



# RTI Semi-Annual Progress Report

Fiscal Year 2006

Date of This Report: August 1, 2006 Project Number: 9-1526 / TPF-5(116) RMC: 5

Period Covered by This Report: March 1 – August 31, 2006

Project Title: Investigation of the Fatigue Life of Steel Base Plate to Pole Connections for Traffic Structures

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## 1. Requested Changes for Possible Project Modification

Project Personnel: No changes.

Work Plan: No changes.

Deliverables Table: No changes.

Project Termination: No changes.

Project Budget:

An increase in project funding is required to pay for the increased cost of the specimens and the salaries of the researchers. A target budget increase for FY2007 could be \$42,333 and \$20,684 for FY2008.

## 2. Equipment

None.

## 3. Progress to Date, by Task

### 1) Literature Review

The literature review is continuing.

## 2) Development of Test Plan

The initial test plan was developed at a project meeting on November 11. The initial test matrix consists of:

### Test Specimen Matrix for Mast Arm

10" Diameter- 7 ga. Round Section Socketed Connection

Base Plate Size	# of Specimens			
	External Collar	No Collar	Calif. Weld Spec	Full Penet. Weld (WY Spec.)
1 3/4"	2	2		
2"	2	2	2	2
3"		2		

Total Specimens: 14

### Test Specimen Matrix for High Mast Pole

24" Diameter- 5/16" Round Section

Base Plate Size	Weld Type	# of Specimens	
		8 Bolts	12 Bolts
1 1/2"	Fillet	2	2
2"	Fillet	2	2
	Full Penet.	2 (WY)	
2" (with Stools)	Fillet	2	
3"	Fillet	2	
	Full Penet.		2 (TX)

Total Specimens: 16

The specimen costs came in more than twice the estimated cost. A modest funding increase of approximately \$19,000 was used to cover the cost of the specimens. The specimens will be shipped in August with 10 mast arm specimens due in the shop in the first week of August.

### **3) Fatigue Testing**

No fatigue tests have started since the specimens have not arrived. The test fixtures have all been fabricated and all the fixtures for the 10 in. mast arm specimens are in place. The larger test setup for the high mast pole specimens is being completed. Both setups should be completed when the specimens arrive. The testing should be underway before the end of the August and continue on for the rest of the project. Testing of these initial test specimens should be completed by the end of this calendar year.

### **4) Analytical Studies**

The analytical studies have been started. The project staff have started familiarizing themselves with the previous work and the use of the available finite element programs. The work on this task will be in the background until the testing of the specimens is underway and should be up to full steam by the end of the fall semester.

### **5) Summary of Results**

None at this time.

## **4. Progress on Development of "Product" Deliverables**

No products required for this project.

## **5. Meetings/Conferences**

None

## **6. Possible Candidates for Formal Presentations at the Upcoming RMC Meeting**

Not at this time.

## **7. Miscellaneous**

N/A

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