



LERCH BATES

Building Insight

**PARK PLACE BUILDING  
EUGENE, OREGON**

**TRACTION ELEVATOR MODERNIZATION  
SPECIFICATION**

**MARCH 13, 2019**

*Prepared For:*

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SECTION 00020 – REQUEST FOR QUOTATION

PART 1 - GENERAL

1.1 PROJECT: ELEVATOR MODERNIZATION

- A. Lerch Bates Inc. has been authorized by Lane Council of Governments c/o Pacific Real Estate Services, Inc. to invite your firm to submit a quotation for:
1. All engineering, labor, materials, transportation, services, and equipment necessary and reasonably incidental to perform work required by Contract Documents.
  2. Interim preventive maintenance.
  3. Warranty preventive maintenance.
  4. Continuing preventive maintenance subsequent to completion of work.

1.2 CONTRACT DOCUMENTS

- A. One set of electronic Contract Documents is provided for your use.
- B. Make inquiries to Lerch Bates Inc. Do not contact building personnel or the Purchaser.

1.3 CONSTRUCTION SCHEDULE

- A. See Section 00310, "Quotation Form" for project schedule.

1.4 PRE-BID SITE SURVEY

- A. A pre-bid site survey meeting will be held at 10:00 a.m. on April 12, 2019 to review the modernization bid documents and existing elevator condition. Non-attendance on the part of the bidder shall not relieve the bidder of any responsibility for adherence to any provision of this bid package or any addenda thereto. The walk-through will begin at the main lobby in the building.

1.5 SEALED QUOTATION

- A. Emailed quotations will be received until 5:00 p.m. prevailing local time on May 13, 2019.

Send electronic copy to: Ms. Kristin Peterson  
Pacific Real Estate Services, Inc.  
859 Willamette Street, Ste 270  
Eugene, OR 97401  
Phone: 541.687.1434  
Email: [kristin@pacificrealestateservices.com](mailto:kristin@pacificrealestateservices.com)

Send electronic copy to: Cory Hunter, CEI  
Consultant  
Lerch Bates Inc.  
[cory.hunter@lerchbates.com](mailto:cory.hunter@lerchbates.com)

- B. Quotations must be submitted on form provided as a part of Contract Documents, Section 00310. Quotations shall be subject to all requirements of Contract Documents, site conditions, General Conditions, Supplementary and Special Conditions and any other documents issued in connection with project. All blank spaces and questions on the quotation form must be completed and/or responded to. Failure to comply will constitute a non-responsive submittal.

- C. If Contractor desires to furnish items different from specified, Contractor shall submit substitution as an alternate quotation. Contractor shall supply Consultant with information in regard to proposed substitution of components or materials. Consultant shall decide whether the Contractor's substitution is equivalent to that specified. Deviation from requirements of Contract Documents shall be stated, in writing, in Contractor's transmittal letter submitted with quotation.

1.6 NOTICE OF INTENT TO SUBMIT A QUOTATION

- A. Quotations have been invited from a limited number of pre-approved Contractors. Contractors who elect not to provide a quotation after having reviewed Contract Documents and site conditions shall notify Consultant no later than ten working days prior to quotation due date. Failure to submit a quotation without prior notice will be construed as justifiable cause for elimination of such Contractor for future consideration.

1.7 OPENING

- A. Opening of quotations will be in private. Contractor selection will be based upon the following criteria:
  1. Cost of required work.
  2. Cost of interim maintenance.
  3. Cost of warranty maintenance.
  4. Cost of contract preventive maintenance.
  5. Completion schedule.
  6. Contractor's successful completion of similar projects and track record in the general location of project.
  7. Contractor's maintenance capability in the general location of the project.

1.8 QUOTATION

- A. All quotations shall be firm. Escalation will not be permitted if Contract is awarded within ninety days from quotation due date.
- B. If award is deferred beyond ninety days, Contractors' quotations shall be subject to adjustment to reflect changes in the cost of labor and material.

1.9 PURCHASER'S RIGHTS

- A. Purchaser reserves right to reject any or all quotations, to accept other than lowest quotation and to waive any informality in connection with opening and award of Contract.

1.10 INVITED CONTRACTORS

- A. Contractor shall be prepared to provide evidence of experience, qualifications, and financial ability to carry out requirements of Contract Documents.
- B. If Contractor's contact person is other than indicated below, Contractor shall notify Consultant within five days of receipt of this Request for Quotation.

Marie Kate Corken  
Centric Elevator  
2617-2635 SE 9th Ave.  
Portland, OR 97202  
(503) 234-0561

Rob Grassmyer  
KONE  
4266 SE International Way  
Portland, OR 97222-8803  
503-652-1011

Wade Gower  
Otis Elevator  
7216 SW Durham Rd., #900  
Portland, OR 97224  
503-639-7045

Adam Moorehead  
Schindler Elevator  
13122 NE David Circle  
Portland, OR 97230  
503-286-9799

Kevin Mason  
thyssenkrupp Elevator  
14626 NE Airport Way  
Portland, OR 97230  
530-255-0079

END OF SECTION



SECTION 00100 – INSTRUCTIONS TO CONTRACTOR

PART 1 - GENERAL

1.1 EXAMINATION

- A. In order to discover and resolve conflicts or lack of definition which might create problems, Contractor must review Contract Documents, existing site conditions, and existing equipment specified to be retained for compatibility with its product prior to submitting quotation. Site review shall include, but not be limited to adequacy of access, retained equipment, elevator hoistways, pits, machine rooms, overhead clearances, electrical power characteristics, structural supports, etc. Investigation and structural calculations required to determine compliance for the new gearless traction machines of existing elevator components including machine support beams, with ASME A17.1, Rule 8.7.2.15.2, are responsibility of Contractor. Attach specific, written exception and/or clarification with quotation. Compliance with all provisions of Contract Documents is assumed and required in absence of written exception. If written exception is acceptable to Purchaser and Consultant, an Addendum to the specifications will be issued and authorized. Purchaser will not pay for change to building structure, structural supports, mechanical, electrical or other systems required to accommodate Contractor's equipment if not identified before Contract award and authorized as stipulated above.
- B. Submission of quotation is considered evidence that Contractor has visited and is conversant with the site facilities, site conditions, requirements of the Contract Documents, pertinent state and local codes, state of labor and material markets, and has made do allowance in his quotation for all contingencies. Should Contractor's investigation of site conditions or local codes or rules reveal requirements contrary to Contract Documents, or if Contractor finds any discrepancies or omissions from Contract Documents, or if Contractor is in doubt as to their meaning, he shall contact the Consultant for clarification at least five working days prior to quotation due date.
- C. No oral explanation will be made, and no oral instructions will be given before quotation due date. Contractor shall act promptly and allow sufficient time for a reply to reach him before submission of his quotation. Any required interpretation or supplemental instructions will be issued in the form of an addendum to the specifications and forwarded to all pre-qualified Contractors.
- D. Provide everything necessary for and incidental to the satisfactory completion of work required by Contract Documents. All required preparations and hoisting and movement of new equipment, reused equipment, or removal of existing equipment shall be the responsibility of Contractor.

1.2 EXISTING MAINTENANCE CONTRACT

- A. If Contractor currently providing equipment maintenance under contract with Purchaser is included on the list of invited Contractors for this Contract, Contractor acknowledges and agrees that said contract shall be immediately null and void upon award of this Contract to Contractor or alternate invited Contractor. Further, if present Maintenance Contractor is not the successful firm in regard to this Contract, Maintenance Contractor agrees to deliver existing as modified control wiring diagrams to Purchaser and immediately remove its equipment and materials from the premises with the Purchaser or Purchasers' representative present. Purchaser shall withhold final maintenance payment due until Maintenance Contractor is in compliance with this requirement.

END OF SECTION

SECTION 00310 – QUOTATION FORM

DATE: .....

PROJECT: Park Place Building  
859 Willamette Street  
Eugene, Oregon

SUBMITTED BY: .....  
Name of CONTRACTOR

.....  
CONTRACTOR'S Representative Telephone Number

.....  
Street Address

.....  
City State Zip Code

TO: Ms. Kristin Peterson  
Pacific Real Estate Services, Inc.  
859 Willamette Street, Ste 270  
Eugene, OR 97401  
Phone: 541.687.1434  
Email: kristin@paificrealestateservices.com

Send electronic copy to: Cory Hunter, CEI  
Consultant  
Lerch Bates Inc.  
cory.hunter@lerchbates.com

PART 1 - GENERAL

1.1 CONTRACTOR'S BASE QUOTATION

- A. Having examined documents prepared by Lerch Bates Inc. dated March 13, 2019, and having reviewed site conditions, applicable codes and all conditions affecting and governing the work, the Undersigned Contractor hereby offers to provide all engineering, labor, materials, transportation, services, and equipment necessary and incidental to properly execute required work of the Contract Documents for the sum of:

Item 1: Modernize Passenger Elevators 1 and 2, Section 14220.

\_\_\_\_\_ \$ \_\_\_\_\_

Item 2: Modernize Passenger Elevator 3, Section 14250.

\_\_\_\_\_ \$ \_\_\_\_\_

Item 3: Related Work, Section 01900.

\_\_\_\_\_ \$ \_\_\_\_\_

Total of the above items 1-3:

\_\_\_\_\_ \$ \_\_\_\_\_

B. Maintenance:

1. Interim Maintenance: We agree to furnish interim, preventive maintenance during the period from written award of this Contract or verbal notice to proceed until all required work is complete for following amount per month per unit:

Passenger Elevators 1-3: \_\_\_\_\_ \$...../Month/Unit

NOTE: Do not include the cost of interim maintenance in "A" above, Base Quotations.

2. Twelve-Month Warranty Preventive Maintenance: Amount included in base quotation Item A. above.

Total included in Item A. \_\_\_\_\_ \$.....

Passenger Elevators 1-3: \_\_\_\_\_ \$...../Month

NOTE: Purchaser reserves the right to pay warranty maintenance cost in a lump sum or on a monthly basis during period maintenance is actually performed.

3. Contract Maintenance: We agree to provide continuing preventive maintenance as required by Owner's five-year contract included with these specifications Section 14325 at a charge per month as follows:

Passenger Elevators 1-3: \_\_\_\_\_ \$...../Month

NOTE: Contract preventive maintenance shall commence at the completion of the one-year warranty maintenance program.

C. Maintenance Billing Rates (2019 Rates):

Billing Rates	Mechanic	Helper	Crew
Straight Time	\$.....	\$.....	\$.....
Overtime Premium (1.7 Time)	\$.....	\$.....	\$.....
Overtime Premium (2.0 Time)	\$.....	\$.....	\$.....

NOTE: The above rates may be adjusted by written notice to Owner proportionally to the increase or decrease in the straight time hourly rates as set forth in Article 1.5 of this Agreement. Such adjustments shall not exceed 5% in any one-year period, except that a percentage increase of less than 5% in any one-year period may be added to a subsequent year's 5% maximum increase.

D. Service Tool Replacement Price:

We agree to provide a replacement customer diagnostics tool for the life of this equipment for the sum of :

..... dollars \_\_\_\_\_  
\$ \_\_\_\_\_

NOTE: The price should be based on 2019 replacement cost. An escalation of 5% maximum for each year thereafter will apply. Indicate "Not Applicable" if no external service tool is required, and provide a detailed explanation of how proposed elevator control diagnostics are performed in an attached letter to this Quotation Form.

- E. Enter a cost figure for all pricing requested. Failure to comply, subjects quotation to disqualification.
- F. Undersigned affirms that quotations provided represent entire cost including site conditions, code requirements, drawings, specifications, addenda, and any other Contract Documents, and no claim will be made due to any increase in wage scales, material prices, taxes, insurance, cost indexes or any other factors affecting the construction industry or this project except as expressly allowed in Owner's maintenance contract specification Section 14325.

1.2 ADDENDA

- A. Undersigned acknowledges receipt of Addendum No. .... through .....

1.3 CONTRACTOR'S OTHER SUPPORTING ENCLOSURES

- A. Undersigned has enclosed the following (Indicate YES/NO):
  1. Separate letter containing any "Qualification" related to its Quotation.  YES /  NO
  2. Separate Substitution Proposal.  YES /  NO

1.4 PURCHASER'S CONSTRUCTION SCHEDULE

- A. Start work date is date existing elevator is removed from service for modernization. Completion date is the date that the modernization work is complete, the elevator has passed State Inspection, and the elevator is returned back to normal operation. Base dates on an award date of May 20, 2019, and a three-week review of submittals.
- B. Undersigned submits the following completion schedule for the project:

UNIT	START WORK DATE	COMPLETION DATE
1	.....	.....
2	.....	.....
3	.....	.....

**1.5 CONTRACTOR PROPOSED MODERNIZATION COMPONENTS AND TECHNOLOGY**

- A. Undersigned Contractor will utilize the following modernization technology for the projects and submits these systems for approval. Upon acceptance of these systems by Purchaser/Consultant, no substitutions shall be made without written approval of Consultant.

Systems and Components to Be Modernized	Proposed Model, Description, and Vendor
1. Machine:	
2. Control:	
3. Door Operator:	
4. Infrared Door Edge:	
5. Fixtures:	
6. Governor:	

**1.6 CONTRACTOR'S LIST OF SUPPLIERS/SUB-CONTRACTORS**

- A. The undersigned Contractor will utilize the following suppliers/subcontractors for major components of work and submits these firms for approval. Upon acceptance of these Suppliers/Sub-Contractors by Purchaser/Consultant, no substitutions shall be made without written approval of Consultant.

Suppliers/Subcontractor Name	Component/Type of Work
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

(Use back of page if necessary)

**1.7 SUBMISSION AND ACCEPTANCE OF QUOTATIONS**

- A. Undersigned Contractor agrees to Purchaser's right to reject any and all quotations without explanation.
- B. Undersigned Contractor declares that preparation and submission of quotations herein contained do not obligate Purchaser or Consultant in any way.
- C. Undersigned Contractor agrees and understands that Purchaser assumes no obligation to enter into a Contract.

1.8 CONTRACTOR SIGNATURE

DATE: .....  
SIGNED: .....  
PRINT NAME: .....  
TITLE: .....  
NAME OF FIRM: .....  
STATE LICENSE NO.: .....

LEGAL ADDRESS:  
.....  
.....  
.....

ORGANIZED AS A (MARK ONE):  
 INDIVIDUAL  
 PARTNERSHIP  
 CORPORATION UNDER STATE LAW OF  
.....

TELEPHONE: .....  
.....

(SEAL)

END OF SECTION

SECTION 00800 – SUPPLEMENTAL CONDITIONS

PART 1 - GENERAL

1.1 DEFINITION OF TERMS

- A. Term ELEVATOR CONSULTANT or CONSULTANT as used herein refers to Lerch Bates Inc. (Lerch Bates).
- B. PURCHASER as used herein refers to Lane Council of Governments c/o Pacific Real Estate Services, Inc. .
- C. The term CONTRACT or CONTRACT DOCUMENTS as used herein consists of the Agreement, Conditions of Contract, Specifications, Addenda, Drawings if included, and Alternates if accepted.
- D. CONTRACTOR or ELEVATOR CONTRACTOR as used herein refers to any persons, partners, firm, or corporation having a contract with Purchaser to furnish labor and materials for the execution of work required.
- E. CONTRACT AWARD as used herein refers to Purchaser’s verbal or written award for work required.
- F. SUBCONTRACTOR as used herein refers to any persons, partners, firm, or corporation having a contract with Contractor to furnish labor and materials for the execution of work required.
- G. As used in these Contract Documents “provide” shall be understood to mean “furnish and install.”
- H. As used in these Contract Documents “retain or reuse existing” shall be understood to mean restore existing components or parts to like-new condition.
- I. Words in the singular shall include the plural whenever applicable or context so indicates.
- J. All technical terms in these Contract Documents have their definition given in latest edition of American National Standard Safety Code for Elevators, Dumbwaiters, Escalators, and Moving Walks ASME A17.1. and A17.2.

1.2 CONSULTANT’S STATUS

- A. Consultant shall act as Purchaser’s and/or Building Management’s representative on all matters pertaining to required work. Consultant shall interpret Contract Documents, analyze Contractor’s quotations, review Contractor suggested alternates, review all submittals of Contractor, approve billings, review technical details and construction procedure, perform work progress reviews and review and test completed work for compliance with Contract Documents prior to acceptance of work by Purchaser.
- B. Field Review Scheduling: Schedule progress and final work reviews with Consultant. Reply promptly, in writing, to corrective work indicated on Consultant’s progress and/or final review reports, indicating status and schedule for completion. Consultant anticipates scheduled site review appointments will be met. Contractor’s price will be reduced to reimburse Consultant at its normal billing rates for appointments not kept or for additional follow up reviews required due to Contractor’s gross non-compliance with previous review requirements.

1.3 CONTRACT

- A. Contract includes all engineering, labor, tools and material required to complete the work in every respect. Contractor is cautioned to familiarize itself with existing site conditions and to include all incidental work that might occur or be required during the work. After Contract has been awarded, verbally or in writing, no extra charges will be allowed for any labor or material necessary to complete required work whether exactly described in these specifications herein or not, as long as such work, labor, and material are required to accomplish desired effect and results.
- B. Any discrepancies or ambiguities found in Contract Document or drawings shall be reported to the Consultant prior to Contractor's quotation submittal.

1.4 MEASUREMENTS AND DRAWINGS

- A. Drawings or measurements included with Contract Documents are for convenience of Contractor. Complete responsibility for detailed dimensions lies with Contractor. Contractor shall verify all dimensions with the actual on-site conditions. Where work of Contractor is to join another trade, Contractor's shop drawings shall show actual dimensions and method of joining work of those trades.

1.5 CODES AND ORDINANCES

- A. All work covered by these Contract Documents is to be done in full accord with national code, state and local codes, ordinances, and elevator safety orders as are in effect at time of Contract award. All requirements of local Building Department and fire jurisdiction are to be fulfilled by Contractor and its Subcontractors. Also see Section 01040, Article 1.1.

1.6 CONTRACTOR'S INSURANCE

- A. Contractor shall take out and maintain during the life of this Contract Worker's Compensation Insurance with statutory limits set by the State of Oregon laws for protection of its employees.
- B. Contractor shall carry a comprehensive general liability policy including completed operations blanket contractual broad form property damage, and Purchaser's and Contractor's protective liability in a casualty or liability insurance company acceptable to Purchaser. Insurance policy shall fully protect Contractor, its Subcontractors, Purchaser, and Consultant from all loss and liability. Refer to Terms and Conditions provided.
- C. Prior to commencing work, Contractor shall secure required insurance, at its sole cost, and submit certificate of confirmation naming indemnified parties as additional insured. Said policies, including an endorsement which states that such insurance will not be cancelled or materially changed unless Purchaser is given thirty days' notice, in writing, of the intention of said insurer to cancel or change any such policy. In the event Property is owned by a joint venture or other multi-party entity, all joint venture partners or parties with an equity interest in the ownership shall be named as additional insureds. Contractor's insurance shall be primary to any applicable loss. With Purchaser's prior approval, an Owners & Contractors Protective Liability (OCPL) Policy may be substituted for commercial general liability coverage. Please refer to the attached appendix that states the project-specific insurance requirements.
- D. Contractor shall file with Purchaser a certificate of insurance from its insurance company, stating that such insurance is being carried and that Purchaser will be notified at least 10 days prior to any cancellation of said insurance.



1.7 PURCHASER INSURANCE

- A. Purchaser's insurance policy covers work and equipment in place in building and approved and accepted by Consultant and Purchaser. All material and equipment stored on site and not actually installed is not included in Purchaser's policy and such material and equipment shall be covered under Contractor's Property Damage Insurance.

1.8 TAXES, OLD AGE PENSIONS, AND UNEMPLOYMENT INSURANCE

- A. Contractor's quotations for required work, materials and equipment shall include all local, state, and federal occupational and sales taxes, luxury taxes, excise taxes, federal and state old age pensions, unemployment insurance contributions, and any other similar taxes and contributions in effect at time of award of Contract, verbally or in writing. Contractor shall be liable for aforementioned taxes whether or not specifically included in his quotation or in final Contract Document. In event additional sales or use taxes are imposed after award of Contract, such sales or use taxes are to be paid, in addition to original Contract amount, by Purchaser to Contractor, who in turn is to pay them to proper authorities. Reciprocally, if any of above-mentioned taxes or contributions in effect at time of award of Contract should be revoked before consummation of Contract, Contractor shall rebate Purchaser amount of taxes included in original quotation and Contract. Where required by law, amount of the tax is to be specifically stated in Contractor's quotation; however, failing to do so will not relieve Contractor from responsibility for assumption of these taxes.

1.9 LABOR LAWS

- A. Contractor and its Subcontractors performing work under this Contract shall comply with applicable provisions of all federal, state, and local labor laws.

1.10 PATENTS

- A. Contractor shall save and hold harmless Purchaser and its officers, agents, servants, employees, and Consultant from liability of any nature or kind on account of any patented or unpatented invention, process, article, or appliance manufactured or used in performance of Contract, including its use by Purchaser including all cost and expenses for defending any suits unless otherwise specifically stipulated in Contract Documents.
- B. Licenses which may be required for completion of required work are to be obtained and paid for by the Contractor.

1.11 ASSIGNMENTS

- A. Neither party to this Contract shall assign Contract or sublet it as a whole without written consent of other party, nor shall Contractor assign any payment due him or to become due to him hereunder without previous written consent of Purchaser.

1.12 ADVERTISING

- A. Advertising privileges will be retained by Purchaser. It is the duty of Contractor to keep premises free from posters, signs, decorations, etc., unless specifically approved by Purchaser.

1.13 PROTECTION OF WORK AND PROPERTY

- A. Contractor shall continuously maintain adequate protection of all its work from damage and shall protect Purchaser property from injury or loss arising out of this Contract. Contractor shall make good any such damages, injury, or loss, except such as may be directly caused by

agents, subcontractors, or employees of the Purchaser. Contractor shall provide all barricades required to protect open hoistways or shafts per OSHA regulations. Design of barricades in public areas shall be approved by Purchaser prior to fabrication and installation.

- B. If Contract includes work which would be disruptive during normal business operations, or would be dangerous to building occupants, said work shall be performed during hours as building management dictates. Examples of such work include, without limitation, saw cutting of concrete, jack hammering, welding, metal cutting, pouring concrete, erecting steel, or hoisting equipment over occupied portions of the building, or performing tests requiring all elevators in a group. Contractor shall perform such work during off-hours and shall include all costs in its quotation. The following times and scheduling requirements are part of the project: Off hours are considered 6:00 p.m. to 6:00 a.m. Monday through Friday and all-day Saturday and Sunday. These services, as well as the items listed in this paragraph, shall be performed off hours: All final testing and life safety testing.
- C. Contractor shall install a suitable protective covering on all finished floors whether marble, wood, carpet or other, in areas where work is being performed. No material handling equipment shall be permitted on or over finished floors unless said floors have been protected in a manner approved by building management.
- D. Portable fire extinguishers shall be provided throughout Contractor's area of work and shall be placed so as to be accessible at all times. Extinguishers shall be multi-purpose dry chemical type, provided on a basis of one 2A-20BC rated unit for each 3,000 square feet of floor area. Extinguishers will remain property of Contractor.
- E. Contractor shall at all times maintain work areas so all portions are accessible to fire department personnel and apparatus. Fire hydrants and fire department connections to building sprinkler systems must be kept free from obstruction at all times.
- F. Contractor shall strictly supervise any welding, metal cutting or other operations employing open flame work. All welding and cutting equipment shall be safely arranged and all combustibles in vicinity of any work being performed shall either be removed or protected by a noncombustible cover. Welding or cutting shall be attended by an assistant or fire watchman who is equipped with at least one 2A-20BC rated multi-purpose dry chemical fire extinguisher. Fire watchman will maintain strict surveillance during entire welding or cutting operation and extinguish flying sparks or burning slag. After welding or cutting operation fire watchman shall thoroughly search entire area for remnants of smoldering materials before he is released from his duty. Any welding or other operation employing open flame in any portion of building shall be scheduled with and receive approval of Purchaser. Hot work permits shall be scheduled and approved with Owner.
- G. Contractor shall keep noise level below 80 dBA level during normal building hours. When it is necessary to produce noise above this level, Contractor shall advise building management of such needs and times will be scheduled as directed. The Contractor shall anticipate and schedule excessive noise generating procedures and include allowance for same in its quotation and schedule. Anything above 80 dBA shall be conducted in previously listed off hours.

#### 1.14 HAZARDOUS MATERIALS

- A. No asbestos-containing material, heavy metal-containing paints/coating, or PCB-containing materials shall be specified or used in construction including, but not limited to, building materials, production processes and equipment, and utilities and other support processes and equipment. Contractor shall communicate and enforce this prohibition with subcontractors and suppliers, and shall provide a written certification at completion of construction to Purchaser

confirming that no asbestos-containing material, heavy metal-containing paints/coating, or PCB-containing materials were specified or used in construction of the Project.

- B. The identification, notification, removal and disposal of asbestos containing material, PCBs, lead or other hazardous substances is the responsibility of Purchaser.
- C. If, during the course of performance of the work, Contractor, any of its employees or subcontractors encounter or become aware of any environmentally related issues including, but not limited to:
  - 1. the release or substantial threat of release of a hazardous substance,
  - 2. the discovery of materials or substances of unknown origins on or under the premises,
  - 3. the discovery of any underground storage tank,
  - 4. and/or similar occurrences, then Contractor or such employee or subcontractor shall immediately notify Purchaser's Project Manager, Purchaser's Environmental Engineer at Purchaser's corporate headquarters as well as Contractor's representative. With the exception of appropriate emergency actions necessary to prevent or contain the spread of hazardous substances, Contractor shall not take any action in respect of such environmentally related issue without first obtaining both verbal and written authorization from Purchaser's Project Manager.
- D. Indemnification: Contractor shall indemnify and hold harmless Purchaser, its divisions and subsidiaries, their officers, directors, agents, employees and representatives from every claim, damage, loss, liability, action or cause of action, complaint or suit, whether or not groundless or fraudulent, for bodily injury, sickness, disease or death or damage to property arising out of any breach of its obligations to comply with Purchaser's environmental procedures.
- E. Purchaser shall indemnify and hold harmless Contractor, subcontractors, and consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the work in the affected area if in fact the material or substance presents the risk of bodily injury or death and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself), and provided that such damage, loss or expense is not caused in part or in whole by the negligence of a party seeking indemnity.
- F. Additional Costs: If, without negligence on the Contractor's part, Contractor is held liable for the cost of remediation of a hazardous material or substance not related to the work but solely by reason of performing work as required by the Contract Documents, Purchaser shall indemnify Contractor for all cost and expense thereby incurred.

#### 1.15 ACCIDENT REPORTS

- A. In the event of accidents of any kind, Contractor shall furnish Purchaser with copies of all accident reports. Reports shall be sent without delay and at same time that they are forwarded to any other parties.

#### 1.16 STORAGE OF MATERIALS

- A. Contractor shall confine storage of materials on job site to limits approved by Purchaser and shall not unnecessarily encumber premises or overload any portion of building with materials to a greater extent than structure design load.

1.17 REMOVAL OF EQUIPMENT AND RUBBISH

- A. Contractor shall remove and properly dispose of all rubbish as fast as it accumulates including all existing parts and components not retained, keeping building and premises clean during progress of work and leave premises at completion in a condition acceptable to the Purchaser. Store parts and components identified by Consultant as useful for maintenance of units not being modernized as directed by Purchaser. All other parts and components not retained shall become property of Contractor. Dumpster shall be located in the loading dock area.

1.18 MATERIALS AND WORKMANSHIP

- A. All materials and equipment furnished shall be new and best quality. Installation shall be accurate, workmanlike, and subject to approval of Consultant. All materials and equipment provided shall conform to regulations of enforcement bodies having jurisdiction. Contractor shall furnish material samples for approval.

1.19 SUPERVISION

- A. Contractor shall assign a competent Project Manager, superintendent, and on-site foreman for project satisfactory to Purchaser and Consultant. Such persons shall represent Contractor and all instructions given to them shall be binding as if given to Contractor.

1.20 SUBCONTRACTORS

- A. Prior to the Commencement of the work at the Project site Contractor shall furnish to Purchaser in writing the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the work. As soon as practicable thereafter, Purchaser shall notify Contractor in writing whether or not Purchaser objects to any such proposed subcontractor. If Purchaser fails to promptly notify Contractor of such an objection, there shall be no such objection. Once Purchaser has given Contractor written notice of Purchaser's objection, Contractor shall not subcontract to the person or entity to whom the objection has been made. However, Contractor shall not be required to contract with a person or entity to whom Contractor has a reasonable objection. If Contractor has relied upon the bid or proposal of a subcontractor which Contractor, in good faith, believes is fully qualified to perform that portion of the work and Purchaser objects to the subcontractor upon whose bid or proposal Contractor has relied, then Contractor shall submit a substitute subcontractor to whom Purchaser has no objection. The Price shall be increased or decreased by the difference in cost occasioned by the substitution and the appropriate Change Order issued if the increase is accepted by Purchaser.
- B. Contractor shall employ each subcontractor with a written subcontract document such that each subcontractor is bound to Contractor by the terms of the Contract Documents and assumes toward Contractor all of the obligations and responsibilities which Contractor assumes toward Purchaser under the Contract. Contractor's agreement with each of its subcontractors shall preserve and protect the rights of Purchaser under the Contract Documents as to the portion of the work assigned to each subcontractor and the subcontracting of the portion of the work shall not diminish the rights of Purchaser as to Contractor and those that Contractor has against Purchaser.
- C. If schedule modifications, not solely caused by Contractor, shall result in overtime work, Contractor agrees to pay in accordance with Subcontractor's standard charges for premium time. Contractor's standard labor rates are acceptable for work required outside of the scope of the agreement during overtime, but maximum markups outlined herein shall be maintained.

1.21 ROUTINE BUSINESS

- A. After award of Contract, all business relating to required work shall be transacted through Consultant, unless otherwise directed.

1.22 CHANGES AND EXTRA WORK

- A. Purchaser may at any time make changes to Contract Documents, plans and drawings, omit work, or require additional work by Contractor. For such additional work performed hereunder, Purchaser shall pay Contractor on the basis of a mutually agreed lump sum. Contractor shall make no additions, changes, alterations, or omissions, or perform extra work, without receipt of written authorization of Purchaser.
- B. Changes or modifications shall be agreed upon in writing, including prices and schedule adjustment, prior to the commencement of work covered by changes or modifications.

1.23 PAYMENTS

- A. Unless otherwise agreed, Contractor shall submit monthly applications for payment together with necessary data, information, waivers, and affidavits to Consultant. Consultant shall review data for accuracy and forward such applications to Purchaser for payment. Information shall be submitted with payment request and work progress forms.
- B. Applications for payments are to cover 90% of the value of labor performed and material installed and delivered during the preceding month or materials delivered to Contractor's storage facility.
- C. Balance (retention) shall be paid by Purchaser upon final acceptance of entire work by Consultant and Purchaser and after performance guarantees have been satisfactorily demonstrated. See Section 01700, Articles 1.2 D-G.

1.24 PAYMENT WITHHELD

- A. Purchaser and/or Consultant may withhold approval of payment on any Contractor request to such extent as may be necessary to protect Purchaser from loss on account of:
  - 1. Believed negligence on part of Contractor to execute the work properly or fail to perform any provision of Contract. Purchaser, after 30 days' written notice to Contractor, may without prejudice to any other remedy he may have, make good such deficiencies and may deduct its cost from the overall Contract sum.
  - 2. Claims filed or reasonable evidence indicating probable filing of claims by other Contractors or Subcontractors.
  - 3. Failure of Contractor to make proper payments to its material suppliers or Subcontractors for material and labor.
  - 4. A reasonable doubt that required work can be completed by Contractor for balance then unpaid or in Contract time frame.
  - 5. Contractor's damage to building or another Contractor.
- B. When the above grounds are removed, payment shall be made in full, less retention.

1.25 LIENS AND AFFIDAVITS

- A. Neither final payment nor any part of billing retention shall become due until Contractor shall deliver to Purchaser a complete release of all liens arising out of this Contract or receipts marked paid in full in lieu thereof. In addition, Contractor shall furnish an affidavit to Purchaser that, so far as he has knowledge or information, releases, or receipts include all labor and

materials for which a lien could be filed. If any lien remains unsatisfied after all payments are made by Purchaser, Contractor shall refund to Purchaser all monies the latter may be compelled to pay in discharging such a lien, including all costs and reasonable attorney's fees.

**1.26 CLAIMS FOR EXTRA COST**

- A. Contractor claims for extra cost due to additions or changes to required work shall be submitted to Consultant in writing within a reasonable time after such additions or changes identified or are requested and, in any event, before proceeding with required work. No such claim shall be valid unless so made. Maximum charge for additions/changes to work shall be Contractor cost +10% for overhead and profit. Contractors cost shall be verifiable from actual supplier invoices, purchase orders, time tickets, etc.

**1.27 DELAYS AND EXTENSION OF TIME**

- A. If Contractor progress is delayed due to acts of Purchaser or Consultant, acts of other Contractors, fire, floods, strikes or other casualties beyond the control or without fault or negligence of Contractor, time for completion of the work shall be extended for a period determined by Consultant to be equivalent to time of such delay. Contractor must notify Consultant, in writing, of such delay within 48 hours after delay commences, or no extension of time will be granted. Extension of time without written request within said period on one or more occasions shall not be deemed a waiver of provisions of this article.
- B. Should the project be completed past the final approved scheduled turnover date by Purchaser, a penalty will be assessed of \$1,000/day.

**1.28 PERMITS**

- A. Contractor shall obtain and pay for or cause its Subcontractor to obtain and pay for all permits required to complete required work. In addition, Contractor shall arrange, schedule, and pay for or cause its Subcontractors to arrange, schedule and pay for all required final inspections by state, local, or independent certified inspecting authorities necessary for issuance of all required Purchaser utilization permits in regard to completed work.

**PART 2 - SPECIAL CONDITIONS**

**2.1 PROGRESS OF WORK**

- A. Upon award, verbally or in writing, Contractor shall reconfirm in writing, starting and completion schedule including equipment delivery dates based upon the information submitted on its quotation form, Section 00310.
- B. Contractor shall submit in writing monthly reports with payment request, including current equipment delivery dates and anticipated completion dates for individual units and groups of units.
- C. Project Manual:
  - 1. Upon award, verbally or in writing, Contractor shall prepare one electronic and three project manuals neatly bound in a three-ring binder. One manual shall be retained by Contractor, one provided to Purchaser and one provided to Consultant. The manuals shall contain the following information and sections identified in an index with numbered divisions.
    - a. Project Specification revised if required to indicate basis of award. (While maintaining original text and clearly identifying revision.)

- b. Contractor completed Bid Form, specification Section 00310. Include copy of original submission and any revisions.
- c. Alternate quotations indicating Purchaser acceptance or rejection.
- d. Purchaser's executed Contract.
- e. Initial project schedule with estimated versus actual milestone dates. Include schedule revisions.
- f. Project payment requests including verification of payment and lien releases.
- g. Code acceptance.
- h. Purchaser's temporary acceptance documents
- i. Purchaser's final acceptance documents.
- j. Consultants progress review comments and requirements.
- k. Consultant's final Contract review comments and requirements.
- l. Shop drawing submittals, including sets with review remarks.
- m. As built drawings, including control wiring diagrams.
- n. Maintenance Agreement, Specification Section 14325.

END OF SECTION

SECTION 01010 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. Modernize Elevators 1 -3.
- B. Provide all labor, engineering, tools, transportation, services, supervision, materials, and equipment necessary for and incidental to satisfactory completion of required work as indicated in Contract Documents.
- C. Provide all required staging, hoisting, and movement of new equipment, reused equipment, or removal of existing equipment.
- D. Applicable conditions of Purchaser's General, Special, and Supplemental Conditions.
- E. Prime contracts are defined below and each is recognized to be a major part of required work to be performed concurrently in close coordination with work of other Contractors.
  - 1. This Contract: Elevator modernization, including associated work specified in Section 01900.
- F. Scope of Contract includes, but is not limited to, the following:
  - 1. Coordination, scheduling, and management of work of component suppliers and subcontractors.
  - 2. Modernize or furnish and install equipment as specified utilizing existing and/or modified hoistways and machine rooms.
  - 3. Specific item of required work which cannot be determined to be included in another contract is thereby determined to be included in prime contract.

1.2 PRIME CONTRACTOR'S DUTIES

- A. Prime Contractor's duties include the following:
  - 1. Provide and pay for labor, materials and equipment, tools, construction equipment and machinery, and other facilities and services necessary for proper execution and completion of required work.
  - 2. Pay for legally required sales, consumer, and state remodel taxes.
  - 3. Secure and pay for required permits, fees and licenses necessary for proper execution and completion of required work, as applicable at time of quotation due date.
  - 4. Give required notices.
  - 5. Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities which bear on performance of required work.
  - 6. Promptly submit written notice to Consultant of observed variance of Contract Documents from legal requirements.
  - 7. Enforce strict discipline and good order among employees. Do not employ persons unskilled in assigned task.

1.3 WORK SEQUENCE

- A. Construct work in stages. Description and proposed sequence dates are as listed on Quotation Form Section 00310.



1.4 CONTRACTOR USE OF PREMISES

- A. Confine operations at site to areas permitted by law, ordinances, permits, Contract Documents, and Purchasers specific instructions.
- B. Do not unreasonably encumber site with materials or equipment. Staging area will be located as directed by Purchaser.
- C. Do not load structure with weight that will endanger structure. Coordinate with Purchaser.
- D. Assume full responsibility for protection and safekeeping of tools and products stored on or off premises.
- E. Move stored products which interfere with operations of building or the operations of other trades.
- F. Obtain and pay for use of additional storage or work areas needed for operations.

1.5 CONCURRENT MODERNIZATION WORK AND BUILDING OPERATION

- A. This project is a major elevator modernization in an existing building which is open for public business and will continue to operate throughout all phases of required work. It is essential that Contractor give special attention and priority to all matters concerning project safety, protection from dust and loose materials, reduction of noise level, protection from water and air infiltration into building, and maintenance of neat, slightly conditions in and around work areas inside and outside of building. Packaging, scrap materials, and demolition debris shall be promptly removed from building and site on a daily basis.
- B. At all times Contractor shall provide clearly visible warning and directions signs, barricades, temporary lighting, overhead protection, and hazard-free walking surfaces throughout public area. At all times special attention must be given to building entrances, exits, and proper safe exiting through work areas as required by law.
- C. Contractor shall consult Purchaser and other Contractors to establish and maintain safe temporary routes including, but not limited to, proper barricades, walking surfaces, lighting, fire protection, exiting, warning and directional signs, and general protection of persons from all hazards in accordance with OSHA Standards due wholly or partially to its operations.

END OF SECTION

SECTION 01040 – PROJECT PROCEDURES

PART 1 - GENERAL

1.1 APPLICABLE CODES

- A. Compliance with Regulatory Agencies: Comply with most stringent applicable provisions of following Codes, laws, and/or Authorities, including revisions and changes in effect:
1. Safety Code for Elevators and Escalators, ASME A17.1
  2. Guide for Inspection of Elevators, Escalators, and Moving Walks, ASME A17.2
  3. Elevator and Escalator Electrical Equipment, ASME A17.5
  4. National Electrical Code, NFPA 70
  5. Americans with Disabilities Act, ADA
  6. Uniform Federal Accessibility Standard, UFAS
  7. Local Fire Authority
  8. Requirements of IBC, OSSC, and all other codes, ordinances and laws applicable within the governing jurisdiction
  9. Life Safety Code, NFPA 101
  10. Uniform Federal Accessibility Standard, UFAS
  11. OAR 918

1.2 STAGING AREA

- A. An equipment staging area will be available for use by Contractor. Contractor shall restrict usage to area designated and shall notify Purchaser/Property Management prior to storing of any large equipment which will impose heavy concentrated loading on floor area. Do not store such equipment until approval is received.

1.3 WORK PHASE

- A. See Section 00310, Quotation Form.

1.4 OCCUPANCY AND WORK BY OTHERS

- A. Contractor expressly affirms Purchaser's rights to let other contracts and employ other Contractors in connection with required work. Contractor will afford other Contractors and their workmen reasonable opportunity for introduction and storage of materials and equipment, for execution of their work, and will properly connect and coordinate its work with theirs. Contractor will also incorporate comparable provisions in all its subcontracts.
- B. Contractor declares that other Contractors employed by Purchaser on basis of separate contracts may proceed at such times as necessary to install items of work required by Purchaser.
- C. Contractor declares that it will cooperate with other Contractors employed by Purchaser and, in addition to other coordination and expediting efforts, will coordinate their work by written notices regarding necessity of such work to be done on or before certain dates.
- D. Contractor declares that it is responsible for review, stamped, and signed approval of all shop drawings for required work.
- E. Contractor hereby declares that content of foregoing paragraphs and influence they may have on project:
1. Shall not cause a change in stipulated Contract Sum.

2. Shall not cause a change in Construction Time Schedule.

END OF SECTION

SECTION 01300 – SUBMITTALS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Within sixty calendar days after award of contract and before beginning equipment fabrication submit shop drawings and required material samples for review. Allow thirty days for response to initial submittal.
1. Power Confirmation Information: Design for existing conditions.
  2. Finish Material: Submit 3" x 12" samples of actual finished material for review of color, pattern, and texture. Compliance with other requirements is the exclusive responsibility of the Contractor. Include, if requested, signal fixtures, lights, graphics, Braille plates, and detail of mounting provisions.
  3. Design Information: Provide calculations verifying the following:
    - a. Adequacy of existing electrical provisions.
    - b. Adequacy of retained equipment relative to code requirements if car weight increased by more than 5%.
    - c. Control space heat emissions in B.T.U.
    - d. Adequacy of existing retained elevator machine beams.
    - e. Adequacy of existing car platform structure for intended loading.
  4. Written Maintenance Control Program (MCP) specifically designed for the equipment included under this contract. Include any unique or product specific procedures or methods required to inspect or test the equipment. In addition, identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedures, including statutory and other required equipment tests.
- B. Submittal review shall not be construed as an indication that submittal is correct or suitable or that the work represented by submittal complies with the Contract Documents. Compliance with Contract Documents, Code requirements, dimensions, fit, and interface with other work is Contractor's responsibility.
- C. Acknowledge and/or respond to review comments within fourteen calendar days of return. Promptly incorporate required changes due to inaccurate data or incomplete definition so that delivery and installation schedules are not affected. Identify and cloud drawing revisions including Contractor elective revisions on each re-submittal. Contractor's revision response time is not justification for equipment delivery or installation delay.

1.2 FINAL CONTRACT DOCUMENTS

- A. See Section 01700, Project Closeout.

END OF SECTION

SECTION 01600 – MATERIAL AND HANDLING

PART 1 - GENERAL

1.1 SITE CONDITION INSPECTION

- A. Prior to beginning installation of equipment, examine hoistway and control space areas. Verify no irregularities exist which affect execution of work specified.
- B. Do not proceed with installation until work in place conforms to project requirements.

1.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver material in Contractor's original unopened protective packaging.
- B. Store material in original protective packaging. Prevent soiling, physical damage, or moisture damage.
- C. Protect equipment and exposed finishes from damage and stains during transportation, erection, and construction.
- D. Allocate available site storage areas and coordinate their use with Purchaser and other Contractors.
- E. Provide suitable temporary weather-tight storage facilities as may be required for materials that will be stored in the open.

1.3 INSTALLATION REQUIREMENTS

- A. Install all equipment in accordance with Contractor's instructions, referenced codes, specification, and approved submittals.
- B. Install control space equipment with clearances in accordance with referenced codes and specification.
- C. Install all equipment so it may be easily removed for maintenance and repair.
- D. Install all equipment for ease of maintenance.
- E. Install all equipment to afford maximum accessibility, safety, and continuity of operation.
- F. Remove oil, grease, scale, and other foreign matter from the following equipment and apply one coat of field-applied machinery enamel.
  - 1. All exposed equipment and metal work installed as part of this work which does not have architectural finish.
  - 2. Control space equipment, hoistway equipment including guide rail brackets and pit equipment.
  - 3. Neatly touch up damaged factory-painted surfaces with original paint color. Protect machine-finish surfaces against corrosion.

1.4 MANUFACTURER'S NAMEPLATES

- A. Manufacturer's nameplates and other identifying markings shall not be affixed on surfaces exposed to public view. This requirement does not apply to Underwriter's Laboratories and code required labels.

- B. Each major component of mechanical and electrical equipment shall have identification plate with the Manufacturer's name, address, model number rating, and any other information required by governing codes.

#### 1.5 COLORS OF FACTORY-FINISHED EQUIPMENT

- A. All colors will be selected from the Manufacturer's standard range unless custom colors are specified herein.
- B. Submit samples of all standard colors available and/or specified custom colors for review and approval. See Section 01300, Submittals
- C. Submit samples of all specified architectural metals specified for review and approval. See Section 01300, Submittals.

#### 1.6 MATERIALS AND FINISHES

- A. Steel:
  - 1. Sheet Steel (Furniture Steel for Exposed Work): Stretcher-leveled, cold-rolled, commercial quality carbon steel, complying with ASTM A366, matte finish.
  - 2. Sheet Steel (for Unexposed Work): Hot-rolled, commercial quality carbon steel, pickled and oiled, complying with ASTM A568/A568M-03.
  - 3. Structural Steel Shapes and Plates: ASTM A36.
- B. Stainless Steel: Type 302 or 304 complying with ASTM A240, with standard tempers and hardness required for fabrication, strength and durability. Apply mechanical finish on fabricated work in the locations shown or specified, Federal Standard and NAAMM nomenclature, with texture and reflectivity required to match Architect's sample. Protect with adhesive paper covering.
  - 1. No. 4 Satin: Directional polish finish. Graining directions as shown or, if not shown, in longest dimension.
  - 2. No. 8 Mirror: Reflective polish finish with no visible graining.
  - 3. Textured: 5WL as manufactured by Rigidized Metals or Windsor pattern 5-SM as manufactured by Rimex Metals or approved equal with .050 inches mean pattern depth with bright directional polish (satin finish).
  - 4. Burnished: Non-directional, random abrasion pattern.
- C. Aluminum: Extrusions per ASTM B221; sheet and plate per ASTM B209.
- D. Paint: Clean exposed metal parts and assemblies of oil, grease, scale, and other foreign matter and factory paint one shop coat of standard rust-resistant primer. After erection, provide one finish coat of industrial enamel paint. Galvanized metal need not be painted.
- E. Prime Finish: Clean all metal surfaces receiving a baked enamel paint finish of oil, grease, and scale. Apply one coat of rust-resistant primer followed by a filler coat over uneven surfaces. Sand smooth and apply final coat of primer.
- F. Baked Enamel Finish: Prime finish per above. Unless specified "prime finish" only, apply and bake three additional coats of enamel in the selected solid color.
- G. Entrance Field Paint: Clean all surfaces to remove dirt and grease. Sand and finish surfaces as necessary to remove pits and scratches and prepare surface for painting. Apply filler to insure smooth surface; sand and apply one coat of electrostatic enamel in the selected solid color.

- H. Refinishing of natural metals: Remove existing protective finish. Buff as necessary to remove scratches. Regrain or finish as specified and protect as indicated for particular metal type.
  
- I. Entrance Support Equipment within Hoistway: Include strut angles, headers, sill support angles, fascia, hanger covers, etc. Clean, remove, and check for corrosive activity. Replace components which exhibit severe deterioration. Tighten all fastenings. Repaint exposed surfaces with two coats of rust preventive primer.

END OF SECTION

SECTION 01700 – FINAL CONTRACT COMPLIANCE REVIEW

PART 1 - GENERAL

1.1 FINAL CLEANING

- A. See Section 00800, Supplemental Conditions, for contractual requirements governing site cleaning. As a minimum:
  - 1. Elevator hoistways and all equipment therein shall be cleaned and left free of rust, filings, welding slag, rubbish, loose plaster, mortar drippings, extraneous construction materials, dirt, and dust. Include walls, building beams, sill ledges, and hoistway divider beams.
  - 2. Care shall be taken by workpersons not to mark, soil, or otherwise deface existing or new surfaces. Clean and restore such surfaces to their original condition.
  - 3. Clean down surfaces and areas which require final painting and finishing work. Cleaning includes removal of rubbish, broom cleaning of floors, removal of any loose plaster or mortar, dust and other extraneous materials from finish surfaces, and surfaces which will remain visible after the work is complete.

1.2 CONSULTANT'S FINAL OBSERVATION AND REVIEW REQUIREMENTS

- A. Review procedure shall apply for individual elevators, portions of groups of elevators and completed groups of elevators accepted on an interim basis, or elevators and groups of elevators completed, accepted, and placed in operation.
- B. Contractor shall perform review and evaluation of all aspects of its work prior to requesting Consultant's final review. Work shall be considered ready for Consultant's final contract compliance review when all Contractor's tests are complete and all elements of work or a designated portion thereof are in place and elevator or group of elevators are deemed ready for service as intended.
- C. Furnish labor, materials, and equipment necessary for Consultant's review. Notify Consultant five working days in advance when ready for final review of elevator or group of elevators.
- D. Consultant's written list of observed deficiencies of materials, equipment and operating systems will be submitted to Contractor for corrective action. Consultant's review shall include as a minimum:
  - 1. Workmanship and equipment compliance with Contract Documents.
  - 2. Contract speed, capacity, floor-to-floor, and door performance comply with Contract Documents.
  - 3. Performance of following is satisfactory:
    - a. Starting, accelerating, running
    - b. Decelerating, stopping accuracy
    - c. Door operation and closing force
    - d. Equipment noise levels
    - e. Signal fixture utility
    - f. Overall ride quality
    - g. Performance of door control devices
    - h. Operations of emergency two-way communication device
    - i. Operations of firefighters' service
  - 4. Test Results:
    - a. In all test conditions, obtain specified contract speed, performance times, stopping accuracy without re-leveling, and ride quality to satisfaction of Purchaser and Consultant. Tests shall be conducted under both no load and full load condition.



- b. Temperature rise in motor windings limited to 50° Celsius above ambient. A full-capacity one-hour running test, stopping at each floor for ten seconds in up and down directions, may be required.
- E. Performance Guarantee: Should Consultant's review identify defects, poor workmanship, variance or noncompliance with requirements of specified codes and/or ordinances, or variance or noncompliance with the requirements of Contract Documents, Contractor shall complete corrective work in an expedient manner to satisfaction of Purchaser and Consultant at no cost as follows:
  - 1. Replace equipment which does not meet code or Contract Document requirements.
  - 2. Perform work and furnish labor, materials, and equipment necessary to meet specified operation and performance.
  - 3. Perform retesting required by governing code authority, Purchaser and Consultant.
- F. A follow-up final contract compliance review shall be performed by Consultant after notification by Contractor that all deficiencies have been corrected. Provide Consultant with copies of the initial deficiency report marked to indicate items which Contractor considers complete. If additional reviews are required due to Contractor's gross non-compliance with initial and follow-up deficiency reports, Consultant shall bill Contractor at normal billing rates plus expenses, and Contractor acknowledges it will pay for additional compliance reviews.

### 1.3 PURCHASER'S INFORMATION

- A. Provide three sets of neatly bound written information necessary for proper maintenance and adjustment of equipment within thirty days following final acceptance. Final retention will be withheld until data is received by Purchaser and reviewed by Consultant. Include the following as minimums:
  - 1. Straight-line wiring diagrams of "as-installed" elevator circuits with index of location and function of components. Provide one set reproducible master. Mount one set wiring diagrams on panels, racked, or similarly protected, in elevator machine room. Provide remaining set rolled and in a protective drawing tube. Maintain all drawing sets with addition of all subsequent changes. These diagrams are Purchaser's property. A legend sheet shall be furnished with each set of drawings to provide the following information:
    - a. Name and symbol of each relay, switch, or other apparatus.
    - b. Location on drawings, drawing sheet number and area, and location of all contacts.
    - c. Location of apparatus, whether on controller or on car.
  - 2. Written Maintenance Control Program (MCP) specifically designed for the equipment included under this contract. Include any unique or product specific procedures or methods required to inspect or test the equipment. In addition, identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedures, including statutory and other required equipment tests.
  - 3. Provide any necessary interface cards required for equipment maintenance, code mandated testing, and troubleshooting.
  - 4. Complete software documentation for all installed equipment.
  - 5. Lubrication instructions including recommended grade of lubricants.
  - 6. Parts catalogs for all replaceable parts including Contractor's identifying numbers, ordering forms, and instructions.
  - 7. Four sets of keys for all switches and control features properly tagged and marked.
  - 8. Neatly bound maintenance and adjustment instructions explaining areas to be addressed, methods and procedures to be used, and specified tolerances to be maintained for all equipment.
  - 9. Diagnostic test devices together with all supporting information necessary for interpretation of test data and troubleshooting of elevator system, and performance of routine safety tests.

10. The elevator installation shall be a design which can be maintained by any licensed elevator maintenance company employing journeymen mechanics, without the need to purchase or lease additional diagnostic devices, special tools, or instructions from the original equipment Contractor.
    - a. Provide onsite capability to diagnose faults to the level of individual circuit boards and individual discrete components for the solid-state elevator controller.
    - b. Provide a separate, detachable device, as required to the Purchaser as part of this installation if the equipment for fault diagnosis is not completely self-contained within the controller. Such device shall be in possession of and become property of the Purchaser.
    - c. Installed equipment not meeting this requirement shall be removed and replaced with conforming equipment at no cost to the Purchaser.
  11. Provide upgrades and/or revisions of software during the progress of the work, warranty period, and the term of the ongoing maintenance agreement between the Purchaser and Contractor.
- B. Preventive Maintenance Contract: Utilize contract form herein provided, Section 14325, Vertical Transportation Preventive Maintenance Contract.
- C. Acceptance of such records by Purchaser/Consultant shall not be a waiver of any Contractor deviation from Contract Documents or shop drawings or in any way relieve Contractor from his responsibility to perform work in accordance with Contract Documents.

END OF SECTION

SECTION 01800 – MAINTENANCE

PART 1 - GENERAL

1.1 INTERIM MAINTENANCE

- A. Furnish preventive maintenance service on elevators described herein for a period from notice to proceed, verbal or written, until each unit is removed from building service for modernization. In addition, furnish interim preventive maintenance on completed units until the modernization of each group of elevators is complete and one-year warranty maintenance, defined in Item 1.2 below, is commenced. Cost of interim maintenance shall not be included as part of modernization quotation. Indicate costs on a per-unit basis for interim maintenance as requested on quotation form, Section 00310. Costs for interim maintenance shall be paid by Purchaser separately and monthly based upon the number of units in service. Perform interim maintenance based upon terms and conditions of Lerch Bates Maintenance Specification (Section 14325).
- B. Prior to the removal of any car from service, the consolidated call back service for all cars in the specific group shall be no more than three calls per month. Contractor will be responsible for providing preventative maintenance to achieve this requirement.
- C. If callback activity exceeds three callbacks per unit per month at any time when cars are off-line, all maintenance must be completed on OT until callback rate is less than three/unit/month.
- D. Use competent personnel, acceptable to Purchaser, employed and supervised by the Contractor.

1.2 WARRANTY MAINTENANCE

- A. Provide preventive maintenance and 24-hour emergency callback service for one year commencing on date of final acceptance by Purchaser. Warranty maintenance should expire for concurrently for all elevators. Systematically examine, adjust, clean, and lubricate all equipment. Repair or replace defective parts using parts produced by the Contractor of installed equipment. Maintain elevator machine room, hoistway, and pit in clean condition.
- B. Use competent personnel, acceptable to the Purchaser, supervised and employed by Contractor.
- C. The warranty maintenance period specified in Item 1.2, A. above shall be extended one month for each three-month period in which equipment related failures average more than .25 per unit per month.
- D. Purchaser retains the option to delete cost of warranty maintenance from new equipment contract and remit twelve equal installments directly to Contractor during period in which maintenance is being performed.
- E. Warranty maintenance to be performed per the terms of Lerch Bates Maintenance Specification (Section 14325).

1.3 CONTRACT PREVENTIVE MAINTENANCE

- A. Quote monthly cost for five-year Preventive Maintenance Agreement with two, one-year extensions possible, commencing upon completion of the warranty period specified in Item 1.2 A. above. Submit quote based upon terms and conditions of Lerch Bates Maintenance Specification (Section 14325).

- B. Base quotation on present labor and material cost. Price adjustment will be made at Agreement commencement date and thereafter as provided in Agreement.
- C. Use competent personnel, acceptable to the Purchaser, employed and supervised by Contractor.

END OF SECTION

SECTION 01900 – RELATED WORK

PART 1 - GENERAL

1.1 RELATED WORK BY CONTRACTOR

- A. Electrical Service, Conductors, and Devices:
1. Control Space Lighting: Guarded LED fixtures to provide minimum 19-foot candles average illumination. Provide toggle switch adjacent to strike side of control space door. Occupancy sensor is not allowed.
  2. Control Space Night Light: Provide always-on 3-5-watt LED luminaire inside entrance to machine room.
  3. Pit Lighting: Guarded LED fixtures to provide minimum 10-foot candles average illumination.
  4. Hallway Lighting: LED fixtures to provide 10-foot candles average illumination measured at the threshold with doors closed. Lighting shall be always on, un-switched, and no occupancy sensor.
  5. Non-GFCI convenience outlet in pit for sump pump.
  6. GFCI convenience outlets in control space.
  7. GFCI convenience outlets in machine space.
  8. Automatic Fire Recall System:
    - a. Fire alarm initiating devices in each elevator lobby, for each group of elevators or single elevator.
    - b. Fire alarm initiating devices in each elevator machine room.
    - c. Fire alarm initiating devices at top of hoistway if sprinklered.
    - d. Three Relay Activation Modules for each group of elevators or single elevator. Locate modules within three feet of controller designated by the Elevator Contractor to minimize un-supervised wiring. Program Modules as follows:
      - 1) PRIMARY: Activate when any hallway device, except primary floor, activates.
      - 2) ALTERNATE: Activate when hallway device at primary floor activates.
      - 3) FIRE HAT: Activate when control space device activates.
    - e. Device in control space and at top of hoistway, if provided, to provide signal for general alarm.
    - f. Provide technician from fire alarm contractor for pre-test of system during normal working hours.
    - g. Provide technician from fire alarm contractor for acceptance test of system with AHJ during normal or overtime working hours.
    - h. Remove fire alarm devices from pit where not required.
    - i. Remove fire alarm devices from hoistway overhead where not required.
  9. Conduit from the closest hoistway of each elevator group or single elevator to the firefighters' control room and/or main control console. Coordinate size, number, and location of conduits with Elevator Contractor.
  10. Means to automatically disconnect power to affected elevator drive unit and controller prior to activation of control space fire sprinkler system and/or hoistway fire sprinkler system. Provide heat detectors, shunt trip breaker and all necessary equipment.
  11. Wiring from building security system to elevator controllers and all security system equipment.
  12. Card or proximity readers, elevator contractor to coordinate and assist with installation of readers in car operating panels or hall stations.
  13. Review power confirmation data, provided by the Elevator Contractor, on behalf of the Owner. Verify electrical supply to the controllers meets the stated requirements. Where applicable, review standby power generator capability to meet stated requirements and absorb regenerated power.

END OF SECTION

SECTION 14220 - ELECTRIC TRACTION ELEVATOR MODERNIZATION

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Two gearless traction passenger elevators, Cars 1 and 2.
- B. All engineering, equipment, labor, and permits required to satisfactorily complete elevator modernization required by Contract Documents.
- C. Applicable conditions of General, Special, and Supplemental Conditions, Division 1, and all sections listed in Contract Documents "Table of Contents."
- D. Applicable conditions of Purchasers General, Special, and Supplemental Conditions.
- E. Preventive maintenance as described in Section 01800 and Section 14325 herein.
- F. Additional equipment or finishes furnished under other sections, installed under this section:
  - 1. Card reader security system
- G. Cartage and Hoisting: All required staging, hoisting, and movement to, on, and from the site including new equipment, reused equipment, or dismantling and removal of existing equipment.
- H. Unless specifically identified as "Reuse," "Retain," or "Refurbish," provide new equipment.
- I. Protective barriers between cars in normal operation and adjacent cars in the modernization process. Full depth and height of hoistway.
- J. Hoistway, pit, and control space barricades as required.

1.2 RELATED WORK PROVIDED UNDER OTHER SECTIONS

- A. See Section 01900, Related Work.

1.3 DEFINITIONS

- A. Terms used are defined in the latest edition of the Safety Code for Elevators and Escalators, ASME A17.1.
- B. Reference to a device or a part of the equipment applies to the number of devices or parts required to complete the installation.
- C. Provisions of this specification are applicable to all elevators unless identified otherwise.

1.4 QUALITY ASSURANCE

- A. Approved Contractors:
  - 1. Gearless Elevators: Centric, KONE, Otis, Schindler, thyssenkrupp.
  - 2. Approved Components:
    - a. Fixtures: Standard, vandal-resistant
    - b. Control Systems: OEM, GAL Galaxy, Smartrise, MCE.

- B. Seismic Performance Requirements: Elevator system shall withstand the effects of earthquake motions determined according to SEI/ASCE 7 and shall comply with elevator safety requirements for seismic risk Zone 3 or greater in ASME A17.1/CSA B44.
  - 1. The term “withstand” means the system will remain in place without separation of any parts when subjected to the seismic forces specified.
  - 2. Provide earthquake equipment required by ASME A17.1/CSA B44.
  - 3. Provide seismic switch required by SEI/ASCE 7.
- C. Compliance with Regulatory Agencies: See Section 01040, Project Procedures.
- D. Warranty:
  - 1. Material and workmanship of installation shall comply in every respect with Contract Documents. Correct defective material or workmanship which develops within one year from date of final acceptance of all work to satisfaction of Architect, Purchaser and Consultant at no additional cost, unless due to ordinary wear and tear or improper use or care by Purchaser. Perform maintenance in accordance with terms and conditions indicated in the Preventive Maintenance Agreement.
  - 2. Defective is defined to include, but not be limited to, operation or control system failures, car performance below required minimum, excessive wear, unusual deterioration, or aging of materials or finishes, unsafe conditions, the need for excessive maintenance, abnormal noise, or vibration, and similar unsatisfactory conditions.
  - 3. Retained Equipment: All retained components, parts, and materials shall be cleaned, checked, modified, repaired, or replaced so each component and its parts are in like new operating condition. Retained equipment must be compatible for integration with new systems. All retained equipment shall be covered under the warranty provisions, of Articles 1.5 F. 1 and 2 above. No prorations of equipment or parts shall be allowed on preventive maintenance contract, Section 14325, between the Contractor and Purchaser.
  - 4. Make modifications, requirements, adjustments, and improvements to meet performance requirements specified herein.

#### 1.5 DOCUMENT AND SITE VERIFICATION

- A. In order to discover and resolve conflicts or lack of definition which might create problems, Contractor must review Contract Documents and site conditions for compatibility with its product prior to submittal of quotation. Review existing structural, electrical, and mechanical provisions for compatibility with Contractor’s products. Purchaser will not pay for change to structural, mechanical, electrical, or other systems required to accommodate Contractor’s equipment.

#### 1.6 SUBMITTALS

- A. See Section 01300, Submittals, and Section 01700, Final Contract Compliance Review, Article 1.3.

#### 1.7 PERMIT, TEST AND INSPECTION

- A. Obtain and pay for permit, license, and inspection fee necessary to complete installation.
- B. Perform full pre-test during normal working hours in advance of acceptance test.
- C. Perform test required by Governing Authority in accordance with procedure described in ASME A17.2 Guide for Inspection of Elevators, Escalators, and Moving Walks in the presence of Authorized Representative.
- D. Supply personnel and equipment for test and final review by Consultant as required in Section 01700.



1.8 MAINTENANCE

- A. Interim: See Section 01800, Maintenance, Article 1.1, A.
- B. Warranty Maintenance: See Section 01800, Maintenance, Article 1.2, A.
- C. Preventive Maintenance: See Section 01800, Maintenance, Article 1.3, A.

PART 2 - PRODUCTS

2.1 SUMMARY

- A. Two Passenger Elevators: Unless specifically identified as “retain existing,” provide new equipment.

Elevators 1 and 2	Existing Equipment	Disposition
Capacity:	2,000 lbs.	Retain existing
Class Loading:	Passenger/service Class A	Retain existing
Contract Speed:	200 fpm	Retain existing
Machine:	Geared	AC induction or P.M.S.M.
Machine Location:	Overhead	Retain existing
Operational Control:	Duplex selective collective	Duplex selective collective microprocessor-based system
Motor Control:	DC Motor Generator	AC variable frequency microprocessor-based with digital closed-loop feedback
Power Characteristics:	Field verify	Retain existing
Stops and Openings:	5 Front	Retain existing
Travel:	Field verify	Retain existing
Minimum Clear Interior:	Field verify	Retain existing
Entrance Size:	3'-0" wide x 7'-0" high	Retain existing
Entrance Type:	Single-speed, Center-opening	Retain existing
Door Operator:	Medium-speed heavy-duty	High-speed heavy-duty linear drive with minimum opening speed of 2½ fps
Door Protection:	Infrared full screen device	Infrared full screen device with differential timing, nudging, and interrupted beam time
Guide Rails:	Planed steel tees	Retain existing.

2.2 MATERIALS

- A. See Section 01600, Materials.

2.3 CAR AND GROUP PERFORMANCE

- A. Car Speed:  $\pm 3\%$  of contract speed under any loading condition.
- B. Car Capacity: Safely lower, stop, and hold 125% of rated load.
- C. Car Stopping Zone:  $\pm 1/8$ " under any loading condition.
- D. Door Opening Time: 1.6 seconds from start of opening to fully open.
- E. Door Closing Time: 2.4 seconds from start of closing to fully closed.
- F. Car Floor-to-Floor Performance Time: 10.5 seconds from start of doors closing until doors are 1/2 open, and car level and stopped at next successive floor under any loading condition or travel direction (172" typical floor height).
- G. Car Ride Quality:
  - 1. Ride Quality shall be measured and analyzed according to the methods specified in ISO18738.
  - 2. Device to be utilized in procuring field measurements shall be the EVA-625 Elevator Vibration Analysis System as manufactured by Physical Measurement Technologies (PMT).
  - 3. Specified levels apply to horizontal and vertical acceleration measured from within car, from the point at which the car has moved  $1/2$  meter from start position to  $1/2$  meter from final position, as defined by ISO18738.
  - 4. Maximum peak-to-peak vibration for the horizontal and vertical axes shall be no greater than 20 mg peak-to-peak.
  - 5. The A95 peak to peak vibration for the horizontal and vertical axes shall be no greater than 14 mg peak to peak.
  - 6. Acceleration and Deceleration: Smooth constant and not less than 3.3 feet/second<sup>2</sup> with an initial ramp between 0.5 and 0.75 second. Sustained Jerk: Not more than 6 feet/second<sup>3</sup>.
- H. Noise and Vibration Control
  - 1. Airborne Noise: Measured noise level of elevator equipment and its operation shall not exceed 55 dBA inside car under any condition including door operation and car ventilation exhaust blower on its highest speed. Limit noise level in the control space relating to elevator equipment and its operation to no more than 80 dBA. All dBA readings to be taken 3'-0" off the floor and 3'-0" from the equipment using the "A" weighted scale.
  - 2. Vibration Control: All elevator equipment provided under this contract, including power unit, controller, and their support shall be mechanically isolated from the building structure and electrically isolated from the building power supply and to each other to minimize the possibility of objectionable noise and vibrations being transmitted to occupied areas of the building.

2.4 OPERATION

- A. Duplex Selective Collective Microprocessor-Based, Elevators 1 and 2:
  - 1. Operate cars without attendants from pushbuttons in cars and located at each floor. When cars are available, park one car at main floor ("home" car). Park other car where last used ("free" car).
  - 2. Respond to car calls and hall calls above main floor using the free car. Once a car has started, respond to registered calls in the direction of travel and in the order the floors are reached.

3. Do not reverse car direction until all car calls have been answered, or until all hall calls ahead of the car and corresponding to the direction of car travel have been answered.
  4. Slow cars and stop automatically at floors corresponding to registered calls in the order in which they are approached in either direction of travel. As slowdown is initiated for a hall call, automatically cancel hall call. Cancel car calls in the same manner. Hold car at arrival floor an adjustable time interval to allow passenger transfer.
  5. Answer calls corresponding to direction in which car is traveling unless call in the opposite direction is the highest (or lowest) call registered.
  6. When the free car is clearing calls, start home car to respond to:
    - a. A call registered on home car pushbuttons.
    - b. An up-hall call registered below free car.
    - c. An up or a down call registered above free car while free car is traveling down.
    - d. A hall call when free car is delayed in its normal operation for a predetermined period.
  7. When both cars are clearing calls, stop only one car in response to any registered hall call. Return the first car to clear its calls to main floor. Should last service required bring both cars to main floor, the first arriving car becomes the free car.
  8. Illuminate appropriate pushbutton to indicate call registration. Extinguish light when call is answered.
  9. Answer lower floor calls with the home car unless free car is parked at floor where the call occurs. If no car is parked at main level, answer calls below main floor using the first car traveling down. Do not stop cars traveling to or from levels below main floor at main floor unless there are calls registered for service at that floor.
- B. Other Items:
1. Load Weighing: Provide means for weighing car passenger load. Control system to provide dispatching at main floor in advance of normal intervals when car fills to capacity. Provide hall call by-pass when the car is filled to preset percentage of rated capacity and traveling in down direction. Field Adjustment Range: 10%-100%.
  2. Anti-Nuisance Feature: If car loading relative to weight in car is not commensurate with number of registered car calls, or activation of door protection device is not commensurate with the number of registered car calls, cancel car calls. Systems employing either load weighing or door protective device for activation of this feature are acceptable.
  3. Independent Service: Provide controls for operation of each car from its pushbuttons only. Close doors by constant pressure on desired destination floor button or door close button. Open doors automatically upon arrival at selected floor.
  4. Car-to-Lobby Feature: Provide the means for automatic return to the main lobby floor. Return car nonstop after answering pre-registered car calls, and park with doors open for an adjustable time period of 60-90 seconds. Upon expiration of time period, car shall automatically revert to normal operation and close its doors until assigned as next car or until the car is placed on manual control via in-car attendant or out-of-service switch.
  5. Artificial Intelligence Systems: Control system shall include one or more of the following artificial intelligence approaches to maximize the interfloor traffic performance and reduce the number of "long wait calls" for a given group of elevators:
    - a. A long-term learning function with a histogram or genetic algorithms that records traffic patterns in the building on a hard disk over at least a week of operation. It shall make use of this information by positioning cars at floors at certain times of the day when heavy traffic is anticipated, by minimizing stops by inferring likely traffic patterns and arrival/departure rates at different floors during different times of the day. The system shall reduce the probability of long wait calls during heavy periods of traffic, etc.
    - b. Incorporates neural network, fuzzy logic type rule sets in an expert system rule base. Provide a short-term learning function and a knowledge base of predicted traffic patterns and car movements.

- c. A destination hall call registration system that anticipates traffic demands before they occur.
  - d. Contractor shall supply full details of his preferred approach to these requirements with his bid response.
- C. Firefighters' Service: Provide equipment and operation in accordance with Code requirements.
- D. Firefighters' Emergency Operation: Provide equipment and operation in accordance with code requirements. Replace all fire key switches in non-modernized elevators in this building to match modernized elevators.
- E. Automatic Car Stopping Zone: Stop car within 1/8" above or below the landing sill. Maintain stopping zone regardless of load in car, direction of travel, distance between landings, hoist rope slippage, or stretch.
- F. Motion Control: Microprocessor based AC, variable-voltage, variable frequency with digitally encoded closed-loop velocity feedback suitable for operation specified and capable of providing smooth, comfortable car acceleration, retardation, and dynamic braking. Limit the difference in car speed between full load and no load to not more than  $\pm 3\%$  of the contract speed.
- G. Door Operation: Automatically open doors when car arrives at main floor. At expiration of normal dwell time, close doors. Reopen doors when car is designated for loading.
- H. Standby Lighting and Alarm: Car mounted battery unit with solid-state charger to operate alarm bell and car emergency lighting. Battery to be rechargeable with minimum five-year life expectancy. Provide constant pressure test button in service compartment of car operating panel. Provide lighting integral with portion of normal car lighting system.
- I. Battery Rescue Operation: Provide battery rescue operation under power loss.
- J. Card/Proximity Reader Security System: Provide provisions inside Cars for reader unit.
- 1. Mount reader unit as directed by Owner and cross connect from car pushbuttons to control module in machine room. Reader control unit, mounting brackets, wiring materials, logic circuits, etc., by Security Subcontractor.
  - 2. Provide a filler plate to match card slot size and car return panel finish, including direction of graining, where card slot or proximity reader cutout is not initially utilized.
  - 3. Elevator control systems shall facilitate system tracking of persons accessing secure floors via printout by passenger I.D. number, floor accessed, and time of entry.
  - 4. Arrange system so that independent service and/or attendant operation overrides security system.
  - 5. Arrange system so that firefighters' service overrides security system.
  - 6. Arrange system so that Code Blue overrides security system.
  - 7. Provide manual override switch on the outside of the elevator controller to enable all car calls.
- K. Car Light and Fan Timer: Provide necessary logic and power relay to allow car lights and fan to turn off.

## 2.5 CONTROL SPACEEQUIPMENT

- A. Arrange equipment in existing control spaces.
- B. Gearless Traction Hoist Machine:
  - 1. AC induction or P.M.S.M. ACV<sup>3</sup>F gearless traction type motor with brake, drive sheave, and deflector sheave mounted in proper alignment on a common, isolated bedplate.

2. Provide hoist machine mounted direct drive, digital, closed-loop velocity encoder.
  3. Provide means to prevent ascending car over-speed and unintended car movement per Code. Provide redundant brake; rope gripper not acceptable.
  4. Provide rope lubricator.
- C. Solid State Power Conversion and Regulation Unit:
1. Provide solid state, alternating current, variable voltage, variable frequency (ACV<sup>3</sup>F), I.G.B.T. converter/inverter drives.
  2. Design unit to limit current, suppress noise, and prevent transient voltage feedback into building power supply. Provide internal heat sink cooling fans for the power drive portion of the converter panels. Conform to IEEE standards 519-1992 for line harmonics and switching noise.
  3. Isolate unit to minimize noise and vibration transmission. Provide isolation transformers, filter networks, and choke inductors.
  4. Suppress solid-state converter noises, radio frequency interference, and eliminate regenerative transients induced into the mainline feeders or the building standby power generator.
  5. Supplemental direct-current power for the operation of hoist machine brake, door operator, dispatch processor, signal fixtures, etc., from separate static power supply.
  6. ACV<sup>3</sup>F Drives for gearless elevators shall be regenerative and utilize IGBT converter/inverter and dynamic braking during overhauling condition.
- D. Encoder: Direct drive, solid-state, digital type. Update car position at each floor and automatically restore after power loss.
- E. Controller: UL/CSA labeled.
1. Compartment: Securely mount all assemblies, power supplies, chassis switches, relays, etc., on a substantial, self-supporting steel frame. Completely enclose equipment with covers. Provide means to prevent overheating.
  2. Relay Design: Magnet operated with contacts of design and material to insure maximum conductivity, long life, and reliable operation without overheating or excessive wear. Provide wiping action and means to prevent sticking due to fusion. Contacts carrying high inductive currents shall be provided with arc deflectors or suppressors.
  3. Microprocessor-Related Hardware:
    - a. Provide built-in noise suppression devices which provide a high level of noise immunity on all solid-state hardware and devices.
    - b. Provide power supplies with noise suppression devices.
    - c. Isolate inputs from external devices (such as pushbuttons) with opto-isolation modules.
    - d. Design control circuits with one leg of power supply grounded.
    - e. Safety circuits shall not be affected by accidental grounding of any part of the system.
    - f. System shall automatically restart when power is restored.
    - g. System memory shall be retained in the event of power failure or disturbance.
    - h. Equipment shall be provided with Electro Magnetic Interference (EMI) shielding within FCC guidelines.
  4. Wiring: CSA labeled copper for factory wiring. Neatly route all wiring interconnections and securely attach wiring connections to studs or terminals.
  5. Permanently mark components (relays, fuses, PC boards, etc.) with symbols shown on wiring diagrams.
  6. Monitoring System Interface: Provide controller with serial data link through RJ45 Ethernet connection and install all devices necessary to monitor items outlined herein. Elevator contractor responsible to connect monitoring system interface to control space monitoring compartment and LAN. Wiring from the LAN to the control space monitoring compartment by others. Provide full monitoring system as specified herein.

7. Provide discreet inputs in each controller and wire terminals to all devices to be monitored.
  8. Provide controller or machine mounted auxiliary, lockable "open," disconnect if mainline disconnect is not in sight of controller and/or machine.
  9. Controller shall automatically turn off car lighting and fan when elevator is not in use.
- F. Machine and Equipment Support Beams: Retain existing in place. Provide all required supplemental supports and attachments. Provide Structural Engineering certification validating size and location of all new support structure provided.
- G. Governor: Centrifugal-type, car driven with pull-through jaws and bi-directional shutdown switches. Provide required bracketing and supports for attachment to building structure.
- H. Emergency Brake:
1. Provide means to prevent ascending car over-speed and unintended car movement per Code.
- 2.6 HOISTWAY EQUIPMENT
- A. Guide Rails: Retain main and counterweight guide rails in place.
1. Clean rails and brackets. Remove rust.
  2. Check all rail and bracket fastenings and tighten.
  3. Realign rails as required to provide smooth car ride.
  4. Provide supplemental rail brackets and/or backing as required by Code or to enhance car ride quality.
- B. Buffers, Car and Counterweight: Retain existing.
1. Clean and paint.
- C. Sheaves: Machined grooves and sealed bearings. Provide mounting means to machine beams, machine bedplate, car and counterweight structural members, or building structure.
- D. Counterweight: Retain existing.
- E. Counterweight Guide Shoes: Rebuild guide shoes.
- F. Governor Rope and Encoder Tape Tensioning Sheaves: Mount sheaves and support frame on pit floor or guide rail. Provide frame with guides or pivot point to enable free vertical movement and proper tension of rope and tape.
- G. Hoist and Governor Ropes:
1. Traction steel type as required by machine design. Fasten with staggered length, adjustable, spring-isolated wedge type shackles.
  2. Coated flat belt with imbedded steel cables.
  3. Governor rope as required by governor manufacturer.
- H. Terminal Stopping: Provide normal and final devices. Provide emergency terminal speed limiting devices.
- I. Electrical Wiring and Wiring Connections:
1. Conductors and Connections: Copper throughout with individual wires coded and connections on identified studs or terminal blocks. Use no splices or similar connections in wiring except at terminal blocks, control compartments, or junction boxes. Provide a minimum of 10% spare conductors throughout. A minimum of ten #18 AWG wires shall be provided. Run spare wires from car connection points to individual elevator controllers

- in the machine room. Provide eight pair of spare shielded communication wires in addition to those required to connect specified items. Tag spares in machine room.
2. Conduit: Painted or galvanized steel conduit, EMT, or duct. Flexible heavy-duty service cord may be used between fixed car wiring and car door switches for door protective devices.
  3. Traveling Cables: Flame and moisture-resistant outer cover. Prevent traveling cable from rubbing or chafing against hoistway or equipment within hoistway. In addition to wires needed to connect specified items the following shall be provided:
    - a. Four twisted shielded pair for card reader.
    - b. Four pair of shielded wires to car top, plus 3'-0" excess loop at both ends for future CCTV.
    - c. One RG6 coax to car top, plus 3'-0" excess loop at both ends for CCTV.
    - d. Three 14-gauge wires for CCTV power.
    - e. One twisted shielded pair for to car top, plus 3'-0" excess loop at both ends for firefighter's announcement speaker.
    - f. One twisted shielded pair to car top, plus 3'-0" excess loop at both ends for background music.
    - g. Four twisted shielded pair to car top, plus 3'-0" excess loop at both ends for Wi-Fi router
    - h. Three 14-gauge wires to car top, plus 3'-0" excess loop at both ends for Wi-Fi router.
    - i. Four twisted shielded pair for Digital Video Display.
    - j. Three 14-gauge wires for Digital Video Display
  4. Auxiliary Wiring: Connect fire alarm initiating devices, emergency two-way communication system, future CCTV, digital video display, card reader, intercom, and announcement speaker and/or background music in each car controller in machine room.
- J. Entrance Equipment: Retain existing. Refurbish/replace and adjust assemblies to ensure smooth and quiet mechanical open and close of doors.
1. Door Hangers and Rollers: Replace all rollers.
  2. Door Track: Replace. Clean and sand for smooth, quiet operation.
  3. Door Interlocks: Replace.
  4. Door Closers: Spring-activated SmarTork spirator. Design and adjust to insure smooth, quiet mechanical close of doors.
- K. Hoistway Door Unlocking Device: Provide unlocking device with escutcheon in door panel at all floors, with finish to match adjacent surface.
- L. Hoistway Access Switches: Retain existing.
- M. Floor Numbers: Stencil paint 4" high floor designations in contrasting color on inside face of hoistway doors or hoistway fascia in location visible from within car.
- 2.7 HOISTWAY ENTRANCES
- A. Frames: Retain existing. Provide Arabic floor designation/Braille plates, centered at 60" above finished floor, on both side jambs of all entrances. Provide plates at main egress landing with "Star" designation. For designated emergency car, provide "Star of Life" designation plates at height of 78"-84" above finished floor on both side jambs at all floors. Braille indications shall be below Arabic floor designation. Provide 3" car identification plates at the designated landing.
  - B. Door Panels: Retain existing. Provide new door gibs with fire tabs at all floors. Minimum two gibs per panel, one at leading edge, and one at trailing edge of each panel. Provide code-required door panel retainer mechanism on lower edge of door panel to address failure of primary lower edge door guidance.

- C. Sight Guards: Retain existing. Replace damaged sight guards.
- D. Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
- E. Sill Supports: Retain existing. Check and tighten all fastenings.
- F. Fascia, Toe Guards, and Hanger Covers: Retain existing. Provide as required where damaged or missing. Check and tighten all fastenings. Stencil paint floor number on fascia or hoistway wall, all floors, visible where car doors are initially opened.
- G. Struts and Headers: Retain existing. Check and tighten all fastenings.

## 2.8 CAR EQUIPMENT

- A. Frame: Retain existing. Check and tighten all fastenings.
- B. Safety Device: Retain existing. Check and tighten all fastenings. Disassemble, clean, and inspect components. Replace all worn or damaged parts. Reassemble and test for proper operation. For wind up safeties inspect tail rope and verify proper type for the application; replace if needed. Perform soft set and full load test in advance of acceptance test.
- C. Platform: Retain existing. Reinforce if required. Check and tighten all fastenings.
- D. Platform Apron: Provide new.
- E. Guide Shoes: Roller type with three or more spring-dampened, sound-deadening rollers per shoe.
- F. Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
- G. Doors: Retain Existing.
- H. Door Hangers: Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.
- I. Door Track: Bar or formed, cold-drawn removable steel track with smooth roller contact surface.
- J. Door Header: Construct of minimum 12-gauge steel; shape to provide stiffening flanges.
- K. Car Gate Switch: Prohibit car operation unless car door is closed.
- L. Door Electrical Contact: Prohibit car operation unless car door is closed.
- M. Door Clutch: Heavy-duty clutch, linkage arms, drive blocks, and pickup rollers or cams to provide positive, smooth, quiet door operation. Design clutch so car doors can be closed while hoistway doors remain open.
- N. Restricted Opening Device: Restrict opening of car doors outside unlocking zone. Plunger type restrictors not acceptable.
- O. Door Operator: High-speed, linear drive, heavy-duty door operator capable of opening doors at no less than 2.5 fps. Accomplish reversal in no more than 2½" of door movement. Provide solid-state door control with closed loop circuitry to constantly monitor and automatically adjust door operation based upon velocity, position, and motor current. Maintain consistent, smooth, and



quiet door operation at all floors, regardless of door weight or varying air pressure. Provide closed loop operation, monitoring door speed, torque and closing force, at all times.

**P. Door Control Device:**

1. Infrared Reopening Device: Black fully enclosed device with full screen infrared matrix or multiple beams extending vertically along leading edge of each door panel to minimum height of 7'-0" above finished floor. Device shall prevent doors from closing and reverse doors at normal opening speed if beams are obstructed while doors are closing, except during nudging operation. In event of device failure, provide for automatic shutdown of car at floor level with doors open.
2. Nudging Operation: After beams of door control device are obstructed for a predetermined time interval (minimum 20.0-25.0 seconds), warning signal shall sound, and doors shall attempt to close with a maximum of 2.5-foot pounds kinetic energy. Activation of the door open button shall override nudging operation and reopen doors.
3. Interrupted Beam Time: When beams are interrupted during initial door opening, hold door open a minimum of 3.0 seconds. When beams are interrupted after the initial 3.0 second hold open time, reduce time doors remain open to an adjustable time of approximately 1.0-1.5 seconds after beams are reestablished.
4. Differential Door Time: Provide separately adjustable timers to vary time that doors remain open after stopping in response to calls.
  - a. Car Call: Hold open time adjustable between 3.0 and 5.0 seconds.
  - b. Hall Call: Hold open time adjustable between 5.0 and 8.0 seconds. Use hall call time when car responds to coincidental calls.

**Q. Car Operating Panel:**

1. One car operating panel with faceplate, consisting of a metal box containing vandal resistant operating fixtures, mounted behind the car stationary front return panel. Faceplate shall be hinged and constructed of satin finish stainless steel.
2. Suitably identify floor buttons, alarm button, door open button, door close button and emergency push-to-call button with flat stainless tactile symbols surface mounted. Configure plates per local building code accessibility standards including Braille. Locate operating controls no higher than 48" above the car floor; no lower than 35" for emergency push-to-call button and alarm button.
3. Provide minimum 3/4" diameter raised or flush floor pushbuttons which illuminate to indicate call registration. Provide brushed stainless buttons with illuminated LED halo. Include 5/8" high floor designation on face of pushbutton.
4. Provide alarm button to ring bell located on car, and sound distress signal at security desk panel. Illuminate button when actuated.
5. Provide keyed stop switch at bottom of car operating panel in locked car service compartment. Arrange switch to sound main control panel distress signal when actuated. Mark device to indicate "run" and "stop" positions.
6. Provide "door open" button to stop and reopen doors or hold doors in open position.
7. Extended Door Hold Open Button: Provide button to extend normal door hold open period up to 30 seconds. Cancel extended time by registration of car call or actuation of door close button. When activated, illuminate the door hold open button and the door close button. Cancel the hold open time when the door close button is activated. If a hall call is entered at another floor, sound a buzzer to indicate call waiting is activated.
8. Provide "door close" button to activate door close cycle. Cycle shall not begin until normal door dwell time for a car or hall call has expired, except firefighters' operation.
9. Provide firefighters' Phase II key switch with engraved instructions filled red. Include light jewel, buzzer, and call cancel button.
10. Provide lockable service compartment with recessed flush door. Door material and finish shall match car return panel or car operating panel faceplate. Inside surface of door shall contain an integral flush window for displaying the elevator operating permit.
11. Include the following controls in lockable service cabinet with function and operating positions identified by permanent signage or engraved legend:

- a. Inspection switch.
  - b. Light switch.
  - c. Three-position exhaust blower switch.
  - d. Independent service switch.
  - e. Constant pressure test button for battery pack emergency lighting.
  - f. 120-volt, AC, GFCI protected electrical convenience outlet.
  - g. Card reader override switch.
  - h. Stop key switch.
  - i. Car lighting dimmer switch.
12. Provide black paint filled (except as noted), engraved, or approved etched signage as follows with approved size and font:
- a. Phase II firefighters' operating instructions on main operating panel above corresponding keyswitch filled red.
  - b. Car number on main car operating panel.
  - c. "Certificate of Inspection on File in Building Office" on main car operating panel.
  - d. "No Smoking" on main car operating panel.
  - e. Car capacity in pounds on main car operating panel service compartment door.
- R. Car Top Control Station: Mount to provide safe access and utilization while standing in an upright position on car top.
- S. Work Light and Duplex Plug Receptacle: GFCI protected outlet at top and bottom of car. Include on/off switch and lamp guard. Provide additional GFCI protected outlet on car top for installation of car future CCTV and digital video display.
- T. Communication System:
1. "Push to Call," two-way communication instrument in car with automatic dialing, tracking, and recall features with shielded wiring to car controller in machine room. Provide dialer with automatic rollover capability with minimum two numbers.
    - a. "Push to Call" button or adjacent light jewel shall illuminate and flash when call is acknowledged. Button shall match car operating panel pushbutton design. Provide uppercase "PUSH TO CALL" "HELP ON THE WAY" engraved signage adjacent to button.
    - b. Provide "Push to Call" button tactile symbol, engraved signage, and Braille adjacent to button mounted integral with car front return panel.
  2. Install remote speakers, with shielded wiring to control space junction box.
  3. Provide onsite two-way communication between car and control space if required.

## 2.9 CAR ENCLOSURE

- A. Retain existing car enclosure and shell. Modify as required for application of new signal and pushbutton fixtures. Overall car weight to be verified and documented, prior to removal of any equipment from the existing car frame or car enclosure. Check and tighten all fasteners.

Provide the following features.

1. Canopy: Retain.
2. Return Panels: New satin finish stainless cladding over returns.
3. Transom: Satin finish stainless cladding over existing transom.
4. Ventilation: Two-speed exhaust blower mounted to car canopy on isolated rubber grommets. Exhaust blower shall meet requirements of Item 2. 3, H. Ventilation shall shut off after adjustable period (60-180 seconds) of no elevator demand.
5. Lighting: Provide LED fixtures with wiring and hookup. Coordinate with emergency lighting requirements. Lighting shall shut off after adjustable period (60-180 seconds) of no elevator demand. Provide emergency lighting integral with portion of normal car lighting system. Provide temporary lighting as required.

6. Suspended Ceiling: New satin finish stainless ceiling panels with cutouts for LED downlights or cove lighting. Lighting choice of the Owner.
7. Handrails: Retain handrails.
8. Pads and Hooks, Cars 1 and 2: Three-piece removable pads. Two pads covering side walls and adjacent front returns and one covering rear wall. Provide cutouts to access main car operating panel.

## 2.10 HALL CONTROL STATIONS

- A. Pushbuttons: Provide riser with flush mounted faceplates. Include pushbuttons for each direction of travel which illuminate to indicate call registration. Include approved engraved message and pictorial representation prohibiting use of elevator during fire or other emergency situation as part of faceplate. Pushbutton design shall match car operating panel pushbuttons. Provide vandal resistant pushbutton and light assemblies. Provide enlarged faceplate to cover existing wall blockout and facilitate handicapped access requirements. Include approved engraved message and pictorial representation prohibiting use of elevator during fire or other emergency situation as part of faceplate. Provide any cutting and patching required. Provide an illuminated signal marked "Elevator Emergency Power" to indicate emergency or standby power is in effect.

## 2.11 SIGNALS

- A. Car Direction Lantern: Provide flush-mounted car lantern in all car entrance columns. Illuminate up or down LED lights and sound electronic tone once for up and twice for down direction travel as doors open. Sound tone once for up direction and twice for down direction. Sound level shall be adjustable from 0-80 dBA measured at 5'-0" in front of hall control station and 3'-0" off floor. Provide adjustable car door dwell time to comply with ADA requirements relative to hall call notification time. Car direction lenses shall be arrow shaped with faceplates. Lenses shall be minimum 2½" in their smallest dimension.
- B. Car Position Indicator: digital indicator containing floor designations and direction arrows a minimum of 2" high to indicate floor served and direction of car travel. Locate fixture in each car operating panel. When a car leaves or passes a floor, illuminate indication representing position of car in hoistway. Illuminate proper direction arrow to indicate direction of travel.
- C. Hall Position Indicator: Alpha-numeric digital indicator containing floor designations and direction arrows a minimum of 2" high to indicate floor served and direction of car travel. Mount integral with hall lanterns at the lobby floor.
- D. Faceplate Material and Finish: Satin finish stainless steel, all fixtures.
- E. Floor Passing Tone: Provide an audible tone of no less than 20 decibels and frequency of no higher than 1500 Hz, to sound as the car passes or stops at a floor served.
- F. Voice Synthesizer: Provide electronic device with easily reprogrammable message and voice to announce car direction, floor, emergency exiting instructions, etc.

## 2.12 GROUP DISPLAY AND MONITORING SYSTEMS

- A. Group Display Panel: Provide a CPU with battery backup and LCD minimum 17" diagonal flat screen color monitor with capability to activate, display, monitor, and control the following functions shown below. Locate Group Display Panels in the following locations; Elevator Machine Rooms, Security/Reception desk.

1. On/off means to place car in or out of service. When placed in "off" position return cars nonstop to designated floor and park with doors open for adjustable period of 1-3 minutes. At expiration of time, restore car to service.
  2. Car operating on normal/standby power.
  3. Car position and direction of travel.
  4. Car calls.
  5. Hall calls.
  6. Operating mode.
  7. Door status.
  8. Delayed car.
  9. Load weighing and by-pass.
  10. Car to lobby feature.
  11. Car in/out of service.
  12. Seismic operation.
  13. Secured floor control and code entry.
  14. Alarm distress signal.
  15. Card reader override. Individual car on/off provisions.
  16. Accumulate hall call registration information as part of monitoring capability. Provide memory capacity for at least the preceding five, 24-hour periods, in blocks of 5 or 15-minute segments, running hour to hour (i.e., 2:00 p.m. to 3:00 p.m.) Provide battery backup to prevent loss of accumulated data due to loss of normal power.
  17. Accumulate information for retrieval and use as follows:
    - a. Visual and printed summary of hall call registration events by floor, direction, and duration, totaled in 5- or 15-minute segments during any 60-minute block using an internal clock.
    - b. Visual and printed summary of hall call registration duration averaged for 5 or 15 minute and hourly periods.
    - c. Visual and printed summary of percentage of hall calls answered within 30 and 60 seconds in each 5- or 15-minute and hourly periods.
    - d. Visual and printed summary of time periods during which individual cars are not in group operation (operating separately or out of service).
  18. Accumulate system fault data including nature of fault, time, and day. Store and retrieval capabilities for minimum 30-day period.
  19. Group Display Panel shall be located as directed by Consultant/Owner. Where applicable, identify all indicators and manual switches with appropriate engraving. Provide conduit and wiring to control panel. Coordinate size and location with Building Console Supplier.
- B. Firefighters' Control Panel: Locate in building fire control room. Fixture faceplate, stainless steel satin finish, including the following features:
1. Car position and direction indicator (digital-readout or color LCD Flat Panel Display). Identify each position indicator with car number and group identification.
  2. Indicator showing operating status of car.
  3. Manual car standby power selection switches and power status indicators.
  4. Two-position firefighters' emergency return switches and indicators with engraved instructions filled red.
  5. Where applicable, identify all indicators and manual switches with appropriate engraving. Reuse conduit and wiring to control panel. Coordinate size and location with Building Console Supplier.

## 2.13 MONITORING SYSTEM

- A. General: Provide new interactive system with battery backup to prevent loss of accumulated data due to loss of normal power, to monitor and manage the elevator equipment ("units") hereinafter called "system." Provide system terminals at the following locations:
1. Security/Reception Desk

- B. All other monitoring locations will utilize an IP address to access the system for reviewing data, interactive capabilities, and reporting.
- C. Data collection, data storage, and real-time monitoring portion of the system shall be based on Microsoft Windows operating systems. Provide the following features:
  1. Network based, capable of interfacing with control systems via either serial data link or hardwired interface connections.
  2. Operate on any TCP/IP based network system including but not limited to an Ethernet, Token Ring, Arc-Net, Lift-Net, etc.
  3. Expansion capability to add unlimited number of monitoring terminals on the network.
  4. Monitoring terminals shall operate peer-to-peer or with a single client server. Failure of a single network device shall not affect the operation of the remainder of the system.
  5. Complete backup of system data shall be accomplished at any single terminal/server location.
  6. Display multiple banks, including multiple buildings, on a single monitoring terminal screen.

2.14 INTERCOM AND DISTRESS SIGNAL SYSTEM

- A. General: Provide intercommunication system, all cars. Include all wiring between elevator hoistways and control panels. Include the following stations:

<u>Station Location</u>	<u>Type Station</u>	<u>Selection Buttons to Call</u>
Elevator Machine Room	Master	Control Panels, All Cars
Lobby Control Panel	Master	Machine Rooms, All Cars
Firefighters' Control Panel	Master	Machine Rooms, All Cars
All Cars	Remote	Lobby Control Panel

- B. Basic Equipment:
  1. Amplifier providing static-free voice transmission with adequate volume and minimum distortion at all stations, with pre-amplifier capable of receiving voice and music inputs from building and emergency building communication system.
  2. Activation of emergency building communication system overrides all other conversations and permits one-way conversation to all master stations in system.
  3. Master Stations:
    - a. Speaker-microphone combination, and/or handset for two-way communication.
    - b. Selection buttons to enable communication with all master stations. Maintain continual reception of hands-free reply from station when a selected button is depressed.
    - c. Two-Position "Talk/Listen" Button: Press to talk; release to listen.
    - d. Illuminate "in use" light when any master station is being used.
    - e. Reset button to make system available for use by any master station.
    - f. Volume control knob for adjustment of incoming volume.
    - g. Button to establish communications with all stations.
    - h. Distress light in lobby panel which illuminates when "push to call" button or alarm button in car is actuated. Energize distress light and buzzer or chime until intercom selection button for that car has been depressed. Sound buzzer or chime in lobby panel simultaneously with illumination of distress light.
  4. Remote Stations:
    - a. Station in car shall be activated by "push to call" two-way communication button. "Push to call" button shall illuminate and flash when call is acknowledged. Button shall match car operating panel pushbutton design. Provide uppercase "PUSH TO

- CALL," "HELP ON THE WAY" engraved signage adjacent to button. Provide "push to call" button tactile symbol, engraved signage, and Braille adjacent to button.
- b. Locate car microphone and speaker, or transceiver/speaker combination in car canopy with drilled speaker pattern, with shielded wiring to control space junction box.

C. Station Housings:

1. House master station in control space in a metal compartment with baked enamel finish. Attach to the group elevator supervisory control panel or wall mount. Provide communication handset with 25'-0" long cord.
2. Provide control center master intercoms with stainless steel satin finish faceplates and engraved operating instructions. Coordinate faceplate size and installation of units with building Console Supplier.

2.15 SEISMIC OPERATIONS AND EQUIPMENT

- A. Provide design, components, and operation per governing code. Provide dual counterweight derailment sensing wires vertically each side of counterweight the entire height of travel. The counterweight frame shall be equipped with a minimum of four derailment rings. A dual axis seismic switch shall be provided that will activate at no less than 0.15 times gravity in the vertical or horizontal directions. A minimum of one seismic switch shall be provided per single or group of elevators. Counterweight retainer plates must be bolted.

PART 3 - EXECUTION

3.1 SITE CONDITION INSPECTION

- A. Prior to beginning installation of equipment, examine hoistway and control space areas. Verify no irregularities exist which affect execution of work specified.
- B. Do not proceed with installation until work in place conforms to project requirements.

3.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver material in Contractor's original, unopened protective packaging.
- B. Store material in original protective packaging. Prevent soiling, physical damage, or moisture damage.
- C. Protect equipment and exposed finishes from damage and stains during transportation, erection, and construction.

3.3 INSTALLATION

- A. Install all equipment in accordance with Contractor's instructions, referenced codes, specification, and approved submittals.
- B. Install control space equipment with clearances in accordance with referenced codes, and specification.
- C. Install all equipment so it may be easily removed for maintenance and repair.
- D. Install all equipment for ease of maintenance.
- E. Install all equipment to afford maximum accessibility, safety, and continuity of operation.

- F. Remove oil, grease, scale, and other foreign matter from the following equipment and apply one coat of field-applied machinery enamel.
  - 1. All exposed equipment and metal work installed as part of this work which does not have architectural finish.
  - 2. Control space equipment and pit equipment.
  - 3. Neatly touch up damaged factory-painted surfaces with original paint color. Protect machine-finish surfaces against corrosion.

- G. Paint control space and pit floors.

### 3.4 FIELD QUALITY CONTROL

- A. Work at jobsite will be checked during course of installation. Full cooperation with reviewing personnel is mandatory. Accomplish corrective work required prior to performing further installation.
- B. Have Code Authority acceptance inspection performed and complete corrective work.

### 3.5 ADJUSTMENTS

- A. Install rails plumb and align vertically with tolerance of 1/16" in 100'-0". Secure joints without gaps and file any irregularities to a smooth surface.
- B. Static balance car to equalize pressure of guide shoes on guide rails.
- C. Lubricate all equipment in accordance with Contractor's instructions.
- D. Adjust motors, power conversion units, brakes, controllers, leveling switches, limit switches, stopping switches, door operators, interlocks, and safety devices to achieve required performance levels.

### 3.6 CLEANUP

- A. Keep work areas orderly and free from debris during progress of project. Remove packaging materials on a daily basis.
- B. Remove all loose materials and filings resulting from work.
- C. Clean control space equipment and floor.
- D. Clean hoistways, car, car enclosure, entrances, operating and signal fixtures.

### 3.7 ACCEPTANCE REVIEW AND TESTS

- A. See Section 01700, Article 1.2, Consultant's Final Observation and Review Requirements.

### 3.8 PURCHASER'S INFORMATION

- A. See Section 01700, Article 1.3, Final Contract Compliance Review.

END OF SECTION

SECTION 14250 – HYDRAULIC ELEVATOR MODERNIZATION

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. One hydraulic passenger elevator, Car 3.
- B. All engineering, equipment, labor, and permits required to satisfactorily complete elevator modernization required by Contract Documents.
- C. Applicable conditions of General, Special, and Supplemental Conditions, Division 1, and all sections listed in Contract Documents "Table of Contents."
- D. Preventive maintenance as described herein.
- E. Additional equipment or finishes furnished under other sections, installed under this section:
  - 1. Card reader security system
- F. Cartage and Hoisting: All required staging, hoisting and movement to, on, and from the site including new equipment, reused equipment, or dismantling and removal of existing equipment.
- G. Unless specifically identified as "Reuse," "Retain," or "Refurbish," provide new equipment.
- H. Protective barriers between cars in normal operation and adjacent cars in the modernization process. Full depth and height of hoistway.
- I. Hoistway, pit, and machine room barricades as required.

1.2 DEFINITIONS

- A. Terms used are defined in the latest edition of the Safety Code for Elevators and Escalators, ASME A17.1.
- B. Reference to a device or a part of the equipment applies to the number of devices or parts required to complete the installation.
- C. Provisions of this specification are applicable to all elevators unless identified otherwise.

1.3 QUALITY ASSURANCE

- A. Approved Contractors:
  - 1. Hydraulic Elevator: CEMCOLift Elevator Systems, KONE, Minnesota Elevator Inc., Otis, Schindler, thyssenkrupp.
- B. Compliance with Regulatory Agencies: Comply with most stringent applicable provisions of following codes, laws, and/or authorities, including revisions and changes in effect:
  - 1. Safety Code for Elevators and Escalators, ASME A17.1
  - 2. Guide for Inspection of Elevators, Escalators, and Moving Walks, ASME A17.2
  - 3. Elevator and Escalator Electrical Equipment, ASME A17.5
  - 4. National Electrical Code, NFPA 70
  - 5. Americans with Disabilities Act, ADA
  - 6. Local Fire Authority



7. Requirements of IBC, OSSC and all other codes, ordinances, and laws applicable within the governing jurisdiction
8. Life Safety Code, NFPA 101
9. Uniform Federal Accessibility Standard, UFAS

C. Warranty:

1. Material and workmanship of installation shall comply in every respect with Contract Documents. Correct defective material or workmanship which develops within one year from date of final acceptance of all work to satisfaction of Architect, Owner and Consultant at no additional cost, unless due to ordinary wear and tear, or improper use or care by Owner. Perform maintenance in accordance with terms and conditions indicated in the Preventive Maintenance Agreement.
2. Defective is defined to include, but not be limited to: operation or control system failures, car performance below required minimum, excessive wear, unusual deterioration, or aging of materials or finishes, unsafe conditions, the need for excessive maintenance, abnormal noise, or vibration, and similar unsatisfactory conditions.
3. Retained Equipment: All retained components, parts, and materials shall be cleaned, checked, modified, repaired or replaced, so each component and its parts are in like new operating condition. Retained equipment must be compatible for integration with new systems. All retained equipment shall be covered under the warranty provisions, of Articles 1.3 C. 1 and 2 above. No prorations of equipment or parts shall be allowed on preventive maintenance contract between the Contractor and Owner.
4. Make modifications, requirements, adjustments, and improvements to meet performance requirements herein.

1.4 PROJECT PROCEDURES

- A. Staging Area: An equipment staging area will be available for use by Contractor. Contractor shall restrict usage to area designated and shall notify Owner/Property Management prior to storing of any large equipment which will impose heavy concentrated loading on floor area. Do not store such equipment until approval is received.
- B. Occupancy and Work by Others:
  1. Contractor expressly affirms Owner's rights to let other contracts and employ other Contractors in connection with required work. Contractor will afford other Contractors and their workmen reasonable opportunity for introduction and storage of materials and equipment, for execution of their work and will properly connect and coordinate his work with theirs. Contractor will also incorporate comparable provisions in all its subcontracts.
  2. Contractor declares that other Contractors employed by Owner on basis of separate contracts may proceed at such times as necessary to install items of work required by Owner.
  3. Contractor declares that it will cooperate with other Contractors employed by Owner and, in addition to other coordination and expediting efforts, will coordinate their work by written notices regarding necessity of such work to be done on or before certain dates.
  4. Contractor declares that it is responsible for review, stamped, and signed approval of all shop drawings for required work.
  5. Contractor hereby declares that content of foregoing paragraphs and influence they may have on project:
    - a. Shall not cause a change in stipulated Contract Sum
    - b. Shall not cause a change in Construction Time Schedule

1.5 DOCUMENT AND SITE VERIFICATION

- A. In order to discover and resolve conflicts or lack of definition which might create problems, Contractor must review Contract Documents and site conditions for compatibility with its product prior to submittal of quotation. Review existing structural, electrical provisions, and mechanical

provisions for compatibility with Contractor's products. Owner will not pay for change to structural, mechanical, electrical, or other systems required to accommodate Contractor's equipment.

## 1.6 SUBMITTALS

- A. Within 60 calendar days after award of contract and before beginning equipment fabrication, submit shop drawings, and required material samples for review. Allow 30 days for response to initial submittal.
1. Scaled or Fully Dimensioned Layout: Plan of pit, hoistway, and machine room indicating equipment arrangement, elevation section of hoistway, details of car enclosures, and car/hall signal fixtures.
  2. Design Information: Indicate equipment lists, reactions, and design information on layouts.
  3. Power Confirmation Information: Design for existing conditions.
  4. Fixtures: Cuts, samples, or shop drawings.
  5. Finish Material: Submit 3" x 12" samples of actual finished material for review of color, pattern, and texture. Compliance with other requirements is the exclusive responsibility of the Contractor. Include, if requested, signal fixtures, lights, graphics, Braille plates, and detail of mounting provisions.
  6. Design Information: Provide calculations verifying the following:
    - a. Adequacy of existing electrical provisions.
    - b. Machine room heat emissions in B.T.U.
    - c. Adequacy of existing car platform structure for intended loading.
    - d. Adequacy of plunger wall thickness for intended loading.
  7. Written Maintenance Control Program (MCP) specifically designed for the equipment included under this contract. Include any unique or product specific procedures or methods required to inspect or test the equipment. In addition, identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedures, including statutory and other required equipment tests.
- B. Submittal review shall not be construed as an indication that submittal is correct or suitable, or that the work represented by submittal complies with the Contract Documents. Compliance with Contract Documents, code requirements, dimensions, fit, and interface with other work is Contractor's responsibility.
- C. Acknowledge and/or respond to review comments within 14 calendar days of return. Promptly incorporate required changes due to inaccurate data or incomplete definition so that delivery and installation schedules are not affected. Identify and cloud drawing revisions, including Contractor elective revisions on each re-submittal. Contractor's revision response time is not justification for equipment delivery or installation delay.

## 1.7 PERMIT, TEST AND INSPECTION

- A. Obtain and pay for permit, license, and inspection fee necessary to complete installation.
- B. Perform test required by governing authority in accordance with procedure described in ASME A17.2 Guide for Inspection of Elevators, Escalators, and Moving Walks in the presence of Authorized Representative.
- C. Supply personnel and equipment for test and final review by Consultant, as required in Part 3.

1.8 MAINTENANCE

- A. Interim: Furnish preventive maintenance service on elevators described herein for a period from notice to proceed, verbal or written, until each unit is removed from building service for modernization. In addition, furnish interim preventive maintenance on completed units until the modernization of each group of elevators is complete and one-year warranty maintenance, defined in Item 1.8 B. below, is commenced. Cost of interim maintenance shall not be included as part of modernization quotation. Indicate costs on a per-unit basis for interim maintenance. Costs for interim maintenance shall be paid by Owner separately and monthly based upon the number of units in service. Perform interim maintenance based upon terms and conditions of preventive maintenance agreement.
- B. Warranty Maintenance:
  - 1. Provide preventive maintenance and 24-hour emergency callback service for one year commencing on date of final acceptance by Owner. Systematically examine, adjust, clean, and lubricate all equipment. Repair or replace defective parts using parts produced by the Contractor of installed equipment. Maintain elevator machine room, hoistway, and pit in clean condition.
  - 2. Use competent personnel, acceptable to the Owner, supervised and employed by Contractor.
  - 3. The warranty maintenance period specified in Item 1.8, A. above shall be extended one month for each three-month period in which equipment related failures average more than .25 per unit per month.
  - 4. Owner retains the option to delete cost of warranty maintenance from new equipment contract and remit twelve equal installments directly to Contractor during period in which maintenance is being performed.
- C. Preventive Maintenance: Quote monthly cost for five-year Preventive Maintenance Agreement commencing upon completion of the warranty period specified in Item 1.8, A. above. Submit quote based upon terms and conditions of the Preventive Maintenance Agreement. Base quotation on present labor and material cost. Price adjustment will be made at Agreement commencement date and thereafter as provided in Agreement.
- D. Use competent personnel, acceptable to the Owner, employed and supervised by Contractor.

PART 2 - PRODUCTS

2.1 SUMMARY

- A. One Passenger Elevators: Unless specifically identified as "retain existing," provide new equipment.

Car 3	Existing Equipment	Disposition
Capacity:	2,000 lbs.	Retain existing
Class Loading:	Passenger Class A	Retain existing
Contract Speed:	125 fpm	Retain existing
Machine:	Hydraulic pump	Provide new
Machine Location:	Remote	Retain existing

Car 3	Existing Equipment	Disposition
Operational Control:	Selective collective	Selective collective microprocessor-based system
Motor Control:	Single speed AC with	Single speed AC with Electronic soft start
Power Characteristics:	480 volts, 3 phase, 60 hertz Field verify	Retain existing
Stops and Openings:	3, all front	Retain existing
Floors Served:	1-3	Retain existing
Travel:	Field Verify	Retain existing
Platform Size:	Field verify	Retain existing
Minimum Clear Inside Car:	Field verify	Retain Existing
Entrance Size:	36" wide x 84" high	Retain Existing
Entrance Type:	Single-speed side-opening	Retain existing
Door Operator:	Medium-speed heavy-duty	Medium-speed heavy-duty with 1½ fps minimum opening speed
Door Protection:	Infrared full screen device	Infrared full screen device with differential timing, nudging, and interrupted beam time
Hydraulic Type:	Direct plunger	Direct plunger
Guide Rails:	Planed steel tees	Retain existing
Buffers:	Spring	Spring
Car Enclosure:		\$15,000 allowance and 400 lbs. weight allowance for interior finishes  Battery powered emergency car lighting. provide separate constant pressure test button in car service compartment. Illuminate portion of normal car lighting
Signal Fixtures:		LED illumination. Contractor's vandal resistant assembly
Hall and Car Pushbutton Stations:		Single hall pushbutton riser Single car operating panel

Car 3	Existing Equipment	Disposition
		Vandal resistant car and hall pushbuttons
	Car Position Indicators:	Single digital with car direction arrows
	In Car Lanterns:	In car entrance columns with volume adjustable electronic chime or tone. Sound twice for down direction. Vandal resistant assembly
	Communication System:	Intercom with distress signal
		Self-dialing, vandal resistant, push to call, two-way communication system with recall, tracking, and voiceless communication
	Fixture Submittal:	Submit brochure depicting contractor's proposed designs with bid
	Additional Features:	Car top inspection station
		Car roller guides
		Firefighters' service, Phases I and II, including alternate floor return
		Battery pack standby power provision
		Accessibility and emergency medical services signage
		Hoistway access switches, top and bottom floors
		Hoistway door unlocking device, all floors
		Platform isolation
		Jack to platen connections
		Independent service feature
		Card reader provisions
		Hydraulic pump unit and controller sound isolation
		Tamper resistant fasteners for all fastenings exposed to the public
		One-year warranty maintenance with 24-hour call-back service
		Seismic safety valve
		Signage engraving filled with black paint or approved etching process

Car 3	Existing Equipment	Disposition
		No visible company name or logo
		Wiring diagrams, operating instructions, and parts ordering information
		Non-proprietary control system and diagnostics provisions

## 2.2 MATERIALS

- A. Site Condition Inspection
1. Prior to beginning installation of equipment, examine hoistway and machine room areas. Verify no irregularities exist which affect execution of work specified.
  2. Do not proceed with installation until work in place conforms to project requirements.
- B. Product Delivery, Storage, and Handling
1. Deliver material in Contractor's original, unopened protective packaging.
  2. Store material in original protective packaging. Prevent soiling, physical damage, or moisture damage.
  3. Protect equipment and exposed finishes from damage and stains during transportation, erection, and construction.
  4. Allocate available site storage areas and coordinate their use with Owner and other Contractors.
  5. Provide suitable temporary weather-tight storage facilities as may be required for materials which will be stored in the open.
- C. Installation Requirements
1. Install all equipment in accordance with Contractor's instructions, referenced codes, specification, and approved submittals.
  2. Install machine room equipment with clearances in accordance with referenced codes and specification.
  3. Install all equipment so it may be easily removed for maintenance and repair.
  4. Install all equipment for ease of maintenance.
  5. Install all equipment to afford maximum accessibility, safety, and continuity of operation.
  6. Remove oil, grease, scale, and other foreign matter from the following equipment and apply one coat of field-applied machinery enamel.
    - a. All exposed equipment and metal work installed as part of this work which does not have architectural finish.
    - b. Machine room equipment, hoistway equipment including guide rail brackets and pit equipment.
    - c. Hoistway equipment including guide rails, guide rail brackets, and pit equipment.
    - d. Neatly touch up damaged factory-painted surfaces with original paint color. Protect machine-finish surfaces against corrosion.
- D. Manufacturer's Nameplates
1. Manufacturer's name plates and other identifying markings shall not be affixed on surfaces exposed to public view. This requirement does not apply to Underwriter's Laboratories and code required labels.
  2. Each major component of mechanical and electrical equipment shall have identification plate with the Manufacturer's name, address, model number, rating, and any other information required by governing codes.

- E. Colors of Factory-Finished Equipment
1. All colors will be selected from the Manufacturer's standard range unless custom colors are specified herein.
  2. Submit samples of all standard colors available and/or specified custom colors for review and approval.
  3. Submit samples of all specified architectural metals specified for review and approval.
- F. Materials and Finishes
1. Steel:
    - a. Sheet Steel (Furniture Steel for Exposed Work): Stretcher-leveled, cold-rolled, commercial quality carbon steel, complying with ASTM A366, matte finish.
    - b. Sheet Steel (for Unexposed Work): Hot-rolled, commercial quality carbon steel, pickled and oiled, complying with ASTM A568/A568M-03.
    - c. Structural Steel Shapes and Plates: ASTM A36.
    - d. Stainless Steel: Type 302 or 304 complying with ASTM A240, with standard tempers and hardness required for fabrication, strength and durability. Apply mechanical finish on fabricated work in the locations shown or specified, Federal Standard and NAAMM nomenclature, with texture and reflectivity required to match Architect's sample. Protect with adhesive paper covering.
      - 1) No. 4 Satin: Directional polish finish. Graining directions as shown or, if not shown, in longest dimension.
      - 2) No. 8 Mirror: Reflective polish finish with no visible graining.
      - 3) Textured: 5WL as manufactured by Rigidized Metals or Windsor pattern 5-SM as manufactured by Rimex Metals or approved equal with .050 inches mean pattern depth with bright directional polish (satin finish).
      - 4) Burnished: Non-directional, random abrasion pattern.
  2. Bronze: Stretcher-leveled, re-squared sheets composed of 60% copper and 40% zinc similar to Muntz Metal, Alloy Group 2, with standard temper and hardness required for fabrication, strength, and durability. Clean and treat bronze surfaces before mechanical finish. After completion of the final mechanical finish on the fabricated work, use a chemical cleaner to produce finish, Federal Standard, and NAAMM nomenclature, matching Architect's sample:
    - a. No. 4 Satin: Directional polish finish, fine-satin, clear-coated with clear-organic coating recommended by Fabricator. Provide graining direction as shown or, if not shown, in longest dimension.
    - b. No. 8 Mirror: Reflective polish finish with no visible graining, bright-polished, clear-coated finish with clear-organic lacquer coating recommended by Fabricator.
    - c. Acid-Etched Pattern: Provide a No. 8 mirror reflective-polished background with selectively acid-etched, matte-textured, custom pattern as shown. Acid selection and dilution, if required, as recommended by Fabricator. After final finishing, coat bronze with clear-organic lacquer coating recommended by Fabricator.
  3. Aluminum: Extrusions per ASTM B221; sheet and plate per ASTM B209.
  4. Plastic Laminate: ASTM E84 Class A and NEMA LD3.1, Fire-Rated Grade (GP-50), Type 7, 0.050" ±.005" thick, color and texture as follows:
    - a. Exposed Surfaces: Color and texture selected by Architect.
    - b. Concealed Surfaces: Contractor's standard color and finish.
  5. Fire-Retardant Treated Particle Board Panels: Minimum 3/4" thick backup for natural finished wood and plastic laminate veneered panels, edged and faced as shown, provided with suitable anti-warp backing; meet ASTM E84 Class "I" rating with a flame-spread rating of 25 or less, registered with local authorities for elevator finish materials.
  6. Natural Finish Wood Veneer: Standard thickness, 1/40" thoroughly dried conforming to ASME/HPMA HP-1983, Premium Grade. Place veneer, tapeless spliced with grain running in direction shown, belt and polish sanded, book-matched. Species and finish designated and approved by Architect.

7. Paint: Clean exposed metal parts and assemblies of oil, grease, scale, and other foreign matter and factory paint one shop coat of standard rust-resistant primer. After erection, provide one finish coat of industrial enamel paint. Galvanized metal need not be painted.
8. Prime Finish: Clean all metal surfaces receiving a baked enamel paint finish of oil, grease, and scale. Apply one coat of rust-resistant primer followed by a filler coat over uneven surfaces. Sand smooth and apply final coat of primer.
9. Baked Enamel Finish: Prime finish per above. Unless specified "prime finish" only, apply and bake three additional coats of enamel in the selected solid color.
10. Entrance Field Paint: Clean all surfaces of dirt and grease. Sand and finish surfaces as necessary to remove pits and scratches and prepare surface for painting. Apply filler to insure smooth surface, sand and apply one coat of electrostatic enamel in the selected solid color.
11. Refinishing of Natural Metals: Remove existing protective finish. Buff as necessary to remove scratches. Regrain or finish as specified and protect as indicated for particular metal type.
12. Entrance Support Equipment within Hoistway: Include strut angles, headers, sill support angles, fascia, hanger covers, etc. Clean, remove, and check for corrosive activity. Replace components that exhibit severe deterioration. Tighten all fastenings. Repaint exposed surfaces with two coats of rust preventive primer.

## 2.3 CAR PERFORMANCE

- A. Car Speed:  $\pm 10\%$  of contract speed in under any loading condition.
- B. Car Capacity: Safely lower, stop and hold 125% of rated load.
- C. Car Stopping Zone:  $\pm 1/4"$  under any loading condition.
- D. Door Opening Time: 2.8 seconds from start of opening to fully open.
- E. Door Closing Time: 3.4 seconds from start of closing to fully closed.
- F. Car Floor-to-Floor Performance Time: 15.7 seconds from start of doors closing until doors are 1/2 open, and car is level and stopped at next successive floor under any loading condition or travel direction. Typical floor height: 172".
- G. Pressure: Fluid system components shall be designed and factory tested for 500 psi. Maximum operating pressure shall be 400 psi.
- H. Car Ride Quality:
  1. Horizontal and vertical acceleration within car during all riding and door operating conditions. Not more than 20 mg peak to peak (adjacent peaks) in the 1-10 Hz range.
  2. Acceleration and Deceleration: Smooth constant and not more than 3 feet/second<sup>2</sup> with an initial ramp between 0.5 and 0.75 second.
  3. Sustained Jerk: Not more than 6 feet/second<sup>3</sup>.
  4. Measurement Standards: Measure and evaluate ride quality consistent with ISO 18738, using low pass cutoff frequency of 10 Hz and A95 peak-to-peak average calculations.
- I. Noise and Vibration Control
  1. Airborne Noise: Measured noise level of elevator equipment and its operation shall not exceed 55 dBA inside car under any condition including door operation and car ventilation exhaust blower on its highest speed. Limit noise level in the machine room relating to elevator equipment and its operation to no more than 80 dBA. All dBA readings to be taken 3'-0" off the floor and 3'-0" from the equipment using the "A" weighted scale.



2. Vibration Control: All elevator equipment provided under this contract, including power unit, controller, oil supply lines, and their support shall be mechanically isolated from the building structure and electrically isolated from the building power supply and to each other to minimize the possibility of objectionable noise and vibrations being transmitted to occupied areas of the building.

## 2.4 OPERATION

- A. Selective Collective Microprocessor-Based, Elevator 3:
  1. Operate car without attendant from pushbuttons in car and located at each floor. When car is available, automatically start car and dispatch it to floor corresponding to registered car or hall call. Once car starts, respond to registered calls in direction of travel and in the order the floors are reached.
  2. Do not reverse car direction until all car calls have been answered, or until all hall calls ahead of car and corresponding to the direction of car travel have been answered.
  3. Slow car and stop automatically at floors corresponding to registered calls, in the order in which they are approached in either direction of travel. As slowdown is initiated for a hall call, automatically cancel hall call. Cancel car calls in the same manner. Hold car at arrival floor an adjustable time interval to allow passenger transfer.
  4. Answer calls corresponding to direction in which car is traveling unless call in the opposite direction is highest (or lowest) call registered.
  5. Illuminate appropriate pushbutton to indicate call registration. Extinguish light when call is answered.
- B. Other Items:
  1. Low Oil Control: In the event oil level is insufficient for travel to the top floor, provide controls to return elevator to the main level and park until oil is added.
  2. Independent Service: Provide controls for operation of each car from its pushbuttons only. Close doors by constant pressure on desired destination floor button or door close button. Open doors automatically upon arrival at selected floor.
- C. Firefighters' Service: Provide equipment and operation in accordance with code requirements.
- D. Automatic Car Stopping Zone: Stop car within 1/4" above or below the landing sill.
- E. Remote Monitoring and Diagnostics: Equip each controller with standard ports, interface boards, and drivers to accept maintenance, data logging, fault finding diagnostic, and monitoring computers, keyboards, modems, and programming tools. The system shall be capable of driving remote color CRT monitors which continually scan and display the status of each car and call.
- F. Motion Control: AC type with unit valve suitable for operation specified and capable of providing smooth, comfortable car acceleration and retardation. Limit the difference in car speed between full load and no load to not more than  $\pm 10\%$  of the contract speed in either direction of travel.
- G. Door Operation: Automatically open doors when car arrives at main floor. At expiration of normal dwell time, close doors. Reopen doors when car is designated for loading.
- H. Standby Lighting and Alarm: Car mounted battery unit with solid-state charger to operate alarm bell and car emergency lighting. Battery to be rechargeable with minimum five-year life expectancy. Include required transformer. Provide constant pressure test button in service compartment of car operating panel. Provide lighting integral with portion of normal car lighting system.

- I. Standby Power Operation: Upon loss of normal power, adequate standby power will be supplied via building electrical feeders to simultaneously start and run one car in each group and single cars at contract car speed and capacity.
  1. Automatically return one car at a time in each group and single car, nonstop to designated floor, open doors for approximately 3.0 seconds, close doors, and park car. During return operation, car and hall call pushbuttons shall be rendered inoperative. As each car parks system shall immediately select the next car until all cars in a group have returned to the designated floor. If a car fails to start or return within 30 seconds, system shall automatically select the next car in the group to automatically return.
  2. When all cars in a group have returned to the designated floor, one car in each group shall be designated for automatic operation. When a service demand exists for 30 seconds and designated car fails to start, next available car in the group shall be automatically selected for operation.
  3. Provide separate group selection switches in firefighters' control panel.
    - a. Switches shall be labeled "STANDBY POWER OVERRIDE" with positions marked "AUTO" and appropriate car numbers controlled by each respective switch. Key shall be keyed same as key utilized for firefighters' Phase I and II key switch. Key shall be removable in "AUTO" position only.
    - b. Switch shall override automatic return and automatic selection functions and cause the manually selected car to operate. Manual selection shall cause car to start and proceed to designated floor and open and close its doors before standby power is manually transferred to next selected car.
    - c. Provide "STANDBY POWER" indicator lights, one per car, in firefighters' control panel. Indicator light illuminates when corresponding car is selected, automatically or manually, to operate on standby power.
  4. Successive Starting: When normal power is restored or there has been a power interruption, individual cars in each bank shall restart at five-second intervals.
  
- J. Card/Proximity Reader Security System: Provide provisions inside car for reader unit. Mount reader unit as directed by Architect and cross connect from car pushbuttons to control module in machine room. Reader control unit, mounting brackets, wiring materials, logic circuits, etc., by Security Subcontractor. Provide a filler plate to match card slot size and car return panel finish, including direction of graining, where card slot or proximity reader cutout is not initially utilized. Elevator control systems shall facilitate system tracking of persons accessing secure floors via printout by passenger ID number, floor accessed, and time of entry.

## 2.5 MACHINE ROOM EQUIPMENT

- A. Arrange equipment in existing machine room spaces.
- B. Pump Unit: Assembled unit consisting of positive displacement pump, induction motor, master-type control valves combining safety features, holding, direction, bypass, stopping, manual lowering functions, shut off valve, oil reservoir with protected vent opening, oil level gauge, outlet strainer, drip pan, muffler, all mounted on isolating pads. Provide oil thermal unit and oil temperature thermostat to maintain oil at operating temperature. Enclose entire unit with removable sheet steel panels lined with sound-absorbing material. Design unit for 80 up starts/hour.
- C. Landing Systems: Solid-state, magnetic, or optical type.
- D. Controller: UL/CSA labeled.
  1. Compartment: Securely mount all assemblies, power supplies, chassis switches, relays, etc., on a substantial, self-supporting steel frame. Completely enclose equipment with covers. Provide means to prevent overheating.
  2. Relay Design: Magnet operated with contacts of design and material to insure maximum conductivity, long life, and reliable operation without overheating or excessive wear.

- Provide wiping action and means to prevent sticking due to fusion. Contacts carrying high inductive currents shall be provided with arc deflectors or suppressors.
3. Microprocessor-Related Hardware
    - a. Provide built-in noise suppression devices which provide a high level of noise immunity on all solid-state hardware and devices.
    - b. Provide power supplies with noise suppression devices.
    - c. Isolate inputs from external devices, such as pushbuttons, with opto-isolation modules.
    - d. Design control circuits with one leg of power supply grounded.
    - e. Safety circuits shall not be affected by accidental grounding of any part of the system.
    - f. System shall automatically restart when power is restored.
    - g. System memory shall be retained in the event of power failure or disturbance.
    - h. Equipment shall be provided with Electro Magnetic Interference (EMI) shielding within FCC guidelines.
  4. Wiring: CSA labeled copper for factory wiring. Neatly route all wiring interconnections and securely attach wiring connections to studs or terminals.
  5. Permanently mark components, relays, fuses, PC boards, etc., with symbols shown on wiring diagrams.
  6. Provide controller or pump unit mounted auxiliary lockable "open," disconnect if mainline disconnect is not in sight of controller and/or pump unit.
- E. Muffler: Provide in discharge oil line near pump unit. Design shall dampen and absorb pulsation and noise in the flow of hydraulic fluid.
- F. Piping and Oil: Provide piping, connections, and oil for the system. Buried piping shall be secondarily contained with watertight Schedule 40 PVC sleeves between elevator machine room and pit. A minimum of two sound isolation couplings shall be provided between the pump unit and oil line and the oil line and jack unit. Provide isolated pipe stands or hangers as required.
- G. Shutoff Valve: Manual valve in line adjacent to pump unit. Provide second valve in pit adjacent to jack unit.
- ## 2.6 HOISTWAY EQUIPMENT
- A. Guide Rails: Retain main guide rails in place.
  1. Clean rails and brackets. Remove rust.
  2. Check all rail and bracket fastenings and tighten.
  3. Realign rails as required to provide smooth car ride.
  4. Provide supplemental rail brackets and/or backing as required by code or to enhance car ride quality.
- B. Buffers: Retain existing.
  1. Rebuild as required and paint.
- C. Hydraulic Jack Assembly: Retain existing.
  1. Cylinders: Retain existing
  2. Plungers: Retain existing. Isolate plunger from car frames.
- D. Overspeed Valves: Provide a pressure sensitive, mechanically-actuated seismic safety valve, conforming to ASME A17.1, Rule 3.19.4.7. Connect valve directly to jack assembly inlet.
- E. Terminal Stopping: Provide normal and final devices.

- F. Electrical Wiring and Wiring Connections:
  - 1. Conductors and Connections:
    - a. Copper throughout with individual wires coded and connections on identified studs or terminal blocks.
    - b. Use no splices or similar connections in wiring except at terminal blocks, control compartments, or junction boxes.
    - c. Provide 10% spare conductors throughout.
    - d. Run spare wires from car connection points to individual elevator controllers in the machine room.
    - e. Provide four pair of spare shielded communication wires in addition to those required to connect specified items.
    - f. Tag spares in machine room.
  - 2. Conduit:
    - a. Painted or galvanized steel conduit, EMT, or duct.
    - b. Minimum Conduit Size: 1/2".
    - c. Flexible heavy-duty service cord may be used between fixed car wiring and car door switches for door protective devices.
  - 3. Traveling Cables:
    - a. Flame and moisture-resistant outer cover.
    - b. Prevent traveling cable from rubbing or chafing against hoistway or equipment within hoistway.
    - c. Provide five pair of shielded wires and two RG-6/U type coaxial cables for card reader.
    - d. Provide two RG-6/U coaxial future CCTV cables within traveling cable from car controller to car top, plus 3'-0" excess loop at both ends.
    - e. Provide two pair 14-gauge wire for CCTV power.
  - 4. Auxiliary Wiring: Connect fire alarm initiating devices, emergency two-way communication system, CCTV, card reader, intercom, and announcement speaker and/or background music in car controller in machine room.
- G. Entrance Equipment: Retain existing. Refurbish/replace and adjust assemblies to ensure smooth and quiet mechanical open and close of doors.
  - 1. Door Hangers and Rollers: Replace all rollers.
  - 2. Door Track: Refurbish and/or replace as required.
  - 3. Door Interlocks: Refurbish and/or replace as required.
  - 4. Door Closers: Spring, spirator, or jamb/strut mounted counterweight type. Design and adjust to insure smooth, quiet mechanical close of doors.
- H. Hoistway Door Unlocking Device: Provide unlocking device with escutcheon in door panel at all floors, with finish to match adjacent surface.
- I. Hoistway Access Switches: Mount in wall at top and bottom floors. Provide switch with faceplate.
- J. Floor Numbers: Stencil paint 4" high floor designations in contrasting color on inside face of hoistway doors or hoistway fascia in location visible from within car.

## 2.7 HOISTWAY ENTRANCES

- A. Frames: Retain existing.
- B. Door Panels: Retain existing. Provide new door gibs with fire tabs at all floors. Minimum two gibs per panel, one at leading edge, and one at trailing edge of each panel.
- C. Sight Guards: Retain existing. Replace damaged sight guards.

- D. Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
- E. Sill Supports: Retain existing. Check and tighten all fastenings.
- F. Fascia, Toe Guards, and Hanger Covers: Retain existing. Provide as required where damaged or missing. Check and tighten all fastenings.
- G. Struts and Headers: Retain existing. Check and tighten all fastenings.

## 2.8 CAR EQUIPMENT

- A. Frame: Retain Existing. Check and tighten all fastenings.
- B. Platform: Retain existing. Reinforce if required. Check and tighten all fastenings.
- C. Platform Apron: Provide new extended platform apron per code. Minimum 14-gauge steel reinforced and braced to car platform Contractor's standard finish.
- D. Guide Shoes: Roller type with three or more spring dampened, sound-deadening rollers per shoe.
- E. Finish Floor Covering: Provided under other sections.
- F. Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
- G. Doors: Retain existing. Retrofit dual gibs, one at trailing edge and one at leading edge of each panel.
- H. Door Hangers: Retain existing. Replace roller or complete hanger assembly as required. Check and tighten all fastenings.
- I. Door Track: Bar or formed, cold-drawn removable steel track with smooth roller contact surface.
- J. Door Header: Construct of minimum 12-gauge steel, shape to provide stiffening flanges.
- K. Door Electrical Contact: Prohibit car operation unless car door is closed.
- L. Door Clutch: Heavy-duty clutch, linkage arms, drive blocks and pickup rollers or cams to provide positive, smooth, quiet door operation. Design clutch so car doors can be closed, while hoistway doors remain open.
- M. Restricted Opening Device: Provide car-door interlock per code to prevent opening of car doors outside unlocking zone. Plunger type restrictors not acceptable.
- N. Door Operator:
  - 1. Medium-speed heavy-duty door operator capable of opening doors at no less than 1½ fps. Accomplish reversal in no more than 2½" of door movement. Provide solid-state door control with closed loop circuitry to constantly monitor and automatically adjust door operation based upon velocity, position, and motor current. . Provide a minimum of four controller-activated motion profiles, per floor, per door, to maintain consistent, smooth, and quiet door operation at all floors, regardless of door weight or varying air pressure.
  - 2. Acceptable closed-loop door operators:
    - a. KONE: Renova 1.5
    - b. Otis: AT 400
    - c. Schindler QKS: 15 Heavy Duty

- d. thyssenkrupp: HD91 StarTrac
  - e. G.A.L.: MOVFR/MOVFRE
- O. Door Control Device:
- 1. Infrared Reopening Device:
    - a. Black, fully enclosed device with full screen infrared matrix or multiple beams extending vertically along leading edge of each door panel to minimum height of 7'-0" above finished floor. Device shall prevent doors from closing and reverse doors at normal opening speed if beams are obstructed while doors are closing, except during nudging operation. In event of device failure, provide for automatic shutdown of car at floor level with doors open.
    - b. Acceptable Infrared Reopening Device:
      - 1) Cegard/MAX-154 by CEDES
      - 2) Gatekeeper by Adams
      - 3) Lambda II by Otis
      - 4) Magic Edge by Tri-Tronics
      - 5) Microlite by thyssenkrupp
      - 6) Microscan E by T.L. Jones
      - 7) Pana40 Plus by Janus
  - 2. Nudging Operation: After beams of door control device are obstructed for a predetermined time interval (minimum 20.0-25.0 seconds), warning signal shall sound and doors shall attempt to close with a maximum of 2.5-foot pounds kinetic energy. Activation of the door open button shall override nudging operation and reopen doors.
  - 3. Interrupted Beam Time: When beams are interrupted during initial door opening, hold door open a minimum of 3.0 seconds. When beams are interrupted after the initial 3.0 second hold open time, reduce time doors remain open to an adjustable time of approximately 1.0-1.5 seconds after beams are reestablished.
  - 4. Differential Door Time: Provide separately adjustable timers to vary time that doors remain open after stopping in response to calls.
    - a. Car Call: Hold open time adjustable between 3.0 and 5.0 seconds.
    - b. Hall Call: Hold open time adjustable between 5.0 and 8.0 seconds. Use hall call time when car responds to coincidental calls.
- P. Car Operating Panel:
- 1. One car operating panel with faceplate, consisting of a metal box containing vandal resistant operating fixtures, mounted behind the car front return panel. Faceplate shall be hinged and constructed of stainless steel, satin finish.
  - 2. Suitably identify floor buttons, alarm button, door open button, door close button, and emergency push-to-call button with SCS, Visionmark, or Entrada cast tactile symbols surface mounted. Configure plates per local building code accessibility standards including Braille. Locate operating controls no higher than 48" above the car floor; no lower than 35" for emergency push-to-call button and alarm button.
  - 3. Provide minimum 3/4" diameter raised or flush floor pushbuttons which illuminate to indicate call registration. Include 5/8" high floor designation on face of pushbutton.
  - 4. Provide alarm button to ring bell located on car, and sound distress signal at control panel. Illuminate button when actuated.
  - 5. Provide keyed stop switch at bottom of car operating panel in locked car service compartment. Arrange switch to sound main control panel distress signal when actuated. Mark device to indicate "run" and "stop" positions.
  - 6. Provide "door open" button to stop and reopen doors or hold doors in open position.
  - 7. Provide "door close" button to activate door close cycle. Cycle shall not begin until normal door dwell time for a car or hall call has expired, except firefighters' operation.
  - 8. Provide locked panel including Phase II fire switch, call cancel button, door open, door close, switch, stop switch, light jewel, per code.
  - 9. Provide lockable service compartment with recessed flush door. Door material and finish shall match car return panel or car operating panel faceplate.

10. Include the following controls in lockable service cabinet with function and operating positions identified by permanent signage or engraved legend:
    - a. Inspection switch.
    - b. Light switch.
    - c. Three-Four-position exhaust blower switch.
    - d. Independent service switch.
    - e. Constant pressure test button for battery pack emergency lighting.
    - f. 120-volt, AC, GFCI protected electrical convenience outlet.
    - g. Card reader override switch.
    - h. Stop switch.
    - i. Switch to select either floor voice annunciation, floor passing tone, or chime.
    - j. Car lighting dimmer switch.
  11. Provide black paint filled (except as noted), engraved, or approved etched signage as follows with approved size and font:
    - a. Phase II firefighters' operating instructions on inside face of firefighters' compartment door. Engrave filled red firefighters' operation on outside face of compartment door.
    - b. Car number on main car operating panel.
    - c. "Certificate of Inspection on File in Building Office" on main car operating panel.
    - d. Car capacity in pounds on service compartment door.
- Q. Car Top Control Station: Mount to provide safe access and utilization while standing in an upright position on car top.
- R. Work Light and Duplex Plug Receptacle: GFCI protected outlet at top and bottom of car. Include on/off switch and lamp guard. Provide additional GFCI protected outlet on car top for installation of car future CCTV.
- S. Communication System:
1. "Push to Call," two-way telephone instrument in car with automatic dialing, tracking, and recall features with shielded wiring to car controller in machine room. Provide dialer with automatic rollover capability with minimum two numbers.
    - a. "Push to Call" button or adjacent light jewel shall illuminate and flash when call is acknowledged. Button shall match car operating panel pushbutton design. Provide uppercase "PUSH TO CALL," "HELP ON THE WAY" engraved signage adjacent to button.
    - b. Provide "Push to Call" button tactile symbol, engraved signage, and Braille adjacent to button mounted integral with car front return panel.
  2. Install remote speaker with shielded wiring to machine room junction box.
  3. Provide two-way communication between car and machine room if required.
- ## 2.9 CAR ENCLOSURE
- A. Retain existing car shell. Remove existing interior finishes, weigh, and document. Check and tighten all fastenings. Provide new interior finishes as specified and/or detailed on architectural drawings. Verify weight of new interior finishes does not exceed weight of removed finishes by more than code allowable. Modify shell for application of new signal and pushbutton fixtures.
- B. Provide complete as specified herein. Provide the following features.
1. Interior Wall Finish: Include allowance of \$15,000 and 400 lbs. for interior car finishes.
  2. Ventilation: Morrison Products, Inc. two-speed model SOE No. 06-01055 exhaust blower mounted to car canopy on isolated rubber grommets.
  3. Lighting: Provide LED fixtures with wiring and hookup. Coordinate with emergency lighting requirements. Provide emergency lighting integral with portion of normal car lighting system. Include required transformer.
  4. Suspended Ceiling: Special design included in allowance in Item 1 above.

5. Handrails: Minimum 1¼" diameter stainless steel tubular grab bar across rear wall.

## 2.10 HALL CONTROL STATIONS

- A. Pushbuttons: Provide one riser with flush mounted faceplates. Include pushbuttons for each direction of travel which illuminate to indicate call registration. Include approved engraved message and pictorial representation prohibiting use of elevator during fire or other emergency situation as part of faceplate. Pushbutton design shall match car operating panel pushbuttons. Provide vandal resistant pushbutton and light assemblies. Provide enlarged faceplate to cover existing wall blockout and facilitate handicapped access requirements. Include approved engraved message and pictorial representation prohibiting use of elevator during fire or other emergency situation as part of faceplate. Provide any cutting and patching required.

## 2.11 SIGNALS

- A. Car Direction Lantern: Provide flush-mounted car lantern in all car entrance columns. Illuminate up or down LED lights and sound electronic tone once for up and twice for down direction travel as doors open. Sound tone once for up direction and twice for down direction. Sound level shall be adjustable from 0-80 dBA measured at 5'-0" in front of hall control station and 3'-0" off floor. Provide adjustable car door dwell time to comply with ADA requirements relative to hall call notification time. Car direction lenses shall be arrow shaped with faceplates. Lenses shall be minimum 2½" in their smallest dimension. Provide vandal resistant lantern and light assemblies consisting of series of dots or lines for maximum visibility.
- B. Car Position Indicator: Alpha-numeric digital indicator containing floor designations and direction arrows a minimum of 1/2" high to indicate floor served and direction of car travel. Locate fixture in each car operating panel. When a car leaves or passes a floor, illuminate indication representing position of car in hoistway. Illuminate proper direction arrow to indicate direction of travel.
- C.
- D. Faceplate Material and Finish: Satin finish stainless steel, all fixtures.
- E. Floor Passing Tone: Provide an audible tone of no less than 20 decibels and frequency of no higher than 1500 Hz, to sound as the car passes or stops at a floor served.
- F. Voice Synthesizer: Provide electronic device with easily reprogrammable message and voice to announce car direction, floor, emergency exiting instructions, etc.
- G. Firefighters' Key Box: Flush-mounted box with lockable hinged cover. Engrave instructions for use on cover per Local Fire Authority requirements.



2.12 INTERCOM AND DISTRESS SIGNAL SYSTEM

- A. General: Provide intercommunication system. Include all wiring between elevator hoistways and control panels. Include the following stations:

<u>Station Location</u>	<u>Type Station</u>	<u>Selection Buttons to Call</u>
Elevator Machine Room	Master	Control Panels, All Cars
Lobby Control Panel	Master	Machine Rooms, All Cars
Firefighters' Control Panel	Master	Machine Rooms, All Cars
Cars (All)	Remote	Lobby Control Panel

B. Basic Equipment:

1. Amplifier providing static-free voice transmission with adequate volume and minimum distortion at all stations, with pre-amplifier capable of receiving voice and music inputs from building and emergency building communication system.
2. Activation of emergency building communication system overrides all other conversations and permits one-way conversation to all master stations in system.
3. Master Stations:
  - a. Speaker-microphone combination and/or handset for two-way communication.
  - b. Selection buttons to enable communication with all master stations. Maintain continual reception of hands-free reply from station when a selected button is depressed.
  - c. Two-Position "Talk/Listen" Button: Press to talk; release to listen.
  - d. Illuminate "in use" light when any master station is being used.
  - e. Reset button to make system available for use by any master station.
  - f. Volume control knob for adjustment of incoming volume.
  - g. Button to establish communications with all stations.
  - h. Distress light in lobby panel which illuminates when "push to call" button or alarm button in car is actuated. Energize distress light and buzzer or chime until intercom selection button for that car has been depressed. Sound buzzer or chime in lobby panel simultaneously with illumination of distress light.
4. Remote Stations:
  - a. Station in car shall be activated by "push to call," two-way communication button. "Push to call" button shall illuminate and flash when call is acknowledged. Button shall match car operating panel pushbutton design. Provide uppercase "PUSH TO CALL," "HELP ON THE WAY" engraved signage adjacent to button. Provide "push to call" button tactile symbol, engraved signage, and Braille adjacent to button.
  - b. Locate car microphone and speaker, or transceiver/speaker combination in car canopy with drilled speaker pattern with shielded wiring to machine room junction box.

C. Station Housings:

1. House master station in machine room in a metal compartment with baked enamel finish. Attach to the group elevator supervisory control panel or wall mount. Provide communication handset with 25'-0" long cord.
2. Provide control center master intercoms with satin finish stainless steel faceplates and engraved operating instructions. Coordinate faceplate size and installation of units with building Console Supplier.

2.13 SEISMIC OPERATIONS AND EQUIPMENT

- A. Provide design, components, and operation per governing code.

**PART 3 - EXECUTION**

**3.1 SITE CONDITION INSPECTION**

- A. Prior to beginning installation of equipment, examine hoistway and machine room areas. Verify no irregularities exist which affect execution of work specified.
- B. Do not proceed with installation until work in place conforms to project requirements.

**3.2 PRODUCT DELIVERY, STORAGE, AND HANDLING**

- A. Deliver material in Contractor's original, unopened protective packaging.
- B. Store material in original protective packaging. Prevent soiling, physical damage, or moisture damage.
- C. Protect equipment and exposed finishes from damage and stains during transportation, erection, and construction.

**3.3 INSTALLATION**

- A. Install all equipment in accordance with Contractor's instructions, referenced codes, specification, and approved submittals.
- B. Install machine room equipment with clearances in accordance with referenced codes and specification.
- C. Install all equipment so it may be easily removed for maintenance and repair.
- D. Install all equipment for ease of maintenance.
- E. Install all equipment to afford maximum accessibility, safety, and continuity of operation.
- F. Remove oil, grease, scale, and other foreign matter from the following equipment and apply one coat of field-applied machinery enamel.
  - 1. All exposed equipment and metal work installed as part of this work which does not have architectural finish.
  - 2. Machine room equipment, hoistway equipment including guide rails, guide rail brackets, and pit equipment.
  - 3. Neatly touch up damaged factory-painted surfaces with original paint color. Protect machine-finish surfaces against corrosion.

**3.4 FIELD QUALITY CONTROL**

- A. Work at jobsite will be checked during course of installation. Full cooperation with reviewing personnel is mandatory. Accomplish corrective work required prior to performing further installation.
- B. Have Code Authority acceptance inspection performed and complete corrective work.

**3.5 ADJUSTMENTS**

- A. Install hydraulic jack assembly and guide rails plumb and align vertically with tolerance of 1/16" in 100'-0". Secure guide rail joints without gaps and file any irregularities to a smooth surface.

- B. Static balance car to equalize pressure of guide shoes on guide rails.
- C. Lubricate all equipment in accordance with Contractor's instructions.
- D. Adjust motors, valves, controllers, leveling switches, limit switches, stopping switches, door operators, interlocks, and safety devices to achieve required performance levels.

### 3.6 CLEANUP

- A. Keep work areas orderly and free from debris during progress of project. Remove packaging materials on a daily basis.
- B. Remove all loose materials and filings resulting from work.
- C. Clean machine room equipment and floor.
- D. Clean hoistways, car, car enclosure, entrances, operating and signal fixtures.

### 3.7 ACCEPTANCE REVIEW AND TESTS

- A. Review procedure shall apply for individual elevators, portions of groups of elevators and completed groups of elevators accepted on an interim basis, or elevators and groups of elevators completed, accepted, and placed in operation.
- B. Contractor shall perform review and evaluation of all aspects of its work prior to requesting Consultant's final review. Work shall be considered ready for Consultant's final contract compliance review when all Contractor's tests are complete and all elements of work or a designated portion thereof are in place and elevator or group of elevators are deemed ready for service as intended.
- C. Furnish labor, materials, and equipment necessary for Consultant's review. Notify Consultant five working days in advance when ready for final review of elevator or group of elevators.
- D. Consultant's written list of observed deficiencies of materials, equipment, and operating systems will be submitted to Contractor for corrective action. Consultant's review shall include as a minimum:
  - 1. Workmanship and equipment compliance with Contract Documents.
  - 2. Contract speed, capacity, floor-to-floor, and door performance comply with Contract Documents.
  - 3. Performance of following is satisfactory:
    - a. Starting, accelerating, running
    - b. Decelerating and stopping accuracy
    - c. Door operation and closing force
    - d. Equipment noise levels
    - e. Signal fixture utility
    - f. Overall ride quality
    - g. Performance of door control devices
    - h. Operations of emergency two-way communication device
    - i. Operations of firefighters' service
  - 4. Test Results:
    - a. In all test conditions, obtain specified contract speed, performance times, stopping accuracy without re-leveling, and ride quality to satisfaction of Owner and Consultant. Tests shall be conducted under both no load and full load condition.



- a. Provide onsite capability to diagnose faults to the level of individual circuit boards and individual discrete components for the solid-state elevator controller.
  - b. Provide a separate, detachable device, as required, to the Owner as part of this installation if the equipment for fault diagnosis is not completely self-contained within the controller. Such device shall be in possession of and become property of the Owner.
  - c. Installed equipment not meeting this requirement shall be removed and replaced with conforming equipment at no cost to the Owner.
10. Provide upgrades and/or revisions of software during the progress of the work, warranty period and the term of the ongoing maintenance agreement between the Owner and Contractor.
- B. Preventive Maintenance Contract: Furnish properly executed contract for continuing, preventive maintenance. Utilize contract form provided, Section 143250, Vertical Transportation Preventive Maintenance Contract.
- C. Acceptance of such records by Owner/Consultant shall not be a waiver of any Contractor deviation from Contract Documents or shop drawings or in any way relieve Contractor from his responsibility to perform work in accordance with Contract Documents.

END OF SECTION

SECTION 143250  
LERCH BATES MAINTENANCE AGREEMENT

PART 1 - GENERAL

1.1 PARTIES

- A. The parties to this Agreement (the "Agreement") are Lane Council of Governments c/o Pacific Real Estate Services, Inc. ("Purchaser") and ..... ("Contractor"). The contract start date is the date this Agreement is executed by Purchaser or their Designated Representative. The purpose of this Agreement is to set forth the terms and conditions under which Contractor will provide certain services for Purchaser. This agreement covers two elevators listed in Appendix A, located at Park Place in Eugene, Oregon, the "Property" where the Services are to be provided.

1.2 DUTIES OF CONTRACTOR

- A. Contractor shall furnish all supplies, materials, parts, labor, labor supervision, tools, scaffolding, machinery, hoists, equipment (including employee safety equipment), lubricants, and technical information to provide proactive full preventive maintenance service including cleaning, lubrication, adjusting, parts replacement, repair, and callback service. All work shall be in conformity with highest standards and best industry practices, applicable laws, and all expressed and implied provisions of this Agreement for the complete vertical transportation systems detailed in Appendix A of this Agreement.

1.3 AGREEMENT INTENT

- A. The intent of this Agreement is to maintain the elevator equipment to highest industry standards and "industry best" condition by continuously preserving and maintaining the condition, appearance, and performance of the elevators in keeping with their original design. The purpose of the maintenance program specified herein is to provide the following:
  - 1. Safe, consistent, and reliable operation
  - 2. Maximum operational performance
  - 3. Maximum beneficial usage
  - 4. Maximum life cycle
- B. Contractor acknowledges Purchaser is relying on Contractor's professional expertise in performance of Services to achieve and comply with the Agreement intent.
- C. Contractor accepts full responsibility for the equipment, as it exists on the effective date of this Agreement and will leave it in a condition acceptable to Purchaser at the termination date.
- D. Contractor acknowledges Purchaser provided free access to and sufficient time for adequate examination of the equipment and review of service records. Contractor further acknowledges the specified vertical transportation equipment has been evaluated by Contractor, and Contractor has determined the equipment is in serviceable operating condition. The Contractor accepts full and complete responsibility for all of the maintenance service, repair, cleaning, and testing of the specified vertical transportation equipment listed, in "as is" condition, in accordance with this Agreement.

1.4 OBSOLESCENCE

- A. During the term of this Agreement there shall be no equipment or components determined to be obsolete.

- B. Contractor must alert Purchaser at beginning of contract term if any components will be deemed obsolete during the term of this Agreement and provide proposal for additional costs or provide estimates for repair and replacement escrow reserves. Contractor must confirm these quotations prior to execution of this Agreement.
- C. Components deemed obsolete will be reviewed by Purchaser. If Purchaser rejects contention of obsolescence, Contractor must agree to full maintenance coverage, or withdraw proposal.
- D. Components accepted by Purchaser as obsolete will be listed in Appendix A, along with pricing for replacement, repair, or upgrade.
- E. During the term of this Agreement there shall be no equipment or components determined to be obsolete.

#### 1.5 TERM OF AGREEMENT

- A. The term of this Agreement is a five-year term beginning at the end of the 12-month post modernization warranty period and terminating after 5 years. If Contract is not renewed after the initial term of five years, work shall continue at fifth year pricing until new agreement is executed. This Agreement shall be subject to termination as provided in Article 4.6
- B. All fees are payable for all vertical transportation equipment as set forth in Appendix A. Contractor shall send invoices detailing the fees in Appendix A and other charges to Purchaser by the 5th day of each month to: Property Management.

#### 1.6 CANCELLATION

- A. If Contractor violates any provision or fails to properly perform Services required by this Agreement on any unit, Purchaser shall advise Contractor of deficiencies and shall allow Contractor ten working days unless otherwise agreed, to correct deficiencies at Contractor's expense and to Purchaser's sole satisfaction. If Contractor fails to comply or remedy in the allotted time, Purchaser shall have right to cancel Agreement immediately with written notice to Contractor.
- B. Purchaser, after an additional ten calendar days' written notice to Contractor, may perform or cause to be performed all or any part of Services and Contractor agrees that it shall reimburse Purchaser for any expenses incurred. Purchaser shall deduct said expense from any sum owing Contractor.
- C. The waiver by Purchaser of a breach of any provision of this Agreement by Contractor shall not be construed as a waiver of any subsequent breach by Contractor.
- D. If any property covered by this Agreement is sold, new Owner may extend this Agreement at its discretion by assignment or other means.
- E. Purchaser may modernize all or a portion of vertical transportation units during the term of this Agreement. Modernization is any "Alteration" as defined by Code. Any modernization may or will be competitively bid and if the successful bidder is not the current Contractor then Contractor agrees that this contract may be cancelled at the sole discretion of the Owner. The Owner is under no obligation to include the Contractor in the bidding process.
- F. If this Agreement Is Cancelled:
  - 1. Contractor agrees to take action reasonably necessary to cause an orderly transition of Services to another contractor without detriment to rights of Purchaser or to continued

operation of Property including, but not limited to, refraining from any interference or disruption of occupants or other contractors.

2. Contractor shall immediately deliver to Purchaser all reports, records, as-built wiring diagrams, portable electronic diagnostic devices supplied (owned by Purchaser or Owner), access codes, and other materials and documentation related to and required to facilitate services required by this Agreement.

## 1.7 CONTRACTOR SERVICES

- A. Services shall include all labor, transportation, supplies, materials, parts, tools, scaffolding, machinery, hoists, employee safety equipment, equipment, lubricants, supervision and all other work and materials expressly required under this Agreement, or reasonably inferred, whether or not expressly stated herein.
- B. Contractor shall submit a written Maintenance Control Program (MCP), specifically designed for Purchaser's equipment and defining its planned preventive maintenance procedures to facilitate this Agreement's intent and Services for all equipment included under this Agreement. Routine maintenance procedures shall include any unique or product-specific procedures or methods required to inspect or test the equipment, including statutory and other required equipment tests. In addition, the MCP shall identify required weekly, bi-weekly, monthly, quarterly, annual, or other maintenance frequencies. When accepted by Purchaser, Contractor's preventive maintenance schedule, including the Maintenance Control Program, and this procedure shall become Appendix H to this Agreement.
- C. Contractor shall coordinate and follow the directives of Purchaser with respect to scheduling Services and any deliveries hereunder or at a time or times further specified in other provisions of this Agreement.
- D. Services shall be performed as follows:
  1. In conformance with all provisions of this Agreement.
  2. In conformance with all applicable original equipment manufacturer's specifications.
  3. In conformance with the written Maintenance Control Program (MCP).
  4. In conformance with Purchaser's rules, policies, regulations, and requirements for work at the Property, as modified and supplemented during term of this Agreement.
  5. In conformance with Purchaser's requirements for cleanup using containers supplied by Contractor.
  6. To Purchaser's satisfaction.
  7. By qualified, careful, and efficient employees in conformity with best industry practices.
  8. Diligently, to highest industry standards, in a complete and workman-like manner, free of defects or deficiencies.
  9. In such manner as to minimize any annoyance, interference, or disruption to occupants of Property and their invitees.
- E. Contractor shall initiate, maintain, and supervise all safety precautions and programs in connection with Services, and comply with all applicable safety laws. Contractor shall take all reasonable precautions for safety of Purchaser, Purchaser's tenants, Purchaser's employees, Contractor's employees, and other persons on or about the Property.
- F. Contractor shall repair, to satisfaction of Purchaser, any damage to the Property and adjacent areas caused by performance of Services.



1.8 CONTRACTOR COMPLIANCE WITH LAWS

- A. Contractor agrees to comply with all current laws, codes, rules, and regulations set forth by appropriate authorities having jurisdiction in the locations where Services are performed. In the event of differing testing requirements between this Agreement and local codes or ordinances, the more stringent requirement shall prevail.
- B. The Contractor shall not be required to install new attachments or perform tests as may be recommended or directed by: inspecting entities; insurance companies; and federal, state, or municipal governmental authorities subsequent to the date of this Agreement, unless compensated for such tests, installation, or services.
- C. Contractor must complete all code-mandated testing and work tasks as detailed in Appendix E.

1.9 CONTRACTOR'S EMPLOYEES

- A. This Agreement is not one of agency, partnership, master-servant, or joint employer, but one with Contractor engaged in the business of providing Services hereunder as an independent contractor. Contractor shall have sole responsibility for the means, methods, techniques, procedures, and safety precautions in connection with performance of Services.
- B. Contractor shall be responsible for the supervision and execution of Services by its employees. An onsite condition review shall be conducted by the designated Supervisor of Contractor on an annual basis to ensure that all Services hereunder are performed properly. Contractor shall designate its Supervisor and inform Purchaser of the person responsible for execution of Service, and Supervisor shall have the authority to act as Contractor's agent. Supervisor shall notify Purchaser of site inspection and provide Purchaser with a written summary of findings within ten working days after completion of site review.
- C. Contractor agrees that its employees are properly qualified and will use reasonable care in the performance of Services. Contractor agrees that all work shall be performed by, and under the supervision of, skilled, experienced elevator service and repair persons directly trained, employed, and supervised by Contractor. Any and all employees performing work under this Agreement shall be satisfactory to Purchaser. Purchaser shall be given at least thirty days' notice prior to making changes to site-specific mechanic/employees
- D. If Purchaser, in Purchaser's sole opinion, determines, for any reason, that the qualifications, actions, or conduct of any particular Contractor employee has violated this Agreement by performing unsatisfactory Services, interfering with operation of Property, bothering or annoying any occupants, other contractors, or subcontractors then at Property, or that such actions or conduct is otherwise detrimental to Purchaser, then upon Purchaser's notice, Contractor shall immediately provide qualified replacement persons.
- E. Contractor shall not engage any subcontractors or other parties to perform Services unless first approved in writing by Purchaser. Purchaser's acceptance of subcontractors or other parties shall not relieve, release, or affect in any manner any of Contractor's duties, liabilities, or obligations hereunder, and Contractor shall at all times be and remain fully liable hereunder.
- F. Contractor employees are required to wear standard matched uniforms with a company logo. Each employee shall be required to have on their person a company ID card for identification as a current company employee.

1.10 HOURS AND MANNER OF WORK

- A. All work, except as otherwise noted in this Agreement, including unlimited call-back service, shall be performed during the building's regular hours. These hours are 7:00 a.m. to 5:00 p.m. Monday through Friday. Purchaser, at its option, may request callback or normal service within the scope of this Agreement at no additional cost during those hours. Emergency callback service requested prior to 4:30 p.m. but answered after 5:00 p.m. shall be considered a regular one-hour callback, after which it shall be in accordance with Article 4.10 A.
- B. Response Time for Callback Service:
  - 1. During regular time hours identified in Article 4.10. Contractor shall arrive at Property within 60 minutes from time of notification of equipment problem or failure by Purchaser. For callbacks placed during regular time hours, the portion of work that could have been accomplished from the required arrival time of technician to the end of the defined work day shall not be billed at overtime rates.
  - 2. During the hours identified in Article 4.10, Contractor shall arrive at Property in response to passenger entrapment calls within thirty minutes from time of notification by Purchaser.
- C. After regular time hours, in response to a callback request to call center, Contractor shall report to Property within time detailed in Appendix A.
- D. If additional work within the scope of this Agreement is requested during overtime hours, Purchaser shall pay only the difference between regular time and overtime hours at the hourly rates indicated in Appendix A.
- E. If additional work beyond the scope of work enumerated in this Agreement is requested during regular hours, the regular time hourly rates shown below shall apply at the hourly rates indicated in Appendix A.
- F. If additional work beyond the scope of work enumerated in this Agreement is requested during overtime, the rate billed shall be the regular time rate plus the applicable overtime premium at the hourly rates indicated in Appendix A.
- G. If any unit is shut down due to equipment failure for more than 48 continuous hours, maintenance billing for that unit shall be suspended until it is restored to beneficial usage, excluding scheduled equipment repairs.
- H. During peak passenger traffic times, Purchaser requires all elevators to be in operation. The elevator Contractor shall not remove elevators from service during these times without authorization. The peak traffic times are Monday thru Friday 4:30-6:00 p.m.

1.11 MINIMUM MAINTENANCE HOURS AND PROCEDURES

- A. Contractor agrees to furnish maintenance personnel for specified minimum hours per week, month, quarterly, or annually for on-site, routine, regular preventive maintenance as listed in Appendix A (see detailed scheduled hours).
- B. Staffing: Contractor shall provide adequate and dedicated personnel suitable to Purchaser, for preventative maintenance based on the required maintenance hours identified in Appendix A. During vacation periods, an alternate mechanic, suitable to Purchaser, shall be assigned for maintenance. These hours shall not include time expended for callbacks, repair work, tests, or billable work. Time spent assisting Purchaser in performing tests of Firefighter's Emergency Operation or Standby Power Operation, and time spent accompanying Purchaser or their Elevator Consultant in making tests, inspections, or reviews may be credited against these minimum hours, and no additional billing shall be accepted for such time expended.

- C. Contractor's Employees Shall:
1. Upon arrival and departure all Contractor employees must register in the log maintained at Purchaser's location. In addition, Purchaser may require Contractor's employees to check in with designated personnel each time they enter the building.
  2. The site maintenance log book shall indicate the name of person or persons, time of arrival, purpose of visit, i.e. callback, preventive maintenance, scheduled repair, Supervisor's inspection, etc., and a brief description of work accomplished, including car and/or group designation, elevator, and time of departure. A sample of the maintenance log book is in Appendix I and a sample of the callback log is in Appendix J.
  3. When departing the property, Contractor's personnel shall sign the maintenance log book indicating as listed above under item C. 2.
  4. In addition, Contractor's employees who perform billable work shall leave time tickets after each visit when leaving the property.
  5. Purchaser may elect to have entries via a manual or electronic log device provided by Purchaser.
- D. If the hours expended fall below those required on a three-month rolling average basis Purchaser shall have the right to require the shortfall in hours of work to be made up on a schedule of work acceptable to Purchaser.
- E. Quarterly, Contractor shall meet with Purchaser or its Designated Representative. The scope of this meeting shall include:
1. A review of the previous quarter's callbacks
  2. A review of maintenance, including work performed, progress on any deficiency lists or other programs, and scheduled work requiring removal of elevators from service
  3. A review of any reported complaints
  4. Such other elevator-related items as may be appropriate
  5. A review of on-site spare equipment or parts for the elevators
  6. A review of maintenance hours
  7. If requested by Purchaser, Contractor shall provide a monthly list of callbacks for review by Purchaser prior to the quarterly meetings.
- F. Overtime travel in response to any callback shall be billed as the difference between regular time and overtime travel. There shall be a maximum of two hours per round trip allowed for travel for any overtime callback. The cost for this overtime travel shall be calculated and identified as a flat rate in Appendix A.

#### 1.12 SCHEDULING OF WORK

- A. Within thirty days of receipt of a fully executed copy of this Agreement, Contractor shall prepare and submit a schedule of repairs, tests, or other work that will require a shutdown of one or more elevators within the initial 90 days. The nature of work, elevator involved, and anticipated days out of service shall be included. Subsequently, this schedule shall be updated quarterly prior to the meeting referenced in Article 4.11 E.
- B. Pre-Maintenance Repairs: all work detailed as pre-maintenance repairs must be completed per the schedule agreed upon between Contractor and Purchaser.

#### 1.13 ELEVATOR CALLBACK FREQUENCY

- A. Callback frequency for the elevators covered under this Agreement shall be subject to the provisions of this Agreement.
- B. Total callbacks for any elevator shall not be more than .333 per unit per month for one quarter, as indicated in Appendix A.

- C. Callbacks due to vandalism or misuse of the equipment shall be excluded.

1.14 PERFORMANCE REQUIREMENTS

- A. Contractor agrees to maintain the following minimum performance requirements for the gearless, geared, gearless machine-room-less (MRL), and hydraulic elevators designated in table located in Appendix A:
1. Floor-to-floor times are measured in seconds from start of doors closing, including a typical one-floor travel and until the elevator is approximately level with the next successive floor, either up or down, and the doors are 3/4 open for center opening doors or 1/2 open for side opening doors, per Appendix A. Times shown are  $\pm 0.2$  seconds.
  2. Door opening times are measured in seconds from start of car door open until doors are fully open, per Appendix A. Times shown are  $\pm 0.1$  seconds.
  3. Door closing times are measured in seconds from start of door close to doors fully closed and shall be no less than the times shown per above schedule or those permitted by code. Times shown are  $\pm 0.1$  seconds. Door closing force is measured at rest with the doors between 1/3 and 2/3 closed. Door closing force shall be no more than 30 lbf.
  4. Stopping accuracy shall be measured under all load conditions and maintained per Appendix A. Standards shown are maximum allowable from no load to full load.
  5. Variance from rated speed, regardless of load, shall not exceed the following:
    - a. 3% for closed loop equipment
    - b. 5% for open loop equipment
  6. Door opening and closing shall be smooth and quiet, with smooth checking at the extremes of travel. Car and hoistway doors shall open flush with entrance jambs and each other.
  7. Acceleration and deceleration shall be smooth, with no noticeable "steps" or bumps to increase or reduce speed, and no objectionable vibrations.
  8. Elevator cars shall travel smoothly and quietly through the hoistways.
  9. Performance requirements indicated are minimum standards and are not the sole criteria for judging the Contractor's performance.
  10. Car Ride Quality and Noise: All elevators shall be maintained and adjusted to meet the performance requirements per the original specifications for each property and within the following parameters:
    - a. Horizontal acceleration within the cars during all riding and door operating conditions shall not exceed 15 mg peak to peak for gearless elevators installed prior to 2013, 15 mg peak to peak for gearless elevators installed after 2013, and 20 mg peak to peak for geared elevators, in the 1-10 Hz range. Measurement Criteria: ISO 8041, peak -to-peak vs. A95 standard.
    - b. Vertical acceleration and deceleration shall be constant and not exceed 4 feet/second/second with an initial ramp between 0.5 and 0.75 seconds.
    - c. Sustained jerk shall not exceed 6 feet/second<sup>3</sup>.
    - d. Measured noise levels in any moving car outside the leveling zone shall not exceed 55 dBA under any condition including ventilation blower or fan on highest speed. Measured noise levels in the car within the leveling zone or when the car is stopped shall not exceed 60 dBA. There shall be no discernible sound in the elevator car from the machine, pump unit, ropes, sheaves, motor generator sets, platforms, cab walls, or car guides unless it is mutually determined by Contractor and Purchaser that such sounds are attributable to the design of the equipment (provided such design exception shall not apply to the extent that Contractor has provided design or redesign Services under this Agreement or a related agreement).

1.15 REMOVAL OF UNITS FROM SERVICE

- A. Removal of elevators from service during peak hours shall be coordinated with and approved by Purchaser. Removal of elevators for routine maintenance during off-peak hours is expected, but notification to and coordination with Purchaser shall be provided.

1.16 PURCHASER'S RIGHT TO INSPECT AND REQUIRE WORK

- A. Purchaser reserves the right to make, or cause to be made, inspections and tests whenever it deems advisable or necessary to ascertain that the requirements of this Agreement are being fulfilled. The Contractor agrees to furnish personnel to accompany Purchaser and/or its representatives during such inspections. Deficiencies noted shall be submitted in writing to the Contractor. The Contractor shall, promptly (within ten days unless otherwise agreed), correct deficiencies covered under this terms of this Agreement at its expense.
- B. If Contractor fails to perform the work required by the terms of this Agreement in a diligent and satisfactory manner, Purchaser, after thirty days' written notice to Contractor listing the deficiencies or failures to perform, may perform or cause to be performed all or any part of the work required hereunder. Contractor agrees that it shall reimburse Purchaser for any expense incurred thereto, or Purchaser, at its election, may deduct such expenses from any sum owed to Contractor. The waiver by Purchaser of a breach of any provision of this Agreement by Contractor shall not operate or be construed as a waiver of any subsequent breach by Contractor.
- C. In the event Contractor disputes a listing of deficiencies or failures to perform, in whole or in part, and the parties cannot resolve the dispute, a qualified Elevator Consultant acceptable to both parties may be retained by Contractor to conduct a non-binding mediation of any disputes, and Purchaser and Contractor shall split the Consultant's fees equally.
- D. A qualified vertical transportation consultant may be retained by Purchaser to perform audit of Services and mediate disputes.

1.17 EXCLUSIONS

- A. Contractor shall NOT be responsible for the following:
  - 1. Repairs, callbacks, modifications, adjustments, or replacement required because of negligence, accident, or misuse of the equipment by anyone other than Contractor, its employees, subcontractors, servants or agent, or other causes beyond the Contractor's control except ordinary wear.
  - 2. Repair or replacement of building items, such as hoistway or control space walls and floors, car enclosures, car finish floor material, hoistway and car entrance frames, car or hoistway sills, signal fixture faceplate surfaces, communication equipment, cleaning of car interiors, and cleaning of the portions of sills visible when the doors are open.
  - 3. Mainline and auxiliary disconnect switches, fuses, and feeders to control panels.
  - 4. Lamps for car, control space and pit illumination. Contractor shall replace control space and pit lamps if such items are provided by Purchaser.
  - 5. Smoke and heat sensors and related life safety equipment.
  - 6. Standby power generators and associated contacts and relays and wiring to the elevator machine rooms (exclusive of wiring connections to elevator controller).
  - 7. Building paging/communication systems, including consoles, panels and wiring to junction box on elevator controllers. However, Contractor shall maintain paging system and emergency telephone speakers in the cars and wiring from each such speaker to the control space junction boxes.
  - 8. Failure or fluctuations of property electric power, air conditioning, or humidity control.
  - 9. Ingress by water or other material into machine room, hoistway, car enclosure, or pit.

- B. Notwithstanding any other agreement or provision to the contrary, under no circumstances will either party be liable for any indirect, special or consequential damages of any kind.

1.18 REMOVAL OF PARTS

- A. No parts or components required for the performance of Services on the vertical transportation equipment or required for its operation may be removed from the site without written approval from Purchaser. This does not include renewal parts stocked on the job by Contractor but does include parts and components that were installed with and are a part of the elevator installation, and parts delivered to the property and paid for by Purchaser, which shall remain its sole property until installed on the equipment.

1.19 MACHINE ROOMS

- A. Contractor shall place and keep in the machine rooms Underwriter's Laboratory rated metal parts cabinets. No open storage of parts or supplies shall be permitted,
- B. Machine rooms and parts cabinets shall be kept clean and neat at all times. Floors shall be painted on a continual basis, and maintained clean and free of dirt, debris, carbon dust, rags, parts, or other items.

1.20 WIRING DIAGRAMS

- A. Wiring diagrams shall be kept neatly folded and stored, except where mounted on boards, and shall be copied and replaced by the Contractor if damaged or unreadable.
- B. For each elevator, Contractor shall maintain Property's complete set of straight-line wiring diagrams, showing "As-Built" conditions and any changes or modifications to circuits resulting from control modifications, parts replacement, or equipment upgrades. This includes all manuals supplied by a third-party controller manufacturer or as part of a non-proprietary specification requirement for a modernization or new installation. Purchaser may reproduce these original or modified as-built drawings, manuals, and shall retain sole possession of this set of drawings or books in the event that the Contract is terminated, or if Purchaser's set of drawings or manuals cannot be located at that time.

1.21 MAINTENANCE CONTROL PROGRAM

- A. Contractor shall prepare and provide a Maintenance Control Program (MCP) in compliance with the current ASME A17.1 code, and any AHJ Code. Instructions for locating this written program shall be posted on the controller cabinets, at least one per elevator, as required by ASME A17.1 code. Documentation of the MCP must be kept in a visible location in each machine room.
- B. Purchaser must maintain access to all documentation via a log-on computer with the ability to print documentation.
- C. Contractor, on Purchaser's behalf, shall conspicuously post written Maintenance Control Program (MCP) and work log in each control spacer instructions for locating the MCP in or on the car controllers. Contractor shall maintain preventive maintenance history and testing logs in accordance with the MCP either in the machine room, building management office, or electronically within unit computer control system. Data shall be accessible by Purchaser via web access and hard copy printout at all times. Log or electronic printout shall include all entries for routine preventive maintenance, repairs, tests, callbacks, and Supervisor's inspection. Entries shall include date work is completed, Mechanic's or Supervisor's name, brief description of work completed, including unit number and number of units serviced, repaired or inspected, and the approximate time required for work excluding travel time to and from property.

Purchaser shall be allowed to inspect and copy log or electronic printout and maintenance history and schedule at any time.

1.22 SPECIAL CONDITIONS

- A. Performance Requirements: Equipment must be maintained to perform in compliance with the following standards, as detailed in Appendix A.
  - 1. Callback frequency
  - 2. Callback response time
  - 3. Mean time between callbacks
  - 4. Availability
  - 5. Maintenance actions
  - 6. Annual repair time accrued
- B. Should Contractor require remote monitoring of the equipment to facilitate its maintenance program, all related installation and maintenance costs shall be at Contractor's expense.
- C. Equipment manufacturer's electronic diagnostic devices required to facilitate services, including fixed and hand-held devices purchased by Purchaser, shall be maintained and upgraded by Contractor during the term of this Agreement and shall remain Purchaser's property at the expiration or cancellation of the contract.
- D. Local inspection fees with regard to operation of equipment covered by this Agreement shall be paid by Purchaser. Fees for re-inspection due to Contractor's failure to expeditiously eliminate deficiencies covered by Services shall be paid by Contractor.
- E. Purchaser may provide information to enable Contractor to render Services hereunder, or Contractor may learn information about Property or develop such information from Purchaser. Contractor agrees:
  - 1. To treat, and to obligate Contractor's employees, subcontractors and suppliers to treat as confidential all such information whether or not identified by Purchaser as confidential.
  - 2. Not to disclose any such information or make available any reports, recommendations and/or conclusions which Contractor may make on behalf of Purchaser to any person, firm or corporation or use the same in any manner, whatsoever, without first obtaining Purchaser's written approval, except to the extent necessary in connection with performing Services or when required by law.
- F. Contractor shall not, in the course of performance of this Agreement, or thereafter, use or permit the use of Purchaser or Property Manager's name or the name of any affiliate of Purchaser or Property Manager, or the name, address or any picture or likeness of or reference to the Property in any advertising, promotional or other materials prepared by or on behalf of Contractor without the prior written approval of Purchaser and Property Manager, as applicable.

1.23 PURCHASER'S RESPONSIBILITIES

- A. Provide clear, safe, and convenient access to the Property and to elevator equipment rooms and pits.
- B. Maintain car lighting, telephone lines to controller terminals, equipment room electrical switch gear, and electrical feeders to elevator controllers and Firefighters' Control Room.
- C. Maintain equipment room heating and air conditioning systems. Temperature range 60°-90° F, non-condensing.
- D. Maintain fire alarm initiating devices in elevators, lobbies, machine rooms, hoistways, etc.

- E. Prohibit storage of Property equipment or supplies in elevator equipment rooms and obstruction of equipment room access corridors and doors.
- F. Maintain standby power generator systems and related switch gear and feeders.
- G. Maintain equipment rooms, hoistways, and pits in a code-compliant and dry condition.
- H. Coordinate with Contractor in regard to Purchaser's required equipment retrofits, such as elevator security systems, new car interior finishes, car interior CCTV systems, etc.
- I. During building construction and/or retrofit, make provisions to limit infiltration of dust and debris into elevator equipment and equipment spaces.

**PART 2 - EXECUTION**

IN WITNESS WHEREOF, the parties have executed this Agreement the date noted below:

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Lane Council of Governments c/o Pacific Real Estate Services, Inc.

BY: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

END OF SECTION



APPENDIX A -  
EQUIPMENT ID, SCHEDULE, PERFORMANCE REQUIREMENTS, AND PRICING

Elevator Identification						Performance Requirements All Stopping Accuracy = ±¼"			
Car ID	AHJ ID	Make	Type	Capacity	# of Stops	Speed	Floor-to-Floor Time	Door Open Time	Door Close Time
1	9782	U.S.	Geared traction	2,000 lbs.	5	200 fpm	10.5 sec.	1.6 sec.	2.2 sec.
2	9783	U.S.	Geared traction	2,000 lbs.	5	200 fpm	10.5 sec.	1.6 sec.	2.2 sec.
3	9784	Otis	Hydraulic	2,000 lbs.	3	125 fpm	15.7 sec.	2.8 sec.	3.4 sec.

Elevator Contractor Monthly Maintenance Hours and Year One Billing per Elevator  
Purchaser's special request for overtime service on specific elevators with hour requirements

Elevator ID	AHJ ID	Elevator Contractor Minimum Monthly Maintenance Hrs.	Purchaser's Requested Overtime Maintenance Hrs.	Total Annual Hours	Year One Monthly Billing	Year One Total Annual Billing
1	9782	1	0	12	\$.....	\$.....
2	9783	1	0	12	\$.....	\$.....
3	9784	.5	0	6	\$.....	\$.....
Subtotals		2.5	0	30	\$.....	\$.....
Total Maintenance Cost						\$.....

During term of this Agreement, Purchaser shall pay Contractor on or before last day of each and every quarter the sum of \$..... including applicable tax (the Agreement Price), for the faithful performance of the services herein required of Contractor on all equipment described above, subject to the terms of this Agreement.

Price Detail and Summary: List the pricing for the individual elevator and the total for the single or group including taxes in the total at bottom:

Five-Year Maintenance Pricing

Elevators	Total Units	Year Two Pricing			Year Three Pricing			Year Four Pricing			Year Five Pricing		
		Unit	Month	Annual	Unit	Month	Annual	Unit	Month	Annual	Unit	Month	Annual
1 and 2	2	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....
3	1		\$.....	\$.....		\$.....	\$.....		\$.....	\$.....		\$.....	\$.....
Totals			\$.....	\$.....		\$.....	\$.....		\$.....	\$.....		\$.....	\$.....

Three-Year Maintenance Pricing

Elevators	Total Units	Year Two Pricing			Year Three Pricing			Year Four Pricing			Year Five Pricing		
		Unit	Month	Annual	Unit	Month	Annual	Unit	Month	Annual	Unit	Month	Annual
1 and 2	2	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....	\$.....
3	1		\$.....	\$.....		\$.....	\$.....		\$.....	\$.....		\$.....	\$.....
Totals			\$.....	\$.....		\$.....	\$.....		\$.....	\$.....		\$.....	\$.....

Appendix A – (continued)

**Additional work as described in Part 1 General 4.10 will be paid at the following rates:**

If additional work within the scope of this Agreement is requested in overtime, Purchaser shall pay only the difference between regular time and overtime hours at the hourly rates indicated below.

BILLING RATE	MECHANIC	HELPER	TEAM
Regular Time	\$.....	\$.....	\$.....
Overtime Premium at 1.7	\$.....	\$.....	\$.....
Overtime Premium at 2.0	\$.....	\$.....	\$.....

**Overtime travel labor and expense cost as identified in 4.10 C**

1. Overtime travel in response to any callback shall be billed as the difference between regular time and overtime travel. There shall be a maximum of two hours per round trip allowed for travel for any overtime callback. The cost for this overtime travel shall be calculated as a flat rate per overtime callback. The following amount is per round trip: \$..... for an overtime callback.
2. In addition, Purchaser requests a standard fixed round trip expense amount. This amount shall be \$..... for all overtime expense.
3. The combination of items 1 and 2 above shall become the amount used as the flat rate amount for any overtime callback. This amount is \$..... for both travel and expense relating to an overtime callback.

**Invoicing Requirements: The following criteria must be clearly met for payment of any invoice:**

1. Travel time clearly identified and a separate line item on technician's time sheet.
2. Site arrival time and departure time clearly identified on technician's time sheet.
3. Service call and work description clearly identified on technician's time sheet.
4. Billable material cost backup.
5. Travel expense clearly identified; vehicle service charge must be indicated as a separate charge with a maximum of \$65 per occurrence.
6. Contractor's invoice must include clear and concise detail of service call and work complete.
7. Contractor's invoice must include clear and concise detail of travel hours billed and hourly rate utilized.
8. Contractor's invoice must include clear and concise detail of time on job and hourly rate utilized.

APPENDIX B -  
KEY PERFORMANCE INDICATORS

	Measured unit or building performance
≤ 4	Callbacks per unit per year
≥90 days	Mean Time Between Callbacks
≥99.5%	Equipment Availability
>24 team hours	Accrued repairs hours per unit per year
≤1	Not more than 1 entrapment per unit per quarter

The Contractor must provide the following information to the Purchaser on a monthly basis.

- A. Callback log containing:
  - 1. Service Provider number
  - 2. Date and time call was placed
  - 3. Date and time technician arrived
  - 4. Date and time unit was returned to service
  - 5. Callback identifier for calls placed due to misuse of equipment or vandalism
  - 6. Callback identifier for calls placed due to entrapment
  
- B. Maintenance log containing:
  - 1. Service Provider number
  - 2. Date of maintenance action
  - 3. Description of maintenance

APPENDIX C -  
DEFINITIONS

The words or phrases shown below, which appear in this Agreement, are defined as follows.

- A. Pro-active: Acting in anticipation of future problems, needs, or changes.
- B. Full: Complete, especially in detail, number, or duration; all that is wanted, needed, or possible.
- C. Preventive: To anticipate or act ahead of; to keep from happening.
- D. Maintain / Maintenance: Keep in an existing state. Preserve from failure or decline.
- E. Timely Replacement: Adequate inventory of commonly used spare parts and other components for elevators available within 4 hours.
- F. Tenant Sensitive Items: Anything concerning the elevators that tenants can see, hear, or feel.
- G. Callback: Any request by Property personnel for elevator service assistance, and those requests which elevator industry jargon would describe as a "callback."
- H. Mean Time Between Failures: The average time between out of service and return to service. This is calculated as the total time out of service / number of out of service events. In the context of this Agreement, refers to Mean Time Between Callbacks.
- I. Repair Time Total: Cumulative time for all repairs over the last twelve months or a set calendar twelve-month period.
- J. Availability: Considers equipment down time vs. maximum equipment up time or usage time. This is calculated as "maximum availability - down time/maximum availability - 100" and is expressed as a percentage. The higher the percentage, the better the performance is. This percentage is only calculated vs. the time in the building or facility when the equipment is required to support building activity. The evaluation considers actual equipment availability vs. potential 100% availability.
- K. Entrapments: An out of service elevator with passengers in the cab requiring the Contractor or other emergency personnel to release the passengers.

APPENDIX D -  
EXTENT AND SCOPE OF SERVICES

- A. Pro-Active Full Preventive Maintenance: Contractor shall regularly and systematically, on a continuous basis, examine, clean, lubricate and adjust the vertical transportation equipment and provide unlimited callback service during regular working hours and, as conditions warrant, in accordance with accepted industry standards and the applicable manufacturer's published specifications and technical field notes, including those published internally within the manufacturer's organization, repair or replace all portions of the equipment, except those specifically excluded, including but not limited to the work and coverage described hereinafter.
- B. Elevators:
1. Basic Elevator Scope: The services shall include all work and materials expressly required under this Agreement or reasonably inferred, whether or not expressly stated herein, including, but not limited to the following:
    - a. Hoist machines, including worms, gears, thrust bearings, drive sheaves, drive sheave shafts and shaft bearings, tachometers, brake assemblies and pulleys, and all other components and parts of the machine and brake;
    - b. Hoist motors and power conversion devices, including motor windings, field coils, rotating elements (including armatures and commutators), brushes, brush holders, motor bearings, and all other related components and parts;
    - c. Controllers, selectors and dispatching equipment, including all micro-processor and/or solid-state components, relays, resistors, capacitors, condensers, transformers, contacts, leads, dashpots, timing devices, computer devices, encoders, tach generators, steel selector tapes (or cables), mechanical and electrical driving equipment, and all other related components and parts;
    - d. Governors, including governor sheave shaft assemblies, bearings, contacts, governors jaws, and all other related components or parts;
    - e. Rope brake devices, secondary braking devices,
    - f. Car and counterweight safeties, including actuating mechanisms, jaws, and all other related components and parts;
    - g. Hoistway equipment, including deflector or secondary sheaves and sheave bearings, car and counterweight guide rails (excluding replacement), top and bottom limit switches, counterweights and counterweight guide shoes including rollers or sliding gibs, inductors, cams, tapes and all other related components and parts;
    - h. Hoistway entrance equipment, including hoistway door interlocks, hangers, hanger covers and tracks, hoistway door drive assemblies including vanes, drive blocks, clutches, pick-up assemblies and bearings, bottom door guides, auxiliary door closing devices (including cables, sheaves, and arms), door restrictor devices, and all other related components and parts;
    - i. Car and hoistway door gibs, including their attachments to the door panels.
    - j. Car equipment, including car guide assemblies, guide rollers or sliding car guides, car door restrictors, car top exhaust fan or blowers, car top 2:1 sheaves, load weighing or sensing switches, car top inspection stations, car top and bottom lights, car frames, car platforms, and all other related components and parts;
    - k. Car door operators, including door drive chains, sheaves or belts, car door hangers, hanger covers and rollers, car door contacts, all door protective devices (including screen type detectors, proximity edges, mechanical safe edges and light rays), and all other related components and parts;
    - l. Pit equipment, including car and counterweight buffers, tape sheave assemblies, governor rope pit tension sheave assemblies, compensating rope sheave

- assemblies or other pit mounted compensation guides, pit lights, and light fixtures including re-lamping (bulbs furnished by Purchaser), and all other related components and parts;
- m. Alarm bells, emergency stop switches, emergency car lights, and batteries;
  - n. Car operating panels and their attachments to return panels, hall call pushbutton stations, car, and corridor signals and fixtures (including lighted surrounds or buttons), visual and audible signaling devices, remote status panels and switches, and all other related components and parts;
  - o. Hoist, compensating, and governor ropes and their fastening means, and all other similar or related components and parts;
  - p. Seismic Devices, including seismic switches and contacts, derailment devices, and all other related components and parts.
2. Additional Elevator Scope of Work:
- a. Treat all motor windings, as needed, with proper insulating compound that has been approved by the motor manufacturers. Replace any cracked or badly worn field coil windings.
  - b. Keep all car tops, pits, and hoistways clean and free from dirt, oil, lint, debris, and stored items, and maintain each control space in clean, neat condition.
  - c. Renew all wire ropes or hoisting belts as often as is necessary to maintain an adequate factor of safety. Maintain equal tension on all hoisting ropes or belts, and, where appropriate, shorten any hoisting device as necessary to provide continued safe operation and maintain normal traction.
  - d. Keep all wire ropes, hoisting belts, and guide rails clean and free from dirt, lint, rust, or accumulated grease, and keep rail shanks properly painted.
  - e. Repair or replace conductor cables and hoistway and control space elevator wiring to prevent shutdowns and provide uninterrupted operation of elevator signals and uninterrupted elevator operation.
  - f. Disassemble machine brakes annually (unless otherwise agreed), check for and replace worn parts, clean all retained parts, reassemble, lubricate, and adjust for proper operation.
  - g. Affix by stencil painting and maintain the appropriate elevator numbers on the car crossheads and on all equipment components in the machine rooms and pits, including hoist machines, motor generators, governors, control cabinets, buffers, and compensation sheave assemblies. These numbers shall be a minimum of 1½" high except on the governor or compensation sheave assembly, which may be less if a suitable flat surface of 1½" is not available.
  - h. Repair damage to car and hoistway door finish when caused by improper adjustment or maintenance of associated door equipment.
  - i. Replace burned out light tubes or bulbs, furnished by Purchaser, in all control space and pit light fixtures. Replacement of car light bulbs or tubes shall be Purchaser's responsibility.
  - j. Maintain the emergency telephone buttons, button contacts, speakers, and wiring to the control space junction box, in a fully operational condition. Also maintain wiring for the car telephones from the cars to the control space junction boxes.
  - k. Maintain, in fully operational condition, the complete Elevator Status or Monitoring Panels in the main lobby Security Desk, and the complete elevator panel in the Fire Command Center, including all lenses, lights, switches, and all associated wiring from the panels to the control space junction boxes.
  - l. Hydraulic: Elevator pump, motor, motor windings, roped hydraulic cables, governors, plunger single or multi-stage, all plunger packings, V-belts, strainers, valves, mufflers, Victaulic fittings, seals, pit oil return units, emergency return unit, oil coolers, emergency return unit and battery.
3. Additional Services:
- a. Cleaning:
    - 1) Contractor shall clean elevator equipment, machine rooms, and pit floors at regular intervals sufficient in frequency to maintain a professional

- appearance, prevent tracking of dirt, oil, grease, or carbon dust from car tops, pits or machine rooms onto carpeted areas, and to preserve the life of the equipment.
- 2) Contractor shall not be responsible for cleaning any equipment made necessary by events beyond its reasonable control or as a result of improper janitorial or building maintenance functions. Unusual conditions, such as on-going construction or "build-out" in the building may be reviewed with Purchaser to determine responsibility for cleaning.
- b. Painting:
- 1) Paint all elevator machine room, hoistway, and pit equipment and all car tops at intervals frequent enough to maintain a professional appearance, prevent rusting, and preserve the equipment. Car tops, and floors in machine rooms, machinery spaces, and pits shall be maintained and painted with a low VOC paint including the color additive "Deck Gray" or other suitable color if approved by Purchaser.
  - 2) All paint shall be suitable for the purpose intended and shall be high quality. Application of the paint shall, in all circumstance, comply with current ASME, OSHA, and applicable local codes. Contractor shall schedule all painting procedures with Purchaser.
- c. Lubrication:
- 1) Lubricate the equipment at intervals recommended by the equipment manufacturer or as dictated by the use of the equipment. All lubricants shall be suitable for the purpose intended and shall meet or exceed the minimum requirements specified by the manufacturer of the equipment to which the lubricant is applied.
  - 2) Lubricants, cleaning fluids and all combustible liquid shall be stored in metal cabinets in the control space and shall be disposed of in accordance with OSHA and EPA guidelines. MSDS data sheets shall be posted as required.
- d. Adjustment: Adjust the equipment as necessary:
- 1) To its originally designed performance.
  - 2) When required to maintain performance standards specified in this Agreement.
  - 3) When necessary to preserve the useful life of a part or assembly.
  - 4) When necessary to prevent or eliminate Tenant Sensitive items from becoming adversely noticeable to building's tenants.
  - 5) Additionally, Contractor shall check and adjust the elevator dispatching systems and make necessary tests at such intervals as are required to ensure all systems are operating properly. If required to complete such system checks, this work shall be completed during overtime at no additional cost to Purchaser.
- e. Repairs and Replacements: Make repairs and/or replace all worn, damaged, or broken parts or components. Parts or components requiring repair shall be rebuilt to "as new" condition. Parts or components shall be replaced:
- 1) When worn beyond normal adjustment limits.
  - 2) When necessary to ensure continued normal operation.
  - 3) When necessary to extend the useful life of the elevators or any of their components.
  - 4) When necessary to continue safe, dependable operation in accordance with ASME A17.1 and A17.2 Code.
  - 5) When necessary to continue performance of the equipment in accordance with its original design.
  - 6) When necessary to maintain the performance, standards specified in this Agreement, including the elevator performance, smoothness, and quietness of operation.
  - 7) When more than one elevator requires repair, Purchaser, upon consultation with Contractor, shall establish priorities of accomplishment.

- f. Manufacturers' Parts and Lubricants: In performing the Services, Contractor agrees to provide parts used by manufacturers of the equipment for replacement or repair, and to use lubricants obtained from and/or recommended by the manufacturer of the equipment. Equivalent parts or lubricants may be used if approved in writing by Purchaser.
- g. Contractor shall provide rope lubricators and maintain adequate levels of OEM approved lubricant to meet the intent of the specifications.
- h. Adequate Parts and Parts Storage:
  - 1) Contractor shall maintain an adequate inventory of spare parts and components to permit timely replacement and repairs without delay. All parts, materials, lubricants, rags, cleaning fluids, combustible liquids, and other materials and supplies shall be kept and stored in U.L. rated metal cabinets, provided by Contractor, properly secured, in each machine room, unless code required clearances would be violated by the presence of such cabinets. All materials and supplies kept in these cabinets shall be neatly arranged, and cabinet doors shall be left in the fully closed position after each visit.
  - 2) Cabinets shall be sufficient in number and size to store all parts, materials, and supplies out of sight. No parts, materials, or supplies shall be stored on top of cabinets, on the floors, or any other place where they are visible.
- i. Prompt Corrective Action: When, as a result of an examination, a need for corrective action is apparent and the corrective action is within the scope of Contractor's responsibility, Contractor shall proceed immediately to make such replacements, repairs, and/or corrections. If Contractor reasonably believes the corrective action is not within the scope of Contractor's responsibility, and no safety or potential safety problem exists, Contractor shall deliver a written report to Purchaser within seven days of the examination. If a safety or potential safety problem exists, Contractor shall immediately take corrective action at the least possible expense to Purchaser, regardless of scope of responsibility, and make a prompt written report to Purchaser.



APPENDIX E -  
CODE-MANDATED TESTS

- A. Contractor shall schedule, coordinate, and complete statutory Category 1 and 5 tests and other equipment tests including but not limited to:
  - 1. Annual no load slow speed test of car safeties, governors, and buffers.
  - 2. Five-year, full load, full speed test of car safeties, governors, and buffers.
  - 3. Quarterly firefighters' service operational tests.
  - 4. Annual standby power operation tests on elevators.
- B. Contractor shall schedule, coordinate, and complete statutory tests. Contractor shall attempt to schedule said tests in the presence of local enforcing authority and/or persons designated by Purchaser. Scheduling difficulties shall not exempt Contractor from performing tests in compliance with applicable Code or regulatory requirements.
- C. Contractor shall make "Periodic Inspections and Tests" in accordance with the Authority Having Jurisdiction, either city or state, requirements, and with the current ASME A17.1 code.
- D. Contractor shall provide not fewer than five business days' of prior notification to Purchaser of its intention to perform Category 5 rated speed, rated load tests such that a representative of Purchaser may witness the tests. Written reports of all "Periodic" tests shall be submitted to Purchaser. The Agreement Price shall include all such required tests during regular hours.
- E. The Elevator Contractor must assist with periodic inspection and testing of Standby Power Operation in accordance with ASME A17.1. Purchaser shall conduct tests during overtime hours. If the elevators systems fail to work correctly during the testing procedure the elevator contractor shall make necessary corrections and be present at the next test to assure proper operation at no charge to the customer. The base hours spent providing this assistance during this overtime testing may be credited against the minimum hours required by Article 1.12 of this Agreement.
- F. Category 1 and Category 3 tests shall be performed during regular hours. Category 5 tests shall also be scheduled during regular working hours. Should Purchaser require tests during overtime hours, the additional costs for tests performed in overtime shall be paid by Purchaser in accordance with Appendix A of this Agreement.
- G. Contractor shall affix metal tags for all Category 1 and 5 tests in accordance with ASME A17.1-2004 or later adopted by the AHJ.
- H. Contractor's failure to execute statutory tests mandated by either national Codes or local jurisdictions or regulations within thirty calendar days of required time constraint shall make the Contractor responsible for any fines assessed by the AHJ. In the event the AHJ places the elevator out of service or levies a fine because of missed statutory tests, no additional costs shall be paid by Purchaser. To prevent missed required testing, the contractor shall attempt to schedule said tests in a timely manner with the building management.
- I. Before performing tests of the elevators, Contractor shall take all reasonable steps to verify that the equipment is in a safe condition for testing, shall check appropriate clearances, and shall adhere to best practices in making the tests, including all safety procedures in general use by the Contractor or published by the Contractor or manufacturer of the equipment

APPENDIX F -  
INSURANCE

- A. Prior to commencing work, Contractor shall secure required insurance, at its sole cost, and submit certificate of confirmation or other documentation reasonably acceptable to Purchaser. All insurance shall meet the minimum requirements of this Section 1.17 set forth below. During the term of this Agreement, Contractor shall, continuously maintain the following minimum insurance coverages:

Type of Insurance Coverage	Amount
Workers' Compensation and Occupational Disease	Statutory Limits
Employer's Liability, Including Occupational Disease Coverage	\$1,000,000
Property Damage Insurance for the protection of Contractor and Purchaser, as their interests may appear, covering all of Contractor's personal property, business records, fixtures and equipment located on the Property, and other insurable risks for "all risk" perils, excluding earthquake and flood.	Not less than the full insurance replacement cost of such property and the full insurable value of such other interests of Contractor
E Commercial General Liability, Including Operations, Contractual, and Completed Operations Coverages, Occurrence Basis (further described in B below)	\$10,000,000 Combined Single Limit for Bodily Injury and Property Damage
Commercial Automobile Liability Covering Owned, Non-Owned, and Hired Vehicles Used in the Performance of the Services	\$1,000,000 Combined Single Limit for Bodily Injury and Property Damage

- B. The Commercial General Liability Insurance shall include, but not be limited to, coverage for death and bodily injury, property damage or destruction (including loss of use), product and completed operations liability, contractual liability, fire legal liability, personal injury liability and advertising injury liability.
- C. All insurance required to be carried by Contractor hereunder shall include the following provisions: (i) shall name Lane Council of Governments c/o Pacific Real Estate Services, Inc. as additional insureds; (ii) shall release Purchaser, any Property Manager and any lender from any claims for damage to business or to any person or the Property or Building and to Contractor's personal property in the Building or Property, caused by or resulting from risks insured against under any insurance policy carried by Contractor in force at the time of such damage; (iii) shall be issued by Insurance companies authorized to do business in the State where the Building is located with a financial rating of at least an "A-" status as rated in the most recent edition of Best's Key Rating Guide; (iv) shall be issued as a primary and noncontributory policy; and (v) shall contain an endorsement requiring at least thirty days' prior written notice of cancellation to Landlord and Landlord's lender (if any), before cancellation or change in coverage, scope or amount of any policy. Contractor shall deliver certificates of such policies together with evidence of payment of all current premiums to Purchaser within thirty days of execution of this Agreement and prior to performance of any Services or work. Any certificate of insurance shall designate Contractor as the insured, specify the Building location, list Purchaser (and its Property Manager and lender, if any) as additional insureds (with the additional insured endorsement attached thereto), and list Purchaser with Purchaser's current address as "Certificate Holder." Contractor shall take all necessary steps to renew all insurance at least thirty days prior to such insurance expiration dates and shall provide Purchaser a copy of the renewed certificate, prior to said policy's expiration date. If Contractor fails at any time to maintain the insurance required by this Agreement, and fails to cure such default within five

business days of written notice from Purchaser or Property Manager then, in addition to all other remedies available under this Agreement and applicable law for such default, Purchaser may terminate this Agreement without further notice or any penalty.

- D. Purchaser and Contractor each release and relieve the other, and waive the entire right of recovery for third party liability and any loss or damage that may occur to the Property, Building or any improvements thereto, or personal property of such party therein, by reason of any cause to the extent that such rights of recovery, claim, action or cause of action is or would be covered by insurance carried by either party or required to be obtained pursuant to this Agreement. This waiver applies whether or not the loss is due to the negligent acts or omissions of Purchaser, Property Manager or Contractor, or their respective officers, directors, employees, agents, contractors, or invitees. Each of Purchaser and Contractor shall have their respective commercial insurers endorse the applicable insurance policies to reflect the foregoing waiver of claims, provided, however, that the endorsement shall not be required if the applicable policy of insurance permits the named insured to waive rights of subrogation on a blanket basis, in which case the blanket waiver shall be acceptable.
- E. Subject to the waiver of subrogation set forth above, nothing in this Agreement shall be construed to mean that Contractor assumes any liability on account of accidents to persons, or property, except those directly, or indirectly, due to acts or omissions of Contractor, its employees, subcontractors, servants or agents. Contractor shall not be held responsible or liable for any loss or damage to the extent solely and directly due to "Force Majeure" (defined below), with the exception of explosion caused by action or inaction of Contractor, its employees, subcontractors, servants or agents which shall continue to be the responsibility of the Contractor regardless of Force Majeure. In the event of Force Majeure, dates for performance or completion of any ongoing maintenance or corrective action required shall be extended by such length of time as may be reasonably necessary to compensate for such "Force Majeure."
- F. "Force Majeure" under this Agreement shall mean any delay in performance by either party to the extent resulting from any (i) strikes, lockouts, or labor disputes; (ii) failure of power or other utilities; (iii) inability to obtain labor or materials or reasonable substitutes therefor; (iv) war, governmental action, court order, condemnation, civil unrest, riot, fire or other casualty; (v) extreme or unusual weather conditions, acts of God or unforeseen soil conditions; or (vi) other conditions similar to those enumerated in this Section beyond the reasonable control of the party required to perform (except for financial inability which shall not be considered Force Majeure).
1. If either party is affected by Force Majeure it shall promptly notify the other of the nature and extent of the circumstances in question.
  2. Notwithstanding any provision of this Agreement, neither party shall be deemed to be in breach of this Agreement, or otherwise be liable to the other for any delay in performance or the non-performance of any of its obligations under this Agreement, to the extent that the delay or non-performance is due to any Force Majeure of which it has notified the other party, and the time for performance of the obligation shall be amended accordingly.
  3. If at any time the Contractor claims Force Majeure in respect of the obligations under this Agreement with regard to the supply of the Services, Purchaser shall be entitled to obtain from any other person such Services as the Contractor is unable to provide.

APPENDIX G -  
INDEMNIFICATION

- A. The Contractor acknowledges that it has reviewed site and equipment conditions covered by this Agreement prior to the date of commencement of this Agreement. The Contractor shall indemnify Purchaser against any claims during the Term of this Agreement for adjustment, repair, or replacement of all equipment for which the Contractor is responsible under this Agreement.
- B. To extent permitted by law, Contractor shall indemnify and hold harmless Indemnified Parties from and against any and all claims, demands, losses, damages, injuries, liabilities, expenses, penalties, judgments, liens, encumbrances, orders and awards, whether foreseen or unforeseen, direct or indirect, special or consequential, all of which are collectively referred to as "claims," howsoever caused, which directly or indirectly relate to or result wholly or in part from, or are alleged to relate or result wholly or in part from:
1. Services performed or required to be performed by Contractor.
  2. Any violation of this Agreement by Contractor.
  3. Any action or omission of Contractor outside the scope of this Agreement.
  4. Utilization of electronic diagnostic devices/capabilities in performance of Services.
- C. Such indemnity shall include reasonable attorneys' fees, experts' fees, court costs, and other related expenses arising out of any matter covered by foregoing indemnity, except to extent of claims excluded under Article 1.17. Contractor shall initially defend claims hereunder on behalf of Indemnified Parties through counsel approved in writing by Purchaser (not unreasonably withheld), until such time as a court of competent jurisdiction determines that exclusion in Article 1.17 applies, or such counsel otherwise has a conflict of interest, or Purchaser's insurer reasonably determines that such counsel's performance is unsatisfactory. Contractor's counsel shall then withdraw its representation of Indemnified Parties and transfer all relevant files and documents to a counsel designated, in writing, by Purchaser or other Indemnified Party. Purchaser, or other Indemnified Party, shall assume responsibility at that time for its defense and payment of its attorney's fees; costs are subject to reimbursement of such reasonable attorney's fees and costs by Contractor unless Article 1.17 applies.
- D. Such indemnity shall not apply to the extent of claims caused by the negligence or willful misconduct of the party or parties seeking to be indemnified, whether determined by a court of competent jurisdiction with all appeals expired or exhausted, or pursuant to a written settlement and release agreement reasonably approved in writing by Contractor and Purchaser, and by their respective insurers, if applicable. For purposes of this clause "negligence" by an Indemnified Party shall not include its passive failure to supervise Contractor.
- E. The term "Indemnified Parties" herein shall mean Purchaser, or Purchaser and their respective subsidiaries, beneficiaries, parents, shareholders, affiliates, directors, officers, partners, agents, servants and employees of all of the foregoing and anyone else acting for or on their behalf.
- F. Contractor's obligations under this Provision shall survive expiration or earlier cancellation of this Agreement for one year.

APPENDIX H -  
CONTRACTOR'S PREVENTIVE MAINTENANCE  
SCHEDULE AND MAINTENANCE CONTROL PROGRAM

Contractor to insert MCP Here

APPENDIX I - SAMPLE MAINTENANCE LOG





APPENDIX J - SAMPLE CALLBACK LOG

**CALLBACK LOG**

Date	Unit #	Time of Call	Person Reporting Issue	Time Mech. Arrive at Building	Date/Time Unit Back into Service

Date	Unit #	Time of Call	Person Reporting Issue	Time Mech. Arrive at Building	Date/Time Unit Back into Service

Description of the Problem:
Resolution Description from Mechanic:

Description of the Problem:
Resolution Description from Mechanic:

