BID FORM

Project Name:	GOOD SAMARITAN SOCIETY HEAD OFFICE ELEVATOR MODERNIZATION
Project Address:	8861 75 STREET NW, Edmonton, AB
Request for Quotation No.	Q103.2024-003
Scope of Project:	Elevator Modernization – Traction Elevator 1 (E000703)
Pre-Bid Meeting Date:	10:30 a.m. MDT, May 21, 2024
Bid Closing Time & Date:	2:00 p.m. MDT, June 12, 2024
Email completed Bid Form and required submittals to:	John.simpkin@vinspec.com c.c: Claire.hitchen@vinspec.com c.c.: rhessels@gss.org
Specification Number	N4473

1. INTRODUCTION

a. The Good Samaritan Society (GSS), a Lutheran social services organization is a leading faith-based, not-for-profit, registered charity that provides quality accommodations, health, and community care services and programs. With over 70 years of experience providing specialized health and community care services in innovative and caring environments, our operational effectiveness and overarching culture of service and care make us the provider of choice for individuals and their families seeking a supportive place to call home.

b. GSS operates a wide range of programs, which include complex/continuing care, assisted living, group homes, supportive housing and multi care sites, life lease apartments, CHOICE programs, Seniors Clinic, day programs and TeleCare™ user services.

c. Good Samaritan acknowledges that every purchase has an economic, environmental, and social impact, whether intended to or not. Reconciliation in Procurement is designed to intentionally leverage the purchasing activities of Good Samaritan to achieve positive social value outcomes for Indigenous Peoples and Communities.

d. All work must be completed in accordance with the established city, municipal, provincial and federal laws, guidelines, codes, policy, and public health guidelines.

e. Pricing is expected to be held firm for the duration of the Contract.

f. All quoted rates are to be exclusive of applicable taxes and must be quoted in Canadian dollars.

g. All Responses must be firm for thirty (30) days from the RFQ Closing Date and Time.

h. If Vendor finds any discrepancy, ambiguity and/or omissions in any part of this RFQ, Vendor shall notify GSS by written notice to the contact person identified on the cover page of the RFQ. GSS may clarify any discrepancies or ambiguities or omissions with a written addendum posted on APC and/or sent to all Respondents of record.

i. Statements made in response to the RFQ may be incorporated into, attached or included in the Contract, and may constitute representations and warranties of the successful Vendor.

j. Mandatory Site Visit: Vendors interested in submitting a bid must attend a mandatory Site Visit scheduled for 16 May 2024. The following protocols are in place for the Site Visits:

i. Vendors must hand sanitize;
ii. Vendors will be escorted throughout the building.
iii. Vendors must be in good health. If you are experiencing symptoms of illness on the day of your site visit, you may send someone in your place or contact purchasing@gss.org to advise.

2. SUBMISSIONS

a. The bidder acknowledges and accepts responsibility for understanding all specifications and requirements stated herein. Any dimensions or site conditions indicated are not necessarily accurate and must be confirmed by the bidder by visiting the Owner's property and confirming all dimensions and conditions prior to submitting a bid.

b. The bidder acknowledges that all work covered by the bid submission is in complete accordance with all related bid specifications as described in this "Elevator Modernization Specifications" document.

c. The bidder acknowledges sole responsibility for seeking clarification in writing of any matter that it considers unclear before submitting a bid. Questions or requests must be submitted 3 or more days prior to the closing date of the tender. The Owner or Consultant will respond within one (1) business day, providing the query and the response to all bidders.

d. The bidder acknowledges and agrees that the Owner will not be held responsible for the bidder's misunderstanding of any of the specifications contained within this "Elevator Modernization Specifications" document.

e. Completed bid forms and any required supplementary documents will be delivered to

the above-mentioned address by the deadline stated. Bids received after the deadline will be returned to the bidder unopened.

f. The bid form will not be altered and all spaces for information will be completed.

g. Bid forms shall be submitted by email in PDF format.

h. Bid forms must be signed by an authorized signing officer or other duly authorized person for the bidder.

i. Bids will be open for acceptance for a period of sixty (60) days following bid closing.

j. Bids will be opened in private.

k. The Owner reserves the right to waive minor non-compliance in a bidder's proposal.

3. WITHDRAWAL OF BIDS

a. Bids may be withdrawn at any time prior to award. Requests for bid withdrawals must be made to the Owner in writing by an authorized officer of the bidder. Bid re-submissions will only be accepted if submitted by the closing date and time stated above.

b. Bids withdrawn after the closing date may not be re-submitted.

4. BID EVALUATION AND ACCEPTANCE

a. The lowest or any bid need not be accepted by the Owner. The Owner, in its sole discretion, reserves the right to reject any or all bids for any reason whatsoever and without further explanation, or to accept any offer that in the Owner's sole opinion is in the Owner's best interests.

b. Prior to award, the Owner may negotiate with one or more bidders, without any obligation to advise or negotiate with any other bidder(s), regarding changes to the scope of work, materials, or any specifications contained herein that may also result in bid price adjustments. The Contractor acknowledges and agrees that the Owner will not incur any liability whatsoever to the Contractor or any other bidder as a result of such negotiations.

c. Bids will be evaluated by the Owner based on the bidder's:

i. Past performance and similar experience with the work at hand
ii. Products proposed for installation

iii. References
iv. Proposed schedule to complete the work
v. Value-added proposals
vi. Bid price
vii. Overall best value offering to the Owner

d. The bidder acknowledges and agrees that the Owner will not be responsible for any costs, losses, damages, expenses or liabilities of any kind that the bidder may incur as a result of preparing and submitting a bid in response to this tender, or due to the Owner's acceptance or rejection of its bid, or due to the Owner's decision to not proceed with the elevator modernization project.

5. TAXES

a. The Goods and Services Tax is not to be included in the bid amounts.

6. CONTRACT

a. The bidder acknowledges that should they be successful, they agree to enter into a binding contract with the Owner or Owner’s representative within fourteen (14) days of receipt of notice of acceptance of their bid.

7. ACKNOWLEDGEMENT OF SCHEDULES

a. All Scheduling estimates are to be based on an award of contract by no later than June 30, 2024.

b. Contractor confirms that all work will be completed to the point of Substantial Completion by no later than January 31, 2025

Contractor Initials:
_____

8. ACKNOWLEDGMENT OF ADDENDA

Addendum Number:_____Date:_____

Addendum Number:_____Date:_____

9. PRICES

a. BASE BID:

i. Modernization price for base bid - full modernization of elevator as per specifications and all addenda.

_____ Dollars ($_____)

b. SEPARATE PRICE ITEMS

i. SAFETY DEVICE REPLACEMENT

Fixed price to replace safety devices in the case of failure of related tests and inability to adjust devices to code.

_____ Dollars ($_____)

10. AUTHORIZATION

We the undersigned submit that we have carefully examined all applicable specification documents pertaining to or related to the work, and we hereby accept and agree to same as forming the basis of our bid.

Contractor Name and Address _____

_____

_____

_____

_____

Signature of Authorized Signing Officer: _____

Print Name: _____

Title: _____

Telephone Number: _____

Witnessed By: _____

Print Name: _____

Dated at _____ this _____ day of _____ , 20_

11. CONFIRMATION OF INFORMATION PROVIDED WITH BID

The Contractor acknowledges that the following information and materials is provided with the bid documents:

Item #	Information provided as part of the bid documents	Contractor's initials
1	Detailed company Résumé	
2	Detailed scheduling information has been provided in section 6 of the bid form	
3	Product Bid List (section 14 09 05)	

12. COMPANY RÉSUMÉ

The Contractor shall attach a company résumé in accordance with the requirements of the specifications.

END OF BID FORM

1. GENERAL

.1 SUMMARY

.1 Intent:

.1 Provide all necessary labour and material to modernize one (1) elevator located in the Good Samaritan Head Office building, Edmonton, Alberta, in accordance with all specifications.

.2 Elevators to be modernized are identified as follows:

.1 Elevators: 1
Gov't ID: E000703

.3 Provide full maintenance service in accordance with all specifications for the Interim Maintenance Period which is the time from the date of commencement of the contract until the termination of the warranty period. The cost for this service shall be a fixed total price and included in the base bid price for the modernization.

.4 Where work is described in singular form, the intent of these specifications is that it shall apply to all elevators or all components, unless otherwise stated.

.5 All parts of the Contract Documents apply to and govern the work of this Section.

.6 All Contractor's travel time and expenses required to complete the work – including parking costs – is included in the base contract price. This includes travel time and expenses for inspection agency service and subcontractor's work that forms part of this project.

.2 Related and Referenced Sections:

.1 Section 140620 – Elevating Device Maintenance
.2 Section 140905 – Product Bid List
.3 Section 140910 – Modernization Data Form

.2 REFERENCES

.1 All labour and materials to be provided shall meet the current and relevant ASME 17.1 / CSA B44 Elevator Safety Code and applicable supplements, Government Regulations, the Alberta Building Code, Canadian Electrical code, and any other relevant code or regulation governing this installation.

.2 Products specified shall be supplied and installed in complete accordance with Barrier Free Access requirements as per the current ASME 17.1 / CSA B44

Elevator Safety Code Appendix E: Elevator Requirements for Persons with Physical Disabilities.

.3 All work in elevator pits where designated as confined or restricted space shall be performed in accordance with Alberta Health Services ELEVATOR PIT Safe Work Entry Access Procedures.

.3 SUBMITTALS WITH BID

.1 Complete form 14 09 05 Product Bid List and provide the following information with the bid documents:

.1 Provide the manufacturer and model name for the following items proposed for installation (where applicable):

.1 Control and VVVF or soft-start drive systems
.2 Elevator machines and drive motors
.3 Auxiliary braking devices
.4 Governors
.5 Door operating systems
.6 Car door restrictor systems
.7 Car and hall fixtures

.2 Provide a detailed company résumé including the following:

.1 Elevator Contractor’s primary project management contact name and experience for the person(s) who will be directly involved in this project

.2 Elevator Contractor’s field supervisor name and experience for the person(s) who will be directly involved in this project

.3 Listing of at least three projects of similar magnitude performed in the past 5 years including reference names and contact information

.3 Provide scheduling information for lead times from point of award of contract until the date of delivery of material to site and start of work on site, and proposed warranty expiration date in accordance with specification requirements.

.4 SUBMITTALS

.1 Control System Information

.1 Within two (2) weeks of award of contract provide the following information pertaining to the control and drive systems:

.1 Full load up running current at disconnect
.2 Full load up peak acceleration current at disconnect
.3 Required main-line disconnect fuse size and type

.4 KVA rating of the isolation transformers
.5 Anticipated heat load of the control system and hoist machines

.2 Construction Schedule

.1 Within two (2) weeks of award of contract the Elevator Contractor will provide a detailed schedule of construction. The schedule of construction shall include the following:

.1 Date of delivery of materials to the site.
.2 Date of commencement of construction and the removal of the first elevator from service.
.3 Date of interim acceptance of each of the three (3) elevators.
.4 Date of final acceptance of the completed modernization.
.5 Proposed date of expiry of the Warranty Period.

.3 Detailed Material and Labour Payment Schedule

.1 Within four (4) weeks of award of contract the Elevator Contractor will provide a detailed breakdown of material pricing and anticipated delivery schedule for review by the Consultant.

.1 Total material pricing, drawing, and engineering costs, including any down payments will make up no more than fifty percent (50 %) of the total contract price.
.2 Material progress claim billing must be approved by the Consultant prior to payment being released.

.2 Within four (4) weeks of award of contract the Elevator Contractor will provide a monthly labour cost projection for the duration of the modernization.

.4 Shop Drawings

.1 Within four (4) weeks of award of contract provide three copies of shop drawing for review by the Architect or Consultant. Required shop drawings include:

.1 Machine room layout
.2 Interior car cab design and finishes
.3 All fixtures (car operating panels, hall stations, indicators, etc.)

.2 Where new equipment of a different configuration from the original installation is provided, provide drawings to indicate the location, direction and magnitude of any and all loads transmitted by the new components to the building structure.

.3 All Elevator Contractor drawing dimensions shall be compliant with the Architectural drawings and existing site conditions where applicable.

.4 Return of approvals by the Architect or Consultant to the Elevator Contractor of all shop drawings shall be required prior to final ordering of any material.

.5 Test Reports

.1 Prior to ordering hoist ropes, provide a Hoist Rope Life Calculation Report confirming proper compatibility between hoist ropes and hoist machine.

.2 Prior to turnover of each completed elevator, provide to the Owner one copy of an Elevator Data and Performance Form for each elevator (Section 14 08 20) filled out by the adjuster or mechanic who completed the work.

.6 Closeout Submittals

.1 Electrical Schematics

.1 Upon completion of the installation provide one (1) hard-copy set of final as-built electrical schematics per elevator machine room to the Owner. They are to be laminated and provided in a protective binder.

.2 Provide one electronic copy of final as-built electrical schematics in PDF format to the Owner.

.3 Electrical schematics are to include an index identifying all controller components and all related elevator devices and their locations on the schematics.

.4 Electrical schematics are to be detailed and comprehensive.

.2 Operation Manual

.1 Provide three (3) hard copy sets and one (1) electronic copy (PDF format) of Operation Manuals to the Owner prior to award of Final Acceptance.

.2 Include operating instructions for all newly installed systems applicable to the Owner including (but not limited to):

.1 Firefighters' Emergency Operation
.2 Emergency Power Operation
.3 Independent Service Operation

.4 Hospital Emergency Operation (Code Blue)
.5 Emergency Phone Systems

.3 Provide cleaning and maintenance instructions for elevator maintenance work that would be performed by the Owner.

.3 Maintenance and Adjusting Manual

.1 Provide three (3) hard copy sets and one (1) electronic copy (PDF format) of Maintenance and Adjusting Manuals to the Owner prior to award of Final Acceptance for all newly installed systems including but not limited to:

.1 Car Control system
.2 VVVF Drive system
.3 Hoist machines
.4 Governors
.5 Hoist ropes
.6 Auxiliary brakes
.7 Door restrictor system
.8 Car and Hall fixtures
.9 Emergency phone systems

.2 All manuals are to be totally comprehensive and detailed and include all necessary troubleshooting and adjusting codes, troubleshooting and adjusting instruction, maintenance and lubrication instructions, etc., required for total maintenance, troubleshooting and adjustment of all elevator equipment provided. Manuals are to include detailed instructions for control software upgrading, initial startup and final adjustments, performing learn runs, and changing of any programmable control parameter.

.3 Do not include any manuals for equipment that has not been supplied in this specific installation. If this is unavoidable due to pre-bound manufacturer's manuals, strike out any references to non-applicable components.

.4 Maintenance manuals are to include a comprehensive and complete parts list with manufacturer and model number of all components installed, along with contact information for obtaining replacement or spare parts.

.4 Inspector's Manual and Category Testing

.1 Provide a separate and specific Inspector's Manual that provides detailed instructions for the performance of all safety device testing.

.2 Provide detailed instructions and procedure for conducting all Category 1 and Category 5 tests.

.5 Manuals

.1 All manuals and electrical schematics shall be provided in full compliance with Section 01 and shall be reviewed and accepted by the Consultant prior to Final Acceptance being awarded.

.2 Both hard and soft copies of manuals shall be divided into specific component sections and include a detailed table of contents. Soft copies of manuals shall have hyperlinks in tables of contents. Individual sections shall be separated and clearly identified.

.5 QUALITY ASSURANCE

.1 Installer Qualifications:

.1 All work to be performed by Journeyman Elevator Constructors and registered Elevator Constructor Apprentices, with proper training and experience regarding the work at hand.

.2 All work to be first rate in every respect and performed in accordance with accepted industry practices for high quality installations.

.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver all materials in ample time to allow for completion of work in accordance with construction schedule.

.2 A designated and secured area within the building will be provided by the Owner for the Elevator Contractor to store materials and tools for the duration of the modernization work.

.3 The transporting of elevator materials, equipment, parts, garbage, packaging materials, and tools within the hospital shall be done on carts approved by the Owner, and all loads shall be enclosed within clean protective coverings in accordance with the Owner’s requirements.

.4 Construction Waste Management

.1 Comply with requirements of Construction Waste Management Plan established by the General Contractor and Owner.

.2 Remove from site and dispose of pallets and packaging materials at appropriate recycling facilities immediately upon removal of goods from such packaging.

.3 Place materials defined as hazardous or toxic in designated containers. Handle and dispose of hazardous materials in accordance with all local regulations and requirements.

.7 WARRANTY

.1 Unless noted otherwise in these specifications, all materials and labour provided shall be warrantied from the time of installation until 1 year from the date of award of Substantial Completion of the modernization of all elevators.

.2 All new, retained and refurbished equipment shall be warrantied against failure for the warranty period with the exception of failures due to vandalism or misuse of the equipment.

.3 The Elevator Contractor warrants that it shall provide all required goods and services pursuant to and in accordance with the Contract. This warranty shall survive, without limitation, the award of Final Acceptance, the expiry of the Warranty Period and the final payment of the Contract Price.

.8 WORK

.1 The Elevator Contractor shall provide any necessary labour (including extra crews or extended hours of work) required to ensure that the work is completed within the construction time frame quoted by the Elevator Contractor in the construction schedule.

.2 All work generating excessive noise or vibration shall be completed during regular working hours and coordinated with the Owner. When noise levels or vibration are excessive or detrimental to the ongoing operation of the existing building facility, an alternate time for such Work shall be scheduled through the Owner. Alternate times for such may involve performance of work during evenings, overnight or on weekends. Such work shall be performed at no additional cost.

.3 Prior to commencing any Work that will cause undue noise or vibration the Contractor shall consult with the Owner.

.9 WORK BY OTHERS

.1 Work required to complete this installation that will be performed by the General Contractor or their sub-trades (other than the Elevator Contractor) includes:

.1 Provision of Fire Alarm Signals (detectors, relays, and wiring) brought to a termination junction box to be mounted by the Elevator Contractor on the side of the elevator controller in the elevator machine room.

.2 Provision of Emergency Power Status and Pre-transfer Signals brought to a termination junction box mounted on the side of the elevator controller in the elevator machine room.

.3 Testing and repair or replacement as required of existing three-phase main-line disconnects and 120 VAC cab lighting disconnects to ensure compliance with current electrical codes.

.4 Provision of a true earth ground wire in each main-line 3 phase disconnect.

.5 Provision of one phone line to be run to the controller in the machine room or the rescue station phone at the option of the Owner. Interconnections for the phone line and emergency phone tie-ins between other elevator controllers and the rescue station phone and auxiliary rescue phone are to be made by the Elevator Contractor.

.6 Provision of one 110 VAC power circuit run to the Rescue Station Phone in the machine room.

.7 Provision of 15 amp, 110 VAC GFI protected receptacles - one located in each elevator pit and one located in each machine room.

.8 Provision of guarded lighting in the elevator pit - minimum 100 lx at the pit floor.

.9 Provision of guarded lighting in the elevator machine room - minimum 200 lx at the machine room floor.

.10 Provision of a self-closing and self-locking mechanism for the elevator machine room door in accordance with code requirements.

.11 Provision of security system card readers, and dry contact security interfaces to control elevator car and hall call access where applicable. Wiring will be provided by the General Contractor or their subtrade to the Elevator Security Panel (ESP) provided by the Elevator Contractor on the outside of each elevator controller. Card readers to be installed in the elevator cabs by the General Contractor or their subtrade.

.12 Supply and installation of camera hardware in the elevator cabs in addition to the Video/Text/Phone device.

.13 Provision of adequate HVAC systems in the elevator machine rooms to maintain ambient room temperature to between 10 and 25 degrees C. Cleaning of existing system ducts and provision of filters as necessary.

.14 Provision of an internet connection brought to the elevator machine room.

.10 INTERIM MAINTENANCE

.1 The Elevator Contractor is to provide full maintenance service for the total elevator system for the Interim Maintenance Period which is defined as the time from the date of commencement of the contract until the end of the Warranty Period (12 months following award of substantial completion of the last elevator plus any warranty extensions).

.2 The interim full maintenance service is to be provided in complete accordance with the Owner's Maintenance Specifications Section 14 06 20.

.3 The interim maintenance fees shall be fixed and included in the base modernization price.

.11 EXTENSION OF WARRANTY PERIOD

.1 If, during the Warranty Period, the number of callbacks due to equipment related failures on any one elevator exceeds 3 in any contiguous 30-day period, the Owner may, at their sole discretion, extend the Warranty Period for all elevators by one month for each 30-day period where the number of callbacks was greater than 3 for any one elevator.

.12 INSPECTIONS, TESTS, DRAWINGS AND PERMITS

.1 The Elevator Contractor is responsible for applying for, obtaining, and paying for any installation permits or any other permits required by the Governing Authorities for the completion of all Elevator Work specified.

.2 The Elevator Contractor is responsible for preparing, providing, and paying for any drawings, engineer-stamped drawings, approvals, or applications required by the Governing Authorities, the Owner, and Consultant for the completion of elevator related work for this project.

.3 The Elevator Contractor is responsible for arranging and paying for any elevator inspections or re-inspections required by the Governing Authorities. The Elevator Contractor shall not be required to cover the cost of re-inspections of the elevator equipment by the Governing Authority that are required due to the fault of others than the Elevator Contractor.

.4 The Elevator Contractor shall provide any service crews or mechanics and test-weights and specialized tools that may be required to assist the Governing Authorities and/or Consultant during any necessary elevator inspections or re-inspections.

.5 All inspections that will result in total loss of service of all elevators in a group is to be done between the hours of 9:00 p.m. and 6:00 a.m. and coordinated with the Owner. The Elevator Contractor will include for overtime costs in the base bid price for such work.

.6 The Elevator Contractor will include for one (1) pre-test of Firefighters' Emergency Operation and Emergency Power Operation for each elevator group. Unless agreed to otherwise by the Owner, such testing shall be completed between the hours of 9:00 p.m. and 6:00 a.m. and coordinated in advance with the Owner. The Elevator Contractor will include for overtime costs in the base bid price for such work.

.7 Unless agreed to by the Owner, the Initial Testing of the Firefighters' Emergency Operation and Emergency Power Operation for each elevator group by the Governing Authority is to be completed between the hours of 9:00 p.m. and 6:00 a.m. and coordinated with the Owner. The Elevator Contractor will include for overtime costs in the base bid price for such work.

.8 The Elevator Contractor shall be responsible for obtaining Elevator Car Cab Interior Alteration permits and conducting tests, procedures, and inspections as required by the governing authority.

.13 ELEVATOR SECURITY AND EMERGENCY OPERATIONS

.1 The Contractor shall maintain all existing emergency services fully operational for existing and modernized elevators throughout the course of the modernizations. This includes maintaining fully functional:

.1 Firefighters' Emergency Operation
.2 Emergency Power Operation
.3 Emergency Hospital Operation (code-blue operation)
.4 Security functions (car and hall lockouts)

.2 Prior to completing any demolition of existing systems, the Contractor will identify, mark, and protect any existing security or emergency system wiring and circuitry. These existing systems will be used on a temporary basis until related work by other trades is completed where necessary.

.14 FINAL ACCEPTANCE INSPECTIONS

.1 Upon completion of work on all elevators, the Contractor provide a completed Elevator Data and Performance Form (see section 140910) and shall notify the Consultant in writing and request a Final Acceptance Inspection. Within 3 days of notification, a Final Acceptance inspection will be performed by the Consultant to confirm that all work has been completed in compliance with the specifications and verify data provided on the Elevator Data and Performance Form. The inspection will include the following:

.1 Verification of completion of installation of all components and assessment of the quality of the installation.

.2 Verification of specific performance characteristics (under both full load and empty car scenarios) as reported by the Elevator Contractor in the Elevator Data and Performance Form including:

.1 Ride quality
.2 Leveling accuracy
.3 Floor-to-floor times
.4 Door operation including door opening and closing speed, smoothness of operation, door closing torque, nudging operation, and noise levels
.5 Dispatching operations where applicable including homing and zoning of the elevators, hall call bypass, anti-nuisance, etc.
.6 Full speed

.3 Verification of painting of all equipment, machine room floors, pit floors, etc.

.4 Verification of all emergency devices and operations including Fire Service and Emergency Power Operation where applicable.

.5 A review of all manuals and drawings received.

.2 Upon completion of the Final Acceptance inspection, a written report will be provided to the Elevator Contractor listing any deficiencies requiring correction by the Elevator Contractor prior to Final Acceptance being awarded.

2. PRODUCTS

.1 GENERAL REQUIREMENTS

.1 Where work is described in singular form, the intent of these specifications is that it shall apply to all elevators or components of the elevator.

.2 MAINTAINABILITY OF EQUIPMENT

.1 It is the intent of this contract to purchase non-proprietary elevating system controls, machinery, parts, and components, which are totally maintainable by any licensed and capable elevator contractor.

.2 Replacement parts for all components of the elevator system must be available from the original equipment manufacturer (OEM) at a fair market price to the Owner, and the Owner’s maintenance contractors for the life of the equipment.

.3 The design life cycle of the major components (controllers, VVVF drives, machines, fixture buttons) shall be a minimum of 25 years with ongoing proper preventative maintenance, repairs, and component replacements.

.4 Comprehensive technical support regarding the control system and all peripheral components provided by the Elevator Contractor must be readily available at a fair market cost directly from the OEM to the Owner and their maintenance contractors for the life of the equipment. This support must be available by telephone during normal working hours.

.5 If remote tools or computers are required to facilitate monitoring, troubleshooting or adjusting of **any** of the elevator systems (including control systems, motor drive, door operating, or other such systems), the Elevator Contractor shall provide one such device per elevator, to be turned over to the Owner. The Elevator Contractor shall also provide a comprehensive user's manual for such tools or computers with a complete listing of all adjustable parameters and diagnostic codes (including their meanings) prior to Final Acceptance of the project.

.6 The Elevator Contractor shall provide one backup copy of all operating software utilized by any of the control systems for each elevator.

.7 Software replacements and upgrades shall be readily available to the Owner or the Owner's maintenance contractor at a fair market price for the life of the equipment.

.8 None of the control, drive, or other systems shall utilize counters, timers or other such means to shut down or alter any elevator system, unless the safety of the system is compromised.

.3 MATERIALS

.1 All materials to be provided shall meet all current and relevant ASME A17.1 / CSA B44 Elevator Safety Code, Canadian Electrical Code, and local Building Code requirements.

.2 Provide only new, high-quality materials designed for heavy-duty usage, vandal resistance and durability.

.3 Provide equipment designed to be totally maintainable with an indefinite life cycle achievable with proper ongoing preventative maintenance and timely replacement of component parts as they wear out.

.4 Provide materials as specified. Alternate materials will only be accepted with prior written approval by the Owner or Consultant.

.4 EQUIPMENT

.1 Machines

.1 Provide a new geared traction machine designed to function with the new car and counterweight loads as modernized and the existing capacity and

car speed. Should re-engineering or modification of any building machine supports, beams, or other structural components be required, the Elevator Contractor shall perform this work at their cost.

.2 Design, supply, and install the required machine and structural supports to retain the existing basement traction configuration. Design the new structural machine supports to utilize the existing building machine room support system.

.3 Any modifications to the building structure shall be the responsibility of the Elevator Contractor and shall only be permitted with the written consent of the Owner.

.4 The Elevator Contractor shall provide engineered drawings and approvals for any building structure modifications.

.5 Provide new hardened traction drive sheaves with sheave groove profiles matched to the new hoist rope layup and material so that rope and sheave life is maximized.

.6 Provide all new deflector sheaves in hoistway overhead and under car. Deflector sheave grooves shall be matched to the pitch, size, and quantity of the grooves on the main drive sheave. Deflector sheave bearings to be rated equivalent to American Bearing Manufacturers Association (ABMA) L10 life.

.7 Provide new hoist motors designed for use with VVVF AC motor drives.

.1 Provide AC motors with a NEMA rating of A or B and a slip specification of 5% or less OR as specified by the VVVF motor drive manufacturer.

.2 Noise levels developed by the motor or drive mechanisms shall be limited to no more than 65 decibels (A scale, fast response) measured anywhere in the machine room, hoistway or hall landing areas.

.8 The new motor and machine shall be either factory aligned or aligned locally by qualified motor alignment shop.

.9 Properly isolate the machines from the building structure. The new motors and machines shall operate without vibrations, excessive noise or heat generation.

.10 Provide a factory installed encoder on the motor shaft to provide closed loop velocity feedback suited for use with the VVVF drive.

.11 The connection between the motor and the machine shall be made with a flexible coupling that will absorb any movement of the worm gear due to endplay in the machine.

.12 Guard all machine and motor components in full accordance with code requirements.

.13 Approved machine manufacturers are:

.1 Hollister / Whitney
.2 Torin Drive
.3 Imperial Electric

.5 Machine Brake

.1 Provide a new machine brake for each machine.

.2 Provide either a disk or drum style brake.

.3 Adjust the brake spring tension so that the brake will hold 125% of full load as per code. Measure the spring lengths and note this information on permanent tags located on the brake or machine.

.4 Drill and pin the brake spring nut and rod and note the brake spring lengths on a permanent data tag attached to the brake or machine.

.6 Auxiliary Braking Devices

.1 Provide new Hollister / Whitney Rope Grippers for each elevator.

.2 Provide Rope Grippers sized to suit the rope configuration and existing rated speed and capacity for each elevator.

.3 Install the new Rope Grippers in accordance with the manufacturer's instructions.

.4 Alter the machines, bedplates, and/or structural machine beam assemblies as necessary to accommodate the installation of new auxiliary braking devices. Any alterations to the existing structural supports to accommodate the new installations or alterations are the responsibility of the Elevator Contractor.

.5 Where alterations are made to the machine room floor or structural supports of the machines to accommodate the installation of the auxiliary braking device, the Elevator Contractor shall provide detailed structural drawings approved by a Professional Structural Engineered, licensed to practice in the province of Alberta.

.6 Except in the case of an over-speeding ascending or descending elevator car, the auxiliary braking device shall only apply when both the car door and one or more hall doors are in an open position and the elevator is outside of the door zone.

.7 Hoist Ropes

.1 Supply and install new hoist ropes as follows:

.1 Provide hoist ropes with quantity, dimensions, and lay-up compatible with the machine sheaves and traction requirements.

.2 The hoist rope manufacturer shall provide a Rope Life Calculation Report confirming suitability of the proposed rope and machine and sheave characteristics in order to ensure proper rope and sheave life expectancy. Provide high quality hoist ropes with a life expectancy of a minimum of 20 years with proper lubrication and tension balancing based on the rope life calculation report.

.3 Adjust the hoist rope tension so that the load on all cables is equally distributed.

.4 Lubricate hoist ropes with a suitable traction rope lubricant immediately following installation.

.2 Supply and install wedge type hoist rope shackles.

.8 Governors and Governor Ropes

.1 Supply and install new overspeed car governors.

.1 Provide fully adjustable overspeed switches as required by code.

.2 Prior to installation of the new governor, spin test and adjust the governor to ensure that the governor overspeed switch and governor trip speed are set up in accordance with code requirements and data plate information.

.3 Governor pull-through force shall be fully adjustable. Measure and adjust the governor pull-through force to meet the safety mechanism manufacturer’s specifications for safety pull-out.

.4 Have the governor sealed in accordance with code requirements.

.5 Approved governor manufacturers for this installation:

.1 Hollister / Whitney

.2 Provide a new governor rope and shackles suited to the governor and safety attachment method.

.3 Provide detailed governor data plates listing all code required data.

.4 Upon completion of installation, perform governor overspeed and pull through tests and note all results in the Elevator Data and Performance Form (section 14 08 20).

.9 Elevator Safety Mechanisms

.1 Clean, service, and refurbish the existing car safety devices as follows:

.1 Disassemble safety devices including all linkages, pivot points, safety dogs, actuating rods and springs, and clean and service all components in accordance with the manufacturers requirements or industry standards.

.2 Replace any worn or corroded safety device components.

.2 Adjust the safety pull-on force and the car slide during safety application to meet code requirements.

.3 Provide a new safety operated switch and adjust the switch for proper operation.

.4 Once cleaning and refurbishment is complete, measure the pull-out force for the safeties and adjust as required to proper specifications. Note test results on data tags and the mod data form.

.10 Guarding

.1 Guard all machine room and hoistway equipment in full accordance with current code requirements.

.1 Provide guarding for all rotating equipment, hoist ropes and sheaves.

.2 Provide new guarding between the machine room and hoistway in accordance with code requirements.

.3 Any new guarding installed shall be designed to be easily removed to facilitate preventative maintenance and repairs to the equipment being guarded.

.4 Provide inspection plates on guarding for accessing hoist ropes and any grease fittings hidden by guarding.

.2 Provide counterweight guarding or other guarding in the pit as required by code.

.3 Extend, reinforce, or replace any missing, corroded, or bent hall door fascia throughout the hoistway as required. Extend fascia in the pit as required by code.

.4 Provide expanded metal or sheet metal guards or covers on any non-compliant holes or ledges in hoistway and machine room walls.

.11 Guardrail - Top of Car

.1 Modify or supply and install new aluminum guardrails and kick-plates as required to comply with code on top of each elevator.

.2 Securely mount the guardrails and any modifications to the car top. Mounting shall not compromise car cab isolation from the car sling.

.3 Provide guardrails in accordance with code requirements for height, strength and design.

.12 Elevator Cab Toe-Guards

.1 Supply and install a new aluminum toe-guard (platform guard).

.2 Paint visible side of toe-guard flat black with a suitable metal paint.

.13 Elevator Control Systems

.1 Provide a new non-proprietary microprocessor-based elevator control system and integrated heavy-duty VVVF drives that are serviceable and maintainable at a reasonable cost by any licensed and qualified elevator maintenance contractor.

.2 The elevator control system manufacturer must provide the following:

.1 The manufacturer must provide in-house, comprehensive training for any and all Elevator Contractors at a reasonable cost. Training courses offered must be total in their scope regarding installing, adjusting, maintaining, and troubleshooting the specific elevator control system being installed. Training courses must be available at least once per year.

.2 Replacement parts for all components of the control system and all peripheral components must be available at a fair market price to the Owner and the Owner's maintenance contractors for the life of the equipment.

.3 Expert Original Equipment Manufacturer (OEM) technical support regarding the control system and all peripheral components provided by the Elevator Contractor must be readily available - at a reasonable cost - to the Owner and their maintenance contractors for the life of the equipment. This support must be available by telephone during normal working hours, year-round.

.3 The elevator control system including motion control, VVVF drive, dispatching control, door operating, or other systems, shall not require the use of remote tools, handheld devices, or computers to facilitate programming, troubleshooting or adjusting of any of the systems. Or, if such remote tools or computers are required, the Elevator Contractor shall provide one of such devices per group of

elevators, to be turned over to the Owner along with detailed manuals and instructions required for use, prior to Final Acceptance of the project.

.4 Emergency Power Operation

.1 Provide automatic emergency power operation

.2 Emergency power capability shall remain as per existing.

.3 Provide pre-transfer operation that will park the elevator during an emergency power transfer for an adjustable period of time.

.5 The elevator controller shall have extensive diagnostic capability. A built-in LCD display or equivalent shall allow access to major user functions and diagnostic features. The display shall be a multi-character, multi-line type with associated keypad to allow users to enter information. The display shall show data and menus in readily understood character format. No numeric, hexadecimal, or binary codes are acceptable.

.6 Software replacements and upgrades shall be readily available to the Owner or the Owner's maintenance contractor for the life of the equipment at a fair market price for the life of the equipment.

.7 Software replacements and upgrades required to correct any safety or critical performance deficiency shall be immediately available to the Owner or the Owner's maintenance contractor at no cost for the life of the equipment.

.8 The elevator control logic configuration shall be fully field programmable. Changes in number of floors, I/O configuration, drive setup, etc. shall not require the replacement or reprogramming of EEPROMs or any other storage devices. Changes in the controller configuration shall be user adjustable in the field.

.9 None of the control, drive, or other systems shall utilize counters, timers or other such means to shut down or alter any elevator system, unless the safety or performance of the system is compromised.

.10 The microprocessor-based control and dispatching systems for each elevator must include the following features:

.1 Automatic emergency power operation including pre-transfer shut-down operation.

.2 Firefighters' Emergency Operation - Phases I (automatic recall) and Phase II (in-car operation).

.3 Closed loop system utilizing elevator speed, car loading, and position feedback.

.4 Applicable seismic control circuitry in accordance with local code requirements.

.5 Independent service operation.

.6 Pre-torque hoist machine operation.

.7 Programmable reduced torque closing operation (nudging door operation). Nudging shall be deactivated during normal operation.

.8 Programmable door hold operation that temporarily extends the door dwell time to between 10 and 60 seconds, and is over-ridden at any time by the door close button.

.9 Top-of-car inspection operation.

.10 Controller inspection operation.

.11 Keyed hoistway inspection access operation for pit and top of car access.

.12 Programmable and automatic homing of elevators.

.13 Car and hall door bypass operation as per code.

.14 Interface capability for securing car and hall calls.

.11 The controller shall maintain an event log that records noteworthy events or faults. They shall be displayed in chronological order and time stamped for analysis or review. Data displayed shall include the type of event or fault, the date and time it occurred, and the position of the car and status of various flags at the time of the occurrence. The events and faults shall be stored for a minimum of 365 days.

.12 The car motion controller shall be adjusted to provide step-less acceleration and deceleration, and smooth operation at all speeds regardless of load in elevator. The velocity profile shall minimize car travel time. System motion parameters including jerk, acceleration and deceleration rates, and so forth, shall be field programmable with parametric limitations for system dynamics and shall be stored in non-volatile memory.

.13 Provide a Drive Isolation Transformer matched to the characteristics of the VVVF drive and designed for use with the existing building power supply. Wiring connections to the Drive Isolation Transformers shall be made using flexible conduit mounted through the side of the transformers only.

.14 Elevator speed shall be maintained to within +/- 2% of target speed or better, regardless of load in car or direction of travel.

.15 The VVVF drive shall not create excessive audible noise, nor create excessive audible noise in the drive motor.

.16 Dispatching

.1 Provide full collective operation.

.17 Parking

.1 The user shall be able to specify whether cars are to park with doors opened, closed, or opened for a specified amount of time.

.18 Provide elevator control and drive systems capable of operating normally in an environment where the ambient air temperature may range between 5˚C and 35˚C with a humidity of up to 95% (non-condensing).

.19 Provide elevator control and drive systems capable of operating normally with the main power supply fluctuating by up to +/- 10% of the measured nominal voltage.

.20 All individual controller components shall be permanently identified by labels affixed to the controller backing panels or component mounting blocks. Labels affixed to any removable or modular controller component will not be considered an acceptable means of identifying that component.

.21 Approved controller and drive system manufacturers

.1 The following control system manufacturers are approved for this installation:

.1 Motion Control Engineering
.2 GAL Manufacturing Galaxy
.3 Elevator Controls

.2 Alternative controller manufacturers may be accepted with prior written approval by the Owner or Consultant. In order for any alternative system to be considered, the Elevator Contractor must demonstrate to the satisfaction of the Owner and Consultant that the proposed alternative complies fully with all specifications.

.14 Security System - Card Access

.1 Supply and install controller interface systems, wiring and electrical panels, to facilitate the installation of card readers in each elevator that will restrict access to elevator hall and car call buttons in accordance with the following:

.1 Provide a NEMA rated electrical box labeled “ELEVATOR SECURITY PANEL” (ESP) complete with controller interface terminal strips to be used by the Security System Provider for call access control connections.

.1 Mount the ESP on the outside of the elevator controller.
.2 Permanently and neatly label all terminals, terminal strips, i/o cards, etc., in the ESP.

.2 Car and Hall Call Lock-Out

.1 Provide, in the ESP, one pair of terminal studs for each elevator car call and hall call button for each elevator.

.2 Provide discrete wiring and circuitry to run from each pair of terminal studs in the ESP to the car-call button circuitry in the controller for each elevator.

.3 Wire the elevator control system such that when there is continuity between a pair of terminal studs in the ESP for any call button, that floor-call may be registered when the button is pushed.

.4 Wire the elevator control system such that when there is NO continuity between a pair of terminal studs in the ESP for any call button, that floor-call may not be registered.

.5 Continuity between pairs of terminal studs in the ESP shall be controlled by the Security System.

.6 Ensure that activation of independent service operation for any elevator will not override the security system at any time.

.3 The ESP shall be utilized for terminating elevator traveling cable wiring for in-car cameras, and card readers.

.4 Security System Override:

.1 Provide the necessary circuitry, relays, and wiring so that activation of Firefighters' Emergency Operation Phase I or Phase II will override any car floor-call security system.

.2 Where required by the security system, run one pair of wires from a dry contact controller output a terminal strip in the ESP. Opening or closing of this dry contact will indicate an over-ride signal to the security system that will disable any floor-call lockout.

.5 Card Reader Installations in car operating panels: provide a traveling cable with a minimum of 6 pair shielded conductors (20 awg) dedicated to the card reader installation in that car operating panel. These wires shall be terminated in the ESP in the machine room and in the car operating station where the card reader is to be located for each elevator. Provide a

minimum of 3 meters of extra cable length in the ESP that will facilitate any relocation of the ESP that may necessary at a later date. Suspend the traveling cable as per code and manufacturers specifications.

.15 Landing System

.1 Provide a solid-state landing system with absolute floor encoding that provides closed loop position feedback to the elevator control system.

.2 If absolute position in the hoistway is not maintainable with power off, upon power-up, the elevator shall automatically move to the closest floor to identify the location of the car.

.3 Provide new hoistway switches and activating cams as necessary to complete the modernization.

.4 Provide a high resolution landing system with a capability of providing consistent leveling accuracy of +/- 5 mm or better regardless of load in the elevator or direction of travel.

.16 Hoistway Keyed Inspection Access

.1 Provide keyed inspection access at the bottom landing for access to pit, and the top landing for access to the car top.

.2 Provide inspection access in complete accordance with code requirements.

.3 Provide surface mount inspection access key switch fixtures at the top and bottom landing.

.4 Install limit switches in the hoistway to limit the keyed hoistway access travel in accordance with code requirements.

.5 Provide stainless steel blank plates (minimum 12 ga, brushed finish, stainless steel) to cover over any preexisting access key locations.

.17 Emergency Alarm Bells

.1 Provide new emergency alarm bells as required to meet current code requirements.

.2 Provide on-car and remote emergency alarm bells that will function with the battery backup emergency light/alarm system.

.18 Car Fixtures

.1 Car Operating Panel (COP)

.1 Provide one new primary car operating panel (COP).

.2 Locate the new applied COP in the existing locations, modifying the cab walls as necessary to accept the new COP.

.3 Design the COP to be uncluttered and logical to use.

.4 Design and install the new COPs in accordance with Appendix E of the ASME A17.1 / CSA B44 for items specified herein.

.5 Manufacture the COPs from minimum 12 gauge #4 brushed stainless steel.

.6 All COPs shall be applied panels, with a minimum of four hinges on the COP side opposite the car door entrance.

.7 COP fasteners shall be key operated and vandal resistant. Through bolting of panels is not acceptable.

.8 Provide vandal resistant, antibacterial buttons compliant with Standard: EN81 71 Cat 2, with halo or bullet LED illumination. LED colour to be chosen by the Owner from the standard product line.

.9 Provide button fixtures manufactured by:

.1 Dupar
.2 MAD
.3 Schaeffer

.10 In each COP provide push buttons with designations to match all of the existing panel buttons including:

.1 Provide all existing floor call buttons.
.2 Provide door open and door close buttons.
.3 Provide YES and NO emergency communications buttons.
.4 Provide alarm bell button with raised surround collar.
.5 Provide a “Door Hold” button.
.6 Provide any other pushbutton operation required for the specific application.
.7 Identify the main egress floor level with a star adjacent to the floor number.
.8 Provide wrap-around Braille tags with a black background and white numbering.

.11 Locate push buttons as high as possible from floor level while still meeting barrier-free code requirements.

.12 Provide a surface mount independent service key switch.

.13 Provide a locked service panel that includes the following items for each elevator:

.1 Key switches: Stop switch, hoistway inspection access.
.2 Toggle switches: light, two speed fan, emergency light test.
.3 All items in the service panel to have permanent, engraved labeling.

.14 Provide in each primary COP a Firefighter's Emergency Operation - Phase II in-car operation key switch, car call cancel button, indicator jewel, buzzer and instruction sub-panel in full accordance code requirements.

.15 Provide in each COP an integrated emergency power system for light and alarm bell operation.

.1 Provide an emergency light with an acrylic, vandal resistant lens, located above the car buttons.
.2 Provide a battery charger and long-life battery pack with sufficient power to operate both the emergency light and alarm in accordance with code requirements.

.16 Provide an integrated digital LED car position indicator.

.1 Locate the bottom of the indicator at a height of 2 m from the cab floor.
.2 Indicator digits to be a minimum height of 50 mm.
.3 Indicator light colours to be chosen by the Owner.

.17 Provide an electronic floor passing chime that has a pleasing sound and adjustable volume in the primary COP.

.18 Provide an electronic car call registration chime that has a pleasing sound and adjustable volume in the primary COP.

.19 Voice Annunciator

.1 Provide voice annunciation that announces:

.1 the floor level upon arrival to a car call;
.2 the direction of travel upon arrival to a hall call;
.3 advance verbal warning of door close nudging operation;
.4 verbal warning of Firefighters' Emergency Operation;
.5 verbal warning of Emergency Hospital Operation.

.2 Provide a voice annunciator with an adjustable volume and clear, coherent, pleasant voice replication.

.20 Provide an emergency communications device consisting of a hands-free auto-dial phone, text display, and video camera in or adjacent to the primary COP.

.1 Pierce the panel to accommodate the phone speaker and microphone.

.2 Provide a phone that has the capability of being used as both an emergency communication device for trapped passengers to call out of the building, as well as phone that can be used as two-way communication between the elevator cab and emergency personnel inside the building in accordance with code requirements.

.3 Provide a phone system that is easily programable by the Owner to call any number, without the necessity of opening the COP.

.4 Provide a phone that can be programmed to send a verbal message indicating the building name, address, and elevator number prior to commencing with two-way communication.

.5 Provide any necessary phone consolidators required to permit all elevator phones in any one machine room to utilize one single phone line terminated in the elevator machine room.

.6 Provide a dedicated electrical box in the machine room and terminate the emergency communication device wiring from all elevators in this box. Label this box “Emergency Phone”.

.7 Interconnections between elevator cab emergency communications devices and any consolidators in the machine room are the responsibility of the Elevator Contractor.

.8 Provide a phone activating push-button in each primary and secondary COP with a raised collar to prevent accidental activation of the button.

.9 Provide that the phone activating buttons illuminate when the in-car emergency light device is activated.

.10 Provide a text display with YES and NO pushbuttons that will display messages as required by code that can be responded to by passenger who cannot verbally communicate or hear.

.11 Provide an integrated video camera in addition to the security cameras being provided by others. The integrated video camara shall be designed and positioned to view passengers located anywhere on the elevator floor.

.12 Provide that the communications device remote monitoring system or hardware or software is non-proprietary, freely accessible, and able to be utilized by the Owner at their existing monitoring stations. Should the remote monitoring system be software-based, the software shall be available to the Owner at no cost, with no ongoing licensing fees or monitoring fees.

.13 The communications device shall be connected to the remote monitoring location via ethernet, VOIP, or conventional analog phone lines.

.14 The emergency communications device wiring and power requirements between elevator cab and machine room shall be a

120 VAC power source and twisted shielded 20g pairs run in standard elevator traveling cables.

.15 Provide a battery backup emergency power supply to ensure uninterrupted operation as per code requirements.

.21 Engrave the car operating panel with all information required by the local code authorities and including, but not limited to: Elevator capacity, elevator identification number, and building name and address.

.2 Exhaust Fans

.1 Install a 2-speed exhaust fan in each elevator.

.2 Modify the car cab plenum as required to accommodate the installation of the exhaust fans.

.3 Isolate the fans from the car cab plenum to prevent the transfer of vibrations to the car cab.

.4 Supply and install new #4 brushed stainless steel finished metal fan grilles in each cab.

.3 Top-of-car inspection / stop / light and alarm station

.1 Provide a portable top of car inspection station (TOCI) mounted on removable fasteners and located on the car top within reach of the access point from outside the hoistway. The portable TOCI shall be connected to its fixed end with a cab-tire of no less than 2000 mm in length.

.2 Provide a TOCI that facilitates single hand inspection operation and incorporates up / down and safe operating buttons.

.3 Provide a TOCI with features required to comply with code for Firefighters' Emergency Operation.

.4 Provide a minimum of four (4) permanently installed LED illuminated car top light units installed on top of each end of the crosshead and at both the front and rear ends of the car top. Protect each car top light unit with a heavy duty metal guard.

.5 Provide a GFI protected receptacle rated for a minimum 15 amps.

.6 Provide a permanently mounted auxiliary stop button within 300 mm of the hoistway access point for both front and rear entrances.

.4 Provide an LED car direction lantern with electronic chime mounted opposite the door jamb side of the car door entrance, 2 m above the sill to the centerline of the fixture.

.19 Hall Fixtures

.1 Hall Position Indicator

.1 Provide new digital LED position indicator at the main egress landing.

.2 Provide indicators with digits with a minimum 50 mm height.

.3 Provide C.E. Electronics MHETC series fixtures custom sized to completely cover any existing boxes and holes in the walls.

.2 Hall Button Fixtures

.1 Provide new vandal resistant surface-mount hall button fixtures at each elevator landing (brushed finish, stainless steel). Provide two button risers in each lobby.

.2 Provide fixtures for full collective operation - Terminal landings shall have one hall button; intermediate landings shall have two buttons.

.3 Provide vandal resistant, antibacterial buttons compliant with Standard: EN81 71 Cat 2, with halo or bullet LED illumination. LED colour to be chosen by the Owner from the standard product line.

.4 Provide button fixtures manufactured by:

.1 Dupar
.2 MAD
.3 Schaeffer

.5 Provide fixture panels to be sized and installed to completely cover any existing button boxes or holes in lobby walls. Where necessary, provide new backing plates (brushed finish, stainless steel) with an appropriate gage to provide a smooth, continuous mounting surface.

.6 Locate the centre line of the buttons at between 890 mm and 1220 mm above floor level.

.7 In the same riser as currently existing, provide keyed priority Up and Down call switches to call Elevator 17 in addition to the up and down buttons. Switches shall be keyed to the same key as the current fixtures.

.3 Provide an Emergency Services Panel at the main egress level within sight of all elevators. Include fixtures for the following:

.1 Emergency Power Operation

.1 Provide automatic emergency power operation with single car operation.

.2 Provide engraving and an LED indicator jewel as required by code.

.2 Firefighters' Emergency Operation

.1 Provide all fixtures and control circuitry required to provide Firefighters' Emergency Operation in full accordance with all code requirements.

.2 Provide Firefighters' Phase 1 fixtures as required by code. Any fixture illumination shall be LED.

.3 Provide an Elevator Communications Failure fixture and all related circuitry and power supplies as required by code.

.20 Floor Identification Plates

.1 Supply and install new Floor Identification Plates on both sides of each elevator hoistway entrance doorframe.

.2 Braille plates shall be black anodized aluminum with white finished characters.

.3 Centre the plates and locate at a height of 1525mm above the floor, measured from the baseline of the characters.

.4 A raised star placed immediately to the left of the floor designation shall be provided at the main entry level.

.5 Characters shall be 50 mm (2 in.) high.

.21 Car and Counterweight Guides

.1 Retain and refurbish existing car and counterweight guides to like new condition.

.2 Clean down all brackets and support beams and lubricate guide rails with an approved lubricant.

.22 Door Operators

.1 Supply and install a new heavy duty, solid state closed-loop door operator on the elevator car entrance.

.2 Provide only equipment designed and constructed to suit the existing application.

.3 Acceptable manufacturer and model of door operators is:

.1 ECI MOVFR - Harmonic or Linear

.4 Supply and install new door operator linkages.

.5 Modify the existing car door skate as required by code.

.6 Install and adjust the new door equipment in accordance with the manufacturer's specifications.

.7 Provide a Door Operator Data Plate in accordance with CSA B44 indicating the minimum door closing speeds required by code. If necessary, remove and weigh the car and hall doors to obtain the necessary weights to make proper calculations of kinetic energy of the door system.

.8 Provide reduced torque closing (nudging) operation and set the reduced door close holding force to no more than 20 lb and ensure that door closing speed are reduced to meet code requirements for kinetic energy.

.23 Car Door Restrictors

.1 Supply and install a collapsible-vane style car door restrictor to prevent the elevator car doors from being opened from inside the car cab when the elevator is outside of the door zone, in full accordance with all Code and Government Regulation requirements.

.1 Provide a spring-loaded hinged vane that is installed on the car door that will allow the car door to close should it be opened outside of the door zone.

.2 Provide steel angle brackets on the hoistway fascia and hall doors as required to ensure compliance with code. Reinforce fascia at all points of bracket attachment to ensure consistent clearance between bracket and vane is maintained at all points in the hoistway.

.24 Car Door Detectors

.1 Supply and install a new multi-beam, 3D door detector on each car door. Acceptable manufacturers are:

.1 Adams
.2 Janus
.3 Formula Systems

.2 Provide an integrated nudging module to facilitate easy installation of a reduced torque closing circuit (nudging).

.3 Provide an audible electronic chime (not a buzzer) with an adjustable volume for warning in advance of, and during the nudging operation.

.4 Door detector power supply shall be separate from the lighting and/or fan power supply circuit.

.5 Door detector devices installed on car doors shall be recessed a minimum of 25 mm from the leading edge of the car door.

.6 Door Detector Wiring

.1 No wiring shall be exposed to the general public.
.2 Run all wiring in approved conduit or flex.
.3 Protect all wiring and wiring connectors from the possibility of being damaged.
.4 Do not leave excess wiring exposed on car tops or in any other location.
.5 Hang, install, or suspend detector cab-tires to ensure longevity of the wires. Do not run cab-tires in a manner that results in moveable bending radii of less than 200 mm.

.25 Car Doors and Entrances

.1 Supply and install new car door gibs.

.2 Supply and install a new aluminum car door sill. Ensure that the profile of the new sill exactly matches the existing profile.

.3 Replace any missing or damaged car door bumpers, spacers, or astragals.

.4 Supply and install new polyurethane car door rollers.

.5 Adjust any car door upthrust rollers to meet code requirements.

.6 Dress the car door track to ensure smooth and quiet door operation.

.7 Replace all car door relating cables.

.8 Supply and install new car gate switches.

.26 Hall Doors and Entrances

.1 Refurbish hall door hangers and tracks.

.1 Supply and install all new hall door hangers and polyurethane hall door rollers at every landing.

.2 Clean and dress all hall door tracks.

.3 Adjust hall door upthrust rollers as per code requirements.

.4 Remove any door track oilers.

.2 Where code compliant hall door retainers are currently not installed, install new top and bottom door retainers. Provide retainers engineered for use with the existing hangers, tracks and sills. Provide retainers in accordance with CSA B44 code requirements.

.3 Provide mechanical hall door unlocking devices at all floors. Cover existing holes using stainless steel fender bolts where keyed unlocking devices exist.

.4 Hall door interlocks

.1 Remove existing retiring cam operated door interlocks and make any modifications required to hall door headers and tracks to enable the supply and install of new GAL MOH hall door interlocks and pickup rollers.

.2 Adjust the hall door lock pickup rollers for proper clearance with the car door clutch. Adjust rollers so that when they are picked up by the clutch, a maximum of 2 mm clearance exists between the clutch and either roller.

.5 Door closers

.1 Remove existing door closer weight assemblies and supply and install new door closer spirators at all floors.

.2 Adjust door closer spirator self-closing force for proper operation and to not exceed maximum door close kinetic energy and closing force for the combined hall and car door systems.

.6 Replace all hall door gibs at all landings.

.7 Replace any missing or damaged door bumpers, astragals, or spacers at all landings.

.8 Replace any damaged, bent, or missing sight guards at all landings. Replacement sight guards are to be black powder-coat finish metal guards free of any sharp edges or burrs.

.27 Elevator Cab Interior Finish Upgrades

.1 Demolition:

.1 Remove all existing interior elevator hang-on panels, handrails, suspended ceiling panels and frames, signage, and car fixtures.

.2 Front Wall:

.1 Skin the front return, car door entrance and header with new stainless steel sheeting with a #4 brushed finish.

.2 Seams to be imperceptible and caulked with a translucent caulking.

.3 Side walls:

.1 Supply and install new light-weight ECR E-Look System™ or equivalent wall panel system on the side and rear walls.

.2 Secure hang-on panels to the existing cab shell wall utilizing hidden clips. Provided clips as required to prevent warping of the panels, and in a manner that will withstand any ongoing safety or emergency stop tests.

.3 Materials shall meet all code requirements for design, fire rating, installation method, and labeling.

.4 Design and install new panels to maintain existing cab ventilation.

.5 Supply and install #4 brush finish stainless steel reveals around all hang on panels.

.4 Provide stainless steel pad hooks every 300 mm along the top of each non-access wall.

.5 Supply and install new handrails on each non-access wall.

.1 Handrails are to be round and manufactured from #4 brushed stainless steel.

.2 Provide handrails that are 38 mm in diameter.

.3 Handrail mounting points shall be no more than 300 mm apart.

.4 On the wall adjacent to the cab entrance, handrails shall be bent at the ends to return to within 10 mm from the wall.

.6 Ceiling

.1 Supply and install a new brushed aluminum suspended ceiling frame with new translucent white Lexan ceiling panels and LED strip lighting mounted to the ceiling plenum.

.2 Maintain full access to the emergency escape hatch.

.7 Cab Finish Material Warranty

.1 All new interior cab finishes shall be covered by warranty for a period of 5 years (excluding vandalism or misuse).

.2 Warranties to cover all materials provided including adhesives.

.3 New wall panels shall be warrantied against warping and delaminating.

.8 Provide all data tags required by code to document the car cab interior finish upgrades

.28 Elevator Pits and Hoistways

.1 Clean and de-grease the pit floors and all pit equipment.

.2 Paint the pit floors with a high-quality cement paint - colour to be chosen by the owner.

.3 Paint the pit channels, buffer stands, and bottom 36 inches of car and counterweight rails with two coats of a rust inhibiting black metal paint.

.4 Refurbish the existing governor idler sheaves as necessary to ensure silent, like-new performance. As a minimum, replace idler sheave bearings.

.5 Refurbish the car and counterweight buffers to like-new condition.

.6 Provide new pit stop switches located in accordance with code requirements.

.7 When required by the governing authority, the Elevator Contractor will modify or replace any pit ladder that is non-compliant with the applicable elevator code.

.8 Make good any deficiencies with fire rating and guarding between hoistway and machine room that is compromised in the elevator hoistway through the course of the Elevator Contractor’s work.

.9 Provide expanded metal or sheet metal guards or covers over any non-compliant holes or ledges in hoistway and machine room walls.

.29 Elevator Machine Rooms

.1 Ensure that all new equipment is installed around any existing building related equipment located in the machine room in accordance with code requirements for clearances.

.2 Upon completion of the modernization, de-grease and paint the machine room floors with two coats of a high quality cement paint (colour to be chosen by the Owner).

.3 Paint all exposed ferrous metal (with the exception of stainless steel) with two coats of a rust inhibiting metal paint.

.4 Ground / bond all machine room equipment as required by code.

.5 Provide access and assistance to the Owner or Electrical Contractor to install proper ground wiring in the machine (and hoistway if necessary).

.6 Label all machine room equipment as required by code.

.7 Make good any deficiencies with fire rating that is compromised in the elevator machine room through the course of the Elevator Contractor's work.

.30 Elevator Static Balancing

.1 Upon completion of all elevator modernization work including cab interior refinishing work, statically balance the elevator cab as follows:

.1 Remove all roller guides.

.2 Add or remove cab balancing weights on the car cab to balance the cab so that the elevator hangs plumb in the hoistway with no forces being applied to the rails at the guide locations.

.3 Re-install all roller guides.

.2 Include in the base bid for the provision of extra counterweight material up to 300 lbs per elevator.

.3 Counterweight material in excess of 300 lbs per elevator shall be manufactured, supplied, and installed by the Elevator Contractor. Weight provided in excess of 300 lbs may be billed for at a rate of $3.00 per pound.

.31 Elevator Cab-to-Counterweight Balancing

.1 Upon the completion of all modernization work including Elevator Static Balancing and any work by others for interior cab renovations, the Elevator Contractor shall add or remove weight to or from the counterweight as required to ensure that the counterweight weighs the equivalent of the sum of the empty car weight plus 40% of the full rated load (plus or minus 3%).

.2 Once the counterweight has been properly balanced, the contractor will weigh the elevator cab and the counterweight and note these values on the cart top data plate.

.3 Include in the base bid for the provision of extra counterweight material up to 300 lbs per elevator.

.4 Counterweight material in excess of 300 lbs per elevator shall be manufactured, supplied, and installed by the Elevator contractor. Weight provided in excess of 300 lbs may be billed for at a rate of $3.00 per pound.

.5 The Contractor shall be responsible for any engineering approvals required as a result in the change of counterweight weight in excess of 5% of the system weight.

.32 Wiring

.1 All wiring to be supplied and installed in full accordance with all codes and regulations.

.2 Provide all new machine room wiring to facilitate the completion of the modernization. The Elevator Contractor is responsible for all wiring including conduit, flex and wire, from the primary main-line 3-phase and 110 VAC disconnects onward.

.3 Provide any secondary disconnect switches that may be required by code due to the location of control cabinets, transformers or machines.

.4 The Elevator Contractor shall be responsible for making any interconnections between elevator machine room and the Emergency Services Panel (located at the main egress floor).

.5 The Elevator Contractor is responsible for making interconnections between elevators for the connection of emergency communication devices (in and outside of cars).

.6 The Owner or their subtrade is responsible for supplying and installing phone lines and ethernet connections run to the elevator controller in the machine room

.7 Provide new traveling cables in the hoistway.

.1 Traveling cables shall be of a type approved for use with elevators and suited to the existing rise.

.2 Hang traveling cables in accordance with manufacturer’s design suited to the traveler type and building rise. Locate supports to allow for proper bending radii of hanging cables. At no time shall traveling cables come into contact with car cabs, hoistway walls, trimmer beams or any other hoistway equipment.

.3 Provide continuous traveling cables from the controller terminal studs to the studs located on the elevator component located on the car.

.4 Provide spare traveling cable wires in addition to the wires required to complete the installation and in addition to security system wiring requirements, for each elevator as follows:

.1 4 pairs of shielded 20 ga. wires
.2 6 individual 18 ga.
.3 6 individual 14 ga.
.4 2 Cat5e equivalent cables with phoenix connectors at both ends.

.8 Provide new hoistway and car wiring, trough, conduit and flex as required for the installation.

.1 Ensure that all wiring is run in approved conduit, flex, trough, in accordance with elevator and electrical code requirements. Existing wire-ways may be re-used if they meet code requirements.

.2 Mechanically support all trough, flex and conduit in accordance with code requirements.

.3 Ensure all vertical runs of wiring are adequately supported to relieve strain on wires.

.9 Permanently and clearly identify all wire connection points on terminal strips.

.10 Ensure that all elevator equipment is grounded / bonded in complete accordance with governing elevator and electrical codes for the jurisdiction.

.11 Provide assistance to the Owner or their subtrades as necessary to run a new ground wire in the hoistway to the machine room.

.12 Provide access to the Owner or their subtrades as necessary to facilitate installation of pit and machine room lighting and electrical receptacles.

.13 Provide assistance to the Owner or their subtrades as necessary to run electrical wiring for elevator related fire alarm upgrades and/or security system upgrades in the hoistway and/or machine room.

.33 KEYS

.1 Prior to Final Acceptance, provide a minimum of 12 spare keys for every new type of key switch installed in the elevator system.

.2 Keys shall all be permanently stamped with their identification number.

.3 Keying of switches shall be in accordance code requirements for type of key (i.e., Security Group I, II, III, or IV).

3. EXECUTION

.1 CONSTRUCTION SCHEDULE

.1 The Elevator Contractor shall provide any labour required to ensure that the Work is completed within the contract time frame.

.2 The Elevator Contractor shall provide extra crews or extended hours of work should construction delays develop that are the Elevator Contractor's fault.

.2 CONSTRUCTION STARTUP MEETING

.1 Within 2 weeks of award of contract the Elevator Contractor shall meet with the Owner or Owner's representatives and develop a detailed schedule for material delivery, start-up of construction, and final completion.

.3 ONGOING PROJECT MANAGEMENT MEETINGS

.1 Unless otherwise agreed to by the Owner, the Elevator Contractor's project manager and lead modernization mechanic will attend regularly scheduled progress meetings. The frequency of these meetings will be set by the Owner and shall occur no less frequent than monthly.

.4 SITE COORDINATION

.1 The Elevator Contractor shall make proper arrangements and coordinate removal and delivery of all materials with the Owner.

.2 The Elevator Contractor shall coordinate any removal of elevators from service with the Owner.

.5 STORAGE

.1 The Owner will provide adequate dry storage areas for elevator equipment within a reasonable distance of the hoistway and machine room.

.6 CLEANING

.1 The Elevator Contractor shall maintain a clean work environment in accordance with Related Specification Sections. Remove all garbage from the site immediately. Construction tools, materials and parts shall be kept in secured areas as provided by the Owner at the site.

.2 The Elevator Contractor shall be responsible for cleaning and repairing all areas that may be soiled or damaged by the Elevator Contractor's employees or subcontractors, through the course of the installation including (but not limited to) stairwells, lobby floors and walls, elevator cab interiors, elevator hall doors and entrances, building access areas, etc.

.3 Upon completion of all work the Contractor shall perform a thorough clean-down of all elevator equipment, hoistways, pits, and machine rooms.

.7 DEMOLITION AND DELIVERY OF MATERIALS

.1 Unless noted otherwise the Elevator Contractor is responsible for all work and costs related to the dismantling and removal from the building of all elevator equipment affected as a result of the scope of work of these specifications.

.2 The Owner reserves the right to take possession of any or all parts or materials being removed from the elevator system.

.3 The Elevator Contractor shall take possession of and dispose of any elevator equipment not retained by the Owner in a responsible manner in accordance with local municipal and/or provincial laws, and at the Elevator Contractor's cost.

.4 The Elevator Contractor is responsible for all work and costs related to the delivery of all new equipment to the machine room including machines and controllers.

.5 The Elevator Contractor is responsible for the protection, reinforcement and alteration of any building areas as required for the delivery or removal of materials to and from the elevator machine rooms, hoistways or pits.

.6 The Elevator Contractor is responsible for all cutting and patching required for the complete and proper execution of the total scope of work outlined in these Specifications.

.7 The Elevator Contractor shall not alter or modify the building structure without the written consent of the Owner. Where modifications or alterations have been made or damage by the Elevator Contractor has occurred, the Elevator Contractor shall return the building structure to its original condition immediately.

4. PERFORMANCE

.1 MOTION CONTROL

.1 Full speed shall be maintained within 2% of rated speed regardless of load in elevator or direction traveled.

.2 Adjust the top of car inspection speed to 75 fpm.

.3 Adjust the leveling accuracy of the elevator cabs to be within +/- 5 mm regardless of load in the elevator, or direction of travel.

.4 Adjust the elevator motion control and machine to provide step-less acceleration and deceleration and a smooth ride at all speeds. Maximum acceleration rates shall not exceed 1.2 m/s5.

.5 No vibrations (mechanically or electrically induced) shall be detectable at any time during elevator operation. Sustained jerk shall be less than 1.2 m/s;. Vibrations in the horizontal and vertical planes shall not exceed 20 milli-g

.6 Floor to floor runs (measured from the time the elevator doors start closing at one floor and are 3/4 open on the next contiguous floor) shall be adjusted to 14 seconds +/- 0.5 seconds for both directions, measured over a typical floor height of less than 4 m.

.7 Brake-to-brake time (measured from the time the elevator machine brake lifts at one floor and then drops at the next contiguous floor) shall be adjusted to less than 8 seconds for a typical floor height of less than 12 feet.

.2 DOOR CONTROL

.1 Adjust the door operation for smooth and quiet operation at all floors.

.2 Door Times

.1 Door open time shall be adjusted to less than 3.5 seconds.

.2 Door close time shall be adjusted to 4.0 seconds or the minimum required speed allowed by code to maintain proper kinetic energy (whichever is longer).

.3 Door closing force during the nudging operation shall be no more than 20 lbf.

.4 Pre-opening of doors shall be permitted while the elevator is in the door zone. Activation of this function shall be field programmable.

.5 Car call door dwell time shall be adjustable (field programmable) and variable between 1 and 10 seconds. Initial setting shall be 6 seconds.

.6 Hall call door dwell time shall be adjustable (field programmable) and variable between 1 and 15 seconds. Initial setting shall be 8 seconds.

.3 NOISE LEVELS

.1 Machine room noise levels are not to exceed 75 db (A-scale, slow response) measured one meter above floor level and one meter in front of the machine or control component.

.2 Door operating noise levels shall not exceed 60 db (A-scale, slow response) measured in the centre of the entrance 1 m above floor level.

.3 In-car fan noise level shall not exceed 60 db (A-scale, slow response) measured in the centre of the car cab, doors closed, one m above floor level.

5. SEPARATE PRICE ITEMS

.1 REPLACEMENT OF CAR SAFETIES

.1 Provide a separate price per elevator for the supply and install of new safety mechanisms should the existing safety device fail full load / full speed safety tests and adjustment to meet code is not possible.

.2 Supply and install new Hollister/Whitney flexible guide clamp safety devices.

.1 Modify the existing car sling as required to accept the new safety devices.
.2 Supply and install adapter plates as required.
.3 Adjust the safety devices as per the manufacturer's instructions.
.4 Successfully perform all tests required by the governing authority.
.5 Provide safety data plates as required by code.
.6 Provide a new car buffer strike-plate on the underside of the car sling.

.3 Conduct all testing as required by the governing authorities.

6. WORK OUTSIDE OF THE CONTRACT

.1 For work requested by the Owner that is unforeseen or required as part of a change order and is billable as per the terms and conditions of the Contract the following prescribed labour rates shall apply and be fixed for the duration of the Contract:

Mechanic Regular Time	2.3 x IUEC base mechanic rate including holiday pay
Mechanic Overtime Premium Rate	2.0 x IUEC base mechanic rate including holiday pay
Service Crew Regular Time	3.8 x IUEC base mechanic rate including holiday pay
Service Crew Overtime Premium	3.0 x IUEC base mechanic rate including holiday pay

.2 Any labour that is billable as an extra to the Contract shall be supported by approved time tickets.

.3 Materials for work requested by the Owner that is unforeseen or required as part of a change order and is billable as per the terms and conditions of the Contract the following prescribed Markup rates shall apply and be fixed for the duration of the Contract:

.1 Materials: Cost plus 15%
.2 Shipping: Cost plus 15%

END OF SECTION

1 GENERAL SCOPE OF WORK

The Contractor shall supply comprehensive preventative elevator maintenance service on the equipment listed in Appendix "A". Included are all labour and materials required to perform major and minor repairs, component replacements, adjustments, testing, routine lubrication, maintenance and cleaning of the elevator equipment, and provide callback service, as per the following specifications, terms and conditions.

Where devices described in this specification do not exist at this site, disregard that portion of the specifications.

1.1 Performance Standards

Elevator operating characteristics shall be maintained to the original design standards. Elevator components and systems shall function to a standard comparable to "as new".

Door operation shall be smooth and relatively silent.

Elevator ride quality shall be smooth with no noticeable vibrations at any point in the travel. Acceleration and deceleration shall be step-less. Maintain all performance characteristics for levelling, acceleration rates, and sustained jerk to original modernization specifications.

1.2 Governing Codes and Regulations

At a minimum, all services to be provided shall be in full accordance with current Alberta Government Regulations and the current CAN/CSA B44 Elevator Safety Code as adopted.

Where maintenance routine and testing frequencies listed herein exceed government requirements the requirements of this specification shall prevail.

All devices covered by this agreement shall be maintained in a condition that is in strict accordance with the governing CSA B44 Elevator Safety Code under which they were installed, as well as any retroactive code requirement that may apply.

The Contractor will not be required to make any alterations to the elevating devices required as a result of retroactive code changes.

The Contractor shall perform all testing required by code and / or government regulations including Category 1, 3, and 5 tests.

1.3 Third Party Inspections

At any time, or when required by government regulation, the Owner may obtain the services of a qualified elevator consultant, or safety codes officer to perform maintenance and performance audits or in-service safety examinations of the elevating devices. Any Consultant's directives resulting from these audits will only be based on lack of compliance with these maintenance contract specifications.

The Contractor shall promptly rectify all consultant directives and/or government in-service safety examination directives as and when issued by the consultant or governing authority or agency. All directives shall be rectified within the time period specified. The Contractor shall notify the Owner in writing, within two working days of receipt of the reports, of any directives that are the responsibility of the Owner.

Should the Contractor fail to rectify consultant directives or in-service safety examination directives that are the Contractor's responsibility by the due dates, the Owner may, at their discretion, hire another firm to complete the work and charge these costs back to the Contractor.

1.4 Workforce

The Contractor will use only trained and qualified elevator constructor journeymen and apprentices registered in the elevator trade in the Province of Alberta to perform all work. These workers will be directly employed by the Contractor.

The Contractor's workforce shall abide by all Owner's health and safety requirements as well as the Owner's code of conduct for employees working on the premises.

Should the Owner object to any of the Contractor's workforce working on site, for reasons of incompetence or breach of any of the Owner's health and safety or code of conduct requirements, the Contractor agrees to replace this employee immediately upon receipt of written notification of the matter from the Owner.

1.5 Labour Disruption

Should the Contractor fail to provide Maintenance Services for any Site for more than two (2) consecutive months due to a striking workforce or any other labour dispute, the Owner may terminate or suspend this contract by providing the Contractor with 30 days prior written notice.

Should the Contractor fail to provide Callback Services in accordance with these specifications for any Site due to a striking workforce or any other labour dispute, the Owner may terminate or suspend this contract by providing the Contractor with 30 days prior written notice.

1.6 Hours of Work

All work will be performed during regular working hours which are between 8:00 a.m. and 5:00 p.m., Monday to Friday (excluding statutory holidays) with the exception of emergency callback service which will be provided 24 hours a day, 365 days a year.

1.7 Callback Service

The Contractor shall provide regular callback service during regular hours and emergency callback service 24 hours per day to repair any out of service or malfunctioning elevator.

The Contractor shall provide the Owner with an emergency service telephone number to directly access callback service 24 hours a day, 365 days a year.

The Contractor shall permit the Owner to program any elevator emergency phones to directly call the Contractor's Emergency Service telephone number at no cost for the duration of the contract.

1.8 Response Times

Regular callbacks shall be responded to with a technician on site within 2 hours from the time of notification by the Owner.

Emergency callbacks shall be responded to with a technician on site within 45 minutes from the time of notification by the Owner.

An emergency callback is defined as either a trapped passenger or a shutdown of more than fifty (50) percent of the elevators in one group or bank of elevators.

1.9 Standards of Service

Elevators that are malfunctioning or shut down shall be attended to immediately and repairs shall

be continually performed during normal working hours until the elevator is returned to service unless otherwise agreed to by the Owner. Should parts be required that are not locally stocked, they shall be ordered by the Contractor within one (1) working day, and the Contractor shall notify the Owner of the schedule for delivery of these parts.

Any part order that is required to return an elevator to service shall be expedited such that the part is delivered within 48 hours of ordering.

In any case, should an elevator be out of service for more than 5 working days, the Contractor shall notify the Owner of the schedule of repairs immediately in writing.

Should an elevator remain out of service for more than 5 working days, the monthly maintenance cost for that device shall be reduced by 50% for that period that the device was out of service.

Should an elevator remain out of service for more than two (2) consecutive weeks or a total of two weeks per month, the Owner may cancel the entire maintenance contract by providing the Contractor with 30 days advance written notice, unless the shutdown was due to misuse, vandalism, flooding, fire, or other reason that was the Owner's responsibility.

1.10 Check-charts and logbooks

The Elevator Contractor will maintain elevator maintenance check-charts, logbooks, and oil loss management programs (where applicable) in complete compliance with current code requirements.

A detailed record of all preventative maintenance, callbacks, repairs, testing, and adjusting shall be made in a logbook on site for each elevator as and when the work is completed.

1.11 Service intervals

The Contractor shall perform all maintenance routines and procedures at time intervals specified in Appendix B and in accordance with the Owner's maintenance logbook and check-chart intervals.

The time interval between legislated required maintenance routines shall never exceed that allowed by code or government legislation.

1.12 Frequency and time requirements of services

The minimum frequency of routine preventative maintenance service shall be as follows:

Hydraulic Elevators:	Monthly visits - minimum of 45 min on site per unit per month

Callbacks, major repair work, and adjusting shall be carried out in addition to the above preventative maintenance frequencies and required time on site.

The scope and frequency of specific maintenance procedures shall be in full accordance with Appendix "B"

The Owner or the Owner's representative will inspect the owner's logbooks and check charts on a random and frequent basis. Based on the Contractor's entries in the Owner's logbooks, should the Contractor fail to provide the minimum number of maintenance visits and / or minimum time on site per unit, for any given month, the Owner reserves the right to withhold fifty (50) percent of that month's total contract maintenance fee. In the case where the Owner has paid the invoice for the month that maintenance service was not provided for, the Owner may deduct this fifty (50)

percent from any later billing.

In the event that during any one-year period the Contractor fails to provide at least 90% of the minimum number of visits and/or 90% of the minimum required time on site for preventative maintenance, the Owner may cancel the contract by providing the Contractor with thirty (30) days prior written notice.

1.13 Category 1, 3 and 5 Testing

This contract includes all labour, materials, tools and test-weights required for the performance of all code required tests of all elevator safety devices.

The Contractor shall perform all required category 1, 3 and 5 tests at frequencies as dictated by code and note all work in logbooks on site.

1.14 Housekeeping and cleaning

Elevator machine room floors, secondary machine room floors, hoistways, pits and car tops shall be maintained broom clean at all times. Machine room and pit floors will be washed on a minimum semi-annual basis or more frequently if necessary to prevent the tracking of carbon dust, dirt oil or grease.

All elevator machines, controllers, and equipment shall be kept clean at all times.

1.15 Painting

The Contractor is responsible for painting the machine room and pit floors with a high-quality cement paint (light gray colour) once during the first year of the contract (unless it is evident that the floor was painted within the last two years) and every five years after that.

1.16 Contaminants in pits or machine rooms

When water or other contaminants are found in the pit, hoistway, or machine room, the Contractor shall provide verbal notification to the Owner immediately and this notification by the Contractor will be followed up in writing to the Owner within one working day.

1.17 Building construction, vandalism, misuse, etc

There will be times when construction work is ongoing in the building, and this construction work may create an excess of dust and/or debris in the elevator hoistways, pits, and machine rooms. Cleaning down of this excess debris due to construction will remain the responsibility of the elevator contractor under the terms of this agreement, unless it can be demonstrated by the Contractor that it is not possible to maintain an acceptable working environment due to the rate of accumulation of dust or debris. In this case, proof of completion of clean-downs at the frequencies required by these specifications must be provided.

The Owner shall make a reasonable effort to isolate any construction that may result in an accumulation of debris or dust in the elevator system.

Repairs due to minor misuse or vandalism to the elevators are included where the time requirement for repairing the problem is less than one (1) hour per occurrence for up to two (2) occurrences per building per calendar year. Otherwise, repairs required due to major or minor misuse or vandalism may be billed extra to the contract at the Contractor’s standard billing rates.

Materials required to repair damage caused by minor misuse or vandalism may be billed extra to the contract.

1.18 Lighting and ventilation

When the lighting levels or operating temperature in any of the hoistways or machine rooms do not meet code requirements, the Contractor is to notify the Owner in writing of such deficiencies within three working days.

1.19 Parts cabinets and minimum maintenance materials on site

The Contractor shall provide an acceptable maintenance cabinet in each machine room. The maintenance cabinet shall be stocked with the following for each specific elevator as a minimum at all times:

1.19.1 Cleaning supplies including rags, solvents, cleaning solutions, etc.
1.19.2 Fuses - minimum of one fuse for each size used in the control, door operator and any other electrical system (excluding main line disconnects).
1.19.3 One door roller for every size and make of roller used at that site.
1.19.4 Two hall and car door gibs.
1.19.5 Two car guide rollers and two pivot pin assemblies for each type used.
1.19.6 Relays or relay contacts – minimum of one complete relay for each type used.
1.19.7 One complete door interlock contact set, and two pickup rollers.
1.19.8 Five indicator lights for each type of incandescent light bulb.
1.19.9 One indicator light for each type of LED indicator light.
1.19.10 One complete car call button assembly and one complete hall call button assembly.
1.19.11 Oil, grease and approved lubricants for the maintenance of sleeve bearings, chains, sliding guides, bearings, bushings, etc.

The Contractor shall provide a broom and dustpan in each machine room.

Parts cabinets, spare parts, and cleaning supplies shall remain the property of the Contractor.

1.20 Alteration of elevating equipment during the contract term

1.20.1 Major equipment upgrades

If the Owner elects to perform a major alteration or modernization to one or more elevators in any one building, they may choose to cancel the maintenance contract for that building entirely, or partially, by giving the Contractor 30 days prior written notice. A major alteration is defined as the replacement of the motion and / or group control system, and / or drive machine.

1.20.2 Minor equipment upgrades

Equipment that is altered or added during a minor equipment upgrade will be covered under the terms of this agreement at no additional cost unless the equipment upgrade or replacement degrades the existing system, or compromises the safety of the system, or the new equipment installed is proprietary and unavailable to the Contractor at a reasonable cost. Minor upgrades of this sort may include:

- Door operator system upgrades
- Car door restrictors additions or upgrades
- Door reversal device additions or upgrades
- Car and counterweight guide systems upgrades
- Car or hall fixture additions or upgrades
- Security system additions or upgrades

1.21 Wiring diagrams

The Owner shall provide up-to-date wiring diagrams in the machine room for use by the elevator Contractor. These drawings shall remain the property of the Owner and shall not be removed from the building without the Owner's written consent.

Should the Contractor make any modifications or wiring changes to the control system circuitry, they will be duly noted on the wiring diagrams. The contractor will provide the Owner with a duplicate copy of any change made to wiring diagrams

1.22 Obsolete parts or components

In the event that a part or component is worn out or damaged beyond repair and this part or component is no longer available from any reputable industry source, the Contractor shall replace the component or part with another of similar design, function and quality. Any cost in addition to what the replacement or repair would have cost had the original part(s) be available shall be billable to the Owner as follows:

1.22.1 The difference in material cost between the original part and the replacement or substitute part plus a markup of 10% of the difference.

1.22.2 Labour costs in excess of what the labour cost would have been to replace the original part(s).

1.22.3 The material costs or non-elevator vendor costs to modify any existing components to accept the replacement or substitute part(s) plus a markup of 10%.

Prior to undertaking any repair of any obsolete part where extra billing to the Owner may be incurred, the Contractor shall provide a written proposal with anticipated pricing to the Owner for approval. The Owner reserves the right to hire another contractor to make repairs to obsolete parts or components.

1.23 Contract exclusions

Maintenance, repairs and replacements of the following components are excluded from the contract unless damaged due to negligence or lack of maintenance by the Contractor:

1.23.1 Elevators

Car enclosures including wall panels, door panels, car gates, glass and mirrors, plenum chambers, ceilings, light or fan diffusers, car lighting, handrails, flooring material; car and hoistway door sills, hoistway doors, hoistway entrance frames, machine room disconnects and disconnect fuses; hydraulic cylinders, plungers, buried piping, buried conduit and wiring, anti-corrosion devices.

1.23.2 General exclusions

The Contractor shall not be required to install new attachments or upgrade the equipment, whether recommended or directed to by others, except as indicated herein. The Contractor shall not be required to make repairs or replace components that are damaged due to flooding, fire, the negligence or misuse of the equipment, or by any other cause other than normal wear and tear or the Contractor’s own negligence, except as indicated otherwise in these specifications.

1.24 Contract Price

The fee for maintenance services shall be billed by the Contractor on a monthly basis in accordance with the pricing quoted on the bid form. Fees for monthly service shall be billed for on the first of each month for that month’s maintenance. The Owner shall pay maintenance fees

within 30 days of receipt of invoices.

1.24.1 Once a year, on the anniversary date of the contract only, the monthly contract price may be adjusted up or down in direct proportion to any change in the Union Base Mechanic's Rate to a maximum increase or decrease of 3% per year. The base mechanic's rate is the IUEC base hourly rate for mechanics plus holiday pay. No other costs, benefits, nor expenses shall be considered.

1.24.2 The Contractor shall provide written confirmation of any change in the Union Base Mechanic's Rate prior to the annual adjustment of the monthly contract price.

1.24.3 The Contractor shall indicate the Union Base Mechanic's Rate on the bid form, upon which the first year's maintenance pricing shall be based.

1.25 Contract term

This agreement shall remain in effect for the duration of the Elevator Modernization Interim Maintenance Period and any extensions agreed upon by the Owner.

2. Detailed Scope of Work for Traction Elevators

The Contractor shall regularly and systematically inspect, clean, adjust, lubricate and when necessary, repair or replace all Elevator components including, but not limited to, the following unless expressly excluded from this contract:

2.1 MACHINES

2.2 Geared and gearless elevator machines including; worms, gears, machine and motor bearings and housings; machine seals and gaskets; drive sheave, sheave liners, drive sheave shaft, bearings and housings; brakes including linings, brake coils, brake contacts, brake pins and brake springs; motors including brushes, brush holders, commutators, armatures, windings and frames; tachometers, encoders.

2.3 CONTROLLERS

2.3.1 Elevator car and group controllers and sub panels and all related auxiliary panels: all components including but not limited to relays, contactors, resistors, capacitors, timers, transformers, condensers, wiring, solid-state and microprocessor-based devices and peripheral computers and monitors.

2.3.2 For microprocessor-based control systems, the Contractor shall be responsible for all software updates that are required to ensure safe and reliable performance of the elevator system. The Contractor shall not be responsible for software upgrades that are not essential to maintain the existing operation or level of performance of the elevator.

2.4 SELECTORS AND LANDING SYSTEMS

2.4.1 Selector tapes, cables, or wires; all electrical and mechanical selector devices and components; selector sheaves and bearings; car-top or hoistway landing system readers; encoders and tachometers.

2.5 MOTOR GENERATORS AND SOLID-STATE DRIVES

2.5.1 Motor generator field windings, armatures, commutators, brushes, brush holders, auxiliary tachometers and regulators; SCR and VVVF solid-state and microprocessor-based drives; main and auxiliary transformers downstream of the primary main line disconnect.

2.6 GOVERNORS

2.6.1 All governor components, governor switches.

2.6.2 Any governor with a missing seal shall be resealed in accordance with code requirements at the Contractor’s expense.

2.7 AUXILIARY BRAKING DEVICES

2.7.1 Rope brakes and sheave jammers.

2.8 HOISTWAY COMPONENTS

2.8.1 Hall door rollers, hangers, tracks, door gibs, safety retainers, door closers, interlocks, cams, retiring cams including motors and other components, pickup rollers, eccentrics, relating cables, chains and air cords; hoistway access door switches; hoistway switches; buffers; suspension means including hoist ropes, belts or other materials, and shackles; suspension means testing devices; governor ropes and shackles; deflector sheaves; idler sheaves; compensating ropes or chains and silencers; compensating sheaves; guide rails.

2.9 CAR COMPONENTS

2.9.1 Car and counterweight guide assemblies, including rollers, pivot pins and sliding guide inserts; door operators including motors, solid-state cards, relays, resistors, nudging circuits, audible signals, switches, cams, bearings, linkages, bushings, door clutches and skates, door detectors, light rays; multi-beam detectors; proximity detectors; mechanical safety edges; cab tires; car door tracks; door rollers; gate switches; retiring cams; car door restrictors; car safeties including safeties, linkages, safety operated switches.

2.10 FIXTURES

2.10.1 All car and hall fixtures including but not limited to: Car and hall call registration buttons and button jewels; indicator lights; car, hall and remote position indicators; emergency light and alarm bell systems including batteries; car fans and fan speed control devices; hands-free auto-dial phones, voice annunciators, rescue stations (solely dedicated to elevator communications).

2.11 WIRING

2.11.1 All machine room and hoistway wiring; travelling cables; travelling cable guards and pads; junction boxes; terminal strips. The telephone line from the telephone to the terminals where the line meets an outside line is the responsibility of the maintenance Contractor.

2.12 ADDITIONAL WORK

2.12.1 The Contractor shall equalize and/or shorten the elevator cab suspension means tension as required to ensure proper suspension means and drive sheave wear.

2.12.2 The Contractor shall provide assistance to the owner for annual verification of smoke/heat detectors in the hoistway at no additional cost.

2.12.3 When replacing wire ropes the Contractor shall supply and install wedge type rope shackles at no extra charge to the Owner.

2.12.4 Load weigher devices shall be re-calibrated every one (1) year.

2.12.5 Category 1, 3, and 5 tests are included under the terms of this contract.

APPENDIX A

EQUIPMENT DESCRIPTION

The Good Samaritan Society Head Office Building

8861 75 Street NW
Edmonton, AB

Elevator 1 – E000703 – Passenger traction

APPENDIX B

Frequency of maintenance services

The frequency of performance of the maintenance procedures noted below shall be in accordance with the following time-frames or applicable Alberta Regulation, whichever is more frequent. Note: where components have been flagged for monitoring by a safety codes officer, the frequency of inspections shall be increased by the Contractor as necessary to ensure that the safety and integrity of the elevating device is maintained at all times.

(Where components listed below do not exist, these procedures shall not apply)

ALL ELEVATORS:

Every Visit (or minimum monthly)

1. Inspect and maintain as necessary: car tops and car top equipment, pits and pit equipment, machine rooms, secondary machine rooms, counterweights, hydraulic systems, overflow pans and buckets, machines and controllers.

2. Test door operation, door reversal devices, emergency communication devices.

3. Test and maintain the in-car emergency light systems.

4. Perform oil loss monitoring procedures for hydraulic elevators.

5. Empty pit-pails for hydraulic elevators.

Quarterly (every three months)

6. Check oil levels and lubricate all elevator equipment as necessary. Frequency of lubrication shall be increased as necessary to maintain the equipment to design specifications.

7. Remove covers and perform a detailed inspection, testing and maintenance of controllers and controller components including selectors.

8. Inspect and maintain car and hall landing doors. Test door locks and related components, door closing mechanisms, door gibs, relating mechanisms, and retainers. Clean door sill grooves.

9. Inspect and maintain pump motor.

10. Inspect, lubricate and maintain car guide system. Replace worn roller-guides and pivot pins when detected.

11. Clean pits.

Semi-Annually (every six months)

12. Thoroughly clean down elevator hoistway. Vacuum, wash and clean as necessary: rails and brackets, trimmer beams, car tops, door operators, car guide assemblies, counterweights, pits and pit equipment.

13. Thoroughly clean down controllers.

Annually

14. Measure buffer oil level and top up as necessary for all oil buffers.

15. Dismantle, clean, lubricate and adjust as necessary all primary braking devices.

16. Perform a minimum 30-minute no-load leak-down test on all hydraulic elevators with buried or inaccessible cylinders or hydraulic lines.

17. Test any buried cylinder corrosion-protection system for water leakage.

Every Five (5) Years

18. Perform and document buffer return test on any oil buffer.

19. Perform all required tests to the hydraulic rupture valve.

END OF SECTION

ELEVATOR PRODUCT BID LIST The following product makes and models have been carried in the Elevator Contractor Base Bid:		
	Manufacturer	Model
Car Controller		
VVVF Motor Drive		
Elevator Hoist Machine		
Auxiliary Braking Device		
Governors		
Car Door Restrictor		
Car and Hall Button Fixtures		
Hall Position Indicators		

Contractor's Authorized Signature _____

Print Name _____

Date _____

MODERNIZATION DATA FORM This form is to be completed by the field adjuster or supervisor directly involved with the installation.	
JOB NAME:	Good Samaritan Society Head Office Building Elevator Modernization
Elevator Company	
Elevator Designation	
Elevator Manufacturer	
Controller Model & Serial #'s	
Machine Model & Serial #'s	
Government Identification #'s	

PERFORMANCE MEASUREMENTS

Criteria		Specified Value	Measured Value
Capacity (lbs)			
Full Speed Up (fpm) (measured)			
Full Speed Down (fpm) (measured)			
Operating Time Up (sec)			
Operating Time Down (sec)			
Door Open Time (sec)			
Door Close Time (sec)			
Car Call Dwell Time (sec)			
Hall Call Dwell Time (sec)			
Nudging Time (sec)	Buzzer		
	Door Close		
Holding Force on Nudging (lb)			
Maximum Door Closing Speed			
Governor Trip Speed			
Governor Pull-Through Force			
Safety Pull-Out Force			

MODERNIZATION DATA FORM This form is to be completed by the field adjuster or supervisor directly involved with the installation.			
JOB NAME:	Good Samaritan Society Head Office Building Elevator Modernization		
Measured slide during full speed full load safety test (mm)			
Leveling Accuracy Measured Maximum (mm)			
Elevator Cab Weight			
Counterweight Weight			
Counterweight Balancing (% of Full Load)			
Car Loading for Hall Call Bypass (% of Full Load)			
Starting Current (full load up) (amps)			
Running Current (full load up) (amps)			
Stopping Current (full load down) (amps)			
Brake Spring Length (in)			
Number of spare travelers in machine room	18g		
	14g		
	Shielded Pairs		
	Cat5e equivalent		
Automatic car light and exhaust fan shut-down time			
Are as-built wiring diagrams on site, bound and laminated?		YES / NO	
Machine room floor painted?		YES / NO	
Pit floor painted?		YES / NO	
Door operator data plates installed and filled out?		YES / NO	

Mechanic / Supervisor Signature _____

Print Name _____

Date _____