Florida Department of Transportation

DISTRICT THREE DESIGN NEWSLETTER

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District III Quarterly Design Newsletter

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From the Editor's Desk

Scott Golden, P.E., District Design Engineer

The District Three Design Office continues to try to improve the quality of plans. We have recently included a field review in the plans review process. This review should be in conjunction with the utility review and should be accomplished after the Phase II plans submittal. The purpose of the review is to include the Operations Managers (Area Maintenance and Construction Engineers or their designees) in the design process. We are looking for input on a variety of topics that include: utility location and impacts (or avoidance measures), maintenance of traffic, drainage issues, right of way, access, environmental or permitting concerns, constructability concerns, maintenance concerns, public involvement, schedules, coordination with adjacent projects, etc. Essentially, we want our partners in Construction and Maintenance to have an opportunity to review the project with the EOR in the field.

One other issue that I would like to bring to your attention is the submittal of Design Variations and Exceptions. During the month of August, District Three submitted three Utility Exceptions to the Central Office for approval. In all three cases, these submittals were late. I realize that we are relying on the Utility Agent/Owner (UAO) to submit these on time. However, as the EOR of the project, we should know what is needed and when. If you are having difficulties coordinating these with a particular UAO or you feel that they are not responding quickly enough, I ask that you contact the Department's Utility Coordinators. We should not be expecting the Central Office to review and approve these types of documents two weeks prior to the project letting.

Expect Perfection, settle for excellence.

Mast Arm Assemblies - Out with Old in with the New

Keith Shores, P.E., District Structures Design Engineer

If you've had a chance to look at the 2008 Edition of the Design Standards, you might have noticed a new version of the mast arm assemblies. Over the past fifteen years or so, the mast arm assemblies have evolved from the "A" Series, to the "B" & "C" Series and now to the newly released "D", "E" & "F" Series.

The use of "D", "E" and "F" Series mast arms is mandatory for projects beginning with the January 2008 Letting. This change is the result of the Department adopting the 2001 Edition of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

A couple of the major changes include the design wind speed and pressures.
For comparison purposes, the new 120 m.p.h. wind speed (2001 Code) produces a wind pressure which is approximately equivalent to that of the old 100 m.p.h. wind speed (1994 Code).

Design wind speed by county can be found in Volume 9 of the Structures Manual.
For District 3, the design or basic wind speeds shall be as follows: 110 m.p.h.: Jackson, Jefferson, Gadsden, Leon; 130 m.p.h.: Bay, Calhoun, Franklin, Gulf, Holmes, Liberty, Okaloosa, Wakulla, Walton, Washington; 150 m.p.h.: Escambia, Santa Rosa

Standard mast arm assemblies should be used as much as possible. The advantage to using the standard mast arm assemblies is that shop drawings are not required and this reduces the procurement time. Standard mast arm assemblies are pre-approved by fabricator and appear on the QPL.

There may be instances where a standard mast arm assembly can be used but the signal and sign configuration does not match the standard load trees shown in Chapter 29 of the PPM. The latest Mathcad program for Mast Arms (v4.11) includes input files for the "D", "E" & "F" Series arms and will enable the designer to quickly determine if a standard arm can be used.

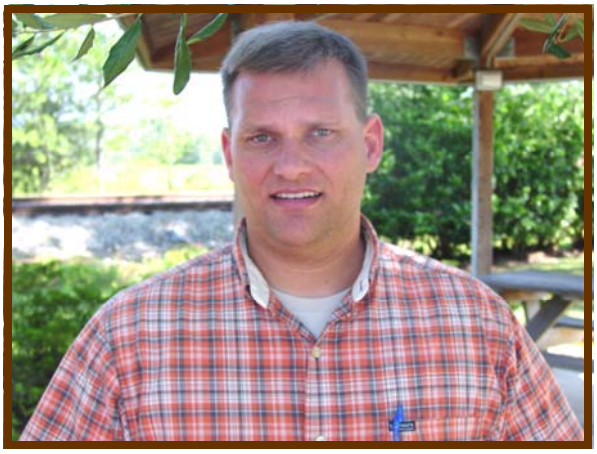
The following items should be addressed in the Signalization Plans. **Signal Head Orientation:** All signal heads shall be mounted horizontally. **Arm Mounting Height:** The arm mounting height shall provide proper vertical clearance under the critical signal head (17 ½' minimum – 19' maximum). Make sure the "Arm Mounting Height" shown on the Mast Arm Tabulation Sheet and dimension "UB" shown on the Table of Variables for Mast Arms are the same. **Painting:** When mast arm assemblies are to be painted, the color shall conform to Federal Standard 595B, Color 20040. **Grout Pads:** Indicate on the Table of Variables for Mast Arms that grout pads are not required. Grout pads trap moisture and allow corrosion of the anchor bolts to go undetected.

Discovery Consists of seeing what everybody has seen and thinking what nobody has thought.

~Albert Gyorgyi

Design Spotlight - Craig Davis

Scott Golden, P.E., District Design Engineer



Craig Davis began his State career with the Department of Corrections in April of 1997 as a Correctional Officer. After spending a couple of years with the D.O.C. he transferred to the Department of Transportation as an Outdoor Advertising Inspector in the Tallahassee Office of Right of Way. After the job was privatized Craig joined the Chipley Office of Right of Way and transferred to the District 3 Survey office in August of 2002. Craig spent some time in the field before taking a job as a Data Reviewer and was promoted to Assistant District Survey Data Manager.

In Craig's personal life he is a Dad of three children, a volunteer fireman with the Chipley Fire Department, and now he will be serving his country in the Army National Guard. Craig will report to US Army Basic Training on October 9th in Fort Sill Oklahoma and then on to Fort Belvoir Virginia. Upon completion of basic he will be a member of the Alabama National Guard 1203rd Engineering Company as a Topographic Surveyor. Craig "felt like there was more that I needed to do with my life, and serve my country like so many others in the D.O.T. family and around the world. "
John F. Kennedy once said "ask not what your country can do for you - ask what you can do for your country. "

Supplemental Agreement Report –June-August, 2007

Scott Golden, P.E., District Design Engineer

This is the Supplemental Agreement Report for the months of June through August 2007. The three (3) categories of supplemental agreements that are included in this report are codes 001, 007 and 115. 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 major bridge construction on one roadway and mast arms and signal construction on another roadway.

Subsequent to beginning work on the project and while performing installation of a mast arm foundation, the drilled shaft damaged a lateral sewer line. This lateral line extended from the sewer main beneath the roadway to a credit building on Strong Street. Prior to the reason for the sewer problems at the credit building being discovered significant damage occurred and resulting repair work had to be done. Since the credit lending institution was a private business, they contracted for and paid for all the repairs.

Upon realizing that the lateral line had been damaged by the drilled shaft, the contractor and the Department entered into negotiations to determine the party responsible for the damages. After researching the plans and field conditions it was decided that the lateral sewer line had not been shown on the plans and therefore not properly located by One-Call.

The contractor reimbursed the credit business for all repair work they had paid for and since this issue was caused through no fault of the contractor's they requested to be repaid by the Department.

Increase = $60,173.60

Description Code 007: Work added or deleted resulting from agreements with other parties (non-DOT) to address concerns within project limits not in original scope (not permit related).

Reason: Improvements under this contract consist of milling and resurfacing, drainage improvements, sidewalk and ADA improvements, signalization and signing and pavement marking on a 5-lane highway in Bay County.

During the construction of this project, the Department requested the contractor make the connection of the City's signalization upgrades to the signal at the intersection of 15th. Street and Florida Avenue. This is due to the City of Panama City Computerized Intersection upgrades underway. This required the contractor to install additional runs of conduit and place larger pull boxes to tie into the cabinet at the aforementioned intersection. This work also required the contractor to remove and replace some concrete sidewalk. In addition to the signal at the aforementioned intersection the Department requested the contractor pull additional conduit and place larger pull boxes throughout the project to accommodate the new signal system being installed by the city.

Increase = $142,158.72

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

Description Code 115: Drainage modifications required due to grade differentials, structure omissions, problems with pond designs, offsite flow not handled, incorrect elevations of structures, improper hydraulic design, etc.

Reason: Improvements under this contract consist of milling and resurfacing, drainage improvements, signalization and signing and pavement marking on a multi-lane highway in Escambia County.

All manholes were required to be removed from the roadway prior to milling and resurfacing and were to be adjusted to the final surface once the friction course is complete. During the removal of the existing manholes, additional manholes were found which were not accounted for in the project plans. These additional manholes are also required to be adjusted to the final roadway surface to provide access to the existing drainage system beneath the roadway.

Increase = $59,998.00

Response: This supplemental agreement is being attributed to a design error with premium cost. If after further evaluation it is determined that the error was avoidable and the responsible party is correct, the Department may pursue recovery of the premium.