

ENHANCED CLASS 'D' ESTIMATE

**DAWSON CITY RECREATIONAL CENTRE
NEW CONSTRUCTION
DOME ROAD 1, DAWSON CITY, YT**

**Prepared for:
Republic Architecture Inc.**

**November 10, 2022
Revised: November 22, 2022**

Hanscomb
Quantity Surveyors - Since 1957

November 10, 2022
Revised: November 22, 2022
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Hanscomb
Quantity Surveyors - Since 1957



Attn: Melanie Gagnon

Re: Dawson City Recreational Centre , New Construction, Dome Road 1,
Dawson City, YT

Dear Ms. Melanie:

Please find attached our Enhanced Class 'D' Estimate for the Dawson City Recreational Centre , New Construction in Dome Road 1, Dawson City, YT.

This Enhanced Class 'D' Estimate is intended to provide a realistic allocation of direct construction costs and is a determination of fair market value. Pricing shown reflects probable construction costs obtainable in the Dome Road 1, Dawson City, YT area on the effective date of this report and is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the work.

Hanscomb has prepared this estimate(s) in accordance with generally accepted principles and practices. Our general assumptions are included in Section 3 of this report and any exclusions are identified in Section 1.6. For quality assurance, this estimate has been reviewed by the designated Team Lead as signed below and Hanscomb staff are available and pleased to discuss the contents of this report with any interested party.

Requests for modifications of any apparent errors or omissions to this document must be made to Hanscomb within ten (10) days of receipt of this estimate. Otherwise, it will be understood that the contents have been concurred with and accepted.

We trust our estimate is complete and comprehensive and provides the necessary information to allow for informed capital decisions for moving this project forward. Please do not hesitate to contact us if you have any questions or require additional information.

Yours truly,

Hanscomb Limited
Team Lead

A blue ink signature consisting of a stylized, cursive 'A' followed by a horizontal line.

Albert Allan Antolin
B.Sc.CE. PQS
Senior Cost Consultant

Hanscomb Limited
Principal / Estimate Reviewer

A blue ink signature consisting of a stylized, cursive 'K' followed by a horizontal line.

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- A - Detailed Elemental Estimate
- 1 – Option 1A
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- AA - Documents and Drawings List
- AB - Representative Drawings

1. INTRODUCTION

1.1 PURPOSE

This Enhanced Class 'D' Estimate is intended to provide a realistic allocation of direct construction costs for the Dawson City Recreational Centre , New Construction, located in Dome Road 1, Dawson City, YT, with the exception of the items listed in 1.6 Exclusions.

1.2 DESCRIPTION

The Dawson City Recreational Centre , New Construction located in Dome Road 1, Dawson City, YT is comprised of the following key elements:

The project is a new construction of 2-storey Recreational Centre Facility with 2 Options:

Option 1A: Dome Road 1, Dawson City, YT

This option is to provide a compact building footprint characterized by the long linear forms of the Ice Rink and Curling Rink with a total gross floor area of 7,361 m²

Option 1B: Dome Road 1, Dawson City, YT

This option is to provide a compact building footprint characterized by the long linear forms of the Ice Rink and Curling Rink with a total gross floor area of 8,097 m²

1.3 METHODOLOGY

Hanscomb has prepared this estimate(s) in accordance with generally accepted principles and practices. Hanscomb staff are available to discuss its contents with any interested party.

From the documentation and information provided, quantities of all major elements were assessed or measured where possible and priced at rates considered competitive for a project of this type under a stipulated sum form of contract in Dome Road 1, Dawson City, YT.

Pricing shown reflects probable construction costs obtainable in the Dome Road 1, Dawson City, YT area on the effective date of this report. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the work.

1.4 SPECIFICATIONS

For building components and systems where specifications and design details are not available, quality standards have been established based on discussions with the design team.

1. INTRODUCTION

1.5 ESTIMATE CLASSIFICATION AND COST PREDICTABILITY

Estimates are defined and classified based on the stage of a project's development and the level of information available at the time of the milestone estimate.

This Enhanced Class 'D' Estimate is considered to have an expected degree of accuracy of +/- 20-30%. In other words, bid results might vary by this amount if the construction budget were set at this milestone estimate.

At the initial stages of a contemplated project, the cost accuracy of the estimate is low as there may be little or no information available to inform a first high-level concept estimate or order of magnitude estimate. As a project nears design completion and is ready to be released to market for tender, the level of accuracy of the estimate is high as the detail is generally extensive and typically represents the information on which contractors will bid.

Milestone cost estimates or “checks” are recommended as the project design develops to keep track of scope and budget. Early detection of potential budget overruns will allow for remedial action before design and scope are locked in. The number of milestone estimates will depend on a project’s size and schedule and cost predictability will improve as the design advances.

According to the Canadian Joint Federal Government/Industry Cost Predictability Taskforce, industry standards for estimate classification and cost estimate accuracy may be summarized as follows:

COST ESTIMATE CLASSIFICATION SYSTEM						
AACE	Class 5	Class 4	Class 3		Class 2	Class 1
DND			Indicative		Substantive	
RAIC	OME	Sketch Design	Design Develop		Contract Documents	Tender Documents
GOC	OME	D	C	← B →		A
Design Documentation % Complete		12.5%	25.0%		95.0%	100.0%
Cost Estimate Accuracy (+/-%)	+/- 30%	+/- 20-30%	+/- 15-20%		+/- 10-15%	+/- 5-10%

Legend

- AACE Association for the Advancement of Cost Engineering
- DND Department of National Defence
- GOC Government of Canada
- RAIC Royal Architectural Institute of Canada
- OME Order of Magnitude Estimate

While the classification categories differ from one authority to the next, the overarching principle for cost predictability remains the same – as the level of detail and design development increases, so does the level of accuracy of the estimate.

1. INTRODUCTION

1.6 EXCLUSIONS

This Enhanced Class 'D' Estimate does not provide for the following, if required:

- Cost of contaminated soil removal
- Cost of hazardous material (e.g. asbestos, lead, PCB, etc.) removal
- Special Foundation design that includes rock anchoring, piling, concrete shoring, etc.
- Geotechnical soil improvement other than removal of unsuitable material and replace with structural fill
- Main Facility Equipment – Zamboni, Fitness, Sauna and Pool Equipment
- Escalation contingency beyond that identified in this estimate
- Financing costs
- Loose furniture, furnishings and equipment
- Winter Construction (Concrete foundation and masonry heating & hoarding)
- Value-added tax (e.g. Harmonized Sales Tax, Goods and Services Tax, or other)
- Premiums associated with Public-Private Partnership procurement model
- Soft Costs
- Unexpected labour unavailability and productivity disruptions leading to delays and added costs
- Supply chain disruptions leading to delays and added costs

2. DOCUMENTATION

This Enhanced Class 'D' Estimate has been prepared from the documentation included in Appendix AA of this report.

All of the above documentation was received from Republic Architecture Inc. and was supplemented with information gathered in meeting(s) and telephone conversations with the design team, as applicable.

Design changes and/or additions made subsequent to this issuance of the documentation noted above have not been incorporated in this report.

3. COST CONSIDERATIONS

3.1 COST BASE

All costs are estimated on the basis of competitive bids (a minimum of 4 general contractor bids and at least 4 subcontractor bids for each trade) being received in November 2022 from general contractors and all major subcontractors and suppliers based on a stipulated sum form of contract. If these conditions are not met, bids received could be expected to exceed this estimate.

3.2 UNIT RATES

The unit rates in the preparation of this Enhanced Class 'D' Estimate include labour and material, equipment, subcontractor's overheads and profit. Union contractors are assumed to perform the work with the fair wage policy in effect.

3.3 GENERAL REQUIREMENTS AND FEE

General Requirements and Fee cover the General Contractor's indirect costs which may include but not be limited to supervision, site set up, temporary utilities, equipment, utilities, clean up, etc. as covered in Division 1 General Conditions of the Contract Documents. It also includes the contractor's fees and should not be confused with Design or Consultant fees which are excluded from the Construction Costs and carried separately in the Owner's Total Project Costs.

3.4 DESIGN AND PRICING ALLOWANCE

An allowance of 15.0% has been included to cover design and pricing unknowns. This allowance is not intended to cover any program space modifications but rather to provide some flexibility for the designers and cost planners during the remaining contract document stages.

It is expected that this allowance amount will be absorbed into the base construction costs as the design advances. The amount by which this allowance is reduced corresponds to an increase in accuracy and detailed design information. Hanscomb recommends that careful consideration be made at each milestone estimate to maintain adequate contingency for this allowance.

As a project nears completion of design, Hanscomb recommends retaining some contingency for this allowance for the final coordination of documents.

3.5 ESCALATION ALLOWANCE

All costs are based on November 2022 dollars. An allowance of 9.8% per annum has been made for construction cost escalation that may occur between November 2022 and the anticipated bid date for the project. Escalation during construction is included in the unit rates.

For escalation, the budgeted amount will typically decline as the time to award nears. Forecasting escalation requires careful assessment of a continually changing construction market which at best is difficult to predict. The escalation rate should be monitored.

3. COST CONSIDERATIONS

3.6 CONSTRUCTION ALLOWANCE

An allowance of 10.0% has been made to cover construction (post contract) unknowns. This allowance, also known as the Post Contract Contingency (PCC), is intended to cover costs for change orders during construction that are not foreseeable. It is not intended to cover scope changes to the contract. The amount carried in a budget for this allowance is typically set at the initial planning stage and should be based on the complexity of the project and the probability of unknowns and retained risks.

3.7 CASH ALLOWANCE

Cash allowances are intended to allow the contractor to include in the bid price the cost for work that is difficult to fully scope at the time of tendering based on factors that are beyond the Owner and Prime Consultant's control. Cash allowances attempt to reduce the risks by dedicating a set amount for use against a certain cost that cannot yet be detailed. The Contractor is obligated to work as best as possible within the limitations of the Cash Allowance.

Examples of Cash Allowances include hardware, inspection and testing, site conditions, replacement of existing elements during demolition for renovation, hazardous materials abatement, signage, etc.

Any Cash Allowances if applicable are included either in the details of this estimate under the appropriate discipline or at the summary level.

3.8 TAXES

No provision has been made for the Goods and Services Tax. It is recommended that the owner make separate provision for GST in the project budget.

3.9 SCHEDULE

Pricing assumes a standard schedule of work appropriate to the size and scope of this project. Premiums for off-hour work, working in an operational facility, accelerated schedule, etc., if applicable, are identified separately in the body of the estimate.

3.10 STATEMENT OF PROBABLE COSTS

Hanscomb has no control over the cost of labour and materials, the contractor's method of determining prices, or competitive bidding and market conditions. This opinion of probable cost of construction is made on the basis of experience, qualifications and best judgment of the professional consultant familiar with the construction industry. Hanscomb cannot and does not guarantee that proposals, bids or actual construction costs will not vary from this or subsequent cost estimates.

3. COST CONSIDERATIONS

3.11 ONGOING COST CONTROL

Hanscomb recommends that the Owner and design team carefully review this document, including line item description, unit prices, clarifications, exclusions, inclusions and assumptions, contingencies, escalation, and mark-ups. If the project is over budget, or if there are unresolved budgeting issues, alternative systems/schemes should be evaluated before proceeding into the next design phase.

It is recommended that a final updated estimate at the end of the design stage be produced by Hanscomb using Bid Documents to determine overall cost changes which may have occurred since the preparation of this estimate. The final updated estimate will address changes and additions to the documents, as well as addenda issued during the bidding process. Hanscomb cannot reconcile bid results to any estimate not produced from bid documents including all addenda.

This estimate does not constitute an offer to undertake the work, nor is any guarantee given that an offer, to undertake the work at the estimate(s) price, will subsequently be submitted by a construction contractor. Unless explicitly stated otherwise, it is assumed that competitive bids will be sought when tender documents have been completed. Any significant deviation between bids received and a pre-tender estimate prepared by Hanscomb from the same tender documents, should be evaluated to establish the possible cause(s).

3.12 COVID-19 CLASS A ESTIMATE STATEMENT

If this project is expected to be tendered in the near future and because risks related to COVID-19 are a currently known but unquantifiable project risk at this time and therefore may not support a claim under any force majeure contract clause, Hanscomb expects general contractors to include in their bids an allowance for COVID-19 risk unless that risk is mitigated in the bid documents. Inclusion of an allowance for risk related to COVID-19 will increase the overall cost of the project, in some cases materially.

Hanscomb believes inclusion of these risks in bids could impact normal competitive market conditions resulting in a bid price increase by a minimum of 5 to 10% or in extreme situations as much as 10 to 20%.

We encourage building owners and Architect & Engineering teams to address this situation by providing clear directives to the bidders on risk mitigation for COVID-19 within the tender documents.

Items related to COVID-19 that may be included in bidders' risk allowances:

- Reduced site productivity due to:
 - lack of availability of labour for sickness and other reasons,
 - delays related to recruiting or unavailability of replacement workers,
 - social/physical distancing requirements,
 - site shutdowns due to outbreaks among site workers,
 - government mandated industry shutdowns,
 - delays in delivery of materials and equipment to the site,
 - unavailability of materials due to factory closure or shipping interruption,
 - delays related to acquiring substitutions for unavailable materials,
- Effect of reduced site productivity on project schedule,
- Effect of project schedule delays on overheads.

If any or all of these risks are encountered the completion date for the project will be delayed.

4. GROSS FLOOR AND SITE DEVELOPED AREAS

Gross Floor Area

Description	Option 1A	Option 1B
Main Floor	6,296 m2	6,374 m2
Second Floor	1,065 m2	1,723 m2
Total Gross Floor Area	7,361 m2	8,097 m2

Site Developed Area

Description	Option 1A	Option 1B
Total Site Area	33,050 m2	33,050 m2
Building Footprint	-6,296 m2	-6,374 m2
Total Site Developed Area	26,754 m2	26,676 m2

Site Developed Area is the area of the site less the foot-print area of the building.

The above areas have been measured in accordance with the Canadian Institute of Quantity Surveyors' Method of Buildings by Area and Volume.

5. CONSTRUCTION COST ESTIMATE SUMMARY

Cost Element	Percent	OPTION 1A Amount	OPTION 1B Amount
New Construction		\$29,273,400	\$31,795,800
Site Development		\$3,537,200	\$3,533,700
Sub-total		\$32,810,600	\$35,329,500
Location Factor (Dawson City, YT)	38.0%	\$12,468,000	\$13,425,200
General Requirements	8.0%	\$3,622,300	\$3,900,400
Fee	3.0%	\$1,467,000	\$1,579,700
Sub-total		\$50,367,900	\$54,234,800
Design and Pricing Allowance	15.0%	\$7,555,200	\$8,135,200
Escalation Allowance, 1 Year	9.8%	\$5,676,500	\$6,112,300
Construction Allowance	10.0%	\$6,360,000	\$6,848,200
Total Construction Cost		\$69,959,600	\$75,330,500
Goods and Services Tax (GST)		Excluded	Excluded
Total Construction Cost		\$69,959,600	\$75,330,500

Alternative Pricing (cost includes adds-on)

- Insulated concrete panel in lieu of the base material (IMP) for exterior wall envelope cladding

Extra Cost

\$1,107,000

Extra Cost

\$1,154,400

6. UNDERSTANDING THE ELEMENTAL COST SUMMARY

The cost information prepared and presented by Quantity Surveyors is organized in a form referred to by Quantity Surveyors as an 'Elemental Cost Summary'. In this format, the more 'intuitive' elements (e.g. foundations, exterior cladding, plumbing, etc.) of a building are evaluated rather than materials or trades. Quantity Surveyors track this information consistently from project to project to benchmark not just the overall unit rate of a building type but also rates and ratios for key elements. Below are some of the key features on the Elementary Cost Summary you will find on page A-1 of this estimate:

Building components are summarized as elements 'A2 Structure' and then sub-elements 'A23 Roof Construction'. This allows review of Roof Construction costs whether it is steel, concrete or wood - something difficult with a trade summary.

Ratio to GFA evaluates design efficiency and highlights outliers. It is arrived at by dividing the parametric quantity of a sub-element (i.e. overall exterior wall area) by the building gross floor area (GFA). A ratio greater than 0.600 for 'A32 Walls Above Grade' is considered high and may be due to articulation, courtyard design or high floor to floor heights.

The 'Unit Rate' is the blended rate of a sub-element's costs divided by its parametric quantity and allows a review of its reasonableness relative to bench-marks. A rate of \$559/m² indicates a good quality exterior wall cladding.

The last column expresses the cost of each element as a percentage of total construction cost. At 18.7% of total construction costs, mechanical and electrical systems are considered basic.

The 'Rate per SF' (m²) column converts costs for each element or sub-element to a \$/SF (m²) of GFA for comparison to benchmark rates. A rate of \$217/m² indicates basic electrical design.

General Requirements & Fee cover General Contractor's overheads (site set up, supervision, etc.) and contractor's expenses. Fee is not for Consultants.

Allowances are critical for estimates. Design & pricing compensates for a lack of detail early in design; escalation considers changes to labour & material; construction allowance is for unforeseen conditions; and, cash allowances offer flexibility for items difficult to detail at bid.

Project		Report date : 19 Jul 2017	
Location		Page No. : A - 1	
Owner		Bldg Type : 420	
Consultant		C.T. Index : 0.0	
		GFA : 1,582 m ²	
SAMPLE ELEMENTAL SUMMARY			
Element	Ratio to GFA	Elemental Cost Quantity Unit Rate	Elemental Amount Sub-Total Total Sub-Total Total %
A SHELL		1,582 m ²	1,829,900 1,156.70 35.6
A1 SUBSTRUCTURE			250,000 158.03 4.9
A11 Foundations	1.000	1,582 m ² 158.03	250,000
A12 Basement Excavation	0.001	1 Nil 0.00	0
A13 Special Conditions	0.001	1 Nil 0.00	0
A2 STRUCTURE			468,800 296.33 9.1
A21 Lowest Floor Construction	1.000	1,582 m ² 84.92	102,700
A23 Roof Construction			0 0.00 0
A23 Roof Construction	1.013	1,602 m ² 228.53	366,100
A3 EXTERIOR ENCLOSURE			1,111,100 702.34 21.6
A31 Walls Below Grade	0.001	1 Nil 0.00	0
A32 Walls Above Grade			612,900 387.42 8.28
A32 Walls Above Grade	1.096	1,096 m ² 559.22	612,900
A33 Windows & Entrances	0.003	4 Lvs 3,275.00	13,100
A34 Roof Coverings	1.013	1,602 m ² 220.22	352,800
A35 Projections	1.000	1,582 m ² 83.63	132,300
B INTERIORS		1,582 m ²	1,033,400 653.22 20.1
B1 PARTITIONS & DOORS			382,900 242.04 7.4
B11 Partitions	1.504	2,380 m ² 105.29	250,600
B12 Doors	0.038	60 Lvs 2,205.00	132,300
B2 FINISHES			398,400 251.83 7.7
B21 Floor Finishes	1.000	1,582 m ² 75.35	119,200
B22 Ceiling Finishes	1.000	1,582 m ² 91.28	144,400
B23 Wall Finishes	2.314	3,660 m ² 38.83	134,800
B3 FITTINGS & EQUIPMENT			252,100 159.36 4.9
B31 Fittings & Fixtures	1.000	1,582 m ² 159.36	252,100
B32 Equipment	1.000	1,582 m ² 0.00	0
B33 Elevators	0.001	1 Nil 0.00	0
B34 Escalators	0.001	1 Nil 0.00	0
C SERVICES		1,582 m ²	964,400 609.61 18.7
C1 MECHANICAL			621,100 392.60 12.1
C11 Plumbing & Drainage	1.000	1,582 m ² 145.26	229,800
C12 Fire Protection	1.000	1,582 m ² 31.04	49,100
C13 HVAC	1.000	1,582 m ² 170.35	269,500
C14 Controls	1.000	1,582 m ² 45.95	72,700
C2 ELECTRICAL			343,300 217.00 6.7
C21 Service & Distribution	1.000	1,582 m ² 42.54	67,300
C22 Lighting, Devices & Heating	1.000	1,582 m ² 116.81	184,800
C23 Systems & Ancillaries	1.000	1,582 m ² 57.65	91,200
NET BUILDING COST - EXCLUDING SITE			\$ 3,827,700 2,419.53 74.4
D SITE & ANCILLARY WORK		1,582 m ²	799,800 505.56 15.5
D1 SITE WORK			799,800 505.56 15.5
D11 Site Development	6.541	10,348 m ² 48.71	504,100
D12 Mechanical Site Services	0.001	1 Sum 167,400.00	167,400
D13 Electrical Site Services	0.001	1 Sum 128,300.00	128,300
D2 ANCILLARY WORK			0 0.00 0.00
D21 Demolitions	0.001	1 Nil 0.00	0
D22 Alterations	0.001	1 Nil 0.00	0
NET BUILDING COST - INCLUDING SITE			\$ 4,627,500 2,925.09 89.9
Z1 GENERAL REQUIREMENTS & FEE			520,100 328.76 10.1
Z11 General Requirements	8.0%		370,200
Z12 Fee	3.0%		149,900
TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES			\$ 5,147,800 3,263.86 100.0
Z2 ALLOWANCES			930,500 588.18
Z21 Design & Pricing Allowance	10.0%		514,800
Z22 Escalation Allowance	2.5%		141,600
Z23 Construction Allowance	3.0%		174,100
Z24 Cash Allowances	1 Sum	100,000.00	100,000
TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES			\$ 6,078,300 3,842.04
VALUE ADDED TAX (GST/HST)			0 0.00 0.00
- Value Added Tax (GST/HST) 0.0%			0 0.00 0.00
TOTAL CONSTRUCTION ESTIMATE			\$ 6,078,300 3,842.04

The power of the Elemental Cost Summary lies in the ability to compare costs with similar building types as well as alternatives without losing sight of the cost associated with that element of the building. By using this format consistently across all projects, Quantity Surveyors can better understand why the 'roof covering' element may be more on this project, if it's fulfilling the same function as a similar project.

**Appendix
A - Detailed Elemental Estimate
OPTION 1A – Dome Road 1**

Project	: Dawson City Recreation Centre	Report date	: 22 Nov 2022
	: New Construction - OPTION 1A	Page No.	: 1
Location	: Dome Road 1, Dawson City, YT	Bldg Type	: 550
Owner	: Government of Yukon	C.T. Index	: 0.0
Consultant	: Republic Architecture Inc.	GFA	: 7,361 m2

ELEMENTAL COST SUMMARY

Element	Ratio to GFA	Elemental Cost		Elemental Amount		Rate per m2		%
		Quantity	Unit rate	Sub-Total	Total	Sub-Total	Total	
A SHELL		7,361 m2			16,343,100		2,220.23	32.5
A1 SUBSTRUCTURE					5,619,000		763.35	11.2
A11 Foundations	0.860	6,296 m2	514.00	3,233,600		439.29		
A12 Bulk Excavation / Fill	2.860	21,030 m3	99.00	2,085,400		283.30		
A13 Special Conditions	0.000	1 Sum	300,000.00	300,000		40.76		
A2 STRUCTURE					6,666,700		905.68	13.2
A21 Lowest Floor Construction	0.860	6,296 m2	197.00	1,242,400		168.78		
A22 Upper Floor Construction	0.140	1,065 m2	659.00	702,300		95.41		
A23 Roof Construction	0.860	6,296 m2	750.00	4,722,000		641.49		
A3 EXTERIOR ENCLOSURE					4,057,400		551.20	8.1
A31 Walls Below Grade				0		0.00		
A32 Walls Above Grade	0.350	2,596 m2	650.00	1,687,400		229.24		
A33 Windows & Entrances	0.020	166 m2	2,246.00	372,900		50.66		
A34 Roof Coverings	0.860	6,296 m2	275.00	1,731,400		235.21		
A35 Projections	1.000	7,361 m2	36.00	265,700		36.10		
B INTERIORS		7,361 m2			3,160,400		429.34	6.3
B1 PARTITIONS & DOORS					1,147,300		155.86	2.3
B11 Partitions	0.540	3,954 m2	235.00	929,700		126.30		
B12 Doors	0.010	88 No	2,473.00	217,600		29.56		
B2 FINISHES					1,015,900		138.01	2.0
B21 Floor Finishes	1.000	7,361 m2	52.00	386,000		52.44		
B22 Ceiling Finishes	1.000	7,361 m2	61.00	447,800		60.83		
B23 Wall Finishes	1.430	10,504 m2	17.00	182,100		24.74		
B3 FITTINGS & EQUIPMENT					997,200		135.47	2.0
B31 Fittings & Fixtures	1.000	7,361 m2	91.00	671,700		91.25		
B32 Equipment	1.000	7,361 m2	44.00	325,500		44.22		
B33 Elevators				0		0.00		
B34 Escalators				0		0.00		
C SERVICES		7,361 m2			9,769,900		1,327.25	19.4
C1 MECHANICAL					6,915,600		939.49	13.7
C11 Plumbing & Drainage	1.000	7,361 m2	110.00	810,800		110.15		
C12 Fire Protection	1.000	7,361 m2	54.00	400,200		54.37		
C13 HVAC	1.000	7,361 m2	706.00	5,196,700		705.98		
C14 Controls	1.000	7,361 m2	69.00	507,900		69.00		
C2 ELECTRICAL					2,854,300		387.76	5.7
C21 Service & Distribution	1.000	7,361 m2	114.00	840,600		114.20		
C22 Lighting, Devices & Heating	1.000	7,361 m2	169.00	1,244,000		169.00		
C23 Systems & Ancillaries	1.000	7,361 m2	105.00	769,700		104.56		
NET BUILDING COST - EXCLUDING SITE					\$ 29,273,400		3,976.82	58.1
D SITE & ANCILLARY WORK		7,361 m2			3,537,200		480.53	7.0
D1 SITE WORK					3,537,200		480.53	7.0
D11 Site Development	3.630	26,754 m2	105.00	2,821,800		383.34		
D12 Mechanical Site Services	0.000	1 Sum	340,000.00	340,000		46.19		
D13 Electrical Site Services	0.000	1 Sum	375,400.00	375,400		51.00		
D2 ANCILLARY WORK					0		0.00	0.0
D21 Demolitions				0		0.00		
D22 Alterations				0		0.00		
NET BUILDING COST - INCLUDING SITE					\$ 32,810,600		4,457.36	65.1
Z1 GENERAL REQUIREMENTS & FEE					17,557,300		2,385.18	34.9
Z10 Location Factor (Dawson, YT)		38.0 %		12,468,000		1,693.79		
Z11 General Requirements		8.0 %		3,622,300		492.09		
Z12 Fee		3.0 %		1,467,000		199.29		
TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES					\$ 50,367,900		6,842.53	100.0
Z2 ALLOWANCES					19,591,700		2,661.55	
Z21 Design & Pricing Allowance		15.0 %		7,555,200		1,026.38		
Z22 Escalation Allowance (1 Yr)		9.8 %		5,676,500		771.16		
Z23 Construction Allowance		10.0 %		6,360,000		864.01		
TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES					\$ 69,959,600		9,504.09	
VALUE ADDED TAX (GST/HST)					0		0.00	
Value Added Tax (GST/HST)		0.0 %		0		0.00		
TOTAL CONSTRUCTION ESTIMATE					\$ 69,959,600		\$ 9,504.09	

**Appendix
A - Detailed Elemental Estimate
OPTION 1B – Dome Road 1**

Project	: Dawson City Recreation Centre	Report date	: 22 Nov 2022
	: New Construction - OPTION 1B	Page No.	: 1
Location	: Dome Road 1, Dawson City, YT	Bldg Type	: 550
Owner	: Government of Yukon	C.T. Index	: 0.0
Consultant	: Republic Architecture Inc.	GFA	: 8,097 m2

ELEMENTAL COST SUMMARY

Element	Ratio to GFA	Elemental Cost		Elemental Amount		Rate per m2		%
		Quantity	Unit rate	Sub-Total	Total	Sub-Total	Total	
A SHELL		8,097 m2			17,118,600		2,114.19	31.6
A1 SUBSTRUCTURE					5,686,500		702.30	10.5
A11 Foundations	0.790	6,374 m2	514.00	3,273,600		404.30		
A12 Bulk Excavation / Fill	2.630	21,306 m3	99.00	2,112,900		260.95		
A13 Special Conditions	0.000	1 Sum	300,000.00	300,000		37.05		
A2 STRUCTURE					7,207,600		890.16	13.3
A21 Lowest Floor Construction	0.790	6,374 m2	197.00	1,257,100		155.26		
A22 Upper Floor Construction	0.210	1,723 m2	679.00	1,170,000		144.50		
A23 Roof Construction	0.790	6,374 m2	750.00	4,780,500		590.40		
A3 EXTERIOR ENCLOSURE					4,224,500		521.74	7.8
A31 Walls Below Grade				0		0.00		
A32 Walls Above Grade	0.330	2,707 m2	650.00	1,759,600		217.32		
A33 Windows & Entrances	0.030	219 m2	2,077.00	454,900		56.18		
A34 Roof Coverings	0.790	6,374 m2	275.00	1,752,900		216.49		
A35 Projections	1.000	8,097 m2	32.00	257,100		31.75		
B INTERIORS		8,097 m2			4,172,000		515.25	7.7
B1 PARTITIONS & DOORS					1,737,100		214.54	3.2
B11 Partitions	0.640	5,170 m2	285.00	1,475,300		182.20		
B12 Doors	0.010	108 No	2,424.00	261,800		32.33		
B2 FINISHES					1,211,400		149.61	2.2
B21 Floor Finishes	1.000	8,097 m2	61.00	496,700		61.34		
B22 Ceiling Finishes	1.000	8,097 m2	61.00	494,500		61.07		
B23 Wall Finishes	1.610	13,047 m2	17.00	220,200		27.20		
B3 FITTINGS & EQUIPMENT					1,223,500		151.11	2.3
B31 Fittings & Fixtures	1.000	8,097 m2	92.00	748,000		92.38		
B32 Equipment	1.000	8,097 m2	40.00	325,500		40.20		
B33 Elevators	0.000	1 No	150,000.00	150,000		18.53		
B34 Escalators				0		0.00		
C SERVICES		8,097 m2			10,505,200		1,297.42	19.4
C1 MECHANICAL					7,408,800		915.01	13.7
C11 Plumbing & Drainage	1.000	8,097 m2	120.00	970,100		119.81		
C12 Fire Protection	1.000	8,097 m2	53.00	428,100		52.87		
C13 HVAC	1.000	8,097 m2	674.00	5,460,000		674.32		
C14 Controls	1.000	8,097 m2	68.00	550,600		68.00		
C2 ELECTRICAL					3,096,400		382.41	5.7
C21 Service & Distribution	1.000	8,097 m2	111.00	896,500		110.72		
C22 Lighting, Devices & Heating	1.000	8,097 m2	169.00	1,367,400		168.88		
C23 Systems & Ancillaries	1.000	8,097 m2	103.00	832,500		102.82		
NET BUILDING COST - EXCLUDING SITE					\$ 31,795,800		3,926.86	58.6
D SITE & ANCILLARY WORK		8,097 m2			3,533,700		436.42	6.5
D1 SITE WORK					3,533,700		436.42	6.5
D11 Site Development	3.290	26,676 m2	106.00	2,818,300		348.07		
D12 Mechanical Site Services	0.000	1 Sum	340,000.00	340,000		41.99		
D13 Electrical Site Services	0.000	1 Sum	375,400.00	375,400		46.36		
D2 ANCILLARY WORK					0		0.00	0.0
D21 Demolitions				0		0.00		
D22 Alterations				0		0.00		
NET BUILDING COST - INCLUDING SITE					\$ 35,329,500		4,363.28	65.1
Z1 GENERAL REQUIREMENTS & FEE					18,905,300		2,334.85	34.9
Z10 Location Factor (Dawson, YT)		38.0 %		13,425,200		1,658.05		
Z11 General Requirements		8.0 %		3,900,400		481.71		
Z12 Fee		3.0 %		1,579,700		195.10		
TOTAL CONSTRUCTION ESTIMATE - EXCLUDING ALLOWANCES					\$ 54,234,800		6,698.14	100.0
Z2 ALLOWANCES					21,095,700		2,605.37	
Z21 Design & Pricing Allowance		15.0 %		8,135,200		1,004.72		
Z22 Escalation Allowance (1 Yr)		9.8 %		6,112,300		754.88		
Z23 Construction Allowance		10.0 %		6,848,200		845.77		
TOTAL CONSTRUCTION ESTIMATE - INCLUDING ALLOWANCES					\$ 75,330,500		9,303.51	
VALUE ADDED TAX (GST/HST)					0		0.00	
Value Added Tax (GST/HST)		0.0 %		0		0.00		
TOTAL CONSTRUCTION ESTIMATE					\$ 75,330,500		\$ 9,303.51	

**Appendix AA
Documents and Drawings List**

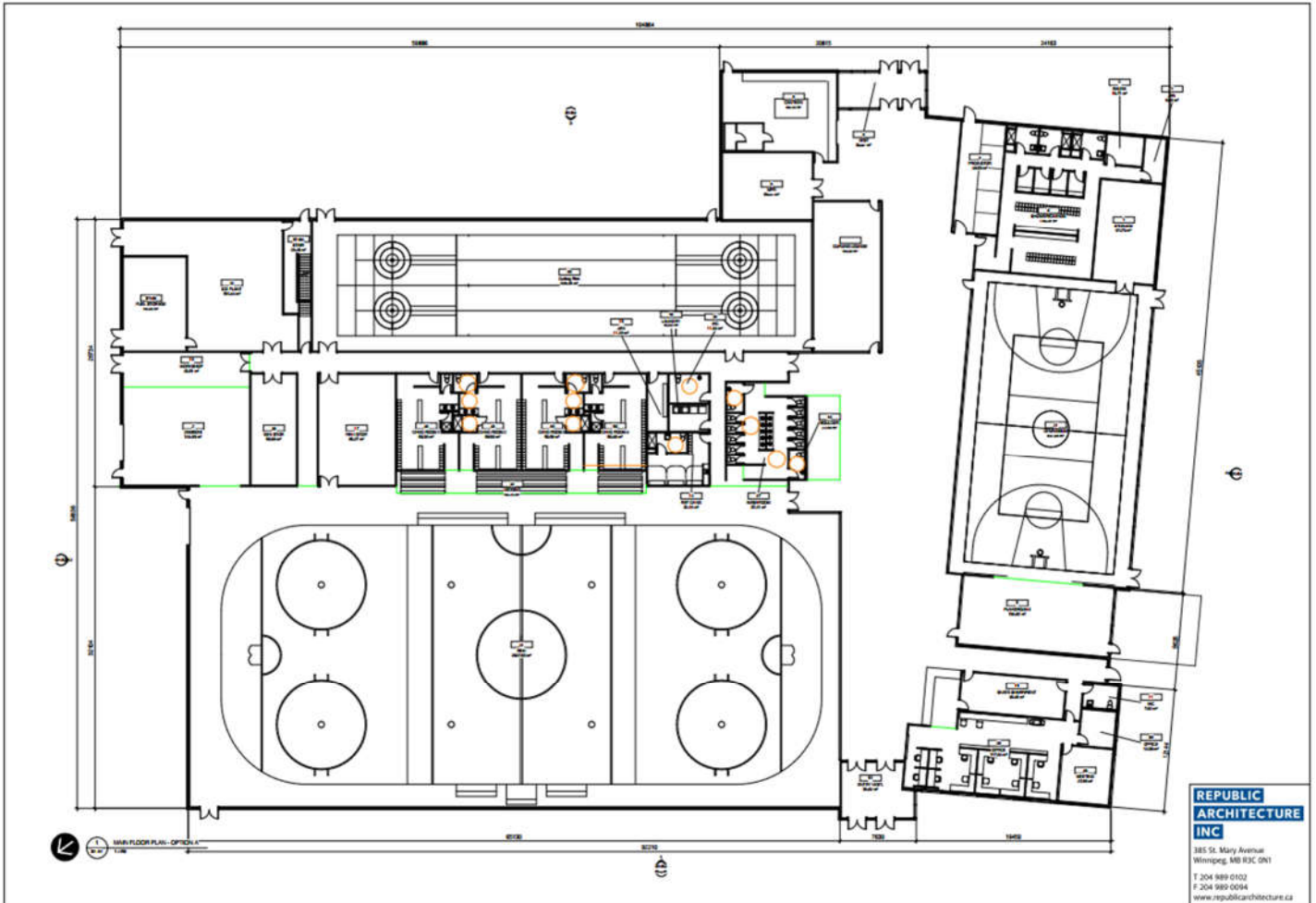
DOCUMENTS AND DRAWING LIST

DOCUMENTS

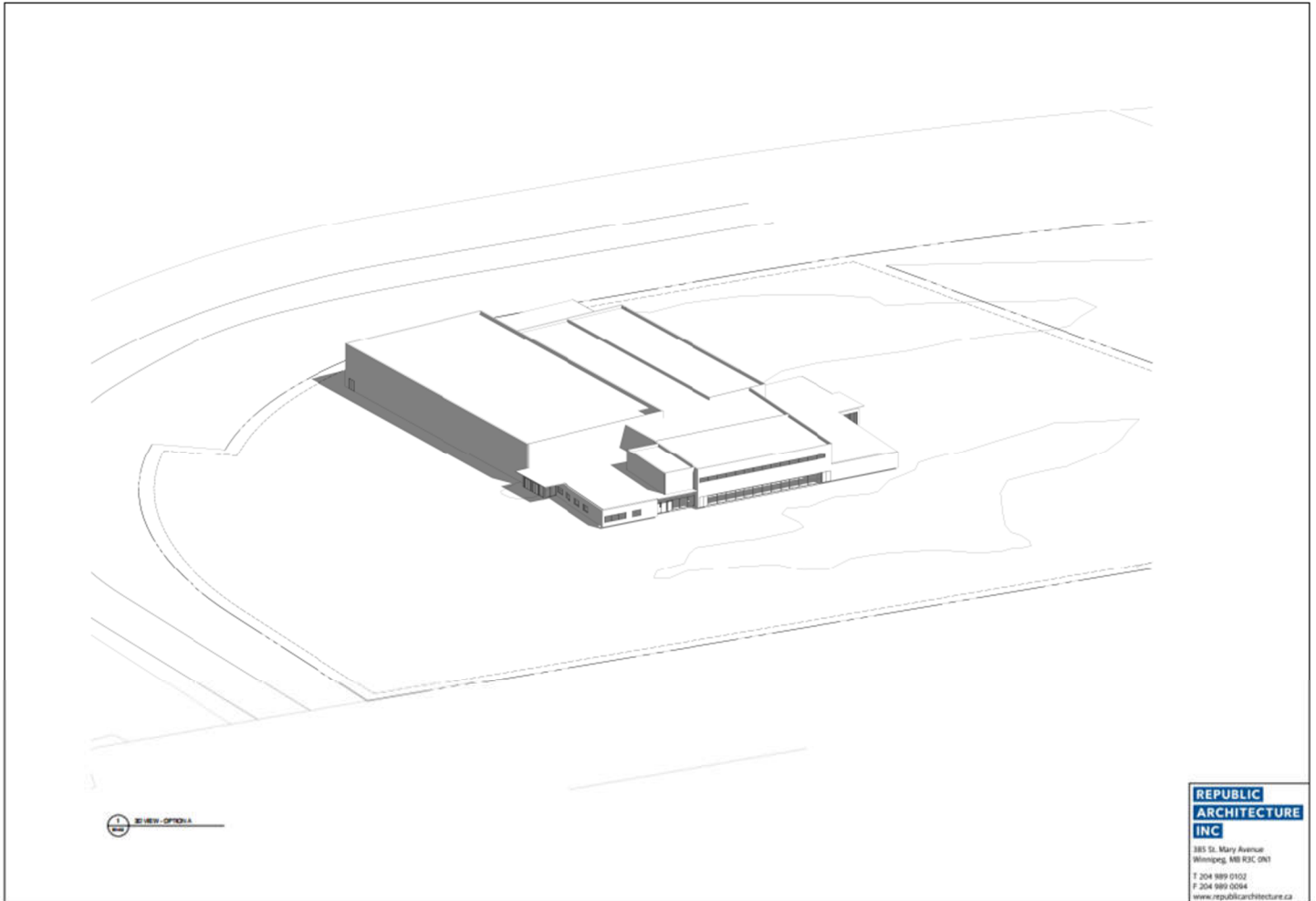
Number	Title	Dated	Received
	Feasibility Study Report (379 pages)	June 04, 2021	Oct 25, 2022
	Dawson City Recreation Centre CSME (16 pages)	Oct 2022	Oct 25, 2022
	Option 1A & 1B Schematic Drawings	Oct 2022	Oct 25, 2022

**Appendix AB
Representative Drawings**

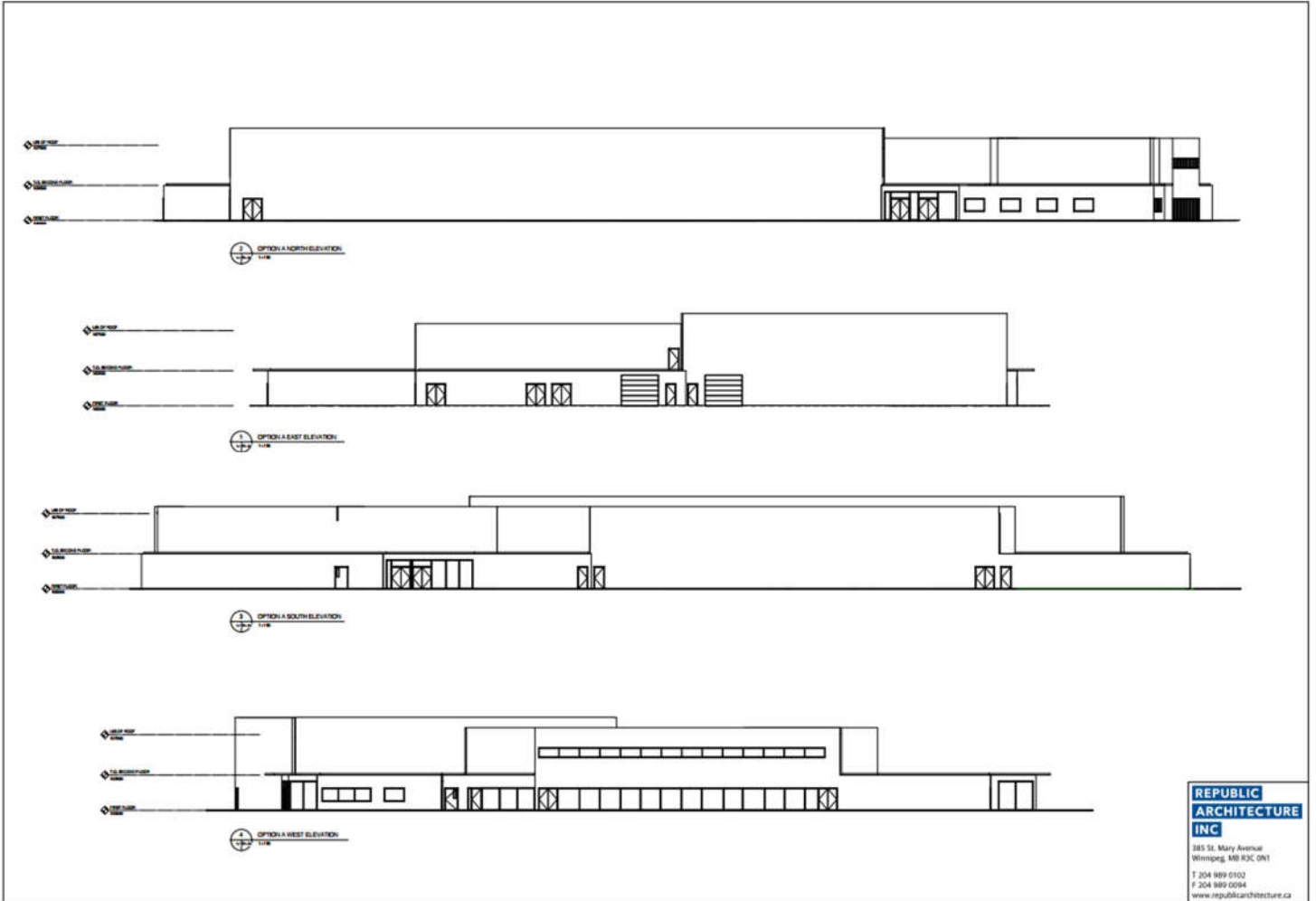
OPTION 1A



OPTION 1A

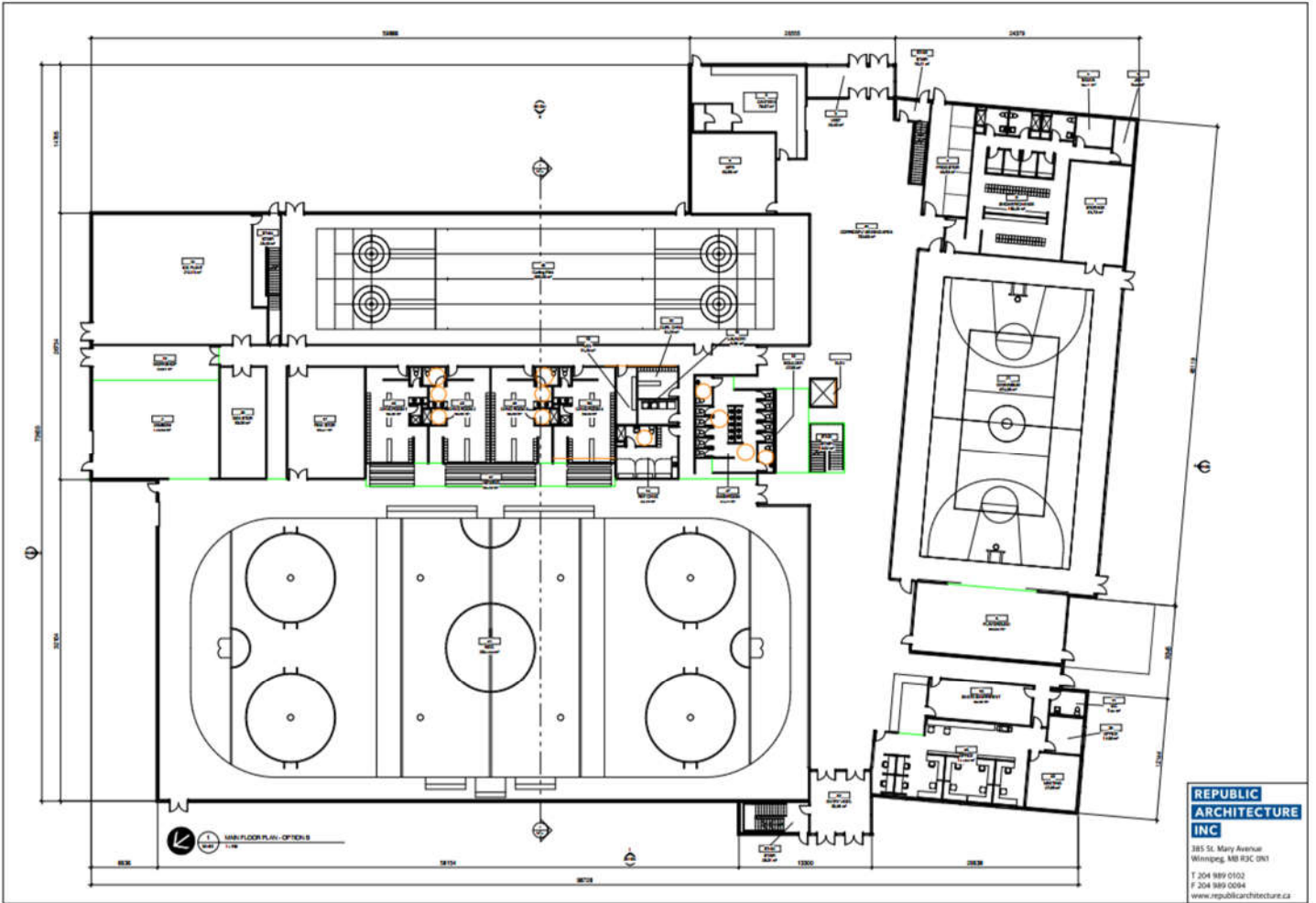


OPTION 1A

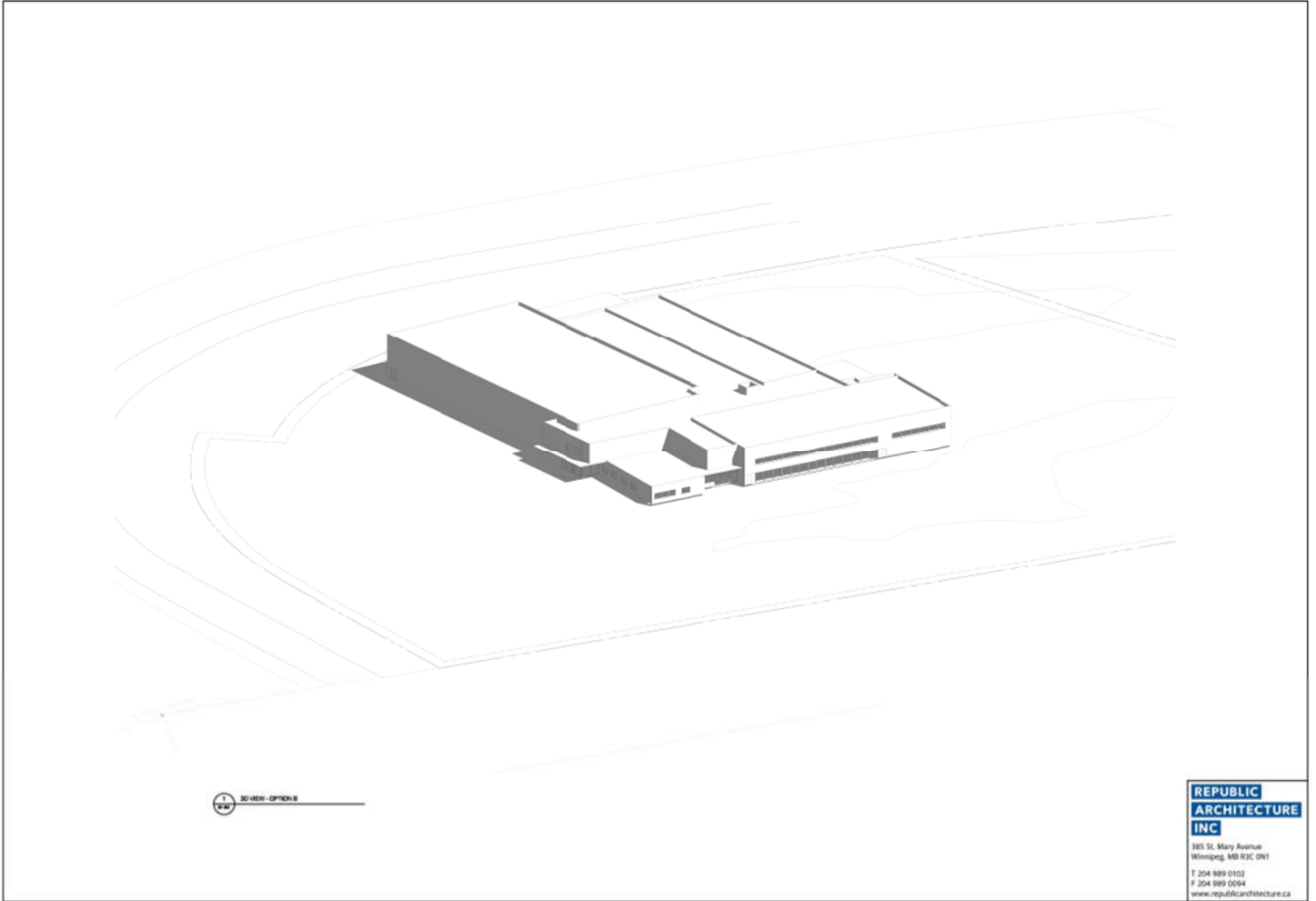


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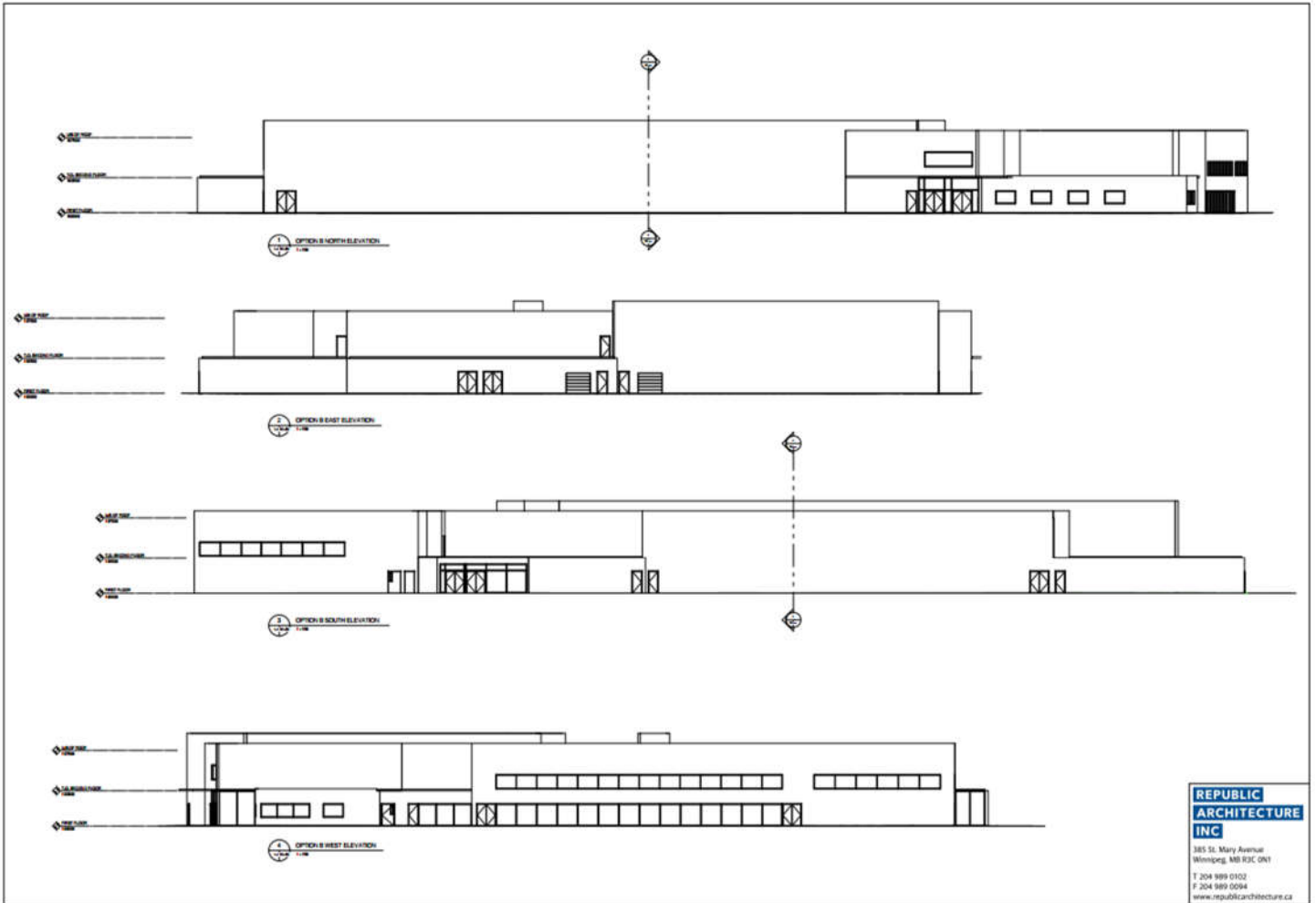
OPTION 1B



OPTION 1B



OPTION 1B



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Operations and Maintenance Cost Analysis - Present Value

Project:	Dawson City Recreation Centre	Job No:	V3123
Location:	Dawson City YT	Date:	18 Nov 22
Owner:	City of Dawson		
Consultant:	Republic		
Subject:	O & M Costing 1A Net Costs (Selected Option)		

Base Year: 2022

Operations & Maintenance Costs				
Escalation Rate: N/A				
Description	Quantity	Unit Rate	Estimated Annual Cost	
A Maintenance & Repair	7,361 m2	6.34	46,690	
B Security (Private)	7,361 m2	3.40	25,030	
C Water and Sewer	7,361 m2	1.60	11,780	
D Equipment Repairs - Built-in equipment	7,361 m2	1.55	11,410	
E Ground Maintenance (Excluded)	7,361 m2	-	-	
F Building Insurance	7,361 m2	11.34	83,470	
G Waste Management	7,361 m2	8.00	58,890	
H Administration/Management	7,361 m2	113.57	835,990	
Total Present Value - Operations & Maintenance Costs				1,073,260
Energy Costs				
Escalation Rate: N/A				
Description	Quantity	Unit Rate (\$/KWh)	Estimated Cost (\$/Year)	
A Electric Power	3,914,000 KWh/Yr	0.19	731,920	
B Propane	518,370 l/Yr	1.03	534,960	
			-	
			-	
Total Present Value - Energy Costs				1,266,880
TOTAL PRESENT VALUE - 1A - Net Costs (Selected Option)				2,340,140

Operations and Maintenance Cost Analysis - Present Value

Project:	Dawson City Recreation Centre	Job No:	V3123
Location:	Dawson City YT	Date:	18 Nov 22
Owner:	City of Dawson		
Consultant:	Republic		
Subject:	O & M Costing 1B Net Costs (Selected Option)		

Base Year: 2022

Operations & Maintenance Costs				
Escalation Rate: N/A				
Description	Quantity	Unit Rate	Estimated Annual Cost	
A Maintenance & Repair	8,097 m2	6.34	51,360	
B Security (Private)	8,097 m2	3.40	27,530	
C Water and Sewer	8,097 m2	1.60	12,960	
D Equipment Repairs - Built-in equipment	8,097 m2	1.55	12,550	
E Ground Maintenance (Excluded)	8,097 m2	-	-	
F Building Insurance	8,097 m2	11.34	91,820	
G Waste Management	8,097 m2	8.00	64,780	
H Administration/Management	8,097 m2	113.57	919,580	
Total Present Value - Operations & Maintenance Costs				1,180,580

Energy Costs				
Escalation Rate: N/A				
Description	Quantity	Unit Rate (\$/KWh)	Estimated Cost (\$/Year)	
A Electric Power	4,305,000 KWh/Yr	0.19	805,040	
B Propane	570,200 l/Yr	1.03	588,450	
			-	
			-	
Total Present Value - Energy Costs				1,393,490

TOTAL PRESENT VALUE - 1B - Net Costs (Selected Option)	2,574,070
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Date: February 2, 2023 File: 2022-2516-00

To: Annika Palm, P.Eng. Page: Page 1 of 1

From: Steven Bartsch, P.Eng.

Project: Dawson City Rec Centre Schematic Design

Subject: Class D Cost Review

Associated Engineering has completed a review of the Class D Operations and Maintenance cost estimates produced for the project based on the available information at this stage of design. At this level of design within the project, a Class “D” estimate is considered to have an expected degree of variance of +/- 20-30% from the values presented.

Source	O/M Cost Opinion
Hanscomb (Nov 2022)	\$2,830,000
Associated Engineering (Jan 2023)	\$2,251,000
Average	\$2,540,500

The complete comparison table is included on the next page.

Comments:

- The Hanscomb O/M value was based on a similar type of structure in Whitehorse, Yukon and adjusted based on the location and floor area for Dawson.
- Associated Engineering completed a rough estimate of electrical and heating loads to develop the energy costs and carried values provided by the City of Dawson values for O/M and expenses.
 - o The energy costs will be highly dependant on the fuel used to heat the building and current market prices. For this estimate, we assumed propane. Fuel oil and Biomass would realize an approximant 20% increase in fuel costs.
- The cost presented in the table above are within the expected variance of a Class D estimate when compared to each other (within a +/- 30% variance). During the next stage of design, including completion of the energy model, the O/M costs will be further refined.
- As the current floor plan options for the facility are generally similar, we have only provided one O/M estimate. The variations between the two proposed floor plans are not significant enough to exceed the Class D variance.

Operations & Maintenance	Hascombe Estimate (1B)	AE Class D Opinion
Maintenance & Repair	51,360.00	\$ 175,000.00
Security	27,530.00	\$ -
Water and Sewer	12,960.00	\$ -
Equipment Repairs - Built-in equipment	12,550.00	\$ 18,000.00
Ground Maintenance (Excluded)		\$ -
Building Insurance	91,820.00	\$ -
Waste Management	64,780.00	\$ -
Administration/Management	919,580.00	\$ 1,166,774.70
Total Expenses - O & M	1,180,580.00	\$ 1,359,774.70
Energy Costs		
Electric Power	805,040.00	\$ 475,000.00
Heating	588,450.00	\$ 160,000.00
Total Expenses - Energy	1,393,490.00	\$ 635,000.00
Expenses Not Included By Hascombe, But Part of New Rec Facility:		
	256,587.00	\$ 256,587.00
Total	2,830,657.00	\$ 2,251,361.70