PROJECT DEVELOPMENT & ENVIRONMENT

NOISE STUDY TECHNICAL MEMORANDUM

Poinciana Parkway Extension (CR 538)

from Poinciana Parkway to CR 532

Osceola and Polk Counties, Florida

CFX Project Number: 599-224

Prepared For:
Central Florida Expressway Authority

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

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October 2019

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1.0 INTRODUCTION

The Poinciana Parkway Extension is a proposed tolled expressway improvement project that includes extending Poinciana Parkway (SR 538), from the northern end of the existing bridge over the Reedy Creek Mitigation Bank to CR 532 (Osceola Polk Line Road). The study area of this Project Development and Environment (PD&E) Study includes portions of Osceola County and Polk County, Florida. Regional location map is provided on **Figure 1-1**. The Poinciana Parkway Extension is approximately 3 miles in length.

1.1 Project Description

Previous studies have been conducted by the former Osceola County Expressway Authority (OCX), Florida Department of Transportation (FDOT), and by the Central Florida Expressway Authority (CFX). Most recently, CFX conducted a Concept, Feasibility & Mobility Study for the Poinciana Parkway Extension/ I-4 Connector. From this study, the CFX Board determined that a phased implementation of an expressway from the Poinciana Parkway to CR 532 was preferred and authorized to move to the PD&E Study phase.

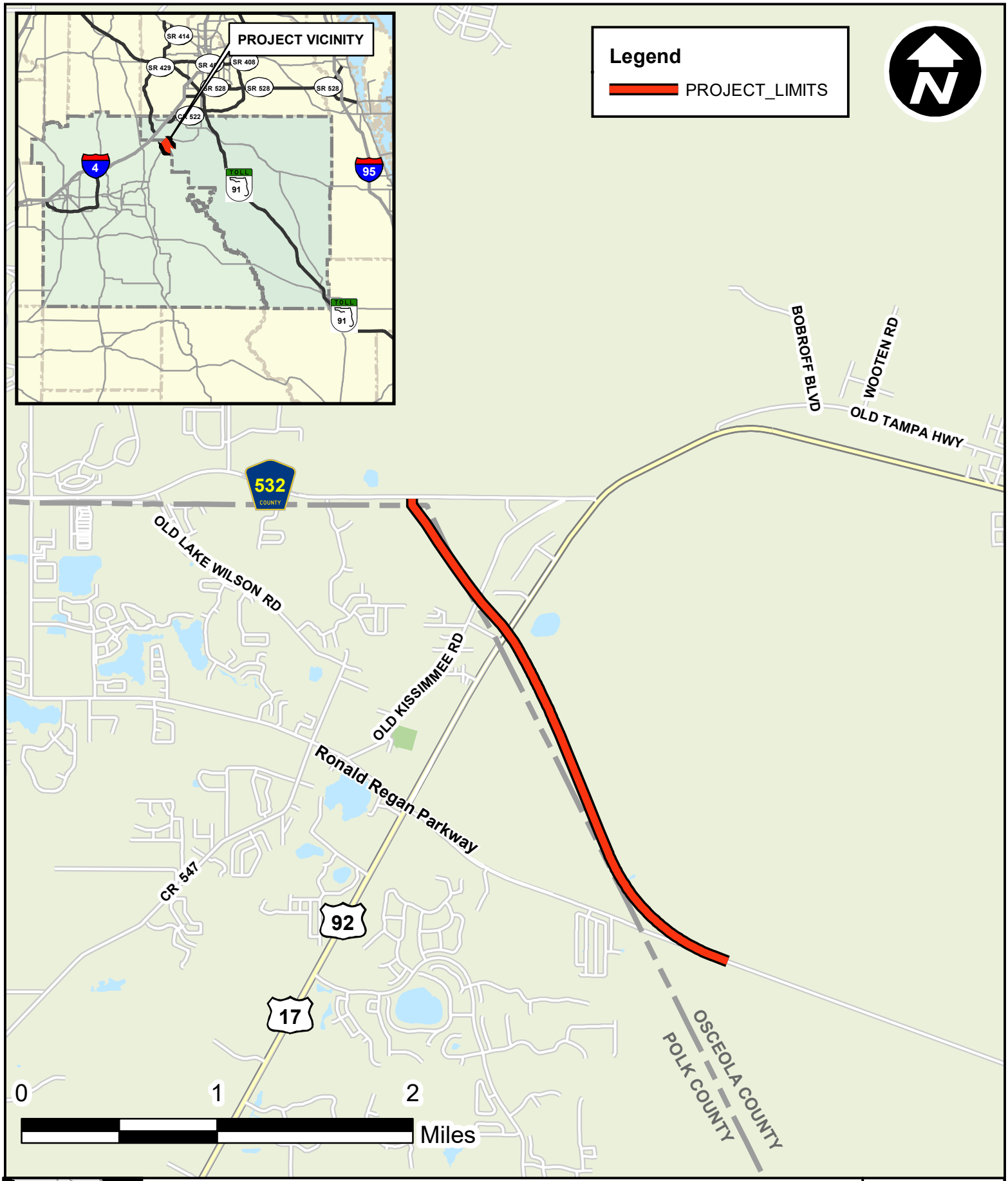
The Poinciana Parkway Extension PD&E Study includes an evaluation of alternatives to extend the existing Poinciana Parkway (SR 538) from the existing bridge over the Reedy Creek Mitigation Bank to CR 532. The project is a proposed tolled 4-lane expressway within approximately 330 feet of right-of-way (ROW). This ROW width provides for future expansion for additional lanes and/or other multi-modal travel options if needed in the future. The project also includes interchanges with other county and state roads, bridges over wetlands in the Reedy Creek Mitigation Bank and South Florida Water Management District (SFWMD) owned/managed Upper Lakes Basin Watershed habitat, as well as bridges over local roads and railroads. Stormwater management facilities are also being considered.

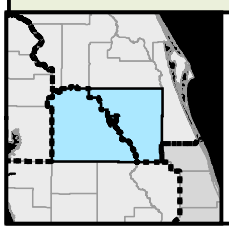
1.2 Purpose and Need

The primary purpose of the Poinciana Parkway Extension is to enhance mobility from I-4 to Cypress Parkway, improve overall traffic operations of the existing highway network within the project study area, and expand regional system linkage in Osceola and Polk Counties. The secondary objectives are to provide transportation infrastructure to support economic growth and provide consistency with local plans and policies.

1.2.1 Purpose

The primary purpose of the Poinciana Parkway Extension is to enhance mobility from I-4 to Cypress Parkway, improve overall traffic operations of the existing highway network within the project study area, and expand regional system linkage in Osceola and Polk Counties. The secondary objectives are to provide transportation infrastructure to support economic growth and provide consistency with local plans and policies.





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PROJECT LOCATION MAP

Figure
1-1

1.2.2 Need

The need for the project is to provide system linkage, provide regional connectivity and mobility, meet social and economic needs, provide increased transportation capacity, achieve consistency with transportation plans, and provide for multimodal opportunities.

1.2.2.1 System Linkage

System linkage is defined as linking two or more existing transportation facilities, types of modal facilities, geographic areas, or regional traffic generators. Poinciana Parkway currently links Marigold Avenue, KOA Street, and Cypress Parkway in Poinciana to US 17/92 in Polk County, near the Osceola County line. No direct limited access connection exists between Poinciana Parkway and I-4. Therefore, no direct connection exists between the Poinciana residential area in Osceola and Polk Counties to major employment centers in the Orlando metropolitan area, or from the limited access Poinciana Parkway to the regional freeway/expressway system. The Poinciana Parkway Extension to CR 532 will improve system linkage.

1.2.2.2 Regional Connectivity and Mobility

Mobility is the movement of people and goods and the ability to meet transportation demands. One of the regional goals is to provide a direct, limited access connection from Poinciana Parkway to I-4 to decrease travel time associated with delays at signalized and unsignalized intersections on the existing local roadway network. Currently, traffic traveling between Poinciana Parkway and I-4 can use Ronald Reagan Parkway and Lake Wilson Road (or Old Lake Wilson Road or Champions Gate Boulevard) to the CR 532 interchange. An alternate route is to use US 17/92 to CR 532 to the CR 532 interchange. However, all routes experience congestion. In addition, the CR 532 interchange with I-4 experiences significant congestion during the morning and afternoon peak periods. While the Poinciana Parkway Extension as part of this study will not connect to I-4, it will be compatible with a future expressway connection to I-4.

In addition, the Poinciana Parkway Extension will improve the connection to I-4 via CR 532, which is planned to be widened. The existing CR 532 interchange is also planned to be improved as part of the I-4 Beyond the Ultimate project (the improvement to the interchange could be implemented prior to the I-4 Beyond the Ultimate project).

1.2.2.3 Social and Economic Needs

Osceola County has identified opportunities for growth but, without increased connectivity and sufficient capacity, congestion within the study area will increase and result in a lack of economic opportunities for areas such as Poinciana and Osceola County's South Lake Toho Master Plan. As part of Osceola County's growth strategy to discourage urban sprawl by focusing on higher intensity and density development within their Urban Growth Boundary, they identified a system of expressways which generally follow their urban growth boundary. These expressways, which include the Poinciana Parkway Extension and the I-4

Connector, will provide connectivity and capacity to support the County's economic and social needs.

1.2.2.4 Capacity Constraints

The construction of Poinciana Parkway, from Cypress Parkway to US 17/92, provided a new alternative route for Poinciana residents traveling to and from the north. However, a direct connection to I-4 is not provided and traffic currently uses various routes (i.e., US 17/92, CR 532, Ronald Reagan Parkway, or Lake Wilson Road) to access I-4 at the CR 532/I-4 interchange. Currently, Lake Wilson Road, from Ronald Reagan Parkway to CR 532, operates over capacity. During the morning peak hour, there is severe congestion on eastbound I-4 (from US 27 to just beyond CR 532), westbound CR 532, eastbound Champions Gate Boulevard, and northbound Lake Wilson Road. There is also congestion on Ronald Reagan Parkway, US 17/92, and northbound Old Lake Wilson Road. During the afternoon peak hour, there is severe congestion on westbound I-4 (from SR 417 to just beyond CR 532), southbound Old Lake Wilson Road, and southbound Lake Wilson Road. There is also congestion on CR 532, Champions Gate Boulevard, Ronald Reagan Parkway, and US 17/92. It is anticipated that the Poinciana Parkway Extension will offer another option for drivers and, therefore, provide congestion relief to local roads.

1.2.2.5 Consistency with Transportation Plans

Osceola County's Comprehensive Plan includes a transportation system developed to respond to planned growth in the County. The Plan incorporates a vision for an integrated, multimodal transportation network that will meet the needs of the County's growing population. The Poinciana Parkway Extension is included in the County's Comprehensive Plan as well as the OCX Master Plan 2040 (OCX, 2013) as part of a planned limited access, high-speed toll facility identified to serve Osceola County's urban growth area. The OCX Master Plan has been adopted into the CFX Master Plan. The MetroPlan Orlando 2040 Long Range Transportation Plan (LRTP) includes the Poinciana Parkway Extension as a new 4-lane facility to be constructed by 2030.

1.2.2.6 Multimodal Opportunities

CFX has established a multimodal policy to fund or partner on multimodal initiatives where revenue generated from the investment equals the project cost or where toll user benefits are equal to or exceed the project cost. In addition, Osceola County's Comprehensive Plan calls for an integrated, multimodal transportation network. Opportunities to provide for multimodal improvements were considered as part of the alternatives developed to address the need and purpose for this project.

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 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.

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.

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. Traffic data used in the TNM models for this project was provided by the CFX's traffic consultant and includes information on the existing and future roadway conditions. 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. Level of Service (LOS) C traffic was utilized to represent the worst-case traffic scenario for the 2045 Build alternative. The existing and design year (2045) posted speeds are 45 mph on US 17-92 and CR 532 and 55 mph for Poinciana Parkway. Traffic volumes and speeds used in the analysis are provided in Appendix A.

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 the FDOT for the purpose of evaluating traffic noise, are referred to as the 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. The 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 **Table 2-2**.

Noise abatement measures must also be considered when a substantial increase in traffic noise will occur as a direct result of the transportation project. The 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 conceptual design for this project is an extension of an existing roadway along a new alignment, therefore substantial noise increases were evaluated. Appendix B shows the NAC utilized at all noise sensitive receptors within the analysis.

Noise abatement will be analyzed on groups of receivers that are considered to be part of a Common Noise Environment (CNE). A CNE consists of a group of receptors within the same activity category (see **Table 2-1**) that are exposed to similar noise sources and levels.

Table 2-1 – Noise Abatement Criteria

NOISE ABATEMENT CRITERIA [Hourly A-Weighted Sound Level-decibels (dB(A))]				
Activity Category	**Activity Leq(h)[1]**		**Evaluation Location**	**Description**
	FHWA	**FDOT**		
A	57	56	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67	66	Exterior	Residential
C	67	66	Exterior	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
D	52	51	Interior	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
E	72	71	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F
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
G	-	-	-	Undeveloped lands that are not permitted

Source: Table 1 of 23 CFR Part 772

[1] The Leq(h) Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.

[2] Includes undeveloped lands permitted for this activity category.

Note: FDOT defines that a substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 decibels or more as a result of the transportation improvement project. When this occurs, the requirement for abatement consideration will be followed.

Table 2-2 – 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 Measures

The FDOT considers noise abatement measures when future traffic noise levels attributed to a proposed roadway alignment approach or exceed the NAC, or when levels increase substantially. 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 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 the 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.

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

3.1 Ambient Noise Levels

The proposed Poinciana Parkway Extension is a new alignment connecting the north end of the Poinciana Parkway to CR 532. Except in the immediate vicinity of existing roadways traffic noise is not the predominate source of existing noise and therefore ambient noise levels were measured to establish the existing noise levels to determine if a substantial noise increase is predicted to occur during the design year (2045) for the Build Alternative.

Ambient noise levels were measured at three representative sites. These locations are shown in the project aerials as receptor points AC-01, AC-02, and AC-03. Receptor point AC-01 is located on the North side of Ivy Mist Lane on the East side of the proposed alignment just North of US 17-92, at approximately Station 81+00. Receptor point AC-02 is located along an unnamed shared private driveway south of CR 532 on the East side of the proposed alignment at the North end of the project, at approximately Station 63+80. Receptor point AC-03 is located on the North side of Central Avenue near an un-named cemetery West of the proposed alignment between Old Kissimmee Road and the CSX A Line Railroad, at approximately Station 73+90. These three selected sites are shown on the Project Aerials located in Appendix C as receptor points AC-01, AC-02, and AC-03 and the observed noise levels are shown in **Table 3-1**.

Field measurements were taken within the project areas following procedures documented in FHWA's *Measurement of Highway-Related Noise*[4] (FHWA, May 1996). Ambient noise monitoring was performed on April 23, 2019 using Larson Davis LxT noise level meters. The noise monitors were calibrated using a CAL200 calibrator before and after each event. All measurements were taken five feet above existing ground. Weather conditions, including temperature, relative humidity, and wind speed, and direction were recorded for each event. **Table 3-1** summarizes the existing noise levels at the receptors where ambient conditions were measured.

Table 3-1 – Measured Ambient Noise Conditions

Location	Measured Noise Levels		
	Run 1 dB(A) Leq(h)	**Run 2** dB(A) Leq(h)	**Run 3** dB(A) Leq(h)
Site AC-01 Ivy Mist Road	**46.97**	48.29	50.5
Site No. AC-02 Private Driveway South of 532	**41.34**	49.24	41.57
Site No. AC-03 Central Avenue	**42.23**	43.02	46.58

At noise sensitive sites within the project area close to existing roadways, traffic related noise was the predominant contributor to the existing noise environment. At these locations the existing (2019) roadway network was utilized as input within TNM to establish the existing (2019) noise levels for analysis. The TNM predicted existing (2019) roadway-related noise levels were compared against the measured ambient condition noise levels. When the TNM predicted existing (2019) roadway-related noise levels exceeded the measured ambient condition noise levels, roadway related noise is considered the predominant noise source and the TNM predicted existing (2019) noise levels were utilized within the analysis as the existing condition. At other noise sensitive locations, where the measured ambient condition noise levels exceeded the TNM predicted traffic noise levels, the lowest observed ambient levels were utilized within the analysis as the existing noise condition. Appendix B shows the existing noise levels utilized within the analysis.

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 May 10, 2019 using Larson Davis LxT noise level meters. The noise monitors were calibrated using a CAL200 calibrator before and after each event. Vehicle speeds were established by sampling with a Decatur Scout handheld radar gun. All monitoring events were 10 minutes in duration and 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. Site selection for the field measurements was based on the location of noise sensitive sites and access to sites where a representative sampling of free-flow traffic could be obtained. Validation Site VS-01 is located along the eastbound side of the CR 532 just west of the proposed alignment of the planned Poinciana Parkway Extension (Station 45+50). Validation Site VS-02 is located alongside the eastbound side of the existing Poinciana Parkway just south of the Serrano neighborhood (Station 175+70). These two validation sites are shown on the Project Aerials located in Appendix C as receptor points VS-01 and VS-02, and the predicted noise levels compared to observed levels are shown in **Table 3-2**.

The results of the validation monitoring events are summarized in **Table 3-2**. As shown in **Table 3-2**, the variance between the measured and predicted noise levels was 3.0 dB(A) or less. Therefore, the noise model is considered validated as specified in the FDOT PD&E Manual[2].

Table 3-2 – Validation Results Comparison

Location	Run	Field Measured dB(A) Leq(h)	TNM Predicted dB(A) Leq(h)	Variance dB(A)
Site VS-01 CR 532	1	65.2	68	2.8
	2	66.4	68.9	2.5
	3	65.8	67.1	1.3
Site VS-02 Serrano	1	58.3	59.1	0.8
	2	58.8	59.2	0.4
	3	57.3	59.6	2.3

3.2 Noise Sensitive Sites

Within the project limits, noise sensitive land uses adjacent to the proposed Poinciana Parkway Extension alignment include residential neighborhoods and parcels, agricultural and conservation land, and one church property. Receptor points representing the noise sensitive sites are located in accordance with the FDOT PD&E Manual, Part 2, Chapter 18 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.

Noise sensitive sites were determined based on a desktop review utilizing 2018 FDOT Aerial Imagery, Osceola and Polk Counties Property Appraisers websites and verified with a site visit conducted on April 23, 2019. Noise levels were predicted at 57 receptor points representing 74 noise sensitive sites, however because this is a new alignment several existing receptors that fall within the expected future ROW and will need to be relocated. 45 receptor points, representing 62 noise sensitive site will remain. 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 C.

3.3 Predicted Noise Levels

The predicted traffic noise levels modeled for noise sensitive sites along the proposed Poinciana Parkway Extension are listed in Appendix B by noise sensitive site. The existing and future year (2045) noise levels with and without the proposed extension are provided.

Of the 62 remaining noise sensitive sites within the study limits, one noise sensitive site is predicted to potentially be affected in the future by traffic noise with the proposed extension to the Poinciana Parkway. The one impacted receptor, RNB02-004, is predicted to exceed the NAC B criteria of 66 dB(A), with an expected noise level of 66.4 dB(A).

As shown in Appendix B, future no-build alternative exterior traffic noise levels are predicted to range from 46.2 dB(A) to 67.3 dB(A). With the extension of the Poinciana Parkway to CR 532, the exterior noise levels at the remaining noise sensitive sites for the future year (2045) build alternative are predicted to range from 51.1 dB(A) to 66.4 dB(A). When compared to the existing noise levels, future build alternative noise levels are predicted to increase by an average of 4.8 dB(A). The range of increase is -5.3 dB(A) to 12.9 dB(A).

3.4 CNEs on Westbound side of the Poinciana Parkway Extension

3.4.1 Ivy Mist Lane Residences (CNE WB01)

Residences along Ivy Mist Lane and scattered single-family residences along Old Tampa Highway (CNE WB01) are located on the westbound side of the planned Poinciana Parkway Extension between US 17/92 and CR 532 (Station 75+00 to Station 83+50). 16 receptor points were utilized to represent 16 residences in the existing and No-Build models. Of those 16 locations 6 will fall inside the planned ROW and will be relocated. The noise level is not predicted to result in a substantial increase at any receptor in the future-build condition, however one receptor is predicted to approach or exceed the NAC for the Build condition at any receptor. The impacted residence (RWB01-004) is an individual isolated residence located at approximately Station 1124+10. Noise abatement was considered for this impacted noise sensitive residence. However, it is not reasonable to construct a noise barrier for an individual isolated residence because a noise barrier would not benefit at least two impacted receptors. Therefore, noise barriers are not a reasonable method to abate roadway-related noise impacts for residences within CNE WB01.

The predicted noise levels for CNE WB01 are shown in Appendix B and the receptor locations are shown on the Project Aerials located in Appendix C.

3.4.2 G5 Church (CNE WB02)

The G5 Church (CNE WB02) is located on the westbound side of the planned Poinciana Parkway Extension just south of US 17/92 (Station 93+50 to Station 97+30). Two receptor points were utilized to represent the G5 Church. The closest building to the proposed alignment was given a receptor point for the existing and No-Build analyses, but these

buildings fall within the planned ROW and will need to be relocated prior to construction. The next closest building on the property was also modeled with a receptor point. Noise levels are not expected to approach or exceed the NAC for the Build condition or see a substantial increase, therefore noise abatement was not considered for CNE WB02.

The predicted noise levels for CNE WB02 are shown in Appendix B and the receptor locations are shown on the Project Aerials located in Appendix C.

3.5 CNEs on Eastbound side of the Poinciana Parkway Extension

3.5.1 Sandy Ridge (CNE EB01)

The Sandy Ridge neighborhood (CNE EB01) is located on the eastbound side of the planned Poinciana Parkway Extension between US 17/92 and CR 532 (Station 45+70 to Station 82+00). Eleven receptor points were utilized to represent eleven residences. Of those 11 locations 3 will fall inside the planned ROW and will be relocated. Noise levels are not expected to approach or exceed the NAC for the Build condition or see a substantial increase, therefore noise abatement was not considered for CNE EB01.

The predicted noise levels for CNE EB01 are shown in Appendix B and the receptor locations are shown on the Project Aerials located in Appendix C.

3.5.2 Sereno (CNE EB02)

J D Vacation Villas, Sereno Phase 5, Sereno Phase 2, and single-family residences (CNE EB02) are located on the eastbound side of the Poinciana Parkway Extension south of US 17/92 (Station 160+50 to Station 181+50). Thirty receptor points were utilized to represent 47 residences in the existing and No-Build models. Of those 47 locations 2 will fall inside the planned ROW way and will be relocated. Noise levels are not expected to approach or exceed the NAC for the Build condition or see a substantial increase, therefore noise abatement was not considered for CNE EB02.

The predicted noise levels for CNE EB02 are shown in Appendix B and the receptor locations are shown on the Project Aerials located in Appendix C.

4.0 CONCLUSIONS

A total of 57 receptor points representing 74 noise sensitive sites located adjacent to the Poinciana Parkway Extension were evaluated for traffic noise related impacts associated with the extension within the project limits. It is anticipated that 12 of these 74 existing noise sensitive locations will fall within the planned ROW and will be relocated, leaving 62 noise sensitive locations to be analyzed in the future build condition. The results of the analysis indicate that existing (2019) exterior traffic noise levels are predicted to range from 46.2 dB(A) to 67.3 dB(A) at the 74 evaluated noise sensitive sites adjacent to Poinciana Parkway Extension. Future year (2045) no-build alternative exterior traffic noise levels are predicted to range from 46.2 dB(A) to 67.3 dB(A). With the proposed extension of

Poinciana Parkway, the exterior traffic noise levels at the remaining noise sensitive sites for the future year (2045) build alternative are predicted to range from 51.1 dB(A) to 66.4 dB(A).

Noise levels are predicted to approach or exceed the NAC (i.e., 66 dB(A) for Activity Category B) established by the Federal Highway Administration (FHWA) for the Build condition at one location (RWB01-004) that will remain after the completion of construction. No receptors, that are to remain after the completion of the project, are projected to experience a substantial increase of 15 dB(A) or greater of traffic noise form the proposed extension of Poinciana Parkway.

In addition to residences, NAC Activity Category B, Title 23 Code of Federal Regulations Part 772 specifies other Activity Categories addressing non-residential noise sensitive sites. Within the project limits no impacts are predicted at any non-residential noise sensitive sites that will remain after the completion of construction.

Based on the noise analyses performed to date, there are no feasible solutions available to mitigate the noise impacts at the location identified in WB01, as there is only one isolated impacted receptor. Further barrier analysis in this location would require two impacted receptors to warrant further consideration of noise impact mitigation.

5.0 CONSTRUCTION NOISE AND VIBRATION

Based on the existing land use within the limits of this project, construction of the proposed roadway improvements may 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 residential neighborhoods, outdoor eating areas and seating, educational buildings, nature trails and a golf course. Trucks, compaction equipment, earth moving equipment, demolition 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 CFX Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

6.0 PUBLIC COORDINATION

6.1 Public Hearing

Coordination with the public and local agencies and officials has been accomplished during the development of this project. In addition, property owners and local and community officials have had the opportunity to comment on the proposed project at the public hearing held on August 29, 2019. One comment was received by a property owner referencing traffic noise. The comment was supportive of the selected alternative and the reduction of traffic and accompanying noise along Ronald Regan Parkway. No comments were received that provided additional or new information not considered as part of the noise analysis of this report. Written responses were sent to all residents who provide a comment as part of the public hearing record.

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 Polk and Osceola Counties to assist them in permitting future noise-compatible land uses along the Poinciana Parkway Extension.

To promote compatibility between land development planning and the Poinciana Parkway Extension 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*; 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; July 2017.

Appendix A

Traffic Data

Noise Analysis Traffic Data - Poinciana Parkway Extension
Existing (2019) Conditions

Arterials													
Arterial Traffic Segment	**Number of Lanes**	**AADT**	**LOS C AADT**	**Peak Hour Peak Direction**	**LOS C Peak Hour Peak Direction**	**Design Hr. % T**	**Design Hr. % MT**	**Design Hr. % HT**	**Design Hr. % Buses**	**Design Hr. % Motorcycles**	**Standard K-factor**	**D-factor**	**Posted Speed (mph)**
532													
532 - East of Poinciana Parkway Extension	1	15,400	37,900	761	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
532 - West of Poinciana Parkway Extension	1	15,400	37,900	761	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
US 17-92													
US 17-92 - East of Poinciana Parkway Extension	1	16,000	37,900	1,231	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
US 17-92 - West of Poinciana Parkway Extension	1	16,000	37,900	1,231	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
Ronald Regan Parkway													
Ronald Regan Parkway - East of 17-92	1	11,200	37,900	850	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45

(1) Posted speed data are obtained by field observation.
(2) Daily and design hour ramp volumes are provided directionally (i.e. does not incorporate return movements on the corresponding ramp). Likewise, the daily and design hour LOS C maximum service volumes are listed directionally for each ramp.
(3) Freeway mainline and ramp LOS C thresholds are based on the FDOT Systems Planning Office *Estimation of Capacities on Florida Freeways Report*, dated September 2014, and adjusted for local conditions.
(4) Arterial design hour LOS C maximum service volumes are obtained from *FDOT 2012 Generalized Service Volume Tables*.
(5) Mainline and ramp AADTs, K & D factors, and arterial K & D are those used in the ESAL calculations (January/February 2017).
(6) LOS C AADTs are estimated using K and D factors and the design hour peak direction LOS C maximum service volumes.
(7) Number of lanes are obtained by field observation.

Noise Analysis Traffic Data - Poinciana Parkway Extension
Future No-Build (2045) Conditions

Arterials													
Arterial Traffic Segment	**Number of Lanes**	**AADT**	**LOS C AADT**	**Peak Hour Peak Direction**	**LOS C Peak Hour Peak Direction**	**Design Hr. % T**	**Design Hr. % MT**	**Design Hr. % HT**	**Design Hr. % Buses**	**Design Hr. % Motorcycles**	**Standard K-factor**	**D-factor**	**Posted Speed (mph)**
532													
532 - East of Poinciana Parkway Extension	1	25,500	37,900	1,265	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
532 - West of Poinciana Parkway Extension	1	25,000	37,900	1,265	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
US 17-92													
US 17-92 - East of Poinciana Parkway Extension	1	25,900	37,900	1,425	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
US 17-92 - West of Poinciana Parkway Extension	1	25,900	37,900	1,425	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
Ronald Regan Parkway													
Ronald Regan Parkway - East of 17-92	1	22,700	37,900	1,225	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45

(1) Posted speed data are obtained by field observation.
(2) Daily and design hour ramp volumes are provided directionally (i.e. does not incorporate return movements on the corresponding ramp). Likewise, the daily and design hour LOS C maximum service volumes are listed directionally for each ramp.
(3) Freeway mainline and ramp LOS C thresholds are based on the FDOT Systems Planning Office *Estimation of Capacities on Florida Freeways Report*, dated September 2014, and adjusted for local conditions.
(4) Arterial design hour LOS C maximum service volumes are obtained from *FDOT 2012 Generalized Service Volume Tables*.
(5) Mainline and ramp AADTs, K & D factors, and arterial K & D are those used in the ESAL calculations (January/February 2017).
(6) LOS C AADTs are estimated using K and D factors and the design hour peak direction LOS C maximum service volumes.
(7) Number of lanes are obtained by field observation.

Noise Analysis Traffic Data - Poinciana Parkway Extension
Future Build (2045) Conditions

Poinciana Parkway Extension Mainline													
Mainline Traffic Segment	**Number of Lanes**	**AADT**	**LOS C AADT**	**Peak Hour Peak Direction**	**LOS C Peak Hour Peak Direction**	**Design Hr. % T**	**Design Hr. % MT**	**Design Hr. % HT**	**Design Hr. % Buses**	**Design Hr. % Motorcycles**	**Standard K-factor**	**D-factor**	**Posted Speed (mph)**
PPE 532 to 17-92	2	18,000	64,000	1,190	3,020	7.00%	4.50%	4.50%	0.00%	0.00%	11.0%	60.0%	55
PPE South of 17-92	2	28,000	64,000	1,850	3,020	7.00%	4.50%	4.50%	0.00%	0.00%	11.0%	60.0%	55

Ramps													
Ramp	**Number of Lanes**	**One-Way AADT**	**One-Way LOS C AADT**	**Peak Hour Peak Direction**	**LOS C Peak Hour Peak Direction**	**Design Hr. % T**	**Design Hr. % MT**	**Design Hr. % HT**	**Design Hr. % Buses**	**Design Hr. % Motorcycles**	**K-factor**	**D-factor**	**Operational Speed (mph)**
532 Interchange													
532 Interchange - Southbound on	1	18,000	0	1,190	0	7.00%	4.50%	4.50%	0.00%	0.00%	11.0%	60.0%	45
532 Interchange - Northbound off	1	18,000	0	1,190	0	7.00%	4.50%	4.50%	0.00%	0.00%	11.0%	60.0%	45
US 17-92 Interchange													
US 17-92 Interchange - Southbound off	1	1,200	0	85	0	7.00%	4.50%	4.50%	0.00%	0.00%	11.0%	60.0%	45
US 17-92 Interchange - Northbound on	1	11,200	0	745	0	7.00%	4.50%	4.50%	0.00%	0.00%	11.0%	60.0%	45
US 17-92 Interchange - Southbound on	1	11,200	0	745	0	7.00%	4.50%	4.50%	0.00%	0.00%	11.0%	60.0%	45
US 17-92 Interchange - Northbound off	1	1,200	0	85	0	7.00%	4.50%	4.50%	0.00%	0.00%	11.0%	60.0%	45

Arterials													
Arterial Traffic Segment	**Number of Lanes**	**AADT**	**LOS C AADT**	**Peak Hour Peak Direction**	**LOS C Peak Hour Peak Direction**	**Design Hr. % T**	**Design Hr. % MT**	**Design Hr. % HT**	**Design Hr. % Buses**	**Design Hr. % Motorcycles**	**Standard K-factor**	**D-factor**	**Posted Speed (mph)**
532													
532 - East of Poinciana Parkway Extension	1	23,300	37,900	1,460	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
532 - West of Poinciana Parkway Extension	1	32,300	37,900	1,740	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
US 17-92													
US 17-92 - East of Poinciana Parkway Extension	2	26,400	37,900	1,755	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
US 17-92 - West of Poinciana Parkway Extension	2	30,400	37,900	1,425	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45
Ronald Regan Parkway													
Ronald Regan Parkway - East of 17-92	1	4,000	37,900	215	1,910	8.00%	4.40%	3.60%	1.20%	0.60%	9.0%	55.0%	45

(1) Posted speed data are obtained by field observation.
(2) Daily and design hour ramp volumes are provided directionally (i.e. does not incorporate return movements on the corresponding ramp). Likewise, the daily and design hour LOS C maximum service volumes are listed directionally for each ramp.
(3) Freeway mainline and ramp LOS C thresholds are based on the FDOT Systems Planning Office *Estimation of Capacities on Florida Freeways Report*, dated September 2014, and adjusted for local conditions.
(4) Arterial design hour LOS C maximum service volumes are obtained from *FDOT 2012 Generalized Service Volume Tables*.
(5) Mainline and ramp AADTs, K & D factors, and arterial K & D are those used in the ESAL calculations (January/February 2017).
(6) LOS C AADTs are estimated using K and D factors and the design hour peak direction LOS C maximum service volumes.
(7) Number of lanes are obtained by field observation.

Appendix B

Predicted Noise Levels

Predicted Noise Levels

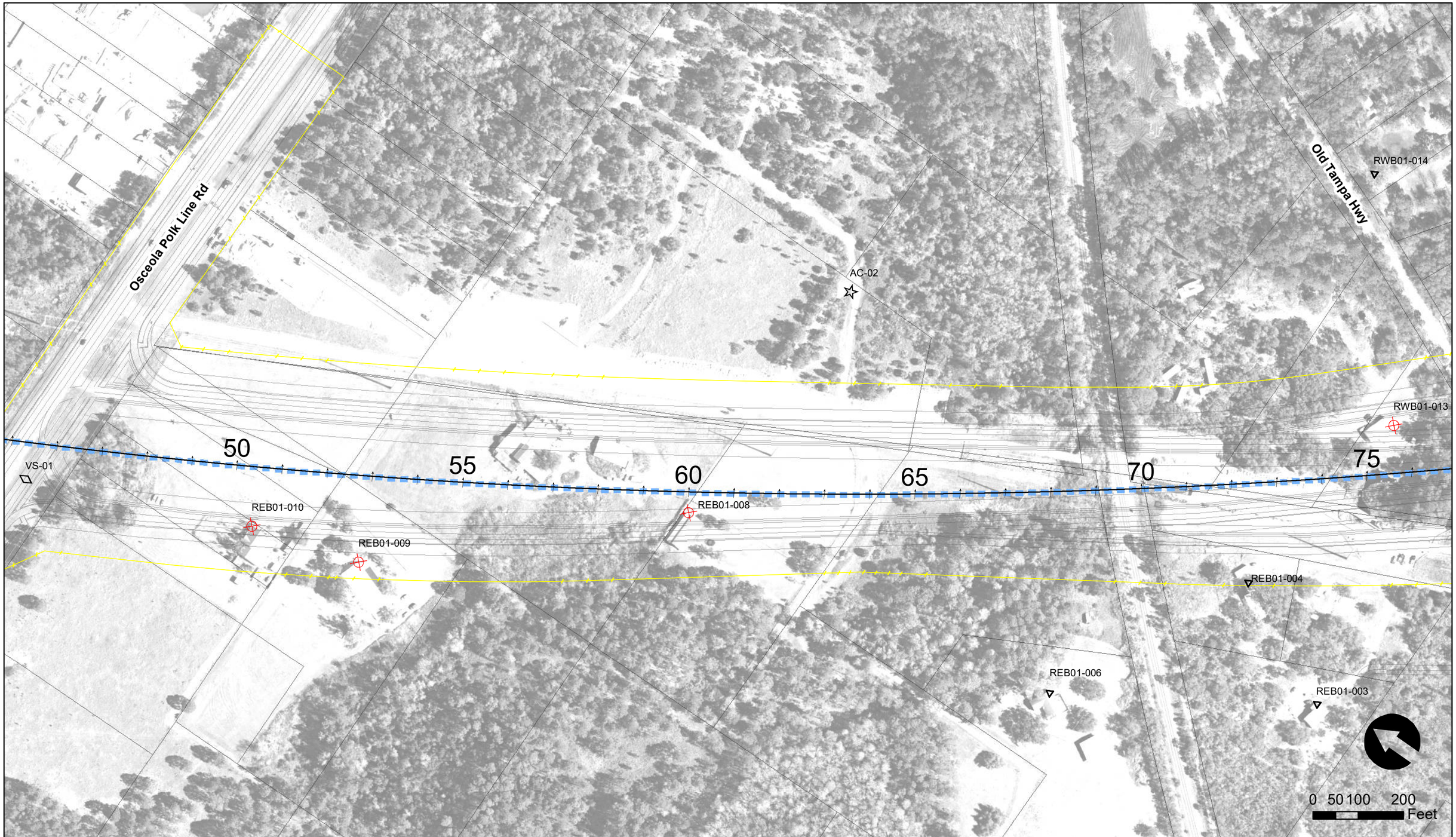
Common Noise Environment (CNE)	Rec. Point	No. of Units	NAC	NAC Criteria (dBA)	FDOT Criteria (dBA)	2017 Existing LAeq1h (dBA)	2045 No-Build LAeq1h (dBA)	2045 Build LAeq1h (dBA)	Increase	NAC Approach or Exceeded	Subst. Increase (>15dB(A))	To Be Relocated	Description
XX.X	Impacted Receptor												
WB02	NWB02-001	1	C	65	66	57.2	57.2	N/A	N/A	N/A	N/A	Yes	G5 Church
WB02	NWB02-002	1	C	65	66	48.9	48.9	54.3	5.4	No	No	No	G5 Church
WB01	RWB01-001	1	B	65	66	62.4	62.4	N/A	N/A	N/A	N/A	Yes	Hidden Glen
WB01	RWB01-002	1	B	65	66	60.3	60.3	N/A	N/A	N/A	N/A	Yes	Hidden Glen
WB01	RWB01-003	1	B	65	66	61.8	61.8	N/A	N/A	N/A	N/A	Yes	Hidden Glen
WB01	RWB01-004	1	B	65	66	61.7	61.7	**66.4**	4.7	Yes	No	No	Hidden Glen
WB01	RWB01-005	1	B	65	66	54.2	54.1	N/A	N/A	N/A	N/A	Yes	Hidden Glen
WB01	RWB01-006	1	B	65	66	53.5	53.5	N/A	N/A	N/A	N/A	Yes	Hidden Glen
WB01	RWB01-007	1	B	65	66	52.9	52.9	64.2	11.3	No	No	No	Hidden Glen
WB01	RWB01-008	1	B	65	66	53.0	52.9	63.3	10.3	No	No	No	Hidden Glen
WB01	RWB01-009	1	B	65	66	53.0	53.0	62.7	9.7	No	No	No	Hidden Glen
WB01	RWB01-010	1	B	65	66	54.1	54.0	63.5	9.4	No	No	No	Hidden Glen
WB01	RWB01-011	1	B	65	66	52.8	52.8	61.7	8.9	No	No	No	Hidden Glen
WB01	RWB01-012	1	B	65	66	55.2	55.2	61.2	6.0	No	No	No	Hidden Glen
WB01	RWB01-013	1	B	65	66	54.4	54.4	N/A	N/A	N/A	N/A	Yes	Hidden Glen
WB01	RWB01-014	1	B	65	66	61.0	61.1	63.1	2.1	No	No	No	Hidden Glen
EB02	REB02-001	1	B	65	66	53.2	53.1	59.1	5.9	No	No	No	Sereno Phase 2
EB02	REB02-002	1	B	65	66	52.9	52.8	59.0	6.1	No	No	No	Sereno Phase 2
EB02	REB02-003	1	B	65	66	52.6	52.5	58.9	6.3	No	No	No	Sereno Phase 2
EB02	REB02-004	1	B	65	66	52.3	52.3	58.7	6.4	No	No	No	Sereno Phase 2
EB02	REB02-005	1	B	65	66	52.0	51.9	58.5	6.5	No	No	No	Sereno Phase 2
EB02	REB02-006	1	B	65	66	52.2	52.1	58.8	6.6	No	No	No	Sereno Phase 2
EB02	REB02-007	1	B	65	66	50.7	50.6	57.8	7.1	No	No	No	Sereno Phase 2
EB02	REB02-008	1	B	65	66	50.3	50.2	57.3	7.0	No	No	No	Sereno Phase 2
EB02	REB02-009	1	B	65	66	50.7	50.6	57.8	7.1	No	No	No	Sereno Phase 2
EB02	REB02-010	1	B	65	66	49.3	49.2	56.6	7.3	No	No	No	Sereno Phase 2
EB02	REB02-012	1	B	65	66	58.3	58.3	56.2	-2.1	No	No	No	J D Vacation Villas
EB02	REB02-013	1	B	65	66	54.1	54.1	62.8	8.7	No	No	No	Sereno Phase 5
EB02	REB02-014	1	B	65	66	54.2	54.1	62.0	7.8	No	No	No	Sereno Phase 5
EB02	REB02-015	1	B	65	66	54.2	54.2	61.2	7.0	No	No	No	Sereno Phase 5
EB02	REB02-016	1	B	65	66	54.0	54.0	60.5	6.5	No	No	No	Sereno Phase 5
EB02	REB02-017	1	B	65	66	54.0	54.0	59.9	5.9	No	No	No	Sereno Phase 5
EB02	REB02-018	1	B	65	66	54.0	54.0	59.4	5.4	No	No	No	Sereno Phase 5
EB02	REB02-019	1	B	65	66	54.1	54.0	59.0	4.9	No	No	No	Sereno Phase 5
EB02	REB02-020	1	B	65	66	54.1	54.0	58.5	4.4	No	No	No	Sereno Phase 5
EB02	REB02-021	5	B	65	66	51.4	51.3	59.1	7.7	No	No	No	Sereno Phase 5
EB02	REB02-022	5	B	65	66	52.9	52.9	56.3	3.4	No	No	No	Sereno Phase 5
EB02	REB02-023	1	B	65	66	55.0	54.9	55.0	0.0	No	No	No	Sereno Phase 5
EB02	REB02-024	3	B	65	66	63.3	63.3	60.9	-2.4	No	No	No	Sereno Phase 5
EB02	REB02-025	3	B	65	66	64.4	64.4	60.5	-3.9	No	No	No	Sereno Phase 5
EB02	REB02-026	1	B	65	66	64.9	64.9	60.4	-4.5	No	No	No	Sereno Phase 5
EB02	REB02-027	3	B	65	66	62.7	62.7	58.6	-4.1	No	No	No	Sereno Phase 5
EB02	REB02-028	2	B	65	66	**67.3**	**67.3**	62.0	-5.3	No	No	No	Sereno Phase 5
EB02	REB02-029	3	B	65	66	63.3	63.3	58.5	-4.8	No	No	No	Sereno Phase 5
EB02	REB02-030	1	B	65	66	55.0	55.0	N/A	N/A	N/A	N/A	Yes	SFR
EB02	REB02-031	1	B	65	66	56.8	56.8	N/A	N/A	N/A	N/A	Yes	SFR
EB01	REB01-001	1	B	65	66	57.0	57.0	59.8	2.8	No	No	No	SFR
EB01	REB01-002	1	B	65	66	50.3	50.3	56.0	5.7	No	No	No	SFR
EB01	REB01-003	1	B	65	66	48.4	48.4	60.1	11.7	No	No	No	SFR
EB01	REB01-004	1	B	65	66	48.5	48.5	N/A	N/A	Yes	N/A	Yes	SFR
EB01	REB01-005	1	B	65	66	48.0	48.0	53.1	5.1	No	No	No	SFR
EB01	REB01-006	1	B	65	66	47.7	47.7	60.6	12.9	No	No	No	SFR
EB01	REB01-007	1	B	65	66	46.2	46.2	51.1	4.9	No	No	No	Sandy Ridge
EB01	REB01-008	1	B	65	66	48.4	48.4	N/A	N/A	N/A	N/A	Yes	SFR
EB01	REB01-009	1	B	65	66	51.4	51.3	N/A	N/A	N/A	N/A	Yes	SFR
EB01	REB01-010	1	B	65	66	54.3	54.3	N/A	N/A	N/A	N/A	Yes	SFR
EB01	REB01-011	1	B	65	66	53.1	53.1	54.0	0.9	No	No	No	Sandy Ridge

Predicted Noise Levels

Noise Sensitive Area (NSA)	Rec. Point	No. of Units	NAC	NAC Criteria (dBA)	FDOT Criteria (dBA)	2016 Existing LAeq1h (dBA)	2042 No-Build LAeq1h (dBA)	2042 Build LAeq1h (dBA)	Increase	NAC Approach or Exceeded	Subst. Increase (>15dB(A))	To Be Relocated	Description
XX.X	Impacted Receptor												
WB02	NWB02-001	1	C	65	66	57.2	57.2	N/A	N/A	N/A	N/A	Yes	G5 Church
WB02	NWB02-002	1	C	65	66	48.9	48.9	54.3	5.4	No	No	No	G5 Church

Appendix C

Project Aerials



Impacted Receptor
Not Impacted Receptor
Receptor to be Relocated
Ambient Receptor
Validation Receptor
Right of Way
Parcels
CNE Boundary

Poinciana Parkway Extension
PD&E Study

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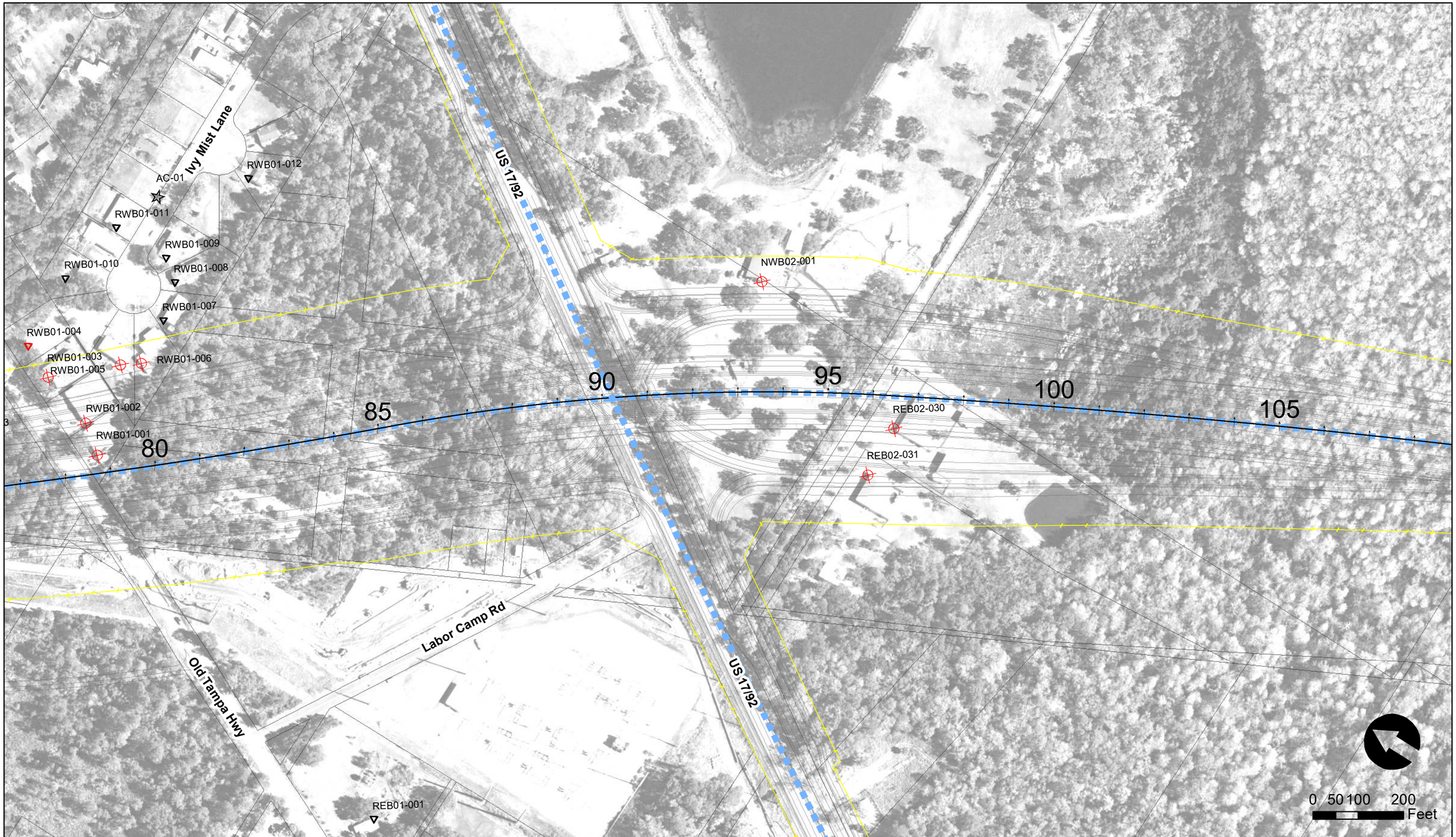
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	CFX Project Number
538	POLK/OSCEOLA	599-224

NOISE STUDY REPORT
PROJECT AERIALS

Sheet No. 1



Impacted Receptor
Not Impacted Receptor
Receptor to be Relocated
Ambient Receptor
Validation Receptor
Right of Way
Parcels
CNE Boundary

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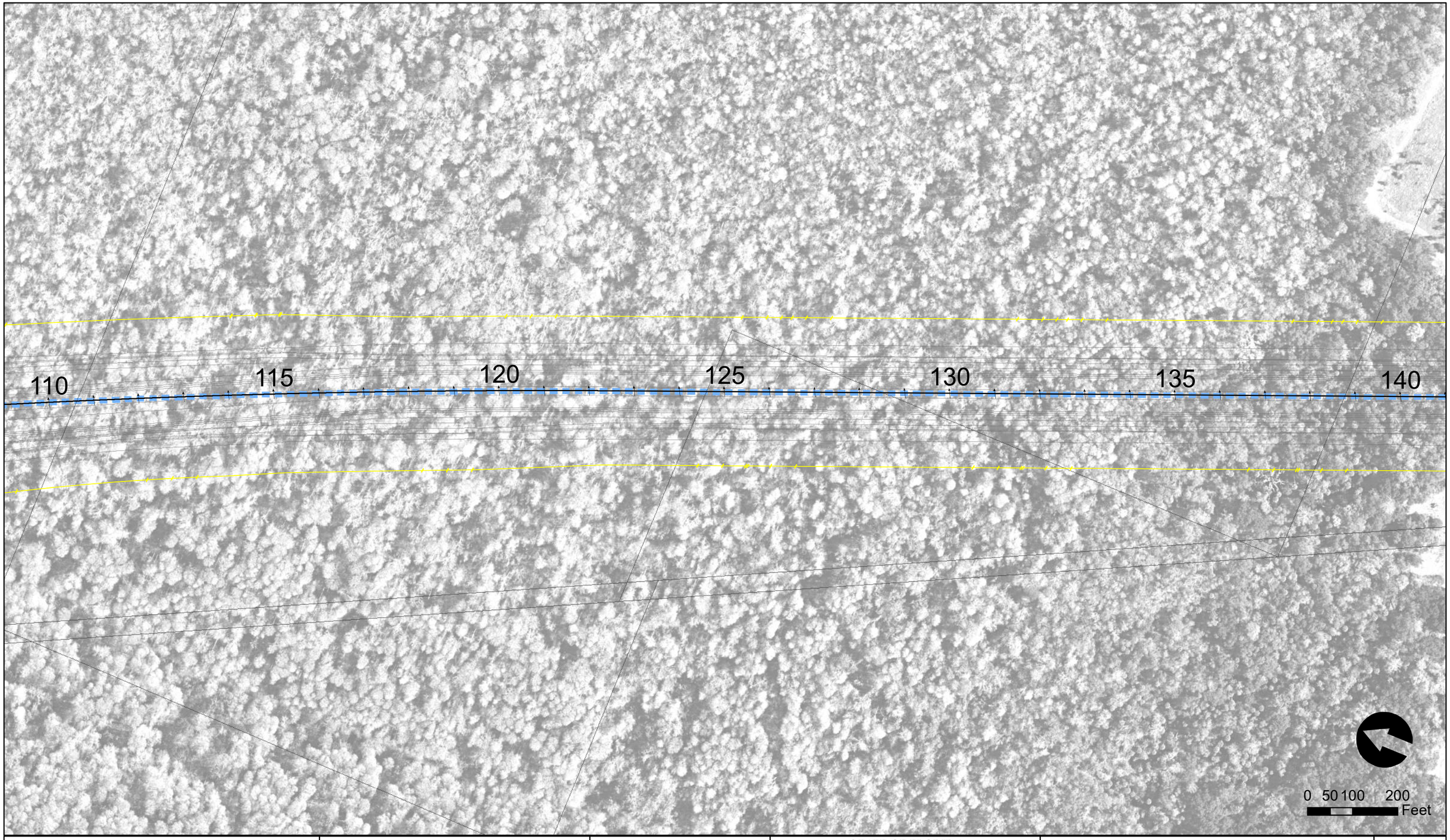
NOISE STUDY REPORT
PROJECT AERIALS

Sheet No. 2



Impacted Receptor
Not Impacted Receptor
Receptor to be Relocated
Ambient Receptor
Validation Receptor
Right of Way
Parcels
CNE Boundary

Poinciana Parkway Extension
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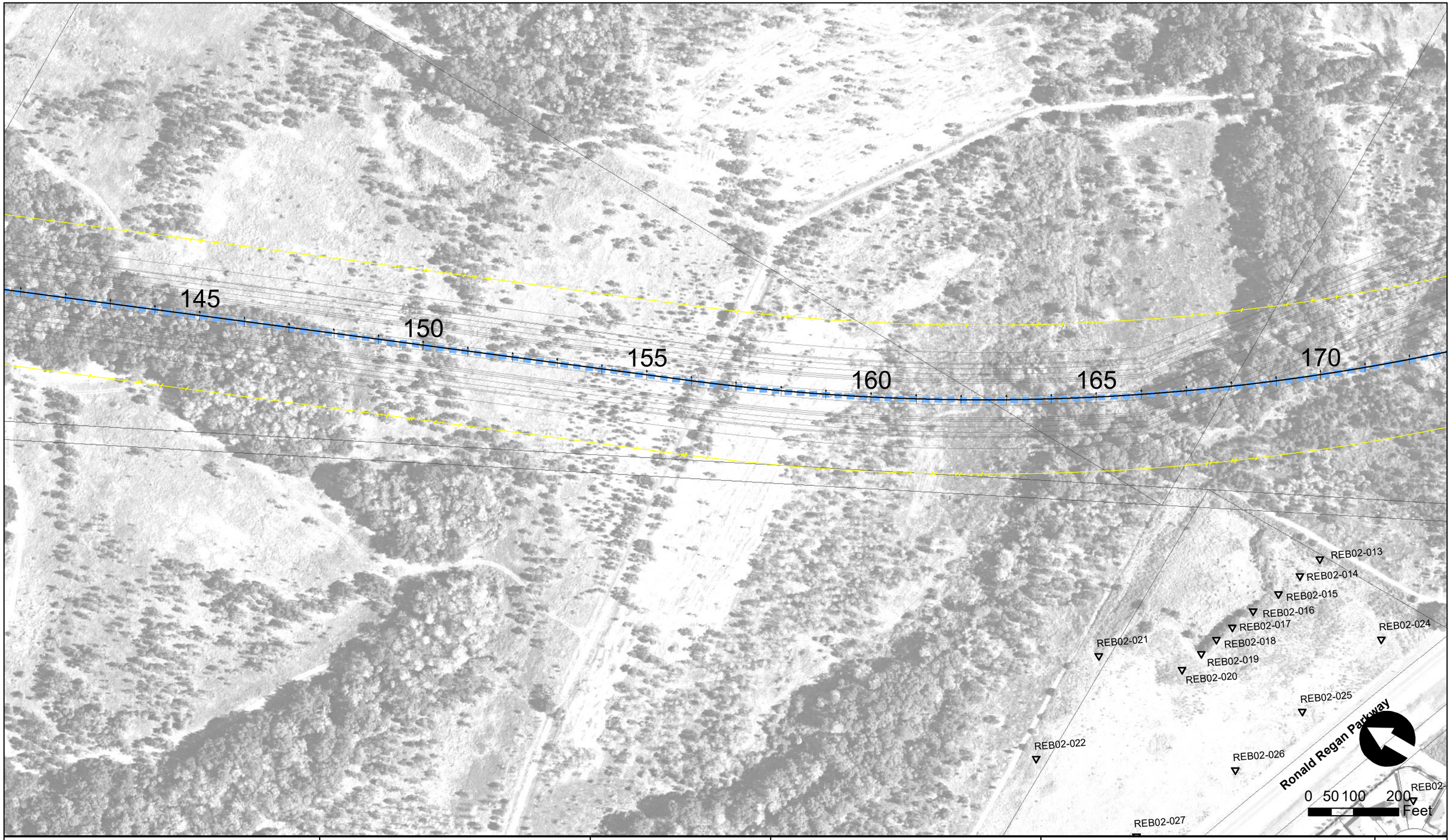
NOISE STUDY REPORT
PROJECT AERIALS

Sheet No.
3



Impacted Receptor
Not Impacted Receptor
Receptor to be Relocated
Ambient Receptor
Validation Receptor
Right of Way
Parcels
CNE Boundary

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PD&E Study

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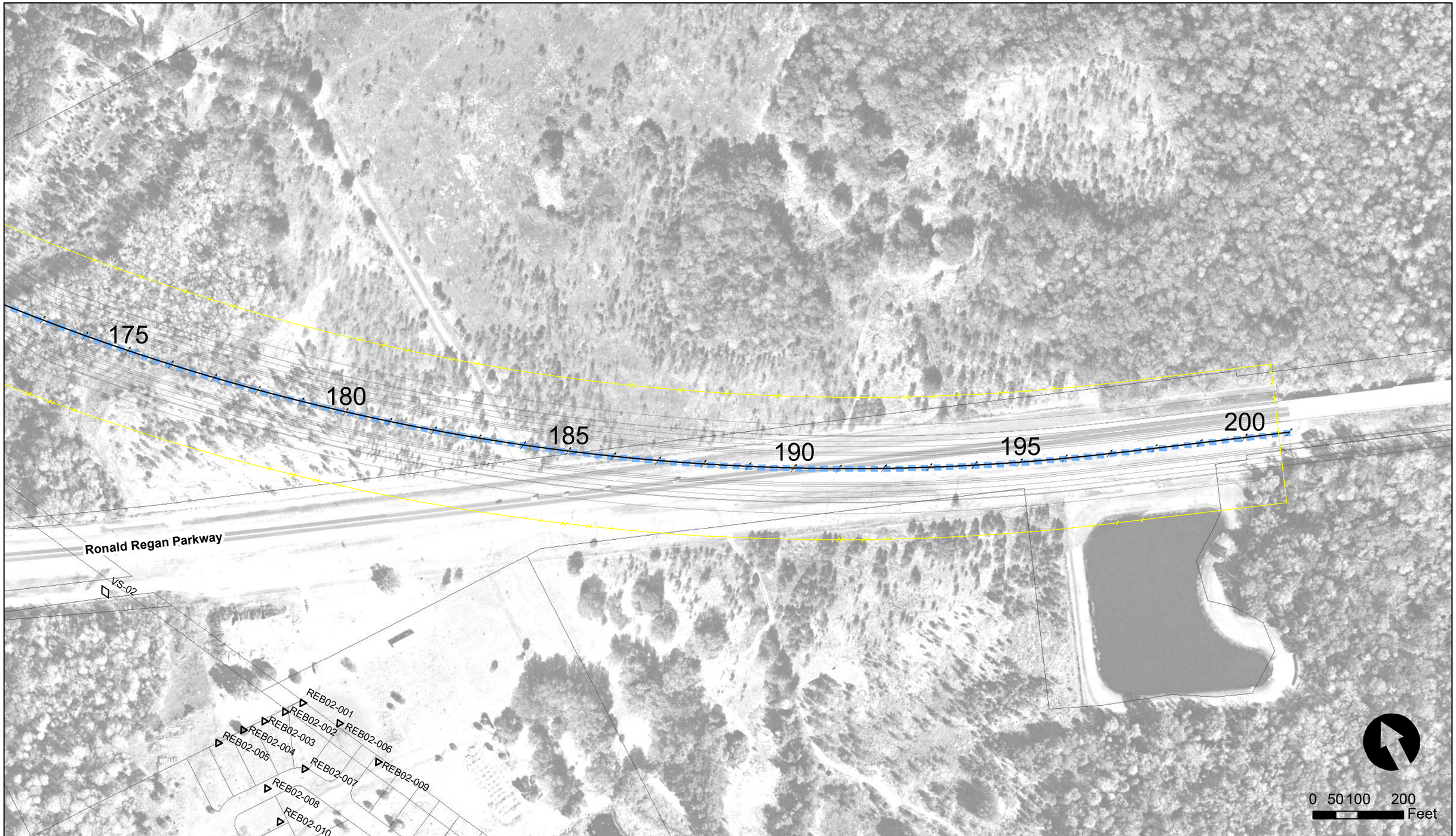
NOISE STUDY REPORT
PROJECT AERIALS

Sheet No. 4



Impacted Receptor
Not Impacted Receptor
Receptor to be Relocated
Ambient Receptor
Validation Receptor
Right of Way
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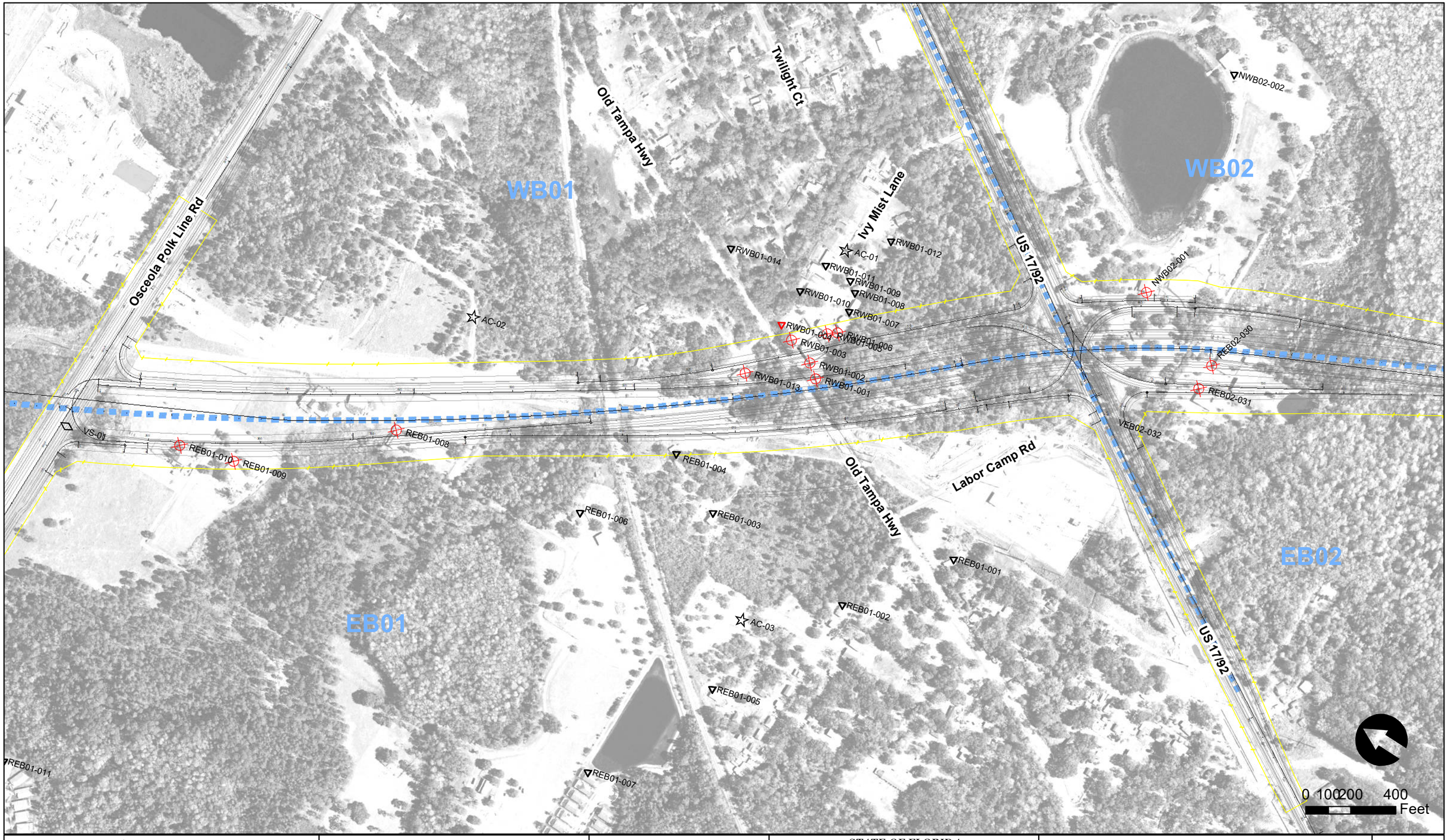
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	CFX Project Number
538	POLK/OSCEOLA	599-224

NOISE STUDY REPORT
PROJECT AERIALS

Sheet No. 5



Impacted Receptor
Not Impacted Receptor
Receptor to be Relocated
Ambient Receptor
Validation Receptor
ROW_Line_02
Right of Way
Parcels
CNE Boundary

Poinciana Parkway Extension
PD&E Study

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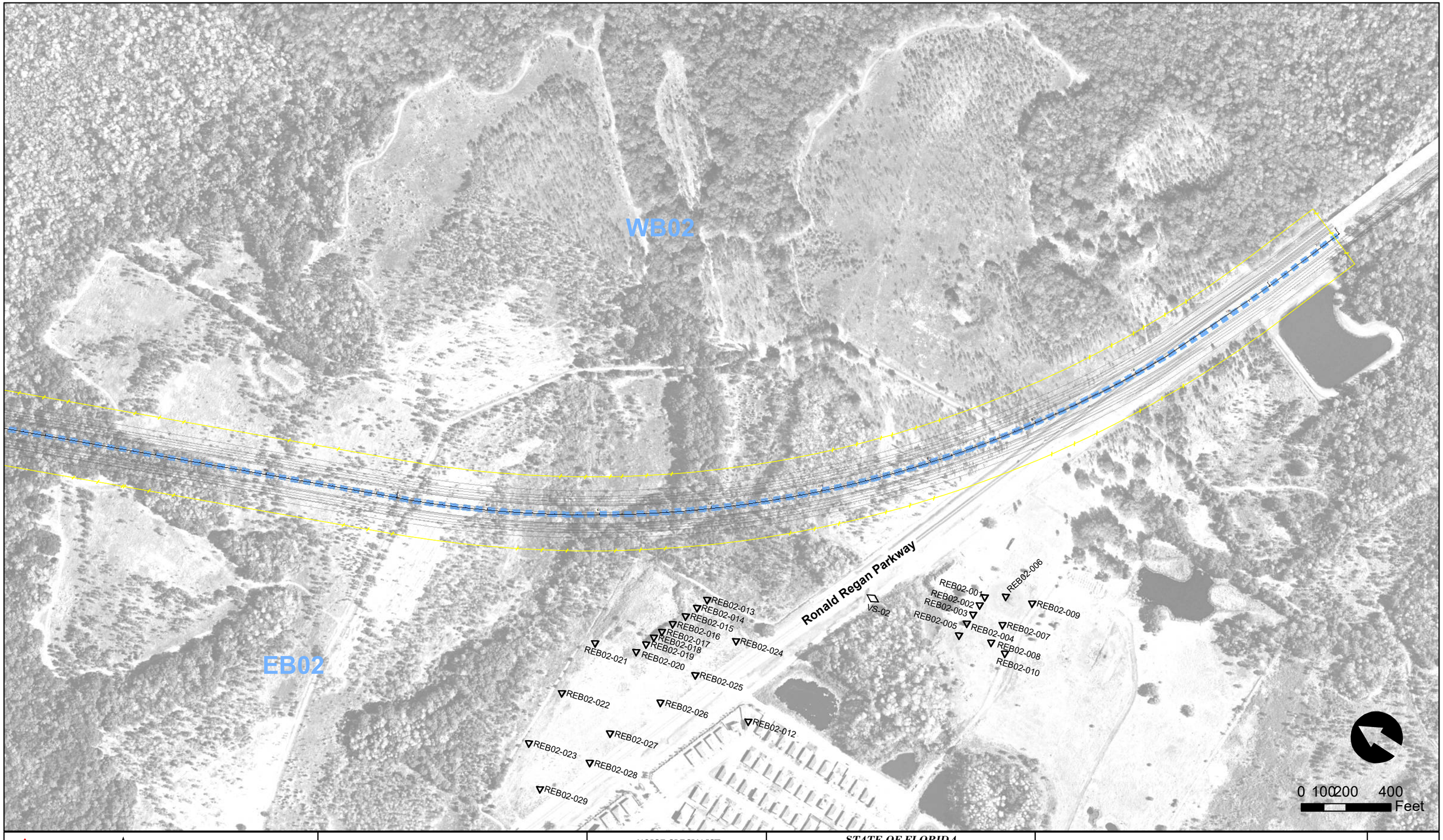
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	CFX Project Number
538	POLK/OSCEOLA	599-224

NOISE STUDY REPORT
PROJECT AERIALS

Sheet No. 6



Impacted Receptor
Not Impacted Receptor
Receptor to be Relocated
Ambient Receptor
Validation Receptor
ROW_Line_02
Right of Way
Parcels
CNE Boundary

Poinciana Parkway Extension
PD&E Study

NOISE SPECIALIST
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Inwood Consulting Engineers, Inc.
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Oviedo, Florida 32765
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	*COUNTY*	*CFX Project Number*
538	POLK/OSCEOLA	599-224

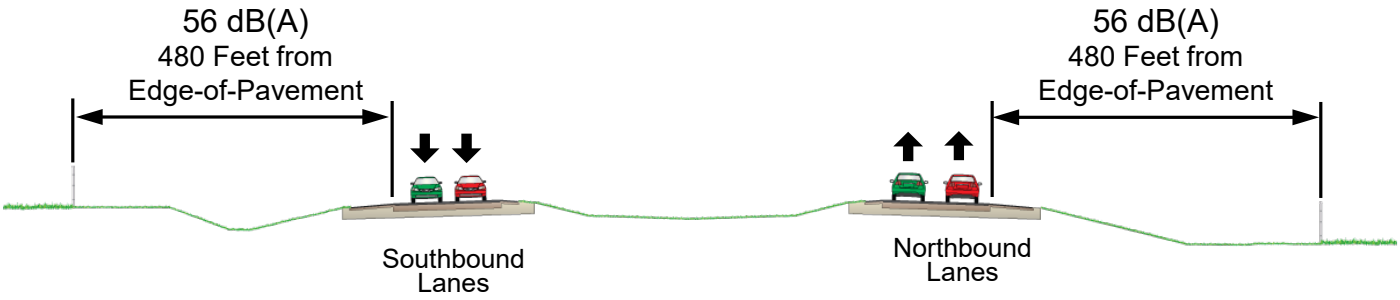
NOISE STUDY REPORT
PROJECT AERIALS

Sheet No.
7

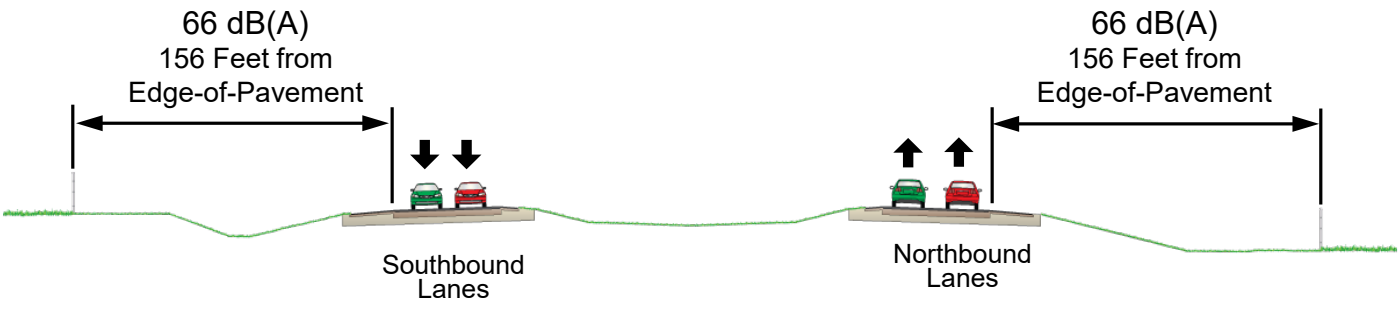
Appendix D

Project Noise Contours

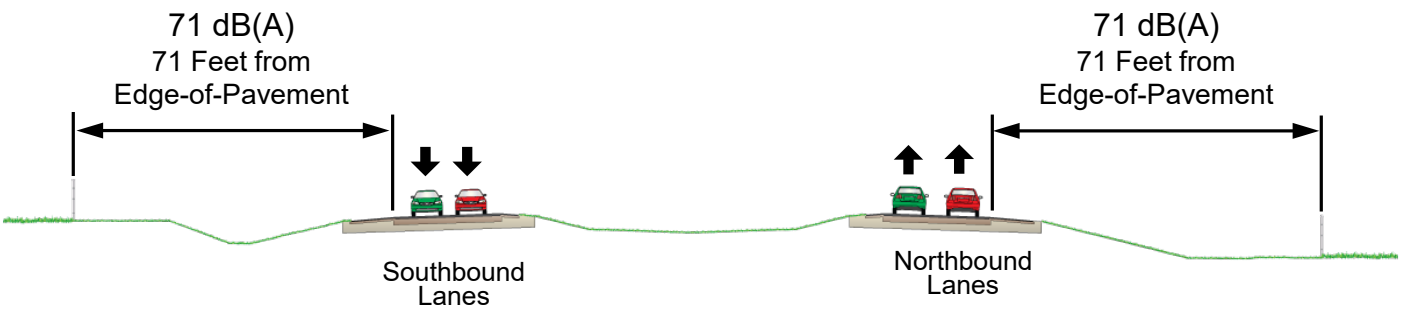
Poinciana Parkway Extension
Noise Contours



Activity Category A



Activity Category B/C



Activity Category E