

# DISTRICT THREE DESIGN NEWSLETTER



Inside this issue:

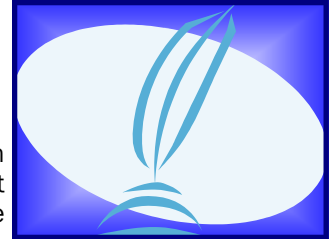
From the Editor's Desk	1
Supplemental Agreement Report—January/February	2
Controlling Project Construction Cost	3
Project to Project Survey Coordination	3
Design Spotlight—Chris Kneiss	4
Cost Estimates in Technical Proposals	4

Volume 11, Issue 2

April—June 2006

## From the Editor's Desk

Larry Kelley, P.E., District Design Engineer



The purpose of this newsletter is to inform you of design issues in District Three in an effort to improve design quality. Often, that means bringing to your attention the “hot topics” which have developed since the last publication.

It should be obvious as you read the articles ahead that “cost control” is a red hot topic. Most of you are aware, I’m sure, that Florida is experiencing unprecedented growth which has placed a strain on the construction industry. Also the last few years, the many mega hurricanes have further strained the construction industry and even created a shortage of many resources that are available to contractors.

FDOT is experiencing bids on lettings that greatly exceed the project estimate and budget. Steps are on-going to make adjustments, but a dilemma continues to exist. We all must get involved in this issue. It is not just an FDOT problem. The consequences of trying to juggle funds to get projects built is far reaching. Sooner or later something gets left out. That affects everyone. It affects DOT’s image, it affects safety and capacity, and it possibly affects the amount of design contracts available.

Two initiatives we have kicked off to deal with this issue are more accurate estimates and cost control. An estimate is obviously expected to have some degree of error in it since there are many unknowns when projects are budgeted. If we can reduce the amount of unknowns at an early stage, the estimates will get better. Some of the unknowns can be eliminated by DOT at the concept and budgeting stage and many unknowns can be eliminated early in the design process. We simply must begin to learn more about a project at an earlier point in time.

There also must be “cost control” after an estimate is established and a project is placed in the work program. This takes discipline and responsible engineering. Discipline means sticking to the game plan and responsible engineering means being an owner of the project and engineering it with concern for all the issues related to the project. The lesson I think we need to learn is that it’s not the same world anymore due to a lot of complex circumstances. The good engineers will figure out how to keep the boat afloat no matter where the storm started or where it goes. The great engineers will get the boat to the original destination on time and within budget.

We have a challenge ahead. We are all in it together. We can no longer do our job and toss it over the fence to the next guy. We’ve got to tear down the fence, communicate and take ownership of all issues related to the success of a project. We cannot design in a vacuum. We are asking all designers to get serious and get involved in eliminating project unknowns as early as possible in order to establish a good estimate. We also ask all designers and project managers to control the cost of the project through discipline and awareness that change and additions may jeopardize the entire project.

Tear down the fences, communicate, take ownership, get everyone involved and let’s continue to deliver the program successfully as we have for so many years.



### District III Quarterly Design Newsletter

Editor.....Larry Kelley

Layout/Graphics.....Eddie Register

SUBMISSIONS BY:

.....Danny Deal

.....Scott Golden

.....Larry Kelley

.....Jason Peters

.....Eddie Register



## *Supplemental Agreement Report-January/February '06*

Larry Kelley, P.E., District Design Engineer

This is the Supplemental Agreement Report for the months of January and February 2006. The two (2) categories of supplemental agreements that are included in this report are codes 001 and 003. This report is included in the Quarterly Design Newsletter as a tool to inform designers of errors and omissions that can lead to Supplemental Agreements and unnecessary costs to the public.

Below is a description of those areas and our responses:

**Description Code 001: Subsurface material or feature encountered not shown in plans –assuming reasonable engineering judgment/processes used in plans preparation (i.e. muck, old piling, boulders, artesian springs, abandoned utility lines, etc.).**

**Reason:** Improvements under this contract consist of the replacement of a low level bridge over the CSX Railroad on Cervantes Street.

Subsequent to beginning construction on this project and while attempting to install a drill shaft for a mast arm a subsurface concrete foundation was encountered which was in direct conflict with the drill shaft. In order to install the drilled shaft as depicted in the plans it was necessary to remove this subsurface foundation.

**Increase = \$22,635.00**

**Response:** This supplemental agreement was not the result of a design error.

**Description Code 003: Harmonize project with adjacent projects, features or adjacent R/W after plans have been completed.**

**Reason:** Improvements under this contract consist of milling and resurfacing and signing and pavement marking on SR 85 in Okaloosa County.

The Department amended the contract to include areas that had been shown as exceptions in the project plans.

The letting date of a future project which would have included the exception areas as part of its scope of work has been postponed until 2011. A project review conducted by field personnel and the District Bituminous Engineer determined the roadway in the exception areas was deteriorating and would not last until 2011. Due to the condition of the roadway the decision was made to mill and resurface the exception areas to prevent pavement failures.

**Increase = \$484,775.44**

**Response:** This supplemental agreement was not the result of a design error.

**Reason:** Improvements under this contract consist of the multi-lane construction of SR 77 from North of the Bailey Bridge to CR 2300 in Bay County.

During construction of the project the Project Administrator observed that the asphalt between the Bailey Bridge and the beginning of the project was rutted and holding water during rain events. Due to the deterioration of the existing pavement the District Bituminous Engineer recommended that this area be milled and resurfaced to improve safety and add to the aesthetics of the project.

**Increase = \$177,779.25**

**Response:** This supplemental agreement was not the result of a design error.

**Reason:** Improvements under this contract consist of milling and resurfacing and signing and pavement marking on SR 10A and SR 291 in Escambia County.

Subsequent to beginning construction on this project CSX Railroad began work on the tracks at Alcaniz and Wright Streets. When performing this work CSX raised the tracks approximately five (5) inches higher than the planned elevation. This grade change necessitated a complete redesign of this intersection including extension of the project limits in order to have room to perform the necessary work.

**Increase = \$69,655.59**

**Response:** This supplemental agreement was not the result of a design error. It was the result of a third party (CSX RR).

**Mark Your Calendars!!**  
**District Three**  
**Design Conference**



**Hilton Sandestin Beach**  
**Golf Resort & Spa**

**April 26—27, 2007**  
**Sandestin, Florida**



## ***Controlling Project Construction Cost***

Scott Golden, P.E., Assistant District Design Engineer

All of us in the transportation industry are aware that the cost of transportation infrastructure improvements have and are increasing dramatically, especially in District Three. We as designers need to ask ourselves if our designs are cost effective. It is important to evaluate our own designs and consider if what we are proposing adds value to the project (especially in today's world). In many cases, this will be an engineering judgment based on good information. One example might be whether or not to replace and/or extend a cross drain pipe to meet clear zone criteria or apply for a Design Variance/Exception. What factors should you consider in this evaluation? Condition of the structure, cost of the needed improvements and is this in the Scope/Long Range Estimate (LRE), safety and accident history at this location, needed length of extension to meet criteria, impacts to the environment, Maintenance of Traffic, erosion control, right of way constraints, specific site conditions, etc. In other words, we must do some type of a cost/benefit analysis in order to justify our decisions.

District Three has always emphasized the need for a quality set of plans and the need for quality submittals. We must reemphasize the need for completeness and accuracy for pay items and quantities for the Phase III submittals. It has been noted by *management* that many of our projects are showing a substantial increase in the cost estimates from Phase III (90%) to Phase IV (100%). A quality Phase III submittal must have correct pay items and quantities. It is not enough to have a quality set of plans if the quantities and pay items are not correct and accurate. This becomes a budgetary issue that could significantly impact this and other projects in the work program. Furthermore, the EOR must review, track and keep the FDOT's Project Manager informed of the project estimates from the project kick-off to final plans. This includes reviewing the project's LRE and evaluating the project estimates as the design progresses.

The FDOT is currently looking at ways to reduce project construction costs as well. One option that has come up recently is "Bid Options" for construction projects. This would allow the FDOT to "reduce" the amount of work in the project if the bid is substantially over the estimate or budget. The Designer/EOR will be directly impacted by this. All the details on how and if this can be done have not yet been resolved. You may see something on this in the near future.

Quality begins with attention to small details! Have a safe and enjoyable summer.

*"Every now and then go away and have a little relaxation. To remain constantly at work will diminish your judgment. Go some distance away, because work will be in perspective and a lack of harmony is more readily seen."*

*Leonardo DeVinci*

## ***Project to Project Survey Coordination***

Danny Deal, P.S.M., District Surveyor

As everyone is aware, District Three has several full design multi-lane projects ongoing. I would like to take this opportunity to stress the importance of project to project coordination as it relates to surveying and these types of projects. The District Three Design Surveying Office initially sets up and makes sure the horizontal and vertical control matches from one project to the next. This ensures that the framework for each project flows throughout the roadway corridor.

Speaking from a surveying point of view it is crucial for Consultant Project Surveyors from adjoining projects to make sure the design survey data matches. This includes items such as alignments, topography, utilities, drainage elevation data, property ties, and R/W map information. Plan set quality and quality construction are both dependent upon good upfront survey data coordination.

The Department does expect this coordination to take place between all Consultant Project Surveyors as well as the Design Consultants on multi-lane and also 3R resurface projects. Please take the opportunity to ensure the Department receives this level of coordination and quality between all parties involved.

Quality Plans start with a quality Survey!

## *Design Spotlight-Chris Kneiss*

Larry Kelley, P.E., District Design Engineer



Being raised in a military family, Chris was born in Germany and was constantly on the move until his dad's retirement in 1978. Chris graduated from Chipley High School in 1980, and went on to receive an AA degree from Chipola College, and then a BS in Building Construction from Auburn University.

After his graduation from Auburn in 1986, Chris proceeded to work for various construction/development companies throughout Georgia and Florida. Chris brings to the department over 16 years of construction experience, 5 of this with the FDOT. He has worked on various construction projects from the 54 story Nations Bank Headquarters to Koala exhibits at the Atlanta Zoo.

Chris started his 2nd career with FDOT back in June of 2005 when he was hired as a Design Project Manager. I never doubted Chris' ability and work ethic since I had worked closely with him when he was employed with FDOT when I was the District Maintenance Engineer between 1994 and 2001. I'm glad Chris made his way back to FDOT. He brings to FDOT a very respectable example on both the professional and personal level.

Chris married Lydia Carroll, a local girl from Marianna, in 1985 and they have three children; Brenna (15), Jesse (12) and Marshall (6). Chris and Lydia teach a young married Sunday School class at Shiloh Baptist Church which Chris says keeps him on his toes and reminds him to remain focused on the eternal and not the temporary. In his spare time Chris likes to spend time with his family and work on his 1980 Trans Am. Chris keeps a good sense of humor, which I think is a very valuable trait. When asked about his philosophy of life and work, his first response was "Remember, wherever you go in life; there you are". After a good laugh he immediately gave me his serious response and recited from the Bible; "Whatever you do, work at it with all your heart, as working for the Lord, not for men." (Colossians 3:23)

What a great response and a great goal for us all.

*"If I had only known, I would have been a locksmith."*

Albert Einstein

## *Cost Estimates in Technical Proposals*

Jason Peters, P.E., Assistant District Design Engineer

Some of you may have heard, seen, or even experienced the fact that District Three now requires a construction cost estimate in the Request for Proposal (RFP) for all projects seeking consultant services for design. The purpose of this article is to provide some guidance on what the District is looking for and why.

So, let's start with why. It seems that a common topic of discussion in every meeting we attend appears to relate to the rising cost of construction. Much of this appears to be a result of inflation, rising fuel prices, supply and demand of materials, etc. These rising costs are having a significant impact on the Department's ability to fund, program, or even award a project. From the design perspective, the focus of any change in a project results in the question, "How much will it cost?" This issue provides an even greater need for concepts to be prepared on all candidate work program projects. Even at that, not all resurfacing projects enter the work program once it becomes a candidate. Why? Budget. Furthermore, each time a project enters the current work program, the project may not be advertised until 6 to 9 months after the Long Range Estimate (LRE) has been prepared. In the past, 6 to 9 months did not reflect much change in the construction cost, however, in today's world, it does.

In addition to its other responsibilities, the District Estimate Office reviews and monitors the construction cost estimate for approximately 125 projects on a regular basis. Therefore, we need your help. As partners in the effort of providing transportation facilities for the citizens of Florida, the Department is now stressing the need for your assistance in establishing and controlling construction cost estimates. The first step to this is ensuring that the project(s) has the latest LRE. At the Scope of Services meeting, the Department will be supplying the current LRE. Based on your perspective of the project, we are requesting that your estimate be provided in the technical proposal. We are requesting that the LRE be prepared after careful review of all factors associated in order to develop a realistic LRE.

We request that the project's LRE be a separate item in your technical proposal as are your resumes, staff hours, and quality control plan. The LRE section of the technical proposal will not be included as part of the 20 page requirement. Additionally, in the event that your LRE reflects significant differences from that of the Department's LRE, we ask that you summarize what those differences in a table format reflecting the items and the associated cost increase or decrease.

If you have any questions or need further clarification, please feel free to contact the District Three Design Office.