

District 4 Design Newsletter

March 2014

Design-Build Gift Arrives in a Blue Box

By: Fred Ochoa, PE; Structures Design Engineer

Increased reliance on the Design-Build project delivery method has prompted the Department to ensure that the appropriate tools are available to carry out its mission. In furtherance of that goal, the State Structures Design Office, in conjunction with the District Structures Design Offices, envisions a new tenor for the FDOT Structures Manual (SM) that directly addresses the challenges peculiar to Design-Build projects. The January 2013 Edition of the SM includes a gift in a blue box for structural engineers. These blue boxes directly address issues unique to Design-Build projects and give unequivocal direction to the relevant parties, such as: the author of the Request for Proposal on a Design-Build project, the Engineer of Record on a Design-Build project, or the Contractor's Engineer of Record or Specialty Engineer on a Design-Build project. The SM, *Introduction*, Section I.1, explains the function of the blue boxes thus:

"The requirements given in the **Structures Manual** apply to all projects. Special requirements for Non-Conventional Projects, e.g. Design-Build Projects and Public-Private-Partnership Projects, may be shown in a "Modification for Non-Conventional Projects" box as seen in the following example:"

Followed by a box similar to the one below:

Modification for Non-Conventional Projects:
Detailed information which modifies the relevant sections of the Structures Manual for non-conventional projects is provided here.

The SM, *Introduction*, Section I.1, goes on to explain:

"These boxes are located immediately before or after the section which is to be modified. The requirements listed within these boxes are only applicable to Non-Conventional Projects."

The changes to the SM highlighted above go hand-in-hand with the Department's other guidance for Design-Build projects. While some of these documents do not require modification, others have been revised to reflect updated direction. For example, the *Pre-scoping Questions for Design-Build Projects* (<http://www.dot.state.fl.us/construction/DesignBuild/DBRules/DB-PrescopingQuestions.pdf>) have been expanded to incorporate items required by the blue boxes in the SM. The Department's website states the following regarding these Pre-scoping questions:

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Design-Build Gift Arrives in a Blue Box Continued

“These pre-scoping questions are intended to supplement the Design-Build Guidelines so as to assist in developing project specific Design and Construction Criteria Packages. While many of the issues raised by the pre-scoping questions may not apply to all projects, this document can serve as a guide in scoping the necessary site surveys and in defining project constraints when developing the Design and Construction Criteria package.”

While not directly related to the changes in the SM, the *Design-Build Request for Proposal* boilerplate (www.dot.state.fl.us/construction/DesignBuild/DBDocuments/RFPDocs/DBRFP-Standard.docx) has also been revised. Lastly, the Design-Build Guidelines (www.dot.state.fl.us/construction/DesignBuild/DBRules/DesignBuildGuidelines.pdf), although not recently revised, also play an important role in defining the Department’s Design-Build process.

Familiarity with the Department’s Design-Build processes, as defined in the above-referenced documents, is necessary for all Structural Engineers engaged in delivering the State’s work program. The need is obvious for those working as RFP author, Design-Build EOR, or Contractor’s EOR/Specialty Engineer. But even those involved in conventional projects must be knowledgeable of Design-Build processes lest their project change from Design-Bid-Build to Design-Build and their role change from EOR to RFP author. Furthermore, although the term Design-Build is used throughout this article, similar guidance applies to other non-conventional project delivery systems employed by FDOT, and understanding of these is also necessary.

As always, the State Structures Design Office and the District Four Structures Design Office are available to clarify these gifts in the blue box.

Note: Any inferences to Tiffany Blue Box® are completely intentional :)
Please note this article was prepared in May 2013.

Utility Certification 101

By: The Utility Department: Tim Brock, May Sanchez & Bruce Wallace

Have you been confused, overwhelmed and frustrated when it comes to obtaining the “Utility Certification” for your project? We are here to offer you one-on-one assistance to any and all of your Utility concerns.

Let us start with the basics....

What is the “Utility Certification”? It is a “Certification Memorandum” generated by your District Design Utility Office. It basically says the utilities are ‘clear’.

Why do we need one? It is the Law. Federal Highway Administration as well as Florida State Law requires all utility conflicts to be addressed prior to project advertisement (much like all Right of Way must be acquired (certified) prior to advertisement). The federal version can be found in the 23 Code of Federal Regulation (CFR) 635.309 and the Florida version can be found in Florida Statutes (FS)337.11(3)(a). Our Design Build Projects must adhere to FS 337.11(7)(c). It is needed to certify that all of the utility work has been completed and/or accounted

Utility Certification 101 cont.

for in the construction plans and schedule. It basically identifies all of the utility agencies located on the project and their final conflict resolution. Each utility conflict is addressed by the utility agency's utility work schedule (UWS) and all other utilities are documented by a "no conflict" letter from the utility agency.

Who submits this? A draft utility certification package identifying the final disposition of all utilities on the project (UWS, "no conflict" letter, or "no facilities" letter) is reviewed by the project team...usually the utility coordinator and the roadway designer (with our assistance). The package is then reviewed by the engineer of record (EOR) for accuracy between the road and bridge plans and the final UWS. The EOR will ensure the overall construction plan-set has identified and resolved every utility conflict. The EOR verifies that the utility time effort to clear the conflict is adequate before and/or during construction. This verification should ensure specific conditions/constraints are identified, dependent activities are identified and the MOT phase accurately reflects the latest plans and final disposition of any utility conflict. The EOR signs each UWS once this information has been verified. The project manager receives this utility certification package, performs their quality assurance and then submits it to the Utility Office signed by the utility agency/ owner (UAO) and the EOR.

When is it submitted? In District Four the utility certification is required prior to the biddability phase submittal.

What happens next? Our utility office reviews the package (letters, UWS, comments and days on the UWS) and either approves or denies the package preferably within a two week turn-around time frame.. If the package is denied, it will be returned to the originator for verification or corrections. Once corrections are made, our Utility Office will sign each UWS and generate the "Utility Certification Memo" and return the completed utility certification package to the project manager and other required offices.

Our office also sends the record contract plans and each associated UWS to the relevant utility agency once the project has gone through the production complete process and the plans have been processed for the scheduled letting. This gives each utility agency advanced notice that we are about to 'get busy' on the specific corridor so make sure you follow through with your commitment to address any conflict within our project corridor. It also nudges them to obtain their utility permit if they have any utility relocation within FDOT Right of Way.

What about Design Build (DB) projects? They too are "certified" by our Utility Office. A "Design-Build Utility Coordination Memo" is generated by our Utility Office. The original request for proposal (RFP) package prepared by the project team has to address many utility coordination issues, too. The main point in the RFP and indicative design is to ensure all known utilities are identified, the utility agencies are aware of the project scope and that all cost and schedule matters are clearly identified.

Regardless of the method of delivering our work program; each utility within our project limits must be identified and any possible conflict must be addressed. Think of the entire production process as working to put together a jig-saw puzzle. The design team must make sure all the parts are compiled and they actually fit to create the 'picture' we desire. We then take the jig-saw puzzle apart, put the individual pieces in a box and then ask the contractor to 'bid the box' and rebuild our picture. The utility certification process helps to ensure the pieces of the puzzle fit and we are happy with the final 'picture'. Our doors are always open to assist with any question or concern related to this piece of the puzzle.

WHEN IS WARM COOL AND COOL WARM?



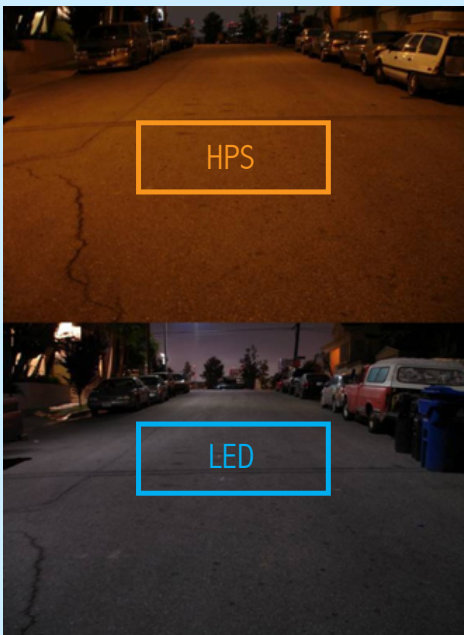
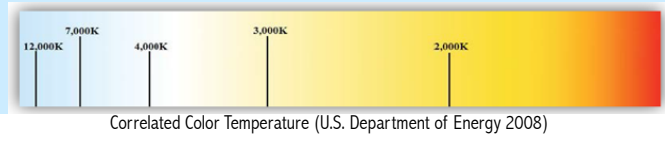
By: Benjamin Restrepo & May Cheng (Traffic Design District 4 FDOT)

When it comes to lighting, we often hear the terms "warm" and "cool" used to describe different colors of light. But what do these terms really mean? In terms of color temperature, warm light is typically associated with lower temperatures (around 2,000K to 3,000K) and has a yellowish or orange hue. Cool light, on the other hand, is associated with higher temperatures (around 4,000K to 7,000K) and has a bluish-white hue.

However, if LEDs emit at a much higher temperature and give off a cool looking bluish-white light should we change our vocabulary when it comes to lighting? Shouldn't higher temperatures be considered warm instead of cool? Really there is no need for that, this opposite naming actually helps us in an ironic way to remember that LEDs emit at a higher temperature than any other light currently on the market.



In terms of benefits, it is literally more than meets the eye. LEDs not only last longer and use less energy than more conventional lights, but they also improve night vision performance. Pedestrians and cyclist benefit greatly from LEDs because after the sun goes down the LEDs reveal the true color of themselves and their surroundings and not just a shadow, giving them a sense of place. Crime stoppers can thoroughly see their surroundings and give better detailed and more accurate reports of what happened.



What does this all mean to the Department? District 4 has already begun the transformation from HPS to LED for street lighting. More and more cities and counties are requesting to use LEDs because of its energy savings and less maintenance. Not only are we designing LED at two I-75 interchange projects in Broward County, but we recently installed them here at the District Office.

To get a better comparison of the two lights against each other stay late after work one day and wait until its dark enough for the lights in the parking lot to turn on. We currently have one CREE LED light active in the NE parking lot surrounded by HPS lights.

References:
<http://ict.illinois.edu/publications/report%20files/FHWA-ICT-12-012.pdf>
<http://gizmodo.com/led-streetlights-will-change-holly-wood-and-make-every-c-1514840416>
http://www.seesmartled.com/kb/choosing_color_temperature/



New/Relocated Employee Introductions



Wilord Metellus - Drainage

While pursuing my bachelor degree at Florida Atlantic University, I started an internship opportunity at FDOT-Drainage where I felt very much welcome and, more importantly, I gained hands-on experience working with great people that fueled my aspiration to accomplish more. My hobbies are sports, music, and travel. I like sports and I do play different types of sports; however, playing tennis with my family and friends is definitely my favorite. Whether I have to accompany a chamber orchestra or play for my own satisfaction, it's always enjoyable playing my acoustic or electric bass guitar. I also like visiting new places. Nothing can replace the relaxation and the unique experiences traveling offers.



Annie Olivieri - Survey and Mapping

Annie comes to us from Puerto Rico, where she worked with the Puerto Rico Highway and Transportation Authority in the land acquisition group for the past 10 years. Annie is a Surveyor in Training, and graduated from the University of Puerto Rico, Mayaguez Campus, with a Bachelor's Degree in Surveying and Topography.



Lee Nye - Survey and Mapping

Please join the Surveying and Mapping unit in welcoming Lee Nye to the District IV Team! Lee is not new to the District as he worked with the Survey and Mapping for the past 6 years as a consultant. We are happy to announce that he is now one of us, and is working with Pete Diaz (Section 2) as a Surveying and Mapping Technician. Before coming to work with the Department, Lee spent 25 years in the aviation field, where he was involved mostly with the testing and certification of turbine engines. Lee also spent 5 years with the National Aeronautics and Space Administration (NASA) working on the Space Shuttle.



Zachary Behring - Structures

Hello! I'm Zachary Behring, I was born in Clearwater, FL. I recently moved to Ft. Lauderdale from Orlando, FL where I studied civil engineering at the University of Central Florida. I received a master's degree in structural and geotechnical engineering. I enjoy playing tennis and visiting with my family. I am very grateful for the opportunity to work with the FDOT and I look forward to my future here.

New/Relocated Employee Introductions cont.

**William Salisbury - In-House Design Section 1**

Brad was born and raised in West Palm Beach. He graduated from UF in 2008 with a Bachelor's degree in Civil Engineering and received his Masters in Engineering Management from FIU in 2012. In 2009, he began his career as a Professional Engineer Trainee in District 6. He has been in Design for the past 3 years and passed the PE in October. In his spare time, Brad is attempting to learn Spanish and yoga. He enjoys skateboarding, observing animals (especially birds and exotic lizards), running, reading, games, and learning new things.

**Scott Thurman - Consultant Management Section 5**

Scott started working with the Department in March 2007 as a roadway designer with James Ford. Immediately he tried to soak up as much engineering knowledge and experience by working on projects before he was asked to become the Assistant Section Leader in Design Section 3 in February 2013. After six years of working with James Ford and his in house design team, Scott took an opportunity to work in District 4 Construction office as the District Warranty Engineer where he was able to see the fruits of our design labors through CEI project shadowing and warranty inspections. Scott is currently working on tasks in his current position requiring his attention. He will join Consultant Management soon. Scott's hobbies include sports, movies, music, food, and travel. He spends all his spare time with his wife, 2 ½ yr old son, and two dogs. He says that he is living the dream!

**July Randt - In-House Design Section 3**

July was born and raised in the Paraguana Peninsula, Venezuela (northernmost point of Venezuela). She moved to Florida at the age of nineteen. After being in Florida for a couple years, she put herself through college and completed her B.S in Civil Engineering at Florida Atlantic University in the spring of 2008. Immediately after graduation, she started working in the Florida Department of Transportation as a P.E Trainee. After spending 3 years in Design-Section 1, she found a new home in Design - Section 3 as a section assistant. She enjoys traveling, biking and spending time with her family.

**Roberto Jimenez - In-House Design Section 1**

Roberto came to us by way of Cienfuegos, Cuba. He has a Bachelors and Masters Degrees from Florida International University (The best!!), and recently became a Registered PE in the State of Florida. Roberto was part of the Drainage family for the past 3 years where he grew professionally under the guidance of Francis Lewis. He enjoys cooking and eating great foods, playing sports (soccer, tennis, ping pong, racquetball, basketball, volleyball...), boating activities (fishing, spearfishing, scuba, water skiing...), outdoor activities (camping, hiking, kayaking...), photography, traveling, dancing... in summary, living the LIFE.