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## Structural Condition Assessment

*CSG Project Number:* 125026

*Subject:* **Sedona Cultural Park  
Sedona, AZ**

*Prepared for:*

City of Sedona  
Community Development  
Steve Mertes, Director  
102 Roadrunner Dr  
Sedona, AZ 86336



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## 1.0 Introduction

### 1.1 Structure Data

The subject structure, described in this report, is an amphitheater stage at Sedona Cultural Park in west Sedona.



*Figure 1A: View of structure from the south*



*Figure 1B: View of structure from the north*

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*Figure 1C: View of structure from the west*



*Figure 1D: View of underside of canopy*

## 1.2 Investigation

A site visit was made on February 19, 2025 to get an overview of the structure. The investigation was limited to a visual review of the major structural components of the building. The foundation was only evaluated based on visual portions and no excavations were performed.

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## 2.0 Assessment

### 2.1 Structure

The information in this section is based on the non-invasive investigation described in Section 1.2. Our assumptions are based on our investigations and our general knowledge of the construction practices for similar structures of the same vintage.

The structure is a three hinged arched glue-laminated (glulam) timber amphitheater with three 14"x40.5" glulam beams supporting a steel framed canopy. The glulam beams are spaced approximately 26ft on center. The three glulam beams span 120 ft at the north end, 133 ft in the center, and 145 ft at the south end. The steel framed canopy is made up of 2x wood decking over 10" wide flange steel beams running east-west over 12" wide flange steel beams running north-south. Tube steel struts hang from the glulam beams with bolted connections and weld to the steel beams of the canopy. Lateral support for the structure is provided by pipe steel compression members between the glulam arches with steel rod x-bracing. The foundation for the amphitheater consists of cast concrete foundations approximately 8.5 ft by 6 ft at the base.

Significant deterioration and weathering were observed on the top two laminations of the glulam beams (Figure 2A). Additional weathering was observed on the perimeter of the glulam beams (Figure 2B). Some of the connections have missing bolts (Figures 2C and 2D).

The bolted splices at mid-span appear to be in good condition (Figure 2E). In addition, the bolted hinged connections at the arch apex appear to be in good condition (Figure 2F).

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*Figure 2A: View of the dry rot at east end of north beam (knife is embedded approximately 2")*



*Figure 2B: View of typical weathering of glulam beams*

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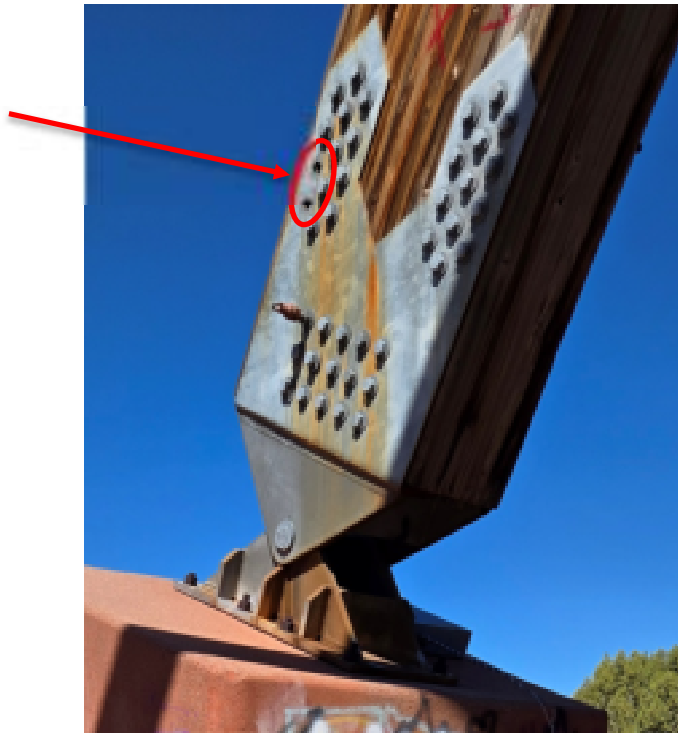
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*Figure 2C: View of missing bolt in base connection*



*Figure 2D: View of missing bolts in base connection*

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*Figure 2E: View of bolted splice connection*



*Figure 2F: View of bolted hinged connection*

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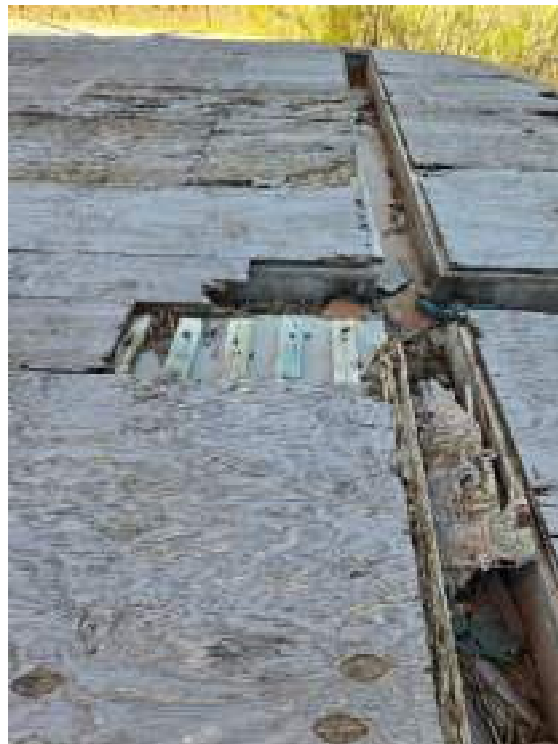
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The stage is a cast concrete structure with a wood subfloor consisting of 1-1/8" plywood over 2x wood sleepers over concrete slab on grade. The wood subfloor is severely deteriorated (Figures 2G and 2H).



*Figure 2G: View of deterioration of stage subfloor*



*Figure 2H: View of deterioration of stage subfloor*

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The roof of the canopy is a spray foam over wood decking. The waterproof membrane of the roof has failed in many areas which has led to rotting of the wood decking in some areas (Figures 2I and 2J).



*Figure 2I: View of deterioration of membrane roof*



*Figure 2J: View of rotting of wood decking*

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## 2.2 Evaluation

The observed structural issues of the amphitheater can be summarized into three categories. They are as follows:

1. Significant deterioration of wood subfloor of the stage
2. Weathering and deterioration of the glulam beams
3. Failure of the spray foam roof of the canopy.

Structural Issue #1: The American Wood Protection Association (AWPA) Use Category (UC) system specifies UC3B for "Exposed to all weather cycles including prolonged wetting". The wood members used as the subfloor for the stage do not appear to have any treatment meeting the recommendations of this standard. This and lack of maintenance led to complete deterioration of the wood subfloor.

Structural Issue #2: The weathering of the beams has affected their structural capacity. The top two laminations of each of the glulam beams are almost completely compromised.

Structural Issue #3: The failure of the spray foam roofing has led to deterioration of the wood decking.

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## 3.0 Conclusions

Based on our visual investigation, it is our professional opinion that the amphitheater structure is not in danger of imminent collapse, however, remediation or deconstruction is required to ensure that the structure does not become a hazard. We recommend yearly inspections on the structure to assess the potential for collapse if remediation or deconstruction does not occur within the next year.

The wood subfloor of the stage requires complete removal and replacement. It is not possible to remediate the existing deteriorated plywood.

The steel appears to be in good condition. No significant rust was observed in the canopy steel framing, the connection plates or in the bolts.

Foundations and concrete structures appear to be in good condition. Substantial cracking or deterioration were not observed. There were no signs of significant foundation movement or failure.

Due to the deterioration of the glulam beams, they will require structural remediation to restore the structural capacity lost to weathering. The deterioration noted does not appear to be extensive enough to require full replacement of the members, nor does it render them useless for re-purposing for a new structure. Further evaluation of the glulam beams is necessary before a determination can be made on the costs associated with remediation or suitability for re-purposing and compared to the costs of a new glulam.

We believe these were all the items that we needed to address; however, we reserve the right to change our opinion as more information is made available. Should you have any questions regarding the items discussed in this report, please feel free to contact us.