



**LERCH BATES**

*Building Insight*

**USPS SEATTLE NDC  
34301 NINTH AVENUE SOUTH  
FEDERAL WAY, WASHINGTON**

**HYDRAULIC ELEVATOR MODERNIZATION AND  
NEW INSTALLATION SPECIFICATION**

**JULY 15, 2019**

*Prepared For:*

Ted Tolle  
Senior Project Manager  
Cornerstone Architectural Group  
9170 Old Naches Hwy  
Naches, WA 98937

*Prepared By:*

Steven J. Hobbs  
Consultant

LB Project № 0100018283-001

ALL DOCUMENTS FURNISHED BY LERCH BATES INC. (LERCH BATES) ARE INSTRUMENTS OF SERVICE AND SHALL REMAIN THE SOLE PROPERTY OF LERCH BATES. LERCH BATES SHALL RETAIN ALL COMMON LAW, STATUTORY, AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT THERETO. THEY ARE TO BE USED ONLY FOR THIS PROJECT AND ARE NOT TO BE MODIFIED, DISTRIBUTED, OR USED FOR ANY OTHER PROJECT, IN WHOLE OR IN PART, EXCEPT WITH THE WRITTEN AUTHORIZATION OF LERCH BATES. LERCH BATES ACCEPTS NO LIABILITY FOR ANY UNAUTHORIZED USE OR MODIFICATION OF THESE DOCUMENTS.

TABLE OF CONTENTS

SECTION 00020 — REQUEST FOR QUOTATION.....	1
PART 1 - GENERAL .....	1
1.1 PROJECT: ELEVATOR MODERNIZATION.....	1
1.2 CONTRACT DOCUMENTS.....	1
1.3 CONSTRUCTION SCHEDULE .....	1
1.4 PRE-BID SITE SURVEY.....	1
1.5 SEALED QUOTATION.....	1
1.6 NOTICE OF INTENT TO SUBMIT A QUOTATION.....	2
1.7 OPENING.....	2
1.8 QUOTATION.....	2
1.9 OWNER'S RIGHTS.....	3
1.10 INVITED CONTRACTORS .....	3
SECTION 00100 — INSTRUCTIONS TO CONTRACTOR.....	4
PART 1 - GENERAL .....	4
1.1 EXAMINATION .....	4
1.2 EXISTING MAINTENANCE CONTRACT .....	4
SECTION 00310 — QUOTATION FORM .....	5
PART 1 - GENERAL .....	6
1.1 CONTRACTOR'S BASE QUOTATION .....	6
1.2 ADDENDA.....	7
1.3 CONTRACTOR'S OTHER SUPPORTING ENCLOSURES .....	7
1.4 OWNER'S CONSTRUCTION SCHEDULE .....	7
1.5 CONTRACTOR'S LIST OF SUPPLIERS/SUB-CONTRACTORS .....	7
1.6 SUBMISSION AND ACCEPTANCE OF QUOTATIONS .....	8
1.7 ALTERNATES.....	8
1.8 CONTRACTOR SIGNATURE.....	9
SECTION 00800 — SUPPLEMENTAL CONDITIONS.....	10
PART 1 - GENERAL .....	10
1.1 DEFINITION OF TERMS .....	10
1.2 CONSULTANT'S STATUS .....	10
1.3 CONTRACT .....	11
1.4 MEASUREMENTS AND DRAWINGS .....	11
1.5 CODES AND ORDINANCES.....	11
1.6 CONTRACTOR'S INSURANCE .....	11
1.7 OWNER'S INSURANCE .....	12
1.8 TAXES, OLD AGE PENSIONS AND UNEMPLOYMENT INSURANCE .....	12
1.9 LABOR LAWS.....	12
1.10 PATENTS.....	12
1.11 ASSIGNMENTS .....	13
1.12 ADVERTISING .....	13
1.13 PROTECTION OF WORK AND PROPERTY .....	13
1.14 ACCIDENT REPORTS .....	14
1.15 STORAGE OF MATERIALS .....	14
1.16 REMOVAL OF EQUIPMENT AND RUBBISH .....	14
1.17 MATERIALS AND WORKMANSHIP .....	14
1.18 SUPERVISION.....	14
1.19 ROUTINE BUSINESS.....	14
1.20 CHANGES AND EXTRA WORK .....	14
1.21 PAYMENTS .....	15
1.22 PAYMENT WITHHELD .....	15
1.23 LIENS AND AFFIDAVITS .....	15

1.24 CLAIMS FOR EXTRA COST .....	15
1.25 DELAYS AND EXTENSION OF TIME .....	16
1.26 PERMITS .....	16
PART 2 - SPECIAL CONDITIONS.....	16
2.1 PROGRESS OF WORK .....	16
ATTACHMENT 1 - PAYMENT REQUEST FORM .....	17
ATTACHMENT 2 - PROGRESS REPORT FORM.....	19
SECTION 01010 — SUMMARY OF WORK.....	21
PART 1 - GENERAL .....	21
1.1 WORK COVERED BY CONTRACT DOCUMENTS.....	21
1.2 PRIME CONTRACTOR'S DUTIES.....	21
1.3 WORK SEQUENCE .....	22
1.4 CONTRACTOR USE OF PREMISES.....	22
1.5 CONCURRENT MODERNIZATION WORK AND BUILDING OPERATION.....	22
SECTION 01030 — ALTERNATES .....	23
PART 1 - GENERAL .....	23
1.1 SCOPE.....	23
SECTION 01040 — PROJECT PROCEDURES .....	24
PART 1 - GENERAL .....	24
1.1 APPLICABLE CODES .....	24
1.2 STAGING AREA .....	24
1.3 WORK PHASE.....	24
1.4 OCCUPANCY AND WORK BY OTHERS .....	24
SECTION 01300 — SUBMITTALS.....	25
PART 1 - GENERAL .....	25
1.1 SUBMITTALS.....	25
1.2 FINAL CONTRACT DOCUMENTS.....	25
SECTION 01600 — MATERIAL AND HANDLING .....	26
PART 1 - GENERAL .....	26
1.1 SITE CONDITION INSPECTION.....	26
1.2 PRODUCT DELIVERY, STORAGE, AND HANDLING .....	26
1.3 INSTALLATION REQUIREMENTS .....	26
1.4 MANUFACTURER'S NAMEPLATES .....	27
1.5 COLORS OF FACTORY-FINISHED EQUIPMENT .....	27
1.6 MATERIALS AND FINISHES .....	27
SECTION 01700 — FINAL CONTRACT COMPLIANCE REVIEW .....	29
PART 1 - GENERAL .....	29
1.1 FINAL CLEANING.....	29
1.2 CONSULTANT'S FINAL OBSERVATION AND REVIEW REQUIREMENTS.....	29
1.3 OWNER'S INFORMATION .....	30
SECTION 01800 — MAINTENANCE .....	32
PART 1 - GENERAL .....	32
1.1 INTERIM MAINTENANCE .....	32
1.2 WARRANTY MAINTENANCE .....	32
1.3 CONTRACT PREVENTIVE MAINTENANCE .....	32

SECTION 01900 — RELATED WORK.....	33
PART 1 - GENERAL .....	33
1.1 RELATED WORK BY CONTRACTOR .....	33
SECTION 14240 – HYDRAULIC ELEVATOR NEW INSTALLATION.....	35
PART 1 - GENERAL .....	35
1.1 SUMMARY.....	35
1.2 <>ALLOWANCE .....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
1.3 DEFINITIONS .....	35
1.4 PERFORMANCE REQUIREMENTS .....	35
1.5 SUBMITTALS.....	35
1.6 QUALITY ASSURANCE .....	36
1.7 PRODUCT DELIVERY, STORAGE, AND HANDLING .....	36
1.8 WARRANTY.....	36
1.9 MAINTENANCE .....	37
PART 2 - PRODUCTS .....	37
2.1 MANUFACTURERS.....	37
2.2 ELEVATORS.....	37
2.3 MATERIALS.....	38
2.4 CAR PERFORMANCE.....	39
2.5 OPERATION .....	40
2.6 MACHINE ROOM EQUIPMENT .....	41
2.7 HOISTWAY EQUIPMENT .....	42
2.8 HOISTWAY ENTRANCES.....	43
2.9 <>SEISMIC EQUIPMENT .....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
2.10 CAR EQUIPMENT .....	44
2.11 CAR ENCLOSURE .....	46
2.12 HALL CONTROL STATIONS .....	47
2.13 SIGNALS.....	47
2.14 <>INTERCOM AND DISTRESS SIGNAL SYSTEM .....	48
PART 3 - EXECUTION.....	48
3.1 EXAMINATION .....	48
3.2 INSTALLATION.....	48
3.3 FIELD QUALITY CONTROL.....	49
3.4 ADJUSTING.....	49
3.5 CLEANUP .....	49
3.6 TEST RESULTS .....	49
3.7 PROTECTION.....	50
3.8 PURCHASER’S INFORMATION .....	50
SECTION 14250 – HYDRAULIC ELEVATOR MODERNIZATION.....	1
PART 1 - GENERAL .....	1
1.1 WORK INCLUDED.....	1
1.2 RELATED WORK PROVIDED UNDER OTHER SECTIONS .....	1
1.3 DEFINITIONS .....	1
1.4 QUALITY ASSURANCE .....	1
1.5 DOCUMENT AND SITE VERIFICATION .....	2
1.6 SUBMITTALS.....	2
1.7 PERMIT, TEST AND INSPECTION.....	2
1.8 MAINTENANCE .....	2
PART 2 - PRODUCTS .....	3
2.1 SUMMARY.....	3
2.2 MATERIALS.....	5
2.3 CAR PERFORMANCE.....	5
2.4 OPERATION .....	6
2.5 MACHINE ROOM EQUIPMENT .....	7

2.6	HOISTWAY EQUIPMENT .....	8
2.7	HOISTWAY ENTRANCES.....	9
2.8	CAR EQUIPMENT .....	9
2.9	CAR ENCLOSURE .....	12
2.10	HALL CONTROL STATIONS .....	12
2.11	SIGNALS.....	13
2.12	INTERCOM AND DISTRESS SIGNAL SYSTEM .....	13
2.13	SEISMIC OPERATIONS AND EQUIPMENT .....	13
PART 3 - EXECUTION.....		13
3.1	SITE CONDITION INSPECTION.....	13
3.2	PRODUCT DELIVERY, STORAGE, AND HANDLING .....	13
3.3	INSTALLATION.....	14
3.4	FIELD QUALITY CONTROL.....	14
3.5	ADJUSTMENTS.....	14
3.6	CLEANUP .....	14
3.7	ACCEPTANCE REVIEW AND TESTS.....	15
3.8	OWNER'S INFORMATION .....	15



SECTION 00020 — REQUEST FOR QUOTATION

PART 1 - GENERAL

1.1 PROJECT: ELEVATOR MODERNIZATION AND NEW INSTALLATION

- A. Lerch Bates Inc. has been authorized by Cornerstone Architectural Group 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 Contract Documents is provided for your use.
- B. Additional sets of Contract Documents are available at cost of reproduction and mailing from Lerch Bates Inc. by contacting Steven J. Hobbs at 425-219-5662.
- C. Make inquiries to Lerch Bates Inc. Do not contact building personnel or the Owner, with the exception of requirement of item 1.2 D.
- D. Permission to review existing equipment and site conditions shall be secured from Steven J. Hobbs at 425.219.5662.

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 ..... on ..... 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. Quotations will be received until .... p.m. prevailing local time on ...., in sealed envelope addressed and identified as follows or via email:

Contractor  
Address  
City/State/Zip

ELEVATOR MODERNIZATION

USPS Seattle NDC  
34301 Ninth Avenue South  
Federal Way, Washington

CONFIDENTIAL - SEALED QUOTATION - DO NOT OPEN

Send electronic  
copies to: Ted Tolle  
Senior Project Manager  
Cornerstone Architectural Group  
9170 Old Naches Hwy  
Naches, WA 98937  
ttolle@cornerstonearch.com

Steven J. Hobbs  
Consultant  
Lerch Bates Inc.  
steven.hobbs@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 differently than 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, having reviewed Contract Documents and site conditions, who elect not to provide a quotation, 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 OWNER'S RIGHTS

- A. Owner reserves right to reject any or all quotations, to accept other than lowest quotation, and to waive any formality 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.

John Oberto  
Eltec  
2025 First Ave., Suite 790  
Seattle, WA 98121  
(206) 405-3371

Nick Bertucci  
Fujitec America  
3325 S. 116th, #109  
Seattle, WA 98168  
(206) 622-5565

James Anneberg  
KONE  
14737 NE 87th St.  
Redmond, WA 98052  
425-861-9696

Nathan Goodwin  
thyssenkrupp Elevator  
2021 130th Ave. NE, Suite A  
Bellevue, WA 98005  
425-702-1200

Grant Berryhill  
Otis Elevator  
3315 S. 116th St., Suite 149  
Seattle, WA 98168  
206-243-8100

Jeff Wittman  
Schindler Elevator  
15413 NE 95th St.  
Redmond, WA 98052-2548  
425-867-0600

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 of existing elevator components including machine support beams, with ASME A17.1, Rule 8.7.2.15.2 1202.4b, 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 Owner and Consultant, an Addendum to the specifications will be issued and authorized. Owner 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 due 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, it 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 it before submission of its 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 Owner 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 Owner and immediately remove its equipment and materials from the premises with the Owner or Owners' representative present. Owner shall withhold final maintenance payment due until Maintenance Contractor is in compliance with this requirement.

END OF SECTION

SECTION 00310 — QUOTATION FORM

DATE: .....

PROJECT: USPS Seattle NDC  
34301 Ninth Avenue South  
Federal Way, Washington

SUBMITTED BY: .....  
Name of CONTRACTOR

.....  
CONTRACTOR'S Representative Telephone Number

.....  
Street Address

.....  
City State Zip Code

TO: Ted Tolle  
Senior Project Manager  
Cornerstone Architectural Group  
9170 Old Naches Hwy  
Naches, WA 98937

Send electronic  
copy to: Steven J. Hobbs  
Consultant  
Lerch Bates Inc.  
steven.hobbs@lerchbates.com

PART 1 - GENERAL

1.1 CONTRACTOR'S BASE QUOTATION

- A. Having examined documents prepared by Lerch Bates Inc. dated \_\_\_\_\_, 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 Elevator 1, Section 14250.

..... dollars

\$ .....

Item 2: Install New Passenger Elevator 2, Section 14240.

..... dollars

\$ .....

Item 3: Related Building Work, Section 01900.

..... dollars

\$ .....

Total of the above Items 1-2:

..... dollars

\$ .....

- B. Modernization Billing Rates (2020 Rates): Provide billing rates for any approved additional work outside of the scope defined in these modernization documents:

Modernization/NI Billing Rates	Mechanic	Helper	Crew
Straight Time	\$.....	\$.....	\$.....
Overtime Premium Only (2.0 Time)	\$.....	\$.....	\$.....

- C. Maintenance Billing Rates (2020 Rates):

Maintenance Billing Rates	Mechanic	Helper	Crew
Straight Time	\$.....	\$.....	\$.....
Overtime Premium Only (1.5 Time)	\$.....	\$.....	\$.....
Overtime Premium Only (1.7 Time)	\$.....	\$.....	\$.....
Overtime Premium Only (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 Section 14325. Such adjustments shall not exceed 4% in any one-year period, except that a percentage

increase of less than 4% in any one-year period may be added to a subsequent year's 4% maximum increase

D. 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 Elevator 1: \$...../Month

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 Elevator 1: \$...../Month

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

- 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 (check YES or NO):
1. Separate letter containing any "Qualification" related to its Quotation: ☐ YES ☐ NO
  2. Separate Substitution Proposal: ☐ YES ☐ NO

1.4 OWNER'S CONSTRUCTION SCHEDULE

- A. Start work date is date existing unit is removed from service for modernization.
- B. Undersigned submits the following completion schedule for the project:

UNIT	START WORK DATE	COMPLETION DATE
1 (mod.)	.....	.....
2 (new)	.....	.....

1.5 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 Owner/Consultant, no substitutions shall be made without written approval of Consultant.

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

(Use back of page if necessary)

**1.6 SUBMISSION AND ACCEPTANCE OF QUOTATIONS**

- A. Undersigned Contractor agrees to Owner'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 Owner or Consultant in any way.
- C. Undersigned Contractor agrees and understands that Owner assumes no obligation to enter into a Contract.

**1.7 ALTERNATES**

- A. State net sum to be added to or deducted from Stipulated Sum (Base Quotation) in event any Alternate Quotation is accepted.
- B. Submit Alternate Quotations by filling in blank spaces provided herein.
- C. Owner reserves right to accept or reject any or all Alternates.
- D. Provide LUMP SUM price for all alternates as described below and in Section 01030, Alternates.

ALTERNATE 1: Accelerated Schedule: Provide costs and plan based on working a 50-hour week throughout the entire modernization.

..... dollars

\$ .....

Schedule Impact:.....

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. OWNER as used herein refers to USPS.
- 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 Owner to furnish labor and materials for the execution of work required.
- E. CONTRACT AWARD as used herein refers to Owner'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 Owner'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 Owner.
- 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 noncompliance with previous review requirements.

**1.3 CONTRACT**

- A. Contract includes all engineering, labor, tools, and material required to complete the work in every respect, except those items specifically indicated to be done by other trades, Section 01900. Contractor is cautioned to familiarize itself with existing site conditions and to include all incidental work which 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 onsite 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 Washington 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 Owner's and Contractor's protective liability in a casualty or liability insurance company acceptable to Owner. Insurance policy shall fully protect Contractor, its Subcontractors, Owner, and Consultant from all loss and liability.
- 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 Owner 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 Owner's prior approval, an Owners & Contractors Protective Liability (OCPL) Policy may be substituted for commercial general liability coverage. Following are minimum insurance coverage requirements:

Type of Insurance Coverage	Amount
Workers' Compensation and Occupational Disease	Statutory Limits
Employer's Liability, including Occupational Disease Coverage	\$1,000,000



Type of Insurance Coverage	Amount
Commercial General Liability, Including Operations, Contractual, and Completed Operations Coverages, Occurrence Basis	\$1,000,000 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

- D. Contractor shall file with Owner a certificate of insurance from its insurance company, stating that such insurance is being carried and that Owner will be notified at least ten days prior to any cancellation of said insurance.

#### 1.7 OWNER'S INSURANCE

- A. Owner's insurance policy covers work and equipment in place in building and approved and accepted by Consultant and Owner. All material and equipment stored on site and not actually installed is not included in Owner'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 Owner 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 Owner 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 Owner 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 Owner 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 Owner.

**1.12 ADVERTISING**

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

**1.13 PROTECTION OF WORK AND PROPERTY**

- A. Contractor shall continuously maintain adequate protection of all its work from damage and shall protect Owner 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 Owner. 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 Owner 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.
- 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 to remain property of Contractor.
- E. Contractor shall at all times maintain work areas so that 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 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.

**1.14 ACCIDENT REPORTS**

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

**1.15 STORAGE OF MATERIALS**

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

**1.16 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 Owner. Store parts and components identified by Consultant as useful for maintenance of units not being modernized as directed by Owner. All other parts and components not retained shall become property of Contractor.

**1.17 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.

**1.18 SUPERVISION**

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

**1.19 ROUTINE BUSINESS**

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

**1.20 CHANGES AND EXTRA WORK**

- A. Owner 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, Owner shall pay Contractor on the basis of a mutually agreed lump sum. See Article 1.25 for method of computing lump sum cost of additional work. Contractor shall make no additions, changes, alterations, or omissions, or perform extra work, without receipt of written authorization of Owner.

**1.21 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 Owner for payment. Information shall be submitted with Payment Request Form and Progress Report Form included at the end of this section as Attachments 1 and 2.
- B. Applications for payments are to cover 90% of the value of labor performed and material installed and delivered during the preceding month.
- C. Balance (retention) shall be paid by Owner upon final acceptance of entire work by Consultant and Owner and after performance guarantees have been satisfactorily demonstrated. See Section 01700, Article 1.2, D-G.

**1.22 PAYMENT WITHHELD**

- A. Owner and/or Consultant may withhold approval of payment on any Contractor request to such extent as may be necessary to protect Owner 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. Owner may, after ten day's written notice to Contractor, and without prejudice to any other remedy it 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.

**1.23 LIENS AND AFFIDAVITS**

- A. Neither final payment nor any part of billing retention shall become due until Contractor shall deliver to Owner 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 Owner 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 Owner, Contractor shall refund to Owner all monies the latter may be compelled to pay in discharging such a lien, including all costs and reasonable attorney's fees.

**1.24 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 +15% for overhead and profit. Contractors cost shall be verifiable from actual supplier invoices, purchase orders, time tickets, etc.

1.25 DELAYS AND EXTENSION OF TIME

- A. If Contractor progress is delayed due to acts of Owner 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.

1.26 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 Owner 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 provide a detailed project schedule that includes all related work that is being performed by their subcontractors.
- C. 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.

END OF SECTION

ATTACHMENT 1 -  
PAYMENT REQUEST FORM

PAYMENT REQUEST FORM

Elevator Company: \_\_\_\_\_  
Payment Request No.: \_\_\_\_\_ Date: \_\_\_\_\_  
Job: USPS Seattle NDC, 34301 Ninth Avenue South, Federal Way, Washington  
Contract No.: \_\_\_\_\_

We Hereby Apply for Progress Payment

Original Contract Amount:	\$	_____
Less Twelve-Month Warranty Cost:	\$	_____
Change Orders No.:	:	\$ _____
	:	\$ _____
	:	\$ _____
Subtotal:	\$	_____
Value of Contract Progress to Date per Breakdown Attached:	\$	_____
Less 10% Reserve per Contract:	\$	_____
Less Previous Payments:	\$	_____
Less Payments Not Received:	\$	_____
Net Amount Application:	\$	_____

ATTACHMENT 2 -  
PROGRESS REPORT FORM



**PROGRESS REPORT FORM**

Building: USPS Seattle NDC, 34301 Ninth Avenue South, Federal Way Hydraulic Elevator: 1

Elevator Company: \_\_\_\_\_

Item	Total Material Price	% Comp	Billing	Total Labor Price	% Comp	Billing	Total
Bond							
Jack Installation							
Power Unit							
Controller							
Piping							
Guide Rails and Brackets							
Buffers							
Entrances, Sills, and Hardware							
Sling and Platform							
Guides							
Enclosure							
Door Operator Hardware and Protection							
Signal Fixtures							
Wiring							
Adjusting							
Misc.							

Reviewed by Lerch Bates

Approved for Payment

Name \_\_\_\_\_

Owner \_\_\_\_\_

Date \_\_\_\_\_

Date \_\_\_\_\_

Approved ☐

Rejected ☐

See Attached Review Comments

SECTION 01010 — SUMMARY OF WORK

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. Modernize one elevator, Car 1.  
Install one new elevator, Car 2.
- 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 Owner'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.
  - 4. Coordinating with and assisting electrical contractor with running LAN cabling in hoistway moving duct to the monitoring equipment compartment in each machine room. Elevator contractor to coordinate with electrical contractor to install all required wiring/cabling for a complete system. Include in the base bid the required time to assist with LAN cable installation. No additional fees will be accepted for coordination and assisting with cable installation by the electrical contractor.

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.
  - 8. Owner will obtain and pay for General Building Permit.

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 Owner's specific instructions.
- B. Do not unreasonably encumber site with materials or equipment. Staging area will be located as directed by Owner.
- C. Do not load structure with weight that will endanger structure. Coordinate with Owner.
- 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, sightly 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 areas. 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 Owner 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 01030 — ALTERNATES

PART 1 - GENERAL

1.1 SCOPE

- A. Provide material and labor required for complete execution of accepted alternates. Comply with all provisions of the Contract Documents.
- B. Alternates:
  - 1. Provide costs and plan based on working a 50-hour work week throughout the entire modernization.

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. Local Fire Authority
  - 7. Requirements of IBC, and all other codes, ordinances, and laws applicable within the governing jurisdiction
  - 8. Life Safety Code, NFPA 101
  - 9. Uniform Federal Accessibility Standard, UFAS
  - 10. Washington Administrative Code, WAC

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 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.

1.3 WORK PHASE

- A. See Section 00310, Quotation Form.

1.4 OCCUPANCY AND WORK BY OTHERS

- A. 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.
- B. 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.
- C. 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.
- 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. 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 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 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.

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 Owner and other Contractors.
- E. Provide suitable temporary weather-tight storage facilities as may be required for materials which 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 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 rail brackets and pit equipment.
  - 3. Hoistway equipment including guide rails, guide rail brackets, and pit equipment.
  - 4. 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 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.
- 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:
  - 1. 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.
  - 2. No. 4 Satin: Directional polish finish. Graining directions as shown or, if not shown, in longest dimension.
- C. Aluminum: Extrusions per ASTM B221; sheet and plate per ASTM B209.
- D. 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:
  - 1. Exposed Surfaces: Color and texture selected by Architect.
  - 2. Concealed Surfaces: Contractor's standard color and finish.
- E. 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.
- F. 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.



- G. 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.
- H. 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.
- I. 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.

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 work persons 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 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.

- 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 Owner and Consultant at no cost as follows:
  - 1. Replace equipment that 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, Owner, 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.

### 1.3 OWNER'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 Owner 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 Owner's property.
  - 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 to 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. Lubrication instructions including recommended grade of lubricants.
  - 5. Parts catalogs for all replaceable parts including ordering forms and instructions.
  - 6. Four sets of keys for all switches and control features properly tagged and marked.
  - 7. Neatly bound instructions explaining all operating features including all apparatus in the car and lobby control panels.
  - 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 equipment complete with access codes, adjusters manuals and set-up manuals for adjustment, diagnosis and troubleshooting of elevator system, and performance of routine safety tests.
- B. Preventive Maintenance Contract: Furnish properly executed contract for continuing, preventive maintenance. Utilize contract form herein provided, Section 14325, 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 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 Owner separately and monthly based upon the number of units in service. Perform interim maintenance based upon terms and conditions of Section 14325.
- B. Use competent personnel, acceptable to Owner, 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 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.
- B. Use competent personnel, acceptable to the Owner, 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. 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.

1.3 CONTRACT PREVENTIVE MAINTENANCE

- A. Maintenance of the elevator will return to the incumbent after the initial twelve-month warranty expires.
- B. Use competent personnel, acceptable to the Owner, employed and supervised by Contractor.

END OF SECTION

SECTION 01900 — RELATED WORK

PART 1 - GENERAL

1.1 RELATED WORK BY CONTRACTOR

- A. Hoistway and Pit:
  - 1. Cutting and patching walls and floors. This includes cutting and patching for new entrance frames of Elevator 2.
  - 2. Pit access stationary ladder. Retractable ladder if provided required due to clearance issues shall include an electrical contact conforming to ASME A17.1, Rule 2.2.2.4.2.7. Ladder shall extend 48" above the sill, be 16" wide, have ladder rungs from top to bottom of ladder with uniform 12" space, and have a clear distance of not less than 4½" from their center line to the nearest obstruction behind it.
  - 3. Protect open hoistways and entrances during construction per OSHA Regulations.
  - 4. Protect car enclosure, hoistway entrance assemblies, and special metal finishes from damage.
  - 5. Protect open hoistways and entrance frames during construction per OSHA Regulations.
  - 6. Protect car enclosure, hoistway entrance assemblies, and special metal finishes from damage.
  - 7. Clean and paint the entrance frames and hoistway doors at each landing. Color to be determined.
  - 8. Install new diamond plate or equal flooring in each elevator.
  - 9. Install hoisting beam in overhead of new elevator. Include structural calculations and attachment designs for installation of beam.
- B. Machine Room and Machinery Spaces:
  - 1. Enclosure with access.
  - 2. Self-closing and locking access door.
  - 3. Ventilation and heating. Maintain minimum temperature of 55° F, maximum 90° F. Maintain maximum 80% relative humidity, non-condensing. Provide new independent split HVAC system capable of maintaining the temperature of the machine room between 55° F, maximum 90° F.
  - 4. Paint walls and ceiling. Color TBD.
  - 5. Class "ABC" fire extinguisher in each elevator machine room.
  - 6. Seal fireproofing to prevent flaking.
  - 7. Provide compliant signage for elevator machine room door if required.
- C. Electrical Service, Conductors, and Devices:
  - 1. Lighting and GFCI convenience outlets in pit, machine room, and overhead machinery spaces. Provide one additional non-GFCI convenience outlet in pit for sump pump.
  - 2. Provide three relays for primary, alternate and the flashing fire hat tied to the building fire panel for fire recall provisions.
  - 3. Install new guarded lighting fixtures in the machine room. Lighting should be installed to provide 19 ftc of illumination in all areas of the machine room and should be installed to maintain a minimum 7'-0" clearance from the floor to the underside of the fixtures. If 7'-0" clearance cannot be provided. Mount guarded lights against a rear wall. Coordinate location of new fixtures with Elevator Contractor.
  - 4. Install new guarded LED lighting fixtures to provide a minimum of 10 ftc of illumination throughout each elevator pit.
  - 5. Provide new three-phase mainline copper power feeders (For both Elevators) with true earthen grounding to terminals of each elevator controller in the machine room with protected, lockable "open" disconnecting means with auxiliary contacts to allow Elevator Contractor to electronically interlock battery power lowering unit. Locate disconnect per WAC 296-96-02460.

6. Provide single-phase 15-amp copper power feeder to elevator controllers for car lighting with individual protected, lockable "open" disconnecting means located in machine rooms
7. Single-phase copper power feeder to elevator controller for exhaust blower with individual protected, lockable "open" disconnecting means located in machine room.
8. Single-phase power feeder to elevator controller in machine room with protected lockable "open" disconnecting means for machine room heating and air conditioning unit.
9. Emergency telephone line to elevator control panels in elevator machine room.
10. Fire alarm initiating devices in each elevator lobby for each group of elevators or single elevator and each machine room to initiate firefighters' return feature. Device at top of hoistway if sprinklered. Provide alarm initiating signal wiring from hoistway or machine room connection point to elevator controller terminals. Device in machine room and at top of hoistway to provide signal for general alarm and discrete signal for Phase II firefighters' operation.
11. Temporary power and illumination to install, test, and adjust elevator equipment.

END OF SECTION

SECTION 14240 – HYDRAULIC ELEVATOR NEW INSTALLATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes one hydraulic passenger elevator, Car 2.
- B. Products Installed But Not Furnished Under This Section:
  - 1. Elevator related security devices, control unit, mounting brackets, wiring materials, logic circuits, security system interface terminals, boxes and relays.
- C. Related Requirements:
  - 1. Division 01 Section "Temporary Facilities and Controls" for temporary use of elevators for construction purposes.
  - 2. Division 03 Section "Cast-in-Place Concrete" for setting sleeves, inserts, and anchoring devices in concrete.

1.2 DEFINITIONS

- A. Terms used are defined in the latest edition of the Safety Code for Elevators and Escalators, ASME A17.1.

1.3 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with ASME A17.1/CSA B44.
- B. Accessibility Requirements: Comply with 2010 ADA standards for Accessible Design and with ICC A117.1.
- C. Seismic Performance: 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 2 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.
  - 4. Design earthquake spectral response acceleration short period (Sds) for Project: <>.
  - 5. Occupancy Category: <>I<>II<>III<>IV.
  - 6. Project Seismic Design Category: <>A<>B<>C<>D<>E<>F.
  - 7. Elevator Component Importance Factor (Ip): <>1.5 <>1.0.

1.4 SUBMITTALS

- A. Product Data: Include capacities, sizes, performances, operations, safety features, finishes, and similar information. Include product data for car enclosures, hoistway entrances, and operation, control, and signal systems. Include product data for signal fixtures, lights, graphics, Braille plates, and details of mounting provisions.
- B. Shop Drawings:
  - 1. Include plans, elevations, sections, and large-scale details indicating openings at each landing, machine room layout, coordination with building structure, relationships with other construction, and locations of equipment.
  - 2. Include large-scale layout of car operating panel.



3. Indicate maximum dynamic and static loads imposed on building structure at points of support and maximum and average power demands.
  4. Power Confirmation Information: Include motor horsepower, code letter, starting current, full-load running current, and demand factor. Provide maximum and average power consumption.
- C. Samples for Initial Selection: For finishes involving surface treatment, paint or color selection.
- D. Samples for Verification: For exposed car, hoistway door and frame, and signal equipment finishes:
1. Samples of sheet materials: 3" square.
  2. Running trim members: 4" lengths.
- E. Operation and Maintenance Data:
1. For elevators to include in emergency, operation, and maintenance manuals.
  2. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include diagnostic and repair information available to manufacturer's and Installer's maintenance personnel.
- F. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted elevator use.

## 1.5 QUALITY ASSURANCE

- 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 A117.1
  6. Local Fire Authority
  7. Requirements of most stringent provision of local authority having jurisdiction.
  8. Life Safety Code, NFPA101
  9. Washington Administrative Code, WAC

## 1.6 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 and construction.

## 1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair, restore, or replace elevator work that fails in materials or workmanship within specified warranty period.
- B. Failures include, but are not limited to: operation or control system failure, including excessive malfunctions; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.

- C. Warranty Period: One year from date of Substantial Completion.

## 1.8 MAINTENANCE

- A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include twelve months full maintenance by skilled employees of elevator Installer. Include monthly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper elevator operation at rated speed and capacity. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.
1. Perform maintenance during normal working hours.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include the following:
1. Otis Elevator Co.
  2. Schindler Elevator Corp.
  3. thyssenkrupp Elevator.

### 2.2 ELEVATORS

- A. Elevator System, General: Manufacturer's standard elevator systems. Unless otherwise indicated, manufacturer's standard components shall be used, as included in standard elevator systems and as required for complete system.
- B. Passenger Elevator Description:

#### **ELEVATOR 2**

1. Capacity: 2,500 lbs.
2. Class of Loading: Class A
3. Contract Speed: 150 fpm
4. Machine: Submersible Hydraulic pump
5. Machine Location: Adjacent at bottom landing
6. Operational Control: Selective collective microprocessor-based
7. Motor Control: Single speed AC with electronic soft start
8. Stops and Openings: 3, all front
9. Floors Served: Front: 1-3
10. Hoistway Dimensions: 7'-4" wide x 6'-5 1/16" deep (Inside cab dimensions to match Elevator 1)
11. Entrance Size: 3'-6" wide x 7'-0" high
12. Entrance Type: Single-speed side-opening
13. Door Operator: Medium-speed heavy-duty with 1.5 fps minimum opening speed.
14. Door Protection: Infrared full screen device with differential timing, nudging, and interrupted beam time.
15. Hydraulic type: Single jack inground holed
16. Buffers: Spring
17. Car Enclosure:
  - a. As specified, stationary returns.
  - b. Steel shell as specified plus car interior finishes provided under this section
  - c. Clear Height under Canopy: 7' 4" minimum.
  - d. Pad buttons and vinyl-covered pads.
18. Signal Fixtures: LED illumination. Contractor's vandal resistant assembly.
  - a. Hall and Car Pushbutton Stations:
    - 1) Single hall pushbutton riser.

## **ELEVATOR 2**

- 2) Single car operating panel.
- 3) Vandal resistant car and hall pushbuttons.
- b. Car Position Indicators:
  - 1) Digital in car station with car direction arrows.
- c. Car Direction Lanterns: All car entrance columns with volume adjustable electronic chime or tone. Sound twice for down direction, vandal resistant assembly.
- 19. Communication System:
  - a. Intercom with distress signal
  - b. Self-dialing, vandal resistant, push to call, two-way communication system with recall, tracking, and voiceless communication
- 20. Additional Features:
  - a. Hoistway access switches, top and bottom floors.
  - b. Hoistway door unlocking device at all floors with escutcheon tubes.
  - c. System diagnostic means and instructions
  - d. Platform isolation, jack to platen connections.
  - e. Hydraulic pump unit and controller sound isolation.

## **2.3 MATERIALS**

- 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, 304, or 441 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: Provide 5WL as manufactured by Rigidized Metals as manufactured by Rimex Metals or approved equal with .050 inches mean pattern depth with bright directional polish (No. 4 satin finish).
  - 4. Burnished: Non-directional, random abrasion pattern.
- C. Aluminum: Extrusions per ASTM B221; sheet and plate per ASTM B209.
- D. Plastic Laminate: ASTM E84 Class A and NEMA LD3.1, Fire-Rated Grade (GP-50), Type 7, 0.050"  $\pm$  .005" thick, color and texture as follows:
  - 1. Exposed Surfaces: Color and texture selected by Architect.
  - 2. Concealed Surfaces: Contractor's standard color and finish.
- E. 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.
- F. 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.

- G. 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.
- H. 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.
- I. 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.
- J. Glass: Laminated safety glass, minimum 9/16" thick, conforming to ANSI Z97.1 and CPSC 16 CFR Part 1201.

## 2.4 CAR PERFORMANCE

- A. Car Speed:  $\pm 10\%$  of contract speed under any loading condition.
- B. Car Capacity: Safely lower, stop and hold 125% of rated load.
- C. Car Stopping Zone:  $\pm 1/4"$  under any loading condition.
- D. Door Times: Seconds from start to fully open or fully closed.
  - 1. Door Open: 3.1 seconds.
  - 2. Door Close: 4.0 seconds.
- E. Car Floor-to-Floor Performance Time: 14.5 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 (12'-0" typical floor height).
- F. Car Ride Quality:
  - 1. Acceleration and Deceleration: Smooth constant and not less than 1.5 feet/second<sup>2</sup> with an initial ramp between 0.5 and 0.75 second.
  - 2. Sustained Jerk: Not more than 6 feet/second<sup>3</sup>.
  - 3. 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.
  - 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.
- G. Noise and Vibration Control
  - 1. Airborne Noise: Measured noise level of elevator equipment and its operation shall not exceed 65 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.

## 2.5 OPERATION

- A. Collective Microprocessor-Based, Elevator 2:
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. Maintain stopping zone regardless of load in car, direction of travel, distance between landings.
- E. Motion Control: Microprocessor-based 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.
- F. Door Operation: Automatically open doors when car arrives at main floor. At expiration of normal dwell time, close doors.
- G. 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.
- H. Battery Lowering Feature: Upon loss of normal power, provide controls to automatically lower the car(s) to the nearest lower landing. Upon arrival at the lowest landing, the elevator doors shall open automatically and remain open until regular door time has expired. The elevator shall then become deactivated. The standby power source shall be provided via 12-volt D.C. battery units installed in machine room, including solid-state charger and testing means mounted in a common metal container. Battery to be rechargeable lead acid or nickel cadmium with a ten-year life expectancy. Upon restoration of normal power, the elevator shall automatically resume normal operation.
- I. n-year life expectancy. Standby power source shall provide minimum four hours operation.

- J. **Card/Proximity Reader Security System:** Provide provisions inside elevator for reader unit.

2.6 MACHINE ROOM EQUIPMENT

- A. Arrange equipment in spaces shown on drawings.
- B. Pump Unit:
1. 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.
  2. Provide oil thermal unit to maintain oil at operating temperature.
  3. Provide SCR soft start with closed transition.
  4. Design unit for 80 up starts/hour.
- C. Landing System: 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 machine mounted auxiliary lockable "open" disconnect if mainline disconnect is not in sight of controller and/or machine.
- 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. Shut-Off Valve: manual valve on line adjacent to pump unit. Provide second valve in pit adjacent to jack unit.

## 2.7 HOISTWAY EQUIPMENT

- A. Guide Rails: Planed steel T-sections for car of suitable size and weight for the application, including seismic reactions, including brackets for attachment to building structure. No additional structural points of rail attachment, other than those shown on the Contract Documents, will be provided.
- B. Buffers: Spring type with blocking and support channels.
- C. Hydraulic Jack Assembly:
  - 1. Cylinders: Seamless steel pipe. Design head to receive unit-type packing and provide means to collect oil at cylinder head and return automatically to oil reservoir.
  - 2. Plungers: Polished seamless steel tubing or pipe. If plunger length exceeds 24'-0", provide two or more sections not exceeding 16'-0" in length, or coordinate installation of longer unit at the jobsite. Join sections by internal threaded couplings. Multiple section jack units shall be factory polished while assembled and marked for proper future reassembly. Isolate plunger from car frame
- D. Sheaves: Machined grooves and sealed bearings. Provide mounting means to top of plungers.
- E. Jack Support and Fluid Shut-Off Valves: Provide steel pit channels to support jack assembly and transmit loads to building structure. Provide intermediate stabilizers as required. Provide manual on/off valves in oil lines adjacent to pump unit and jack units in pit.
- F. Well Hole Casing: (Elevator contractor to verify existing conditions)
  - 1. Well hole is to be provided by Elevator Contractor. No additional compensation will be allowed for unforeseen conditions of any kind or spoil removal.
  - 2. Install steel outer casing minimum 18" diameter. Install watertight sleeve over jack assembly for secondary containment prior to insertion into the outer casing. Extend PVC sleeve through pit floor slab to underside of jack support beams and seal with non-permeable membrane. Seal well opening at the pit floor with hydraulic quick setting cement. Provide PVC vision/access ports. Seal well opening at the pit floor with hydraulic quick setting cement. Provide PVC vision/access ports.
- G. Overspeed Valves: Provide a pressure sensitive, mechanically-actuated seismic safety valve, conforming to ASME A17.1, Rule 2410.6 and 3.19.4.7. Connect valve directly to jack assembly inlet.
- H. Terminal Stopping: Provide normal and final 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 10% spare conductors throughout. Run spare wires from car connection points to individual elevator controllers in the machine room.
  - 2. Conduit: Galvanized steel conduit, EMT, or duct. Flexible conduit length not to exceed 3'-0". 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.
    - a. Provide five pair of shielded wires of minimum 18 gauge for card reader.
    - b. Provide one RG-6/U coaxial CCTV cable and two pair of shielded 18 gauge wire within traveling cable from car controller to car top junction box, plus 3'-0" excess loop at both ends.

- c. Provide four pair of spare shielded communication wires in addition to those required to connect specified items.
      - d. Tag spares in machine room. Provide cables from controller to car top.
    - 4. Auxiliary Wiring: Provide conduit, wiring and connections for fire alarm initiating devices, emergency two-way communication system, security system and card reader interface terminals and relays, intercom, and announcement speaker and/or background music from the machine room junction box to each car controller in machine room.
  - J. Entrance Equipment:
    - 1. Door Hangers: Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.
    - 2. Door Tracks: Bar or formed, cold-drawn removable steel tracks with smooth roller contact surface.
    - 3. Door Interlocks: Operable without retiring cam. Paint interlock box flat black.
    - 4. Door Closers: Spring, spirator, or jamb/strut mounted counterweight type. Design and adjust to insure smooth, quiet mechanical close of doors.
    - 5. Hoistway Door Unlocking Device: Provide unlocking device with escutcheon in door panel at all floors, with finish to match adjacent surface.
    - 6. Hoistway Access Switches: Mount in entrance frame side jamb at top and bottom floors. Provide switch with faceplate.
  - K. 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.
- 2.8 HOISTWAY ENTRANCES
- A. Complete entrances bearing fire labels from a nationally recognized testing laboratory approved within the governing jurisdiction.
  - B. Frames: 14 gauge hollow metal at all floors. Bolted and lapped jamb assembly at all floors. 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 cast floor designation/Braille plates as manufactured by SCS, Vision Mark, or Entrada.
  - C. Door Panels: 16 gauge steel, sandwich construction without binder angles. Provide a minimum of two gibs per panel, one at leading and one at trailing edge with gibs in the sill groove entire length of door travel. Construct door panels with interlocking, stiffening ribs.
  - D. Sight Guards: 14 gauge, same material and finish as hoistway entrance door panels. Construct without sharp edges.
  - E. Sills: Extruded aluminum.
  - F. Sill Supports:
    - 1. Structural or formed steel designed to support door sill based upon car loading classification.
    - 2. Mount to eliminate need for grout under the sill.
  - G. Fascia, Toe Guards and Hanger Covers: 14 gauge furniture steel with Contractor's standard finish.



- H. Struts and Headers: Provide for vertical support of entrances and related material. Provide door open bumpers on entrances equipped with vertical struts.
- I. Finish of Frames and Doors: **Satin finish stainless steel.**
- J. Hoistway Access:
  - 1. Hoistway Door Unlocking Device: Provide unlocking device with locking escutcheon in door panel at all floors, with finish to match adjacent surface.
  - 2. Hoistway Access Switches: Mount in entrance frame side jamb at top and bottom floors. Provide switch with faceplate.

## 2.9 CAR EQUIPMENT

- A. Frame: Welded or bolted, rolled or formed steel channel construction to meet load classification specified.
- B. Platform: Isolated type, constructed of steel, or steel and wood which is fireproofed on underside. Design and construct to accommodate load classification requirements. Provide Class A construction.
- C. Platform Apron: Minimum 14 gauge steel, reinforced and braced to car platform with Contractor's standard finish.
- D. Guide Shoes: Roller type with three or more spring dampened, sound-deadening rollers per shoe. Maximum roller rotation speed, 350 rpm.
- E. Finish Floor Covering: **Furnished under other sections. Accommodate a minimum 2" floor thickness.**
- F. Sills: One piece extrusion with extruded aluminum extension between car entrance columns to face of car front return. Extruded extension to match finish of sill.
- G. Door Panels: 16 gauge steel, sandwich construction without binder angles. Provide a minimum of two gibs per panel, one at leading and one at trailing edge with gibs in the sill groove entire length of door travel. Construct door panels with interlocking, stiffening ribs.
- 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. Door Electrical Contact: Prohibit car operation unless car door is closed. **Provide car door interlock to prevent opening of car doors outside the unlocking zone.**
- 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 to prevent opening of car doors outside unlocking zone.

- 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: AMD 1.0
    - b. Otis: Glide A
    - c. Schindler: QKS 14 Medium Duty
    - d. thyssenkrupp: HD04
    - e. G.A.L.: MOVFR
- 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 the vandal resistant operating fixtures, mounted behind the car stationary front return panel.
    - a. Provide manually operated stop switch within Firefighters' Phase II compartment.
    - b. Provide "door open" button to stop and reopen doors or hold doors in open position.
    - c. 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.
    - d. Locked panel including Phase II fire access switch and hidden floor buttons, call cancel button, door open, door close, switch, stop switch, light jewel, for fire officer use and use of car on independent service only.

2. Suitably identify floor buttons, alarm button, door open button, door close button, and emergency push-to-call button with SCS, Entrada, or equal cast tactile symbols surface mounted, recessed flush mounted or with permanent rear mounted fastenings.  
<>Manufacturer's standard tactile markings acceptable for service and freight cars.  
Configure plates per local building code accessibility standards including Braille. Locate top floor button at maximum height allowed above the car floor; no lower than 35" for emergency push-to-call button and alarm button.
  3. Provide minimum 3/4" diameter raised floor pushbuttons that illuminate to indicate call registration.
  4. Provide alarm button to ring bell located on car. Illuminate button when actuated.
  5. Provide Firefighters' devices and operation.
  6. 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. 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 speed 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 duplex outlet.
    - g. Card reader override switch.
    - h. Switch to select either floor voice annunciation, floor passing tone, or chime.
    - i. Keyed stop switch.
  7. 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. Building identification car number on main car operating panel.
    - c. "No Smoking" on main car operating panel.
    - d. Car capacity in pounds on main car operating panel 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. Include on/off switch and lamp guard.
- S. Communication System:
1. 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. Actuate two-way communication via "Help" button.
    - b. Button or adjacent light jewel shall illuminate and flash when call is acknowledged.
    - c. Button shall match car operating panel pushbutton design.
    - d. Provide "Help" button tactile symbol, engraved signage, and Braille adjacent to button mounted integral with car front return panel.
  2. Firefighters' communication. Jack bezel shall match adjacent controls.
  3. Provide two-way communication between car and machine room if required.
- 2.10 CAR ENCLOSURE (CAB INTERIOR DESIGN TO MATCH ELEVATOR 1 – RAVENNA DESIGN FROM VERTICAL DIMENSIONS)
- A. Provide complete as specified herein.

1. Shell: Reinforced 14 gauge furniture steel formed panels with baked enamel interior finish as selected. Apply sound-deadening mastic to exterior. Provide concealed ventilation cutouts.
2. Canopy: Reinforced 14 gauge furniture steel formed panels with lockable, contacted, hinged emergency exit. Interior finish white color reflective baked enamel.
3. Front Return Panels and Integral Entrance Columns: Reinforced 14 gauge furniture steel clad with minimum 16 gauge satin stainless steel.
4. Front Return Panels: Reinforced 14 gauge furniture steel clad with minimum 16 gauge satin stainless steel with cutouts for applied car operating panels and other equipment.
5. Transom: Reinforced 14 gauge furniture steel clad with minimum 16 gauge satin stainless steel full width of enclosure.
6. Car Door Panels: Reinforced minimum 16 gauge furniture steel clad with minimum 18 gauge satin stainless steel. Same construction as hoistway door panels. Cladding shall wrap leading and trailing edge of panel a minimum of 1/2" on rear side.
7. Base: Satin finish stainless steel.
8. Interior Wall Finish: Removable panels with a satin stainless steel finish.
9. Ventilation: Morrison Products, Inc. three-speed model SOE 06-01055 exhaust blower mounted to car canopy on isolated rubber grommets. Exhaust blower shall meet noise and vibration criteria.
10. Lighting: Provide LED fixtures with wiring and hookup. Coordinate with emergency lighting requirements. Provide emergency lighting integral with portion of normal car lighting. Provide required transformer.
11. Suspended Ceiling: Three-section translucent plastic panels mounted in an extruded aluminum angle and T-frame.
12. Handrails: Minimum 1 1/2" diameter brushed stainless steel tubular grab bar with backing plates and captive nuts across rear and side walls. Bolt rails through car walls from back and mount on 1 1/2" deep solid round stainless steel standoff spacers no more than 18" O.C. Return handrail/guardrail ends to car walls.
13. Pads and Buttons: 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.
- 14.

## 2.11 HALL CONTROL STATIONS

- A. Pushbuttons: Provide one riser between Elevators 1 & 2 with flush mounted faceplates. Include pushbuttons for each direction of travel that illuminate to indicate call registration. Include approved engraved message and engraved pictorial representation prohibiting use of elevator during fire or other emergency on separate engraved plate. Pushbutton design shall match car operating panel pushbuttons. Provide vandal resistant pushbutton and light assemblies. Provide LED illumination.
- B. <>Phase I Fire Service fixture, including keyswitch, engraved operating instructions and illuminating jewel. <>Provide illuminating jewels indicating standby power status.

## 2.12 SIGNALS

- A. Car Direction Lantern:
  1. Provide flush-mounted car lantern in all car entrance columns.
  2. Illuminate up or down LED lights and sound tone once for up and twice for down direction as doors open.
  3. Sound level shall be adjustable from 20-80 dBA measured at 5'-0" in front of hall control station and 3'-0" off floor.
  4. Provide adjustable car door dwell time to comply with ADA requirements relative to hall call notification time.
  5. Car direction lenses shall be arrow shaped with faceplates.

6. Lenses shall be minimum 2½" in their smallest dimension.
  7. 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. Faceplate Material and Finish: Satin finish stainless steel, all fixtures. Tamper resistant fasteners for all fastenings exposed to the public.
- D. 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.
- E. Firefighters' Key Box: Flush-mounted box with lockable hinged cover. Engrave instructions for use on cover per Local Fire Authority requirements.

2.13 INTERCOM AND DISTRESS SIGNAL SYSTEM (DESCRIBED UNDER SECTION 14250)

PART 3 - EXECUTION

3.1 EXAMINATION

- 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 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.
- G. Clean all architectural finishes and replace or restore any surfaces damaged during construction to like new condition.

### 3.3 FIELD QUALITY CONTROL

- A. Acceptance Testing: On completion of elevator installation and before permitting elevator use (either temporary or permanent), perform acceptance tests as required and recommended by ASME A17.1/CSA B44 and by governing regulations and agencies.
- B. Operating Test: Load each elevator to rated capacity and operate continuously for thirty minutes over full travel distance, stopping at each level and proceeding immediately to the next. Record temperature rise of elevator machine during thirty-minute test period. Record failure to perform as required.
- C. Advise Owner, Architect, and authorities having jurisdiction in advance of dates and times that tests are to be performed on elevators.

### 3.4 ADJUSTING

- 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.

### 3.5 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 pit equipment and floor.
- E. Clean hoistways, car, car enclosure, entrances, operating, and signal fixtures.

### 3.6 TEST RESULTS

- A. Under any load obtain specified contract speed, performance times, stopping accuracy without re-leveling, and ride quality to satisfaction of Consultant. Tests may be conducted under no load, balanced load, and full load conditions.
- B. Consultant may test 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.
- C. Engage a factory-authorized service representative to train Owner's maintenance personnel to operate elevator.
- D. Check operation of each elevator with Owner's personnel present before date of Substantial Completion and again not more than one month before end of warranty period. Determine that operation systems and devices are functioning properly.

### 3.7 PROTECTION

- A. Temporary Use: Comply with the following requirements for each elevator used for construction purposes:
1. Provide car with temporary enclosure, either within finished car or in place of finished car, to protect finishes from damage.
  2. Provide strippable protective film on entrance and car doors and frames.
  3. Provide padded wood bumpers on entrance door frames covering jambs and frame faces.
  4. Provide other protective coverings, barriers, devices, signs, and procedures as needed to protect elevator and elevator equipment.
  5. Do not load elevators beyond their rated weight capacity.
  6. Engage elevator Installer to provide full maintenance service. Include preventive maintenance, repair, or replacement of worn or defective components, lubrication, cleanup, and adjustment as necessary for proper elevator operation at rated speed and capacity. Provide parts and supplies same as those used in the manufacture and installation of original equipment.
  7. Engage Elevator Installer to restore damaged work, if any, so no evidence remains of correction. Return items which cannot be refinished in the field to the shop, make required repairs, and refinish entire unit, or provide new units as required.

### 3.8 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.
  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 to test the equipment. In addition, identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedures, including statutory and other required equipment tests.
  3. Lubrication instructions including recommended grade of lubricants.
  4. Parts catalogs for all replaceable parts including ordering forms and instructions.
  5. Four sets of keys for all switches and control features properly tagged and marked.
  6. Neatly bound instructions explaining all operating features including all apparatus in the car and lobby control panels.
  7. 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.
  8. Diagnostic equipment complete with access codes, adjusters' manuals and set-up manuals for adjustment, diagnosis and troubleshooting of elevator system, and performance of routine safety tests.
- B. 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 14250 – HYDRAULIC ELEVATOR MODERNIZATION

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. One hydraulic passenger elevator, Car 1.
- 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 in Section 01800 and Section 14325 herein.
- E. Additional equipment or finishes furnished under other sections, installed under this section:
  - 1. Card reader security system
  - 2. Car interior finishes
  - 3. Car finish flooring
- 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 RELATED WORK PROVIDED UNDER OTHER SECTIONS

- A. See Section 01900, Related Work Provided Under Other Sections.

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. Qualified Contractors: Alternate Contractors must receive approval of Architect, Owner, and/or Consultant at least 14 days prior to bid date.
- B. Approved Contractors:
  - 1. Hydraulic Elevators: KONE, Minnesota Elevator Inc., Otis, Schindler, thyssenkrupp, Fujitec, Mitsubishi and Eltec.

2. Alternate Contractors must receive approval of Consultant at least 14 calendar days prior to bid date.
- 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, 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 Article 1.4 D. 1. and 2. above. No prorations of equipment or parts shall be allowed on preventive maintenance contract, Section 14325, between the Contractor and Owner.
  4. Make modifications, requirements, adjustments, and improvements to meet performance requirements of Sections 01700 and 14250.

#### 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. 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 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 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. One passenger elevator. Unless specifically identified as "retain existing," provide new equipment.

Car 1	Existing Equipment	Disposition
Capacity:	2,500 lbs.	Retain existing
Class Loading:	Passenger Class A	Retain existing
Contract Speed:	150 fpm	Retain existing
Machine:	Hydraulic pump	Provide new
Machine Location:	Adjacent	Retain existing
Operational Control:	Microprocessor-based system	Selective collective microprocessor-based system
Motor Control:	Single speed AC with electronic soft start	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:	42" wide x 84" high. Field verify	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. Reinforce to meet seismic requirements
Buffers:	Spring	Retain existing
Car Enclosure:		As specified. Car interior finishes provided under this section

Car 1	Existing Equipment	Disposition
		Pad buttons and vinyl-covered pads
		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 standard.
Hall and Car Pushbutton Stations:		Single hall pushbutton riser Single car operating panel
		Vandal resistant car and hall pushbuttons
Car Position Indicators:		Single digital with car direction arrows mounted in the car operating panel
In Car Lanterns:		All 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
Additional Features:		Car top inspection station
		Retain car roller guides
		Firefighters' service, Phases I and II, including alternate floor return
		Battery pack standby power provision
		Accessibility
		Stationary car return panel arranged for surface applied car operating panel
		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

Car 1	Existing Equipment	Disposition
		Tamper resistant fasteners for all fastenings exposed to the public
		One year warranty maintenance with 24-hour call-back service
		Sill support angles
		New seismic safety valve
		Signage engraving filled with black paint or approved etching process
		No visible company name or logo
		Wiring diagrams, operating instructions, and parts ordering information
		System diagnostic means and instructions
Alternates:		See Section 01030

## 2.2 MATERIALS

- A. See Section 01600, Materials.

## 2.3 CAR PERFORMANCE

- A. Car Speed:  $\pm 10\%$  of contract speed under any loading condition.
- B. Car Capacity: Safely lower, stop and hold 125% of rated load.
- C. Car Stopping Zone:  $\pm 1/4"$  under any loading condition.
- D. Door Opening Time: 3.1 seconds from start of opening to fully open.
- E. Door Closing Time: 4.0 seconds from start of closing to fully closed.
- F. Car Floor-to-Floor Performance Time: 14.5 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 (12'-0" typical floor height).
- G. 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.
- H. Noise and Vibration Control:
  - 1. Airborne Noise: Measured noise level of elevator equipment and its operation shall not exceed 65 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:
  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. Maintain stopping zone regardless of load in car, direction of travel, distance between landings.
- 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 that 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. Battery Standby Power Transfer:
  - 1. Upon loss of normal power, provide controls to automatically lower the car to the nearest lower landing. Upon arrival at the nearest landing, the elevator doors shall open automatically and remain open until regular door time has expired. The elevator shall then become deactivated. The standby power source shall be provided via 12-volt D.C. battery units installed in machine room, including solid-state charger and testing means mounted in a common metal container. Battery to be rechargeable lead acid or nickel cadmium with a ten-year life expectancy.
  - 2. Upon restoration of normal power, the elevator shall automatically resume normal operation.
- J. Card/Proximity Reader Security System: Provide provisions inside car for reader unit.

## 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. Provide SCR soft start with closed transition. 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. Monitoring System Interface: Provide controller with serial data link through RJ45 Ethernet connection and install all devices necessary to monitor items outlined in Section 2.13. Elevator contractor responsible to connect monitoring system interface to machine room monitoring compartment and LAN. Wiring from the LAN to the machine room monitoring compartment by others.
  7. 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 new heavy duty 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. Rebuild as required and paint.
- C. Hydraulic Jack Assembly: Retain existing.
1. Cylinder: Retain existing.
  2. Plunger: Retain existing. Isolate plunger from car frame.
  3. Provide new packing gland.
- D. Overspeed Valve: Provide a pressure sensitive, mechanically-actuated seismic safety valve, conforming to ASME A17.1, Rule 2410.6 or 3.19.4.7. Connect valve directly to jack assembly inlet.
- E. Terminal Stopping: Provide normal and final devices. Provide emergency terminal speed limiting 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 20% spare conductors throughout. Run spare wires from car connection points to individual elevator controllers in the machine room.
    - d. Provide four pair of spare shielded communication wires in addition to those required to connect specified items.
    - e. 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.
  - 4. Auxiliary Wiring: Connect fire alarm initiating devices, emergency two-way communication system, card reader, intercom, and announcement speaker and/or background music in each 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 as required.
  - 2. Door Track: Refurbish and/or replace as required.
  - 3. New Door Interlocks: Refurbish and/or replace as required.
  - 4. New Door Closers: Refurbish and/or replace as required
- 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 hall station at top and bottom floors.
- 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. Re-clad all landings in satin stainless steel. Finish to match Elevator 2.
- B. Door Panels: 16 gauge steel, sandwich construction without binder angles. Provide leading edges of center-opening doors with rubber astragals. Provide a minimum of two gibs per panel, one at leading and one at trailing edge with gibs in the sill groove entire length of door travel. Construct door panels with interlocking, stiffening ribs. Satin stainless steel finish.
- C. Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
- D. Sill Supports: Retain existing. Check and tighten all fastenings.
- E. Fascia, Toe Guards, and Hanger Covers: Retain existing. Provide as required where damaged or missing. Check and tighten all fastenings.
- F. Struts and Headers: Retain existing. Check and tighten all fastenings.
- G. Finish of Frames and Doors: Provide final painting requirements to General Contractor where factory prime finish is specified.

## 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: Retain existing. Check and tighten all fastenings. Replace damaged or missing sections.
- D. Guide Shoes: Retain existing. Check and tighten all fastenings. Replace worn rollers or inserts.
- E. Finish Floor Covering: Provided under other sections.
- F. Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
- G. Doors: Provide new satin stainless steel.
- 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: Retain existing. Check and tighten all fastenings.
- 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.
- 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: AMD 1.0
    - b. Otis: Glide A
    - c. Schindler: QKS 14 Medium Duty
    - d. thyssenkrupp: HD04
    - e. G.A.L.: MOVFR
- 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 Devices:
      - 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 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 SCS, Visionmark, or Entrada cast tactile symbols surface or recessed flush. 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 floor pushbuttons which illuminate to indicate call registration.
  - 4. Provide alarm button to ring bell located on car. Illuminate button when actuated.
  - 5. Provide keyed stop switch at bottom of car operating panel in locked car service compartment. 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 firefighters' Phase II key switch with engraved instructions filled red. Include light jewel, audible signal, and call cancel button.
  - 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-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.
  - 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 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 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.
- S. 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. 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 a cab interior that matches the Ravenna design from Vertical Dimensions with the following features:
  - 1. Provide drawings prior to manufacturing approval.
  - 2. Re-clad front wall (including strike plate) and transom with satin stainless steel.
  - 3. Provide three #4 brushed stainless steel true vent base supports.
  - 4. Provide all horizontal wall panels with a satin stainless-steel finish. Lightweight removable panels.
  - 5. Provide three 1½" round #4 brushed stainless steel sectional handrails. The handrails will be curved back to the walls on their ends.
  - 6. Provide #4 brushed stainless steel reveals.
  - 7. Provide #4 brushed stainless steel frieze for three walls.
  - 8. Provide aluminum pad studs for three walls.
  - 9. Provide a 6" bumper rail on all three sides.
  - 10. Provide custom canvas protective pads for three walls. Provide an additional cab pad to protect the front wall with a cutout to provide access to the Main Car Operating Panel.
  - 11. Ventilation: Morrison Products, Inc. two-speed model SOE No. 06-01055 exhaust blower mounted to car canopy on isolated rubber grommets. Exhaust blower shall meet requirements of Item 2.3, I.
  - 12. Lighting:
    - a. Provide drawings prior to manufacturing for approval.
    - b. Provide a three-panel section brushed aluminum framed ceiling.
    - c. Provide six twin-wall Lexan diffuser panels.
    - d. Provide one twin-tube T8 fluorescent light fixture with tubes.

## 2.10 HALL CONTROL STATIONS

- A. Pushbuttons: Provide one riser with flush mounted faceplate. 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 blackout 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. Faceplate Material and Finish: Satin stainless steel, all fixtures.
- D. 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.

## 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	Car
Lobby Fixture	Master	Machine Rooms, Car
Car	Remote	Lobby Fixtures

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

**3.8 OWNER'S INFORMATION**

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

**END OF SECTION**