

Date: November 10, 2025 (revised)

No. of Pages: 5 + Encl.

Project: Trout Creek Community Centre

Project No.: TE-45355-2

Address: 181 Main St. W, Trout Creek

Permit No.:

Client: Municipality of Powassan

Distribution: Trevor Keefe

Mun. of Powassan

TKeefe@Powassan.net

DRAFT

Background

Tacoma Engineers Inc. (Tacoma) have been retained by the Municipality of Powassan to complete a multi-phase assessment of the existing community centre located in Trout Creek.

A site review was completed by the undersigned on July 25th, 2025.

The Trout Creek Community Centre (TCCC) is located at 181 Main Street West. Drawings provided for the building indicate construction around 1976.

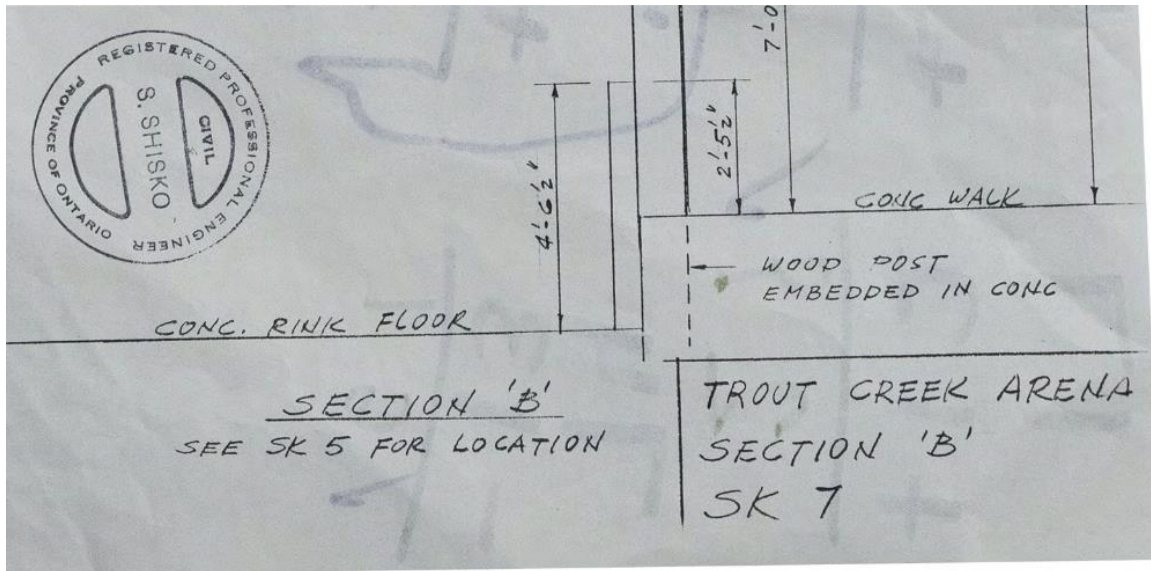


This report focuses on options for remediating the deteriorating columns with the goal of removing the previously installed shoring and returning the facility to its previous operating state.

Comments

As understood by Tacoma, the reason for the temporary shoring was to allow occupancy of the arena to continue while deferring the required structural upgrades due to the on-going deterioration of the original wood timber posts.

Originally embedded in the concrete foundations (refer to original partial drawing below), the wood posts have been exposed to conditions that have allowed deterioration (rot) to occur. Water, most likely sourced from the ice surface, would be trapped against the wood posts by the surrounding concrete, and with inadequate ability to dry, the moist environment has triggered deterioration.



Original Drawing (Partial)

Recognizing that deterioration was occurring, the main posts were previously reinforced with steel brackets to transfer the loads from the posts to the concrete foundations above the deterioration. Refer to the photo below:



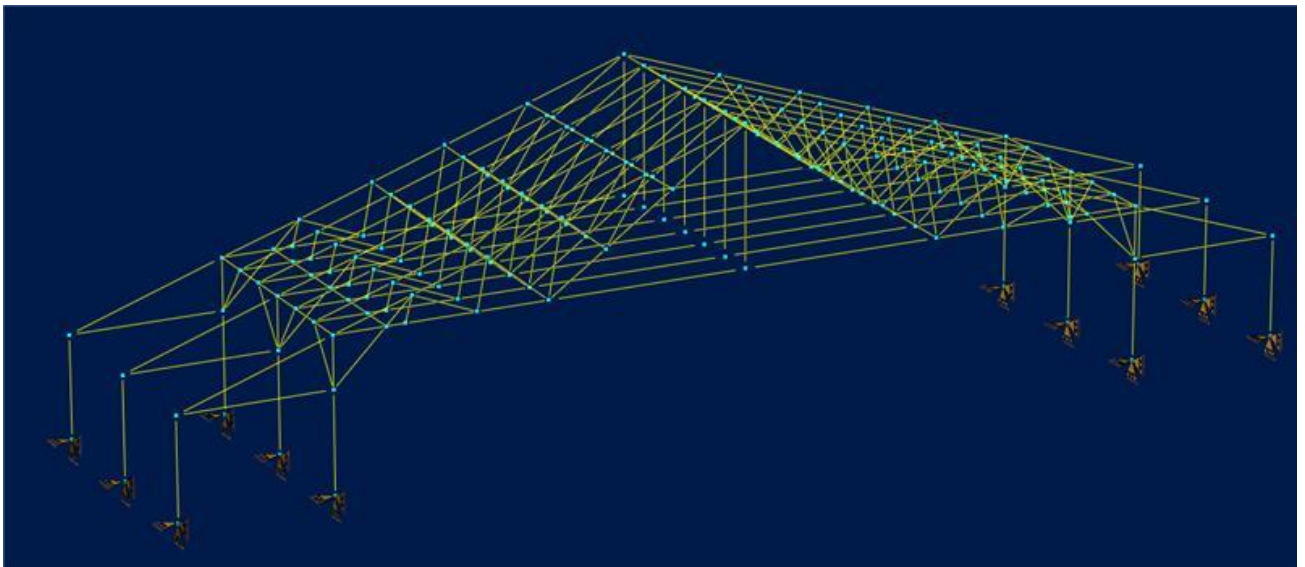
Photo: Steel Bracket Reinforcing

More recent assessments have added secondary shoring to the main beam lines to further reduce the loads on the primary wood posts.



Photo: Shoring

A model of the frame was constructed to verify the existing foundation loads. The image below shows the existing framing, without the additional shoring that was added.



Our analysis utilized the design snow load from the original building drawings.

Snow = 50psf (2.4kPa)

Roof = 8psf (0.4 kPa)

Note that this snow load is less than what is currently required by code. Upgrading to current codes will likely require reinforcement of the existing roof trusses (not part of this scope).

The following scope was used to establish an estimate for remediation work:

Refer to the sketch drawing attached.

Work to be completed in 3 stages (replace 1, skip 2, repeat) as all the supports can not be removed at one time.

In 38 locations (every 12' down the length of a 216' long arena), provide temporary shoring as required (in addition to the existing shoring already in place).

Sawcut and remove the existing upper walkway concrete slab.

Excavate between the main post and exterior wall post.

Sawcut the foundation wall / curb (+/- 12" on either side of existing embedded wood post) without affecting the rink floor slab (has chilling pipes).

Remove the existing rotted wood posts (interior: from the steel brackets down, exterior: full height).

Install new W8x24 steel exterior column (cantilevered wind post).

Install new 5' wide reinforced concrete footing with 6-15M long and 15M @12" cross bars.

Install new concrete piers with 6 – 15M vertical bars with bottom hooks and 10M ties at 12" o.c. in the pier. Note on the interior pier, the rink side below the existing rink slab cannot be formed. Concrete shall be allowed to flow under existing rink slab to fill any void that may occur during removal. It is assumed that the soils are suitable to allow this excavation to occur.

Backfill and replace the slab on grade.

Once complete, remove the temporary shoring (pink and green posts).

Based on the above, a Class 'C' budget estimate ($\pm 15\%$) was prepared for \$280,000 for the interior piers and \$340,000 for the exterior piers plus applicable taxes.

Recommendations

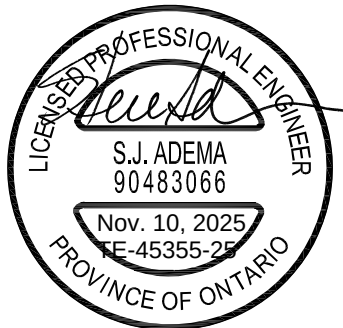
The following recommendations are from our previous report and remain:

1. The current design snow load for a community centre (high importance factor) in Trout Creek is 2.94 kPa. Since this design load is significantly greater than the capacity of the roof structure based on its actual design, Tacoma recommends that this building be excluded from the Municipalities Emergency Plan that would call for a community centre to be utilized as a shelter location in an emergency situation.

2. Using the information presented in the National Research Council Canada Structural Commentaries, referenced in the Ontario Building Code, the density of snow in an accumulated state can be capped at 4.0 kN/m³ (Commentary G, Clause 8). In reference to the design snow load of 2.4 kPa, this would equate to a 0.6m (24") allowable depth of snow accumulation to reach the design load. Tacoma recommends that indicators be added to the roof set at 18" in height. If snow accumulation exceeds that amount (covers the indicators), the roof snow be removed in a careful, balanced approach.
3. If at any time, cracks, settlement or any other distress be noticed in the building structure, Tacoma or another professional engineer be retained to immediately review the structure and that operations within the building be ceased until cleared to resume.

NOTE: These recommendations are presented with respect to our visual assessment and structural analysis of the built-up wood posts as temporary support for the existing structure.

If you have any questions about the recommendations outlined above, please contact the undersigned at your convenience.

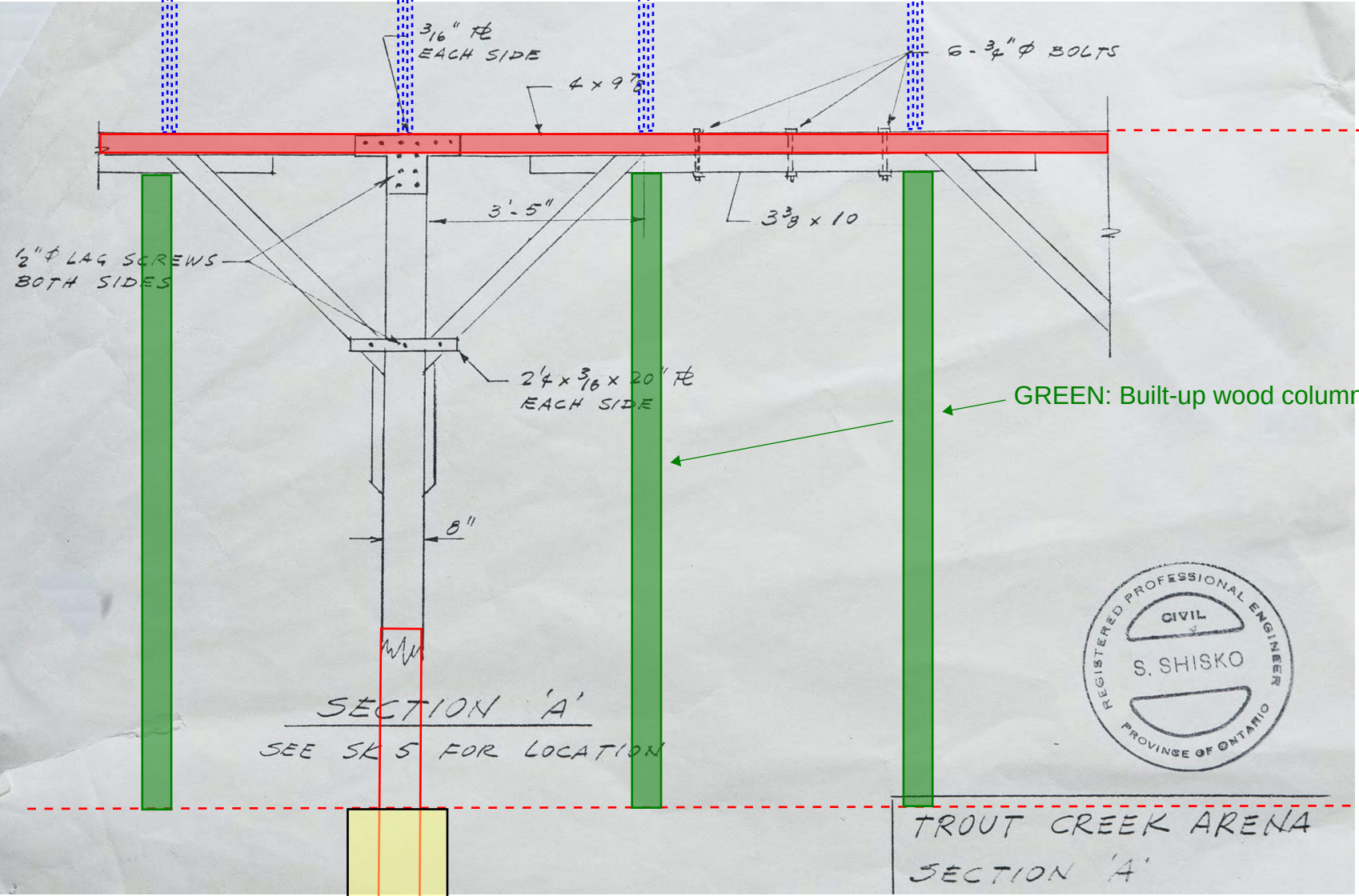


Per

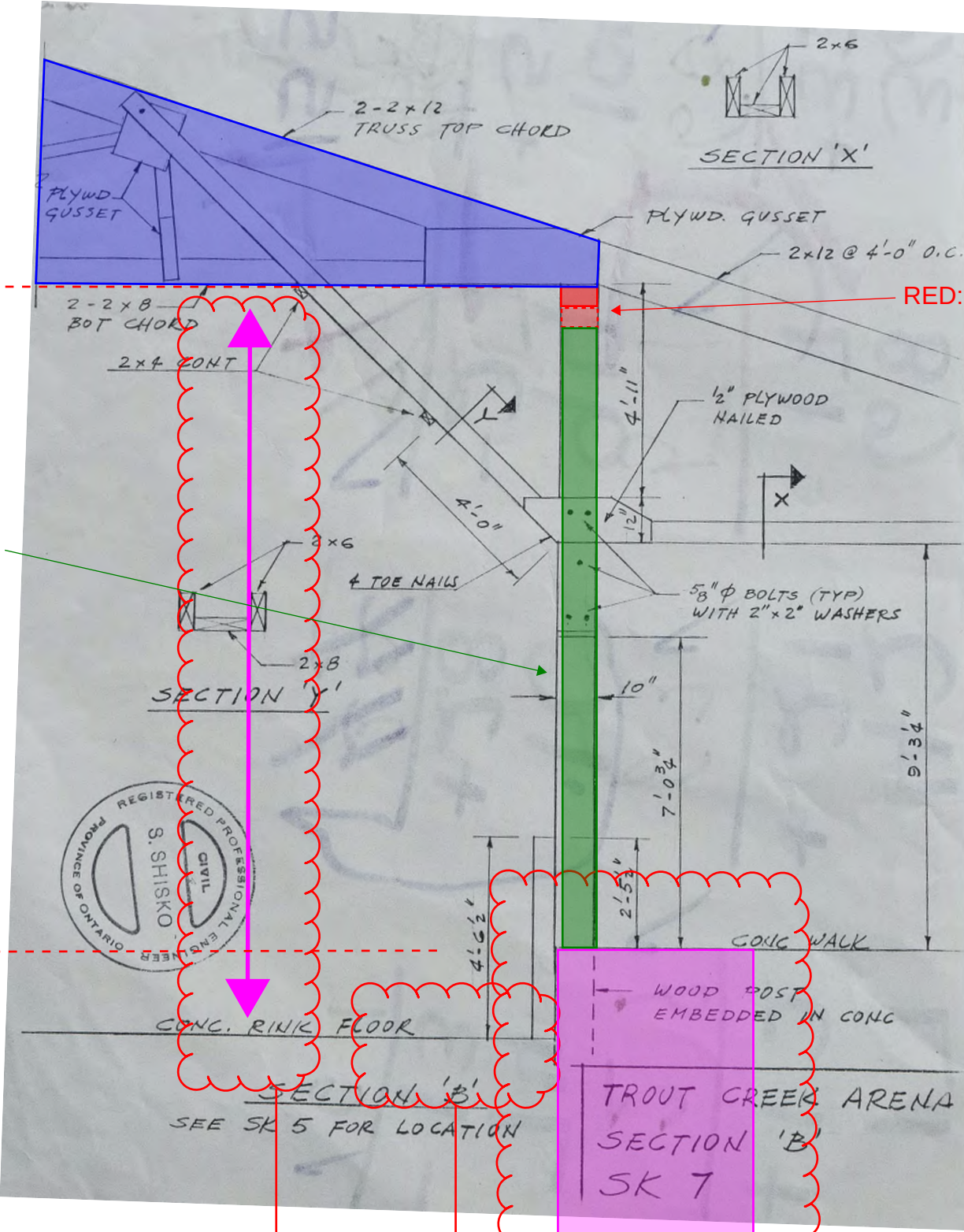
Steven Adema, P.Eng.
Director of Engineering, Principal
Tacoma Engineers Inc.

Encl. Foundation Remedial Details

BLUE: Wood roof trusses above



GREEN: Built-up wood columns



RED: Existing beams

Temporary shoring post to be added by contractor

Section of existing column

This slab NOT to be touched

sawcut and remove extg slab, excavate, new concrete pier

Black with yellow - extg concrete foundations

Elevation of extg shoring

