

RSQ 21-0921
**ENGINEERING & DESIGN SERVICES
FOR HARTWOOD MARSH ROAD –
PHASE 1**

METRO Consulting Group, LLC
September 7, 2020



Presentation Outline

- Project Overview and Objectives
- Project Approach
- Engineering / Survey and Mapping
 - Roadway
 - Safety and Signalization
 - Stormwater
 - Survey and Mapping
 - Utilities
 - Geotechnical
- Project Management / Community Awareness
- Summary by METRO



Project Overview



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Project Objectives

Update the plans and to implement redlined updates from Lake County, DPW.

- ▶ Verify right of way
- ▶ Redesign the connection with US 27.
- ▶ Reduce the proposed northbound dual right turn lanes on Hartwood Marsh Road to a single right turn lane into the US 27 intersection.
- ▶ Redesign the median opening from full to directional into the Publix mall and the Royal Oaks Plaza.
- ▶ Coordinate with the new storage facility regarding the driveway, left turn lane, and concrete gravity wall.
- ▶ Coordinate with Kings Ridge Homeowner's Association on the sound wall.
- ▶ Update plans to account for improvements.
- ▶ Extend eastbound left turn lane at school.

Project Approach



- ▶ Accelerate Project Schedule
 - ▶ Use the original MicroStation Files then Export to ACAD
 - ▶ Multi-Discipline Quality Review of the Plans and Design
 - ▶ Independent Design Analysis and Update Reports
 - ▶ Use Plan Revisions for minor changes to Update Plans
 - ▶ Minimize the Need for Additional Right of Way
 - ▶ Preserve Existing Infrastructure
 - ▶ Use Aerial Lidar to update survey
 - ▶ Effective Community Awareness Plan
 - ▶ Agency Coordination and Permits
 - ▶ Directional Median at the Publix Mall Driveway
 - ▶ Proactive Early and Consistent Communication with Kings Ridge HOA – Small Group Meetings (During 30%)



Bikers from S. Lake Trail

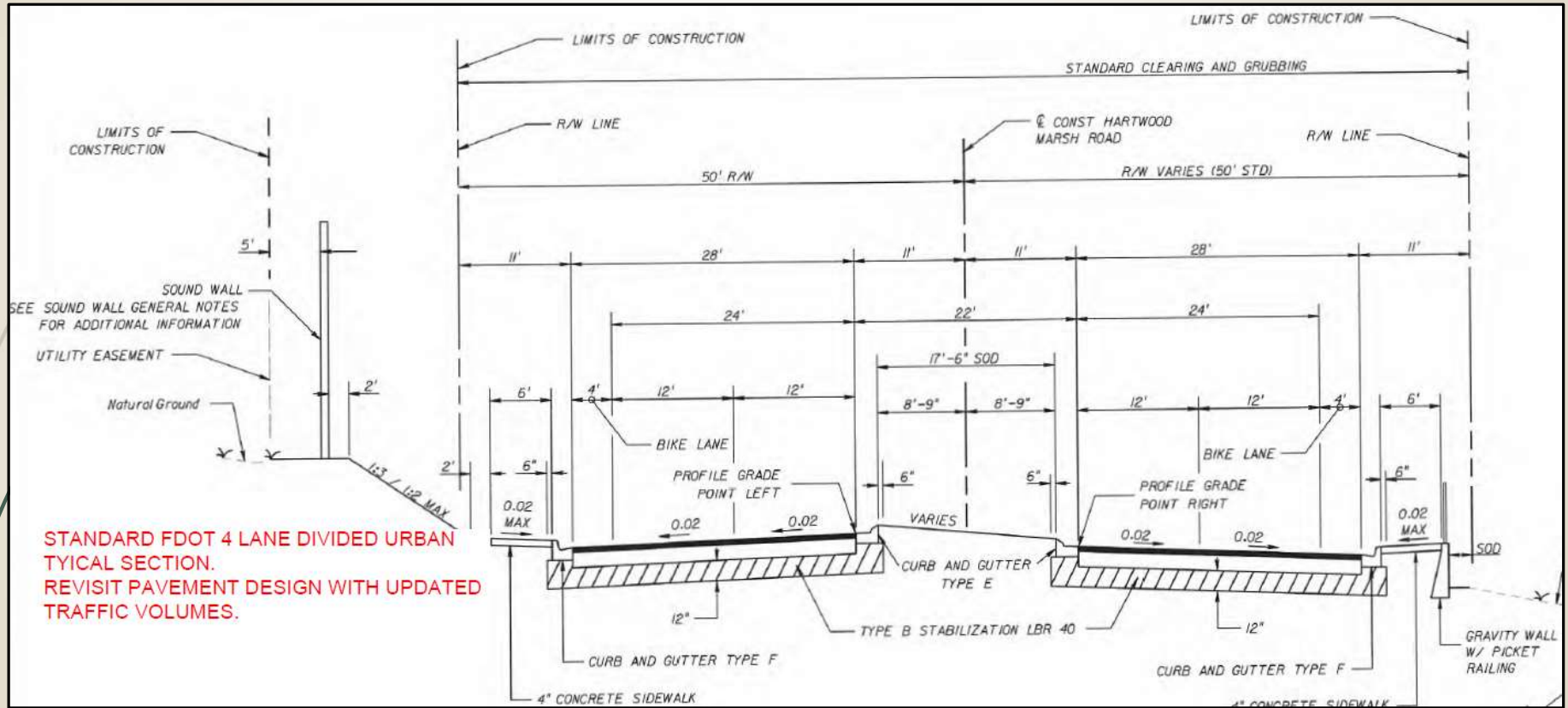


ENGINEERING AND SURVEY AND MAPPING

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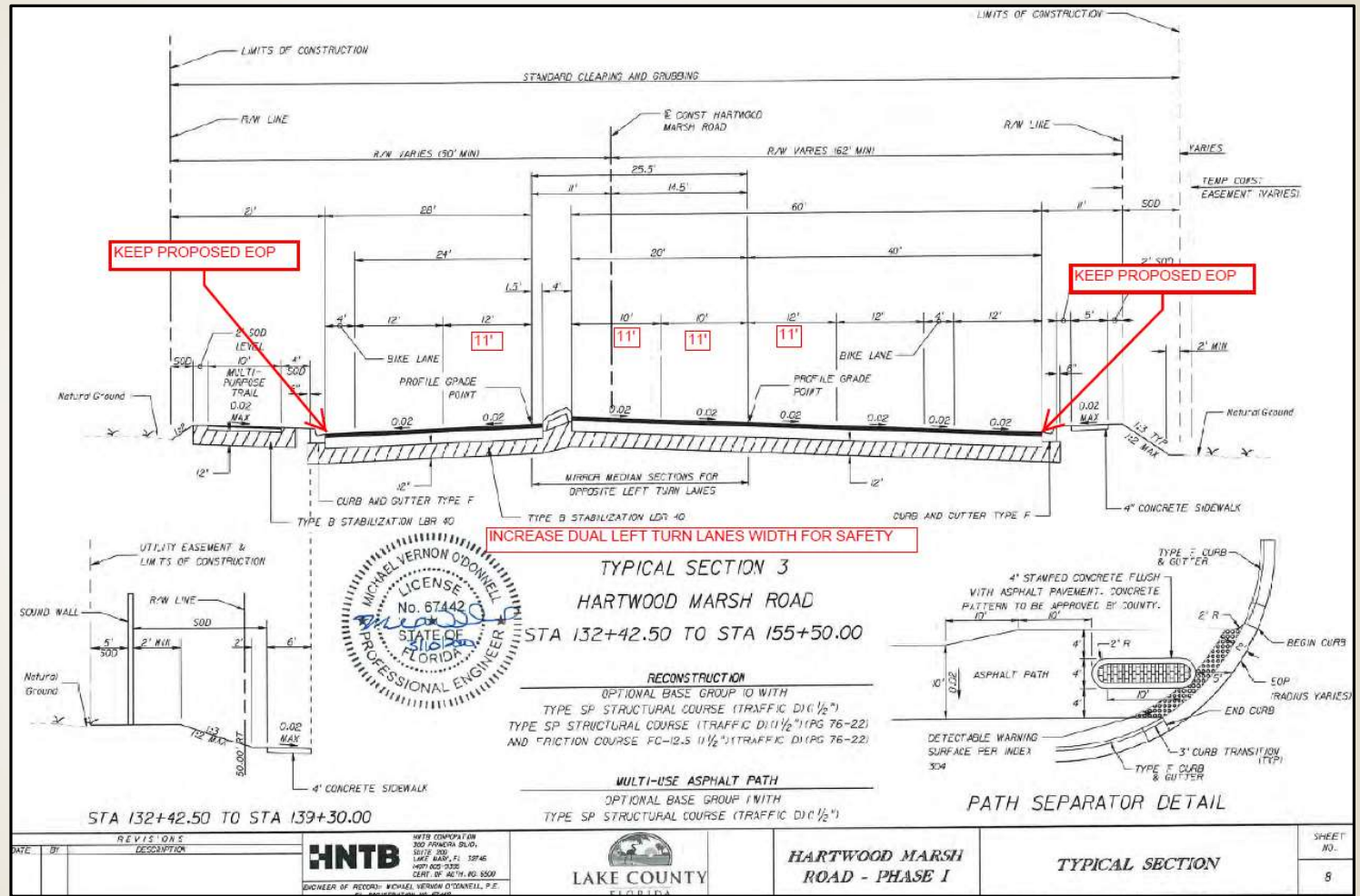
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Typical Section 1



STANDARD FDOT 4 LANE DIVIDED URBAN TYPICAL SECTION. REVISIT PAVEMENT DESIGN WITH UPDATED TRAFFIC VOLUMES.

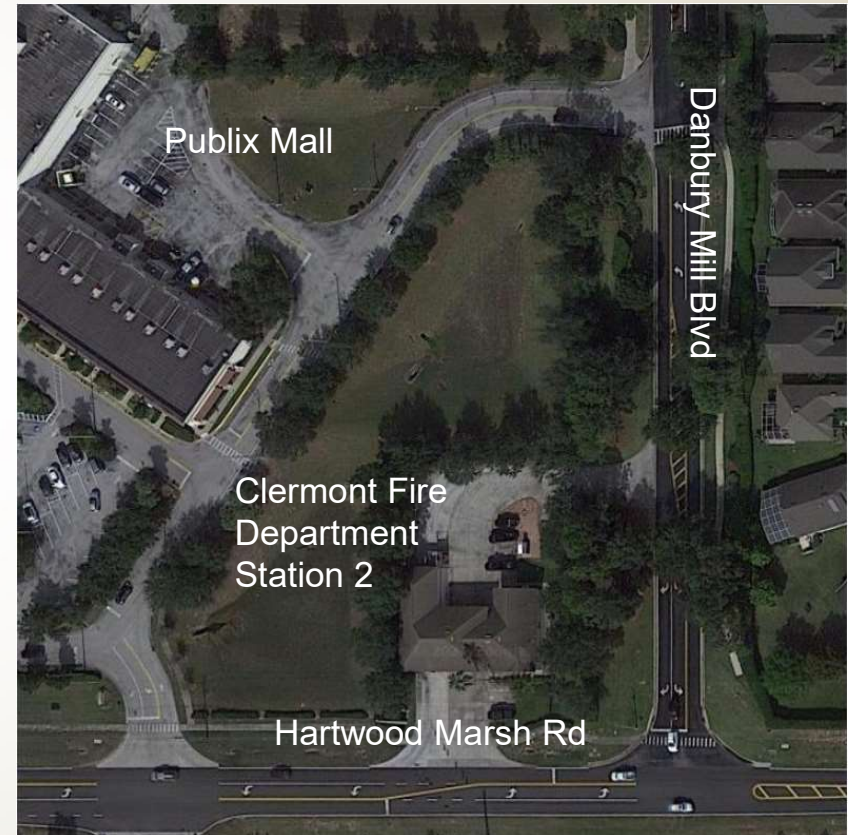
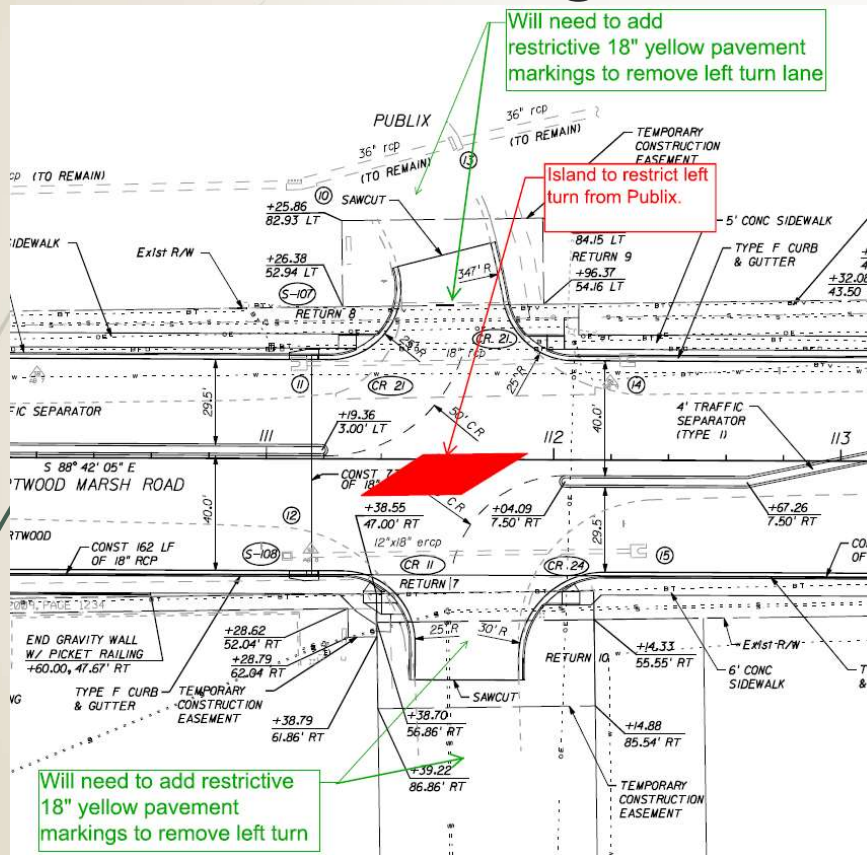
Typical Section



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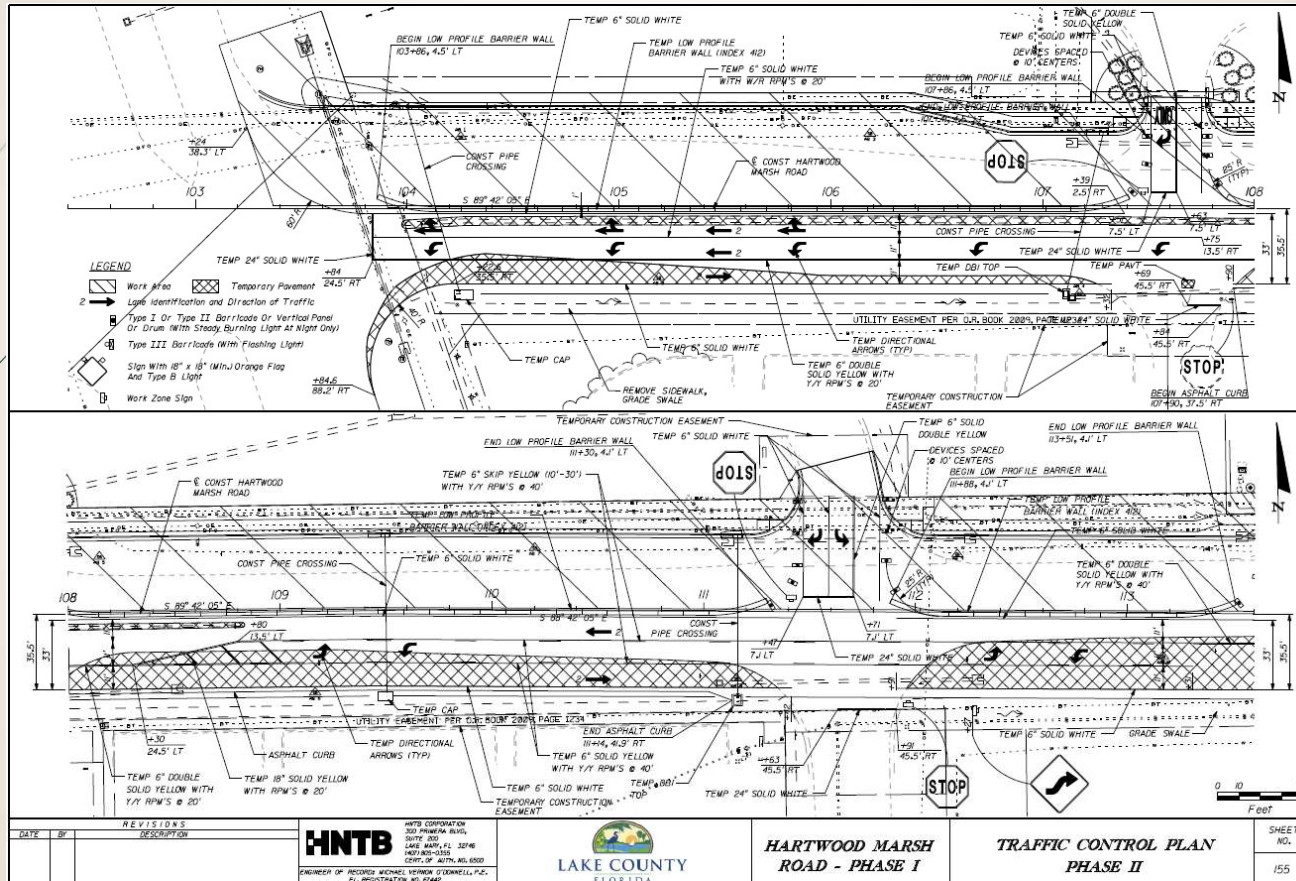
Access Management



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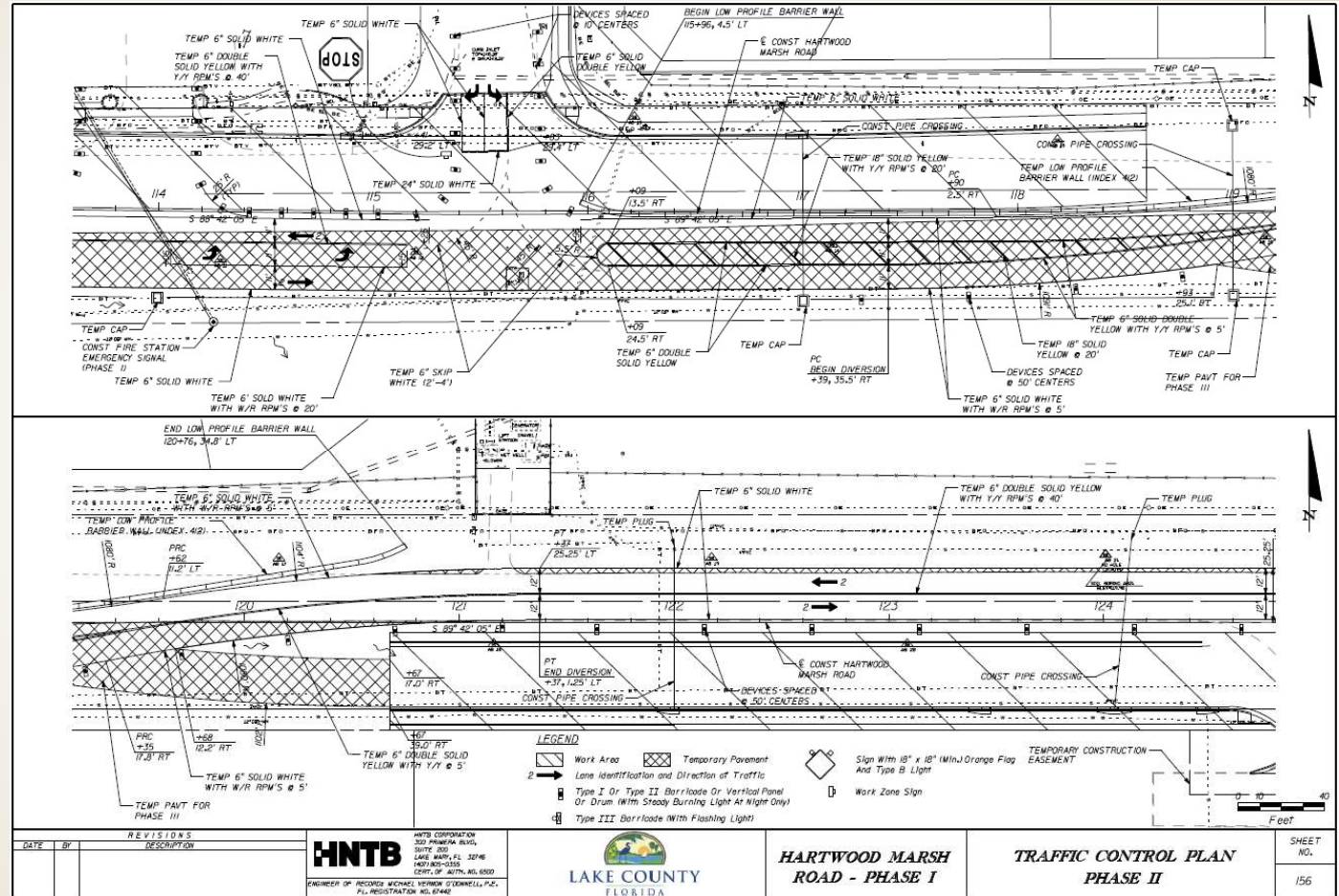
TTCP



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TTCP



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Signalization

- **US-27 Signal Modifications**
 - Add second left turn signal for a second SB left turn lane
 - Avoid impacts to the SE corner signal pole
 - Evaluate the need for of a westbound dual left in the future
- **Fire Station 2 Emergency Signal Replacement / Danbury Mill Blvd Signal Warrant**
 - Reconstruct diagonal span-wire emergency signal
 - Perform a signal warrant analysis at Danbury Mill Blvd



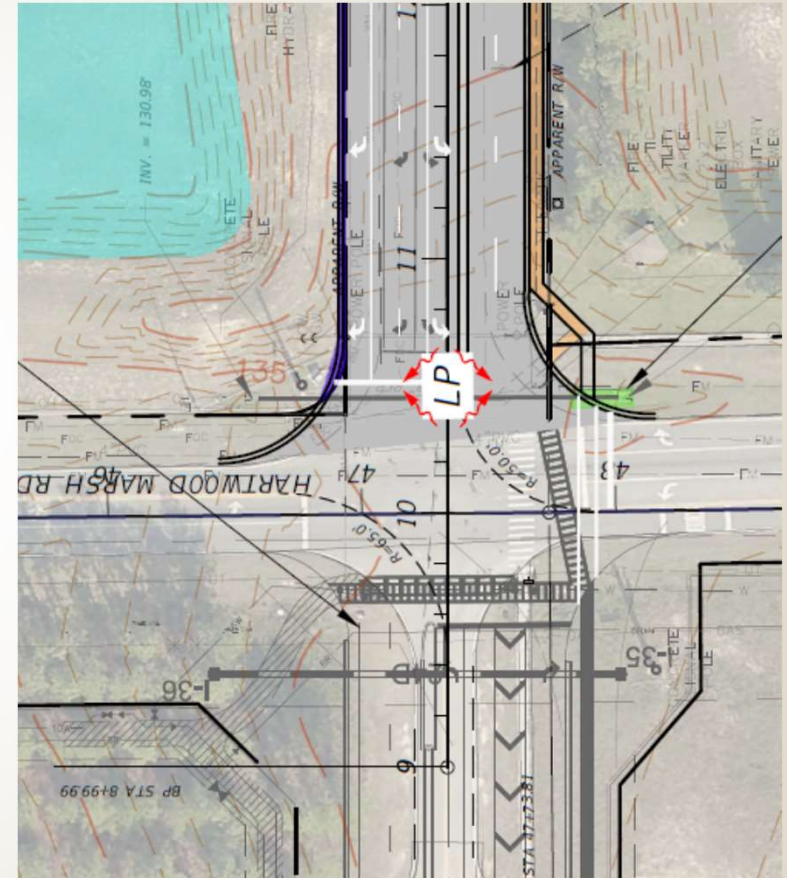
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Signalization

- **Hancock Rd Signal Modifications**
 - Analyze to modify existing span
 - Account for interim and ultimate Hancock Rd
- **ITS Communication Fiber**



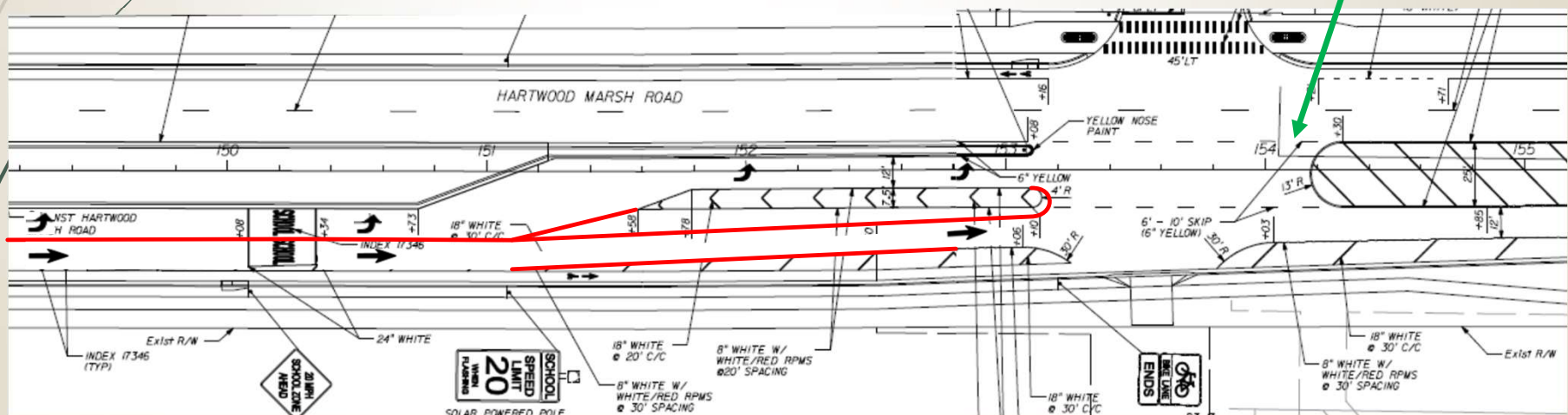
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Signalization

- **Reduced Speed School Zone Modifications**

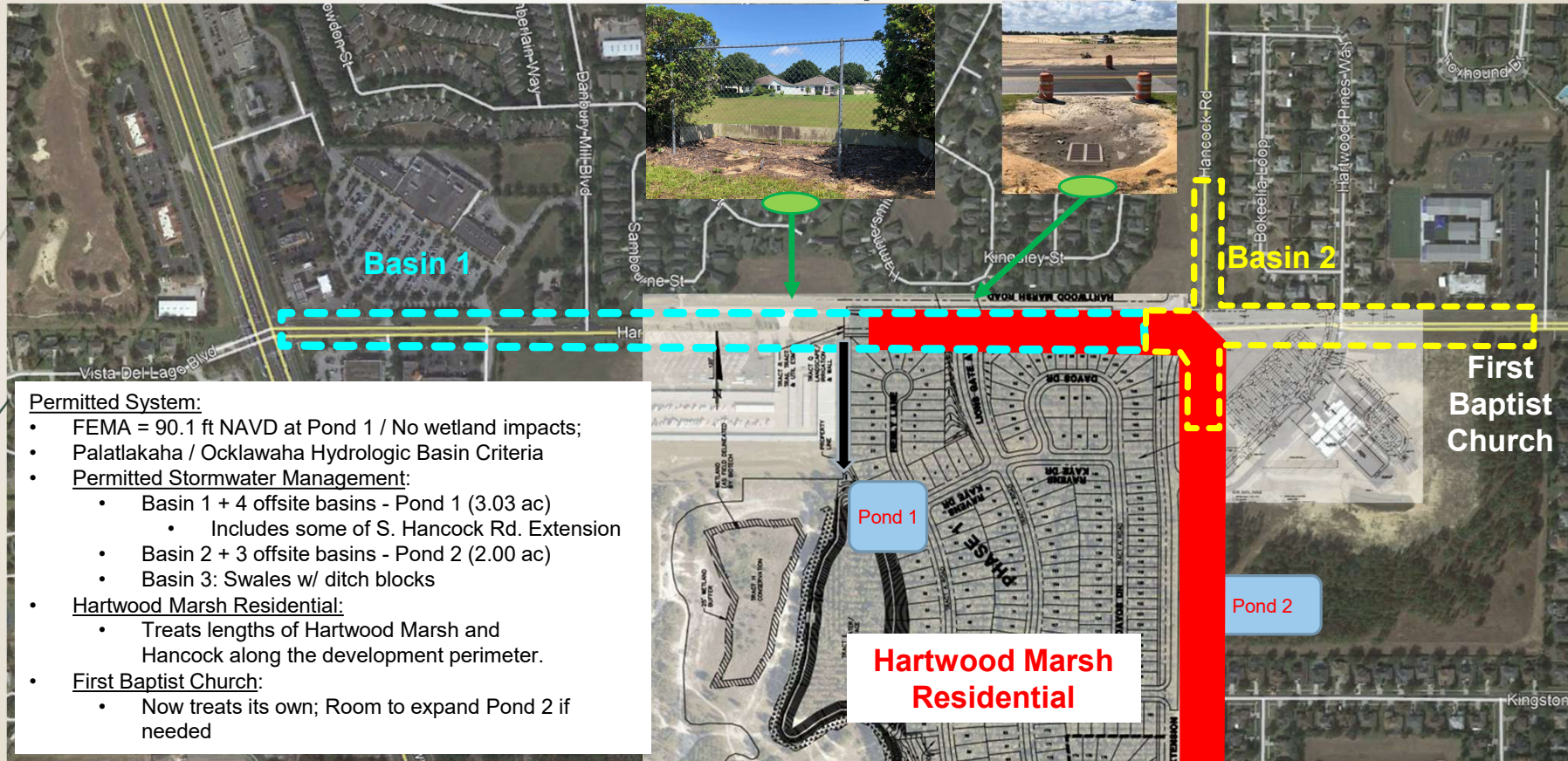
- Relocate school zone signs and beacons
- Install eastbound left lane drop into the Imagine School South Lake turn lane
- Reinstall crosswalk and construct raised median for the school crossing



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Stormwater - Quantity/Quality



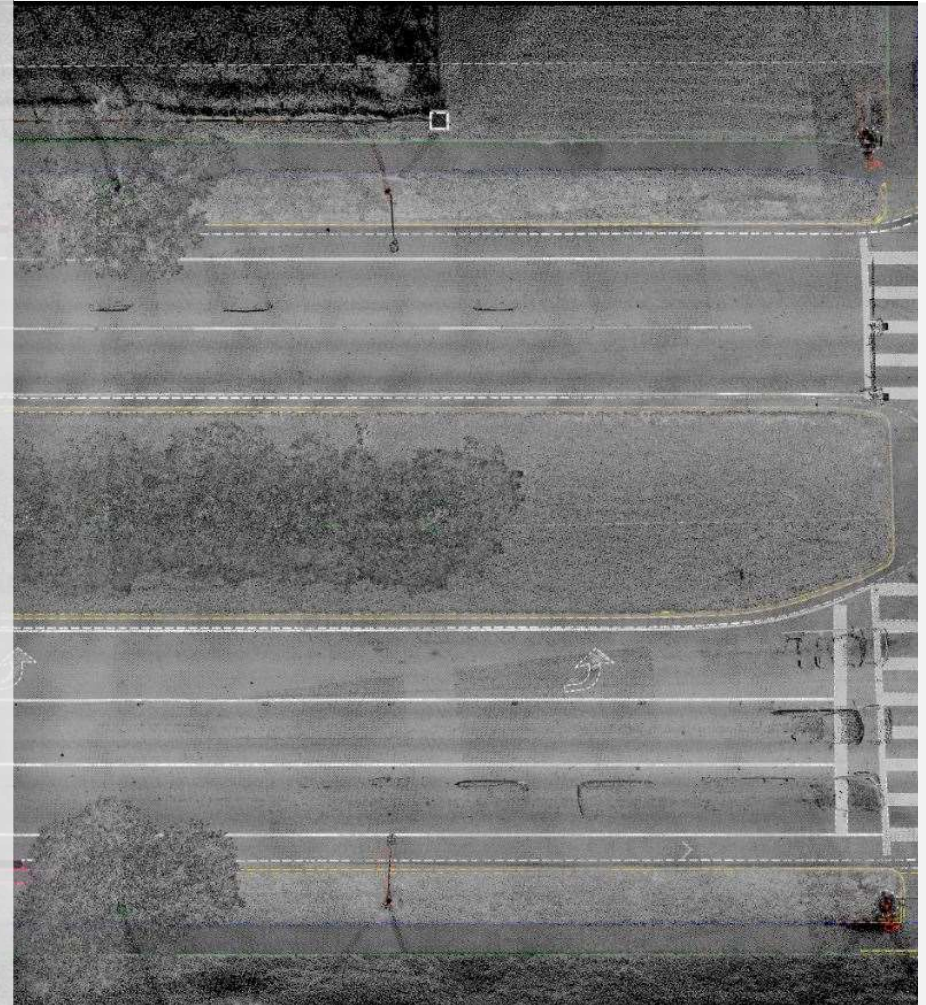
Permitted System:

- FEMA = 90.1 ft NAVD at Pond 1 / No wetland impacts;
- Palatka / Ocklawaha Hydrologic Basin Criteria
- Permitted Stormwater Management:
 - Basin 1 + 4 offsite basins - Pond 1 (3.03 ac)
 - Includes some of S. Hancock Rd. Extension
 - Basin 2 + 3 offsite basins - Pond 2 (2.00 ac)
 - Basin 3: Swales w/ ditch blocks
- Hartwood Marsh Residential:
 - Treats lengths of Hartwood Marsh and Hancock along the development perimeter.
- First Baptist Church:
 - Now treats its own; Room to expand Pond 2 if needed



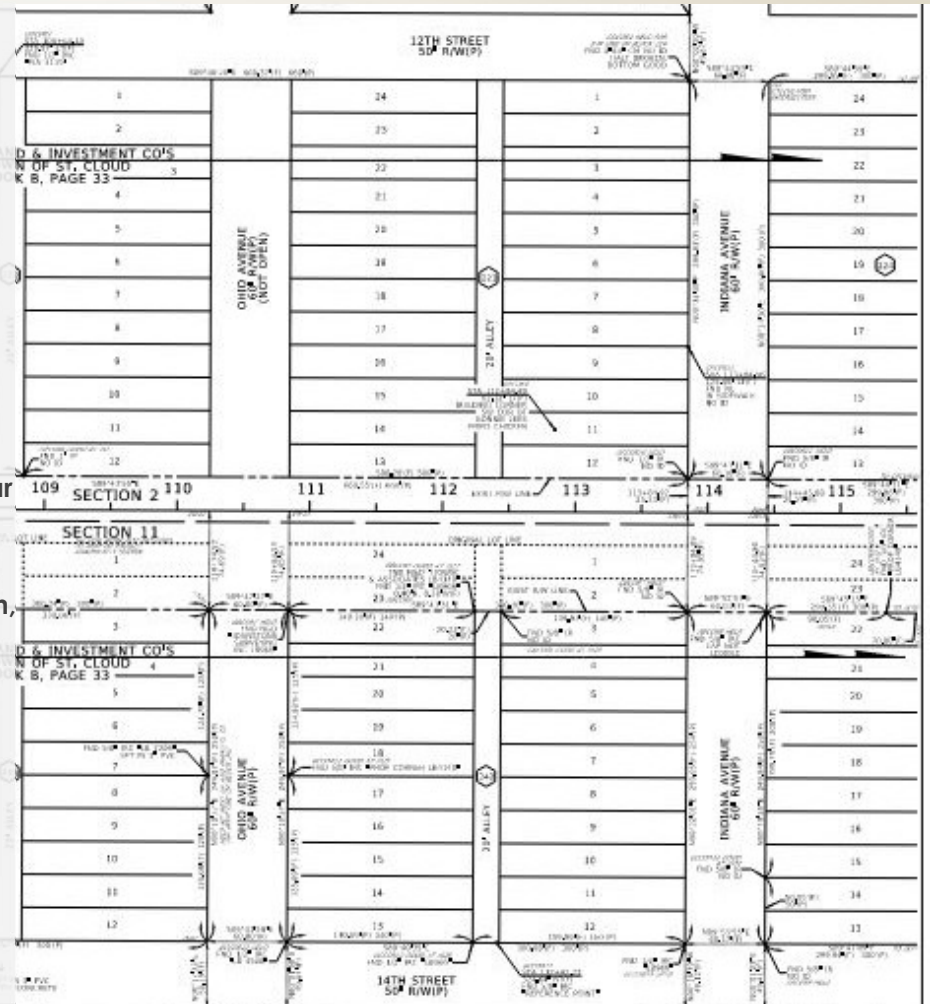
Aerial LiDAR and Photogrammetry

- ▶ **Quality Control of existing data**
 - ▶ Verify control accuracy and datums
 - ▶ Aerial Imagery and LiDAR to quickly verify existing topography
- ▶ **Schedule driven approach**
 - ▶ Imagery quickly identifies new improvements
 - ▶ Streamlines updates to the existing topographic files
 - ▶ Only extract new features
- ▶ **Increased safety for field staff**
 - ▶ Stay out of travel lanes
 - ▶ Cross slopes, curbs, driveways, drainage, etc.
- ▶ **Significantly reduces field crew effort**
 - ▶ Aerial LiDAR reduces obscured areas
 - ▶ Can capture proposed pond sites along the corridor
- ▶ **Deep bench of office staff with familiarity with both AutoCAD and MicroStation**



R/W Mapping

- Validate and build upon existing survey data
 - Match project datums
 - Focus on accuracy of information and CADD compliancy
- Our survey team has performed dozens of RW maps for FDOT, counties and cities in Central Florida
 - Lead RW Surveyor Jeffery Schwartz PSM, is very familiar with the County's Right of Way Identification Map requirements
 - Our relationship with the County Surveyor, Cary Melvin, PSM dates back to when he used to work for GPI (2006)
- Complete understanding of survey efforts
 - Includes submittals of S&D's for acquisition parcels
 - Field staff with significant retracement experience
 - Include final monumentation of right of ways, alignments and references



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Utility Coordination

- ▶ Reference: FDOT Utility Accommodation Manual
- ▶ Based on our 811 System inquiry and results of utility permit search, within the project limits, there are potentially twelve (12) UAO Contacts within the project limits
 - ▶ Bright House Networks, CenturyLink, CenturyLink fka Level 3, City of Clermont Water/Sewer/Fiber, Lake Apopka Natural Gas, Optical, Sumter Electric Cooperative, Utilities Inc of Florida, Verizon, Zayo Group
- ▶ At NTP, we will forward the plans to all UAO's within project limits. RED, GREEN and BROWNS will be updated.



Consider Underground Powerlines at Hancock Road

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Geotechnical Environmental Concerns

- Quality Review conducted on available Reports and update as necessary
- Verification of subsurface conditions (soil and groundwater) along the corridor in conjunction with existing geotechnical data
- Re-establish a groundwater profile along the project corridor and compare to measurements previously obtained. Alternations in subsurface conditions may occur, if recent development in the area has modified soil and surface/subsurface damage





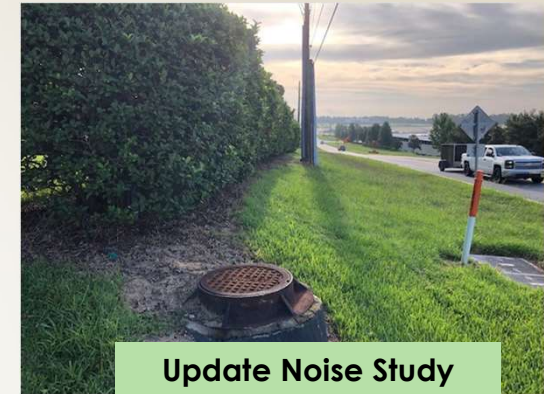
PROJECT MANAGEMENT

Project Management

- Monthly Progress Meetings (In Person Meetings)
- Impromptu Meetings (Virtual Teams Meetings)
- Scope of Services...Minimal Risk for Change
- Budget



Ref: CR 455 Study	Roadway	US 27 to Hancock	Hancock to CR 455
CR 455 No Build (2018)	Harthwood Marsh	16,077	12,123
CR 455 No Build (2045)	Harthwood Marsh	17,788	20,668
CR 455 Build DY 2045	Harthwood Marsh	15,619	24,602
CR 455 Build DY 2045	Harthwood Marsh	19,900	25,637
CR 455 Build DY 2045	Harthwood Marsh	14,397	31,163
Plans (2010) DY 2029	Harthwood Marsh	45,500	45,500



**Update Noise Study
\$ 370k Savings by
Eliminating Sound Wall**



**Pavement Section Savings
\$ 150k to \$ 200k Savings**

- Schedule



- 30% / 60% / 90% / 100% Scoped Schedule 17 months
- 30% / 60% / 100% - Eliminate 90% Submittal 12 – 13 months
- Community Awareness: Newsletters, Website, Small Group Meetings (Pre-30%), Public Meeting (Pre 60%) at Clermont Arts & Recreation Center and Public Hearing (Pre 100%) at Lake County BCC

Community Awareness Hot Spots

- Publix Mall / Southside Business Access Modification
- Access during Construction
 - Fire Station – Emergencies Services
 - Business / Church / School Access, during Construction
- Storage Facility Driveway (Turning Vehicles)
- Sound Wall – Kings Ridge Homeowners Association
- Homeowner Associations: Kings Ridge (Wall and R/W), Future HOA – Developer, Hartwood Pines (R/W), Hunter's Run and Regency Hills
- We reference the FDOT Public Involvement Handbook for the planning, advertising and the execution of public meetings
- Consider a Project Website



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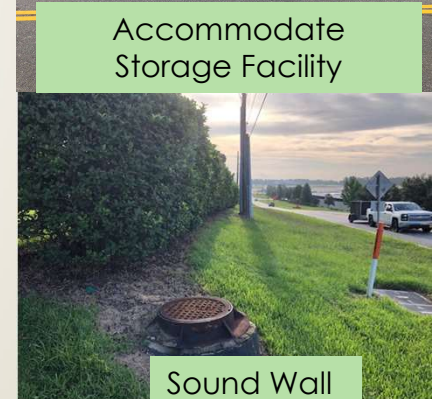
Access during
Construction



Accommodate
Storage Facility



Sound Wall



Quality Process

Existing Signed and Sealed Plans and Engineering Reports



- Quality Assurance Audit
- Deliverable: **QA Report of Findings**
- METRO – Roadway
- TMC – Signals and Signing and Pavement Markings
- Singhofen – Stormwater and Permitting
- GPI – Topo Survey and R/W Control and Parcels Sketches
- AWK – Geotechnical Reports

Proposed Plan Revisions or Replacement Sheets

- Quality Control: Use a 5 Step Color Coded Process
- Quality Assurance: Multi – Discipline Review



QUALITY CONTROL SIGN-OFF FORM

As part of METRO's pursuit to maintain Quality Control with all documents, please provide the following:

PROJECT INFORMATION

Client Name: _____

Project Name: _____

Document Title: _____

QC REVIEW PROCESS

Please print your name, initials, and date.

	Print Name	Initials	Date
Originator	_____	_____	_____
Check	_____	_____	_____
Back Check	_____	_____	_____
Update	_____	_____	_____
Verification	_____	_____	_____

QUALITY ASSURANCE REVIEWER SIGN-OFF

I have reviewed this document and find that it was prepared consistent with the proper Turnpike's procedures.

QA Reviewer Name: _____

Signature: _____

Date: _____



SUMMARY

Summary by METRO

Client Focused...Transportation Engineering Services Firm.



► Value Added Alternatives...That Accelerates the Project Schedule

- Project Manager knowledge of this area ...Identified Construction Cost Savings \$500,000 +
- Use original source MicroStation files and convert properly to ACAD
- Use Aerial Mapping to update survey
- Hancock Road – Use the Study’s Narrow Median Alternative – (No Right of Way)
- Multi-Discipline Quality Review of the Design and Construction Plans
 - Independent Design Analysis and Review of Existing Reports (Update)
 - Use Plan Revisions for minor changes to the Plans
- Solutions to Community Awareness Concerns
 - Wayfinding Signage within the Publix Shopping Plaza to Danbury
 - Proactive Outreach to Kings Ridge HOA - Sound Wall
 - Proactive with Agencies (FDOT Pre-Permit Meeting) / Utilities (Submit plans at NTP)