

## **EXTINGUISH THE TORCH MEETING SESSION ONE**

FIN: 432827-1-52-01 & 432827-3-52-01

Contract No.: E8P94

Project: Resurfacing & Safety Upgrades of Turnpike Mainline (SR 91)

Contractor: The Middlesex Corporation

Project Acceptance Date: 2/8/2018

County: Osceola

### **MEETING AGENDA**

1. Introductions
2. Project Scope of Work
3. Contract Time and Money
4. Supplemental Agreements and Work Orders – See Appendix A
5. Contractor's Notices of Intent to File Claims – No NOI's
6. Review and discussion of Lessons Learned incorporated into the Summary Report
  - a. What worked well
    1. Coordination with adjacent projects (District 5 & Turnpike widening)
    2. Pavement smoothness, ride number 4.3, IRI 33
    3. Deep mill under Neptune Rd. (12 3/4") with traffic shift
    4. Exit 244/US 192 deep mill (13") with weekend closure
    5. Coordination between the EOR, CEI and the contractor
  - b. Lessons Learned – what needed improvement
    1. Metal Traffic Railing (Thrie Beam Retrofit) – Missing pay items & MOT
    2. Conflict between bridge pier & temp. barrier wall during diversion
    3. Conflicting drainage structure with traffic diversion
    4. Ramp typical sections didn't show begin/end stations for milling & resurfacing
    5. Bridge Joint Replacement Quantity Errors
    6. Headwall removal not included in summary of quantities
    7. Interchange MOT for ramp paving
    8. Existing rumble strips conflict with new edge of pavement
    9. Conflicting Speed Limit Signage (Ramp 15)
    10. Sign arrows with wrong directions
    11. FGT line conflict with multi-post sign
    12. New light pole within the ramp clear zone
    13. Signal loops not replaced in contract
    14. General quantity errors
    15. Limits of milling & resurfacing

**Project Team:**

CEI Senior Project Engineer: Anu Shah, P.E., Mehta & Associates, Inc.

CEI Project Administrator: Sam Saleh, Mehta & Associates, Inc.

FTE Project Manager: Todd Kelly, P.E.

FTE Design Project Manager: Snehal Ambare, P.E.

Engineer of Record: Bill Terwilleger, P.E. Moffatt and Nichol Inc.

Contractor Project Manager: Damon Sallee, The Middlesex Paving, LLC

## Summary Report

### Resurfacing & Safety Upgrades of (SR 91)

FIN: 432827-1-52-01 & 432827-3-52-01

Contract No.: E8P94

CEI Senior Project Engineer: Anu Shah, P.E.  
Mehta & Associates, Inc.  
One Purlieu Place, Suite 130  
Winter Park, FL 32792

FTE Project Manager: Todd Kelly, P.E.

FTE Design Project Manager: Snehal Ambare, P.E.

Engineer of Record: Bill Terwilleger, P.E.  
Moffatt and Nichol Inc.  
1025 Greenwood Blvd., Suite 371  
Lake Mary, FL 32746

### Project Scope of Work

Scope of the work included milling and resurfacing with overbuild, superelevation corrections, guardrail, bridge joint rehabilitation, Lighting, Signalization, Signing and pavement marking with other incidental construction and safety improvements along Florida's Turnpike Mainline (SR91) from MP 238.76 to MP248.50 in Osceola County.

### Contract Time

Original Contract Time:	425 days
Time extension for weather impacts:	49 days
Time extension for Holidays:	49 days
<u>Other time extensions:</u>	<u>0 days</u>
Total Allowable Contract Time:	523 days

Project completed on Day 519 of 523 allowable days – 99.24% of Allowable Contract Time

### Contract Amount

Original Contract Amount (OCA):	\$ 11,716,804.30
Initial Contingency Amount (ICA):	\$150,000.00
Contract Amount without ICA:	\$ 11,866,804.30
Final Contract Amount:	\$ 11,338,372.61 – <u>96.77%</u> of Original Contract Amount
Pending SA, Hurricane IRMA Impact	\$ 37,270.20

## Lessons Learned

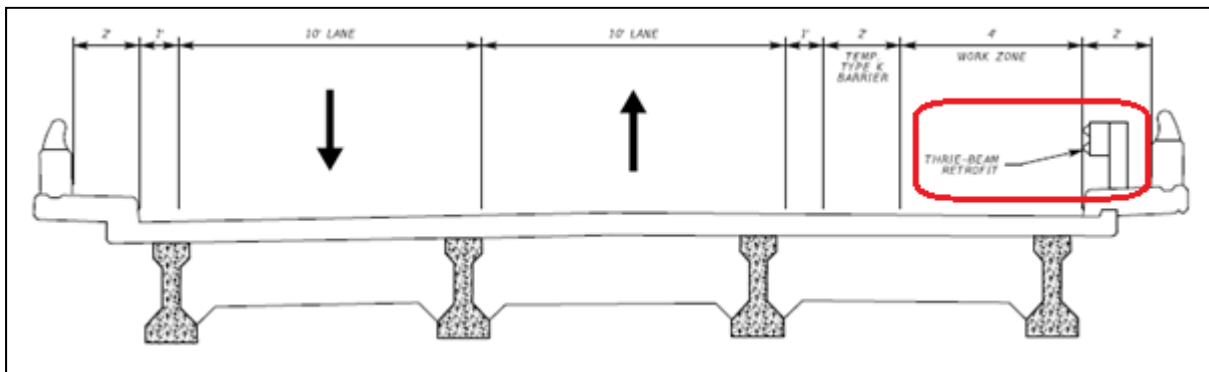
### 1) Metal Traffic Railing (Thrie Beam Retrofit) – Missing pay items & MOT

#### *Issue Summary:*

Plan details and pay items were not included in the contract, for planned thrie-beam upgrades to bridges crossing over the Turnpike. Several challenges would result if this work had been pursued, as several work components were not included in the contract (such as traffic coordination with Osceola County, and additional costs not in the original contract).

Quantities not included in the contract for the thrie-beam installation: Barrier Wall Temporary, F&I, Type K, Temporary Crash Cushion, Redirective Option (8 installations), MOT associated with thrie-beam operation, striping plan, advance warning, and thrie Beam transition from bridges. The estimated cost for these omitted items was approximately \$150,000.

Also, note that a 4' work area restricts the Contractor's equipment access.



#### *Resolution:*

The thrie-beam retrofit work was deleted from this project. A future widening project is planned at these four bridge locations.

#### *Lesson learned / Recommendation:*

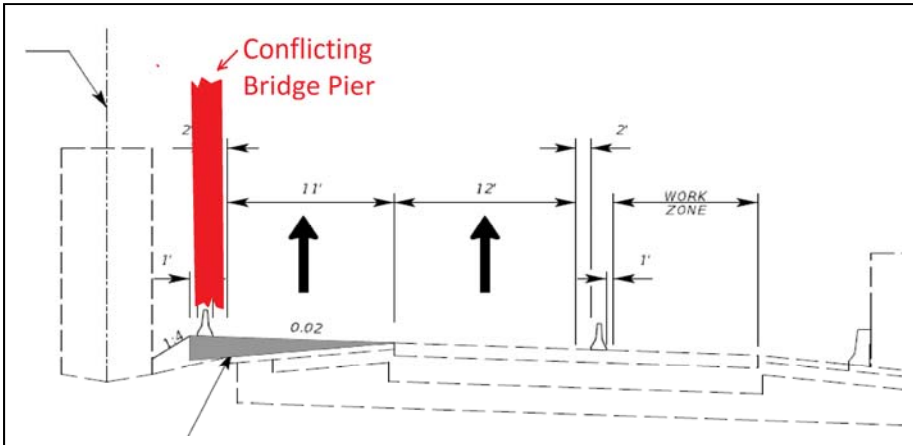
Recommend an evaluation of bridge sites during design, to fully understand & define the MOT needs.

EOR to provide details on connection of thrie-beam to existing guardrail.

## 2) Conflict between bridge pier & temp. barrier wall during diversion

### *Issue Summary:*

The Neptune Road bridge pier was located within the limits of a temporary diversion, and would not allow the required 11' & 12" lane widths. This temporary diversion was needed to deep mill the northbound lanes to repair full depth cracking.



### *Resolution:*

Shortened the traffic diversion length to avoid the bridge pier. The remaining diversion length was paved with a continuous milling & paving operation (Sunday afternoon through Monday morning), without the use of a barrier wall.

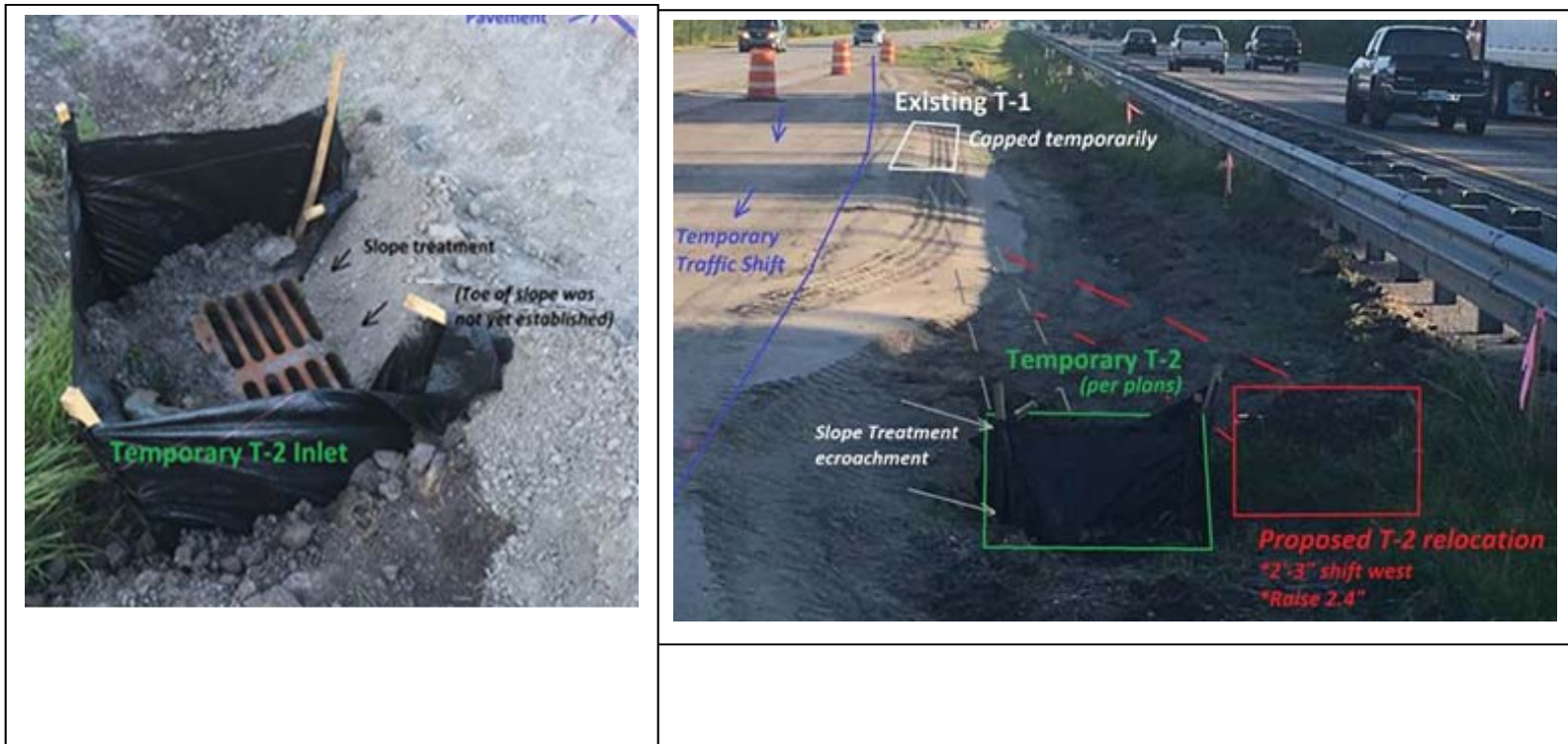
### *Lesson learned / Recommendation:*

Design team to account for any conflicts when designing traffic diversions. In this case, the presence of a bridge pier had not been taken into account.

## 3) Conflicting drainage structure with traffic diversion

*Issue Summary:*

A temporary drainage structure conflicted with the temporary diversion's toe of slope. After the structure's installation, it was discovered that the slope between edge of temporary pavement & structure would need to be steeper than 1:4 to avoid the temporary inlet.



*Resolution:*

EOR provided a revised location & elevation for the structure, and a re-installation was performed by work order. This adjustment to the drainage structure allowed the front slope to be a minimum of 1:4.

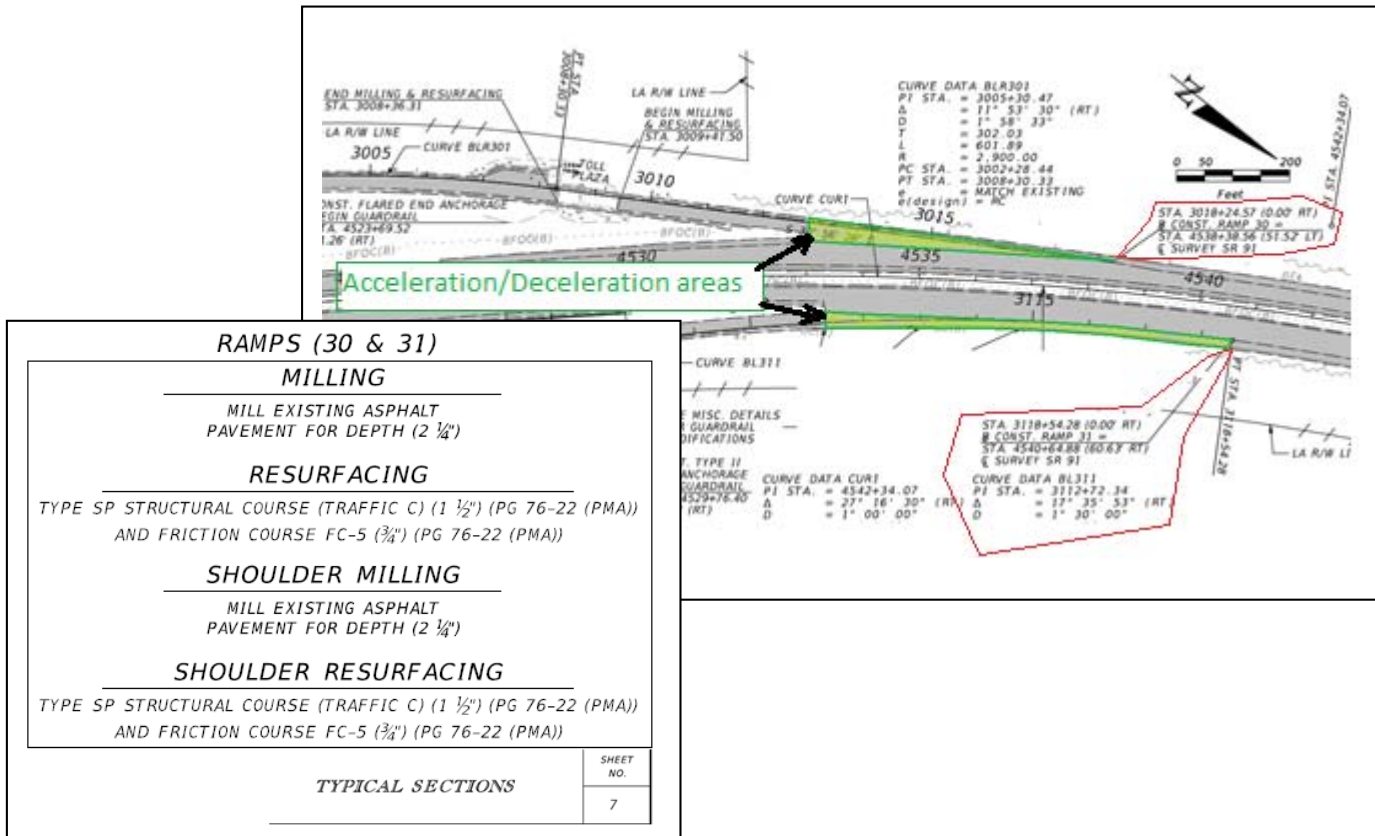
*Lesson learned /Recommendation:*

Have the plans show cross sections for the temporary drainage structures, in conjunction with temporary diversions. This likely would have identified the conflict prior to construction.

4) Ramps typical sections didn't show begin/end stations for milling & resurfacing

**Issue Summary:**

Typical sections do not show stations, which leads to confusion about resurfacing scope for ramp accel/decel lanes.



**Resolution:**

Clarification was obtained to establish the ramp limits. This involved coordination with the EOR, Bituminous Engineer and Contractor.

**Lesson Learned / Recommendations:**

Depict ramp limits starting & stopping at the gore area.

This could be done by including limits on typical sections or a legend on plan sheets.

5) Bridge Joint Replacement Quantity Errors

*Issue Summary:*

The plan quantities were not correct

- Two pay items are required for this work, per Basis of Estimates & Specification:
  - Bridge deck expansion joint pay item – successfully included in this contract
  - Polymer nosing pay item (# 458-2) – was OMITTED from this contract
  - Contractually, the Contractor was entitled to separate payment for the omitted pay item, but did not request it.
- Inaccurate quantities for bridge on SR 91, over St. Cloud Canal. Two separate bridge lengths should have been quantified, but only one was.

*Resolution:*

The Contractor fortunately didn't request separate payment for the omitted pay item. He bid his bridge joint expansion pay item to include the 2" of polymer material.

The pay item was overran at locations that weren't accurately quantified.

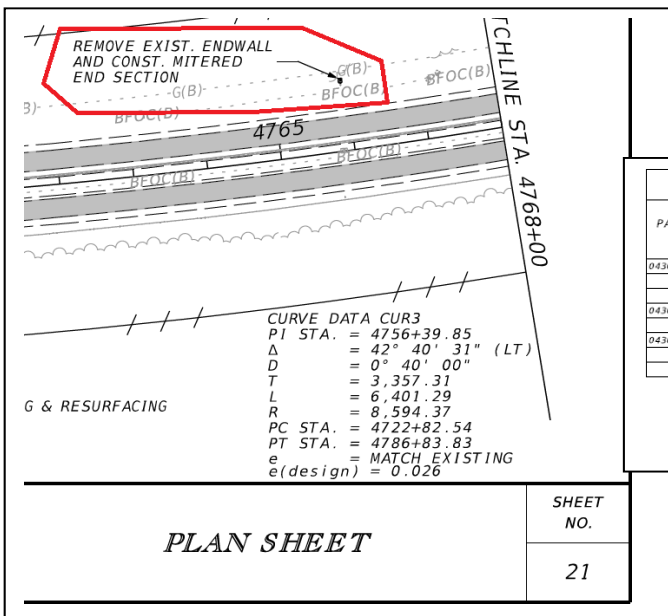
*Lesson Learned / Recommendations:*

- Plans should include pay item 458-2 Polymer Nosing for Bridge Expansion Joints.
- Quantities need to be checked for bridge joints.

6) Headwall removal not included in summary of quantities

*Issue Summary:*

Plans removed an existing endwall & constructed a mitered end section. However, the summary of quantities didn't include pay items for the work. Only one other MES replacement was in the contract pay items, but was not the size needed. The note for this work was not seen until after all other drainage work was performed, and the Contractor had to re-mobilize to perform this work.



SUMMARY OF MISCELLANEOUS DRAINAGE ITEMS								
PAY ITEM NO.	PAY ITEM DESCRIPTION	LOCATION		SIDE	UNIT	QUANTITY		TOTAL
		STA.	TO STA.			P	F	P
0430 94 1	DESILTING PIPE, 0-24"	1433+75.00		RT	LF	24.0		142
		1437+50.00		LT/RT		118.0		
0430175124	PIPE CULVERT, OPTIONAL MATERIAL, ROUND, 24" S/CD	1437+50.00		LT	LF	6.0		6
0430982129	MITERED END SECTION, OPTIONAL ROUND, 24" CD	1437+50.00		RT	EA	1.0		1
	<b>Needed 18" MES @ Sta. 4766+00</b>							

SUMMARY OF QUANTITIES		SHEET NO.
		50-12

PLAN SHEET

SHEET NO.

21



**Resolution:**

The Contractor was compensated by work order, to re-mobilize & perform the work. This included premium cost.

The possibility of leaving the existing endwall in place was initially considered, but this would have required adding another structure to be maintained.

**Lesson Learned / Recommendations:**

Summary of quantity sheets should accurately include all pay items for work.

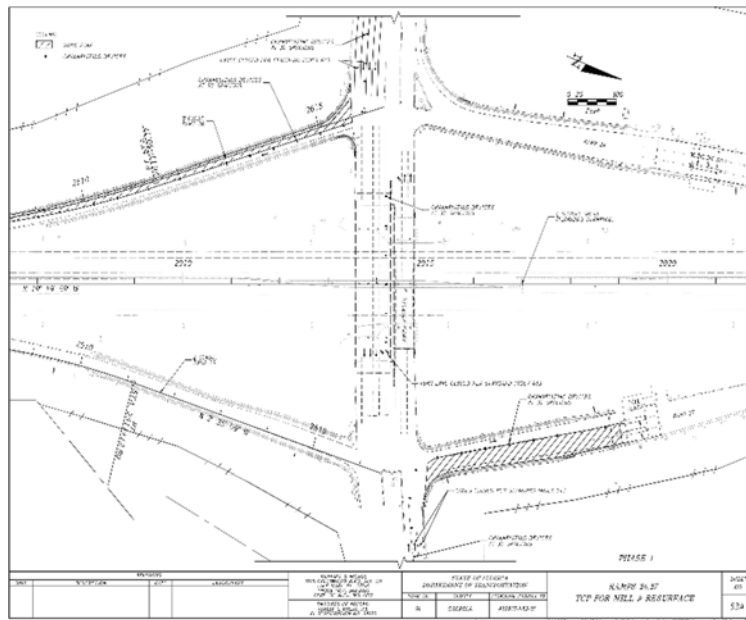
7) MOT details at Osceola PKWY for ramp milling & resurfacing

**Summary Issue:**

Contract did not provide MOT details for lane closures on Osceola Pkwy, which were required for the ramp milling & resurfacing. A dedicated right turn lane & one through lane on Osceola Pkwy required closure to prevent turning trucks from cutting across the construction zone.

Also, one of two left turn lanes, from Osceola Pkwy onto the Turnpike entrance ramp, required closure during paving operation. MOT details for this were not provided, and had to be produced during construction.

Lastly, lane closure coordination was not performed Osceola County, during design.



**Resolution:**

The EOR provided an MOT detail sheet, and the Contractor had to obtain a lane closure permit from the county (Osceola). Auto-turn analysis was required for MOT layout.

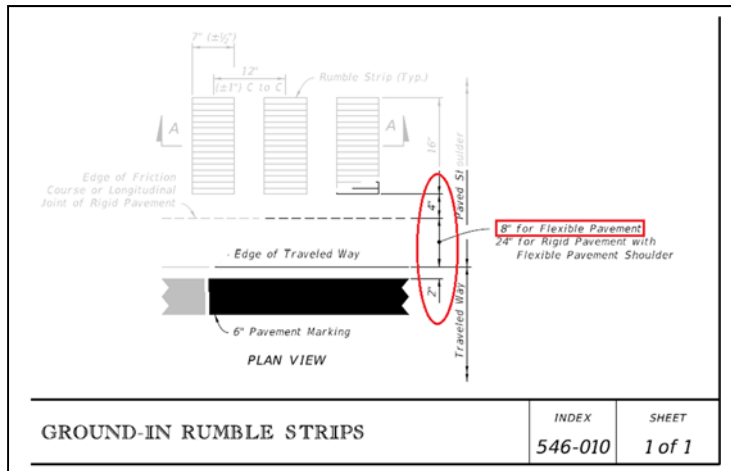
*Lesson Learned / Recommendation:*

Contract plans should include MOT for paving near ramps terminations, and MOT coordination with adjacent counties should occur during design. Special attention is needed for multi-turn lanes & truck turning radii.

8) Existing rumble strips not in line with new edge of pavement

*Issue summary:*

The alignment of the existing rumble strips varied, creating an inconsistent distance between edge of friction and rumble strips. Because the shoulders were not resurfaced in this project, the new edge of friction inherited this inconsistency. This made compliance with Standard Plan 546-010 (Index 518 impossible at some locations.



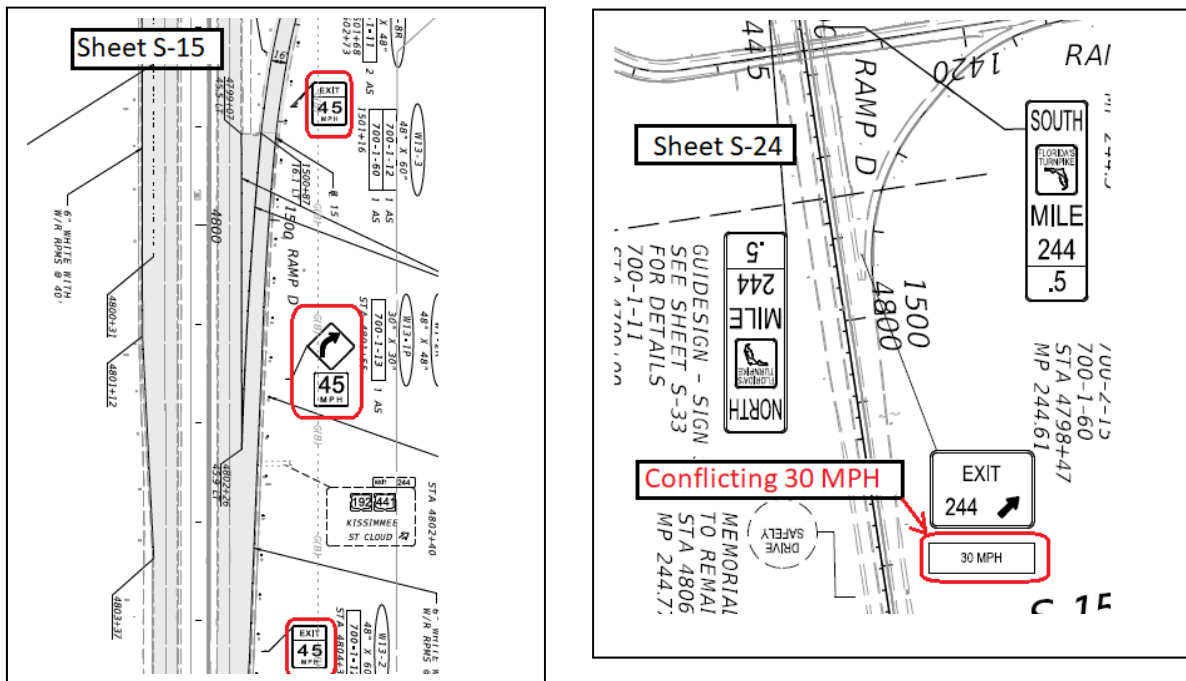
**Resolution:**

The friction course layout had to be adapted to the existing rumble strips' inconsistencies. A future widening project, planned for 2021 at this location, will remove these inconsistent rumble strips.

9) Conflicting Speed Limit Signage (Ramp 15)

**Issue summary:**

Conflicting speed signage was depicted at the same ramp location. One of the S&PM plan sheets called for installation of 45 mph advisory speed limit signs at three locations, while a different S&PM sheet called for '30 mph' on supplemental speed limit signage.



**Resolution:**

After review with Turnpike Traffic Operations & Production, the EOR revised the plan sheet to change the speed limit for two advisory signs to 30 mph, to coincide with the supplemental sign. The advisory sign closer to the mainline was also changed, from 45 mph to 40 mph.

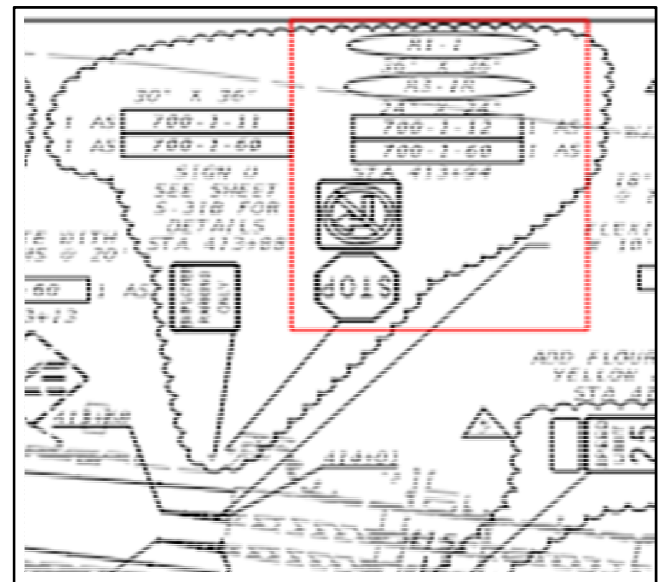
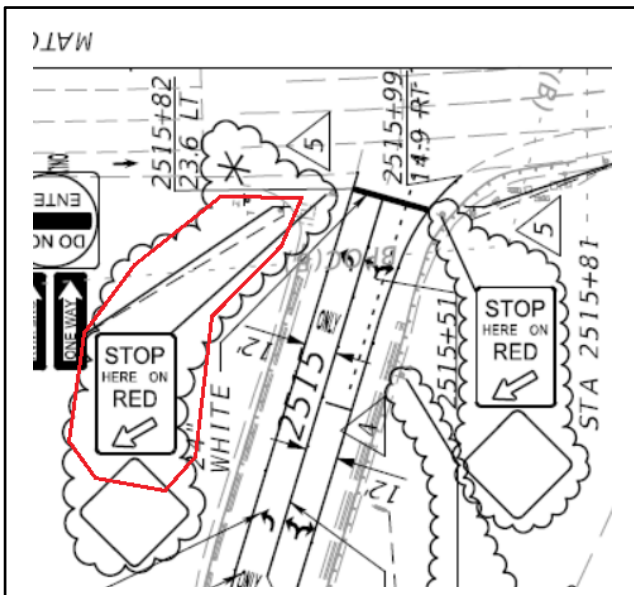
**Lesson learned /Recommendation:**

If possible, all signs for a given location should be on the same plan sheet, rather than on multiple as shown above. Thoroughly review all sign sheets to ensure that there's no conflicting signs.

## 10) Sign arrows with wrong directions

### *Issue summary:*

- “STOP HERE ON RED” sign; The arrow pointed wrong direction, toward shoulder instead of stop bar (NB Exit to Osceola Pkwy).
- Arrow under “STOP” sign; Arrow pointed in wrong direction (SB Exit to Osceola Pkwy)



### *Resolution:*

The CEI & Contractor coordinated the correct arrow's installation.

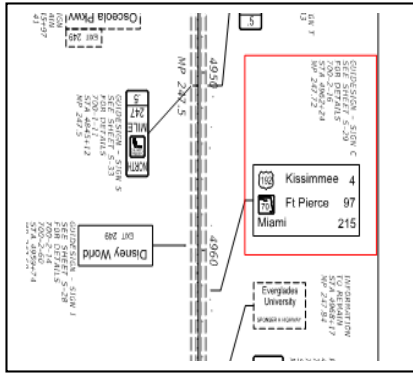
### *Lesson learned / Recommendation:*

Review plans & field conditions for correct direction of arrows.

## 11) Multi-post sign conflicting with FGT line

### *Issue summary:*

The S&PM plans called for installation of a new multi-post sign panel. The designed offset placed a sign post within 5 feet of an FGT line, which was not shown in the plans. The sign couldn't be shifted laterally, as it would conflict with either the clear zone or vegetation. It also couldn't be shifted longitudinally, since the FGT line ran continuously in this area.



**Resolution:**

After discussing with Production and EOR, the new multi-post sign remained the same location as existing sign at MP 248.01.

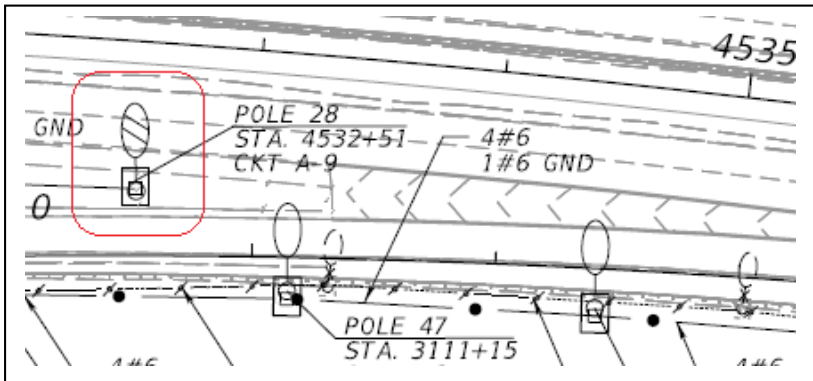
**Lesson learned / Recommendation:**

Cross reference existing utilities when designing signage plans, with special consideration for FGT.

**12) Light pole location in the ramp clear zone**

**Issue summary:**

The proposed location of a new light pole was in the ramp clear zone.



**Resolution:**

After performing a photometric analysis, the EOR recommended deleting this light altogether (per RFI # 5).

**Lesson learned / Recommendation:**

Review lighting plans for clear zone requirements.

13) Signal Loops not replaced in plans

*Issue Summary:*

The advance loops were removed during the paving operation, but the plans did not call for their replacement. This caused the traffic to stop on Kissimmee Park Rd. every cycle. These loops are used for activating the signal when traffic queue's too far down the ramp.



*Resolution:*

Replacement loops were installed back on the ramp, after the county noticed the signals were not functioning properly. This was paid for by work order.

*Lesson learned / Recommendation:*

Evaluate & account for existing traffic loops during design.

14) Summary of other Quantity Errors

Pay Item No.	Item Description	Issue Summary	Resolution
0107-1	Litter Removal	Summary of quantity sheet calling for 14 cycles, and pay item calculated for 1 cycle only	Litter removal was omitted from the contract, and performed by others
0107-2	Mowing	Summary of quantity sheet calling for 14 cycles, and pay item calculated for 1 cycle only	Mowing was omitted from the contract, and performed by others
0522-1	Concrete Sidewalk 4" Thick	Missing pay item, Plan sheet no. 29 calling to construct 4" concrete sidewalk	Paid in a work order
0527-2	Detectable Warnings	Missing pay item, Plan sheet no. 29 calling to construct 4" concrete sidewalk with detectable warning	Paid in a work order
0458-2	Polymer Nosing	Missing pay item	Paid in a work order
0458-1-21	Bridge Deck Expansion Joint, Rehabilitation, Poured Joint with Backer Rod	Quantified only 1/2 of joints at a location with two bridges.	Overran the pay item quantity
0715-1-60	Lighting Conductor, Remove, Dispose	Plans accounted for removed length of conduit, but not the 3 individual runs of conductor.	Overran the pay item quantity

## 15) Limits of milling & resurfacing

### *Issue Summary:*

235' of distressed pavement was omitted from the southern project limit. This small segment was intended to be addressed in a future widening project, within a year of this project's completion. That future project has since been postponed.



### Lesson Learned / Recommendation:

M&R completely to adjacent joints between old & new pavement.