



QUARTERLY PROGRESS REPORT

Project Title:	A Proposal for the Development of High Performances Concrete for Transportation Structures in New Jersey		
RFP NUMBER: N/A	NJDOT RESEARCH PROJECT MANAGER: Tony Chmiel		
TASK ORDER NUMBER/Study Number: 62 / 4-23806	PRINCIPAL INVESTIGATOR: Hani Nassif		
Study Start Date: 04/30/2001 Study End Date: 01/01/2003	Period Covered: 2 nd Quarter 2002		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Selection of Final Mixes	5%	5%	95%	4.75%
Collection of Data and Preparation of Samples During the Field Samples	20%	20%	75%	15%
Evaluation of Field Samples	10%	30%	60%	6%
Creep and Shrinkage Set-up and Testing	50%	20%	70%	35%
Preparation of Specifications for HPC	10%	5%	10%	1%
Final Report	5%	10%	20%	1%
TOTAL	100%			62.75%

I. Progress this quarter by task:

- A. Five mixes (three 6000 psi and two 8000 psi mixes) are tested for Creep, Shrinkage, Rapid Chloride Permeability, Freeze-Thaw, Strength, Elastic Modulus, and Scaling.
 - I. Shrinkage
 - Prepared specimens for mix designs 6000 psi & 8000 psi
 - Tested Shrinkage specimens for 1, 3, 7, 14, and 28 days.
 - II) Freeze & Thaw
 - Prepared specimens for mix designs 6000 psi & 8000 psi
 - Specimens are continuously being tested every 5 days.
 - III) Rapid Chloride Permeability
 - Prepared specimens for mix design 6000 psi & 8000 psi.
 - Tested 8I, 6I & 6II at 28 days of curing.
 - IV) Creep
 - Prepared specimens for mix design 6000 psi (6I, 6II & 6III) & 8000 psi (8I & 8II).
 - Loaded 8I, 8II & 6I specimens.
- B. The creep chamber is now operating and five rigs are loaded with cylinder specimens. The data collection is programmed using a data logger and a computer during the early age loading (hourly for the first week).
- C. The computer and data logger installed outside the creep and shrinkage chamber will be maintained in a control box to protect collected data from damage, dust, and vandalism. Data collection schemes are designed to ensure redundancy by using three sources of data collection: 1) manual gage reading, 2) vibrating wire strain gages, and 3) foil strain gages.
- D. Tests on concrete with different size aggregates are underway
- E. Collected Field Mixes from American Concrete Batching Plant in Newark, NJ, for a HPC mix containing Silica Fume and Slag Cement. All eight tests are performed on the specimens.



2. Proposed activities for next quarter by task

A. Continue the testing Tasks as follows:

I. Mix concrete for design strength 10000 psi.

II. Shrinkage

-Test the available samples at a age of 56 & 90 days.

III. Freeze & Thaw

-Test the samples placed in freeze & thaw apparatus every 5 days.

IV. Rapid Chloride Permeability

-Test samples of 6-III at an age of 28 days and samples of 6I, 6II, 6III & 8I at an age of 56 & 90 days.

B. Check Autogenous (immediate) shrinkage for each mix in addition to the drying shrinkage.

C. Arrange for field mixing day with Clayton Concrete batching plant.

3. List of deliverables provided in this quarter by task (product date)

N/A

4. Progress on Implementation and Training Activities

N/A

5. Problems/Proposed Solutions

N/A

6. Budget Summary*

Total Project Budget (# of years)	1.5 Years	\$384,320.00
Total Project Expenditure to date		\$222,833
% of Total Project Budget Expended		58%
Task Order Number/Study Number:		62 / 4-23806
Current Task Order Budget (# of years)	Year 1.5	\$384,320.00
Actual Expenditure to date against current task order		\$222,833
% of current task order budget expended		58%

* These are approximate expended amounts for the project; these estimates are for reference only and should not be used for official accounting purposes. For a more accurate project accounting please review the quarterly invoice for this project.