



District 4 Design Newsletter



In this issue:

From the Editor's Desk	1
Structures Design Updates for 2010	2
Quality Plans Production Complete at District 4	3
New/Relocated Employee Introductions	3
Executive Summary of Earned Value Management (EVM)	4
Design's Award Winners	5

From the Editor's Desk

By: Howard Webb, P.E., District Design Engineer

As FDOT is going thru these hard economic times, the main focus has been on the advancement of major projects to stimulate the economy and enhance the transportation infrastructure. This also serves to keep our construction and consulting engineering industries buoyant financially. This is evident thru the addition of multiple projects into the work program as the bids were coming in lower than the department estimates on all our projects, including the American Recovery and Reinvestment Act (ARRA) projects. The department has also helped many municipalities to tap into their share of ARRA funds in order to put more projects out for design and construction. This has enabled us to use the entire allocated ARRA funds as well as sustain the flow of work to contractors and consultants.

The department is also having new perspective on the production of major projects such as reconstruction and add-lanes. There will be a greater emphasis on advanced production and completing PD&E for priority projects.

As always, we thank all our internal and external partners for all their assistance this past year. We will face more challenges in the coming fiscal year and we know we can depend on you all for your continued support.

Did you know?

Shop drawings have 45 days for review by the EOR, and if the EOR doesn't reply within those 45 days, then the contractor could potentially charge premium dollars for the work as extra work because he will be doing this work out of the sequence. Recently, a contractor sent shop drawings to an EOR for the review of internal illuminated signs and the EOR forgot about them. The contractor placed the existing street name plate signs on the newly-constructed mast arms. The EOR approved the shop drawings after 45 days. Contractor sent out the approved shop drawings for fabrications. The contractor replaced the plates with illuminated signs and charged premium dollars as extra work. The point of this story is that the EOR needs to approve shop drawings on time or run the risk of paying premium dollars to the department.

Administrative Staff

Engineering Support

CADD

Consultant Management

Drainage

Roadway

Structures

Survey

Traffic Design

Utilities

District 4 Quarterly

Design Newsletter

Editor.....Howard Webb

Layout.....Amie Marsh

Submissions By:

Morteza Alian, Fred Ochoa,

Xinmin Zheng



Structures Design Updates for 2010

By: Fred Ochoa, P.E., District Structures Design Engineer

The FDOT Central Office Structures staff has been working on updates and major changes to the FDOT Structures Manual. In addition to the regular maintenance of the Structures Design Guidelines (SDG), the rest of the Structures Manual has received a major reorganization as well as enhancements of depth and breadth. In our role as a voting member of the Technical Advisory Group, we have reviewed the new Structures Manual and can provide this preview. The principal changes to the Structures Manual includes the following items: 1) annual update of the SDG; 2) major reorganization and revision of the Structures Detailing Manual (SDM); 3) major revision of the Instructions for Structures Related Design Standards; and 4) adoption of the Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 5th Edition (LTS-5) and publication of modifications to the same. In addition, there is a new Frequently Asked Questions (FAQ's) section.

However, the first change you are likely to notice is that the new Structures Manual requires the installation of an executable file. The executable file creates a desktop icon and installs the various files associated with the Manual on the user's hard drive. From then on access to the interface for the Structures Manual is through the desktop icon. The outline of the Structures Manual follows the familiar use of Volumes to designate the major elements within the Manual.

Although the update of the SDG includes various items of interest, the most significant changes are to the SDM and the Instructions for Structures Related Design Standards. The SDM has been expanded to become a comprehensive inventory of the requirements for Structures Design plans. The document goes beyond listing the minimum information required for plans to providing guidance for design, drafting, and detailing of first-rate plans. Likewise, the Instructions for Structures Related Design Standards has evolved from a collection of "old Structures Standard Drawings," to a compilation of design criteria, usage limitations, plan content requirements, and pay item information – cross-referenced and hyperlinked for ease of use.

Another notable milestone is the first production of a Florida I-Beam (FIB). The FIB group - intended to replace the five AASHTO beam and two Bulb-T beam groups - will result in more economical bridge designs. The first project to make use of the FIB is in District Six, but we anticipate that projects already under construction in District Four will also turn out FIB's soon. Does your project comply with the Temporary Design Bulletin (C09-01) regarding the implementation of this new beam group? To read more about the first FIB go to <http://www.dot.state.fl.us/structures/Florida-I%20Beam%20article.pdf>.

So, be sure to install the new FDOT Structures Manual, as soon as you are done reading this newsletter, since it is certain to significantly improve designing and detailing structures for FDOT (actually, go install it now, you can read the newsletter later!).

Quality Plans Production Complete at District 4

By: Morteza Alian, P.E., DCPME

In May 2004, District 4 published the first Design Newsletter and one of the articles dealt with quality plans production. It is very difficult to measure quality of plans at any time. Some say we could measure the quality at each plans submittal by the overall number of comments made by plans reviewers. This is because some reviewers believe that designers are producing plans by reviews. Some say we could look at the supplemental agreements with cost and time overruns regardless of premium dollars during construction. However, the Final Plans Office has established two quality metrics that would measure plans production packages at the Production Complete (PC) date and those are: Quality Delivery Indicator (QDI) and Project Audit Submittal System (P.A.S.S.).

The Quality Delivery Indicator is measured as an average of two percentage numbers. The first number is the percentage of changed record plan sheets and the second number is the percentage of modified pay items. The QDI is measured after the plans have been shipped to Central Office for letting process. The QDI is measured based on hundred scale points so the higher the numbers represent better quality plans. On the other hand, the P.A.S.S. is a measure of completeness of plans, specifications, estimate, and contract files submittal at production complete date. Additionally, P.A.S.S. keeps track of number of change memos and timely responses to Total Concern comments. The P.A.S.S. measures the total number of mistakes in the plans packages so the lower the number the better quality set of plans so a zero number would represent the highest satisfaction level. These numbers are available on our intranet site and our project managers could share them with our consultants if interested.

At a time when competition is high and the numbers of projects are relatively lower than previous years, the Consultant Management will begin to use these metrics in addition to the official consultant grades to separate high performers from the marginal ones during longlisting process. We do get a number of consultants that are trying to break in our district so the best advice would be for them to provide a list of references with phone numbers for a quick on their performance.

New/Relocated Employee Introductions



Kevin Homrich-Micocci - Drainage

Kevin Homrich-Micocci was born in Winter Park, Florida, where he lived throughout his childhood. At the age of 12, he finally learned how to pronounce and spell his last name in its entirety. He attended the University of Florida during arguably the greatest sports dynasty in the history of sports (2004-2009), where he earned both a Bachelors and a Masters degree in Civil Engineering. His work background includes an internship with GSE Engineering, Inc. a small geotechnical engineering firm in Gainesville, and teaching assistant positions for AutoCAD and Construction Management courses. His interests include playing the guitar and bass, playing and watching sports, dominating at Farkle during lunch, and spending time with family and friends. Also, he works through his church in Winter Park to drill groundwater wells in areas of the world where there is a need for potable water, and has recently traveled to Kenya and Costa Rica for such efforts. He is very happy that he has had the opportunity to start his career at the FDOT District 4 offices, and enjoys working with all his new friends on the drainage team.



Angel Betancourt - Engineering Support

Angel Betancourt joined the US Navy as an interior communication electrician where he received experience working with modems and navigational equipment. After a 5 year tour on the USS America CV66, Angel went to Pensacola for a crash course on network administration. That training lead to his assignment as an assistance Network Administrator at the Navy Recruiting District Miami where he completed his 8 year enlistment in 1999. From 1999 to 2002, Angel worked as a Network Administrator for Keefe Commissary Network. In 2005 he received an AS degree in NETWORKING SERV TECH-MICROSOFT and AA degree in ENGINEERING-ELECTRICAL from Miami Dade College. Angel is currently taking classes toward his WEB DEVELOPMENT SPECIALIST certification with 80% of the curriculum completed and an expected graduation date of March 2011. Angel joined FDOT (OIS) on October 21 2005. On a personal note, on October 24 2008 his long awaited promise became a reality with the birth of his baby girl Abigail.

Executive Summary of Earned Value Management (EVM)

By: Xinmin (Daisy) Zheng

EVM is a project management tool that integrates the technical, cost, and schedule parameters of a project. During the planning phase, an integrated baseline is developed by time phasing budget resources for defined work. As work is performed and measured against the baseline, the corresponding budget value is “earned”. From this earned value metric, cost and schedule variances can be determined and analyzed. From these basic variance measurements, the project manager can identify significant drivers, forecast future cost and schedule performance, and construct corrective action plans to get the project back on track. EVM therefore encompasses both performance measurement (i.e., what is the project status) and performance management (i.e., what we can do about it).

EVM and Management Needs

Proper EVM implementation ensures that the PM is provided project performance data that:

- relates time-phased budgets to specific tasks and/or scope of work
- objectively measures work progress
- properly relates cost, schedule, and technical accomplishment
- allows for informed decision making and corrective action
- allows for statistical estimation of future costs
- supplies managers at all levels with status information at the appropriate level

EVM in District Four

The EVM tool was researched and explored at D4 as a pilot study, this began in 2008. Jose Theiler volunteered his project 421662-1 for the initial study. A “Standard Monthly Progress Report” was created to provide progress and cost with EVM in mind. After one year of research and development, it was discovered that the current 3R template needed to be tailored specifically for EVM. This required regrouping the current activities in the 3R template to mimic the cost and task structure of the staff hour estimate. This result was presented to Consultant Management with the request to add additional projects using EVM. Starting in January 2009, 8 projects (managed by 5 PMs) have been using the tailored EVM 3R template. After 2 user group meetings, at 6 month intervals, project managers’ feedback was encouraging. Some of their comments are:

- Help to manage project performance (progress, cost and time)
- Monthly progress report is simple and easy to use. No extra work for consultants.
- More confidence in knowing what is invoiced
- Better balance of the competing demands between quality, scope, time and cost

At the D4 Partnering Meeting, it was determined that all new contracts will start using this technique. For detailed testimonials, please contact Jose Theiler, Nadir Rodrigues, James Hughes, Julio Delgado, Donovan Pessoa or Bing Wang who participated in the study. For more information, please visit D4’s Knowledge base, select design, select miscellaneous, “Earned Value Management”.

Design's Quarterly Award Winners

Employee of the Quarter:
Ron Wallace



Ron handles a very heavy work load of ongoing design and post design projects. Along with Ron's current workload, he was asked to convert a major interstate design project from a conventional design-bid-build to a design/build project within a very short timeframe. A funding source for the previously unfunded I-75/Miramar Parkway interchange project became available, but had to be encumbered in the current year. These federal safety dollars came from the passage of the Seat Belt Law. Ron worked diligently and efficiently to switch gears and provide a completed RFP package ready for approval in record time. The project was production complete and advertised for D/B selection in November 2009. In addition to Ron's Project Management duties, he was asked by the District Maintenance office (Cleo Marsh) to help out and "straighten-out" the contracts mess they had in their office. Ron began pulling extra duty the first week of November 2009 and working overtime to tackle the serious funding issues left with the unexpended maintenance contracts. By the end of December 2009, Ron had gotten the Maintenance Contracts office back on the "road". If all this work wasn't enough, Ron also helped out with the Program Management office by participating as a Technical review Committee member and leading them to select their first Districtwide Contract by the Alternative Contracting technique "longlist-to-selection. Those who know Ron, also know that he is an extremely up-beat person with a positive attitude and always ready to help out where he can.

Team of the Quarter:

U.S. 27 Concrete Pavement Team
(Fausto Gomez, Brent Lee Shue Ling, Aysel Abin, Actus Etienne, Kenzot Jasmin, Pedro Santiesteban, Tyler Wallum)



In early November, the US-27 RRR project (FM # 403618.1) was identified as a candidate for an alternate pavement bid process in order to help FDOT determine the viability and cost effectiveness of concrete versus asphalt pavement on relatively long rural resurfacing projects. The US 27 project was production complete and scheduled for a December letting. It is said that success is not achieved in a vacuum and that is certainly the case here. Big kudos should go to many others within FDOT's various offices who contributed to the overall success of this effort. While not organized as a traditional work unit per se, this "team" was quickly assembled, organized and focused on the task at hand. Each team member enthusiastically took on the required assignments including; completely revising the MOT, coordinating and developing the concrete pavement design, updating the typical sections, establishing a new LRE and finally, delivering the project back to final plans as committed. The MOT changes included complex construction phasing, detailed transitions, multiple diversions, numerous bridge connection alterations as well as emergency/fire rescue input and collaboration. All of this coordination, communication and collaboration was completed in just over a month. Although this is not a permanent team in Design, this type of effort exemplifies the meaning of "teamwork" and dedication leading to a successful conclusion.

Design's People's Choice Award Winners

Most Enthusiastic:
Georgi Celusnek



Most Decorated Cubicle/Office:
Georgi Celusnek



User of Best Grammar:
Shandra Davis-Sanders



*Ellen accepted on behalf of Shandra

Biggest Sports Fanatic:
Jim Hughes

