**TRANSPORTATION POOLED FUND PROGRAM**

**QUARTERLY PROGRESS REPORT**

Lead Agency: **----** **Utah Department of Transportation ----**

**INSTRUCTIONS:**

*Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.*

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| **Transportation Pooled Fund Program Project #**  *(TPF-5(257)* | | **Transportation Pooled Fund Program - Report Period:**  \_ Quarter 1 (January 1 – March 31)  \_ Quarter 2 (April 1 – June 30)  \_X Quarter 3 (July 1 – September 30)  \_Quarter 4 (October 1 – December 31) | |
| Project Title: Evaluation of Spliced Sleeve Connections for Precast RC Bridge Piers | | | |
| **Name of Project Manager(s):**  **Russ Scovil** | **Phone Number:**  **801.870.4665** | | **E-Mail**  Rgscovil@utah.gov |
| **Lead Agency Project ID:**  **5H06604H, UT11.502** | **Other Project ID (i.e., contract #):**  **12-8775** | | **Project Start Date:**  **3/23/2012** |
| **Original Project End Date:**  **3/30/2013** | **Current Project End Date:**  **10/30/2013** | | **Number of Extensions:**  **1** |

Project schedule status:

\_ On schedule X\_ On revised schedule \_ Ahead of schedule \_ Behind schedule

Overall Project Statistics:

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| **Total Project Budget** | **Total Cost to Date for Project** | **Percentage of Work**  **Completed to Date** |
| **$175,848.00** | **$37,800.00** | **21%** |

***Quarterly*** Project Statistics:

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| **Total Project Expenses**  **and Percentage This Quarter** | **Total Amount of Funds**  **Expended This Quarter** | **Total Percentage of**  **Time Used to Date** |
| $20,216.00, 11% | $20,216.00 | 35% |

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| **Project Description**:  Sleeved connections are being considered as one of the methods for connecting precast concrete bridge elements. The purpose of this project is to perform experiments to evaluate the performance of a sleeved connection between a reinforced concrete square bridge column and a bridge footing (Type I) or a reinforced concrete square bridge column and a bridge bent cap (Type II) in a seismic area. This information is very valuable for construction of bridges using Accelerated Bridge Construction in areas with high seismic activity. |

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| **Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):**  This quarter the project was focused on building the precast concrete column and footing for the NMB splice connection (Type I), as well as the precast concrete column and bent cap for the Lenton Interlock connection (Type II). The steel has been delivered for six specimens (two NMB specimens and two Lenton Interlock specimens as well as two control specimens). The plan is to carry out these six tests and depending on the results, construct and test two more specimens. The steel cages for the NMB splice connection and footing have been built. In addition, strain gauge instrumentation for the NMB splice connection specimen has been applied, as well as threaded rods for the displacement transducers. In addition the steel cages for the Lenton Interlock and bent cap have also been built.  Figure 1 shows a picture of the column with the NMB splice sleeve connectors, and Figure 2 shows the corresponding footing. We have built the column for the Lenton Interlock connection, as shown in Figure 3. Figure 4 shows the reinforcement for the bent cap. Two specimens have been grouted as shown in Figure 5. The first (foreground) is the footing to column connection with six NMB splice sleeve connectors and the second (background) is the column to bent cap connection with six Lenton Interlock connectors.  In addition, the actuator for applying the axial load in the columns has been serviced and calibrated.  Moreover, the data acquisition system has been upgraded to handle 40 electrical strain gauges and 24 displacement transducers.    Figure 1. Column reinforcement with six NMB splice sleeve connectors.    Figure 2. Footing reinforcement for six NMB splice sleeve connectors.    Figure 3. Column reinforcement with six Lenton Interlock connectors.    Figure 4. Bent cap reinforcement for six Lenton Interlock connectors.    Figure 5. Footing to column (NMB splice) and column to bent cap (Lenton Interlock) specimens. |
| **Anticipated work next quarter**:  It is anticipated that in Quarter 3, the second set of precast concrete columns, footings, and cap beams will be built. We are expecting that the first two tests will be carried out during November 2012. |

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| **Significant Results:**  There are no results to report at the present time. |
| **Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that**  **might affect the completion of the project within the time, scope and fiscal constraints set forth in the**  **agreement, along with recommended solutions to those problems).**  **None.** |

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| **Potential Implementation:**  It is anticipated the Utah DOT will implement the findings of this research once it is completed in Accelerated  Bridge Construction (ABC). It is likely that the New York State Department of Transportation and the Texas Department of Transportation will be able to implement them too. |