April 10, 2015

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: Awarding Request for Proposal (RFP) 15-OF-04 – Design/Build of Storage Structure for Winter Control Sand

As you are aware the approved 2015 capital budget included the design/build of a storage structure for approximately 6000 tonnes of salted winter control sand. The total budget for the design, foundation and superstructure for a storage structure is $528,278. The scope of work identified in the Terms of Reference document included the following 12 main criteria;

a. The successful firm shall have all structure drawings, foundation drawings, a site layout drawing and all specifications used to design and install the building approved and stamped by a professional engineer registered in Ontario.

b. A minimum of 2 hard copy sets of the as-built drawings shall be supplied to the Town of Fort Frances, and in a digital autocad format if available.

c. The area available to accept the outside footprint of the structure is 80 feet wide by 150 feet long. The preferred size of structure is 60 feet wide by 125 feet long. Refer to the attached map (Appendix "B") showing the approximate location to where the structure will be situated within the Public Works yard site (on lot 501 – 6th Street West property).

d. Height of the structure shall facilitate approximately 4500 to 6000 tonnes of salted winter control sand and allow the capability to use a portable conveyor stacker that can be wheeled in and out of the structure, in addition to raised truck dump boxes.

e. It is anticipated for the structure to be rectangular in shape. The structure shall be completely open at one end of the width (short length) to facilitate the entry and exit of haul trucks and equipment to be utilized in the stockpiling and loading of winter control sand.

f. The condition of the site where the structure is being proposed is basically in a back yard of lot 501 – 6th Street West which is comprised of grass over a small layer of organics. The Town will be responsible to strip the organics, place a layer of granular "B" approximately 450 mm in thickness, a 150 mm thick layer of granular "A" and 80 mm of asphalt. The Town

workforce will be responsible for preparing the site as outlined herein and will coordinate with the successful firm to ensure the foundation for structure can be installed in a cost effective manner.

g. If a concrete cast-in- place, in ground foundation is being proposed, the constructor will be responsible to excavate down to the underside of the footing and backfill up to original ground elevation on both sides of the foundation wall.

h. The floor elevation within the building will be approximately 1 foot or 300 mm above the existing ground elevation. The floor will be sloped at approximately 1 to 1.5% falling towards the open end of the structure.

i. Proposals shall indicate if the asphalt surface is required prior to the concrete wall installation taking place i.e.- should the wall be required to rest on the asphalt surface.

j. If a truss & fabric system structure is being proposed, the proposals shall include all data sheets on the proposed truss and fabric system in addition to the concrete foundation/wall concept. The data sheets shall clearly indicate the quality of the fabric and truss system being proposed. The fabric and truss system should be of a workmanship and quality to last for an extended period of time (> 25 years) when exposed to the weather conditions in Fort Frances and to a stockpile of salted winter control sand being stored within the structure on a year round basis.

k. Proposals shall clearly indicate the guarantee/warranty on all components of the structure and concrete wall system.

l. The structure shall be completed no later than Monday, September 7, 2015. Proposals shall provide a completion date based on the Town awarding the work by Tuesday April 21, 2015.

The R.F.P. call was advertised on February 18, 2015 in the Fort Frances Times with the tender closing on Tuesday, March 31st, 2015 at 2:00 p.m. The RFP documents were developed to be generic in nature to ensure all types of storage structures such as; conventional wood framed, engineered fabric, and pre-engineered steel framed could be submitted. Twenty-six (26) terms of reference documents were distributed to building suppliers and contractors where 10 proposals were received with 13 different structure/ foundation options to consider.

There were 7 engineering fabric structures, 3 wood frame c/w exterior metal cladding structures, 2 wood/galvanized steel c/w exterior metal cladding structures and 1 galvanized steel structure.

The proposals submitted by each individual Building firm were reviewed and scored. A scoring system utilized the following 5 main categories:

1) Quality of the proposal submitted - ease of understanding, required components of the proposed structure, work schedule.

2) Past Experience in completing similar size and shaped structures

3) Key Personnel assigned to the project

4) Proposal Cost

5) Schedule

Travis Rob – Chief Building Official, Doug Herr – Environmental and Facilities Superintendent and myself completed the evaluation of the 13 options where it was determined that Engineered Fabric cover structures would be eliminated due to the following reasons;

1) **Low longevity** approximately 10 years for the fabric cover and approximately 15 years for the structural steel components where the Town wanted a building that has a longevity of 25 years or more.
2) **The possibility of microbursts, tornados and wind forces higher than design loads is a reality in the Fort Frances Area.** For example in the summer 2014 a mini tornado or microburst touched down at the International Falls golf course where hundreds of trees blew down and the roof for the sundeck blew and flew 500 hundred feet from the deck. A properly installed fabric cover could be blown off during a high wind event in the Fort Frances area.
3) **Highly influenced by Thermal expansion and contraction forces-** (extreme temperatures changes) -40 C to + 35C. The fabric is loosened or tightened on a regular basis where this creates a rubbing action of fabric against the structure steel components, which reduces the longevity of the fabric cover. Harvey Benford of MTO supplied several pictures where the fabric and structural fasteners were damaged & repaired due to thermal expansion and contraction forces. As a result the MTO has stopped erecting engineered fabric structures in Northern Ontario since 2011 and fabric is being replaced with metal cladding and plywood.
4) **Reduced side wall clearance-** could result in pre-mature structure damage due to direct contact with loader to structural steel roofing or wall elements. High costs for such spot repairs.
5) **Past Experience-** based on information provided by the MTO. The MTO is not considering the erection of engineered fabric cover type structures for salt/winter control sand storage structure based on the on-going maintenance repairs and several failures. Also it should be noted that existing fabric cover structures are being replaced with plywood and metal cladding on existing MTO structures. See attached pictures.

With the elimination of the Engineered fabric cover structures, the evaluation results indicated that the preferred structure is an 80 foot diameter circular storage structure (c/w 8 foot high concrete walls and a peak of 37 feet from the finish floor elevation) design and built by Van Pelt Construction Inc. out of Mitchell, Ontario at a net cost of $404,582.50. The estimated cost for the Town's workforce to supply, place and compact the granular bases and 80 mm HL4 asphalt base is approximately $44,500. Therefore the total project cost is estimated at $449,082.50 which is ***approximately $79,200 less*** than the approved capital budget.

The Operations & Facilities Executive Committee recommends the following;

1) That the design and construction of a storage structure be awarded to Van Pelt Construction out of Mitchell Ontario at a total cost of $449,271.05 (all taxes included) as outlined in their proposal dated March 25, 2015 under Option No. 2 – Circular structure.
2) That the Mayor and Clerk be authorized to execute the contract documents on behalf of the Corporation of the Town of Fort Frances.
3) That the Building Permit fees be waived as outlined in the Terms of reference as the control of this project is under the Town of Fort Frances.

Respectfully Submitted
Operations & Facilities Division

Doug Brown

Doug Brown, P. Eng.
Operations and Facilities Manager

Council approval of this report will ensure the following;

1) That the design and construction of a storage structure be awarded to Van Pelt Construction out of Mitchell, Ontario at a total cost of $449,271.05 (all taxes included) as outlined in their proposal dated March 25, 2015 under Option No. 2 – Circular Structure.

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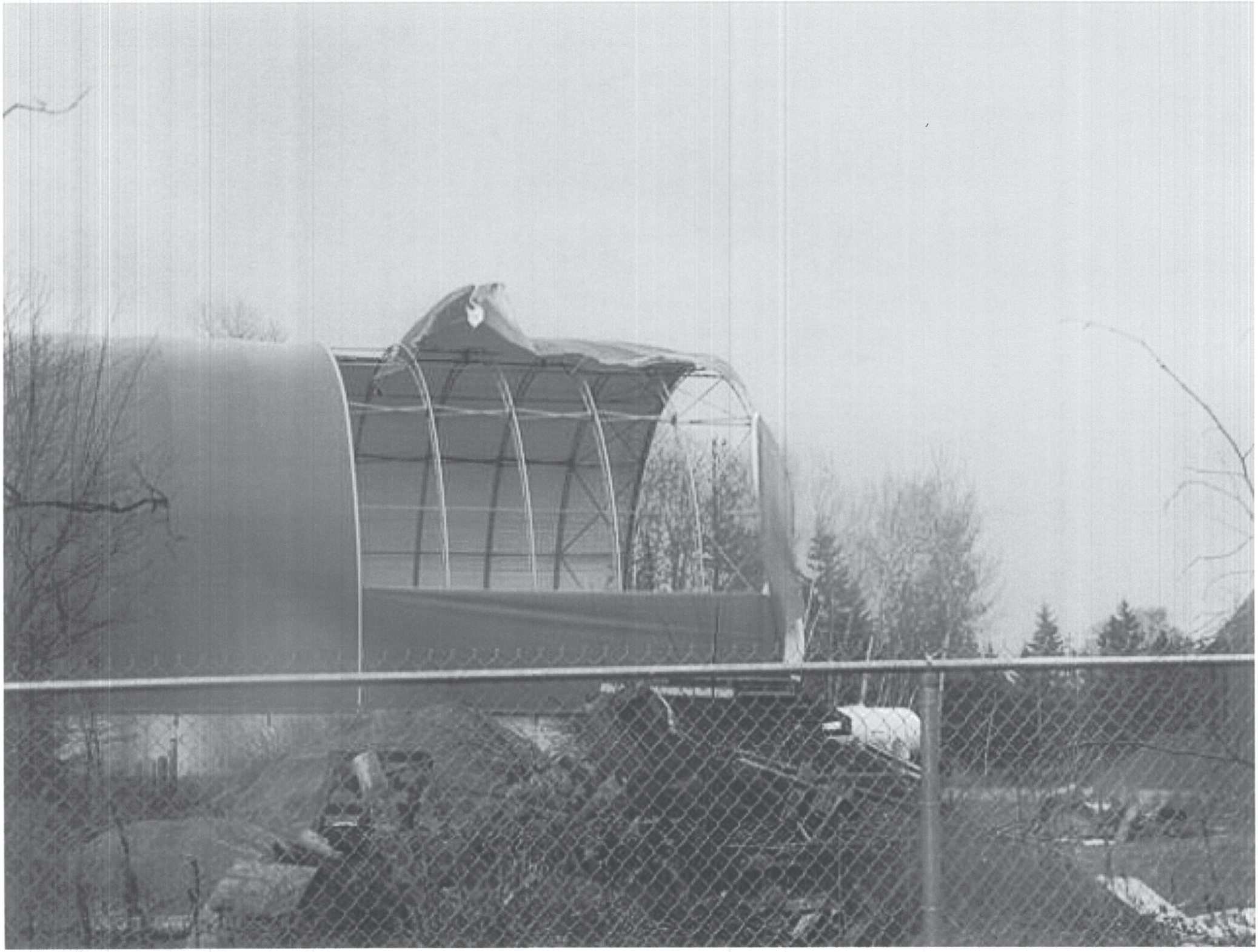

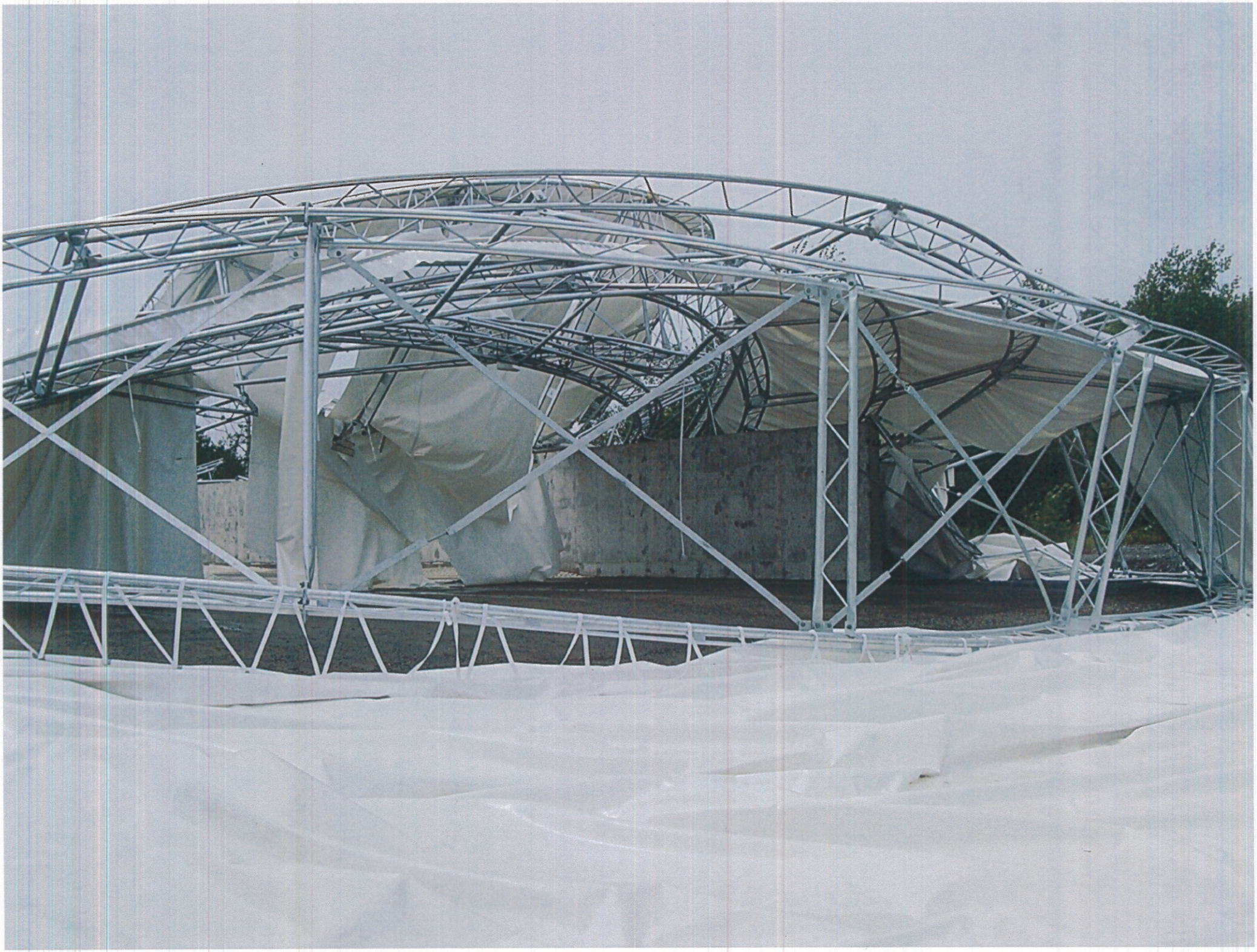

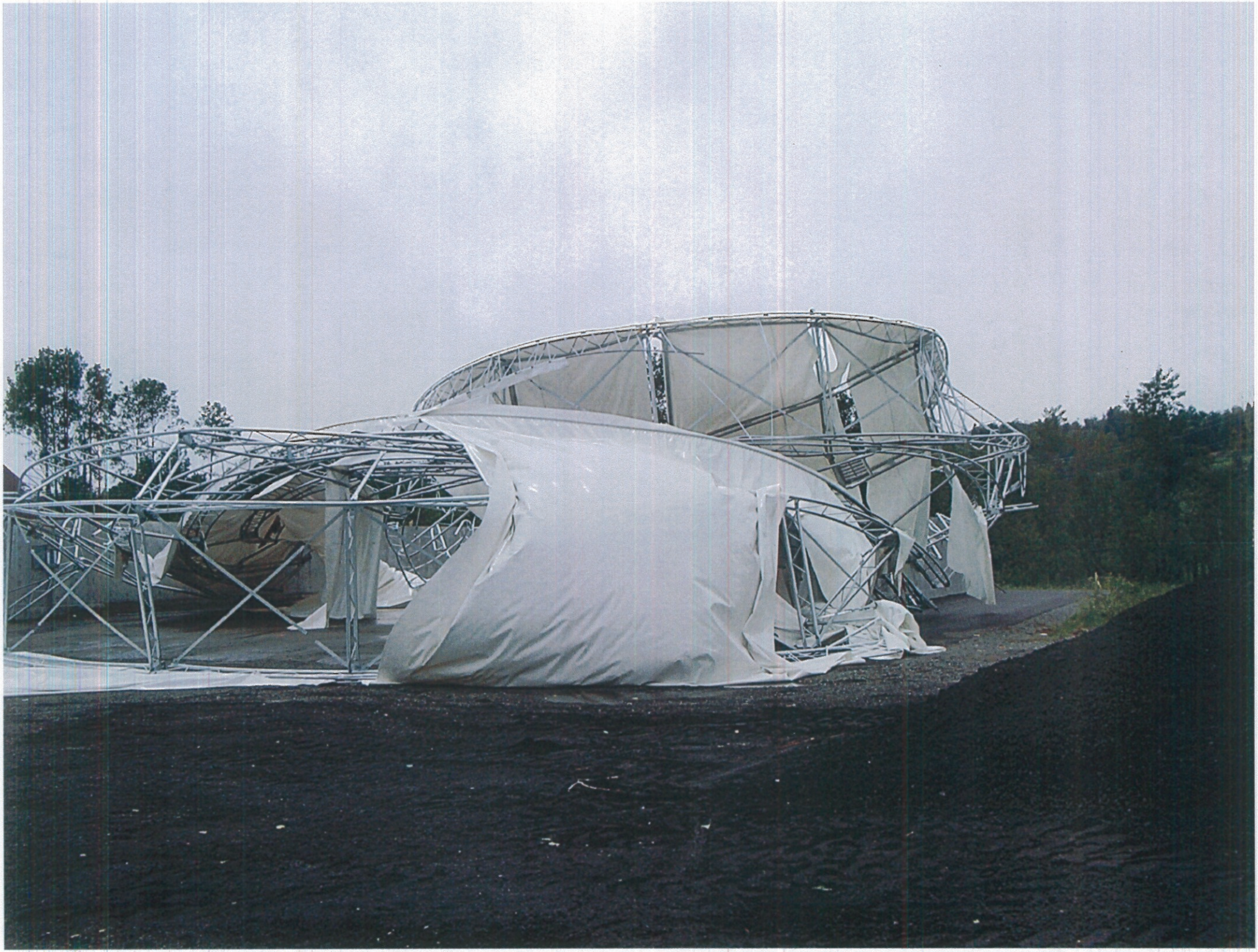
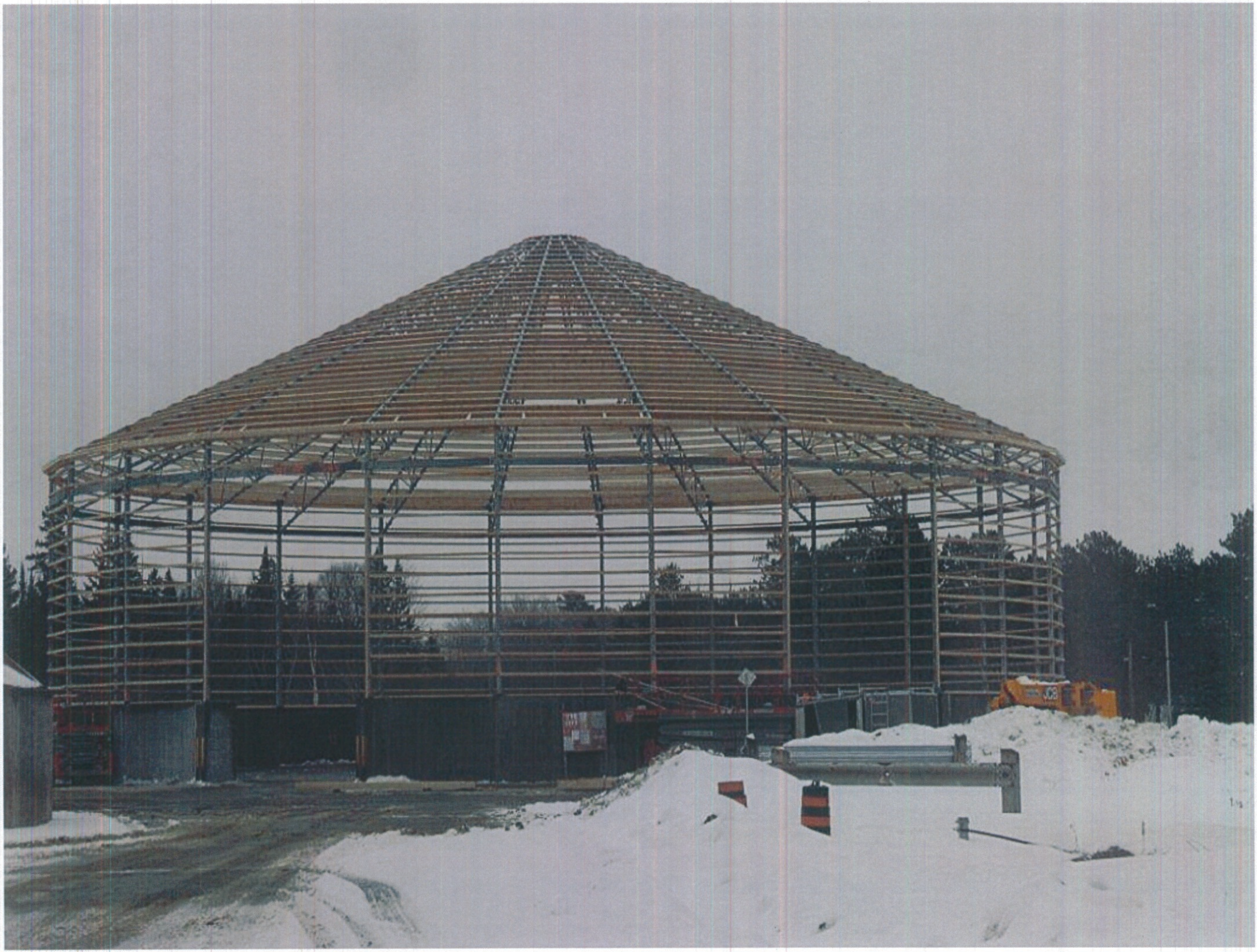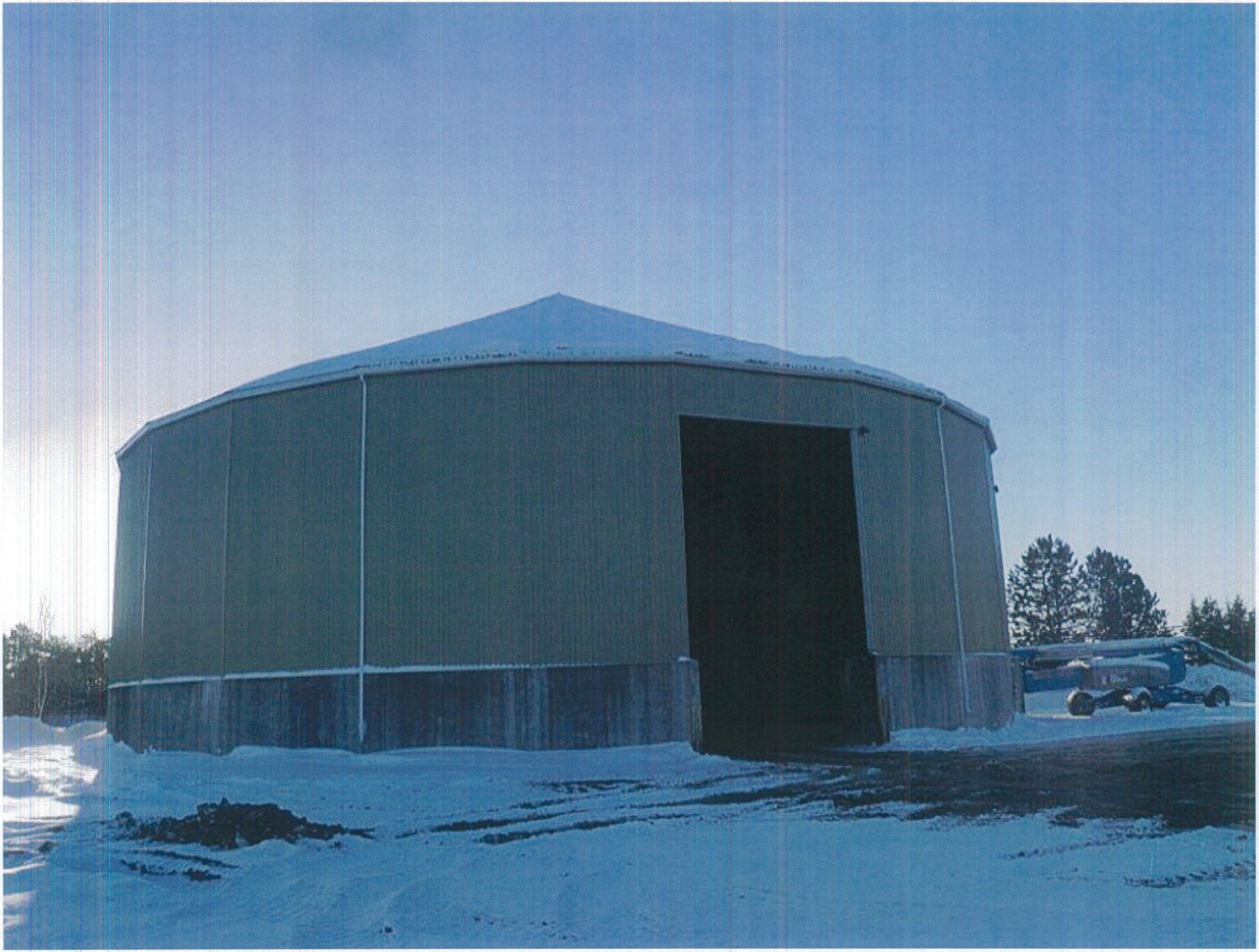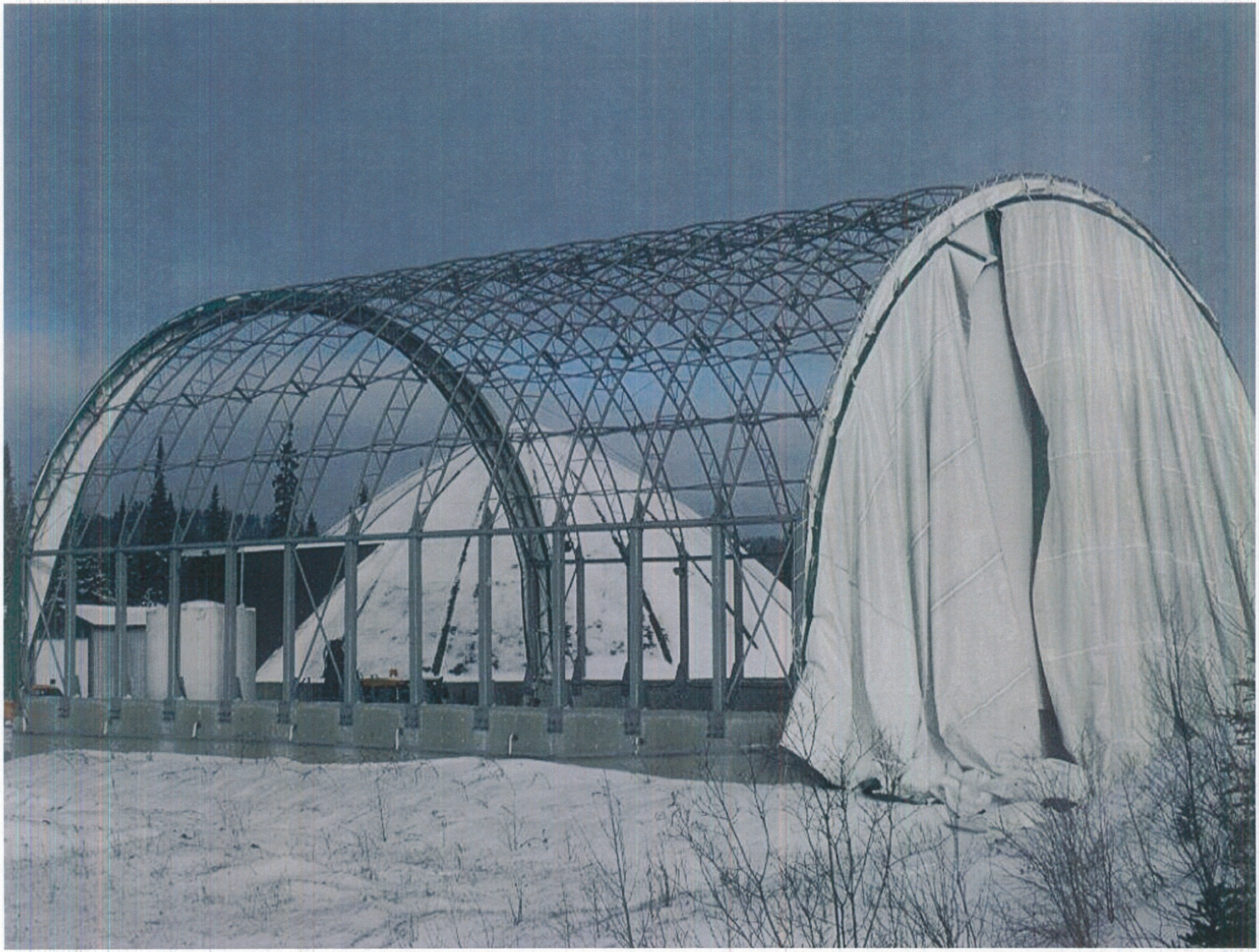
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