June 19 - 20, 2025
Hollywood, FL

TRANSPORTATION SYMPOSIUM

D6 Quality Control Process Overview

Patricia Quintela, P.E.
Ryan Raghunandan, P.E

Transportation Symposium Website

SCAN ME

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Presenters

Patricia Quintela, PE.
Assistant District
Drainage Engineer

Ryan Raghunandan, PE.
Internal Design
Project Manager

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Agenda

- *D6 Quality Control (QC) Process Overview*
- *Internal QC Review (Prior to ERC Submittal)*
  - *Staffing Plan*
  - *Review Procedures*
  - *Certificate of Compliance*
- *Lessons Learned – What to look for during QC Reviews?*

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Why is Quality Important?

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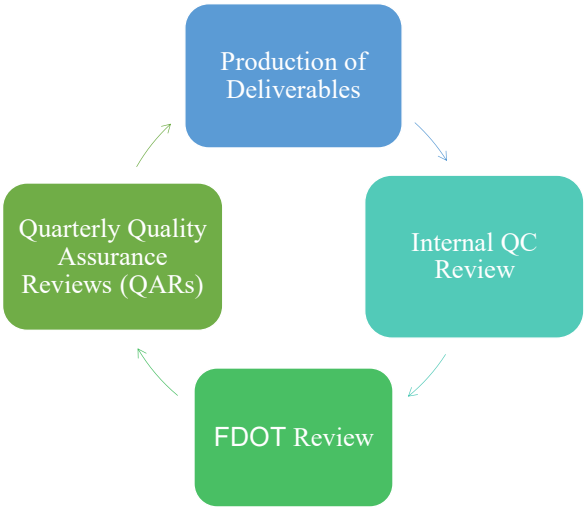
D6 Quality Control Process Overview



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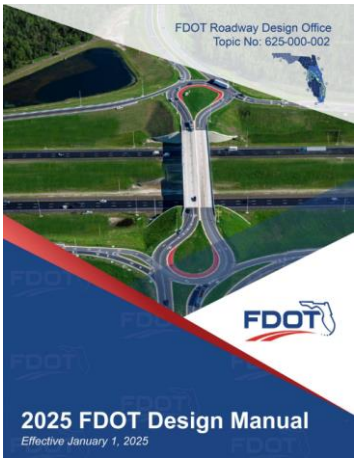
Internal QC Review

- QC Plan (FDM 124.2)
  - QA/QC Staffing Plan
  - Review Procedures for each Deliverable type
  - Certificate of Compliance



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Internal QC Review

- Staffing Plan (FDM 124.2.1)
  - Table which list the deliverable, lead technical professional and QC reviewer per each discipline.

Table 124.2.1 Example QA/QC Staffing Plan

Element/Task	Deliverable	Lead Technical Professional	QC Reviewer
General (PM: Luke S. Walker, PE) (QA Mgr.: Dew Wright, PE) (BIM Mgr.: Tye Down, PE)			
Project Schedule	Schedule	Luke S. Walker, PE	Dep Abillaba, PE
Quality Assurance	Quality Control Plan	Luke S. Walker, PE	Dep Abillaba, PE
Roadway (Rdwy EOR: Luke S. Walker, PE) (Drg EOR: Flow Fast, PE) (TTCP EOR: Lan Solo, PE)			
Variations/Exceptions	Sidewalk Variation	Luke S. Walker, PE	Dep Abillaba, PE
Typical Section	Typical Section Package	Luke S. Walker, PE	Dep Abillaba, PE
Pavement Design	Pavement Design Package	Luke S. Walker, PE	Dep Abillaba, PE
Project Control	Roadway Plans	Chad Bane, PE	Anna King, PSM
Roadway Design	Roadway Plans	Chad Bane, PE	Dep Abillaba, PE
	BIM files	Mora d' Minbas, E.I.	Sabrina Ren, PE
Temp Traffic Control	Roadway Plans	Lan Solo, PE	Luke S. Walker, PE
Drainage Design	Roadway Plans	Flow Fast, PE	Dep Abillaba, PE
Quantity Computations	QTDSRD files	Mora d' Minbas, E.I.	Sabrina Ren, PE
	EQ Report / AASHTOWare	Luke S. Walker, PE	Dep Abillaba, PE
Specifications, TSP	Specifications Package	Luke S. Walker, PE	Dep Abillaba, PE
Signing & Pavement Marking (EOR: Tara Full, PE)			
Signing Design	S&PM Plans	Tara Full, PE	Luke S. Walker, PE
Pavt Marking Design	S&PM Plans	Tara Full, PE	Luke S. Walker, PE
Quantity Computations	EQ Report	Chad Bane, PE	Luke S. Walker, PE
Survey and Mapping (SOR: Anna King, PSM)			
Design Survey	Survey Files	Anna King, PSM	Bob Afett, PSM
Terr Mobile LiDAR	SURVRD01.dgn file	Anna King, PSM	Bob Afett, PSM

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Internal QC Review

- BIM Review Technology
  - List all software used to conduct BIM review

- QC Review Procedures for Plans and Documents
  - QC Document is needed before ERC review.
  - Consult 5-step review process:
    - Origination
    - Checked
    - Concurrence
    - Changes Made
    - Changes Verified

Figure 124.3.1 Example QC Stamp

QC Stamp Submittal:		
Step	By	Date
Origination		
Checked Correct - Yellow Highlight Change - Red Comments		
Concurrence Agree - Green Check No change - Green 'X'		
Changes Made Green Highlight		
Changes Verified Blue Check		

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Internal QC Review

Where to place it? Under Phase Review Submittal – Admin Zip folder

ProjectSuite

PSEE Phase Review Documents (Click to collapse)

EDMS Doc No	Created By	Created Date	Document Name	Description	
11105131		1/4/2021	-CADD.zip	-CADD	View
11104988		1/4/2021	-PLANS-04-ITS.pdf	-PLANS-04-ITS	View
11104957		1/4/2021	-PLANS-01-ROADWAY.pdf	-PLANS-01-ROADWAY	View
10845227		11/2/2020	-PLANS-08-STRUCTURE.pdf	-PLANS-08-STRUCTURE	View
10845221		11/2/2020	-PLANS-07-ARCHITECTURAL.pdf	-PLANS-07-ARCHITECTURAL	View
10845210		11/2/2020	-PLANS-06-LANDSCAPE.pdf	-PLANS-06-LANDSCAPE	View
10845201		11/2/2020	-PLANS-05-LIGHTING.pdf	-PLANS-05-LIGHTING	View
10845192		11/2/2020	-PLANS-03-SIGNALIZATION.pdf	-PLANS-03-SIGNALIZATION	View
10845188		11/2/2020	-PLANS-02-SIGNINGMARKING.pdf	-PLANS-02-SIGNINGMARKING	View
10845186		11/2/2020	-PLANS-01-ROADWAY-PC.pdf	-PLANS-01-ROADWAY-PC	View
10845183		11/2/2020	-PLANS-01-ROADWAY-COREBORINGS.pdf	-PLANS-01-ROADWAY-COREBORINGS	View
10845151		11/2/2020	-ADMIN.zip	-ADMIN	View

Page 1 (Showing Items 1 to 12 of 12) Show per page 10 25 50

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Internal QC Review

- QC Review for BIM
  - Developmental Reviews
    - Conformance – CADD Standards
    - Completeness – Project Expectations
    - Consistency – Accurate relative to each other
  - Design Analysis Review
    - Design Criteria
  - Interdisciplinary Review
    - Interactions between each discipline

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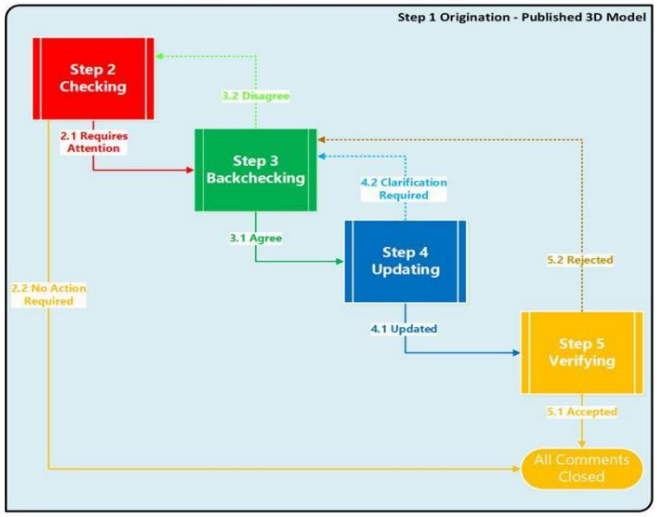
Internal QC Review

Figure 124.4.1 QC Review Steps



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Internal QC Review

Table 124.4.1 Example BIM Review Log

Review Description	Reviewer	Developmental Review			Design Analysis Review	Inter-disciplinary Review
		Conform.	Complete.	Consist.		
Initial Geometrics	Sabrina Ren, PE	12/10/2020			12/12/2020	
Existing Utilities	Sabrina Ren, PE	2/14/2021			2/15/2020	
Phase I BIM	Tye Down, PE	3/25/2021	3/27/2021	3/28/2021	3/28/2021	3/29/2021
Initial Drainage	Dep Abillaba, PE	4/20/2021			4/21/2021	
Final Geometrics	Sabrina Ren, PE	4/26/2021			4/28/2021	
Phase II BIM	Tye Down, PE	8/9/2021	8/10/2021	8/12/2021	8/13/2021	8/15/2021
QTDSRD files	Sabrina Ren, PE					
Final Drainage	Dep Abillaba, PE					
Phase III BIM	Tye Down, PE					
Phase IV BIM	Tye Down, PE					
Final BIM	Tye Down, PE					

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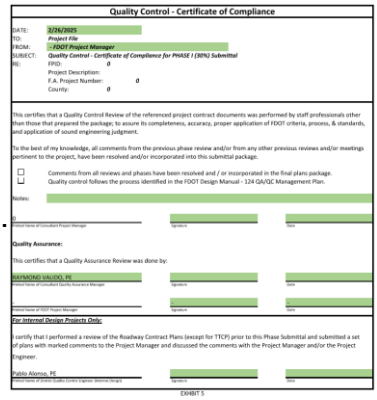
Internal QC Review

- Certificate of Compliance
  - QC Manager
- Independent Peer Review
  - Supplemental and conducted by an independent team.
- Field Review
  - Supplemental and is held at project site.



Quality Control - Certificate of Compliance

DATE: 2/26/2025
TO: Project File
FROM: FDOT Project Manager
SUBJECT: Quality Control - Certificate of Compliance for PHASE I (30%) Submittal
RE: FPID: 0
Project Description:
F.A. Project Number: 0
County: 0

This certifies that a Quality Control Review of the referenced project contract documents was performed by staff professionals other than those that prepared the package; to assure its completeness, accuracy, proper application of FDOT criteria, process, & standards, and application of sound engineering judgment.

To the best of my knowledge, all comments from the previous phase review and/or from any other previous reviews and/or meetings pertinent to the project, have been resolved and/or incorporated into this submittal package.

☐ Comments from all reviews and phases have been resolved and / or incorporated in the final plans package.
☐ Quality control follows the process identified in the FDOT Design Manual - 124 QA/QC Management Plan.

Notes:

0
Printed Name of Consultant Project Manager | Signature | Date

Quality Assurance:

This certifies that a Quality Assurance Review was done by:

RAYMOND VALDO, PE
Printed Name of Consultant Quality Assurance Manager | Signature | Date

Printed Name of FDOT Project Manager | Signature | Date

For Internal Design Projects Only:

I certify that I performed a review of the Roadway Contract Plans (except for TTCP) prior to this Phase Submittal and submitted a set of plans with marked comments to the Project Manager and discussed the comments with the Project Manager and/or the Project Engineer.

Pablo Alonso, PE
Printed Name of Author Quality Control Engineer (Internal Design) | Signature | Date

EXHIBIT 5

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What to look for during QC Reviews?

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Pavement Marking Errors

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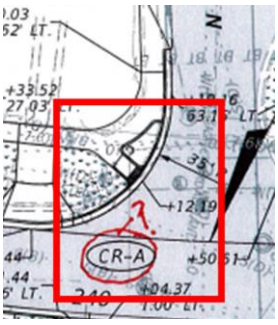
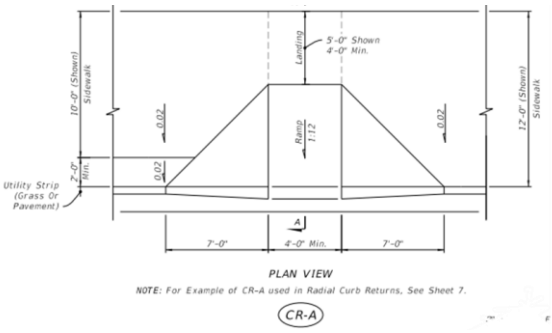
Contract Plan Labelling





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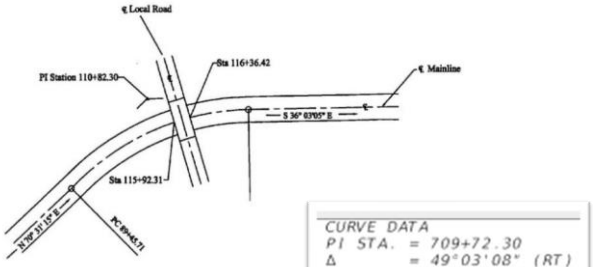
Contract Plan Labelling



CURVE DATA
PI STA. = 709+72.30
Δ = 49°03'08" (RT)
D = 06°30'13"
T = 401.98
L = 754.24
R = 881.00
PC STA. = 705+70.32
PT STA. = 713+24.57
e = 0.024

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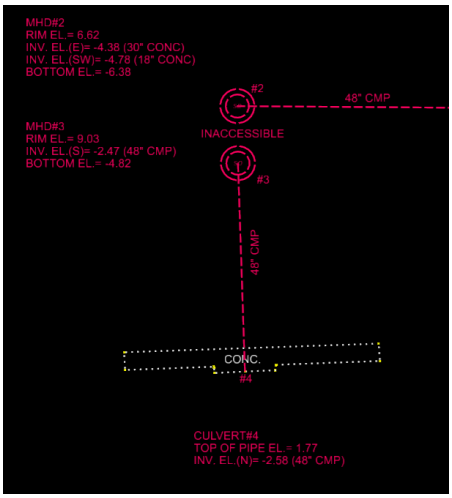
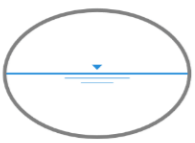
Survey Information Verification



Circular Pipe



Elliptical Pipe

Concrete Pipe—Elliptical Dimensions						
Nominal Dimensions				Equiv. Dia. (in)	Area (Sq. Ft.)	Wall Thickness (in.)
Horiz.		Vert.				
Rise (in.)	Span (in.)	Rise (in.)	Span (in.)			Classes HE II, III, IV VE II, III, IV
12	18	18	12	15	1.3	2 1/2
14	23	23	14	18	1.8	2 3/4
19	30	30	19	24	3.3	3 1/4
24	38	38	24	30	5.1	3 3/4
29	45	45	29	36	7.4	4 1/2
34	53	53	34	42	10.2	5
38	60	60	38	48	12.9	5 1/2
43	68	68	43	54	16.6	6
48	76	76	48	60	20.5	6 1/2
53	83	83	53	66	24.8	7
58	91	91	58	72	29.5	7 1/2
63	98	98	63	78	34.6	8
68	106	106	68	84	40.1	8 1/2
72	113	113	72	90	46.1	9
77	121	121	77	96	52.4	9 1/2
82	128	128	82	102	59.2	10
87	136	136	87	108	66.4	10 1/2
92	143	143	92	114	74	11
97	151	151	97	120	82	11 1/2

* For Informational Purposes Only.

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Verification of Existing Drainage Structures

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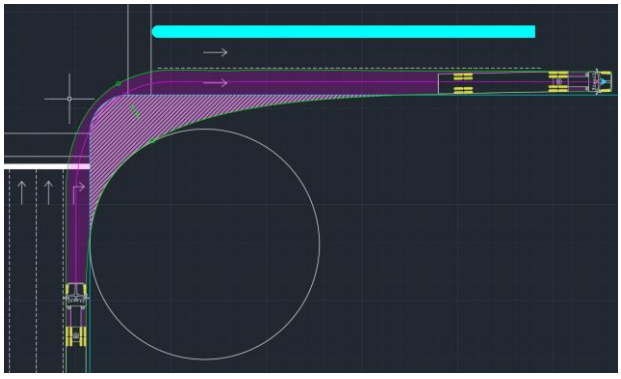
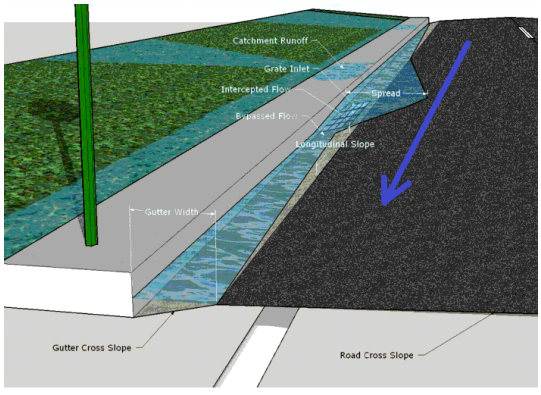
EOP Profile Change Impacts





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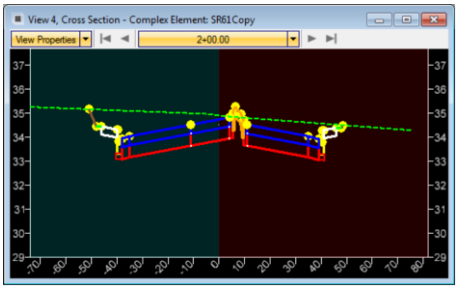
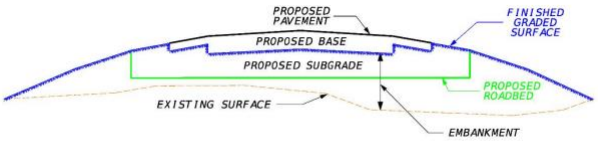
3D Modeling





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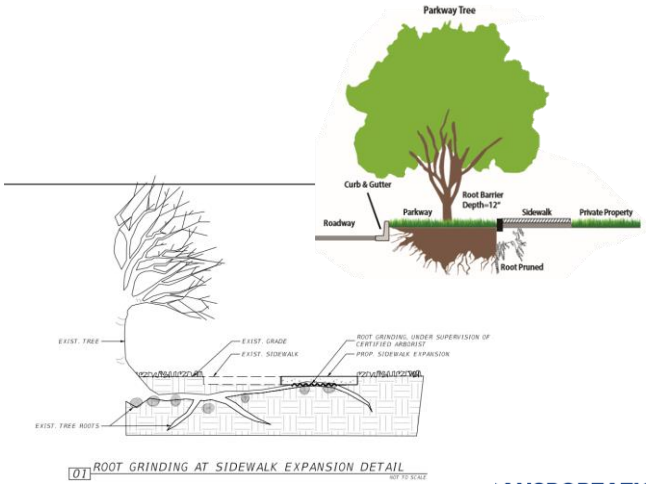
Missing Pay Items



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Identification of Design Variations/Exceptions

GENERAL:
1. LANE CLOSURE SHALL OCCUR ONLY DURING NON-PEAK HOURS, OR ON NON-EVENT DAYS/WEEKENDS.

NON-PEAK HOURS ARE:
FROM 10:00 P.M. TO 05:00 A.M. SUNDAY THRU THURSDAY(SR 826/PALMETTO NB EXPRESS LANE)*
FROM 11:30 P.M. TO 05:00 A.M. SUNDAY THRU THURSDAY(SR 826/PALMETTO NB FROM MP-2.785 TO MP-3.13)
FROM 08:00 P.M. TO 06:00 A.M. SUNDAY THRU THURSDAY(SR 826/PALMETTO NB FROM MP-3.70 TO MP-4.046)
FROM 08:00 P.M. TO 06:00 A.M. SUNDAY THRU THURSDAY(SR 826/PALMETTO SB FROM MP-4.329 TO MP-4.378)
FROM 12:30 A.M. TO 05:00 A.M. SUNDAY THRU THURSDAY(SR 826/PALMETTO EB/WB FROM MP-18.39 TO MP-18.625)
FROM 10:30 P.M. TO 5:30 A.M. SUNDAY THRU THURSDAY(SR 5/SOUTH DIXIE HIGHWAY NB FROM BMP-6.170 TO EMP-6.290)
FROM 10:00 P.M. TO 6:00 A.M. SUNDAY THRU THURSDAY(SR 5/SOUTH DIXIE HIGHWAY SB FROM BMP-6.170 TO EMP-6.290)
FROM 8:00 P.M. TO 6:00 A.M. SUNDAY THRU THURSDAY(SR 93/I-75 NB EXPRESS LANE)
FROM 9:30 P.M. TO 6:00 A.M. SUNDAY THRU THURSDAY(SR 9/I-95 NB EXPRESS LANE)

240.2.1.6 Lane Closure Analysis

When a closure of one or more lanes is necessary, provide an allowable lane closure duration of at least one ten-hour period per 24-hour work period. Approval by the State Roadway Design Engineer is required when at least one ten-hour-period per 24-hour work period cannot be provided.

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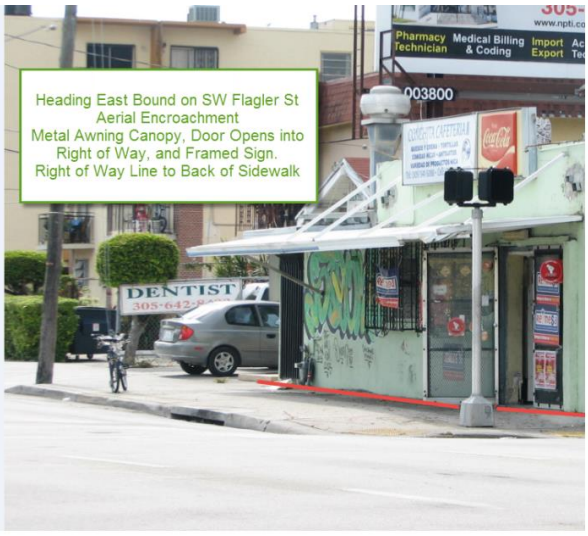
Private Property Encroachments



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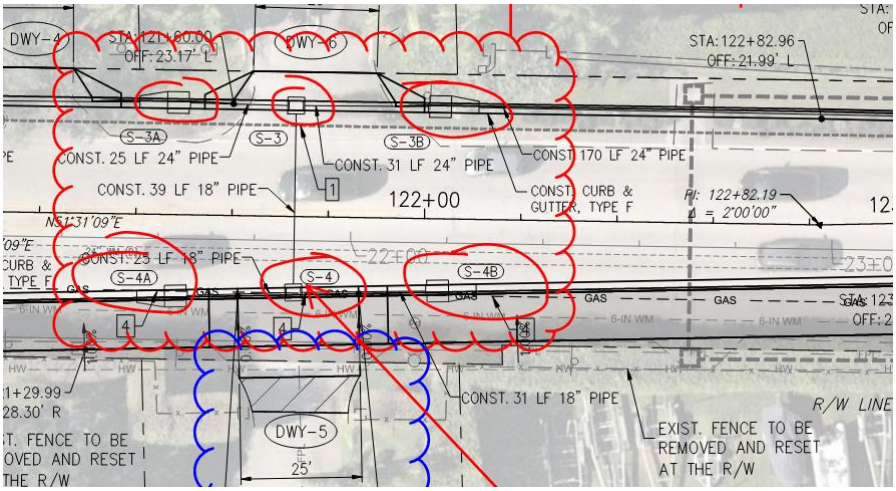
Constructability



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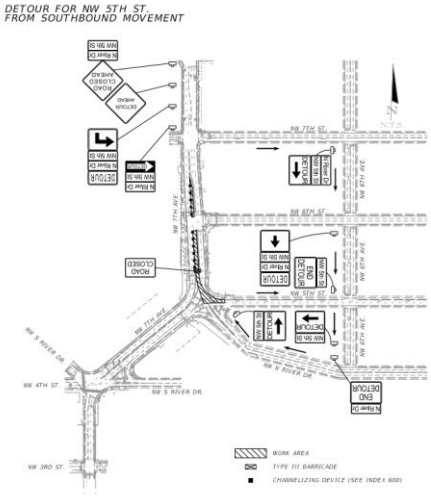
Temporary Detours through Non-State Roadways



June 27, 2024

Patricia Quintela, PE
Project Manager - Consultant Management
FDOT District VI
1000 NW 111 Ave
Miami, FL 33172

Subject: **Temporary Detour Concurrence Letter**
FM 445999-1-52-01

Dear Ms.Quintela:

The City of Miami is in receipt of the proposed temporary detour by the Florida Department of Transportation as part of FM 445999-1-52-01. The intent of this detour is to maintain access to NW 5th Street and NW N River Drive from SR 7 (NW 7th Avenue/NW 8th Avenue) during milling and resurfacing operations on the single lane ramps that provide this access. The detour will only be at night (8:30 pm to 6:30 am) for approximately two nights. The City of Miami agrees with the proposed temporary detour utilizing local roadways as shown in the roadway plans related to the construction of this project (Exhibit A- Proposed Detour).

If you have any questions or would like to discuss further, please contact me at calfaro@miamigov.com or (305) 416-1047.

Sincerely,

Charles M Alfaro
Digitally signed by Charles M Alfaro
Date: 2024.07.01 11:19:46 -04'00'

Charles M. Alfaro, P.E.
Assistant Director
Department of Resilience and Public Works

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Constructability/Practical Decision Making

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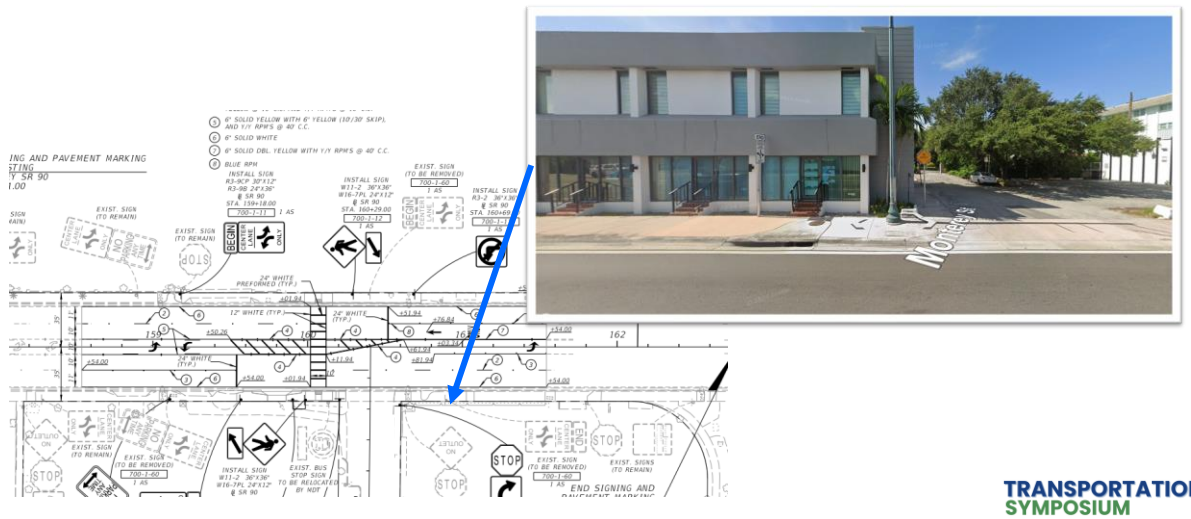
Constructability/Practical Decision Making



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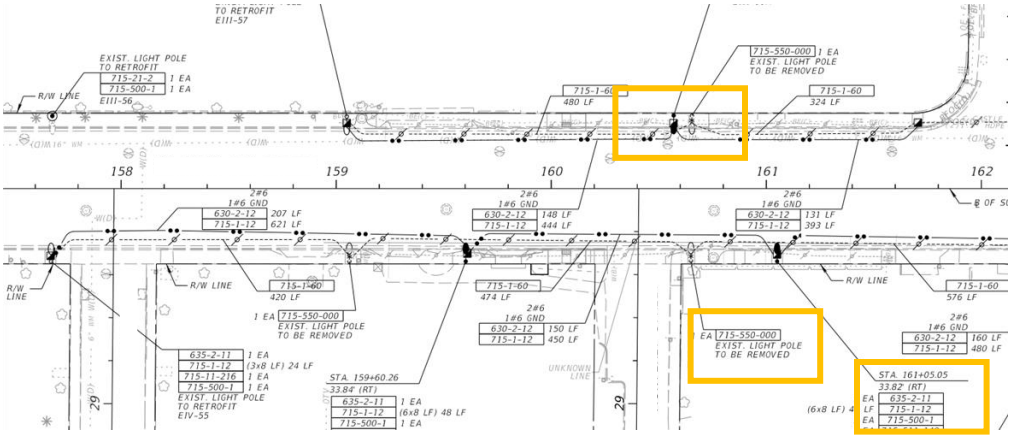
Constructability/Practical Decision Making



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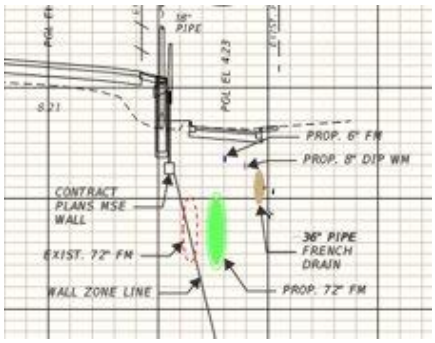
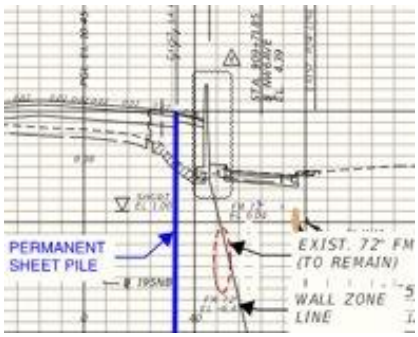
Utilities





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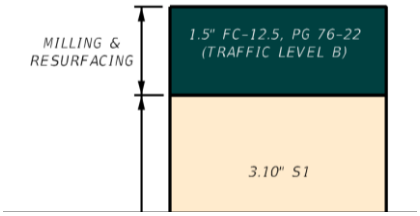
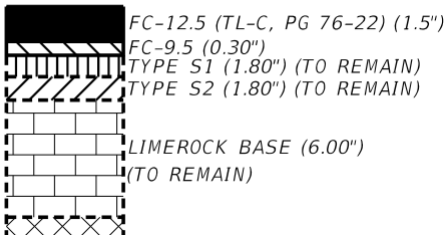
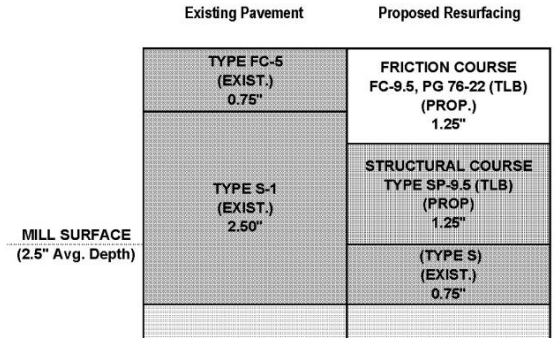
Cost Savings/Efficiencies







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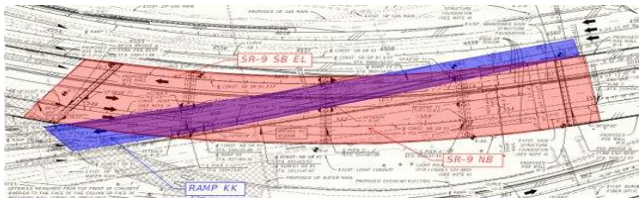
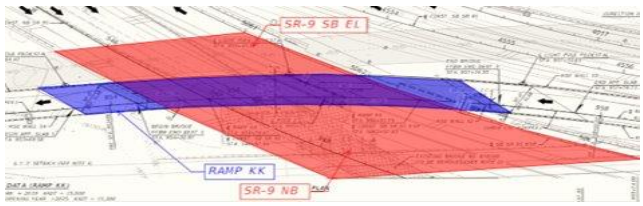
Cost Savings/Efficiencies





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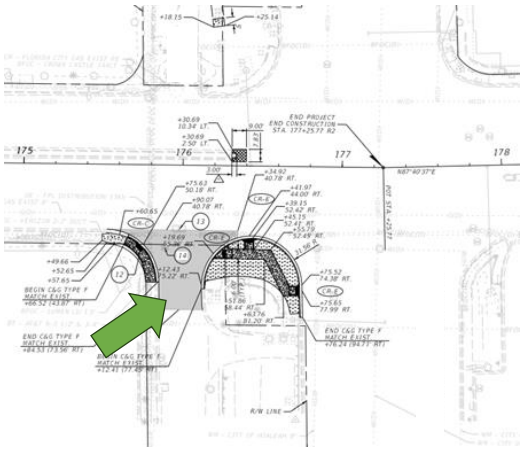
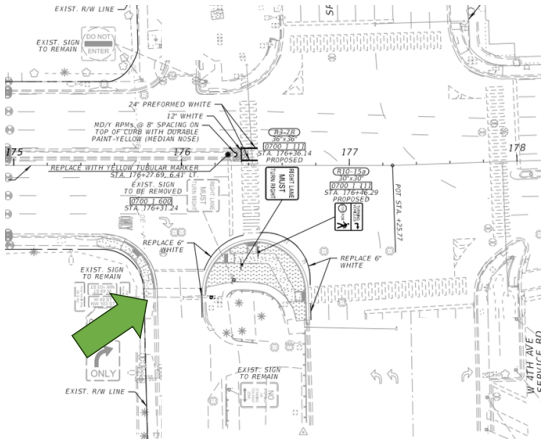
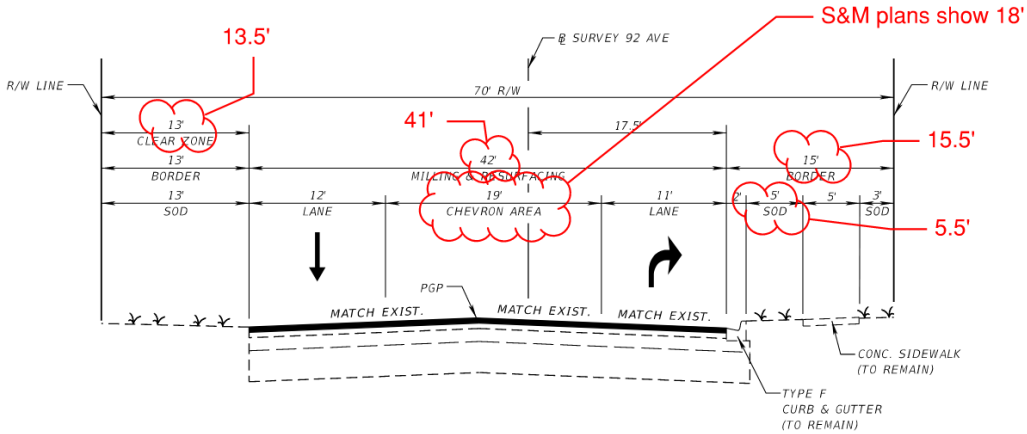
Consistency Across Different Disciplines





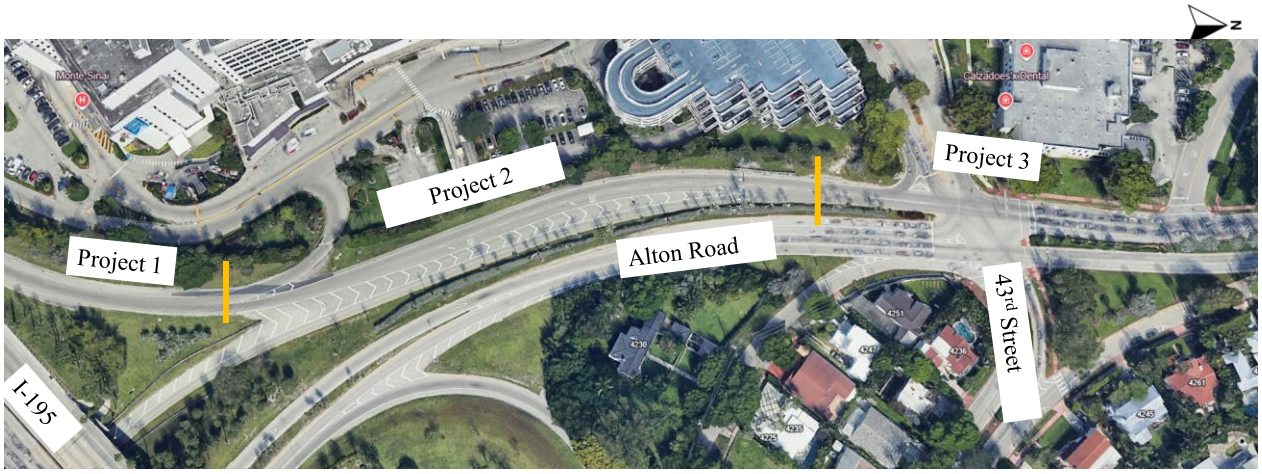
TRANSPORTATION SYMPOSIUM

Consistency Across Different Disciplines



TRANSPORTATION SYMPOSIUM

Consistency with Adjacent/Overlapping Projects



TRANSPORTATION SYMPOSIUM

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Consistency with Adjacent/Overlapping Projects

TRANSPORTATION SYMPOSIUM

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Consistency with Adjacent/Overlapping Projects

TRANSPORTATION SYMPOSIUM

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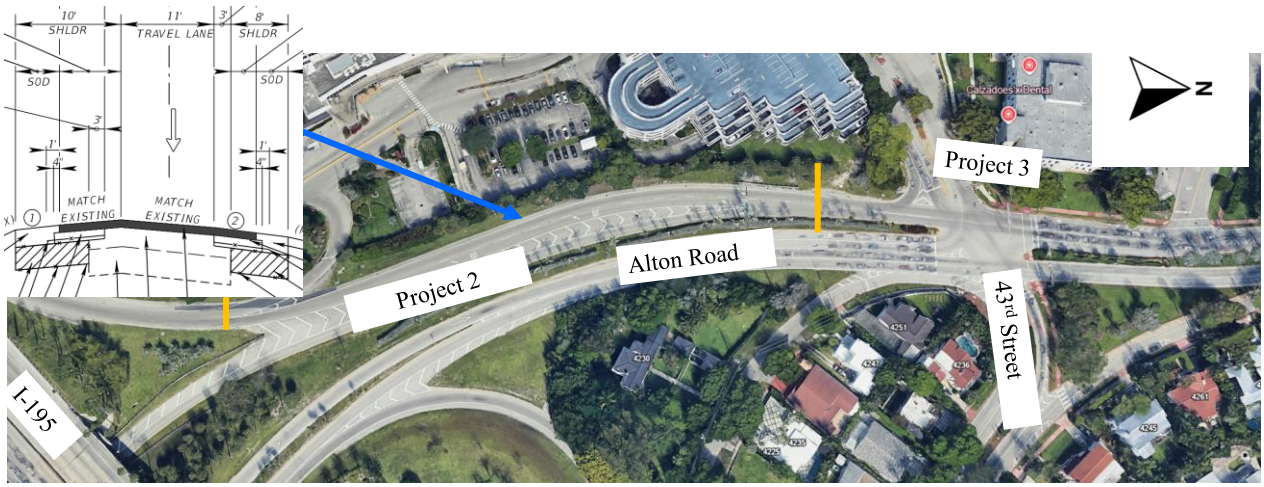
Consistency with Adjacent/Overlapping Projects



TRANSPORTATION SYMPOSIUM

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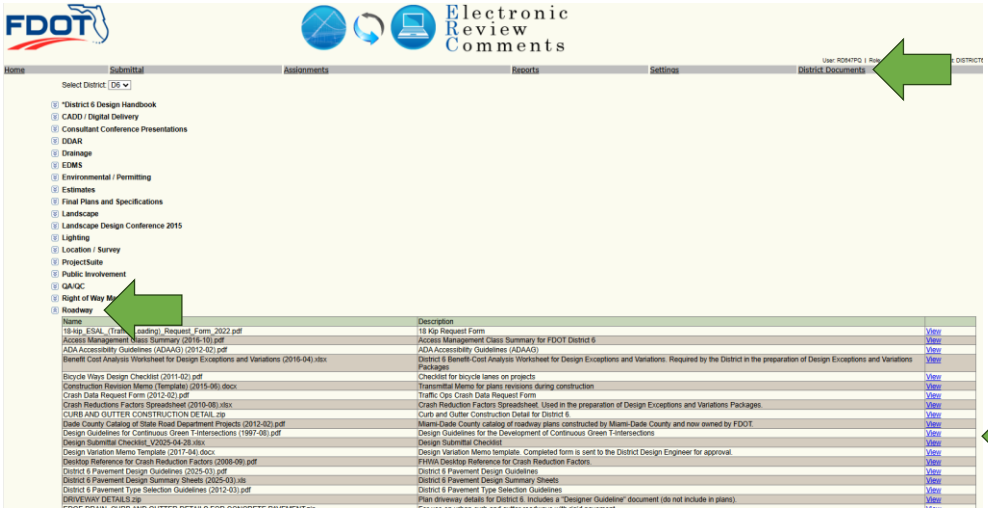
Missing Design Documents



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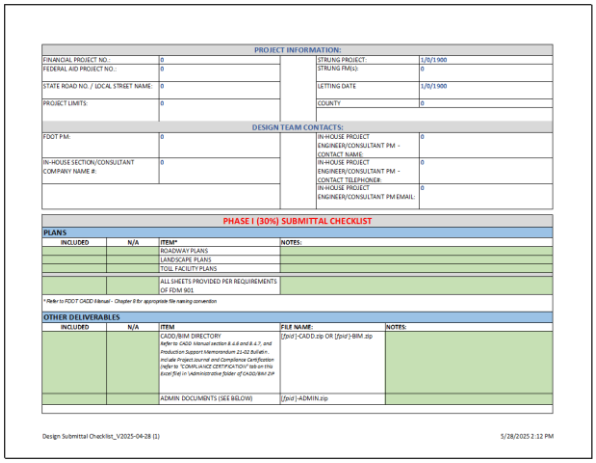
Phase Submittal Checklist



PROJECT INFORMATION:

FINANCIAL PROJECT NO.:	0	STRUNG PROJECT:	1/0/1900
FEDERAL AID PROJECT NO.:	0	STRUNG PHASE:	0
STATE ROAD NO. / LOCAL STREET NAME:	0	LETTING DATE	1/0/1900
PROJECT LIMITS:	0	COUNTY	0

DESIGN TEAM CONTACTS:

FDOT PM:	0	IN-HOUSE PROJECT ENGINEER/CONSULTANT PM - CONTACT NAME:	0
IN-HOUSE SECTION/CONSULTANT COMPANY NAME #:	0	IN-HOUSE PROJECT ENGINEER/CONSULTANT PM - CONTACT TELEPHONE#:	0
		IN-HOUSE PROJECT ENGINEER/CONSULTANT PM EMAIL:	0

PHASE I (30%) SUBMITTAL CHECKLIST

PLANS

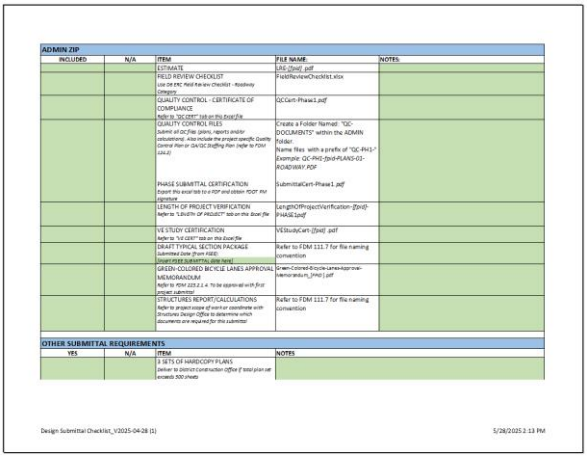
INCLUDED	N/A	ITEM*	NOTES:
		ROADWAY PLANS	
		LANDSCAPE PLANS	
		TOLL FACILITY PLANS	
		ALL SHEETS PROVIDED PER REQUIREMENTS OF FDM 901	

* Refer to FDOT CADD Manual - Chapter 8 for appropriate file naming convention

OTHER DELIVERABLES

INCLUDED	N/A	ITEM	FILE NAME:	NOTES:
		CADD/BIM DIRECTORY *Refer to CADD Manual section 8.4.6 and 8.4.7, and Production Support Memorandum 21-02 Bullet h - include Project Journal and Compliance Certification (refer to "COMPLIANCE CERTIFICATION" tab on this Excel file) in "Administrative Folder of CADD/BIM ZIP*	[fpid]-CADD.zip OR [fpid]-BIM.zip	
		ADMIN DOCUMENTS (SEE BELOW)	[fpid]-ADMIN.zip	

Design Submittal Checklist_V2025-04-28 (1) 5/28/2025 2:12 PM



ADMIN ZIP

INCLUDED	N/A	ITEM	FILE NAME:	NOTES:
		ESTIMATE	LRE-[fpid].pdf	
		FIELD REVIEW CHECKLIST *Use DB ERC Field Review Checklist - Roadway Template*	FieldReviewChecklist.xlsx	
		QUALITY CONTROL - CERTIFICATE OF COMPLIANCE *Refer to "QC CERT" tab on this Excel file*	QCCert-Phase1.pdf	
		QUALITY CONTROL FILES *Submit all QC/Tier plans, reports and/or calculations). Also include the project-specific Quality Control Plan or QA/QC Staffing Plan (refer to FDM 124.3)*	Create a Folder Named: "QC-DOCUMENTS" within the ADMIN Folder. Name files with a prefix of "QC-PH1-" *Example: QC-PH1-fpid-PLANS-01-ROADWAY.PDF*	
		PHASE SUBMITTAL CERTIFICATION *Export this excel tab to a PDF and obtain FDOT PM signature*	SubmittalCert-Phase1.pdf	
		LENGTH OF PROJECT VERIFICATION *Refer to "LENGTH OF PROJECT" tab on this Excel file*	LengthOfProjectVerification-[fpid]-PHASE1.pdf	
		VE STUDY CERTIFICATION *Refer to "VE CERT" tab on this Excel file*	VEStudyCert-[fpid] .pdf	
		DRAFT TYPICAL SECTION PACKAGE *Submitted Date (from ASD): Insert PDF SUBMITTAL date here*	Refer to FDM 111.7 for file naming convention	
		GREEN-COLORED BICYCLE LANES APPROVAL MEMORANDUM *Refer to FDM 223.2.1.4. To be approved with first project submittal*	Green-Colored-Bicycle-Lanes-Approval-Memorandum_[YYMM].pdf	
		STRUCTURES REPORT/CALCULATIONS *Refer to project scope of work or coordinate with Structures Design Office to determine which documents are required for this submittal*	Refer to FDM 111.7 for file naming convention	

OTHER SUBMITTAL REQUIREMENTS

YES	N/A	ITEM	NOTES
		3 SETS OF HARDCOPY PLANS *deliver to District Construction Office if total plan set exceeds 500 sheets*	

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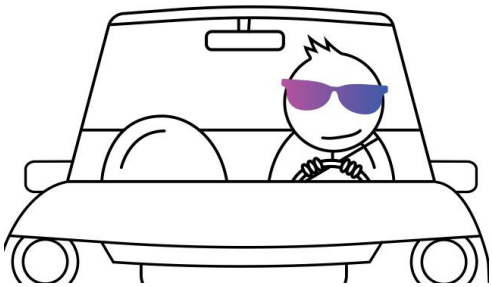
Safety Message

Early. On time. A little late.

JUST GET THERE SAFELY.



TRANSPORTATION SYMPOSIUM

Contact Us

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TRANSPORTATION SYMPOSIUM

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June 19 - 20, 2025
Hollywood, FL

TRANSPORTATION SYMPOSIUM

Please be sure to **certify your attendance** before leaving this event or no later than **Monday, June 30**, in order to receive PDH/CEC.
Detailed instructions are available on the Transportation Symposium website.

Transportation Symposium Website

SCAN ME

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