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Florida Department of Transportation

District 4 Design Newsletter

Admin Staff
CADD
Consultant Management
Drainage
Roadway
Structures
Survey
Traffic Design
Utilities

From the Editor's Desk

Howard Webb, P.E., District Design Engineer

In today's world, communication happens in many forms. This newsletter is intended to be one of many forums to share and communicate the most important issues with our internal and external customers as well as our own staff. It will be published quarterly and encompass issues from all units within the Design Office. We are a large group and we work with many entities such as local government agencies, private industries and members of the public. We have many policies, standards, and practices that are unique to our district and we will communicate those issues that are important and affect our work.

A project's success depends on how well team members communicate what they are doing not only among themselves but also to anyone likely to be affected by or interested in their activities. This will be one method of sharing information with our fellow staff and those who are directly involved, to ensure the delivery of a successful product.

This newsletter will be published in January, April, July, and October. The articles are intended to communicate the department perspective on a variety of issues. We hope that the information provided will help us to learn about the various people and functions in the Design Office and also facilitate delivery of quality products.

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Inside this issue:

Quality Control on Delivery of Production Complete Plans

Morteza Alian, P.E., DCPME

It is the policy of the Florida Department of Transportation to pursue, achieve and maintain national leadership among state transportation agencies in the quality of our products and services through total employee involvement and through continual improvement of the state-of-the-art transportation engineering technology and practice. Therefore, it is the District 4 Design Office goal to deliver quality production complete plans to Final Plans Office.

The quality of plans is typically discovered after the construction is completed however, the Final Plans Office has established an easy method of determining the quality of plans as delivered at the scheduled production date. This method is called "Quality Delivery Indicator, QDI" and 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 directly related to Quality Control process that is required and essential to all projects during the development of plans. The QDI shows how a project has been reviewed at the end of design phase prior to submittal to Final Plans. For consultant projects, this will have a direct effect on final grade determination by project manager and favorable consideration for longlisting on future projects.

District 4 Quarterly Design Newsletter

Editor……..Howard Webb

Layout…….....Morteza Alian

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Howard Webb,
Morteza Alian, James Ford

Typical Error on Production Complete Plans

Morteza Alian, P.E., DCPME

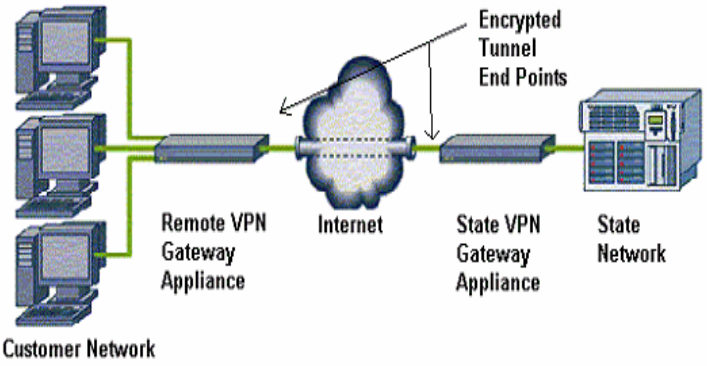
You might wonder how we could improve the delivery of our plans now that there is a way to measure and the department is seriously monitoring this activity. Well, it is very simple. Final Plans Office has put together a list of all those things they look at when they are reviewing a set of production complete plans. The list is very similar to the those Central Office uses and is comprised of three sections: Key Sheet, Overall Plan Set, and Revision Memo. Maria Izquierdo from Final Plans frequently updates this list. For a latest update, you may link up to D4NET and download a copy from D4 Knowledge Base. Project managers may need to provide a copy to consultants without VPN access.

I have to emphasize that this is not all-inclusive and each project needs to be looked at for proper QC process that is specific and better fitted as determined by the project manager.

VPN - A Vital Need

Morteza Alian, P.E., DCPME

Virtual Private Network (VPN) is a private data network that makes use of the public telecommunication in our case the FDOT infrastructure, maintaining privacy through the use of a tunneling protocol and security procedures. A virtual private network can be contrasted with a system of owned or leased lines that can only be used by one company. The idea of the VPN is to give the company the same capabilities at much lower cost by using the shared public infrastructure rather than a private one. The VPN will allow the consultants to gain access to all districts intranet sites, LRE, TRNS*PORT, and mainframe system. This will provide fast access and ultimately save time. With such an access, the consultants are able to see the same information the FDOT personnel are privy to. Consultants should get with their project manager and begin the process to obtain this service.



Design Practice – Contingency Items in Plans

Morteza Alian, P.E., DCPME

Design and Construction are always working together to resolve all issues regardless of magnitude and extent. These issues are typically lesson-learned which means they were earned the hard way. The FDOT has typically stayed away from the use of contingency items in the past due primarily to the fact that the department's desire to establish a comprehensive cost estimate at the outset and systematic update as the projects progressed. However, we have found that certain pay items have been routinely the cause of overruns during construction. As a result, D4 has determined that all projects are required to provide the following contingencies: 1) MOT - 35% to all each day items, 2) Structural Course - 10%, 3) Friction Course - 5%. The MOT items are EACH DAY only. These contingency items must be clearly identified and referenced in the Computation Book.

Other items of interests are the VMS and driveway connections. The VMS signs must be placed for additional two weeks for advance notification and the quantities for the driveways must be based on actual number of driveways in the field with the respective size/dimension.

D4 Knowledge Base

Morteza Alian, P.E., DCPME

District 4 Transportation Development intranet site is equipped with a search engine called D4 Knowledge Base or D4Kbase. The D4Kbase is stored with much up-to-date design information, which is intended to help designers and reviewers with FDOT policies/standards, and District 4 practices. New information is uploaded on a regular basis in order to provide the users with the latest information. The D4Kbase is NOT intended for use as discussion board, FAQ (frequently asked question), and announcement bulletin.

Consultants need to have VPN access in order to take advantage of this valuable tool.

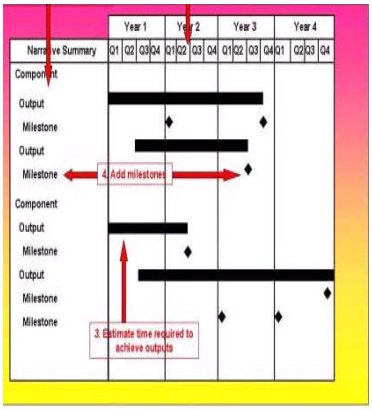
Projects within 12-Month Window

Morteza Alian, P.E., DCPME

District 4 has long established monitoring of projects with logic-driven schedules. The department goal is to meet or exceed the scheduled deadlines on all major activities and mainly the production dates. As a result, project managers are notified individually and per project by Gerry O'Reilly, Director of Transportation Development 13 months in advance of production date. The project managers are required to review the schedule of each project and respond in 30 days to the director whether or not the schedule to remain. In case of consultant projects, the department project managers are required to review the schedule with the consultants' project managers and respond in 30 days to the director.

A schedule change request requires detailed justification in the Project Scope History, a tentative schedule change and concurrence from the consultant's project manager in case of consultants' projects.

Any project that is moved prior to 12-month window will not be counted as "late". Project managers are encouraged to set aside a time to review the schedules of their projects with their consultants project managers within the 30-day period to ensure the validity of project schedules.



New Arrival — Design Section 3

James Ford, P.E., Roadway Section

Vandana Nagole

Vandana comes to Design Section 3 with a diverse educational background having a Bachelors in Civil Engineering, a Masters in Planning and is working toward her Masters in Civil Engineering (Transportation) at FIU. She is a dedicated Associate member of ITE and is the Secretary for the Student Chapter. Her hobby is chess, but watch out because she is a serious player.

Supplemental Agreement Report – January

Morteza Alian, P.E., DCPME

Supplemental agreements are contract changes used during the construction phase to allow the contractor to proceed with the construction activities without delays to the projects. The intent of this section is to make the designers aware of errors and/or omissions that lead to Supplemental Agreements and unnecessary costs to the department and the public.

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

Reason: This project consists of adding lanes, bridge widening, new lighting system, drainage improvements, and signing and pavement marking.

The contractor began to construct box culvert forms off site to meet the dimensions shown in the plans. The dimensions shown were smaller than that of the actual box culvert in the field. The proposed design was based on survey information and as-built plans. A discrepancy in the survey was not discovered until the contractor had already constructed the initial form work. The contractor incurred cost for constructing the forms and the time involved in the delay to correct this error.
Increase = $38,414.07

Response: This supplemental agreement is attributed to design error with a premium cost of $38, 414.07. This has been reviewed by the designer and concurred.

Supplemental Agreement Report – January (Continued)

Morteza Alian, P.E., DCPME

Description Code 106: Inaccurate location, size, identification, conflict resolution, etc., of an existing or proposed utility (No JPA involved)

Reason: This project consists of adding lanes, bridge widening, new lighting system, drainage improvements, and signing and pavement marking.

A work order was issued to compensate the contractor for costs incurred as a result of a conflict with a city utility. The City of Delray had an existing 400mm water main line that was in direct conflict with the construction of Pond #1. The constractor was directed to construct a berm over the city line in the middle of the pond since the city did not want to relocate the line. Initially the city assumed that the pipe was deep enough not requiring relocation. The city provided as-built information to the designer that showed the location and elevation of the pipe. The designer could have designed around the pipe provided the information was correct. The contractor has incurred additional cost of $6,617.36 and is coded as recoverable premium cost.

Response: The City of Delray provided erroneous information to the designer during design phase. This is a 3rd party agreement and the coding is recommended to be changed to 007 and recoverable. The project manager is required to discuss this with the city official.

Description Code 108: Plans do not describe scope of work

Reason: This project consists of adding lanes, bridge widening, new lighting system, drainage improvements, and signing and pavement marking.

The plans called for construction of standard opaque median barrier wall. The top of the barrier wall would rise and dip with the changes in the EOP grades. During the construction the Department suggested the proposed barrier wall should be ascetically match the adjoining project to the north, which planned to have a variable height barrier wall. This work required additional concrete and the contractor elected to use a variable height slip form to expedite the construction of the wall. The slip form costs $42,909.95 and was turned over to the department at the end of contract.

Response: The plans were designed based on the proposed profile grade and the project was reviewed by the department during design without any comment on the design of the median barrier wall. The department does not have specific guidelines and criteria for the variable height for the median barrier. However, the designer to the north of this project recognized the ascetic issue and made adjustment accordingly. This is not a design error and the code is recommended to be changed to 003 and non-recoverable premium.

You've Been Noticed!!!

Morteza Alian, P.E., DCPME

The 2003 Employee Survey showed the Consultant Management and in-house Roadway units required many improvements in many areas. A group of project managers and in-house designers were assembled to look into the survey elements and determine those areas of opportunity for improvement. The team met several times and made their recommendations on March 15, 2004. The management staff reviewed their report and began to implement some of their recommendations. The team members are: Sonny Abia, Ellen Daniel, Barbara Handrahan, Jean Hanna, Jose Santiago, Candace C. Scott, James Scully, Anson Sonnett, and Leslie Wetherell. Jose Santiago was the team facilitator.

The Design management is greatly appreciative of their effort and is awarding them with Immediate Recognition Award and $15 gift certificate for each member.