

Texas Transportation Pooled Fund Project – Progress Report

Project Title: Investigation of the Fatigue Life of Steel Base Plate to Pole Connections for Traffic Structures	
Project Number: TPF-5(116) / 9-1526	Project Manager – Name & Contact Info: Scott Walton, Bridge Division, TxDOT swalton@dot.state.tx.us
Term of Contract: 11/4/05 – 8/31/08	
Reporting Period: 3/1/06 – 5/31/06	
Work Performed and Progress:	
<u>Task 1 Literature Review</u>	
<p>The literature survey has continued. The work done by Connor and his colleagues was received and the influence of bolt tightness upon the force distribution was noted.</p>	
<u>Task 2 Development of Test Plan</u>	
<p>Based on the test matrix developed at the kick off panel meeting a set of drawing for the initial test matrix was developed. The initial test matrix includes fourteen 10 inch diameter signal mast arm specimens and sixteen 24 inch diameter high mast specimens. The variables included in this initial test matrix include full penetration versus fillet welded connections, a stool type connection for the high mast pole, external collar, and base plate thickness. Two replicate specimens of each type will be tested and all specimens will be hot dipped galvanized after testing. The drawings were sent to Valmont Industries for a price quote. After working out some of the fabrication details, a price was received which was more than double what had been budgeted. Additional funding was provided by TxDOT to cover the shortfall and the specimens were ordered. They will be shipped in August with the 10 inch mast arm specimens shipping first on August 4.</p>	
<u>Task 3 Fatigue Testing</u>	
<p>The two test setups have been constructed and are undergoing final alignment. All the test fixtures have been fabricated, including the large loading fixture for the high mast specimens. The plan is to have both test setups operating at the same time.</p>	
<u>Task 4 Analytical Studies</u>	
<p>Work on the development of finite element models of the specimens has just been started. This work will be put on hold until after the fatigue tests have been started.</p>	
<u>Task 5 Summary of Results</u>	
<p>This task is not scheduled to begin until March 2008.</p>	
Expenditures Life-to-date: \$42,569.02	
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