

**NEW ENGLAND TRANSPORTATION CONSORTIUM  
QUARTERLY PROJECT PROGRESS REPORT**

**A. PROJECT NUMBER AND TITLE:**

NETC 13-1: Development of High Early-Strength Concrete for Accelerated Bridge Construction Closure Pour Connections

**B. PRINCIPAL INVESTIGATOR(s) & UNIVERSITY(s):**

Sergio F. Breña (PI) – University of Massachusetts Amherst  
Scott A. Civjan (Co-PI) – University of Massachusetts Amherst

**C. WEB SITE ADDRESS (If one exists):**

**D. START DATE (Per NETC Agreement): September 01, 2014**

**E. END DATE (Per NETC Agreement): April 02, 2016**

**F. ANTICIPATED COMPLETION DATE: August 31, 2016**

A no cost extension is expected to be requested to accommodate the current coordination contract that NETC has with the University of Vermont. The proposed project period was for 24 months.

**G. PROJECT OBJECTIVES:**

To develop and validate concrete mixtures capable of developing high early strength without detrimentally affecting their long-term durability. The mixtures are for use in projects using accelerated bridge construction methods.

**H. REPORT PERIOD: October 01, 2014 –December 31, 2014**

**I. ACCOMPLISHMENTS THIS PERIOD:**

- Executed a kickoff meeting with members of the NETC Project Technical Committee.
- Compiled and analyzed responses to the survey that was sent to New England State DOTs and precast/prestressed producer members of the PCI Northeast Bridge Technical Committee, including previously used high-early strength concrete mix designs and specifications.
- Began to prepare concrete mix design specifications based on the literature review and feedback from surveys.

**J. PROBLEMS ENCOUNTERED (If any):**

No problems encountered to date.

**K. TECHNOLOGY TRANSFER ACTIVITIES:**

No technology transfer activities were performed.

**L. STATUS BY TASK:**

*Task 1: Literature Search – 80% complete*

*Task 2: Develop Mixture Design Specification – 30% complete*

*Task 3: Develop Mix Design – Work for this task has not started (0%)*

*Task 4: Test Mixture – Work for this task has not started (0%)*

**M. PERCENT COMPLETION OF TOTAL PROJECT: 15 %**

**N. ACTIVITIES PLANNED FOR NEXT QUARTER:**

- Prepare a written summary of the literature review including main findings of relevant research reports, technical papers and survey responses.
- Begin testing preliminary concrete mix designs and comparing the test results with the four initial short-term performance criteria (set time, air content, slump and compressive strength).
- Adjust existing concrete mix design specifications based on preliminary test results and feedback from the NETC Project Technical Committee.

**O. FINANCIAL STATUS:**

**As of:** December, 31, 2014

**Total Project Budget:** \$ 174,923

**Total Expenditures:** \$ 26,561

**Note: This report should not require more than 2-3 pages & should be e-mailed to the NETC Coordinator so as to arrive no later than three (3) working days after the end of each calendar quarter.**