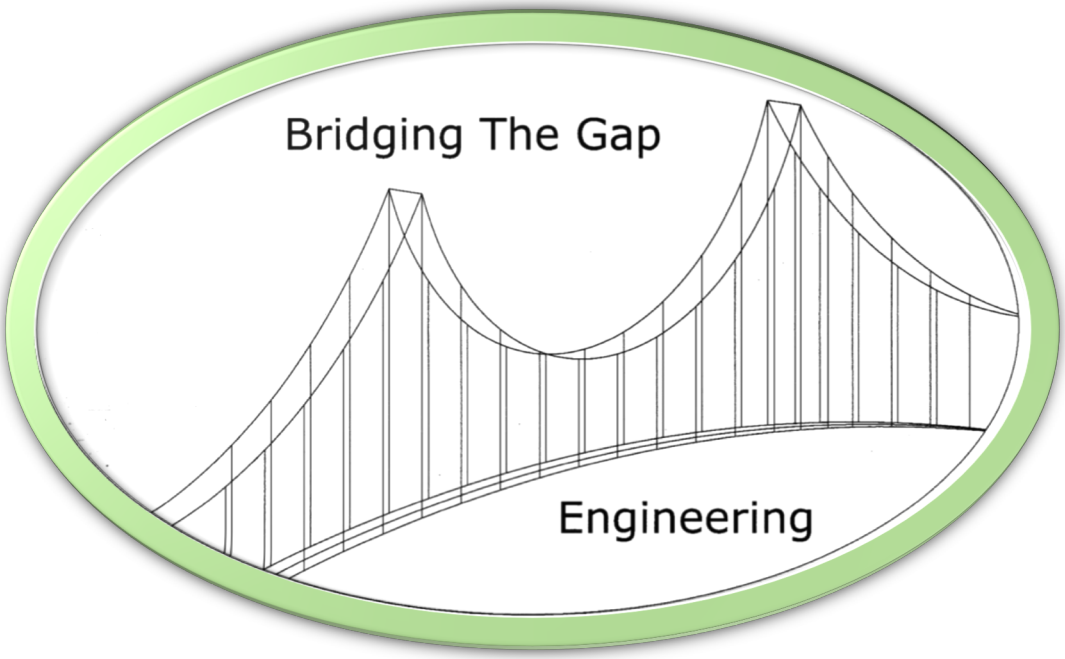



# Progress Report
## Weeks 8-12

Submission Date: 9 April 2019

Submitted To: Dr. Greg Michaelson
Submitted By: Natasha Napier

# Table of Contents:

## 1. Completed/Ongoing Work (3/4/19-4/7/19)

- John Skaggs – Format entire Alternatives Report, and write Chapter 1 (Executive Summary & Introduction) of the report
- Natasha N. – Prepare graphs of moment and shear calculations for the report, write Chapter 2 (Alt. #1 – Plate Girder) of the report, and edit other chapters as necessary, create PowerPoint slides for Chapter 1, 2, 4, edit PowerPoint slides as necessary
- Brandon D. – Write Chapter 3 (Alt. #2 – Concrete I-Beam) of the report, create PowerPoint slides for Chapter 3
- Zach C. – Write Chapter 4 (Alt. #3 – Steel Rolled Beam) of the report
- Michael – Finish drawing and dimensioning the CAD drawings of the cross sections and the overall views of each alternative
- Michael/Natasha – Write Chapter 5 (Selection of Alternative #1) of the report and create PowerPoint slides for Chapter 5 and format slides that contain CAD drawings to enhance visibility
- Brandon A. – Finish cost estimation for each alternative, write the cost section of each chapter (2, 3, 4), and create PowerPoint slides detailing the cost components of each alternative
- Entire team – Practice PowerPoint presentation after all slides were compiled.

## 2. Assigned Work

- Incorporate provided Alternative Report comments/corrections
- Fix Rolled Steel Alternative by choosing a rolled section from the Sigma = My/I equation – to justify logic for not choosing rolled section
- Fix formatting (text, title block size, etc) on CAD Drawings
- Confirm moment capacity is adequate for final girder selection
- Confirm shear capacity is adequate for final girder selection
- Design shear stud layout
- Calculate live load deflection and ensure that it meets the L/800 requirement
- Write the additional analysis chapter in the report

## 3. Summary of Hours Worked

| Hours Worked (3/4/19-4/7/19) | | |
|---|---|---|
| **Employee Name** | **Hours (3/4/19-4/7/19)** | **Hours (To Date)** |
| Brandon Adams | 29.00 | 51.00 |
| Michael Ashworth | 21.00 | 41.00 |
| Zach Cumm | 9.00 | 19.00 |
| Brandon Dial | 14.00 | 25.00 |
| Natasha Napier | 36.50 | 50.00 |
| John Skaggs | 24.50 | 33.50 |
| **Company Total** | 134.00 | 219.50 |

4. **Employee Timesheets**

****Week of 25 March has been omitted due to Spring Break****

- **Brandon Adams**

| Week # | Dates | Days | Hours Worked | Description | Weekly Hours Total |
|---|---|---|---|---|---|
| 8 | Mar 4 - 10 | 4-Mar | 3 | MII work | 10.00 |
| | | 5-Mar | 2 | MII work and meeting | |
| | | 6-Mar | | | |
| | | 7-Mar | 5 | MII work | |
| | | 8-Mar | | | |
| | | 9-Mar | | | |
| | | 10-Mar | | | |
| 9 | Mar 11 - 17 | 11-Mar | 3 | MII work & Meeting | 19.00 |
| | | 12-Mar | 5 | MII work | |
| | | 13-Mar | 7 | Cost Section Write-up | |
| | | 14-Mar | 3 | Presentation Slides | |
| | | 15-Mar | 1 | Meeting and Report Re | |
| | | 16-Mar | | | |
| | | 17-Mar | | | |
| 10 | Mar 18 - 24 | 18-Mar | | | 0.00 |
| | | 19-Mar | | | |
| | | 20-Mar | | | |
| | | 21-Mar | | | |
| | | 22-Mar | | | |
| | | 23-Mar | | | |
| | | 24-Mar | | | |
| 12 | Apr 1 - 7 | 1-Apr | | | 0.00 |
| | | 2-Apr | | | |
| | | 3-Apr | | | |
| | | 4-Apr | | | |
| | | 5-Apr | | | |
| | | 6-Apr | | | |
| | | 7-Apr | | | |

- **Michael Ashworth**

| Week # | Dates | Days | Hours Worked | Description | Weekly Hours Total |
|---|---|---|---|---|---|
| 8 | Mar 4 - 10 | 4-Mar | 1 | CAD Drawings | 17.00 |
| | | 5-Mar | 3 | CAD Drawings/weekly meet | |
| | | 6-Mar | | | |
| | | 7-Mar | 1 | CAD | |
| | | 8-Mar | 2 | CAD | |
| | | 9-Mar | 6 | CAD | |
| | | 10-Mar | 4 | CAD | |
| 9 | Mar 11 - 17 | 11-Mar | 1 | MEETING | 4.00 |
| | | 12-Mar | 2 | CAD | |
| | | 13-Mar | 1 | Meeting | |
| | | 14-Mar | | | |
| | | 15-Mar | | | |
| | | 16-Mar | | | |
| | | 17-Mar | | | |
| 10 | Mar 18 - 24 | 18-Mar | | | 0.00 |
| | | 19-Mar | | | |
| | | 20-Mar | | | |
| | | 21-Mar | | | |
| | | 22-Mar | | | |
| | | 23-Mar | | | |
| | | 24-Mar | | | |
| 12 | Apr 1 - 7 | 1-Apr | | | 0.00 |
| | | 2-Apr | | | |
| | | 3-Apr | | | |
| | | 4-Apr | | | |
| | | 5-Apr | | | |
| | | 6-Apr | | | |
| | | 7-Apr | | | |

- **Zach Cumm**

| Week # | Dates | Days | Hours Worked | Description | Weekly Hours Total |
|---|---|---|---|---|---|
| 8 | Mar 4 - 10 | 4-Mar | | | 1.00 |
| | | 5-Mar | 1 | Group meeting | |
| | | 6-Mar | | | |
| | | 7-Mar | | | |
| | | 8-Mar | | | |
| | | 9-Mar | | | |
| | | 10-Mar | | | |
| 9 | Mar 11 - 17 | 11-Mar | 1 | Group meeting/roll | 8.00 |
| | | 12-Mar | 2 | writing report | |
| | | 13-Mar | 1 | Group meeting/ roll | |
| | | 14-Mar | 3 | writing report | |
| | | 15-Mar | 1 | making powerpoint | |
| | | 16-Mar | | | |
| | | 17-Mar | | | |
| 10 | Mar 18 - 24 | 18-Mar | | | 0.00 |
| | | 19-Mar | | | |
| | | 20-Mar | | | |
| | | 21-Mar | | | |
| | | 22-Mar | | | |
| | | 23-Mar | | | |
| | | 24-Mar | | | |
| 12 | Apr 1 - 7 | 1-Apr | | | 0.00 |
| | | 2-Apr | | | |
| | | 3-Apr | | | |
| | | 4-Apr | | | |
| | | 5-Apr | | | |
| | | 6-Apr | | | |
| | | 7-Apr | | | |

- **Brandon Dial**

| Week # | Dates | Days | Hours Worked | Description | Weekly Hours Total |
|---|---|---|---|---|---|
| 8 | Mar 4 - 10 | 4-Mar | | | 10.00 |
| | | 5-Mar | | | |
| | | 6-Mar | 1 | virtual meeting | |
| | | 7-Mar | | | |
| | | 8-Mar | | | |
| | | 9-Mar | 5 | preparing alternative | |
| | | 10-Mar | 4 | finishing alternative | |
| 9 | Mar 11 - 17 | 11-Mar | 1 | alternative prep | 4.00 |
| | | 12-Mar | | | |
| | | 13-Mar | 1 | proofing | |
| | | 14-Mar | | | |
| | | 15-Mar | 2 | powerpoint prep | |
| | | 16-Mar | | | |
| | | 17-Mar | | | |
| 10 | Mar 18 - 24 | 18-Mar | | | 0.00 |
| | | 19-Mar | | | |
| | | 20-Mar | | | |
| | | 21-Mar | | | |
| | | 22-Mar | | | |
| | | 23-Mar | | | |
| | | 24-Mar | | | |
| 12 | Apr 1 - 7 | 1-Apr | | | 0.00 |
| | | 2-Apr | | | |
| | | 3-Apr | | | |
| | | 4-Apr | | | |
| | | 5-Apr | | | |
| | | 6-Apr | | | |
| | | 7-Apr | | | |

- **Natasha Napier**

| Week # | Dates | Days | Hours Worked | Description | Weekly Hours Total |
|---|---|---|---|---|---|
| 8 | Mar 4 - 10 | 4-Mar | 0.5 | Meeting Prep | 20.50 |
| | | 5-Mar | 1 | Weekly Meeting | |
| | | 6-Mar | 1 | Alternatives Meeting | |
| | | 7-Mar | | | |
| | | 8-Mar | 5 | Report outline, element level quantities, bearing & connection research | |
| | | 9-Mar | 7 | Quantities, admin work | |
| | | 10-Mar | 6 | Report writing & bearing research | |
| 9 | Mar 11 - 17 | 11-Mar | 1 | Meeting | 13.50 |
| | | 12-Mar | | | |
| | | 13-Mar | 6 | Meeting, Letter of Transmission, Writing/Editing Report (Ch 2, 3, 4, 5) | |
| | | 14-Mar | 5.5 | Report Proofreading/PowerPoint | |
| | | 15-Mar | 1 | Meeting | |
| | | 16-Mar | | | |
| | | 17-Mar | | | |
| 10 | Mar 18 - 24 | 18-Mar | 1 | PowerPoint Editing | 2.50 |
| | | 19-Mar | 1.5 | Meeting | |
| | | 20-Mar | | | |
| | | 21-Mar | | | |
| | | 22-Mar | | | |
| | | 23-Mar | | | |
| | | 24-Mar | | | |
| 12 | Apr 1 - 7 | 1-Apr | | | 0.00 |
| | | 2-Apr | | | |
| | | 3-Apr | | | |
| | | 4-Apr | | | |
| | | 5-Apr | | | |
| | | 6-Apr | | | |
| | | 7-Apr | | | |

- **John Skaggs**

| Week # | Dates | Days | Hours Worked | Description | Weekly Hours Total |
|---|---|---|---|---|---|
| 8 | Mar 4 - 10 | 4-Mar | | | 3.50 |
| | | 5-Mar | 1 | Weekly Meeting | |
| | | 6-Mar | 2.5 | Alternatives Meeting/Alternatives report | |
| | | 7-Mar | | | |
| | | 8-Mar | | | |
| | | 9-Mar | | | |
| | | 10-Mar | | | |
| 9 | Mar 11 - 17 | 11-Mar | 3 | Weekly Meeting/ Alternatives | 21.00 |
| | | 12-Mar | | | |
| | | 13-Mar | 6 | Alternatives Report | |
| | | 14-Mar | 12 | Alternatives Report | |
| | | 15-Mar | | | |
| | | 16-Mar | | | |
| | | 17-Mar | | | |
| 10 | Mar 18 - 24 | 18-Mar | | | 0.00 |
| | | 19-Mar | | | |
| | | 20-Mar | | | |
| | | 21-Mar | | | |
| | | 22-Mar | | | |
| | | 23-Mar | | | |
| | | 24-Mar | | | |
| 12 | Apr 1 - 7 | 1-Apr | | | 0.00 |
| | | 2-Apr | | | |
| | | 3-Apr | | | |
| | | 4-Apr | | | |
| | | 5-Apr | | | |
| | | 6-Apr | | | |
| | | 7-Apr | | | |

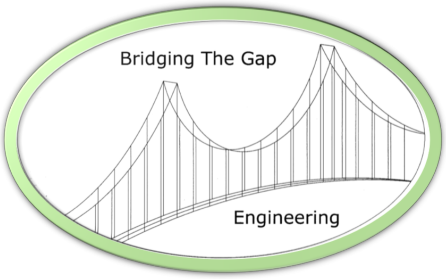
## 5. Meeting Minutes/Agendas

- **Meeting Minutes – 5 March 2019**
    - Members in attendance:
        - Michael Ashworth
        - John Skaggs
        - Natasha Napier
        - Zach C.
        - Brandon D.
        - Brandon A.
    - Tasks that need to be accomplished:
        - Preliminary deck design
        - Preliminary connection design
        - Update E-Span Design for bearing design
        - Update CAD drawings with dimensional beam spacing changes
        - Begin writing chapters for each alternative
        - Wrap up cost estimate and gather cost report in order to make alternative selection
    - Upcoming Meetings to work on assigned tasks:
        - Friday, Mar 8th from 8-9
        - Monday, Mar 11th from 8-9
        - Wednesday, Mar 13th from 8-9

- **Meeting Minutes – 8 March 2019**
    - Members in attendance:
        - Michael Ashworth
        - John Skaggs
        - Natasha Napier
        - Zach C.
        - Brandon D.
        - Brandon A.
    - Tasks that need to be accomplished:
        - Preliminary deck design
        - Preliminary connection design
        - CAD Drawings update
        - Cost estimate wrap-up
- **Meeting Minutes – 13 March 2019**
    - Members in attendance:
        - Michael Ashworth
        - John Skaggs
        - Natasha Napier
        - Zach C.
        - Brandon D.
        - Brandon A.
    - Tasks that need to be accomplished:
        - Report chapters need to be submitted to John so that he can format and compile the report
        - PowerPoint slides need to be created for each respective chapter
        - Compile the cost analysis report from MII

6. **Sent Correspondence – RFI #1 (See following page)**

7. **Received Correspondence – RFI #1 Response (See attached)**




Natasha Napier
Project Manager
Bridging the Gap Engineering

Date 2/19/2019

Dr. Greg Michaelson
Principal Engineer
WV Division of Highways

Dr. Michaelson,

This letter is to address the following question which requires some context:

While conducting our preliminary design phase we have considered the following three alternatives: steel rolled beams, steel plate girders, and precast concrete girders. It has become increasingly apparent that our span length of 125 feet is becoming a limiting factor for each of these alternatives. The given span is presenting difficulties due to manufacturing limitations for the concrete beams as well as the given shipping limits. The most obvious solution to this would be to construct a pier midway through the span.

1. Given the aforementioned constraints, are we limited to a single 125 foot span or is construction of a pier with two spans an acceptable solution?

Thank you for your assistance with these matters.

Sincerely,

Natasha Napier

Natasha Napier
Project Manager

MARSHALL UNIVERSITY
Weisberg Division of Engineering
*One John Marshall Drive, WAEC 2201*
*Huntington WV 25755*

Gregory K. Michaelson, Ph.D., P.E.
Assistant Professor (Structural Engineering), Weisberg Division of Engineering
One John Marshall Drive, WAEC 2227, Huntington WV 25755
Office: (304) 696-5606
Email: michaelson@marshall.edu

Bridging the Gap Engineering
One John Marshall Drive
Huntington WV 25755

Response to Request for Information
February 27, 2019

Dear Ms. Napier:

I have received the following request for information from your firm:

1. Given the aforementioned constraints, are we limited to a single 125 foot span or is construction of a pier with two spans an acceptable solution?

In response:

1. Yes, however you would need to estimate all required construction costs associated with this option. This would include changes in the resulting superstructure, all costs associated with the pier substructure, and any geotechnical and/or hydraulic considerations for the project.

If there are any other questions or concerns, I would be happy to answer them. I can be reached through email at michaelson@marshall.edu or my office phone at (304) 696-5606.

Sincerely,

Gregory K. Michaelson, Ph.D., P.E.

CC: BRAHMS Design Group, Truss-Worthy Engineering, In the Moment Engineering, Herd Engineering