NOISE STUDY REPORT

for

Neptune Road PD&E Study

From Partin Settlement Road to US 192

Osceola County, Florida

FPID: 445415-1

Prepared for:

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1.0 INTRODUCTION

This project involves a 3.9-mile segment of Neptune Road extending from Partin Settlement Road to US 192 in Osceola County. The section east of the South Florida Water Management District C-31 Canal (locally named St. Cloud Canal) (approximately 1.1 miles in length) is within the City of St. Cloud. From Partin Settlement Road to Old Canoe Creek Road, the proposed project improves the existing 2-lane roadway to a 4-lane, divided roadway with a curbed median, with premium bicycle and pedestrian facilities (i.e., bike lanes, multiuse path(s), and/or sidewalks). From Old Canoe Creek Road to US 192, the project widens the existing 2-lane roadway to 4-lanes with sidewalks. Bridge structures are to be replaced and stormwater management facilities will be evaluated. **Figure 1** illustrates the project location and **Figure 2** illustrates the project limits.

Figure 1 – Project Location

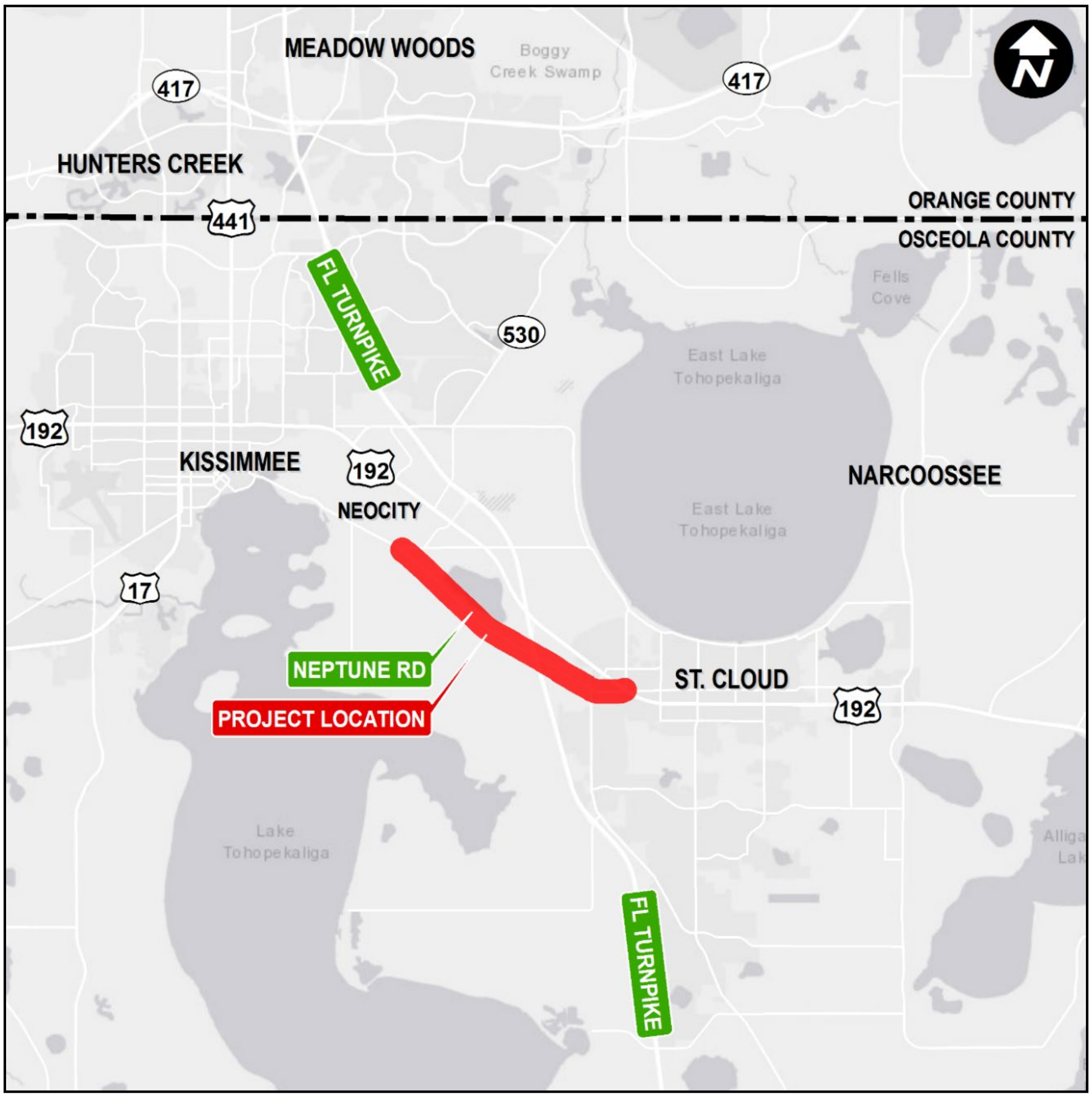


Figure 2 – Project Limits

1.1 PURPOSE AND NEED

1.1.1 Purpose

The purpose of the project is to address capacity and safety issues along the 3.9-mile segment of Neptune Road.

1.1.2 Need

The need for the project is based on capacity and safety.

1.1.3 Capacity

The 2017 annual average daily traffic (AADT) volume on Neptune Road, between Partin Settlement and Old Canoe Creek Road was 18,100 resulting in a volume to capacity (V/C) ratio of 1.02, which indicates level of service (LOS) F operating conditions. The 2040 traffic volumes on Neptune Road between Partin Settlement Road to US 192 are projected to range between 27,000 and 55,000 AADT, resulting in LOS F for the entire corridor with V/C ratios ranging from 1.94 to 2.15.

1.1.4 Safety

A total of 195 crashes were reported for the five-year period (January 1st, 2013 through December 31st, 2017), including three fatal crashes and 109 injury crashes, which resulted in three fatalities and 187 injuries. The number of reported crashes per year nearly doubled over the five-year period:

- 28 crashes in 2013
- 22 crashes in 2014
- 33 crashes in 2015
- 57 crashes in 2016
- 55 crashes in 2017

A crash type analysis was conducted and the predominant crash type along the corridor was the rear-end crash (47.7 percent). Approximately 49 percent of the rear-end collisions occurred at-fault in the westbound direction and 30 percent occurred at-fault in the eastbound direction. Rear-end crashes occurred along the entire length of the corridor but were most concentrated along the sections in the vicinity of Ames Haven Road, as well as at the Commerce Center Drive and Stroupe Road intersections. The next most common crash types were left-turn crashes (14.4 percent) and run-off-the-road (ROTR) crashes (13.3 percent). Left-turn crashes were most concentrated at the intersection of Neptune Road at Stroupe Road, and ROTR crashes were most concentrated along the section of Neptune Road near Ames Haven Road.

2.0 METHODOLOGY

The traffic noise study was performed in accordance with Code of Federal Regulations, Title 23, Part 772 (23 CFR 772) *Procedures for Abatement of Highway Traffic Noise and Construction Noise*[1] using methodology established by the Florida Department of Transportation (FDOT) in the *Project Development and Environment Manual*[2], Part 2, Chapter 18 (FDOT, January 14, 2019) and FDOT's *Traffic Noise Modelling Practitioner's Handbook*[3] (FDOT, January 2016). Predicted noise levels were produced using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM), version 2.5 and the predicted noise levels for existing, future no-build, and future build conditions are shown in **Appendix B**.

2.1 Noise Metrics

Noise levels developed for this analysis are expressed in decibels (dB) using an "A"-scale [dB(A)] weighting. This scale most closely approximates the response characteristics of the human ear. All noise levels are reported as hourly equivalent noise levels (Leq(h)). The Leq(h) 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. Use of the dB(A) and Leq(h) metrics to evaluate traffic noise is consistent with 23 CFR 772[1].

2.2 Traffic Data

Traffic noise is heavily dependent on both traffic speed and traffic volume with the amount of noise generated by traffic increasing as the vehicle speed and number of vehicles increases. A project traffic report, Neptune Road PD&E Project Traffic Analysis Report, Kimley-Horn and Associates, Inc. April 2019, was prepared for this project and includes information on the existing and future roadway conditions. The traffic conditions that result in the highest noise levels for roadways are the hourly traffic volumes that represent Level of Service (LOS) C traffic conditions because they represent maximized traffic volumes that continue to travel at free flow speed.

Traffic volumes and vehicle mix (e.g. cars, medium trucks, heavy trucks, motorcycles and buses) were predicted for the design year (2045) under the build and no-build condition. Demand traffic volumes were utilized for the prediction of roadway related noise for segments below LOS C traffic volumes, and LOS C traffic volumes are used where they are exceeded. Where demand traffic is used, directional peak-hour traffic was utilized for receptors on each side of the roadway to represent the worst-case traffic scenario for the 2045 build condition. Traffic volumes and speeds used in the analysis are provided in **Appendix C**.

2.3 Noise Abatement Criteria

Noise sensitive receptors are any property where frequent exterior and/or interior human use occurs and where a lowered noise level would provide a benefit. FHWA has established noise levels at which noise abatement must be considered for various types of noise sensitive receptors. These levels, which are used by FDOT for the purpose of evaluating traffic noise, are referred to as the Noise Abatement Criteria (NAC). As shown in **Table 2-1**, the NAC vary by activity category. Noise abatement measures are considered when predicted traffic noise levels approach or exceed the NAC. FDOT defines “approach” as within one dB(A) of the applicable FHWA criterion. For comparison purposes, typical noise levels for common indoor and outdoor activities are provided in **Figure 2**.

Noise abatement measures must also be considered when a substantial increase in traffic noise will occur as a direct result of the transportation project. FDOT defines a substantial increase as 15 or more dB(A) above existing conditions. A substantial increase typically occurs in areas where traffic noise is a minor component of the existing noise environment but would become a major component after the project is constructed (e.g., new alignment project). The proposed concept design for this project follows the existing alignment and the results from the noise analysis confirmed that a substantial increase in traffic noise will not occur. **Appendix B** shows the NAC utilized at all noise sensitive receptors within the analysis.

Table 2-1 – FHWA Noise Abatement Criteria

Activity Category	Description	Leq(h) [dB(A)]
A	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	57 (Exterior)
B	Residential	67 (Exterior)
C	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings	67 (Exterior)
D	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, schools, and television studios	52 (Interior)
E	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F	72 (Exterior)
F	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing	N/A
G	Undeveloped lands that are not permitted	N/A
Source: 23 CFR Part 772[1], Procedures for Abatement of Highway Traffic Noise and Construction Noise; FHWA, 2010		

Figure 3 – Typical Noise Levels

Common Outdoor Activities	Noise Level dB(A)	Common Indoor Activities
	---110---	Rock Band
Jet Fly-Over 1000 ft.		
	---100---	
Gas Lawn Mower at 3 ft.		
	---90---	
Diesel Truck at 50 ft., at 50 mph		Food Blender at 3 ft.
	---80---	Garbage Disposal at 3 ft.
Noise Urban Area (Daytime)		
Gas Lawn Mower at 100 ft.	---70---	Vacuum Cleaner at 10 ft.
Commercial Area		Normal Speech at 3 ft.
Heavy Traffic at 300 ft.	---60---	
		Large Business Office
Quiet Urban Daytime	---50---	Dishwasher Next Room
Quiet Urban Nighttime	---40---	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime		
	---30---	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (Background)
	---20---	
	---10---	
Lowest Threshold of Human Hearing	---0---	Lowest Threshold of Human Hearing
Source: California Dept. of Transportation; Technical Noise Supplement; Oct 1998; Page 18.		

2.4 Noise Abatement

Noise abatement measures are considered when predicted traffic noise levels approach, meet, or exceed the NAC or when there is a substantial increase (15 dB(A)) in traffic noise levels. For the year 2045 build condition, noise levels are predicted to approach or exceed the NAC at seventy-two noise sensitive sites. As outlined in the PD&E Manual[2], these noise abatement measures may include traffic system management, alignment modifications, property acquisitions, land use controls, and noise barriers.

2.4.1 Traffic Management

Traffic control measures that limit motor vehicle speeds and restrict certain vehicle types can be effective noise mitigation measures; however, these measures may also negate a project's ability to meet the need of the facility. For example, if the posted speed on Neptune Road were reduced, the capacity of the roadway to handle the forecasted motor vehicle demand would also be reduced. Therefore, reducing traffic speeds and/or traffic volumes is inconsistent with the goal of improving the ability of the roadway to handle the forecast volumes. As such, although feasible, traffic management measures are not considered a reasonable noise mitigation measure for the project.

2.4.2 Alignment Modifications

Alignment modification involves orienting and/or siting the roadway at sufficient distances from the residential areas to minimize traffic noise. Based on the noise contours developed for this project and shown in **Appendix D,** any alignment shift that would avoid traffic-related noise impacts of the proposed project would simply introduce noise impacts to other noise sensitive sites and no net benefit would result. Therefore, alternative alignments are not considered a reasonable noise mitigation.

2.4.3 Buffer Zones & Land Use Controls

To be considered reasonable, the FDOT has determined that noise abatement should not exceed $42,000 per benefited receptor (noise sensitive site). Property and homes within this area far exceed this value; therefore, property acquisition is not considered a reasonable noise abatement measure.

Another noise abatement measure is the use of land use controls to minimize impacts to future development. This Noise Study Report will be made available to local planning authorities to assist in the siting of future compatible land uses. Noise contours were developed for the roadway segments which show the best estimate of the distances from the proposed edge of the nearest travel lane at which traffic noise would approach or exceed the NAC for each activity category found within each segment of the project. The predicted noise contours for each segment of Neptune Road for the build condition is shown in **Appendix D**.

2.4.4 Noise Barriers

Noise barriers reduce traffic noise by blocking the sound path between a highway and noise sensitive site. To effectively reduce traffic noise, a noise barrier must be relatively long, continuous (with no intermittent openings), and of sufficient height. For a noise barrier to be considered feasible and cost reasonable, the following three conditions must be met:

- A noise barrier must demonstrate that it will benefit at least two impacted receptors by providing a reduction in traffic-related noise, or insertion loss, of at least 5 dB(A).

- The FDOT has established a Noise Reduction Design Goal of 7 dB(A). Therefore, a noise barrier must provide a noise reduction of at least 7 dB(A) for at least one benefited receptor.

- The cost of the noise barrier must not exceed $42,000 per benefited receptor. This is the upper cost limit established by FDOT. A benefited receptor is defined as a receptor that would experience at least a 5 dB(A) reduction in noise levels as a result of providing a noise barrier. The current unit cost used to evaluate cost reasonableness is $30 per square foot for all noise barriers. This cost covers barrier materials and labor.

In addition to evaluating cost reasonableness of noise barriers, certain feasibility factors must also be considered, including accessibility, sight distance, and aesthetics. Accessibility refers to the ingress and egress to properties that would be affected by the construction of a noise barrier. Sight distance is a safety issue that refers to the ability of drivers to see far enough in each direction to safely enter the roadway. Aesthetics refers to the physical appearance of the noise barrier from both the highway side and the affected property side.

3.0 TRAFFIC NOISE ANALYSIS AND ABATEMENT ASSESSMENT

3.1 Model Validation

To verify the accuracy of the computer noise model, field measurements were taken within the project areas following procedures documented in FHWA's *Measurement of Highway-Related Noise*[4] (FHWA, May 1996). Noise monitoring was performed on July 11, 2019, using Larson Davis LxT noise level meters. All monitoring events were 10 minutes in duration, which is consistent with methodology documented in the FDOT PD&E Manual[2]. The noise monitors were calibrated using a CAL200 calibrator before and after each event. Typical vehicle speeds were established by sampling with a Decatur Scout handheld radar gun. Vehicles generally travelled 5-10 miles per hour (mph) below the posted 50 mph speed limit for Neptune Road. Traffic volumes by vehicle classification were recorded for each monitoring event and then extrapolated to one-hour equivalent volumes for input within the TNM.

Two locations were used to validate the ability of the TNM to accurately predict traffic noise for this project. The locations of the validation sites are shown in the project aerials in **Appendix E** as receptor points VS-01 and VS-02. The validation sites are located in front of a retention pond on the northwest side of Kings Crest subdivision and in front of the Battaglia townhomes on the westbound side of Neptune Road. The validation sites are located at approximately Station 95+40 and Station 193+20, respectively.

The results of the monitoring events are summarized in **Table 3-1**. As shown in **Table 3-1**, the variance between the measured and predicted noise levels for all validation runs was 3.0 dB(A)or less. One run had a measured value 0.5 dB(A) above the modeled value, likely due to increased insect noise from cicadas and a few aircraft overflights during that validation run. Therefore, the noise model is predicting roadway-related noise for this project within the level of accuracy specified in the FDOT PD&E Manual[2].

Table 3-1 – TNM Validation Results Summary

Location	Run	TNM Predicted dB(A) Leq(h)	Field Measured dB(A) Leq(h)	Variance dB(A)
Site VS-01 Kings Crest	1	67.6	66.0	-1.6
	2	68.0	66.3	-1.7
	3	67.7	67.2	-0.5
Site VS-02 Battaglia	1	69.6	70.1	0.5
	2	69.5	69.5	0.0
	3	70.3	69.4	-0.9

3.2 Noise Sensitive Sites

Within the project limits, noise sensitive land uses adjacent to Neptune Road include residential neighborhoods, places of worship, schools, meeting halls, and park facilities. Receptor points representing the noise sensitive sites are located in accordance with the FDOT PD&E Manual[2] as follows:

- Residential receptor points are located at the edge of the residential building closest to the major traffic noise source.
- Where residences are clustered together, single receptor points are analyzed as representative of a group of sites with similar characteristics.
- Ground floor receptor points are assumed to be 5 feet above the ground elevation.
- Higher floor receptors are assumed to increase in elevation in 10-foot increments above the ground floor receptor.

Noise levels were predicted at 210 receptor points representing 361 noise sensitive sites. Predicted noise levels for these sites are provided in **Appendix B**. The locations of the receptor points are depicted on the project aerials found in **Appendix E**. The alphanumeric identification for each receptor point associated with a noise sensitive site is formulated as follows:

- Receptors are labeled according to the Common Noise Environment (CNE) within which they are located.

- The first letter of the receptor label is either an "R" or "N" and denotes whether the point is a residential or non-residential noise sensitive site, respectively.
- The two-digit following the first three letters is the number of the CNE (e.g., RWB06 would be the prefix for residential receptors located within CNE WB06).
- The number following the CNE identifier is the receptor number and is separated from the first string of characters with a dash (e.g., RWB06-002 is the 2nd receptor in the 6th CNE on the westbound side of the mainline road).
- Where residences occur on multiple floors, a suffix is added to the receptor identification to indicate the receptor location includes an additional receptor on the second floor. This additional suffix is "A" or "/B" added to receptor label shown on the project aerials. (e.g., RWB06-002A/B represents both a first and second floor receptor at location 2 on the westbound side of the roadway in CNE WB06). The predicted noise level for the first and second floor receptors are shown separately within Appendix B.

The project aerials in **Appendix E** show the locations of all impacted and/or benefited receptors but some of the non-impacted receptors are outside the printing limits of the project aerials and are not shown.

3.3 Common Noise Environments on Eastbound Side of Neptune Road

3.3.1 Meadow Springs (EB01)

Meadow Springs is located on the eastbound side of Neptune Road approximately between station 30+00 and station 31+50. One NAC B receptor was added to the model to represent one residence within this neighborhood. Noise levels at this site are not predicted to approach or exceed the NAC for the build condition in the design year (2045), and therefore noise abatement was not considered for the Meadow Springs neighborhood.

The receptor point representing Meadow Springs is shown in the project aerials in **Appendix E**, and the predicted noise level is shown in **Appendix B**.

3.3.2 Faith Community Church & Elks Lodge (EB02)

Faith Community Church and Elks Lodge are located on the eastbound side of Neptune Road approximately between station 32+80 and station 35+60. Two receptors were added to the model, one NAC D to represent an interior church receptor and one NAC C receptor for an outdoor play area. Noise levels at these sites are not predicted to approach or exceed the NAC for the build condition in the design year (2045), and therefore noise abatement was not considered for the Faith Community Church or Elks Lodge.

The receptor points representing Faith Community Church and Elks Lodge are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.3.3 Florida Drainland Single-Family Residences (EB03)

Florida Drainland single-family residences are located on the eastbound side of Neptune Road approximately between station 38+00 and station 51+00. Seven NAC B receptors were added to the model to represent the seven residences. Noise levels at two of the residences are predicted to approach or exceed the NAC for the build condition in the design year (2045). The impacted receptors are on the first row of residences approximately between stations 48+60 and 49+80.

Noise barriers were evaluated for these residences to abate roadway-related noise. Based on this evaluation, a potential noise barrier located along the eastbound ROW could not provide a 7dB(A) reduction at any receptor, or a 5 dB(A) reduction at any impacted receptor. The driveways of the single-family residences would cause gaps in any potential noise barrier system, substantially reducing the potential effectiveness of the noise barriers. Because no modelled noise barrier system was predicted to provide at least a 5 dB(A) insertion loss at any receptor, noise barriers are not a reasonable method to abate roadway-related noise for the residences in CNE EB03. **Table 3-2** summarizes the various barrier configurations that were evaluated for CNE EB03.

Table 3-2 – Barrier Analysis Summary for CNE EB03

Height (feet)	Length (feet)	Location[5]	No. of Impacts	Noise Reduction at Impacted Residences			Number of Benefited Residences				Impacted Res. Not Benefited[3]	Total Estimated Cost[4]	Cost per Benefited Residence
				5-5.9 dB(A)	6.0-6.9 dB(A)	≥ 7 dB(A)	Impacted[1]	Not Impacted[2]	Total	Average Reduction dB(A)			
14	210	ROW	2	0	0	0	0	0	0	N/A	2	N/A	N/A
14	40	ROW											
14	50	ROW											
14	90	ROW											

[1] Benefited residences with predicted noise levels that approach or exceed the NAC.
[2] Benefited residences with predicted noise levels that do not approach the NAC.
[3] Impacted residences that do not received a minimum 5 dB(A) reduction from proposed noise barrier.
[4] Unit cost of $30/ft^2
[5] ROW – Noise barrier located along Right of Way.

The receptor locations for the Florida Drainland single-family residence are shown the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.3.4 Cane Break (EB04)

The Cane Brake neighborhood is located on the eastbound side of Neptune Road approximately between station 76+00 and station 94+50. Twenty-seven NAC B receptors were added to the model to represent the thirty-one residences. Noise levels at thirteen of the residences are predicted to approach or exceed the NAC for the build condition in the design year (2045). The thirteen impacted receptors are located on the first row of residences approximately between stations 78+20 and 93+20.

Noise barriers were evaluated for these residences to abate roadway-related noise. Based on this evaluation, it was determined that a noise barrier system could provide at least a 7 dB(A) reduction at one or more receptors and at least a 5dB(A) reduction at two or more impacted receptors. However, the most cost-effective barrier evaluated would exceed the allowable $42,000 per benefited receptor, and, therefore, is not cost reasonable. **Table 3-3** summarizes the various barrier configurations that were evaluated for CNE EB04.

Table 3-3 - Barrier Analysis Summary for CNE EB04

Height (feet)	Length (feet)	Location[5]	No. of Impacts	Noise Reduction at Impacted Residences			Number of Benefited Residences				Impacted Res. Not Benefited[3]	Total Estimated Cost[4]	Cost per Benefited Residence
				5-5.9 dB(A)	6.0-6.9 dB(A)	≥ 7 dB(A)	Impacted[1]	Not Impacted[2]	Total	Average Reduction dB(A)			
14	800	ROW	13	1	1	11	13	0	13	8.2	0	$688,800	$52,985
14	840	ROW											
14	700	ROW	13	1	2	8	11	0	11	8.1	2	$646,800	$58,800
14	840	ROW											
12	800	ROW	13	1	2	9	12	0	12	7.5	1	$590,400	$49,200
12	840	ROW											

[1] Benefited residences with predicted noise levels that approach or exceed the NAC.
[2] Benefited residences with predicted noise levels that do not approach the NAC.
[3] Impacted residences that do not received a minimum 5 dB(A) reduction from proposed noise barrier.
[4] Unit cost of $30/ft^2
[5] ROW – Noise barrier located along Right of Way.

The receptor locations for the Cane Brake neighborhood are shown the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.3.5 Kings Crest (EB05)

Kings Crest is located on the eastbound side of Neptune Road approximately between station 95+00 and station 111+00. Sixteen NAC B receptors were added to the model to represent the twenty-two residences. Noise levels at nine of the residences are predicted to approach or exceed the NAC for the build condition in the design year (2045). The nine impacted receptors are located approximately between stations 97+50 and 109+80.

Noise barriers were evaluated for these residences to abate roadway-related noise. Based on this evaluation, it was determined that a noise barrier system could provide at least a 7 dB(A) reduction at one or more receptors and at least a 5dB(A) reduction at two or more impacted receptors. However, the most cost-effective barrier evaluated would exceed the allowable $42,000 per benefited receptor, and, therefore, is not cost reasonable. **Table 3-4** summarizes the various barrier configurations that were evaluated for CNE EB05.

Table 3-4 – Barrier Analysis Summary for CNE EB05

Height (feet)	Length (feet)	Location[5]	No. of Impacts	Noise Reduction at Impacted Residences			Number of Benefited Residences				Impacted Res. Not Benefited[3]	Total Estimated Cost[4]	Cost per Benefited Residence
				5-5.9 dB(A)	6.0-6.9 dB(A)	≥ 7 dB(A)	Impacted[1]	Not Impacted[2]	Total	Average Reduction dB(A)			
14	540	ROW	9	1	1	5	7	3	10	7.5	2	$537,600	$53,760
14	740	ROW											
14	440	ROW	9	0	1	4	5	1	6	7.7	4	$453,600	$75,600
14	640	ROW											
12	540	ROW	9	0	2	3	5	1	6	7.1	4	$460,800	$76,800
12	740	ROW											

[1] Benefited residences with predicted noise levels that approach or exceed the NAC.
[2] Benefited residences with predicted noise levels that do not approach the NAC.
[3] Impacted residences that do not received a minimum 5 dB(A) reduction from proposed noise barrier.
[4] Unit cost of $30/ft^2$
[5] ROW – Noise barrier located along Right of Way.

The receptor locations for the Kings Crest neighborhood are shown the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.3.6 Iglesia Bautista Resureccion Church and Single Family Residence (EB06)

The Iglesia Bautista Resureccion Church and a single family residence are located on the eastbound side of Neptune Road approximately between station 122+50 and station 130+00. One NAC B residential receptor for a single family home on the Ritter Orchids Nursery property and one NAC C receptor for an outdoor play area at the church were added to the model. Noise levels at these receptors are not predicted to approach or exceed the NAC for the build condition in the design year (2045), and therefore noise abatement was not considered for this non-residential site.

The receptor points representing the residence and the play area at the church are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.3.7 Single-Family Residences (EB07)

There are single-family residences located on the eastbound side of Neptune Road approximately between station 131+00 and station 137+00. Three NAC B receptors were added to the model to represent the three residences. Noise levels at these sites are not predicted to approach or exceed the NAC for the build condition in the design year (2045), and therefore noise abatement was not considered for these single-family residences.

The receptor points representing these single-family residences are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.3.8 Partin Triangle Park, Playground, & Tennis Courts (EB08)

Partin Triangle Park, Playground, & Tennis Courts are located on the eastbound side of Neptune Road approximately between station 168+00 and station 177+00. Six NAC C receptors were added to the model to represent outdoor play areas at the park. Noise levels at two of these receptors are predicted to approach or exceed the NAC for the build condition in the design year (2045). The impacted receptors are on the western side of the park, at approximately station 173+50.

Noise barriers were evaluated for these sites to abate roadway-related noise. However, the traffic noise coming from the adjacent roadway on the west side of CNE EB08 substantially reduces the effectiveness of any noise barrier along Neptune Road. In this case a 14-foot ROW noise barrier along Neptune Road would not benefit any receptor by 5 dB(A). Therefore, noise barriers are not a reasonable method to abate roadway-related noise for the non-residential Partin Triangle Park receptors in CNE EB08. **Table 3-5** summarizes the various barrier configurations that were evaluated for CNE EB08.

Table 3-5 – Barrier Analysis Summary for CNE EB08

Height (feet)	Length (feet)	Location[5]	No. of Impacts	Noise Reduction at Impacted Residences			Number of Benefited Residences				Impacted Res. Not Benefited[3]	Total Estimated Cost[4]	Cost per Benefited Residence
				5-5.9 dB(A)	6.0-6.9 dB(A)	≥ 7 dB(A)	Impacted[1]	Not Impacted[2]	Total	Average Reduction dB(A)			
14	2000	ROW	2	0	0	0	0	0	0	N/A	2	N/A	N/A
14	200	ROW											

[1] Benefited residences with predicted noise levels that approach or exceed the NAC.
[2] Benefited residences with predicted noise levels that do not approach the NAC.
[3] Impacted residences that do not received a minimum 5 dB(A) reduction from proposed noise barrier.
[4] Unit cost of $30/ft^2
[5] ROW – Noise barrier located along Right of Way.

The receptor points representing Partin Triangle Park are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.3.9 Royal Gardens of St Cloud Nursing Home (EB09)

The Royal Gardens of St Cloud nursing home is located on the eastbound side of Neptune Road approximately between station 219+00 and station 223+50. One NAC C receptor was added to the model to represent an outdoor seating area near the entrance to the facility. Noise levels at this site are not predicted to approach or exceed the NAC for the build condition in the design year (2045), and therefore noise abatement was not considered for the Royal Gardens of St. Could nursing home.

The receptor point representing this outdoor seating area is shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.3.10 Palamar Oaks Village (EB10)

Palamar Oaks Village is located on the eastbound side of Neptune Road approximately between station 223+50 and station 230+00. Ten NAC B receptors were added to the model to represent twenty-nine residences. Noise levels at these sites are not predicted to approach or exceed the NAC for the build condition in the design year (2045), and therefore noise abatement was not considered for the Palamar Oaks Village neighborhood.

The receptor points representing these residences are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.4 Common Noise Environments on Westbound Side of Neptune Road

3.4.1 Single-Family Residences (WB01)

Neptune Pointe is located on the westbound side of Neptune Road approximately between station 30+00 and station 34+00. Seven NAC B receptors were added to the model to represent eighteen residences. Noise levels at these sites are not predicted to approach or exceed the NAC for the build condition in the design year (2045), and therefore noise abatement was not considered for the Neptune Pointe neighborhood.

The receptor points representing these single-family residences are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.4.2 Midway City (WB02)

Midway City is located on the westbound side of Neptune Road approximately between station 33+00 and station 50+00. Fifteen NAC B receptors were added to the model to represent 20 residences. Six of these residences are expected to fall within the future ROW and have been removed from the analysis. Noise levels at the two of the remaining receptors are predicted to approach or exceed the NAC for the build condition in the design year (2045). The impacted receptors are located approximately between stations 44+80 and 47+80.

Noise barriers were evaluated for these residences to abate roadway-related noise. Based on this evaluation, it was determined that a noise barrier system could provide at least a 7 dB(A) reduction at one or more receptors and at least a 5dB(A) reduction at two or more impacted receptors. However, the most cost-effective barrier evaluated would exceed the allowable $42,000 per benefited receptor, and, therefore, is not cost reasonable. **Table 3-8** summarizes the various barrier configurations that were evaluated for CNE WB02.

Table 3-8 – Barrier Analysis Summary for CNE WB02

Height (feet)	Length (feet)	Location[5]	No. of Impacts	Noise Reduction at Impacted Residences			Number of Benefited Residences				Impacted Res. Not Benefited[3]	Total Estimated Cost[4]	Cost per Benefited Residence
				5-5.9 dB(A)	6.0-6.9 dB(A)	≥ 7 dB(A)	Impacted[1]	Not Impacted[2]	Total	Average Reduction dB(A)			
14	400	ROW	2	0	1	1	2	0	2	7.2	0	$168,000	$84,000
14	300	ROW	2	0	0	1	1	0	1	8.3	1	$126,000	$126,000
12	400	ROW	2	1	0	1	2	0	2	6.8	0	$144,000	$72,000
10	400	ROW	2	1	0	1	2	0	2	6.2	0	$120,000	$60,000
8	400	ROW	2	0	1	0	1	0	1	6.3	1	$96,000	$96,000

[1] Benefited residences with predicted noise levels that approach or exceed the NAC.
[2] Benefited residences with predicted noise levels that do not approach the NAC.
[3] Impacted residences that do not received a minimum 5 dB(A) reduction from proposed noise barrier.
[4] Unit cost of $30/ft^2
[5] ROW – Noise barrier located along Right of Way.

The receptor points representing these single-family residences are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.4.3 Midway City & Loveland Estates (WB03)

Midway City and Loveland Estates are located on the westbound side of Neptune Road approximately between station 77+00 and station 107+00. Seventeen NAC B receptors were added to the model to represent twenty-three residences. Two of these residences are expected to fall within the future ROW and have been excluded from further analysis. Noise levels at five receptors, representing six of the remaining residences, are predicted to approach or exceed the NAC for the build condition in the design year (2045). The six impacted residences are located approximately between stations 89+50 and 105+80.

Noise barriers were evaluated for these residences to abate roadway-related noise. Based on this evaluation, a potential noise barrier system located along the eastbound ROW could not provide a 7dB(A) reduction at any receptors, or a 5 dB(A) reduction at two or more impacted receptors. The driveways of the impacted residences in the Midway City and Loveland Estates neighborhoods would cause gaps in any potential noise barrier, substantially reducing the effectiveness of any potential noise barrier. Because no modelled system was able to benefit any receptors, noise barriers are not a reasonable method to abate roadway-related noise for the residences in CNE WB03. **Table 3-9** summarizes the noise barrier system that was evaluated for CNE WB03.

Table 3-9 – Barrier Analysis Summary for CNE WB03

Height (feet)	Length (feet)	Location[5]	No. of Impacts	Noise Reduction at Impacted Residences			Number of Benefited Residences				Impacted Res. Not Benefited[3]	Total Estimated Cost[4]	Cost per Benefited Residence
				5-5.9 dB(A)	6.0-6.9 dB(A)	≥ 7 dB(A)	Impacted[1]	Not Impacted[2]	Total	Average Reduction dB(A)			
14	200	ROW	6	0	0	0	0	0	0	N/A	6	N/A	N/A
14	200	ROW											
14	80	ROW											
14	60	ROW											

[1] Benefited residences with predicted noise levels that approach or exceed the NAC.
[2] Benefited residences with predicted noise levels that do not approach the NAC.
[3] Impacted residences that do not received a minimum 5 dB(A) reduction from proposed noise barrier.
[4] Unit cost of $\$30/ft^2$
[5] ROW – Noise barrier located along Right of Way.

The receptor points representing Midway City and Loveland Estates are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.4.4 G & H Mobile Home Park, & Single-Family Residences (WB04)

G & H Mobile Home Park, and two single-family residences are located on the westbound side of Neptune Road approximately between station 119+00 and station 131+00. Seventeen NAC B receptors were added to the model to represent seventeen residences. One of these residences is expected to fall within the future ROW and has been excluded from further analysis. Noise levels at four of the remaining receptors are predicted to approach or exceed the NAC for the build condition in the design year (2045). The four impacted residences are located approximately between station 122+00 and station 124+60.

Noise barriers were evaluated for these residences to abate roadway-related noise. Based on this evaluation, it was determined that a noise barrier system could provide at least a 7 dB(A) reduction at one or more receptors and at least a 5dB(A) reduction at two or more impacted receptors. However, the most cost-effective barrier evaluated would exceed the allowable $42,000 per benefited receptor, and, therefore, is not cost reasonable. **Table 3-10** summarizes the various barrier configurations that were evaluated for CNE WB04.

Table 3-10 – Barrier Analysis Summary for CNE WB04

Height (feet)	Length (feet)	Location[5]	No. of Impacts	Noise Reduction at Impacted Residences			Number of Benefited Residences				Impacted Res. Not Benefited[3]	Total Estimated Cost[4]	Cost per Benefited Residence
				5-5.9 dB(A)	6.0-6.9 dB(A)	≥ 7 dB(A)	Impacted[1]	Not Impacted[2]	Total	Average Reduction dB(A)			
14	200	ROW	4	1	0	1	2	0	2	6.6	2	$126,000	$63,000
14	100	ROW											
14	180	ROW	4	0	1	0	1	0	1	6.0	3	$109,200	$109,200
14	80	ROW											
12	200	ROW	4	1	0	1	2	0	2	6.2	2	$108,000	$54,000
12	100	ROW											
10	200	ROW	4	0	1	0	1	0	1	6.5	3	$90,000	$90,000
10	100	ROW											

[1] Benefited residences with predicted noise levels that approach or exceed the NAC.
[2] Benefited residences with predicted noise levels that do not approach the NAC.
[3] Impacted residences that do not received a minimum 5 dB(A) reduction from proposed noise barrier.
[4] Unit cost of $30/ft^2
[5] ROW – Noise barrier located along Right of Way.

The receptor points representing G & H Mobile Home Park, and these single-family residences are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.4.5 Neptune Middle School Sports Fields, & Outdoor Benches (WB05)

Neptune Middle School is located on the westbound side of Neptune Road approximately between station 136+00 and station 160+00. Sixteen NAC C receptors were added to the model to represent outdoor benches and sports fields. Noise levels at these receptors are not predicted to approach or exceed the NAC for the build condition in the design year (2045), and therefore noise abatement was not considered for these non-residential sites

Initially, noise levels at one of the receptors on the sports field was predicted to approach or exceed the NAC for the build condition in the design year (2045). This receptor was located at the closest point of the sports field to Neptune Road at approximately station 116+60. However, the Neptune Middle School Sports Fields are classed as a 'Special Use Site', and special use sites have a special abatement analysis process that is documented in an FDOT report, 'A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations', FDOT 2019[6]. This report contains a flowchart to follow when considering abatement analysis at special use sites. According to Feasibility Item #2 of the chart, consideration must be given to whether a site is used during peak traffic conditions. For the analysis, the 5-6pm was identified as the peak traffic condition, as documented in the Florida Traffic Monitoring Handbook, FDOT, July 2018[7]. Typical middle school hours run from 7:30am to 1:50pm, so the school is not open during peak traffic conditions. Therefore, the special use abatement analysis flowchart contains a method to adjust sound level for off peak conditions. In this case Method #3 was used to apply a 1 dB(A) reduction to all the Neptune Middle School receptors that applies to weekday off-peak use at special use sites. Once this adjustment is applied no receptors in WB05 are predicted to exceed the NAC for the build condition in the design year (2045).

The receptor points representing Neptune Middle School are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.4.6 Soleil Blu Apartments (WB06)

The Soleil Blu Apartments are located on the westbound side of Neptune Road approximately between station 181+00 and station 188+50.

Twenty-six residential NAC B receptors and two NAC C special use site receptors were added to the model to represent seventy-two first and second floor residential patios and balconies and two outdoor play areas. Noise levels at six of the residential receptors are predicted to approach or exceed the NAC for the build condition in the design year (2045). The impacted residential receptors in the Soleil Blu Apartments are located approximately between station 181+60 and 183+40. Noise levels are not predicted to approach or exceed the NAC for the special use sites for the build condition in the design year (2045).

Noise barriers were evaluated for these residences to abate roadway-related noise. Based on this evaluation, a noise barrier could provide at least a 7 dB(A) reduction at one or more receptor and a 5dB(A) reduction at two or more impacted receptors. A potential 14-foot tall ROW noise barrier would not exceed the allowable $42,000 per benefited receptor. However, this barrier would require additional ROW to be acquired due to construction and maintenance concerns. This additional ROW is estimated to cost at least $400,000. Adding this cost into the noise barrier cost analysis would result in this noise barrier exceeding the $42,000 per benefitted residence cost threshold. Therefore, noise barriers are not a potentially reasonable method to abate roadway-related noise for the residences in Soleil Blu. **Table 3-11** summarizes the various barrier configurations that were evaluated for the Soleil Blu Apartments in CNE WB06.

Table 3-11 - Barrier Analysis Summary for CNE WB06

Height (feet)	Length (feet)	Location[5]	No. of Impacts	Noise Reduction at Impacted Residences			Number of Benefited Residences				Impacted Res. Not Benefited[3]	Total Estimated Cost[4]	Cost per Benefited Residence
				5-5.9 dB(A)	6.0-6.9 dB(A)	≥ 7 dB(A)	Impacted[1]	Not Impacted[2]	Total	Average Reduction dB(A)			
14	640	ROW	6	0	1	4	5	1	6	8.2	1	$268,800	$44,800
14	280	ROW	6	1	3	1	5	0	6	6.4	1	$117,600	$19,600
14	200	ROW	6	3	1	0	4	0	4	5.7	2	$84,000	$21,000
12	280	ROW	6	1	2	0	3	0	3	6.0	3	$100,800	$33,600
14	280	ROW	6	1	3	1	5	0	6	6.4	1	$517,600[6]	$86,267

[1] Benefited residences with predicted noise levels that approach or exceed the NAC.
[2] Benefited residences with predicted noise levels that do not approach the NAC.
[3] Impacted residences that do not received a minimum 5 dB(A) reduction from proposed noise barrier.
[4] Unit cost of $30/ft^2
[5] ROW – Noise barrier located along Right of Way.
[6] Total cost with $400,000 ROW acquisition costs included.

The receptor points representing the Soleil Blu Apartments in WB06 are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

3.4.7 Battaglia Townhomes (WB07)

The Battaglia Townhomes are located on the westbound side of Neptune Road approximately between station 188+50 and station 200+00. Thirty-five (35) residential NAC B receptors were added to the model to represent 88 residences. Noise levels at 24 of the residential receptors are predicted to approach or exceed the NAC for the build condition in the design year (2045). The impacted residential receptors are located approximately between station 188+50 and 196+50.

Noise barriers were evaluated for these residences to abate roadway-related noise. Based on this evaluation, a noise barrier could provide at least a 7 dB(A) reduction at one or more receptor and a 5dB(A) reduction at two or more impacted receptors. A potential noise barrier up to 14-feet tall would not exceed the allowable $42,000 per benefited receptor. This noise barrier design would require the relocation of up to 5 transmission power poles. Because of the cost of relocating transmission poles, a two-barrier system was also analyzed that would leave all the transmission power poles in their current locations. This two-barrier system, consisting of up to a 14-foot tall noise barrier system, is also predicted to provide a 7dB(A) benefit to one or more receptor and a 5 dB(A) benefit to two or more impacted receptors and would not exceed the allowable $42,000 per benefited receptor. Therefore, noise barriers may be a potentially feasible and reasonable method to abate roadway-related noise for the residences in CNE WB07. Further evaluation of this potential noise barrier will occur in the design phase. This evaluation may change the length, height, or viability of this potential noise barrier. **Table 3-12** summarizes the various barrier configurations that were evaluated for the Battaglia Townhomes in CNE WB07.

Table 3-12 - Barrier Analysis Summary for CNE WB07

Height (feet)	Length (feet)	No. of Impacts	Noise Reduction at Impacted Residences			Number of Benefited Residences				Impacted Res. Not Benefited[3]	Total Estimated Cost[4]	Cost per Benefited Residence
			5-5.9 dB(A)	6.0-6.9 dB(A)	> 7 dB(A)	Impacted[1]	Not Impacted[2]	Total	Average Reduction dB(A)			
14	820	24	0	1	23	24	0	24	9.4	0	$344,400	$14,350
14	410	24	1	3	20	24	0	24	8.7	0	$323,400	$13,475
14	360											
12	410	24	2	3	19	24	0	24	8.0	0	$277,200	$11,550
12	360											
10	410	24	5	4	15	24	0	24	7.1	0	$231,000	$9,625
10	360											
8	410	24	6	7	0	13	0	13	6.0	11	$184,800	$14,215
8	360											

[1] Benefited residences with predicted noise levels that approach or exceed the NAC.
[2] Benefited residences with predicted noise levels that do not approach the NAC.
[3] Impacted residences that do not received a minimum 5 dB(A) reduction from proposed noise barrier.
[4] Unit cost of $30/ft^2
[5] ROW – Noise barrier located along Right of Way.

The receptor points representing the Battaglia Townhomes in WB06 are shown in the project aerials in **Appendix E**, and the predicted noise levels are shown in **Appendix B**.

4.0 CONCLUSIONS

A total of 210 receptor points representing 361 noise sensitive sites located adjacent to Neptune Road were evaluated for traffic noise related impacts associated with the widening of Neptune Road within the project limits. The results of the analysis indicate that existing (2019) exterior traffic noise levels are predicted to range from 52.1 dB(A) to 69.7.2 dB(A) at the 361 evaluated exterior noise sensitive sites adjacent to Neptune Road. Future year (2045) no-build condition exterior traffic noise levels are predicted to range from 52.1 dB(A) to 69.7 dB(A). Noise levels did not change substantially from existing to the future no-build condition, as Neptune Road is already operating at LOS C in these sections, generating the maximum traffic noise condition. With the proposed widening, the exterior traffic noise levels for the future year (2045) build condition are predicted to increase to range from 53.1 dB(A) to 75.7 dB(A). The maximum increase at any noise sensitive site in the future build condition is 6.7 dB(A). This means that no noise sensitive sites are expected to experience a substantial increase in traffic noise compared to existing conditions.

In addition to residences (NAC B), Title 23 Code of Federal Regulations Part 772 specifies other Activity Categories addressing non-residential noise sensitive sites. Within the project limits, two impacts are predicted at non-residential noise sensitive sites. Noise barriers were evaluated for these impacted locations, but the noise barriers were not able to provide a benefit to the impacted non-residential noise sensitive sites.

Noise levels at 66 residences are predicted to approach or exceed the NAC (i.e., 66 dB(A) for Activity Category B) established by the FHWA for the build condition. Noise barriers were evaluated for the impacted residential noise sensitive sites. Noise barriers were determined to be a potentially feasible and cost reasonable abatement measure in one location, the Battaglia Townhomes in CNE WB07.

4.1 Statement of Likelihood

4.1.1 Potential feasible and reasonable noise barriers

Osceola County is committed to the construction of feasible and reasonable noise abatement measures for this project. The noise barrier system for the Battaglia Townhomes in CNE WB07 may be considered feasible and reasonable, contingent upon the following conditions:

- Final recommendations on the construction of abatement measures is determined during the project's final design and through the public involvement process;
- Detailed noise analyses during the final design process support the need, feasibility and reasonableness of providing abatement;
- Cost analysis indicate that the cost of the noise barrier(s) will not exceed the cost reasonable criterion;
- Community input supporting types, heights, and locations of the noise barrier(s) is provided to the county; and
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed and any conflicts or issues resolved.

A land use review will be performed during the future project Design phase to identify all noise sensitive sites that may have received a building permit subsequent to the noise study but prior to the project's Date of Public Knowledge. The date that the Type 2 Categorical Exclusion is approved by the FDOT Office of Environmental Management will be the Date of Public Knowledge. If the review identifies noise sensitive sites that have been permitted prior to the Date of Public Knowledge, then those sensitive sites will be evaluated for traffic noise impacts and abatement considerations.

4.1.2 No potential feasible and reasonable noise barriers

Based on the noise analyses performed to date, there are no feasible solutions available to mitigate the noise impacts at the locations identified in **Table 4-1**.

Table 4-1 – Barrier Analysis Summary

Common Noise Environment (CNE)	Number of Impacted Residences or Noise Sensitive Sitess[1]	Number of Benefited Receptors		Preliminary Barrier Cost	Cost Per Benefited Receptor
		Impacted[2]	Total[3]		
Florida Drainland Single-Family Residences (EB03)	2	0	0	N/A[4]	N/A[4]
Cane Break (EB04)	13	12	12	$590,400	$49,200[5]
Kings Crest (EB05)	9	6	10	$537,600	$53,760[5]
Partin Triangle Park (EB08)	2	0	0	N/A[4]	N/A[4]
Midway City (WB02)	2	2	2	$120,000	$60,000[5]
Midway City & Loveland Estates (WB03)	6	0	0	N/A[4]	N/A[4]
G & H Mobile Home Park (WB04)	4	3	3	$140,400	$46,800[5]
Soleil Blu Apartments (WB06)	6	6	6	$509,200[6]	$84,867[5]

1 Noise sensitive sites where the predicted noise level exceeds the NAC.
2 Benefited residences with predicted noise levels that approach or exceed the NAC.
3 Impacted and non-impacted benefited residences.
4 No possible benefitted receptors, so no cost analysis was conducted for these barriers.
5 Cost exceeds the $42,000 per benefitted residence cost criteria.
6 Cost includes $400,000 in ROW acquisition costs.

5.0 CONSTRUCTION NOISE AND VIBRATION

Based on the existing land use within the limits of this project, construction of the proposed roadway improvements will have temporary noise and vibration impacts. Construction noise sensitive sites include all of the noise sensitive sites detailed in Section 3.0 of this report. Vibration sensitive sites on the project include residences, schools, public institutions, and parks. Trucks, compaction equipment, earth moving equipment, pumps, and generators are sources of construction noise and vibration. During the construction phase of the proposed project, short-term noise and vibration may be generated by stationary and mobile construction equipment. The construction noise and vibration will be temporary at any location and will be controlled by adherence to the most recent edition of the *FDOT Standard Specifications for Road and Bridge Construction*[5]. Should any noise or vibration issue arise during construction, the Project Engineer, in concert with the Contractor, will investigate additional methods of controlling these impacts.

6.0 PUBLIC COORDINATION

6.1 Public Meeting/Hearing

Section will be added after Public Hearing comments are received.

6.2 Coordination with Local Officials

Local officials can promote compatibility between land development and highways. Copies of this Noise Study Report will be sent to Osceola County to assist them in permitting future noise-compatible land uses along Neptune Road.

To promote compatibility between land development planning and Neptune Road within the project limits, the distance between the edge of the outside travel lane and the point where the roadway-related noise is predicted to reach the NAC for each activity category was estimated. These estimates are referred to as noise contours and are shown in **Appendix D**. County officials can use the noise contour data to establish compatible development of currently undeveloped parcels or compatible redevelopment in areas where land use changed.

7.0 REFERENCES

1. 23 CFR Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise;* Federal Highway Administration; Tallahassee, Florida; July 2010.

2. *Project Development and Environment Manual*; Part 2, Chapter 18, Florida Department of Transportation; Tallahassee, Florida; January 2019.

3. *Traffic Noise Modelling Practitioner's Handbook*; Florida Department of Transportation; Tallahassee, Florida; January 2016.

4. *Measurement of Highway-Related Noise*; Federal Highway Administration; Springfield, Virginia; May 1996.

5. *Standard Specifications for Road and Bridge Construction*; Florida Department of Transportation; Tallahassee, Florida; 2013.

6. 'A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations'; Florida Department of Transportation; Tallahassee, Florida; July 2009.

7. Florida Traffic Monitoring Handbook; Florida Department of Transportation; Tallahassee, Florida; July 2018.

Appendix A

Typical Section Package

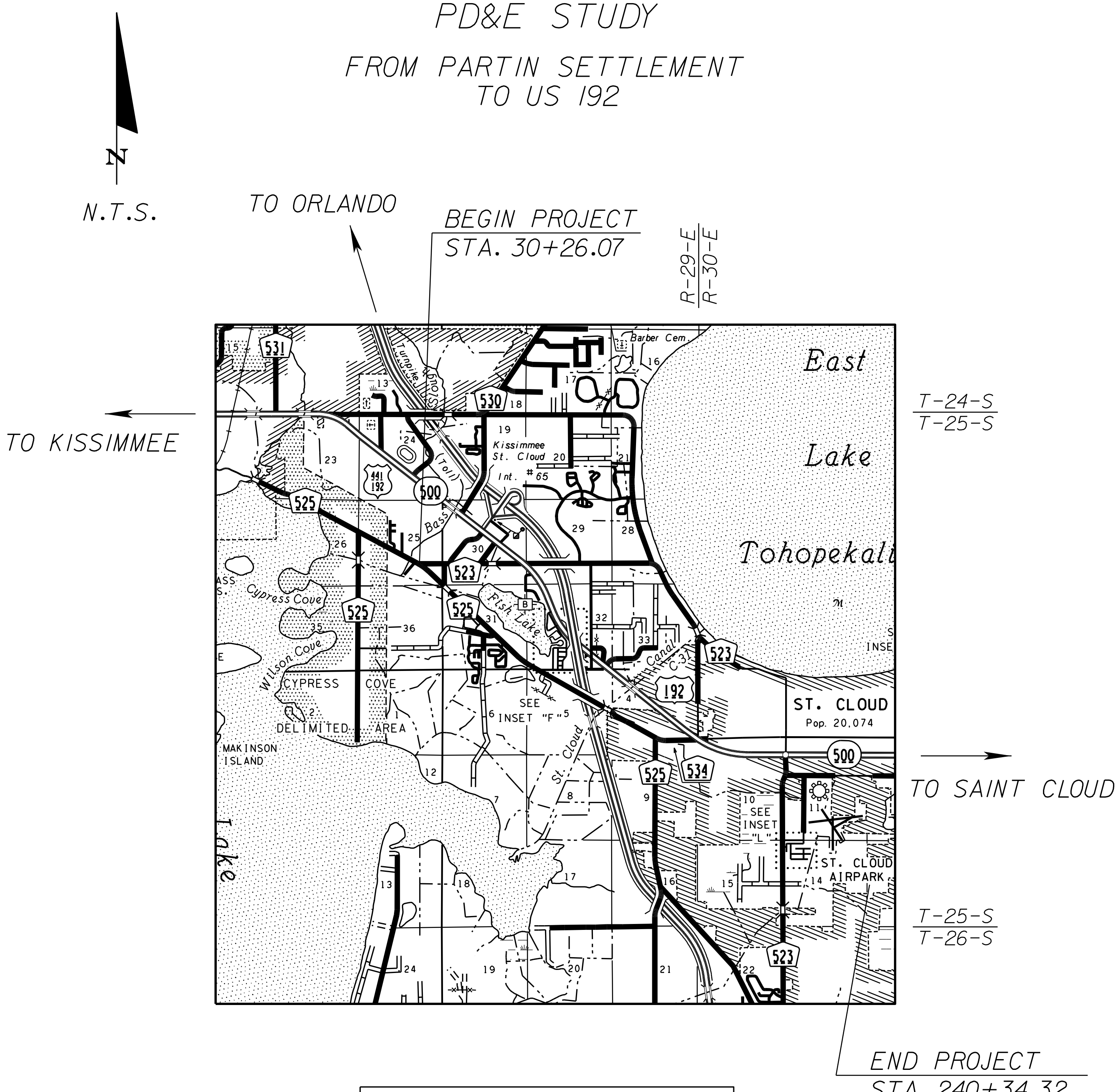
OSCEOLA COUNTY
TRANSPORTATION DEPARTMENT

TYPICAL SECTION PACKAGE

NEPTUNE ROAD

PD&E STUDY

FROM PARTIN SETTLEMENT
TO US 192



Kimley»Horn

Certificate Of Authorization No. 696
L. Frederick Burkett, P.E.
P.E. License No. 45825
3660 Maguire Boulevard, Suite 200
Orlando, Florida 32803

PROJECT IDENTIFICATION

PROJECT NAME NEPTUNE ROAD

PROJECT DESCRIPTION WIDEN EXISTING TWO LANE ROAD TO FOUR LANES FROM PARTIN SETTLEMENT RD. TO US 192

PROJECT CONTROLS

FUNCTIONAL CLASSIFICATION

( ) RURAL
(X) URBAN

( )	FREEWAY/EXPWY.	(X)	MAJOR COLL. 2
(X)	MAJOR ART. 1	( )	MINOR COLL.
( )	MINOR ART.	( )	LOCAL

HIGHWAY SYSTEM

Yes	No	
( )	(X)	NATIONAL HIGHWAY SYSTEM
( )	(X)	FLORIDA INTRASTATE HIGHWAY SYSTEM
( )	(X)	STRATEGIC INTERMODAL SYSTEM
( )	(X)	STATE HIGHWAY SYSTEM
(X)	( )	OFF STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

( ) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
( ) 3 - RESTRICTIVE w/660 ft. Connecting Spacing
( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
(X) 7 - BOTH MEDIAN TYPES

TRAFFIC

	YEAR	AADT
OPENING	2025	32,000
INTERIM	2035	42,000
DESIGN	2045	52,000

	1	2
DESIGN SPEED	(X)	(X)
POSTED SPEED	45	35

DISTRIBUTION

K 9 %
D 55 %
T_{24} 4 %

DESIGN SPEED APPROVALS

JOSHUA DEVRIES, AICP DATE

DATE

CRITERIA

(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RRR INTERSTATE / FREEWAY
( ) RRR NON-INTERSTATE / FREEWAY
( ) TDLC / NEW CONSTRUCTION / RECONSTRUCTION
( ) TDLC / RRR
(X) MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK)(OFF-STATE HIGHWAY SYSTEM ONLY)

LIST ANY POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION ELEMENTS:

LIST MAJOR STRUCTURES LOCATION/DESCRIPTION - REQUIRING INDEPENDENT STRUCTURE DESIGN:

- FLORIDA TURNPIKE ENTERPRISE
- SFWMD CANAL C-31

LIST MAJOR UTILITIES WITHIN PROJECT CORRIDOR:

- ORLANDO UTILITIES COMMISSION (OUC)
- KISSIMMEE UTILITY AUTHORITY (KUA)

LIST OTHER INFORMATION PERTINENT TO DESIGN OF PROJECT:

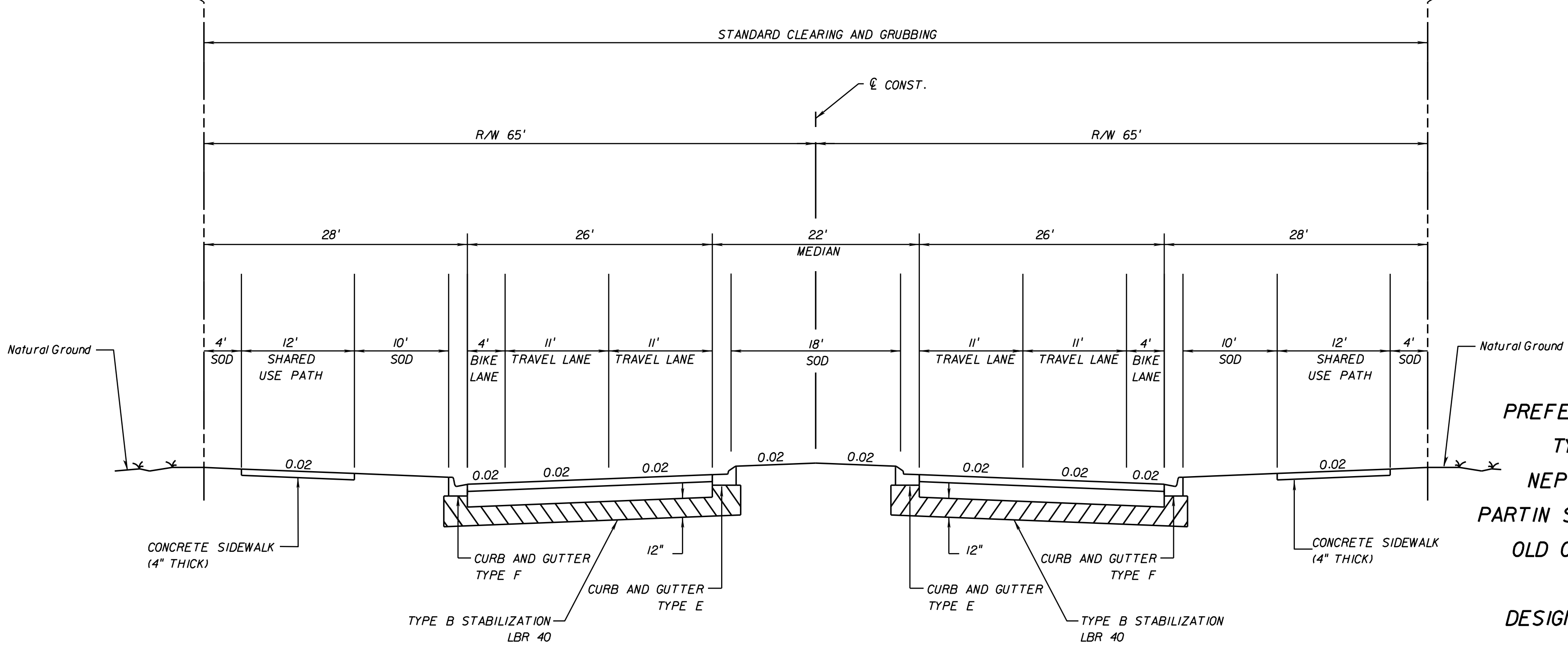
1 PARTIN SETTLEMENT TO OLD CANOE CREEK RD.

2 OLD CANOE CREEK RD. TO US 192

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	N/A	FEDERAL AID PROJECT NO.	N/A	COUNTY NAME	OSCEOLA
SECTION NO.	N/A	ROAD DESIGNATION	NEPTUNE ROAD	LIMITS/MILEPOST	
PROJECT DESCRIPTION	WIDEN EXISTING TWO LANE ROAD TO FOUR LANES FROM PARTIN SETTLEMENT RD. US 192				

PROPOSED ROADWAY TYPICAL SECTION



PREFERRED ALTERNATIVE TYPICAL SECTION NEPTUNE ROAD FROM PARTIN SETTLEMENT ROAD TO OLD CANOE CREEK ROAD

DESIGN SPEED = 45 MPH

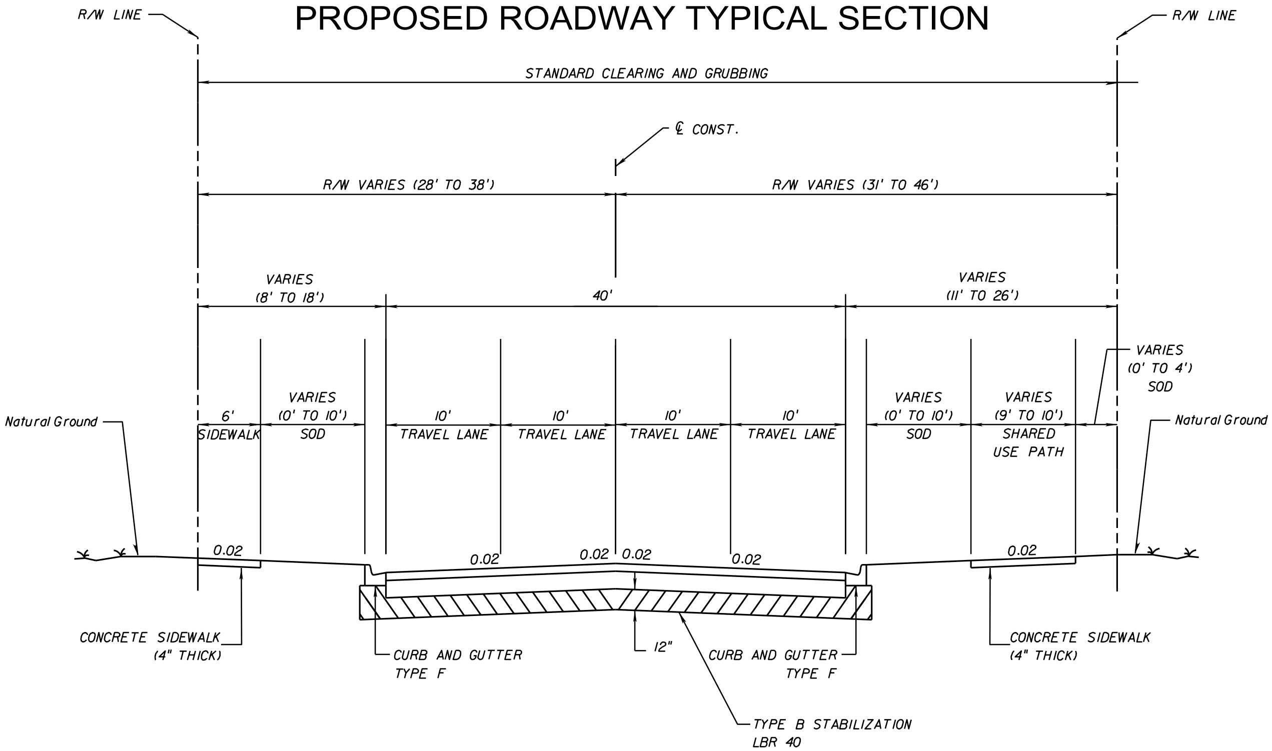
APPROVED BY

Highway Construction Manager — Date	Road And Bridge Manager — Date	Public Works Services Manager — Date
L. Frederick Burkett, P.E. Engineer of Record — Date	Stormwater Manager — Date	Traffic Engineering Manager — Date

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	N/A	FEDERAL AID PROJECT NO.	N/A	COUNTY NAME	OSCEOLA
SECTION NO.	N/A	ROAD DESIGNATION	NEPTUNE ROAD	LIMITS/MILEPOST	
PROJECT DESCRIPTION	WIDEN EXISTING TWO LANE ROAD TO FOUR LANES FROM PARTIN SETTLEMENT RD. TO US 192				

PROPOSED ROADWAY TYPICAL SECTION



PREFERRED ALTERNATIVE TYPICAL SECTION NEPTUNE ROAD FROM OLD CANOE CREEK ROAD TO US 192

DESIGN SPEED = 35 MPH

APPROVED BY

Highway Construction Manager — Date	Road And Bridge Manager — Date	Public Works Services Manager — Date
L. Frederick Burkett, P.E. Engineer of Record — Date	Stormwater Manager — Date	Traffic Engineering Manager — Date

Appendix B

Predicted Noise Levels

Predicted Noise Levels

Appendix B-1

XX.X Impacted Receptor

~~XX.X~~ Receptor inside future ROW

Common Noise Environment (CNE)	Rec. Point	No. of Units	NAC	NAC Criteria (dBA)	FDOT Criteria (dBA)	2019 Existing LAeq1h (dBA)	2045 No-Build LAeq1h (dBA)	2045 Build LAeq1h (dBA)	Increase	NAC Approach or Exceeded	Subst. Increase (>15dB(A))	To Be Relocated	Description
EB01	REB01-001	2	B	67	66	62.7	63.2	63.0	0.3	No	No	No	Meadow Springs
EB03	REB03-001	1	B	67	66	63.5	63.4	65.0	1.5	No	No	No	Florida Drainland
EB03	REB03-002	1	B	67	66	64.1	63.9	65.7	1.6	No	No	No	Florida Drainland
EB03	REB03-003	1	B	67	66	55.8	55.7	59.3	3.5	No	No	No	Florida Drainland
EB03	REB03-004	1	B	67	66	63.1	62.5	64.1	1	No	No	No	Florida Drainland
EB03	REB03-005	1	B	67	66	63.7	62.9	64.9	1.2	No	No	No	Florida Drainland
EB03	REB03-006	1	B	67	66	64.3	63.4	**66.0**	1.7	Yes	No	No	Florida Drainland
EB03	REB03-007	1	B	67	66	64.4	63.0	**66.0**	1.6	Yes	No	No	Florida Drainland
EB04	REB04-001	1	B	67	66	56.5	56.5	61.2	4.7	No	No	No	Cane Brake
EB04	REB04-002	1	B	67	66	60.1	60.1	64.4	4.3	No	No	No	Crane Brake
EB04	REB04-003	1	B	67	66	62.5	62.5	**66.7**	4.2	Yes	No	No	Cane Brake
EB04	REB04-004	1	B	67	66	62.8	62.8	**67.0**	4.2	Yes	No	No	Cane Brake
EB04	REB04-005	1	B	67	66	63.5	63.5	**67.9**	4.4	Yes	No	No	Cane Brake
EB04	REB04-006	1	B	67	66	63.8	63.8	**67.8**	4	Yes	No	No	Cane Brake
EB04	REB04-007	1	B	67	66	64.1	64.1	**67.6**	3.5	Yes	No	No	Crane Brake
EB04	REB04-008	1	B	67	66	64.0	64.0	**67.2**	3.2	Yes	No	No	Crane Brake
EB04	REB04-009	1	B	67	66	64.0	64.0	**67.3**	3.3	Yes	No	No	Crane Brake
EB04	REB04-010	1	B	67	66	54.5	54.5	59.2	4.7	No	No	No	Cane Brake
EB04	REB04-011	2	B	67	66	55.7	55.7	59.8	4.1	No	No	No	Cane Brake
EB04	REB04-012	1	B	67	66	53.8	53.9	58.2	4.4	No	No	No	Cane Brake
EB04	REB04-014	1	B	67	66	56.3	56.3	59.8	3.5	No	No	No	Cane Brake
EB04	REB04-016	1	B	67	66	56.7	56.7	60.0	3.3	No	No	No	Cane Brake
EB04	REB04-017	2	B	67	66	54.2	54.2	58.1	3.9	No	No	No	Cane Brake
EB04	REB04-018	1	B	67	66	64.5	64.5	**67.7**	3.2	Yes	No	No	Cane Brake
EB04	REB04-019	1	B	67	66	63.5	63.5	**66.3**	2.8	Yes	No	No	Cane Brake
EB04	REB04-020	1	B	67	66	65.5	65.5	**68.9**	3.4	Yes	No	No	Cane Brake
EB04	REB04-021	1	B	67	66	64.3	64.3	**67.2**	2.9	Yes	No	No	Crane Brake
EB04	REB04-022	1	B	67	66	63.5	63.5	**66.8**	3.3	Yes	No	No	Cane Brake
EB04	REB04-023	1	B	67	66	59.9	59.9	62.0	2.1	No	No	No	Cane Brake
EB04	REB04-024	2	B	67	66	56.5	56.5	59.5	3	No	No	No	Cane Brake
EB04	REB04-025	1	B	67	66	52.6	52.6	56.5	3.9	No	No	No	Cane Brake
EB04	REB04-027	1	B	67	66	54.5	54.5	58.1	3.6	No	No	No	Cane Brake
EB04	REB04-028	2	B	67	66	54.5	54.5	58.3	3.8	No	No	No	Cane Brake
EB04	REB04-030	1	B	67	66	57.9	57.9	60.1	2.2	No	No	No	Cane Brake
EB04	REB04-031	1	B	67	66	65.0	65.0	**68.4**	3.4	Yes	No	No	Cane Brake
EB05	REB05-001	1	B	67	66	63.2	63.2	**67.0**	3.8	Yes	No	No	Kings Crest
EB05	REB05-002	1	B	67	66	65.0	65.0	**68.6**	3.6	Yes	No	No	Kings Crest
EB05	REB05-003	1	B	67	66	62.4	62.4	**66.0**	3.6	Yes	No	No	Kings Crest
EB05	REB05-004	2	B	67	66	61.9	61.9	65.0	3.1	No	No	No	Kings Crest
EB05	REB05-005	1	B	67	66	63.6	63.6	**66.6**	3	Yes	No	No	Kings Crest
EB05	REB05-006	1	B	67	66	63.8	63.8	**66.6**	2.8	Yes	No	No	Kings Crest
EB05	REB05-007	1	B	67	66	64.3	64.3	**67.2**	2.9	Yes	No	No	Kings Crest
EB05	REB05-008	1	B	67	66	63.1	63.1	65.7	2.6	No	No	No	Kings Crest
EB05	REB05-009	1	B	67	66	64.6	64.6	**68.0**	3.4	Yes	No	No	Kings Crest
EB05	REB05-010	1	B	67	66	65.0	65.0	**69.3**	4.3	Yes	No	No	Kings Crest
EB05	REB05-011	1	B	67	66	62.8	62.8	**66.8**	4	Yes	No	No	Kings Crest
EB05	REB05-012	1	B	67	66	58.9	59.0	62.3	3.4	No	No	No	Kings Crest
EB05	REB05-013	2	B	67	66	56.5	56.5	59.3	2.8	No	No	No	Kings Crest
EB05	REB05-014	2	B	67	66	55.4	55.4	58.4	3	No	No	No	Kings Crest
EB05	REB05-015	3	B	67	66	57.1	57.1	59.6	2.5	No	No	No	Kings Crest
EB05	REB05-016	2	B	67	66	57.0	57.0	59.9	2.9	No	No	No	Kings Crest
EB06	REB06-001	1	B	67	66	61.5	61.5	65.4	3.9	No	No	No	SFR - Ritter Orchids
EB07	REB07-001	1	B	67	66	56.3	56.3	60.0	3.7	No	No	No	SFR
EB07	REB07-002	1	B	67	66	56.5	56.5	60.1	3.6	No	No	No	SFR
EB07	REB07-003	1	B	67	66	61.4	61.4	64.9	3.5	No	No	No	SFR
EB10	REB10-001	2	B	67	66	61.0	61.1	65.2	4.2	No	No	No	Palamar Oak Village - Duplex
EB10	REB10-002	2	B	67	66	60.7	60.7	65.0	4.3	No	No	No	Palamar Oak Village - Duplex
EB10	REB10-003	3	B	67	66	56.0	56.4	58.9	2.9	No	No	No	Palamar Oak Village
EB10	REB10-004	2	B	67	66	55.0	55.3	58.6	3.6	No	No	No	Palamar Oak Village
EB10	REB10-005	4	B	67	66	52.5	52.8	55.4	2.9	No	No	No	Palamar Oak Village
EB10	REB10-006	5	B	67	66	56.3	56.4	59.9	3.6	No	No	No	Palamar Oak Village
EB10	REB10-007	2	B	67	66	57.6	57.7	60.4	2.8	No	No	No	Palamar Oak Village

Predicted Noise Levels

Appendix B-1

Common Noise Environment (CNE)	Rec. Point	No. of Units	NAC	NAC Criteria (dBA)	FDOT Criteria (dBA)	2019 Existing LAeq1h (dBA)	2045 No-Build LAeq1h (dBA)	2045 Build LAeq1h (dBA)	Increase	NAC Approach or Exceeded	Subst. Increase (>15dB(A))	To Be Relocated	Description
XX.X	Impacted Receptor												
~~XX.X~~	Receptor inside future ROW												
EB10	REB10-008	2	B	67	66	56.7	56.7	57.7	1	No	No	No	Palamar Oak Village
EB10	REB10-009	4	B	67	66	54.0	54.1	56.6	2.6	No	No	No	Palamar Oak Village
EB10	REB10-010	3	B	67	66	52.3	52.5	54.8	2.5	No	No	No	Palamar Oak Village
WB01	RWB01-001	3	B	67	66	55.0	55.9	55.5	0.5	No	No	No	Neptune Pointe
WB01	RWB01-002	5	B	67	66	57.0	58.3	57.7	0.7	No	No	No	Neptune Pointe
WB01	RWB01-003	2	B	67	66	61.4	61.7	61.7	0.3	No	No	No	Neptune Pointe
WB01	RWB01-004	1	B	67	66	63.8	64.1	64.1	0.3	No	No	No	Neptune Pointe
WB01	RWB01-005	1	B	67	66	63.6	64.0	64.0	0.4	No	No	No	Neptune Pointe
WB01	RWB01-006	2	B	67	66	61.7	62.5	62.2	0.5	No	No	No	Neptune Pointe
WB01	RWB01-007	4	B	67	66	62.6	65.6	63.4	0.8	No	No	No	Neptune Pointe
WB02	RWB02-001	1	B	67	66	65.1	64.9	~~69.3~~	4.2	No	No	Yes	Midway City
WB02	RWB02-002	1	B	67	66	65.2	65.1	~~69.8~~	4.6	No	No	Yes	Midway City
WB02	RWB02-003	1	B	67	66	65.2	65.0	~~69.9~~	4.7	No	No	Yes	Midway City
WB02	RWB02-004	1	B	67	66	65.7	65.6	~~70.5~~	4.8	No	No	Yes	Midway City
WB02	RWB02-005	1	B	67	66	65.5	65.5	~~70.1~~	4.6	No	No	Yes	Midway City
WB02	RWB02-006	1	B	67	66	63.1	62.9	**66.2**	3.1	Yes	No	No	Midway City
WB02	RWB02-007	3	B	67	66	69.7	69.2	~~74.1~~	4.4	No	No	Yes	Midway City
WB02	RWB02-008	1	B	67	66	66.2	65.5	**69.7**	3.5	Yes	No	No	Midway City
WB02	RWB02-009	1	B	67	66	60.2	63.3	61.4	1.2	No	No	No	Midway City
WB02	RWB02-010	2	B	67	66	57.3	59.4	59.1	1.8	No	No	No	Midway City
WB02	RWB02-011	1	B	67	66	54.8	56.3	57.0	2.2	No	No	No	Midway City
WB02	RWB02-012	1	B	67	66	55.9	56.5	58.1	2.2	No	No	No	Midway City
WB02	RWB02-013	2	B	67	66	54.7	55.1	57.0	2.3	No	No	No	Midway City
WB02	RWB02-014	1	B	67	66	58.1	58.2	60.0	1.9	No	No	No	Midway City
WB02	RWB02-015	2	B	67	66	57.5	57.3	59.4	1.9	No	No	No	Midway City
WB03	RWB03-001	1	B	67	66	55.4	55.4	59.0	3.6	No	No	No	Midway City
WB03	RWB03-002	2	B	67	66	60.7	60.7	63.5	2.8	No	No	No	Loveland Estates
WB03	RWB03-003	2	B	67	66	62.5	62.5	**66.1**	3.6	Yes	No	No	Loveland Estates
WB03	RWB03-004	1	B	67	66	62.8	62.8	**66.2**	3.4	Yes	No	No	Loveland Estates
WB03	RWB03-005	1	B	67	66	61.2	61.2	64.9	3.7	No	No	No	Loveland Estates
WB03	RWB03-006	1	B	67	66	60.1	60.1	63.7	3.6	No	No	No	Loveland Estates
WB03	RWB03-007	1	B	67	66	58.6	58.6	61.6	3	No	No	No	Loveland Estates
WB03	RWB03-008	1	B	67	66	59.8	59.8	62.8	3	No	No	No	Loveland Estates
WB03	RWB03-009	1	B	67	66	60.6	60.7	64.3	3.7	No	No	No	Loveland Estates
WB03	RWB03-010	3	B	67	66	60.9	60.9	64.9	4	No	No	No	Loveland Estates
WB03	RWB03-011	1	B	67	66	62.1	62.1	**66.9**	4.8	Yes	No	No	Loveland Estates
WB03	RWB03-012	1	B	67	66	69.7	69.7	~~75.8~~	6.1	No	No	Yes	Loveland Estates
WB03	RWB03-013	1	B	67	66	60.2	60.2	63.4	3.2	No	No	No	Loveland Estates
WB03	RWB03-014	3	B	67	66	55.6	55.6	59.6	4	No	No	No	Loveland Estates
WB03	RWB03-015	1	B	67	66	62.3	62.3	**66.7**	4.4	Yes	No	No	Loveland Estates
WB03	RWB03-016	1	B	67	66	63.0	63.0	**67.6**	4.6	Yes	No	No	Loveland Estates
WB03	RWB03-017	1	B	67	66	67.0	67.0	~~73.1~~	6.1	No	No	Yes	Loveland Estates
WB04	RWB04-001	1	B	67	66	54.0	54.0	57.7	3.7	No	No	No	G & H Mobile Home Park
WB04	RWB04-002	1	B	67	66	60.1	60.1	63.7	3.6	No	No	No	G & H Mobile Home Park
WB04	RWB04-003	1	B	67	66	58.1	58.1	61.4	3.3	No	No	No	G & H Mobile Home Park
WB04	RWB04-004	1	B	67	66	67.6	67.6	**71.5**	3.9	Yes	No	No	G & H Mobile Home Park
WB04	RWB04-005	1	B	67	66	57.1	57.1	60.5	3.4	No	No	No	G & H Mobile Home Park
WB04	RWB04-006	1	B	67	66	53.1	53.1	56.5	3.4	No	No	No	G & H Mobile Home Park
WB04	RWB04-007	1	B	67	66	62.5	62.5	**66.4**	3.9	Yes	No	No	G & H Mobile Home Park
WB04	RWB04-008	1	B	67	66	66.4	66.4	**69.9**	3.5	Yes	No	No	SFR
WB04	RWB04-009	1	B	67	66	57.5	57.5	60.9	3.4	No	No	No	Twelve Oaks
WB04	RWB04-010	1	B	67	66	58.6	58.6	61.9	3.3	No	No	No	Twelve Oaks
WB04	RWB04-011	1	B	67	66	54.4	54.4	58.0	3.6	No	No	No	Twelve Oaks
WB04	RWB04-012	1	B	67	66	54.1	54.1	57.6	3.5	No	No	No	SFR
WB04	RWB04-013	1	B	67	66	69.2	69.2	~~73.3~~	4.1	No	No	Yes	G & H Mobile Home Park
WB04	RWB04-014	1	B	67	66	65.0	65.0	**69.6**	4.6	Yes	No	No	G & H Mobile Home Park
WB04	RWB04-015	1	B	67	66	60.5	60.5	64.6	4.1	No	No	No	G & H Mobile Home Park
WB04	RWB04-016	1	B	67	66	59.5	59.5	63.0	3.5	No	No	No	G & H Mobile Home Park
WB04	RWB04-017	1	B	67	66	58.6	58.6	61.9	3.3	No	No	No	G & H Mobile Home Park
WB06	RWB06-001A	1	B	67	66	62.6	62.6	65.2	2.6	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-001B	1	B	67	66	67.0	67.1	**69.2**	2.2	Yes	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-002A	1	B	67	66	63.2	63.3	65.9	2.7	No	No	No	Soleil Blu Luxury Apartments

Predicted Noise Levels

Common Noise Environment (CNE)	Rec. Point	No. of Units	NAC	NAC Criteria (dBA)	FDOT Criteria (dBA)	2019 Existing LAeq1h (dBA)	2045 No-Build LAeq1h (dBA)	2045 Build LAeq1h (dBA)	Increase	NAC Approach or Exceeded	Subst. Increase (>15dB(A))	To Be Relocated	Description
XX.X	Impacted Receptor												
~~XX.X~~	Receptor inside future ROW												
WB06	RWB06-002B	1	B	67	66	67.4	67.4	**69.7**	2.3	Yes	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-003A	1	B	67	66	64.8	64.8	**67.6**	2.8	Yes	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-003B	1	B	67	66	68.3	68.3	**70.9**	2.6	Yes	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-004A	1	B	67	66	65.6	65.6	**68.5**	2.9	Yes	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-004B	1	B	67	66	68.7	68.8	**71.4**	2.7	Yes	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-005A	1	B	67	66	51.0	51.1	53.1	2.1	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-005B	1	B	67	66	53.3	53.4	55.5	2.2	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-006A	1	B	67	66	51.5	51.5	53.6	2.1	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-006B	1	B	67	66	53.2	53.2	55.7	2.5	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-007A	1	B	67	66	51.8	51.8	53.9	2.1	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-007B	1	B	67	66	53.6	53.6	56.2	2.6	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-008A	1	B	67	66	53.1	53.1	55.1	2	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-008B	1	B	67	66	55.7	55.7	58.5	2.8	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-011A	4	B	67	66	54.8	55.0	57.5	2.7	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-011B	4	B	67	66	58.2	58.2	60.2	2	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-012A	4	B	67	66	54.3	54.2	56.5	2.2	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-012B	4	B	67	66	57.5	57.5	59.2	1.7	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-013A	4	B	67	66	53.9	53.9	56.7	2.8	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-013B	4	B	67	66	57.1	57.1	59.2	2.1	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-014A	8	B	67	66	54.6	54.7	57.9	3.3	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-014B	8	B	67	66	58.1	58.1	60.5	2.4	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-015A	8	B	67	66	53.5	53.6	56.4	2.9	No	No	No	Soleil Blu Luxury Apartments
WB06	RWB06-015B	8	B	67	66	56.7	56.7	58.8	2.1	No	No	No	Soleil Blu Luxury Apartments
WB07	RWB07-031	1	B	67	66	66.7	66.7	**69.9**	3.2	Yes	No	No	Battaglia
WB07	RWB07-032	1	B	67	66	66.8	66.8	**69.9**	3.1	Yes	No	No	Battaglia
WB07	RWB07-033	1	B	67	66	66.8	66.8	**69.7**	2.9	Yes	No	No	Battaglia
WB07	RWB07-034	1	B	67	66	66.8	66.8	**69.6**	2.8	Yes	No	No	Battaglia
WB07	RWB07-035	1	B	67	66	66.9	66.9	**69.6**	2.7	Yes	No	No	Battaglia
WB07	RWB07-036	1	B	67	66	67.1	67.1	**69.7**	2.6	Yes	No	No	Battaglia
WB07	RWB07-037	1	B	67	66	67.0	66.9	**69.4**	2.4	Yes	No	No	Battaglia
WB07	RWB07-038	1	B	67	66	67.0	67.0	**69.6**	2.6	Yes	No	No	Battaglia
WB07	RWB07-039	1	B	67	66	67.0	66.9	**69.5**	2.5	Yes	No	No	Battaglia
WB07	RWB07-040	1	B	67	66	66.8	66.8	**69.2**	2.4	Yes	No	No	Battaglia
WB07	RWB07-041	1	B	67	66	66.9	66.8	**69.3**	2.4	Yes	No	No	Battaglia
WB07	RWB07-042	1	B	67	66	66.9	66.8	**69.4**	2.5	Yes	No	No	Battaglia
WB07	RWB07-043	1	B	67	66	66.9	66.9	**69.6**	2.7	Yes	No	No	Battaglia
WB07	RWB07-045	1	B	67	66	66.9	66.9	**69.6**	2.7	Yes	No	No	Battaglia
WB07	RWB07-046	1	B	67	66	66.9	66.9	**69.6**	2.7	Yes	No	No	Battaglia
WB07	RWB07-047	1	B	67	66	67.0	67.0	**69.6**	2.6	Yes	No	No	Battaglia
WB07	RWB07-048	1	B	67	66	67.0	67.0	**69.5**	2.5	Yes	No	No	Battaglia
WB07	RWB07-049	1	B	67	66	66.9	67.0	**69.3**	2.4	Yes	No	No	Battaglia
WB07	RWB07-050	1	B	67	66	66.7	66.8	**69.1**	2.4	Yes	No	No	Battaglia
WB07	RWB07-051	1	B	67	66	66.6	66.7	**69.0**	2.4	Yes	No	No	Battaglia
WB07	RWB07-052	1	B	67	66	66.8	66.9	**69.3**	2.5	Yes	No	No	Battaglia
WB07	RWB07-053	1	B	67	66	67.0	67.1	**69.4**	2.4	Yes	No	No	Battaglia

Predicted Noise Levels

Common Noise Environment (CNE)	Rec. Point	No. of Units	NAC	NAC Criteria (dBA)	FDOT Criteria (dBA)	2016 Existing LAeq1h (dBA)	2042 No-Build LAeq1h (dBA)	2045 Build LAeq1h (dBA)	Increase	NAC Approach or Exceeded	Subst. Increase (>15dB(A))	To Be Relocated	Description
XX.X	Impacted Receptor												
XX.X	-20dB adjustment factor												
EB02	NEB02-001	1	D	52	51	40.2	41.0	41.0	0.8	No	No	No	Church
EB02	NEB02-002	1	C	67	66	56.8	57.3	58.4	1.6	No	No	No	Elks Lodge
EB06	NEB06-002	1	C	67	66	57.2	57.2	61.1	3.9	No	No	No	Igesia Bautista Church
EB08	NEB08-001	1	C	67	66	65.2	65.2	66.2	1.0	Yes	No	No	Partin Triangle Park Playground
EB08	NEB08-002	1	C	67	66	64.1	64.1	65.5	1.4	No	No	No	Partin Triangle Park Tennis Courts
EB08	NEB08-003	1	C	67	66	63.7	63.6	65.1	1.4	No	No	No	Partin Triangle Park Tennis Courts
EB08	NEB08-004	1	C	67	66	66.0	66.0	66.4	0.4	Yes	No	No	Partin Triangle Park
EB08	NEB08-005	1	C	67	66	64.7	64.7	65.3	0.6	No	No	No	Partin Triangle Park
EB08	NEB08-006	1	C	67	66	63.5	63.5	64.2	0.7	No	No	No	Partin Triangle Park
EB09	NEB09-001	1	C	67	66	60.8	60.9	65.0	4.2	No	No	No	Nursing Home
WB05	NWB05-001	1	C	67	66	62.8	62.8	65.8	3.0	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-002	1	C	67	66	60.4	60.4	62.9	2.5	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-003	1	C	67	66	58.5	58.5	60.9	2.4	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-004	1	C	67	66	57.3	57.3	60.1	2.8	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-005	1	C	67	66	61.1	61.1	63.5	2.4	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-006	1	C	67	66	59.6	59.6	61.6	2.0	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-007	1	C	67	66	58.1	58.1	60.6	2.5	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-008	1	C	67	66	56.9	56.9	59.5	2.6	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-009	1	C	67	66	56.0	56.0	58.5	2.5	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-010	1	C	67	66	54.9	54.9	56.6	1.7	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-011	1	C	67	66	57.9	57.9	60.1	2.2	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-012	1	C	67	66	56.9	56.9	59.2	2.3	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-013	1	C	67	66	56.1	56.1	58.3	2.2	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-014	1	C	67	66	55.9	55.9	57.3	1.4	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-015	1	C	67	66	56.0	56.0	57.7	1.7	No	No	No	Neptune Middle School Sports Fields
WB05	NWB05-016	1	C	67	66	62.4	62.4	62.6	0.2	No	No	No	Neptune Middle School Benches

Appendix C

Traffic Data

TRAFFIC DATA FOR NOISE STUDIES

Federal Aid Number(s):	
FPID Number(s):	445415-1
State/Federal Route No.:	
Road Name:	Neptune Road
Project Description:	From Partin Settlement Road to US 192
Segment Description:	Neptune Road from Partin Settlement Road to Cross Prairie Parkway
Section Number:	1 - North
Mile Post To/From:	

Existing Facility:				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2018	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1910	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	1824	B =	0	% of Design Hour Volume
Posted Speed:	40	MC =	0	% of Design Hour Volume

No Build Alternative (Design Year):				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2045	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1910	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	2762	B =	0	% of Design Hour Volume
Posted Speed:	50	MC =	0	% of Design Hour Volume

Build Alternative (Design Year):				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2045	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1910	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	2762	B =	0	% of Design Hour Volume
Posted Speed:	50	MC =	0	% of Design Hour Volume

I certify that the above information is accurate and appropriate for use with the traffic noise analysis.

Prepared By: CLIF TATE, P.E. (Print Name) [signature] (Signature) Date: 2.10.20

I have reviewed and concur that the above information is appropriate for use with the traffic noise analysis.

FDOT Reviewer: ____________ Print Name ____________ Signature Date: ____________

TRAFFIC DATA FOR NOISE STUDIES

Federal Aid Number(s):	
FPID Number(s):	445415-1
State/Federal Route No.:	
Road Name:	Neptune Road
Project Description:	From Partin Settlement Road to US 192
Segment Description:	Neptune Road from Cross Prairie Parkway to Old Canoe Creek Road
Section Number:	2 - Central
Mile Post To/From:	

Existing Facility:				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2018	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	830	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	1251	B =	0	% of Design Hour Volume
Posted Speed:	50	MC =	0	% of Design Hour Volume

No Build Alternative (Design Year):				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2045	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	830	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	1615	B =	0	% of Design Hour Volume
Posted Speed:	50	MC =	0	% of Design Hour Volume

Build Alternative (Design Year):				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2045	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1910	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	1772	B =	0	% of Design Hour Volume
Posted Speed:	50	MC =	0	% of Design Hour Volume

I certify that the above information is accurate and appropriate for use with the traffic noise analysis.

Prepared By: CLIF TATE, P.E. [signature] Date: 2-10-20

Print Name Signature

I have reviewed and concur that the above information is appropriate for use with the traffic noise analysis.

FDOT Reviewer: ______________________ Date: __________

Print Name Signature

TRAFFIC DATA FOR NOISE STUDIES

Federal Aid Number(s):	
FPID Number(s):	445415-1
State/Federal Route No.:	
Road Name:	Neptune Road
Project Description:	From Partin Settlement Road to US 192
Segment Description:	Neptune Road from Old Canoe Creek Road to US 192
Section Number:	3 - South
Mile Post To/From:	

Existing Facility:				
		D =	57.9	%
Year:	2018	T24 =	5.1	% of 24 Hour Volume
		Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	370	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	573	B =	0	% of Design Hour Volume
Posted Speed:	35	MC =	0	% of Design Hour Volume

No Build Alternative (Design Year):				
		D =	57.9	%
Year:	2045	T24 =	5.1	% of 24 Hour Volume
		Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	370	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	730	B =	0	% of Design Hour Volume
Posted Speed:	35	MC =	0	% of Design Hour Volume

Build Alternative (Design Year):				
		D =	57.9	%
Year:	2045	T24 =	5.1	% of 24 Hour Volume
		Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1910	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	730	B =	0	% of Design Hour Volume
Posted Speed:	35	MC =	0	% of Design Hour Volume

I certify that the above information is accurate and appropriate for use with the traffic noise analysis.

Prepared By: CLIF TATE P.E. (Print Name) [signature] (Signature) Date: 2.10.20

I have reviewed and concur that the above information is appropriate for use with the traffic noise analysis.

FDOT Reviewer: ______ Print Name ______ Signature Date: ______

TRAFFIC DATA FOR NOISE STUDIES

Federal Aid Number(s):	
FPID Number(s):	445415-1
State/Federal Route No.:	
Road Name:	Neptune Road
Project Description:	From Partin Settlement Road to US 192
Segment Description:	Old Canoe Creek Road North of Neptune Road
Section Number:	Old Canoe Creek Road North
Mile Post To/From:	

Existing Facility:

Year:	2018	D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
		Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1910	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	990	B =	0	% of Design Hour Volume
Posted Speed:	45	MC =	0	% of Design Hour Volume

No Build Alternative (Design Year):

Year:	2045	D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
		Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1910	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	1251	B =	0	% of Design Hour Volume
Posted Speed:	45	MC =	0	% of Design Hour Volume

Build Alternative (Design Year):

Year:	2045	D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
		Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1910	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	1251	B =	0	% of Design Hour Volume
Posted Speed:	45	MC =	0	% of Design Hour Volume

I certify that the above information is accurate and appropriate for use with the traffic noise analysis.

Prepared By: CLIF TATE, P.E. (Print Name) — CT (Signature) — Date: 2-10-20

I have reviewed and concur that the above information is appropriate for use with the traffic noise analysis.

FDOT Reviewer: ________ Print Name ________ Signature — Date: ________

TRAFFIC DATA FOR NOISE STUDIES

Federal Aid Number(s):	
FPID Number(s):	445415-1
State/Federal Route No.:	
Road Name:	Neptune Road
Project Description:	From Partin Settlement Road to US 192
Segment Description:	Old Canoe Creek Road South of Neptune Road
Section Number:	Old Canoe Creek Road South
Mile Post To/From:	

Existing Facility:				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2018	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1910	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	1615	B =	0	% of Design Hour Volume
Posted Speed:	45	MC =	0	% of Design Hour Volume

No Build Alternative (Design Year):				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2045	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1910	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	2032	B =	0	% of Design Hour Volume
Posted Speed:	45	MC =	0	% of Design Hour Volume

Build Alternative (Design Year):				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2045	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	1910	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	2032	B =	0	% of Design Hour Volume
Posted Speed:	45	MC =	0	% of Design Hour Volume

I certify that the above information is accurate and appropriate for use with the traffic noise analysis.

Prepared By: CLIF TATE, P.E. (Print Name) ______ (Signature) Date: 2-10-20

I have reviewed and concur that the above information is appropriate for use with the traffic noise analysis.

FDOT Reviewer: ______ Print Name ______ Signature Date: ______

TRAFFIC DATA FOR NOISE STUDIES

Federal Aid Number(s):	
FPID Number(s):	445415-1
State/Federal Route No.:	
Road Name:	Neptune Road
Project Description:	From Partin Settlement Road to US 192
Segment Description:	Partin Settlement Road East of Neptune Road
Section Number:	Partin Settlement Road East
Mile Post To/From:	

Existing Facility:

Year:	2018	D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
		Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	747	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	677	B =	0	% of Design Hour Volume
Posted Speed:	35	MC =	0	% of Design Hour Volume

No Build Alternative (Design Year):

Year:	2045	D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
		Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	747	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	1615	B =	0	% of Design Hour Volume
Posted Speed:	35	MC =	0	% of Design Hour Volume

Build Alternative (Design Year):

Year:	2045	D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
		Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	747	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	1251	B =	0	% of Design Hour Volume
Posted Speed:	35	MC =	0	% of Design Hour Volume

I certify that the above information is accurate and appropriate for use with the traffic noise analysis.

Prepared By: CLIF TATE, P.E. (Print Name) [signature] (Signature) Date: 2-10-20

I have reviewed and concur that the above information is appropriate for use with the traffic noise analysis.

FDOT Reviewer: ____________ (Print Name) ____________ (Signature) Date: ____________

TRAFFIC DATA FOR NOISE STUDIES

Federal Aid Number(s):	
FPID Number(s):	445415-1
State/Federal Route No.:	
Road Name:	Neptune Road
Project Description:	From Partin Settlement Road to US 192
Segment Description:	Turnpike South of US 192
Section Number:	Turnpike
Mile Post To/From:	

Existing Facility:				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2018	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	5760	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	-	B =	0	% of Design Hour Volume
Posted Speed:	65	MC =	0	% of Design Hour Volume

No Build Alternative (Design Year):				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2045	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	5760	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	-	B =	0	% of Design Hour Volume
Posted Speed:	65	MC =	0	% of Design Hour Volume

Build Alternative (Design Year):				
		D =	57.9	%
		T24 =	5.1	% of 24 Hour Volume
Year:	2045	Tpeak =	2.6	% of Design Hour Volume
		MT =	1.7	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	5760	HT =	3.4	% of Design Hour Volume
Demand Peak Hour Volume:	-	B =	0	% of Design Hour Volume
Posted Speed:	65	MC =	0	% of Design Hour Volume

I certify that the above information is accurate and appropriate for use with the traffic noise analysis.

Prepared By: CLIF TATE, P.E. (Print Name) [signature] (Signature) Date: 2.10.20

I have reviewed and concur that the above information is appropriate for use with the traffic noise analysis.

FDOT Reviewer: ______ Print Name ______ Signature Date: ______

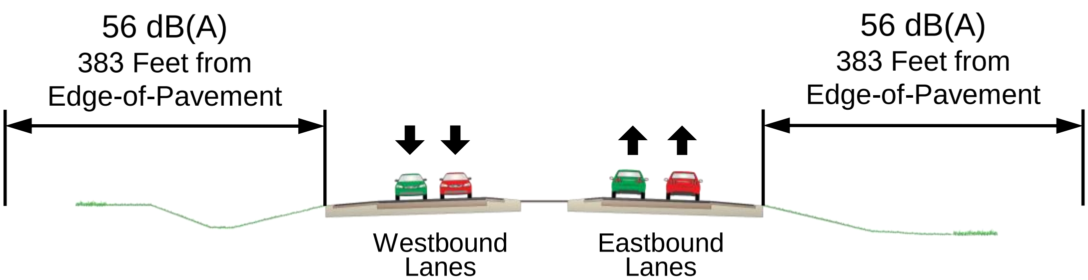
Appendix D

Project Noise Contours

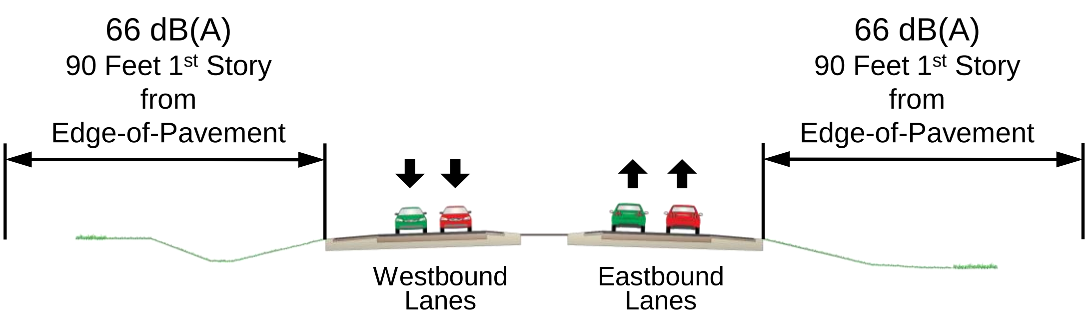
Neptune Road Noise Contours

4 Lanes – North Segment

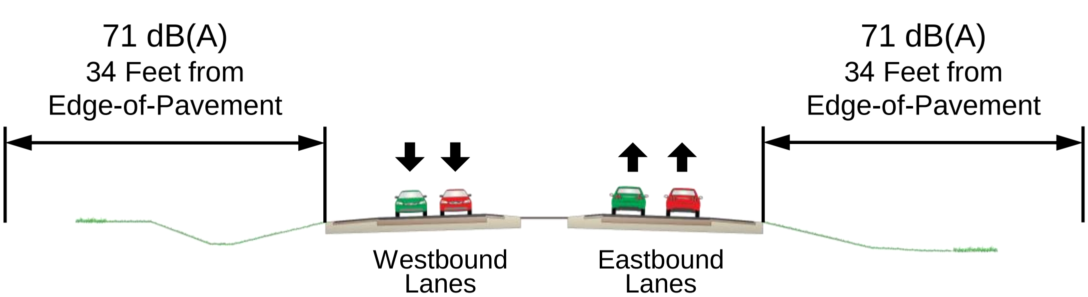
from Partin Settlement Road to Cross Prairie Parkway



Activity Category A



Activity Category B/C



Activity Category E

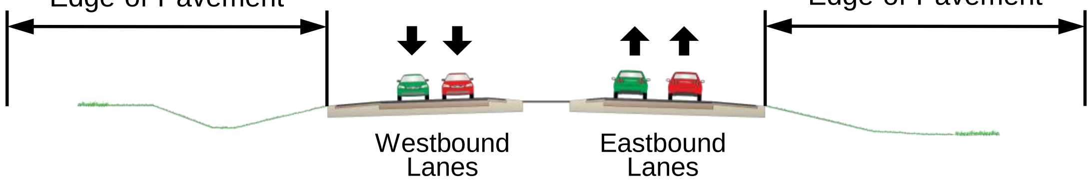
Neptune Road Noise Contours

4 Lanes – Central Segment

from Cross Prairie Parkway to Old Canoe Creek Road

56 dB(A)
470 Feet from
Edge-of-Pavement

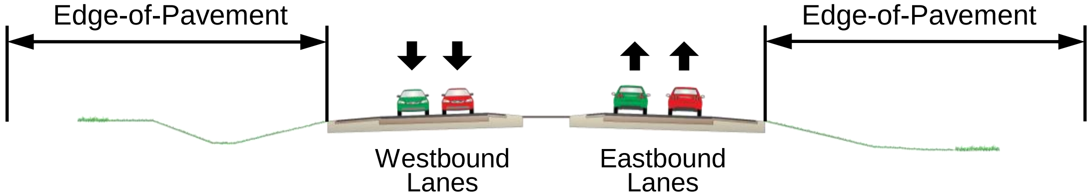
56 dB(A)
470 Feet from
Edge-of-Pavement



Activity Category A

66 dB(A)
126 Feet 1st Story
from
Edge-of-Pavement

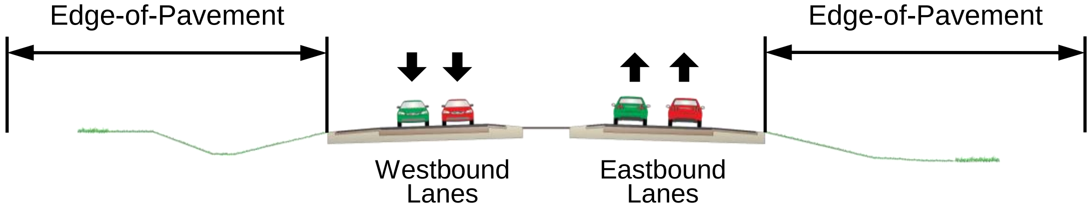
66 dB(A)
126 Feet 1st Story
from
Edge-of-Pavement



Activity Category B/C

71 dB(A)
54 Feet from
Edge-of-Pavement

71 dB(A)
54 Feet from
Edge-of-Pavement

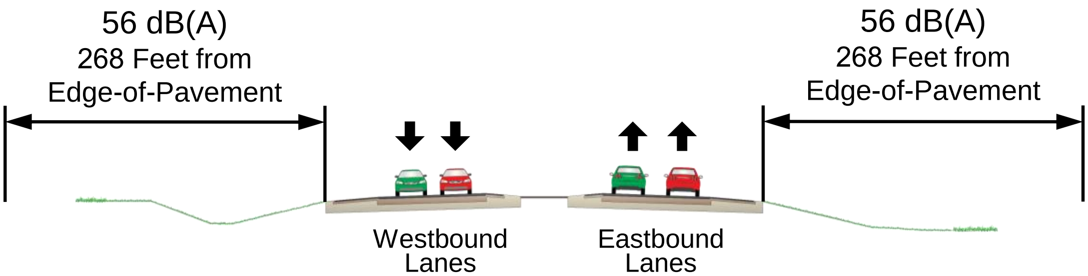


Activity Category E

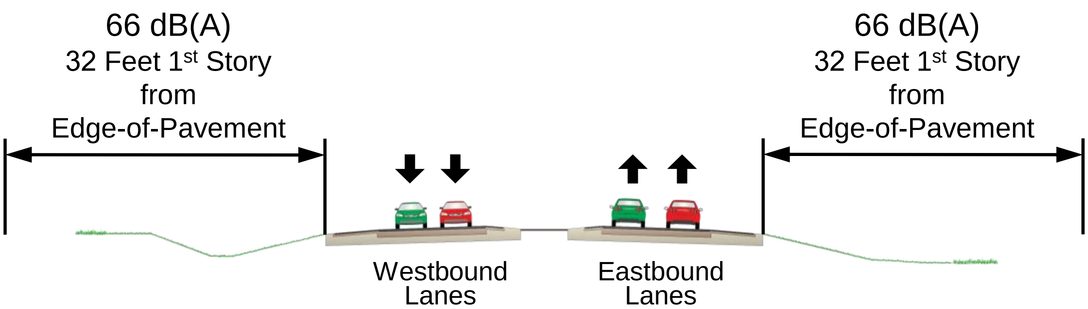
Neptune Road Noise Contours

4 Lanes – South Segment

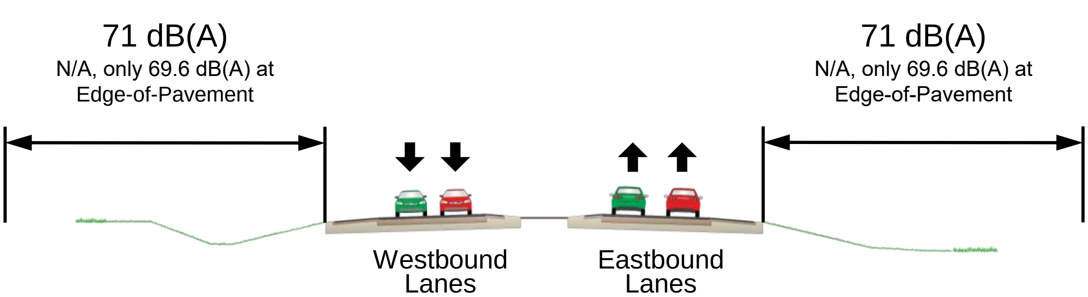
from Old Canoe Creek Road to US 192



Activity Category A



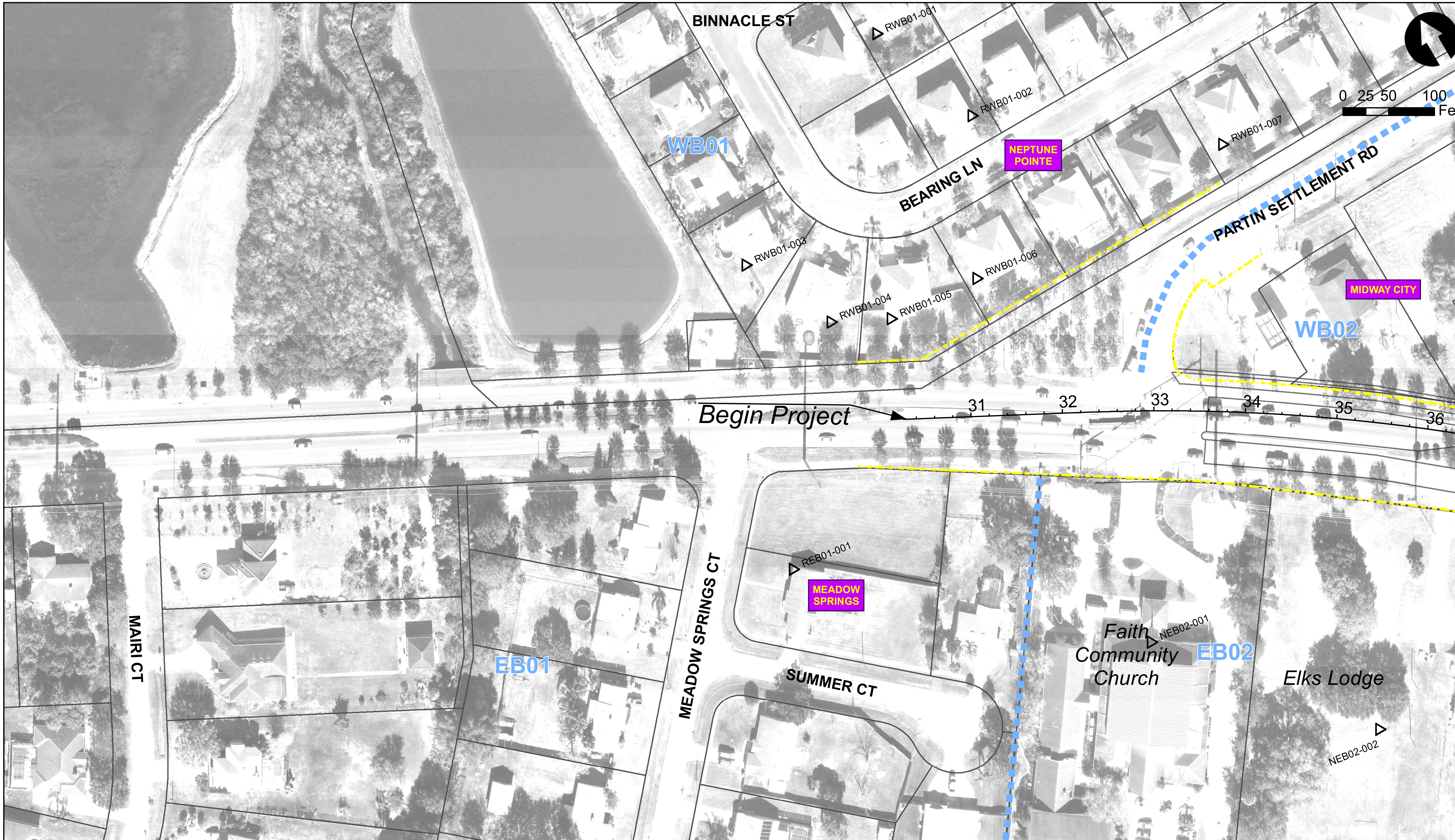
Activity Category B/C



Activity Category E

Appendix E

Project Aerials



Not Impacted - Not Benefitted	Potential Relocation	Existing ROW
Impacted - Benefitted	Validation Site	Proposed ROW
Impacted - Not Benefitted	Potential Noise Barrier	CNE Boundary

Neptune Road PD&E Study

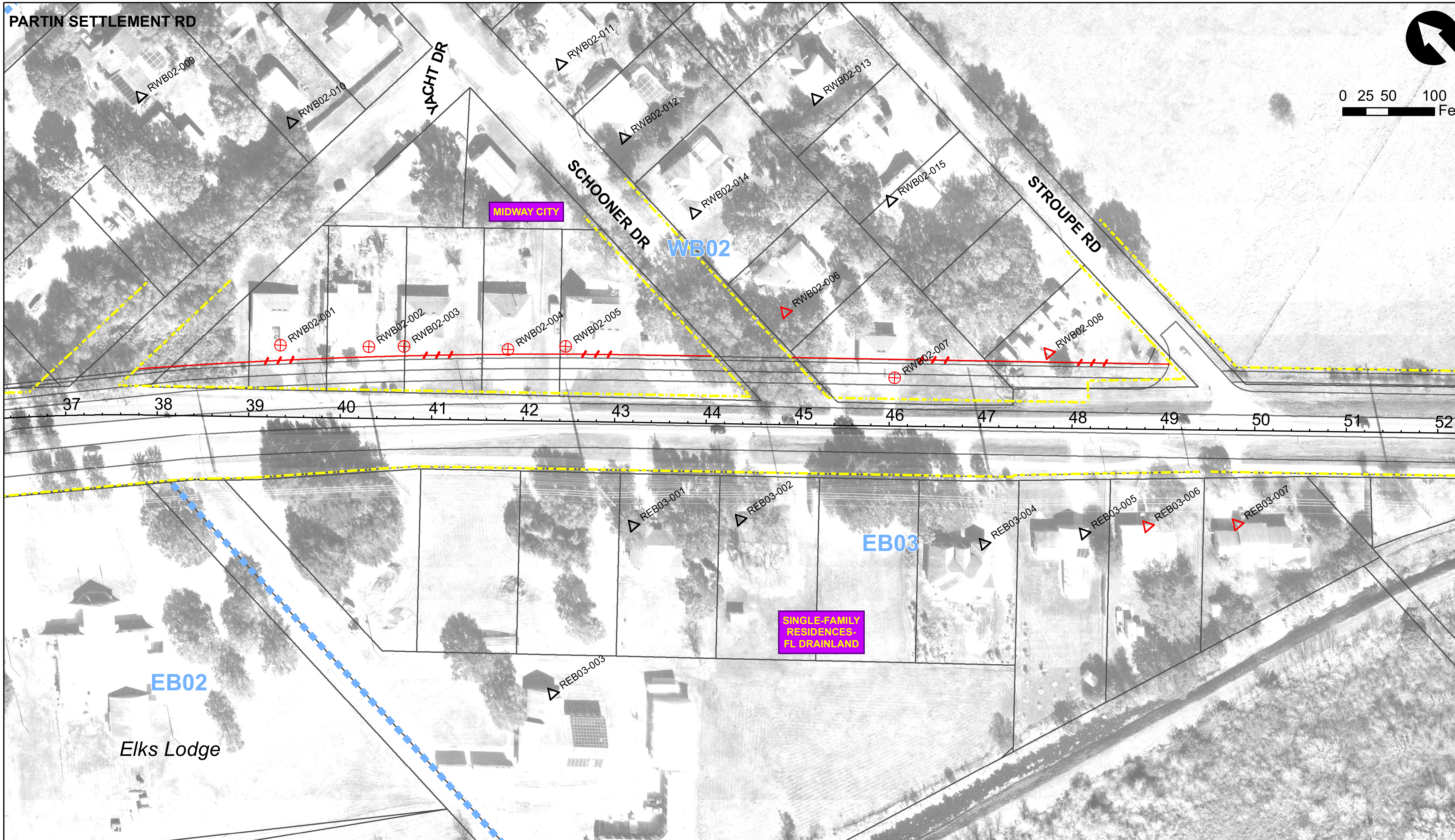
NOISE SPECIALIST
Jeff Jones, GISP
Inwood Consulting Engineers, Inc.
3000 Dovera Drive, Suite 200
Oviedo, Florida 32765
P 407.971.8850

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	OSCEOLA	445415-1

NOISE STUDY REPORT PROJECT AERIALS

Sheet No. 1



Not Impacted - Not Benefitted
Impacted - Benefitted
Impacted - Not Benefitted
Potential Relocation
Validation Site
Potential Noise Barrier
Existing ROW
Proposed ROW
CNE Boundary

Neptune Road PD&E Study

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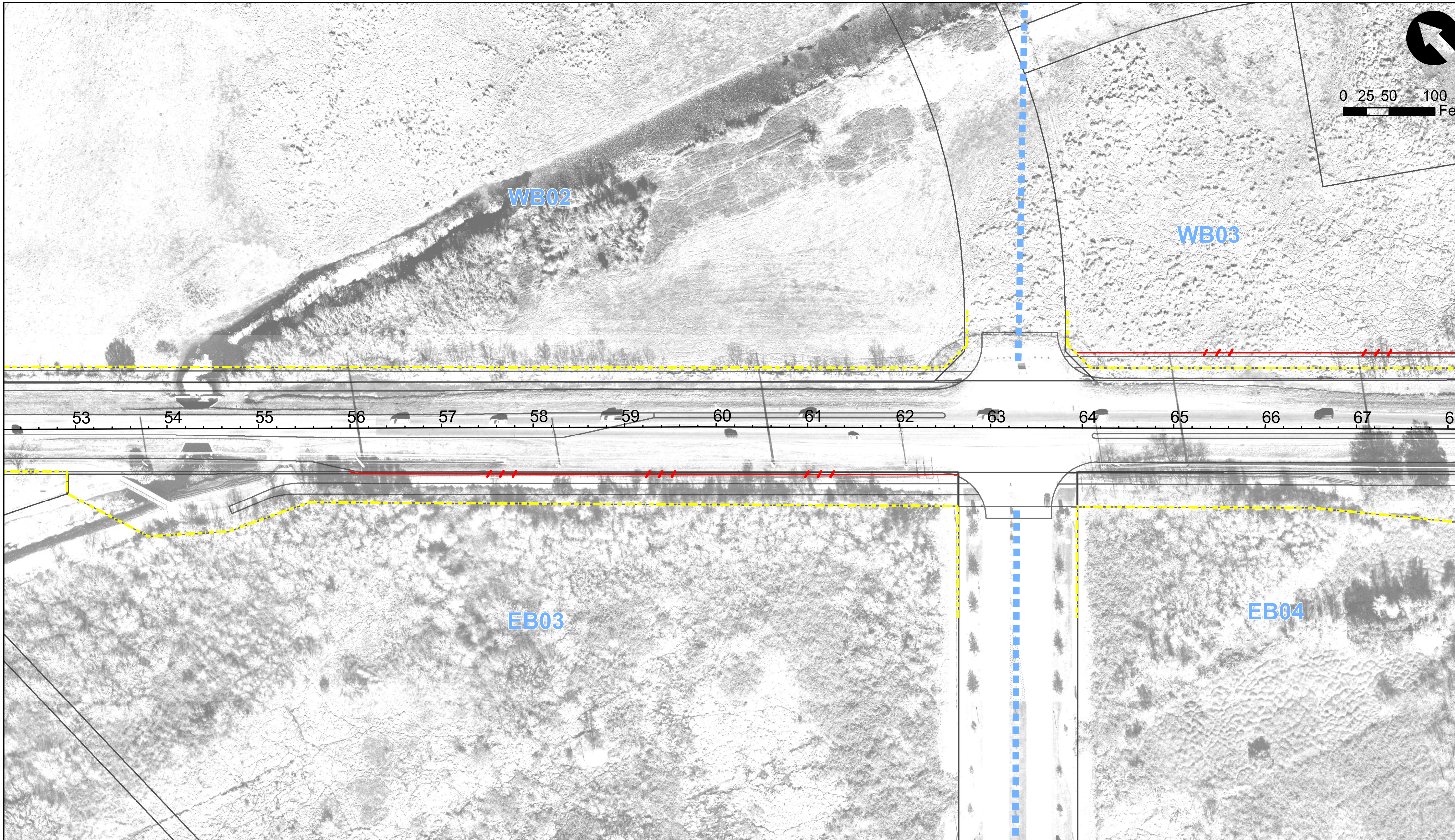
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	OSCEOLA	445415-1

NOISE STUDY REPORT PROJECT AERIALS

Sheet No. 2



Not Impacted - Not Benefitted
Impacted - Benefitted
Impacted - Not Benefitted
Potential Relocation
Validation Site
Potential Noise Barrier
Existing ROW
Proposed ROW
CNE Boundary

Neptune Road PD&E Study

NOISE SPECIALIST

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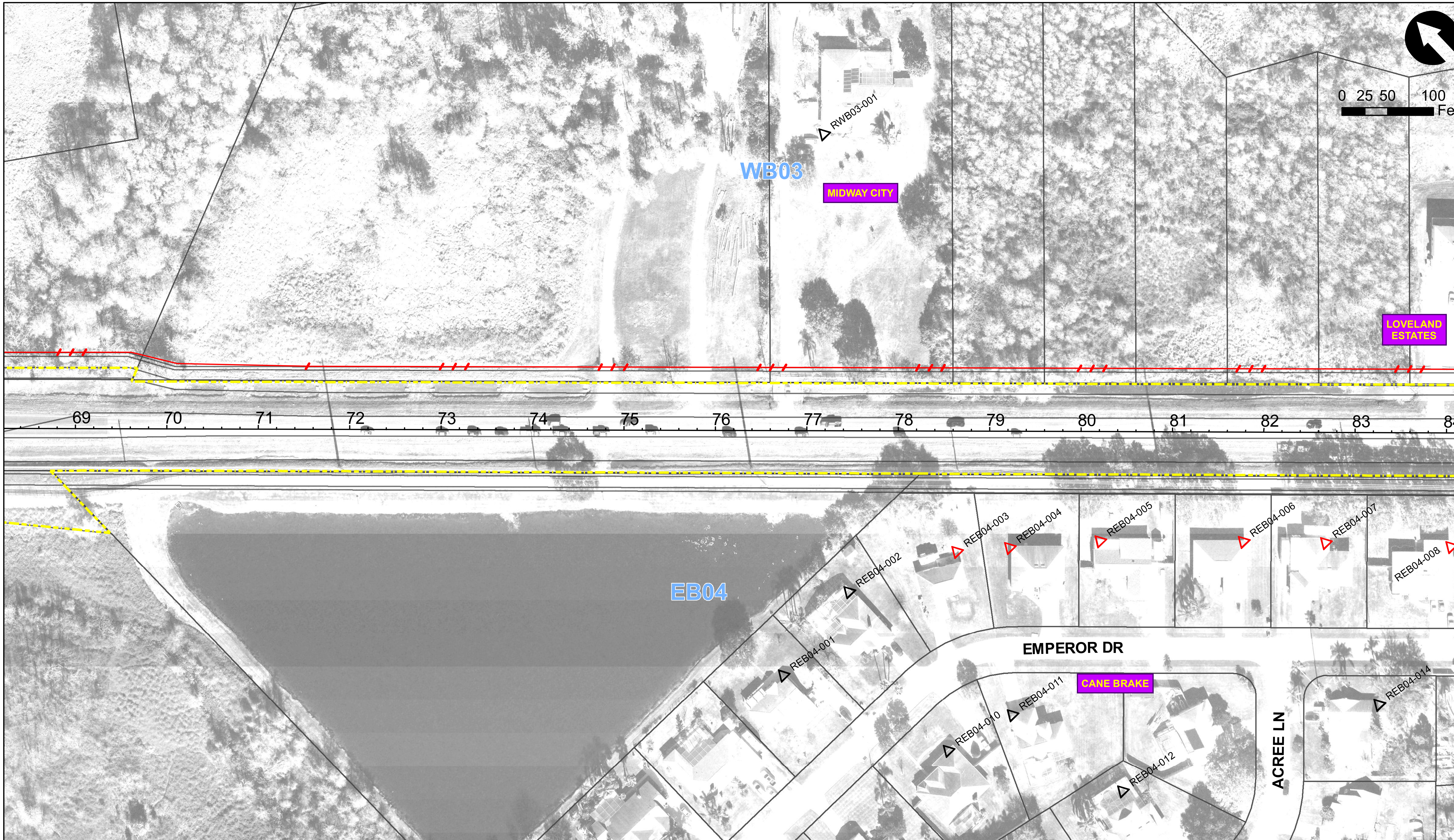
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	OSCEOLA	445415-1

NOISE STUDY REPORT PROJECT AERIALS

Sheet No. 3



Not Impacted - Not Benefitted	Potential Relocation	Existing ROW
Impacted - Benefitted	Validation Site	Proposed ROW
Impacted - Not Benefitted	Potential Noise Barrier	CNE Boundary

Neptune Road PD&E Study

NOISE SPECIALIST

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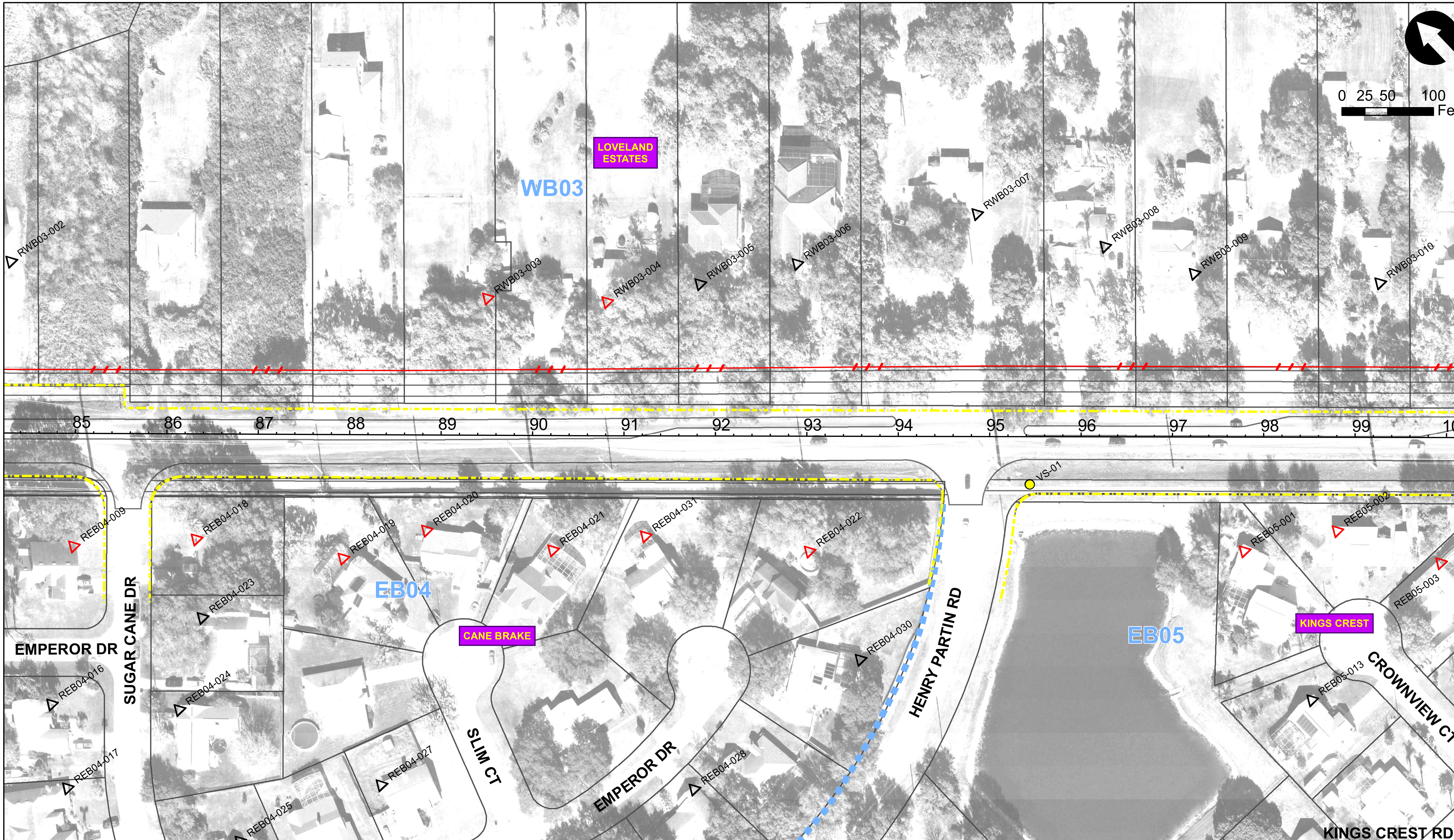
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	OSCEOLA	445415-1

NOISE STUDY REPORT PROJECT AERIALS

Sheet No. 4



Not Impacted - Not Benefitted
Impacted - Benefitted
Impacted - Not Benefitted
Potential Relocation
Validation Site
Potential Noise Barrier
Existing ROW
Proposed ROW
CNE Boundary

Neptune Road
PD&E Study

NOISE SPECIALIST
Jeff Jones, GISP
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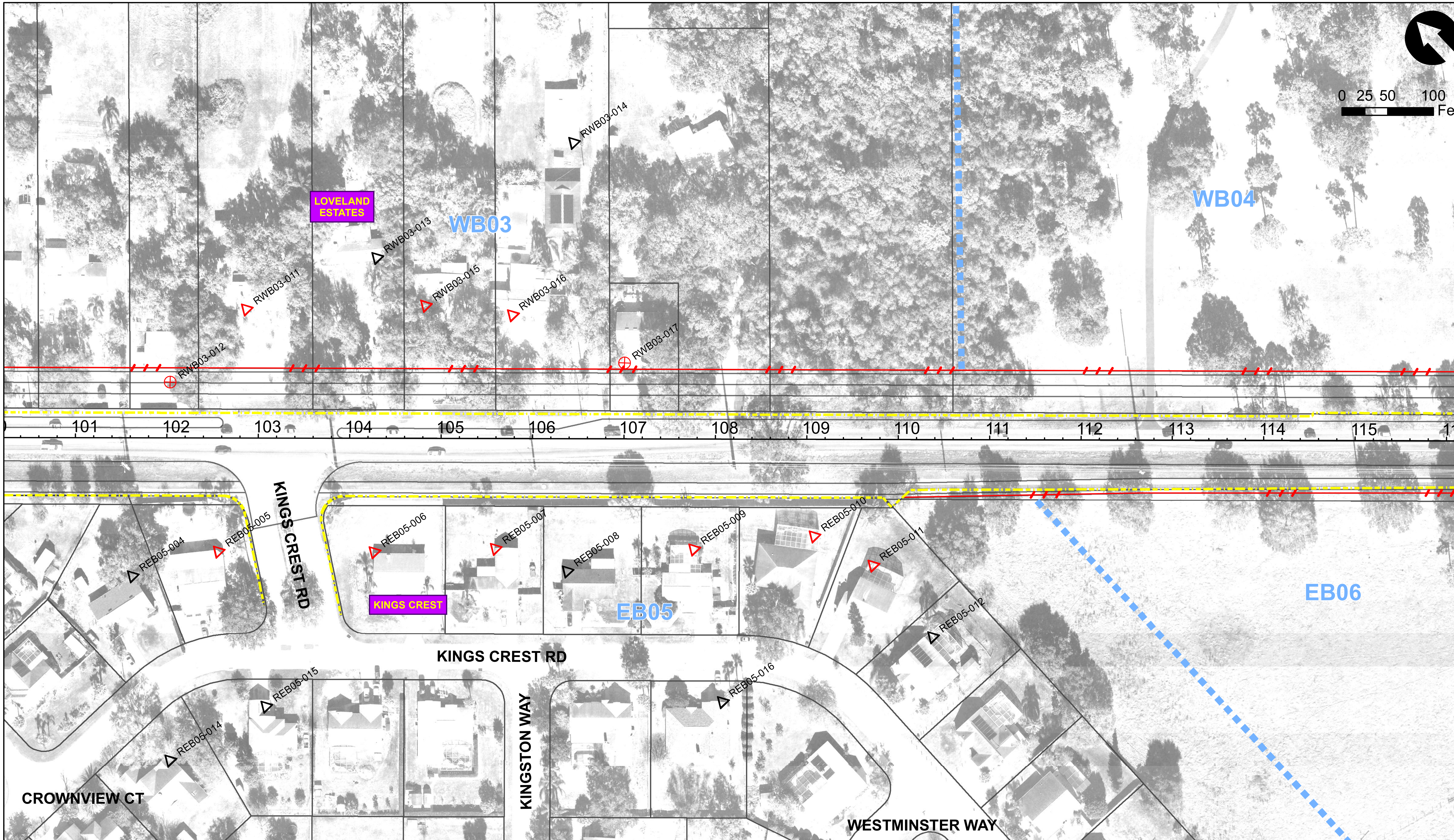
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	OSCEOLA	445415-1

NOISE STUDY REPORT
PROJECT AERIALS

Sheet No.
5



Not Impacted - Not Benefitted	Potential Relocation
Impacted - Benefitted	Validation Site
Impacted - Not Benefitted	Potential Noise Barrier
Existing ROW	Proposed ROW
CNE Boundary	

Neptune Road PD&E Study

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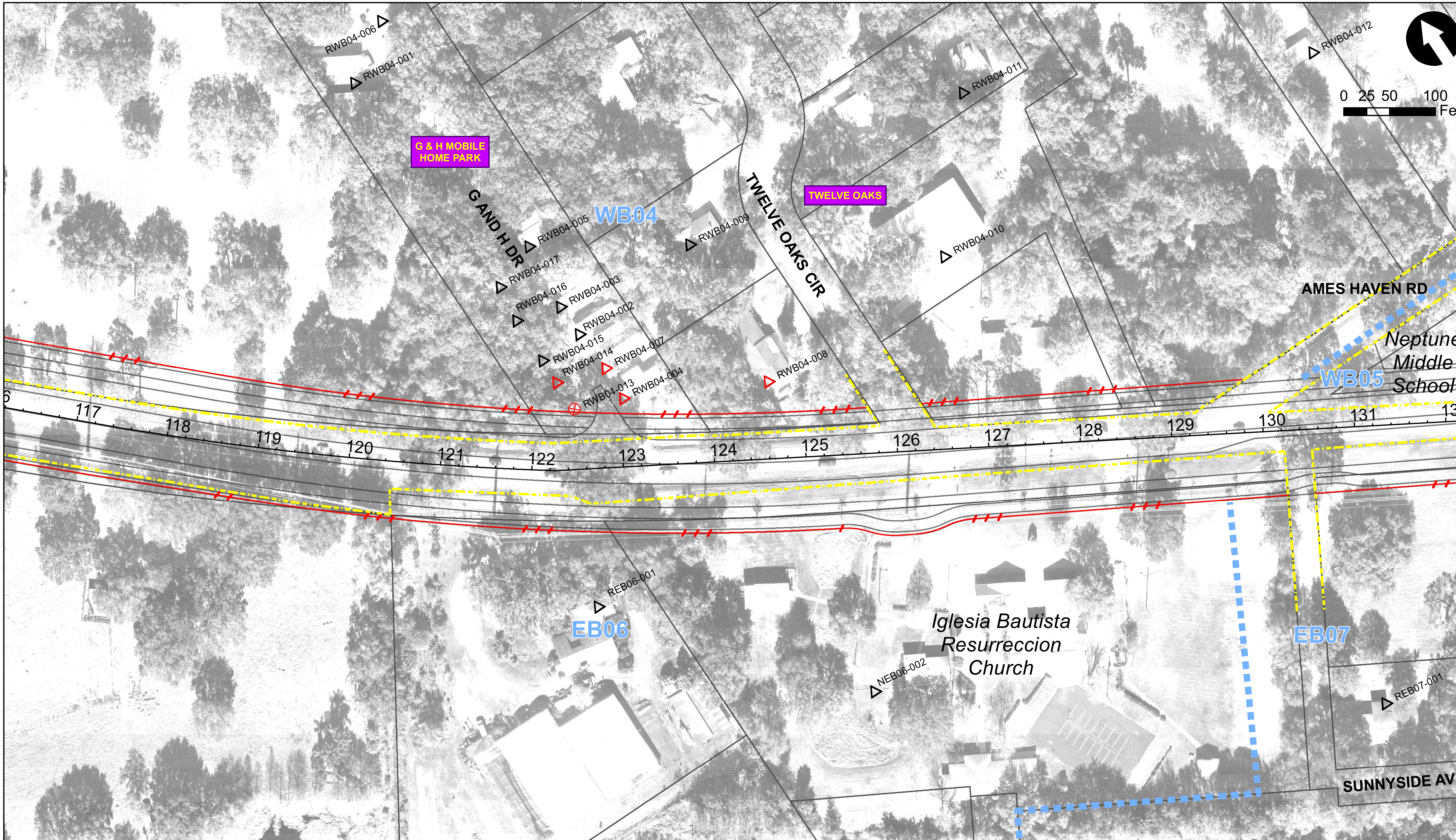
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	OSCEOLA	445415-1

NOISE STUDY REPORT PROJECT AERIALS

Sheet No. 6



Not Impacted - Not Benefitted	Potential Relocation	Existing ROW
Impacted - Benefitted	Validation Site	Proposed ROW
Impacted - Not Benefitted	Potential Noise Barrier	CNE Boundary

Neptune Road
PD&E Study

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DEPARTMENT OF TRANSPORTATION

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	OSCEOLA	445415-1

NOISE STUDY REPORT
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Sheet No.
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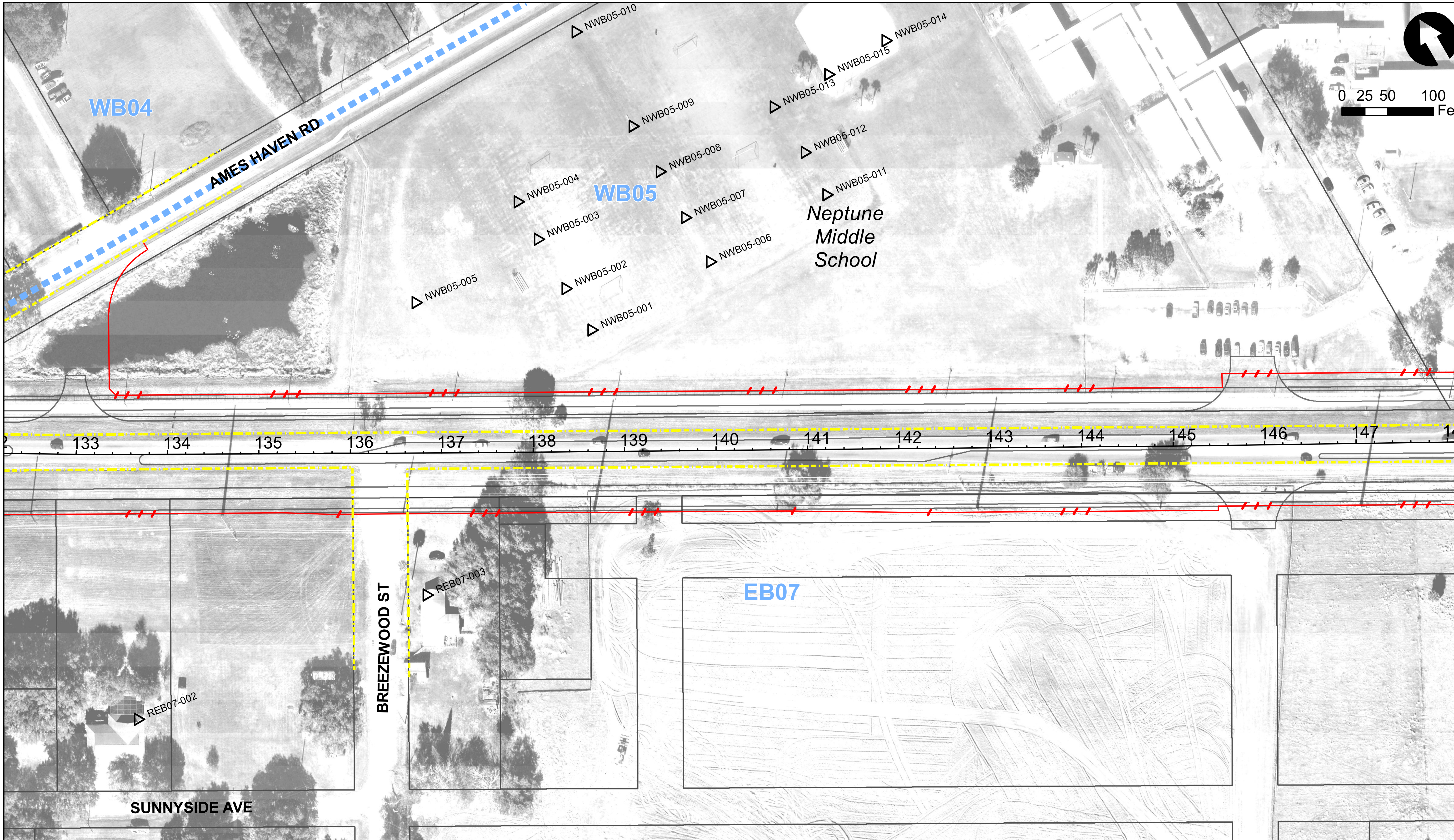

Not Impacted - Not Benefitted	Potential Relocation	Existing ROW
Impacted - Benefitted	Validation Site	Proposed ROW
Impacted - Not Benefitted	Potential Noise Barrier	CNE Boundary

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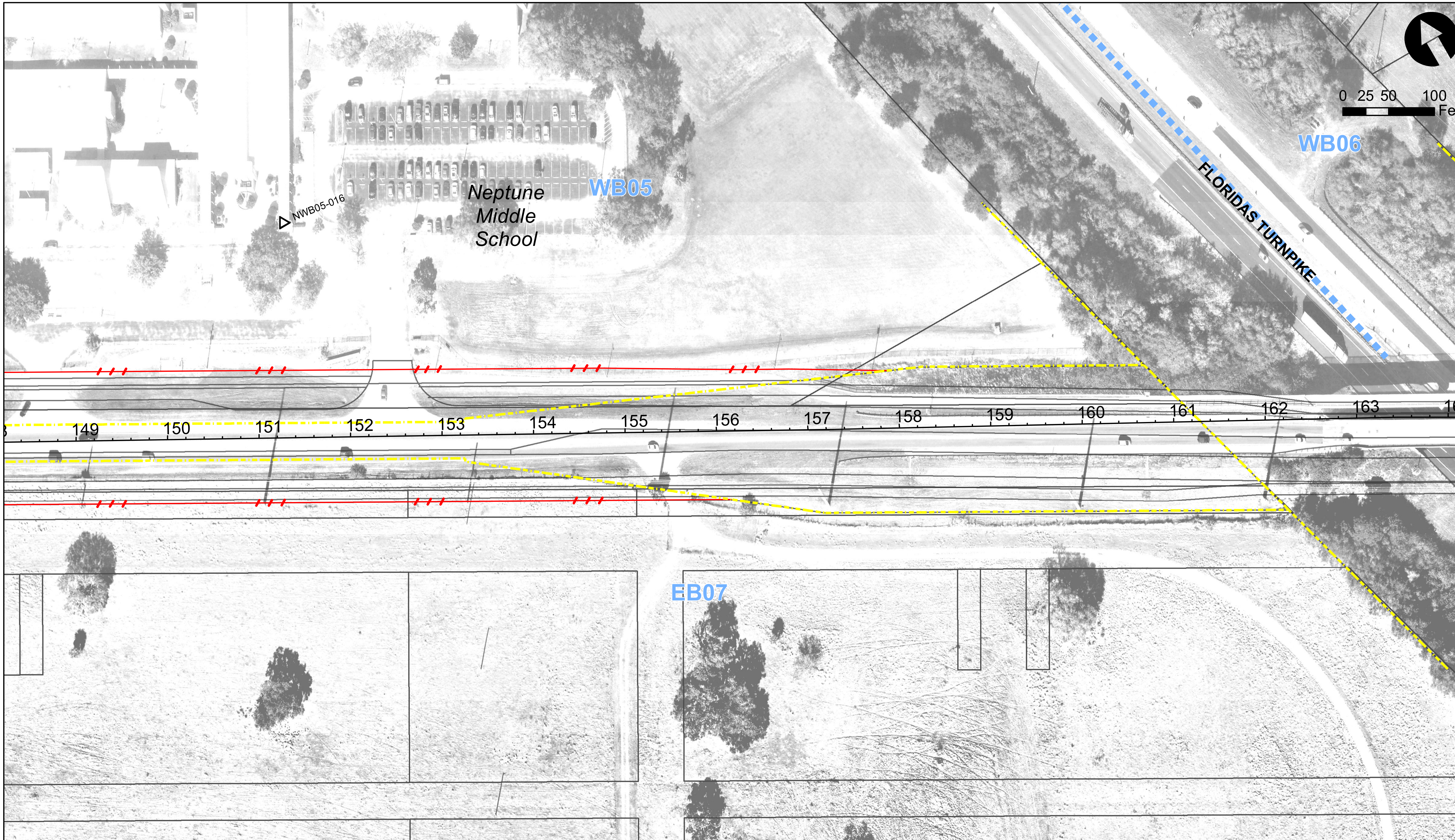
	OSCEOLA	445415-1

NOISE STUDY REPORT PROJECT AERIALS

Sheet No. 8



△ Not Impacted - Not Benefitted	⊗ Potential Relocation	Existing ROW
△ Impacted - Benefitted	● Validation Site	Proposed ROW
△ Impacted - Not Benefitted	Potential Noise Barrier	CNE Boundary

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NOISE STUDY REPORT
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Sheet No.
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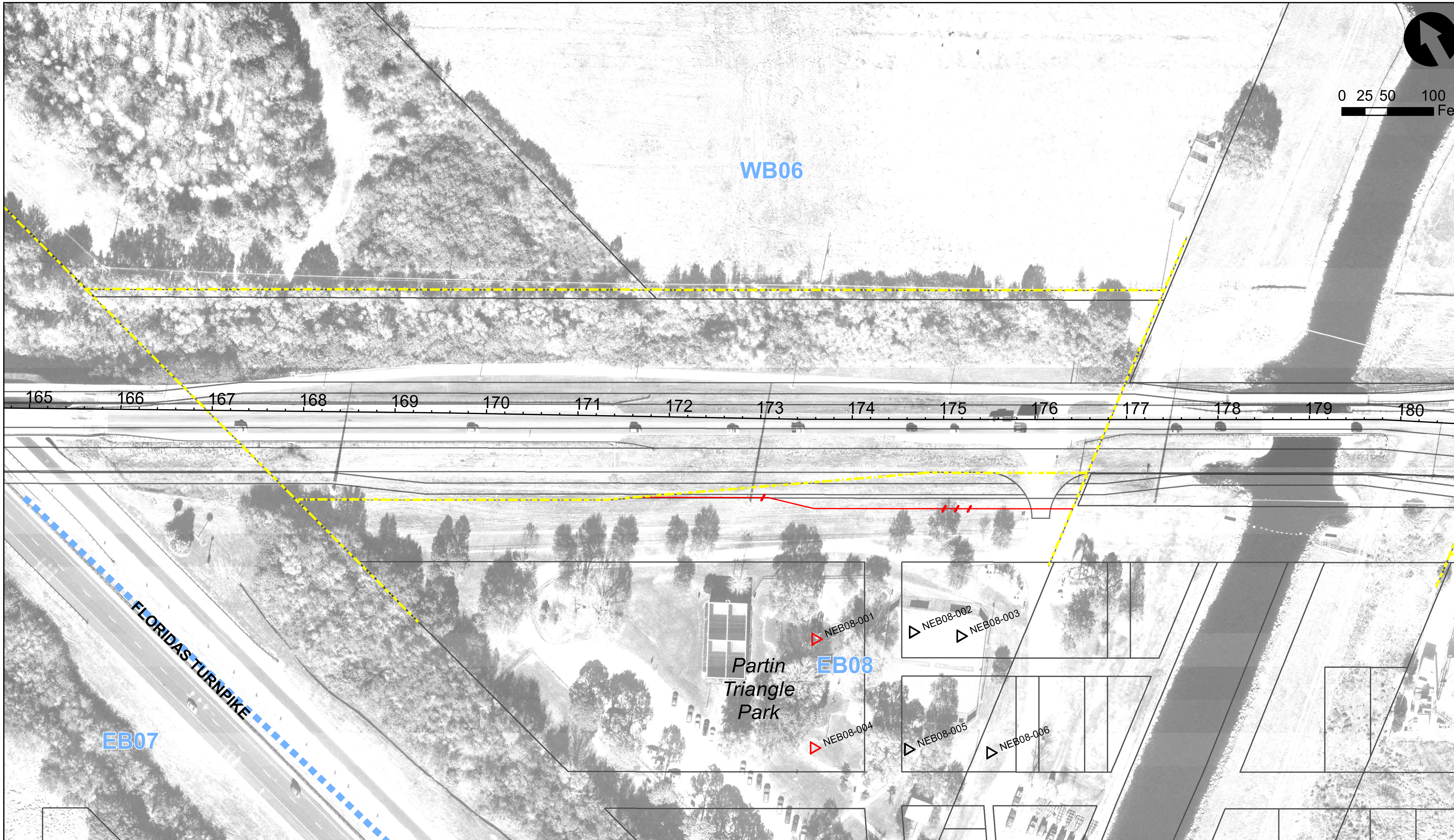

Not Impacted - Not Benefitted	Potential Relocation	Existing ROW
Impacted - Benefitted	Validation Site	Proposed ROW
Impacted - Not Benefitted	Potential Noise Barrier	CNE Boundary

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NOISE STUDY REPORT PROJECT AERIALS

Sheet No. **10**

Not Impacted - Not Benefitted	Potential Relocation	Existing ROW
Impacted - Benefitted	Validation Site	Proposed ROW
Impacted - Not Benefitted	Potential Noise Barrier	CNE Boundary

Neptune Road PD&E Study

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NOISE STUDY REPORT PROJECT AERIALS

Sheet No. **11**

Not Impacted - Not Benefitted
Impacted - Benefitted
Impacted - Not Benefitted
Potential Relocation
Validation Site
Potential Noise Barrier
Existing ROW
Proposed ROW
CNE Boundary

Neptune Road
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NOISE STUDY REPORT
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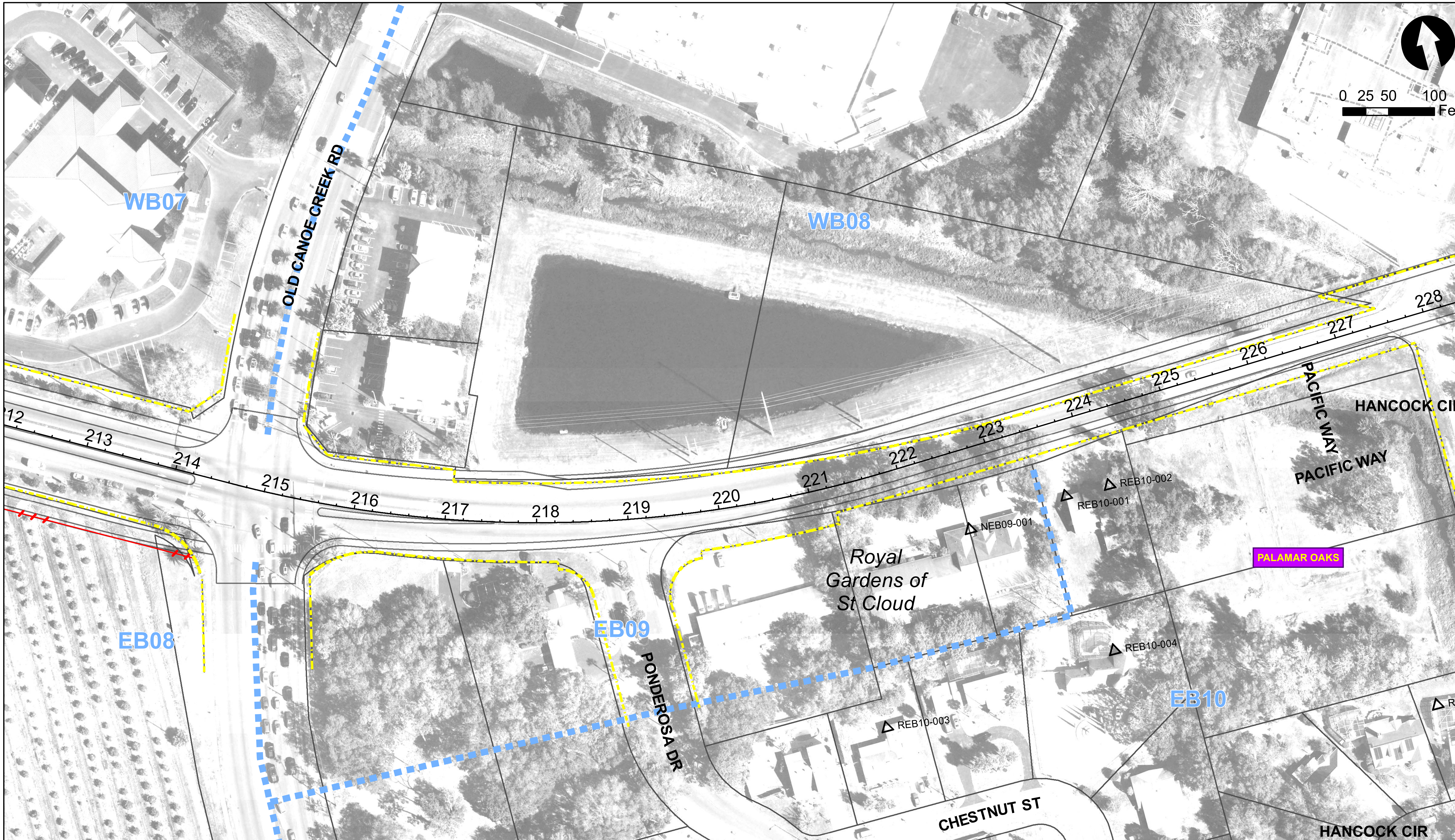
Sheet No.
12



Not Impacted - Not Benefitted
Impacted - Benefitted
Impacted - Not Benefitted
Potential Relocation
Validation Site
Potential Noise Barrier
Existing ROW
Proposed ROW
CNE Boundary

Neptune Road
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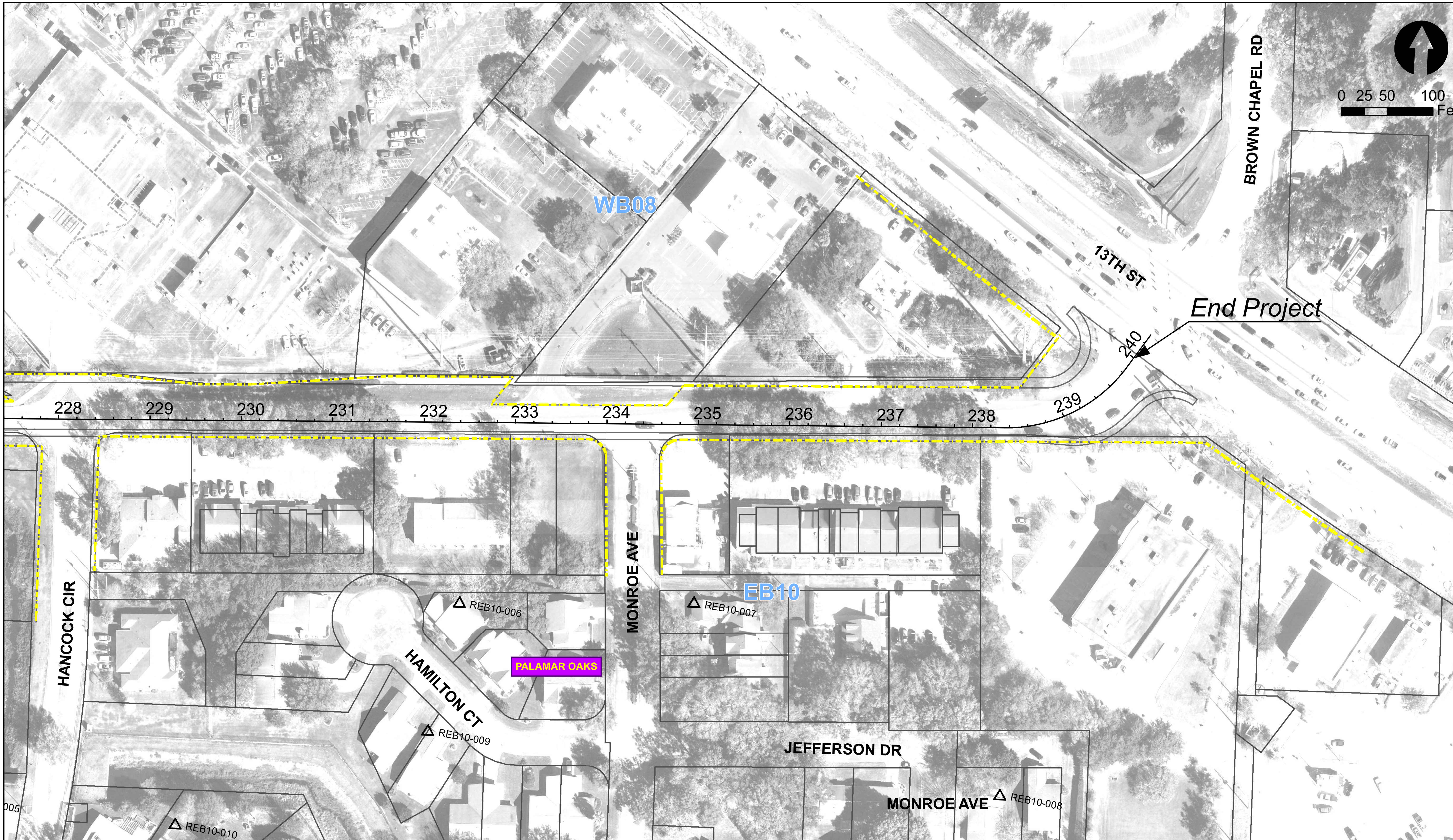
NOISE STUDY REPORT
PROJECT AERIALS

Sheet No.
13



△ Not Impacted - Not Benefitted	Potential Relocation
Impacted - Benefitted	Validation Site
Impacted - Not Benefitted	Potential Noise Barrier
Existing ROW	Proposed ROW
CNE Boundary	

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NOISE STUDY REPORT PROJECT AERIALS

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