ADDENDUM NO. 1

CONTRACT:	Second Floor Meeting Room and Elevator Upgrades
OWNER:	Atlantic City Free Public Library Atlantic City, NJ 080401
Notice:	This Addendum is issued to clarify questions regarding the bid documents.
Update to Dates:	The last day to receive questions from bidders is 4/28/25. Answers to questions to be issued by 5/2/25. Revised bid due date is 11:00 AM 5/20/25.
List of Contractors	See attached List of Contractors requesting documents.

A. GENERAL QUESTIONS FROM BIDDERS

A.1 (Levy Construction) Is there roof access to the building? We are trying to determine if a crane lift will be need for the small rooftop HVAC equip,

Response (Library) There is roof access in the library, accessible via ladder.

A-2 (Massett) Specifications call for removal of any non-elevator equipment, materials and pass-through lines in the hoistway and machine room. Additionally, it calls for repairs to the hoistway, waterproofing, fire safing, and chamfering of edges. At time of bid, these items are indeterminable and cannot be quantified. Can an allowance be set these types of hidden conditions?

Response. (WATG SOSH) Further inspections of the hoistway and machine room can occur at the additional walk through on Wednesday 4/23/25 @ 10:00 AM. See item C below.

B. PROJECT MANUAL

B.1 See updated Atlantic City Library Elevator Specifications 4-9-25

C. ADDITIONAL WALK THROUGH OF ELEVATOR AND MACHINE ROOM

C.1 An additional walk through will be accommodated on Wednesday 4/23/25 @ 10:00 AM.

END OF CONSTRUCTION ADDENDUM NO. 1

List of People requesting documents for the AC Public Library 2nd Floor AV and Elevator Modernization

Name	Company	Address	Phone	Email
General Contractors				
Chris Schied	Massett Building Company	6815 Delilah Rd Egg Harbor TWP, NJ 08234	609-641-2503	schiedc@massettbuilding.com
Joe McMahon	Network Construction Co	1410 South New Road, Pleasantville, NJ 08232	609-641-1854	jmcmahon@networkcon.com
Mike Weatherby	Weatherby Construction	147 N. Iowa Ave Atlantic City, NJ 08401	609-487-8555	michael@weatherbycorp.com
Kristine Johnson	Aliano Brothers	2560 Industrial Way Vineland, NJ 08360	856-794-9490	kristine@alianoconstruction.com
Jason Zelinka	Shore Building Contractors	293 Old River Rd. Mays Landing, NJ 08330	609-567-6404	jason@shorebuildinginc.com
Ren Reali	Scozzari Builders Inc	1891 North Olden Ave. Trenton NJ 08639	609-989-1221	rreali@scozzari.com
Nick Scozzari	Scozzari Builders Inc	1891 North Olden Ave. Trenton NJ 08639	609-989-1221	nscozzari@scozzari.com
Joshua Levy	Levy Construction Company, INC	800 Newton Ave. Oaklyn, NJ 08107	856-547-0707	josh@levyconstruction.com
Garrett Keers-Flood	West End-KB Builders & Developers	18 Bridgewater Drive Oceanport, NJ 07757	732-318-2849	gkeers-flood@kellydevelopers.com
Elevator Contractors				
Joseph Ritz	Ascent Elevators	222 Carter Drive, Suite 201 Middletown DE 19709	302-252-8988	jritz@myelevator.us
Steve Vogelman	Code Elevator Company	420 Feheley Drive, Suite B King of Prussia, PA 19406	267-535-0863	vogelman@codeelevator.com

SECTION 14000

ELEVATOR MODERNIZATION

PART 1 - INSTRUCTIONS TO BIDDERS

1.1 EXAMINATION OF EXISTING BUILDING AND CONTRACT DOCUMENTS

A. Examine the existing building to become informed as to facilities for delivering materials and equipment.

B. Examine the specifications and other data or instructions pertaining to the work. Lack of knowledge of any conditions that exist, or any difficulties or conditions that may be encountered concerning the work to be performed, will not be accepted as an excuse for any failure or omission on the part of the Elevator Contractor to fulfill the requirements of the work.

C. Provide notice of any materials or apparatus that is in violation of laws or ordinance rules and regulations of authorities having jurisdiction.

D. Provide a schedule of the work to be completed in the shortest possible time frame taking into account any negative impact on the tenants and their operations.

1.2 REJECTION OF BIDS

A. Owner reserves the right to reject any or all bids, to waive informalities and to award any bid.

1.3 SUBSTITUTION OF MATERIAL OR EQUIPMENT

A. Submit the proposal in accordance with materials listed in the specifications as the Base Bid.

B. Acceptance of an alternate or substitute article, material or piece of equipment shall be subject to approval of the Owner.

1.4 ASSIGNMENTS

A. No part of the work of the contract shall be assigned without prior approval of the Owner.

1.5 DEFINITIONS

A. Technical terms in these specifications have their definitions given in the latest edition of the American National Standard Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks ASME A17.1 and A17.2.

B. Common terms used in these specifications have their definitions given below:

1. AHJ (Authority Having Jurisdiction): Authority having responsibility for final elevator acceptance inspection, enforcement of Codes, issuance of Certificate of Operation.
2. Approved, Satisfactory, Accepted: As approved, satisfactory, accepted or directed by the Owner.
3. Defective Elevator Work: Operation or control system failures; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes;

unsafe conditions; the need for excessive maintenance abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.

4. Elevator Bidder: Person or company submitting a bid proposal to perform the work of the specification.
5. Elevator Contractor: Elevator Company performing the work.
6. Elevator Consultant: Person or company authorized by Owner to represent Owner and act as Owner's representative in all matters relating to the technical component of the specifications.
7. Install: To erect, mount and connect complete with related accessories.
8. Overhaul: To examine thoroughly, repair, renovate, revise, renew thoroughly.
9. Owner: Person or company holding title to the property in which the specified work is to be performed, or his appointed representative(s).
10. Provide: To supply, install, connect and make ready for safe and normal operation the complete elevator system as specified herein.
11. Similar or Equal: Approved material, weight, size, design, and characteristics to the specified product.
12. Supply: To purchase, procure, acquire and deliver complete with related accessories.
13. Wiring: Conduit, fittings, wire, traveling cables, junction and outlet boxes, switches, cutouts, receptacles, and related items and accessories.
14. Work: Labor materials, equipment, apparatus, controls, accessories and other items required for proper and complete installation.
15. Non-Proprietary: The elevator equipment proposed for this project shall be Non-Proprietary. It shall comply with the following provisions and be in compliance with all known standards for universal serviceability and maintainability. Further,

    a. Equipment must be generally available for purchase by any qualified elevator contracting business.
    b. Spare Parts must be available to any qualified purchaser at reasonable prices and based on a published price list.
    c. All equipment or tools necessary for diagnostics, maintenance, adjustment, or troubleshooting shall be available to any qualified elevator contracting business. Such tools shall provide access to all parameters and levels of adjustment that are necessary for the maintenance of the equipment. There shall be no expiring or degrading software that would prohibit proper maintenance.
    d. Factory and or on-site training for the installation, adjustment, maintenance, and troubleshooting shall be available from the manufacturer to any qualified elevator contracting business. Any training fees shall be reasonable and appropriate.
    e. Technical Support should be made available to any qualified elevator contracting business by the equipment manufacturer. The equipment manufacturer shall provide a toll-free phone line available for technical support.
    f. Documentation in the form of manuals, circuitry diagrams, prints, engineering drawings, testing procedures, and parts lists shall be provided with the equipment at the time of installation. Replacement documentation shall be available to any qualified elevator contracting business and reasonable and normal cost.

1.6 INTENT

A. Intent of these specifications is to cover the specified work complete and operable in every respect. It is not intended to give every detail in the specifications. Owner shall not be responsible for absence of wiring diagrams for existing equipment or any detail the Elevator Contractor may require. Material and equipment usually furnished with such systems and/or needed to make a complete and safe installation, whether specifically mentioned or not, omitting only such parts and assemblies as are specifically excluded, shall be furnished. Material and equipment furnished shall be new and in perfect condition.

B. Owner's, or Owner's representative's, interpretation of specifications shall be final and binding upon the Elevator Contractor.

1.7 QUALITY ASSURANCE

A. Work shall comply with governing codes, conform to laws, ordinances and regulations affecting the erection, sequence of erection and completion of the whole or part of the work, and conform to the requirements of Authorities Having Jurisdiction. Elevator Contractor shall be responsible for correction of any violations of codes caused by himself or his employees. Owner warrants that as of the bid date, no violations have been placed upon the existing equipment by any authority having jurisdiction.

1.8 LAWS AND PERMITS

A. Comply with federal, state and municipal laws and ordinances, prepare documents, obtain and pay costs and fees for permits and inspections and obtain certificates of operation.

1.9 CONFLICTS

A. Should it appear that there is real or apparent discrepancy between different sections of the specifications concerning nature quality or extent of work to be furnished, it shall be assumed that the Elevator Contractor has based the bid on completing the work in a more stringent manner. Final decision shall rest with the Owner or Owner's Representative.

1.10 PROJECT SCHEDULE and COORDINATION

A. Submit a schedule with the Bid Proposal indicating the following.

1. Engineering Survey/Drawing Approval time.
2. Fabrication Time.
3. Installation Time.

B. Proposed project schedule shall be the initial basis for the contract schedule, modified as may result from discussion prior to award of a contract. Final schedule shall be the basis for establishing starting and completion dates upon which penalties shall be based, if applicable.

C. Be responsible for coordinating with all trade contractors in such a timely manner so as to facilitate project progress.

PART 2 - GENERAL REQUIREMENTS

2.1 SCOPE OF WORK

A. The scope of work of the Elevator Contractor's Base Bid consists of the following:

1. The modernization one (1) existing hydraulic passenger elevator, #6, including work as outlined within this specification and coordination with other trades as required to obtain a Certificate of Operation from the State of New Jersey.

B. Perform field surveys and provide engineering, labor, materials, tools, equipment, coordination, transportation, supervision and means and methods as required to design, fabricate and install the equipment as specified, complete in a first-class workmanlike manner. All work shall be done in accordance with the requirements of local codes and applicable regulations which may govern the requirements of the installation.

1. During the term of the project, maintain life safety systems of operating elevators in Code compliant condition.

C. In cases where a device or part of the equipment is herein referred to in the singular number, it is intended that such reference shall apply to as many such devices as are required to complete the installation.

D. All work and materials that may be required for the complete and proper execution of the work shall be included. Work shall be performed in accordance with the best trade practices.

E. Any items not specified in detail by the specifications, but which are incidental to or necessary for the complete installation and proper operation of the work described herein or reasonably implied, shall be furnished as if called for in detail by the specifications.

F. Discrepancies or ambiguities occurring in the specifications shall be reported prior to the submission of a bid proposal, or at the time of submission of a bid.

1. Submission of a bid without clarifications will reflect acceptance of the specifications and complete understanding of the project scope and intent.

2.2 ARCHITECT AND ELEVATOR CONSULTANT'S RESPONSIBILITIES

A. The Architect and Elevator Consultant shall act as a representatives of the Owner in matters pertaining to the work of the contract.

1. Responsibilities shall include interpretation of specifications and contract documents, review of shop drawing submissions, approval of payment applications and final review of the completed work.

B. The Architect and Elevator Consultant shall not be responsible for engineering and equipment design, equipment application, means and methods, project oversight, coordination or safety.

2.3 STANDARDS AND REGULATIONS

A. Regulatory Requirements: Comply with governing codes and conform to the requirements of Authorities Having Jurisdiction.

B. Standards: Comply with provisions of the following.

1. Safety Code for Elevators and Escalators, ASME A17.1.
2. Guide for Inspection of Elevators, Escalators, and Moving Walks, ASME A17.2.
3. Accessible and Usable Buildings and Facilities, ICC A117.1.
4. Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities.
5. International Building Code-IBC.
6. National Fire Alarm and Signaling Code, NFPA 72.
7. National Electric Code, NFPA 70.
8. OSHA.
9. Life Safety Code, NFPA 101
10. Uniform Construction Code
11. Requirements of the AHJ.

C. Nothing contained in these specifications shall conflict with any codes or federal, state or local laws, ordinances, rules or regulations governing the work.

2.4 LAWS, PERMITS AND INSPECTIONS

A. Comply with federal, state and municipal laws and ordinances, prepare documents, obtain permits, pay costs and fees for permits and inspections, obtain Certificates of Operation and deliver to the Owner.

B. Obtain and pay for state and local inspections and conduct tests as required by the regulations of such authorities. Conduct tests in the presence of the authorized representative of such authorities.

C. Confirm that all systems interfacing with elevators are operational prior to scheduling tests with regulatory authorities to assure that testing will be accomplished promptly and efficiently.

D. Obtain final approval of constituted authorities and provide evidence of the inspection results and the Certificate of Operation from the constituted authority.

2.5 INSURANCE

A. Maintain a comprehensive general liability insurance policy throughout the term of the contract, including completed operations, blanket contractual and broad form property damage in a casualty or liability insurance company acceptable to the Owner, in accordance with project requirements.

B. Insurance shall fully protect the Elevator Contractor, the Elevator Contractor’s subcontractors engaged to perform work under this contract, Owner, Elevator Consultant, and any other Owner representatives identified by the Owner, from loss.

C. Prior to starting work, submit Certificate of Insurance as evidence of required coverage. Certificate shall include the statement that the Owner will be notified thirty (30) days prior to any cancellation.

D. Coverage shall be as identified in Project documents, with Minimum coverage as follows:

Workman's Compensation	Statutory

Employer's Liability	$1,000,000	Comprehensive General Liability
	$ 500,000	Single Limit, Combined Bodily Injury and Property Damage
Comprehensive Automobile Liability		
Bodily Injury	$ 500,000	Each Person
	$1,000,000	Each Occurrence
Property Damage	$ 500,000	Each Occurrence
Umbrella Liability Coverage	$5,000,000	

E. The Owner, the Architect, the Elevator Consultant, and any other Owner designated representatives must be included as named Additional Insured to the Elevator Contractor's insurance, regardless of any other document.

2.6 PROJECT SCHEDULE

A. Subsequent to the Contract award, immediately commence survey work and submit shop drawings of the hoistway and elevator equipment.

1. Confirm power, floor designation, emergency recall floors and dispatch floor locations, etc. prior to fabricating equipment.
2. Provide engineering information as necessary for the Owner to coordinate the interface work of other trades not part of the elevator contract impacting the elevator work.

B. Confirm the following, as committed to on Bid Form.

1. Engineering Survey/Drawing Approval time.
2. Fabrication Time.
3. Installation Time, hours, number of teams.

2.7 ELEVATOR EQUIPMENT MANUFACTURER QUALIFICATION

A. Manufacturers of elevator components shall be regularly engaged in the business of design, engineering and manufacture of elevators, or elevator components, of the type and character required by these specifications and shall assume full responsibility for the products used in said assembly.

B. Components, technical assistance, operating manuals, hardware and software, etc. must be immediately available to the Owner, regardless of whether the elevator maintenance contractor is the original installing contractor or manufacturer.

2.8 ELEVATOR EQUIPMENT MANUFACTURERS

A. Products and manufacturers listed are approved for the project. Other products and manufacturers will be considered upon substantiation of equal status to specified products.

1. Power Unit — Unitec.
   Elevator Equipment Co. (EECo).
   Minnesota (MEI).
2. Hydraulic Jack Assembly — Custom Elevator

	EECo.
3. Control Valve	Maxton. EECo.
4. Controller	Smartrise Engineering. GAL Manufacturing. Elevator Systems, Inc.
5. Signal Fixtures	Mad. Innovation Industries.
6. Door Operator	GAL Manufacturing.
8. Car Enclosure	Curtis Cab. Columbia. Elevator Cabs Inc. SnapCab.
9. Proximity Detector	Janus Elevator Products.
10. Telephone	Rath. K-TECH
11. Travel Cable	Draka.

2.9 PRODUCTS AND SUPPORT

A. The elevator equipment proposed for this project shall be Non-Proprietary. It shall comply with the following provisions and be in compliance with all known standards for universal serviceability and maintainability.

1. Equipment must be generally available for purchase by any qualified elevator contracting business.
2. Spare Parts must be available to any qualified purchaser at reasonable prices and based on a published price list.
3. All equipment or tools necessary for diagnostics, maintenance, adjustment, or troubleshooting shall be available to any qualified elevator contracting business. Such tools shall provide access to all parameters and levels of adjustment that are necessary for the maintenance of the equipment. There shall be no expiring or degrading software that would prohibit proper maintenance.
4. Factory and or on-site training for the installation, adjustment, maintenance, and troubleshooting shall be available from the manufacturer to any qualified elevator contracting business. Any training fees shall be reasonable and appropriate.
5. Technical Support should be made available to any qualified elevator contracting business by the equipment manufacturer. The equipment manufacturer shall provide a toll free phone line available for technical support.
6. Documentation in the form of manuals, circuitry diagrams, prints, engineering drawings, testing procedures, and parts lists shall be provided with the equipment at the time of installation. Replacement documentation shall be available to any qualified elevator contracting business and reasonable and normal cost

2.10 ELEVATOR CONTRACTOR QUALIFICATION

A. The Elevator Contractor shall:

1. Be regularly engaged in the business of design, engineering, installation and servicing of elevators of the type and character required by these specifications, shall be or represent an approved manufacturer, and shall assume full responsibility for the products used in assembling the elevator equipment.
2. Be able to demonstrate a minimum of 3-projects within 1 hours driving distance (60 miles) from the project site with elevators installed by the Elevator Contractor similar to that specified which have given satisfactory service and been in successful operation for a period of at least five years.
3. Be able to show successful experience in the complete maintenance of elevators, maintain locally an adequate stock of parts for replacement or emergency and employ qualified full time employees locally or within 1 hours driving distance (60 miles) from the project site locally available to ensure the fulfillment of the service without unreasonable delay.

2.11 SUBSTITUTION OF MATERIAL OR EQUIPMENT

A. Bid proposal shall include materials and equipment as manufactured by manufacturers listed in the specifications. NO substitutions.

2.12 COORDINATION

A. Coordinate locations and dimensions of other work relating to the elevator, including electrical service, electrical outlets, lights, and switches in pit and equipment room.

B. Confirm power, floor designation, emergency recall floors and dispatch floor locations, etc., prior to fabricating equipment.

C. Provide engineering information as necessary to coordinate the interface work of other trades impacting the elevator work.

D. Review the specifications, drawings, and field conditions and be responsible for the proper fitting of the material and equipment indicated.

E. Submit details of any conflict between the specifications, any drawings, and existing conditions prior to submission of the bid proposal. No departures from the requirements of the specifications shall be made without the prior written approval.

2.13 SHOP DRAWINGS/SUMITTALS

A. Submit Product Data and Catalogue Information in electronic pdf format for review, as follows:

1. Include capacity, sizes, performances, operations, safety features, finishes and similar information. Information shall be job specific.
2. Provide catalogue cuts for the following:

a. Controller.
b. Power unit, including motor, pump and valve.
c. Hydraulic jack assembly.
d. Rupture valve.

e. Hydraulic fluid.
f. Guide shoes.
g. Signal operating fixtures.
h. Telephone system.
i. Doors and door operating systems.
j. Proximity detector.

B. Shop Drawings:

1. Submit in electronic PDF format.
2. Show plan, elevation, section, scaled or fully dimensioned, details indicating service at each landing, equipment room layout, coordination with building structure, relationships with other construction, and locations of equipment and signals. Include the following:

a. Elevator machine/control room.
b. Elevator hoistway, plan and section.
c. Signal operating fixtures.
d. Doors and door operating equipment.
e. Elevator car enclosure details.

C. Samples:

1. For exposed finishes, submit 6-inch square samples of sheet materials; and 4-inch lengths of running trim members.

D. Submit sufficiently in advance of job progress requirements to afford ample time for review.

E. Submittals shall conform to requirements of contract documents. Submittals differing from the contract shall be identified in a letter of transmittal with explanation.

F. Prior to submission, check submittals for conformity with contract specifications and correct any errors, omissions, or deviations before submitting. Submit specifications, catalogs, product data, etc., properly labeled indicating specific service for which material or equipment is to be used, and Manufacturer's name and name of job.

G. Confirm correct quantities, dimensions, and details for satisfactory construction of work.

H. Drawings shall be reviewed to confirm compliance with specifications. Documents that are reviewed and returned shall not be interpreted as a complete check, nor shall it relieve the Elevator Contractor of responsibilities stated.

I. Materials or equipment delivered before the required approval is provided shall be removed and replaced at no charge, if material or equipment does not meet the intent of the specifications.

J. Coordinate dimensions before submitting shop drawings. Submission of shop drawings shall represent that all project drawings have been reviewed with dimensions coordinated on the shop drawings.

2.14 DRAWING CERTIFICATION

A. Provide Professional Engineer's certification of elevator layout drawings, if/when required by AHJ.

2.15 CONSTRUCTION PROGRESS SCHEDULE

A. Submit initial schedules in a Bar Chart format, within 15 days after Notice to Proceed.

B. Indicate dates required completion of work by other trades.

C. Include a schedule showing submittal dates for shop drawings, product data, and samples. Indicate decision dates for selection of finishes.

2.16 MATERIALS STANDARDS

A. Materials to be furnished shall be new, of the best grade and quality used for the purpose of commercial practice and be the latest standard product as advertised in printed catalogues by reputable manufacturers.

1. Aluminum	Extrusions per ASTM B-221; sheet and plate per ASTM B-209.
2. Bronze	Stretcher leveled, resquared sheets composed of 60% copper and 40% zinc similar to Muntz metal, Alloy Group 2 with No. 4 finish. Grain of belting shall be in the direction of the longest dimension.
3. Nickel Silver	Copper-Nickel-Zinc extrusions of CDA alloy C77600.
4. Steel	Low carbon, cold rolled to stretcher leveled standard flatness per ASTM A366 for sheet; per ASTM A-36 for structural.
5. Satin Stainless Steel	ASTM A666 Type 302 or 304 with No 4 finish (150 grit) on exposed surfaces per ASTM A-167. Grains of belting shall be in the direction of the longest dimension.
6. Polished Stainless Steel	ASTM A666, Type 302 or 304 with No 8 polished finish.
7. Textured Stainless Steel	ASTM A666, Type 304 with embossed texture rolled onto exposed surface.
8. Plastic Laminate	NEMA LD3, Grade HGS 0.048-inch nominal thickness.
9. Paint	Exposed metal work, except as otherwise noted, shall be cleaned of oil, grease, scale, and other foreign matter with a factory coat of manufacturer’s standard rust-resistant primer applied.
10. Prime Finish	Surfaces which are to receive an enamel finish shall be cleaned of oil, grease, scale, etc. and have one coat of rust-resistant mineral paint applied followed by a filler coat over uneven surfaces, then the surfaces shall be sanded smooth and a final coat of mineral paint applied.
11. Enamel Finish	Surfaces shall be primed per the preceding specification for Prime Finish and then have two (2) coats of enamel in the color selected applied.

2.17 EQUIPMENT STANDARDS

A. Equipment furnished shall be new and be the latest standard product by listed manufacturers. Equipment shall be of the best grade and quality used for the purpose of commercial practice and shall have the Manufacturer's name, address and catalog numbers on a plate securely affixed to the equipment in a conspicuous place.

B. Equipment or apparatus of any one system must be the product of one manufacturer, or equivalent products of several manufacturers which are suitable for use in a unified or assembled system. All parts of the elevator equipment shall be built to standard dimensions, tolerances and clearances in order to ensure complete interchangeability of similar parts of similar machines and devices. The mechanical fastenings used throughout the equipment on parts subject to wear and replacement shall be key and seat, nut and bolt, screw or other removable type not requiring physical deformation.

2.18 ACCEPTANCE OF EQUIPMENT

A. Materials, equipment and appurtenances specified, or required for the completion of the work shall be completely satisfactory and acceptable with respect to operation, performance and capacity.

B. No approval, either written or verbal, of any drawings, descriptive data or samples of such material, equipment and/or appurtenances shall relieve the Elevator Contractor of the responsibility to turn over the same in perfect working order at the completion of the work.

C. Any material, equipment, or appurtenances, the operation, capacity or performance of which does not comply with the specification requirements, or which is damaged prior to acceptance, shall be held to be defective and shall be removed and replaced with proper and acceptable materials, equipment and/or appurtenances, or put in proper and acceptable working order, satisfactory, without additional cost.

2.19 VARIANCES

A. Prepare, submit and obtain Variances from the AHJ as may be required to retain existing conditions.

2.21 RELATED WORK INCLUDED IN ELEVATOR CONTRACTOR SCOPE

A. Hoistway and elevator equipment room shall be accepted as they exist.

1. Size and design the equipment to fit within existing equipment room and maintain Code clearances.
2. Apply for Variances as may be required to retain existing conditions not in compliance with current Code requirements.

B. Coordinate the work to be performed by all subcontractors during the course of the project to assure that work required is completed in such a manner and in such time as will be required to permit the commencement and completion of the work within the project schedule requirements.

C. Elevator Hoistway:

1. Restore pit after removal of the existing jack cylinder and installation of new jack cylinder. Backfill jack cylinder PVC waterstop with non-shrink grout. Provide waterproofing as required to assure pit does not take on water as a result of the jack cylinder replacement.
2. Bevel ledges in hoistway greater than 4" to 75 degrees.
3. Repairs to hoistway walls, except those exceeding 3 sq. ft.
4. Firesafe all wall penetrations.
5. Provide access to the hoistway for others to remove all non-elevator equipment and materials from the hoistway, including any pass-through lines.

2.22 RELATED WORK - BY OTHERS

A. Building work and Mechanical, Electrical, Plumbing, Sprinkler, and Fire Alarm systems work required to support the elevator modernization.

1. Elevator Equipment Room:
   a. Remove all non-elevator equipment and materials from the equipment room, including pass-through lines.
   b. Provide a B labeled fire rated equipment room entry door with closer and storeroom type lock.
   c. Provide a type ABC fire extinguisher in the equipment room, in accordance with NFPA 10.

2. Equipment Room Ventilation:
   a. Provide equipment room ventilation as required to maintain 50°-90° F temperature.
   b. Provide power and disconnect.

3. Electrical:
   a. Three-phase Power:
      1) Inspect and confirm existing 3-phase power feeders comply with National Electric Code.
      2) Confirm feeders are dedicated for elevator service only and separate of other building circuits to prevent interference or segregate as necessary.
      3) Replace existing disconnect switch with a new combination shunt breaker/power disconnect, compliant with National Electric Code and Elevator Code. Disconnect must be lockable in the open or de-energized position.
      4) Provide building ground in disconnect.
      5) Provide auxiliary contact in disconnect(s) to indicate when disconnect is manually activated vs. actual utility power loss.
      6) Provide signage on disconnect indicating location of power source.
      7) Extend feeders from main line disconnect to elevator controller.

   b. 110V Cab Lighting Power:
      1) Provide 110V feed and circuit breaker in the equipment room for cab lighting.
         a) Confirm separate feed for the elevator. Retain or replace as necessary.
         b) Breaker to be lockable in the open or de-energized position.
      2) Provide signage on disconnect indicating location of power source.

3) Extend feed from disconnect to elevator controller.
4) Lighting to be on emergency power, if available.

c. 110V Receptacles:
1) Evaluate 110V receptacles in the elevator equipment room and pit areas.
2) Remove/replace all non GFCI 110V receptacles with duplex 110V GFCI receptacles.
3) Receptacles to be on emergency power, if available.

d. Elevator Equipment Room and Pit Lighting:
1) Remove/replace present lighting with LED fixtures in the elevator equipment room to provide minimum 19-foot candles at the floor level throughout.
2) Remove/replace present lighting with LED fixtures in the elevator pit to provide minimum 10-foot candles at the floor level throughout.
3) Provide a light switch located within 18" of the lock jamb side of the equipment room access door.
4) Provide a light switch located adjacent to the pit ladder.
5) Lighting to be on emergency power, if available.

4. Equipment Room Sprinklers and Heat Detectors:
a. Inspect and certify sprinkler line in the equipment room.
b. Confirm a sprinkler head is not required in the elevator pit. (None presently).
b Relocate, modify, or replace the existing sprinkler head in the equipment room as necessary to comply with applicable codes.
1) Confirm existing head is 200°F rated or replace with 200° rated heads.
2) Provide 135°F rated heat detector located adjacent to the sprinkler head. Heat detector to signal fire alarm to activate shunt breaker.

5. Fire Alarm:
a. Provide Code compliant fire alarm initiating devices (smoke detectors) at each floor level in each elevator lobby, in sprinklered hoistways, and in the equipment room. Provide fire alarm initiating devices, where missing.
a. Provide signals from the fire alarm system to the elevator controller as required to comply with current Elevator Code requirements, as follows:
1) Signal 1: One (1) set of wires through a set of contacts, Normally Open-Normally Closed, to the elevator controller in the equipment room representing the elevator lobby at the main Fireman access floor and at any floor below the main Fireman access floor.
2) Signal 2: One (1) set of wires through a set of contacts, Normally Open-Normally Closed, to the elevator controller in the equipment room, representing the elevator lobbies all other typical floors, hoistways and equipment room.
3) Signal 3: One (1) set of wires through a set of contacts, Normally Open-Normally Closed, to the elevator controller in the equipment room, representing the hoistway and elevator equipment room only.
4) Sprinkler head associated heat detector to signal fire alarm to activate shunt breaker.

6. Security System-by Security Contactor, if to be Provided:
   a. Provide security system interface panel in control room.
   b. Identify type/size wire required for travel cable. Elevator Contractor to provide travel cable from elevtor cab to elevator control room.
   c. Provide card readers in elevator cab, and at hall stations, if required. Hook up card reader and in the control room.
   d. Test card reader function with Elevator Contractor.
7. CCTV- by Security Contactor, if to be Provided:
   a. Provide CCTV camera in the elevator car.
   b. CCTV travel cable by Elevator Contractor, terminate at camera and in control room.
   c. Hook up in cab and in control room by Security contractor
8. Telephone Line:
   a. Retain/reuse/replace existing analog telephone line for emergency communication with the cab.
9. Sump Pit and Pump
   a. Per NJ AHJ, a sump pit and pump is not required as this is an existing condition.
10. Pit Waterproofing:
    a. Inspect pit.
    b. Provide pit waterproofing if required.

2.23 SCHEDULE

A. Commence survey work immediately upon receiving Notice to Proceed.

B. Confirm power, capacity, floor designations, emergency recall floors and dispatch floor locations, etc. prior to fabricating equipment.

C. Provide engineering coordination information as necessary to coordinate the interface work of other trades impacting the elevators.

2.24 WARRANTY

A. Upon completion and turn-over of the elevator, Warrant equipment provided and installed under these specifications against defects in materials and workmanship and correct any defects not due to ordinary wear and tear or improper use or care which may develop within twelve (12 months from the date the elevator system is completed, placed into operation.

2.25 MAINTENANCE SERVICE

A. Upon completion and turn-over of the elevator, provide twelve (12) months Preventive Maintenance service to the elevator to coincide with the Warranty period.

B. Maintenance Service Program

1. Preventive maintenance service shall consist of monthly scheduled systematic examinations of the equipment, and include adjustments, lubrication, cleaning, supplies and parts to keep the equipment in proper operation, except such adjustments, parts or repairs made necessary by abuse, misuse or any other causes beyond the control of the Elevator Contractor.

2. Maintenance service work shall be performed solely by the Elevator Contractor and shall not be assigned or transferred to any agent or subcontractor. Work shall be performed by competent personnel under the supervision and in the direct employ of the Elevator Contractor.
3. Electrical and mechanical parts of the equipment shall be repaired or replaced, whenever required, using only genuine parts produced by the Manufacturer of the equipment concerned.
4. Tests as required by Code of the equipment operation shall be performed as often as required.
5. Preventive maintenance and callback service work, except for Emergency callbacks, shall be performed during the regular working hours of the regular working days, unless specifically requested to be performed, at other times by the Owner.
6. Perform a minimum of one (1) hour of preventive maintenance service per month to the elevator, exclusive of callbacks and repairs.
7. Respond to requests for service within one hour during normal working hours, and two hours at all other times, regardless of time of day or day, including Saturdays, Sundays and Holidays, the call is placed for service.
8. Provide callback service and Emergency Callback service on a 24-hour 7 day per week basis.
9. Respond to emergency callbacks with 1 hour and routine callbacks within 2 hours during normal work hours or normal working days, and 2-4 hours nights, weekends and holidays.

2.26 CONTINUING MAINTENANCE SUPPORT

A. Provide continuing information regarding changes to be performed to the equipment to comply with Manufacturer recommended and/or authorized changes or repairs, modifications, adjustments, replacements, etc.

B. Perform all repairs and/or replacements of equipment components required by the component Manufacturer to be made to correct faulty design or manufacturer.

PART 3 - SPECIFICATIONS

3.1 ELEVATOR SCHEDULE/EQUIPMENT SUMMARY

A.	Quantity	Existing	One.
B.	Type	Existing	Passenger.
C.	Capacity	Existing	2500 lbs.
D.	Speed	Existing	100 fpm. Verify based on existing equipment.
E.	Travel	Existing	15-0” +/-. Field Verify.
F.	Stops/Openings	Existing	Two (2) in line at L1-2.

G.	Power	Existing	____; 3Ø; 60hz. Field verify.
			• Confirm voltage prior to release of control to fabrication.
			• Others to provide:
			  o New combination disconnect switch/shunt breaker disconnect switch.
			  o Building ground wire in disconnect.
			  o Auxiliary contacts in disconnect switch associated with battery lowering
			• Confirm location of disconnect switch with elevator equipment to assure NEC Code clearances.
			• Extend new feeders from disconnect switch to new controller location.

H.	Hydraulic Power Unit	New	Remove and replace existing power unit, oil line, valve, muffler, etc. • Provide submersible oil self-contained hydraulic power unit with control valve, pump, and muffler in existing equipment room. • Maintain existing motor HP. • Size unit to fit through existing equipment room entrance frame, or remove and restore door and frame. Restore entrance frame and disturbed masonry and drywall. • Provide threaded oil line to jack cylinder.
I.	Hydraulic Fluid	New	Remove and replace existing hydraulic fluid. • Provide petroleum based hydraulic fluid formulated specifically for use in operating hydraulic elevators.

J.	Controller	New	Remove and replace existing controller and motor starter. • Provide microprocessor controller with solid state motor starter. • Provide battery rescue system for car lowering in the event of power failure.
K.	Operation	New	Simplex collective microprocessor.
L.	Operational Features	New	• Non-proprietary design. • Variable door timing. • Door closing delay. • Independent service. • Firefighters Emergency Operation. • Security Card System interface-car and hall. • Floor Lockout capability from controller. • Low oil control. • Car light and fan shutdown. • Hoistway access.
M.	Battery Lowering	New	Emergency Power Battery Operation: • Provide a self-contained battery lowering unit as part of the elevator controller. • Upon loss of normal power, arrange car to automatically lower to floor level and open doors, allowing passengers to exit the elevator. • Confirm others have provided an auxiliary contact in main line disconnect switch and shunt breaker to differentiate loss of building power from mechanical activation of a disconnect switch.
N.	Barricades	New	Provide barricades and walk-off mats. • Barricades to be minimum 6 ft in height, plywood and stud, and fully enclose the work area in front of the elevator hoistway at the 1st and 2nd floors. • Barricades to be locked at all times. • Walk off mats to completely cover and protect lobby floors. • 1st floor barricade to be removable to facilitate removal of existing jack cylinder and installation of new jack cylinder.

			• Provide additional protection of lobbies if jack cylinder hole must be redrilled. • Barricades to provide minimum 3ft wide corridor from stairwell to exit door at all times. • Coordinate with Owner regarding shut down of exit during hours when Owner is not open to permit full use of 1st floor lobby to facilitate jack cylinder removal and reinstallation.
O.	Jack Hole	Modify	Remove existing hydraulic jack assembly. • Saw cut existing jack assembly in sections for removal. NO BURNING. • Modify existing concrete jack support as required. • Upon removal of existing jack assembly, clean out hole, plumb to determine clear diameter and confirm hole plumbness for new cylinder casing with PVC liner. • Support new jack assembly on existing support structure. • After installation of new jack assembly, restore structural integrity of pit caused by jack removal. Provide an Engineer's certification of pit repairs. • Restore pit and waterproof around all areas where concrete was disturbed.
P.	Jack Hole Redrill-Alternate #1	Modify	In the event the existing jack hole is not plumb to adequate diameter and depth to enable installation of the new jack assembly with sealed PVC protection system: • Remove existing casing. • Ream hole to adequate diameter and depth to accommodate new PVC liner. • Provide new steel outer liner as required. • Provide water-stop ring and embed in pit concrete. • Restore pit and waterproof around all areas where concrete was disturbed.
Q.	Jack Assembly	New	Provide a new direct acting jack assembly located directly beneath the elevator car in existing jack hole location.

			• Provide jack manufacturer's sealed PVC jack protection system with means to monitor and evacuate unwanted fluids. • Provide PVC water-stop ring around perimeter of PVC casing and embed in cylinder hole with non-shrink grout. Seal to prevent water infiltration into the pit • Provide new structural steel pit mounting channels to span cylinder hole. • Restore structural integrity of the pit floor, if disturbed, caused by jack cylinder removal, after installation of new jack cylinder assembly.
R.	Guide Rails	Existing	Retain existing guide rails. • Inspect, clean, secure, file rail joints, align. • Clean running surfaces, belt sand and file. • Torque fishplate bracket bolts. • Clean and paint non-machined surfaces with rust inhibitor paint.
S.	Buffers	New	Remove and replace existing buffers. • Provide spring buffers, pit steel and pit support channels. • Clean and paint non-machined surfaces with rust inhibitor paint.
T.	Pit Access	New	Provide a steel ladder as required to comply with code. • Ladder for access to the pit shall include handgrips extending 48" above access floor elevation.
U.	Pit Stop Switch	New	Remove and replace existing pit stop switch. • Provide new pit stop switch, located adjacent to pit access.
V.	Pit Lighting and Switch	New	Remove and replace existing pit light. • Replace existing/provide new LED strip pit lights to provide 10fc light level throughout pit. • Replace existing/provide a new light switch adjacent to pit ladder.

			• Replace existing/provide a new GFCI receptacle.
V.	Terminal Limit and Slow Down Switches	New	Remove and replace hoistway switches, cams and slowdowns. • Provide new switches, contacts and wiring, cams and roller wheels.
W.	Car Frame	Existing	Retain existing steel car frame. • Inspect and overhaul as per specification.
X.	Car Platform	Existing	Retain existing car platform. • Retain and protect existing flooring, sub floor, and car sill. • Inspect, tighten all fastenings. • Provide extended toe guard as per code.
Y.	Guide Shoes	New	Remove and replace existing guide shoes. • Provide new removable gib slide guide assemblies. • Provide adaptor plates to mount the new guide shoes to the existing car frame.
Z.	Entrances	Existing	Retain existing entrances. • Inspect, secure. • Clean and polish stainless steel. • Provide new door bumpers on strut angles to restrict door overtravel. • Clean, repair, straighten, or replace where missing, all fascia, toe guards and dust covers and paint with rust inhibiting paint to match hoistway • Retain and clean passenger hoistway door sills. • Provide access switches in frames at terminal floors.
AA.	Hoistway Door Panels	Existing	Retain existing hoistway door panels. • Retain existing mounting locations for interlocks and interlock release keyways. • Provide new U/L heavy duty door gibs and fire tabs.
BB.	Identification Plates	Existing	Retain existing floor ID plates. • Provide car ID plates at primary floor.

- Finish: Black background with stainless steel raised numerals.

CC. Pictograph Signage — New

Provide stainless steel pictograph signs.

- Pictograph signs to be minimum 5" x 8" x 1/8" thick, engraved with "In Case of Fire Do Not Use Elevators – Use Exit" and graphics required by Code.
- Locate adjacent to hall call pushbutton stations.
- Provide samples for approval.
- Stainless to match entrance finish.

DD. Door Operating System — New

Remove and replace existing door operating system.

- New door system to include closed loop heavy duty, solid-state door operator and all associated car and hoistway door operating system components, including control, gate switch and wiring, clutch, car door track, car and hoistway door hangers, hanger rollers, sill spring closers, door restrictor, interlocks, pickups, releases, fire retardant wiring.
- Hoistway and car door track may be retained if cleaned and able to provide smooth and quiet door operation.
- Adjust to provide smooth and quiet operation

EE. Door Detector — New

Remove and replace existing door detector.

- Provide Janus Panachrome proximity detector with light edges and with Smart 3D.

FF. Car Enclosure — Retain

Retain the existing car enclosure shell with the following modifications:

- Remove finishes to cab shell.
- Canopy:
  - Clean canopy.
  - Provide a new top exit lock, contact and chain.
  - Provide a new 2-speed exhaust fan and grill.
- Suspended Ceiling and Lighting:
  - Remove existing suspended ceiling and lighting.

- Provide a new stainless steel suspended ceiling with LED down lights.

- Side and Rear Walls:
  - Remove existing side and rear wall panels.
  - Provide new ¾" thick vertical removable wall panels, faced with plastic laminate and edged with 1/8" stainless steel projecting 1/32" proud, eased, 2 panels per side wall and 3 panels on rear wall.
  - Separate panels with 1/2" stainless steel reveals between panels.
  - Provide stainless steel above wall panels to conceal cab shell.
- Base:
  - Provide #4 satin finish stainless steel base.
- Handrail:
  - Remove existing handrail.
  - Provide 2" stainless bar handrail on rear wall, with ends returned to wall, at 32" above finished floor.
- Returns Walls:
  - Clean and polish existing stainless steel front return walls.
  - Modify existing car operating panel and telephone box cutouts for new car operating panel. Reinforce.
  - Provide cutouts for car directional lantern in return jamb, visible from hall pushbutton station.
- Car Doors:
  - Remove existing car doors.
  - Provide new 16 gauge #4 satin finish stainless steel car doors.
  - Reinforce car doors for new door operation.
- Exhaust Fan:
  - Remove existing.
  - Provide new 2-speed exhaust fan and grill.
- Pads buttons and Pads:
  - Remove existing pad buttons.
  - Provide new pad buttons secured to cab shell.
  - Provide one set heavy vinyl elevator cab protection pads.
  - Cover front return walls and include cutouts for COP.
  - Provide sample colors for Approval.
- Emergency light:

- Provide an emergency light with alarm bell to be operable from emergency power packs.

- Flooring:
  - Protect and retain existing. If new, to be by Owner.

GG. Signal Fixtures — New

Remove the existing signal operating fixtures and replace.

- Size faceplates to cover existing boxes and cutouts to eliminate/minimize cutting, patching, refinishing of wall surfaces.

Car operating panel:

- Call buttons with LED acknowledge lights and integral Braille plates.
- 1.5" LED position indicator with direction of travel arrows at top of panel.
- Emergency Light.
- Firefighters Emergency Operation devices per Code.
- Door open, door close buttons.
- Alarm button.
- Voice Annunciator.
- Hands free, voice announcing, auto dialing telephone instrument.
- Engraved Car Number identification, Capacity.
- Space and provisions for card reader.
- Keyed service switches-surface mount:
  - Access-enable switch.
  - Independent Service keyed switch.
  - Stop switch.
  - Light switch.
  - Emergency Light Test switch.
  - 2-speed fan switch.
  - One spare switch.
- Adjustable volume floor passing electronic toners.
- Door delay buzzer.
- 110 GFCI outlet.

Direction lantern:

- Car direction lantern with LED bulbs, in return jamb.
- Audible, adjustable volume electronic chime.

- Lantern to chime/light upon arrival of car at floor.
- Locate to be visible from hall pushbutton stations.

Hall pushbuttons.

- Hall stations at each entrance frame at ADA height.
- 1" position indicator with discrete direction of travel arrows in each hall station.
- Size box and faceplate to match and completely cover existing cutouts.
- LED bulbs.
- Firefighters Emergency Operation keyed switch and illuminated signal at 1st floor hall station.
- Communication failure fixture at 1st floor.
- Battery Operation/Emergency Power illuminated signal at 1st floor station with Firefighters Emergency key switch.
- If existing cutouts are not reused, blank off with stainless cover.

Top of Car Inspection Station.

Terminal landing hoistway access switches.

HH. Fixture Style and Finish — New

Fixture style and finish:

- 1/8" thick #4 satin stainless steel.
- Eased edges on cover plates.
- Tamperproof stainless-steel operating buttons with LED acknowledge jewel and with integral Braille indications.
- Tamperproof fasteners.
- Fire-safe all cutouts.
- Repair any walls damaged around fixtures.
- Comply with ADA height accessibility.
- Oversize faceplates to cover existing boxes.

3.2 ELEVATOR SUMMARY – ADDITIONAL

A. Work Hours

All work shall be performed during agreed upon regular hours, unless otherwise indicated in this specification.

Removal of existing jack cylinder, installation of new jack cylinder and redrilling, if required of existing jack cylinder hole to be done when building is not open.

All testing of interface of building systems with the elevator, i.e. standby power, fire alarm, etc. shall be done after regular hours, if required.

B.	Warranty	Twelve (12) months from completion of modernization.
C.	Interim Maintenance	Interim maintenance: From award of contract until removal of the elevator from service for modernization.
C.	Warranty Maintenance	Warranty Maintenance: Twelve (12) months from completion of modernization to coincide with Warranty period.
D.	Interface with Existing Building Life Safety Systems	Interface new elevator system with building systems, including fire alarm, three-phase and single-phase electrical power, etc. Perform fire alarm system interface.
E.	Permits/Inspection	Obtain permits and perform inspections and re-inspections necessary to obtain Certificate of Operation.
F.	Testing	Coordinate all testing with Owner and AHJ and perform the following: • Fire alarm system test and demonstration to AHJ. • Battery Power/Emergency Power system test and demonstration to AHJ.
G.	Codes	Comply with requirements of applicable local codes, including faceplate engraving, indicator lights, etc. Design and manufacture equipment to comply with clearance requirements of applicable Codes.
H.	Americans with Disabilities Act	Comply with requirements of Americans with Disabilities Act.
I.	Sound Isolation	Isolate hydraulic power unit.
J.	Variances	Apply for Variances that may be necessary due to existing conditions.
K.	Hoistway Inspection/Repair	Thoroughly inspect hoistway. • Provide 75° 16 gauge CRS steel bevels on any ledges in hoistway exceeding 4” • Patch and fire-safe holes and voids in hoistway. • Fire safe new and existing hall pushbutton penetrations, where required. • Patch and grout holes in equipment room floor resulting from removal of existing equipment
L.	Hoistway Protection	Erect and maintain OSHA approved barricades and enclosures to guard the elevator hoistway when exposed.
M.	Cleaning and Painting	At the end of the project prior to turn-over: • Thoroughly clean hoistway, car top rails, etc. at end of project.

- Paint facia, dust covers, toe guards.
- Stencil equipment identification number on power unit, controller, car top, buffers and disconnect switch.
- Paint the pit floor and equipment room floor with gray deck enamel.
- Paint areas of restricted clearance on car top and pit floor.
- Paint pit steel, buffer channels, buffers.

N. Storage

On-site storage for materials is limited.

- Store all new materials off site at a remote location. When brought to site, move directly to equipment room or to an area approved by and coordinated with Owner.
- All materials removed from hoistway and equipment room must be removed from site on the same day, unless moved to an area approved by and coordinated with Owner.
- Do not block sidewalk. Obtain approval from Owner and Atlantic City to erect barricades as required for access from street to elevator equipment room and elevator lobby.

O. Electrical Wiring and Conduit

Provide wiring from disconnect switch to new controller.

Replace all elevator electrical wiring, including:

- Travel cable.
  - Suspend via internal core.
  - Provide travel cable mesh protection.
- Hatch wire. .
- Interlock wiring.
  - Fire retardant code compliant.
- Safety circuit wiring.
  - All to be replaced for interlocks, hoistway switches, and miscellaneous devices.
- Signal fixture wiring.
  - All to be replaced for signal fixtures and miscellaneous devices.

Existing conduit may be retained if acceptable for use with new wiring.

Remove abandoned conduit and wire.

P. Cutting and Patching

Perform cutting, patching and firesafing of walls, floors, etc., where necessary for signal fixture boxes, etc. except marble, which will be by Owner

Q. Fire Protection

Obtain Owner approval for use of any "hot" tools, such as welders.

Comply with Owner's policy for use of such equipment.

Provide "smoke eaters" to inhibit smoke from exiting the immediate area of work.

R. Retained Equipment

All existing retained components and equipment shall be modified as necessary to operate as per Code with new equipment.

All parts to be replaced shall be new, original equipment manufacturer manufactured parts. DO NOT use parts obtained from secondary or after-market parts manufacturers.

S. Alarm

Provide a car mounted alarm bell with battery unit with solid state charger and means of testing. Battery to be rechargeable nickel cadmium with 10-year life expectancy. Interconnect alarm to car operating panel alarm button.

T. Emergency Power

Provide battery rescue system as part of controller.

Confirm auxiliary contacts are in and operational in power disconnect switches before activation.

U. CCTV and Security

CCTV Camera Provisions:

- Provide provisions for camera surveillance of the elevator.
- Camera and hook up by Owner.
- Provide travel cable.
  - Confirm type wire, Coax of cat5E, before required for travel cable and include wiring in travel cable, terminated at camera location in car and in control room outside controller in a designated box marked CCTV cable.
- Allow 10 ft extra, looped at each connection.
- Camera to be located in the car enclosure, mounted in corner mounted housing.
- CCTV Security contractor to furnish, install and hooked up by the CCTV Security contractor.
- Provide one 120V un-switched duplex convenience outlet dedicated to CCTV camera on the top of each elevator equipped with a CCTV camera.

Security System Interface:

- Provide for card reader security system interface.
- Coordinate with Security contractor.
- Confirm type travel cable wire and include wiring in travel cable, terminated at car operating panel location

in car and in control room outside controller in a designated box marked Card Reader cable.
- Allow 10 ft extra, looped at each connection.
- Readers to be located at the car operating panel and at the hall button stations. Coordinate with Owner.
- Reader to be provided by and hooked up by the Security contractor.
- Provide override of card reader upon a fire alarm condition.
- Provide card reader override key switch in car operating panel to override card reader operation.

V. Telephone

In car:
- Autodial ADA compliant hands-free telephone.
- Upon pressing of a button in the car, the telephone shall automatically dial a pre-programmed emergency number.
- Phone to have programming ability to include two additional numbers to dial in the event the dialed number does not respond to a call.
- Phone to automatically shut off.
- Battery back-up:
  - Capable of sustained operation of the complete system for a minimum of 4 hours.
  - Battery to have minimum life expectancy of 5 years.
  - Provide means to test battery.

3.3 MISCELLANEOUS ITEMS BY ELEVATOR CONTRACTOR

A. Remove and dispose of off-site all existing equipment listed to be replaced.

B. Provide equipment in accordance with AHJ requirement for elevators to be inspected in accordance with A17.1 Code

C. Apply for all Variances with AHJ, as necessary. Provide support and justification for all Variances which may need to be applied for requiring Variance, i.e. retention of pipes, drains, etc., as needed.

D. Protect building floors and walls. Provide masonite or plywood non-skid floor protection when transferring equipment from receiving location to elevator hoistways. Repair any damage to floors

E. Perform all cutting of walls, floors, etc., and repairs where necessary, and remove obstructions as necessary for proper installation of the elevator equipment.

F. Provide all recesses, block-outs and fixture cutouts to accommodate door operating equipment and, signal operating equipment, and grouting, patching and finishes required to maintain hoistway fire rating.

G. Thoroughly inspect hoistway for holes and voids and patch.

H. Provide all hoistway barricades and enclosures as required by and in conformance with OSHA and local code requirements. Do not expose hoistway to public at any time.

I. Extend wiring from disconnect switches to new controllers.

J. On-site storage for materials is limited. No extended on-site storage of materials will be provided. Store all materials off site at a remote location and, when brought to site, move directly to equipment room or to area in which materials are to be used.

K. Materials removed from hoistway and equipment room must be removed from site on the same day, unless moved to an area approved by and coordinated with Owner.

L. Interface new elevator system with all existing and new building systems, including emergency power signal, fire sensor signal, three phase and single-phase electrical power, etc.

M. Provide 75° 16-gauge galvanized steel bevels on all ledges in the hoistway in excess of 4" (except divider beams.)

N. Design and manufacture equipment to comply with clearance requirements of applicable Codes.

O. All existing retained components and equipment shall be modified as necessary to operate as per Code with new equipment.

P. Obtain approval for use of any "hot" tools, such as welders. Comply with Owner's policy for use of such equipment, including the use of "smoke eaters" to inhibit smoke from exiting the immediate area of work.

Q. Provide all required Professional Engineer's certification of elevator equipment room and hoistway drawings.

3.4 HYDRAULIC POWER UNIT AND OIL LINE

A. Remove and replace existing hydraulic power unit and dispose of off-site.

B. Remove all hydraulic fluid and dispose of in accordance with the Department of Environmental Protection Agency requirements.

C. The new hydraulic power unit shall be a compact, self-contained fully enclosed rigid steel submersible design. Power unit shall be floor mounted on isolators. Power unit shall contain the submersible pump and drive motor, hydraulic fluid control valve unit assembly, and storage tank.

D. Pump shall be a positive displacement screw type design, specifically designed for hydraulic elevator service, with a steady discharge for minimal vibrations to provide smooth operation. Output of the pump shall not vary more than 10% percent between no load and full load conditions on the elevator. Mechanical efficiency of the pump shall be minimum 85% under fully rated load conditions.

E. Motor shall be an alternating current, poly-phase, squirrel-cage induction type design motor, specifically designed for starting and running requirements of a hydraulic elevator.

F. The hydraulic control valve shall provide for step-less acceleration and deceleration. Valve shall ensure consistent operation and speed regulation regardless of load and/or oil temperature. Speed deviations throughout the load range shall not exceed 5% in either direction.

G. Hydraulic fluid reservoir storage tank shall be constructed of welded steel sheets and provided with a tight fitting cover, a protected vent opening, an hydraulic fluid level gage, a filtering screen mounted over the suction inlet and a drain connection and baffles as required to prevent surging and splashing of the hydraulic fluid upon reentering the reservoir. An initial supply of hydraulic fluid of the proper grade and volume shall be provided to permit proper operation of the elevator. Storage tank shall be of sufficient capacity to lift the elevator to the top terminal of the hoistway, plus a reserve of a minimum of ten gallons. Tank shall not operate as a pressure tank but shall operate only as a storage tank.

H. A blow out proof hydraulic muffler system, designed to reduce hydraulic pulsations and to minimize noise to permit quiet operation, shall be provided in the hydraulic fluid line near the power unit.

I. A self-cleaning main line strainer with a 60-mesh element and a magnetic drain plug shall be installed in the hydraulic fluid line.

J. Shut off valves shall be installed in the hydraulic fluid line in the elevator pump room and in the elevator pit to isolate the hydraulic fluid in the system to permit maintenance and repair work to be performed without draining the system.

K. An automatic pipe rupture shut-off valve shall be installed in the oil line immediately before the jack inlet. Automatic shut-off valve shall be adjusted to immediately stop the elevator in the event of a loss in supply pressure or an excessive oil flow condition.

L. Supplemental means to maintain oil operating temperatures within acceptable design ranges shall be provided, if necessary.

M. Hydraulic fluid shall be formulated specifically for hydraulic elevators. Hydraulic fluid shall meet Code requirements and elevator manufactures specifications for hydraulic elevator duty.

N. Supplemental sound isolation of the power unit and hydraulic operating system shall be provided, including:

1. A minimum of two sound isolating couplings in the oil line in the equipment room between pump and jack. Each coupling shall consist of two machined flanges departed by two neoprene seals to absorb vibration and to positively prevent metal to metal contact in the oil line. Build couplings in such a manner that they will be absolutely blow-out proof.
2. Vibration pads under the power unit assembly and oil line support brackets to isolate the unit form the building structure.
3. Locate the power unit at least 6 inches from any walls.
4. Resilient insert of neoprene sponge at any hydraulic floor or wall supports or use neoprene mount or hanger for the support.
5. Flexible conduit with ground wiring for pump unit connections.

O. Piping, fittings and valves shall be of sufficient schedule steel or extra heavy wrought iron with extra heavy fittings to exceed the pressures expected in operating the system. Piping installed

under floors or in trenches shall be given a heavy exterior coating of bitumastic or other corrosion resistant material, after assembly. Piping in the equipment room and pit shall be resiliently supported by isolators. Piping which penetrates walls shall have a resilient sleeve to prevent direct contact with the equipment e room wall. At least two hangers or supports shall be provided between each flexible coupling. All pipe connections shall be threaded.

P. All piping running through walls shall include a resilient penetration sleeve fabricated from a pipe that is ½" to ¾" larger than the penetrating element in directions around the element. Space between the sleeve and the penetrating element shall be packed with fire-safing insulation to within ¼" of the ends of the sleeve. Remaining ¼" space on each end shall be filled with a fire rated sealant to form an airtight seal. Penetrating element shall be able to pass through the sleeve without contacting the sleeve.

Q. Provide all new piping, fittings and valves, including a new threaded hydraulic oil line, of the proper schedule, properly supported and isolated from the hydraulic machine to the new hydraulic jack assembly and with approved shut off valves located in the equipment room and elevator pit. (Note: Victaulic connections are not acceptable).

3.5 HYDRAULIC CONTROLLER

A. Remove and replace the existing hydraulic elevator controller.

B. The elevator controller shall be designed to provide the required flow control of oil from the power unit to the hydraulic jack. This flow control shall bypass oil on the initial start of the pump, allowing the motor to attain full running speed, and gradually increase load to the motor over a timed acceleration interval. Thermal overload relays shall be provided to protect the motor in three phases. Time between door close and car start shall not exceed one second.

C. Solid state starting shall be provided to limit the motor starting current.

D. The elevator shall be provided with a self-leveling feature that will automatically bring the car level to the floor landing and maintain the car within 1/4" of level with the floor landing, regardless of rated capacity, load or direction of travel. Self-leveling shall be entirely automatic and correct for overtravel or undertravel.

E. The controller shall be enclosed in a properly ventilated metal cabinet with sides and top, and with hinged access doors on the front. Rubber mats shall be installed on the floor in front of the controller for electrical grounding protection of the equipment.

F. Controller printed circuit boards, discrete components, switches, and other items of control equipment shall be mounted on a common panel or individual panels which shall be made of a moisture-resisting, noncombustible material which shall be securely mounted in a substantial, self supporting steel frame. A vibration absorbing mounting shall be provided for the steel frame to eliminate perceptible vibration.

G. Electro-mechanical switches and relays shall be used where heavy current is supplied and/or on safety circuits required by the governing Codes.

H. Switches shall be the electro-magnetic operated with contacts of design and material to ensure maximum conductivity, long life and reliable operation without overheating or excessive wear

and provide a wiping action to prevent sticking due to fusion. Switches carrying highly inductive currents shall be provided with arc deflectors or suppressers.

I. Switches, printed circuit boards and discrete components shall be mounted in the front of panels together with any small electronic components. Large capacity resistors shall be mounted on the sides or top of panels.

J. Protective devices shall protect against overload and single phasing and against overload and phase reversal.

K. Time delay circuits shall be via electronic timing circuits.

L. Wiring on the controller shall be done in neat workmanlike order and connections shall be made to studs and/or terminals by means of solderless lugs or similar connections. Wiring shall be copper.

M. Terminal blocks with identifying studs shall be provided on the controller for connection of board wiring and external wiring.

N. Identifying symbols or letters shall be permanently marked on or adjacent to each device on the controller and the marking shall be identical to marking used on the wiring diagrams. In addition to the identifying marks, the ampere rating shall be marked adjacent to fuse holders.

O. Input-output devices shall be marked similarly to relays for ease of reference to wiring diagrams.

P. Confirmation of which floor is to be the main dispatch floor; the Fireman Recall floor and the Alternate Fireman Recall floor shall be obtained prior to fabrication of the control equipment. Control shall be programmable to enable dispatch and recall floors to be changed in the field.

Q. Electrical information necessary for review by the project Electrical Engineer shall be provided at the time of submission of the elevator hoistway layout drawings.

3.6 SINGLE CAR MICROPROCESSOR OPERATION

A. Elevator operation shall be solid-state microprocessor design simplex collective automatic, operating from calls registered by momentary pressure of car or landing pushbuttons. System shall incorporate a directionally selective response to landing calls as well as a collective retention of calls.

B. Elevator shall operate from buttons located at each floor and in the car. Registration of calls by momentary pressure on buttons shall cause the car to respond to passenger demand. Elevator shall slow down and stop automatically at landings corresponding to calls registered on car or hall buttons. Simultaneous to the initiation of the slowdown of a car for a hall call, that call shall be canceled. Call shall remain canceled and hall button ineffective until car doors begin to close after passenger traffic. Calls registered on car buttons shall cancel in the same manner.

C. In the event the doors are held open, or prevented from closing, for a predetermined adjustable period of time, initially to be set at 20 seconds, after automatic door closing has been initiated, a buzzer shall continuously sound, a voice announcement shall indicate to clear the doors, and the doors shall reopen. The doors shall not be permitted to close, even at a reduced speed, if an obstruction is in the plane of proximity detector curtain. When the obstruction is removed and

the doors are permitted to close, the doors shall close at a reduced speed. Buzzer shall continuously sound until the doors are fully closed. Door open button shall remain operable.

D. Door Dwell Times: Door dwell times shall be field adjustable between 1 and 30 seconds. Hall call timing shall predominate in the event of a coincidental car and hall call stop. Upon interruption of car door proximity detector, the door open time shall be reduced to an adjustable time of 0.5 to 5 seconds. Proximity detector control door dwell time shall be separately adjustable for car and hall calls.

E. Provisions shall be incorporated into the elevator control dispatch system to prevent loss of control memory, sequence of operation and/or other control functions due to fractional power interruptions, spikes or other interference.

3.7 CONTROLLER DIAGNOSTICS

A. The controller shall include the ability to perform diagnostic analysis of the system and be capable of determining faults. When a fault occurs, the computer shall be able to provide a retrievable fault code message identifying the location of the elevator, the time of day of the occurrence, and the number of times the fault occurred.

1. The following shall be provided:

a. Instructions for proper use of diagnostic system.
b. Maintenance of the diagnostic system and update of the associated instructions and other related documents.

3.8 INDEPENDENT SERVICE

A. Independent Service operation shall permit the elevator to be removed from automatic operation and be used for special service.

B. When the switch is in the Independent Service position, the elevator shall respond only to calls registered on the car buttons. Hall calls shall be automatically bypassed, and directional lanterns and high call operation circuits shall be inoperative. Car doors shall close only when a car call button is pressed.

3.9 FIREFIGHTERS EMERGENCY OPERATION

A. Firefighters Emergency Operation shall include Phase I, Phase II and Alternate Floor operation in accordance with ASME A17.1 Elevator Code and local Code requirements.

B. Key switches for Phase I and Phase II operation shall be the same and not operate any other device. Key shall be a uniform key for the facility and be acceptable to local authorities. Provide adequate quantity of keys to operate all Firefighters Emergency Operation devices at once.

C. Firefighters Emergency Operation Phase 1 key switch shall be located in the main Fireman access floor elevator lobby.

D. Floor access restrictions shall be overridden on Firefighters Emergency Operation.

E. Elevator control system shall be tied in and tested with the Fire Alarm system.

3.10 LOW OIL CONTROL

A. In the event the oil level is insufficient for travel to the top floor, provide controls to return the elevator to the main level and park until oil is added.

3.11 EMERGENCY POWER OPERATION - Battery lowering

A. Provide a battery-operated system as part of the elevator controllers to automatically lower each elevator to the lowest landing where it shall stop and allow the doors to open, then close in the event of loss of normal power. Door open button in the cab shall remain operational. Upon restoration of normal power, the elevator shall return to normal operation.

B. Provide an auxiliary contact in the disconnect switch, and shunt breaker if applicable, to inhibit elevator emergency lowering in the event the disconnect switch shuts power off. Auxiliary contact shall be positively opened mechanically and the opening shall not be solely dependent on springs. Contact shall cause additional power source to be disconnected from its load when disconnecting means is in the open position.

3.12 EMERGENCY LIGHTING AND ALARM

A. A self-contained power supply system shall be provided which shall operate a minimum of two of the light fixtures in the car enclosure, and an alarm bell in the event of loss of normal power.

B. The standby power system shall contain nickel cadmium batteries and charger and shall be provided with a means of testing. The standby power supply power system be operational for at least four hours. The operation shall be completely automatic upon failure of normal power supply.

C. The standby power system shall be connected to the normal power supply and be arranged to be energized at all times. After use, the standby power system shall recharge automatically. The standby power system shall have a minimum ten-year life expectancy

3.13 AMERICANS WITH DISABILITIES ACT

A. Elevator system operation and equipment shall comply with requirements of the Americans with Disabilities Act, ICC/ANSI A117.1.

3.14 MANUFACTURER/CONTRACTOR LOGOS

A. There shall be no Logos or Contractor's or Manufacturer's identification or nameplates visible within the car or in the corridors.

3.15 HOISTWAY ACCESS

A. A hoistway access switch shall be provided at the terminal landings, to permit access to the elevator car top and pit, as per local Code requirements. Switch shall be recessed with flush cover. Coordinate cutting of the box for the new devices with Owner.

3.16 TOP OF CAR STATION

A. The existing car top inspection station shall be removed and replaced.

B. The new inspection and maintenance control station shall be mounted on top of the elevator car. Station shall contain Up and Down direction buttons and an emergency stop switch, 110V GFCI duplex receptacle, work light and audible and visual signal to comply with the Firefighters Emergency Operation requirements. When the car is on inspection it shall operate at reduced speed by constant pressure on the appropriate direction button. Provisions shall be made to make normal operating devices inoperative while the top of car operating device is in use.

3.17 SIGNALS AND OPERATING FIXTURES

A. The existing signal operating fixtures shall be removed and replaced with new as indicated in equipment summary.

1. Car operating panel shall include:

   a. A series of car operating buttons with LED acknowledge light illumination corresponding to the landings served. Pressure upon a car button shall cause the button to illuminate. When car stops in response to a car call, call shall be canceled and button illumination extinguished.
   b. Alarm bell button.
   c. Door open and door close buttons.
   d. Plates containing raised numerals and Braille indications shall be mounted flush and adjacent to each floor button, operating buttons, and the alarm bell button.
   e. Adjustable volume electronic toner for audible signaling of floor passing and car stop, and buzzers to signal door delay and firefighters emergency operation.
   f. An emergency light fixture, with prismatic flush lens.
   g. Firefighters Emergency Operation Phase II key switch, illuminated signal and call cancel button.
   h. Hands-free ADA compliant telephone and speaker.
   i. Engraved and filled in standard Helvetica graphics as follows: “Capacity” (0.25”), “Car Number” (0.5”), “Fire fighter’s Instructions” (0.125”), And all other engraving as required by Code.
   j. Keyed service switches:

      1) Independent service.
      2) Light.
      3) Two speed fan.
      4) Emergency light test.
      5) Inspection/access.
      6) Stop switch
      7) 110V GFCI outlet.

   k. Voice annunciator speaker.

l. Engrave and fill, in standard Helvetica graphics as follows: “Capacity” (0.25 inch), “Car Number” (0.5 inch), “Firefighters Emergency Operation Instructions” (0.125 inch), and all other engraving required by Code”.

2. An LED digital readout position indicator to indicate position of the car in the hoistway and include arrows to indicate direction of car travel shall be provided.

3. Directional lantern with adjustable audible electronic toners shall be provided in the cab entrance jamb. Directional lantern shall signal once if a car is traveling in Up direction and twice if in Down direction and signal waiting passengers of arrival of next elevator and direction of travel.

4. Landing pushbutton fixtures shall be provided at each floor which shall contain Up and/or Down pushbuttons and an LED digital readout position indicator to indicate position of the car in the hoistway and direction of travel. LED illumination shall be provided in each button, which shall light upon pressure registration of a call at that landing and extinguish when a car responds to that call.

5. Firefighters Emergency Operation Phase I key switch and illuminated signal shall be located at primary Fire access floor elevator lobby to permit elevators to be recalled manually via operation of that key switch. Primary Fireman access floor and alternate floor shall be confirmed prior to fabricating control or installing key switch station.

6. An illuminated signal shall be provided at the designated level marked “Elevator Battery Power” to indicate that normal power has failed, and battery emergency power is in effect.

7. Visual and audible signal and reset shall be provided at the designated level to indicate communication failure.

8. A hoistway access switch shall be provided at the top and bottom terminal landings to permit access to the car top and elevator pit. Cover plate to match entrance finish.

B. Fixture faceplates shall be a minimum of 1/8 inch thick with eased edges to eliminate sharpness and finished per the Equipment Schedule. Faceplates graining shall run vertically.

C. Landing, car and lobby fixtures shall be mounted with tamperproof type screws. Screws shall be same finish as the faceplates.

D. Key switch cylinders in faceplates shall match the faceplate finish.

E. Hall pushbutton bulbs, car operating panel pushbutton bulbs and hall lantern bulbs shall be LED. Bulb light shall be of sufficient intensity to not be overwhelmed by surrounding light. Car and hall pushbutton bulbs shall be uniform white.

F. Fixtures and devices shall be located as required by the Americans with Disabilities Act. Fire-safing of wall penetrations shall be performed.

3.18 VOICE ANNUNCIATOR

A. A programmable voice annunciator system shall be provided in the car. Voice annunciator system to include:

1. Solid state digital speech annunciator.

2. A recording feature for customized messages.
3. Playback option.
4. Built-in voice amplifier.
5. Master volume control.
6. Audible indication for selected floor, floor status or position, direction of travel and nudging.

B. Locate all associated equipment in a single, clearly labeled enclosure on the car top.

C. Voice annunciation shall be provided with ability to activate the following actions:

1. Upon arrival at a floor, announce floor number.
2. As doors open at destination floor: Activated when the elevator stops at the designated level, "Floor (followed by floor number), 0.5 second pause "This car going (Up or Down)".
3. Immediately before door closing sequence is initiated: "Doors closing".
4. Nudging: Activated when the doors are delayed from closing beyond the scheduled dwell time. "Please allow the door to close".
5. Exit message, activated when on Firefighters Emergency Operation and/or Emergency Power Operation: "Emergency, this elevator is on Emergency Service. Please exit when the elevator arrives at the next floor"

D. Language: English.

E. Voice: Messages shall be in a calm, female gender voice, with phrases paced at 3 syllables per second.

F. Messages and actual voice shall be submitted to the Owner from manufacturer's standard range of voice products for Owner selection. Voice shall be digitized recordings of actual human speech, not synthesized voices. Voice recording shall be absent of background noise at normal listening levels. Volume of the announcements shall be field adjustable for each group of cabs within a range of plus or minus 20dB. The base setting shall be 10 dB above ambient levels in the cab with all equipment running.

3.19 TELEPHONE, CCTV and CARD ACCESS SECURITY INTERFACE

A. Communication System:

1. An ADA compliant hands-free telephone and wiring from the telephone to terminals on the elevator controller, shall be provided in car operating panel.
2. Others shall provide telephone wiring to the equipment room controller location.
3. Hands-free telephone shall be integral with the car operating panel and include instructions for use, pushbutton to initiate the call, microphone transmitter, speaker and acknowledge light to indicate when the call has been answered.
4. Operation of telephone shall automatically signal call acknowledgment and automatically reset on call termination and not require any special action on the part of the operator.
5. The telephone shall have capability for ring-down use with in-house telephone system or operate with standard dial tone.

B. CCTV Camera Provisions (If required):

1. Provide provisions for camera surveillance in the elevator cab. Cameras by Owner's security system contractor.

2. Confirm type wire required for travel cable and include wiring in travel cable, terminated at camera location in car and in control room outside controller in a designated box marked CCTV cable.
3. Allow 10 ft extra, looped at each connection.

    a. Camera to be located in the car enclosure, mounted in corner mounted housing.
    b. Camera to be provided by CCTV Security contractor, installed and hooked up by the CCTV Security contractor.
    c. Provide one 120V un-switched duplex convenience outlet dedicated to CCTV camera on the top of each elevator equipped with a CCTV camera.

C. Card Reader Provisions (If required):

1. Provide provisions for Card Reader System in the elevator cab and at hall stations. Card Readers by Owner's security system contractor.
2. Confirm type wire required for travel cable and include wiring in travel cable, terminated at camera location in car and in control room outside controller in a designated box marked Card Reader cable.
3. Allow 10 ft extra, looped at each connection.

    a. Card reader to be located in the car enclosure, mounted in Car Operating Panel.
    b. Card Reader to be provided by Security contractor, installed and hooked up by the Security contractor.

3.20 JACK ASSEMBLY REMOVAL AND REPLACEMENT

A. The existing jack assembly shall be removed and replaced.

1. Pump hydraulic fluid out of the existing jack assembly and dispose of as per requirements of local environmental agencies.
2. Remove the jack assembly, oil line, related hardware, and fittings, and clean out the jack hole to create a clean hole.
3. Plumb hole and determine adequacy for use with new jack assembly. Jack assembly to include manufacturers PVC encased integral system.
4. Minimize demolition of the concrete, which may be surrounding the jack hole casing.
5. Dispose of all oil and contaminated materials in a proper manner in accordance with regulatory authority requirements

B. Install the new PVC encased hydraulic jack assembly in the hole, plumb.

1. Once the jack assembly is aligned and plumb, backfill the casing with clean dry sand to maintain the plumb cylinder alignment.
2. Restore concrete damaged due to removal of jack cylinder assembly or installation of new jack cylinder assembly.
3. Embed jack assembly PVC waterstop ring in non-shrink concrete.

3.21 JACK HOLE REDRILLING - Alternate No. 1

A. If, once the jack assembly is removed and the jack hole cleaned out, it is determined that the jack hole outer casing has insufficient clear plumb diameter to install the new PVC encapsulated jack assembly system, advise Owner and obtain authorization to redrill cylinder hole.

B. Upon Owner authorization, pull the jack hole outer casing and re-bore the hole to sufficient depth and diameter to accommodate a new steel outer casing and the new PVC encased hydraulic jack assembly with a pit water-stop ring.

1. Removal of the jack assembly, cleanout of the hole, installation of the new PVC encapsulated jack assembly in cleaned out hole is to be included as part of the Base Bid work.
2. Removal of the existing jack hole casing, re-boring of the hole, if required, and installation of a new steel outer casing shall be bid as an Alternate to the Base Bid and a separate price shall be provided for this work.

C. Restore the pit floor concrete disturbed due to the removal of the existing jack cylinder and jack hole casing.

1. Provide a PVC waterstop ring for pit to be dry.
2. Embed jack assembly PVC waterstop ring in non-shrink concrete.
3. Provide certification from a Structural Engineer that the pit floor integrity has been restored.

3.22 HYDRAULIC FLUID DISPOSAL

A. Engage a licensed environmental firm regularly employed in the recovery and removal of hazardous materials, to evacuate, remove, and properly dispose of all hydraulic fluid, and all hazardous and contaminated materials from the job site.

1. When requested:

a. Submit a sample of the spoils to a certified and approved testing lab for analysis.
b. Submit testing lab test results to the Owner.
c. Provide manifests supporting removal methods, procedures and site of disposal of materials to the Owner for record.
d. Provide the location of the disposal site to the Owner for substantiation of authorization of site to receive contaminated materials.

3.23 HYDRAULIC JACK ASSEMBLY; PIPING

A. Remove and replace the existing hydraulic jack assembly and oil lines.

B. Hydraulic jack assembly shall be a single (non-telescoping) piece fabricated of steel pipe of sufficient thickness to withstand operating and overload pressure, closed at the bottom and provided with a removable cylinder head and packing gland at the top. Bottom of the jack cylinder shall have a safety bulkhead in addition to the welded closure. Jack head shall have a bronze or Babbitt lined bearing and an integral drip ring. Packing shall be of the self-adjusting type, not requiring external adjustment, and shall allow operation of the plunger with minimal friction. Packing gland shall be arranged for and a return system shall be provided to automatically return any hydraulic fluid, which may escape the packing ring to the reservoir.

C. The jack assembly shall be contained within an integral sealed PVC protection system provided by the jack manufacturer, sealed at top and bottom to protect the jack assembly from corrosion and electrolysis.

1. A means shall be provided as part of the jack/PVC system to determine if water has entered the PVC containment system and to evacuate same pursuant to Code requirements.
2. PVC shall include a waterstop ring to be embedded in non-shrink concrete in the pit floor.

D. Structural steel channels shall be provided to support the jack and to transmit the vertical loads to the building structure.

E. Exposed jack assembly shall be laterally supported, and access ladders and service platforms shall be provided for access to cylinder heads. Existing access ladders and service platforms may be retained if acceptable to local Code authority.

F. Plunger shall be a single stage, seamless steel pipe or tubing, turned true and smooth and polished to a fine finish. Internal couplings shall join multiple piece plungers. Telescoping applications are not accepted.

G. Plunger shall be fastened to the bottom of the car frame by means of vibration isolating dampening plates to prevent noise and vibration from being transmitted to the car frame. A stop plate shall be welded on the bottom of the plunger to prevent the plunger from leaving the jack cylinder.

H. Grey cast iron or other brittle materials shall not be used, and the cylinder and plunger unit shall be factory tested at not less than 400 psi for strength and freedom from leakage. All jacks shall be tested for potential leakage, and corrected if any is observed, before they are finally installed.

I. Oil lines shall be threaded, of the proper schedule, properly supported and isolated from the hydraulic machine to the hydraulic jack assembly and with approved shut off valves located in the equipment room and elevator pit. Victaulic connections are not acceptable.

J. Piping, which penetrates walls, shall have a resilient sleeve to prevent direct contact with the equipment room wall and the hole fireproofed. At least two hangers or supports shall be provided between each flexible coupling.

3.24 SPRING BUFFERS

A. Remove and replace the existing buffers.

1. Provide new spring buffers and pit mounting channels.

3.25 PIT LADDER

A. Remove and replace the existing pit ladder.

1. Code compliant steel pit ladder with handgrips extending 48” above access floor level.

3.26 PIT STOP SWITCH

A. Remove and replace the existing pit stop switch.

1. Provide a new stop switch in the elevator pit located adjacent to pit access ladder.

3.27 PIT LIGHT AND SWITCH

A. Remove and replace the existing pit lights.

1. Provide a new guarded LED strip light fixture and an 110V duplex GFCI receptacle in the elevator pit to provide illumination not less than 10-foot candles at the pit floor. Locate a pit light switch accessible from pit access ladder.

3.28 GUIDE RAILS

A. Retain the existing guide rails.

B. Rails and rail bracket fastenings shall be examined and resecured to the building structure, as necessary. Running surface of the guide rails shall be thoroughly cleaned. Joints shall be filed smooth and the alignment shall be checked and adjusted to within 1/8" (+ or -) top to bottom and face to face, as required for proper and smooth operation of the elevator. Unmachined portion of the guide rails and brackets shall be thoroughly cleaned.

C. Anti-snag guards shall be provided where necessary to prevent travel cables from snagging on brackets, fishplates, clips or bolts.

D. Unmachined portion of the guide rails and brackets shall be touched up with rust inhibitor paint at the conclusion of the project.

3.29 CAR FRAME

A. Retain the existing car frame.

B. Car frame members shall be checked and secured. The car frame shall be reinforced, as necessary, to relieve the car enclosure from undue strains.

3.30 PLATFORM

A. Retain the existing car platform.

B. Retain and protect the existing car platform flooring.

C. Remove the existing toe guard and provide a new toe guard on the entrance side of the car platform extending the full width of the car opening and below the surface of the car platform of not less than the depth of the leveling zone plus 3", a minimum of 21”. The lower portion of the toe guard shall be bent back at an angle of 75º.

D. If the cab is replaced, provide a new extruded aluminum sill and new plywood subfloor, prepared for the new flooring. Provide Vinyl tile or carpet tile floor, as per Owner.

3.31 CAR GUIDE SHOES

A. Remove and replace the existing car guide shoes.

B. Provide new removable gib slide guide shoes.

3.32 ENTRANCE ASSEMBLIES

A. The existing hoistway landing entrances shall be retained.

B. All fastenings of the retained landing entrance assemblies shall be made secure. Any repairs that may be required, or alterations necessary to adapt the new doors and door operating equipment to the existing hoistway landing entrance assemblies, shall be performed.

C. Landing sills for all openings shall be cleaned to permit smooth operation of the door gibs in the sill tracks.

D. Fascia, toe guards, hanger covers, and dust covers may be retained, if in compliance with Code and if reinforced, resecured, and degreased. New fascia shall be sheet steel, reinforced as necessary to prevent deflection and to present a flat surface. Fascia shall be no more than 5 inches from the edge of the car sill, or as required by Code, throughout the full rise of the hoistway and be securely fastened to hanger housings, intermediate supports and sills. The fascia shall overlap the entrance width by a minimum of 6 inches on each side. Fascia shall be secured at hanger supports and at the sills with oval head machine screws. All existing and new, fascia, toe guards, hanger covers, and dust covers shall be painted with rust inhibitor paint. Six (6) inch high numerals designating the appropriate floor shall be stenciled at six (6) foot intervals on all fascia.

E. New door stops and rubber bumpers shall be mounted at the top and bottom of the strut angles to cushion and limit the extreme travel of the door panels.

F. Floor identification plates shall be provided on each side of each entrance frame jamb at 60 inches above the finish floor line and be minimum two (2) inch high numerals with Braille. Numerals and Braille shall be raised stainless steel finish against a contrasting black painted background. Plates shall be secured to the jamb by concealed fasteners. Samples shall be submitted for approval.

G. A pictograph sign, minimum 1/8" thick, stating "In Case of Fire Do Not Use Elevators-Use Exit" and graphics required by Code, shall be provided at all floors above the hall pushbutton station. Shop drawings and/or samples shall be submitted for approval. Finish to match entrance finishes.

3.33 HOISTWAY DOOR PANELS

A. Retain the existing hoistway doors.

B. Reinforced for new power operation. Retain existing locations for emergency release keyways.

C. Provide heavy duty door gibs with fire tabs.

3.34 ELEVATOR DOOR OPERATING EQUIPMENT

A. Remove and replace the existing door operating equipment.

B. A motor driven heavy-duty door operator with closed loop control system and electronic and digital operation shall be provided. Door operator shall open and close car doors and hoistway doors simultaneously at any landing through use of pickups and an automatic clutch arrangement.

C. Closed loop control shall give constant feedback on the position and velocity of the elevator door. Motor torque shall be constantly adjusted to maintain correct door speed based upon

position and load of the door. Door movements shall be electronically cushioned at both limits of travel and door operating mechanism shall be arranged for manual operation in the event of power failure with amount of force needed not to exceed thirty pounds per Code.

D. Closing speed of hoistway doors shall not cause the kinetic energy of hoistway door assembly to exceed 7 foot-pounds per Code. Doors shall begin to open when car has stopped at floor level.

E. Doors shall open automatically when the car has stopped at floor line and shall again close after predetermined time interval has elapsed or when the car is parked. A door open button shall be provided in the car, momentary pressure on which shall reopen the door and reset the time interval. Momentary touch of the corridor button at the floor at which the elevator is parked shall cause the doors to open. Doors shall reclose if no call is registered after an adjustable time interval. Emergency stop key switch operation shall open the car doors only after the car has come to rest.

F. Car and hoistway door hangers shall be sheave type arranged for two-point suspension of the doors. Sheaves and rollers shall be steel or have resilient sound-absorbing tires of approved material and shall include ball bearings properly sealed to retain grease lubrication. Adjustable ball bearing rollers shall be provided to take up thrust of doors. Hangers shall have safety retainers. Hanger tracks may be retained and cleaned. Worn tracks shall be replaced.

G. Hoistway door closers and relating devices shall be provided for hoistway doors. Operation of door closers shall be per Code.

H. Car door and hoistway doors shall be arranged that hoistway doors and car doors cannot be opened more than 4 inches from inside car when car is outside unlocking zone, per the requirements of ASME A17.1.

I. Mechanical electrical interlocks of a design, which will operate without use of a retiring cam, shall be installed at each landing entrance.

3.35 PROXIMITY DOOR DETECTOR EDGE

A. Remove and replace the existing door detection system.

B. A new full curtain screen design proximity detector door edge shall be installed on the car doors. Device shall include a full curtain of LED light-rays to fully cover entire opening and be so arranged that, should the plain of the screen be penetrated or if the edge should be touched or an object come into proximity of the doors while the doors are open or while the doors are closing, it shall cause car and hoistway doors to remain in the open position or, if closing, cause the doors to return to open position. Design and operation of the proximity detector shall be in conformance with requirements of the Americans with Disabilities Act.

C. Should the proximity detector be interrupted for an extended adjustable period of time, an adjustable volume buzzer shall continuously sound until doors are released and allowed to fully close. Doors shall not be permitted to close, even at a reduced speed, if an obstruction is in the plane of proximity detector curtain. Nudging shall not be activated, only audible signal provided.

D. The control system shall permit adjusting of varying door dwell times after the proximity detector is interrupted, based on car call time and hall call time.

E. Should the proximity detector device become inoperative, elevator shall be removed from service until the proximity detector is made operational and elevator returned to service.

F. A second independent 3D detection system consisting of an infra-red proximity detector which operates between the hoistway doors and landing doors shall be provided. 3D system shall detect any reflection within the 3D zone in the landing, which triggers the system, causing the doors to reopen. 3D system shall have multiple modes of activation to suit the building requirements. 3D system shall desensitize after either three attempts to close or after doors have been held open for a predefined time. Static curtain detector shall remain operational when 3D system is desensitized.

3.36 ELEVATOR CAR ENCLOSURE

A. The elevator car enclosure shall be retained.

1. Top exit shall be inspected and modified as required for Code compliance.
2. New lighting shall comply with Code required minimum illumination levels.
3. The existing exhaust fan shall be replaced with a new motor driven propeller type fan rubber mounted to prevent transmission of vibrations to car structure. Fan shall be a two (2) speed type and have a capacity of one air change per minute at low speed and 1.5 air changes per minute on high speed. The unit shall not exceed 45 dBa approximately 3 ft above the car floor when on high speed. A switch shall be provided in car-operating panel to control fan.
4. Removable panels shall be particle board ¾ inch overall thickness with ½" separation reveal. Metal clad panels shall wrap the sides of the panels. All edges shall be eased to eliminate sharpness.
5. Rails shall be fastened to car enclosure walls via through bolts penetrating the panels, fastened to 4” x 4” x ¼” steel reinforcing backing plates with nuts and lock washers.
6. Car entrance, when provided, shall be provided with new 16-gauge hollow metal CRS horizontal sliding doors with flush surfaces both sides, min 1.25” thick. Car side surface of doors shall be clad with stainless steel. Door panel rigidity shall be obtained by suitable steel reinforcement. Doors shall be guided at the bottom by non-metallic shoes sliding in a smooth machined groove in an extruded non-slip car sill. A minimum of two gibs shall be provided on each door panel. New heavy duty gibs shall be provided and be replaceable without removing door panels from the track. Door panels shall have sound deadening filler. Doors shall be reinforced for power door operation.
7. Pad hooks shall be mounted on walls and on return panel for the hanging of protective wall pads. Reinforced vinyl covered protective wall pads with hanging clips shall be provided. One set of pads shall be provided.
8. Cutouts for car fixtures shall be reinforced and located to permit signal operating fixtures to be in compliance with ADA requirements.
9. A Certificate of Operation frame shall be provided.

B. Should the elevator car enclosure be replaced, provide a new 14 gauge shell, 12 gauge canopy with top exit, lock and electrical contacts, new plywood car platform subfloor, new extruded aluminum car sill and interior finishes as describe in Section A, above.

3.37 FINISHED FLOOR

A. Finish flooring shall be per the Equipment Summary.

3.38 ELECTRIC WIRING

A. Remove and replace the existing elevator electric wiring and travel cable.

B. Existing wiring, travel cable and abandoned conduit shall be removed from the hoistway, pit, and elevator equipment room. Existing conduit and duct, which is in compliance with Code and compatible with the new equipment, may be retained.

C. Power and control wiring to connect parts of the elevator equipment including controllers, cars, remote panels, and signal operating fixtures shall be insulated copper wiring.

D. Wiring shall have a flame retarding and moisture resisting insulating outer cover and be run in metal conduit, metallic tubing or wire ducts. Wiring shall bear the UL approval or equivalent for service intended and be installed in accordance with National Electric Code.

E. Travel cables for elevator cars shall have a flame retarding and moisture resisting outer cover and be circular in cross section. Travel cables shall contain a steel core and be flexible and suitably suspended by the steel core to relieve strains in individual conductors. Cables shall contain an approximately equal number of conductors and be of approximate equal diameter and flexibility. Traveling cables shall be terminated in a junction box on top of the car and in elevator equipment room. Anti-snag guards shall be provided to prevent travel cables from snagging or abrading on beams, brackets, or any surfaces within the hoistway.

F. Each elevator shall include a minimum of:

1. Six (6) pairs of 22/6 shielded wires for use by a building security and/or communication system for two in-car readers per car
2. One (1) 22/6 shielded wires for use by a building security to each hall station.
3. Two (2) video coaxial cable Type RG59/U.
4. Three (3) Draka Cat 5e – 20AWG cables per cab. 1 for IP camera, 1 for intercom/telephone, 1 for spare. 300ft max distance run allowed.
5. All other special wiring as may be required to accommodate telephone, music, card readers, etc.

G. Ten percent spare wires shall be provided between each controller, hoistway junction box and remote panel and in each traveling cable. Spare wires shall be properly tagged.

H. A duplex 110V GFCI receptacle shall be provided in the car enclosure and on top of the crosshead in the Top of Car operating panel.

I. An emergency alarm bell shall be mounted in the hoistway, or just outside the hoistway, where directed by local Code enforcement official.

J. Interlock wiring of elevator entrances shall be Teflon insulated, or as required by Code.

K. Elevator cab lighting circuits of each elevator shall be separate of any other elevator.

L. Wiring, conduit, fittings and devices in pit shall be waterproof NEMA rated design and be identified for use in wet locations in accordance with NFPA 70.

3.39 PAINTING

A. The elevator hoistway, pit, and elevator equipment room shall be thoroughly cleaned at conclusion of the project and prior to Acceptance.

B. The elevator hoistway, pit, and elevator equipment room shall be thoroughly cleaned at the conclusion of 12-month Warranty period.

C. The elevator equipment room and pit floor shall be painted with two coats of deck enamel, after final adjusting.

D. Restricted clearance areas on car top and in the pit shall be delineated by contrasting color.

E. Exposed ferrous metal surfaces of power units and controllers shall receive a factory applied primer and finish coat of rust inhibiting machinery paint.

F. Exposed ferrous metal in the hoistway including guide rails, brackets, pit steel, buffers, platforms, ladders, car frames, shall be thoroughly cleaned.

G. Fascia, dust covers, toe guards receive a primer and finish coat of rust inhibiting paint and be touched up or repainted after installation and final adjusting.

H. Electrical wiring ducts, junction boxes, switch boxes, signal boxes, terminal boxes, rigid or flexible metallic tubing, trough and brackets shall be painted to prevent corrosion or be fabricated from a noncorrosive material.

3.40 PERFORMANCE

A. Elevator system shall be required to meet the following performance criteria.

1. Control:
   a. Design and adjust equipment and control so that an average acceleration over total accelerating period of not less than 2.2 FPSPS is maintained and acceleration peaks do not exceed 3.5 FPSPS.
   b. Provide a selector as part of operating system to accurately provide signal to control of the exact position of the elevator within hoistway within ¾ inches.
2. Operating Time:
   a. Adjust equipment so that elapsed time to travel one typical floor does not exceed time parameters as follows:
      1) Flight time: 13 seconds.

         Start to measure time when fully opened doors begin to close and continue to measure time until car is stopped level with next floor and car and hall doors are open to three quarters of fully open position.
   b. Criteria to be used when measuring the time durations are as follows:
      1) A typical floor shall not exceed 14 feet.
      2) Floor level is considered to be within ¼ inch of level.

3) Time is measured with full load in the car and in both directions of travel.
4) Power door operation for the hall and car doors conforms to Elevator Code requirements.

c. Adjust equipment so that operating speed in both directions of travel under load and no-load conditions does not vary more than three percent.
d. Adjust equipment so that operating time as set out above is compatible with dependable, consistent operation without undue wear on the equipment, can be maintained without excessive maintenance and so that operating time can be readily maintained over the life of the elevator installation.
e. Adjust equipment so that, with the control adjusted to give the required time, elevator operates under smooth acceleration and retardation and provides a comfortable and agreeable ride to passengers.

3. Leveling:

a. Cause the car to stop automatically at floor level without overshooting, regardless of load or direction of travel, so that car sill is within ¼ inch of level with respect to hoistway sill.
b. Correct for overtravel or undertravel or rope stretch by returning car imperceptibly to the floor. Releveling shall not commence within the ¼ inch floor landing zone, above or below, with doors in open position. Releveling sequence of operation within this zone shall be initiated with car doors in closed position only.

4. Door Time/Door Operation:

a. Arrange time necessary for passenger elevator doors to operate as follows:
b. Arrange doors to close with an average horizontal speed creating a kinetic energy not in excess of 7 foot-pounds.

c. Arrange time necessary for passenger elevator doors to operate as follows:

1) Opening: Measured from start of door opening to ¾ of fully open position.
2.0 seconds.

2) Closing: Measured start of door closing to fully closed position.
3..5 seconds.

3) Door Dwell Time: Measured as follows:

a) 3 seconds after stopping for a car call.
b) 5 seconds after stopping for a hall call.
c) Individual timers shall be adjustable from 0 to 90 seconds.

4) Reduced Door Dwell Time: Measured as follows.

a) Initially adjusted to 1 second.
b) Short door dwell time after interruption of proximity detector to be adjustable from 0 to 10 seconds.

5) Main Lobby Door Dwell Time: Measured as follows:
a) Initially adjusted to 10 seconds.
b) Timer to be adjustable from 0 to 30 seconds.
c) Load weigher to bypass door dwell time if load in car is 60% of rated capacity.

6) Arrange that door closing force, as measured when a door panel is stalled in the act of closing, does not exceed 30 lbs.
7) Arrange equipment so that the increase in noise level over ambient noise level as measured within the cab, does not exceed four decibels at any time during a full door open, door close and door reversal cycle.

PART 4 - EXECUTION

4.1 EXAMINATION

A. Examine elevator areas for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Examine hoistway, hoistway openings, pits, and equipment rooms; verify critical dimensions; and examine supporting structure and other conditions under which elevator work is to be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

4.2 PROJECT MANAGEMENT AND SUPERVISION

A. Designate an experienced Project Manager to perform administrative management of the project.

B. Place a competent Superintendent in charge of the project throughout the course of the work.

C. Place a competent on-site job Foreman to be responsible for day-to-day operations and scheduling with the Owner.

D. Project Manager and Superintendent shall be available to the Owner to assist in the progress and coordination of the work of the project and shall represent the Elevator Contractor in matters relating to the project.

4.3 CONDUCT AT SITE

A. Instruct all personnel to refrain from unworkmanlike conduct while on the Owner’s property.

B. Property is a smoke-free facility. No smoking is permitted in any location in the facility.

C. Unworkmanlike conduct or smoking on the property shall be grounds for permanent removal of the violator from the job site.

4.4 MATERIAL AND EQUIPMENT DELIVERY, STORAGE

A. Deliver materials in the original unopened protective packaging and store in the protective packaging to prevent soiling, physical damage or wetting.

B. Protect equipment and exposed finishes during transportation, erection and construction against damage and stains.

C. Confine apparatus and the storage of materials to limits established by law, ordinances, permits or directions of the Owner and do not unreasonably encumber the premises with his materials.

D. Properly store flammable or combustible materials to obviate fire and in areas approved by the Owner.

4.5 CONSTRUCTION PROJECT MANAGEMENT AND COORDINATION

A. Perform overall project management of the project and coordinate all trades, including subcontractors and other prime contractors associated with the project to assure work is completed in accordance with time schedule requirement for project completion.

B. Conduct meetings as needed to assure work of all trades is coordinated.

4.6 PROTECTION OF PERSONS AND PROPERTY AND CLEANING

A. Initiate, maintain and supervise all safety precautions and programs in connection with the work and at minimum, follow guidelines of the most recent NEII (National Elevator Industry, Inc) Elevator Industry Field Employees' Safety Handbook.

B. Take responsible precautions for the safety of all employees and other persons on the project.

C. Provide reasonable protection to prevent damage to other work and materials and equipment to be incorporated herein whether in storage on or off the site or under the care custody or control of subcontractors.

D. Comply with applicable laws, ordinances, rules, regulations and lawful orders of any public authority having jurisdiction over the safety of persons or property to protect them from damage, injury or loss. Erect and maintain, as required by existing conditions and progress of the work, reasonable safeguards for safety and protection, including posting of danger signs and other warnings against hazards.

E. Do not load or permit any part of the work to be loaded so as to endanger the safety of the building or occupants.

F. Keep the premises, driveways and streets clean and free from excess accumulation of waste material or rubbish caused by the Elevator Contractor's operations.

G. At the completion of each workday, remove rubbish from and around the premises and tools, scaffolding and temporary work shall be left broom clean, unless otherwise specified.

H. Failure to attend to such cleaning with reasonable promptness may cause such cleaning to be done by others with cost for cleaning backcharged to the Elevator Contractor.

4.7 DEMOLITION, CUTTING, ALTERATIONS AND REMOVALS

A. Protect and repair surfaces, such as roofs, walls, windows, floorings, ceiling, etc., which are damaged or disturbed due to the performance of the work of this contract, in a first-class workmanlike manner to match existing and surrounding areas.

B. Provide permanent and temporary bracing and anchoring required for the support or transfer of any load while work is in progress. Work shall be made absolutely stable and secure and the Elevator Contractor shall be held strictly responsible for any damage resulting from failure to properly furnish such support.

C. Protect the Owner's property, equipment and materials against damage, dust and dirt and confine methods of construction to promote safety and reduce noise and dust and provide necessary protective guards, barricades, tarpaulins and drop cloths.

D. Remove unused equipment and rubbish on a continual basis and keep the premises clean during the term of the project. At the completion of work leave the premises clean and in such condition as is satisfactory to the Owner.

E. Provide barricades and enclosures, which are necessary to guard the elevator shaft when the elevator shaft is exposed.

4.8 HOISTING AND HANDLING

A. Provide cartage, handling and receiving, hoisting and lowering and removal of equipment related to the work, from the property.

B. Obtain permits, pay fees and coordinate with local authorities, including local police and fire departments, for use of crane service on and around the property.

C. Install equipment in accordance with the equipment manufacturer's direction, referenced codes and specifications.

D. Install equipment with clearances complying with referenced and applicable codes and specifications.

E. Install equipment so as to be safely accessible for maintenance and be removable via portable hoist or other means for maintenance and repair.

4.9 INSTALLATION

A. Comply with manufacturer’s written instructions.

B. Provide welded connections for installing elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualifications of welding operators.

C. Mount rotating and vibrating equipment on vibration-isolating mounts designed to minimize transmissions or vibrations to structure and thereby minimize structure-borne noise from elevator system.

D. Lubricate operating parts of systems as recommended by manufacturers.

E. Leveling tolerance shall be maximum 1/4” up or down, regardless of load in car and direction of travel.

F. Pre-hang traveling cables for at least 24 hours with ends suitably weighted to eliminate twisting.

G. Pack openings around wall penetrations with fire resistant, sound isolating material.

4.10 EXECUTION

A. Initiate, maintain and supervise safety precautions and programs in connection with the work and at minimum, follow guidelines of the NEII (National Elevator Industry, Inc) Elevator Industry Field Employees' Safety Handbook.

B. Perform the following as part of the execution of the work:

1. Provide safety barricades compliant with the NEII Field Safety Handbook and all applicable OSHA guidelines.
2. Restore all barricades removed to facilitate work, to ensure the safety of the contractor's workforce and compliance with Owner requirements. Provide all temporary barricades to protect work areas when normal safety barricades are removed.
3. Comply with requirements of the local Fire Codes applicable to this work. A fire watch shall remain in the vicinity of any welding for a minimum period of three (3) hours after the welding has been completed, or as required by the General Conditions of the Contract.
4. Be sensitive to the needs and entitlements of the occupants of the building while performing the work.
5. Confirm that the specifications and contract documents are complete with regard to the work required to provide for a complete, legal and Code compliant installation.
6. Confirm that the equipment to be provided will fit within the space available. Survey the job site and verify by measurement, dimensions affecting the work to be performed as part of the Contract. Advise of any deficiencies, which may be in conflict with design tolerances of the equipment to be installed, prior to fabrication of the equipment affected.
7. Provide information as required for coordination of work to be performed by other trades which will affect scheduling of the work and information required for coordination in scheduling the work which will affect the scheduling of other trade contractor work.
8. Permit only skilled workmen to perform the work.
9. Install equipment in accordance with the contract, the specifications and the final approved shop drawings.
10. Install all replacement equipment, systems, and components in strict accordance with manufacturer's instructions, shop drawings and submittals.
11. Ensure that existing equipment can be safely removed, and new equipment installed in existing spaces through existing access.
12. Maintain operating life safety features of the elevator systems in operation throughout the term of the project.
13. Keep means of access and egress to and from the building, stairwells and lobbies free and clear of materials, tools and equipment.
14. Protect finished surfaces during installation through to the final acceptance of the equipment. Upon acceptance of the equipment, remove protective coverings and thoroughly clean finished surfaces of paint, wrappings, mastic, etc. Repair any damage, including scratches, dents, discoloration, etc., which may have occurred to the finished surfaces.
15. Broom sweep the work areas, remove hazardous materials from the site on a daily basis and keep areas clean of dirt and grease resulting from the work.

16. Maintain operating life safety features of the elevator systems in operation throughout the term of the project.

4.11 TESTING

A. Notify the Owner before scheduling of tests to be performed to enable the Owner to observe testing of the elevators.

B. Upon completion of work, completely test the equipment before the AHJ and the Owner to demonstrate that the equipment was provided in accordance with Code and Contract specification requirements and complies with the Performance criteria listed elsewhere in the specification.

1. Testing that may be necessary to be done after hours shall be coordinated with the Owner and be provided at no additional cost to the contract.

C. Provide labor, tools and equipment necessary for on-site observations, testing, re-testing, inspections and reinspections as may be required to satisfy the Code testing requirements, the requirements of the local testing authority.

D. Upon satisfactory completion of required tests, obtain and submit the Certificate of Operation or other instrument, which may be required to legally permit the operation of the elevators.

E. Provide escort to assist the Owner's Elevator Consultant in performance of Substantial Completion audits.

4.12 DEMONSTRATION

A. Operation of the elevator shall be demonstrated to Owner's personnel, including:

1. Communication systems.
2. Emergency Power operation.
3. Instructions on proper procedures for assisting and dealing with entrapped passengers.
4. Firefighters Emergency Operation.
5. Independent service operation.
6. Card Access control operation.
7. Operating and control switches, devices, and keys.

4.13 RECORD DOCUMENTS

A. Submit the following in both hard copy and pdf electronic format, upon completion of the work:

1. Three (3) sets of equipment parts lists with parts numbers.
2. Three (3) sets of wiring diagrams.
3. Three (3) sets of As-Built shop drawings.

a. Hoistway and machine/control room drawings.
b. Signal operating fixtures.
c. Equipment catalogue cuts.

4. Three (3) sets of lubrication charts and type of lubrication recommended.

B. Submit the following upon completion of the work:

1. Six (6) sets of keys to operate each unique cylinder for key operated functions. Keys shall be marked and identified.
2. Two (2) copies of manufacturer warranties.

4.14 SPECIAL DEVICES AND INSTRUCTIONS AND DEVICE MAINTENANCE

A. Provide diagnostic devices, manuals, and passwords necessary to operate the diagnostic device, where required to test, adjust, maintain and troubleshoot the equipment provided.

4.15 SPECIAL CONDITIONS

A. Provide escort for access to hoistway for Owner's representative(s) to perform substantial completion surveys, when requested.

B. Obtain licenses in the state and in the local municipality to do work of this nature.

C. Comply with laws, ordinances, rules and regulations, including standards as set forth in the rules and regulations of the AHJ and other bodies having jurisdiction, which are hereby incorporated and made a part of these specifications.

D. Nothing contained in these specifications shall be so construed as to conflict with any Codes or state or local laws, ordinances, rules or regulations governing the work specified herein.

E. Work performed and equipment installed under these specifications shall be subject to inspection and approval by any AHJ, notwithstanding anything in these specifications to the contrary.

F. Confine apparatus, storage of materials and operation of workmen to limits established by law, ordinances, permits or directions of the Owner and do not unreasonably encumber the premises with materials. Flammable or combustible materials shall be properly stored to obviate fire and in areas approved by the Owner.

G. Do not load or permit any part of the structure to be loaded with a weight that will endanger its safety

4.16 FINAL CLEAN-UP

A. Clean and wipe down hoistway, pit, equipment room and equipment, including guide rails, ledges and projections, car slings and pits of excess lubricant, dirt and debris upon completion of the work.

B. Remove crating and packing materials and unused equipment from the job site.

C. Clean and wipe down the hoistway, pit and elevator equipment room and equipment, including guide rails, ledges and projections, and pit of dirt and debris immediately prior to the end of the warranty period.

E. Provide Code Data plates.