



# DISTRICT THREE DESIGN NEWSLETTER

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## *From the Editor's Desk - Cross Slope Correction...*

John Fowler, P.E., District Roadway Design Engineer



Recently the Department received a phone call from a contractor who advised us that the cross slope correction shown in the plans was not constructable. This particular project was already advertised for construction and was about three weeks away from the letting date. Several individuals from the Design and Construction offices were asked to review the plans and weigh-in on what remedies were necessary. The design consultant was asked to make quick revisions to the plans, and the project ultimately let on time and without a hitch.

Although the plans were revised in a timely fashion and the project let with no issues, the incident still shed some light in an area that continues to present problems in both design and construction. The decision of when, where, and how to correct cross slope has been discussed at length but continues to cause consternation. For this reason, I have developed a set of guidelines for use when implementing cross slope correction. As always, these are guidelines to go by, and they do not supersede the engineering judgment of the engineer doing the work.

- **KEEP IT SIMPLE.** The best cross slope correction details are the ones that are easy to read and understand.
- **USE EXCEPTIONS AND VARIATIONS.** For RRR projects and other project types where existing lanes will generally remain in their present configuration, the default should be to not fix what isn't broken. Use of exceptions and variations is encouraged to maintain existing conditions that do not present safety hazards to roadway users.
- **CHECK AT REASONABLE INTERVALS.** When I first began with FDOT, we used to request surveyed cross sections at 500-foot or 1,000-foot intervals. Increased levels of survey now allow engineers to check cross slope at intervals of 50 or 100 feet. Chapter 25.3.4.2 of the PPM still requires cross slope check sections at 1,000-foot intervals for Level 1 and Level 2 projects as determined by the Project Manager and Designer. More sections are not always better.
- **CORRECT FOR A SUFFICIENT LENGTH.** In general, when I am looking for areas of potential cross slope correction, I try to look for areas of 1,000 feet in length or greater. Shorter distances are more difficult to construct and slow down production. Remember that the milling and paving machines will have to transition longitudinally into and out of the cross slope correction areas.
- **MINIMUM NUMBER OF DETAILS POSSIBLE.** One of the problems that is frequently encountered is the number of cross slope correction details shown in the plans. As an example, the project mentioned above contained three details (A, B, and C). Combined with the standard milling and resurfacing (no cross slope correction), this presented four different pavement designs that the contractor would have to follow at different stages while progressing down the roadway.
- **DON'T JUMP AROUND TOO OFTEN.** Another problem typically encountered is a design that requires the contractor to switch back and forth between the different pavement designs too frequently during the paving operation. As an example, the design for the project mentioned above called for Detail A (900 feet), followed by standard paving (200 feet), then Detail A (1,600 feet), then Detail B (700 feet), then Detail C (200 feet), followed by Detail A (300 feet), then



*District 3 Quarterly Design Newsletter*

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## Cross Slope Correction (continued)

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Detail C (300 feet), then... well, this continues on. It is always important to remember that there is a contractor on the back end who is trying to build this, and the paving operation will be considerably more efficient and constructable if each pavement design extends for 1,000 feet or more before transitioning to a new pavement design.

In addition to asking our engineers to reevaluate their own practices when calling for cross slope correction, the Design Office is implementing an additional check. One major finding as a result of the above referenced project was that no dialogue exists between the interested parties. ERC comments were being made regarding the cross slope correction details at the various plans submittals. However, because of the nature of ERC, the reviewers were not reading each other's comments, which resulted in some conflicting comments. Other comments were misinterpreted. As the engineer tried to address the comments from each interested party, the details became more and more convoluted.

For this reason, projects that call for cross slope correction will be required to have a constructability meeting at some time near the Phase II plans submittal. That constructability meeting should include the Engineer of Record, the Project Manager, District Design, District Construction, District Materials, and the Local Construction Office. The purpose of the constructability meeting is to improve communication between the interested parties and ensure that everyone agrees to when, where, and how the cross slope correction will occur.

Cross slope correction continues to be an area of much consternation and confusion both for designers and contractors. The District Design Office is requesting your help to eliminate the confusion and to create details that will provide clear, concise, constructable directions to our contractors.

## Top Ten Quality Control Comments October - December, 2015

Lester Forrest - QA/QC Plans Reviewer

1. When there is guardrail being proposed in divided medians, I-10 or other roadways with divided medians; question why is the guardrail warranted and if crash history was analyzed during design? (Especially when the guardrail is being called for throughout the entire project)
2. When doing sub-surface construction around active water/sewer/gas mains, the plans should indicate the exact location of the valves.
3. For Pay Item 0102-74-1, no specific channelizing device should be called out in the plans. Any symbols should be labeled "Channelizing Devices" to avoid specifying a particular device. Reference Specification 102-11.8.
4. On Lump Sum projects; all summary tables that are not necessary for instructions to the contractor should be deleted from the plans.
5. A control point will be necessary to achieve a new desired slope on any travel lane that is not "Match Existing". Reference PPM Vol. II, Chapter 6
6. The District standard for sod is 2'6" or 30".
7. V ditches are not recommended. Reference P.P.M Vol. I. 4.1.3 The use of a V ditch will require approval by the District Drainage Engineer.
8. Ensure that the plans address drop off hazards that are adjacent to pedestrian or bicyclist travel way. Reference P.P.M Vol. I Chapter 8, Section 8.8.
9. On bridge construction projects ensure that there are no conflicts with utilities (overhead or attached)
10. On landscaping projects ensure that existing vegetation to remain or to be removed are labeled on the Plan Sheets. Reference P.P.M Vol. II, Chapter 26, Section 26.6.2

## ***Bid Set Revision(s)/Addenda(s): - September 2015***

**William Evans, District Specifications Coordinator**

Description: Add Lanes Multilane 4L & Reconstruct; Plus Construct new Parallel Bridge 2L  
State Funds \$29,686,177.00

### **Revision 1**

Mandatory Revision 4 (Legislative Change) to the specifications: Supplemented Structures Foundations Subarticle 455-5.2 which requires all 455-34 piles to use either internal or external 100% Dynamic Testing. The contractors are afforded the option to bid on internal or external but not both. Also this revision is detailing boundary limits on the north boundary of a Government Facility specifically to define adjacent areas available for contractor equipment / material staging.

(Summary of Pay Items) revise DQE...see table below Revision 1.

Sheet BQ-01 (Summary of Structure Quantities – Bridge) added new pay items...see table below.

Discovery of errors:

Legislative change requiring the testing of all piles.

Estimate Effect: for Dynamic Testing (+) approximately \$1 mill added to the official estimate.

However, all bids came in low enough, approximately \$8 mill below the official estimate, that no significant increase was apparent to any pay items.

### **Revision 2**

Added rumble striping pay items and the permanent tape pay items.

Added Sediment Barrier to further outline and protect the permitted area, per commitments to a Government Agency, add new dynamic testing test pile pay items that are associated to the requirements with revision 1 above.

(Summary of Pay Items) revise DQE...see table below Revision 2.

Sheet SQ-2--SQ-4 (Summary of Quantities)(Summary of Erosion Control Devices) added to pay items...see table below.

Sheet BQ-01 (Summary of Structure Quantities – Bridge) added new pay items...see table below.

Sheet S-2 (Tabulation of Quantities) add rumble strips and permanent tape...see table below.

Discovery of errors:

Bid Question: Marking tabulation sheet S-2 does not match the provided Thermoplastic Worksheet or detail sheet S-3. Missing pay items for Thermoplastic, Rumble Striping, Permanent Tape.

Answer: Thermoplastic pavement markings will NOT be placed as part of this contract. All Pavement Markings shall be paint only in this contract. The painted markings shall be the same as presented on the plans for thermoplastic markings. The Thermoplastic Worksheet is not for use as part of this contract and the quantities will not necessarily match those on Sheet S-2. Rumble Striping and Permanent Tape pay items and quantities are being added to the contract under an upcoming plan revision.

Estimate Effect: for Rumble Strips and Permanent Tape (+) approximately \$129,397.00 added to official estimate;

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## ***Bid Set Revision(s)/Addenda(s): - September 2015***

**William Evans, District Specifications Coordinator**

*(Continued from page 3)*

For sediment barrier (+) approximately \$75,000.00 added to official estimate;

For Test Pile Dynamic Testing (+) 0.00 no change to official estimate

### **Revision 3**

Removed Milling pay items for 1 1/4" and 1 3/4" depths. Added working bridge and bridge area to clearing and grubbing.

(Summary of Pay Items) revise DQE...see table below Revision 3.

Sheet SQ-6 (Summary of Quantities)(Summary of Removal Items) added to pay items...see table below.

Sheet SQ-8 (Summary of Quantities)(Summary of Pavement) added to pay items...see table below.

Discovery of errors:

Bid Question: Milling Pay items, 327 70 12 & 327 70 13 are not shown on the typical or plan drawings. Please advise where the 1.25" & 1.75" milling is located.

Answer: These items have been removed from the project. Revision forthcoming.

Estimate Effect: for milling (-) approximately \$1,880.00 removed from official estimate;

For the clearing and grubbing (+) approximately \$55,120.00 added to official estimate;

<b>Pay Item</b>	<b>Sheet No.</b>	<b>Add. / Del. / Rev.</b>	<b>Old Quantity</b>	<b>New Quantity</b>
		<b>Revision 1</b>		
455-34-5	BQ-01	Delete	25697 LF	
455-34-105	BQ-01	Add		25697 LF
455-34-205	BQ-01	Add		25697 LF
		<b>Revision 2</b>		
104-10-3	SQ-2—SQ-4	Revise	25192 LF	28943 LF
455-143-105	BQ-01	Add		3225 LF
455-143-205	BQ-01	Add		3225 LF
455-143-5	BQ-01	Delete	3225 LF	
546-72-53	S-2	Add		12.364 GM
710-11-101	S-2	Add		6.758 GM
710-11-201	S-2	Add		5.606 GM
713-103-101	S-2	Add		1.819 GM
713-103-131	S-2	Add		1.824 GM
713-103-201	S-2	Add		1.819 GM
		<b>Revision 3</b>		
110-1-1	SQ-6	Revise	97.74 AC	106.22 AC
327-70-12	SQ-8	Delete	584 SY	
327-70-13	SQ-8	Delete	356 SY	

## ***Bid Set Revision(s)/Addenda(s): - December 2015***

**William Evans, District Specifications Coordinator**

Description: Resurfacing  
 Federal Funds \$7,264,374.00

### **Revision 1**

Revise overbuild drawings and cross slope correction tables and adjust asphalt quantities associated to the revision.

(Summary of Pay Items) revise DQE...see table below Revision 1.

Sheet SQ-8—SQ9 (Summary of Quantities)(Summary of Pavement) revised pay items...see table below.

Discovery of errors:

Biddability comments; also, contractor question of overbuild drawings vs quantities.

Estimate Effect: for Asphalt Change (-) approximately \$928,416.00 removed from official estimate.

Pay Item	Sheet No.	Add. / Del. / Rev.	Old Quantity	New Quantity
		<b>Revision 1</b>		
334-1-12	SQ-08-SQ-9	Revise	9373.7 TN	8075.2 TN
334-1-34	SQ-09	Revise	46690.1 TN	37745.0 TN

## ***New ERC User Sign-In Portal***

ERC has a new User **Sign-In Portal** and is now available 24 hours a day, 7 days a week.

### **Remember!!!!**

It can take a few days to get your password reset if you get locked out of ERC. Don't wait until the last minute. Your ERC password expires every 60 days.

The screenshot shows the Florida Department of Transportation (FDOT) website header with the logo and navigation menu. Below the header is the 'FDOT User Sign-in Portal' section. It features a 'Login' form with fields for 'Racf Id\*' and 'Password\*', a 'Login' button, and a 'Change Password' link. A note indicates that an asterisk (\*) denotes required entries. The footer contains contact information, social media icons, and the text 'Florida Department of Transportation 100 Years of Innovation, Mobility and Economic Development'.

## ***Supplemental Agreement Report – September, October, November 2015*** Carol Kreis - QA/QC Plans Reviewer

**Description Code: 001: Subsurface material or feature not shown in Plans.**

**Reason:** To repair areas where the pavement has severe rutting, caused by underlying unstable material. Replacing the underlying base material, replace with geogrid material and Graded Aggregate Base, and existing asphalt to strengthen the newly resurfaced roadway and eliminate future rutting.

**Granted Time:** 6 Days

**Increase:** \$31, 111.90

**Response:** Unavoidable: No action recommended.

**Description Code: 112: Phasing or plan components not constructible as shown in the plans.**

**Reason:** To provide for added footer extensions on the approach slabs, new monuments, and revised sidewalk coping and curb due to the poor conditions of the existing railing which required plan modifications and redesign while retaining the historical integrity.

**Granted Time:** 10 Days

**Increase:** \$72, 712.55

**Response:** Avoidable; 3<sup>rd</sup> Party: No action recommended.

**Description Code: 101: Necessary pay item(s) not included in contract.**

**Reason:** To provide for the extra work associated with Jack & Bore Pipe installation instead of the open trench construction indicated in the plans for a 36" Cross Drain which also reduced the impacts to the motorists along the corridor for normally required lane closures.

**Granted Time:** 0 Days

**Increase:** \$38, 443.41

**Response:** Avoidable: No action recommended.

**Description Code: 101: Necessary pay item(s) not included in contract.**

**Reason:** The Pay Item for 6" Finish Soil Layer was deleted from the project before the bid letting which is necessary for the Treatment II Shoulder Treatment per Index 105. The Pay Item for 12" Finish Soil Layer was also necessary for areas that required in excess of 6" of Soil Buildup. To provide compensation to the contractor for the extra work required to use these Pay Items for shoulder and front slope buildup in the median area.

**Granted Time:** 3 Days

**Increase:** \$47,040.00

**Response:** Avoidable: Action recommended.

**Description Code: 003: To harmonize project with adjacent projects.**

**Reason:** To provide compensation for the work necessary for the extension of the project limits which includes construction a grass median with Type E Curb & Gutter and placement of Friction Course in the mainline.

**Granted Time:** 30 Days

**Increase:** \$54, 421.19

**Response:** Unavoidable: No action recommended.

**Description Code: 119: Revisions required related to major structural component changes.**

**Reason:** To provide for additional costs associated with a MSE wall design error which included, increases to the MSE wall quantity, increased embankment, additional design costs and compensable time due to delay impacts to the contractor's schedule.

**Granted Time:** 21 Days

**Increase:** \$45, 864.19

**Response:** Avoidable: Action recommended.

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## *Supplemental Agreement Report – September, October, November 2015* Carol Kreis - QA/QC Plans Reviewer

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**Description Code: 007: Work added from 3<sup>rd</sup> party agreements.**

**Reason:** To provide for the addition of Temporary Navigational Lighting which were added by the Coast Guard (USCG) and were not in the original USCG Permit.

**Granted Time:** 0 Days

**Increase:** \$21, 334.56

**Response:** Avoidable: No action recommended.

**Description Code: 001: Subsurface material or feature not shown in Plans.**

**Reason:** To provide for the use of Steel Sheet Piling in lieu of Concrete Piling for compatibility with the subsurface conditions.

**Granted Time:** 209 Days

**Increase:** \$785, 315.93

**Response:** Avoidable: No action recommended.

**Description Code: 503: Change resulting from engineering decision.**

**Reason:** To provide for FC-5 and ¾” Milling Average Depth in lieu of FC-9.5 and 1” Milling Average Depth for the turn lane which created a conflict for drainage between the turn lane and mainline which was paved with FC-5.

**Granted Time:** 10 Days

**Increase:** \$4, 998.88.00

**Response:** Avoidable: No action recommended.

**Description Code 503: Change resulting from engineering decision.**

**Reason:** To provide for Class V Finish on concrete barrier walls, gravity walls and permanent sheet pile walls exposed to driver’s view through the project and not originally shown to be painted to match in color as an aesthetic improvement as well as consistency between all the walls on the project since this is considered a “Gateway” to Florida.

**Granted Time:** 0 Days

**Increase:** \$217, 106.15

**Response:** Unavoidable: No action recommended.

### Design Spotlight

Seth Gay, P.E.

Roadway Design Project Manager



Seth graduated from Florida State University (Panama City campus) with a Bachelor of Science in Civil Engineering in May 2009. While going to school, Seth was employed by the Department as an OPS employee in In-House Roadway Design. After graduation, he was hired full-time in Roadway Design as a Project Manager. In 2011, he went to work for a consultant as a project engineer and most recently was a GEC Project Manager. Seth is married to Mallory and they have three children (Brayden, Brantley and Bryce). Seth and Mallory were raised locally and still reside in Chipley. Seth enjoys hunting in his free time and roots for the Seminoles.

## ***CADD TRICKS, TIPS, UPDATES - CADD Training***

Howard Helms, CADD Manager

### **Northwest Florida Regional CADD Training March 2-3, 2016**

Mark your calendars, ECSO staff will be coming to District 3 with CADD Training. This training will be open to Consultants and FDOT staff. Be looking for an email from ECSO staff for registration. You will have to register for what events you would like to attend, seats are limited. This is free training, no cost. The General Sessions will be open to all, but the workshops/hands on training will be limited to FDOT staff.

<b>Day One - March 2, 2016</b>			
<b>Time</b>	<b>General Session MicroStation D3 Design Conference Room 200 seats</b>	<b>General Session AutoDesk Emergency Operation Conference Room 100 Seats</b>	<b>Workshop Computer Training Room 18 seats</b>
8:00-8:50 AM	Digital Delivery Quinton	Survey EFB Design Deliveribles Brian & Doug	FDOT Automated Quantities Denise Broom
9:00-9:50 AM	FDOT SS4 Utilities Christi		
10:00-10:50 AM	FDOT SS4 Drainage Christi	Interscetions & Roundabouts ? Doug & Brian	
11:00-11:50 AM	Understanding Design Model/View Integration Vern	Grading in Civil 3D Randy	
12:00-1:30 PM	Lunch	Lunch	
1:30-2:20 PM	Earthwork, Cross Sections, Labeling & Sheets Christi	FDOT Civil 3D Traffic Plans Randy	FDOT Automated Quantities Denise Broom
2:30-3:20 PM	Templates-Behind the Scenes Jimmie		
3:30-5:00 PM		Drainage Brian & Doug	



# ***CADD TRICKS, TIPS, UPDATES - CADD Training***

Howard Helms, CADD Manager

Day Two - March 3, 2016			
Time	General Session MicroStation D3 Design Conference Room 200 200 seats	General Session AutoDesk Emergency Operation Conference Room 100 Seats	Workshop Computer Training Room 18 seats
8:00-8:50 AM	Un-Corridor Modeling Vern	Digital Delivery Quinton	Plan Development Workflows Christi/Denise
9:00-9:50 AM	Detailing Gore Areas Vern	Plans Production Existing Conditions Cross Sections Profiles Earthwork SSM Mike & Scott	
10:00-10:50 AM	Driveway Modeling Options Vern		
11:00-11:50 AM	RRR Modeling Jimmie		
12:00-1:30 PM	Lunch	Lunch	Lunch
1:30-3:20 PM	FDOT Automated Quantities Denise	Plans Production Existing Conditions Cross Sections Profiles Earthwork SSM Mike & Scott	Plan Development Workflows Christi/Denise
3:30-5:00 PM	Intersection Modeling with Bonus Jimmie		

*"Coming together is a beginning; keeping together is progress; working together is success." ~ Henry Ford*