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July 22, 2019

Joseph Graybill
City of Sweet Home Public works
1140 12th Ave.
Sweet Home, Oregon 97386

Job#: 19-0275

RE: Structural review of bandstand at Sankey park, 877 14th Ave, Sweet Home, Oregon

Scope of work:

Stability Engineering Inc has been hired to review the structural damage caused by a tree impact as well as structural deterioration of the structure. We will also review the structural adequacy of the structure in relation to current structural codes. This report is based on what could be observed on site.

Observations:

The structure consists of a wood framed elevated platform with a covered roof. It is open on all sides. The foundation is post and beam construction with a continuous perimeter concrete footing and stem wall. Based on provided information and the sign attached to the front indicating it was a WPA project it was constructed in the late 1930's to early 1940's. (picture 1)

A tree fell on the south side damaging the roof and one of the main structural members. (pictures 2,3,4). At the time of the inspection temporary shoring was in place to support the broken beam. (picture 5)

We noted several areas of dry rot damage at the outside edges of the roof members. (pictures 6,7,8)

The southeast corner has settled, and the movement has cracked the adjacent foundation. The downspout above this section is not installed or was knocked off when the tree hit the roof. (picture 9) Water movement adjacent to the foundation may cause foundation settlement. There is also a large stump within a few feet of the east side. The tree may have undermined and moved the foundation adjacent. (picture 10)

The gutters and downspouts for the entire structure are compromised and not functioning as designed. This will contribute to the foundation movement and dry rot issues as the water can land on the structural members below. (picture 11). The roof flashing was missing at several locations which allows water to infiltrate onto the roof framing.

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The lateral braces (knee braces) at the front of the structure were removed and a decorative stick was installed (picture 12). This will have severely affected the lateral resistance to wind and seismic loads at the north end of the structure.

We did enter the crawlspace and found footings that had settled and shifted over time. (picture 13, 14). The foundation appears to have been replaced or repaired relatively recently (in relation to the age of the structure). The posts are dimensional lumber instead of the round members use for the rest of the structure, we also noted pressure treated lumber used for the sill plate on the continuous footing.

Since the platform is more than 30 inches above grade current code requires guardrails to protect from fall over the top and to limit small children squeezing through the rails. The current guardrail is too short to meet code and has openings that exceed the allowable size. This is a potential safety hazard. Code does not require upgrading existing structures but we recommend addressing this issue if the structure is going to be rehabilitated.

Structural review

Due to the age of the structure and construction type portions of the structure do not meet today's building code. This is due to changes in the design process since the 1930's and increased safety factors in the current code.

For instance, the current minimum snow load at this location is 20 psf but the actual snow load based on the SEAO snow loading maps is 11 psf.

Inadequate structural elements:

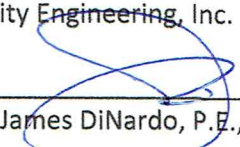
1. The main horizontal structural beams are extremely inadequate. (~2300%)
2. The round floor beams are inadequate (~75%)
3. The footings are significantly undersized. (~500%)

The lateral resisting system for the bandstand is a series of knee braces around the structure in conjunction with partially braced columns. The missing braces would need to be replaced and all of the connections should be repaired as necessary.

Please let us know if you have any questions.

Sincerely,

Stability Engineering, Inc.

By: 
James DiNardo, P.E., Principal, Project Engineer



Picture 1 – north side



Picture 2 – Broken main member



Picture 3- tree damage



Picture 4 – tree damage



Picture 5 -south side tree damage and shoring



Picture 6 – dry rot damage



Picture 7 – dry rot damage



Picture 8 – dry rot damage



Picture 9 – downspout



Picture 10 – foundation movement and stump



Picture 11 – damaged downspout



Picture 12 – knee brace removed



Picture 13 – shifted post/footing



Picture 14 – shifted footings

