DRAFT

Noise Study Report

Florida Department of Transportation
District 5

US 17/92 PD&E Study
from Ivy Mist Lane to Avenue A
Osceola County, Florida
Financial Project ID No.: 437200-2

March 2024
Draft

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration (FHWA) and FDOT.

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Prepared By:
Environmental Transportation Planning, LLC
Ponte Vedra Beach, FL

In Coordination With:
VHB, Inc. and RES, LLC
Orlando, FL

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District Five is conducting a Project Development and Environment (PD&E) Study to evaluate alternatives to widen US 17/92 from the existing two-lane roadway to a four-lane divided roadway from Ivy Mist Lane to Avenue A, a distance of 3.8 miles, in Osceola County as illustrated in **Figure 1**. This project traverses through the community of Poinciana and the unincorporated community of Intercession City. A prior Corridor Planning Study of US 17/92 from County Road (CR) 54 (Ronald Reagan Parkway) in Polk County to 1,900 feet west of Poinciana Boulevard at Avenue A in Osceola County was completed in 2018.

Two related projects overlap the western end of this PD&E Study:

- The segment of US 17/92 from west of Parker Road in Polk County to Ivy Mist Lane in Osceola County is included in the Central Florida Expressway Authority's (CFX) State Road (SR) 538/Poinciana Parkway Extension to CR 532 project, which is under design and anticipated to be complete in late 2022 with construction beginning in mid-2023. The SR 538/Poinciana Parkway Extension project will include the widening of US 17/92 within these limits and a new diverging diamond interchange with US 17/92 southwest of Ivy Mist Lane, as shown in teal in Figure 1.
- Adjacent to the western end of the PD&E Study (shown in dark green in Figure 1) is a CFX study evaluating the widening of CR 532/Osceola Polk Line Road from two to four lanes from Old Lake Wilson Road to US 17/92. This study includes design and is anticipated to begin construction in 2024.

At the eastern limits of this PD&E Study, FDOT District 5 recently completed the widening of US 17/92 from two to four lanes, for the limits from 1,900 feet west of Poinciana Boulevard (Avenue A) to CR 535 (Ham Brown Road) in Kissimmee (FPID: 239714-1). The project, completed in 2022, is shown in purple in Figure 1.

This project aims to provide needed capacity through the design year 2045, enhance regional connectivity, and improve safety conditions along the study corridor. The project is needed to meet future traffic demand, provide satisfactory future traffic operations, improve corridor access management, and improve safety along the corridor. The full project design layout is illustrated in **Appendix D**.

The Noise Impact Comparison Matrix in Appendix C of this Noise Study Report (NSR) presents the traffic noise impact analysis conducted for 167 noise sensitive sites (receptors) for the 2019 existing condition and the 2045 No-Build and Build Alternatives. The analysis results predicted that 31 residential receptors and one church would meet or exceed the FDOT Noise Abatement Criteria (NAC) using the 2019 traffic data. The highest existing noise level is 70.9 decibels (dB(A)) at four residences that front US 17/92 in Intercession City. As part of the No-Build Alternative, the three adjacent planned projects are considered built: Poinciana Parkway Extension and interchange with US 17/92, the CR 532 improvement, and the recently completed widening of US

17/92 east of Avenue A. The No-Build Alternative is predicted to have two fewer residential noise impacts than the existing condition.

Compared to the existing condition, the proposed project will increase exterior noise levels within the study corridor an average of 1.9 dB(A), with the greatest increase [9.4 dB(A)] occurring at a residence near the planned Poinciana Parkway Extension interchange. While none of the noise increases are considered substantial (i.e., 15 dB(A) or more over existing levels), project noise levels are predicted to meet or exceed the NAC at 38 residential receptors and the Intercession City Church. The highest noise level is 73.6 dB(A) at four Intercession City residences.

To mitigate the 39 project impacts, noise barriers were considered as an abatement measure. For a noise barrier to be considered feasible, the barrier must meet the minimum acoustic feasibility requirement of 5.0 dB(A) in noise reduction at two impacted receptors. Five of the impacted residential receptors are considered "isolated." Therefore, noise abatement at those locations cannot meet this minimum requirement.

For the remaining 33 impacted residential receptors and at the Intercession City Church, noise barriers cannot be constructed with sufficient lengths to meet the 5.0 dB(A) minimum acoustic reduction requirement due to engineering constraints caused by numerous driveways and sidestreets. Consequently, the abatement evaluation concluded that noise barriers are not feasible for this project.

STATEMENT OF LIKELIHOOD

Based on the noise analyses performed to date, no feasible and reasonable solutions are available to mitigate the noise impacts on the 39 noise sensitive sites identified as impacted in Appendix C.

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

TABLE OF CONTENTS

EXECUTIVE SUMMARY ..... **i**
STATEMENT OF LIKELIHOOD ii

1.0 PROJECT DESCRIPTION **1**
1.1 PROPOSED IMPROVEMENTS 2
1.2 NO-BUILD ALTERNATIVE 3

2.0 METHODOLOGY **3**
2.1 NOISE METRICS 3
2.2 TRAFFIC DATA 4
2.3 NOISE ABATEMENT CRITERIA 4
2.4 NOISE ABATEMENT MEASURES 6
2.4.1 Traffic Management 6
2.4.2 Alignment Modifications 6
2.4.3 Buffer Zones 7
2.4.4 Noise Barriers 7
2.4.4.1 Feasibility Factors 7
2.4.4.2 Reasonableness Factors 8

3.0 TRAFFIC NOISE ANALYSIS **8**
3.1 MODEL VALIDATION 9
3.2 PREDICTED NOISE LEVELS AND ABATEMENT ANALYSIS 10
3.2.1 Noise Study Area 1 11
3.2.2 Noise Study Area 2 13
3.2.2.1 NSA 2 Noise Abatement Consideration 13
3.2.3 Noise Study Areas 3 and 4 13
3.2.4 Noise Study Area 5 13
3.2.4.1 NSA 5 Noise Abatement Consideration 14
3.2.5 Noise Study Area 6 18
3.2.5.1 NSA 6 Noise Abatement Consideration 18

4.0 CONCLUSIONS **23**
4.1 STATEMENT OF LIKELIHOOD 23

5.0 CONSTRUCTION NOISE AND VIBRATION **23**

6.0 COMMUNITY COORDINATION **24**

6.1 NOISE IMPACT CONTOURS 24
6.2 PUBLIC COORDINATION 24

7.0 REFERENCES 27

Appendix A: Typical Sections
Appendix B: Project Traffic Data
Appendix C: Predicted Noise Levels
Appendix D: Project Aerials

LIST OF TABLES

Table 1: Noise Abatement Criteria 5
Table 2: Comparative Noise Levels 6
Table 3: TNM Validation Results 10

LIST OF FIGURES

Figure 1: Project Location Map 2
Figure 2: NSA 2 Project Impacts 12
Figure 3: NSA 5 Project Impacts 15
Figure 4: NSA 6 Project Impacts 19
Figure 5: Noise Impact Contours (45 MPH Segments) 25
Figure 6: Noise Impact Contours (Intercession City - 30 MPH Segment) 26

1.0 PROJECT DESCRIPTION

The Florida Department of Transportation (FDOT) District Five is conducting a Project Development and Environment (PD&E) Study to evaluate alternatives to widen US 17/92 from the existing two-lane roadway to a four-lane divided roadway from Ivy Mist Lane to Avenue A, a distance of 3.8 miles, in Osceola County as illustrated in **Figure 1.** This project traverses through the community of Poinciana and the unincorporated community of Intercession City. A prior Corridor Planning Study of US 17/92 from County Road (CR) 54 (Ronald Reagan Parkway) in Polk County to 1,900 feet west of Poinciana Boulevard at Avenue A in Osceola County was completed in 2018.

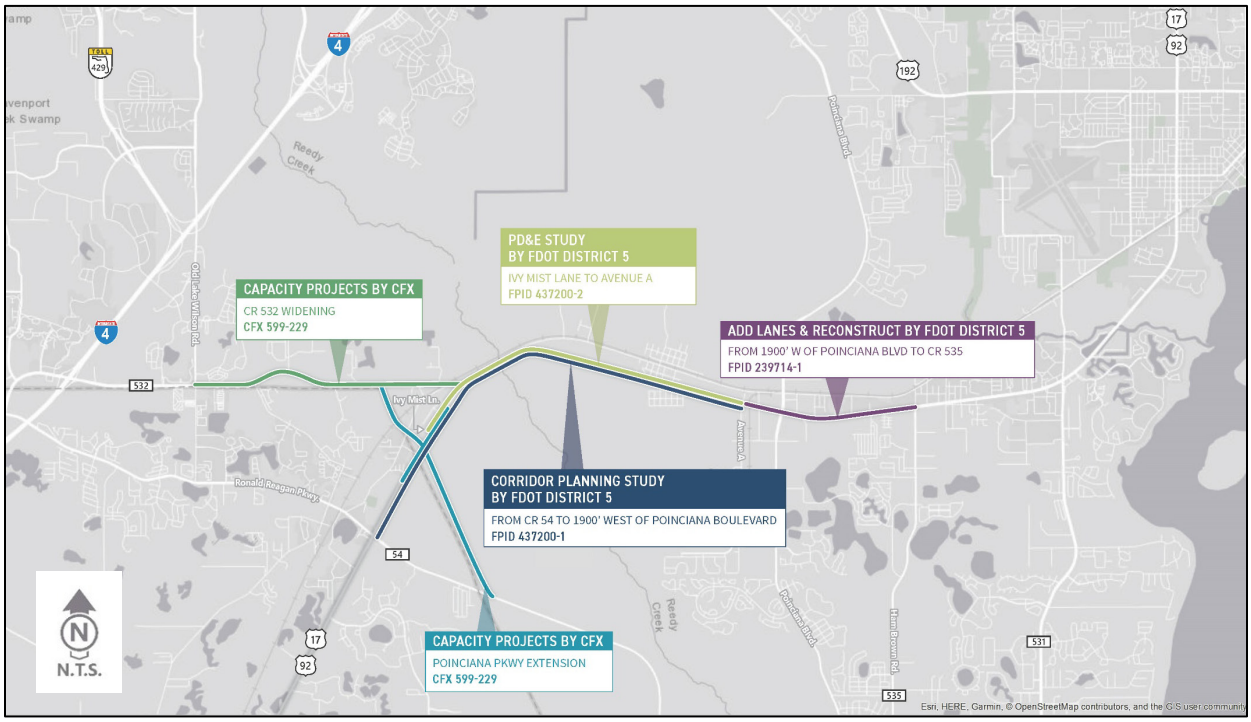
Two related projects overlap the western end of this PD&E Study:

- The segment of US 17/92 from west of Parker Road in Polk County to Ivy Mist Lane in Osceola County is included in the Central Florida Expressway Authority's (CFX) State Road (SR) 538/Poinciana Parkway Extension to CR 532 project, which is under design and anticipated to be complete in late 2022 with construction beginning in mid-2023. The SR 538/Poinciana Parkway Extension project will include the widening of US 17/92 within these limits and a proposed diverging diamond interchange with US 17/92 southwest of Ivy Mist Lane, as shown in teal in Figure 1.
- Adjacent to the western end of the PD&E Study (shown in dark green in Figure 1) is a CFX study evaluating widening CR 532/Osceola Polk Line Road from two to four lanes from Old Lake Wilson Road to US 17/92. This study includes design and is anticipated to begin construction in 2024.

At the eastern limits of this PD&E Study, FDOT District 5 recently completed the widening of US 17/92 from two to four lanes, for the limits from 1,900 feet west of Poinciana Boulevard (Avenue A) to CR 535 (Ham Brown Road) in Kissimmee (FPID: 239714-1). The project, completed in 2022, is shown in purple in Figure 1.

The purpose of this project is to provide needed capacity through the design year 2045, enhance regional connectivity, and improve safety conditions along the study corridor. The project is needed to meet future traffic demand, provide satisfactory future traffic operations, improve corridor access management, and improve safety along the corridor.

Figure 1: Project Location Map



1.1 PROPOSED IMPROVEMENTS

The project's purpose is to widen the existing two-lane roadway to a four-lane divided roadway with median openings to improve access management. The Preferred Build Alternative adds a continuous 12-foot shared-use path along both sides of the study corridor, with the exception of the Reedy Creek Bridge, due to constraints along the existing bridge. A pedestrian crossing will be provided at the Osceola Polk Line Road and Old Tampa Highway intersections to provide pedestrians with a crossing over US 17/92 to the shared-use path to reduce the footprint within Intercession City, 10-foot urban side paths will be provided along both sides of the roadway. Illustrations of the proposed typical sections are included in **Appendix A.**

The Build Alternative also involves retaining the existing bridge over Reedy Creek to serve as the eastbound traffic lanes and adding a new bridge over Reedy Creek to serve as the westbound traffic lanes. The westbound bridge will have a 12-foot-wide shared-use path for the use of pedestrians and bicyclists traveling in both directions. In addition to the widening and multimodal improvements along US 17/92, this project includes intersection improvements at CR 532, Old Tampa Highway, and Avenue A. Five stormwater pond site locations have been recommended as part of the Preferred Alternative. The full project design layout is illustrated in **Appendix D**.

1.2 NO-BUILD ALTERNATIVE

Consistent with Federal Highway Administration (FHWA) guidelines, this analysis also considers an alternative that assesses what would happen to the environment in the future if this proposed improvement was not built. This alternative, called the No-Build Alternative, does not meet project needs but provides a baseline condition to compare and measure the proposed project's effects. Illustrations of the existing US 17/92 typical sections are included in **Appendix A.**

The No-Build Alternative assumes no improvements, such as additional traffic lanes or other improvements, will be made within the study area, except for programmed improvements to nearby or adjacent facilities. For this project, the No-Build Alternative includes the recently completed widening of US 17/92 from Avenue A to CR 535 (FPID: 239714-1) to four lanes, the programmed SR 538/Poinciana Parkway Extension and interchange, and the CR 532 widening.

2.0 METHODOLOGY

The traffic noise study was conducted in accordance with Title 23, *Code of Federal Regulations* (CFR), § 772[1], Part II, Chapter 18 of the FDOT *Project Development and Environment Manual* [2], and Chapter 335, Section 335.17, *Florida Statutes* [3]. This assessment also adheres to the FHWA traffic noise analysis guidelines in *FHWA-HEP-10*-025 [4]. The FHWA Traffic Noise Model (TNM) - version 2.5 was used to predict traffic noise levels for this project following guidelines outlined in the FDOT *Traffic Noise Modeling and Analysis Practitioners Handbook* [5]. The analysis evaluated noise levels for the 2019 Existing Condition and the 2045 No-Build and Build Alternatives.

Noise receptor coordinates used in the TNM are located in exterior areas where frequent human use may occur, usually at the edge of the residential structure closest to the project roadways, unless the analyst's professional judgment determines otherwise.

The MicroStation design files, georeferenced to the ortho-rectified 2021 State Plane imagery for Orange County and 2020 imagery for Osceola County, were used to determine the proposed alternative's location for input into TNM. Elevation data for noise receptors and existing roadways were obtained from the project's engineering plans and Google Earth[6].

2.1 NOISE METRICS

Noise levels developed for this analysis are expressed in decibels (dB) using an "A"-scale weighting expressed as dB(A). This scale most closely approximates the response characteristics of the human ear to typical traffic noise levels. All reported noise levels are 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.

2.2 TRAFFIC DATA

Traffic noise is heavily dependent on traffic volume and speed, with the amount of noise generated by traffic increasing as the vehicle speed and number of vehicles increase. Characteristics contributing to the 2045 Design Year's highest traffic noise levels were used to predict project noise levels. Worst-case noise conditions occur with the maximum traffic traveling at the posted speed and represent a Level of Service (LOS) C operating condition. However, if the traffic analysis indicates the roadway will operate below LOS C, the project's Demand peak-hour directional traffic volumes are used per Chapter 18 of the FDOT PD&E Manual. Traffic volumes and speeds used in the analysis are included in **Appendix B**.

2.3 NOISE ABATEMENT CRITERIA

Land use also plays an important role in traffic noise analyses. Noise sensitive receptors are any property where frequent exterior human use occurs and where a lowered noise level would provide a benefit. The FHWA has established noise levels at which noise abatement must be considered for various types of land uses. As shown in **Table 1**, these levels are used to evaluate traffic noise and are referred to as Noise Abatement Criteria (NAC). The FDOT requires noise abatement consideration for noise levels that approach the FHWA criteria by one dB(A) for the corresponding Activity Category. Another criterion for determining project impacts that warrant abatement consideration occurs when project noise levels are below the NAC but show a substantial increase (15.0 dB(A) or more) over existing levels.

Table 1: Noise Abatement Criteria

Hourly A-Weighted Sound Level-decibels (dB(A))				Description of Activity Category
Activity Category	Activity Leq(h) [1]		Evaluation Location	
	FHWA	FDOT		
A	57.0	56.0	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[2]	67.0	66.0	Exterior	Residential.
C[2]	67.0	66.0	Exterior	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, golf courses, places of worship, playgrounds, public meeting rooms, public/nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52.0	51.0	Interior	Auditoriums, daycare centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public/nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[2]	72.0	71.0	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.

(Based on 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.

An illustration of typical exterior and interior noises and their corresponding decibel reading is presented in **Table 2**. This table gives the reader a better understanding of the noise levels discussed herein.

Table 2: Comparative Noise Levels

Common Outdoor Activities	dB(A)	Common Inside Activities
Jet Flyover at 1,000 ft. Gas Lawn Mower at 3 ft.	-110- -100-	Rock Band
Diesel Truck at 50 ft. (at 50 MPH) Busy Urban Area Daytime	-90- -80-	Food Blender at 3 ft. Garbage Disposal at 3 ft.
Gas Mower at 100 ft. Commercial Area Heavy Traffic at 300 ft.	-70- -60-	Vacuum Cleaner at 10 ft. Normal Speech at 3 ft. Large Business Office
Quiet Urban Daytime Quiet Urban Nighttime Quiet Suburban Nighttime	-50- -40-	Dishwasher Next Room Theater, Large Conference Room (Background)
Quiet Rural Nighttime	-30- -20-	Library
Lowest Threshold of Human Hearing	-10- -0-	Lowest Threshold of Human Hearing
Source: California Dept. of Transportation Technical Noise Supplement, Oct. 1998, Page 18.		

2.4 NOISE ABATEMENT MEASURES

Noise abatement measures are considered when traffic noise impacts are identified as part of the traffic noise analysis. Potential abatement alternatives may include traffic management techniques, alternative roadway alignments, buffer zones, and noise barriers.

2.4.1 Traffic Management

Traffic management measures that limit motor vehicle speeds and reduce volumes can be effective as a noise mitigation option. However, these measures may also negate a project's ability to meet its stated purpose and need. Consequently, while feasible, traffic management measures are not considered a reasonable noise mitigation measure for this project.

2.4.2 Alignment Modifications

The proposed project follows the same alignment as the existing facility. Several widening alternatives were considered, and the preferred alternative was selected to minimize the additional right-of-way (ROW) needs. Further alignment modification is not feasible.

2.4.3 Buffer Zones

Noise buffer zones that separate the roadway and noise sensitive land uses can minimize or eliminate noise impacts. This measure requires local land use planning not currently in place within the project corridor. Because the noise impact analysis applies to existing land uses, buffer zones are not an applicable abatement measure at this time. However, for any new development or redevelopment occurring in the future, local planning authorities can use the noise contour information provided in **Section 6.1 Noise Contours** of this NSR to establish buffer zones, thereby minimizing or avoiding noise impacts on future sensitive land uses.

2.4.4 Noise Barriers

Due to the limited ROW and proposed typical section, noise barrier walls are the only measure considered for this project. The following feasibility and reasonableness factors must be evaluated when evaluating noise barriers.

2.4.4.1 Feasibility Factors

As summarized below, the FDOT PD&E Manual stipulates that a noise barrier must meet acoustic and engineering criteria to be considered feasible.

1. Acoustic feasibility: The barrier must provide a minimum of 5.0 dB(A) reduction in traffic noise for at least two impacted receptors. Consequently, noise barriers are not evaluated for isolated and single-impacted receptors.
2. Engineering feasibility: The engineering review identifies whether other factors must be evaluated for the barrier to be considered feasible.
    a. Safety: If a conflict between a noise barrier and safety exists, primary consideration must be given to safety. An example of such a conflict is losing a safe sight distance (line of sight) at an intersection or driveway resulting from a noise barrier placement.
    b. Accessibility to adjacent properties: The noise barrier placement cannot block ingress and egress on non-limited access roadways. Other access issues to be considered include access to a local sidewalk or normal routes of travel. Neither applies to noise barriers on limited-access roadways.
    c. Right-of-way needs: Does the noise barrier require additional land, access rights, or easements for construction and maintenance?
    d. Maintenance: Maintenance crews must have reasonable access to both sides of the barrier for personnel and equipment using standard practices.
    e. Drainage: Does the barrier impact existing or planned drainage?
    f. Utilities: Does the barrier impact existing utilities?

2.4.4.2 Reasonableness Factors

If a noise barrier meets the feasibility criteria, the following reasonableness factors must collectively be achieved for the noise abatement measure to be deemed reasonable.

1. Acoustic reasonableness: The barrier must attain the FDOT noise reduction design goal (NRDG) of 7.0 dB(A) for at least one benefited receptor. (Note: to be considered "benefited," the receptor must receive a minimum of 5.0 dB(A) in traffic noise reduction from the barrier.) Failure to achieve the NRDG results in the noise abatement measure being deemed not reasonable.
2. Cost reasonableness: Using the current $30.00 per square foot statewide average, a cost of $42,000 per benefited receptor is considered the upper limit for cost-reasonableness.
3. Benefited property owner and resident viewpoints: During project development, FDOT solicits the opinion of benefited owners and residents regarding noise abatement. Affected owners and residents are given the opportunity to provide input regarding their desires to have the proposed noise abatement measure constructed. This process aims to obtain a response for or against the noise barrier from a majority of respondents to the survey. The noise barrier is not deemed reasonable if a majority consensus is not obtained in favor of the barrier.

3.0 TRAFFIC NOISE ANALYSIS

The traffic noise analysis includes noise model validation and prediction of noise levels for the 2019 Existing Condition and the 2045 No-Build and Build Alternatives. A field review on August 23, 2022, verified existing noise-sensitive sites within the project limits. Using **Table 1** as a guide, most noise sensitive land uses within the study corridor fall under Activity Category B - Residential. Activity Category C land uses are also in the project corridor, including several churches, the Aspire Health Rehabilitation Center, and the Muslim Cemetery. Analysis of interior (Category D) noise levels is not required for this project as all Category C locations have areas of exterior use. The one Activity Category E land use is the Ebenezer Nursery and Landscaping commercial business. While Activity Category F land uses are in the project corridor, this is not considered a noise sensitive activity and is not included in this analysis. No land uses in the study corridor warrant an Activity Category A analysis.

There are pockets of Activity Category G undeveloped land within the study corridor. A permit search of vacant properties was conducted to identify active building permits for noise sensitive land uses. As of September 1, 2022, no such permits were discovered. If a future noise sensitive land use receives a building permit before the project's Date of Public Knowledge and after the date of this report, they will be assessed for traffic noise impacts during the project's final design phase of development.

3.1 MODEL VALIDATION

On August 23, 2022, a series of three 10-minute sound measurements were collected using an Extech Instruments Model 407780 Type 2 Integrating Sound Level Meter to verify the accuracy of the computer noise model (TNM 2.5). The meter, calibrated with an Extech Instruments Model 407766 calibrator, was adjusted to the A-weighted frequency scale, which approximates the frequency sensitivity of the human ear. Traffic data, including vehicle volumes and speeds by type, and meteorological conditions, were recorded during each measurement session. The data collection effort also recorded the travel speed for each type of vehicle using a Bushnell Speedster handheld radar gun.

One location within the study corridor was selected to undergo a series of three 10-minute measurements. The validation site, illustrated on page **D-7** in Appendix D, is located in Intercession City adjacent to the US 17/92 westbound (WB) lane. The predominant noise source at this location is the roadway. During the monitoring session, the temperature ranged from 88 to 89 degrees under clear skies, 68% humidity, and winds out of the South/Southeast at 2 MPH. No unusual noise events occurred during the three 10-minute sessions at this location.

Validation of the TNM occurs when the model-predicted noise levels are within three decibels of the field-measured levels. As shown in **Table 3**, TNM predicted within the 3.0-decibel acceptance range for each 10-minute session. Consequently, the model is acceptable for predicting noise levels on this project.

Table 3: TNM Validation Results

Validation Date: 8/23/22										
Run 1: Start-10:22 AM										
US 17/92	**Cars**		**Medium Trucks**		**Heavy Trucks**		**Buses**		**Motorcycles**	
	Vol. Count	**Avg. Speed**	**Vol. Count**	**Avg. Speed**	**Vol. Count**	**Avg. Speed**	**Vol. Count**	**Avg. Speed**	**Vol. Count**	**Avg. Speed**
WB	105	45	10	43	8	42	0	0	1	48
EB	102	45	14	43	6	42	0	0	0	0
Field Measurement (dB(A)):					68.1					
TNM Prediction (dB(A)):					69.8					
Variance (dB(A)):					1.7					
Run 2: Start-10:35 AM										
US 17/92	**Cars**		**Medium Trucks**		**Heavy Trucks**		**Buses**		**Motorcycles**	
	Vol. Count	**Avg. Speed**	**Vol. Count**	**Avg. Speed**	**Vol. Count**	**Avg. Speed**	**Vol. Count**	**Avg. Speed**	**Vol. Count**	**Avg. Speed**
WB	95	46	3	39	12	45	0	0	0	0
EB	105	46	11	39	10	45	0	0	0	0
Field Measurement (dB(A)):					68.1					
TNM Prediction (dB(A)):					70.1					
Variance (dB(A)):					2.0					
Run 3: Start- 10:45 AM										
US 17/92	**Cars**		**Medium Trucks**		**Heavy Trucks**		**Buses**		**Motorcycles**	
	Vol. Count	**Avg. Speed**	**Vol. Count**	**Avg. Speed**	**Vol. Count**	**Avg. Speed**	**Vol. Count**	**Avg. Speed**	**Vol. Count**	**Avg. Speed**
WB	82	45	5	41	6	43	0	0	0	0
EB	107	45	9	41	10	43	0	0	1	45
Field Measurement (dB(A)):					67.6					
TNM Prediction (dB(A)):					69.1					
Variance (dB(A)):					1.5					

3.2 PREDICTED NOISE LEVELS AND ABATEMENT ANALYSIS

For this project, a total of 167 noise sensitive sites were evaluated for project-related noise impacts. Due to the number of receptors, the analysis divided the study corridor into six Noise Study Areas (NSA). Each analyzed residential receptor is identified by NSA number, and then a sequential numbering, i.e., 2-1 refers to NSA 2, receptor #1. The Activity Category C and E receptors are considered special land uses for purposes of the noise analysis and are referred to by SLU(NSA#)(sequential #)(activity category), i.e., SLU2-1C.

The reporting of project noise levels was further simplified by using receptors representing similar adjacent noise sensitive sites. The grouping within a representative receptor is referred to as a Common Noise Environment (CNE), which FDOT defines as a group of receptors within

the same Activity Category exposed to similar noise sources and levels; traffic volumes, traffic mix, speed; and topographic features. There may be several CNEs within one NSA.

The analysis results discussed in this section for the 2019 existing condition, the 2045 No-Build Alternative, and the 2045 Build Alternative are also presented in a noise impact comparison matrix provided in **Appendix C.** The analysis predicted that 31 residential receptors and one church would have noise levels that meet or exceed the FDOT NAC using the 2019 existing traffic data. The highest existing noise level is 70.9 dB(A) at four residences that front US 17/92 in Intercession City.

As part of the No-Build and Build Alternatives, the three adjacent planned projects are considered built: Poinciana Parkway Extension and interchange with US 17/92, the CR 532 improvement, and the recent widening of US 17/92 east of Avenue A. The No-Build Alternative is predicted to have two fewer residential noise impacts than the existing condition.

Compared to the existing condition, the proposed project will increase exterior noise levels within the study corridor an average of 1.9 dB(A), with the greatest increase [9.4 dB(A)]occurring at a residence near the planned Poinciana Parkway Extension interchange. While none of the noise increases are considered substantial (i.e., 15 dB(A) or more over existing levels), project noise levels are predicted to meet or exceed the NAC at 39 receptors. The highest noise level is 73.6 dB(A) at four residences in Intercession City.

When discussing noise level increases, the general rule that applies to perception is:

- A 3 dB(A) increase is barely perceptible to most people.
- A 5 dB(A) increase is noticeable to most people.
- A 10 dB(A) increase is perceived as twice as loud and is considered a doubling of noise.
- *Note: FDOT considers a 15 dB(A) increase as substantial.*

A discussion of each NSA and the corresponding impact and abatement analysis is provided in the following sections. A set of project aerials illustrating the NSAs, representative receptors, and the analyzed sites within each CNE is included in **Appendix D**.

3.2.1 Noise Study Area 1

NSA 1 is located south of US 17/92 from the project's beginning limits to CR 532/Osceola Polk Line Road, as illustrated in Appendix D on pages **D-2** and **D-3**. There are two residences in this NSA (receptors 1-1 and 1-2), and neither is currently impacted by traffic noise. However, these residences are located within the ROW of a proposed retention pond for the Poinciana Parkway Extension, which will be shared by this project in the Build Alternative. Both residences will be acquired. The **Figure 2** graphic provided as part of the NSA 2 abatement discussion illustrates the location of these two receptors.

Figure 2: NSA 2 Project Impacts

3.2.2 Noise Study Area 2

NSA 2 is located north of US 17/92 from the project's beginning limits to CR 532/Osceola Polk Line Road, as illustrated in Appendix D on pages **D-2** and **D-3**. The noise sensitive land uses in this NSA are predominantly residential and include 22 single-family residences analyzed for project noise impacts, represented by receptors 2-1 through 2-19. There is also an Activity Category E receptor (SLU2-1), Ebenezer Nursery and Landscaping.

At the western section of this NSA adjacent to the Ivy Lane neighborhood is the planned Poinciana Parkway Extension and its interchange with US 17/92. With this project's proposed widening of US 17/92 east of the interchange, the overall traffic noise levels are predicted to increase an average of 3.1 dB(A) compared to the existing condition, with the highest increase being 9.4 dB(A) at a residence on Ivy Mist Lane. While these noise increases are not considered substantial (≥ 15 decibels), noise abatement consideration is required because project noise levels are expected to exceed the 66.0 dB(A) NAC at three residences. A summary of the abatement evaluation to mitigate these impacts is summarized in Section **3.2.2.1**. The noise levels discussed for this NSA are also presented in the noise impact comparison matrix provided in **Appendix C**.

3.2.2.1 NSA 2 Noise Abatement Consideration

Multiple driveway openings between the three impacted sites represented by receptors 2-6, 2-10, and 2-12 pose engineering constraints that prevent the construction of a continuous or segmented noise barrier system of effective lengths from meeting the minimum noise reduction feasibility requirement, as discussed in Section **2.4.4.1**. Therefore, noise abatement for NSA 2 impacts is not considered feasible. **Figure 2** illustrates the location of the impacted receptors.

3.2.3 Noise Study Areas 3 and 4

NSA 3 and NSA 4 are located between CR 532/Osceola Polk Line Road and Old Tampa Highway. As illustrated in Appendix D on pages **D-3** and **D-4**, NSA 3 is south of US 17/92, and NSA 4 is located to the north. There are no noise sensitive sites in either of these noise study areas.

3.2.4 Noise Study Area 5

NSA 5 is located south of US 17/92 from Old Tampa Highway to Avenue A/end of project limits, as illustrated in Appendix D on pages **D-5** through **D-9.** Forty-four residential receptors, represented by receptors 5-1 through 5-31, and the three Activity Category land uses listed below were analyzed for noise impacts in this NSA.

- SLU5-1 – Aspire Health Rehabilitation Facility
- SLU5-2 – Miracle Springs Church
- SLU5-3 – Iglesia Evangelica El Tabor Church

The average project noise level is predicted to be 3.3 dB(A) higher than the existing condition, with the highest increase being 6.4 dB(A). While these noise increases are not considered substantial, noise abatement consideration is required because project noise levels are expected to exceed the 66.0 dB(A) NAC at 13 residences. A summary of the abatement evaluation to

mitigate these impacts is summarized in Section **3.2.4.1**. The noise levels discussed for this NSA are also presented in the noise impact comparison matrix provided in **Appendix C**.

3.2.4.1 NSA 5 Noise Abatement Consideration

Impacted receptor 5-3 is a single residence where a potential noise barrier cannot achieve the minimum acoustic feasibility requirement of 5.0 dB(A) reduction at two impacted sites, as discussed in Section **2.4.4.1**. Multiple driveway openings at the remaining 12 impacted sites represented by receptors 5-6, 5-7, 5-9, 5-25, 5-26, and 5-31 pose engineering constraints that prevent a continuous or segmented noise barrier system of effective lengths that will meet the minimum noise reduction requirement. Therefore, noise abatement for NSA 5 impacts is not considered feasible. The **Figure 3** series illustrates the location of the impacted receptors.

Figure 3: NSA 5 Project Impacts

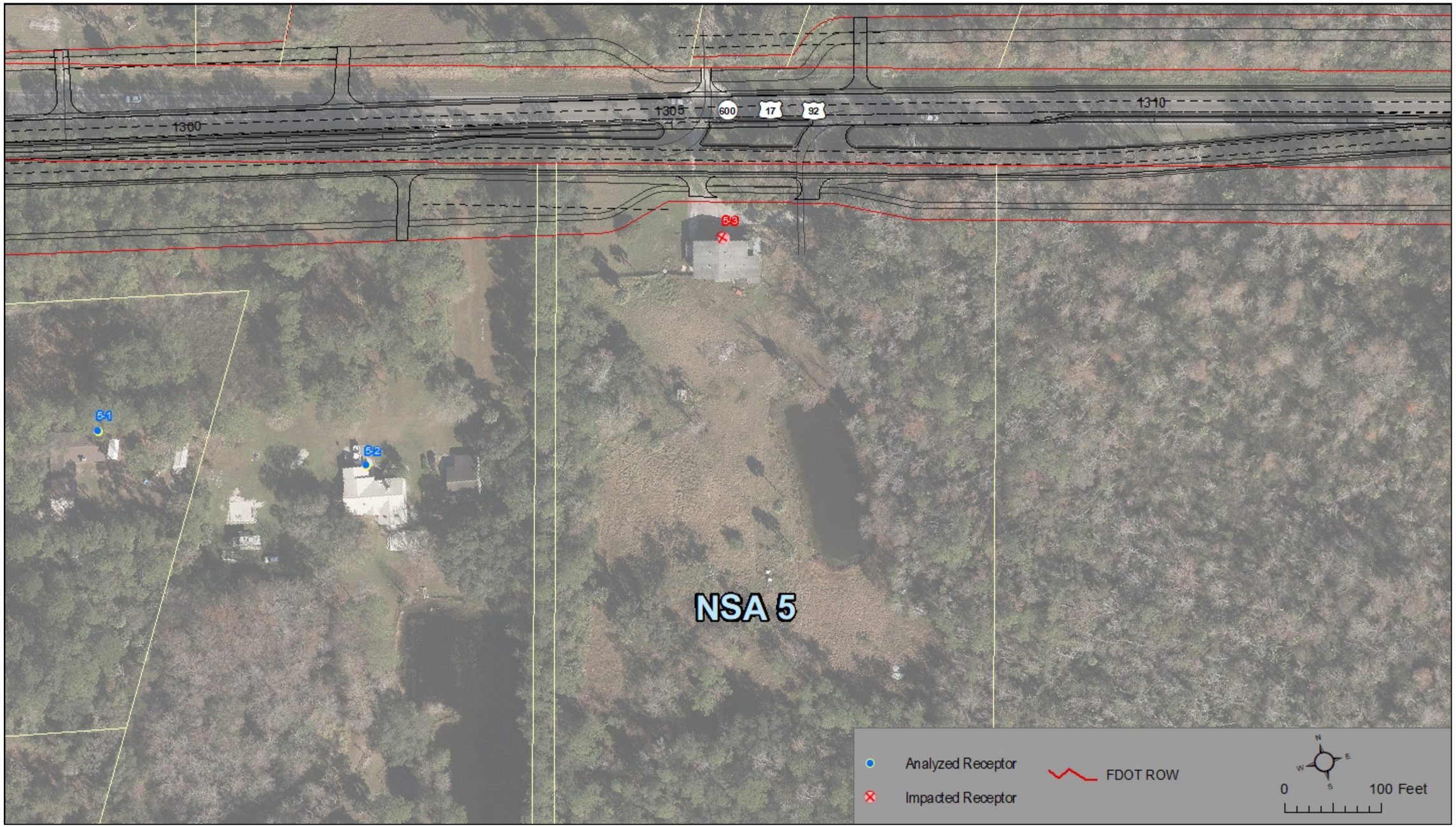
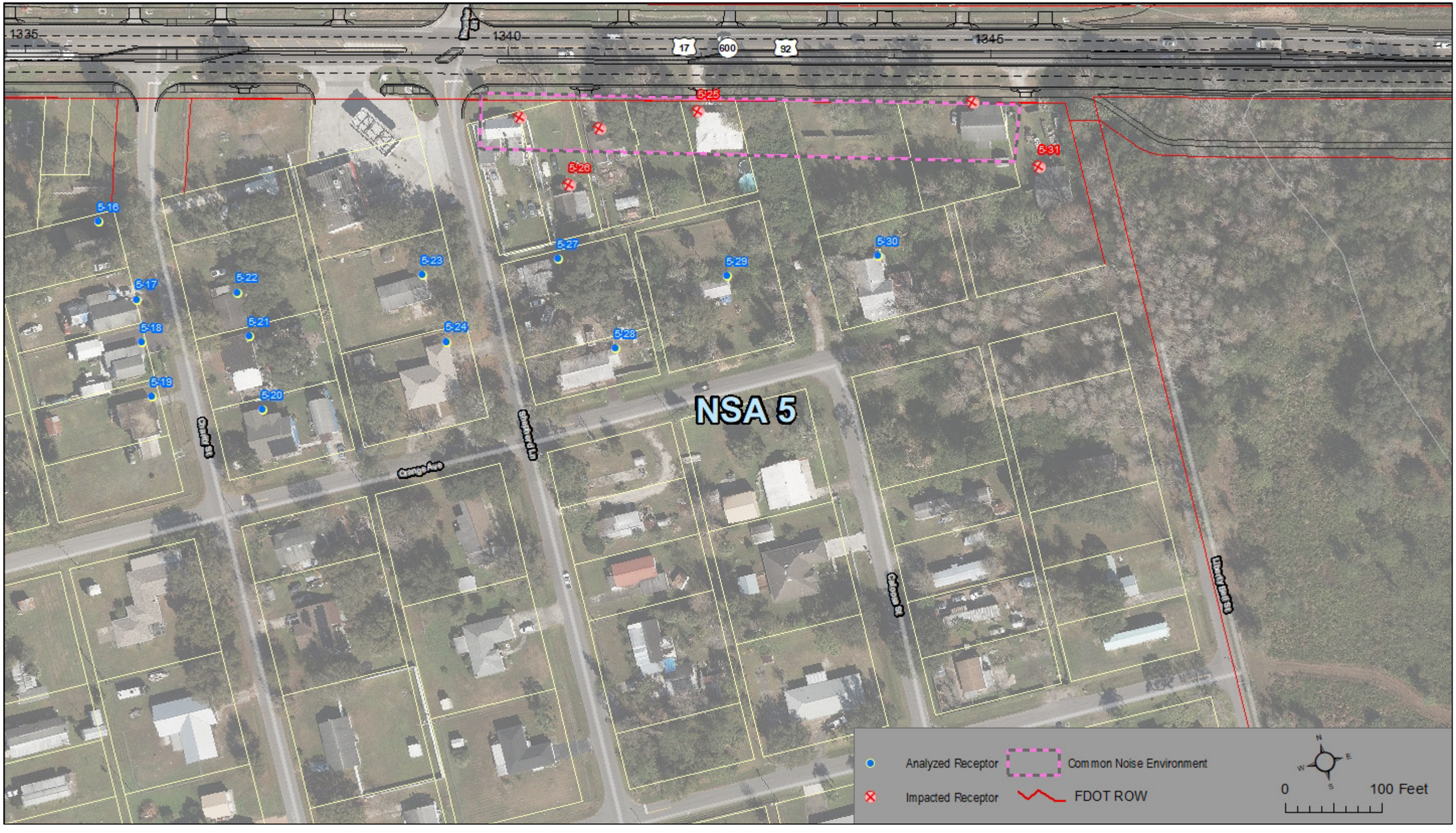


Figure 3: Sheet 2 of 3

Figure 3: Sheet 3 of 3



3.2.5 Noise Study Area 6

NSA 6 is located north of US 17/92 from Old Tampa Highway to Avenue A/end of project limits, as illustrated in Appendix D on pages **D-5** through **D-9.** The analyzed noise sensitive land uses in this NSA are predominantly residential, represented by receptors 6-1 through 6-67 and the Activity Category C receptors listed below:

- SLU6-1 – Muslim Cemetery
- SLU6-2 – Gift of Grace Worship Center
- SLU6-3 – Intercession City Church

Because the project speed limit through Intercession City is reduced to 30 MPH, the average project noise level is predicted to be 1.0 dB(A) higher than the existing condition through NSA 6, with the highest increase being 4.5 dB(A) at a residence east of Nocatee Street where the speed limit increases to 45 MPH. While these noise increases are not considered substantial, noise abatement consideration is required because project noise levels are expected to exceed the 66.0 dB(A) NAC at 22 residences and the Intercession City Church. A summary of the abatement evaluation to mitigate these impacts is summarized in **Section 3.2.5.1**. The noise levels discussed for this NSA are also summarized in the noise impact comparison matrix provided in **Appendix C**.

3.2.5.1 NSA 6 Noise Abatement Consideration

Four impacted residential receptors are single/isolated residences where a potential noise barrier cannot achieve the minimum noise reduction feasibility requirement. These residences are represented by receptors 6-2, 6-12, 6-28, and 6-50.

Multiple sidestreets and driveway openings at the remaining 19 impacted sites pose engineering constraints that prevent a continuous or segmented noise barrier system of effective lengths that can achieve the minimum noise reduction requirement. These impacted sites include the Intercession City Church (SLU6-3) and the following residential receptors: 6-29, 6-29.5, 6-37, 6-53, 6-56, 6-58 through 6-61, 6-63, 6-65, and 6-66.

Therefore, noise abatement for NSA 6 impacts is not considered feasible. An illustration of the impacted receptors is provided in the **Figure 4** series. The noise levels discussed for this NSA are also summarized in the noise impact comparison matrix provided in **Appendix C**.

Figure 4: NSA 6 Project Impacts

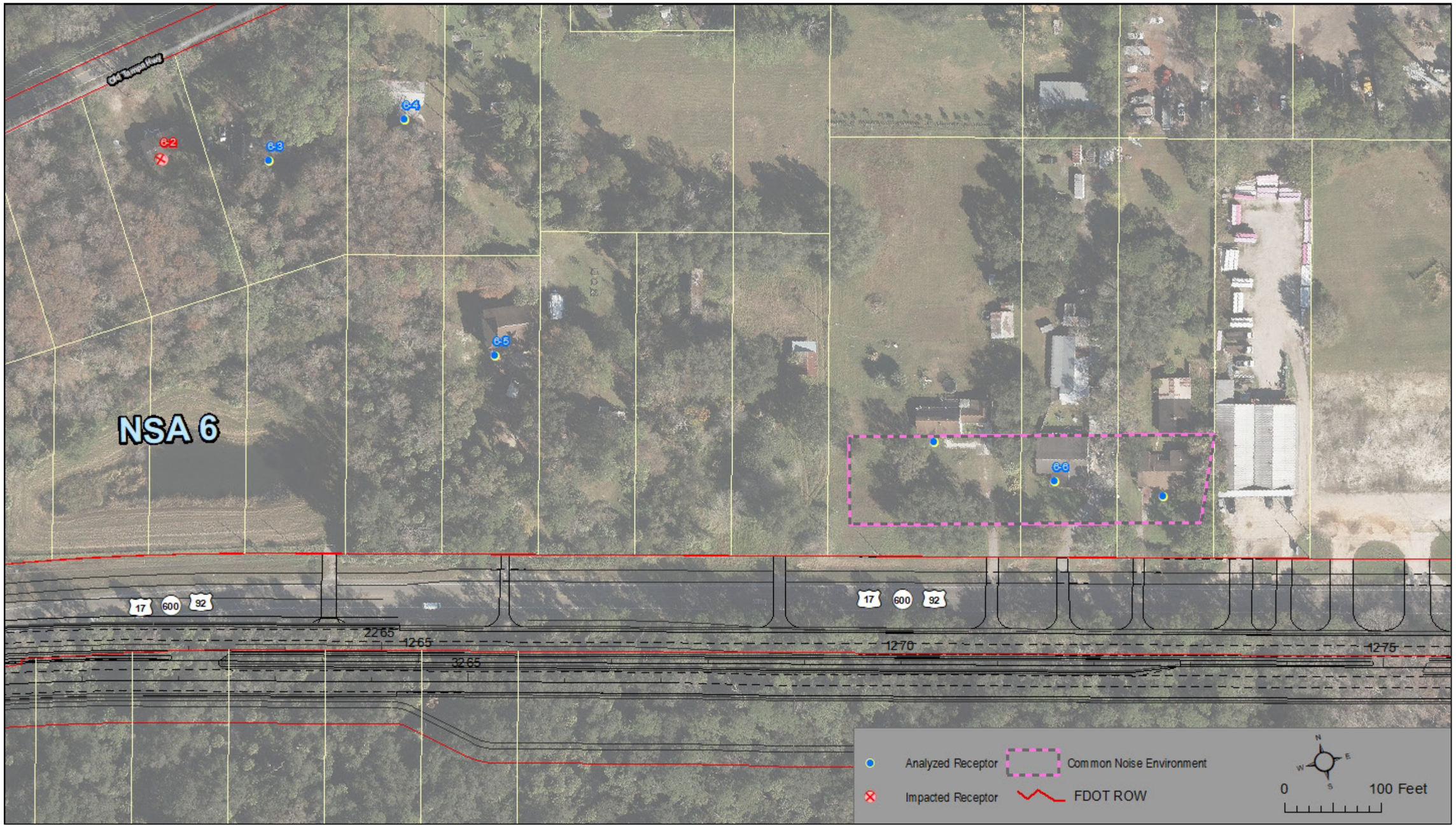


Figure 4: Sheet 2 of 4

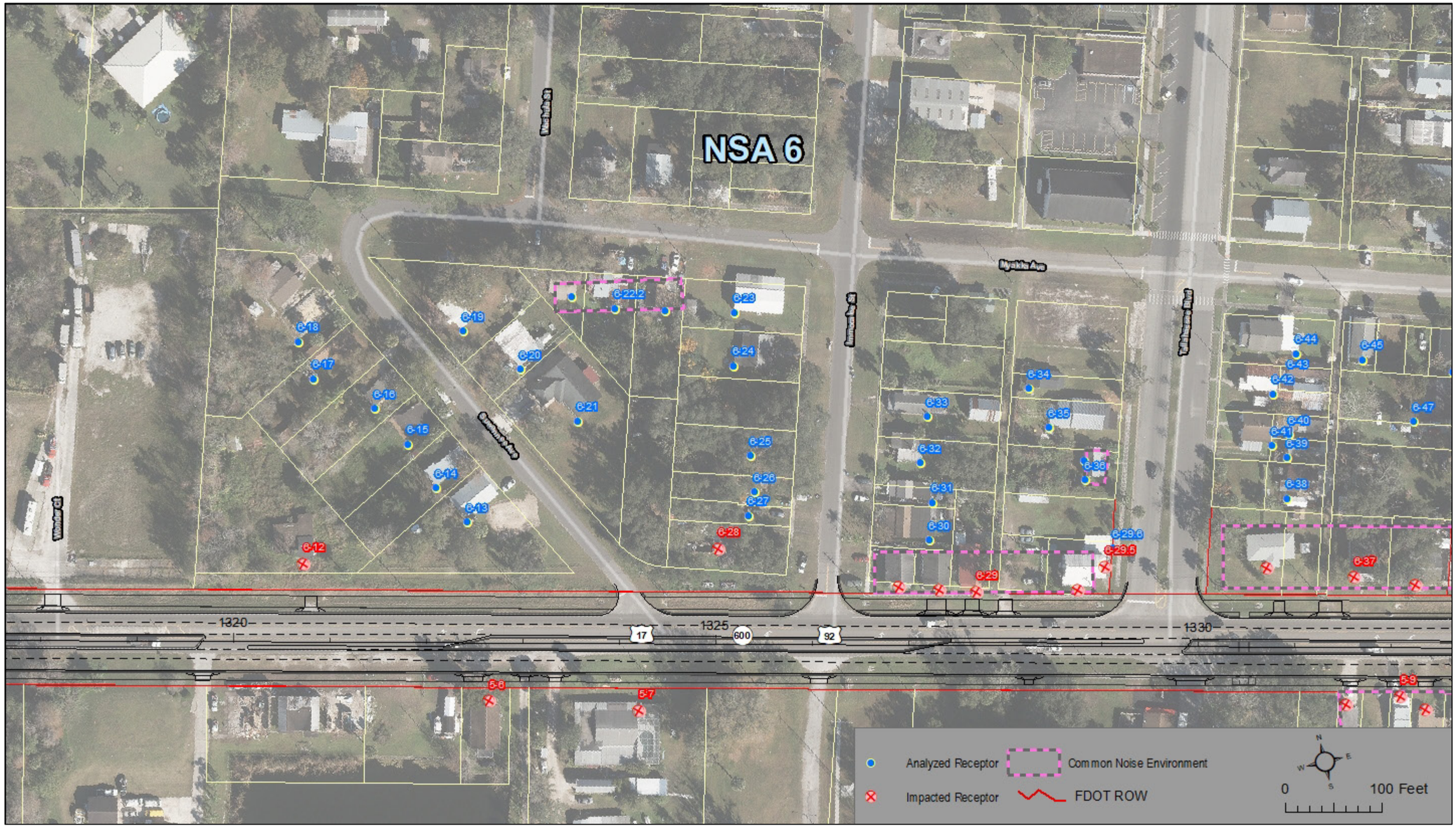


Figure 4: Sheet 3 of 4

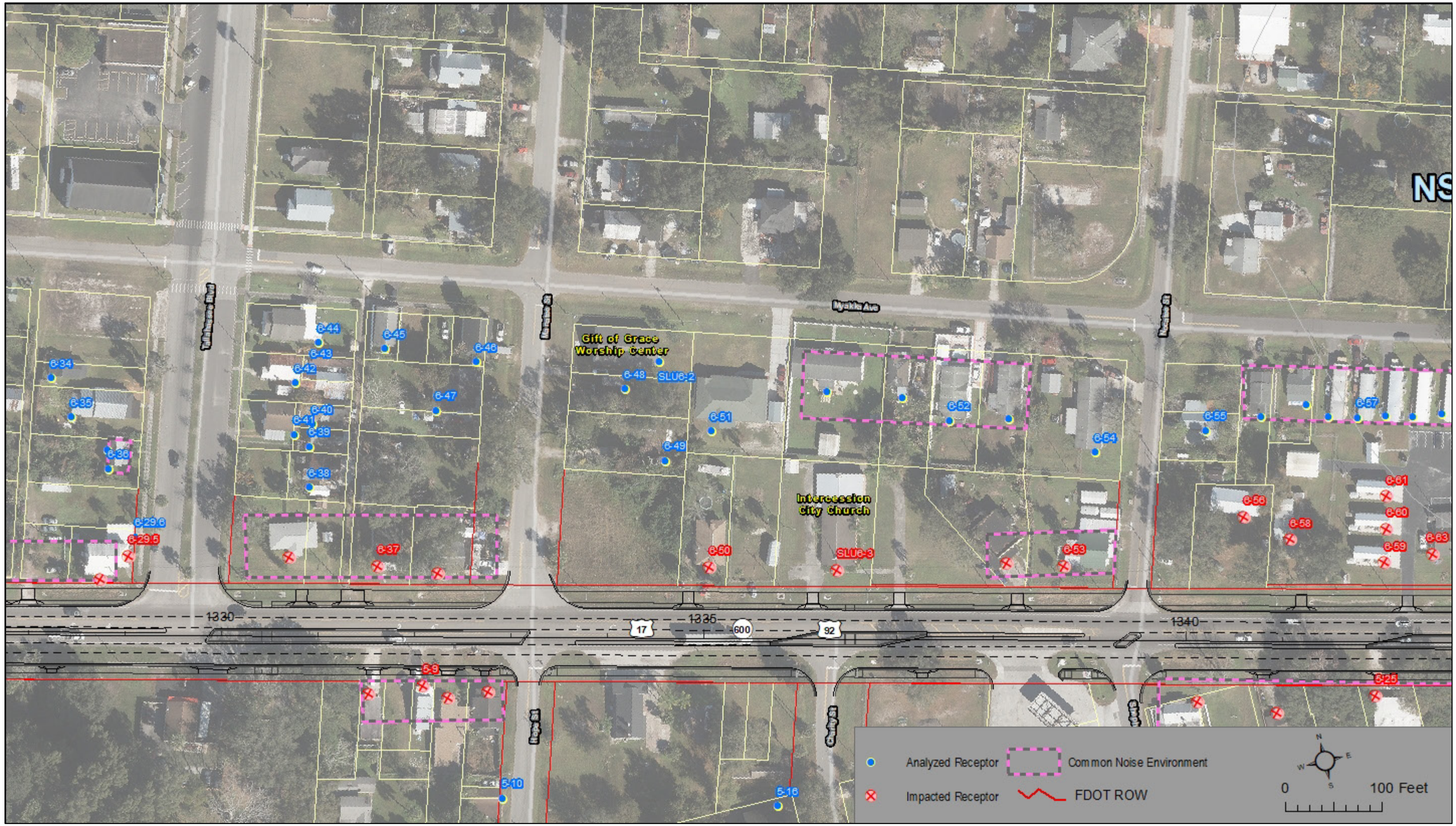
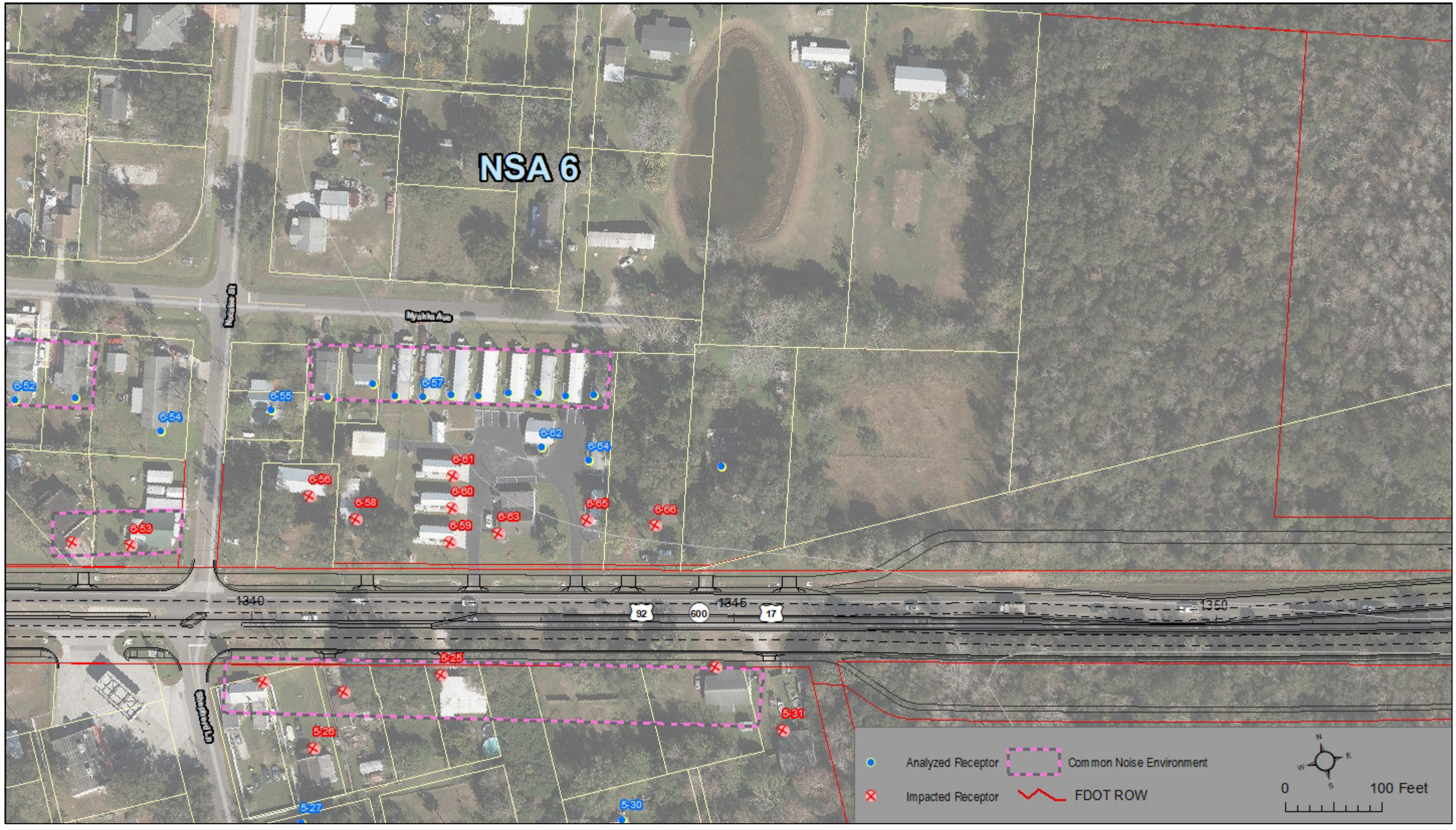


Figure 4: Sheet 4 of 4



4.0 CONCLUSIONS

The noise impact analysis results show that noise levels attributed to the project's Build Alternative will not increase substantially over existing noise levels, with 9.4 dB(A) being the highest predicted noise level increase. While none of the individual increases are considered substantial (i.e., ≥15 dB(A) over existing levels), project noise levels are predicted to meet or exceed the NAC at 38 residential Activity Category B receptors and one Activity Category C receptor.

To mitigate the 39 impacts, noise barriers were considered as an abatement measure. The evaluation concluded that barriers are not feasible for this project. Five impacted residential receptors are considered "isolated." Therefore, noise abatement at those locations cannot meet the minimum acoustic feasibility requirement of 5.0 dB(A) in noise reduction at two impacted receptors. Due to engineering constraints caused by numerous driveways and sidestreets, noise barriers cannot be constructed with sufficient length to mitigate the noise impacts at the remaining 34 impacted receptors.

4.1 STATEMENT OF LIKELIHOOD

Based on the noise analyses performed to date, no feasible and reasonable solutions are available to mitigate the noise impacts on the 39 noise sensitive sites identified as impacted in Appendix C.

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

5.0 CONSTRUCTION NOISE AND VIBRATION

Construction of the proposed roadway improvements is not expected to cause significant noise or vibration impacts. However, the existing residential land uses within the limits of this project are considered noise and vibration-sensitive. Additional impacts could result if new noise-sensitive land uses develop adjacent to the roadway before construction. Applying the *FDOT Standard Specifications for Road and Bridge Construction*[7] will minimize or eliminate most potential construction noise and vibration impacts. However, should unanticipated noise or vibration issues arise during the construction process, the Project Engineer, in concert with the FDOT District Five Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

6.0 COMMUNITY COORDINATION

6.1 NOISE IMPACT CONTOURS

Generalized future noise impact contours have been developed for NAC Activity Categories A, B, C, and E land uses. These contours represent the approximate distance from the nearest US 17/92 roadway edge of pavement (EOP) to the limits of the area predicted to meet or exceed the NAC in the 2045 Design Year. These contours do not consider any shielding of noise provided by structures or vegetation between the receptor site and the proposed travel lanes.

Within the project corridor, the distance between the proposed EOP and the noise impact contour line for the US 17/92 segments with a posted speed of 45 MPH is presented in **Figure 5**. For the project segment through Intercession City, where the posted speed limit is reduced to 30 MPH, the noise impact contours are presented in **Figure 6**. Noise sensitive land uses should be located beyond these distances to minimize the potential for incompatible land use.

This NSR provides information that can be used to protect future land development from becoming incompatible with anticipated traffic noise levels. A copy will be made available to local planning officials to promote future land use compatibility.

6.2 PUBLIC COORDINATION

A public hearing will be held for this project. Any comments pertinent to the noise analysis will be noted in the final version of this report.

Figure 5: Noise Impact Contours (45 MPH Segments)

- From Ivy Mist Lane to Reedy Creek Bridge
- Reedy Creek Bridge to E. of Old Tampa Highway
- From E. of Old Tampa Highway to W. of Suwannee Avenue
- From Nocatee Street/Shepherd Lane to Avenue A

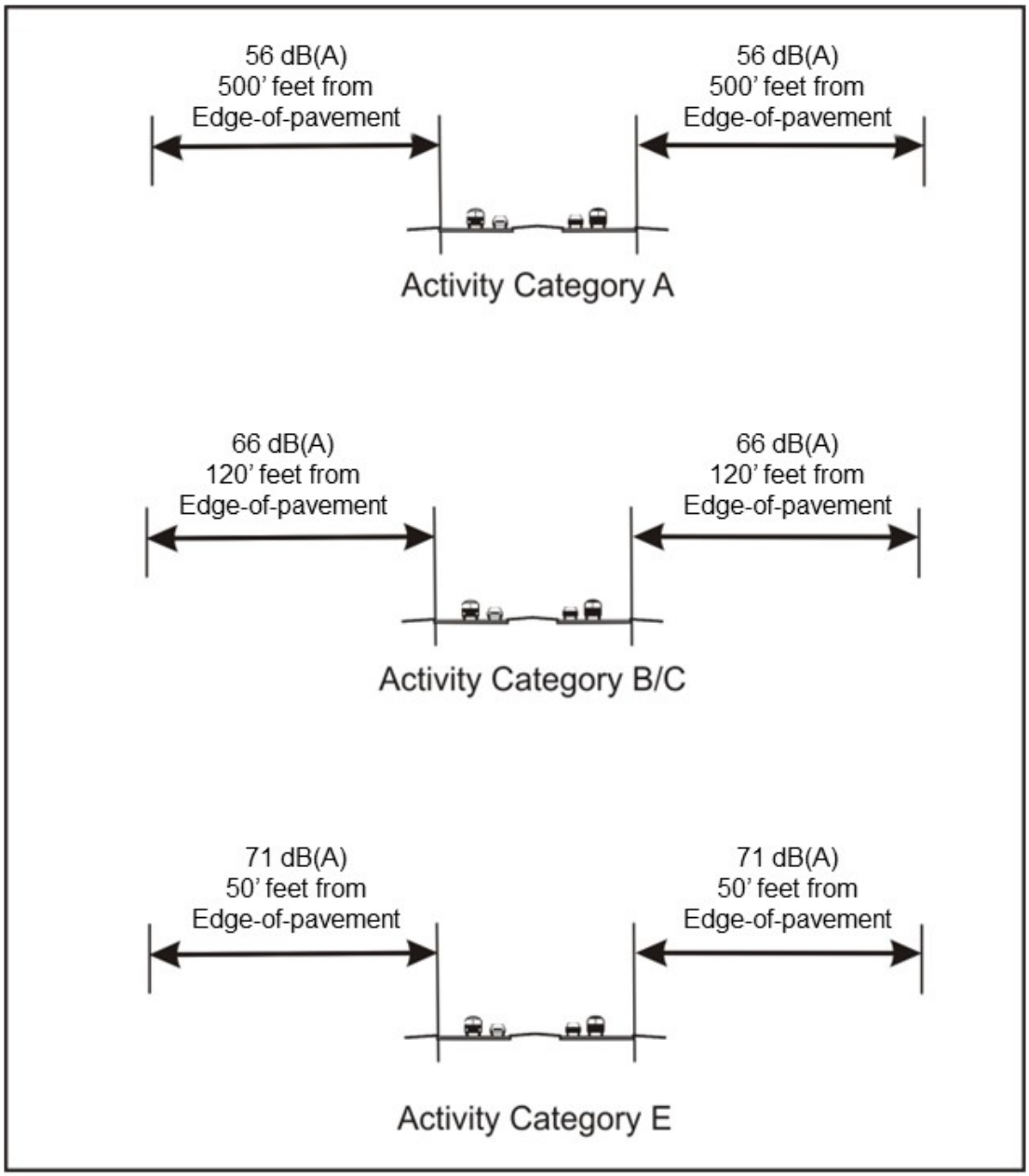
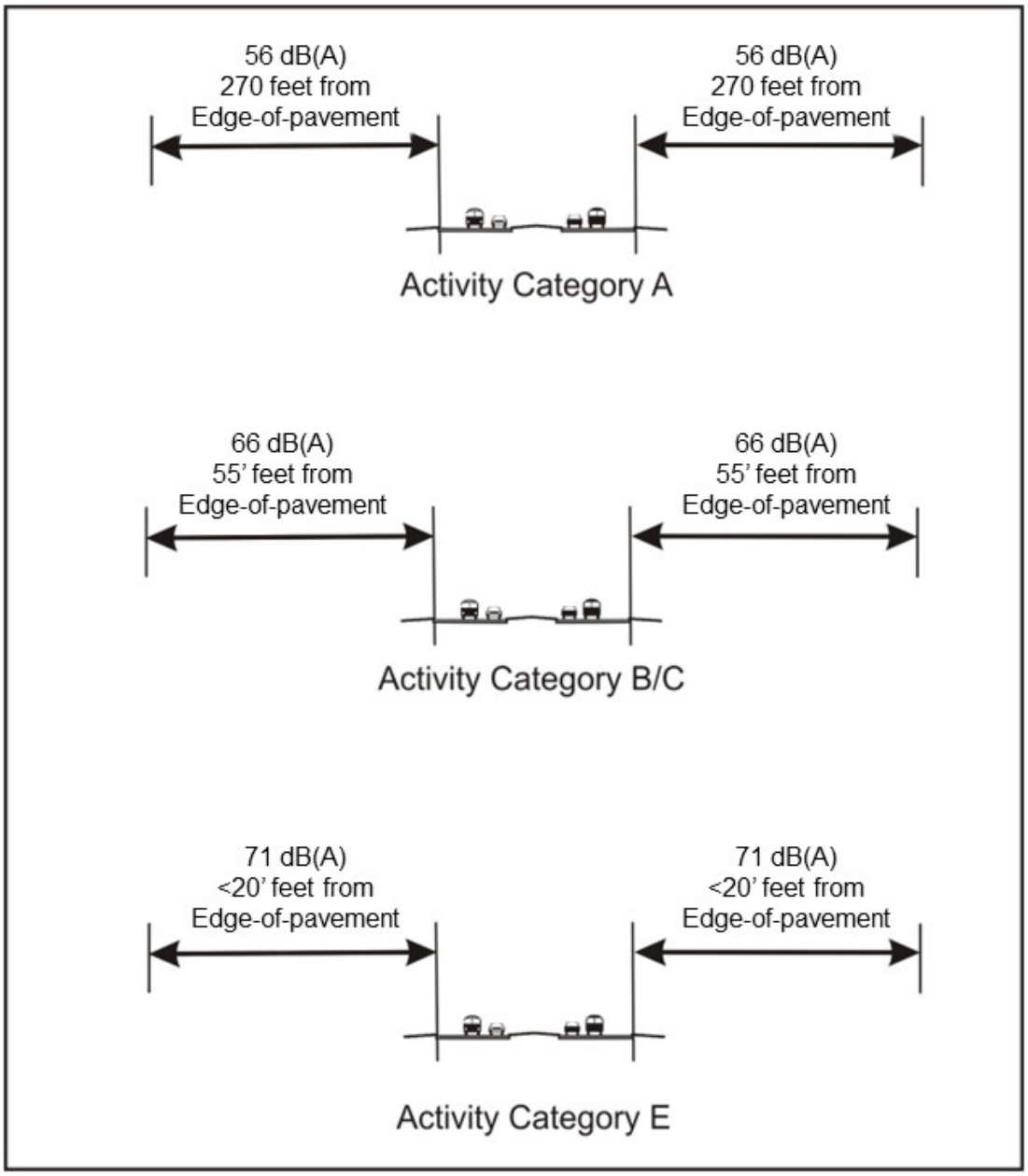


Figure 6: Noise Impact Contours (Intercession City - 30 MPH Segment)

- From W. of Suwannee Avenue to Nocatee Street/Shepherd Lane



7.0 REFERENCES

1. Federal Highway Administration, *Code of Federal Regulations*, Title 23 Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise," (July 13, 2010)

2. Florida Department of Transportation, *Project Development and Environment Manual,* Part 2, Chapter 18, (July 1, 2023)

3. *Florida Statutes*, Chapter 335, § 335.17

4. FHWA, FHWA-HEP-10-025: Highway Traffic Noise: Analysis and Abatement Guidance, (December 2011)

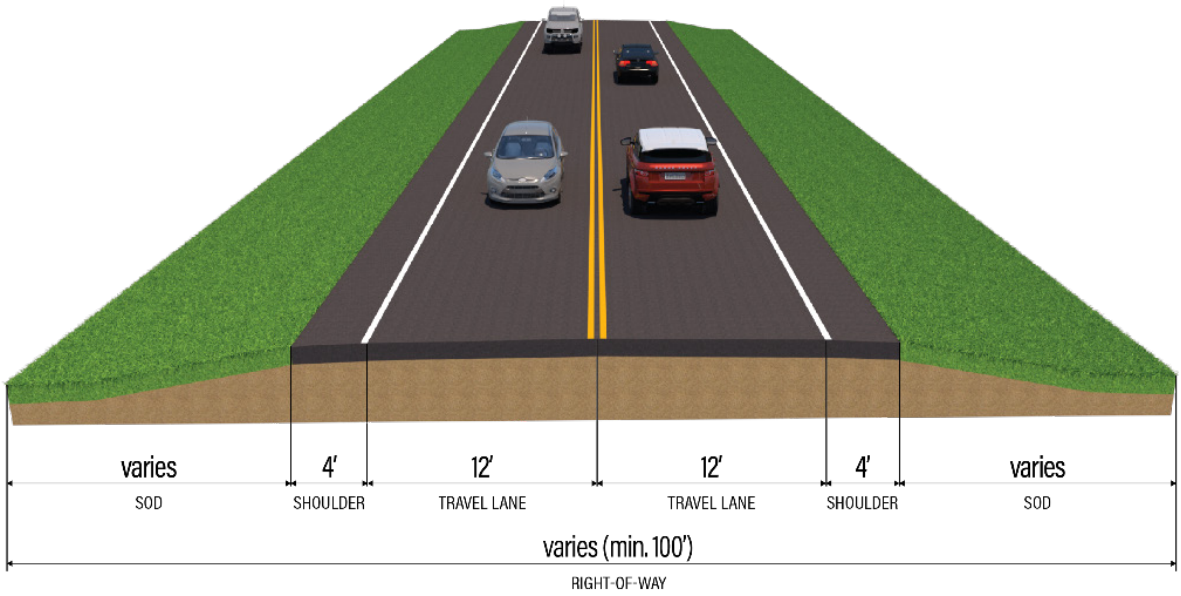
5. FDOT, Traffic Noise Modeling and Analysis Practitioners Handbook, (December 31, 2018)

6. ©Google 2023. Google Earth Pro

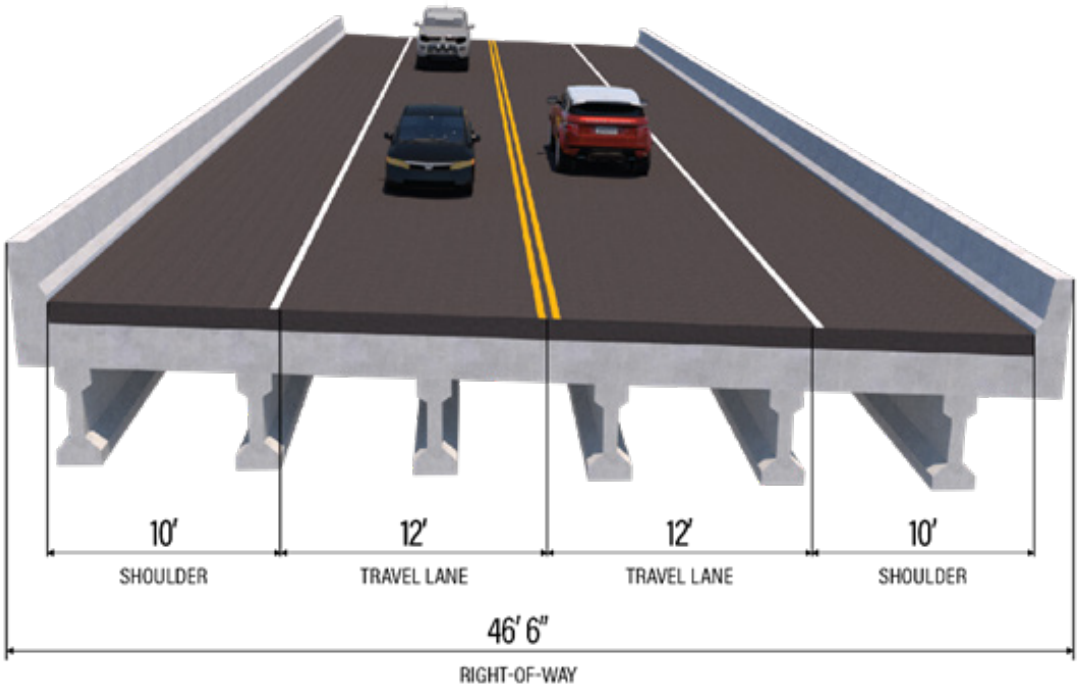
7. FDOT, Standard Specifications for Road and Bridge Construction

Appendix A: Typical Sections

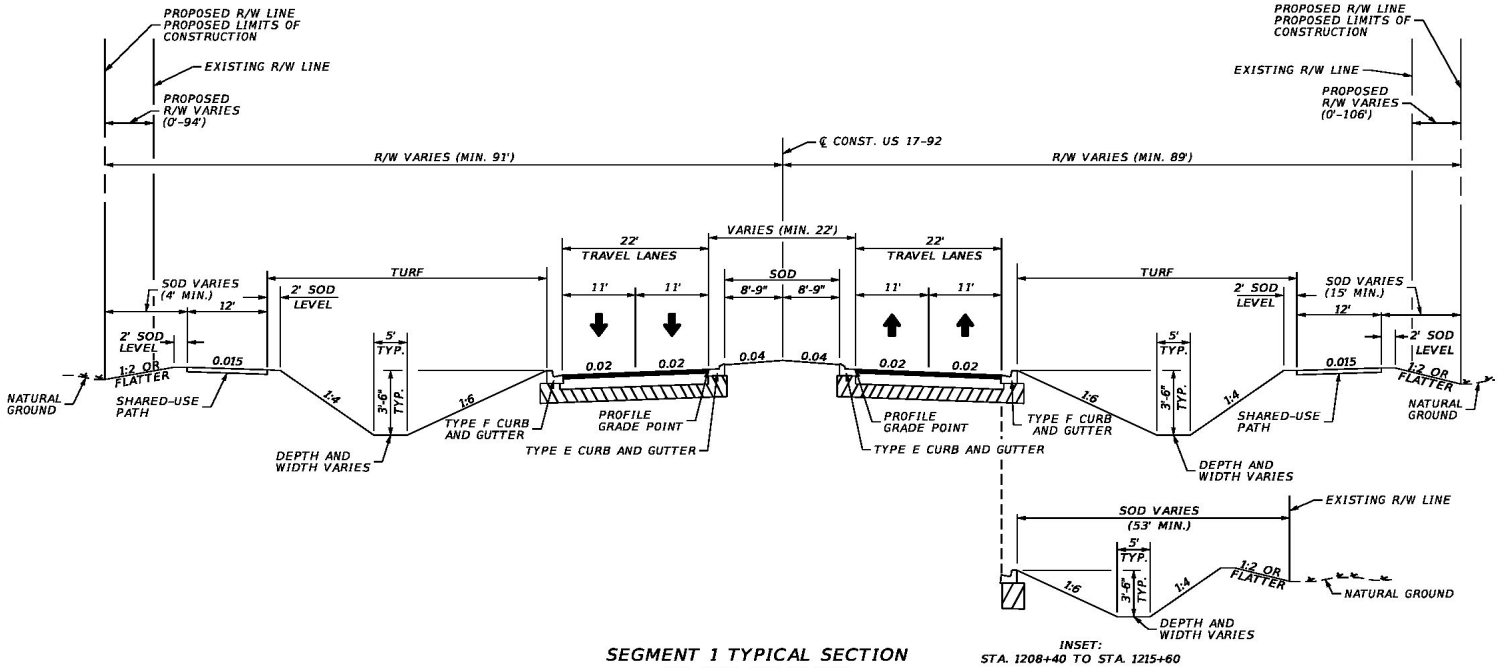
Existing US 17/92 Typical Section



Existing Reedy Creek Bridge Typical Section



TYPICAL SECTION No. 1



SEGMENT 1 TYPICAL SECTION
SR 600 (US 17/92)
FROM JUST EAST OF IVY MIST LANE TO REEDY CREEK BRIDGE
ROADWAY ID: 92010000
ROADWAY ID: 92010100
STA. 1179+00 TO STA. 1215+60

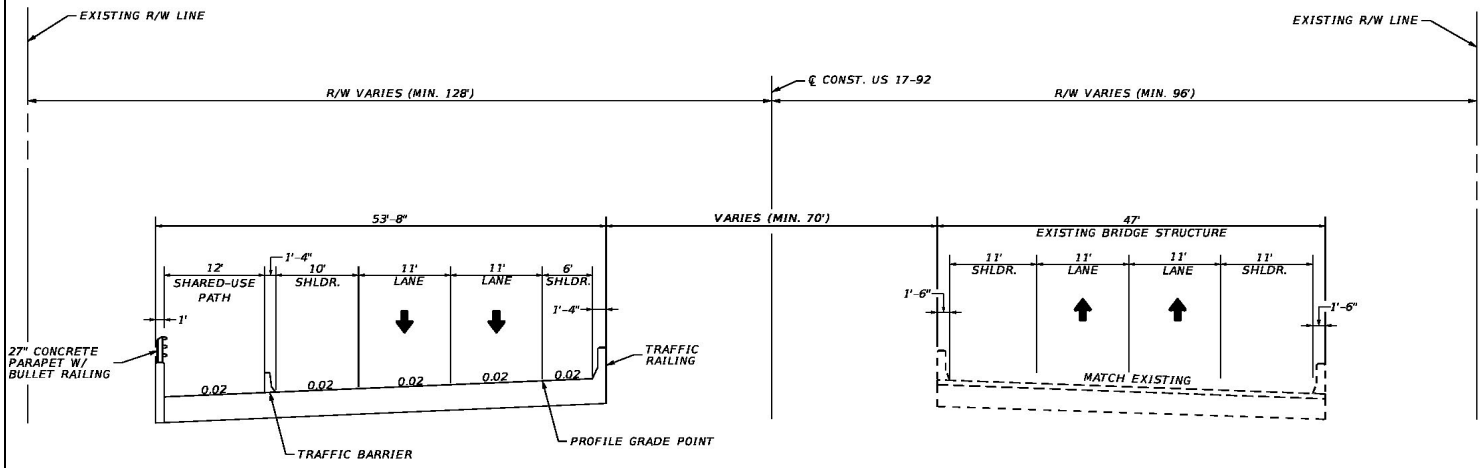
SEGMENT 4 TYPICAL SECTION
SR 600 (US 17/92)
FROM JUST EAST OF OLD TAMPA HIGHWAY TO JUST WEST OF SUWANNEE AVENUE
ROADWAY ID: 92010000
STA. 1264+80 TO STA. 1317+00

SEGMENT 6 TYPICAL SECTION
SR 600 (US 17/92)
FROM NOCATEE STREET/SHEPHERD LANE TO AVENUE A
ROADWAY ID: 92010000
STA. 1346+00 TO STA. 1381+00

CURRENT YEAR	= 2019 AADT = 29,000
ESTIMATED OPENING YEAR	= 2025 AADT = 32,500
ESTIMATED DESIGN YEAR	= 2045 AADT = 43,500
K = 9 % D = 57 % T = 10 % (24 HOUR)	
DESIGN SPEED	= 45 MPH
POSTED SPEED	= 45 MPH
TARGET SPEED	= 45 MPH

FINANCIAL PROJECT ID	SHEET NO.
437200-2-22-01	

TYPICAL SECTION No. 2

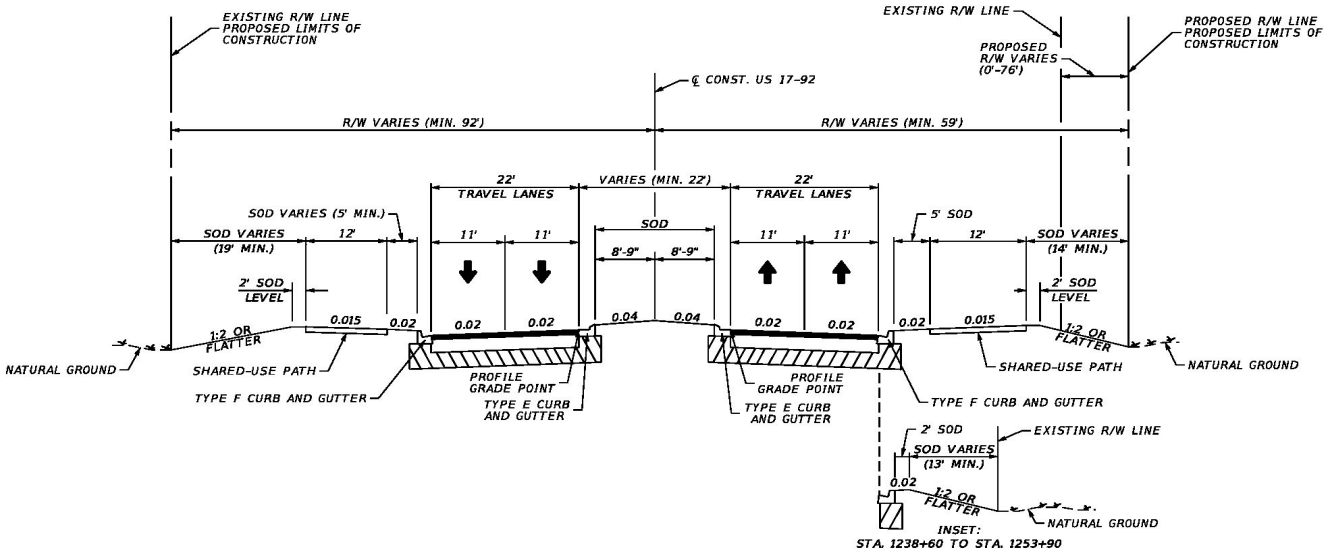


SEGMENT 2 TYPICAL SECTION
SR 600 (US 17/92)
REEDY CREEK BRIDGE
ROADWAY ID: 92010100
STA. 1215+60 TO STA. 1238+60

CURRENT YEAR = 2019 AADT = 29,000
ESTIMATED OPENING YEAR = 2025 AADT = 32,500
ESTIMATED DESIGN YEAR = 2045 AADT = 43,500
K = 9 % D = 57 % T = 10 % (24 HOUR)
DESIGN SPEED = 45 MPH
POSTED SPEED = 45 MPH
TARGET SPEED = 45 MPH

FINANCIAL PROJECT ID	SHEET NO.
437200-2-22-01	4

TYPICAL SECTION No. 3

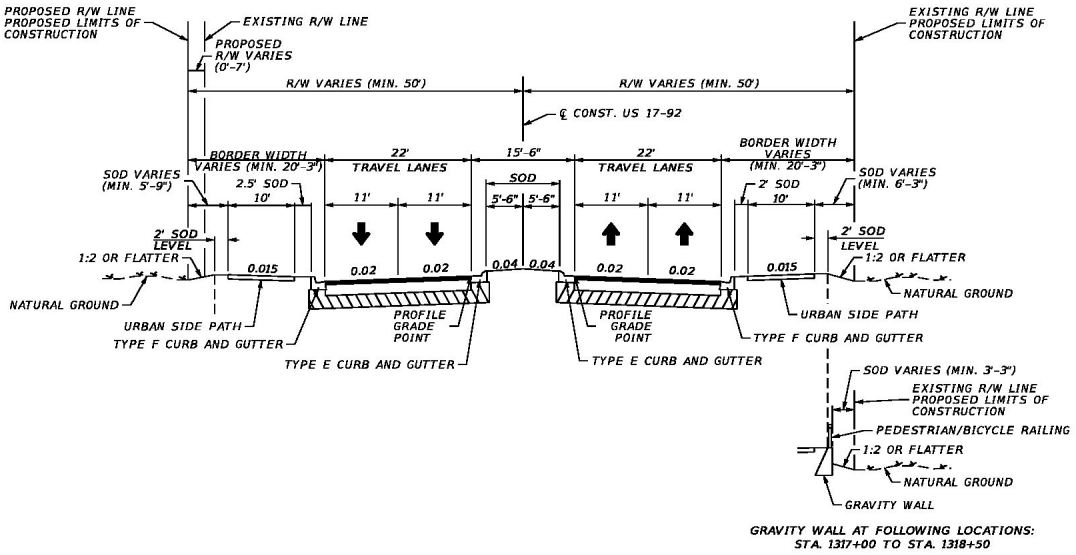


SEGMENT 3 TYPICAL SECTION
SR 600 (US 17/92)
FROM REEDY CREEK BRIDGE TO JUST EAST OF OLD TAMPA HIGHWAY
ROADWAY ID: 92010100
ROADWAY ID: 92010000
STA. 1238+60 TO STA. 1264+80

CURRENT YEAR = 2019 AADT = 28,000
ESTIMATED OPENING YEAR = 2025 AADT = 30,000
ESTIMATED DESIGN YEAR = 2045 AADT = 37,500
K = 9 % D = 57 % T = 10 % (24 HOUR)
DESIGN SPEED = 45 MPH
POSTED SPEED = 45 MPH
TARGET SPEED = 45 MPH

FINANCIAL PROJECT ID	SHEET NO.
437200-2-22-01	5

TYPICAL SECTION No. 4



SEGMENT 5 TYPICAL SECTION
SR 600 (US 17/92)
FROM JUST WEST OF SUWANNEE AVENUE TO NOCATEE STREET/SHEPHERD LANE
ROADWAY ID: 92010000
STA. 1317+00 TO STA. 1346+00

CURRENT YEAR = 2019 AADT = 25,500
ESTIMATED OPENING YEAR = 2025 AADT = 27,500
ESTIMATED DESIGN YEAR = 2045 AADT = 34,000
K = 9 % D = 57 % T = 10 % (24 HOUR)
DESIGN SPEED = 30 MPH
POSTED SPEED = 30 MPH
TARGET SPEED = 30 MPH

FINANCIAL PROJECT ID	SHEET NO.
437200-2-22-01	6

Appendix B: Project Traffic Data

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TRAFFIC DATA FOR NOISE STUDIES

1. Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.
2. When the demand volume is higher than the LOS C threshold, use the LOS C volume in the noise analysis; otherwise, use the demand volume. The volume illustrated in red will be used in the noise model.

Project Description: US 17/92 PD&E Study from Ivy Mist Lane (0.62 miles S. of CR 532) to Avenue A

Work Program Item Segment Number(s): 437200-1-22-01

Federal Aid Number(s):

Segment Description: US 17/92 from Ivy Mist Lane to Avenue A

SEGMENT		Ivy Mist Lane to CR 532			CR 532 to Old Tampa Hwy			Old Tampa Hwy to Avenue A		
ANALYSIS SCENARIO		Existing	No-Build	Build	Existing	No-Build	Build	Existing	No-Build	Build
YEAR		2019	2045	2045	2019	2045	2045	2019	2045	2045
Number of Lanes (Directional)		1	1	2	1	1	2	1	1	2
LOS C Peak Hour Directional Volume *1		830	830	1,910	830	830	1,910	830	830	1,910
Demand Peak Hour Directional Vol. *2	AM	966	1,799	1,799	1,152	2,022	2,022	938	1,644	1,644
	PM	923	1,895	2,182	1,315	2,182	2,182	1,104	1,719	1,719
Posted		55	55	45	55	55	55	45-55	45-55	45-30
D % *2		53.2	57.0	57.0	53.2	57.0	57.0	53.2	57.0	57.0
T24% *2		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Tpeak		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
MT		1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94	1.94
HT		2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
Buses		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Motorcycles (DHV%)		0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23

Sources:
**1 = Table 7 (Arterial Class 1) from the FDOT Quality/Level of Service Handbook, January 2020*
**2 = Based on 437200-1 US 1792 PTAR dated June 2021 & FDOT CoSite (921002) class count*

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

Prepared By: Rajashekar Pemmanaboina *Print Name* — P. Rajashekar// *Signature* — Date: 01/14/2022

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

FDOT Reviewer: Jason Learned *Print Name* — DocuSigned by: Jason Learned CE97380D017491... *Signature* — Date: 2/22/2022 | 10:01 AM EST

TRAFFIC DATA FOR NOISE STUDIES

Red denotes volumes used in modeling

Project Description: Poinciana Parkway (SR 538) Extension

CFX Project #: 538-235 & 538-234

Segment Description: **CR 532/Osceola Polk Line Road**

	CR 532		
Data (Directional)	**Existing Facility**	**No-Build (Design Year)**	**Build (Design Year)**
Year	2020	2045	2045
Number of Lanes	1	2	2
LOS C Peak Hour Directional	**747**	**1910**	1910
Demand Peak Hour Directional	not available	**1265**	**1160**
Demand Off-Peak Hour	not available	**805**	**940**
Posted Speed*4	55	55	55
D%*3	60	60	60
Tpeak (DHV%)*3	3.5	3.5	3.5
MT(DHV%)*3	2.1	2.1	2.1
HT (DHV%)*3	1.4	1.4	1.4
Buses (DHV%)*3	0.45	0.45	0.45
Motorcycles (DHV%)*3	0.25	0.25	0.25

Data Sources:

*1 = LOS C Directional Volumes per FDOT *Generalized Service Volume Tables* January 2020 (Table 7)

*2 = Demand Peak Hour Dir. Volumes per Dewberry/CDM Smith: *Figure 2045_DDHV_PPW_Full Build_Jan2021.pdf* (corrected version of 6-24-20 report)

*3 = Class distribution per CDM Smith *PP Design Traffic_Report_Revised* 6-24-2020; Dewberry email 8-24-21

*4 = Observed via Google Earth Street View

TRAFFIC DATA FOR NOISE STUDIES

Red denotes volumes used in modeling

Project Description: Poinciana Parkway (SR 538) Extension

CFX Project #: 538-235 & 538-234

Segment Description: **Poinciana Pkwy Extension/Mainline**

	Extension from CR 532 to US 17-92			Extension from US 17-92 to 538-234/538-165 Project Limits		
Data (Directional)	**Existing Facility**	**No-Build**	**Build (Design Year)**	**Existing Facility**	**No-Build**	**Build (Design Year)**
Year	n/a	n/a	2045	n/a	n/a	2045
Number of Lanes	n/a	n/a	2	n/a	n/a	2
LOS C Peak Hour Directional	n/a	n/a	**3100**	n/a	n/a	**3100**
Demand Peak Hour Directional	n/a	n/a	3500	n/a	n/a	3305
Demand Off-Peak Hour Directional	n/a	n/a	2335	n/a	n/a	2200
Posted Speed*4	n/a	n/a	65	n/a	n/a	65
D%*3	n/a	n/a	60	n/a	n/a	60
Tpeak (DHV%)*3	n/a	n/a	2.0	n/a	n/a	2.0
MT(DHV%)*3	n/a	n/a	1.2	n/a	n/a	1.2
HT (DHV%)*3	n/a	n/a	0.8	n/a	n/a	0.8
Buses (DHV%)	n/a	n/a	0.3	n/a	n/a	0.3
Motorcycles (DHV%)	n/a	n/a	0.25	n/a	n/a	0.25

Data Sources:

*1 = LOS C Directional Volumes per FDOT *Generalized Service Volume Tables* January 2020 (Table 7)

*2 = Demand Peak Hour Dir. Volumes per Dewberry/CDM Smith: *Figure 2045_DDHV_PPW_Full Build_Jan2021.pdf* (corrected version of 6-24-20 report)

*3 = Class distribution per CDM Smith *PP Design Traffic_Report_Revised* 6-24-2020

*4 = Posted Speed per *538-235 Roadway Plans.pdf* 7-30-2021

TRAFFIC DATA FOR NOISE STUDIES

Red denotes volumes used in modeling

Project Description: Poinciana Parkway (SR 538) Extension

CFX Project #: 538-235 & 538-234

Segment Description: Poinciana Pkwy Extension at US 17-92 Ramps

	NB On (Ramps C1/C2)			NB Off (Ramps F1/F2)			SB On (Ramps E1/E2)			SB Off (Ramps D1/D2)		
Data	Existing Facility	No-Build	Build (Design Year)	Existing Facility	No-Build	Build (Design Year)	Existing Facility	No-Build	Build (Design Year)	Existing Facility	No-Build	Build (Design Year)
Year	n/a	n/a	2045	n/a	n/a	2045	n/a	n/a	2045	n/a	n/a	2045
Number of Lanes	n/a	na	1	n/a	na	1	n/a	na	1	n/a	na	1
Demand Peak Hour	n/a	na	**740**	n/a	na	**545**	n/a	na	**545**	n/a	na	**740**
Posted Speed*3	n/a	na	50	n/a	na	50	n/a	na	50	n/a	na	50
Tpeak (DHV%)*2	n/a	na	2.0	n/a	na	2.0	n/a	na	2.0	n/a	na	2.0
MT(DHV%)*2	n/a	na	1.2	n/a	na	1.2	n/a	na	1.2	n/a	na	1.2
HT (DHV%)*2	n/a	na	0.8	n/a	na	0.8	n/a	na	0.8	n/a	na	0.8
Buses (DHV%)*2	n/a	na	0.3	n/a	na	0.3	n/a	na	0.3	n/a	na	0.3
Motorcycles (DHV%)*2	n/a	na	0.25	n/a	na	0.25	n/a	na	0.25	n/a	na	0.25

Data Sources:

*1 = Demand Peak Hour Dir. Volumes per Dewberry/CDM Smith: *Figure 2045_DDHV_PPW_Full Build_Jan2021.pdf* (corrected version of 6-24-20 report)

*2 = Class distribution per CDM Smith *PP Design Traffic_Report_Revised* 6-24-2020

*3 = Ramp speeds per Dewberry email 8-18-21

Appendix C: Predicted Noise Levels

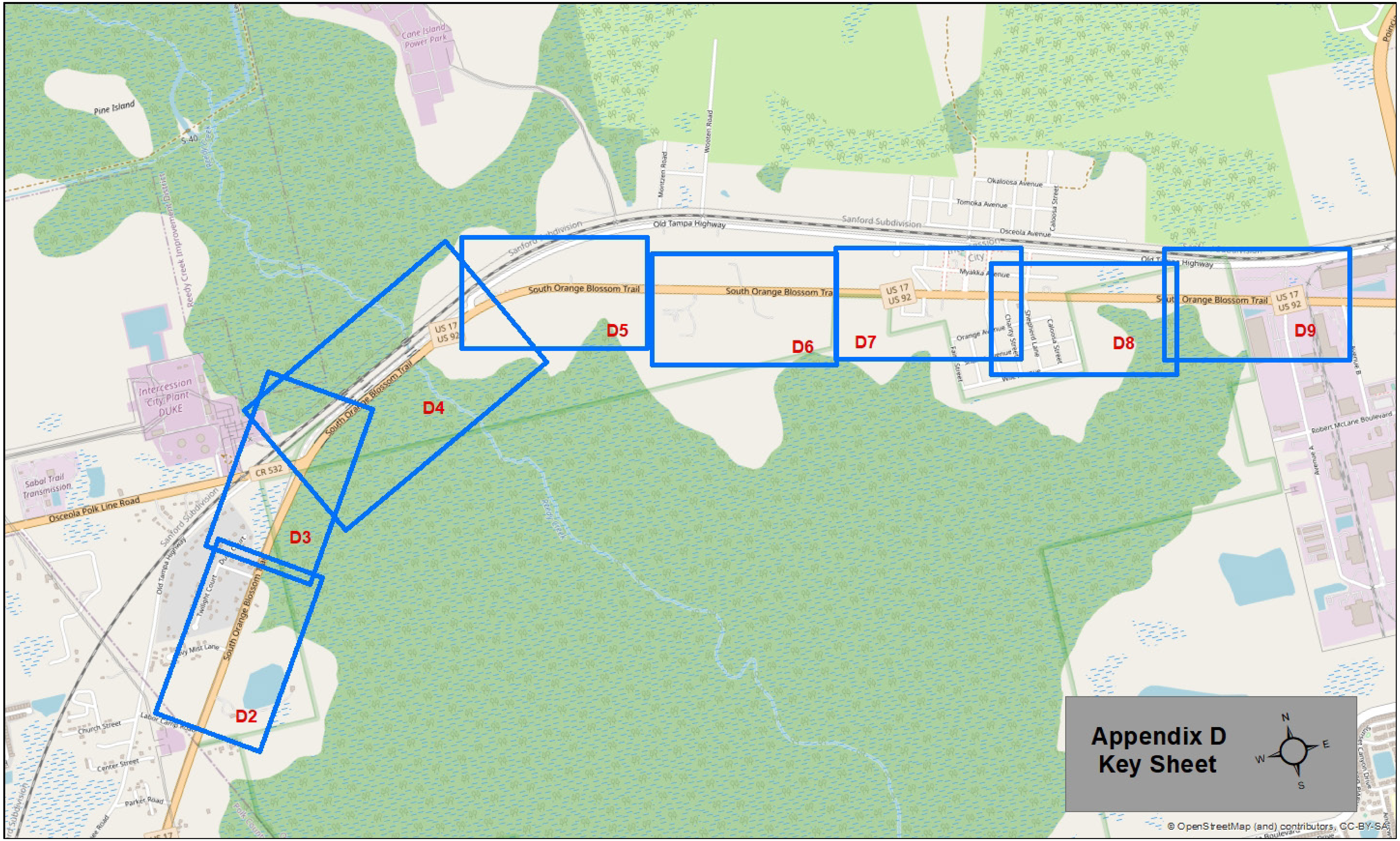
APPENDIX C: Noise Impact Comparison Matrix								
Noise Sensitive Sites				Predicted Noise Levels dB(A) *Red = Exceeds NAC*				
Receptor ID	# Sites Represented	NAC		2019 Existing Noise Level	2045 No-Build Noise Level	2045 Build Design Year		
		Activity Category	Impact Criterion (dB(A))			Project Noise Level	Change From Existing	Consider Abatement
NSA 1: South of US 17/92 from Begin project limits to CR532/Osceola Polk Line Rd- Illustrated on Appendix D pages D-2 & D-3								
1-1	1	B	66.0	64.4	IN POND ROW	IN POND ROW	N/A	
1-2	1	B	66.0	59.5	IN POND ROW	IN POND ROW	N/A	
NSA 1 Summary Totals/Averages	**2**			**62.0**	**N/A**	**N/A**	**N/A**	**0**
NSA 2: North of US 17/92 from Begin project limits to CR532/Osceola Polk Line Rd- Illustrated on Appendix D pages D-2 & D-3								
2-1	1	B	66.0	54.4	61.0	62.1	7.7	
2-2	1	B	66.0	53.3	61.9	62.7	9.4	
2-3	1	B	66.0	55.2	59.4	60.9	5.7	
2-4	1	B	66.0	53.1	59.1	60.2	7.1	
2-5	1	B	66.0	54.0	57.0	58.6	4.6	
2-6	1	B	66.0	***70.1***	***68.0***	***69.4***	-0.7	**Yes**
2-7	1	B	66.0	55.3	57.3	59.1	3.8	
2-8	1	B	66.0	64.3	63.9	65.3	1.0	
2-9	3	B	66.0	53.0	55.2	57.1	4.1	
2-10	1	B	66.0	***68.1***	***68.1***	***67.7***	-0.4	**Yes**
2-11	1	B	66.0	54.5	56.1	57.9	3.4	
2-12	1	B	66.0	***67.3***	***67.6***	***67.1***	-0.2	**Yes**
2-13	1	B	66.0	58.8	60.1	60.4	1.6	
2-14	1	B	66.0	54.1	55.6	57.7	3.6	
2-15	1	B	66.0	55.8	56.9	58.3	2.5	
2-16	1	B	66.0	58.0	58.9	59.2	1.2	
2-17	2	B	66.0	54.2	55.3	57.1	2.9	
2-18	1	B	66.0	53.7	56.0	56.3	2.6	
2-19	1	B	66.0	52.7	55.3	55.6	2.9	
SLU2-1	1	E	71.0	69.7	67.3	69.3	-0.4	
NSA 2 Summary Totals/Averages	**23**			**58.0**	**60.0**	**61.1**	**3.1**	**3**
NSA 3: South of US 17/92 from CR532/Osceola Polk Line Rd to Old Tampa Hwy- Illustrated on Appendix D pages D-3 & D-4								
There are no noise sensitive sites in this NSA.								

Noise Sensitive Sites				Predicted Noise Levels dB(A) *Red = Exceeds NAC*				
Receptor ID	# Sites Represented	NAC		2019 Existing Noise Level	2045 No-Build Noise Level	2045 Build Design Year		
		Activity Category	Impact Criterion (dB(A))			Project Noise Level	Change From Existing	Consider Abatement
NSA 4: North of US 17/92 from CR532/Osceola Polk Line Rd to Old Tampa Hwy- Illustrated on Appendix D pages D-3 & D-4								
There are no noise sensitive sites in this NSA.								
NSA 5: South of US 17/92 from Old Tampa Hwy to End Project- Illustrated on Appendix D pages D-5 thru D-9								
5-1	1	B	66.0	56.5	56.0	60.7	4.2	
5-2	1	B	66.0	55.6	55.4	58.8	3.2	
5-3	1	B	66.0	65.4	***66.1***	***68.6***	3.2	***Yes***
5-4	1	B	66.0	59.6	60.1	63.3	3.7	
5-5	7	B	66.0	55.6	55.8	59.8	4.2	
5-6	1	B	66.0	**67.6**	**68.6**	**72.9**	5.3	***Yes***
5-7	1	B	66.0	**66.5**	**67.8**	**71.6**	5.1	***Yes***
5-8	1	B	66.0	50.5	50.4	53.1	2.6	
5-9	4	B	66.0	***69.2***	***69.2***	***70.0***	0.8	***Yes***
5-10	1	B	66.0	61.0	61.0	61.0	0.0	
5-11	1	B	66.0	56.6	55.9	57.8	1.2	
5-12	1	B	66.0	52.2	51.9	54.7	2.5	
5-13	1	B	66.0	52.4	52.0	54.9	2.5	
5-14	1	B	66.0	54.3	53.9	56.3	2.0	
5-15	1	B	66.0	56.5	55.9	58.0	1.5	
5-16	1	B	66.0	60.3	60.6	61.5	1.2	
5-17	1	B	66.0	57.3	56.8	59.2	1.9	
5-18	1	B	66.0	55.6	55.3	57.9	2.3	
5-19	2	B	66.0	53.8	53.6	56.6	2.8	
5-20	1	B	66.0	53.6	53.2	56.7	3.1	
5-21	1	B	66.0	55.7	55.4	58.5	2.8	
5-22	1	B	66.0	57.5	57.1	59.8	2.3	
5-23	1	B	66.0	58.1	57.8	61.4	3.3	
5-24	1	B	66.0	55.5	55.1	59.4	3.9	
5-25	4	B	66.0	***68.2***	***68.6***	***73.6***	5.4	***Yes***
5-26	1	B	66.0	62.5	61.8	***66.8***	4.3	***Yes***
5-27	1	B	66.0	58.8	58.1	63.0	4.2	
5-28	1	B	66.0	55.1	54.6	60.1	5.0	
5-29	1	B	66.0	57.6	56.8	63.2	5.6	
5-30	1	B	66.0	58.2	57.5	64.2	6.0	
5-31	1	B	66.0	62.6	62.8	***69.0***	6.4	***Yes***
SLU5-1	1	C	66.0	53.0	53.1	57.6	4.6	
SLU5-2	1	C	66.0	55.8	55.5	58.1	2.3	
SLU5-3	1	C	66.0	51.6	51.3	54.0	2.4	

Noise Sensitive Sites				Predicted Noise Levels dB(A) *Red = Exceeds NAC*				
Receptor ID	# Sites Represented	NAC		2019 Existing Noise Level	2045 No-Build Noise Level	2045 Build Design Year		
		Activity Category	Impact Criterion (dB(A))			Project Noise Level	Change From Existing	Consider Abatement
NSA 5 Summary Totals/Averages	**47**			**58.0**	**57.8**	**61.2**	**3.3**	**13**
NSA 6: North of US 17/92 from Old Tampa Hwy to End Project - Illustrated on Appendix D pages D-5 thru D-9								
6-1	1	B	66.0	64.3	64.2	65.2	0.9	
6-2	1	B	66.0	***66.3***	***66.3***	***67.3***	1.0	***Yes***
6-3	1	B	66.0	62.6	62.6	63.5	0.9	
6-4	1	B	66.0	61.4	61.3	62.1	0.7	
6-5	1	B	66.0	59.4	59.4	60.0	0.6	
6-6	3	B	66.0	64.8	65.2	64.2	-0.6	
6-7	1	B	66.0	***66.0***	***66.4***	64.6	-1.4	
6-8	1	B	66.0	55.9	55.5	57.5	1.6	
6-9	1	B	66.0	64.9	63.7	64.5	-0.4	
6-10	1	B	66.0	64.8	65.2	65.3	0.5	
6-11	1	B	66.0	52.6	52.7	55.1	2.5	
6-12	1	B	66.0	***68.5***	***68.6***	***70.3***	1.8	***Yes***
6-13	1	B	66.0	64.8	64.9	65.6	0.8	
6-14	1	B	66.0	62.6	62.6	64.0	1.4	
6-15	1	B	66.0	59.9	59.9	62.6	2.7	
6-16	1	B	66.0	58.3	58.3	61.7	3.4	
6-17	1	B	66.0	57.1	57.1	60.8	3.7	
6-18	1	B	66.0	55.7	55.7	59.6	3.9	
6-19	1	B	66.0	54.8	54.6	57.9	3.1	
6-20	1	B	66.0	56.9	56.7	59.9	3.0	
6-21	1	B	66.0	58.9	58.7	61.4	2.5	
6-22	3	B	66.0	54.8	54.6	57.6	2.8	
6-23	1	B	66.0	55.0	54.7	57.4	2.4	
6-24	1	B	66.0	56.6	56.2	58.6	2.0	
6-25	1	B	66.0	60.6	60.1	61.1	0.5	
6-26	1	B	66.0	62.7	62.3	62.2	-0.5	
6-27	1	B	66.0	64.2	63.9	63.2	-1.0	
6-28	1	B	66.0	***66.9***	***66.8***	***66.2***	-0.7	***Yes***
6-29	4	B	66.0	***70.9***	***70.9***	***69.8***	-1.1	***Yes***
6-29.5	1	B	66.0	***68.3***	***68.1***	***66.5***	-1.8	***Yes***
6-29.6	1	B	66.0	***66.3***	65.5	64.3	-2.0	
6-30	1	B	66.0	62.0	61.3	61.0	-1.0	
6-31	1	B	66.0	60.6	59.5	59.9	-0.7	
6-32	1	B	66.0	58.5	57.4	58.1	-0.4	
6-33	1	B	66.0	57.1	56.2	57.2	0.1	
6-34	1	B	66.0	57.3	56.6	58.0	0.7	
6-35	1	B	66.0	59.8	58.7	59.3	-0.5	

Noise Sensitive Sites				Predicted Noise Levels dB(A) *Red = Exceeds NAC*				
Receptor ID	# Sites Represented	NAC		2019 Existing Noise Level	2045 No-Build Noise Level	2045 Build Design Year		
		Activity Category	Impact Criterion (dB(A))			Project Noise Level	Change From Existing	Consider Abatement
6-36	2	B	66.0	62.0	60.7	60.8	-1.2	
6-37	3	B	66.0	***69.2***	***69.2***	***67.7***	-1.5	***Yes***
6-38	1	B	66.0	61.0	59.7	59.6	-1.4	
6-39	1	B	66.0	59.0	57.8	58.2	-0.8	
6-40	1	B	66.0	58.2	57.1	57.7	-0.5	
6-41	1	B	66.0	58.6	57.6	58.0	-0.6	
6-42	1	B	66.0	56.6	55.8	56.6	0.0	
6-43	1	B	66.0	55.9	55.2	56.2	0.3	
6-44	1	B	66.0	55.3	54.5	55.9	0.6	
6-45	1	B	66.0	56.6	55.8	56.8	0.2	
6-46	1	B	66.0	57.0	56.4	57.4	0.4	
6-47	1	B	66.0	58.9	58.1	58.7	-0.2	
6-48	1	B	66.0	57.9	57.4	58.6	0.7	
6-49	1	B	66.0	60.7	60.2	60.6	-0.1	
6-50	1	B	66.0	***68.7***	***68.9***	***67.6***	-1.1	***Yes***
6-51	1	B	66.0	59.3	59.0	60.0	0.7	
6-52	4	B	66.0	59.0	58.6	60.4	1.4	
6-53	2	B	66.0	***68.3***	***68.6***	***68.1***	-0.2	***Yes***
6-54	1	B	66.0	60.6	59.8	62.0	1.4	
6-55	1	B	66.0	59.5	58.6	62.4	2.9	
6-56	1	B	66.0	64.1	63.2	***66.4***	2.3	***Yes***
6-57	10	B	66.0	58.8	57.4	62.7	3.9	
6-58	1	B	66.0	65.8	65.2	***68.2***	2.4	***Yes***
6-59	1	B	66.0	***68.1***	***67.9***	***70.7***	2.6	***Yes***
6-60	1	B	66.0	64.9	64.0	***67.9***	3.0	***Yes***
6-61	1	B	66.0	63.0	61.5	***66.2***	3.2	***Yes***
6-62	1	B	66.0	61.1	59.5	64.7	3.6	
6-63	1	B	66.0	***67.2***	***66.7***	***69.8***	2.6	***Yes***
6-64	1	B	66.0	61.5	60.2	65.4	3.9	
6-65	1	B	66.0	65.7	65.1	***68.7***	3.0	***Yes***
6-66	1	B	66.0	65.9	65.7	***69.2***	3.3	***Yes***
6-67	1	B	66.0	61.0	60.5	65.5	4.5	
SLU6-1	1	C	66.0	55.5	55.7	57.5	2.0	
SLU6-2	1	C	66.0	56.9	56.3	57.9	1.0	
SLU6-3	1	C	66.0	***69.1***	***69.2***	***67.7***	-1.4	***Yes***
NSA 6 Summary Totals/Averages	**95**			**61.3**	**60.8**	**62.3**	**1.0**	**23**

Appendix D: Project Aerials


Appendix D
Key Sheet
D2
D3
D4
D5
D6
D7
D8
D9
South Orange Blossom Trail
Old Tampa Highway
Sanford Subdivision
Osceola Polk Line Road
CR 532
US 17
US 92
Pine Island
Cane Island Power Park
Intercession City Plant DUKE
Sabal Trail Transmission
Reedy Creek Improvement District
Ivy Mist Lane
Twilight Court
Church Street
Center Street
Parker Road
Labor Camp Road
Montzen Road
Wooten Road
Okaloosa Avenue
Tomoka Avenue
Osceola Avenue
Myakka Avenue
Orange Avenue
Charity Street
Shepherd Lane
Calooosa Street
Robert McLane Boulevard
Avenue A
Avenue B
N
E
S
W
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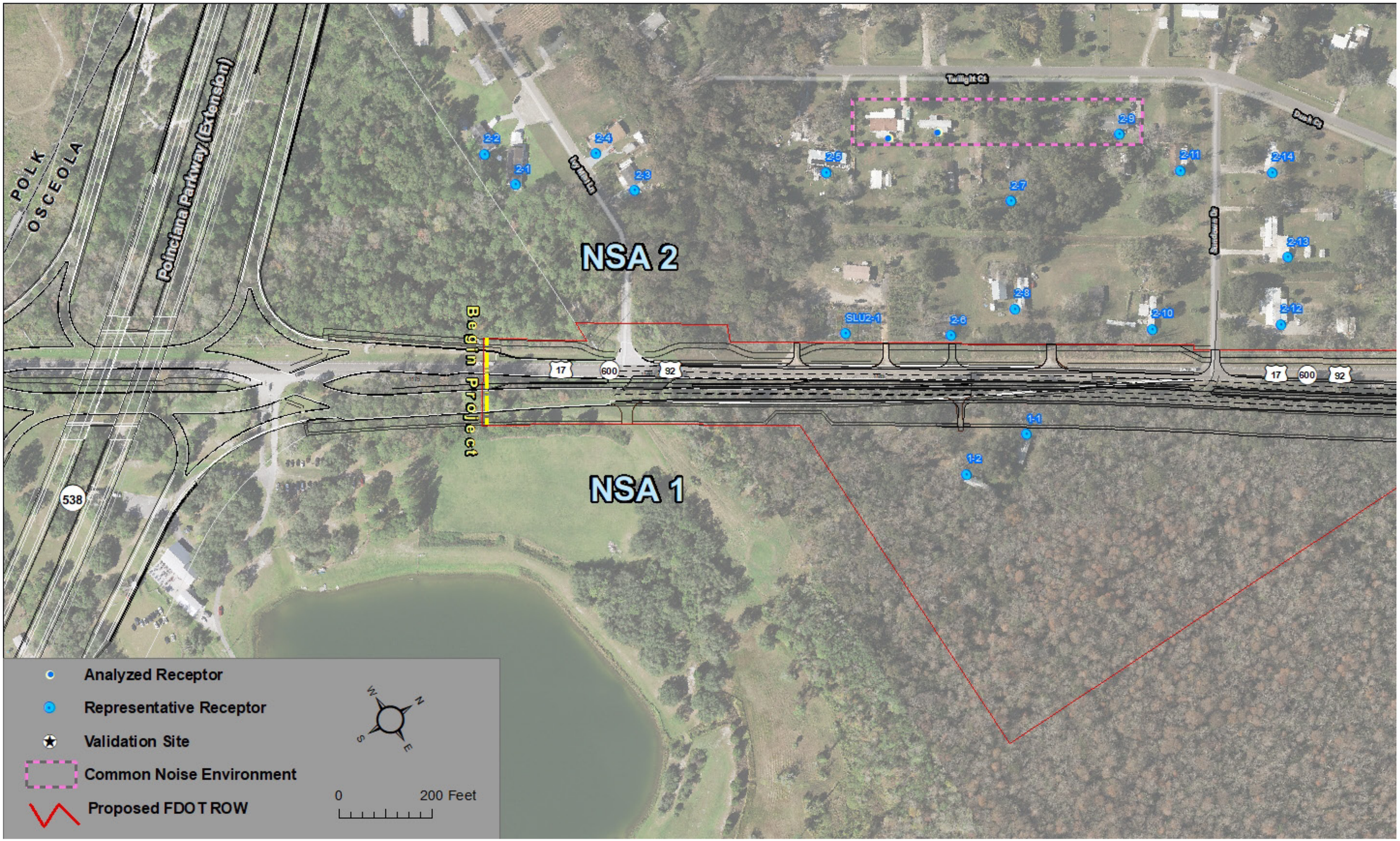
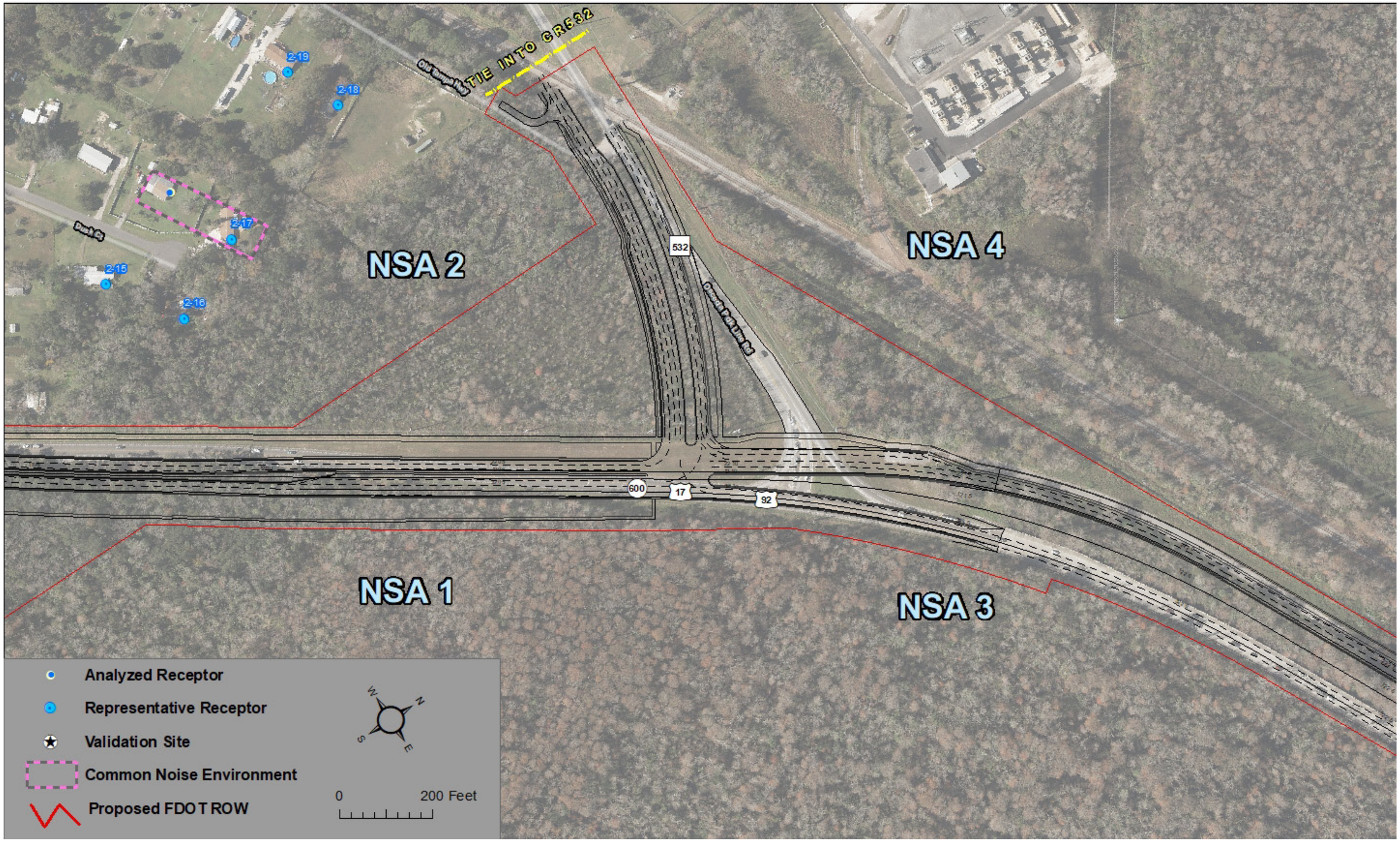
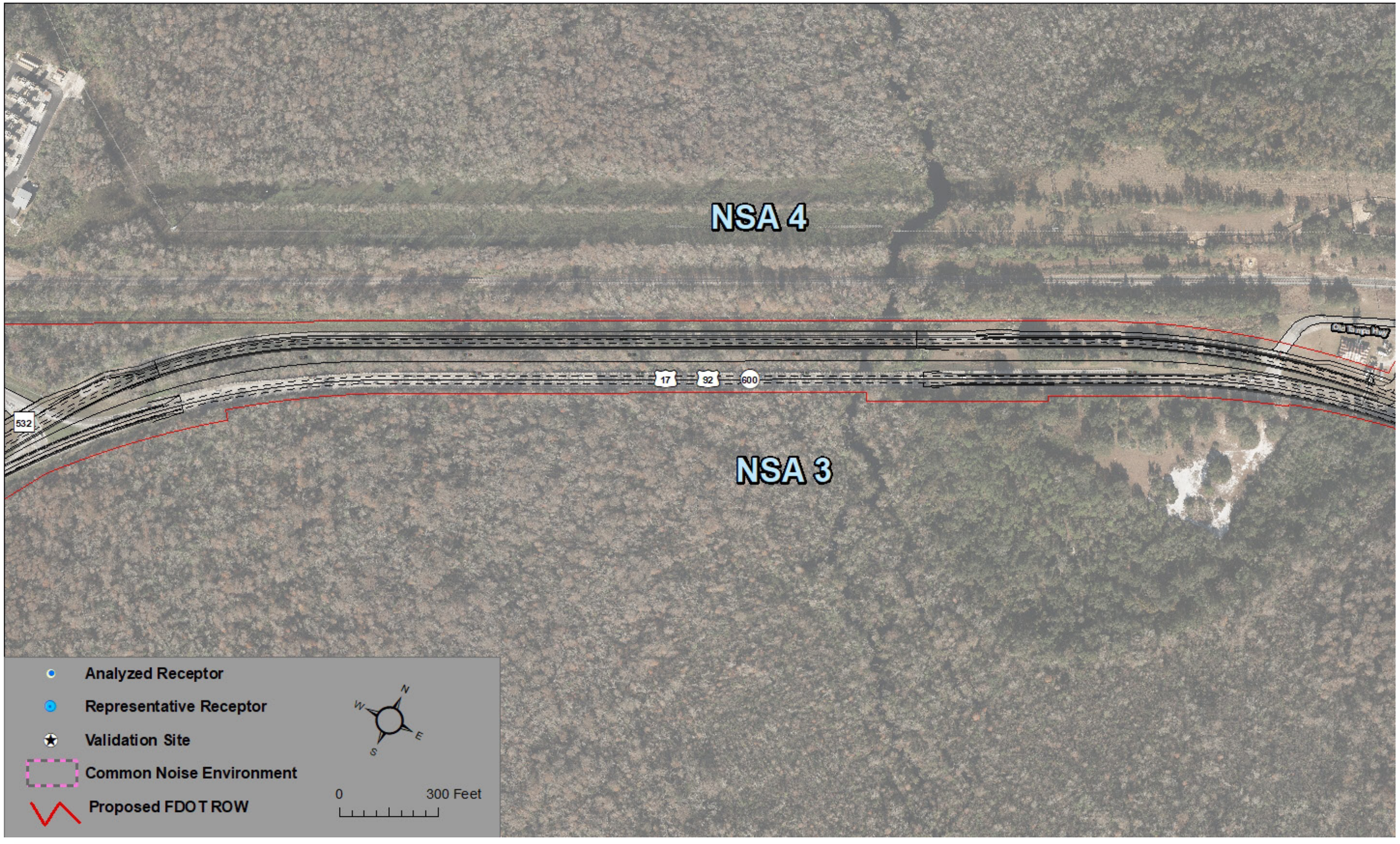
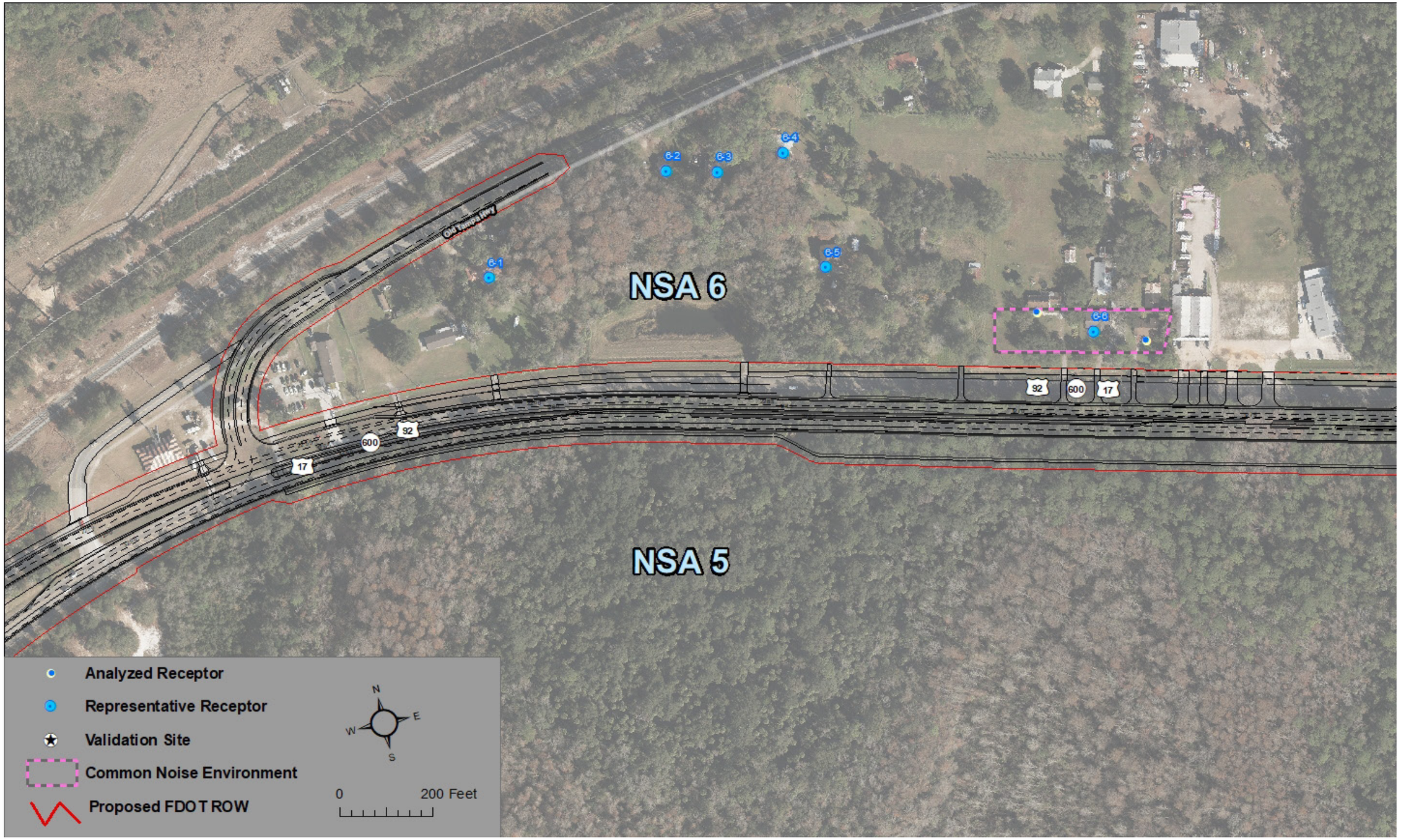
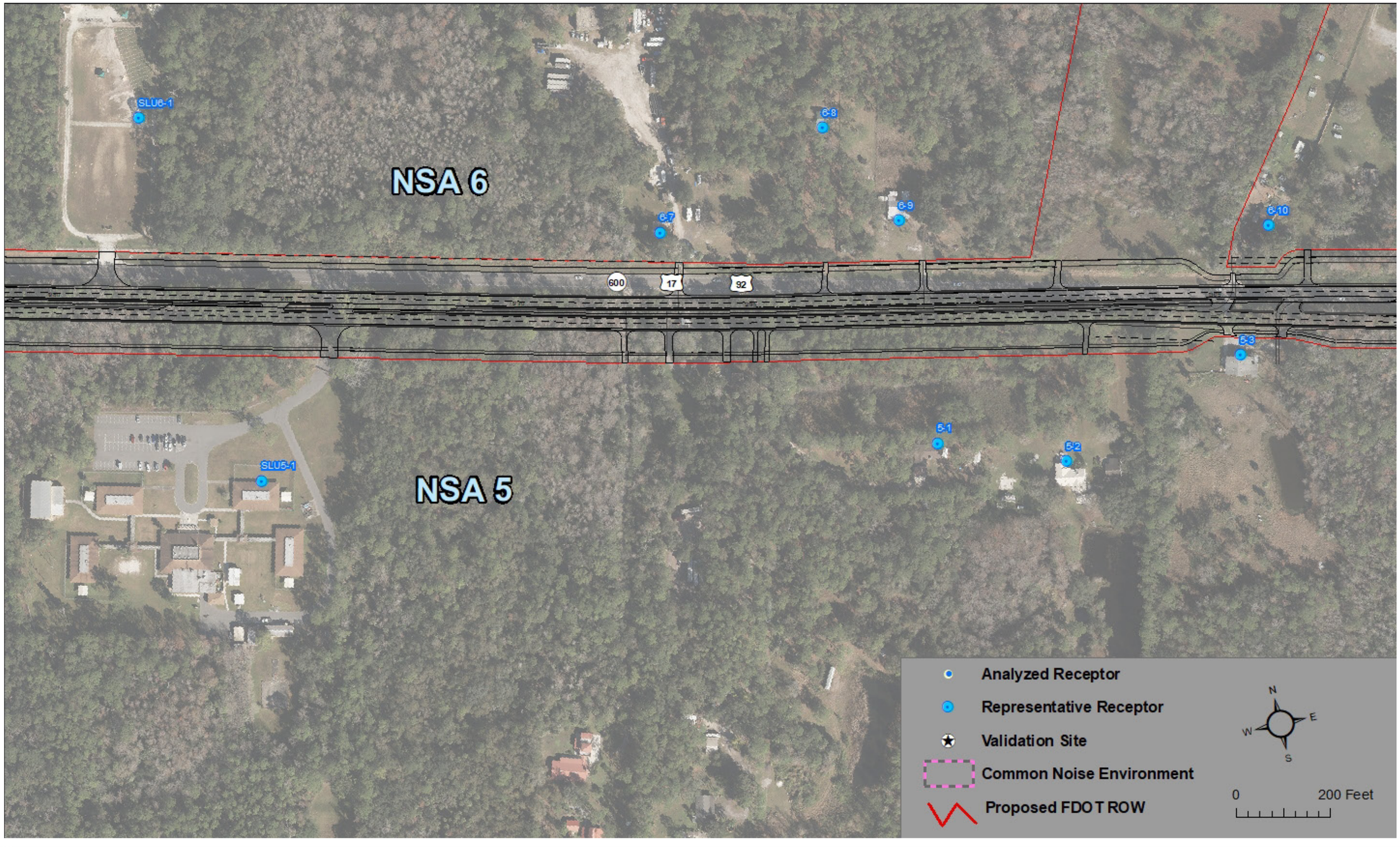

POLK
OSCEOLA
Poinciana Parkway (Extension)
NSA 2
NSA 1
Begin Project
Twilight Ct
Ivy Mist Ln
Sandtown Dr
2-1
2-2
2-3
2-4
2-5
2-6
2-7
2-8
2-9
2-10
2-11
2-12
2-13
2-14
SLU2-1
1-1
1-2
17
600
92
538
Analyzed Receptor
Representative Receptor
Validation Site
Common Noise Environment
Proposed FDOT ROW
N
E
S
0
200 Feet


TIE INTO GRE32
NSA 2
NSA 4
NSA 1
NSA 3
2-19
2-18
2-17
2-15
2-16
532
600
17
92
Analyzed Receptor
Representative Receptor
Validation Site
Common Noise Environment
Proposed FDOT ROW
0
200 Feet


NSA 4
NSA 3
17
92
600
532
Old Dixie Hwy
Analyzed Receptor
Representative Receptor
Validation Site
Common Noise Environment
Proposed FDOT ROW
N
W
E
S
0
300 Feet


NSA 6
NSA 5
6-1
6-2
6-3
6-4
6-5
6-6
92
600
17
Analyzed Receptor
Representative Receptor
Validation Site
Common Noise Environment
Proposed FDOT ROW
N
E
S
W
0
200 Feet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6-7
6-9
6-10
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17
92
6-3
NSA 5
SLU5-1
5-1
5-2
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Representative Receptor
Validation Site
Common Noise Environment
Proposed FDOT ROW
N
E
W
S
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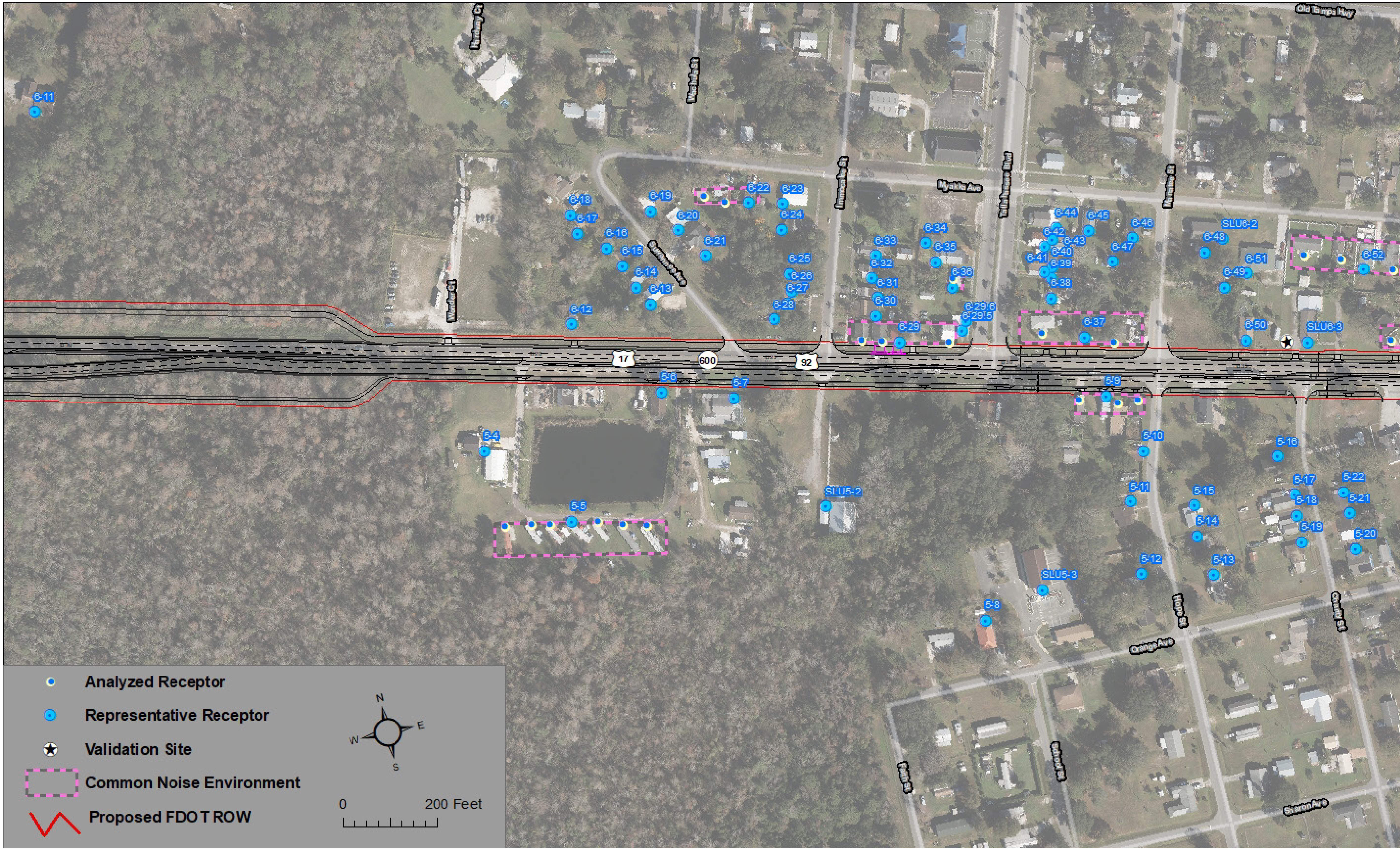
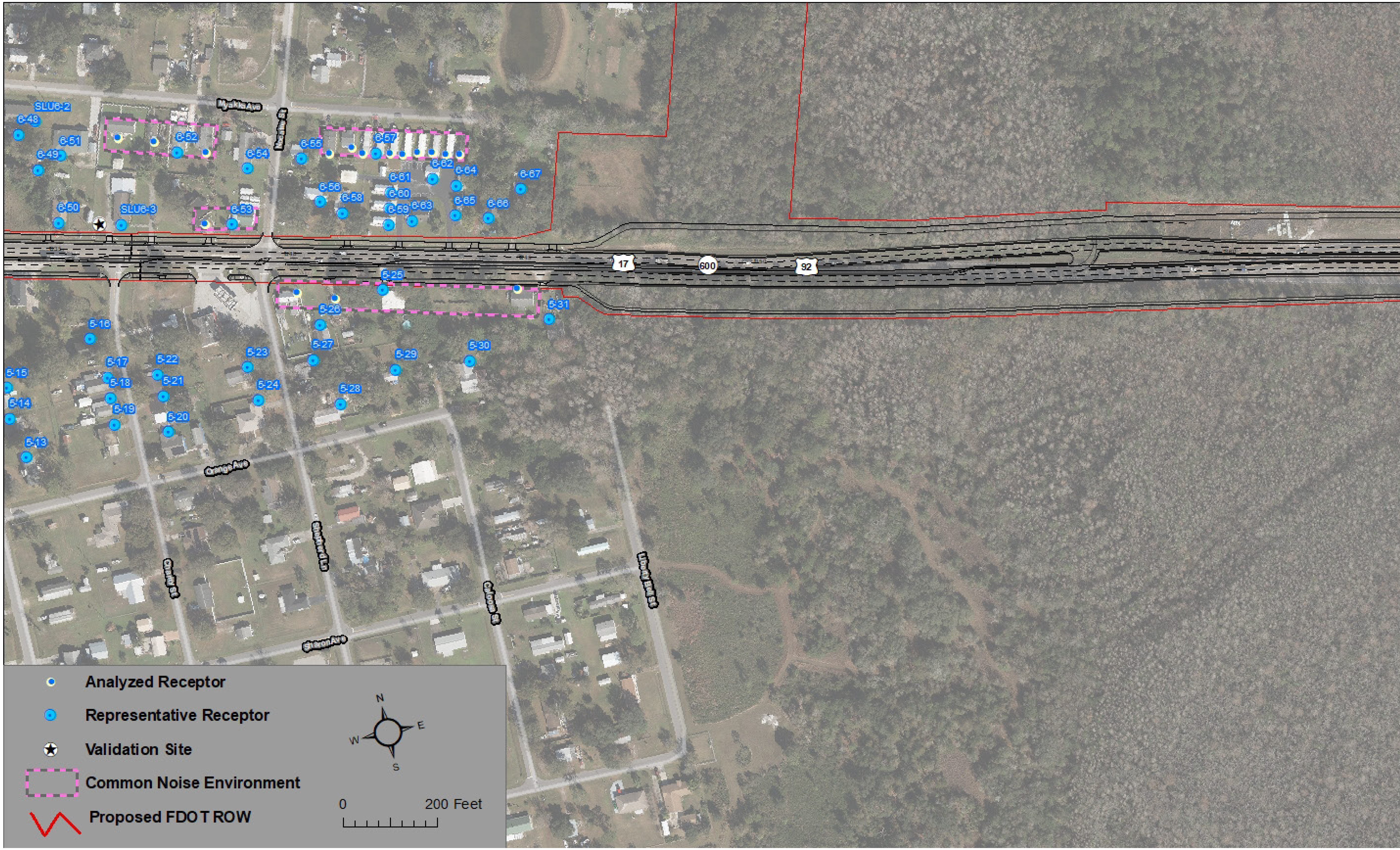
200 Feet


Analyzed Receptor
Representative Receptor
Validation Site
Common Noise Environment
Proposed FDOT ROW
N
E
W
S
0
200 Feet
17
600
92
Old Tampa Hwy
Orange Ave
Sharon Ave


SLU6-2
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6-63
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6-66
6-67
SLU6-3
17
600
92
5-13
5-14
5-15
5-16
5-17
5-18
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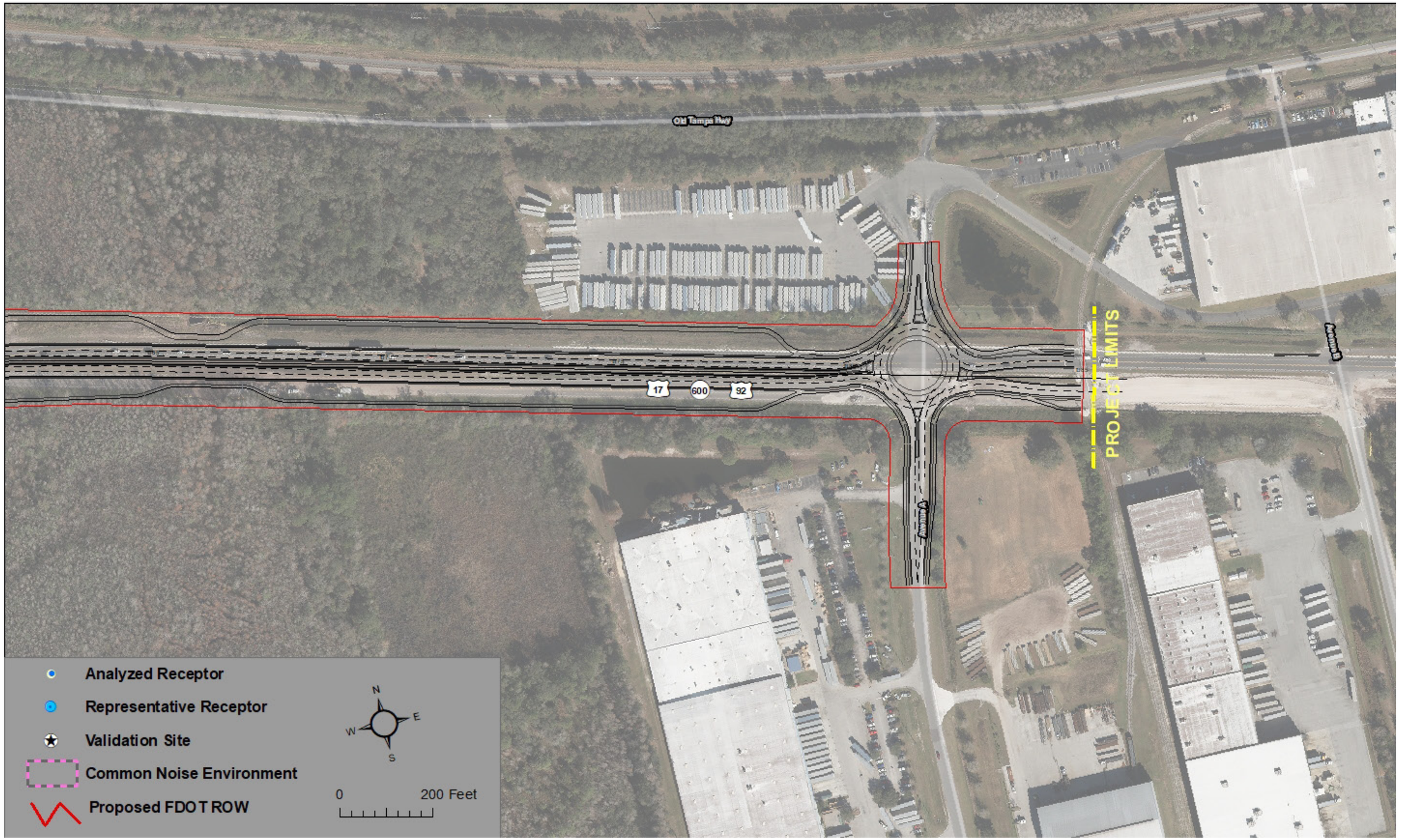
5-20
5-21
5-22
5-23
5-24
5-25
5-26
5-27
5-28
5-29
5-30
5-31
Analyzed Receptor
Representative Receptor
Validation Site
Common Noise Environment
Proposed FDOT ROW
N
E
S
W
0
200 Feet


Old Tampa Hwy
17
600
92
PROJECT LIMITS
Analyzed Receptor
Representative Receptor
Validation Site
Common Noise Environment
Proposed FDOT ROW
N
E
W
S
0
200 Feet