**Click here to enter Program or Project Title**

**Progress Report – Click here to enter a date.**

**Title:** Assessment and Repair of Prestressed Bridge Girders Subjected to Over-height Truck Impacts Pooled Fund Project

**Project Number:** TR202011

**Principal Investigator (PI):** Mohamed ElGawady PhD (PI)

**Co-PI(s):** William Schonberg PhD, PE (Co-PI)

|  |  |  |  |
| --- | --- | --- | --- |
| **Award date:** | **1/1/2021** | | |
| **Scheduled completion date:** | **12/31/2023** | **% of project completed to date:** | **25%** |
| **Total budget:** | **$**755,000 | **% of budget expended to date:** | **17%** |
| **Draft report due:** | **3/31/2021** | **Final report due:** | **12/1/2023** | |

Provide a short description of the **work currently underway**.

*Use* [*additional notes section*](#notes) *if you need to provide more information.*

***Task 2. Experimental testing of bridge girders subjected to lateral impacts:*** The review of the design of the test setup is completed. Acquiring and manufacturing of the test setup has been completed. Delivery of the different pieces started.

Provide a short description of the **noteworthy activities/accomplishments** during this reporting period.

*Use* [*additional notes section*](#notes) *if you need to provide more information.*

The following are different images presenting the design and physical setup

Shape, arrow

Description automatically generated

**Figure 1: 3D Model of the track system in Sap2000**

Chart

Description automatically generated

**Figure 2: Track system maximum axial forces**

Chart

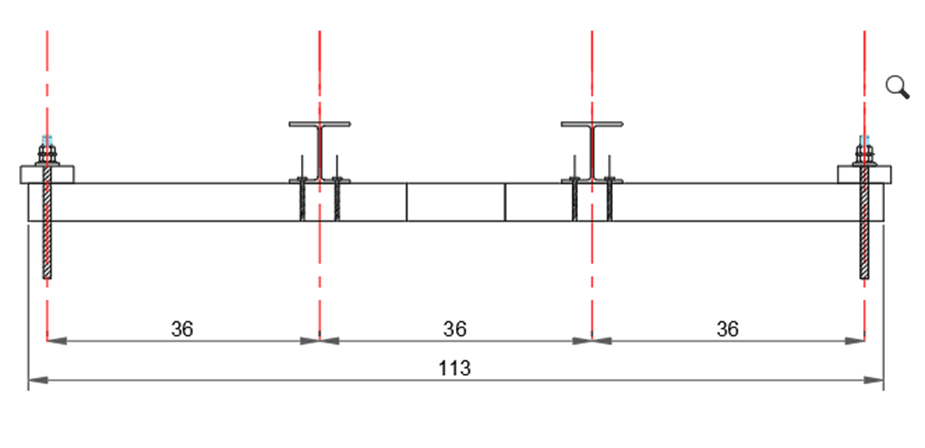
Description automatically generated

**Figure 3: Track system maximin bending moments**

A picture containing chart

Description automatically generated

**Figure 4: Track system maximin frame shear forces**



**Figure 5: HSS sections to carry out the rail**

A picture containing diagram

Description automatically generated

**Figure 6: Geometric design of the lateral support (side view)**

A picture containing chart

Description automatically generated

**Figure 7: Shear force diagram of the beams due to ultimate load combination**

Diagram

Description automatically generatedDiagram

Description automatically generated

**Figure 8: Maximum shear force acting on the connection**

Chart

Description automatically generated

**Figure 9: Bending moment diagram of the beams due to ultimate load combination**

Diagram

Description automatically generated

**Figure 10: Straining actions acting on the splice**

**Diagram

Description automatically generated**

**Figure 11: Straining actions on the connection**

|  |
| --- |
| ***A person working on a machine  Description automatically generated with low confidence*** |
| **Figure 11: Steel plates preparation** |

|  |  |
| --- | --- |
| ***A picture containing outdoor, tool, stacked, grill  Description automatically generated*** | ***A picture containing outdoor  Description automatically generated*** |
| ***A picture containing outdoor, parked  Description automatically generated*** | ***A picture containing bench, outdoor, wooden, park  Description automatically generated*** |
| **Figure 11: Preparing the HSS beams** | |

|  |  |
| --- | --- |
| A picture containing text  Description automatically generated | A picture containing farm machine  Description automatically generated |
| A picture containing red, miller  Description automatically generated | A picture containing indoor, old  Description automatically generated |
| **Figure 12: Vertical elements** | |

|  |  |
| --- | --- |
| A picture containing red, miller  Description automatically generated | A picture containing indoor, old  Description automatically generated |
| **Figure 13: Vertical elements** | |

Identify **issues or problems** that need to be addressed.

Three graduate students arrived late for this project due to COVID-19 and visa issues (US embassies halt the visa section for the major part of the year). A fourth student will join us o January 2022.

*Use* [*additional notes section*](#notes) *if you need to provide more information.*

Provides dates for when the **next progress report or presentation**