Quarterly Progress Report:
Project Number and Title: Assessment of Micropile-Supported Integral Abutment Bridges
Research Area: Civil Engineering
PI: *Aaron Gallant, Department of Civil and Environmental Engineering*
Co-PI(s): *Bill Davids, Department of Civil and Environmental Engineering*
Reporting Period: *Q4 2020*
Submission Date: *March 31, 2020*

Overview: (Please answer each question individually)
*Provide **BRIEF** overview and summary of activities performed during the reporting period. This summary should be written in lay terms for a general audience to understand. This should not be an extensive write up of findings (those are to be included in the final report), but a high-level overview of the activities conducted during the last three months **no more than 3 bullet points no more than 1 sentence each** ….*

The last quarter has consisted of:

- Continuation of a parametric 3D FEA of integral abutment bridges (IABs) supported on Micropiles, which will be delivered to the MaineDOT in the form a final report in summer 2021.
- Development of a full-scale testing plan to test micropiles in four point bending at the Advanced Structures and Composites Center (ASCC) is planned in Summer and fall of 2021. The testing will be performed to address salient concerns regarding bending capacity at the threaded connections of this foundation element. A proposal has been written by UMaine and reviewed and supported by the Micropile Technical Committee associated with ADSC-IAFD. Cooperating members from ADSC-IAFD will furnish and supply UMaine with micropiles for testing. UMaine is currently waiting to see if IAFD will financially support (match) this effort.

Complete the following tables to document the work toward each task and budget (add rows/remove rows as needed, make sure you complete the Overall Project progress row and include all tasks even if they have ended or have not been started)…

Table 1: Task Progress

Task Number	Start Date	End Date	% Complete
Task 1: Parametric FEA	October 1st 2020	December 31st 2020	90
Task 2: Literature review	October 1st 2020	December 31st 2020	90
Task 3: Full-scale testing	July 2021		0
Overall Project:			

Table 2: Budget Progress

Project Budget	Spend – Project to Date	% Project to Date*

***Include the date the budget is current to.**

Describe any opportunities for training/professional development that have been provided…

*Describe any activities involving the dissemination of research results (be sure to include outputs, outcomes, and the ways in which the outcomes/outputs have had an impact during the reporting period. Please use the tables below for any Publications and Presentations in addition to the description of any other technology transfer efforts that took place during the reporting period.)… Use the tables below to complete information about conferences, workshops, publications, etc**. List all other outputs, outcomes, and impacts after the tables** (i.e. patent applications, technologies, techniques, licenses issued, and/or website addresses used to disseminate research findings).*

Table 3: Presentations at Conferences, Workshops, Seminars, and Other Events				
Title	**Event**	**Type**	**Location**	**Date(s)**

Table 4: Publications and Submitted Papers and Reports				
Type	**Title**	**Citation**	**Date**	**Status**
i.e. Peer-reviewed journal, conference paper, book, policy paper	Publication title	Full citation		I.e. Submitted, accepted, under review

Encouraged to add figures that may be useful (especially for the website)…

Participants and Collaborators:

Use the table below to list all individuals who have worked on the project.

Table 5: Active Principal Investigators, faculty, administrators, and Management Team Members			
Individual Name	**Email Address**	**Department**	**Role in Research**
Aaron Gallant	aaron.gallant@maine.edu	CIE	PI
Bill Davids	william.davids@maine.edu	CIE	Co-PI

Use the table below to list all students who have participated in the project.

Table 6: Student Participants during the reporting period				
Student Name	**Email Address**	**Class**	**Major**	**Role in research**
Sebastian Montoya		Master	Civil Engineering	Research Assistant

Use the table below to list any students who worked on this project and graduated during this reporting period.

Table 7: Student Graduates			
Student Name	**Role in Research**	**Degree**	**Graduation Date**

Use the table below to list organizations have been involved as partners on this project and their contribution to the project.

Table 8: Research Project Collaborators during the reporting period						
Organization	**Location**	**Contribution to the Project**				
		Financial Support	**In-Kind Support**	**Facilities**	**Collaborative Research**	**Personnel Exchanges**
Maine Department of Transportation	Maine	X				

List all other outputs, outcomes, and impacts here (i.e. patent applications, technologies, techniques, licenses issued, and/or website addresses used to disseminate research findings). Please be sure to provide detailed information about each item as with the tables above.

Have other collaborators or contacts been involved? If so, who and how? (This would include collaborations with others within the lead or partner universities; especially interdepartmental or interdisciplinary collaborations.)

Table 9: Other Collaborators			
Collaborator Name and Title	**Contact Information**	**Organization and Department**	**Contribution to Research**
			(i.e. Technical Champion)

Who is the Technical Champion for this project?
Name: Laura Krusinksi
Title: Senior Geotechnical Engineer
Organization: MaineDOT
Location (City & State): August, Maine

Changes:

A micropile-supported IAB will not be available for monitoring as initially planned. However, UMaine believes there is more value in understanding the influence of thread details on the bending capacity of micropiles—and understanding that can ultimately be used to develop physically meaning models to address the bending capacity of these elements. Therefore, UMaine is moving towards full-scale testing of micropiles.

Planned Activities:

Description of future activities over the coming months.

UMaine is currently waiting to see whether or not ADSC-IAFD will ultimately provide financial and in-kind support for micropile testing planned to begin in summer 2021.