



STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

# DISTRICT THREE DESIGN

## *Quarterly News Letter*

### TABLE OF CONTENTS

Obtaining the Dist. 3 Newsletter  
via the Internet.....1

Cadd Files.....1

Earthwork & Embankment  
Projects.....2

Constructing Paved  
Shoulders.....2

Proposed Revision to Mowing  
Note.....3

Supplemental Agreement Report  
- June.....3

Supplemental Agreement Report  
- July.....5

Supplemental Agreement Report  
- August.....7

Bicycle Training  
Course.....8

DISTRICT THREE DESIGN  
FLORIDA DEPARTMENT OF  
TRANSPORTATION

If you are interested in  
obtaining a copy of this  
free news letter, contact  
Brian Blanchard, District  
Design Engineer.

(850) 638-0250) X - 425  
or fax (850) 638-6148

### **OBTAINING THE DISTRICT THREE NEWSLETTER VIA THE INTERNET**

**Darrell Weeks,  
District Bidability Team**

This document will be a word  
perfect document and it will  
be placed on the FDOT FTP  
Site on the Internet.

- ▶Go to the FDOT home page  
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location on the Internet is  
[ftp://ftp.dot.state.fl.us/pub/  
dist03/design](ftp://ftp.dot.state.fl.us/pub/dist03/design))
  - ▶The file name will be  
News Letter.
- Starting in 1999, District  
Three's newsletter will be  
available through the internet  
only, unless a hard-copy is

specifically requested. ❖

### **CADD FILES**

**Brian Blanchard  
District Design Engineer**

It is a requirement of the  
Scope of Services that  
CADD files be submitted  
with the final plans. These  
files are archived for use by  
the Construction Office. The  
Design and Construction  
Offices want to emphasize  
the importance of these files  
meeting the requirements of  
the Department's CADD  
Manual. The Construction  
Office is now utilizing the  
files.

Since the Design Department  
does not perform a quality  
control check of these files, it  
is mandatory that designers  
use the CADD Quality  
Control Software for  
checking these files. This  
software is available through  
Maps and Publications. The  
use of this software will be a  
requirement in all future  
scope of services.

A certification form will be handed out at the consultant's notice-to-proceed meeting to ensure that this requirement is met. This form must be signed and attached when the final CADD files are submitted. For on-going projects, this certification form will be submitted to the Consultants along with the bidability comments. Construction Project Engineers have been notified to contact Design Project Managers with any CADD quality issues. This information will be considered when short-listing future design consultants. ❖

### ***EARTHWORK AND EMBANKMENT PROJECTS***

**Brian Blanchard,  
District Design Engineer**

The Plans Preparation Manual requires that suitable and unsuitable earthwork be calculated and shown on the summary of earthwork chart and on cross-section sheets. This approach has caused large claims in the past on multi-lane projects where the stratum lines became mostly guess work in estimating the soil's breakdown. After a plans review of a recent project by the F.D.O.T. Geotechnical Engineer, the decision was made that the stratum lines on all Cross Section sheets were to be removed. We removed the reference to suitable and unsuitable material under the Summary of Earthwork chart and on all Cross Section sheets.

Soil Boxes represent individual boring and soil materials at that specific spot; contractors have been taking advantage of the soil's breakdown in two ways. First, the contractor will not and cannot attempt to separate the good and bad material. Second, if during construction the contractor discovers that soil cannot be used when the plans show a large quantity of good excavated material can be used, he can file a claim. Stratum lines are only guess work of the breakdown of materials. All references to

suitable excavation and unsuitable excavation should be removed from the cross section sheet, thereby showing only the total amount of roadway excavation, and fill on right side of sheet, (and subsoil excavation on the left side of sheet) disregarding stratum lines and separation of material contained within each cross section. Keep in mind when subsoil is involved, use the item for embankment in place for fill. This item will include the cost of Regular Roadway, Lateral Ditch, or Channel Excavation unless such excavation is specifically shown to be paid for separately, regardless of whether the materials are utilized in the embankment. The contractor will be able to use the subsoil and roadway excavation as provided for in the Specifications and Standard Index No. 505.

The soil boxes will continue to be used to determine where undercut of plastic material must be made and organic material removed per Standard Index No. 500.

On all new construction and reconstruction projects, the designer should consult the materials office early in the plans development to determine which method (embankment or borrow excavation) best suits that particular project. ❖

### ***CONSTRUCTING PAVED SHOULDERS***

**Frank M. Kreis  
District Bituminous Engineer**

There has been numerous complaints from contractors and project personnel alike, regarding the placement of structural course in a separate pass on the shoulder. Based on discussion and feedback from Design and Construction Engineers, the following actions will be taken.

1.) The Pavement Design Engineer will continue to evaluate each milling and resurfacing project

separately and calculate the required overlay thickness according to the required structural number. Minimizing lane costs per mile is still a major factor in the determination of pavement thicknesses.

2.) District 3 desires to place a structural layer, minimum 44Kg/m<sup>2</sup>, on the paved shoulders where FC-3 is specified. When FC-6 (88 Kg/m<sup>2</sup>) is specified, there may be some projects where the FC-6 Friction course is the only layer placed on the paved shoulders.

3.) If the pavement design specifies that the shoulder structural course be paved separate from the roadway, then the Design Consultant should include a typical section note stating this.

4.) There are currently some pavement designs which specify 110Kg/m<sup>2</sup> Type "S" to be placed over the ARMI. Design consultants should review the typical sections on their projects and determine if this amount should be increased to 132 Kg/m<sup>2</sup> and placed in two layers: 88 Kg/m<sup>2</sup> over the ARMI and the second layer of 44Kg/m<sup>2</sup> over the roadway and adjacent shoulder. Notify the District Pavement Design Engineer or District Bituminous Engineer to approve this change and to revise the Pavement Design. ❖

***PROPOSED REVISION TO  
MOWING NOTE  
(RRR PROJECTS)  
Billy Powell***

"It is the responsibility of the contractor to mow the contract area on a 30 day cycle from May through October. Hand cutting around obstructions (signs, head walls, guardrail, and like items) and litter pick up shall be incidental to the mowing performed each cycle. The last cycle of mowing shall be performed AFTER the final cleanup on the project if within the above designated time period."

The designer must make sure that enough quantity is shown for the mowing pay item. The quantity of mowing area must be calculated by multiplying the width of the mowing area by the length of the project (or mowing area) times the number of cycles it will be mowed. The calculations cannot be made by the method shown in the Plans Preparation Manual (PPM). That method is basically for new construction or major reconstruction projects. ❖

***SUPPLEMENTAL AGREEMENT  
REPORT- JUNE***

**Brian Blanchard,  
District Design Engineer**

This is the Supplemental Agreement Report for the month of June, 1998. The two (2) categories of supplemental agreements that are included in this months report are codes 106 and 503.

Below is a description of those areas and our responses:

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

**S.P. No. 48020-3563, FPN: 218599-1-52-01  
(Escambia County)**

**Reason:** Modifications to drainage structures had to be made to avoid conflict with existing utilities. Existing structure S-1A and pipe was left in place. The cost of the inlet was negotiated and absorbed by the Prime Contractor. The existing structure S-2 was also left in place, but converted to a P-7 manhole by reworking the top as a partial manhole. A price was negotiated for the re-construction of the inlet into a P-7 manhole.

Increase = \$1,133

**Response:** This supplemental agreement was not a design error. It was paid for with a Work Order as part of a Contingency Supplemental Agreement. The utility owner did not provide information on the utility involved.

**S.P. No. 53120-3511, FPN: 219336-1-52-01 (Jackson County)**

**Reason:** During excavation of the backslope as required for ditch alignment and construction of proposed ditch pavement, a water main was encountered. An investigation revealed the water main was in conflict with the proposed paved ditch. To resolve this conflict, the Department made a decision to construct a continuous side drain from station 1131+42 to 1135+25 Lt. with inlets and pipe in lieu of the paved ditch.

**Increase = \$14,960**

**Response:** This supplemental agreement was not a design error. The cost was negotiated with the Contractor and a work order was prepared, however the Contractor elected not to execute the document, therefore, it was paid for as a unilateral payment. The utility owner did not provide information/location of the water main.

**Description Code 503: Change resulting from an engineering decision.**

**S.P. No. 58080-3515, FPN: 220410-1-52-01 (Santa Rosa County)**

**Reason:** The Contractor bid the project to utilize crushed recycled concrete as a base material for paved shoulders salvaged from a previous FDOT project. He had used this same material on a similar project close to this location. Due to difficulties experienced with

the subsoil being displaced during compaction of this graded aggregate on the previous project (58010-3559), a decision was made to use ABC III. The Contractor will be compensated for the increased cost involved, however he agreed to cut the contract time by 25 days.

**Increase = \$35,406**

**Response:** This supplemental agreement was not a design error. This was an engineering decision made by the Department and agreed upon by the Contractor. Any base material shown for the Optional Base Group for paved shoulders can be used by the contractor.

**S.P. No. 58080-3515, FPN: 220410-1-52-01 (Santa Rosa County)**

**Reason:** The plans called for constructing concrete ditch pavement in several locations. Subsequent to commencement of placement of concrete ditch pavement, the Contractor submitted a proposal to utilize Pyramat ditch lining in lieu of the concrete ditch pavement at certain locations along the project. The Department agreed to amend the contract and utilize the Pyramat ditch lining.

**Decrease = \$20,000**

**Response:** This supplemental agreement was not a design error. This was an engineering proposal submitted by the Contractor and agreed upon by the Department.

**Note:** A similar proposal was made by another contractor on a project in a different Maintenance area and in a different county. This Maintenance unit had concerns about the cleaning of the ditches where this material was used. There concern was there are numerous county graded roads that drained into these ditches and silt build-up is a problem. They believed that in cleaning these ditches the ditch lining could possibly be damaged and would

become a continuing expense to the unit because of erosion. Because of this concern they requested the proposal be denied.

If the ditches on the 58080-3515 project are in similar locations/conditions, they can serve as test areas to give the Department more experience with this type construction. ❖

### ***SUPPLEMENTAL AGREEMENT REPORT- JULY***

**Brian Blanchard,  
District Design Engineer**

This is the Supplemental Agreement Report for the month of July, 1998. The two (2) categories of supplemental agreements that are included in this months report are codes 105 and 128.

Below is a description of those areas and our responses:

**Description Code 105: Conflicts resulting from discrepancies, inconsistencies, etc. between plans notes, details, pay items, standard indexes or specifications.**

**S.P. No. 46060-3533, FPN: 217902-1-52-01  
(Bay County)**

**Reason:** The plans should have specified a pipe safety rail be installed on the back of the guardrail that was adjacent to the sidewalk between station 83+36 and 89+45. The plans did not include the rail and the 1994 Standards for Roadway and Traffic Design were unclear.

**Increase = \$3,808**

**Response:** This supplemental agreement was not a design error. The 1994 Standards only had a small detail showing the pipe on the back of the post. The standards did not give any details about what type of pipe to use, the size, how to

attach the pipe to the post or how to pay for the pipe rail. There was not a pay item for guardrail with pipe rail attachment in the Basis of Estimate Manual or CES system.

The 1998 Standards have sufficient details on the pipe rail and attachment procedures. However, there is not a pay item in the Basis of Estimate Manual or the CES system for guardrail with pipe rail attachment nor is there any directions in the Standards on how to pay for the rail.

This report serves as instructions on how to provide this information in the plans.

1. Show a note on the plan sheet where the handrail is needed stating that the pipe handrail will be required at the back of the guardrail or include a note or column on the Summary of Guardrail with this information.
2. Show in the Pay Item Footnotes the quantity of handrail that will be needed (i.e. 536-1-1 includes 100 meters of pipe handrail on the backside of the guardrail posts.

**S.P. No. 57070-3507, FPN: 220165-1-52-01  
(Okaloosa County)**

**Reason:** Additional clearing and grubbing between construction limits and the established clear zone. This was done to improve safety by removing brush between construction limits and the clear zone.

**Increase = \$8,713**

**Response:** This supplemental agreement was attributable to a design error. The plans indirectly implied that the clear zone would be provided, however the typical only showed clearing and grubbing to the proposed toe of slope. In several locations the clear zone exceeded the toe of slope limits and brush needed to be removed within this area.

This problem has been addressed in the Design and Construction coordination meetings and a solution has been provided to the consultants and the in-house designers to incorporate into their plans.

**Description Code 128: Inaccurate or inadequate survey information used in plans preparation.**

**S.P. No. 58060-3507, FPN: 220434-1-52-01 (Santa Rosa County)**

**Reason:** There were a number of locations in which the existing concrete aprons on 450 mm and 600 mm side drain pipes were either distorted or deteriorated. All the areas were potential safety hazards and in need of repair.

**Increase = \$5,939**

**Response:** This supplemental agreement was attributable to a design error. The survey did not indicate the deteriorated condition of the concrete aprons on the side drain pipes, however a field review of the project by the designer should have detected these.

**S.P. No. 48020-3562, FPN: 218587-1-52-01 (Escambia County)**

**Reason:** The plans called for the construction of three type "V" gutter inlets along an existing 24" pipe that the survey showed was under the edge of the existing pavement. Construction of the inlets required a special shoring system and the contractor incurred engineering expenses as well as the purchase cost for the system. Prior to construction it was determined that the existing pipe encroached upon the Right of Way and could not be used as designed. The designer determined that the three inlets could be eliminated and an asphalt swale constructed to drain to other inlets. The Department

reimbursed the contractor for the inlets and they were transported to the FDOT Maintenance yard. The contractor will keep the shoring equipment and will be reimbursed for a part of his expenses that were negotiated based on a review of his expenditures. The contract time was reduced by three days.

**Increase = \$4,024**

**Response:** This supplemental agreement was not a design error. The designer used what he thought was accurate information in the design of the inlets for this area.

**S.P. No. 48040-3546, FPN: 218403-1-52-01 (Escambia County)**

**Reason:** The department desired to increase the conveyance capacity of the new storm sewer system at station 197+00 right and to provide an auxiliary drainage connection to the west side of Old Palafox Street to reduce the probability of localized flooding. To accomplish this, inlet S-32 had to be modified to receive an 18" RCP from the east. A night time detour had to be constructed according to FDOT standards and the MUTCD to facilitate the construction of a pipe crossing at station 197+30. The existing road had to be open cut for the pipe crossing and necessary shoring provided and pavement patched to match the existing pavement thickness per specifications.

**Response:** This supplemental agreement was not a design error. The survey information did not include drainage structures on the west side of Old Palafox Street.

The plans for this project had been done by a consultant in the mid 80's and placed on the shelf. District Design personnel several years later were to update the plans and make some drainage changes because of utility conflicts. The plans were done based on the piecing

together of several previous surveys done on SR 95, "W" Street and Airport Road and filling in the gaps in between. During the revising of the plans, several update surveys were done to try and pick-up recent developments, etc. that had occurred after the completion of the plans by the consultant. Because of the complexity and size of the project it was almost impossible to catch every change to the existing conditions that had taken place within the time span mentioned without doing a complete or major re-survey of the project. Because of the expense and schedule for plans completion, this was determined not to be feasible. ❖

### ***SUPPLEMENTAL AGREEMENT REPORT- AUGUST***

**Brian Blanchard,  
District Design Engineer**

This is the Supplemental Agreement Report for the month of August, 1998. The two (2) categories of supplemental agreements that are included in this months report are codes 105 and 107.

Below is a description of those areas and our responses:

**Description Code 105: Conflicts resulting from discrepancies, inconsistencies, etc. between plans notes, details, pay items, standard indexes or specifications.**

**S.P. No. 50070-3502, FPN: 218921-1-52-01  
(Gadsden County)**

**Reason:** The plans did not specify the type of bridge anchorage assemblies by scheme number to be used to connect the guardrail to the bridge. Therefore, the contractor did not have sufficient information to accurately bid the required scheme.

**Increase = \$10,400**

**Response:** This supplemental agreement was a design error. Design note number 3 (Index no. 401) of the 1995 Standards specifies that the scheme number for the assemblies or retrofit rail across the bridge should have the scheme number shown in the plans.

This report will be a part of the next Quarterly Design Newsletter and will serve as a reminder to designers to place the scheme numbers on the plans, either on the plan sheet at the bridge or in a pay item footnote for the anchorage assemblies. Anytime the designer uses a Standard Index, he/she should thoroughly read all the notes as well as referring to the details.

**Description Code 107: Modification of approved MOT plan to accommodate various modes of transportation (i.e. pedestrians, boats, cars, bikes, etc).**

**S.P. No. 61080-3533, FPN: 220789-1-52-01  
(Washington County)**

**Reason:** The contractor proposed an acceptable method of removing temporary paint in lieu of using temporary removable tape. This change will result in a significant cost savings to the Department.

**Cost = \$13,177    Decrease = Unknown at this time**

**Response:** This supplemental agreement was not a design error.

The following however will serve as instructions to other designers that may not be aware of when and where to use temporary paint on the mainline roadway at detours, lane diversions, etc. or when to use removable markings.

1. Temporary paint should be used when the marking will be placed on an old surface that will later in the project be paved over.

2. Temporary paint should be used on all pavement courses up through the final layer of structural course. An exception would be when there will not be a friction course and the final layer of structural will serve as the final surface (these projects are few and far between).

3. Removable markings should be used on the new friction course.

4. Removable markings should be used on existing pavement when the old surface will not be resurfaced. An exception to this might be when there will be a large quantity of temporary markings on the old pavement. When this is the case the designer should coordinate with the District Construction Office to determine which method to use. ❖

***BICYCLE DESIGN TRAINING COURSE***

**Mary Anne Koos**

District Three will be holding a bicycle facility design training course on November 3, 1998 from 8:00am to 4:00pm, in the Design Conference Room. DOT employees, consultants, local government officials, and the public are welcome to attend. Please contact Barbara Forrest at ext. 231 to register or Mary Anne Koos at ext. 547 for course information. The course, taught by Theo Petrutsch, FDOT Central Office has been well received in Districts 5 and 7. Please join us. ❖

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