



MEYER DEVELOPMENT AND ENGINEERING

January 5, 2024

VIA EMAIL

Preliminary Engineering Report

Mr. Ashley Thoman
Weber County Engineering
athoman@webercountyutah.gov

RE: Evaluation of Ruby Resort Bridge Post-2023 Flooding

Dear Mr. Thoman:

This engineer visited the Ruby Resort located at 10909 E Highway 39, Huntsville, UT, 84317, Huntsville, UT, 84317, to evaluate the condition of an existing private bridge over the South fork of the Ogden River. This report presents this engineer's findings, observations, and opinions developed during the investigation. All opinions expressed herein are based on a reasonable degree of engineering certainty.

Background:

The subject bridge was reportedly constructed in 2010 by the former landowner with assistance of the ARMY Corps of Engineers, and consists of steel longitudinal beams supported by concrete bridge abutments. In 2022, the owner reported replacing the weathered wood-slat bridge deck with B Deck topped with a 6" slab of reinforced concrete (#5 rebar @ 6" OC). In the spring of 2023, the south fork of the Ogden River flooded. The property owner reported making repairs to the backfill at the west bridge abutment.

Purpose:

The purpose of this engineer's investigation was to evaluate any damage to the bridge due to the 2023 flooding.

Procedure:

This engineer inspected the subject bridge on January 1, 2024, documenting damage with notes and photographs. Selected photographs are presented within this report and all photographs can be provided upon request. This engineer visited and photographed the subject bridge on October 12, 2022. Selected photographs from this site visit are included for comparison purposes.

Findings and Discussion:

The major structural components of the bridge (steel beams, concrete abutments, concrete decking, and the connections between these elements) appeared sound and undamaged. The bridge structure showed no sign of movement and excessive cracking of the concrete abutments, broken welds, or bending of the steel structural members was observed. This engineer would recommend additional backfill and an extension of the northwest wingwall to prevent erosion of backfill in possible future flooding events. Further, the removal of vegetation near the west bridge abutment is recommended to eliminate the possibility of degradation of the abutment.

Conclusions:

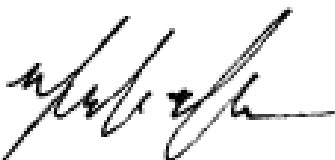
Based on this engineer's training, education, experience, and available evidence, in the context of the investigation that was performed, this engineer has made the following conclusions:

- No signs of significant structural damage were found on the bridge.
- Additional backfill and an extension of the northwest wingwall is recommended.
- Removal of vegetation near the west bridge abutment is recommended.

The findings and conclusions presented within this report are the result of non-destructive, visual observation of the exposed building elements. Determination of structural adequacy and building code compliance of all building elements was beyond the scope of this engineer's inspection. As such, MDE is not responsible for hidden conditions unexposed at the time of the inspection. Furthermore, MDE provides no warranties or guarantees of any kind, express or implied, of the future performance of the subject building. The opinions and conclusions expressed in this report are based on the information available to the engineer as of the date of this report. If in the course of discovery or other disclosure, additional information becomes available that affects these opinions and conclusions, this engineer reserves the right to supplement or modify the opinions disclosed herein.

With warmest regards,

MDE, Inc.



Matthew Meyer, PhD., P.E.

Appendix A: Photographs

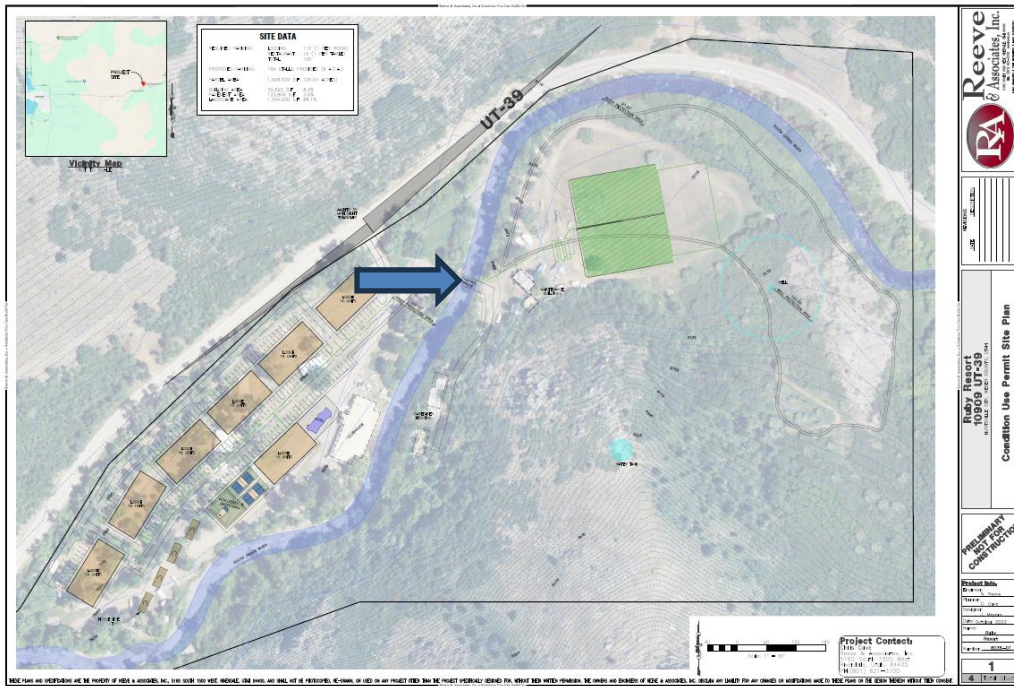


Figure 1. Proposed Ruby Resort. Blue Arrow indicates location of subject bridge.

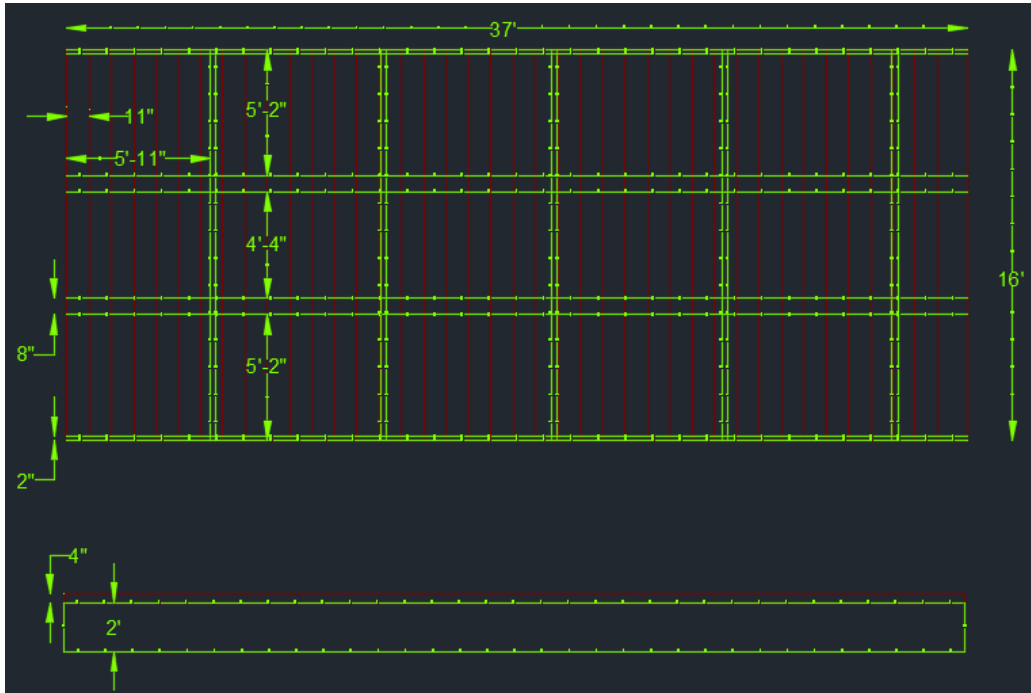


Figure 2. Measurements of bridge deck and beams taken by this engineer on October 12, 2022 (before 2023 flooding).



Figure 3. Bridge condition on October 12, 2022 looking west (before 2023 flooding).



Figure 4. Bridge condition on January 1, 2024 looking west (after 2023 flooding and bridge repair).



Figure 5. NW bridge abutment on October 12, 2022 looking west (before 2023 flooding).



Figure 6. Post-flooding and repair photograph of west bridge abutment.



Figure 7. Post-flooding and repair photograph of northwest bridge abutment.