

NOISE STUDY REPORT DRAFT

Florida Department of Transportation

District One

State Road (SR) 70 Project Development and Environment (PD&E) Study

West of SR 31 to SE Highlands County Line Road

DeSoto County, Florida

Financial Management Number: 451942-1-22-01

ETDM Number: 14569

Date: August 2025

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 and FDOT.

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT), District One, is conducting a Project Development and Environment (PD&E) Study to evaluate the proposed widening of approximately 16.7 miles of State Road (SR) 70 from west of SR 31 to SE Highlands County Line Road in unincorporated DeSoto County, Florida.

The proposed action is to increase the capacity of the existing two-lane undivided roadway by widening it to a four-lane divided roadway, with the inclusion of safety and operational improvements as needed to accomplish the project's Purpose and Need. The project will include the construction of wildlife crossing features, roadway signing and pavement markings, and stormwater management facilities including treatment ponds and floodplain compensation sites.

As a component of this PD&E Study, this Noise Study Report (NSR) has been prepared to document the methodology and results of the highway traffic noise evaluation. The purpose of this noise study is to identify noise sensitive sites that would be impacted by the Preferred Alternative, evaluate abatement measures at impacted noise sensitive sites, and determine where noise abatement (i.e., noise barriers) should be carried forward to the project's design phase.

The Federal Highway Administration (FHWA) Traffic Noise Model (TNM) (version 2.5) was utilized to predict noise levels at 69 receptor points representing 88 residences and six nonresidential special land uses (SLUs). For the year 2050 Build condition, noise levels are predicted to meet or exceed the FDOT Noise Abatement Criteria (NAC) at twelve residences within the project limits. A substantial noise increase of 15 dB(A) over existing noise levels is not predicted to occur at any residence or SLU; however, the twelve impacted residences were evaluated to determine the feasibility and reasonableness of providing noise barriers to reduce traffic noise.

To effectively reduce traffic noise, a noise barrier must be relatively long and continuous (with no intermittent gaps). To be acoustically feasible, the barrier must provide a minimum of 5 dB(A) reduction in traffic noise for at least two impacted receptors. Consequently, noise barriers are not evaluated for residential areas with a single, isolated receptor. Such is the case with eight impacted but isolated residences. Noise barriers for the remaining four impacted residences do not meet the acoustic feasibility requirement due to numerous driveways with direct access to SR 70, which hinder the ability to provide a continuous and effective noise barrier.

Based on the noise analyses performed to date, there are no feasible solutions available to mitigate the noise impacts at the locations identified in **Section 3.3**.

Table of Contents

<i>Section</i>	<i>Page</i>
Executive Summary	ES1
1 Introduction	1-1
1.1 Project Description.....	1-1
1.2 Existing Facility	1-1
1.3 Proposed Improvements.....	1-5
1.4 Purpose of Report	1-8
2 METHODOLOGY	2-1
2.1 Noise Metrics	2-1
2.2 Traffic Data.....	2-1
2.3 Noise Abatement Criteria	2-2
2.4 Noise Abatement Measures	2-4
2.4.1 Traffic Management.....	2-5
2.4.2 Alignment Modifications	2-5
2.4.3 Buffer Zones & Land Use Controls	2-5
2.4.4 Noise Barriers	2-5
2.4.4.1 Feasibility Factors	2-6
2.4.4.2 Reasonableness Factors	2-6
2.4.5 Nonresidential Barrier Analysis.....	2-7
3 TRAFFIC NOISE ANALYSIS	3-1
3.1 Model Validation	3-1
3.1.1 Model Validation Results.....	3-1
3.2 Noise Sensitive Receptors.....	3-2
3.3 PREDICTED NOISE LEVELS AND ABATEMENT ANALYSIS	3-3
3.3.1 NSA EB1: From Project Begin Limits to SR 31	3-4
3.3.2 NSA EB2: From SR 31 to E. of DeSoto Ford Dealership	3-4
3.3.3 NSA EB3: From E. of DeSoto Ford Dealership to SE Townsend Ave.	3-4
3.3.4 NSA EB4: From SE Townsend Ave. to SE Hansel Ave.	3-4
3.3.5 NSA EB5: From SE Hansel Ave. to SE Walston Ave.....	3-5
3.3.5.1 Noise Abatement Evaluation NSA EB5	3-5

3.3.6	NSA EB6: From SE Walston Ave. to CR 760.....	3-5
3.3.6.1	Noise Abatement Evaluation NSA EB6.....	3-5
3.3.7	NSA EB7: From CR 760 to W. of DeSoto Correctional Institution.....	3-6
3.3.8	NSA EB8: From W. of DeSoto Correctional Institution to E. of DeSoto Correctional Institution	3-6
3.3.9	NSA EB9: From E. of DeSoto Correctional Institution to Project End Limits	3-6
3.3.10	NSA WB1: From Project Begin Limits to E. of NE Canal Ave.....	3-6
3.3.10.1	Noise Abatement Evaluation NSA WB1.....	3-7
3.3.11	NSA WB2: From E. of NE Canal Ave. to SE Townsend Ave.	3-7
3.3.11.1	Noise Abatement Evaluation NSA WB2.....	3-7
3.3.12	NSA WB3: From SE Townsend Ave. to NE Hansel Ave.	3-7
3.3.13	NSA WB4: From NE Hansel Ave. to SE Walston Ave.....	3-8
3.3.13.1	Noise Abatement Evaluation NSA WB4.....	3-8
3.3.14	NSA WB5: From SE Walston Ave. to NE Cross Ave.....	3-8
3.3.14.1	Noise Abatement Evaluation NSA WB5.....	3-8
3.3.15	NSA WB6: From NE Cross Ave. to CR 760.....	3-9
3.3.15.1	Noise Abatement Evaluation NSA WB6.....	3-9
3.3.16	NSA WB7: From CR 760 to Project End Limits.....	3-9
4	CONCLUSIONS	4-1
4.1	Statement of Likelihood.....	4-1
5	CONSTRUCTION NOISE AND VIBRATION.....	5-1
6	COMMUNITY COORDINATION	6-1
6.1	Noise Impact Contours	6-1
7	REFERENCES	7-1

List of Tables	Page
Table 2-1: Noise Abatement Criteria.....	2-3
Table 2-2: Typical Noise Levels.....	2-4
Table 3-1: TNM Validation Results Summary	3-2
Table 6-1: Noise Abatement Criteria Contours	6-1

List of Figures.....	Page
Figure 1-1: Project Location Map.....	1-2
Figure 1-2: Existing Roadway Typical Section from west of SR 31 to west of Townsend Road.....	1-3
Figure 1-3: Existing Roadway Typical Section from CR 760 to SE Highlands County Line Road .	1-3
Figure 1-4: Typical Section for Existing Bridges Over Whidden Creek and Joshua Creek.....	1-4
Figure 1-5: SR 70 Preferred Alternative from west of SR 31 to west of Joshua Creek	1-5
Figure 1-6: Preferred Alternative for SR 70 Bridges Over Whidden Creek and Joshua Creek	1-6
Figure 1-7: SR 70 Preferred Alternative from east of Joshua Creek to CR 760.....	1-7
Figure 1-8: SR 70 Preferred Alternative from CR 760 to SE Highlands County Line Road	1-7
Figure 1-9: Preferred Alternative for SR 70 Bridges from CR 760 to SE Highlands County Line Road	1-8

List of Appendices

Appendix A	Noise Analysis Traffic Data
Appendix B	Model Validation Field Sheets
Appendix C	Predicted Noise Levels
Appendix D	Project Aerials

1 INTRODUCTION

1.1 Project Description

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study to evaluate options for widening State Road (SR) 70 in DeSoto County. The project limits cover approximately 16.7 miles of SR 70 from west of SR 31 (Mile Post (MP) 14.973) to SE Highlands County Line Road (MP 31.763), as needed to accommodate roadway tie-ins. The project is located in Sections 32-36 of Township 37 South, Range 25 East; Sections 31-36 of Township 37 South, Range 26 East; Sections 31-36 of Township 37 South, Range 27 East; Sections 1-5 of Township 38 South, Range 25 East; Sections 1-6 of Township 38 South, Range 26 East; and Sections 1-6 of Township 38 South, Range 27 East. The project limits are shown in **Figure 1-1**.

The objective of this PD&E Study is to evaluate widening the existing two-lane undivided roadway to a four-lane divided roadway. The project will include the construction of shared-use paths, wildlife crossing features, roadway signing and pavement markings, and stormwater management facilities including treatment ponds and floodplain compensation sites.

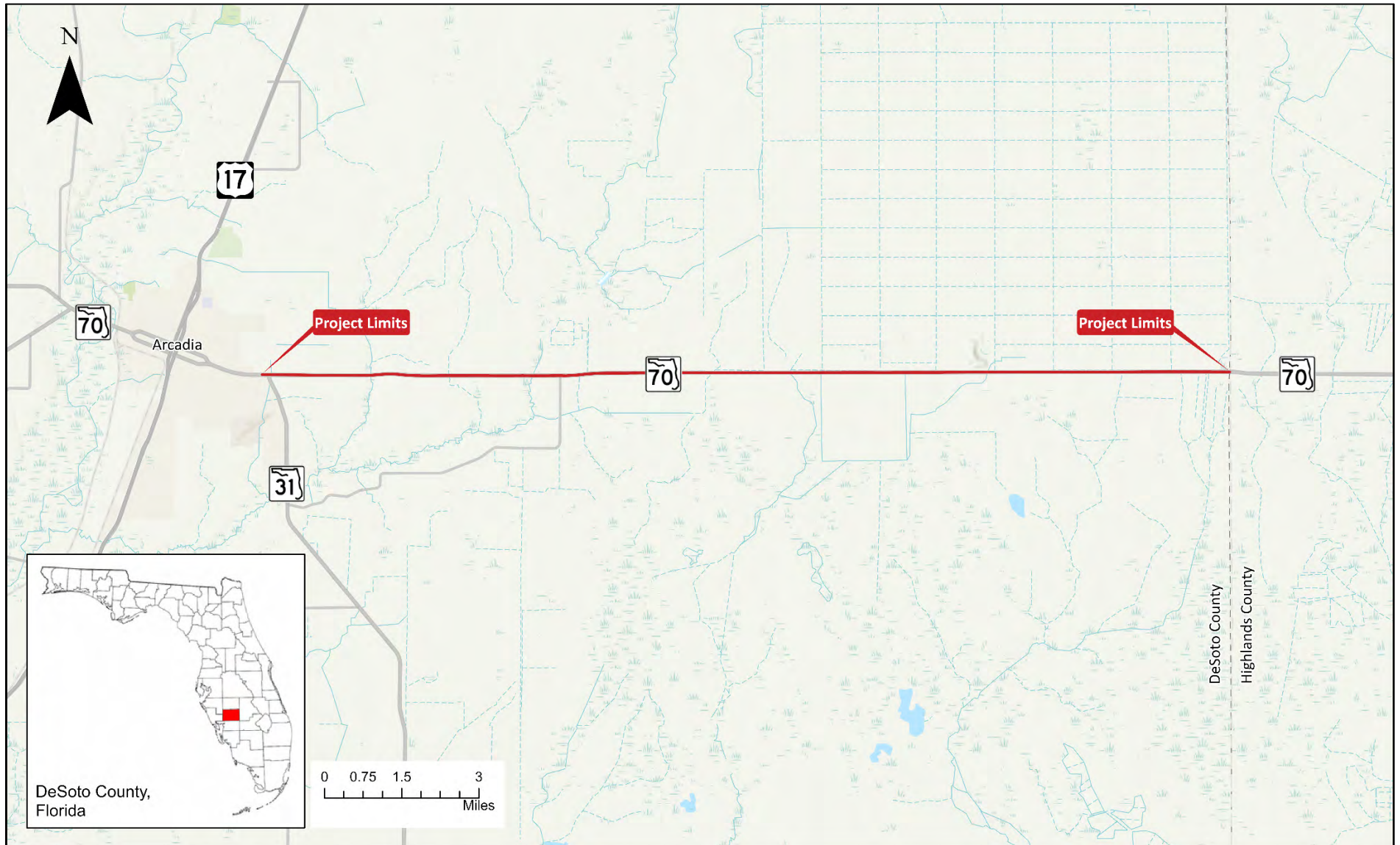
This project has been evaluated for its potential effects on various social, cultural, natural, and physical resources. In addition to resource-specific technical reports produced for this study, the project was evaluated through FDOT's Efficient Transportation Decision Making (ETDM) process as project #14569.

Upon completion, this study will meet all requirements of the National Environmental Policy Act of 1969 (NEPA) as administered for the FDOT by the FDOT Office of Environmental Management (OEM) and the requirements of other federal and state laws to qualify the proposed project for federal-aid funding.

1.2 Existing Facility

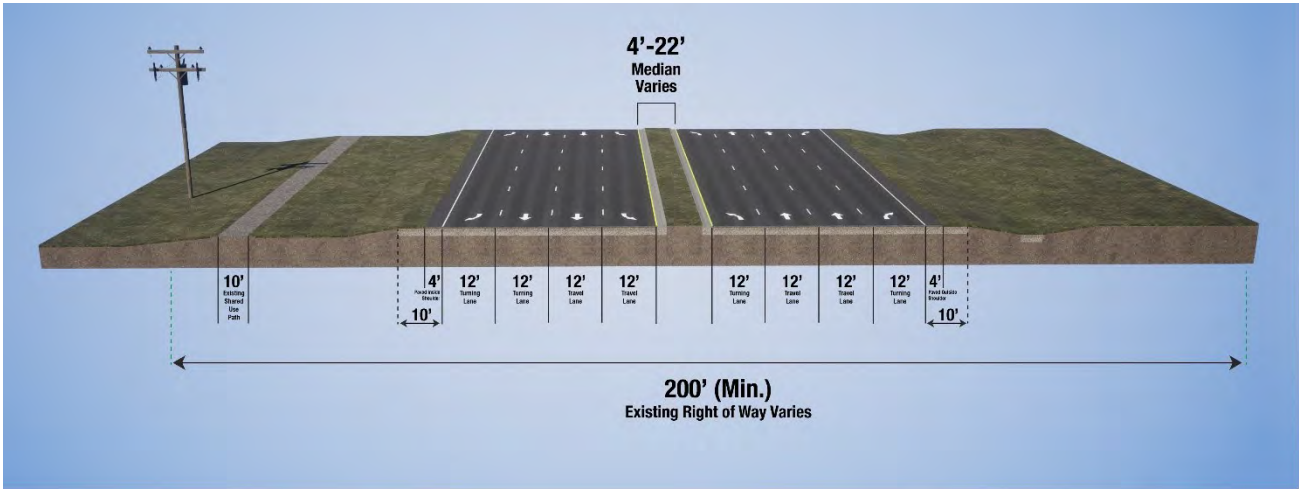
SR 70 is part of Florida's Strategic Intermodal System (SIS) highway network and designated state hurricane evacuation route network. As part of the National Highway System, SR 70 is critical in the transportation network as it facilitates local and regional traffic and the movement of goods/freight. SR 70 is functionally classified as "Rural Principal Arterial – Other" within the project area, and the project segment of the roadway has an existing context classification of C2-Rural. The posted speed limit on the corridor is generally 60 miles per hour (mph), with slower speeds ranging from 40 mph to 55 mph west of SR 31 to west of Townsend Avenue.

Figure 1-1: Project Location Map



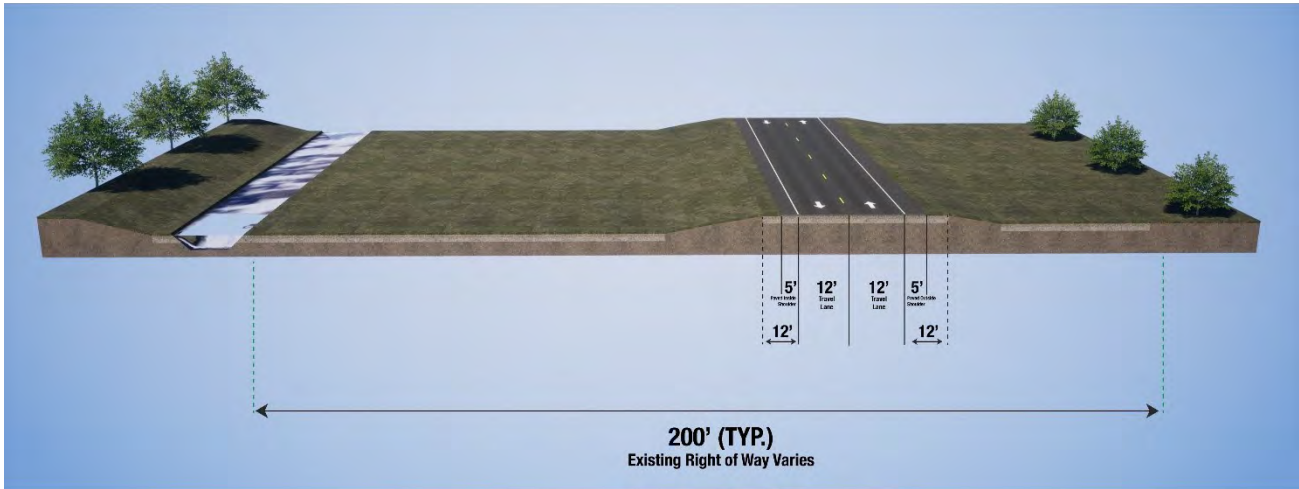
This segment of SR 70 consists of two existing roadway typical sections. From west of SR 31 to west of Townsend Road, SR 70 is a four-lane divided facility with 12-foot travel lanes and ten-foot outside shoulders (four feet paved). The travel lanes are separated by a raised grass median and intermittent right and left turn lanes. A portion of a ten-foot shared-use path is present on the northern side of the roadway, extending from west of SR 31 to west of Townsend Road (**Figure 1-2**). No designated bicycle lanes are present on either side of the facility.

Figure 1-2: Existing Roadway Typical Section from west of SR 31 to west of Townsend Road



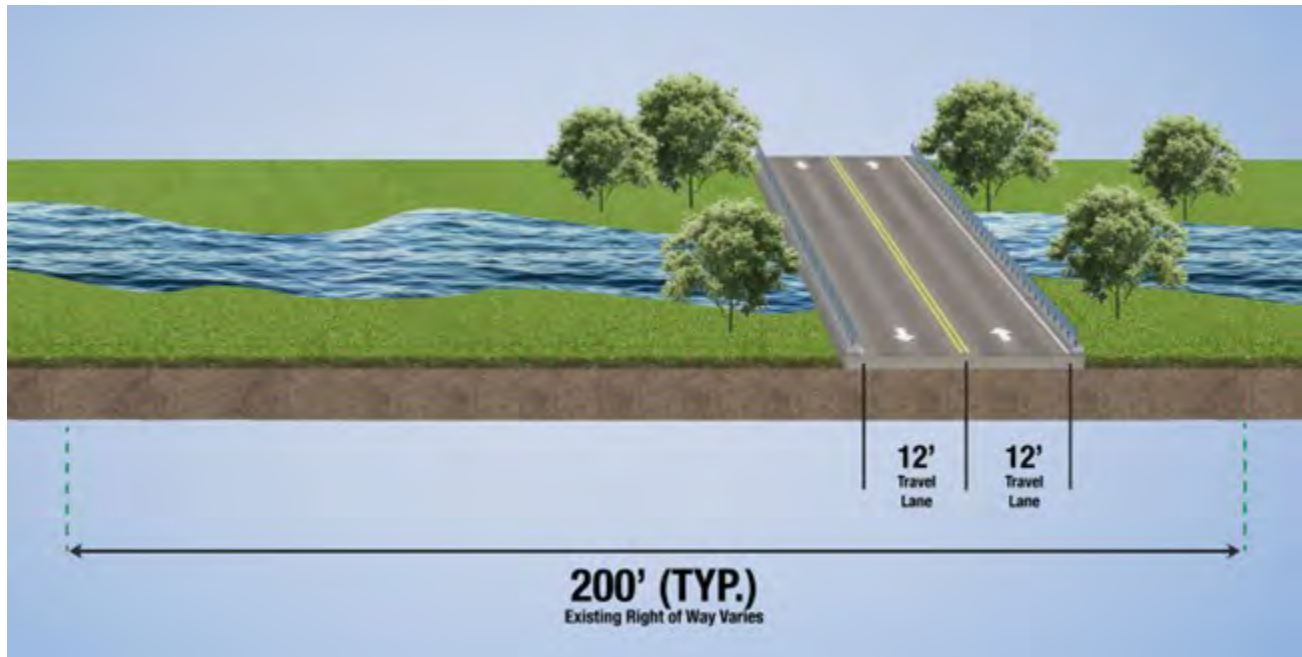
From west of Townsend Road to SE Highlands County Line Road, SR 70 becomes a two-lane undivided facility with 12-foot travel lanes and 12-foot outside shoulders (five feet paved) (**Figure 1-3**). There are no shared-use paths or designated bicycle facilities along this portion.

Figure 1-3: Existing Roadway Typical Section from CR 760 to SE Highlands County Line Road



The existing typical section for the SR 70 bridges over Whidden Creek (aka Mare Branch) and Joshua Creek consists of two 12-foot travel lanes with guardrail and traffic railings (**Figure 1-4**). There are no shared-use paths or designated bicycle facilities at these locations.

Figure 1-4: Typical Section for Existing Bridges Over Whidden Creek and Joshua Creek



Existing right-of-way (ROW) along the project portion of SR 70 is generally 200 feet in width, but ranges from approximately 180 feet to 220 feet in width from west of SR 31 to CR 760, and from 200 feet to 350 feet in width from CR 760 to SE Highlands County Line Road; it is generally wider to the north than south along the eastern end.

There are two bridges and five concrete bridge culverts along the corridor where lakes, streams, or wetlands intersect with the roadway. In addition, there are seven smaller concrete box culverts located along the project area. The two bridges and five concrete bridge culverts are as follows:

- SR 70 Concrete Bridge:
 - SR 70 over Whidden Creek (No. 040024)
 - SR 70 over Joshua Creek (No. 040027)
- SR 70 Concrete Bridge Culvert:
 - SR 70 over Tiger Bay (No. 040031)
 - SR 70 over Mossy Gully (No. 040032)
 - SR 70 over DCI Canal (No. 040033)
 - SR 70 over Long Point Marsh (No. 040037)
 - SR 70 over Parker Creek (No. 040940)

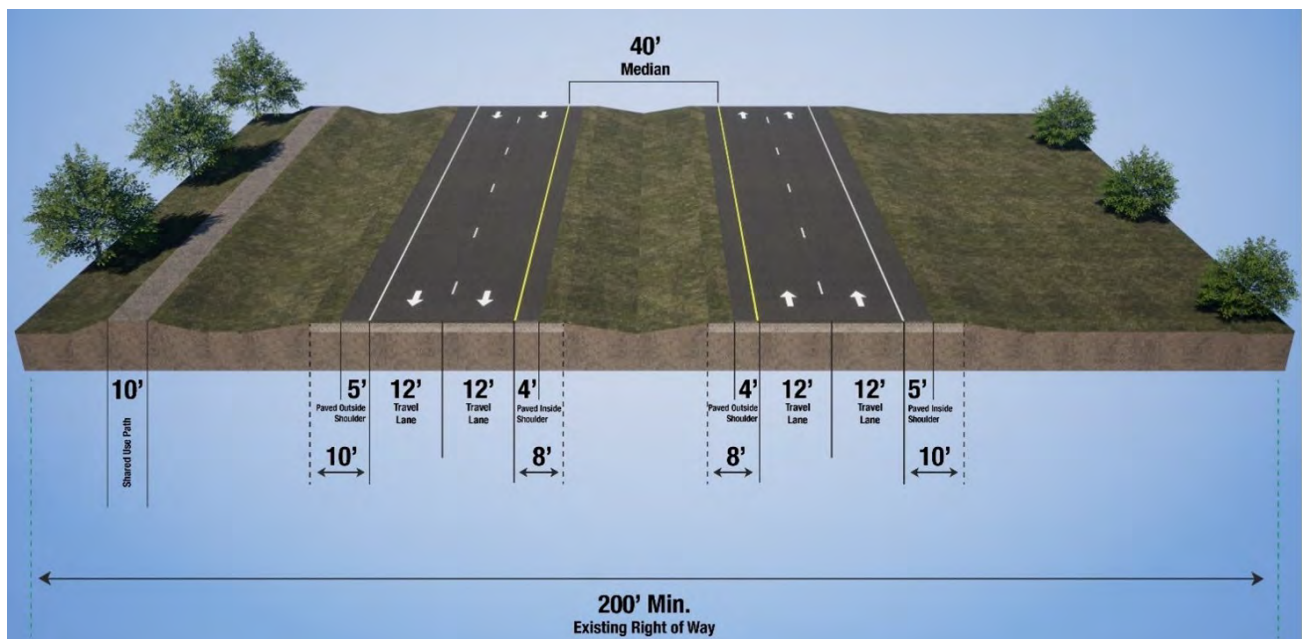
1.3 Proposed Improvements

To meet the Purpose and Need, the Preferred Alternative will widen SR 70 from two to four lanes throughout the study limits. The Preferred Alternative includes milling and resurfacing of portions of the existing roadway, along with construction of the westbound lanes to the north of the existing travel lanes.

From west of SR 31 to east of Siesta Boulevard, the Preferred Alternative will mill and resurface the existing roadway and shared-use path, as consistent with **Figure 1-2**.

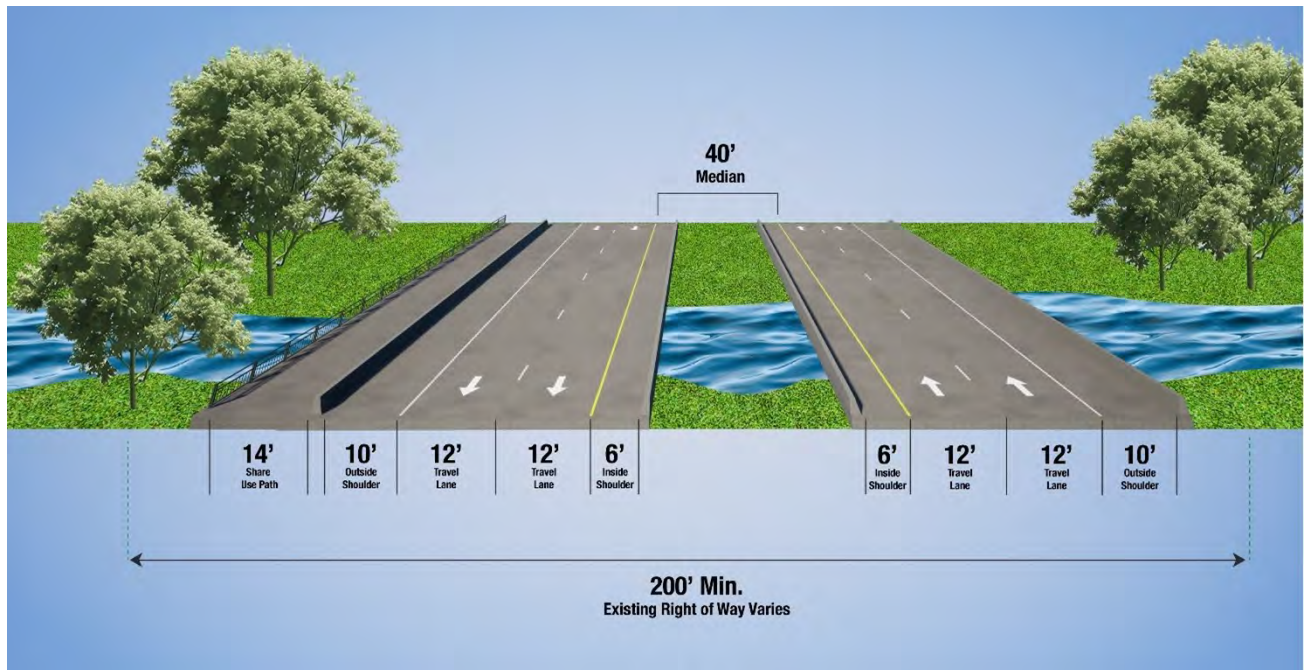
The Preferred Alternative from east of Siesta Boulevard to west of Joshua Creek (**Figure 1-5**) generally consists of four 12-foot travel lanes, a 40-foot width median that includes eight-foot inside shoulders (four-foot paved), and ten-foot outside shoulders (five-foot paved). Improvements proposed within these limits will primarily consist of intermittent milling/resurfacing and widening/reconstruction of the existing lanes as the new eastbound lanes and widening/new construction of the new westbound lanes. A new ten-foot shared-use path will be constructed adjacent to the northern ROW line from the Toby's RV Resort entrance to the new westbound bridge over Joshua Creek.

Figure 1-5: SR 70 Preferred Alternative from west of SR 31 to west of Joshua Creek



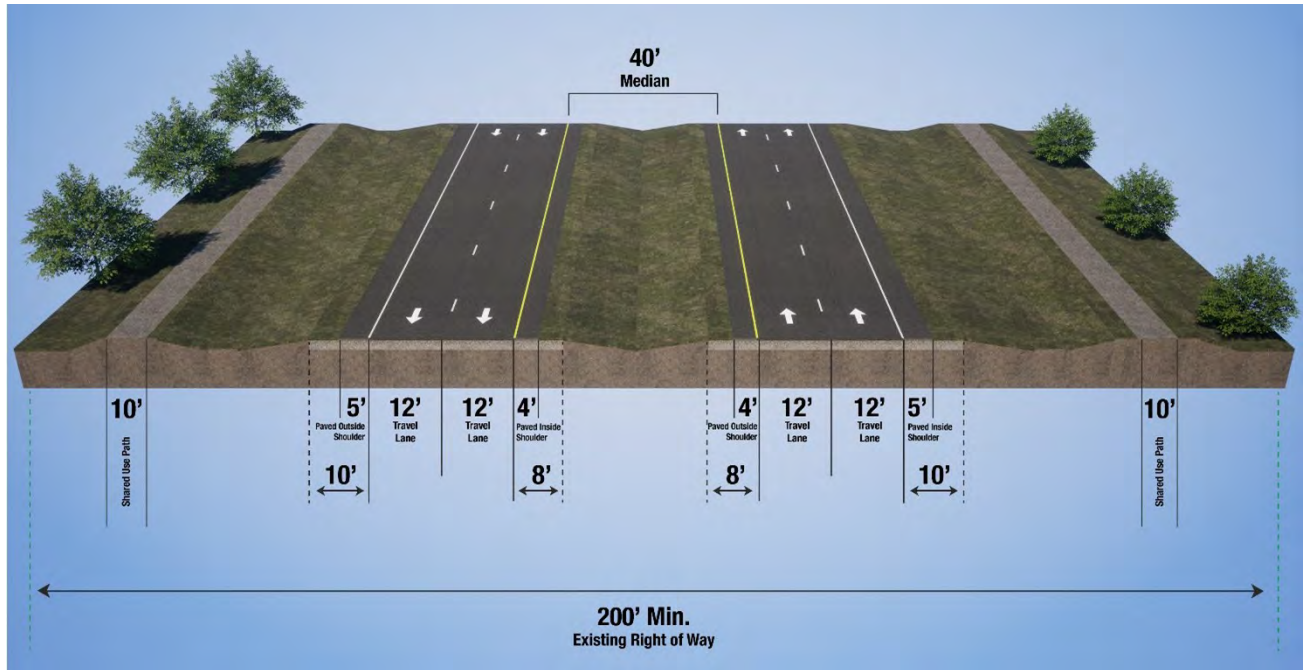
The Preferred Alternative for the bridges over Whidden Creek and Joshua Creek (**Figure 1-6**) includes four 12-foot travel lanes (two in each direction) with six-foot paved inside shoulders and ten-foot paved outside shoulders. Concrete barriers would be implemented on both shoulders. The westbound bridge will have a 14-foot shared-use path with a concrete barrier separating pedestrian and bicycle users from the travel lane and a railing at the outside edge of the bridge. At Joshua Creek, the shared-use path will switch from the north to the south side of SR 70 via a bicycle and pedestrian underpass under the reconstructed SR 70 bridges over Joshua Creek.

Figure 1-6: Preferred Alternative for SR 70 Bridges Over Whidden Creek and Joshua Creek



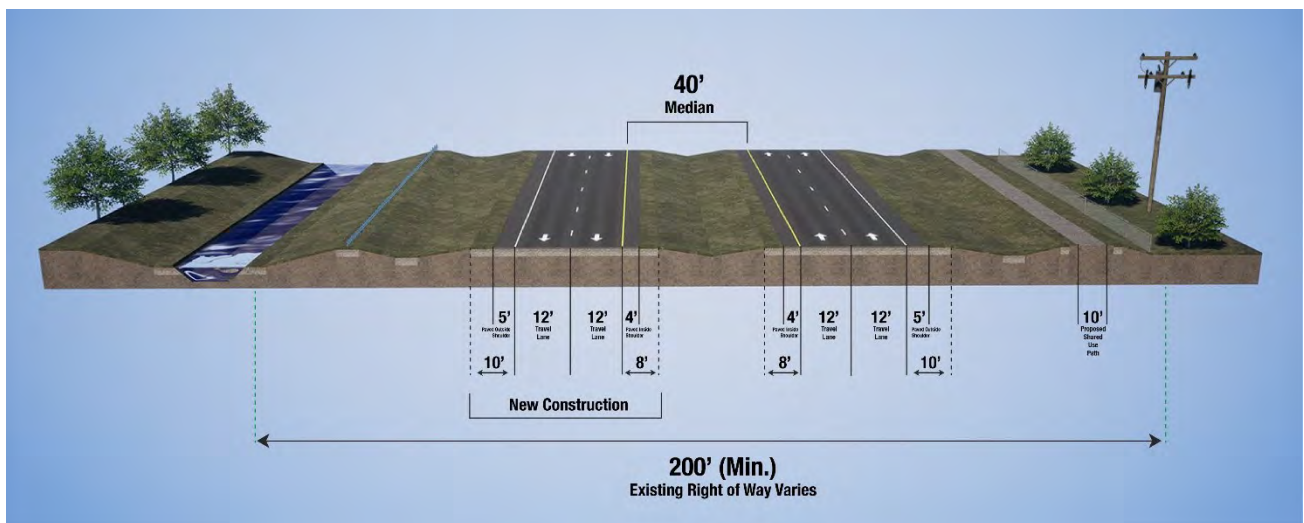
The Preferred Alternative east of Joshua Creek to CR 760 (**Figure 1-7**) features the construction of new westbound lanes to the north of the existing lanes, consisting of four 12-foot travel lanes (two in each direction) with an open median of 40 feet that includes eight-foot inside shoulders (four-foot paved), and ten-foot outside shoulders (five-foot paved). Between Joshua Creek and CR 760, two new ten-foot shared-use paths will be constructed adjacent to both the northern and southern ROW lines. Along the north side of SR 70, the shared use path will end opposite the CR 760 intersection, while the shared use path adjacent to the southern ROW line will continue eastward.

Figure 1-7: SR 70 Preferred Alternative from east of Joshua Creek to CR 760



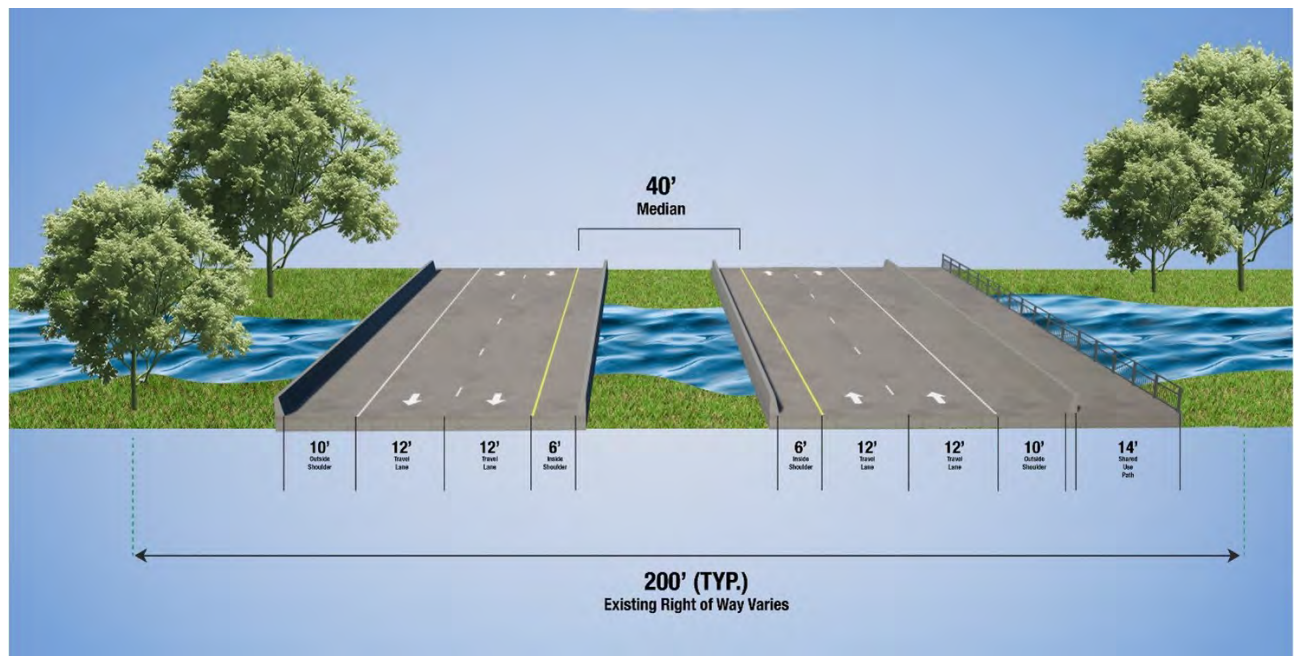
The Preferred Alternative from CR 760 to SE Highlands County Line Road (**Figure 1-8**) features the construction of new westbound lanes to the north of the existing lanes, consisting of four 12-foot travel lanes (two in each direction) with an open median of 40 feet that includes eight-foot inside shoulders (four-foot paved) and ten-foot outside shoulders (five-foot paved). A guardrail will be constructed adjacent to the westbound lanes and the existing canal.

Figure 1-8: SR 70 Preferred Alternative from CR 760 to SE Highlands County Line Road



Between CR 760 and SE Highlands County Line Road, SR 70 has five additional bridge culvert crossings at Tiger Bay, Mossy Gully, DCI Canal, Long Point Marsh, and Parker Creek. The Preferred Alternative proposes new bridges (**Figure 1-9**) at each of these locations, including four 12-foot travel lanes (two in each direction) with six-foot paved inside shoulders and ten-foot paved outside shoulders. Concrete barriers would be implemented on both shoulders. The eastbound bridge will have a 14-foot shared-use path with a concrete barrier separating pedestrian and bicycle users from the travel lane and a railing at the outside edge of the bridge.

Figure 1-9: Preferred Alternative for SR 70 Bridges from CR 760 to SE Highlands County Line Road



The project will include the construction of wildlife crossing features at the seven major bridge crossings, roadway signing and pavement markings, and stormwater management facilities including treatment ponds and floodplain compensation sites.

1.4 Purpose of Report

The purpose of this noise study is to identify noise sensitive sites that would be impacted by the Preferred Alternative, evaluate abatement measures at impacted noise sensitive sites, and determine where noise abatement (i.e., noise barriers) should be carried forward to the project's design phase. These impacts and proposed mitigation are discussed within this report.

2 METHODOLOGY

The traffic noise impact analysis conducted for this project is consistent with Title 23, Code of Federal Regulations (C.F.R.), § 772, the FDOT PD&E Manual, and Chapter 335, Section 335.17, Florida Statutes. This assessment also adheres to current Federal Highway Administration (FHWA) traffic noise analysis guidelines contained in FHWA-HEP-10-025. The FHWA Traffic Noise Model (TNM) - version 2.5 was used to predict traffic noise levels for this project, following guidelines set forth in the FDOT Traffic Noise Modeling and Analysis Practitioners Handbook.

The analysis evaluated noise levels for the 2024 Existing Condition, the 2050 No-Build Alternative, and the 2050 Preferred Alternative. The project design files (State Plane West) were used to determine the location of the Preferred Alternative for input into TNM. Vertical elevations for the project roadways (existing and proposed) and analyzed receptors were obtained from the United States Geological Survey digital elevation models and the project's engineering report.

2.1 Noise Metrics

Noise levels for this traffic noise study are expressed in decibels (dB) using an "A"-scale [dB(A)] weighting. 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)] unless otherwise specified. The Leq(h) is defined as the equivalent steady-state sound level that, in an hourly period, contains the same acoustic energy as the time-varying sound level for the same hourly period. Use of these metrics is consistent with the requirements of 23 C.F.R. 772.

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 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 that the roadway will operate below LOS C, predicted design year demand hourly volumes (DDHV) are used per the FDOT PD&E Manual.

FDOT traffic data for the 2024 Existing Condition and the 2050 No-Build and Preferred alternatives were obtained from the project's traffic report. Based on the review of the data, a combination of DDHV and LOS C volumes was used for the Existing Condition and the No-Build Alternative. DDHV volumes were modeled for the Preferred Alternative. **Appendix A** summarizes the traffic data utilized in the noise analysis.

2.3 Noise Abatement Criteria

Land use plays an important role in traffic noise analyses. Noise sensitive land uses are areas where frequent human use occurs. To determine which land uses are "noise sensitive," this noise impact analysis used the FHWA Noise Abatement Criteria (NAC) shown in **Table 2-1**. The FDOT has established noise levels for each activity category at which noise abatement for the design year, future build condition must be considered. In Florida, noise levels that meet or exceed 66 dB(A) at NAC B and C land uses require noise abatement consideration. A 71 dB(A) noise level is required for an NAC E land use to be considered impacted by traffic noise. For perspective on the decibel values, **Table 2-2** provides typical noise levels of common indoor and outdoor activities.

Noise abatement measures must also be considered when a substantial increase in traffic noise is predicted to occur as a direct result of a transportation project. The FDOT defines a substantial increase as 15 dB(A) or more 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., a new alignment project).

Table 2-1: Noise Abatement Criteria

Activity Category	Activity Leq(h) ¹		Evaluation Location	Description of Land Use Activity Category
	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 ²	67	66	Exterior	Residential.
C ²	67	66	Exterior	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	51	Interior	Auditoriums, daycare centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E ²	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.
Based on Table 1 of 23 C.F.R. 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.				

Table 2-2: Typical 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
<i>Source: California Dept. of Transportation Technical Noise Supplement, Sept. 2013, Page 2-20.</i>		

2.4 Noise Abatement Measures

Noise abatement for the design year, future build condition is considered at all noise sensitive sites predicted to meet or exceed the FDOT NAC or those with a substantial increase in noise, as stipulated by 23 C.F.R. 772. Abatement measures considered include traffic management, alignment modifications, noise buffer zones through the application of land use controls, and noise barriers. Each of these abatement measures is discussed further in the following sections.

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 the needs of the facility. For example, if the posted speed limit on SR 70 were reduced, the roadway's capacity to handle the forecasted motor vehicle demand would also be reduced. Therefore, reducing traffic speeds and/or volumes is inconsistent with the goal of improving the roadway's ability to handle the forecasted volumes. As such, although feasible, traffic management measures are not considered a reasonable noise mitigation measure for the project.

2.4.2 Alignment Modifications

Modifying the horizontal alignment and/or vertical profile of a roadway can influence highway traffic noise levels and can, therefore, be an effective abatement measure. However, the existing alignment of SR 70 has already established the proposed vertical alignment. The proposed horizontal alignment has minimized project costs and detrimental effects on land use. Because a noise abatement measure must not exceed \$64,000 per benefited receptor, the cost of acquiring additional property for the sole purpose of abating highway traffic noise would exceed the cost-reasonable limit. Therefore, an alignment modification that could provide a substantial noise reduction is not a feasible or reasonable abatement measure.

2.4.3 Buffer Zones & Land Use Controls

Noise buffer zones that separate the roadway and noise sensitive land uses can minimize or eliminate noise impacts to areas of future development. This measure requires local land use planning, which is 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. However, for any new development or redevelopment that may occur in the future, local officials can utilize the noise contour information provided in **Section 6** of this NSR to establish buffer zones, thereby minimizing or avoiding noise impacts on future sensitive land uses.

2.4.4 Noise Barriers

The most common type of noise abatement measure is constructing a noise barrier, and it is the only measure considered for this project. Noise barriers associated with transportation projects do not block all sound from the roadway. Rather, they can reduce traffic noise by blocking the sound path between a traffic noise source and noise sensitive receptor. To effectively reduce traffic noise, a noise barrier must be relatively long, continuous (with no intermittent openings), and of sufficient height.

The following feasibility and reasonableness factors must be evaluated when considering noise barriers for abatement.

2.4.4.1 Feasibility Factors

The FDOT PD&E Manual stipulates that a noise barrier must meet acoustic and engineering criteria to be considered feasible, as summarized below:

- Acoustic feasibility: The barrier must provide a minimum of 5 dB(A) reduction in traffic noise for at least two impacted receptors. Consequently, noise barriers are not evaluated for isolated and single-impacted receptors.
- Engineering feasibility: The engineering review identifies whether other factors must be evaluated for the barrier to be considered feasible.
- Safety: If a noise barrier and safety conflict exist, primary consideration must be given to safety. An example of such a conflict would be the loss of a safe sight distance (line of sight) at an intersection or driveway resulting from a noise barrier placement.
- 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 travel routes.
- Right-of-way needs: Does the noise barrier require additional land, access rights, or easements for construction and maintenance?
- Maintenance: Maintenance crews must have reasonable access to both sides of the barrier for personnel and equipment using standard practices.
- Drainage: Does the barrier impact existing or planned drainage?
- 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.

- Acoustic reasonableness: The barrier must attain the FDOT noise reduction design goal (NRDG) of 7 dB(A) for at least one benefited receptor. (Note: to be considered "benefited," the receptor must receive a minimum of 5 dB(A) in traffic noise reduction from the barrier.) Failure to achieve the NRDG results in the noise abatement measure being deemed not reasonable.
- Cost-effectiveness: Using the current statewide average of \$40.00 per square foot, \$64,000 per benefited receptor is the upper limit for a cost-reasonable noise barrier.
- Benefited property owner and resident viewpoints: During the design phase of the project, the FDOT solicits the opinions of benefited property owners and residents regarding noise abatement. Affected owners and residents are given the opportunity to provide input on their

desires regarding the proposed noise abatement measure. This process aims to obtain a response for or against the noise barrier from a majority of the survey respondents. The noise barrier is not deemed reasonable if a majority consensus is not obtained in favor of the barrier.

2.4.5 Nonresidential Barrier Analysis

The methodology used to evaluate noise barrier systems for nonresidential sites differs from that used for residential locations. The standard procedure for determining the feasibility and reasonableness of a noise barrier for a special land use (SLU) site is documented in *Methodology to Evaluate Traffic Noise at Special Land Uses* (FDOT 2024). This SLU evaluation is a multi-step process.

- If an impacted SLU receptor is not adjacent to impacted residences or other impacted SLUs such that a single noise barrier would not be a practical form of abatement for all impacted properties, it is considered isolated. It must undergo a preliminary screening analysis to determine if it has sufficient person-hour usage to equate to at least two residences, making it feasible for noise abatement. To meet the feasibility requirement, the isolated SLU must have at least 44,326 person-hours of use per year in the benefited area for a noise barrier to be found as a feasible form of noise abatement.
- A noise barrier is evaluated if the preliminary screening results indicate that a full analysis is warranted or if the impacted SLU is adjacent to other impacted SLUs or residences.
- Once it is determined that impacted SLUs benefit from the analyzed noise barrier, the FDOT SLU Worksheet is utilized to assess whether a noise barrier is a reasonable form of abatement. The SLU Worksheet includes all residences and SLUs that would receive a benefit from the noise barrier. This methodology allows the combined evaluation of all impacted land use activity categories that would potentially benefit from a single noise barrier system.

3 TRAFFIC NOISE ANALYSIS

3.1 Model Validation

Existing noise levels are measured in the project corridor to confirm if traffic is the primary noise source. These field measurements are also required to verify the accuracy of the TNM 2.5 noise model before it can be used to predict noise levels. Two locations were used to validate the TNM's ability to accurately predict traffic noise for this project. The location of the validation sites is shown on the project aerials in **Appendix D** as receptor points VS-1 and VS-2. Site VS-1 is located west of SE Townsend Avenue and is shown on **page D4**. Site VS-2 is located east of CR 760 and is shown on **page D11**.

A series of measurements was taken on September 16, 2024, using an Extech Instruments Model 407780 Type 2 Integrating Sound Level Meter. All measurement sessions were ten minutes in duration, consistent with FDOT procedures. The noise meter was calibrated using an Extech Instruments Model 407766 calibrator before and after the field measurement event. Typical vehicle speeds were established by sampling with a Bushnell Speedster handheld radar gun. Vehicles generally traveled above the posted speed limit of 60 miles per hour (mph) on SR 70. Traffic volumes by vehicle classification were recorded for each session and then extrapolated to one-hour equivalent volumes for input within the TNM for validation. The model validation field sheets are provided in **Appendix B**.

3.1.1 Model Validation Results

Validation of TNM occurs when the model-predicted noise levels are within three decibels of the field-measured levels. The results of the validation events are summarized in **Table 3-1**. Due to the presence of active cicadas throughout the entire corridor during the field visit, the measured noise levels for site VS-1 sessions 1 and 2 could not be replicated in TNM. However, the variance between the measured and predicted noise levels was 3.0 dB(A) or less for VS-1 session 3 and all site VS-2 sessions. Therefore, the noise model is predicting traffic-related noise for this project within the level of accuracy specified in the FDOT PD&E Manual.

Table 3-1: TNM Validation Results Summary

Location	Measurement Session	Start Time	Field Measured (dB(A)) ¹	TNM Predicted (dB(A))	Variance (dB(A))
VS-1	Session 1	1:07 PM	68.6	63.8	-4.8
	Session 2	1:20 PM	70.1	65.7	-4.4
	Session 3	1:32 PM	67.5	65.0	-2.5
VS-2	Session 1	12:10 PM	64.7	64.7	0.0
	Session 2	12:25 PM	64.3	63.6	-0.7
	Session 3	12:36 PM	65.3	64.4	-0.9

¹ The field measurements are higher than TNM-predicted noise levels due to the presence of cicadas within the study corridor.

3.2 Noise Sensitive Receptors

Using **Table 2-1** as a guide, noise sensitive land uses within the study corridor fall under NAC B, C, and E. The remainder of the corridor is NAC G undeveloped land. A permit search of these NAC G areas was conducted to identify active building permits for noise sensitive land uses. As of May 14, 2025, no such permits were discovered within the study corridor. If a future noise sensitive land use receives a building permit before the project's Date of Public Knowledge, it will be assessed for traffic noise impacts during the project's final design phase of development. While NAC F land uses are in the project corridor, this is not considered a noise sensitive activity and is not included in the analysis. No land uses warrant an NAC A or NAC D analysis.

For the noise impact analysis, TNM receptor points representing residences are modeled in accordance with the FDOT PD&E Manual as follows:

- Residential receptor points are located in areas of frequent outdoor use or at the corner 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 residences with similar characteristics.
- Ground floor receptor points are assumed to be five feet above the ground elevation, and all receptors are assumed to be at ground level unless otherwise noted.
- Higher floor receptors are assumed to increase in elevation in ten-foot increments above the ground floor receptor.
- Nonresidential (SLU) receptor points are located at the edge of the outdoor use area closest to the major traffic noise source.

The noise analysis divided the study corridor into Noise Sensitive Areas (NSA) based on geographical dividers such as roads, large developments, or environmental areas. The reporting of project noise levels was further simplified by using receptors that represent similar adjacent noise sensitive sites. A group of receptors within the same activity category that are exposed to similar noise sources and levels, traffic volumes, traffic mix, speed, and topographic features are said to share a Common Noise Environment (CNE). There may be several CNEs within one NSA. Generally, CNEs occur between two secondary noise sources, such as interchanges, intersections, and crossroads.

The alphanumeric identification for each receptor point associated with a noise sensitive receptor is labeled according to the NSA within which it is located. NSAs are named as follows:

- The first two letters (i.e., EB or WB) describe on which side of SR 70 the NSA is located (e.g., "EB" indicates the receptor is located in an NSA on the eastbound side of the SR 70 travel lanes).
- The number following the first two letters is a numeric sequencing number (e.g., EB3 is the 3rd NSA on the eastbound side of SR 70).
- The final two characters for residential land uses are the individual receptor number, which is separated from the first string of characters with a dash (e.g., EB3-07 is the 7th receptor in the 3rd NSA on the eastbound side of SR 70).

Nonresidential land use receptors are identified by "SLU" before the individual receptor number and is separated from the first string of characters with a dash. (e.g., EB3-SLU1 is the first nonresidential receptor in the 3rd NSA on the eastbound side of SR70).

3.3 PREDICTED NOISE LEVELS AND ABATEMENT ANALYSIS

Traffic noise levels were predicted for 88 residences and six nonresidential SLUs within the project corridor. All impacted receptors were evaluated to determine the feasibility and reasonableness of providing noise barriers to reduce traffic noise.

The following sections discuss the noise analysis results for the 2024 Existing Condition, the 2050 No-Build Alternative, and the 2050 Preferred Alternative. The results are also presented in a comparison matrix, which is provided in **Appendix C**.

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.

3.3.1 NSA EB1: From Project Begin Limits to SR 31

Noise sensitive land uses in NSA EB1 consist of the outdoor seating area at Culver's restaurant, represented by receptor EB1-SLU1 as shown on **page D1** in the project aerials **Appendix D**. The predicted noise levels at this NAC E receptor for the Existing Condition and No-Build Alternative are 62.0 dB(A) and 64.0 dB(A), respectively.

The predicted noise level for the Preferred Alternative is 65.9 dB(A), which is below the FDOT's 71 dB(A) NAC E criterion. The 3.9 dB(A) project noise level increase over the Existing Condition is not considered a substantial increase. Therefore, noise abatement consideration for this receptor is not warranted.

3.3.2 NSA EB2: From SR 31 to E. of DeSoto Ford Dealership

Noise sensitive land uses in NSA EB2 consist of the two outdoor benches at Chili's restaurant, represented by receptor EB2-SLU1, as shown on **page D1** in **Appendix D**. The predicted noise levels at this NAC E receptor for the Existing Condition and the No-Build Alternative are 64.7 dB(A) and 66.6 dB(A), respectively.

The predicted noise level for the Preferred Alternative is 68.4 dB(A), which is below the FDOT's 71 dB(A) NAC E criterion. The 3.7 dB(A) project noise level increase is not considered a substantial increase. Therefore, noise abatement consideration for this receptor is not warranted.

3.3.3 NSA EB3: From E. of DeSoto Ford Dealership to SE Townsend Ave.

Noise sensitive land uses in NSA EB3 consist of four residences located west of SE Townsend Avenue. These residences are represented by receptors EB3-01 through EB3-04 and are shown on **pages D2 through D4** in **Appendix D**. The predicted noise levels at these NAC B receptors for the Existing Condition range between 47.9 dB(A) and 56.8 dB(A). With the No-Build Alternative, predicted noise levels range between 48.0 dB(A) and 56.8 dB(A).

Predicted noise levels for the Preferred Alternative range between 52.8 dB(A) and 59.9 dB(A), which is below the FDOT's 66 dB(A) NAC B criterion. The greatest increase over existing noise conditions is 4.9 dB(A) at receptor EB3-04 and does not constitute a substantial increase. Therefore, noise abatement consideration for these receptors is not warranted.

3.3.4 NSA EB4: From SE Townsend Ave. to SE Hansel Ave.

There is only one noise sensitive land use in NSA EB4, a residence on SE Benedict Street. This residence, represented by receptor EB4-01, is shown on **pages D4 and D5** in **Appendix D**. The predicted noise level at this NAC B receptor is 50.1 dB(A) for both the Existing Condition and No-Build Alternative.

The predicted noise level for the Preferred Alternative is 55.2 dB(A). The noise level prediction does not meet or exceed the FDOT's 66 dB(A) NAC B criterion, and the 5.1 dB(A) project noise level increase is not considered substantial. Therefore, noise abatement consideration for this receptor is not warranted.

3.3.5 NSA EB5: From SE Hansel Ave. to SE Walston Ave.

Noise sensitive land uses in NSA EB5 consist of 18 residences, represented by receptors EB5-01 through EB5-13, and are shown on **pages D5 through D7 in Appendix D**. The predicted noise levels at these NAC B receptors range between 50.4 dB(A) and 69.8 dB(A) for both the Existing Condition and No-Build Alternative.

Predicted noise levels for the Preferred Alternative range between 54.1 dB(A) and 71.9 dB(A), with the greatest increase over existing noise conditions being 4.6 dB(A) at receptor EB5-13. The noise level predictions exceed the NAC B criterion at four receptors. While the noise increases are not considered substantial, the project is predicted to have four impacts; thus, noise abatement consideration is required for NSA EB5.

3.3.5.1 Noise Abatement Evaluation NSA EB5

Multiple driveway openings between the four impacted sites represented by receptors EB5-01 through EB5-04 pose engineering constraints that prevent the construction of a continuous or segmented noise barrier system that can attain the minimum required 5 dB(A) of noise reduction. Therefore, noise barriers are not considered feasible in this NSA.

3.3.6 NSA EB6: From SE Walston Ave. to CR 760

Noise sensitive land uses in NSA EB6 consist of four residences, represented by receptors EB6-01 through EB6-04, and are shown on **pages D7 through D11 in Appendix D**. The predicted noise levels at these NAC B receptors range between 55.8 dB(A) and 64.7 dB(A) for both the Existing condition and the No-Build Alternative.

Predicted noise levels for the Preferred Alternative range between 63.2 dB(A) and 67.1 dB(A), with receptors EB6-02 and EB6-03 predicted to have noise levels that exceed the FDOT's 66 dB(A) NAC B criterion. The greatest increase over existing noise conditions is 3.4 dB(A) at receptor EB6-01. While the noise increases are not considered substantial, the project is predicted to have two impacts; thus, noise abatement consideration is required for NSA EB6.

3.3.6.1 Noise Abatement Evaluation NSA EB6

Although two residences, receptors EB6-02 and EB6-03, are predicted to experience noise levels above the NAC, these receptors are not located near one another and are considered "isolated." FDOT policy requires two impacted receptors to receive a 5 dB(A) noise reduction for a noise barrier to be

feasible. Consequently, noise barriers are not considered a feasible abatement measure for these isolated impacted residences.

3.3.7 NSA EB7: From CR 760 to W. of DeSoto Correctional Institution

There are two residences in NSA EB7, represented by receptors EB7-01 and EB7-02, respectively, and shown on **pages D11 through D20 in Appendix D**. The predicted noise levels at these NAC B receptors for both the Existing condition and the No-Build Alternative are 45.4 dB(A) and 62.3 dB(A), respectively.

Predicted noise levels for the Preferred Alternative are 50.8 dB(A) and 65.0 dB(A), respectively, with the greatest increase over existing noise conditions being 5.4 dB(A) at receptor EB7-01. The noise level predictions do not meet or exceed the FDOT's 66 dB(A) NAC B criterion, and the project noise levels do not constitute a substantial increase. Therefore, noise abatement consideration for these receptors is not warranted.

3.3.8 NSA EB8: From W. of DeSoto Correctional Institution to E. of DeSoto Correctional Institution

NSA EB8 contains the DeSoto Correctional Institution campus. The noise sensitive sites consist of 28 staff residences (receptors EB8-01 through EB8-13) and an inmate outdoor recreation area (receptor EB8-SLU1). These receptors are shown on **pages D20 through D22 in Appendix D**. The predicted noise levels for both the Existing condition and the No-Build Alternative at these receptors range between 48.0 dB(A) and 58.4 dB(A).

Predicted noise levels for the Preferred Alternative range between 53.4 dB(A) and 62.0 dB(A), with the greatest increase over existing noise conditions being 5.4 dB(A) at receptor EB8-13. The noise level predictions do not meet or exceed the FDOT's 66 dB(A) NAC B/C criteria, and the project noise levels do not constitute a substantial increase. Therefore, noise abatement consideration for these receptors is not warranted.

3.3.9 NSA EB9: From E. of DeSoto Correctional Institution to Project End Limits

Noise Sensitive Area EB9 is shown on **pages D22 through D33 in Appendix D**. There are no noise sensitive sites in this NSA.

3.3.10 NSA WB1: From Project Begin Limits to E. of NE Canal Ave.

Noise sensitive land uses in NSA WB1 consist of the 8 residences, represented by receptors WB1-01 through WB1-04, and the J&B Produce Stand, an outdoor NAC E land use, represented by receptor WB1-SLU1 as shown on **page D1 in the project aerials Appendix D**. The predicted noise levels at these receptors for the Existing Condition range between 57.3 dB(A) and 64.7 dB(A). Predicted noise levels for the No-Build Alternative range between 59.2 dB(A) and 66.6 dB(A).

Predicted noise levels for the Preferred Alternative range between 60.6 dB(A) and 67.8 dB(A), with receptor WB1-01 predicted to have a noise level that exceeds the FDOT's 66 dB(A) NAC B criterion. The greatest increase over existing noise conditions is 3.3 dB(A) at receptors WB1-03 and WB1-04. While the noise increases are not considered substantial, the project is predicted to have one impact; thus, noise abatement consideration is required for NSA WB1.

3.3.10.1 Noise Abatement Evaluation NSA WB1

Although one residence, receptor WB1-01, is predicted to experience noise levels above the NAC, FDOT policy requires two impacted receptors to receive a 5 dB(A) noise reduction for a noise barrier to be feasible. Consequently, a noise barrier is not considered a feasible abatement measure for an isolated impacted residence.

3.3.11 NSA WB2: From E. of NE Canal Ave. to SE Townsend Ave.

Noise sensitive land uses in NSA WB2 consist of two residences, represented by receptors WB2-01 and WB2-02, and Toby's Encore RV Resort, an NAC C land use, represented by receptor WB2-SLU1, as shown on **pages D1 through D4 in Appendix D**. The predicted noise levels at these receptors for the Existing Condition range between 54.2 dB(A) and 63.4 dB(A). Predicted noise levels for the No-Build Alternative range between 54.2 dB(A) and 65.3 dB(A).

Predicted noise levels for the Preferred Alternative range between 58.1 dB(A) and 66.6 dB(A), with receptors WB2-01 and WB2-02 predicted to have noise levels that exceed the FDOT's 66 dB(A) NAC B criterion. The greatest increase over existing noise conditions is 5.9 dB(A) at receptor WB2-02. While the noise increases are not considered substantial, the project is predicted to have two impacts; thus, noise abatement consideration is required for NSA WB2.

3.3.11.1 Noise Abatement Evaluation NSA WB2

Although two residences, receptors WB2-01 and WB2-02, are predicted to experience noise levels above the NAC, these receptors are not located near one another and are considered "isolated." Consequently, noise barriers are not considered a feasible abatement measure for these isolated impacted residences.

3.3.12 NSA WB3: From SE Townsend Ave. to NE Hansel Ave.

Noise sensitive land uses in NSA WB3 consist of three residences, represented by receptors WB3-01 through WB3-03, and are shown on **pages D4 and D5 in Appendix D**. The predicted noise levels at these NAC B receptors for both the Existing Condition and the No-Build Alternative range between 50.6 dB(A) and 54.1 dB(A).

Predicted noise levels for the Preferred Alternative range between 56.1 dB(A) and 60.0 dB(A). The greatest increase over existing noise conditions is 5.9 dB(A) at receptor WB3-03. The noise level predictions do not meet or exceed the FDOT's 66 dB(A) NAC B criterion, and the project noise levels

do not constitute a substantial increase. Therefore, noise abatement consideration for these receptors is not warranted.

3.3.13 NSA WB4: From NE Hansel Ave. to SE Walston Ave.

Noise sensitive land uses in NSA WB4 consist of 3 residences, represented by receptors WB4-01 through WB4-03, and the Church of God of Prophecy outdoor playground, an NAC C land use, represented by receptor WB4-SLU1 as shown on **pages D5 through D7 in Appendix D**. The predicted noise levels at these receptors for both the Existing Condition and the No-Build Alternative range between 51.1 dB(A) and 61.3 dB(A).

Predicted noise levels for the Preferred Alternative range between 56.6 dB(A) and 67.1 dB(A), with the greatest increase over existing noise conditions being 5.8 dB(A) at receptor WB4-01. The noise level predictions exceed the NAC B criterion at one receptor, WB4-01. While the noise increases are not considered substantial, the project is predicted to have one impact; thus, noise abatement consideration is required for NSA WB4.

3.3.13.1 Noise Abatement Evaluation NSA WB4

Although one residence, receptor WB4-01, is predicted to experience noise levels above the NAC, FDOT policy requires two impacted receptors to receive a 5 dB(A) noise reduction for a noise barrier to be feasible. Consequently, a noise barrier is not considered a feasible abatement measure for an isolated impacted residence.

3.3.14 NSA WB5: From SE Walston Ave. to NE Cross Ave.

Noise sensitive land uses in NSA WB5 consist of 8 residences, represented by receptors WB5-01 through WB5-06, and are shown on **pages D7 through D9 in Appendix D**. The predicted noise levels at these receptors for both the Existing Condition and the No-Build Alternative range between 53.8 dB(A) and 60.9 dB(A).

Predicted noise levels for the Preferred Alternative range between 59.3 dB(A) and 67.4 dB(A), with the greatest increase over existing noise conditions being 6.5 dB(A) at receptor WB5-04. The noise level predictions exceed the NAC B criterion at one receptor, WB5-04. While the noise increases are not considered substantial, the project is predicted to have one impact; thus, noise abatement consideration is required for NSA WB5.

3.3.14.1 Noise Abatement Evaluation NSA WB5

Although one residence, receptor WB5-04, is predicted to experience noise levels above the NAC, FDOT policy requires two impacted receptors to receive a 5 dB(A) noise reduction for a noise barrier to be feasible. Consequently, a noise barrier is not considered a feasible abatement measure for an isolated impacted residence.

3.3.15 NSA WB6: From NE Cross Ave. to CR 760

Noise sensitive land uses in NSA WB6 consist of five residences, represented by receptors WB6-01 through WB6-05, and are shown on **pages D9 through D11 in Appendix D**. The predicted noise levels at these NAC B receptors for both the Existing Condition and the No-Build Alternative range between 54.3 dB(A) and 61.4 dB(A).

Predicted noise levels for the Preferred Alternative range between 60.4 dB(A) and 67.6 dB(A), with receptor WB6-03 predicted to have a noise level that exceeds the FDOT's 66 dB(A) NAC B criterion. The greatest increase over existing noise conditions is 6.2 dB(A) at receptor WB6-03. While the noise increases are not considered substantial, the project is predicted to have one impact; thus, noise abatement consideration is required for NSA WB6.

3.3.15.1 Noise Abatement Evaluation NSA WB6

Although one residence, receptor WB6-03, is predicted to experience noise levels above the NAC, FDOT policy requires two impacted receptors to receive a 5 dB(A) noise reduction for a noise barrier to be feasible. Consequently, noise barriers are not considered a feasible abatement measure for this isolated impacted residence.

3.3.16 NSA WB7: From CR 760 to Project End Limits

There are two residences in NSA WB7, represented by receptors WB7-01 and WB7-02, respectively, and shown on **pages D11 through D33 in Appendix D**. The predicted noise levels at these NAC B receptors for both the Existing Condition and the No-Build Alternative range between 48.0 dB(A) and 54.0 dB(A).

Predicted noise levels for the Preferred Alternative range between 53.8 dB(A) and 60.1 dB(A), with the greatest increase over existing noise conditions being 6.1 dB(A) at receptor WB7-02. The noise level predictions do not meet or exceed the FDOT's 66 dB(A) NAC B criterion, and the project noise levels do not constitute a substantial increase. Therefore, noise abatement consideration for these receptors is not warranted.

4 CONCLUSIONS

Noise levels were predicted at 69 receptor points representing 88 residences and six nonresidential SLUs. For the year 2050 Build condition, noise levels are predicted to meet or exceed the FDOT NAC at twelve residences within the project limits. None of the SLU sites will be impacted by project noise levels, nor will the project cause a substantial noise increase of 15 dB(A) at any residence or SLU.

The twelve impacted residential receptors were evaluated to determine the feasibility and cost-reasonableness of providing noise barriers to reduce traffic noise. The evaluation determined that noise barriers could not provide at least a 5 dB(A) reduction to the impacted residences because they do not meet the criteria of feasibility and/or reasonableness to warrant the construction of a noise barrier. Based on the noise analyses performed to date, there are no feasible solutions available to mitigate the noise impacts at the locations identified in **Section 3.3**.

The project TNM files have been uploaded to the FDOT State-Wide Environmental Project Tracker (SWEPT).

4.1 Statement of Likelihood

Based on the noise analyses performed to date, there are no feasible solutions available to mitigate the noise impacts at the twelve locations identified in **Section 3.3**. Therefore, noise barriers are not recommended for further evaluation as part of this project at this time.

The date that FDOT approves the project's environmental document will be the Date of Public Knowledge. During the project's design phase, a land use review will be conducted to identify all noise sensitive sites that may have received a building permit between the time the PD&E noise study is finalized and prior to the project's Date of Public Knowledge. If the review identifies noise sensitive sites that were permitted prior to the Date of Public Knowledge, these noise sensitive sites will be evaluated for traffic noise impacts and abatement considerations.

5 CONSTRUCTION NOISE AND VIBRATION

Based on the existing land use within the limits of this project, construction of the proposed roadway improvements will have temporary noise and vibration impacts to residences and churches within the project corridor. If noise sensitive land uses develop adjacent to the roadway prior to construction, additional impacts could result. It is anticipated that the application of the FDOT Standard Specifications for Road and Bridge Construction will minimize or eliminate most of the potential construction noise and vibration impacts. However, should unanticipated noise or vibration issues arise during the construction process, the Project Manager, in concert with the District Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

6 COMMUNITY COORDINATION

Coordination with local agencies, officials, and the general public will be accomplished during the PD&E Study. The public will have the opportunity to comment on the proposed project at the planned public meetings.

A copy of the final NSR will be circulated to the appropriate local planning/zoning officials for their use upon approval of the Environmental Document. Planning/zoning officials should reference **Table 6-1** to plan appropriate noise buffer zones.

6.1 Noise Impact Contours

To promote compatibility between land development planning and SR 70, the distance between the edge of the outside travel lane and the point where the roadway-related noise is predicted to meet the FDOT NAC for each activity category was estimated. These estimates are referred to as noise contours and are shown in **Table 6-1**. These estimates provide the general distance at which the traffic noise meets or exceeds the FDOT NAC for each activity type. These contours represent the approximate distance from the nearest edge of pavement to the limits of the area predicted to meet or exceed the NAC in the 2050 Design Year. These contours do not account for any noise shielding provided by structures or vegetation between the receptor site and the proposed travel lanes.

Table 6-1: Noise Abatement Criteria Contours

Roadway Segment	Distance (ft.) ¹		
	Activity Category A [56 dB(A)]	Activity Category B & C [66 dB(A)]	Activity Category E [71 dB(A)]
W. SR 31 to SE Highlands County Line Rd	465'	110'	50'

¹ Distance referenced to the edge of the nearest edge of pavement. Distance does not account for any reduction in noise levels that berms, privacy walls, or intervening structures may provide.

7 REFERENCES

23 C.F.R. Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise", Federal Register, Vol. 75, No. 133, Tuesday, July 13, 2010.

Federal Highway Administration Report FHWA-HEP-06-015, "FHWA Highway Construction Noise Handbook: Final Report," August 2006.

Federal Highway Administration Report FHWA-HEP-10-025, "Highway Traffic Noise: Analysis and Abatement Guidance," December 2011.

Federal Highway Administration Report Number FHWA-HEP-18-065, "Noise Measurement Handbook," June 2018.

Florida Department of Transportation. "Highway Traffic Noise", Part 2, Chapter 18. Project Development and Environment Manual, Florida Department of Transportation, Tallahassee, July 31, 2024.

Florida Department of Transportation "Methodology to Evaluate Highway Traffic Noise at Special Land Uses," December 2024.

Florida Department of Transportation "Standard Specifications for Road and Bridge Construction," 2025.

APPENDICES

APPENDIX A Noise Analysis Traffic Data

APPENDIX B Model Validation Field Sheets

APPENDIX C Predicted Noise Levels

APPENDIX D Project Aerials

Highway Traffic Noise: Traffic Data

Project/Data Information	Highway Traffic Noise: Traffic Data																	
	Project Name	SR 70 PD&E Study W. of SR 31 to SE Highlands County Line Rd.																
	Project Number	451942-1-22-01																
	Condition	Existing																
	Year	2024																
	Source	Traffic volumes taken from the SR 70 PD&E Study, Classification counts were utilized from the closest available station in Florida Traffic Online (Station ID: 040011) for 2024. Classification count with the highest T-Factor was utilized to perform a conservative analysis.																
	Preparer [Traffic Engineer]	HNTB																
	Prepared Date	5/6/2025																
	Notes	Existing Year 2024																
	Roadway Details						Traffic Details									Raw Traffic Data Selection & Off-Peak Calculation		
Traffic Segment Number	Roadway Name	From	To	Roadway Type	Number of Lanes <small>*In 1 direction</small>	LOS C Peak Hour Peak Direction (PHPD)	Demand Hourly Volumes (DHV) Peak Hour Peak Direction (PHPD)	% Autos	% Medium Trucks	% Heavy Trucks	% Buses	% Motorcycles	Standard K-factor	D-factor	Posted Speed (mph)	LOS C vs. DHV Comparison	Peak Direction Volume* <small>*Used on both sides for LOS C</small>	Off-Peak Direction Volume* <small>*DHV only</small>
1	SR 70	W of SR 31	E of Ford Dealer	Arterial	2	2,390	554	91.7%	3.6%	4.6%	0.1%	0.1%	9.0%	55.00%	60	DHV	554	453
2	SR 70	E of Ford Dealer	Blue Head St	Arterial	1	430	520	91.7%	3.6%	4.6%	0.1%	0.1%	9.0%	55.00%	60	LOS C	430	N/A

Highway Traffic Noise: Traffic Data

Project/Data Information	Highway Traffic Noise: Traffic Data																	
	Project Name	SR 70 PD&E Study W. of SR 31 to SE Highlands County Line Rd.																
	Project Number	451942-1-22-01																
	Condition	No-Build																
	Year	2050																
	Source	Traffic volumes taken from the SR 70 PD&E Study, Classification counts were utilized from the closest available station in Florida Traffic Online (Station ID: 040011) for 2024. Classification count with the highest T-Factor was utilized to perform a conservative analysis.																
	Preparer [Traffic Engineer]	HNTB																
	Prepared Date	5/6/2025																
	Notes	Design Year 2050 - No Build																
	Roadway Details						Traffic Details									Raw Traffic Data Selection & Off-Peak Calculation		
Traffic Segment Number	Roadway Name	From	To	Roadway Type	Number of Lanes <small>*In 1 direction</small>	LOS C Peak Hour Peak Direction (PHPD)	Demand Hourly Volumes (DHV) Peak Hour Peak Direction (PHPD)	% Autos	% Medium Trucks	% Heavy Trucks	% Buses	% Motorcycles	Standard K-factor	D-factor	Posted Speed (mph)	LOS C vs. DHV Comparison	Peak Direction Volume* <small>*Used on both sides for LOS C</small>	Off-Peak Direction Volume* <small>*DHV only</small>
1	SR 70	W of SR 31	E of Ford Dealer	Arterial	2	2,390	881	91.7%	3.6%	4.6%	0.1%	0.1%	9.0%	55.00%	60	DHV	881	721
2	SR 70	E of Ford Dealer	Blue Head St	Arterial	1	430	812	91.7%	3.6%	4.6%	0.1%	0.1%	9.0%	55.00%	60	LOS C	430	N/A

Highway Traffic Noise: Traffic Data

Project/Data Information	Highway Traffic Noise: Traffic Data																	
	Project Name	SR 70 PD&E Study W. of SR 31 to SE Highlands County Line Rd.																
	Project Number	451942-1-22-01																
	Condition	Build																
	Year	2050																
	Source	Traffic volumes taken from the SR 70 PD&E Study, Classification counts were utilized from the closest available station in Florida Traffic Online (Station ID: 040011) for 2024. Classification count with the highest T-Factor was utilized to perform a conservative analysis.																
	Preparer [Traffic Engineer]	HNTB																
	Prepared Date	5/6/2025																
	Notes	Design Year 2050 - Build																
	Roadway Details						Traffic Details									Raw Traffic Data Selection & Off-Peak Calculation		
Traffic Segment Number	Roadway Name	From	To	Roadway Type	Number of Lanes <small>*In 1 direction</small>	LOS C Peak Hour Peak Direction (PHPD)	Demand Hourly Volumes (DHV) Peak Hour Peak Direction (PHPD)	% Autos	% Medium Trucks	% Heavy Trucks	% Buses	% Motorcycles	Standard K-factor	D-factor	Posted Speed (mph)	LOS C vs. DHV Comparison	Peak Direction Volume* <small>*Used on both sides for LOS C</small>	Off-Peak Direction Volume* <small>*DHV only</small>
1	SR 70	W of SR 31	E of Ford Dealer	Arterial	2	2,390	1,163	91.7%	3.6%	4.6%	0.1%	0.1%	9.0%	55.00%	60	DHV	1163	952
2	SR 70	E of Ford Dealer	Blue Head St	Arterial	2	2,390	1,079	91.7%	3.6%	4.6%	0.1%	0.1%	9.0%	55.00%	60	DHV	1079	883

Table B-1
Measured Noise Levels and Traffic Data for Validation

Project			SR 70 (W. of SR 31 – SE Highlands Cty Line Rd)						
Date			9/16/24						
Name of Observer(s)			R. Ossi - ETP						
Wind Speed/Direction			4 mph W						
Temperature			88 °						
Humidity			67%						
Cloud Cover			Partly cloudy						
Feet from Edge of Pavement			118’						
X, Y, Z			718047.89; 1045243.065; 65.8’						
Sound Level Meter Model/Serial #			Extech 407780A / Z360539						
Calibration Performed			4/12/2024						
Site #			1						
Repetition	Start Time	Roadway Direction	Cars	Medium Trucks	Heavy Trucks	Motorcycles	Buses	Avg. Speed (mph)	Sound Level dB(A)
1	1:07 PM	EB	15	2	6	0	0	67	64.7
		WB	14	5	8	0	0	67	
2	1:20 PM	EB	15	2	4	0	0	67	64.3
		WB	14	4	6	0	0	67	
3	1:32 PM	EB	14	3	5	0	0	67	65.3
		WB	20	4	7	0	0	67	
Repetition	Notes								
1	Large amount of cicada noise in adjacent trees on both sides of roadway; plane overflight.								
2	Large amount of cicada noise in adjacent trees on both sides of roadway.								
3	Fewer cicadas but still present								

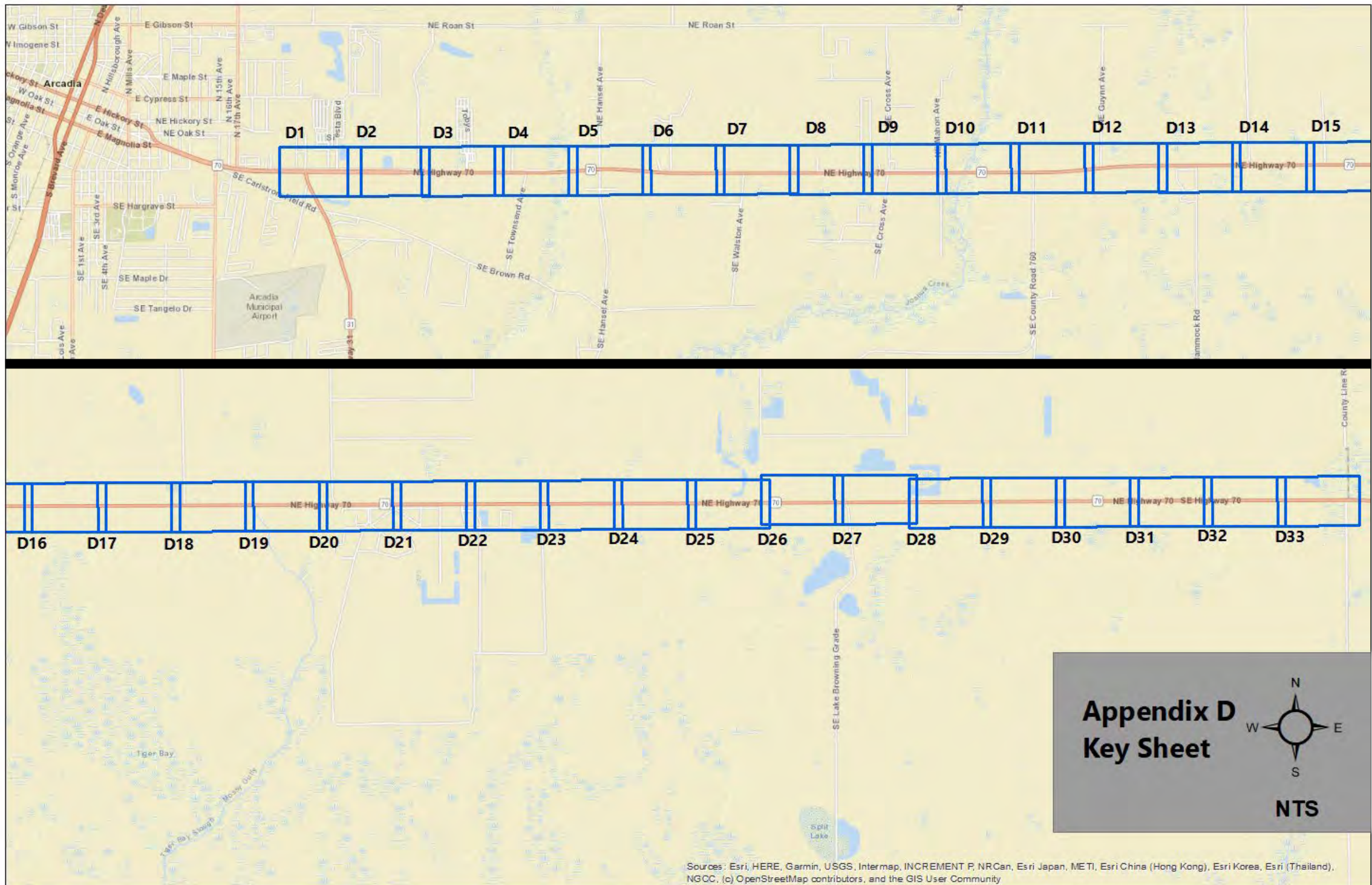
Table B-2
Measured Noise Levels and Traffic Data for Validation

Project			SR 70 (W. of SR 31 – SE Highlands Cty Line Rd)						
Date			9/16/24						
Name of Observer(s)			R. Ossi - ETP						
Wind Speed/Direction			3 mph WNW						
Temperature			86 °						
Humidity			73%						
Cloud Cover			Partly cloudy						
Feet from Edge of Pavement			90’						
X, Y, Z			737511.92; 1045241.28; 64.2’						
Sound Level Meter Model/Serial #			Extech 407780A / Z360539						
Calibration Performed			4/12/2024						
Site #			2						
Repetition	Start Time	Roadway Direction	Cars	Medium Trucks	Heavy Trucks	Motorcycles	Buses	Avg. Speed (mph)	Sound Level dB(A)
1	12:10 PM	EB				0	0	68	68.6
		WB				0	0	68	
2	12:25 PM	EB				0	0	67	70.1
		WB				0	0	67	
3	12:36 PM	EB				0	0	69	67.5
		WB				0	0	69	
Repetition	Notes								
1	Cicada noise in adjacent trees on both sides of roadway.								
2	Cicada noise in adjacent trees on both sides of roadway; WB heavy truck turned onto CR 710								
3	Cicada noise in adjacent trees on both sides of roadway. EB heavy truck turned into nearby driveway causing 4 cars to stop behind it and then accelerate after truck turned.								

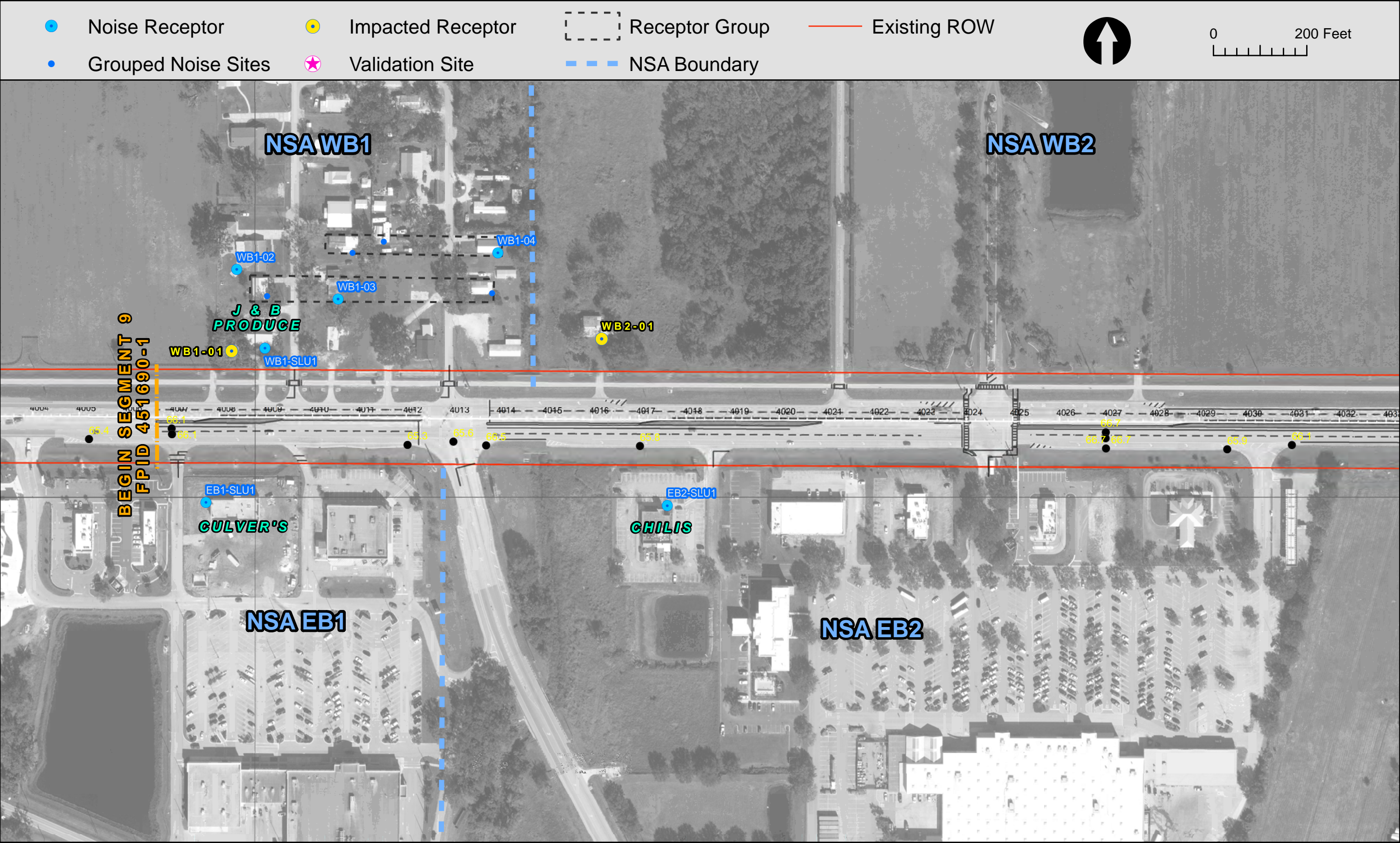
Predicted Noise Levels

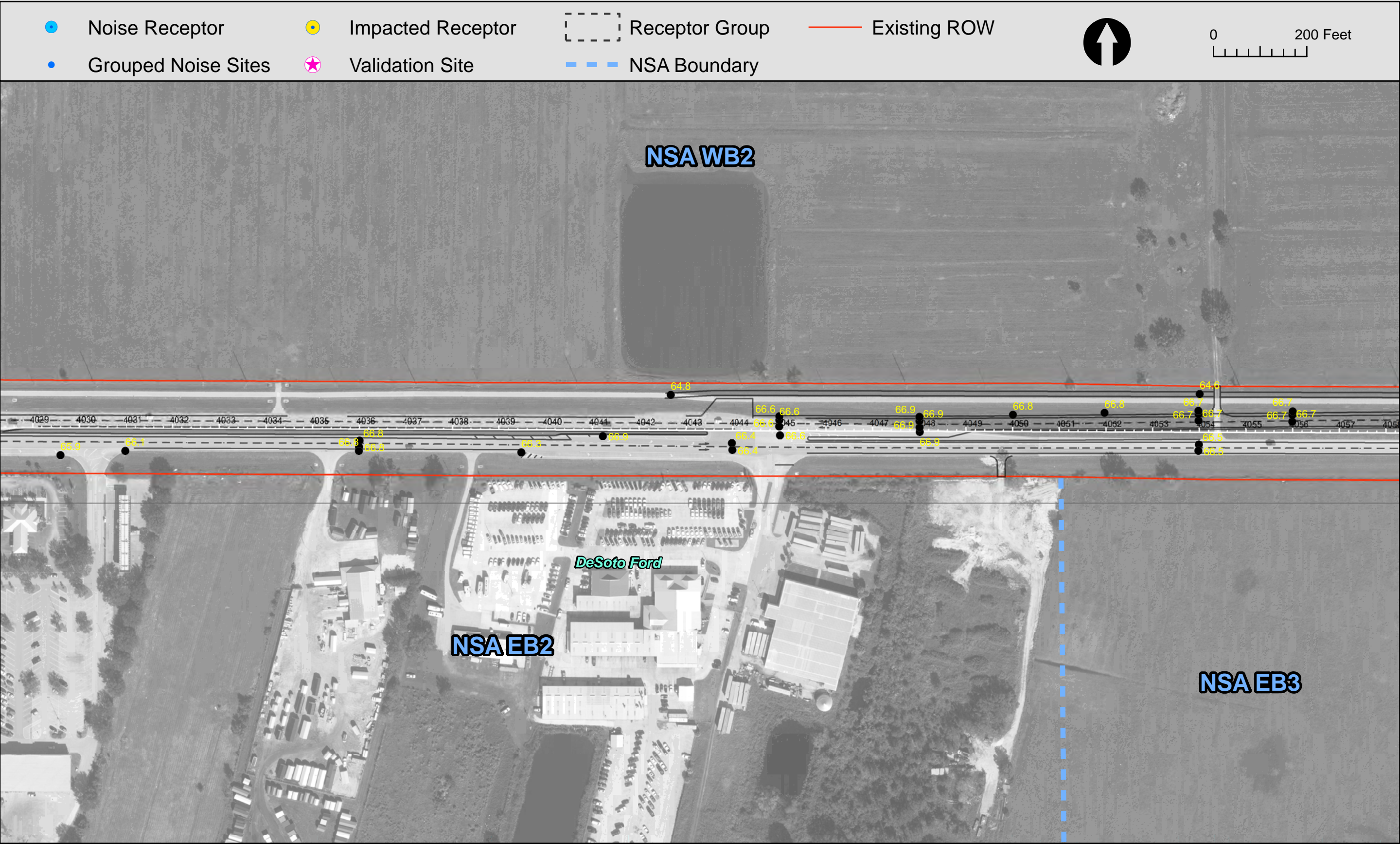
NSA	Receptor Name	No. of Units	NAC	FDOT NAC Criterion (dB(A))	2024 Existing LAeq1h (dB(A))	2050 No-Build LAeq1h (dB(A))	2050 Build LAeq1h (dB(A))	Noise Level Change from Existing	Substantial Increase	Description
XX.X	Meets/Exceeds FDOT NAC									
EB1	EB1-SLU1	1	E	71.0	62.0	64.0	65.9	3.9	No	Culver's outdoor seating
EB2	EB2-SLU1	1	E	71.0	64.7	66.6	68.4	3.7	No	Chili's outdoor seating
EB3	EB3-01	1	B	66.0	56.8	56.8	59.9	3.1	No	S. Townsend Ave Residence
EB3	EB3-02	1	B	66.0	53.1	53.2	56.6	3.5	No	S. Townsend Ave Residence
EB3	EB3-03	1	B	66.0	50.3	50.4	55.0	4.7	No	S. Townsend Ave Residence
EB3	EB3-04	1	B	66.0	47.9	48.0	52.8	4.9	No	S. Townsend Ave Residence
EB4	EB4-01	1	B	66.0	50.1	50.1	55.2	5.1	No	SE Benedict St. Residence
EB5	EB5-01	1	B	66.0	69.8	69.8	71.9	2.1	No	SR 70 Residence
EB5	EB5-02	1	B	66.0	67.3	67.3	70.0	2.7	No	SR 70 Residence
EB5	EB5-03	1	B	66.0	65.1	65.1	67.8	2.7	No	SR 70 Residence
EB5	EB5-04	1	B	66.0	65.1	65.1	67.8	2.7	No	SR 70 Residence
EB5	EB5-05	1	B	66.0	60.0	60.0	62.5	2.5	No	SR 70 Residence
EB5	EB5-06	1	B	66.0	61.9	61.9	64.5	2.6	No	SR 70 Residence
EB5	EB5-07	1	B	66.0	62.3	62.3	65.4	3.1	No	SR 70 Residence
EB5	EB5-08	1	B	66.0	57.4	57.4	60.4	3.0	No	SR 70 Residence
EB5	EB5-09	1	B	66.0	57.2	57.2	60.3	3.1	No	SR 70 Residence
EB5	EB5-10	1	B	66.0	60.7	60.7	63.2	2.5	No	SR 70 Residence
EB5	EB5-11	1	B	66.0	50.4	50.4	54.1	3.7	No	Evangeline Terrace MH Residence
EB5	EB5-12	3	B	66.0	52.6	52.6	56.6	4.0	No	Evangeline Terrace MH Residence
EB5	EB5-13	4	B	66.0	51.7	51.7	56.3	4.6	No	Evangeline Terrace MH Residence
EB6	EB6-01	1	B	66.0	55.8	55.8	59.2	3.4	No	SR 70 Residence
EB6	EB6-02	1	B	66.0	62.9	62.9	66.0	3.1	No	SR 70 Residence
EB6	EB6-03	1	B	66.0	64.7	64.7	67.1	2.4	No	SR 70 Residence
EB6	EB6-04	1	B	66.0	59.5	59.5	63.2	3.7	No	SR 70 Residence
EB7	EB7-01	1	B	66.0	45.4	45.4	50.8	5.4	No	SE Sargent Loop Residence
EB7	EB7-02	1	B	66.0	62.3	62.3	65.0	2.7	No	SR 70 Residence
EB8	EB8-01	2	B	66.0	57.2	57.2	61.3	4.1	No	DeSoto Correctional Staff Housing
EB8	EB8-02	4	B	66.0	53.8	53.8	58.0	4.2	No	DeSoto Correctional Staff Housing
EB8	EB8-03	2	B	66.0	52.3	52.3	56.8	4.5	No	DeSoto Correctional Staff Housing
EB8	EB8-04	2	B	66.0	50.5	50.5	55.8	5.3	No	DeSoto Correctional Staff Housing
EB8	EB8-05	2	B	66.0	51.1	51.1	56.1	5.0	No	DeSoto Correctional Staff Housing
EB8	EB8-06	2	B	66.0	57.6	57.6	61.7	4.1	No	DeSoto Correctional Staff Housing
EB8	EB8-07	6	B	66.0	58.1	58.1	62.0	3.9	No	DeSoto Correctional Staff Housing
EB8	EB8-08	2	B	66.0	58.4	58.4	60.4	2.0	No	DeSoto Correctional Staff Housing
EB8	EB8-09	1	B	66.0	56.4	56.4	58.6	2.2	No	DeSoto Correctional Staff Housing
EB8	EB8-10	2	B	66.0	52.4	52.4	56.5	4.1	No	DeSoto Correctional Staff Housing
EB8	EB8-11	1	B	66.0	49.6	49.6	55.0	5.4	No	DeSoto Correctional Staff Housing
EB8	EB8-12	1	B	66.0	50.8	50.8	55.5	4.7	No	DeSoto Correctional Staff Housing
EB8	EB8-13	1	B	66.0	48.0	48.0	53.4	5.4	No	DeSoto Correctional Staff Housing
EB8	EB8-SLU1	1	C	66.0	52.4	52.4	57.1	4.7	No	DeSoto Correctional Inmate Basketball Ct
WB1	WB1-01	1	B	66.0	64.7	66.6	67.8	3.1	No	SR 70 Residence
WB1	WB1-02	1	B	66.0	57.6	59.5	60.7	3.1	No	SR 70 Residence
WB1	WB1-03	3	B	66.0	59.6	61.5	62.9	3.3	No	SR 70 Residence
WB1	WB1-04	3	B	66.0	57.3	59.2	60.6	3.3	No	SR 70 Residence
WB1	WB1-SLU1	1	E	71.0	64.3	66.3	67.5	3.2	No	J & B Produce outdoor seating
WB2	WB2-01	1	B	66.0	63.4	65.3	66.6	3.2	No	SR 70 Residence
WB2	WB2-02	1	B	66.0	60.7	60.7	66.6	5.9	No	SR 70 Residence
WB2	WB2-SLU1	1	C	66.0	54.2	54.2	58.1	3.9	No	Toby's Encore RV Resort campsite
WB3	WB3-01	1	B	66.0	50.6	50.6	56.1	5.5	No	SR 70 Residence
WB3	WB3-02	1	B	66.0	53.4	53.5	59.3	5.9	No	SR 70 Residence
WB3	WB3-03	1	B	66.0	54.1	54.1	60.0	5.9	No	SR 70 Residence
WB4	WB4-01	1	B	66.0	61.3	61.3	67.1	5.8	No	Church of God Residence
WB4	WB4-02	1	B	66.0	56.4	56.4	62.3	5.9	No	NE Wildwood Ave Residence
WB4	WB4-03	1	B	66.0	51.1	51.2	56.6	5.5	No	SR 70 Residence
WB4	WB4-SLU1	1	C	66.0	51.2	51.1	56.7	5.5	No	Church of God Playground
WB5	WB5-01	1	B	66.0	54.3	54.3	59.8	5.5	No	SR 70 Residence
WB5	WB5-02	1	B	66.0	53.8	53.8	59.3	5.5	No	NE Forest Ave Residence
WB5	WB5-03	2	B	66.0	54.9	54.9	60.8	5.9	No	NE Childress Ave Residence
WB5	WB5-04	1	B	66.0	60.9	60.9	67.4	6.5	No	NE Childress Ave Residence
WB5	WB5-05	1	B	66.0	55.3	55.3	61.4	6.1	No	NE Childress Ave Residence
WB5	WB5-06	2	B	66.0	55.4	55.4	61.8	6.4	No	SR 70 Residence
WB6	WB6-01	1	B	66.0	56.3	56.3	62.8	6.5	No	SR 70 Residence
WB6	WB6-02	1	B	66.0	54.3	54.3	60.4	6.1	No	SR 70 Residence
WB6	WB6-03	1	B	66.0	61.4	61.4	67.6	6.2	No	SR 70 Residence
WB6	WB6-04	1	B	66.0	55.9	55.9	61.2	5.3	No	SR 70 Residence
WB6	WB6-05	1	B	66.0	60.1	60.1	65.8	5.7	No	SR 70 Residence
WB7	WB7-01	1	B	66.0	48.0	48.0	53.8	5.8	No	SR 70 Residence
WB7	WB7-02	1	B	66.0	54.0	54.0	60.1	6.1	No	SR 70 Residence

Noise Study Report Appendix D

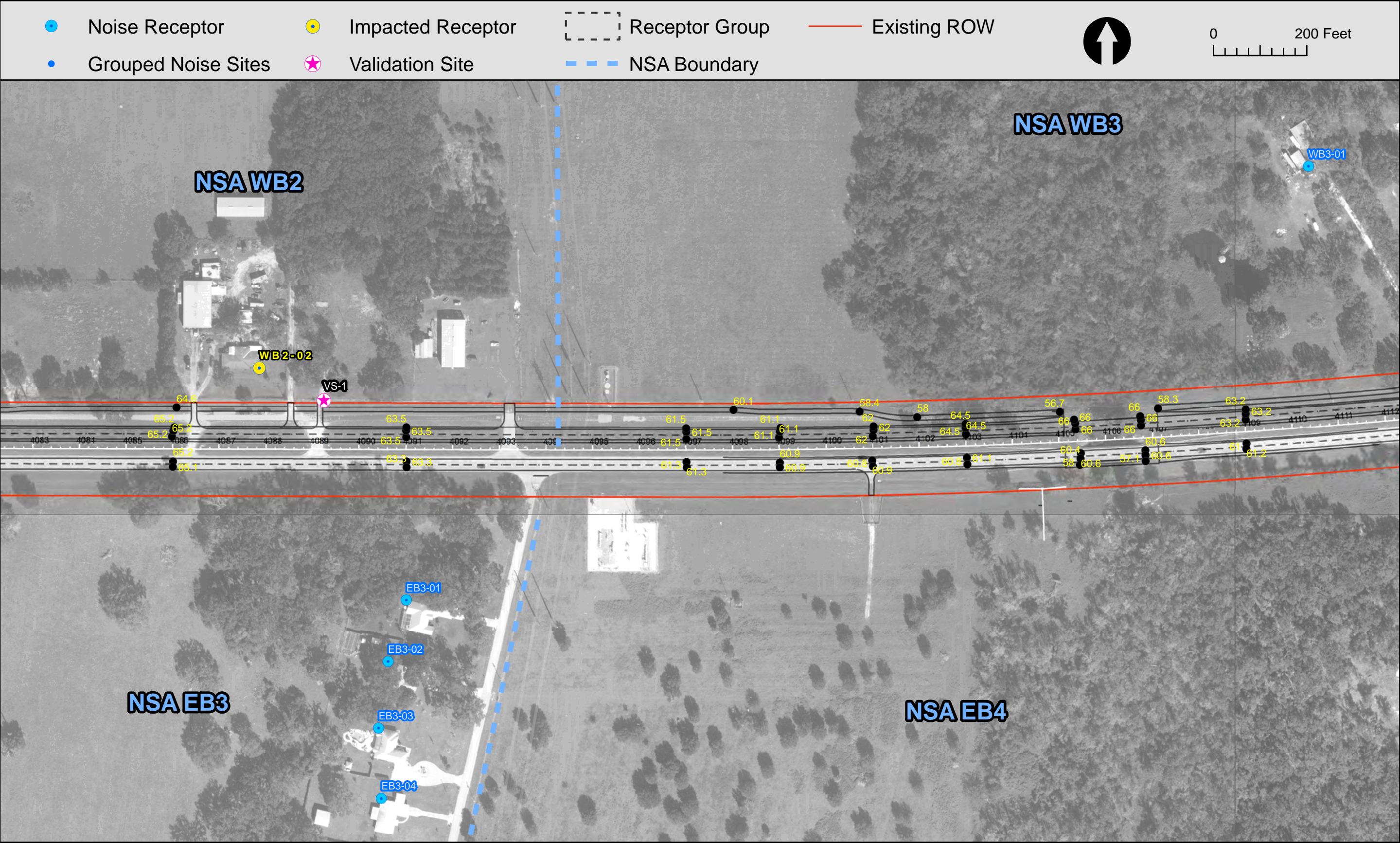


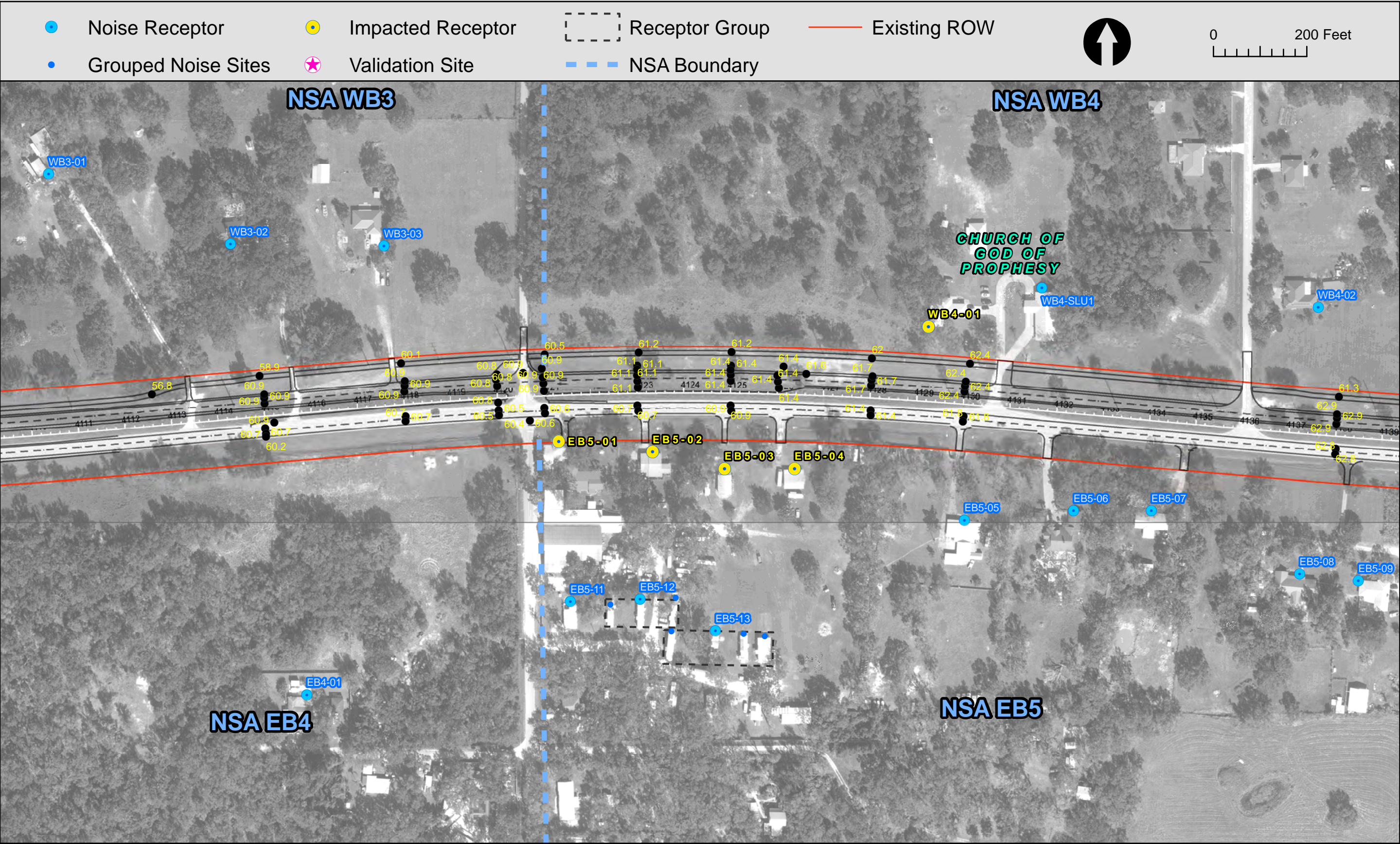
SR 70 from W. of SR 31 to SE Highlands County Line Rd
FPID 451942-1





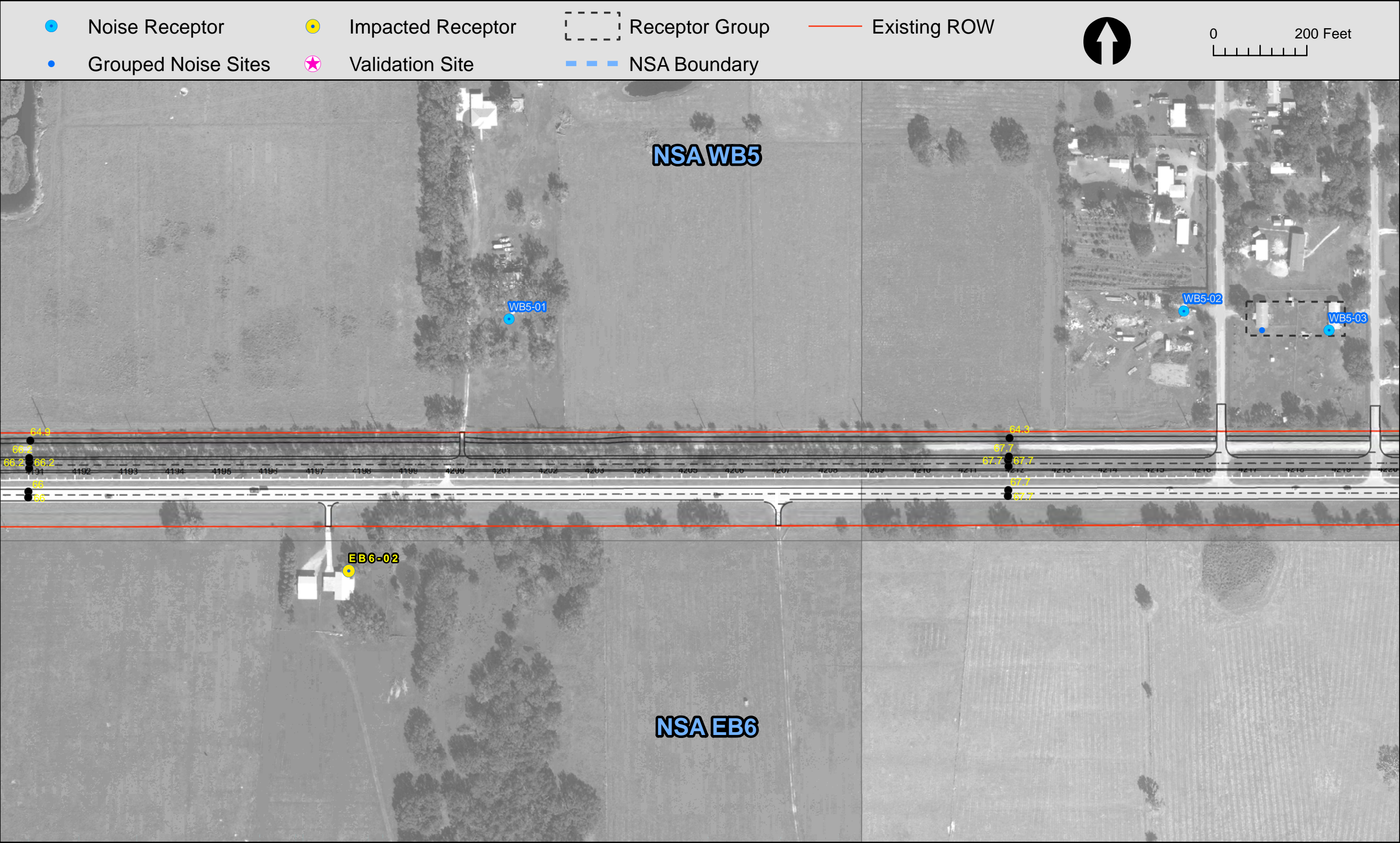




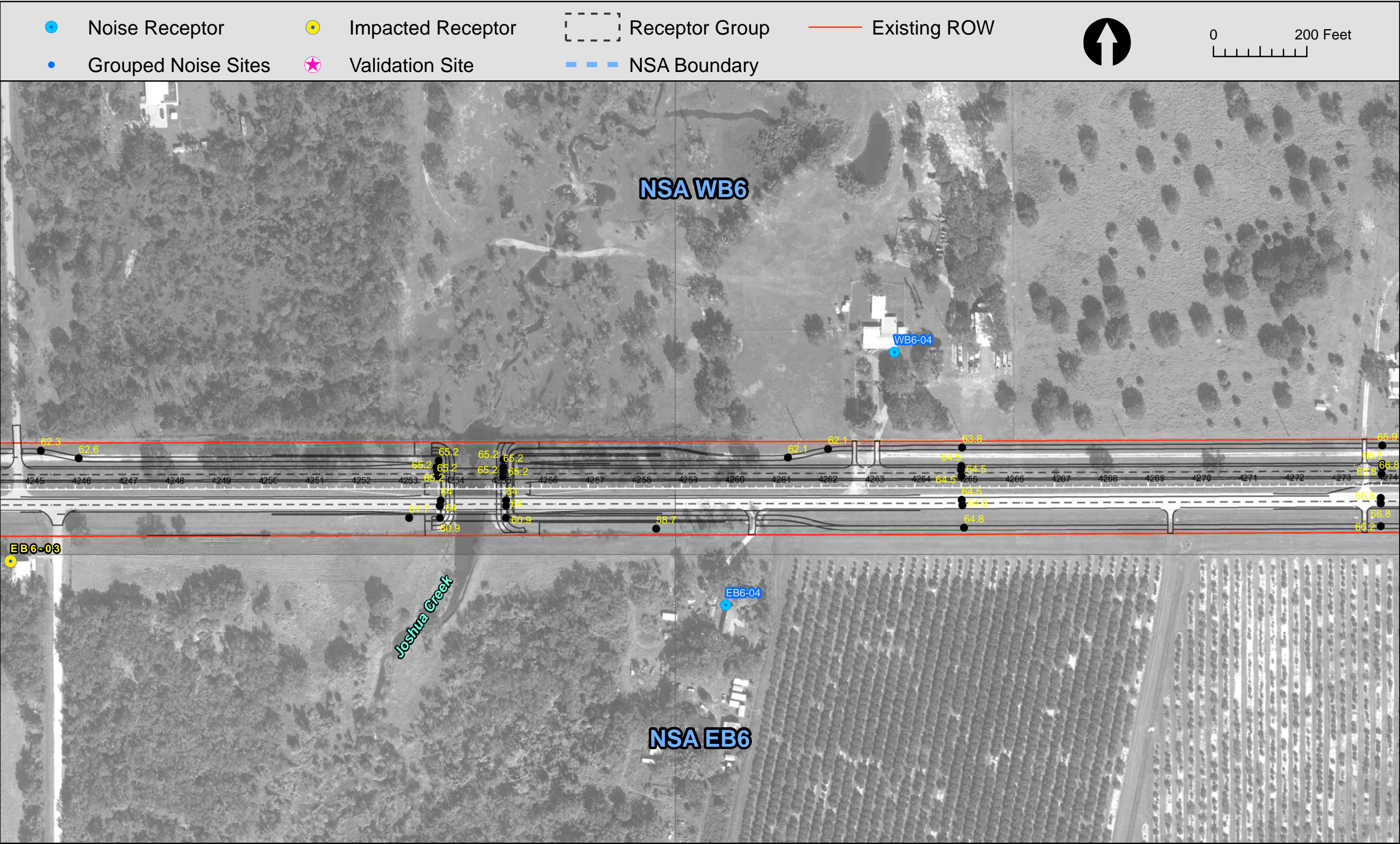


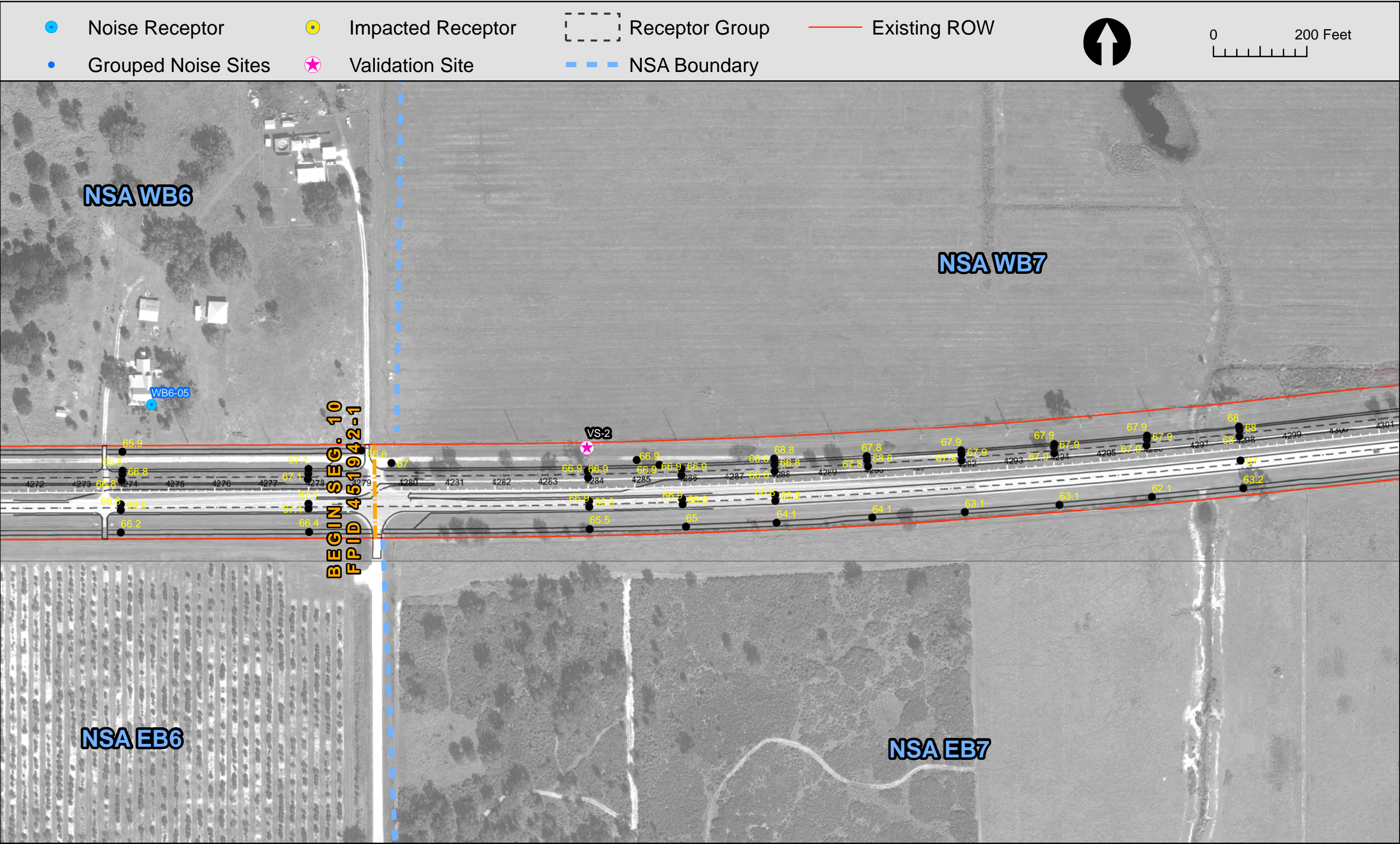




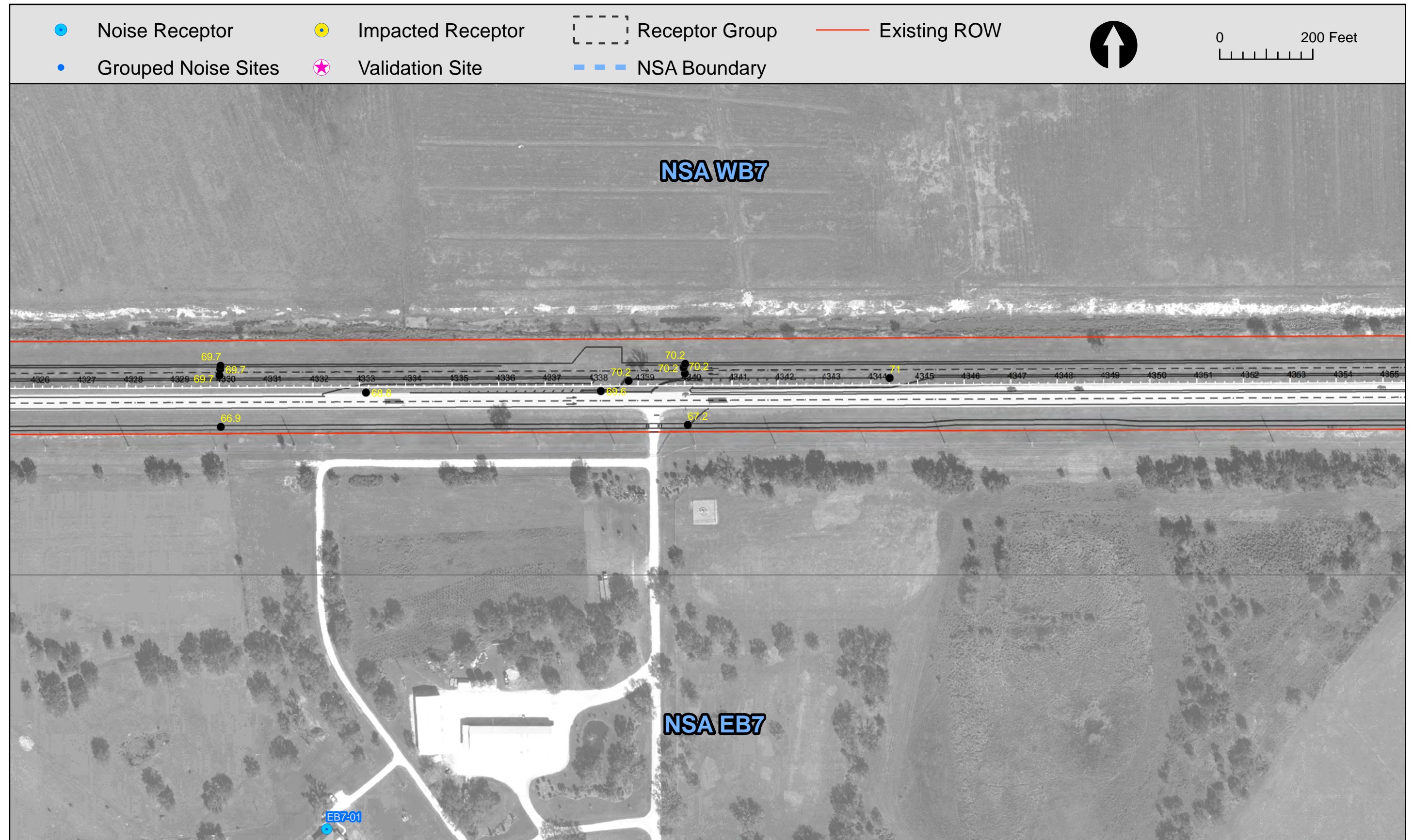




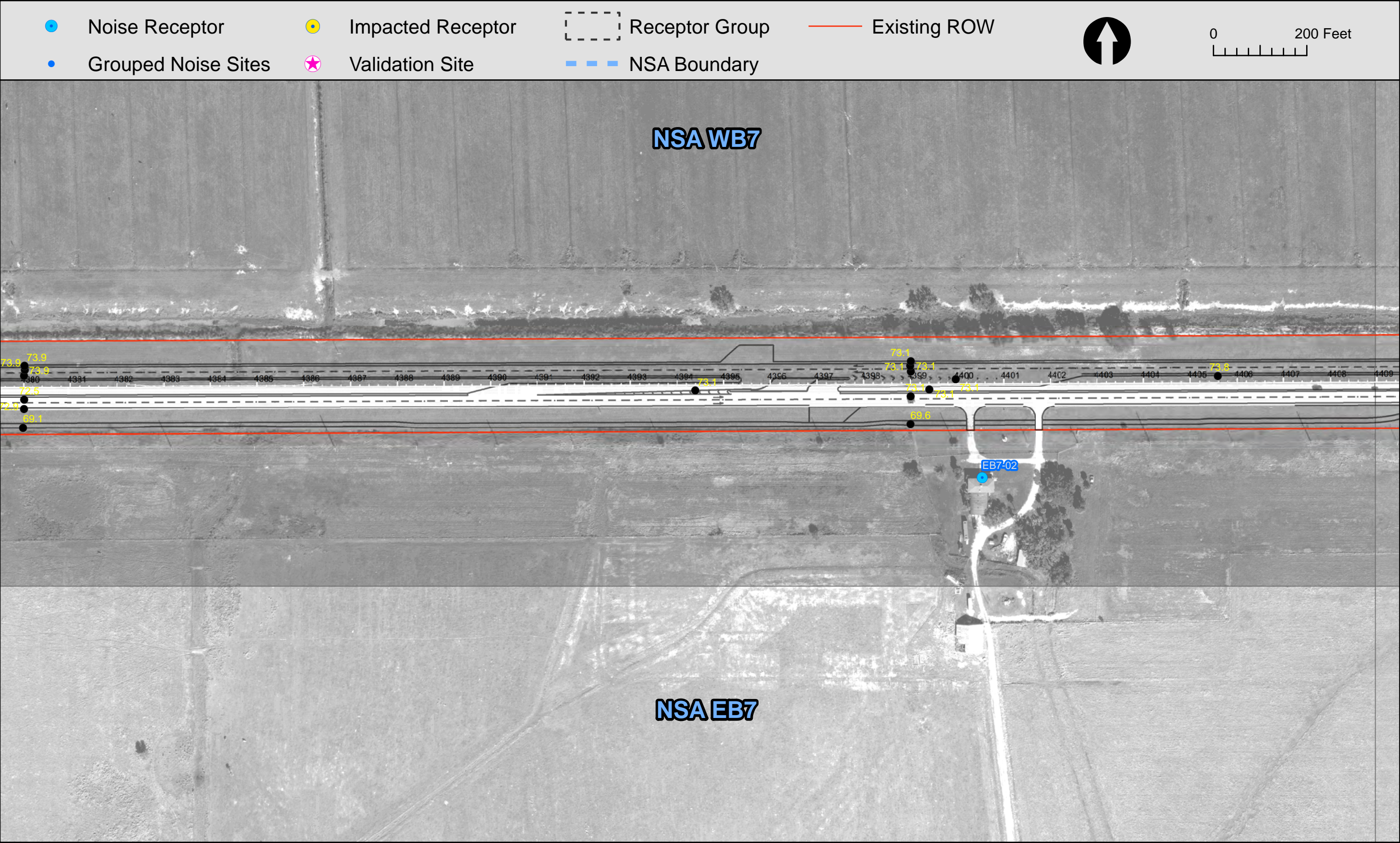


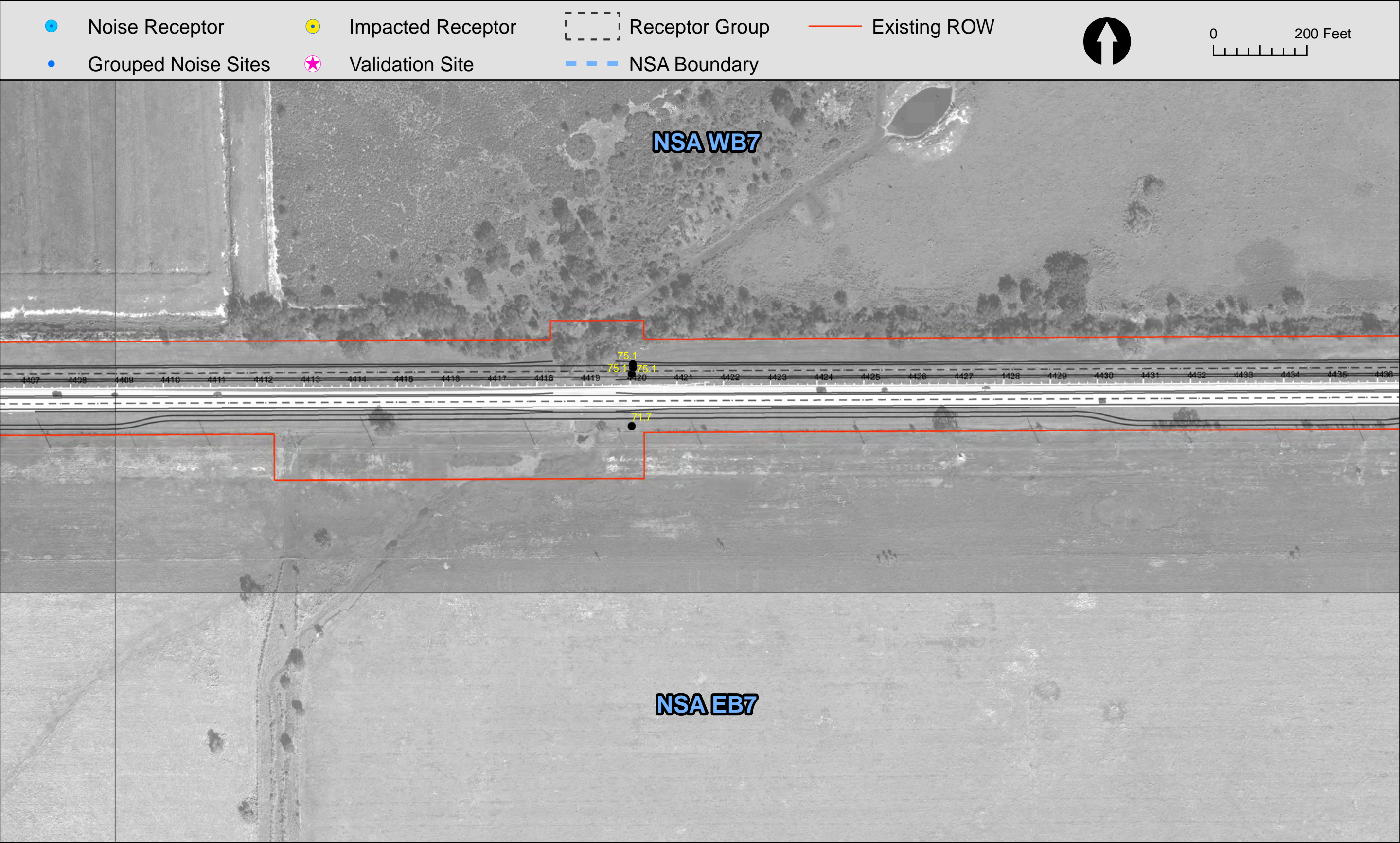


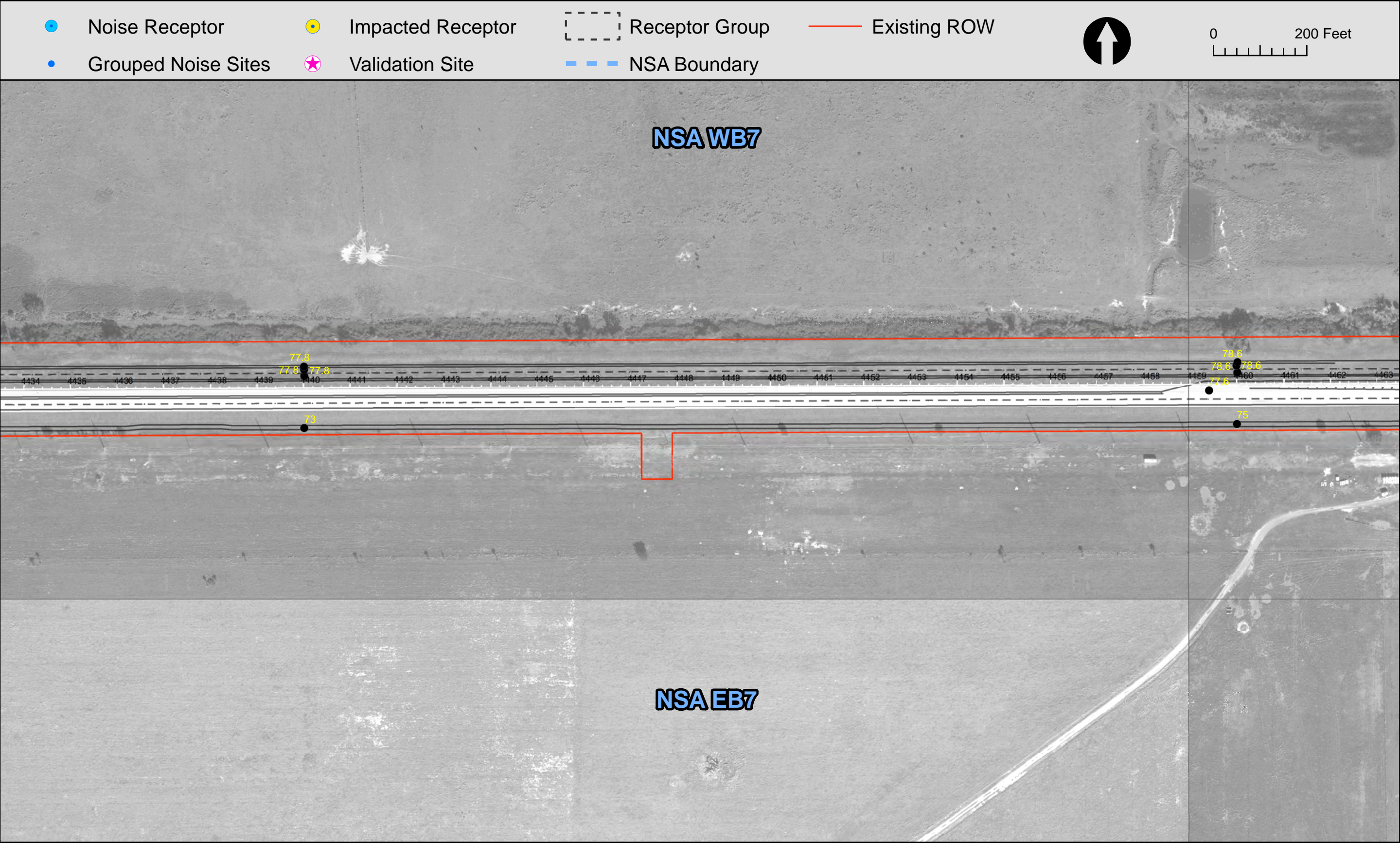








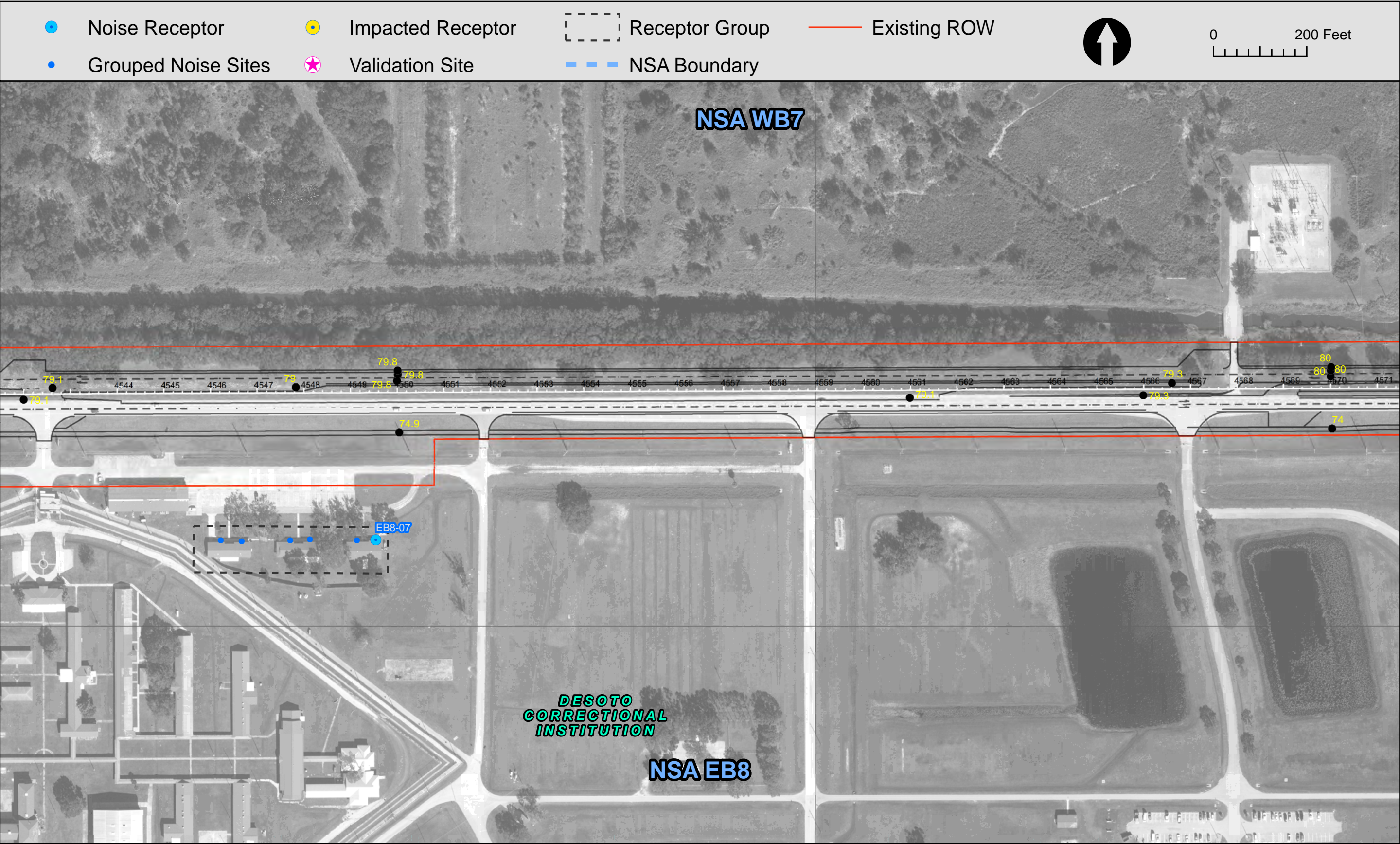


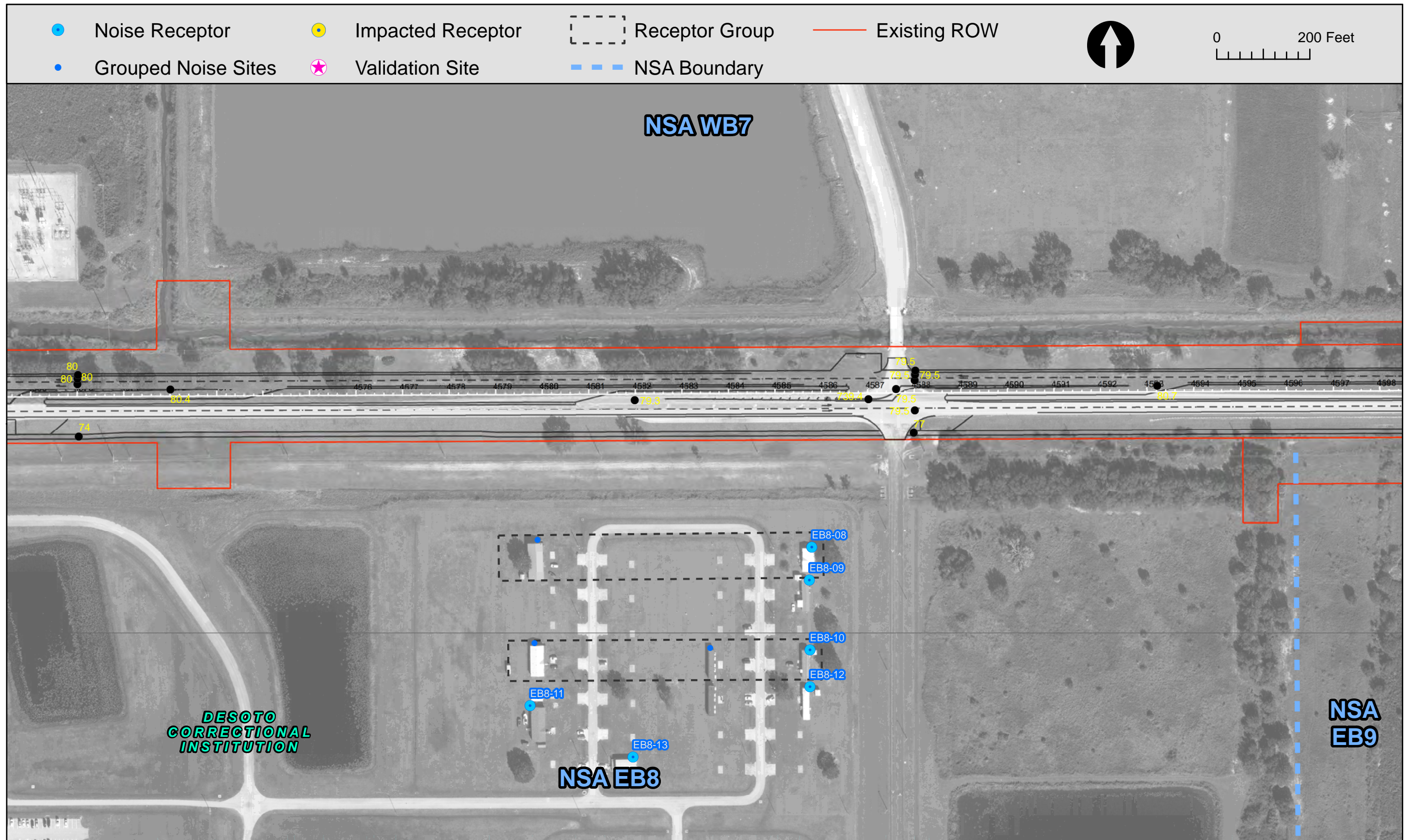


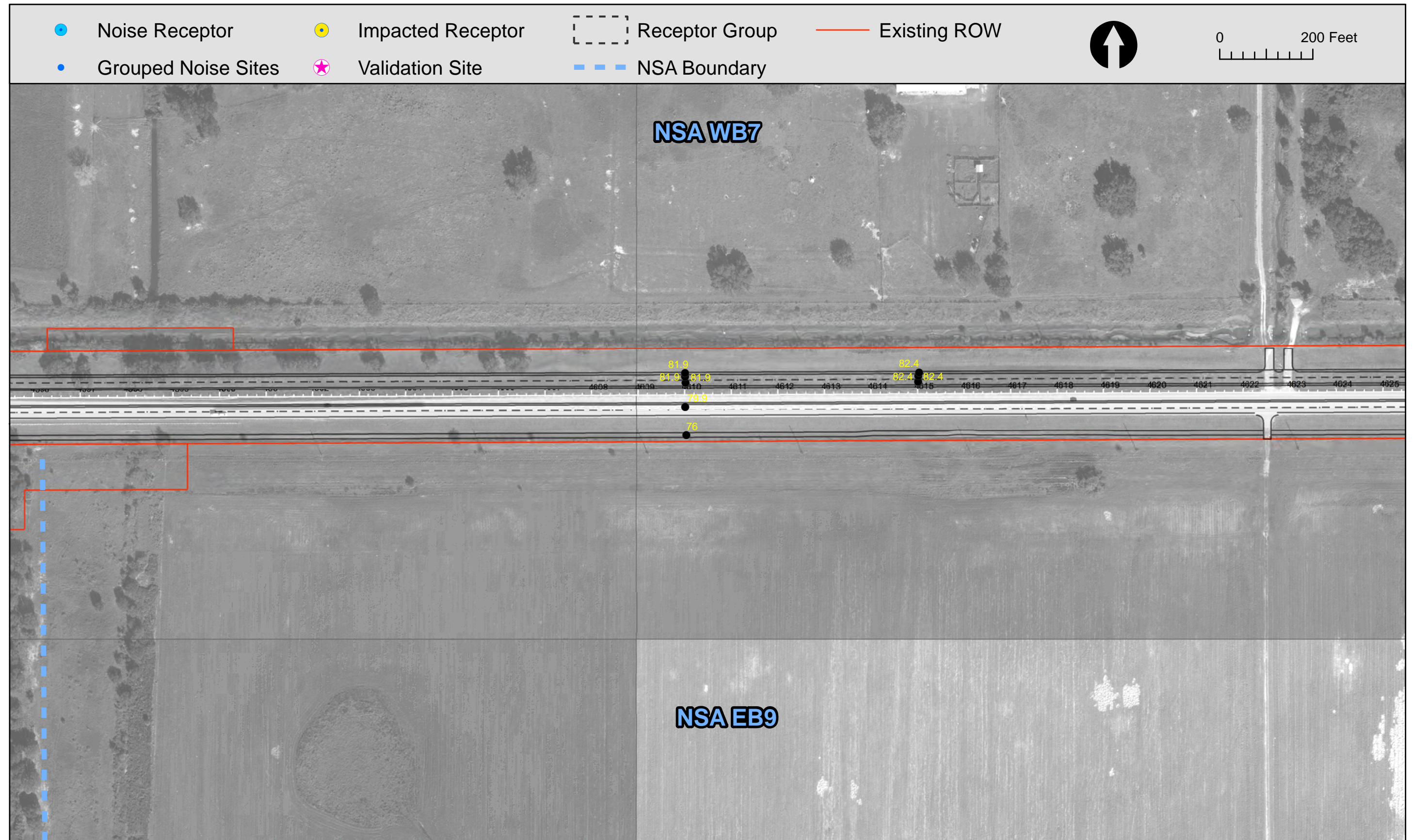


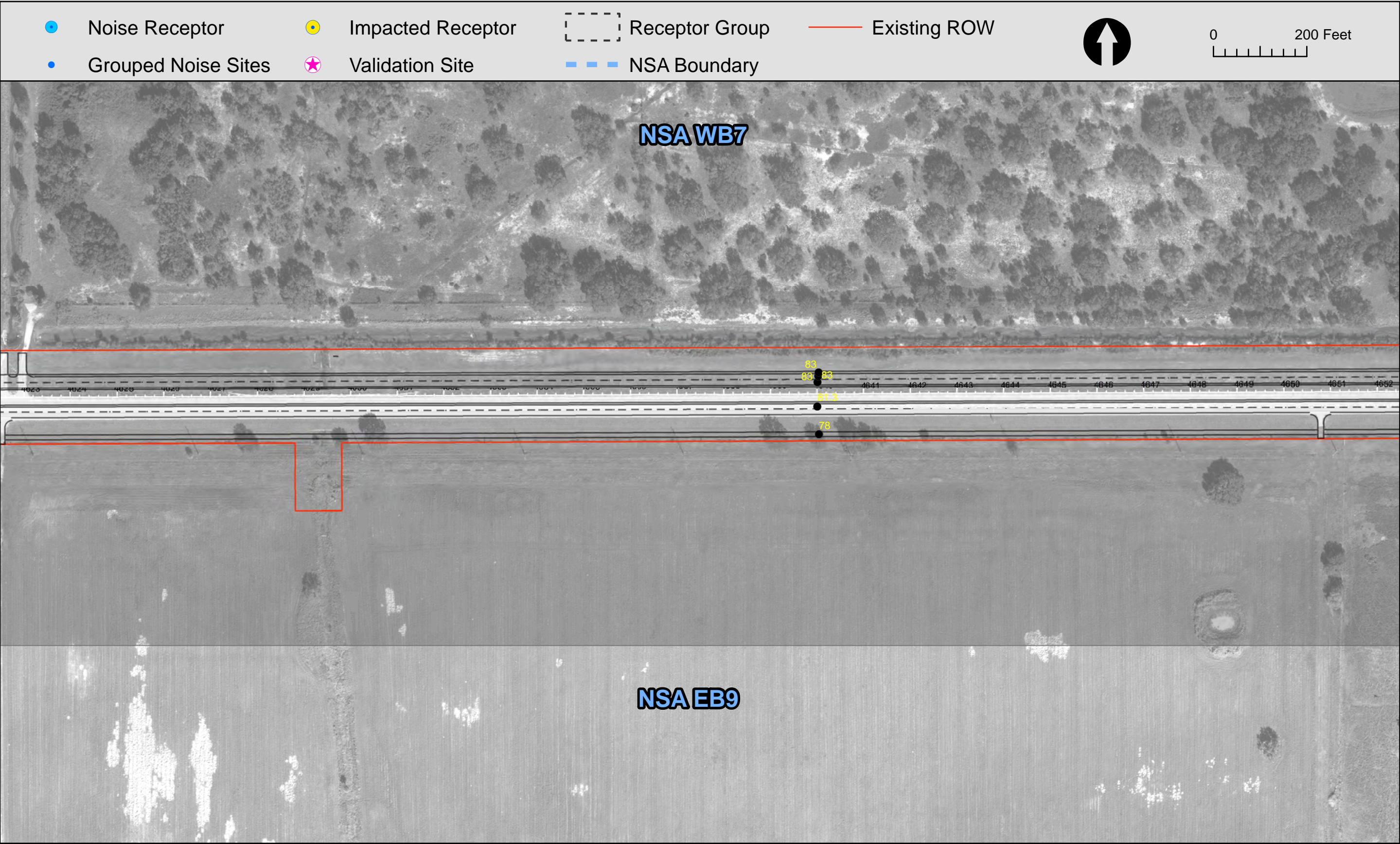


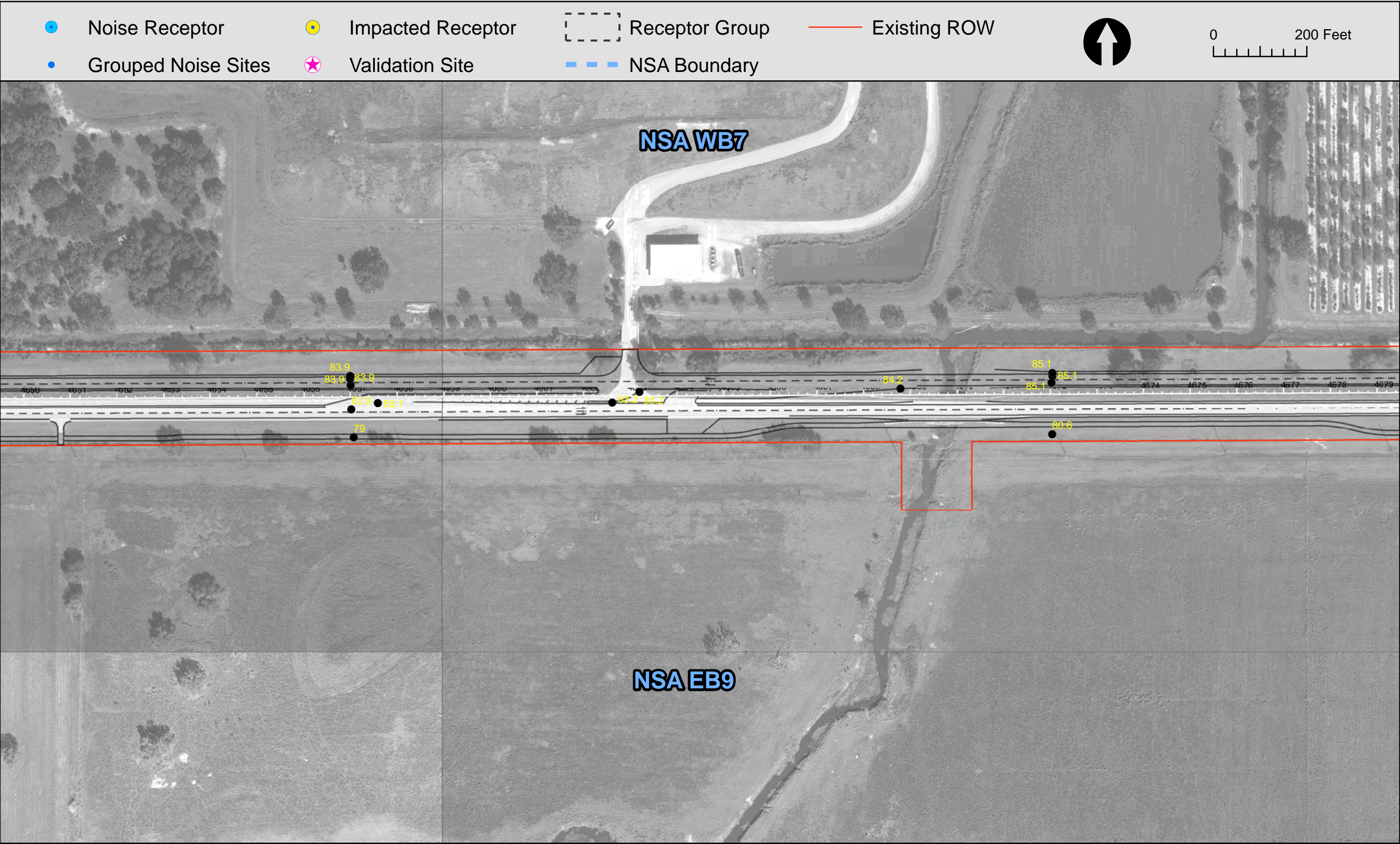


















0200 Feet

SR 70 from W. of SR 31 to SE Highlands County Line Rd

FPID 451942-1

D 28





0200 Feet



