



October 1, 2019

# Extinguish the Torch Meeting Veterans Expressway (SR 589) Improvements for Bridge Approaches FIN 442631-1-52-01 Contract E8R64

# Jacobs CEI Team

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# **Design Firm**

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(813) 286-1711

Paul Schmid, PE – Engineer of Record

### 1. Project Description & Limits

This project consisted of improvements to the Veterans Expressway (SR 589) from south of Memorial Highway (MP 1.043) to north of Gardner Road (MP 6.774). The work included improvements to 35 bridge approach and departure slabs, adjacent roadway pavement, pavement markings, and express lane markers.

### 2. Contract Details - See Page 3

### 3. Lessons Learned

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c.	Maintenance of Traffic for Hydrodemolition Operation	Page 6
d.	Mechanical Grooving	Page 7
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# 4. Summary of Issues

- a. Revisions 1 and 2: \$97,924.99 See Lessons Learned Items B and C above.
- b. Existing bridge header repair: \$55,503.41
- c. Deletion of Mechanical grooving: -\$10,346.42 See Lesson Learned D above.
- d. Concrete Overruns: \$148,923.72
- e. Asphalt Overruns: \$122,550.68 Thin pavement resulting in exposed base.

### 5. Outstanding Work After Final Acceptance – None

### **Attachments**

1.	Lessons Learned	Pages 4-8
2.	Items That Went Well	Page 9
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**Entry Date** Sep 27, 2019

Issue Title Missing MOT and Striping Pay Items

Project E8R64 C9Q36 442631-1-52-01 Veterans Expressway Improvements Bridge Approaches

Ashley Quaid, PE Senior Project Engineer 813-404-7816 Main Contact:

ashley.quaid@jacobs.com

Discipline Design

Roadway Spec

CSI Spec.

Design Index

Key Word(s) Pay Items

# Issue Detail:

Several MOT and striping pay items had to be added to the project including an "Express" pavement message.

### Resolution:

The necessary pay items were added to the contract via Supplemental Agreements and/or paid for by Work Orders.

### Lesson Learned:

Design should QC plan callouts and review previous as-builts/field conditions to ensure all necessary pay items are included in the Contract prior to letting.





Entry Date Sep 30, 2019

Issue Title Duration of Hydrodemolition

Project E8R64 C9Q36 442631-1-52-01 Veterans Expressway Improvements Bridge Approaches

Main Contact:

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Discipline

Roadway Spec DIV II SEC 110 CLEARING CONSTRUCTION SITE

CSI Spec.

Design Index

Key Word(s) Hydrodemolition

### Issue Detail:

The plans called for hydrodemolition and concrete replacement in all lanes of an approach slab to occur over a single weekend. Core information used to determine rebar depth was not accurate and rebar depth was greater than anticipated leading to a much longer hydrodemolition duration. The duration of the hydrodemolition made it impossible to complete this work effort in the specified lane closure restrictions while meeting concrete strength requirements prior to opening the lanes to traffic.

### Resolution:

The area of work was decreased to a manageable size of a shoulder, single lane, and partial lane. In addition, it became more cost effective and efficient to perform full slab replacement.

### Lesson Learned:

FTE should consider full slab replacement on future projects or have provisions to divert traffic and/or leave MOT in place for an extended period of time. For future hydrodemolition, more cores should be taken to accurately gauge rebar depth especially if there are portions of slabs that were built at different times. An additional recommendation is to allow for use of high early concrete.







Entry Date Sep 30, 2019

Issue Title Maintenance of traffic for hydrodemolition operation

Project E8R64 C9Q36 442631-1-52-01 Veterans Expressway Improvements Bridge Approaches

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Main Contact:

Discipline Design

DIV II SEC 100-105 GENERAL CONSTRUCTION OPERATIONS Roadway Spec

CSI Spec.

Design Index

Key Word(s) Maintenance of traffic

### Issue Detail:

The plans called for hydrodemolition of an approach slab shoulder and two lanes to occur with live traffic directly adjacent to the hydrodemolition operation. This posed a safety concern for projectiles to hit vehicles and the safety of the workers.

### Resolution:

The hydrodemolition work area was decreased in width to provide space for a protection shield and safety of the workers replacing the slab during pouring of concrete. In addition, approval was given to close a third lane in order to pour back concrete.

### Lesson Learned:

FTE should specify MOT which takes into account the necessary buffer space (recommended minimum 5') for the hydrodemolition equipment and means and methods for screeding and finishing concrete as called for in the Specifications.

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Entry Date Oct 19, 2019

Issue Title Mechanical Grooving

Project E8R64 C9Q36 442631-1-52-01 Veterans Expressway Improvements Bridge Approaches

Main Contact:

Discipline Design

Roadway Spec DIV II SEC 400-471 STRUCTURES

CSI Spec.

Design Index

Key Word(s) Grooving

### Issue Detail:

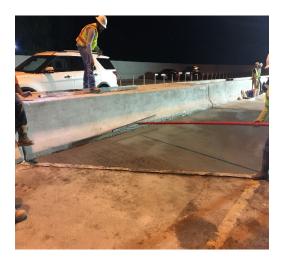
The plans called for hydrodemolition and concrete replacement in all lanes of an approach slab to occur over a single weekend. In addition, the plans called for a Class 4 finish and grooving to the proposed approach slab concrete. Due to constraints of lane closure restrictions, mechanical grooving could not be performed prior to opening the travel lanes.

### Resolution:

A specification change was processed to permit manual tining, Manual tining was performed at the depth called for in the Standard Specifications matching the random spacing of the existing adjacent bridge deck prior to opening to traffic.

### Lesson Learned:

A technical special provision should be included in the contract to provide details for grooving.







Entry Date	Oct 19, 2019	į

Issue Title Number of lanes open for MOT due to Express Lane

Project E8R64 C9Q36 442631-1-52-01 Veterans Expressway Improvements Bridge Approaches

Ashley Quaid, PE

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Discipline Design

DIV II SEC 100-105 GENERAL CONSTRUCTION OPERATIONS Roadway Spec

CSI Spec.

Design Index

Key Word(s) MOT due to Express Lane

### Issue Detail:

Per lane closure restrictions, the intent of the plans was to have two lanes open at all times during construction operations. However, the project corridor had an inside express lane. When closures were necessary for the outside lanes, the traveling public experienced delays due to truly only one lane being open if the express lane was not entered/ utilized several miles away from the work zone.

### Resolution:

### Lesson Learned:

Take extra measures to warn the raveling public to expect delays.

# ITEMS THAT WENT WELL

- The plans, specifications, and original contract duration were based on what was believed to be aggressive time frame with the Contractor possibly needing to use multiple crews to complete the work. Through careful planning and scheduling, the Contractor utilized the longer lane closures over the weekend with a 4-day work schedule (Friday-Monday) and was able to finish before expiration of original contract time with only one crew.
- In order to reach the proposed finished grade, the contractor achieved precise dimensions using stringline for finished grade control while paving the approaches and departures.

