NOISE STUDY REPORT

Florida Department of Transportation

District Seven

US 301 / State Road (SR) 35

Project Development and Environment (PD&E) Study

Limits of Project: South of US 98 to SR 50

Pasco and Hernando Counties, Florida

Financial Management Number: 447536-1-22-01

ETDM Number: 14465

Date: July 2021

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016 and executed by FHWA and FDOT.

Noise Study Report

US 301 / State Road (SR) 35
From South of US 98 to SR 50
Project Development & Environment (PD&E) Study

Work Program Item Segment No. 447536-1
ETDM Project No. 14465
Pasco and Hernando Counties, Florida

Prepared for:

Florida Department of Transportation
District Seven

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EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District 7 conducted a Project Development and Environment (PD&E) study for US Highway 301 (US 301) / State Road (SR) 35 from south of US 98 to SR 50, in Pasco and Hernando counties. The study focuses on widening this section of US 301 from a 2-lane undivided facility to a multi-lane divided facility and includes pedestrian and bicycle accommodations. The study also evaluates issues related to traffic operations, safety, access management, freight movements and transit. The project will improve safety along this segment of US 301 and continue to improve an important freight route for this area.

The PD&E study objectives include: determine proposed typical sections and develop preliminary conceptual design plans for proposed improvements, while minimizing impacts to the environment; consider agency and public comments; and ensure project compliance with all applicable federal and state laws. A Type 2 Categorical Exclusion was prepared as part of this study. The proposed improvements will include construction of stormwater management facility (SMF) and floodplain compensation (FPC) sites. The PD&E study satisfies all applicable requirements, including the National Environmental Policy Act (NEPA), to qualify for federal-aid funding of subsequent development phases (design, right-of-way acquisition, and construction).

Highway traffic noise impact analysis was performed for the project's PD&E Study as required by the FDOT's PD&E Manual, Part 2, Chapter 18 (Highway Traffic Noise, July 1, 2020) and Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772)—Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 13, 2010). This Noise Study Report (NSR) presents the results of the analysis.

Sixty-seven receptors (i.e., discrete representative locations on a property that has a noise sensitive land use) comprised of 64 residences, two places of worship, and the outdoor use area of a bar were evaluated. The results of the highway traffic noise analysis indicate that with the proposed improvements, one of the 64 residences would be impacted however, the impacted residence is currently designated as a relocation for the proposed improvements. Even if the residence isn't acquired, for an abatement measure to be considered feasibly, at least two impacted receptors must be benefited. Because only one receptor is impacted, noise abatement measures would not be considered feasible for the impacted residence.

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SECTION 1 INTRODUCTION

1.1 PROJECT DEVELOPMENT & ENVIRONMENT (PD&E) STUDY PURPOSE

The objective of the PD&E study is to assist the Florida Department of Transportation's (FDOT's) Office of Environmental Management (OEM) in reaching a decision on the type, location, and conceptual design of the necessary improvements for the widening of US Highway 301 (US 301), including stormwater management facility (SMF) and floodplain compensation (FPC) sites. This study documents the need for the improvements as well as the procedures utilized to develop and evaluate various improvements, including elements such as proposed typical sections, preliminary horizontal alignments, and intersection enhancement alternatives.

The PD&E study satisfies all applicable requirements, including the National Environmental Policy Act (NEPA), to qualify for federal-aid funding of subsequent development phases (design, right-of-way acquisition, and construction). This project was screened through the FDOT's Efficient Transportation Decision Making (ETDM) process as ETDM Project No. 14465. The ETDM Programming Screen Summary Report was published on February 22, 2021, containing comments from the Environmental Technical Advisory Team (ETAT) on the project's effects on various natural, physical, and social resources. A Type 2 Categorical Exclusion was prepared as part of this PD&E study.

1.2 PROJECT PURPOSE AND NEED

1.2.1 Purpose

The purpose of the project is to address existing safety issues on US 301, which is a crucial north-south roadway providing an important freight route through Florida as well as much of the East Coast.

1.2.2 Need

US 301, within the project limits, exhibits crash rates that are higher than the statewide average for similar facilities. Improving freight capacity on US 301 is vital to the efficient movement of freight through Florida. This project is needed to address these safety issues and provide a safe parallel alternative freight route to I-75.

1.2.3 System Linkage

US 301 spans from Sarasota, Florida to Delaware and provides an important freight route through Florida as well as the greater Eastern Seaboard. Increasing capacity on US 301 will provide an alternative freight route to I-75 and has the potential to safely accommodate higher truck volumes, thus creating more efficient freight movements in the area and greater region.

1.2.4 Connectivity/Modal Interrelationships

SR 50 (Cortez Boulevard), at the northern terminus of this project, is currently planned for construction to widen the facility to six lanes, including accommodations for bicyclists and pedestrians, to the west of US 98 (McKethan Road) and four lanes to the east of US 98 (McKethan

Road) (FPID #416732-2). The US 301 project will provide connectivity to these SR 50 (Cortez Boulevard) improvements.

1.2.5 Safety

For crash analysis purposes, US 301 was divided into two segments based on facility type. The first segment was US 98 (McKethan Road) to SR 575/CR 575 and the second segment was SR 575/CR 575 to SR 50 (Cortez Boulevard). Between 2014 and 2018 the total number of crashes on US 301 between US 98 and SR 575/CR 575 was 65. The average crash rate for US 301 on this segment was 2.91 which is more than double the statewide average of 1.20. The segment from SR 575/CR 575 to SR 50 (Cortez Boulevard) experienced 41 crashes. The average crash rate for US 301 on this segment was 1.11 and had a crash rate greater than the statewide average of 0.77 for similar facility types.

1.3 PROJECT DESCRIPTION

The project consists of widening US 301 from south of US 98 to SR 50 (Cortez Boulevard) from two to four lanes and is being evaluated for multimodal facilities (pedestrian, bicycle and transit accommodations), various intersection improvements, median modifications, and SMF and FPC sites. It is located in both Pasco and Hernando Counties and is approximately 4.0 miles long. A project location map is provided as **Figure 1-1**. Within the project limits, US 301 is a two-lane, undivided rural facility and is functionally classified as an Urban Principal Arterial - Other for the project area south of SR 575/CR 575 and a Rural Principal Arterial - Other for the project area north of SR 575/CR 575.

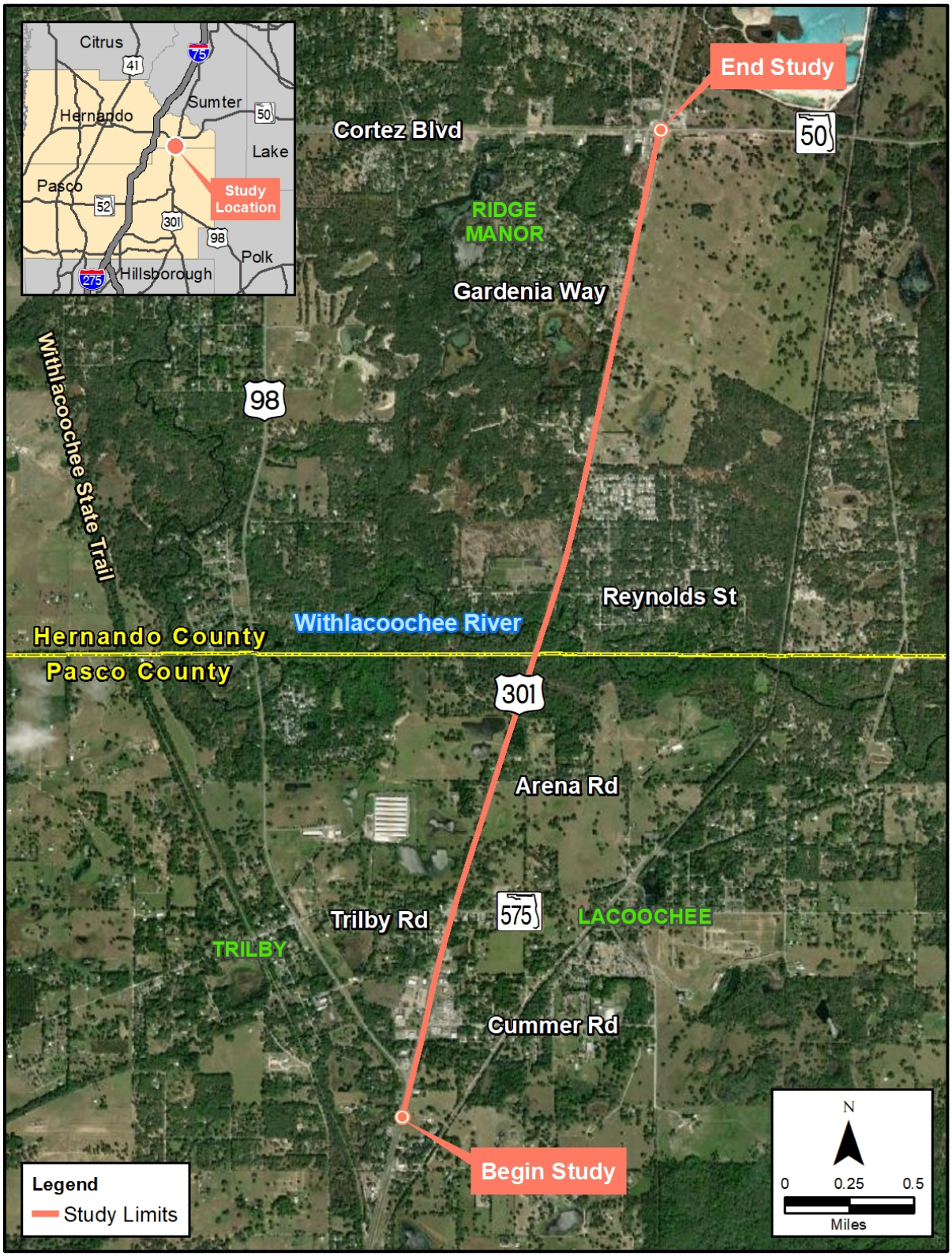

Figure 1-1 Project Location Map

1.4 EXISTING FACILITY AND PROPOSED IMPROVEMENTS

1.4.1 Existing Facility

The existing US 301 from north of US 98 to south of SR 50 is a 2-lane roadway. The roadway is functionally classified by FDOT as an Urban Principal Arterial – Other for the area south of Trilby Road (SR 575/CR 575) and a Rural Principal Arterial – Other for the area north of Trilby Road. In Pasco County, the 2-lane undivided facility has 12-foot travel lanes and 4-foot paved shoulders. In Hernando County, the 2-lane undivided facility has 12-foot travel lanes and 5-foot to 6-foot paved shoulders. The existing right of way (ROW) along the project corridor varies from 100 feet to 173 feet. Just north of the Pasco County line, there is an existing bridge carrying US 301 over the Withlacoochee River, with two 12-foot lanes and 10-foot paved shoulders. There are no sidewalks, multi-use trails, bike lanes or other similar multi-modal facilities within the project corridor, with the exception of 6-foot sidewalks on both sides of US 301, to Cummer Road on the east side and approximately 300 feet south of Cummer Road on the west side. The existing typical section is provided in **Figure 1-2**.

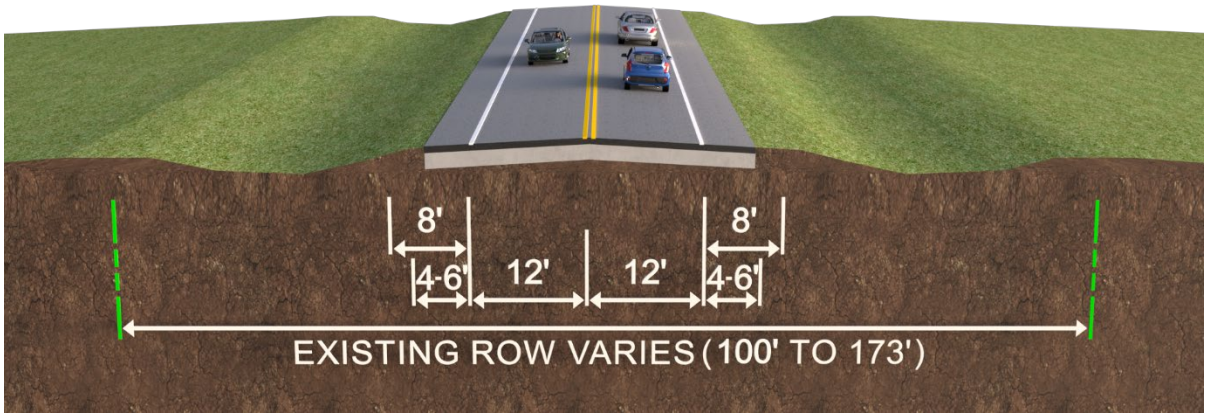

Figure 1-2 Existing Roadway Typical Section

1.4.2 Proposed Improvements

The proposed typical section includes a 4-lane divided rural facility with a 40-foot median. There will be two 12-foot travel lanes in each direction with 10-foot shoulders (5-foot paved). There is a 10-foot wide sidewalk provided for most of the project on the east side of US 301, from Cummer Road in Pasco County to SR 50 in Hernando County. South of Cummer Road, there are existing 6-foot sidewalks on both sides, which will be replaced within this section of US 301. The 6-foot sidewalk on the west side of US 301 will be extended to Trilby Road. The proposed ROW width is approximately 182 feet for the majority of the project corridor. There are two proposed roadway typical sections for the project, described below. These proposed roadway typical sections are being used for three different segments along US 301 within the project study limits, as shown in **Figure 1-3**.

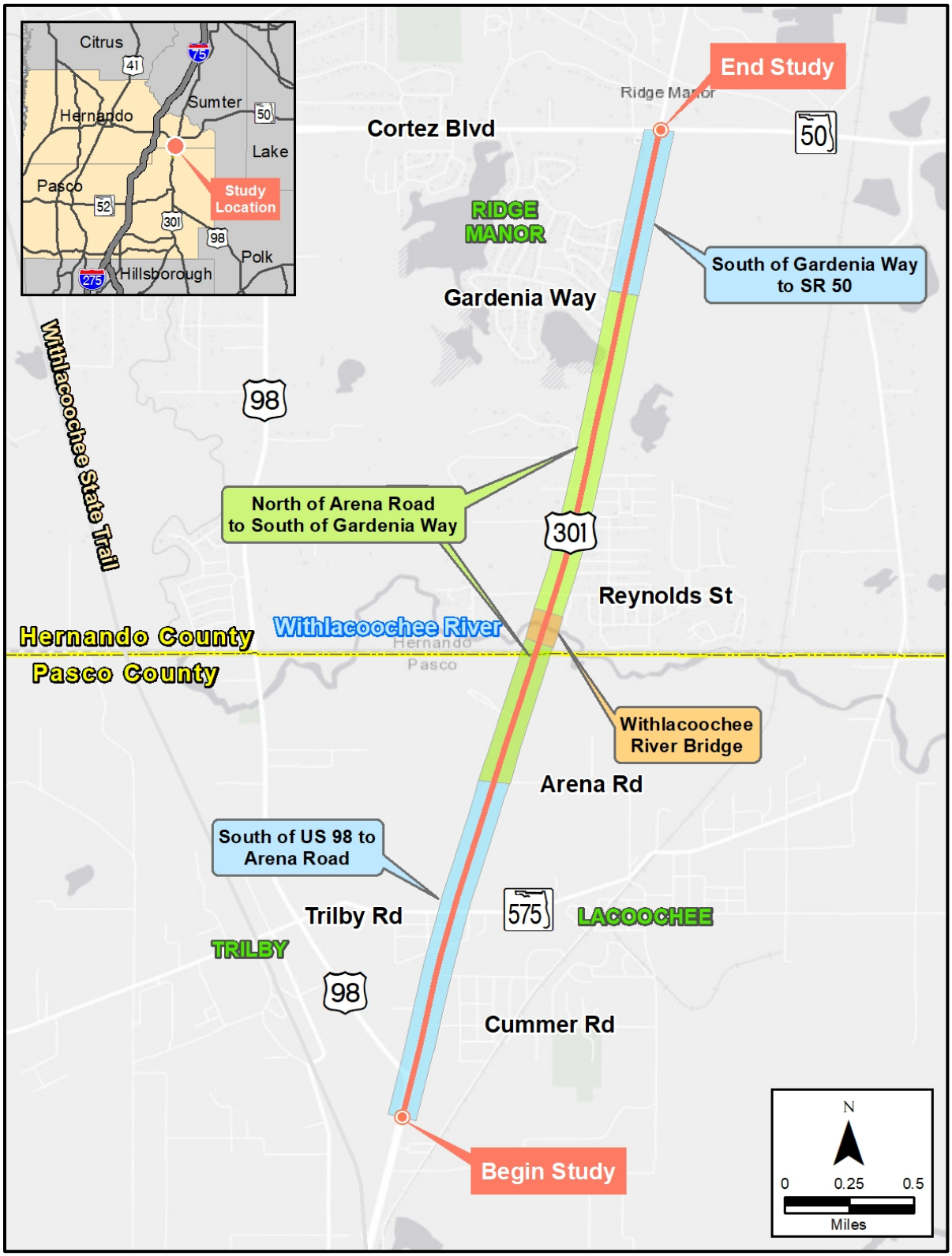

Figure 1-3 Project Segments Map

The proposed typical section from north of US 98 to Arena Road in Pasco County, a distance of approximately 1.4 miles and from south of Gardenia Way to SR 50 in Hernando County, a distance of approximately 0.7 miles, is shown in **Figure 1-4**. This typical section includes widening to the east. The proposed ROW is planned at 182 feet for these sections of US 301.

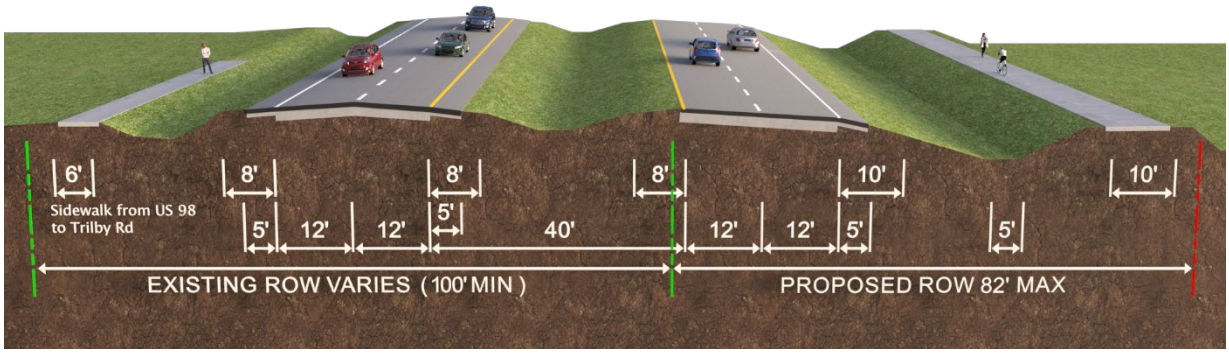

Figure 1-4 Proposed Roadway Typical Section 1
US 98 to Arena Road and
South of Gardenia Way to SR 50

The proposed typical section from north of Arena Road in Pasco County to south of Gardenia Way in Hernando County, a distance of approximately 1.9 miles, is shown in **Figure 1-5**. This typical section includes widening to the west. The proposed ROW is planned at 172 feet for these sections of US 301.

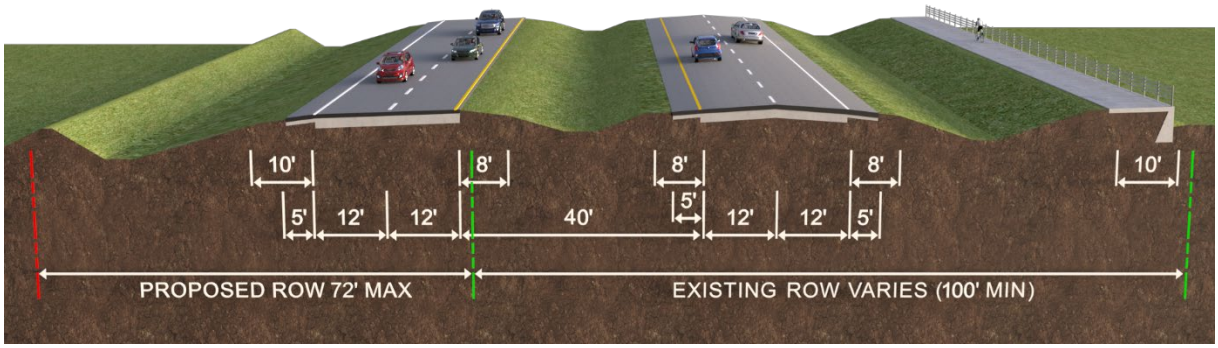

Figure 1-5 Proposed Roadway Typical Section 2
North of Arena Road to South of Gardenia Way

At the Withlacoochee River, a new southbound bridge would be constructed and situated to the west of the existing bridge. This new bridge will have two 12-foot travel lanes with 10-foot shoulders on both sides. A 6-foot sidewalk will be provided for future sidewalk connections along US 301. A new pedestrian/trail bridge will be constructed on the east side of the existing bridge. The ROW width within the area of the bridge will be approximately 220 feet. The bridge typical section is provided in **Figure 1-6**.

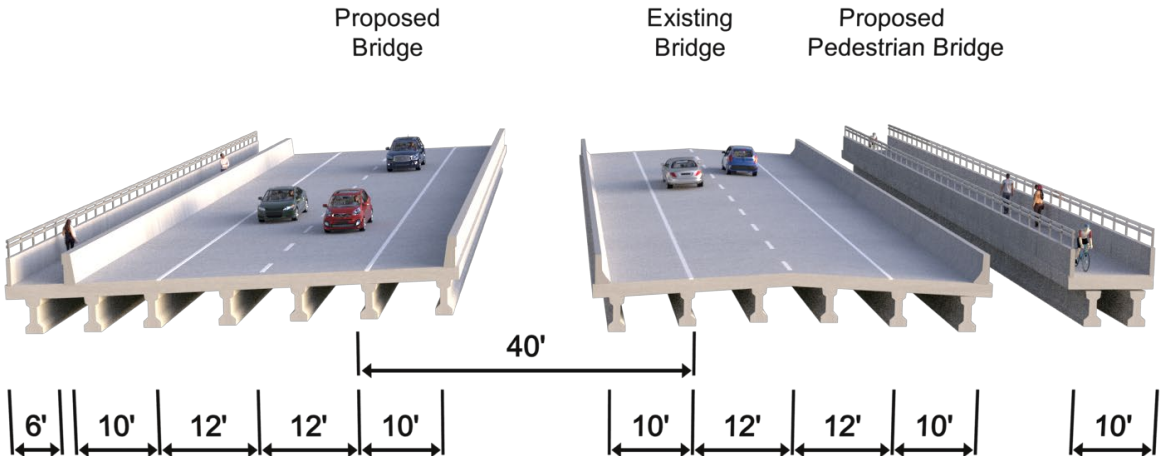

Figure 1-6 Proposed Bridge Typical Section

1.5 REPORT PURPOSE

This Noise Study Report (NSR) presents the assumptions, data, procedures, and results of the highway traffic noise analysis that was conducted to evaluate the proposed improvements to US 301. The objectives of the NSR are to identify land uses within the project corridor for which there are Noise Abatement Criteria (NAC), to predict and evaluate existing and future traffic noise levels with and without the proposed improvements, and to evaluate the need for, and effectiveness of, noise abatement measures. Additional objectives include the evaluation of construction noise and vibration impacts and the identification of traffic noise impact areas for future compatible land use planning adjacent to the project corridor.

SECTION 2 METHODOLOGY

The highway traffic noise analysis for the US 301 project was prepared in accordance with the requirements of the Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) and Part 2, Chapter 18 – Highway Traffic Noise of the FDOT's PD&E Manual. The analysis was performed using the FHWA's Traffic Noise Model (TNM), Version 2.5. Use of the TNM is required when evaluating the potential for highway traffic noise impacts for the design year of a roadway improvement project for which the regulations, policies, and guidelines with 23 CFR 772 and the PD&E Manual are applicable.

For non-residential properties, the methodologies described in the FDOT's *A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations* (July 22, 2009) were used.

2.1 NOISE METRICS

The predicted traffic noise levels presented in this report are expressed in decibels on the "A"-weighted scale (dB(A)). This scale most closely approximates the response characteristics of the human ear to traffic noise. All traffic noise levels are reported as equivalent levels (Leq(h)). Levels reported as Leq(h) are equivalent steady-state sound levels that contain the same acoustic energy as time-varying sound levels over a period of one hour.

2.2 TRAFFIC DATA

Noise levels are low when traffic volumes are low and operating conditions are good [Level of Service (LOS) A or B] and when traffic is so congested that movement is slow (LOS D, E, or F). Generally, the maximum hourly noise level occurs between these two conditions (i.e., LOS C). With the exception of the segment of US 301 from US 98 to Tribly Road for the No-Build Alternative, because the forecast traffic volumes are less than the LOS C volumes, the volumes used in the analysis were the forecast demand volumes. For the No-Build Alternative segment from US 98 to Tribly Road, the LOS C volume was used. Forms that provide the traffic data for the existing (2019) condition, the future (2045) No-Build Alternative, and the future (2045) Build Alternative are provided in **Appendix A** of this NSR.

2.3 NOISE ABATEMENT CRITERIA (NAC)

For the purpose of evaluating traffic noise and considering abatement measures, the FHWA established NAC. As shown in **Table 2-1**, the criteria vary according to a properties' activity category (i.e., land use). For comparative purposes, typical noise levels for common indoor and outdoor activities are provided in **Table 2-2**.

Table 2-1 FHWA/FDOT Noise Abatement Criteria

Activity Category	Description of Activity Category	Activity Leq(h)[1]	
		FHWA	FDOT
A	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.	57 (Exterior)	56 (Exterior)
B[2]	Residential	67 (Exterior)	66 (Exterior)
C[2]	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, schools, television studios, trails and trail crossings.	67 (Exterior)	66 (Exterior)
D	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools and television studios.	52 (Interior)	51 (Interior)
E[2]	Hotels, motels, offices, restaurants/bars and other developed lands, properties or activities not included in A-D or F.	72 (Exterior)	71 (Exterior)
F	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical) and warehousing.	--	--
G	Undeveloped lands that are not permitted.	--	--

Sources: Table 1 of 23 CFR Part 772 and Table 18.1 of Chapter 18 of the FDOT's PD&E Manual (dated 1-14-19).

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

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

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

Table 2-2 Typical Noise Levels

Common Outdoor Activities	Noise Level dB(A)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area daytime		
Gas lawnmower at 100 feet	**70**	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	**60**	
		Large business office
Quiet urban daytime	**50**	Dishwasher in next room
		Theater, large conference room
Quiet urban nighttime	**40**	(background)
Quiet suburban nighttime		
	30	Library
		Bedroom at night, concert hall
Quiet rural nighttime		(background)
	20	
		Broadcast/recording studio
	10	
	0	

Source: California Dept. of Transportation Technical Noise Supplement, Sept. 2013, Page 2-20.

FHWA regulations also state that a traffic noise impact is predicted to occur when predicted traffic noise levels with a proposed improvement are considered substantial when compared to existing levels. The FDOT considers a substantial increase to occur when traffic noise levels are predicted to increase 15 dB(A) or more above existing conditions as a direct result of a transportation improvement project.

2.4 NOISE ABATEMENT MEASURES

When traffic noise impacts are predicted, noise abatement measures are considered for the impacted properties and the feasibility and reasonableness of providing an abatement measure are considered. Feasibility factors are related to the acoustical and engineering properties of an abatement measure

while reasonableness factors relate to the social, economic and environmental properties of a measure. The following subsections of this NSR present and discuss four potential methods of abating traffic noise impacts.

To be considered a potential abatement measure, a measure must meet the following requirements:

- Minimum Noise Reduction Requirement – The measure must provide at least a 5 dB(A) reduction in traffic noise for two or more impacted receptors and provide at least a 7 dB(A) reduction (i.e., the FDOT's noise reduction design goal) for at least one impacted receptor. Receptors for which the reduction is predicted to be at least 5 dB(A) are considered benefited by an abatement measure.
- Cost Effective Requirement –An abatement measure cannot cost more than $42,000 per benefited receptor. For special land uses (e.g., the outdoor area of a restaurant/bar), the cost should not be more than $995,935 per person-hour per square foot (dollars/person-ft^2).

2.4.1 Traffic Management

Some types of traffic management reduce noise levels. For example, trucks can be prohibited from certain streets and roads, or be permitted to only use certain streets and roads during daylight hours. The timing of traffic lights can also be changed to smooth out the flow of traffic and eliminate the need for frequent stops and starts. Reducing a roadway's speed limit also reduces traffic noise.

2.4.2 Alignment Modifications

Modifying the horizontal and/or vertical alignment of a roadway can be an effective traffic noise mitigation measure. When the horizontal alignment is shifted (i.e., moved) away from a noise sensitive property or when the vertical alignment is shifted below (i.e., placing the roadway below the elevation of a noise sensitive land use) or above a noise sensitive property, traffic noise levels have the potential to be reduced.

2.4.3 Buffer Zones

Providing a buffer between a roadway and noise sensitive land uses is an abatement measure that can minimize/eliminate noise impacts. To abate traffic noise at an existing land use for which there are NAC, the property would be acquired to create a buffer zone. Buffer zones can also be used to eliminate the potential for new noise sensitive land uses to be impacted by traffic noise. For this purpose, and to encourage use of this abatement measure through local land use planning, noise contours have been developed and are further discussed in **Section 4.0** of this NSR.

2.4.4 Noise Barriers

The most common type of noise abatement measure is construction of a noise barrier. Noise barriers have the potential to reduce traffic noise levels by blocking the sound path between the motor vehicles on the roadway (the source) and the noise sensitive land uses adjacent to the roadway.

To effectively reduce traffic noise, a noise barrier must be relatively long, continuous (without intermittent openings) and sufficiently tall.

If the results of the analysis indicate that a noise barrier would provide the required reduction in traffic noise at a cost at or below the cost-effective limit (using a materials and labor unit cost of $30 per square foot), additional feasibility factors are then considered. These feasibility factors relate to barrier design and construction (i.e., given site-specific details, can a barrier be constructed), safety, access to and from adjacent properties, ROW requirements, maintenance and impacts on utilities and drainage. The viewpoint of the impacted property owners (and renters if applicable) who may, or may not, desire a noise barrier, is also a factor that is considered when evaluating noise barriers as an abatement measure.

SECTION 3 TRAFFIC NOISE ANALYSIS

3.1 EVALUATED RECEPTORS

The locations of the receptors evaluated for the US 301 improvements are shown on aerials in **Appendix B**. Sixty-seven receptors, comprised of 64 residences, two places of worship, and the outdoor use area of a bar. Notably, a motel located just outside of the project limits (the Ridge Manor Motel) was evaluated as part of the intersection improvements approved under WPI Segment No. 416732-2 (described in Section 1.3) and therefore was not evaluated in this noise analysis.

Following FHWA/FDOT guidance, the residences were evaluated as Activity Category "B" [i.e., abatement considered at a predicted traffic noise level of 66 dB(A)]. The places of worship do not have areas of exterior use. Therefore, these properties were evaluated as Activity Category "D" [i.e., abatement considered at a predicted traffic noise level of 51 dB(A)]. The outdoor use area of the bar was evaluated as Activity Category "E" [i.e., abatement considered at a predicted traffic noise level of 71 dB(A)].

3.2 MEASURED NOISE LEVELS

Both existing and future noise levels (with and without the proposed improvements) were modeled using the TNM. To verify the accuracy of the predictions, the computer model was validated using field measured noise levels adjacent to the project corridor. Traffic data including motor vehicle volumes, vehicle mix, vehicle speeds and meteorological conditions were recorded during each measurement period.

The field measurements were conducted in accordance with the FHWA's *Measurement of Highway-Related Noise*. The measurements were obtained using a Larson Davis Model 831, Type II integrating sound level meter (SLM) and a Larson Davis LxT. The SLMs were calibrated before and after the measurement period with a Larson Davis CAL200 calibrator.

The recorded traffic data were used as input for the TNM to determine if, given the topography and site conditions of the area, the computer model could "recreate" the measured levels with the existing roadway. Following FDOT guidelines, a noise prediction model is considered within the accepted level of accuracy if the measured and predicted noise levels are within a tolerance standard of 3 dB(A).

Table 3-1 presents the field measurements and the validation results. As shown, the ability of the model to predict noise levels within the FDOT limits of plus or minus 3 dB(A) for the project was confirmed. Documentation in support of the validation is provided in **Appendix C** of this NSR.

Table 3-1 Validation Data

Location	Site	Measurement Period	Modeled (dB(A))	Measured (dB(A))	Difference
US 301 - adjacent to St. Anne Catholic Church	Row 1	1	66.8	65.7	1.1
		2	68.3	67.6	0.7
		3	67.7	66.5	1.2
	Row 2	1	62.3	59.8	2.5
		2	64.2	61.3	2.9
		3	62.9	60.0	2.9

3.3 PREDICTED TRAFFIC NOISE LEVELS

Table 3-2 presents the results of the traffic noise analysis for the proposed improvements. As shown, with the existing (2019) conditions, traffic noise is predicted to range from 36.3 to 64.5 dB(A). In the future year (2045) with the No-Build Alternative, traffic noise is predicted to range from 39.4 to 67.3 dB(A). In the future with the Build Alternative, traffic is predicted to range from 38.5 to 67.9 dB(A) with one of the evaluated receptors, a residence, predicted to be impacted by traffic noise that would exceed the NAC. Traffic noise is not predicted to increase substantially at any of the evaluated receptors.

Table 3-2 Traffic Noise Analysis Results

Receptor ID	Description of Activity Category	Activity Category	FDOT NAC	Existing (2019)	No-Build (2045)	Build (2045)	Increase over Existing	Approaches, Meets, or Exceeds the NAC?
N1	Place of Worship	D	51	42.2	45.3	45.8	3.6	—
N2	Residential	B	66	52.0	55.1	59.4	7.4	—
N3	Residential	B	66	54.5	57.5	63.2	8.7	—
N4	Residential	B	66	48.9	51.9	54.3	5.4	—
N5	Residential	B	66	55.7	58.8	64.5	8.8	—
N6	Residential	B	66	52.0	55.2	60.9	8.9	—
N7	Residential	B	66	54.4	57.6	56.7	2.3	—
N8	Residential	B	66	51.1	54.3	54.3	3.2	—
N9	Residential	B	66	49.5	52.7	53.5	4.0	—
N10	Residential	B	66	49.9	53.1	53.7	3.8	—
N11	Residential	B	66	52.4	55.6	54.9	2.5	—
N12	Residential	B	66	55.3	58.5	57.4	2.1	—
N13	Residential	B	66	53.0	56.2	55.3	2.3	—
N14	Residential	B	66	56.5	59.7	58.3	1.8	—
N15	Residential	B	66	56.9	60.1	59.1	2.2	—
N16	Residential	B	66	57.1	60.3	59.2	2.1	—
N17	Residential	B	66	61.4	64.6	64.6	3.2	—

Receptor ID	Description of Activity Category	Activity Category	FDOT NAC	Existing (2019)	No-Build (2045)	Build (2045)	Increase over Existing	Approaches, Meets, or Exceeds the NAC?
N18	Residential	B	66	58.4	61.6	61.8	3.4	—
N19	Residential	B	66	61.7	64.9	64.7	3.0	—
N20	Residential	B	66	57.0	60.2	59.3	2.3	—
N21	Residential	B	66	52.2	55.4	54.6	2.4	—
N22	Residential	B	66	50.8	54.0	53.6	2.8	—
N23	Residential	B	66	51.7	54.8	54.1	2.4	—
N24	Residential	B	66	52.2	55.3	54.4	2.2	—
N25	Residential	B	66	51.5	54.7	54.0	2.5	—
N26	Residential	B	66	52.9	56.1	54.9	2.0	—
N27	Residential	B	66	54.0	57.1	55.9	1.9	—
N28	Residential	B	66	55.3	58.5	57.4	2.1	—
N29	Residential	B	66	56.3	59.5	58.2	1.9	—
S1	Residential	B	66	50.1	52.9	54.0	3.9	—
S2	Residential	B	66	51.6	54.4	55.8	4.2	—
S3	Residential	B	66	53.3	56.1	58.0	4.7	—
S4	Residential	B	66	51.7	54.1	55.9	4.2	—
S5	Residential	B	66	56.8	59.3	61.6	4.8	—
S6	Residential	B	66	51.0	53.6	54.3	3.3	—
S7	Residential	B	66	52.7	55.3	56.1	3.4	—
S8	Residential	B	66	55.8	58.4	59.4	3.6	—
S9	Residential	B	66	63.2	66.4	65.8	2.6	—
S10	Residential	B	66	61.0	64.2	63.3	2.3	—
S11	Place of Worship	D	51	36.3	64.4	38.5	2.2	—
S12	Residential	B	66	64.1	67.3	65.8	1.7	—
S13	Residential	B	66	62.1	65.2	64.6	2.5	—
S14	Residential	B	66	62.6	65.8	65.5	2.9	—
S15[1]	Residential	B	66	60.5	63.7	67.9	7.4	Yes
S16	Residential	B	66	56.2	59.3	60.5	4.3	—
S17	Residential	B	66	53.9	57.1	57.9	4.0	—
S18	Residential	B	66	51.2	54.4	54.6	3.4	—
S19	Residential	B	66	58.2	61.4	63.4	5.2	—
S20	Residential	B	66	50.8	54.0	54.4	3.6	—
S21	Residential	B	66	48.7	51.9	52.4	3.7	—
S22	Residential	B	66	50.2	53.4	54.4	4.2	—
S23	Residential	B	66	52.4	55.6	54.3	1.9	—

Receptor ID	Description of Activity Category	Activity Category	FDOT NAC	Existing (2019)	No-Build (2045)	Build (2045)	Increase over Existing	Approaches, Meets, or Exceeds the NAC?
S24	Residential	B	66	51.7	54.9	53.6	1.9	—
S25	Residential	B	66	49.6	52.8	52.1	2.5	—
S26	Residential	B	66	49.9	53.1	52.1	2.2	—
S27	Residential	B	66	52.6	55.7	54.1	1.5	—
S28	Residential	B	66	50.7	53.9	52.6	1.9	—
S29	Residential	B	66	52.0	55.2	53.7	1.7	—
S30	Residential	B	66	51.8	55.0	53.5	1.7	—
S31	Residential	B	66	51.7	54.9	53.5	1.8	—
S32	Residential	B	66	51.5	54.7	53.7	2.2	—
S33	Residential	B	66	51.3	54.4	53.6	2.3	—
S34	Residential	B	66	49.8	53.0	52.5	2.7	—
S35	Residential	B	66	49.7	52.9	52.6	2.9	—
S36	Residential	B	66	49.6	52.8	52.5	2.9	—
S37	Residential	B	66	50.3	53.5	53.3	3.0	—
S38	Bar	E	71	59.5	62.7	62.8	3.3	—

[1] Potential residential relocation.

3.4 ABATEMENT CONSIDERATIONS

As previously stated, when traffic noise impacts are predicted, noise abatement measures are considered for the impacted properties. The results of the analysis for the US 301 improvements indicates that one receptor, representing a residence, is predicted to be impacted in the project's design year. Because the impacted residence has been designated as a relocation in order to construct the proposed improvements, noise abatement measures were not considered for the residence. Additionally, as stated in **Section 2.4** above, to be considered feasible, an abatement measure must benefit at least two impacted receptors. Since only one receptor is impacted, even if the residence remains, noise abatement measures would not be considered feasible.

SECTION 4 NOISE CONTOURS

Land uses such as residences are considered incompatible with highway noise levels that approach, meet, or exceed the NAC. To reduce the possibility of new traffic noise-related impacts, noise level contours were developed for the future improved roadway facility. These contours delineate the extent of the predicted traffic noise impact area from the improved roadway's edge-of-travel lane for each of the FHWA/FDOT land use Activity Categories (**Table 2-1**). **Table 4-1** provides the distance from the edge-of-travel lane at which traffic noise levels are predicted to be 56 dB(A)—the NAC for land uses classified as Activity Category A, to 66 dB(A)—the NAC for land uses classified as Activity Category B and C, and to 71 dB(A)—the NAC for land uses classified as Activity Category E.

Table 4-1 Noise Contours

US 301 Roadway Segment	Distance from Improved Roadway's Edge-of-Travel Lane (ft)		
	Activity Category A 56 dB(A)	Activity Category B/C 66 dB(A)	Activity Category E 71 dB(A)
South of US 98	375	130	60
US 98 to Trilby Road	240	65	25
Trilby Road to SR 50	260	75	30

SECTION 5 CONSTRUCTION NOISE AND VIBRATIONS

Some land uses adjacent to US 301 are identified on the FDOT listing of noise- and vibration-sensitive sites (e.g., residential use). Construction of the proposed roadway improvements is not expected to have a significant noise or vibration effect. Additionally, the application of the *FDOT Standard Specifications for Road and Bridge Construction* may minimize or eliminate potential issues. Should unanticipated noise or vibration issues arise during the construction process, the Project Engineer, in coordination with the District Noise Specialist and the Contractor, will investigate additional methods of controlling these impacts.

SECTION 6 COMMUNITY COORDINATION

A public hearing for the PD&E was held on June 24, 2021. This public hearing was conducted to give interested persons an opportunity to express their views concerning the conceptual design, and social, economic, and environmental effects of the proposed improvements. No public comments specific to noise were received at or following the public hearing; however, two comments were received prior the public hearing through the project website and by phone call. These comments will be addressed further during the design phase once a detailed analysis for this project has been completed. Although no noise barriers are proposed, additional public coordination specific to potential noise barriers may be conducted during this time.

SECTION 7 REFERENCES

FHWA. U.S. Department of Transportation. July 13, 2010. Title 23 CFR, Part 772. Procedures for Abatement of Highway Traffic Noise and Construction Noise.

FHWA. February 2004. Traffic Noise Model, Version 2.5.

FHWA. December 2011. Highway Traffic Noise: Analysis and Abatement Guidance.

FHWA. June 1, 2018. Noise Measurement Handbook. FHWA-HEP-18-065.

FDOT. January 2014. Final Noise Study Report. SR 50 (Cortez Blvd) PD&E Study. SR 50 from Lockhart Road to US 301 (SR 35/Treiman Blvd), Hernando County, FL. WPI Segment No. 416732-2.

FDOT. July 1, 2017. Plans Preparation Manual, Volume 1, Chapter 32 – Noise Walls and Perimeter Walls.

FDOT. July 1, 2020. Project Development and Environment Manual, Part 2, Chapter 18 – Highway Traffic Noise.

FDOT. January 2021. Standard Specifications for Road and Bridge Construction.

California Department of Transportation. September 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol.

APPENDICES

Appendix A Traffic Data

Appendix B Project Aerials

Appendix C Validation Documentation

APPENDIX A

Traffic Data

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

TRAFFIC DATA FOR NOISE STUDIES

Project:	US Hwy 301 from South of US 98 to SR 50/Cortez Blvd	Date:	3/24/2021
Federal Aid Number(s):	447536-1-22-01	Prepared By:	American (LH)
Segment Description:	US 301 - South of US 98		

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	4		Lanes:	4		Lanes:	4	
Year:	2019		Year:	2045		Year:	2045	
ADT: LOS (C)	34,000		ADT: LOS (C)	34,000		ADT: LOS (C)	34,000	
Demand	15,860		Demand	32,860		Demand	32,860	
Speed:	55	mph	Speed:	55	mph	Speed:	55	mph
	89	kmh		89	kmh		89	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	57.0	%	D=	57.0	%	D=	57.0	%
T=	13.0	% for 24 hrs.	T=	13.0	% for 24 hrs.	T=	13.0	% for 24 hrs.
T=	7.0	% Design hr	T=	7.0	% Design hr	T=	7.0	% Design hr
4.0	% Medium Trucks DHV		4.0	% Medium Trucks DHV		4.0	% Medium Trucks DHV	
1.0	% Heavy Trucks DHV		1.0	% Heavy Trucks DHV		1.0	% Heavy Trucks DHV	
0.8	% Buses DHV		0.8	% Buses DHV		0.8	% Buses DHV	
1.2	% Motorcycles DHV		1.2	% Motorcycles DHV		1.2	% Motorcycles DHV	

STAMINA/TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		Demand	No-Build (Design Year) Model:		Demand	Build (Design Year) Model:		Demand
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	1622	Southbound:	Autos	1622	Southbound:	Autos	1622
	Med Trucks	70		Med Trucks	70		Med Trucks	70
	Hvy Trucks	17		Hvy Trucks	17		Hvy Trucks	17
	Buses	14		Buses	14		Buses	14
	Motorcycles	21		Motorcycles	21		Motorcycles	21
Northbound:	Autos	1224	Northbound:	Autos	1224	Northbound:	Autos	1224
	Med Trucks	53		Med Trucks	53		Med Trucks	53
	Hvy Trucks	13		Hvy Trucks	13		Hvy Trucks	13
	Buses	11		Buses	11		Buses	11
	Motorcycles	16		Motorcycles	16		Motorcycles	16
Demand			Demand			Demand		
Southbound:	Autos	757	Southbound:	Autos	1568	Southbound:	Autos	1568
	Med Trucks	33		Med Trucks	67		Med Trucks	67
	Hvy Trucks	8		Hvy Trucks	17		Hvy Trucks	17
	Buses	7		Buses	13		Buses	13
	Motorcycles	10		Motorcycles	20		Motorcycles	20
Northbound:	Autos	571	Northbound:	Autos	1183	Northbound:	Autos	1183
	Med Trucks	25		Med Trucks	51		Med Trucks	51
	Hvy Trucks	6		Hvy Trucks	13		Hvy Trucks	13
	Buses	5		Buses	10		Buses	10
	Motorcycles	7		Motorcycles	15		Motorcycles	15

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4/5/2021

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

TRAFFIC DATA FOR NOISE STUDIES

Project:	US Hwy 301 from South of US 98 to SR 50/Cortez Blvd	Date:	3/24/2021
Federal Aid Number(s):	447536-1-22-01	Prepared By:	American (LH)
Segment Description:	US 301 - US 98 to Trilby Road		

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility		No-Build (Design Year)		Build (Design Year)	
Lanes:	2	Lanes:	2	Lanes:	4
Year:	2019	Year:	2045	Year:	2045
ADT: LOS (C)	14,400	ADT: LOS (C)	14,400	ADT: LOS (C)	34,000
Demand	8,100	Demand	16,790	Demand	16,790
Speed:	50 mph	Speed:	50 mph	Speed:	50 mph
	80 kmh		80 kmh		80 kmh
K=	9.0 %	K=	9.0 %	K=	9.0 %
D=	57.0 %	D=	57.0 %	D=	57.0 %
T=	9.0 % for 24 hrs.	T=	9.0 % for 24 hrs.	T=	9.0 % for 24 hrs.
T=	5.0 % Design hr	T=	5.0 % Design hr	T=	5.0 % Design hr
2.6	% Medium Trucks DHV	2.6	% Medium Trucks DHV	2.6	% Medium Trucks DHV
0.8	% Heavy Trucks DHV	0.8	% Heavy Trucks DHV	0.8	% Heavy Trucks DHV
0.6	% Buses DHV	0.6	% Buses DHV	0.6	% Buses DHV
1.0	% Motorcycles DHV	1.0	% Motorcycles DHV	1.0	% Motorcycles DHV

STAMINA/TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		Demand	No-Build (Design Year) Model:		LOS (C)	Build (Design Year) Model:		Demand
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	702	Southbound:	Autos	702	Southbound:	Autos	1657
	Med Trucks	19		Med Trucks	19		Med Trucks	45
	Hvy Trucks	6		Hvy Trucks	6		Hvy Trucks	14
	Buses	4		Buses	4		Buses	10
	Motorcycles	7		Motorcycles	7		Motorcycles	17
Northbound:	Autos	529	Northbound:	Autos	529	Northbound:	Autos	1250
	Med Trucks	14		Med Trucks	14		Med Trucks	34
	Hvy Trucks	4		Hvy Trucks	4		Hvy Trucks	11
	Buses	3		Buses	3		Buses	8
	Motorcycles	6		Motorcycles	6		Motorcycles	13
Demand			Demand			Demand		
Southbound:	Autos	395	Southbound:	Autos	818	Southbound:	Autos	818
	Med Trucks	11		Med Trucks	22		Med Trucks	22
	Hvy Trucks	3		Hvy Trucks	7		Hvy Trucks	7
	Buses	2		Buses	5		Buses	5
	Motorcycles	4		Motorcycles	9		Motorcycles	9
Northbound:	Autos	298	Northbound:	Autos	617	Northbound:	Autos	617
	Med Trucks	8		Med Trucks	17		Med Trucks	17
	Hvy Trucks	3		Hvy Trucks	5		Hvy Trucks	5
	Buses	2		Buses	4		Buses	4
	Motorcycles	3		Motorcycles	6		Motorcycles	6

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4/5/2021

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

TRAFFIC DATA FOR NOISE STUDIES

Project:	US Hwy 301 from South of US 98 to SR 50/Cortez Blvd	Date:	3/24/2021
Federal Aid Number(s):	447536-1-22-01	Prepared By:	American (LH)
Segment Description:	US 301 - Trilby Road to Pasco/Hernando County Line		

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	2		Lanes:	2		Lanes:	4	
Year:	2019		Year:	2045		Year:	2045	
ADT: LOS (C)	14,400		ADT: LOS (C)	14,400		ADT: LOS (C)	34,000	
Demand	6,800		Demand	14,080		Demand	14,080	
Speed:	55	mph	Speed:	55	mph	Speed:	55	mph
	89	kmh		89	kmh		89	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	57.0	%	D=	57.0	%	D=	57.0	%
T=	12.0	% for 24 hrs.	T=	12.0	% for 24 hrs.	T=	12.0	% for 24 hrs.
T=	6.0	% Design hr	T=	6.0	% Design hr	T=	6.0	% Design hr
3.0	% Medium Trucks DHV		3.0	% Medium Trucks DHV		3.0	% Medium Trucks DHV	
1.0	% Heavy Trucks DHV		1.0	% Heavy Trucks DHV		1.0	% Heavy Trucks DHV	
0.8	% Buses DHV		0.8	% Buses DHV		0.8	% Buses DHV	
1.2	% Motorcycles DHV		1.2	% Motorcycles DHV		1.2	% Motorcycles DHV	

STAMINA/TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		Demand	No-Build (Design Year) Model:		Demand	Build (Design Year) Model:		Demand
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	694	Southbound:	Autos	694	Southbound:	Autos	1640
	Med Trucks	22		Med Trucks	22		Med Trucks	52
	Hvy Trucks	7		Hvy Trucks	7		Hvy Trucks	17
	Buses	6		Buses	6		Buses	14
	Motorcycles	9		Motorcycles	9		Motorcycles	21
Northbound:	Autos	524	Northbound:	Autos	524	Northbound:	Autos	1237
	Med Trucks	17		Med Trucks	17		Med Trucks	39
	Hvy Trucks	6		Hvy Trucks	6		Hvy Trucks	13
	Buses	4		Buses	4		Buses	11
	Motorcycles	7		Motorcycles	7		Motorcycles	16
Demand			Demand			Demand		
Southbound:	Autos	328	Southbound:	Autos	679	Southbound:	Autos	679
	Med Trucks	10		Med Trucks	22		Med Trucks	22
	Hvy Trucks	3		Hvy Trucks	7		Hvy Trucks	7
	Buses	3		Buses	6		Buses	6
	Motorcycles	4		Motorcycles	9		Motorcycles	9
Northbound:	Autos	247	Northbound:	Autos	512	Northbound:	Autos	512
	Med Trucks	8		Med Trucks	16		Med Trucks	16
	Hvy Trucks	3		Hvy Trucks	5		Hvy Trucks	5
	Buses	2		Buses	4		Buses	4
	Motorcycles	3		Motorcycles	7		Motorcycles	7

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US301_TrafficNoiseData_2021_03_24.xlsx

4/5/2021

This spreadsheet is designed to calculate the appropriate traffic data for use in the noise model - do not input values for items in "red".

TRAFFIC DATA FOR NOISE STUDIES

Project:	US Hwy 301 from South of US 98 to SR 50/Cortez Blvd	Date:	3/24/2021
Federal Aid Number(s):	447536-1-22-01	Prepared By:	American (LH)
Segment Description:	US 301 - Pasco/Hernando County Line to SR 50		

(Data sheets are to be filled out for every segment having a change in traffic parameters such as volumes, posted speeds, typical section, etc.)

NOTE: Modeled ADT is the LOS(C) volume referenced in the FDOT LOS tables or demand, whichever is less.

Existing Facility			No-Build (Design Year)			Build (Design Year)		
Lanes:	2		Lanes:	2		Lanes:	4	
Year:	2019		Year:	2045		Year:	2045	
ADT: LOS (C)	14,400		ADT: LOS (C)	14,400		ADT: LOS (C)	34,000	
Demand	6,800		Demand	14,080		Demand	14,080	
Speed:	60	mph	Speed:	60	mph	Speed:	55	mph
	97	kmh		97	kmh		89	kmh
K=	9.0	%	K=	9.0	%	K=	9.0	%
D=	57.0	%	D=	57.0	%	D=	57.0	%
T=	12.0	% for 24 hrs.	T=	12.0	% for 24 hrs.	T=	12.0	% for 24 hrs.
T=	6.0	% Design hr	T=	6.0	% Design hr	T=	6.0	% Design hr
3.0	% Medium Trucks DHV		3.0	% Medium Trucks DHV		3.0	% Medium Trucks DHV	
1.0	% Heavy Trucks DHV		1.0	% Heavy Trucks DHV		1.0	% Heavy Trucks DHV	
0.8	% Buses DHV		0.8	% Buses DHV		0.8	% Buses DHV	
1.2	% Motorcycles DHV		1.2	% Motorcycles DHV		1.2	% Motorcycles DHV	

STAMINA/TNM INPUT

The following are spreadsheet calculations based on the input above - do not enter data below this line

Existing Facility Model:		Demand	No-Build (Design Year) Model:		Demand	Build (Design Year) Model:		Demand
LOS (C)			LOS (C)			LOS (C)		
Southbound:	Autos	694	Southbound:	Autos	694	Southbound:	Autos	1640
	Med Trucks	22		Med Trucks	22		Med Trucks	52
	Hvy Trucks	7		Hvy Trucks	7		Hvy Trucks	17
	Buses	6		Buses	6		Buses	14
	Motorcycles	9		Motorcycles	9		Motorcycles	21
Northbound:	Autos	524	Northbound:	Autos	524	Northbound:	Autos	1237
	Med Trucks	17		Med Trucks	17		Med Trucks	39
	Hvy Trucks	6		Hvy Trucks	6		Hvy Trucks	13
	Buses	4		Buses	4		Buses	11
	Motorcycles	7		Motorcycles	7		Motorcycles	16
Demand			Demand			Demand		
Southbound:	Autos	328	Southbound:	Autos	679	Southbound:	Autos	679
	Med Trucks	10		Med Trucks	22		Med Trucks	22
	Hvy Trucks	3		Hvy Trucks	7		Hvy Trucks	7
	Buses	3		Buses	6		Buses	6
	Motorcycles	4		Motorcycles	9		Motorcycles	9
Northbound:	Autos	247	Northbound:	Autos	512	Northbound:	Autos	512
	Med Trucks	8		Med Trucks	16		Med Trucks	16
	Hvy Trucks	3		Hvy Trucks	5		Hvy Trucks	5
	Buses	2		Buses	4		Buses	4
	Motorcycles	3		Motorcycles	7		Motorcycles	7

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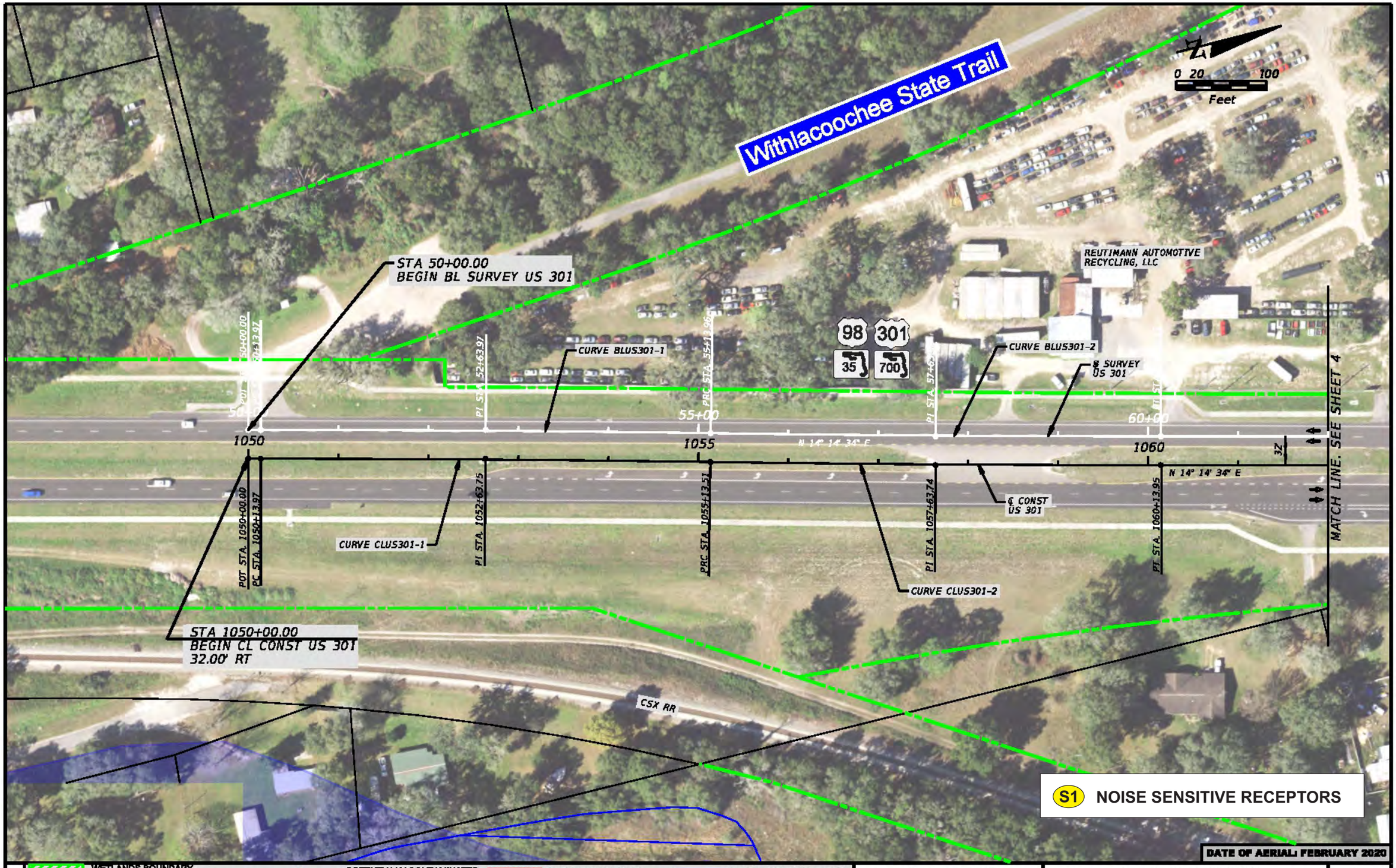
APPENDIX B

Receptor Aerials



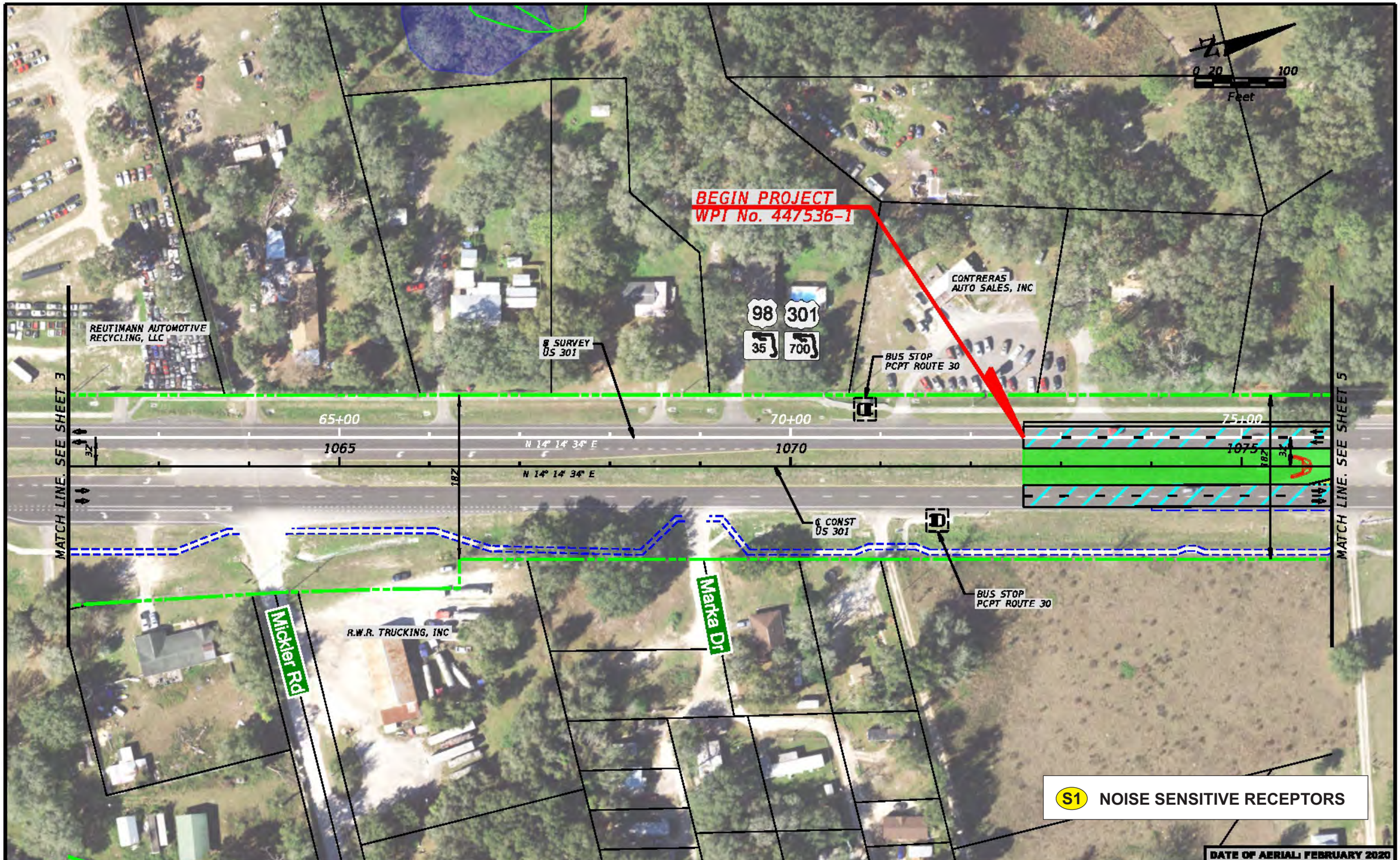
LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- POTENTIAL BUSINESS RELOCATION
- POTENTIAL RESIDENTIAL RELOCATION
- POTENTIALLY CONTAMINATED SITE
- PROPERTY LINE
- EXISTING ROW
- PROPOSED ROW
- EXISTING SIDEWALK
- CONCRETE REMOVAL
- MILLING AND RESURFACING
- PROPOSED MSE WALL/ GRAVITY WALL
- PROPOSED SIDEWALK/ SHARED USE PATH
- IMPROVEMENTS BY FDOT
- PROPOSED MEDIAN (SOD)
- PROPOSED TRAFFIC SEPARATOR
- POTENTIAL IMPROVEMENT BY OTHERS

American Consulting Professionals, LLC
2819 Cypress Ridge Blvd, Suite 200
Wesley Chapel, Florida 33544
Phone: (813) 435-2600 Fax: (813) 435-2601
Engineering Business No. EB7178
Jeffrey S. Mavatny, P.E. No. 51083

US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans
WPI SEGMENT No.: 447538-1

SHEET NO. 3



LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- POTENTIAL BUSINESS RELOCATION
- POTENTIAL RESIDENTIAL RELOCATION
- POTENTIALLY CONTAMINATED SITE
- PROPERTY LINE
- EXISTING ROW
- PROPOSED ROW
- EXISTING SIDEWALK
- CONCRETE REMOVAL
- MILLING AND RESURFACING
- PROPOSED MSE WALL/ GRAVITY WALL
- PROPOSED SIDEWALK/ SHARED USE PATH
- IMPROVEMENTS BY FDOT
- PROPOSED MEDIAN (SOD)
- PROPOSED TRAFFIC SEPARATOR
- POTENTIAL IMPROVEMENT BY OTHERS

American Consulting Professionals, LLC
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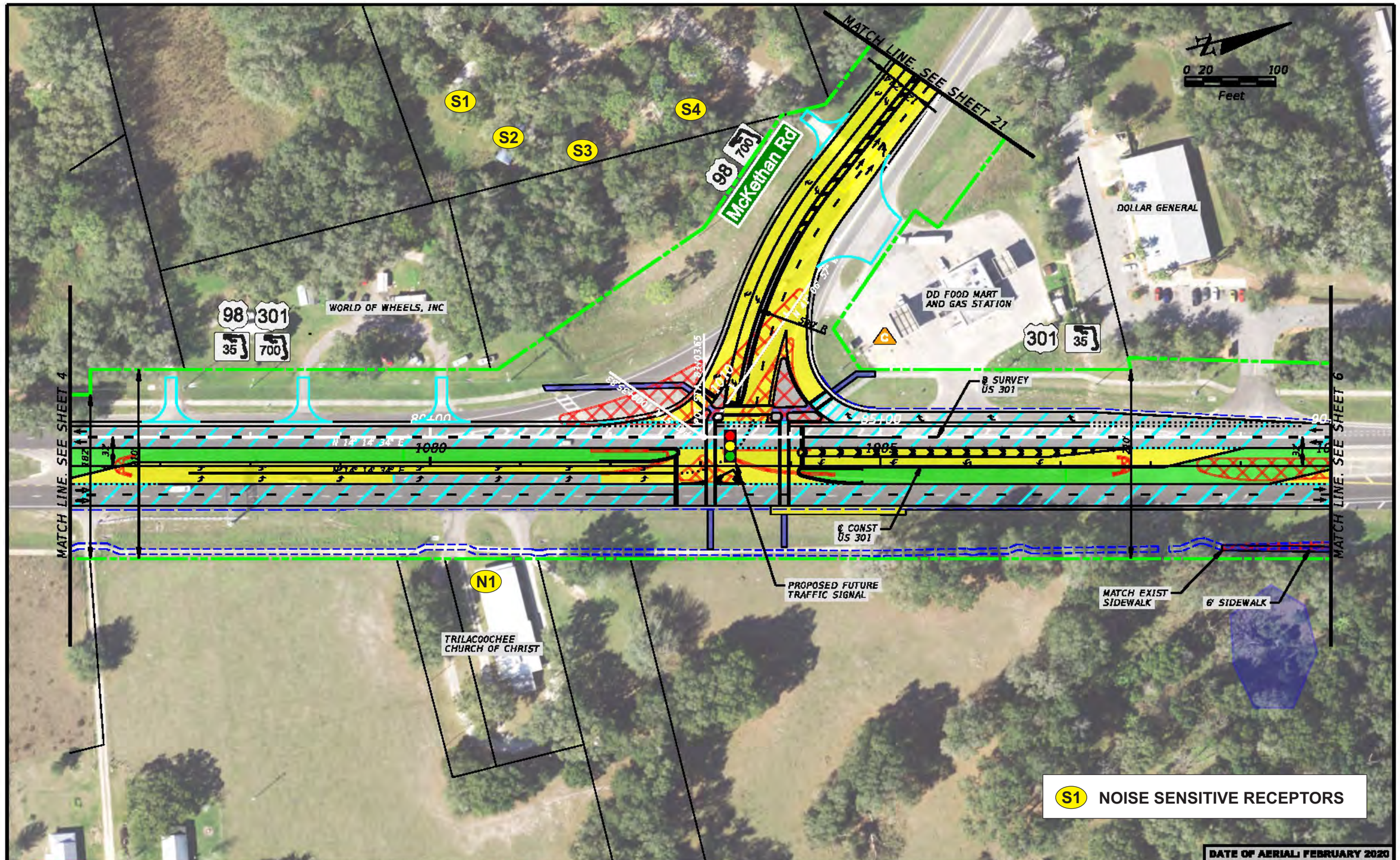
Phone: (813) 435-2600 Fax: (813) 435-2601
Engineering Business No. EB7116
Jeffrey S. Novotny, P.E. No. 51083

US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans
WPI SEGMENT No.: 447536-1

SHEET NO. 4



LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- POTENTIAL BUSINESS RELOCATION
- POTENTIAL RESIDENTIAL RELOCATION
- POTENTIALLY CONTAMINATED SITE
- PROPERTY LINE
- EXISTING ROW
- PROPOSED ROW
- EXISTING SIDEWALK
- CONCRETE REMOVAL
- MILLING AND RESURFACING
- PROPOSED MSE WALL/ GRAVITY WALL
- PROPOSED SIDEWALK/ SHARED USE PATH
- IMPROVEMENTS BY FDOT
- PROPOSED MEDIAN (SOD)
- PROPOSED TRAFFIC SEPARATOR
- POTENTIAL IMPROVEMENT BY OTHERS

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US 301 PD&E STUDY
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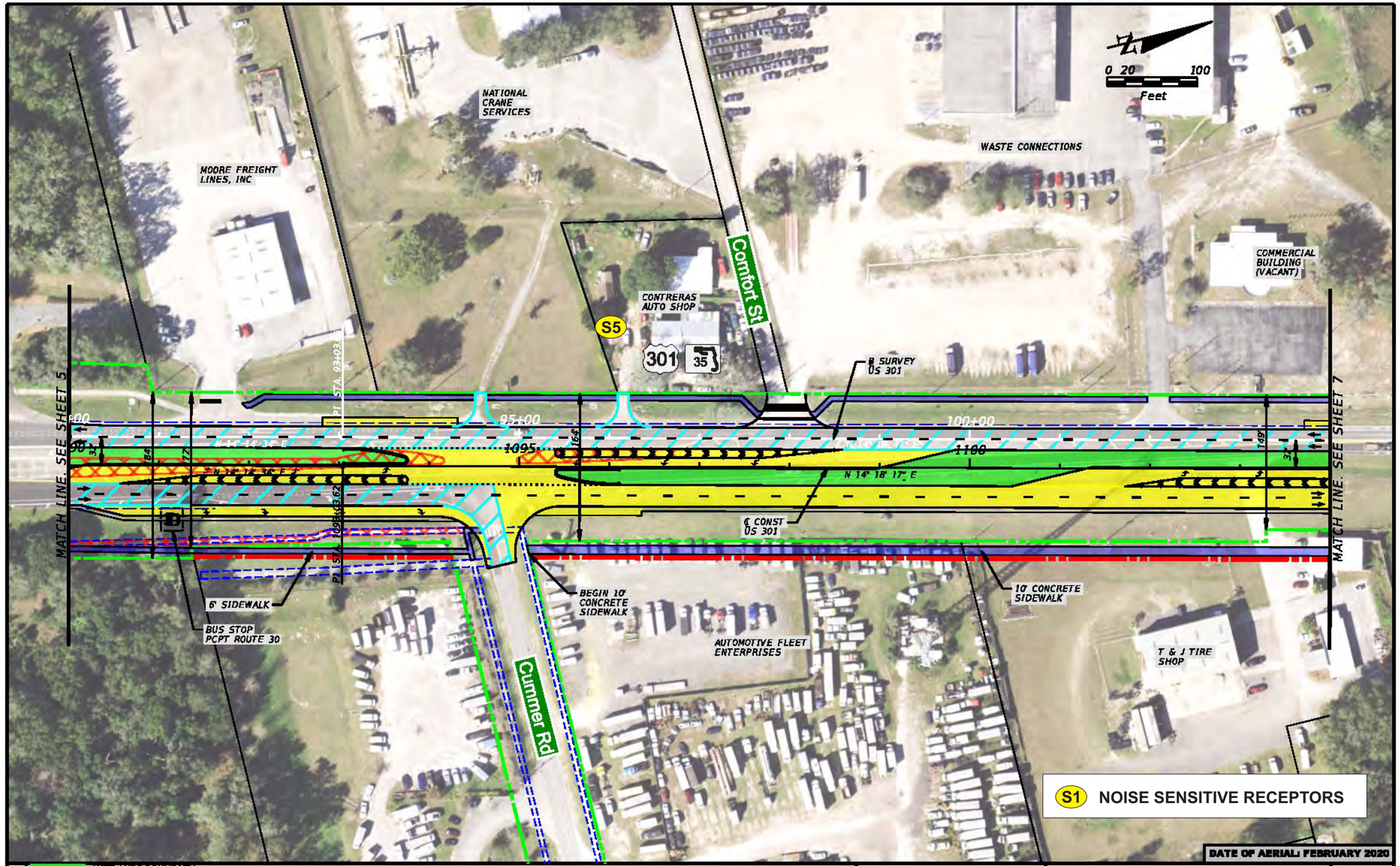
Preferred Alternative Concept Plans

WPI SEGMENT No.: 447538-1

SHEET NO. 5



LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- POTENTIAL BUSINESS RELOCATION
- POTENTIAL RESIDENTIAL RELOCATION
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- PROPOSED ROW
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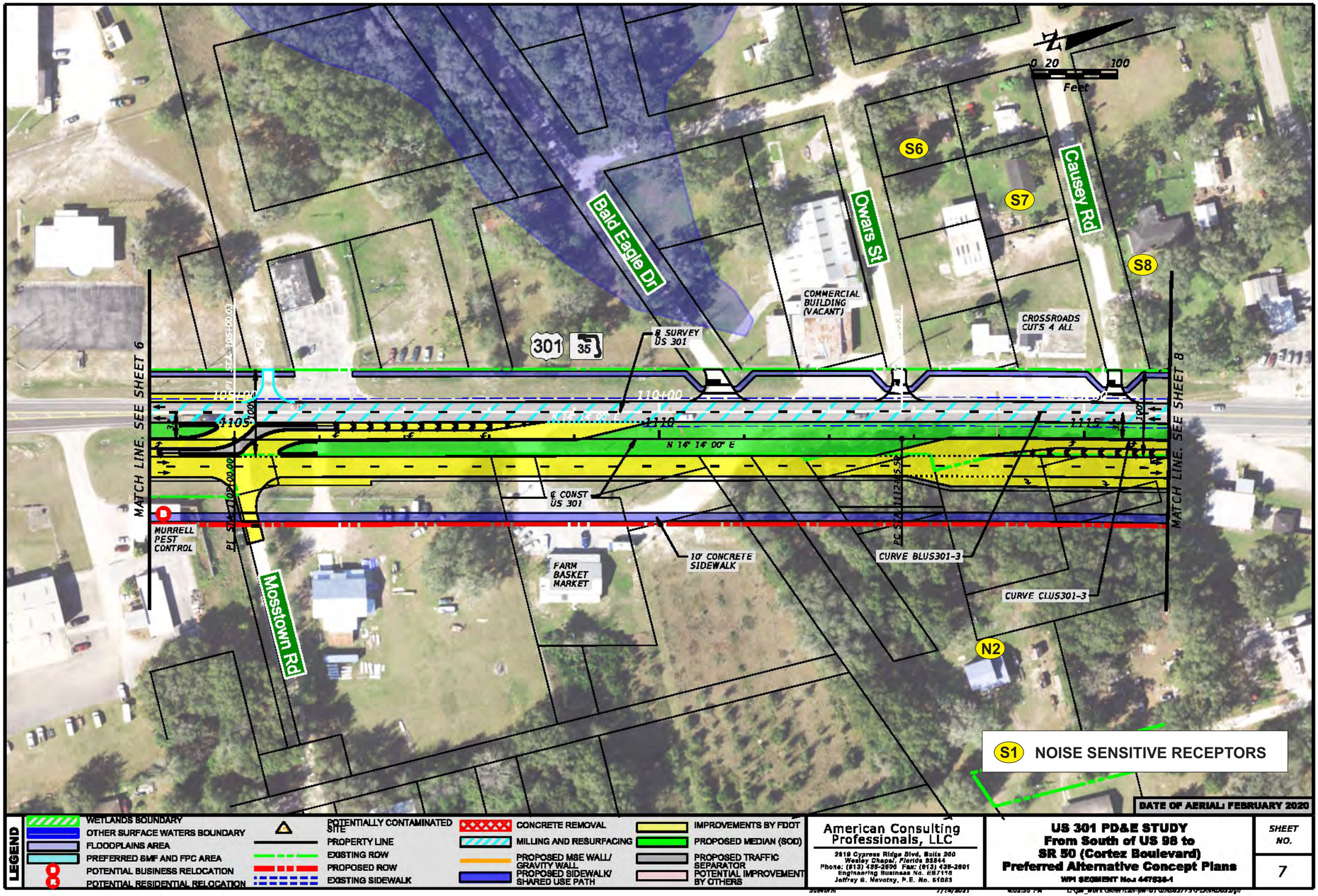
US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans

WPI SEGMENT No.: 447538-1

SHEET NO. 6



LEGEND

- WETLANDS BOUNDARY
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US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans
WPI SEGMENT No.: 447538-1

SHEET NO. 7

CURVE DATA BLUS301-3
PI STA. = 118+13.67
Δ = 3° 31' 13" (RT)
D = 0° 20' 00"
T = 528.21
L = 1,056.08
R = 17,188.73
PC STA. = 112+85.46
PT STA. = 123+41.54

CURVE DATA CLUS301-3
PI STA. = 1118+12.72
Δ = 3° 31' 13" (RT)
D = 0° 20' 02"
T = 527.22
L = 1,054.12
R = 17,156.73
PC STA. = 1112+85.50
PT STA. = 1123+39.62

0 20 100
Feet

Trilby Rd
575
BUS STOP
PCPT ROUTE 30
PKs FOOD STORE
TADLOCKS AUTO SALES
RATLIFF ENTERPRISES, LLC AUTO SALES
KOUNTRY KITCHEN (VACANT)
301
35
℄ SURVEY US 301
PT STA. 123+41.58
125+00
N 17° 45' 13" E
MATCH LINE. SEE SHEET 7
MATCH LINE. SEE SHEET 9
PC STA. 118+12.72
PC STA. 1123+39.62
RESIDENTAL BUILDING (VACANT)
℄ CONST US 301
THE CHRISTIAN EDGE DAYCARE CENTER
PROPOSED FUTURE TRAFFIC SIGNAL
EXISTING EMERGENCY TRAFFIC SIGNAL
N3
CURVE CLUS301-3
CURVE BLUS301-3
10' CONCRETE SIDEWALK
N5
575
Trilacoochee Rd
N4
ELA 1-FPC 1A EXTENDS APPROX. 779' BEYOND AERIAL BOUNDARY. SEE SHEET 22.
S1 NOISE SENSITIVE RECEPTORS
ELA 1-FPC 1A
DATE OF AERIAL: FEBRUARY 2020

LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
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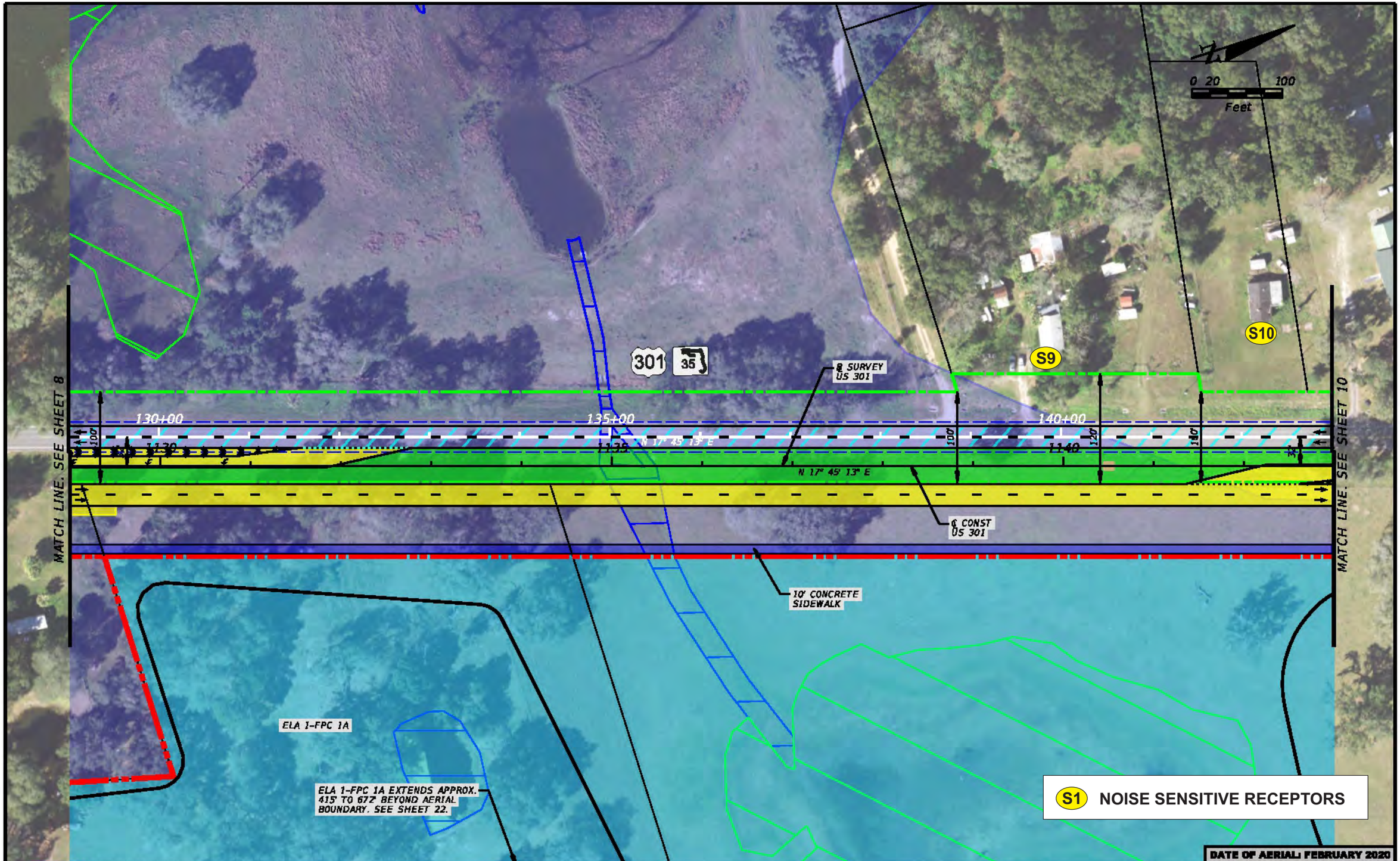
Jeffrey G. Novotny, P.E. No. 51083

US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans

WPI SEGMENT No.: 447538-1

SHEET NO. 8



LEGEND

- WETLANDS BOUNDARY
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- FLOODPLAINS AREA
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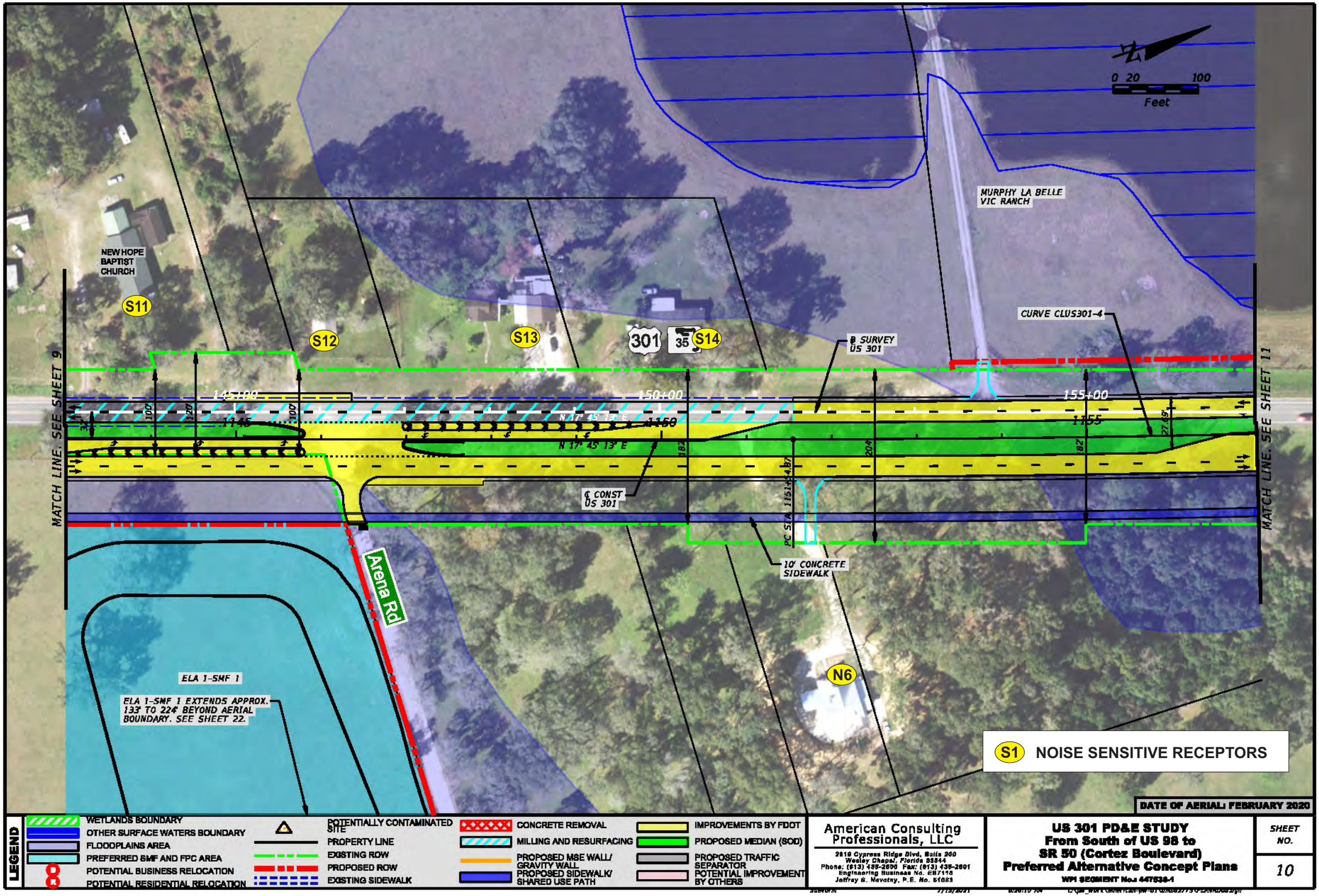
US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans
WPI SEGMENT No.: 447538-1

SHEET NO. 9



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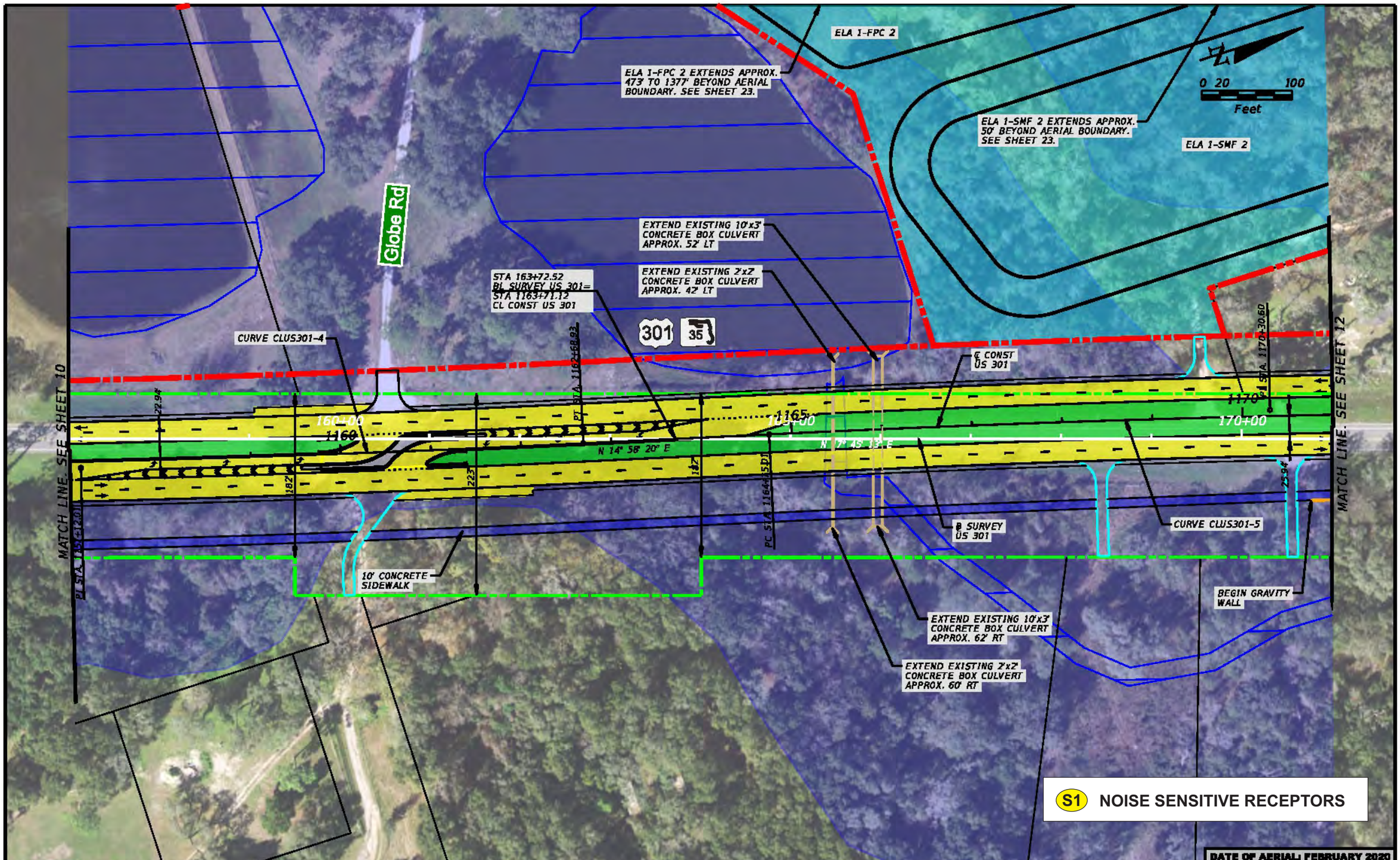
US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans
WPI SEGMENT No.: 447536-1

SHEET NO. 10



LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
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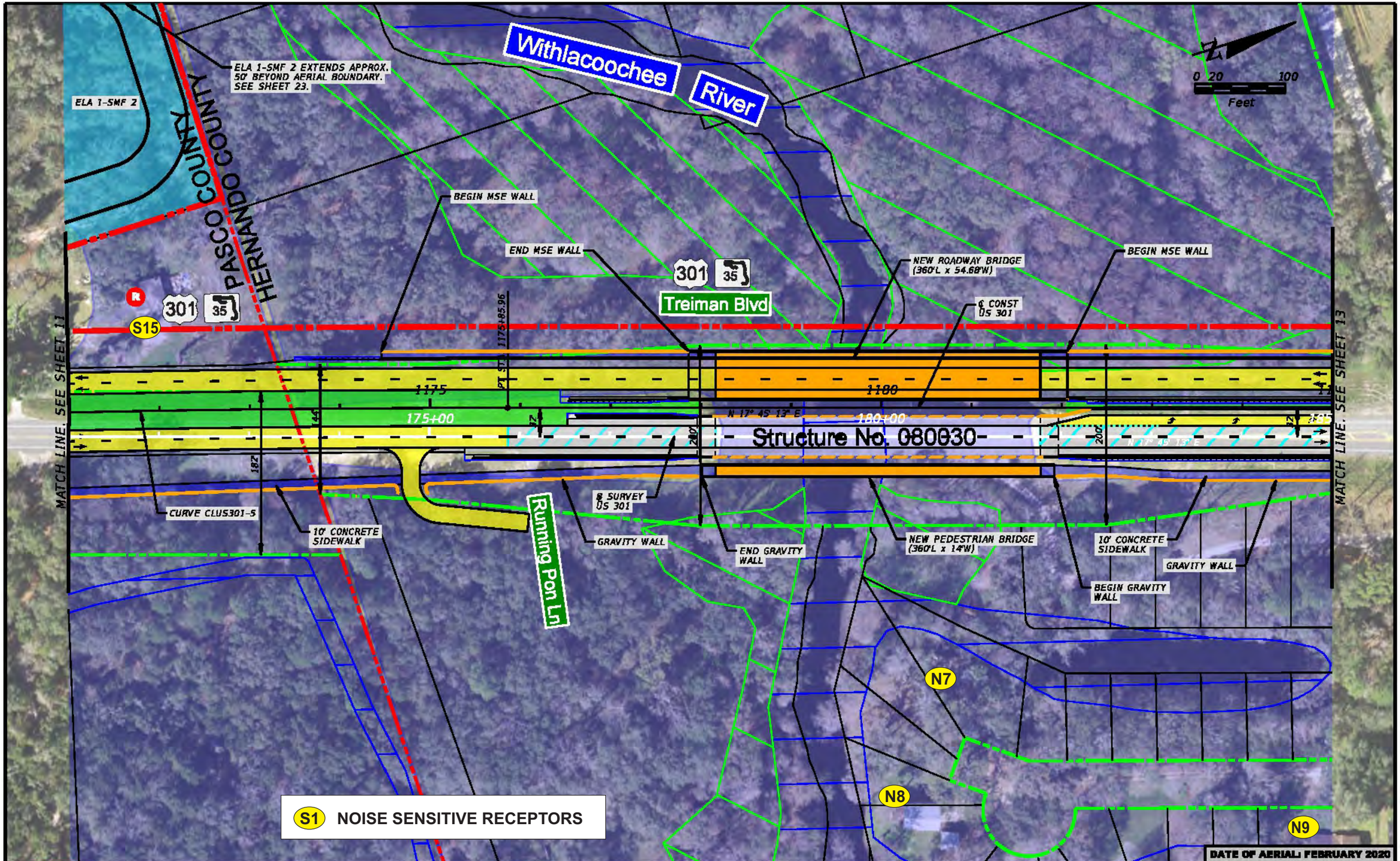
US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans
WPI SEGMENT No.: 447538-1

SHEET NO. 11



LEGEND

- WETLANDS BOUNDARY
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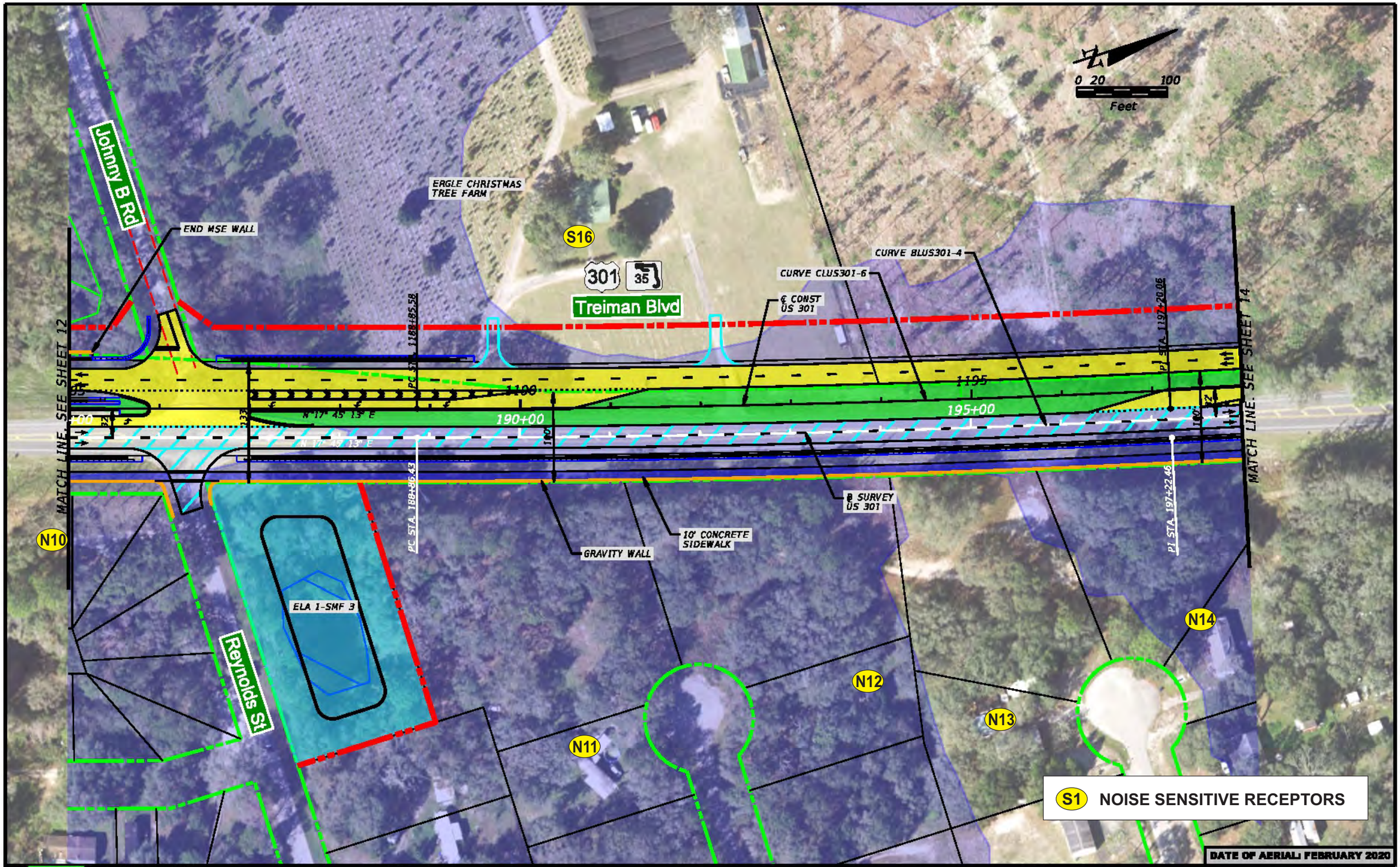
Jeffrey S. Novotny, P.E. No. 51083

US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans
WPI SEGMENT No.: 447538-1

SHEET NO. 12



LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
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Engineering Business No. 28715
Jeffrey S. Novotny, P.E. No. 51083

US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans
WPI SEGMENT No.: 447538-1

SHEET NO. 13

0 20 100
Feet

S17
S18
Lesters Ln
CURVE CLUS301-6
CURVE BLUS301-4
301
35
Treiman Blvd
PATRIOT ACRES BLUEBERRY FARM
℄ CONST US 301
PT STA. 1205+53.22
1200
1205
1210
200+00
205+00
210+00
N 12° 11' 04" E
MATCH LINE, SEE SHEET 13
MATCH LINE, SEE SHEET 15
GRAVITY WALL
GRAVITY WALL
10' CONCRETE SIDEWALK
STA. 205+57.18
℄ SURVEY US 301
GRAVITY WALL
N15
N16
N17
N18
N19
N20
N21
N22
N23
N24
N25
N26
N27
N28
N29
Louise St
Major Dade Rd
FORT DADE PARK A PLUS 55 COMMUNITY

S1 NOISE SENSITIVE RECEPTORS

DATE OF AERIAL: FEBRUARY 2020

LEGEND

- WETLANDS BOUNDARY
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US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
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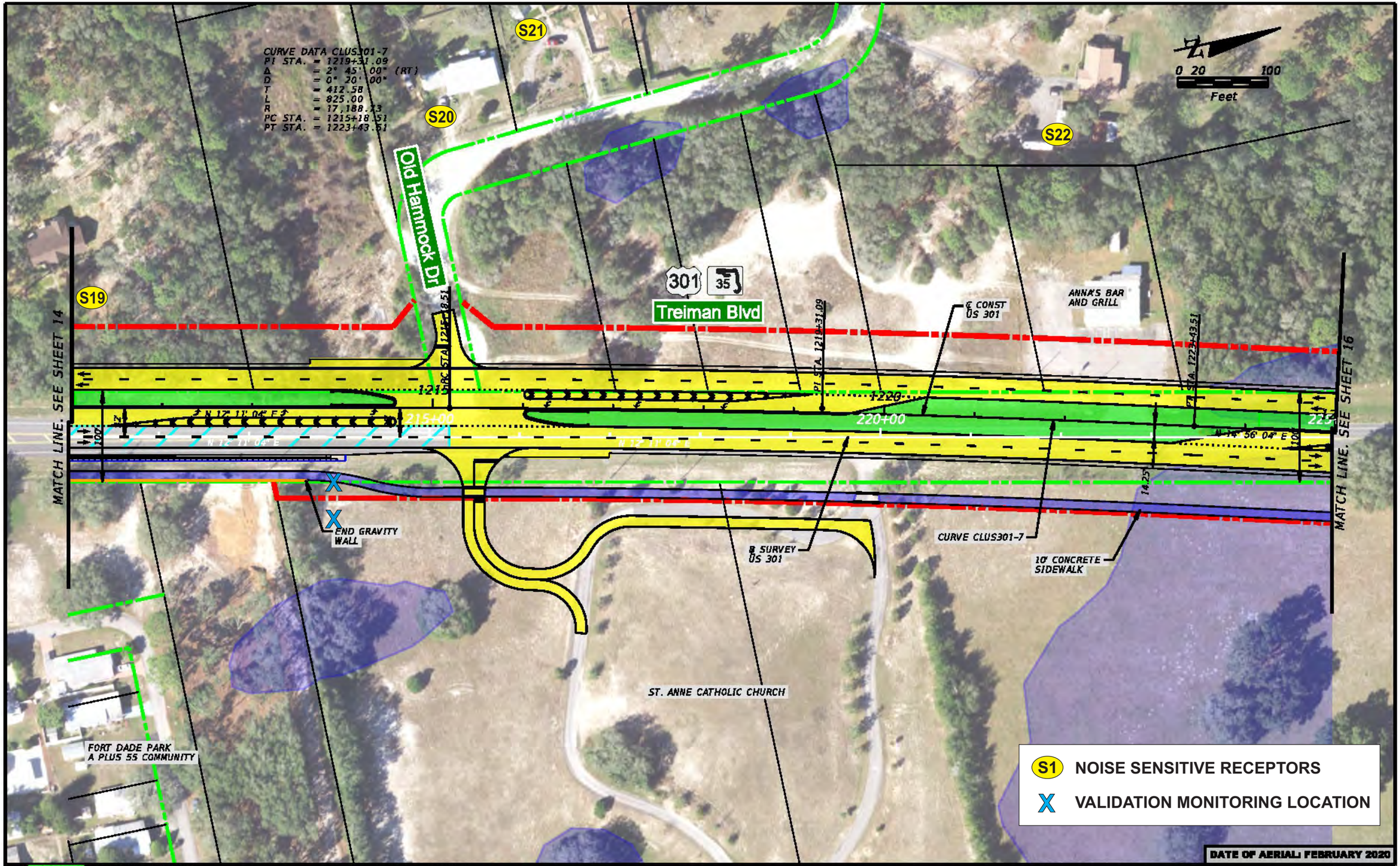
WPI SEGMENT No.: 447538-1

SHEET NO. 14



LEGEND

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SHEET NO. 15

0 20 100
Feet

STA 226+01.25
BL SURVEY US 301
STA 1225+97.90
CL CONST US 301

301 35
Treiman Blvd

CURVE CLUS301-B

℄ SURVEY
US 301

EXTEND EXISTING 4'x3'
CONCRETE BOX CULVERT
APPROX. 14' LT

230+00
1230

235+00
1235

MATCH LINE. SEE SHEET 15

MATCH LINE. SEE SHEET 17

PC STA 1228+92.30

PI STA 1232+94.87

PT STA 1236+77.30

℄ CONST
US 301

10' CONCRETE
SIDEWALK

EXTEND EXISTING 4'x3'
CONCRETE BOX CULVERT
APPROX. 74' RT

ELA 2-FPC 3

ELA 2-FPC 3 EXTENDS APPROX.
470' BEYOND AERIAL
BOUNDARY. SEE SHEET 24.

S1 NOISE SENSITIVE RECEPTORS

DATE OF AERIAL: FEBRUARY 2020

LEGEND

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US 301 PD&E STUDY
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WPI SEGMENT No.: 447536-1

SHEET NO. 16

Orchid Pkwy

S23 S24 S25 S26 S27 S28

0 20 100 Feet

Bobwhite Ct

Gardenia Way

301 35

Treiman Blvd

℄ SURVEY US 301

240+00 245+00 250+00

1240 1245 1250

N 12° 11' 04" E

100' 32'

MATCH LINE. SEE SHEET 16

MATCH LINE. SEE SHEET 18

℄ CONST US 301

10' CONCRETE SIDEWALK

ELA 2-FPC 3

ELA 2-SMF 4

ELA 2-FPC 3 EXTENDS APPROX. 470' BEYOND AERIAL BOUNDARY. SEE SHEET 24.

S1 NOISE SENSITIVE RECEPTORS

DATE OF AERIAL: FEBRUARY 2020

LEGEND

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Jeffrey S. Mavatny, P.E. No. 51083

US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans

WPI SEGMENT No.: 447538-1

SHEET NO. 17

NOTE:
FPID No. 416732-2 PD & E STUDY SR 50 (CORTEZ BLVD) FROM WEST OF I-75 TO US 301 (SR 35/TREIMAN BLVD) PROPOSED ROADWAY IMPROVEMENTS.

AERIAL REFLECTS EXISTING CONDITIONS.

0 20 100
Feet

S29 S30 S31 S32 S33 S34 S35 S36 S37

Bobwhite Ct

STOCKPILES
SELF STORAGE

MILLER'S
LIGHTHOUSE
LOUNGE
S38

301 35
Treiman Blvd

℄ SURVEY
US 301

255+00 260+00

N 12° 11' 04" E

℄ CONST
US 301

MATCH LINE. SEE SHEET 17

MATCH LINE. SEE SHEET 19

10' CONCRETE
SIDEWALK

END 10' CONCRTE SIDEWALK.
MATCH PROPOSED 6' SIDEWALK
(BY SR 50 PD&E STUDY)

S1 NOISE SENSITIVE RECEPTORS

DATE OF AERIAL: FEBRUARY 2020

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- PROPOSED TRAFFIC SEPARATOR
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Jeffrey S. Novotny, P.E. No. 51063

US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans

WPI SEGMENT No.: 447538-1

SHEET NO. 18

EXISTING FPC (BY OTHERS)

ELA 2-FPC 4 EXTENDS APPROX. 1170' BEYOND AERIAL BOUNDARY. SEE SHEET 25.

ELA 2-SMF 5

EXISTING SMF (BY OTHERS)

0 20 100 Feet

Dogwood Dr

PALM PLAZA

301 35 Treiman Blvd

℄ SURVEY US 301

265+00 270+00 275+00

N 12° 11' 04" E

1265 1270 1275

MATCH LINE. SEE SHEET 18

MATCH LINE. SEE SHEET 20

℄ CONST US 301

NOTE:
FPID No. 416732-2 PD & E STUDY SR 50 (CORTEZ BLVD) FROM WEST OF I-75 TO US 301 (SR 35/TREIMAN BLVD) PROPSOED ROADWAY IMPROVEMENTS.

FPID No. 416732-3 CURRENTLY UNDER CONSTRUCTION SR 50 (CORTEZ BLVD) FROM WEST OF I-75 TO US 301 (SR 35/TREIMNA BLVD) AS OF JANUARY 2021

AERIAL REFLECTS EXISTING CONDITIONS.

S1 NOISE SENSITIVE RECEPTORS

DATE OF AERIAL: FEBRUARY 2020

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- EXISTING SIDEWALK
- CONCRETE REMOVAL
- MILLING AND RESURFACING
- PROPOSED MSE WALL/ GRAVITY WALL
- PROPOSED SIDEWALK/ SHARED USE PATH
- IMPROVEMENTS BY FDOT
- PROPOSED MEDIAN (SOD)
- PROPOSED TRAFFIC SEPARATOR
- POTENTIAL IMPROVEMENT BY OTHERS

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2819 Cypress Ridge Blvd, Suite 200
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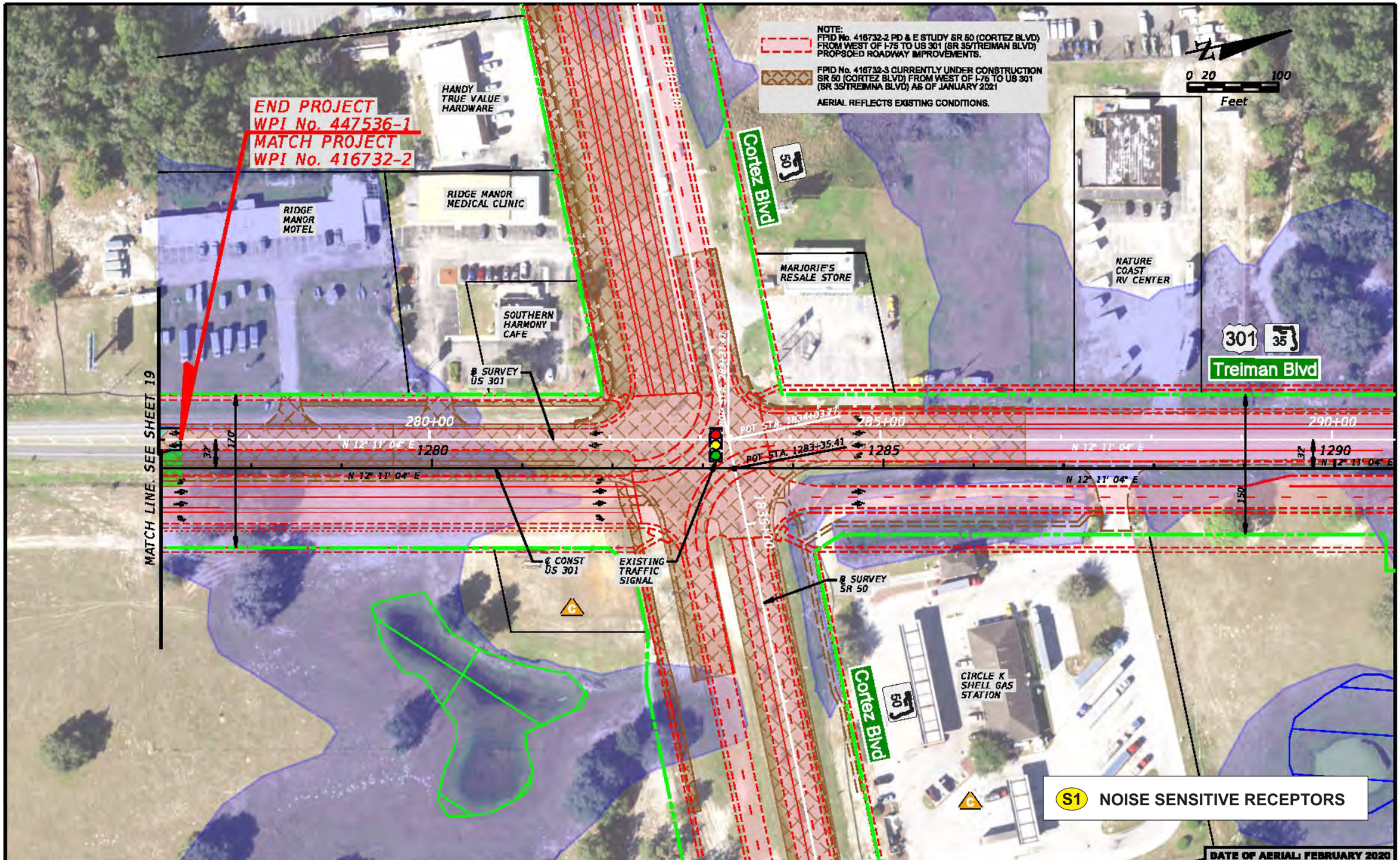
US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans

WPI SEGMENT No.: 447536-1

SHEET NO. 19



LEGEND

- WETLANDS BOUNDARY
- OTHER SURFACE WATERS BOUNDARY
- FLOODPLAINS AREA
- PREFERRED SMF AND FPC AREA
- POTENTIAL BUSINESS RELOCATION
- POTENTIAL RESIDENTIAL RELOCATION
- POTENTIALLY CONTAMINATED SITE
- PROPERTY LINE
- EXISTING ROW
- PROPOSED ROW
- EXISTING SIDEWALK
- CONCRETE REMOVAL
- MILLING AND RESURFACING
- PROPOSED MSE WALL/ GRAVITY WALL
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US 301 PD&E STUDY
From South of US 98 to SR 50 (Cortez Boulevard)
Preferred Alternative Concept Plans
WPI SEGMENT No.: 447536-1

SHEET NO.
20

APPENDIX C

Validation Documentation

NOISE MEASUREMENT DATA SHEET

Measurements Taken By: L. Baumaister, W. Arner, E. Howard Date: 5/11/2021
Time Study Started: 10:16 Time Study Ended: 10:55
Project Identification:
Project ID: WPI 447536-1
Project Location: US 301 from South of US 98 to SR 50

Site Identification: US 301, south of St. Anne Catholic Church,
Larson Davis 831 – 44 ft. from edge of travel lane
Larson Davis LxT – 76 ft. from edge of travel lane

Weather Conditions:
Sky: Clear ___ Partly Cloudy X Cloudy ___ Other _____
Temperature 86°F Wind Speed <1 Wind Direction N/A Humidity 63%
Equipment:
Sound Level Meter:
Type: Larson Davis 831 / LxT Serial Number(s): 1285
Did you check the battery? Yes X No ____
Calibration Readings: Start 114.0/113.9 End 114.0/114.0
Response Settings: Fast ____ Slow X
Weighting: A X Other ____
Calibrator:
Type: Larson Davis CAL 200 Serial Number: 5592
Did you check the battery? Yes X No ____

TRAFFIC DATA

Roadway Identification	US 301 Northbound		US 301 Southbound	
	Run 1-Run 2-Run 3		Run 1-Run 2-Run 3	
Vehicle Type	Volume	Speed (mph)	Volume	Speed (mph)
Autos	29-34-22	54-57-61	27-34-31	56-57-56
Medium Trucks	4-1-2	59-53-54	1-0-1	49-n/a-55
Heavy Trucks	1-3-3	60-58-56	1-4-1	55-55-54
Buses	0-0-0	0-0-0	0-0-3	n/a-n/a-55
Motorcycles	0-1-0	0-55-0	1-1-0	45-55-53
Duration	10 minutes per run		10 minutes per run	

*Speeds were not documented for all vehicle types.

RESULTS [dB(A)]

L_{EQ} LD 831: 72.3/67.6/66.5; LxT: 66.1/61.3/60.0
Background Noise: insects, birds, rooster, intersection traffic
Major Sources: US 301
Unusual Events: loud RV, train horns in distance, plane flyover