



September 24, 2024

Mr. Mike Mood
Township of Douro Dummer
894 South Street
Warsaw, ON, K0L 3A0

Re: Construction Budget Prices – Douro Community Centre Refrigerated Slab Replacement

Mike;

Further to our discussions regarding the replacement of the rink slab at the Douro Community Centre, TS Engineering offers the following construction budget.

Based on our discussions, we understand the current scope of work to be broken down as follows:

New Rink Floor – Civil Work

- Remove and dispose of existing dasher boards
- Remove and store existing netting for reuse.
- Remove and dispose of existing concrete rink floor and sub floor insulation
- Remove and dispose of 4” of existing native soil
- Saw cut and remove a section of perimeter slab outside refrigeration room for new cold floor mains up to blue line (for new cold floor headers to be encased in new floor).
- Supply, install, level and compact 6” of clean sand (to level new pad and raise approximately 2”)
- Supply and install two 2” layers of subfloor insulation c/w vapour barrier
- Supply and install new 6” thick reinforced concrete rink floor
- Fill existing header trench with granular and top with concrete. Top with rubber flooring.
- Supply and install new concrete as require to patch perimeter slab where cut for valves and headers. Patch rubber flooring on top of new concrete.
- Supply and install new dasher boards.
- Reinstall netting

New Rink Floor - Refrigeration Work

- Drain and dispose of existing chromated brine charge.
- Demo existing headers in trench.
- Supply and install new cold brine mains from refrigeration room to new buried cold header location
- Supply and install new cold floor pipe grid and headers

- Supply and install new cold brine charge.

Underfloor Option – Civil Work

- Excavate, remove and dispose of additional 10” native soil
- Saw cut additional section of perimeter slab for new underfloor heating mini headers
- Supply and install new 12” layer of underfloor sand in two lifts, levelled and compacted.

Underfloor Option – Refrigeration Work

- Supply and install underfloor mini headers beneath perimeter slab (or in a section of existing header trench) and underfloor poly pipe grid with mains back to refrigeration room capped for future use.
- Supply and install new warm glycol charge and expansion tank. Underfloor grid to be left charged for future use. A shell and tube heat exchanger and associated piping in the refrigeration room would need to be added in the future for year round ice.

Construction Budget Summaries

<u>CONSTRUCTION BUDGET</u>	
<u>BASE SCOPE (no underfloor)</u>	
<u>ITEM</u>	<u>BUDGET</u>
New Rink Floor – Civil Work & Boards	\$1,250,000 + HST
New Rink Floor - Refrigeration Work	\$340,000 + HST
Base Scope Construction Sub Total	\$1,590,000 + HST
Design & Construction Management	\$143,000 + HST
Contingency including Environmental Allowance	\$270,000 + HST
Cash Allowances & Testing	\$150,000 + HST
TOTAL	\$2,153,000 + HST

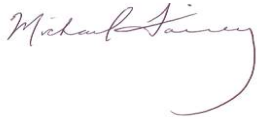
<u>CONSTRUCTION BUDGET</u>	
<u>BASE SCOPE with UNDERFLOOR OPTION</u>	
<u>ITEM</u>	<u>BUDGET</u>
New Rink Floor – Civil Work & Boards	\$1,250,000 + HST
New Rink Floor - Refrigeration Work	\$340,000 + HST
Underfloor Option – Civil Work	\$120,000 + HST
Underfloor Option – Refrigeration Work	\$88,000 + HST
Base Scope & Underfloor Option Construction Sub Total	\$1,798,000 + HST
Design & Construction Management	\$157,000 + HST
Contingency including Environmental Allowance	\$295,000 + HST
Cash Allowances & Testing	\$150,000 + HST
TOTAL	\$2,400,000 + HST

Please note that the following has been assumed:

- Sand removal is clean fill and not contaminated.
- There are no tie rods below the existing rink slab.
- There is no weeping tile system obstructing access.
- There is no other concrete, asphalt, etc underneath.
- There is no permafrost that needs to thaw before work can begin.
- Sub floor Insulation is HI-40.
- Budget includes Canoe discounted rate.
- Refrigeration room wall opening to remove and install equipment is not required.
- Pricing is based on construction in 2025, allow for price escalation if construction is expected to take place later.

The budgets above were developed in conjunction with Cimco Refrigeration and cross referenced with local projects we have completed in 2024.

Regards,

A handwritten signature in cursive script that reads "Michael Fairey". The signature is written in a dark ink and is positioned above the typed name.

Mike Fairey, P. Eng.
TS Engineering Inc.
416-418-7375