



DISTRICT THREE DESIGN

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

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Quality

Brian Blanchard

Since January, my efforts have gone toward reducing supplemental agreements, which generally result in time extensions and cost overruns. To achieve this goal and objective, we have rewritten our Quality Control Plan, improved the supplemental agreement reporting format, made changes to the Plans Preparation Manual, worked on improving the consultant grading system, established a bidability team, and we are in the process of training project managers statewide, in-house and consultants. There are changes implemented by the Legislature on methods of bidding projects and new methods being written related to contractor's work time.

This is all being done to meet a common goal, *Quality*. We know things will improve if we continue to try new ideas. We would like to have your ideas, feed back or questions for further improvement. ♦

Consultant Work Performance Evaluations, Notice to Proceed Meetings and Project Schedules

Gene Martin

As each of you are aware, great emphasis is being placed on work performance grades for consultants. I am sure this will continue as the Transportation Commission continues to look at time extensions and

supplemental agreements on construction contracts as well as errors and omissions on plans.

In April of last year, the Production Department began scheduling an activity for final grades (A/E 236 - Final Evaluation of Consultant) for all major consultant projects and also an interim grade (A/E 238 - Interim Evaluation of Consultant) if the contract was greater than 18 months in length. I have asked them to begin scheduling an interim grade on every project regardless of the length and if it is not required, project managers will simply note on their update "Not Required" or "Delete Activity."

It is the project managers responsibility to complete the rating forms timely and forward them to Professional Services so they can be sent to the consultant and then entered into the computer system for use by all districts.

In the past, it has been a decision of the Project Manager whether or not a Notice-To-Proceed Meeting was deemed necessary. Effective immediately, a **Notice-To-Proceed Meeting will be required on all major projects.** The consultant shall provide an anticipated payout curve within ten (10) days of the Notice-To-Proceed Meeting.

Also, in the past, we have requested the consultant submit a schedule within ten (10) days after the Notice-To-Proceed Letter has been issued. From now on, we will require the consultant to submit a project schedule as part of the negotiation process to be negotiated and approved by the Department. The approved project schedule shall consist of the Department's Activity/Event numbers and descriptions utilizing the Critical Path Method. **The approved schedule will become part of the Consultant Agreement.**

DISTRICT THREE DESIGN

Florida Department of
Transportation

If you are interested in
obtaining a copy of this free
quarterly Newsletter, contact
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All scopes in progress and future scopes will need to reflect these changes:

**PROJECT MANAGEMENT GUIDELINES
SECTION II (PAGE A-41 & A-42)**

**STUDY REQUIREMENTS AND PROVISIONS
FOR WORK**

B. Schedules

1. The CONSULTANT shall submit a project schedule as part of the negotiation process to be negotiated and approved by the DEPARTMENT. The project schedule shall consist of the Department's Activity/Event numbers and descriptions utilizing the Critical Path Method of scheduling.
2. The CONSULTANT shall submit an anticipated payout curve within ten (10) days after the Notice-To-Proceed Meeting.
3. **Meetings and Presentation**
The CONSULTANT shall attend a Notice-To-Proceed Meeting with DEPARTMENT representatives where relevant project information will be provided by the DEPARTMENT along with procedures for administering the contract. The CONSULTANT and his staff shall also be available with no more than a five (5) workday notice to attend meetings or make presentations at the request of the DEPARTMENT. Such meetings may be held at any hour between 8:00 am and 12:00 midnight on any day of the week. The CONSULTANT may be called upon to provide maps, press releases, advertisements, audiovisual displays and similar material for such meetings. The CONSULTANT shall attend all Pre-Construction and Utility Meetings.

In our Notice-To-Proceed Letter, we need to advise the consultant of the date, time, and place of this meeting and what will be expected from the consultant at that time. ❖

**Maximum Number of Lanes
Provided by Department Funds**

Ben G. Watts

It is the policy of the Department of Transportation to establish the maximum number of lanes on the State Highway System to be provided by Department funds as follows:

- (1) Limited Access facilities will be limited to six lanes. In all urbanized areas with populations greater than 200,000, in addition to these six lanes, the ultimate improvement may include up to four physically separated, exclusive lanes (two in each direction) for through traffic public transit vehicles and other high occupancy vehicles. Where provided, access to and egress from these exclusive lanes will be restricted to public transit and high occupancy vehicles.
- (2) The Turnpike Mainline, from the vicinity of the Palm Beach/Martin County line to Kissimmee, will be limited to four lanes.

- (3) Florida Intrastate Highway System (FIHS) Controlled Access facilities will be a minimum of four and a maximum of six lanes with a restricted median. Interim upgrades to existing two-lane facilities will be considered.
- (4) Other non-FIHS state highways will be limited to six lanes in urbanized areas greater than 50,000 population and four lanes outside such urbanized areas.
- (5) Any needed capacity beyond the maximum number of lanes defined in this policy statement will be provided by other transportation alternatives and strategies. Emphasis on the development of intercity rail service will be placed on the following corridors: Tampa - Orlando; Orlando-Miami; Miami - Tampa; and Orlando - Jacksonville. Additional corridors may be added based on favorable rail related market/ridership assessments.
- (6) Exceptions to this policy will be addressed on a case-by-case basis, with final approval resting with the Secretary of Transportation. ❖

Impact Attenuators Update

Bill Hattaway

We have approved changes to Standard Index 415 to be revised by special provisions effective with the July '96 letting. This index includes details for 'TEMPORARY CONCRETE BARRIER WALL END SHIELDING' using crash cushions such as the REACT 350 and the G-R-E-A-T CZ for inertial Attenuators using modules. This special provision also includes Index No. 434, a new interim standard drawing entitled 'REACT 350', which is referenced in Index No. 415.

The following Pay Item Numbers will be permanently blocked for projects Let to contract July and thereafter:

2102-87	Vehicular Impact Attenuator with Spare Parts Package (GREAT) (Temporary)	EA
102-87	Vehicular Impact Attenuator with Spare Parts Package (GREAT) (Temporary)	EA

The new pay items are:

2102-89-1	Impact Attenuator Vehicular (Temporary) (GREAT CZ)	LO
2102-89-2	Impact Attenuator Vehicular (Temporary) (REACT 350)	LO
2102-89-3	Impact Attenuator Vehicular (Temporary) (INDEX 415 OPTION)	LO
102-89-1	Impact Attenuator Vehicular (Temporary) (GREAT CZ)	LO

102-89-2	Impact Attenuator Vehicular (Temporary) (REACT 350)	LO
102-89-3	Impact Attenuator Vehicular (Temporary) (INDEX 415 OPTION)	LO

Impact Attenuators are to be paid for per each location that they are used. By specification, the GREAT CZ no longer requires a spare parts package. *It is critical that designers update to the new pay items for all projects let in and after July to be compatible with the specifications.* ♦

Temporary Attenuators

Brian Blanchard

There are four potential options for Temporary Barrier Wall Terminations:

(1) Eliminate the need for an attenuator.

Extend the Barrier Wall to the Clear Zone.

- ▼ Most Desirable
- ▼ A 10:1 cross slope (or flatter) is required
- ▼ A desirable flare rate for the barrier wall is 20:1 (a minimum of 10:1 for <45mph & 15:1 for >45mph). At lane drops, the 20:1 flare rate is considered minimum.
- ▼ Pending existing conditions, this option may not be feasible, especially for a short term application or where the barrier wall is going to be relocated several times during a project.

(2) REACT 350 (Index 434)

- ▼ Redirective crash cushion
- ▼ Due to its unique characteristics, the Department is limiting its applications until we have more experience with it.
- ▼ Height=4'0", this can block a driver's view, so care should be taken when considering a location where sight distance may be an issue.
- ▼ On roads posted <45mph, the REACT 350 can be used at any location.
- ▼ On roads posted >45mph, the REACT 350 shall not be used in narrow medians or in gore areas where the post impact trajectory (rebound) of the crash vehicle would enter into the opposing traffic. For example, the use of the REACT 350 is not recommended in high speed median applications, unless the median is extraordinarily wide or if the roadway profiles are bifurcated such that the rebounding vehicle would be stopped prior to entering the opposing traffic lanes.
- ▼ Until more experience is obtained, the REACT 350 is considered to have good outer roadway applications, especially where frequent hits are anticipated.
- ▼ Used with Barrier wall terminations only. Not to be used to protect isolated hazards.

(3) GREAT CZ (Index 439)

- ▼ Redirective Crash Cushion
- ▼ Shields "Narrow" fixed hazards or the ends of other fixed barrier systems.
- ▼ Speeds above 50mph, the 6 bay unit is required

- ▼ Speeds less than 45mph, the 3 bay unit can be used.
- ▼ Works excellent where the approach space is limited and where the terminal is having to be located close to the traffic lane.
- ▼ The maximum width of a hazard that a GREAT CZ can shield is 30", however, for wider barriers, the GREAT can be integrated with guardrail to protect the wider hazards.

(4) Inertial Impact Attenuators

- ▼ Gating type crash cushion (non-redirective & penetratable).
- ▼ Recommended uses include outer roadway applications and median applications with clear zone provided between the back side module and the lane of the opposing traffic.
- ▼ There are 2 arrays: 7 barrel array for <45mph & 9 barrel array for >45mph.
- ▼ Any other array(s) will be site designed with adequate details in the plans and supporting documentation and calculations signed/sealed by and engineer. ♦

Man-Hours for Detour Bridges

Brian Blanchard

On May 28, 1996, the Design and Materials Departments held a meeting discussing the constructability of detour bridges. It has always been the contractor's responsibility to drive detour piles to the minimum penetration required by the specifications, and ensure a pile capacity of 20 tons. Designers are reminded that tall bents or potential soft/hard driving could result in a need to revise standard indexes 300 through 311. A change using steel piles or additional piles per bent may be necessary.

William Knight, District Geotechnical Engineer, will require Geotechnical engineers to provide, by memorandum, minimum soil parameters to the structural engineer for a lateral stability check of the detour bridge. No borings will be provided for a detour bridge. The soil parameters will be based on borings from the adjacent new bridge. Use your engineering judgement in these situations. A low level detour bridge in normal soils will not justify man-hours for a lateral analysis.

In a related matter, soil borings for temporary walls on a detour alignment are required. Walls will require a preliminary design prior to soil exploration. The preliminary design should be sufficient to locate the walls with reasonable accuracy (+ 10 feet). ♦

Interstate Logo Signing

John K. Coates

Concerning questions that arose relative to the Department's responsibility in the area of Interstate Logo Signing, I talked with Roger Eudy, State Logo Administrator. Based on that conversation, it was determined that at present

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where new installations are required, the State will continue to supply and place Mother Boards for logo panels. The private vendor will be responsible for procurement of the individual logo panels. These will be attached to the Mother Board by state forces or a contractor working for the state.

If an existing Mother Board with logo panels is in the way of construction, or if for maintenance reasons a Mother Board has to be replaced, the DOT or the DOT's contractor will be responsible for the relocation or placement of the Mother Board and will also assume responsibility for the care and relocation of the existing logo panels. The replacement of logo panels destroyed by natural disaster would be the responsibility of the applicable vendor.

According to Mr. Eudy, the state's manner of handling logo signing is about to change. This change is scheduled to take place January 1997 and is supposed to defer total responsibility of procurement and maintenance to the business owners. Mr. Eudy advised that written notification would be given to the District prior to the date of official policy change. ♦

Supplemental Agreements

Mac Watters

A new CRS (contract reporting system) has been adopted. The new coding system comprises six (6) fields. The fourth field identifies whether or not the cause was avoidable or unavoidable and who or if there is a responsible party. The fifth field indicates The Status of the Cost Recovery Review Process (Initiated, Not-initiated, Process Closed or Recovery Pursued). The sixth field indicates whether or not the supplement resulted from a claim settlement, extending the project limits or neither.

There are fifty-eight (58) different descriptions that can be used to identify the cause or reason for a supplemental. These 58 descriptions are distributed among nine (9) major categories. The nine (9) major categories are listed as follows:

- 1) Changed Condition - (after letting conditions)-fifteen (15) descriptions to choose from.
- 2) Plan's Modification - twenty-seven (27) descriptions to choose from.
- 3) Specification's Modifications - eight (8) descriptions to choose from.
- 4) Value Engineering Change Proposal (VECP) - one (1) description to choose from.
- 5) Partnering - one (1) description to choose from.
- 6) CEI (Construction-Engineering-Inspection) Action/Inactions three (3) descriptions to choose from.
- 7) Minor Changes in the Plans and/or Specifications - one (1) description to choose from.
- 8) Defective Materials - one (1) description to choose from.
- 9) Contingency Supplemental Agreement - one (1) description to choose from - all work orders must be coded individually.

The use of this new coding system will allow the Department to show a more accurate representation of why a supplemental agreement was generated.

A supplemental agreement caused by a design error or omission will be identified by the new coding system. The new CRS will allow us to determine whether or not to initiate procedure 375-020-010-b (Identifying and Assigning Responsibility for Errors and/or Omissions by Design Consultants). The new CRS will also allow us to determine whether or not to seek recovery for damages by other causes also.

By using CRS we will be able to demonstrate to the public and our state representatives that we are indeed good stewards of our allotted funds. ♦

Earth Work on RRR Projects

Eugene Toole

On Thursday, June 6, 1996, there was a meeting held in the Emergency Management conference room with Garvin McCrary, Eddy Wilson, and myself attending. The meeting was organized by Jimmy Miller and Garvin McCrary to deal with problems concerning the verification of earthwork quantities on RRR projects.

The problem centers around, though payment is shown by lump sum quantity, a quantity of regular excavation is being shown in the summary of earthwork. It was agreed on by the attendees of the meeting that the following plans notes be added to the notes already being placed under the summary of earthwork.

The excavation quantities above are for informational purposes only and are not to be used to substantiate "plan quantities."

**Pay item footnote for Item No. 120-71:
This pay item will be paid for as 1 (LS). ♦**

Mast Arm Policy

Brian Blanchard

Most Designers are familiar with the Department's policy requiring mast arms within 10 miles of the coastline where practical. Often mast arms are not practical due to their required arm lengths. Designers must use the Department's mast arm program which can accommodate arm lengths preferably no greater than 72 feet. The design of mast arms is no longer the contractor's responsibility. Therefore, due to limitations in the Department's program, there will be instances where alternative signal supports must be used. Alternatives include concrete strain poles, overhead steel trusses, etc.

As of 5/21/96, all exceptions to the FDOT Mast Arm Policy must be forwarded in writing to Bill Deyo through the District Design Engineer along with supporting documentation. ♦

Right of Way / Design Surveys

Brian Blanchard

We continually stress the importance of designers keeping their projects on schedule. In our May production meeting, it became obvious that we have a problem with timely surveys.

A reminder to our design consultants: *who you subcontract surveying to, and when it is completed is your responsibility.* The primary reason for this serious scheduling problem is over-working certain survey companies. Design consultants should request a realistic survey schedule that both parties (Engineer of record and surveyor) can agree on. Consider switching survey companies if that company cannot meet your notice-to-proceed date for surveying. ♦

Joint Seal Material for Concrete Pavement (Pay Items 350-74-I and 2350-74-I)

Coordination Task Team

Section 350 of the specifications has been revised to incorporate several frequently used Special Provisions and to update some of the requirements. A copy of this specifications is attached for your review. As part of this revision, payment for sealing joints and cracks was revised as follows:

For new concrete pavement, the cost of all work and materials for sealing joints is included in the cost of the concrete pavement.

For existing concrete pavement, including pavement that has been ground, the cost of all work and materials for sealing joints is paid per foot (or meter). The correct pay items are 350-72(2350-72) or 250-78(2350-78).

Please note that no additional payment is to be made for the joint material. Therefore, pay item 350-74(2350-74) is no longer needed and has been blocked from further use. It should be deleted from all future projects. ♦

Optional Pipe Material Selection

Paul Harkins

Recently, I had the opportunity to present an outline on Optional Pipe Material Selection to District and Consultant personnel. The outline covered such details as the types of material approved for each application, Design Service Life for each application, as well as hydraulic, environmental and structural considerations for each application. In addition to the procedure for selecting materials, examples were presented that depicted how the options could be shown in the plans.

The design and plans preparation were not new. The outline was merely presented to make designers aware of the resources available to them and to reiterate the Department's policy on Optional Materials.

Resource materials introduced were the FDOT

Drainage Manual, the Culvert Service Life Estimator Program, Roadway and Traffic Standard Index Drawings, and examples from the Plans Preparation Manual. The Drainage Culvert Life Estimator Program (Item #P106) is a Windows based program that was written by Central Office, and it is available from FDOT Maps and Publications Sales (904-488-9220) for \$25 plus local sales tax.

The Drainage Manual provided approved materials, Design Service Life, and the design "n" value for each material to be evaluated. The forthcoming change to the Drainage Manual, which would require that a "one size" design based on an "n" value of 0.012 for Storm Drains, was also presented. Environmental concerns were addressed using the Culvert Service Life Estimator Program. The Program shows those materials that meet design criteria with regard to the environmental conditions of the project. Structural consideration was then performed using the information provided in the Culvert Service Life Estimator Program and the Roadway and Traffic Design Standards. Having established the allowable materials, examples from the Plans Preparation Manual were introduced to illustrate how the information should be shown in the plans.

Those of you that have read this far are probably wondering what happened to ALTERNATIVE culvert material. Do not worry, it's still here. The design process is the same as for optional pipe. Plans preparation and payment are different. When doing optional pipe, allowable options are shown for each structure or size of pipe on the OPTIONAL PIPE TABULATION SHEET, and one Pay Item is used for each size. When alternate pipe is shown, each individual alternate combination of alternates must be shown and individual pay items have to be shown for each material.

Presentation of the Optional Pipe Material Selection is available upon request by contacting me, Paul Harkins at SC 277-3261. ♦

Interim Standards

Ronnie Peel

There continues to be some confusion about when and which interim standards are to be included with the plans. When the department quit listing the standard indexes individually then applied to a project on the key sheet and started referencing the Roadway and Traffic Design Standards booklet, it became imperative that we supply the contractor with a complete standards booklet and that includes any interim standards that are created as a supplement to that booklet.

The current interim standards that should be included on an English project that references the 1994 Roadway and Traffic Design Standards booklet are:

- Index No. 0304 Public Sidewalk Curb Ramps (3 sheets)
- 0400 Guardrail (Sheet 1 of 1)
- 0431 GREAT System (Sheet 6 of 6)
- 0434 REACT 350 (Sheet 1 of 1)
- 011865 Single Column Ground Signs (2 sheets)

If end anchorage type melt is to be used in conjunction

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with curb and gutter type F the following detail sheet should be included as a special detail sheet: (English or Metric)

Guardrail (replaces sheet 9 of 15 Index No. 400)

If fill slopes will not allow the use of the melt type end anchorage, then the end anchorage assembly type ET-2000 can be used. It should be included as a special detail sheet: (English or Metric)

ET-2000

The current interim standards that should be included on a metric project that references the 1995 Roadway and Traffic Design Standards booklet are:

- Index No. 0400 Guardrail (Sheet 1 of 1)
- 0410 Concrete Barrier Wall (Sheet 1 of 1)
- 0431 GREAT System (Sheet 6 of 6)
- 0434 REACT 350 (Sheet 1 of 1)

There are four sheets of attachments ('Attachment I' for English plans and 'Attachment B' for Metric plans) that are to be included into the standard specifications package and are not to be included as interim standards or special details. They involve standard index no. 415 and will be included as special provisions in the specifications package. ❖

Design Issues

Brian Blanchard

Index Numbers in Plans: It is acceptable to show Index Numbers in the plans; however, it is our preference to only show Index Numbers where it is necessary to avoid conflicts and contractor claims. For example: Don't show it on the drainage structure sheets and again on the drainage summary sheet.

Railroad Bridge Crossings: Designers should make every effort to span railroad right-of-way. This will avoid acquisition of railroad right-of-way and will ultimately simplify the project. There will be exceptions such as grade restrictions, nearby intersections etc. So review each project on a case by case basis.

Please note that the Plans Preparation Manual revisions, dated July 1996, have increased the vertical clearance requirements for railroad crossings. ❖

DISTRICT THREE DESIGN NEWSLETTER

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