

DISTRICT THREE DESIGN NEWSLETTER



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January - March, 2017

From the Editor's Desk - Roadway Design Issues

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



Audible/Vibratory Pavement Markings

In August 2016, District Three began removing ground-in rumble stripes from projects that had not let for construction. This was done in response to numerous complaints from residents and businesses regarding the noise level of the rumble stripes. As a result, Central Office Roadway Design has made modifications to Developmental Standard D519 that should alleviate most of the noise concerns while still preserving the audible warning intent. District Three will be including rumble stripes on all projects where it is context appropriate. When noise level concerns and historical crash data do not warrant placement of ground-in rumble stripes, discuss alternate recommendations with your Project Manager.



Design-Related Lane Closures

The Design office receives numerous lane closure requests, usually for geotech or pavement-related investigations. Recently, several requests have been made to other offices and by the time they are forwarded to Design, there is very little time for review. All requests should adhere to the following process:

1. If the lane closure is a design-related activity, send the request directly to John Fowler and copy the PM.
2. Requests must be made two weeks before the date the work is scheduled.
3. The review can be streamlined if you do your homework upfront by contacting the Operations Centers for any issues that would impact lane closure restrictions.

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District 3 Quarterly Design Newsletter

Editor.....Rodney Chamberlain

Layout/Graphics.....Aixa Corbitt

CONTRIBUTORS:

Lester Forrest John Fowler

Howard Helms Carol Kreis

Marty Wilson

Roadway Design Issues

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

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Exceptions and Variations

The Submittal/Approval Letter that accompanies design exceptions and design variations should provide an executive summary within about 1-3 paragraphs. The summaries should include:

1. A statement of the condition for which the exception or variation is being requested. This sentence should mostly recite key information from above. (e.g., FDOT Roadway Design is requesting an exception for cross slope that is too flat on SR 77 south of Graceville.)
2. A summary of the applicable design criteria. (e.g., Per PPM Table 25.4.6, travel lane cross slopes must be between 1.5% and 3.0%.)
3. A description of the non-standard condition being proposed. (e.g., Existing cross slopes range from 0.7% to 3.2%, and it is proposed to match the existing cross slope. Cross slopes were measured below 1.5% for about 6,500 linear feet (LF). Areas of too flat cross slope ranged in length from 300 LF to 1,600 LF and had an average cross slope that ranged from 1.1% to 1.4%. Too steep cross slopes were measured at 6 spot locations and ranged from 3.1% to 3.2%.)
4. A summary of the crashes attributed to this design element for existing conditions. If the request involves a new feature, a statement regarding the expected safety impact of the design element should be provided. (e.g., Between 2011 and 2015 there were no crashes within the project limits that could be attributed to deficient cross slope.)
5. A statement of any mitigation strategies that are proposed. (e.g., This project is resurfacing the existing asphalt, which is expected to improve surface friction. No other mitigation strategies are proposed for this project.)
6. A summary of any other primary justifications that will influence the decision. (e.g., Correcting cross slope throughout the project will impact wetlands at two locations and will also impact a species of endangered rosemary that is growing within the right-of-way.)

In addition to the Executive Summary described above, the signature sheet must be signed by the Engineer of Record. Either handwritten signatures or digital signatures are acceptable. The EOR's typewritten name on the signature line will not be accepted.

Standard Pedestrian Detectors Versus Accessible Detectors

The District Construction Office receives frequent bid questions when Pay Item 665-1-12 is used for Accessible Pedestrian Pushbutton Detectors. There is a significant cost difference between these and the standard pushbutton detectors. Per specification, the accessible detector is required to provide a raised, vibrating tactile arrow on the button as well as a variety of audible indications. The decision to use a standard detector or an accessible detector rests solely upon the engineering judgment of the EOR. However, the decision to use accessible detectors should be coordinated with any local jurisdictions and with J.C. Spivey, District Traffic Plans Coordinator.

Top Ten Quality Control Comments January – March, 2017

Lester Forrest - QA/QC Plans Reviewer

1. Evaluate all vertical faced structures that are located within the clear zone to ensure that they do not present a drop-off hazard. Reference: P.P.M Vol. I , 4.3.3
2. For projects that have a Value Engineering study, ensure that plans reflect all changes from the study.
3. The quantity for channelizing devices should include those which will be necessary to delineate the trailer mounted warning devices, i.e., advance warning arrow panel, portable changeable message sign. Reference the Specifications
4. Design speed as well as traffic data are to be provided for each Typical Section associated with project. Reference: P.P.M Vol. II, 6.2
5. Temporary Type K barrier wall is to be installed with the installation of Temporary Crash Cushions. Reference: Index 415
6. Designers should ensure that all construction activities are being called for within existing, proposed right of way or approved easements.
7. The temporary pavement markings should be listed in the summary of temporary traffic control plan items. Reference: Basis of Estimates
8. For pay item 110-86, (delivery of salvageable material) the costs for delivery of milled material is not included in the costs of this pay item for it is included in the costs of milling pay items. Reference: Specifications
9. Please ensure quantities in the plans match Transport quantities.
10. Drainage systems are required to be shown on landscaping plans, Plan Sheets. Reference Vol II, 26.6.2

Supplemental Agreement Report – December 2016, January, February 2017

Carol Kreis - QA/QC Plans Reviewer

Description Code: 012: Deterioration of, or damage to project after design (not weather related).

Reason: To compensate the Contractor for slip lining two existing pipes for a permanent repair. The pipes failures became apparent upon shifting traffic during the first MOT phase. Lane Closure Restrictions were modified to accommodate the repair time.

Granted Time: 3 Days

Increase: \$81, 847.81

Response: Unavoidable: No action recommended.

Description Code: 503: Change resulting from engineering decision.

Reason: To compensate the Contractor for the removal of two existing 14” concrete piling in an End Bent which conflicted with the new sheet pile to be constructed per the plan set.

Granted Time: 1 Day

Increase: \$ 6, 824.00

Response: Unavoidable: No action recommended.

Description Code: 503: Change resulting from engineering decision.

Reason: To compensate the contractor for modifications to the temporary MOT plan which included additional phases which were not previously existing to ensure proper traffic flow.

Granted Time: 0 Days

Increase: \$10, 632.68

Response: Unavoidable: No action recommended.

Description Code: 115: Required drainage modifications. & 112: Phasing or plan components not constructible as shown in plans.

Reason: To add drainage and outside sidewalk drainage to avoid stormwater ponding on the proposed sidewalk; and modify street lighting poles to avoid conflicts with overhead electrical lines.

Granted Time: 0 Days

Increase: \$16, 070.00

Response: Avoidable: No action recommended.

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

Reason: To increase the width of a Special Detour with additional temporary pavement to increase the work zone width to allow the contractor to utilize the equipment necessary to construct the permanent Traffic Railing Sound Barrier Wall along the outside shoulders of an overpass.

Granted Time: 0 Days

Increase: \$120, 705.86

Response: Avoidable: No action recommended.

Description Code: 106: Utility work w/no JPA: conflict, wrong size, wrong location, proposed or existing.

Reason: To compensate for placement of a conflict structure in order to mitigate a sewer conflict which was discovered during construction.

Granted Time: 5 Days

Increase: \$ 5, 075.74

Response: Avoidable: No action recommended.

Description Code: 012: Deterioration of, or damage to project after design (not weather related).

Reason: To compensate for manhole adjustment which required a manhole and structure modification in order to meet the intent and scope of the project.

Granted Time: 1 Days

Increase: \$1, 215.00

Response: Unavoidable: No action recommended.

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Supplemental Agreement Report – December 2016, January, February 2017

Carol Kreis - QA/QC Plans Reviewer

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Description Code: 007: Work added or deleted from 3rd part agreements.

Reason: To compensate for the work associated with installing Temporary Navigational Lighting for the safety and protection of the traveling public as required and added by the United States Coast Guard.

Granted Time: 24 Days

Increase: \$79, 934.07

Response: Avoidable: No action recommended.

Description Code: 503: Change resulting from engineering decision.

Reason: To compensate the contractor for static compaction efforts required to obtain density on the Graded Aggregate Base (GAB).

Granted Time: 0 Days

Increase: \$86, 609.81

Response: Unavoidable: No action recommended.

Description Code: 503: Change resulting from engineering decision.

Reason: To compensate changing the location and shape of a traffic separator to avoid concrete damage that would have been caused by transport trucks running over the curb.

Granted Time: 0 Days

Increase: \$3,775.38

Response: Unavoidable: No action recommended.

Description Code: 106: Utility work w/no JPA: conflict, wrong size, wrong location, proposed or existing.

Reason: To compensate for the relocation of overhead power lines which would conflict with the equipment needed by the contractor to construct the bridge structure as per the project plans to avoid potential unforeseen delays and impacts during project construction.

Granted Time: 0 Days

Increase: \$35, 437.15

Response: Unavoidable: No action recommended.

Description Code: 101: Necessary Pay Item(s) not included in the contract.

Reason: To compensate for the additional work, as directed by the Department, of replacing existing deteriorated expansion joints on bridges using polymer nosing.

Granted Time: 0 Days

Increase: \$47, 212.00

Response: Unavoidable: No action recommended.

Description Code: 101: Necessary Pay Item(s) not included in the contract.

Reason: To compensate for additional work required to remove the unusually thick asphalt and additional embankment material that was required for an unforeseeable site condition due to lack of information provided for there were no road-way borings.

Granted Time: 7 Days

Increase: \$56, 609.00

Response: Avoidable: No action recommended.

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

Reason: To compensate for the installation of a steel pile cofferdam and vibration monitoring to mitigate tidal water and allow construction of the project MSE wall.

Granted Time: 0 Days

Increase: \$92,260.78

Response: Avoidable: Action recommended.

MicroStation Tips & Tricks

Howard Helms, CADD Manager

ALT+DATA to Match - To quickly match an elements level, color, line style or line weight: hold the pointer over the element, and press ALT+Data. The active attributes will change to match the element under the pointer.

Double Click to Fit View - To quickly and easily fit the view, simply double click the middle mouse button.

Drag selection support during manipulate commands - After selecting a manipulation tool, you can now select multiple elements by dragging a window around them. In addition, the manipulate tools support the drag window at the beginning of the command, or after the first group has been selected. You can then hold the CTRL down to add additional elements or CTRL +Drag for multiple elements. Note that this is not a Selection Set.

Drag and Drop to Attribute Pickers - Position the Element Selection arrow over an element, when it highlights, drag it to the Attributes toolbox and drop it on the icon for the setting. For example, to set the Active Line Weight to match an element's line weight, drag the element and drop it on the Active Line Weight icon in the Attributes toolbox. If you enable the display of the Symbology Preview box in the Attributes toolbox, you can use the drag and drop technique to change all of the above settings to match the attributes of an existing element.

***Turn on Symbology Preview in the attributes tool box. ***

***Drag drop elements to icons. ***

Element Selection Tabs - Five attributes tabs, which are hidden by default, are added to the Element Selection tool. To display one or all of these tabs, right-click on the attributes section of the tool settings window. From the menu that opens, turn on the desired attributes.

Element Selection

***Select All ***

***Expand tabs ***

***Right click on a tab title and note additional tabs that are off by default. ***

***Turn on Transparency. ***

Pop-up key-in browser - When in the Home position, just press ENTER to open the keyin browser under the cursor.

Quick Info - Rather than using the Element Information dialog to retrieve bits of information about the selected element, simply use the Quick Info dialog. To do that, hover your cursor over the element and press ALT + RESET. The resulting compact dialog allows you to review and even edit the symbology values.

Cursor over element, ALT+RESET

Trim Tools - The *Trim Element* tool has been renamed *Trim Multiple*, and has new modes. Regardless of which

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MicroStation Tips & Tricks

Howard Helms, CADD Manager

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mode you are in, after you select the cutting element, you can select multiple elements by dragging a selection line across them, so you can simultaneously trim, extend, or trim and extend them at their intersection with the cutting element. The *Extend Element to Intersection* tool has been renamed *Trim To Element*. The default behavior of the enhanced *Extend To Element* tool remains the same as before. However, a new tool setting has been added which lets you invert the element identification behavior, so that the first element you identify is now the cutting element, and the second element you identify is the element that gets extended or shortened. When this tool setting is on, after you select the cutting element, you can select multiple elements by dragging a selection line across them to simultaneously extend and/or shorten them. The *Extend Two Elements to Intersection* tool has been renamed *Trim To Intersection*, and has been enhanced to let you extend or shorten two elements of any type to their intersection.

****Trim to Intersection ****

****Trim to element > Select cutting element first > ON ****

****Trim multiple****

Design Spotlight

Marty Wilson

Project Manager/Roadway Designer

Marty has moved to his new role in the Roadway Design Office. He began his career with FDOT 5 ½ years ago in the District Structures Maintenance Office (DSMO)



as an Assistant Inspector/Diver performing inspections on State-owned structures. After a couple years on the inspection side of the office, Marty moved to the engineering side of the DSMO as a Project Manager where he spent the past 3 years learning a combination of both Operations and Development within the Department.

Marty is married to Stephanie and they have a 3 ½ year old son (Noah). Both Marty and Stephanie were raised in East Tennessee, but have resided in Freeport for the past 6 ½ years. When he is not working, Marty enjoys numerous outdoor activities (especially in-water activities) and spending time with his wife and son.

*Big jobs usually go to the men who prove
their ability to outgrow small ones.*

~ Theodore Roosevelt ~