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DISTRICT THREE DESIGN

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

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The End of a Successful Year

Brian Blanchard P.E.,
District Design Engineer

This is our final newsletter for 1996. I believe we have been successful in promoting communication between all involved with plans development. In October, we began producing a monthly supplemental agreement report. This report summaries the major problem areas and our responses/recommendations for the supplemental agreements. These supplemental agreements are not always related to design errors, but the information will help designers understand the issues occurring in construction. Each month's report will be included in the newsletter.

We would like to get your feedback on how we can continue to reduce supplemental agreements, cost errors and time extensions. Please send us your comments or suggestions. This is the perfect time of year to express our appreciation to you. We extend our wishes to you for a happy and prosperous new year.

To communicate the double fine situation to motorists, the following procedures should be followed:

- Limited Access Construction zones will use a 4' x 4' ground mount sign specifying double fines.
- Arterial roadway construction zones will use a 3' x 2'6" size sign specifying double fines.

All current projects, under design and maintenance activities involving a defined work zone should be included in the signing plan.

- Principal routes into the State should be posted near the State line with the larger sign specifying speeding fines doubled in work zones and school zones.
- School zones will not be routinely provided with double fine signs, but individual school zones may be signed, based on District preference.

Double Fines in Work Zones and School Zones

Bill Deyo,
State Highway Engineer

The passing of Senate Bill 892 modified speeding fines contained in Florida Statute 318 and specified that fines would be doubled when violations occur in work zones and school zones. The effective date for this change is October 1, 1996.

All active construction projects should include the new signage as determined by the project engineer. Most contracts should have the pay items necessary to cover this. Adding the signage should be considered overruns where the items do exist. If they are not included, contracts should be supplemented as deemed appropriate by the project engineer.

- Signs on projects should be placed 150 m (500 ft.) beyond the CONSTRUCTION AHEAD sign.

DISTRICT THREE DESIGN

Florida Department of
Transportation

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- When speed reduction does not occur within 3.2 km (2 miles) of the CONSTRUCTION AHEAD sign, an additional sign should be placed 350m (1150 ft.) in advance of the speed reduction sign.

The sign designs have been forwarded to the Sign Shop and orders may be placed for sign fabrication. Any questions on this should be directed to Dave Anderson at SC 278-4284.

Additional Guidance for the Implementation of the Work Zones and School Zones Signs

Bill Deyo,
State Highway Engineer

The signs have been detailed in metric sizes and will be included in the Design Standards as a Special Provision. The inclusion of these signs will be mandatory with the July 1997 letting. The Districts are encouraged to include on earlier projects if possible. District Specifications should receive the update within the next few weeks.

The signs should be installed on all construction projects. The placement should be 150 m (500 ft.) beyond the ROAD WORK AHEAD sign or midway to the next sign. When speed reductions do not occur within 3.2 km (2 miles) of the ROAD WORK AHEAD sign, an additional sign should be placed approximately 350 m (1150 ft.) in advance of the speed reduction sign.

Signs should be installed in school zones as determined by the District. It is recommended the District Traffic Operations Engineer be contacted for this determination.

The Freeway Sign (FTP-56) is 900x900 mm. The pay item number for construction zones is 2102-75-2, and for school zones is 2700-40-2. The Arterial Sign (FTP-57) is 750x900 mm. The pay item number for this sign for construction zones is 2102-75-1, and for school zones is 2700-40-1. The State Line Sign (FTP-58) is a multi-post sign and should be paid for under 2700-41-1. ❖

Corrosion Testing for Cross Drain Culvert Extensions

William F. Knight,
District Geotechnical Engineer

Several years ago a mutual decision was made by the Design Engineer, Gerald Vickery, and this office to not perform corrosion testing for the extension of cross-drains. The reasoning for this decision is as follows:

- The materials beneath the roadway are assumed to be good or replacement would be planned.
- The construction methods used to construct the existing section will not compare with those required for

construction of the extension if the corrosion test results are considered. The differences between the two could be strength of concrete, cover of steel, type of pipe, and types of coatings for steel pipe.

- If a segment of the culvert is going to fail from corrosion the most likely section to fail would be the older one beneath the roadway. Therefore, what is being gained by "corrosion protecting" the extensions out beneath the shoulder of the road? In conclusion, we are in essence wasting the money and time it takes to do corrosion testing for culvert extensions for circumstances discussed above.

There are circumstances where corrosion testing along a project is still needed. One such circumstance is where complete replacement of a culvert is planned. Another, is where all of the drains along a project are being replaced. Corrosion testing is still needed for projects with bridges and on projects where closed drainage systems are being designed. ❖

Supplemental Agreement Report (October)

Brian Blanchard P.E.,
District Design Engineer

Following is the Supplemental Agreement Report for the month of October 1996. This report summarizes the number of supplemental agreements (S.A.) and amount. The % of total S.A.'s for each category indicate there were three problem areas (codes 007, 014 and 700). These problem areas and responses / recommendations are provided to all designers through the design newsletter.

We will provide further feedback to our designers at the Annual District Consultant Group Meeting (Spring 1997).

Below is a description of those areas and our responses:

Description Code: 007 (Resulting from agreements with local government to modify contracts to address local concerns within project limits not in original scope).

- % of Total S.A. = 16.04%
Number of S.A. = 1

Reason: Project 55003-3527 was designed by a consultant under the county's supervision. The "Bid Plans" required a precast box to minimize the road closure. At the county's request, this was later changed to cast-in-place with a longer road closure period. Near the expiration of the closure period for Miccosukee Road it became apparent the work progress would not allow reopening of the road to traffic as scheduled.

Leon County requested temporary asphalt be utilized in order to re-open the road as scheduled. Later, the temporary asphalt would be removed by milling.
Increase = \$156,670.

Response: This S.A. resulted from changes made by the county. The high volume of traffic and inconvenience to motorists detouring around the closure caused this S.A. Steps will be taken in the future to minimize closures through the use of precast structures. Better local government coordination will occur through design partnering.

Description Code: 014 (Other plan's detailed not constructable as shown).

- % of total S.A. = 17.85%
Number of S.A. = 1

Reason : A field review of the existing pavement, subsequent to the letting of this project indicated the pavement had experienced continued deterioration since the survey was performed for pavement design. To correct this condition, an asphalt rubber membrane interlayer was incorporated into the pavement design.
Increase = \$174,411.

Response: The above "changed condition" is not considered a design error. The solution is to shorten the time frame between pavement survey and letting date. We are currently A) using a reduced plans format and B) requesting design variances to eliminate right-of-way thereby shortening design schedules. The other solution is to require inspection of the pavement during the 90% field review. This will allow time for pavement design changes prior to letting. This requirement will be forwarded to all project managers and designers.

Description Code: 700 (Minor Changes in the plans and/or specifications when no new contract pay items are established, no modifications are made to the unit prices of established pay items, the physical limits of the work are not extended, additional contract time is not granted, and the cost of the changes does exceed the original contract amount by more than five (5) percent.)

- %Total S.A. = 63.13%
Number of S.A. = 1

Reason: The contract time was extended due to pile bearing problems and weather days partly due to two hurricanes. These minor changes are not related to design errors. Due to the extension of contract time on this project and utilization of these items (Off-Duty Law Enforcement, Barricades, Sign Arrow Boards, High Intensity Lights, Variable Message Board), this will result in an overrun of contract quantities for these

items. Increase=\$616,736.

Response: An extension of the contract time on this project was unavoidable. Unforeseen soil conditions were unavoidable. No remedial action is required. ❖

Supplemental Agreement Report (November)

Brian Blanchard P.E.
District Design Engineer

Following is the Supplemental Agreement Report for the month of November, 1996. The percent of total supplemental agreements (S.A.) for each category indicates there were two problem areas (codes 002 and 014). The reason for these S.A.'s and our responses will be provided to all designers through the design newsletter.

Below is a description of those areas and our responses:

Description Code: 002 (Subsurface condition excluding utilities which could not reasonably have been anticipated in the design effort.)

- % of total S.A. = 93.79%
Number of S.A. = 2

Supplemental Agreement No. 1

Reason: A field review of the existing roadway revealed several areas experienced deterioration under traffic. The sand clay base material in these areas contained a high moisture content causing the base to fail. The Department determined the unsuitable material will be removed and replaced with 8 inches of type S-I asphalt.
Increase = \$153,413.70

Response: Using the reduced plans format for resurfacing projects, soil surveys are not included in the design scope of work. The cost of this S.A. is reasonable in lieu of a full soils survey and cross sections for every project. This is not a design error. No remedial action is planned.

Supplemental Agreement No. 2

Reason: The Engineer's intent was to remove and replace all existing cross drains having clay or metal pipe. The designer took for granted these pipes were all concrete (six of the twelve had been extended in the past with concrete pipe).

Under the roadway, clay or metal pipe existed. It was agreed to remove and replace these additional cross drains. Side drains were deteriorated, too near to the roadway, too deep or too shallow to achieve proper front slope in the clear zone. Increase=\$50,444

Response: Consultant's scope of services did not require a detailed analysis of cross drains or side drains. In the future, consultants will be asked to provide proposed side drain information such as begin and end stations. Offsets and assumed elevations will be provided in table format measured from the edge or center line of roadway. If ditches are to be relocated, flowline elevations will be provided in the plans.

Description Code: 014 (Changes resulting from an administrative decision)

- %of total S.A. = 5.26%
Number of S.A.=1

Reason: The purpose of this S.A. was to settle all claims related to this contract. The material excavated for pipe construction was used as fill material eliminating the need for the borrow pay item. Fill brought in for use as topsoil did not meet specifications and was rejected. The contractor's cost for final grading was included in the topsoil. The Department agreed to reimburse the contractor for his final grading as a claim settlement. Increase= \$11,439.89

Response: This S.A. was not a design error. The claim settlement resulted from an administrative decision. No further action is required. ❖

Plans Preparation - Roadway Typical Section

F.W. Heiman, P.E.,
Turnpike District
Design Engineer

The typical section view(s) in the roadway plan set shows, among other things, the depth and type of subgrade stabilization. This is often identified as "12 inches of type B stabilization, minimum LBR 40. The Standard Specifications for Road and Bridge Construction, Section 160-7.2 allows an under tolerance of 5.0 when specifying LBR 40. As such, the plans are in conflict with the Standard specifications which is not the intent. Therefore, remove the word "minimum" from the plan call-out describing the subgrade stabilization. ❖

Bridges on 3R Projects

Brian Blanchard P.E.,
District Design Engineer

FHWA is not in favor of excepting out bridges on our 3R projects and expects us to address handrail and attachment issues according to our 3R manual. If we cannot use the Jersey or 'F' shape barrier, then standard index - 401/scheme 1 is the next best option. After that, the continuous guardrail across the bridge can be used if weight is a problem. You will have to do a

structural analysis to show that the additional weight can be accommodated. ❖

Geotechnical Plans Review

Brian Blanchard P.E.,
District Design Engineer

The Materials Department has repeatedly requested evidence of the geotechnical subconsultant's review of the plans, but have not received it. This is necessary to determine whether sufficient geotechnical data is presented and whether their recommendations were interpreted properly. This is critical to the Materials Department's review of plans to prevent casting them in the role of quality control.

In the future, the geotechnical subconsultant should review phase I, II, III and IV plans. The Materials Department will not initiate review of the next submittal unless the geotechnical consultant's comments and the response are included with the plans submitted for review. ❖

Guardrails - 3R

Brian Blanchard P.E.,
District Design Engineer

Guardrail at bridge ends should remain or be provided even if it is less than the distance that is set as a minimum. It should be provided per sheet 3 of 15 of standard index number 400. On roadways, we have set 1.8 meters or 6' as the minimum offset for guardrail. The reason is, AASHTO allows guardrail to be placed at normal shoulder width without requiring an exception. RRR allows shoulders to be a minimum of 6' regardless of design speed. This issue continues to come up. We have decided to use 6 feet as the minimum offset for guardrail without requiring a design exception. Remember, if you meet 3R criteria but not AASHTO, then no action is required (chap. 25 is approved by FHWA as Florida's minimum for 3R-type projects). If you meet AASHTO but not 3R, a variance is required. ❖

Incidental Items Included in Other Pay Items

Freddie Simmons,
State Design Engineer

D-6 has recently published a construction/design newsletter giving information including common plan errors found. One section in the first issue on page 2 stated the continuing problem with including pay for certain items that are felt to be incidental in other pay items. This practice is OK if:

1. It is truly incidental and it is clear that it can not be paid for under another item in the contract. For example,

excavation for a drainage structure is paid for as part of the structure unless you have a separate item for structure excavation. Make sure however you show it, the contractor can be paid only one time. You must differentiate how an item is to be paid for if it is such as this one and could be questioned.

- 2. If there is no established pay items and a note clearly says it is to be included in the item provided...

Note: An item is not considered incidental if it is a major work effort...one example of this....on a project there was to be a crossdrain added underneath a sideroad that was 4 laned plus median. Repair of the roadway which was a major undertaking was included in the cost of the pipe when it actually cost more than the crossdrain itself.

I'm sure this could be debated, but it is best to use pay items when they are available and to include all possible work under such items provided. This avoids confusion and possible claims by the contractor. (The above example should include a pay item note. If not the contractor will expect it in all locations where repairing roadways. See 430.13 specifically 430-13.4) Please share this with your designers and QC personnel. Let's try to do better with this issue. ❖

**DISTRICT THREE DESIGN
NEWS LETTEER**

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