



## QUARTERLY PROGRESS REPORT

Project Title:	Finite Element Analysis of Bridge Approach and Transition Slab		
RFP NUMBER: N/A	NJDOT RESEARCH PROJECT MANAGER: Robert Sauber		
TASK ORDER NUMBER/Study Number: 88-03 / 4-23933	PRINCIPAL INVESTIGATOR: Hani Nassif		
Period Starting: 6/1/2000 - 12/31/2001 (Start-End Date of Study)	Period Ending: 6/30/2001		

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature Search	10%	30%	80%	8%
Site Selection, field observation, and parameter designation	30%	30%	0%	9%
Finite element model verification and development	25%	10%	90%	22.5%
Parametric Study	15%	30%	80%	12%
Progress Reports	15%	20%	60%	9%
Final Report	5%	0%	0%	0%
TOTAL	100%			60.5%

### 1. Progress this quarter by task:

- The parametric analysis underway.
- Few bridge sites were visited and cracks in approach slabs were observed. However, more bridge with cracked approach slabs are needed to correlate the behavior of the model versus actual cracking pattern.
- Modified the model to use ABAQUS/Explicit to visualize the cracked elements upon the movement of the truck.
- The effect of design parameters such as  $f'_c$ ,  $A_s$ , Depth,  $f_y$ , etc. are studied. It is observed that increasing the thickness of the slab will enhance the cracking performance of the approach slab. However, the enhancement can be achieved further by changing the settlement conditions and placing boundary conditions.

### 2. Proposed activities for next quarter by task

- Observe more bridges especially those sites that NJDOT has detailed information regarding the history of settlement, repairs, and future plans.
- Change boundary conditions to reflect placing a sleeper slab for example.
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### 3. List of deliverables provided in this quarter by task (product date)

N/A



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4. Progress on Implementation and Training Activities

N/A

5. Problems/Proposed Solutions

N/A

6. Budget Summary\*

Total Project Budget (# of years)	1 Year	\$48,220.00
Total Project Expenditure to date		\$23,245
% of Total Project Budget Expended		48%
Task Order Number/Study Number:		88-03 / 4-23933
Current Task Order Budget (# of years)	Year 1	\$48,220.00
Actual Expenditure to date against current task order		\$23,245
% of current task order budget expended		48%

\* 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.

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