



***HARRIS COUNTY
APPRAISAL DISTRICT
Harris County
Houston, Texas***

***BID DOCUMENTS
BID NUMBER 2021-02
Issued: August 18, 2021***

***Elevator Modernization
FOR THE
HARRIS COUNTY APPRAISAL DISTRICT
HEADQUARTERS BUILDING
13013 NORTHWEST FREEWAY
HOUSTON, TEXAS 77040***

**Bid Number 2021-02
Elevator Modernization
INVITATION TO BID**

Bids

Sealed bids will be received by the Purchasing Manager for the Harris County Appraisal District, Second Floor, 13013 Northwest Freeway, Houston, Texas until 10:00 A.M., Thursday, September 16, 2021 for the Elevator Modernization project.

Bid Opening

All bids will be opened and publicly read in the Board Room, 7th Floor, 13013 Northwest Freeway at 10:30 A.M. on that date for the purchase of all equipment, material, labor, and performing all work required as specified in section A of this invitation.

Buyer

If you have comments regarding this bid package, contact Tammy Argento, Purchasing Manager, at (713) 957-740. Questions should be emailed to Targento@hcad.org. They will go to the project manager, Mike Thompson, Lerch Bates Elevator Consulting. Questions and answers will be published at the end of each day at www.hcad.org. Answers will cease on September 10, 2021.

Bidders' Conference and Site Visit

A mandatory bidders' conference and site visit is scheduled at 9:30 a.m., Monday, August 30, 2021. The assembly area will be in the 7th floor boardroom.

Proposal Requirements

1. All bids must be on submitted on company letterhead with this request for proposal. Bids must be manually signed in ink by an authorized officer of the company and acknowledged by a Notary Public (see page 53). Submit an original only, no copies are required. The statement "**BID #2021-02 ENCLOSED**" must be indicated on all bid packages. If a bid is not adequately identified, it will be opened to establish identification and will be processed as any other bid. However, this results in an unsealed bid and violates the integrity of purpose for the sealed bid procedure. Consequently, bidders are urged to make certain the envelope is adequately identified.
2. TIME AND DATE: Bids MUST physically be in the Purchasing Manager's office, 13013 Northwest Freeway, Second Floor, by 10:00 A.M. on the date bids are due; an early postmark will not suffice. Be sure you have allowed ample time for postal delivery.
3. WITHDRAWAL OF BID: A bidder may withdraw his proposal before the expiration of the time during which a proposal may be submitted by submitting a written request for its withdrawal to the officer who holds it.
4. No change in price will be considered after bids have been opened.
5. This proposal must not be altered. Any erasure or alteration of figures may invalidate the bid on the item on which the erasure or alteration is made.
6. All bids are for delivery not later than the time stated in the specifications, F.O.B., Destination, and Full Freight Allowed to the point of delivery stated in the Specifications and/or Bid Form.
7. Bidders are invited to be present at the opening of bids. After opening, bids may be inspected in the Purchasing Office, Second Floor, 13013 Northwest Freeway, Houston, Texas.
8. All bids must show the full name of firm bidding, with the name typewritten or in ink.
9. All bids must be signed, in ink, by a responsible officer or employee of the firm and title of the officer or employee must be shown. Obligations assumed by the signature must be fulfilled.
10. Bidders having delinquent property taxes will not be considered for award.

PRICING

1. No change in price will be considered in the award of the bids.

TAXES

The Harris County Appraisal District is exempt from the Federal Excise and Transportation Tax, and the limited Sales and Use Tax.

Evaluation and Award

The District will evaluate proposals and award the contract based on the criteria listed below. Lowest bid, most responsible, best value, and most advantageous to the District are other criteria the bid evaluation committee will use to determine the best proposal. The District uses weighted criteria with mandatory elements.

Bid Evaluation	
Mandatory Criteria (Pass or Fail)	P or F
Attended Pre-Bid Meeting	
Deadline for Bid Delivery Was Met	
Sealed Bid Packaged Appropriately	
Bidder's Application	
W-9 Form	
Certificate of Liability Insurance	
Conflict of Interest Form	
Harris County Taxes are Current	
Prevailing Wage Scale Can Be Met	
References	
Weighted Criteria	
Safety Record	15%
Price	55%
Satisfactory Past Experience with HCAD	15%
Estimated Time Line	5%
References	5%
Off-site Storage by vendor	5%

AWARD

The purchasing manager plans to make the recommendation, on October 20, 2021 at 9:30 am, at the scheduled board of directors' meeting held on the 7th floor of the HCAD building. The District reserves the right to reject any or all qualifications and to waive informalities and

minor irregularities in proposals received, and to accept any portion of or all items proposed if deemed in the best interest of the District to do so.

PATENTS

The contractor agrees to indemnify and save harmless the District, the purchasing agent, and his assistants from all suits and actions of every nature and description brought against them of any of them, for on account of the use of patented appliances, products or processes and he shall pay royalties and charges which are legal and equitable.

BIDDER QUALIFICATIONS & EVALUATION

1. Bidders are required to submit a properly completed Bidder Application Form to the District's Purchasing Office. It is the responsibility of the bidder to inform the District's Purchasing Office of any changes/deletions to this form as is deemed appropriate. This application is used to establish a bidder's database which is maintained for the purpose of a bid mailing list, and other references as required. Bidders are only required to submit this form one time. Please contact the District's Purchasing Office at (713) 957-5214 if you are unsure as to whether this form has been previously submitted.
2. Each Bidder must furnish a list of three similar projects the Bidder has performed in the past five years with the contact name and phone number of the project owner for each project. Each Bidder must also furnish a list of the Bidder's current on-going projects, the anticipated dates of completion for each, and a contact name and phone number of the project owner for each project.
3. Chapter 2270.002 of the Government Code provides that any government entity may not enter into contract with a company for goods or services unless the contract contains a written verification from the company that it:
 - a. Does not boycott Israel; and
 - b. Will not boycott Israel during the term of the contract.
4. Chapter 2252.152 of the Government Code provides that any governmental entity may not enter into a governmental contract with a company that is identified on a list prepared and maintained under Section 806.051, 807.051, or 2252.153.

LABOR CLASSIFICATION & MINIMUM WAGE SCALE

1. Chapter 2258 of the Government Code provides that any government subdivision shall ascertain the general prevailing rate of per diem wages in the locality in which the work is to be performed for each craft or type of workman or mechanic and rate of per diem wages which shall be paid for each craft type of workman. The law further provides that the Contractor shall forfeit, as a penalty, to the City, County, State, or other political subdivision, \$60.00 per day for each laborer, or workman, or mechanic who is not paid the stipulated wage for the type of work performed by him as set up in the wage scale. HCAD is authorized to withhold from the Contractor the amount of this penalty in any payment that might be claimed by the Contractor or subcontractor. The Act makes the Contractor responsible for the acts of the subcontractor in this respect.
2. The law likewise requires that the Contractor and subcontractor keep an accurate record of the names and occupations of all persons employed by him and show the actual per diem wages paid to each work, and these records are open to the inspection of HCAD.

3. See Section B for Labor Classification and Minimum Wage Scale for this project.

SECTION A OFFICIAL BID FORM



Bid Number 2021-02 Elevator Modernization

The undersigned Bidder hereby offers to contract with the Harris County Appraisal District (HCAD) upon the terms and conditions stated in the document entitled "Invitation to Bid" for the items and services specified, along with all schedules and exhibits incorporated herein by reference. This offer is made at the following prices. When issued, Letters of Clarification shall automatically become part of this bid document and shall supersede any previous specifications or provisions in conflict with the Letters of Clarification. It is the responsibility of the bidder to ensure that the bidder has obtained all such letters. By submitting a bid on this project, bidder shall be deemed to have received all Letters of Clarification and to have incorporated them into its bid.

HCAD may accept this bid offer by issuance of a purchase order or execution of a contract covering award of said bid to this Bidder at any time on or before the 60th day following the day this Official Bid Form is opened by HCAD. This offer shall be irrevocable for 60 days but shall expire on the 61st day unless the parties mutually agree to an extension of time in writing. This contract is not subject to annual appropriation by the Board of Directors of the Harris County Appraisal District.

If HCAD accepts the foregoing offer, this Bidder promises to deliver to the Purchasing Manager of HCAD, proof of insurance (certificate of coverage) for the duration of the project as outlined below on or before the 10th day after notification of award of the Contract. The Harris County Appraisal District shall be named as an additional insured on all coverages except Workers' Compensation and Employers' Liability.

1. Workers' Compensation Coverage required by Section 406.096, Texas Labor Code for the Contractor and Subcontractors;
2. General liability with limits of not less than \$2,000,000 for each occurrence, with an aggregate limit of \$5,000,000 for bodily injury, personal injury, property damage, and products/completed operations;
3. Automobile liability with a limit of not less than \$1,000,000 for any auto, hired autos, and non-owned autos;
4. Excess/Umbrella liability with a limit of not less than \$3,000,000.

Representations The undersigned bidder:

1. Has examined the Invitation to Bid and the proposed Contract, plans and specifications, and all other documents for the Project;
2. Fully understands all factors and conditions affecting or that may affect the work, including the:
 - a. Extent, scope, and character of the work to be performed;
 - b. Location, arrangement, and requirements for the proposed work;
 - c. Roadway and other approaches to the project site;
 - d. Space available for storage;
 - e. Availability and accessibility of utilities;
 - f. Location, condition and nature of the project site, surrounding areas, and existing improvements;
 - g. Anticipated labor supply and costs;
 - h. Availability and cost of equipment, materials, and tools; and
 - i. Issues similar to the above factors and conditions.
3. Has visited the project site and correlated its personal observations with the requirements of the contract documents;
4. Will submit its project schedule to HCAD at the scheduled preconstruction meeting;
5. Understands that HCAD may reject any or all Bids.

Similar Projects Within the past five years, the undersigned Bidder has performed the following three projects that are similar to this project:

- Project No. 1

Name of project: _____

Location of project: _____

Project cost: _____

Name of owner: _____

Telephone number of project owner: _____

Email of project owner: _____

- Project No. 2

Name of project: _____

Location of project: _____

Project cost: _____

Name of owner: _____

Telephone number of project owner: _____

Email of project owner: _____

- Project No. 3

Name of project: _____

Location of project: _____

Project cost: _____

Name of owner: _____

Telephone number of project owner: _____

Email of project owner: _____

Current On-Going Projects: The undersigned bidder has attached a list of each project that it is performing at the time of the Bid using the format below:

Name of project: _____

Location of project: _____

Type of project: _____

Anticipated completion date: _____

Name of owner: _____

Telephone number of project owner: _____

Email of project owner: _____

Storage of New Equipment: It is requested that the vendor store in their warehouse the equipment needed for this project. HCAD has very little storage space. Will you be able to arrange storage for this project offsite? **yes** **no**

Specifications for Project

Prepared by Lerch Bates, Inc. Elevator Consulting Group

SECTION 14220

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SECTION 14220

ELECTRIC TRACTION ELEVATOR MODERNIZATION

PART 1 GENERAL

1.01 WORK INCLUDED

- Four (4) traction elevators and one (1) hydraulic service elevator as follows:
 - Four (4) Geared Passenger Elevators, Cars 1 - 4
 - One (1) Hydraulic Service Elevator, Car 5
- All engineering, equipment, labor, and permits required to satisfactorily complete elevator modernization required by Contract Documents.
- Applicable conditions of General, Special, and Supplemental Conditions.
- Preventive maintenance as described herein.
- Additional equipment or finishes furnished under other Sections, installed under this Section:
 - Building announcement speakers
 - In car Firefighters' telephone jacks
 - CCTV system
 - Car interior finishes
 - Car finish flooring
- 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.
- Unless specifically identified as "Reuse," "Retain," or "Refurbish," provide new equipment.
- Protective barriers between cars in normal operation and adjacent cars in the modernization process. Full depth and height of hoistway.
- Hoistway, pit, and machine room barricades as required.

1.02 INSTRUCTIONS TO CONTRACTOR

- EXAMINATION
 - 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, 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 Contractor and Consultant, an Addendum to the specifications will be issued and authorized. Purchaser will not pay for change to building structure, structural supports, mechanical, electrical or other systems required to accommodate Contractor's equipment if not identified before Contract award and authorized as stipulated above.

- Submission of quotation is considered evidence that Contractor has visited and is conversant with the site facilities, site conditions, requirements of the Contract Documents, pertinent state and local codes, state of labor and material markets, and has made do allowance in his quotation for all contingencies. Should Contractor's investigation of site conditions or local codes or rules reveal requirements contrary to Contract Documents, or if Contractor finds any discrepancies or omissions from Contract Documents, or if Contractor is in doubt as to their meaning, he shall contact the Consultant for clarification at least five working days prior to quotation due date.
- No oral explanation will be made, and no oral instructions will be given before quotation due date. Contractor shall act promptly and allow sufficient time for a reply to reach him before submission of his quotation. Any required interpretation or supplemental instructions will be issued in the form of an addendum to the specifications and forwarded to all pre-qualified Contractors.
- 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.
 - EXISTING MAINTENANCE CONTRACT
 - Purchaser shall affect cancellation of existing Maintenance Contract.

1.03 SUPPLEMENTAL CONDITIONS

- DEFINITION OF TERMS
 - Term ELEVATOR CONSULTANT or CONSULTANT as used herein refers to Lerch Bates Inc. (Lerch Bates).
 - PURCHASER as used herein refers to Harris County Appraisal District
 - 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.
 - CONTRACTOR or ELEVATOR CONTRACTOR as used herein refers to any persons, partners, firm, or corporation having a contract with Purchaser to furnish labor and materials for the execution of work required.
 - CONTRACT AWARD as used herein refers to Purchaser's verbal or written award for work required.
 - 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.
 - As used in these Contract Documents "provide" shall be understood to mean "furnish and install."
 - As used in these Contract Documents "retain or reuse existing" shall be understood to mean restore existing components or parts to like-new condition.
 - Words in the singular shall include the plural whenever applicable or context so indicates.
 - 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.
- CONSULTANT'S STATUS
 - Consultant shall act as Purchaser's and/or Building Management's representative on all matters pertaining to required work. Consultant shall interpret Contract Documents, analyze Contractor's quotations, review Contractor suggested alternates, review all

submittals of Contractor, approve billings, review technical details and construction procedure, perform work progress reviews and review and test completed work for compliance with Contract Documents prior to acceptance of work by Purchaser.

- Field Review Scheduling: Schedule progress and final work reviews with Consultant. Reply promptly, in writing, to corrective work indicated on Consultant's progress and/or final review reports, indicating status and schedule for completion. Consultant anticipates scheduled site review appointments will be met. Contractor's price will be reduced to reimburse Consultant at its normal billing rates for appointments not kept or for additional follow up reviews required due to Contractor's gross non-compliance with previous review requirements.

▪ **CONTRACT**

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

▪ **MEASUREMENTS AND DRAWINGS**

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

▪ **CODES AND ORDINANCES**

- 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.

▪ **PROTECTION OF WORK AND PROPERTY**

- Contractor shall continuously maintain adequate protection of all its work from damage and shall protect Purchaser property from injury or loss arising out of this Contract. Contractor shall make good any such damages, injury, or loss, except such as may be directly caused by agents, subcontractors, or employees of the Purchaser. Contractor shall provide all barricades required to protect open hoistways or shafts per OSHA regulations. Design of barricades in public areas shall be approved by Purchaser prior to fabrication and installation.
- 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.
- 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.

- Portable fire extinguishers shall be provided throughout Contractor's area of work and shall be placed so as to be accessible at all times. Extinguishers shall be multi-purpose dry chemical type, provided on a basis of one 2A-20BC rated unit for each 3,000 square feet of floor area. Extinguishers will remain property of Contractor.
 - Contractor shall at all times maintain work areas, so all portions are accessible to fire department personnel and apparatus. Fire hydrants and fire department connections to building sprinkler systems must always be kept free from obstruction.
 - Contractor shall strictly supervise any welding, metal cutting or other operations employing open flame work. All welding and cutting equipment shall be safely arranged and all combustibles in vicinity of any work being performed shall either be removed or protected by a noncombustible cover. Welding or cutting shall be attended by an assistant or fire watchman who is equipped with at least one 2A-20BC rated multi-purpose dry chemical fire extinguisher. Fire watchman will maintain strict surveillance during entire welding or cutting operation and extinguish flying sparks or burning slag. After welding or cutting operation fire watchman shall thoroughly search entire area for remnants of smoldering materials before he is released from his duty. Any welding or other operation employing open flame in any portion of building shall be scheduled with and receive approval of Purchaser.
 - Contractor shall keep noise level below 80 db 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.
- ACCIDENT REPORTS
 - In the event of accidents of any kind, Contractor shall furnish Purchaser with copies of all accident reports. Reports shall be sent without delay and at same time that they are forwarded to any other parties.
 - STORAGE OF MATERIALS
 - Contractor shall confine storage of materials on job site to limits approved by Purchaser and shall not unnecessarily encumber premises or overload any portion of building with materials to a greater extent than structure design load.
 - REMOVAL OF EQUIPMENT AND RUBBISH
 - Contractor shall remove and properly dispose of all rubbish as fast as it accumulates including all existing parts and components not retained, keeping building and premises clean during progress of work and leave premises at completion in a condition acceptable to the Purchaser. All other parts and components not retained shall become property of Contractor.
 - MATERIALS AND WORKMANSHIP
 - 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.
 - SUPERVISION
 - Contractor shall assign a competent Project Manager, superintendent, and on-site foreman for project satisfactory to Purchaser and Consultant. Such persons shall represent Contractor and all instructions given to them shall be binding as if given to Contractor.
 - ROUTINE BUSINESS

- After award of Contract, all business relating to required work shall be transacted through Consultant, unless otherwise directed.
- PAYMENTS
 - Unless otherwise agreed, 20% initial payment after award of contract, 30% payment when all materials for project have been delivered to site, and Contractor shall submit monthly applications for payment. Payment requests shall be submitted together with necessary data, information, waivers, and affidavits to Consultant. Consultant shall review data for accuracy and forward such applications to Purchaser for payment.
 - Applications for payments are to cover 90% of the value of labor performed and material installed and delivered during the preceding month or materials delivered to Contractor's storage facility.
 - Balance (retention) shall be paid by Purchaser upon final acceptance of entire work by Consultant and Purchaser and after performance guarantees have been satisfactorily demonstrated.
- PAYMENT WITHHELD
 - Purchaser and/or Consultant may withhold approval of payment on any Contractor request to such extent as may be necessary to protect Purchaser from loss on account of:
 - Believed negligence on part of Contractor to execute the work properly or fail to perform any provision of Contract. Purchaser, after 45 days' written notice to Contractor, may without prejudice to any other remedy he may have, make good such deficiencies and may deduct its cost from the overall Contract sum.
 - Claims filed or reasonable evidence indicating probable filing of claims by other Contractors or Subcontractors.
 - Failure of Contractor to make proper payments to its material suppliers or Subcontractors for material and labor.
 - A reasonable doubt that required work can be completed by Contractor for balance then unpaid or in Contract time frame.
 - Contractor's damage to building or another Contractor.
 - When the above grounds are removed, payment shall be made in full, less retention.
- LIENS AND AFFIDAVITS
 - Neither final payment nor any part of billing retention shall become due until Contractor shall deliver to Purchaser a complete release of all liens arising out of this Contract or receipts marked paid in full in lieu thereof. In addition, Contractor shall furnish an affidavit to Purchaser that, so far as he has knowledge or information, releases, or receipts include all labor and materials for which a lien could be filed. If any lien remains unsatisfied after all payments are made by Purchaser, Contractor shall refund to Purchaser all monies the latter may be compelled to pay in discharging such a lien, including all costs and reasonable attorney's fees.
- CLAIMS FOR EXTRA COST
 - Contractor claims for extra cost due to additions or changes to required work shall be submitted to Consultant in writing within a reasonable time after such additions or changes identified or are requested and, in any event, before proceeding with required work. No such claim shall be valid unless so made. Maximum charge for additions/changes to work shall be Contractor cost +10% handling fee + 15% for overhead and profit. Contractors cost shall be verifiable from actual supplier invoices, purchase orders, time tickets, etc.
- DELAYS AND EXTENSION OF TIME

- If Contractor progress is delayed due to acts of Purchaser or Consultant, acts of other Contractors, fire, floods, strikes or other casualties beyond the control or without fault or negligence of Contractor, time for completion of the work shall be extended for a period determined by Consultant to be equivalent to time of such delay. Contractor must notify Consultant, in writing, of such delay within 48 hours after delay commences, or no extension of time will be granted. Extension of time without written request within said period on one or more occasions shall not be deemed a waiver of provisions of this article.
- PERMITS
 - Contractor shall obtain and pay for or cause its Subcontractor to obtain and pay for all permits required to complete required work. In addition, Contractor shall arrange, schedule, and pay for or cause its Subcontractors to arrange, schedule and pay for all required final inspections by state, local, or independent certified inspecting authorities necessary for issuance of all required Purchaser utilization permits in regard to completed work.
- PROGRESS OF WORK
 - 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.
 - 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.
 - Project Manual: Upon award, verbally or in writing, Contractor shall prepare three project manuals neatly bound in a three-ring binder. One manual shall be retained by Contractor, one provided to Purchaser and one provided to Consultant. The manuals shall contain the following information and sections identified in an index with numbered divisions.
 - Project Specification revised if required to indicate basis of award. (While maintaining original text and clearly identifying revision.)
 - Contractor completed Bid Form. Include copy of original submission and any revisions.
 - Alternate quotations indicating Purchaser acceptance or rejection.
 - Purchaser's executed Contract.
 - Initial project schedule with estimated versus actual milestone dates. Include schedule revisions.
 - Project payment requests including verification of payment and lien releases.
 - Code acceptance.
 - Purchaser's final acceptance documents.
 - Consultants progress review comments and requirements.
 - Consultant's final Contract review comments and requirements.
 - Shop drawing submittals, including sets with review remarks.
 - As built drawings, including control wiring diagrams.
 - A second manual shall include the identical section numbers and shall be identified and utilized for general correspondence on these subjects. Additional sections shall include correspondence not specifically identified by one of these sections. An index in front of this section shall number and identify source of correspondence and subject.
 - Contractor shall maintain all manuals in an up-to-date condition. Prior to final payment, Contractor shall deliver to Purchaser the documents in Items 1, 2, 3, and 4 above on computer disk.

1.04 SUMMARY OF WORK

- **WORK COVERED BY CONTRACT DOCUMENTS**
 - Modernize Four (4) traction passenger elevators and one (1) hydraulic service elevator in the HCAD Headquarters Building located at 13013 Northwest Freeway in Houston, Texas 77040.
 - 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.
 - Provide all required staging, hoisting and movement of new equipment, reused equipment, or removal of existing equipment.
 - Applicable conditions of Purchaser's General, Special, and Supplemental Conditions.
 - 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.
 - This Contract: Elevator Modernization. Including associated work specified in Article 1.06 below.
 - Scope of Contract includes, but is not limited to, the following:
 - Coordination, scheduling, and management of work of component suppliers and subcontractors.
 - Modernize or furnish and install equipment as specified utilizing existing and/or modified hoistways and machine rooms.
 - Specific item of required work which cannot be determined to be included in another contract is thereby determined to be included in prime contract.
 - 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.
- **PRIME CONTRACTOR'S DUTIES**
 - Prime Contractor's duties include the following:
 - 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.
 - Pay for legally required sales, consumer, and state remodel taxes.
 - 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.
 - Give required notices.
 - Comply with codes, ordinances, rules, regulations, orders, and other legal requirements of public authorities which bear on performance of required work.
 - Promptly submit written notice to Consultant of observed variance of Contract Documents from legal requirements.
 - Enforce strict discipline and good order among employees. Do not employ persons unskilled in assigned task.
- **WORK SEQUENCE**
 - Construct work in stages. Description and proposed sequence dates are as listed on Quotation Form.
- **CONTRACTOR USE OF PREMISES**
 - Confine operations at site to areas permitted by law, ordinances, permits, Contract Documents, and Purchasers specific instructions.

- Do not unreasonably encumber site with materials or equipment. Staging area will be located as directed by Purchaser.
- Do not load structure with weight that will endanger structure. Coordinate with Purchaser.
- Assume full responsibility for protection and safekeeping of tools and products stored on or off premises.
- Move stored products which interfere with operations of building or the operations of other trades.
- Obtain and pay for use of additional storage or work areas needed for operations.
- CONCURRENT MODERNIZATION WORK AND BUILDING OPERATION
 - This project is a major elevator modernization in an existing building which is open for public business and will continue to operate throughout all phases of required work. It is essential that Contractor give special attention and priority to all matters concerning project safety, protection from dust and loose materials, reduction of noise level, protection from water and air infiltration into building, and maintenance of neat, slightly conditions in and around work areas inside and outside of building. Packaging, scrap materials, and demolition debris shall be promptly removed from building and site on a daily basis.
 - At all times Contractor shall provide clearly visible warning and directions signs, barricades, temporary lighting, overhead protection, and hazard-free walking surfaces throughout public area. At all times special attention must be given to building entrances, exits, and proper safe exiting through work areas as required by law.
 - Contractor shall consult Purchaser and other Contractors to establish and maintain safe temporary routes including, but not limited to, proper barricades, walking surfaces, lighting, fire protection, exiting, warning, and directional signs, and general protection of persons from all hazards in accordance with OSHA Standards due wholly or partially to its operations.

1.05 PROJECT PROCEDURES

- APPLICABLE CODES
 - Compliance with Regulatory Agencies: Comply with most stringent applicable provisions of following Codes, laws, and/or Authorities, including revisions and changes in effect:
 - Safety Code for Elevators and Escalators, ASME A17.1
 - Guide for Inspection of Elevators, Escalators, and Moving Walks, ASME A17.2
 - Elevator and Escalator Electrical Equipment, ASME A17.5 National Electrical Code, NFPA 70
 - Americans with Disabilities Act, ADA
 - Local Fire Authority
 - Requirements of most stringent provision of local applicable building code.
 - Life Safety Code, NFPA 101
 - Texas Accessibility Standard, TAS
- STAGING AREA
 - An equipment staging area will be available for use by Contractor. Contractor shall restrict usage to area designated and shall notify Purchaser/Property Management prior to storing of any large equipment which will impose heavy concentrated loading on floor area. Do not store such equipment until approval is received.
- WORK PHASE
 - See Quotation Form.
- OCCUPANCY AND WORK BY OTHERS

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

1.06 RELATED WORK BY CONTRACTOR

- Hoistway and Pit:
 - Wall blockouts and fire rated closure for control and signal fixture boxes which penetrate walls.
 - Cutting and patching walls and floors.
 - Pit access for each elevator.
 - Structural support at pit floor for buffer impact loads, guide rail loads, and cylinder loads.
 - Waterproof pit for the hydraulic service elevator. Indirect waste drain or sump with flush grate and pump. Sump pump/drain capacity minimum 3000 gallons per hour, per pit.
 - Protect open hoistways and entrances during construction per OSHA Regulations.
- Protect car enclosure, hoistway entrance assemblies, and special metal finishes from damage.
- Machine Room and Machinery Spaces:
 - Repairs to enclosure to meet all required fire ratings.
 - Repair or replace access door to provide self-closing and locking operation.
 - Ventilation and heating. Maintain minimum temperature of 55° F, maximum 90° F. Maintain maximum 80% relative humidity, non-condensing.
 - Paint walls, ceiling, and floors.
 - Class "ABC" fire extinguisher in each elevator machine room.
 - Fire sprinklers where required.
- Electrical Service, Conductors, and Devices:
 - 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.
 - TRACTION ELEVATORS ONLY: Three-phase mainline copper power feeder with true earthen ground to terminals of each elevator controller in the machine room with protected lockable "open" disconnecting means.
 - HYDRAULIC ELEVATOR ONLY: Three-phase mainline copper power feeder 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.
 - Single-phase copper power feeder to each elevator controller for car lighting and exhaust blower with individual protected lockable "open" disconnecting means located in machine room.

- Emergency telephone line to each individual elevator control panel in elevator machine room.
 - 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.
 - Firefighters' telephone jack and announcement speaker in car with connection to individual elevator control panels in elevator machine room and elevator control panel in firefighters' control room.
 - Conduit from the closest hoistway of each elevator group or single elevator to the firefighters' control room.
 - Means to automatically disconnect power to affected elevator drive unit and controller prior to activation of machine room fire sprinkler system and/or hoistway fire sprinkler system. Manual shut-off means shall be located outside bounds of machine room.
 - When sprinklers are provided in the hoistway all electrical equipment, located less than 4'-0" above the pit floor shall be identified for use in wet locations.
 - Single-phase power feeder to elevator intercom amplifier in the elevator machine room.
- Standby Power Provision:
 - Standby power of normal voltage characteristics via normal electrical feeders to run one elevator at a time in traction elevator group at full-rated car speed and capacity.
 - Conductor from auxiliary form "C" dry contacts, located in the standby power transfer switch to a designated elevator control panel in traction elevator group. Provide a time delay of 30 - 45 seconds for pre-transfer signal in either direction.
 - Standby single-phase power to group controller, and each elevator controller for car lighting, exhaust blower, emergency signaling device, and intercom amplifier. Means for absorbing regenerated power during an overhauling load condition per NEC 620.91.
 - Standby power to machine room ventilation or air conditioning.
 - Standby power to emergency communications device.

1.07 DEFINITIONS

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

1.08 QUALITY ASSURANCE

- Approved Contractors:
 - Geared Elevators: KONE, Otis, Schindler, ThyssenKrupp, Fujitec, Mitsubishi.
 - Hydraulic Elevators:
 - Car Enclosure: Jobs/AMST, Travertine, CID.
- Compliance with Regulatory Agencies: Comply with most stringent applicable provisions of following Codes, laws, and/or Authorities, including revisions and changes in effect:
 - Safety Code for Elevators and Escalators, ASME A17.1
 - Guide for Inspection of Elevators, Escalators, and Moving Walks, ASME A17.2
 - Elevator and Escalator Electrical Equipment, ASME A17.5
 - National Electrical Code, NFPA 70
 - Americans with Disabilities Act, ADA
 - Local Fire Authority

- Requirements of most stringent provision of local applicable building code.
 - Life Safety Code, NFPA 101
 - Texas Accessibility Standard, TAS
- Warranty:
 - Material and workmanship of installation shall comply in every respect with Contract Documents. Correct defective material or workmanship which develops within one year from date of final acceptance of all work to satisfaction of Architect, Purchaser and Consultant at no additional cost, unless due to ordinary wear and tear or improper use or care by Purchaser. Perform maintenance in accordance with terms and conditions indicated in the Preventive Maintenance Agreement.
 - 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.
 - 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 1.08, C., 1. & 2. above. No prorations of equipment or parts shall be allowed on preventive maintenance contract, between the Contractor and Purchaser.

1.09 DOCUMENT AND SITE VERIFICATION

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

1.10 SUBMITTALS

- Within 15 calendar days after award of contract and before beginning equipment fabrication submit shop drawings and required material samples for review. Allow 15 days for response to initial submittal.
 - Scaled or Fully Dimensioned Layout: Plan of details of car enclosures and car/hall signal fixtures.
 - Design Information: Indicate equipment lists, reactions, and design information on layouts.
 - Power Confirmation Information: Design for existing conditions.
 - Fixtures: Cuts, samples, or shop drawings.
 - 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.
 - Design Information: Provide calculations verifying the following:
 - Adequacy of existing electrical provisions.
 - Adequacy of retained equipment relative to code requirements if car weight increased by more than 5%.
 - Machine room heat emissions in B.T.U.
 - Adequacy of existing retained elevator machine beams.

- Adequacy of existing car platform structure for intended loading.
- 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.
- 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.
- Acknowledge and/or respond to review comments within 15 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.

1.11 PERMIT, TEST AND INSPECTION

- Obtain and pay for permit, license, and inspection fee necessary to complete.
- 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.
- Supply personnel and equipment for test and final review by Consultant as required.

1.12 MAINTENANCE

- Interim Maintenance
 - 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 elevators is complete and one-year warranty maintenance, defined in Item 1.12 B below, is commenced. Cost of interim maintenance shall not be included as part of modernization quotation. Indicate costs on a per-unit basis for interim maintenance as requested on quotation form. Costs for interim maintenance shall be paid by Purchaser separately and monthly based upon the number of units in service. Perform interim maintenance based upon terms and conditions.
 - Use competent personnel, acceptable to Purchaser, employed and supervised by the Contractor.
 - Warranty Maintenance
 - Provide preventive maintenance and 24-hour emergency callback service for one year commencing on date of final acceptance by Purchaser. 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.
 - Use competent personnel, acceptable to the Purchaser, supervised and employed by Contractor.
 - The warranty maintenance period specified in Item 1.12, B.1 above shall be extended one (1) month for each three (3) month period in which equipment related failures average more than .25 per unit per month.
 - Purchaser retains the option to delete cost of warranty maintenance from new equipment contract and remit twelve (12) equal installments directly to Contractor during period in which maintenance is being performed.
- Contract Preventive Maintenance

- Quote monthly cost for five-year Preventive Maintenance Agreement commencing upon completion of the warranty period specified in Item 1.12, B.1 above. Submit quote based upon terms and conditions of the Preventive Maintenance Agreement. Base quotation on present labor and material cost. Price adjustment will be made at Agreement commencement date and thereafter as provided in Agreement.
- Use competent personnel, acceptable to the Purchaser, employed and supervised by Contractor.

PART 2 PRODUCTS

▪ SUMMARY

- Passenger Elevators 1 – 4, Service Elevator 5
- Unless specifically identified as “retain existing,” provide new equipment.

	Existing Equipment	Disposition
Number:	Cars 1 - 3	Retain Existing
Capacity:	3500 #	Retain Existing
Class Loading:	Passenger Class A	Retain Existing
Contract Speed:	350 F.P.M.	Retain Existing
Roping:	1:1	Retain Existing
Machine:	Geared	Replace With New
Machine Location:	Overhead	Retain Existing
Supervisory Control:	Group Automatic Microprocessor-Based System	Group Automatic Microprocessor-Based System
Motor Control:	AC Variable Voltage Variable Frequency Microprocessor Based with Digital Closed-Loop Feedback	AC Variable Voltage Variable Frequency Microprocessor Based With Digital Closed-Loop Feedback
Power Characteristics:	480 Volts, 3 Phase, 60 Hertz Field Verify	Retain Existing
Stops:	7 Front	Retain Existing
Openings:	7 Front	Retain Existing
Floors Served:	1, 2 - 7 Front	Retain Existing
Entrance Size:	42" Wide X 108" High Field Verify	Retain Existing
Entrance Type:	Single Speed, Center Opening	Retain Existing

	Existing Equipment	Disposition
Door Operation:	Medium Speed, Heavy-Duty Door Operator, Minimum Opening Speed 1-1/2 F.P.S.	High Speed, Heavy-Duty, Linear, Door Operator, Minimum Opening Speed 2-1/2 F.P.S.
Door Protection:	Infrared, Full Screen Device	3-Dimensional Infrared, Full Screen Device With Differential Timing, Nudging And Interrupted Beam Time
Safety:	Flexible Guide Clamp – Type B	Retain Existing
Guide Rails:	Planed Steel Tees	Retain Existing
Buffers:	Oil	Retain Existing, Refurbish
Car Enclosure:		New Car Interior Finishes, Modifications As Required For New Fixtures Battery Powered Emergency Car Lighting. Provide Separate Constant Pressure Test Button In Car Service Compartment.
Signal Fixtures:		LED Illumination Contractor's Standard Assembly
Hall and Car Pushbutton Stations:		Single Hall Pushbutton Riser Single Car Operating Panel
Car Position Indicators:		Single Digital With Car Direction Arrows Firefighters' Control Panel
Hall Lanterns:		At All Floors With Volume Adjustable Electronic Chime Or Tone. Sound Twice For Down Direction With Predictive Function
Communication System:		Self-Dialing, Vandal Resistant, Push To Call, Two-Way Communication System With Recall, Tracking And Voiceless Communication

Existing Equipment	Disposition
Additional Features, Cars 1-3:	Car And Counterweight Roller Guides
	Car Top Inspection Station
	Firefighters' Service, Phase I And II, Including Alternate Floor Return
	Standby Power Transfer (Automatic To Main Floor) With Manual Override In Firefighters' Control Panel
	Fixed Car Return Panels Arranged For Integral Car Operating Panels
	Hoistway Access Switches, Top And Bottom Floors
	Hoistway Door Unlocking Device, All Floors
	Platform Isolation
	Load-Weighing Device
	Independent Service Feature
	Digital Video Display Provisions, All Cars
	Firefighters' Control Panel And Remote Wiring
	Machine, Power Conversion Unit, And Controller Sound Isolation
	Tamper Resistant Fasteners For All Fastenings Exposed To The Public
	One Year Warranty Maintenance With 24-Hour Call-Back Service
	Firefighters' Telephone Jack
	Emergency Paging Speaker Installation

	Existing Equipment	Disposition
		No Visible Company Name Or Logo
		Wiring Diagrams, Operating Instructions, And Parts Ordering Information
		Monitoring System
		System Diagnostic Means And Instructions
	Existing Equipment	Disposition
Number:	Car 4	Retain Existing
Capacity:	5000 #	Retain Existing
Class Loading:	Passenger Class A	Retain Existing
Contract Speed:	350 F.P.M.	Retain Existing
Roping:	2:1	Retain Existing
Machine:	Geared	Replace With New
Machine Location:	Overhead	Retain Existing
Operational Control:	Selective Collective Microprocessor-Based System	Selective Collective Microprocessor-Based System, Alternate To Include "Swing Car" Operation
Motor Control:	AC Variable Voltage Variable Frequency Microprocessor Based With Digital Closed-Loop Feedback	AC Variable Voltage Variable Frequency Microprocessor Based With Digital Closed-Loop Feedback
Power Characteristics:	480 Volts, 3 Phase, 60 Hertz Field Verify	Retain Existing
Stops:	7 Front	Retain Existing
Openings:	7 Front	Retain Existing
Floors Served:	1, 2 - 7 Front	Retain Existing
Entrance Size:	60" Wide X 108" High Field Verify	Retain Existing
Entrance Type:	Two Speed, Center Opening	Retain Existing

	Existing Equipment	Disposition
Door Operation:	Medium Speed, Heavy-Duty, Door Operator, Minimum Opening Speed 1-1/2 F.P.S., Front Only	High Speed, Heavy-Duty, Linear, Door Operator, Minimum Opening Speed 2-1/2 F.P.S., Alternate To Add Rear Entrance To Elevator Cab
Door Protection:	Infrared, Full Screen Device	3-Dimensional Infrared, Full Screen Device With Differential Timing, Nudging And Interrupted Beam Time
Safety:	Flexible Guide Clamp – Type B	Retain Existing
Guide Rails:	Planed Steel Tees	Retain Existing
Buffers:	Oil	Retain Existing, Refurbish
Car Enclosure:		New Car Interior Finishes Pad Buttons And Canvas Covered Pads Hooks Battery Powered Emergency Car Lighting. Provide Separate Constant Pressure Test Button In Car Service Compartment.
Signal Fixtures:		LED Illumination Contractor's Standard Assembly
Hall and Car Pushbutton Stations:		Single Hall Pushbutton Riser For Group, Single Car Operating Panel
Car Position Indicators:		Single Digital With Car Direction Arrows Firefighters' Control Panel
Hall Lanterns:		At All Floors With Volume Adjustable Electronic Chime Or Tone. Sound Twice For Down Direction With Predictive Function
Communication System:		Intercom With Distress Signa Self-Dialing, Vandal Resistant, Push To Call, Two-Way Communication System With Recall, Tracking And Voiceless Communication

Existing Equipment	Disposition
Additional Features, Car 4:	Car And Counterweight Roller Guides
	Car Top Inspection Station
	Firefighters' Service, Phase I And II, Including Alternate Floor Return
	Standby Power Transfer (Automatic To Main Floor) With Manual Override In Firefighters' Control Panel
	Accessibility And Emergency Medical Services Signage
	Fixed Car Return Panel Arranged For Integral Car Operating Panel
	Hoistway Access Switches, Top And Bottom Floors
	Hoistway Door Unlocking Device, All Floors
	Platform Isolation
	Load-Weighing Device
	Independent Service Feature
	Digital Video Display Provisions,
	Firefighters' Control Panel And Remote Wiring
	Machine, Power Conversion Unit, And Controller Sound Isolation
	Tamper Resistant Fasteners For All Fastenings Exposed To The Public
	One Year Warranty Maintenance With 24-Hour Call-Back Service
	Firefighters' Telephone Jack

Existing Equipment	Disposition
	Emergency Paging Speaker Installation
	No Visible Company Name Or Logo
	Wiring Diagrams, Operating Instructions, And Parts Ordering Information
	Monitoring System
	System Diagnostic Means And Instructions

	Existing Equipment	Disposition
Number:	Car 5	Retain Existing
Capacity:	4500 #	Retain Existing
Class Loading:	Passenger Class A	Retain Existing
Contract Speed:	110 F.P.M.	Retain Existing
Machine:	Hydraulic Pump	Replace With New Pumping Unit
Machine Location:	Above At 3rd Floor	Retain Existing
Operational Control:	Selective Collective 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:	2 Front	Retain Existing
Openings:	2 Front	Retain Existing
Floors Served:	1, 2 Front	Retain Existing
Entrance Size:	48" Wide X 84" High Field Verify	Retain Existing
Entrance Type:	Two Speed, Side Opening	Retain Existing

	Existing Equipment	Disposition
Door Operation:	Medium Speed, Heavy-Duty, Door Operator, Minimum Opening Speed 1-1/2 F.P.S.	High Speed, Heavy-Duty, Linear Door Operator, Minimum Opening Speed 2-1/2 F.P.S.
Door Protection:	Infrared, Full Screen Device	3-Dimensional Infrared, Full Screen Device With Differential Timing, Nudging And Interrupted Beam Time
hydraulic type:	Above Ground Twin Post Telescopic Plungers	Replace With New.
Guide Rails:	Omega Shaped Steel Rails	Retain Existing
Buffers:	Spring	Retain Existing
Car Enclosure:		New Car Interior Finish 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 Design Assembly
Hall and Car Pushbutton Stations:		Single Hall Pushbutton Riser Single Car Operating Panel
Car Position Indicators:		Single Digital With Car Direction Arrows Firefighters' Control Panel
In Car Lanterns:		Car Entrance Column With Volume Adjustable Electronic Chime Or Tone. Sound Twice For Down Direction Vandal Resistant Assembly
Communication System:		Self-Dialing, Vandal Resistant, Push To Call, Two-Way Communication System With Recall, Tracking And Voiceless Communication
Additional Features, Car 5:		Car Solid Slide Type Guides Car Top Inspection Station

Existing Equipment	Disposition
	Firefighters' Service, Phase I And II, Including Alternate Floor Return
	Battery Pack Standby Power Provision
	Accessibility And Emergency Medical Services Signage
	Swing Car Return Panel Arranged For Integral Car Operating Panel
	Hoistway Door Unlocking Device, All Floors
	Platform Isolation, Jacks To Platen Connections
	Independent Service Feature
	CCTV Provisions
	Firefighters' Control Panel And Remote Wiring
	Hydraulic Pump Unit, And Controller Sound Isolation
	Tamper Resistant Fasteners For All Fastenings Exposed To The Public
	One Year Warranty Maintenance With 24-Hour Call-Back Service
	Emergency Paging Speaker Installation
	No Visible Company Name Or Logo
	Wiring Diagrams, Operating Instructions, And Parts Ordering Information
	Monitoring System
	System Diagnostic Means And Instructions

ALTERNATES

- SCOPE
 - Provide material and labor required for complete execution of accepted alternates. Comply with all provisions of the Contract Documents.
 - Alternates:
 - Provide Destination Control Dispatching on the traction elevator group only.
 - Provide stainless steel #4 finish cladding and new landing door panels at all landings which currently have mirrored finishes.

MATERIAL AND HANDLING

- Site Condition Inspection
 - Prior to beginning installation of equipment, examine hoistway and machine room areas. Verify no irregularities exist which affect execution of work specified.
 - Do not proceed with installation until work in place conforms to project requirements.
- Product Delivery, Storage, and Handling
 - Deliver material in Contractor's original unopened protective packaging.
 - Store material in original protective packaging. Prevent soiling, physical damage, or moisture damage.
 - Protect equipment and exposed finishes from damage and stains during transportation, erection, and construction.
 - Allocate available site storage areas and coordinate their use with Purchaser and other Contractors.
 - Provide suitable temporary weather-tight storage facilities as may be required for materials that will be stored in the open.
- Installation Requirements
 - Install all equipment in accordance with Contractor's instructions, referenced codes, specification, and approved submittals.
 - Install machine room equipment with clearances in accordance with referenced codes and specification.
 - Install all equipment so it may be easily removed for maintenance and repair.
 - Install all equipment for ease of maintenance.
 - Install all equipment to afford maximum accessibility, safety, and continuity of operation.
 - Remove oil, grease, scale, and other foreign matter from the following equipment and apply one coat of field-applied machinery enamel.
 - All exposed equipment and metal work installed as part of this work which does not have architectural finish.
 - Machine room equipment, and pit equipment.
 - Neatly touch up damaged factory-painted surfaces with original paint color. Protect machine-finish surfaces against corrosion.

Manufacturer's Nameplates

- 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.
- 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.

Colors of Factory-Finished Equipment

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

Materials and Finishes

- Steel:
 - Sheet Steel (Furniture Steel for Exposed Work): Stretcher-leveled, cold-rolled, commercial quality carbon steel, complying with ASTM A366, matte finish.
 - Sheet Steel (for Unexposed Work): Hot-rolled, commercial quality carbon steel, pickled and oiled, complying with ASTM A568/A568M-03.
 - Structural Steel Shapes and Plates: ASTM A36.
- Stainless Steel: Type 302 or 304 complying with ASTM A240, with standard tempers and hardness required for fabrication, strength and durability. Apply mechanical finish on fabricated work in the locations shown or specified, Federal Standard and NAAMM nomenclature, with texture and reflectivity required to match Architect's sample. Protect with adhesive paper covering.
 - No. 4 Satin: Directional polish finish. Graining directions as shown or, if not shown, in longest dimension.
 - Textured: 5WL as manufactured by Rigidized Metals or Windsor pattern as manufactured by Rimex Metals or approved equal with .050 inches mean pattern depth with bright directional polish (satin finish).
 - Burnished: Non-directional, random abrasion pattern.
- Aluminum: Extrusions per ASTM B221; sheet and plate per ASTM B209.
- 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:
 - Exposed Surfaces: Color and texture selected by Architect.
 - Concealed Surfaces: Contractor's standard color and finish.
- Fire-Retardant Treated Plywood 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.
- 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.
- 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.
- Baked Enamel Finish: Prime finish per above. Unless specified "prime finish" only, apply and bake three (3) additional coats of enamel in the selected solid color.
- Entrance Support Equipment within Hoistway: Include strut angles, headers, sill support angles, fascia, hanger covers, etc. Clean, remove, and check for corrosive activity.

Replace components which exhibit severe deterioration. Tighten all fastenings. Repaint exposed surfaces with two coats of rust preventive primer.

CAR AND GROUP PERFORMANCE

- Car Speed: $\pm 3\%$ of contract speed under any loading condition.
- Car Capacity: Safely lower, stop and hold 125% of rated load.
- Car Stopping Zone: $\pm 1/4"$ under any loading condition.
- Door Opening Time: Seconds from start of opening to fully open:
 - Cars 1 - 3: 1.6 seconds.
 - Car 4: 2.0 seconds.
 - Car 5: 2.5 seconds.
- Door Closing Time: Seconds from start of closing to fully closed:
 - Cars 1 - 3: 2.4 seconds.
 - Car 4: 3.5 seconds.
 - Car 5: 4.0 seconds. Car Floor-to-Floor Performance Time: Seconds from start of doors closing until doors are 3/4 open (1/2 open for side opening doors) and car level and stopped at next successive floor under any loading condition or travel direction:
 - Cars 1- 3: 9.1 seconds.
 - Car 4: 12.8 seconds.
 - Car 5: 16.5 seconds.
 - Car Ride Quality:
 - 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.
 - Acceleration and Deceleration: Smooth constant and not less than and not more than 3 feet/second² with an initial ramp between 0.5 and 0.75 second.
 - Sustained Jerk: Not more than 6 feet/second³.
 - 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.
 - Noise and Vibration Control
 - Airborne Noise: Measured noise level of elevator equipment and its operation shall not exceed 60 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.
 - 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.
- OPERATION
 - Two Stop Collective Microprocessor-Based, Car 5 ONLY:

- Operate car without attendant from pushbuttons in car and located at each landing. Dispatch car when the car or hall pushbutton for a landing is pressed.
 - Retain calls registered when car is in transit, allow time for passenger transfer, and then dispatch to another hall call.
 - Illuminate appropriate pushbutton to indicate call registration. Extinguish light when call is answered.
- Group Automatic, Cars 1 - 4:
 - Approved microprocessor-based, group dispatch, car and motion control systems as follows:
 - KONE
 - Otis
 - Schindler
 - TKElevator
 - Fujitec
 - Elevator Controls Corp
 - MCE
 - Smartrise
 - GAL
- Include as a minimum, the following features:
 - Operate cars as a group capable of balancing service and providing continuity of group operation with one or more cars removed from the system.
 - Register service calls from pushbuttons located at each floor and in each car. Slow cars and stop automatically at floors corresponding to registered calls. Make stops at successive floors for each direction of travel irrespective of order in which calls are registered except when bypassing hall calls to balance and begin to close after passenger transfer. Cancel car calls in the same manner. Give priority to coincidental car and hall calls in car assignment. Operate system to meet changing traffic conditions on a service demand basis. Include provisions for handling traffic which may be heavier in either direction, intermittent or very light. As traffic demands change, automatically and continually modify group and individual car assignment to provide the most-effective means to handle current traffic conditions. Provide means to sense long-wait hall calls and preferentially serve them. Give priority to coincidental car and hall calls in hall call assignment.
 - Operate system to meet changing traffic conditions on a service demand basis. Include provisions for handling traffic which may be heavier in either direction, intermittent or very light. As traffic demands change, automatically and continually modify group and individual car assignment to provide the most-effective means to handle current traffic conditions. Provide means to sense long-wait hall calls and preferentially serve them. Give priority to coincidental car and hall calls in hall call assignment. Accomplish car direction reversal without closing and reopening doors.
 - Use easily reprogrammable system software. Design basic algorithm to optimize service based on equalizing system response to registered hall calls and equalizing passenger trip time to shortest possible time.
 - Serve floors below main floor in a manner which logically minimizes delay in passing or stopping at main floor in both directions of travel. Provide manual means to force a stop at the main floor when passing to or from lower levels.
 - Required Features:
 - Dispatch Protection: Backup dispatching shall function in the same manner as the primary dispatching.

- Delayed Car Removal: Automatically remove delayed car from group operation.
 - Position Sensing: Update car position when passing or stopping at each landing.
 - Hall Pushbutton Failure: Provide multiple power sources and separate fusing for pushbutton risers.
 - Communication link: Provide serial or duplicate communication link for all group and individual car computers.
- IF ALTERNATE a IS SELECTED Destination-Based Group Operation, Cars 1 - 4:
 - Approved microprocessor-based, group dispatch with artificial intelligence car and motion control systems as follows:
 - KONE: Resolve w Destination Control Solutions
 - Otis: Compass Destination
 - Schindler: Port Destination Dispatch
 - TKElevator: AGILE Destination Dispatch
 - Fujitec: Destination Dispatch
 - Elevators operate via selection of destination floor from input stations (keypads or touch screens) at each floor.
 - Operate cars as a group, capable of balancing service and providing continuity of group operation with one or more cars removed from the system.
 - Direct passengers to board a specific car that has been assigned to stop at the destination floor selected at the hall controls.
 - Assign multiple passengers selecting the same destination floors to the same elevator limiting the number of car stops per round trip.
 - Passengers enter their desired destination floor input stations provided at each boarding floor. System acknowledges destination floor entry displaying the requested floor number in a display immediately above the keypad or after selection on a touchscreen. After the destination is displayed, the assigned car identifier is displayed together with an indication of the location of the specific elevator. Provide voice annunciation capability for at each input station and each car destination indicator.
 - Each elevator is assigned an alphabetic character identifier.
 - All floors are designated by numerals or alphabetic characters.
 - Determine car assignments based on traffic conditions by continuously monitoring:
 - Quantity, location, and duration of destination calls placed.
 - Weight of current load in the elevator.
 - Number of passengers assigned to each car.
 - Car position, speed, and direction of travel.
 - Field programed maximum allowed walking time from each input station location to the assigned elevator.
 - Firefighters' Emergency Operation and other life safety features override any normal dispatching and card reader security operation.
 - Accessibility: In addition to the keypads/touch screens, provide each floor input station with a push button identified with the International Symbol for Accessibility. This button initiates special accessibility operation. When accessibility button is pressed the following sequence of operation occurs:
 - The floor destination is registered by the passenger using the conventional input station procedure.
 - Car allocation is confirmed both visually and by a second tone that is repeated at the car destination indicator of the car assigned that call upon arrival. The floor annunciator is illuminated and flashes to coincide with the audible signal at the input terminal confirming to partially sighted and blind persons which car has been assigned.
 - The allocated car will be selected based on:

- Available space inside the car to permit a wheelchair user to board.
 - ETA of the car in relation to extended accessibility transit time from the input station to the assigned car.
 - Preference for no exiting passenger for the boarding floor.
 - Upon arriving at the boarding floor and after opening the doors, car destination indicator audibly announces the status of the doors and automatically extends the dwell (non-interference) time by five seconds (variable) to permit safe access. Control system will initiate a slow closing of the doors.
 - Upon arrival at the destination floor audibly announce the floor number followed by confirmation of door open status.
 - After the extended door dwell time, the car returns to normal service.
- Other required features:
 - False Call Cancel: Cancel destination floor assignment if door reopening device is not activated upon car arrival to pick up a passenger assigned to that destination floor.
 - Dispatch Protection: Backup dispatching functions in the same manner as primary dispatching.
 - Delayed Car Removal: Automatically remove delayed car from group operation.
 - Position Sensing: Update car position when passing or stopping at each landing.
 - Keypad/Touchscreen Failure:
 - Provide multiple power sources and separate fusing for car registration risers.
 - Keypad/Touchscreen back-up power provided by Uninterruptable Power Supply and the building Emergency power system if provided, similar to back-up dispatching system, until such time as normal power has been restored or Emergency power has been provided.
 - Communication Link: Provide serial or duplicate communication link for all group and individual car computers.
 - Other Items:
 - Load Weighing: Provide means for weighing car passenger load. Control system to provide dispatching at main floor in advance of normal intervals when car fills to capacity. Provide hall call by-pass when the car is filled to preset percentage of rated capacity and traveling in down direction. Field adjustment range: 10% to 100%.
 - ELEVATOR 5 ONLY: 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.
 - Anti-Nuisance Feature: If car loading relative to weight in car is not commensurate with number of registered car calls, cancel car calls. Systems employing either load weighing or door protective device for activation of this feature are acceptable.
 - 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.
 - Car-to-Lobby Feature: Provide the means for automatic return to the 1st floor. Return car nonstop after answering pre-registered car calls, and park with doors open for an adjustable time period of 60-90 seconds. Upon expiration of time period, car shall automatically revert to normal operation and close its doors until assigned as next car or until the car is placed on manual control via in-car attendant or out-of-service switch.
 - Firefighters' Service: Provide equipment and operation in accordance with Code requirements.

- 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, hoist rope slippage, or stretch.
- Remote Monitoring and Diagnostics: Equip each controller and the group dispatch logic 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 monitor that continually scan and display the status of each car and call.
- TRACTION ONLY: Motion Control: Microprocessor based AC, variable-voltage, variable frequency with digitally encoded closed-loop velocity feedback suitable for operation specified and capable of providing smooth, comfortable car acceleration, retardation, and dynamic braking. Limit the difference in car speed between full load and no load to not more than $\pm 3\%$ of the contract speed.
- ELEVATOR 5 ONLY: 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.
- 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. Provide "heavy door/variable air pressure" feature for consistent specified door operation within appropriate speed and inertia limits.
- 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 5-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.
- Standby Power Operation: Upon loss of normal power, adequate standby power will be supplied via building electrical feeders to simultaneously start and run one car in each group and single cars at contract car speed and capacity.
- Automatically return one car at a time in each group and single car(s) nonstop to designated floor, open doors for approximately 3.0 seconds, close doors, and park car. During return operation, car and hall call pushbuttons shall be rendered inoperative. As each car parks, system shall immediately select the next car until all cars in a group have returned to the designated floor. If a car fails to start or return within 30 seconds, system shall automatically select the next car in the group to automatically return.
- When all cars in a group have returned to the designated floor, one car in each group shall be designated for automatic operation. When a service demand exists for 30 seconds and designated car fails to start, next available car in the group shall be automatically selected for operation.
- Provide separate group selection switch in firefighters' control panel.
 - Switch shall be labeled "STANDBY POWER OVERRIDE" with positions marked "AUTO" and appropriate car numbers controlled by each respective switch. Key shall be keyed same as key utilized for firefighters' Phase I and II key switch. Key shall be removable in "AUTO" position only.

- Switch shall override automatic return and automatic selection functions and cause the manually selected car to operate. Manual selection shall cause car to start and proceed to designated floor and open and close its doors before standby power is manually transferred to next selected car.
 - Provide "STANDBY POWER" indicator lights, one per car, in firefighters' control panel. Indicator light illuminates when corresponding car is selected, automatically or manually, to operate on standby power.
- Successive Starting: When normal power is restored or there has been a power interruption, individual cars in each bank shall restart at five second intervals.
 - Card/Proximity Reader Security System: Provide provisions in 1st floor hall stations for all elevators for reader unit. Mount reader unit in 1st floor hall station behind smoked glass lens and cross connect from hall pushbuttons to control module in machine room. Reader control unit, mounting brackets, wiring materials, logic circuits, etc., by Security Subcontractor. Elevator control systems shall facilitate system tracking of persons accessing secure floors via printout by passenger I.D. number, floor accessed, and time of entry.
 - Flood Operation, All Cars:
 - Provide the following operation:
 - Upon activation of pit flood devices, elevators shall automatically recall to the first level located above the 2nd floor.
 - Once car has arrived, doors shall open and remain open for the duration of the flood event
 - Hall signage shall remain illuminated indicating that the elevators are out of service.
 - Elevator is to remain out of service until flood devices have been manually reset, and all damage to elevator, hoistway, or affected components, have been fully evaluated and/or repaired, as needed.
 - Car Light and Fan Timer: Provide necessary logic and power relay to allow car lights and fan to turn off.
 - Pushbutton Crossover Network: Provide an interim crossover network to interface new and old group supervisory systems for purposes of cross cancellation of registered car and hall calls until modernization of individual group is complete.

MACHINE ROOM EQUIPMENT

- Arrange equipment in existing machine room spaces.
- ELEVATORS 1 – 4 ONLY: Geared Traction Hoist Machine:
 - Single worm geared or helical geared traction type with AC induction or P.M.S.M. ACV3F motor, brake, gear, drive shaft, deflector sheave, and gear case mounted in proper alignment on an isolated bedplate. Provide bedplate blocking to elevate deflector sheave above machine room floor.
 - Provide hoist machine mounted direct drive, digital, closed-loop velocity encoder.
 - Provide hoist machine drip pans to collect lubricant seepage.
- Solid State Power Conversion and Regulation Unit:
 - Provide solid state, alternating current, variable voltage, variable frequency (ACV3F), I.G.B.T. converter/inverter drives.

- Design unit to limit current, suppress noise, and prevent transient voltage feedback into building power supply. Provide internal heat sink cooling fans for the power drive portion of the converter panels. Conform to IEEE standards 519-1992 for line harmonics and switching noise.
 - Isolate unit to minimize noise and vibration transmission. Provide isolation transformers, filter networks, and choke inductors.
 - Suppress solid-state converter noises, radio frequency interference, and eliminate regenerative transients induced into the mainline feeders or the building standby power generator.
 - Supplemental direct-current power for the operation of hoist machine brake, door operator, dispatch processor, signal fixtures, etc., from separate static power supply.
- Encoder: Direct drive, solid-state, digital type. Update car position at each floor and automatically restore after power loss.
 - ELEVATOR 5 ONLY: Pump Unit: Assembled submersible 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. Provide SCR soft start with closed transition. Design unit for 80 upstarts/hour.
 - Controller: UL/CSA labeled.
 - 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.
 - 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 carry high inductive currents shall be provided with arc deflectors or suppressors.
 - Microprocessor-Related Hardware:
 - Provide built-in noise suppression devices which provide a high level of noise immunity on all solid-state hardware and devices.
 - Provide power supplies with noise suppression devices.
 - Isolate inputs from external devices (such as pushbuttons) with opto-isolation modules.
 - Design control circuits with one leg of power supply grounded.
 - Safety circuits shall not be affected by accidental grounding of any part of the system.
 - System shall automatically restart when power is restored.
 - System memory shall be retained in the event of power failure or disturbance.
 - Equipment shall be provided with Electro Magnetic Interference (EMI) shielding within FCC guidelines.
 - Wiring: CSA labeled copper for factory wiring. Neatly route all wiring interconnections and securely attach wiring connections to studs or terminals.
 - Permanently mark components (relays, fuses, PC boards, etc.) with symbols shown on wiring diagrams.
 - 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.

- Provide controller or machine mounted auxiliary, lockable "open," disconnect if mainline disconnect is not in sight of controller and/or machine.
- Sleeves and Guards: Provide 2" steel angle guards around cable or duct slots through floor slabs or grating. Provide rope and smoke guards for sheaves, cables, and cable slots in machine room.
- Machine and Equipment Support Beams: Retain existing in place. Provide all required supplemental supports and attachments.
- Governor: Centrifugal-type, car driven machine room mounted with pull-through jaws and bi-directional shutdown switches. Provide required bracketing and supports for attachment to building structure.
- ELEVATORS 1 – 4 ONLY: Emergency Brake:
 - Provide means to prevent ascending car over-speed and unintended car movement per Code.
 - Acceptable emergency brake devices:
 - BODE Rope Brake
 - Hollister-Whitney Rope Gripper
- Mount the auxiliary brake on suitable structural steel supports. Provide a drawing showing the supports, stamped by Professional Engineer verifying the adequacy of the support provided.
- Provide control circuits to enable the device to function as required by Code.
- ELEVATOR 5 ONLY: Muffler: Provide in discharge oil line near pump unit. Design shall dampen and absorb pulsation and noise in the flow of hydraulic fluid.
- ELEVATOR 5 ONLY: Piping and Oil: Provide piping, connections and oil for the system. A minimum of two (2) 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.
- ELEVATOR 5 ONLY: Shutoff Valve: Manual valve in line adjacent to pump unit. Provide second valve in pit adjacent to jack units.

HOISTWAY EQUIPMENT

- Guide Rails: Retain main and counterweight guide rails in place.
 - Clean rails and brackets. Remove rust.
 - Check all rail and bracket fastenings and tighten.
 - Realign rails as required to provide smooth car ride.
 - Provide supplemental rail brackets and/or backing as required by Code or to enhance car ride quality.
- ELEVATORS 1- 4 ONLY: Buffers, Car, and Counterweight: Oil type with blocking and support channels. Provide switch on buffer to limit car speed if buffer is compressed.
- ELEVATOR 5 ONLY: Buffers: Spring type with blocking and support channels.

- Sheaves: Machined grooves and sealed bearings. Provide mounting means to machine beams, machine bedplate, car and counterweight structural members, or building structure.
- Counterweight: Retain existing. Retrofit spring dampening roller guide shoes.
- Counterweight Guard: Metal guard in pit. Retain existing.
- Governor Rope and Encoder Tape Tensioning Sheaves: Mount sheaves and support frame on pit floor or guide rail. Provide frame with guides or pivot point to enable free vertical movement and proper tension of rope and tape.
- Hoist and Governor Ropes:
 - 8 x 19 or 8 x 25 Seale construction, traction steel type. Fasten with staggered length, adjustable, spring isolated wedge type shackles.
 - Governor rope to suit Contractor's specification.
- ELEVATOR 5 ONLY: Hydraulic Jack Assembly:
 - 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.
 - Plungers: Multi stage. Polished seamless steel tubing or pipe.
 - Provide dual jack holeless application.
- Terminal Stopping: Provide normal and final devices.
- Electrical Wiring and Wiring Connections:
 - 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. Provide four pair of spare shielded communication wires in addition to those required to connect specified items. Tag spares in machine room.
 - Conduit: Painted or galvanized steel conduit, EMT, or duct. Conduit size, 1/2" minimum. Flexible heavy-duty service cord may be used between fixed car wiring and car door switches for door protective devices.
 - Traveling Cables: Flame and moisture-resistant outer cover. Prevent traveling cable from rubbing or chafing against hoistway or equipment within hoistway. Provide five (5) pair of shielded wires and two (2) RG-6/U type coaxial cables for card reader. Provide two (2) RG-6/U coaxial CCTV cables within traveling cable from car controller to car top, plus 3'-0" excess loop at both ends. Provide two (2) pair 14 gauge wire for CCTV power.
 - Auxiliary Wiring: Connect fire alarm initiating devices, emergency two-way communication system, firefighters' phone jack, paging speaker, CCTV, digital video display, card reader, intercom, and announcement speaker and/or background music in each car controller in machine room.
- Entrance Equipment: Retain existing. Refurbish/replace and adjust assemblies to ensure smooth and quiet mechanical open and close of doors.
 - Door Hangers and Rollers: Replace as required.
 - Door Track: Refurbish and/or replace as required.
 - Door Interlocks: Refurbish and/or replace as required. Relocate interlocks on elevator 4 to be above the landing door entrances.
 - Door Closers: Replace with new.

- Hoistway Door Unlocking Device: Provide unlocking device with escutcheon in door panel at all floors, with finish to match adjacent surface.
- Hoistway Access Switches: Mount in existing locations at the top and bottom landings. Provide switch with faceplate.
- 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.

HOISTWAY ENTRANCES

- Frames: Retain existing. Clad all mirrored stainless-steel entrance frames with #4 stainless steel cladding.
- Transom Panels: Retain existing at all levels. Clad all mirrored stainless-steel panels with #4 stainless steel cladding.
- Door Panels: Retain existing painted panels. Provide new door gibs with fire tabs at all floors. Minimum two gibs per panel, one at leading edge, and one at trailing edge of each panel
- Door Panels: Provide new panels to replace the existing landing door panels which are mirrored stainless steel. 16-gauge steel, sandwich construction without binder angles. Provide leading edges of center-opening doors with rubber astragals. Provide a minimum of two (2) 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. Finish of new panels to be #4 stainless steel.
- Sight Guards: Retain existing painted sight guards. Replace any damaged sight guards with new finish to match existing paint color.
- Sight Guards: Provide new sight guards to replace the existing sight guards which are mirrored stainless steel 14-gauge, same material and finish as hoistway entrance door panels. Construct without sharp edges.
- Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
- Sill Supports: Retain existing. Check and tighten all fastenings.
- Fascia, Toe Guards, and Hanger Covers: Retain existing. Provide as required where damaged or missing. Check and tighten all fastenings.
- Struts and Headers: Retain existing. Check and tighten all fastenings.

CAR EQUIPMENT

- Frame: Retain Existing. Check and tighten all fastenings.
- Safety Device: Retain existing. Check and tighten all fastenings. Disassemble, clean, and inspect components. Replace all worn or damaged parts. Reassemble and test for proper operation.
- Platform: Retain existing. Reinforce if required. Check and tighten all fastenings.

- Platform Apron: Provide new extended platform apron to meet Code. Minimum 14-gauge steel, reinforced and braced to car platform with Contractor's standard finish.
- ELEVATORS 1 – 4 ONLY: Guide Shoes: Roller type with three or more spring dampened, sound-deadening rollers per shoe. Maximum roller rotation speed, 350 r.p.m.
- ELEVATOR 5 ONLY: Guide Shoes: Solid type with renewable inserts.
- Finish Floor Covering:
 - Cars 1- 4: VCT type to be selected by Purchaser.
 - Car 5: 1/4" thick aluminum checker plate over marine plywood sub-floor.
- Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
- Doors: Provide as specified for hoistway entrance doors.
- Door Hangers: Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.
- Door Track: Bar or formed, cold-drawn removable steel track with smooth roller contact surface.
- Door Header: Construct of minimum 12 gauge steel, shape to provide stiffening flanges.
- Door Electrical Contact: Prohibit car operation unless car door is closed.
- Door Clutch: Retain existing. Check and tighten all fastenings
- Restricted Opening Device: Restrict opening of car door outside unlocking zone. Plunger type restrictors not acceptable.
- Door Operator: High speed, heavy-duty, linear door operator capable of opening doors at no less than 2-1/2 f.p.s. Accomplish reversal in no more than 2-1/2" of door movement. Provide solid-state door control with closed loop circuitry to constantly monitor and automatically adjust door operation based upon velocity, position, and motor current. Maintain consistent, smooth, and quiet door operation at all floors, regardless of door weight or varying air pressure. Acceptable closed-loop door operators:
 - KONE
 - Otis
 - Schindler
 - ThyssenKrupp
 - GAL
- Door Control Device:
 - Infrared Reopening Device: Black fully enclosed device with full screen infrared matrix or multiple beams extending vertically along leading edge of each door panel to minimum height of 7'-0" above finished floor. Provide housing and lens additional beams full height of door panels. 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.
 - Acceptable Infrared 3D Reopening Device:
 - JANUS Panachrome with Smart 3D
- 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.

- 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.
- Differential Door Time: Provide separately adjustable timers to vary time that doors remain open after stopping in response to calls.
 - Car Call: Hold open time adjustable between 3.0 and 5.0 seconds.
 - Hall Call: Hold open time adjustable between 5.0 and 8.0 seconds. Use hall call time when car responds to coincidental calls.

ELEVATORS 1 – 4 ONLY: Car Operating Panel:

- One car operating panel with faceplate, consisting of a metal box containing operating fixtures, mounted behind the car stationary front return panels. Faceplate shall be hinged and constructed of stainless steel, satin finish.
- 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 recessed flush rear mounted. Configure plates per local building code accessibility standards including Braille. Locate operating controls no higher than 48" above the car floor; no lower than 35" for emergency push-to-call button and alarm button.
- Provide minimum 3/4" diameter raised floor pushbuttons which illuminate to indicate call registration.
- Provide alarm button to ring bell located on car. Illuminate button when actuated.
- Provide keyed stop switch at bottom of car operating panel in locked car service compartment. Mark device to indicate "run" and "stop" positions.
- Provide "door open" button to stop and reopen doors or hold doors in open position.
- 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.
- Provide firefighters' Phase II key switch with engraved instructions filled red. Include light jewel, buzzer and call cancel button.
- Install firefighters' telephone jack with approved mounting bezel matching adjacent controls.
- Provide lockable service compartment with recessed flush door. Door material and finish shall match car return panel or car operating panel faceplate.
- Include the following controls in lockable service cabinet with function and operating positions identified by permanent signage or engraved legend:
 - Hoistway Enable switch.
 - Light switch.
 - Three-position exhaust blower switch.
 - Independent service switch.
 - Constant pressure test button for battery pack emergency lighting.
 - 120-volt, AC, GFCI protected electrical convenience outlet.
 - Card reader override switch.
 - Stop switch.
 - Switch to select either floor voice annunciation, floor passing tone, or chime.
- Provide black paint filled (except as noted), engraved, or approved etched signage as follows with approved size and font:
 - Phase II firefighters' operating instructions on main operating panel above corresponding key switch filled red.
 - Car number on main car operating panel.

- "No Smoking" on main car operating panel.
- Car capacity in pounds on service compartment door.
- ELEVATOR 5 ONLY: Car Operating Panel:
 - One car operating panel without faceplate, consisting of a metal box containing vandal resistant operating fixtures, mounted behind the car pivoting front return panel. Faceplate shall be hinged and constructed of stainless steel, satin finish.
 - 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 recessed flush rear mounted. Configure plates per local building code accessibility standards including Braille. Locate operating controls no higher than 48" above the car floor; no lower than 35" for emergency push-to-call button and alarm button.
 - Provide minimum 3/4" diameter raised floor pushbuttons which illuminate to indicate call registration.
 - Provide alarm button to ring bell located on car. Illuminate button when actuated.
 - Provide keyed stop switch at bottom of car operating panel in locked car service compartment. Mark device to indicate "run" and "stop" positions.
 - Provide "door open" button to stop and reopen doors or hold doors in open position.
 - Extended Door Hold Open Button: Provide button to extend normal door hold open period up to 30 seconds. Cancel extended time by registration of car call or actuation of door close button. When activated, illuminate the door hold open button and the door close button. Cancel the hold open time when the door close button is activated. If a hall call is entered at another floor, sound a buzzer to indicate call waiting is activated.
 - 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.
 - Provide firefighters' Phase II key switch with engraved instructions filled red. Include light jewel, buzzer, and call cancel button.
 - Provide lockable service compartment with recessed flush door. Door material and finish shall match car return panel or car operating panel faceplate.
 - Include the following controls in lockable service cabinet with function and operating positions identified by permanent signage or engraved legend:
 - Hoistway enable switch.
 - Light switch.
 - Three-position exhaust blower switch.
 - Independent service switch.
 - Constant pressure test button for battery pack emergency lighting.
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 - Card reader override switch.
 - Stop switch.
 - Switch to select either floor voice annunciation, floor passing tone, or chime.
- Provide black paint filled (except as noted), engraved, or approved etched signage as follows with approved size and font:
 - Phase II firefighters' operating instructions on main operating panel above corresponding keyswitch filled red.
 - Car number on main car operating panel.
 - "No Smoking" on main car operating panel.
 - Car capacity in pounds on service compartment door.
- Car Top Control Station: Mount to provide safe access and utilization while standing in an upright position on car top.

- Work Light and Duplex Plug Receptacle: GFCI protected outlet at top and bottom of car. Include on/off switch and lamp guard. Provide additional GFCI protected outlet on car top for installation of car CCTV & digital video display.
- Communication System:
 - "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.
 - "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.
 - Provide "Push to Call" button tactile symbol, engraved signage, and Braille adjacent to button mounted integral with car front return panel.
 - Firefighters' telephone jack in car and firefighters' panel, with four shielded wires to machine room junction box. Jack bezel shall match adjacent controls.
 - Install remote speakers provided under Item 1.01, E., 1, in car behind front return panel with drilled speaker pattern, with shielded wiring to machine room junction box.
 - Provide two-way communication between car and machine room if required.

CAR ENCLOSURE

- Car Enclosure Passenger Elevators 1 - 4: 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.
 - Front Return Panels: Reinforced 14-gauge stainless steel satin finish with cutouts for car operating panel and other equipment.
 - Entrance Columns: Reinforced 14-gauge stainless steel satin finish.
 - Transom: Reinforced 14-gauge stainless steel satin finish full width of enclosure.
 - Car Door Panels: Reinforced minimum 16 gauge stainless steel satin finish. Same construction as hoistway door panels.
 - Interior Wall Finish: Removable panels, faced and edged, with color core plastic laminate. Color and finish as selected by Purchaser.
 - Ventilation: Two-speed OE exhaust blower mounted to car canopy on isolated rubber grommets. Exhaust blower shall meet requirements of Item 2.03, H.
 - Lighting: Provide direct LED fixtures with wiring and hookup. Coordinate with emergency lighting requirements. Provide emergency lighting integral with portion of normal car lighting system. Include required transformer.
 - Suspended Ceiling: Special design included in allowance in Item 9 above.
 - Handrails: Minimum 1-1/4" diameter stainless steel tubular grab bar across rear wall.
- Car Enclosure Service Elevator 5: Provide complete as specified herein. Provide the following features.
 - Shell: Retain existing.
 - Canopy: Retain existing.
 - Front Return Panels: Retain existing.
 - Entrance Columns and Transom: Retain existing.
 - Car Door Panels: Reinforced minimum 16-gauge stainless steel textured finish as specified in Item 2.02. Same construction as hoistway door panels. Architectural metal cladding shall wrap around leading and trailing edge of panel and return a minimum of 1/2" on rear side of leading edge of panels.

- Ventilation: Two-speed exhaust blower mounted to car canopy on isolating rubber grommets. Provide with a diffuser and grille.
- Lighting: Retain existing.
- Handrails/Guardrails: Retain existing.

HALL CONTROL STATIONS

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

SIGNALS

- Hall Lantern: Retain existing at all floor. Retrofit tone device. Illuminate up or down lights and sound tone, twice for down direction travel, prior to car arrival at floor. Sound level to be adjustable from 20 - 80 dBA measured at 5'-0" in front of hall pushbutton and 3'-0" off floor. Illuminate light until the car doors start to close. Provide advanced hall lantern notification to comply with ADA hall call notification time.
- Digital Video Display, Cars 1 – 4: Provide JANUS IS2LX digital, wireless, flat panel active matrix video display screen in main car front return panel. Provide site programmable, system control unit, upload interface, antenna, and all required monitoring hardware, shielded wiring or fiber optic cabling and power source wiring, etc. Coordinate installation details, including required cut-outs and video display mounting provisions in car front return panels. Provide 12" video display units.
- 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.
- Hall Position Indicator, Cars 1 - 4: 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. Mount integral with hall lanterns at 1st floor.
- Faceplate Material and Finish: Stainless steel Satin finish all fixtures.
- 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.
- Voice Synthesizer: Provide electronic device with easily reprogrammable message and female voice to announce car direction, floor, emergency exiting instructions, etc.

GROUP CONTROL AND DISPLAY PANEL

- Firefighters' Control Panel: Locate in building fire control room. Fixture faceplate, stainless steel satin finish, including the following features:
 - Car position and direction indicator (digital-readout or color SVGA display type). Identify each position indicator with car number.

- Indicator showing operating status of car.
 - Manual car standby power selection switches and power status indicators.
 - Two-position firefighters' emergency return switches and indicators with engraved instructions filled red.
 - Firefighters' telephone jack.
- Fixtures and monitor shall be located as directed by Architect. Where applicable, identify all indicators and manual switches with appropriate engraving. Provide conduit and wiring to control panel.
 - Machine Room Display Unit: Provide groups of elevators with a machine room color SVGA monitor. As a minimum, SVGA monitor shall display the following functions:
 - Car operating in normal/standby power.
 - Car position and direction of travel.
 - Car calls.
 - Hall calls.
 - Operating mode.
 - Door status.
 - Delayed car.
 - Load weighing and by-pass.
 - Car to lobby feature.
 - Car in/out of service.
 - Card reader override. Individual car on/off provisions.
 - Machine Room Monitoring System: Provide on-site monitoring capability for Cars 1 - 4
 - Accumulate hall call registration information as part of monitoring capability. Provide memory capacity for at least the preceding five, 24-hour periods, in blocks of 5 or 15-minute segments, running hour to hour (i.e., 2:00 p.m. to 3:00 p.m.) Provide battery backup to prevent loss of accumulated data due to loss of normal power.
 - Accumulate information for retrieval and use as follows:
 - Visual and printed summary of hall call registration events by floor, direction, and duration, totaled in 5- or 15-minute segments during any 60-minute block using an internal clock.
 - Visual and printed summary of hall call registration duration averaged for 5 or 15 minute and hourly periods.
 - Visual and printed summary of percentage of hall calls answered within 30 and 60 seconds in each 5- or 15-minute and hourly periods.
 - Visual and printed summary of time periods during which individual cars are not in group operation (operating separately or out of service).
 - Accumulate system fault data including nature of fault, time, and day. Store and retrieval capabilities for minimum 30-day period.
 - Provide printer and interface with elevator microprocessor control in the machine room to download data and/or produce a hard copy of stored data. Provide directions and software to accomplish information retrieval.

EXECUTION

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

- PRODUCT DELIVERY, STORAGE, AND HANDLING
 - Deliver material in Contractor's original, unopened protective packaging.
 - Store material in original protective packaging. Prevent soiling, physical damage, or moisture damage.
 - Protect equipment and exposed finishes from damage and stains during transportation, erection, and construction.

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

- FIELD QUALITY CONTROL
 - 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.
 - Have Code Authority acceptance inspection performed and complete corrective work.

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

- CLEANUP & PAINTING
 - Keep work areas orderly and free from debris during progress of project. Remove packaging materials on a daily basis.
 - Remove all loose materials and filings resulting from work.
 - Clean machine room equipment and floor.
 - Paint machine room and pit floors with high quality, deck grey enamel.
 - Clean hoistways, car, car enclosure, entrances, operating and signal fixtures.

- CONSULTANT'S FINAL OBSERVATION AND REVIEW REQUIREMENTS
 - 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.
 - 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.

- Furnish labor, materials, and equipment necessary for Consultant's review. Notify Consultant five (5) working days in advance when ready for final review of elevator or group of elevators.
- 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:
 - Workmanship and equipment compliance with Contract Documents.
 - Contract speed, capacity, floor-to-floor, and door performance comply with Contract Documents.
 - Performance of following is satisfactory:
 - Starting, accelerating, running
 - Decelerating, stopping accuracy
 - Door operation and closing force
 - Equipment noise levels
 - Signal fixture utility
 - Overall ride quality
 - Performance of door control devices
 - Operations of emergency two-way communication device
 - Operations of firefighters' service
- Test Results:
 - In all test conditions, obtain specified contract speed, performance times, stopping accuracy without re-leveling, and ride quality to satisfaction of Purchaser and Consultant. Tests shall be conducted under both no load and full load condition.
 - Temperature rise in motor windings limited to 50° Celsius above ambient. A full-capacity one (1) hour running test, stopping at each floor for ten (10) seconds in up and down directions, may be required.
- Performance Guarantee: Should Consultant's review identify defects, poor workmanship, variance or noncompliance with requirements of specified codes and/or ordinances, or variance or noncompliance with the requirements of Contract Documents, Contractor shall complete corrective work in an expedient manner to satisfaction of Purchaser and Consultant at no cost as follows:
 - Replace equipment which does not meet code or Contract Document requirements.
 - Perform work and furnish labor, materials, and equipment necessary to meet specified operation and performance.
 - Perform retesting required by governing code authority, Purchaser and Consultant.
- 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.
- PURCHASER'S INFORMATION
 - Provide three sets of neatly bound written information necessary for proper maintenance and adjustment of equipment within 30 days following final acceptance. Final retention will be withheld until data is received by Purchaser and reviewed by Consultant. Include the following as minimums:

- 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.
 - 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.
 - Provide any necessary interface cards required for equipment maintenance, code mandated testing, and troubleshooting.
 - Lubrication instructions including recommended grade of lubricants.
 - Parts catalogs for all replaceable parts including ordering forms and instructions.
 - Four sets of keys for all switches and control features properly tagged and marked.
 - Neatly bound instructions explaining all operating features including all apparatus in the car and lobby control panels.
 - 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.
 - 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.
- Non-Proprietary Equipment Design: Provide three sets of neatly bound written information necessary for proper maintenance and adjustment for equipment of within 30 days following final acceptance. Final retention will be withheld until data is received by Purchaser and reviewed by Consultant. Include the following as minimums:
 - Straight-line wiring diagrams of "as-installed" elevator circuits, with index of location and function of components. Provide one set reproducible master. Mount one set wiring diagrams on panels, racked, or similarly protected, in elevator machine room. Provide remaining set rolled and in a protective drawing tube. Maintain all drawing sets with addition of all subsequent changes. These diagrams are Purchaser's property. A legend sheet shall be furnished with each set of drawings to provide the following information:
 - Name and symbol of each relay, switch, or other apparatus.
 - Location on drawings, drawing sheet number and area, and location of all contacts.
 - Location of apparatus, whether on controller or on car.
 - 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.
 - Printed instructions explaining all operating features.
 - Complete software documentation for all installed equipment.
 - Lubrication instructions, including recommended grade of lubricants.
 - Parts catalogs listing all replaceable parts including Contractor's identifying numbers and ordering instructions.
 - Four sets of keys for all switches and control features properly tagged and marked.

- Diagnostic test devices together with all supporting information necessary for interpretation of test data and troubleshooting of elevator system, and performance of routine safety tests.
 - The elevator installation shall be a design which can be maintained by any licensed elevator maintenance company employing journeymen mechanics, without the need to purchase or lease additional diagnostic devices, special tools, or instructions from the original equipment Manufacturer.
 - Provide onsite capability to diagnose faults to the level of individual circuit boards and individual discreet components for the solid state elevator controller.
 - Provide a separate, detachable device, as required to the Purchaser as part of this installation if the equipment for fault diagnosis is not completely self-contained within the controller. Such device shall be in possession of and become property of the Purchaser.
 - Installed equipment not meeting this requirement shall be removed and replaced with conforming equipment at no cost to the Purchaser.
 - Provide upgrades and/or revisions of software during the progress of the work, warranty period and the term of the ongoing maintenance agreement between the Purchaser and Contractor.
- Preventive Maintenance Contract: Furnish properly executed contract for continuing, preventive maintenance. Utilize contract form herein provided, Vertical Transportation Preventive Maintenance Contract.
 - 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
 Lerch Bates, Inc.
 Elevator Consulting Group

SECTION 003100

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SECTION 003100 –
QUOTATION FORM

DATE: August 18, 2021

PROJECT: HCAD Headquarters Building
13013 Northwest Freeway
Houston, Texas 77040

SUBMITTED BY:

Name of CONTRACTOR

CONTRACTOR'S Representative

Telephone Number

Street Address

City

State

Zip Code

PART 1 – GENERAL

1.1 CONTRACTOR'S BASE QUOTATION

- A. Having examined documents prepared by Lerch Bates Inc. dated August 18, 2021, and having reviewed site conditions, applicable codes and all conditions affecting and governing the work, the Undersigned Contractor hereby offers to provide all engineering, labor, materials, transportation, services and equipment necessary and incidental to properly execute required work of the Contract Documents for the sum of:

ITEM 1: Modernize Passenger Elevators 1 - 4:

\$

ITEM 2: Modernize Service Elevator 5:

_____ \$

ITEM 3: Related Work:

_____ \$

ITEM 4: Total of Items 1-3:

_____ \$

B. Maintenance:

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

Passenger Elevators 1- 4: \$ _____/Month/Unit

Service Elevator 5: \$ _____/Month/Unit

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

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

Total Included in Item \$

A. _____

Passenger Elevators 1- 4: \$ _____/Month

Service Elevator 5: \$ _____/Month

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

3. Contract Maintenance: We agree to provide continuing preventive maintenance as required by Owner's five-year contract included with these specifications Section 143250 at a charge per month as follows:

Passenger Elevators 1 - 4: \$ _____/Month

Service Elevator 5: \$ _____/Month

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

C. Enter a cost figure for all pricing requested. Failure to comply, subjects quotation to disqualification.

D. 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.

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

1.4 PROPOSED MODERNIZATION INSTALLATION SCHEDULE

A. Undersigned contractor submits the following completion schedule for project. Bidders are instructed to add additional rows to the following schedule grid to accommodate job specific phasing.

PHASE	DESCRIPTION	DURATION
1	Engineering Surveys	weeks
2	Submittal Preparation	weeks
3	Client Approval Period	weeks
4	Engineering, Procurement and Fabrication	weeks
5	Mod Installation, Sub-Phase 1: Cars 1 - 2	weeks
6	Mod Installation, Sub-Phase 2: Cars 3 - 4	weeks
7	Mod Installation, Sub-Phase 3: Car 5	weeks
8	Final Group Testing and Adjusting	weeks
9	Total Project Duration	weeks

1.5 CONTRACTOR PROPOSED MODERNIZATION COMPONENTS AND TECHNOLOGY

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

Modernization Systems and Components	Proposed Model Description/Vendor
Machine	
Control	
Door Operator	
Infrared Door Edge	

Fixtures	
Governor	
Safety	
Monitoring System	
Cab Interiors	
Door Panels/Entrances	

1.6 CONTRACTOR'S LIST OF SUBCONTRACTORS

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

Subcontractor Name	Type of Work
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

1.7 SUBMISSION AND ACCEPTANCE OF QUOTATIONS

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

1.8 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. Purchaser 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: Replace cab interiors of elevators 1 – 4 with new finishes and flooring approved by Purchaser.

_____ \$

Schedule Impact: _____

ALTERNATE 2: Replace cab interior of elevator 5 with new finishes and flooring approved by Purchaser.

_____ \$

Schedule Impact: _____

ALTERNATE 3: Provide Destination Control Dispatching on elevators 1 - 4.

_____ \$

Schedule Impact: _____

1.9 CONTRACTOR SIGNATURE

DATE: _____

PRINT NAME: _____

TITLE: _____

NAME OF FIRM: _____

STATE LICENSE _____

Nº: _____

LEGAL ADDRESS: _____

ORGANIZED AS A (MARK ONE):

INDIVIDUAL

PARTNERSHIP

CORPORATION UNDER STATE LAW OF

TELEPHONE: _____

END OF SECTION
Lerch Bates, Inc.
Elevator Consulting Group

BIDDER’S ATTACHMENTS: Detail below all attachments, which are submitted with your Bid Form. This list will be used by the Purchasing Manager to verify contents of your sealed bid submission. Labeling your bid attachments with the same titles as shown below will facilitate this process. (NOTE: This listing should also include separate attachments, which are too large, or for some other reason cannot be placed into your sealed envelope containing the bid documents. These separate attachments should be placed in an envelope or wrapped and should include a label clearly identifying the bidder’s name and the HCAD bid number and title, as well as the bid-opening date.)

(If additional space is needed, please attach a separate space to continue the list.)

BIDDER'S QUALIFICATIONS

This list is submitted in connection with the attached proposal, submission or bid of _____ ("the firm"), whose business mailing address is _____.

The firm is organized as a (check one as applicable):

Sole proprietorship whose proprietor is _____

_____(include the business mailing address of the proprietor or note "same" if it is the same as above).

A partnership, each of whose partners having an equity interest of ten percent or more are _____

_____include the business mailing address of each person or note "same" if it is the same as above).

A corporation, each of whose officers, each of whose directors and each of whose holders of ten percent or more of the outstanding shares of stock are _____

Include the business mailing address of each person or note "same" if it is the same as above).

I certify that I am duly authorized to submit this list on behalf of the firm, that I am associated with the firm in the capacity noted below and that I have personal knowledge of the accuracy of the information provided herein.

Preparer Printed Name _____

Title _____

NOTE: This list constitutes a government record, as defined by Section 37.01 of the Texas Penal Code. Submission of a false government record is punishable as provided in Section 37.10 of

the Texas Penal Code. Attach additional pages if needed to supply the required names and addresses.

The undersigned hereby offers to furnish and deliver the goods and/or services as specified at the prices and terms herein stated and in accordance with the Invitation to Bid, Clarification Letters, and General Conditions of Bidding, all of which are made a part of this offer. All pages of the HCAD form, including but not limited to the conditions of bidding and page one of this bid invitation are incorporated into this bid for all purposes.

SUBMIT ORIGINAL BID ONLY, NO COPIES NECESSARY. BID MUST BE MANUALLY SIGNED IN INK (BLUE INK PREFERRED) BEFORE A NOTARY PUBLIC.

Respectfully submitted,

Bidder: _____
(Print or type name of Bidder-Company Name)

Federal ID Number: _____

By: _____
(Signature of Authorized Officer or Agent)

Name: _____

Title: _____

Date: _____

Address (Street or P. O. Box)

City-State-Zip Code

Email: _____

Telephone Number: (____) _____

FAX Number: (____) _____

SUBSCRIBED AND SWORN to before me this the _____ day of _____ 2021.

Notary Public, State of _____

Bidder's Name _____

Total Bid \$ _____

SECTION B

LABOR CLASSIFICATION & PREVAILING WAGE SCALE

CITY OF HOUSTON
STANDARD DOCUMENT

WAGE SCALE
FOR BUILDING CONSTRUCTION

Wage Determination Publication Date:

January 1, 2021

for

General Decision Number: TX20210253 01/01/2021 TX253

Superseded General Decision Number: TX20200253

State: Texas
Construction Type: Building
County: Harris County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

**CITY OF HOUSTON
STANDARD DOCUMENT**

**WAGE SCALE
FOR BUILDING CONSTRUCTION**

**CITY OF HOUSTON, TEXAS
LABOR CLASSIFICATIONS AND PREVAILING WAGE RATES FOR BUILDING CONSTRUCTION
2021**

Worker Classification	Ratio	Base Rate	Fringe Benefit	Wage Total
Acoustical Ceiling Mechanic		\$17.27	\$3.98	\$21.25
Asbestos Worker/ Heat & Frost Insulator (Duct, Pipe and Mechanical System Insulation) *	Ratio 1/1 -Apprentice	\$24.28	\$14.16	\$38.44
Asbestos Abatement Worker (ceilings, walls, floors only)	Ratio 1/3	\$14.00	\$0.00	\$14.00
Boilermaker*	Ratio 5/1 - Apprentice	\$28.00	\$22.35	\$50.35
Bricklayer *	Ratio 1/3 - Mason Tender Brick	\$18.87	\$0.00	\$18.87
Carpenter (excludes acoustical ceiling installation, drywall hanging, form work and metal stud installation work) *	Ratio 2/1 -Apprentice	\$23.05	\$8.78	\$31.83
Caulker		\$15.36	\$0.00	\$15.36
Cement Mason/Concrete Finisher*	Ratio 1/3 - Mason Tender Concrete	\$13.93	\$0.00	\$13.93
Drywall Finisher Taper *	Ratio 1/3 - Apprentice	\$16.27	\$3.66	\$19.93
Drywall Hanger and Metal Stud Installer *	Ratio 1/3 -Apprentice	\$17.44	\$3.93	\$21.37
Electrician (Excludes Low Voltage Wiring and Installation of Alarms)	Ratio 3/2 - Apprentice	\$32.55	\$10.35	\$42.90
Electrician (Alarm Installation Only) *	Ratio 1/1 - Apprentice	\$17.97	\$3.37	\$21.34
Electrician (Low Voltage Wiring Only) *		\$18.00	\$1.68	\$19.68
Elevator Mechanic *, ¹ , ++	Ratio 1/1 -Apprentice	\$44.00	\$34.765	\$78.765
Form worker*		\$12.77	\$0.00	\$12.77
Floor Layer: Carpet		\$20.00	\$0.00	\$20.00
Glazier *	Ratio 1/3 - Apprentice	\$23.27	\$7.12	\$30.39
Insulator- Batt *		\$14.87	\$0.73	\$15.60
Ironworker, Ornamental		\$25.14	\$7.43	\$32.57
Ironworker, Reinforcing *	Ratio 1/3 - Apprentice	\$12.14	\$0.00	\$12.14
Ironworker, Structural *	Ratio 1/3 -Apprentice	\$25.26	\$7.13	\$32.39
Lather*	Ratio 1/3	\$19.73	\$0.00	\$19.73
Painter * (brush, roller, and spray) excludes drywall	Ratio 1/3 - Apprentice	\$17.24	\$4.41	\$21.65
Pipe Fitter (including HVAC Pipe installation) *	Ratio 1/1 - Apprentice	\$33.30	\$12.26	\$45.56
Plasterer	Ratio 1/3 - Plasterer	\$19.92	\$1.00	\$20.92
Roofer*	Ratio 1/3 -Apprentice	\$15.40	\$0.00	\$15.40
Plumber *	Ratio 3/2 -Apprentice	\$36.15	\$11.04	\$47.19
Sheet Metal Worker (excludes HVAC unit installation) *	Ratio 2/1 -Apprentice	\$29.70	\$13.85	\$43.55
Sheet Metal Worker (HVAC duct installation only) *	Ratio 2/1 -Apprentice	\$29.70	\$13.85	\$43.55
Sheet Metal Worker (HVAC unit installation only) *	Ratio 2/1 - Apprentice	\$20.05	\$2.24	\$22.29
Sprinkler Fitter (Fire sprinklers) *	Ratio 1/1 -Apprentice	\$30.64	\$21.68	\$52.32
Tile Finisher *	Ratio 1/3 -Apprentice	\$12.00	\$0.00	\$12.00
Tile Setter*	Ratio 1/3 - Apprentice	\$16.17	\$0.00	\$16.17

Truck Driver: 1/single axle truck		\$14.18	\$0.00	\$14.18
Truck Driver: dump truck		\$12.39	\$1.18	\$13.57
Truck Driver: flatbed truck		\$19.65	\$8.57	\$28.22

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SECTION C

Documents to be attached to proposal:

at www.hcad.org

- Bidder's Application
- Conflict of Interest Form
- GC 2270.002, No Boycott of Israel Form
- W-9 Form

Supplied by bidder

- HUB Certificate if applicable
- Certificate of Liability Insurance
- Cooperative Affiliation Information
- Safety Letter