FINAL
NOISE STUDY REPORT

S.R. 39
FROM I-4 TO U.S. 301
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Work Program Item Segment Nos: 255099 1 & 256289 1
Federal Aid Project No: F-321-1(4)

This proposed project involves multi-lane improvements to S.R. 39 and the proposed extension of the Alexander Street Bypass from I-4 in Hillsborough County to U.S. 301 in Pasco County, a distance of approximately 21.2 km (13.2 mi)

Prepared for:

Florida Department of Transportation
District Seven
11201 North McKinley Drive
Tampa, Florida 33612-6456

December 2000

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Prepared for:

Florida Department of Transportation
District Seven
11201 North McKinley Drive
Tampa, Florida 33612-6456

Prepared by:

PBS&J
5300 West Cypress Street
Suite 300
Tampa, Florida 33607

December 2000

EXECUTIVE SUMMARY

Through the Project Development and Environment (PD&E) Study process, the Florida Department of Transportation (FDOT) has evaluated the expansion of S.R. 39 to a four-lane facility from the vicinity of Joe McIntosh Road in Hillsborough County to the vicinity of U.S. 301 in Pasco County. In addition, the FDOT has evaluated the extension of Alexander Street Bypass as a four-lane facility from Interstate 4 (I-4) northward to S.R. 39 in the vicinity of Joe McIntosh Road.

The objective of the noise study is to identify noise sensitive sites adjacent to the project corridor, compare and evaluate the effect of traffic noise on these sites with and without the project, and evaluate the need for and the effectiveness of noise abatement measures. Additional objectives include the evaluation of construction noise and the prediction of future noise level contours adjacent to the corridor.

Noise modeling results for the design year indicate that 75 residences may experience traffic noise levels that approach or exceed the FHWA Noise Abatement Criteria Activity Category B. Noise levels at the affected sites are predicted to range from 65 to 71 dBA. Predicted increases above existing noise levels range from 1 to 13 dBA.

Noise abatement measures were evaluated for the affected noise sensitive sites. Abatement measures considered include traffic system management, alignment modifications, property acquisition, land use controls, and noise barriers. All of these measures were considered during the project development. Noise barriers were modeled at those sites where predicted noise levels would approach or exceed 65 dBA. One noise barrier, at the Colonial Park mobile home park, was found to be feasible and cost reasonable. Noise walls were not found to be reasonable and feasible at other noise sensitive sites.

A copy of this final Noise Study Report will be furnished to local officials to assist them in the development of compatible land uses for future development.

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1.0 INTRODUCTION

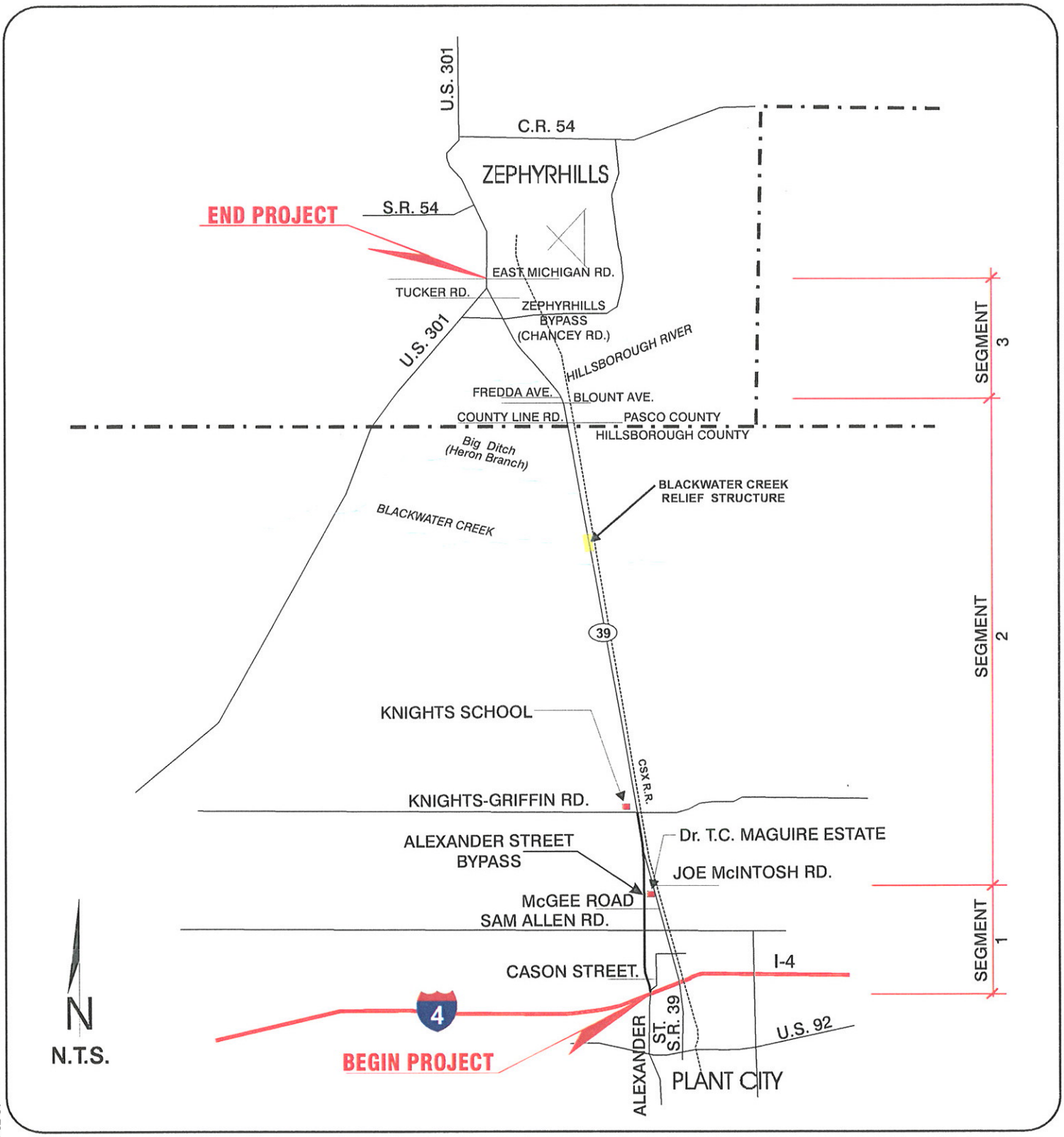
Through the Project Development and Environment (PD&E) Study process, the Florida Department of Transportation (FDOT) evaluated the expansion of S.R. 39 to a four-lane facility from the vicinity of Joe McIntosh Road in Hillsborough County to the vicinity of U.S. 301 in Pasco County. In addition, the FDOT evaluated the extension of Alexander Street Bypass as a four-lane facility from Interstate 4 (I-4) northward to S.R. 39 in the vicinity of Joe McIntosh Road.

The S.R. 39 corridor is functionally classified as a north/south minor arterial facility between I-4 and U.S. 301. S.R. 39 is part of the Federal-Aid Primary and State Highway System and is classified as an emergency evacuation route. The project limits extend from I-4 in Plant City and Hillsborough County to U.S. 301 in Pasco County, a distance of 21.2 kilometers (km) [13.2 miles (mi)]. Figure 1 illustrates the limits of the study area in relation to the highway system.

The existing S.R. 39 within the project limits contains a two-lane undivided typical section with 3.658 meter (m) [12 foot (ft)] wide travel lanes, 1.219 m (4 ft) paved shoulders, and open roadside ditches on both sides of the roadway. The existing right-of-way (ROW) varies from 18.288 m (60 ft) to 45.720 m (150 ft).

S.R. 39 is currently a two-lane undivided roadway with drainage ditches adjacent to the existing roadway. A CSX Transportation railroad line parallels the existing roadway on the east side of S.R. 39 for approximately 17.7 km (11.0 mi) from the existing S.R. 39 and I-4 intersection to a point just north of Crystal Springs in Pasco County.

The objective of the noise study is to identify noise sensitive sites adjacent to the project corridor, compare and evaluate the effect of traffic noise on these sites with and without the project, and evaluate the need for and the effectiveness of noise abatement measures. Additional objectives include the evaluation of construction noise and the prediction of future noise contours adjacent to the corridor. The study was performed using methodology



FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39

From I-4 to U.S. 301
Hillsborough and Pasco Counties, Florida

PROJECT LOCATION MAP

Work Program Item Segment #: 255099 1 & 256289 1
FAP #: F-321-1(4)

FIGURE 1

established by the Federal Highway Administration (FHWA) in Title 23 CFR, Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise[1], and the FDOT in the Project Development Environment (PD&E) Manual[2], Part 2, Chapter 17 (October 1998).

1.1 Project Need

The Hillsborough County Metropolitan Planning Organization's (MPO) Long Range Transportation Plan[3] (LRTP) for the year 2020 takes into account projects planned for in the Capital Improvements Programs of the local government jurisdictions in Hillsborough County. The FDOT's Adopted Five-Year Work Program[4] for projects within Hillsborough County is also consistent with the LRTP. The Alexander Street Bypass and S.R. 39 from its juncture with the Alexander Street Bypass up to Knights-Griffin Road are identified as needed four-lane roadways in the MPO's Cost Affordable Highway Improvements map which is contained in its 2020 LRTP. The proposed project was not required by the Federal Highway Administration (FHWA) to be subject to a Major Investment Study. The portion of the project subject to Location Design and Concept Approval is in the LRTP's Cost Affordable Plan which has been determined by the FHWA, Federal Transit Authority (FTA) and the Environmental Protection Agency (EPA) to be in conformance with the State Implementation Plan (SIP). Therefore, this project comes from a conforming transportation plan and Transportation Improvement Plan (TIP) as required by the Clean Air Act Amendments of 1990.

S.R. 39 provides one of the few north-south routes within eastern Pasco and Hillsborough Counties. Connecting Plant City to Zephyrhills and points beyond, this facility will provide a transportation service to the area by supporting the population and socioeconomic growth identified in the MPO's LRTP and the Comprehensive Plans for Hillsborough and Pasco Counties. The need for improvement along the S.R. 39 corridor was established based on the evaluation of the following: current substandard traffic operations within the study area; the expected future quality of traffic along S.R. 39 based on the No-Build Alternative; and the projected future socioeconomic growth in the region of the project.

As part of the PD&E Study, a Project Traffic and Intersection Analysis Technical Memorandum[5] was prepared. Capacity analyses were conducted to identify the roadway segments and intersections that presently or will in the future operate at a deficient level of service (LOS) if no improvements are constructed. Hillsborough and Pasco Counties require that the roadway and intersections operate at LOS C (rural) and D (urban) or better under future traffic conditions.

1.2 Existing Facility

The S.R. 39 corridor is functionally classified as a north/south minor arterial facility between I-4 and U.S. 301. S.R. 39 is part of the Federal-Aid Primary and State Highway System and is classified as an emergency evacuation route. The project limits extend from I-4 in Plant City and Hillsborough County to U.S. 301 in Pasco County, a distance of 21.2 km (13.2 mi).

The existing S.R. 39 within the project limits contains a two-lane undivided typical section with 3.658 m (12 f t) wide travel lanes, 1.219 m (4 ft) paved shoulders, and open roadside ditches on both sides of the roadway. The existing ROW varies from 18.288 m (60 ft) to 45.720 m (150 ft).

S.R. 39 is currently a two-lane undivided roadway with drainage ditches adjacent to the existing roadway. A CSX Transportation railroad line parallels the existing roadway on the east side of S.R. 39 for approximately 17.7 km (11.0 mi) from the existing S.R. 39 and I-4 intersection to a point just north of Crystal Springs in Pasco County.

1.3 Proposed Improvements

The project would improve the existing two-lane facility to a four-lane divided facility. Several typical sections have been developed and will be used throughout the project.

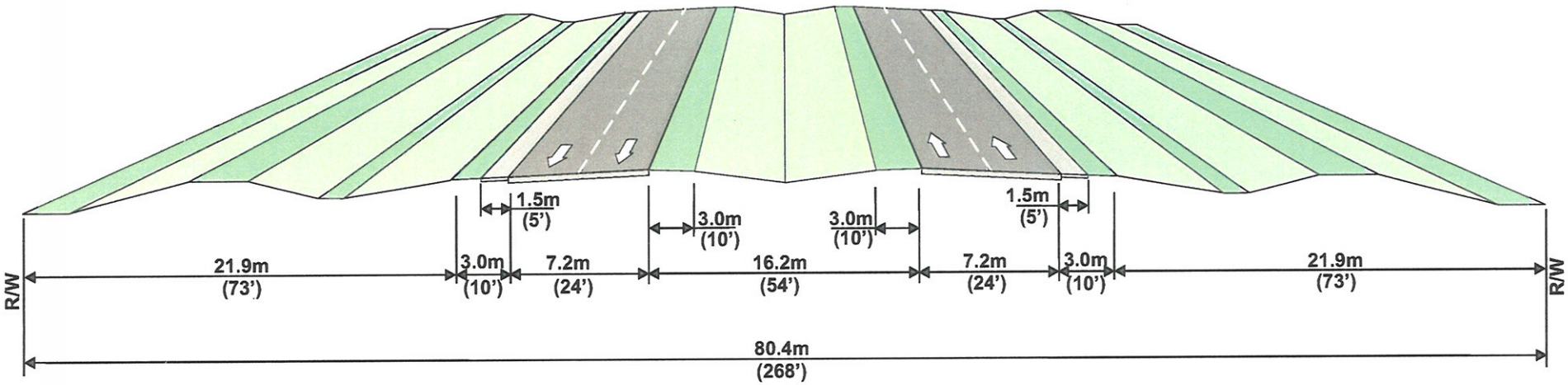
The typical section to be utilized along the Alexander Street Bypass from I-4 to Cason Street, a length of approximately 0.63 km (0.4 mi), is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and 21.9 m (73 ft) borders. This typical section will require 80.4 m (268 ft) of right-of-way (ROW) (see Figure 2).

The typical section proposed from Cason Street to S.R. 39, a length of approximately 3.18 km (2.0 mi), is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and 15.0 m (50 ft) borders. This typical section will require approximately 66.6 m (222 ft) of ROW (see Figure 3).

The typical section proposed from S.R. 39 to Blount Street, a length of approximately 13.15 km (8.2 mi), is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and a 13.8 m (46 ft) border on the west side of the roadway and an 8.4 m (28 ft) minimum border on the east side of the roadway. This typical section will require approximately 58.8 m (196 ft) of ROW (see Figure 4).

The typical section proposed from Blount Street to Shady Oaks Drive, a length of approximately 3.60 km (2.2 mi), is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, a 16.2 m (54 ft) depressed median, 3.0 m (10 ft) outside shoulders with 1.5 m (5 ft) of the shoulder paved, 3.0 m (10 ft) inside shoulders, and a 13.8 m (46 ft) borders. This typical section will require approximately 64.2 m (214 ft) of ROW (see figure 5).

Finally, the typical section to be utilized from Shady Oaks Drive to U.S. 301, a length of approximately 0.35 km (0.2 mi), is a four-lane divided facility, with 3.6 m (12 ft) wide travel lanes, 1.2 m (4 ft) bicycle lanes, a 16.2 m (54 ft) depressed median, Type E curb and gutter,



FROM I-4 TO CASON STREET

Based on 6' of Fill to Proposed PGL

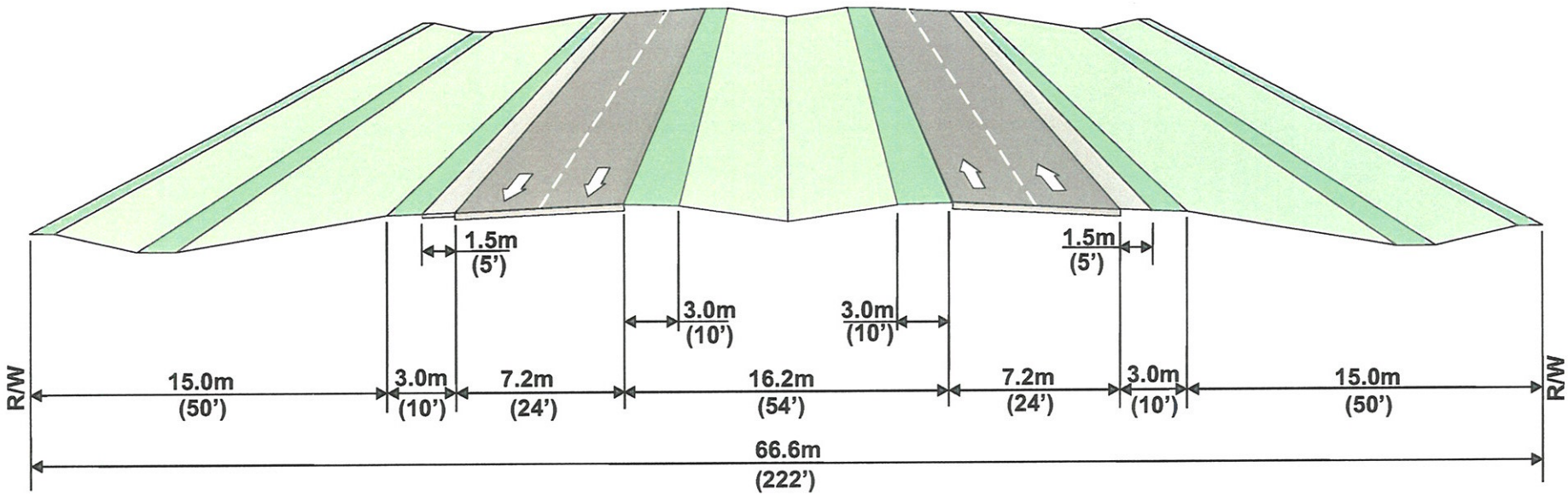
TYPICAL SECTION 6

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 2



FROM CASON STREET TO S.R. 39

Based on 3' of Fill to Proposed PGL

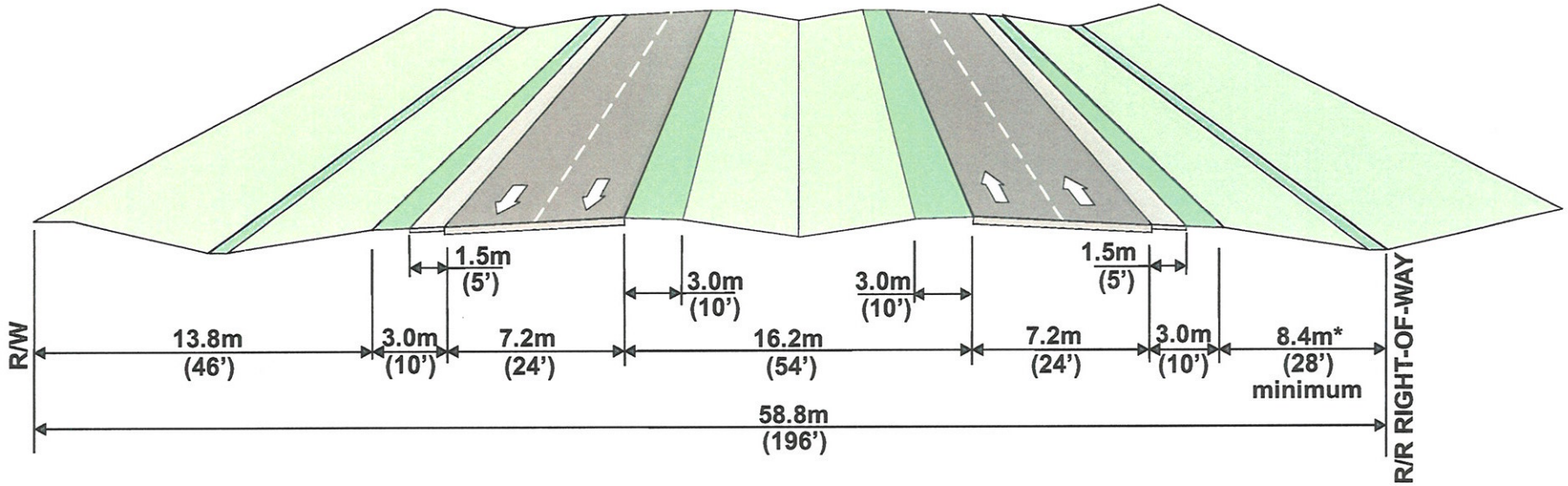
TYPICAL SECTION 7

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 3



FROM S.R. 39 TO BLOUNT STREET

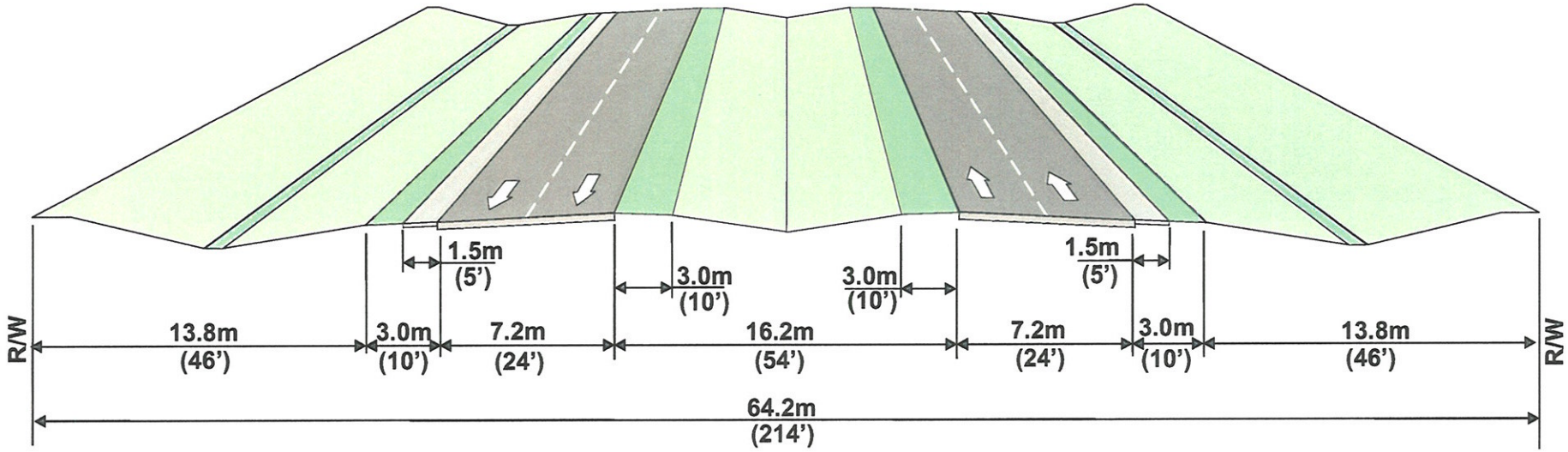
Based on 1.5' of Fill to Proposed PGL & Sharing R/R Right-of-Way

* Does Not Meet Border Criteria.
However, it does meet clear zone criteria.

TYPICAL SECTION 8

S.R. 39 FROM I-4 TO U.S. 301
WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 4



FROM BLOUNT AVENUE TO SHADY OAKS DRIVE

Based on 1.5' of Fill to Proposed PGL

TYPICAL SECTION 9

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 5

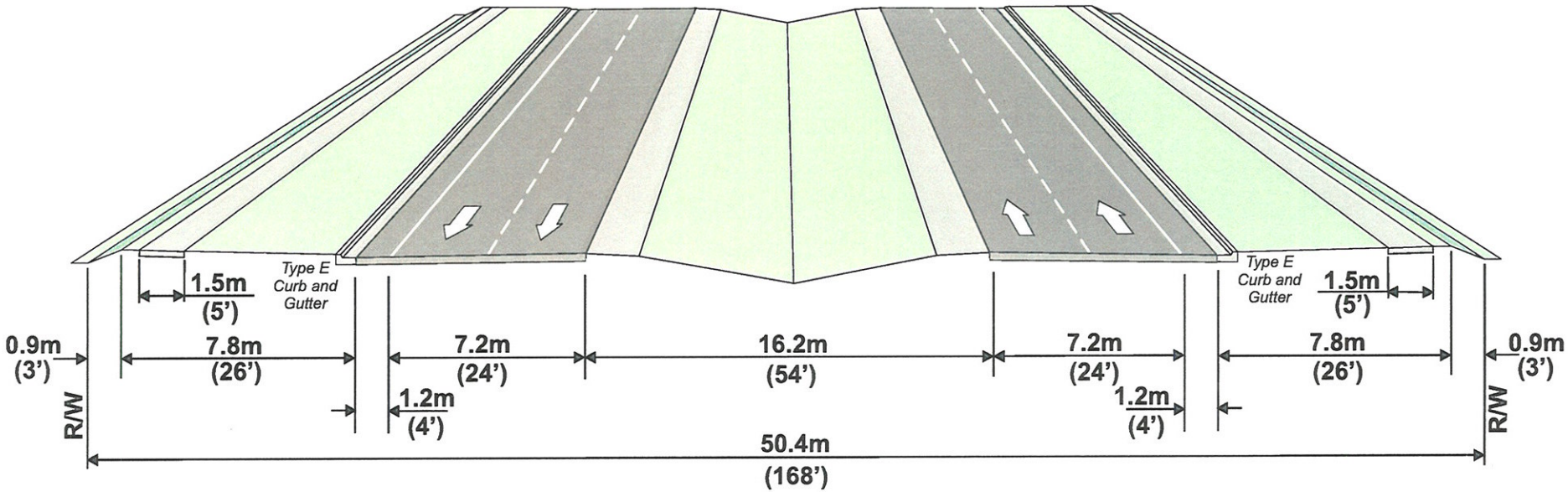
and 1.5 m (5 ft) sidewalks. This typical section will require 50.4 m (168 ft) of ROW (see Figure 6).

Two alignment alternatives are currently under evaluation for S.R. 39 from Fredda Avenue to U.S. 301 (Segment 3). The Alexander Street Bypass from I-4 to Joe McIntosh Road (Segment 1) and S.R. 39 from Joe McIntosh Road to Fredda Avenue (Segment 2). Only one alignment alternative was evaluated for traffic noise under the Build condition. Alignment B is on a western alignment (i.e., the new lanes will be constructed to the west of existing S.R. 39). Alignment D is on an eastern alignment from Fredda Avenue to U.S. 301.

2.0 METHODOLOGY

All noise levels generated for this study were produced using the FHA STAMINA 2.0 (Florida Version STAMINA 2.1) traffic noise prediction model. All noise levels, measured and predicted, are expressed in decibels (dB) on the "A"-scale (dBA). This scale most closely approximates the response characteristics of the human ear. All noise levels are reported as hourly equivalent noise levels (L_{aeqlh}). The L_{aeqlh} is defined as the equivalent steady-state sound level that, in a given hourly period, contains the same acoustic energy as the time-varying sound level for the same hourly period.

To simulate "worst-case" conditions, level of service "C" or demand traffic volumes, whichever is less, are usually modeled. The traffic data utilized for input into the traffic noise prediction computer models was provided by Parsons Brinckerhoff (January 1999 memo). A peak hour factor (K) of 9.54 percent was used for Existing, No-Build, and Build conditions to determine hourly traffic volumes from Annual Average Daily Traffic (AADT) volumes. The percent of medium and heavy trucks used was 2.5 percent and 4.5 percent (total of 7 percent), respectively. The traffic data is summarized in Table 1 and traffic data sheets, developed by Parsons Brinckerhoff, are included in the Appendices.



FROM SHADY OAKS DRIVE TO U.S. 301

Based on 1.5' of Fill to Proposed PGL

TYPICAL SECTION 10

S.R. 39 FROM I-4 TO U.S. 301

WPI SEGMENT Nos. 255099 1 & 256289 1 FAP No. F-321-1(4)

HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

Figure 6

Table 1
Traffic Data

Traffic Segment	Existing 1995 AADT	KM/H (MPH)	No-Build 2020 AADT	KM/H (MPH)	Build 2020 AADT	KM/H (MPH)
Alexander Bypass from I-4 to Sam Allen Road	N/A	N/A	N/A	N/A	11,100 [1]	70 (45 mph)
Alexander Bypass from Sam Allen Road to S.R. 39 at Knights-Griffin Road	N/A	N/A	N/A	N/A	13,000 [1]	70 (45 mph)
S.R. 39 from Knights-Griffin Road to Pasco County Line Road	8,500 [1]	90 (55 mph)	8,600 [2]	90 (55 mph)	19,000 [1]	90 (55 mph)
S.R. 39 from Pasco County Line Road to Zephyrhills Bypass (Chancey Road)	8,600 [2]	100 (60 mph)	8,600 [2]	100 (60 mph)	21,000 [1]	100 (60 mph)
S.R. 39 from Zephyrhills Bypass (Chancey Road) to U.S. 301	8,900 [1]	70 (45 mph)	14,000 [2]	70 (45 mph)	18,400 [1]	70 (45 mph)

[1] Denotes peak-hour traffic demand level.
[2] Denotes level of service "C" (LOS C) traffic demand level.
Source: Parsons Brinkerhoff, January 1999.

3.0 TRAFFIC NOISE ANALYSIS

3.1 Noise Sensitive Receivers

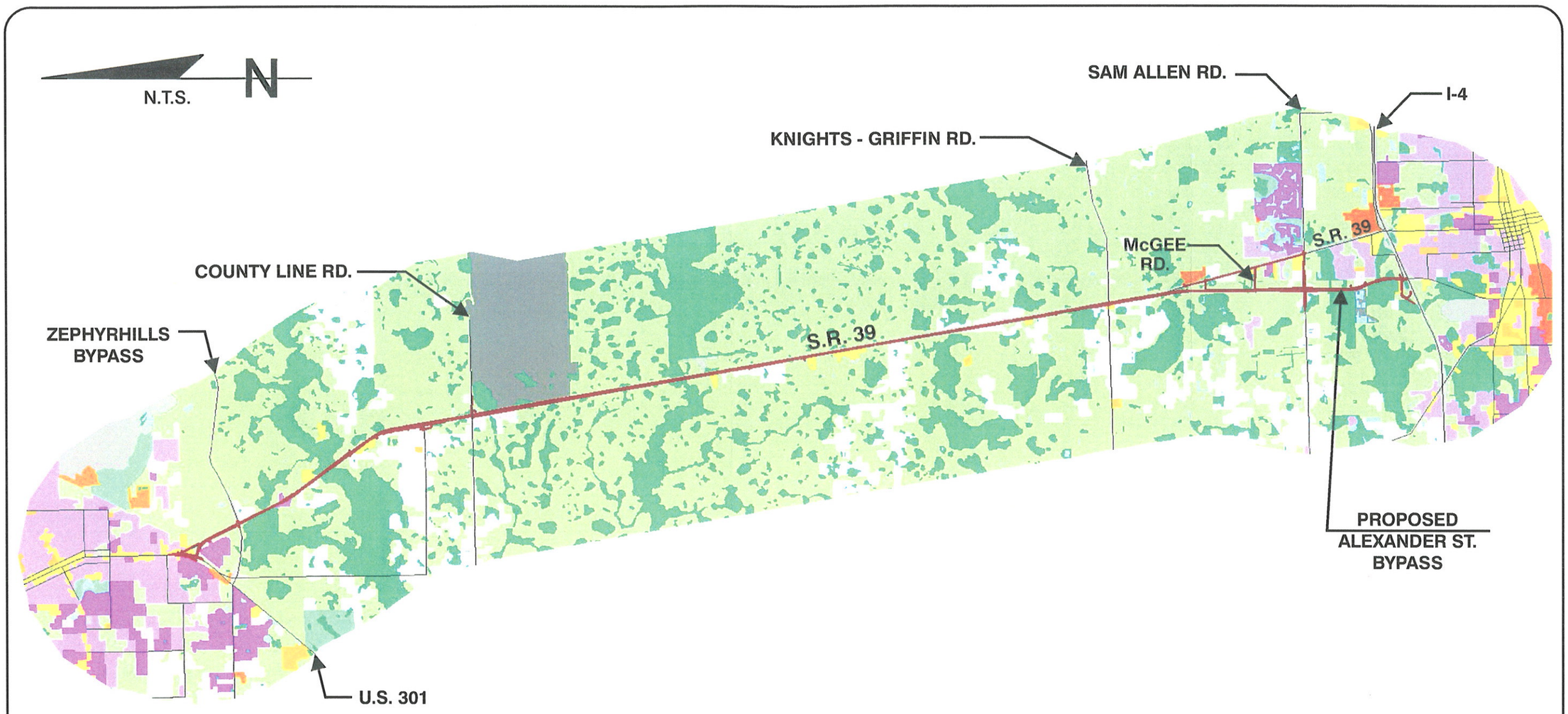
A noise sensitive receiver is any property (owner occupied, rented, or leased) where frequent exterior human use occurs and where a lowered noise level would be of benefit. The FHA has established noise levels at which noise abatement must be considered. These noise levels are referred to as the Noise Abatement Criteria (NAC). As shown in Table 2, the NAC varies according to the activity category. When future predicted traffic noise levels "approach" or exceed the NAC, the FHA requires that noise abatement measures be considered. The FDOT defines the term "approach" to mean within 2 dBA of the FHA criteria.

Table 2
Federal Highway Administration
Noise Abatement Criteria

Activity Category	Design Noise Level (LEQ)H))	Description of Land Use Category
A	57 Exterior	Lands on which serenity and quiet 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.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B.
D	--	Undeveloped lands.
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: 23 CFR Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise, Federal Highway Administration, U.S. Department of Transportation, April 1999.

The existing land use patterns along the S.R. 39 corridor are both urban and rural in character (see Figure 7, Existing Land Use). Land use along the proposed Alexander Street Bypass, beginning at the southern terminus and extending to existing S.R. 39 south of Knights-Griffin Road, is primarily agricultural and undeveloped parcels with scattered rural residential properties. Land uses in the central portion of the corridor consist of agricultural uses, rural residential development, vacant parcels, and a few commercial/industrial uses. In addition, an ultra-light aircraft airport is located to the east of S.R. 39. In the northern portion of the project near Zephyrhills, the land uses are primarily residential development. The existing land use is consistent with the future land use designations with future development generally specified as residential along the project corridor (see Figure 8, Future Land Use).



P.B.S. & J., INC.

LEGEND

New Alignment
Existing, Major Road

1990 Land Use

- Residential, Low Density
- Residential, Medium Density
- Residential, High Density
- Commercial
- Industrial
- Institutional
- Extractive
- Recreational
- Agriculture, Barren Land, Rangeland, Upland Forest
- Water
- Wetlands
- Transportation / Utility

FLORIDA DEPARTMENT OF TRANSPORTATION

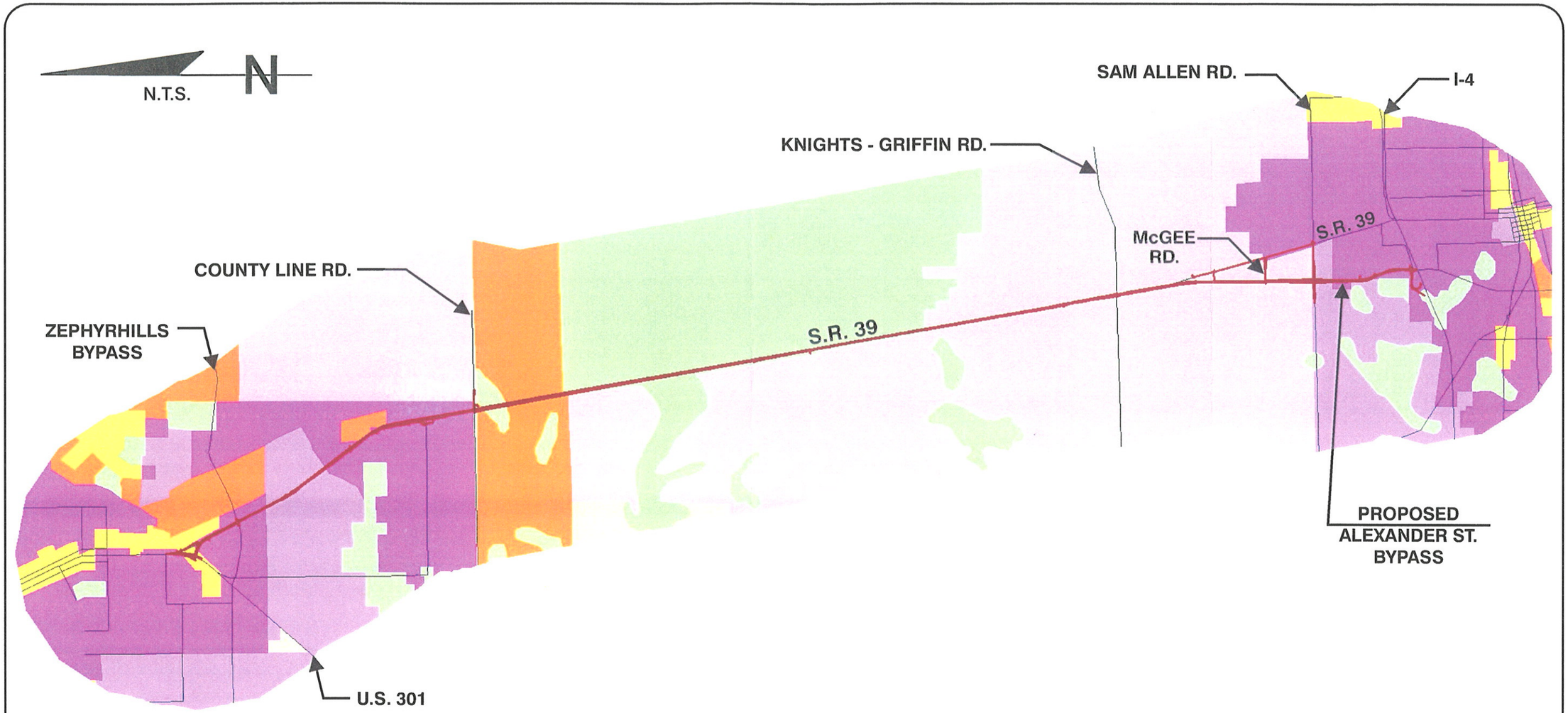
S.R. 39
FINAL NOISE REPORT
From I-4 to U.S. 301
Hillsborough and Pasco Counties, Florida

EXISTING LAND USE

Work Program Item Segment #: 255099 1 & 256289 1
State Project #: 10200-1508 and 14110-1503
FAP #: F-321-1(4)

FIGURE 7

COREL:\ DIST_7 \ S.R. 39 \ NOISE \ REPORT \ FIG_7.CDR \ 5-03-01



P.B.S. & J

LEGEND

Future Land Use (2010)

- New S.R. 39 Alignment
- Existing, Major Road
- Agriculture
- Commercial
- Industrial
- Residential, Estate
- Residential, Multi Family
- Residential, Single Family
- Preserve
- Water

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39
FINAL NOISE REPORT
From I-4 to U.S. 301
Hillsborough and Pasco Counties, Florida

FUTURE LAND USE

Work Program Item Segment #: 255099 1 & 256289 1
State Project #: 10200-1508 and 14110-1503
FAP #: F-321-1(4)

FIGURE 8

COREL: \ DIST_7 \ S.R. 39 \ NOISE \ REPORT \ FIG_8.CDR \ 05-03-01

3.2 Measured Noise Levels

To establish ambient noise levels in the new alignment portion of the project and validate the STAMINA computer model, field measurements were taken following procedures documented in the FHA Measurement of Highway Related Noise[6]. Each field measurement was obtained using a Metrosonic 308-dBA dosimeter. The dosimeter was calibrated before and after each monitoring period using a Metrosonics Sound Level Calibrator. Speeds were obtained with a MPH, Model K-15, K-band, hand held, radar gun.

For model validation purposes, field measurements were taken at three locations along the project corridor. Site selection for each field measurement was based on a location representative of free-flow traffic and proximity to noise sensitive sites. Vehicle counts, vehicle classifications, and vehicle speeds were also recorded. Table 3 presents the field measurements and the validation results using the FDOT STAMINA V2.1 computer model.

The noise prediction computer model is approved for use if measured and predicted noise levels are within the FDOT tolerance standard of 3 dBA. As shown in Table 3, the ability of the STAMINA computer model to accurately predict noise levels for this project was confirmed as the levels are within the FDOT tolerance standard. The traffic data and the printouts of the field monitoring results are provided in the Appendices of this report.

Table 3
Validations

Location	Date/ Time	Field Measure	Computer Validation	Difference
South of Varn Road	1/21/99 3:43 PM	70.9 dBA	71.9 dBA	1.0 dBA
Crystal Springs Church	1/21/99 4:15 PM	70.5 dBA	72.1 dBA	1.6 dBA
Shady Oaks	1/21/99 4:32 PM	68.9 dBA	70.3 dBA	1.4 dBA

Ambient noise levels were monitored at three locations along the Alexander Street Bypass: (1) rural residences near Cason Street, (2) rural residences near Sam Allen Road and (3) rural residences near McGee Road. At Sam Allen Road, traffic was a significant noise source resulting in an ambient noise level of 60 dBA. Ambient noise levels at the other two

sites were much less influenced by traffic with a monitored noise level of 53 dBA. Based on the monitoring data, noise sensitive sites along the new alignment were assigned a conservative ambient noise level of 53 dBA.

3.3 Predicted Noise Levels

Noise contours associated with the future Build scenario were determined using the STAMINA V2.1 computer model and traffic volumes and speed data provided by Parsons Brinckerhoff. Noise contours, or points of equal noise level, were developed for two specific noise levels. The 65 dBA contour was used to identify those receptors for which noise abatement considerations are warranted. The 67 dBA contour is included for use by local officials in planning noise compatible future land uses adjacent to the proposed facility.

The noise contours are shown in Table 4. All reported distances are measured from the proposed centerline of the road.

3.4 Noise Analysis

Based on the noise contour data, a review of land use data, proximity of noise sensitive sites to the Alexander Street Bypass or existing S.R. 39 and field verification of noise sensitive site locations, a total of 231 receiver sites were evaluated for Segment 1, 2, and 3 (Alignment B) and 240 receiver sites were evaluated for Segments 1,2, and 3 (Alignment D). Of the evaluated receivers, 228 are common to both alignments with the difference involving

Table 4
Distance to Noise Contours*

Noise Level	Alexander Bypass from I-4 to Sam Allen Road	Alexander Bypass from Sam Allen Road to S.R. 39 at Knights-Griffin Road	S.R. 39 From Knights-Griffin Road to Pasco County Line Road	S.R. 39 From Pasco County Line Road to Zephyrhills Bypass (Chancey Rd)	S.R. 39 From Zephyrhills Bypass to U.S. 301
65 dBA	39 m 128 (ft)	43 m 141 (ft)	64 m 210 (ft)	74 m 243 (ft)	51 m 167 (ft)
67 dBA	31 m 102 (ft)	34 m 112 (ft)	49 m 161 (ft)	57 m 187 (ft)	40 m 131 (ft)

* All distances are measured from the proposed centerline of the roadway.

relocations specific to an alignment alternative in Segment 3. Except for the Knights Baptist Church (receiver R25W), the Knights-Griffin Recreation Center (receivers R27W and R28W), and Crystal Springs First Assembly of God (receiver R127W), all evaluated sites were residences. The locations of the evaluated receivers are shown on aerial photographs provided in the Appendix. The receiver labels are generally numbered from south to north with an "E" designating a receiver east of S.R. 39 and a "W' designating a receiver west of S.R. 39.

Predicted noise levels for Segments 1, 2, and 3 (Alignment B) and summarized in Table 5. Predicted noise levels for receivers that would be affected by the eastern alternative alignment in Segment 3 (Alignment D) are summarized in Table 6. All predictions are for exterior uses, except for sites with no evidence of frequent outdoor activity or sites necessitating a prediction of the interior noise level (i.e., churches and recreation center). At sites requiring an indoor noise level prediction, an outdoor to indoor reduction of 20 dBA was assumed to occur from structural attenuation.

For Segments 1,2, and 3 (Alignment B), a total of 75 noise sensitive sites are predicted to approach or exceed the NAC for the build condition. Likewise, the number of noise sensitive sites predicted to approach or exceed the NAC for Segments 1,2, and 3 (Alignment D) under the build condition is also 75. Impacted noise sensitive sites are generally limited to first-row sites with some second-row sites also approaching the NAC. All affected sites are residences in Activity Category B of the NAC.

Table 5
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
1	R1E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of Cason Street on east side	53.0	53.0	59.2
1	R3E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of Cason Street on east side	53.0	53.0	66.1
1	R4E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of Cason Street on east side	53.0	53.0	65.1
1	R5E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of Cason Street on east side	53.0	53.0	62.2
1	R6E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of Cason Street on east side	53.0	53.0	60.2
1	R7E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of Cason Street on east side	53.0	53.0	65.2
1	R8E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	South of Sam Allen Rd. on east side	53.0	53.0	63.1
1	R9E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	South of Sam Allen Rd. on east side	53.0	53.0	54.0
1	R10E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of Sam Allen Rd. on east side	53.0	53.0	52.7
1	R11E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of Sam Allen Rd. on east side	53.0	53.0	56.9
1	R12E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	South of McGee Rd. on east side	53.0	53.0	63.4
1	R13E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of McGee Rd. on east side	53.0	53.0	57.3
1	R14E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of McGee Rd. on east side	53.0	53.0	59.1
1	R15E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of McGee Rd. on east side	53.0	53.0	61.5
1	R16E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of McGee Rd. on east side	53.0	53.0	65.3
1	R17E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of Joe McIntosh on east side	58.8	60.2	68.0
1	R18E	Alexander Bypass from Sam Allen Rd. to Knights-Griffin Rd.	North of Joe McIntosh on east side	61.0	62.5	63.9
1	R19E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Knights-Griffin Rd. on east side	59.1	59.1	62.2
2	R20E	Knights-Griffin Rd. to Pasco County Line Rd.	South of Lanier Rd. on east side	62.1	62.1	65.2
2	R21E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lanier Rd. on east side	58.0	58.0	61.3

Table 5 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
2	R22E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lanier Rd. on east side	58.8	58.9	62.1
2	R23E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lanier Rd. on east side	57.2	57.2	60.5
2	R24E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lanier Rd. on east side	57.0	57.1	60.3
2	R25E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lanier Rd. on east side	58.9	58.9	62.2
2	R26E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lanier Rd. on east side	57.5	57.5	60.8
2	R27E	Knights-Griffin Rd. to Pasco County Line Rd.	South of Hunter Rd. on east side	60.1	60.1	63.3
2	R28E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on east side	54.5	54.5	57.8
2	R29E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on east side	57.5	57.5	60.7
2	R30E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on east side	60.7	60.7	63.8
2	R31E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on east side	61.2	61.3	64.3
2	R32E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on east side	56.9	56.9	60.0
2	R33E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on east side	61.8	61.8	64.8
2	R34E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on east side	60.6	60.7	63.7
2	R35E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on east side	63.0	63.0	65.9
2	R36E	Knights-Griffin Rd. to Pasco County Line Rd.	South of Varn Rd. on east side	59.6	59.6	62.6
2	R37E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Varn Rd. on east side	61.2	61.2	64.1
2	R38E	Knights-Griffin Rd. to Pasco County Line Rd.	South of Candis Rd. on the east side	60.4	60.4	63.3
2	R39E	Knights-Griffin Rd. to Pasco County Line Rd.	South of Candis Rd. on the east side	60.3	60.4	63.2
2	R40E	Knights-Griffin Rd. to Pasco County Line Rd.	South of Candis Rd. on the east side	60.7	60.8	63.5
2	R41E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Candis Rd. on the east side	61.6	61.6	64.3
2	R42E	Knights-Griffin Rd. to Pasco County Line Rd.	North of Candis Rd. on the east side	60.8	60.8	63.5
2	R43E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	West of Blackwater Ultra Light Company on east side	56.9	56.9	59.9

Table 5 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
2	R44E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of County Line Rd. on east side	55.7	55.8	59.2
2	R45E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Pattie Rd. on east side	62.3	62.3	64.6
3	R46E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Pattie Rd. on east side	56.1	56.1	59.3
3	R47E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Pattie Rd. on east side	62.5	62.5	64.7
3	R48E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Pattie Rd. on east side	68.8	68.8	69.5
3	R49E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Pattie Rd. on east side	60.2	60.2	63.0
3	R50E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Pattie Rd. on east side	56.8	56.8	60.0
3	R51E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Chancey Rd. on east side	63.7	63.7	66.9
3	R52E	S.R. 39 from Zephyrhills Bypass (Chancey Rd.) to U.S. 301	South of Chancey Rd. on east side	63.9	63.9	67.4
3	R53E	S.R. 39 from Zephyrhills Bypass (Chancey Rd.) to U.S. 301	South of Chancey Rd. on east side	64.5	64.7	68.2
1	R1W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	North of Cason Street on the west side	53.0	53.0	62.2
1	R2W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	North of Cason Street on the west side	53.0	53.0	61.3
1	R3W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	North of Cason Street on the west side	53.0	53.0	61.6
1	R4W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	South of Sam Allen Rd. on west side	53.0	53.0	65.2
1	R5W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	South of Sam Allen Rd. on west side	53.0	53.0	55.6

Table 5 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
1	R6W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	North of Sam Allen Rd. on west side	53.0	53.0	65.3
1	R7W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	South of McGee Rd. on west side	53.0	53.0	54.2
1	R8W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	South of McGee Rd. on west side	53.0	53.0	57.0
1	R9W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	South of McGee Rd. on west side	53.0	53.0	65.0
1	R10W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	South of McGee Rd. on west side	53.0	53.0	59.5
1	R11W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	South of McGee Rd. on west side	53.0	53.0	57.0
1	R12W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	South of McGee Rd. on west side	53.0	53.0	54.5
1	R13W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	North of Joe McIntosh on west side	53.1	54.5	65.0
1	R14W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	South of LH Drive on west side	56.3	57.8	59.4
1	R15W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	North of LH Drive on west side	60.1	61.6	64.8
1	R16W	Alexander Bypass from Sam Allen to Knights-Griffin Rd.	North of Joe McIntosh on west side	56.8	58.3	59.9
1	R17W	Alexander Bypass at Sam Allen to Knights-Griffin Rd.	North of LH Drive on west side	56.8	58.2	59.7
1	R18W	Alexander Bypass at Sam Allen to Knights-Griffin Rd.	North of LH Drive on west side	57.6	59.1	60.9
1	R19W	Alexander Bypass at Sam Allen to Knights-Griffin Rd.	North of LH Drive on west side	56.4	57.9	59.2
1	R20W	Alexander Bypass at Sam Allen to Knights-Griffin Rd.	North of LH Drive on west side	58.9	60.3	62.4
1	R21W	Alexander Bypass at Sam Allen to Knights-Griffin Rd.	South of McLin Drive on west side	60.5	61.9	64.7
1	R22W	Alexander Bypass at Sam Allen to Knights-Griffin Rd.	South of McLin Drive on west side	61.2	62.7	65.9
1	R23W	Alexander Bypass at Sam Allen to Knights-Griffin Rd.	South of McLin Drive on west side	55.7	57.1	58.9
1	R24W	Alexander Bypass at Sam Allen to Knights-Griffin Rd.	North of McLin Drive on west side	61.9	63.4	67.2
1	R25W	Alexander Bypass at Sam Allen to Knights-Griffin Rd.	Knights Baptist Church[1]	<45	<45	47.9
1	R26W	Alexander Bypass at Sam Allen to Knights-Griffin Rd.	South of Knights-Griffin Rd. on west side	53.6	54.4	57.2
1	R27W	Knights-Griffin Rd. to Pasco County Line Rd.	Playground associated with Knights-Griffin Recreation Center	56.0	56.5	60.6

[1] Represents interior noise level (20 dBA reduction)

Table 5 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
1	R28W	Knights-Griffin Rd. to Pasco County Line Rd.	Knights-Griffin Recreation Center[1]	<45	<45	49.9
1	R29W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Knights-Griffin Rd. on west side	51.3	51.7	58.0
2	R30W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Hunter Rd. on west side	60.7	60.7	65.5
2	R31W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Lanier Rd. on west side	56.0	56.0	59.9
2	R32W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Hunter Rd. on west side	59.2	59.2	63.7
2	R33W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on west side	56.5	56.5	60.6
2	R34W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on west side	58.6	58.7	63.1
2	R35W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on west side	57.5	57.6	61.9
2	R36W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on west side	58.3	58.4	62.8
2	R37W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on west side	58.4	58.4	62.9
2	R38W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hunter Rd. on west side	59.8	59.9	64.6
2	R39W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Candis Rd. on west side	58.7	58.8	63.6
2	R40W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Hidden Pond Rd. on west side	61.5	61.5	67.5
2	R41W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Hidden Pond Rd. on west side	55.0	55.1	59.3
2	R42W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hidden Pond Rd. on west side	57.6	57.6	62.2
2	R43W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Hidden Pond Rd. on west side	54.5	54.6	58.7
2	R44W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Bruton Rd. on west side	60.5	60.6	66.0
2	R45W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Bruton Rd. on west side	61.3	61.3	67.1
2	R46W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Bruton Rd. on west side	56.0	56.1	60.6
2	R47W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Bruton Rd. on west side	53.8	53.8	58.0
2	R48W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Bruton Rd. on west side	51.7	51.7	55.7
2	R49W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Lightning Rod Lane on west side	62.6	62.6	69.2
2	R50W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Lightning Rod Lane on west side	57.6	57.7	62.5

Table 5 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
2	R51W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lightning Rod Lane on west side	57.5	57.5	62.6
2	R52W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lightning Rod Lane on west side	53.1	53.1	57.3
2	R53W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lightning Rod Lane on west side	62.2	62.2	68.5
2	R54W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lightning Rod Lane on west side	60.2	60.2	65.5
2	R55W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lightning Rod Lane on west side	63.0	63.0	69.1
2	R56W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lightning Rod Lane on west side	58.0	58.0	63.3
2	R57W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lightning Rod Lane on west side	57.8	57.9	63.0
2	R58W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lightning Rod Lane on west side	62.8	62.9	69.6
2	R60W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lightning Rod Lane on west side	63.1	63.1	70.1
2	R61W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lightning Rod Lane on west side	61.9	62.0	68.1
2	R62W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Lightning Rod Lane on west side	55.6	55.6	60.0
2	R63W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Moriczville Lane on west side	60.2	60.3	65.6
2	R64W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Moriczville Lane on west side	60.8	60.9	66.4
2	R65W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Moriczville Lane on west side	61.7	61.7	67.6
2	R66W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Moriczville Lane on west side	61.4	61.5	67.3
2	R68W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Moriczville Lane on west side	59.3	59.3	64.3
2	R69W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Moriczville Lane on west side	56.4	56.4	60.8
2	R70W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Moriczville Lane on west side	57.0	57.1	61.5
2	R71W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Moriczville Lane on west side	59.0	59.0	63.9
2	R72W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Moriczville Lane on west side	61.2	61.2	66.8
2	R73W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Patrinostro Rd. on west side	62.5	62.6	68.9
2	R74W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Patrinostro Rd. on west side	60.4	60.5	65.8
2	R75W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Patrinostro Rd. on west side	57.3	57.3	61.8

Table 5 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
2	R76W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Patrinostro Rd. on west side	55.6	55.7	59.9
2	R77W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Patrinostro Rd. on west side	59.8	59.8	64.9
2	R78W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Patrinostro Rd. on west side	60.4	60.4	65.7
2	R79W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Blackwater Ultra Light Flight Company on west side	63.5	63.5	70.6
2	R80W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Blackwater Ultra Light Flight Company on west side	61.5	61.5	67.3
2	R81W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Blackwater Ultra Light Flight Company on west side	58.3	58.3	63.2
2	R82W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Blackwater Ultra Light Flight Company on west side	62.6	62.6	69.0
2	R84W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Blackwater Ultra Light Flight Company on west side	62.9	62.9	69.5
2	R85W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Blackwater Ultra Light Flight Company on west side	63.3	63.3	70.2
2	R86W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Blackwater Ultra Light Flight Company on west side	55.2	55.2	59.5
2	R87W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Blackwater Ultra Light Flight Company on west side	58.4	58.4	63.1
2	R88W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Blackwater Ultra Light Flight Company on west side	58.9	58.9	63.8
2	R89W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Blackwater Ultra Light Flight Company on west side	54.4	54.4	58.5
2	R90W	Knights-Griffin Rd. to Pasco County Line Rd.	North of Blackwater Ultra Light Flight Company on west side	60.4	60.5	65.7
2	R91W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Tollar Rd. on west side	60.7	60.7	66.0

Table 5 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
2	R92W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Tollar Rd. on west side	62.3	62.4	68.5
2	R93W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Tollar Rd. on west side	58.8	58.8	63.6
2	R94W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Tollar Rd. on west side	53.1	53.1	57.1
2	R95W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Uncle Ned's Restaurant on west side	59.4	59.4	64.0
2	R96W	Knights-Griffin Rd. to Pasco County Line Rd.	South of Uncle Ned's Restaurant on west side	57.1	57.2	61.4
2	R97W	Knights-Griffin Rd. to Pasco County Line Rd.	South of County Line Rd. on west side	60.0	60.0	64.7
2	R98W	Knights-Griffin Rd. to Pasco County Line Rd.	South of County Line Rd. on west side	58.4	58.5	62.9
2	R99W	Knights-Griffin Rd. to Pasco County Line Rd.	South of County Line Rd. on west side	54.9	54.9	59.0
2	R100W	Knights-Griffin Rd. to Pasco County Line Rd.	South of County Line Rd. on west side	54.9	54.9	59.0
2	R101W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of County Line Rd. on west side	54.4	54.4	58.6
2	R102W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Central Avenue on west side	61.5	61.5	67.5
2	R103W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Central Avenue on west side	55.9	55.9	60.9
2	R104W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Amber Avenue on west side	63.1	63.1	70.0
2	R105W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Amber Avenue on west side	63.1	63.1	70.0
2	R106W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Amber Avenue on west side	63.2	63.2	70.2
2	R107W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Between Amber and Bay Avenue on west side	55.4	55.4	60.4
2	R108W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Between Amber and Bay Avenue on west side	63.3	63.3	70.5
2	R109W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Between Amber and Bay Avenue on west side	63.3	63.3	70.5
2	R110W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Between Amber and Bay Avenue on west side	63.3	63.3	70.5
2	R111W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Between Amber and Bay Avenue on west side	63.3	63.3	70.5
2	R112W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Between Amber and Bay Avenue on west side	63.4	63.4	70.8
2	R113W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Between Amber and Bay Avenue on west side	56.2	56.2	61.4

[1] Represents interior noise level (20 dBA reduction)

Table 5 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
2	R114W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Between Amber and Bay Avenue on west side	54.6	54.6	59.4
2	R115W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Between Amber and Bay Avenue on west side	53.9	53.9	58.6
2	R116W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Covey Avenue on west side	62.9	62.9	69.9
2	R117W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Covey Avenue on west side	62.9	62.9	70.3
2	R118W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Covey Avenue on west side	62.7	62.7	69.8
2	R119W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Covey Avenue on west side	62.9	62.9	70.0
2	R120W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Covey Avenue on west side	63.1	63.1	70.4
2	R121W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Covey Avenue on west side	55.1	55.1	60.1
2	R122W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Blount Avenue on west side	62.2	62.2	68.7
2	R123W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Blount Avenue on west side	56.7	56.7	61.7
2	R124W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Blount Avenue on west side	60.3	60.3	65.9
3	R125W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Blount Avenue on west side	57.6	57.6	62.7
3	R126W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Fredda Avenue on west side	57.3	57.3	64.7
3	R127W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Crystal Springs First Assembly of God Church[1]	<45	<45	46.8
3	R128W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Jerry Rd. on west side	58.0	58.0	63.3
3	R129W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Jerry Rd. on west side	61.0	61.0	67.4
3	R130W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Jerry Rd. on west side	58.4	58.4	63.8
3	R131W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Jerry Rd. on west side	55.2	55.2	60.0
3	R134W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	61.7	61.7	70.0
3	R135W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	61.0	61.0	67.9
3	R136W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	60.1	60.1	66.5

[1] Represents interior noise level (20 dBA reduction)

Table 5 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
3	R137W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.4	59.5	65.5
3	R138W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	58.8	58.8	64.6
3	R139W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	57.5	57.6	63.0
3	R140W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	55.3	55.3	60.6
3	R143W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.0	59.0	68.9
3	R145W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.1	59.1	69.1
3	R146W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.4	59.4	69.5
3	R148W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.3	59.3	69.3
3	R150W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.5	59.5	69.6
3	R152W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.4	59.4	69.5
3	R154W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	55.4	57.2	59.7
3	R155W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	58.9	61.6
3	R156W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	52.4	54.2	56.6
3	R157W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	58.9	61.6
3	R158W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.1	58.9	61.7
3	R159W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.3	59.1	62.0
3	R160W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.1	62.0
3	R161W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	58.9	61.7
3	R162W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	51.6	53.4	55.8
3	R163W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	58.9	61.7
3	R164W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.3	59.2	62.1
3	R165W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	56.9	58.8	61.7
3	R166W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.3	59.2	62.2

Table 5 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
3	R167W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	58.9	61.7
3	R168W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	51.5	53.4	55.9
3	R169W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.1	62.1
3	R170W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.1	62.1
3	R171W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.2	62.2
3	R172W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.3	59.2	62.3
3	R173W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.2	62.4
3	R174W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.2	62.6
3	R175W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.1	59.0	62.6
3	R176W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	51.6	53.5	56.8
3	R177W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	59.0	63.2
3	R178W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	51.3	53.2	57.7
3	R179W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.1	59.0	64.1
3	R180W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	56.4	58.4	63.9
3	R181W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	50.8	52.7	58.5
3	R182W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	56.7	58.6	66.9
3	R183W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	56.4	58.3	68.7
3	R184W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	54.4	56.4	65.5
3	R185W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	55.2	57.1	65.7
3	R186W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	53.6	55.5	64.1
3	R187W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	51.1	53.0	61.2
3	R188W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	50.4	52.3	60.6
3	R189W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	48.8	50.6	59.8

Table 5 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Segments 1,2, and 3 (Alignment B)

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
3	R190W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	48.3	50.1	59.7
3	R191W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	47.9	49.7	59.4R

Table 6
Predicted Existing and Future Noise Levels (dBA)
For Alignment D in Segment 3

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
2	R45E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Pattie Rd. on east side	62.3	62.3	68.5
3	R46E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Pattie Rd. on east side	56.1	56.1	60.8
3	R47E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Pattie Rd. on east side	62.5	62.5	68.8
3	R49E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Pattie Rd. on east side	60.2	60.2	65.7
3	R50E	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Pattie Rd. on east side	56.8	56.8	61.6
2	R116W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Covey Avenue on west side	62.9	62.9	69.6
2	R117W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Covey Avenue on west side	62.9	62.9	69.6
2	R118W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Covey Avenue on west side	62.7	62.7	69.4
2	R119W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Covey Avenue on west side	62.9	62.9	69.6
2	R120W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Covey Avenue on west side	63.1	63.1	70.1
2	R121W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Covey Avenue on west side	55.1	55.1	59.9
2	R122W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Blount Avenue on west side	62.2	62.2	68.4
2	R123W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Blount Avenue on west side	56.7	56.7	61.5
2	R124W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Blount Avenue on west side	60.3	60.3	65.5
3	R125W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Blount Avenue on west side	57.6	57.6	62.4
3	R126W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	North of Fredda Avenue on west side	57.3	57.3	63.7
3	R127W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Crystal Springs First Assembly/God Church[1]	<45	<45	<45

[1] Represents interior noise level (20 dBA reduction)

Table 6 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Alignment D in Segment 3

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
3	R128W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Jerry Rd. on west side	58.0	58.0	61.2
3	R129W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Jerry Rd. on west side	61.0	61.0	63.9
3	R130W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Jerry Rd. on west side	58.4	58.4	61.5
3	R131W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Jerry Rd. on west side	55.2	55.2	58.6
3	R132W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	South of Pattie Rd. on west side	63.8	63.8	66.5
3	R133W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	64.4	64.4	66.7
3	R134W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	61.7	61.7	64.3
3	R135W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	61.0	61.0	63.7
3	R136W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	60.1	60.1	62.9
3	R137W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.4	59.5	62.4
3	R138W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	58.8	58.8	61.8
3	R139W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	57.5	57.6	60.7
3	R140W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	55.3	55.3	58.4
3	R141W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	63.7	63.7	66.2
3	R142W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	64.0	64.0	66.5
3	R143W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.0	59.0	61.7
3	R144W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	64.1	64.1	66.5
3	R145W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.1	59.1	61.9
3	R146W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.4	59.4	62.1
3	R147W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	64.5	64.5	66.9
3	R148W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.3	59.3	62.0

Table 6 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Alignment D in Segment 3

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
3	R149W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	63.5	63.5	65.9
3	R150W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.5	59.5	62.2
3	R151W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	62.6	62.6	65.0
3	R152W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	59.4	59.4	62.1
3	R153W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	62.5	62.5	64.9
3	R192W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	69.2	69.2	70.3
3	R193W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	68.6	68.6	70.1
3	R194W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	70.3	70.3	71.3
3	R195W	County Line Rd. to Zephyrhills Bypass (Chancey Rd.)	Colonial RV Park on west side	66.9	66.9	68.8
3	R154W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	55.4	57.2	58.1
3	R155W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	58.9	59.5
3	R156W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	52.4	54.2	55.2
3	R157W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	58.9	59.5
3	R158W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.1	58.9	59.6
3	R159W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.3	59.1	59.8
3	R160W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.1	59.8
3	R161W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	58.9	59.5
3	R162W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	51.6	53.4	54.4
3	R163W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	58.9	59.6
3	R164W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.3	59.2	59.9
3	R165W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	56.9	58.8	59.6

Table 6 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Alignment D in Segment 3

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
3	R166W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.3	59.2	59.9
3	R167W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	58.9	59.6
3	R168W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	51.5	53.4	54.5
3	R169W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.1	59.9
3	R170W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.1	60.0
3	R171W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.2	60.1
3	R172W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.3	59.2	60.2
3	R173W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.2	60.4
3	R174W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.2	59.2	60.6
3	R175W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.1	59.0	60.8
3	R176W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	51.6	53.5	55.7
3	R177W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.0	59.0	61.6
3	R178W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	51.3	53.2	57.1
3	R179W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	57.1	59.0	62.7
3	R180W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	56.4	58.4	62.7
3	R181W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	50.8	52.7	58.2
3	R182W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	56.7	58.6	66.0
3	R183W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	56.4	58.3	68.2
3	R184W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	54.4	56.4	65.6
3	R185W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	55.2	57.1	65.5
3	R186W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	53.6	55.5	63.9

Table 6 (cont.)
Predicted Existing and Future Noise Levels (dBA)
For Alignment D in Segment 3

Design Segment	Receiver ID	Traffic Segment	Location	Existing 1998	2020 No-Build	2020 Build
3	R187W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	51.1	53.0	61.2
3	R188W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	50.4	52.3	60.5
3	R189W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	48.8	50.6	59.8
3	R190W	Zephyrhills Bypass (Chancey Rd.) to U.S. 301	Shady Oaks Mobile Home Park	48.3	50.1	59.6
3	R191W	U.S. 301	Shady Oaks Mobile Home Park	47.9	49.7	59.4

In addition to approaching or exceeding the NAC, sensitive sites are considered affected by traffic noise if the Build Alternative is predicted to cause a substantial increase in the noise level. The FDOT defines the term "substantial increase" as 15 or more dBA above the existing noise level as a direct result of the transportation improvement project. Comparing the existing to the build condition or the no build to the build condition, the range of increase for the predicted noise levels is from 1 to 13 dBA. The largest increases occur in the portions of the project that are on new alignment (i.e., Alexander Street Bypass and the intersection approach at U.S. 301). Based on the comparisons, the project will not result in a substantial noise increase at any noise sensitive sites. It should be noted that all sites predicted to experience an increase at the high end of the range are identified as affected by traffic noise because predicted noise levels at the sites approach or exceed the NAC.

3.5 Noise Abatement Techniques

As stipulated by 23 CFR Part 772, the FHWA requires that noise abatement measures be evaluated if noise levels at sensitive sites approach or exceed the NAC. Abatement measures considered include traffic system management, alignment modifications, property acquisition, land use controls and noise barriers.

3.5.1 Traffic System Management

Traffic system management measures which limit motor vehicle speeds and reduce traffic volumes can be used as mitigation measures. However, these measures also negate the purpose of providing a facility that can accommodate forecasted traffic volumes. For example, a substantial speed reduction on S.R. 39 would lower traffic noise levels, however, the capacity of the roadway to handle traffic would also be reduced. As one of the few north-south routes in the area connecting I-4 to U.S. 301, reducing traffic volumes or prohibiting truck traffic is also not a viable mitigation measure. Therefore, traffic system management is not considered a feasible abatement measure.

3.5.2 Alignment Modifications

Alignment modification generally involves orientating and/or siting the roadway at sufficient distances from noise sensitive areas so as to minimize the effects of traffic noise. Since this project includes improving an existing facility, left, right, and centered alternatives were evaluated during the PD&E Study. In the area of the new alignment, one of the criteria utilized to choose the preferred alignment was the number of noise sensitive sites affected by traffic noise. Where possible, the alignment alternative which minimized traffic noise was selected. Therefore, further alignment modifications are not a feasible measure to abate traffic noise for the S.R. 39 project.

3.5.3 Property Acquisition

Property acquisition programs to provide noise buffer zones are not feasible due to the limited availability of vacant land near noise sensitive sites.

3.5.4 Land Use Controls

Another noise abatement measure involves establishing land use controls to minimize the effects of traffic noise. Local governmental and planning agencies with land use control authority will be provided with a copy of this report which they can use to assist in the development of policies which deter the placement of noise sensitive land uses within the 65 dBA noise contour adjacent to S.R. 39. Distances to the 65 and 67 dBA noise contours are provided in Table 4.

3.5.5 Noise Barriers

Noise barriers reduce noise levels by blocking the sound path between a roadway and noise sensitive sites. To be effective in reducing traffic induced noise, a noise barrier must be relatively long, continuous (with no intermittent openings), and sufficiently tall to provide the necessary reduction in noise levels. Noise barriers are most often used on high speed,

limited access facilities where noise levels are high and there is adequate space for continuously long and sufficiently high barriers.

In order for a barrier to be considered feasible and economically reasonable it must meet the following minimum conditions:

1. Provide a minimum insertion loss (I.L.) or noise reduction of at least 5 dBA with a design goal of 8 to 12 dBA or more being desirable.

2. Cost not to exceed $30,000 per benefitted receiver unless a higher level of expenditure can be justified by other circumstances.

However, other important factors such as community desires, adjacent land uses, safety and barrier constructability and maintenance also play important roles. These criteria are evaluated more closely during the engineering design phase.

3.6 Noise Barrier Analysis

In order to analyze the effectiveness of noise barriers, the STAMINA companion computer program, OPTIMA, was utilized. The following discusses the feasibility and reasonableness of providing noise barriers at noise sensitive sites approaching or exceeding the NAC and describes the modeling results where applicable.

Within the new alignment portion of the project, Alexander Street Bypass from I-4 to S.R. 39 just south of Knights-Griffin Road, noise sensitive sites approaching or exceeding the NAC are isolated residences. Typically, noise barriers are not a reasonable abatement measure for isolated receivers because of the high cost per benefitted site. A noise barrier was analyzed for a representative receiver (13W). At a predicted noise level of 65.0 dBA and a predicted increase above existing levels of 10.5 dBA, this receiver approaches the NAC and has one of the highest predicted increases. The results of the barrier analysis are summarized in Table 7. As shown, the lowest cost that could be achieved for a barrier that provided at least a 5 dBA reduction is $33,880. The barrier, located on the proposed ROW line, is 47 m (154 ft) long and 3.4 m (11 ft) high. The cost per benefitted receiver exceeds the FDOT guideline of $30,000. Based on these results, a noise barrier for receiver R13W, or any other isolated residence, would not be a cost reasonable abatement measure.

Table 7
Noise Barrier Analysis For Receiver 13W

Wall Height	#/Rec 5 dBA	#/Rec 6 dBA	#/Rec 7 dBA	#/Rec 8 dBA	#/Rec 9 dBA	#/Rec 10 dBA	#/Rec 11+ dBA	Wall Length m (ft)	Total Cost*	Total Benefit Rec	Cost/ Rec**
3.0 m (10 ft)	1							62 m (203 ft)	$40,600	1	$40,600
3.4 m (11 ft)	1							47 m (154 ft)	$33,880	1	$33,880
3.7 m (12 ft)	1							47 m (154 ft)	$36,960	1	$36,960
4.0 m (13 ft)	1							47 m (154 ft)	$40,040	1	$40,040

* Cost is calculated based on $215.28 per square meter ($20.00 sq. ft.)
**Receivers counted in cost analysis only include those receiving at least a 5 dBA I.L.

For the portion of the project following the existing S.R. 39 alignment, most noise sensitive sites have access drives which connect directly to S.R. 39. The access drives would require gaps in a noise barrier which would greatly reduce the amount of noise reduction. Therefore, noise barriers were not a feasible abatement measure for many of the sensitive sites affected by traffic noise. However, two areas were identified where the number of required gaps in a noise barrier would be limited. These areas include Colonial Park and Shady Oaks.

Colonial Park

Colonial Park is a residential area (mobile home park) with only one access drive to S.R. 39. A noise barrier could be designed for this area with only one gap to accommodate the drive (See Appendix F for Modeled Noise Barrier Locations). For Alignment B in Segment 3, a noise barrier was modeled along the proposed ROW line and the results are summarized in Table 8. As shown, wall heights from 3 m (10 ft) to 4.6 m (15 ft) meet the minimum insertion loss of 5 dBA and are below the cost reasonable criteria of $30,000 per benefitted receiver.

Table 8
Noise Barrier Analysis For Colonial Park with Alignment B

Wall Height	#/Rec 5 dBA	#/Rec 6 dBA	#/Rec 7 dBA	#/Rec 8 dBA	#/Rec 9 dBA	#/Rec 10 dBA	#/Rec 11+ dBA	Wall Length m (ft)	Total Cost*	Total Benefit Rec	Cost/ Rec
3.0 m (10 ft)	3	5						164 m (538 ft)	$107,600	8	$ 13,450
3.4 m (11 ft)	1	4	3					149 m (489 ft)	$107,580	8	$ 13,448
3.7 m (12 ft)	1	3	2	3				178 m (584 ft)	$140,160	9	$ 15,573
4.0 m (13 ft)	1		3	4	1			178 m (584 ft)	$151,840	9	$ 16,871
4.3 m (14 ft)	1	1	2	2	3	1		194 m (636 ft)	$178,080	10	$ 17,808
4.6 m (15 ft)	1	1	1	2	4	1		178 m (584 ft)	$175,200	10	$ 17,520

* Cost is calculated based on $215.28 per square meter ($20.00 sq. ft.)
**Receivers counted in cost analysis only include those receiving at least a 5 dBA I.L.

For Alignment D in Segment 3, a noise barrier was also modeled along the proposed ROW line and the results are presented in Table 9. Wall heights from 4 m (13 ft) to 4.6 m (15 ft) meet the minimum insertion loss of 5 dBA and are below the cost reasonable criteria of $30,000 per benefitted receiver. Table 10 presents an evaluation of the 21 Traffic Noise Abatement Considerations to be utilized in the assessment of the feasibility of a noise wall at this location.

Table 9
Noise Barrier Analysis For Colonial Park with Alignment D

Wall Height	#/Rec 5 dBA	#/Rec 6 dBA	#/Rec 7 dBA	#/Rec 8 dBA	#/Rec 9 dBA	#/Rec 10 dBA	#/Rec 11+ dBA	Wall Length m (ft)	Total Cost*	Total Benefit Rec	Cost/ Rec**
4.0 m (13 ft)	3			1	1		1	194 m (636 ft)	$ 165,360	6	$ 27,560
4.3 m (14 ft)	5				1	1	1	180 m (591 ft)	$ 165,480	8	$ 20,685
4.6 m (15 ft)	5				1	1	1	180 m (591 ft)	$ 177,300	8	$ 22,163

* Cost is calculated based on $215.28 per square meter ($20.00 sq. ft.)
**Receivers counted in cost analysis only include those receiving at least a 5 dBA I.L.

Table 10
Traffic Noise Abatement Considerations for a Noise Barrier at Colonial Park

	Evaluation Criteria	Explanation
1.	Relationship of future levels to the abatement criterion	Receivers approach or exceed NAC for the Build Alternatives.
2.	Insertion loss	At least 8 receivers would achieve the minimum 5 dBA IL with Alignment B and at least 6 receivers would achieve the minimum 5 dBA IL for Alignment D.
3.	Safety	Sight distance and clear recovery were considered.
4.	Community desires	No documented comments to date. Public coordination ongoing.
5.	Accessibility	The wall does not affect accessibility.
6.	Land use stability	Land use in the area is expected to remain stable.
7.	Local controls	No known restrictions imposed by Hillsborough or Pasco counties.
8.	Views of local officials with jurisdiction in the area	The final NSR will be distributed to local agencies upon approval.
9.	Relative noise level increases resulting from the project	Increases of 6.1 to 10.1 dBA above Existing with Alignment B and increases of 1.0 to 2.7 dBA above Existing with Alignment D.
10.	The difference in noise levels between build and no-build alternatives	Increases of 6.0 to 10.1 dBA above No Build with Alignment B and increases of 1.0 to 2.7 dBA above No Build with Alignment D.
11.	Antiquity	It appears road was constructed before mobile homes.
12.	Constructability	There appear to be no constraints at this time, but constructability issues must be reviewed during the design phase.
13.	Maintainability	The wall was placed 1.5 m (5 ft) within the proposed ROW.
14.	Aesthetics	Careful consideration should be given to the nature of the surrounding area and the function of the roadway to determine the aesthetic compatibility of a noise wall.
15.	ROW needs including access rights, easements for construction and /or maintenance, and additional land	No additional ROW should be required.
16.	Cost	Meets cost criteria
17.	Utilities	Location of utilities must be reviewed during the design phase.
18.	Drainage	There do not appear to be any potential drainage problems, but drainage will have to be addressed during the design phase.
19.	Special land use considerations	None
20.	Other environmental impacts	None
21.	Additional considerations	None

Shady Oaks

Shady Oaks is a residential area (mobile home park) with only one access drive to S.R. 39. A barrier designed to abate traffic noise at the affected residences would not require any gaps for access drives (see Appendix F for Modeled Noise Barrier Locations). For Alignment B, a noise barrier was modeled along the proposed ROW line and the results are summarized in Table 11. As shown, wall heights from 3.7 m (12 ft) to 4.6 m (15 ft) meet the minimum insertion loss of 5 dBA but exceed the cost reasonable criteria of $30,000 per benefitted receiver.

Table 11
Noise Barrier Analysis For Shady Oaks with Alignment B

Wall Height	#/Rec 5 dBA	#/Rec 6 dBA	#/Rec 7 dBA	#/Rec 8 dBA	#/Rec 9 dBA	#/Rec 10 dBA	#/Rec 11+ dBA	Wall Length m (ft)	Total Cost*	Total Benefit Rec	Cost/ Rec**
3.7 m (12 ft)	2	1		1				195 m (640 ft)	$153,600	4	$ 38,400
4.0 m (13 ft)	2	1		1				148 m (486 ft)	$126,360	4	$ 31,590
4.3 m (14 ft)	3			1				132 m (433 ft)	$121,240	4	$ 30,310
4.6 m (15 ft)	3				1			132 m (433 ft)	$129,900	4	$ 31,590

* Cost is calculated based on $215.28 per square meter ($20.00 sq. ft.)
**Receivers counted in cost analysis only include those receiving at least a 5 dBA I.L.

For Alignment D, a noise barrier was also modeled along the proposed ROW line and the results are presented in Table 12. Wall heights from 4.0 m (13 ft) to 4.6 m (15 ft) meet the minimum insertion loss of 5 dBA but exceed the cost reasonable criteria of $30,000 per benefitted receiver. Table 13 presents an evaluation of the 21 Traffic Noise Abatement Considerations to be utilized in the assessment of the feasibility of a noise wall at this location.

Table 12
Noise Barrier Analysis For Shady Oaks with Alignment D

Wall Height	#/Rec 5 dBA	#/Rec 6 dBA	#/Rec 7 dBA	#/Rec 8 dBA	#/Rec 9 dBA	#/Rec 10 dBA	#/Rec 11+ dBA	Wall Length m (ft)	Total Cost*	Total Benefit Rec	Cost/ Rec**
4.0 m (13 ft)	3		1					164 m (538 ft)	$139,880	4	$34,970
4.3 m (14 ft)	3			1				144 m (472 ft)	$132,160	4	$33,040
4.6 m (15 ft)	3			1				144 m 472 ft	$141,600	4	$35,400

* Cost is calculated based on $215.28 per square meter ($20.00 sq. ft.)
**Receivers counted in cost analysis only include those receiving at least a 5 dBA I.L.

Table 13
Traffic Noise Abatement Considerations
for a Noise Barrier at Shady Oaks

	Evaluation Criteria	Explanation
1.	Relationship of future levels to the abatement criterion	Receivers approach or exceed NAC for the Build Alternatives.
2.	Insertion loss	4 receivers would achieve the minimum 5 dBA IL for both alternatives.
3.	Safety	Sight distance and clear recovery were considered.
4.	Community desires	No documented comments to date. Public coordination ongoing.
5.	Accessibility	The wall does not affect accessibility.
6.	Land use stability	Land use in the area is expected to remain stable.
7.	Local controls	No known restrictions imposed by Hillsborough or Pasco counties.
8.	Views of local officials with jurisdiction in the area	The final NSR will be distributed to local agencies upon approval.
9.	Relative noise level increases resulting from the project	Increases of 10.2 to 12.3 above Existing with Alignment B and increases of 9.3 to 11.8 with Alignment D.
10.	The difference in noise levels between build and no-build alternatives	Increases of 8.3 to 10.4 above No Build with Alignment B and increases from 7.4 to 9.9 above No Build with Alignment D.
11.	Antiquity	It appears the road was constructed before the mobile homes.
12.	Constructability	There appear to be no constraints at this time, but constructability issues must be reviewed during the design phase.
13.	Maintainability	The wall was placed 1.5 m (5 ft) within the proposed ROW.
14.	Aesthetics	Careful consideration should be given to the nature of the surrounding area and the function of the roadway to determine the aesthetic compatibility of a noise wall.
15.	ROW needs including access rights, easements for construction and/or maintenance, and additional land	No additional ROW should be required.
16.	Cost	Does not meet cost criteria
17.	Utilities	Location of utilities must be reviewed during the design phase.
18.	Drainage	There do not appear to be any potential drainage problems, but drainage will have to be addressed during the design phase.
19.	Special land use considerations	None
20.	Other environmental impacts	None
21.	Additional considerations	None

3.7 Conclusion

Noise barriers appear to be a reasonable and feasible abatement measure in only one area, Colonial Park. The noise barriers can abate traffic noise at about 6 to 10 residences depending on the road alignment and wall height. There appears to be no apparent solution to abate traffic noise at the remainder of the residences which approach or exceed the NAC.

The FDOT is committed to construct feasible noise abatement measures at the noise-sensitive locations identified in Tables 8 and 9 contingent upon the following conditions:

- Detailed noise analyses during the final design process supports the need for abatement;
- Reasonable cost analyses indicate that the economic cost of the barriers will not exceed the guidelines at the time of construction;
- Community input regarding desires, types, heights, and locations of barriers has been solicited by the District Office;
- Preferences regarding compatibility with adjacent land uses, particularly as addressed by officials having jurisdiction over such land uses, has been noted;
- Safety and engineering aspects, as related to the roadway user and the adjacent property owner, have been reviewed; and
- Any other mitigating circumstances found in Section 17-4.6.1 of the PD&E Manual have been analyzed.

4.0 CONSTRUCTION NOISE

During the construction phase of the proposed project, sensitive sites may be affected by noise as a result of both stationary and mobile construction equipment. These effects will be temporary at any one location.

Construction noise will be controlled by adherence to the controls listed in the most recent edition of the FDOT Standard Specifications for Road and Bridge Construction[7] [1999].

Specific noise problems that may arise during construction of the project will be addressed by the Construction Engineer in cooperation with the appropriate FDOT District Environmental Specialist.

5.0 COORDINATION

5.1 Coordination with Local Officials

In accordance with 23 CFR Part 772, the FDOT will take measures that are prudent and feasible to assure the location and design of highways are compatible with existing and planned land uses. Local agencies and officials can play an important role by ensuring that future residential development does not occur in areas projected to experience noise levels which approach or exceed the NAC.

This report delineates a contour line which parallels the roadway (see Table 4). In the area between the roadway and the contour line, noise levels of 65 dBA or greater are predicted to occur for traffic conditions forecasted for the project design year. The local agencies and officials have an opportunity to prevent future land development from becoming incompatible with anticipated highway noise levels by deterring residential development within the 65 dBA contour.

Continued coordination with local agencies and officials has been conducted during the development of this study and a copy of this report will be provided to appropriate local planning authorities in order to assist in the development of compatible future land use criteria.

5.2 Public Involvement

The Draft Noise Report was available for review by the public at a Public Hearing held on April 10, 2000. A Noise Specialist was present to provide the opportunity for concerned citizens to discuss issues. No noise related comments were received as part of this Public Involvement process.

6.0 REFERENCES

1. Title 23 CFR, Part 772, Federal Highway Administration, U.S. Department of Transportation, Procedures for Abatement of Highway Traffic Noise and Construction Noise, April 1, 1998, Edition.

2. Florida Department of Transportation, Project Development and Environment Manual, Volumes 1 and 2, Tallahassee, FL, 1998.

3. The Hillsborough County Metropolitan Planning Organization (MPO) Adopted 2020 Long Range Transportation Plan; Hillsborough County Metropolitan Planning Organization; Hillsborough County; Adopted November 9, 1998.

4. The Florida Department of Transportation, Adopted Five-Year Work Program, Florida Department of Transportation, Tampa, Florida.

5. Project Traffic and Intersection Analysis Technical Memorandum, Parsons Brinckerhoff Quade and Douglas, Tampa, Florida, November 3, 1999.

6. FHWA Measurement of Highway Related Noise, May 1996.

7. Florida Department of Transportation, Standard Specifications for Road and Bridge Construction, 1999.

APPENDICES

APPENDIX A

Traffic Data

DISTRICT 7 PD&E
TRAFFIC DATA FOR AIR STUDY SCREENING TEST

DATE: 1/14/99
PREPARED BY: Parsons Brinckerhoff

Financial Project Number(s):
Federal Aid Numbers(s):
Project Description: PD&E re-evaluation study for SR 39

NOTE. The most congested intersection is the intersection with the highest total volume and lowest departure speeds and it could be two different intersection based on the "Build" vs. "No-Build" alternatives. The traffic volumes are to be the vph of the most congested leg approaching the intersection. The speeds are to be the average cruise speed for the most congested leg no closer than 152.4 m (500') from the intersection.

OPENING YEAR: 2010

"Build"	"No-Build"
Most Congested Intersection:	Most Congested Intersection:
Alexander St Extension & Sam Allen Rd	SR 39 and US 301
Design or Peak Hour Traffic	Design or Peak Hour Traffic
for most congested leg: 270 vph	for most congested leg: 1415 vph
Specify leg: EB Sam Allen Rd	Specify leg: NB SR 39
Average Cruise Speed: 40 MPH	Average Cruise Speed: 40 MPH

DESIGN YEAR: 2020

"Build"	"No-Build"
Most Congested Intersection:	Most Congested Intersection:
Alexander St Extension & Sam Allen Rd	SR 39 and US 301
Design or Peak Hour Traffic	Design or Peak Hour Traffic
for most congested leg: 340 vph	for most congested leg: 1530 vph
Specify leg: EB Sam Allen Rd	Specify leg: WB US 301
Average Cruise Speed: 40 MPH	Average Cruise Speed: 30 MPH

airdata.xls

Post-it® Fax Note 7671	Date 10/26/99	# of pages ▶ 4
To Ron Pscion	From Gabor Farkas/Tony	
Co./Dept. PBS&J	Co. FDOT	
Phone #	Phone # 975-6455	
Fax # 282-8155	Fax #	

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES

DATE. 1/14/99
PREPARED BY. Parsons Brinckerhoff

Financial Project Number(s):
Federal Aid Numbers(s):
Project Description: PD&E re-evaluation study for SR 39 (from south of Sam Allen Road to US 301)
Alexander Street Extension (I-4 to Sam Allen Road)
Alexander Street Extension (Sam Allen Road to SR 39)

Segment Description: Sam Allen Road to Knights-GriffinRoad
(data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: ADT is the LOS (C) volume references in the FDOT LOS tables or Demand, whichever is less.

Existing Facility		No-Build (design year)		Build (design year)	
Year:	1998	Year:	2020	Year:	2020
ADT:		ADT:		ADT:	
LOS (C)	2LU:14,000	LOS (C)	2LU:14,000	LOS (C)	4LD:30,600
Demand	10,000	Demand	18,800	Demand	20,900 North of Alex
					8,000 South of Alex
Posted Speed:	45 mph	Posted Speed:	45 mph	Posted Speed:	45 mph
	70 km/h		70 km/h		70 km/h
K =	9.54 %	K =	9.54 %	K =	9.54 %
D =	59.5 %	D =	59.5 %	D =	59.5 %
T =	14.0 % for 24 hrs	T =	14.0 % for 24 hrs.	T =	14.0 % for 24 hrs.
T =	7.0 % Design Hr.	T =	7.0 % Design Hr.	T =	7.0 % Design Hr.
4.5	% Heavy Trucks DHV	4.5	% Heavy Trucks DHV	4.5	% Heavy Trucks DHV
2.5	% Medium Trucks DHV	2.5	% Medium Trucks DHV	2.5	% Medium Trucks DHV

Segment Description: Knights-Griffin Road to County Line

Existing Facility		No-Build (design year)		Build (design year)	
Year:	1998	Year:	2020	Year:	2020
ADT:		ADT:		ADT:	
LOS (C)	2LU:8,600	LOS (C)	2LU:8,600	LOS (C)	4LD:29,900
Demand	8,500	Demand	16,500	Demand	19,000
Posted Speed:	55 mph	Posted Speed:	55 mph	Posted Speed:	55 mph
	90 km/h		90 km/h		90 km/h
K =	9.54 %	K =	9.54 %	K =	9.54 %
D =	59.5 %	D =	59.5 %	D =	59.5 %
T =	14.0 % for 24 hrs.	T =	14.0 % for 24 hrs.	T =	14.0 % for 24 hrs.
T =	7.0 % Design Hr.	T =	7.0 % Design Hr.	T =	7.0 % Design Hr.
4.5	% Heavy Trucks DHV	4.5	% Heavy Trucks DHV	4.5	% Heavy Trucks DHV
2.5	% Medium Trucks DHV	2.5	% Medium Trucks DHV	2.5	% Medium Trucks DHV

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES
SR 39 (from South of Sam Allen Road to US 301)

Segment Description: County Line to Zephyrhills Bypass

Existing Facility		No-Build (design year)		Build (design year)	
Year:	1998	Year:	2020	Year:	2020
ADT:		ADT:		ADT:	
LOS (C)	2LU:8,600	LOS (C)	2LU:8,600	LOS (C)	4LD:29,900
Demand	9,900	Demand	18,000	Demand	21,000
Posted Speed:	60 mph	Posted Speed:	60 mph	Posted Speed:	60 mph
	100 km/h		100 km/h		100 km/h
K =	9.54 %	K =	9.54 %	K =	9.54 %
D =	59.5 %	D =	59.5 %	D =	59.5 %
T =	14.0 % for 24 hrs.	T =	14.0 % for 24 hrs.	T =	14.0 % for 24 hrs.
T =	7.0 % Design Hr.	T =	7.0 % Design Hr.	T =	7.0 % Design Hr.
4.5	% Heavy Trucks DHV	4.5	% Heavy Trucks DHV	4.5	% Heavy Trucks DHV
2.5	% Medium Trucks DHV	2.5	% Medium Trucks DHV	2.5	% Medium Trucks DHV

Segment Description: Zephyrhills Bypass to US 301

Existing Facility		No-Build (design year)		Build (design year)	
Year:	1998	Year:	2020	Year:	2020
ADT:		ADT:		ADT:	
LOS (C)	2LU:14,000	LOS (C)	2LU:14,000	LOS (C)	4LD:30,600
Demand	8,800	Demand	16,800	Demand	18,400
Posted Speed:	45 mph	Posted Speed:	45 mph	Posted Speed:	45 mph
	70 km/h		70 km/h		70 km/h
K =	9.54 %	K =	9.54 %	K =	9.54 %
D =	59.5 %	D =	59.5 %	D =	59.5 %
T =	14.0 % for 24 hrs	T =	14.0 % for 24 hrs.	T =	14.0 % for 24 hrs.
T =	7.0 % Design Hr.	T =	7.0 % Design Hr	T =	7.0 % Design Hr.
4.5	% Heavy Trucks DHV	4.5	% Heavy Trucks DHV	4.5	% Heavy Trucks DHV
2.5	% Medium Trucks DHV	2.5	% Medium Trucks DHV	2.5	% Medium Trucks DHV

DISTRICT 7 PD&E
TRAFFIC DATA FOR NOISE STUDIES
Alexander Street Extension

Segment Description: SR 39 to Sam Allen Road (Sam Allen to Knights Gr...

Existing Facility		No-Build (design year)		Build (design year)	
Year:	1998	Year:	2020	Year:	2020
ADT:		ADT:		ADT:	
LOS (C)	N/A	LOS (C)	N/A	LOS (C)	4LD:30,600
Demand	N/A	Demand	N/A	Demand	13,000
Posted Speed:	N/A mph	Posted Speed:	N/A mph	Posted Speed:	45 mph
	N/A km/h		N/A km/h		70 km/h
K =	N/A %	K =	N/A %	K =	9.54 %
D =	N/A %	D =	N/A %	D =	59.5 %
T =	N/A % for 24 hrs.	T =	N/A % for 24 hrs.	T =	14.0 % for 24 hrs.
T =	N/A % Design Hr.	T =	N/A % Design Hr.	T =	7.0 % Design Hr
N/A	% Heavy Trucks DHV	N/A	% Heavy Trucks DHV	4.5	% Heavy Trucks DHV
N/A	% Medium Trucks DHV	N/A	% Medium Trucks DHV	2.5	% Medium Trucks DHV

Segment Description: Sam Allen Road to North of I-4

Existing Facility		No-Build (design year)		Build (design year)	
Year:	1998	Year:	2020	Year:	2020
ADT:		ADT:		ADT:	
LOS (C)	N/A	LOS (C)	N/A	LOS (C)	4LD:30,600
Demand	N/A	Demand	N/A	Demand	11,100
Posted Speed:	N/A mph	Posted Speed:	N/A mph	Posted Speed:	45 mph
	N/A km/h		N/A km/h		70 km/h
K =	N/A %	K =	N/A %	K =	9.54 %
D =	N/A %	D =	N/A %	D =	59.5 %
T =	N/A % for 24 hrs	T =	N/A % for 24 hrs.	T =	14.0 % for 24 hrs
T =	N/A % Design Hr.	T =	N/A % Design Hr	T =	7.0 % Design Hr.
N/A	% Heavy Trucks DHV	N/A	% Heavy Trucks DHV	4.5	% Heavy Trucks DHV
N/A	% Medium Trucks DHV	N/A	% Medium Trucks DHV	2.5	% Medium Trucks DHV

APPENDIX B

Field Validation Data

```
*YYN
SR 39 65 dBA VALIDATION SOUTH OF VARN ROAD ON SR 39 EXISTING ROAD
1 3
2 2
NB SR 39 VALIDATION 1
'CARS' 354 85
'MT' 30 82
'HT' 42 80
'L'/
'NB1' -610 -1.8 0 0
'NB2' 610 -1.8 0 0
'L'/
SB SR 39 VALIDATION SITE 1
'CARS' 468 85
'MT' 18 82
'HT' 30 80
'L'/
'SB1' 610 1.8 0 0
'SB2' -610 1.8 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -15 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 65 dBA VALIDATION SOUTH OF VARN ROAD ON SR 39 EXISTING ROAD

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB SR 39 VALIDATION 1

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	354.	85.
HT	42.	80.
MT	30.	82.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-2.	.0	0
NB2	610.	-2.	.0	0

ROADWAY 2 SB SR 39 VALIDATION SITE 1

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	468.	85.
HT	30.	80.
MT	18.	82.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	2.	.0	0
SB2	-610.	2.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-15.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	71.9	75.2

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	
1	1	
	69.8	
2	1	
	67.9	

```
*YYN
SR 39 SITE 2 VALIDATION CRYSTAL SPRINGS CHURCH ON SR 39 EXISTING ROAD
1 3
2 2
NB SR 39 VALIDATION 2
'CARS' 444 90
'MT' 18 85
'HT' 54 88
'L'/
'NB1' -610 -1.8 0 0
'NB2' 610 -1.8 0 0
'L'/
SB SR 39 VALIDATION SITE 2
'CARS' 300 90
'MT' 30 85
'HT' 12 88
'L'/
'SB1' 610 1.8 0 0
'SB2' -610 1.8 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -15 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 SITE 2 VALIDATION CRYSTAL SPRINGS CHURCH ON SR 39 EXISTING ROAD

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB SR 39 VALIDATION 2

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	444.	90.
HT	54.	88.
MT	18.	85.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-2.	.0	0
NB2	610.	-2.	.0	0

ROADWAY 2 SB SR 39 VALIDATION SITE 2

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	300.	90.
HT	12.	88.
MT	30.	85.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	2.	.0	0
SB2	-610.	2.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-15.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	72.1	75.3

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
1	1
	70.7
2	1
	66.4

```
*YYN
SR 39 SITE 3 VALIDATION SHADY OAKS ON SR 39 EXISTING ROAD
1 3
2 2
NB SR 39 VALIDATION 3
'CARS' 396 77
'MT' 30 76
'HT' 24 77
'L'/
'NB1' -610 -1.8 0 0
'NB2' 610 -1.8 0 0
'L'/
SB SR 39 VALIDATION SITE 3
'CARS' 300 77
'MT' 18 76
'HT' 18 77
'L'/
'SB1' 610 1.8 0 0
'SB2' -610 1.8 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -15 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 SITE 3 VALIDATION SHADY OAKS ON SR 39 EXISTING ROAD

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB SR 39 VALIDATION 3

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	396.	77.
HT	24.	77.
MT	30.	76.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-2.	.0	0
NB2	610.	-2.	.0	0

ROADWAY 2 SB SR 39 VALIDATION SITE 3

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	300.	77.
HT	18.	77.
MT	18.	76.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	2.	.0	0
SB2	-610.	2.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-15.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	70.3	73.5

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
1	1
	68.5
2	1
	65.6

APPENDIX C

Noise Contour Data

```
*YYN
SR 39 65 dBA I-4 TO SAM ALLEN ROAD BUILD (ALEXANDER EXTENSION)
1 3
2 2
NB ALEXANDER EXTENSION FROM I-4 TO SAM ALLEN ROAD
'CARS' 586 70
'MT' 16 70
'HT' 28 70
'L'/
'NB1' -610 -11.7 0 0
'NB2' 610 -11.7 0 0
'L'/
SB ALEXANDER EXTENSION FROM SAM ALLEN ROAD TO I-4
'CARS' 399 70
'MT' 11 70
'HT' 19 70
'L'/
'SB1' 610 11.7 0 0
'SB2' -610 11.7 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -39 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 65 dBA I-4 TO SAM ALLEN ROAD BUILD (ALEXANDER EXTENSION)

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB ALEXANDER EXTENSION FROM I-4 TO SAM ALLEN ROAD

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	586.	70.
HT	28.	70.
MT	16.	70.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-12.	.0	0
NB2	610.	-12.	.0	0

ROADWAY 2 SB ALEXANDER EXTENSION FROM SAM ALLEN ROAD TO I-4

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	399.	70.
HT	19.	70.
MT	11.	70.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	12.	.0	0
SB2	-610.	12.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-39.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	65.0	68.5

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	
1	1	
		64.0
2	1	
		58.2

```
*YYN
SR 39 65 dBA BUILD KNIGHTS GRIFFIN ROAD TO PASCO COUNTY LINE
1 3
2 2
NB KNIGHTS GRIFFIN ROAD TO PASCO COUNTY LINE
'CARS' 1003 90
'MT' 27 90
'HT' 49 90
'L'/
'NB1' -610 -11.7 0 0
'NB2' 610 -11.7 0 0
'L'/
SB PASCO COUNTY LINE TO KNIGHTS GRIFFIN ROAD
'CARS' 683 90
'MT' 18 90
'HT' 33 90
'L'/
'SB1' 610 11.7 0 0
'SB2' -610 11.7 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -64 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 65 dBA BUILD KNIGHTS GRIFFIN ROAD TO PASCO COUNTY LINE

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB KNIGHTS GRIFFIN ROAD TO PASCO COUNTY LINE

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1003.	90.
HT	49.	90.
MT	27.	90.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-12.	.0	0
NB2	610.	-12.	.0	0

ROADWAY 2 SB PASCO COUNTY LINE TO KNIGHTS GRIFFIN ROAD

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	683.	90.
HT	33.	90.
MT	18.	90.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	12.	.0	0
SB2	-610.	12.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-64.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	64.9	68.4

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	
1	1	
		63.5
2	1	
		59.4

```
*YYN
SR 39 65 dBA BUILD PASCO COUNTY LINE TO ZEPHYRHILLS BYPASS (CHANCEY ROA
D)
1 3
2 2
NB PASCO COUNTY LINE TO ZEPHYRHILLS BYPASS (CHANCEY ROAD)
'CARS' 1109 100
'MT' 30 100
'HT' 54 100
'L'/
'NB1' -610 -11.7 0 0
'NB2' 610 -11.7 0 0
'L'/
SB ZEPHYRHILLS BYPASS (CHANCEY ROAD) TO PASCO COUNTY LINE
'CARS' 755 100
'MT' 20 100
'HT' 37 100
'L'/
'SB1' 610 11.7 0 0
'SB2' -610 11.7 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -74 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 65 dBA BUILD PASCO COUNTY LINE TO ZEPHYRHILLS BYPASS (CHANCEY ROAD)

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB PASCO COUNTY LINE TO ZEPHYRHILLS BYPASS (CHANCEY ROAD)

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1109.	100.
HT	54.	100.
MT	30.	100.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-12.	.0	0
NB2	610.	-12.	.0	0

ROADWAY 2 SB ZEPHYRHILLS BYPASS (CHANCEY ROAD) TO PASCO COUNTY LINE

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	755.	100.
HT	37.	100.
MT	20.	100.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	12.	.0	0
SB2	-610.	12.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-74.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	65.0	68.3

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
1	1
	63.5
2	1
	59.7

```
*YYN
SR 39 65 dBA BUILD ALEXANDER EXTENSION TO SR 39 AT KNIGHTS GRIFFIN ROAD
1 3
2 2
NB ALEXANDER EXTENSION FROM SAM ALLEN RD TO KNIGHTS GRIFFIN RD
'CARS' 687 70
'MT' 18 70
'HT' 33 70
'L'/
'NB1' -610 -11.7 0 0
'NB2' 610 -11.7 0 0
'L'/
SB ALEXANDER EXTENSION FROM KNIGHTS GRIFFIN RD TO SAM ALLEN RD
'CARS' 466 70
'MT' 13 70
'HT' 23 70
'L'/
'SB1' 610 11.7 0 0
'SB2' -610 11.7 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -43 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 65 dBA BUILD ALEXANDER EXTENSION TO SR 39 AT KNIGHTS GRIFFIN ROAD

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB ALEXANDER EXTENSION FROM SAM ALLEN RD TO KNIGHTS GRIFFIN RD

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	687.	70.
HT	33.	70.
MT	18.	70.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-12.	.0	0
NB2	610.	-12.	.0	0

ROADWAY 2 SB ALEXANDER EXTENSION FROM KNIGHTS GRIFFIN RD TO SAM ALLEN RD

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	466.	70.
HT	23.	70.
MT	13.	70.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	12.	.0	0
SB2	-610.	12.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-43.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	64.9	68.4

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	
1	1	
	63.8	
2	1	
	58.4	

```
*YYN
SR 39 65 dBA BUILD ZEPHYRHILLS BYPASS TO US 301
1 3
2 2
NB ZEPHYRHILLS BYPASS TO US 301
'CARS' 971 70
'MT' 26 70
'HT' 47 70
'L'/
'NB1' -610 -11.7 0 0
'NB2' 610 -11.7 0 0
'L'/
SB US 301 TO ZEPHYRHILLS BYPASS
'CARS' 661 70
'MT' 18 70
'HT' 32 70
'L'/
'SB1' 610 11.7 0 0
'SB2' -610 11.7 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -51 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 65 dBA BUILD ZEPHYRHILLS BYPASS TO US 301

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB ZEPHYRHILLS BYPASS TO US 301

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	971.	70.
HT	47.	70.
MT	26.	70.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-12.	.0	0
NB2	610.	-12.	.0	0

ROADWAY 2 SB US 301 TO ZEPHYRHILLS BYPASS

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	661.	70.
HT	32.	70.
MT	18.	70.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	12.	.0	0
SB2	-610.	12.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-51.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	65.0	68.5

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
1	1
	63.8
2	1
	59.0

```
*YYN
SR 39 67 dBA BUILD I-4 TO SAM ALLEN ROAD BUILD (ALEXANDER EXTENSION )
1 3
2 2
NB ALEXANDER EXTENSION FROM I-4 TO SAM ALLEN ROAD
'CARS' 586 70
'MT' 16 70
'HT' 28 70
'L'/
'NB1' -610 -11.7 0 0
'NB2' 610 -11.7 0 0
'L'/
SB ALEXANDER EXTENSION FROM SAM ALLEN ROAD TO I-4
'CARS' 399 70
'MT' 11 70
'HT' 19 70
'L'/
'SB1' 610 11.7 0 0
'SB2' -610 11.7 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -31 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 67 dBA BUILD I-4 TO SAM ALLEN ROAD BUILD (ALEXANDER EXTENSION)

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB ALEXANDER EXTENSION FROM I-4 TO SAM ALLEN ROAD

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	586.	70.
HT	28.	70.
MT	16.	70.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-12.	.0	0
NB2	610.	-12.	.0	0

ROADWAY 2 SB ALEXANDER EXTENSION FROM SAM ALLEN ROAD TO I-4

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	399.	70.
HT	19.	70.
MT	11.	70.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	12.	.0	0
SB2	-610.	12.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-31.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	67.0	70.4

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
1	1
	66.2
2	1
	59.3

```
*YYN
SR 39 67 dBA KNIGHTS GRIFFIN ROAD TO PASCO COUNTY LINE BUILD
1 3
2 2
NB KNIGHTS GRIFFIN ROAD TO PASCO COUNTY LINE
'CARS' 1003 90
'MT' 27 90
'HT' 49 90
'L'/
'NB1' -610 -11.7 0 0
'NB2' 610 -11.7 0 0
'L'/
SB PASCO COUNTY LINE TO KNIGHTS GRIFFIN ROAD
'CARS' 683 90
'MT' 18 90
'HT' 33 90
'L'/
'SB1' 610 11.7 0 0
'SB2' -610 11.7 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -49 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 67 dBA KNIGHTS GRIFFIN ROAD TO PASCO COUNTY LINE BUILD

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB KNIGHTS GRIFFIN ROAD TO PASCO COUNTY LINE

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1003.	90.
HT	49.	90.
MT	27.	90.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-12.	.0	0
NB2	610.	-12.	.0	0

ROADWAY 2 SB PASCO COUNTY LINE TO KNIGHTS GRIFFIN ROAD

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	683.	90.
HT	33.	90.
MT	18.	90.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	12.	.0	0
SB2	-610.	12.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-49.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	67.0	70.5

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
1	1
	65.8
2	1
	60.9

```
*YYN
SR 39 67 dBA PASCO COUNTY TO ZEPHYRHILLS BYPASS (CHANCEY ROAD)
1 3
2 2
NB PASCO COUNTY LINE TO ZEPHYRHILLS BYPASS (CHANCEY ROAD)
'CARS' 1109 100
'MT' 30 100
'HT' 54 100
'L'/
'NB1' -610 -11.7 0 0
'NB2' 610 -11.7 0 0
'L'/
SB ZEPHYRHILLS BYPASS (CHANCEY ROAD) TO PASCO COUNTY LINE
'CARS' 755 100
'MT' 20 100
'HT' 37 100
'L'/
'SB1' 610 11.7 0 0
'SB2' -610 11.7 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -57 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 67 dBA PASCO COUNTY TO ZEPHYRHILLS BYPASS (CHANCEY ROAD)

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB PASCO COUNTY LINE TO ZEPHYRHILLS BYPASS (CHANCEY ROAD)

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1109.	100.
HT	54.	100.
MT	30.	100.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-12.	.0	0
NB2	610.	-12.	.0	0

ROADWAY 2 SB ZEPHYRHILLS BYPASS (CHANCEY ROAD) TO PASCO COUNTY LINE

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	755.	100.
HT	37.	100.
MT	20.	100.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	12.	.0	0
SB2	-610.	12.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-57.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	67.0	70.4

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	
1	1	
	65.6	
2	1	
	61.2	

```
*YYN
SR 39 67 dBA ALEXANDER EXTENSION TO SR 39 AT KNIGHTS GRIFFIN ROAD
1 3
2 2
NB ALEXANDER EXTENSION FROM SAM ALLEN RD TO KNIGHTS GRIFFIN ROAD
'CARS' 687 70
'MT' 18 70
'HT' 33 70
'L'/
'NB1' -610 -11.7 0 0
'NB2' 610 -11.7 0 0
'L'/
SB ALEXANDER EXTENSION FROM KNIGHTS GRIFFIN RD TO SAM ALLEN ROAD
'CARS' 466 70
'MT' 13 70
'HT' 23 70
'L'/
'SB1' 610 11.7 0 0
'SB2' -610 11.7 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -34 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 67 dBA ALEXANDER EXTENSION TO SR 39 AT KNIGHTS GRIFFIN ROAD

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB ALEXANDER EXTENSION FROM SAM ALLEN RD TO KNIGHTS GRIFFIN ROAD

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	687.	70.
HT	33.	70.
MT	18.	70.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-12.	.0	0
NB2	610.	-12.	.0	0

ROADWAY 2 SB ALEXANDER EXTENSION FROM KNIGHTS GRIFFIN RD TO SAM ALLEN ROAD

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	466.	70.
HT	23.	70.
MT	13.	70.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	12.	.0	0
SB2	-610.	12.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-34.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	66.9	70.4

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
1	1
	66.0
2	1
	59.6

```
*YYN
SR 39 67 dBA ZEPHYRHILLS BYPASS TO US 301 BUILD
1 3
2 2
NB ZEPHYRHILLS BYPASS TO US 301
'CARS' 971 70
'MT' 26 70
'HT' 47 70
'L'/
'NB1' -610 -11.7 0 0
'NB2' 610 -11.7 0 0
'L'/
SB US 301 TO ZEPHYRHILLS BYPASS
'CARS' 661 70
'MT' 18 70
'HT' 32 70
'L'/
'SB1' 610 11.7 0 0
'SB2' -610 11.7 0 0
'L'/
5 1
RECEIVERS
'R1' 0 -40 1.5
6 1
ALPHAS
0.5
0.5
7/
```

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

(INPUT UNITS- METRIC , OUTPUT UNITS- METRIC)

SR 39 67 dBA ZEPHYRHILLS BYPASS TO US 301 BUILD

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)
2.44	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
.70	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 NB ZEPHYRHILLS BYPASS TO US 301

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	971.	70.
HT	47.	70.
MT	26.	70.

	COORDINATES			
	X	Y	Z	GRADE
NB1	-610.	-12.	.0	0
NB2	610.	-12.	.0	0

ROADWAY 2 SB US 301 TO ZEPHYRHILLS BYPASS

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	661.	70.
HT	32.	70.
MT	18.	70.

	COORDINATES			
	X	Y	Z	GRADE
SB1	610.	12.	.0	0
SB2	-610.	12.	.0	0

RECEIVERS

	COORDINATES		
	X	Y	Z
R1	0.	-40.	1.5

ALPHA FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .5
2 * .5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 * .0
2 * .0

RECEIVER	LEQ(H)	L10
R1	67.0	70.5

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	
1	1	
		65.9
2	1	
		60.3

APPENDIX D

Optima Computer Runs

****
OPTIMA-VU1
****
BARRIER OPTIMIZATION PROGRAM USING
PARTIAL SOUND ENERGIES COMPUTED BY THE
STAMINA 2.0 PROGRAM
MODIFIED FROM THE FHWA VAX VERSON -- MARCH 1983

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

****

MODIFIED FOR IBM-COMPATIBLE PC WITH MATH COPROCESSOR
IN JUNE 1991 BY
VANDERBILT ENGINEERING CENTER FOR TRANSPORTATION
OPERATIONS AND RESEARCH (VECTOR)
BOX 96-B, VANDERBILT UNIVERSITY, NASHVILLE, TENNESSEE 37235
(615) 322-3683

****

PROBLEM TITLE
****
SR 39 BARRIER R13W

EFFECTIVENESS/COST RATIO AND BARRIER HEIGHT MATRICES
****

BARRIER SECTION NO IDENT		EFFECTIVENESS/COST RATIO								CORRESPONDING BARRIER HEIGHTS(IN FT)					
HEIGHT INDEX		1	2	3	4	5	6	7	8	1	2	3	4	5	6
7	8														
1	1	*	16.	16.	15.	14.	14.	13.	13.	0.	9.	10.	11.	12.	13.
14.	15.														
2	2	*	19.	19.	18.	17.	16.	15.	15.	0.	9.	10.	11.	12.	13.
14.	15.														
3	3	*	26.	24.	23.	21.	20.	19.	19.	0.	9.	10.	11.	12.	13.
14.	15.														
4	4	*	30.	27.	25.	24.	22.	21.	20.	0.	9.	10.	11.	12.	13.
14.	15.														
5	5	*	21.	21.	19.	18.	17.	16.	16.	0.	9.	10.	11.	12.	13.
14.	15.														
6	6	*	17.	17.	16.	16.	15.	14.	14.	0.	9.	10.	11.	12.	13.
14.	15.														
7	7	*	12.	14.	14.	13.	13.	12.	12.	0.	9.	10.	11.	12.	13.
14.	15.														
HEIGHT INDEX		1	2	3	4	5	6	7	8	1	2	3	4	5	6
7	8														

SR 39 BARRIER R13W

ADJUSTED 9 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 2 2 2 2 2 2
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 9. 9. 9. 9. 9. 9.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R13W	60.1	65.0	5.0

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	25600.	3138.
FH-STEEL	0.	0.
TOTALS:	$ 25600.	3138.

SR 39 BARRIER R13W

ADJUSTED 10 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 3 3 3 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0.10.10.10. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R13W	59.8	65.0	5.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	16500.	2032.
FH-STEEL	0.	0.
TOTALS:	$ 16500.	2032.

SR 39 BARRIER R13W

ADJUSTED 11 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 4 4 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0.11.11. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R13W	59.7	65.0	5.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	14200.	1687.
FH-STEEL	0.	0.
TOTALS:	$ 14200.	1687.

SR 39 BARRIER R13W

ADJUSTED 12 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 5 5 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0.12.12. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R13W	59.3	65.0	5.7

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	16000.	1841.
FH-STEEL	0.	0.
TOTALS:	$ 16000.	1841.

SR 39 BARRIER R13W

ADJUSTED 13 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 6 6 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0.13.13. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R13W	59.0	65.0	6.0

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	17700.	1994.
FH-STEEL	0.	0.
TOTALS:	$ 17700.	1994.

END OF ALL CASES

****
OPTIMA-VU1
****
BARRIER OPTIMIZATION PROGRAM USING
PARTIAL SOUND ENERGIES COMPUTED BY THE
STAMINA 2.0 PROGRAM
MODIFIED FROM THE FHWA VAX VERSON -- MARCH 1983

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

****
MODIFIED FOR IBM-COMPATIBLE PC WITH MATH COPROCESSOR
IN JUNE 1991 BY
VANDERBILT ENGINEERING CENTER FOR TRANSPORTATION
OPERATIONS AND RESEARCH (VECTOR)
BOX 96-B, VANDERBILT UNIVERSITY, NASHVILLE, TENNESSEE 37235
(615) 322-3683
****

PROBLEM TITLE
****
SR 39 BARRIER R127W TO R153W (ALT 3A)

EFFECTIVENESS/COST RATIO AND BARRIER HEIGHT MATRICES
****

BARRIER SECTION NO	IDENT	EFFECTIVENESS/COST RATIO								CORRESPONDING BARRIER HEIGHTS(IN FT)					
HEIGHT INDEX		1	2	3	4	5	6	7	8	1	2	3	4	5	6
7	8														
1	B1	*	12.	16.	17.	17.	18.	18.	18.	0.	9.	10.	11.	12.	13.
14.	15.														
2	B2	*	19.	23.	23.	23.	23.	23.	22.	0.	9.	10.	11.	12.	13.
14.	15.														
3	B3	*	22.	24.	23.	23.	23.	22.	22.	0.	9.	10.	11.	12.	13.
14.	15.														
4	B4	*	29.	29.	28.	27.	27.	26.	26.	0.	9.	10.	11.	12.	13.
14.	15.														
5	B5	*	34.	33.	31.	30.	29.	28.	27.	0.	9.	10.	11.	12.	13.
14.	15.														
6	B6	*	38.	36.	34.	33.	31.	30.	30.	0.	9.	10.	11.	12.	13.
14.	15.														
7	B7	*	40.	37.	35.	34.	33.	31.	31.	0.	9.	10.	11.	12.	13.
14.	15.														
8	B8	*	40.	37.	35.	34.	33.	31.	31.	0.	9.	10.	11.	12.	13.
14.	15.														
9	B9	*	38.	36.	34.	33.	32.	31.	30.	0.	9.	10.	11.	12.	13.

14.15. 10	B10	*	35.	33.	32.	31.	30.	29.	29.	0.	9.10.11.12.13.			
14.15. 11	B12	*	34.	33.	32.	31.	30.	29.	29.	0.	9.10.11.12.13.			
14.15. 12	B13	*	38.	36.	34.	33.	32.	30.	30.	0.	9.10.11.12.13.			
14.15. 13	B14	*	37.	35.	33.	32.	31.	30.	29.	0.	9.10.11.12.13.			
14.15. 14	B15	*	32.	31.	29.	29.	28.	27.	26.	0.	9.10.11.12.13.			
14.15. 15	B16	*	29.	29.	27.	27.	26.	25.	25.	0.	9.10.11.12.13.			
14.15. 16	B17	*	25.	25.	24.	24.	24.	23.	23.	0.	9.10.11.12.13.			
14.15.														
HEIGHT INDEX			1	2	3	4	5	6	7	8	1	2	3	4	5	6
7 8																

SR 39 BARRIER R127W TO R153W (ALT 3A)

ADJUSTED 10 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 3 3 3 3 3 3 3 3 3 3 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0.10.10.10.10.10.10.10.10.10. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	66.6	66.6	.0
2	R128W	63.0	63.0	.0
3	R129W	67.1	67.1	.0
4	R130W	63.5	63.5	.0
5	R131W	59.8	59.8	.0
6	R134W	62.8	69.6	6.7
7	R135W	62.1	67.4	5.2
8	R136W	62.0	65.7	3.7
9	R137W	61.6	64.7	3.1
10	R138W	61.2	63.9	2.6
11	R139W	60.2	62.3	2.1
12	R140W	57.9	60.0	2.1
13	R143W	63.0	68.5	5.5
14	R145W	62.7	68.7	6.0
15	R146W	62.6	69.1	6.5
16	R148W	62.7	69.0	6.3
17	R150W	62.8	69.3	6.5
18	R152W	63.4	69.1	5.7

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	43600.	5359.
FH-STEEL	0.	0.
TOTALS:	$ 43600.	5359.

SR 39 BARRIER R127W TO R153W (ALT 3A)

ADJUSTED 11 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 4 4 4 4 4 4 4 4 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0.11.11.11.11.11.11.11.11.11. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	66.6	66.6	.0
2	R128W	63.0	63.0	.0
3	R129W	67.1	67.1	.0
4	R130W	63.5	63.5	.0
5	R131W	59.8	59.8	.0
6	R134W	63.0	69.6	6.6
7	R135W	62.2	67.4	5.2
8	R136W	62.1	65.7	3.6
9	R137W	61.8	64.7	2.9
10	R138W	61.3	63.9	2.5
11	R139W	60.3	62.3	2.0
12	R140W	57.8	60.0	2.2
13	R143W	62.3	68.5	6.2
14	R145W	61.9	68.7	6.8
15	R146W	61.8	69.1	7.3
16	R148W	61.9	69.0	7.1
17	R150W	62.0	69.3	7.3
18	R152W	62.8	69.1	6.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	45100.	5343.
FH-STEEL	0.	0.
TOTALS:	$ 45100.	5343.

SR 39 BARRIER R127W TO R153W (ALT 3A)

ADJUSTED 12 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 5 5 5 5 5 5 5 5 5 5 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0.12.12.12.12.12.12.12.12.12.12. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	66.6	66.6	.0
2	R128W	63.0	63.0	.0
3	R129W	67.1	67.1	.0
4	R130W	63.5	63.5	.0
5	R131W	59.8	59.8	.0
6	R134W	61.0	69.6	8.6
7	R135W	60.6	67.4	6.8
8	R136W	60.7	65.7	5.0
9	R137W	60.5	64.7	4.2
10	R138W	60.2	63.9	3.6
11	R139W	59.4	62.3	2.9
12	R140W	57.1	60.0	2.9
13	R143W	61.7	68.5	6.8
14	R145W	61.2	68.7	7.5
15	R146W	61.0	69.1	8.1
16	R148W	61.2	69.0	7.8
17	R150W	61.3	69.3	8.0
18	R152W	62.3	69.1	6.9

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	61000.	7015.
FH-STEEL	0.	0.
TOTALS:	$ 61000.	7015.

SR 39 BARRIER R127W TO R153W (ALT 3A)

ADJUSTED 13 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 6 6 6 6 6 6 6 6 6 6 1

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0.13.13.13.13.13.13.13.13.13.13. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	66.6	66.6	.0
2	R128W	63.0	63.0	.0
3	R129W	67.1	67.1	.0
4	R130W	63.5	63.5	.0
5	R131W	59.8	59.8	.0
6	R134W	60.2	69.6	9.4
7	R135W	60.0	67.4	7.4
8	R136W	60.3	65.7	5.4
9	R137W	60.1	64.7	4.6
10	R138W	59.9	63.9	4.0
11	R139W	59.1	62.3	3.2
12	R140W	56.8	60.0	3.2
13	R143W	61.2	68.5	7.3
14	R145W	60.6	68.7	8.1
15	R146W	60.3	69.1	8.8
16	R148W	60.6	69.0	8.4
17	R150W	60.7	69.3	8.6
18	R152W	61.8	69.1	7.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	67800.	7600.
FH-STEEL	0.	0.
TOTALS:	$ 67800.	7600.

SR 39 BARRIER R127W TO R153W (ALT 3A)

ADJUSTED 14 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 7 7 7 7 7 7 7 7 7 7 7 7
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0.14.14.14.14.14.14.14.14.14.14.14.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	66.6	66.6	.0
2	R128W	63.0	63.0	.0

3	R129W	67.1	67.1	.0
4	R130W	63.5	63.5	.0
5	R131W	59.8	59.8	.0
6	R134W	59.4	69.6	10.2
7	R135W	59.3	67.4	8.0
8	R136W	59.6	65.7	6.1
9	R137W	59.5	64.7	5.2
10	R138W	59.3	63.9	4.6
11	R139W	58.6	62.3	3.7
12	R140W	56.4	60.0	3.6
13	R143W	60.7	68.5	7.8
14	R145W	60.0	68.7	8.7
15	R146W	59.7	69.1	9.4
16	R148W	60.0	69.0	9.0
17	R150W	60.1	69.3	9.2
18	R152W	61.5	69.1	7.6

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	81000.	8899.
FH-STEEL	0.	0.
TOTALS:	$ 81000.	8899.

****

SR 39 BARRIER R127W TO R153W (ALT 3A)

ADJUSTED 15 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 8 8 8 8 8 8 8 8 8 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0.15.15.15.15.15.15.15.15.15.15. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	66.6	66.6	.0
2	R128W	63.0	63.0	.0
3	R129W	67.1	67.1	.0
4	R130W	63.5	63.5	.0
5	R131W	59.8	59.8	.0
6	R134W	59.0	69.6	10.6
7	R135W	59.1	67.4	8.3
8	R136W	59.6	65.7	6.1
9	R137W	59.5	64.7	5.2
10	R138W	59.3	63.9	4.5
11	R139W	58.7	62.3	3.7

12	R140W	56.4	60.0	3.7
13	R143W	60.3	68.5	8.2
14	R145W	59.5	68.7	9.2
15	R146W	59.2	69.1	9.9
16	R148W	59.5	69.0	9.5
17	R150W	59.7	69.3	9.6
18	R152W	61.2	69.1	7.9

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	81200.	8769.
FH-STEEL	0.	0.
TOTALS:	$ 81200.	8769.

END OF ALL CASES

****
OPTIMA-VU1
****
BARRIER OPTIMIZATION PROGRAM USING
PARTIAL SOUND ENERGIES COMPUTED BY THE
STAMINA 2.0 PROGRAM
MODIFIED FROM THE FHWA VAX VERSON -- MARCH 1983

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

****
MODIFIED FOR IBM-COMPATIBLE PC WITH MATH COPROCESSOR
IN JUNE 1991 BY
VANDERBILT ENGINEERING CENTER FOR TRANSPORTATION
OPERATIONS AND RESEARCH (VECTOR)
BOX 96-B, VANDERBILT UNIVERSITY, NASHVILLE, TENNESSEE 37235
(615) 322-3683
****

PROBLEM TITLE
****
SR 39 BARRIER R154W TO R191W (ALT 3A)

EFFECTIVENESS/COST RATIO AND BARRIER HEIGHT MATRICES
****

BARRIER SECTION NO	IDENT	EFFECTIVENESS/COST RATIO								CORRESPONDING BARRIER HEIGHTS(IN FT)					
HEIGHT INDEX		1	2	3	4	5	6	7	8	1	2	3	4	5	6
7	8														
1	B1	*	23.	24.	23.	23.	22.	22.	21.	0.	9.	10.	11.	12.	13.
14.	15.														
2	B2	*	26.	26.	25.	25.	24.	24.	23.	0.	9.	10.	11.	12.	13.
14.	15.														
3	B3	*	26.	26.	25.	25.	24.	23.	23.	0.	9.	10.	11.	12.	13.
14.	15.														
4	B4	*	28.	28.	27.	27.	26.	25.	25.	0.	9.	10.	11.	12.	13.
14.	15.														
5	B5	*	31.	30.	29.	28.	28.	27.	26.	0.	9.	10.	11.	12.	13.
14.	15.														
6	B6	*	33.	32.	30.	30.	29.	27.	27.	0.	9.	10.	11.	12.	13.
14.	15.														
7	B7	*	36.	34.	32.	31.	29.	28.	28.	0.	9.	10.	11.	12.	13.
14.	15.														
8	B8	*	33.	32.	30.	29.	28.	27.	27.	0.	9.	10.	11.	12.	13.
14.	15.														
9	B9	*	32.	31.	29.	28.	27.	26.	26.	0.	9.	10.	11.	12.	13.

```
14.15.
   10  B10       *  31.  30.  29.  28.  27.  26.  26.  0. 9.10.11.12.13.
14.15.
   11  B11       *  30.  29.  28.  27.  27.  26.  25.  0. 9.10.11.12.13.
14.15.
   12  B12       *  30.  29.  28.  27.  26.  25.  25.  0. 9.10.11.12.13.
14.15.

 HEIGHT INDEX   1   2    3    4    5    6    7    8   1  2  3  4  5  6
 7  8
```

SR 39 BARRIER R154W TO R191W (ALT 3A)

ADJUSTED 9 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 1 2 2 2 1 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0. 0. 9. 9. 9. 0. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0
5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	56.0	56.0	.0
10	R163W	61.9	61.9	.0
11	R164W	62.3	62.3	.0
12	R165W	61.8	61.8	.0
13	R166W	62.3	62.3	.0
14	R167W	61.9	61.9	.0
15	R168W	56.0	56.1	.0
16	R169W	62.3	62.3	.0
17	R170W	62.3	62.3	.0
18	R171W	62.4	62.4	.0
19	R172W	62.5	62.5	.0
20	R173W	62.5	62.6	.0
21	R174W	62.7	62.7	.1
22	R175W	62.6	62.7	.1
23	R176W	56.8	56.9	.1
24	R177W	63.0	63.1	.1
25	R178W	57.3	57.7	.5
26	R179W	63.6	63.8	.3

27	R180W	63.0	63.5	.5
28	R181W	57.6	58.4	.8
29	R182W	63.9	66.3	2.4
30	R183W	63.3	68.6	5.3
31	R184W	63.5	65.0	1.6
32	R185W	62.8	65.2	2.4
33	R186W	62.9	63.8	.8
34	R187W	60.9	61.2	.4
35	R188W	60.4	60.6	.3
36	R189W	59.8	59.9	.1
37	R190W	59.7	59.8	.1
38	R191W	59.5	59.6	.1

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	16200.	1984.
FH-STEEL	0.	0.
TOTALS:	$ 16200.	1984.

SR 39 BARRIER R154W TO R191W (ALT 3A)

ADJUSTED 10 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 3 3 3 3 3 3 3 3 3
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0.10.10.10.10.10.10.10.10.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0
5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	55.9	56.0	.0
10	R163W	61.9	61.9	.0
11	R164W	62.2	62.3	.0
12	R165W	61.8	61.8	.0
13	R166W	62.3	62.3	.0
14	R167W	61.9	61.9	.0
15	R168W	56.0	56.1	.1

16	R169W	62.2	62.3	.1
17	R170W	62.2	62.3	.1
18	R171W	62.3	62.4	.1
19	R172W	62.4	62.5	.1
20	R173W	62.4	62.6	.2
21	R174W	62.4	62.7	.3
22	R175W	62.3	62.7	.4
23	R176W	56.3	56.9	.6
24	R177W	62.0	63.1	1.1
25	R178W	56.1	57.7	1.6
26	R179W	61.4	63.8	2.4
27	R180W	60.7	63.5	2.8
28	R181W	56.3	58.4	2.1
29	R182W	61.3	66.3	5.0
30	R183W	61.8	68.6	6.9
31	R184W	61.2	65.0	3.8
32	R185W	61.1	65.2	4.2
33	R186W	61.1	63.8	2.7
34	R187W	60.1	61.2	1.1
35	R188W	59.8	60.6	.8
36	R189W	59.6	59.9	.3
37	R190W	59.6	59.8	.3
38	R191W	59.4	59.6	.2

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	48800.	5998.
FH-STEEL	0.	0.
TOTALS:	$ 48800.	5998.

SR 39 BARRIER R154W TO R191W (ALT 3A)

ADJUSTED 11 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 1 4 4 4 4 4 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0. 0.11.11.11.11.11. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0

5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	56.0	56.0	.0
10	R163W	61.9	61.9	.0
11	R164W	62.3	62.3	.0
12	R165W	61.8	61.8	.0
13	R166W	62.3	62.3	.0
14	R167W	61.9	61.9	.0
15	R168W	56.0	56.1	.1
16	R169W	62.2	62.3	.0
17	R170W	62.3	62.3	.0
18	R171W	62.3	62.4	.1
19	R172W	62.4	62.5	.1
20	R173W	62.5	62.6	.1
21	R174W	62.6	62.7	.2
22	R175W	62.5	62.7	.2
23	R176W	56.5	56.9	.4
24	R177W	62.7	63.1	.5
25	R178W	56.7	57.7	1.1
26	R179W	62.8	63.8	1.1
27	R180W	61.7	63.5	1.8
28	R181W	56.9	58.4	1.4
29	R182W	61.4	66.3	5.0
30	R183W	61.5	68.6	7.1
31	R184W	63.0	65.0	2.1
32	R185W	61.8	65.2	3.4
33	R186W	62.6	63.8	1.2
34	R187W	60.7	61.2	.6
35	R188W	60.2	60.6	.4
36	R189W	59.8	59.9	.2
37	R190W	59.7	59.8	.1
38	R191W	59.5	59.6	.1

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	30700.	3641.
FH-STEEL	0.	0.
TOTALS:	$ 30700.	3641.

SR 39 BARRIER R154W TO R191W (ALT 3A)

ADJUSTED 12 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 5 5 5 5 5 5 5 5 5 5

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0.12.12.12.12.12.12.12.12.12.12.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0
5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	55.9	56.0	.1
10	R163W	61.8	61.9	.0
11	R164W	62.2	62.3	.0
12	R165W	61.8	61.8	.0
13	R166W	62.3	62.3	.0
14	R167W	61.9	61.9	.1
15	R168W	55.9	56.1	.1
16	R169W	62.2	62.3	.1
17	R170W	62.2	62.3	.1
18	R171W	62.2	62.4	.1
19	R172W	62.3	62.5	.2
20	R173W	62.3	62.6	.3
21	R174W	62.3	62.7	.4
22	R175W	62.1	62.7	.6
23	R176W	56.1	56.9	.8
24	R177W	61.7	63.1	1.4
25	R178W	55.6	57.7	2.1
26	R179W	60.9	63.8	2.9
27	R180W	59.9	63.5	3.6
28	R181W	55.6	58.4	2.8
29	R182W	59.9	66.3	6.4
30	R183W	60.2	68.6	8.5
31	R184W	60.0	65.0	5.0
32	R185W	59.8	65.2	5.4
33	R186W	60.1	63.8	3.7
34	R187W	59.7	61.2	1.5
35	R188W	59.5	60.6	1.1
36	R189W	59.5	59.9	.5
37	R190W	59.5	59.8	.4
38	R191W	59.3	59.6	.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	65800.	7564.
FH-STEEL	0.	0.

****

TOTALS: $ 65800. 7564.

SR 39 BARRIER R154W TO R191W (ALT 3A)

ADJUSTED 13 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 6 6 6 6 6 6 6 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0.13.13.13.13.13.13.13. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0
5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	55.9	56.0	.0
10	R163W	61.8	61.9	.0
11	R164W	62.2	62.3	.0
12	R165W	61.8	61.8	.0
13	R166W	62.3	62.3	.0
14	R167W	61.9	61.9	.0
15	R168W	56.0	56.1	.1
16	R169W	62.2	62.3	.1
17	R170W	62.2	62.3	.1
18	R171W	62.3	62.4	.1
19	R172W	62.4	62.5	.1
20	R173W	62.4	62.6	.2
21	R174W	62.5	62.7	.2
22	R175W	62.4	62.7	.3
23	R176W	56.4	56.9	.5
24	R177W	62.5	63.1	.6
25	R178W	56.1	57.7	1.6
26	R179W	62.5	63.8	1.3
27	R180W	61.3	63.5	2.3
28	R181W	55.9	58.4	2.5
29	R182W	60.0	66.3	6.3
30	R183W	59.8	68.6	8.9
31	R184W	59.9	65.0	5.1
32	R185W	59.7	65.2	5.6
33	R186W	60.2	63.8	3.6
34	R187W	59.8	61.2	1.4

35	R188W	59.6	60.6	1.0
36	R189W	59.5	59.9	.4
37	R190W	59.5	59.8	.3
38	R191W	59.3	59.6	.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	56400.	6327.
FH-STEEL	0.	0.

****

TOTALS: $ 56400. 6327.

SR 39 BARRIER R154W TO R191W (ALT 3A)

ADJUSTED 14 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 7 7 7 7 7 7 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0.14.14.14.14.14.14. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0
5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	55.9	56.0	.0
10	R163W	61.8	61.9	.0
11	R164W	62.2	62.3	.0
12	R165W	61.8	61.8	.0
13	R166W	62.3	62.3	.0
14	R167W	61.9	61.9	.0
15	R168W	56.0	56.1	.1
16	R169W	62.2	62.3	.1
17	R170W	62.2	62.3	.1
18	R171W	62.3	62.4	.1
19	R172W	62.4	62.5	.1
20	R173W	62.4	62.6	.1
21	R174W	62.5	62.7	.2
22	R175W	62.4	62.7	.3
23	R176W	56.4	56.9	.5

24	R177W	62.7	63.1	.5
25	R178W	56.4	57.7	1.4
26	R179W	62.9	63.8	.9
27	R180W	61.9	63.5	1.6
28	R181W	56.1	58.4	2.3
29	R182W	60.7	66.3	5.6
30	R183W	59.7	68.6	8.9
31	R184W	59.7	65.0	5.3
32	R185W	59.7	65.2	5.6
33	R186W	60.1	63.8	3.6
34	R187W	59.8	61.2	1.4
35	R188W	59.6	60.6	1.0
36	R189W	59.5	59.9	.4
37	R190W	59.5	59.8	.3
38	R191W	59.3	59.6	.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	55400.	6087.
FH-STEEL	0.	0.
TOTALS:	$ 55400.	6087.

SR 39 BARRIER R154W TO R191W (ALT 3A)

ADJUSTED 15 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 8 8 8 8 8 8 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0.15.15.15.15.15.15. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0
5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	55.9	56.0	.1
10	R163W	61.8	61.9	.0
11	R164W	62.2	62.3	.0
12	R165W	61.8	61.8	.0

13	R166W	62.3	62.3	.0
14	R167W	61.9	61.9	.1
15	R168W	56.0	56.1	.1
16	R169W	62.2	62.3	.1
17	R170W	62.2	62.3	.1
18	R171W	62.3	62.4	.1
19	R172W	62.4	62.5	.1
20	R173W	62.4	62.6	.2
21	R174W	62.5	62.7	.2
22	R175W	62.4	62.7	.3
23	R176W	56.4	56.9	.5
24	R177W	62.6	63.1	.5
25	R178W	56.3	57.7	1.4
26	R179W	62.9	63.8	.9
27	R180W	61.9	63.5	1.6
28	R181W	56.0	58.4	2.4
29	R182W	60.5	66.3	5.8
30	R183W	59.3	68.6	9.3
31	R184W	59.5	65.0	5.5
32	R185W	59.4	65.2	5.9
33	R186W	59.9	63.8	3.8
34	R187W	59.7	61.2	1.5
35	R188W	59.6	60.6	1.0
36	R189W	59.5	59.9	.4
37	R190W	59.5	59.8	.3
38	R191W	59.3	59.6	.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	60400.	6522.
FH-STEEL	0.	0.

****

TOTALS:	$	60400.	6522.

END OF ALL CASES

****
OPTIMA-VU1
****
BARRIER OPTIMIZATION PROGRAM USING
PARTIAL SOUND ENERGIES COMPUTED BY THE
STAMINA 2.0 PROGRAM
MODIFIED FROM THE FHWA VAX VERSON -- MARCH 1983

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

****

MODIFIED FOR IBM-COMPATIBLE PC WITH MATH COPROCESSOR
IN JUNE 1991 BY
VANDERBILT ENGINEERING CENTER FOR TRANSPORTATION
OPERATIONS AND RESEARCH (VECTOR)
BOX 96-B, VANDERBILT UNIVERSITY, NASHVILLE, TENNESSEE 37235
(615) 322-3683

****

PROBLEM TITLE
****
SR 39 BARRIER R127W TO R153W (ALT 3B)

EFFECTIVENESS/COST RATIO AND BARRIER HEIGHT MATRICES
****

BARRIER SECTION NO IDENT IN FT)		EFFECTIVENESS/COST RATIO								CORRESPONDING BARRIER HEIGHTS(					
HEIGHT	INDEX	1	2	3	4	5	6	7	8	1	2	3	4	5	6
7 8 1	B1	*	30.	29.	28.	27.	27.	26.	26.	0.	9.	10.	11.	12.	13.
14.15. 2	B2	*	28.	29.	28.	27.	27.	26.	26.	0.	9.	10.	11.	12.	13.
14.15. 3	B3	*	31.	31.	29.	29.	28.	28.	27.	0.	9.	10.	11.	12.	13.
14.15. 4	B4	*	34.	33.	32.	31.	30.	30.	29.	0.	9.	10.	11.	12.	13.
14.15. 5	B5	*	41.	37.	35.	34.	33.	32.	31.	0.	9.	10.	11.	12.	13.
14.15. 6	B6	*	40.	38.	36.	34.	33.	32.	31.	0.	9.	10.	11.	12.	13.
14.15. 7	B7	*	37.	36.	34.	33.	32.	31.	30.	0.	9.	10.	11.	12.	13.
14.15. 8	B8	*	36.	35.	34.	33.	32.	31.	30.	0.	9.	10.	11.	12.	13.
14.15. 9	B9	*	35.	34.	33.	32.	31.	30.	30.	0.	9.	10.	11.	12.	13.

```
14.15.
   10  B10       *  33.  33.  31.  31.  30.  29.  29.  0. 9.10.11.12.13.
14.15.
   11  B12       *  34.  33.  32.  31.  30.  29.  29.  0. 9.10.11.12.13.
14.15.
   12  B13       *  38.  36.  34.  33.  31.  30.  30.  0. 9.10.11.12.13.
14.15.
   13  B14       *  35.  33.  32.  31.  30.  29.  28.  0. 9.10.11.12.13.
14.15.
   14  B15       *  32.  31.  30.  29.  28.  28.  27.  0. 9.10.11.12.13.
14.15.
   15  B16       *  29.  28.  27.  27.  26.  26.  25.  0. 9.10.11.12.13.
14.15.
   16  B17       *  27.  27.  26.  26.  26.  25.  25.  0. 9.10.11.12.13.
14.15.

 HEIGHT INDEX   1   2    3    4    5    6    7    8   1  2  3  4  5  6
 7  8
```

SR 39 BARRIER R127W TO R153W (ALT 3B)

ADJUSTED 9 FT BARRIER

```
 BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
   1  1  1  1  2  2  2  2  2  2  2  2  2  1  1  1
 CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
  0. 0. 0. 0. 9. 9. 9. 9. 9. 9. 9. 9. 9. 0. 0. 0.
```

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	63.4	63.4	.0
2	R128W	60.9	60.9	.0
3	R129W	63.7	63.7	.0
4	R130W	61.3	61.3	.0
5	R131W	58.4	58.4	.0
6	R132W	66.3	66.3	.0
7	R133W	63.8	65.9	2.1
8	R134W	61.8	63.5	1.7
9	R135W	61.3	63.0	1.7
10	R136W	60.7	62.3	1.5
11	R137W	60.3	61.8	1.5
12	R138W	59.9	61.3	1.4
13	R139W	59.0	60.2	1.2
14	R140W	56.7	58.0	1.3
15	R141W	62.5	65.4	2.9
16	R142W	62.6	65.7	3.0
17	R143W	58.8	61.1	2.3
18	R144W	62.7	65.7	3.1

19	R145W	58.8	61.1	2.3
20	R146W	59.0	61.3	2.3
21	R147W	63.0	66.1	3.0
22	R148W	59.1	61.3	2.2
23	R149W	62.4	65.1	2.7
24	R150W	59.4	61.4	2.0
25	R151W	61.8	64.2	2.4
26	R152W	59.7	61.4	1.6
27	R153W	62.4	64.1	1.7
28	R192W	64.0	69.9	5.9
29	R193W	63.8	69.7	6.0
30	R194W	61.8	70.9	9.1
31	R195W	68.5	68.5	.0

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	36000.	4415.
FH-STEEL	0.	0.

****

TOTALS:	$ 36000.	4415.

SR 39 BARRIER R127W TO R153W (ALT 3B)

ADJUSTED 10 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 3 3 3 3 3 3 3 3 3 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0.10.10.10.10.10.10.10.10. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	63.4	63.4	.0
2	R128W	60.9	60.9	.0
3	R129W	63.7	63.7	.0
4	R130W	61.3	61.3	.0
5	R131W	58.4	58.4	.0
6	R132W	66.3	66.3	.0
7	R133W	63.5	65.9	2.4
8	R134W	61.5	63.5	2.0
9	R135W	61.1	63.0	1.9
10	R136W	60.5	62.3	1.8
11	R137W	60.1	61.8	1.7
12	R138W	59.7	61.3	1.6
13	R139W	58.8	60.2	1.4
14	R140W	56.5	58.0	1.5

15	R141W	62.1	65.4	3.4
16	R142W	62.1	65.7	3.6
17	R143W	58.4	61.1	2.7
18	R144W	62.1	65.7	3.6
19	R145W	58.4	61.1	2.7
20	R146W	58.7	61.3	2.7
21	R147W	62.6	66.1	3.5
22	R148W	58.8	61.3	2.5
23	R149W	62.0	65.1	3.2
24	R150W	59.1	61.4	2.3
25	R151W	61.5	64.2	2.8
26	R152W	59.5	61.4	1.9
27	R153W	62.2	64.1	1.9
28	R192W	63.2	69.9	6.7
29	R193W	62.9	69.7	6.8
30	R194W	60.7	70.9	10.2
31	R195W	68.5	68.5	.0

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	39900.	4906.
FH-STEEL	0.	0.

****

TOTALS:	$ 39900.	4906.

SR 39 BARRIER R127W TO R153W (ALT 3B)

ADJUSTED 11 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 4 4 4 4 4 4 4 4 4 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0.11.11.11.11.11.11.11.11.11. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	63.4	63.4	.0
2	R128W	60.9	60.9	.0
3	R129W	63.7	63.7	.0
4	R130W	61.3	61.3	.0
5	R131W	58.4	58.4	.0
6	R132W	66.3	66.3	.0
7	R133W	63.3	65.9	2.6
8	R134W	61.3	63.5	2.2
9	R135W	60.8	63.0	2.2
10	R136W	60.3	62.3	2.0

11	R137W	59.9	61.8	1.9
12	R138W	59.5	61.3	1.8
13	R139W	58.6	60.2	1.6
14	R140W	56.3	58.0	1.7
15	R141W	61.6	65.4	3.8
16	R142W	61.6	65.7	4.1
17	R143W	58.0	61.1	3.0
18	R144W	61.7	65.7	4.1
19	R145W	58.1	61.1	3.1
20	R146W	58.3	61.3	3.0
21	R147W	62.1	66.1	4.0
22	R148W	58.4	61.3	2.9
23	R149W	61.6	65.1	3.5
24	R150W	58.8	61.4	2.6
25	R151W	61.1	64.2	3.1
26	R152W	59.3	61.4	2.1
27	R153W	62.0	64.1	2.1
28	R192W	62.5	69.9	7.4
29	R193W	62.2	69.7	7.6
30	R194W	59.9	70.9	11.1
31	R195W	68.5	68.5	.0

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	45600.	5397.
FH-STEEL	0.	0.

****

TOTALS:	$ 45600.	5397.

SR 39 BARRIER R127W TO R153W (ALT 3B)

ADJUSTED 12 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 5 5 5 5 5 5 5 5 1 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0.12.12.12.12.12.12.12.12. 0. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	63.4	63.4	.0
2	R128W	60.9	60.9	.0
3	R129W	63.7	63.7	.0
4	R130W	61.3	61.3	.0
5	R131W	58.4	58.4	.0
6	R132W	66.3	66.3	.0

7	R133W	64.2	65.9	1.7
8	R134W	61.7	63.5	1.8
9	R135W	61.2	63.0	1.8
10	R136W	60.6	62.3	1.7
11	R137W	60.1	61.8	1.7
12	R138W	59.6	61.3	1.6
13	R139W	58.7	60.2	1.5
14	R140W	56.3	58.0	1.7
15	R141W	61.3	65.4	4.1
16	R142W	61.2	65.7	4.4
17	R143W	57.8	61.1	3.2
18	R144W	61.2	65.7	4.5
19	R145W	57.8	61.1	3.3
20	R146W	58.0	61.3	3.3
21	R147W	61.7	66.1	4.4
22	R148W	58.2	61.3	3.1
23	R149W	61.2	65.1	3.9
24	R150W	58.6	61.4	2.8
25	R151W	60.9	64.2	3.3
26	R152W	59.1	61.4	2.3
27	R153W	61.8	64.1	2.3
28	R192W	64.9	69.9	5.0
29	R193W	61.5	69.7	8.2
30	R194W	59.2	70.9	11.7
31	R195W	68.5	68.5	.0

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	46000.	5290.
FH-STEEL	0.	0.
TOTALS:	$ 46000.	5290.

SR 39 BARRIER R127W TO R153W (ALT 3B)

ADJUSTED 13 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 6 6 6 6 6 6 6 6 6 6 6 6
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0.13.13.13.13.13.13.13.13.13.13.13.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	63.4	63.4	.0
2	R128W	60.9	60.9	.0

3	R129W	63.7	63.7	.0
4	R130W	61.3	61.3	.0
5	R131W	58.4	58.4	.0
6	R132W	66.3	66.3	.0
7	R133W	60.9	65.9	5.0
8	R134W	59.5	63.5	4.0
9	R135W	59.2	63.0	3.8
10	R136W	58.8	62.3	3.5
11	R137W	58.5	61.8	3.2
12	R138W	58.2	61.3	3.1
13	R139W	57.5	60.2	2.7
14	R140W	55.3	58.0	2.7
15	R141W	60.6	65.4	4.8
16	R142W	60.6	65.7	5.0
17	R143W	57.1	61.1	3.9
18	R144W	60.7	65.7	5.0
19	R145W	57.2	61.1	3.9
20	R146W	57.6	61.3	3.8
21	R147W	61.3	66.1	4.8
22	R148W	57.8	61.3	3.5
23	R149W	60.9	65.1	4.2
24	R150W	58.3	61.4	3.1
25	R151W	60.6	64.2	3.6
26	R152W	58.8	61.4	2.5
27	R153W	61.6	64.1	2.5
28	R192W	60.3	69.9	9.6
29	R193W	61.0	69.7	8.7
30	R194W	58.7	70.9	12.2
31	R195W	68.5	68.5	.0

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	73700.	8264.
FH-STEEL	0.	0.
TOTALS:	$ 73700.	8264.

SR 39 BARRIER R127W TO R153W (ALT 3B)

ADJUSTED 14 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 7 7 7 7 7 7 7 7 7 7 7 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0.14.14.14.14.14.14.14.14.14.14. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	63.4	63.4	.0
2	R128W	60.9	60.9	.0
3	R129W	63.7	63.7	.0
4	R130W	61.3	61.3	.0
5	R131W	58.4	58.4	.0
6	R132W	66.3	66.3	.0
7	R133W	60.9	65.9	5.0
8	R134W	59.5	63.5	4.0
9	R135W	59.2	63.0	3.8
10	R136W	58.9	62.3	3.4
11	R137W	58.5	61.8	3.2
12	R138W	58.2	61.3	3.1
13	R139W	57.5	60.2	2.7
14	R140W	55.3	58.0	2.7
15	R141W	60.3	65.4	5.2
16	R142W	60.3	65.7	5.4
17	R143W	56.9	61.1	4.2
18	R144W	60.3	65.7	5.4
19	R145W	56.9	61.1	4.2
20	R146W	57.3	61.3	4.0
21	R147W	61.0	66.1	5.1
22	R148W	57.5	61.3	3.7
23	R149W	60.7	65.1	4.5
24	R150W	58.1	61.4	3.4
25	R151W	60.4	64.2	3.8
26	R152W	58.7	61.4	2.7
27	R153W	61.5	64.1	2.6
28	R192W	59.7	69.9	10.2
29	R193W	60.6	69.7	9.2
30	R194W	58.3	70.9	12.6
31	R195W	68.5	68.5	.0

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	75100.	8257.
FH-STEEL	0.	0.
TOTALS:	$ 75100.	8257.

SR 39 BARRIER R127W TO R153W (ALT 3B)

ADJUSTED 15 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 8 8 8 8 8 8 8 8 8 8 8 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION

0. 0. 0. 0.15.15.15.15.15.15.15.15.15.15. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R127W	63.4	63.4	.0
2	R128W	60.9	60.9	.0
3	R129W	63.7	63.7	.0
4	R130W	61.3	61.3	.0
5	R131W	58.4	58.4	.0
6	R132W	66.3	66.3	.0
7	R133W	60.6	65.9	5.2
8	R134W	59.3	63.5	4.2
9	R135W	59.0	63.0	4.0
10	R136W	58.6	62.3	3.6
11	R137W	58.4	61.8	3.4
12	R138W	58.0	61.3	3.2
13	R139W	57.4	60.2	2.8
14	R140W	55.1	58.0	2.9
15	R141W	59.9	65.4	5.5
16	R142W	59.9	65.7	5.8
17	R143W	56.6	61.1	4.4
18	R144W	60.0	65.7	5.7
19	R145W	56.7	61.1	4.5
20	R146W	57.1	61.3	4.3
21	R147W	60.7	66.1	5.4
22	R148W	57.3	61.3	4.0
23	R149W	60.4	65.1	4.7
24	R150W	57.9	61.4	3.5
25	R151W	60.2	64.2	4.0
26	R152W	58.5	61.4	2.8
27	R153W	61.4	64.1	2.7
28	R192W	59.2	69.9	10.8
29	R193W	60.2	69.7	9.5
30	R194W	58.0	70.9	12.9
31	R195W	68.5	68.5	.0

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	81900.	8847.
FH-STEEL	0.	0.
TOTALS:	$ 81900.	8847.

END OF ALL CASES

****
OPTIMA-VU1
****
BARRIER OPTIMIZATION PROGRAM USING
PARTIAL SOUND ENERGIES COMPUTED BY THE
STAMINA 2.0 PROGRAM
MODIFIED FROM THE FHWA VAX VERSON -- MARCH 1983

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

****
MODIFIED FOR IBM-COMPATIBLE PC WITH MATH COPROCESSOR
IN JUNE 1991 BY
VANDERBILT ENGINEERING CENTER FOR TRANSPORTATION
OPERATIONS AND RESEARCH (VECTOR)
BOX 96-B, VANDERBILT UNIVERSITY, NASHVILLE, TENNESSEE 37235
(615) 322-3683
****

PROBLEM TITLE
****
SR 39 BARRIER R154W TO R191W (ALT 3B)

EFFECTIVENESS/COST RATIO AND BARRIER HEIGHT MATRICES
****

BARRIER SECTION NO	IDENT	EFFECTIVENESS/COST RATIO								CORRESPONDING BARRIER HEIGHTS(IN FT)					
HEIGHT INDEX		1	2	3	4	5	6	7	8	1	2	3	4	5	6
7	8														
1	B1	*	23.	23.	22.	22.	21.	21.	21.	0.	9.	10.	11.	12.	13.
14.	15.														
2	B2	*	25.	25.	25.	24.	24.	23.	23.	0.	9.	10.	11.	12.	13.
14.	15.														
3	B3	*	26.	26.	25.	25.	24.	23.	23.	0.	9.	10.	11.	12.	13.
14.	15.														
4	B4	*	28.	28.	27.	27.	26.	25.	25.	0.	9.	10.	11.	12.	13.
14.	15.														
5	B5	*	31.	30.	29.	28.	27.	26.	26.	0.	9.	10.	11.	12.	13.
14.	15.														
6	B6	*	34.	32.	31.	30.	29.	28.	27.	0.	9.	10.	11.	12.	13.
14.	15.														
7	B7	*	35.	33.	31.	30.	29.	28.	27.	0.	9.	10.	11.	12.	13.
14.	15.														
8	B8	*	32.	31.	29.	28.	26.	25.	24.	0.	9.	10.	11.	12.	13.
14.	15.														
9	B9	*	31.	30.	27.	26.	24.	23.	23.	0.	9.	10.	11.	12.	13.

```
14.15.
   10  B10       *  25.  24.  23.  23.  22.  21.  21.   0. 9.10.11.12.13.
14.15.
   11  B11       *  24.  24.  23.  22.  21.  21.  20.   0. 9.10.11.12.13.
14.15.
   12  B12       *  24.  23.  22.  22.  21.  20.  20.   0. 9.10.11.12.13.
14.15.

 HEIGHT INDEX   1   2    3    4    5    6    7    8   1  2  3  4  5  6
 7  8

 SR 39 BARRIER  R154W TO R191W (ALT 3B)


 ADJUSTED 9 FT BARRIER


 BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
   1  1  1  1  1  2  2  2  2  1  1  1
 CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
  0. 0. 0. 0. 0. 9. 9. 9. 9. 0. 0. 0.

     R E S U L T S
     *************

 REC     REC ID          LEQ       LEQ(Z(0))       IL
   1     R154W          59.8        59.8           .0
   2     R155W          61.8        61.8           .0
   3     R156W          56.7        56.7           .0
   4     R157W          61.7        61.8           .0
   5     R158W          61.9        61.9           .0
   6     R159W          62.1        62.2           .0
   7     R160W          62.1        62.1           .0
   8     R161W          61.8        61.8           .0
   9     R162W          56.0        56.0           .0
  10     R163W          61.9        61.9           .0
  11     R164W          62.3        62.3           .0
  12     R165W          61.8        61.8           .0
  13     R166W          62.3        62.3           .0
  14     R167W          61.9        61.9           .0
  15     R168W          56.0        56.1           .1
  16     R169W          62.2        62.3           .0
  17     R170W          62.3        62.3           .0
  18     R171W          62.3        62.4           .1
  19     R172W          62.4        62.5           .1
  20     R173W          62.4        62.5           .1
  21     R174W          62.6        62.7           .2
  22     R175W          62.5        62.7           .2
  23     R176W          56.6        56.9           .3
  24     R177W          62.8        63.2           .4
  25     R178W          56.9        57.7           .8
  26     R179W          63.2        64.0           .8
```

27	R180W	62.5	63.6	1.2
28	R181W	57.3	58.4	1.1
29	R182W	63.0	66.2	3.2
30	R183W	63.3	68.3	5.0
31	R184W	63.3	65.0	1.8
32	R185W	62.6	65.2	2.6
33	R186W	62.8	63.8	1.0
34	R187W	60.8	61.2	.4
35	R188W	60.3	60.6	.3
36	R189W	59.8	59.9	.1
37	R190W	59.7	59.8	.1
38	R191W	59.5	59.6	.1

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	23700.	2908.
FH-STEEL	0.	0.

TOTALS:	$	23700.	2908.

3B

SR 39 BARRIER R154W TO R191W (ALT 2)

ADJUSTED 10 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 1 3 3 3 1 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0. 0.10.10.10. 0. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0
5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	56.0	56.0	.0
10	R163W	61.9	61.9	.0
11	R164W	62.3	62.3	.0
12	R165W	61.8	61.8	.0
13	R166W	62.3	62.3	.0
14	R167W	61.9	61.9	.0
15	R168W	56.0	56.1	.0

16	R169W	62.2	62.3	.0
17	R170W	62.3	62.3	.0
18	R171W	62.3	62.4	.0
19	R172W	62.4	62.5	.1
20	R173W	62.5	62.5	.1
21	R174W	62.6	62.7	.1
22	R175W	62.6	62.7	.1
23	R176W	56.7	56.9	.2
24	R177W	62.9	63.2	.3
25	R178W	57.1	57.7	.7
26	R179W	63.5	64.0	.5
27	R180W	62.8	63.6	.8
28	R181W	57.4	58.4	1.0
29	R182W	63.2	66.2	2.9
30	R183W	62.8	68.3	5.5
31	R184W	63.1	65.0	1.9
32	R185W	62.4	65.2	2.8
33	R186W	62.8	63.8	1.0
34	R187W	60.8	61.2	.4
35	R188W	60.3	60.6	.3
36	R189W	59.8	59.9	.1
37	R190W	59.7	59.8	.1
38	R191W	59.5	59.6	.1

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	21300.	2621.
FH-STEEL	0.	0.

****

TOTALS:	$ 21300.	2621.

3B
SR 39 BARRIER R154W TO R191W (ALT 2)

ADJUSTED 11 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 1 1 4 4 1 1 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0. 0. 0.11.11. 0. 0. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0

5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	56.0	56.0	.0
10	R163W	61.9	61.9	.0
11	R164W	62.3	62.3	.0
12	R165W	61.8	61.8	.0
13	R166W	62.3	62.3	.0
14	R167W	61.9	61.9	.0
15	R168W	56.0	56.1	.0
16	R169W	62.3	62.3	.0
17	R170W	62.3	62.3	.0
18	R171W	62.3	62.4	.0
19	R172W	62.4	62.5	.0
20	R173W	62.5	62.5	.1
21	R174W	62.7	62.7	.1
22	R175W	62.6	62.7	.1
23	R176W	56.7	56.9	.2
24	R177W	63.0	63.2	.2
25	R178W	57.2	57.7	.5
26	R179W	63.7	64.0	.3
27	R180W	63.1	63.6	.5
28	R181W	57.5	58.4	.9
29	R182W	64.1	66.2	2.1
30	R183W	62.7	68.3	5.6
31	R184W	63.1	65.0	2.0
32	R185W	62.3	65.2	2.8
33	R186W	62.7	63.8	1.0
34	R187W	60.8	61.2	.4
35	R188W	60.3	60.6	.3
36	R189W	59.8	59.9	.1
37	R190W	59.7	59.8	.1
38	R191W	59.5	59.6	.1

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	19400.	2302.
FH-STEEL	0.	0.

****

TOTALS:	$ 19400.	2302.

SR 39 BARRIER R154W TO R191W (ALT 3B)

ADJUSTED 12 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
5 5 5 5 5 5 5 5 5 5 5 5

CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
12.12.12.12.12.12.12.12.12.12.12.12.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0
5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	55.9	56.0	.1
10	R163W	61.8	61.9	.0
11	R164W	62.2	62.3	.0
12	R165W	61.8	61.8	.1
13	R166W	62.3	62.3	.1
14	R167W	61.8	61.9	.1
15	R168W	55.9	56.1	.2
16	R169W	62.2	62.3	.1
17	R170W	62.2	62.3	.1
18	R171W	62.2	62.4	.1
19	R172W	62.3	62.5	.2
20	R173W	62.3	62.5	.3
21	R174W	62.4	62.7	.4
22	R175W	62.2	62.7	.5
23	R176W	56.2	56.9	.7
24	R177W	62.3	63.2	.9
25	R178W	56.0	57.7	1.7
26	R179W	62.5	64.0	1.5
27	R180W	61.5	63.6	2.1
28	R181W	55.9	58.4	2.5
29	R182W	61.3	66.2	4.8
30	R183W	61.0	68.3	7.3
31	R184W	60.1	65.0	4.9
32	R185W	60.2	65.2	5.0
33	R186W	59.8	63.8	3.9
34	R187W	59.2	61.2	2.0
35	R188W	59.2	60.6	1.4
36	R189W	59.4	59.9	.6
37	R190W	59.4	59.8	.4
38	R191W	59.2	59.6	.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	82700.	9501.
FH-STEEL	0.	0.

****

TOTALS: $ 82700. 9501.

SR 39 BARRIER R154W TO R191W (ALT 3B)

ADJUSTED 13 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 6 6 6 6 6 6 6 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0.13.13.13.13.13.13.13. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0
5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	55.9	56.0	.1
10	R163W	61.8	61.9	.0
11	R164W	62.2	62.3	.0
12	R165W	61.8	61.8	.0
13	R166W	62.3	62.3	.0
14	R167W	61.9	61.9	.1
15	R168W	55.9	56.1	.1
16	R169W	62.2	62.3	.1
17	R170W	62.2	62.3	.1
18	R171W	62.3	62.4	.1
19	R172W	62.3	62.5	.1
20	R173W	62.3	62.5	.2
21	R174W	62.4	62.7	.3
22	R175W	62.3	62.7	.4
23	R176W	56.3	56.9	.6
24	R177W	62.5	63.2	.7
25	R178W	56.2	57.7	1.6
26	R179W	62.7	64.0	1.3
27	R180W	61.6	63.6	2.0
28	R181W	56.0	58.4	2.4
29	R182W	61.1	66.2	5.0
30	R183W	60.6	68.3	7.7
31	R184W	60.0	65.0	5.0
32	R185W	60.0	65.2	5.2
33	R186W	60.2	63.8	3.6
34	R187W	59.8	61.2	1.4

35	R188W	59.6	60.6	1.0
36	R189W	59.5	59.9	.4
37	R190W	59.5	59.8	.3
38	R191W	59.3	59.6	.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	62700.	7031.
FH-STEEL	0.	0.

****

TOTALS:	$ 62700.	7031.

38

SR 39 BARRIER R154W TO R191W (ALT 2)

ADJUSTED 14 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 7 7 7 7 7 7 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0.14.14.14.14.14.14. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0
5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	55.9	56.0	.1
10	R163W	61.8	61.9	.0
11	R164W	62.2	62.3	.0
12	R165W	61.8	61.8	.0
13	R166W	62.3	62.3	.1
14	R167W	61.9	61.9	.1
15	R168W	55.9	56.1	.1
16	R169W	62.2	62.3	.1
17	R170W	62.2	62.3	.1
18	R171W	62.2	62.4	.1
19	R172W	62.3	62.5	.1
20	R173W	62.3	62.5	.2
21	R174W	62.5	62.7	.3
22	R175W	62.3	62.7	.4
23	R176W	56.3	56.9	.6

24	R177W	62.5	63.2	.7
25	R178W	56.2	57.7	1.6
26	R179W	62.8	64.0	1.2
27	R180W	61.7	63.6	1.9
28	R181W	56.0	58.4	2.4
29	R182W	61.0	66.2	5.2
30	R183W	60.3	68.3	8.0
31	R184W	59.7	65.0	5.3
32	R185W	59.7	65.2	5.5
33	R186W	60.0	63.8	3.8
34	R187W	59.7	61.2	1.5
35	R188W	59.6	60.6	1.0
36	R189W	59.5	59.9	.4
37	R190W	59.5	59.8	.3
38	R191W	59.3	59.6	.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	60900.	6691.
FH-STEEL	0.	0.

****

TOTALS:	$ 60900.	6691.

3B

SR 39 BARRIER R154W TO R191W (ALT 2)

ADJUSTED 15 FT BARRIER

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
1 1 1 8 8 8 8 8 8 1 1 1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
0. 0. 0.15.15.15.15.15.15. 0. 0. 0.

R E S U L T S
****

REC	REC ID	LEQ	LEQ(Z(0))	IL
1	R154W	59.8	59.8	.0
2	R155W	61.8	61.8	.0
3	R156W	56.7	56.7	.0
4	R157W	61.7	61.8	.0
5	R158W	61.9	61.9	.0
6	R159W	62.1	62.2	.0
7	R160W	62.1	62.1	.0
8	R161W	61.8	61.8	.0
9	R162W	55.9	56.0	.1
10	R163W	61.8	61.9	.0
11	R164W	62.2	62.3	.0
12	R165W	61.8	61.8	.1

13	R166W	62.3	62.3	.1
14	R167W	61.8	61.9	.1
15	R168W	55.9	56.1	.1
16	R169W	62.2	62.3	.1
17	R170W	62.2	62.3	.1
18	R171W	62.2	62.4	.1
19	R172W	62.3	62.5	.1
20	R173W	62.3	62.5	.2
21	R174W	62.4	62.7	.3
22	R175W	62.3	62.7	.4
23	R176W	56.3	56.9	.6
24	R177W	62.5	63.2	.7
25	R178W	56.1	57.7	1.6
26	R179W	62.7	64.0	1.2
27	R180W	61.7	63.6	1.9
28	R181W	55.9	58.4	2.5
29	R182W	60.8	66.2	5.3
30	R183W	60.0	68.3	8.3
31	R184W	59.5	65.0	5.6
32	R185W	59.5	65.2	5.7
33	R186W	59.8	63.8	3.9
34	R187W	59.7	61.2	1.5
35	R188W	59.5	60.6	1.1
36	R189W	59.5	59.9	.5
37	R190W	59.5	59.8	.4
38	R191W	59.3	59.6	.3

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	0.	0.
FH-MASON	0.	0.
FH-WOOD	0.	0.
FH-CONC	66400.	7169.
FH-STEEL	0.	0.

****

TOTALS:	$ 66400.	7169.

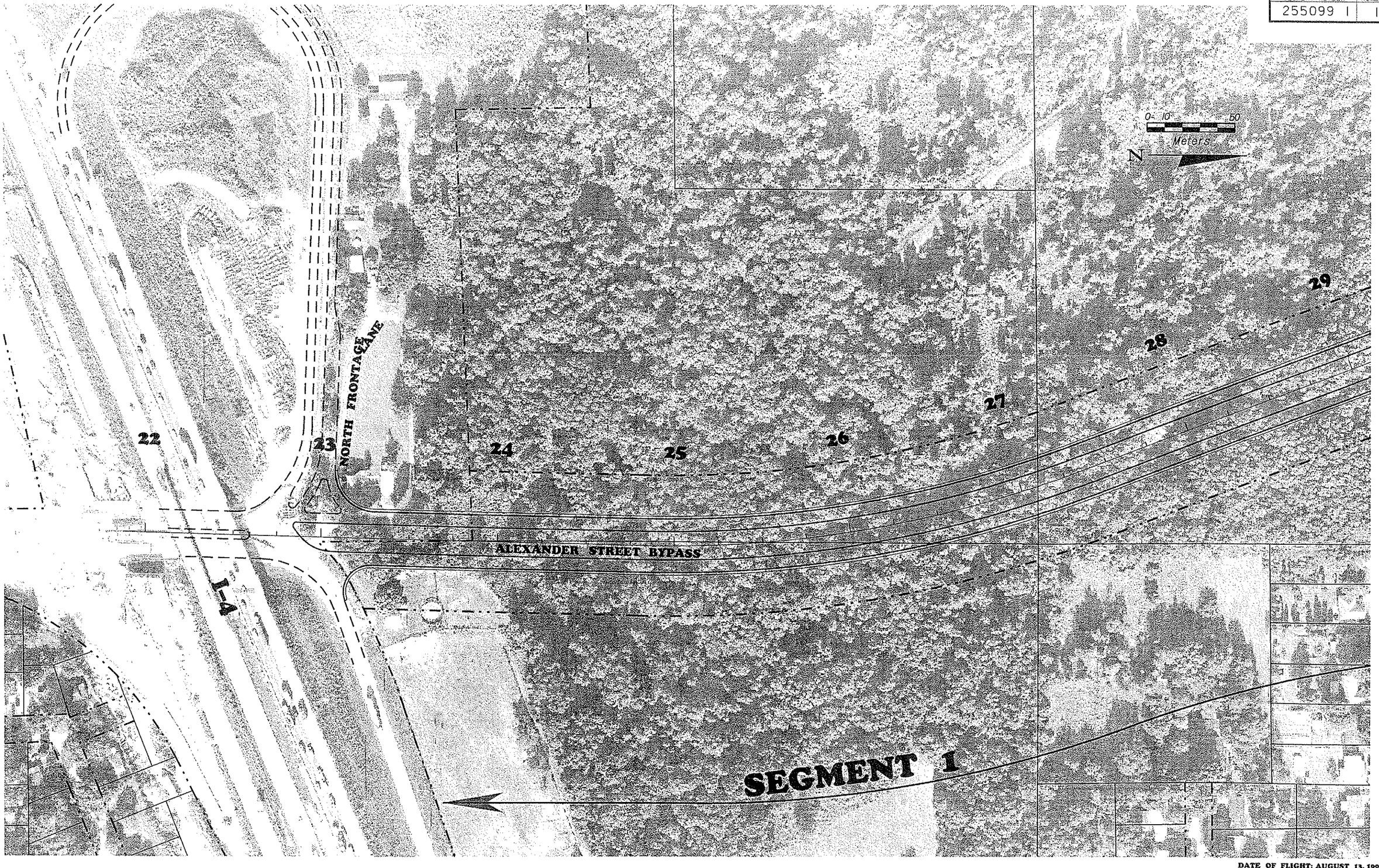
END OF ALL CASES

APPENDIX E

Modeled Receiver Locations

(Aerials provided to identify modeled receiver locations.
Refer to Preliminary Engineering Report for final project alignment.)

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	1



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	2

0 10 50
Meters

N

R1W
R2W
R3W
R1E
R3E
R4E
R5E
R6E
R7E

29
30
31
32
33
34
35
36

CASON STREET

BARBOUR DRIVE

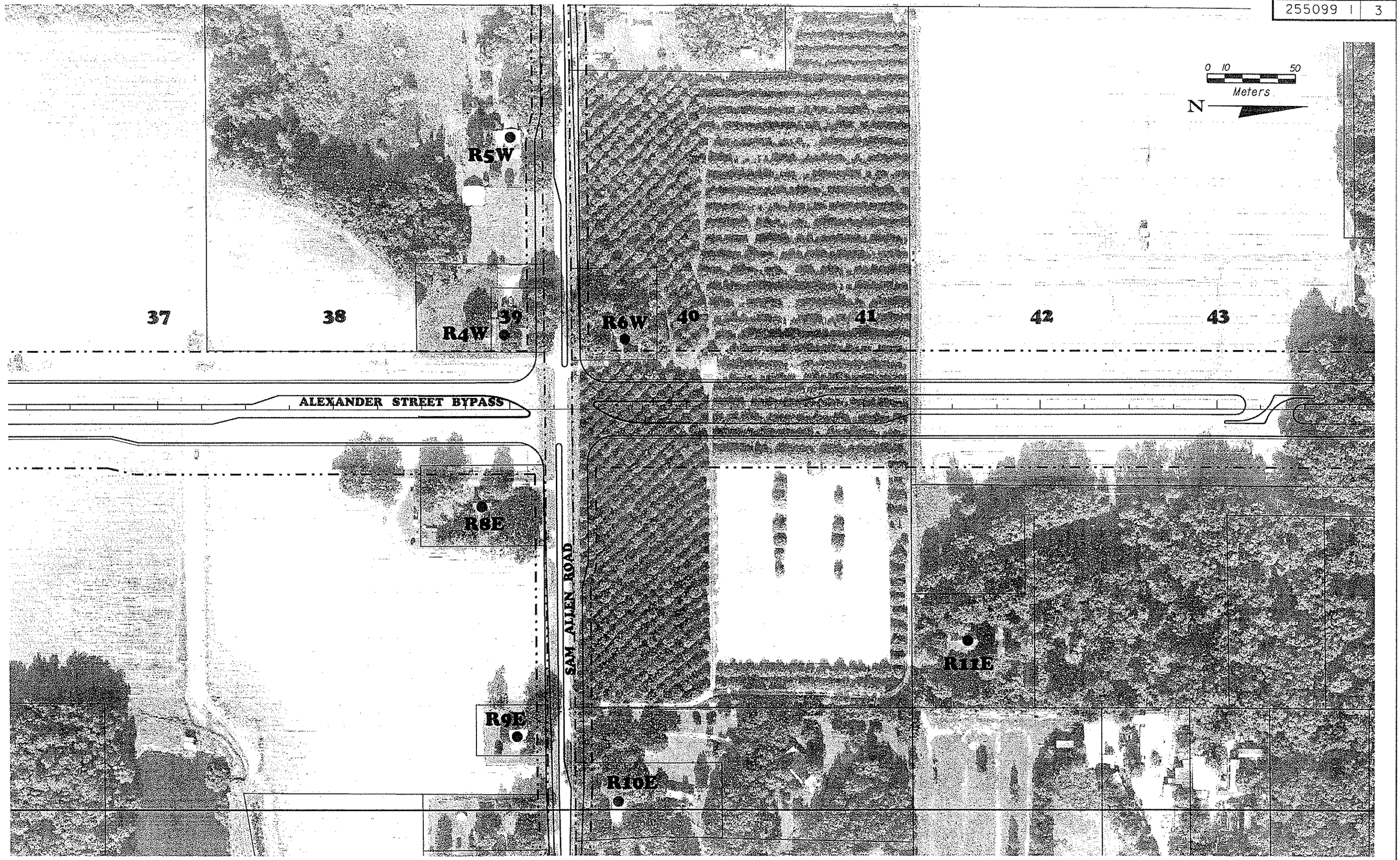
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	3



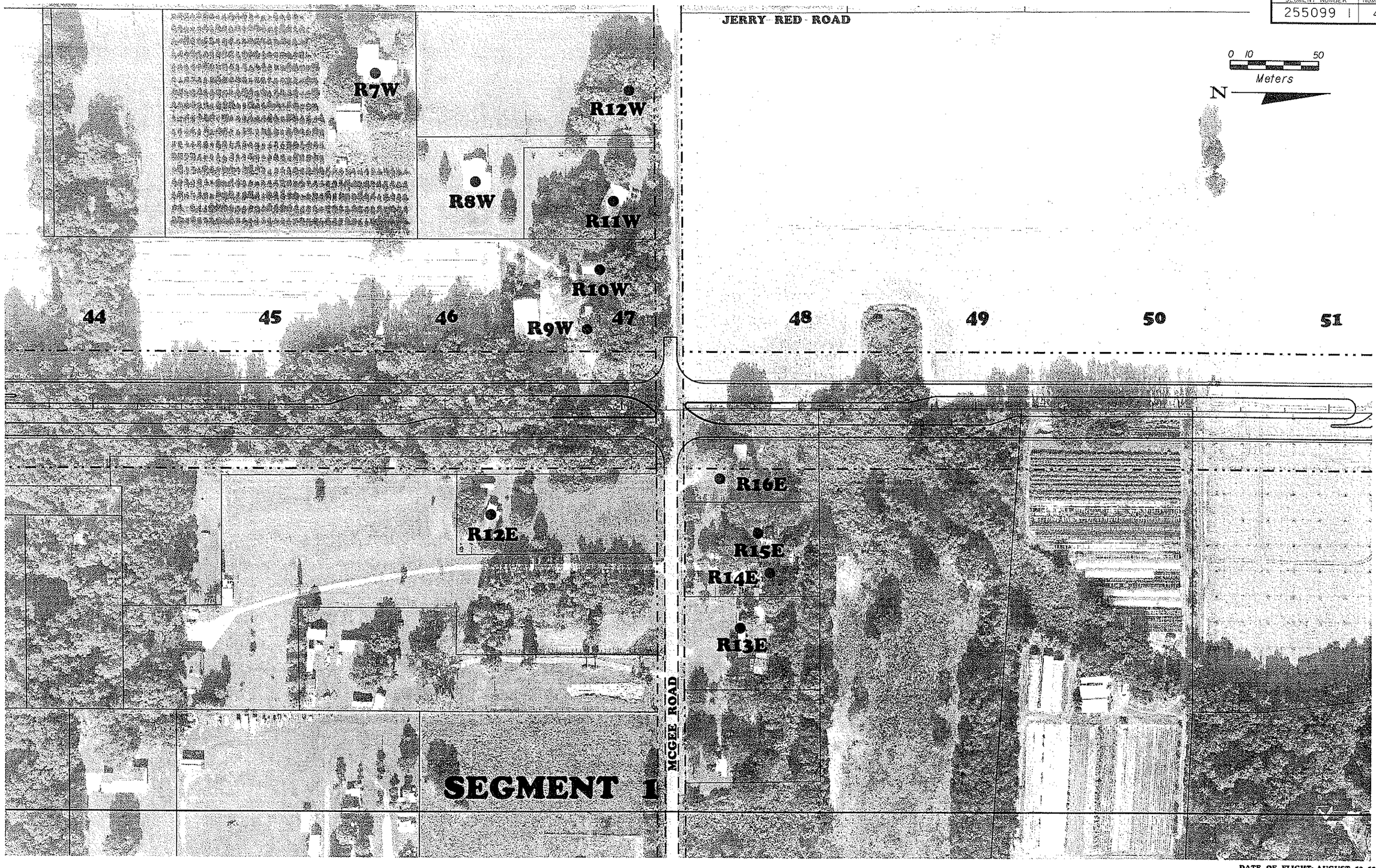
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	4



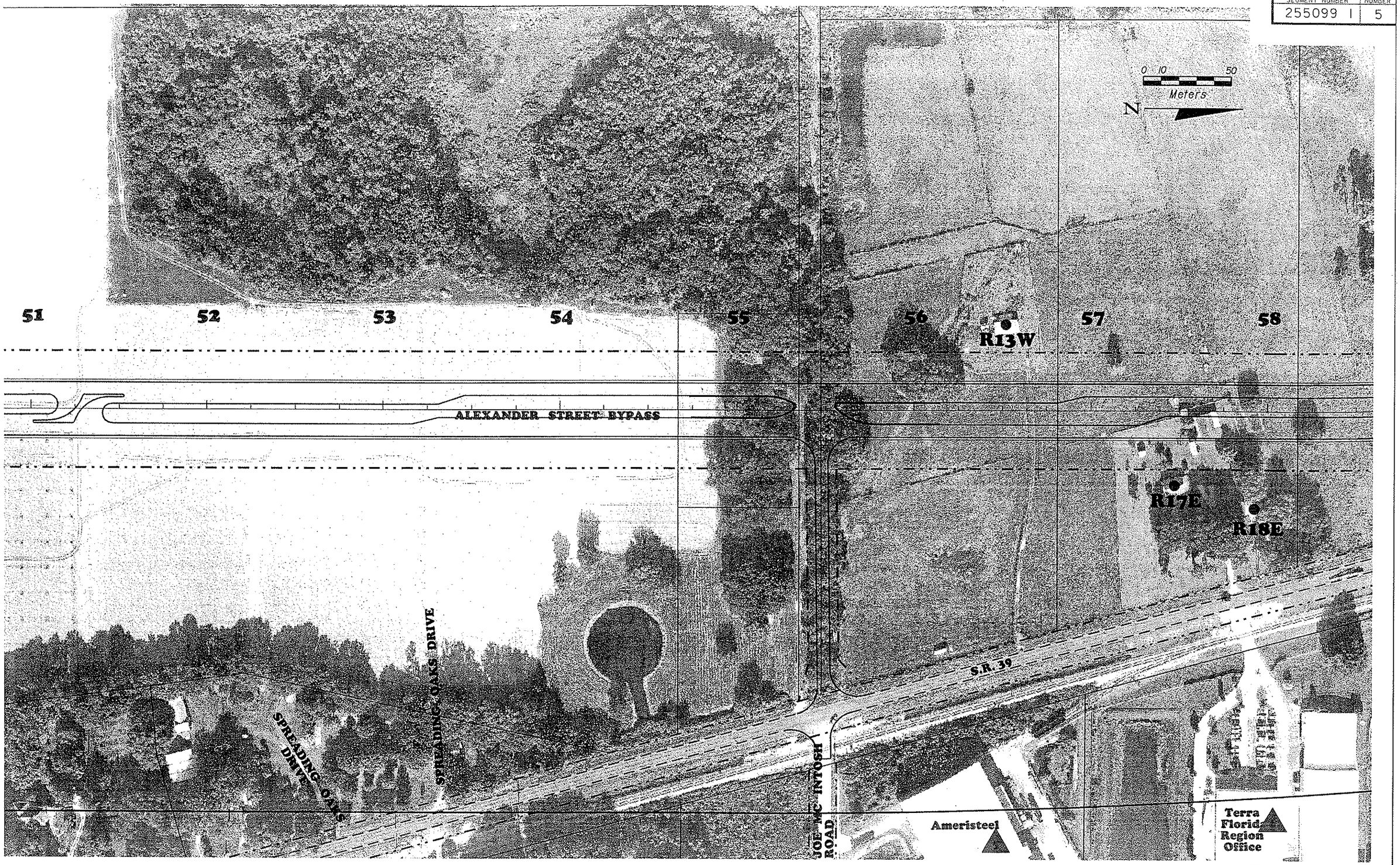
EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

DATE OF FLIGHT: AUGUST 13, 1998

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	5



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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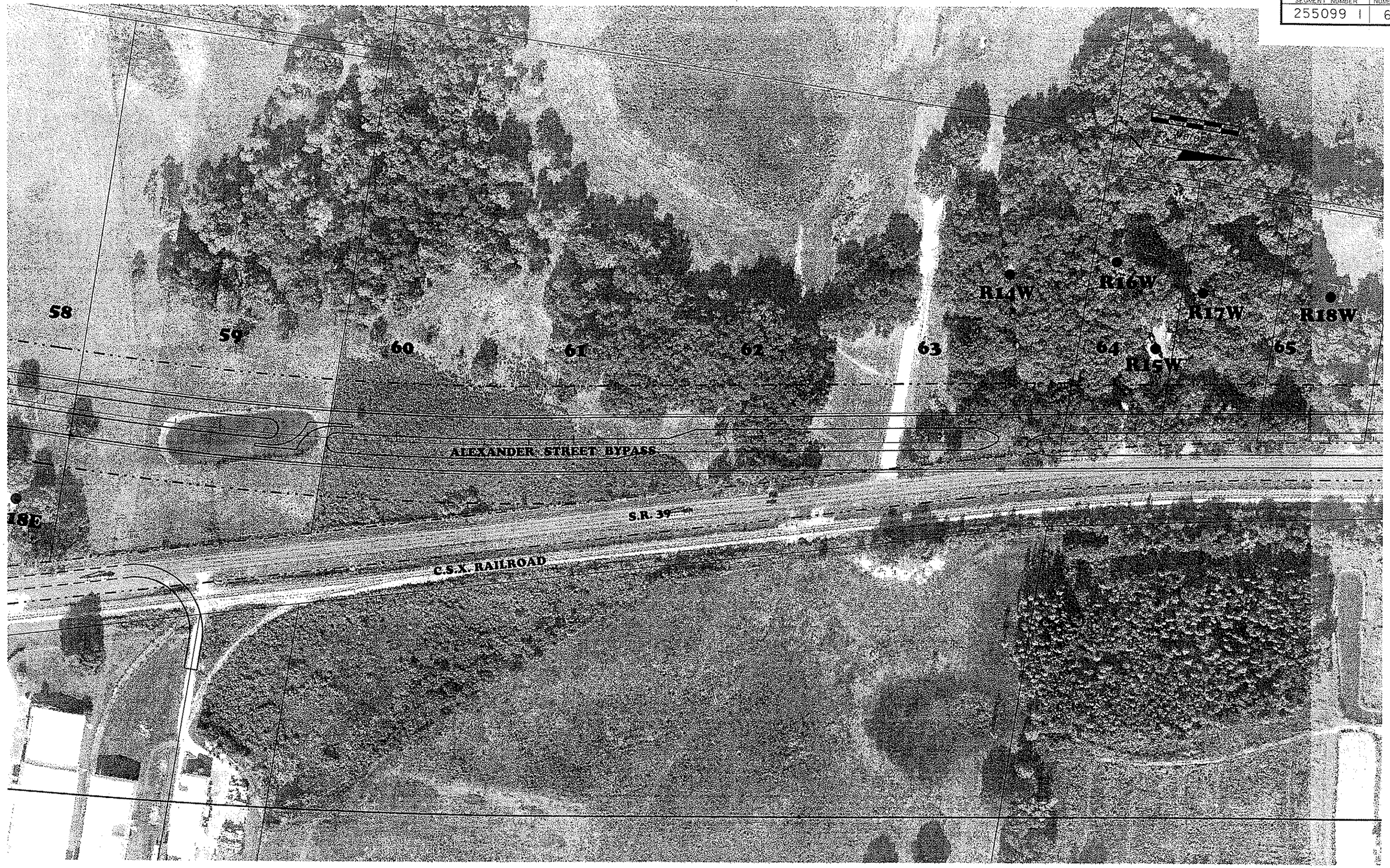

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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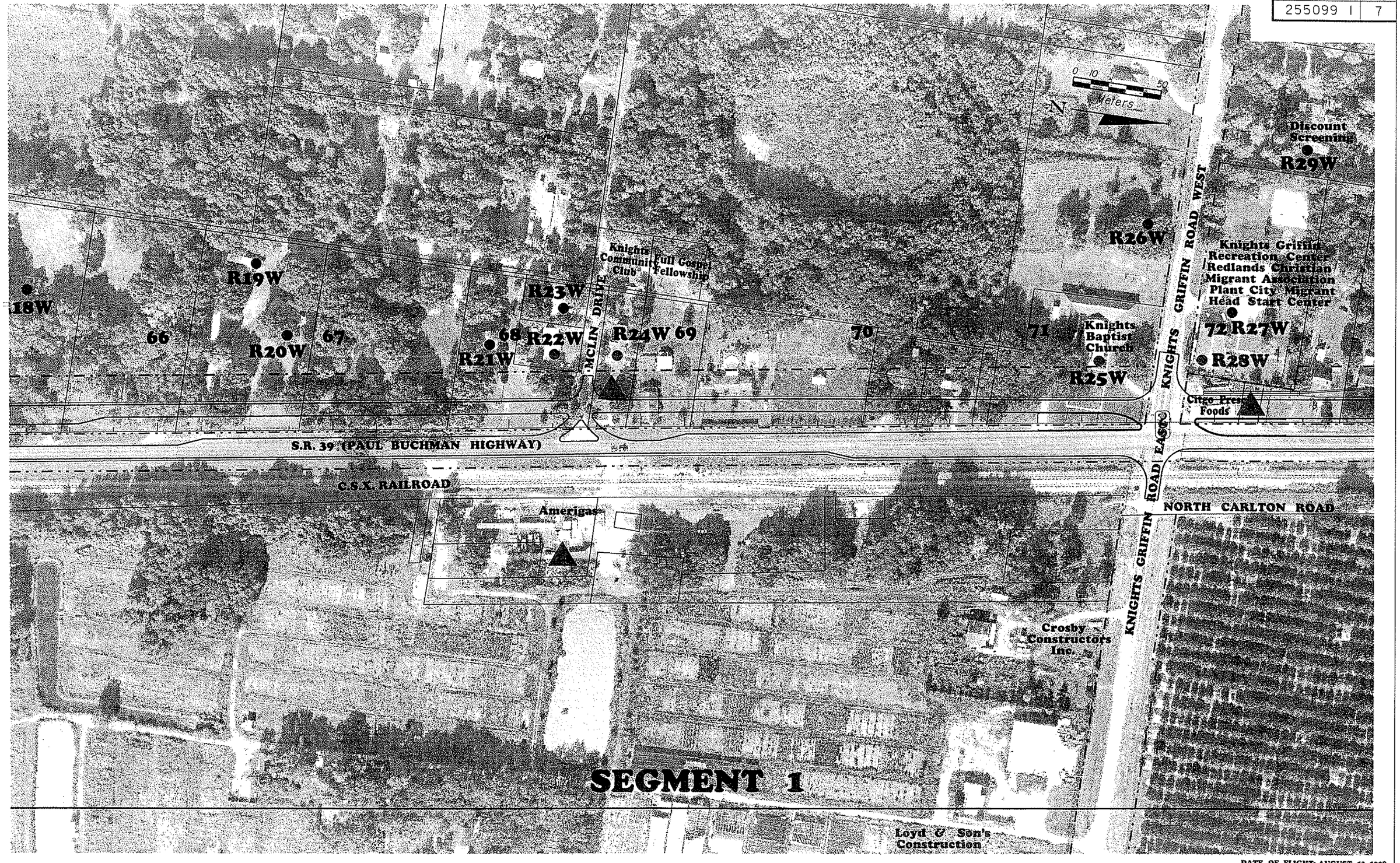

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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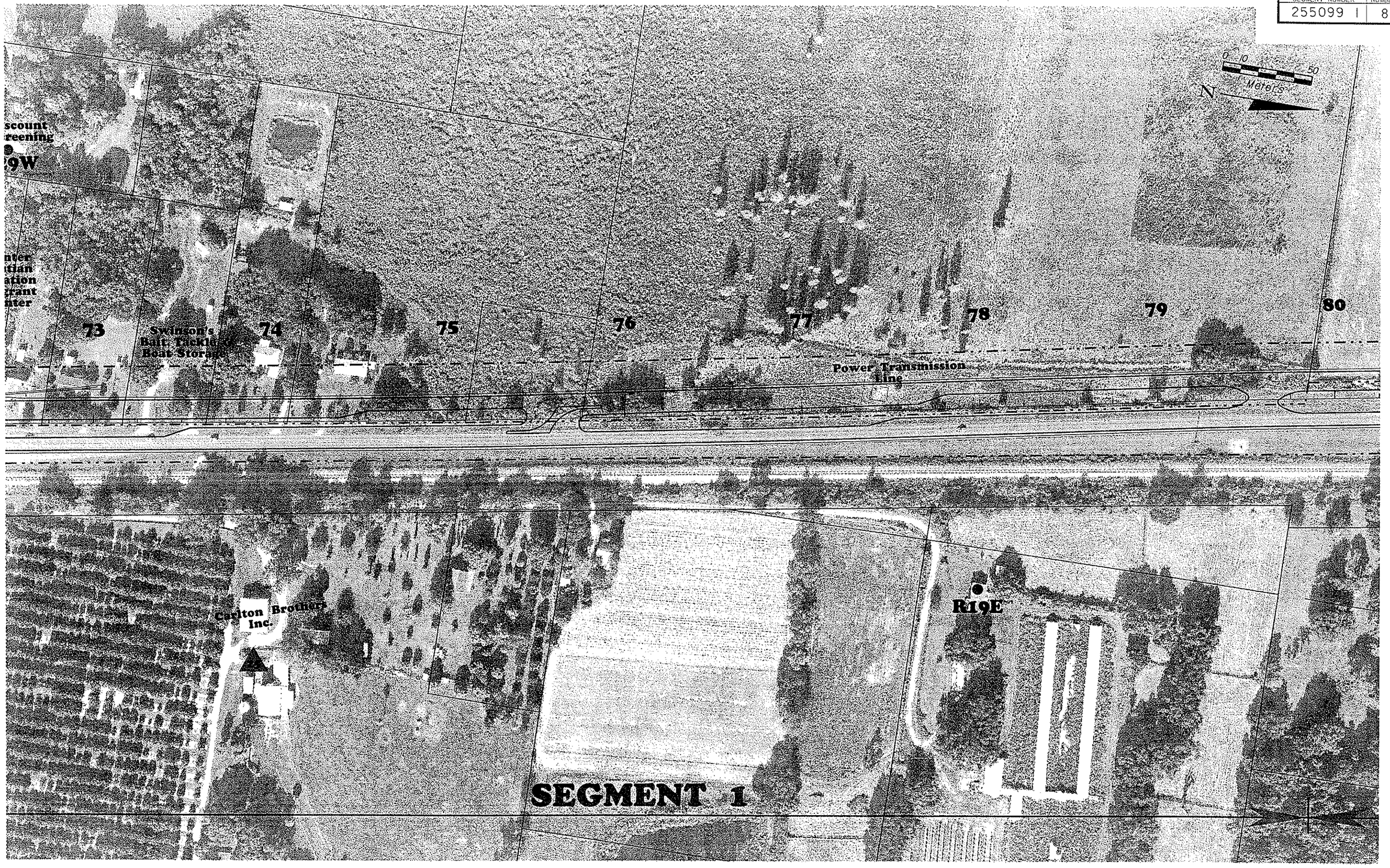

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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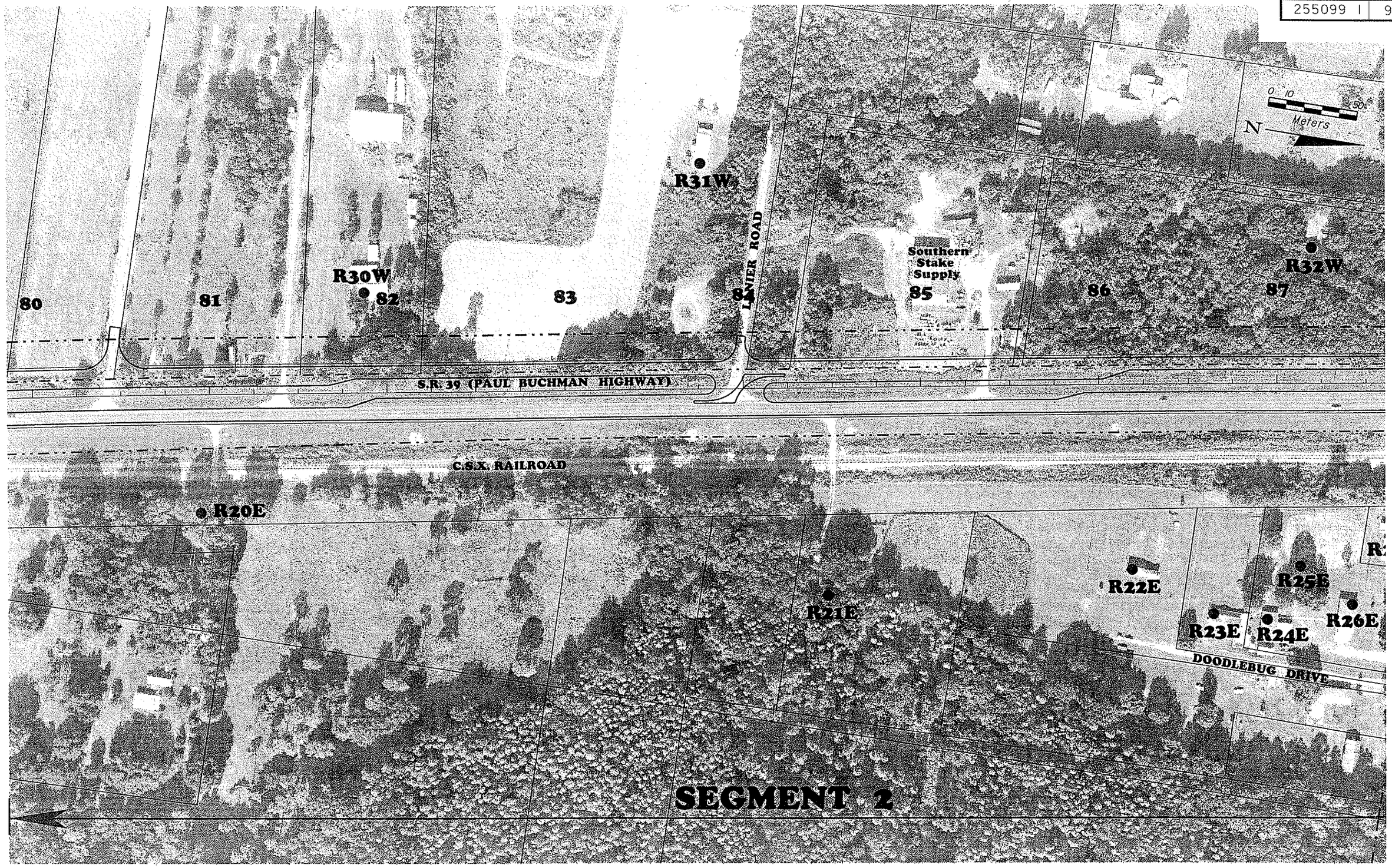

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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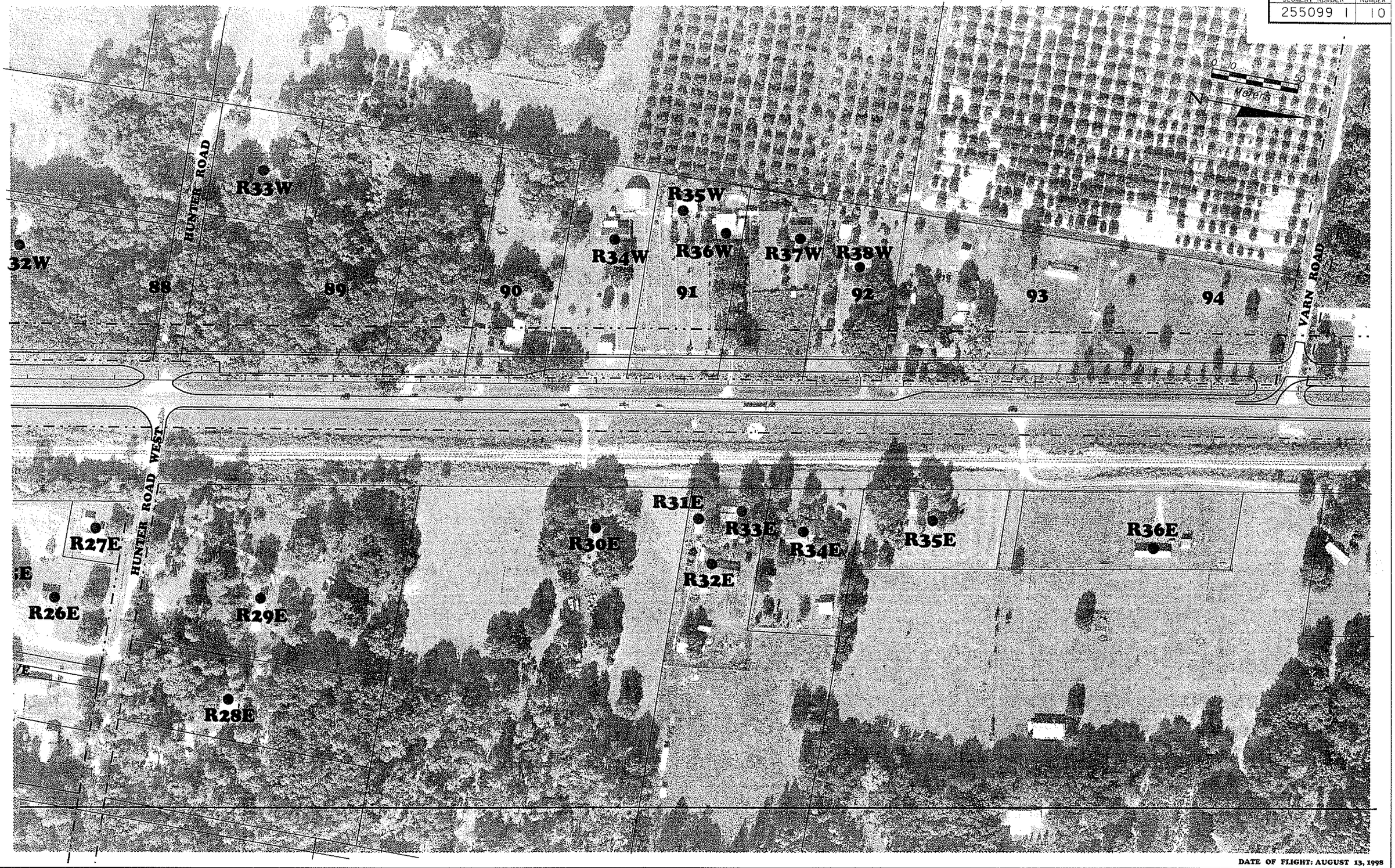

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
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PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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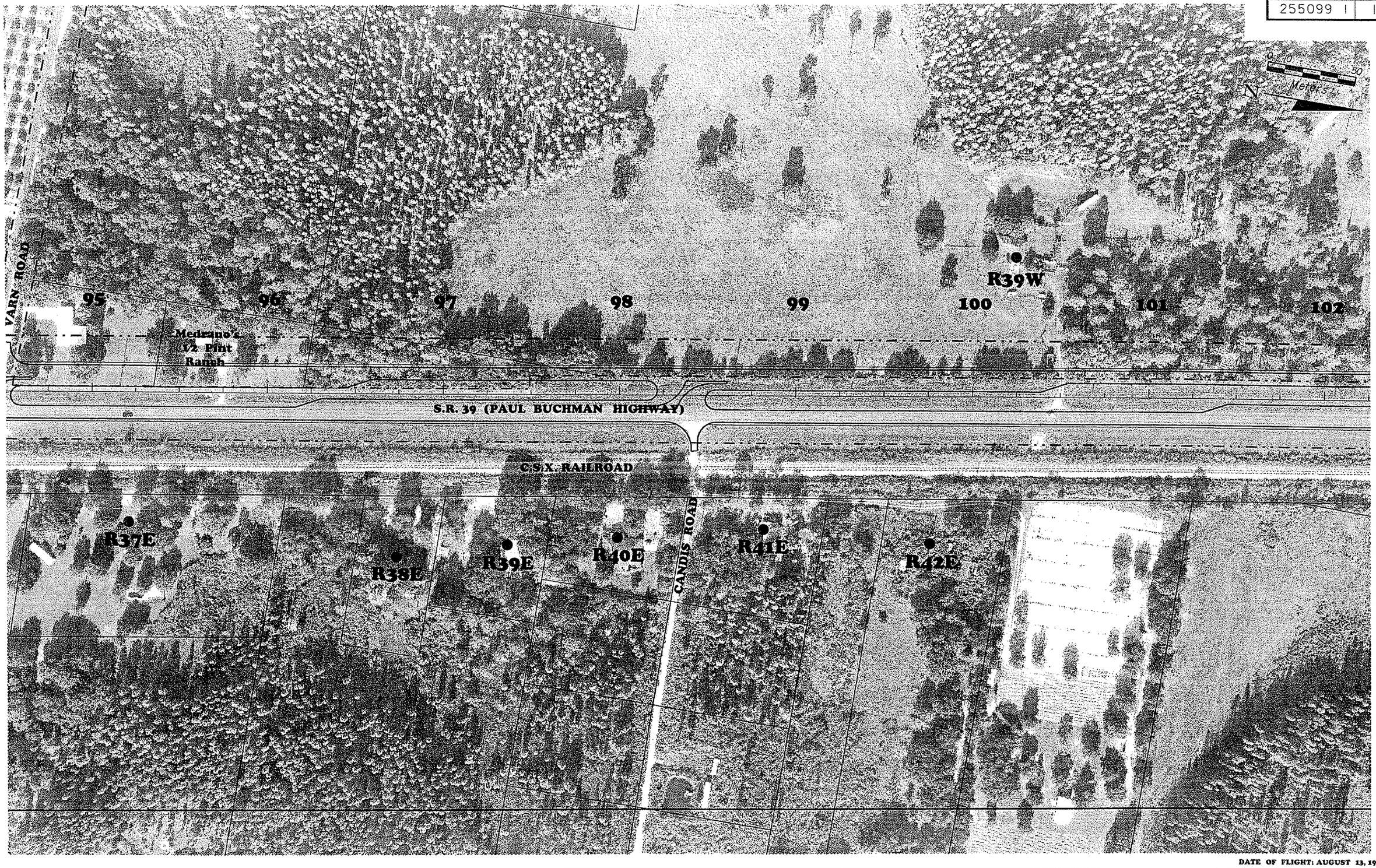

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
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RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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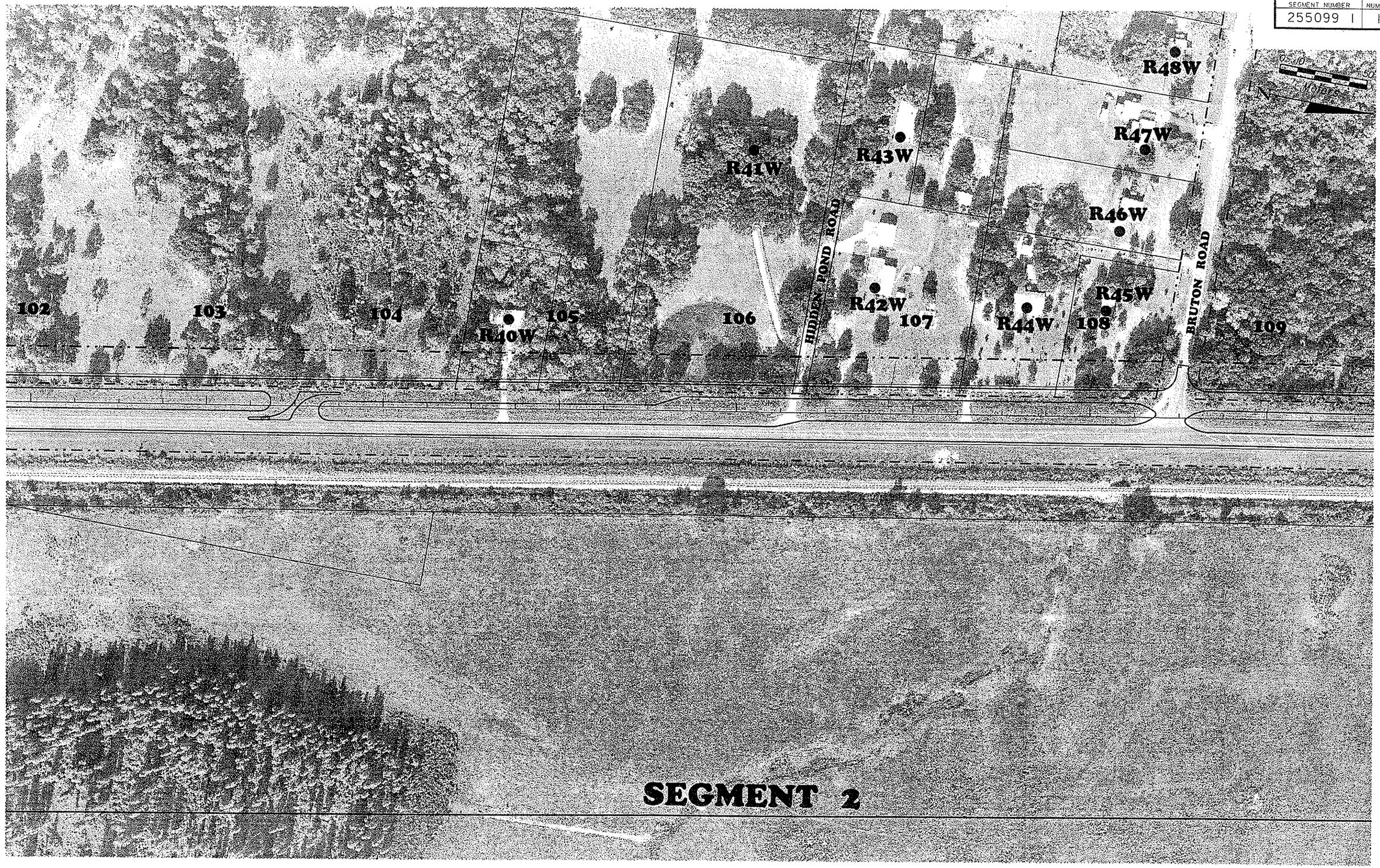

SEGMENT 2

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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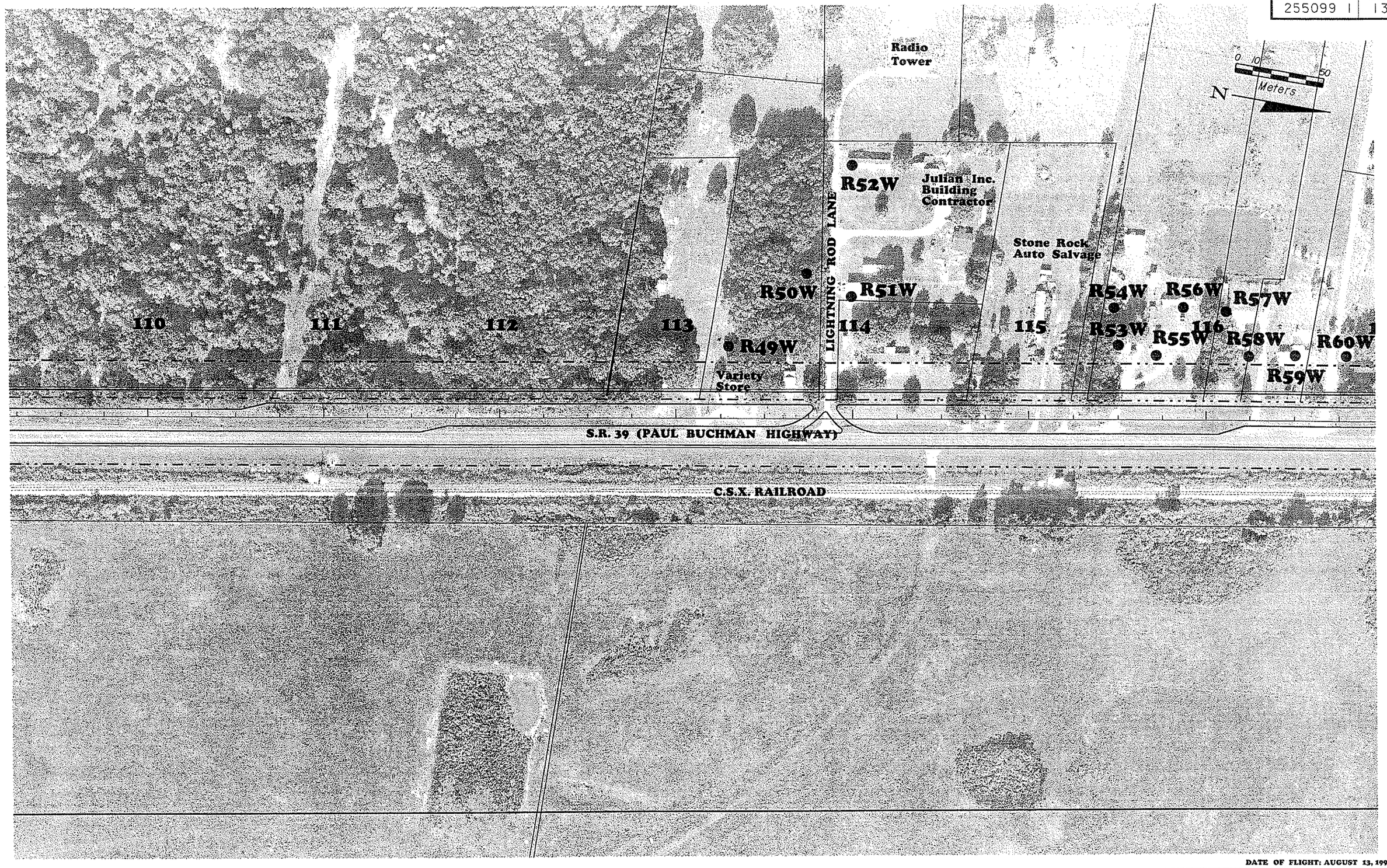

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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PROPERTY LINES
POTENTIAL CONTAMINATION SITE
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FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	14

DATE OF FLIGHT: AUGUST 13, 1999

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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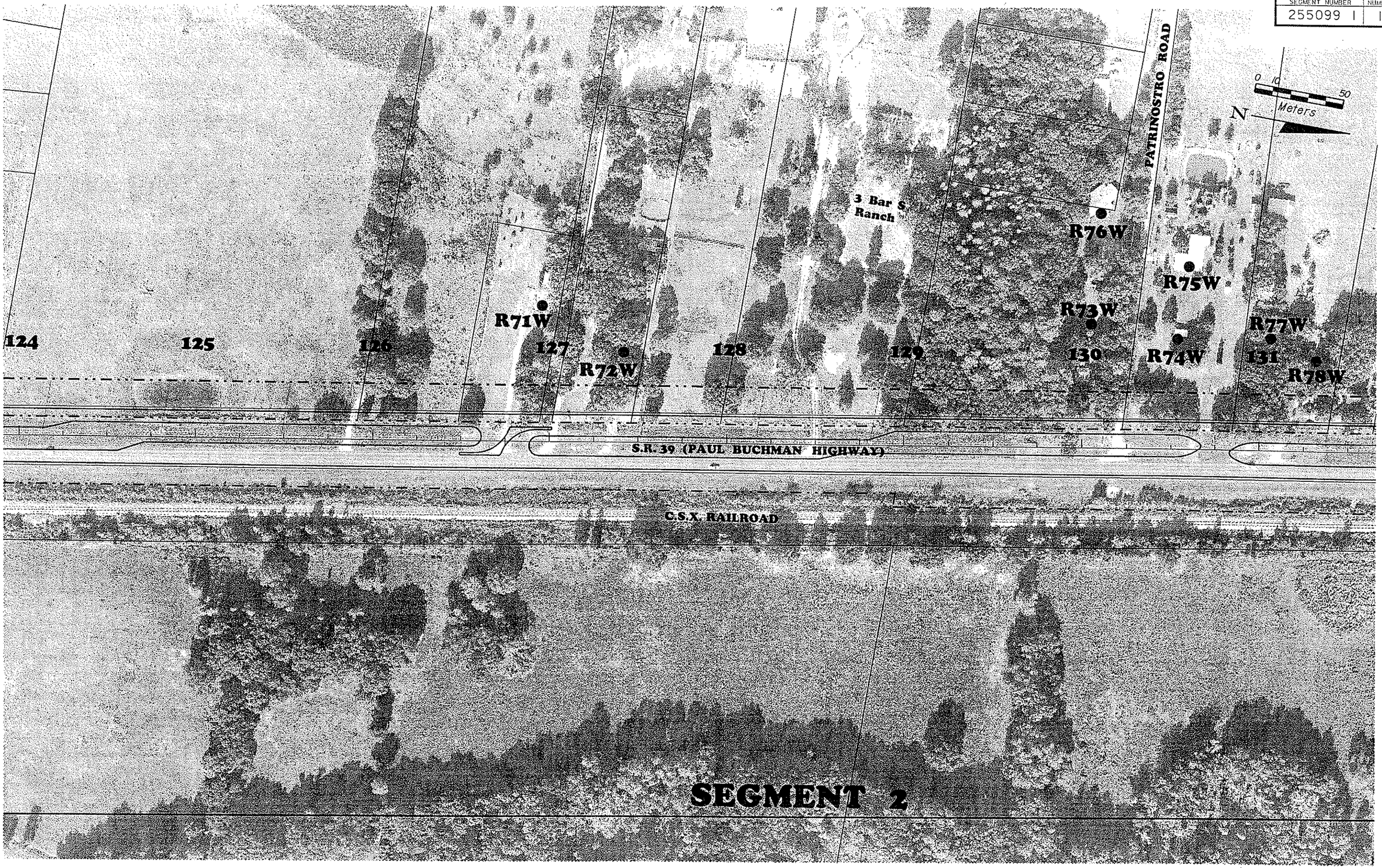

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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PROPERTY LINES
POTENTIAL CONTAMINATION SITE
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FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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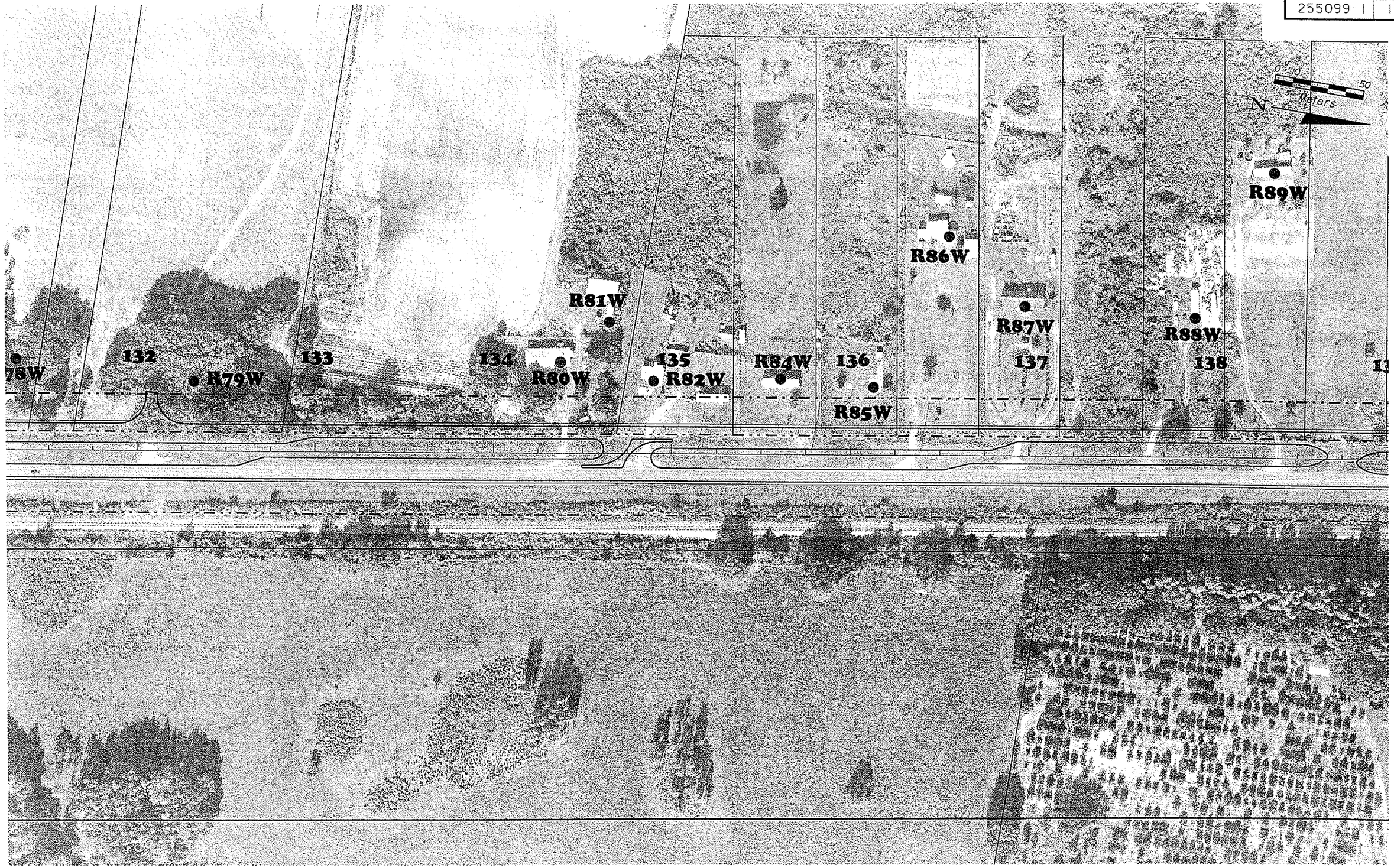

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
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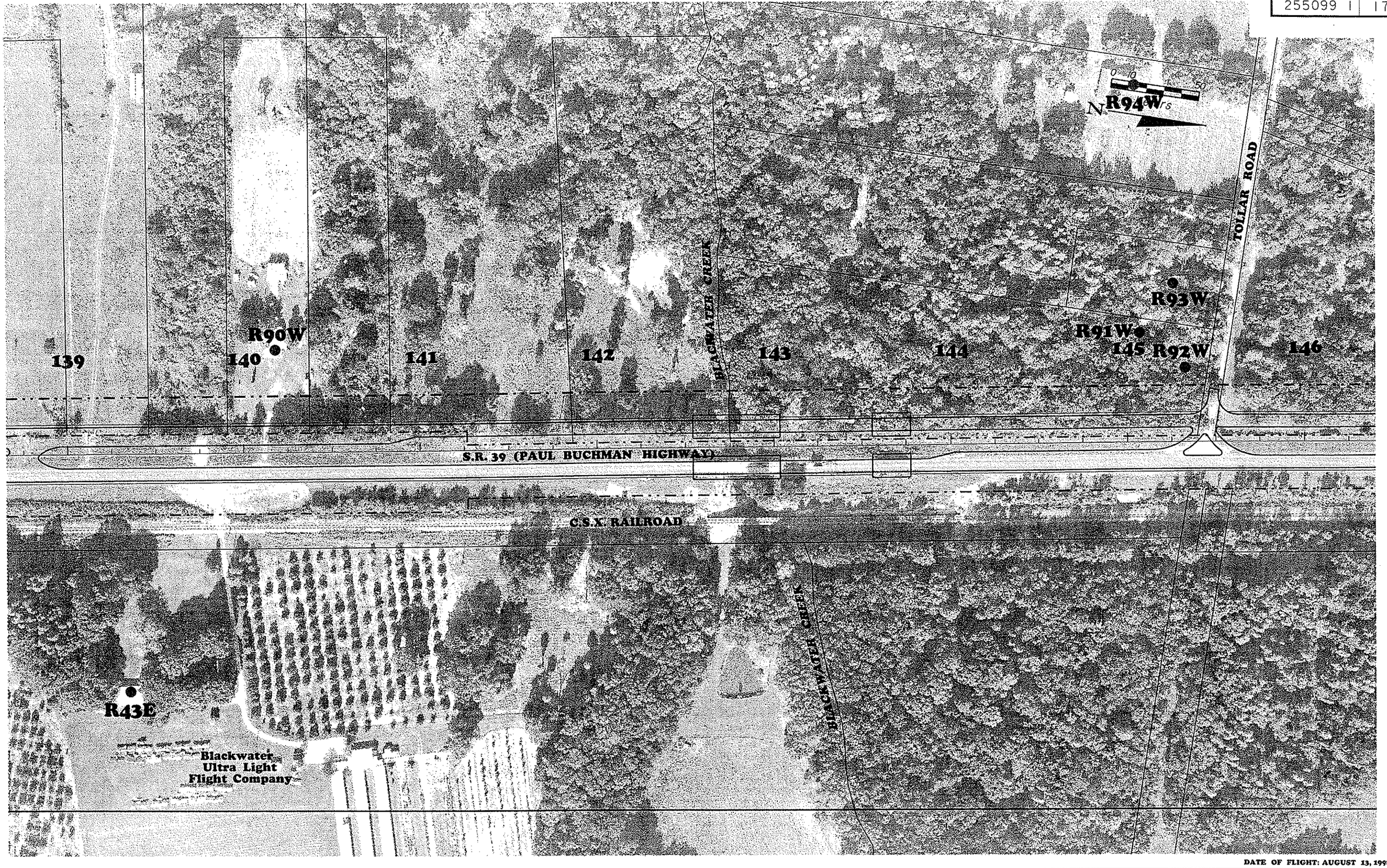
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	17



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
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FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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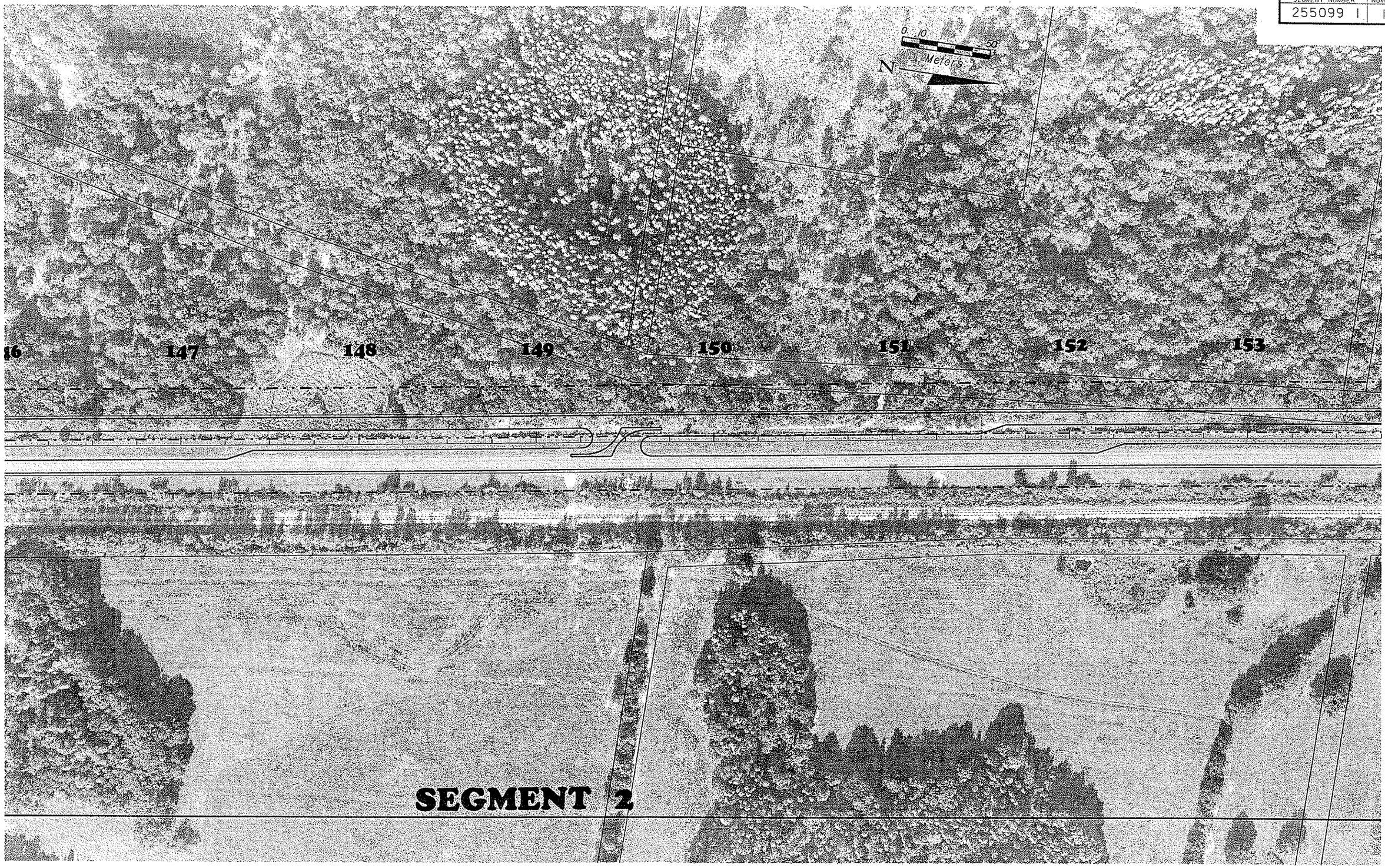

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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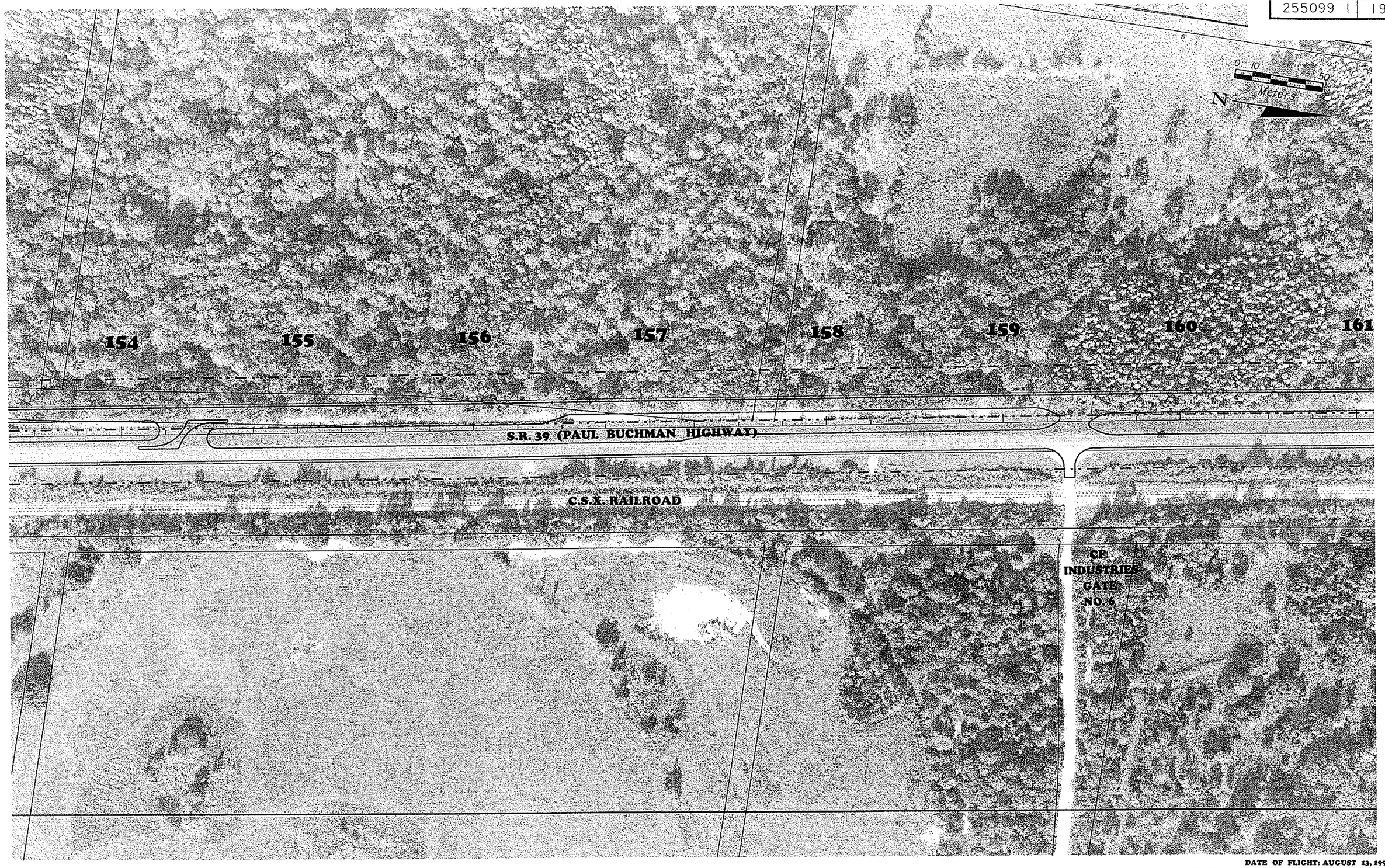

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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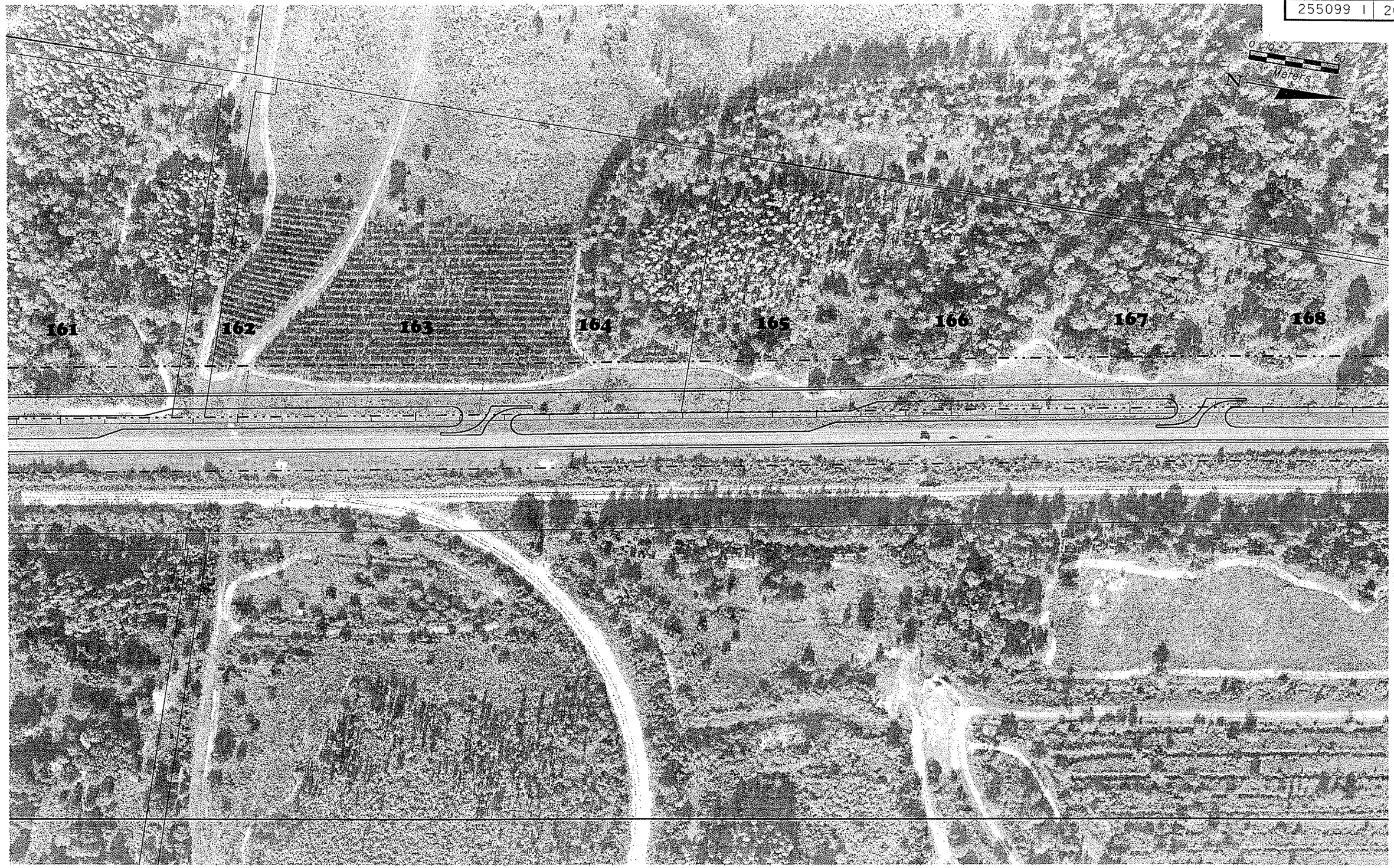

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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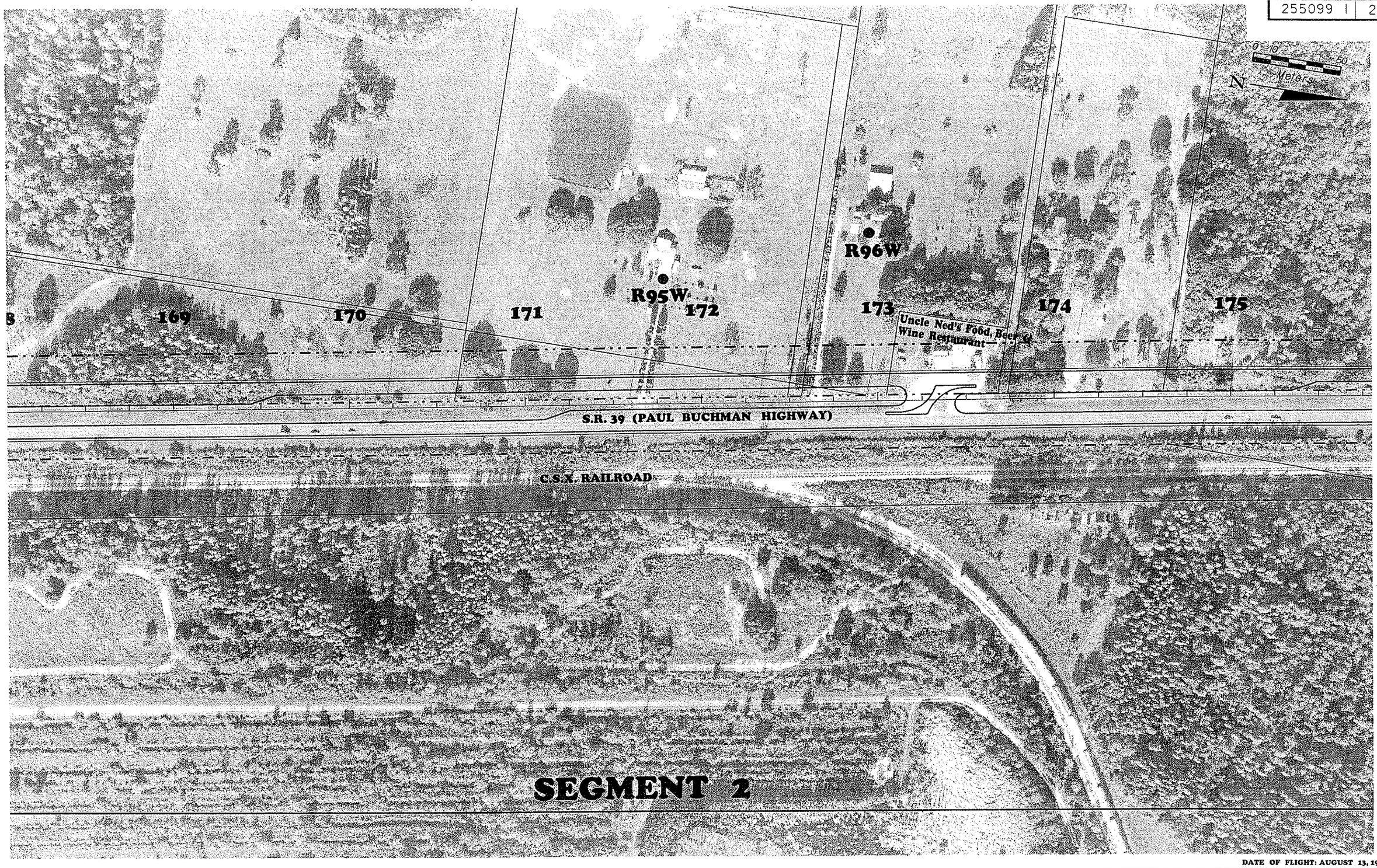

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
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FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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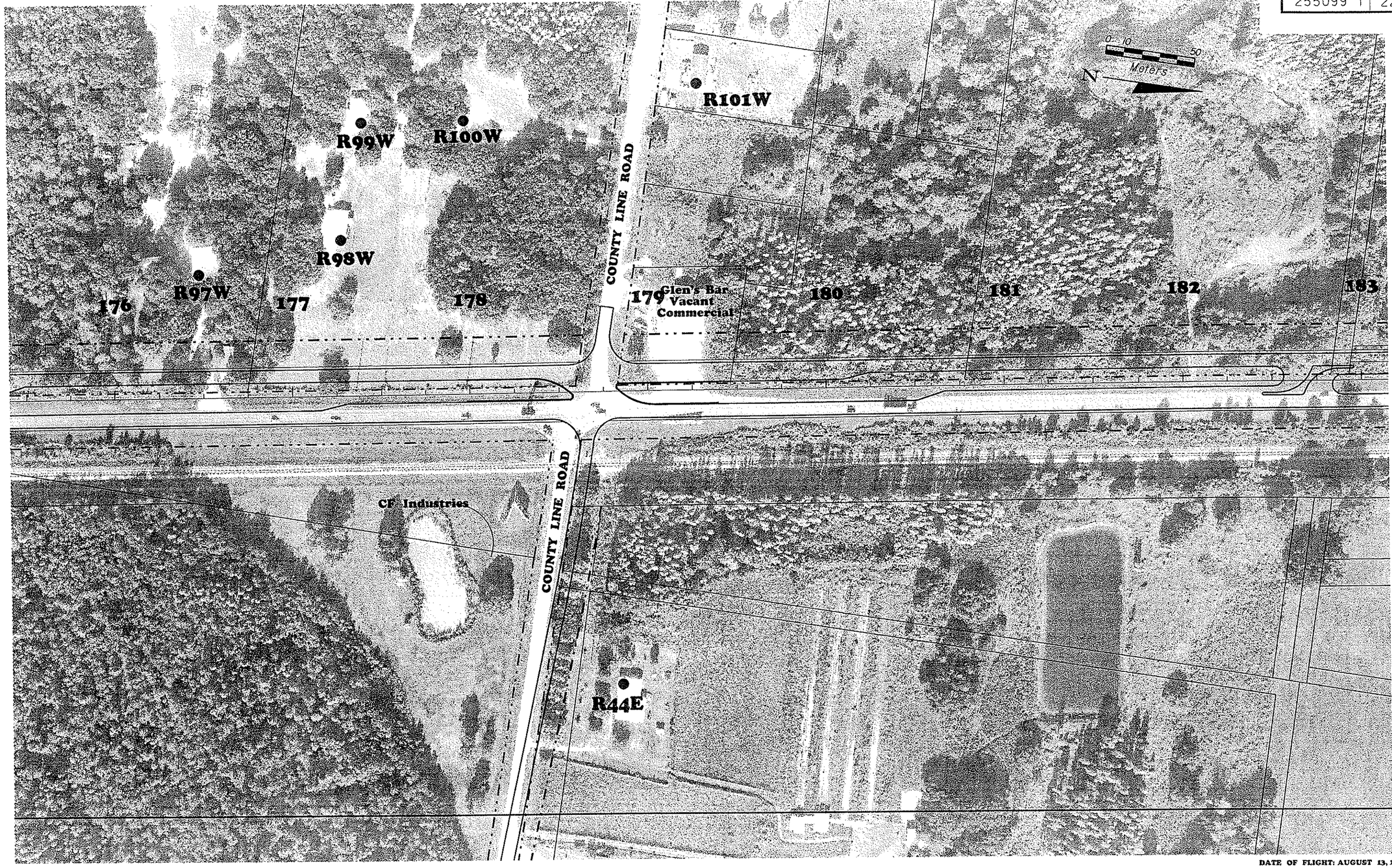


DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	23

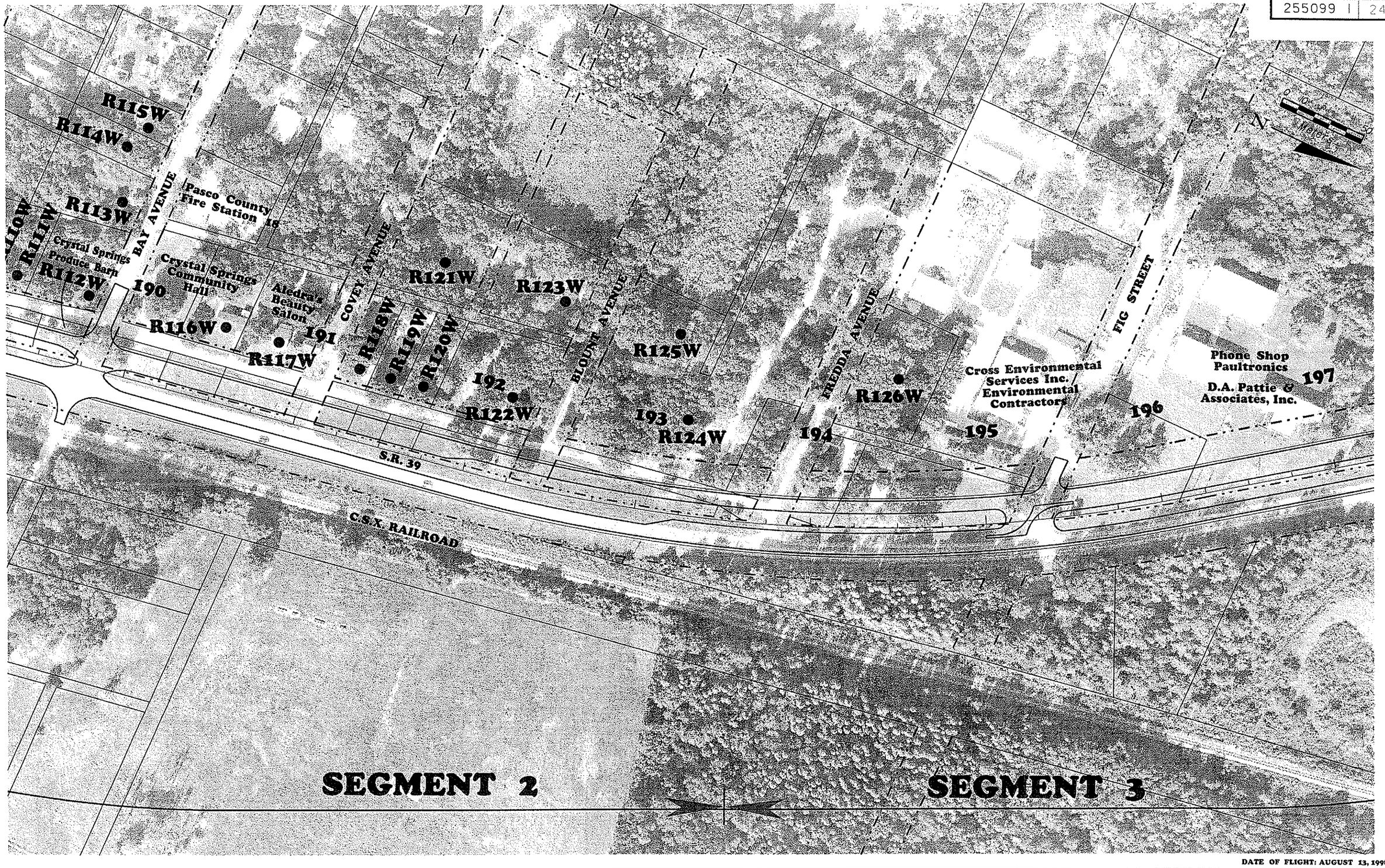
DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	24



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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PROPOSED RIGHT OF WAY
PROPERTY LINES
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WETLAND BOUNDARY
RECEIVER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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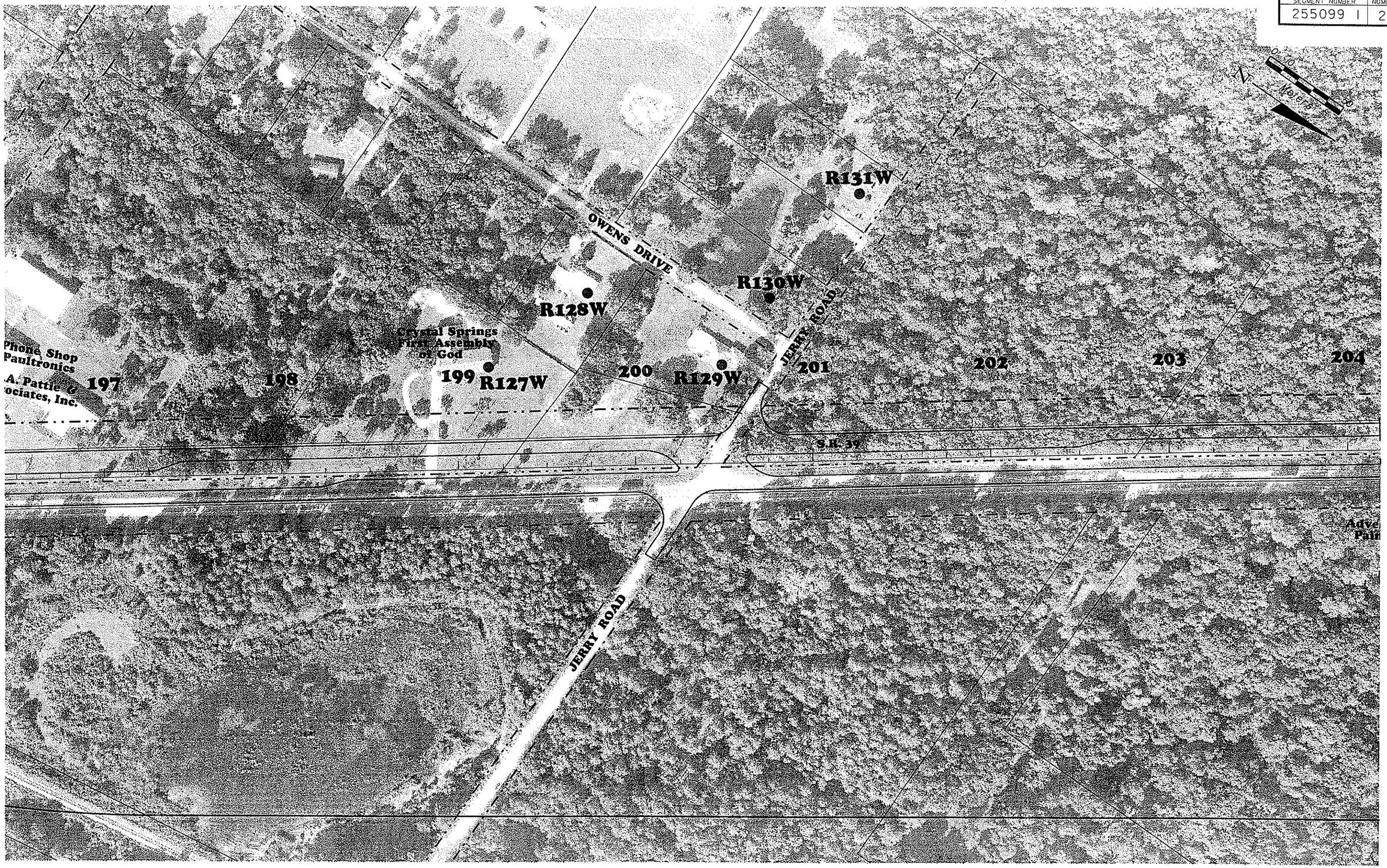

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EDGE OF PAVEMENT
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FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	26

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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PROPOSED RIGHT OF WAY
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POTENTIAL CONTAMINATION SITE
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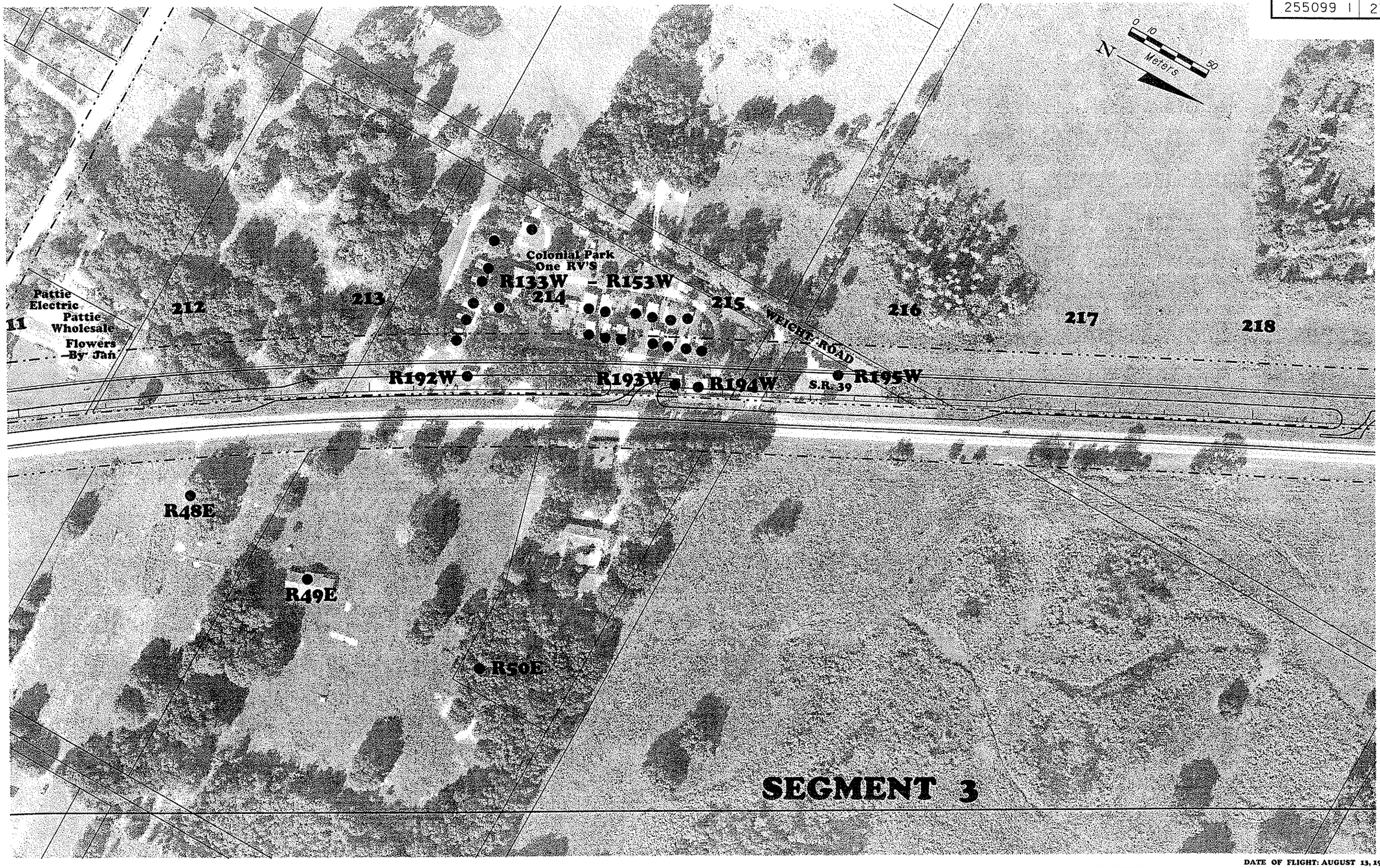
FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	27



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EDGE OF PAVEMENT
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PROPERTY LINES
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WETLAND BOUNDARY
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FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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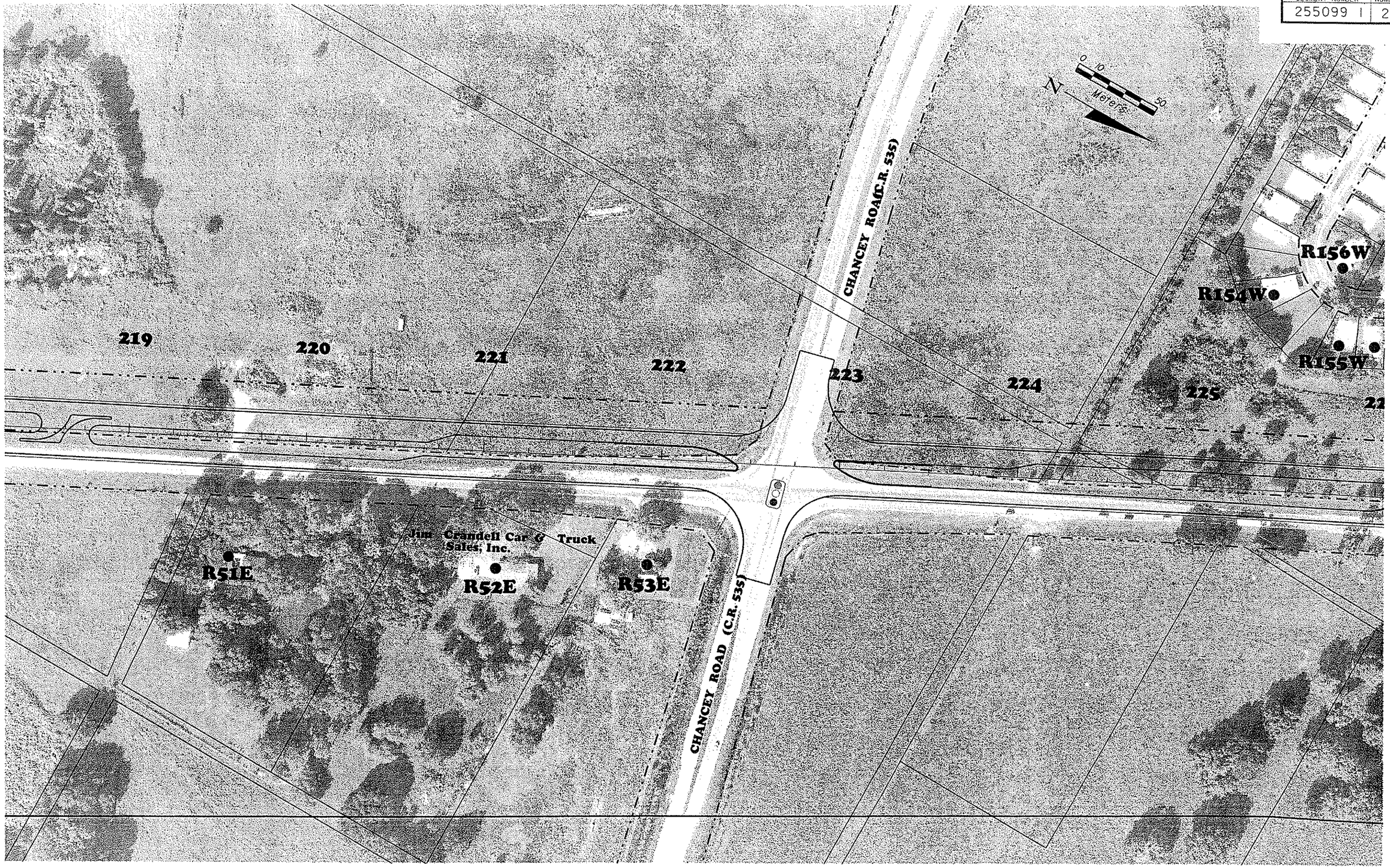

DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
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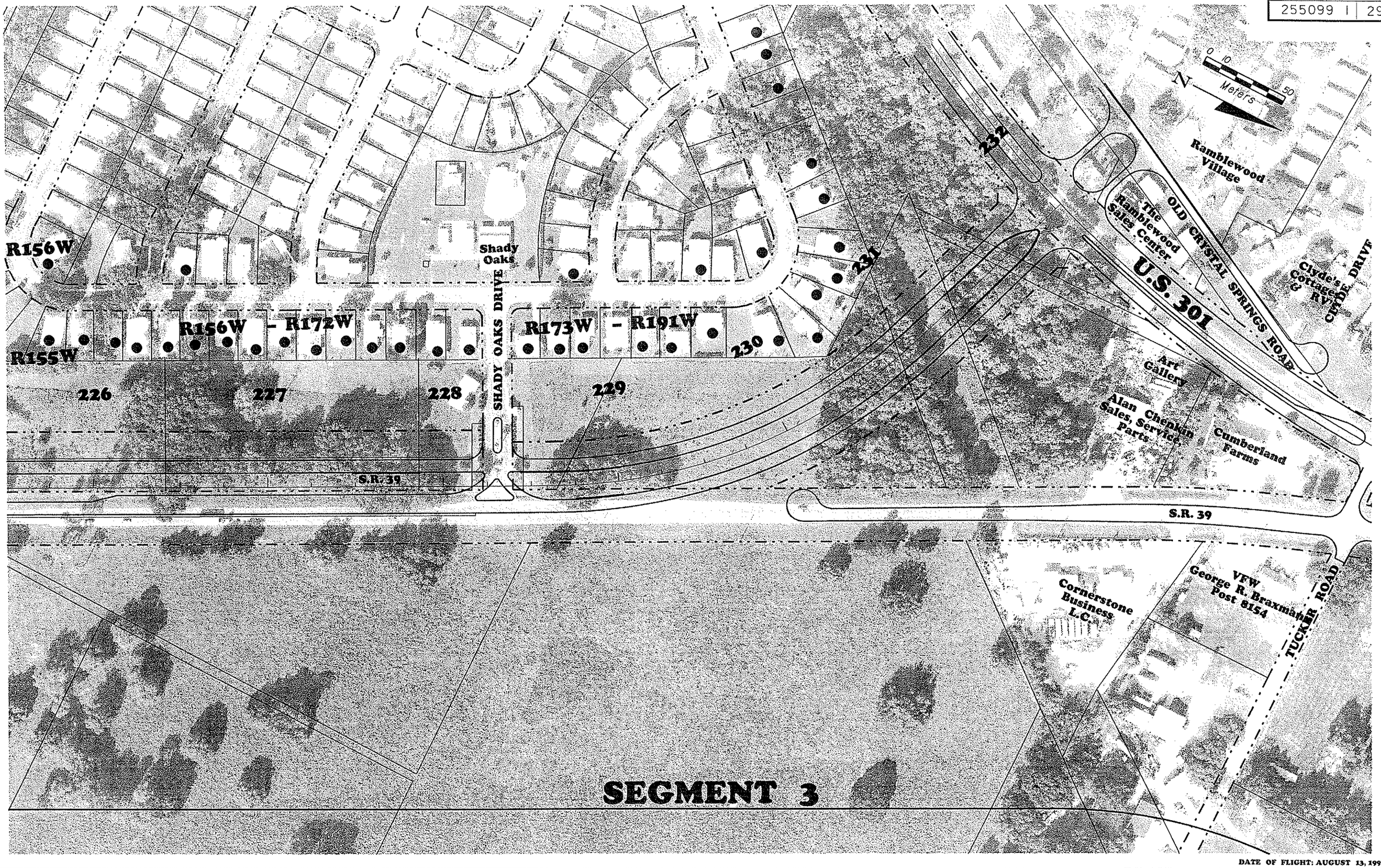

DATE OF FLIGHT: AUGUST 13, 1998

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S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	30

DIXON STREET

Zephyr Senior Mobile Park

blewood
llage

CLYDE DRIVE

Clyde's Cottages & RV

CRYSTAL SPRINGS ROAD

S. 301

TUCKER ROAD

Sullivan Auto Sales

PALM GROVE DRIVE

United 500

Plymale Appliance Inc.

Zephyr Radiator

COREY STREET

Vagabond Village RV Park

FIR AVENUE

OJ's Seafood

Barrentine's Fruit Stand

Repo Mart

VINSON AVENUE

0 10 50
Meters

N

U.S. 301 (GALL BOULEVARD)

Art Gallery

Alan Chenkin Sales, Service, Parts

Cumberland Farms

Rick's Fresh Stop Fruit Stand

Twilite Motel

Geno's Auto Repair
Mid Florida Golf Cars

Sure Thing Auto Repair

Custom Auto Service

WP Johnston Trust

Statewide Cabinets

Betty's Service

Produce

FIR AVENUE

Donnelly Auto Sales

1st RV and Refrigeration

D G A Antiques

CALVIN AVENUE

Citgo Sav-E-Ton

S.R. 39

TUCKER ROAD

Vacant Commercial

VFW
George R. Braxmaier
Post 8154

PALM GROVE DRIVE

Cornerstone Business L.C.

DATE OF FLIGHT: AUGUST 13, 1998

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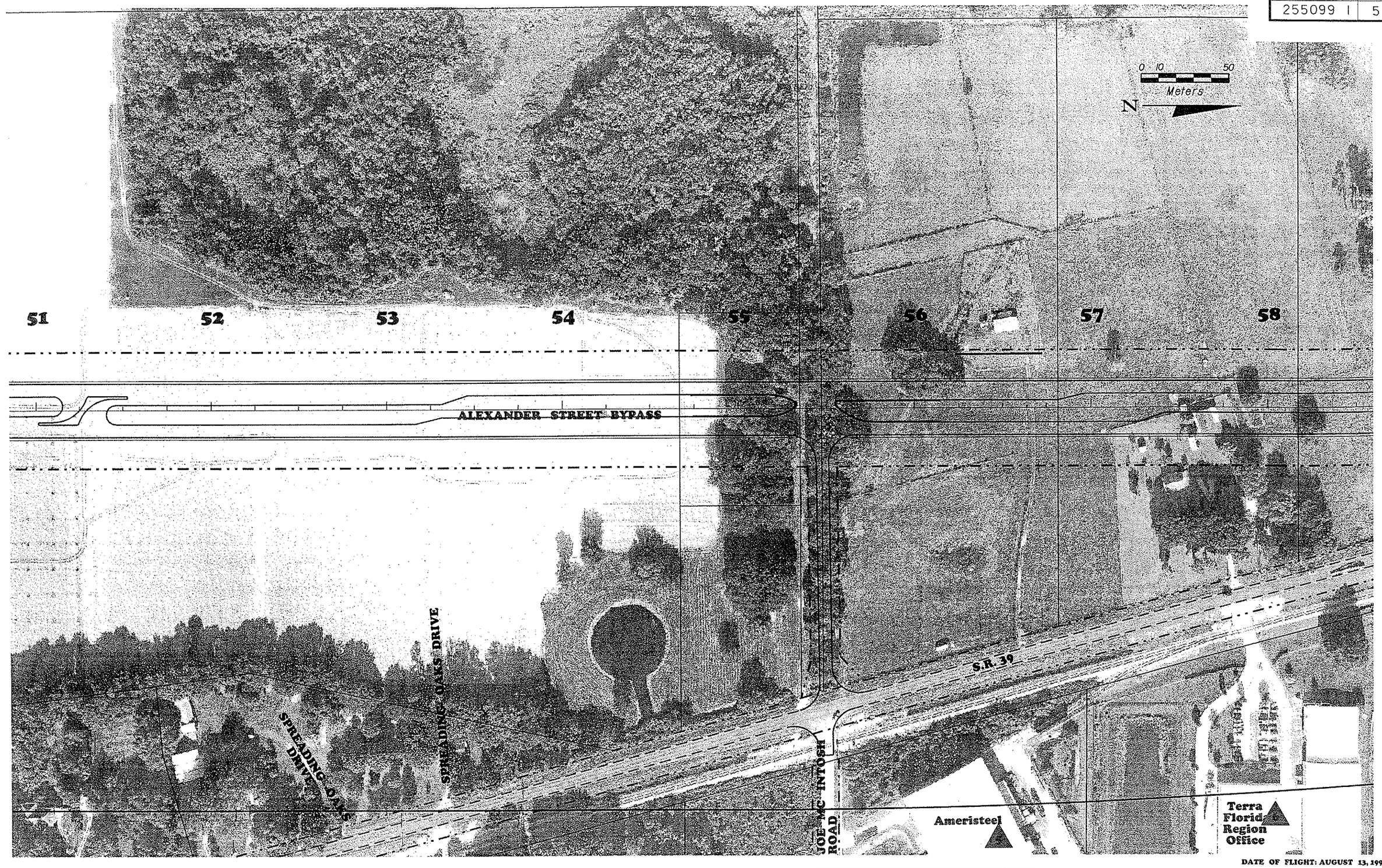
S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

APPENDIX F

Modeled Noise Barrier Locations

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	5



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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POTENTIAL CONTAMINATION SITE
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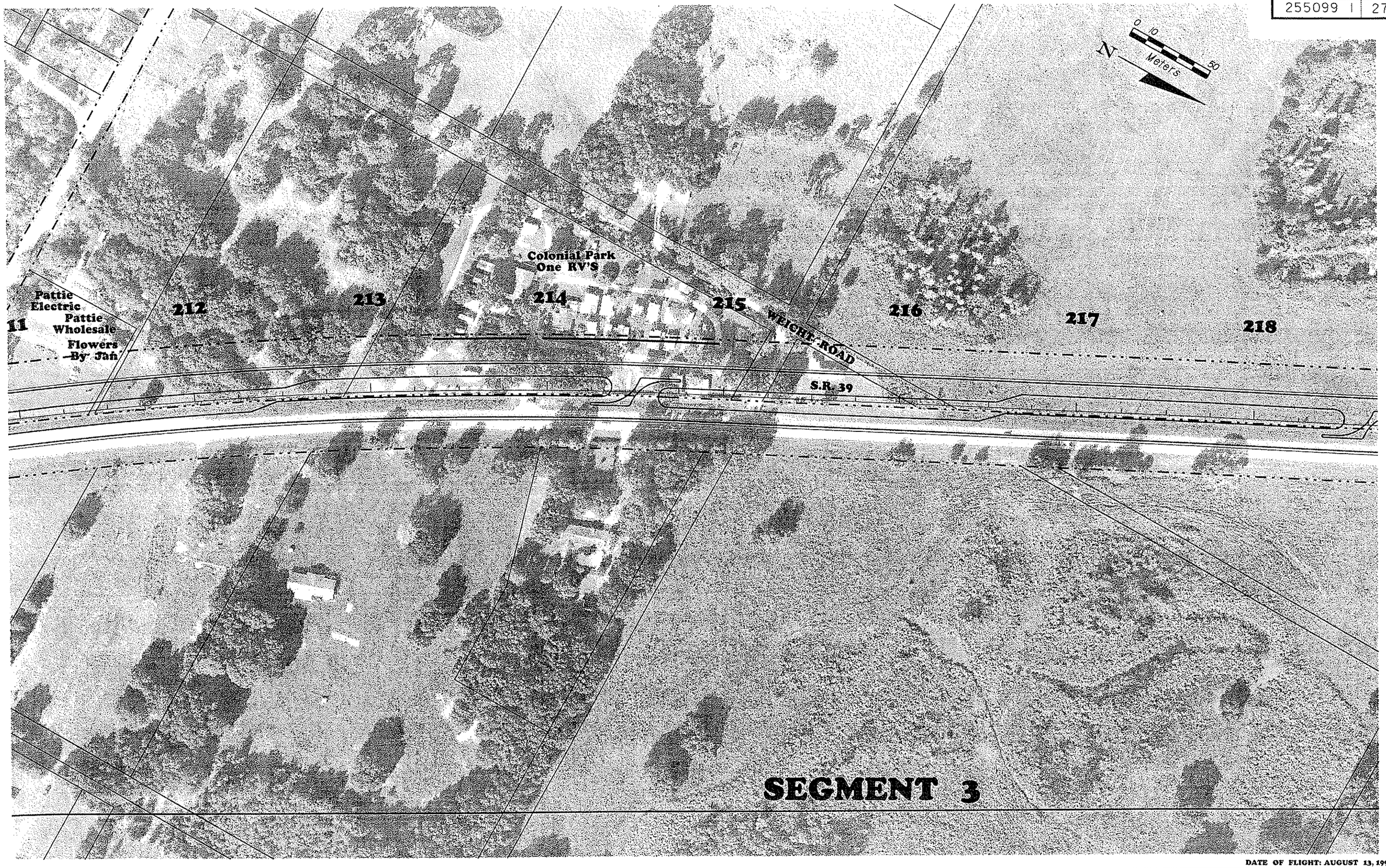
RECEIVER LOCATION
MODELED NOISE BARRIER LOCATION

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	27



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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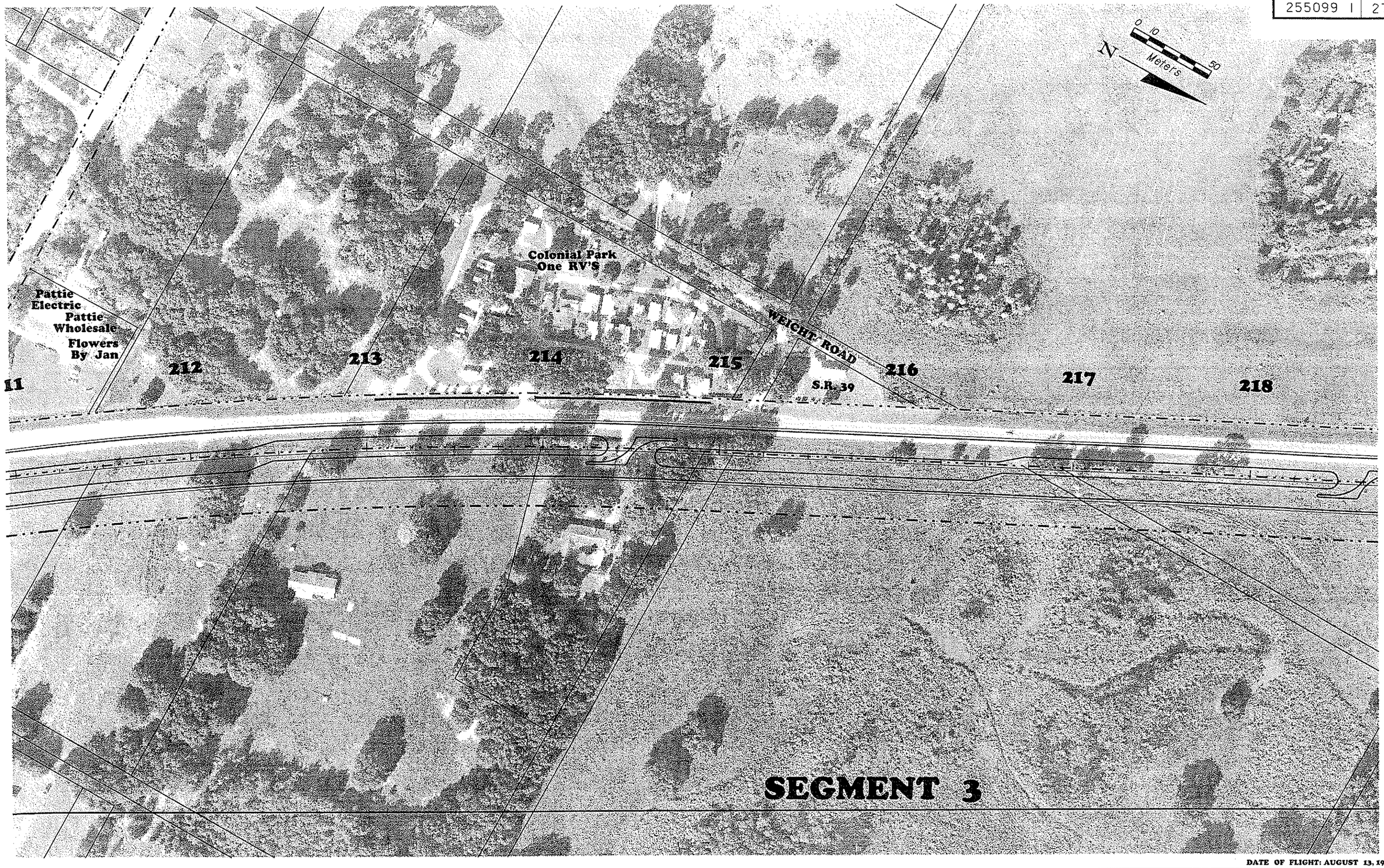
WETLAND BOUNDARY
RECEIVER LOCATION
MODELED NOISE BARRIER LOCATION

ALTERNATIVE 3B

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	27



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
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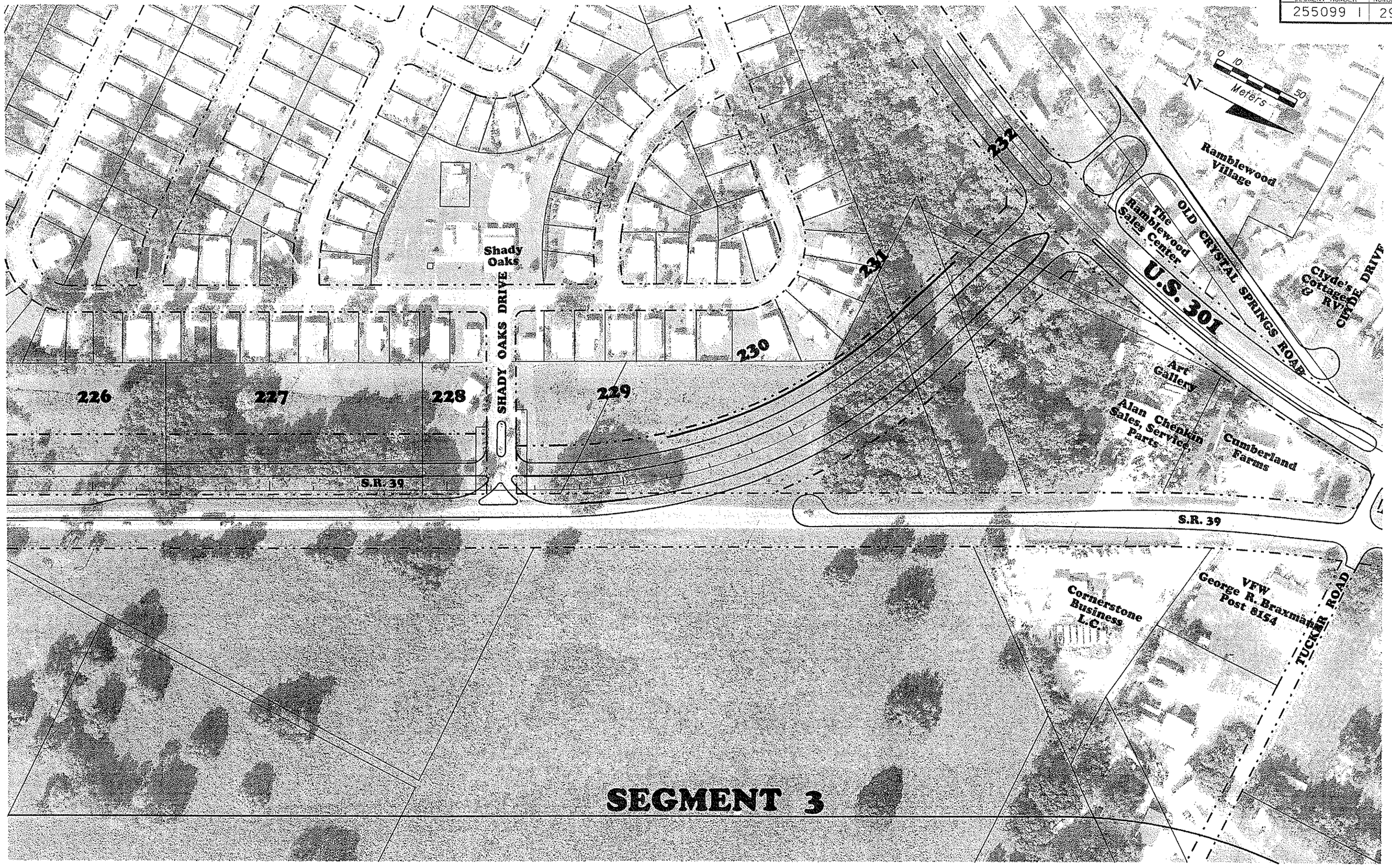
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION
MODELED NOISE BARRIER LOCATION

ALTERNATIVE 3D

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 39 FROM I-4 TO U.S. 301
PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
HILLSBOROUGH AND PASCO COUNTIES, FLORIDA

WORK PROGRAM ITEM SEGMENT NUMBER	SHEET NUMBER
255099 1	29



DATE OF FLIGHT: AUGUST 13, 1998

EDGE OF PAVEMENT
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPERTY LINES
POTENTIAL CONTAMINATION SITE
WETLAND BOUNDARY
RECEIVER LOCATION
MODELED NOISE BARRIER LOCATION

ALTERNATIVE 3B

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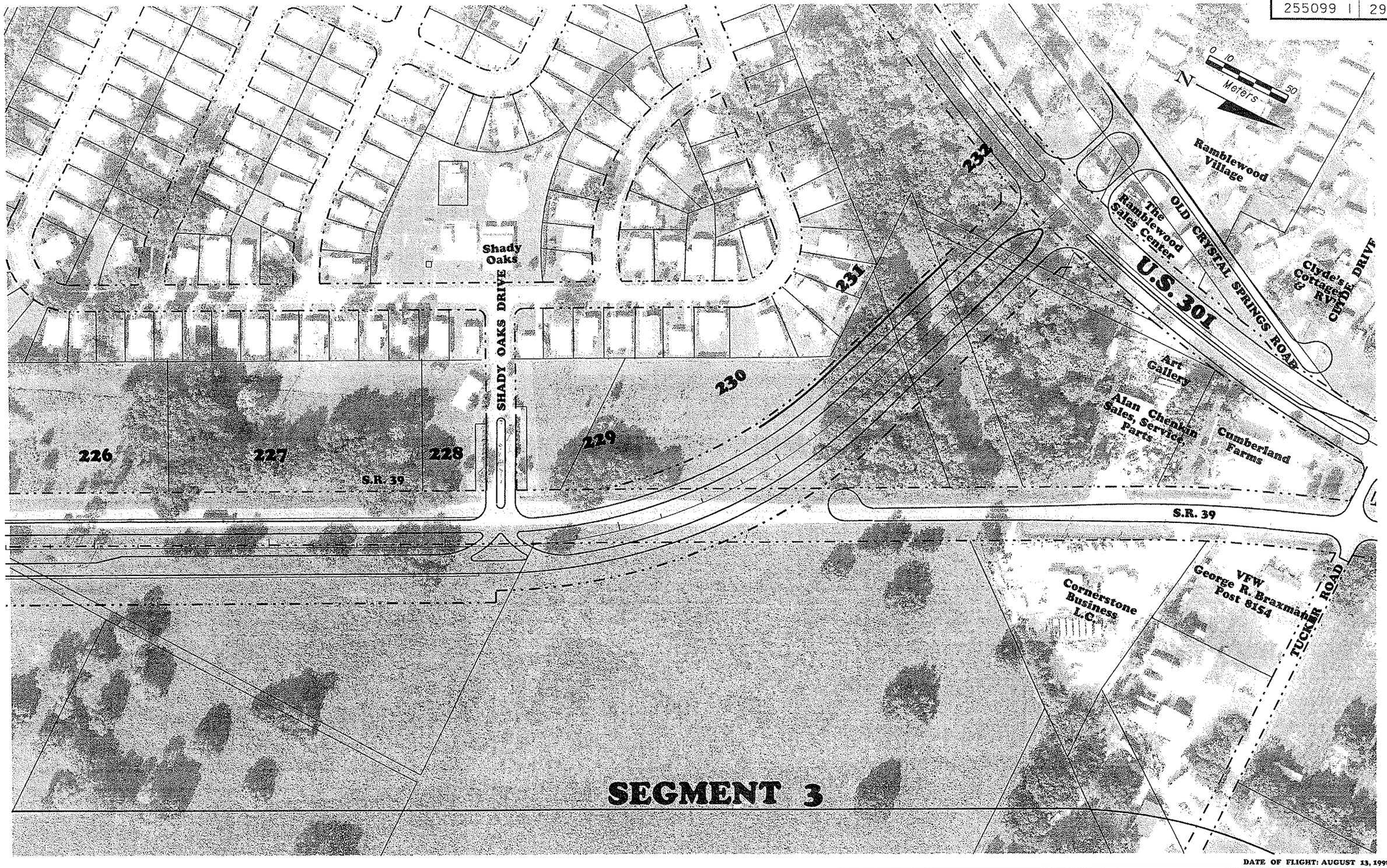

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