District 4 Design Newsletter

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District 4 Quarterly Design Newsletter

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From the Editor's Desk

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

We had our 9th annual Design-PDE conference in mid-April and we learned a few things such as readiness for equipment failure. You would think that a big department like FDOT would be ready for situations and cases like this and we thought we were. I say this because we were told to ignore warning messages about the projector lamp and how to get rid of these messages so we could continue with our presentations. This worked for us in the past until ten minutes before the official beginning of our conference this year. To cut this story short, our building maintenance has purchased extra lamps for each overhead projector in our district headquarters building so we could better prepared for future equipment malfunctions like this.

Aside from equipment issues, your feedback indicates that the conference was a success and you learned a few things from our presentations on "New D4KB site", New Stormwater Rule, and Construction Lessons Learned. Other comments we received are: recent concerns/questions related to work program, negotiations, escalations, D/B issues were covered fully, wide variety of topics were well represented, and that all topics presented dealt with current issues. We also received good feedback as what topics to cover in our next year conference and those topics are: compare design-bid-build to design-build projects, scheduling software input and access, and electronic delivery.

Overall you came out of this conference with good balance of information on funding and technical issues and we will try to do the same next year barring any hardship.

Did you know?

D4 Design has an electronic suggestion box that is available to anyone with a FDOT user id. This includes all internal FDOT employees and all consultants that have a FDOT user id (ie, anyone that has access to the DOT INFONET). We encourage everyone to use this venue to share your suggestions with D4 design staff and management. Hopefully, with this additional communication tool, we can make enhancements and
improvements that will benefit not only Design but all of District 4.

To access, please go to:
DOT INFONET >Offices >District 4>Transportation Development >Design >"Design Office Suggestion Box"

Please be professional in your suggestions, as management reserves the right to not post inappropriate suggestions.

New Structure's Standard Drawings Near Release

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

The FDOT Central Office Structures Staff has been working on updates and changes to the Standard Drawings. In addition to this regular maintenance of the Standard Drawings, two new structures-related Standard Drawings are nearing release. Both of the new Standard Drawings serve to fill a gap in our current Standards as evidenced by recent projects that have utilized similar non-Standard structural elements. In our role as evaluator for Central Office Structures, we have reviewed the new Standard Drawings and can provide this preview. The two new structures-related Standard Drawings are: 1) Precast Perimeter Wall, and 2) Composite Prestressed Slab Units.

The Precast Perimeter Wall Standard Drawings are a new approach to providing standardized wall designs for heights less than 12 feet. The format and instructions are similar to those used for the Precast Sound Barriers Standard Drawings. In total the Standard is comprised of 14 sheets, three data tables, and two sheets of instructions. In addition, there is perimeter wall specific language added to the Structures Detailing Manual, the Standard Specifications for Road and Bridge Construction, and the QPL. This Standard is intended to offer a privacy wall for locations where project needs dictate it. One new aspect of the Standard is the provision for a spread footing foundation. The Standard offers pile type foundations as well. Lastly, the Standard provides for a 10' and 20' post spacing for walls 6', 8', 10', and 12' tall.

The Composite Prestressed Slab Units Standard Drawings are an addition to the existing selection of prestressed beam Standards, joining the five AASHTO beams, two Bulb-T beams, four FL U-beams, and the Inverted-T beam. The format and instructions follow the pattern set for the other prestressed beams. In total the Standard is comprised of 10 sheets plus four data tables. This Standard is intended to offer a prestressed beam option for short spans below the range of the Inverted-T and AASHTO Type II beams, and should be competitive with cast-in-place flat slab construction (particularly where site conditions make flat slab formwork unwieldy). One notable characteristic of the Standard is the absence of transverse post-tensioning, replaced instead by a 6" minimum composite concrete overlay. The Standard provides for a 12" and 15" deep prestressed slab unit in widths of 48" and 60", as well as custom widths.

We look forward to the use of these new Standard Drawings for projects where sound engineering principles demonstrate that they offer the best solution to a transportation need.

Lessons Learned: Don't Be A "Tool", Learn Your Trade's Secrets

By: Tim Brock, P.E., Utilities Engineer

Experienced craftsmen know the secret. Profitable companies know the secret. Successful entrepreneurs know the secret. Those just learning their trade will eventually come to understand the secret. What's the secret? Tools, tools, and more tools! Novice workers will become skilled craftsmen by learning the tools of their trade! Successful business owners ensure their employees have a working knowledge, and access to all available tools, which will help them stay competitive and become profitable. Entrepreneurs must quickly learn where to find, and how to use, the specific tools they need to be successful in their ventures.

I never completely understood the importance of the "right tool for the right job" and how each task has a very specific tool that can make the work more efficient and accurate...until I had my own crises of sorts. My lesson came in the form of rebuilding portions of my home that was damaged by Hurricane Wilma. My contractor buddy and I laughed quite a lot during my initial 'learning' stages. More often, it was him laughing

Lessons Learned Cont.

at my facial expressions as I used the "wrong tool" for certain reconstruction efforts (which actually complicated matters!). My friend was a great teacher, and with his help, I quickly mastered the project and knew what tools were required to make my project more efficient and precise.

Providing your customer with a quality product while remaining profitable requires the knowledge, skills and ability to use many tools. Road and bridge construction plan preparation is no different. We have many tools that will make your efforts more efficient and accurate (and less costly). One of the most important tools for this effort is the Primavera scheduling system.

Knowing what and when certain production activities must occur will help you focus on the specific interim tasks at hand, as you work to complete the entire project. These specific interim tasks require specific tools that one must realize are available, and then you must become proficient with them to ensure that you provide a quality product - on time and under budget (making a profit). District Four staff has worked very hard to be that "buddy" to help inform designers of the many tools required to produce a quality product (on time and under budget). One great example of this buddy system is the FDOT District Four knowledge base. If you are unfamiliar with design's knowledge base, then please work with your project manager or logon to the district design's website and learn about the specific tool you could be using to produce a quality contract plan-set. Remember...you only get one chance to submit it correct the first time! Don't be a tool, learn your trade's secret.

Uncovering Hidden Gems

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

You probably feel like you know your way around the FDOT Design Standards booklet pretty well. "Sure," you may say, "there are interims released every six months and a new booklet is issued every two years, but I manage to stay on top of it." But, did you know that there are other standards that bear directly on the implementation of the Design Standards that are not published in the booklet? These standards, titled "Instructional Standards," are only available on-line and are therefore often overlooked. A recent highly unscientific survey (conducted by yours truly) revealed that many experienced designers were not aware of the existence of the Instructional Standards. A review of plans submitted to this office leads me to believe this may be a widespread occurrence.

The Instructional Standards contain information that is pertinent to both Structures Engineers and Roadway Engineers. In fact, it tells you so right up front, stating on the first page: "The following drawings provide general instructions and examples to assist the designer when referencing certain structures related Design Standards in the contract plans." However, don't think that these standards are solely for the use of the Structures Engineer, as the following statements taken from the Instructional Standards make clear: "The roadway plans shall include the following notes:" and "An example of a note containing the required information as it would appear on a Plan or Plan-Profile sheet is as follows:". In addition to the standards of interest to both the Structures Engineers and Roadway Engineers, there are additional Instructional Standards that apply exclusively to the Structures Engineers. In total, there are thirteen sets of Design Standards directly addressed by the Instructional Standards. These are:

400 Series
402(a)
402(b)
470 Series
480 Series
5100
5200 Series
5250
20100 Series
20200 Series
20300 Series
20500 Series
21800 Series

Uncovering Hidden Gems Cont.

These hidden gems can be found through links on both the Structures Design internet website and the Roadway Design internet website. On the Structures Design website, the Instructional Standards are located in Volume 3 of the On-line Structures Manual and can be accessed directly at the following link: http://www.dot.state.fl.us/structures/structuresmanual/currentrelease/instructionalstandards.pdf. On the Roadway Design website, the Instructional Standards are located on both the Design Standards booklet link: http://www.dot.state.fl.us/rddesign/rd/rtds/08/2008Standards.shtm, and on the Interim Design Standards sheets link: http://www.dot.state.fl.us/rddesign/rd/2008Interims/2008Interims.shtm; and can be accessed through a link to "<view Design Instructions>" located next to each applicable Design Standard.

Why not take fifteen minutes right now to familiarize yourself with the content of the Instructional Standards? One of these hidden gems just might contain the information you need to make your next project a success.

New/Relocated Employee Introductions

Vanessa Velasquez - Admin.

I was born in Manhattan, New York and my heritage is Colombian. I have lived in Miami, Florida for over 20 years. I graduated from Miami Sunset Senior High in 1993 and am currently pursuing a Bachelor's degree in Business Management from the University of Phoenix. My anticipated graduation date is November 2010! My future goal is to obtain an MBA from Nova University. I have worked in the administrative field for many years and primarily in the Human Resources field for the past 5 years. Working in these fields has enabled me to enhance my clerical and technical skills, and also given me the ability to deliver great customer service. My hobbies include decorating, reading and collecting cat figurines....YES, I love cats! I have a 5 year old black/white lap cat named Lulu, and a brand new kitten named Spirit.

Joseph Marzi - Section 6

Joe Marzi was born in the Washington DC area and raised in Irving, TX. He graduated from the University of Ohio in Athens, OH (typically mistaken for Ohio State-Buckeyes) with a bachelor's degree in civil engineering. He is a registered civil engineer with over ten-years experience in the land development area, and he recently worked at Kimley-Horn and Associates. Prior to engineering, he served six years in the U.S. Marine Corps. He was stationed at Camp Lejeune, NC and Marine Barracks, 8th & I in Washington D.C. While on barracks duty he met his future wife on a blind date. When there is time, he loves reading military history and travelling with his wife and 20-month old son.

Tyler Wallum - Section 1

I was born and raised in the Ft. Myers area. I went to school at the University of South Florida where I am still pursuing my master's degree. I enjoy being active and doing anything outdoors. I love the water whether it is at the beach or out on a boat fishing. I enjoy all sports, especially football, baseball, and tennis.

Bruce Wallace - Utilities

Born in Philadelphia, Pa sometime after the Stone Age. I have three children and three grandchildren. 11 years as a Mechanical Designer with Bendix Corp and 20 years at Rockwell International, as a Purchasing Engineer Agent, and also involved in the space shuttle program. I have an A.S. Degree in Mechanical Arts from Trenton Technical Institute &Tech., certification in Mechanical Design from UCF and certification from National Association Purchasing Management. I came to the FDOT in Feb. 2008. My hobbies are Art (Oil Painting), wood working and going to SeaWorld with my family.

Kristen Youcis - Section 3

Kristen was born and raised in Orland, Maine (a very small town on the coast), and went to school at the University of Virginia in Charlottesville. After graduating in June of 2007, she worked for a land development firm in Fort Myers, and is now joining the Section 3 Design Team. Kristen loves to read and is always looking for recommendations. She's also a fan of yoga and practices Bikram (hot yoga) as often as possible.

Eva Campello - Section 2

I was born and raised in Caracas, Venezuela. In the year 2000 I moved to the United States and in 2007 I graduated from Florida Atlantic University with a Bachelors degree in Civil Engineering. I then joined the Department as a PE Trainee and now I permanently work in Design Section 2

Context Sensitive Solutions (CSS) in Florida

By: Jeff Caster, Melanie Weaver Carr, and Daphne Spanos

The Florida Department of Transportation adopted its first Context Sensitive Solutions policy in 2008. This raises valid questions, one of which is described in this article: What is Context Sensitive Solutions in Florida?

The Federal Highway Administration defines Context sensitive solutions (CSS) as *"... a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist."*

The Florida Transportation Plan (FTP) recognizes the principles of CSS throughout the State's long-range transportation plan. *Enriched quality of life and responsible environmental stewardship* is one of the five FTP goals. Furthermore, the Department's Short Range Component states,"... Regional transportation investments should reflect the balance between facilitating efficient travel and transport and maintaining unique community and environmental resources within each region."

It goes on to state, "Transportation decisions should be made in the context of an integrated transportation, economic development, and land use vision that reflects the input of the region's elected officials, residents, and other stakeholders, including key transportation partners, economic development organizations, and resource agencies."

Context sensitive solutions come in all sizes, forms, places, and costs. Some consider the Sunshine Skyway Bridge to be a vivid example of a context sensitive solution; a landmark bridge to replace another landmark bridge, a safer and more durable structure in a harsh yet fragile coastal environment,
a gateway structure into one of the nation's greatest ports and two of the state's most popular destinations, an iconic structure symbolic of the Tampa bay area and sunshine state, and an exciting experience to enjoy when driving over or sailing under. In the context of Tampa Bay's history, culture, commerce, ecosystems, scenery, and transportation needs, anything less would be out of context.

This is not to say that all context sensitive solutions are on the scale of the Skyway. Most context sensitive solutions are far less monumental. Simple solutions are often the best solutions; adding color, texture, pattern, and form to proposed structures; redirecting a sidewalk or utility line around an old live oak, or narrowing lane widths to minimize impact to a historic home or business, all within the guidelines of design criteria and standards. To some, carefully scheduling the start of a project to avoid conflict with a scheduled community event may be the most meaningful context sensitive solution.

In the future newsletters, we will discuss FDOT's involvement in Context Sensitive Solutions and how you can become a part of the process! For more information, please contact Daphne Spanos at daphne.spanos@dot.state.fl.us.

Source: Davis, California, www.contextsensitivesolutions.org