



EXTINGUISH THE TORCH SUMMARY REPORT

**SUNCOAST PARKWAY (S.R. 589) ALL ELECTRONIC TOLLING (AET)
PHASE 6C FROM VAN DYKE ROAD TO U.S. 98
FINANCIAL PROJECT ID NO.: 436619-1-52-01
CONTRACT NO.: E8Q10**

SUMMARY REPORT

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Project Description/Information

Suncoast AET Phase 6C - The improvements under this Contract consist of the conversion of the existing conventional Sunpass/cash toll collection system to an All Electronic Toll (AET) collection system from Van Dyke Road to U.S. 98 for the Mainline tolls (3 locations; Anclote, Spring Hill and Oak Hammock) and the Ramp tolls (8 locations; Van Dyke Rd., S.R. 54, County Line Rd. and S.R. 50). Also, included under this contract is the demolition of each of these existing toll plaza sites with partial demolition of the Anclote, Spring Hill Mainline and Oak Hammock locations. Other activities include widening, milling & resurfacing, drainage, guardrail, signing & pavement markings, lighting and Intelligent Transportation System (ITS).

LESSONS LEARNED

Issue No. 01 - Toll Building Floor Conduit Block-Outs

Issue Detail:

The Toll Facility plans depicted block-outs in the toll building floor slabs for the conduits entering the building for various electrical and communication lines. The Contractor submitted shop drawings adjusting the location of these block-outs due to the location of coil inserts that are used to lift the building. On the initial pouring of the floor slabs for the Ramp toll buildings a few of the conduits did not fall within the block-outs when the building was placed on top of the floor slabs. This was due to the size of some of the block-outs not being very big and also the slight margin of error in the spacing of the multiple conduits within the individual block-outs. Subsequently, the Contractor had to submit a repair procedure to core the block-outs down to the conduits and extend them into the building.

Resolution:

Prior to pouring the floor slabs for the Mainline toll buildings, a field meeting was held to discuss the placement of the conduits within the block-outs. Sketches were developed for each floor slab showing the location of the conduits within each block-out in the north/south & east/west directions. On the smaller block-outs, the Contractor centered the conduits to allow additional spacing to the edge of the block-out. This allowed additional tolerance when setting the buildings.

Lesson Learned:

Due to the small margin of error provided in the layout of the conduits within the toll building floor block-outs, additional layout and location details are needed to ensure the proper placement of the conduits. Initial field meetings to go over the layout and placement of the conduits within the block-outs increased the accuracy of the installation and reduced the adjustments required when setting the building on the floor slab.

Issue No. 02 – Mainline Toll Gantry Inside Shoulder Asphalt Friction Course Transition from FC-5 to FC-12.5

Issue Detail:

The plan details for the inside shoulder construction depicts new construction from the existing 4 Ft. wide shoulder to the 12 Ft. wide shoulder within the 100 Ft. toll gantry section. The transition is 400 Ft. long on either side of the 100 Ft. gantry sections, northbound and southbound, at each of the three mainline gantry toll sites. The mainline shoulder friction course is the standard 8" FC-5 overlap on either side of the 100 Ft. gantry section and full FC-12.5 shoulder friction within the 100 Ft. section. While constructing the new shoulders at each of the mainline toll locations, the Contractor constructed the entire 900 Ft. length of the shoulders without adjusting for the 3/4" FC-5 overlap on either side of the toll gantry. Therefore, when the asphalt was constructed the FC-5 shoulder areas were not graded deep enough to allow for the 3/4" overlap. The shoulder construction on either side off the gantry section shoulder should have been graded $\frac{3}{4}$ " deeper and then transitioned up to the FC-12.5 100 Ft. toll section.

Resolution:

Since the inside shoulder slopes away from the mainline inside through lane and water would not be trapped, it was decided with Production to place the FC-5 friction course flush with the shoulder structural course since it was not graded for the 8" overlap.

Lesson Learned:

Due to the change in the types of friction course used for the 100 Ft. toll gantry roadway section, there should have been a transition area shown in the plans or a discussion with the Contract prior to construction to allow for the 8" FC-5 overlap. The transition length would have been minor due to the small elevation change, so it would not have been a construction issue. This could have been a major issue if the roadway sloped towards the inside shoulder and the water would have been trapped as to removed and replaced to provide for the 8" overlap and proper drainage.

Issue No. 03 – ITS and Toll Facilities Separate Electric Power Service Transformers**Issue Detail:**

The Intelligent Transportation Systems (ITS) plans for this project show splicing the new power service to the existing conductors feeding the existing ITS system at the northbound Van Dyke Road, S.R. 54, County Line Road and S.R. 50 ramps. The power feed to the existing system is shown to be removed once the new system is activated. In order to provide power to the new ITS system, the power service needs to tied into the Toll building transformer or a new transformer. Per Section 26 27 13, Part 3.02 C of the Technical Special Provisions for this project, "Utility transformers serving toll buildings shall be dedicated to the toll buildings and shall not serve any other loads." Therefore, a new transformer was provided by the utility companies to provide power to the new ITS system at each of the four ramps.

Resolution:

A Work Oder was written to the Contractor to compensate Tampa Electric Company, Duke Energy and Withlacoochee River Electric Company for providing an electrical service feed for the proposed Intelligent Transportation System (ITS) for the northbound Van Dyke Road, S.R. 54, County Line Road and S.R. 50 ramp toll building sites.

Lesson Learned:

Need to make sure that the ITS plans on future projects include the additional transformer in accordance with the requirements of the Technical Special Provisions. On this project it was not an issue, because the new ITS power service did not have to be operational for the implementation of the new tolling system. Tolls was able to provide separate feeds to the new and existing toll facilities so that both could be functional separately. TECO initially refused to provide the additional transformer, because they were concerned they would be responsible for maintaining an unnecessary facility for 30+ years just due to preference from the customer. They requested electrical and code documentation. This was provided by FTE Tolls and subsequently the additional transformer was installed by TECO.

Issue No. 04 – Toll Site Electric Service to New and Existing Toll Facilities

Issue Detail:

Utility General Note No. 5 on Utility Adjustment Plan Sheet No. 282 states that all necessary construction costs for new service connections shall be the responsibility of the Contractor. Withlacoochee River Electric Coop. (WREC) provided De Moya with an invoice for the cost of installing electric services to the two new toll buildings and removing the services to the existing toll buildings on the S.R. 50 ramps as shown in the contract plans. However, the plans did not specify both services being active at the same time. In order to provide service to the new and the existing buildings, WREC had to install an additional directional bore to provide a two-way feed. The two-way feed was added at the S.R. 50 ramps to provide power to both locations at the same time. This eliminated the need to run the existing toll facilities off the generators, until such time the new toll facilities were activated and functional. FTE Tolls did not want the existing toll facilities running off the generators for any extended period of time in case there were any mechanical problems with the generators that may shut off the power.

Resolution:

A Work Order was written to the Contractor to compensate Withlacoochee River Electric Coop. (WREC) to provide a two-way electrical service feed to the proposed and existing S.R. 50 ramp toll buildings instead of the one-way feed to the proposed toll buildings. This allowed electric service to both buildings until the new toll facilities were activated and functional.

Lesson Learned:

At the time of design, the electric utility companies need to have a clear understanding of the scope of service being provided, so that the cost estimate provided includes all the items of work necessary for a complete and functional system.

Issue No. 05 – Removal of Existing ORT Toll Structures

Issue Detail:

The roadway plans showed the removal of the ORT gantry structures at the existing Anclote and Spring Hill mainline tolling points. The structures northbound at Oak Hammock were not identified to be removed. This work was not shown in the demolition plans, and the method for compensation for this work was not clearly identified. In the demolition plans, there were several notes indicating what was included in the 110 pay items. In total, there were 10 ORT gantry structures to be removed (the 2 gantry structures southbound at Oak Hammock were part of the tolls test track and were removed by the tolls contractor).

Resolution:

A cost per structure/gantry was negotiated with the contractor and added to the clearing and grubbing pay item. The total cost for the additional work to remove 10 ORT gantry structures was **\$97,908.25**.

Lesson Learned:

It is recommended that all work is clearly identified, including how the contractor will be compensated for the work.

Other items to consider

Performing ramp reconstruction and demolition during off-peak continuous weekend closures

Issue Detail:

The contractor requested, and it was agreed, that the ramp reconstruction be performed utilizing weekend ramp closures, instead of weeks of multiple phases of construction for each ramp. This method was also used for the demolition of the existing plaza and reconstruction of the ramp within the demolition area. This saved time and minimized the number of ramp closures needed over the duration of the project.

Lesson Learned:

Where feasible, taking into the account of the length of the detour route and the constraints due to traffic counts, it is recommended that this option be considered. All AET projects along the Veterans also utilized this MOT plan for the reconstruction of the ramps.

AET Implementation in phases for projects of excessive length

Issue Detail:

The project consisted of 8 ramp and 3 mainline conversions that spanned the entire Suncoast Parkway (MM 14 to MM 55). Multiple road closures were necessary at the mainline locations to facilitate overhead sign removal/replacement. The amount of work to be done in one overnight operation was not reasonable. The contractor, and his subs, did not have adequate resources to perform the work. It was determined that the project would be broken up into two phases for implementation.

The southern section, MM 14 to MM 27, included four ramp and one mainline locations. One detour was necessary for the overhead sign work at Anclote during the night of implementation. The contractor was still unable to complete all the signing removals/replacements per the plans. It was agreed that this work could be completed within two weeks following implementation.

The northern section, MM 31 to MM 55, included four ramp and two mainline locations. Two detours were necessary for the overhead work at Spring Hill and Oak Hammock. Because of this and the extensive detours, it was agreed that the work for this implementation would be done on two consecutive nights for the critical removals, and the remaining removals and striping would be completed within two weeks following implementation.

Lesson Learned:

It is recommended for lengthy corridor conversion, that implementation be broken into manageable phases.