Draft Noise Study Report

US 41/SR 45 AT CSX GRADE SEPARATION
FROM S OF SR 676 TO N OF SR 676
Project Development & Environment (PD&E) Study

Florida Department of Transportation

District 7

Work Program Item Segment No. 440749-1

ETDM Project No. 14345

Hillsborough County, Florida

February 2023

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 May 26, 2022 and executed by the Federal Highway Administration and FDOT.

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Prepared for:

Florida Department of Transportation
District 7

Prepared by:

RK&K
700 E Pratt Street, Suite 500
Baltimore, MD 21202

Executive Summary

The Florida Department of Transportation (FDOT) is conducting a Design Change and Right of Way (ROW) Authorization Reevaluation of a previous Environmental Assessment (EA) (Work Program Item Segment (WPIS) No. 255598-1) with a Finding of No Significant Impact (FONSI) approved by the Federal Highway Administration on May 24, 1994. The current study effort being conducted under WPIS No. 440749-1 evaluates capacity and operational improvements on US 41/SR 45/SR 599 from south of the Causeway Boulevard intersection to north of the Causeway Boulevard intersection. These improvements include the construction of a grade separation of US 41/SR 45 at the CSX railroad crossing located approximately 1,400 feet south of the Causeway Boulevard intersection. Intersection and operational improvements at US 41/SR 45 and Causeway Boulevard are also provided.

The purpose of this project is to reduce traffic delays associated with the CSX railroad crossing, adequately support the safe movement of vehicle traffic, including trucks and freight, and enhance connectivity and safety for bicyclists and pedestrians.

This Noise Study Report (NSR) presents the assumptions, data, procedures, and results of the traffic noise analysis that was conducted to evaluate the proposed improvements. The objectives of the NSR are to identify noise sensitive receptors (discrete or representative locations of a noise sensitive area) adjacent to the project corridor, to predict and evaluate future traffic noise levels at the receptors with and without the improvements, and to evaluate the need for, and effectiveness of, noise abatement measures. This NSR also discusses construction-related noise and vibration and identifies traffic noise impact areas for future compatible land use planning adjacent to the project corridor.

A total of 55 properties for which there are land use Noise Abatement Criteria (NAC) were evaluated. The properties are comprised of 52 residential properties, one active sports area, one restaurant, and one motel.

The conclusions of this traffic noise analysis are as follows:

- Predicted noise levels will create eleven (11) NAC residential land use impacts to noise-sensitive receptors in Common Noise Environments (CNEs) 09, 10, 11 and 12.
- The proposed project will not create any additional noise impacts due substantial noise increase over predicted existing noise levels.
- No noise barriers were found to meet the criteria for feasibility and reasonableness.

The Florida Department of Transportation is committed to the construction of feasible and reasonable noise abatement measures where recommended. However, based on the noise analyses performed to date, there are no feasible and reasonable solutions available to mitigate the noise impacts at CNEs 09, 10, 11, and 12. This determination is subject to a detailed review in Design and subsequent re-evaluations.

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1 INTRODUCTION

1.1 Project Background

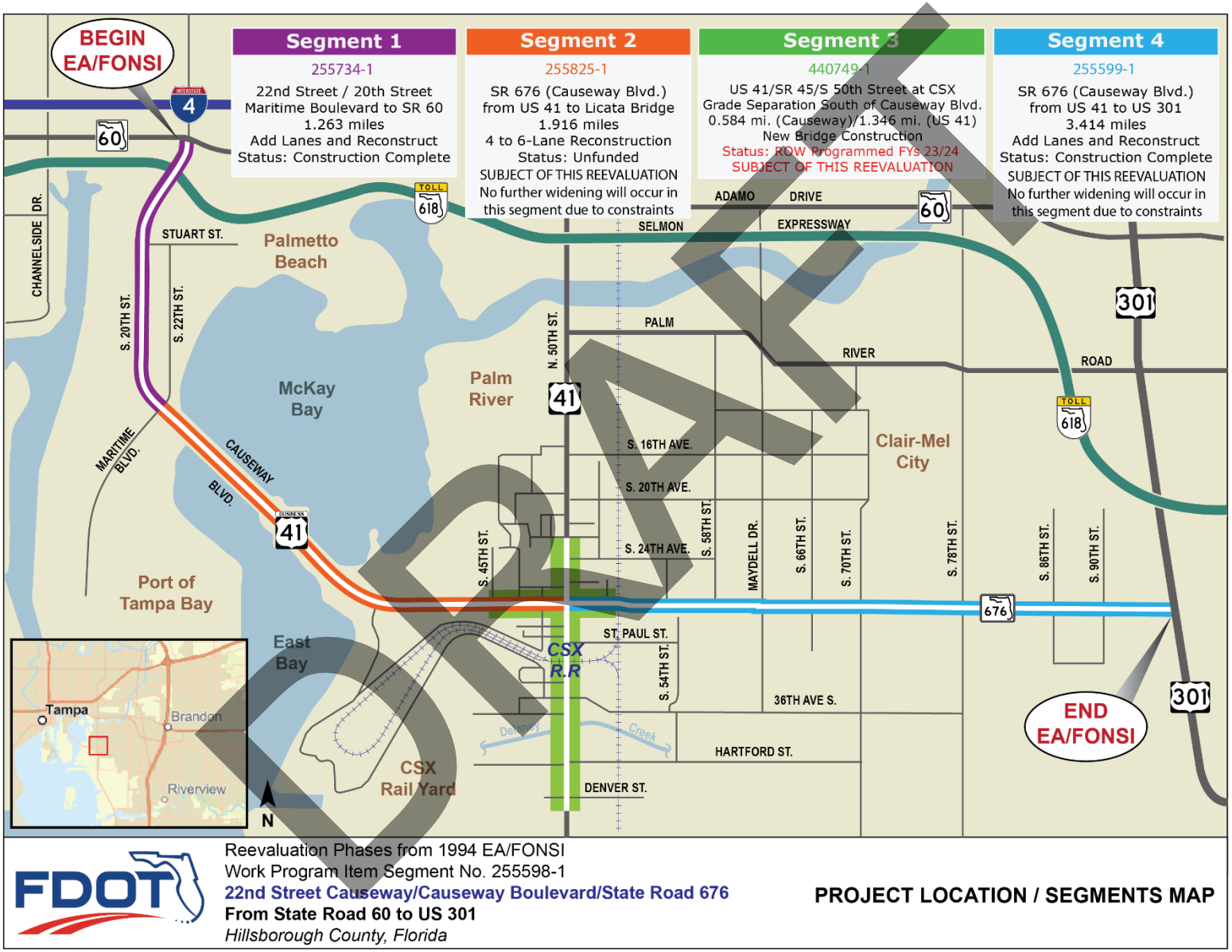
The Florida Department of Transportation (FDOT) is conducting a Design Change and Right of Way (ROW) Authorization Reevaluation of a previous Environmental Assessment (EA) (Work Program Item Segment (WPIS) No. 255598-1) with a Finding of No Significant Impact (FONSI) approved by the Federal Highway Administration on May 24, 1994. **Figure 1-1** shows the limits of the previous PD&E study completed along 22nd Street Causeway/Causeway Boulevard (State Road 676) from State Road (SR) 60 to US 301, in Hillsborough County, Florida. The segment currently being evaluated/advanced is shown as Segment 3 on **Figure 1-1**.

The previous study evaluated anticipated conditions for a 2015 Design Year. The FONSI documented the construction of a six-lane roadway to replace the existing 2- to 4-lane roadway beginning at SR 60 and extending approximately 7 miles east at US 301. Since the completion of the 1994 PD&E Study, Causeway Boulevard has been widened to four-lanes.

The project included a new interchange at US 41/Causeway Boulevard intersection for which the approved concept was a “compressed diamond” interchange with US 41 elevated over Causeway Boulevard. This interchange is also known as a Single Point Urban Interchange (SPUI) or a Tight Urban Diamond Interchange (TUDI). The study identified that the US 41 interchange bridge would carry three lanes of traffic in each direction with a barrier wall separating opposing traffic. The study recommended an additional grade separation of US 41 over the CSX railroad crossing south of Causeway Boulevard while the CSX railroad crossing east of US 41 would remain at-grade with Causeway Boulevard. The concept showed the SPUI ramps oriented along US 41 and one-way, one-lane frontage roads were provided in the southeast and northeast quadrants to provide local property access. Five-foot sidewalks and 4-foot bicycle lanes were proposed along both sides of Causeway Boulevard.

The current study effort being conducted under WPIS# 440749-1 is evaluating various intersection and operational improvements along Causeway Boulevard east and west of US 41 (SR 45/SR 599) along US 41 from south of the Causeway Boulevard intersection to north of the Causeway Boulevard intersection. These improvements include the construction of a grade separation of US 41/SR 45 at the CSX railroad crossing located approximately 1,400 feet south of the Causeway Boulevard intersection. Bicycle and pedestrian facility improvements along US 41 and Causeway Boulevard are also provided.

Figure 1-1 Project Location Map



1.2 Project Purpose and Need

Purpose

The purpose of this project is to reduce traffic delays associated with the CSX railroad crossing, adequately support the safe movement of vehicle traffic, including trucks and freight, and enhance connectivity and safety for bicyclists and pedestrians.

Need

As expressed in the original 1994 EA/FONSI, the need for the 22nd Street Causeway/Causeway Boulevard improvements was based on the following criteria: System Linkage; Capacity; Transportation Demand; Federal, State, or Local Government Authority; Socioeconomic Demand; Modal Interrelationships; Safety; and Navigation.

For the current segment, US 41 and Causeway Boulevard are vital arterial highways which serve the City of Tampa located in Hillsborough County. The US 41/SR 45 and Causeway Boulevard intersection experiences traffic delays during the AM and PM peak periods with heavy truck traffic (approximately 13% of the daily volume) traversing through the intersection. The presence of CSX railroad crossings to the south and east of the intersection also further contribute to these traffic delays. The CSX railroad crossing located to the south of the intersection causes traffic delays particularly during the AM peak period. This project will address traffic delays associated with the CSX railroad crossing to the south of the US 41 and Causeway Boulevard intersection and will facilitate the safe movement of vehicle traffic through the project corridor.

In addition, this project will also address multimodal connectivity and safety within the area. Although there are sidewalks and dedicated bicycle lanes along both sides of Causeway Boulevard within the project limits, there are only sidewalks and no dedicated bicycle facilities along US 41 within the project limits. Between 2017 and 2021, there were 10 crashes involving bicyclists or pedestrians. These 10 crashes resulted in 1 fatality as well as a total of 8 injuries.

The proposed improvements have been identified in the Hillsborough County Transportation Planning Organization's (TPO) 2045 Adopted Long Range Transportation Plan (under the Hillsborough County Freight Hot Spots), the TPO's Fiscal Year 2022/23-2026/27 Transportation Improvement Program, as well as the FDOT's Statewide Transportation Improvement Plan and Strategic Intermodal System (SIS) Adopted 1st 5-Year Program. US 41 has also been identified as a Goods Movement Roadway Corridor from I-4 to the Manatee County Line and is a priority project for the National Highway Freight Program.

1.3 Existing Facility and Proposed Improvements

1.3.1 Existing Facility

The project limits identified along US 41 begin south of Denver Street (MP 22.578) and extend north of the Causeway Boulevard intersection to 23rd Avenue (MP 23.925). The improvements along Causeway Boulevard begin west of 45th Street (MP 3.554) and extend east of the Causeway Boulevard intersection terminating prior to the CSX crossing (624815B; MP 2.971). US 41 is currently

a six-lane roadway throughout the project limits and Causeway Boulevard is currently four-lanes. US 41 and Causeway Boulevard are functionally classified by the FDOT as urban principal arterials. US 41 south of Causeway Boulevard and Causeway Boulevard west of US 41 are part of FDOT's Strategic Intermodal System (SIS), designated as a SIS Connector. The CSX railroad crossing east of US 41 is a designated SIS Railway Corridor and the CSX railroad crossing south of Causeway Boulevard is designated as a SIS Railway Connector. There is one bridge culvert south of Causeway Boulevard for US 41 over Delaney Creek (MP 23.003).

US 41 from south of Denver Street to Causeway Boulevard is a divided 6-lane roadway with a 19-foot median, 10-foot outside travel lanes, 11-foot middle and inside travel lanes, curb and gutter, and a sidewalk on both sides. The inside northbound travel lane from north of St. Paul Street becomes one of the two left-turn lanes for the Causeway Boulevard intersection. The sidewalk on the east side is 6-foot wide and the sidewalk on the west side varies from 5-foot to 6-foot wide.

Along US 41 from north of St. Paul Street to Causeway Boulevard, the existing typical section consists of a 5-lane curbed roadway with asphalt pavement, three travel lanes southbound and two travel lanes northbound divided by a 29-foot median. The inside northbound travel lane from north of St. Paul Street becomes one of the two left-turn lanes for the Causeway Boulevard intersection. The southbound travel lanes consist of a 10-foot outside, and 11-foot middle and inside lanes. The northbound travel lanes consist of 10-foot outside and 11-foot inside. The sidewalk on both sides varies between 5-foot to 6-foot wide.

Along US 41 from north of Causeway Boulevard to just north of S. 23rd Avenue, the existing typical section consists of an undivided 6-lane roadway with asphalt pavement, 11-foot travel lanes, a centered 10-foot bi-directional turn lane, curb and gutter, and 4-foot sidewalk along both sides of the roadway.

Along Causeway Boulevard from S. 45th Street to Sagasta Street, the existing typical section consists of an undivided 4-lane roadway with concrete pavement, 12-foot lanes, a centered 14-foot bi-directional turn lane, curb and gutter, 4-foot bike lanes, and 6-foot sidewalks.

The existing typical section of Causeway Boulevard from Sagasta Street to US 41 consists of a divided 4-lane roadway with concrete pavement and 12-foot travel lanes, 4-foot bicycle lanes, and 6-foot sidewalks on both sides.

The existing typical section of Causeway Boulevard from US 41 to the end project limits consists of a divided 4-lane roadway with concrete pavement and 12-foot travel lanes, 4-foot bicycle lanes, and 6-foot sidewalks on both sides.

The majority of the existing ROW along US 41 is 100 feet wide. In the vicinity of the CSX railroad, the ROW width varies from 100 to 332-feet. CSX Transportation owns a large portion of the adjacent property along both sides of US 41 where the CSX railroad crosses at grade. Causeway Boulevard is 150 feet wide or greater west of S. 45th Street and reduces to 100 feet wide around S. 47th Street. The ROW increases around the US 41 intersection along Causeway Boulevard then reduces to 100 feet wide before the CSX railroad crossing.

1.3.2 Proposed Improvements

This Design Change and ROW Authorization Project Development and Environment (PD&E) Reevaluation study (WPIS# 440749-1), with a 2046 Design Year, is evaluating various operational improvements along US 41/SR 45/SR 599/S. Tamiami Trail (US 41) from south of the Causeway Boulevard intersection to north of the Causeway Boulevard intersection. The study will evaluate roadway widening/reconstruction, new stormwater management facilities, new bridge overpasses at Delaney Creek, the CSX railroad, and other roadways for local traffic needs. Intersection and operational improvements being evaluated include signalization and turn lane additions for Hartford Street, US 41/Causeway Boulevard, and 47th Street. In addition to addressing operational improvements, this project will address the need for pedestrian/ bicycle accommodations and improving connectivity and safety for these modes.

There are multiple typical sections throughout the project limits. From just south of Denver Street to north of Trenton Street, the proposed typical section includes reconstructing US 41 with concrete pavement to accommodate a 6-lane divided urban curbed section with 12-foot lanes, 7-foot buffered bicycle lanes, and 10-foot sidewalks on both sides. The median width varies from 19-22 feet to provide turn lanes with raised traffic separators between opposing directions of travel. The proposed improvements will require the acquisition of ROW beyond the existing footprint varying from 0-22 feet along the west side and varying from 0-17 feet along the east side of US 41.

From north of Trenton Street the proposed typical section grade separates US 41 to continue a concrete paved typical section to south of St. Paul Street. The proposed typical section consists of a 6-lane divided urban section with concrete pavement, 12-foot lanes and 10-foot inside and outside paved shoulders. A northbound exit ramp connects to 36th Avenue with a t-intersection configuration on the east side of US 41. The proposed concrete ramp consists of a 15-foot travel lane, 7-foot buffered bicycle lane and a 10-foot sidewalk on the eastside. The existing US 41 southbound mainline pavement will be repurposed to accommodate a two-lane undivided frontage road for local access to adjacent properties. The proposed frontage road is an urban curbed section with asphalt pavement, 12-foot travel lanes, and a 10-foot sidewalk on the west side. Bridge overpasses are proposed for the US 41 mainline over Delaney Creek, 36th Avenue, and the at grade CSX Crossing (No 624802A). The proposed improvements will require the acquisition of ROW varying from 29 to 88 feet along the west side and varying from 39 to 200 feet along the east side.

From north of St. Paul Street to the Causeway Boulevard intersection, the proposed typical section along US 41 consists of a 6-lane divided urban section with concrete pavement, 12-foot lanes, 10-foot outside paved shoulders on the west side and a 7-foot buffered bicycle lane on the east side. The median bifurcates to accommodate three 12-foot left turn lanes approaching the intersection with one 12-foot right turn lane along the outside in the northbound direction. Milling and resurfacing is proposed for the outside 22-feet of the existing southbound lanes. This area will be restriped to provide a frontage road with one 15-foot lane and a 7-foot buffered bicycle lane on the outside with a new raised curb and 10-foot sidewalk. The proposed improvements will require the acquisition of ROW varying from 0 to 160 feet along the east side only.

The proposed typical section for US 41 north of Causeway Boulevard consists of a 6-lane divided urban section with 12-foot lanes, 7-foot buffered bike lanes and 6-foot sidewalks. The northbound

lanes will be asphalt and the southbound lanes will be concrete. There are two 12-foot left turn lanes and one 12-foot right turn lane shown in the southbound direction. The proposed improvements will require the acquisition of ROW varying from 30 to 45 feet along the west side and varying from 0 to 45 feet along the east side.

The proposed typical section for Causeway Boulevard from S. 45th Street to US 41 widens the existing concrete pavement to accommodate a 4-lane divided urban section with 11-foot travel lanes, 7-foot buffered bike lanes and 6-foot sidewalks along the outside. Approaching the US 41 intersection, there are two 11-foot left turn lanes and three 11-foot right turn lanes in the eastbound direction. The proposed improvements will require the acquisition of ROW varying from 0 to 44 feet along the north side only.

The proposed typical section for Causeway Boulevard from US 41 to the end project limit just west of the CSX railroad crossing consists of a westbound concrete and eastbound asphalt 4-lane divided urban section with 11-foot travel lanes, 7-foot buffered bike lanes and 6-foot sidewalks on the outside. Approaching the US 41 intersection, there are two 11-foot left turn lanes and one 11-foot right turn lane in the westbound direction. The proposed improvements will require the acquisition of ROW varying from 0 to 4 feet along the north side only.

1.4 Report Purpose

The purpose of this Noise Study Report is to document the noise analysis performed to support decisions related to the evaluation of the project Preferred Alternative and to summarize potential noise impacts to the project area. This Noise Study Report was conducted in accordance with the PD&E Manual and applicable State and Federal natural resources regulations.

2 METHODOLOGY

The traffic noise analysis was prepared in accordance with all applicable guidelines as stated within both Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) and Part 2, Chapter 18 of the FDOT's PD&E Manual (the FDOT's Noise Policy). As such, 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 traffic noise impacts during the design year of roadway improvement projects for which the regulations, policies, and guidelines within 23 CFR 772 and the FDOT's Noise Policy are applicable.

For properties with uses other than residential, the highway traffic noise analysis methodologies described in the FDOT's A Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations were used. One special land use within the study area consists of an active sports area.

2.1 Noise Metrics

All noise levels were assessed as the hourly equivalent sound level, Leq(h), in terms of A-weighted decibels, dB(A). The hourly equivalent sound level, Leq(h), is the equivalent steady-state sound level which in a period of one hour contains the same acoustic energy as the time-varying sound level during that hour. The A-weighted decibel filtering scale applies numerical adjustments to sound frequencies to emphasize the frequencies at which human hearing is sensitive, and to minimize the frequencies to which human hearing is not as sensitive.

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). In predicting traffic noise levels and assessing impacts, traffic characteristics that would yield the highest traffic noise level for the 2018 existing year and the 2046 design year were used. It is known that the highest traffic volume (also taking into consideration truck percentages) and the highest average speed usually create the noisiest conditions. Maximum peak-hourly traffic representing LOS C was used, unless traffic analysis shows that LOS C would not be reached. If LOS C was not reached, demand volumes were used. Detailed traffic data (e.g., motor vehicle volumes, fleet mixes, speeds) are provided in Appendix B of this NSR.

2.3 Noise Abatement Criteria

For the evaluation of traffic noise, the FHWA established Noise Abatement Criteria (NAC). As shown in **Table 2-1**, these 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: Noise Abatement Criteria

Hourly Equivalent A-Weighted Sound Level (decibels (dB(A))				
Activity Category	Activity Leq(h)[1]		Evaluation Location	Activity Description
	FHWA	FDOT		
A	57	56	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67	66	Exterior	Residential
C[2]	67	66	Exterior	Active sport 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, Section4(f) sites, schools, television studios, trails, and trail crossings
D	52	51	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or 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

[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.

Sources: Table 1 of 23 CFR Part 772 and Table 18.1 of Chapter 18 of the FDOT's PD&E Manual, Part 2 (dated 7-1-2020).

In determining traffic noise impacts for properties with Activity Category A, B, C or E, areas of frequent exterior human use should be identified. For those properties with Activity Category D, interior areas of frequent human use should be identified. Unless the area of exterior frequent human use is identified elsewhere, residential receptor sites are be placed at the edge of the dwelling unit closest to the major traffic noise source

When more than one unit is clustered together, a single receptor can be analyzed as representative of a group of noise sensitive sites. Each residence in a multifamily dwelling is counted as one receptor when determining impacted and benefited receptors. Noise sensitive receptors may also consist of

parks, schools, hospitals, and other sites where quiet is important for normal activities. The location of the receptor in these cases will be dictated by the location of the noise source and the exterior activity that may be impacted, if any.

Table 2-2: Typical Noise Levels

Common Outdoor Noise Levels	Noise Level (dB(A))	Common Indoor Noise Levels
	110	Rock Band
Jet Flyover at 1,000 feet	100	Inside Subway Train (NY)
Gas Lawn Mower at 3 feet		
Diesel Truck at 50 feet	90	Food Blender at 3 feet
Noisy Urban Daytime	80	Garbage Disposal at 3 feet
Gas Lawn Mower at 100 feet	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Small Theater, Large Conference Room (Background)
Quiet Suburban Nighttime		Library
	30	
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (Background)
	20	
		Broadcast and Recording Studio
	10	
	0	Threshold of Hearing

Source: California Dept. of Transportation Technical Noise Supplement, September 2013.

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 levels 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 methods of abating traffic noise impacts.

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. Speed limits can also be reduced.

2.4.2 Alignment Modifications

Modifying the horizontal and / or vertical alignment of a roadway can also 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.

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 noise sensitive land use, 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. For a noise barrier to be considered a potential abatement measure the barrier must meet the following conditions:

- Minimum Noise Reduction Requirements – A barrier must provide at least a 5 dB(A) reduction in traffic noise for two or more impacted noise sensitive 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 are discrete representative locations on a property that has noise sensitive land uses (see **Table 2-1**).

- Cost Effective Criteria – At a cost of $30 per square foot, a barrier should not cost more than $42,000 per benefited noise sensitive receptor (a benefited receptor is one that receives at least a 5 dB(A) reduction in noise from a mitigation measure). For special land uses (e.g., the outdoor eating area of a restaurant), the cost of a barrier should not be more than $995,935 per person-hour per square foot (dollars / person-ft2). Notably, 23 CFR 772 and the FDOT's Noise Policy address the cost of abatement with respect to the number of modeled receptors. While the number of modeled receptors has been reported in this NSR, because a receptor can represent more than one property or multiple receptors can be modeled on a single property, cost calculations and considerations were made based on the number of benefited properties and not the number of benefited receptors.

3 TRAFFIC NOISE ANALYSIS

3.1 Noise Sensitive Receptors

As previously stated, receptors are discrete representative locations of a noise sensitive land use. The locations of the receptors evaluated for this study are shown on aerial maps provided in Appendix C. A total of 59 receptors representing 55 properties for which the land use has a NAC were evaluated within 13 Common Noise Environments (CNEs). A CNE is comprised of receptors within the same NAC activity category that are exposed to similar noise sources and levels. The evaluated properties represent:

- 52 residences
- 1 active sports area
- 1 restaurant
- 1 motel

Table 3-1 provides a list of the evaluated CNEs, the land use for each CNE, and the number of evaluated receptors and properties. See **Appendix C** for the Noise CNE & Monitoring Map.

Table 3-1: Common Noise Environments

CNE	Subdivision, Location or Area	Activity Category	Number of Receptors	Number of Evaluated Properties
01	Residence located on northeast corner of Sagasta Street and S 30th Avenue, south side of Causeway Boulevard	B - residential	1	1
02	Ranch House Motel (Exterior use area)	E - motel	1	1
03	Azucar Sandwich Shop (Exterior use area)	E - restaurant	1	1
04	Residences located along S 34th Avenue on the southbound side of US 41	B – residential	1	1
05	Residences located on the southbound side of US 41 (S 50th St), just south of S 34th Avenue	B - residential	2	2
06	Residences located north of Hartford Street on the northbound side of US 41	B - residential	2	2
07	Urban Core Paintball facility	C - recreation	5	1
08	Residences located south of S 24th Avenue along northbound US 41	B - residential	1	1
09	J & L Family Park mobile homes	B - residential	28	28
10	Residences located along Sagasta Street, west of US 41 (S 50th St), between S 21st Avenue and S 24th Avenue	B - residential	3	3

11	Residences located along El Camino Blanco Boulevard, north of Causeway Boulevard	B - residential	6	6
12	Residence located on eastbound El Camino Blanco Boulevard, west of US 41	B - residential	1	1
13	Residences located on the south side of S 26th Avenue, between S 45th St and S 47th Street	B - residential	7	7
Total			59	59

Most land uses were evaluated as Activity Category “B” residences. With one Activity Category “C” land use at the paintball facility, abatement would be considered if the predicted future traffic noise level with the improvements was 66 dB(A) or greater for each of these land use categories. Two Activity Category “E” land uses at the motel and sandwich shop would be considered for abatement if the future predicted traffic noise level at these locations was 71 dB(A) or greater.

3.2 Measured Sound Levels

To verify that the TNM accurately predicts existing traffic noise levels, field sound level measurements are taken. During each measurement period, average vehicle travel speeds, vehicle count and fleet identification (i.e., automobiles, trucks, buses, and motorcycles), site conditions (i.e., typography, distance from the roadway(s)) and sources of sound other than motor vehicles (e.g., aircraft flyovers, birds, barking dogs) are noted. The motor vehicle data and site conditions are used to create input for the TNM, and the model is executed. Following FDOT’s methodology, the TNM is considered valid to predict existing conditions if the field measured sound levels are within 3 dB(A) of the TNM predicted highway traffic noise levels.

The field measurements were conducted in accordance with the FHWA’s Measurement of Highway-Related Noise. The measurements were obtained using Rion sound level meters (SLM) Model NL-42. The SLMs were calibrated before and after each monitoring period with a Rion calibrator Model NC-74.

Short-term noise monitoring data was acquired at three (3) receptor locations within influence of highway traffic noise from Causeway Boulevard and US 41 (S 50th St) on Tuesday, April 13, 2021. Site sketch information on the noise measurements can be found in **Appendix D**. Classified vehicle traffic counts from Causeway Boulevard and US 41 (S 50th St) were acquired concurrently with each of the short-term noise monitoring sessions. Measurements were taken for three ten-minute intervals. Weather conditions for the short-term noise monitoring session were favorable for obtaining accurate noise level data.

Table 3-2 presents the field measurements and the validation results. As shown, the ability of the model to predict noise levels within the FDOT limit of plus or minus 3.0 dBA for the project was confirmed.

Table 3-2: TNM Validation Table

Receptor	CNE	Land Use NAC[1]	Date Start – Stop Time	Distance to Existing Edge of Road (feet)	TNM-Predicted $L_{eq(h)}$ dB(A)	Measured $L_{eq(h)}$ dB(A)	Validation Delta (Meas. – Pred.)	Validate?
M-01	13	B	4/13/21 11:15 – 11:24 am	45' to Causeway Blvd	70.2	73.6	3.4	Yes
			4/13/21 11:25 – 11:34 am		70.1	73.5	3.4	Yes
			4/13/21 11:55 – 12:04 pm		70.0	72.9	2.9	Yes
M-02	05	F	4/13/21 12:25 – 12:34 pm	59' to US 41 (S 50th St)	71.7	72.9	1.2	Yes
			4/13/21 12:35 – 12:44 pm		71.0	72.3	1.3	Yes
			4/13/21 12:45 – 12:54 pm		71.0	73.3	2.3	Yes
M-03	09	B	4/13/21 10:15 – 10:25 am	55' to US 41 (S 50th St)	69.1	66.5	-2.6	Yes
			4/13/21 10:25 – 10:35 am		68.6	67.8	-0.8	Yes
			4/13/21 10:35 – 10:45 am		68.5	65.8	-2.7	Yes

1. Land uses in this table are identified only for the exact noise monitoring locations. Noise monitoring locations were selected to represent the overall noise environment and for optimal TNM model validation throughout each Common Noise Environment (CNE), regardless of land use.

3.3 Predicted Traffic Noise Levels

The predicted existing, future No Build Alternative, and future Preferred Build Alternative traffic noise levels for each evaluated receptor are provided in **Table 3-3** provides the range of predicted traffic noise within each CNE and the number of evaluated receptors / properties at which the Preferred Build Alternative traffic noise level is predicted to approach, meet, or exceed the NAC. None of the receptors / properties are predicted to have traffic noise levels in the future with the Preferred Build Alternative that would increase substantially (i.e., 15 dB(A) or greater) when compared to existing levels.

Peak and off-peak models were calculated for each CNE since traffic is not directionally equal in both directions using Demand volumes. Therefore, nearest traffic is represented by the peak hour volumes in one model and off-peak hour volumes in the other. Noise levels shown in **Table 3-3** represent the single loudest levels between those predicted peak and off-peak traffic conditions. Future (2046) Preferred Build Alternative traffic noise levels are predicted to approach, meet, or exceed the NAC at 11 receptors, representing 11 residences.

Table 3-3: Predicted Traffic Noise Levels

Noise-Sensitive Receptors				Predicted Traffic Noise Levels (dB(A))[1]			
Rec. No.	Use	NAC	Address	2018 Existing[2,3]	2046 No-Build[2,3]	2046 Build[2,3]	Δ[4]
01-B-01	Residence	B	4901 Causeway Blvd	59.8	61.6	61.4	1.6
02-E-01	Hotel	E	2909 S 50th St	71.1	73.2	69.7	-1.4
03-E-01	Restaurant	E	3137 S 50th St	73.5	75.1	67.3	-6.2
04-B-01	Residence	B	3314 Dorothy's Dream Place	62.5	64.6	63.1	0.6
05-B-01	Residence	B	4917 S 34th Ave	61.4	63.4	61.8	0.4
05-B-02	Residence	B	4917 S 34th Ave	55.8	57.9	57.4	1.6
06-B-01	Residence	B	5010 Hartford Street	59.3	61.2	64.4	5.1
06-B-02	Residence	B	5010 Hartford Street	57.9	60.1	61.6	3.7
07-C-01	Recreational	C	3378 S 50th St	61.0	62.8	65.1	4.1
07-C-02	Recreational	C	3378 S 50th St	59.2	60.9	63.9	4.7
07-C-03	Recreational	C	3378 S 50th St	57.8	59.5	63.2	5.4
07-C-04	Recreational	C	3378 S 50th St	57.5	59.3	62.9	5.4
07-C-05	Recreational	C	3378 S 50th St	59.1	60.8	63.7	4.6
08-B-01	Residence	B	5015 24th Ave 1-10	57.1	59.0	58.5	1.4
09-B-01	Residence	B	2310 S 50th St	73.1	75.0	74.0	0.9
09-B-02	Residence	B	2310 S 50th St	68.0	69.9	69.1	1.1
09-B-03	Residence	B	2310 S 50th St	66.1	68.0	67.1	1.0
09-B-04	Residence	B	2310 S 50th St	64.7	66.6	65.6	0.9
09-B-05	Residence	B	2310 S 50th St	63.3	65.2	64.0	0.7
09-B-06	Residence	B	2310 S 50th St	62.0	63.9	62.5	0.5
09-B-07	Residence	B	2310 S 50th St	60.8	62.7	61.3	0.5
09-B-08	Residence	B	2310 S 50th St	60.0	61.9	60.4	0.4
09-B-09	Residence	B	2310 S 50th St	57.8	59.6	58.5	0.7
09-B-10	Residence	B	2310 S 50th St	58.1	60.0	58.6	0.5
09-B-11	Residence	B	2310 S 50th St	60.9	62.8	61.9	1.0

Noise-Sensitive Receptors				Predicted Traffic Noise Levels (dB(A))[1]			
Rec. No.	Use	NAC	Address	2018 Existing[2,3]	2046 No-Build[2,3]	2046 Build[2,3]	Δ[4]
09-B-12	Residence	B	2310 S 50th St	52.6	54.5	54.3	1.7
09-B-13	Residence	B	2310 S 50th St	52.7	54.6	53.4	0.7
09-B-14	Residence	B	2310 S 50th St	70.9	72.8	72.4	1.5
09-B-15	Residence	B	2310 S 50th St	65.5	67.4	67.0	1.5
09-B-16	Residence	B	2310 S 50th St	63.1	65.0	64.2	1.1
09-B-17	Residence	B	2310 S 50th St	61.4	63.3	62.3	0.9
09-B-18	Residence	B	2310 S 50th St	60.2	62.0	60.7	0.5
09-B-19	Residence	B	2310 S 50th St	58.9	60.7	59.2	0.3
09-B-20	Residence	B	2310 S 50th St	57.2	59.1	57.7	0.5
09-B-21	Residence	B	2310 S 50th St	55.7	57.6	56.4	0.7
09-B-22	Residence	B	2310 S 50th St	54.4	56.4	55.3	0.9
09-B-23	Residence	B	2310 S 50th St	68.0	69.8	70.0	2.0
09-B-24	Residence	B	2310 S 50th St	61.5	63.4	63.3	1.8
09-B-25	Residence	B	2310 S 50th St	60.2	62.1	62.2	2.0
09-B-26	Residence	B	2310 S 50th St	65.1	67.0	67.0	1.9
09-B-27	Residence	B	2310 S 50th St	62.6	64.5	64.4	1.8
09-B-28	Residence	B	2310 S 50th St	60.7	62.6	62.6	1.9
10-B-01	Residence	B	2111 S 49th St	60.5	62.4	62.6	2.1
10-B-02	Residence	B	2303 S 49th St	60.4	62.3	61.6	1.2
10-B-03	Residence	B	4901 S 23rd Ave	64.1	65.9	65.6	1.5
11-B-01	Residence	B	2604 S 47th St	57.3	58.4	60.5	3.2
11-B-02	Residence	B	4713 El Camino Blanco Blvd	57.6	58.7	60.6	3.0
11-B-03	Residence	B	4720 El Camino Blanco Blvd	58.3	59.6	62.1	3.8
11-B-04	Residence	B	4902 El Camino Blanco Blvd	58.8	60.2	63.3	4.5
11-B-05	Residence	B	4904 El Camino Blanco Blvd	60.2	61.8	64.5	4.3
11-B-06	Residence	B	4910 El Camino Blanco Blvd	62.1	63.8	65.9	3.8

Noise-Sensitive Receptors				Predicted Traffic Noise Levels (dB(A))[1]			
Rec. No.	Use	NAC	Address	2018 Existing[2,3]	2046 No-Build[2,3]	2046 Build[2,3]	Δ[4]
12-B-01	Residence	B	4711 El Camino Blanco Blvd	63.1	64.7	68.2	5.1
13-B-01	Residence	B	4503 26th Ave	59.2	60.2	59.2	0.0
13-B-02	Residence	B	4505 S 26th Ave	59.0	60.1	59.2	0.2
13-B-03	Residence	B	4507 26th Ave	58.3	59.3	58.8	0.5
13-B-04	Residence	B	4509 S 26th Ave	57.8	58.9	58.5	0.7
13-B-05	Residence	B	4511 S 26th Ave	58.0	59.0	59.1	1.1
13-B-06	Residence	B	0 47th Blvd	58.2	59.3	60.9	2.7
13-B-07	Residence	B	2701 N 47th St	59.2	60.3	62.1	2.9

[1] The loudest of Peak vs. Off-Peak traffic predicted noise levels are shown for all design years and conditions.
[2] An impacted CNE may not warrant abatement analysis due to many reasons, including design/construction, safety, access, right-of-way, maintenance, drainage, and utility limitations.
[3] Receptors with a predicted noise level that approach or exceed the NAC are highlighted red with yellow text.
[4] Δ is the difference of 2046 Build Conditions to 2018 Existing Worst Case. No receptors are predicted to have an increase by 15 dB(A) or more above existing. Δ's that are predicted to be lower in the Build Year are a result of design elements that shield the receptor from the traffic source.

Predicted 2018 existing noise levels were compared to 2046 design-year no-build and build noise levels. There are no predicted substantial noise increase impacts directly associated with this project. Of the 59 receptors modeled, eleven (11) receptors were predicted to by impacted by the project. A total of nine CNEs were found to have no noise impacts for this project and four were found to be impacted, as seen on **Table 3-4**.

Table 3-4: Noise Level Impacts by CNE

CNE	NAC	Receptors[3]	Total Receptors in CNE	Impacted CNE? Y/N	Warrant Abatement Analysis[1]? Y/N	Includes Special Land Use[2]? Y/N
01	B	01-B-01	1	N	N	N
02	E	02-E-01	1	N	N	N
03	E	03-E-01	1	N	N	N
04	B	04-B-01	1	N	N	N
05	B	05-B-01, 05-B-02	2	N	N	N
06	B	06-B-01, 06-B-02	2	N	N	N
07	C	07-C-01 thru 07-C-05	5	N	N	**Y**
08	B	08-B-01	1	N	N	N
09	B	**09-B-01 thru 09-B-04**, 09-B-05 thru 09-B-13, **09-B-14 thru 09-B-15**, 09-B-16 thru 09-B-22, **09-B-23**, 09-B-24 thru 09-B-25, **09-B-26**, 09-B-27 thru 09-B-28	28	**Y**	N	N
10	B	10-B-01, 10-B-02, **10-B-03**	3	**Y**	N	N
11	B	11-B-01 thru 11-B-05, **11-B-06**	6	**Y**	N	N
12	B	**12-B-01**	1	**Y**	N	N
13	B	13-B-01 thru 13-B-07	7	N	N	N
		TOTAL	**59**	**4**	**0**	**1**

[1] An impacted CNE may not warrant abatement analysis due to many reasons, including isolated receptors, design/construction, safety, access, right-of-way, maintenance, drainage, and utility limitations.

[2] Special land uses (SLU) are analyzed during the mitigation analysis, defined as an outdoor activity area at facilities such as sports areas, churches and schools where factors such as frequency and duration are assessed to determine activity level and abatement reasonableness.

[3] Impacted receptors shown in bold.

3.4 Evaluation of Abatement Measures

As previously stated, when traffic noise impacts are predicted, noise abatement measures are considered for the impacted properties. The following discusses the FDOT's evaluation of each of the measures for which an overview was provided in Section 2.4 of this NSR.

3.4.1 Traffic Management

Reducing traffic speeds and / or the traffic volume or changing the motor vehicle fleet on the proposed improvements is inconsistent with the goal of improving the ability of the roadway to handle the forecast traffic volume. Therefore, traffic management measures are not considered to be a reasonable noise abatement measure for the project.

3.4.2 Alignment Modifications

A change in the horizontal or vertical alignment of a roadway may reduce noise levels at noise sensitive receptors. The proposed improvements would be constructed to follow the existing roadway alignment. Because shifting the alignment horizontally would require substantial right- of-way acquisitions and, because noise sensitive land uses are located on both sides of the roadway, a modification to the alignment for the purpose of reducing traffic impacts is not considered to be a reasonable noise abatement measure. Additionally, suppressing the roadway's vertical alignment to create a natural berm between the highway and receivers or raising the vertical alignment is not considered to be reasonable due to the cost associated with this measure.

3.4.3 Buffer Zones

As previously stated, to abate predicted traffic noise at an existing noise sensitive land use, the property would have to be acquired. The same cost-effective limit that applies to noise barriers (i.e., $42,000 per benefited noise sensitive receptor) would apply to the purchase price of any impacted noise sensitive property. A review of data from the Hillsborough Property Appraiser indicates that the cost to acquire the developed properties adjacent to proposed improvements would exceed the cost-effective limit. Therefore, creating a buffer zone by acquiring existing noise sensitive properties is not considered to be a reasonable noise abatement measure.

3.4.4 Noise Barriers

While four impacted CNEs are predicted to be impacted, none were found to warrant mitigation analysis as it is determined that noise abatement is not feasible for these areas. As stated in the PD&E Manual section 18.2.3.3, "*once a noise abatement measure is determined to be feasible, the reasonableness of noise abatement will then be determined*". Therefore, mitigation must first pass a feasibility assessment before proceeding to an analysis of reasonableness. After coordination with roadway engineering teams over potential noise barrier locations, various constructability issues were identified that rendered mitigation to be not physically feasible. Specific conditions within each CNE are discussed below.

CNE 09

This CNE, located on the northbound side of US 41 (S 50th St) north of S 24th Avenue, represents the J & L Family Park mobile homes. These residences, analyzed as NAC B, have multiple driveway access directly to US 41. Existing and 2046 future no-build and build-condition hourly equivalent sound levels were predicted at 28 noise-sensitive receptors (refer to **Table 3-3**). Future build-condition noise levels approach or exceed the applicable NAC for 8 sites; no receptors are impacted by a substantial increase.

Under FDOT policy, feasibility of a noise barrier is determined by analyzing factors related to the design and construction including safety, access, barrier height, topography, drainage, utilities, maintenance of the abatement measure, maintenance access to adjacent properties, right of way, and general access to adjacent properties.

For this CNE, a potential noise barrier was considered; however, preliminary findings determined that factors such as access, right of way, utilities, constructability, and maintenance issues would significantly impact feasibility. More specifically, FDOT maintenance requirements call for a least 5 to 7 feet of buffer behind a noise barrier; a potential barrier at CNE 09 would require right of way acquisitions; a potential barrier would completely block ingress and egress access of the residences to US 41 (S 50th St); and overhead power lines present at the location of the potential barrier would cause constructability issues. Aerial and street view images that illustrate these significant feasibility issues are shown on the following pages.

A reasonableness analysis showed that a noise barrier would meet the reasonableness criteria. An 8-foot high, 330-foot-long noise barrier would meet the noise reduction design goal and remained under the cost effectiveness goal.

A noise barrier must meet both the feasible and reasonableness criteria to be recommended for further consideration. Since this noise barrier cannot be built due to construction, utility, access, maintenance and safety concerns, there are no feasible solutions available to mitigate the noise impacts for CNE 09. Therefore, a noise barrier is not recommended for further consideration.

CNE 09 Aerial View

CNE 09 Street View 1

CNE 09 Street View 2

CNE 09 Street View 3

CNE 10

This CNE is located along Sagasta Street, west of US 41 (S 50th St), between S 21st Avenue and S 24th Avenue. This CNE represents single family residences and is evaluated as NAC B. Existing and 2046 future no-build and build-condition hourly equivalent sound levels were predicted at 3 noise-sensitive receptors (refer to **Table 3-3**). Future build-condition noise levels approach or exceed the applicable NAC for one site; no receptors are impacted by a substantial increase.

Impacted receptor 10-B-03 is an isolated impacted receptor. Abatement would not be feasible because under FDOT policy, noise abatement must provide a benefit at a minimum of two impacted receptors. Therefore, based on the noise analyses performed to date, there are no feasible solutions available to mitigate the noise impact for CNE 10.

CNE 11

This CNE is located along El Camino Blanco Boulevard, north of Causeway Boulevard. Representing 6 single family residences, it is evaluated as NAC B. Existing and 2046 future no-build and build-condition hourly equivalent sound levels were predicted at 6 noise-sensitive receptors (refer to **Table 3-3**). Future build-condition noise levels approach or exceed the applicable NAC for one site; no receptors are impacted by a substantial increase.

Impacted receptor 11-B-06 is an isolated impacted receptor. Abatement would not be feasible because under FDOT policy, noise abatement must provide a benefit at a minimum of two impacted receptors. Therefore, based on the noise analyses performed to date, there are no feasible solutions available to mitigate the noise impact for CNE 11.

CNE 12

This CNE represents a single-family residence located along eastbound El Camino Blanco Boulevard, west of US 41 (S 50th St) and is evaluated as NAC B. Existing and 2046 future no-build and build-condition hourly equivalent sound levels were predicted at one noise-sensitive receptor (refer to **Table 3-3**). Future build-condition noise levels approach or exceed the applicable NAC for one site; no receptors are impacted by a substantial increase.

Impacted receptor 12-B-01 is an isolated impacted receptor. Abatement would not be feasible because under FDOT policy, noise abatement must provide a benefit at a minimum of two impacted receptors. Therefore, based on the noise analyses performed to date, there are no feasible solutions available to mitigate the noise impact for CNE 12.

4 NOISE CONTOURS

Land uses such as residences and recreational areas are considered incompatible with highway noise levels that approach or exceed the NAC. To reduce the possibility of additional traffic noise-related impacts in the future, noise level contours were developed for the improved roadway facility. These noise contours delineate the extent of the predicted traffic noise impact area from the improved roadway's edge-of-travel lane for each of the 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 up to 56 dB(A)—the NAC for land uses classified as Activity Category A, up to 66 dB(A)—the NAC for land uses classified as Activity Category B and C, and up to 71 dB(A)—the NAC for land uses classified as Activity Category E.

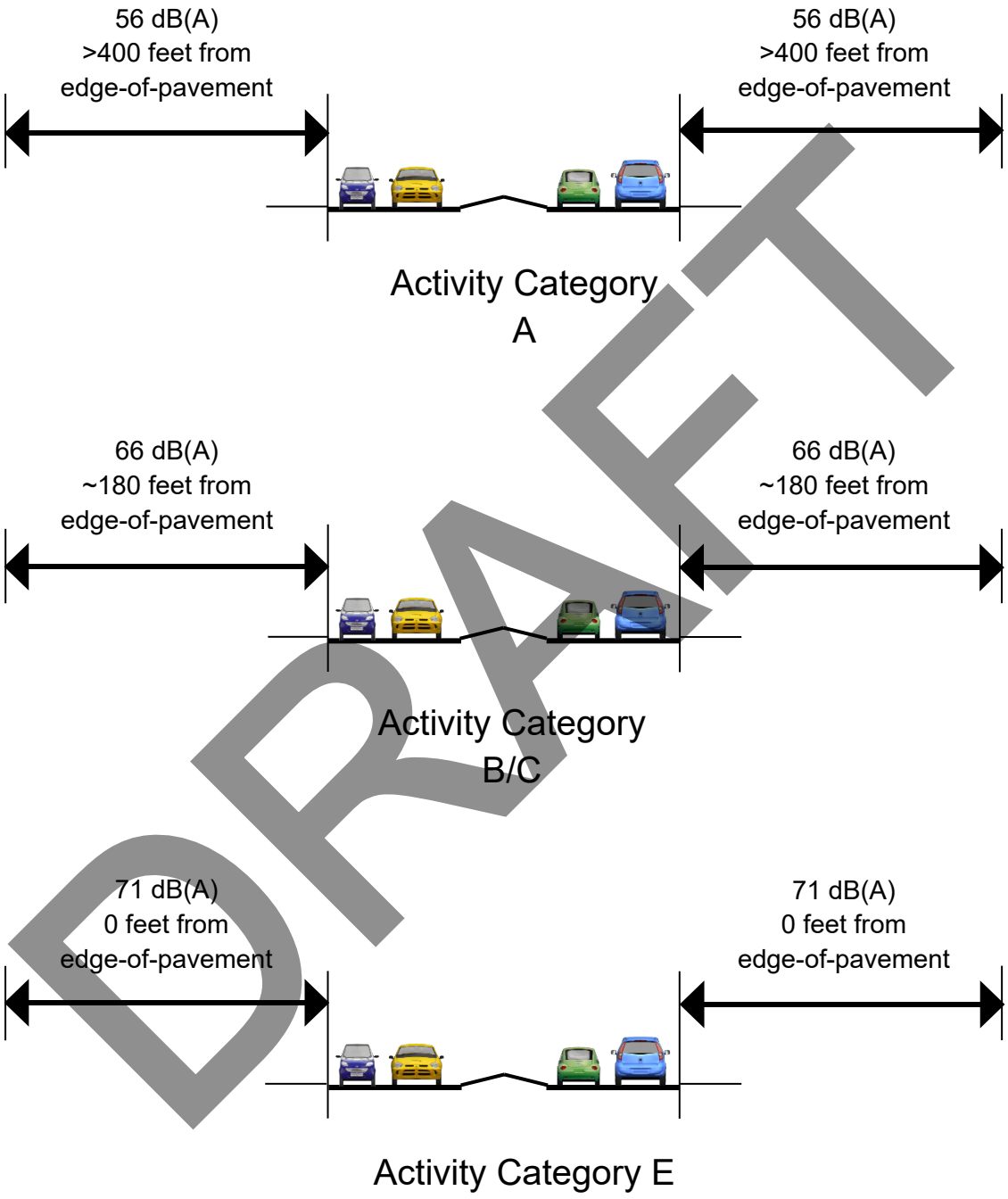
Local officials will be provided a copy of the Final NSR to promote compatibility for the land uses adjacent to the proposed improvements.

Table 4-1: Noise Contour Limits

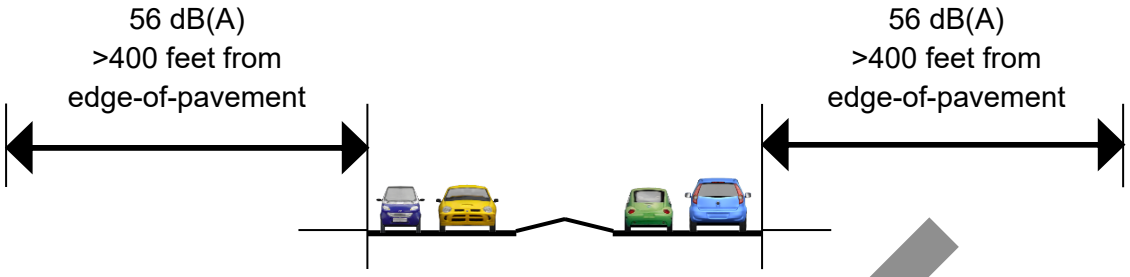
Locations	Distance from Proposed Nearest Travel Lane to Noise Contour (Feet)		
	71 dB(A) NAC E	66 dB(A) NAC B & C	56 dB(A) NAC A
US 41 Between Causeway Blvd and S 31st Ave	0	180	>400
US 41 Between S 31st Ave and S 34th Ave	0	100	>400
US 41 Between S 34th Ave and Trenton St	0	120	>400
US 41 South of Trenton St	100	220	>400
SR 676 East of US 41	40	120	>400
US 41 North of Causeway Blvd	40	140	>400
Causeway Blvd West of US 41	40	100	>400

Figure 4-1 Noise Contours for Local Officials

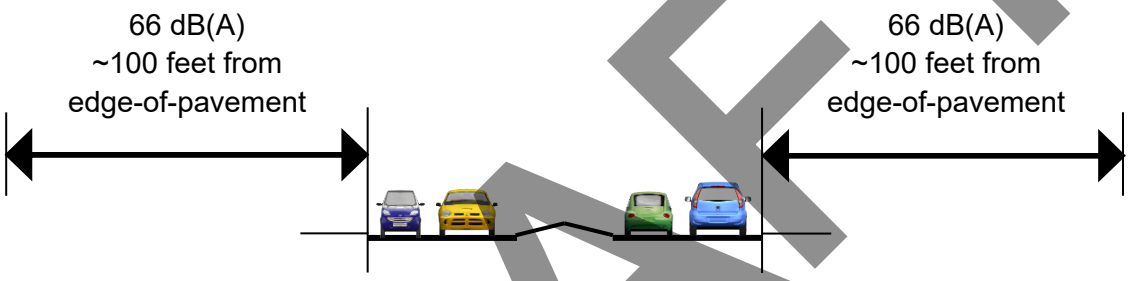
US 41 Between Causeway Blvd and S 31st Ave



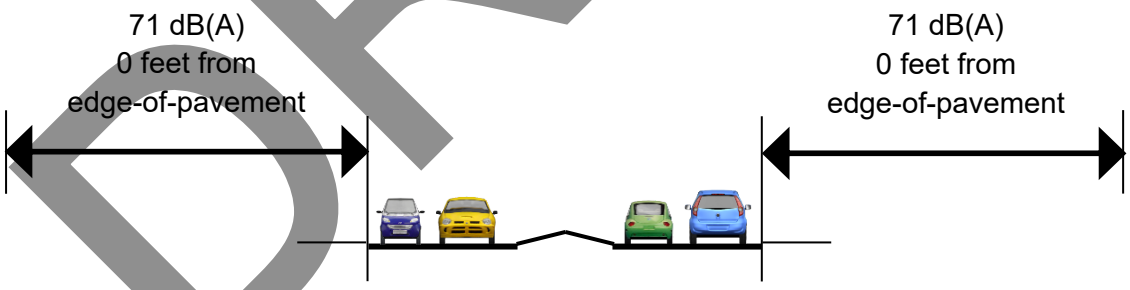
US 41 Between S 31st Ave and S 34th Ave



Activity Category
A

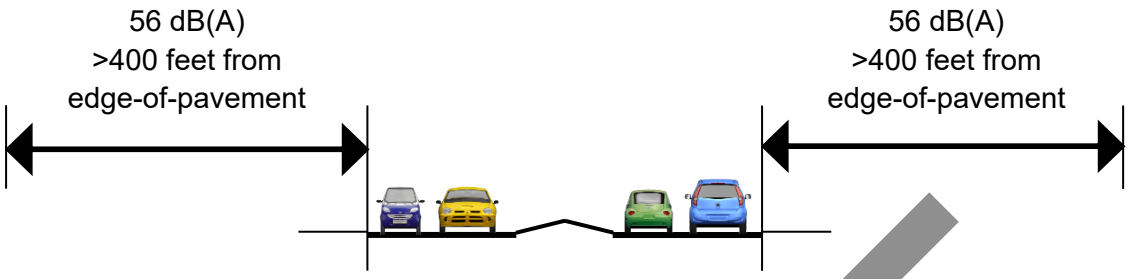


Activity Category
B/C

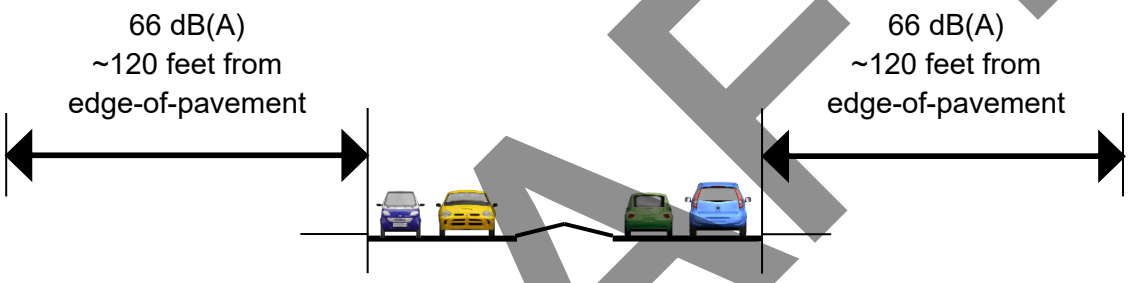


Activity Category E

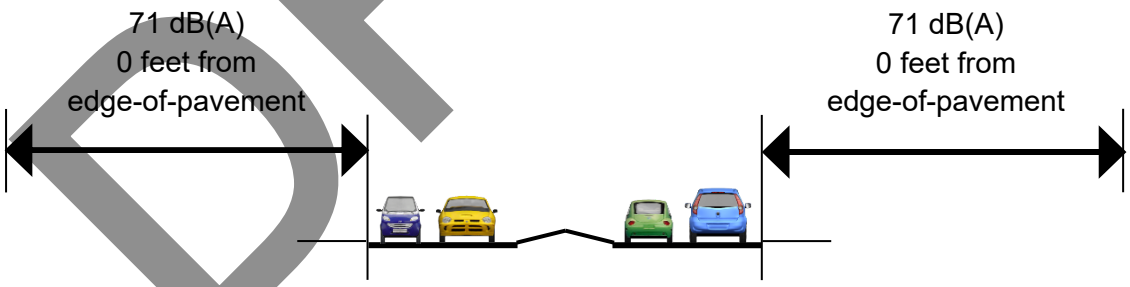
US 41 Between S 34th Ave and Trenton St



Activity Category
A

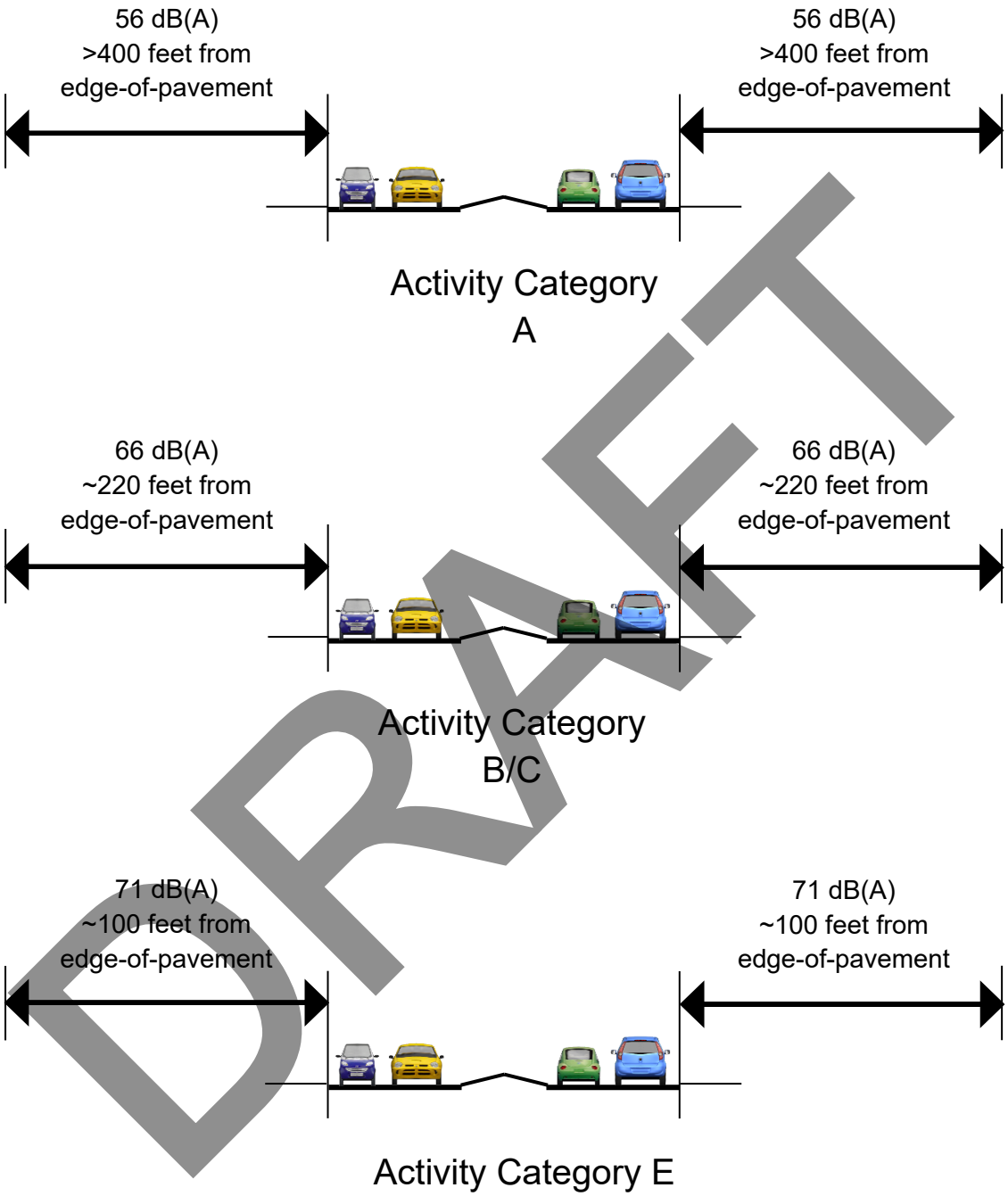


Activity Category
B/C

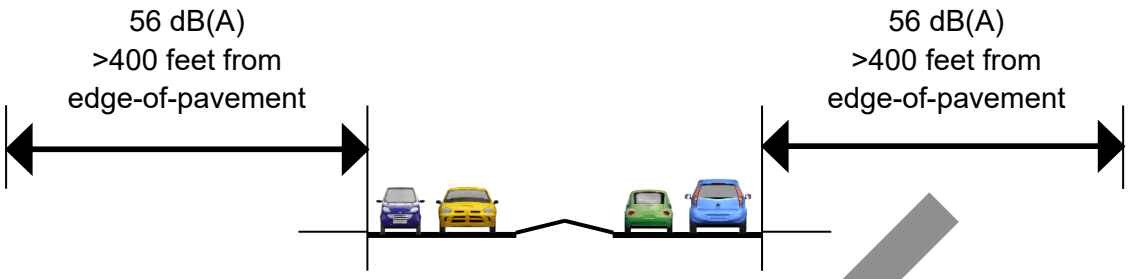


Activity Category E

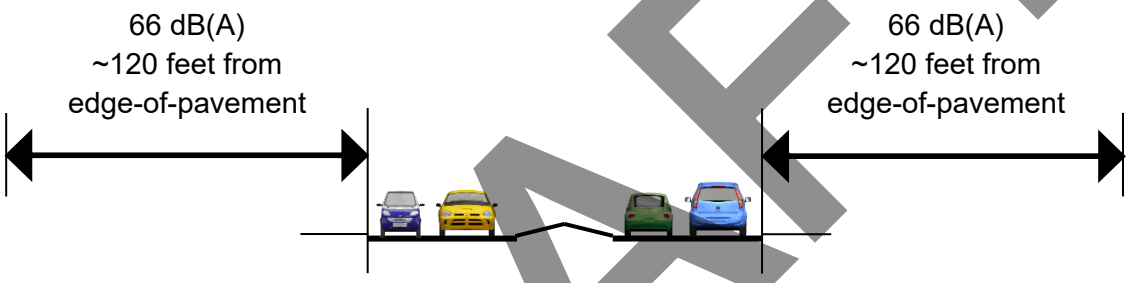
US 41 South of Trenton St



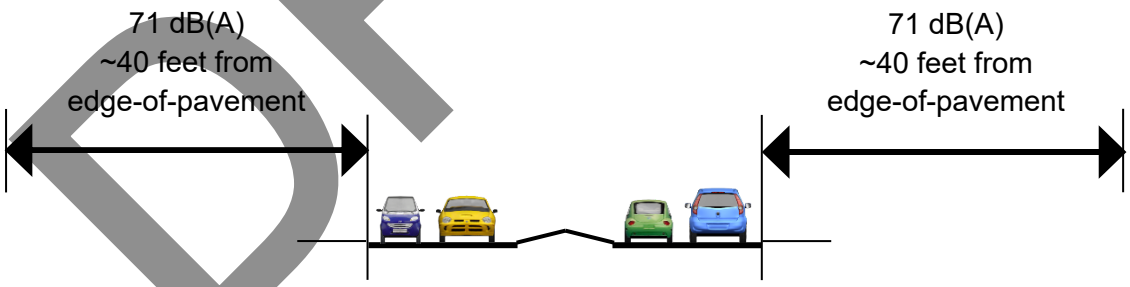
SR 676 East of US 41



Activity Category
A

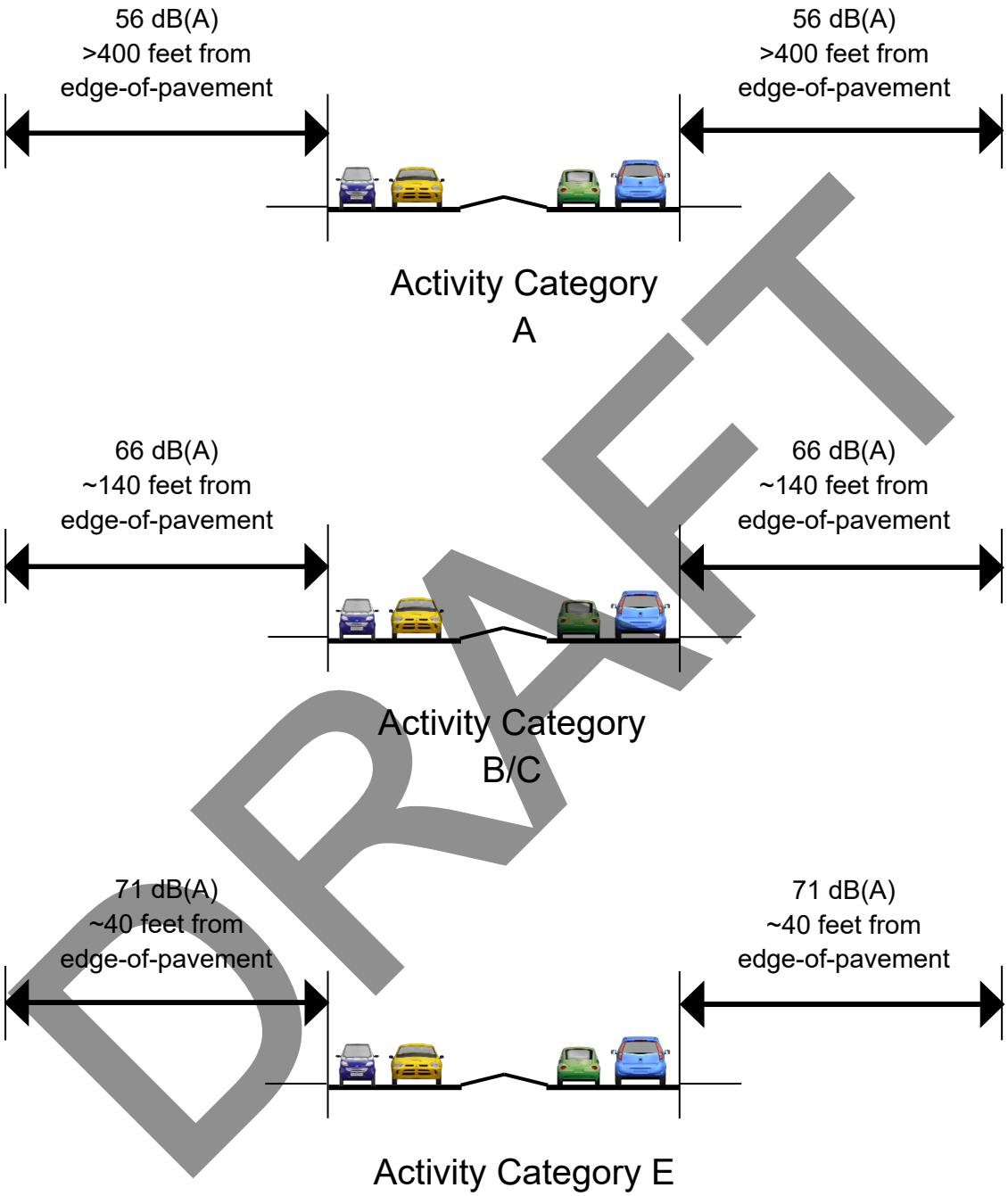


Activity Category
B/C

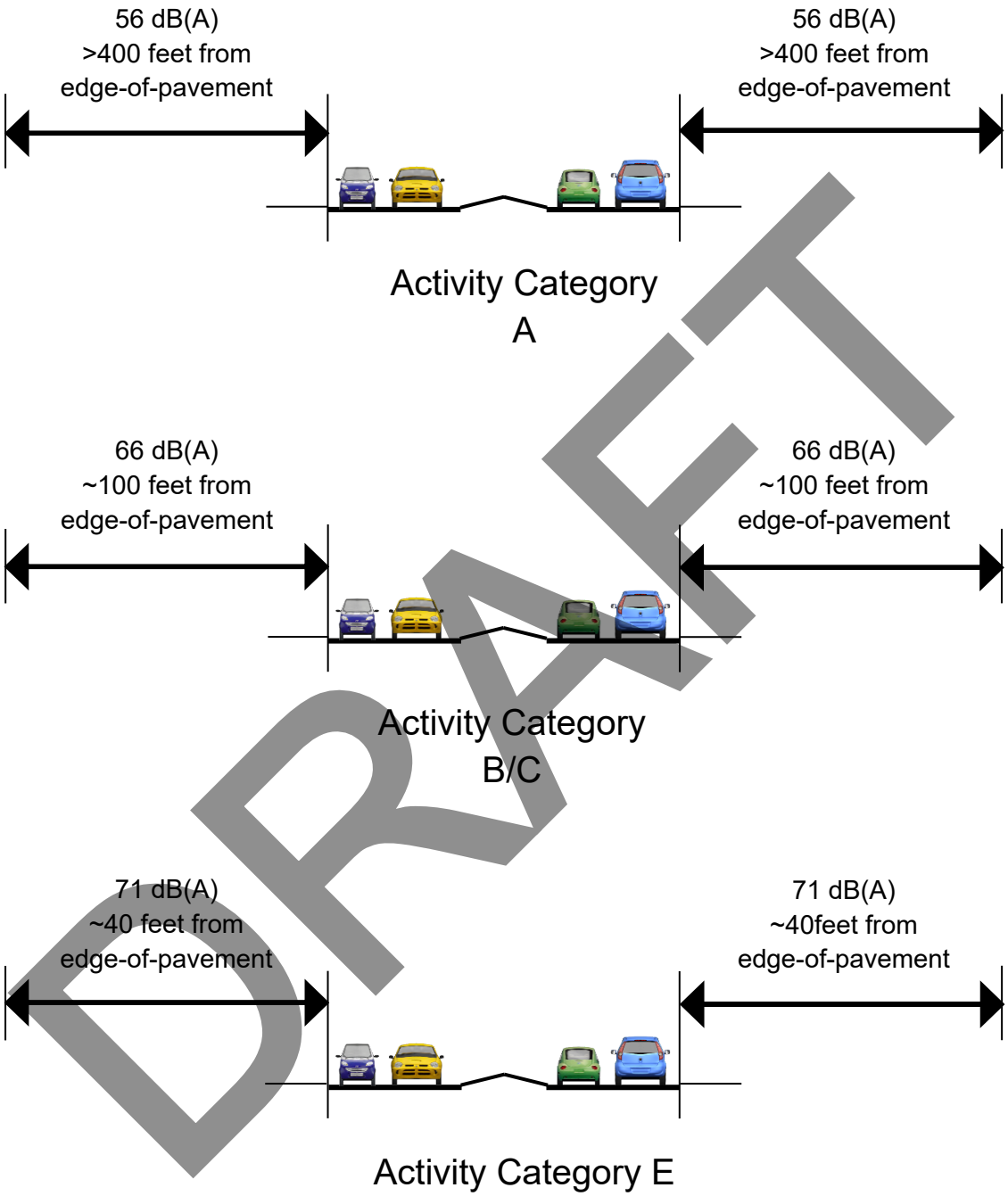


Activity Category E

US 41 North of Causeway Blvd



Causeway Blvd West of US 41



5 CONSTRUCTION NOISE AND VIBRATION

Some land uses adjacent to US 41/SR 45 are identified by the FDOT to be noise- and vibration-sensitive uses (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 any impact.

6 COMMUNITY COORDINATION

Details regarding the hearing process and any traffic noise-related issues raised during the hearing or in the comment period will be documented in the final NSR.

7 CONCLUSIONS

The conclusions of this traffic noise analysis are as follows:

- Predicted noise levels will create eleven (11) NAC residential land use impacts to noise-sensitive receptors in CNEs 09, 10, 11 and 12.
- The proposed project will not create any additional noise impacts due substantial noise increase over predicted existing noise levels.
- No noise barriers were found to meet the criteria for both feasibility and reasonableness.

During a project's PD&E phase, the results of a traffic noise analysis and abatement evaluation are preliminary. During the project's design phase, additional feasibility and reasonableness factors are considered for the preliminary abatement measures. These feasibility factors relate to barrier design and construction (i.e., given site-specific details, can a barrier be constructed at the evaluated location), safety, access to and from adjacent properties, right-of-way 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 making a final determination to construct noise barriers as an abatement measure.

7.1 Statement of Likelihood

The Florida Department of Transportation is committed to the construction of feasible and reasonable noise abatement measures where recommended. However, based on the noise analyses performed to date, there are no feasible and reasonable solutions available to mitigate the noise impacts at CNEs 09, 10, 11, and 12. The reasonableness of providing noise abatement in the form of a noise barrier is subject to a detailed review in Design and subsequent re-evaluations.

8 REFERENCES

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Florida Department of Transportation. *Standard Specifications for Road and Bridge Construction*. January 2017.

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Harris, Cyril M., (Ed.), Piercy, J.E. and Embleton, Tony, F.W. Handbook of Noise Control. Chapter 3, “Sound Propagation in the Open Air”. McGraw-Hill. 1979.

U.S. Environmental Protection Agency. *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*. Washington, D.C. 1971.

APPENDICES

Appendix A – Contract Plans

Appendix B – Traffic Data

Appendix C – Noise CNE & Monitoring Map

Appendix D – Noise Monitoring Field Data Sheets

Appendix E – TNM Modeling Files and PDF of the NSR

APPENDIX A

Contract Plans

CONTRACT PLANS COMPONENTS

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

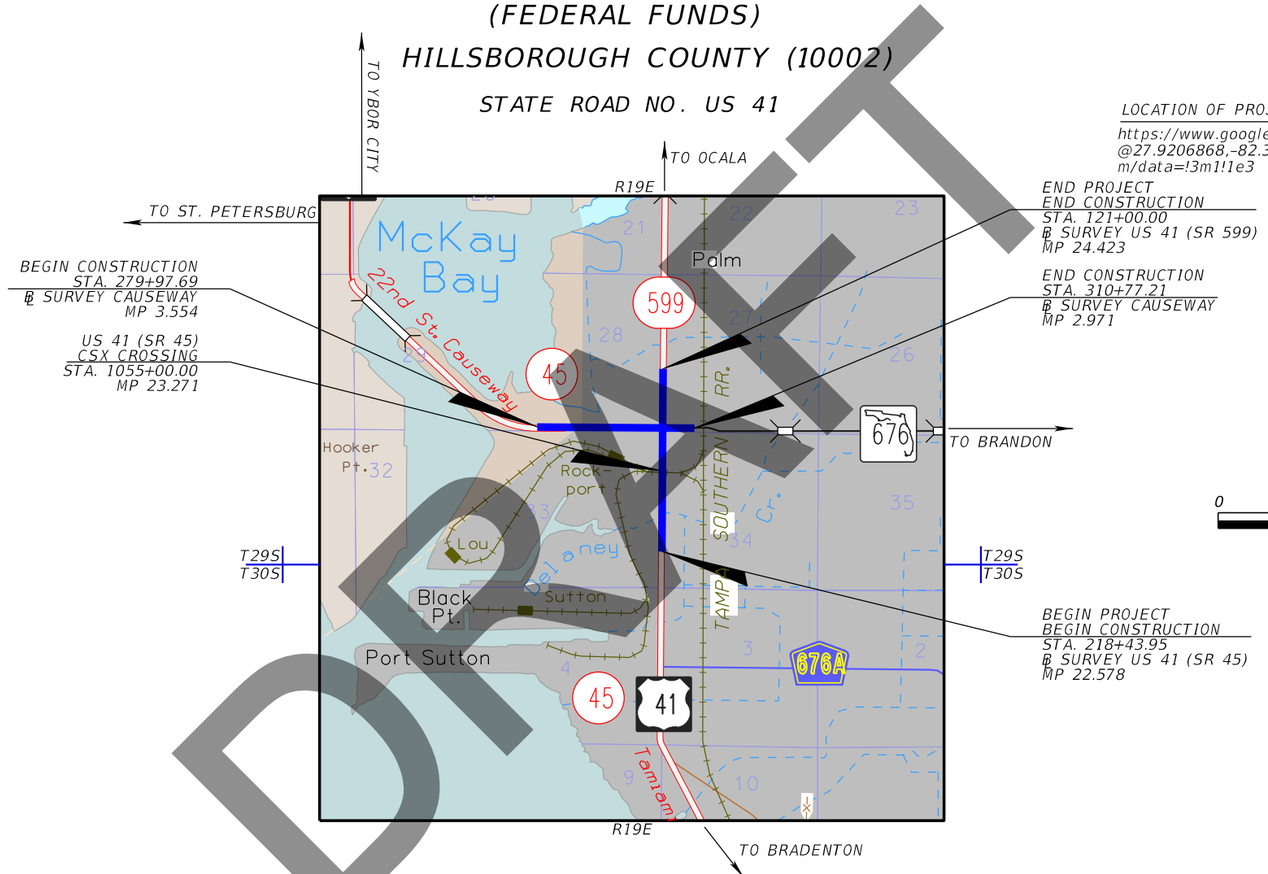
FINANCIAL PROJECT ID 440749-1-52-01

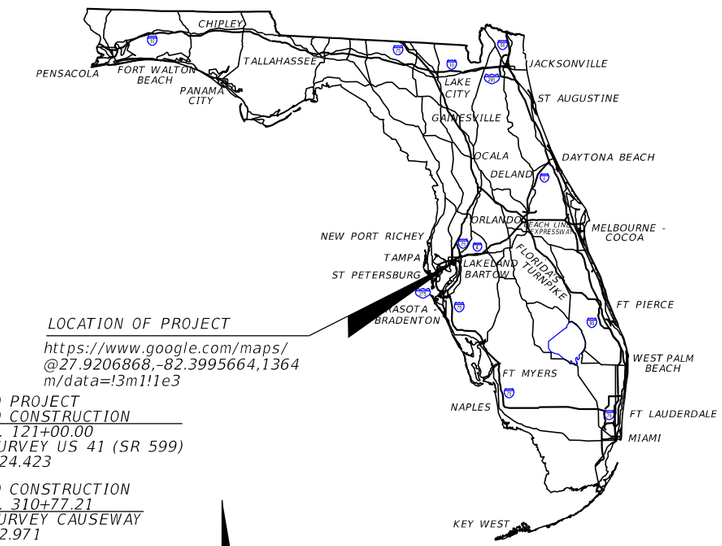
(FEDERAL FUNDS)

HILLSBOROUGH COUNTY (10002)

STATE ROAD NO. US 41

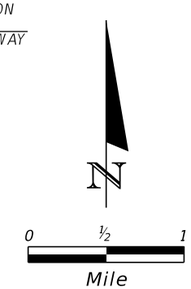
INDEX OF ROADWAY PLANS





LOCATION OF PROJECT

https://www.google.com/maps/@27.9206868,-82.3995664,1364m/data=!3m1!1e3



GOVERNING STANDARD PLANS:

Florida Department of Transportation, FY2021-22 Standard Plans for Road and Bridge Construction and applicable Interim Revisions (IRs).

Standard Plans for Road Construction and associated IRs are available at the following website: http://www.fdot.gov/design/standardplans

APPLICABLE IRs: N/A

Standard Plans for Bridge Construction are included in the Structures Plans Component

GOVERNING STANDARD SPECIFICATIONS:

Florida Department of Transportation, July 2022 Standard Specifications for Road and Bridge Construction at the following website: http://www.fdot.gov/programmanagement/Implemented/SpecBooks

ROADWAY PLANS ENGINEER OF RECORD:

BRANAN R. ANDERSON, P.E. NO.: 78438
KISINGER CAMPO AND ASSOCIATES CORP.
CONSULTING ENGINEERS & PLANNERS
201 N. FRANKLIN STREET, SUITE 400
TAMPA, FLORIDA 33602
(813) 871-5331
VENDOR NUMBER.: F59-1677145

FDOT PROJECT MANAGER:

Craig Fox P.E.

15% LINE AND GRADE
AUGUST 2022

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
TBD	22	1

NOTES TO REVIEWER

1. THE FOLLOWING DESIGN VARIATIONS HAVE BEEN IDENTIFIED FOR THE PROJECT:
   a. BASE CLEARANCE
   b. BIKE LANE WIDTH
   c. BORDER WIDTH
   c. CURB USE HIGH SPEED
   d. SHOULDER WIDTH

2. PROPOSED R/W SHOWN IN THE PLANS IS PRELIMINARY AND SUBJECT TO CHANGE BASED ON THE POND SITING ANALYSIS AND FUTURE DESIGN CHANGES AS A RESULT OF THE BRIDGE DEVELOPMENT REPORT.

3. TRAFFIC DATA WILL BE ADDED TO THE PLAN SET WHEN IT IS MADE AVAILABLE.

4. THE CURB USE AND TYPE ALONG US 41 (SR 45) WILL BE DISCUSSED WITH THE DEPARTMENT DURING THE 15% LINE AND GRADE MEETING.

5. DURING THE PD&E PHASE, COORDINATION WITH THE HILLSBOROUGH COUNTY MPO ULTIMATELY DETERMINED THE WIDE SIDEWALK COMMITMENT TO PROVIDE 10-FOOT SIDEWALKS ALONG US 41 SOUTH OF THE CAUSEWAY BLVD. INTERSECTION.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, PE
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

NOTES TO REVIEWER

SHEET NO. 1A

	US 41 Facility Parameters	Interchange	North/South of Causeway	Ramps	Sidestreets	Frontage Road	2022 FDM	2022 FDM Ramps	Design Variation
	Parameter	Determination	Determination	Determination	Determination	Determination	Documentation	Documentation	Determination
1	Fuctional Classification	Urban Principal Arterial	Urban Principal Arterial	Urban Principal Arterial	Urban Principal Arterial	Urban Principal Arterial	SLD	SLD	N/A
2	Context Classification	C3C - Suburb. Comm. (35 - 55 mph)	C3C - Suburb. Comm. (35 - 55 mph)	C3C - Suburb. Comm. (35 - 55 mph)	C3C - Suburb. Comm. (35 - 55 mph)	C3C - Suburb. Comm. (35 - 55 mph)	FDOT Memo	FDOT Memo	N/A
3	Minimum Design Speed (SIS)	50 mph	50 mph	50 mph	N/A	N/A	Table 201.5.1	Table 201.5.2	N/A
4	Posted Speed	50 mph	50 mph	N/A	TBD	TBD	N/A	N/A	N/A
5	Proposed Design Speed	50 mph	50 mph	40 mph	35 mph	35 mph	Table 201.5.1	Table 201.5.2	N/A

	US 41 Typical Section Parameters	Interchange	North/South of Causeway	Ramps	Sidestreets	Frontage Road	2022 FDM	2022 FDM Ramps	Design Variation
	Parameter	Required *(Ft.)*	Required *(Ft.)*	Required *(Ft.)*	Required (Ft.)	Required *(Ft.)*	Documentation	Documentation	Determination
1	Type of Shoulder	High Speed Curbed	High Speed Curbed	Curbed	Curbed	Curbed	Section 210.5	N/A	Yes
2	Minimum Lane Width (Travel / Auxilary)	(12 / 12)	(12 / 12)	15 (1-Lane)	(10/10)	(11 / 11)	Table 210.2.1	Table 211.2.1	N/A
3	Minimum Median Width (Without Barrier)	30	30	N/A	22	22	Table 210.3.1	N/A	N/A
4	Minimum Shoulder Width						Table 210.4.1	Table 211.4.1	Yes
	a. Outside (Full / Paved)	(10/5)	(10/5)	(10/5)	(10/5)	(10/5)	Section 210.4		Yes
	b. Inside (Full / Paved)	(10/4)	(10/4)	N/A - Curbed	N/A - Curbed	N/A - Curbed			Yes
5	Minimum Border Width	29	29	12	12	12	Table 210.7.1	Table 210.7.1	Yes
6	Minimum Clear Zone Width (Travel / Auxilary)	(24 / 14)	(24 / 14)	(24 / 14)	N/A Local	(14 / 10)	Table 215.2.1	Table 215.2.1	N/A
7	Minimum Sidewalk Width	6	6	6	6	6	Table 222.1.1	Table 222.1.1	N/A
8	Minimum Bike Lane Width	7	7	7	7	7	Section 223.2.1.1	Section 223.2.1.1	Yes
9	Maximum Tangent Travel Lane Cross Slopes	3.00%	3.00%	2.00%	2%	2%	Figure 210.2.1	Figure 210.2.1	N/A
10	Maximum Tangent Shoulder Cross Slopes						Section 210.4.1	Section 210.4.1	N/A
	a. Outside Shoulder	6.00%	6.00%	Match Travel Lane	Match Travel Lane	Match Travel Lane			N/A
	b. Inside Shoulder	5.00%	5.00%	Match Travel Lane	Match Travel Lane	Match Travel Lane			N/A

	US 41 Horizontal Geometry	Interchange	North/South of Causeway	Ramps	Sidestreets	Frontage Road	2022 FDM	2022 FDM Ramps	Design Variation
	Parameter	Required *(Ft.)*	Required *(Ft.)*	Required *(Ft.)*	Required *(Ft.)*	Required *(Ft.)*	Documentation	Documentation	Determination
1	Maximum Deflection (*Without Horiz. Curve*)	0°45'00"	0°45'00"	2°00'00"	2°00'00"	2°00'00"	Section 210.8.1	Section 211.7.1	N/A
2	Desired Horizontal Curve Length (*400 ft Min.*)	750	750	600	525	525	Table 210.8.1	Table 211.7.1	N/A
3	Minimum Horizontal Curve Radius	694	694	432	402	402	Table 210.8.2	Table 210.8.2	N/A
4	Maximum Super-Elevation Rate [e]	0.10	0.10	0.10	0.05	0.05	Section 210.9	Section 210.9	N/A
5	Maximum Curvature								N/A
	a. (e = NC / e max = 0.10)	8337 / 694	8337 / 694	5,560 / 432	N/A	N/A	Table 210.9.1	Table 210.9.1	N/A
	b. (e = NC / e max = 0.05)	N/A	N/A	N/A	1,146 / 402	1,146 / 402	Table 210.9.2	Table 210.9.2	N/A
6	Superelevation Transition	1:160	1:160	1:175	1:100	1:100	Table 210.9.3	Table 210.9.3	N/A

	US 41 Vertical Geometry	Interchange	North/South of Causeway	Ramps	Sidestreets	Frontage Road	2022 FDM	2022 FDM Ramps	Design Variation
	Parameter	Required *(Ft.)*	Required *(Ft.)*	Required *(Ft.)*	Required *(Ft.)*	Required *(Ft.)*	Documentation	Documentation	Determination
1	Maximum Grade	6.00%	6.00%	6.00%	7.00%	7.00%	Table 210.10.1	Table 211.9.1	N/A
2	Minimum K-Values						Table 210.10.3	Table 211.9.2	N/A
	a. Sag	96	96	64	49	49			N/A
	b. Crest	136	136	70	47	47			N/A
3	Minimum Vertical Curve Lengths						Table 210.10.4	Table 211.9.3	N/A
	a. Sag	200 ft	200 ft	120 ft	105 ft	105 ft			N/A
	b. Crest	300 ft	300 ft	120 ft	105 ft	105 ft			N/A
4	Minimum Vertical Clearance								N/A
	a. Base over BCWE *(ft)*	3 ft	3 ft	2 ft	2 ft	2 ft	Section 210.10.3	Section 210.10.3	N/A
	b. Sign over Roadway *(ft)*	17.5 ft	17.5 ft	17.5 ft	17.5 ft	17.5 ft			N/A
	c. Roadway over Roadway *(ft)*	16.5 ft	16.5 ft	16.5 ft	16.5 ft	16.5 ft	Table 260.6.1	Table 260.6.1	N/A
	d. Roadway over Railroad *(ft)*	23.5 ft	23.5 ft	23.5 ft	23.5 ft	23.5 ft			N/A
5	Minimum Stopping Sight Distance						Table 210.11.1	Table 211.10.2	N/A
	a. Downgrade (*ft*) (≤2% / 6%)	(425' / 474')	(425' / 474')	(305' / 333')	(250' / 271')	(250' / 271')			N/A
	b. Upgrade (*ft*) (≤2% / 6%)	(425' / 388')	(425' / 388')	(305' / 278')	(250' / 229')	(250' / 229')			N/A

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, PE
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

DESIGN CRITERIA TABLE
(1 OF 2)

SHEET NO. 1B

	Causeway Blvd. Facility Parameters	Interchange	West of US 41	East of US 41	2022 FDM	Design Variation
	Parameter	Determination	Determination	Determination	Documentation	Determination
1	Fuctional Classification	Urban Principal Arterial	Urban Principal Arterial	Urban Principal Arterial	SLD	N/A
2	Context Classification	C3C - Suburb. Comm. (35 - 55 mph)	C3C - Suburb. Comm. (35 - 55 mph)	C3C - Suburb. Comm. (35 - 55 mph)	FDOT Memo	N/A
3	Minimum Design Speed (SIS)	50 mph	50 mph	50 mph	Table 201.5.1	N/A
4	Posted Speed	45 mph	45 mph	45 mph	N/A	N/A
5	Proposed Design Speed	45 mph	45 mph	45 mph	Table 201.5.1	N/A

	Causeway Blvd. Typical Section Parameters	Interchange	West of US 41	East of US 41	2022 FDM	Design Variation
	Parameter	Required (Ft.)	Required (Ft.)	Required (Ft.)	Documentation	Determination
1	Type of Shoulder	Curbed	Curbed	Curbed	Section 210.5	No
2	Minimum Lane Width (Travel / Auxilary)	(11/11)	(11/11)	(11/11)	Table 210.2.1	N/A
3	Minimum Median Width (Without Barrier)	22	22	22	Table 210.3.1	N/A
4	Minimum Shoulder Width (3 Travel Lanes)				Table 210.4.1	Yes
	a. Outside (Full / Paved)	(10/5)	(10/5)	(10/5)		Yes
	b. Inside (Full / Paved)	(10/0)	(10/0)	(10/0)		Yes
4	Minimum Shoulder Width (2 Travel Lanes)				Table 210.4.1	Yes
	a. Inside (Full / Paved)	(10/5)	(10/5)	(10/5)		Yes
	b. Inside (Paved / Full)	(8/0)	(8/0)	(8/0)		Yes
5	Minimum Border Width	14	14	14	Table 210.7.1	Yes
6	Minimum Clear Zone Width (Travel / Auxilary)	(24/14)	(24 / 14)	(24 / 14)	Table 215.2.1	N/A
7	Minimum Sidewalk Width	6	6	6	Table 222.1.1	N/A
8	Minimum Bike Lane Width	7	7	7	Section 223.2.1.1	N/A
9	Maximum Tangent Travel Lane Cross Slopes	3.00%	3.00%	3.00%	Figure 210.2.1	N/A
10	Maximum Tangent Shoulder Cross Slopes				Section 210.4.1	N/A
	a. Outside Shoulder	6.00%	6.00%	6.00%		N/A
	b. Inside Shoulder	5.00%	5.00%	5.00%		N/A

	Causeway Blvd. Horizontal Geometry	Interchange	West of US 41	East of US 41	2022 FDM	Design Variation
	Parameter	Required (Ft.)	Required (Ft.)	Required (Ft.)	Documentation	Determination
1	Maximum Deflection (*Without Horiz. Curve*)	1°00'00"	1°00'00"	1°00'00"	Section 210.8.1	N/A
2	Desired Horizontal Curve Length (*400 ft Min.*)	675	675	675	Table 210.8.1	N/A
3	Minimum Horizontal Curve Radius	559	559	559	Table 210.8.2	N/A
4	Maximum Super-Elevation Rate [e]	0.10	0.10	0.10	Section 210.9	N/A
5	Maximum Curvature					N/A
	a. (e = NC / e max = 0.10)	6878 / 559	6878 / 559	6878 / 559	Table 210.9.1	N/A
	Superelevation Transition	1:160	1:160	1:160	Table 210.9.3	N/A

	Causeway Blvd. Vertical Geometry	Interchange	West of US 41	East of US 41	2022 FDM	Design Variation
	Parameter	Required (Ft.)	Required (Ft.)	Required (Ft.)	Documentation	Determination
1	Maximum Grade	6.00%	6.00%	6.00%	Table 210.10.1	N/A
2	Maximum Grade Change (*Without Vertical Curve*)	0.70%	0.70%	0.70%	Table 210.10.2	N/A
3	Minimum K-Values				Table 210.10.3	N/A
	a. Sag	96	96	96		N/A
	b. Crest	136	136	136		N/A
4	Minimum Vertical Curve Lengths				Table 210.10.4	N/A
	a. Sag	125	125	125		N/A
	b. Crest	125	125	125		N/A
5	Minimum Vertical Clearance					N/A
	a. Base over BCWE *(ft)*	3 ft	3 ft	3 ft	Section 210.10.3	N/A
	b. Sign over Roadway *(ft)*	17.5 ft	17.5 ft	17.5 ft		N/A
	c. Roadway over Roadway *(ft)*	16.5 ft	16.5 ft	16.5 ft	Table 260.6.1	N/A
	d. Roadway over Railroad *(ft)*	23.5 ft	23.5 ft	23.5 ft		N/A
6	Minimum Stopping Sight Distance				Table 210.11.1	N/A
	a. Downgrade (*ft*) (≤2% / 6%)	(360 / 400)	(360 / 400)	(360 / 400)		N/A
	b. Upgrade (*ft*) (≤2% / 6%)	(360 / 331)	(360 / 331)	(360 / 331)		N/A

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

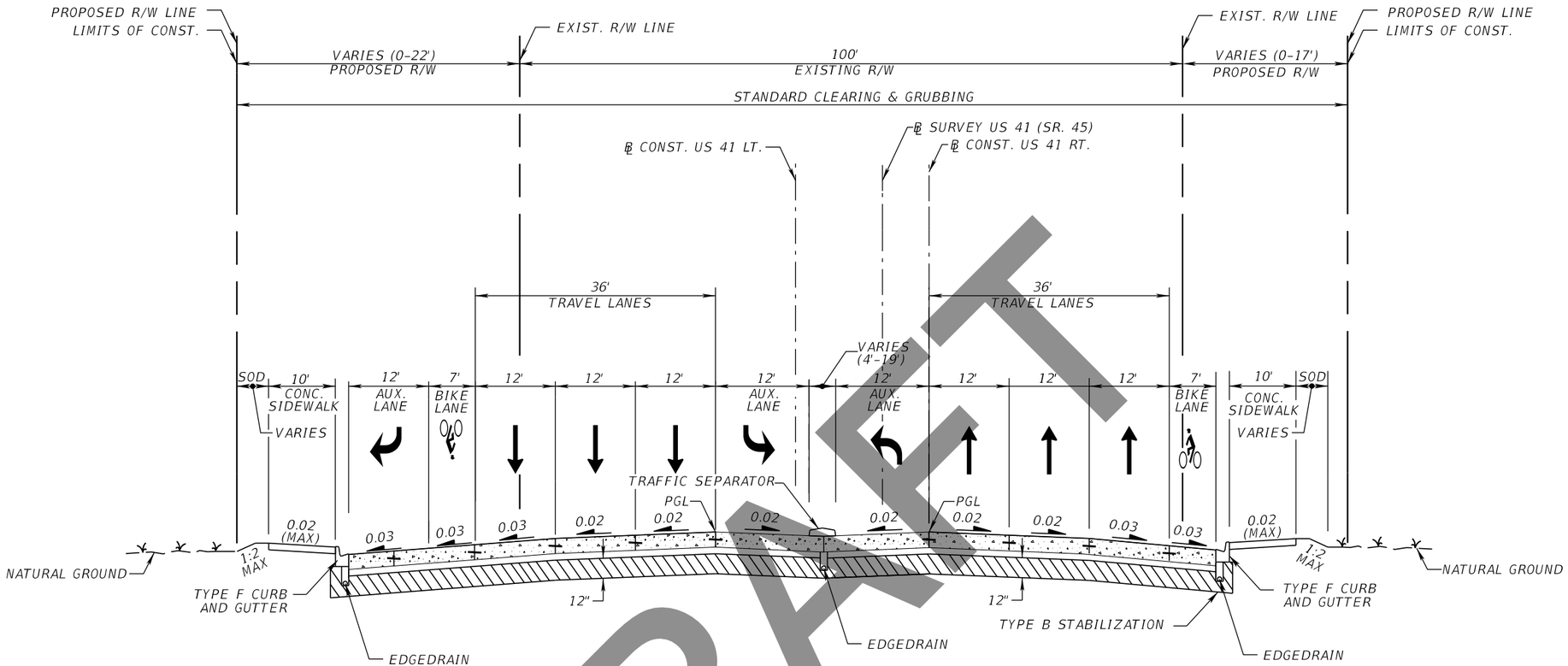
Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, PE
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

DESIGN CRITERIA TABLE
(2 OF 2)

SHEET NO. 1C



TYPICAL SECTION
US 41 (S TAMIAMI TRAIL)

STA. 1018+43.94 TO STA. 1036+86.27 ℄ CONST. US 41 LT.
STA. 2018+43.96 TO STA. 2039+00.50 ℄ CONST. US 41 RT.

DESIGN SPEED = 50 MPH
POSTED SPEED = 50 MPH
CONTEXT CLASSIFICATION = C3C

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

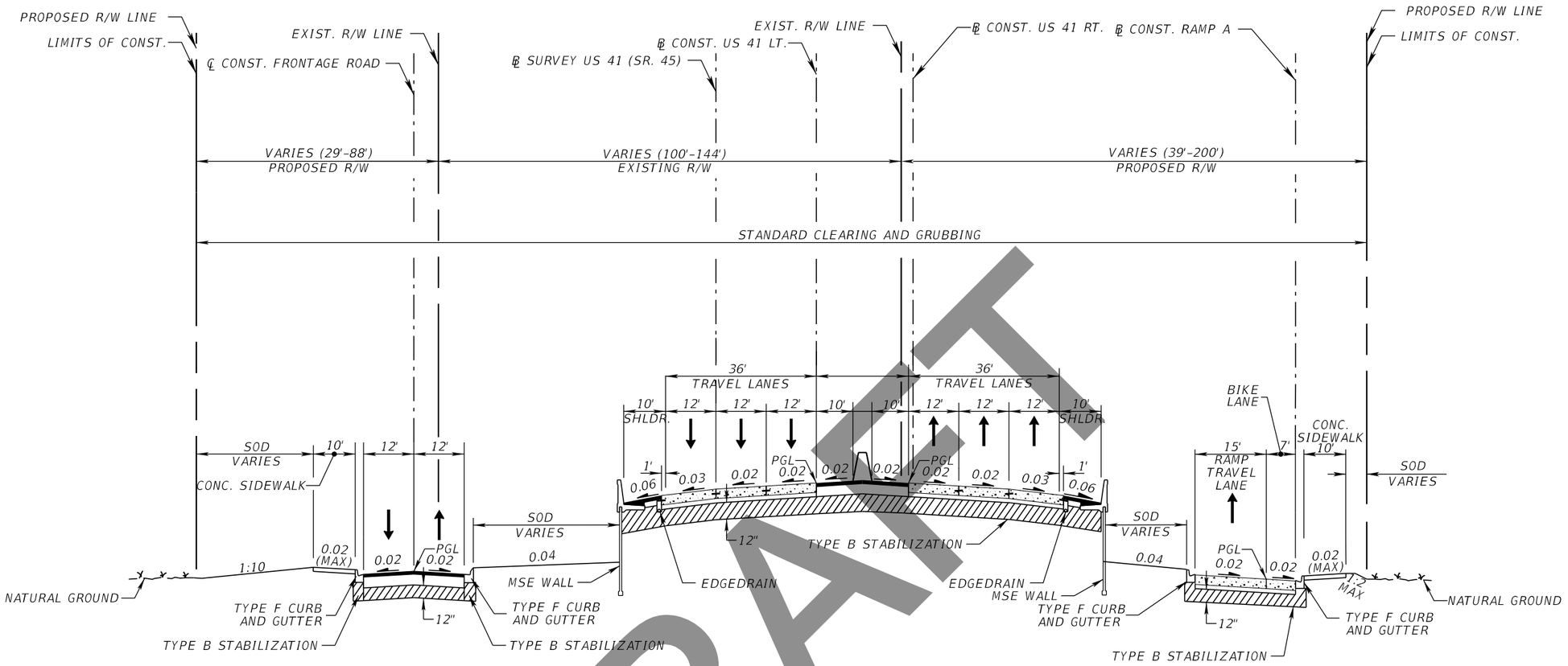
Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, P.E.
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

TYPICAL SECTION (1)

SHEET NO. 2



TYPICAL SECTION
US 41 (S TAMIAMI TRAIL)

STA. 1036+86.27 TO STA. 1040+67.68 ℄ CONST. US 41 LT.
STA. 1041+50.29 TO STA. 1044+72.50 ℄ CONST. US 41 LT.
STA. 1046+22.01 TO STA. 1052+78.38 ℄ CONST. US 41 LT.
STA. 2039+00.50 TO STA. 2040+77.74 ℄ CONST. US 41 RT.
STA. 2041+60.31 TO STA. 2044+71.83 ℄ CONST. US 41 RT.
STA. 2046+21.63 TO STA. 2052+74.95 ℄ CONST. US 41 RT.

FRONTAGE ROAD
DESIGN SPEED = 35 MPH
POSTED SPEED = 30 MPH

US 41
DESIGN SPEED = 50 MPH
POSTED SPEED = 50 MPH

RAMP
DESIGN SPEED = 40 MPH
POSTED SPEED – N/A
CONTEXT CLASSIFICATION = C3C

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

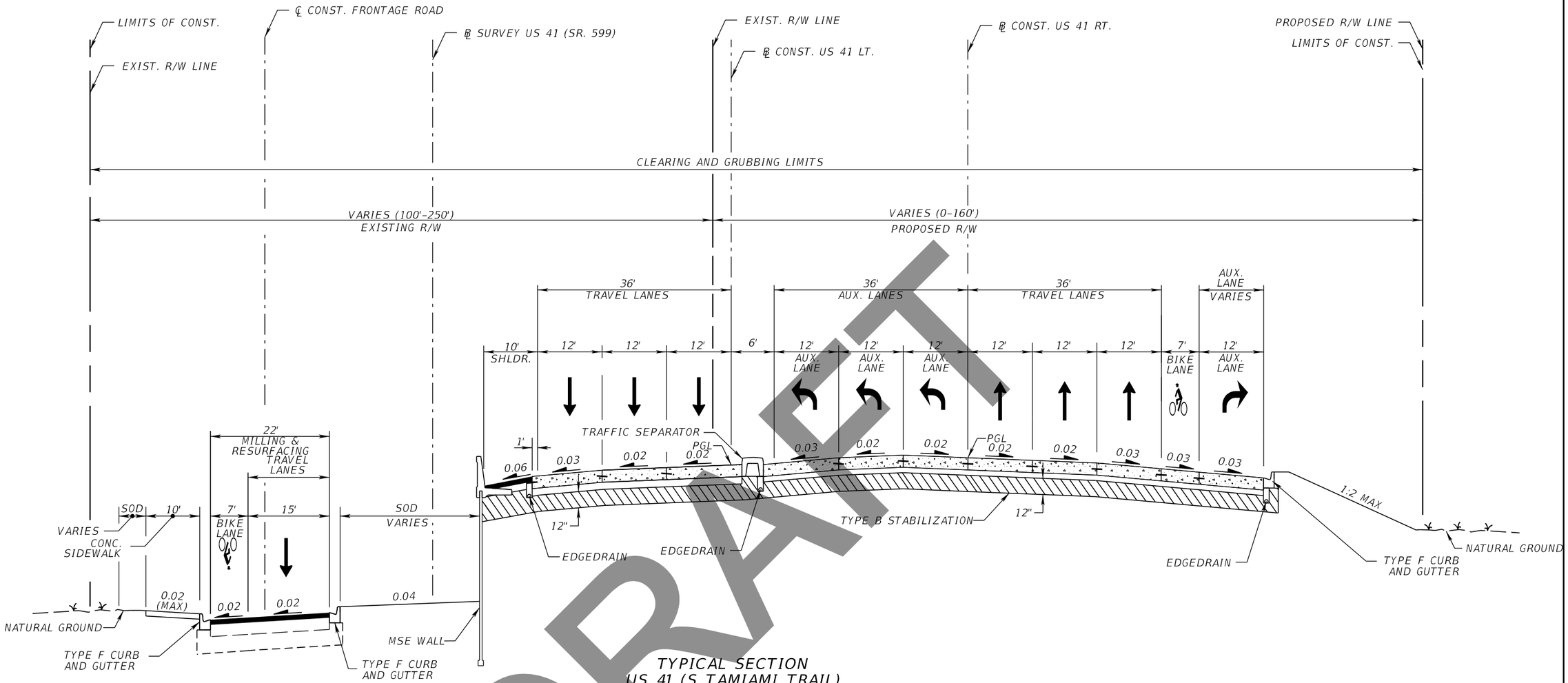
Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, P.E.
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

TYPICAL SECTION (2)

SHEET NO. 3



TYPICAL SECTION
US 41 (S TAMIAMI TRAIL)

STA. 1056+89.73 TO STA. 1070+00.00 ℄ US 41 LT.
STA. 2056+90.02 TO STA. 2070+00.00 ℄ US 41 RT.

FRONTAGE ROAD
DESIGN SPEED = 35 MPH
POSTED SPEED = 30 MPH

US 41
DESIGN SPEED = 50 MPH
POSTED SPEED = 50 MPH
CONTEXT CLASSIFICATION = C3C

PROPOSED CONCRETE PAVEMENT

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

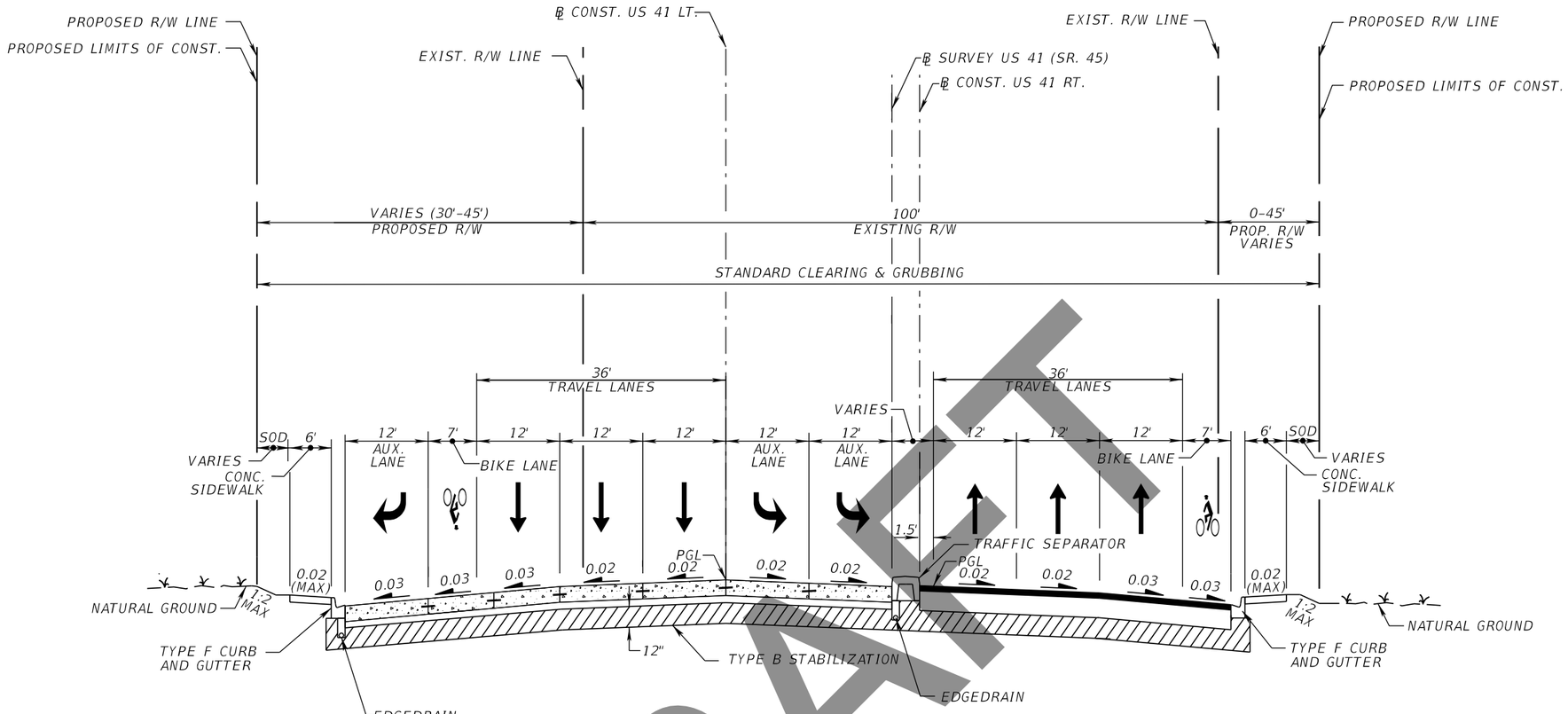
Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, P.E.
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

TYPICAL SECTION (3)

SHEET NO. 4



TYPICAL SECTION
US 41 (S TAMIAMI TRAIL)

STA. 1070+00.00 TO STA. 1089+56.42 ℄ CONST. US 41 LT.
STA. 2070+00.00 TO STA. 2089+57.12 ℄ CONST. US 41 RT.

PROPOSED CONCRETE PAVEMENT

DESIGN SPEED = 50 MPH
POSTED SPEED = 50 MPH
CONTEXT CLASSIFICATION = C3C

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

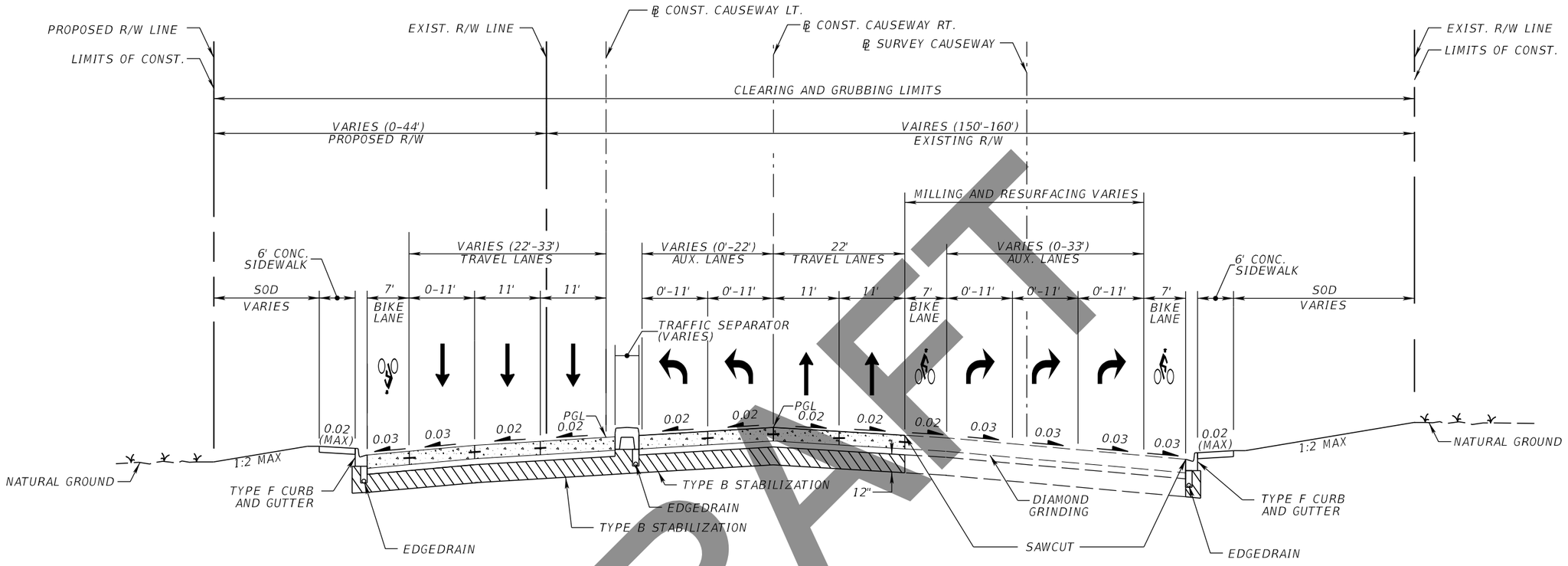
Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, P.E.
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

TYPICAL SECTION (4)

SHEET NO. 5



TYPICAL SECTION
CAUSEWAY BLVD. (SR 676)

STA. 3079+97.69 TO STA. 3100+00.00 ℄ CONST. CAUSEWAY LT.
STA. 4079+97.69 TO STA. 4100+00.00 ℄ CONST. CAUSEWAY RT.

PROPOSED CONCRETE PAVEMENT

DESIGN SPEED = 45 MPH
POSTED SPEED = 45 MPH
CONTEXT CLASSIFICATION = C3C

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

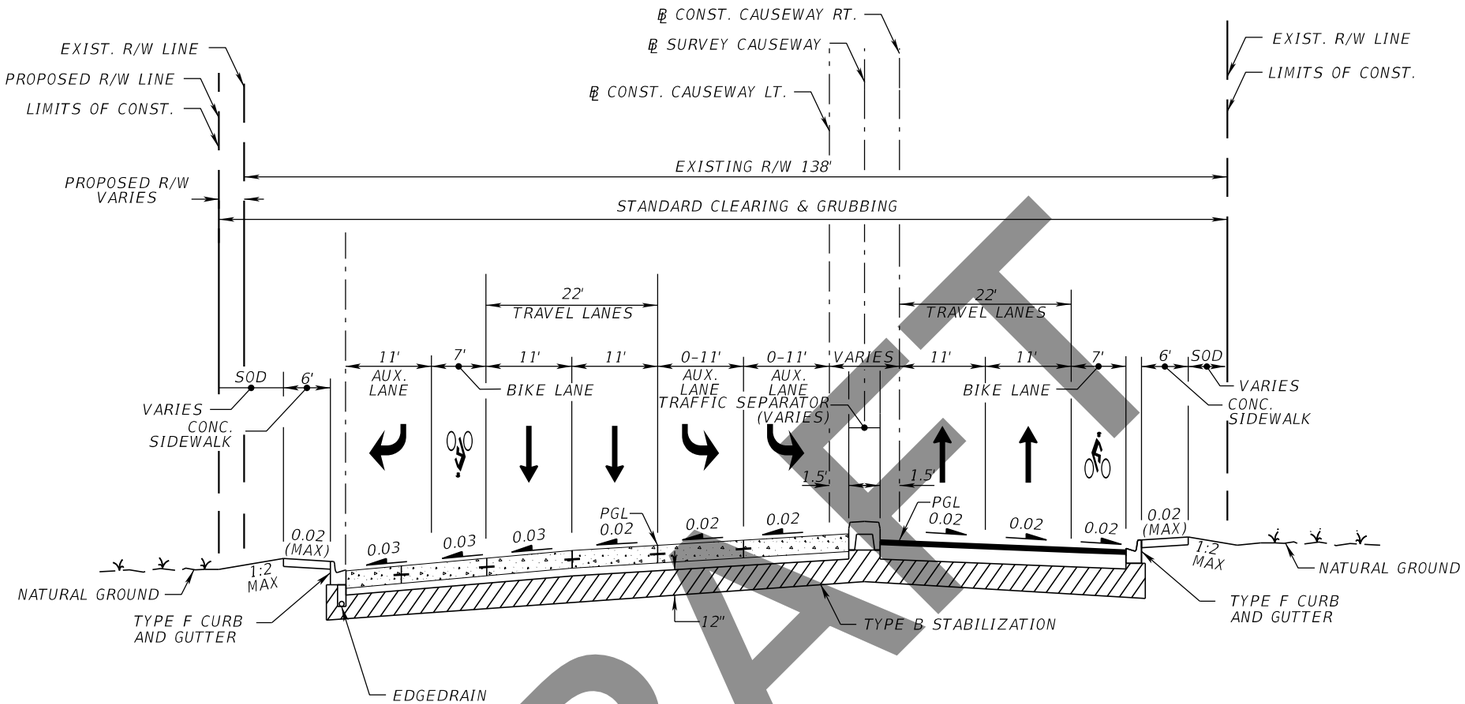
Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, P.E.
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

TYPICAL SECTION (5)

SHEET NO. 6



TYPICAL SECTION
CAUSEWAY BLVD. (SR 676)

STA. 3100+00.00 TO STA. 3110+75.59 ℄ CONST. CAUSEWAY LT.
STA. 4100+00.00 TO STA. 4110+74.95 ℄ CONST. CAUSEWAY RT.

PROPOSED CONCRETE PAVEMENT

DESIGN SPEED = 50 MPH
POSTED SPEED = 45 MPH
CONTEXT CLASSIFICATION = C3C

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

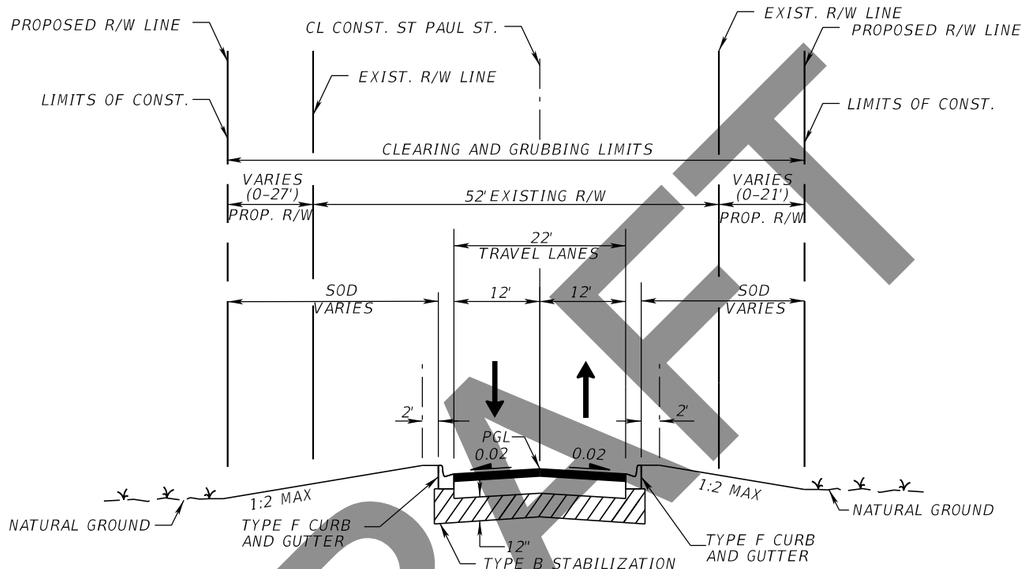
Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, P.E.
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

TYPICAL SECTION (6)

SHEET NO. 7



TYPICAL SECTION
ST PAUL ST
STA. 40+61.88 TO STA. 45+34.76

DESIGN SPEED = 35 MPH
POSTED SPEED = 30 MPH

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

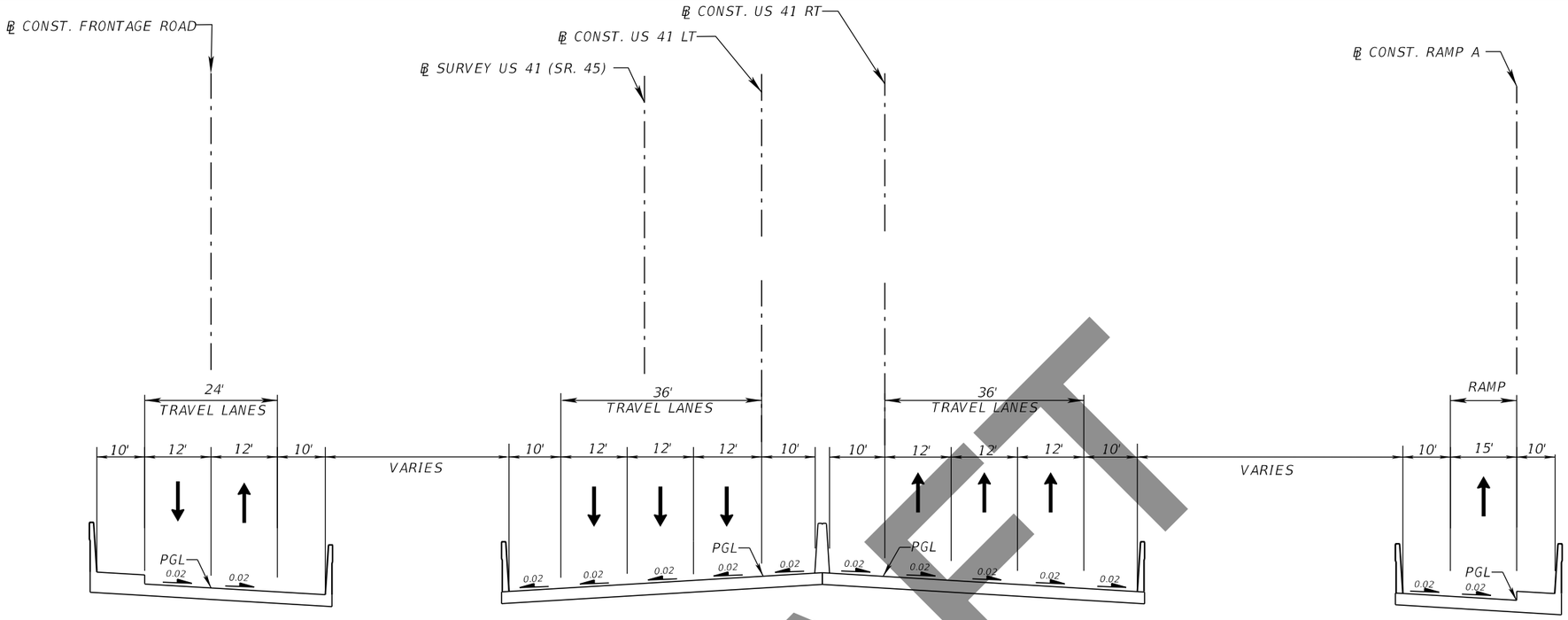
Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, P.E.
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

TYPICAL SECTION (7)

SHEET NO. 8



TYPICAL SECTION
US 41 (S TAMIAMI TRAIL)

STA. 1040+67.68 TO STA. 1041+50.29 ℄ CONST. US 41 LT.
STA. 2040+77.74 TO STA. 2041+60.31 ℄ CONST. US 41 RT.

DESIGN SPEED = 50 MPH
POSTED SPEED = 50 MPH

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

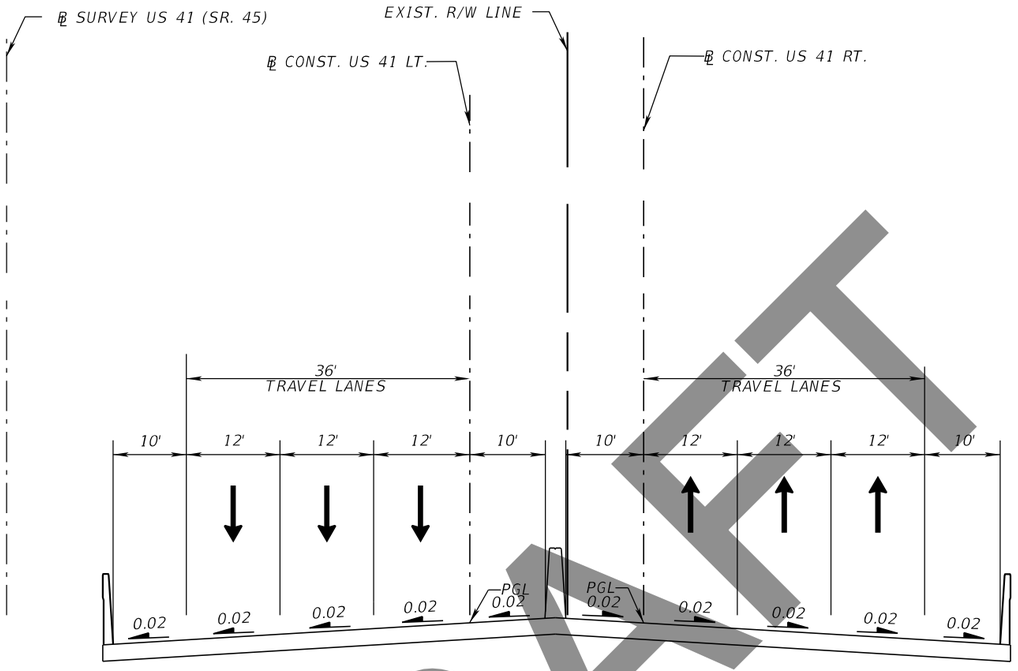
Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, P.E.
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

TYPICAL SECTION (8)

SHEET NO. 9



BRIDGE TYPICAL SECTION
US 41 S. TAMIAMI TRAIL

STA. 1044+72.50 TO STA. 1046+22.01 ℄ CONST. US 41 LT.
STA. 2044+71.83 TO STA. 2046+21.63 ℄ CONST. US 41 RT.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

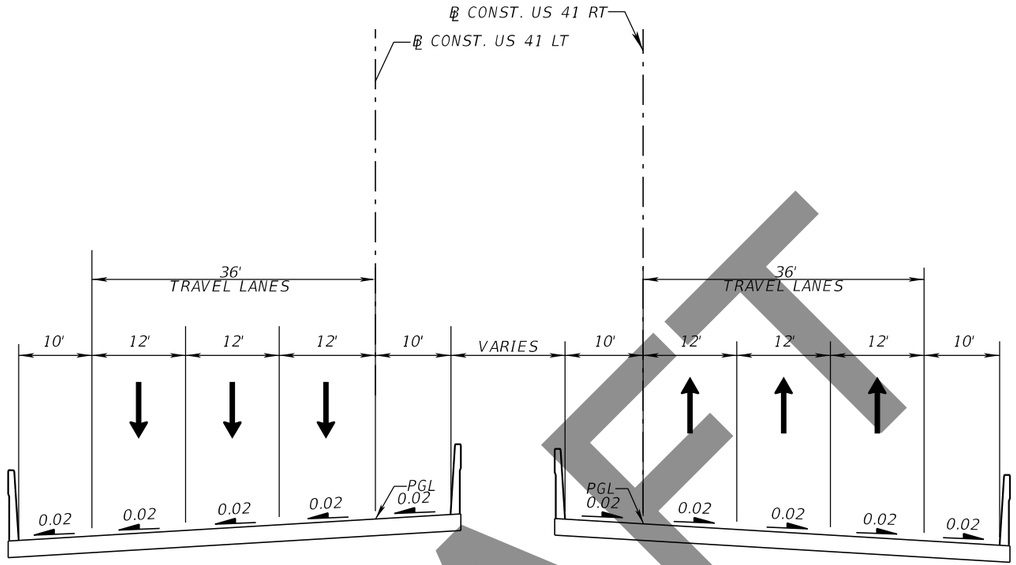
Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, P.E.
P.E. No.: 78438

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

TYPICAL SECTION (9)

SHEET NO. 10



BRIDGE TYPICAL SECTION
US 41 (S TAMIAMI TRAIL)

STA. 1052+75.30 TO STA. 1056+89.73 ℄ CONST. US 41 LT.
STA. 2052+75.38 TO STA. 2056+90.02 ℄ CONST. US 41 RT.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

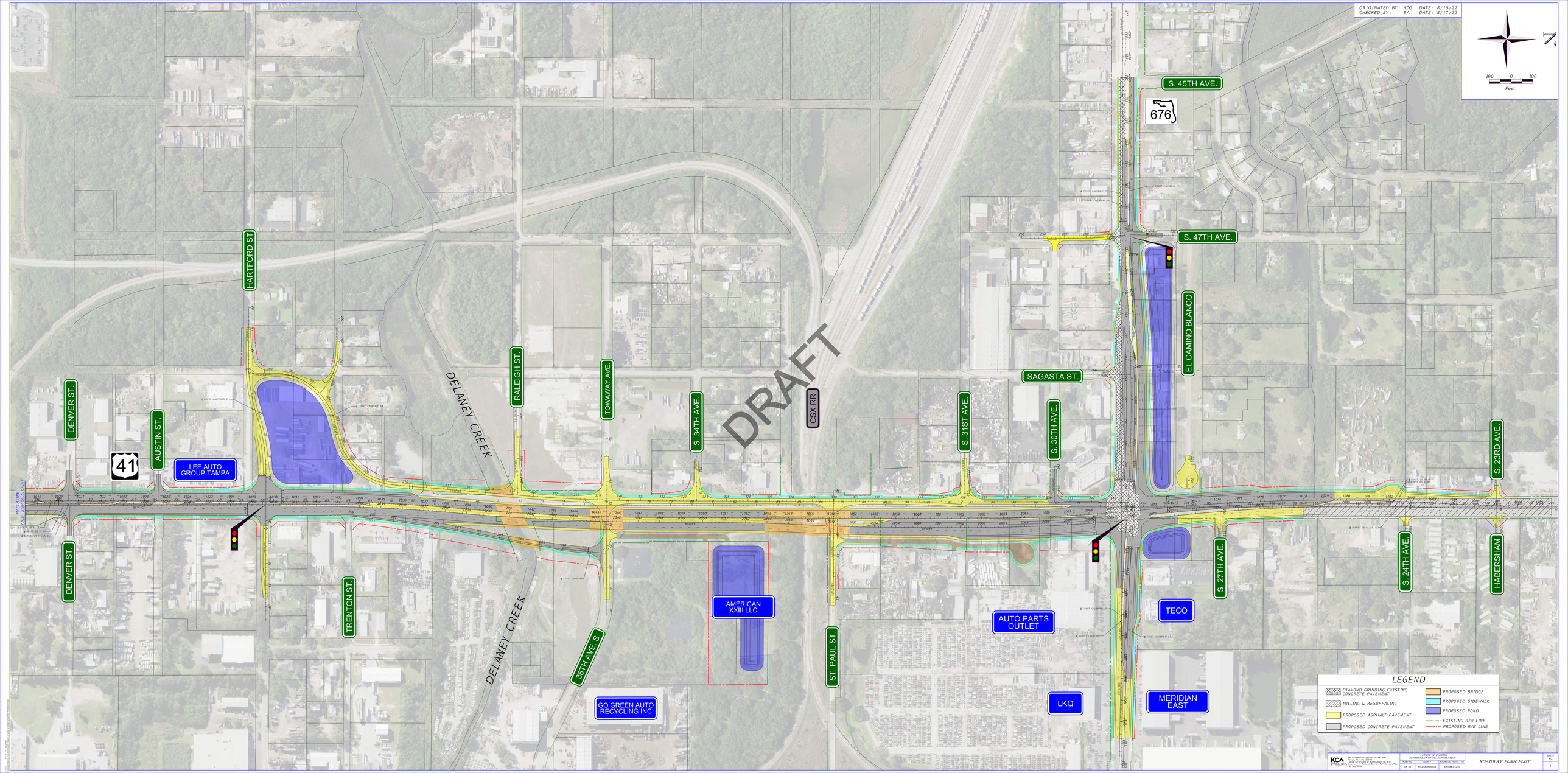
Kisinger Campo & Associates Corp.
201 N. Franklin Street, Suite 400
Tampa, Florida 33602
Engineer of Record: Branan R. Anderson, P.E.
P.E. No.: 78438

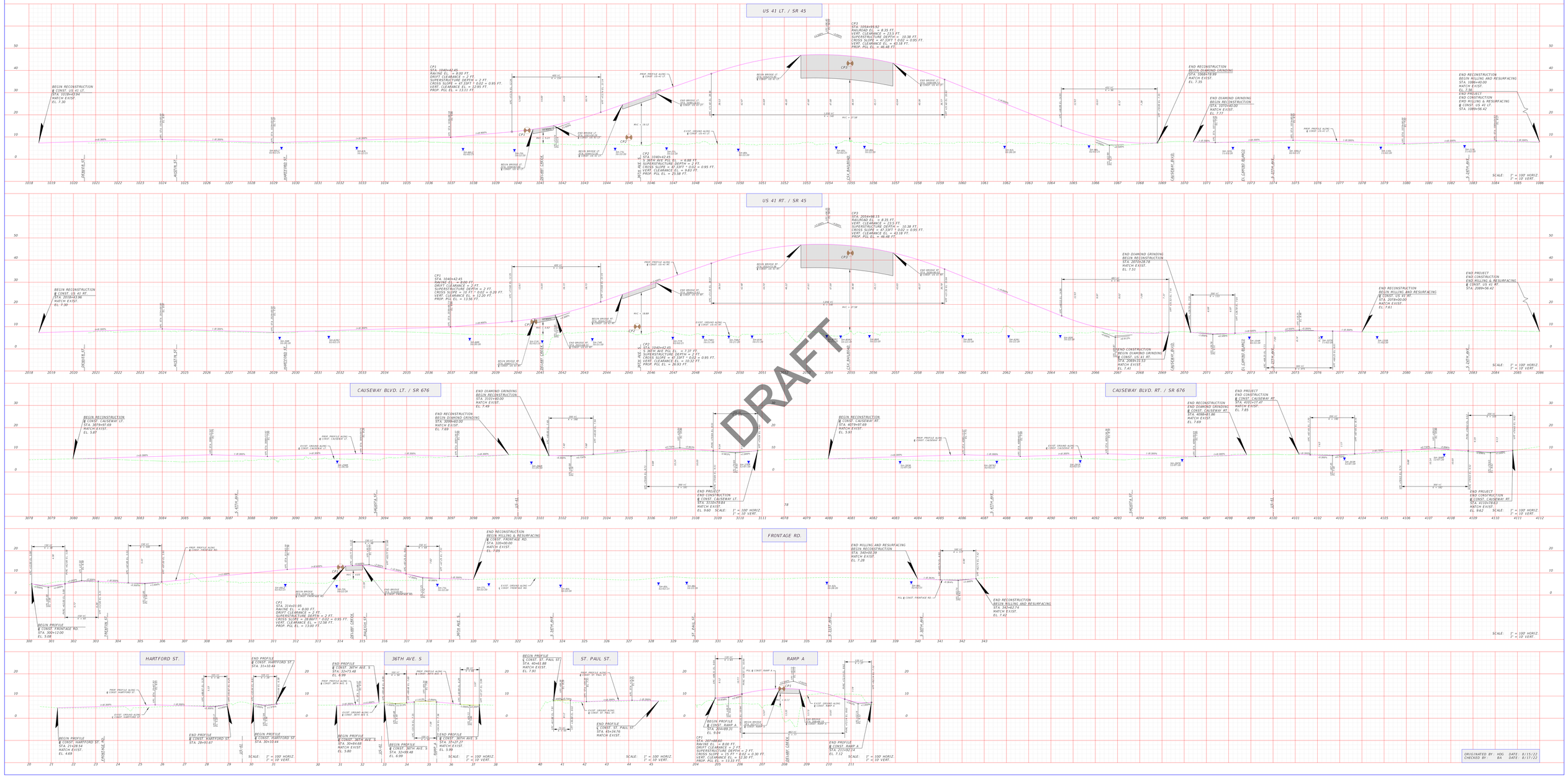
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 45	HILLSBOROUGH	440749-1-52-01

TYPICAL SECTION (10)

SHEET NO. 11


ORIGINATED BY: HOG DATE: 8/15/22
CHECKED BY: BA DATE: 8/17/22
N
100 0 100
Feet
S. 45TH AVE.
676
S. 47TH AVE.
EL CAMINO BLANCO
SAGASTA ST.
S. 30TH AVE.
S. 31ST AVE.
S. 34TH AVE.
CSX RR
DRAFT
HARTFORD ST.
RALEIGH ST.
TOWAWAY AVE.
DELANEY CREEK
DENVER ST.
AUSTIN ST.
41
LEE AUTO GROUP TAMPA
TRENTON ST.
35TH AVE. S.
AMERICAN XXIII LLC
ST. PAUL ST.
AUTO PARTS OUTLET
TECO
S. 27TH AVE.
S. 24TH AVE.
S. 23RD AVE.
HABERSHAM
GO GREEN AUTO RECYCLING INC
LKQ
MERIDIAN EAST
LEGEND
DIAMOND GRINDING EXISTING CONCRETE PAVEMENT
MILLING & RESURFACING
PROPOSED ASPHALT PAVEMENT
PROPOSED CONCRETE PAVEMENT
PROPOSED BRIDGE
PROPOSED SIDEWALK
PROPOSED POND
EXISTING R/W LINE
PROPOSED R/W LINE
KCA
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
ROAD NO. COUNTY FINANCIAL PROJECT ID
SR 45 HILLSBOROUGH 440748-1-52-01
ROADWAY PLAN PLOT
SHEET NO. 1


US 41 LT. / SR 45
US 41 RT. / SR 45
CAUSEWAY BLVD. LT. / SR 676
CAUSEWAY BLVD. RT. / SR 676
FRONTAGE RD.
HARTFORD ST.
36TH AVE. S
ST. PAUL ST.
RAMP A
DRAFT
SCALE: 1" = 100' HORIZ
1" = 10' VERT.
ORIGINATED BY: HDG DATE: 8/15/22
CHECKED BY: BA DATE: 8/17/22

APPENDIX B

Traffic Data

TRAFFIC DATA FOR NOISE STUDIES - SUMMARY OUTPUT
FDOT DISTRICT 1

Federal Aid Number(s):	0
FPID Number(s):	440749-1-52-1
State/Federal Route No.:	676
Road Name:	SR 676 (Causeway Blvd)
Project Description:	S 41/SR 45/S 50th St @ CSX Grade Separation South of Causeway Bl
Segment Description:	Approaching CSX Crossing from US 41
Section Number:	10250000
Mile Post To/From:	3

Existing Facility:		D =	**61.00%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2018**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**1910**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**1043**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**45**	MC =	**2.00%**	% of Design Hour Volume

No Build Alternative (Design Year):		D =	**61.00%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**1910**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**2295**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**45**	MC =	**2.00%**	% of Design Hour Volume

Build Alternative (Design Year):		D =	**61.00%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**1910**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**2295**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**45**	MC =	**2.00%**	% of Design Hour Volume

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

Prepared By: Stuart Samberg (Print Name) _____ (Signature) Date: 9/29/2022

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

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

TRAFFIC DATA FOR NOISE STUDIES - SUMMARY OUTPUT
FDOT DISTRICT 1

Federal Aid Number(s):	0
FPID Number(s):	440749-1-52-1
State/Federal Route No.:	676
Road Name:	SR 676 (Causeway Blvd)
Project Description:	S 41/SR 45/S 50th St @ CSX Grade Separation South of Causeway Bl
Segment Description:	West of S 47th Street
Section Number:	10250000
Mile Post To/From:	3.5

Existing Facility:		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2018**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**1910**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**1824**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**45**	MC =	**2.00%**	% of Design Hour Volume

No Build Alternative (Design Year):		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**1910**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**4274**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**45**	MC =	**2.00%**	% of Design Hour Volume

Build Alternative (Design Year):		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**1910**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**4274**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**45**	MC =	**2.00%**	% of Design Hour Volume

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

Prepared By: Stuart Samberg (Print Name) _____ (Signature) Date: 9/29/2022

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

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

TRAFFIC DATA FOR NOISE STUDIES - SUMMARY OUTPUT
FDOT DISTRICT 1

Federal Aid Number(s):	0
FPID Number(s):	440749-1-52-1
State/Federal Route No.:	676
Road Name:	SR 676 (Causeway Blvd)
Project Description:	S 41/SR 45/S 50th St @ CSX Grade Separation South of Causeway Bl
Segment Description:	S 47th Street to US 41
Section Number:	10250000
Mile Post To/From:	3.379

Existing Facility:		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2018**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**1910**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**1824**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**45**	MC =	**2.00%**	% of Design Hour Volume

No Build Alternative (Design Year):		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**1910**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**4301**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**45**	MC =	**2.00%**	% of Design Hour Volume

Build Alternative (Design Year):		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**1910**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**4301**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**45**	MC =	**2.00%**	% of Design Hour Volume

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

Prepared By: Stuart Samberg (Print Name) _____ (Signature) Date: 9/29/2022

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

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

TRAFFIC DATA FOR NOISE STUDIES - SUMMARY OUTPUT
FDOT DISTRICT 1

Federal Aid Number(s):	0
FPID Number(s):	440749-1-52-1
State/Federal Route No.:	41
Road Name:	US 41 (S 50th St)
Project Description:	S 41/SR 45/S 50th St @ CSX Grade Separation South of Causeway Bl
Segment Description:	Approaching S 24th Ave from Causeway Blvd
Section Number:	10060000
Mile Post To/From:	23.75

Existing Facility:		D =	**61.00%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2018**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**2940**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**1427**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**50**	MC =	**2.00%**	% of Design Hour Volume

No Build Alternative (Design Year):		D =	**61.00%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**2940**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**2218**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**50**	MC =	**2.00%**	% of Design Hour Volume

Build Alternative (Design Year):		D =	**61.00%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**2940**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**2218**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**50**	MC =	**2.00%**	% of Design Hour Volume

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

Prepared By: Stuart Samberg (Print Name) _____ (Signature) Date: 9/29/2022

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

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

TRAFFIC DATA FOR NOISE STUDIES - SUMMARY OUTPUT
FDOT DISTRICT 1

Federal Aid Number(s):	0
FPID Number(s):	440749-1-52-1
State/Federal Route No.:	41
Road Name:	US 41 (S 50th St)
Project Description:	S 41/SR 45/S 50th St @ CSX Grade Separation South of Causeway Bl
Segment Description:	From Hartford St to Causeway Blvd
Section Number:	10060000
Mile Post To/From:	23

Existing Facility:		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2018**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**2940**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**2541**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**50**	MC =	**2.00%**	% of Design Hour Volume

No Build Alternative (Design Year):		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**2940**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**4731**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**50**	MC =	**2.00%**	% of Design Hour Volume

Build Alternative (Design Year):		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**2940**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**4731**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**50**	MC =	**2.00%**	% of Design Hour Volume

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

Prepared By: Stuart Samberg _____ Date: 9/29/2022
Print Name Signature

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

FDOT Reviewer: _____ Date: _____
Print Name Signature

TRAFFIC DATA FOR NOISE STUDIES - SUMMARY OUTPUT
FDOT DISTRICT 1

Federal Aid Number(s):	0
FPID Number(s):	440749-1-52-1
State/Federal Route No.:	41
Road Name:	US 41 (S 50th St)
Project Description:	S 41/SR 45/S 50th St @ CSX Grade Separation South of Causeway Bl
Segment Description:	South of Hartford St
Section Number:	10060000
Mile Post To/From:	22.5

Existing Facility:		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2018**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**2940**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**2541**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**50**	MC =	**2.00%**	% of Design Hour Volume

No Build Alternative (Design Year):		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**2940**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**4503**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**50**	MC =	**2.00%**	% of Design Hour Volume

Build Alternative (Design Year):		D =	**72.40%**	%
		T24 =	**13.00%**	% of 24 Hour Volume
Year:	**2046**	Tpeak =	**7.00%**	% of Design Hour Volume
		MT =	**5.00%**	% of Design Hour Volume
LOS C Peak Hour Directional Volume:	**2940**	HT =	**2.00%**	% of Design Hour Volume
Demand Peak Hour Volume:	**4503**	B =	**2.00%**	% of Design Hour Volume
Posted Speed:	**50**	MC =	**2.00%**	% of Design Hour Volume

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

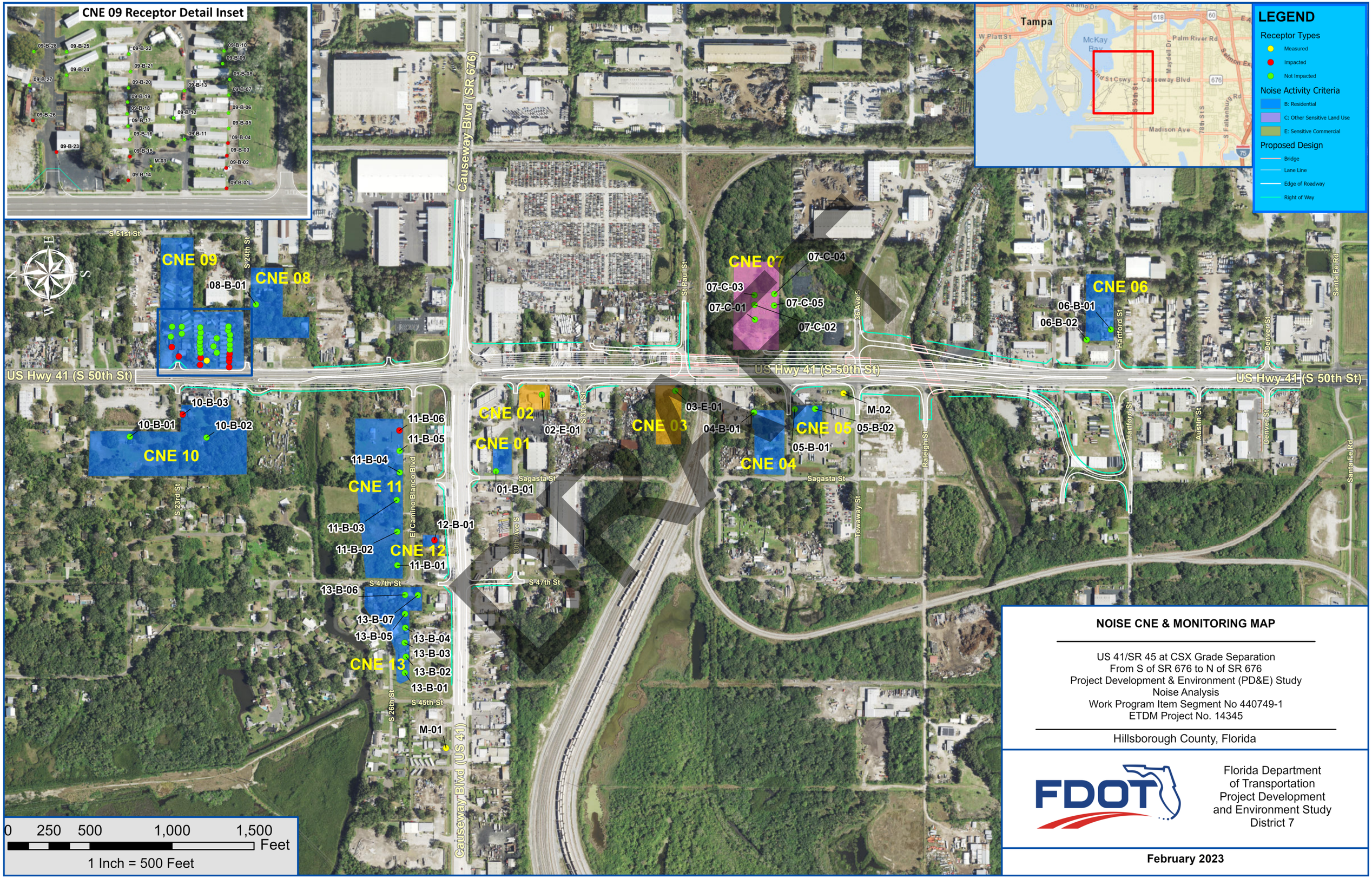
Prepared By: Stuart Samberg _____ Date: 9/29/2022
Print Name Signature

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

FDOT Reviewer: _____ Date: _____
Print Name Signature

APPENDIX C

Noise CNE & Monitoring Map



NOISE CNE & MONITORING MAP

US 41/SR 45 at CSX Grade Separation
From S of SR 676 to N of SR 676
Project Development & Environment (PD&E) Study
Noise Analysis
Work Program Item Segment No 440749-1
ETDM Project No. 14345

Hillsborough County, Florida

Florida Department
of Transportation
Project Development
and Environment Study
District 7

February 2023

APPENDIX D

Noise Monitoring Field Data Sheets

M-01

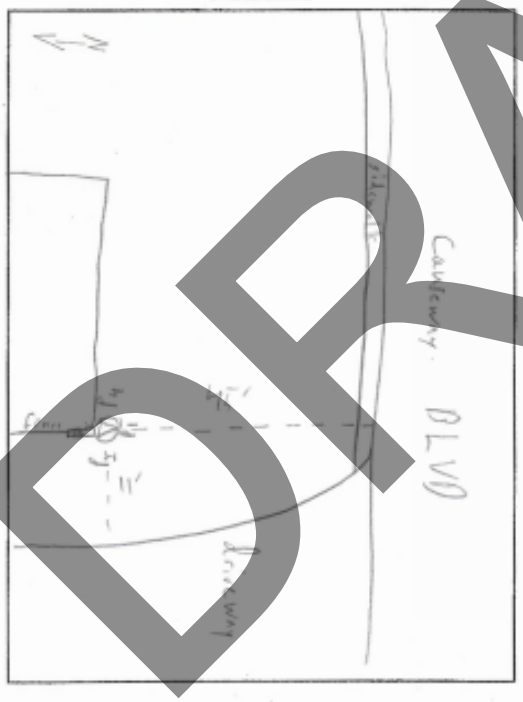
RK&K
Noise Measurement Data Sheet

Project:	VS 41@ CSX	Date:	4/13/20
Meter Number	5	Traffic Monitoring Session (TMS):	TM01 & TM018
Noise Measurement Site Number:	M-01	Start Time:	11:15 AM & 11:35 AM
File Number (on Meter):	5003 & 5005	End Time:	11:45 AM & 12:05 PM
Location/Address:	4134 Commerce Blvd	Wind Speed/Direction:	E 1-8 mph
Name of Meter Operator:	Brett Berube		

Checklist

- [x] Data: Fill out all data in the above table and complete this checklist.
- [x] Announce Presence: Knock on door and leave a letter in doorway or under mat.
- [x] Meter Location: Set meter in common use area, between building and noise source. Minimum of 15' from building and minimum of 50' from noise source.
- [x] Meter Height: Set microphone to 5' height.
- [x] Events & Notes: Record any non-traffic noise events (i.e. sirens, talking, mowers, jake brakes) or other misc. notes.
- [x] Measurements: Take measurements from permanent objects on photogrammetry such as buildings or curb lines, but not trees or poles. Measure at right angles if possible and put on site sketch.
- [x] Photos: Take at least 4 photos showing the entire meter including tripod. 1 towards the building and 1 towards the noise source, one to both remaining directions. Mark photo location on site sketch.

Site Sketch



Events & Notes

11:19 Semi idling nearby
11:20 Semi backing
11:22 Semi moving & engine
11:25 Camera fell over
camera recording stopped <1 min.
11:32 bird, tweeting
11:41 bird tweeting
11:59 loud motorcycle
12:00 truck horn
12:04 truck horn

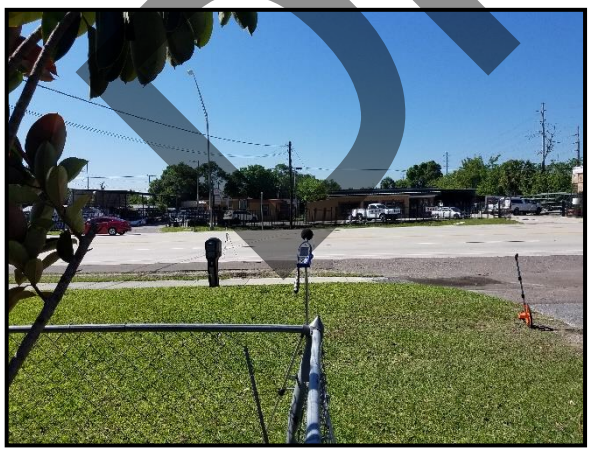
6 vehicles turned into Mister Truck Parts

North

South

East

West



M-02

RK&K

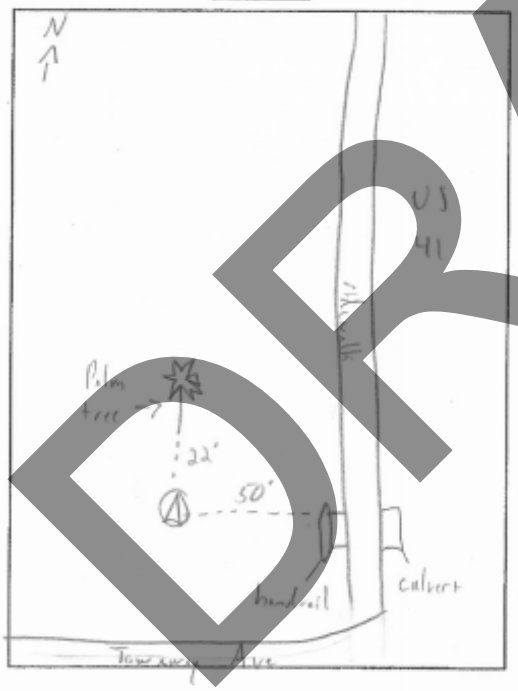
Noise Measurement Data Sheet

Project:	US 41 @ CSX	Date:	4/13/21
Meter Number	5	Traffic Monitoring Session (TMS):	TM02
Noise Measurement Site Number:	M02	Start Time:	12:25 PM
File Number (on Meter):	5006	End Time:	12:55 PM
Location/Address:	3411 S 50th St	Wind Speed/Direction:	S 3.6 mph
Name of Meter Operator:	Brett Beale		

Checklist

- [x] Data: Fill out all data in the above table and complete this checklist.
- [x] Announce Presence: Knock on door and leave a letter in doorway or under mat.
- [x] Meter Location: Set meter in common use area, between building and noise source. Minimum of 15' from building and minimum of 50' from noise source.
- [x] Meter Height: Set microphone to 5' height.
- [x] Events & Notes: Record any non-traffic noise events (i.e. sirens, talking, mowers, jake brakes) or other misc. notes.
- [x] Measurements: Take measurements from permanent objects on photogrammetry such as buildings or curb lines, but not trees or poles. Measure at right angles if possible and put on site sketch.
- [x] Photos: Take at least 4 photos showing the entire meter including tripod. 1 towards the building and 1 towards the noise source, one to both remaining directions. Mark photo location on site sketch.

Site Sketch



Events & Notes

12:28PM drill
12:35PM
12:38PM
12:41PM
12:44PM
12:45PM dump truck beeping
12:47PM
12:51PM drill

2 vehicles turned onto 41 from Tiwaway Ave
7 vehicles turned onto Tiwaway Ave from 41

North

East

South

West

M-03

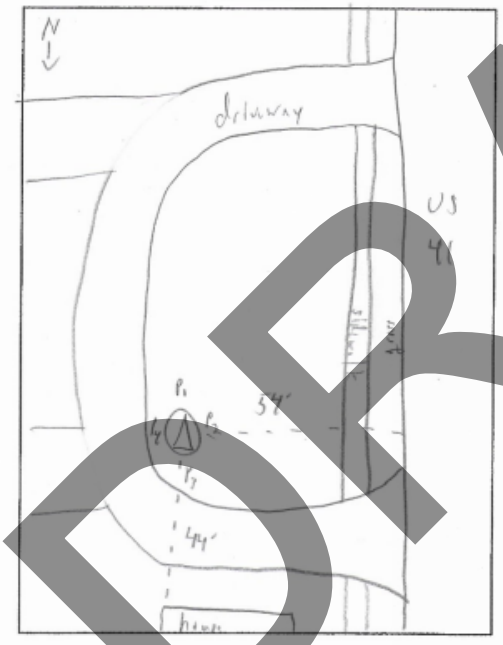
RK&K
Noise Measurement Data Sheet

Project:	US41 @ CSX	Date:	4/13/21
Meter Number	5	Traffic Monitoring Session (TMS):	TM03
Noise Measurement Site Number:	M03	Start Time:	1:10 PM
File Number (on Meter):	5007	End Time:	1:40 PM
Location/Address:	2810 S 50th St	Wind Speed/Direction:	S 2.4 mph
Name of Meter Operator:	Brett Bernbe		

Checklist

- ☑ Data: Fill out all data in the above table and complete this checklist.
- ☑ Announce Presence: Knock on door and leave a letter in doorway or under mat.
- ☑ Meter Location: Set meter in common use area, between building and noise source. Minimum of 15' from building and minimum of 50' from noise source.
- ☑ Meter Height: Set microphone to 5' height.
- ☑ Events & Notes: Record any non-traffic noise events (i.e. sirens, talking, mowers, jake brakes) or other misc. notes.
- ☑ Measurements: Take measurements from permanent objects on photogrammetry such as buildings or curb lines, but not trees or poles. Measure at right angles if possible and put on site sketch.
- ☐ Photos: Take at least 4 photos showing the entire meter including tripod. 1 towards the building and 1 towards the noise source, one to both remaining directions. Mark photo location on site sketch.

Site Sketch



2 vehicles traveling on neighborhood driveway

Events & Notes

1:12 PM car drive by meter, neighbor talking
1:17 PM dump truck backing
1:21 PM loud dump truck
1:23 PM trailer rattling
1:24 PM truck radio
1:34 car drive by meter
1:38 train horn

North

South

East

West

APPENDIX E

TNM Modeling Files and PDF of the NSR
(in Project File, including “Read Me” file)