



S.R. 44 Multi-Use Trail Feasibility Study

Final Report

City of New Smyrna Beach, Florida

June 24, 2020

Prepared For:

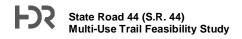




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Executive Summary

The City of New Smyrna Beach identified the need for a 12-foot wide multi-use trail that would connect an existing trail in the Shoppes at Coronado property along the north side of State Road 44 (S.R. 44) under the I-95 overpass to a proposed 10-foot trail at the southwest property line of the Coastal Woods commercial development. This short trail segment is part of the City of New Smyrna Beach's citywide multi-use trail network and is a piece of a longer proposed east-west trail along SR 44 extending more than 5 miles from Airport Road to east of Mission Road, where it will connect with an existing multi-use trail. The trail will also link to the existing New Smyrna Beach Multi-use Pedestrian Path via a proposed connection along Sugar Mill Drive along the east side of the Coastal Woods development. This study addresses concerns regarding trail connectivity, intersection improvements, and lighting improvements along the proposed trail through data collection, field observations, and qualitative analysis. The scope called for a connection to the existing 0.1 mile long trail in the Shoppes at Coronado but preliminary coordination with FDOT concerning the Limited Access Right-of-Way (LA ROW) indicated the trail should avoid crossing the LA ROW on the west side of I-95 where there is an existing fence along the LA ROW owned by FDOT. As a result, this study identified a trail alignment that would still connect to the existing trail at the Shoppes at Coronado, but would avoid the LA ROW, and rather than connect to the eastern terminus of the existing trail, would connect instead to the existing 0.15 mile trail in front of Walmart and west of the Shoppes of Coronado driveway. This proposed alignment still meets the needs identified by the City of New Smyrna Beach to better connect their trail network. The finding for this study is that this connection is feasible.

Data Collection and Field Assessment

Two field assessments occurred on December 9, 2019 and January 16, 2020 to evaluate utilities, drainage, signalization, and lighting characteristics along the corridor and determine potential ROW and environmental impacts. Existing roadway conditions, intersection operations, and traffic behavior were observed and documented during the assessment. Traffic counts were provided by FDOT for the study corridor and included 8-hour turning movement counts (weekday) on S.R. 44 at the I-95 northbound (NB) Ramps and 7 day continuous volume counts on S.R. 44 from Shoppes at Coronado to Colony Park Lane. Traffic counts were collected in October 2017 during both the AM and PM peak period. An intersection analysis was completed for the NB 1-95 ramps intersection with S.R. 44 to understand potential traffic operations impacts to the proposed concept design.

Geometric Analysis

The conceptual layout shows a 12-foot multi-use trail (10 feet in restricted areas) fits into the existing ROW and accommodates conflict points that may arise for all vehicular movements on S.R. 44, including turn lanes, and the on / off ramps in relation to I-95. The proposed concept was developed to better and more safely accommodate trail users and not impact the LA ROW facilities present on the corridor.

Conclusion

At the conclusion of the data collection, traffic analysis, geometric analysis, and field observations, it was determined that a multi-use trail along S.R. 44 under the I-95 overpass beginning from the existing sidewalk network within the Shoppes at Coronado connecting to the southwest property line of the Coastal Woods commercial development was feasible. The proposed concept avoids critical impacts to the LA ROW and will facilitate the eventual connection of a much longer multi-use trail along S.R. 44 as a component of the citywide trail network.

1 Introduction

The River to Sea Transportation Planning Organization (R2CTPO) is evaluating the feasibility of a new multi-use trail along the north side of S.R. 44 connecting from an existing trail in the Shoppes at Coronado property, located immediately east of the Chevron gas station west of I-95, through the I-95 interchange, to a proposed 10-foot trail at the southwest property line of the Coastal Woods commercial development. The project is located within the City of New Smyrna Beach over a distance of approximately 0.3 miles and is a component of a longer east-west trail along S.R. 44 in the citywide trail network extending more than 5 miles from Airport Road to east of Mission Road, where it will connect with an existing multi-use trail. This project will evaluate an alignment to avoid impacting the Florida Department of Transportation (FDOT) Limited Access Right-of-Way (LA ROW) along I-95. The trail is proposed to be 12-feet wide and be constructed of concrete.

This study will also address the need for potential improvements to the underdeck lighting at the I-95 overpass, include a preliminary evaluation of drainage and environmental impacts, and evaluate the need for potential traffic signal modifications at the northbound (NB) on-ramp to I-95. An analysis was done to determine the potential impacts of a change in the traffic signal phasing at the NB ramps intersection to more safely accommodate trail users crossing the on-ramp due to a sight distance issue.





The two images above show the proposed location of the multi-use path along S.R. 44, where it will then connect to the proposed Coastal Woods commercial development.

2 Project Purpose and Scope

The purpose of this project is to determine the feasibility of a new multi-use trail along the north side of S.R. 44 from an existing trail in the Shoppes at Coronado property to a proposed 10-foot trail at the southwest property line of the Coastal Woods commercial development. The trail will provide a safer route and enhance connectivity for pedestrians and bicyclists, as part of a larger citywide multi-use trail network. Within the corridor exists heavy vegetation, drainage elements, parking lots, and a mix of public and private property. Also within the corridor is the I-95 interchange, in which a portion of the proposed trail will run underneath the I-95 overpass bridges. This trail segment is critical in improving the livability and sustainability for existing communities such as the Landings at Sugar Mill and the future development of Coastal Woods. This study will also evaluate potential intersection improvements for the NB I-95 ramps intersection.

A field review was conducted to collect data, evaluate corridor characteristics, help develop concept plans, and produce an opinion of probable cost. In addition, ADA requirements were used as guidance for the development of all concept plans.

The project team would like to extend appreciation to all agency representatives and stakeholders whose assistance in this project proved invaluable.

- Mr. Stephan Harris River to Sea Transportation Planning Organization
- Mr. Jesse Meyers City of New Smyrna Beach
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- Mr. Chris Engels Florida Department of Transportation
- Mr. Albert Neumann Florida Department of Transportation
- Mr. Taleb Shams Florida Department of Transportation
- Mr. Mike Heron STV, Inc.

A project location map is supplied in **Figure 2-1**.

Figure 2-1. Project Location



3 Existing Conditions

The following section details the characteristics observed within the project study limits regarding physical conditions, environmental concerns, drainage, utilities, and right of way (ROW) assessment.

3.1 General Description

The study section of S.R. 44 is located within the City of New Smyrna Beach, Florida. There are two disconnected sections of an existing trail along the north side of S.R. 44 within private property in the Shoppes of Coronado shopping center on the west side of I-95. The first section of trail begins at Shopping (Williamson Boulevard) and extends approximately 0.15 miles to the east to the Walmart driveway. There is a gap in the trail across the Chevron gas station property. The second section of trail begins east of the Chevron gas station, and extends approximately 0.1 miles to an existing fence maintained by the Florida Department of Transportation (FDOT) near the I-95 Limited Access (LA) Facility.

Two bus stops (Stop 13 and Stop 14) exist on the study corridor for the Volusia County Public Transit System (VOTRAN) for Route 44. Stop 13 is a turnaround connection point that transports users to the Walmart located at the Shoppes at Coronado, and Stop 14 is

an eastbound (EB) / inbound (IB) connection point that transports users to S.R. 44 and Advent Health (formerly, Florida Hospital) at I-95. During the design and permitting phase, coordination with VOTRAN for Route 44 and any other planned routes that may interact with the study area is recommended.



Existing VOTRAN Route (44)

Two field reviews were conducted by the project team on December 9, 2019 and January 16, 2020. During the field reviews, the team inspected existing trail / sidewalk conditions, roadway conditions, land use, and potential obstacles related to a proposed multi-use trail including utilities, drainage structures, and roadside swales. Existing conditions and observations, including photographs, were documented using a mobile Geographic Information Systems (GIS) data collection application. An inventory of the observations and photos is included in **Appendix A**.

S.R. 44 within the study area is a four-lane divided urban principal arterial that runs east-west through a grade-separated interchange with I-95. The interchange is a partial cloverleaf to the west and a signalized diamond to the east. West of I-95, EB S.R. 44 has a left turn lane to turn into the Shoppes at Coronado and a right turn lane to merge onto I-95 southbound (SB). Westbound (WB) S.R. 44 west of I-95 has two consecutive left turn lanes; one immediately west of the overpass to turn onto SB I-95, and one farther west for u-turning vehicles. WB S.R. 44 also has a right turn lane for the Shoppes at Coronado. East of the overpass is the signal for the I-95 NB on and off ramps. At this signal there is a EB left turn lane and WB right turn lane for vehicles merging onto NB I-95. The FDOT has proposed plans on S.R. 44 at I-95. These plans include the extension of the WB right turn lane for traffic turning onto the NB on ramp. The proposed FDOT concept plans on S.R. 44 at I-95 are included in **Appendix B**.

The posted speed limit on S.R. 44 is 55 MPH. The existing access management classification is Class 3 and the existing context classification is C3C, Suburban Commercial. Within the study area, S.R. 44 has 4-foot paved shoulders that are designated as bike lanes, but does not have any existing pedestrian facilities.

Land uses along the corridor are mostly commercial. Within a one-mile radius of the proposed trail are commercial developments. These commercial developments include:

- Walmart Supercenter
- McDonald's (restaurant)
- Popeye's Louisiana Kitchen (restaurant)
- Chevron (gas station)
- RaceTrac (gas station)
- New Smyrna Beach Fire Station 51
- Advent Health

The planned development within the Shoppes at Coronado development adjacent to and east of the existing Walmart, along with the future Coastal Woods commercial development at the east terminus of the project along S.R. 44 will contribute to the current commercial land use, and also promote residential, and mixed land use.

The City of New Smyrna Beach Planning and Zoning Board unanimously approved the Coastal Woods' site plan. The 80.39-acre plan to add stores, homes, offices and a hotel will also provide a 10-foot wide concrete multi-use path that will run along the development's frontage on Sugar Mill Drive and S.R. 44, ending at the southwest corner of the site adjacent to I-95. During the field visit on January 12, 2020, a sediment barrier and orange buried fiber optic cable flags were observed near the proposed development.

The site plan of the Coastal Woods commercial development is located in **Appendix C**.

3.2 Right-of-Way

Parcel boundaries were obtained from Volusia County's GIS website and used for apparent ROW width, which varies along the study corridor. S.R. 44 is a state road in the City of New Smyrna Beach, Florida, and runs through an interchange with I-95. I-95 is a LA Facility maintained by the FDOT. The FDOT Design Manual (FDM Topic #625-000-002) discourages exposing vulnerable road users to high-speed traffic, and Section 224.1.1 provides criteria for shared use paths that cross LA ROW.



Existing LA ROW Fence with FDOT Survey Marker

In coordination with FDOT and the City of New Smyrna Beach, it was determined that the primary obstacle in connecting to the existing multi-use path on the Shoppes of Coronado property east of the Chevron gas station was the need to break an existing FDOT chain-link fence generally located along the LA ROW line. Further coordination would be required with the Federal Highway Administration (FHWA) to determine the feasibility of cutting a break in the existing fence. To avoid this potential obstacle, the proposed trail concept plan shows an alignment which avoids LA ROW altogether. If it is desired in the future to directly connect to new development or the existing path at the Shoppes of Coronado by cutting a break in the existing fence, it will be necessary to coordinate with FHWA.

Existing landscape and trees within the ROW will be considered for removal as required to accommodate the multi-use path. This would include the removal of small trees and bushes.

3.3 Utilities

The project team completed a utilities assessment on the study corridor. There are two overhead distribution power lines that run west to east along both the north and south side of S.R. 44. There is another overhead distribution power line that crosses perpendicular to S.R. 44 near the Chevron gas station. Additional power lines exist east of the I-95 interchange along S.R. 44 and do not interfere with the project study area. The setback distance of utility poles from the pavement edge varies from approximately 30 feet to 90 feet. The relocation of existing utilities, such as poles, is not anticipated.

A Sunshine One Call Ticket identified the following utilities along the corridor:

- Utilities Commission, City of New Smyrna Beach Wastewater, Water
- Utilities Commission, City of New Smyrna Beach Electric
- AT&T / Distribution Telephone
- Florida Public Utilities Co. Gas
- Unitifiber LLC Fiber
- Charter Communications CATV

The Sunshine One Call Ticket is supplied in **Appendix D.**

3.4 Drainage and Permitting

The corridor's drainage is defined by roadside swales that vary in depth relative to the roadway. Drainage inlets and mitered end sections are also provided along S.R. 44 near the proposed multi-use trail.

The Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRMs) for the study area in Volusia County were reviewed, showing potential impact by identified floodplains on the corridor. The impact to the floodplains from work performed are expected to be negligible. Any fill in the floodplain is anticipated to be compensated with excavating. The volume of fill must equal the volume of excavation so that overall volume available in the floodplain remains unchanged. The FIRM for the study area is provided in **Appendix E**.

There is no anticipated impact to wetlands. However, the exact wetland edge should be determined through surveying during final design to better understand the impacts presented. Based on the findings during final design related to wetlands, it is recommended to avoid impacts where possible, and mitigate impacts where necessary.

Determination of qualification for an activity exemption can be obtained through the St. Johns River Water Management District (SJRWMD). Once potential impacts are known during the design and permitting phase, a pre-application meeting should be held with the SJRWMD to verify whether the project qualifies for an exemption (62-330.051, Florida Administrative Code & Florida Administrative Register).

3.5 Soils

The multi-use trail corridor subsurface consists of the soil types Myakka Sand, Pomona (St. John's complex), and Immokalee Sand. The Myakka Sand is a poorly drained fine sand and is part of the Hydrologic Soil Group A/D. The Pomona a poorly drained to very poorly drained thick deposit sandy soil and is a part of the Hydrologic Soil Group A/D. The Immokalee Sand is a poorly drained sandy soil and is a part of the Hydrologic Soil Group A/D. A soil map is provided in **Appendix F**. The map was prepared using GIS data from the USDA Natural Resources Conservation Services (NRCS).

3.6 Environmental

The portion of the study area along S.R. 44 west of I-95 is located primarily in commercial land use. S.R. 44 east of I-95 runs along vacant commercial and agricultural land use, which will be designated for commercial, residential, and mixed land use with the proposed Coastal Woods development.

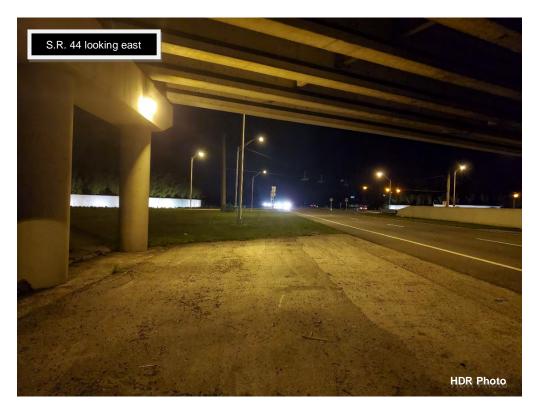
Impacts to any endangered or protected species is expected to be negligible. The Florida Fish and Wildlife Conservation Commission (FWC) identifies the project area as being part of a scrub-jay consultation area. There are no bald eagle nests known to occur within 660 feet of the project corridor. USFWS has de-listed the bald eagle; however, protection will continue under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. During both field reviews on December 9, 2019 and January 16, 2020, no eagles were observed near the proposed multi-use trail location. The trail construction should cause minimal amount of increased noise over the existing roadway, but to reduce potential disturbance, a commitment could be made to a construction schedule outside of the nesting / fledging season of October 1st to May 15th. The United States Fish and Wildlife Service (USFWS) National Bald Eagle Management Guidelines (May 2007) identifies the intended construction activity (roads, trails, canals, power lines, and other linear utilities) as Category A, and where there is a visual buffer between the nest and activity between 330 and 660 feet of the nest (where construction is outside nesting season), monitoring of the nest is not required. FWC Gopher Tortoise Permitting Guidelines were also obtained to examine the gopher tortoise overlay observed in Volusia County's Growth and Resource Management (GRM) Interactive Map. Gopher tortoises are threatened wildlife species protected by state law (Chapter 68A-27, Florida Administrative Code), and must be relocated before any development / land clearing takes place. No gopher tortoise burrows were observed during both field reviews on December 9, 2019 and January 16, 2020, however per FWC's Guidelines a preconstruction survey should be conducted to guarantee there is no potential for disturbance by construction of the new proposed multi-use trail, or if a permit is required. The Florida Natural Areas Inventory (FNAI) Element Occurrence data does not identify any documented listed species within the project area.

The FNAI does not identify any part of the corridor as being conservation land. The Florida Department of Environmental Protection (FDEP) identifies no area within the study limits as Outstanding Florida Water. Volusia County is within a Central (Ocala) Bear Management Unit (BMU). The limited scope of this project make it unlikely that protected species or any wildlife will be affected by this project. During the design and permitting phase, potential impacts to any species should be re-evaluated.

3.7 Lighting

A qualitative lighting evaluation was conducted by the project team on January 16, 2020, at approximately 8 PM during dark conditions along S.R. 44. No quantitative lighting measurements were taken.

S.R. 44 has multiple light poles along the north side of the roadway varying 12 to 21 feet from the edge of pavement to the front of the concrete base of the light pole. During the field review on January 16, 2020, the light poles were observed to emit yellow-orange lights. It can be assumed that these light poles are high pressure sodium lamps. These light poles along S.R. 44 provide lighting on the roadway, and under the I-95 overpass. The existing rectangular lamps under the I-95 overpass do not provide sufficient lighting for pedestrians whose safety may be jeopardized by vehicles traveling at high speeds on S.R. 44 during dark lighting conditions. There are existing light poles in the immediate vicinity of both the SB off-ramp and NB onramp at proposed trail crossing locations , however these light poles do not provide sufficient lighting for crossing pedestrians at night.



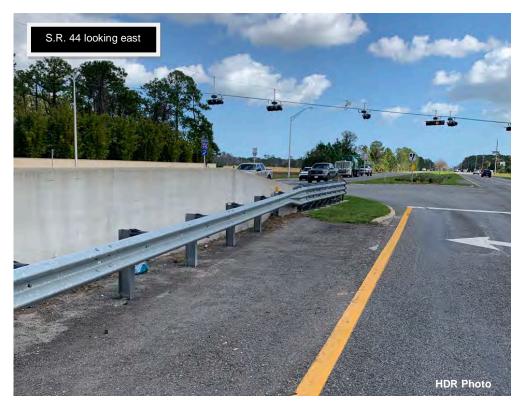
Existing light poles along S.R. 44 and underdeck lighting under the I-95 overpass

3.8 Bridges

The S.R. 44 multi-use trail project is proposed to pass under the existing I-95 bridges. There will be no impact to existing bridge structures with the proposed trail concept and lighting improvements.

3.9 Signalization

A traffic signal exists on S.R. 44 at the I-95 NB ramps intersection. The EB left turn onto the NB I-95 on-ramp operates with protected plus permissive phasing. As shown below, the concrete barrier on the west leg between the EB and WB directions of S.R. 44 approaching the signal creates a sight distance restriction where drivers may not be able to see trail users crossing the on-ramp, particularly when trail users are traveling east. This is a potential safety concern during the permissive EB left turn phase when drivers are focused on finding a gap in oncoming traffic and trail users have a 'Walk' phase. Based on this concern, Section 4 of this report includes an evaluation of the potential queuing impacts of changing the EB left turn signal phasing to protected only. Eight-hour turning movement counts (TMC) on S.R. 44 at the I-95 NB ramps, and additional 7 day continuous volume counts on S.R. 44 from Shoppes at Coronado to Colony Park Lane from October 2017 are included in **Appendix G**, along with the latest signal timings.



Existing traffic signal at S.R. 44 and I-95 NB Ramps. Concrete wall creates a potential sight distance obstruction for EB left turning drivers to see pedestrians or bicyclists crossing the NB on-ramp.

Based on the 2017 TMC, the highest total traffic volume at the intersection occurred between 4:30 and 5:30 PM. The EB left turning volume during this hour was 61 vehicles and the total intersection volume was 2,752. A Synchro analysis was completed for the 2017 PM peak hour condition, which showed an overall intersection level of service (LOS) of B and an average delay of 17.7 seconds per vehicle. Under protective and permissive signal phasing, the EB left turn movement was shown to operate at LOS A with an average delay of 8.1 seconds per vehicle and a 95% queue of less than 50 feet (or two vehicles). The WB right turn was shown to operate at LOS A with an average delay of 3.6 seconds per vehicle and a 95% queue of less than 100 feet (or four vehicles).

The signalized intersection analysis is provided in Appendix H.

4 Multi-Use Trail Concept Plan

The following section outlines the concept plans for the corridor which are attached in **Appendix I**. Typical Sections are located in **Appendix J**.

4.1 Trail, Driveways, and Ramps

This section reviews the concept plans for the multi-use trail, driveways, and vehicles entering and leaving the I-95 ramps. Criteria from the FDOT Design Manual (FDM) were followed for minimum standards and design criteria. The FDM defines a shared use path as a paved facility physically separated from motorized vehicular traffic by an open space or barrier within the ROW, and must comply with Americans with Disabilities Act (ADA) standards.

The following items were considered during the development of the concepts:

- Appropriate alignment for the proposed trail due to the existing fence located along the LA ROW line hindering the connection of the existing 0.1 mile long trail that runs along the north side of S.R. 44 east of the Chevron gas station within the Shoppes of Coronado development to the proposed trail
- 26 feet of width availability under the I-95 bridge from the edge of pavement to the front of the bridge piers
- Connection to the proposed 10-foot multi-use trail in the Coastal Woods commercial development east of I-95

As discussed previously in Section 3.2, the trail alignment in the proposed concept was developed to avoid having to cross the LA ROW line and break an existing chain link fence that follows that line on the west side of the I-95 SB off-ramp to connect to an existing 0.1-mile section of trail east of the Chevron gas station within the Shoppes of Coronado development. On the east side of I-95, the proposed trail alignment does cross the LA ROW east of the NB ramps intersection to connect to the 10-foot sidewalk proposed on the Coastal Woods property because there is no existing fence in this area.

FDM Section 224.1.1 provides five criteria that shared use paths that cross LA ROW must meet. These criteria are listed below, along with how they are met with the proposed concept plan:

- 1. The shared use path is available for public use and includes a fence or wall to prevent access to the LA Facility travel lanes. <u>How met:</u> The proposed trail will be part of the City of New Smyrna Beach's citywide trail network, all of which is publicly accessible. A fence is proposed in between the two I-95 bridges to prevent user access into the I-95 median. No additional fencing or walls is proposed adjacent to the SB off ramp or NB on-ramp, consistent with other area interchanges.
- Local Agency Agreements must be obtained to assign ownership,
 maintenance, and management responsibilities, including lighting, fencing or
 barriers, security gates, signing, and amenities. <u>How met:</u> The City of New
 Smyrna Beach is amenable to such local agency agreements, as needed.
- 3. At-grade crossings are permitted only at interchange ramp terminals and signalized crosswalks. <u>How met:</u> At-grade crossings are proposed only at the I-95 SB off-ramp (stop controlled) and NB on-ramp (signal controlled).
- 4. A proposed overpass crossing (i.e., bridge structure spanning LA ROW) must not be within two miles of an existing or proposed shared use path crossing of the same LA Facility. <u>How met:</u> This criteria is not applicable, since this project does not propose an overpass crossing.
- 5. A proposed underpass crossing (i.e., shared use path adjacent to roadway or waterway under LA Facility bridge) must meet minimum vertical clearance as defined in FDM 224.8. A proposed underpass must remain free from standing water up to, and including the 10 year storm event. How met: The existing vertical clearance of the I-95 bridges over SR 44 exceeds the minimum 10-foot clearance and desirable 12-foot clearance. With the proposed concept plan the drainage criteria would be met.

To avoid impacting the LA ROW fence west of the SB I-95 off-ramp, the proposed concept keeps the trail within the S.R. 44 ROW, and connects to an existing 0.15 mile trail in front of Walmart and west of the Shoppes of Coronado driveway. This connection also avoids having a gap in the trail network at the Chevron gas station property. To allow this connection to happen, a permanent easement will need to be obtained for the construction of the small section of trail on the McDonald's parcel. Further east within the S.R. 44 ROW, the proposed trail placement is shown just north of an existing drainage swale located along S.R. 44 just south of the Shoppes at Coronado. Existing landscape and trees within the ROW will be considered for removal as required to accommodate the 10 to 12-foot multi-use trail.

To make the trail facility safe and comfortable for its users, the conceptual trail alignment has been placed at the backside of the existing swale east of the Chevron gas station to provide greater separation from vehicles traveling at high speeds along S.R. 44. However, in all cases per FDM 224.12, the alignment exceeds the minimum lateral separation of five feet between the shoulder break and the edge of the proposed path.

The proposed placement of the multi-use trail on S.R. 44 under the I-95 overpass would not impact the existing bridge structures and is proposed to have guardrail placed between the shoulder of S.R. 44 and the multi-use trail to maximize safety for trail users.

FDOT is currently in design for proposed improvements at the S.R. 44 interchange at I-95 from the SB off ramp to Florida Memorial Parkway (Financial Project Identification (FPI) Number 442932-1). The purpose of the project is to improve safety and operations within the interchange by adding or extending auxiliary lanes to provide additional space for vehicles to merge when entering or exiting the interstate. Project recommendations include adding an EB auxiliary lane on S.R. 44 through the interchange, an extension of the WB right turn slip lane to have proper deceleration distance for the I-95 NB on ramp, and the addition of a second left turn lane from the NB I-95 exit ramp to WB S.R. 44. Auxiliary lanes are added next to the through lanes to maintain traffic flow. The currently proposed design concept for these improvements is shown in **Appendix B**.

FDOT's project to provide a WB right turn lane with proper deceleration for vehicles turning right onto the I-95 NB on-ramp may negatively impact trail user safety more than the existing configuration by encouraging even faster speeds through this sweeping right turn movement by allowing WB right turning vehicles to bypass queued vehicles at the signal. The multi-use trail concept proposes reconfiguring the channelized right turn lane and requiring vehicles to make a near 90-degree right turn at the signalized intersection onto the ramp. This proposed change to the ramp terminal is intended to dramatically slow WB right turning vehicles at the trail crosswalk, and improve the likelihood of drivers seeing and yielding to trail users. A change of this type to the arterial ramp terminal does not require an Interchange Operations Analysis Report (IOAR) based on the guidance in the FDOT Interchange Access Request User's Guide.

As part of the I-95 / S.R. 44 interchange improvements (FPI 442932-1), the new signal mastarm structure for WB traffic will be designed to accommodate a dynamic blank-out sign. The blank-out sign will be placed on the mastarm at the time of the multi-use trail project construction and will be aligned with the WB right turn lane. It will be programmed to display "Yield to Peds" during the concurrent green phase for the WB through and right turn movements on S.R. 44, and will be blank during the red phase for WB traffic. At the time the multi-use trail is constructed, pedestrian signals should be installed for crossing the I-95 NB on-ramp and the pedestrian phase should be set to recall so the phase will be displayed each signal cycle.

The concept shown in **Appendix I** convey these proposed trail, driveway, and ramp improvements.

4.2 Drainage

The following design considerations will minimize drainage impacts to S.R. 44:

Construct the proposed S.R. 44 multi-use trail at grade and with a slope towards the
existing swale, outside of the I-95 overpasses, in order to maintain any offsite
drainage collection.

• Construct the proposed S.R. 44 multi-use trail under the I-95 overpass towards the existing bridge pier in order to maintain any offsite drainage collection.

Where the proposed multi-use trail directly impacts the existing swale, the existing drainage will be maintained through a closed storm system. Additional inlets will be installed between the trail and the roadway to correct the roadway flow.

4.3 Lighting and Traffic Control

Adequate lighting should be provided at all marked pedestrian crossing locations. Insufficient illumination of the crosswalk during night time conditions could jeopardize the safety of pedestrians if no intersection improvements are considered. The FHWA Informational Report on Lighting Design for Midblock Crosswalks recommends that

lighting of crosswalks be placed just in front of the crosswalk on the approach side to create optimal visibility of pedestrians. A qualitative lighting evaluation was conducted by the project team on January 16, 2020. At the I-95 NB on-ramp and SB off-ramp, existing light poles closest to the proposed crosswalk at each intersection should be relocated so that they are positioned in front of the crosswalk in the direction of vehicle travel to provide higher illumination for the driver. It is recommended to evaluate the need for additional lighting on S.R. 44 under the I-95 overpass to better illuminate trail users along S.R. 44 to enhance safety and personal security. The trail concept follows lighting criteria outlined in the FDOT Design Manual (FDM) Table 231.2.1 for Sidewalks and Shared Use Paths, for



Existing Light Pole at channelized right turn lane

enhanced illumination and visibility of pedestrians for drivers. Only additional luminaires were considered for underdeck lighting as a wall mount fixture located on the pier or pier cap under the I-95 overpass (FDM 231.1.5).

The specific lighting changes necessary to meet the current FDOT lighting standards has not been determined as part of the qualitative visual assessment performed, however, an assumption of a complete upgrade of intersection lighting to reflect FDM standards are included in the opinion of probable cost.

As discussed previously in Section 3.9, the traffic signal at the NB ramps intersection is being evaluated for a change in the EB left turn phasing from protected plus permissive phasing to protected only phasing due to sight distance and safety concerns with trail users crossing the on-ramp.

A Synchro analysis of the 2017 PM peak hour volumes in the proposed Build condition included two changes that impacted traffic operations. The first was changing the EB left turn phasing from protected plus permissive to protected only. The second was changing the traffic control of the WB right turn movement from a slip lane under yield control to signal control.

Synchro results show the proposed intersection improvements would not adversely affect operations. The overall intersection in the 2017 PM peak hour under the Build configuration was shown to operate at LOS B, with an average delay of 19.8 seconds per vehicle using the same signal timings as those in the existing conditions analysis. While the EB left turn delay increased from an average delay of 8.1 seconds per vehicle (LOS A) to 86 seconds per vehicle (LOS F), the 95% queue length only increased from less than 50 feet (two vehicles) to approximately 125 feet (five vehicles). This queue, plus a deceleration distance of 405 feet, would require at least 530 feet. The existing EB left turn lane is approximately 565 feet long, making it sufficiently long, and not needing an extension. The WB right turn movement continues to operate at LOS A, but the 95% queue length decreases slightly to approximately 50 feet (two vehicles). To accommodate the WB queue and deceleration requirements, a minimum turn lane length of 475 feet is recommended.

It should be noted that this analysis did not consider the proposed changes in the FDOT interchange improvements project on S.R. 44 at I-95 (**Appendix B**) including the additional NB left turn lane. However, the additional NB left turn lane would provide an opportunity to shorten its phase and lengthen the EB left turn phase to reduce the expected longer EB left queues and further optimize the operations of the intersection.

Based on the results of the Build-condition analysis showing the longer queue lengths will not require the eastbound left turn lane to be extended, it is recommended to change the eastbound left turn phasing to protected only, thereby enhancing safety for trail users crossing the NB on-ramp.

Traffic control signs on the multi-use trail approaches to the SB I-95 off-ramp and the two driveways at the Shoppes of Coronado include Stop signs, and Bike Route signs (D11-1 signs in the Manual on Uniform Traffic Control Devices (MUTCD)) placed on the backs of the Stop signs. In addition, a Trail Crossing Ahead sign assembly (W11-15, W11-15P, and W16-9P signs and plaques from the MUTCD) is recommended on the I-95 SB off-ramp in advance of the existing Stop sign. Signs on the proposed multi-use trail should follow the dimensions provided in MUTCD Table 9B-1 Bicycle Sign and Plaque Sizes. As noted previously, new pedestrian signals are recommended to be added to the signal at the I-95 NB on-ramp to facility trail user crossings of the ramp. The pedestrian phase is proposed to be placed on recall and displayed concurrently with the WB through and right turn movements. A dynamic blank-out sign will be placed on the mastarm and aligned with the WB right turn lane as previously described.

Crosswalk visibility enhancement through improved nighttime lighting is recommended along the multi-use trail at the two driveways the trail crosses adjacent to the Shoppes of Coronado shopping center west of I-95.

This enhancement is intended to reinforce the driver requirement to yield the right-ofway at the trail crossing locations. Additional lighting should also be provided along the proposed trail at the backside of the existing swale for improved nighttime visibility for trail users.

Refer to **Appendix I** for the proposed multi-use trail concept.

4.4 Utilities

The concept plans in **Appendix I** identify utilities visible during the field visit on the existing 0.1 mile trail near the Shoppes at Coronado property, located immediately east of the Chevron gas station west of I-95, through the I-95 interchange, to the location of the proposed 10-foot trail at the southwest property line of the Coastal Woods commercial development along S.R. 44. These include existing utility poles, water manholes, and a fire hydrant south of the existing sidewalk at the Shoppes at Coronado near the Walmart sign. In addition, buried fiber optic cable was noted along the area of the proposed trail on S.R. 44 near the Coastal Woods commercial development. Buried fiber optic cables observed / noted along the proposed trail on S.R. 44 may be impacted.

5 Financial Feasibility

This section outlines the preliminary opinion of probable cost for the design and construction of all proposed trail improvements along the S.R. 44 corridor. For estimating the probable cost, a 10 to 12-foot trail on S.R. 44 was assumed, which is also reflected in the concept plans in **Appendix I**. Concrete was the only trail material considered for the proposed S.R. 44 facility.

The opinion of probable cost, pay item numbers, and units of measurement are based on FDOT's Basis of Estimates Manual. This opinion of probable cost is completed for the feasibility study to allow the R2CTPO and City of New Smyrna Beach to determine the priority of any planned improvements. It should be noted that utility relocation costs are typically borne by the utility company, so no specific costs were included for utility relocations. Utility relocations of the buried fiber optic cables within the study corridor that may be impacted with the proposed trail are anticipated, however he total estimated opinion of probable cost of the project does not include utility relocation costs. Unit prices for pay items are determined from historical average costs provided through FDOT. To accommodate future increases in the opinion of probable cost, an inflation factor was applied based on FDOT guidelines for roadway construction costs. A list of FDOT approved inflation factors through 2037 is provided in **Appendix K**.

Table 5-1 summarizes the estimates for the corridor and **Table 5-2** summarizes inflation for the corridor through 2023. The total estimated opinion of probable cost of the project is \$700,000.

Table 5-1. S.R. 44 Quantities and Opinion of Probable Cost

					UCTION				
S.R. 44 MULTI-USE TRAIL PROJECT									
FDOT Pay Item No.	Description	Unit Cost	Quantity	Unit	Cost				
01 1	MOBILIZATION	15%	1	LS	\$52,750.23				
02 1	MAINTENANCE OF TRAFFIC	10%	1	LS	\$35,166.82				
04 10 3	SEDIMENT BARRIER	\$2.04	3,831	LF	\$7,814.95				
04 18	INLET PROTECTION SYSTEM	\$97.58	2	EA	\$195.16				
10 1 1	CLEARING & GRUBBING	\$9,645.29	1.4	AC	\$13,747.33				
20 1	REGULAR EXCAVATION	\$10.18	320	CY	\$3,254.01				
20 6	EMBANKMENT	\$5.71	324	CY	\$1,850.46				
60 4	TYPE B STABILIZATION	\$5.66	969	SY	\$5,483.14				
85709	OPTIONAL BASE,BASE GROUP 09	\$18.99	969	SY	\$18,396.61				
327 70 1	MILLING EXIST ASPH PAVT, 1" AVG DEPTH	\$2.02	1,687	SY	\$3,408.60				
34 1 52	SUPERPAVE ASPH CONC, TRAF B, PG76-22	\$109.74	159.84	TN	\$17,541.30				
37 7 80	ASPH CONC FC,TRAFFIC B,FC-9.5,PG 76-22	\$111.22	219.13	TN	\$24,372.17				
39 1	MISCELLANEOUS ASPHALT PAVEMENT	\$117.63	31	TN	\$3,633.70				
25 1521	INLETS, DT BOT, TYPE C, <10'	\$3,703.85	1	EA	\$3,703.85				
25 5	MANHOLE, ADJUST	\$1,572.00	1	EA	\$1,572.00				
25 11	MODIFY EXISTING DRAINAGE STRUCTURE	\$3,060.00	1	EA	\$3,060.00				
30175130	PIPE CULV, OPT MATL, ROUND, 30"S/CD	\$88.00	12	LF	\$1,056.00				
	PIPE CULV, OPT MATL, ROUND, 36"S/CD	\$275.00	20	LF	\$5,500.00				
30982138	MITERED END SECT, OPTIONAL RD, 36" CD	\$3,000.00	2	EA	\$6,000.00				
22 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	\$48.20	2,491.43	SY	\$120,087.08				
27 2	DETECTABLE WARNINGS	\$29.72	160	SF	\$4,755.20				
36 1 1	GUARDRAIL- ROADWAY, GEN TL-3	\$18.64	460	LF	\$8,574.40				
36 85 20	GUARDRAIL END ANCH ASSY/END TRE,PARALLEL	\$1,130.76	1	EA	\$1,130.76				
36 85 24	GUARDRAIL END TREAT- TRAILING ANCHORAGE	\$3,074.01	1	EA	\$3,074.01				
50 10222	FENCING, TYPE B, 5.1-6.0, W/ VINYL COAT	\$52.83	70	LF	\$3,698.10				
70 1 2	PERFORMANCE TURF, SOD	\$2.93	1,509	SY	\$4,420.91				
30 2 11	CONDUIT, F& I, OPEN TRENCH	\$7.72	50	LF	\$386.00				
30 2 12	CONDUIT, F& I, DIRECTIONAL BORE	\$22.22	80	LF	\$1,777.60				
32 7 2	SIGNAL CABLE, REPAIR/REPL-FUR & INSTALL	\$2.95	800	LF	\$2,360.00				
35 2 11	PULL & SPLICE BOX, F&I, 13" x 24"	\$750.10	2	EA	\$1,500.20				
46 1 11	ALUMINUM SIGNALS POLE, PEDESTAL	\$1,577.79	2	EA	\$3,155.58				
553 1 11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	\$573.07	2	AS	\$1,146.14				
65 1 12	PEDESTRIAN DETECTOR, F&I, ACCESSIBLE	\$1,700.00	2	EA	\$3,400.00				
00 1 11	SINGLE POST SIGN, F&I GM, <12 SF	\$358.40	20	AS	\$7,168.00				
00 11391	ELECT DISP SIGN, F&I OM- AC, BLANK OUT	\$5,130.00	1	AS	\$5,130.00				
00 1 50	SINGLE POST SIGN, RELOCATE	\$135.69	4	AS	\$542.76				
10 11101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	\$1,090.72	0.34	GM	\$372.25				
10 11131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	\$475.54	0.05	GM	\$25.62				
	PAINTED PAVT MARK,STD,VELLOW,SOLID,6"	\$1,055.34	0.03	GM	\$29.98				
10 11201	THERMOPLASTIC, STD, WHITE, SOLID, 12"	\$2.42	272.00	LF	\$658.24				
11 11123 11 11124	THERMOPLASTIC, STD, WHITE, SOLID, 12 THERMOPLASTIC, STD, WHITE, SOLID, 18"	\$3.00	48	LF	\$144.00				
	THERMOPLASTIC, STD, WHITE, SOLID, 16 THERMOPLASTIC, STD, WHITE, SOLID, 24"	\$4.97	314	LF	\$1,560.58				
11 111125	THERMOPLASTIC, STD, WHITE, SOLID, 24 THERMOPLASTIC, STD, WHITE, MESSAGE	\$102.12	4	EA	\$408.48				
11 11170	THERMOPLASTIC, STD, WHITE, MESSAGE THERMOPLASTIC, STD, WHITE, ARROW	\$118.85	9	EA	\$1,069.65				
	LUMINAIRE,F&I,UNDER DECK, WALL MOUNT	\$4,900.00	4	EA	\$21,600.00				
15 11125 15 4 13	LIGHT POLE COMPLETE, F&I- STD, 40'	\$3,900.00	7	EA	\$36,300.00				
15 4 60	LIGHT POLE COMPLETE, F&F STD, 40 LIGHT POLE COMPLETE, RELOCATE	\$917.50	4	EA	\$3,670.00				
15 7 11	LOAD CENTER, F&I, SECONDARY VOLTAGE	\$11,633.33	1	EA	\$11,633.33				
13 / 11	LOAD CLIVILIN, I AI, SECONDAR I VOLTAGE	ψ ι ι,υυυ.υυ		SUBTOTAL	\$457,960.21				
CEI (15%) \$68,694.03 ENGINEERING AND DESIGN (30%) \$137,388.06									
SURVEY AND ROW MAPPING (\$0.35 per sq. ft) \$35,350.00									
				TOTAL	\$699,392.30				
			ROUNDE	D TOTAL*	\$700,000				

(Historical Costs from 2019/05/01 to 2020/04/30 for area 6 (Volusia County) * Construction cost estimate does not include utility relocation costs and right-of-way costs. **Includes cost of removal of existing striping.

Table 5-2. S.R. 44 FDOT Inflated-Adjusted Estimate

FDOT Inflation-Adjusted Estimate	Inflation Factor	PDC Multiplier	Adjusted Cost Estimate
Year 1 Inflation-Adjusted Estimate (2021)	2.60%	1.026	\$718,200.00
Year 2 Inflation-Adjusted Estimate (2022)	2.70%	1.054	\$737,800.00
Year 3 Inflation-Adjusted Estimate (2023)	2.80%	1.083	\$758,100.00

6 Conclusions

The proposed multi-use trail concept plans are presented within this study to help the R2CTPO and the City of New Smyrna Beach plan for the design and construction phases, and prioritize funding for the planned improvements. Additional improvements including, roadway improvements, driveway enhancements, modified signalization, lighting additions along the project corridor, and ADA accommodations at the trail crossings are recommended along the study corridor to meet ADA and FDM guidelines.

An analysis of the NB ramps signalized intersection was completed to evaluate a potential change in the signal phasing for the EB left from protected plus permissive to protected only to help alleviate a sight distance and safety issue for people crossing the NB on-ramp on the trail. The results of the analysis showing 95% maximum queue lengths for the eastbound left are expected to increase from approximately two vehicles to five vehicles, based on the 2017 PM peak hour. This change in queuing will not require the eastbound left turn lane to be extended. Therefore, it is recommended to change the eastbound left turn phasing from protected plus permissive to protected only, thereby enhancing safety for trail users crossing the NB on-ramp.

This study identified a trail alignment that would connect to the existing trail at the Shoppes at Coronado, but avoid having to cross the LA ROW line by breaking an existing chain link fence west of the I-95 SB off-ramp. The S.R. 44 multi-use trail is proposed to cross the Chevron gas station driveway and Shoppes of Coronado driveway, and connect to the existing 0.15 mile long trail in front of Walmart that continues west to Shopping (Williamson Boulevard). On the east side of I-95, the proposed trail would cross the LA ROW line to connect to the proposed Coastal Woods development and a proposed 10 foot wide sidewalk, however, there is no existing fence in this area. The study demonstrates that the proposed multi-use trail meets all of the relevant criteria in FDM Section 224.1.1 regarding shared use paths within Department LA ROW. The proposed alignment meets the needs identified by the FDOT to better connect their citywide trail network, including the key connection through the I-95 interchange.

In conclusion, the finding for this study is that this multi-use trail connection through the I-95 interchange between an existing trail in the Shoppes of Coronado shopping center and a proposed 10 foot wide sidewalk in the future Coastal Woods development is feasible.

7 References

FDOT 2019/2020 Basis of Estimates Manual

2020 http://www.fdot.gov/programmanagement/Estimates/BasisofEstimates/

FEMA Maps Service Center (FIRM Maps)

2020 https://msc.fema.gov/portal/search

Florida Department of Transportation Design Manual (FDM)

2020 https://www.fdot.gov/roadway/fdm/default.shtm

Florida Fish and Wildlife Conservation Commission. Bald Eagle Nest Locator.

2020 https://www.arcgis.com/apps/webappviewer

Florida Natural Areas Inventory (FNAI) Florida Biodiversity Matrix

2020 http://www.fnai.org/biodiversitymatrix/index.html

National Resources Conservation Service. Web Soil Survey.

2020 https://websoilsurvey.nrcs.usda.gov/app/

River to Sea Transportation Planning Organization

2020 https://www.r2ctpo.org/

City of New Smyrna Beach

2020 https://www.cityofnsb.com/

Volusia County Property Appraiser's Land Mapping System

2020 https://vcpa.vcgov.org/searches

Manual on Uniform Traffic Control Devices (MUTCD) Part 7

2020 https://mutcd.fhwa.dot.gov/htm/2009/part7/part7_toc.htm

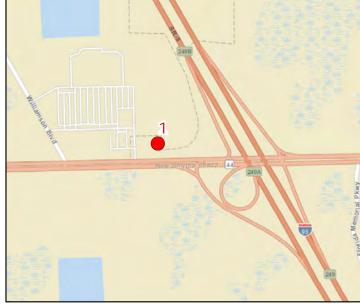
Appendix A

Field Observations Inventory







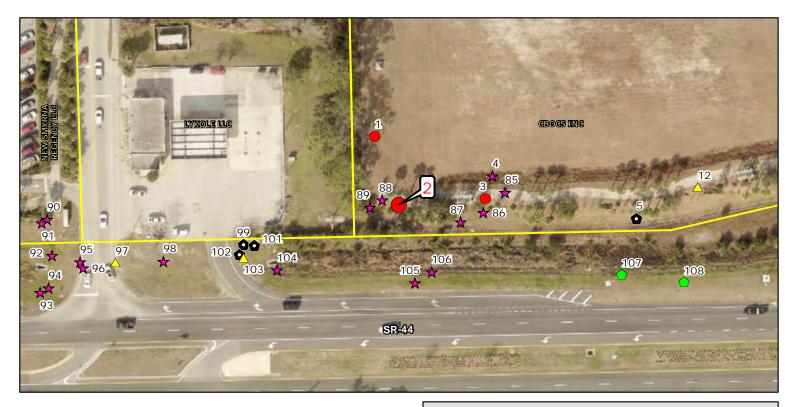




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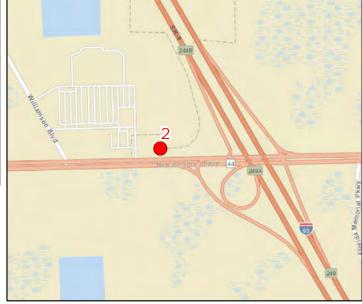
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Feet





Feature ID: 2 Feature Type: ADA - Safety Comment: Existing Sidewalk **Lat:** 29.01315 **Long:** -80.99136 http://maps.google.com/maps?q=29.01315,-80.99136 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





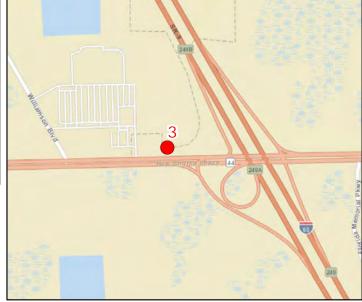
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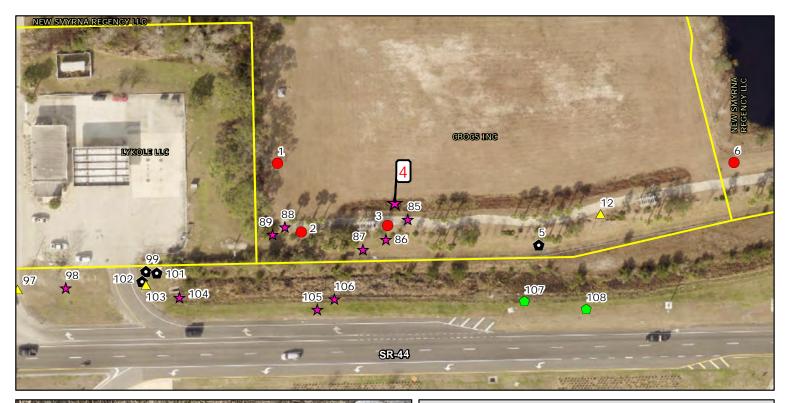




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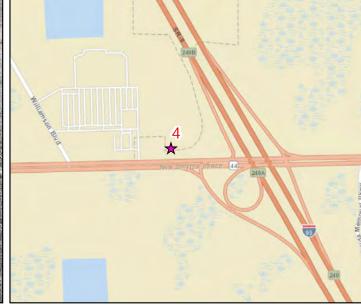
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Feature ID: 4 Feature Type: Other - Misc Comment: damaged sidewalk **Lat:** 29.01323 **Long:** -80.9911 http://maps.google.com/maps?q=29.01323,-80.9911 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

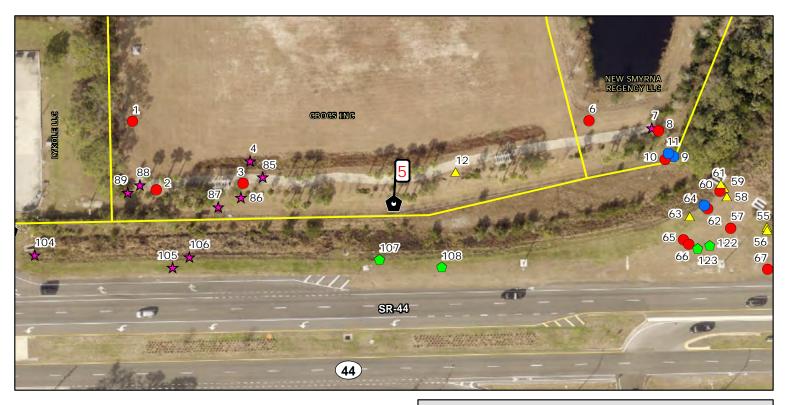




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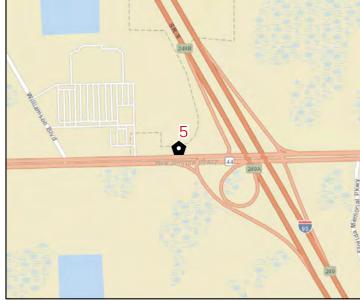
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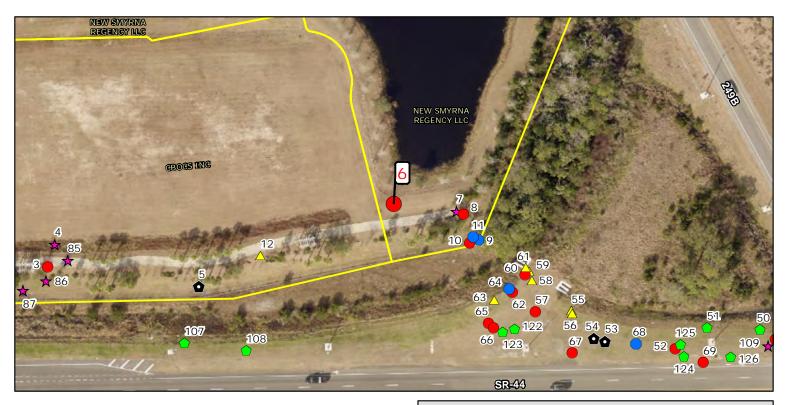




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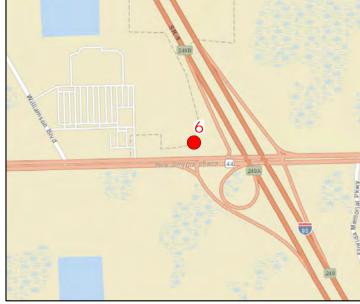
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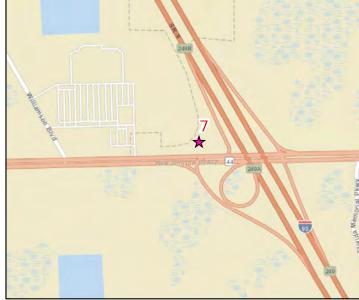
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Feature ID: 7 Feature Type: Other - Misc Comment: end of sidewalk trail **Lat:** 29.01333 **Long:** -80.98994 http://maps.google.com/maps?q=29.01333,-80.98994 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

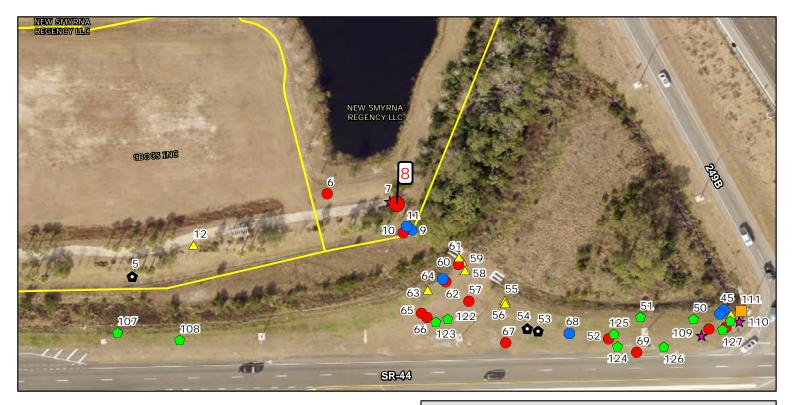




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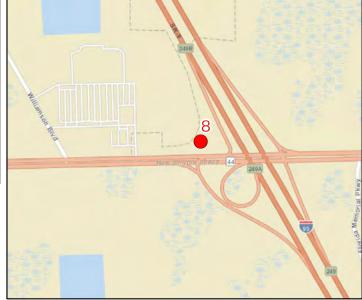
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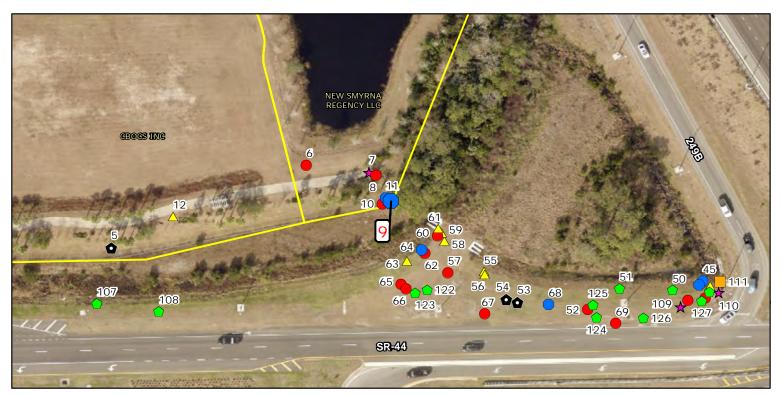
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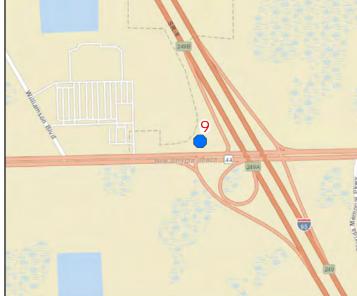
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Feature ID: 9 Feature Type: Environmental Comment: Survey Marker FDOT **Lat:** 29.01325 **Long:** -80.98988 http://maps.google.com/maps?q=29.01325,-80.98988 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





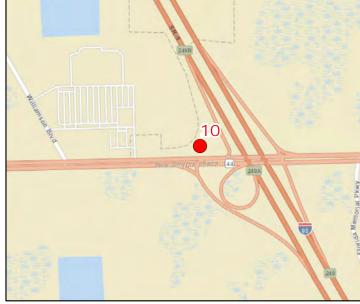
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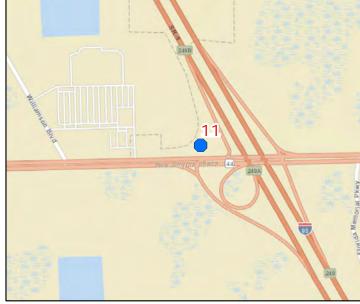




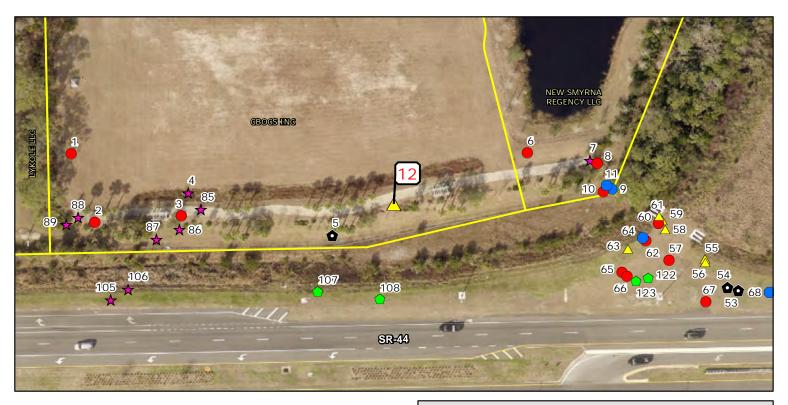














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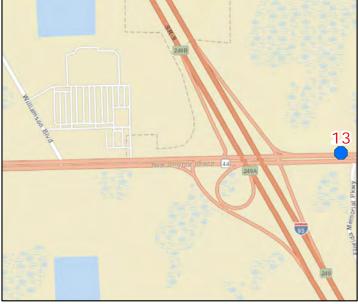
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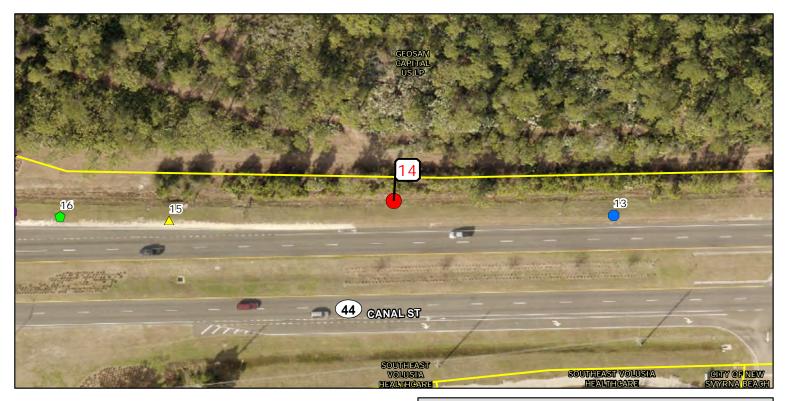






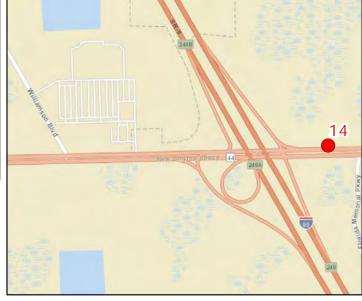




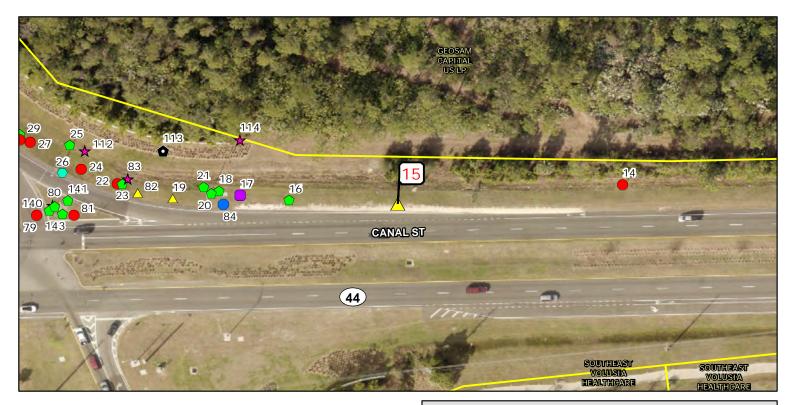




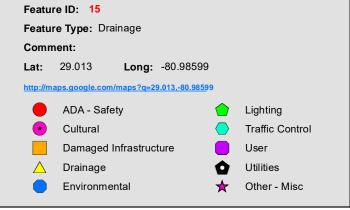






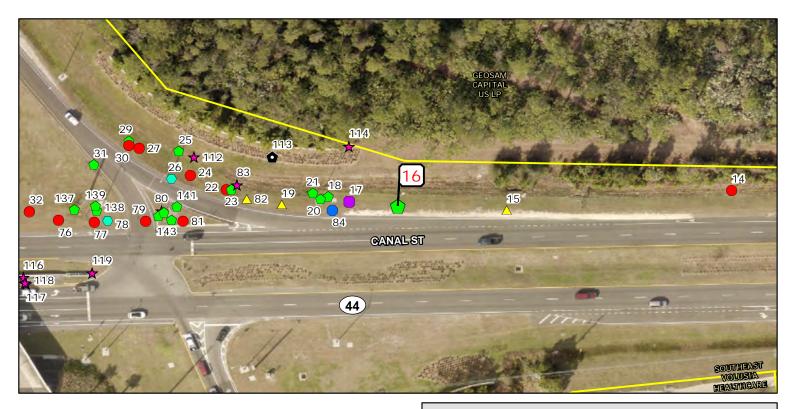
















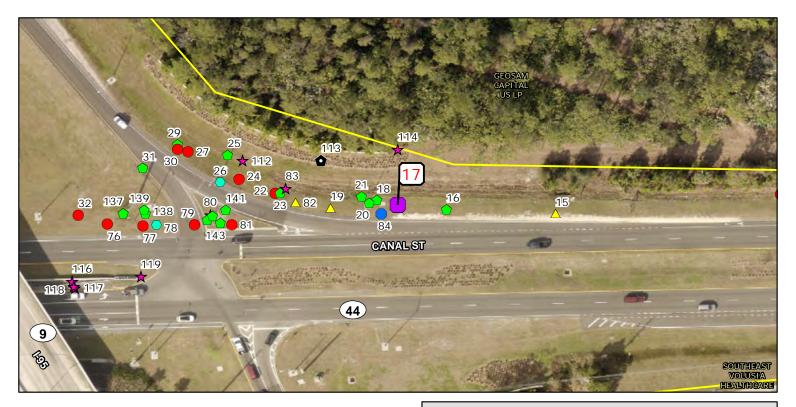




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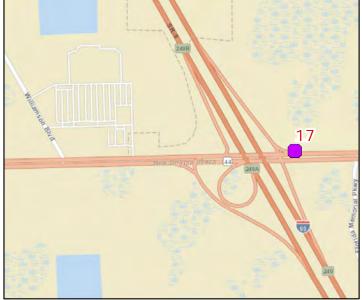
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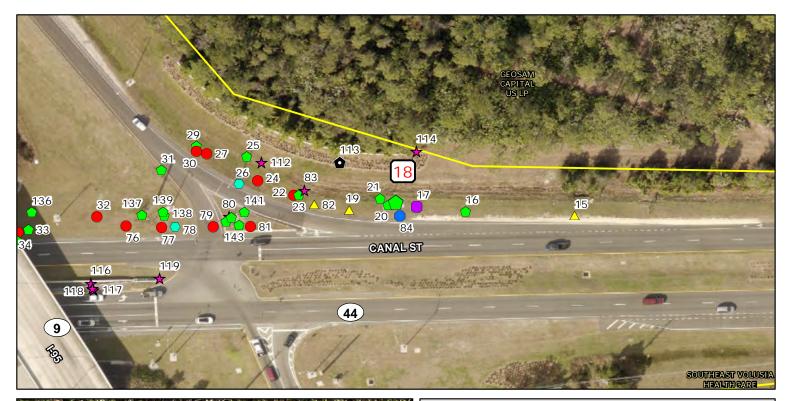














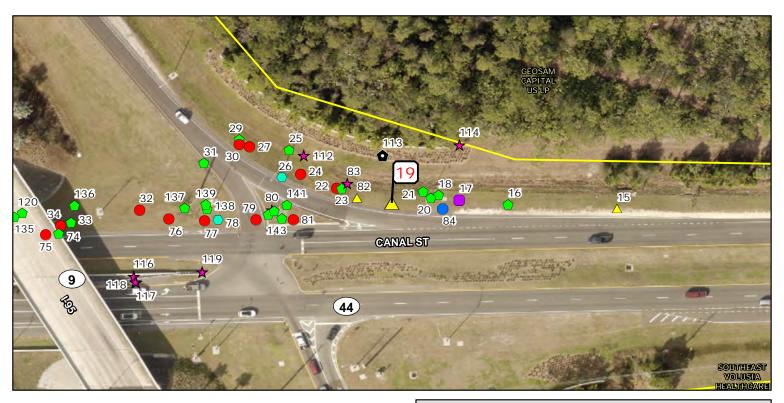
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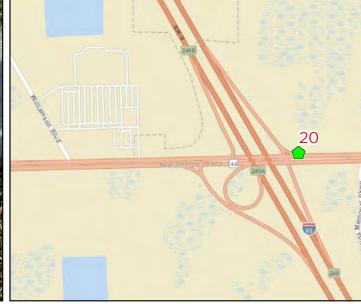








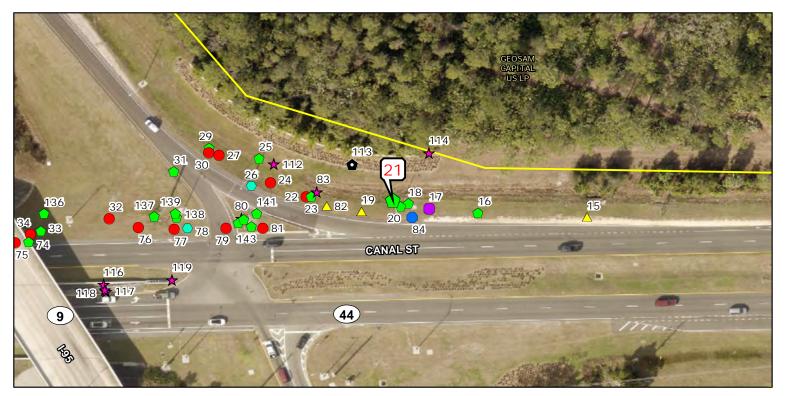
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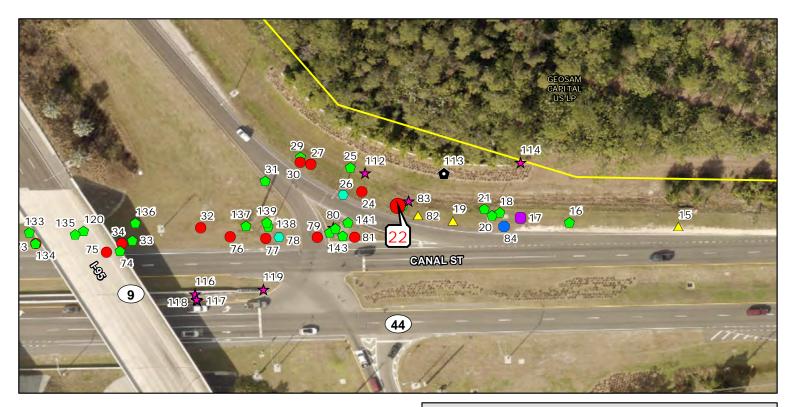




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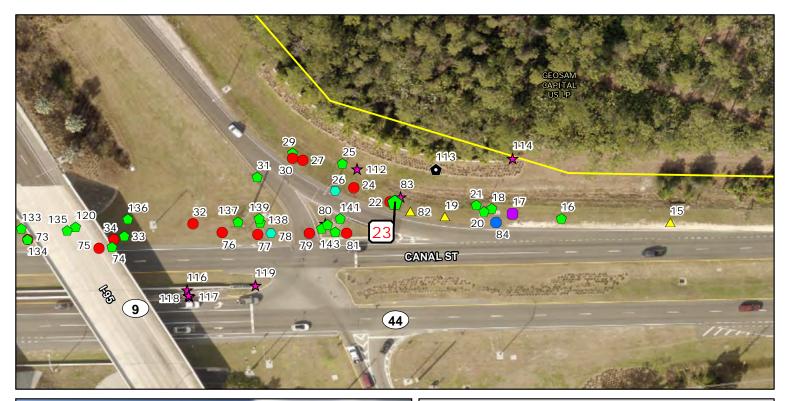






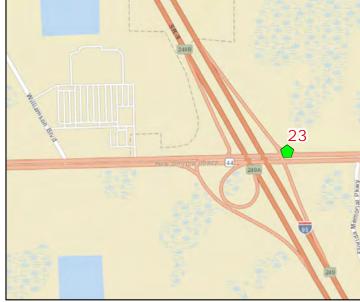








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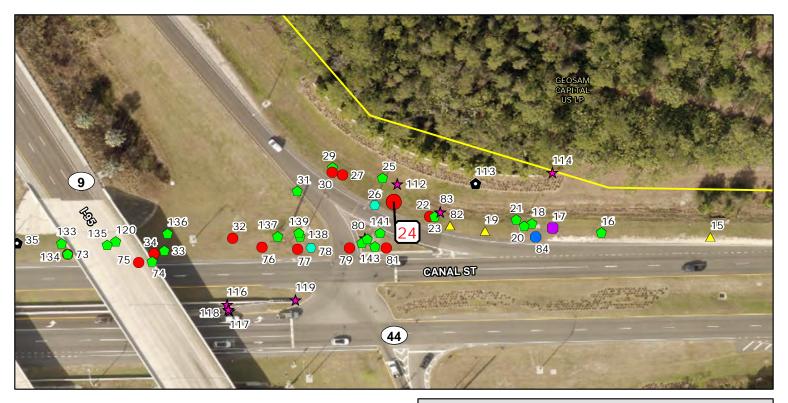




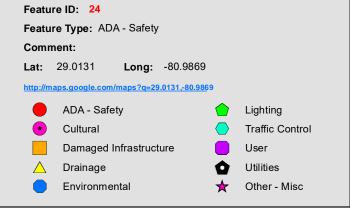
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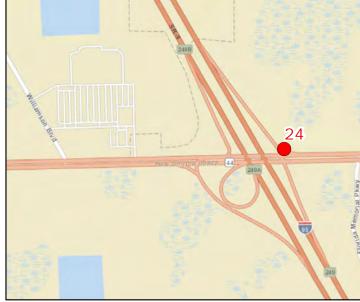
0 50 100 150

Feet

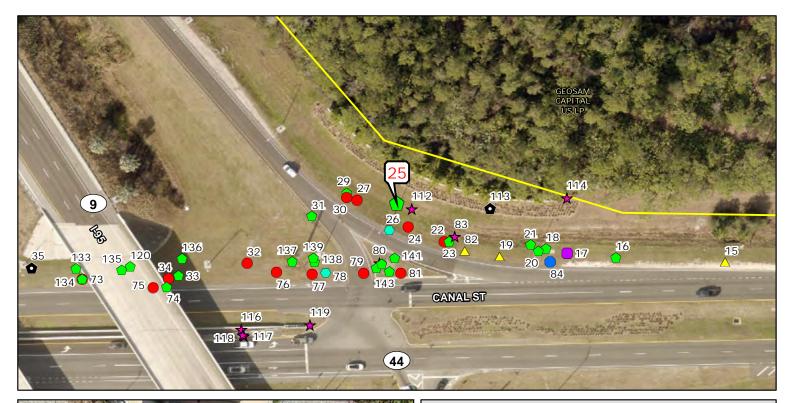






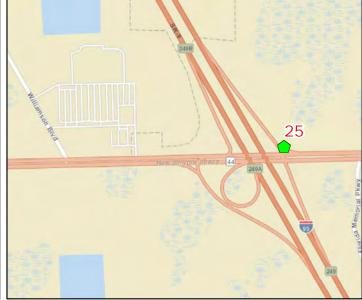








Feature ID: 25 Feature Type: Lighting Comment: **Lat:** 29.01317 Long: -80.98693 http://maps.google.com/maps?q=29.01317,-80.98693 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





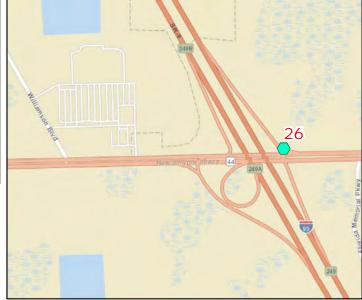
Map Scale: 1 Inch = 100 Feet

0 50 100 150

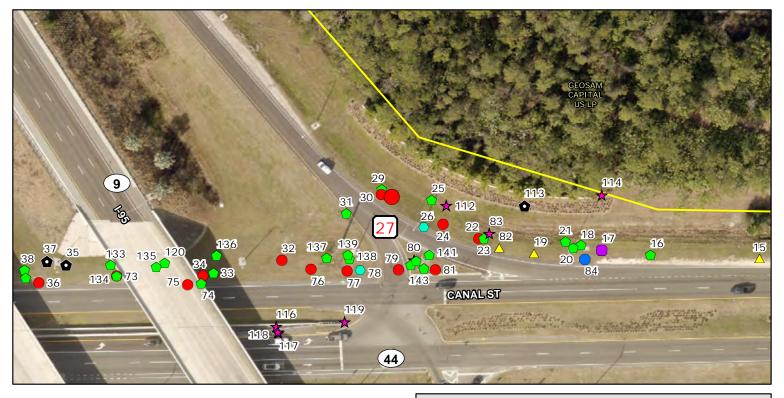














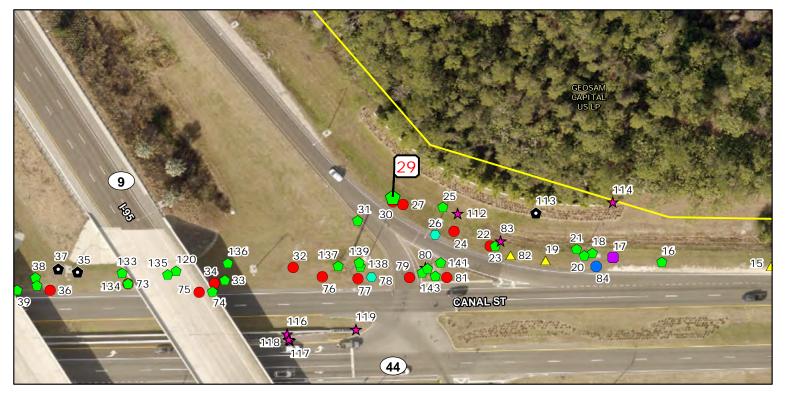
Feature ID: 27 Feature Type: ADA - Safety Comment: Lat: 29.01318 **Long:** -80.98705 http://maps.google.com/maps?q=29.01318,-80.98705 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

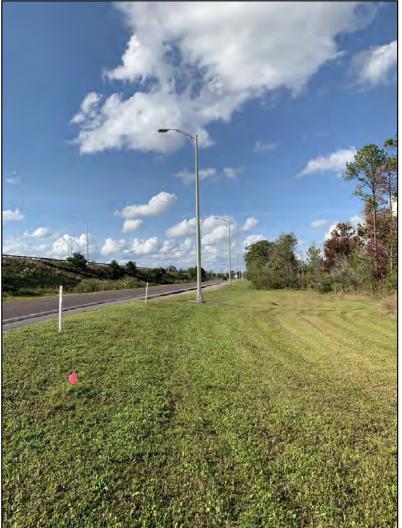




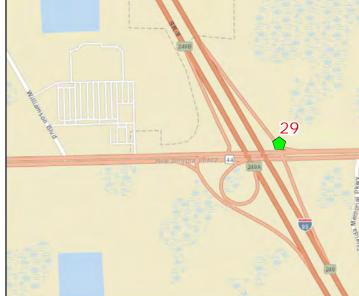
Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 29 Feature Type: Lighting Comment: Lat: 29.0132 **Long:** -80.98708 http://maps.google.com/maps?q=29.0132,-80.98708 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

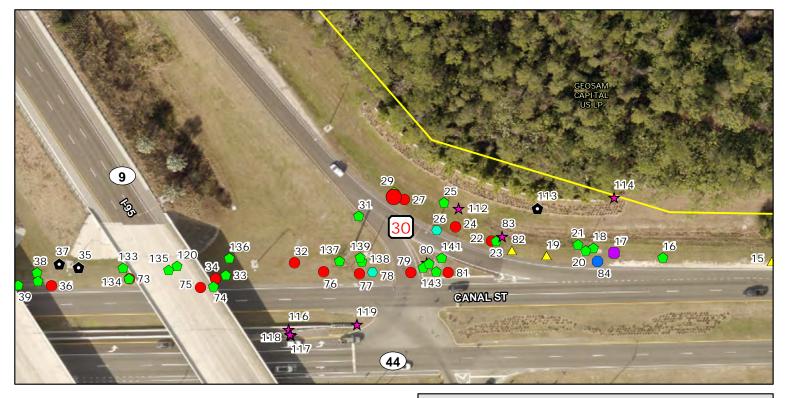




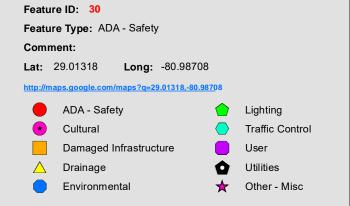
Map Scale: 1 Inch = 100 Feet

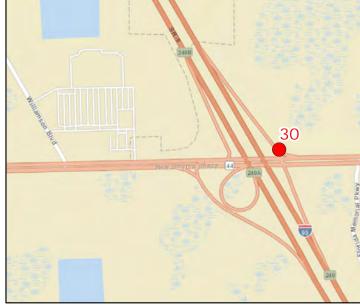
0 50 100 150

Feet







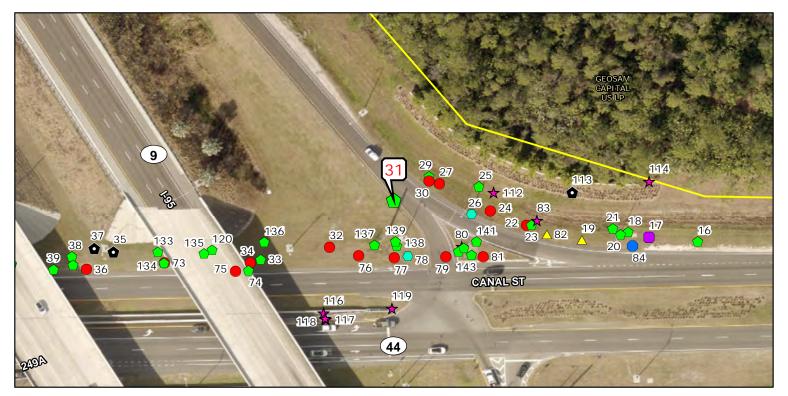


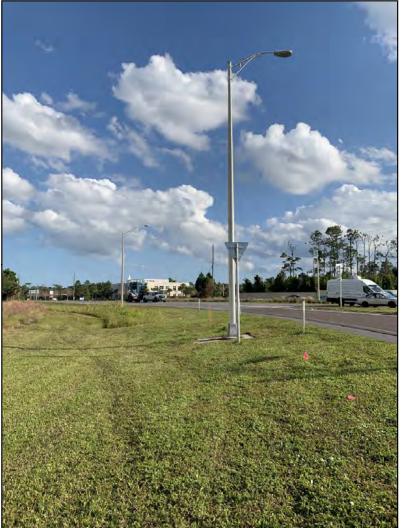


Map Scale: 1 Inch = 100 Feet

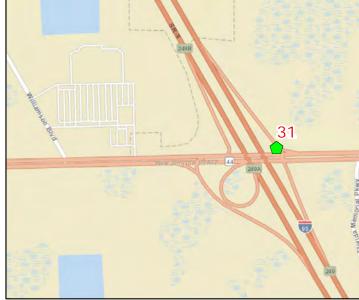
0 50 100 150

Feet





Feature ID: 31 Feature Type: Lighting Comment: **Lat:** 29.01313 **Long:** -80.98717 http://maps.google.com/maps?q=29.01313,-80.98717 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

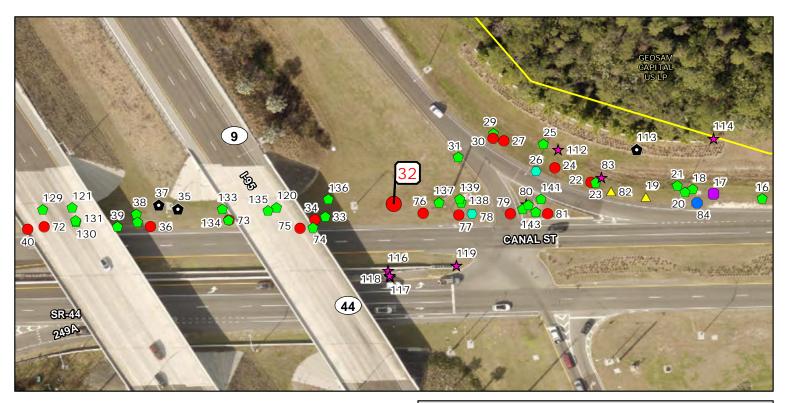




Map Scale: 1 Inch = 100 Feet

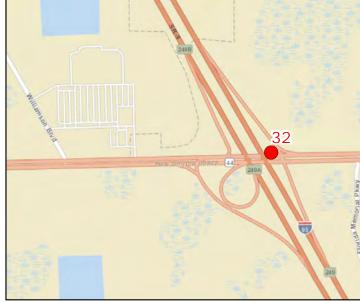
0 50 100 150

Feet





Feature ID: 32 Feature Type: ADA - Safety Comment: 29.013 **Long:** -80.98736 Lat: http://maps.google.com/maps?q=29.013,-80.98736 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

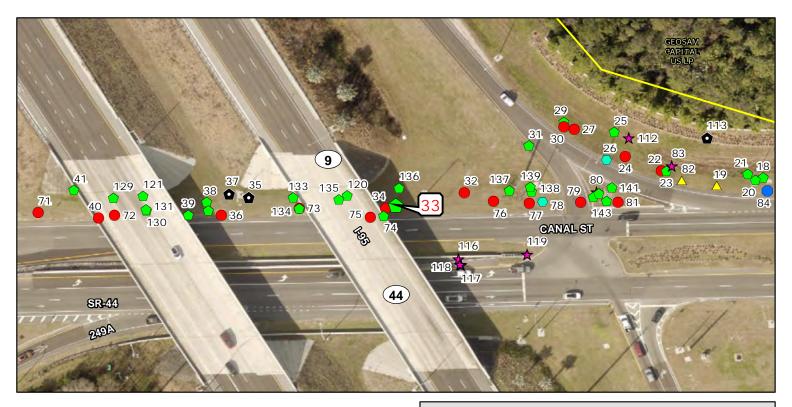




Map Scale: 1 Inch = 100 Feet

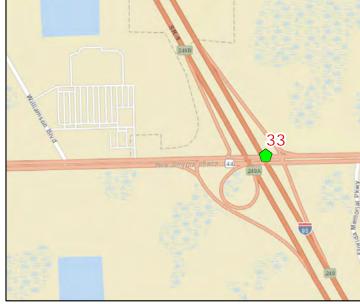
0 50 100 150

Feet

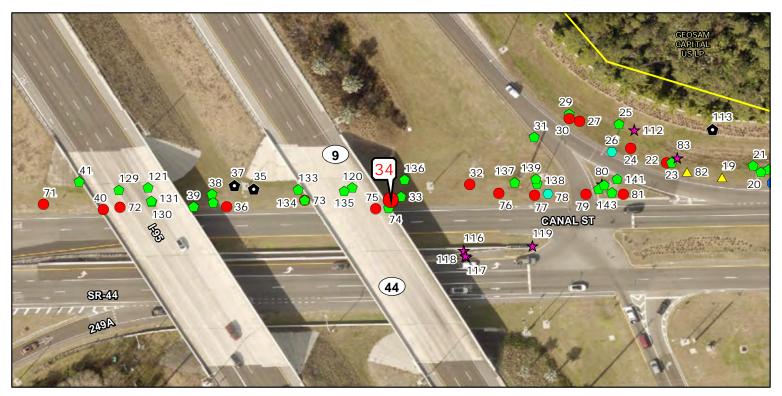






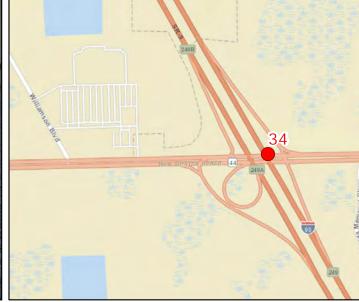








Feature ID: 34 Feature Type: ADA - Safety Comment: Lat: 29.01295 **Long:** -80.98758 http://maps.google.com/maps?q=29.01295,-80.98758 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

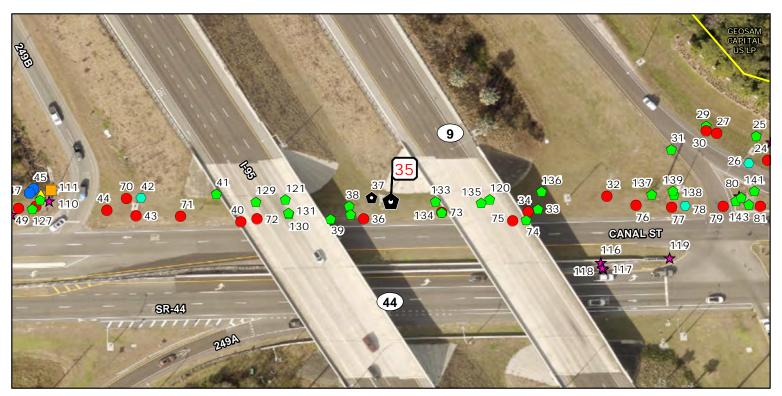




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





Feature ID: 35 Feature Type: Utilities Comment: Lat: 29.01298 **Long:** -80.98798 http://maps.google.com/maps?q=29.01298,-80.98798 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

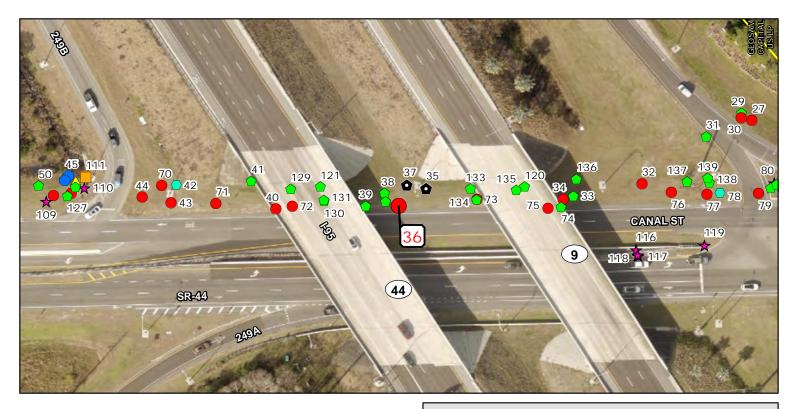




Map Scale: 1 Inch = 100 Feet

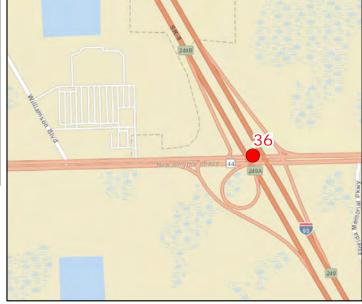
0 50 100 150

Feet







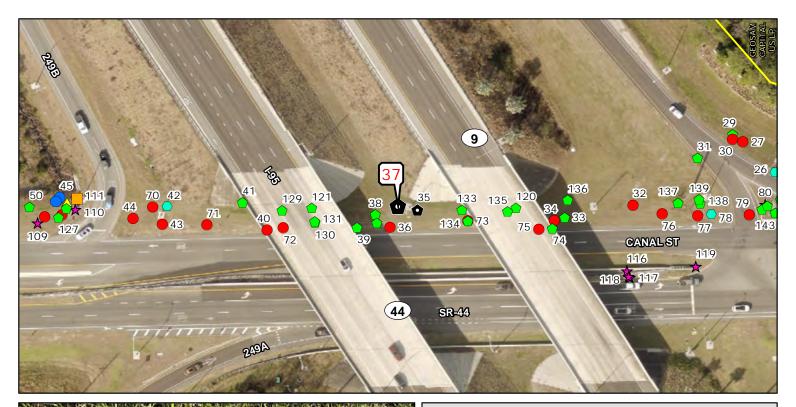




Map Scale: 1 Inch = 100 Feet

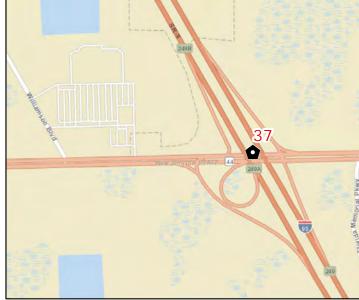
0 50 100 150

Feet





Feature ID: 37 Feature Type: Utilities Comment: Lat: 29.01299 Long: -80.98803 http://maps.google.com/maps?q=29.01299,-80.98803 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

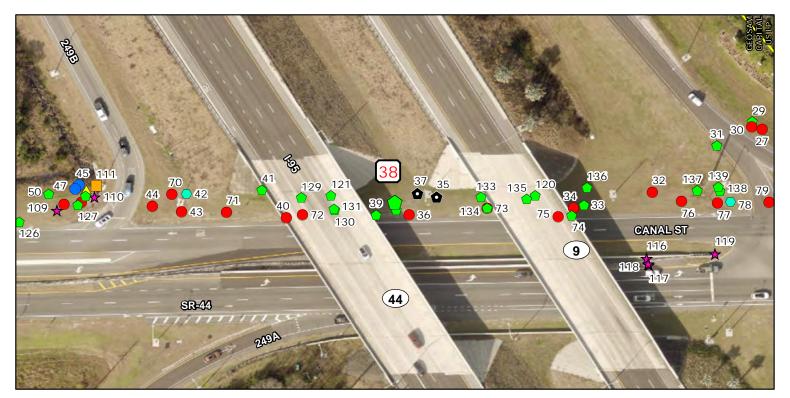




Map Scale: 1 Inch = 100 Feet

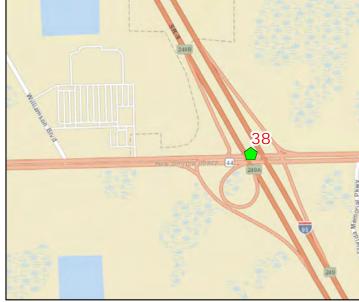
0 50 100 150

Feet





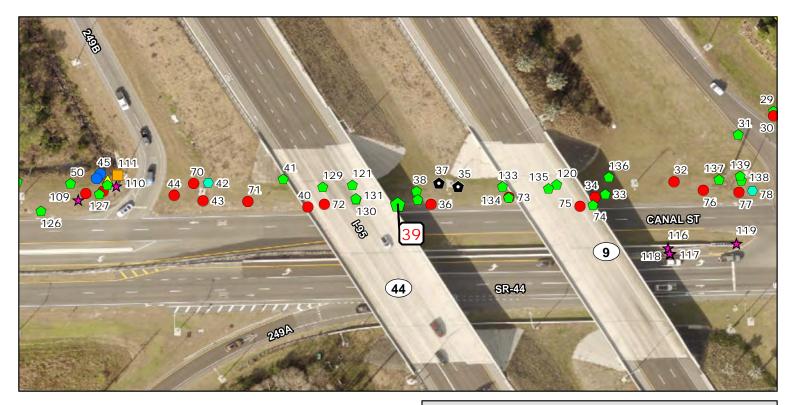
Feature ID: 38 Feature Type: Lighting Comment: Lat: 29.01297 **Long:** -80.98809 http://maps.google.com/maps?q=29.01297,-80.98809 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





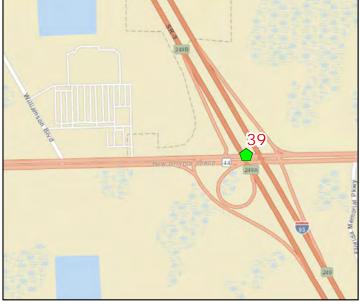
Map Scale: 1 Inch = 100 Feet

0 50 100 150

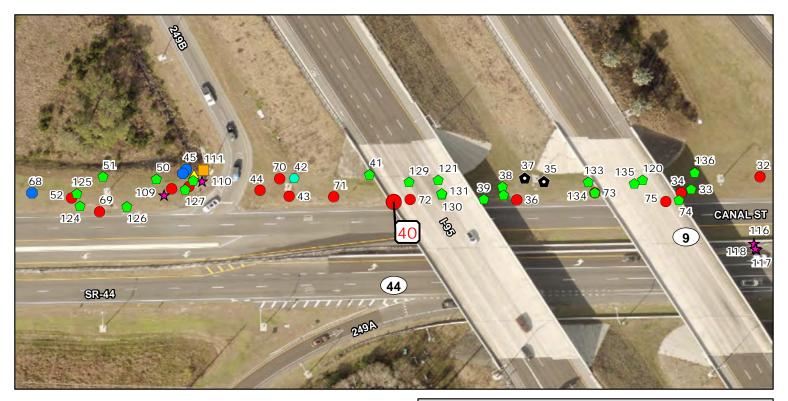






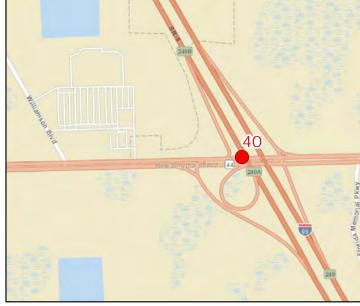




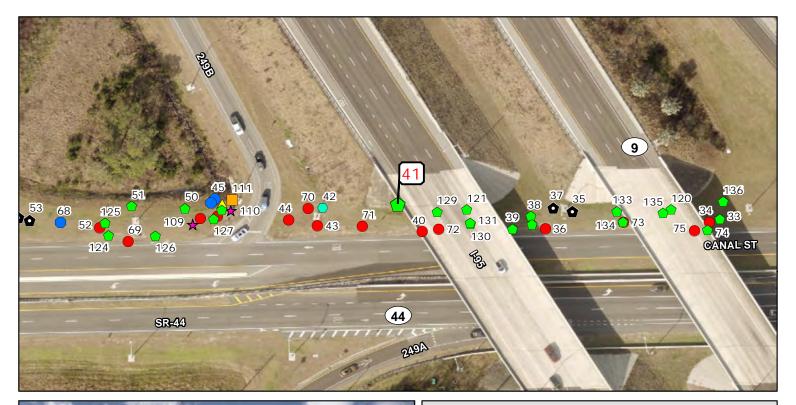






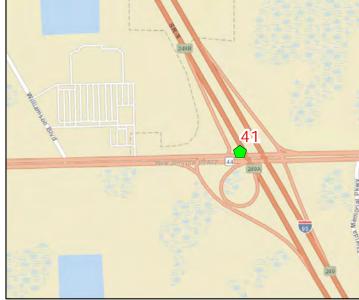








Feature ID: 41 Feature Type: Lighting Comment: 29.013 **Long:** -80.98847 Lat: http://maps.google.com/maps?q=29.013,-80.98847 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

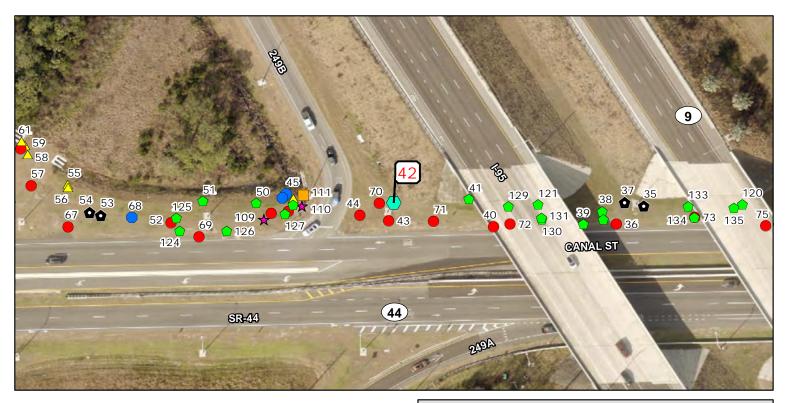




Map Scale: 1 Inch = 100 Feet

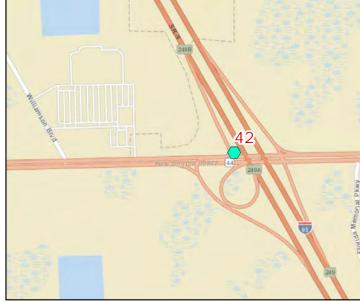
0 50 100 150

Feet

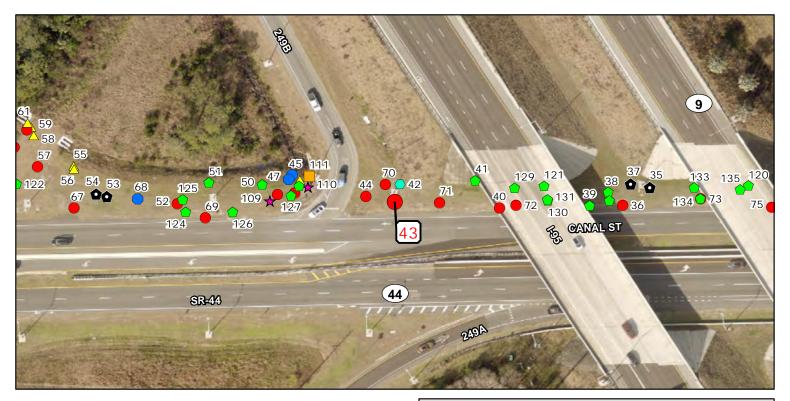






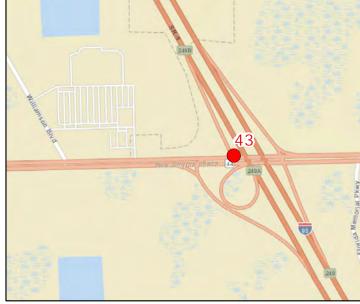




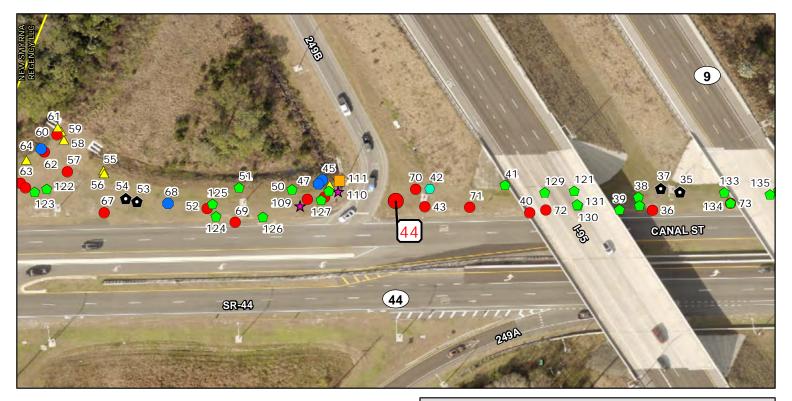






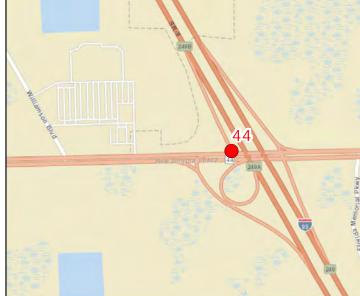






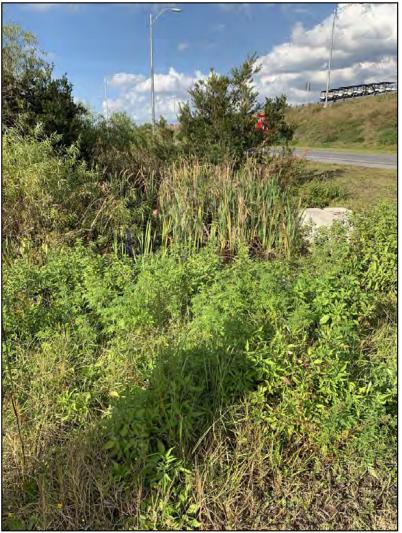




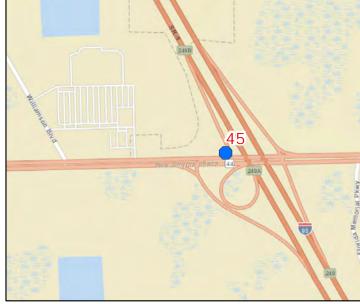








Feature ID: 45 Feature Type: Environmental Comment: Lat: 29.01302 Long: -80.98899 http://maps.google.com/maps?q=29.01302,-80.98899 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc



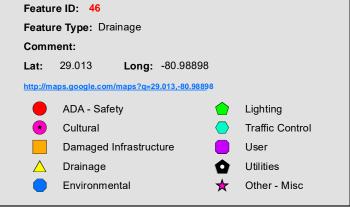


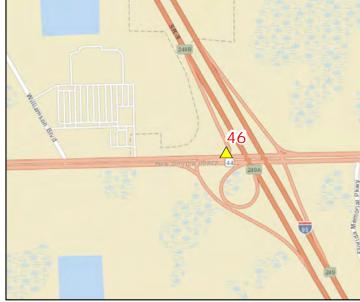
Map Scale: 1 Inch = 100 Feet

0 50 100 150

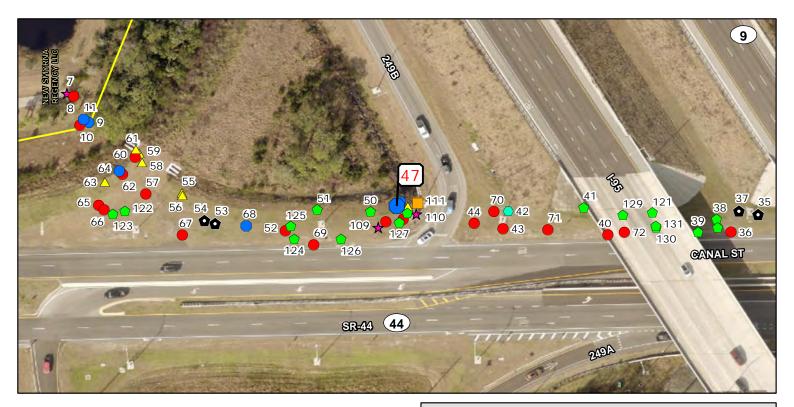






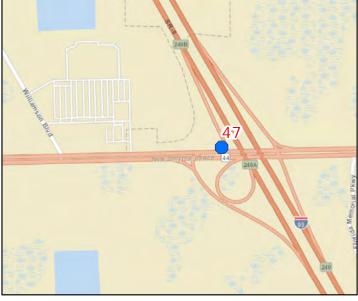




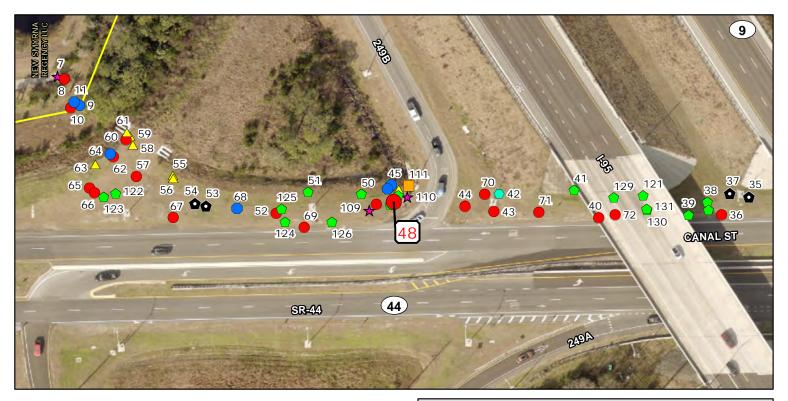






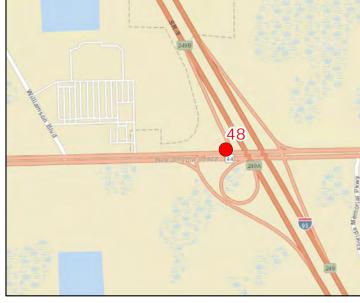




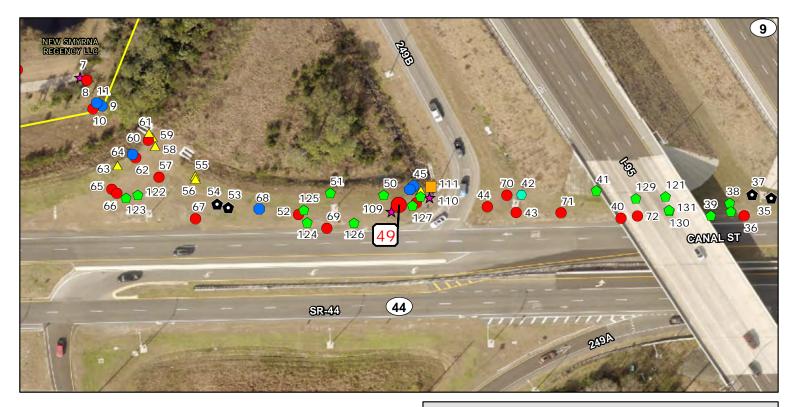




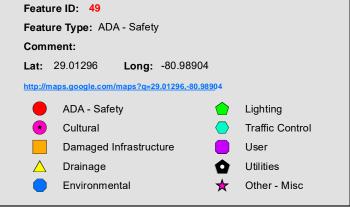


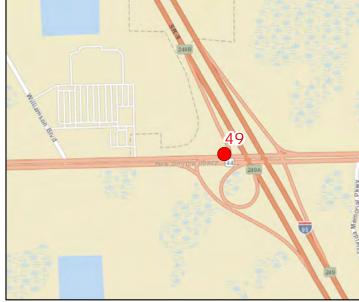










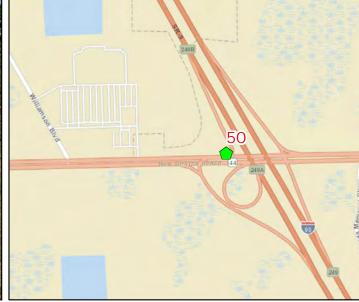








Feature ID: 50 Feature Type: Lighting Comment: **Lat:** 29.01299 **Long:** -80.98908 http://maps.google.com/maps?q=29.01299,-80.98908 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





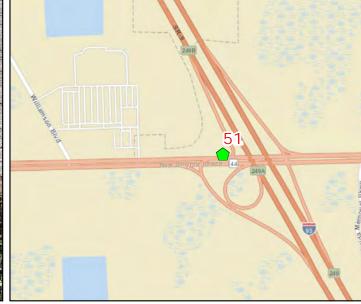
Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 51 Feature Type: Lighting Comment: 29.013 **Long:** -80.98923 Lat: http://maps.google.com/maps?q=29.013,-80.98923 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





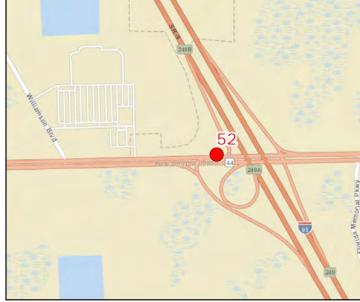
Map Scale: 1 Inch = 100 Feet

0 50 100 150

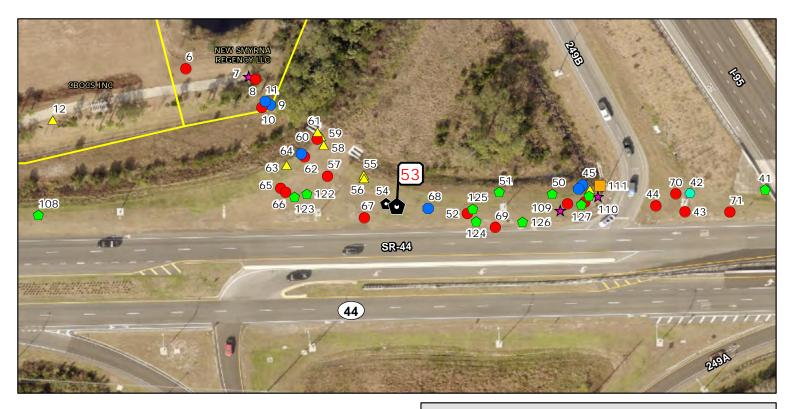






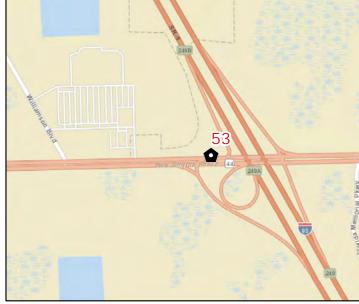














Map Scale: 1 Inch = 100 Feet

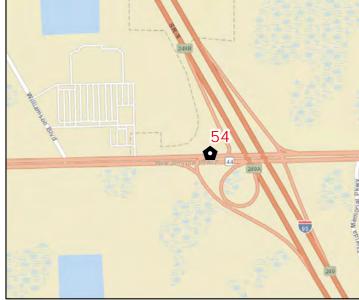
0 50 100 150

Feet





Feature ID: 54 Feature Type: Utilities Comment: Lat: 29.01297 **Long:** -80.98956 http://maps.google.com/maps?q=29.01297,-80.98956 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

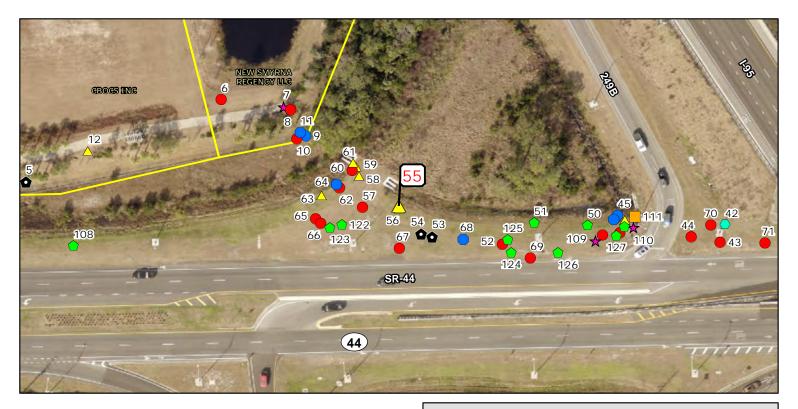




Map Scale: 1 Inch = 100 Feet

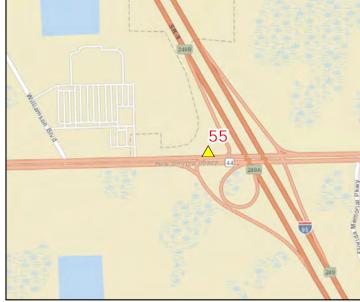
0 50 100 150

Feet







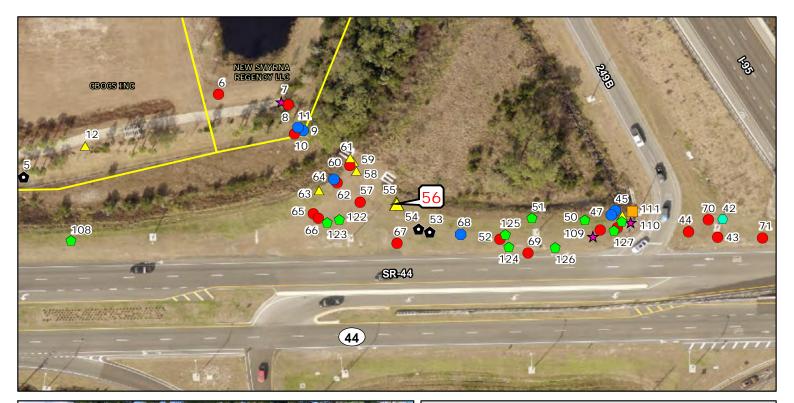




Map Scale: 1 Inch = 100 Feet

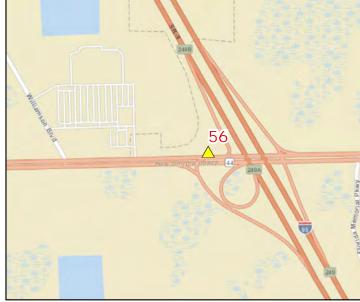
0 50 100 150

Feet





Feature ID: 56 Feature Type: Drainage Comment: **Lat:** 29.01304 **Long:** -80.98962 http://maps.google.com/maps?q=29.01304,-80.98962 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

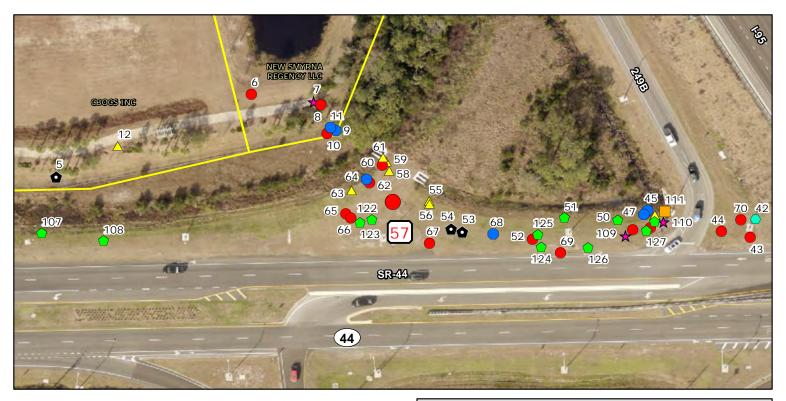




Map Scale: 1 Inch = 100 Feet

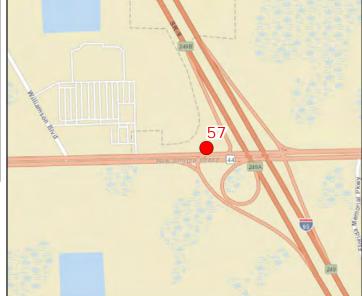
0 50 100 150

Feet





Feature ID: 57 Feature Type: ADA - Safety Comment: Lat: 29.01304 **Long:** -80.98972 http://maps.google.com/maps?q=29.01304,-80.98972 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

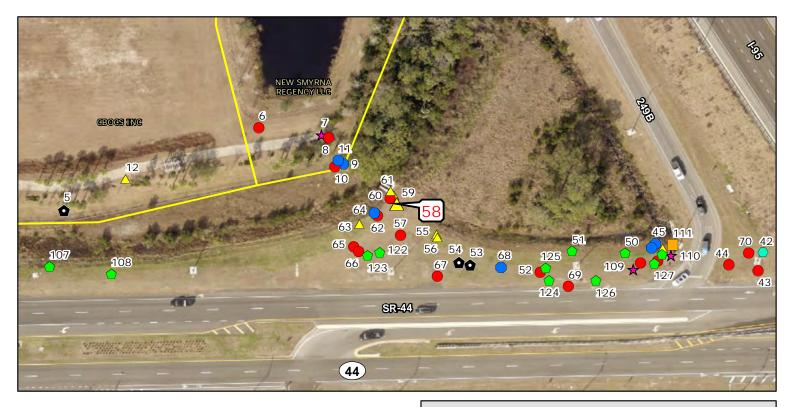




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





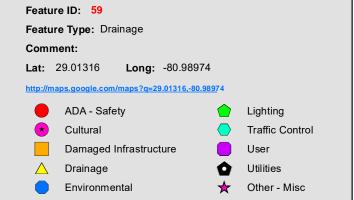


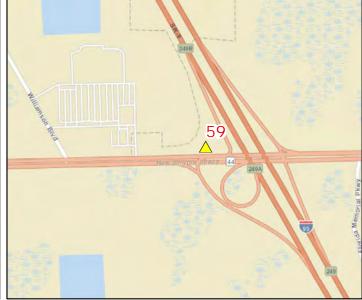










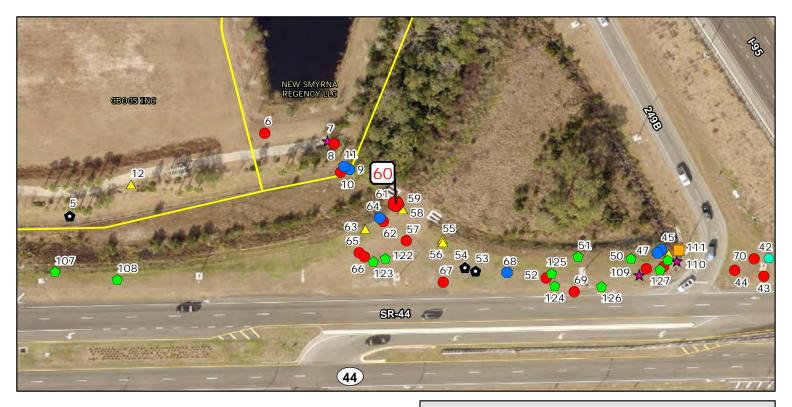




Map Scale: 1 Inch = 100 Feet

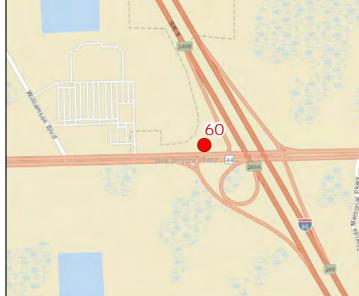
0 50 100 150

Feet

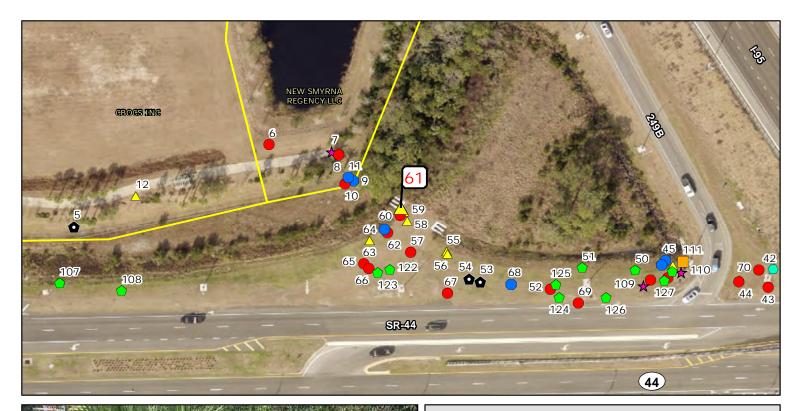


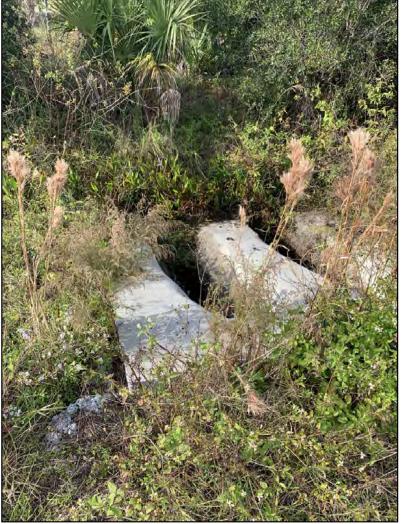




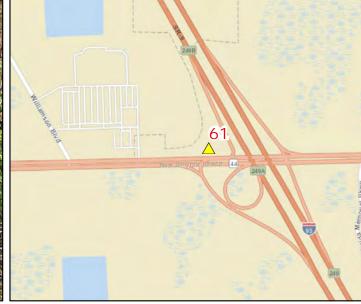








Feature ID: 61 Feature Type: Drainage Comment: **Lat:** 29.01317 **Long:** -80.98975 http://maps.google.com/maps?q=29.01317,-80.98975 ADA - Safety Lighting Traffic Control Cultural Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

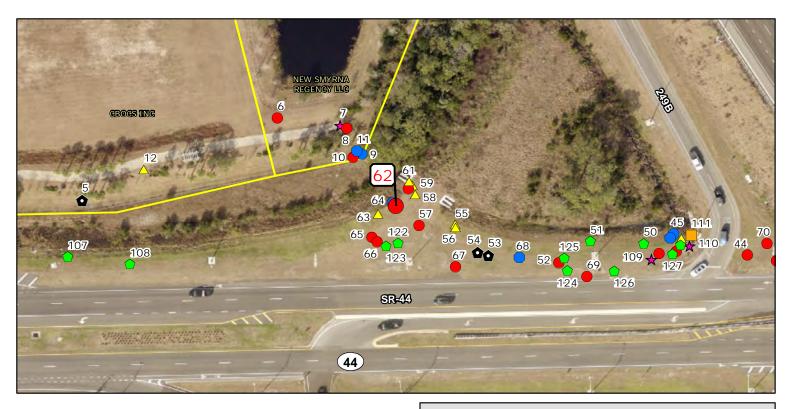




Map Scale: 1 Inch = 100 Feet

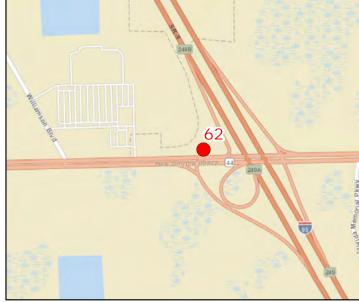
0 50 100 150

Feet







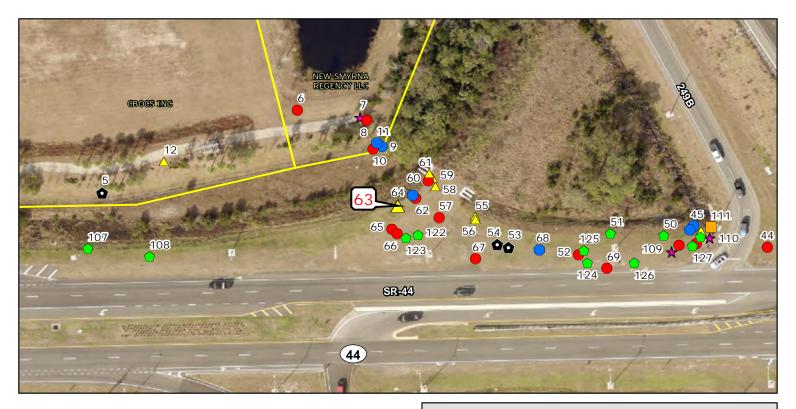




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet

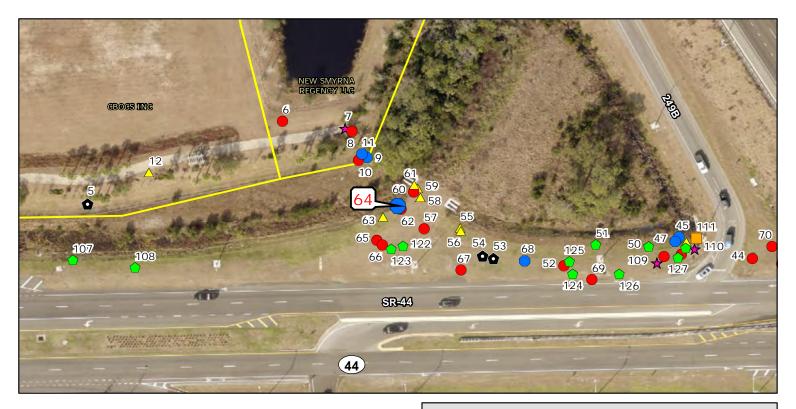






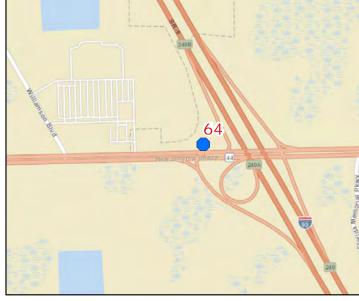




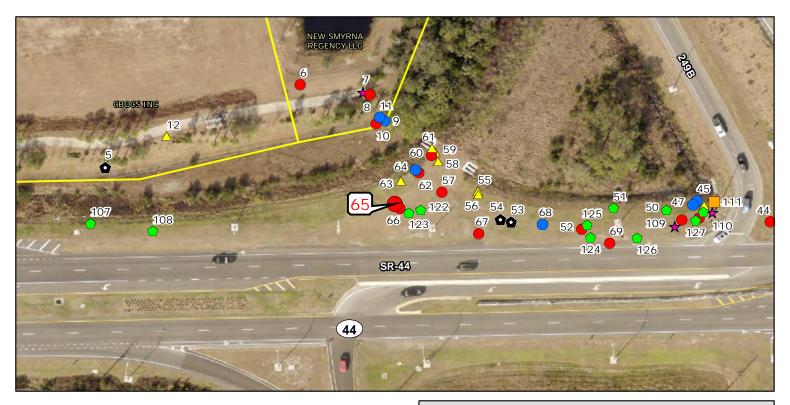






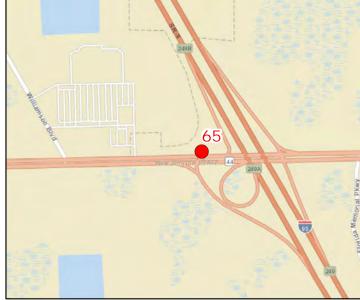










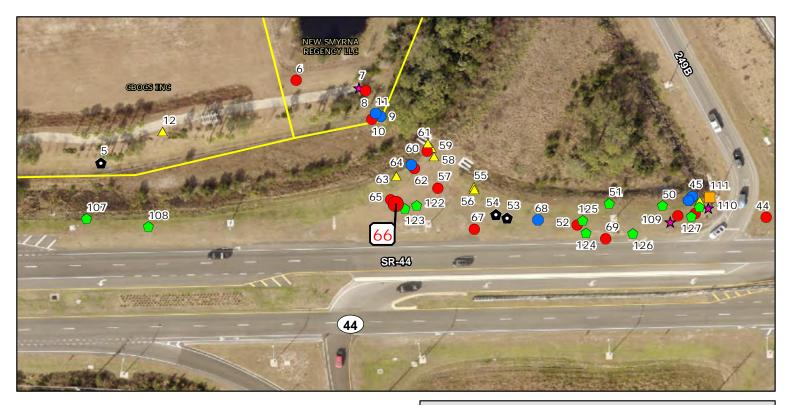




Map Scale: 1 Inch = 100 Feet

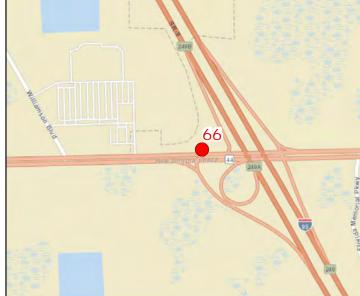
0 50 100 150

Feet

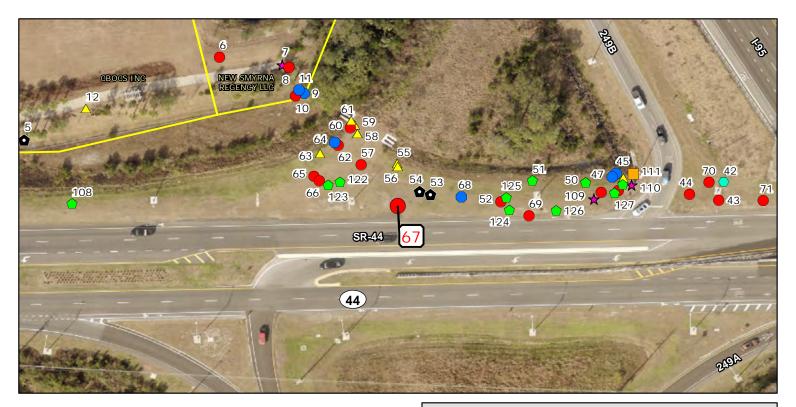






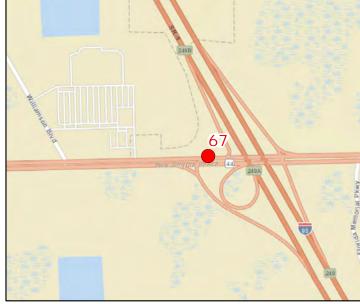








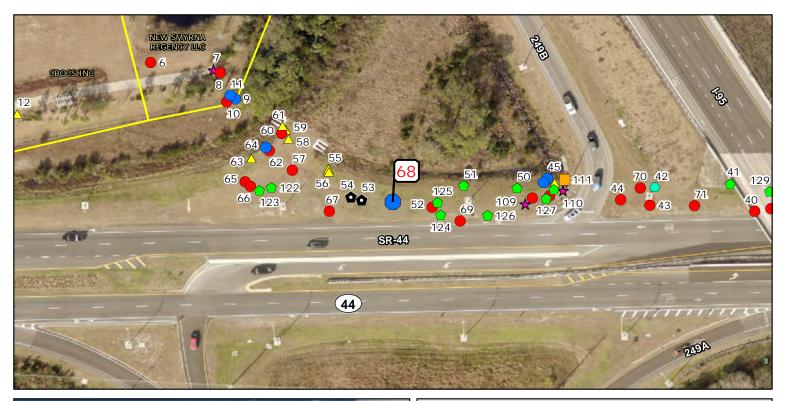
Feature ID: 67 Feature Type: ADA - Safety Comment: Lat: 29.01292 **Long:** -80.98962 http://maps.google.com/maps?q=29.01292,-80.98962 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





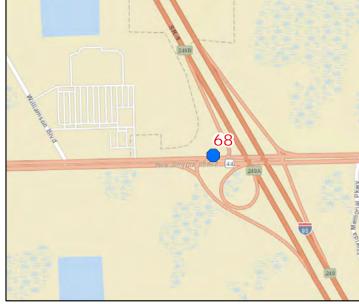
Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 68 Feature Type: Environmental Comment: Lat: 29.01295 **Long:** -80.98943 http://maps.google.com/maps?q=29.01295,-80.98943 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

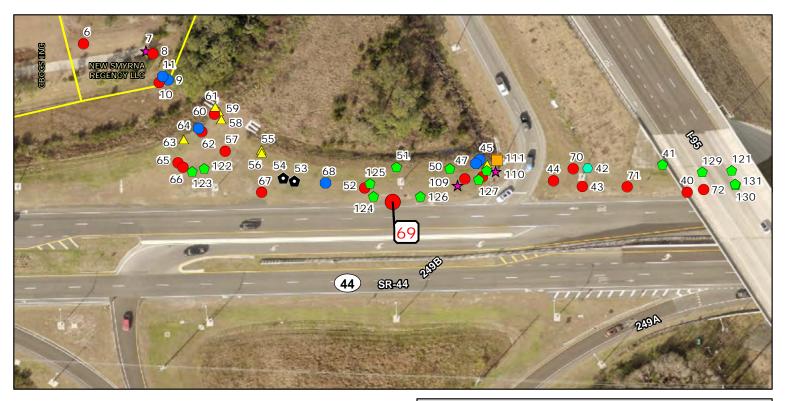




Map Scale: 1 Inch = 100 Feet

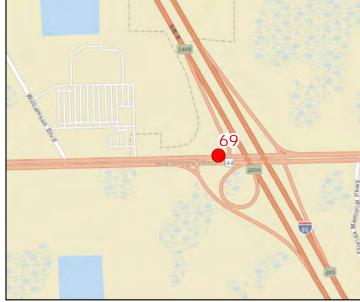
0 50 100 150

Feet





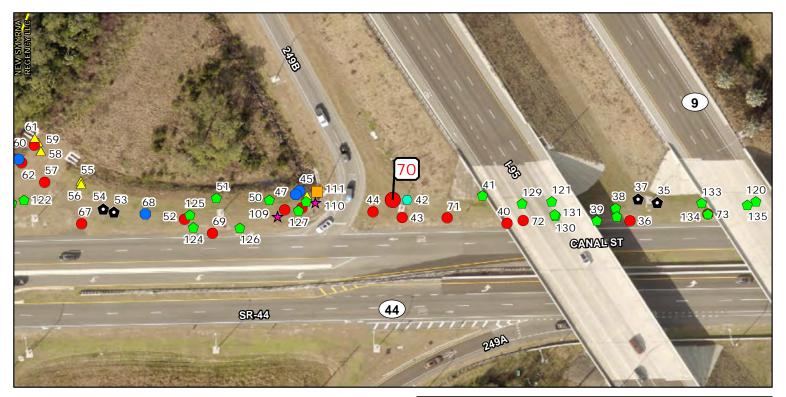
Feature ID: 69 Feature Type: ADA - Safety Comment: Lat: 29.0129 **Long:** -80.98924 http://maps.google.com/maps?q=29.0129,-80.98924 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





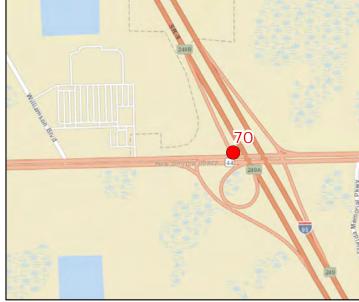
Map Scale: 1 Inch = 100 Feet

0 50 100 150





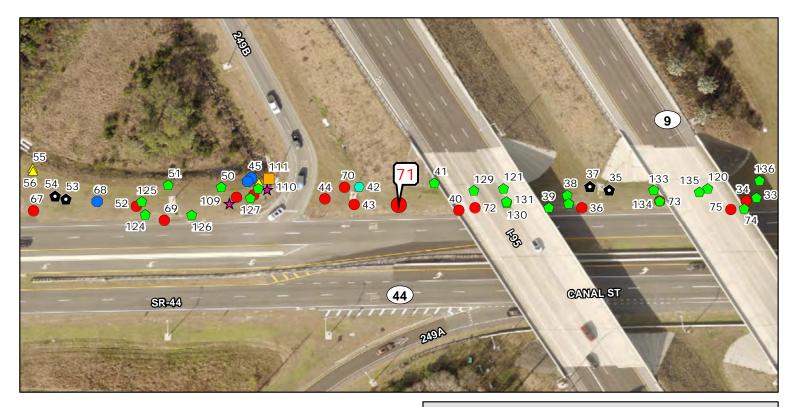
Feature ID: 70 Feature Type: ADA - Safety Comment: Lat: 29.01299 **Long:** -80.98873 http://maps.google.com/maps?q=29.01299,-80.98873 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





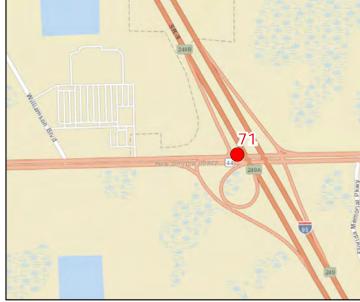
Map Scale: 1 Inch = 100 Feet

0 50 100 150

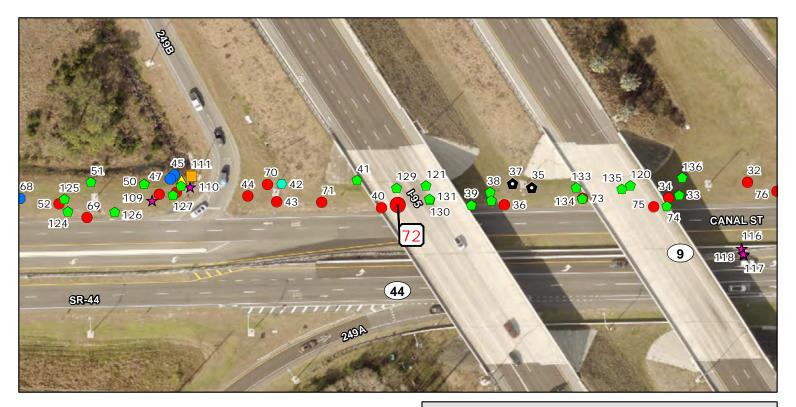






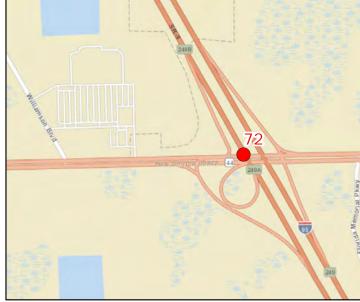




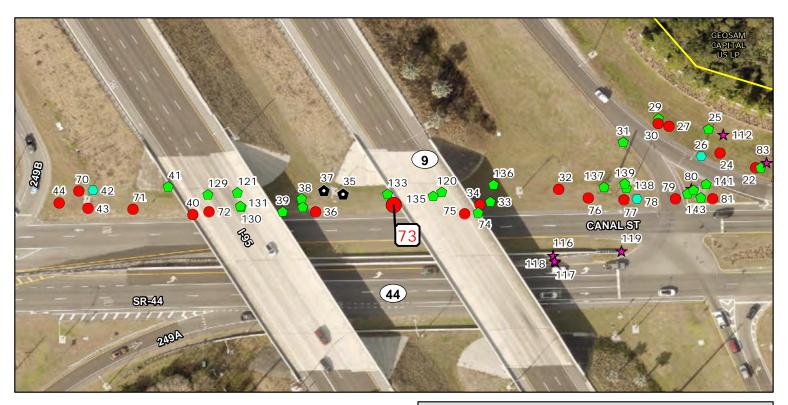






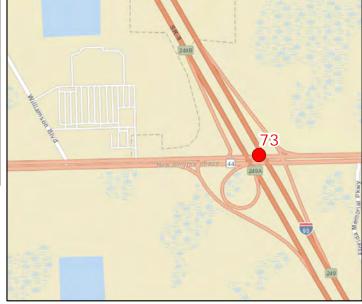








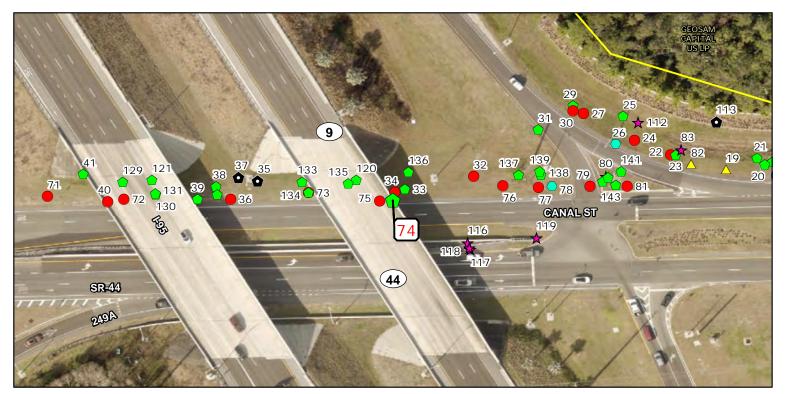
Feature ID: 73 Feature Type: ADA - Safety Comment: Lat: 29.01295 **Long:** -80.98783 http://maps.google.com/maps?q=29.01295,-80.98783 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





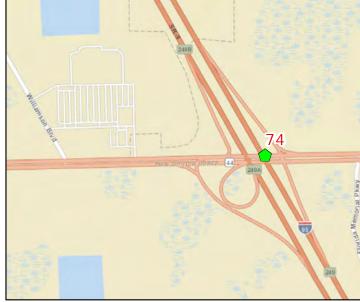
Map Scale: 1 Inch = 100 Feet

0 50 100 150





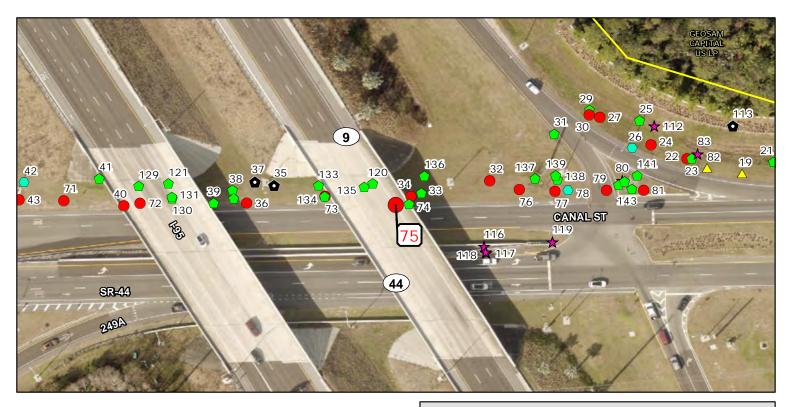
Feature ID: 74 Feature Type: Lighting Comment: **Lat:** 29.01293 **Long:** -80.98759 http://maps.google.com/maps?q=29.01293,-80.98759 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





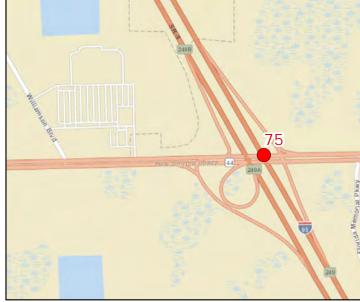
Map Scale: 1 Inch = 100 Feet

0 50 100 150







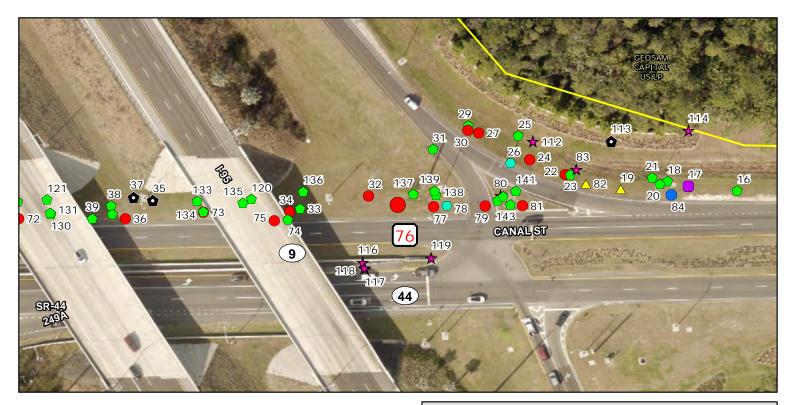




Map Scale: 1 Inch = 100 Feet

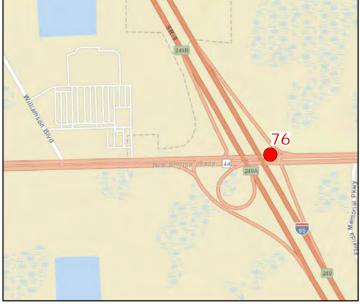
0 50 100 150

Feet

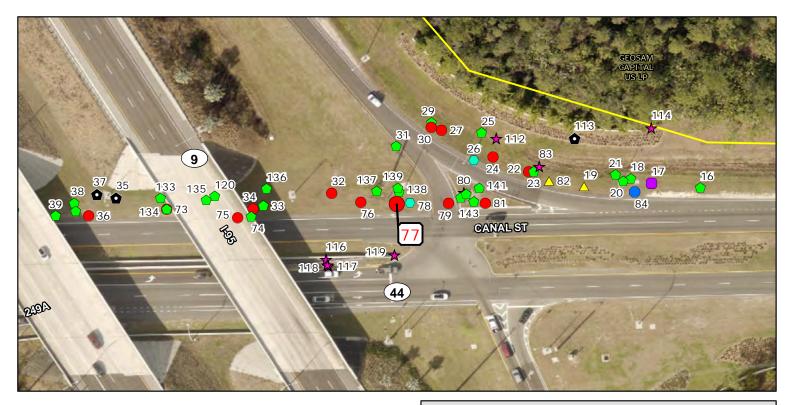




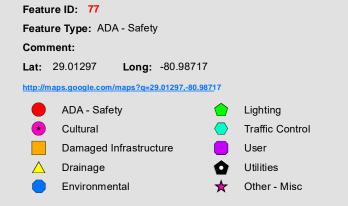


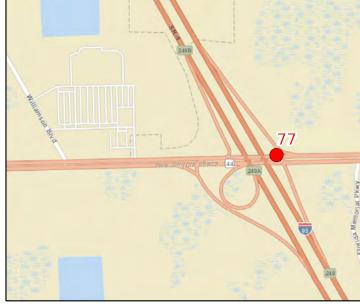




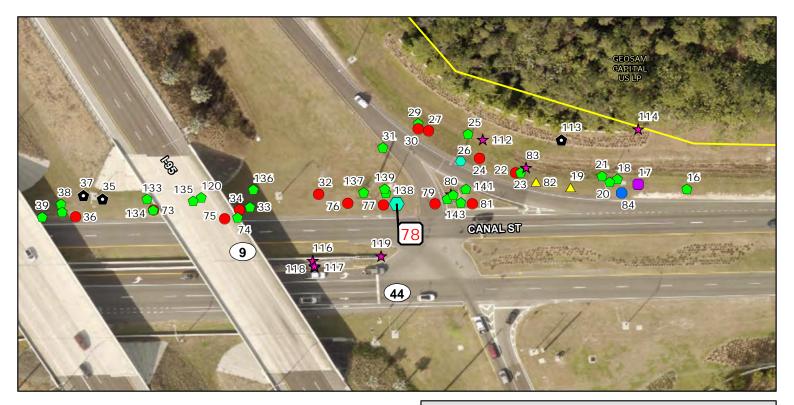






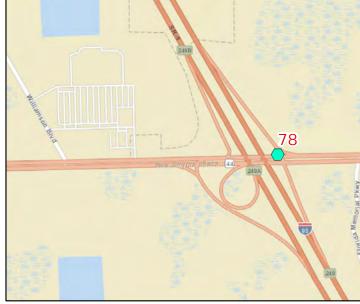






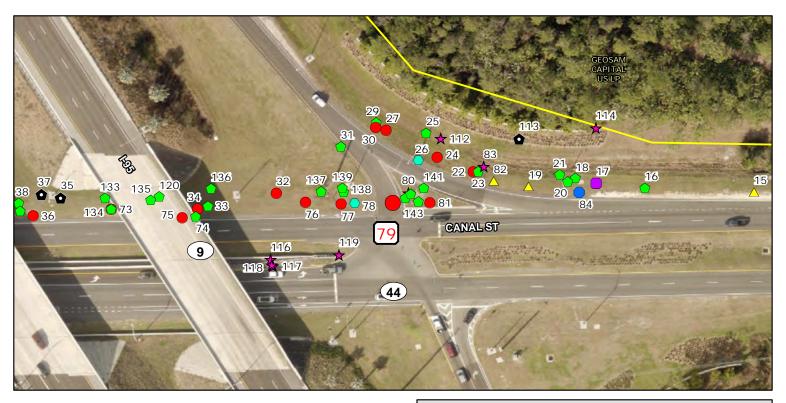


Feature ID: 78 Feature Type: Traffic Control Comment: Lat: 29.01297 **Long:** -80.98714 http://maps.google.com/maps?q=29.01297,-80.98714 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc



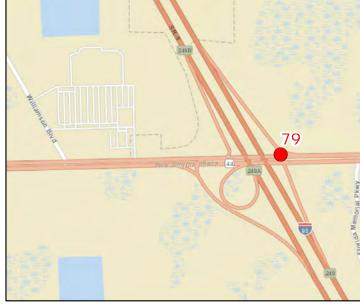


Map Scale: 1 Inch = 100 Feet
0 50 100 150

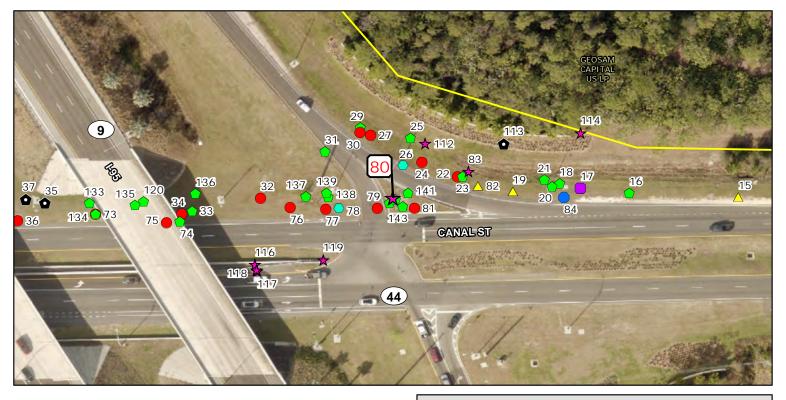






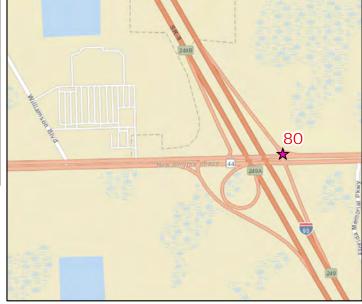










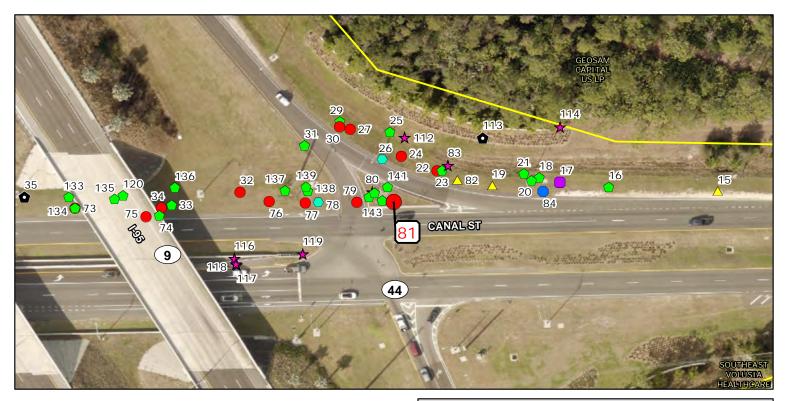




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet

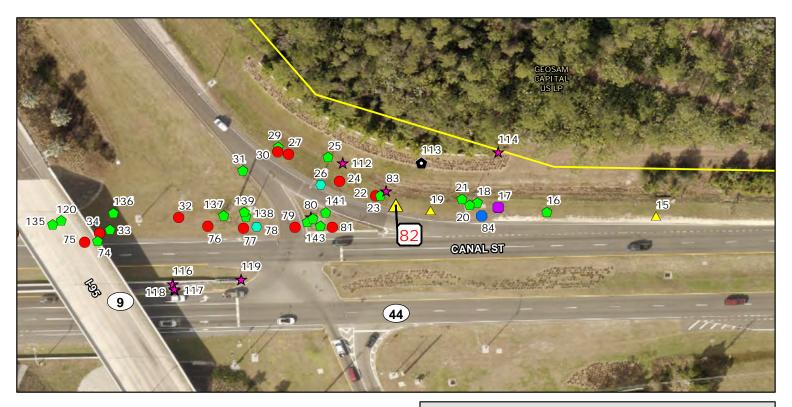






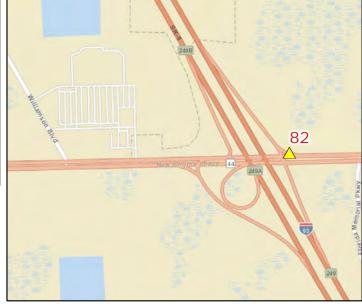




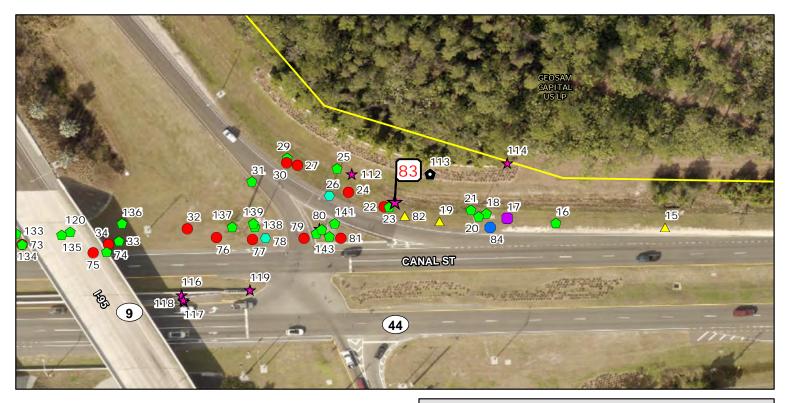
















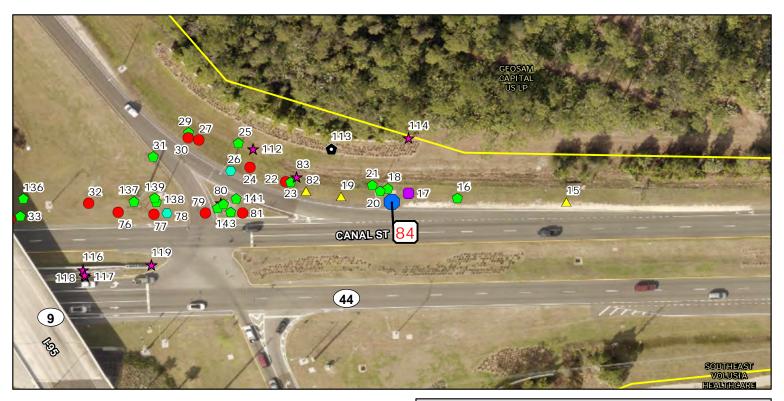




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet











Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 85 Feature Type: Other - Misc Comment: **Lat:** 29.01319 **Long:** -80.99106 http://maps.google.com/maps?q=29.01319,-80.99106 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





Feature ID: 86 Feature Type: Other - Misc Comment: **Lat:** 29.01313 **Long:** -80.99112 http://maps.google.com/maps?q=29.01313,-80.99112 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 87 Feature Type: Other - Misc Comment: **Lat:** 29.0131 **Long:** -80.99119 http://maps.google.com/maps?q=29.0131,-80.99119 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

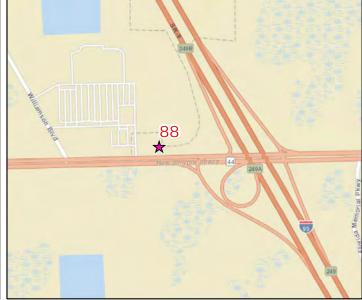
0 50 100 150

Feet





Feature ID: 88 Feature Type: Other - Misc Comment: **Lat:** 29.01316 **Long:** -80.99141 http://maps.google.com/maps?q=29.01316,-80.99141 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

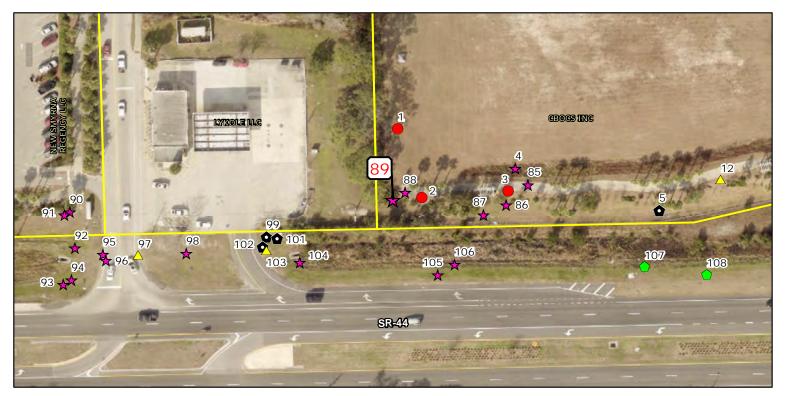




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





Feature ID: 89 Feature Type: Other - Misc Comment: Lat: 29.01314 **Long:** -80.99145 http://maps.google.com/maps?q=29.01314,-80.99145 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





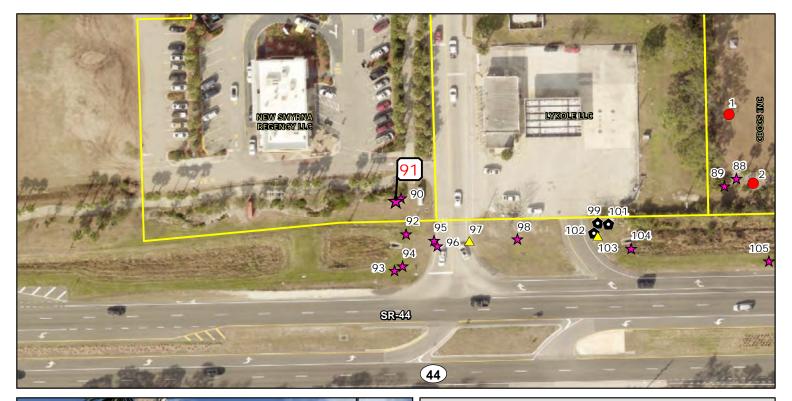
Feature ID: 90 Feature Type: Other - Misc Comment: Lat: 29.01311 Long: -80.99237 http://maps.google.com/maps?q=29.01311,-80.99237 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





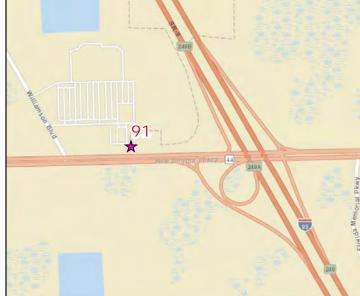
Map Scale: 1 Inch = 100 Feet

0 50 100 150





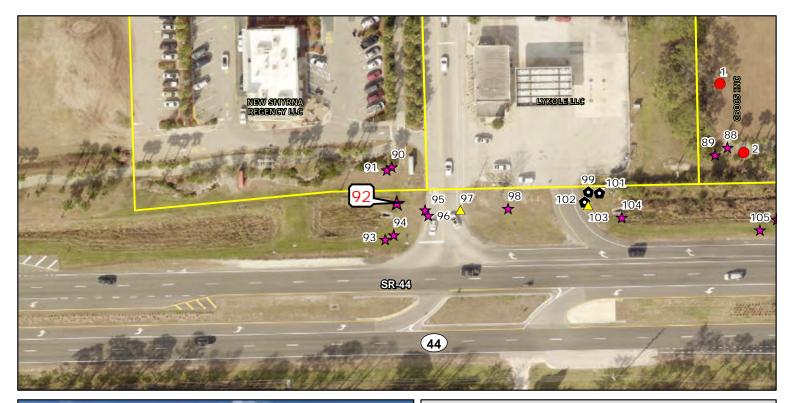
Feature ID: 91 Feature Type: Other - Misc Comment: **Lat:** 29.0131 **Long:** -80.99238 http://maps.google.com/maps?q=29.0131,-80.99238 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





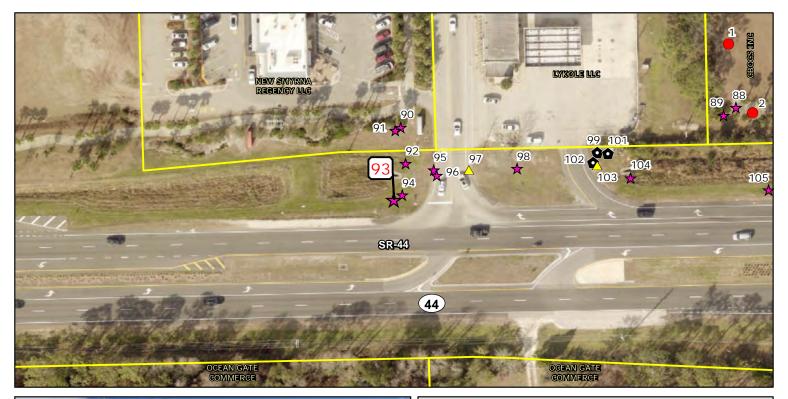
Feature ID: 92 Feature Type: Other - Misc Comment: Lat: 29.01301 **Long:** -80.99236 http://maps.google.com/maps?q=29.01301,-80.99236 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





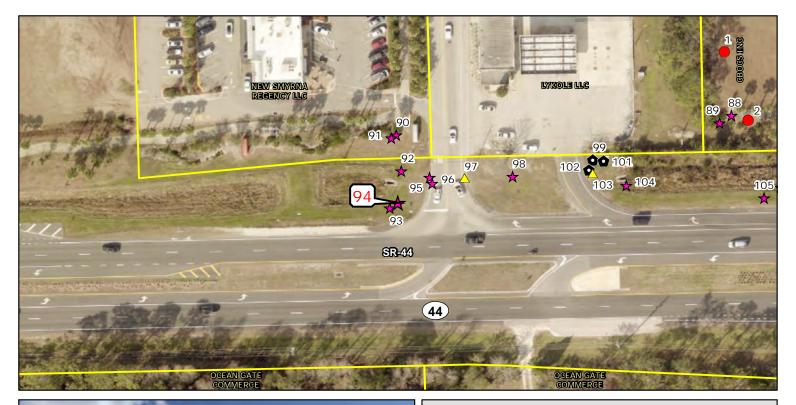
Feature ID: 93 Feature Type: Other - Misc Comment: **Lat:** 29.0129 **Long:** -80.99239 http://maps.google.com/maps?q=29.0129,-80.99239 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 94 Feature Type: Other - Misc Comment: Lat: 29.01291 **Long:** -80.99236 http://maps.google.com/maps?q=29.01291,-80.99236 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





Feature ID: 95 Feature Type: Other - Misc Comment: Lat: 29.01299 Long: -80.99227 http://maps.google.com/maps?q=29.01299,-80.99227 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





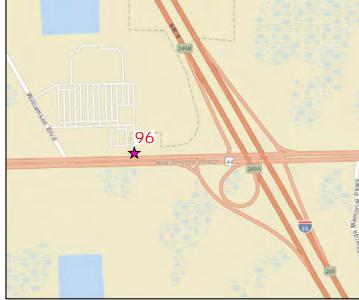
Map Scale: 1 Inch = 100 Feet

0 50 100 150





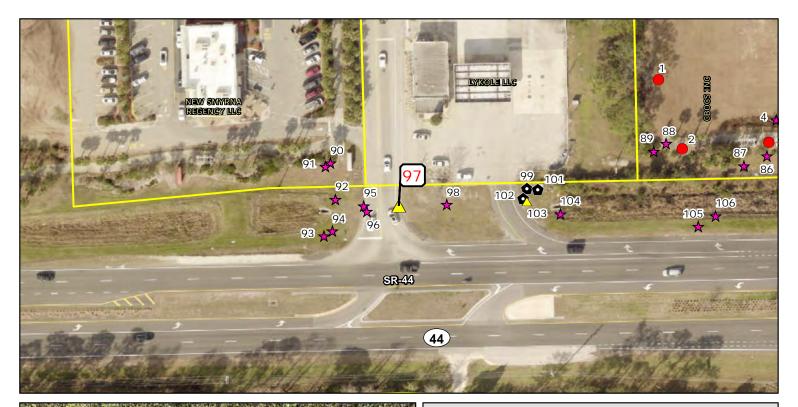
Feature ID: 96 Feature Type: Other - Misc Comment: Lat: 29.01297 **Long:** -80.99226 http://maps.google.com/maps?q=29.01297,-80.99226 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





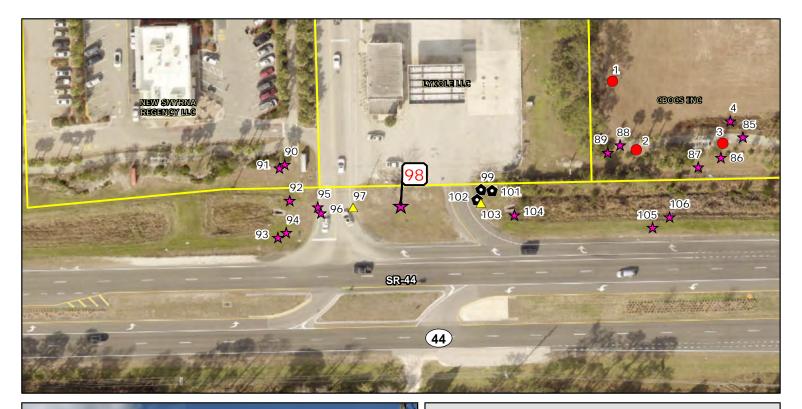
Feature ID: 97 Feature Type: Drainage Comment: Lat: 29.01299 **Long:** -80.99217 http://maps.google.com/maps?q=29.01299,-80.99217 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





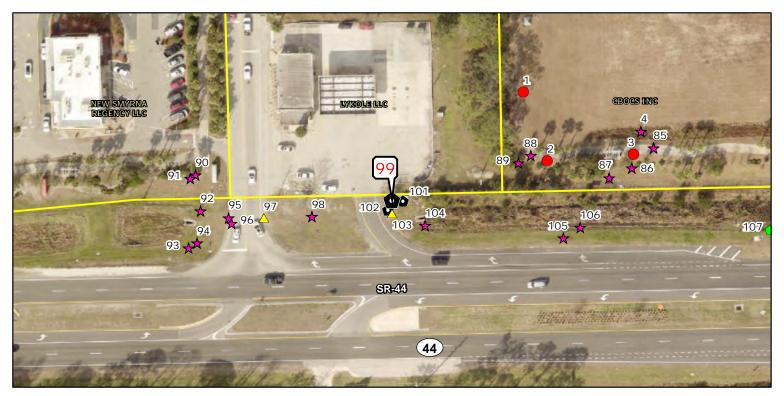
Feature ID: 98 Feature Type: Other - Misc Comment: Lat: 29.01299 **Long:** -80.99203 http://maps.google.com/maps?q=29.01299,-80.99203 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





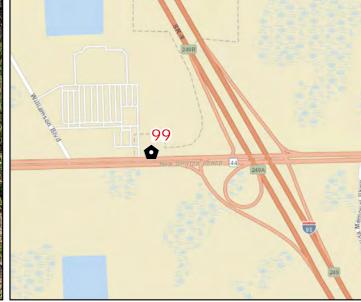
Map Scale: 1 Inch = 100 Feet

0 50 100 150





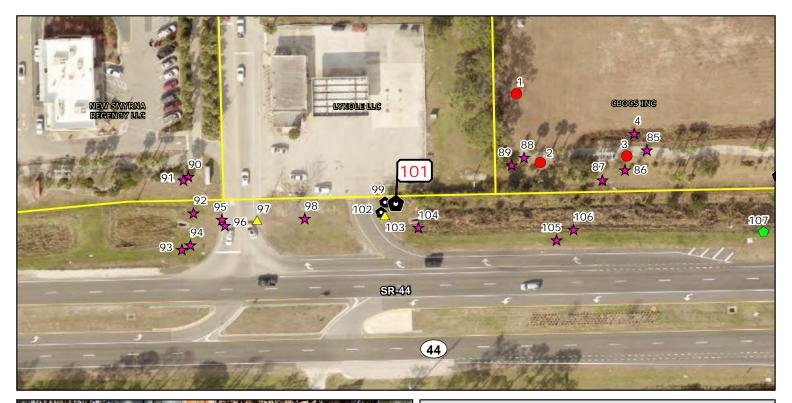
Feature ID: 99 Feature Type: Utilities Comment: Lat: 29.01304 **Long:** -80.99181 http://maps.google.com/maps?q=29.01304,-80.99181 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 101 Feature Type: Utilities Comment: Lat: 29.01303 **Long:** -80.99178 http://maps.google.com/maps?q=29.01303,-80.99178 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

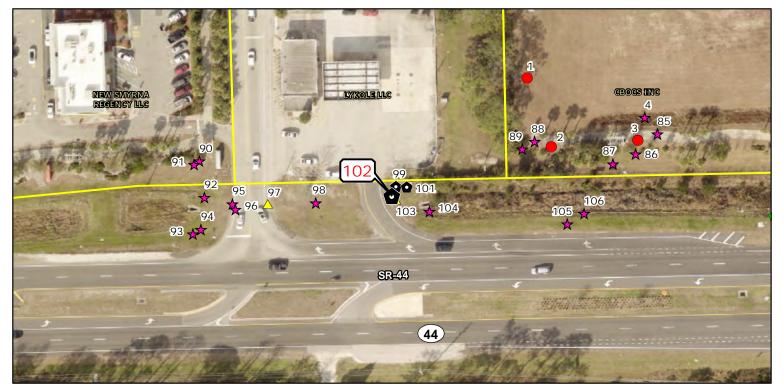




Map Scale: 1 Inch = 100 Feet

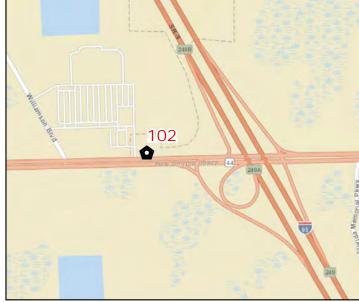
0 50 100 150

Feet





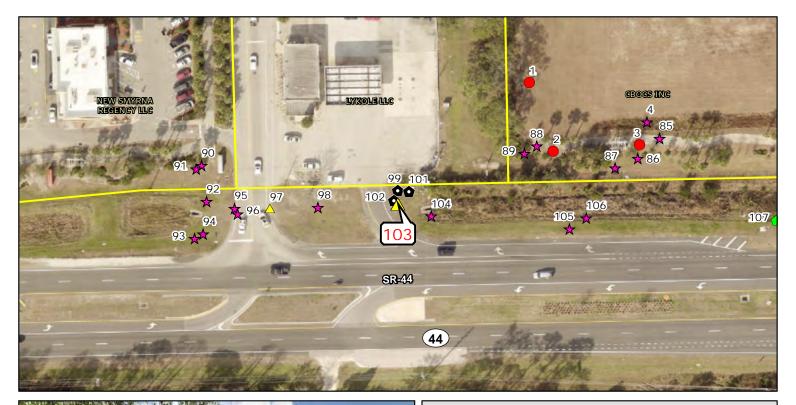
Feature ID: 102 Feature Type: Utilities Comment: Lat: 29.01301 **Long:** -80.99181 http://maps.google.com/maps?q=29.01301,-80.99181 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 103 Feature Type: Drainage Comment: 29.013 **Long:** -80.99181 Lat: http://maps.google.com/maps?q=29.013,-80.99181 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

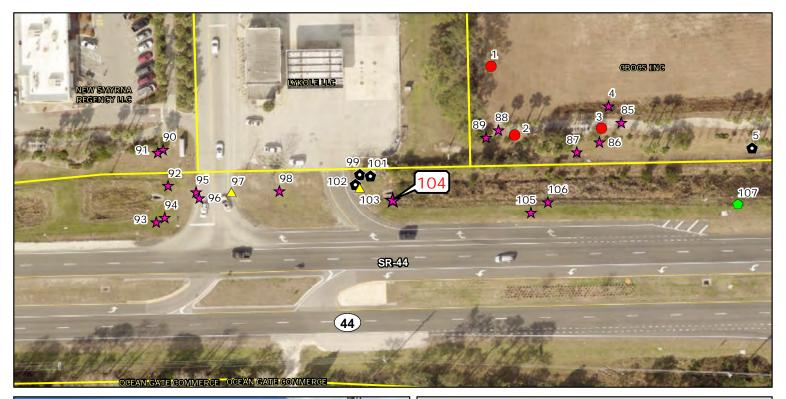




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





Feature ID: 104 Feature Type: Other - Misc Comment: **Lat:** 29.01296 **Long:** -80.99171 http://maps.google.com/maps?q=29.01296,-80.99171 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

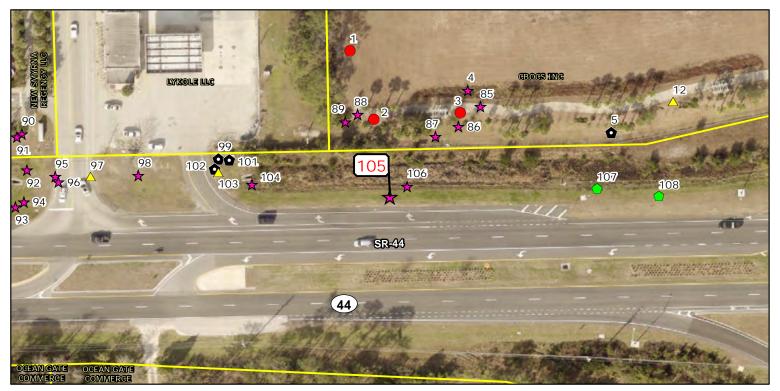




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





Feature ID: 105 Feature Type: Other - Misc Comment: Lat: 29.01293 **Long:** -80.99132 http://maps.google.com/maps?q=29.01293,-80.99132 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

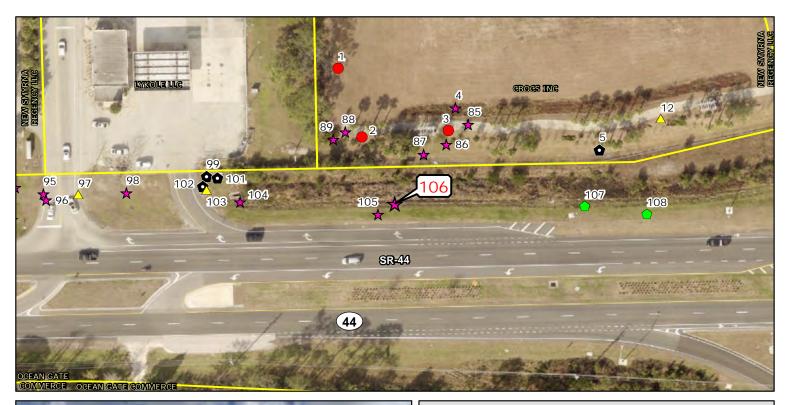




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





Feature ID: 106 Feature Type: Other - Misc Comment: Lat: 29.01296 **Long:** -80.99126 http://maps.google.com/maps?q=29.01296,-80.99126 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





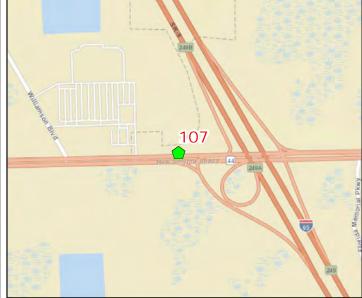
Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 107 Feature Type: Lighting Comment: Lat: 29.01295 **Long:** -80.99072 http://maps.google.com/maps?q=29.01295,-80.99072 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

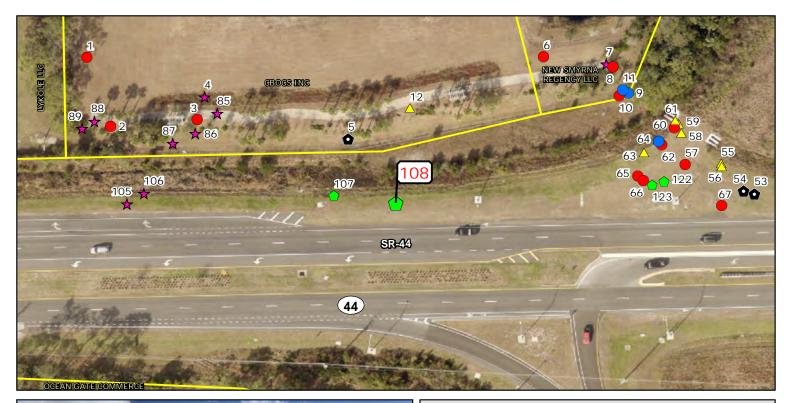




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





Feature ID: 108 Feature Type: Lighting Comment: Lat: 29.01293 **Long:** -80.99055 http://maps.google.com/maps?q=29.01293,-80.99055 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

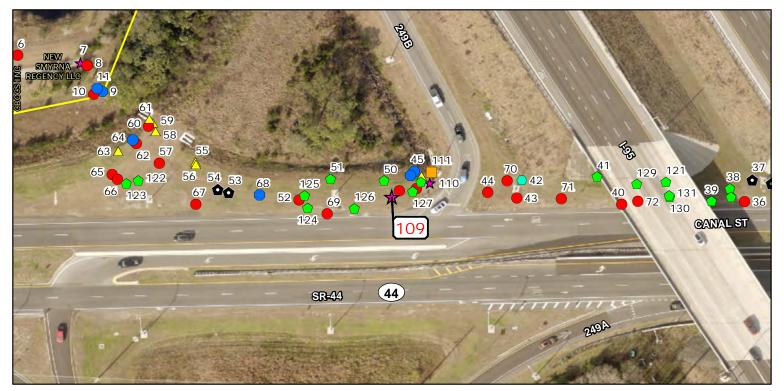




Map Scale: 1 Inch = 100 Feet

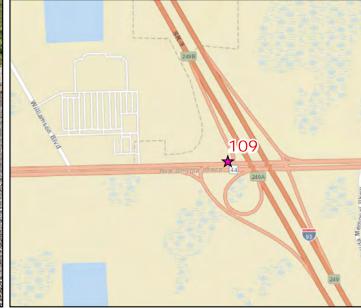
0 50 100 150

Feet





Feature ID: 109 Feature Type: Other - Misc Comment: Lat: 29.01295 **Long:** -80.98906 http://maps.google.com/maps?q=29.01295,-80.98906 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 110 Feature Type: Other - Misc Comment: Lat: 29.01298 **Long:** -80.98895 http://maps.google.com/maps?q=29.01298,-80.98895 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





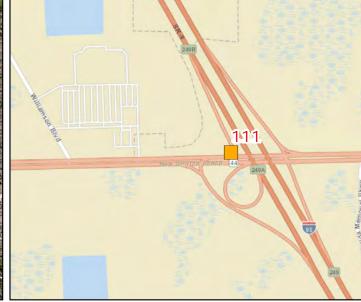
Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 111 Feature Type: Damaged Infrastructure Comment: **Lat:** 29.01302 **Long:** -80.98895 http://maps.google.com/maps?q=29.01302,-80.98895 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

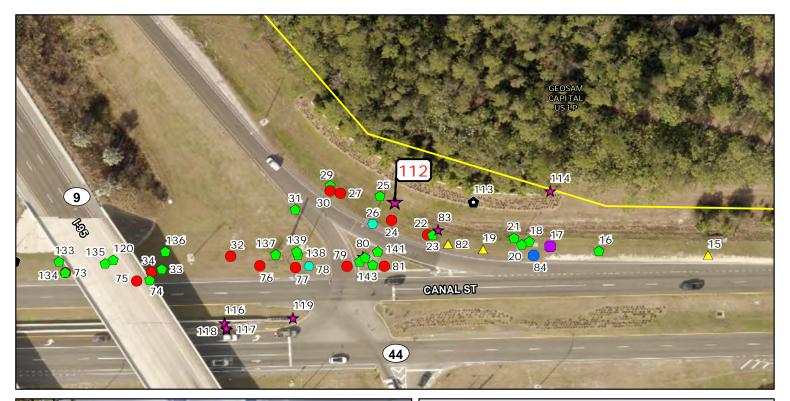




Map Scale: 1 Inch = 100 Feet

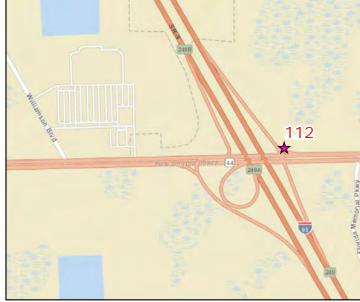
0 50 100 150

Feet





Feature ID: 112 Feature Type: Other - Misc Comment: **Lat:** 29.01315 **Long:** -80.98689 http://maps.google.com/maps?q=29.01315,-80.98689 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





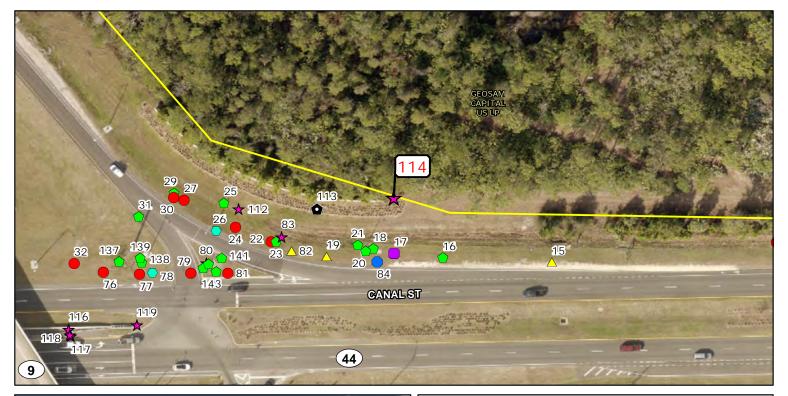
Feature ID: 113 Feature Type: Utilities Comment: Lat: 29.01315 **Long:** -80.98666 http://maps.google.com/maps?q=29.01315,-80.98666 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 114 Feature Type: Other - Misc Comment: Lat: 29.01318 **Long:** -80.98644 http://maps.google.com/maps?q=29.01318,-80.98644 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

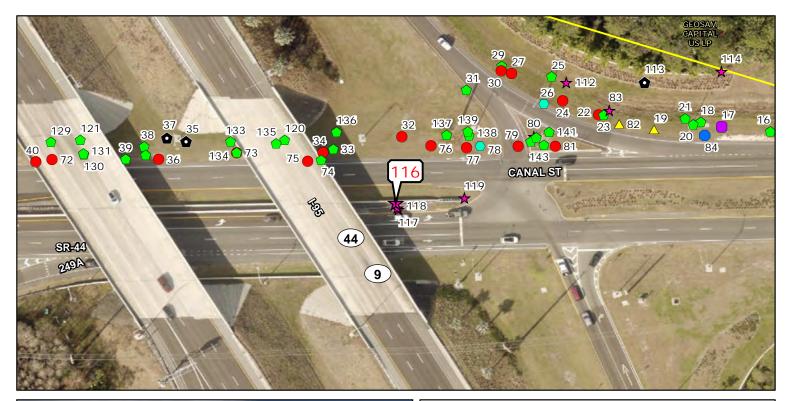




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





Feature ID: 116 Feature Type: Other - Misc Comment: Lat: 29.01281 **Long:** -80.98737 http://maps.google.com/maps?q=29.01281,-80.98737 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

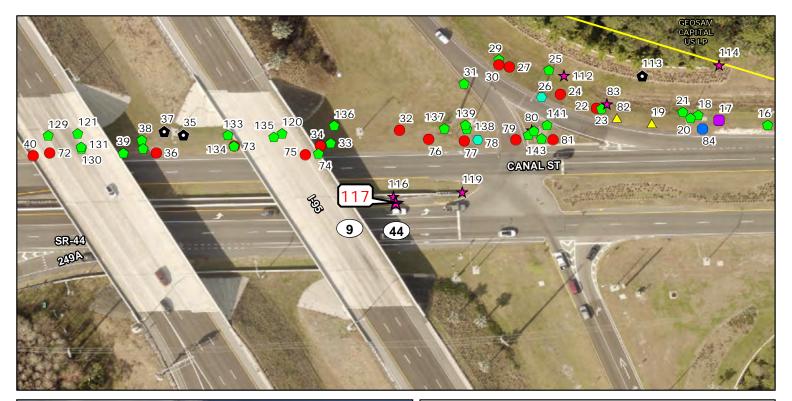




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





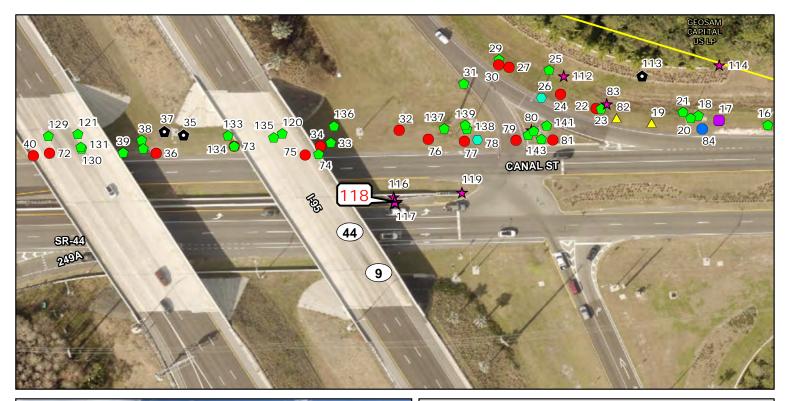
Feature ID: 117 Feature Type: Other - Misc Comment: Lat: 29.01279 **Long:** -80.98737 http://maps.google.com/maps?q=29.01279,-80.98737 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





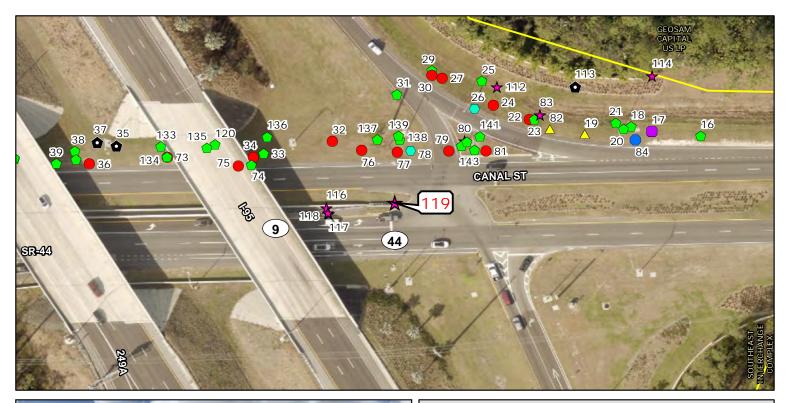
Feature ID: 118 Feature Type: Other - Misc Comment: flashing yellow potential to make protected left **Lat:** 29.01279 Long: -80.98737 http://maps.google.com/maps?q=29.01279,-80.98737 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





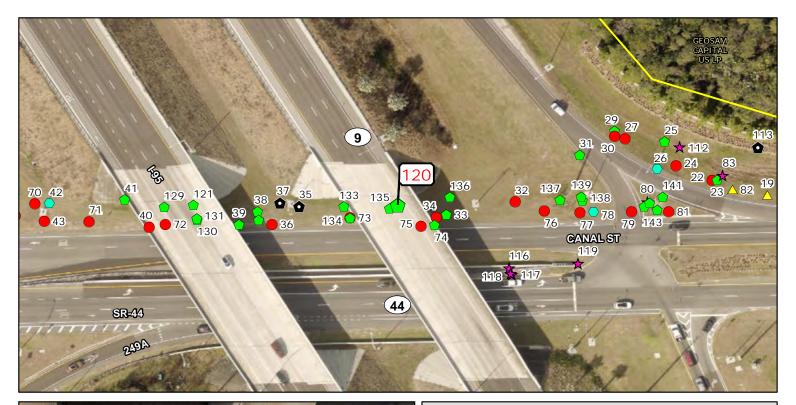
Feature ID: 119 Feature Type: Other - Misc Comment: **Lat:** 29.01282 **Long:** -80.98717 http://maps.google.com/maps?q=29.01282,-80.98717 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





Map Scale: 1 Inch = 100 Feet

0 50 100 150





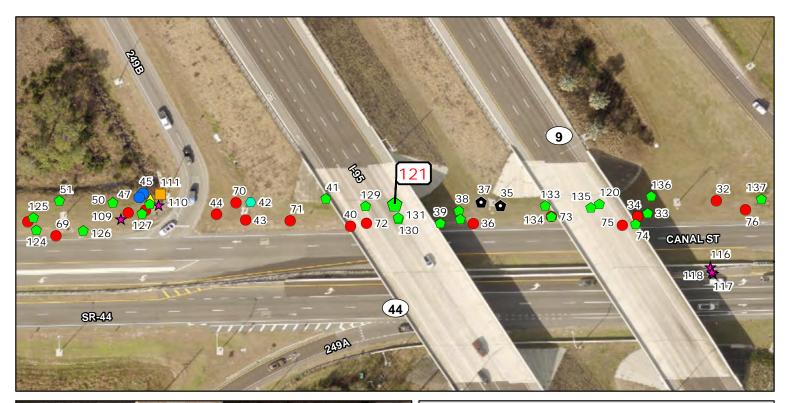
Feature ID: 120 Feature Type: Lighting Comment: Lat: 29.01299 **Long:** -80.98769 http://maps.google.com/maps?q=29.01299,-80.98769 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





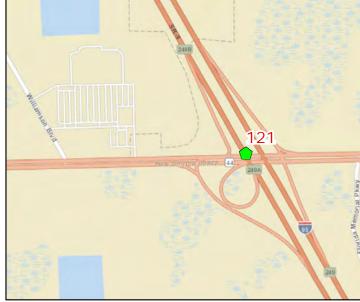
Map Scale: 1 Inch = 100 Feet

0 50 100 150





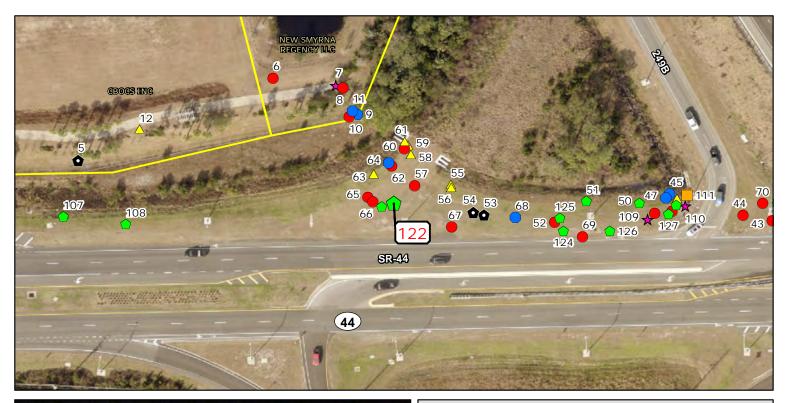
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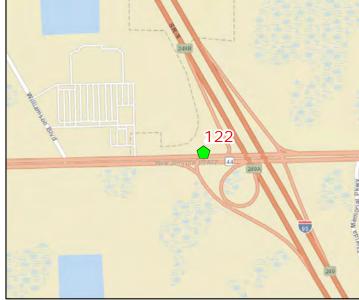
Map Scale: 1 Inch = 100 Feet

0 50 100 150





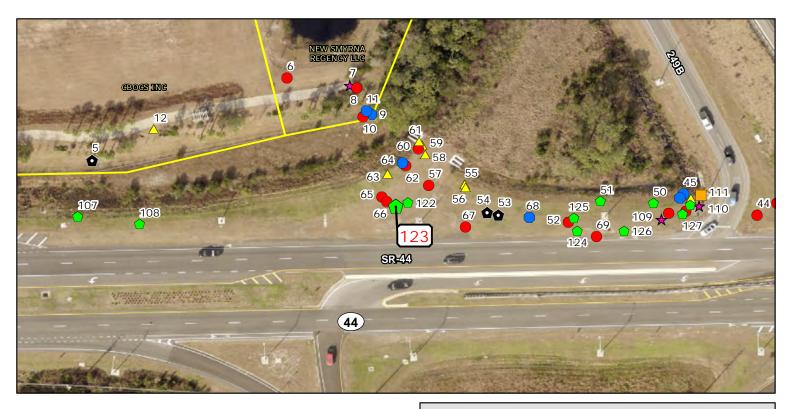
Feature ID: 122 Feature Type: Lighting Comment: picture appears lighter than usual **Lat:** 29.01299 **Long:** -80.98978 http://maps.google.com/maps?q=29.01299,-80.98978 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





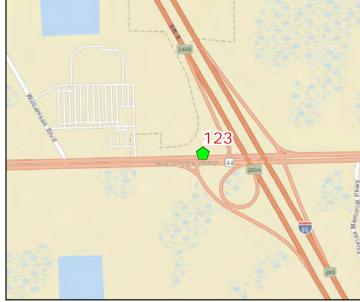
Map Scale: 1 Inch = 100 Feet

0 50 100 150





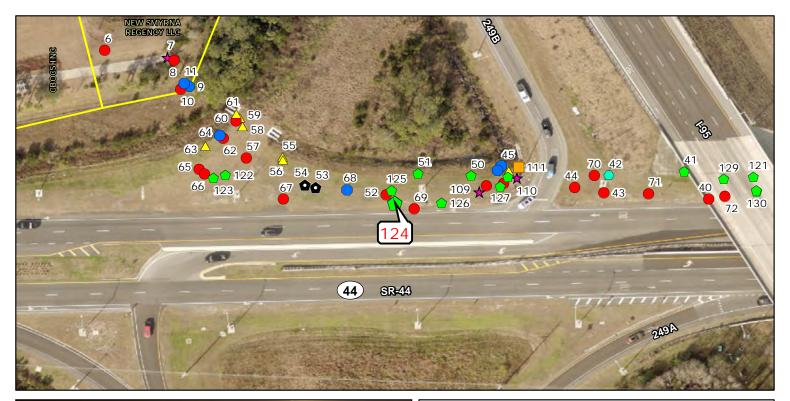






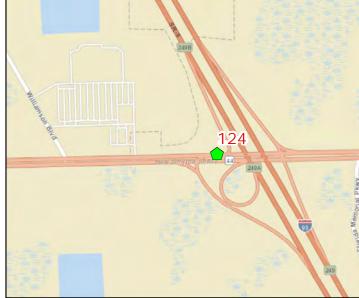
Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 124 Feature Type: Lighting Comment: Lat: 29.01291 **Long:** -80.9893 http://maps.google.com/maps?q=29.01291,-80.9893 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

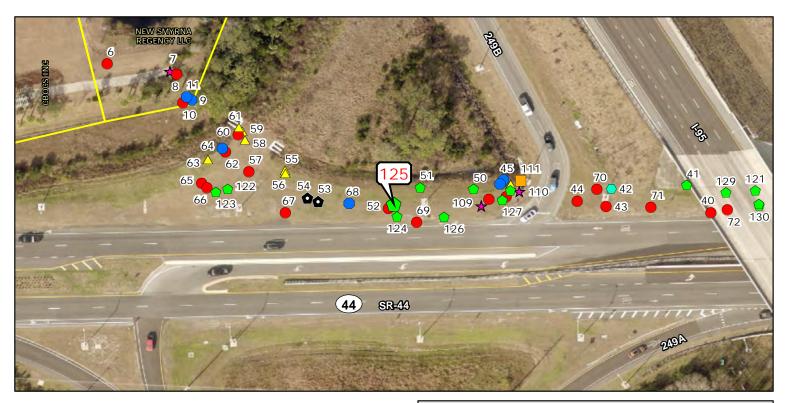




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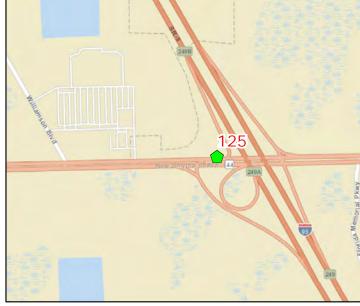
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Feet





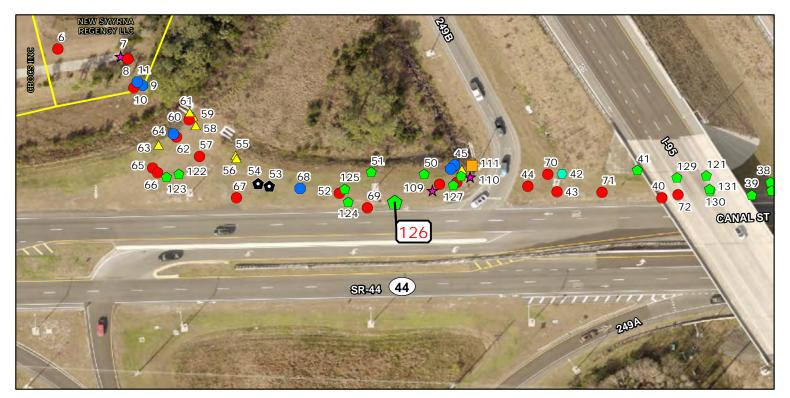






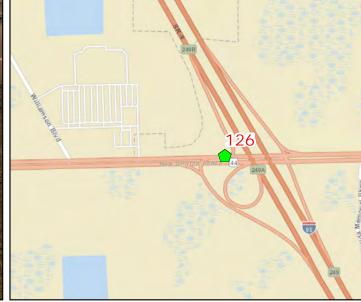
Map Scale: 1 Inch = 100 Feet

0 50 100 150





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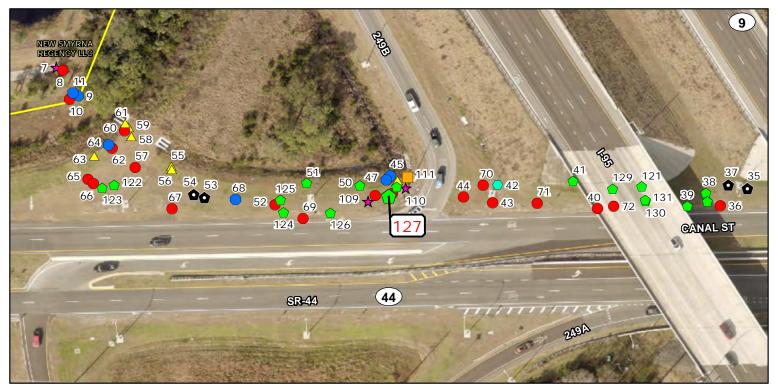




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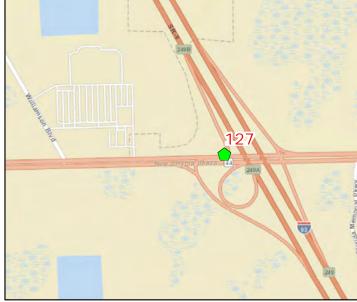
0 50 100 150

Feet





Feature ID: 127 Feature Type: Lighting Comment: Lat: 29.01296 **Long:** -80.989 http://maps.google.com/maps?q=29.01296,-80.989 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





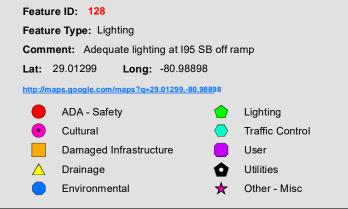
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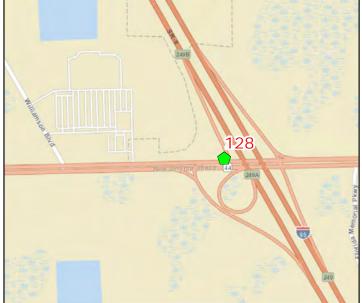
0 50 100 150

Feet







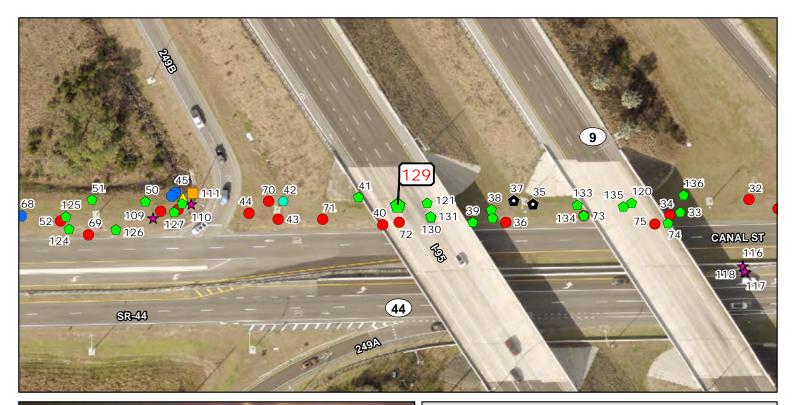




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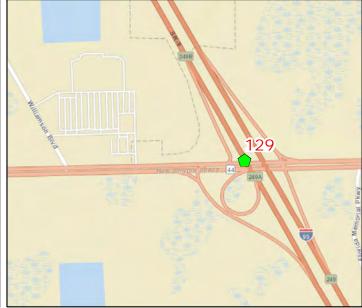
0 50 100 150

Feet





Feature ID: 129 Feature Type: Lighting Comment: light is yellow- LED typically white? **Lat:** 29.01298 **Long:** -80.98836 http://maps.google.com/maps?q=29.01298,-80.98836 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

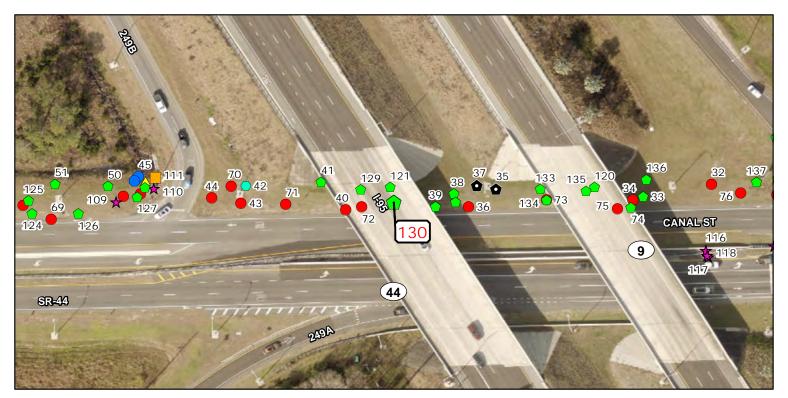




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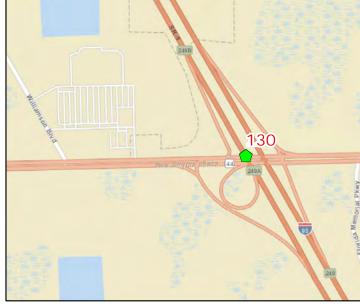
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Feet





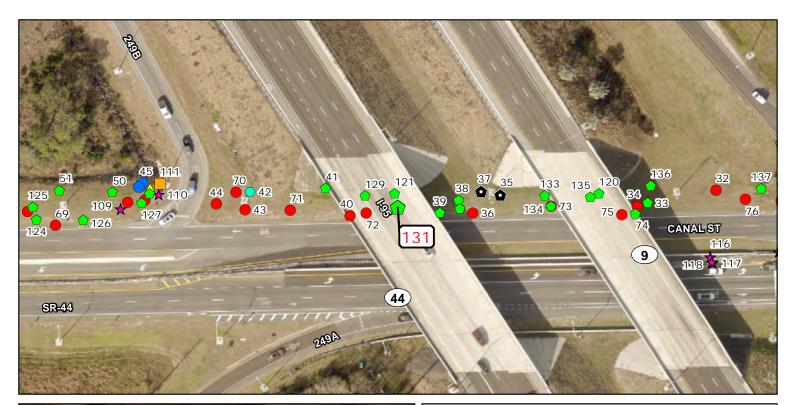
Feature ID: 130 Feature Type: Lighting Comment: Lat: 29.01295 Long: -80.98827 http://maps.google.com/maps?q=29.01295,-80.98827 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





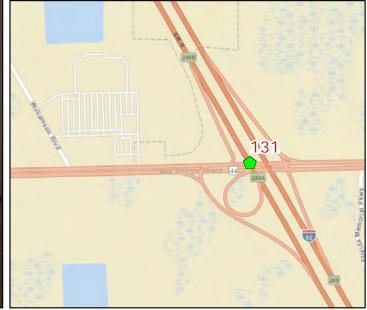
Map Scale: 1 Inch = 100 Feet

0 50 100 150





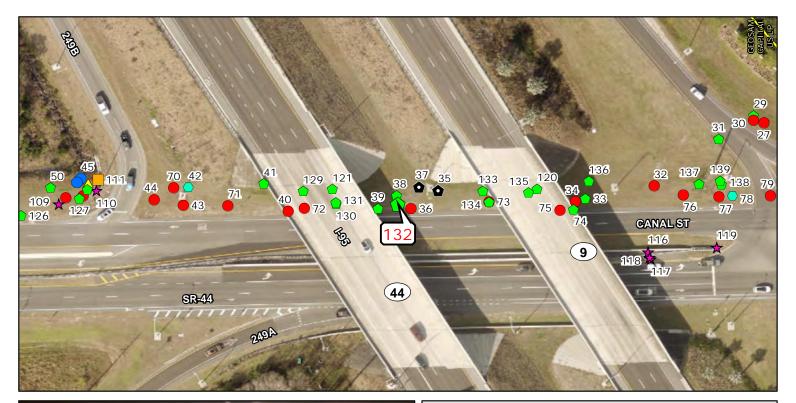
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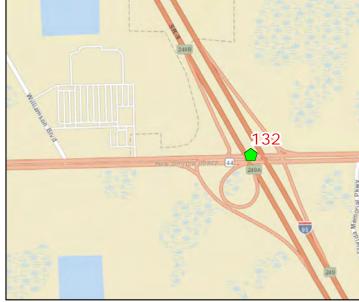
Map Scale: 1 Inch = 100 Feet

0 50 100 150





Feature ID: 132 Feature Type: Lighting Comment: **Lat:** 29.01295 **Long:** -80.98809 http://maps.google.com/maps?q=29.01295,-80.98809 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

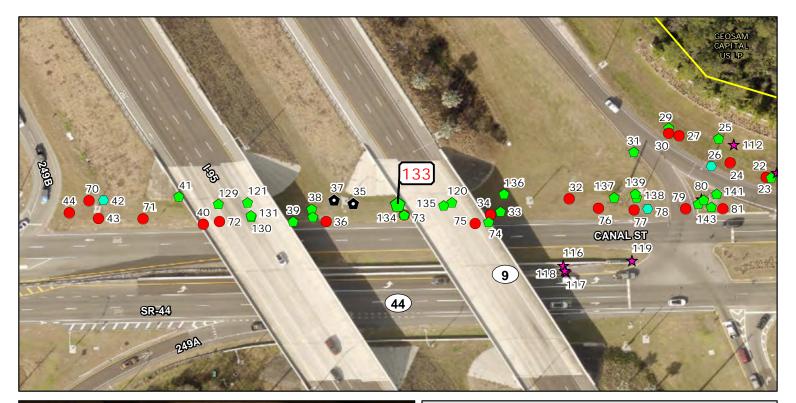




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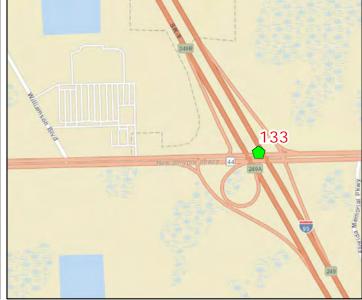
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Feet





Feature ID: 133 Feature Type: Lighting Comment: **Lat:** 29.01298 **Long:** -80.98785 http://maps.google.com/maps?q=29.01298,-80.98785 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

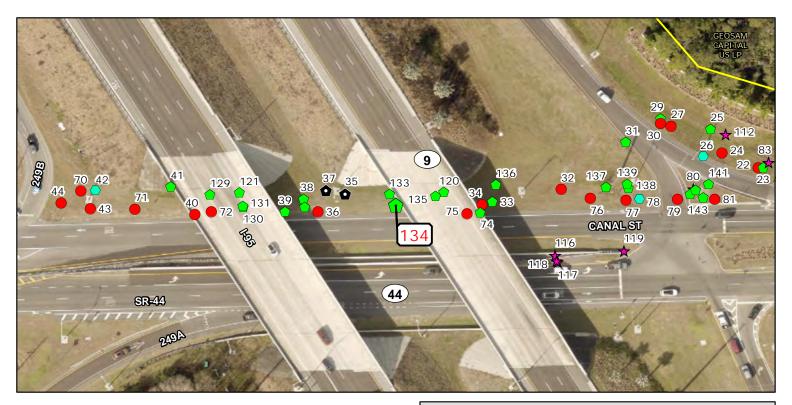




Map Scale: 1 Inch = 100 Feet

0 50 100 150

Feet





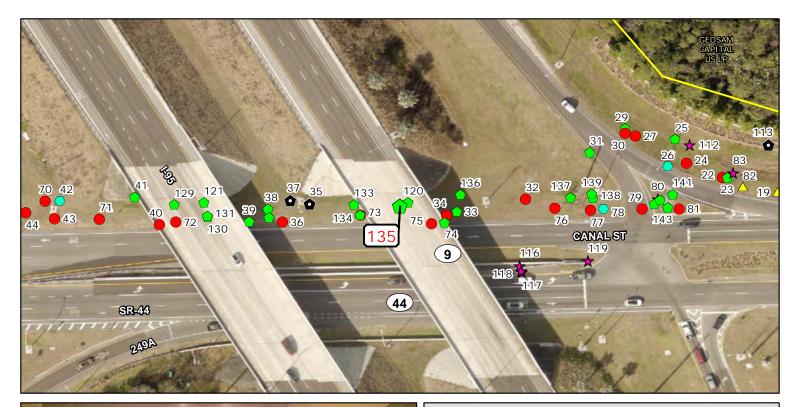
Feature ID: 134 Feature Type: Lighting Comment: Adequate lighting beneath NB I95 bridge **Lat:** 29.01295 Long: -80.98783 http://maps.google.com/maps?q=29.01295,-80.98783 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc





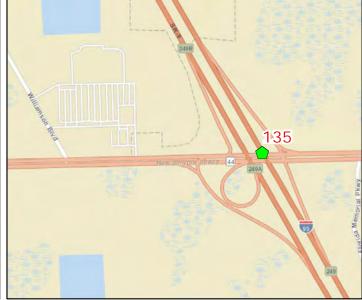
Map Scale: 1 Inch = 100 Feet

0 50 100 150





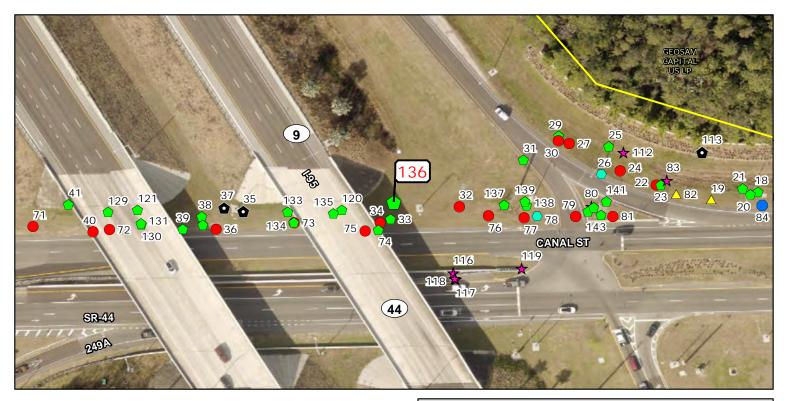
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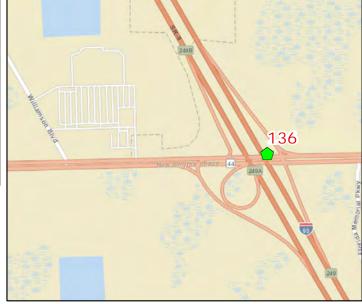
Map Scale: 1 Inch = 100 Feet

0 50 100 150







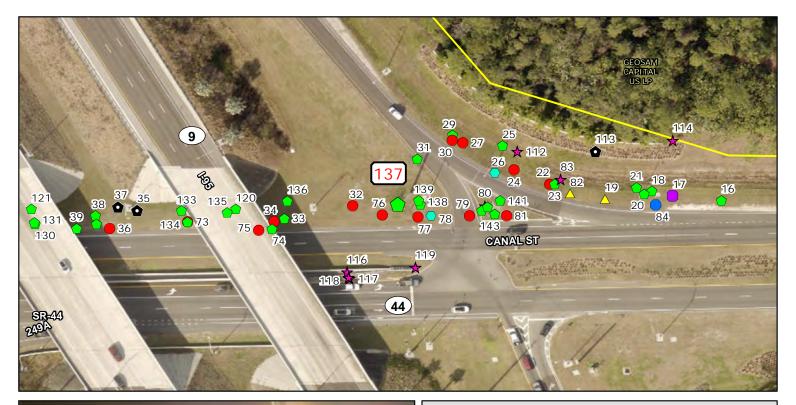




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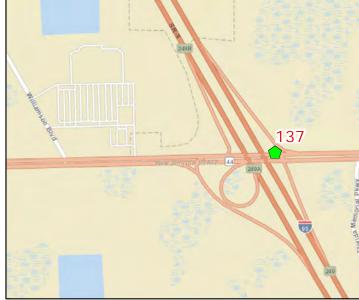
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Feet





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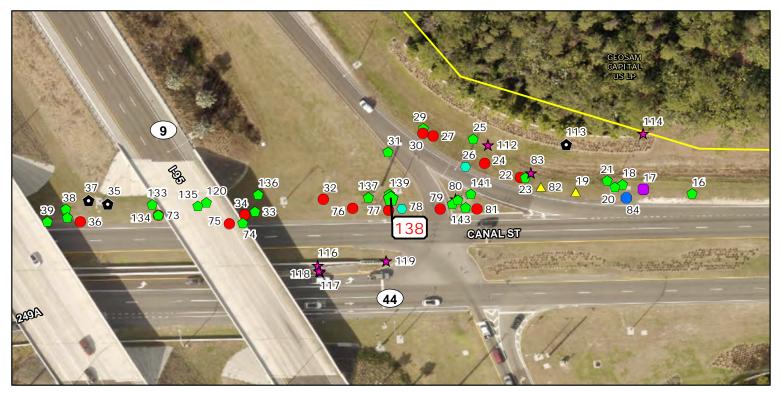




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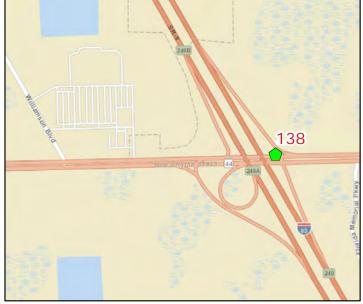
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Feet







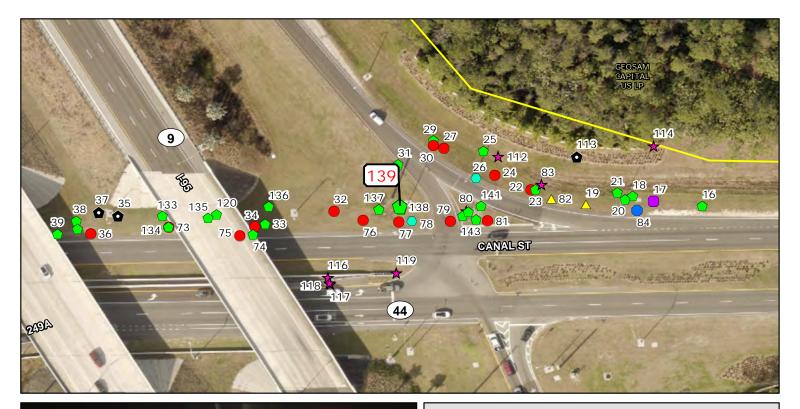




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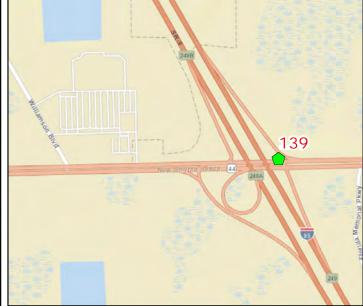
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Feet





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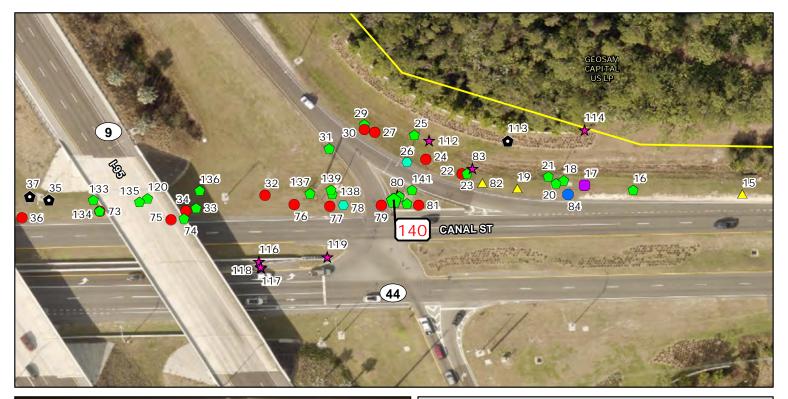




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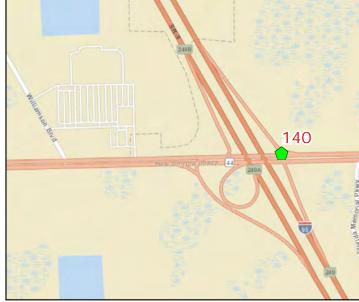
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Feet





Feature ID: 140 Feature Type: Lighting Comment: Lat: 29.01298 **Long:** -80.98699 http://maps.google.com/maps?q=29.01298,-80.98699 ADA - Safety Lighting Cultural Traffic Control Damaged Infrastructure User Drainage Utilities Environmental Other - Misc

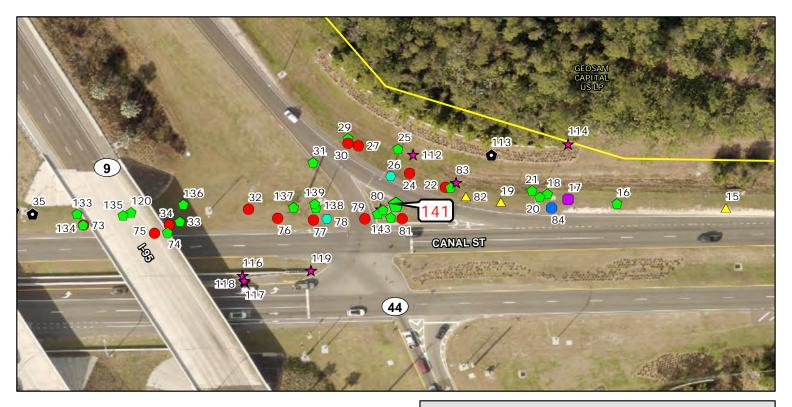




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Feet





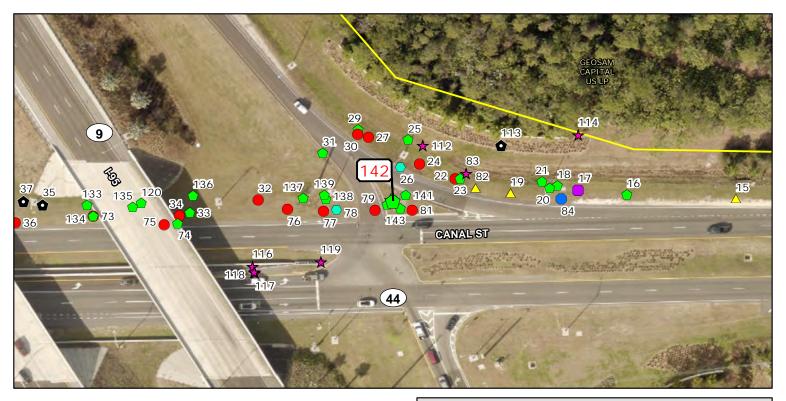






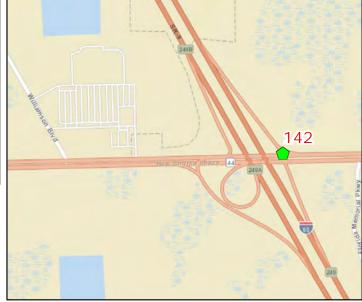
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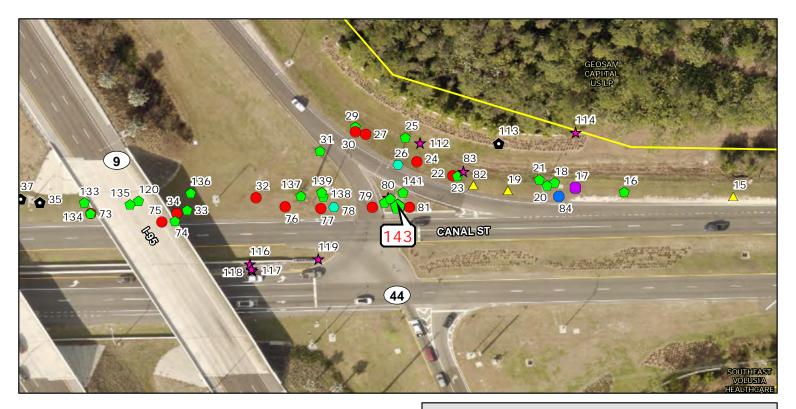






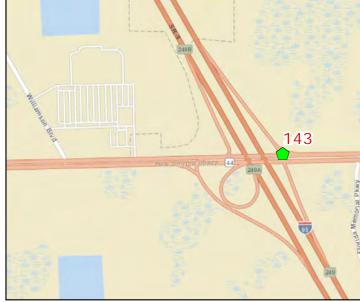
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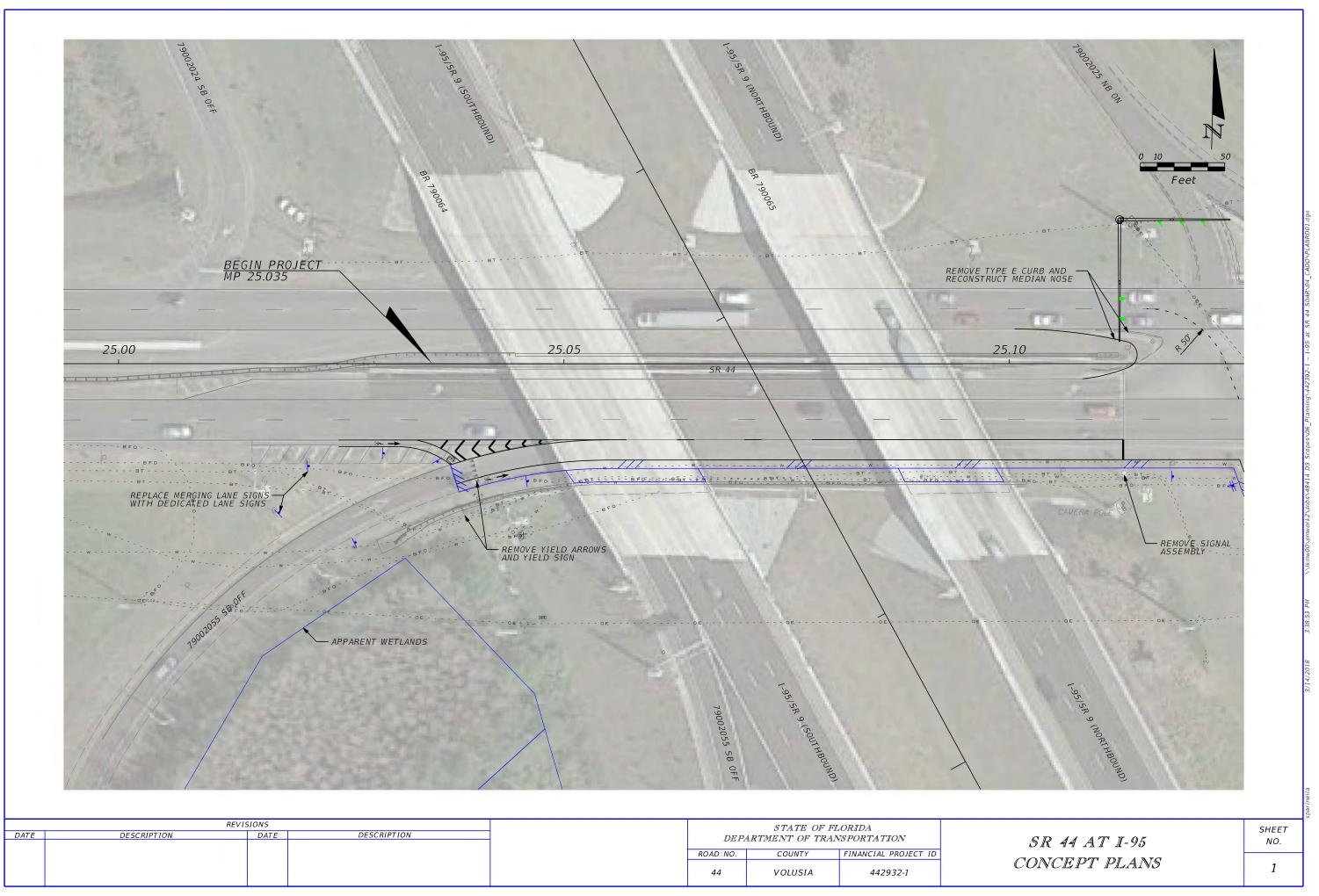
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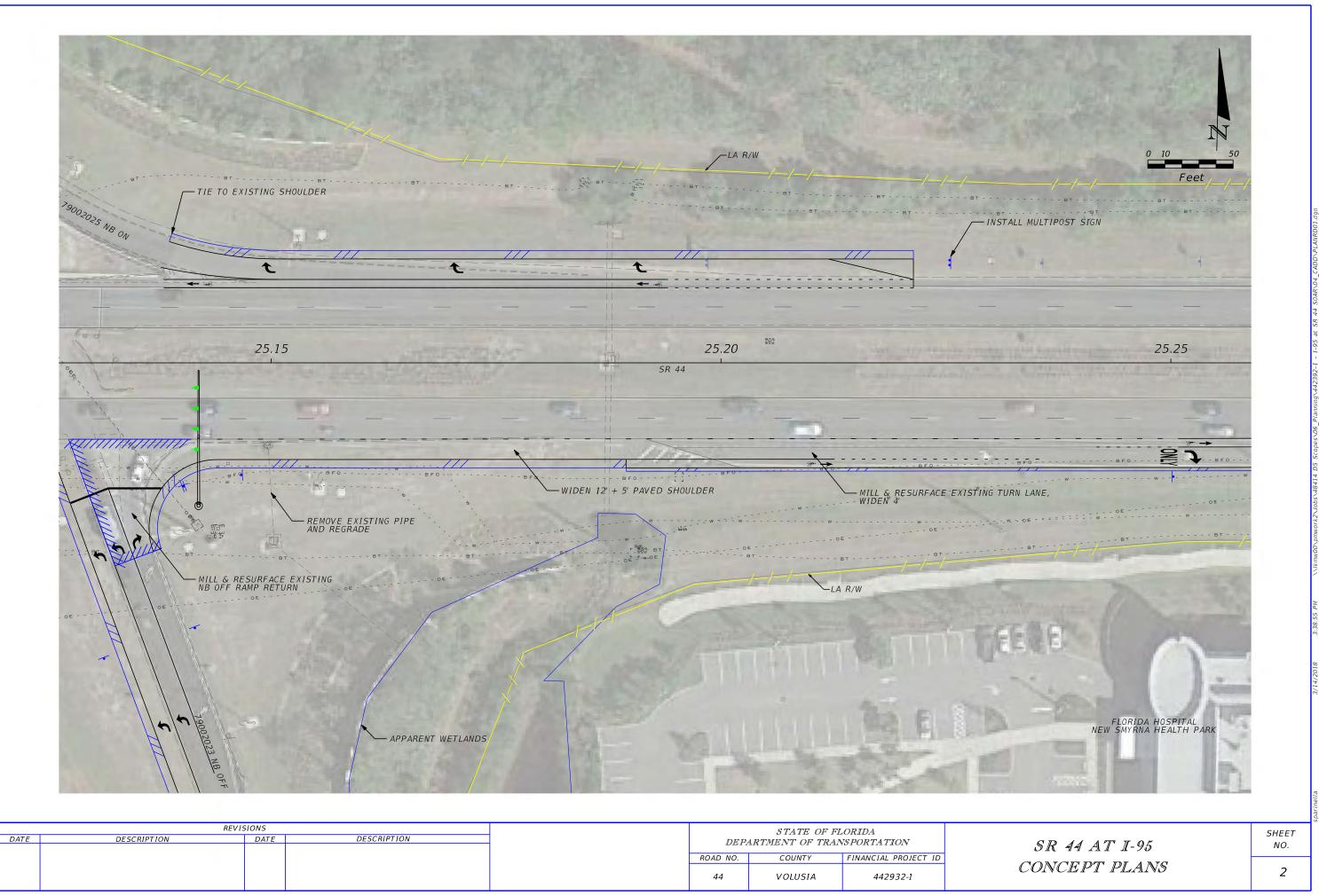
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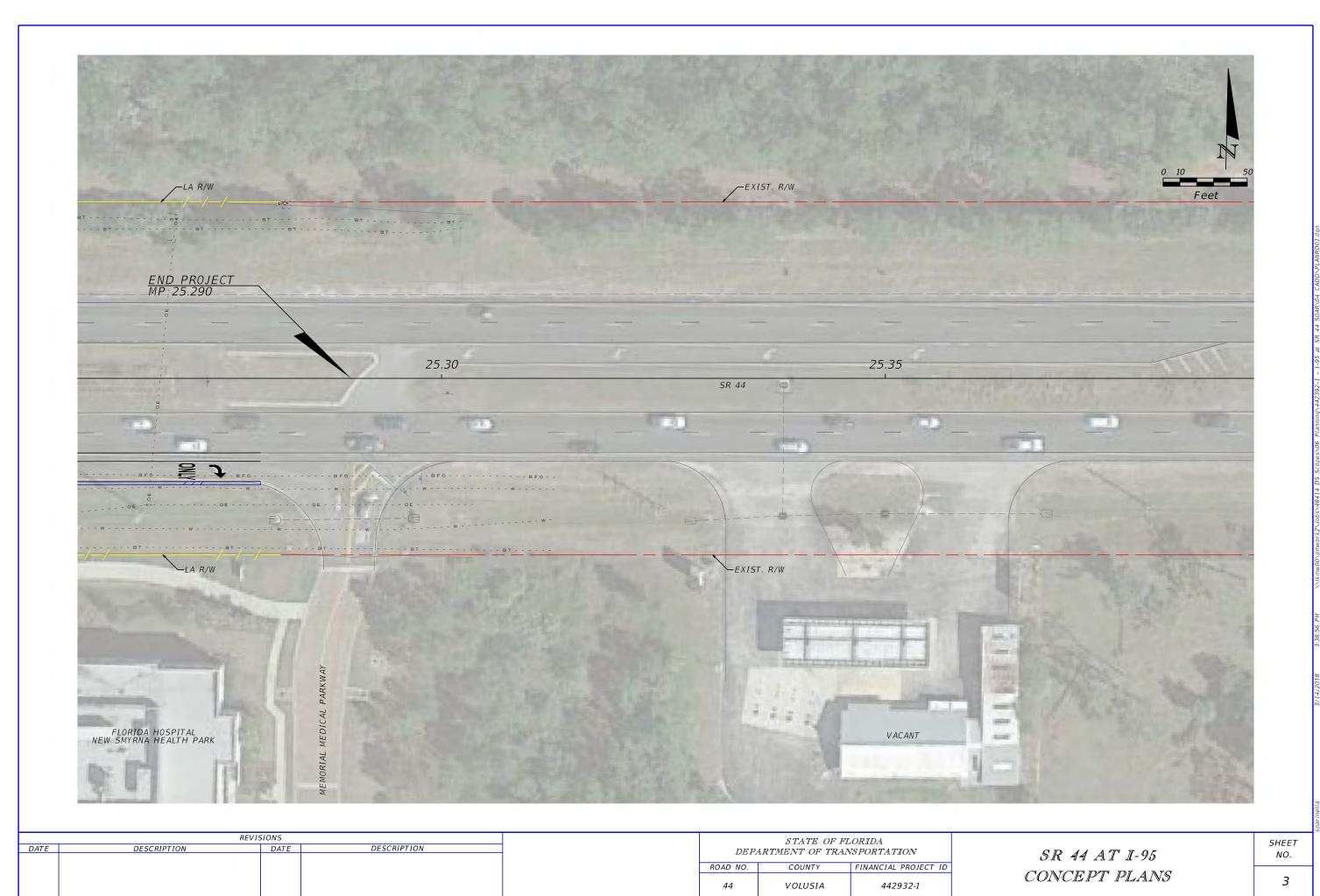
Feet

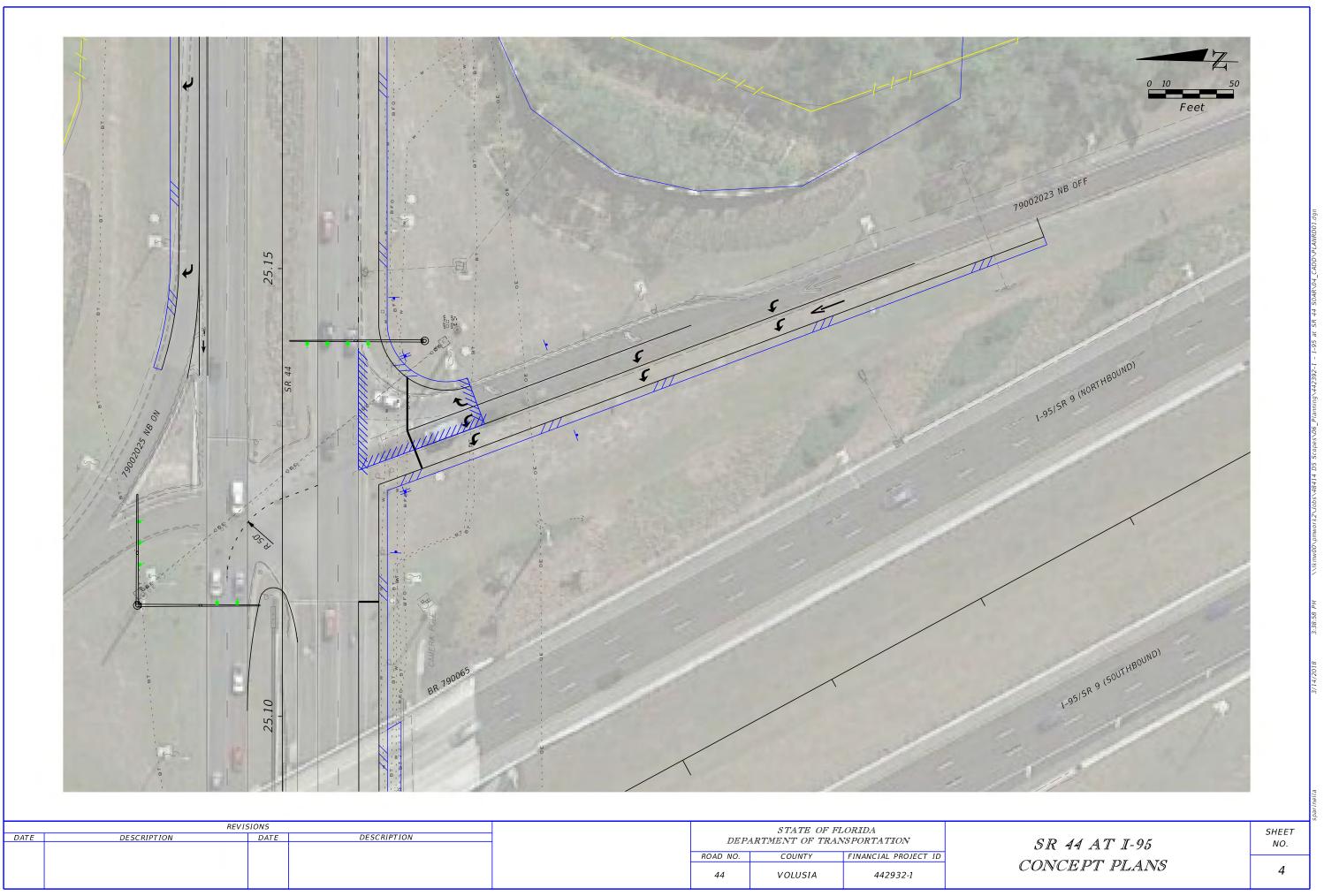
Appendix B

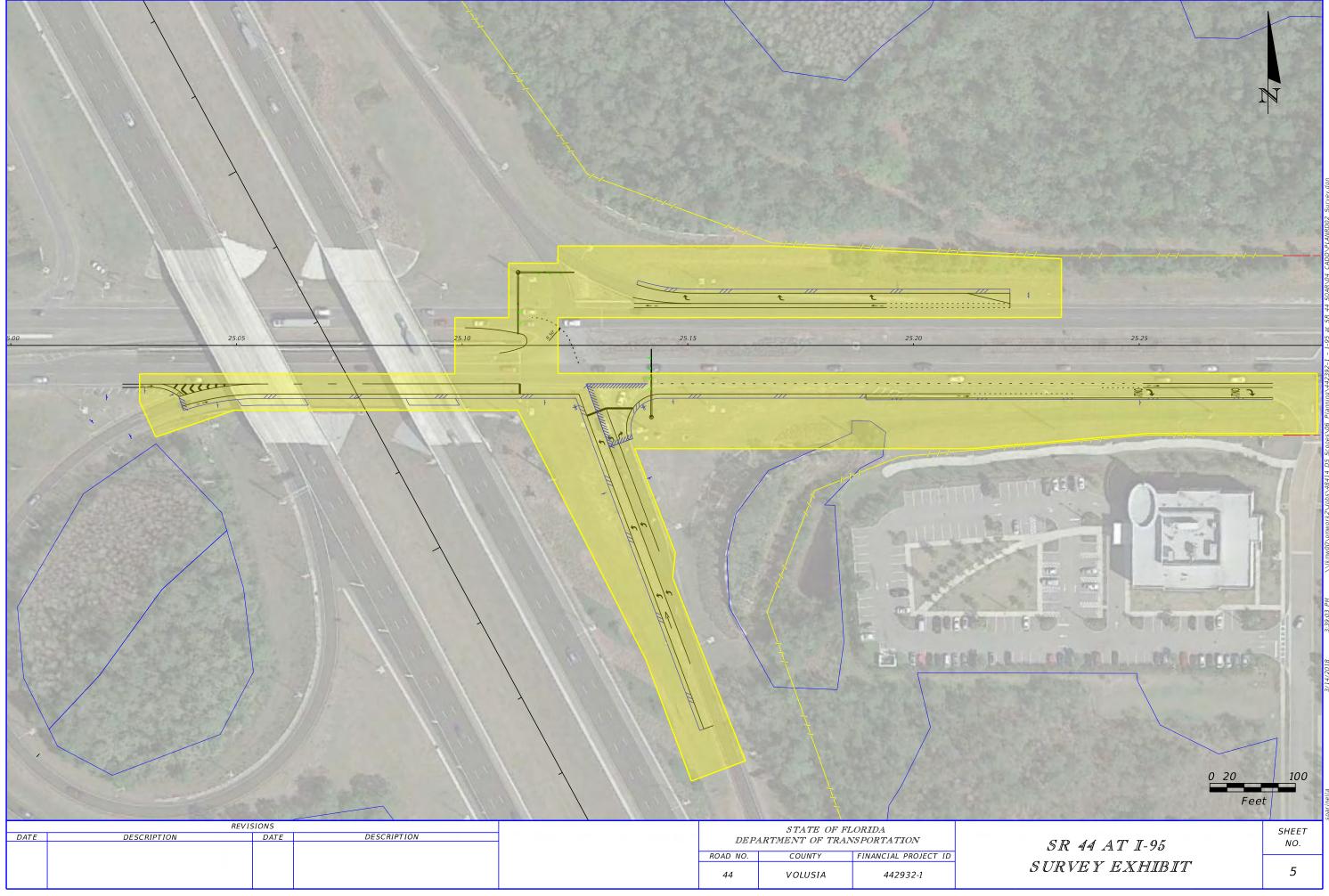
S.R. 44 at I-95 Concept Plans





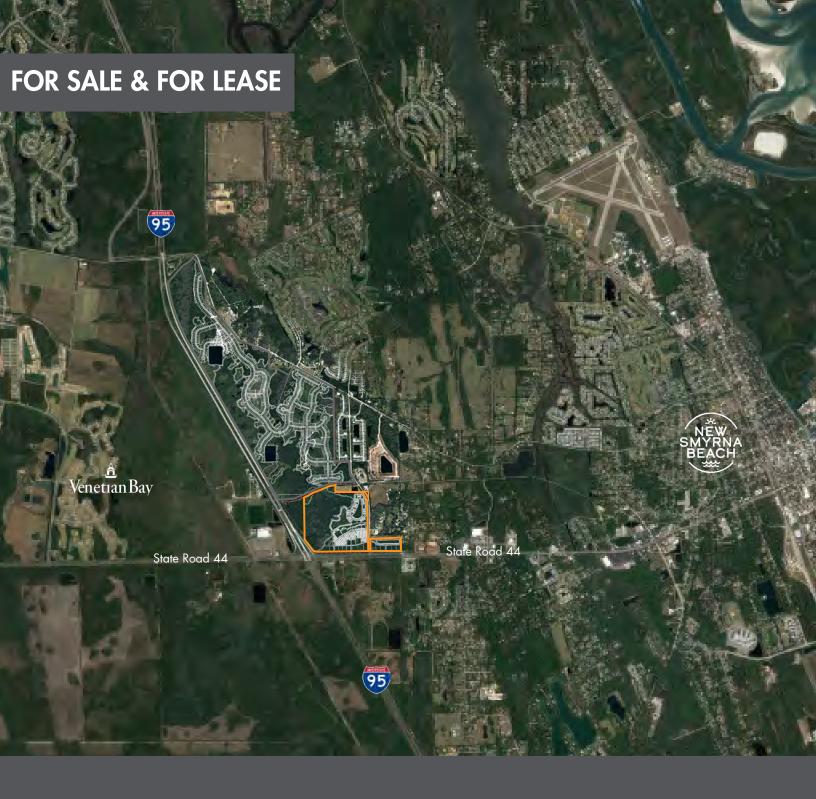






Appendix C

Coastal Woods Commercial Development Site Plan



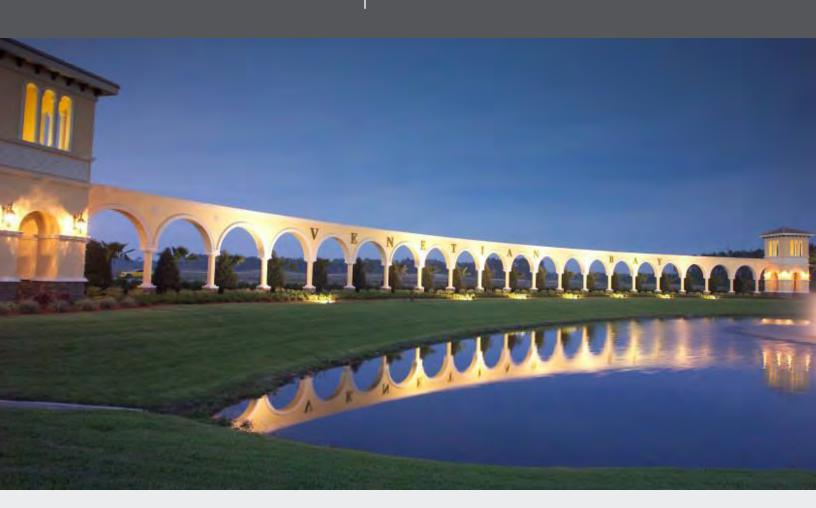
COASTAL WOODS COMMERCIAL RETAIL & COMMERCIAL NEW SMYRNA BEACH

PROPERTY HIGHLIGHTS

Located in New Smyrna Beach, Florida and consisting of a total of 80.39 acres, Coastal Woods Commercial is located at the Gateway to New Smyrna Beach from 1-95.

Consisting of two phases of commercial development and adjacent to a growing residential community, Coastal Woods Commercial offers new opportunities to prospective users.

Total Acreage	2 Acres - 80 Acres
Water / Sewer	To Site
Zoning	MPUD
Current Use	Raw Land
Approved Uses	Retail Commercial, MI.



FOR MORE INFORMATION:

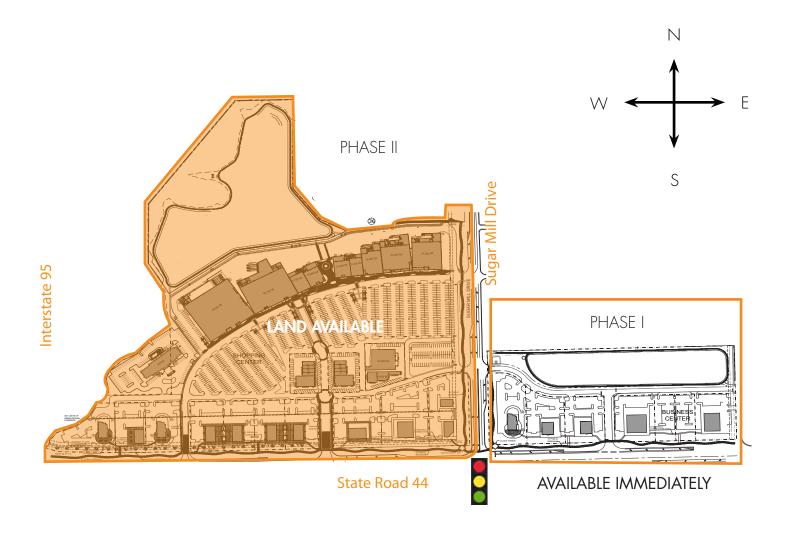
ANDY HAWKINS

Senior Vice President 407.540.7749 andy.hawkins@foundrycommercial.com

BRETT HARTUNG

SITE PLAN

CONCEPTUAL PLAN



FOR MORE INFORMATION:

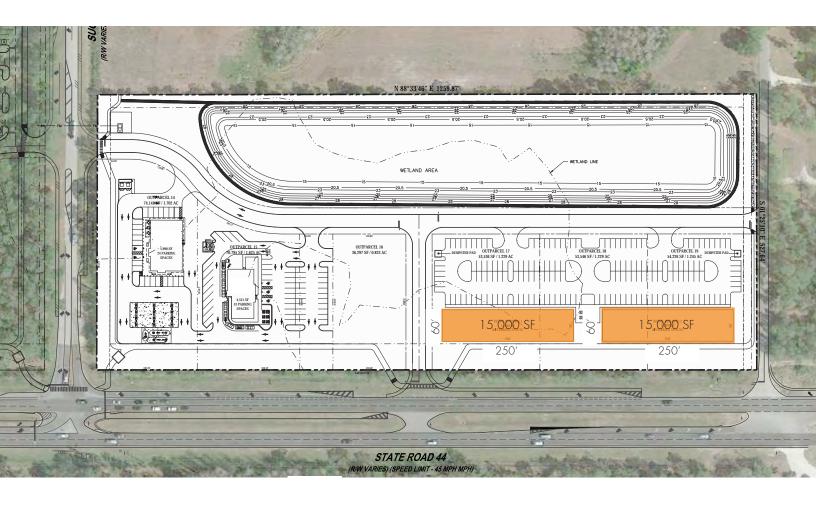
ANDY HAWKINS

Senior Vice President 407.540.7749 andy.hawkins@foundrycommercial.com

BRETT HARTUNG

PHASE I - PAD SITES + SMALL SHOP RETAIL

CONCEPTUAL PLAN



PAD SITES

- 1 acre 5 acre
- Cleared, leveled + graded
- Master Stormwater
- All utilities available at property summary
- Access + driveways constructed

AVAILABLE SPRING 2018

SMALL SHOP RETAIL

- 1,500 SF 15,000 SF
- Bay Depth-60
- Parking- 5.5/1,000 SF
- Outdoor seating available

AVAILABLE SUMMER 2019

FOR MORE INFORMATION:

ANDY HAWKINS

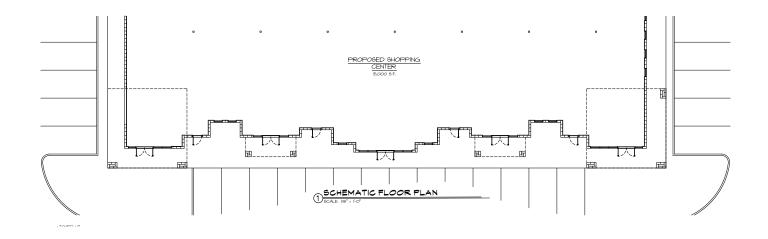
Senior Vice President 407.540.7749 andy.hawkins@foundrycommercial.com

BRETT HARTUNG

PHASE I

CONCEPTUAL ELEVATIONS





FOR MORE INFORMATION:

ANDY HAWKINS

Senior Vice President 407.540.7749 andy.hawkins@foundrycommercial.com

BRETT HARTUNG

WHY COASTAL WOODS



GROWING COMMUNITY

- 140 New Home starts in the last 12-months in Venetian Bay
- 1,544 Rooftops currently at Venetian Bay
- 4,713 rooftops at complete buildout



HIGH VISIBILITY

- Located a State Road 44, westerly entrance to New Smyrna Beach
- Traffic Signal located at S.R. 44 and Sugar Mill Drive
- AADT on SR-44: +30,000



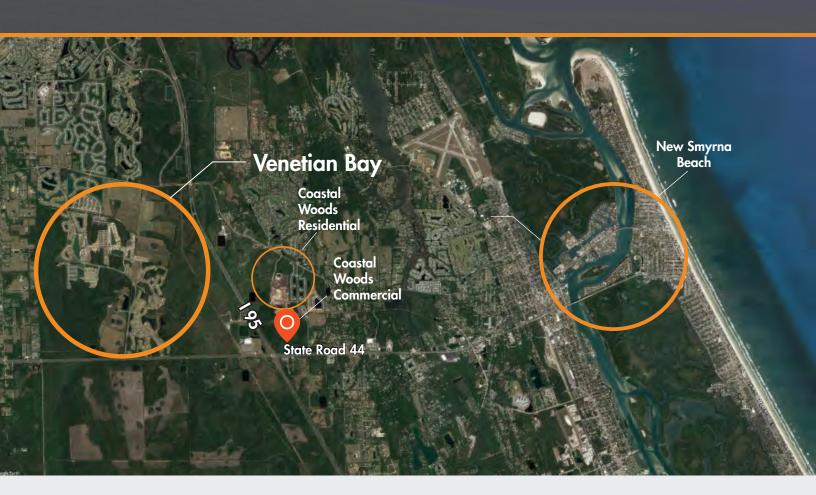
DEMAND DRIVEN LOCATION

- Sabal Lakes (200 homes), adjacent to Coastal Woods started selling homes in early 2016.
- Development work on Phase 1 of Coastal Woods residential (290 Homes) is complete and currently selling homes.
- Development work on Ph 2 of Coastal Woods residential (360 Homes) has commenced.



ROAD NETWORK

- State Road 44, connecting New Smyrna Beach to I-95, and I-4
- Located at Interstate 95 exit
- Straight line connect to Interstate 4 connecting Orlando to NSB



FOR MORE INFORMATION:

ANDY HAWKINS

Senior Vice President 407.540.7749 andy.hawkins@foundrycommercial.com

BRETT HARTUNG

GROWING COMMUNITY



Located a mere 5 miles from New Smyrna Beach and leading the way for growth in Volusia County, Coastal Woods Commercial provides a unique opportunity in a growing community.

VENETIAN BAY



3,765 ESTIMATED POPULATION 2017



50.5 AVERAGE AGE



\$238,187 MEDIAN HOME VALUE 2010



\$80,666 AVG HOUSEHOLD INCOME

NEW SYMRNA



23,398 ESTIMATED POPULATION 2017



48.7 AVERAGE AGE



\$148,051
MEDIAN HOME VALUE



\$50,076 AVG HOUSEHOLD INCOME

FOR MORE INFORMATION:

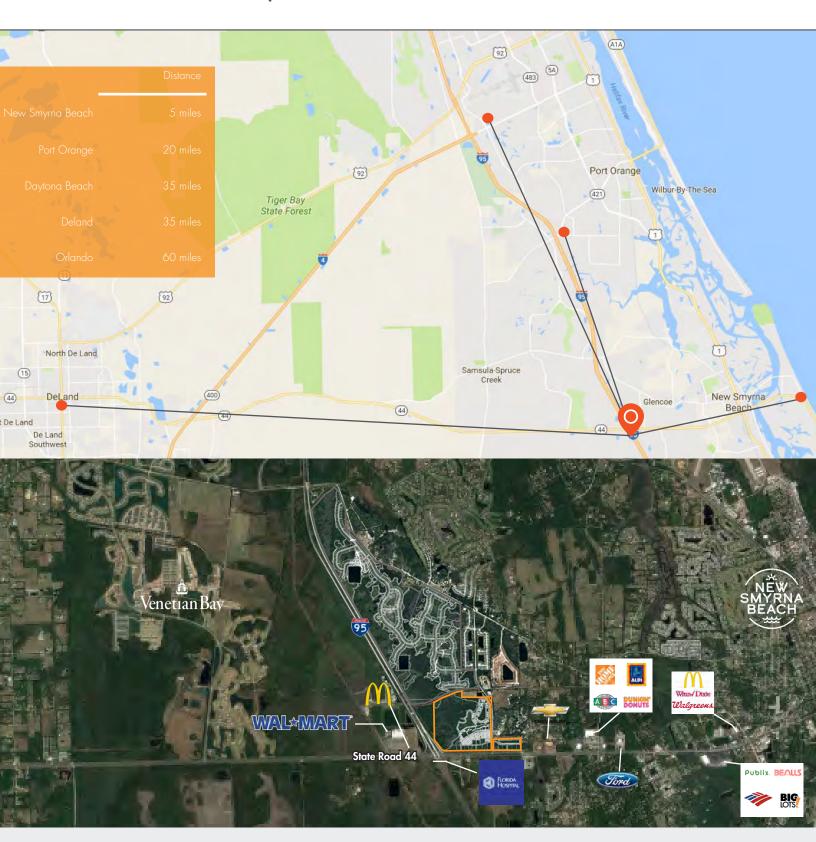
ANDY HAWKINS

Senior Vice President 407.540.7749 andy.hawkins@foundrycommercial.com

BRETT HARTUNG

Senior Associate 407.540.7897 brett.hartung@foundrycommercial.com

DRIVE TIMES / MARKET MAP



FOR MORE INFORMATION:

ANDY HAWKINS

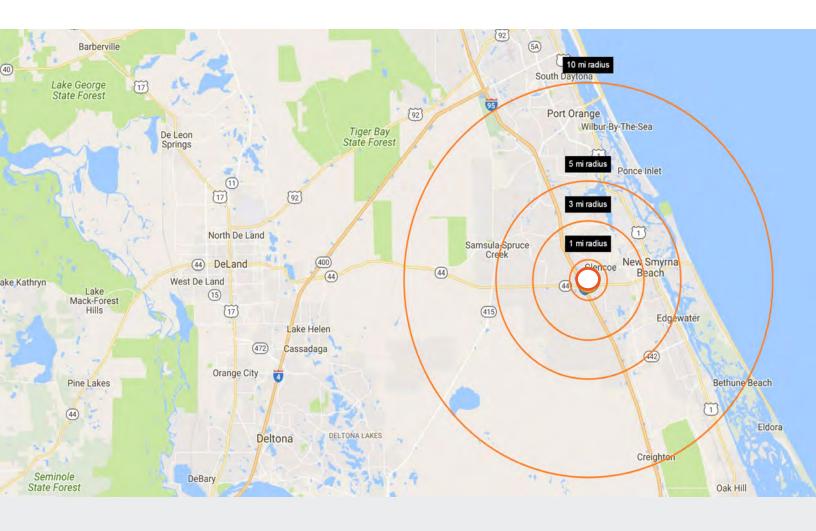
Senior Vice President 407.540.7749 andy.hawkins@foundrycommercial.com

BRETT HARTUNG

Senior Associate 407.540.7897 brett.hartung@foundrycommercial.com

AREA DEMOGRAPHICS

Demographic & Income Comparison Profile	1 MILE	3 MILES	5 MILES	10 MILES
2017 Population	817	11,090	35,544	136,331
2022 Population (Projected)	904	12,196	38,998	149,509
2017 Total Households	364	5,278	16,265	63,252
2022 Total Households (Projected)	1,526	11,438	18,342	65,435



FOR MORE INFORMATION:

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COASTAL WOODS COMMERCIAL

FOR MORE INFORMATION:

ANDY HAWKINS

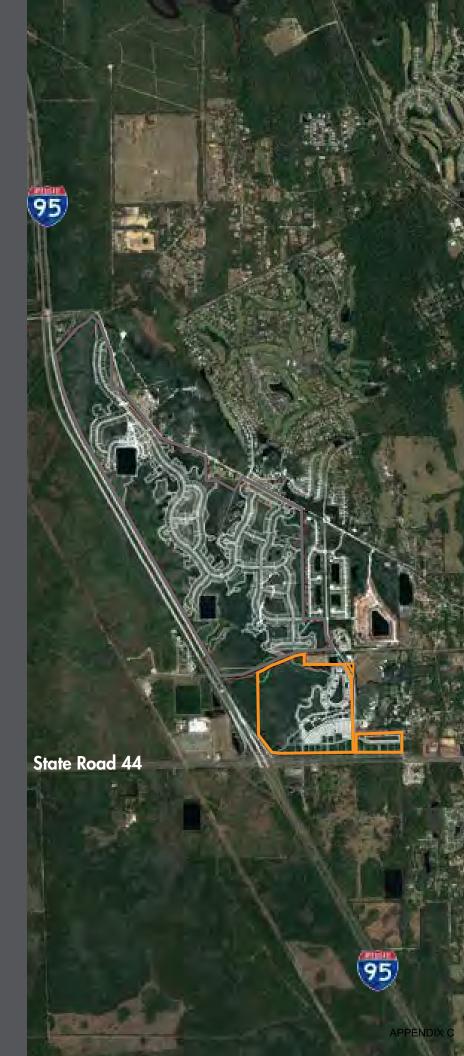
Senior Vice President 407.540.7749 andy.hawkins@foundrycommercial.com

BRETT HARTUNG

Senior Associate
407.540.7897
brett.hartung@foundrycommercial.com

FOR MORE INFORMATION:

Foundry commercial.com



Appendix D

Sunshine One Call Ticket

1/20/2020 FL811 | Ticket Dashboard

DESIGN TICKET REQUEST - NO LOCATE NEEDED

Ticket: 020003661 Rev:000 Taken: 01/20/20 16:42ET

State: FL Cnty: VOLUSIA GeoPlace: NEW SMYRNA BEACH CallerPlace: NEW SMYRNA BEACH Subdivision:

Address :

Street : SR 44 Cross 1 : WILLIAMSON BLVD Within 1/4 mile: Y
Cross 2 : SUGAR MILL DR

Locat: DESIGN TICKET ONLY - NO LOCATE NEEDED

Remarks : DESIGN TICKET REQUEST FOR SR 44 AT I-95 INTERCHANGE PD&E *** LOOKUP BY BETWEEN ***

Grids : 2900A8058A 2900A8058B 2900A8059B 2900A8059C 2900A8059D Grids : 2900B8058A 2900B8058B 2900B8059B 2900B8059C 2900B8059D

Work date: 01/22/20 Time: 23:59ET Hrs notc: 045 Category: 3 Duration: 00 HRS

Due Date : 01/22/20 Time: 23:59ET Exp Date : 02/19/20 Time: 23:59ET

Work type: DESIGN TICKET REQUEST FOR SR 44 INTERCHANGE PROJECT Boring: N White-lined: N

Ug/Oh/Both: U Machinery: N Depth: 48 IN Permits: N N/A

Done for : FDOT

Company : HDR ENGINEERING Type: CONT
Co addr : 4830 W KENNEDY BLVD
Co addr2: SUITE 400
City : TAMPA State: FL Zip: 33609-2548
Caller : JASON STARR Phone: 813-282-2300
Contact : JASON STARR Email: JASON.STARR@HDRINC.COM
BestTime: 8-5
Mobile : 941-342-2711
Fax : 941-342-6589
Email : JASON.STARR@HDRINC.COM

Submitted: 01/20/20 16:42ET Oper: JAS Chan: WEB Mbrs : CN1366 CNS736 SBF02 SFN477 SL1086 TCI377

** There aren't any Excavator comments, so the column is omitted ** $\begin{tabular}{ll} \hline \end{tabular} \label{table_equation} \begin{tabular}{ll} \hline \end{tabular} \begin{t$

Ex. Circum	Service Area	Utility Type(s)	Contact	Alt: Contact	Emergency Contact	Positive Response
No	UTILITIES COMMISSION, CITY OF NEW SMYRNA BEACH CN1366	WASTEWATER, WATER	CHRIS BROCKMAN (386) 424-3188	CHRIS BROCKMAN (386) 424-3188	CHRIS BROCKMAN (386) 424-3188	
No	UTILITIES COMMISSION CITY OF NEW SMYRNA BEACH CNS736	ELECTRIC	CRYSTAL MEAHL (386) 424-3161	CRYSTAL MEAHL (386) 424-3161	MIKE MINES (386) 424-3172	
No	A T & T/ DISTRIBUTION SBF02	TELEPHONE	USIC DISPATCH (800) 778-9140	DINO FARRUGGIO (561) 997-0240	DINO FARRUGGIO (561) 997-0240	
No	FLORIDA PUBLIC UTILITIES CO. SFN477	GAS	DAWN DECOSTA (386) 624-8883	KENNY KENNEDY (386) 785-3351	VIRGINIA CESPEDES (352) 636-7047	
No	UNITI FIBER LLC SL1086	FIBER	SOUTHERN LIGHT EMERGENCY RESPONSE DISPATCH (877) 652-2321		NOC UNITI FIBER (877) 652-2321	
No	CHARTER COMMUNICATIONS TCI377	CATV	USIC DISPATCH OFFICE (CLS) (800) 778-9140	USIC DISPATCH OFFICE (CLS) (800) 778-9140	FIELD OPERATIONS CENTER (727) 253-4636	₹

Appendix E

FEMA FIRM Map

National Flood Hazard Layer FIRMette VOLUSIA COUNTY AREA OF MINIMAL FLOOD HAZARD 125 155 CHTY OF NEW SMYRNA BEACH 125132 Zone A accuracy standards

2,000

250

500

1,000

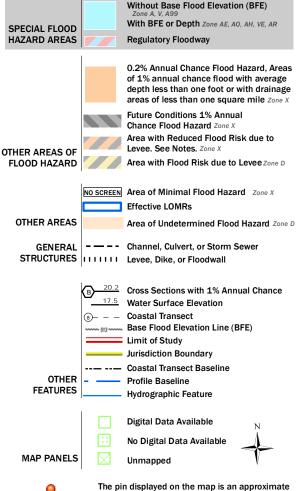
1,500

USGS The National Map: Orthoimagery, Data refreshed April, 2019.

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap

point selected by the user and does not represent

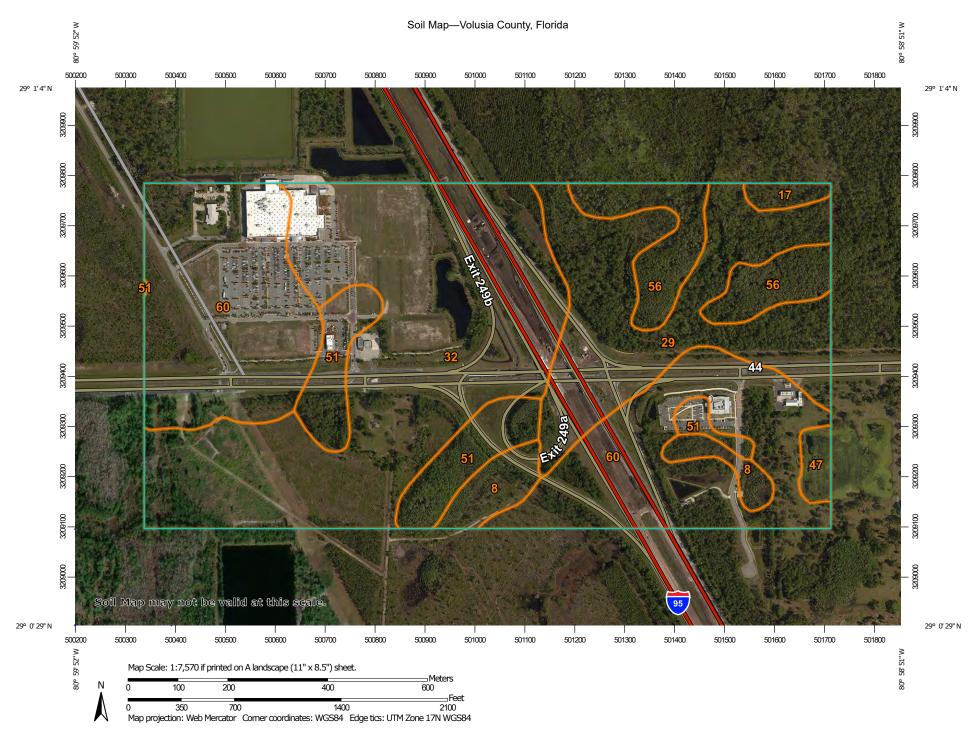
an authoritative property location.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/28/2020 at 4:16:58 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix F

NRCS Soil Survey Map



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons



Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Candfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot
Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot
 Other

Special Line Features

Water Features

Δ

Streams and Canals

Transportation

HH Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Volusia County, Florida Survey Area Data: Version 18, Sep 17, 2019

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Mar 12, 2011—Apr 4, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8	Basinger fine sand, frequently ponded, 0 to 1 percent slopes	7.7	3.3%
17	Daytona sand, 0 to 5 percent slopes	1.9	0.8%
29	Immokalee sand	40.4	17.2%
32	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	79.9	34.0%
47	Pits	2.2	0.9%
51	Pomona-St. Johns complex	16.4	7.0%
56	Samsula muck, frequently ponded, 0 to 1 percent slopes	14.9	6.4%
60	Smyrna-Smyrna, wet, fine sand, 0 to 2 percent slopes	71.4	30.4%
Totals for Area of Interest	'	234.8	100.0%

Appendix G

Traffic Counts

8-Hour Turning Movement Counts (Weekday)

State Road 44 at I-95 NB Ramps Volusia County

Prepared for:

TSM&O Continuing Services

Florida Department of Transportation – District Five 719 S. Woodland Boulevard DeLand, Florida 32720

Prime Consultant:

HDR Engineering Inc.

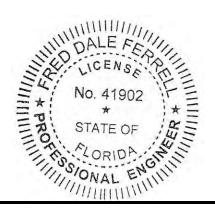
Financial Project ID: 440412-1-32-02 FDOT Contract No: C-9V31 TEDS Contract No.: 11009 Work Order: 1

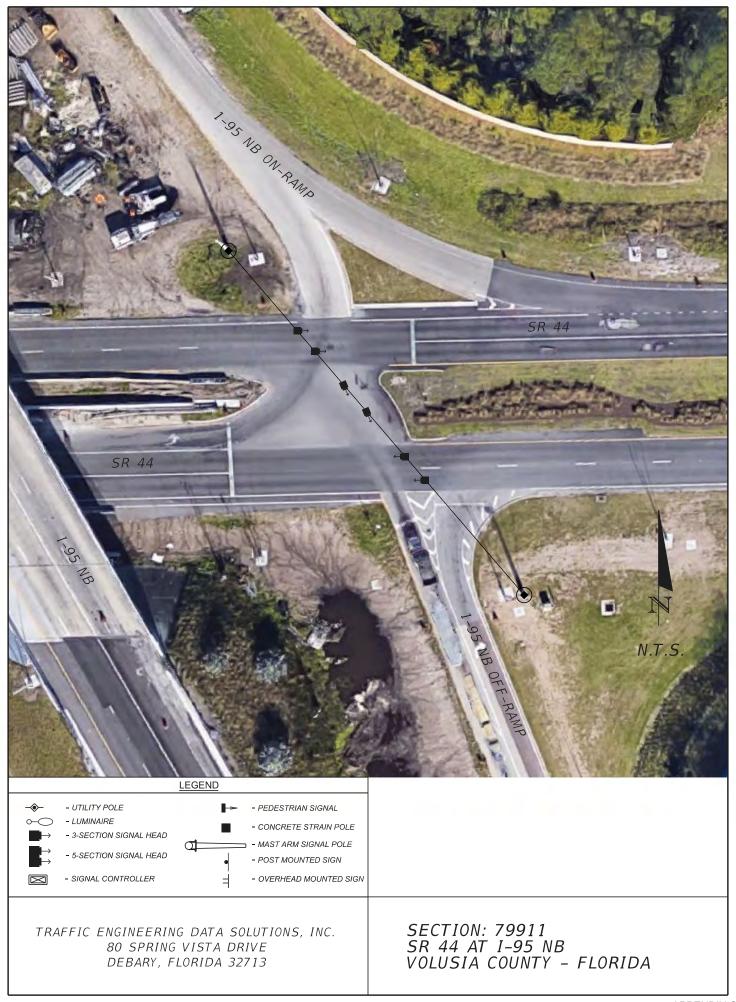
> Prepared by: Halley Ferrell

Traffic Engineering Data Solutions, Inc.

Certificate of Authorization License Number: 27392 80 Spring Vista Drive DeBary, Florida 32713

October 2017





Northbound Photographs State Road 44 at I-95 NB Ramps



Looking North Toward Intersection



Looking South Away from Intersection

Eastbound Photographs State Road 44 at I-95 NB Ramps



Looking East Toward Intersection



Looking West Away from Intersection

Westbound Photographs State Road 44 at I-95 NB Ramps



Looking West Toward Intersection



Looking East Away from Intersection

FLORIDA DEPARTMENT OF TRANSPORTATION **SUMMARY OF VEHICLE MOVEMENTS** SECTION **CITY** New Smyrna Beach COUNTY Volusia State Road 44 INTERSECTING ROUTE I-95 NB Ramps STATE ROUTE **TEDS DATE** 10/5/2017 OBSERVER SIGNAL ID WEATHER ROAD CONDITION Good Sunny REMARKS FORM COMPLETED BY PHF DATE 10/16/17 I-95 NB Ramps SB ST NAME L R Т Т State Road 44 State Road 44 EB ST NAME **WB ST NAME** I-95 NB Ramps L Т R NB ST NAME TOTAL TIME NORTHBOUND SOUTHBOUND **EASTBOUND** WESTBOUND TOTAL тот BEGIN/END т тот т N/S Т R U тот U тот E/W 7:00 - 8:00 8:00 - 9:00 11:00 - 12:00 12:00 - 1:00 2:00 - 3:00 3:00 - 4:00 4:00 - 5:00 Ω

5:00 - 6:00

TOTAL

FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN MOVEMENT SUMMARY

SECTION 79911 CITY New Smyrna Beach **COUNTY** Volusia

STATE ROUTE State Road 44 OBSERVER **TEDS**

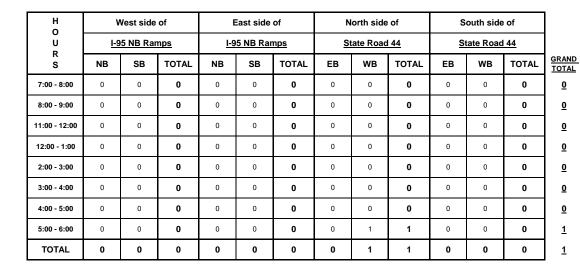
INTERSECTING ROUTE I-95 NB Ramps

DATE 10/5/2017

REMARKS

FORM COMPLETED BY PHF

DATE 10/16/17





FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE MOVEMENT SUMMARY

SECTION 79911 CITY New Smyrna Beach **COUNTY** Volusia

STATE ROUTE State Road 44 OBSERVER **TEDS**

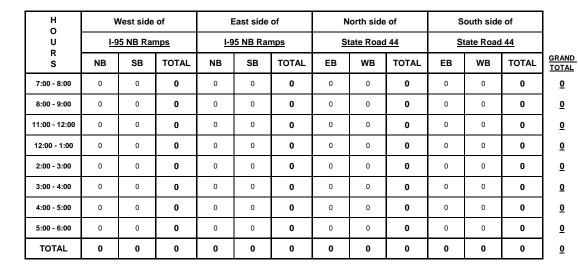
INTERSECTING ROUTE I-95 NB Ramps

DATE 10/5/2017

REMARKS

FORM COMPLETED BY PHF

DATE 10/16/17





File Name : Not Named 1 Site Code : 00000000 Start Date : 10/5/2017

Page No : 1

								_								Pa	ige I	No	: 1		
		1.95	NB RA	MPS			1.95	NB RA		Printed	- All Ve		TE ROA	D 44			SΤΔ	TE ROA	ND 44		
			orthbou					uthbou					astbou					estbou			
Start Time	Left	Thru		Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru		Peds	App. Total	Left	Thru		Peds	App. Total	Int. Total
07:00 AM	51	0	9	0	60	0	0	0	0	0	22	203	0	0	225	0	146	108	0	254	539
07:15 AM	77	0	17	0	94	0	0	0	0	0	26	173	0	0	199	0	161	149	0	310	603
07:30 AM	52	0	17	0	69	0	0	0	0	0	42	212	0	0	254	0	163	191	0	354	677
07:45 AM	38	0	24	0	62	0	0	0	0	0	26	310	0	0	336	0	141	127	0	268	666
Total	218	0	67	0	285	0	0	0	0	0	116	898	0	0	1014	0	611	575	0	1186	2485
08:00 AM	53	0	16	0	69	0	0	0	0	0	35	230	0	0	265	0	157	120	0	277	611
08:15 AM	48	0	16	0	64	0	Ō	Ö	0	0	16	198	0	0	214	0	145	122	0	267	545
08:30 AM	39	1	36	0	76	0	0	0	0	0	22	176	0	0	198	0	125	113	0	238	512
08:45 AM	46	3	23	0	72	0	0	0	0	0	23	240	0	0	263	0	156	93	0	249	584
Total	186	4	91	0	281	0	0	0	0	0	96	844	0	0	940	0	583	448	0	1031	2252
*** BREAK ***	*																				
11:00 AM	44	1	23	0	68	0	0	0	0	0	22	236	0	0	258	0	168	66	0	234	560
11:15 AM	33	1	15	0	49	0	0	0	0	0	24	181	0	0	205	0	175	83	0	258	512
11:30 AM	52	2	22	0	76	0	0	0	0	0	20	235	0	0	255	0	160	96	0	256	587
11:45 AM	35	3	18	0	56	0	0	0	0	0	24	235	0	0	259	0	168	94	0	262	577
Total	164	7	78	0	249	0	0	0	0	0	90	887	0	0	977	0	671	339	0	1010	2236
12:00 PM	64	0	19	0	83	0	0	0	0	0	19	230	0	0	249	0	163	103	0	266	598
12:15 PM	51	0	18	0	69	0	Ō	Ö	Ō	0	19	226	0	0	245	0	175	102	0	277	591
12:30 PM	30	0	19	0	49	0	0	0	0	0	35	228	0	0	263	0	156	95	0	251	563
12:45 PM	34	0	24	0	58	0	0	0	0	0	19	224	0	0	243	0	178	72	0	250	551
Total	179	0	80	0	259	0	0	0	0	0	92	908	0	0	1000	0	672	372	0	1044	2303
*** BREAK ***	*																				
02:00 PM	40	0	16	0	56	0	0	0	0	0	18	227	0	0	245	0	183	73	0	256	557
02:15 PM	42	0	18	0	60	0	0	0	0	0	19	256	0	0	275	0	208	87	0	295	630
02:30 PM	39	0	26	0	65	0	0	0	0	0	24	220	0	0	244	0	161	101	0	262	571
02:45 PM	46	1	20	0	67	0	0	0	0	0	20	224	0	0	244	0	178	86	0	264	575
Total	167	1	80	0	248	0	0	0	0	0	81	927	0	0	1008	0	730	347	0	1077	2333
03:00 PM	28	1	16	0	45	0	0	0	0	0	17	210	0	0	227	0	241	97	0	338	610
03:15 PM	32	0	27	0	59	0	0	0	0	0	10	231	0	0	241	0	174	80	0	254	554
03:30 PM	43	0	15	0	58	0	0	0	0	0	31	265	0	0	296	0	244	86	0	330	684
03:45 PM	37	0	18	0	55	0	0	0	0	0	25	278	0	0	303	0	168	86	0	254	612
Total	140	1	76	0	217	0	0	0	0	0	83	984	0	0	1067	0	827	349	0	1176	2460
04:00 PM	37	1	25	0	63	0	0	0	0	0	24	266	0	0	290	0	172	78	0	250	603
04:15 PM	60	0	21	0	81	Ö	Ö	Ö	Ö	0	16	271	Ö	0	287	Ö	204	80	0	284	652
04:30 PM	58	0	34	0	92	0	0	0	0	0	14	285	0	0	299	0	214	108	0	322	713
04:45 PM	77	1	27	0	105	0	0	0	0	0	23	279	0	0	302	0	199	83	0	282	689
Total	232	2	107	0	341	0	0	0	0	0	77	1101	0	0	1178	0	789	349	0	1138	2657
05:00 PM	45	0	28	0	73	0	0	0	0	0	14	298	0	0	312	0	201	99	0	300	685
05:15 PM	58	0	20	0	78	0	0	0	0	0	10	285	Ö	0	295	0	205	87	0	292	665
05:30 PM	70	0	19	0	89	0	0	0	0	0	20	290	Ö	0	310	0	193	72	0	265	664
05:45 PM	34	1	24	0	59	0	0	0	0	0	22	281	Ō	Ō	303	0	111	85	1	197	559
Total	207	1	91	0	299	0	0	0	0	0	66	1154	0	0	1220	0	710	343	1	1054	2573
Grand Total	1493	16	670	0	2179	0	0	0	0	0	701	7703	0	0	8404	0	5593	3122	1	8716	19299
Apprch %	68.5	0.7	30.7	0	21//	0	0	0	0	J	8.3	91.7	0	0	0-04	0	64.2	35.8	0	0710	1/477
Total %	7.7	0.1	3.5	0	11.3	0	0	0	0	0	3.6	39.9	0	0	43.5	0	29	16.2	0	45.2	
/0				-		-	-	-	-	- 1			-	-		-			_		'

File Name: Not Named 1 Site Code : 00000000 Start Date : 10/5/2017

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Page No : 2

			NB RA					NB RA					TE ROA					TE RO			
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour An	alysis F	rom 0	7:00 AN	√l to 09:	45 AM	Peak 1	of 1														
Peak Hour for	Entire	Inters	ection E	Begins a	at 07:15	AM															
07:15 AM	77	0	17	0	94	0	0	0	0	0	26	173	0	0	199	0	161	149	0	310	603
07:30 AM	52	0	17	0	69	0	0	0	0	0	42	212	0	0	254	0	163	191	0	354	677
07:45 AM	38	0	24	0	62	0	0	0	0	0	26	310	0	0	336	0	141	127	0	268	666
MA 00:80	53	0	16	0	69	0	0	0	0	0	35	230	0	0	265	0	157	120	0	277	611
Total Volume	220	0	74	0	294	0	0	0	0	0	129	925	0	0	1054	0	622	587	0	1209	2557
% App. Total	74.8	0	25.2	0		0	0	0	0		12.2	87.8	0	0		0	51.4	48.6	0		
PHF	.714	.000	.771	.000	.782	.000	.000	.000	.000	.000	.768	.746	.000	.000	.784	.000	.954	.768	.000	.854	.944
Peak Hour An	alveie F	From O	7·00 AN	Ato OO	15 ΔM.	Poak 1	of 1														

Peak Hour for	<u>r Each <i>P</i></u>	Approa	<u>ch Begi</u>	ns at:																
	07:15 AM					07:00 AM					07:30 AN					07:15 AM				
+0 mins.	77	0	17	0	94	0	0	0	0	0	42	212	0	0	254	0	161	149	0	310
+15 mins.	52	0	17	0	69	0	0	0	0	0	26	310	0	0	336	0	163	191	0	354
+30 mins.	38	0	24	0	62	0	0	0	0	0	35	230	0	0	265	0	141	127	0	268
+45 mins.	53	0	16	0	69	0	0	0	0	0	16	198	0	0	214	0	157	120	0	277
Total Volume	220	0	74	0	294	0	0	0	0	0	119	950	0	0	1069	0	622	587	0	1209
% App. Total	74.8	0	25.2	0		0	0	0	0		11.1	88.9	0	0		0	51.4	48.6	0	
PHF	.714	.000	.771	.000	.782	.000	.000	.000	.000	.000	.708	.766	.000	.000	.795	.000	.954	.768	.000	.854
Dook Hour Ar	alveie E	rom 1	0.00 AI	/1 to 01.	4E DM	Dook 1	of 1													

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1 Peak Hour for Entire Intersection Begins at 11:30 AM 11:30 AM 11:45 AM 12:00 PM Λ 12:15 PM Total Volume

91.9 % App. Total 71.1 1.8 8.1 PHF .789 .417 .875 .000 .854 .000 Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at: 11:30 AM 11:45 AM 11:30 AM +0 mins. +15 mins. +30 mins. +45 mins. Total Volume 9.5 % App. Total 71.1 1.8 27.1 90.5 62.8 37.2 .000 .000 .000 .978 .000 .000 .966 .000 .951 .000 .958

PHF .789 .417 .875 .000 Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

I Cak Hour An	arysis i	101110	2.0011	vi to ob.	40 I IVI -	I can i	OI I														
Peak Hour for	Entire	Inters	ection I	Begins a	at 04:30	PM															
04:30 PM	58	0	34	0	92	0	0	0	0	0	14	285	0	0	299	0	214	108	0	322	713
04:45 PM	77	1	27	0	105	0	0	0	0	0	23	279	0	0	302	0	199	83	0	282	689
05:00 PM	45	0	28	0	73	0	0	0	0	0	14	298	0	0	312	0	201	99	0	300	685
05:15 PM	58	0	20	0	78	0	0	0	0	0	10	285	0	0	295	0	205	87	0	292	665
Total Volume	238	1	109	0	348	0	0	0	0	0	61	1147	0	0	1208	0	819	377	0	1196	2752
% App. Total	68.4	0.3	31.3	0		0	0	0	0		5	95	0	0		0	68.5	31.5	0		
PHF	773	250	801	000	829	000	000	000	000	000	663	962	000	000	968	000	957	873	000	929	965

.693

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for	<u> Each <i>F</i></u>	Approa	ch Begi	ns at:																
	04:15 PM					02:00 PM					05:00 PM	1				04:30 PM				
+0 mins.	60	0	21	0	81	0	0	0	0	0	14	298	0	0	312	0	214	108	0	322
+15 mins.	58	0	34	0	92	0	0	0	0	0	10	285	0	0	295	0	199	83	0	282
+30 mins.	77	1	27	0	105	0	0	0	0	0	20	290	0	0	310	0	201	99	0	300
+45 mins.	45	0	28	0	73	0	0	0	0	0	22	281	0	0	303	0	205	87	0	292
Total Volume	240	1	110	0	351	0	0	0	0	0	66	1154	0	0	1220	0	819	377	0	1196
% App. Total	68.4	0.3	31.3	0		0	0	0	0		5.4	94.6	0	0		0	68.5	31.5	0	
PHF	.779	.250	.809	.000	.836	.000	.000	.000	.000	.000	.750	.968	.000	.000	.978	.000	.957	.873	.000	.929

Site Code : 00000000 Start Date : 10/5/2017

Page No : 1

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			NB RA					5 NB R/ outhbo					TE RO. astbou					TE ROA			
Start Time	Left	Thru			App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right		App. Total	Left	Thru	Right		App. Total	Int. Total
07:00 AM	1	0	1	0	2	0	0	0	0	0	1	4	0	0	5	0	8	0	0	8	15
07:15 AM	0	0	0	0	0	0	0	0	0	0	3	5	0	0	8	0	3	5	0	8	16
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	9	0	0	10	0	3	2	0	5	15
07:45 AM	4	0	1_	0	5	0	0	0	0	0	1	10	0	0	11	0	4	0	0	4	20_
Total	5	0	2	0	7	0	0	0	0	0	6	28	0	0	34	0	18	7	0	25	66
08:00 AM	3	0	0	0	3	0	0	0	0	0	4	10	0	0	14	0	6	2	0	8	25
08:15 AM	1	0	0	0	1	0	0	0	0	0	1	14	0	0	15	0	9	5	0	14	30
08:30 AM	4	0	4	0	8	0	0	0	0	0	0	10	0	0	10	0	7	3	0	10	28
08:45 AM Total	7 15	0	<u>2</u>	0	9 21	0	0 0	0	0	0	9	<u>16</u> 50	0	0	20 59	0	<u>11</u> 33	<u>2</u> 12	0	13 45	<u>42</u> 125
*** BREAK ***		U	U	U	21	U	U	U	U	0	7	30	U	U	37	U	33	12	U	45	123
BREAK																					
11:00 AM	2	0	0	0	2	0	0	0	0	0	2	6	0	0	8	0	4	3	0	7	17
11:15 AM	3	0	0	0	3	0	0	0	0	0	3	6	0	0	9	0	12	4	0	16	28
11:30 AM	6	0	6	0	12	0	0	0	0	0	1	9	0	0	10	0	9	5	0	14	36
11:45 AM	4	0	3	0	7	0	0	0	0	0	1_	15	0	0	16	0	6_	8	0	14	37
Total	15	0	9	0	24	0	0	0	0	0	7	36	0	0	43	0	31	20	0	51	118
12:00 PM	3	0	0	0	3	0	0	0	0	0	2	11	0	0	13	0	6	4	0	10	26
12:15 PM	3	0	1	0	4	0	0	0	0	0	0	9	0	0	9	0	7	4	0	11	24
12:30 PM	5	0	1	0	6	0	0	0	0	0	0	7	0	0	7	0	6	5	0	11	24
12:45 PM	3	0	2	0	5	0	0	0	0	0	2	8	0	0	10	0	3	4	0	7	22
Total	14	0	4	0	18	0	0	0	0	0	4	35	0	0	39	0	22	17	0	39	96
*** BREAK ***	k																				
02:00 PM	2	0	0	0	2	0	0	0	0	0	0	7	0	0	7	0	9	5	0	14	23
02:15 PM	7	0	1	0	8	0	0	0	0	0	0	5	0	0	5	0	6	2	0	8	21
02:30 PM	2	0	1	0	3	0	0	0	0	0	2	7	0	0	9	0	7	7	0	14	26
02:45 PM	5	0	0	0	5	0	0	0	0	0	1	7	0	0	8	0	5	5	0	10	23_
Total	16	0	2	0	18	0	0	0	0	0	3	26	0	0	29	0	27	19	0	46	93
03:00 PM	3	0	3	0	6	0	0	0	0	0	1	6	0	0	7	0	10	7	0	17	30
03:15 PM	0	0	0	0	0	0	0	0	0	0	1	5	0	0	6	0	2	3	0	5	11
03:30 PM	3	0	0	0	3	0	0	0	0	0	1	6	0	0	7	0	9	2	0	11	21
03:45 PM	2	0	0	0	2	0	0	0	0	0	1_	8	0	0	9	0	8	4_	0	12	23_
Total	8	0	3	0	11	0	0	0	0	0	4	25	0	0	29	0	29	16	0	45	85
04:00 PM	1	0	1	0	2	0	0	0	0	0	1	10	0	0	11	0	4	1	0	5	18
04:15 PM	6	0	0	0	6	0	0	0	0	0	0	5	0	0	5	0	6	2	0	8	19
04:30 PM	1	0	0	0	1	0	0	0	0	0	0	4	0	0	4	0	7	2	0	9	14
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	5	0	0	5	11_
Total	8	0	1	0	9	0	0	0	0	0	1	25	0	0	26	0	22	5	0	27	62
05:00 PM	1	0	0	0	1	0	0	0	0	0	0	4	0	0	4	0	4	2	0	6	11
05:15 PM	1	0	1	0	2	0	0	0	0	0	0	4	0	0	4	0	5	0	0	5	11
05:30 PM	3	0	0	0	3	0	0	0	0	0	0	2	0	0	2	0	2	1	0	3	8
05:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1_
Total	6	0	1	0	7	0	0	0	0	0	0	10	0	0	10	0	11	3	0	14	31
Grand Total	87	0	28	0	115	0	0	0	0	0	34	235	0	0	269	0	193	99	0	292	676
Apprch %	75.7	0	24.3	0		0	0	0	0		12.6	87.4	0	0		0	66.1	33.9	0		
Total %	12.9	0	4.1	0	17	0	0	0	0	0	5	34.8	0	0	39.8	0	28.6	14.6	0	43.2	

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			NB RA					5 NB R					TE RO	AD 44				TE RO			
Start Time	Left				App. Total	Left				App. Total	Left	Thru			App. Total	Left	Thru			App. Total	Int. Total
Peak Hour An													1 3								
Peak Hour for																					
08:00 AM	3	0	0	0	3	0	0	0	0	0	4	10	0	0	14	0	6	2	0	8	25
08:15 AM	1	0	0	0	1	0	0	0	0	0	l i	14	0	0	15	0	9	5	0	14	30
08:30 AM	4	0	4	0	8	0	0	0	0	0	0	10	0	0	10	0	7	3	0	10	28
08:45 AM	7	0	2	0	9	0	0	0	0	0	4	16	0	0	20	0	11	2	0	13	42
Total Volume	15	0	6	0	21	0	0	0		0	9	50	0	0	59	0	33	12	0	45	125
% App. Total	71.4	0	28.6	0	21	0	0	0	0	O	15.3	84.7	0	0	37	0	73.3	26.7	0	75	123
PHF	.536	.000	.375	.000	.583	.000	.000	.000	.000	.000	.563	.781	.000	.000	.738	.000	.750	.600	.000	.804	.744
Peak Hour An Peak Hour for	alysis F	rom 0	7:00 Al	M to 09:				.000	.000	.000	1.505	.701	.000	.000	.730	.000	.750	.000	.000	.004	.,,,,,
	08:00 AM					07:00 AM					08:00 AM	l				08:00 AM					
+0 mins.	3	0	0	0	3	0	0	0	0	0	4	10	0	0	14	0	6	2	0	8	
+15 mins.	1	0	0	0	1	0	0	0	0	0	1	14	0	0	15	0	9	5	0	14	
+30 mins.	4	0	4	0	8	0	0	0	0	0	0	10	0	0	10	0	7	3	0	10	
+45 mins.	7	0	2	0	9	0	0	0	0	0	4	16	0	0	20	0	11	2	0	13	
Total Volume	15	0	<u>_</u>	0	21	0	0	0	0	0	9	50	0	0	59	0	33	12	0	45	
% App. Total	71.4	0	28.6	0	21	0	0	0	0	U	15.3	84.7	0	0	37	0	73.3	26.7	0	40	
PHF	.536	.000	.375	.000	.583	.000	.000	.000	.000	.000	.563	.781	.000	.000	.738	.000	.750	.600	.000	.804	
Peak Hour An								.000	.000		.303	.701	.000	.000	.730	.000	.730	.000	.000	.004	
Peak Hour for	,						01 1														
11:15 AM	3	0	0	0	3	0	0	0	0	0	3	6	0	0	9	0	12	4	0	16	28
11:30 AM	6	0	6	0	12	0	0	0	0	0	1	9	0	0	10	0	9	5	0	14	36
11:45 AM	4	0	3	0	7	0	0	0	0	0		15	0	0	16	0	6	8	0	14	37
12:00 PM	3	0	0	0		0	0	0	0		2	11	0	0		0		4	0	10	
		0	9	0	3 25					0	7	41	0	0	13	_	6			54	26
Total Volume	16	-	-	-	25	0	0	0	0	U					48	0	33	21	0	54	127
% App. Total PHF	<u>64</u> .667	.000	<u>36</u> .375	.000	.521	.000	.000	.000	.000	.000	.583	.683	.000	.000	.750	.000	.688	38.9 .656	.000	.844	.858
Peak Hour An Peak Hour for					45 PM -	Peak 1					11:15 AM					11:15 AM					
+0 mins.	6	0	6	0	12	0	0	0	0	0	3	6	0	0	9	0	12	4	0	16	
+15 mins.	4	0	3	0	7	0	0	0	0	0	1	9	0	0	10	0	9	5	0	14	
+30 mins.	3	0	Ō	Ō	3	0	0	0	Ō	0	1	15	0	0	16	0	6	8	Ō	14	
+45 mins.	3	0	1	0	4	0	0	0	0	0	2	11	0	0	13	0	6	4	0	10	
Total Volume	16	0	10	0	26	0	0	0	0	0	7	41	0	0	48	0	33	21	0	54	
% App. Total	61.5	0	38.5	Ō		Ō	Ō	0	Ō	_	14.6	85.4	0	0		0	61.1	38.9	Ō		
PHF	.667	.000	.417	.000	.542	.000	.000	.000	.000	.000	.583	.683	.000	.000	.750	.000	.688	.656	.000	.844	
Peak Hour An																					
Peak Hour for																					
02:15 PM	7	0	1	0	8	0	0	0	0	0	0	5	0	0	5	0	6	2	0	8	21
02:30 PM	2	0	1	0	3	Ö	0	0	0	0	2	7	0	0	9	0	7	7	0	14	26
02:45 PM	5	0	0	0	5	0	0	0	0	0	1 1	7	0	0	8	0	5	5	0	10	23
03:00 PM	3	0	3	0	6	0	0	0	0	0	1	6	0	0	7	0	10	7	0	17	30
Total Volume	17	0	5	0	22	0	0	0	0	0	4	25	0	0	29	0	28	21	0	49	100
% App. Total			22.7	Ö		0	0	0	0	O	13.8	86.2	0	0	۷,	0	57.1	42.9	0	17	100
PHF	.607	.000	.417	.000	.688		.000	.000	.000	.000			.000	.000	.806	.000	.700	.750	.000	.721	.833
Peak Hour An Peak Hour for	alysis F Each <i>E</i>	rom 0 Approa	2:00 Pl	M to 05:				.000	.000	.000	.300	.073	.000	.000	.000	.000	.700	.730	.000	./21	
	02:15 PM					02:00 PM					03:15 PN					02:15 PM					l
+0 mins.	7	0	1	0	8	0	0	0	0	0	1	5	0	0	6	0	6	2	0	8	l
+15 mins.	2	0	1	0	3	0	0	0	0	0	1	6	0	0	7	0	7	7	0	14	l
+30 mins.	5	0	0	0	5	0	0	0	0	0	1	8	0	0	9	0	5	5	0	10	l
+45 mins.	3	0	3	0	6	0	0	0	0	0	1	10	0	0	11	0	10	7	0	17	l
Total Volume	17	0	5	0	22	0	0	0	0	0	4	29	0	0	33	0	28	21	0	49	l
% App. Total	77.3	0	22.7	0		0	0	0	0		12.1	87.9	0	0		0	57.1	42.9	0		l
PHF	.607	.000	.417	.000	.688		.000	.000	.000	.000		.725	.000	.000	.750		.700	.750	.000	.721	l

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									Groui	os Printe		aye ırns	, INC		•						
			NB R					NB RA	AMPS			STA	TE RO					TE RO			
Start Time	Left		Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
*** BREAK ***																					
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
*** BREAK ***					·										·						
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
*** BREAK ***																					
02:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
03:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
*** BREAK ***	U	U	U	U	0	U	U	U	U	0		U	U	U	1	U	U	U	U	0	ı
03:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
*** BREAK ***																					
04:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	Ō	0	0	ō	1
*** BREAK ***																					
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
Grand Total	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	14
Apprch %	0	Ö	0	0		0	0	0	0	٦	100	0	0	Ö		0	0	0	0	١	
Total %	0	Ö	0	0	0	0	0	0	0	0	100	0	0	Ö	100	0	0	0	0	0	
					- 1					- 1										- 1	

		1-95	NB RA	AMPS			1-95	NB R	AMPS			STA	TE RO	AD 44			STA	TE RO	AD 44		1
			rthbo					uthbo					astbou					/estbo			
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Tota
Peak Hour An	alysis F	rom 0	7:00 Al	M to 09	9:45 AM	Peak 1	1 of 1														
Peak Hour for	Entire	Inters	ection	Begins	at 07:15	AM															
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	'
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(
MA 00:80	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
% App. Total	0	0	0	0		0	0	0	0		100	0	0	0		0	0	0	0		
PHF	000	000	000	000	000	000	000	000	000	000	500	000	000	000	500	000	000	000	000	.000	.500

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at: 07:15 AM 07:00 AM 07:00 AM 07:00 AM +0 mins. +15 mins. +30 mins. +45 mins. Total Volume % App. Total PHF .000 .000 .000 .000 .000 .500 .000 .000 .500 .000 .000

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	I-95 NB RAMPS					I-95 NB RAMPS					STA	TE RO	AD 44		STATE ROAD 44						
		No	orthbo	und			So	uthbo	und			Ε	astbou	ınd			W	estbou	und		
Start Time		Thru			App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Ar	nalysis F	rom 1	0:00 A	M to 01	:45 PM -	Peak 1	of 1														
Peak Hour for	Entire	Inters	ection I	Begins	at 10:00	MA															
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0_
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
Peak Hour Ar	,				:45 PM -	Peak 1	of 1														
Peak Hour for		• • • • • • • • • • • • • • • • • • • •	<u>ch Begi</u>	ins at:																	1
	10:00 AM					10:00 AN					10:00 AM					10:00 AM					
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
Peak Hour Ar	,						OT I														
Peak Hour for						1	0	0	0	0	۱ ۵	0	0	0	2	0	0	0	0	0	٠ .
04:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	<u>2</u> 7	0	0	0	0	0	7
Total Volume		0	0	0	U	0	0	0	0	Ü	7	0	0	0	/	0	0	0	0	Ü	/
% App. Total PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.875	.000	.000	.000	.875	.000	.000	.000	.000	.000	.875
PHF	000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.875	.000	.000	.000	.875	.000	.000	.000	.000	.000	.875
Peak Hour Ar	alveie F	rom 0	2.00 DN	VI to OE	·45 DM	Doak 1	of 1														
Peak Hour for					.45 FIVI -	reak	OI I														
reak Hour to	02:00 PM	трргоа	cribegi	nis at.		02:00 PM					04.15.014					00.00.014					1
+0 mins.	02:00 PM	0	0	0	0	02:00 PM	0	0	0	0	04:15 PM 2	0	0	0	2	02:00 PM O	0	0	0	0	
+0 mins. +15 mins.	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	
+30 mins.	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	
+30 mins. +45 mins.	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	
+45 111115.	0	0		0	0	0	0	0		0		0	0			0	0	0	0	0	

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Total Volume

% App. Total

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PHF .000

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.000

7 Day Continuous Volume Counts

State Road 44
from
Shoppes at Coronado (Williamson Blvd) to Colony Park Lane
Volusia County

Prepared for:

TSM&O Continuing Services

Florida Department of Transportation – District Five 719 S. Woodland Boulevard DeLand, Florida 32720

Prime Consultant:

HDR Engineering Inc.

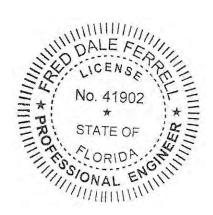
Financial Project ID: 440412-1-32-02 FDOT Contract No: C-9V31 TEDS Contract No.: 11009 Work Order: 1

Prepared by: Halley Ferrell

Traffic Engineering Data Solutions, Inc.

Certificate of Authorization License Number: 27392 80 Spring Vista Drive DeBary, Florida 32713

October 2017

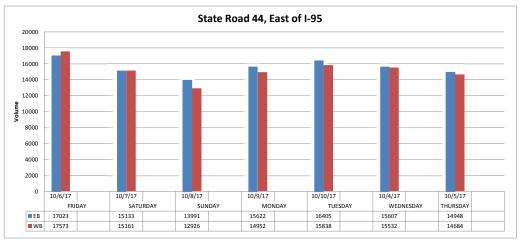


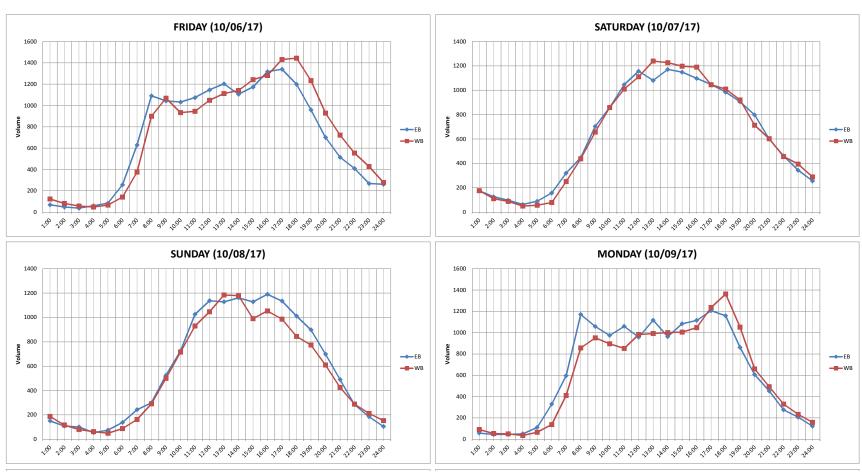


Traffic Engineering Data Solutions Inc.

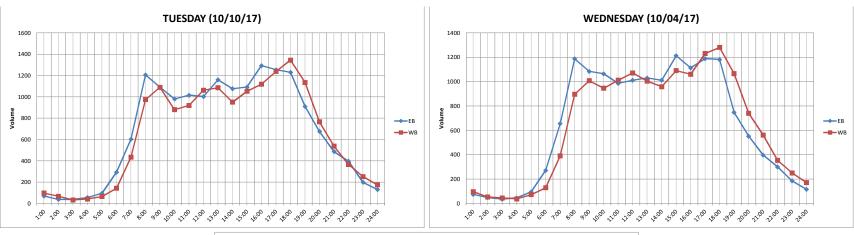
								State Roa	ad 44, Ea	st of I-95								
	FRIDAY		SATURDAY		SUN	DAY	MON	IDAY	TUES	SDAY	WEDNI	ESDAY	THUR	SDAY	-	otal	D-II A-	
Time	10/6/2	2017	10/7/2	2017	10/8/	2017	10/9/	2017	10/10	/2017	10/4/	2017	10/5/	2017	10	otai	Daily A	verage
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
1:00	69	123	174	175	151	187	58	91	70	98	75	97	69	106	666	877	95	125
2:00	47	80	126	110	109	117	45	54	38	67	49	53	48	64	462	545	66	78
3:00	37	56	97	88	100	80	46	51	37	33	35	45	37	56	389	409	56	58
4:00	60	47	62	50	54	63	50	35	56	42	46	38	59	50	387	325	55	46
5:00	84	65	89	56	74	49	111	66	96	65	96	73	111	72	661	446	94	64
6:00	256	141	157	78	137	88	330	138	294	143	272	129	274	120	1720	837	246	120
7:00	630	375	320	250	242	163	596	410	604	435	656	391	552	365	3600	2389	514	341
8:00	1091	898	446	437	299	291	1171	857	1207	975	1188	896	1141	856	6543	5210	935	744
9:00	1043	1069	704	658	525	500	1058	951	1091	1090	1085	1008	1028	908	6534	6184	933	883
10:00	1033	933	859	859	726	715	973	895	981	880	1065	946	942	875	6579	6103	940	872
11:00	1075	945	1047	1009	1025	929	1060	852	1016	920	986	1012	987	866	7196	6533	1028	933
12:00	1147	1049	1157	1111	1137	1047	957	983	1003	1063	1012	1072	949	886	7362	7211	1052	1030
13:00	1204	1112	1080	1240	1128	1184	1117	992	1161	1086	1031	1005	1079	1003	7800	7622	1114	1089
14:00	1106	1141	1171	1227	1161	1179	962	1001	1077	951	1012	959	988	981	7477	7439	1068	1063
15:00	1174	1242	1149	1197	1128	990	1084	1005	1093	1053	1213	1091	1071	985	7912	7563	1130	1080
16:00	1317	1281	1098	1189	1190	1053	1115	1047	1294	1120	1114	1061	1156	986	8284	7737	1183	1105
17:00	1340	1431	1048	1045	1134	986	1206	1236	1255	1239	1189	1231	1091	1181	8263	8349	1180	1193
18:00	1199	1443	985	1009	1011	844	1158	1362	1231	1345	1182	1281	1066	1238	7832	8522	1119	1217
19:00	959	1234	906	920	898	773	861	1052	911	1136	748	1066	720	1009	6003	7190	858	1027
20:00	700	928	798	713	698	609	606	660	676	766	553	740	527	725	4558	5141	651	734
21:00	515	722	600	603	490	425	453	494	487	538	398	562	418	545	3361	3889	480	556
22:00	409	553	461	455	284	289	275	329	397	366	300	354	319	376	2445	2722	349	389
23:00	268	428	344	394	185	212	207	233	199	252	186	251	205	263	1594	2033	228	290
24:00	260	277	255	288	105	153	123	158	131	175	116	171	111	168	1101	1390	157	199
Daily Total	17023	17573	15133	15161	13991	12926	15622	14952	16405	15838	15607	15532	14948	14684				

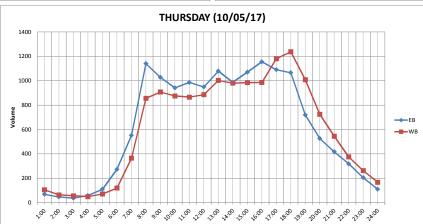
Traffic Engineering Data Solutions Inc.





Traffic Engineering Data Solutions Inc.





Signal Retiming Report

Volusia County

SR 44 from Shopping (Williamson Boulevard) to Live Oak Street

Contract No: C-9V31 Work Order 1 (Study 12) FM: 440412-1-32-02

Prepared for



District 5

Prepared by

HDR Engineering, Inc. Orlando, Florida

December 13, 2017

SUMMARY OF REVISIONS (REVISED 1/19/2018)

1. REVISED CYCLE LENGTH FOR PATTERN 4 ON TIME OF DAY PLAN

2. ADDED NOTE REGARDING PATTERN 4 AS AN EXISTING PLAN ON TIME OF DAY PLAN 3. REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS



Engineer of Record: Richard Atta-Armah

Time of Day Plan

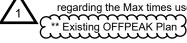
Designed By:	SMP
Date:	1/19/2018
Checked By:	RAA
Date:	1/19/2018

Section:						
Corridor:	SR 44					
From:	William Blvd					
To:	Live Oak St					

TIME OF DAY

Day	Plan	Tin	ne	Pattern	Cycle Length
	FREE	0:00	6:00	11	FREE
	AM	6:00	7:10	1	130
	AM School *	7:10	8:10	9	130
	AM	8:10	9:30	1	130
Monday Thru Friday	MD	9:30	11:00	2	140
Monday Thiu Friday	PM	11:00	14:25	3	160
	PM School *	14:25	15:15	10	160
	PM	15:15	18:30	3	160
	MD	18:30	19:30	2	140
	FREE	19:30	0:00	11	FREE
	FREE	0:00	7:30	11	FREE
	MD	7:30	9:30	2	120
Saturday	PM	9:30	17:00	3	130
	MD	17:00	19:00	2	120
	FREE	19:00	0:00	11	FREE
	FREE	0:00	7:30	11	FREE
Sunday	OFFPEAK **	7:30	9:30	4	£100 Z 1
Sunday	MD	9:30	19:00	2	120
	FREE	19:00	0:00	11	FREE

^{*} AM & PM School plans apply to the intersection of SR 44 & Mission Dr/Wallace Rd on Monday, Tuesday, Thursday, and Friday. On Wednesday, the PM School plan begins an hour earlier (13:25-14:15). The Wednesday plan has been programmed under Schedule 6. See the SR 44 & Mission Dr/Wallace Rd timing sheet for further information regarding the Max times used for each school plan period.



STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION - DISTRICT FIVE SR 44 - TSMO Signal Retiming

SR 44 - TSMO Signal Retimin Volusia County

Designed By:	F.W.
Date:	1/19/2018
Checked By:	R.A.A.
Date:	1/19/2018

	\				
Section	79070000	Mile Post	24.710	Node	1
5 (x x)	Controller	Econolite ASC/3-2100	System ID	79911
Maj. Street	SR 44	Orientation	E-W	SOP	7 Modified
Min. Street	Shopping (Williamson Blvd)	Orientation	N-S		

						Pedestr	ians						
	Movement ntroller Pha		1	2	3	4	5	6	7	8		Notes	
	Direction		EBL	WB			WBL	EB		SB			
Sp	eed Limit (r	nph)	55	55			55	55		30			
Vehic	Vehicle Traversed Width		135	105			63	116		117			
Ap	oproach Gra	ides	-0.5%	-0.5%			-0.5%	-0.5%		-0.8%			
Ped	d-X (curb to	curb)		76						106			
C	Crossing Tir	ne		22						31			
Ped-	-X (button to	curb)		9						9			
Ped-X	(button to f	ar curb)		85						115			
Crossii	ng Time (to	far curb)		25						33			
					Contr	oller Timin	gs (secon	ds)					
	Movement ntroller Pha		1	2	3	4	5	6	7	8		Notes	
	Direction		EBL	WB			WBL	EB		SB			
	Turn Type)	Prot.				Prot.						
	Min Green)	5	16			5	16		7			
	Ext		3.0	4.0			3.0	4.0		3.0			
Yello	w Change I	nterval	5.6	5.6			5.6	5.6		3.7			
Red	Clearance I	nterval	3.3	2.0			2.0	2.0		2.2			
	Max I		25	50			15	50		40			
	Max II		20	93			20	93		40			
	Walk			7						7			
Flas	shing Don't	Walk		22						31			
	Min Splits	1	14.0	37.0			13.0	24.0		44.0			
De	etector Men	nory	On	On			On	On		Off			
De	t. Cross Sw	itch.											
	Recall			Min				Min]		
	CNA										1		
Coord Phase				Yes				Yes					
	1		1		Coordi	nation Timi		nds)			Cycle	1	
Plan	Pattern	c-o-s		T	T	Sp	lits	T	Т	T	Length	Offset	
AM	1		19	67	-	-	22	64	-	44	130	119	

	Coordination Timings (seconds)													
Plan	Pattern	C-O-S		Splits										
AM	1		19	67	-	-	22	64	-	44	130	119		
MD	2		24	71	-	-	24	71	-	45	140	58		
PM	3		22	93	-	-	22	93	-	45	160	65		
OFFPEAK*	4		21	46	-	-	21	46	-	33	100	58		
PM170**	8		23	102	-	-	23	102	-	45	170	80		

1. Fixed force offs

Notes

2. Max II during coordination

- 3. Offset referenced to beginning of yellow for Phases 2 and 6 $\,$
- 4. SB pedestrian phase is currently turned off due to construction
- * Existing OFFPEAK Plan



1

REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS

Study No.12 - SR 44 - Timing Sheets

HDR Engineering Inc, Orlando DIX G

^{**} PM170 is backup plan for PM period

SR 44 - TSMO Signal Retiming Volusia County

Designed By:	F.W.
Date:	1/19/2018
Checked By:	R.A.A.
Date:	1/19/2018

	L				
Section	79070000	Mile Post	24.710	Node	1
15	(a a)	Controller	Econolite ASC/3-2100	System ID	79911
	SR 44	Orientation	E-W	SOP	7 Modified
Min. Street	Shopping (Williamson Blvd)	Orientation	N-S		

						Pedest	rians						
	Movement ntroller Phas		1	2	3	4	5	6	7	8		Notes	
	Direction		EBL	WB	SBL	NB	WBL	EB	NBL	SB			
Sp	eed Limit (n	nph)	55	55	30	25	55	55	25	30	1		
Vehic	le Traverse	d Width	135	112	126	163	137	122	146	150	1		
Ap	pproach Gra	des	-0.5%	-0.5%	-0.8%	0.0%	-0.5%	-0.5%	0.0%	-0.8%	1		
Ped	d-X (curb to	curb)		69		124		95		129			
(Crossing Tin	ne		20		36		28		37			
Ped-	-X (button to	curb)		9		9		10		10			
Ped-X	(button to f	ar curb)		78		133		105		139			
Crossii	ng Time (to	far curb)		23		38		30		40			
				Post	Construc	tion Contro	ller Timing	s (seconds	s)				
	Movement ntroller Phas		1	2	3	4	5	6	7	8		Notes	
	Direction		EBL	WB	SBL	NB	WBL	EB	NBL	SB			
	Turn Type		Prot.		Prot.		Prot.		Prot.		1		
	Min Green		5	16	7	7	5	16	5	7			
	Ext		3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0	1		
Yello	w Change II	nterval	5.6	5.6	3.7	3.7	5.6	5.6	3.4	3.7			
Red	Clearance Ir	nterval	3.3	2.0	3.0	4.0	3.3	2.0	3.6	4.0			
	Max I		25	50	36	32	15	50	10	32	1		
	Max II		20	93	20	12	20	93	12	40	1		
	Walk			7		7		7		7	1		
Flas	shing Don't	Walk		20		36		28		37			
	Min Splits		14.0	35.0	14.0	51.0	14.0	43.0	12.0	52.0			
De	etector Mem	ory	On	On	Off	Off	On	On	Off	Off			
De	t. Cross Sw	itch.											
	Recall			Min				Min					
	CNA												
	Coord Phas	e		Yes				Yes					
				Post (Construction	on Coordin	ation Timir	ngs (secon	de)				
Plan	Pattern	C-O-S		1 031 (50113114611		olits	193 (3000)	u0,		Cycle Length	Offset	
	1				1	1	1		1		Lengui		-

	Post Construction Coordination Tillings (seconds)												
Plan	Pattern	C-O-S		Splits								Offset	
АМ	1		19	49	18	44	22	46	18	44	130	119	
MD	2		24	53	18	45	24	53	18	45	140	58	
PM	3		22	69	18	51	22	69	18	51	160	65	
OFFPEAK*	4		21	43	18	18	21	43	18	18	100	58	
PM170**	8		23	78	18	51	23	78	18	51	170	80	

1. Fixed force offs

Notes

2. Max II during coordination

- 3. Offset referenced to beginning of yellow for Phases 2 and 6
- 4. These timings are to be implemented once Race Trac is built and intersection open.
- * Modified Existing OFFPEAK Plan for 8 phase operation

	All Patterns									
Ring-1	1	2	3	4						
Ring-2	5	6	7	8						

1

REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS

^{**} PM170 is backup plan for PM period

SR 44 - TSMO Signal Retim Volusia County

Designed By:	F.W.
Date:	1/19/2018
Checked By:	R.A.A.
Date:	1/19/2018

	1				
Section	79070000	Mile Post	25.208	Node	2
19)	Controller	Econolite ASC/3-2100	System ID	79911
Maj. Street	SR 44	Orientation	E-W	SOP	15
Min. Street	I-95NB Ramps	Orientation	N-S		

						Pedestri	ans						
	Movement ntroller Phas		1	2	3	4	5	6	7	8	1	Notes	
	Direction		EBL	WB		NB		EB					
Sp	eed Limit (n	nph)	55	55		35		55					
Vehic	le Traverse	d Width	81	74		93		124					
Ap	proach Gra	ides	-0.2%	-0.1%		-1.1%		-0.2%					
Ped	I-X (curb to	curb)											
C	Crossing Tin	ne											
Ped-	X (button to	curb)											
Ped-X	(button to f	ar curb)											
Crossir	ng Time (to	far curb)											
					Contro	ller Timing	s (seconds	s)					
	Movement ntroller Phas		1	2	3	4	5	6	7	8	1	Notes	
	Direction		EBL	WB		NB		EB					
	Turn Type	!	Prot./Perm.										
	Min Green)	8	16		6		16					
	Ext		4.0	4.0		4.0		4.0					
Yello	Yellow Change Interval		5.5	5.5		4.1		5.5					
Red (Clearance Ir	nterval	2.0	2.0		3.2		2.0					
	Max I			50		25		50					
	Max II			90		30		90					
	Walk												
Flas	shing Don't	Walk											
	Min Splits		16.0	24.0		14.0		24.0					
De	etector Mem	nory		On		Off		On					
De	t. Cross Sw	itch.											
	Recall			Min				Min					
	CNA												
	Coord Phas	se		Yes				Yes					
								-		-			
					Coordina	ation Timir	ngs (secon	ds)					
Plan	Pattern	C-O-S		Splits							Cycle Length	Offset	
AM	1		20	75	-	35	-	95	-	-	130	113	
MD	2		21	75	-	44	-	96	-	-	140	109	
PM	3		20	96	-	44	-	116	-	-	160	114	
OFFPEAK*	4		20	52	-	28	-	72	-	-	100	88	
PM170**	8		21	102	-	47	-	123	-	-	170	160	

Notes

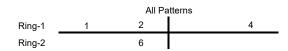
1. Floating force offs

2. Max II during coordination

3. Offset reference to beginning of yellow for Phases 2 and 6 $\,$

* Existing OFFPEAK Plan

** PM170 is backup plan for PM period





REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION - DISTRICT FIVE

SR 44 - TSMO Signal Retiming Volusia County

Designed By:	F.W.
Date:	1/19/2018
Checked By:	R.A.A.
Date:	1/19/2018

	2				
Section	79070000	Mile Post	25.624	Node	3
1 5	la a <i>1</i>	Controller	Econolite ASC/3-2100	System ID	79911
Maj. Street	SR 44	Orientation	E-W	SOP	12
Min. Street	Sugar Mill Dr	Orientation	N-S		

						Pedestri	ans						
	Movement ntroller Pha		1	2	3	4	5	6	7	8	N	lotes	
	Direction		EBL	WB				EB		SB			
Sp	eed Limit (r	nph)	55	55				55		45			
Vehic	le Traverse	d Width	116	120				93		90			
Ap	proach Gra	ides	-0.5%	-0.2%				-0.5%		-0.2%			
Ped	I-X (curb to	curb)											
C	Crossing Tir	ne											
Ped-	X (button to	curb)											
Ped-X	(button to f	ar curb)											
Crossii	ng Time (to	far curb)											
					Contro	ller Timing	s (seconds	5)					
	Movement ntroller Pha		1	2	3	4	5	6	7	8	N	lotes	
	Direction		EBL	WB				EB		SB			
	Turn Type	,	Prot./Perm.										
	Min Green	1	6	16				16		6			
	Ext		3.0	4.0				4.0		4.0			
Yello	w Change I	nterval	5.6	5.6				5.6		4.8			
Red	Clearance li	nterval	2.8	2.0				2.0		2.0			
	Max I		20	50				50		30			
	Max II		20	110				136		20			
	Walk												
Flas	shing Don't	Walk											
	Min Splits	1	15.0	24.0				24.0		13.0			
De	etector Men	nory	Off	On				On		Off			
De	t. Cross Sw	itch.											
	Recall			Min				Min					
	CNA												
	Coord Phas	se		Yes				Yes					
					Coordina	ation Timir	ıgs (secon	ds)					
Plan	Pattern	C-O-S		Splits							Cycle Length	Offset	
АМ	1		23	81	-	=	-	104	-	26	130	58	
MD	2		23	92	-	-	-	115	-	25	140	116	
PM	3		26	110	-	-	-	136	-	24	160	110	
OFFPEAK*	4		21	57	-	-	-	78	-	22	100	46	
PM170**	8		27	119	-	-	-	146	-	24	170	168	

Notes

1. Fixed force offs

2. Max II during coordination

3. Offset referenced to beginning of yellow for Phases 2 and 6 $\,$

* Existing OFFPEAK Plan

** PM170 is backup plan for PM period

		All Pa	atterns	
Ring-1	1	2		
Ring-2		6		8



REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION - DISTRICT FIVE

SR 44 - TSMO Signal Retiming Volusia County

Designed By:	F.W.
Date:	1/19/2018
Checked By:	R.A.A.
Date:	1/19/2018

	7				
Section	79070000	Mile Post	26.185	Node	4
0.9.2	la a <i>1</i>	Controller	Econolite ASC/3-2100	System ID	79911
Maj. Street	SR 44	Orientation	E-W	SOP	7
Min. Street	Glencoe Rd	Orientation	N-S		

						Pedestri	ians						
	Movement ntroller Pha		1	2	3	4	5	6	7	8	N	lotes	
	Direction		WBL	EB		SB	EBL	WB		NB			
Sp	eed Limit (r	nph)	55	55		30	55	55		35			
Vehic	le Traverse	d Width	98	85		138	100	90		142			
Αŗ	pproach Gra	ides	0.7%	-1.4%		-0.3%	-1.4%	0.7%		-0.9%			
Ped	d-X (curb to	curb)											
(Crossing Ti	me											
Ped-	-X (button to	curb)											
Ped-X	(button to t	ar curb)									1		
Crossi	ng Time (to	far curb)									1		
			<u>'</u>		Contro	ller Timing	gs (seconds	5)					
(Co	Movement ntroller Pha		1	2	3	4	5	6	7	8	ı	lotes	
	Direction		WBL	EB		SB	EBL	WB		NB			
	Turn Type)	Prot./Perm.				Prot./Perm.						
	Min Greer	1	7	16		7	7	16		7	1		
	Ext		3.0	4.0		3.0	3.0	4.0		3.0			
Yello	w Change I	nterval	5.5	5.7		4.1	5.7	5.7		4.1	1		
Red	Clearance I	nterval	2.3	2.3		2.6	2.3	2.3		2.6	1		
	Max I		20	50		25	20	50		25	1		
	Max II		20	110		23	20	110		23	1		
	Walk										1		
Fla	shing Don't	Walk											
	Min Splits	1	15.0	24.0		14.0	15.0	24.0		14.0			
D	etector Men	nory	Off	On		Off	Off	On		Off			
De	et. Cross Sw	itch.											
	Recall												
	CNA												
	Coord Phas	se		Yes				Yes			1		
			ı		1	1	1		ı	ı	1		
					Coordina	ation Timi	ngs (second	ds)					
Plan	Pattern	C-O-S					plits				Cycle Length	Offset	
АМ	1		21	79	-	30	21	79	-	30	130	49	
MD	2		22	88	-	30	22	88	-	30	140	97	
PM	3		20	110	-	30	20	110	-	30	160	113	
OFFPEAK*	4		20	55	-	25	20	55	-	25	100	42	

Notes			Patterns	1, 3, & 4	
1. Fixed force offs	Ring-1	1	2		4
2. Max II during coordination	Ring-2	5	6		8
3. Offset referenced to beginning of yellow for Phases 2 and 6				-	
4. Min recall Φ5 on Patterns 2 & 8	Patterns 2 & 8				
* Existing OFFPEAK Plan	Ring-1	1	2		4
** PM170 is backup plan for PM period	Ring-2	6	5		8

112



PM170**

REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION - DISTRICT FIVE

SR 44 - TSMO Signal Retiming Volusia County

Designed By:	F.W.
Date:	1/19/2018
Checked By:	R.A.A.
Date:	1/19/2018

	2				
Section	79070000	Mile Post	26.536	Node	5
9 (la a)	Controller	Econolite ASC/3-2100	System ID	79911
Maj. Street	SR 44	Orientation	E-W	SOP	7
Min. Street	Colony Park Rd/Home Depot	Orientation	N-S		

						Pedestri	ans						
	Movement ntroller Pha		1	2	3	4	5	6	7	8	,	Notes	
	Direction		WBL	EB		SB	EBL	WB		NB			
Sp	eed Limit (r	nph)	45	45		35	45	45		25			
Vehic	le Traverse	d Width	133	141		155	124	129		144			
Αţ	pproach Gra	ides	0.7%	-1.1%		-2.4%	-1.1%	0.7%		-5.2%			
Ped	d-X (curb to	curb)		67		132		87		136			
(Crossing Ti	me		20		38		25		39			
Ped-	-X (button to	curb)		23		15		15		15			
Ped-X	(button to f	far curb)		90		147		102		151			
Crossi	ng Time (to	far curb)		26		42		30		44			
					Contro	ller Timing	s (seconds	s)					
(Co	Movement ntroller Pha		1	2	3	4	5	6	7	8	ı	Notes	
	Direction		WBL	EB		SB	EBL	WB		NB			
	Turn Type)	Prot.				Prot.						
	Min Green	1	7	16		7	7	16		7			
	Ext		3.0	4.0		3.0	3.0	4.0		3.0			
Yello	ow Change I	nterval	4.9	4.9		4.2	4.9	4.9		4.2			
Red	Clearance I	nterval	3.2	3.2		3.5	3.0	3.2		3.5			
	Max I		25	50		25	25	50		25			
	Max II		25	100		28	30	100		28			
	Walk			7		7		7		7			
Fla	shing Don't	Walk		20		38		25		39			
	Min Splits	3	16.0	36.0		53.0	15.0	41.0		54.0			
D	etector Men	nory	On	On		Off	On	On		Off			
De	et. Cross Sw	ritch.											
	Recall												
	CNA												
	Coord Phas	se		Yes				Yes					
					Coordina	ation Timir	ngs (secon	ds)					
Plan	Pattern	C-O-S				Sp	olits				Cycle Length	Offset	
AM	1		18	58	-	54	22	54	-	54	130	107	
MD	2		18	68	-	54	23	63	-	54	140	34	
PM	3		18	88	-	54	24	82	-	54	160	22	
	1	1	1	1		1	1	1	1				

24

54

19

25

57

91

OFFPEAK'

PM170**

1. Fixed force offs

2. Max II during coordination

3. Offset reference to beginning of yellow for Phases 2 and 6 $\,$

19

18

57

98

4. Min recall Φ1 on Patterns 1, 3, & 8

* Existing OFFPEAK Plan

** PM170 is backup plan for PM period

		Fallen	15 2 0 4
Ring-1	1	2	4
Ring-2	5	6	8

24

100

170

87

	Patterns 1, 3, & 8					
Ring-1	2	1	4			
Ring-2	5	6	8			



REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS

HDR Engineering Inc, Ollando

SR 44 - TSMO Signal Retin Volusia County

Designed By:	F.W.
Date:	1/19/2018
Checked By:	R.A.A.
Date:	1/19/2018

	1				
Section	79070000	Mile Post	27.589	Node	6
19	(i)	Controller	Econolite ASC/3-2100	System ID	79911
Maj. Street	SR 44	Orientation	E-W	SOP	11
Min. Street	Eddie Rd/Publix Ent	Orientation	N-S		

						Pedestri	ans					
	Movement		1	2	3	4	5	6	7	8	N	lotes
	Direction			WB		NB	WBL	EB		SB		
Sp	eed Limit (r	nph)		45		30	45	45		30		
Vehic	le Traverse	d Width		109		127	109	108		125		
Ap	proach Gra	ides		-0.6%		-0.1%	-0.6%	0.6%		-0.5%		
Ped	I-X (curb to	curb)		62		87		78		105		
C	Crossing Tir	ne		18		25		23		30		
Ped-	X (button to	curb)		13		13		10		7		
Ped-X	(button to f	ar curb)		75		100		88		112		
Crossir	ng Time (to	far curb)		22		29		26		32		
					Contro	ller Timing	s (seconds	s)				
	Movement ntroller Pha		1	2	3	4	5	6	7	8	N	lotes
	Direction			WB		NB	WBL	EB		SB		
	Turn Type	•					Prot./Perm.					
	Min Green	1		17		7	6	17		7		
	Ext			4.0		3.0	4.0	4.0		3.0		
Yello	w Change I	nterval		4.8		3.7	4.8	4.8		3.7		
Red (Clearance li	nterval		2.0		2.4	2.6	2.0		2.4		
	Max I			40		30	20	40		30		
	Max II			120		20	20	120		20		
	Walk			7		7		7		7		
Flas	shing Don't	Walk		18		25		23		30		
	Min Splits	į		32.0		39.0	14.0	37.0		44.0		
De	etector Men	nory		On		Off		On		Off		
De	t. Cross Sw	ritch.										
	Recall											
	CNA											
	Coord Phas	se		Yes				Yes				
			1		1				1			
					Coordina	ation Timir	ngs (secon	ds)				
Plan	Pattern	C-O-S					olits	/			Cycle Length	Offset
АМ	1		-	86	-	44	20	66	-	44	130	56
MD	2		-	96	-	44	23	73	-	44	140	119
РМ	3		-	116	-	44	23	93	-	44	160	122
OFFPEAK*	4		-	74	-	26	22	52	-	26	100	55
PM170**	8		-	126	-	44	24	102	-	44	170	161

Notes

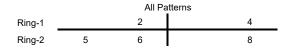
1. Fixed force offs

2. Max II during coordination

3. Offset reference to beginning of yellow for Phases 2 and 6 $\,$

* Existing OFFPEAK Plan

** PM170 is backup plan for PM period



1

REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS

Volusia County

Designed By:	F.W.
Date:	1/19/2018
Checked By:	R.A.A.
Date:	1/19/2018

	1				
Section	79070000	Mile Post	27.936	Node	7
19	()	Controller	Econolite ASC/3-2100	System ID	79911
Maj. Street	SR 44	Orientation	E-W	SOP	10
Min. Street	Wallace Rd/Mission Dr	Orientation	N-S		

Pedestrians													
	Movement ntroller Pha		1	2	3	4	5	6	7	8	N	lotes	
	Direction		EBL	WB	SBL	NB	WBL	EB	NBL	SB			
Sp	eed Limit (r	nph)	45	45	35	40	45	45	40	35			
Vehic	le Traverse	d Width	128	125	118	130	119	138	120	133			
Ap	pproach Gra	ides	0.0%	-0.1%	0.5%	-0.7%	-0.1%	0.0%	-0.7%	0.5%			
Ped	d-X (curb to	curb)		69		88		90		97			
C	Crossing Ti	ne		20		26		26		28			
Ped-	-X (button to	curb)		18		21		12		13			
Ped-X	(button to f	ar curb)		87		109		102		110			
Crossii	ng Time (to	far curb)		25		32		30		32			
Controller Timings (seconds)													
	Movement ntroller Pha		1	2	3	4	5	6	7	8	•	lotes	
	Direction		EBL	WB	SBL	NB	WBL	EB	NBL	SB			
	Turn Type)	Prot.		Prot.		Prot.		Prot.				
	Min Greer	1	7	17	7	7	7	17	7	7			
	Ext		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
Yello	Yellow Change Interval		4.8	4.8	4.0	4.5	4.8	4.8	4.5	4.5			
Red	Clearance I	nterval	3.1	3.1	2.8	2.0	2.8	3.1	2.9	2.0			
	Max I		20	50	20	25	20	50	20	25			
	Max II		13	90	12	23	13	90	19	24			
	Walk			7		7		7		7			
Flas	shing Don't	Walk		20		26		26		28			
	Min Splits	1	15.0	35.0	14.0	40.0	15.0	41.0	15.0	42.0			
De	etector Men	nory	On	On	Off	Off	On	On	Off	Off			
De	et. Cross Sw	itch.											
	Recall												
	CNA												
	Coord Phas	se		Yes				Yes					
		ı	1		Coordin	ation Timir	ngs (secon	ds)				1	
Plan	Pattern	c-o-s			1	Sp	olits		T	1	Cycle Length	Offset	
AM	1		19	42	27	42	19	42	27	42	130	26	
MD	2		23	47	28	42	23	47	28	42	140	86	
PM	3		24	62	32	42	24	62	32	42	160	97	
OFFPEAK*	4		18	43	19	20	18	43	22	17	100	96	

Notes

PM170**

25

REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS

32

45

68

Patterns 3, 4, & 8

32

68

1. Fixed force offs

Ring-1 Ring-2

25

- 3. Offset referenced to beginning of yellow for Phases 2 and 6
- 4. Min recall Φ1 on Patterns 1 & 2

2. Max II during coordination

5. See table below for School Plan details and Max II/Max III assignment

Patterns 1 & 2 Ring-1 Ring-2 5

* Existing OFFPEAK Plan

,	** PM170	is bac	kup plar	n for PN	1 period

						Timing									
Day of Week	Plan	Time	Schedule	Action	Pattern	Plan	Max #	Ф1	Ф2	Ф3	Ф4	Ф5	Ф6	Ф7	Ф8
M-F	AM School	7:10-8:10am	1	9	9	2	Max II	13	90	15	26	13	90	28	26
M, Tu, Th, F	PM School	2:25-3:15pm	1	10	10	1	Max III	26	90	23	36	26	90	28	31
W	PM School	1:25-2:15pm	6	10	10	1	Max III	26	90	23	36	26	90	28	31

136

170

SR 44 - TSMO Signal Retim Volusia County

Designed By:	F.W.
Date:	1/19/2018
Checked By:	R.A.A.
Date:	1/19/2018

	1				
Section	79070000	Mile Post	28.777	Node	8
Sig ID	224	Controller	Econolite ASC/3-2100	System ID	79911
Maj. Street	SR 44	Orientation	E-W	SOP	1
Min. Street	Myrtle Ave	Orientation	N-S		

						Pedestri	ans						
	Movement ntroller Pha		1	2	3	4	5	6	7	8	1	Notes	
	Direction			WB		NB		EB		SB			
Sp	eed Limit (r	nph)		40		30		45		30			
Vehic	le Traverse	d Width		89		135		87		138			
Ap	oproach Gra	ides		-3.6%		0.9%		1.5%		0.6%			
Ped	d-X (curb to	curb)		41		90		38		85			
(Crossing Ti	me		12		26		11		25			
Ped-	X (button to	curb)		17		13		18		8			
Ped-X	(button to f	ar curb)		58		103		56		93			
Crossii	ng Time (to	far curb)		17		30		16		27			
Controller Timings (seconds)													
	Movement ntroller Pha		1	2	3	4	5	6	7	8	1	Notes	
	Direction			WB		NB		EB		SB			
	Turn Type	•											
	Min Green	1		17		6		17		6			
	Ext			3.0		4.0		3.0		4.0			
Yello	w Change I	nterval		4.8		3.7		4.8		3.7			
Red	Clearance I	nterval		2.0		2.6		2.0		2.6			
	Max I			35		20		35		20			
	Max II			120		22		120		22			
	Walk			7		7		7		7			
Flas	shing Don't	Walk		12		26		11		25			
	Min Splits	i		26.0		40.0		25.0		39.0			
De	etector Men	nory		On		Off		On		On			
De	t. Cross Sw	itch.											
	Recall												
	CNA												
	Coord Phas	se		YES				YES					
					Coordina	ation Timir	ngs (secon	ds)					
Plan	Pattern	C-O-S				Sp	lits				Cycle Length	Offset	
AM	1		-	90	-	40	-	90	-	40	130	113	
MD	2		-	100	-	40	-	100	-	40	140	32	
PM	3		-	108	-	52	-	108	-	52	160	61	
OFFPEAK*	4		-	80	-	20	-	80	-	20	100	73	
PM170**	8		-	118	-	52	-	118	-	52	170	92	

Notes

1. Floating force offs

2. Max II during coordination

3. Offset reference to beginning of yellow for Phases 2 and 6 $\,$

* Existing OFFPEAK Plan

** PM170 is backup plan for PM period

	All Pa	tterns
Ring-1	2	4
Ring-2	6	8



REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS

SR 44 - TSMO Signal Retimi Volusia County

Designed By:	F.W.
Date:	1/19/2018
Checked By:	R.A.A.
Date:	1/19/2018

	7				
Section	79070000	Mile Post	29.159	Node	9
(la a)	Controller	Econolite ASC/3-2100	System ID	79911
Maj. Street	SR 44	Orientation	E-W	SOP	7 Special
Min. Street	Palmetto St	Orientation	N-S		

						Pedestri	ians						
	Movement ntroller Pha		1	2	3	4	5	6	7	8	ı	Notes	
	Direction		EBL	WB	EB RAMP	NB	WBL	EB		SB			
Sp	eed Limit (r	nph)	40	40	25	30	40	40		25			
Vehic	le Traverse	d Width	84	84	84	126	82	84		119			
Αp	oproach Gra	ides	-4.8%	-1.1%	-2.4%	-0.7%	-1.1%	-4.8%		0.0%			
Ped	d-X (curb to	curb)		45		92		43					
(Crossing Tir	me		13		27		13					
Ped-	-X (button to	curb)		11		11		12					
Ped-X	(button to f	ar curb)		56		103		55					
Crossii	ng Time (to	far curb)		16		30		16					
Controller Timings (seconds)													
	Movement ntroller Pha		1	2	3	4	5	6	7	8	ı	Notes	
	Direction		EBL	WB	EB RAMP	NB	WBL	EB		SB			
	Turn Type	•	Prot./Perm.		Prot		Prot./Perm.				1		
	Min Green	1	7	17	8	6	7	17		6	1		
	Ext		3.0	4.0	4.0	4.0	3.0	4.0		4.0	1		
Yello	w Change I	nterval	4.9	4.9	3.4	3.7	4.5	4.9		3.7			
Red	Clearance I	nterval	2.0	2.0	2.0	2.8	2.0	2.0		2.8			
	Max I		20	45	35	30	20	45		30			
	Max II		20	100	45	22	20	100		22			
	Walk			7		7		7					
Flas	shing Don't	Walk		15		27		15			1		
	Min Splits	i	14.0	29.0	14.0	41.0	14.0	29.0		13.0	1		
De	etector Men	nory	On	On	Off	Off	Off	On		Off	1		
De	t. Cross Sw	itch.											
	Recall			Min				Min			1		
	CNA										1		
	Coord Phas	se		YES				YES			1		
					•		•				•		
					Coordina	ation Timi	ngs (secon	ds)					
Plan	Pattern	c-o-s			·		plits	,			Cycle Length	Offset	
AM	1		20	41	28	41	20	41	-	41	130	41	
MD	2		20	48	31	41	20	48	-	41	140	107	
РМ	3		21	65	33	41	21	65	-	41	160	26	
OFFPEAK*	4		20	43	18	19	20	43	-	19	100	2	

Notes

PM170**

1. Fixed force offs

2. Max II during coordination

3. Offset referenced to beginning of yellow for Phases 2 and 6 $\,$

21

36

* Existing OFFPEAK Plan

** PM170 is backup plan for PM period

		All Pa	tterns	_	
Ring-1	1	2	3	4	
Ring-2	5	6		8	

170



REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS

Volusia County

Designed By:	F.W.
Date:	1/19/2018
Checked By:	R.A.A.
Date:	1/19/2018

	^				
Section	79070000	Mile Post	29.230	Node	10
1 - 0	(i)	Controller	Econolite ASC/3-2100	System ID	79911
Maj. Street	SR 44(A1A)	Orientation	E-W	SOP	10
Min. Street	Live Oak St	Orientation	N-S		

	Pedestrians												
	Movement # (Controller Phase Ø) Direction		1	2	3	4	5	6	7	8	N	Notes	
	Direction		EBL	WB	SBL	NB	WBL	EB	NBL	SB			
Spe	eed Limit (n	nph)	40	40	25	30	40	40	30	25			
Vehicl	le Traverse	d Width	112	107	116	151	104	111	102	145			
Ap	proach Gra	des	-1.4%	-5.8%	0.3%	-0.3%	-5.8%	-1.4%	-0.3%	0.3%			
Ped-	-X (curb to	curb)		52		129		60		74			
С	rossing Tir	ne		15		37		18		22			
Ped->	X (button to	curb)		10		13		13		14			
Ped-X	(button to f	ar curb)		62		142		73		88			
Crossin	Crossing Time (to far curb)			18		41		21		26			
					Contro	ller Timing	s (seconds	s)					
	Movement troller Pha		1	2	3	4	5	6	7	8	N	Notes	
	Direction		EBL	WB	SBL	NB	WBL	EB	NBL	SB			
	Turn Type		Prot./Perm.		Prot.		Prot./Perm.		Prot.				
	Min Green		7	17	7	6	7	17	7	6			
	Ext		3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0			
Yellov	w Change I	nterval	4.5	5.1	3.4	3.7	5.1	5.1	3.7	3.7			
Red C	Clearance li	nterval	2.6	2.0	2.8	3.5	2.4	2.0	2.4	3.5			
	Max I		20	45	20	30	20	45	20	30			
	Max II		15	100	17	20	15	100	15	20			
	Walk			7		7		7		7			
Flas	shing Don't	Walk		15		37		18		22			
	Min Splits		15.0	30.0	14.0	52.0	15.0	33.0	14.0	37.0			
De	tector Mem	ory	Off	On	Off	On	Off	On	Off	On			
Det	t. Cross Sw	itch.	ON				ON						
	Recall			Min				Min					
	CNA												
(Coord Phas	ie .		YES				YES					
					Coordin	otion Timir	ngs (second	40)					
Plan	Pattern	C-O-S			Coordina		lits (second	uəj			Cycle Length	Offset	
AM	1		20	42	19	49	20	42	19	49	130	51	
MD	2		20	51	21	48	20	51	21	48	140	112	
			1			50	20	66	24	50	160	33	

Notes

OFFPEAK*

PM170**

1. Fi

2. M

20

21

43

72

* Existing OFFPEAK Plan

** PM170 is backup plan for PM period

otes			All Pa	tterns	
Fixed force offs	Ring-1	1	2	3	4
Max II during coordination	Ring-2	5	6	7	8
Offset referenced to beginning of yellow for Phases 2 and 6					

19

52

20

21

43

72

18

25

19

100

170

75

18

25



REVISED SIGNAL ID #'s FOR ALL INTERSECTIONS

HDR Engineering Inc, Ollando

Appendix H

Signal Timing Analysis

	۶	→	•	•	←	•	•	†	/	/	+	✓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	^			^	1		4	7			
Traffic Volume (vph)	61	1147	0	0	819	377	238	1	109	0	0	0
Future Volume (vph)	61	1147	0	0	819	377	238	1	109	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525	.,,,,	0	0	.,,,,	175	0	.,,,,	200	0	1,00	0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25		•	25		•	25		· ·
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.70	1.00	1.00	0.70	0.850	1.00	1.00	0.850	1.00	1100	1.00
Flt Protected	0.950					0.000		0.953	0.000			
Satd. Flow (prot)	1770	3539	0	0	3539	1583	0	1775	1583	0	0	0
Flt Permitted	0.256	0007	Ü		0007	1000		0.953	1000	<u> </u>		
Satd. Flow (perm)	477	3539	0	0	3539	1583	0	1775	1583	0	0	0
Right Turn on Red	177	0007	Yes		0007	Yes		1770	Yes	<u> </u>		Yes
Satd. Flow (RTOR)			103			353			95			103
Link Speed (mph)		55			55	333		35	/3		30	
Link Distance (ft)		1281			1727			730			350	
Travel Time (s)		15.9			21.4			14.2			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	1247	0.72	0.72	890	410	259	1	118	0.72	0.72	0.72
Shared Lane Traffic (%)	00	1277	U	U	070	710	207		110	U	U	U
Lane Group Flow (vph)	66	1247	0	0	890	410	0	260	118	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	LOIT	12	rtigrit	LOIT	12	rtigitt	LOIL	0	rtigitt	Lon	0	rtigitt
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		10			10			10			10	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	1.00	9	15	1.00	9	15	1.00	9	15	1.00	9
Number of Detectors	13	2	,	10	2	1	1	2	1	10		,
Detector Template	Left	Thru			Thru	Right	Left	Thru	Right			
Leading Detector (ft)	20	100			100	20	20	100	20			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	6			6	20	20	6	20			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel	OLLEX	OTTEX			OITEX	OTTEX	OITEX	OTTEX	OFFER			
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	0.0	94			94	0.0	0.0	94	0.0			
Detector 2 Fosition(it) Detector 2 Size(ft)		6			6			6				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				
Detector 2 Type Detector 2 Channel		OITEX			OITEX			OITEX				
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	piii+pt 1	6			2	i Cilli	i Cilli	4	i Cilli			
Permitted Phases	6	0				2	4	4	4			
i emiliteu rhases	U					Z	4		4			

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	8.0	16.0			16.0	16.0	6.0	6.0	6.0			
Minimum Split (s)	15.5	23.5			23.5	23.5	13.3	13.3	13.3			
Total Split (s)	20.0	116.0			96.0	96.0	44.0	44.0	44.0			
Total Split (%)	12.5%	72.5%			60.0%	60.0%	27.5%	27.5%	27.5%			
Maximum Green (s)	12.5	108.5			88.5	88.5	36.7	36.7	36.7			
Yellow Time (s)	5.5	5.5			5.5	5.5	4.1	4.1	4.1			
All-Red Time (s)	2.0	2.0			2.0	2.0	3.2	3.2	3.2			
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Total Lost Time (s)	7.5	7.5			7.5	7.5		7.3	7.3			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Recall Mode	None	C-Max			C-Max	C-Max	None	None	None			
Act Effet Green (s)	115.8	115.8			99.7	99.7		29.4	29.4			
Actuated g/C Ratio	0.72	0.72			0.62	0.62		0.18	0.18			
v/c Ratio	0.16	0.49			0.40	0.37		0.80	0.32			
Control Delay	8.1	10.8			16.6	3.6		80.1	16.4			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay LOS	8.1	10.8 B			16.6 B	3.0 A		80.1 F	16.4 B			
Approach Delay	А	10.6			12.5	A		60.2	D			
Approach LOS		10.0 B			12.3 B			00.2 E				
90th %ile Green (s)	10.0	108.5			91.0	91.0	36.7	36.7	36.7			
90th %ile Term Code	Gap	Coord			Coord	Coord	Max	Max	Max			
70th %ile Green (s)	8.9	111.4			95.0	95.0	33.8	33.8	33.8			
70th %ile Term Code	Gap	Coord			Coord	Coord	Gap	Gap	Gap			
50th %ile Green (s)	8.2	115.7			100.0	100.0	29.5	29.5	29.5			
50th %ile Term Code	Gap	Coord			Coord	Coord	Gap	Gap	Gap			
30th %ile Green (s)	8.0	119.2			103.7	103.7	26.0	26.0	26.0			
30th %ile Term Code	Min	Coord			Coord	Coord	Gap	Gap	Gap			
10th %ile Green (s)	8.0	124.3			108.8	108.8	20.9	20.9	20.9			
10th %ile Term Code	Min	Coord			Coord	Coord	Gap	Gap	Gap			
Queue Length 50th (ft)	18	270			234	22	'	263	20			
Queue Length 95th (ft)	39	372			325	81		351	77			
Internal Link Dist (ft)		1201			1647			650			270	
Turn Bay Length (ft)	525					175			200			
Base Capacity (vph)	446	2561			2205	1119		407	436			
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.15	0.49			0.40	0.37		0.64	0.27			
Intersection Summary												

Intersection Summary

Area Type: Other

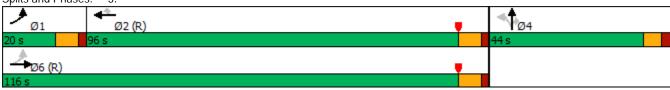
Cycle Length: 160
Actuated Cycle Length: 160

Offset: 114 (71%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow

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Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 17.7 Intersection LOS: B
Intersection Capacity Utilization 61.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3:



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	^			^	7		ર્ન	7			
Traffic Volume (vph)	61	1147	0	0	819	377	238	1	109	0	0	0
Future Volume (vph)	61	1147	0	0	819	377	238	1	109	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		0	0		450	0		200	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.953				
Satd. Flow (prot)	1770	3539	0	0	3539	1583	0	1775	1583	0	0	0
Flt Permitted	0.950							0.953				
Satd. Flow (perm)	1770	3539	0	0	3539	1583	0	1775	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						410			95			
Link Speed (mph)		55			55			35			30	
Link Distance (ft)		1281			1727			730			350	
Travel Time (s)		15.9			21.4			14.2			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	1247	0	0	890	410	259	1	118	0	0	0
Shared Lane Traffic (%)			-					•		-	-	_
Lane Group Flow (vph)	66	1247	0	0	890	410	0	260	118	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12	9		12	9		0	9		0	9
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	•		2	1	1	2	1			-
Detector Template	Left	Thru			Thru	Right	Left	Thru	Right			
Leading Detector (ft)	20	100			100	20	20	100	20			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Detector 1 Position(ft)	0	0			0	0	0	0	0			
Detector 1 Size(ft)	20	6			6	20	20	6	20			
Detector 1 Type	CI+Ex	CI+Ex			CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel	51.2%	51. E.K			5 <u>E</u> ,	027	01.12.1	51. 2.1	011211			
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	0.0	94			94	0.0	0.0	94	0.0			
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex				
Detector 2 Type Detector 2 Channel		OITEX			OITEX			OITEX				
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	Prot	NA			NA	Prot	Perm	NA	Perm			
Protected Phases	1	6			2	2	i Cilli	4	ı GIIII			
Permitted Phases	I	U			Z	Z	4	4	4			
I GITHILICU F HASES							4		4			

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6			2	2	4	4	4			
Switch Phase												
Minimum Initial (s)	8.0	16.0			16.0	16.0	6.0	6.0	6.0			
Minimum Split (s)	15.5	23.5			25.5	25.5	13.3	13.3	13.3			
Total Split (s)	20.0	116.0			96.0	96.0	44.0	44.0	44.0			
Total Split (%)	12.5%	72.5%			60.0%	60.0%	27.5%	27.5%	27.5%			
Maximum Green (s)	12.5	108.5			88.5	88.5	36.7	36.7	36.7			
Yellow Time (s)	5.5	5.5			5.5	5.5	4.1	4.1	4.1			
All-Red Time (s)	2.0	2.0			2.0	2.0	3.2	3.2	3.2			
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Total Lost Time (s)	7.5	7.5			7.5	7.5		7.3	7.3			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?					9	9						
Vehicle Extension (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Recall Mode	None	C-Max			C-Max	C-Max	None	None	None			
Walk Time (s)	110110	O Max			7.0	7.0	110110	110110	140110			
Flash Dont Walk (s)					11.0	11.0						
Pedestrian Calls (#/hr)					10	10						
Act Effct Green (s)	11.5	115.8			96.9	96.9		29.4	29.4			
Actuated g/C Ratio	0.07	0.72			0.61	0.61		0.18	0.18			
v/c Ratio	0.52	0.49			0.42	0.37		0.80	0.32			
Control Delay	86.0	10.8			18.3	2.4		80.1	16.4			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	86.0	10.8			18.3	2.4		80.1	16.4			
LOS	F	В			В	Α.		F	В			
Approach Delay		14.6			13.3	А		60.2	D			
Approach LOS		В			В			E				
90th %ile Green (s)	12.5	108.5			88.5	88.5	36.7	36.7	36.7			
90th %ile Term Code	Max	Coord			Coord	Coord	Max	Max	Max			
70th %ile Green (s)	14.0	111.4			89.9	89.9	33.8	33.8	33.8			
70th %ile Term Code	Gap	Coord			Coord	Coord	Gap	Gap	Gap			
50th %ile Green (s)	12.3	115.7			95.9	95.9	29.5	29.5	29.5			
50th %ile Term Code	Gap	Coord			Coord	Coord	Gap	Gap	Gap			
30th %ile Green (s)	10.5	119.2			101.2	101.2	26.0	26.0	26.0			
		Coord			Coord							
30th %ile Term Code 10th %ile Green (s)	Gap 8.0	124.3			108.8	Coord 108.8	Gap 20.9	Gap 20.9	Gap 20.9			
. ,												
10th %ile Term Code	Min	Coord			Coord	Coord	Gap	Gap	Gap			
Queue Length 50th (ft)	68	270			252	0		263	20			
Queue Length 95th (ft)	122	372			338	49		351	77		270	
Internal Link Dist (ft)	רחר	1201			1647	450		650	200		270	
Turn Bay Length (ft)	525	05/1			01.40	450		407	200			
Base Capacity (vph)	141	2561			2142	1120		407	436			
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.47	0.49			0.42	0.37		0.64	0.27			
Intersection Summary	Other											
Area Type:	Othel											

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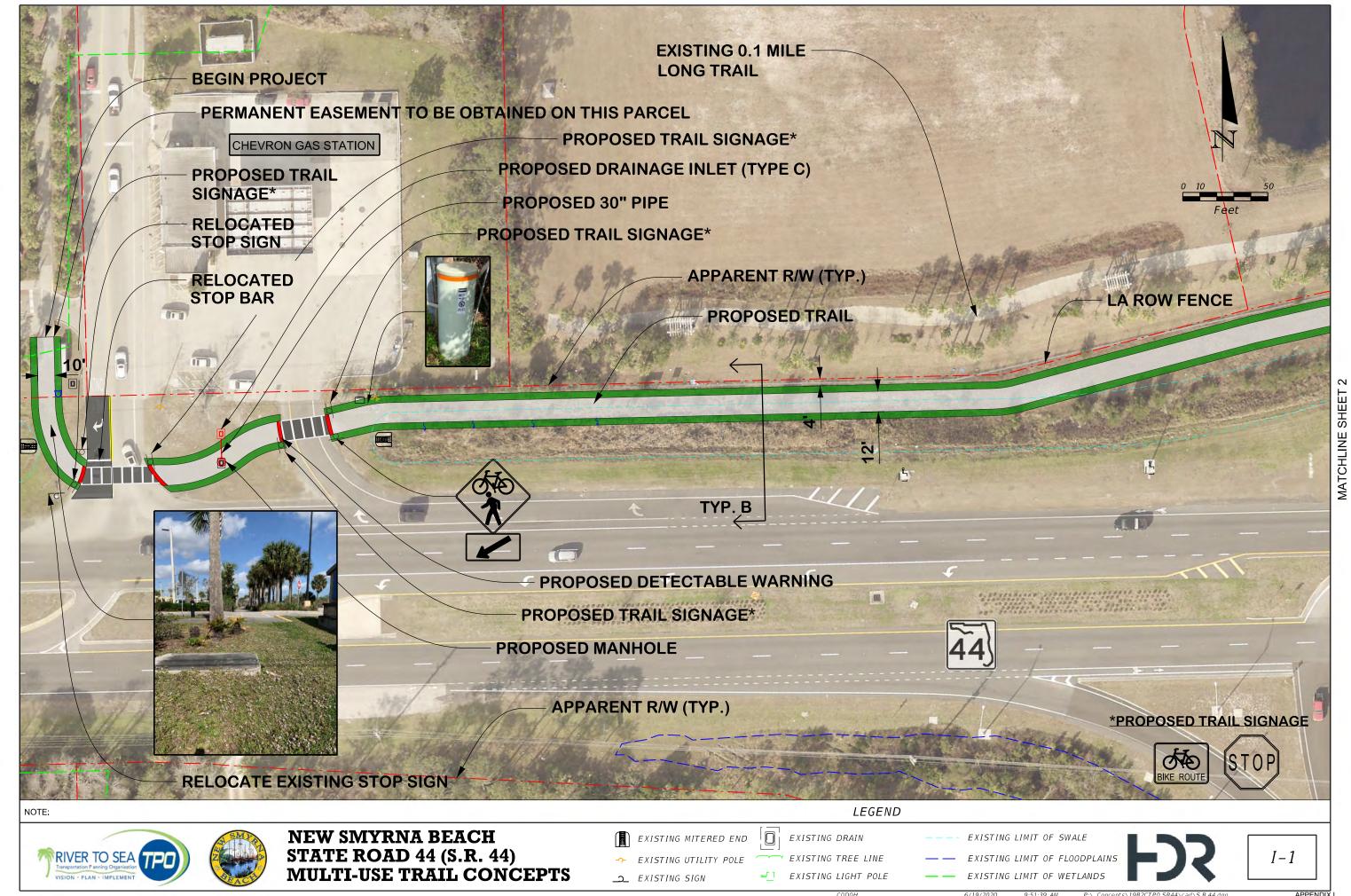
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 54 (34%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 19.8 Intersection LOS: B
Intersection Capacity Utilization 61.8% ICU Level of Service B
Analysis Period (min) 15

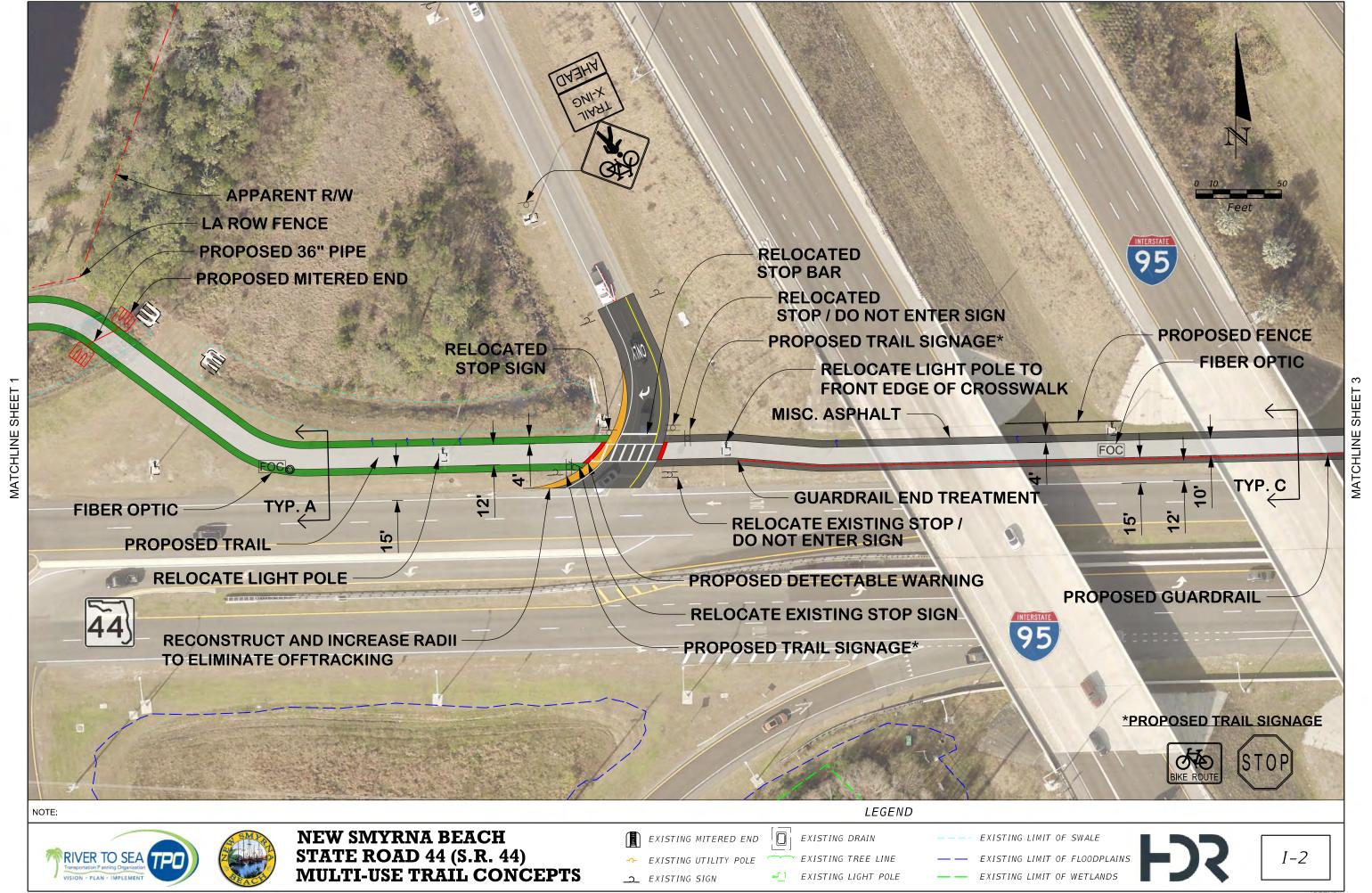
Splits and Phases: 3:

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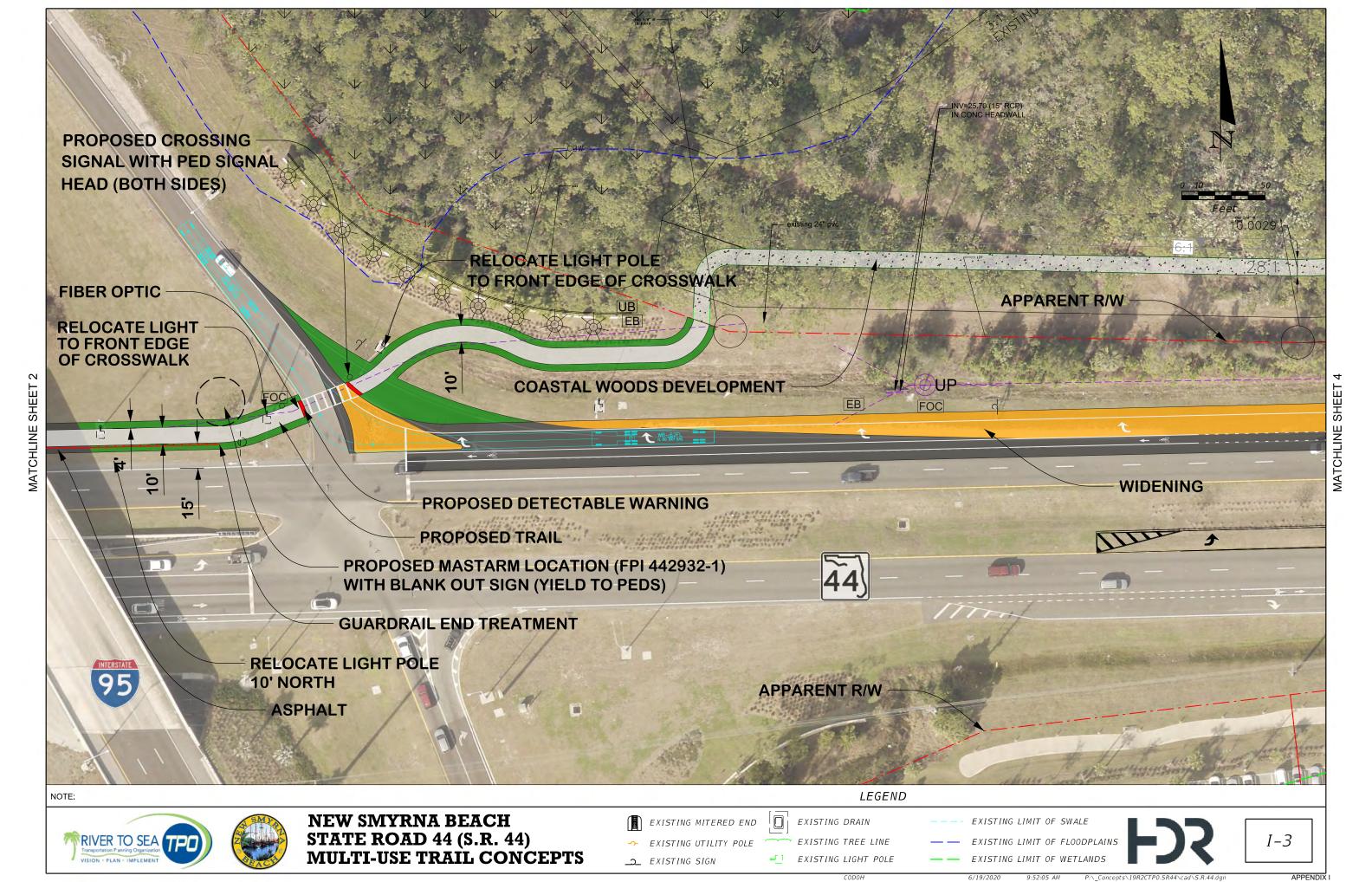
Appendix I

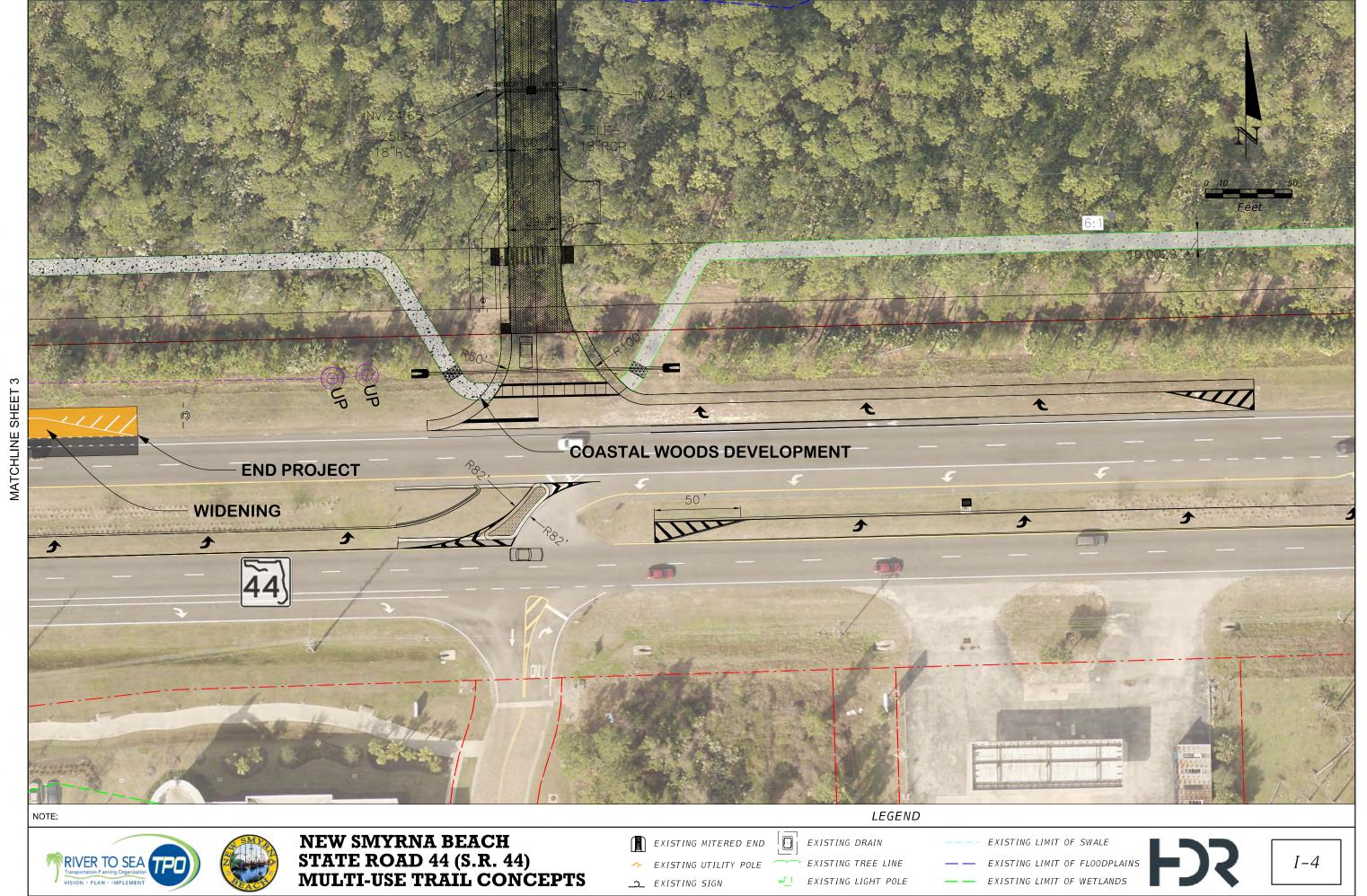
Concept Plan





APPENDIX I



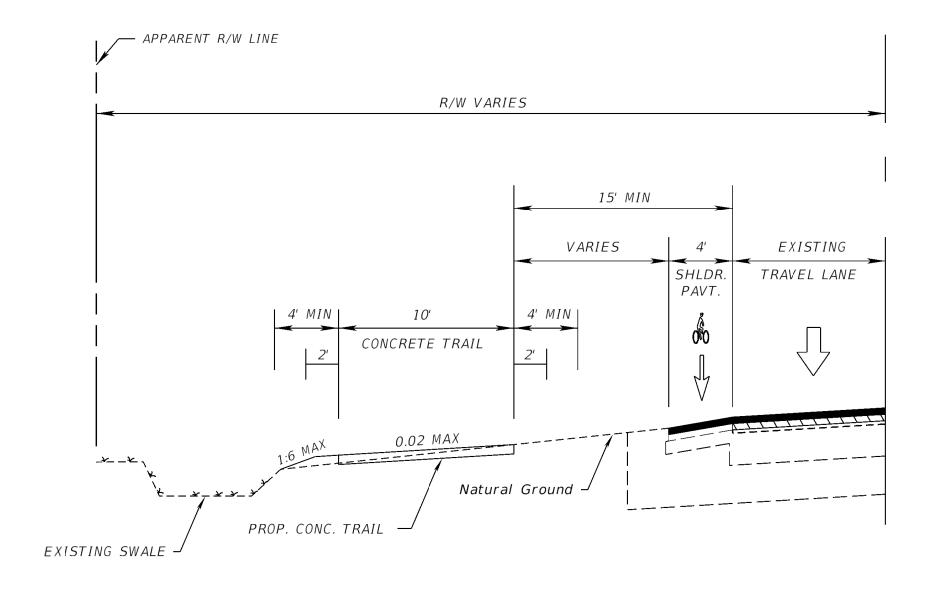


APPEND

Appendix J

Typical Section

FOR CONCEPTUAL USE ONLY



TYPICAL SECTION A

STATE ROAD 44 (S.R. 44)

PROPOSED MULTI-USE TRAIL

NOTE: PARCEL LINES REPRESENT "APPARENT" RIGHT-OF-WAY, ACTUAL RIGHT-OF-WAY HAS NOT BEEN VERIFIED. PROPOSED TRAIL MAY BE TEN TO TWELVE FEET WIDE, SHOWN AS TEN FEET



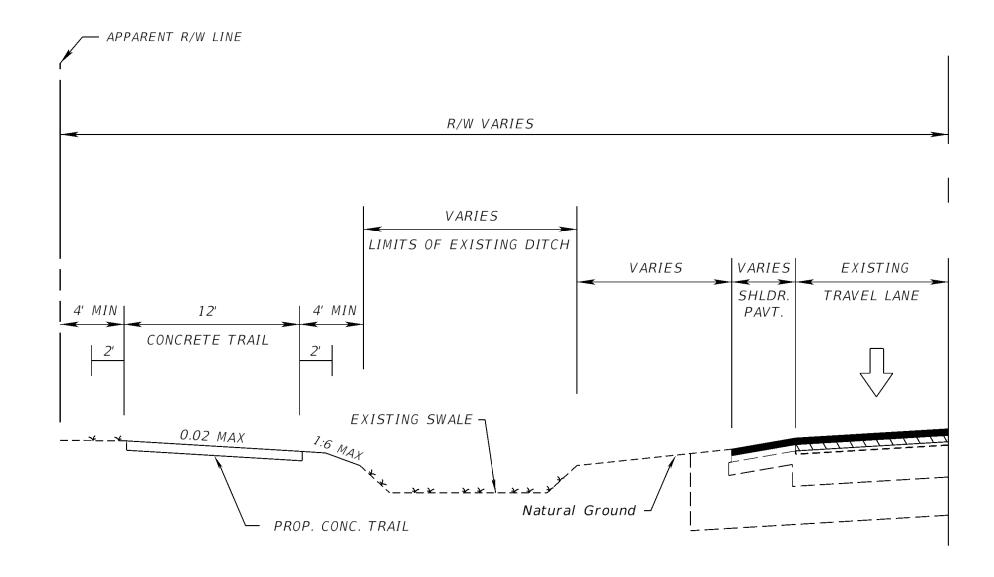


NEW SMYRNA BEACH STATE ROAD 44 (S.R. 44) MULTI-USE TRAIL CONCEPTS





FOR CONCEPTUAL USE ONLY



TYPICAL SECTION B STATE ROAD 44 (S.R. 44) PROPOSED MULTI-USE TRAIL

NOTE: PARCEL LINES REPRESENT "APPARENT" RIGHT-OF-WAY, ACTUAL RIGHT-OF-WAY HAS NOT BEEN VERIFIED. PROPOSED TRAIL MAY BE TEN TO TWELVE FEET WIDE, SHOWN AS TWELVE FEET



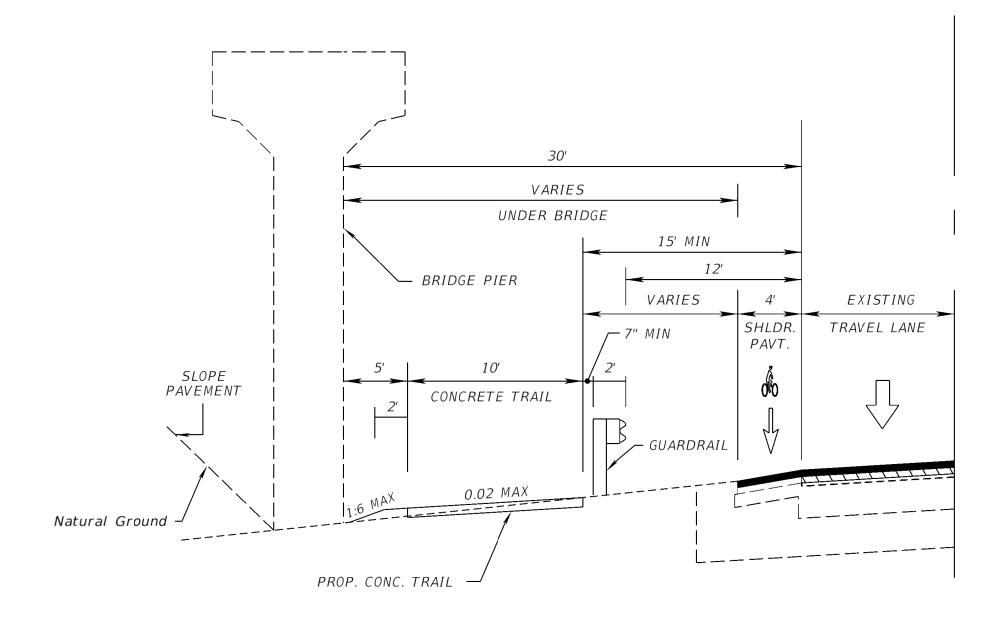


NEW SMYRNA BEACH STATE ROAD 44 (S.R. 44) MULTI-USE TRAIL CONCEPTS





FOR CONCEPTUAL USE ONLY



TYPICAL SECTION C STATE ROAD 44 (S.R. 44) PROPOSED MULTI-USE TRAIL

NOTE: PARCEL LINES REPRESENT "APPARENT" RIGHT-OF-WAY, ACTUAL RIGHT-OF-WAY HAS NOT BEEN VERIFIED. PROPOSED TRAIL MAY BE TEN TO TWELVE FEET WIDE, SHOWN AS TEN FEET





NEW SMYRNA BEACH STATE ROAD 44 (S.R. 44) MULTI-USE TRAIL CONCEPTS





Appendix K

FDOT Inflation Factors

FLORIDA DEPARTMENT OF TRANSPORTATION



TRANSPORTATION COSTS REPORTS

Inflation Factors

This "Transportation Costs" report is issued by the Office of Policy Planning. It provides information on inflation factors and other indices that may be used to convert Present Day Costs (PDC) to future Year Of Expenditure costs (YOE) or vice versa. This report is updated regularly based on the FDOT Work Program Instructions.

Please note that the methodology for inflationary adjustments relating to specific transportation projects should be addressed with the district office where the project will be located. For general use or non-specific areas, the guidelines provided herein may be used for inflationary adjustments.

Construction Cost Inflation Factors

The table on the next page includes the inflation factors and Present Day Cost (PDC) multipliers that are applied to the Department's Work Program for highway construction costs expressed in Fiscal Year 2019 dollars (FY 2019 runs from July 1, 2018 to June 30, 2019).

Other Transportation Cost Inflation Factors

Other indices may be used to adjust project costs for other transportation modes or nonconstruction components of costs. Examples are as follows:

The <u>Consumer Price Index</u> (CPI, also retail price index) is a weighted average of prices of a specified set of products and services purchased by wage earners in urban areas. As such, it provides one measure of inflation. The CPI is a fixed quantity price index and a reasonable cost-of-living index.

The <u>Employment Cost Index</u> (ECI) is based on the National Compensation Survey, administered by the Bureau of Labor Statistics (BLS). It measures quarterly changes in compensation costs, which include wages, salaries, and other employer costs for civilian workers (nonfarm private industry and state and local government).

The monthly series, <u>Producer Price Index for Highway and Street Construction</u>, is also available from BLS. It provides national-level estimates of past and recent highway construction inflation. The Producer Price Index (PPI) web site is http://www.bls.gov/ppi/home.htm.

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TRANSPORTATION COSTS REPORTS

Work Program Highway Construction Cost Inflation Factors

Fiscal Year	Inflation Factor	PDC Multiplier
2019	Base	1.000
2020	2.6%	1.026
2021	2.6%	1.053
2022	2.7%	1.081
2023	2.8%	1.111
2024	2.9%	1.144
2025	3.0%	1.178
2026	3.1%	1.214
2027	3.2%	1.253
2028	3.3%	1.295
2029	3.3%	1.337
2030	3.3%	1.381
2031	3.3%	1.427
2032	3.3%	1.474
2033	3.3%	1.523
2034	3.3%	1.573
2035	3.3%	1.625
2036	3.3%	1.679
2037	3.3%	1.734
2038	3.3%	1.791
2039	3.3%	1.850
Source: Offices of \	Nork Program and Budge	t and Policy Planning

Source: Offices of Work Program and Budget and Policy Planning (Fiscal Year 2019 is July 1, 2018 to June 30, 2019)

Advisory Inflation Factors For Previous Years

Another "Transportation Costs" report covers highway construction cost inflation for previous years. "Advisory Inflation Factors For Previous Years (1987-2018) provides Present Day Cost (PDC) multipliers that enable project cost estimates from previous years to be updated to FY 2018. For the table and text providing this information, please go to https://fdotwww.blob.core.windows.net/sitefinity/docs/default-

source/planning/policy/economic/retrocostinflation220259309.pdf?sfvrsn=ce29b2b6 2

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