Florida Department of Transportation

DISTRICT THREE DESIGN NEWSLETTER

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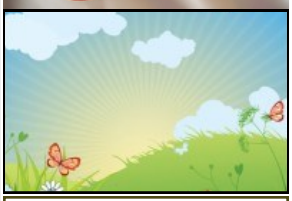

District 3 Quarterly Design Newsletter

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From the Editor's Desk - Meaningful Communication

Miranda Glass, P.E., District Drainage Engineer

Sometimes the greatest failure in communication is assuming it's been done. The process of taking a project from conception to completion is an arduous and complex task that requires the input and associations of many people. In the life of a project there are so many components and details that must be considered, many of the "nuts and bolts" could easily be overlooked. With active and intentional communication, the opportunities for misses are significantly reduced.

Consider the numerous contributions during the life of a design and imagine what increased communication could achieve. With our continuing efforts to utilize "outside the box" thinking and increase innovation in what we do, we may overlook the expectations of the end users of the plans and designs we produce. It is important in every stage to ask appropriate questions and consider unintended consequences. It can be what prevents a "firecracker" of a mistake from becoming a "mushroom cloud" of an error.

The intentions of a designer are typically to increase the safety of the design, enhance constructability, provide adequate maintenance of traffic that serves both roadway users and the Contractor, and reduce project cost. The difficulty lies when these different considerations conflict with one another. Even the best of intentions could result in unforeseen challenges. So how do we avoid the unforeseen? Be proactive. Don't wait for questions, but instead be the one asking them. After all, the devil is in the details.

"Life stands before me like an eternal spring with new and brilliant clothes." ~ Carl Friedrich Gauss

Supplemental Agreement Report – Dec., Jan., Feb., 2015

Carol Kreis, Plans Reviewer

Description Code: 010 - New work items, overruns or plans modifications due to weather.
Reason: Due to excessive rainfalls over the past year the ground table rose substantially in the area. The high groundwater table has caused water seepage beneath the newly placed ditch pavement on both sides of the roadway, the material eroded damaging sections of the ditch pavement. The contractor installed type II underdrain in this area and replaced the sections of damaged ditch pavement.
Granted Time: 0 Days
Increase: $124, 455.00
Response: Unavoidable; No action recommended.

Description Code: 001 – Subsurface material not shown in the plans.
Reason: During construction, groundwater began to accumulate in the area of the proposed special detour at the stabilized subgrade elevation. The area became saturated and began pumping when compaction attempts were made. Temporary Underdrain and graded aggregate base were installed to dewater the Phase I Special Detour area.
Granted Time: 13 Days
Increase: $101, 352.06
Response: Unavoidable; No action recommended.

Description Code: 503 – Change resulting from engineering decision.
Reason: Rework to demolish installed traffic separator and install new traffic separator in the same location to leave an area of asphalt so that the existing sanitary manhole in the same location could be raised at a future time.
Granted Time: 0 Days
Increase: $3, 950.97
Response: Avoidable; Production consultant; No action recommended.
Note: All costs for this work are premium cost since this is rework. Had the solution been determined before bid or early in the project all of the extra costs would not have been incurred.

Description Code: 503 – Change resulting from engineering decision.
Reason: The plans indicated to construct a traffic separator using Type E Curb & Gutter, but the Contractor proposed to use the Pay Item 0520-70, Special Concrete Traffic Separator in lieu of the quantities of the Plan Pay Items to reduce the overall costs and save time.
Granted Time: 0 Days
Decrease: $-3, 027.57
Response: Unavoidable; No action recommended.

Description Code: 001 – Subsurface material not shown in the plans.
Reason: To cut 12” diameter cores through 10” of reinforced concrete pavement and auger additional 6” soil for pedestrian fence foundation installation.
Granted Time: 0 Days
Increase: $32, 318.00
Response: Unavoidable; No action recommended.

(Continued on page 3)

Supplemental Agreement Report – Dec., Jan., Feb., 2015

Carol Kreis, Plans Reviewer

(Continued from page 2)

Description Code: 001 – Subsurface material not shown in the plans.
Reason: For the an additional quantity of Variable Thickness Overbuild and Flowable Fill to plug an existing side drain pipe to avoid the reconstruction of the entire turnout, due to subsoil failures.
Granted Time: 0 Days
Increase: $22, 237.34
Response: Unavoidable; No action recommended.

Description Code: 001 – Subsurface material not shown in the plans.
Reason: To compensate the contractor for additional costs associated with the removal of unsuitable material and allow for the area to be constructed per a previous agreement with stabilization and base.
Granted Time: 5 Days
Increase: $111, 653.14
Response: Unavoidable; no action recommended.

Description Code: 010 - New work items, overruns or plans modifications due to weather.
Reason: Compensate the contractor for installation of new drainage features, earthwork, and grassing per revised plans, and the use of dewatering pumps by construction crews to perform the required work.
Granted Time: 0 Days
Increase: $634, 179.22
Response: Avoidable; Production consultant; Action recommended.

Description Code: 117 – Access management issues.
Reason: After the project was let for construction, citizens within the project limits approached the Access Management Committee to request the reinstallation of median openings that had been removed in accordance with the plans. The Committee ruled in favor of the reinstallation. This compensates the contractor for the additional work.
Granted Time: 30 Days
Increase: $146, 112.96
Response: Avoidable; 3rd Party; no action recommended.

Description Code: 001 – Subsurface material not shown in the plans.
Reason: To compensate the contractor for the removal and disposal of unforeseen existing concrete pavement and additional borrow material needed to bring the template back up to the current bottom of the template elevation as indicated in the plan cross section.
Granted Time: 20 Days
Increase: $136, 278.45
Response: Avoidable; Production Consultant; Action recommended.

Top Ten Quality Control Comments Jan. – Mar., 2015

1. The General Notes are to be labeled Project Notes and should be listed as such on the Key Sheet. Reference Roadway Design Bulletin 15-01 and Plans Preparation Manual January 1, 2015, Vol. 2, Chapter 9, Exhibit PN-1 and Vol. 2, Chapter 10, Exhibit 10-1.
2. The use of fencing around storm water ponds require a Design Variation approved by the State Roadway Design Engineer. Reference Drainage Manual, Topic No. 625-040-002.
3. Rumble striping shall be used for center line and edge line pavement markings on all rural, two-lane and multi-lane, flush shoulder, non-limited access facilities where the posted speed is 50 mph or grater. Reference Roadway Design Bulletin 15-03, Estimates Bulletin 15-02, January 21, 2015.
4. Type K Barrier wall is to be installed adjacent to a Temporary Crash Cushion
5. Reference Index 415, Sheet 4 of 7.
6. Designers should be aware of the need to have ample quantities for Pay Item 102-74-1 for lane closures. The designer is not to add plan notes specifying one type of vehicular channelizing device. Reference Basis of Estimates Manual
7. Friction course is required a minimum of 8" beyond edge of travel lane on ramp shoulders. The limits for friction course shall be shown in the plans. Reference P.P.M Vol. II, Chapter 6, Exhibit 16, Ramp Typical Section.
8. Reference the Basis of Estimates Manual to ensure that the most current and necessary summary boxes are being used for each Pay Item.
9. Designers should coordinate with the FDOT project manager to ensure that the project begin/end mile posts that are present on the Key Sheet matches that which is loaded in the FM system.
10. Evaluate the need to provide sediment barrier if soil disturbing activity is greater than 8' from Wetland.
11. Please make sure all pay items listed in the plans are in Trns*port.

Design Spotlight

April Williams, P.E.
Interim District Design Engineer

I graduated from Auburn University in December 2005 and began the PE Trainee Program at the end of the year. After two years of rotations, I was assigned to the District Structures Design Office where I worked for about 7 years. In 2012, I was given the opportunity to manage the Project Development and Environment Section in Intermodal Systems Development and have been there since. I am excited about the Interim appointment and see this as an excellent learning opportunity. The support I have received from our partners is very much appreciated. On a personal note, I grew up, and still live, in Chipley. I have two boys, Davis and Collin, and spend the majority of my time being their mom, my favorite job. ~ April

CADD TRICKS, TIPS, UPDATES - FDOT Linked Data Manager

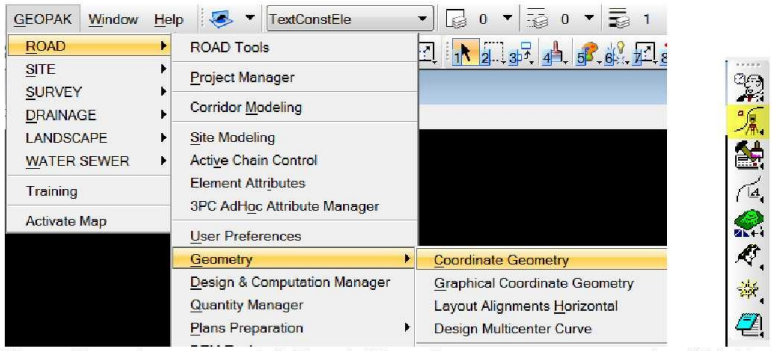
Howard Helms, CADD Manager; Kenny Rudd, Senior Roadway Design CADD Specialist

How to get alignment into Microstation from Survey

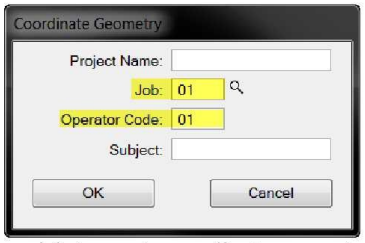
Make a copy of the align.inp file, rename copy to align01.i01, in the Project Directory.

Create an algnrd01.dgn file and open it.

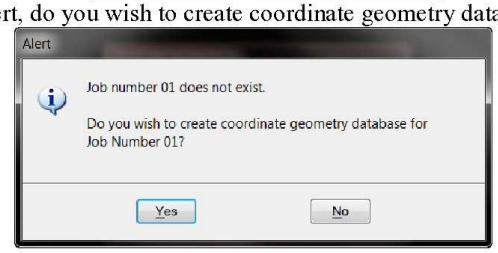
Go to Coordinate Geometry
Geopak\Road\Geometry\Coordinate Geometry or from Geopak Road Tools toolbar



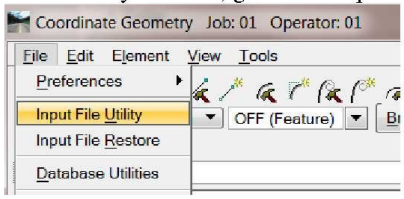
You will need to create a job01.gpk file and enter an operator code of 01, Project Name and subject is not needed. Click ok.



It will bring up an alert, do you wish to create coordinate geometry database for Job Number 01? Click yes.



In the Coordinate Geometry tool box, go to File\Input File Utility



CADD TRICKS, TIPS, UPDATES - FDOT Linked Data Manager

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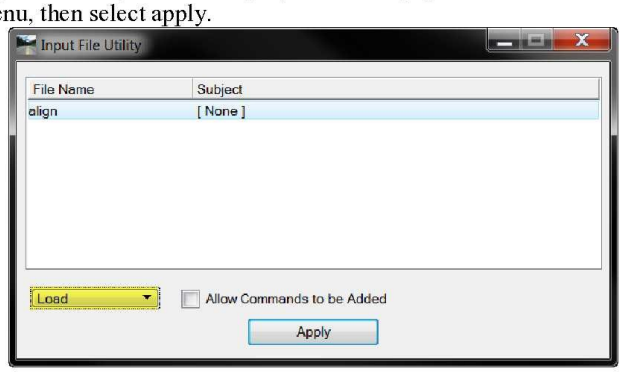
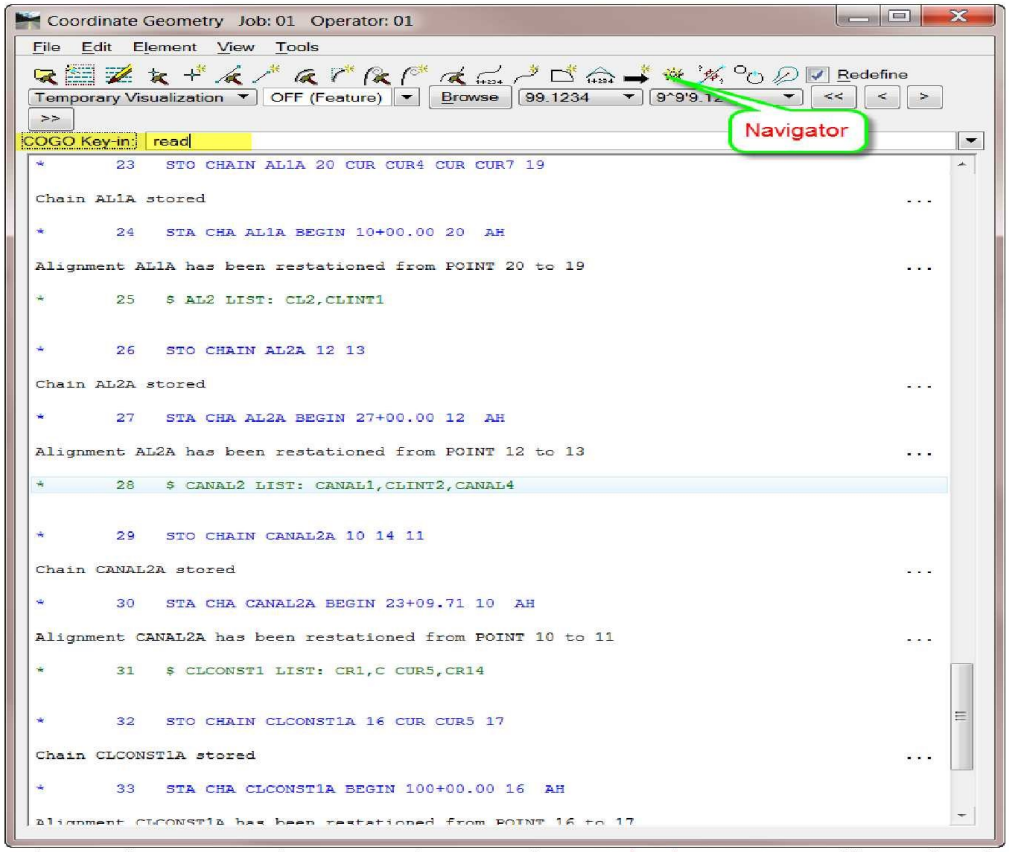
It should recognize the align file in the project directory, pick it and have the load command picked from the drop down menu, then select apply.



It should show up in the Coordinate Geometry



In the Coordinate Geometry\COGO Key-in command type read and press enter. It will store the points, curves and chains in the alignment file. You can scroll down in the Coordinate Geometry window and see what it stored. You can also pick on Navigator to see what was stored.