FINAL
Candidate Project Technical Scope

443512-1, SR A1A Access Management
From Milsap Road to SR 40 (Granada Boulevard)

Section 79080-000, MP 5.114 – MP 6.713
Volusia County

Prepared for:
THE FLORIDA DEPARTMENT OF TRANSPORTATION
PROGRAM MANAGEMENT
719 South Woodland Boulevard
DeLand, Florida 32720

General Engineering Consultant (GEC) Services
Financial Project ID: 436094-1-32-01
Contract No.: C-9L04
HNTB No.: 54854-PL-134

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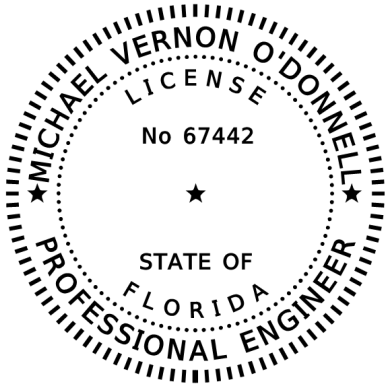

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Michael V O'Donnell
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This item has been digitally signed and sealed by Michael Vernon O'Donnell, P.E on the date adjacent to the seal.

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Digitally signed by: AMIR ASGARINIK
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Date: 2018.12.18 18:23:17 -05'00'

December 13, 2018

To: Amir Asgarinik
From: Michael O'Donnell

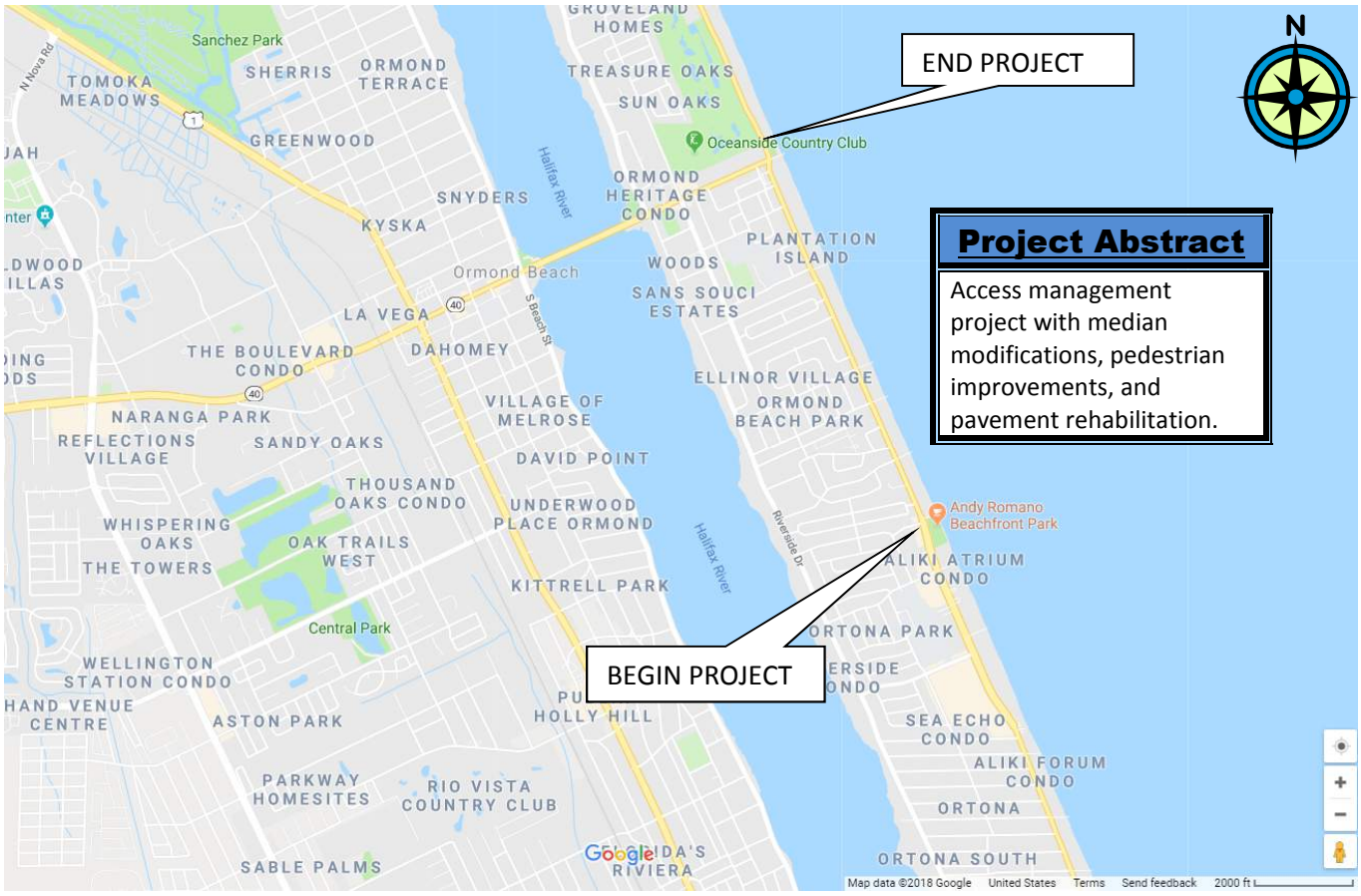
RE: SR A1A Access Management from Milsap Road to SR 40 (Granada Boulevard)

State Road Number: A1A
Section Number: 79080-000
County: Volusia
Project Limits: From Milsap Road to approximately 300-ft north of SR 40/Granada Boulevard
Begin MP/End MP: 5.114 to 6.713 (Length 1.599 MI)
FM: 443512-1

1. Existing R/W Map Project Numbers:	79080-2509 (1974); MP 6.643 to MP 10.667, 30-ft Min. (Prop. R/W Not Acquired Under this Project, Dropped from WP.) 79080-2504 (1970); MP 5.214 to MP 6.454, 40-ft LT & RT 7908 (1958); MP 4.232 to MP 5.195, 40-ft LT & RT 7908-Proj 996 -5183 (1941); MP 6.643 to MP 15.897, Varies. 30-ft Min.
2. Old Construction Project Numbers:	411985-1 (2009); MP 2.691 to MP 6.790; Resurfacing 79150-3517 (1999); MP 6.643; Signalization (Monotube) 79000-3550 (1996): MP Varies; Fiber Optic System, Signalization 79080-3528 (1983); MP Varies; Signal Improvements 79080-3523 (1977); MP 6.643; Reconstruction 79080-3504 (1973); MP 5.137 to MP 6.544; Reconstruction 79080-3524 (1970); MP 5.997; Drainage 79080-3516 (1970); MP 5.777 to MP 5.997; Drainage 79080-3508 (1968); MP 6.544 to MP 6.790; Reconstruction 79080-3502 (1966); MP 4.232 to MP 5.214; New Construction
3. Additional R/W Required?	Proposed work requires 2 License Agreements for sidewalk work.
4. Level of Community Awareness Plan:	Level 3. Access Management Changes. Public Involvement will need to be completed.
5. Are there any bridges within the limits?	No.
6. Are there any RR Crossings within the project limits or in the vicinity?	No.
7. Are there any Airports within 5-miles?	Smokey's Heliport - FL44, 2.8 MI S Ormond Beach Muni Airport – 4.3 MI W Halifax Hospital Medical Center Heliport-29FL – 5.0 MI SW
8. Storm Water Management Jurisdiction:	SJRWMD.
9. Is the Project within CCCL *(Coastal Construction Control Line)*?	No.
10. Is the project near a significant archaeological site?	This project was reviewed by EMO and no concerns were noted.
11. Existing Utilities per Sunshine One Call: 11 Estimated number of underground: 8	AT&T Florida Bright House Networks City of Ormond Beach – Electric City of Ormond Beach – Fiber City of Ormond Beach – Reuse City of Ormond Beach – Sewer City of Ormond Beach – Water Crown Castle Florida Power & Light – Distribution TECO Peoples Gas Uniti Fiber

12. Any Special MOT concerns?	1. Garbage trucks, delivery trucks, buses, etc. use the outside travel lane as a temporary parking facility for loading/unloading and is to be addressed in the TTC. 2. TTCP to consider proximity to City of Ormond Beach Fire Station #91, located at MP 5.950 LT. 3. Florida Hospital Medical Center is within the project limits. 4. Coordinate with Volusia County Public Schools as this project may be a primary route for school buses.
13. Any Construction Concerns?	1. Restrict construction to daylight hours during sea turtle nesting season or include provisions to meet local lighting requirements. 2. Temporary shoring is required for drainage structures at R/W. 3. There are known contamination sites adjacent to the project. See Permitting Scope Items.
14. Posted/Design Speed Limits:	Milepost Range: MP 5.114 to MP 6.713 — Design Speed: 45 mph — Posted Speed: 35 mph
15. Design Criteria and Highway System: *Note: The Context Classification for this roadway was updated after the finalization of the lead project, FPID 442884-1.	SHS, FDM (2019), RRR. Milepost Range: MP 5.114 to MP 6.665 — Context Classification: "Urban General" C4 Milepost Range: MP 6.665 to MP 6.713 — Context Classification: "Suburban Commercial" C3C
16. Lump Sum or Pay Item?	Pay Item.
17. Proposed Design Schedule:	18-24 months.

Project Location Map:



The Engineer is responsible for verifying all items in the proposed scope and shall review the project for conformance with all applicable criteria and standards. This Technical Scope has been presented to FDOT Department Heads and received final concurrence through the Technical Review Meeting process. The project scope, schedule, and budget have been established based on this Technical Scope and approved to enter the work program.

Candidate Safety Project Technical Scope

Intent of and Nature of Project:

The project developed out of the SR A1A Access Management Study (Study) from Milsap Road to State Road 40 completed by Traffic Engineering Data Solutions, Inc. in June 2018. The purpose of the project is to provide access management and pedestrian safety improvements on SR A1A in accordance with FDOT Design Manual (FDM) 2019. The proposed improvements will update the corridor using current access management criteria including closure and modifications to the existing median openings and provide unsignalized pedestrian crossings, as recommended in the Study. Proposed improvements are limited to satisfying the recommendations of the Study, with the exception of the work added after TRM. TRM requested to incorporate all improvements from the FPID 442884-1 resurfacing project that fell within the limits of this project (443512-1); including pavement rehabilitation and roadside improvements.

Project Description:

- Project is located in northeast Volusia County, within the city of Ormond Beach.
- SR A1A is classified as an urban principal arterial with access classification 06. This segment of SR A1A will meet access classification 05 with the proposed typical section changes.
- SR A1A is a designated evacuation route per the Florida Division of Emergency Management.
- The following projects have been identified within the vicinity of this resurfacing project:
    - 442884-1: This is a candidate resurfacing project on SR A1A, from MP 1.448 to MP 5.114*. The end limits of this project equate to the begin limits of this scope (443512-1). The FDOT PM is Amir Asgarinik. *The end project limit has been adjusted from MP 6.713 to MP 5.114 due to the incorporation of the improvements into this project (443512-1).
    - 442874-1: This is a candidate resurfacing project on SR A1A, from MP 6.713 to MP 9.839. The begin limits of this project equate to the end limits of this scope (443512-1). The FDOT PM is Amir Asgarinik. Coordinate lane closures if construction dates overlap.
    - 435596-1: This is a signal reconstruction project at SR A1A and Cardinal Drive. This project includes replacing the existing span wire system with mast arms. This project is currently in design and is to be let July 2019. The FDOT PM is Marcus Lisicki.
    - 439872-1: This is a potential candidate trail project on SR 40 and SR A1A, with proposed work within the limits of this project (443512-1). The FDOT PM is Amir Asgarinik. Coordinate proposed improvements at the time of Design.
    - Volusia County Public Works is currently making improvements to several public beach ramps connecting to SR A1A. The projects include sidewalk construction, signing and pavement marking improvements, and landscaping at Williams Avenue, Plaza Drive, Rockefeller Drive, and Boylston Avenue. Proposed improvements at Williams Avenue can be found in the project file. Coordinate milling limits, sidewalk construction, and other construction activities at these locations with Volusia County Public Works, the contact is Jessica Winterwerp.

Typical Sections:

- The project includes 2 typical sections;
    - 1) MP 5.114 to MP 6.149 & MP 6.451 to MP 6.713: Four 11-ft travel lanes (two in each direction), separated by a 12-ft wide two way left turn lane, with a 2.5-ft shoulder, type F curb and gutter, and sidewalk on each side. This typical section will be modified to provide four 11-ft travel lanes (two in each direction), separated by a 17-ft raised curbed median.
    - 2) MP 6.149 to MP 6.451: Two 12-ft inside travel lanes, two 14-ft outside travel lanes, separated by a variable width raised median (17.5-ft wide typ.), with type F curb and gutter and sidewalk on each side. This typical section will be modified to provide four 11-ft (two in each direction) and 4-ft paved shoulder separated by a variable width raised median (17.5-ft wide typ.).
- Based on 2017 Traffic Data:

MP	TMS Site No.	AADT	T%
6.416	795124	17,800	6.5

Roadway Scope Items:

- A Pavement Condition Assessment was completed by FDOT on June 15, 2018. Overall, the pavement is in fair condition. From MP 5.114 to MP 6.713 there are no locations with any severe pavement distress but there is isolated minor branch cracking, isolated pavement shoving, and several manhole and utility covers within the outside travel lanes.

  Prepare three pavement designs; 1) widening for turn lanes, 2) overbuild for existing turn lanes, and 3) milling and resurfacing existing pavement.

- Complete Median and Left Turn modifications as recommended in the Study and shown in the Concept Plans.
    - Median turn lanes are to be sloped to the outside to match the existing travel lane cross slopes and to limit the drainage improvements within the median.
    - Remove the existing median pavement through the base course outside the limits of the proposed left turn lanes to facilitate drainage and future landscaping.
    - The design vehicle used for the left turn movements at the proposed directional median openings is a predominant passenger vehicle with the occasional SU-30 and passenger vehicles with trailers, except at Osceola Avenue as noted in the table below. U-turn movements cannot accommodate larger vehicles within the constraints of the existing roadway, but all openings should be designed to allow passenger vehicle U-turn movements, except as noted within the Design Considerations.
    - The Engineer is to design directional median openings with allowance of U-turn movements to maintain operational performance and improve safety while discouraging wrong way movements from side streets. Note that Traffic Operations discourages the use of separator wings within the median island.
- Begin milling and resurfacing approximately 100-ft south of Milsap Road. End milling and resurfacing approximately 300-ft north of SR 40 (Granada Boulevard) to match the limits of FPID: 442874-1. Limits of connecting side streets will be to the existing visible pavement joint unless otherwise noted on the Concept Plans.
- Provide driveway modifications as described in the Concept Plans. Note that the driveway size and locations shown on the Concept Plans are for conceptual purposes only. The Engineer shall coordinate the removal of obsolete/abandoned driveways with property owners to determine any final driveway configurations;
    - MP 5.203 LT
    - MP 5.338 RT
    - MP 5.473 LT
    - MP 5.621 RT
    - MP 5.784 RT
    - MP 6.308 RT
- Construct a raised median with median openings at the following locations as recommended in the Study and shown in the Concept Plans. Turn lane lengths as noted have been modified from what is recommended in the Study per FDM 212.14.2, with consideration of existing and proposed constraints. Overbuild the turn lanes to drain away from the separator.

MP (Intersection)	Median Opening Type	Northbound Left Turn Lane Length (ft)	Southbound Left Turn Lane Length (ft)	Additional Work Required
5.137/5.150 (Milsap Road/Beach Ramp)	Directional	220 *(260-ft per Study)*	260	NB: Reconstruct the existing NB median nose and widen to accommodate the improvements.
5.289 (Wren Road)	Directional	260	250 *(260-ft per Study)*	-
5.399 (Cardinal Drive/Beach Ramp)	Full (Signalized)	260	285 *(260-ft per Study)*	-
5.501 (Ellinor Village Shopping Center)	Directional	260	-	-
5.531 (Tropic Sun Towers)	Directional	-	335	-
5.637 (River Beach Drive)	Directional	285 *(310-ft per Study)*	-	SB: Beach access eliminated.
5.777 (Rockefeller Drive)	Directional	285	235 *(260-ft per Study)*	SB: Construct the southbound median opening to discourage vehicles from driving up the opposing lanes of travel to turn left onto the beach ramp. SB beach access is eliminated.

5.873 (Aliki Plaza/Tidesfall Condominiums)	Directional	260	260	-
5.950 (City of Ormond Beach Fire Station #91)	Full	-	-	-
5.997 (Arlington Way)	Directional	290 *(260-ft per Study)*	-	NB: A portion of the northbound left turn lane is within the limits of the emergency fire station entrance/exit. Construct a turn lane with a flush traffic separator at the intersection to provide access to emergency vehicles while accommodating left turning vehicles.
MP 6.025 (U-turn)	Directional	-	260	-
6.142 (Ormond Parkway)	Directional	260	-	-
6.191 (Seminole Approach/Beach Ramp)	Directional	-	260	-
6.313 (Osceola Avenue)	Directional	260	260	NB: Ensure that the northbound left turn lane can accommodate school buses, as this is the main access to Osceola Elementary School.
6.454 (Bosarvey Drive)	Directional	260	215 *(260-ft per Study)*	-
6.544 (Vining Court)	Directional	250 *(260-ft per Study)*	150 *(260-ft per Study)*	Restripe to remove the existing eastbound left turn lane on Vining Court.

- MP 5.551 to MP 5.561 RT: Remove the existing exposed metal pipe within miscellaneous asphalt along the drop curb at the "Corvette Inn" driveway. Reconstruct the drop curb to maintain flow.
- MP 5.591 (Ormond Shores Drive): Reconstruct the SW return providing a curb and gutter connection from the existing drop curb along Ormond Shores Drive to the existing curb line along SR A1A to convey the stormwater to the curb inlet along SR A1A, approximately 15-ft south.
- MP 5.637 (River Beach Drive): Full depth pavement reconstruction will be required to accommodate the proposed drainage improvements in the NE quadrant of the intersection.
- MP 5.777 (Rockefeller Drive): Reconstruct the NE quadrant to tighten up the return to accommodate the proposed pedestrian improvements. Provide curb along Rockefeller Drive to hold back sediment that is washing onto the roadway. Provide new miscellaneous asphalt between the limits of the driveway and the proposed curb ramp.
- MP 5.879 to MP 5.895 RT: Reconstruct and modify existing features to accommodate the southbound U-turning vehicles at Bosarvey Drive.
    - Construct 50 LF of modified type F curb and gutter. The existing driveway does not provide enough length to complete the movement so the addition of modified curb and gutter in this area will limit vehicles from over tracking onto and over the curb.
    - Full depth pavement reconstruction within the shoulder and outside thru lane will be required to accommodate the proposed drainage modifications.
- MP 6.313 RT (Osceola Avenue): Construct 55 LF of modified type F curb and gutter to accommodate southbound U-turning vehicles at Osceola Avenue. Per AASHTO Greenbook table 9-30 the minimum allowable distance from the edge of travel of the turning lane to the outside edge is 32-ft for U-turning vehicles. The proposed typical section in this area provides 31.5-ft plus the type F curb and gutter. Providing a modified curb and gutter in this area will limit vehicles from over tracking onto and over the curb.

- MP 6.446 to MP 6.458 RT: Reconstruct the existing driveway at the garage entrance/exit to Oceanside 99 to accommodate the proposed unsignalized pedestrian crossing at Bosarvey Drive and Beach Place. The existing driveway is approximately 55-ft in length and provides access to Oceanside 99 and onto Beach Place. The driveway should be reconstructed to provide a separate access at Oceanside 99. A ramp will be constructed at Beach Place to serve a dual purpose; providing a crossing location for pedestrians and accommodating the occasional maintenance and garbage vehicles onto Beach Place.
- MP 6.465 to MP 6.474 RT: Reconstruct and modify existing features to accommodate the southbound U-turning vehicles at Bosarvey Drive.
    - Construct 40 LF of modified type F curb and gutter. The existing driveway does not provide enough length to complete the movement so the addition of modified curb and gutter in this area will limit vehicles from over tracking onto and over the curb.
    - Full depth pavement reconstruction within the shoulder and outside thru lane will be required to accommodate the proposed drainage modifications.
- MP 6.512 to MP 6.516 RT: Reconstruct the drop curb at the driveway to be level with the adjacent curb and gutter to maintain flow to the inlet, approximately 30-ft south.
- MP 6.544 LT (Vining Court): Stripe out the existing eastbound left turn lane on Vining Court to northbound SR A1A due to the proposed directional median opening.

Drainage Scope Items:

- Based on field observations the existing roadside drainage system appears to be functioning properly, except as noted below.
    - MP 5.640 to MP 5.666 LT: Reconstruct the drop curb and type F curb and gutter to remove the existing low point and to provide flow toward the existing curb inlet at the NW return of River Beach Drive, MP 5.637.
    - MP 6.144 to MP 6.149 RT: Reconstruct the type F curb and gutter to remove the offset elevation between the driveway and the existing curb inlet. Adjust the utility manhole to be flush with the roadway and gutter.

MP 6.144 to MP 6.149 RT

- In areas of overbuild within the left turn lanes, conduct a spread analysis to determine if additional inlets are required along the outside curb. Based on preliminary spread calculations no additional inlets are anticipated. Alternatively, all concrete traffic separators can be designed with drainage slots to prevent storm water buildup within the proposed left turn lanes, although this is discouraged as the beach environment will fill the slots with sand faster than typical.
- MP 5.150 (Beach Ramp): Construct curb inlets at new locations to accommodate the proposed curb ramps.
    - SE Quadrant: Construct a J-bottom to connect to the existing box and provide a type 4 inlet just outside the return to accommodate pedestrian improvements.
    - NE Quadrant: Remove the existing structure top but maintain the manhole access. Construct a type 3 and a type 10 inlet on the north and east side of the return, respectively, connecting to the existing structure.
- MP 5.637 (River Beach Drive): Construct a J-bottom to connect to the existing box in the northeast quadrant and provide a type 4 inlet outside the return to accommodate pedestrian improvements. Temporary shoring will be required to construct drainage structures at the Right of Way.
- MP 5.887 to MP 5.895 RT: Remove the existing inlet and construct a J-bottom manhole. Construct a type 5 inlet approximately 30-ft north to accommodate U-turn movements. Connect the proposed inlet to the new structure to maintain the existing conveyance.
- MP 6.466 to MP 6.474 RT: Remove the existing inlet and construct a J-bottom manhole. Construct a type 5 inlet approximately 30-ft north to accommodate U-turn movements. Connect the proposed inlet to the new structure to maintain the existing conveyance.

Utility Scope Items:

- Utility coordination will be required to determine adjustments so there are no conflicts with the proposed construction.
    - Adjust all valve covers, utility pull boxes, fire hydrants, and utility manholes to be flush with proposed sidewalk, ramps, and roadway pavement as shown in the Concept Plans.

  - An 8-in water main and a 10-in water main run under the existing northbound and southbound concrete sidewalk for the length of the project per SPN 79080-3504.
- Quality Level A "QL A" utility information is anticipated. Construction activities that involve underground work in proximity to noted utilities include roadway widening, drainage work, lighting, and pedestrian signal poles.

Multimodal Scope Items:

- The Engineer shall include a project-specific pedestrian/bicyclist temporary traffic control plan.

Transit

- Votran routes 1, 18, and 19 currently utilize the SR A1A corridor. Coordinate stop locations, boarding and alighting requirements, temporary construction relocations, and other transit issues with John Cotton at (386)-756-7496 x4111.
- Twenty-Eight bus stops were designated with sign post. If not currently present, provide minimum stop requirements per the Accessing Transit Guidelines. Coordinate proposed locations with Votran and construct sidewalk connections from existing or proposed sidewalks. Anticipated locations of sidewalk connections are noted in the Concept Plans.

Bicycles

- Bicycle facilities are not present along this roadway and are not to be included under this project due to existing roadway pavement width and Right of Way. A 4-ft paved urban shoulder is provided between MP 6.149 and MP 6.451 but is not considered a bicycle lane due to the short length.

Pedestrians

- This project does not include gaps in the sidewalk connectivity.
- Pedestrian curb ramps are to be reconstructed as shown in the Concept Plans. Separate curb ramps are considered at all intersections where it is accommodated by the intersection geometry, deemed feasible within the existing Right-of-Way while limiting drainage impacts, and without compromising safety to the pedestrian and vehicular traffic. Shared single ramps are provided where these conditions are not met within the constraints of a RRR project.
- Provide connections in areas of reconstructed driveways and curb ramps as described in the Concept Plans.
- Reconstruct sidewalk curb ramps as shown and described on the concept plans.
  - Twenty-Four (24) curb ramps require reconstruction due to excessive running and\or cross slope but can be reconstructed in-place to flatter slopes with no additional work to meet ADA requirements.
  - Five (5) curb ramps are proposed to be reconstructed in a new location to improve ADA compliance and\or enhance pedestrian safety.
  - Nineteen (19) ramps are proposed to be constructed for new crossing locations.
  - Thirty-Eight (38) existing ramps and driveways are to remain but require detectable warning surface (DWS) only.
- The existing sidewalk from MP 6.600 to MP 6.705 uses paver tiles and any proposed work impacting these tiles should replace them in kind. See FPID: 241001-2 SR A1A Streetscape for construction details.
- Construct six (6) unsignalized pedestrian crossings at the following locations as recommended in the Study and shown in the Concept Plans.
  - Reconstruct adjacent sidewalk disturbed at each location during removal or installation of lighting and ITS.
  - Provide sidewalk and curb ramps for an east-west crossing of SR A1A.
  - An elevated median platform is the preferred option to improve the pedestrian visibility when crossing the roadway. Due to the proposed 17-ft to 17.5-ft wide median and crossing configuration the elevated median platforms can only be accommodated at some crossing locations.

MP (Intersection)	Median Refuge?	Other
5.637 (River Beach Drive)	Yes.	The east ramp is shared with side street landing due to the existing driveway and curb inlet. Provide a new west ramp north of the existing side street landing.
5.777 (Rockefeller Drive)	Yes, Directional Median Opening.	Both the east and west ramps are shared with side street landings due to the existing driveways, curb inlet, and proposed median turn lanes. Coordinate the proposed improvements with Volusia County Public Works, as this beach access is to be improved.

5.997 (Arlington Way)	Yes, Directional Median Opening.	Location is shifted approximately 75-ft north from the Study to avoid existing driveways. Provide new east and west ramps.
6.191 (Seminole Approach/Beach Access)	Yes.	-
6.313 (Osceola Avenue)	Yes, Directional Median Opening.	The west ramp is shared with side street landing due to the existing driveway. Driveway configurations do not allow for offset crosswalks of SR A1A.
6.454 (Bosarvey Drive & Beach Place)	Yes, Directional Median Opening.	A modified ramp is to be used on the east side at Beach Place, accommodating pedestrians and the occasional maintenance and garbage vehicles. Include detectable warning surface that can withstand the vehicular traffic. The west ramp is shared with side street landing due to existing curb inlet and proposed median turn lanes.

- MP 6.324 to MP 6.334 RT: Reconstruct sidewalk adjacent to modified type F curb and gutter to provide the 6-ft minimum sidewalk width adjacent to curb and gutter, per Standard Plans Index 522-001.
- MP 6.466 to MP 6.474 RT: Reconstruct sidewalk adjacent to modified type F curb and gutter to provide the 6-ft minimum sidewalk width adjacent to curb and gutter, per Standard Plans Index 522-001.

Permitting Scope Items:

- Coordinate with FDOT, submitting a permit determination letter to the Environmental Permits Office, Attention District Five Permits Coordinator, for review and concurrence during the design process, considering the below descriptions of work and conditions.
    - This project is anticipated to exceed one acre of soil disturbing activities and will require NPDES coverage under the FDEP Generic Permit for Stormwater Discharge from Large and Small Construction Activities.
    - Provide design documentation\calculations of the net reduction of impervious area identified within the existing SJRWMD permit no. 127584.
- Complete an environmental assessment:
    - Records indicate that rare species or suitable habitat may exist within or near the project limits. The following species were noted as potentially occurring that may require additional environmental surveys; Leatherback Sea Turtle, Loggerhead Sea Turtle, Green Sea Turtle, Kemp's Ridley Sea Turtle, Hawksbill Sea Turtle, Gopher Tortoise, Wood Stork and Eastern Indigo Snake.
    - Wetlands were not noted within the Right-of-Way.
    - The following locations have been identified as contamination sites. Proposed work as shown in the concept should not interact with these sites. If work requiring excavation, dewatering, etc, is added to the project, a Contamination Assessment will be required. Coordinate proposed work with the FDOT Contamination Impact Coordinator;
        - MP 5.414 LT: DEP Site #8735190
        - MP 5.760 LT: DEP Site #8517583
- The following public lands were identified in proximity to the project limits. No Contractor staging, storing, disposing, etc. or other work activities are permitted on public lands per section 4(f) of the USDOT Act;
    - Andy Romano Beachfront Park
    - Birthplace of Speed Park

Structural Scope Items:

- None.

Traffic Design (Includes Signing, Signals, ITS) Scope Items:

<u>Signing and Pavement Markings</u>

- Signing and Pavement Marking shall be completed for the project limits as recommended in the Study. All mainline signing within the project limits shall be inventoried. Any existing signs that conflict with the proposed median or crossings shall be addressed in the plans.
    - Signing shall be provided for any driveways, crossroads, or turnouts impacted by the proposed median modifications.
    - The District Safety Office requests that the proposed Rectangular Rapid Flashing Beacons (RRFB's) on the outside of the roadway be back-to-back assemblies.

Signals

- All features added or modified should be designed "Accessible Pedestrian Signal Ready" to permit future upgrades without reconstructing curb ramps or relocating pedestrian poles to meet spacing requirements.
- Signal detection is to be reestablished. Existing detection methods are provided within the table for each signal, located below.

MP 5.399 – Cardinal Drive (Diagonal Span Strain Pole)	
Detection	Microwave. Adjust signal detection zones on SR A1A due to the proposed typical section modifications.
Backplates	N/A.
Left Turns	NB and SB are protected-permissive. EB and WB are permissive-only.
Pedestrian Signals	N/A.
Other	FPID 435596-1 is a signal rebuild project currently in Design, to be let July 2019.

MP 6.643 – SR 40/Granada Boulevard (Monotube)	
Detection	Detection and advance loops.
Backplates	None existing. No signal modifications proposed due to limited signal information at this intersection.
Left Turns	All are protected-only.
Pedestrian Signals	1 existing to remain, relocate or replace 5 assemblies to new crossing locations, standard.
Other	

- Due to the proximity of adjacent signals, develop coordinated signal timing into the existing system.
- Update the signal phasing at all signalized intersections within the project limits to accommodate added/modified crosswalks.
- The engineer shall design the existing signal rebuild to be a smart signal compatible with the districtwide ATSPM database and future compatibility for CV including enhanced detection. The smart signal design shall include:
    - Provide plan sheets that include:
        - Stop bar detection for all lanes of the intersection which will provide 1 min batch Turning Movement Counts.
        - Advance detection for all lanes of the intersection (including turn lanes) with consideration of bluetooth and/or computer vision.
        - Communication between the controller and ATSPM system.
        - ATC controller that are compatible with the maintaining agencies ATMS software, capable of high-resolution data logging and are forward compatible with CV and ICM expansion efforts.
        - Upgrade the existing cabinet to Type 6, if it is not already of this type.
- Traffic Monitoring Sites within the project limits have been reviewed and the following recommendations coordinated with the Data Collection Manager.

MP	TMS Site No & Type.	Recommendation
6.416	795124, Road Tube	N/A

Intelligent Transportation Systems (ITS)

- Any ITS items within the project limits shall be shown on plan sheets that are necessary for other work. Plan sheets are not necessary solely to show ITS elements. ITS Certification Memo will be required at Production. See District Design Memo 09-02.
    - The Engineer shall verify if any proprietary products certification is necessary for the project, as defined in 23 CFR 635.411. If a product is deemed necessary for project synchronization with existing facilities, or is a unique product for which there is no suitable alternative, then the Engineer is responsible to coordinate and prepare any necessary product justification letters with maintaining agency for the certification process.
    - FDOT Fiber Optic Cable is in the area of the underground work for this project. The Engineer is responsible to designate the fiber location in the plans and to determine if there is a conflict and to resolve the conflict. No additional splices may be introduced into the cable. If the fiber removal and installation of a new cable is needed the designer shall:
        - Verify the location of existing full termination splices
        - Verify existing drop cable splicing
        - Determine if Multimode and/or Single Mode FOC is in use

        - If Multimode is in use:
            - Coordinated with Multimode user(s) to migrate to Single Mode
            - If Multimode is to continue.
                - Develop a MM TSP (requiring both 50 micron and 62.5 micron)
                - Provide a 24/12/12 or existing cable whichever is larger.
        - If Single Mode only is to be used provide a 72SM or existing cable whichever is larger
        - Coordinate with cable users for allowable downtime. The users include:
            - Volusia County
            - City of Ormond Beach
            - FDOT
        - Provide plan sheets that
            - Restrict downtime
            - Present a Maintenance of Communication plan meeting the downtime requirement
            - Require a single uninterrupted cable will be used
            - Reflect splices for all drops cables to return existing functions
    - The Engineer shall verify if any existing pullboxes are present within the project limits. If present within the project limits, the Engineer is responsible to provide ITS/Signalization plans for the replacement of the pullboxes. Relocation of pullboxes is not allowed.
        - Provide plan sheets that:
            - Show the replacement of pullboxes within the limits of sidewalk and/or curb cut ramp work.
    - If an existing conduit greater than 1,000-ft in length is to be reused for temporary or permanent signal cable, fiber optic cable, or any other transportation cable, the Engineer is responsible to proof during design. Please contact Ron Miller (386) 943-5370 for coordinating the mobilization of a contractor to proof the conduit. The design shall document the proofing testing including, time, date, attendees, and results by conduit run, dowel size, and conduit size. This information shall be part of the design documentation.

Lighting Scope Items:

- Lighting is present along both sides of the roadway throughout the project limits. Existing lighting is to remain.
- Provide supplemental lighting at all the proposed unsignalized pedestrian crossing locations per the FDOT Traffic Engineering Manual (TEM) 3.8.5 (5)(c).
    - Lighting at these crossing locations may be restricted to specific times of the year due to environmental concerns. Coordinate lighting with Volusia County to comply with the adopted Beach Lighting Management Plan.
    - Provide supplemental pedestrian lighting within the raised median at the following locations, construct the poles as close to the center of the median as feasible;
        - MP 5.637 RT (River Beach Drive): Additional lighting cannot be provided at the northeast corner near the proposed pedestrian crossing. In addition, upgrade or supplement the luminaire on existing light pole within the southeast corner to provide higher illumination levels to accommodate the unsignalized crossing.
        - MP 6.313 LT (Osceola Avenue): Lighting cannot be provided at the northwest corner near the proposed pedestrian crossing.
        - MP 6.454 RT (Beach Place): Additional lighting cannot be provided at the east side of the proposed pedestrian crossing. An existing light pole is present approximately 10-ft north of the proposed crossing location.

Landscaping:

- Trees, shrubs, and irrigation is currently present within the medians from MP 6.149 to MP 6.451 and will require removal within areas of proposed median modifications. The Engineer is to coordinate any removed/relocated landscaping, including irrigation, with the City of Ormond Beach.

Survey Required:

- Obtain Design Survey, collecting data for the areas and locations shown on the concept plans. Total survey area is 5.76 AC.
    - Locate utilities as Quality Level B “QL B” and surface features including valve covers, meter boxes, manholes, etc. within the limits of survey locations shown on the concept plans. Quality Level A “QL A” utility information is anticipated to include 25 Vvh’s.

- Locate existing drainage structures within the limits of survey locations shown on the concept plans plus the nearest connecting structure beyond those limits. Pipe sizes, flow lines, material type, etc. are not required, with the exception of the work proposed within the Drainage Scope Items.
- Include items identified by the environmental assessment.

Right-of-Way and Mapping Scope Items:

- All scope items are clearly within the apparent Right of Way or established easements, with the following exceptions. Work outside the Right-of-Way is anticipated to be completed by obtaining a License Agreement. If a License Agreement cannot be obtained for the proposed improvements, below, the work will be eliminated from this project.
  - MP 6.544 (Vining Court): Obtain a License Agreement to perform the work required to provide an ADA compliant curb ramp at the NW return.
  - MP 6.643 (SR 40/Granada Boulevard): Obtain a License Agreement to perform the work required to provide an ADA compliant curb ramp at the NE return.
- Obsolete and/or abandoned driveways are to be removed as described in the Scope to improve pedestrian mobility. Verify proposed access closures with the Right of Way Office.

Geotechnical Scope Items:

- FDOT to perform Pavement Coring Report and provide ESAL calculation and Resilient Modulus values including in areas of roadway widening.
- Complete optional materials analysis for proposed drainage work.

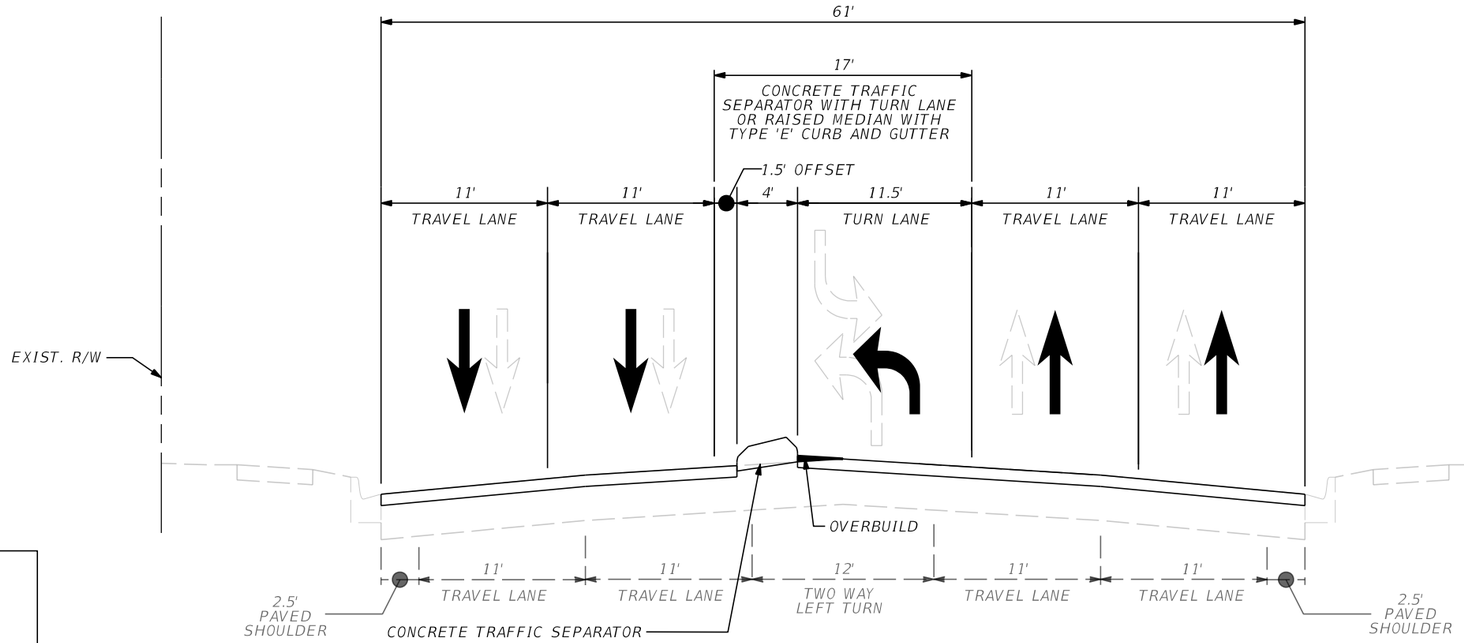
Design Documentation:

- Project Documentation
  - Left turn lanes with reduced lengths, as noted below, are recommended to remain. There is no proposed work at these turn lanes and no documented crash history attributed to deficient turn lane length. The deceleration length for 45 mph is 185-ft, and the total length including 50-ft minimum queue is 235-ft.
    - MP 6.643 (SR 40/Granada Boulevard): The southbound left turn lane. Due to the proximity to the adjacent northbound left turn lane, the full deceleration length and storage cannot be accommodated and the turn lane is limited to 170-ft total length.
    - MP 6.710: The northbound left turn lane at Granada Plaza. Due to the proximity to the adjacent southbound left turn lane, the full deceleration length and storage cannot be accommodated and the turn lane is limited to 165-ft total length.
  - The following horizontal curves do not meet the minimum curve length of 400-ft required in FDM Table 210.8.1. There is insufficient length to provide the minimum 100-ft of full superelevation within the curves. There is no apparent history of crashes solely attributable to the horizontal geometry. The curve is recommended to remain.
    - PI MP 5.151: 309.96-ft length
    - PI MP 6.155: 206.88-ft length
    - PI MP 6.190: 186.83-ft length
    - PI MP 6.616: 247.26-ft length
    - PI MP 6.664: 246.36-ft length
- Design Variation
  - *Lighting within Median* – Supplemental pedestrian lighting cannot be provided on the outside of the roadway at the following proposed unsignalized crossing locations. Per the FDOT Traffic Engineering Manual (TEM) 3.8.5 (5)(c), crosswalk illumination shall be provided at all newly constructed uncontrolled approach crosswalks. Lighting is to be provided within the median at these locations, and per FDM 215.2.2 lighting should not be placed within the median except in conjunction with justified barriers. Additional lighting for these crossings cannot be provided outside of the median due to the restrictive Right of Way, adjacent driveways, abandoned sign foundations, and existing concrete planters. See Lighting Scope Items.
    - MP 5.637 RT (River Beach Drive
    - MP 6.313 LT (Osceola Avenue)
    - MP 6.454 RT (Beach Place)
  - *Median Width* – The proposed typical section includes a 17-ft to 17.5-ft wide median throughout the project. Per FDM Table 210.3.1 the minimum median width for a roadway with "Urban General" context classification and a 45-mph design speed is 22-ft. Due to the existing pavement width and proposed safety improvements this is the maximum width that can be provided without reducing lane widths outside of the acceptable range or reconstructing the entire curb and drainage system.

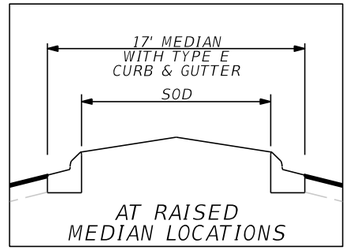
  - *Pedestrian Crossing Ramp* - The unsignalized pedestrian crossing at Bosarvey Drive (MP 6.454) proposed within the Study can be included within this project, however, the ramp of the east side of SR A1A at Beach Place will be treated as a driveway and no detectable warning surface shall be provided. There is an existing paved maintenance access at this location that cannot be closed and the ramp cannot be constructed at this location without modifying this access due to the existing right of way and adjacent driveways. Per FDM 222.2.2.1 and FDM 222.3 this ramp will not be in compliance with the criteria for reconstructed driveways and detectable warnings, respectively.
  - *Turn Lane Length* – The southbound left turn lane at Royal Floridian, MP 6.555. Due to the proximity to the adjacent northbound left turn lane the full deceleration length and storage cannot be accommodated, and the turn lane is limited to 150-ft total length. The deceleration length for 45 mph is 185-ft, and the total length including 75-ft minimum queue, as stated in the Study, is 260-ft.
- Design Exception
  - None.

Project Development Considerations (items not to be included in final design):

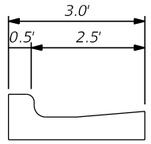
- Due to existing features, limited Right of Way, and the criteria set in FDM 223.2.2, bicycle lanes cannot be provided within this project.
- The Study recommends installing backplates with retro-reflective borders for all signal heads at the intersection of SR A1A and SR 40/Granada Boulevard. A conceptual structural review was completed with limited information available and indicates the additional area of backplates increases wind loading by over a factor of 2. These forces would be concentrated on the base plates 90° from the overhead tube increasing fatigue stress. Design calculations are not available for review, but shop drawings indicate the base plate is secured by one external and one internal weld. The monotube shop drawings were compared to Index 17746 (2006 Design Standards) and found to generally be equal or more robust in element sizing however the standard loading is much less. One notable exception where the Standard Index values are larger is the upright wall thickness (21 mm vs. 28 mm). Additionally, the standard mast arm uprights and base plates have since been strengthened and the smallest of which is 15% larger than the monotube connections. Given the likely failure mechanism, limited inspection ability of the internal weld, and loading well in excess of the 2006 Design Standards assumptions, modifications to the monotube are not recommended. The crash modification factor identified in the Study should be modified to reflect the omission of backplates from this project.



TYPICAL SECTION
MP 5.114 TO MP 6.149
MP 6.451 TO MP 6.713



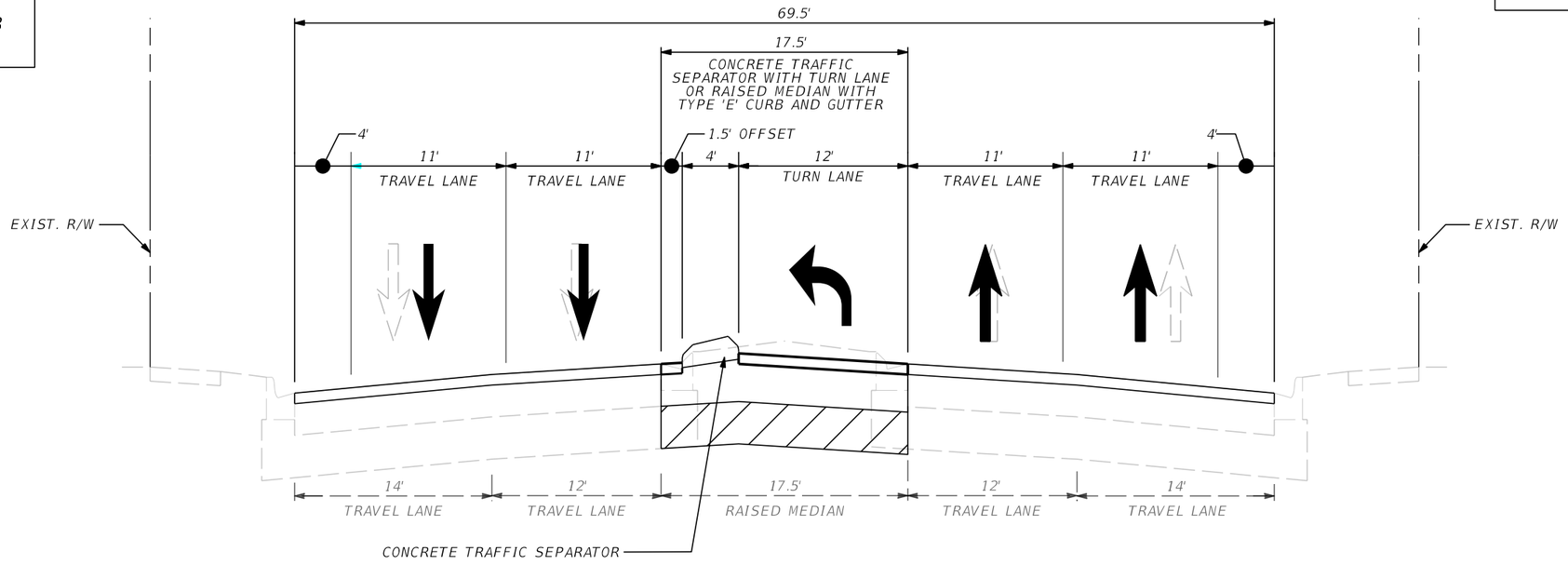
AT RAISED MEDIAN LOCATIONS



MODIFIED TYPE F CURB AND GUTTER DETAIL

EXISTING CONDITION

PROPOSED WORK INCLUDED IN 443512-1



TYPICAL SECTION
MP 6.149 TO MP 6.451

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
A1A	VOLUSIA	443512-1

SR A1A
TYPICAL SECTIONS

SHEET NO. 1

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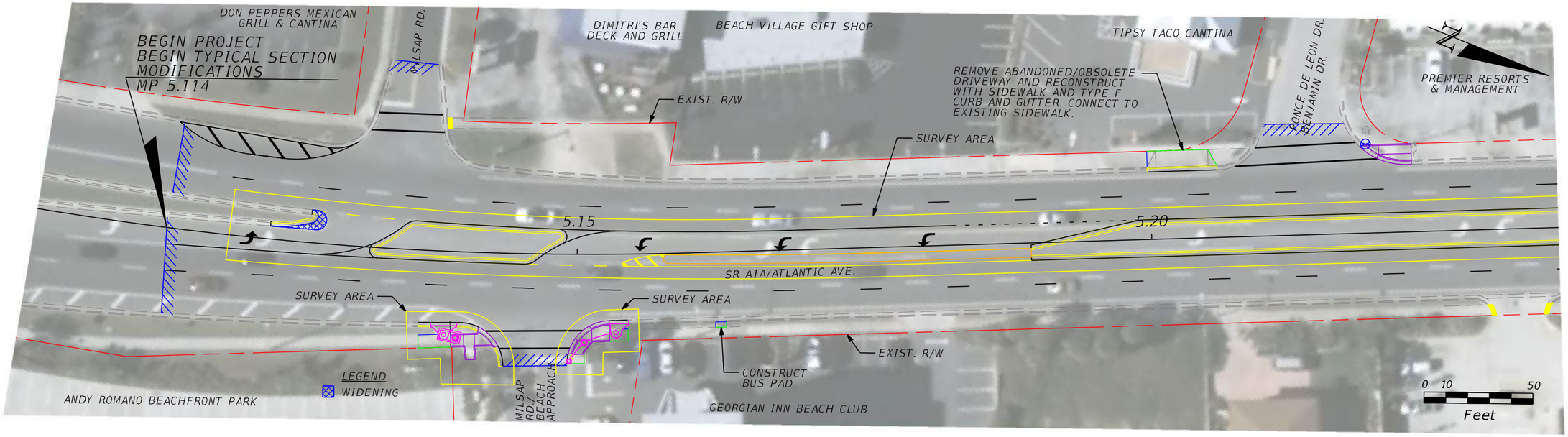

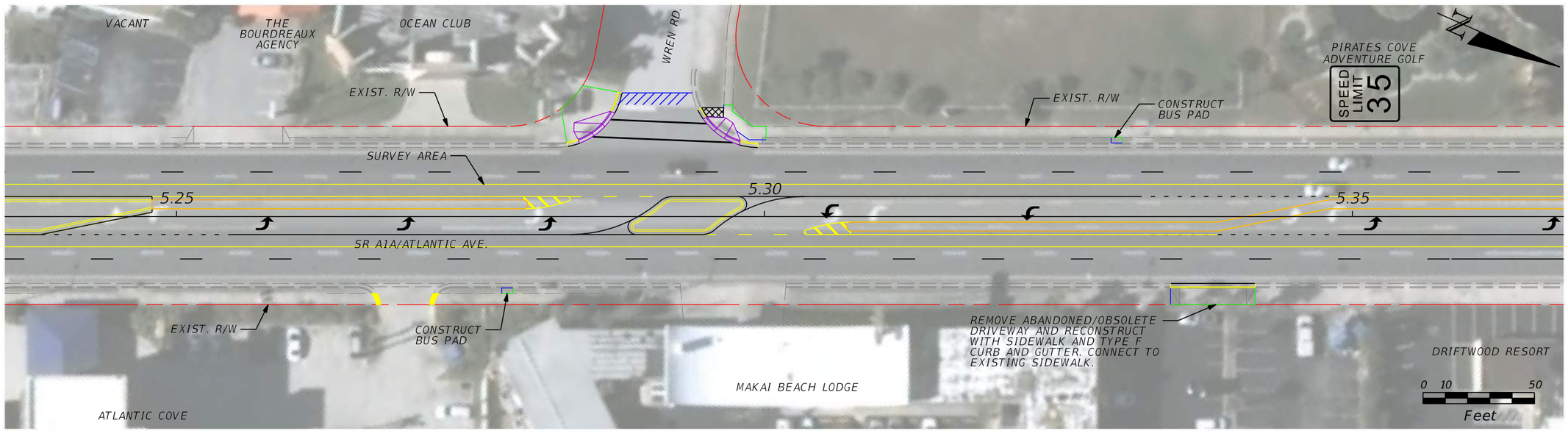

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
A1A	VOLUSIA	443512-1

SR A1A ACCESS MANAGEMENT CONCEPT PLANS

SHEET NO. 2

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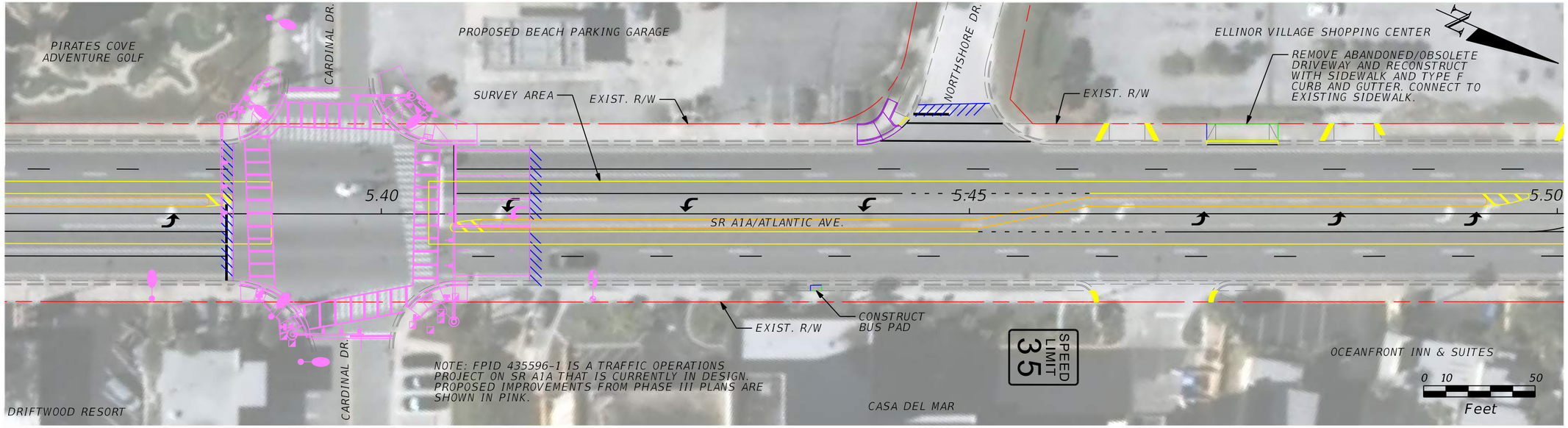

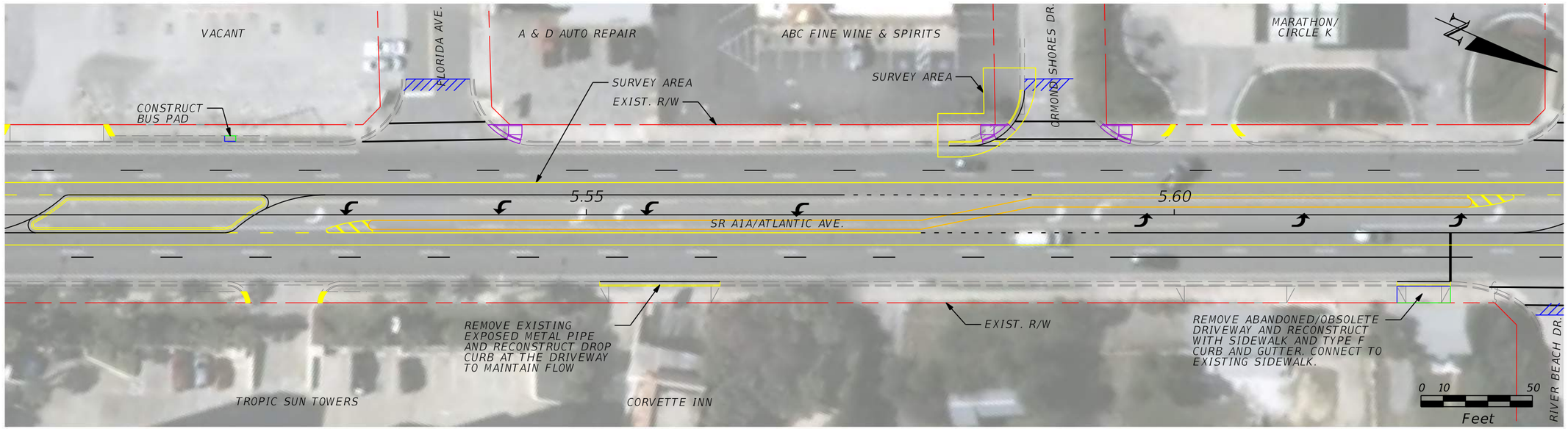

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
A1A	VOLUSIA	443512-1

SR A1A
ACCESS MANAGEMENT
CONCEPT PLANS

SHEET NO. 3

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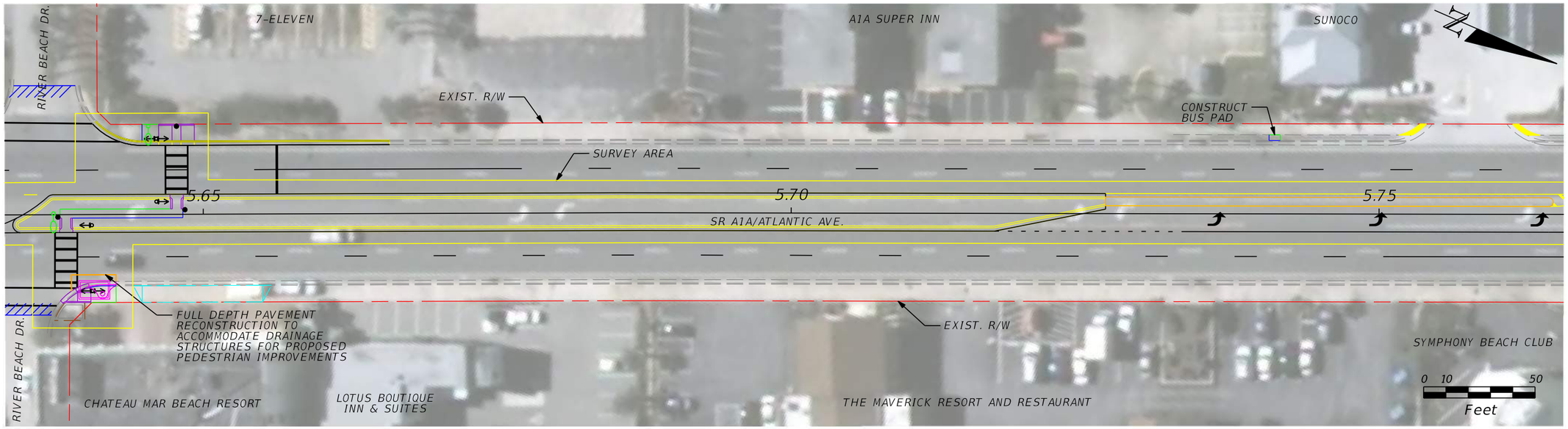

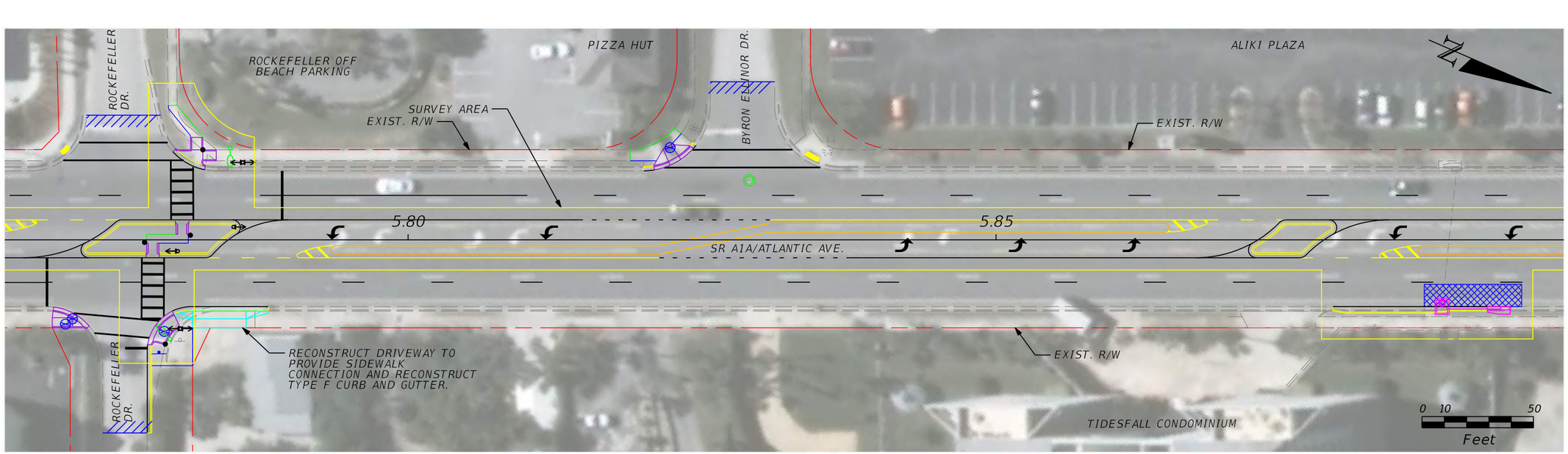

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
A1A	VOLUSIA	443512-1

SR A1A ACCESS MANAGEMENT CONCEPT PLANS

SHEET NO. 4

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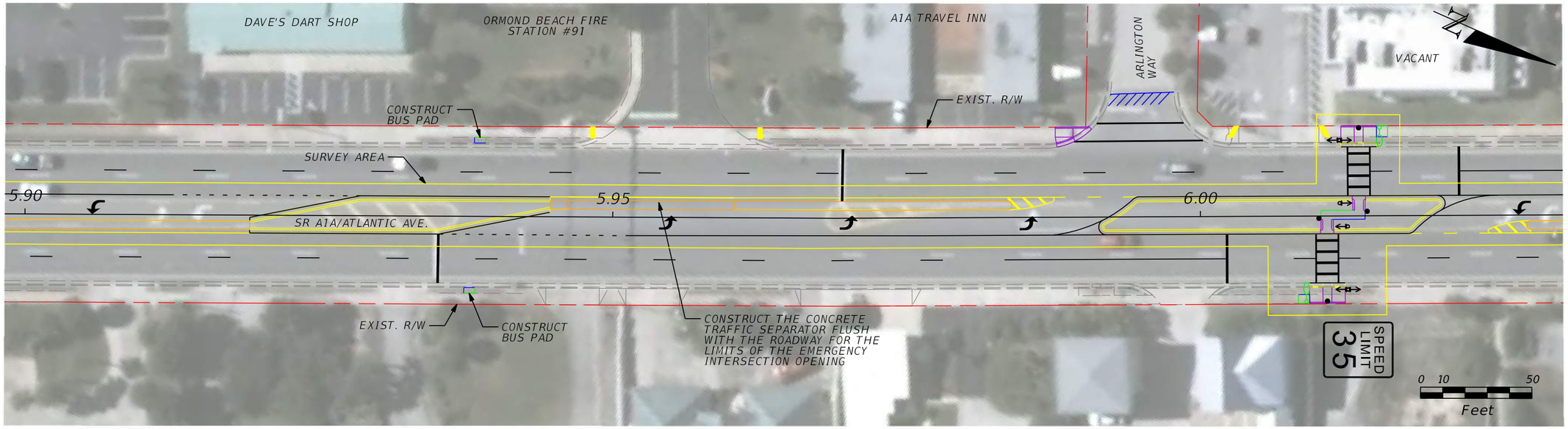

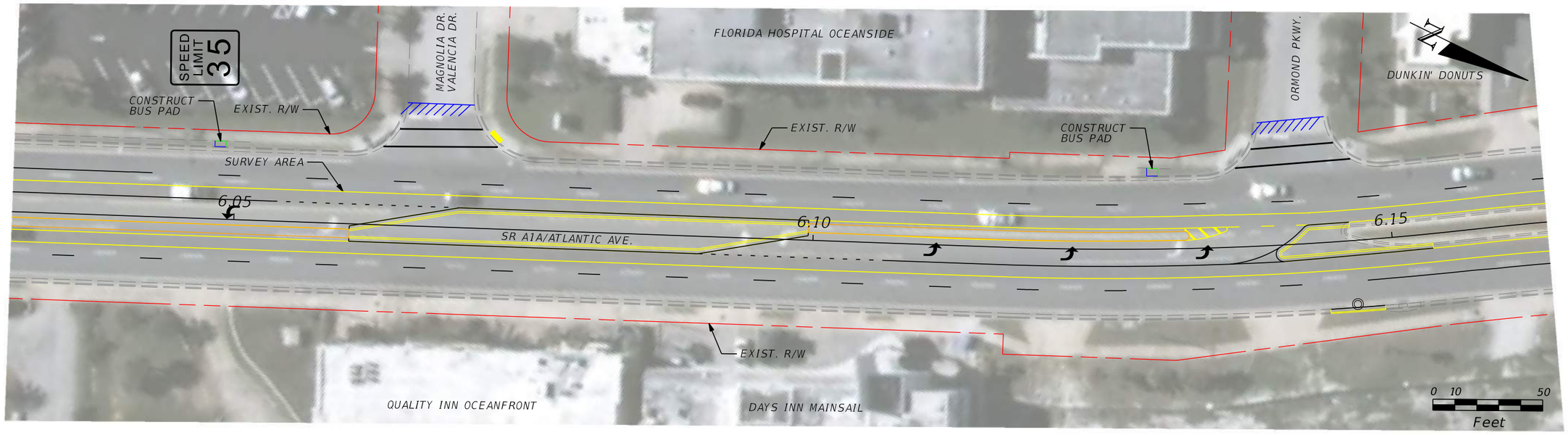

REVISIONS					STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SR A1A ACCESS MANAGEMENT CONCEPT PLANS	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					A1A	VOLUSIA	443512-1		5

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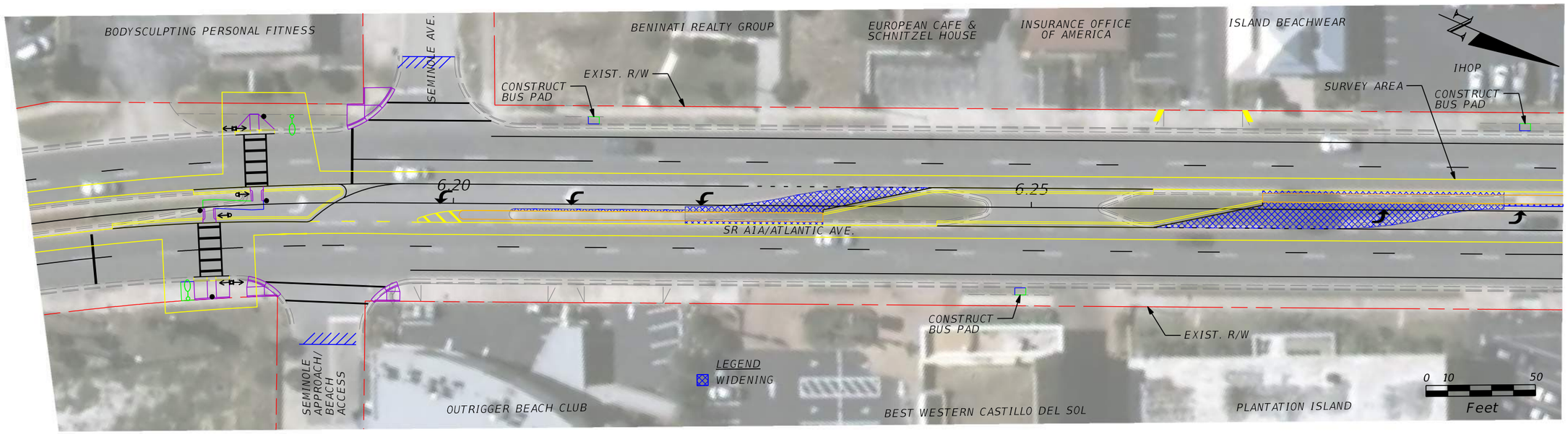

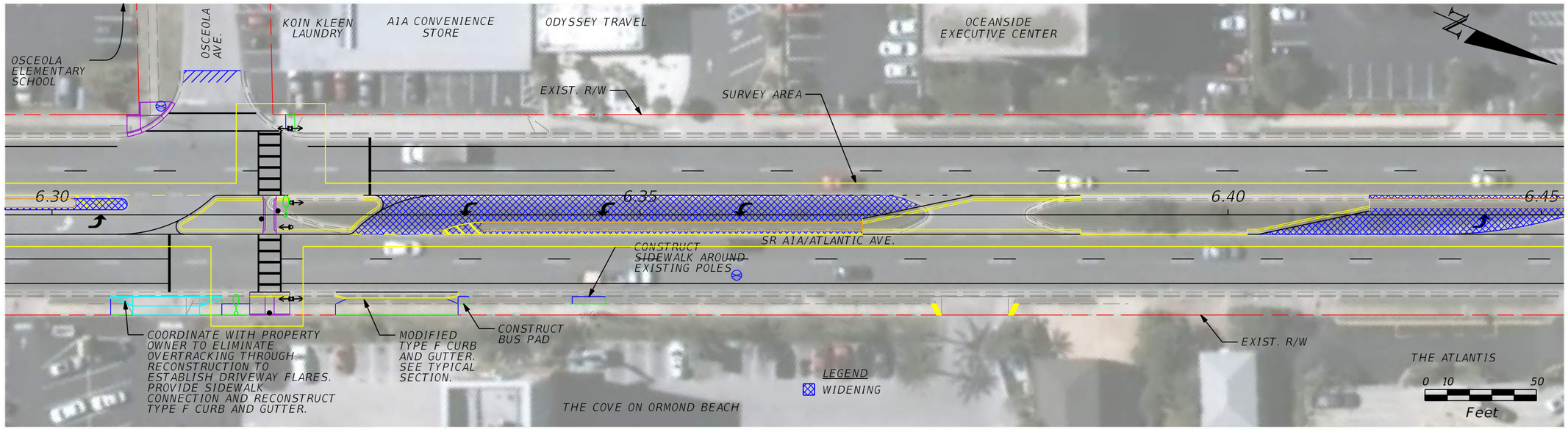

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
A1A	VOLUSIA	443512-1

SR A1A ACCESS MANAGEMENT CONCEPT PLANS

SHEET NO. 6

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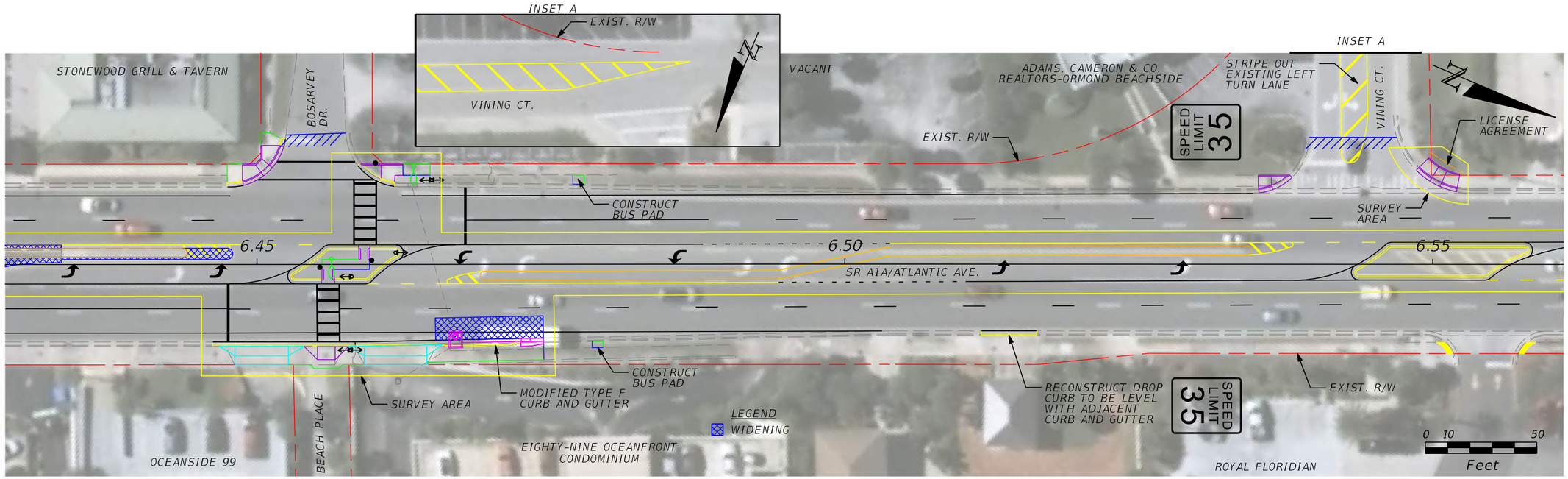

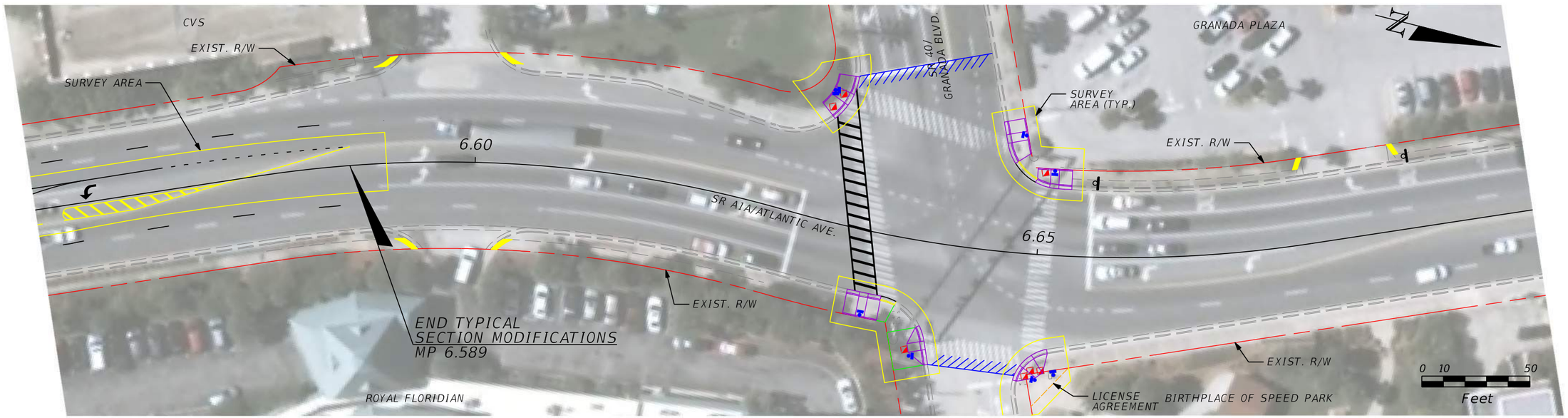

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
A1A	VOLUSIA	443512-1

SR A1A ACCESS MANAGEMENT CONCEPT PLANS

SHEET NO. 7

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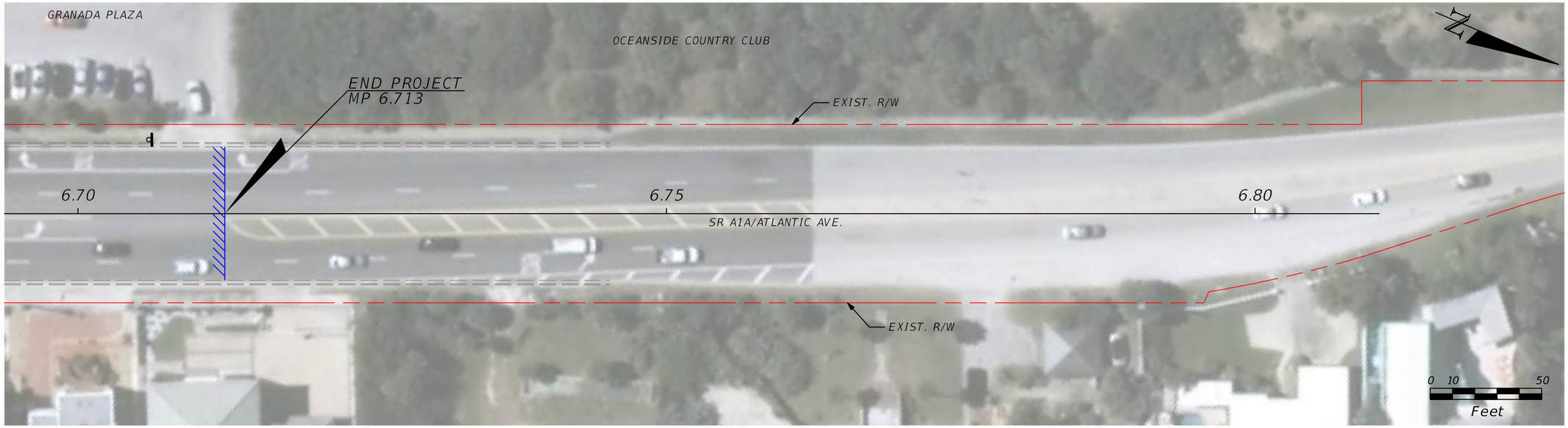

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
A1A	VOLUSIA	443512-1

SR A1A ACCESS MANAGEMENT CONCEPT PLANS

SHEET NO. 8

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FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 443512-1-52-01 **Letting Date:** 08/2021

Description: A1A FROM MILLSAP RD TO SR 40

District: 05 **County:** 79 VOLUSIA **Market Area:** 06 **Units:** English
Contract Class: 4 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 1.506 MI

Project Manager: AAA-ARN\ HNTB-MO

Version 3 Project Grand Total **$3,736,583.90**

Description: A1A FROM MILLSAP RD TO SR 40 Updates Include: Modified proposed lighting, removed proposed backplate at SR 40/Granada Blvd., Incorporated work from 442884-1 resurfacing project.

Sequence: 1 MIS - Miscellaneous Construction **Net Length:** 1.599 MI
8,443 LF

Description: SR A1A Access Management from Milsap Road to SR 40 (Granada Boulevard)

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	1.50	AC	$19,000.00	$28,500.00
120-1	REGULAR EXCAVATION	1,891.00	CY	$14.50	$27,419.50
120-6	EMBANKMENT	1,891.00	CY	$23.84	$45,081.44
162-1-11	PREPARED SOIL LAYER, FINISH SOIL, 6"	2,915.00	SY	$3.01	$8,774.15
	Earthwork Component Total				$109,775.09

ROADWAY COMPONENT

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	910.00	SY	$26.34	$23,969.40
160-4	TYPE B STABILIZATION	800.00	SY	$12.66	$10,128.00
285-709	OPTIONAL BASE,BASE GROUP 09	885.00	SY	$17.50	$15,487.50
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	249.00	TN	$104.00	$25,896.00
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	70.00	TN	$136.25	$9,537.50
520-5-11	TRAF SEP CONC-TYPE I, 4' WIDE	4,185.00	LF	$42.00	$175,770.00
527-2	DETECTABLE WARNINGS	200.00	SF	$28.62	$5,724.00

710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.89	GM	$2,859.02	$2,544.53
710-11-123	PAINTED PAVT MARK,STD,WHITE,SOLID, 12"	495.00	LF	$0.92	$455.40
710-11-125	PAINTED PAVT MARK,STD,WHITE,SOLID,24"	800.00	LF	$2.51	$2,008.00
710-11-170	PAINTED PAVT MARK,STD,WHITE, ARROWS	59.00	EA	$32.23	$1,901.57
710-11-201	PAINTED PAVT MARK,STD,YELLOW,SOLID,6"	3.01	GM	$2,432.58	$7,322.07
711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	495.00	LF	$2.86	$1,415.70
711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	800.00	LF	$5.25	$4,200.00
711-11-170	THERMOPLASTIC, STD, WHITE, ARROW	59.00	EA	$69.68	$4,111.12
711-11-224	THERMOPLASTIC, STD, YELLOW, SOLID, 18"	100.00	LF	$4.06	$406.00
711-11-241	THERMOPLASTIC,STD,YELLOW,DOT / GUIDE, 6"	0.40	GM	$2,145.25	$858.10
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	0.89	GM	$7,095.94	$6,315.39
711-16-201	THERMOPLASTIC, STD-OTH,YELLOW, SOLID, 6"	3.01	GM	$6,988.83	$21,036.38
	Roadway Component Total				$319,086.66

SHOULDER COMPONENT

User Input Data

Description	Value

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	4,541.00	LF	$20.25	$91,955.25
520-1-10	CONCRETE CURB & GUTTER, TYPE F	357.00	LF	$23.86	$8,518.02
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	63.00	SY	$40.33	$2,540.79
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	359.00	SY	$57.91	$20,789.69
570-1-2	PERFORMANCE TURF, SOD	3,433.00	SY	$2.80	$9,612.40
	Shoulder Component Total				$133,416.15

DRAINAGE COMPONENT

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	2.00	EA	$5,728.66	$11,457.32
425-2-71	MANHOLES, J-7, <10'	2.00	EA	$6,566.67	$13,133.34
430-174-118	PIPE CULV, OPT MATL, ROUND,18"SD	48.00	LF	$59.76	$2,868.48

	Drainage Component Total	$27,459.14

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	81.00	AS	$347.83	$28,174.23
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	3.00	AS	$1,669.68	$5,009.04
	Signing Component Total				$33,183.27

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	Miscellaneous
Multiplier	1
Description	

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	800.00	LF	$20.44	$16,352.00
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	45.00	EA	$681.82	$30,681.90
646-1-12	ALUMINUM SIGNALS POLE, PED DETECT POST	21.00	EA	$1,097.89	$23,055.69
654-2-11	RECT RAPID FLASH BCN, F&I AC, 1 SIGN	12.00	AS	$8,139.12	$97,669.44
654-2-12	RECT RAPID FLASH BEACON, F&I AC, BB SIGN	12.00	AS	$9,464.48	$113,573.76
660-3-51	VEHICLE DETECTION SYSTEM-MICRO,A&J,CAB	1.00	EA	$504.06	$504.06
660-3-52	VEHICLE DETECTION SYSTEM-MICRO,A&J,ABOV	2.00	EA	$711.42	$1,422.84
	Signalizations Component Total				$283,259.69

LIGHTING COMPONENT

Conventional Lighting Subcomponent

Description	Value
Spacing	MAX

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	1,300.00	LF	$9.35	$12,155.00
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	13.00	EA	$681.82	$8,863.66
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	1,300.00	LF	$1.75	$2,275.00
715-4-13	LIGHT POLE COMPLETE, F&I-STD, 40'	13.00	EA	$5,709.55	$74,224.15

715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	13.00	EA	$576.59	$7,495.67
	Subcomponent Total				$105,013.48

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-7-11	LOAD CENTER, F&I, SECONDARY VOLTAGE	8.00	EA	$13,984.02	$111,872.16
	Lighting Component Total				$216,885.64

LANDSCAPING COMPONENT

User Input Data

Description	Value
Lump Sum	55,000.00
Cost %	0.00
Component Detail	N

	Landscaping Component Total	$55,000.00
Sequence 1 Total		$1,178,065.64

Sequence: 2 RSD - Resurfacing, Divided **Net Length:** 1.035 MI
5,465 LF

Description: Milling and Resurfacing of SR A1A from Milsap Road to Ormond Parkway, MP 5.114 to MP 6.149.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.05

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.05	AC	$19,000.00	$950.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	503.00	SY	$26.34	$13,249.02

Earthwork Component Total $14,199.02

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	22.00 / 22.00
Structural Spread Rate	110
Friction Course Spread Rate	110

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	26,716.80	SY	$3.30	$88,165.44
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,469.42	TN	$104.00	$152,819.68
337-7-82	ASPH CONC FC,TRAFFIC C,FC-9.5,PG 76-22	1,469.42	TN	$167.30	$245,833.97

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	10.00	SY	$12.66	$126.60
	Comment: Full Depth Pavement Reconstruction for Drainage Structures				
285-709	OPTIONAL BASE,BASE GROUP 09	10.00	SY	$17.50	$175.00
	Comment: Full Depth Pavement Reconstruction for Drainage Structures				
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	7,442.00	SY	$3.30	$24,558.60
	Comment: Additional Milling and Resurfacing of Side Streets, Median Openings				
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	411.00	TN	$104.00	$42,744.00

	Comment: Additional Milling and Resurfacing & Widening			
337-7-83	ASPH CONC FC,TRAFFIC C,FC-12.5,PG 76-22	410.00 TN	$136.25	$55,862.50
	Comment: Additional Milling and Resurfacing & Widening			
711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	1,370.00 LF	$2.86	$3,918.20
711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	200.00 LF	$5.25	$1,050.00

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	419.00	EA	$6.69	$2,803.11
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	4.14	GM	$2,859.02	$11,836.34
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	2.07	GM	$585.17	$1,211.30
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	4.14	GM	$6,006.67	$24,867.61
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	2.07	GM	$5,219.67	$10,804.72
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	4.14	GM	$12,374.33	$51,229.73
	Roadway Component Total				$718,006.80

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	0
Friction Course Spread Rate	0
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	992.00	LF	$23.86	$23,669.12
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	137.00	SY	$40.33	$5,525.21
522-2	CONCRETE SIDEWALK AND	218.00	SY	$57.91	$12,624.38

	DRIVEWAYS, 6"			
527-2	DETECTABLE WARNINGS	410.00 SF	$28.62	$11,734.20

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	11,000.00	LF	$1.50	$16,500.00
104-18	INLET PROTECTION SYSTEM	54.00	EA	$118.08	$6,376.32
	Shoulder Component Total				$76,429.23

DRAINAGE COMPONENT

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-211	INLETS, CURB, TYPE 10, <10'	1.00	EA	$4,552.86	$4,552.86
425-1-311	INLETS, CURB, TYPE P-1, <10'	1.00	EA	$7,466.67	$7,466.67
425-1-442	INLETS, CURB, TYPE J-4, >10'	2.00	EA	$18,588.23	$37,176.46
425-2-43	MANHOLES, P-7, PARTIAL	1.00	EA	$3,224.55	$3,224.55
425-5	MANHOLE, ADJUST	2.00	EA	$1,155.58	$2,311.16
	Comment: Utility Manholes				
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	32.00	LF	$149.41	$4,781.12
	Drainage Component Total				$59,512.82

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	21.00	AS	$347.83	$7,304.43
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	19.00	AS	$1,669.68	$31,723.92
700-1-50	SINGLE POST SIGN, RELOCATE	3.00	AS	$274.18	$822.54
700-1-60	SINGLE POST SIGN, REMOVE	17.00	AS	$45.45	$772.65
	Signing Component Total				$40,623.54

UTILITIES COMPONENT

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
1080-21-500	UTILITY FIXTURE, VALVE/METER BOX, ADJUST	5.00	EA	$465.33	$2,326.65
	Utilities Component Total				$2,326.65

Sequence 2 Total $911,098.06

Sequence: 3 RSD - Resurfacing, Divided **Net Length:** 0.302 MI
1,595 LF

Description: Milling and Resurfacing SR A1A from Ormond Parkway to Bosarvey Drive, MP 6.149 to MP 6.451.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.05

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.05	AC	$19,000.00	$950.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	294.00	SY	$26.34	$7,743.96

Earthwork Component Total $8,693.96

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	26.00 / 26.00
Structural Spread Rate	110
Friction Course Spread Rate	110

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	9,213.01	SY	$3.30	$30,402.93
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	506.72	TN	$104.00	$52,698.88
337-7-82	ASPH CONC FC,TRAFFIC C,FC-9.5,PG 76-22	506.72	TN	$167.30	$84,774.26

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	1,188.00	SY	$3.30	$3,920.40
	Comment: Additional Milling and Resurfacing of Side Streets, Median Openings, and Turn Lanes				
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	65.00	TN	$104.00	$6,760.00
	Comment: Additional Milling and Resurfacing				
337-7-82	ASPH CONC FC,TRAFFIC C,FC-9.5,PG 76-22	65.00	TN	$167.30	$10,874.50
	Comment: Additional Milling and Resurfacing				
711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	375.00	LF	$2.86	$1,072.50

711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	100.00 LF	$5.25	$525.00

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	122.00	EA	$6.69	$816.18
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.21	GM	$2,859.02	$3,459.41
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.60	GM	$585.17	$351.10
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	1.21	GM	$6,006.67	$7,268.07
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.60	GM	$5,219.67	$3,131.80
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	1.21	GM	$12,374.33	$14,972.94
	Roadway Component Total				$221,027.97

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	158.00	LF	$23.86	$3,769.88
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	25.00	SY	$40.33	$1,008.25
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	103.00	SY	$57.91	$5,964.73
527-2	DETECTABLE WARNINGS	100.00	SF	$28.62	$2,862.00

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

104-10-3	SEDIMENT BARRIER	3,200.00 LF	$1.50	$4,800.00
104-18	INLET PROTECTION SYSTEM	16.00 EA	$118.08	$1,889.28
	Shoulder Component Total			$20,294.14

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	7.00	AS	$347.83	$2,434.81
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	6.00	AS	$1,669.68	$10,018.08
700-1-50	SINGLE POST SIGN, RELOCATE	1.00	AS	$274.18	$274.18
700-1-60	SINGLE POST SIGN, REMOVE	5.00	AS	$45.45	$227.25
	Signing Component Total				$12,954.32

UTILITIES COMPONENT

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
1080-21-500	UTILITY FIXTURE, VALVE/METER BOX, ADJUST	2.00	EA	$465.33	$930.66
	Utilities Component Total				$930.66

Sequence 3 Total $263,901.05

Sequence: 4 RSD - Resurfacing, Divided **Net Length:** 0.262 MI
1,383 LF

Description: Milling and Resurfacing SR A1A from Bosarvey Drive to North of SR 40 (Granada Boulevard), MP 6.451 to MP 6.713.

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.05

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.05	AC	$19,000.00	$950.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	123.00	SY	$26.34	$3,239.82

Earthwork Component Total $4,189.82

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	22.00 / 22.00
Structural Spread Rate	110
Friction Course Spread Rate	110

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	6,763.09	SY	$3.30	$22,318.20
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	371.97	TN	$104.00	$38,684.88
337-7-82	ASPH CONC FC,TRAFFIC C,FC-9.5,PG 76-22	371.97	TN	$167.30	$62,230.58

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	3,422.00	SY	$3.30	$11,292.60
	Comment: Additional Milling and Resurfacing				
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	188.00	TN	$104.00	$19,552.00
	Comment: Additional Milling and Resurfacing				
337-7-82	ASPH CONC FC,TRAFFIC C,FC-9.5,PG 76-22	188.00	TN	$167.30	$31,452.40
	Comment: Additional Milling and Resurfacing				
711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	800.00	LF	$2.86	$2,288.00

711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	640.00 LF	$5.25	$3,360.00

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	Y
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	1
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	1
Skip Stripe No. of Stripes	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	106.00	EA	$6.69	$709.14
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.05	GM	$2,859.02	$3,001.97
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.52	GM	$585.17	$304.29
711-15-101	THERMOPLASTIC, STD-OP, WHITE, SOLID, 6"	1.05	GM	$6,006.67	$6,307.00
711-15-131	THERMOPLASTIC, STD-OP, WHITE, SKIP, 6"	0.52	GM	$5,219.67	$2,714.23
711-15-201	THERMOPLASTIC, STD-OP,YELLOW, SOLID, 6"	1.05	GM	$12,374.33	$12,993.05
	Roadway Component Total				$217,208.34

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips ï¿½No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	200.00	LF	$23.86	$4,772.00
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	35.00	SY	$40.33	$1,411.55
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	119.00	SY	$57.91	$6,891.29
527-2	DETECTABLE WARNINGS	160.00	SF	$28.62	$4,579.20

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount

104-10-3	SEDIMENT BARRIER	2,800.00 LF	$1.50	$4,200.00
104-18	INLET PROTECTION SYSTEM	14.00 EA	$118.08	$1,653.12
	Shoulder Component Total			$23,507.16

DRAINAGE COMPONENT

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
425-1-341	INLETS, CURB, TYPE P-4, <10'	1.00	EA	$5,525.73	$5,525.73
425-1-442	INLETS, CURB, TYPE J-4, >10'	2.00	EA	$18,588.23	$37,176.46
425-2-43	MANHOLES, P-7, PARTIAL	1.00	EA	$3,224.55	$3,224.55
430-175-124	PIPE CULV, OPT MATL, ROUND, 24"S/CD	16.00	LF	$149.41	$2,390.56
	Drainage Component Total				$48,317.30

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	6.00	AS	$347.83	$2,086.98
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	5.00	AS	$1,669.68	$8,348.40
700-1-50	SINGLE POST SIGN, RELOCATE	1.00	AS	$274.18	$274.18
700-1-60	SINGLE POST SIGN, REMOVE	5.00	AS	$45.45	$227.25
	Signing Component Total				$10,936.81

SIGNALIZATIONS COMPONENT

Signalization 1

Description	Value
Type	Miscellaneous
Multiplier	1
Description	SR 40\Granada Boulevard (MP 6.643)

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	375.00	LF	$9.35	$3,506.25
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	125.00	LF	$20.44	$2,555.00
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	11.00	EA	$681.82	$7,500.02
646-1-11	ALUMINUM SIGNALS POLE, PEDESTAL	5.00	EA	$1,510.41	$7,552.05
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	4.00	AS	$586.78	$2,347.12
653-1-12	PEDESTRIAN SIGNAL, F&I LED COUNT, 2 WAYS	1.00	AS	$1,256.54	$1,256.54
660-1-102	LOOP DETECTOR INDUCTIVE, F&I,	12.00	EA	$323.18	$3,878.16

	TYPE 2			
660-1-106	LOOP DETECTOR INDUCTIVE, F&I, TYPE 6	8.00 EA	$283.50	$2,268.00
660-2-102	LOOP ASSEMBLY, F&I, TYPE B	4.00 AS	$823.00	$3,292.00
660-3-11	VEHICLE DETECTION SYSTEM-MICRO,F&I, CAB	1.00 EA	$1,458.36	$1,458.36
660-3-12	VEHICLE DETECTION SYSTEM-MICRO,F&I, ABO	4.00 EA	$7,992.91	$31,971.64
663-1-122	SIGNAL PRIO & PREEMP, F&I, GPS, DETE	1.00 EA	$4,294.34	$4,294.34
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	6.00 EA	$238.33	$1,429.98
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	$32,036.73	$32,036.73
685-1-12	UPS, F&I, ONLINE DOUBLE CONVERSION	1.00 EA	$7,214.68	$7,214.68
	Signalizations Component Total			$112,560.87

Sequence 4 Total $416,720.30

Date: 12/14/2018 1:54:32 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 443512-1-52-01 **Letting Date:** 08/2021

Description: A1A FROM MILLSAP RD TO SR 40

District: 05 **County:** 79 VOLUSIA **Market Area:** 06 **Units:** English
Contract Class: 4 **Lump Sum Project:** N **Design/Build:** N **Project Length:** 1.506 MI

Project Manager: AAA-ARN\ HNTB-MO

Version 3 Project Grand Total **$3,736,583.90**

Description: A1A FROM MILLSAP RD TO SR 40 Updates Include: Modified proposed lighting, removed proposed backplate at SR 40/Granada Blvd., Incorporated work from 442884-1 resurfacing project.

Project Sequences Subtotal **$2,769,785.05**

102-1	Maintenance of Traffic	10.00 %	$276,978.50
101-1	Mobilization	10.00 %	$304,676.36

Project Sequences Total **$3,351,439.91**

Project Unknowns	10.00 %	$335,143.99

Justification for high %: Standard percentages for MOT and MOB. 10% Unknowns recommended due to proposed raised median construction, full depth reconstruction.

Design/Build	0.00 %	$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	$50,000.00	$50,000.00

Project Non-Bid Subtotal **$50,000.00**

Version 3 Project Grand Total **$3,736,583.90**