

Montana Department of Transportation  
Research Programs  
June 2007

**EXPERIMENTAL PROJECT WORK PLAN**

**EVALUATION OF HIGH-PERFORMANCE CONCRETE (HPC) BRIDGE DECK**

**Location:** Interstate 15, Jefferson, Lewis & Clark Counties; Milepost 191.

**Project Name:** South Helena Interchange

**Project Number:** NH-STPU-CM-MT-STPE 15-4(108)191

**Type of Project:** Experimental trial of high-performance concrete (HPC) for placement in interstate bridge deck

**Principal Investigator:** Craig Abernathy, Experimental Project Manager

**Objective**

The primary objective of this project is to demonstrate and document the constructability and advantages of high-performance concrete (HPC) in bridge deck construction. Premature deterioration of concrete bridges and new advances in concrete technology make high performance concrete (HPC) an attractive option for new bridges. Recent MDT sponsored research has developed usable specifications for this area bridge. This research has nominated the use of the HPC spec in South Helena Interchange deck construction.

**Experimental Design**

Perform a pre-pour test at the Lincoln maintenance workshop (Lincoln Rd. and North Montana) for the purpose familiarizing the contractor and work crew the working characteristics of the placement of HPC using a conventional pumping unit. The same crew will be used for the test pour and bridge deck slab placement. Research will monitor the construction of the deck and report on ongoing performance.

### **Evaluation Procedures**

During the bridge construction of the test pour and deck pour the researcher will be on-site during all critical stages. The construction process will be documented and a draft guide for use of HPC in bridges prepared with input from Bridge and Construction staff. A crack map will be created on an annual basis.

### **Estimated Cost**

Pending.

### **Evaluation Schedule**

The data collection and analysis reporting of this effort will be a combined effort of the MDT Bridge/Construction and Research staff. An initial construction report will be published. An interim six-month report will be performed on initial results (based on visual distress). Research will monitor performance for a period of five years annually, with every year up to \*ten years (informally). This is in accordance with the Department's 'Experimental Project Procedures'. Delivery of a construction/installation report, interim, annual or semi-annual reports is required as well as a final project report, (responsibility of Research).

2007:	Installation (June-August)	Research Participation and Documentation of test pour and deck placement
2007:	Interim	Status Report on completion of deck construction
2007-2011:	Annual Evaluation	Annual Reports
2012:	Final Evaluation	Final Report
*2012-2016:	Annual Evaluation	Annual Reports (Informal)