CONDITION ASSESSMENT REPORT NO. 1

Phase 1: Temporary Wood Posts

Date:	August 29, 2025	**No. of Pages:**	4 + Encl.
Project:	Trout Creek Community Centre	**Project No.:**	TE-45355-25
Address:	181 Main St. W, Trout Creek	**Permit No.:**	
Client:	Municipality of Powassan		
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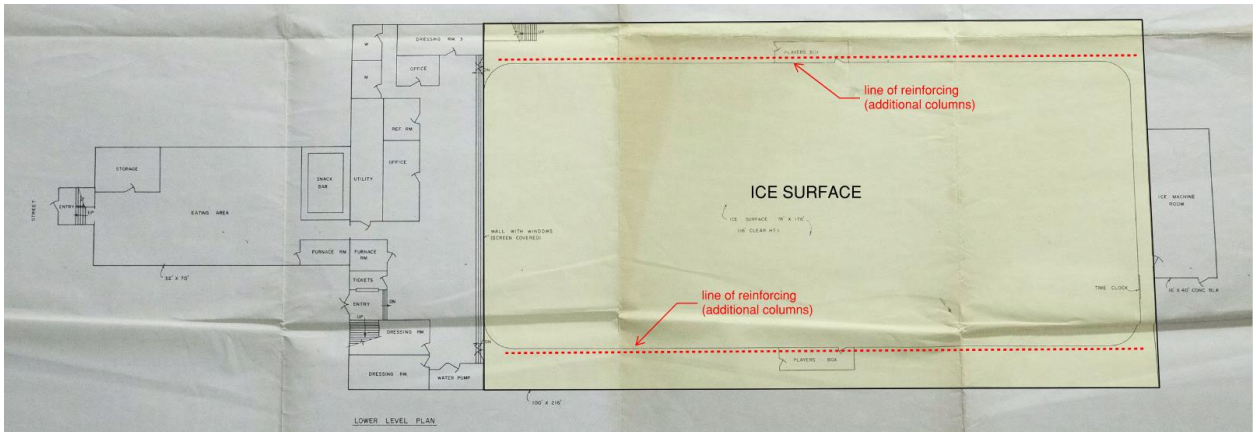
Background

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 the structural assessment of the support columns that were previously installed as reinforcing for the wood framed roof structure.



Identified on the plan above, two lines (red dashed lines) of additional columns have been added, one on either side of the primary ice surface, extending the full length of the arena.

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A previous engineering report identified that the existing 10x10 wood columns had deteriorated to the point that steel column bases were installed and two additional built-up wood posts were added between each original post.

Pic: Steel reinforced post base.

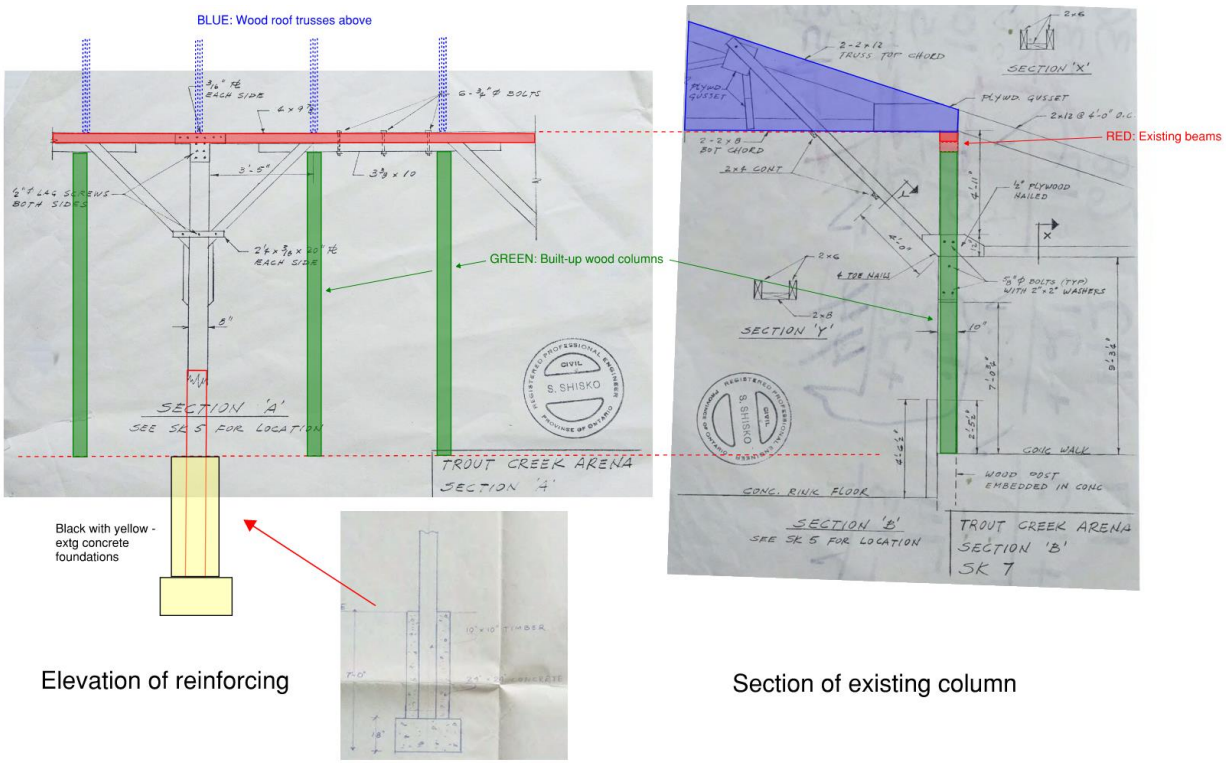
Pic: Two additional columns added.

Pic: Interior of Arena – Extents of double columns.

Comments

At the time of our review, the arena was not currently being used. Installation of the ice surface is scheduled for the fall.

The following sketch (also attached to this report for an enlarged version) combines various drawing details to show the location of the built-up posts (green) relative to the existing wood frame. In summary, the arena is framed with double trusses located at 4'o.c. (blue) supported on a Y-braced wood frame with 10"x10" wood posts at 12'o.c. The 4' truss spacing lands trusses at each of the Y-brace locations, which is the location of the built-up wood posts that were added (green).



The following design loads[1] were used in our analysis:

Snow = 50psf (2.4kPa)
Roof = 8psf (0.4 kPa)

Using these loads, with an 80' span truss and a 10' side span, the factored loads on each column (every 4') can be calculated at 15,300 pounds (68.1 kN).

Increasing the roof dead load to 10psf (0.5 kPa) to account for the additional ceiling coverings, increases the load to 15,750 pounds (70 kN).

Using O86-19 Engineering Design in Wood, a SPF No.1, 5-ply 2x6 built-up wood post that is 15' tall (4.6m) can be calculated to have a capacity of 19,900 pounds (88.6 kN).

[1] These loads were indicated on the original building drawings for the design of the roof trusses. Current building codes would require the use of a high importance factor for community centres. This factor, in conjunction with the current climatic factors, would increase the snow load to 61.4psf (2.94 kPa).

Based on our assessment, the existing wood frame, as reinforced with the additional built-up wood posts, is structurally adequate to support the imposed roof and snow loads.

Around the perimeter of the arena, the additional built-up posts are supported by a concrete curb that forms the transition from the arena floor to the walking surface around the arena. The exact extents of the concrete are unknown (depth, thickness). Our site review did not reveal any signs of distress (cracking, movement, settlement) in the concrete foundations. Based on this, it would appear that the foundations are performing adequately. However, since the duration of exposure to load is very short, it is also unknown to what extent of capacity the foundations have been loaded to.

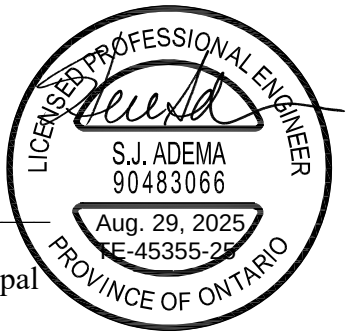
Recommendations

Based on our site review, and the information presented above, we have the following recommendations:

1. As outlined in the footnote referenced in the design load section, 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.

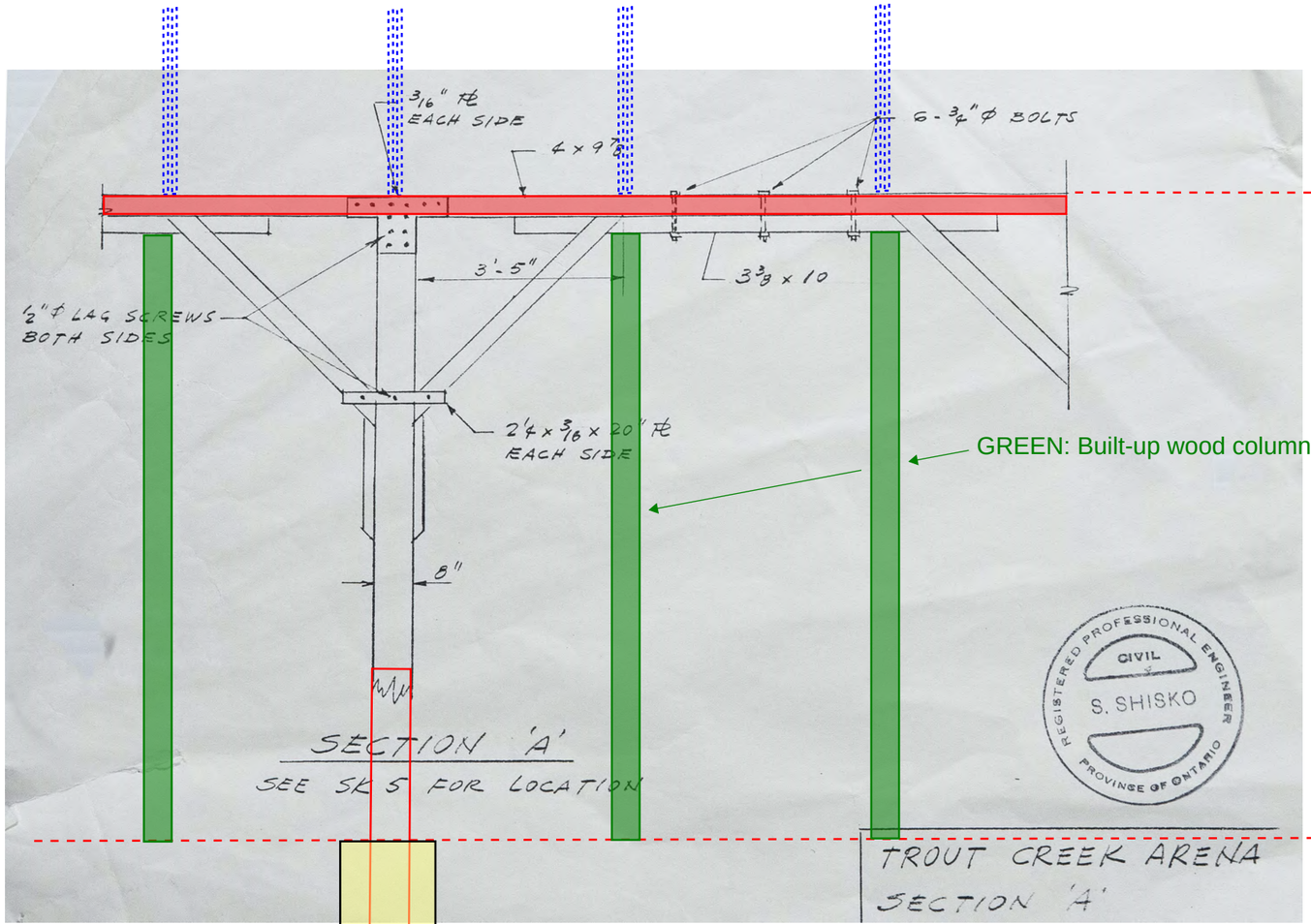


Per _____

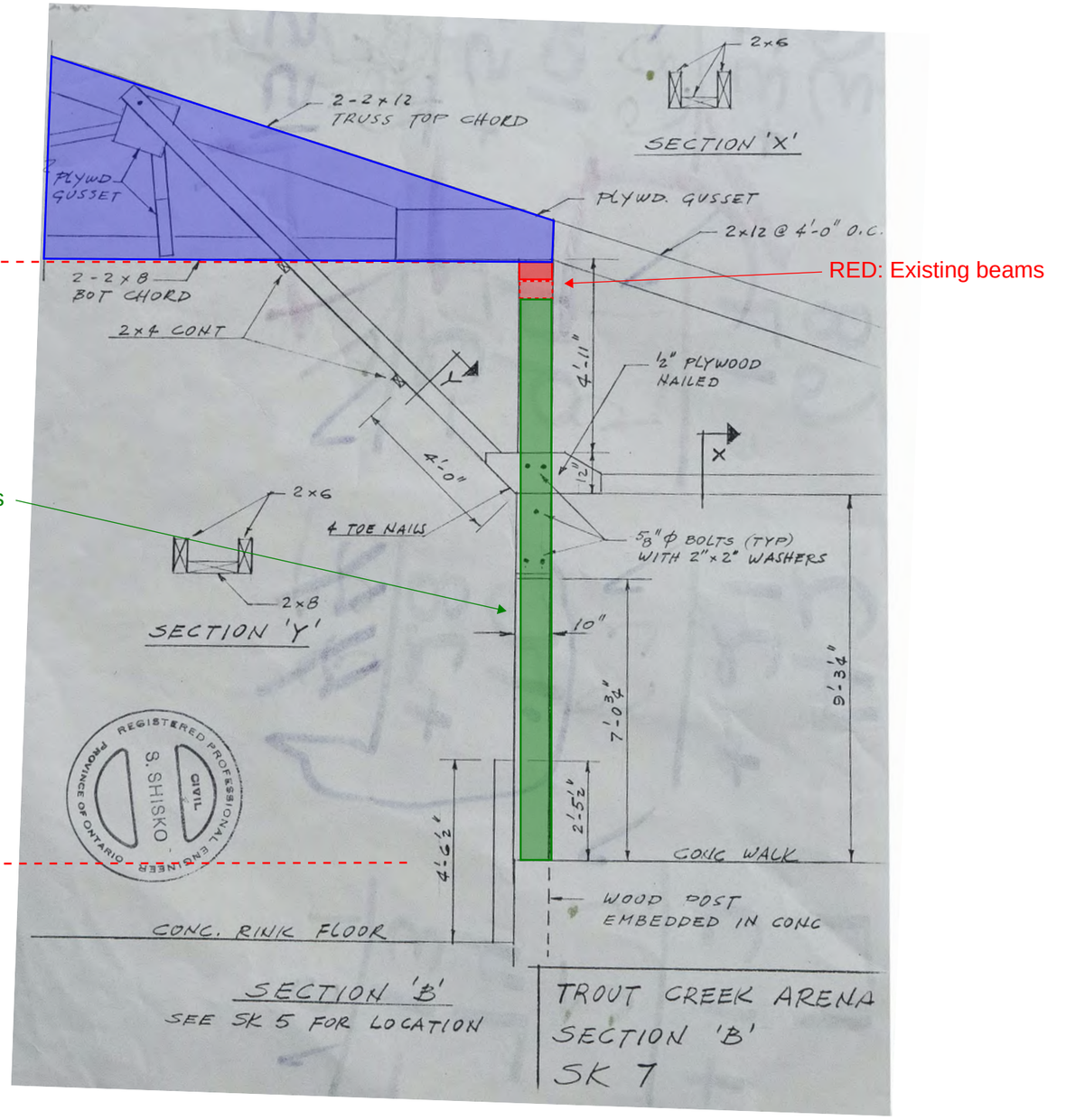
Steven Adema, P.Eng.
Director of Engineering, Principal
Tacoma Engineers Inc.

Encl. 1 (one) Framing Schematic – Built-up Posts

BLUE: Wood roof trusses above

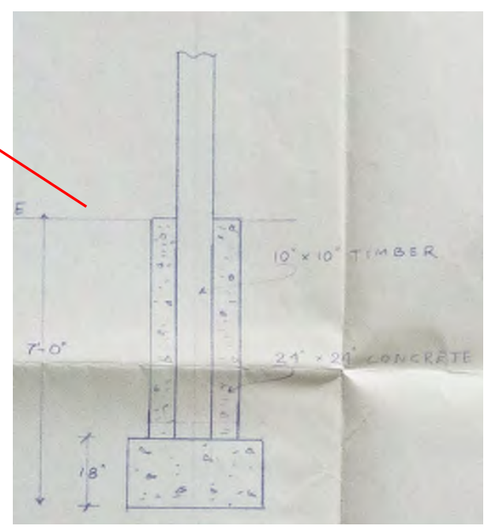


GREEN: Built-up wood columns



RED: Existing beams

Black with yellow - extg concrete foundations



Elevation of reinforcing

Section of existing column