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District 4 Design Newsletter

May 2013

Risky Business

By: Tim Brock, P.E. and José Theiler, P.E.

One morning I had a very important meeting with an executive regarding a high profile project. Knowing that I could not be late or unprepared for this meeting, I asked myself, what could go wrong?" I thought for a moment and decided that possibly, I may have some presentation equipment issues or that there might be an accident on I -95 on my way to work; consciously dismissing a bunch of other events that could derail my plan. Waking up two hours earlier on that morning, I got on the road much earlier than usual. However, five minutes into I-95, the road stopped dead; forty five minutes later I drove past a major incident on I-95, but because I had planned ahead I arrived forty-five minutes ahead of schedule. As I made it to the conference room and switched on the equipment, several things were not working. Fortunately, I was able to resolve all issues fifteen minutes before the meeting began. It was a good thing because the executive had arrived early and we were able to discuss the presentation before anyone arrived; showing that I was very well prepared (he noticed!).

The moral of the story is that risk impacts everyone. Managing those risks will save you time and money either in the office or at home. It is something you may already do on a daily basis and not even realize it.

In FDOT, risk management is a discipline within project management as defined in the Project Management Handbook as *"…the systematic process of identifying, analyzing, planning for, responding to and monitoring project risks"*. It involves processes, tools and techniques that will help the Project Manager **minimize the probability and consequences of adverse events** while increasing the likelihood of positive events. Project risk is an uncertain event or condition that, if it occurs, will have an effect on project success. Project success is defined as meeting the goals of the project. Take the word "project" and replace it with Agency and/or Program and you will soon begin to realize we are just beginning our journey into FDOT risk management. Did you know that every FDOT District has a risk management team? Did you know that each district risk team is part of a network of regional risk teams? Oh, yes! These regional risk teams are in place to support the project management team's efforts in the delivery of a successful project. The reason why I say we are just beginning this journey into risk management is because we are just starting to have project risk workshops. Agency and program risk workshops will be next…you should get involved, because it matters to all of us; executives do notice!

In this issue:

Master Dewatering Permits
By: Christina Borello and Kevin Homrich-Micocci

There is a new procedure being implemented at the District Office adding to the influx of innovative ideas coming out of Florida Department of Transportation (FDOT) District Four. It is the Master Dewatering Permit. With this new procedure, obtaining short-term Water Use permits from South Florida Water Management District (SFWMD) just got a whole lot easier.

The previous method of receiving a Dewatering Permit from SFWMD included the preparation of applications, plans, and calculations for dewatering by *FDOT*, as well as a demonstration that the proposed work does not cause adverse impacts to contamination sites, salinity intrusion, well-fields, wetlands, or other environmental resources. Additionally, the Department had to pay permitting fees for *each* dewatering permit application. Despite all of this work done by FDOT staff to ensure that permit criteria was met, the Contractor would often submit their own dewatering plans and calculations to SFWMD.

Previously applying for and receiving a Dewatering Permit from SFWMD resulted in a redundancy of paperwork and staff hours. FDOT District Four has initiated a much more streamlined approach to obtaining dewatering permits from SFWMD. The result is, the Master Dewatering Permit (MDP). There are currently four MDPs that have been executed between FDOT and SFWMD, broken up into the four counties within our district under the jurisdiction of SFWMD; Broward County, Palm Beach County, Martin County, and St. Lucie County. There are many benefits to the MDP, including the elimination of duplicative work by FDOT. Annually, FDOT submits an updated five year work program along with GIS maps for each county illustrating the location of projects included in the MDP and the potential impacts. This simplifies the process of obtaining a dewatering permit as SFWMD can confirm t the project is included on the work program list submitted by FDOT during the Environmental Resource Permitting (ERP) process. Also, under the MDP, the *Contractor* chooses their own dewatering plan and only needs to demonstrate to SFWMD that the proposed dewatering does not cause adverse impacts. Financially, the MDP holds a benefit as well. Previously, the Department was required to pay $500 for any project that needed a dewatering permit and another $500 if the Contractor proposes their own dewatering plan. These permits were valid for one year, often requiring extensions as needed. With the development of the MDP, there is a one time, lump sum fee for each county of $5,000, which lasts 5-10 years, so permit extensions will not be an issue.

Although St. John's River Water Management District (Indian River County) does not currently have a Master Dewatering Permit, a Noticed General Water Use Permit for Temporary Construction Dewatering is used in lieu of the MDP. This Noticed General Water Use Permit is good for three years, it is inexpensive and most contractors working in the area are familiar with them.

You may be asking yourself "What does this mean for me?" In general, it means a decreased permit schedule for short-term Water Use Permits *and* when preparing or reviewing the General Notes sheets for plan sets, it is important to add or look for the new note regarding MDPs.

Through the effort put forth by the staff in District Four, particularly the Drainage, GIS, and Work Program groups, the dewatering permit process timeline is shortened. Since SFWMD is aware of the project during the ERP process, there is less support documentation to review, neither is there a fee required prior to issuance nor a risk of expiration. In addition to winning a Davis Productivity Award this past year, this innovative idea is catching the attention of several other districts throughout the state who would like to initiate conversations with their permitting agencies to implement a similar procedure.

Structures Design Frequently Asked Questions (FAQs)
By: José Omar Núñez

Whether you work in maintenance, traffic design or roadway, the following is a list of common questions most designers come across sooner or later:

Is it possible to provide decorative features to traffic railings? Yes, it is possible if the decorative feature is: (1) a standard FDOT design, (2) an approved Structures Design Office non-standard, or (3) a new railing design as indicated in the *Structures Design Guidelines 6.7.2*

What is the structures design wind speed? The design wind speed for all counties in District 4 is 150mph.

Can the signs or signals of an existing mast arm be changed to a slightly bigger one or moved? If there is a modification that results in additional load, then the structure must be evaluated using the latest FDOT design criteria. If the structure meets current criteria the modification is approved, otherwise a change cannot be made without a design variation. For more information, see *PPM Volume 1, 25.4.26.2.*

Is a Bridge Development Report (BDR) required for Design/Build projects? No, it is not required. Guidance on bridge design will be given in the Request for Proposal.

Are Roadway Initial Engineer plans and Bridge 30% plans submitted at the same time? If not, what is the order of submittal? No, the road plans in the vicinity of the bridge must be approved by the District before BDR and 30% bridge plans submittal.

Do I need to perform a bridge load rating if I'm only upgrading the traffic barriers? Yes. Before preparing widening or rehabilitation plans, including traffic barrier upgrade, a load rating of the existing bridge shall be performed as outlined in the *Structures Design Guidelines 7.1.1*.

What are the structures requirements for approving decorative lighting? Signed and sealed calculations by a professional engineer licensed in the State of Florida showing that all wind loads and applicable forces have been properly applied and that the luminaire, arm, upright, foundation, and all connections have been properly designed according to the applicable design code.

What are the structures requirements for approving sign banners on cantilever signs, light poles, or mast arm uprights? Signed and sealed calculations by a professional engineer licensed in the State of Florida showing that all wind loads and applicable forces have been properly applied and that the banner, arm, upright, foundation, and all connections have been properly designed according to the applicable design code.

How long will the new bridge piles be? The pile length estimate will be established at the Constructability Phase submittal. The actual length of the pile will be determined during construction when the test piles are driven.
When does a Design Exception or Design Variation require District Structures Design Office approval?
Approval is required from the District Structures Design Office for: Design Variations for bridge width, structural capacity, horizontal clearance and vertical clearance affecting Category 1 Structures. In addition the concurrence of the DSDO is required for Design Variations and Design Exceptions requiring SSDO approval (*PPM 23.3*).

**The answers provided are valid as of March 2012. An expanded, updated list will continue to be available on the Structures Design District 4 website.*

Philosophy of Innovation in Action
By: Fred Ochoa, PE; Structures Design Engineer

Bridge engineering is a field that demands creative problem-solving skills within a highly constrained, rigorously verifiable environment. As such, many innovative ideas never reach fruition, and change usually takes place in an incremental way. However, the advent of alternate project procurement formats (such as Design/Build and Public Private Partnership) along with a renewed focus on reducing project costs has breathed fresh life into the bridge engineering community. District Four's Structures Design team recently visited the site of one such project to see innovation in action for themselves.

The project in question is the I-595 Corridor Improvement Project in Broward County. As the first Public Private Partnership (PPP) project in the District, it already had several notable innovations built into the base concept. Nonetheless, the Alternative Technical Concept (ATC) mechanism allowed the short-listed teams to exercise additional creativity and innovation. One remarkable example is the bridge carrying the southbound University Drive Ramp to eastbound I-595 (Ramp N). The Department's concept, as reflected in the RFP documents, envisioned the replacement of this flyover bridge in order to provide the horizontal and vertical clearance required for the proposed I-595 reversible lanes and the relocated I-595 eastbound lanes. The team awarded the contract met this challenge through an ATC to *raise and lengthen* the twin steel box girder bridge.

Regardless of whether you subscribe to Flaubert's or van der Rohe's philosophy ("God is in the detail(s)" or "the devil is in the detail(s)"), it must be acknowledged that turning an innovative idea such as the raising and lengthening of a bridge into a practical reality requires tremendous effort from all parties. This was the case for Ramp N as well. Right after the PPP concession contract was signed, the design team began regular, in-depth collaboration with the Department to ensure that every detail of this innovative concept would meet the contract requirements. With every aspect of the innovative and complex design completed, the contractor and specialty sub-contractors are now putting the plan into *action*.

Our team's recent visit to the Ramp N construction site leads me to believe the innovation is well on its way to becoming a practical reality. We were there just a few days after the raising of the bridge had been completed. Our guide, Jeremy Grady, is an employee of the Department's Oversight CEI consultant. He explained to us how the bridge was raised 18" by synchronized hydraulic jacks. Raising a bridge is rare, but the jacking operations utilized several additional innovations (e.g., lightweight laminate shim plates in lieu of heavy steel plates, and vacuum-assisted hydraulic fuel retrieval to expedite operations) that made this operation state-of-the-art.

The remaining work such as the partial demolition and reconstruction of Pier 4, the replacement and lengthening of the superstructure in span 5, and the addition of cover plates to spans 1 and 3 will further test the design team's and contractor's ability to put innovation into action.

Note: This article was originally prepared for publication in August 2012.

New/Relocated Employee Introductions

Alverene Arjun - Survey/Mapping

I am pleased to announce the appointment of Alverene Arjun to the position of Land Title Specialist in the Title and Documents section of the Surveying and Mapping unit. Alverene comes to us from Design where she worked under Administration Support since 2006. Alverene's new duties will be performing quality reviews of legal descriptions, title reports, performing land title searches and examinations of county official records, review and coordinate project schedules, maintaining databases and spreadsheets and preparing closing documents. On a personal note, Alverene is married to Doug (30 Years) with 3 children and two granddaughters. Her hobbies include reading, watching movies, and shopping. Please join us in welcoming Alverene to Surveying and Mapping.

Sabrina Aubery - Consultant Management

Please join me to welcome Sabrina Aubery to her new position as a Project Manager in Consultant Management with an effective date of September 14, 2012. Her years of experience in roadway design are an asset to our unit and we are very excited to have her as a project manager. Currently, she is working on Constructability package for State Road 7 in Broward County and will still be involved on this project which is expected to be completed by the end this year. Sabrina graduated from the University of South Florida with a Bachelor in Civil Engineering in May 2004. During her studies at USF Sabrina worked as a supervisor at the water park, Adventure Island. Sabrina started her career at FDOT in January 2005 in Roadway Design Section 3. Since 2008, she has been the Section 3 Assistant Section Leader. Sabrina enjoys traveling around the United States and the world to learn more about other cultures. Most recently Sabrina traveled to the Philippines. Sabrina is also a dedicated volunteer in the fight against cancer and spends her free time training for the Susan G. Komen 60 mile 3 Day Cancer Walk. Sabrina's hobbies include basketball, boot camp fitness training, and spending time with family and friends. Congratulations and Welcome to Consultant Management

Robert Bostian - Special Projects Manager

Rob has been working as a Section Leader in Consultant Management for the past 12 years. Recently, he has been splitting his time between the CM section and the I-75 Express Lanes Project. This new position will allow Rob to focus on the delivery and completion of the I-75 and I-95 Corridor Program. Rob graduated from the Citadel, Charleston South Carolina, where he earned a Bachelor of Science in Civil Engineering and he has also received a MS in Civil Engineering from Florida International University. Robert began his career as a Professional Engineer Trainee and has worked as a Roadway Designer, District Pavement Design Engineer, and District Specifications Engineer/Final Plans Section Leader before moving to Consultant Management. Congratulations to Rob!

Jamie Polidora - Section 2

Jamie graduated in 2007 with her Bachelors and 2008 with a Masters in Civil Engineering at Florida Atlantic University. After receiving her Masters degree, Jamie worked at a Water and Wastewater consulting firm working on construction management and structural design teams. In 2010, she went back to Florida Atlantic University full time to obtain her PhD in engineering. Jamie's dissertation studies the behavior of asphalt with geosynthetic inclusions under fatigue and fracture testing. For fun, she enjoys playing many sports including softball, golf, and bowling as well as spending time with friends and family.

New/Relocated Employee Introductions

Brent Lee Shue Ling - Consultant Management

Please join me to welcome Brent as a newest project manager in Consultant Management effective September 28, 2012. Brent will be working in Section 6 under the supervision of Henry Oaikhena. His years of experience in roadway design as a designer and District Pavement engineer are an asset to our unit and we are very excited to have him in our unit. Currently, he is working on finalizing production plans for Sunrise Bridge near the Galleria in Broward County and will still be involved on this project which is expected to be completed by the end of November 2012. Brent graduated from the City College of New York with a Bachelor degree in Civil Engineering in May 2005. Searching for more warmer and familiar climates, he quickly moved to South Florida where he began a career at FDOT in July 2005 with the In-house Design Section 2. He has served in this position with increasing responsibilities for the past 7 years. In 2008 he was also given the additional duty to serve as District Pavement Design Engineer. In 2008, he was also recognized as the Design Employee of Year. Moving to South Florida was not only a good move for the weather and his career, but also his personal life. Brent recently got married in 2010 to his wife, Tonya, who he first met soon after moving down to the sunshine state. On a personal level, Brent enjoys spending time with his wife, family, and friends. His favorite hobby is soccer and can be found playing with fellow coworkers every Wednesday evening. Congratulations and Welcome to Consultant Management.

Debbie Zuckerman - Admin

I am pleased to announce the relocation of Debbie Zuckerman to Design Administrative Support from the Mapping Unit where she worked since 2007 as a Staff Assistant. Debbie moved from New York (Brooklyn) in October 1985. In August 1986, she began working for the Department of Children & Families as a Secretary Specialist in the Fiscal Office and then in Human Resources as Administrative Assistant for the HR Director. Debbie also worked at South Florida State Hospital as Administrative Assistant to the HR Director until July 2007. On a personal note, Debbie is married for 33 years to Steve, they have a beautiful daughter Cara, who just loves to bungee jump, skydive, and would love to swim with sharks. Debbie enjoys reading and knitting. Please join us in welcoming Debbie to Design Administrative Support.

Kenzot Jasmin - Section 6

I am pleased to announce Kenzot Jasmin as the newest addition to Consultant Management. Kenzot will be joining Henry Oaikhena's group as a Design Project Manager in Section 6 where he will manage consultants preparing design plans and construction contract packages. He will start in his new position as soon as his temporary assignment with the Concept Development Office is completed. Kenzot joined FDOT in July of 2005 after his internship at the District 4 Material and Research Lab. He has been with In-House Design Section 1 where he has worked on several projects of various complexities ranging from resurfacing, road and bridge reconstructions, and design/build projects. He has participated as nonvoting member in various Technical Review Committees (TRC). He graduated with a BS and a MS in Civil Engineering from Florida Atlantic University (FAU). He had the privilege to serve in (what he considers) the best branch of the US Military (Army) and he very proud of his service. His favorite sport is soccer and he also enjoys being around friends and family, playing the piano and watching action movies. Congratulations and Welcome to Consultant Management