

**Project Status Report: CEE-2018CPST-001**

**Report Date: 5 November 2018**

**Team Members: Rex Henretta, Shane Oh, Ryan Wilkinson**

**Project Title: Bluffdale Bridge Options**

### 1) Summary of technical/non-technical challenges encountered

- The greatest challenge we currently face is determining the capacity of the pre-stressed concrete T-girders for the current and existing conditions. This type of analysis is slightly more advanced than the structures we have analyzed in our reinforced concrete design class.
- Additionally, we have very little experience designing for highway loads.

### 2) Team approaches & resolutions to overcome challenges

- Our approach is to communicate with Dr. Fonseca and Professor Isom to find the best method for analysis. Additionally, we have made an assumption that the current capacity of the bridge is equal to the original structure of the T-girders without the bottom two strands. This simplified the overall process for analysis.
- Instead of designing for a highway load directly, we decided that it would be simpler to find the capacity of the girders first and then use that information to predict the maximum highway load the bridge can take.

### 3) Status of challenge resolutions & potential project impact

- We have communicated with both Dr. Fonseca and Professor Isom and gathered the proper resources for analyzing the pre-stressed concrete T-girders.
- Over the course of the week, we will be parsing through the information and gathering the pertinent material for our analysis.

### 4) Project status & summary

- We are in the process of analyzing the girders for capacity.
- We have begun organizing the spreadsheet to evaluate different options for bridge rehabilitation or repair. In addition to a full bridge replacement option, we have also started looking at coating materials that could be used to minimize further erosion. This is another option that can be used to increase the design life of the bridge.