FACILITIES MANAGEMENT

OPEN CALL FOR BIDS

FOR

MU-502-25
EDO 0844 Cylinder Replacement & Modernization

Request for Open Call Number: **TFM-032-26**

Issued: April 17, 2026

Submission Deadline: **Thursday, May 14, 2026 @ 3:00PM NST**

REQUEST FOR OPEN CALL FOR BIDS INFORMATION SHEET

Request for Open Call			
Title:	**MU-502-25 EDO 0844 Cylinder Replacement & Modernization**		
Open Call #:	**TFM-032-26**	Issue Date:	**April 17, 2026**
Non-Mandatory Site Visit:	**Location: Music Building, Level 1 Lobby**		**May 1, 2026**
Questions Deadline:	**Eight (8) days prior to closing time, at 3:00pm (NST).**	Closing Date & Time: Bid Submission Format: Opening Date, Time & Location:	**Thursday May 14, 2026 @ 3:00 pm NST** **opencalls@mun.ca** **Thursday, May 14, 2026 @ 3:30 pm NST** **Via Conference line: 1-416-915-6530 (toll free) Access Code: 2774 391 8773 Attendee ID: Please press Pound(#)**
Bids Irrevocable Period after Submission Deadline:			**45 days (See section 1.6)**

Bid Submission: Responses to this solicitation must be submitted by email to opencalls@mun.ca Email subject line must read: BID SUBMISSION: TFM-032-26 MU-502-25 EDO 0844 Cylinder Replacement & Modernization

PLEASE NOTE
1. Addition of Section 1.11 in Part 1.
2.The Stipulated Price Contract has been updated as of January 2026.
Vendors are encouraged to take note of these updates.

Inquiries and Communication

Inquiries and communication: Strategic Procurement Office, Memorial University of Newfoundland, opencalls@mun.ca. Inquiries accepted only via email. No phone calls will be accepted. **Please reference open call Title and Open Call # from above, ie: TFM-032-26 MU-502-25 in subject line. Emails not containing this requirement information in the subject line will NOT receive a response.**

Bids submitted by fax, mail, courier, drop off or by any other means of delivery other than by email stated above shall not be accepted.

ABOUT MEMORIAL UNIVERSITY

As Newfoundland and Labrador's only university, Memorial has a special obligation to the people of this province. Established as a memorial to the Newfoundlanders who lost their lives on active service during the First and Second World Wars, Memorial University draws inspiration from these shattering sacrifices of the past as we help to build a better future for our province, our country and our world.

We are a multi-campus, multi-disciplinary, public university committed to excellence in teaching and learning, research and scholarship, and to public engagement and service. We strive to have national and global impact, while fulfilling our social mandate to provide access to university education for the people of the province and to contribute to the social, cultural, scientific and economic development of Newfoundland and Labrador and beyond.

The Memorial experience goes beyond academics; it invites a discovery of self, community and place. At Memorial, we celebrate our unique identity through the stories of our people – the work of scholars and educators, the ingenuity of students, the achievements of alumni – and the impact we collectively make in the province, the country and the world. Memorial is the natural place where people and ideas become.

Memorial University has more than 18,500 students and 3,600 faculty and staff spread across four campuses and nearly 100,000 alumni active throughout the world. From local endeavors to research projects of national importance, Memorial's impact is felt far and wide.

Mission, Vision and Values

Vision

Memorial University will be one of the most distinguished public universities in Canada and beyond, and will fulfill its special obligation to the people of Newfoundland and Labrador.

Mission

Memorial University is an inclusive community dedicated to innovation and excellence in teaching and learning, research, scholarship, creative activity, service and public engagement.
Memorial welcomes and supports students and scholars from all over the world and contributes knowledge and expertise locally, nationally and internationally.

Values

Excellence: Encouraging and promoting excellence through innovation and creativity, rigor and pragmatism.

Integrity: Being honest and ethical in all interactions, maintaining the highest ethical standards in teaching, research, public engagement and service.

Collegiality: Engaging others with respect, openness and trust in pursuit of a common purpose, having regard for individuals, ideals and the institution as a whole.

Inclusiveness and diversity: Embracing and acting on responsibility to guarantee diversity and equity.

Responsiveness: Being receptive to individuals and communities.

Accountability: Accepting responsibility for achievement of common goals and objectives.

Freedom and Discovery: Supporting the freedom to pursue knowledge that is based on individual and collective intelligence, curiosity, ingenuity and creativity.

Recognition: Acknowledging, tangibly, all aspects of university enterprise including teaching and learning, research, scholarship, creative activity and public engagement.

Responsibility to place: Valuing and fulfilling the special obligation to the people of Newfoundland and Labrador by supporting and building capacity for excellence that:

- addresses needs and opportunities for Newfoundland and Labrador;
- engages the university community on matters of national and international significance;
- produces and delivers academic programs of national and international calibre; and,
- Recognizes the dynamic opportunities presented by a multi-campus institution.

Responsibility to learners: Recognizing students as a first priority and providing the environment and support to ensure their academic and personal success.

Interdisciplinary collaboration: Supporting overarching themes in all pursuits that cut across academic units and address significant opportunities and challenges for which Memorial is particularly well positioned to build nationally and internationally recognized capacity.

Sustainability: Acting in a manner that is environmentally, economically and socially sustainable in administration, academic and research programs.

Memorial's exceptional staff and students contribute to the vitality and positive environment of the university through active community engagement. Memorial University has always been a publicly engaged institution. Since the founding of the University in 1949, the work of many of Memorial's students, faculty and staff has emphasized the importance of strong, sustained partnerships with members of the public of Newfoundland and Labrador and beyond.

Faculty and Staff

Memorial is one of the largest employers in the province, with approximately 3,600 faculty and staff. Memorial has been recognized as an Employer of Distinction by the Newfoundland and Labrador Employers' Council, which is reflective of its investment in comprehensive benefits, services such as childcare and recreation facilities, emphasis on work-life balance, and its vibrant work environment.

Governance and Administration

The management, administration and control of the property, revenue, business and affairs of the University are vested in a Board of Regents. The Board is appointed under the *Memorial University Act* and is responsible for the management, administration, and control of the property, revenue, business and affairs of the university. Matters of an academic character are in general charge of the Senate of the University.

For more information on Memorial University of Newfoundland, please visit:
Memorial's home page: http://www.mun.ca/

Territory Acknowledgements at Memorial:

We acknowledge that the lands on which Memorial University's Campus are situated are in the traditional territories of diverse Indigenous groups and we acknowledge with respect the diverse histories and cultures of the Beothuk, *Mi'kmaq, Innu, and Inuit of this province.*

PROCUREMENT AND CONTRACTING DOCUMENTS GROUP

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

Open Call for Bids Strategic Procurement Sections

General Conditions and Agreement between Owner and Contractor for the Stipulated Price Contract

SPECIFICATIONS GROUP

END OF SECTION

PART 1 – SUBMISSION INSTRUCTIONS

1.1 Bids to be Submitted on Time

Bids must be submitted as set out above on or before the Submission Deadline. Bids submitted after the Submission Deadline will be rejected. Onus and responsibility rest solely with the bidder to submit its bid to the email indicated in the Open Call for Bids on or before the Submission Deadline. The Owner does not accept any responsibility for any bids submitted by means other than the email listed above. Bidders making submissions near the deadline do so at their own risk due server availability. The time for the closing will be determined according to the inbox, time stamp on opencalls@mun.ca.

Bids received after the closing time based on this time stamp, will NOT be considered.

1.2 Bids to be Submitted in Prescribed Format

- Bidders should submit **one (1)** email submission in PDF format.
- Please note: File size cannot exceed 15 MB. Otherwise server may reject bid submission due to size.
- **Bids submitted by fax, mail, courier, drop off or by any other means of delivery other than by email stated above shall not be accepted.**

1.3 Amendment/Revision of Bids

Bidders shall amend their bids after they have been submitted if, and only if, the amendment is emailed prior to the Submission Deadline marked **BID SUBMISSION AMENDMENT** followed by open call number and name. Previous submissions shall be cancelled and the bid submission with the most recent date and time shall be considered the final bid.

Bidders shall revise **APPENDIX C- Pricing form *only*** by submitting an updated **Pricing Form** prior to submission deadline. The revised **Pricing Form** shall replace the **Pricing Form** received with the original bid submission.

PLEASE NOTE: **APPENDIX C – Pricing Form** is the only section of the bid that can be revised independently. All other amendments/revisions shall require completing a new bid submission.

Bidders may revise their bid by email: opencalls@mun.ca

The Owner does not accept any responsibility for amendments submitted by means other than the email listed above. Bidders making submission near the deadline do so at their own rick due to service availability. The time for the closing will be determined according to the inbox, time stamp on opencalls@mun.ca. Amendments to bids received after the closing time base on this times stamp, will NOT be considered.

Email inquiries and requests for clarification shall be accepted up to eight (**8) days (3:00pm NST)** prior to the closing time. Inquiries and requests for clarification received after this date shall not be addressed. The Strategic Procurement Office will be the only official source of

information regarding this Open Call for Bids and information from any other source shall be considered unofficial and may not be correct.

1.4 Amendment of Open Call for Bid Documents

To ensure consistency and quality in the information provided to bidders the Owner shall provide, by way of amendment to this Open Call for Bids, in the form of an addendum, any relevant information with respect to the Open Call inquiries received in writing without revealing the source of those inquiries. Bidders are cautioned that it is their responsibility to ensure that they receive all information relevant to this Open Call. The Owner shall not be responsible for bidders who fail to inform themselves regarding the scope and nature of the work. The Owner shall publish all amendments on Memorial University's current service providers: MERX: www.merx.com, BIDS: www.bids.ca and PODS: www.pods.net. In addition, all amendments will be published on https://www.mun.ca/finance/strategic_procurement/. Bidders should check on a regular basis for Open Call updates. Bidders are solely responsible for ensuring they are aware of and have complied with all amendments by tender closing time. In the event there is a discrepancy between MERX, BIDS, and PODS and the official website https://www.mun.ca/finance/strategic_procurement/ website, the https://www.mun.ca/finance/strategic_procurement/ is the official website. Bidders are welcome to register their email address through opencalls@mun.ca to receive addendum notifications from Open Calls as a matter of courtesy. This does not relieve any Bidder of their responsibility to ensure all addenda has been received.

1.5 Withdrawal of Bids

Bidders may withdraw their bids prior to the Submission Deadline. To withdraw a bid, a notice of withdrawal must be sent to the opencalls@mun.ca email address prior to the Submission Deadline. The Owner is under no obligation to return withdrawn bids.

1.6 Bids Irrevocable after Submission Deadline

Bids shall be irrevocable for a period of **45** days running from the moment that the Submission Deadline passes.

1.7 Delivery

Time is of the essence and delivery schedule(s) are legally binding. Memorial University reserves the right to assess penalties or cancel awards to Bidders who fail to meet the stated delivery or completion dates. Delivery of all materials and services must be DAP (delivered at place) or DDP (delivered duty paid (all locations) and local environs.

1.8 Signature

Memorial University, in consideration of section 11 of the Electronic Commerce Act, confirms its acceptance of electronic signatures, or other acceptable form of electronic consent, in satisfaction of the signature requirement for bid submissions. The electronic form of signature or consent must be directly related to the relevant bid submission at issue and must be reliable, in a manner as determined by Memorial University, for the purpose of identifying the person submitting the bid response. By submitting a bid under this process, the bidder confirms that the signatory has the appropriate and proper authority to bind the bidder to its submission, a confirmation upon which Memorial University relies in the

processing of the bid submission.

Bidders must complete Appendix B –Submission Form. Any bids received without Appendix B completed will be deemed non-complaint.

1.9 Closure

In the event that the University is closed earlier than normally expected prior to a scheduled open calls closing for that day, or for the full day, the closing date for those open calls will be extended to the next business day for the University at the same time as listed originally.

1.10 Corporations Act

The Corporations Act of Newfoundland and Labrador requires that an extra-provincial company be registered before it begins or carries on business in the Province. If your company is not registered, please apply for the appropriate forms and procedures to:

Commercial Registrations Division
Dept of Government Services, PO Box 8700 St John's, NL Canada A1B 4J6
Phone: 709-729-3317, Fax: 709-729-0232
Website: http://www.gs.gov.nl.ca/registries/companies/corp_art_inc.html

1.11 Stipulated Price Contract

The successful bidder will be required to sign the *Department of Facilities Management General Conditions and Agreement Between Owner and Contractor for the Stipulated Price Contract* upon receipt of the pre-award letter.

[End of Part 1]

PART 2 – EVALUATION AND AWARD

2.0 Stages of Evaluation

The Owner will conduct the evaluation of bids in the following stages:

2.1.0 Stage I – Mandatory Submission Requirements

Stage I will consist of a review to determine which bids comply with all of the mandatory submission requirements. Bids that do not comply with all of the mandatory submission requirements as of the Submission Deadline will, subject to the express and implied rights of the Owner, be disqualified and not evaluated further.

2.1.1 Stage II – Mandatory Technical Requirements

Stage II will consist of a review to determine which bids comply with all of the mandatory technical requirements. Bids that do not comply with all of the mandatory technical requirements as of the Submission Deadline will, subject to the express and implied rights of the Owner, be disqualified and not evaluated further. The mandatory technical requirements are listed in Appendix A - Specifications.

2.1.2 Stage III – Pricing

Stage III will consist of a scoring of the submitted pricing of each compliant bid in accordance with the evaluation method set out in the Pricing Form (Appendix C). The evaluation of price will be undertaken after the evaluation of mandatory requirements has been completed.

2.2 No Amendment to Forms

Other than inserting the information requested on the mandatory submission forms set out in the Open Call, a bidder may not make any changes to any of the forms. Any bid containing any such changes, whether on the face of the form or elsewhere in the bid, shall be disqualified.

2.3 Selection of Lowest Compliant Bidder as Preferred Supplier

Subject to the Owner's reserved rights, the compliant bidder with the lowest pricing will be the preferred supplier, and will be selected to enter into the Agreement in accordance with the following section. In the event of a tie, the preferred supplier will be determined by way of a coin toss, in accordance with the Public Procurement Policy. Provincial suppliers, suppliers with a place of business in Newfoundland and Labrador, will be given provincial supplier preference provision. This mandates an allowance of ten percent for provincial suppliers for all procurement below trade agreement thresholds.

Please note, the supplier preference does not apply when the estimated value of the commodity is above the trade agreement threshold shown in the following table.

Public Body	Thresholds			
	Goods	Services	Public Works	Lease of Space
Memorial University	$133,800	$133,800	$334,400	$100,000

2.4 Notice to Bidder and Execution of Agreement

Notice of selection by the Owner to the preferred supplier shall be in writing. The preferred supplier shall execute the Agreement, the form and content of which will be mutually agreed upon between the parties and satisfy any other applicable conditions of this open call within fifteen (15) days of notice of selection. This provision is solely for the benefit of the Owner and may be waived by the Owner.

2.5 Failure to Enter into Agreement

If a selected bidder fails to execute the Agreement or satisfy the pre-conditions of award listed in the Open Call Particulars within fifteen (15) days of notice of selection the Owner may, without incurring any liability, proceed with the selection of another bidder and pursue all remedies available to the Owner.

2.6 Payment Terms

The University's standard payment terms are net 30 days after delivery of goods, or net 15 days after successful completion of installation as applicable. In the case of services, payment terms are also net 30 days after successful completion of the service. These terms shall also apply in the case of sub-contracted items. Prepayments will not be considered unless the supplier provides an irrevocable standby letter of credit, or the supplier provides a credit reference from its banker (in conjunction with a 50% materials and labour bond and a 50% performance bond) satisfactory to the Director of Financial and Administrative Services.

[End of Part 2]

PART 3 – TERMS AND CONDITIONS OF THE OCB PROCESS

3.1 Open Call Incorporated into Bid

All of the provisions of this Open call are deemed to be accepted by each bidder and incorporated into each bidder's bid. A bidder who submits conditions, options, variations or contingent statements to the terms as set out in this Open call, either as part of its bid or after receiving notice of selection, unless otherwise indicated, shall be disqualified.

3.2 Bidders to Follow Instructions

Bidders should structure their bids in accordance with the instructions in this Open call. Where information is requested in this Open Call, any response made in a bid should reference the applicable section numbers of this Open Call.

3.3 Bids in English

All bids are to be in English only.

3.4 No Incorporation by Reference

The entire content of the bidder's bid should be submitted in a fixed form, and links to the content of websites or other external documents referred to in the bidder's bid but not attached will not be considered to form part of its bid.

3.5 References and Past Performance

In the evaluation process, the Owner may consider information provided by the bidder's references and may also consider the bidder's past performance or conduct on previous contracts with the Owner or other institutions.

3.6 Information in Open Call Only an Estimate

The Owner and its advisors make no representation, warranty or guarantee as to the accuracy of the information contained in this Open Call or issued by way of addenda. Any quantities shown or data contained in this Open Call or provided by way of addenda are estimates only, and are for the sole purpose of indicating to bidders the general scale and scope of the Deliverables. It is the bidder's responsibility to obtain all the information necessary to prepare a bid in response to this Open Call.

3.7 Bidders to Bear Their Own Costs

The bidder will bear all costs associated with or incurred in the preparation and presentation of its bid, including, if applicable, costs incurred for interviews or demonstrations.

3.8 Bid to be Retained by the Owner

The Owner will not return the bid or any accompanying documentation or samples submitted by a bidder.

3.9 Trade Agreements

Bidders should note that procurements falling within the scope of the Canadian Free Trade Agreement, and/or the Canada-European Union Comprehensive Economic Trade Agreement are subject to those trade agreements but that the rights and obligations of the parties will be governed by the specific terms of this Open Call.

3.10 No Guarantee of Volume of Work or Exclusivity of Contract

The Owner makes no guarantee of the value or volume of work to be assigned to the preferred supplier. The Agreement will not be an exclusive contract for the provision of the described Deliverables. The Owner may contract with others for goods and services the same as or similar to the Deliverables or may obtain such goods and services internally.

3.11 Communication After Issuance of Open Call

Bidders shall promptly examine all of the documents comprising this Open Call, and

(a) shall report any errors, omissions or ambiguities; and
(b) may direct questions or seek additional information in writing by email to opencalls@mun.ca on or before the Deadline for Questions. All questions or comments submitted by bidders by email to the Open Call Contact shall be deemed to be received once the email has entered into the Open Call Contact's email inbox. No such communications are to be directed to anyone other than the Open Call Contact, and the Owner shall not be responsible for any information provided by or obtained from any source other than the Strategic Procurement Office. The Owner is under no obligation to provide additional information. It is the responsibility of the bidder to seek clarification from the Open Call Contact on any matter it considers to be unclear. The Owner shall not be responsible for any misunderstanding on the part of the bidder concerning this Open Call or its process.

3.12 All New Information to Bidders by Way of Addenda

This Open Call may be amended only by addendum in accordance with this section. If the Owner, for any reason, determines that it is necessary to provide additional information relating to this Open Call, such information will be communicated to all bidders by addenda. Each addendum forms an integral part of this Open Call and may contain important information, including significant changes to this Open Call. Bidders are responsible for obtaining all addenda issued by the Owner. In the Submission Form (Appendix B), bidders MUST confirm their receipt of all addenda by setting out the number of each addendum in the space provided.

3.13 Addenda and Extension of Submission Deadline

Any addendum issued within four (4) calendar days of the Open Call for Bids closing (Including on closing day) will extend closing by a reasonable period to be determined by Memorial University.

When evaluating bids, the Owner may request further information from the bidder or third parties in order to verify, clarify or supplement the information provided in the bidder's bid. The response received by the Owner shall, if accepted by the Owner, form an integral part of the bidder's bid.

3.14 Notification to Other Bidders

In accordance with section 30 of the *Public Procurement Regulations*, once the Agreement is awarded by the Owner, the outcome of the Open Call will be publicly posted at https://www.mun.ca/finance/strategic_procurement/. There will be no issuing of regret letters.

3.15 Debriefing

In accordance with the Public Procurement Act and Regulations, unsuccessful bidders may request a debriefing within ten (10) business days after the award has been posted. The request must be sent in writing to the Open call contact. The intent of the debriefing information session is to provide the bidder an overview of their bid and why it was unsuccessful and to help the bidder in presenting a better bid in subsequent procurement opportunities. The debriefing process is not for the purpose of providing an opportunity to challenge the procurement process or its outcome. A debriefing shall not disclose information regarding another bidder's bid.

3.16 Supplier Complaint Process

If a bidder wishes to register a complaint with respect to the Open Call process, the complaint should be provided in writing and within the parameters established by section 25 of the Public Procurement Regulations, as amended. The notice must provide a detailed explanation of the bidder's concerns with the procurement process or its outcome, in addition to such other information as may be required by the *Regulations*. Bidders should note that these complaint procedures are separate and distinct from any dispute resolution processes that may be provided for under applicable trade agreements. If a bidder wishes to dispute a matter under an applicable trade agreement, the bidder must follow the process set out in the trade agreement.

3.17 Conflict of Interest and Prohibited Conduct

The Owner may disqualify a bidder for any conduct, situation or circumstances, determined by the Owner, in its sole and absolute discretion, that constitutes a conflict of interest.

The Owner reserves the right to disqualify any bidder that in the Owner's sole opinion has an actual or potential conflict of interest or an unfair advantage.

For the purposes of this Open Call, the term "Conflict of Interest" includes, but is not limited to, any situation or circumstance where in relation to the Open Call process, the bidder has an unfair advantage or engages in conduct, directly or indirectly, that may give it an unfair advantage, including but not limited to: (i) having, or having access to, confidential information of the Owner in the preparation of its bid that is not available to other bidders, (ii) communicating with any person with a view to influencing preferred treatment in the Open Call process (including but not limited to the lobbying of decision makers involved in the Open Call process), or (iii) engaging in conduct that compromises, or could be seen to compromise, the integrity of the open and competitive Open Call process or render that process non-competitive or unfair.

Bidders are required to disclose, to the Open Call Contact, any potential or perceived conflict of interest issues prior to Open Call closing date and time.

3.18 Disqualification for Prohibited Conduct

The Owner may disqualify a bidder, rescind a notification of selection or terminate a contract subsequently entered into if the Owner determines that the bidder has engaged in any conduct prohibited by this Open Call.

3.19 Bidder Not to Communicate with Media

Bidders must not at any time directly or indirectly communicate with the media in relation to this Open Call or any agreement entered into pursuant to this Open Call without first obtaining the written permission of the Open Call Contact.

3.20 No Lobbying

Bidders must not, in relation to this Open Call or the evaluation and selection process, engage directly or indirectly in any form of political or other lobbying whatsoever to influence the selection of the successful bidder(s).

3.21 Illegal or Unethical Conduct

Bidders must not engage in any illegal business practices, including activities such as bid-rigging, price-fixing, bribery, fraud, coercion or collusion. Bidders must not engage in any unethical conduct, including lobbying, as described above, or other inappropriate communications; offering gifts to any employees, officers, agents, elected or appointed officials or other representatives of the Owner; deceitfulness; submitting bids containing misrepresentations or other misleading or inaccurate information; or any other conduct that compromises or may be seen to compromise the competitive process provided for in this Open Call.

3.22 Past Performance or Past Conduct

The Owner may prohibit a supplier from participating in a procurement process based on past performance or based on inappropriate conduct in a prior procurement process, including but not limited to the following:

(a) illegal or unethical conduct as described above;

(b) the refusal of the supplier to honor submitted pricing or other commitments; or

(c) any conduct, situation or circumstance determined by the Owner, in its sole and absolute discretion, to have constituted a Conflict of Interest.

(d) performance on other contracts, including the efficiency and workmanship as well as the extent to which the Bidders performed the Work in accordance with the contractual clauses and conditions, is sufficiently poor to jeopardize the successful completion of the project being bid on, by way of previous contractor performance evaluations.

In addition, the Owner may suspend the bidding privileges of a supplier with regard to non-compliant or substandard performance in accordance with section 26 of the *Public Procurement Regulations*.

3.23 Confidential Information of the Owner

All information provided by or obtained from the Owner in any form in connection with this Open Call either before or after the issuance of this Open Call:

(a) is the sole property of the Owner and must be treated as confidential;

(b) is not to be used for any purpose other than replying to this Open Call and the performance of the Agreement;

(c) must not be disclosed without prior written authorization from the Owner; and

(d) must be returned by the bidder to the Owner immediately upon the request of the Owner.

3.24 Confidential Information of Proponent

This procurement process is subject to the *Access to Information and Protection of Privacy Act, 2015* (*ATIPPA, 2015*). A Proponent must identify any information in its Proposal or any accompanying documentation supplied in confidence for which confidentiality is requested to be maintained by the Owner. The confidentiality of such information will be maintained by the Owner, except as otherwise required by law or by order of a court or tribunal. Proponents are advised that their Proposal will, as necessary, be disclosed, on a confidential basis, to advisers retained by the Owner to advise or assist with the Request for Proposal process, including the evaluation of Proposals.

The Proponent agrees that any specific information in its submission that may qualify for an exemption from disclosure under subsection 39(1) of the *ATIPPA, 2015* has been identified in its submission. If no specific information has been identified it is assumed that, in the opinion of the Proponent, there is no specific information that qualifies for an exemption under the subsection 39(1) of the *ATIPPA, 2015*.

Contracting with the Owner is a public process. Information provided through this process will be disclosed when requested under the *ATIPPA, 2015*, except where disclosure of that information is harmful to the business' interests, as set out in the three-part test in the *ATIPPA, 2015*.

Information, including the financial value of a contract resulting from this procurement process, will be publicly released as part of the award notification process, in accordance with section 30 of the *Public Procurement Regulations*.

If a Proponent has any questions about the collection and use of personal information pursuant to this Request for Proposal, questions are to be submitted to the Request for Proposal Contact. Further information relating to subsection 39(1) of the ATIPPA, 2015 is provided in guidance documents available through the Office of the Information and Privacy Commissioner at https://oipc.nl.ca/guidance/documents.

3.25 Reserved Rights of the Owner

The Owner reserves the right to:

(a) make public the names of any or all bidders as well as bid price and value of contract;

(b) make changes, including substantial changes, to this Open Call provided that those changes are issued by way of addendum in the manner set out in this Open Call; request written clarification or the submission of supplementary written information in relation to the clarification request from any bidder and incorporate a bidder's response to that request for clarification into the bidder's bid. This shall not be an opportunity for bid repair;

(c) assess a bidder's bid on the basis of: (i) a financial analysis determining the actual cost of the bid when considering factors including quality, service, price and transition costs arising from the replacement of existing goods, services, practices, methodologies and infrastructure (howsoever originally established); and (ii) in addition to any other evaluation criteria or considerations set out in this Open Call consider any other relevant information that arises during this Open call process; and (iii) Unbalanced bids, as determined by the Owner, will be rejected (i.e. prices must fairly represent proper compensation for various items of work to be done).

(d) waive minor irregularities and formalities and accept bids that substantially comply with the requirements of this Open Call ;

(e) verify with any bidder or with a third party any information set out in a bid;

(f) check references other than those provided by any bidder;

(g) disqualify a bidder, rescind a notice of selection or terminate a contract subsequently entered into if the bidder has engaged in any conduct that breaches the process rules or otherwise compromises or may be seen to compromise the competitive process;

(h) cancel this Open Call process at any stage;

(i) cancel this Open Call process at any stage and issue a new Open Call for the same or similar deliverables;

(j) accept any bid in whole or in part; or

(k) reject any or all bids;

(l) not necessarily select the lowest or any bidder;

And these reserved rights are in addition to any other express rights or any other rights that may be implied in the circumstances.

3.26 Limitation of Liability

By submitting a bid, each bidder agrees that:

(a) neither the Owner nor any of it employees, officers, agents, elected or appointed officials,

advisors or representatives will be liable, under any circumstances, for any claim arising out of this Open Call process including but not limited to costs of preparation of the bid, loss of profits, loss of opportunity or for any other claim; and

(b) the bidder waives any right to or claim for any compensation of any kind whatsoever, including claims for costs of preparation of the bid, loss of profit or loss of opportunity by reason of the Owner's decision not to accept the bid submitted by the bidder for any reason, the Owner's decision to enter into an agreement with any other bidder or to cancel this bidding process, and the bidder shall be deemed to have agreed to waive such right or claim.

3.31 Governing Law and Interpretation

These Terms and Conditions of the Open Call Process:

(a) are intended to be interpreted broadly and independently (with no particular provision intended to limit the scope of any other provision);

(b) are non-exhaustive and shall not be construed as intending to limit the pre-existing rights of the Owner; and

(c) are to be governed by and construed in accordance with the laws of the Province of Newfoundland & Labrador and the federal laws of Canada applicable therein.

3.32 Facility Compliance Requirement

(a) Equipment, power tools, instruments and appliances intended for use within Memorial University's facilities must comply with all regulatory requirements related to use and/or installation in University facilities. This includes but is not limited to certification/listing by recognized agencies, Pressure Vessel Act of Newfoundland and Labrador and similar.

(b) Items provided related to this open call that receive power from the University's electrical system must be certified or listed for use within Canada by a recognized agency such as Canadian Standards Association (CSA) or Underwriter Laboratories Canada (ULC). A full list of agencies recognized by Memorial University is available upon request.

(c) Equipment, tools, instruments and appliances that generate pressure may require registration as a pressure system with the Province of Newfoundland and Labrador. Compliance with the Boiler, Pressure Vessel and Compressed Gas Regulations under the Public Safety Act of Newfoundland and Labrador and the Boiler, Pressure Vessel, and Pressure Piping Code CSA B51:19 shall be demonstrated.

(d) The vendor is responsible for all costs associated with ensuring the system is compliant with legislative requirements and for the application and registration processes. Field certifications may be considered but all costs and efforts for such scenarios are the responsibility of the vendor.

[End of Part 3]

PART 4 – ENVIRONMENTAL HEALTH AND SAFETY REQUIREMENTS

4.1 Maintaining a healthy and safe environment for all members of the campus community, as well as visitors, is a priority with the University. This involves a commitment from all sectors of the campus community and extends to outside agencies having occasion to come on campus to conduct business.

The following requirements will apply to all work undertaken by contractors and service personnel on any University property or for any work undertaken on behalf of the Owner.

4.1.0 Regulations, Codes and Standards

Contractors shall be familiar with and abide by provisions of various safety codes and standards applicable to the work performed and should refer to:

The Contractor shall be completely responsible for the safety of the Work as it applies to protection of the public and property and construction of the Work.

The codes that must be followed and enforced for safety are:

(a) The National Building Code, Part 8, Safety Measures at Construction and Demolition Sites (Latest Edition);

(b) Canadian Code for Construction Safety (Latest Edition) as issued by the Associate Committee of the National Building Code;

(c) The Occupational Health and Safety Act of Newfoundland and Labrador (most current version) and Regulations.

In particular, strict adherence to the Provincial Occupational Health and Safety Act and Regulations and with the National Building Code of Canada, Part 8 is required.

4.2.0 General Health and Safety Regulations

(a) Contractors/service agencies shall ensure that members of the campus community are not endangered by any work or process in which they may be engaged. Work areas shall be adequately barricaded, and if dust or fumes are generated, suitable enclosures shall be installed to contain such emissions.

(b) No material shall be stored in such a way as to obstruct walkways or represent a danger to pedestrian or vehicular traffic.

(c) Adequate protection shall be provided to prevent the possibility of goods falling from scaffolding or elevated areas. Areas where goods are being loaded or off loaded shall be barricaded or otherwise protected to prevent unauthorized entry. Appropriate warning signs must be posted.

(d) The work areas must be kept reasonably clean and free from debris which could constitute a fire hazard. Care must be taken to ensure that the work process does not activate fire

alarm detection devices. (Generation of dust and fumes can activate smoke detectors causing a false alarm).

(e) Due consideration shall be given to fire safety in buildings. Flammable goods must be kept away from sources of ignition. No work involving the use of open flame devices must be undertaken around flammable solvents of gases.

(f) Some University buildings contain asbestos and other hazardous materials. Do not alter or disturb any goods believed to contain asbestos goods (unless this is a duly authorized part of the project). Consult with University officials before proceeding with any work.

(g) Safety Data Sheets shall be procured for any hazardous product used on campus. Such sheets shall be made readily available for consultation as required under the Workplace Hazardous Materials Information System (WHMIS).

(h) Contractors are required to complete the online training module for Memorials Zero Energy Isolation Program (ZEIP) before mobilizing on site. Training can be accessed via the link: https://ooc.citl.mun.ca/enrol/index.php?id=21 .

- First time users must create an account. Click **'Create new account'**. Enter required information and click **'Create my new account'**.
- A confirmation email will be sent to the email you entered when creating your account. Open that email and click the link it contains.
- Click **'Zero energy isolation Program for Contractors'**.
- To enroll in the training, enter the enrollment key: 7653. Click **'Enroll me'**.
- Complete the training according to the instructions provided in the course.
- Successful completion certificates shall be available during auditing by Environmental Health & Safety.

NOTE: The above requirements are not to be considered all-inclusive and are considered to be complementary to the safety requirements outlined in the agreement between the University and Supplier. Certain conditions and circumstances may require adherence to additional safety requirements.

As a general requirement, contract/service personnel are expected to conduct all work on campus in a professional and safe manner and to give priority to the safety and welfare of members of the campus community.

4.3.0 Contractor Safety Management

4.3.1 All Contractors and Subcontractors to be used by the Contractor in the execution of the Contract shall be required to submit confirmation of a current third party occupational health and safety program certification (Letter of Assurance). These may include, but not be limited to, Certificate of Recognition (COR), OHSAS 18001, and CSA Z.1000.

4.3.2 All Contractors and Subcontractors shall be required to review and follow all requirements of sections 4.4.5.2. below.

4.3.3 Prior to Contract award, the Contractor will be required to provide the Information requested in 4.4.5.2. below.

4.3.4 The University reserves the right to stop any work or portion of work where no documentation can be produced on site which identifies the hazards presented by a piece of work, safe work procedures for work or certification of employees performing work. The Contractor is liable for any costs incurred by affected parties associated with such a stoppage.

4.4.0 Contractor Safety Management Element

4.4.1 Purpose

This element establishes the requirements for the administration and monitoring of contractor health and safety programs and activities at Memorial University. These measures shall ensure that contractors understand their collective responsibility with respect to the Occupational Health & Safety Act and Regulations, Memorial University policy and this element.

4.4.2 Scope

This procedure shall apply to all work done for Memorial University of Newfoundland with respect to the provision of services as outlined below. Memorial University reserves the right to exempt a Contractor from this element, in whole or in part, based upon an evaluation of the risk of the work being conducted. This evaluation must comply with the hazard identification and risk management element.

4.4.3 Definitions

Act: Newfoundland & Labrador Occupational Health & Safety Act, latest edition.
Contract: A documented agreement between Memorial University and a contractor.
Contractor: The principal contractor, person, partnership, or corporation bound to execute the work under the contract and defined as such in the agreement is responsible for the supervision of the work so as to ensure the work is carried out in accordance with the contract.
Project Management Team: The group assigned by the University to act on behalf of the owner with respect to the execution of Contractor work.
Principal Contractor: The person primarily responsible for the carrying out of a contract.
Regulations: Newfoundland & Labrador Occupational Health & Safety Regulations, latest edition.
Subcontractor: A person, firm or corporation having a direct contract with the Contractor or subcontractor(s) to perform a part or parts of the work included in the contract, or to supply products worked to a special design according to the contract documents, but does not include one who merely supplies products not so worked.

Owner: The Owner, Engineer/Architect are the persons, firms or corporation identified as such in the Contract. The term Owner, Engineer/Architect means, respectively, each of the Owner, Engineer/Architect and their authorized representatives as designated by each such party in writing.
Work: The services and job procedure completion that is described in the contract.

4.4.4 Roles and Responsibilities

4.4.4.1 Project Management Team, including Environmental Health & Safety

Will monitor the Contractor's performance for health and safety compliance. Monitoring activities may include but are not limited to:

- planned and unplanned workplace inspections;
- attendance of meetings;
- communications of safety related issues and topics, as deemed necessary;
- review of contractor records, inspections, work practices and documentation; and
- complete audits to verify that contractors and subcontractors are meeting their legislative, procedural and contractual responsibilities.

4.4.4.2 Contractors

Will comply with applicable Federal and Provincial legislation and applicable MUN safety procedures. Contractor responsibilities include but not limited to:

- report all incidents immediately to the required University project team followed by a written incident report within 24 hours;
- be responsible for the safety of subcontractors including those not under their employ;
- stop work if the conditions are such that work cannot be performed safely;
- perform evaluation, monitoring of the workplace to identify potential hazards and associated risks and ensure corrective actions are implemented;
- ensure daily task specific hazard assessments are completed; and
- maintain the accountability of persons responsible for the reporting and correction of hazards.

4.4.5 Procedure

4.4.5.1 Considerations prior to signing of contract

Prior to signing of contract, the preferred General Contractor shall provide proof of compliance with 4.4.4.2. within seven (7) calendar days. After a pre-signing start up meeting, the General Contractor shall provide proof of compliance of themselves and their subcontractors with 4.4.4.2. as well as the information requested in Section 4.4.4.2.(a)(b).

4.4.5.2 Requirements

All Contractors, and their Subcontractors, shall be required to submit confirmation of a current third party occupational health and safety program certification (Letter of Assurance). These may include, but not be limited to, Certificate of Recognition (COR), OHSAS 18001, and CSA Z.1000.

Contractors shall also provide the following:

(a) health and safety policy statement;

(b) safety program table of contents; and

(c) site hazard assessment;

The hazard assessment shall be updated by the General Contractor and re-submitted whenever the conditions, work practices or work forces change to the extent that new hazards can be identified.

In lieu of a Subcontractors 3rd party program, Contractors shall be required to integrate the Subcontractor(s) into the Contractors program and provide proof of same.

Memorial reserves the right to request and audit the full safety program of Contractors and Subcontractors and their associated documentation. This documentation may include, but not be limited to the following:

(a) safety program and/or manual

(b) applicable documented safe work practices;

(c) inspection reports and schedules;

(d) required employee safety training certifications and qualifications; and

(e) updated list of OHS Committee and/or a worker health and safety representative, or workplace health and safety designate.

Request for submission shall be complied with within 7 calendar days of a written request from Memorial’s Environmental Health and Safety unit.

Memorial reserves the right to:

(a) Reject any Contractor that fails to meet the requirements or schedules outlined herein;

(b) The University reserves the right to stop any work or portion of work where the risk presents an immediate danger.

4.4.5.3 Schedule of Submissions

General Contractors and their sub-contractors who have complied with 5.1.1 will be permitted to commence physical work on the site however no work shall be performed by the General Contractor, their sub-contractors until such a time as they comply with 5.1.1.

4.4.6 Post-Contract Evaluation

Environmental Health & Safety will determine the extent of the evaluation of the Contractor's safety performance at the completion of the contract. This evaluation will be conducted by way of a standard contractor safety evaluation form and will be supported by objective evidence documented during the term of the Contract. The records of the evaluation must be retained with the project owner.

4.5 Access To Site

4.5.1 All Contractors and Subcontractors to be used in the execution of the Contract shall give advance notification of when they will be on site. Any work to be performed outside of Regular Time must have advance approval of the Owner.

Any discontinuation of the Work which causes a Contractor or their Subcontractors to suspend operations onsite will require the following:

- Contractor/Subcontractors shall notify the Owner of the stop work date.
- Contractor/Subcontractors shall ensure the site is left in a safe and secure condition.
- Contractor/Subcontractors shall ensure that locks and tags on mechanical and/or electrical systems are removed and, where necessary, replaced by the University.
- Contractor/Subcontractors shall not return to site without expressed prior permission from the Owner.

[End of Part 4]

PART 5– GENERAL CONDITIONS

5.1 I/We hereby authorize the Owner to release names of Subcontractors, Suppliers and Manufacturers used in my/our Bid including those as listed in Appendix "D", where such information is requested from the Owner.

5.2 I/We understand that Bids that do not list major Subcontractors and Suppliers and Manufacturers where required in Appendix “D” may be rejected.

5.3 I/We reserve the right to substitute other Subcontractors and/or Suppliers and/or Manufacturers for any Subcontractor or Suppliers or Manufacturer withdrawing their Bid or becoming bankrupt after the date hereof. Any such substitutes shall be subject to the approval of the Owner and contingent upon evidence of withdrawal or bankruptcy satisfactory to the Owner.

5.4 I/We agree that upon approval by the Engineer/Architect, the Owner shall have the right to take possession of any part of the work upon its completion, except for minor deficiency items, and that such possession shall not necessarily constitute acceptance of that part of the work.

5.5 I/We understand and agree that the Owner may order changes to the work in the form of additions or deletions in accordance with the General Conditions, Supplementary General Conditions and the intent of the Contract Documents.

5.6 I/We understand and agree that the Unit Price Table in Appendix "C2" must be completed where indicated and the total amount included in my/our stipulated price for the total performance of the work under Part 4 of the Bid and Acceptance form. I/We understand that the Unit Prices include all costs and charges of every kind, including overhead and profit, to perform the items of work listed in Appendix "A". I/We also understand that these same Unit Prices will be used for additions or deletions to the actual measured quantities.

5.7 When Appendix “E” is included in the Open Call, I/we understand that bids which do not list project references, where required in Appendix “E”, will be rejected.

5.8 Corporations Act

The Corporations Act of Newfoundland and Labrador requires that an extra-provincial company be registered before it begins or carries on business in the Province. If your company is not registered, please apply for the appropriate forms and procedures to:

Commercial Registrations Division
Dept. of Government Services, PO Box 8700
St John’s, NL Canada A1B 4J6
Phone: 709-729-3317, Fax: 709-729-0232
Website: http://www.gs.gov.nl.ca/registries/companies/corp_art_inc.html

[End of Part 5]

Part 6 – Supplementary Terms and Conditions

6.1 The open call document consist of the Open Call and Acceptance Form, General Conditions of Contract, Supplementary General Conditions of Contract, Special Conditions, Campus Safety and Health Regulations, Contractors Performance Evaluation, Drawings, Specifications and any Addenda to the Contract Documents issued before the open call closing period.

6.2 Surety

6.2.1 Bid Surety

Bids shall be accompanied by a copy of a bid security by way of a Bid Bond from a surety company acceptable to the Owner and which is licensed to do business in the Province of Newfoundland and Labrador or a copy of a cheque in the amount of 10 percent of the bid price. Originals to be delivered to Memorial University post tender closing. Bid security will not be required for a total contract value of $100,000 or less (HST Excluded), unless specifically called for in the contract documents. The bid security will be returned to the bidder upon receipt of the required Performance Bond and Labour and Materials Payment Bond as per 6.2.2 below.

The terms of the bid security will be invoked and the amount retained by the Owner if: the Tenderer fails to enter into a formal agreement, where one is specified, when notified of the award of the Contract within the tender validity period; or fails to provide the required Performance Bond and Labour and Materials Payment Bond within the time specified

6.2.2 Public Work's Surety

Within seven (7) days of the issuance of the letter of acceptance, the preferred Bidder shall obtain and deliver to the Owner a Performance Bond in the amount of 50 percent of the bid price (HST Excluded) which guarantees the successful and complete performance of the Work. The Performance Bond is required as a condition of bid award. In lieu of a Performance Bond an approved certified cheque in the amount of 10 percent of the bid price may, at their option, be accepted for retention by the Owner until the successful completion of the Contract. The certified cheque will be retained until satisfactory completion of the Work including the warranty period after which it will be returned to the Contractor. Performance Bond or other such security will not be required for a contract value of $100,000 or less. No Work is to be undertaken while the above performance security remains outstanding.

Within seven (7) days of issuance of the letter of acceptance, the preferred Bidder shall obtain and deliver to the Owner a Labour and Materials Payment Bond in the amount of 50 percent of the bid price (HST Excluded). The Labour and Materials Payment Bond is required as a condition of the bid award. In lieu of a Labour and Materials Payment Bond, an approved certified cheque in the amount 10 percent of the bid price may, at their option, be accepted for retention by the Owner until successful completion of the Contract. The certified cheque will be retained until substantial completion of the Work as defined by the Mechanics Lien Act and upon receipt of an acceptable statutory declaration form stating that all labour and material obligations due and payable under the Work have been discharged, after which it will then be returned to the Contractor. Labour and Materials

Payment Bond or other such security will not be required for a contract value of $100,000 or less. No Work is to be undertaken while the above labour and materials security remains outstanding.

No interest will be paid to the preferred Bidder for any certified cheques on deposit during the period of retention.

The cost of all bid, performance and labour and materials security shall be included in the bid price

6.3 Site Visit

A site visit may occur at the time and location identified on the Request for Open Calls for Bids Information Sheet.

Questions will not be answered at the site visit.

Before submitting a bid, Bidders may carefully examine the site of the Proposed Work and fully inform themselves of the existing condition and limitations. It is the responsibility of the Bidder to report any unsatisfactory conditions in writing which may adversely affect the proper completion of the work, to opencalls@mun.ca, at least **eight (8)** days before the open call closing date. Submission of a bid shall imply acceptance of previously completed Work and the conditions of the site, and the Contractor shall, therefore, be fully responsible for executing the Work in accordance with the Contract Documents.

6.4 Substitution of Materials

6.4.1 The open call shall be based upon using the materials or products as specified without substitution, unless there is an "or approved alternate" clause. Where two or more brand names are specified, the choice shall be left to the bidder. Where only one brand name is stated, there shall be no substitution.

6.4.2 Where the Specifications include the "or approved alternate" clause, substitutions may be proposed provided that the request for a substitution is received in writing at least eight (8) days (3:00pm NST) prior to the open call closing date and shall clearly define and describe the product for which the substitution is requested. Submissions shall compare in tabular form, to the characteristics and performance criteria of the specified material.

6.4.3 It is the Bidder's responsibility to ensure that the substituted article is equivalent to the specified article with regard to design, function, appearance, durability, operation and quality.

6.4.4 Request for substitutions made after the award of the contract will be subject to the requirements of Clause 2.37.0 MATERIALS AND SUBSTITUTIONS in the General Conditions of the Contract and will only be considered under special circumstances or where it is clear, at the Engineer's/Architect's discretion, that proposed substitution will provide a substantial benefit to the Owner.

6.4.5 Approval of the substitution shall be in the form of an addendum to the Specifications.

The decision on substitutions will be final.

6.5 Completion date

6.5.1 Bidders shall state the time required to complete the Contract from time of open call award. The bidder shall, within seven (7) days after the Contract is award submit a preliminary construction schedule indicating as closely as possible the starting and completion date for the major sections of the Work.

[End of Part 6]

APPENDIX A – SPECIFICATIONS

SPECIFICATIONS
LOCATED AT THE END OF THIS DOCUMENT

APPENDIX B – SUBMISSION FORM

1. Bidder Information

Please fill out the following form, naming one person to be the bidder's contact for the Open Call process and for any clarifications or communication that might be necessary.	
Full Legal Name of Bidder:	
Any Other Relevant Name under which Bidder Carries on Business:	
Street Address:	
City, Province/State:	
Postal Code:	
Phone Number:	
Fax Number:	
Company Website (if any):	
Bidder Contact Name and Title:	
Bidder Contact Phone:	
Bidder Contact Fax:	
Bidder Contact Email:	

2. Offer

The bidder has carefully examined the Open Call documents and has a clear and comprehensive knowledge of the Deliverables required under the Open Call. By submitting a bid, the bidder agrees and consents to the terms, conditions and provisions of the Open Call, including the Form of Agreement, and offers to provide the Deliverables in accordance therewith at the rates set out in the completed Pricing Form (Appendix C1 and/or C2 and/or C3).

3. Rates

The bidder has submitted its rates in accordance with the instructions in the Open Call and in the Pricing Form (Appendix C1 and/or C2 and/or C3). The bidder confirms that it has factored all of the provisions of Appendix A, including insurance and indemnity requirements, into its pricing assumptions and calculations.

4. Addenda

4.1 The bidder is deemed to have read and accepted all addenda issued by the Owner. The onus is on bidders to make any necessary amendments to their bids based on the addenda. The bidder is required to confirm that it has received all addenda by listing the addenda numbers in table below:(**Listing of individually the numbers of each Addendum received in the blank space)**

NOTE: FAILURE TO COMPLETE "TABLE: ADDENDA RECEIVED" LOCATED BELOW SHALL RESULT IN BID DISQUALIFICATION:

TABLE 1.10: ADDENDA RECEIVED

Bidders who fail to complete the above table will be deemed to have not received all posted addenda and shall be deemed **non- compliant.**

5. No Prohibited Conduct

The bidder declares that it has not engaged in any conduct prohibited by this Open Call.

6. Disclosure of Information

The bidder hereby agrees that any information provided in this bid, even if it is identified as being supplied in confidence, may be disclosed where required by law or by order of a court or tribunal. The bidder hereby consents to the disclosure, on a confidential basis, of this bid by the Owner to the advisers retained by the Owner to advise or assist with the Open Call process, including with respect to the evaluation of this bid.

7. Bid Irrevocable

The bidder agrees that its tender shall be irrevocable for a period of **45** days running from the moment that the Submission Deadline passes.

8. Execution of Agreement

The bidder agrees that in the event its bid is selected by the Owner, in whole or in part, it will finalize and execute the Agreement in the form set out in Appendix A (or in a form mutually acceptable to the parties) to this Open Call in accordance with the terms of this Open Call . Failure to submit this signature section will render the proposal NON-COMPLIANT and the proposal will be disqualified.

BIDDER SIGNATURE FORM:

BIDDERS MUST COMPLETE THE BIDDER SIGNATURE FORM. ANY BIDS RECEIVED WITHOUT THE BIDDER CONTACT FORM COMPLETED WILL BE DEEMED NON- COMPLIANT

(See Part 1 section 1.8 for Electronic Signature acceptance)

Signature of Witness	Signature of Bidder Representative
Name of Witness	Name of Bidder Representative
	Title of Bidder Representative
	Date

I have the authority to bind the bidder.

IN SIGNING THIS PAGE AND SUBMITTING YOUR PROPOSAL, THE PROPONENT ACKNOWLEDGES HAVING READ, UNDERSTOOD AND AGREED TO THE TERMS AND CONDITIONS OF THIS DOCUMENT

APPENDIX C1 – PRICING FORM

1. INSTRUCTIONS ON HOW TO COMPLETE THE PRICING FORM

- Rates must be provided in Canadian Dollars
- Rates quoted by the bidder must be all-inclusive and must include all labor and material costs, all travel and carriage costs, all insurance costs, all costs of delivery to the Owner, all costs of installation and set-up, including any pre-delivery inspection charges, and all other overhead, including any fees or other charges required by law
- Owner: Having carefully examined the site and all conditions affecting the proposed work as well as the Bid Documents including the Drawings and Specifications, all Addenda and the Instructions to bidders, I/We, the undersigned, hereby offer to furnish all necessary labour, materials, superintendence, plant, tools, equipment, etc., required to complete all work requisite and necessary for the proper execution of this Contract, expeditiously and in the satisfactory manner and accept in full payment therefore a stipulated sum of:

The scope of work for Price A, Price B and Price C is outlined in the contract documents – Refer to Scope of Work as defined in Appendix A – Specifications in relation to "Cylinder Replacement" and "Modernization". The Owner reserves the right to delete any or all parts of this tender and award individual and/or combined parts.		
	Contract Bid (HST Excluded)	
Price A: Cylinder Replacement		HST EXCLUDED
Price B: Modernization		HST EXCLUDED
Price C: Sum of Allowances (Section 01 21 00)	$10,000	HST EXCLUDED
Price =D: Total: [$(A+B+C)]		HST EXCLUDED

I/We agree to commence work within two (2) weeks after the acceptance of my/our Bid and complete the work in _____weeks from the acceptance of the Bid and to coordinate the scheduling of our work with that of all Subcontractors working on the Project. The time of completion indicated herein is required and will be a significant factor in assessing bids.

2. THE DELIVERABLES:

MU-502-25 - EDO 0844 Cylinder Replacement & Modernization as per specifications listed in Appendix A

3. MANDATORY SUBMISSION REQUIREMENTS

(a) Submission Form (Appendix B)
Each bid must include a Submission Form (Appendix B) completed and signed by an authorized representative of the bidder.

(b) Each bid must include Pricing Form (Appendix C1) as per instructions on form.

(c) Where Appendix C2 and C3 are required, they must be included in bid submission.

APPENDIX D - LIST OF SUBCONTRACTORS

Herewith is the list of Subcontractors, Suppliers and/or Manufacturers referred to in Section no. **5.1 of Part 5 of the Open Call and Acceptance Form**. The Subcontractors and Suppliers whose bids have been used in the preparation of this Bid must be listed in full including work to be done by own forces (B.O.F.). By Own Forces will be considered valid and satisfactory only if, prior to award, the supplier provides three (3) current (< 3 years) references of satisfactory completion of trade work of similar ***scale, scope and complexity*** as that described within the Bid documents. Trade certifications may be requested in addition to the references above. The determination of suitability is entirely at the discretion of the owner and shall be based on submitted documentation. The owner may use their knowledge and understanding of experience and performance of the Contractor on past work in lieu of this submission. The list will be subject to the approval of the Owner.

NOTE: FAILURE TO COMPLETE THIS PORTION OF THE BID SUBMISSION SHALL RESULT IN DISQUALIFICATION.

The trades below, if listed, have been identified by the owner, however it is the Bidder's responsibility to identify all applicable subtrades.

TRADE/DIVISION	SUBCONTRACTOR - SUPPLIER - MANUFACTURER

DEPARTMENT OF FACILITIES MANAGEMENT

GENERAL CONDITIONS
AND
AGREEMENT BETWEEN OWNER AND CONTRACTOR
FOR
THE STIPULATED PRICE CONTRACT

JANUARY 2026

DEPARTMENT OF FACILITIES MANAGEMENT

GENERAL CONDITIONS AND AGREEMENT
BETWEEN OWNER AND CONTRACTOR FOR THE STIPULATED PRICE CONTRACT

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1.0 DEFINITIONS

1.1.1 Contract Documents

The Contract Documents consist of the Instructions to bidders, Executed Agreement between the Owner and the Contractor, General Conditions of Contract, Supplementary General Conditions of Contract, Special Conditions, Campus Safety and Health Regulation, , Specifications, Drawings and such other documents forming part of the open call, including all amendments thereto incorporated before their execution and subsequent amendments thereto made pursuant to the provisions of the Contract or agreed upon between the parties. The successful bid and any Addenda to the Specifications issued during the bidding period shall also form part of the Contract Documents.

1.1.2 Owner, Engineer/Architect, Contractor

The Owner, Engineer/Architect and Contractor are the persons, firms or corporation identified as such in the Agreement. The term Owner, Engineer/Architect and Contractor means the Owner, Engineer/Architect and Contractor or their authorized representatives as designated by each party in writing.

1.1.3 Subcontractors

A Subcontractor is a person, firm or corporation having a direct contract with the Contractor to perform a part or parts of the Work included in the Contract, or to supply products worked to a special design according to the Contract Documents but does not include one who merely supplies products not so worked.

1.1.4 The Project

The Project is the total construction contemplated of which the Work performed under the Contract Documents may be the whole or a part.

1.1.5 The Work

The Work means the total construction and related services required by the Contract Documents.

1.1.6 Place of Work

The Place of Work is the designated site or location of the project of which the Work may be the whole or a part.

1.1.7 Products/Materials/Equipment

The term Products/Materials/Equipment means all materials, machinery, equipment and fixtures forming the Work as required by the Contract Documents but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work and normally referred to as construction machinery and equipment.

1.1.8 Other Contractor

The term Other Contractor means any persons, firm or corporation employed by or having a separate contract directly or indirectly with the Owner for Work other than that required by the Contract Documents.

1.1.9 Time

a) The Contract Time is the time stated in the Open Call for Bid and Acceptance Form for substantial performance of the Work.

b) The date of substantial performance of the Work is the date certified by the Engineer/Architect.

c) The term day, as used in the Contract Documents, shall mean the calendar day.

d) The term working day means any day observed by the construction industry in the area of the place of the Work.

1.1.10 Substantial Performance of the Work

A Contract shall be deemed to be substantially performed:

a) When the Work or a substantial part thereof is ready for use or is being used for the purpose intended; and

b) When the Work to be done under the Contract is capable of completion or correction at a cost of not more than:

(i) 3% (Three per centum) of the first two hundred and fifty thousand dollars ($250,000) of the Contract Price;

(ii) 2% (Two per centum) of the next two hundred and fifty thousand dollars ($250,000) of the Contract Price; and

(iii) 1% (One per centum) of the balance of the Contract Price.

c) When the Work or a substantial part thereof is ready for use or is being used for the purpose intended and where the Work cannot be completed expeditiously for reasons beyond the control of the Contractor, the value of the remaining Work to be completed shall be deducted from the Contract Price in determining substantial performance. As per Section 4.19.0, Substantial Performance will not be issued until the final commissioning of the Work has been successfully completed.

d) In all cases, time is of the essence regarding substantial performance.

1.1.11 Total Performance of the Work

Total Performance of the Work shall mean when the entire Work except those items arising from the provision **2.26.0 WARRANTY** has been performed to the requirements of the Contract Documents and is so certified by the Engineer/Architect.

1.1.12 Changes in the Work

Changes in the Work means additions, deletions or other revisions to the Work within the general scope of Work as contemplated by the Contract Documents.

1.1.13 Extra Work

Extra Work means any additional work or service, the performance of which is beyond the scope of Work as contemplated by the Contract Documents.

2.0 GENERAL CONDITIONS

2.1.0 INTENTIONALLY LEFT BLANK

2.2.0 DOCUMENTS

2.2.1 The Contract Documents shall be signed by the Owner and by the Contractor, in accordance with Part 1 – Submission Instructions, Open Call for Bids. A digital copy of the executed Stipulated Price Contract will be provided to the Contractor.

2.2.2 Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.

2.2.3 In the event of conflicts between Contract Documents, the following shall apply:

a) Documents of later date shall govern;

b) Figured dimensions shown on the drawings shall govern even though they may differ from scaled dimensions on the same drawing;

c) Drawings of larger scale shall govern over those of smaller scale of the same date;

d) Specifications shall govern over drawings;

e) Special Conditions shall govern over Specifications;

f) The General Conditions of Contract shall govern over Specifications;

g) Supplementary General Conditions shall govern over the General Conditions of the Contract;

h) The Executed Agreement between the Owner and the Contractor shall govern over all documents.

2.2.4 The Contractor will be provided, without charge, up to three (3) sets of Contract Documents or parts thereof as are reasonably necessary for the performance of the Work. A .pdf version of the contract documents will also be provided, at the Contractor's request.

2.2.5 The Contractor shall keep a copy of all current Contract Documents and shop drawings on the site, in good order and available to the Engineer/Architect and or their representatives.

2.2.6 Drawings, specifications, models and copies thereof furnished to the Contractor are to be used only with respect to the Work. Such documents and models are

not to be otherwise used or revised in any manner without the written authorization of the Owner.

2.2.7 Models furnished by the Contractor at the Owner's request and expense are the property of the Owner.

2.2.8 Models furnished by the Contractor that have not been requested by the Owner are at the expense of the Contractor.

2.3.0 ADDITIONAL INSTRUCTIONS AND SCHEDULE OF WORK

2.3.1 During the progress of the Work, the Engineer/Architect shall furnish to the Contractor such additional instructions as may be necessary to supplement the Contract Documents. All such instructions shall be consistent with the intent of the Contract Documents.

2.3.2 Additional instructions may include minor changes to the Work which affect neither the Contract Price nor the Contract Time.

2.3.3 Additional instructions may be in the form of drawings, samples, models or written instructions.

2.3.4 Additional instructions will be issued by the Engineer/Architect with reasonable promptness and in accordance with any schedule agreed upon for such instructions.

2.3.5 The Contractor shall prepare and update, as required, a construction schedule indicating the timing of major activities of the Work. The schedule shall be designed to conform with the Contract Time. The schedule shall be submitted to the Engineer/Architect within seven (7) days of the date of the Owner's letter of award. The Contractor shall monitor the progress of the Work relative to the schedule and advise the Engineer/Architect of any revisions required as a result of delays, as provided for in 2.5.0 DELAYS, and indicating what action will be taken to complete the Work within the Contract Time.

2.4.0 ENGINEER/ARCHITECT'S DECISIONS

2.4.1 The Engineer/Architect, in the first instance, shall decide on questions arising under the contract Documents and interpret the requirements therein. Such decisions shall be given in writing.

2.4.2 The Contractor shall notify the Engineer/Architect in writing within fourteen (14) days of receipt of a decision of the Engineer/Architect referred to in 2.4.1, if the Contractor believes that a decision by the Engineer/Architect is in error and/or at variance with the Contract Documents. Unless the Contractor fulfils this requirement, subsequent claims by them for extra compensation arising out of the decision will not be accepted.

2.4.3 If the question of error and/or variance is not resolved immediately, and the Engineer/Architect decides that the disputed work shall be carried out, the Contractor shall act according to the Engineer/Architect's written decision and carry out the disputed work.

Any questions of change in Contract Price and/or extension of Contract Time due to such error and/or variance shall be decided as provided in **2.11.0 DISPUTES**.

In the absence of an Engineer/Architect, the Owner's decisions will prevail.

2.5.0 DELAYS

2.5.1 If it can be clearly shown that the Contractor is delayed in the performance of the Work by any act or fault of the Owner, Engineer/Architect, then the Contract Time shall be extended for such reasonable time as the Engineer/Architect may decide in consultation with the Owner and the Contractor. The Contractor shall be entitled to be reimbursed for any costs incurred by them as a result of such a delay occasioned by the act or fault, provided that it can be clearly shown that the Contractor's forces cannot work efficiently elsewhere on the project and that the incurred cost is limited to that which could not reasonably have been avoided.

2.5.2 If the Contractor is delayed in the performance of the Work by a Stop Work Order issued by any court or other public authority and providing that such order was not issued as the result of any act or fault of the Contractor or of anyone employed by them directly or indirectly then the Contract Time shall be extended for such reasonable time as the Engineer/Architect may decide in consultation with the Contractor.

2.5.3 If the Contractor is delayed in the performance of the Work by civil disorders, labour disputes, strikes, lockouts, (including lockouts decreed or recommended for its members by a recognized Contractor's Association, of which the Contractor is a member) fire, unusual delay by common carriers or unavoidable casualties, or without limit to any of the foregoing, by any cause of any kind whatsoever beyond the Contractor's control, then the Contract Time shall be extended for such reasonable time as may be decided by the Engineer/Architect in consultation with the Owner and the Contractor, but in no case shall the extension of time be less than the time lost as the result of the event causing the delay, unless such shorter extension of time be agreed to by the Contractor.

2.5.4 No extension shall be made for delays unless written notice of claims is given to the Engineer/Architect within fourteen (14) days of its commencement, providing that in the case of the continuing cause of delay one notice shall be necessary.

2.5.5 If no schedule is provided under **2.3.0 ADDITIONAL INSTRUCTIONS AND SCHEDULE OF WORK**, no claim for delay will be considered because of failure to furnish instructions until fourteen (14) days after a demand for such instructions had been made and not then unless such claim is reasonable.

No extension shall be made for delays unless written notice of claims is given to the Engineer/Architect within fourteen (14) days of its commencement, providing that in the case of the continuing cause of delay one notice shall be necessary.

If no schedule is provided under **2.3.0 ADDITIONAL INSTRUCTIONS AND SCHEDULE OF WORK**, no claim for delay will be considered because of failure to furnish instructions until fourteen (14) days after a demand for such instructions had been made and not then unless such claim is reasonable.

2.6.0 OWNER'S RIGHT TO PERFORM WORK, STOP WORK AND/OR TERMINATE CONTRACT

2.6.1 If the Contractor should be adjudged bankrupt or makes a general assignment for the benefit of creditors because of their insolvency or if a Receiver is appointed on account of their insolvency, the Owner may, without prejudice to any other right or remedy they may have, by giving the Contractor or Receiver or Trustee in Bankruptcy written notice, terminate the Contract. If a Performance Bond has been provided by the Contractor guaranteeing faithful performance of the Work, the Owner shall give written notice to the Surety invoking the terms of the bond.

2.6.2 The Owner may notify the Contractor in writing that they are in default of their contractual obligations, if the Contractor:

a) Fails to proceed regularly and diligently with the Work; or

b) Without reasonable cause wholly suspends the carrying out of the Work before the completion thereof; or

c) Fails to maintain or manage the construction schedule as required by 2.3.5 above; or

d) Refuses or fails to supply sufficient, properly skilled workers for proper workmanship, products or construction machinery and equipment for the scheduled performance of the Work within five (5) working days of receiving written notice from the Engineer/Architect except in those cases provided in **2.5.0 DELAYS**; or

e) Fails to make payments due to their Subcontractors, their Suppliers for their workers, or fails to comply with the procedures around Progress Payments in accordance with 2.15.8 and 2.15.9; or

f) Persistently disregards laws or ordinances, or the Engineer/Architect's instructions; or

g) Otherwise violates the provisions of their Contract to a substantial degree.

Such written notice by the Owner shall instruct the Contractor to correct the default within five (5) working days from the receipt of the written notice. If a Performance Bond has been provided by the Contractor, a copy of such written notice will be provided to the Surety.

2.6.3 If the correction of the default cannot be completed within the five (5) working days specified, the Contractor shall be considered to be in compliance with the Owner's instruction if they:

a) Commence the correction of the default within the specified time; and

b) Provide the Owner with an acceptable schedule for such correction; and

c) Complete the correction in accordance with such schedule.

2.6.4 If the Contractor fails to correct the default within the time specified or subsequently agreed upon, the Owner may, without prejudice to any other right or remedy they may have:

a) Correct such default and deduct the cost thereof as certified by the Engineer/Architect from any payment due under the Contract; or

b) Terminate the Contract by written notice to the Contractor. If a Performance Bond has been provided by the Contractor, the Owner will provide the Surety with a copy of such notice.

2.6.5 If the Owner terminates the Contract under the conditions set out above, they are entitled to:

a) Take possession of the premises and products and utilize the temporary buildings, plants, tools, construction machinery and equipment, goods and materials, intended for, delivered to and placed on or adjacent to the Work and may complete the Work by whatever method they may deem expedient but without undue delay or expense;

b) Withhold any further payments to the Contractor until the Work is finished;

c) Upon total performance of the Work, charge the Contractor the amount by which the full cost of finishing the Work as certified by the Engineer/Architect including compensation to the Engineer/Architect for their additional services and a reasonable allowance to cover the cost of any corrections required by **2.26.0 WARRANTY** exceeds the unpaid balance of the Contract Price; or if such cost of finishing the Work is less than the unpaid balance of the Contract Price, pay the Contractor the difference;

d) On expiry of the warranty period, charge the Contractor the amount by which the cost of corrections under **2.26.0 WARRANTY** exceeds the allowance

provided for such corrections, or if the cost of such corrections is less than the allowance, pay the Contractor the difference;

e) Invoke the terms of the Performance Bond if such Bond has been provided under the Contract.

2.6.6 The Contractor's obligation under the Contract as to the performance of the Work up to the time of termination will remain in force after such termination.

2.7.0 CONTRACTOR'S RIGHT TO STOP WORK AND/OR TERMINATE CONTRACT

2.7.1 If the Owner should be adjudged bankrupt or makes a general assignment for the benefit of creditors or if a Receiver is appointed on account of their insolvency, the Contractor may, without prejudice to any other right or remedy they may have, by giving the Owner written notice, terminate the Contract.

2.7.2 If the Work should be stopped or otherwise delayed for a period of thirty (30) days or more under an order of any court or other public authority and providing that such order was not issued as the result of any act or fault of the Contractor or of anyone directly or indirectly employed by him, the Contractor may, without prejudice to any other right or remedy they may have, by giving the Owner fifteen (15) days' written notice, terminate the Contract.

2.7.3 The Contractor may notify the Owner in writing that the Owner is in default of their contractual obligations if:

The Engineer/Architect fails to issue a certificate in accordance with **2.16.0 CERTIFICATES AND PAYMENTS;**

a) The Owner fails to pay the Contractor when due any amount certified by the Engineer/Architect and verified by the audit of the Owner;

b) The Owner violates the provisions of the Contract to a substantial degree.

Such written notice shall advise the Owner that if such default is not corrected within fifteen (15) days from the receipt of the written notice, the Contractor may, without prejudice to any other right or remedy they may have, stop the Work and/or terminate the Contract.

2.7.4 If the Contractor terminates the Contract under the conditions set out above, they shall be entitled to be paid for all work performed including reasonable overhead and profit and for any loss sustained upon products, construction machinery and equipment and other damages as the Contractor may have sustained as a result of the termination of the Contract.

2.8.0 OTHER CONTRACTORS

2.8.1 The Owner reserves the right to let separate contracts in connection with the project of which the Work is part or do certain work by their own forces.

2.8.2 The Owner shall, in such cases, coordinate the Work and insurance coverage of other Contractors as it affects the Work of this Contract.

2.8.3 The Contractor shall coordinate their work with that of other Contractors and connect as specified or shown in the Contract Documents. Any change in the costs incurred by the Contractor in the planning and performance of such work which was not shown or included in the Contract Documents as of the date of signing the Contract, shall be evaluated as provided under 2.14.0 VALUATION AND CERTIFICATION OF CHANGES IN THE WORK and authorized as provided in 2.13.0 CHANGES INTHE WORK AND EXTRA WORK.

2.8.4 The Contractor shall report to the Engineer/Architect any apparent deficiencies in other Contractor's work which would affect this Contract immediately as they come to their attention and shall confirm such report in writing. Failure by the Contractor to so report shall invalidate any claims against the Owner by reason of the deficiencies of other Contractor's work except as to those of which they were not reasonably aware.

2.9.0 ASSIGNMENT

2.9.1 The Contractor shall not assign the Contract or any part thereof or any benefit or interest therein or thereunder without the written consent of the Owner.

2.10.0 SUBCONTRACTORS

2.10.1 The Contractor agrees to preserve and protect the rights of the Owner under the Contract with respect to any work to be performed under subcontract. The Contractor shall:

a) Require their Subcontractors to perform their work in accordance with and subject to the terms and conditions of the Contract Documents; and

b) Be fully responsible to the Owner for acts and omissions of their Subcontractors and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by them.

The Contractor, therefore, agrees that they will incorporate all the terms and conditions of the Contract Documents into all Subcontractor Agreements they enter into with their Subcontractors.

2.10.2 The Contractor shall employ those Subcontractors proposed by them in writing and accepted by the Owner prior to the signing of the Contract for such portions of the Work as may be designated in the bidding requirements.

2.10.3 The Owner may, for reasonable cause, object to the use of a proposed Subcontractor and require the Contractor to employ one of the other Subcontractors

2.10.4 In the event that the Owner requires a change from any proposed Subcontractor, the Contract price shall be adjusted by the difference in cost occasioned by such required change.

2.10.5 The Contractor shall not be required to employ as a Subcontractor any person or firm to whom they may reasonably object.

2.10.6 The Engineer/Architect may, upon reasonable request and at their discretion, provide to a Subcontractor information as to the percentage of the Subcontractor's work which has been certified for payment.

2.10.7 Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor and the Owner.

2.11.0 DISPUTES

2.11.1 Differences between the parties to the Contract as to the interpretation, application or administration of this Contract or any failure to agree where agreement between the parties is called for, herein collectively called disputes, which are not resolved in the first instances by decision of the Engineer/Architect pursuant to the provisions of **2.4.0 ENGINEER/ARCHITECT'S DECISIONS** shall be settled in accordance with the requirement of the General Conditions.

2.11.2 The Claimant shall give written notice of such dispute to the other party no later than fourteen (14) days after the receipt of the Engineer/Architect's decisions given under **2.4.0 ENGINEER/ARCHITECT'S DECISIONS**. Such notice shall set forth particulars of the matters in dispute, the probable scope, extent and value of the dispute and relevant provisions of the Contract Documents. The other party shall reply to such notice no later than fourteen (14) days after they receive or are considered to have received it, setting out in such reply their grounds and other relevant provisions of the Contract Documents.

2.11.3 Pending settlement of the dispute, the Engineer/Architect will give such instructions as, in their opinion, are necessary for the proper performance of the Work or to prevent delays pending settlement of the dispute. The parties shall act immediately according to such instructions, it being understood that by so doing neither party will jeopardize any claim they may have. If it is subsequently determined that such instructions were in error or at variance with the Contract Documents, the Owner shall pay the Contractor cost incurred by the Contractor in carrying out such instructions which they were required to do beyond what the Contract Documents correctly understood and interpreted would have required

them to do, including costs resulting from interruption of the Work.

2.11.4 It is agreed that no act by either party shall be construed as a renunciation or waiver of any of their rights or recourse, provided they have given the notices in accordance with Paragraph 2.11.2 and have carried out the instructions as provided in Paragraph 2.11.3.

2.11.5 If the dispute or claim cannot be resolved to the satisfaction of both parties, either party may refer the matter to such tribunal as the circumstances require.

2.11.6 In recognition of the obligation of the Contractor to perform the disputed work as provided in Paragraph 2.11.3, it is agreed that settlement of dispute proceedings may be commenced immediately following the dispute in accordance with the aforegoing settlement of dispute procedures.

2.12.0 INDEMNIFICATION

2.12.1 The Contractor shall be liable for and shall indemnify and hold harmless the Owner and the Engineer/Architect, their agents and employees from and against all claims, demands, losses, costs, damages, actions, suits or proceedings whatsoever arising under any statute or Common law.

a) In respect of personal injury to or the death of any person whomsoever arising out of or in the course of or caused by the carrying out of the Work; and

b) In respect of any injury or damage whatsoever to any property, real or personal or any chattel real, insofar as such injury or damage arises out of or in the course of or by reason of the carrying out of the Work.

2.12.2 The Contractor shall not be liable under Paragraph 2.12.1 if the injury, death, loss or damage is due to any act or neglect of the Owner or Engineer/Architect, their agents or employees.

2.13.0 CHANGES IN THE WORK AND EXTRA WORK

2.13.1 The Owner may, without invalidating the Contract, make changes by altering, adding to or deducting from the Work, with the Contract Price and the Contract Time being adjusted accordingly; and

2.13.2 No change in the Work shall be made by the Contractor without prior written order from the Owner, and no claim for an addition or deduction to the Contract Price or change in the Contract Time shall be valid unless so ordered and at the same time valued or agreed to be valued as provided in **2.14.0 VALUATION AND CERTIFICATION OF CHANGESIN THE WORK.** Signed faxed copies are acceptable at the discretion of the Owner.

2.14.0 VALUATION AND CERTIFICATION OF CHANGES IN THE WORK

2.14.1 The value of any change shall be determined in one or more of the following methods:

a) By estimate and acceptance in a lump sum;

b) By unit prices subsequently agreed upon;

c) By cost and a fixed or percentage fee.

In the case of changes in the Work valued as outlined in Paragraph 2.14.1(a) (as will be the usual case), the Contractor will submit an itemized estimate of all materials and labour (including Subcontractor's work) to complete the change.

In the case of changes in the Work as valued in Paragraph 2.14.1 (c), the Contractor shall submit detailed invoices, vouchers and time sheets for all materials and labour to complete the change.

The submissions in both cases shall be in the manner acceptable to the Engineer/Architect and will show separately the following percentages for overhead and profit:

(i) The Contractor shall include, in the breakdown, their 15 percent mark-up (10 percent of the estimated cost for the overhead and 5 percent for profit on their portion of the Work

(ii) When work is performed by one of the Contractor's Subcontractors, the Subcontractor's markup shall be 10 percent of the estimated cost for overhead and 5 percent for profit.

(iii) The Contractor shall add 10 percent to the Subcontractor's pricing for their own profit and overhead combined.

Mark-ups for both the Contractor and Subcontractors shall be limited to and considered full compensation for:

(a) all head office costs including salaries (specifically including the costs of superintendence pursuant to **2.28 PROJECT MANAGEMENT & SUPERINTENDENCE**), financing, overhead, profit and risk of undertaking the work.

(b) all normal administration, communications, supervision and coordination generally associated with routine change orders.

(c) all costs associated with the normal preparation of the change order

quotation such as investigation and estimating time, miscellaneous discussions and coordination and negotiations.

(d) costs related to:

i. the purchase or rental of material, plant and equipment;

ii. small tools and supplies;

iii. incidental or routine safety and protective measures, except not including labor and materials associated with special safety processes and procedures;

iv. permits, bonds, insurance, engineering, as-built drawings, project record documents, commissioning and site office facilities. The Contractor will be compensated, without markup, at the end of the Contract, upon presentation of specific invoices or supporting documentation, clearly demonstrating the additional costs incurred for permits, bonds, and insurance associated with the net value of all change order work;

v. and fines and any insurance deductibles payable upon fault of the Contractor in performance of the Work.

2.14.2 Notwithstanding the provisions of Paragraph 2.14.1, in case of changes in the Work, the amount charged for equipment rentals shall be that provided in the rental Contract, and no additional amount shall be paid as markup for overhead or profit for the Contractor or Subcontractor.

When a change in the Work is proposed or required, the Contractor shall present to the Engineer/Architect for approval their claim for the change in the Contract Price and/or change in the Contract Time in a form acceptable to the Engineer/Architect and including the appropriate documentation. The Engineer/Architect shall satisfy themselves as to the correctness of such claim, and when approved by the Owner, a change order will be issued to the Contractor to proceed with the change. The value of Work performed in the change shall be included for payment with the regular certificates for payment. Once a change has been approved as to time, there may be no future claim for time due to this change.

2.14.3 In the case of changes in the Work to be paid for under methods (b) and (c) of Paragraph 2.14.1, the form of presentation of costs and methods of measurement shall be agreed to by the Engineer/Architect and Contractor before proceeding with the change. The Contractor shall keep accurate records, as agreed upon, of quantities or costs and present an account of the cost of the change in the Work, together with vouchers where applicable.

2.14.4 If the method of valuation, measurement and the change in Contract Price and/or

change in Contract Time cannot be promptly agreed upon, and the change is required to be proceeded with, then the valuation, measurement and the change in Contract Price and/or Contract Time will be subject to final determination in the manner set out in **2.11.0 DISPUTES**. In this case, the Engineer/Architect shall, with the consent of the Owner, issue a written authorization for the change setting out the method of valuation and, if by lump sum, their valuation of the change in Contract Price and/or Contract Time.

2.14.5 In the case of a dispute in the valuation of a change authorized in the Work and pending final determination of such value, the Engineer/Architect shall certify the value of the Work performed in accordance with their own evaluation of the change and include the amount with the regular certificates for payment. The Contractor shall keep accurate records of quantities and cost of such work.

2.14.6 It is intended in all matters referred to above that both the Engineer/Architect and Contractor shall act promptly.

2.14.7 Should the Owner direct the Contractor not to correct work that has been damaged or that was not performed in accordance with the Contract Document, an equitable deduction from the Contract amount by the Architect/Engineer shall be made to compensate the Owner for the uncorrected or uncompleted work.

2.14.8 Credits will be based on the net cost of material and labour or the net difference in the unit price quantities.

2.15.0 APPLICATION FOR PAYMENT

2.15.1 Applications for payment on account may be made monthly as the Work progresses.

2.15.2 Applications for payment shall be made monthly on a date to be agreed upon between the Owner and the Contractor, and the amount claimed shall be for the value proportionate to the amount of the Contract, of the Work performed and products delivered to the site at that date.

2.15.3 The Contractor shall submit to the Engineer/Architect, before the first application for payment, a schedule of values of the various parts of the Work aggregating the total amount of the Contract Price and divided so as to facilitate evaluation of applications for payment.

2.15.4 This schedule shall be made out in such form and supported by such evidence as to its correctness as the Engineer/Architect may reasonably direct and, when approved by the Engineer/Architect, shall be used as the basis for application for payment.

2.15.5 When making application for payment, the Contractor shall submit a statement based upon this schedule. Claims for products delivered to the site but not yet

incorporated into the Work shall be supported by such evidence as the Engineer/Architect may reasonably require to establish the value and delivery of the products.

2.15.6 With each monthly claim for payment, except the first, the Contractor shall submit a Statutory Declaration attesting that they have made all payments to Subcontractors, Suppliers, and workers on behalf of whom amounts were included in the previous claim for payment.

2.15.7 Applications for release of holdback monies following the substantial performance of the Work and the application for final payment shall be made at the time in the manner set forth in **2.16.0 CERTIFICATES AND PAYMENTS**.

2.15.8 For **all** projects, it should be clearly understood that the University's policy is as follows:

a) Each Progress Claim must be accompanied by a breakdown indicating amounts included for each Subcontractor;

b) When the University makes a Progress Payment, it is made in prorated amounts on behalf of those Subcontractors for whom amounts have been included in the corresponding Progress Claim;

c) The Contractor submitting the Progress Claim **must** make payment of the amounts included for the various Subcontractors to the various Subcontractors within ten (10) working days of issuance of the Progress Payment by the University. A failure to do so that results in a mechanics lien being filed against the University will result in no future Progress Claims being paid until the lien is vacated.

d) Monthly payment amounts are not final or conclusive as to their value or quality of work performed and are subject to reopening and readjustment

2.15.9 Contractors not following the above procedures will be considered to be in default of their Contract, and the University may proceed in accordance with **Article 2.6.0 OWNER'S RIGHT TO PERFORM WORK, STOP WORK AND/OR TERMINATE CONTRACT** Subsection **2.6.2 (d)** of the General Conditions.

2.16.0 CERTIFICATES AND PAYMENTS

2.16.1 The Engineer/Architect shall, within ten (10) days of receipt of an application for payment from the Contractor submitted in accordance with **2.15.0 APPLICATION FOR PAYMENT**, issue a certificate for payment in the amount applied for or such amount as they shall determine to be properly due. If the Engineer/Architect amends the application, they shall promptly notify the Contractor in writing, giving their reason(s) for the amendment.

2.16.2 The Owner shall, within thirty (30) days of receipt and approval by the Owner of a certificate for payment from the Engineer/Architect, make payment to the Contractor on account.

2.16.3 Notwithstanding any other provisions of the Contract:

a) Where legislation permits and where, upon application by the Contractor, the Engineer/Architect has certified that a Subcontract has been totally performed to their satisfaction prior to the Substantial Performance of this Contract, the Owner may, at their discretion, pay the Contractor the holdback retained for such Subcontractor on the day following the expiration of the Statutory Limitations Period stipulated in the Mechanic's Lien Act applicable to the place of the Work and subject to the following conditions:

(i) A copy of the Contract between the Subcontractor and the General Contractor must be submitted.

(ii) The Subcontract is completed without deficiencies.

(iii) The warranty for the Subcontract will not start until Substantial Performance of the General Contract.

(iv) The General Contractor provides an approved Statutory Declaration that all monies have been paid to the said Subcontractor.

(v) The General Contractor provides an approved Waiver of Lien from this Subcontractor.

(vi) The Contractor and the Subcontractor provide an approved Waiver of Claim for all work associated with this Subcontractor.

(vii) A certificate is issued by the Engineer/Architect indicating that the Subcontract has been totally completed to their satisfaction.

(viii) The Owner will, at that time, release the total amount specified on the Subcontractor's Contract.

2.16.4 Notwithstanding the provisions of Paragraph 16.3 (a) and notwithstanding the wording of such certificate, the Contractor shall ensure that such work is protected pending the Total Performance of the Contract and be responsible for the correction of any defects in it regardless of whether or not they were apparent when such certificates were issued.

2.16.5 The Engineer/Architect shall within ten (10) days of receipt of an application from the Contractor for a Certificate of Substantial Performance make an inspection and assessment of the Work to verify the validity of the application. The Engineer/Architect shall within seven (7) days of their inspection notify the

Contractor of their approval or the reasons for their disapproval of the application. When the Engineer/Architect finds the Work to be substantially performed, they shall issue such a certificate. The date of this certificate shall be the date of Substantial Performance of the Contract. Immediately following the issuance of the Certificate of Substantial Performance, the Engineer/Architect, in consultation with the Contractor, shall establish a reasonable date for the Total Performance of the Contract.

2.16.6 Following the issuance of the Certificate of Substantial Performance and upon receipt from the Contractor of all documentation called for in the Contract Documents, the Engineer/Architect shall issue a Certificate for Payment of holdback monies, providing that no lien or privilege claims against the Work exists, that the Contractor has submitted to the Owner a sworn statement that all accounts for labour, Subcontracts, products, construction machinery and equipment and any other indebtedness which may have been incurred by the Contractor in the Substantial Performance of the Work and for which the Owner might in any way be held responsible, have been paid in full and that the Contractor has submitted to the Owner a waiver of all claims associated with this project except holdback monies properly retained. The holdback monies will become due and payable on the day following the expiration of the Statutory Limitation Period stipulated in the Mechanic's Lien Act applicable to the place of buildings. The Owner may retain out of such holdback monies any sum required by law to satisfy any liens against the Work or other monetary claims against the Contractor which may be enforceable against the Owner.

2.16.7 The Engineer/Architect shall, within ten (10) days of receipt of an application from the Contractor for payment upon Total Performance of the Contract, make an inspection and assessment of the Work to verify the validity of the application. The Engineer/Architect shall, within seven (7) days of their inspection, notify the Contractor of their approval or the reasons for their disapproval of the application. When the Engineer/Architect finds the Work to be totally performed to their satisfaction, they shall issue a Certificate of Total Performance and certify for payment the remaining monies due to the Contractor under the Contract, less any holdback monies which are required to be retained. The date of this certificate shall be the date of Total Performance of the Contract. The Owner shall, within thirty (30) days of issuance of such certificate, make payment to the Contractor in accordance with the provisions of the Contract.

2.16.8 The release of any remaining holdback monies shall become due and payable on the day following the expiration of the Statutory Limitation period stipulated in the Mechanics' Lien Act of the place of building provided that no claims against the Work exists and that the Contractor has submitted to the Owner a sworn statement that all accounts for labour, Subcontractors, products, construction machinery and equipment and any other indebtedness which may have been incurred by the Contractor in the Total Performance of the Work and for which the Owner might in any way be held responsible have been paid in full, except holdback monies properly retained.

2.16.9 No certificate for payment, any payment made thereunder or any partial or entire use of occupancy of the Work by the Owner shall constitute an acceptance of any work or products not in accordance with the Contract Documents.

2.16.10 As of the date of Total Performance of the Work as set out in the Certificate of Total Performance of the Work, the Owner expressly waives and releases the Contractor from all claims against the Contractor including, without limitation, those that might arise from the negligence or breach of Contract by the Contractor except one or more of the following:

a) Those made in writing prior to the date of the Total Performance of the Work and still unsettled;

b) Those arising from the provisions of **2.12.0 INDEMNIFICATION** or **2.26.0 WARRANTY**;

c) Those made in writing within a period of six (6) years from the date of Substantial Performance of the Work, as set out in the Certificate of Substantial Performance of the Work or within such shorter period as may be prescribed by any Limitation Statute of the Province of Newfoundland and Labrador and arising from any liability of the Contractor for damages resulting from their performance of the Contract with respect to substantial defects or deficiencies in the Work for which the Contractor is proven responsible.

As used herein, "substantial defects or deficiencies" means those defects or deficiencies in the Work which affect the Work to such an extent or in such manner that a significant part or the whole of the Work is unfit for the purpose intended by the Contract Documents.

2.16.11 As of the date of Total Performance of the Work, as set out in the Certificate of Total Performance of Work, the Contractor expressly waives and releases the Owner from all claims against the Owner including, without limitation, those that might arise from the negligence or breach of Contract by the Owner except those made in writing prior to the Contractor's application for payment upon Total Performance of the Work and still unsettled.

2.16.12 In the event of conflict between the provisions of the General Conditions and **2.24.0 DAMAGES AND MUTUAL RESPONSIBILITY**, the provisions of this General Condition shall govern.

2.16.13 The holdback to be used by the Engineer/Architect when issuing certificates of payment will be ten (10) percent of the value of the Work completed at the date of Contractor's claim.

2.16.14 Notwithstanding any other provision of this Contract, the Owner may:

a) In the event of a claim by the Owner against the Contractor for damages arising out of the performance or non-performance of the Contract, withhold payment of any amount equal to the alleged damages until the liability for damages is established, and no amount of interest will be paid on amounts held under this Clause;

b) Set-off amounts owing by the Contractor to the Owner;

c) Following the issuance of the Certificate of Substantial Performance, withhold payment of an amount equal to twice the cost as estimated by the Engineer/Architect of remedying deficiencies until the issuance of a Certificate of Total Performance, and no amount of interest will be paid on amounts held under this Clause.

2.17.0 TAXES AND DUTIES

2.17.1 Unless otherwise stated in the Supplementary General Conditions, the Contractor shall pay all applicable government sales taxes, goods and services taxes, customs duties and excise taxes with respect to the Contract.

2.17.2 Any increase or decrease in costs to the Contractor due to changes in such taxes and duties after the date of the Agreement and up to the agreed date of completion shall increase or decrease the Contract Price accordingly. For further clarity, changes to legislation or regulations that purport to decrease speed limits of vehicles (including trains or sailing vessels) do not constitute a tax or duty. If the Owner so desires, the Contractor is to cooperate with the Engineer/Architect and Owner and permit access to books and records in order to establish the amount of such taxes involved.

2.17.3 The Contractor shall maintain full records of their estimates and of actual costs to them of the Work, together with all proper open calls, quotations, contracts, correspondence, invoices, receipts, payments to Subcontractors and Suppliers and vouchers relating thereto and shall make them available to audit and inspection by the Owner, the Auditor General for Newfoundland and Labrador or by persons acting on their behalf and shall furnish them with any information which they may require from time to time in connection with such records.

2.18.0 LAWS, NOTICES, PERMITS AND FEES

2.18.1 The laws of the Province of Newfoundland and Labrador shall govern the Work.

2.18.2 The Contractor shall obtain all permits, licenses and certificates and pay all fees required for the performance of the Work which are in force at the date of open call closing with the following exceptions:

a) The Contractor shall obtain building permits for the Work but are not required to pay for said permits.

b) The Contractor shall not include the obtaining of permanent easements or rights of servitude.

2.18.3 The Contractor shall give all required notices and comply with all laws, ordinances, rules, regulations, codes and order of all authorities having jurisdiction relating to the Work, to the preservation of the public health and construction safety which are or become in force during the performance of the Work.

2.18.4 The Contractor shall not be responsible for verifying that the Contract Documents are in compliance with the applicable laws, ordinances, rules, regulations and codes relating to the Work. If the Contract Documents are a variance therewith or changes which necessitate modifications to the Contract Documents are required by the authorities having jurisdiction subsequent to the Open call closing date, the Contractor shall notify the Engineer/Architect in writing requesting direction immediately when any such variance or change is observed by them. The Engineer/Architect will make the changes required to the Contract Documents, and the Contract Price and/or Contract Time shall be adjusted in accordance with **2.13.0 CHANGES IN THE WORK AND EXTRA WORK** and evaluated in accordance with **2.14.0 VALUATION AND CERTIFICATION OF CHANGES IN THE WORK**.

2.18.5 If the Contractor fails to notify the Engineer/Architect in writing and obtain their direction as required in 2.18.4 and performs any work knowing it to be contrary to any laws, ordinances, rules, regulation, codes and orders of any authority having jurisdiction, they shall be responsible for and shall correct any violations thereof and shall bear all costs, expense and damages, attributable to their failure to comply with the provisions of such laws, ordinances, rules, regulations, codes and orders.

2.19.0 PATENT FEES

2.19.1 The Contractor shall pay all royalties and patent license fees required for the performance of the Contract and such royalties or fees shall be deemed to have been included in the Contract Price. They shall hold the Owner harmless from and against all claims, demands, losses, costs, damages, actions, suits or proceedings arising out of the Contractor's performance of the Contract which are attributable to an infringement or an alleged infringement of any patent or invention by the Contractor or anyone for whose acts they may be liable.

2.19.2 The Owner shall hold the Contractor harmless against all claims, demands, losses, costs, damages, actions, suits or proceedings arising out of the Contractor's performance of the Contract which are attributable to an infringement or an alleged

infringement of any patent or invention in executing anything for the purpose of the Contract, the model, plan or design of which was supplied to the Contractor by the Owner.

2.20.0 WORKERS' COMPENSATION

2.20.1 The Contractor shall be registered with and shall remain in good standing with the Workplace Health and Safety Compensation Commission during the term of their Contract.

2.20.2 At any time during the term of the Contract when requested by the Owner, the Contractor shall provide evidence of compliance by themselves and any or all of their Subcontractors.

2.21.0 LIABILITY INSURANCE

2.21.1 Comprehensive General Liability Insurance

a) Without restricting the generality of **2.12.0 INDEMNIFICATION**, the Contractor shall provide and maintain, either by way of a separate policy or by an endorsement to their existing policy, Comprehensive General Liability Insurance acceptable to the Owner and subject to limits set out in detail below, inclusive per occurrence for bodily injury, death and damage to property including loss of use thereof.

b) The insurance shall be in the joint names of the Contractor and the Owner. It shall also cover as Additional Insureds all Subcontractors and anyone employed directly or indirectly by the Contractor or their Subcontractors to perform a part or parts of the Work but excluding Suppliers whose only function is to supply and/or transport products to the project site.

c) The insurance shall also include as Additional Insureds the architectural and engineering consultants of the Owner and Engineer/Architect.

d) The insurance shall preclude subrogation claims by the Insurer against anyone insured thereunder.

e) The Comprehensive General Liability Insurance will not be limited to, but shall include coverage for:

(i) Premises and Operations Liability

(ii) Products or Completed Operations Liability

(iii) Blanket Contractual Liability

(iv) Cross Liability

(v) Elevator and Hoist Liability

(vi) Contingent Employer's Liability

(vii) Personal Injury Liability arising out of false arrest, detention or imprisonment or malicious prosecution, libel, slander or defamation of character, invasion of privacy or wrongful entry

(viii) Shoring, blasting, excavating, underpinning, demolition, pile driving and caisson work, work below ground surface, tunnelling and grading, as applicable

(ix) Liability with respect to non-owned, licensed vehicles.

2.21.2 The Contractor shall provide and maintain liability insurance in respect of owned licensed vehicles subject to limits set out in detail in Article **2.21.0 LIABILITY INSURANCE** subsection **2.21.6.**

2.21.3 All liability insurance shall be maintained continuously until twelve (12) months after the date the Engineer/Architect issues a Certificate of Substantial Performance.

2.21.4 The Contractor shall provide the Owner with evidence of all liability insurance prior to the commencement of the Work and shall promptly provide the Owner with a certified true copy of each insurance certificate.

2.21.5 All liability insurance policies shall contain an endorsement to provide all Additional Insureds with prior notice of changes and cancellations. Such endorsements shall be in the following form:

"It is understood and agreed that the coverage provided by this policy will not be changed or amended in any way nor cancelled until thirty (30) days after written notice of such change or cancellation shall have been given to all Additional Insureds."

2.21.6 The Contractor shall protect themselves and indemnify and save the Owner harmless from any and all claims which may arise from the Contractor's performance or failure of performance of the Contract and for this purpose shall, without restricting the generality of the foregoing, maintain insurance acceptable to the Owner to the following limits:

a) Where the contract value exceeds $100,000 (inclusive of HST)
   - Comprehensive General Liability = $10,000,000.00;
   - Standard Automobile Policy Liability = $5,000,000.00;
   - Contractor's Pollution Liability = $5,000,000.00 per occurrence.

   And if used directly or indirectly in the performance of The Work:

   - Manned Aircraft and Watercraft Liability = $10,000,000.00;

- Unmanned Aerial Vehicle (drone) Liability = $5,000,000.00;

b) Where the contract value is less than $100,000 (inclusive of HST)
- Comprehensive General Liability = $5,000,000.00;
- Standard Automobile Policy Liability = $3,000,000.00;
- Contractor's Pollution Liability = $3,000,000.00 per occurrence.

And if used directly or indirectly in the performance of The Work:

- Manned Aircraft and Watercraft Liability = $10,000,000.00;
- Unmanned Aerial Vehicle (drone) Liability = $5,000,000.00.

Prior to the commencement of any work hereunder, the Contractor shall file with the Owner a copy of each insurance policy and certificate required.

2.22.0 PROPERTY INSURANCE

2.22.1 Property Insurance is required to be provided by the Contractor if one of the following criteria is met:

a) The contract value exceeds $5,000,000.00 (inclusive of HST).

b) The contract is for a new building or extension, regardless of the contract value.

c) The contract is for a renovation and will expose the interior elements of a building to the elements of weather, regardless of the contract value. Including, but not limited to, windows or roofing replacement projects.

2.22.2 The Contractor shall provide and maintain property insurance acceptable to the Owner insuring the full value of the Work in the amount of the replacement cost or the Contract value, whichever is greater, and the full value as stated of products for incorporation into the Work. The insurance shall be in the joint names of the Contractor, the Owner, the Subcontractors as Unnamed Insured or, if they specifically request, as Named Insured. The policies shall preclude subrogation claims by the Insurer against anyone insured thereunder.

2.22.3 Such coverage shall be provided by EITHER an ALL-RISKS Builders' Risk Policy OR by a combination of a Coverage and Malicious Damage Endorsements and a Builder's Risk Difference in Conditions Policy providing equivalent coverage of Piers, Wharves and Docks, Government Structures Policy.

2.22.4 The policies shall insure against all risks of direct loss or damage. Such coverage shall apply to:

a) All products, labour and supplies of any nature whatsoever, the property of

the Insureds or of others for which the Insureds may have assumed responsibility, to be used in or pertaining to the site preparations, demolition of existing structures, erections and/or fabrication and/or reconstruction and/or repair of the insured project, while on the site or in transit, subject to the exclusion of the property specified.

b) The installation, testing and any subsequent use of machinery and equipment including boilers, pressure vessels or vessels under vacuum.

c) Damage to the Work caused by an accident to and/or the explosion of any boiler(s) or pressure vessel(s) forming part of the Work.

Such coverage shall exclude construction machinery, equipment, temporary structural and other temporary facilities, tools and supplies used in the construction of the Work and which are not expendable under the Contract.

2.22.5 The Contractor shall provide the Owner with evidence of all insurance prior to the commencement of the Work and shall promptly provide the Owner with a certified true copy of each insurance policy.

Policies provided shall contain an endorsement to provide all Named Insureds with prior notice of changes and cancellations. Such endorsements shall be in the following form:

"It is understood and agreed that the coverage provided by this policy will not be changed or amended in any way or cancelled until thirty (30) days after written notice of such change or cancellation shall have been given to all Named Insureds."

2.22.6 All such insurance shall be maintained continuously until ten (10) days after the date the Engineer/Architect issues a certificate of Substantial Performance. All such insurance shall provide for the Owner to take occupancy of the Work or any part thereof during the terms of this insurance. Any increase in the cost of this insurance arising out of such occupancy shall be at the Owner's expense.

2.22.7 The policies shall provide that, in the event of a loss, payment for damage to the Work shall be made to the Owner and the Contractor as their respective interests may appear. Damage shall not affect the rights and obligations of either party under the Contract except that the Contractor shall be entitled to such reasonable extension of time for Substantial and Total Performance of the Work as the Engineer/Architect may decide.

2.22.8 The Contractor and/or their Subcontractors, as may be applicable, shall be responsible for any deductible amounts under the policies and for providing such additional insurance as may be required to protect the Insureds against loss on items excluded from the policies.

2.22.9 When this Contract pertains to a new building or structure with a total bid amount greater than $25,000.00, the Contractor shall maintain All Risk Builder's Risk Insurance acceptable to the Owner in the joint names of the Owner and Contractor in the amount of 100 percent of the total value of the Work done and material delivered to the site and payable to the Owner and Contractor as their respective interest may appear.

2.23.0 PROTECTION OF WORK AND PROPERTY

2.23.1 The Contractor shall protect the property adjacent to the project site from damage as the result of their operations under the Contract.

2.23.2 The Contractor shall protect the Work and the Owner's property from damage and shall be responsible for any damage which may arise as the result of their operations under the Contract except damage which occurs as the result of:

a) Errors in the Contract documents; and/or

b) Acts or omissions by the Owner, their agents, employees or other Contractors

2.23.3 Should the Contractor, in the performance of this Contract, damage the Work and/or Owner's property and/or property adjacent to the place of the Work, the Contractor shall be responsible for making good such damage at their own expense or pay all costs incurred by others in making good such damage.

2.23.4 Should any damage occur to the Work and/or Owner's property for which the Contractor is not responsible as provided in of **2.12.0 INDEMNIFICATION**, they shall make good such damage to the Work and, if the Owner so directs, to the Owner's property, and the contract Price and Contract Time shall be adjusted in accordance with in **2.13.0 CHANGES IN THE WORK AND EXTRA WORK** and evaluated in accordance with in **2.14.0 VALUATION AND CERTIFICATION OF CHANGES IN THE WORK**.

2.23.5 The Contractor shall be completely responsible for the safety of the Work as it applies to protection of the public and property and construction of the Work.

The codes that must be followed and enforced for safety are:

a) The National Building Code, Part 8, Safety Measures at Construction and Demolition Sites (Latest Edition);

b) Canadian Code for Construction Safety (Latest Edition) as issued by the Associate Committee of the National Building Code;

c) The Occupational Health and Safety Act (1979) and Regulations.

2.23.6 Any person not following stipulated safety regulations shall be dismissed.

2.24.0 DAMAGES AND MUTUAL RESPONSIBILITY

2.24.1 If either party to this Contract should suffer damage in any manner because of any wrongful act or neglect of the other party or anyone employed by them then they shall be reimbursed by the other party for such damages. The party reimbursing the other party shall be subrogated to the rights of the other party in respect of such wrongful act or neglect if it be that of a third party.

2.24.2 Claims under this Contract shall be made in writing to the party liable within a maximum of thirty (30) days after the first observance of such damage and may be adjusted by agreement or in the manner set out in **2.11.0 DISPUTES**.

2.24.3 If the Contractor has caused damage to any other Contractor on the Work, the Contractor agrees upon due notice to settle with such other Contractor by agreement or arbitration, if they will so settle. If such other Contractor sues the Owner on account of any damage alleged to have been sustained, the Contractor agrees to fully indemnify the Owner to the extent that the Owner is adjudicated to pay any of the damages. The Owner shall notify the Contractor and may require the Contractor to defend the action at the Contractor's expense. If any final order or judgment against the Owner arises therefrom, the Contractor shall pay or satisfy it and pay all costs incurred by the Owner.

2.24.4 If the Contractor becomes liable to pay or satisfy any final order, judgment or award against the Owner then the Contractor, upon undertaking to indemnify the Owner against any and all liability for costs, shall have the right to appeal in the name of the Owner such final order or judgment to any and all courts of competent jurisdiction.

2.24.5 Should the Contractor fail to meet the date to substantially perform the Work, as indicated in the Agreement between the Owner and the Contractor, and is unable to provide justification acceptable to the Owner for the delay then the Contractor will be held liable for any liquidated damage amount indicated in **3.0 SUPPLEMENTARY GENERAL CONDITIONS** and may be held liable for payment to the Owner for other damages and losses suffered by the Owner as a result of the Contractor's delay including additional costs for Engineering/Architectural supervision.

2.25.0 BONDS

2.25.1 The Contractor shall promptly provide the Owner the surety bonds called for in the Open call Documents.

2.25.2 All such bonds shall be issued by a duly incorporated surety company approved by the Owner and authorized to transact a business or surety-ship in the Province of Newfoundland and Labrador.

2.25.3 If bonds are called for in the and Acceptance form, Instructions to Bidders or Supplementary General Conditions, the costs attributable to providing such bonds shall be included in the bid price.

2.25.4 Should the Owner require the provision of a bond or bonds by the Contractor other than those provided for under 2.25.3, the Contract Price shall be increased by all costs attributable to providing such bonds.

2.26.0 WARRANTY

2.26.1 The Contractor shall be responsible for the proper performance of the Work to the extend that the design and specifications permit such performance.

2.26.2 Subject to Paragraph 2.26.1, the Contractor agrees to correct promptly, at their own expense, defects or deficiencies in the Work which appear prior to and during the period of one (1) year from the date of Substantial Performance of the Work or such longer periods as may be specified for certain products or work.

2.26.3 The Contractor shall correct and/or pay for any damage to other work resulting from any corrections required under the conditions of Paragraph 2.26.2.

2.26.4 Neither the Engineer/Architect's final certificate nor payment thereunder shall relieve the Contractor from their responsibility hereunder.

2.26.5 The Owner and/or Engineer/Architect shall give the Contractor written notice of observed defects promptly.

2.27.0 CONTRACTOR'S RESPONSIBILITIES AND CONTROL OF THE WORK

2.27.1 The Contractor shall have complete control of the Work and shall effectively direct and supervise the Work so as to ensure conformance with the requirements of the Contract Documents. They shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all parts of the Work under the Contract.

2.27.2 The Contractor shall have the sole responsibility for the design, erection, operation, maintenance and removal of temporary structural and other temporary facilities and the design and execution of construction methods required in their use. The Contractor shall engage and pay for registered professional engineering personnel skilled in the appropriate disciplines to perform these functions where required by law or by the Contract Documents and, in all cases, where such temporary facilities and their method of construction are of such a nature that professional engineering skill is required to produce safe and satisfactory results.

2.27.3 Notwithstanding the provision of Paragraphs 2.27.1 and 2.27.2 above or any provisions to the contrary elsewhere in the Contract Documents where such Contract Documents include designs for temporary structural and other temporary facilities or specify a method of construction in whole or in part, such facilities and methods shall be deemed to comprise part of the overall design of the Work, and the Contractor shall not be held responsible for that part of the design or the specified method of construction. The Contractor shall, however, be responsible for the execution of such design or specified method of construction in the same manner that they are responsible for the execution of the Work.

2.27.4 The Contractor shall carefully examine the Contract Documents and shall promptly report to the Engineer/Architect any error, inconsistency or omission they may discover. The Contractor shall not be held liable for any damage resulting from any such errors, inconsistencies or omissions in the Contract Documents which they may discover, and they shall not proceed with the Work affected until they have received corrected or missing information from the Engineer/Architect.

2.28.0 PROJECT MANAGEMENT AND SUPERINTENDENCE

2.28.1 The Contractor shall employ a competent Project Manager and necessary project team. It is the Contractor's responsibility to ensure their project team is qualified and capable of executing the project work.

2.28.2 The Project Manager shall be satisfactory to the Engineer/Architect and shall not be changed except for good reason and only then after consultation with an agreement by the Engineer/Architect.

For projects with a bid value greater than $5 million dollars, excluding HST, the Project Manager shall have a minimum of ten (10) years' experience on construction projects of similar scale, complexity, type and value.
At the Owner's request, the project manager shall be required to submit a resume and cover letter outlining their work experience. The owner reserves its right to refuse the Contractor's suggested Project Manager in the event that the suggested project manager does not meet the above requirements. Such refusal shall not be exercised unreasonably by the Owner.

2.28.3 The Contractor shall employ a competent Superintendent and necessary assistants who shall be in attendance at the Work site at all times while the Work is being performed.

The Superintendent shall represent the Contractor at the place of work and instructions given to them by the Engineer/Architect shall be held to have been given to the Contractor. Important instructions shall be confirmed to the Contractor in writing, other instructions will be so confirmed if requested.

For projects with a bid value greater than $5 million dollars, excluding HST, the Superintendent shall have a minimum of ten (10) years' experience on construction projects of similar scale, complexity, type and value. The Owner reserves its right to refuse the Contractor's suggested Superintendent in the event that the suggested Superintendent does not meet the above requirements. Such refusal shall not be exercised unreasonably by the Owner.

At the Owner's request, the Superintendent shall be required to submit a resume outlining their work experience.

2.29.0 LABOUR AND PRODUCTS

2.29.1 Unless otherwise stipulated elsewhere in the Contract Documents, the Contractor shall provide and pay for all labour, products, tools, construction equipment and machinery, water, heat, light, power, transportation and other facilities and services necessary for the requirements of the Contract Documents.

2.29.2 All products provided shall be new unless otherwise specified in the Contract Documents. Any products which are not specified shall be of a quality best suited to the purpose required, and their use shall be subject to the approval of the Engineer/Architect.

2.29.3 In carrying out their duties under this Contract, the Contractor shall comply with all Provincial and Federal legislation respecting labour and the employment of labour, where applicable, including the Labour Standards Code and shall not operate in conflict with the Human Rights legislation. In the employment of labour, preference should be given to persons normally residing in Newfoundland and Labrador.

2.29.4 The Contractor and Subcontractors shall maintain and keep available for inspection by the Owner, a record of the names and addresses of all persons employed on the project.

2.29.5 The Contractor shall maintain good order and discipline among their employees engaged on the Work and shall employ on the Work only employees skilled in their various trades.

2.29.6 There shall be no discrimination in the selection of workers for employment on the project in respect to race, religion, views or political affiliation or any other enumerated ground contained in the *Human Rights Act, 2010* of Newfoundland and Labrador, and the office of the Canada Manpower will be used in the recruitment of workers wherever possible.

2.29.7 The Contractor shall pay fair wages and shall pay rates of wages and allowances to the various classes of labour not less favourable than those prevailing in the area where the Work is being performed.

2.29.8 The Contractor shall be aware that the majority of hourly-paid and maintenance workers employed within the University are unionized. It is of utmost importance that any labour force used by the Contractor neither disrupts or be disrupted by any labour conditions existing on the University campus. Failure by the Contractor to familiarize themselves with labour conditions on Campus or disruptions to the Contractor's own labour force because of labour conditions on Campus will not relieve them of their obligations to furnish all labour and materials necessary to carry out the requirements of the Contract.

2.30.0 SUBSURFACE CONDITIONS

2.30.1 The Contractor shall promptly notify the Engineer/Architect in writing if, in their opinion, the subsurface conditions at the project site differ materially from that indicated or reasonably inferred from the Contract Documents.

2.30.2 After prompt investigation, should the Engineer/Architect determine that conditions do differ materially, they shall issue appropriate instructions for changes in the Work as provided for in **2.13.0 CHANGES IN THE WORK AND EXTRA WORK**.

2.31.0 USE OF THE WORK

2.31.1 The Contractor shall confine their apparatus, the storage of products and the operations of their employees to limits indicated by laws, ordinances, permits or by instructions of the Engineer/Architect and shall not unreasonably encumber the premises with their products.

2.31.2 The Contractor shall not load or permit to be loaded any part of the Work with a weight or force that will endanger its safety.

2.31.3 Unless otherwise provided, the Contractor shall, at their own expense and without expense to the Owner, make suitable provision to accommodate all traffic, either pedestrian or vehicular, over or around the project upon which work is being performed in a manner satisfactory to the Engineer/Architect.

2.31.4 The Contractor shall provide and maintain at their own expense such fences, barriers, signs, lights and watchmen as may be necessary to prevent avoidable accidents to University Users or to the public generally.

2.31.5 All work shall be executed with the least possible interference with or disturbance to personnel and the Public. The Contractor shall cooperate with the person in charge of the premises. The Contractor shall ascertain from the Owner's representative the hours during which the work shall be performed, conform to the directions of the representative and to the directions of the said representative in determining the order in which the work shall be done.

2.31.6 The Contractor shall carry out all work required to maintain the building services and to provide necessary access for personnel and vehicles whenever new work affects occupied portions of the building.

2.31.7 Before final completion of the work, the Owner shall be entitled to make use of any portion of the work which is completed and fit for use for the installation of equipment, storage and furniture, supplies, etc., and for occupancy, if such can be arranged without interfering with the progress of the work.

2.32.0 CUTTING AND REMEDIAL WORK

2.32.1 The Contractor shall do all cutting and remedial work that may be required to make the several parts of the Work come together properly and shall coordinate the Work to ensure that this requirement is kept to a minimum.

2.32.2 Should the Owner, the Engineer/Architect, other contractors or anyone employed by them, be responsible for ill-timed work necessitating additional cutting and/or remedial work to be performed, it shall be valued as provided in **2.14.0 VALUATION AND CERTIFICATION OF CHANGES IN THE WORK** and added to the Contract Price.

2.32.3 Cutting and remedial work shall be performed by specialists familiar with the materials affected and shall be performed in a manner to neither damage nor endanger any work.

2.33.0 INSPECTION OF WORK

2.33.1 The Owner, the Engineer/Architect and their authorized representatives shall have access to the Work for inspection wherever it is in preparation or progress. The Contractor shall cooperate to provide reasonable facilities for such access.

2.33.2 If parts of the Work are designated for special tests, inspections or approvals in the Contract Documents or by the Engineer/Architect's instructions or the laws or ordinances of the place of the Work, the Contractor shall give the Engineer/Architect timely notice requesting inspection. Inspection by the Engineer/Architect shall be made promptly. The Contractor shall arrange for inspections by other authorities and shall notify the Engineer/Architect with timely notice of the date and time.

2.33.3 If the Contractor covers or permits to be covered any of the Work that is designated for special tests, inspections or approvals, before such special tests, the Contractor shall, if so instructed by the Engineer/Architect, uncover the Work, have the inspection satisfactorily completed and make good the Work at their own expense.

2.33.4 The Engineer/Architect may order any part of the Work to be specifically examined, should they believe such work not to be in accordance with the

requirements of the Contract Documents. If upon examination such work is found not to be in accordance with the requirements of the Contract Documents, the Contractor shall correct such work and pay the cost of examination and correction. If such work is found to be in accordance with the requirements of the Contract Documents, the Owner will pay the cost of examination and replacement.

2.33.5 The Contractors shall furnish promptly to the Engineer/Architect two (2) copies of all certificates and inspection reports relating to the Work.

2.34.0 REJECTED WORK

2.34.1 Defective work, whether the result of poor workmanship, use of defective products or damage through carelessness or other act or omission of the Contractor and whether incorporated in the Work or not which has been rejected by the Engineer/Architect as failing to conform to the Contract Documents, shall be removed promptly from the premises by the Contractor and replaced and/or re-executed promptly in accordance with the Contract Documents at the Contractor's expense.

2.34.2 Other contractors' work destroyed or damaged by such removals or replacements shall be made good promptly at the Contractor's expense.

2.34.3 If, in the opinion of the Engineer/Architect, it is not expedient to correct defective work not done in accordance with the Contract Documents, the Owner may deduct from the Contract Price the difference in value between the Work as done and that called for by the Contract, the amount of which shall be determined in the first instance by the Engineer/Architect.

2.35.0 SHOP DRAWINGS AND SAMPLES

2.35.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of the Work.

2.35.2 The Contractor shall arrange for the preparation of clearly identified shop drawings as called for by the Contract Documents or as the Engineer/Architect may reasonably request.

2.35.3 Prior to submission to the Engineer/Architect, the Contractor shall review all shop drawings. By this review, the Contractor represents that they have determined and verified all field measurements, field construction criteria, materials, catalogue numbers and similar data, or will do so, and that they have checked and coordinated each shop drawing with the requirements of the Work and of the Contract Documents. The Contractor's review of each shop drawing shall be indicated by stamp, date and signature of a responsible person.

The Contractor shall submit shop drawings to the Engineer/Architect for their review with reasonable promptness and in orderly sequence so as to cause no delay in the Work or in the Work of other contractors. If either the Contractor or the Engineer/Architect so requests, they shall jointly prepare a schedule fixing the dates for submission and return of shop drawings. Shop drawings shall be submitted in the form of reproducible transparencies or prints as the Engineer/Architect may direct. At the time of the submission, the Contractor shall notify the Engineer/Architect in writing of any deviations in the shop drawings from the requirements of the Contract Documents.

2.35.4 The Engineer/Architect will review and return shop drawings in accordance with any schedule agreed upon or otherwise with reasonable promptness so as to cause no delay. The Engineer/Architect's review will be for conformity to the design concept and for general arrangements only, and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the Contract Documents unless a deviation on the shop drawings has been approved in writing by the Engineers/Architects.

2.35.5 The Contractor shall make any changes in shop drawings which the Engineer/ Architect may require consistent with the Contract Documents and resubmit, unless otherwise directed by the Engineer/Architect. When resubmitting, the Contractor shall notify the Engineer/Architect in writing of any deviations other than those requested by the Engineer/Architect. Any required resubmission of shop drawings shall be at the sole expense of the Contractor.

2.35.6 The Contractor shall submit for the Engineer/Architect's approval such standard manufacturer's samples as the Engineer/Architect may reasonably require. Samples shall be labeled as to origin and intended use in the Work and shall conform to the requirements of the Contract Documents.

2.35.7 The Contractor shall provide samples of special products, assemblies or components when so specified. The cost of such samples not specified shall be authorized as an addition to the Contract Price as provided in **2.13.0 CHANGES IN THE WORK AND EXTRA WORK**.

2.36.0 TESTS AND MIX DESIGNS

2.36.1 The Contractor shall furnish to the Engineer/Architect test results and mix designs as may be requested. The testing company must first be approved by the Engineer/Architect.

2.36.2 The cost of tests and mix designs beyond those called for in the Contract Documents or beyond those required by law, ordinances, rules and regulations relating to the Work and the preservation of public health, shall be authorized as an addition to the Contract Price as provided in **2.13.0 CHANGES IN THE WORK**

AND EXTRA WORK.

2.37.0 MATERIALS AND SUBSTITUTIONS

Materials described and named in the specifications with "or approved equal" clause after the Manufacturer's name are so described as to the establish quality only, and substitutions of a similar materials may be made before the award of the Contract provided the Engineer/Architect's approval is obtained. Substitutions after the award

may be considered under special circumstances as indicated in Subsection 1.7.4 in the **INSTRUCTIONS TO Bidders**

2.37.1 Requests for substitutions must be accompanied by sufficient information in the form of shop drawings, manufacturer's literature, samples and other data to permit proper investigation of the substitutes proposed, together with any increase or decrease in price.

2.37.2 Whenever a substitute is proposed for approval, the Contractor shall guarantee that such proposed substitute will not adversely affect the space requirements allocated on the drawings for the material specified, and they shall agree to bear any additional expense incurred due to their use of the proposed substitute.

2.37.3 The Engineer/Architect may accept or reject any or all of the proposed substitutions as they see fit, and their decision on a question of equality shall be final.

2.38.0 TIME OF ESSENCE AND SCHEDULE

2.38.1 Time is of the essence of the Contract.

2.39.0 CASH ALLOWANCE

2.39.1 The Contract Price includes cash allowances, if any, stated in the Contract Documents.

2.39.2 Cash allowances, unless otherwise specified, cover the entire cost to the Contractor of services, products, construction machinery and equipment, freight, unloading, handling, storage, installation and other authorized expenses incurred in performing the Work stipulated under the cash allowances. This also includes the Contractors overhead and profit in connection with such cash allowance.

2.39.3 The cash allowance shall not include HST.

2.39.4 Where costs under a cash allowance exceed the amount of the allowance, the Contractor shall be compensated for any excess incurred and substantiated plus an allowance for overhead and profit as set out in **2.14.0 VALUATION AND**

CERTIFICATION OF CHANGES IN THE WORK.

2.39.5 The Contract Price shall be adjusted by change order to provide for any excess or deficit to each cash allowance.

2.39.6 Progress payments on account of Work authorized under cash allowance shall be included in the Engineer/Architect's monthly certificates for payment.

2.39.7 A schedule shall be prepared jointly by the Engineer/Architect and Contractor to show the items called for under Cash Allowances. They must be authorized by the Owner for ordering purposes so that the progress of the Work will not be delayed.

2.40.0 CLEANUP AND FINAL CLEANING OF THE WORK

2.40.1 The Contractor shall maintain the Work in a tidy condition and free from the accumulation of waste products and debris, other than that caused by the Owner, other contractors or their employees.

2.40.2 When the Work is substantially performed, the Contractor shall remove their surplus products, tools, construction machinery and equipment not required for the performance of the remaining Work. They shall also remove waste products and debris, other than that caused by the Owner, other contractors or their employees, and leave the Work clean and suitable for occupancy by the Owner, unless otherwise specified.

2.40.3 When the Work is totally performed, the Contractor shall remove their surplus products, tools, construction machinery and equipment. They shall also remove waste products and debris other than that caused by the Owner, other contractors or their employees.

3.0 SUPPLEMENTARY GENERAL CONDITIONS

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4.0 SPECIAL CONDITIONS

ALL SECTIONS STRUCK OUT IN SECTION 4.0 ARE NOT INCLUDED IN THE CONTRACT

4.1.0 LAYOUT OF WORK

4.1.1 Other than the original lot lines and a benchmark, both shown on the drawings, establish and maintain all grades, lines, levels and well-built batter boards at all corners of the building. As work progresses, lay out on the forms or rough flooring the exact location of all partitions as a guide to all trades.

4.1.2 Verify all grades, lines, levels and dimensions as shown on the drawings and report any errors or inconsistencies in the above to the Engineer/Architect before commencing Work.

~~4.2.0 JOB SIGN~~

~~**4.2.1** At the start of the job, erect two painted signs as detailed and where located by the Engineer/Architect. This will be the only sign or advertisement permitted on the site unless instructed otherwise by the Engineer/Architect.~~

~~**4.2.2** The signs shall be 8'0" x 8'0" plywood, properly supported. It shall be painted and shall show the names of the building, Owner, Prime Consultant, Major Subconsultants, Contractor and Major Subcontractors. A drawing of the signs to be erected will be supplied by the Engineer/Architect.~~

4.3.0 TEMPORARY OFFICES AND SHEDS

4.3.1 Construct and maintain, until completion of the Contract temporary offices and storage sheds in approved locations on site for the use of staff.

4.3.2 Buildings shall be of weatherproof wood stud and plywood construction completely equipped with adequate lighting, heating and ventilation, and in addition, the Contractor’s office shall be fully furnished with desks, plan tables, storage cabinets, file drawers, chairs, stools and plan racks.

4.3.3 Provide storage sheds for small tools, equipment, perishable materials, etc., as necessary. All buildings shall be equipped with windows for natural light and doors properly fitted and equipped with locks.

4.3.4 Maintain offices and storage sheds in good condition to the approval of the Engineer/Architect from start of Work until final completion of Work or, when directed by the Engineer/Architect, remove offices and sheds from the site and leave areas free of debris and waste materials and in a clean and tidy condition.

4.3.5 Offices and storage sheds required by Trade Contractors, such as mechanical and electrical, shall be provided by the trade requiring them.

~~**4.3.6** Provide an office approximately 120 square feet for the absolute use of the Owner or their representative(s). It shall be properly fitted and furnished with light, heat, telephone, lock and key, shelving, table and chairs and plan rack. The building shall be removed from the site at the completion of the Work.~~

4.4.0 TEMPORARY SERVICES

4.4.1 Light and Power

Furnish all temporary light and power required to provide such intensity of light and sufficient power as necessary for the Work to be carried out under the best conditions. Obtain and pay for all permits and inspection tests required by Provincial and/or Municipal authorities. Pay all charges and maintain fixtures and equipment in good working order. This shall include electric heat.

~~**4.4.2** Telephone~~

~~Install and pay for the operation of one job telephone and one telephone for the use of the Engineer/Architect for the duration of the Contract. Subcontractors requiring individual telephones shall have them installed at their expense. Long distance calls will be at the expense of the party making the calls.~~

4.4.3 Toilets

At the start of operations, provide and maintain in sanitary condition sufficient temporary toilets and washing facilities for the use of personnel on the job. Conform to requirements of the Department of Health and other authorities having jurisdiction. Supply adequate quantities of disinfectant and toilet paper. When building toilets and washing facilities are operable, they may be used under the same conditions as the temporary toilets with the latter being removed, leaving all surfaces and areas hygienically clean and in immaculate condition.

4.4.4 Heat

Provide and maintain in good condition a temporary heating system for use when the building is closed in until the project has been handed over to the Owner. Pay for fuel and maintenance of the system. Maintain temperatures at a minimum of 50^{o} F, (higher if required for special trades). Heating equipment not adequately protected or operated in conditions other than those intended by the manufacturer shall be regarded as temporary. Remove all such equipment and replace with new permanent equipment.

When ready for operation, the permanent heating equipment may be used for temporary heating purposes, subject to the conditions of the Mechanical Division of

the specifications. Protect all permanent heating equipment used for temporary heating purposes. Provide satisfactory site conditions for the proper operation of this equipment.

4.4.5 Water Supply

Provide in two convenient locations outside the building line a fresh water supply for the use of all trades.

Where connection cannot be made to an existing water supply, provide adequate size tanks and keep them filled for use of all trades.

4.5.0 PLANT AND MACHINERY

4.5.1 Provide all framework, scaffolding, ladders, cranes, derricks, planks, screens, gantries, tarpaulins, tools, equipment and machinery for the proper execution of the Work. Scaffolding shall be erected without damage of the structure or the finishes, be removed to suit the installation of work of other trades and be promptly removed at completion.

4.5.2 Where it is the normal practice for the trade to provide its own scaffolding, it shall be included in the Subcontract.

4.6.0 PROTECTION OF PUBLIC AND WORKMEN

4.6.1 Part 8 of the National Building Code of Canada, latest edition, shall apply to this project in its entirety. This covers fencing, barricades, Fire protection, excavation, use of streets or public property, control of vehicular traffic and mechanical methods of demolition.

4.6.2 The latest edition of Canadian Construction Safety Code shall also apply to all phases of this project.

4.6.3 The Workplace Health, Safety and Compensation Commission Regulations shall also apply to all phases of this project.

4.7.0 CONSTRUCTION SCHEDULE

4.7.1 The Contractor shall, within seven (7) days after the Contract is awarded, prepare for the use of the Engineer/Architect and Owner, a construction schedule. It shall indicate as closely as possible the starting and completion dates for the major sections of the Work, together with the Subcontractors' names.

4.7.2 With each monthly progress claim, submit one (1) copy of the original construction schedule marked in red to show the actual construction progress on the date of the submission of the claim. When necessary, provide an updated construction schedule superseding the original.

4.8.0 OPERATIONS AND MAINTENANCE DATA

4.8.1 On completion of the project, submit to the Engineer/Architect one (1) copy of Operations and Maintenance Data and one (1) electronic copy as original editable format.

a) Title page, labelled "Operation and Maintenance Data", project number, project name, date and list of contents.

b) Organize contents into applicable sections of work to parallel project specifications breakdown.

c) Provide electronic document in an acceptable file transfer method (external hard drive or file share), including all original and editable files or, at the direction of the Owner, pdf format.

4.8.2 Include the following information plus data specified in the technical specifications:

a) Maintenance instruction for finished surface and materials.

b) Copy of hardware schedules.

c) Description, operation and maintenance instructions for equipment and systems, including complete list of equipment and parts list. Indicate nameplate information such as make, size capacity and serial number.

d) Names, addresses, email and phone numbers of Subcontractors and Suppliers.

e) Guarantees, warranties and bonds showing:

(i) Name and address of project.

(ii) Guarantee commencement date (date of Final Certification of Completion).

(iii) Duration of guarantee.

(iv) Clear indication of what is being guaranteed and what remedial action will be taken under guarantee.

(v) Signature and Seal of Contractor.

f) Additional materials used in project listed under various sections showing name of manufacturer and source of supply.

4.8.3 Neatly type lists and notes. Use clear drawings, diagrams or manufacturer's literature.

4.8.4 The final certificate will not be issued until requirements of section 4.8have been received and approved by the Engineer/Architect.

4.9.0 COORDINATION OF WORK

4.9.1 The Contractor will coordinate the Work of their Subcontractors and provide necessary instructions and scheduling so as to permit continuous progress in the Work by all trades. They will coordinate work between the Subcontractors on the site to ensure that anchor bolts, plates, attachments, etc., are provided and set in place in a timely manner. They will lay out partitions and assist Subcontractors in establishing the actual location of the fixtures, pipes, outlets, duct conduit, etc., so as to limit the interference of one trade with another. Locations shown on the drawings are approximate. If interference problems are encountered which cannot be resolved on the site, advise the Engineer/Architect before proceeding with the Work. Conceal all mechanical and electrical work unless otherwise indicated.

4.10.0 TRAFFIC MAINTENANCE

4.10.1 Do not close or obstruct streets, sidewalks, driveways, etc., without permission from authorities having jurisdiction. Do not place or store materials in street, sidewalks, parking areas, etc., unless so authorized.

4.11.0 FIRE PROTECTION

4.11.1 The Contractor's fire protection measures shall include:

a) An adequate fire alarm signal, the use of fire-resistant tarpaulins, the daily inspection of temporary heating system by competent staff and regular fire patrol;

b) All temporary wiring shall be done by electricians qualified under the applicable local regulations;

c) Supply and maintenance of fifteen (15) pounds dry chemicals and/or five (5) gallons soda-acid fire extinguishers in such locations that no working crew has to travel more than fifty (50) feet to an extinguisher station. In any case, there shall be not less than one (1) fully charged extinguisher(s) at the job at any time.

4.12.0 JOB MEETINGS

4.12.1 Where the value of the contract exceeds $100,000 (HST excluded) job meetings

shall occur at definitely prescribed times (minimum twice a month), which will be determined after commencement of work, the Contractor shall organize job meetings and send out notices stating time and place to the Owner's representative, the Engineer/Architect, Subconsultants, to all Subcontractors and to other persons whose presences are required at the meetings. They shall take note of all persons attending these meetings and shall, within one (1) week after each job meeting, submit to the Owner, the Engineer/Architect, the Subconsultants and others present, minutes of the meeting which must show any major decisions made and any instructions or information required.

4.12.2 Where the value of the contract is less than $100,000 (HST excluded) job meetings shall occur at the discretion of the Owner's representative but shall not occur fewer than once per month.

4.13.0 AS-BUILT DRAWINGS

4.13.1 The Engineer/Architect will issue to the Contractor three (3) sets of prints of Issued for Construction drawings for the sole purpose of providing "as- built" drawings. The Contractor shall pass these to the relevant Subcontractor who shall keep two (2) sets in their office and one (1) set on the job. As changes occur, the Subcontractor shall make them on the field set. Upon completion of the project, the Subcontractor shall accurately transfer all changes to the two (2) office sets in red ink and pass them to the Engineer/Architect, through the Contractor, for approval. If they are not approved, the Subcontractor shall prepare new sets for resubmission (purchasing additional white prints for this purpose).

14.13.2 As-built drawings shall be digital and shall indicate any and all changes in the contract work.

14.13.3 Provide electronic as-builts in an acceptable file transfer method (external hard drive or file share)or, at the direction of the Owner, pdf format.

14.13.4 The Certificate of Total Performance will not be issued until such drawings have been received and approved.

4.14.0 COMPLETION TIME

4.14.1 The project shall be ready for the use and occupancy by the Owner within the time stated in the Contract Documents. Time is and continues to be of the essence.

4.14.2 Prior to the acceptance by the Owner of the Substantial Performance, the Contractor and the Owner shall agree on a list of deficiencies as prepared by the Engineer/Architect for prompt correction and/or completion.

4.15.0 CLOSE DOWN OF WORK

4.15.1 Should the Work be closed down for any cause, the Contractor shall assume all responsibility for its proper protection during such period. They must protect all foundation work and other work liable to be damaged.

4.16.0 BROKEN GLASS

4.16.1 The Contractor shall be held responsible for any damaged, broken or scratched glass and at completion shall replace all such glass at no additional cost to the Owner.

4.17.0 HOARDING

4.17.1 Before starting excavating, construct and thereafter the Contractor shall maintain all necessary hoarding required by Municipal or Provincial regulations or by other authorities having jurisdiction.

4.18.0 COMMISSIONING

4.18.1 The Contractor is responsible for commissioning the Work to ensure that the various parts are operating in a manner as intended by the Contract Documents. Even through individual components and/or parts of the Work may have been tested and approved prior to the substantial completion, the Contractor must coordinate a final commissioning of the complete Work, including at the place of the Work all their major Subcontractors and Suppliers. The final commissioning will be carried out by the appropriate trades working together in a complementary manner such that the successful operation of the whole Work is completed properly to the satisfaction of the Engineer/Architect. **The Substantial Performance Certificate will not be issued until the final commissioning of the Work has been successfully completed.**

4.19.0 FINAL CLEAN-UP

4.19.1 At the end of the job, thoroughly clean the building of all rubbish and surplus materials.

4.19.2 Make good all damaged areas in the building caused as a result of the Work of this Contract.

4.19.3 Do final cleaning, waxing and polishing of resilient flooring.

5.0 CAMPUS SAFETY AND HEALTH REGULATIONS

Maintaining a healthy and safe environment for all members of the campus community, as well as visitors, is a priority with the University. This involves a commitment from all sectors of the campus community and extends to outside agencies having occasion to come on campus to conduct business.

The following regulations will apply to all work undertaken by contractors and service personnel on any University property.

5.1.0 REGULATIONS, CODES AND STANDARDS

Contractors shall be familiar with and abide by provisions of various safety codes and standards applicable to the work performed and should refer to Article **23. PROTECTION OF WORK AND PROPERTY** in the **General Conditions**.

In particular, strict adherence shall be required to the Provincial Occupational Health and Safety Act and Regulations and the National Building Code of Canada, Part 8.

5.2.0 GENERAL SAFETY REGULATIONS

a) Contractors/service agencies shall ensure that members of the campus community are not endangered by any work or process in which they may be engaged. Work areas shall be adequately barricaded, and if dust or fumes are generated, suitable enclosures shall be installed to contain such emissions.

b) No material shall be stored in such a way as to obstruct walkways or represent a danger to pedestrian traffic.

c) Adequate protection shall be provided to prevent the possibility of materials falling from scaffolding or elevated areas. Areas where materials are being loaded or offloaded shall be barricaded or otherwise protected to prevent unauthorized entry. Where necessary, appropriate warning signs shall be posted.

d) The work areas must be kept reasonably clean and free from debris which could constitute a fire hazard. Care must be taken to ensure that the work process does not activate fire alarm detection devices. (Generation of dust and fumes can activate smoke detectors causing a false alarm).

e) Due consideration shall be given to fire safety in buildings. Flammable materials must be kept away from sources of ignition. No work involving the use of open flame devices must be undertaken around flammable solvents or gases.

f) Do not alter or disturb any materials believed to contain asbestos materials (unless this is a duly authorized part of the project). Should suspect materials be encountered, consult with University officials before proceeding.

g) Material Safety Data Sheets shall be procured for any hazardous product used on campus. Such sheets shall be made readily available for consultation as required under the Workplace Hazardous Materials Information System.

NOTE: The above regulations are not to be considered all-inclusive and are considered to be complementary to the safety requirements outlined in the agreement between the Owner and the Contractor/Service Agency. Certain conditions and circumstances may require adherence to additional safety regulations.

As a general requirement, contract/service personnel are expected to conduct all work on campus in a professional and safe manner and to give priority to the welfare of members of the campus community.

6.0 CONTRACTOR PERFORMANCE EVALUATION

6.1.0 The purpose of this process is to maintain an acceptable level of performance with external contractors carrying out work for the Department of Facilities Management.

6.2.0 A record of the performance of external contractors will be maintained to identify the following:

a) Those contractors who by virtue of satisfactory performance will continue to be eligible to submit bids for work at the University;

b) Those contractors whose performance is considered unsatisfactory and will be advised of the need to improve performance to remain eligible to submit bids for work at the University;

c) Those contractors whose record of unsatisfactory performance will render them ineligible to submit bids for work at the University.

6.3.0 Contractors' performance will be evaluated on a points rating system relative to quality of work performed, timeliness in completing work and management/administration of contracts/work and safety parameters.

7.0 SIGNATURE PAGE

Open Call for Bid for: Memorial University (the Owner) Open Call Number: _____

Project Name: _____ Project Number: _____

Contractor's Full Business Name:

_____

Contractor's Full Business Mailing Address:

_____

Phone Number: _____ Email: _____

Signature(s) **Title(s)**

Contractor:

_____ _____
Signature

_____ I have authority to bind the corporation.
Print Name

Witness:

_____
Signature

_____ _____
Print Name

Signed of Behalf of Memorial University (the Owner):

_____ _____
Signature

_____ I have authority to bind the corporation.
Print Name

Witness:

_____ _____
Signature

_____
Print Name

This Stipulated Price Contract is signed at St. John's, NL on this ____ day of _____, 20 ____.

APPENDIX A
SPECIFICATION 01

MUN Music Building
230 Elizabeth Avenue
St. John’s, Newfoundland

Elevator Cylinder Replacement Specifications
Vertical Transportation

238099 cylinder rev 01

2026-04

Section 14 00 00 General

1 General

1.1 Scope

.1 Provide labour, materials, products and services necessary for the following work at MUN Music Building, 230 Elizabeth Avenue, St. John's, Newfoundland:

.1 Cylinder replacement of a single drect-acting buried hydraulic passenger elevator, designated 1 in accordance with Section 14 24 23.

1.2 Definitions of terms

.1 The term "Owner", as used herein, refers to Memorial University of Newfoundland.

.2 The term "Inspecting Authorities", as used herein, refers to authorized agents of governments and of insurance groups that are charged with the responsibility of carrying out periodic inspections and tests on vertical transportation equipment.

.3 The term "Consultant", as used herein, means KJA Consultants Inc. or such other entity selected by the Owner to fulfill the role of Consultant.

.4 The term "provide", as used herein, means to supply and install new equipment.

.5 The term "arrange", as used herein, means to provide the required features.

.6 The term "unit", as used herein, means any Elevator, Escalator, Dumbwaiter, Moving Walk, Material Lift or similar device mentioned in this Specification.

.7 The term "Code", as used herein, refers to the latest edition of the CAN/CSA-B44 Safety Code for Elevators and Escalators, with updates and including Nonmandatory Appendices (which are deemed mandatory herein), as adopted by the Authority Having Jurisdiction.

.8 The terms in the Specifications that are not otherwise defined shall have the definitions as given in the Code.

1.3 Operation and maintenance manual

.1 Supply to the Consultant and Owner prior to the Substantial Performance inspection, operation and maintenance manuals.

.2 The project shall not be deemed to have reached Substantial Performance until the complete operation and maintenance manuals have been approved by the Consultant or Owner.

.3 Upon acceptance by the Consultant or Owner, provide three copies of the operation and maintenance manuals per group in one of the following formats, as selected by the Owner.

.1 Print and bind hard copies of which two will be given to the Owner and one will be placed in the respective machine room; OR

.2 Provide an electronic copy in PDF format on an unprotected digital storage device (such as a USB).

.4 The operation and maintenance manual shall incorporate, at a minimum:

.1 A cover page including project title, address;

.2 An index;

.3 Contact details for the respective parties;

.4 A warranty letter signed by a representative of the contractor having authority to bind the company;

.5 As-built wiring diagrams;

.6 A copy of the final submission to the Authority Having Jurisdiction;

.7 A copy of the final inspection report from the Authority Having Jurisdiction;

.8 Operation and maintenance manuals for other major components where applicable, including:

.1 Cylinders.

.9 Supplier and part name for other parts, excluding minor or generic items such as screws, bolts, hinges, etc;

.10 Full instructions for any special maintenance procedure, repair protocol, adjustment or test not addressed by Code (including the A17.2 and the Elevator Industry Field Employee's Safety Handbook);

.11 Manufacturer's recommended maintenance intervals for each major component.

.12 A copy of the Maintenance Control Program.

1.4 Coordination with other trades

.1 Where the work joins another trade, provide drawings showing the actual dimensions and the method of joining the work to the work of the other trade and information such as anchors, templates and details for cast-ins.

.2 Provide access and assistance as required, at no extra charge, in relation to work by other trades.

1.5 Progress payments

.1 Progress payments will be based on the percentage of the work complete as determined by the Consultant.

.2 Ten percent of the contract value will be assigned to the provision of manuals and close-out documents and the correction of deficiencies.

.3 A 10% holdback will apply to payments, this holdback to be released within a period as set out in the applicable legislation.

1.6 Designated substances

.1 The Contractor is responsible to adhere to the designated substances and/or hazardous substances management programs in place at the site including, but not limited to, the presence of asbestos.

.2 In the event that designated substances or hazardous substances are discovered by the Contractor's personnel and not previously identified by the Owner, report such substances to the Owner.

.3 The Contractor shall not be responsible for abatement of designated substances or hazardous substances.

.4 The Contractor acknowledges that small amounts of designated substances or hazardous substances may be present in elevator components (such as asbestos in brake pads and mechanical gaskets, lead in paints and soldering, silica in concrete and masonry, mercury in fluorescent light tubes, PCBs in transformers, etc.), and the Contractor shall ensure proper maintenance procedures are followed to safely complete maintenance, repair and replacement of such components.

.5 The Contractor shall provide personal protective equipment as necessary to comply with the management program for work in such environments including, but not limited to, disposable protective clothing (gloves, boot covers, coveralls) and fit-tested respirators.

1.7 Acceleration of the Work

.1 If the Work falls behind the schedule, take action as necessary to meet the schedule, including, but not limited to, extra personnel and overtime work.

.2 Pay any costs associated with this action unless the delay is caused by acts of government, riot, civil commotion, war, malicious mischief, act of God or any cause beyond the control of the contractor.

1.8 Acknowledgments

.1 The proposer acknowledges that the proposer has found no discrepancies nor any ambiguities in the specifications.

1.9 Assignments

.1 Do not assign nor sublet the contract without the written consent of the Owner.

.2 Do not assign any payment due or to become due as a result of this contract without the written consent of the Owner.

1.10 Certificates of inspection

.1 Obtain and pay for certificates of approval and all other necessary permits and inspections.

.2 Prior to Substantial Performance, arrange for and pay for a safety inspection of the equipment by a government authority or, if that is not available, by a recognized independent private professional inspection organization.

.3 As a minimum, ensure that this inspection includes:

.1 Pressure tests for hydraulic elevators;

.2 Full load full speed car buffer tests if oil buffers are provided;

.3 Electrical safety circuit check;

.4 Tests of any other safety devices.

.4 Submit, prior to Substantial Performance inspection, the approved safety inspection report.

.5 If sufficient advance notice of such deficient work has not been given, assume the cost of the additional inspections.

1.11 Changes in Work

.1 The Owner, without invalidating the contract, may order extra work or make changes by altering, adding to, or deducting from the Work, the contract sum being adjusted as agreed.

.2 Execute all such work under the conditions of the original contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.

.3 The Consultant shall have authority to make minor changes in the Work, not involving extra cost and not inconsistent with the purpose of the contract.

.4 Otherwise do no extra work nor make any change unless in pursuance of written order from the Owner.

1.12 Claims for extra cost

.1 Provide any claims for extra cost due to instructions or otherwise, to the Owner in writing within a reasonable time after the instructions and in any event before proceeding with the work.

.2 No such claim shall be valid unless so made and authorized in writing by the Owner.

.3 Invoices or quotes for extra cost shall be based on the material cost +10% plus labour at the contract rates.

.4 The Contractor shall supply invoices from manufacturers to support the material cost, otherwise the work will be deemed included in the contract.

1.13 Codes and ordinances

.1 Supply equipment and do work in accordance with building codes, by-laws, regulations and requirements of the local, provincial and federal authorities in effect at the time of the execution of the work.

.2 Supply equipment and do work in accordance with the Code, and any other code which may govern the requirements of the installation.

.3 Provide labour and material, whether or not specifically mentioned in this specification, that may be necessary to provide an installation conforming to the applicable codes and regulations.

.4 Prior to submission of the proposal and throughout the duration of work, give prompt notification in writing of any regulations or requirements known to be in process which might affect the acceptability of the work.

.5 If changes in codes or regulations result in extra costs, those taking effect subsequent to the date of proposal submission shall be treated as an extra to the contract.

.6 Requirements of the Authority Having Jurisdiction applicable at the time of proposal submission shall be deemed to be included in the contract, unless specifically excluded herein.

.7 Should changes in codes, changes in legislative requirements or changes to the requirements of the Authority Having Jurisdiction be announced prior to the date of proposal submission but with a delayed adoption date, those changes shall be deemed to be included in the contract, unless specifically excluded herein.

1.14 Completion schedule

.1 Submit with the proposal, a detailed completion schedule including equipment delivery times and anticipated completion date.

1.15 Contract Documents

.1 The Contract Documents shall consist of general conditions, instructions to bidders, the Drawings, Specifications (including alternates and addenda) and completion schedules.

.2 Execute the work in accordance with the Owner's contract documents, any supplemental conditions and these specifications.

.3 Where there is a conflict between the documents the Owner's contract documents will take precedence over the other documents and any supplemental conditions will take precedence over these specifications.

1.16 Cutting and patching

.1 Cut and patch floors and walls and around hall fixtures as required to accommodate the elevator works.

1.17 Defective work and non-performance

.1 The Owner reserves the right to correct any defective work and to charge the cost to the contractor.

.2 Should the contractor fail to execute any of the Work set out in the contract the Owner reserves the right to do the Work and to charge the cost to the contractor.

.3 The Owner reserves the right to withhold payment in the event of non-performance

or to pay only for that portion of the Work that has been executed.

.4 The Owner will give reasonable notice in writing prior to taking such action unless the defective work or non-performance prejudice the safety of people or the installation.

1.18 Electrical diagrams

.1 Supply wiring diagrams and data as required for the execution of the Work including schematics for speed control, dispatching system, interfaces, printed circuit boards.

.2 Incorporate, as part of the schematic diagrams, a reference index ('road map') giving the location of electrical components and wiring interconnections for relay coils, relay contacts, field equipment, integrated circuits and other such devices, so that the position on the schematics of any of these items can be readily determined.

.3 Supply, prior to the Substantial Performance inspection, three prints and one reproducible of the wiring and schematic diagrams revised to show changes that have been made.

.4 If changes are subsequently made to the wiring or control, supply an additional two sets of marked-up prints of the schematics and field wiring diagrams showing the changes.

1.19 Environmental considerations

.1 Where practicable, recycle material replaced in the course of the work.

.2 Provide a list of materials to be removed from site and their proposed recycling or disposal location for approval prior to commencing work.

.3 Where practicable, provide new materials manufactured by methods that do not adversely affect the environment by, for example, generating residual deposits of heavy elements and greenhouse gases.

.4 Use materials on site, such as low VOC (Volatile Organic Compound) adhesives and paint, that will not negatively affect the in-building environment.

1.20 Equipment insurance

.1 The Owner's insurance policy covers equipment delivered to the agreed-upon storage location and accepted by the Owner.

.2 All other material and equipment is not included in the Owner's policy and such material and equipment is stored at the Contractor's own risk.

1.21 Equipment moving

.1 Provide floor protection and bracing so that equipment moving causes no damage to the building.

1.22 Existing conditions

.1 Provide additional material and labour necessary to modify the equipment to suit the existing site conditions, in order to complete the Work and to obtain licences and approvals.

1.23 Existing drawings

.1 The Owner will provide, if available, existing equipment layout drawings.

1.24 Failure to perform

.1 If the contractor shall neglect to prosecute the work properly or fail to perform any provision of the contract, the Owner after ten days written notice to the contractor may, without prejudice to any other remedy the Owner may have, make good such deficiencies and may deduct the cost therefrom from payment due to the contractor.

1.25 Generic maintenance

.1 Arrange that the equipment can be maintained and adjusted by any competent elevator company without the use of proprietary tools, information or equipment or, if such tools, information or equipment are required, provide them (these shall become the property of the Owner).

.2 Do not incorporate any running time, cycle counters or trip counters that would cause the equipment to shut down or alter its operation in any way.

1.26 Hoistway protection

.1 Provide, maintain and, after the Work is complete, remove any partitions required in the hoistway.

1.27 Inability to complete contract

.1 Should there be a reasonable doubt that the work will be completed within the scheduled time because of labour disputes or any other cause, the Owner reserves the right, at the Owner's option, to cancel the contract.

.2 In the event this option is exercised, the payments for the work shall be made on a pro rata basis for materials and labour supplied to the time of cancellation and such material and work performed shall become the property of the Owner.

.3 Prior to exercising this option, the Owner shall give two weeks notice in writing of intention to cancel.

1.28 Information with proposal

.1 Provide the following information, where relevant, with the proposal:

.1 The model and manufacturer of such items as solid state drives, fixtures, control systems, door operators and other purchased material (with the exception of miscellaneous minor items);

.2 The current rating of the solid state drives;

.3 The KVA rating of the transformers feeding the solid state drives;

.4 Certification from an independent testing laboratory detailing the line pollution generated by the solid state drives;

.5 Certification from an independent testing laboratory detailing the extent to which the control systems are protected against external electromagnetic radiation;

.6 Brochures, descriptions and manuals (where applicable) for the major items;

.7 Renderings or samples of the fixtures and exposed materials;

.8 Detailed completion schedule for the work;

.9 A copy of your health and safety policy as issued to your employees;

.10 Mechanic and team regular and overtime hourly rates.

1.29 Inspection and acceptance

.1 Furnish a team of competent personnel to assist the Consultant with an inspection of each elevating device prior to Substantial Performance to verify that the work is in compliance with the Specifications.

.2 If the results of these inspections do not meet the requirements of the Specifications, make the appropriate corrections, and provide, as set out above, for another inspection.

1.30 Labour laws

.1 Comply with applicable provisions of federal, provincial and local labour laws and with applicable union regulations.

1.31 Liability insurance

.1 Provide, during the period this contract is in force, premises liability, including public liability insurance and property damage insurance in the amount of $5,000,000 inclusive, to be covered against any claims for damage to property or for personal injury, including death, which may arise from operation under this contract, whether such operation is by yourself or by any sub-contractor or anyone directly or indirectly employed by you.

.2 Upon completion of the contract, have in force a completed operations and products liability insurance, in the amount of $5,000,000 inclusive, to be covered against any claims for damages to property or for personal injury, including death, which may arise after the premises liability is terminated.

.3 Maintain the insurance in force for a minimum period of two years after completion of the contract.

.4 List the Owner as an additional insured.

.5 The certificates shall state that the insurance will not become ineffective without sufficient written notice to the Owner.

.6 Submit certificates of such insurance with the Owner before work is begun.

1.32 Liens and affidavits

.1 The final payment and any part of the retained percentage shall not become due until a complete release of liens arising out of this contract or receipts in full in lieu thereof have been delivered to the Owner.

.2 Furnish an affidavit to the Owner that the release or receipts include labour and materials for which a lien could be filed.

.3 If any lien remains unsatisfied after all payments are made, refund to the Owner monies that the Owner may be compelled to pay in discharging such a lien, including costs and reasonable legal fees.

1.33 Materials and workmanship

.1 Provide all new materials and equipment.

.2 Install equipment in a neat, accurate, workmanlike manner.

1.34 Materials validity check

.1 Perform a general materials validity check of components and fastenings that under failure might create a dangerous situation, including, but not limited to, sheave bolts, welds, car slings, gears, worm shafts, sheave shafts, brakes, safeties, guide rails, car platform and any other retained component.

1.35 Measurements

.1 In the execution of the work, verify all dimensions with the actual conditions in order to ensure work of the highest quality.

1.36 Occupied building

.1 This is an occupied building and normal building routine will have to carry on while this work is being done.

.2 Take proper care to avoid unnecessary noise, clutter or obstruction in pedestrian areas, and arrange for storage of materials and tools where they will cause minimum inconvenience.

.3 Where excessive noise or obstruction is in certain cases unavoidable, advise the Owner ahead of time and make suitable arrangements.

.4 The Owner will allow access to the building and to the work site at times designated by the Owner.

.5 The Owner will assign storage space, if available, for materials and tools.

.6 The Owner will allow the contractor's personnel to use designated washrooms.

.7 Perform work which interferes with tenant comfort or significantly impacts unit operation in overtime or at the times specified by the Owner.

1.37 Organization chart

.1 Provide to the Owner an organization chart from the local supervisory level up.

.2 Provide to the Owner the names, positions and experience of the field and supervisory personnel associated with this project.

.3 During the course of the work when organization changes are made, provide the Owner with updated information.

1.38 Overtime premium

.1 In the event that the Owner, for whatever reason, pays for overtime worked to complete the work as set out in the Specifications, the Owner will pay the added cost of the overtime.

.2 The added cost shall be the difference between the overtime cost and straight time cost at contract rates.

.3 Obtain from the Owner prior written authorization for overtime to be worked and chargeable, as described above, to the Owner, this authorization to be for specific amounts and for specific times.

.4 Submit time sheets for such overtime worked for approval to the Owner or the designated representative of the Owner within 48 hours of the time that such overtime is worked.

.5 If the procedures as set out above are not followed, assume the costs of the time worked.

1.39 Overtime provisions

.1 Include overtime labour for work that would disturb people such as concrete chipping, drilling, moving of material and any work that would create noise or odours.

1.40 Owner's General Terms and Conditions

.1 Abide by the Owner's General Terms and Conditions.

.2 Where there is a conflict between the Owner's General Terms and Conditions and these specifications the Owner's Terms and Conditions take precedence.

1.41 Parts

.1 Supply parts on request for a period of fifteen years subsequent to Substantial Performance of the project, at then prevailing prices.

.2 Where purchased components are used, ensure that the original manufacturer's name and component designation are clearly marked on the part or in the parts catalogue.

1.42 Patents

.1 Hold and save the Owner and its officers, agents, servants and employees harmless from liability due to patent or copyright infringement arising from the use of, in the performance of the work or in the completed installation, any invention, process, article, or appliance.

1.43 Payment withheld

.1 Approval for payment may be withheld to such extent as may be necessary on account of:

.1 Defective work not remedied;

.2 Claims filed or reasonable evidence indicating probable filing of claims;

.3 Failure of contractor to make payments properly to sub-contractors or for material and labour;

.4 Failure to work to schedule;

.5 A reasonable doubt that the contract can be completed for the balance then unpaid;

.6 Damage to the building or another contractor by the elevator contractor or one of their subcontractors.

.2 When the above grounds are removed, payment will be made for amount withheld.

1.44 Personnel

.1 Supervise personnel so that they present a neat appearance and their movement in the building is within the requirements of their work.

.2 Provide uniforms and photo identification for personnel.

.3 The Owner reserves the right to reject or refuse access to personnel or contractors at its sole discretion.

.4 Assign and maintain a dedicated service representative to the work, this representative to be responsible for liaison with the Owner and the Consultant.

.5 Assign and maintain a dedicated service supervisor to the work, this supervisor to be responsible for technical communications with the Owner and the Consultant.

1.45 Pre-inspection check list

.1 Upon completion of each group, review each page of the specifications and initial each page at the bottom left to indicate that the work has been completed in compliance with the Specifications.

.2 Submit this initialled copy of the Specifications to the Consultant prior to requesting an inspection by the Consultant.

1.46 Preliminary information

.1 Submit, within 30 working days after awarding of contract, the information and details, including power requirements, cutouts, access requirements, and all other information required to complete the work to be performed by others in conjunction with the installation of the equipment.

1.47 Protection of the Work and property

.1 Maintain protection of the Work and protect the Owner's property from injury or loss arising out of the execution of this contract.

.2 Make good any injury or loss caused by the Contractor's agents or employees.

.3 Take all necessary precautions to ensure that the Work is done in a manner that does not endanger any person.

1.48 Regular hours of work

.1 Regular hours of work are from 08:00 to 17:00 Monday to Friday, excluding holidays.

.2 For residential buildings and hotels complete noisy and disruptive work during regular hours.

.3 For all other buildings, unless otherwise noted, complete noisy and disruptive work outside of regular hours.

1.49 Removal of existing equipment

.1 Remove and take possession of any existing equipment that is replaced in the course of the execution of the work.

.2 Remove equipment with prior permission of, and only at times specified by, the Owner.

.3 Remove and transfer to the Owner equipment that the Owner elects to retain for the

Owner's use.

.4 Remove existing wiring that is no longer being used.

1.50 Removal of rubbish

.1 Remove rubbish, keep the building and premises clean during the progress of the work, and leave the premises at completion in perfect condition as far as the work under the specifications is concerned.

1.51 Work completion and maintenance turnover

.1 At the completion of the work and prior to turning over the unit for public use:

.1 So as to ensure a smooth and harmonious turnover, arrange with the existing elevator maintenance provider a walkthrough of the installation, this walkthrough to be carried out jointly by your supervisor and the existing elevator maintenance provider's maintenance supervisor.

.2 Provide to the Owner and Consultant the Test Data Forms signed by both your supervisor and the existing elevator maintenance provider's supervisor together with a signed confirmation that the work has been checked by both parties and both parties are in agreement that the work has been completed satisfactorily and poses no problems for ongoing maintenance.

1.52 Request for payment

.1 Submit applications for payment with the necessary data, information, waivers and affidavits including certificates of compliance and appropriate statutory declaration.

1.53 Retained equipment

.1 In the event that retained equipment is in conflict with or incompatible with the new equipment, or is in conflict with alteration Code requirements, note this on the proposal form.

.2 If no conflicts are noted on the proposal form, pay for any changes or necessary equipment that may be required to complete the work.

1.54 Singular and plural

.1 In all cases singular and plural shall be interchangeable and shall be applied as required to meet the sense and intent of the Specifications.

.2 Where the singular is employed it shall be interpreted as necessary, unless otherwise indicated, to apply to all equipment and devices required to produce a

complete installation.

1.55 Subcontractors

.1 Bind subcontractors to all applicable portions of the Specifications.

.2 The contractor shall be responsible for all actions and all work performed by its subcontractors to the same extent as the contractor is itself responsible under the Specifications.

1.56 Submission of proposal

.1 Submission of a proposal will be considered presumptive evidence that the proposer is conversant with local facilities and conditions, requirements of the Contract Documents and of pertinent provincial and local codes, state of labour and material markets, and in the proposal has made due allowance for all contingencies.

1.57 Taxes

.1 Include applicable local, provincial and federal taxes or assessments in effect at the time of the signing of the contract.

.2 Show on the proposal form the amount of each tax included.

.3 The Contractor is liable for the above mentioned taxes or assessments whether or not specifically mentioned in his proposal or in the final contract document.

.4 In the event new taxes or assessments, to become due on completion of the contract, are imposed after the signing of the contract these are to be paid, in addition to the original contract amount, by the Owner to the Contractor, who in turn is to pay them to the proper authorities.

.5 In the event taxes or assessments in effect at the signing of the contract should be revoked before consummation of the contract rebate to the Owner the amount of such taxes and assessments included in the original contract.

1.58 Technical seminar

.1 Before the time of Substantial Performance, arrange with the Owner to provide a seminar for the Owner's staff.

.2 Include in the seminar a complete review of the documentation, operation of the equipment and demonstration of any special features including programming of any display devices.

1.59 Trade marks

.1 Do not apply any new trade marks visible to the general public on any piece of equipment.

1.60 Unit inspection by the Consultant

.1 Advise the Consultant in writing two weeks prior to the completion of a unit so as to arrange an inspection by the Consultant at a mutually convenient time.

.2 Assist the Consultant in the performance of this inspection to verify that performance figures, workmanship and equipment furnished are in compliance with the Specifications.

.3 Provide the necessary test weights to carry out full load tests and a team of competent persons to assist the Consultant in making the necessary tests and inspections.

1.61 Warranty of work

.1 Warrant that the materials, performance and workmanship are in accordance with the industry standard in every respect.

.2 Make good defects not due to improper use which may develop within one year from the date of Substantial Performance of the project.

.3 Warrant that the equipment performs to the standards set out herein.

.4 Neither the final payment nor any provision of the Contract Documents diminishes the responsibility for negligence or faulty materials or workmanship within the extent and period provided by law.

.5 Upon written notice remedy defects and pay expenses for damage to others resulting from defects.

1.62 Withdrawal or rejection of proposals

.1 The Owner reserves the right to reject any or all proposals or to waive any conditions.

.2 Proposals may not be withdrawn until sixty days after the scheduled date for the receipt of the proposals.

1.63 Work by other trades

.1 In the event that work by other trades is required and work by others as set out herein is in conflict with or inadequate for your equipment or design, so state on the proposal form with all necessary details.

.2 If no exceptions are noted on the proposal form, pay the costs of all modifications necessary to suit your equipment and design.

1.64 Work site protection

.1 Provide, maintain and, after the work is complete, remove protective hoarding around the work site.

.2 Arrange the protective hoarding so as to prevent public access to the work site.

1.65 Work under division 26

.1 Work not included but required in conjunction with the installation under Division 26 (Electrical) will consist of the following items:

.1 In the elevator pit, protected LED lights, controlled by a light switch located adjacent to the pit entrance, located clear of elevator equipment to give a minimum illumination of 100 lx at pit level, the power for the lighting circuit being derived from the emergency power supply.

.2 Replace existing duplex receptacles in the elevator pit with GFCI receptacles.

2 Separate prices

2.1 Separate price submission requirements

.1 Submit prices to provide the following:

2.2 Cathodic cylinder protection

.1 Provide continuous impressed current cathodic protection for the hydraulic cylinder so as to prevent corrosion.

.2 Derive the power for the cathodic protective unit from the elevator controller power supply.

.3 Provide monitoring devices as follows:

.1 A meter with the correct operating range marked in green;

.2 Two indicator lights, one red to illuminate when the unit is not functioning correctly and one green to illuminate when the unit is functioning correctly;

.3 An audible alarm to sound when the unit is not functioning correctly.

END OF SECTION

Section 14 24 23 Hydraulic Cylinder Replacement

1 General

1.1 General requirements

.1 Conform to Section 14 00 00.

1.2 Type

.1 Cylinder replacement of a single drect-acting buried hydraulic passenger elevator, designated 1.

1.3 Data

MUN Music Building			
Item	Existing		Upgraded
number of units	1		no change
designation	1		no change
licence number	EDO 0844		no change
application	passenger		no change
rated speed (m/s, fpm)	0.51	100	no change
capacity (kg, lb)	1814	4000	no change
motor power (kW, HP)	18.6	25	no change
operation	automatic		no change
motor location	submerged		no change
pump type	submerged		no change
jack type	direct-acting buried		new
hydraulic piping	above ground		new
cylinder diameter			no change
corrosion protection	not provided		new PVC liner
scavenger pump	not provided		no change
overspeed valve	not provided		new
pit shut-off valve	not provided		new

1.4 Dimensions

.1 Provide equipment to suit the existing hoistway, pit and overhead dimensions.

2 Products

2.1 Hydraulic jack

.1 Provide a new hydraulic jack.

.2 Provide a jack unit of sufficient size to lift the gross load the height as required to suit the existing travel.

.3 Factory test the jack unit to ensure adequate strength and freedom from leakage.

.4 Do not use brittle material, such as gray cast iron or semi steel, in the jack construction.

.5 Provide a jack unit consisting of the following parts: a plunger of heavy seamless steel tubing accurately turned and polished, a stop ring electrically welded to the plunger to positively prevent the plunger leaving its casing, an internal babbit-lined or bronze guide bearing, packing of suitable design and quality, a drip ring around the casing top, an outer casing made of steel tubing provided with a pipe connection with an air bleeder.

.6 Use packing of the single sealing edge type of Teflon, Roulon or similar material to reduce wear and friction.

.7 Provide one bottom bulkhead and one safety bulkhead.

.8 Provide, in addition to the shut-off valve at the tank, a shut-off valve in the pit.

2.2 Hydraulic: plunger attachment

.1 Affix the plunger to the car frame so as to support the weight of the empty car, with the car door closed, through the centre of gravity.

.2 Provide sound and vibration isolation between the plunger and the car frame.

2.3 Hydraulic: cylinder protection

.1 Protect the hydraulic cylinder against corrosion with a plastic sleeve so arranged as to provide a water and air tight seal for the portion of the cylinder extending below the pit floor.

.2 Install the cylinder inside a protective pipe as follows:

.1 Use ABS or PVC pipe;

.2 Seal the pipe so as to provide a water and air tight seal;

.3 If joints are required, weld them with solvent or heat;

.4 Provide a minimum pipe wall thickness of 6 mm (1/4");

.5 Provide a pipe of sufficient diameter and length to allow a free space of at least 38 mm (1.5") between the cylinder and the protective pipe.

.3 Provide an air and water tight seal between the top of the pipe and the outside of the cylinder wall.

.4 Provide a means of monitoring the space between the cylinder wall and the protective pipe to detect any unwanted liquids.

.5 Provide four ports with removable threaded plugs at the top of the pipe spaced at 90 degrees around the pipe circumference.

.6 Arrange the port access and pipe to cylinder space so that a fibre optic probe can be inserted to allow visual examination of the interior space and the state of the pipe and cylinder walls.

.7 Provide an evacuation port to allow the removal of unwanted liquids that have breached the protective liner.

2.4 Buffer channel

.1 Provide, if necessary, a new buffer channel wide enough to accommodate the new jack with its cylinder protection.

2.5 Pit equipment

.1 Remove rust from the pit equipment and scrape to the bare metal surface.

.2 Protect the equipment in the pit, except for machined surfaces and non-rusting surfaces, with two coats of a rust inhibiting primer of a neutral colour.

.3 Make good the pit floor after the installation of the new jack.

2.6 Hydraulic piping: modernization

.1 Provide new pipes and fittings where required to connect a new power unit and/or new cylinder.

.2 Seal connections adequately to prevent any leakage or seepage of oil.

.3 Review existing connections and replace seal connections as required to prevent any leakage or seepage of oil.

.4 Provide pipe of minimum 50 mm (2") nominal size to reduce oil velocity, noise and vibration.

.5 Run the oil lines above ground and suspend the oil lines with isolating hangers to reduce sound transmission.

2.7 Hydraulic fluid: biodegradable

.1 Provide hydraulic fluid of the non-toxic and inherently or readily biodegradable type.

.2 Provide hydraulic fluid having a minimum viscosity index of 95.

.3 Do not use vegetable-based hydraulic fluid.

.4 Provide signage on the tank identifying the type of oil used in the system.

2.8 Overspeed valve

.1 Provide an overspeed valve in the elevator pit.

.2 Use Victaulic couplings to connect the valve in the oil line.

.3 Provide a data tag on the valve showing the operating pressure, maximum pressure rating and overspeed setting.

.4 Arrange the valve to operate in the event that the elevator speed in the down direction exceeds 125% (plus or minus 10%) of the elevator operating speed in the down direction

.5 Arrange that the valve cuts off the flow of oil from the hydraulic jack in the event that the set tripping speed is exceeded.

.6 Arrange that when the valve operates the elevator will be decelerated at a rate of not less than 0.25 g nor more than 1.00 g with any peak deceleration rate in excess of 2.50 g having a duration of not more than 0.04 seconds.

.7 If the valve is field-adjustable, provide a numbered seal and record the date and number in the log book.

2.9 Hydraulic pit shut-off valve

.1 Provide a pit shut-off valve for the hydraulic jack.

2.10 Painting

.1 Ensure that pit equipment, except for machined surfaces and non-rusting surfaces, is protected with rust inhibiting primer of a neutral colour.

.2 Where rust has developed on the existing equipment, brush the surface to the bare metal and re-paint.

.3 Clean and paint the pit floor.

3 Execution

3.1 Hydraulic jack hole

.1 Remove the existing jack together with any backfill or other material that would impede the installation of the new jack.

.2 If requested, after the cylinder is removed, retain it on site to allow inspection, for insurance purposes, by the Consultant (It is anticipated that this would be done within five working days from the time the Consultant is advised that the cylinder is available for inspection).

.3 Provide any incidental pit floor concrete chipping around the jack hole necessary for the removal of the cylinder.

.4 Prior to the conclusion of the project, as necessary patch the concrete floor and seal against water.

.5 If necessary, provide a pumping truck to drain and remove any water or debris from inside the jack hole.

.6 Provide equipment and labour as necessary to remove or agitate any soil or slurry that has collapsed into the hole to permit the new cylinder and PVC casing installation.

3.2 Hydraulic: jack installation

.1 Install the plastic pipe centered on the car sling and plumb within 3 mm (1/8") over its length.

.2 Backfill as necessary to maintain the plastic pipe in its correct position.

.3 Install the new jack centered on the car sling and plumb within 3 mm (1/8") over its length.

.4 Submit a certificate to the Owner outlining the alignment of the installed plastic pipe and jack unit.

3.3 Subsoil decontamination

.1 After the existing hydraulic jack has been removed, excavate or pump as required:

.1 The oil that has leaked from the cylinder;

.2 Any contaminated subsoil.

.2 Dispose of the removed oil and contaminated sub-soil.

.3 After the decontamination work is complete, demonstrate to the satisfaction of the consultant and the relevant inspecting authorities that the site meets the requirements of the applicable environmental regulations.

3.4 Jack unit test: buried cylinder

.1 After the installation of the jack unit is complete carry out a test of the cylinder and sleeve in the presence of the Consultant.

.2 Detect and remove any liquid between the cylinder and sleeve using an air compressor as per the directives from the cylinder manufacturer;

.3 Pressure test the system using an air compressor as per the directives from the cylinder manufacturer.

.4 Carry out this pressure test in the presence of the Consultants at the time of the Consultant's inspection.

3.5 Coordination with maintenance company

.1 Schedule and execute the work in coordination with the company maintaining the equipment so as to avoid conflict with the ongoing maintenance program.

END OF SECTION
END OF SPECIFICATION

APPENDIX A
SPECIFICATION 02

MUN Music Building
230 Elizabeth Avenue
St. John’s, Newfoundland

Elevator Modernization Specifications
Vertical Transportation

238099 modernization rev 01

2026-04

Section 14 00 00 General

1 General

1.1 Scope

.1 Provide labour, materials, products and services necessary for the following work at MUN Music Building, 230 Elizabeth Avenue, St. John's, Newfoundland:

.1 Modernization of a single direct-acting buried hydraulic passenger elevator, designated 1 in accordance with Section 14 24 23.

1.2 Maintenance: interim and first year

.1 Provide full maintenance of the equipment in accordance with the MUN Elevator Maintenance Contract.

.2 The maintenance will start from the date of work on-site and terminate one year after Substantial Completion.

.3 Include the cost of this maintenance in the project costs.

1.3 Maintenance Control Program

.1 Provide to the Owner a copy of the Maintenance Control Program for each device type regardless of whether maintenance of the units is included in the project scope of work.

1.4 Definitions of terms

.1 The term "Owner", as used herein, refers to Memorial University of Newfoundland.

.2 The term "Inspecting Authorities", as used herein, refers to authorized agents of governments and of insurance groups that are charged with the responsibility of carrying out periodic inspections and tests on vertical transportation equipment.

.3 The term "Consultant", as used herein, means KJA Consultants Inc. or such other entity selected by the Owner to fulfill the role of Consultant.

.4 The term "provide", as used herein, means to supply and install new equipment.

.5 The term "arrange", as used herein, means to provide the required features.

.6 The term "unit", as used herein, means any Elevator, Escalator, Dumbwaiter, Moving Walk, Material Lift or similar device mentioned in this Specification.

.7 The term "Code", as used herein, refers to the latest edition of the CAN/CSA-B44 Safety Code for Elevators and Escalators, with updates and including Nonmandatory Appendices (which are deemed mandatory herein), as adopted by the Authority Having Jurisdiction.

.8 The terms in the Specifications that are not otherwise defined shall have the definitions as given in the Code.

1.5 Operation and maintenance manual

.1 Supply to the Consultant and Owner prior to the Substantial Performance inspection, operation and maintenance manuals.

.2 The project shall not be deemed to have reached Substantial Performance until the complete operation and maintenance manuals have been approved by the Consultant or Owner.

.3 Upon acceptance by the Consultant or Owner, provide three copies of the operation and maintenance manuals per group in one of the following formats, as selected by the Owner.

.1 Print and bind hard copies of which two will be given to the Owner and one will be placed in the respective machine room; OR

.2 Print and bind one hard copy that will be placed in the respective machine room and two electronic copies in PDF format on an unprotected digital storage device (such as a USB).

.4 The operation and maintenance manual shall incorporate, at a minimum:

.1 A cover page including project title, address;

.2 An index;

.3 Contact details for the respective parties;

.4 A warranty letter signed by a representative of the contractor having authority to bind the company;

.5 Controller and drive manuals, including:

.1 A description of the controller user interface;

.2 The installation and user's manuals;

.3 A list of fault and error codes, including an explanation of meanings

and corrective actions;

.4 Troubleshooting and diagnostic procedures, methods of use and the adjustment of programmable parameters together with their settings at the time of final adjustment.

.6 As-built wiring diagrams;

.7 The operation of the equipment including special features, dispatching sequences, and such items as intercom systems and security systems;

.8 Step-by-step instructions for the operation for special features such as Firefighters' Emergency Operation, Independent service and Emergency Power service;

.9 As-built diagrams and drawings of operating panels (e.g. car panels, central control consoles) with descriptions of the function of switches and indicators;

.10 A copy of the final submission to the Authority Having Jurisdiction;

.11 A copy of the final inspection report from the Authority Having Jurisdiction;

.12 Operation and maintenance manuals for other major components where applicable, including:

.1 Door operator;

.2 Emergency brake;

.3 Communication system;

.4 Safeties & governor;

.5 Hoist machine & motor;

.6 Cylinders;

.7 Hydraulic pump machine and internal components;

.8 Hall kiosks, including step-by-step instructions for re-programming;

.9 In-car monitors, position indicators and display screens, including step-by-step instructions for re-programming;

.10 Hall kiosk special screen features and codes (i.e. to call a specific car to a floor, to call a specific car to a floor for cleaning or other

maintenance functions, etc.).

.13 Supplier and part name for other parts (ex: travelling cable, restrictors, retainers, interlocks, car top inspection station, guide means, etc.), excluding minor or generic items such as screws, bolts, hinges, etc;

.14 Full instructions for any special maintenance procedure, repair protocol, adjustment or test not addressed by Code (including the A17.2 and the Elevator Industry Field Employee's Safety Handbook);

.15 Manufacturer's recommended maintenance intervals for each major component.

.16 A copy of the Maintenance Control Program signed and sealed by a licensed Engineer in jurisdictions where required by the applicable authorities (ex. Quebec).

1.6 Coordination with other trades

.1 Where the work joins another trade, provide drawings showing the actual dimensions and the method of joining the work to the work of the other trade and information such as anchors, templates and details for cast-ins.

.2 Provide access and assistance as required, at no extra charge, in relation to work by other trades.

1.7 Fixture type: vandal resistant

.1 Provide, unless otherwise indicated in the Specifications or Drawings, all signal fixtures, such as push buttons, position indicators, et cetera, of the vandal resistant type.

.2 Provide push buttons with metal targets.

.3 Provide push buttons having an enclosure rating of not less than IP54 (per EN 60529) or an approved equivalent upon approval by the Owner.

.4 Provide push buttons with a positive stop on the back of the button to prevent excessive force from transferring to the contact.

.5 Provide push buttons compliant with EN 81-71 Class 2.

.6 Provide a faceplate of 20 gauge stainless steel.

.7 Provide, unless otherwise indicated in the Specifications or Drawings, signal fixtures in an illumination colour selected by the Owner.

.8 Submit illustrations of those types available and provide at least one physical button sample of the type selected by the Owner for final approval.

1.8 Finishes: stainless steel

.1 Provide, unless otherwise indicated in the Specifications or Drawings, stainless steel number four finish for visible natural metal finishes.

.2 Arrange, unless otherwise indicated in the Specifications or Drawings, that the brush or grain direction of finishes of visible natural metals be in the vertical direction (for horizontal sections the brush or grain shall be in the direction of the longer surface dimension).

.3 Remove all protective film prior to turnover of the unit to the Owner.

1.9 Progress payments

.1 Progress payments will be based on the following schedule (per elevator group):

Description of Item	%
Contract award	10
Engineering drawing review	15
Material delivery to site	20
Progress installation	45
Provision of documentation & deficiencies resolution	10

.2 A 10% holdback will apply to payments, this holdback to be released within a period as set out in the applicable legislation.

1.10 Designated substances

.1 The Contractor is responsible to adhere to the designated substances and/or hazardous substances management programs in place at the site including, but not limited to, the presence of asbestos.

.2 In the event that designated substances or hazardous substances are discovered by the Contractor's personnel and not previously identified by the Owner, report such substances to the Owner.

.3 The Contractor shall not be responsible for abatement of designated substances or hazardous substances.

.4 The Contractor acknowledges that small amounts of designated substances or hazardous substances may be present in elevator components (such as asbestos

in brake pads and mechanical gaskets, lead in paints and soldering, silica in concrete and masonry, mercury in fluorescent light tubes, PCBs in transformers, etc.), and the Contractor shall ensure proper maintenance procedures are followed to safely complete maintenance, repair and replacement of such components.

.5 The Contractor shall provide personal protective equipment as necessary to comply with the management program for work in such environments including, but not limited to, disposable protective clothing (gloves, boot covers, coveralls) and fit-tested respirators.

1.11 Acceleration of the Work

.1 If the Work falls behind the schedule, take action as necessary to meet the schedule, including, but not limited to, extra personnel and overtime work.

.2 Pay any costs associated with this action unless the delay is caused by acts of government, riot, civil commotion, war, malicious mischief, act of God or any cause beyond the control of the contractor.

1.12 Access for cab refurbishing

.1 Arrange for access to the elevators for cab refurbishing work, to be at a floor selected by the Owner.

.2 The selected floor will not be the main floor.

.3 It will be necessary to allow passage through the elevator lobby at the selected floor at all times; the corridor cannot be completely obstructed.

1.13 Acknowledgments

.1 The proposer acknowledges that the proposer has found no discrepancies nor any ambiguities in the specifications.

1.14 Assignments

.1 Do not assign nor sublet the contract without the written consent of the Owner.

.2 Do not assign any payment due or to become due as a result of this contract without the written consent of the Owner.

1.15 Certificates of inspection

.1 Obtain and pay for certificates of approval and all other necessary permits and inspections.

.2 Prior to Substantial Performance, arrange and pay for an acceptance inspection of the equipment by a government authority or, if that is not available, by a recognized independent private professional inspection organization.

.3 Submit, prior to Substantial Performance, the acceptance inspection report.

.4 Should more than one inspection for a licence or approval be required due to deficient work by others give sufficient advance notice of such deficient work to allow the Work to be completed prior to the time of the subsequent inspection.

.5 If sufficient advance notice of such deficient work has not been given, assume the cost of the additional inspections.

1.16 Changes in Work

.1 The Owner, without invalidating the contract, may order extra work or make changes by altering, adding to, or deducting from the Work, the contract sum being adjusted as agreed.

.2 Execute all such work under the conditions of the original contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.

.3 The Consultant shall have authority to make minor changes in the Work, not involving extra cost and not inconsistent with the purpose of the contract.

.4 Otherwise do no extra work nor make any change unless in pursuance of written order from the Owner.

1.17 Claims for extra cost

.1 Provide any claims for extra cost due to instructions or otherwise, to the Owner in writing within a reasonable time after the instructions and in any event before proceeding with the work.

.2 No such claim shall be valid unless so made and authorized in writing by the Owner.

.3 Invoices or quotes for extra cost shall be based on the material cost +10% plus labour at the contract rates.

.4 The Contractor shall supply invoices from manufacturers to support the material

cost, otherwise the work will be deemed included in the contract.

1.18 Codes and ordinances

.1 Supply equipment and do work in accordance with building codes, by-laws, regulations and requirements of the local, provincial and federal authorities in effect at the time of the execution of the work.

.2 Supply equipment and do work in accordance with the Code, and any other code which may govern the requirements of the installation.

.3 Provide labour and material, whether or not specifically mentioned in this specification, that may be necessary to provide an installation conforming to the applicable codes and regulations.

.4 Prior to submission of the proposal and throughout the duration of work, give prompt notification in writing of any regulations or requirements known to be in process which might affect the acceptability of the work.

.5 If changes in codes or regulations result in extra costs, those taking effect subsequent to the date of proposal submission shall be treated as an extra to the contract.

.6 Requirements of the Authority Having Jurisdiction applicable at the time of proposal submission shall be deemed to be included in the contract, unless specifically excluded herein.

.7 Should changes in codes, changes in legislative requirements or changes to the requirements of the Authority Having Jurisdiction be announced prior to the date of proposal submission but with a delayed adoption date, those changes shall be deemed to be included in the contract, unless specifically excluded herein.

1.19 Completion schedule

.1 Submit with the proposal, a detailed completion schedule including equipment delivery times and anticipated completion date.

.2 During the modernization period give the following information to the Consultant:

.1 Revisions, if necessary, to the completion schedule;

.2 A progress report every week showing the progress being made and the percentage of the job completed;

.3 One week advance notice for inspection by the Consultant.

.3 Schedule a job site meeting with the Owner every two weeks during the modernization period.

1.20 Contract Documents

.1 The Contract Documents shall consist of general conditions, instructions to bidders, the Drawings, Specifications (including alternates and addenda) and completion schedules.

.2 Execute the work in accordance with the Owner's contract documents, any supplemental conditions and these specifications.

.3 Where there is a conflict between the documents the Owner's contract documents will take precedence over the other documents and any supplemental conditions will take precedence over these specifications.

1.21 Cutting and patching

.1 Cut and patch floors and walls and around hall fixtures as required to accommodate the elevator works.

1.22 Defective work and non-performance

.1 The Owner reserves the right to correct any defective work and to charge the cost to the contractor.

.2 Should the contractor fail to execute any of the Work set out in the contract the Owner reserves the right to do the Work and to charge the cost to the contractor.

.3 The Owner reserves the right to withhold payment in the event of non-performance or to pay only for that portion of the Work that has been executed.

.4 The Owner will give reasonable notice in writing prior to taking such action unless the defective work or non-performance prejudice the safety of people or the installation.

1.23 Drawing and sample submittals

.1 Drawing and sample submittals are required for exposed finishes and fixtures.

.2 Submit for review samples of metals, glass, paint colours, plastic laminates and finishes, of 200 mm (8") by 300 mm (12") approximate size, properly identified as to project, location and material.

.3 Submit for review, as a minimum, the following:

.1 General arrangements;

.2 Details of areas where the work joins the work of other trades;

.3 Machine room layouts showing the location of the equipment;

.4 Hoistway layouts showing the location of the equipment, car platform dimensions, cab interior dimensions and net inside cab area;

.5 Hoistway sections showing overhead, pit equipment, car and frame and entrances;

.6 Cab details including the cab shell, platform, interior panels, ceiling, entrance, lighting and finishes;

.7 Details of control panels such as central control consoles or fire control panels showing the layout and detailing the design of switches and indicator lights;

.8 Details of intercom system station types detailing the controls;

.9 Details of any display devices complete with examples of proposed displays, symbols and layout;

.10 Fixture brochures.

.4 Show on the general arrangement or separately, details of frames, doors, sills and supports, lanterns and gongs, including views showing the relationship of hall stations, lanterns and entrances.

.5 Provide as built information at job completion prior to Substantial Performance.

.6 Reviews do not include the checking of measurements and do not imply approval of variations from the specifications.

1.24 Electrical diagrams

.1 Supply wiring diagrams and data as required for the execution of the Work including schematics for speed control, dispatching system, interfaces, printed circuit boards.

.2 Incorporate, as part of the schematic diagrams, a reference index ('road map') giving the location of electrical components and wiring interconnections for relay coils, relay contacts, field equipment, integrated circuits and other such devices, so that the position on the schematics of any of these items can be readily determined.

.3 Supply, prior to the Substantial Performance inspection, three prints and one

reproducible of the wiring and schematic diagrams revised to show changes that have been made.

.4 If changes are subsequently made to the wiring or control, supply an additional two sets of marked-up prints of the schematics and field wiring diagrams showing the changes.

1.25 Environmental considerations

.1 Where practicable, recycle material replaced in the course of the work.

.2 Provide a list of materials to be removed from site and their proposed recycling or disposal location for approval prior to commencing work.

.3 Where practicable, provide new materials manufactured by methods that do not adversely affect the environment by, for example, generating residual deposits of heavy elements and greenhouse gases.

.4 Use materials on site, such as low VOC (Volatile Organic Compound) adhesives and paint, that will not negatively affect the in-building environment.

1.26 Equipment insurance

.1 The Owner's insurance policy covers equipment delivered to the agreed-upon storage location and accepted by the Owner.

.2 All other material and equipment is not included in the Owner's policy and such material and equipment is stored at the Contractor's own risk.

1.27 Equipment moving

.1 Provide floor protection and bracing so that equipment moving causes no damage to the building.

1.28 Existing conditions

.1 Provide additional material and labour necessary to modify the equipment to suit the existing site conditions, in order to complete the Work and to obtain licences and approvals.

1.29 Existing drawings

.1 The Owner will provide, if available, existing equipment layout drawings.

1.30 Existing equipment: refurbishing

.1 Refurbish the retained existing equipment; cleaning, reworking or replacing worn parts, refinishing and adjusting so that the appearance and performance of the equipment are as new and so that the completed modernization is the equivalent of a new installation.

1.31 Failure to perform

.1 If the contractor shall neglect to prosecute the work properly or fail to perform any provision of the contract, the Owner after ten days written notice to the contractor may, without prejudice to any other remedy the Owner may have, make good such deficiencies and may deduct the cost therefrom from payment due to the contractor.

1.32 Generic maintenance

.1 Arrange that the equipment can be maintained and adjusted by any competent elevator company without the use of proprietary tools, information or equipment or, if such tools, information or equipment are required, provide them (these shall become the property of the Owner).

.2 Do not incorporate any running time, cycle counters or trip counters that would cause the equipment to shut down or alter its operation in any way.

1.33 Hoistway protection

.1 Provide, maintain and, after the Work is complete, remove any partitions required in the hoistway.

1.34 Inability to complete contract

.1 Should there be a reasonable doubt that the work will be completed within the scheduled time because of labour disputes or any other cause, the Owner reserves the right, at the Owner's option, to cancel the contract.

.2 In the event this option is exercised, the payments for the work shall be made on a pro rata basis for materials and labour supplied to the time of cancellation and such material and work performed shall become the property of the Owner.

.3 Prior to exercising this option, the Owner shall give two weeks notice in writing of intention to cancel.

1.35 Information with proposal

.1 Provide the following information, where relevant, with the proposal:

.1 The model and manufacturer of such items as solid state drives, fixtures, control systems, door operators and other purchased material (with the exception of miscellaneous minor items);

.2 The current rating of the solid state drives;

.3 The KVA rating of the transformers feeding the solid state drives;

.4 Certification from an independent testing laboratory detailing the line pollution generated by the solid state drives;

.5 Certification from an independent testing laboratory detailing the extent to which the control systems are protected against external electromagnetic radiation;

.6 Brochures, descriptions and manuals (where applicable) for the major items;

.7 Renderings or samples of the fixtures and exposed materials;

.8 Detailed completion schedule for the work;

.9 A copy of your health and safety policy as issued to your employees;

.10 Mechanic and team regular and overtime hourly rates.

1.36 Inspection and acceptance

.1 Furnish a team of competent personnel to assist the Consultant with an inspection of each elevating device prior to Substantial Performance to verify that the work is in compliance with the Specifications.

.2 If the results of these inspections do not meet the requirements of the Specifications, make the appropriate corrections, and provide, as set out above, for another inspection.

1.37 Key switches

.1 Where possible supply switches and keys compatible with the vertical transportation equipment portfolio of the Owner, unless otherwise noted herein.

.2 Engrave or mechanically fasten collar rings to clearly mark key-switch functions, positions and key required.

.3 Prior to placing any units into service for the public, provide to the Owner six copies of each key-switch key type defined in the Code as being Security Group 2, 3 and 4.

.4 Engrave the key number on each key provided to the Owner and group the keys by Security Group and key type.

1.38 Labour laws

.1 Comply with applicable provisions of federal, provincial and local labour laws and with applicable union regulations.

1.39 Liability insurance

.1 Provide, during the period this contract is in force, premises liability, including public liability insurance and property damage insurance in the amount of $5,000,000 inclusive, to be covered against any claims for damage to property or for personal injury, including death, which may arise from operation under this contract, whether such operation is by yourself or by any sub-contractor or anyone directly or indirectly employed by you.

.2 Upon completion of the contract, have in force a completed operations and products liability insurance, in the amount of $5,000,000 inclusive, to be covered against any claims for damages to property or for personal injury, including death, which may arise after the premises liability is terminated.

.3 Maintain the insurance in force for a minimum period of two years after completion of the contract.

.4 List the Owner as an additional insured.

.5 The certificates shall state that the insurance will not become ineffective without sufficient written notice to the Owner.

.6 Submit certificates of such insurance with the Owner before work is begun.

1.40 Liens and affidavits

.1 The final payment and any part of the retained percentage shall not become due until a complete release of liens arising out of this contract or receipts in full in lieu thereof have been delivered to the Owner.

.2 Furnish an affidavit to the Owner that the release or receipts include labour and materials for which a lien could be filed.

.3 If any lien remains unsatisfied after all payments are made, refund to the Owner monies that the Owner may be compelled to pay in discharging such a lien, including costs and reasonable legal fees.

1.41 Materials and workmanship

.1 Provide all new materials and equipment.

.2 Install equipment in a neat, accurate, workmanlike manner.

1.42 Materials validity check

.1 Perform a general materials validity check of components and fastenings that under failure might create a dangerous situation, including, but not limited to, sheave bolts, welds, car slings, gears, worm shafts, sheave shafts, brakes, safeties, guide rails, car platform and any other retained component.

1.43 Measurements

.1 In the execution of the work, verify all dimensions with the actual conditions in order to ensure work of the highest quality.

1.44 Modernization completion and maintenance turnover

.1 At the completion of the modernization and prior to turning over the elevator for public use:

.1 So as to ensure a smooth and harmonious turnover, arrange with the existing elevator maintenance provider a walkthrough of the modernized installation, this walkthrough to be carried out jointly by your modernization supervisor and the existing elevator maintenance provider's maintenance supervisor.

.2 Provide to the Owner and Consultant the Test Data Forms signed by both your modernization supervisor and the existing elevator maintenance provider's supervisor together with a signed confirmation that the modernization work has been checked by both parties and both parties are in agreement that the modernization has been completed satisfactorily and poses no problems for ongoing maintenance.

1.45 Occupied building

.1 This is an occupied building and normal building routine will have to carry on while this work is being done.

.2 Take proper care to avoid unnecessary noise, clutter or obstruction in pedestrian

areas, and arrange for storage of materials and tools where they will cause minimum inconvenience.

.3 Where excessive noise or obstruction is in certain cases unavoidable, advise the Owner ahead of time and make suitable arrangements.

.4 The Owner will allow access to the building and to the work site at times designated by the Owner.

.5 The Owner will assign storage space, if available, for materials and tools.

.6 The Owner will allow the contractor's personnel to use designated washrooms.

.7 Perform work which interferes with tenant comfort or significantly impacts unit operation in overtime or at the times specified by the Owner.

1.46 Operation by persons with physical disabilities

.1 Ensure that controls and fixtures comply with Appendix E of the Code.

1.47 Operating certificate

.1 Where permitted by the Authority Having Jurisdiction, locate licences or operating certificates in the control room, and submit and pay for any such applications as may be necessary.

.2 Where licences or operating certificates in the cab are required by the Authority Having Jurisdiction, coordinate with the Owner a location to install licences with permanent licence holders with steel or aluminum borders and plastic or glass covers.

1.48 Operating environment

.1 Provide material and equipment to function normally within the requirements of the specifications when the ambient temperature is between 5.0 and 32.0 degrees Celsius (41 and 90 degrees Fahrenheit).

.2 Provide material and equipment to function normally and within the requirements of the specifications when the ambient relative humidity is between 25% and 95% non-condensing.

.3 Provide material and equipment to function normally and within the requirements of the specifications when the supply voltage is within minus 10% and plus 10% of the nominal voltage and the frequency is within 5% of the nominal frequency.

.4 Provide equipment needed to meet the specified voltage operating parameters (e.g.

filters, isolation transformers, transient voltage surge suppression, etc.).

1.49 Organization chart

.1 Provide to the Owner an organization chart from the local supervisory level up.

.2 Provide to the Owner the names, positions and experience of the field and supervisory personnel associated with this project.

.3 During the course of the work when organization changes are made, provide the Owner with updated information.

1.50 Overtime premium

.1 In the event that the Owner, for whatever reason, pays for overtime worked to complete the work as set out in the Specifications, the Owner will pay the added cost of the overtime.

.2 The added cost shall be the difference between the overtime cost and straight time cost at contract rates.

.3 Obtain from the Owner prior written authorization for overtime to be worked and chargeable, as described above, to the Owner, this authorization to be for specific amounts and for specific times.

.4 Submit time sheets for such overtime worked for approval to the Owner or the designated representative of the Owner within 48 hours of the time that such overtime is worked.

.5 If the procedures as set out above are not followed, assume the costs of the time worked.

1.51 Overtime provisions

.1 Include overtime labour for work necessary to complete the job, such as emergency power testing, fire alarm testing, cutout, mounting and wiring of hall stations into dispatchers, tasks requiring two or more elevators in a group to be out of service and work that will cause a major disruption of service to the building.

1.52 Owner's General Terms and Conditions

.1 Abide by the Owner's General Terms and Conditions.

.2 Where there is a conflict between the Owner's General Terms and Conditions and these specifications the Owner's Terms and Conditions take precedence.

1.53 Parts

.1 Supply parts on request for a period of fifteen years subsequent to Substantial Performance of the project, at then prevailing prices.

.2 Where purchased components are used, ensure that the original manufacturer's name and component designation are clearly marked on the part or in the parts catalogue.

1.54 Patents

.1 Hold and save the Owner and its officers, agents, servants and employees harmless from liability due to patent or copyright infringement arising from the use of, in the performance of the work or in the completed installation, any invention, process, article, or appliance.

1.55 Payment withheld

.1 Approval for payment may be withheld to such extent as may be necessary on account of:

.1 Defective work not remedied;

.2 Claims filed or reasonable evidence indicating probable filing of claims;

.3 Failure of contractor to make payments properly to sub-contractors or for material and labour;

.4 Failure to work to schedule;

.5 A reasonable doubt that the contract can be completed for the balance then unpaid;

.6 Damage to the building or another contractor by the elevator contractor or one of their subcontractors.

.2 When the above grounds are removed, payment will be made for amount withheld.

1.56 Personnel

.1 Supervise personnel so that they present a neat appearance and their movement in the building is within the requirements of their work.

.2 Provide uniforms and photo identification for personnel.

.3 The Owner reserves the right to reject or refuse access to personnel or contractors

at its sole discretion.

.4 Assign and maintain a dedicated service representative to the work, this representative to be responsible for liaison with the Owner and the Consultant.

.5 Assign and maintain a dedicated service supervisor to the work, this supervisor to be responsible for technical communications with the Owner and the Consultant.

1.57 Preliminary information

.1 Submit, within 30 working days after awarding of contract, the information and details, including reactions, power requirements, ventilation requirements, cutouts, access requirements, light and outlet locations, quantity, location and size of external wires required to inter-connect the equipment, and all other information required to complete the work to be performed by others in conjunction with the installation of the equipment.

1.58 Protection of the Work and property

.1 Maintain protection of the Work and protect the Owner's property from injury or loss arising out of the execution of this contract.

.2 Make good any injury or loss caused by the Contractor's agents or employees.

.3 Take all necessary precautions to ensure that the Work is done in a manner that does not endanger any person.

1.59 Regular hours of work

.1 Regular hours of work are from 08:00 to 17:00 Monday to Friday, excluding holidays.

.2 For residential buildings and hotels complete noisy and disruptive work during regular hours.

.3 For all other buildings, unless otherwise noted, complete noisy and disruptive work outside of regular hours.

1.60 Removal of existing equipment

.1 Remove and take possession of any existing equipment that is replaced in the course of the execution of the work.

.2 Remove equipment with prior permission of, and only at times specified by, the Owner.

.3 Remove and transfer to the Owner equipment that the Owner elects to retain for the Owner's use.

.4 Remove existing wiring that is no longer being used.

1.61 Removal of rubbish

.1 Remove rubbish, keep the building and premises clean during the progress of the work, and leave the premises at completion in perfect condition as far as the work under the specifications is concerned.

1.62 Request for payment

.1 Submit applications for payment with the necessary data, information, waivers and affidavits including certificates of compliance and appropriate statutory declaration.

1.63 Retained equipment

.1 In the event that retained equipment is in conflict with or incompatible with the new equipment, or is in conflict with alteration Code requirements, note this on the proposal form.

.2 If no conflicts are noted on the proposal form, pay for any changes or necessary equipment that may be required to complete the work.

1.64 Singular and plural

.1 In all cases singular and plural shall be interchangeable and shall be applied as required to meet the sense and intent of the Specifications.

.2 Where the singular is employed it shall be interpreted as necessary, unless otherwise indicated, to apply to all equipment and devices required to produce a complete installation.

1.65 Special tools and access codes

.1 If any special tools (i.e. tools that are not readily purchased from a hardware supplier) are used to maintain or adjust the equipment or are required for any aspect of the work on the equipment, list these tools with details on the proposal form and provide such tools to the Owner prior to Substantial Performance.

.2 If any access codes are used to maintain or adjust the equipment or are required for any aspect of the work on the equipment (including the reading and resetting of error codes and logs) list these access codes with details on the proposal form and provide such access codes to the Owner prior to Substantial Performance.

.3 Do not change the access codes without the written consent of the Owner and, when changed, provide to the Owner the new access codes.

1.66 Subcontractors

.1 Bind subcontractors to all applicable portions of the Specifications.

.2 The contractor shall be responsible for all actions and all work performed by its subcontractors to the same extent as the contractor is itself responsible under the Specifications.

1.67 Submission of proposal

.1 Submission of a proposal will be considered presumptive evidence that the proposer is conversant with local facilities and conditions, requirements of the Contract Documents and of pertinent provincial and local codes, state of labour and material markets, and in the proposal has made due allowance for all contingencies.

1.68 Taxes

.1 Include applicable local, provincial and federal taxes or assessments in effect at the time of the signing of the contract.

.2 Show on the proposal form the amount of each tax included.

.3 The Contractor is liable for the above mentioned taxes or assessments whether or not specifically mentioned in his proposal or in the final contract document.

.4 In the event new taxes or assessments, to become due on completion of the contract, are imposed after the signing of the contract these are to be paid, in addition to the original contract amount, by the Owner to the Contractor, who in turn is to pay them to the proper authorities.

.5 In the event taxes or assessments in effect at the signing of the contract should be revoked before consummation of the contract rebate to the Owner the amount of such taxes and assessments included in the original contract.

1.69 Technical seminar

.1 Before the time of Substantial Performance, arrange with the Owner to provide a seminar for the Owner's staff.

.2 Include in the seminar a complete review of the documentation, operation of the equipment and demonstration of any special features including programming of any display devices.

1.70 Trade marks

.1 Do not apply any new trade marks visible to the general public on any piece of equipment.

1.71 Unit inspection by the Consultant

.1 Advise the Consultant in writing two weeks prior to the completion of a unit so as to arrange an inspection by the Consultant at a mutually convenient time.

.2 Assist the Consultant in the performance of this inspection to verify that performance figures, workmanship and equipment furnished are in compliance with the Specifications.

.3 Provide the necessary test weights to carry out full load tests and a team of competent persons to assist the Consultant in making the necessary tests and inspections.

1.72 Warranty of work

.1 Warrant that the materials, performance and workmanship are in accordance with the industry standard in every respect.

.2 Make good defects not due to improper use which may develop within one year from the date of Substantial Performance of the project.

.3 Warrant that the equipment performs to the standards set out herein.

.4 Neither the final payment nor any provision of the Contract Documents diminishes the responsibility for negligence or faulty materials or workmanship within the extent and period provided by law.

.5 Upon written notice remedy defects and pay expenses for damage to others resulting from defects.

1.73 Withdrawal or rejection of proposals

.1 The Owner reserves the right to reject any or all proposals or to waive any conditions.

.2 Proposals may not be withdrawn until sixty days after the scheduled date for the receipt of the proposals.

1.74 Work by other trades

.1 In the event that work by other trades is required and work by others as set out herein is in conflict with or inadequate for your equipment or design, so state on the proposal form with all necessary details.

.2 If no exceptions are noted on the proposal form, pay the costs of all modifications necessary to suit your equipment and design.

1.75 Work site protection

.1 Provide, maintain and, after the work is complete, remove protective hoarding around the work site.

.2 Arrange the protective hoarding so as to prevent public access to the work site.

1.76 Work under division 09

.1 Work not included but required in conjunction with the installation under Division 09 (Finishes) will consist of the following items:

.1 Cutting and patching of machine/control room walls and floors as needed to accommodate works by related trades.

1.77 Work under division 23

.1 Work not included but required in conjunction with the installation under Division 23 (Heating, Ventilating, and Air-conditioning (HVAC)) will consist of the following items:

.1 Heating and cooling by means of an HVAC system in order to maintain continuously (i.e. 24 hours a day) a temperature of greater than 13 degrees Celsius and less than 29 degrees Celsius based on the estimated heat generated by the elevator equipment as follows:

Heat generated (per unit):	when active	
	kW	BTU/h
Elevator 1	3.2	11,000

.2 Do not locate HVAC equipment directly above elevator equipment and ensure air conditioning exhaust ducts do not direct conditioned air directly onto elevator wire ropes.

1.78 Work under division 26

.1 Work not included but required in conjunction with the installation under Division 26 (Electrical) will consist of the following items:

.1 A grounded power supply sufficient to start and run the elevators at rated speed and capacity, including the following:

.1 A disconnect means located in view of the elevator controller near the access to the machine room or control space.

.2 Wiring between the disconnect and the elevator power input point (elevator transformer or controller).

.3 Protection of the feeder cables for designated firefighters' elevators.

.2 A lockable power supply, with an isolated ground, capable of supplying for each unit the following estimated starting and running currents in amperes based on the power supply noted:

Full load up currents (per unit):	power supply	starting amps	running amps
	Volts	Amps	Amps
Elevator 1	600	80	35

.3 A grounding system for the elevator related electrical equipment for safety and performance.

.4 An auxiliary disconnect contact with wiring to the controller for the battery rescue device, to indicate if the disconnect is on or off.

.5 In the elevator machine room one 15A 120V single phase circuit breaker or disconnect per elevator, located adjacent to the lock side of the machine room door, to power cab ventilation, cab lighting equipment and the car top duplex GFCI receptacle. The power from this circuit to be derived from the emergency power supply if available.

.6 In the elevator machine room one 15A 120V single phase circuit breaker or disconnect per elevator located in view of the elevator controller near the access to the machine/control room, to power the cab interior duplex GFCI receptacle (if one is provided) and auxiliary equipment (e.g. camera, news monitor).

.7 In the elevator machine room one 15A 120V single phase circuit breaker or disconnect per machine/control room located in view of the elevator

controller near the access to the machine/control room, to power the two-way communications device.

.8 Replace existing duplex receptacles in the elevator machine room with GFCI receptacles.

.9 In the machine room, protected LED lights controlled by a switch located adjacent to the lock side of the machine room door, located at approximately 2500 mm (8') from floor level as required to give a minimum illumination of 200 lx at floor level and within the controller, the power for the lighting circuit being derived from the emergency power supply.

.10 For operation of Firefighters' Emergency Operation:

.1 Fire alarm initiating devices (FAIDs) on the recall floor.

.2 Fire alarm initiating devices (FAIDs) on all other floors.

.3 Fire alarm initiating devices (FAIDs) at the top of the hoistway.

.4 Fire alarm initiating devices (FAIDs) in the pit.

.5 Fire alarm initiating devices (FAIDs) in the machine space.

.6 Fire alarm initiating devices (FAIDs) in the control space.

.7 A connection from the fire alarm initiating devices (FAIDs) on the recall floor to the elevator controller.

.8 A connection from the fire alarm initiating devices (FAIDs) on all other floors to the elevator controller.

.9 A connection from the fire alarm initiating devices (FAIDs) at the top of the hoistway to the elevator controller.

.10 A connection from the fire alarm initiating devices (FAIDs) in the pit to the elevator controller.

.11 A connection from the fire alarm initiating devices (FAIDs) in the machine space to the elevator controller.

.12 A connection from the fire alarm initiating devices (FAIDs) in the control space to the elevator controller.

.11 An internet connection run to each machine room, capable of operating

during a power failure for a minimum of four hours.

.12 Do not mount auxiliary equipment such as security controllers or elevator telephone cabinets on elevator controller cabinets.

.13 Where needed, conduit and pulling of wire (wiring to be supplied by the Elevator Contractor) between the machine room, elevator hoistway, and any other remote equipment locations, to be terminated outside the elevator hoistway at a junction box (provided by the Elevator Contractor).

END OF SECTION

Section 14 24 23 Hydraulic Passenger Elevator

1 General

1.1 General requirements

.1 Conform to Section 14 00 00.

1.2 Type

.1 Modernization of a single direct-acting buried hydraulic passenger elevator, designated 1.

1.3 Data

Group Designation			
Item	Existing		Modernized
number of units	1		no change
designation	1		no change
licence number	EDO 0844		no change
application	passenger		no change
rated speed (m/s, fpm)	0.51	100	no change
capacity (kg, lb)	1814	4000	no change
motor power (kW, HP)	18.6	25	no change
operation	automatic		no change
motor location	submerged		new submerged
pump type	submerged		new submerged
jack type	direct-acting buried		no change
hydraulic piping	above ground		no change
cylinder diameter			no change
corrosion protection	PVC liner		no change
valve assembly	Maxton 185243		new
drive type	wye-delta		new soft start
emergency brake	not provided		no change
heat exchanger	not provided		no change
tank heater	not provided		no change
scavenger pump	not provided		no change
overspeed valve	provided		no change
pit shut-off valve	provided		no change
control system	Montgomery relay-based		new
front entrances	*1, 2		no change

rear entrances	not provided		no change
door type	two speed side opening		no change
hoistway door fire resistance			no change
entrance width (mm, ")	1219	48	no change
entrance height (mm, ")	2134	84	no change
entrance markings	not provided		new
cab width (mm, ")	1626	64	no change
cab depth (mm, ")	2362	93	no change
cab height (mm, ")	2413	95	no change
car door restrictor	not provided		new
door safety retainers	provided		new
door reopening device	infrared multi-beam		new 3D
door operator	MAC type PMSSC		new linear or harmonic
interlocks	MAC type P-13002		new
main car station	provided		new applied
auxiliary car station	not provided		no change
verbal annunciation			new
car position indicator	provided		new digital
cab emergency lighting	provided		new
cab communication	corded phone		new
telephone system with video communication	not provided		new
car closed circuit camera	not provided		no change
car call security	not provided		no change
hall call security	not provided		no change
hall stations (typical)	single riser		new surface mount
hall stations (main floor)	single riser		new surface mount
hoistway access switches			new
cab ventilation	not provided		new
cab finishes	provided		new
hall door finish (typical)	painted		no change
hall door finish (main floor)	painted		no change
car door finish	stainless steel		re-skin
hall lanterns	not provided		no change
in-car lanterns	provided		new applied
hall position indicator	provided at main floor only		new at main floor only
lobby panel	not provided		no change
CACF panel	not provided		no change
central control monitor	not provided		no change

car top inspection station	provided	new
car guiding	sliding guides	new inserts
load weighing device	not provided	no change
guide rails	T rails	no change
buffers	spring	new
emergency recall (phase I)	not provided	new automatic
firefighter's operation (phase II)	not provided	new
emergency power	not provided	new battery lowering
car top railings	not provided	no change
equipment guarding	not provided	no change
flood detection	not provided	new to B44-22
seismic		no change
operating time		18s
acceleration rate		0.6 m/s/s

1.4 Dimensions

.1 Provide equipment to suit the existing machine room, hoistway, pit and overhead dimensions.

2 Products

2.1 Hydraulic: pumping machine unit

.1 Provide a pumping machine unit compactly and neatly designed with all the components as follows in a self-contained unit: drip pan, floating inner base for mounting motor pump assembly, oil reservoir with tight fitting tank cover, filter in suction line, oil hydraulic pump, electric motor, oil control unit.

.2 Provide an oil level gauge that can be read without removing the tank cover.

.3 Provide, to measure the oil temperature, a thermometer that can be read without removing the tank cover.

.4 Provide a pump especially designed and manufactured for oil hydraulic service of the rotary positive displacement type inherently designed for steady discharge with minimum pulsations to give smooth and quiet operation.

.5 Provide a motor designed for oil hydraulic service.

.6 Provide a motor rated for not less than 80 starts/hour at 40°C.

.7 Provide equipment which will deliver its rated output continuously with a temperature rise not to exceed 50°C (90 F).

.8 Provide an oil control unit consisting of the following components: relief valve, safety check valve, levelling valve, manual lowering valve, tank shut-off valve.

.9 Design the equipment so that all adjustments are accessible and can be made without removing the assembly from the oil line.

.10 Provide variable flow bypass valves to give controlled high and levelling speed operation.

.11 Provide valves with individual adjustments, such that changing one adjustment does not affect other adjustments.

.12 Provide an externally adjustable relief valve capable of by-passing the total oil flow without increasing the back pressure more than 10% above that required to barely open the valve.

.13 Provide a 50 mm (2") pressure gauge, complete with isolating shut-off valve, for measuring the setting of the relief valve.

.14 Design the safety check valve to close quietly without permitting any reverse flow and to support the elevator on a positive locked column of oil when the car is at rest.

.15 Provide an externally adjustable up start valve to by-pass oil flow during initial start of the motor pump assembly, and to close slowly, gradually diverting oil to the jack unit, insuring smooth up starts, so as to relieve load on the motor during starting.

.16 Provide an externally adjustable lowering valve and levelling valve for drop away speed, lowering speed, levelling speed and stopping speed to insure smooth down starts and stops.

.17 Provide a manual lowering valve for manual lowering of the elevator car in the event of power failure and for use in servicing and adjusting the elevator mechanism.

.18 Provide shut off valves in the machine room and elevator pit for isolating oil in the power tank unit to facilitate servicing and adjusting the elevator mechanism without removing the oil from the tank.

.19 Provide an externally adjustable up stop valve to by-pass the oil flow for landing stops in the up direction.

.20 Provide strainers to prevent foreign materials from lodging in the oil system.

.21 Provide temperature and pressure compensation so as to minimize speed variations.

.22 Arrange the equipment so that the car stops at the landing through controlled oil flow with the motor and pump running and so that the motor shuts off only after the car has come to rest at the landing.

.23 Use flexible hose on the pumping machine unit where required but only within the regulations of the governing safety codes.

.24 Provide a tank of sufficient capacity to contain, as a minimum, all of the oil in the hydraulic system (pipe lines and hydraulic cylinder) plus 10%.

.25 Install the pumping machine unit in a dedicated machine room and not within the hoistway.

2.2 Hydraulic piping: modernization

.1 Provide new pipes and fittings where required to connect a new power unit.

.2 Seal connections adequately to prevent any leakage or seepage of oil.

.3 Review existing connections and replace seal connections as required to prevent any leakage or seepage of oil.

.4 Provide pipe of minimum 50 mm (2") nominal size to reduce oil velocity, noise and vibration.

.5 Run the oil lines above ground and suspend the oil lines with isolating hangers to reduce sound transmission.

2.3 Hydraulic fluid: biodegradable

.1 Provide hydraulic fluid of the non-toxic and inherently or readily biodegradable type.

.2 Provide hydraulic fluid having a minimum viscosity index of 95.

.3 Do not use vegetable-based hydraulic fluid.

.4 Provide signage on the tank identifying the type of oil used in the system.

2.4 Hydraulic motor starting

.1 Start the hydraulic pump motor after the doors start to close so that the motor is running at full speed before the doors are fully closed.

.2 Stop the hydraulic pump motor if the door closing operation is interrupted.

.3 Provide solid state control of the starting operation so as to limit the motor starting current to not more than two times the full load running current.

.4 Energize the hydraulic machine up start valve, subject to the standard safety circuits, after the doors are closed and a signal is received from the solid state starter indicating that the motor is up to operating speed.

2.5 Hydraulic: time protective device

.1 Provide a time protective device.

.2 If the pump motor should run continuously for 20 seconds longer than the period of time necessary to move the elevator (in inspection operation) from the bottom floor to the top floor, the time protective device will cause:

.1 Up direction relays and contactors to be de-energized.

.2 Automatic registration of a bottom floor call to bring the car to the lowest landing where it will remain with its doors open.

.3 No response to any further hall calls or car calls until the main line switch has been opened and closed again.

2.6 Hydraulic: main line strainer

.1 Provide a main line strainer and shut off cock assembly of the self cleaning type, equipped with a 60 minimum mesh element, and a magnetic drain plug, in the oil line.

.2 Design the unit for a minimum 2800 kilopascals (400 psi) working pressure and provide easy access for cleaning.

2.7 Hydraulic: silencing devices

.1 If the motor and pump are not submersible:

.1 Enclose the power unit on all four sides with sheet steel panels combined with 20 mm (3/4") suitable sound-deadening material;

.2 Form the panels with approximately 20 mm (3/4") returns, returning to, but separated from, the main power unit frame with suitable rubber mouldings.

.2 To reduce hydraulic pulsations through the oil, provide a blow-out proof double-faced hydraulic muffling device in the oil line adjacent to the power unit, downstream to the valve assembly.

.3 To reduce any vibration transmitted through the oil line itself, provide two approved blow-out proof sound isolating couplings in the oil line, located between the check valve and the hydraulic jack.

.4 Design each sound-isolating coupling to completely eliminate any solid metal to metal contact from the pipe on one side of the coupling to the pipe on the other side.

.5 Mount the motor and pump on a resilient rubber base to isolate them from the oil reservoir, controller and building structure.

2.8 Solid-state hardware

.1 Mount solid-state devices, except for high power silicon controlled rectifiers, on removable printed circuit boards.

.2 Gold plate the contact points of edge connectors.

.3 Use G10 glass epoxy with minimum equivalent 57 gram (2 ounce) copper.

.4 Coat the circuits with tin-lead.

.5 Provide a solder resist screen.

.6 Provide plated through holes for double sided boards.

.7 Make all connections to the printed circuits on the printed circuit boards by means of properly dimensioned pads.

.8 Do not provide "patched" connections.

.9 Design solid-state devices for a high level of noise immunity.

.10 Incorporate electrical noise suppression devices in the power supplies and the inputs and outputs associated with the solid-state circuits.

.11 Provide filters and circuits to limit the generated electromagnetic noise level at any frequency to not more than 0.1 db above the ambient electromagnetic noise level, as measured in the centre of the machine room using a calibrated radio frequency receiver designed in accordance with CSA Standard C108.1.1 together with a calibrated rod or loop antenna.

.12 Provide filters and circuits to limit the generated electromagnetic noise level at 10 KHz to not more than 0.01 db above the ambient electromagnetic noise level, as measured in the centre of the machine room using a calibrated radio frequency receiver designed in accordance with CSA Standard C108.1.1 together with a calibrated rod or loop antenna.

2.9 Auxiliary slowdown devices

.1 Provide auxiliary slowdown devices compatible with the solid state speed control and so arranged that, if the normal slowdown devices fail to operate correctly, the elevator will be brought to a controlled stop at the terminal landing with an acceleration not exceeding 0.3 g.

.2 Arrange the control circuits so that, if the auxiliary slowdown devices were required to act to stop the elevator, the elevator parks at the terminal landing until the system is checked by a maintenance technician.

2.10 Position transducer

.1 Provide a position transducer device to transmit to the control system the position of the elevator.

.2 Arrange that the device transmit a minimum of 10 counts per 25 mm (1") of travel.

.3 Provide a device having an overall precision within ±1.0 mm (±0.04").

.4 Arrange the elevator controls so that the output from this device is read at least every 5 ms.

.5 Transmit the signal from this device either in serial format using a standard protocol (e.g, CAN) or in parallel format using low impedance (less than 10 kilohms) inputs.

.6 If the transducer is a relative (pulse counter) type rather than an absolute encoder type:

.1 Provide gray encoding so as to indicate the direction of movement of the car and to offset 'false' counts caused by vibration;

.2 In the event of a counter error reset the position with an accuracy within ±2.5 mm (±0.1") by returning the car at low speed to a fixed point in the hoistway.

2.11 Controller

.1 Provide a micro-processor based controller designed to give the required operation as herein specified.

.2 Mount panels securely on substantial, self supporting steel frames designed for floor or wall mounting.

.3 Provide completely enclosed controllers with covers.

.4 Do not mount equipment on the covers unless:

.1 Its wiring is designed to support bending caused by opening and closing the cover;

.2 Its wiring is protected against damage;

.3 If damage happens to the equipment mounted on the cover or the wiring of this equipment, the unit will continue to operate normally.

.5 Where relays are used, provide those having a design electrical life and mechanical life equivalent to thirty years operation in the given application, with their contacts designed for maximum conductivity and wiping action.

.6 Install wiring on the controller, whether control or field wiring, in a neat workmanlike order and make connections to studs and terminals by means of solder or solderless lugs, or similar connecting devices.

.7 Mark relays, contactors, fuses, printed circuit boards and other components clearly and permanently with designations as shown on the schematics.

.8 Mount the designations for plug in components on the controller adjacent to the component; do not mount the designation on the plug in component.

.9 Provide a written guarantee from the control manufacturer that software and firmware updates will be provided for not less than 20 years at no charge to the Owner.

.10 Install the controller in a dedicated control room and not within the hoistway.

2.12 Computing devices

.1 Where computing devices are used, such as micro-processors or mini-computers, along with associated devices, design to the following requirements:

.1 Isolate the inputs from external devices (such as push-buttons) and isolate the outputs to external devices (such as indicators) by means of relays or optical devices;

.2 Provide the control program on read-only-memory with spare capacity to allow for future programming modifications and extensions;

.3 Provide crystal regulation of frequency;

.4 Provide for separate regulated power supplies to serve each micro-processor system.

2.13 Speed control: hydraulic

.1 Provide a speed control system of the hydraulic-electric type in which control is accomplished by varying the oil flow to and from the hydraulic jack.

.2 Design and adjust the equipment so that the average acceleration over the period of constant acceleration is 0.6 m/s^2 (2.0 ft/s^2) plus or minus 10%.

.3 Design and adjust the equipment so that the average change in acceleration (jerk) is 1.8 m/s^3 (6.0 ft/s^3) plus or minus 10%.

.4 Design and adjust the equipment so that the rated speed is maintained under any condition of loading, except the case of overload, with an accuracy of 5%.

2.14 Power interruption restart

.1 Provide means so that the elevator system will restart automatically in the event of power interruption.

.2 Where volatile memories are provided for position and other data necessary to the continuing operation of the elevators, provide means of preserving this data on power failure or fading ('brownout') for a minimum of four hours and means of automatic recovery upon restoration of normal power.

2.15 Control circuits grounding

.1 Arrange the control circuits so that one side of the control power supply for external circuits is grounded to facilitate testing and trouble shooting.

.2 An external circuit is defined as one wired outside micro-processors or solid-state devices, as for example, buttons, relays, lights, display screens, position indicators, lanterns, kiosks, limits, locks and such similar devices.

.3 Arrange that accidental grounding in the control system will not defeat the safety circuits.

2.16 Main floor elevator markings

.1 Provide at the main floor, for each elevator designated as a Firefighter's Elevator, a suitable symbol such as a Firefighter's Hat.

.2 At locations required by Code, provide for each elevator alphanumeric symbols on a metal plate indicating the designation of the elevator.

.3 Provide markings as selected by the Owner.

.4 Provide samples for review.

2.17 Entrance floor markings

.1 Provide, on each hall entrance jamb, raised tactile and braille metallic markings on a metal plate to designate the floor.

.2 Provide markings as selected by the Owner.

.3 Provide samples for review.

2.18 Floor marking: hoistway

.1 Identify each landing by means of markings on the inside of the hoistway.

.2 Use a stencil to ensure that the floor markings are neat and uniform in appearance.

.3 Provide numerals and letters approximately 100 mm (4") high and of a clearly contrasting colour to the colour of the doors and fascias.

2.19 Car door restrictor

.1 Provide a car door restrictor to mechanically prevent the opening of the car door from inside the cab unless the elevator is in the door unlocking zone.

.2 Provide a device that does not require electrical or electronic components to function.

2.20 Car and hoistway door safety retainers

.1 Provide safety retainers at the top and bottom of horizontally sliding doors to retain the closed door panel in position if the primary guiding means fail.

.2 Provide retainers that will prevent the displacement of the door panel top and bottom by more than 20 mm (0.8") when the door panel is subjected to a force of 5 000 N (1130 lbf) applied towards the hoistway at right angles to the panel over an area of 300 mm by 300 mm (12" by 12") at the centre of the panel.

.3 Provide retainers that will withstand, without detachment or permanent deformation, a force of 1 000 N (225 lbf) applied upward at any point along the width of the door panel together with an additional concurrent force of 1 100 N (250 lbf) applied at right angles to the door at the centre of the panel over an area of 300 mm by 300 mm (12" by 12").

.4 Arrange that the retaining means are not involved in the guiding of the panel and are not subjected to wear or stress during normal door operation.

2.21 Hoistway entrance lunar key access

.1 Provide lunar key access for each hoistway entrance.

.2 Provide a protective metal sleeve for each circular lunar key hole (where applicable).

2.22 Door friction

.1 Adjust the doors so that with the door closing device disconnected, the doors can be started into motion, from any position, with a force of less than 25 newtons (six pounds) per door panel applied horizontally at the mid-point of the door in line with the direction of movement of the door.

2.23 Reopening devices and detection of objects

.1 Provide a reopening device and entrance protection capable of detecting objects in the door path and objects approaching the doors.

.1 In jurisdictions that have adopted B44-19 or earlier, provide equipment in accordance with B44-19 Section 2.13.5.

.2 In jurisdictions that have adopted B44-22, provide equipment in accordance with B44-22 Section 2.13.5.

.2 Arrange the doors to reopen (or remain open) when an object is detected.

.3 To prevent accidental damage, position detection receivers and emitters, when installed on the door, as far from the leading edge of the doors as allowable by manufacturer's installation guidelines.

.4 Provide a signal on the unit or in the machine room to indicate that a failure has occurred.

.5 Supply a device, reliable and consistent in operation, not affected by dust or temperature changes, and having inherent long term reliability with minimum maintenance.

.6 Arrange that the operation of the devices will not be affected by adjacent reflective, shiny or glass surfaces.

.7 For a transom-mounted reopening device, if new cab interiors are being provided, install the device recessed into the transom substantially flush with the surface (i.e. do not surface mount).

2.24 Door operator (linear or harmonic)

.1 Provide a heavy duty door operator to open and close the car and hoistway doors simultaneously.

.2 If providing a harmonic door operator:

.1 Provide either:

.1 An alternating current motor, either standard or linear induction type, with associated variable voltage and variable frequency solid state drive to control the speed and torque of the door operator, or;

.2 A direct current motor with associated solid state drive to control the speed and torque of the door operator.

.3 Provide as a minimum a 375 W (0.5 HP) motor.

.3 If providing a linear door operator:

.1 Provide either one or two permanent magnet synchronous AC drive motors rated at a total of 250 W (1/3 HP) minimum.

.2 Arrange that the operator functions on a single phase 110 or 220 VAC supply.

.3 Provide a solid state motion control system using a DC link (single phase AC to DC to three phase variable frequency AC).

.4 Provide event logging with non-volatile memory so as to retain the event log under power-off conditions.

.5 Directly connect the operator motor or motors to a circulating flat belt with integral teeth (power timing belt).

.6 Connect the belt to the door panels so as to move the door panels as the operator motor turns.

.7 Provide a solid state door operator control incorporating negative feedback circuits for position, acceleration, velocity and torque.

.8 Provide fully automatic installation algorithm profiles that self-adjust the motion profile for the relevant parameters.

.9 Provide an output from the door control for a pre-start command to the elevator speed control system.

.10 Provide optical isolation for input and output signals.

.11 Provide signal line short circuit protection.

.12 Provide a serial input to the door control to allow adjustment of speed, acceleration, torque and pre-start point using a notebook computer or keypad.

.13 Provide the keypad or software for a standard notebook computer.

.14 Arrange that the settings for the door operator can be uploaded to the keypad or notebook computer and then downloaded to another identical operator.

.15 Provide an average door closing speed of 300 mm (12") per second, respecting the parameters for door force and door inertia as set out in the elevator code.

.16 Provide an average door opening speed of 400 mm (16") per second.

.17 Provide, either in the door operator control or in the main elevator control, means to automatically recycle the doors in the event that they stall during the opening or closing operations.

.18 Design the door operator and associated components for a minimum of noise.

2.25 Hoistway doors: refurbishing

.1 Replace gibs, rollers, closers and relating cables, where provided.

.2 Provide new interlocks.

.3 If new door operators are being installed, replace any hall door equipment necessary to accommodate the new door operator.

.4 Replace any relating cables that are not 7X19 stranding with 7X19 cables.

.5 Install sound absorbing materials so as to eliminate interlock noise.

.6 Replace astragals (car and hall doors), where provided.

.7 Straighten and tighten all loose sight guards. Replace any badly worn or damaged sight guards.

.8 Clean, lubricate and re-adjust car and hoistway door equipment.

.9 Adjust the equipment such that the doors open flush with the entrance jamb.

.10 Adjust the doors so that with the door closing device disconnected, the doors can be started into motion, from any position, with a force of less than 25 Newtons per door panel applied horizontally at the mid-point of the door in line with the direction of movement of the door.

.11 Adjust the hoistway door rollers so as to obtain 6 mm (1/4") clearance from the car sill and on either side of the skate.

.12 Adjust the hoistway door roller pressure so that when engaged in the skate both rollers exert a firm pressure on the skate.

.13 Eliminate any rattles, loose connections or worn bearings that might cause noise.

.14 Where identical replacement components are not available, ensure that substantially equivalent replacements are used such that the fire rating of the assembly is maintained.

.15 Do not replace metal rollers with nylon rollers on fire-rated assemblies.

.16 Where fire-rated hall doors are painted, use intumescent paint or fire-rated paint such that the fire rating of the assembly is maintained.

2.26 Car station

.1 Provide one main car operating panel.

.2 Provide in the panel the devices required for normal automatic operation, including the following:

.1 Floor push buttons;

.2 Door open button;

.3 Door close button;

.4 Alarm button;

.5 Emergency communication button.

.3 Number the car call buttons to correspond to the floor served.

.4 Provide in conjunction with the car buttons a call registered light for each button to be lighted when the button is pressed and extinguished when the car stops at the selected floor.

.5 Secure tactile markings using hidden fasteners.

.6 Provide a Firefighters' Emergency Operation cabinet on the main car station in accordance with the Code.

.7 Provide a locked service cabinet, its size and location to match the Firefighters' Emergency Operation cabinet, containing the following:

.1 Light key switch;

.2 Fan key switch;

.3 Independent service key switch;

.4 Hoistway access enable key-switch;

.5 Emergency lighting test switch;

.6 GFCI duplex receptacle (Run the wires for this receptacle separately from the wires for the other car light and ventilation equipment and connect it to a separate breaker in the machine room).

.8 Provide, only when required by the prevailing codes, a stop switch located in the service cabinet, arranged to stop the elevator and to duplicate the functions of the alarm button.

.9 Engrave the car station with markings and signage such as car capacity, elevator number and other markings required by the prevailing codes and local regulations including remote location of device licenses where available.

.10 Ensure that engravings and button designations are easily read when viewed at an angle from any normal standing position in the elevator cab within arms reach of the car station.

.11 Hinge the car station faceplate so that it can be swung open towards the adjacent cab side wall to allow access for servicing of the inner components of the car station.

.12 Provide a hinge capable of supporting without distortion a test weight of minimum 11 kg resting on the panel non-hinged edge with the panel swung open.

.13 Secure the car station in the closed position using countersunk spanner head fasteners or approved equivalent.

.14 Arrange the car station so that it can be swung open without interference from the cab flooring, cab wall, cab handrails or other cab appurtenances.

2.27 Signal lights

.1 Provide LED position indicators and call registered lights having a minimum contrast ratio of 8:1 throughout a life expectancy greater than 100,000 hours.

.2 The contrast ratio is to be determined by subtracting the brightness of the indicator background from the brightness of the marking and then dividing the result by the brightness of the background.

.3 Arrange that the variation in intensity and contrast ratio between position indicators does not exceed 5 percent.

.4 Arrange that the variation in intensity and contrast ratio between call registered lights does not exceed 5 percent.

.5 All measurements are to be made in ambient lighting conditions meeting Code requirements.

2.28 Automatic cab lighting and fan control

.1 Arrange that the cab lights and fan are turned off in not more than five minutes when:

.1 The elevator is level at a floor;

.2 The elevator doors are closed;

.3 The elevator has not been selected to answer a call;

.4 The elevator is on automatic operation;

.5 The elevator safety circuit (including interlocks) is intact.

.2 Ensure cab lighting has an efficacy of not less than 35 lumens per Watt.

.3 Should any of the above conditions no longer obtain or when emergency communication devices are initiated, turn the car lights and fan on within 0.5 seconds.

2.29 Car position annunciator

.1 Provide automatic verbal announcement to announce the floors and to provide floor passing tones.

.2 Provide a unit to meet the requirements of the Code.

.3 Provide means to adjust the volume over a range from 55 and 70 decibels.

.4 Use a female voice for the announcements.

2.30 Car position indicator

.1 Provide a digital car position indicator mounted in each car operating panel.

.2 Arrange the indicator to display a number or symbol at least 50 mm (2") high.

.3 Indicate the position of the car at all times, corresponding to the landing through which the car is passing or at which it is stopped.

.4 Provide an LCD position indicator screen, a segmented display using LEDs with a minimum of 16 segments per character, or a dot-matrix display using LEDs with a minimum of 35 dots per character.

.5 If there is an auxiliary car station, provide identical position indicators in both stations.

.6 Arrange the circuits so as to provide continuous indication of car position.

2.31 Emergency lighting

.1 Provide a back-up battery power system for alarm bell operation and emergency cab lighting.

.2 Install the emergency lighting lamp at the top or upper reaches of the car station unless otherwise required by the site Architectural cab design.

.3 Provide a lighting level of at least 11 lux of illumination at the car operating panels for a minimum period of four hours, using at least four LED lamps of equal rating.

.4 Cause the lamps to be immediately energized in the event of a power failure or electrical fault de-energizing the normal elevator lighting circuit.

.5 Provide for the automatic disconnection of the lamps and the automatic recharging of the lighting unit when normal power is restored to the elevator lighting circuit.

.6 Provide a rechargeable battery of the hermetically sealed type, or of a type which provides a reserve of electrolyte, capable of operating unattended and requiring no addition of water or electrolyte for a period of not less than ten years, with provision for visual checking of the electrolyte level without opening the battery or removing caps or fittings.

.7 Arrange the battery charging to operate automatically upon restoration of normal power to the unit, to remain in operation until the battery is fully recharged and to maintain the battery at full rated capacity at all times when the unit is not in operation.

.8 Provide a pilot lamp to indicate that the normal power supply to the unit and battery charging is in operation.

.9 Arrange that the unit can be conveniently tested and operated manually.

.10 Install the unit as part of the car so that it is not readily removed.

.11 Do not provide portable equipment.

.12 Install the lamp fixture above the car station.

.13 Provide an emergency lighting test switch in the car service cabinet or behind the car swing return.

2.32 Telephone: hands-free operation

.1 Provide a hands-free telephone with automatic dialer capable of initiating and receiving calls.

.2 Integrate the telephone into the car station.

.3 Provide a push button to initiate the telephone connection.

.4 Arrange that the telephone connection can be initiated by an external call.

.5 Provide an indicator light to confirm that communication has been established.

.6 Pierce the car station for the push button and indicator light with the indicator light mounted flush with the panel.

.7 Provide a speaker/microphone for communication.

.8 Pierce the car station in front of the speaker with multiple holes 3 mm (1/8") in diameter to allow passage of sound to and from the speaker.

.9 Identify the telephone and the button with a raised symbol and Braille.

.10 Provide instructions and button identification text adjacent to the button (i.e. do not place text directly on button).

.11 Provide wiring for the telephone from the cab to the machine room.

.12 Provide a communication station in the machine room.

.13 Connect the wiring on the car to a terminal block mounted in or adjacent to the telephone box.

.14 Terminate the wiring in the machine room at a separate enclosed external terminal block mounted on the controller.

.15 Provide the terminal block and its enclosure and locate it so that personnel other than elevator mechanics can easily run their conduit and wiring to these terminals without interfering with or touching the elevator wiring or controls.

.16 Where more than one controller is in a common machine room bring wiring to one common terminal block.

.17 Clearly mark the terminal block.

.18 Provide wiring of the twin conductor shielded type with grounded shields.

.19 Provide equipment and wiring compatible with and acceptable to the telephone company providing service to the project.

.20 Provide material and labour as necessary so as to ensure that the communication system meets the requirements of the Code.

2.33 Two-way communication system

.1 Provide a two-way emergency communication system that permits verbal and non-verbal communication.

.2 Provide a VoIP system (Voice over Internet Protocol) or approved alternative.

.3 Provide line monitoring.

.4 Integrate the system into the car station.

.5 For verbal communication:

.1 Provide a speaker/microphone for communication.

.1 Utilization of the hands-free telephone system, including speaker/microphone, is acceptable provided it is compatible and all requirements are met.

.6 For non-verbal communication:

.1 Provide a camera inside the elevator cab to permit authorized persons to observe the entire surface area of the elevator cab floor.

.2 Provide the video coverage required to meet the Code via a streaming service.

.3 Ensure that the video streaming service is only initiated by the operator and that streaming is stopped once terminated by the operator.

.4 Ensure that video recordings are not stored off-site (including "cloud"-based servers).

.5 If buffering of the video (or any other temporary storage for streaming purposes) is required, ensure that the video is immediately deleted at the end of the video streaming session.

.6 Install the camera in the elevator ceiling or in the car station and protect it from damage caused by impact.

.1 Utilization of existing closed circuit camera systems installed inside the elevator is acceptable provided it is compatible and all requirements are met.

.7 Provide a LCD display screen in the car station.

.1 Utilization of the car position indicator for the LCD screen is acceptable provided it is compatible and capable of displaying the car position during communication.

.8 Arrange the display screen to display the elevator cab floor surface area, text messages transmitted by authorized personnel and text messages transmitted by passengers inside the elevator.

.9 Provide means for the passengers inside the elevator to communicate non-verbally with authorized personnel by:

.1 A QWERTY style button input on the car station; or

.2 YES or NO buttons on the car station.

.7 Provide instructions and button identification text adjacent to the button (i.e. do not place text directly on button).

.8 Provide a back-up battery power system for the communication system capable of operating the system for 4 hours in the event of a power failure.

.9 Provide a communication station in each machine room.

.10 Initiate the emergency communication system when the push-button on the car station for two-way emergency communication is pressed.

.11 Arrange that the emergency communication system connection can be initiated by an external call.

.12 Provide an indicator light to confirm that communication has been established.

.13 Arrange the emergency communication system to dial to a location within the building staffed by authorized personnel when activated and, if not answered within 45 seconds, automatically forward the call to an off-site location staffed 24 hours per day by authorized personnel.

.14 Provide, to authorized personnel, information that identifies where the call is coming when an emergency communication call is made.

.15 Provide audible and visual communication failure signals within the same housing as the emergency recall switches and indicators and provide a key-switch in this housing to allow authorized personnel to temporarily deactivate the audible signal.

.16 Supply wiring as necessary to connect the system to the elevator system.

.17 Connect the wiring on the car to a terminal block mounted in or adjacent to the telephone box.

.18 Terminate the wiring in the machine room at a separate enclosed external terminal block mounted on the controller.

.19 Provide the terminal block and its enclosure and locate it so that personnel other than elevator mechanics can easily run their conduit and wiring to these terminals without interfering with or touching the elevator wiring or controls.

.20 Where more than one controller is in a common machine room bring wiring to one common terminal block.

.21 Clearly mark the terminal block.

.22 Provide wiring of the twin conductor shielded type with grounded shields.

.23 Provide equipment and wiring compatible with and acceptable to the telephone/IT company providing service to the project.

.24 Provide material and labour as necessary so as to ensure that the communication system meets the requirements of the Code.

.25 Provide any incidental elevator material and elevator work necessary to obtain a complete functioning communication system.

.26 Do not ground the system to an alternating current circuit.

.27 If the connecting wiring requires conduit external to the elevator hoistways and machine rooms coordinate with and assist as necessary the trades executing this work (these other trades are responsible for the provision of the conduit and the pulling of the wiring supplied by the elevator contractor).

.28 Provide standard, readily available hardware components.

.29 Submit for review brochures, details, wiring diagrams and description of the communication system.

2.34 Web-based monitoring service

.1 Provide a web-based monitoring service to enable authorized personnel to initiate cab video monitoring or initiate non-verbal two-way communication.

.2 Provide this monitoring service to the Owner for the maintenance period included herein (whether in the base scope or as an itemized or separate price).

.3 If the web-based monitoring service requires fees for continued usage beyond the maintenance period included herein, such fees shall not exceed $15 per device per month (adjusted annually from the date of substantial performance by an amount not to exceed the previous year's "all items" percentage change in the Consumer Price Index).

.4 Ensure that the monitoring system does not require any other special licences, services, subscription or fees to remain functional.

.5 Ensure that the monitoring service functions with the current version of all major operating systems and browsers.

.6 Ensure that the monitoring system does not require the installation of any proprietary software.

.7 Make the web-based monitoring service available to any call answering service selected by the Owner (including other elevator contractors), regardless of which company maintains the elevator equipment.

.8 Guarantee that the web-based service shall be provided and maintained for not less than 15 years.

2.35 Hall push button stations: surface mount

.1 Replace the existing hall push button stations with new extended surface mounted hall push button stations.

.2 Provide at the intermediate floors, for each station, up and down push buttons located one above the other and call registered lights.

.3 Provide at the upper terminal and lower terminal, for each station, a single button and call registered light.

.4 Illuminate the call registered light only when there is an elevator in service to respond to the call.

.5 Provide emergency power and firefighters' switches, indicators and devices as necessary in the stations.

.6 Where line monitoring is being installed, provide a communication indicator.

.7 Secure the hall push button stations to the wall using countersunk spanner head fasteners or approved equivalent.

2.36 Hoistway access switch

.1 Provide hoistway access switches in accordance with the Code.

.2 Locate the switches in the entrance frame or in the sight guard in an inconspicuous place.

.3 Locate the switches on the same side of the entrance frame as the pick-up roller assembly.

2.37 Cab ventilation

.1 Provide an exhaust fan capable of developing 30 pascals (0.1" H_2O) static pressure differential with a minimum capacity of 165 litres per second (350 cfm).

.2 Provide a two speed motor for the fan with the speed control located in the car operating panel.

.3 Ensure that the cab ventilation does not consume over 0.33 W/cfm at maximum speed.

2.38 Cab: standard finishes

.1 Provide cab finishes including the following items:

.1 Returns, transom, car door jamb, lintel and door finished in stainless steel;

.2 Aluminum car sill;

.3 A 3 mm (1/8") thick aluminum plate over a wooden sub-floor;

.4 For non-access walls, 19 mm (3/4") thick plywood panels covered with plastic laminate chosen by the Owner, with stainless steel reveals and binders;

.5 A solid suspended ceiling made of stainless steel panels, the number and dimensions of ceiling panels to correspond with the number and width of panels on adjacent cab walls;

.6 A LED light fixture in each suspended ceiling panel;

.7 Single piece heavy duty linoleum flooring chosen by the Owner installed flush with the car sill;

.8 Tubular stainless steel handrails of an exterior diameter of 38 mm (1.5") and located at the maximum height allowed by Appendix E of the Code;

.9 Hooks for protective pads.

.2 Provide vandal-resistant finishes.

.3 Supply any other material and labour necessary to provide a completed, installed cab including mounting strips, stay plates, base and sound-deadening material.

.4 Provide cut-outs to accommodate the elevator equipment.

.5 Submit for review shop drawings showing the finishes and design.

2.39 Protective pads

.1 Provide protective pads covering all exposed wall surface, attached to inconspicuous pad hooks at the top of the cab and reaching to within 100 mm (4") of the car floor.

.2 Provide stitched cut-outs within the pads to provide visibility and access to fixtures.

2.40 In car lanterns and gongs: applied

.1 Provide in car lanterns complete with electronic gongs at each side of the elevator cab entrance to indicate the future direction of the elevator.

.2 Mount the lanterns on the car entrance columns.

.3 Arrange the lanterns and circuits so that as the car doors start to open in response to a call, the lanterns illuminate and the gong strikes.

.4 Sound the gong once to indicate the up direction and twice to indicate the down direction.

.5 Maintain the lantern illuminated until the car has stopped and the door open time has elapsed.

.6 Do not illuminate the lantern on a door re-open unless the re-open is caused by a reversal of direction of travel of the car.

.7 Arrange the operation of the lanterns and gongs to comply with requirements for persons with physical disabilities.

.8 Provide LEDs for illumination.

.9 Design the fixture so that the lamps may be readily changed. Do not mount any equipment to the covers; arrange that the covers can be removed completely without disturbing the electric wiring.

2.41 Hall position indicator: digital

.1 Provide a digital position indicator mounted above the main floor entrance.

.2 Arrange the indicator to display a number or symbol at least 50 mm (2") high.

.3 Indicate the position of the car at all times, corresponding to the landing through which the car is passing or at which it is stopped.

.4 Provide an LCD position indicator screen, a segmented display using light emitting diodes with a minimum of 16 segments per character, or a dot-matrix display using LEDs with a minimum of 35 dots per character.

.5 Arrange the circuits so as to provide continuous indication of car position.

2.42 Car inspection devices

.1 Provide, on the top of the car, a fixed lamp receptacle, with switch, outfitted with wire clamp guards, and a GFI duplex receptacle with safety ground connection.

.2 Provide, on the top of the car, an inspection station consisting of an emergency stop button, up, down and common inspection running buttons, on-off switch for the door operator and other devices necessary for top-of-car inspection operation.

2.43 Sliding guides: retain

.1 Retain the existing sliding guides.

.2 Provide new non-metallic liners.

.3 Adjust the sliding guide to secure good contact with the rail.

2.44 Guide rails: retain

.1 Retain the existing guide rails and brackets.

.2 Ensure that the guide rail system is of structural strength and rigidity sufficient to limit the horizontal deflection of the guide at any point to less than 0.6 mm (0.025") under normal conditions of operation.

.3 Align guide rails with a variation of not more than 1.6 mm (0.06") over any 6 m (20') section and with a maximum variation of not more than 0.8 mm (0.03") in 30 mm (1").

.4 Ensure that the guide rails and brackets are installed in a strong and substantial manner.

2.45 Emergency lowering

.1 Provide battery operated emergency lowering.

.2 Provide, as a minimum, sufficient battery power to perform the following cycle of operation five times within a 30 minute period:

.1 Close the elevator doors;

.2 Run the car to the bottom floor;

.3 Open the doors;

.4 Close the doors.

.3 Cause the emergency lowering operation to be implemented in the event of a power failure or electrical fault de-energizing the normal elevator power supply.

.4 Under emergency lowering conditions cause the elevator to close its doors and travel down, without stopping, to the bottom floor, open its doors, and after the normal door open time has elapsed, close its doors and remain parked at the lowest floor.

.5 On emergency lowering operation, maintain operational all of the normal safety devices including door open buttons, and door protective devices.

.6 Provide for the automatic termination of the emergency lowering operation and the automatic recharging of the battery when normal power is restored.

.7 Provide a rechargeable battery of the hermetically sealed type, or of a type which provides a reserve of electrolyte, capable of operating unattended and requiring no addition of water or electrolyte for a period of not less than ten years, with provision for visual checking of the electrolyte level without opening the battery or removing caps or fittings.

.8 Arrange the battery charging means to operate automatically upon restoration of normal power, to remain in operation until the battery is fully recharged and to maintain the battery at full rated capacity at all times when emergency lowering is not in operation.

.9 Provide a pilot lamp to indicate that the normal power supply and battery charging are in operation.

.10 Provide means for convenient manual operation and testing.

2.46 Machine room equipment guarding: hydraulic elevators: component guarding

.1 Provide component guards for the hydraulic machine, high-voltage components, tripping hazards and any other machine-room items that present a hazard to personnel.

.2 As an alternative to individual guards for the external motor and belts, provide an expanded metal screen around the lower part of the hydraulic machine.

.3 Provide machine room equipment guarding in accordance with the prevailing regulations and these specifications.

.4 Provide drawings of the guarding under the seal of a Professional Engineer.

.5 Where expanded metal screens are used for guards construct them of minimum 2.2 mm thick metal so supported and braced as to deflect not more than 15 mm when subjected to a force of 450 N applied perpendicularly to the screen at any point

.6 Arrange the guards so as to prevent hands, arms, or any other part of a worker's body from coming in contact with moving parts

.7 Affix the guards in a strong and substantial manner so that they cannot be accidentally removed.

.8 Construct the guards of durable materials that can withstand the workplace conditions.

.9 Arrange the guards to protect from falling objects so that no objects (such as tools) can fall into moving parts or into open electrical components.

.10 Ensure that the guards do not themselves create a hazard (such as shear point, a jagged or sharp edge).

.11 Provide removable guards such that regular maintenance procedures can be performed.

.12 Arrange the guards so as not to impede a worker from performing the Work efficiently and conveniently.

.13 Wherever practicable, arrange the guards so that those devices requiring regular attention can be maintained without removing the guards.

.14 Wherever practicable, provide fixed guards that cannot be easily removed.

.15 Finish the metal components of the guarding devices in a bright yellow paint with one base primer coat and two finishing coats or, alternatively, in baked enamel, so as to make them highly visible.

.16 Where polycarbonate covers are used, add marking stripes of tape in bright yellow so as to make them highly visible.

.17 Provide protective guards for high voltage circuits.

.18 Arrange that those elements of the controller with potentials to ground in excess of 130 volts are separated from the low voltage elements by means of barriers that can be removed for maintenance and repair purposes.

.19 Provide barriers consisting of clear polycarbonate covers (where consistent with the prevailing regulations), hinged so as to allow access without removing the covers.

.20 Arrange the barriers so that they are of sufficient dimension that the controller covers cannot be closed completely when the barriers are in the open position.

.21 Provide an entry in the elevator maintenance logbook confirming that the elevator controller covers and doors are closed and that the machine room guards are in place and functioning properly, this entry to be checked when performing regular maintenance.

.22 Where the status (in motion or stationary) of the lift machine cannot be visually determined as viewed from the disconnect switch, provide at the machine a manually opened and closed stop switch to prevent movement of the elevator.

2.47 Car balance

.1 Statically balance the car so that, at the centre of the travel, with the top guiding means removed, the car hangs in the centre of the rails.

.2 Arrange the equipment so that there is, in this position, with the guiding means properly adjusted, no force upon the guides.

.3 Make this test with empty car and car doors closed.

.4 Locate and adjust devices such as the compensating devices, travelling cable hangers and cab balancing weights so that the force upon any guide at any point in the travel does not exceed 110 Newtons (25 pounds) with empty car and car doors closed.

2.48 Limit switch dowelling

.1 After the final limit switches are adjusted and prior to the performance of safety tests and checks by the inspecting authorities, fasten, by throughbolting or dowelling, the final limit switches and final limit switch brackets so as to minimize the possibility of future incorrect adjustment.

2.49 Car ride

.1 Improve upon the existing ride quality as much as possible in an effort to attain:

.1 Arrange that the horizontal acceleration front to rear or side to side measured in the car with the elevator travelling, with a load of less than 10 per cent of capacity, from top to bottom and bottom to top does not exceed 0.15 m/s^2 (0.5 ft/s^2) measured between two consecutive points of opposite value.

.2 Arrange that the vertical acceleration measured in the car with the elevator travelling, with a load of less than 10 per cent of capacity, from top to bottom and bottom to top at contract speed, does not exceed 0.10 m/s^2 (0.3 ft/s^2) measured between two consecutive points of opposite value.

2.50 Flood detection means

.1 Equip the elevator with a flood detection means in the pit in accordance with the relevant sections from B44-22, Section 2.2.9, Section 2.27.13 and Section 3.27.5.

.2 Provide this device even when it is not mandated by Code. In this scenario, the recall landing shall be determined as follows:

.1 Where the main egress floor is not the lowest landing, recall to the main egress floor.

.2 Where the main egress floor is the lowest landing, recall to the first landing above the main egress floor.

2.51 Painting

.1 Ensure that machine room and hoistway equipment, except for machined surfaces and non-rusting surfaces, is protected with rust inhibiting primer of a neutral colour.

.2 Where rust has developed on the existing equipment, brush the surface to the bare metal and re-paint.

.3 Clean and paint the machine room floor.

.4 Clean and paint the pit floor.

2.52 External connections

.1 Provide a junction box on the external wall of the hoistway at a point to be designated later for connections for such items as telephones, CCTV, lobby panels, monitor systems, to external locations such as the CACF Room.

.2 Locate this box as instructed and provide clearly marked terminal blocks for the wiring connections.

.3 Supply the required wiring for the connections from this box to the external locations (provision of external conduit and pulling of wiring by others).

2.53 Travelling cable

.1 Provide travelling cables with flame-retarding and moisture-resisting outer covers and stranded conductors.

.2 Supply cables approved for elevator use.

.3 Provide in the travelling cables:

.1 14 AWG (1.5 square mm) conductors for current-carrying circuits;

.2 18 AWG (0.75 square mm) conductors for signal circuits;

.3 20 AWG (0.5 square mm) shielded pair conductors with shielding for telecommunications circuits and data circuits;

.4 one RG6/U stranded centre conductor coaxial cable and one pair 18 gauge stranded conductor cable within an overall braided shield for closed-circuit television.

.4 Provide ten percent additional minimum spare signal and current-carrying wires in each cable.

.5 Terminate cables using terminal blocks or suitable connectors having identifying numbers to facilitate replacement and service.

.6 Suspend light weight cables using a wire mesh sleeve to relieve strain in the individual conductors and heavier cables using a steel supporting strand if the suspended weight exceeds 35 kg (seventy-five pounds).

2.54 Electric wiring

.1 Provide wiring required to interconnect the new equipment.

.2 Provide copper wire.

.3 Provide insulated wiring having a flame retarding and moisture resisting outer cover.

.4 Where flexible conduit is used, supply it in aluminum.

.5 Provide travelling cable to connect car operating panels and other car operating devices to the controller in the machine room.

.6 Where shielded wire is specified, provide wire of not less than 0.52 mm^2 area (20 gauge) having individually shielded pairs with 100% shielding.

.7 Provide colour or number coded wires in multiwire cables.

.8 Provide waterproof terminal labels.

.9 Provide stranded field wire except for the individual wires in multiwire cables which may be either stranded or solid.

.10 Provide a minimum of ten percent spare wires throughout the elevator wiring signal runs.

.11 Provide, if required by the inspecting authorities, in the main machine room or auxiliary machine room, additional main line safety disconnect switches and associated wiring.

3 Execution

3.1 Operation: simplex

.1 Provide a micro-processor based simplex control for the elevator.

3.2 Operation: call response

.1 Store all hall and car calls in the control memory until answered.

.2 Cancel a call when it is answered by a car.

.3 Stop a running car at the first landing for which a car call is registered.

.4 Stop a running car for a hall call registered for the same direction as the car is travelling, subject to higher priority assignments and to load in the car.

3.3 Operation: dispatch recovery

.1 If a hall call remains registered for longer than 60 seconds and within that period the cars are not running, dispatch all cars and run without dispatch delay or assignment until all registered hall calls are cancelled.

.2 Prevent nuisance car calls by:

.1 Not allowing car calls to be registered below the current position of an up travelling car;

.2 Not allowing car calls to be registered above the current position of a down travelling car;

.3 Or, by cancelling car calls when the car reverses direction.

3.4 Operation: call initiation

.1 Control the elevator automatically by buttons in the car, marked to correspond with the respective landings served, and by the call buttons at the landing stations.

.2 Register a call by momentary pressure of a button.

3.5 Operation: high & low call return

.1 Cause the car to proceed to the calls until it has come to the limit of calls placed in the direction in which it is travelling, and having done this, subject to the assignment of the dispatch system, to reverse direction.

.2 Do not stop the car, except in the case of high and low return, for hall calls in the opposite direction to the direction of the car.

3.6 Operation: coincident calls

.1 Assign a hall call to an elevator with a car call at the same floor if the elevator is travelling in the same direction as the hall call.

3.7 Operation: direction reversal

.1 Cause a car without registered car calls, arriving at a floor where both up and down hall calls are registered, to initially respond to the hall call in the direction that the car was travelling.

.2 If, subsequent to the stop at this landing, there are no car or hall calls registered such as to require immediate travel in the same direction as before stopping at that landing, cause the car to close its doors, immediately reopen them and respond to the hall call in the opposite direction.

3.8 Operation: fault recovery

.1 Provide a recovery circuit arranged to take the elevator at low speed to the next floor in the event of an overspeed condition, overload trip, or other similar fault condition.

.2 Do not implement the recovery circuit if the movement of the car would endanger the passengers in the car.

.3 Provide a circuit separate from the normal speed control circuits, with power derived through separate controls and limited in power by resistance or fixed devices to an appropriate low level.

.4 Do not use, in this circuit, any solid state or other device which could fail in a mode that would allow an increase in applied power.

.5 Upon arrival of the car level at the next floor, cause the doors to open and remain open, and turn off the car lights.

.6 Leave the elevator in this state until the fault is corrected and the car restored to service.

3.9 Operation: independent service

.1 Provide independent service.

.2 On independent service:

.1 Remove the car from the automatic supervisory control system;

.2 Arrange the circuits so that the car does not respond to hall calls;

.3 Render the hall lanterns (if provided) inoperative;

.4 Cause the car to park with its doors open;

.5 Arrange the controls so that the car responds to any car calls registered if a button is held until the doors are closed and the interlocks made-up;

.6 Cause the doors to reopen if the button is released at any time up to the point at which the elevator starts to move;

.7 Render inoperative the normal door protective devices;

.8 Arrange the controls so that the attendant can select direction of travel;

.9 Cancel all registered car calls when the direction reverses or a car call is answered.

.10 Arrange the independent service operation so that it does not override security features or security systems.

3.10 System clock

.1 Where operations or functions are subject to clock control or require clock input, provide a solid state clock.

.2 Provide, in the machine room or at the central control console, means to indicate the current clock time.

.3 Provide, in the machine room or at the central control console, means to readily reset the clock time.

.4 Provide crystal regulation of frequency and voltage control adequate to maintain the time within an accuracy of plus or minus five seconds per month.

.5 Provide software to automatically adjust the time for changes from standard to daylight saving time and from daylight saving time to standard time.

.6 Provide battery back-up to maintain for a period of at least 24 hours accurate clock time in the event of power loss.

3.11 Door protective device by-pass (nudging)

.1 Should a door protective device be operated continuously for more than 20 seconds after the elapse of the normal door open time, cause the doors to close slowly under reduced power and operate a buzzer in the car panel as a warning to the person obstructing the door.

.2 Cause the 20 seconds to be reduced to 6 seconds until a normal door cycle is performed.

3.12 Door open pause time

.1 Arrange the circuits so that when the car is stopped in response to a hall call the doors remain open a predetermined length [approximately 5 seconds for an elevator whose entrances are within 3 metres (10') of the hall push button and approximately

6 seconds for an elevator whose entrances are further than 3 metres (10') from the hall push button].

.2 Arrange that this predetermined length of time is reduced to approximately 0.7 seconds if a person moves through the entrance (as indicated by the actuation of the door protective device).

.3 Unless otherwise specified (e.g. to allow for advance hall lantern warning), arrange the circuits so that when the car is stopped in response to a car registered call the doors remain open a predetermined length of time (approximately 3 to 4 seconds).

.4 Make the times separately adjustable over a range from 0.25 seconds to 15 seconds.

.5 Arrange the circuits so that the door open pause time is cancelled if a car call button is pressed or the door close button is pressed.

3.13 Operation: door protective device

.1 Arrange the door protective device so that, should it detect a person or any object in its path, at any point during the door closing operation, it will cause the doors to return to the open position.

.2 Adjust both the detection device and the door operation so that an object or person in the way of the door will cause the doors to reverse without the door panel of either hall or car doors actually striking the object or person.

3.14 Deadweight or reaction change

.1 Weigh the car and the counterweight (where applicable) within six weeks of contract execution.

.2 Calculate the anticipated change in deadweight and building reactions from those of the originally installed elevator prior to ordering of any equipment.

.3 If the anticipated cumulative deadweight change is greater than 115 kg (255 lb) but less than 5% of the weight of the originally installed elevator car plus elevator capacity:

.1 Perform an engineering assessment of the installation with regard to the equipment which may be affected by the weight change including machine and sheaves, car and counterweight frame, buffers, traction and overbalance, suspension ropes, plunger strengths and working pressure, hydraulic components under pressure and safeties;

.4 If the anticipated cumulative deadweight change is greater than 5% of the weight of the originally installed car plus the elevator capacity:

.1 Perform a full engineering assessment of the installation with regard to all equipment which may be affected by the weight change including machine and sheaves, car frame and counterweight, buffers, traction and overbalance, suspension ropes, plunger strengths and working pressure, hydraulic components under pressure, safeties, car platform, capacity and loading, governors, guide rails, beams, supports and foundations;

.5 Where the alterations are anticipated to increase the original building design reactions by more than 5%:

.1 Perform a full engineering assessment of the installation with regard to all equipment which may be affected by the reaction change including sheaves, supports and foundations of the machinery, sheaves and suspension ropes;

.2 Provide information and details regarding the new building reactions including their location.

.6 If the cumulative deadweight change of the car is more than 11 kg (25 lb):

.1 Record the car and counterweight weight change on an Auxiliary Data Tag;

.2 Post the Auxiliary Data Tag on the car crosshead.

.7 Provide an Auxiliary Data Tag to meet the requirements of latest edition of the Code.

.8 Enter, as a minimum, the following data on the Auxiliary Data Tag:

.1 The measured car weight prior to the alteration;

.2 The weight change of the car and counterweight;

.3 The year and month of the alteration;

.4 The name of the contractor who performed or supervised the work.

.9 For traction elevators, test the traction relations in accordance with the latest edition of the B44 code.

3.15 Noise level: door operation

.1 Arrange the equipment so that the noise level, as measured within the cab, does not exceed 60 decibels at any time during a full door open, door close and door reversal cycle.

.2 Initiate the door reversal by triggering the door protective device.

.3 Measure the noise level using an ANSI type 2 sound level meter on the "A" scale with an "F" response.

3.16 Noise level: cab

.1 Arrange that, with the elevator travelling from one end of the hoistway to the other, the noise level as measured within the elevator cab does not exceed 55 dBA for traction elevators and 58 dBA for hydraulic elevators.

.2 Measure this noise level with an ANSI type 2 sound level meter on the "A" scale with an "F" response.

3.17 Cab fan: operation

.1 Arrange that there is no discernible vibration in the car with the fan operating.

.2 Arrange that the noise level developed by the fan, measured in the car with the fan running, does not exceed 55 dBA.

.3 Measure this noise level with an ANSI type 2 sound level meter on the “A” scale with an “F” response.

3.18 Noise level: control and machine room

.1 Design the equipment so that the noise level with the elevator running, as measured by a meter positioned in the centre of the control and machine rooms, does not exceed 80 decibels.

.2 Measure this noise level using an ANSI type 2 sound level meter on the "A" scale with an "F" response.

3.19 Levelling

.1 Cause the car to stop automatically at floor level, without overshoot, regardless of load or direction of travel so that the car sill is level, within 6 mm (1/4"), with respect to the hoistway sill.

.2 When the elevator cab is stopped at a floor, correct for over travel or under travel or movement of the cab away from the floor, by returning the car imperceptibly to floor level.

3.20 Test data form: hydraulic

.1 After completion of the Work, and prior to Substantial Performance, submit a test data form certifying that the unit is complete and ready for inspection.

.2 Arrange that this form be signed by the person responsible for the performance of the Work.

.3 Include a check list of the items in the specifications as well as other performance data such as door times, operating times, starting and running currents and voltages, operating pressures, slowdown distances, valve settings, and, in general, settings of any adjustable devices.

.4 List on this form safety devices, together with their settings and indicate as to whether they have been checked and adjusted.

.5 Submit a soft copy of the data form in PDF (Acrobat Reader) format.

3.21 Operating time

.1 Adjust the equipment so that the elapsed time to travel one typical floor does not exceed the time shown in the data table.

.2 Measure this time under the following conditions:

.1 A typical floor height of less than 4000 mm (13');

.2 Floor levelling accuracy of ± 6 mm (1/4");

.3 Start time when the fully opened doors begin to close;

.4 Stop time when the car is stopped level with the next floor and the car and hall doors are 800 mm (32") open;

.5 Time measured with full load in the car and in both directions of travel;

.6 Power door operation for the hall and car doors conforms to the elevator code requirements.

.3 Adjust the equipment so that the operating time is compatible with dependable, consistent operation without undue wear or excessive maintenance and so that this operating time can be readily maintained over the life of the elevator installation.

.4 Adjust the equipment so that, with the control functioning so as to give the required time, the elevator operates under smooth acceleration and retardation and provides a comfortable and agreeable ride.

3.22 Firefighters' Emergency Operation: automatic recall

.1 Provide Firefighters' Emergency Operation including:

.1 Phase I automatic Emergency Recall Operation;

.2 Phase I Emergency Recall Operation to an alternate level;

.3 Phase II Emergency In-Car Operation.

.2 Provide switches and indicators in the hall and car stations as required by Code.

END OF SECTION
END OF SPECIFICATION