D3 DESIGN NEWSLETTER

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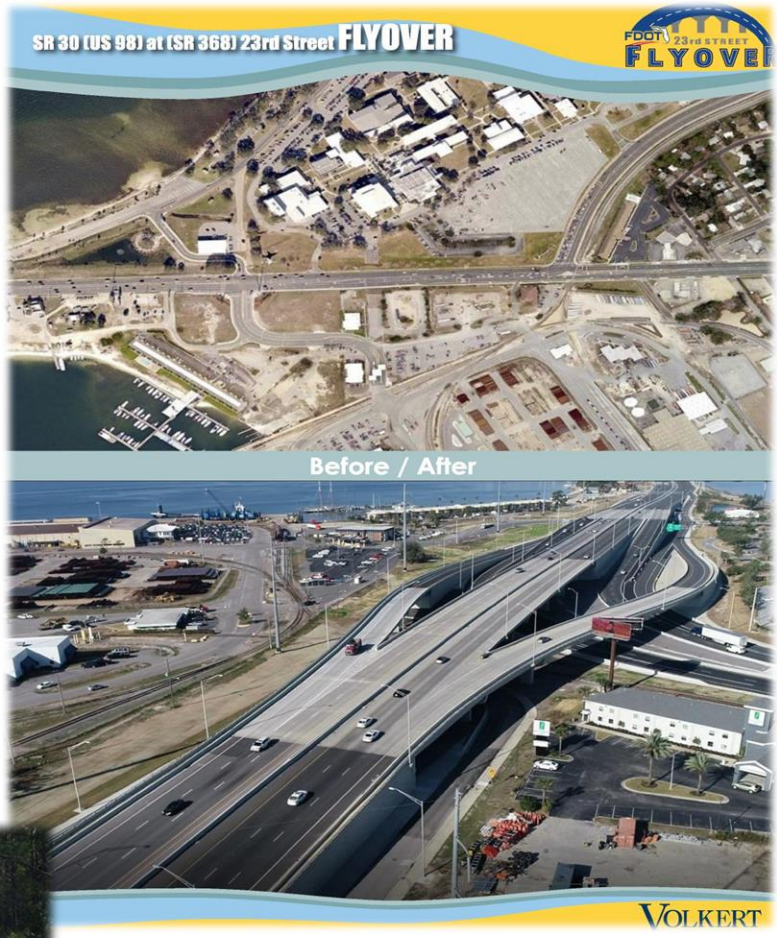
QA/QC FOR ALL DOCUMENTS

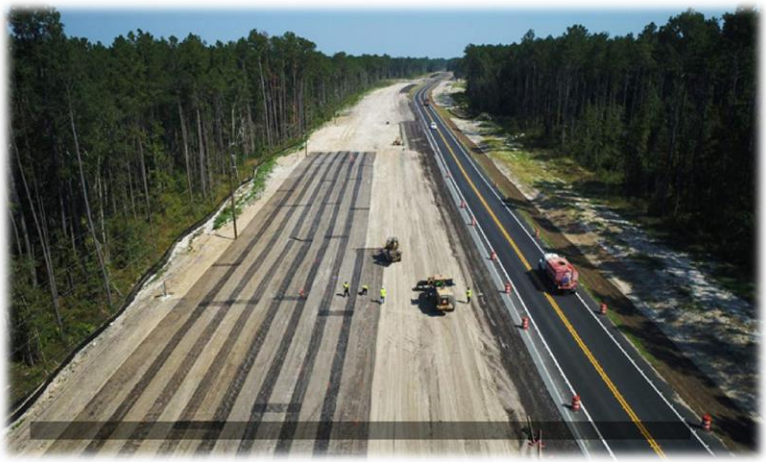
This is a reoccurring topic but one that needs to be discussed. A lot of time and energy is being spent on Design Approval Requests, specifically Exceptions and Variations. Due diligence is necessary in making this process as efficient as possible. The process is evolving and we will continue to send out guidance as needed. Please provide all efforts to receive approval on the first submittal. This will require your document to be thoroughly QC'd and signed and sealed prior to being submitted to the Department. Responses should be provided to comments when submittals must be revised and resubmitted. The Quality Control Plan should include all documents and submittals for a project. Refer to chapters 122 and 124 of the FDOT Design Manual.

ACEC-FL OUTSTANDING PROJECT AWARDS

The SR 30 (US 98) at SR 368 (23rd St) Flyover project in Bay County is the recipient of the 2022 ACEC-FL Outstanding Major Project Award. This project is the primary corridor connecting the cities of Panama City and Panama City Beach and consists of six new elevated roadways and nine new ramps. The unique combination of traffic required an innovative process to effectively transform this at-grade intersection to a grade separated interchange that included the construction of bridges, structural walls, roadways, intelligent transportations systems, and stormwater improvements. The consulting firm for this project was VOLKERT, managed by Scott Golden, P.E., and the FDOT Design Project Manager was Dean Mitchell, P.E.

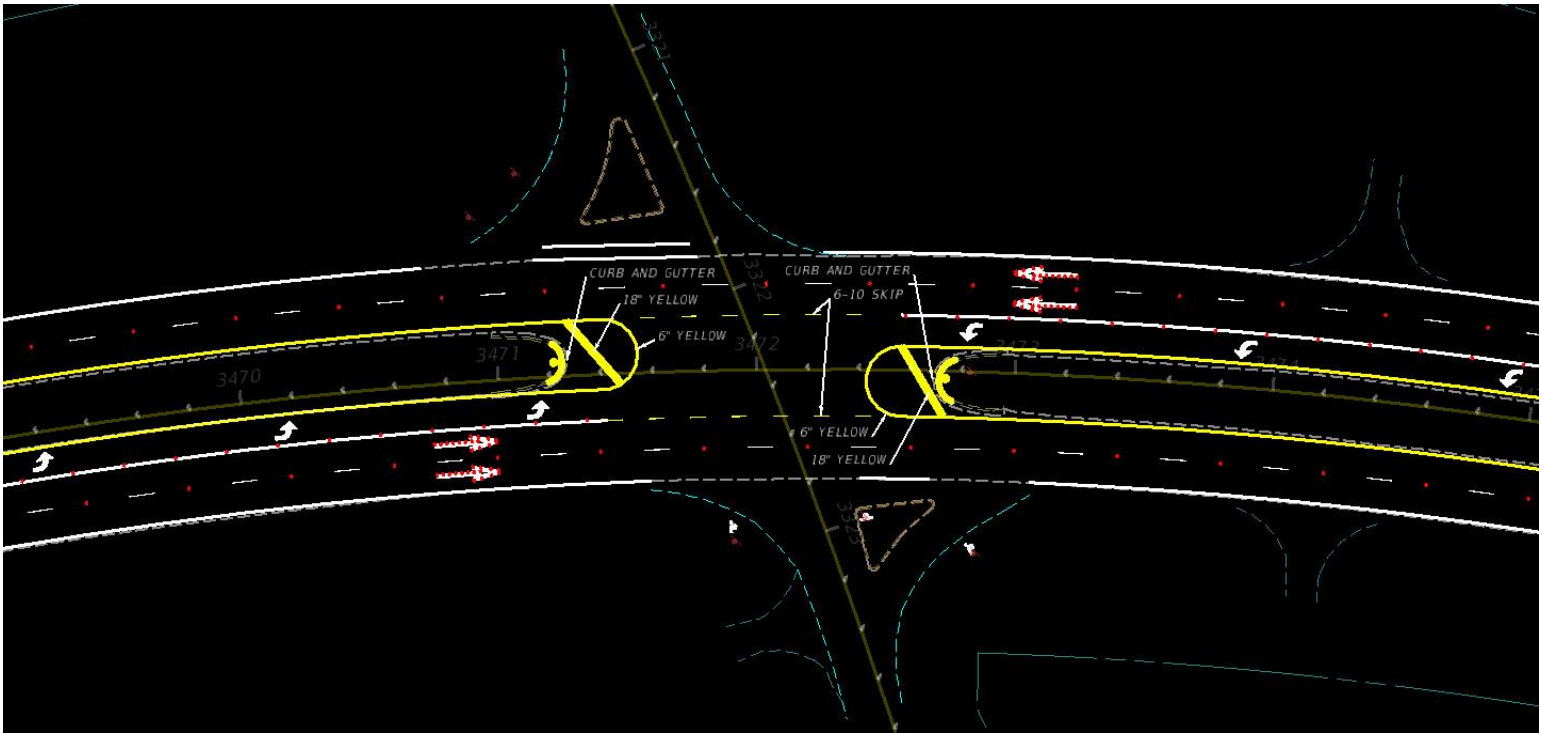


SR 369 (US 319) from north of SR 267 to the Leon County line in Wakulla County was selected as the 2022 ACEC-FL Outstanding Environmental Project. The Department of Transportation, District Three, partnered with the Florida Department of Environmental Protection and Edward Ball Wakulla Springs State Park to successfully complete this project. This project increased the capacity of the facility from two lanes to four lanes and included the design and construction of inside and outside paved shoulders and a 40-ft depressed grass median. The consulting firm for this project was AECOM, managed by David Gilbert, P.E., and the FDOT Design Project Manager was Ray Hodges, P.E.



- **FDM Form 122-B (Design Variation Memo)**
  - The use of Form 122-B is discussed in FDM 122.2.2.
    - Please provide all applicable design variations in a single Design Variation Memo.
    - These memos should be submitted no later than the PH II Plans Submittal.
    - If additional design documentation is required (cross slope tables, lateral offset tables, auto-turn exhibits, etc.) please provide them as an attachment.
    - Provide both the posted and design speed in in the justification section.
    - We have noticed that the PDF form provided in the FDM does not always produce legible text. A word document has been created and is available upon request through the Design PM. It is highly recommended to utilize the word document.
- **Cross Slope/Superelevation Correction**
  - In the past, we have not considered segments less than 1000' for correction due to constructability concerns. We are now willing to correct sections as short as 500'. If it is not feasible to correct to new construction criteria, partial correction is a viable alternative.
- **Hardened Centerlines**
  - Please be sure that the requirements in FDM 210.3.3 are being met. If it is not feasible to provide a Hardened Centerline, a Design Variation Memo will be required. Autoturn analysis should be provided as an attachment if the Hardened Centerline cannot be provided due to left turning vehicles.
- **Audible and Vibratory Treatment (Markings) Update**
  - Please be aware that a Roadway Design Bulletin is forthcoming to provide updated guidance for placing Audible and Vibratory Treatment (AVT) on arterials and collectors.
  - Until it is released, design projects should use the following direction for placement of AVT:
    - An AVT Recommendation Memo is no longer required.
    - Utilize FDM 210.4.6 for placement of AVT.
    - Provide only Sinusoidal Ground-In Rumble Strips for all asphalt pavement.
    - Provide Profiled Thermoplastic for concrete pavement (including bridge decks).
- **KMZ Files**
  - Please be sure that when .kmz files are submitted the following are provided:
    - The BL of Survey or CL of Construction should always be shown and legible.
    - When a .kmz file is created from ORD, yellow pins are placed throughout the file. Please be sure that these are cleaned up (not shown) before the file is submitted.
    - Please confirm the .kmz is navigable before submitting.
- **SS10 and Windows 11**
  - At this time, we are being told that SS10 will not be compatible with Windows 11. If you have any projects that are designed in SS10 and you wish to have the ability to access these files, at least one of your CADD machines will need to have Windows 10 or older.

- **Target Speed**
  - When submitting typical section packages, typically these guidelines should be followed:
    - For low speed (≤45 MPH) – Design Speed/ Target Speed/Posted Speed should match.
    - For high speed (≥50 MPH) – Design Speed and Target speed should match. Posted speed should be ≤ the Design Speed and Target Speed.
- **Median Openings**
  - Consideration should be given in the design process on reducing the width of excessively wide median openings at minor intersections and providing additional guidance on how vehicles should interact in the openings. Consider using measures that clearly define the median opening. The design should be such that vehicles are deterred from stacking up in an opening and there is clear intent on where vehicles should be in the opening. In the CADD screenshot below, additional pavement markings have been used to delineate a narrower median opening, and 6-10 skip was used to show the space vehicles should occupy in the opening.



DRAINAGE STRUCTURE INSPECTION FOR RRR PROJECTS

Standard Scope language for RRR projects includes the following:

The CONSULTANT shall field inspect the project for the structural condition of all side drains, cross drains, and drainage under the roadway area and make recommendations concerning repairs, extensions, replacement/upgrade, or removal of such facilities.

In general, if good engineering judgment deems that the structure(s) are structurally sufficient to remain in service until the next resurfacing project (+/- 15 years), the structure does not warrant replacement or rehabilitation within the RRR project.

Purpose

The intent of the field inspection is to identify structural deficiencies that should reasonably be addressed in the RRR project and to avoid damage to the facility (such as repairs requiring patching of recently resurfaced roadway) after the RRR construction is complete. This is consistent with the main purpose of RRR projects, which is to extend the service life of the facility. Repairs to structures beneath the roadway surface impact the rideability of the facility. Necessary repairs that are not identified during design but discovered during construction result in increased repair cost due to the inclusion of unbid items necessary for the repairs, which leads to a potential for error and omission claims by the contractor.

Level of Inspection

The intent of the scope language is not to employ a structural engineer to evaluate the existing structures. Conversely, the Department does not want an evaluation based on the surveyor's report of condition. What is desired is an evaluation by the engineer based on an appropriate and reasonable level of information. Pipe video inspection should be requested only when necessary. These inspections are expensive and may require dewatering, desilting and MOT. The expense, work effort, and disruption to the traveling public required for pipe video inspection is not warranted for all projects or all locations within a project.

Suggested Procedure

The engineer should visually inspect the structures within the project limits. If accessible, the engineer should investigate pipe runs to check for pipe alignment, indications of disjointed pipes, and evidence of intrusion at the joints.

Larger pipes and cross drains may be entered physically for inspection. These are considered confined spaces and the engineer should complete confined spaces safety training before entering. Appropriate personal protective equipment should be employed when physically entering confined spaces. It should be noted that these spaces present a potential danger from heavy gases, and a confined space gas detector, i.e., a sniffer, should be used during the inspection.

Dry pipes can be both evaluated and documented with stationary cameras. The illumination and zoom features of these cameras allows for more detailed inspections than can be accomplished by simply looking into the pipe. The software supplied with the camera allows the reviewer to enter documentation while performing the inspection. The limitation of the stationary camera is that, unlike a pipe video inspection camera, the camera cannot be positioned to get a radial view of the joints.

For structures and pipe systems that are not accessible, the roadway surface should be evaluated for indications of pipe and joint issues. If local area maintenance has no history of pipe issues within the project limits, and surface indications of pipe issues are not present, it is reasonable to view the pipes and structures to the greatest extent possible and conclude the pipes and structures are structurally adequate. Surface conditions that may indicate further investigation is necessary include the following:

- Cracks aligned with pipe runs
- Settlement over joints/connections
- Patches – contact local area maintenance for history

If visual inspections or roadway surface conditions suggest the need for further investigation, the expense and effort of acquiring pipe video inspection is warranted.

FPL LIGHTING

When designing lighting for a JPA with FPL it is requested that at least one of the three luminaire options required to be considered by section 231.7, paragraph 2 of the FDM be the Acuity Brands American Electric ATB_P602_R4_3K_186W Roadway Fixture with a color temperature of 3000K as they have these readily available.

DESIGN EXCEPTION – CROSS SLOPE AND SUPERELEVATION

The Office of Design reviews many exceptions for cross slope and superelevation, and these exceptions tend to be more complex and may require revision before getting approved. If an exception is needed for cross slope and superelevation, AASHTO and FDOT criteria will need to be looked at to determine values that do not meet criteria.

- FDM (2022) 210.2.4 discusses pavement cross slopes, and 210.2.4.1 further dives into RRR criteria for cross slopes.
- FDM 210.9 covers superelevation with FDM 210.9.2 covering RRR criteria for superelevation.
- FDM 122 provides AASHTO criteria for each of the controlling elements. Superelevation can be found in FDM 122.5.5 and cross slope in FDM 122.5.8.

The most crucial element to the design exception for cross slope and superelevation is the cross slope data table. The exception will cover ***all*** values that do not meet criteria, so it is imperative that the data be presented in a clear, accurate manner that is easy for the Design Office (and Central Office) to review.

The data table should include not only the travel lanes, but also paved shoulders, auxiliary lanes and algebraic difference where applicable.

For cross slopes, we recommend color coding values that are flat and steep. See the example below. Algebraic difference should be shown with a different color. Refer to FDM Table 210.2.3 for RRR allowable ranges for cross slopes on arterials and collectors and FDM Table 211.2.3 for limited access facilities.

LEGEND					
TL = Travel Lane	PS = Paved Shoulder	OS = Outside Shoulder (Paved)	IS = Inside Shoulder (Paved)		
Steep	TL > 2.5%	PS > 8%			
Flat	TL < 1%	1% < TL < 1.5%	PS < Adj TL		
Alg. Diff.	TL > 4%	PS & TL > 7%			

Milepost	Station	LT OS (*100=%)	Alg Diff (*100=%)	LT OTL (*100=%)	Alg Diff (*100=%)	LT ITL (*100=%)	Alg Diff (*100=%)	LT IS (*100=%)	RT IS (*100=%)	Alg Diff (*100=%)	RT ITL (*100=%)	Alg Diff (*100=%)	RT OTL (*100=%)	Alg Diff (*100=%)	RT OS (*100=%)
13.499	A 794+00.000	0.069	0.050	0.019	0.002	0.022	0.080	-0.058	0.041	0.064	-0.023	0.006	-0.029	0.043	-0.072
13.517	A 795+00.000	0.071	0.049	0.022	0.002	0.019	0.080	-0.060	0.057	0.077	-0.021	0.013	-0.034	0.033	-0.067
13.536	A 796+00.000	0.063	0.029	0.034	0.017	0.017	0.079	-0.063	0.038	0.061	-0.023	0.004	-0.027	0.037	-0.064
13.555	A 797+00.000	0.061	0.035	0.026	0.009	0.018	0.084	-0.067	0.094	0.121	-0.027	0.006	-0.022	0.049	-0.071
13.574	A 798+00.000	0.068	0.039	0.029	0.012	0.017	0.077	-0.060	0.047	0.070	-0.023	0.001	-0.025	0.041	-0.065
13.593	A 799+00.000	0.065	0.035	0.030	0.010	0.019	0.087	-0.068	0.072	0.097	-0.024	0.005	-0.029	0.040	-0.069
13.612	A 800+00.000	0.066	0.034	0.032	0.023	0.009	0.079	-0.070	0.058	0.081	-0.023	0.009	-0.033	0.046	-0.079
13.631	A 801+00.000	0.065	0.039	0.025	0.005	0.020	0.087	-0.067	0.049	0.075	-0.026	0.006	-0.031	0.034	-0.065
13.650	A 802+00.000	0.059	0.040	0.018	0.004	0.015	0.075	-0.061	0.034	0.057	-0.023	0.015	-0.037	0.026	-0.063
13.669	A 803+00.000	0.061	0.039	0.022	0.009	0.013	0.089	-0.076	0.046	0.073	-0.027	0.002	-0.026	0.039	-0.065

(I-10 data from Jackson Co)

In the case of horizontal curvature, it is important to demarcate these areas in the table since they are evaluated with superelevation criteria.

Milepost	Station	LT OS (*100=%)	Alg Diff (*100=%)	LT OTL (*100=%)	Alg Diff (*100=%)	LT ITL (*100=%)	Alg Diff (*100=%)	LT IS (*100=%)	RT IS (*100=%)	Alg Diff (*100=%)	RT ITL (*100=%)	Alg Diff (*100=%)	RT OTL (*100=%)	Alg Diff (*100=%)	RT OS (*100=%)	
16.339	A 944+00.000	0.073	0.045	0.029	0.014	0.014	0.063	-0.049	0.057	0.089	-0.032	0.009	-0.022	0.054	-0.077	
16.358	A 945+00.000	0.076	0.070	0.006	0.005	0.000	0.061	-0.060	0.063	0.094	-0.031	0.002	-0.029	0.035	-0.063	
16.377	A 946+00.000	0.071	0.081	-0.010	0.003	-0.013	0.043	-0.057	0.053	0.079	-0.026	0.005	-0.031	0.050	-0.082	
16.396	A 947+00.000	0.058	0.074	-0.016	0.016	-0.032	0.018	-0.050	0.051	0.080	-0.028	0.008	-0.036	0.038	-0.074	
16.415	A 948+00.000	0.049	0.065	-0.016	0.017	-0.033	0.046	-0.079	0.020	0.048	-0.028	0.011	-0.039	0.040	-0.078	
16.434	A 949+00.000	0.050	0.065	-0.014	0.018	-0.033	0.022	-0.055	0.040	0.069	-0.028	0.003	-0.025	0.047	-0.072	
16.453	A 950+00.000	0.047	0.069	-0.022	0.007	-0.030	0.042	-0.072	0.050	0.088	-0.038	0.016	-0.022	0.053	-0.074	
16.472	A 951+00.000	0.037	0.061	-0.025	0.003	-0.028	0.020	-0.047	0.052	0.079	-0.027	0.004	-0.031	0.049	-0.081	
16.491	A 952+00.000	0.039	0.058	-0.018	0.017	-0.035	0.042	-0.077	0.040	0.073	-0.033	0.007	-0.026	0.058	-0.084	
16.510	A 953+00.000	0.048	0.082	-0.034	0.010	-0.025	0.048	-0.073	0.047	0.075	-0.028	0.000	-0.028	0.050	-0.079	
16.529	A 954+00.000	0.046	0.068	-0.022	0.007	-0.029	0.041	-0.070	0.058	0.086	-0.028	0.003	-0.025	0.051	-0.076	
16.548	A 955+00.000	0.037	0.060	-0.023	0.006	-0.030	0.056	-0.085	0.061	0.093	-0.033	0.001	-0.032	0.046	-0.078	
16.567	A 956+00.000	0.033	0.052	-0.019	0.020	-0.039	0.031	-0.070	0.055	0.103	-0.048	0.020	-0.028	0.052	-0.080	CURVE 2 (RT)
16.586	A 957+00.000	0.052	0.080	-0.028	0.004	-0.024	0.037	-0.062	0.048	0.088	-0.040	0.009	-0.031	0.053	-0.084	R = 7638.52
16.605	A 958+00.000	0.050	0.083	-0.033	0.006	-0.027	0.015	-0.042	0.034	0.069	-0.035	0.001	-0.036	0.043	-0.079	emax = 6% (2.8)
16.624	A 959+00.000	0.045	0.069	-0.024	0.007	-0.030	0.037	-0.067	0.048	0.089	-0.041	0.002	-0.040	0.037	-0.076	emax = 12% (3.0)
16.642	A 960+00.000	0.070	0.094	-0.023	0.014	-0.038	0.039	-0.077	0.030	0.070	-0.039	0.005	-0.034	0.045	-0.079	
16.661	A 961+00.000	0.048	0.073	-0.025	0.013	-0.038	0.028	-0.066	0.028	0.062	-0.034	0.000	-0.034	0.041	-0.075	
16.680	A 962+00.000	0.045	0.070	-0.025	0.003	-0.028	0.038	-0.066	0.034	0.070	-0.036	0.003	-0.033	0.032	-0.064	
16.699	A 963+00.000	0.047	0.074	-0.027	0.004	-0.031	0.049	-0.080	0.037	0.067	-0.030	0.001	-0.028	0.046	-0.074	
16.718	A 964+00.000	0.054	0.078	-0.024	0.009	-0.033	0.039	-0.072	0.046	0.084	-0.038	0.017	-0.021	0.059	-0.081	
16.737	A 965+00.000	0.066	0.089	-0.023	0.003	-0.026	0.030	-0.056	0.036	0.067	-0.031	0.000	-0.031	0.037	-0.068	
16.756	A 966+00.000	0.064	0.083	-0.019	0.012	-0.031	0.042	-0.072	0.045	0.077	-0.032	0.008	-0.024	0.047	-0.072	
16.775	A 967+00.000	0.064	0.093	-0.029	0.007	-0.022	0.057	-0.079	0.059	0.091	-0.032	0.008	-0.023	0.056	-0.079	
16.794	A 968+00.000	0.055	0.071	-0.016	0.020	-0.036	0.039	-0.076	0.047	0.073	-0.026	0.005	-0.031	0.053	-0.084	
16.813	A 969+00.000	0.058	0.081	-0.022	0.008	-0.031	0.065	-0.096	0.042	0.072	-0.030	0.003	-0.027	0.044	-0.072	
16.832	A 970+00.000	0.054	0.075	-0.021	0.011	-0.032	0.007	-0.024	0.046	0.077	-0.031	0.003	-0.034	0.054	-0.088	
16.851	A 971+00.000	0.059	0.087	-0.028	0.000	-0.028	0.037	-0.065	0.065	0.103	-0.038	0.006	-0.032	0.043	-0.075	
16.870	A 972+00.000	0.054	0.068	-0.014	0.002	-0.016	0.101	-0.116	0.038	0.069	-0.030	0.007	-0.037	0.036	-0.073	
16.889	A 973+00.000	0.050	0.045	0.005	0.000	0.004	0.065	-0.060	0.035	0.054	-0.019	0.018	-0.037	0.033	-0.070	

(I-10 data from Jackson Co)

The Office of Design reviews the data tables for accuracy. We are looking to ensure that negative and positive slopes are consistent. Color coding slopes helps identify all deficient values and problematic areas that may need further discussion for cross slope correction.

For superelevation, we also need to know what the design speed (DS) is for each horizontal curve and what the radius of the curve is to properly evaluate these areas. It is also helpful if the data table identifies whether the curve is to the right or left so that we can check signing conventions and make sure the curve was constructed properly. If correction is being proposed, please note that in the table as well.

The exception report also has specific requirements that must be documented. FDM 122.3 and FDM 122.4 outline the justification and documentation needed for approval. Becoming familiar with these sections for all exceptions is recommended.

FDM 122.5.5 and FDM 122.5.8 go over controlling element specific information that must be included in the exception for superelevation and cross slope. For instance, side friction factors are required for a superelevation exception.

A D3 specific requirement for superelevation exceptions is to identify the design speed that the existing superelevation meets per the FDOT emax = 10% table (Table 210.9.1). For example, if the average superelevation of an existing horizontal curve is 0.031 and the radius of the curve is 4,584, this corresponds to a design speed of 55 mph.

No exception would be complete without a discussion of crash history and mitigation strategies.

The current crash history guidance we have is from FDM 122.4 (6)(a)(i):

- Review and evaluation of the most recent 5 years of crash data from the current date of analysis.

CARs data has been verified through 2019. Supplemental information through to the "current date of analysis" can be acquired from Signal 4 Analytics. Central Office is looking at dates of crash history as related to the time when the exceptions are submitted to PSEE. It is recommended to not have crash history more than 3 months out from the date the exception is submitted for review in PSEE.

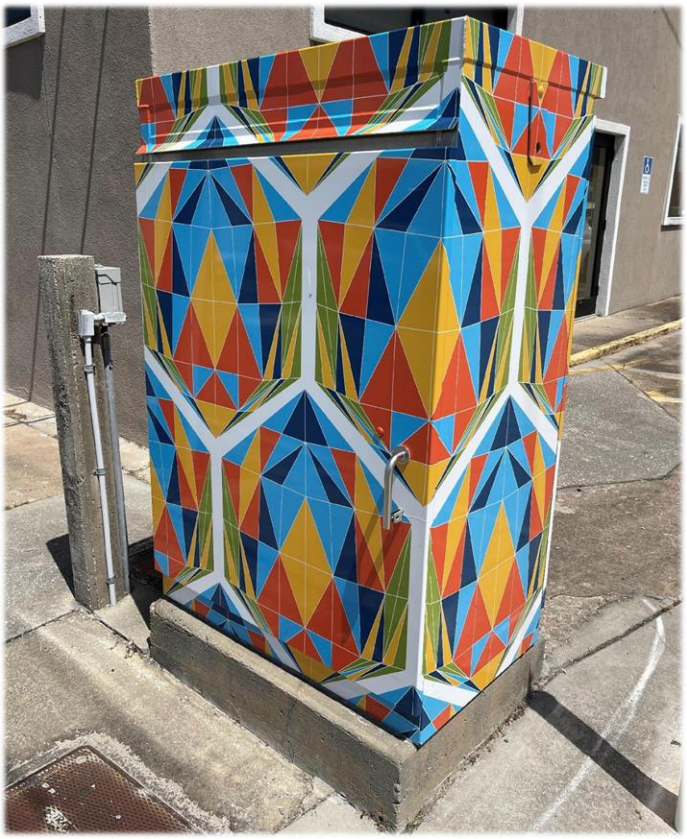
FDM 122 discusses mitigation strategies for each of the controlling elements including cross slope and superelevation. Please discuss which mitigation strategies, if any, are being utilized in your project. It is also appropriate to mention strategies that were considered even if not implemented.

The goal of the Design Office is to get exceptions approved by Central Office on the first submittal. The guidance given above has yielded positive results in gaining Central Office approval for cross slope and superelevation exceptions. We want to represent the DDE, the District and you in the best light possible.

Helpful Hints:

- Remember to sign and seal the exception according to FDM 130.
- Combine cross slope and superelevation into one exception.
- Do not interpolate superelevation rates from the AASHTO emax tables (2011 AASHTO Greenbook, Section 3.3.5).
- Watch crash history dates and keep current.
- Discuss both AASHTO and FDOT criteria as it relates to cross slope and superelevation.
- Provide design speed and posted speed for the project.
- Discuss mitigation strategies considered and/or implemented.
- There is no need to provide a station range with average values for cross slope. The exception will cover all deficiencies.
- Double check conditional formatting in the data table to ensure accuracy.
- Mention cross slope correction if applicable. Make sure any proposed cross slope correction has been approved by FDOT.
- Only include relevant information to the exception in the appendices. Do not submit a whole plan set.
- Please provide long form reports for crashes that are relevant to the exception.

SIGNAL CONTROL CABINET CONFIGURATION- GENERATOR ACCESS DOOR



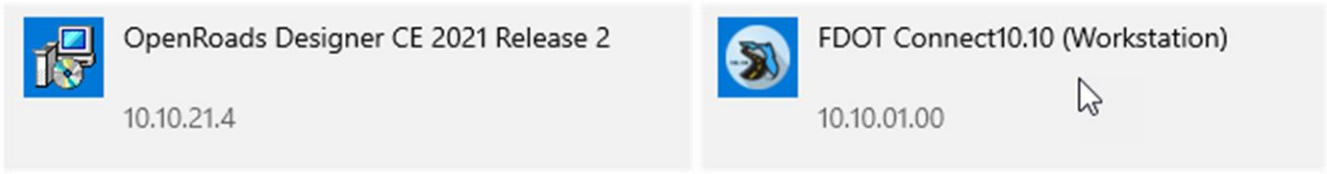
Recent discussion between the Design and Traffic Operations Departments determined that language changes to specification 676-2.6 has eliminated the need for the District 3 generator harness assemblies note. All future controller cabinets should be fitted with generator harness connections per specification 676-2.6. The District Three signalization notes have been updated and the generator harness assembly note has been removed. The current District Three signalization notes can be obtained in ERC under District Documents – Plans, Spec and Estimates – D3 Notes Database – January 2022 – D3 Acceptable Notes.

All future controller cabinets should be fitted with generator harness connections per Specification 676-2.6.

VALUE ENGINEERING STUDIES

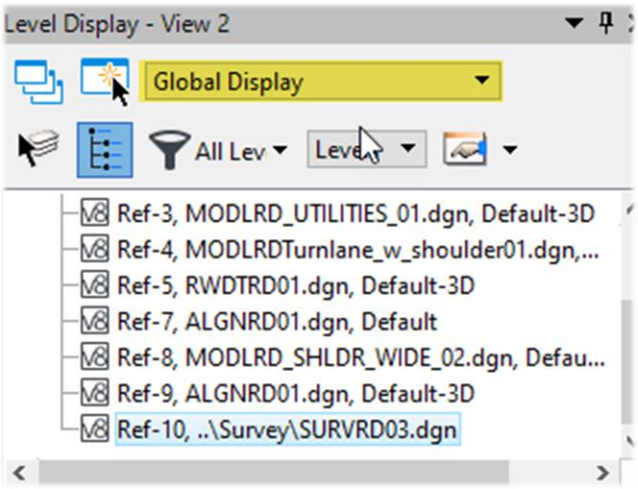
The FDOT thresholds for Value Engineering Studies have been increased to match the federal thresholds. The new thresholds are $40 million for bridges on the National Highway System and $50 million for roads on the National Highway System. When determining if a Value Engineering Study is required, be sure to include all phases of the project, PD&E, Design, R/W, Construction, and CEI. Value Engineering Studies are not required for Design Build Projects regardless of the amount

GLOBAL DISPLAY FOR YOUR PLANRD AND RDXSRD FILE



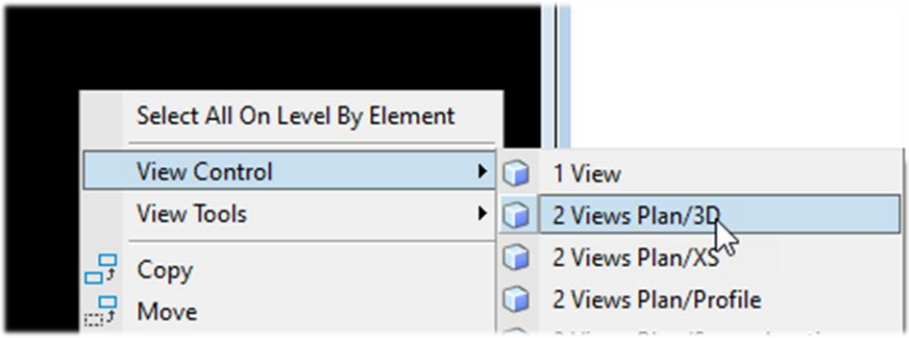
The above software versions are being used at this time.

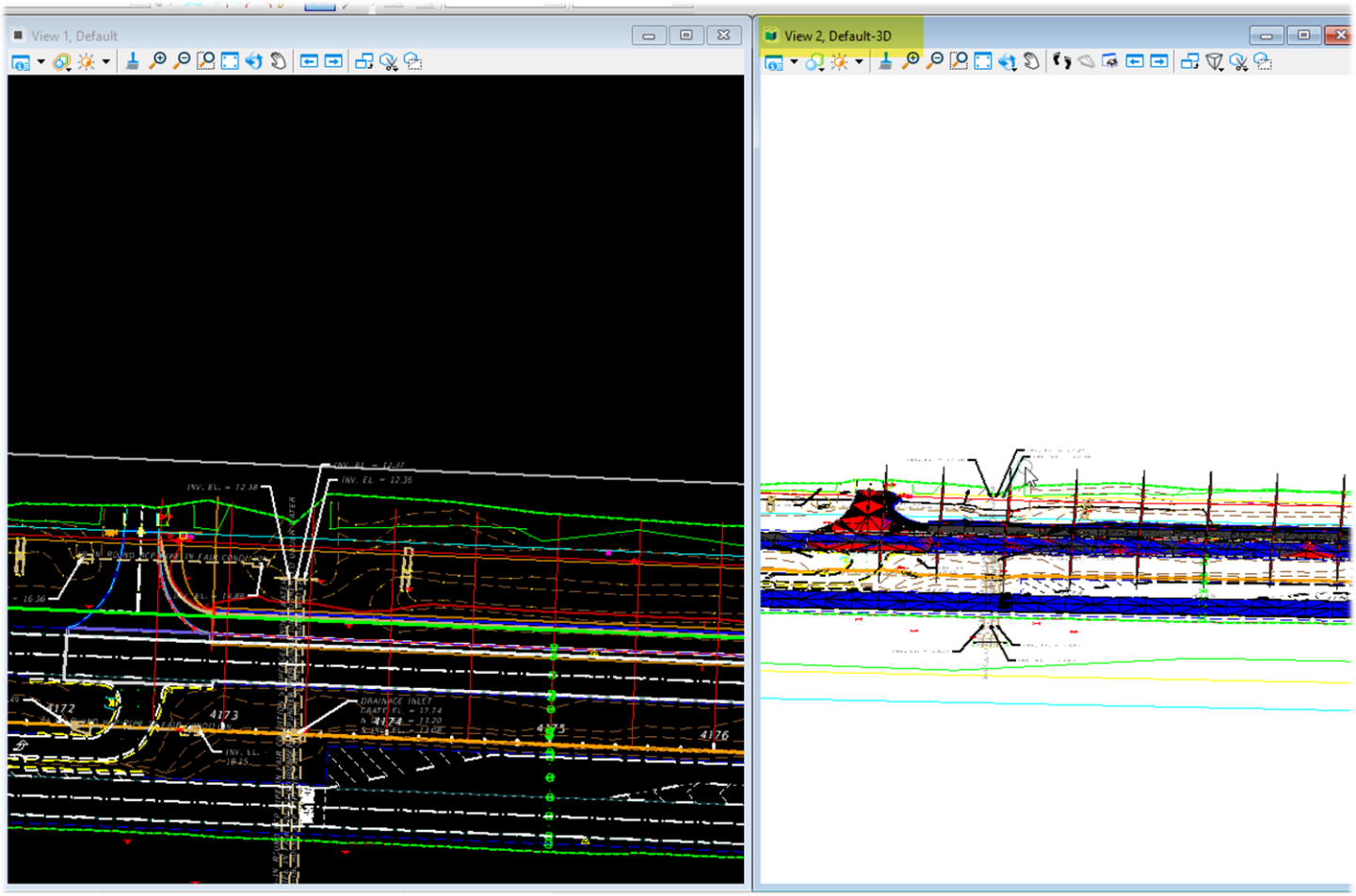
If you are cutting plan sheets and cross section sheets and find levels coming back on after you have turned them off, we have found using Global Display when turning the levels off stops this.



If you are in your PLANRD file, you need to do this in the DEFAULT 2D view. If you are in your RDXSRD file, you need to do this in the DEFAULT 3D view.

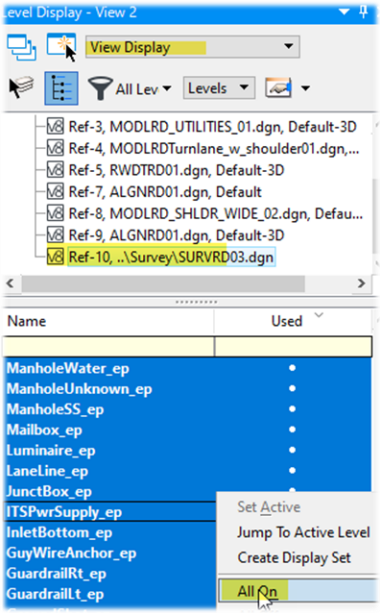
In the RDXSRD file, hold down a right click for View Control, then 2 Views Plan/3D



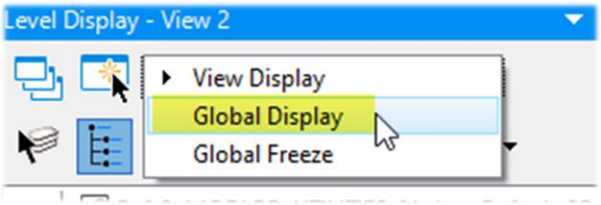


Click in View 2 the Default 3D view to make it active. Then, in your View Display go to the reference you want to turn levels off in. I am using the SURVRD file, and I usually turn everything off in that file except the DTM_ex.

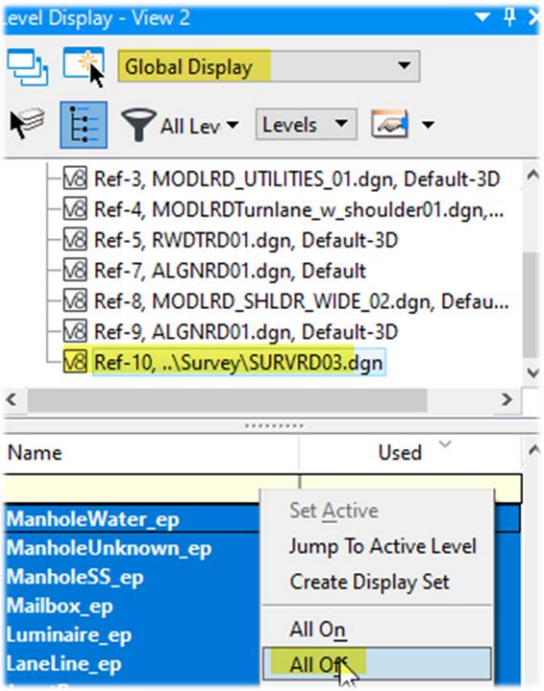
With View Display selected, hold a right click down your levels are and click turn all levels on.



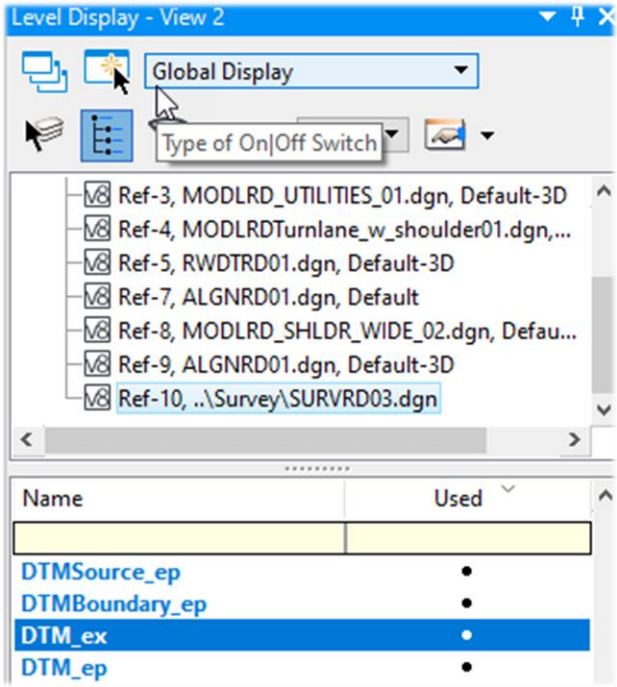
Then change from View Display to Global Display.



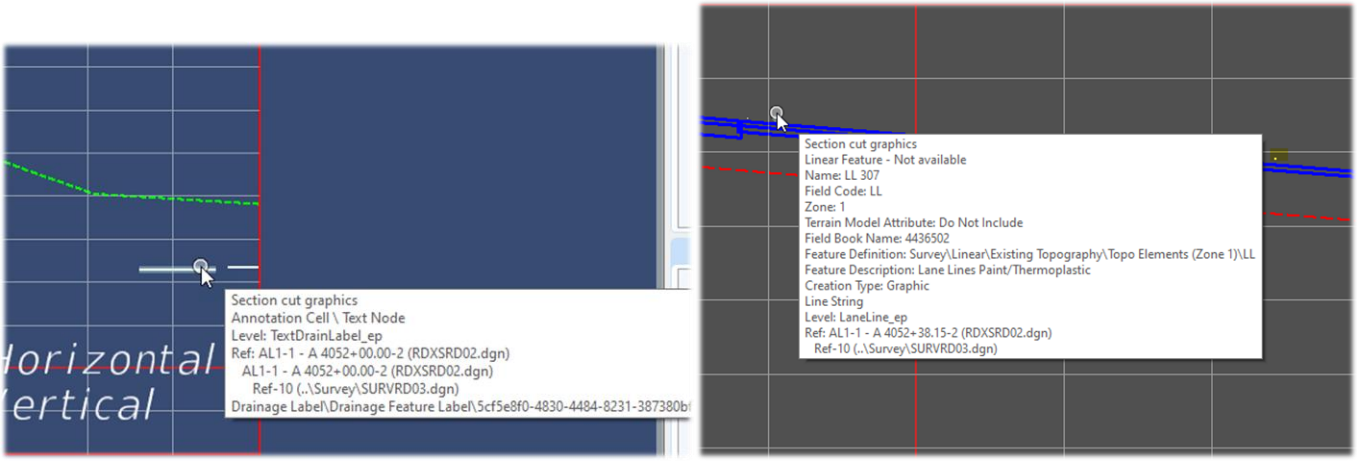
Hold a right click down and click all off.



Then turn the level DTM_ex on, by left clicking it.



We have found levels in our cross sections on like below.



Using Global Display seems to turn them off and keep them off. We were having issues when, after turning off levels, we would get back in the file or print the .pset and levels would be back on.

FROM THE CONSTRUCTION WORLD

Over the past few years, we have faced many new challenges in our pursuit to continue delivering the Department's Work Program. Most recently our challenges have included price escalation due to inflation and material availability, material shortages, and workforce shortages. As we move forward, looking for ways to help alleviate and work around these issues, I wanted to take the opportunity to make mention of some current issues that we are experiencing on construction projects.

Logistics – Many of the delays we are beginning to experience are stemming from what seems to be a nationwide logistics issue of supplying raw materials used in both asphalt and concrete mixes. We are getting notices daily of material shortages due to lack of the ability to get the amount of aggregate needed for asphalt, concrete, and base material.

Miscellaneous Items – Materials shortages of items such as UFO's, Thermoplastic, Traffic Signal Cabinets, and Mast Arms have been high on the list of creating delays in project completion. These items are not consistently issues on every project as most are only creating short duration delays, but we are being told that lead times on items such as traffic signal cabinets and some ITS fiber may be up to one year.

Workforce and Equipment – According to our Construction Industry partners, some of their main obstacles are workforce and equipment availability. We have heard stories of the difficulties in recruiting personnel during this time which seems to be prevalent on all sides of the industry including FDOT and Consultants. It seems that procuring equipment is as difficult in the construction world as it is with buying passenger vehicles. We've heard of companies purchasing used dump trucks for over $250,000 when the same dump truck new is only around $200,000, but unavailable for 6-12 months.

With this trend of obstacles stacking up to make timely completion of projects more difficult than ever, it becomes evident that we may have an overabundance of on-going projects that linger on far longer than originally expected. As we continue to let new projects while working through the difficulties of completing the ones already out there, I would like to encourage everyone to pay special attention in a few areas.

- Keep an eye on nearby and adjacent projects that are both in design and construction to ensure that we do our best to alleviate any unintentional delays or impacts from project overlap with these construction projects last much longer than anticipated.
- If you are considering adding design elements that aren't critical please include construction in the communication as certain additions may have considerable time impacts to project completion.
- If you are considering "GAB only" as a stabilization or base option please coordinate with construction for the time being with the aggregate supply issues.

As always, we encourage you to call anytime to discuss issues or bounce ideas around on how we can improve. Thanks from the Construction Office in working with us to keep these projects moving forward.

Contributions by: Adam Scurlock, P.E., Anna Harlson, P.E., April Williams, P.E., Beverly Hynes, Donald Rogers, P.E., Howard Helms, JC Spivey, John Whittington, P.E., Keith Hinson, P.E., Kevin Fussell, P.E., Lisa Bell Mitchell, Seth Gay, P.E.