

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

A. PROJECT NUMBER AND TITLE:

NETC 19-1: Curved Integral Abutment Bridge Design Study

B. PRINCIPAL INVESTIGATOR(S) & UNIVERSITY(S):

WSP USA Inc. & University of New Hampshire

C. WEB SITE ADDRESS (If one exists):

NA

D. START DATE (Per NETC Agreement):

2/12/2020

E. END DATE (Per NETC Agreement):

6/30/2022

F. ANTICIPATED COMPLETION DATE:

6/30/2022

*If different from the END DATE in paragraph E., the reason must be given. It is the responsibility of the Principal Investigator to ensure that the project, including review of the draft report by the Project Technical Committee and the printing of the Final Report, is completed prior to the Agreement End Date. Costs incurred after the Agreement End Date cannot be reimbursed. **Requests for extensions of the Agreement End Date must contain the reasons for the request and be submitted so as to arrive in the Coordinator's office at least 90 days prior to the Agreement End Date.***

G. PROJECT OBJECTIVES:

This project's objective is to develop guidelines for the designing of Curved Integral Abutment Bridges. These guidelines should provide recommendations for span length, total bridge length, and degree of curvature and skew, with modeling recommendations for designs that are consistent with current AASHTO LRFD Bridge Design Specifications.

H. REPORT PERIOD:

Quarter 2 2021 (April – June)

I. ACCOMPLISHMENTS THIS PERIOD:

Task 2:

Completed:

- Model Validations
- Finalize initial base model
- Checking of the six base superstructure wizards
- Coding and master sheet for iterative model substructure command text
- Development of construction stage sequencing code
- A memo was delivered to the technical committee to ask for an alternative modeling procedure utilizing a 2D beam element including warping stresses as opposed to the 3D superstructure

elements. After some letter correspondence and a brief discussion, this method was approved by the committee.

Work in Progress:

- Mass production of 504 finite element model iterations
- Collection and post-processing of model data
- Synthesis of data to observe trends in model response to changing parameters

Task 3:

Work in progress:

- Define outline of Task 3 guideline document

J. PROBLEMS ENCOUNTERED (If any):

None

K. TECHNOLOGY TRANSFER ACTIVITIES: *List any reports, papers, presentations published/presented during the report period or anticipated for the next quarter.*

Task 3 report anticipated for completion next quarter.

L. STATUS BY TASK: *Show Work Task Number, description and % complete for each task including those completed, those underway, and those not started.*

0	Project Management	60%
1	Review of Existing Structures	100%
2	Finite Element Studies	35%
3	Design Guidelines	10%
4	Draft Final Report/Presentation	0%
5	Final Report	0%

M. PERCENT COMPLETION OF TOTAL PROJECT: 45%

N. ACTIVITIES PLANNED FOR NEXT QUARTER:

Continue mass production of iterative models and post processing.

Write guidelines for the refined analysis section for task 3.

Develop simplified guidelines for task 3 as models yield results.

O. FINANCIAL STATUS:

As of: 7/14/2021

Total Project Budget: \$151,315.47

Total Expenditures: approx. \$79,000

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 ten (10) working days after the end of each calendar quarter.