Elevator Modernization Project Manual

Gainesville.
Citizen centered
People empowered

March 12, 2018

City Hall - 3 Traction Units

200 East University Avenue
(Technical Specification #1 – pages 1-54)

Old Library Building - 1 Hydraulic Unit

222 East University Avenue
(Technical Specification #2 – pages 1-55)

Thomas Center - 2 Hydraulic Units

302 N.E. 6th Avenue
(Technical Specification #2 – pages 1-55)

Consultant: VTE Solution
Indian Rocks Beach, FL
Phone: (877) 269-6151
FAX: (877) 269-6519

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City of Gainesville Elevator Modernizations

Elevator Modernization Project - City of Gainesville
City Hall, Old Library Building, and Thomas Center A/B

SCHEDULE OF BIDDING ALTERNATES

Note: Additive Alternates may be accepted in any order and shall be determined at Bid Award.

BASE BID: Base Bid to include a total base contract price for all labor and materials to provide repair, upgrade, and new work as called for in Technical Specification #1, Modernization of Traction Elevators and Technical Specification #2, Modernization of Hydraulic Elevators for the following units:

City Hall, Main Entry Elevator #1- FL State SN #4642

City Hall, Main Entry Elevator #2 - FL State SN #4643

Old Library Building, Elevator #1 (Hydraulic) - FL State SN #4647

ADDITIVE BID ALTERNATE #1: Alternate Bid to include a total additive contract price for all labor and materials to provide elevator cab upgrades as called for in the Cab Enclosure, Cab Interior Renovations section of the Technical Specifications for the following units:

City Hall, Main Entry Elevator #1 - FL State SN #4642

City Hall, Main Entry Elevator #2 - FL State SN #4643

ADDITIVE BID ALTERNATE #2: Alternate Bid to include a total additive contract price for all labor and materials to provide repair, upgrade, and new work as called for in Technical Specification #2, Modernization of Hydraulic Elevators for the following units:

Thomas Center “A” Elevator - FL State SN #25165

Thomas Center “B” Elevator - FL State SN #23860

ADDITIVE BID ALTERNATE #3: Alternate Bid to include a total additive contract price for all labor and materials to provide elevator cab upgrades as called for in the Cab Enclosure, Cab Interior Renovations section of the Technical Specifications for the following units:

Thomas Center “A” Elevator - FL State SN #25165

Thomas Center “B” Elevator - FL State SN #23860

ADDITIVE BID ALTERNATE #4: Alternate Bid to include a total additive contract price for all labor and materials to provide repair, upgrade, and new work as called for in Technical Specification #1, Modernization of Traction Elevators for the following unit:

City Hall, Loading Dock Elevator #3 - FL State SN #4644

Section 01 - 0390

COORDINATION AND MEETINGS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Preconstruction Conference.

1.2 RELATED REQUIREMENTS

A. See the City of Gainesville Invitation to Bid .

1.3 PRECONSTRUCTION CONFERENCE / PROGRESS MEETINGS

A. Elevator Contractor will administer the Preconstruction Conference for review of the Contract requirements, clarification of responsibilities and use of project site and for review of administrative procedures. Date, time and place for Preconstruction Conference will be announced after award of the Contract.

B. At the Preconstruction Conference, the Owner shall make arrangements with the Elevator Contractor for the assignment of staging areas to be used for storage of materials, parking, etc.

C. Elevator Contractor shall prepare agenda with copies for participants, attend progress meetings, record minutes and distribute copies to participants and those affected by decisions made.

D. Attendance: Owner, Elevator Consultant (VTE), and Elevator Contractor.

E. The dates and times of the progress meetings will be discussed at the Preconstruction Conference.

END OF SECTION

Section 01 - 3000

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Coordination of all Trades/Contractors.

B. Codes and Reference Standards.

C. Ordinances and Regulations.

1.2 RELATED REQUIREMENTS

A. See the City of Gainesville Invitation to Bid.

1.3 COORDINATION

A. Coordinate work of the various Specifications Sections to assure efficient and orderly sequence of installation of construction elements with provisions for accommodating items installed later.

B. Verify that characteristics of elements of interrelated operating equipment are compatible; coordinate work of various Sections having interdependent responsibilities for installing, connecting to and placing in service such equipment.

C. Execute cutting and patching to integrate elements of work, uncover ill-timed, defective, and non-conforming work, provide proper openings for penetrations of existing surfaces and provide samples for testing as/if required. Seal all penetrations through floors, walls and ceilings with appropriate materials.

1.4 REGULATIONS, CODES AND STANDARDS

A. Design and construction shall conform to the Florida Building Code, 2017, the Florida Fire Prevention Code 5th Edition, the National Electric Code NFPA 70, latest edition and OSHA.

B. For products specified in the individual Specifications Sections by association or trade standards, comply with requirements of the applicable standard, except when more rigid requirements are specified or are required by applicable codes.

C. All Work shall conform to all applicable State Codes, ordinances and regulations governing the construction.

END OF SECTION

Section 01 - 3300
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Procedures for submittals during construction, including Shop Drawings, product data and samples. Refer also to other Sections for specific equipment submittal requirements.

B. Construction Progress Schedules.

1.2 RELATED REQUIREMENTS

A. See the City of Gainesville Invitation to Bid.

1.3 SHOP DRAWINGS

A. Present in a clear and thorough manner. Title each drawing with Project name and number; identify each element of Shop Drawings by reference to sheet number and detail, schedule or room number of Contract Documents.

B. Identify field dimensions and show relation to adjacent or critical features of work or products.

C. Minimum sheet size shall be 8-1/2 x 11 inches.

1.4 PRODUCT DATA

A. Submit only pages which are pertinent; mark each copy of standard printed data to identify pertinent products, referenced to Specifications Section number. Show reference standards, performance characteristic, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.

B. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the work. Delete information not applicable; indiscriminate submittal of unmarked product data will not be accepted.

C. Manufacturers' Certificates: When required by individual Specifications Section, submit applicable manufacturer's certificate(s) that products meet or exceed specified requirements.

D. Manufacturers' Printed Instructions: When required by individual Specifications Section, submit applicable manufacturer's instructions for delivery, storage, assembly, installation, start-up adjusting and finishing.

1.5 SAMPLES

A. Submit full range of manufacturer's standard finishes, except when more restrictive requirements are specified, for selection.

B. Submit samples to illustrate functional characteristics of products, including parts and attachments. Label each sample with identification required for transmittal letter.

CONSTRUCTION PROGRESS SCHEDULES

Submit network analysis system using the critical path method, generally as outlined in Associated General Contractors of America (AGC) publication "The Use of CPM in Construction - A Manual for General Contractors". Other Progress Schedule methods may be submitted subject to the Owner's review and approval.

Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Show projected percentages of completion for each item of work as of time of each Application for Payment.

Show submittal dates required for shop drawings, product data and samples, and product delivery dates.

1.6 ELEVATOR CONTRACTOR'S REVIEW

A. Review all submittals prior to transmittal; determine and verify field measurements, field construction criteria, manufacturers' catalog numbers and conformance of submittal with requirements of Contract Documents. Submittals without Contractor's review stamp indicating approval will not be processed.

B. Coordinate submittals with requirements of Work and of Contract Documents.

C. Sign or initial each Shop Drawings and product data and each sample label to certify compliance with requirements of Contract Documents. Provide notification in writing, at time of submittal, of any deviations from requirements of Contract Documents.

D. Do not fabricate products or begin work which requires submittals until return of submittal with Owner, Elevator Consultant (VTE), or Engineer acceptance.

1.7 SUBMITTAL REQUIREMENTS

A. Transmit submittals in accordance with approved Progress Schedule, and in such sequence to avoid delay in the work.

B. Apply Elevator Contractor's stamp, signed or initialed, certifying to review and approval, verification of products, field dimensions and field construction criteria and coordination of information with requirements of work and Contract Documents. Do not send submittals until item is approved by Contractor.

C. Coordinate submittals into logical groupings to facilitate interrelation of the several items.

D. Submit electronic copies, PDF format, of all shop drawings and product data for each item as specified in individual Specifications Sections.

E. Submit under Elevator Contractor's standard transmittal letter; each transmittal letter shall be numbered for ease of reference during construction. Identify Project by title and number and identify work and product by Specifications Section number.

1.8 RESUBMITTALS

A. Make resubmittals under procedures specified for initial submittals and identify changes made since previous submittal. Transmittal letter shall be numbered the same as initial submittal, except with suffix "A", "B", etc. for each time resubmittal occurs until accepted.

B. Delays caused by the need for resubmittals shall not constitute reason for an extension of Contract time.

1.9 REVIEW

A. Review of shop drawings, product data and samples shall be as promptly as possible and submittals shall be returned to Elevator Contractor for distribution.

B. The review of submittals will be limited to general design requirements only, and shall in no way relieve the Contractor from responsibility for errors or omissions contained therein or from supplying materials specified.

C. Submittals reviewed will be marked in one of the following ways: NO EXCEPTIONS TAKEN, EXCEPTIONS AS NOTED, REVISE AND RESUBMIT or REJECTED. If a submittal is returned as NO EXCEPTONS TAKEN OR EXCEPTIONS AS NOTE then the Contractor may proceed with ordering material, but all exceptions must be provided. If a submittal is returned as REVISE AND RESUBMIT OR REJECTED then the Contractor may not proceed with ordering material until a resubmittal is approved as NO EXCEPTONS TAKEN OR EXCEPTIONS AS NOTED.

1.10 DISTRIBUTION

A. Elevator Contractor shall distribute copies of shop drawings and product data and samples, which bear stamp of approval to project site file, Subcontractors, suppliers, other affected Contractors and other entities requiring information.

END OF SECTION

Section 01 - 4000

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. General Quality Control.

B. Workmanship.

C. Manufacturers' Instructions.

1.2 RELATED REQUIREMENTS

A. See the Invitation to Bid provided by the City of Gainesville.

1.3 QUALITY CONTROL, GENERAL

A. Maintain quality control over suppliers, manufacturers, products, services, site conditions and workmanship, to produce work of specified quality.

1.4 WORKMANSHIP

A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.

B. Perform work by persons qualified to produce workmanship of specified quality.

C. Secure products in place with positive anchorage devices.

1.5 MANUFACTURERS' INSTRUCTIONS

A. When required by individual Specifications Section, comply with manufacturers' printed instructions, latest edition, in full detail, including each step in sequence. If instructions conflict with Contract Documents request clarification prior to starting work.

END OF SECTION

Section 01 - 6000
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Products.

B. Transportation and Handling.

C. Storage and Protection.

D. Product Options.

E. Substitutions.

F. Systems Demonstration.

1.2 RELATED REQUIREMENTS

A. See the Invitation to Bid provided by the City of Gainesville.

1.3 PRODUCTS

A. Products include material, equipment and systems.

B. Comply with Specifications and referenced standards as minimum requirements.

C. Components required to be supplied in quantity within a Specification Section and like items shall be the end products of one manufacturer in order to achieve standardization for appearance, operation, maintenance, spare parts and manufacturers' service.

D. Do not use materials and equipment removed from existing structures, except as specifically required, or allowed by Contract Documents.

1.4 TRANSPORTATION AND HANDLING

A. Transport products by approved methods to avoid product damage; deliver in undamaged condition in manufacturers' unopened containers or packaging, dry.

B. Provide equipment and personnel to handle products by methods to prevent damage.

C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct and products are undamaged.

1.5 STORAGE AND PROTECTION

A. Store products in accordance with manufacturers' instructions, with seals and labels

B. intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturers' instructions.

1.6 SUBSTITUTIONS

A. Substitutions shall be considered per the requirements specified in the Division 00 Sections provided by the City of Gainesville.

1.7 SYSTEMS DEMONSTRATION

A. Prior to Final Review, instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems, using the Operation and Maintenance Manual as the basis of instruction.

B. See Section 01 7000 - Execution and Closeout Requirements.

END OF SECTION

Section 01 - 7000

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

1. Closeout Procedures.
2. Final Cleaning.
3. Prerequisites to Final Payment.
4. Record Drawings.
5. Operation and Maintenance Manuals.
6. Warranties, Guarantees and Bonds.
7. Spare Parts and Maintenance Materials.
8. Correction during Contractor's One Year Guarantee Period.

1.2 RELATED REQUIREMENTS

1. See the Invitation to Bid provided by the City of Gainesville.

1.3 CLOSEOUT PROCEDURES

1. Comply with procedures stated in the Contract. When the Work is Substantially Complete, the Contractor shall notify the Owner in writing who shall make a Substantial Completion Review and after said review is made, the Contractor shall remedy any defects or make any corrections on the Punch Lists to prepare the Project for a Final Completion Review.

1.4 FINAL CLEANING

1. Execute prior to Final Review.

1.5 PREREQUISITES TO FINAL REVIEW: When the Elevator Contractor considers the work has reached Final Completion, and all items on the punch lists have been corrected and final cleaning has been completed, submit written notice to Owner that work is complete in accordance with the Contract Documents and ready for Final Review.

1. If all items are found in order, the Owner will recommend Final Acceptance of the project, upon receipt of all Final Closeout Documents including, but not limited to: Final Releases of Liens, Guarantees and Warranties as outlined in each Section of the Specifications, O&M Manuals, Final Reports and all other closeout requirements outlined in the Electrical Sections of the Specifications.

1.6 PREREQUISITES TO FINAL PAYMENT

1. Elevator Contractor's affidavit that responsible representatives of the Owner have been properly instructed and informed as to all working characteristics of electrical systems and equipment as required under the individual Specifications Sections.

2. Record Drawings, Operation and Maintenance Manuals, Warranties, Guarantees and Bonds.

3. Elevator Contractor's Affidavit that Spare Parts and Maintenance Materials have been delivered to the Facilities Department of the Owner.

4. Submit satisfactory evidence using the latest editions of the following forms, unless otherwise stipulated by the Owner, showing that all labor employed on the project has been paid in full and that all materials and/or equipment and incidentals used directly or indirectly in connection with the project have been paid for in full and that no claims are outstanding against the work.

    1. Elevator Contractor's Affidavit of Payment of Debts and Claims Conditional Final Releases of Lien.

    2. Elevator Contractor's Affidavit of Release of Liens.

    3. Consent of Surety Company to Final Payment.

5. Provide all submittals, approvals and certificates required by governing authorities for this project and submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.

1.7 RECORD DRAWINGS

1. Keep Record Drawings current and upon completion of the work, the Record Documents shall be submitted to the Owner for review and approval.

1.8 OPERATION AND MAINTENANCE MANUALS

1. Provide Operation and Maintenance Manuals for Electrical equipment and controls and as specified in individual Specification Sections.

2. Submit two sets bound in 8-1/2 x 11 inch three-ring side binders with durable plastic covers, unless otherwise specified in individual Specifications Sections.

3. Provide a separate volume for each system with a table of contents and index tabs for each volume.

    1. Part 1: Directory, listing names, addresses and telephone numbers of Contractor.

    2. Part 2: Operation and maintenance instructions arranged by system. For each system give names, addresses and telephone numbers of Subcontractors and suppliers. List: appropriate design criteria, list of equipment, parts list, operating instructions, maintenance instructions, equipment, maintenance instructions, shop drawings and product data and warranties.

1.9 WARRANTIES, GUARANTEES AND BONDS

1. Execute Elevator Contractor's applicable documents and assemble documents executed by Subcontractors, suppliers and manufacturers. Provide table of contents and assemble all documents in binder with durable plastic cover.

1.10 SPARE PARTS AND MAINTENANCE MATERIALS: Submit affidavit.

1. Provide products, spare parts and maintenance materials in quantities specified in individual Specifications Sections, in addition to that used for construction of work. Coordinate with Owner and deliver to project site.

1.11 CORRECTION DURING CONTRACTOR'S ONE YEAR GUARANTEE PERIOD

1. Elevator Contractor shall report to the proper officials regarding corrections to be made after job completion.

2. Owner will notify Elevator Contractor of deficiency.

3. Elevator Contractor shall then accomplish agreed upon corrective measures and then notify the Owner and secure a release on the item.

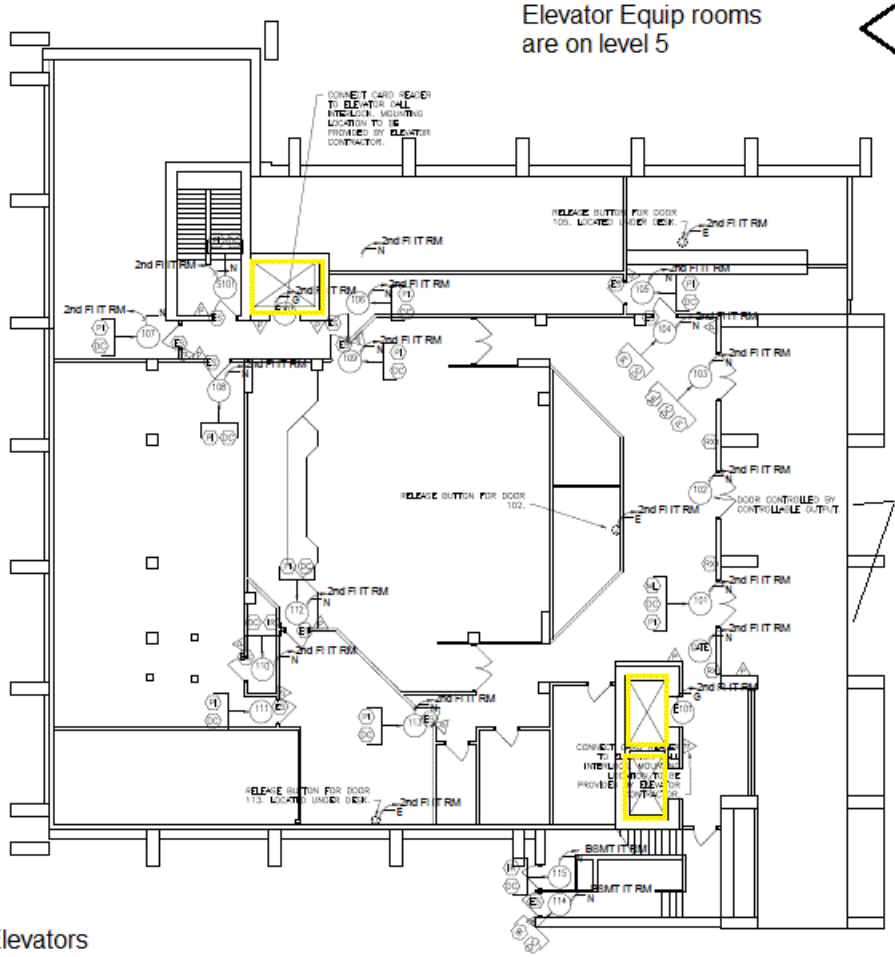
4. Should the Elevator Contractor fail to perform corrective work within 14 calendar days, Owner may submit written notification the Surety Company may be notified of Elevator Contractor's non- performance.

END OF SECTION

ELEVATOR RENOVATION PROJECT

Elevator Equip rooms
are on level 5

NORTH



Elevators
#4642
#4643
#4644

LOCATION PLAN

City Hall 1st Floor

City Hall
200 East University Ave
Gainesville, Florida

Technical Specification #1
for the
Modernization of 3 Traction Elevators
City of Gainesville

City of Gainesville
City Hall Building
200 East University Ave.
Gainesville, FL 32601

FL State SN: # 4642, # 4643 & # 4644

Consultant: VTE Solution
Indian Rocks Beach, FL
Phone: (877) 269-6151
FAX: (877) 269-6519

GENERAL PROVISIONS

These general terms and conditions of the bid quotation and acceptance apply in like force to this inquiry and to any subsequent contract resulting there from.

DEFINITIONS

The following definitions shall be used throughout all general conditions, specifications and contract documents except where superseded in those documents.

1. "Owner": City of Gainesville.
2. "Consultant": Vertical Transportation Equipment Solution, LLC.
3. "Contractor": The Elevator Contractor.
4. "Work": All material and labor required to provide and install equipment as specified under this specification for a complete project.
5. "Provide": Provide all materials and labor required to furnish and install.
6. "Code": All applicable laws and codes, including but not limited to the electrical, fire, building, and Safety Codes for Elevators and Escalators codes designated by any authority having jurisdiction as detailed in the codes and standards reference section of this specification.
7. "Services": Services shall include, but shall not necessarily be limited to, all labor, transportation, supplies, materials, parts, tools, scaffolding, machinery, hoists, employee safety equipment, equipment, lubricants; supervision, applicable taxes, and all other work and materials expressly required under this Agreement or reasonably inferred whether or not expressly stated herein necessary to maintain all equipment covered under this specification.

END OF GENERAL PROVISIONS

SPECIAL PROVISIONS

Special Provisions, along with the specifications that follow, will apply in like force to this solicitation and to any subsequent contract resulting there from.

TRANSPORTATION AND PACKING

Prices quoted shall be net, including transportation and delivery charges and fully prepaid by the seller, f.o.b. the site. No additional charges will be allowed for packing, packages, or partial delivery costs.

END SPECIAL PROVISIONS

ELEVATOR RENOVATION PROJECT SCHEDULE

Contractor shall provide a schedule for execution of modernization work with time periods deemed necessary to complete the work. Provide time durations to indicate the milestones as listed below.

The start of on-site modernization must initiate on the mutually agreed date by the Owner and Elevator Contractor with final completion in accordance with the project schedule for each elevator. The schedule below will constitute a preliminary schedule for this project. Subsequent schedule modification using owner, contractor and user input will be completed prior to contract award. There can be no deviation or delays from the final approved contracted schedule.

Provide estimated total durations below in Calendar Days.

Days	Action
_____	All product submittals provided to consultant
_____	Submittal review period
_____	Base Bid - On-site modernization work (total duration)
_____	Alternate #1 - Cab finishes work (total duration)
_____	Alternate #2 - On-site modernization work (total duration)
_____	Alternate #3 - Cab finishes work (total duration)
_____	Alternate #4 - On-site modernization work (total duration)
30 days	Substantial Completion to Final Completion
30 days	City of Gainesville / Close out

END OF SPECIAL PROVISIONS

Specification for Modernization of Elevator
City of Gainesville

City Hall Building

FL State SN # 4642
FL State SN # 4643
FL State SN # 4644

THREE (3) ELECTRIC TRACTION PASSENGER ELEVATORS

SUMMARY

This section specifies required work to complete the modernization of Three (3) Electric Traction Elevators.

1) Elevator work includes:
   a) Commercial, standard electric traction passenger elevator.
   b) Elevator car and hoistway signal equipment.
   c) Operation and control systems.
   d) Accessibility provisions for physically disabled persons.
2) Engineering, equipment, labor, machines, control systems, devices and accessories as required for safely operating the specified elevator at rated speed with rated capacities.
3) Delivery, staging, and hoisting of new equipment. Hoisting, dismantling, removal and disposal of existing equipment. Repair, cleaning and painting of reusable equipment.
4) Materials and accessories as required for completing the elevator modernization.
5) Hoistway, pit and machine room barricades for safety as required.
6) Required hoisting, hoisting permits and traffic coordination and/or permits with local jurisdictions and the State of Florida as required.
7) Required permits and coordination and/or permits with local jurisdictions, Bureau of Elevator Safety and the State of Florida as required.
8) Unless specified otherwise, all specification requirements are to be the same for each elevator. Specific requirements for a particular elevator or component shall be designated as such and shall not apply to other elevator(s) in a building,

DEFINITIONS

The following definitions shall be used throughout all general conditions, specifications and contract documents except where superseded in those documents.

1) "Owner": City of Gainesville
2) "Consultant": Vertical Transportation Equipment Solution, LLC.
3) "Contractor": Elevator Contractor.
4) "Work": All material and labor required to provide and install equipment as specified under this specification for a complete project.
5) "Provide": Provide all materials and labor required to furnish and install.
6) "Code": All applicable laws and codes, including but not limited to the electrical, fire, building, and Safety Codes for Elevators and Escalators codes designated by any authority having jurisdiction as detailed in the codes and standards reference section of this specification.
7) "Services": Services shall include, but shall not necessarily be limited to, all labor, transportation, supplies, materials, parts, tools, scaffolding, machinery, hoists, employee safety equipment, equipment, lubricants; supervision, applicable taxes, and all other work and materials expressly required under this Agreement or reasonably inferred whether or not expressly stated herein necessary to maintain all equipment covered under this specification.

CODE AND STANDARD REFERENCES

1) All codes and standards referenced in this specification will be to the edition of the references as detailed in this section. All materials and work to be performed under these specifications shall be in compliance with the codes listed in this section or as determined by the authority having jurisdiction.

1) Comply with applicable building codes and elevator codes at the project site, including but not limited to the following:
   a) Florida Statutes 399 and 553
   b) Florida Administrative Code 61C-5.
   c) Florida Building Code 2017, including all supplements.
   d) ASME A17.3-1996 Safety Code for Existing Elevators and Escalators.
   e) A17.1-2013 Safety Code for Elevators and Escalators
   f) ASME A17.2-2014 Guide for Inspection of Elevators and Escalators
   g) ADAAG, Americans with Disabilities Act Accessibility Guidelines.
   h) NFPA 70, National Electrical Code 2014.
   i) NFPA 80, Fire Doors and Windows.
   j) ANSI/UL 10B, Fire Tests of Door Assemblies.
   k) NFPA 72, National Fire Alarm Code 2013

l) NFPA 101 Florida Edition 2015

m) O.S.H.A. Requirements for construction and repairs of existing buildings.

n) Elevator Industry Field Employees' Safety Handbook 2015

RELATED WORK BY OTHERS: **NONE.**

This will be a Turn Key Project. The Elevator Contractor shall be responsible for scheduling, coordinating, subcontracting, and all required submittals for all work associated with this elevator modernization project including subcontract trades.

WORK BY ELEVATOR CONTRACTOR:

1) This contract will be issued as a Turn Key project with all work required being the responsibility of the Elevator Contractor for completion as detailed in this specification. All work, necessary for a complete and useable elevator system, will be the responsibility of the Elevator Contractor. Specifically, to include non-traditional Contractor work detailed below in addition to traditional Contractor work as detailed in all other sections of this specification.

   a) All materials and work to be performed under these specifications shall be in compliance with the codes listed in the Code and Standard References section or as determined by the authority having jurisdiction. As work progresses, Elevator Contractor shall consult with his subcontractors, examine the Work installed by them, and resolved all conflicts without expense to Owner and/or Consultant.

2) **Machine Room HVAC**: Machine room HVAC is required, to maintain temperature and humidity to between 55 deg F and 90 deg F with relative humidity of not more than 85% non-condensing. The Elevator Contractor shall provide actual calculations for total anticipated heat loads generated by all elevator machine room equipment.

   a) Machine room HVAC must be positioned as approved by the Elevator Contractor and Elevator Consultant (VTE). There shall be no drain lines or condensation allowing water in the machine room.

   b) Dedicated HVAC system for machine room is required to have an electrical disconnect lockable in the off position with proper labels identifying source of power and purpose.

   c) HVAC Contractor shall provide HVAC receptacle or disconnect switch as required for the installation of HVAC system by HVAC Contractor.

   d) Remote systems shall have a proper thermostat inside the machine room.

   e) Any existing vents in the machine room will be properly covered and protected.

3) **Fire Alarm**: Fire alarm including heat and smoke sensing devices as per NFPA 70 National Electrical Code and NFPA 72 National Fire Alarm.

   a) Verify that proper connections exist for fire recall devices to the elevator controllers. Provide connection from new or existing fire recall devices to the elevator controllers in machine room. For each elevator within the building, a minimum of three separate elevator control circuits shall be terminated at the designated elevator controller within each elevator machine room in accordance with NFPA 72. Operation of the elevator shall be in accordance with Section 2.27 of ASME A17.1 Safety Code for Elevators and

Escalators. The smoke detectors or other automatic fire detection as permitted by NFPA 72 shall actuate the elevator control circuits as detailed in NFPA 72.

b) Automatic fire alarm-initiating devices shall be located and installed in accordance with ASME A17.1 and NFPA 72.

c) Fire alarm initiating devices used to initiate Phase I Emergency Recall Operation shall be installed in conformance with the requirements of NFPA 72, and shall be located:

i) at each floor served by the elevator

ii) in the associated elevator machine room, machinery space containing a motor controller or electric driving machine, control space, or control room

iii) in the elevator hoistway, when sprinklers are located in those hoistway

d) Fire alarm contractor shall demonstrate at time of elevator inspection, compliance and testing of all alarm initiating devices as required by ASME A17.1 Safety Code for Elevators and Escalators, ASME A17.2 and NFPA 72 National Fire Alarm Code.

e) Install heat detectors within 24" of sprinklers if installed in machine rooms or hoistways including wiring and conduit to shunt trip breaker as installed by electrical contractor as indicated below:

i) Hoistway: When sprinklers are installed anywhere above 24 inches from the pit floor in the elevator hoistway installation of heat detector is required within 24" of sprinkler head.

ii) Pit: Where elevator equipment is located or its enclosure is configured such that application of water from sprinklers located below 24 inches from the pit floor could cause unsafe elevator operation a heat detector.

iii) These heat detectors shall be provided to automatically disconnect the main line power supply to the affected elevator and any other power supplies used to move the elevator upon or prior to the application of water.

iv) Installation of alarm system and devices shall conform to ASME A17.1 Safety Code for Elevators and Escalators, and NFPA 72 including NFPA 70 NEC.

f) Installation of alarm system and devices shall conform to ASME A17.1 Safety Code for Elevators and Escalators, and NFPA 72 including NFPA 70 NEC.

4) **Electrical Requirements:** Electrical requirements for hoistway, GFCI receptacles and disconnects, as required by NFPA 70 National Electrical Code and ASME A17.1 Safety Code for Elevators and Escalators. Additionally, Electrical Contractor shall provide and install conduits and wiring required for communication devices as detailed in this section. Electrical requirements shall include the following:

a) All Electrical work must be coordinated and scheduled with, at least 7 days' notice, with the building owner. Elevator shall be removed from service while electrical trades are working.

b) Electrical requirements for hoistway and machine room HVAC, GFCI receptacles and disconnects, as required by NFPA 70, NEC and ASME A17.1 Safety Code for Elevators and Escalators. Additionally, Electrical Contractor shall provide and install conduits and

wiring required for communication devices as detailed in this section. Electrical requirements shall include the.

c) Main Line Disconnect: Install new disconnect for elevator main line power. Disconnect to be verified as appropriately size and type for power requirements of new elevator equipment prior to installation. Main line disconnects for elevators shall not be used for other conductors to pass thru disconnect switch boxes.

   i) The disconnecting means shall be an enclosed externally operable fused motor circuit switch capable of being locked in the open position. The provision for locking or adding a lock to the disconnecting means shall be installed on or at the switch used as the disconnecting means and shall remain in place with or without the lock installed. Portable means for adding a lock to the switch or circuit breaker shall not be permitted

d) Cab Light Disconnect: Provide and install new disconnect switch in each machine room for each elevator cab lighting system as per NFPA 70.

   i) Cab Lighting disconnect for elevator shall not be used for other conductors to pass thru disconnect switch boxes.

   ii) The disconnecting means shall be an enclosed externally operable fused motor circuit switch capable of being locked in the open position. The provision for locking or adding a lock to the disconnecting means shall be installed on or at the switch used as the disconnecting means and shall remain in place with or without the lock installed. Portable means for adding a lock to the switch or circuit breaker shall not be permitted.

e) Car Light Source: A separate branch circuit shall supply the car lights, receptacle(s), auxiliary lighting power source, and ventilation on each elevator car. The overcurrent device protecting the branch circuit shall be located in the elevator machine room or control room/machinery space or control space. Required lighting shall not be connected to the load side of a ground-fault circuit interrupter.

f) Shunt Trip Breaker: These elevators have sprinklers located in elevator spaces.

   i) Machine Room: Verify installation of existing shunt trip breakers or install new shunt trip breakers outside of machine rooms for feeder to each mainline disconnect for removal of power by NFPA 70 NEC and NFPA 72 if installation of sprinklers in machine rooms or hoistways is required by the Florida Building Code. Shunt trip shall be activated by heat detectors installed by Elevator Contractor/Sub-Contractors.

   ii) Hoistway: When sprinklers are installed anywhere above 24 inches from the pit floor in the elevator hoistway installation of heat detector is required within 24" of sprinkler head. Fire alarm initiating devices used to initiate Phase I Emergency Recall Operation shall be installed in conformance with the requirements of NFPA 72, and shall be located in the elevator hoistway, when sprinklers are located in those hoistways.

   iii) Pit: Where elevator equipment is located, or its enclosure is configured such that application of water from sprinklers could cause unsafe elevator operation, means shall be provided to automatically disconnect the main line power supply to the

affected elevator and any other power supplies used to move the elevator upon or prior to the application of water.

When sprinklers are installed not more than 600 mm (24 in.) above the pit floor, and elevator electrical equipment and wiring in the hoistway is located less than 1 200 mm (48 in.) above the pit floor; and on the exterior of the car at the point where the car platform sill and the lowest landing hoistway door sill are in vertical alignment elevator; electrical equipment shall be weatherproof (Type 4 as specified in NEMA 250). Elevator wiring, except traveling cables, shall be identified for use in wet locations in accordance with the requirements in NFPA 70.

g) Machine Room Lighting and Receptacles:

i) A separate branch circuit shall supply the machine room or control room/machinery space or control space lighting and receptacle(s).

ii) Minimum lighting in machine room shall be provided at 19 ft-c and verified by Elevator Consultant.

iii) Required lighting shall not be connected to the load side of a ground-fault circuit interrupter.

h) Pit Lighting and Receptacle(s):

i) Verify that current pit lighting meets minimum 10 ft-c. at all locations in the pit. If pit lighting is below 10 ft-c requirement, provide additional lighting as detailed in this specification.

ii) Verify that a separate branch circuit is installed to supply the hoistway pit lighting and receptacle(s).

iii) Required lighting shall not be connected to the load side of a ground-fault circuit interrupter.

iv) The lighting switch shall be so located as to be readily accessible from the pit access door.

v) Duplex Receptacle. At least one 125-volt, single phase, 15- or 20-ampere duplex receptacle shall be provided in the hoistway pit.

vi) Provide a single receptacle non-GFCI for each sump in each elevator hoistway.

i) Pit Receptacles: Pit receptacles, with GFCI protection shall be installed in NEMA 4 devices where placed within 4’-0” of pit floor. Care must be taken not to place equipment in line with elevator equipment.

j) Each 125-volt, single-phase, 15- and 20-ampere receptacle installed in pits, in hoistways and on elevator car tops shall be of the ground fault circuit-interrupter type.

k) All 125-volt, single-phase, 15- and 20-ampere receptacles installed in machine rooms and machinery spaces shall have ground-fault circuit-interrupter protection for personnel.

l) All disconnects shall be labeled according to NFPA 70 National Electrical Code including source of power, State of Florida Elevator Serial Number, Elevator Number and all required warning signs.

m) All disconnects shall be installed with proper clearances in accordance to the applicable provisions of NFPA 70 National Electrical Code.

n) All conduit and wiring in the hoistway must be checked for proper installation and properly mounted in accordance with applicable provisions of NFPA 70 National Electrical Code.

o) Equipment grounding and bonding shall be provided in accordance with the requirements of NFPA 70 National Electrical Code. The equipment grounding conductor will be run with the circuit conductors and shall be a copper conductor. Ground all conductors, supports, controller enclosure, and other non-current conducting metal enclosures for electrical equipment in accordance with NFPA 70 National Electrical Code. The ground wires shall be solid or stranded; insulated, covered, or bare copper, sized as required by NFPA 70 National Electrical Code, and shall be colored green if less than #6, and have green marking if #6 or larger.

p) Provide new electric wiring from disconnect switches to the terminals of the new elevator controllers in their new locations, inclusive of a normal 120 VAC, 15 AMP supply at each controller.

q) Provide new pit lighting and machine room lighting as per NFPA 70 National Electrical Code with enclosed and protected lamps.

r) All existing and new lighting fixtures in machine rooms, elevator cars and on top of car are to be suitably guarded in accordance with ASME A17.1 Safety Code for Elevators and Escalators clearance requirements and NFPA 70 National Electrical Code requirements for guarding.

s) Pit lighting switches and emergency stop switches shall be installed approximately 18" above first floor landing adjacent to opening and operable at both sides of each pit access door.

5) **Sprinkler Requirements:** Currently there are sprinklers located in the elevator spaces. Where sprinklers are provided in the machine room or hoistway of elevators the following requirements apply:

a) If sprinkler head(s) are located in the machine room it will be required to install a heat detector within 24" of each sprinkler in order to automatically disconnect the main line power supply to the affected elevator(s) upon or prior to the application of water, in accordance with ASME A17 Safety Code for Elevators and Escalators, and NFPA 72 National Fire Alarm Code.

b) If sprinkler head(s) are located in the hoistway, it will be required to install a heat detector within 24" of each sprinkler located 24" above the pit floor in order to automatically disconnect the main line power supply to the affected elevator(s) upon or prior to the application of water, in accordance with ASME A17 Safety Code for Elevators and Escalators, and NFPA 72 National Fire Alarm Code

c) If sprinkler head(s) are located in the hoistway, it will be required to install a fire alarm initiating device in conformance with the requirements of NFPA 72 which is to be used to initiate Phase I Emergency Recall Operation.

d) Any required sprinkler work must be coordinated by the Elevator Contractor to insure non-interference with any elevator equipment and must be compliant with NFPA 13, NFPA 72 and Florida Building Code.

6) **Emergency Generator:** Currently these elevators are supplied with emergency generator power.

a) Contractor will provide new elevator controllers capable of required emergency power operations as detailed below, including sequencing operation for both elevators and conformance with the requirement detailed from the Florida Building Code.

b) Current Florida Building Code Chapter 30, Section 3003, Emergency Operations requires the following:

c) 3003.1 Standby power. In buildings and structures where standby power is required or furnished to operate an elevator, the operation shall be in accordance with Sections 3003.1.1 through 3003.1.4.

d) 3003.1.1 Manual transfer. Standby power shall be manually transferable to all elevators in each bank.

e) 3003.1.3 Two or more elevators. Where two or more elevators are controlled by a common operating system, all elevators shall automatically transfer to standby power within 60 seconds after failure of normal power where the standby power source is of sufficient capacity to operate all elevators at the same time. Where the standby power source is not of sufficient capacity to operate all elevators at the same time, all elevators shall transfer to standby power in sequence, return to the designated landing and disconnect from the standby power source. After all elevators have been returned to the designated level, at least one elevator shall remain operable from the standby power source.

f) Emergency power in the building may need to be configured to power both cars either concurrently or one at a time, dependent on available emergency generator power capacity.

g) The operation of elevator cars on emergency power shall be determined through a selector switch (sequencing operation) capable of automatic or manual selection of the car to be operated by emergency power.

h) Generator contractor shall provide signal in transfer switch to elevator controllers that the building is on emergency standby power.

7) **Telephone Line:** Existing dedicated telephone lines shall be reutilized for the elevators. All elevator phones will have phone serviced provided by the Building owner utilizing VOIP.

a) Telephone lines and wiring to elevator controllers for telephone system including all wiring in machine room to be installed inside conduit as per NFPA 70 NEC.

b) All emergency telephone devices shall include a minimum of 4 hours emergency backup power including power from emergency generator if supplied.

c) Provide phone numbers for emergency communication phone system to be programmed to for response.

8) **Building General Construction:** Building general construction conditions will include, work detailed in this section, including cleaning and painting of miscellaneous surfaces. The

Elevator Contractor shall be responsible for all work as detailed in this section. All construction, repair, cleaning and painting shall be performed by the Elevator Contractor.

a) Verify or provide proper installation of 1-½ hour "B-Label" door to machine room to include self-closing and self-locking requirements.

b) Existing machine room vents to exterior air and machine room door with vents shall have louvered vent secured and covered to prevent the loss of conditioned air from machine room.

c) Verify or provide proper Class ABC Fire Extinguisher in machine room permanently mounted and conveniently located to the access door as required by ASME A17.1 Safety Code for Elevators and Escalators.

d) Verify that all non-elevator related pipes, wiring, and conduit have been removed and openings in machine rooms and hoistways are protected to provide a 2-hour fire rating. All foreign pipes, wiring or conduit not in use or directly related to the elevator system shall be removed from machine rooms and hoistways.

e) Repair or replacement of tile or other finished flooring as required assuring proper level of adjoining surfaces of cab floor and sill including hall sills and finished flooring at each landing. All sills must be substantially level to all adjacent finished flooring surfaces.

f) Masonry, drywall, patching and finishes including painting for repair of all openings as required by elevator installation work shall be completed with fire rating of hoistway or machine room equal or greater than 2 hours in accordance with Florida Building Code 2010.

g) Machine room warning signs "Danger Authorized Personnel Only" shall be provided on each machine room door as required by NFPA 70 NEC.

h) Elevator Contractor shall be required to provide any cutting, patching including painting to match existing finishes of building.

9) All above work and materials to be performed to meet compliance with Florida Building Code, ASME A17.1 Safety Code for Elevators and Escalators, NFPA 70 National Electrical Code, NFPA 13 National Sprinkler Code and NFPA 72 Fire Alarm Code or as determined by the authority having jurisdiction.

10) Failure by above associated sub-contractors to perform required testing at time of scheduled elevator acceptance testing and inspection will require full advance payment by contractor at fault for all expenses relating to re-inspection, permit and scheduling fees to building management.

11) **Non-Traditional Work by Elevator Contractor**:

a) **Patching**: Patching of all masonry openings inside the hoistway as required by elevator installation work shall be completed with fire rating of hoistway or machine room equal or greater than 2 hours in accordance with Florida Building Code.

i) All openings required for the installation of new elevator components shall be the responsibility of the elevator contractor.

ii) Surface restoration inside the hoistway shall be the responsibility of the Elevator Contractor.

iii) Finished surface restoration of all surfaces outside the hoistway will be the responsibility of the Contractor.

12) **Local Telephone Line Status Monitoring**: The telephone system for the elevator shall be compliant with the requirements of the A17.1b-2009 Safety Code for Elevators and Escalators Requirement 2.27.1.1.6.

13) **Coordination of Work**:

a) Elevator Contractor shall coordinate as required with all of his sub-contractors to ensure that schedules are met and all work being performed with the elevator modernization project is acceptable.

b) Before proceeding with any Work, the Elevator Contractor shall carefully check and verify all pertinent dimensions and sizes, and assume full responsibility for fitting the equipment and materials to the structure. Where the apparatus and equipment have been indicated on the drawings, the dimensions have been taken from typical equipment of the type specified in these specifications. The Contractor shall carefully check the drawings to verify that the equipment that will be actually provided will fit into the spaces available. Should the equipment not fit the specific structure shown on the drawings, all additional sub-framing members required to accommodate the equipment installation shall be provided and paid for by Contractor as part of the Work of this section. The Contractor shall submit all structural shop drawings and engineering calculations for the Consultant's review and written approval.

c) Elevator Contractor shall familiarize himself with the specifications, drawings, installation procedures and construction schedules for those phases of Work performed by his subcontractors. The Contractor shall also familiarize himself with the Owner's security and safety requirements and shall abide by and conform to such established regulations at all times. If the Contractor's Work or the Work of any of his subcontractors depends upon the execution of the Work of another subcontractor or upon his own Work, he shall so coordinate all phases of Work so as to avoid conflicts in installation procedures and construction schedules.

d) As work progresses, Elevator Contractor shall consult with his subcontractors, examine the Work installed by them, and resolved all conflicts without expense to Owner and/or Consultant.

e) Progress meetings shall be held at the job site, as and when requested by Owner or Consultant. The Elevator Contractor shall be represented at these meetings by persons familiar with the details of the scope of Work and authorized to conclude matters relative to Work progress, as may be necessary to expedite completion of Work.

PAINTING

1) **Machine Room Painting**: Clean and paint machine room floor.

2) **Cleaning and Painting of Miscellaneous Surfaces**: The Elevator Contractor shall be responsible for all miscellaneous painting as detailed in this specification.

a) All paint products and application method must be pre-approved prior to application by owner or owner's agent. Paint products and application methods are to be equal or better than existing product applicable with matching color as approved by owner.

b) Except as otherwise specified, paint all metal work provided by the elevator manufacturer and installer.

c) Provide all ferrous metals installed in the hoistway shop primed with a rust inhibitive primer.

d) Remove rust, clean, degrease and paint any existing required parts or components for a like new condition.

e) Pit and hoistway metal which has rust shall be cleaned and treated with a rust neutralizing/converting product such as Pro Tek 2 IN 1 Industrial Rust Converter by Pro Tek Maintenance Products, Inc., "1" Step Rust Converter by Interstate Products, Inc. (Aqueous Vinyl Acrylic Emulsion) or Rust-X Converter by Superior Industries, or similar, and all hoistway metal to be painted with industrial grade oil based enamel. Paint applied to cleaned and primed galvanized metal must be designed for painting of galvanized metal,

f) All cleaning or painting work that produces any vapors or fumes shall be performed with sufficient ventilation to prevent the vapors or fumes from permeating into the building. Work of this nature must be scheduled and coordinated three (3) days prior to execution of work.

g) The procedures proposed for the accomplishment of the work shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged, protection of property, which is to remain undisturbed, and coordination with other work in progress. The work plan shall include a Safety and Health plan describing procedures for handling monitoring, and disposition of Volatile Organic Compounds "VOCs" and other hazardous and toxic materials. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.

h) The procedures proposed for the accomplishment of the work shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged, protection of property, which is to remain undisturbed, and coordination with other work in progress. The work plan shall include a Safety and Health plan describing procedures for handling monitoring, and disposition of Volatile Organic Compounds "VOCs" and other hazardous and toxic materials. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.

i) All products of paint, thinners or cleaning agents must be pre-approved prior to use for VOC's or any additional health concerns.

j) Interior work zones having a volume of 1,000 cubic feet or less shall be ventilated at a minimum of 2 air exchanges per hour. Ventilation in larger work zones shall be maintained by means of mechanical exhaust. Solvent vapors shall be exhausted outdoors, away from air intakes, building occupants and workers. Building air conditioning return air inlets in the work zone shall be temporarily sealed before start of work until the prepared surfaces have dried and are free of odor. Operators and personnel in the vicinity of paint

removal processes involving chemicals or mechanical action (sanding or blasting) shall wear respirators.

ELEVATOR SYSTEM DESCRIPTION:

1) Elevator Arrangement
   a) Elevator shall be numbered as follows:
      1. SN# 4643-Car 1
      2. SN# 4642-Car 2
      3. SN# 4644-Car 3
   b) Specific requirements for the specific elevator or component shall be designated as such. It shall be the bidder's responsibility to review and verify as required for proper installation. Specifications for elevator include minimum requirements of the elevator and it shall be the responsibility of the bidder to complete all work to code compliance.
2) Quantity – Three (3) with Elevators Numbered above.
3) Type:
   a) Electric Traction Passenger.
4) Number of Stops & Openings:
   a) SN# 4643-Car 1: 5 Front Openings (labeled B, 1, 2, 3 & 4) - No Rear Opening.
   b) SN# 4642-Car 2: 5 Front Openings (labeled B, 1, 2, 3 & 4) - No Rear Opening.
   c) SN# 4644-Car 3: 5 Front Openings (labeled B, 1, 2, 3 & 4) - No Rear Opening.
5) Rise: All existing conditions
6) Rated Capacity/Speed: Maintain existing conditions.
   a) SN# 4643-Car 1: Capacity rated at 2500 lbs. / Speed rated at 200 fpm
   b) SN# 4642-Car 2: Capacity rated at 2500 lbs. / Speed rated at 200 fpm
   c) SN# 4644-Car 3: Capacity rated at 2500 lbs. / Speed rated at 200 fpm
7) Entrance Width & Type:
   a) SN# 4643-Car 1: Center Opening One Speed 3' 6" x 7'-0".
   b) SN# 4642-Car 2: Center Opening One Speed 3' 6" x 7'-0".
   c) SN# 4644-Car 3: Center Opening One Speed 3' 6" x 7'-0".
8) Minimum Car Inside:
   a) Maintain existing dimensions
9) Inside Cab Height:
   a) Maintain existing clear headroom dimensions inside car.

10) Main Power Supply: Existing power supply will be retained and reutilized as detailed in this specification. All main line power is with a separate equipment grounding conductor.

11) Lighting Power Supply: 120 Volts, 1 Phase, 15 Amp, 60 Hz.

12) Stopping Accuracy: ±1/4" under any loading condition or direction of travel.

13) Door operating equipment shall be labeled with maximum door speed so that Kinetic Energy shall not be above 7.37 ft-lbf. as measured by ASME A17.1 Safety Code for Elevators and Escalators.

14) Car Operation:

a) SN# 4643-Car 1 & SN# 4642-Car 2:

i) Using a Duplex Selective Collective for elevator microprocessor-based controller, the operation shall be automatic by means of the car and hall buttons.

ii) Provide microprocessor-based Duplex Selective Collective automatic operation control system, which utilizes on-board diagnostics for servicing, trouble-shooting, and adjusting without requiring the use of an outside service tool.

b) SN# 4644-Car 3:

i) Using a Simplex Selective Collective for elevator microprocessor-based controller, the operation shall be automatic by means of the car and hall buttons.

ii) Provide microprocessor-based Simplex Selective Collective automatic operation control system, which utilizes on-board diagnostics for servicing, trouble-shooting, and adjusting without requiring the use of an outside service tool.

SUBMITTALS

1) **Product Data**: When requested, submit product data for the following:

a) Elevator car and hoistway fixtures.

b) Operation, control, and signal systems.

c) Drive, motor, machine and all major components of system.

2) **Shop Drawings**:

a) Show equipment arrangement in the machine room, pit and hoistway. Provide plans, elevations, sections and details of assembly, erection, anchorage, and equipment location as required.

b) Indicate elevator system capacities, sizes, performances, safety features, finishes and other pertinent information.

c) Show floors served, existing travel distances, maximum loads imposed on the building structure at points of support and all similar considerations of the elevator work, if required.

d) Indicate electrical power requirements and branch circuit protection device recommendations and locations as required.

3) **Certificates**: Inspection and acceptance certificates of elevator system installation.

A) **Submittals at Project Close-Out:**

1) **Operation and Maintenance Data:** Include the following:

a) Product User Manuals and maintenance guides.

b) Parts list, with recommended parts inventory.

a) Furnish two (2) copies of bound Product User Manuals and maintenance guides for elevators. Furnish one (1) electronic copy of all project close-out submittals to Owner.

2) **Wiring Diagrams:** Provide complete as built wiring diagrams with all electrical connections of elevator systems.

a) Provide one set of as built wiring diagrams in the elevator machine room.

b) Provide one (1) additional hard copy and 1 electronic copy on separate USB Flash Drive, in PDF format to Elevator Consultant for review and delivery to Owner.

c) Provide legible schematic wiring diagrams of installed electrical equipment, including control equipment, and any changes or in field modifications.

d) Provide legible copy of field pull sheets and wiring notes. Pull sheets to include wire numbers and colors. List symbols corresponding to identity or markings on machine room and hoistway apparatus.

e) Coded diagrams are not acceptable unless fully identified.

QUALITY ASSURANCE

1) **Elevator Contractor Qualifications**: Elevator Contractor shall provide pre-engineered elevator system components by manufacturer(s) regularly engaged in the manufacture of elevator systems and that complies with ASME A17.1Safety Code for Elevators and Escalators in its entirety, Florida Statutes, Chapter 399, Florida Administrative Code 61C-5, all applicable sections of the Florida Building Code as referenced above in its entirety, and additional requirements specified herein.

a) The Elevator Contractor shall have a documented, on-going quality assurance program.

b) Elevator Contractor shall have a minimum of 10 continuous years as a licensed Elevator Contractor in the State of Florida.

c) Elevator Cab Contractor shall have a minimum of 10 continuous years as a licensed Elevator Contractor in the State of Florida and provide rendering of cab interiors with bid package.

2) **Installer Qualifications**: The manufacturer or an authorized agent of the manufacturer with not less than ten years of satisfactory experience installing elevators equal in character and performance to the project elevators. All mechanics employed to work onsite must have a valid Certificate of Competency issued by State of Florida Bureau of Elevator Safety. There shall not be allowed onsite more than one helper or unlicensed assistant.

3) **Permits**: Apply and secure all required Florida Bureau of Elevator Safety permits as required by Florida Administrative Code 61C-5 for Alteration Permits, and local jurisdiction permits. Elevator Contractor is responsible for proper posting of all required licenses,

permits and safety documentation. Elevator Contractor will oversee / secure all trade permits required for the elevator modernization trade contractors working on site.

4) **Regulatory Requirements**:
   a) ASME A17.1-2013 Safety Code for Elevators and Escalators.
   b) Florida Building Code 2017.
   c) Current Florida Statute 399 and 553.
   d) NFPA 70 National Electrical Code 2014
   e) NFPA 72 National Fire Alarm Code 2013
   f) Americans with Disabilities Act - Accessibility Guidelines (ADAAG).
   g) Any changes or updates as required by Florida Building Code or Florida Statute 399 by time of permit application.
   h) Any and all onsite workmen and receiving of products to site are required to follow security and safety procedures as per City of Gainesville policies due to facility regulations.
5) **Inspection and Testing**: Elevator Installer shall obtain and pay for all required tests, permits and fees for elevator installation as required by the State of Florida.
   a) City of Gainesville has designated Vertical Transportation Equipment Solution (VTE Solution) as their consultant on this project. VTE Solution, in accordance with ASME A17.1Safety Code for Elevators and Escalators, Inspection and Test Requirements, may be present for and review all acceptance inspections for these elevators. Elevator Installer in accordance with ASME A17.1Safety Code for Elevators and Escalators, Inspection and Test Requirements will schedule and coordinate all acceptance tests and arrange for inspection for these elevators. Elevator Contractor must notify building owner and elevator consultant 5 days prior to inspection advising of the date and time of all inspections and tests.
   b) Elevator consultant must qualify and approve any inspector prior to inspection other than State of Florida Bureau of Elevator Safety employed inspectors.
   c) Elevator Contractor shall be solely responsible for the application, securing, maintaining, completion and posting of existing elevator permits as per Florida Statute 399 and delivery to the Owner upon completion and acceptance of elevator work, the certificate of operation.
6) All signage as required by Florida Building Code, NFPA 70 National Electrical Code and NFPA 72 Fire Alarm Code to be posted in elevator lobbies, fire alarm panels, disconnects, machine rooms and machine room doors.
7) Letter of guarantee that any and all equipment installed shall be completely non-proprietary and shall not require the need for specialized testing or programming tools currently or in the future. Future information for trouble shooting or adjusting shall be available to any licensed elevator maintenance contractor by the supplier of the control system at a reasonable cost comparable to cost of competitive parts within marketplace.
   a) Contractor shall provide complete schematics and wiring diagrams for control systems including information for change of program, on board diagnostics or mnemonics, or other on-board switches or settings.

b) Any controller by a manufacturer other than specified must be submitted by June 4th at 5pm local time email: sowersma@cityofgainesville.org Pre-approval notification will be by by Addendum.
Note: Pre-Bid approval does not indicate or imply Owner final acceptance or bid award.

c) Any equipment that is provided for installation which would require any specialized tool, devices, manuals, source codes, access codes, objects, passwords and/or software to input parameters, make adjustments, troubleshoot, perform diagnostics, perform testing functions or required for any other type of maintenance or repair function shall be included with the modernization cost of this contract and will become the property of the building owner. At the time of the submission of the bid this shall be identified as such on the bid.

8) Elevator Contractor is responsible for all protection both inside and outside hoist way areas to all personnel both inside or outside of hoist way areas. This includes providing and maintaining of protective barriers at hall entrances screening of each hoist way during work and protection from trip hazards due to storage of materials or use of drop cords.

9) Elevator Contractor is to provide due care to protect building flooring and walls from excessive debris, dirt or damage due to workmen onsite.

DELIVERY, STORAGE AND HANDLING

1) Deliver elevator materials, components and equipment in manufacturer's protective packaging.

2) Elevator equipment disassembled for replacement shall be neatly stored prior to removal from site and disposal, which is responsibility of Elevator Contractor.

3) Store materials in a dry protected area if designated by owner. Protect and handle materials in accordance with manufacturer's recommendations to prevent damage, soiling, or deterioration.

4) Elevator Contractor shall be responsible for the material handling of all elevator equipment to site storage area. Elevator Contractor will be responsible for keeping all stored materials inside storage area with lock and key.

5) Elevator Contractor shall be responsible for the removal the existing equipment from the machine rooms and placement of the new equipment in the machine rooms.

6) Locked and protected storage for Elevator Contractor’s tools or materials at site is contractor’s responsibility. Key will be provided for elevator machine room and can be utilized for storage or securing of tools and equipment. This is the only area available on site for storage of any elevator materials, equipment or tools.

7) Elevator Contractor can request to be provided a single location for either a storage trailer or POD. The cost of the storage container/trailer is the responsibility of the Elevator Contractor.

8) Authorized elevator personnel only are responsible for temporary installed barrier panels as may be required during construction to protect the openings at elevators at each floor. Panels may be removed only while the authorized elevator personnel are to perform work in the immediate area of the unprotected opening. Authorized elevator personnel shall re-install all

barriers as required to maintain the original solid and safe protection to the opening prior to leaving immediate work area of the opening.

PROJECT CONDITIONS

1) **Prohibited Use**: Elevator that is turned over to the contractor for modernization work shall not be used for any purpose during the construction period before Substantial Completion. The elevator will only be turned over to the owner upon completion of all modernization work, including successful completion of all required inspections and tests including acceptance by consultant.
2) **Security**: Any and all onsite workmen and receiving of products to site are required to follow security and safety procedures as per OSHA and City of Gainesville policies.
3) **Painting**:
   a) Except as otherwise specified, paint all metal work provided by the elevator manufacturer and installer.
   b) Provide all ferrous metals installed in the hoistway shop primed with a rust inhibitive primer.
   c) Remove rust, clean, degrease and paint any existing required parts or components for a like new condition.
   d) Pit and hoistway metal which has rust shall be cleaned and treated with a rust neutralizing/converting product such as Pro Tek 2 IN 1 Industrial Rust Converter by Pro Tek Maintenance Products, Inc., "1" Step Rust Converter by Interstate Products, Inc. (Aqueous Vinyl Acrylic Emulsion) or Rust-X Converter by Superior Industries, or similar, and all hoistway metal to be painted with industrial grade oil based enamel.
   e) All cleaning or painting work that produces any vapors or fumes shall be performed during normal business work hours. Work of this nature must be scheduled and coordinated three (3) days prior to execution of work.
   f) The procedures proposed for the accomplishment of the work shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged, protection of property, which is to remain undisturbed, and coordination with other work in progress. The work plan shall include a Safety and Health plan describing procedures for handling monitoring, and disposition of Volatile Organic Compounds "VOCs" and other hazardous and toxic materials. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.
   g) All paint products and application method must be pre-approved prior to application by owner or owner's agent. Paint products and application methods are to be equal or better than existing product applicable with matching color as approved by owner.
   h) All products of paint, thinners or cleaning agents must be pre-approved prior to use for VOC's or any additional health concerns.
   i) Interior work zones having a volume of 1,000 cubic feet or less shall be ventilated at a minimum of 2 air exchanges per hour. Ventilation in larger work zones shall be maintained by means of mechanical exhaust. Solvent vapors shall be exhausted outdoors,

away from air intakes, building occupants and workers. Building air conditioning return air inlets in the work zone shall be temporarily sealed before start of work until the prepared surfaces have dried and are free of odor. Operators and personnel in the vicinity of paint removal processes involving chemicals or mechanical action (sanding or blasting) shall wear respirators.

WARRANTY

1) **Warranty**: The Elevator Contractor's acceptance is conditional on the understanding that their warranty covers defective material and workmanship. The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work and labor will be free from defects for the period of one (1) year upon acceptance of Contractor's work by Owner, provided that manufacturer approved preventative maintenance program is in effect during the Guarantee/Warranty period, and that the Work will conform with the requirements of the Contract Documents. The Contractor's Warranty is only subject to the exclusions specified in the Contract or herein.
2) The guarantee excludes ordinary wear and tear or improper use, vandalism, abuse, misuse, or neglect or any other causes beyond the control of the Elevator Contractor and this express warranty is in lieu of all other warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose. Any defective condition or workmanship not mutually agreeable as satisfactory to building owner and Elevator Contractor shall be determined by the independent elevator consultant as final for the replacement, repair or continued use or product or part in question.
3) Contractor shall promptly correct Work rejected by the Owner or failing to conform to the requirements of the Contract Documents, and shall correct any Work found to be not in accordance with the requirements of the Contract Documents within a period of one year from the date of completion of the Work.
4) In addition to Contractor's above-mentioned warranties, Contractor shall, for the benefit of the Owner, obtain and assign to Owner if necessary, warranties from the manufacturers, producers and suppliers whose products are incorporated into or used in the work performed hereunder. All work and materials provided pursuant to the warranties hereunder shall be performed at no charge to the Owner.
5) Contractor warrants that (a) the Work shall be completed in accordance with the Contract Documents and in compliance with all federal, state and local laws, ordinances and regulations, and (b) all materials and equipment furnished by Contractor will be of good quality and new, unless otherwise specified in the Contract Documents.

CONTRACT PREVENTIVE MAINTENANCE

1) Existing Elevator Maintenance Agreement: Existing maintenance contract will continue for these elevators, but will be held in abeyance for the warranty/maintenance period. There will be no follow-on maintenance contract awarded for any elevator scheduled for modernization under this specification. Upon the conclusion of each elevator warranty/maintenance period

the current Elevator Maintenance Contractor for the City of Gainesville will resume normal maintenance on each elevator.

a) The elevator modernization contractor will assume maintenance on all elevator(s) that are the subject of this modernization specification once on-site modernization work commences on each elevator.

b) Elevator(s) taken out of service for modernization will not be billed for maintenance during any time the elevator is under modernization.

c) Upon completion of the modernization of each of elevator no additional maintenance charges will be due for the elevator until after the maintenance period detailed in Contract Preventive Maintenance section herein subpart #2, Modernization Maintenance Period, as detailed below has ended.

2) **Modernization Maintenance Period**: Maintenance service consisting of a minimum of monthly examinations, adjustments and lubrication of the elevator equipment shall be provided by the Elevator Contractor for a period of twelve (12) months after the elevator has been turned over for the customer's use. This service shall not be subcontracted, but shall be performed by the Elevator Contractor. All work shall be performed by competent employees during regular working hours of regular working days and shall include emergency 24-hour callback service. This service shall not cover adjustments, repairs or replacement of parts due to negligence, misuse, abuse or accidents caused by persons other than the Elevator Contractor. Only genuine parts and supplies as used in the manufacture and installation of the original equipment shall be provided.

3) Elevator Contractor shall provide a service manual for each elevator describing monthly, quarterly and annual maintenance tasks. Each task shall include an area for signature by a Certified Elevator Technician upon completion of task. Service manual shall also include page/s for documenting all required inspections and tests. Service manual shall contain a section to record all related maintenance, repair and replacement information in accordance with ASME A17.1, Part 8.6 and remain on site.

4) Elevator Contractor shall provide monthly maintenance to all elevators that are the subject of this modernization contract starting at the time the elevator is turned over for modernization and shall continue for a 12-month period upon the completion of each elevator modernization. The Elevator Contractor shall provide one (1) hour per month per elevator dedicated to maintenance of these elevators.

5) The "per month" time is to be dedicated to ongoing comprehensive P.M. service with the goal to reduce unit shutdowns and to extend the useful life of the equipment.

6) The "per month" time shall not include call back times required for correction of calls placed with the elevator Contractor to correct operational issues with elevators.

7) Elevator Contractor shall provide documentation and shall perform monthly testing of fire service recall operation as per ASME A17.1 and ASME A17.2.

8) Submit parts catalog and show evidence of local parts inventory with complete list of recommended spare parts. Manufacturer of original equipment shall produce parts.

9) Manufacturer shall have a service office and full time service personnel within 50-mile radius of the project site.

10) Maintenance service shall include all required tests for inspection services as required by Florida Elevator Bureau and ASME A17.1Safety Code for Elevators and Escalators.

PRODUCTS

ACCEPTABLE MANUFACTURER

1) Only products and components produced or provided by manufacturer(s) regularly engaged in the manufacture of elevator products, and that complies with ASME A17.1Safety Code for Elevators and Escalators in its entirety, ASME A17.2, Florida Statutes, Chapter 399, Florida Administrative Code 61C-5, all applicable sections of the Florida Building Code in its entirety, and additional requirements specified herein are acceptable.

MATERIALS, GENERAL

1) Colors, patterns, and finishes: As selected by the City of Gainesville from manufacturer's full range of standard colors, patterns, and finishes.
   a) Steel:
      i) Shapes and bars: ASTM A 36.
      ii) Sheet: ASTM A 366, cold-rolled steel sheet, commercial quality, Class 1, matte finish, stretcher leveled.
      iii) Finish: Factory-applied baked or powder coated enamel.
   b) Stainless steel:
      i) Shapes and bars: ASTM A 276, Type 300 (18-8).
      ii) Tubing: ASTM A 269, Type 300 (18-8).

HOISTING / LIFTING EQUIPMENT

1) **Platform**: Existing frame shall be retained. Underside of the platform shall be verified and maintained fireproof by the Elevator Contractor.
2) **Platform Guard**:
   a) Existing platform guard (apron) shall be removed.
   b) New Platform Guard (Apron) shall be installed. The entrance side of the platform of each elevator shall be provided with a smooth metal guard plate of not less than 1.5 mm (0.059 in.) thick steel, or material of equivalent strength and stiffness, adequately reinforced and braced to the car platform. The guard plate shall extend not less than the full width of the widest hoistway door opening. The guard plate shall have a straight vertical face, extending below the floor surface of the platform no less than 1 220 mm (48 in.).
3) **Sling**: Existing steel stiles affixed to a steel crosshead and bolstered with bracing members to remove strain from the car enclosure shall be retained.

4) **Car Top Guard Railing:** A standard railing conforming to ASME A17.1 shall be provided on the outside perimeter of the car enclosure top on all sides where the perpendicular distance between the edges of the car enclosure top and the adjacent hoistway enclosure exceeds 300 mm (12 in.) horizontal clearance and on sides where there is no hoistway enclosure.
   a) If clearances require the standard railing to be located more than 100 mm (4 in.) from the edge of the outside perimeter of the car enclosure top, the top of the car enclosure outside of the railing shall be clearly marked.
   b) The marking shall consist of alternating 100 mm (4 in.) diagonal red and white stripes. The forces specified in ASME A17.1 shall not deflect the railing beyond the perimeter of the car top.
5) **Guide Rails**: Existing guide rails shall be retained and reutilized.
   a) The guide rails are to be fastened to the building with steel brackets verified in alignment, secure to wall and brackets with surface planed smooth. Existing guide rails shall be cleaned and aligned as necessary for the proper performance of the elevators.
6) **Car Roller Guides**: Replace all roller guide complete assemblies which shall have a minimum of three tires each, shall be mounted on top and bottom of the car frame and be held in contact with the guide rail by adjustable devices.
   a) Car roller guide shall be ELSCO Model B or equal.
7) **Counterweight Roller Guides**: Retain and reutilize the existing counterweight roller guide assemblies. Replace all roller guide wheels with new OEM style replacement roller wheels.
8) **Buffers**: Retain existing buffers. Buffer data plates shall be maintained or replaced for compliance with ASME A17.1 Safety Code for Elevators and Escalators.
   a) All buffers shall be cleaned and painted.
   b) Verify the spring buffer(s) comply with the stroke and load requirements of the ASME A17.1 Safety Code for Elevators and Escalators.
   c) Buffer data plates shall be maintained or replaced for compliance with ASME A17.1 Safety Code for Elevators and Escalators.
9) **Hoisting Motor & Drive**: Install new Hoisting Motor and Drive:
   a) **Drive**: Variable Voltage Variable Frequency (VVVF) type.
      i) Hoist Motor: Standard, open drip proof AC motor. Motor armature shall be dynamically balanced and supported by ball bearings of ample capacity. New Hoisting Machine Motor, Imperial or equal, will be provided and will be specifically designed and rated for elevator duty with high starting torque and low starting current. The new motor will be fitted to the drive machine, adjusted, and aligned to run smooth and free of excessive vibration.
      ii) The flux vector drive shall be capable of producing full torque at zero speed and shall not require DC injection braking in order to control the stopping of the car. The drive shall use a three-phase, full-wave bridge rectifier and capacitor bank to provide a DC voltage bus for the solid-state inverter.

b) The drive shall use power semiconductor devices and pulse width modulation, with a carrier frequency of not less than 2 kHz, to synthesize the three-phase, variable voltage variable frequency output to operate the hoist motor in an essentially synchronous mode. The drive shall have the capability of being adjusted or programmed to achieve the required motor voltage, current and frequency, in order to properly match the characteristics of the AC elevator hoist motor.

c) The drive shall not create excessive audible noise in the elevator motor. The drive shall be a heavy-duty type, capable of delivering sufficient current required to accelerate the elevator to contract speed with rated load. The drive shall provide speed regulation appropriate to the motor type.

d) For non-regenerative drives, a means shall be provided for removing regenerated power from the drive's DC power supply during dynamic braking. This power shall be dissipated in a resistor bank, which is an integral part of the controller. Failure of the system to remove the regenerated power shall cause the drive's output to be removed from the hoist motor.

e) A contactor shall be used to disconnect the hoist motor from the output of the drive unit each time the elevator stops. This contactor shall be monitored, and the elevator shall not start again if the contactor has not returned to the de-energized position when the elevator stops.

f) An electro-mechanical switch shall open all power feed lines to the brake. A single ground, short circuit or solid-state control failure shall not prevent the application of the brake. The controller shall provide step less acceleration and deceleration and provide smooth operation at all speeds. The power control shall be arranged to continuously monitor the performance of the elevator in such a way that if the car speed exceeds 150 fpm during access, inspection or leveling, the car shall shut down immediately, requiring a reset operation.

g) Existing coupling and bushing attaching motor to drive machine shall be replaced with a new coupling and bushing assembly.

10) **Traction Machine**: Existing geared traction machines will be reutilized.

a) The existing Hoisting Machines will be retained, repainted and reused in place.

b) The entire Machine Assembly will be adjusted, thoroughly cleaned and finish painted. Paint will be standard top quality durable enamel.

c) All existing Hoisting Machine bearings and gears will be checked with notice to consultant if any problems found.

d) All Hoisting Machine seals and gaskets shall be replaced with new seals and gaskets.

e) The Gear Case Oil Reservoirs will be drained, flushed clean and refilled with new, high grade, high quality lubricant.

11) **Brake Assembly**: Existing brake shall be retained, disassembled, cleaned and inspected. The brake assembly will be rebuilt with new components as necessary to provide a like new condition.

12) **Emergency Brake Assembly**: An emergency brake assembly, Hollister-Whitney Rope Gripper, shall be installed to provide protection against ascending car overspeed and unintended car movement. The preferred method to mount a rope gripper assembly is to through bolt to the existing bed plate or machine beams. All bolts used in the mounting of the Rope Gripper shall be minimum Grade 5 bolt.

13) **Counterweight**: With existing counterweights, counterbalance each elevator for smooth and economical operation by cast iron or steel plate weights contained in a structural steel frame. Counterweight shall equal a complete elevator car and approximately 40 percent of the specified load. If additional weights are required contractor shall provide and adjust for proper balance as a part of this specification and contract.

14) **Sheaves and Cable Guards**: Existing primary and secondary drive sheaves shall be retained and reutilized. New cable guards shall be provided as required by ASME A17.1.

15) **Suspension Ropes**: Suspension ropes shall be retained and reutilized.

    a) All suspension means shall be adjusted and installed with alternating shackle rod length so that shackles do not make contact and include anti-rotation devices.

    b) Load-carrying rope must be vertically in line with shackle rod.

    c) All required labels shall be affixed after installation.

    d) All ropes are to be tensioned equally.

16) **Governor Ropes**: Replace governor ropes with traction steel ropes with size noted and stenciled on the Centrifugal Governor Data Tag.

    a) All required labels shall be affixed after installation.

17) **Car Safety**: Retain existing descending car safeties. Car safeties to be reconditioned as required for engagement by the centrifugal speed governor to apply stopping distances as required by ASME A17.1. Additional switches as required shall be included as per the requirements of ASME A17.1.

18) **Centrifugal Speed Governor**: The centrifugal speed governor shall be retained, reused, and reconditioned to as new condition as required to cut off power to the motor and apply the brake whenever the governor indicates the car has excessive speed.

19) **Automatic Terminal Limits**: Automatic Terminal Limits. Place electric limit switches in the hoistway near the terminal landings. Limit switches shall be designed to cut off the electric current and stop the car if it runs beyond either terminal landing.

20) **Automatic Self-Leveling**: Provide each elevator car with a self-leveling feature to automatically bring the car to the floor landings and correct for overtravel or undertravel. Self-leveling shall, within its zone, be automatic and independent of the operating device. The car shall be maintained level to less than 1/4” with the landing irrespective of its load.

21) **Load Weighing Devices**: Draka Micelect Model # LW-ILC3-MSTD or approved EMCO equal load weighing device for 1:1 roping shall be installed to provide signals to the controller for various load monitoring and dispatching operations.

22) **Governor Tail Sheave**: The governor tail sheave shall be retained and reutilized for operation with the centrifugal speed governor to apply stopping distances as required by

latest applicable edition of ASME A17.1. Tail Sheave shall be reconditioned to as new condition.

23) **Traveling Cable**: Existing traveling cables shall be removed and replaced with new traveling cables.

   a) Traveling cables shall terminate at numbered terminal blocks in car and machine room.

   b) Traveling cable shall be provided with a separate shielded circuit for communication system and hang to obtain proper size of loop. Traveling cable outer covering will be of fire resistant and meet UL standard testing.

   c) Traveling cable will be hung free of all contact from hoistway or car equipment and shall be provided with 10 percent spare conductors for each car

24) **Hoistway & Machine Room Wiring**:

   a) Provide and install all new wiring throughout the elevator machine room and hoistway, adequately sized and constructed for the proper operation of the equipment. Multi-conductor type wiring for light and signal circuits shall be used in the elevator hoistway. All conductors will be copper and the minimum size of conductors, excluding those which form an integral part of control devices, shall be No. 14 for lighting circuits and No. 18 for operating, control and signal circuits. All wiring will be installed in accordance with applicable NEC and latest applicable edition of ASME A17.1 codes. Hoistway door interlock wiring will be replaced with new SF-2 high heat resistance wiring and shall include a grounding conductor. All other new wiring will have flame retarding and moisture resistant outer covering.

   b) Equipment grounding shall be provided. The equipment grounding conductor will be run with the circuit conductors and shall be a copper conductor. Ground all conductors, supports, controller enclosure, and other non-current conducting metal enclosures for electrical equipment in accordance with NEC. The ground wires shall be solid or stranded; insulated, covered, or bare copper, sized as required by NEC, and shall be colored green if less than #6, and have green marking if #6 or larger.

   c) Retain and reutilize to the maximum extent possible all ducts and conduit in machine room and hoistway. Install new ducts and conduit as required.

   d) Hoistway travel cable and associated wiring shall be coordinated with controller manufacture for wiring configuration requirements to match all controller wiring color coded and numbered diagrams for installation

25) **Pit Stop Switch**: Provide and install new pit stop switch as required by latest applicable edition of ASME A17.1 code.

26) **Pit Light**: Pit lighting to be verified by Electrical Contractor as meeting minimum 10 ft-c requirement of additional pit lighting will be installed by electrical contractor as detailed in the Electrical Requirements section of this specification.

27) **Pit Ladder**: Existing pit ladder has obstructions that significantly reduce the clear horizontal distance from the centerline of the rings to the Hoistway wall surface. Existing pit ladder can be retained and reutilized if the code required horizontal distances can be achieved. If obstructions cannot be removed or relocated to provide code required distances then it will be required to install a new pit ladder as follows:

a) If pit ladder is not in compliance with current A17.1 code, provide new pit ladder as required by latest applicable edition of ASME A17.1 code.

b) Pit ladder shall be installed to provide a clear distance of not less than 115mm (4.5 in.) from the centerline of the rungs, cleats, or steps to the nearest permanent object in back of the ladder.

c) Pit ladder must be positioned so that means to unlock the access door from inside the pit shall be provided and be located not more than 1 825 mm (72 in.) vertically above a rung, cleat, or step. The minimum distance from the top rung, cleat, or step to the top of the pit ladder or handhold shall not be less than 1 200 mm (48 in.). With the door in the closed position, in a plane not more than 1 000 mm (39 in.) horizontally from a rung, cleat, or step of the pit ladder.

HOISTWAY ENTRANCES

1) **Hoistway Door Interlocks**:

a) All existing interlocks shall be retained and reutilized.

b) Interlock Assemblies: Reutilize existing Interlock Assembly. Refurbish as required and rebuild with direct OEM parts necessary to deliver interlock in as new condition.

c) Equip each hoistway entrance with SF-2 wiring and grounding as required by code.

d) Interlock shall be designed to prevent operation of the car away from the landing until the doors are locked in the closed position as defined by code and shall prevent opening the doors at any landing from the corridor side unless the car is at rest at that landing or is in the leveling zone and stopping at that landing.

e) Means to unlock the access door from inside the pit shall be provided in accordance with latest applicable edition of ASME A17.1 code requirements. This means shall be located in a plane not more than 1 000 mm (39 in.) horizontally from a rung, cleat, or step of the pit ladder with the door in the closed position and not more than 1 825 mm (72 in.) vertically above a rung, cleat, or step.

2) **Hoistway Door Hangers, Sheaves, and Tracks**:

a) Existing door hangers and door tracks shall be retained and reutilized.

b) Existing Hoistway door sheaves, door gibs including all required primary and secondary door retainers shall be replaced with direct OEM replacement components.

c) Door Sheaves and Door Gibs including all required Primary and Secondary Door Retainers for all landings shall be replaced with all new OEM replacement components as specified below.

i) Sheaves: Polyurethane tires with ball bearings properly sealed to retain grease.

ii) All hoistway door closers shall be replaced with new closers

iii) Replace all door gibs including all required primary and secondary door retainers.

iv) All elevators shall have secondary retainers installed at the bottom of each hoistway door in conformance with applicable requirements of A17.1.

2) **Hoistway Doors**:

   a) Refurbish as required and replace all parts necessary to deliver doors in as new condition. Verify and adjust as required to maintain all door gaps less than 3/8 inch in accordance with latest applicable edition of ASME A17.1 code.

   b) Hoistway doors that are unable to be adjusted to maintain the door gaps to less than 3/8 inch shall be replaced with new door panels. Bidders are cautioned to verify the capability of all hoistway doors to be properly adjusted to maintain code required clearances and gaps as no request for any change order will be approved for this purpose. It is the Elevator Contractors responsibility to verify this prior to submission of a bid on this project.

3) **Hoistway Entrances General:** Existing hoistway entrance assembly consisting of the elevator entrance frame, head jamb, strike jamb & return jamb shall be retained and reutilized unless detailed below. Verify and adjust as required to maintain all door gaps less than 3/8 inch in accordance with latest applicable edition of ASME A17.1 code.

4) **Hoistway Entrances and Door Panels for Lobby Level Car 1, SN# 4643 & Car 2 SN# 4642**: Hoistway entrances shall be retained and refinished for Lobby Level for Car 1, SN# 4643 & Car 2 SN# 4642 as detailed below.

   a) Furnish and install new Satin Finish Stainless Steel Cladding to the existing hoistway frame and center parting doors. Included are new standard Braille plates, rubber astragals and satin finish stainless-steel site guards. The existing surface shall be cleaned and prepared to accommodate new metal cladding.

5) **Hoistway Door Sills:** Existing Hoistway Door sills shall be retained and reutilized. Existing Hoistway Door sills shall be thoroughly cleaned and polished to present a bright finish.

6) **Hoistway Entrances**: Hoistway entrances shall be retained and reutilized. Verify and adjust as required to maintain all door gaps less than 3/8 inch in accordance with latest applicable edition of ASME A17.1 code.

7) **Sight Guards**: Sight guards, as required to reduce the opening between the leading edge of the hoistway door and the car door to maintain code required clearances, will be furnished and shall be satin finish Stainless Steel to match door panels.

8) **Escutcheon Tubes**: Hoistway doors shall have all escutcheon holes fitted with stainless steel escutcheon tubes fitted with a zinc plated push nut.

9) **Door Bumpers**: Provide and install new rubber door bumpers on all hoistway door jambs and on car door jamb. Bumpers shall be installed at top and bottom of door jambs.

10) **Painting and Rust Remediation**:

   a) After removal of all old hardware and components for the hoistway door the hoistway door headers shall have all rust thoroughly removed and treated as detailed below.

   b) Pit and hoistway metal which has rust shall be cleaned and treated with a rust neutralizing/converting product such as Pro Tek 2 IN 1 Industrial Rust Converter by Pro Tek Maintenance Products, Inc., “1” Step Rust Converter by Interstate Products, Inc. (Aqueous Vinyl Acrylic Emulsion) or Rust-X Converter by Superior Industries, or approved equal product.

c) All hoistway metal to be painted with industrial grade oil based enamel or pre-approved alternate paint in accordance with the painting section of this specification.

d) Remove rust, clean, degrease and paint any existing parts or components for a like new condition, including but not limited to the door panel surfaces, door track assemblies and door frame surfaces inside the hoistway.

11) **Hoistway Floor Numbers**: After painting has been completed, the hoistways shall have floor numbers, not less than 100 mm (4 in.) in height, painted on the hoistway side of the enclosure or hoistway doors.

12) **Entrance Markings**: Entrance jambs shall be marked with new 4" x 4" stainless steel plates having raised floor markings with Braille adjacent. Markings shall be provided on both sides of the entrance. Plates shall be permanently fixed on jambs at a location as per Florida Building Code.

13) **Floor Designations**: Floor designations shall be as listed in Elevator System Description, Number of Stops and Openings section of this specification.

CAR OPERATING PANEL

1) **New Car Operating Station, General:** The main car control shall contain the devices required for specific operation mounted directly to an aluminum backing plate with a stainless-steel no. 4 brush finish applied faceplate. The panel shall consist of a series of modules, key switches or approved buttons for optimum viewing and accessibility. All engraving shall be on flush mounted hairline faceplates securely mounted to the aluminum backing plate.

a) The lowest section shall contain the "door open," "door close," "alarm" buttons and a keyed "emergency stop" switch.

b) Intermediate section shall contain floor buttons, which illuminate when a call is registered and remain illuminated until the call is answered. Raised floor indications and handicap symbols shall be located immediately adjacent to the floor buttons.

c) Layout of floor buttons will have the floor buttons in one column and the lock out key switches in the adjacent column.

d) Door Open and Door Close buttons shall be in a single row.

e) Provide a lockable service compartment with recessed flush door. Door material and finish to match car station face plate or car return panel. Inside surface of door shall contain an integral flush window for displaying the elevator operating permit. Service cabinet shall contain all required and accessory key switches including independent service, fan switch, key stop switch, service receptacle and an emergency light test button in service cabinet.

f) All key switches shall be barrel (round) style key for enhanced security.

g) The top section shall contain fire service features inside a locked cabinet in accordance with the currently adopted edition of ASME A17.1 Safety Code for Elevators and Escalators, including operating instructions.

h) Cap operating panels shall swing open with the hinged side closest to the sidewall.

i) All push buttons to be tamper resistant as follows:

i) Monitor Controls, Model HPS 1300, positive stop Flat Button with Illuminated Blue Center Jewel.

ii) Innovation Industries PB 23, Flush Button with Illuminated Blue Center Jewel Stainless Steel with counter bored stop.

j) Car operating panels by Monitor Controls, Model "Monitor Series" or Innovation Industries "Bruiser Series" Stainless Steel #4 brushed finish. No adhesive type applied plates will be accepted at either car or hall stations. All fixtures shall have a Blue LED lighting source.

k) Car stations shall be pre-wired by the car station manufacture with terminal strip connection to control wiring.

l) Swing of panel shall match car door configuration. Panel shall swing to open only to the open car side.

2) **Position Indicator**: A 2" electronic segmented digital position indicator mounted in the control panel for optimum viewing. As the car travels, its position in the hoistway shall be indicated by the illumination of the alpha/numeric character corresponding to the landing which the elevator is stopped or passing. On one side of digital numeric indicator in the car panel will also be a matching indicator with direction of travel.

a) Position Indicator shall have a ¼ inch lens to provide high level of vandal resistance.

b) Position Indicator shall have a Blue LED lighting source.

3) **Emergency Light:** An emergency light and capacity plate shall be attached to the aluminum backing plate in the Car Operating Panel. Emergency light shall illuminate automatically upon loss of the building's normal power supply.

4) **Emergency Communications System**: Provide a Kings III, Wurtec S3, Electronic Micro Systems PNB, or equal, emergency communications device mounted in the car station panel. Emergency communications device shall comply with Americans with Disabilities Act (ADA) and the ASME A17.1b-2009 Safety Code for Elevators and Escalators requirements. All elevator phones will have phone serviced provided by the Building owner utilizing VOIP.

5) **Special Accessories in each car station panel**:

a) Located in Service Compartment Subpanel with ¼ inch thick 6" Wide x by 9" High Clear Certificate Window

i) Light switch.

ii) Fan key switch.

iii) Independent Operation Keyed Switch

iv) Access Keyed Switch

v) Emergency Light Test Button

b) Keyed stop switch

c) All push buttons and key switches as required for fire service operation.

d) No applied plates.

e) Braille and engraving to include

i) Engraved Capacity City of Gainesville number designation and Serial Number of elevator.

ii) Fire service instructions.

iii) No Smoking sign to meet minimum size requirements of the Florida Building Code and shall be engraved on flush mounted hairline faceplate.

f) Fire Fighters Service Key switches as required by the Florida Building Code including operations required by A17.1 shall be engraved on a flush mounted hairline faceplate.

i) The "FIRE OPERATION" switch, the "CALL CANCEL" button, the "STOP" switch, the door open button(s), the door close button(s), the additional visual signal, and the operating instructions shall be grouped together at the top of the main car operating panel behind a locked cover.

ii) The firefighters' operation panel cover shall be openable by the same key that operates the "FIRE OPERATION" switch. The cover shall be permitted to open automatically when the car is on Phase I Emergency Recall Operation and at the recall level. When the key is in the "FIRE OPERATION" switch, the cover shall not be capable of being closed. When closed, the cover shall be self-locking.

iii) All buttons and switches shall be readily accessible, located not more than (72 in.) above the floor.

iv) The front of the cover shall contain the words "FIREFIGHTERS' OPERATION" in red letters at least 0.4 in. high.

v) Fire Fighters' Emergency Operation Key: The fire key shall be of a tubular, 7 pin, style 137 construction and shall have a bitting code of 6143521 starting at the tab sequenced clockwise as viewed from the barrel end of the key. The key shall be coded "FEO-K1."

g) **Voice Annunciation**: The Elevator Contractor shall furnish wiring to the elevator cab and a speaker for voice annunciation. The annunciator shall announce the floor number, the intended direction of travel and audio cues for passengers who may not be able to see, or may fail to notice, visual cues of door movement.

h) All required Braille for buttons and other switches as required by the Florida Building Code shall be securely fastened to the aluminum backing plate or directly engraved.

i) Integral telephone including engraved directly into the car-operating panel ADA required telephone instructions.

j) There shall be NO ADHESIVE APPLIED PLATES, SIGNS or PANELS affixed to the car-operating panel or other locations inside or outside the elevator cab.

6) Car Operating Stations must be approved by consultant prior to contractor ordering fixtures.

CAR RIDING LANTERN

1) **Column Mounted Car Riding Lantern**: A new tamper resistant, arrows thru engraved, clear epoxy filled, car-riding lantern shall be installed in the elevator cab and located in the entrance. The car riding lantern shall be visible from the location of the hall station. The lantern bars, when illuminated, will indicate the intended direction of travel. The lantern will illuminate and a signal will sound when the car arrives at a floor where it will stop. The lantern shall remain illuminated until the door(s) begin to close.
2) Car Riding Lantern shall be Monitor Controls, Model "Monitor Series" or Innovation Industries "Bruiser Series".
3) Car Riding Lanterns must be approved by consultant prior to contractor ordering fixtures.

CAR TOP LIGHTING & CAR TOP INSPECTION STATION

1) **Car Top Lighting**: The elevator shall be provided with lighting and a duplex receptacle fixture on the car top. The lighting shall be permanently connected, fixed, or portable, or a combination thereof, to provide an illumination level of not less than 100 lx (10 fc) measured at the point of any elevator part or equipment, where maintenance or inspection is to be performed from the car top. All lighting shall be equipped with guards. The light switch shall be accessible from the landing when accessing the car top
2) **Car Top Inspection Station**: Provide a new car top inspection station with an "emergency stop" switch and constant pressure "up-down" direction buttons to make the normal operating devices inoperative and give the inspector complete control of the elevator. Car top Inspection unit manufactured by Vator Accessories, Inc., (630) 876-8370, Nylube Products Company, LLC. (248) 852-6500, Monitor Controls, or equal. Mount the car top inspection station as required by ASME A17.1 Safety Code for Elevators and Escalators.
    a) When the elevator is on inspection operation or when the hoistway access switch has been enabled, a continuous audible signal, audible at the location where the operation is activated shall sound when the "FIRE RECALL" switch is in the "ON" position or when the fire alarm initiating device is activated to alert the operator of an emergency.
    b) Car Top Inspection Station must be approved by consultant prior to contractor ordering fixtures.

DOOR OPERATION

1) **New Door Operator**: Provide a direct current motor driven heavy-duty operator GAL MOVFR Door Operator, UNITEC AT400 Door Operator or pre-approved equal.
    a) Door operator shall be a closed loop, microprocessor based system. The door operator will facilitate smooth operation under varying environmental influences such as, temperature, wind, friction, and component variation. The processor will monitor the door's actual position and velocity compared to its desired position and velocity. If variations are detected in the profile the command will be automatically corrected. The Closed Loop Door Operator control system shall not require machine room door control equipment.

b) Door operation to comply with A17.1 requirements for Restricted Opening of Hoistway or Car doors of passenger elevator.

c) Door Operator shall be provided with adjustable parameters, at a minimum, for the following:

i) Adjustable Parameters in the closing cycle for high speed, final speed, nudging speed, acceleration, deceleration, and slow speed torque.

ii) Adjustable parameter for stall reversal – automatic reversal if the door meets an obstruction.

iii) Adjustable parameter for door reversal – to accomplish a quick but smooth reversal.

d) Door noise not to exceed 58 dBA.

e) Door control to open doors automatically when car arrives at a landing in response to a normal hall or car call.

f) Install door operator data plate as per A17.1 Safety Code for Elevators and Escalators and provide all door closing speed times to ensure code conformance to Kinetic Energy limitations of latest applicable edition of ASME A17.1 code.

g) Door operator must be mounted so completely isolated from the car top. Mounting to car stiles by brackets as configured by GAL will be accepted for isolation.

2) **Door Zone Lock Device**: Existing restricted door opening system shall be retained and reutilized. Intermediate flags shall be installed to so that when the car is outside the unlocking zone, as defined in A17.1, the hoistway doors or car doors cannot be opened more than 4 in. (102 mm) from inside the car. When the car is outside the unlocking zone, the car doors shall be openable from outside the car without the use of special tools.

3) **Door Clutch:** A new door vane or door retracting device shall be installed to operate with the refurbished interlock assemblies.

4) **Door Protection Device**: New Door Protection Device shall be provided. Door protection shall be an infrared light screen type with a minimum of 154 criss-cross light beams. The Elevator Cab Door shall be provided with a new reopening device that will stop and reopen the car doors and hoistway door automatically should the doors become obstructed by an object or person. The beams shall project across the car opening detecting the presence of a passenger or object. If door movement is obstructed, the doors shall immediately reopen. A mechanical reopening device shall not be acceptable.

a) The light screen is to be totally immune to ambient light, including strobes, fluorescent, and direct sunlight (100,000 lux). Maximum allowable installed misalignment shall be plus or minus 30 degrees @ 3 feet. The receiver and light array cables shall be hi-flex robotic grade, a minimum of 15 feet in length, connector on each end, and interchangeable when connected to the power supply.

b) Light beam and receiver arrays to operate independent of the power supply, allowing the use of any 18 – 25Vdc supply, and provide a continuously short-circuit protected NPN transistor output. The arrays shall incorporate Automatic Dynamic Gain Sensitivity Adjustment to compensate for severe misalignment, condensation, damaged or

contaminated lenses, and provide automatic on-the-fly dynamic adjustment as the doors open and close.

c) The power supply shall be dual voltage input (120-240Vac, 50/60Hz), provide LED indicators for power applied and relay operation, simulator test button for beam break, and push-to-test button for manual operation of master control relay. Nudge feature to be field installable in standard power supply with accessory relay to operate in either the delayed nudge mode or redundant mode, switch selectable. Nudge feature also to incorporate buzzer with enable/disable switch, and delay timer adjustable from 5 to 45 seconds for nudge operation.

d) Provide nylon fasteners, which attach to array studs for mounting array to jam of side parting door. Molded tool for attaching fasteners to be included.

e) All configurations shall meet or exceed ADA requirements, be CE certified, and UL/cUL listed. Door protection will be per these specifications and be manufactured by Janus Elevator Products Inc. Model "Panachrome 3D" including green and red illuminating visual warning signals to warn users of door movement. The device shall illuminate GREEN when opening, RED when closing and flash RED a couple of seconds prior to closing. The safety edge shall be capable of projecting light beams across the entire opening and the 3D portion will project beams on a 45 deg angle out into the hoistway. The 3D protection zone should move with the doors, so that if a person or object enters the zone after the doors have begun to close, the doors shall stop, and then reverse to reopen. The doors shall remain open until the expiration of an adjustable time interval (3D Timeout option only) and then close automatically.

f) The Panachrome 3D shall be provided with Voice Annunciator. The Panachrome with Voice Annunciator option will provide audio cues for passengers who may not be able to see, or may fail to notice, visual cues of door movement. Customer selected messages such as "Doors are opening, safe to enter," and "Doors are closing, please use caution," are to factory pre-recorded for quick installation. Volume shall be controlled and adjusted on-site.

5) **Nudging Operation**: The doors shall remain open as long as the electronic detector senses the presence of a passenger or object in the door opening. If door movement is obstructed for a field programmable time, a buzzer will sound, and the doors will close at reduced speed. If the infra-red door protection system detects a person or object while closing, the doors will stop and resume closing after the obstruction has been removed.

CAB ENCLOSURE

1) Existing elevator cabs shall be retained, reutilized, and upgraded.

a) Cab interiors at two (2) of the existing City Hall elevators shall be upgraded by a Cab Interior Sub-Contractor to the Elevator Modernization Contractor (see Bid Alternates).

b) Elevator Modernization Contractor shall coordinate with the Cab Interior Sub-Contractor to schedule all cab interior refurbishment/upgrade work.

c) Elevator Modernization Contractor is responsible to provide schedule that allows for coordination of the cab interior refurbishment. This schedule will have all cab interior

work performed prior to elevator modernization contractor making final acceptance inspection and testing of this elevator.

d) Elevator Modernization Contractor is responsible for all required door adjustments required for cab modernization contractor to complete all cab modernization work; no additional charges will be allowed for any door adjustments.

e) Elevator Modernization Contractor shall be responsible for all work detailed in this section.

2) **Re-Cladding of Cab Fronts**:

a) **Front Returns**: Re-clad with stainless steel, ASTM A 167, Type 300 stainless steel panels, No. 4 satin finish, extend one piece to cover all existing car box openings in return panels and wrap around car return panels. Cladding is to encompass the car door frame and extend a minimum of 1" return parallel to the car door. Existing surface to be cleaned and prepared to accommodate new metal cladding.

b) **Door Headers & Frames**: Re-clad or cap with stainless steel, ASTM A 167, Type 300 stainless steel panels, No. 4 satin finish, extend one piece to cover all existing car box openings in car door header and jamb assembly. Headers to include the cab wall above the door to the cab ceiling. Existing surface to be cleaned and prepared to accommodate new metal cladding.

3) **Car Door Hangers, Sheaves, and Tracks:**

a) Existing door hangers, sheaves, tracks, door gibs including all required retainers shall be replaced.

b) New components for all components shall be OEM replacement or preapproved equal.

i) Sheaves: Polyurethane tires with ball bearings properly sealed to retain grease.

ii) Hangers: Provide an adjustable slide to accommodate the up-thrust of the doors.

iii) Tracks: Drawn steel shapes, smooth surface and shaped to conform to the hanger sheaves.

iv) Door hangers, sheaves and tracks shall be OEM replacement or equal.

v) Replace all door gibs including all required primary door retainers.

vi) New slide guides shall be installed with fire tabs installed as per manufactures design. Bottom slide guides as manufactured by original manufacture, OEM replacement or preapproved equal.

vii) Car door guides shall be matched to existing car door sill.

4) **Cab Interior Renovations:**

a) Elevator #3 SN# 4644: Cab interior finishes will be retained and reutilized for cab interior surfaces not identified differently in this specification.

b) Elevator #1 SN# 4643 & Elevator #2 SN# 4642: Furnish and install new code compliant elevator interior finishes as follows:

i) **Flooring:** Cab interior company to remove all existing flooring prior to installing new approved interior finishes. The Owner (City of Gainesville) will then be responsible

for furnishing and installing new selected finished flooring upon completion of installing new interiors.

ii) **Handrails:** Furnish and install new Stainless-steel 1½" tubular handrail on rear wall only, ends returned.

iii) **Wall Finishes:** Furnish and install Wilson Art Premium Laminate panels and Rigidized Metals standard pattern textured stainless steel panels. Each side and rear wall to contain four (4) raised panels per wall, the second row of panels down from the ceiling to be 5HR textured stainless steel on each wall and all other rows to be Wilson Art Premium Laminate panels, as approved by Owner. Twelve (12) total horizontal raised panels. All panels to be applied with z-clips to allow for future removal/replacement as needed.

iv) **Reveals and Base:** All recessed reveals to be satin stainless steel ½" horizontally separating all panels and vertically in cab corners/car front area. Exposed frieze area and 6" tall protruded base shall be satin stainless steel. Base to have incorporated code required ventilation as needed.

v) **Ceiling:** Furnish and Install a new LED downlight ceiling faced with 20ga. satin (#4) stainless steel (Type 304). Ceiling face to be divided into six (6) sections separated by ¼" wide black painted reveals. Each section to contain an individual light fixture. Each fixture to contain a black trim bezel and Man-D-Tech Eye Beam LED bulbs to comply with Code. Edge to be painted black to match ceiling reveals. Included is a low voltage driver unit to be mounted on car top. Emergency escape hatch shall be incorporated into ceiling based on existing location of escape hatch in elevator canopy and shall have hairline joints in ceiling finish. Edge of ceiling to be held approximately 1" from transom & centered between side walls.

5) **Cab Doors**: Replace & hang new cab door panels.

a) Provide new fire rated cab door on new sheave type hangers with polyurethane tires that roll on a new nylon track and are guided at the bottom by new non-metallic shoes sliding in existing threshold groove/on reconditioned sheave type hangers with polyurethane tires that roll on a new nylon track and are guided at the bottom by new non-metallic shoes sliding in existing threshold groove.

b) New car door close contact switch including zone locking device shall be installed.

c) Provide new car door clutch with integrated door lock, door top adapter bars (if required) and hanger roller assembly.

d) Finish for car door shall be ASTM A 167, Type 300 Stainless Steel Number 4 finish. Door shall be manufactured to include all mounting hardware requirements of the door operating equipment. Door shall be manufactured by Gunderlin LTD or pre-approved equal by consultant.

6) **Cab Enclosure Vents**: Cab enclosure vents shall be verified to be code compliant. Openings for natural ventilation shall be installed in cove base with appropriate covers. Openings shall be appropriately sized and be guarded to prevent straight through passage in accordance to the applicable requirements of the current A17.1 safety code.

7) **Car Door Sills:** Existing Car Door sills shall be retained and reutilized. Existing Car Door sills shall be thoroughly cleaned and polished to present a bright finish.

8) **Car Top Exit**: Car top exit shall be verified that it is hinged or securely attached with a chain when in both the open and closed positions. If a chain is used, it shall be not more than 300 mm (12 in.) in length. The exit cover shall only be openable from the top of the car, where it shall be openable without the use of special tools.

9) **Car Top Exit Switch**: Car top escape panels shall have switch assemblies including all wiring to install proper safety circuit as required by A17.1 Safety Code for Elevators and Escalators.

10) **Car Fan**: New 2 speed quiet run fan manufactured by Nylube securely mounted in ceiling.

11) **Car Emergency Lighting**: New emergency lighting, integrated in car operating panels as specified.

12) All openings left from removal of current car devices, which are not re-clad as detailed above, shall be covered with stainless steel: ASTM A 167, Type 300 stainless steel covers, No. 4 satin finish. All edges shall be finished in a manner that presents no sharp edges or corners.

CONTROL AND LANDING SYSTEM

1) **Elevator Controller System:** Provide New Motion Control Engineering Inc., Controller Model Motion 4000, GAL Galaxy or preapproved equal. The elevator controller shall use a microprocessor based logic system and shall comply with all applicable elevator and electrical safety codes to include the following:

   a) All power feed lines to the brake shall be opened by an electro-mechanical switch. A single ground, short circuit or solid-state control failure shall not prevent application of the brake.

   b) The automatic leveling zone shall not extend more than 6" (152.4 mm) above or below the landing level, nor shall the doors begin to open until the car is within 6" (152.4 mm) of the landing. In addition, the inner leveling zone shall not extend more than 3" (76.2 mm) above or below the landing. The car shall not move if it stops outside the inner leveling zone unless the doors are fully closed and locked.

   c) The system shall use an automatic two-way leveling device to control the leveling of the car to within 0.25" (6.35 mm) or better above or below the landing sill. Overtravel, undertravel or rope stretch must be compensated for and the car brought level to the landing sill.

   d) The closed loop feedback power control shall be arranged to continuously monitor the actual elevator speed signal from the velocity transducer and compare it with the intended speed signal to verify proper and safe operation of the elevator.

   e) During operation of the elevator with an overhauling load (empty car up or loaded car down), precision speed control shall be obtained by the regulation system used in the power control. The power control shall have the capability to maintain regulation under varying loads.

   f) The controller shall provide stepless acceleration and deceleration and smooth operation at all speeds. The system shall provide the required electrical operation of the elevator

control system including automatic application of the brake, which shall bring the car to rest in the event of a power failure.

g) The controller shall include absolute floor encoding which, upon power up, shall move the car to the closest floor to identify the position of the elevator. With absolute floor encoding it is not necessary to travel to a terminal to establish floor position.

h) The controller shall use a variable voltage, variable frequency drive to control three-phase AC induction and Permanent Magnet AC motors.

i) The drive shall use a three-phase, full-wave bridge rectifier and capacitor bank to provide a DC voltage bus for the solid-state inverter.

j) The drive shall use power semiconductor devices and pulse width modulation with a carrier frequency of not less than 8 kHz to synthesize the three-phase, variable voltage, variable frequency output to operate the hoist motor in an essentially synchronous mode.

k) The drive shall have the capability of being adjusted or programmed to achieve the required motor voltage, current and frequency to properly match the characteristics of the AC elevator hoist motor.

l) The drive shall not create excessive audible noise in the elevator motor.

m) The drive shall be a heavy-duty type, capable of delivering sufficient current to accelerate the elevator to contract speed with rated load. The drive shall provide speed regulation appropriate to the motor type.

n) A means shall be provided for removing regenerated power from the drive DC power supply during dynamic braking. This power shall be dissipated in a resistor bank which is an integral part of the controller. Failure of the system to remove the regenerated power shall cause drive output to be removed from the hoist motor.

o) A contactor shall be used to disconnect the hoist motor from the output of the drive unit each time the elevator stops. This contactor shall be monitored. The elevator shall not start again if the contactor has not returned to the de-energized position when the elevator stops.

p) All power feed lines to the brake shall be opened by an electro-mechanical switch. A single ground, short circuit or solid-state control failure shall not prevent application of the brake.

q) The controller shall provide stepless acceleration and deceleration and smooth operation at all speeds.

r) The controls shall be arranged to continuously monitor the performance of the elevator so that, if car speed exceeds 150 fpm during access, inspection, or leveling, the car shall shut down immediately, requiring a reset operation.

s) The controller shall include absolute floor encoding which, upon power up, shall move the car to the closest floor to identify the position of the elevator. With absolute floor encoding it is not necessary to travel to a terminal to establish floor position.

t) The controller shall have an RFI Filter to reduce EMI and RFI noise.

u) Failure of the brake to lift as detected by a mechanical switch (if provided) shall cause the

control system to take the elevator out of service at the next stop where it shall remain out of service until the condition is corrected.

2) Hoistway Equipment Minimization

   a) The control system shall allow slowdown, emergency terminal, and hoistway access limit switches to be eliminated. These switches shall exist as virtual switches in system software.

   b) The control system shall allow leveling magnets and/or vanes to be eliminated.

3) Programmable Logic

   a) All available programming options or parameters shall be field programmable, without need for any external device or knowledge of any programming languages. Programmable options and parameters shall be stored in nonvolatile memory. At a minimum, there shall be a 32-character alphanumeric display used for programming and diagnostics. Programmable parameters and options shall include, but are not limited to, the following:

      i) Number of Stops/Openings Served (Each Car)

      ii) Duplex

      iii) Selective Collective

      iv) Programmable Fire Code Options/Fire Floors (Main, Alternates)

      v) Floor Encoding (Absolute PI)

      vi) Digital Position Indicators/Single Wire Position Indicators

      vii) Programmable CE Microcom floor labels

      viii) Programmable Door Times

      ix) Programmable Motor Limit Timer

      x) Programmable Car Fan and Light Timer

      xi) Door Nudging, Automatic and Fire Operation

      xii) Emergency Power

      xiii) Parking Floors

      xiv) Lobby Floor

      xv) Door Pre-opening

      xvi) Hall or Car Gong Selection

      xvii) Standard Security

      xviii) Integral Voice Annunciation

      xix) Anti-nuisance - Light Load Weighing and Photo Eye

      xx) Load Weighing for Light, Heavy and Overload Car

      xxi) High Speed Inspection Enable

xxii) Door behavior selections

xxiii) Door type selection

xxiv) Fault Bypass – Inspection Operation

xxv) Fault Bypass – Automatic Operation

4) ADA Requirements

a) The elevator shall comply with ICC/ANSI A117.1, the American National Standard for Accessible and Usable Buildings and Facilities and the Florida Building Code, Chapter 11.

b) Leveling Accuracy: The controller shall have a self-leveling feature that shall automatically bring the car to floor landings within a tolerance of 0.25" (6.35 mm) or better under all loading conditions up to the rated load.

c) Hall Lanterns: The controller shall have outputs to drive the visible and audible signals that are required at each hoistway entrance to indicate which elevator car is answering a call. Audible signals shall sound once for up, twice for down. (In-car lanterns located in cars, visible from the vicinity of hall call buttons, and conforming to the above requirements, shall be acceptable.)

d) Car Position Indicators: The controller shall have a position indicator output to drive the required position indicator which shall indicate the corresponding floor numbers as the car passes or stops at a floor. An audible signal shall sound as the position indicator changes floors.

e) Voice Annunciation: The controller shall have a voice annunciator output to facilitate announcement of car direction and floor number.

5) Environmental Considerations

a) The elevator control shall be capable of operating within the following environmental conditions:

i) Ambient temperature: 32°F to 104°F (0°C degrees to 40°C degrees).

ii) Humidity: Non-condensing up to 95%

iii) Altitude: Up to 7500 feet (2286 m)

6) Building and System Configuration

a) The elevator controller shall be microprocessor based and designed specifically for elevator applications. Elevator and drive logic shall be implemented independently of safety functions.

b) Elevator logic shall be implemented to facilitate tight coordination between subsystems and enhance reliability. The implementation shall utilize a real-time, multi-tasking operating system to allow the processors to simultaneously execute elevator control logic, drive control logic, operator interface logic, and communication support.

c) The elevator controller shall have an independent safety system in order to implement safety features required by ASME A17.1 code. The safety system shall incorporate check redundant, multi-processor, multi-path, solid-state, ASME compliant implementation that meets CSA and CE standards.

d) The elevator controller shall be configured and packaged in such a way that external "jumpers" cannot be used (intentionally or unintentionally) while the elevator is running in any passenger mode of operation. Non-passenger modes of operation shall be provided, along with means to bypass safety functionality, to allow inspection testing and other setup and/or troubleshooting operations.

e) The elevator control logic configuration shall be fully field programmable. Changes in number of floors, I/O configuration, starter setup, eligibility etc. shall not require the replacement/reprogramming of EEPROMs or other storage devices. Further, changes in the controller configuration shall be user adjustable in the field.

7) Diagnostics

a) The control system shall provide comprehensive means of accessing the computer memory for elevator diagnostic purposes. It shall have permanent indicators for important elevator status conditions as an integral part of the controller.

b) The microprocessor boards shall be equipped with on-board diagnostics for ease of troubleshooting and field programmability of specific control variables. Field changes shall be stored permanently, using nonvolatile memory. The microprocessor board shall provide the features listed below:

i) On-board diagnostic switches and an alphanumeric display to provide user friendly interaction between the mechanic and the controller.

ii) An on-board event log shall store and display time-stamped events for diagnostic purposes. (Viewable only with monitoring software.)

iii) An on-board real time clock shall display the time and date and be adjustable by means of on-board switches.

iv) Field programmability of specific timer values (i.e., door times, etc.) may be viewed and/or altered through on-board switches and pushbuttons.

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

vi) Dedicated indicators shall be provided in a conspicuous location on the elevator controller to indicate important system statuses, such as when the safety string is made, when the door locks are made, when the elevator is on Inspection/Access, etc. In addition, other special or error conditions detected by the main processor or safety subsystem shall be displayed.

8) CAN Bus Connectivity

a) Circuit boards within the controller shall communicate through CAN Bus connections for reliable performance and simplified board replacement. Power for individual circuit boards shall also be distributed through the CAN Bus connection. Communication and power connection shall radiate from a central, multi-connection point such that single-point board failure shall not affect operation of other boards.

9) Universal I/O

   a) Field I/O boards shall be universal in that 24V to 120V AC or DC connections shall be accepted without requirement for unique circuit boards for each. I/O boards shall provide built-in current limiting protection.

10) Intended Operation of Critical Components

   a) Failure of any single magnetically operated switch, contactor, or relay to release in the intended manner; the failure of any static control device, speed measuring circuit, or speed pattern generating circuit to operate as intended; the occurrence of a single accidental ground or short circuit shall not permit the car to start or run if any hoistway door or gate interlock is unlocked or if any hoistway door or car door or gate contact is not in the made position. Furthermore, while on car top inspection or hoistway access operation, failure of any single magnetically operated switch, contactor or relay to release in the intended manner, failure of any static control device to operate as intended or the occurrence of a single accidental ground, shall not permit the car to move even with the hoistway door locks and car door contacts in the closed or made position.

11) Status Indicators

   a) Dedicated permanent status indicators shall be provided on the controller to indicate when the safety string is made, when the door locks are made, when the elevator is operating at high speed, when the elevator is on independent service, when the elevator is on Inspection or Access, when the elevator is on fire service, when the elevator out of service timer has elapsed, and when the elevator has failed to successfully complete its intended movement. A means shall be provided to display other special or error conditions detected by the microprocessor.

   b) Every field connection input or output shall have a dedicated LED such that no volt meter or other test equipment is required to see when and input or output is active.

12) Parking Floor Function

   a) Parking floor: Each car shall be capable of individually parking on a designated floor after a predetermined time period. Any landing may be the parking floor. The car will go to the parking floor when it is free of call demand. A Parking Delay Timer will cause a free car to wait for a short time before parking. The timer shall be adjustable, with a value between 0.0 minutes (no delay) and 6.0 minutes. The first free car will go to the first parking floor and the second car will stay at the last call answered.

   b) Secondary Parking Floor: Duplex only. Any landing may be the secondary parking floor. A car will go to this floor when it is free of call demand and the other car is already parked at the first parking floor. It is acceptable to make the secondary parking floor the same as the first parking floor if both cars are to park at the same floor. If a second parking floor is not needed, delete this section.

13) Out of Service Timer

   a) An out of service timer (T. O. S.) shall be provided to take the car out of service if the car is delayed in leaving the landing while calls exist in the system.

14) High or Low Speed Inspection

a) A selection shall be provided on the controller to select high or low speed during access or inspection operation as long as contract speed does not exceed 150 feet per minute.

15) Door Operation

a) Door protection timers shall be provided for both opening and closing directions to protect the door motor and help prevent the car from getting stuck at a landing. The door open protection timer shall cease attempting to open the door after a predetermined time if the doors are prevented from reaching the open position. In the event that the door closing attempt fails to make up the door locks after a predetermined time, the door close protection timer shall reopen the doors for a short time. If, after a predetermined number of attempts, the doors cannot successfully be closed, the doors shall be opened and the car removed from service.

b) A minimum of four different door standing open times shall be provided. A car call time value shall predominate when only a car call is canceled. A hall call time value shall predominate whenever a hall call is canceled. In the event of a door reopen caused by the safety edge, photo eye, etc., a separate short door time value shall predominate. A separate door standing open time shall be available for lobby return.

c) If the doors are prevented from closing for longer than a predetermined time, door nudging operation shall cause the doors to move at slow speed in the closed direction. A buzzer shall sound during nudging operation.

16) Door Pre-opening

a) When selected, this option shall start to open the doors when the car is in final leveling, 3" (76.2 mm) from the floor. If pre-opening is not selected, the doors shall remain closed until the car is at the floor, at which time the doors shall commence opening.

17) Car and Hall Call Registration

a) Car and hall call registration and lamp acknowledgment shall be by means of a single wire per call, in addition to the ground and the power bus. Systems that register the call with one wire, and light the call acknowledgment lamp with a separate wire can be accommodated.

b) The user shall be able to register car calls via the on-board LCD display and keypad.

18) Emergency Power Operation

a) Currently this elevator is provided with emergency generator power.

b) Elevator Contractor is required to verify that emergency generator is capable of operating all elevators under emergency power. If emergency generator is capable of operating both elevators in both buildings and other building loads no key operated sequencing will be required.

c) In the event that it is determined that the emergency generator is not capable of operating both elevators in both buildings and other building loads under emergency power then sequencing operation will be required by A17.1, Part 2.27.2 with full functionality of the code requirements for sequencing operation..

19) Fire Service Operation

a) Fire Phase I emergency recall operation, alternate level Phase I emergency recall operation and Phase II emergency in-car operation shall be provided according to latest applicable edition of ASME A17.1 and current Florida Statute 399 including Florida Regional Fire Service Key

20) Independent Service

a) Independent service operation shall be provided in such a way that actuation of a key switch in the car operating panel will cancel any existing car calls, and hold the doors open at the landing. The car will then respond only to car calls. Car and hoistway doors will only close with constant pressure on a car call pushbutton or door close button. While on independent service, hall arrival lanterns or jamb mounted arrival lanterns shall be inoperative.

21) Integral Voice Annunciation

a) The controller shall include, as an integral part of the controller, a computer voice annunciator. The contractor shall only need to furnish wiring to the elevator cab and a speaker. The annunciator shall announce the floor number, the intended direction of travel and audio cues for the door protection.

22) Duplex Operation

a) For duplex configurations, each elevator shall have its own computer and dispatching algorithm. Should one computer lose power or become inoperative, the other shall be capable of accepting and answering all hall calls. When both computers are in operation, only one shall assume the role of dispatching hall calls to both elevators.

23) Leveling

a) The car shall be equipped with two-way leveling to automatically bring the car level at any landing, within the required range of leveling accuracy, with any load up to full load.

24) Test Switch

a) A controller test switch shall be provided. In the test position, this switch shall allow independent operation of the elevator with the door open function deactivated for purposes of adjusting or testing the elevator. The elevator shall not respond to hall calls and shall not interfere with any other car in a duplex or group installation.

25) Inspection

a) To enhance safety, an inspection switch, enable switch, and an up/down toggle switch shall be provided in the controller and on the car top to place the elevator on inspection operation and allow the user to move the car. Activation of the car top inspection switch shall render the controller inspection switch inoperative.

26) Uncanceled Call Bypass

a) A timer shall be provided to limit the amount of time a car is held at a floor due to a defective hall call or car call, including stuck pushbuttons. Call demand at another floor shall cause the car, after a predetermined time, to ignore the defective call and continue to provide service in the building.

27) Anti-nuisance (Photo Eye)

a) The controller shall cancel all remaining car calls, if a user-determined number of car calls are answered without the computer detecting a change in the photo eye input (indicating that no one is passing through the car door).

28) Load Weighers

a) Load weighing devices shall be installed to provide signals to the controller for various load monitoring and dispatching operations.

b) By identifying the load (light, heavy or overload), the system can activate anti-nuisance car call cancellation, loaded car hall call bypass, or overload.

29) Absolute Floor Encoding

a) The controller shall include absolute floor encoding, which upon power up, shall move the car to the closest floor to identify the position of the elevator.

30) Landing/Positioning System Information

a) The landing/positioning system shall use a Gray code, magnetically permanent encoded tape and two, independent sensor heads in a single housing for absolute position control under all powered conditions. The tape shall provide a unique code for every 1mm of travel. A third, independent system shall provide speed feedback directly from the hoist motor. The system shall continuously compare inputs from the three independent systems to assure accuracy and safety.

31) Service Enhancements

a) The manufacturer shall make software updates for controller and/or group control available via Internet download, email attachment, or physical EEPROM shipment. Internet downloads and email attachment deliveries require an optional, hand-held user interface to facilitate software transfer from the user's PC to the elevator or group.

32) Hand-held User Interface

a) A hand-held user interface with all the functionality of the on-board LCD display and keypad shall be available. The hand-held interface shall allow the user system access via any system CAN Bus connection in the controller, from the car top, or in the car (if a CAN connection has been made available here).

a) The hand-held interface shall connect to a standard PC, allowing system software updates to be delivered to the PC via Internet download or email attachment, transferred to the hand-held and uploaded to the elevator or group controller.

HALL STATIONS

1) **New Hall Stations, General**: Hall station shall be flush mounted. Buttons shall illuminate to indicate call has been registered at that floor for the indicated direction. Faceplates shall be Stainless Steel #4 brush finish. Provide one sets of risers. Riser shall include 1 for elevator front.

a) SN# 4643-Car 1 & SN# 4642-Car 2 shall have the hall stations located between the elevator entrances.

b) SN# 4644-Car 3 shall have the hall station located adjacent to the entrance jamb

c) Hall stations shall be of one-piece construction, flush mounted.

d) All switches, fixtures and pushbuttons shall be by Monitor Controls, Innovation Industries or pre-approved equal.

e) All push buttons to be tamper resistant as follows:

   i) Monitor Controls, Model HPS 1300, positive stop Flat Button with Illuminated Blue Center Jewel.

   ii) Innovation Industries PB 23, Flush Button with Illuminated Blue Center Jewel Stainless Steel with counter bored stop.

f) Hall Stations shall be Monitor Controls, Model "Monitor Series" or Innovation Industries "Bruiser Series" Stainless Steel #4 brushed finish. No adhesive type applied plates will be accepted at either car or hall stations. All fixtures shall have a Blue LED lighting source.

g) In case of fire use stair signs shall be engraved into the hall station panel with exact signage as per Florida Building Code. No adhesive type applied signage plates will be accepted at this hall station.

h) All hall and car push button assemblies shall include long life LED type lamps.

i) Each terminal station shall contain one illuminating push button and other applicable accessories.

j) Hoistway Access Switches: Hoistway access switches shall be provided at each terminal landing.

k) Each intermediate station shall consist of two illuminating push buttons, one for the up direction and one for the down position.

l) Phase 1 Firefighter's Service key switch, with instructions, shall be incorporated into the hall station at the designated level. Fire Service instructions as per A17.1 Safety Code for Elevators and Escalators shall be engraved in the main floor hall station panel.

m) **Local Telephone Line Status Monitoring:** The telephone system for the elevators shall be compliant with the requirements of the A17.1b-2009 Safety Code for Elevators and Escalators Requirement 2.27.1.1.6 and will include a verification means as required by the latest applicable edition of ASME A17.1 code. If the verification means determines that the telephone line or equivalent means is not functional, an audible and illuminated visual signal shall be activated. A minimum of one visual and one audible signal shall be provided for each group of elevators controlled by a "FIRE RECALL" switch.

n) **Floor Identification Plates:** Replace all door jamb plates at each floor. Stainless steel jamb plates shall comply with Americans with Disabilities Act (ADA) and Florida Building Code 2010 requirements.

o) **Emergency Generator**: Emergency key (Group 3 Key & Switch Required) operated selector switches including lighted jewel indicators shall be provided at the main floor panel with proper labels as required. If an emergency key operated selector switch is not required, a lighted jewel indicator for emergency generator elevator power shall be provided with proper labeling as required.

2) **Fixture Approval**: Hall and car operating stations must be approved by consultant prior to ordering fixtures by contractor.

HALL POSITION INDICATOR

1) "1" Floor Hall Position Indicator: A new 2" electronic segmented digital position indicator shall be provided and mounted in a module for optimum viewing for each elevator. As each the car travels, its' position in the hoistway shall be indicated by the illumination of the alpha/numeric character corresponding to the landing which the elevator is stopped or passing. The position indicator shall be provided at the first-floor landing with a faceplate mounted at a 20-degree angle for viewing. Faceplates shall match hall and car stations.
   a) The position indicator shall be installed either above the hoistway entrance assembly or adjacent to the door jamb. Position shall be determined for maximum visibility at the landing.
2) Each hall station, except for the "1" designation landing shall contain a single electronic segmented digital position indicators one inch high and mounted in a module for optimum viewing.
3) As the car travels, its' position in the hoistway shall be indicated by the illumination of the alpha/numeric character corresponding to the landing which the elevator is stopped or passing.
4) Elevator Contractor shall provide detailed drawings and rendering of Hall Position Indicators.
5) Hall and car operating stations must be approved prior to ordering fixtures by contractor.

EXECUTION

2) **Examination**:
   a) Before starting elevator modernization, inspect hoistway, hoistway openings, pits and machine room, as constructed, verify all critical dimensions, and examine supporting structures and all other conditions under which elevator work is to be installed. Elevator Contractor shall correct all unsatisfactory conditions in a manner acceptable to the Elevator Consultant prior to proceeding with elevator modernization work.
   b) Modernization constitutes acceptance of existing conditions and responsibility for satisfactory performance.
3) Elevator Contractor shall coordinate crane services, if required, for the removal the existing equipment from the machine rooms and placement of the new equipment in the machine rooms with building owner's representative.
4) **Scheduling**: Only one (1) elevator at a time will be turned over to the elevator contractor for modernization work. The subsequent elevators will only be turned over for modernization work upon completion of all modernization work on the first elevator, including successful completion of all required inspections and tests.
   a) Elevator Contractor shall be responsible for screening and protection of hoistway door openings and protection.

5) **Signage**:

a) The City of Gainesville Representative and the Elevator Consultant, in accordance with the General Materials section of this specification, will approve all signage in order to maintain consistent appearance for entire elevator installation.

b) All signage as required by current edition of the Florida Building Code, A17.1 Safety Code for Elevators and Escalators, NFPA 70 National Electrical Code and NFPA 72 Fire Alarm Code to be posted in elevator lobbies, fire alarm panels, disconnects, machine rooms and machine room doors.

c) All existing signage will be replaced in conformance to the Current edition of the Florida Building Code, A17.1 Safety Code for Elevators and Escalators, NFPA 70 National Electrical Code and NFPA 72 Fire Alarm Code requirements as a part of this specification.

6) **Installation**:

a) Install elevator systems components and coordinate repairs of hoistway wall construction.

b) Competent licensed elevator installation personnel in accordance with Florida Statute 399 and A17.1 Safety Code for Elevators and Escalators, manufacturer's installation instructions and approved shop drawings shall perform work.

c) Comply with the NFPA 70 National Electrical Code for electrical work required during installation.

d) Perform work with competent, skilled workmen under the direct control and supervision of the elevator manufacturer's experienced foreman.

e) Supply in ample time for installation by other trades, inserts, anchors, bearing plates, brackets, supports, and bracing including all setting templates and diagrams for placement.

f) Welded construction: Provide welded connections for installation of 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 B2.1 Standard Welding Procedure and Performance Qualification. Safety Procedures for "hot work" must be provided to the Owner prior to beginning work. Current welding certificates and welding inspection reports shall be provided for any structural welding.

g) Coordination: Coordinate elevator work with the work of other trades, for proper time and sequence to avoid construction delays. Use benchmarks, lines, and levels designated by the Elevator Contractor, to ensure dimensional coordination of the work.

h) Install machinery, guides, controls, car and all equipment and accessories to provide a quiet, smoothly operating installation, free from side sway, oscillation or vibration.

i) Sound isolation: Mount rotating and vibrating elevator equipment and components on vibration-absorption mounts, designed to effectively prevent the transmission of vibrations to the structure, and eliminate sources of structure-borne noise from the elevator system.

j) Lubricate operating parts of system, including ropes, as recommended by the manufacturer.

7) **Data Plates & Tags**: Elevator Contractor shall be required to install all data plates as required by A17.1 Safety Code for Elevators and Escalators on complete elevator system including alteration and original equipment.
   a) All data plates shall be manufactured and printed with proper data for each elevator by CodeDataPlate.com or approved equal.
   b) No ink markers shall be used for any data plates or tags. All miscellaneous signage shall be stenciled, etched or pre-printed.
8) **Field Quality Control:** The Elevator Contractor shall perform pre-testing of all required acceptance tests of the elevator system(s) prior to the scheduled Alteration Acceptance Testing and Inspection. The Elevator Contractor shall ensure the installation conforms to all applicable safety codes and contract requirements.
9) **Acceptance Testing & Inspection:**
   a) **Acceptance Testing:** Upon completion of the elevator modernization perform and satisfactorily complete all acceptance tests as required by the State of Florida, AHJ (Authority Having Jurisdiction) and required by all applicable codes and governing regulations. Perform other tests, if any, as required by governing regulations or agencies.
   b) Advise Owner, Elevator Consultant, and governing authorities in advance as required of dates and times tests are to be performed on the elevator.
   c) **Acceptance Inspection:** The City of Gainesville has designated VTE Solution, as their consultant on this project.
      i) The Elevator Contractor shall be responsible, in accordance with A17.1 Safety Code for Elevators and Escalators for all acceptance inspections for this elevator.
      ii) Elevator Installer in accordance with A17.1 Safety Code for Elevators and Escalators, Inspection and Test Requirements will perform all acceptance tests for this elevator.
      iii) Elevator Contractor must notify building owner and elevator consultant 5 days prior to inspection advising of the date and time of all inspections and tests.
      iv) Elevator inspector other than Florida Bureau of Elevator Safety must be approved prior to inspection date by consultant.
      v) **Alteration Acceptance Inspection Report:** At the conclusion of the alteration inspection of the elevator(s) the inspector shall provide a completed DBPR Form HR 5023-003 with signatures executed on the form.
10) **Keys for Elevator Key Switches:** Provide a minimum of two (2) keys per cylinder used on all key switches for a single elevator. If there is more than one elevator, two (2) additional keys per cylinder will be required for each additional elevator. Each numbered set of keys shall be identified with their function on a labeled plastic tag with a split ring for each numbered set.
11) **Adjusting**:
   a) Make necessary adjustments of operating devices and equipment to ensure elevator operates smoothly and accurately.
   b) The Elevator Contractor shall be required to perform and pass all required testing of all equipment as per A17.1 Safety Code for Elevators and Escalators and ASME A17.2.

12) **Cleaning**:

a) Before final acceptance, remove protection from finished surfaces and clean and polish surfaces in accordance with manufacturer's recommendations for type of material and finish provided.

b) For duration and/or completion of elevator work, remove tools, equipment, and surplus materials from site daily.

c) Clean equipment rooms and hoistway.

d) Remove trash and debris daily from premises.

13) **Protection**:

a) During all elevator work, or portion thereof, provide suitable protective coverings, barriers, devices, signs, or other such methods or procedures to protect elevator work from damage or deterioration. Protect all areas of work from public access or dangers including tripping or fall hazards. Maintain protective measures throughout remainder of construction period.

14) **Demonstration**:

a) The Elevator Contractor shall make a final check of each elevator operation with the Owner's representative and the Elevator Consultant present prior to turning each elevator over for use. The Elevator Contractor shall demonstrate that control systems and operating devices are functioning properly.

b) Instruct Owner's personnel in proper use, operations, and daily care or operation of elevators. Review emergency provisions, including emergency access and procedures to be followed at time of failure in operation and other building emergencies.

c) Train Owner's personnel in normal procedures to be followed in checking for sources of operational failures or malfunctions.

d) Make a final check of each elevator operation, with Owner's personnel present, immediately before date of substantial completion.

e) Demonstrate that control systems and operating devices are functioning properly.

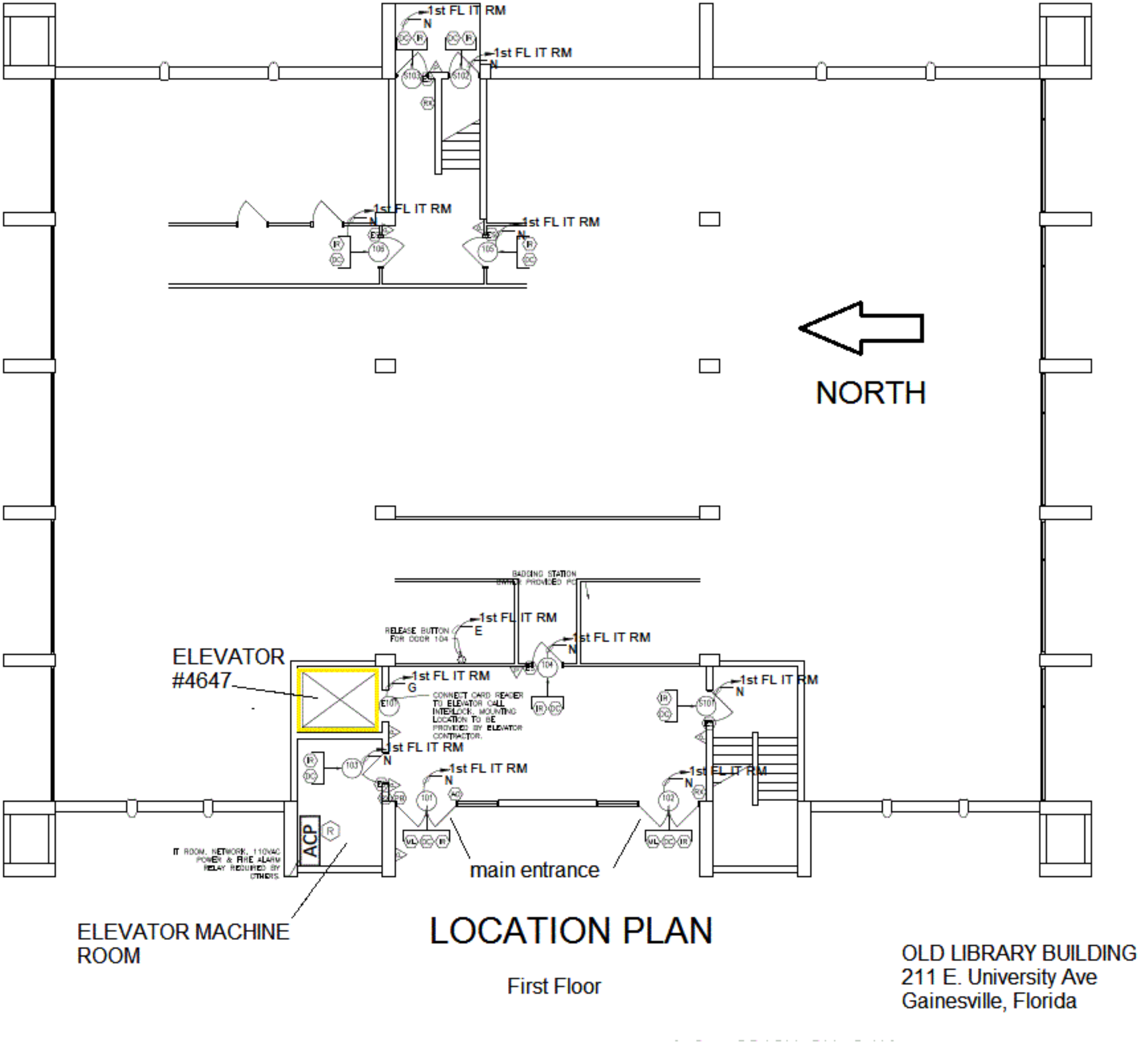
f) Final Electrical Schematics and Drawings

g) Maintenance Requirements.

15) **Elevator Consultant's Punch-Out List Items**:

a) Complete all of the consultant's punch-out list items as may be required. The elevator consultant shall provide a review and written punch list of deficiencies. The elevator consultant shall verify one time that the items from the punch list are completed after notice by the Elevator Contractor. If the work is not complete and the consultant is required to make return visits, the Elevator Contractor shall be charged for consultant at a rate of $175.00 per hour including travel time for any additional return visits, reviews or work of any type.

END OF TRACTION MODERINZATION SECTION



LOCATION PLAN

First Floor

OLD LIBRARY BUILDING
211 E. University Ave
Gainesville, Florida

THOMAS CENTER A
306 NE 6th Ave Gainesville Florida

ELEVATOR EQUIPMENT ROOM
LOCATED IN THE BASEMENT

ELEVATOR #25165

NORTH

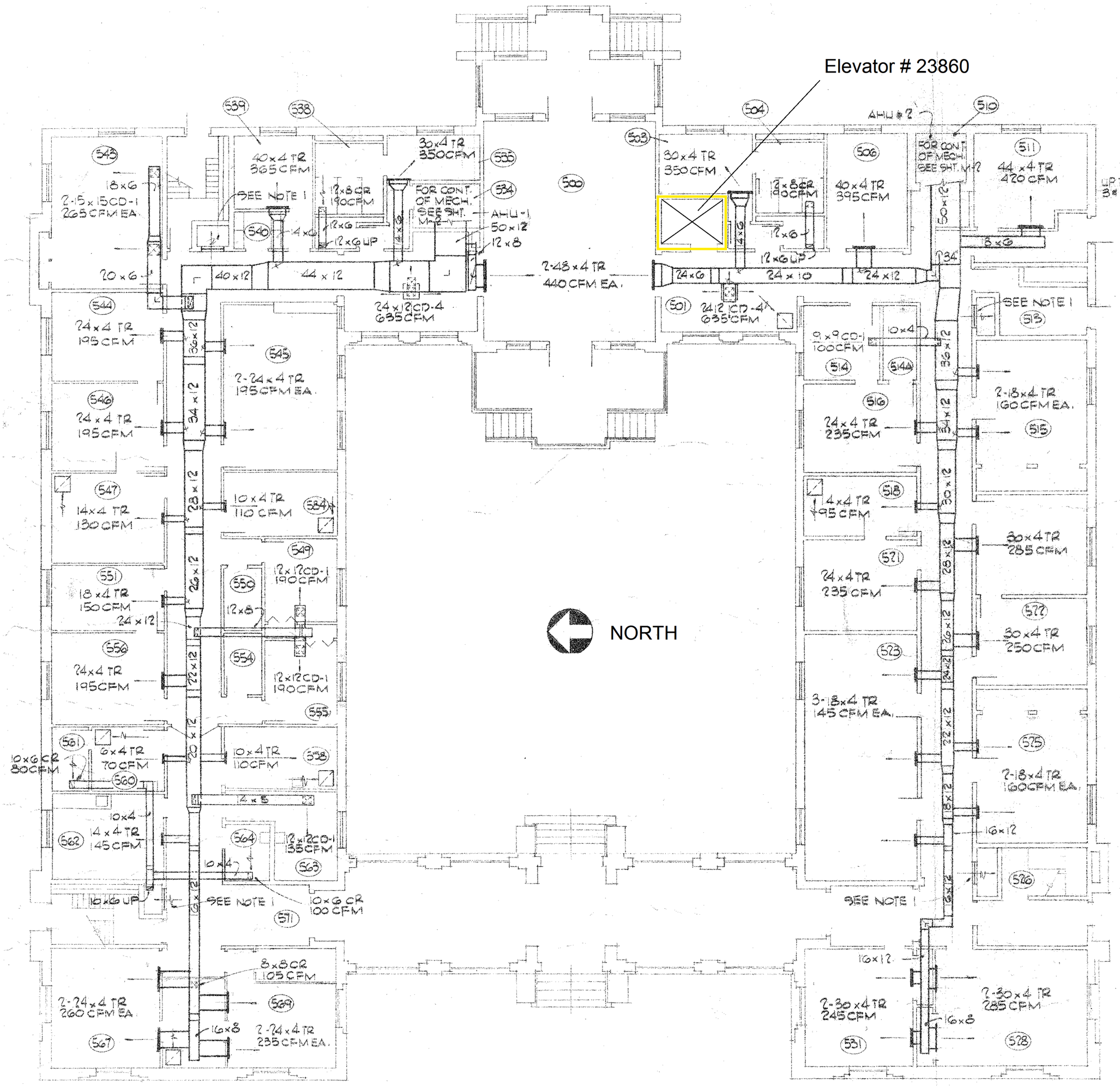
main entrance

LOCATION PLAN

THOMAS CENTER B

306 NE 6th Ave Gainesville Florida

ELEVATOR EQUIPMENT ROOM LOCATED IN THE BASEMENT



LOCATION PLAN

FIRST FLOOR PLAN -

SCALE: 1/8" = 1'-0"

Technical Specification #2
for
Modernization of 3 Hydraulic Elevators
City of Gainesville

Old Library Building
222 East University Ave.
Gainesville, FL 32601
FL State SN # 4647

Thomas Center
302 N.E. 6th Ave
Gainesville, FL 32601
Building "A", FL State SN # 25165

Thomas Center
306 N.E. 6th Ave
Gainesville, FL 32601
Building "B", FL State SN # 23860

Consultant: VTE Solution
Indian Rocks Beach, FL
Phone: (877) 269-6151
FAX: (877) 269-6519

GENERAL PROVISIONS

These general terms and conditions of the bid quotation and acceptance apply in like force to this inquiry and to any subsequent contract resulting there from.

ADDITIONAL INFORMATION

Questions concerning the Bid shall be directed to Melanie Sowers, Senior Buyer of the City of Gainesville Purchasing Department. Bidders are cautioned that any statements made by individuals other than as indicated above shall not be relied upon unless subsequently ratified by a formal written amendment to the bid document. (see Invitation to Bid)

DEFINITIONS

The following definitions shall be used throughout all general conditions, specifications and contract documents except where superseded in those documents.

1. "Owner": City of Gainesville.
2. "Consultant": Vertical Transportation Equipment Solution, LLC.
3. "Contractor": The Elevator Contractor.
4. "Work": All material and labor required to provide and install equipment as specified under this specification for a complete project.
5. "Provide": Provide all materials and labor required to furnish and install.
6. "Code": All applicable laws and codes, including but not limited to the electrical, fire, building, and Safety Codes for Elevators and Escalators codes designated by any authority having jurisdiction as detailed in the codes and standards reference section of this specification.
7. "Services": Services shall include, but shall not necessarily be limited to, all labor, transportation, supplies, materials, parts, tools, scaffolding, machinery, hoists, employee safety equipment, equipment, lubricants; supervision, applicable taxes, and all other work and materials expressly required under this Agreement or reasonably inferred whether or not expressly stated herein necessary to maintain all equipment covered under this specification.

END OF GENERAL PROVISIONS

SPECIAL PROVISIONS

In addition to the General Provisions of this solicitation, these Special Provisions, along with the specifications that follow, will apply in like force to this solicitation and to any subsequent contract resulting there from.

TRANSPORTATION AND PACKING

Prices quoted shall be net, including transportation and delivery charges and fully prepaid by the seller, f.o.b. the site. No additional charges will be allowed for packing, packages, or partial delivery costs.

END OF SPECIAL PROVISIONS

ELEVATOR RENOVATION PROJECT SCHEDULE

Contractor shall provide a schedule for execution of modernization work with time periods deemed necessary to complete the work. Provide time durations to indicate the milestones as listed below.

The start of on-site modernization must initiate on the mutually agreed date by the Owner and Elevator Contractor with final completion in accordance with the project schedule for each elevator. The schedule below will constitute a preliminary schedule for this project. Subsequent schedule modification using owner, contractor and user input will be completed prior to contract award. There can be no deviation or delays from the final approved contracted schedule.

Provide estimated total durations below in Calendar Days.

Days	Action
_____	All product submittals provided to consultant
_____	Submittal review period
_____	Base Bid - On-site modernization work (total duration)
_____	Alternate #1 - Cab finishes work (total duration)
_____	Alternate #2 - On-site modernization work (total duration)
_____	Alternate #3 - Cab finishes work (total duration)
_____	Alternate #4 - On-site modernization work (total duration)
30 days	Substantial Completion to Final Completion
30 days	City of Gainesville / Close out

END OF SPECIAL PROVISIONS

Specification For Modernization of Elevators
City of Gainesville

Old Library Building	Thomas Center – A & B
222 East University Ave.	302 &306 N.E. 6th Ave
Gainesville, FL 32601	Gainesville, FL 32601
FL State SN#4647	FL State SN #25165 & 23860

HYDRAULIC PASSENGER ELEVATORS

SUMMARY

This section specifies required work to complete the modernization of Three (3) Hydraulic Passenger Elevators.

1) Elevator work includes:
   a) Commercial, standard hydraulic passenger elevator.
   b) Elevator car and hoistway signal equipment.
   c) Operation and control systems.
   d) Accessibility provisions for physically disabled persons.
2) Engineering, equipment, labor, machines, control systems, devices and accessories as required for safely operating the specified elevator at rated speed with rated capacities.
3) Delivery, staging, and hoisting of new equipment. Hoisting, dismantling, removal and disposal of existing equipment. Repair, cleaning and painting of reusable equipment.
4) Materials and accessories as required for completing the elevator modernization.
5) Hoistway, pit and machine room barricades for safety as required.
6) Required hoisting, hoisting permits and traffic coordination and/or permits with local jurisdictions and the State of Florida as required.
7) Required permits and coordination and/or permits with local jurisdictions, Bureau of Elevator Safety and the State of Florida as required.

DEFINITIONS

The following definitions shall be used throughout all general conditions, specifications and contract documents except where superseded in those documents.

1) "Owner": City of Gainesville, FL

2) "Consultant": Vertical Transportation Equipment Solution, LLC.
3) "Contractor": The Elevator Contractor.
4) "Work": All material and labor required to provide and install equipment as specified under this specification for a complete project.
5) "Provide": Provide all materials and labor required to furnish and install.
6) "Code": All applicable laws and codes, including but not limited to the electrical, fire, building, and Safety Codes for Elevators and Escalators codes designated by any authority having jurisdiction as detailed in the codes and standards reference section of this specification.
7) "Services": Services shall include, but shall not necessarily be limited to, all labor, transportation, supplies, materials, parts, tools, scaffolding, machinery, hoists, employee safety equipment, equipment, lubricants; supervision, applicable taxes, and all other work and materials expressly required under this Agreement or reasonably inferred whether or not expressly stated herein necessary to maintain all equipment covered under this specification.

CODE AND STANDARD REFERENCES

1) All codes and standards referenced in this specification will be to the edition of the references as detailed in this section. All materials and work to be performed under these specifications shall be in compliance with the codes listed in this section or as determined by the authority having jurisdiction.
2) Comply with applicable building codes and elevator codes at the project site, including but not limited to the following:
   a) Florida Statutes 399 and 553
   b) Florida Administrative Code 61C-5.
   c) Florida Building Code 2017, including all supplements.
   d) ASME A17.3-1996 Safety Code for Existing Elevators and Escalators.
   e) A17.1-2013 Safety Code for Elevators and Escalators
   f) ASME A17.2-2014 Guide for Inspection of Elevators and Escalators
   g) ADAAG, Americans with Disabilities Act Accessibility Guidelines.
   h) NFPA 70, National Electrical Code 2014.
   i) NFPA 80, Fire Doors and Windows.
   j) ANSI/UL 10B, Fire Tests of Door Assemblies.
   k) NFPA 72, National Fire Alarm Code 2013
   l) NFPA 101 Florida Edition 2015
   m) O.S.H.A. Requirements for construction and repairs of existing buildings.
   n) Elevator Industry Field Employees' Safety Handbook 2015

RELATED WORK BY OTHERS: NONE.

This will be a Turn Key Project with the Elevator Contractor responsible for all work associated with this elevator modernization project.

WORK BY ELEVATOR CONTRACTOR:

1) This contract will be issued as a Turn Key project with all work required being the responsibility of the Contractor for completion as detailed in this specification. All work, necessary for a complete and useable elevator system, will be the responsibility of the Contractor. Specifically to include non-traditional Contractor work detailed below in addition to traditional Contractor work as detailed in all other sections of this specification.

   a) All materials and work to be performed under these specifications shall be in compliance with the codes listed in the Code and Standard References section or as determined by the authority having jurisdiction. As work progresses, Contractor shall consult with his subcontractors, examine the Work installed by them, and resolved all conflicts without expense to Owner and/or Consultant.

2) **Machine Room HVAC**:

   a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): Existing machine room ventilation is acceptable and will not require any modification.

   b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A"): Existing machine room ventilation is acceptable and will not require any modification. Building Owner will monitor temperature & humidity to maintain temperature and humidity to between 55 deg F and 90 deg F with relative humidity of not more than 85% non-condensing.

   c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B") Existing machine room ventilation is acceptable and will not require any modification. Building Owner will monitor temperature & humidity to maintain temperature and humidity to between 55 deg F and 90 deg F with relative humidity of not more than 85% non-condensing.

3) **Fire Alarm**: Fire alarm including heat and smoke sensing devices as per NFPA 70 National Electrical Code and NFPA 72 National Fire Alarm.

   a) Verify that proper connections exist for fire recall devices to the elevator controllers. Provide connection from new or existing fire recall devices to the elevator controllers in machine room. For each elevator within the building, a minimum of three separate elevator control circuits shall be terminated at the designated elevator controller within each elevator machine room in accordance with NFPA 72. Operation of the elevator shall be in accordance with Section 2.27 of ASME A17.1 Safety Code for Elevators and Escalators. The smoke detectors or other automatic fire detection as permitted by NFPA 72 shall actuate the elevator control circuits as detailed in NFPA 72.

   b) Automatic fire alarm-initiating devices shall be located and installed in accordance with ASME A17.1 and NFPA 72.

   c) Fire alarm initiating devices used to initiate Phase I Emergency Recall Operation shall be installed in conformance with the requirements of NFPA 72, and shall be located:

      i) at each floor served by the elevator

ii) in the associated elevator machine room, machinery space containing a motor controller or electric driving machine, control space, or control room

iii) in the elevator hoistway, when sprinklers are located in those hoistway

d) Fire alarm contractor shall demonstrate at time of elevator inspection, compliance and testing of all alarm initiating devices as required by ASME A17.1 Safety Code for Elevators and Escalators, ASME A17.2 and NFPA 72 National Fire Alarm Code.

e) Install heat detectors within 24" of sprinklers if installed in machine rooms or hoistways including wiring and conduit to shunt trip breaker as installed by electrical contractor as indicated below:

i) Hoistway: When sprinklers are installed anywhere above 24 inches from the pit floor in the elevator hoistway installation of heat detector is required within 24" of sprinkler head.

ii) Pit: Where elevator equipment is located or its enclosure is configured such that application of water from sprinklers located below 24 inches from the pit floor could cause unsafe elevator operation a heat detector.

iii) These heat detectors shall be provided to automatically disconnect the main line power supply to the affected elevator and any other power supplies used to move the elevator upon or prior to the application of water.

iv) Installation of alarm system and devices shall conform to ASME A17.1 Safety Code for Elevators and Escalators, and NFPA 72 including NFPA 70 NEC.

f) Installation of alarm system and devices shall conform to ASME A17.1 Safety Code for Elevators and Escalators, and NFPA 72 including NFPA 70 NEC.

4) **Electrical Requirements:** Electrical requirements for hoistway, GFCI receptacles and disconnects, as required by NFPA 70 National Electrical Code and ASME A17.1 Safety Code for Elevators and Escalators. Additionally, Electrical Contractor shall provide and install conduits and wiring required for communication devices as detailed in this section. Electrical requirements shall include the following:

a) Electrical requirements for hoistway, GFCI receptacles and disconnects, as required by NFPA 70 National Electrical Code and ASME A17.1 Safety Code for Elevators and Escalators. Additionally, Electrical Contractor shall provide and install conduits and wiring required for communication devices as detailed in this section.

b) All Electrical work must be coordinated and scheduled with, at least 7 days' notice, with the building owner. Elevator shall be removed from service while electrical trades are working.

c) **Main Line Disconnect:** Verify that existing main line disconnect is code compliant and acceptable for reutilization. If existing main line disconnect switch is not code compliant for reutilization, install new disconnect for elevator main line power. Disconnect to be verified as appropriately size and type for power requirements of new elevator equipment prior to installation.

i) Auxiliary Power Lowering: Provide and install Auxiliary Power Lowering in elevator controllers for hydraulic elevators that do not have emergency generator power. Elevator systems with auxiliary power lowering operation shall be provided with an

auxiliary contact that is positively opened mechanically, and the opening shall not be solely dependent on springs. This contact shall cause the additional power source to be disconnected from its load when the disconnecting means is in the open position.

d) **Cab Light Disconnect:** Verify that existing 110 volt cab light disconnect is code compliant and acceptable for reutilization. If existing 110 volt cab light disconnect switch is not code compliant for reutilization, install new disconnect switch in machine room for elevator cab lighting system as per NEC-2011.

e) All disconnects shall be labeled according to NFPA 70 National Electrical Code including source of power, State of Florida Elevator Serial Number, Elevator Number and all required warning signs.

f) All disconnects shall be installed with proper clearances in accordance to the applicable provisions of NFPA 70 National Electrical Code.

g) All conduit and wiring in the hoistway must be checked for proper installation and properly mounted in accordance with applicable provisions of NFPA 70 National Electrical Code.

h) Equipment grounding and bonding shall be provided in accordance with the requirements of NFPA 70 National Electrical Code. The equipment grounding conductor will be run with the circuit conductors and shall be a copper conductor. Ground all conductors, supports, controller enclosure, and other non-current conducting metal enclosures for electrical equipment in accordance with NFPA 70 National Electrical Code. The ground wires shall be solid or stranded; insulated, covered, or bare copper, sized as required by NFPA 70 National Electrical Code, and shall be colored green if less than #6, and have green marking if #6 or larger.

i) Provide new electric wiring from disconnect switches to the terminals of the new elevator controllers in their new locations, inclusive of a normal 120 VAC, 15 AMP supply at each controller.

j) Provide new GFCI Duplex receptacles in machine rooms and hoistways as required by NFPA 70 National Electrical Code. Provide a simplex receptacle non-GFCI for each sump in each elevator hoistway.

k) Pit receptacles, with GFCI protection shall be installed in NEMA 4 devices where placed within 4’-0” of pit floor. Care must be taken not to place equipment in line with elevator equipment.

l) Verify that all machine room lighting and pit lighting have enclosed and protected lamps. If existing lighting is not code compliant, provide new pit lighting and machine room lighting require for code compliance as per NFPA 70 National Electrical Code with enclosed and protected lamps. All lighting fixtures in machine rooms, elevator cars and on top of car are to be suitably guarded in accordance with ASME A17.1 Safety Code for Elevators and Escalators clearance requirements and NFPA 70 National Electrical Code requirements for guarding.

m) Machine Room Lighting and Receptacles:
   i) Provide a separate branch circuit to supply the machine room or control room/machinery space or control space lighting and receptacle(s).
   ii) Minimum lighting in machine room shall be 19 ft-c.

iii) Required lighting shall not be connected to the load side of a ground-fault circuit interrupter.

n) Pit Lighting and Receptacle(s):

i) A separate branch circuit shall supply the hoistway pit lighting and receptacle(s).

ii) Minimum lighting in pit shall be 10 ft-c. at all locations in the pit.

iii) Required lighting shall not be connected to the load side of a ground-fault circuit interrupter.

iv) The lighting switch shall be so located as to be readily accessible from the pit access door.

o) Pit lighting switches and emergency stop switches shall be installed approximately 18" above first floor landing adjacent to opening and operable at both sides of each pit access door.

p) Telephone lines and wiring to elevator controllers for telephone system including all wiring in machine room to be installed inside conduit as per NFPA 70 NEC. Conduit to be installed under Electrical Requirements.

5) **Sprinkler Requirements:** Currently there are sprinklers located in the elevator spaces. Where sprinklers are provided in the machine room or hoistway of elevators the following requirements apply:

a) If sprinkler head(s) are located in the machine room it will be required to install a heat detector within 24" of each sprinkler in order to automatically disconnect the main line power supply to the affected elevator(s) upon or prior to the application of water, in accordance with ASME A17 Safety Code for Elevators and Escalators, and NFPA 72 National Fire Alarm Code.

b) If sprinkler head(s) are located in the hoistway, it will be required to install a heat detector within 24" of each sprinkler located 24" above the pit floor in order to automatically disconnect the main line power supply to the affected elevator(s) upon or prior to the application of water, in accordance with ASME A17 Safety Code for Elevators and Escalators, and NFPA 72 National Fire Alarm Code

c) If sprinkler head(s) are located in the hoistway, it will be required to install a fire alarm initiating device in conformance with the requirements of NFPA 72 which is to be used to initiate Phase I Emergency Recall Operation.

d) Any required sprinkler work must be coordinated by the Elevator Contractor to insure non-interference with any elevator equipment and must be compliant with NFPA 13, NFPA 72 and Florida Building Code.

6) Emergency Generator:

a) Currently Elevator SN# 4647, Elevator # 1 (Old Library Bldg.) is supplied with emergency generator power.

i) Contractor shall provide new elevator controller capable of required emergency power operations in conformance with the Florida Building Code Chapter 30, Section 3003, Emergency Operations requirements as detailed in the Florida Building Code.

ii) Generator contractor shall provide signal in transfer switch to elevator controller that the building is on emergency standby power.

b) Elevator SN# 08873. Elevator # 1 (Thomas Center Bldg. "A") is not supplied with emergency generator power and shall be provided with Battery Lowering Operation in conformance with the requirements of A17.1.

c) Elevator SN# 08873. Elevator # 1 (Thomas Center Bldg. "B") is not supplied with emergency generator power and shall be provided with Battery Lowering Operation in conformance with the requirements of A17.1.

7) **Telephone Line:** Existing dedicated telephone lines shall be reutilized for the elevators. All elevator phones will have phone serviced provided by the Building owner utilizing VOIP.

a) Telephone lines and wiring to elevator controllers for telephone system including all wiring in machine room to be installed inside conduit as per NFPA 70 NEC.

b) All emergency telephone devices shall include a minimum of 4 hours emergency backup power including power from emergency generator if supplied.

c) Provide phone numbers for emergency communication phone system to be programmed to for response.

8) **Building General Construction:** Building general construction conditions will include, work detailed in this section, including cleaning and painting of miscellaneous surfaces. The Elevator Contractor shall be responsible for all work as detailed in this section. All construction, cleaning and painting shall be performed by the Elevator Contractor.

a) Verify proper installation of 1-½ hour "B-Label" door to machine room to include self-closing and self-locking requirements.

b) Existing machine room vents to exterior air and machine room door with vents must have louvered vent secured and covered to prevent the loss of conditioned air from machine room.

c) Verify proper Class ABC Fire Extinguisher in machine room permanently mounted and conveniently located to the access door as required by ASME A17.1 Safety Code for Elevators and Escalators.

d) Verify that all non-elevator related pipes, wiring, conduit have been removed and openings in machine rooms and hoistways to include a 2 hour fire rating. All foreign pipes, wiring or conduit not in use or directly related to the elevator system shall be removed from machine rooms and hoistways.

e) Repair or replacement of tile or other finished flooring as required assuring proper level of adjoining surfaces of cab floor and sill including hall sills and finished flooring at each landing. All sills must be substantially level to all adjacent finished flooring surfaces.

f) Masonry, drywall, patching and finishes including painting for repair of all openings as required by elevator installation work shall be completed with fire rating of hoistway or machine room equal or greater than 2 hours in accordance with Florida Building Code 2010.

g) Machine room warning signs reading "Danger Authorized Personnel Only" shall be provided on each machine room door as required by NFPA 70 NEC.

h) Each contractor will be required to provide any cutting, patching including painting to match existing finishes of building.

9) All above work and materials to be performed to meet compliance with Florida Building Code, ASME A17.1 Safety Code for Elevators and Escalators, NFPA 70 National Electrical Code, NFPA 13 National Sprinkler Code and NFPA 72 Fire Alarm Code or as determined by the authority having jurisdiction.

10) Failure by above associated sub-contractors to perform required testing at time of scheduled elevator acceptance testing and inspection will require full advance payment by contractor at fault for all expenses relating to re-inspection, permit and scheduling fees to building management.

11) **Non-Traditional Work**:

a) **Patching**: Patching of all masonry openings inside the hoistway as required by elevator installation work shall be completed with fire rating of hoistway or machine room equal or greater than 2 hours in accordance with Florida Building Code.

i) All openings required for the installation of new elevator components shall be the responsibility of the elevator contractor.

ii) Surface restoration inside the hoistway shall be the responsibility of the Elevator Contractor.

iii) Finished surface restoration of all surfaces outside the hoistway will be the responsibility of the Elevator Contractor.

12) **Local Telephone Line Status Monitoring**: The telephone system for the elevator shall be compliant with the requirements of the A17.1b-2009 Safety Code for Elevators and Escalators Requirement 2.27.1.1.6.

13) **Coordination of Work**:

a) Elevator Contractor shall coordinate all his other sub-contractors to insure that schedules are met and all work being performed with the elevator modernization project is acceptable.

b) Before proceeding with any Work, the Elevator Contractor shall carefully check and verify all pertinent dimensions and sizes, and assume full responsibility for fitting the equipment and materials to the structure. Where the apparatus and equipment have been indicated on the drawings, the dimensions have been taken from typical equipment of the type specified in these specifications. The Elevator Contractor shall carefully check the drawings to verify that the equipment that will be actually provided will fit into the spaces available. Should the equipment not fit the specific structure shown on the drawings, all additional sub-framing members required to accommodate the equipment installation shall be provided and paid for by Elevator Contractor as part of the Work of this section. The Elevator Contractor shall submit all structural shop drawings and engineering calculations for the Consultant's review and written approval.

c) Elevator Contractor shall familiarize himself with the specifications, drawings, installation procedures and construction schedules for those phases of Work performed by his

subcontractors. The Elevator Contractor shall also familiarize himself with the Owner's security and safety requirements and shall abide by and conform to such established regulations at all times. If the Elevator Contractor's Work or the Work of any of his subcontractor's depends upon the execution of the Work of another subcontractor or upon his own Work, he shall so coordinate all phases of Work so as to avoid conflicts in installation procedures and construction schedules.

d) As work progresses, Elevator Contractor shall consult with his subcontractors, examine the Work installed by them, and resolved all conflicts without expense to Owner and/or Consultant.

e) Progress meetings shall be held at the job site, as and when requested by Owner or Consultant. The Elevator Contractor shall be represented at these meetings by persons familiar with the details of the scope of Work and authorized to conclude matters relative to Work progress, as may be necessary to expedite completion of Work.

PAINTING

1) **Machine Room Painting**: Clean and paint machine room floor.

2) **Cleaning and Painting of Miscellaneous Surfaces**: The Elevator Contractor shall be responsible for all miscellaneous painting as detailed in this specification if it is not designated to be performed by others in Section titled, Related Work by Others.

a) All paint products and application method must be pre-approved prior to application by owner or owner's agent. Paint products and application methods are to be equal or better than existing product applicable with matching color as approved by owner.

b) Except as otherwise specified, paint all metal work provided by the elevator manufacturer and installer.

c) Provide all ferrous metals installed in the hoistway shop primed with a rust inhibitive primer.

d) Remove rust, clean, degrease and paint any existing required parts or components for a like new condition.

e) Pit and hoistway metal which has rust shall be cleaned and treated with a rust neutralizing/converting product such as Pro Tek 2 IN 1 Industrial Rust Converter by Pro Tek Maintenance Products, Inc., "1" Step Rust Converter by Interstate Products, Inc. (Aqueous Vinyl Acrylic Emulsion) or Rust-X Converter by Superior Industries, or similar, and all hoistway metal to be painted with industrial grade oil based enamel. Paint applied to cleaned and primed galvanized metal must be designed for painting of galvanized metal,

f) All cleaning or painting work that produces any vapors or fumes shall be performed with sufficient ventilation to prevent the vapors or fumes from permeating into the building. Such Work must be scheduled and coordinated three (3) days prior to execution of work.

g) The procedures proposed for the accomplishment of the work shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged, protection of property, which is to remain undisturbed, and coordination with other work in progress. The work plan shall include a Safety and Health plan describing procedures for handling monitoring, and disposition of Volatile Organic Compounds

"VOCs" and other hazardous and toxic materials. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.

h) The procedures proposed for the accomplishment of the work shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged, protection of property, which is to remain undisturbed, and coordination with other work in progress. The work plan shall include a Safety and Health plan describing procedures for handling monitoring, and disposition of Volatile Organic Compounds "VOCs" and other hazardous and toxic materials. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.

i) All products of paint, thinners or cleaning agents must be pre-approved prior to use for VOC's or any additional health concerns.

j) Interior work zones having a volume of 1,000 cubic feet or less shall be ventilated at a minimum of 2 air exchanges per hour. Ventilation in larger work zones shall be maintained by means of mechanical exhaust. Solvent vapors shall be exhausted outdoors, away from air intakes, building occupants and workers. Building air conditioning return air inlets in the work zone shall be temporarily sealed before start of work until the prepared surfaces have dried and are free of odor. Operators and personnel in the vicinity of paint removal processes involving chemicals or mechanical action (sanding or blasting) shall wear respirators.

ELEVATOR SYSTEM DESCRIPTION:

1) Elevator Arrangement
   a) Elevators shall be numbered as follows:
      i) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.)
      ii) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A")
      iii) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B")
   b) Unless specified otherwise, all specification requirements are to be the same for each elevator. Specific requirements for the specific elevator or component shall be designated as such and shall not apply to other elevator in the building. It shall be the bidder's responsibility to review and verify as required for proper installation. Specifications for elevators include minimum requirements of all elevators and it shall be the responsibility of the bidder to complete all work to code compliance.
2) Quantity – Three (3) with Elevators Numbered as:
   a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.)
   b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A")
   c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B")
3) Type: Hydraulic Passenger.
4) Number of Stops & Openings:
   a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.)

i) 3 Stops, 3 Front, Labeled 1 G & 2

b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. “A”)

i) 3 Stops, 3 Front, Labeled B, 1 & 2

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. “B”)

i) 3 Stops, 3 Front, Labeled 1, 2 & 3

5) Rise: All existing conditions

6) Rated Capacity/Speed: Maintain existing conditions

a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.)

i) Capacity rated at 3000 lbs.

ii) Speed rated at 85 UP / 65 DOWN fpm

b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. “A”)

i) Capacity rated at 2400 lbs.

ii) Speed rated at 100 fpm

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. “B”)

i) Capacity rated at 2500 lbs.

ii) Speed rated at 100 fpm

7) Minimum Car Inside:

a) Maintain existing dimensions

8) Inside Cab Height:

a) Maintain existing clear headroom dimensions inside car.

9) Entrance Width & Type:

a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.)

i) Two Speed Slide 3’-3” x 7’- 0”

b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. “A”)

i) Single Slide 3’- 0” x 7’- 0”

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. “B”)

i) Single Slide 3’- 6” x 7’- 0”

10) Main Power Supply:

a) Elevator SN# 10202, Elevator # 1 (Old Library Bldg.): Existing 480 Volts + or - 5% of normal, 3 Phase, 60 Cycle with a separate equipment grounding conductor.

b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. “A”): Existing 208 Volts + or - 5% of normal, 3 Phase, 60 Cycle with a separate equipment grounding conductor.

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. “B”): Existing 208 Volts + or - 5% of normal, 3 Phase, 60 Cycle with a separate equipment grounding conductor.

11) Lighting Power Supply: 120 Volts, 1 Phase, 15 Amp, 60 Hz.

12) Stopping Accuracy: ±1/4" under any loading condition or direction of travel.

13) Door operating equipment shall be labeled with maximum door speed so that Kinetic Energy shall not be above 7.37 ft-lbf. As measured by ASME A17.1 Safety Code for Elevators and Escalators.

14) Car Operation: Using a Simplex Selective Collective for elevator microprocessor-based controller, the operation shall be automatic by means of the car and hall buttons.

15) Provide microprocessor-based Simplex Selective Collective automatic operation control system, which utilizes on-board diagnostics for servicing, trouble-shooting, and adjusting without requiring the use of an outside service tool.

SUBMITTALS

1) **Product Data**: When requested, submit product data for the following:
   a) Elevator car and hoistway fixtures.
   b) Operation, control, and signal systems.
   c) Motor & hydraulic pump, control valve and all major components of system.
2) **Shop Drawings**:
   a) Show equipment arrangement in the machine room, pit and hoistway. Provide plans, elevations, sections and details of assembly, erection, anchorage, and equipment location as required.
   b) Indicate elevator system capacities, sizes, performances, safety features, finishes and other pertinent information.
   c) Show floors served, existing travel distances, maximum loads imposed on the building structure at points of support and all similar considerations of the elevator work.
   d) Indicate electrical power requirements and branch circuit protection device recommendations and locations.
3) **Certificates**: Inspection and acceptance certificates of elevator system installation.

A) Submittals at Project Close-Out:

1) **Operation and Maintenance Data:** Include the following:
   a) Product User Manuals and maintenance guides.
   b) Parts list, with recommended parts inventory.

   a) Furnish two (2) copies of bound Product User Manuals and maintenance guides for elevators. Furnish one (1) electronic copy of all project close-out submittals to Owner.

2) **Wiring Diagrams:** Provide complete as built wiring diagrams with all electrical connections of elevator systems.
   a) Provide one set of as built wiring diagrams in the elevator machine room.

b) Provide one (1) additional hard copy and 1 electronic copy on separate USB Flash Drive, in PDF format to Elevator Consultant for review and delivery to Owner.

c) Provide legible schematic wiring diagrams of installed electrical equipment, including control equipment, and any changes or in field modifications.

d) Provide legible copy of field pull sheets and wiring notes. Pull sheets to include wire numbers and colors. List symbols corresponding to identity or markings on machine room and hoistway apparatus.

e) Coded diagrams are not acceptable unless fully identified.

QUALITY ASSURANCE

1) **Elevator Contractor Qualifications**: Elevator Contractor shall provide pre-engineered elevator system components by manufacturer(s) regularly engaged in the manufacture of elevator systems and that complies with ASME A17.1Safety Code for Elevators and Escalators in its entirety, Florida Statutes, Chapter 399, Florida Administrative Code 61C-5, all applicable sections of the Florida Building Code as referenced above in its entirety, and additional requirements specified herein.

   a) Elevator Contractor shall have a documented, on-going quality assurance program.

   b) Elevator Contractor shall have a minimum of 10 continuous years as a licensed Elevator Contractor in the State of Florida.

   c) Elevator Cab Interior Contractor shall have a minimum of 10 continuous years as a licensed Elevator Contractor in the State of Florida and provide rendering of cab interiors with bid package.

2) **Installer Qualifications**: The manufacturer or an authorized agent of the manufacturer must have not less than ten years of satisfactory experience installing elevators equal in character and performance to the project elevator. All mechanics employed to work onsite must have a valid Certificate of Competency issued by State of Florida Bureau of Elevator Safety. There shall not be allowed onsite more than one helper or unlicensed assistant.

3) **Permits**: The Elevator Contractor shall be responsible to obtain all permits, licenses and other fees that are necessary for proper completion and execution of the Work, which are specifically included in the Contract Sum, but not limited to required Florida Bureau of Elevator Safety permits as required by Florida Administrative Code 61C-5 for Alteration Permits, and local jurisdiction permits. Elevator Contractor is responsible for proper posting of all required licenses, permits and safety documentation.

4) **Regulatory Requirements**:

   a) ASME A17.1-2013 Safety Code for Elevators and Escalators.

   b) Florida Building Code 2017.

   c) Current Florida Statute 399 and 553.

   d) NFPA 70 National Electrical Code 2014

   e) NFPA 72 National Fire Alarm Code 2013

   f) Americans with Disabilities Act - Accessibility Guidelines (ADAAG).

g) Any changes or updates as required by Florida Building Code or Florida Statute 399 by time of permit application.

h) Any and all onsite workmen receiving of products to the site are required to follow all security, safety, and facility regulations per City of Gainesville policies.

5) **Inspection and Testing**: Elevator Installer shall obtain and pay for all required tests, permits and fees for elevator installation as required by the State of Florida.

a) City of Gainesville has designated Vertical Transportation Equipment Solution (VTE Solution) as their consultant on this project. VTE Solution, in accordance with ASME A17.1 Safety Code for Elevators and Escalators, Inspection and Test Requirements, may be present for and review all acceptance inspections for this elevator. Elevator Installer in accordance with ASME A17.1Safety Code for Elevators and Escalators, Inspection and Test Requirements will schedule and coordinate all acceptance tests and arrange for inspection for this elevator. Elevator Contractor must notify building owner and elevator consultant 5 days prior to inspection advising of the date and time of all inspections and tests. Elevator Consultant must qualify and approve any inspector prior to inspection other than State of Florida Bureau of Elevator Safety employed inspectors.

b) Elevator Contractor shall be solely responsible for the application, securing, maintaining, completion, and posting of existing elevator permits as per Florida Statute 399 and delivery of the Certificate of Operation to the Owner upon completion and acceptance of elevator work.

6) All signage as required by Florida Building Code, NFPA 70 National Electrical Code and NFPA 72 Fire Alarm Code to be posted in elevator lobbies, fire alarm panels, disconnects, machine rooms and machine room doors.

7) Letter of guarantee that any and all equipment installed shall be completely non-proprietary and shall not require the need for specialized testing or programming tools currently or in the future. Future information for trouble shooting or adjusting shall be available to any licensed elevator maintenance contractor by the supplier of the control system at a reasonable cost comparable to cost of competitive parts within marketplace. Contractor shall provide complete schematics and wiring diagrams for control systems including information for change of program, on board diagnostics or mnemonics, or other on board switches or settings. Any controller by a manufacturer other than specified must be pre-approved prior to bid. Letter stating agreement to the above compliance shall be signed by an officer of Elevator Contractor and shall be notarized.

Any equipment that is provided for installation which would require any specialized tool, devices, manuals, source codes, access codes, objects, passwords and/or software to input parameters, make adjustments, troubleshoot, perform diagnostics, perform testing functions or required for any other type of maintenance or repair function shall be included with the modernization cost of this contract and will become the property of the building owner. At the time of bid submission, this shall be identified as such on the bid.

8) Elevator Contractor is responsible for all protection both inside and outside of hoistway to all personnel inside or outside of hoistway areas. This includes providing and maintaining of protective barricades at hall entrances, screening of each hoistway during work and protection from trip hazards due to storage or use of materials or drop cords.

9) Elevator Contractor is to provide due care to protect building flooring and walls from excessive debris, dirt or damage due to workmen onsite.

DELIVERY, STORAGE AND HANDLING

1) Deliver elevator materials, components and equipment in manufacturer's protective packaging.
2) Elevator equipment disassembled for replacement shall be neatly stored prior to removal from site and disposal, which is responsibility of Elevator Contractor.
3) Store materials in a dry protected area if designated by owner. Protect and handle materials in accordance with manufacturer's recommendations to prevent damage, soiling, or deterioration.
4) Elevator Contractor shall be responsible for the material handling of all elevator equipment to site storage area. Elevator Contractor will be responsible for keeping all stored materials inside storage area with lock and key.
5) Elevator Contractor's sole responsibility and liability shall be limited to the extent Elevator Contractor is at fault; and shall not be responsible for material once material arrives at jobsite.
6) Elevator Contractor shall be responsible for the removal the existing equipment from the machine rooms and placement of the new equipment in the machine rooms.
7) Owner shall afford the Contractor and his sub-contractors reasonable opportunity for storage of materials and performance of their activities on the property, and shall cooperate in coordinating operations with such other activities.
8) Locked and protected storage for Elevator Contractor’s tools or materials at site is contractor’s responsibility. Key will be provided for elevator machine room, which is located on 5th floor level of building, and can be utilized for storage or securing of tools and equipment. This is the only area available on site for storage of any elevator materials, equipment or tools.
9) Elevator Contractor will be provided a single location for either a storage trailer or POD. The cost of the storage container/trailer is the responsibility of the Elevator Contractor.
10) Authorized elevator personnel only are responsible for temporary installed barrier panels as may be required during construction to protect the openings at elevator at each floor. Panels may be removed only while the authorized elevator personnel are to perform work in the immediate area of the unprotected opening. Authorized elevator personnel shall re-install all barriers as required to maintain the original solid and safe protection to the opening prior to leaving immediate work area of the opening.

PROJECT CONDITIONS

1) **Prohibited Use**: Elevator that is turned over to the contractor for modernization work shall not be used for any purpose during the construction period before Substantial Completion. The elevator will only be turned over to the owner upon completion of all modernization work, including successful completion of all required inspections and tests including acceptance by consultant.

2) **Security**: Any and all onsite workmen and receiving of products to site are required to follow security and safety procedures as per OSHA and City of Gainesville policies.

3) **Painting**:

   a) Except as otherwise specified, paint all metal work provided by the elevator manufacturer and installer.

   b) Provide all ferrous metals installed in the hoistway shop primed with a rust inhibitive primer.

   c) Remove rust, clean, degrease and paint any existing required parts or components for a like new condition.

   d) Pit and hoistway metal which has rust shall be cleaned and treated with a rust neutralizing/converting product and all hoistway metal to be painted with industrial grade oil based enamel.

   e) All cleaning or painting work that produces any vapors or fumes shall be performed during normal business work hours. Work of this nature must be scheduled and coordinated three (3) days prior to execution of work.

   f) The procedures proposed for the accomplishment of the work shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged, protection of property, which is to remain undisturbed, and coordination with other work in progress. The work plan shall include a Safety and Health plan describing procedures for handling monitoring, and disposition of Volatile Organic Compounds "VOCs" and other hazardous and toxic materials. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.

   g) All paint products and application method must be pre-approved prior to application by owner or owner's agent. Paint products and application methods are to be equal or better than existing product applicable with matching color as approved by owner.

   h) All products of paint, thinners or cleaning agents must be pre-approved prior to use for VOC's or any additional health concerns.

   i) Interior work zones having a volume of 1,000 cubic feet or less shall be ventilated at a minimum of 2 air exchanges per hour. Ventilation in larger work zones shall be maintained by means of mechanical exhaust. Solvent vapors shall be exhausted outdoors, away from air intakes, building occupants and workers. Building air conditioning return air inlets in the work zone shall be temporarily sealed before start of work until the prepared surfaces have dried and are free of odor. Operators and personnel in the vicinity of paint removal processes involving chemicals or mechanical action (sanding or blasting) shall wear respirators.

   j) Elevator Contractor's compliance is limited to the extent the policy does not conflict with Elevator Contractor's collective bargaining agreement, nor shall it cause Elevator Contractor to incur any additional costs, excluding safety fines pursuant to OSHA or Elevator Contractor's safety policy.

WARRANTY

1) **Warranty**: The Elevator Contractor's acceptance is conditional on the understanding that their warranty covers defective material and workmanship. The Elevator Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work and labor will be free from defects for the period of one (1) year upon acceptance of Contractor's work by Owner, provided that manufacturer approved preventative maintenance program is in effect during the Guarantee/Warranty period, and that the Work will conform with the requirements of the Contract Documents. The Elevator Contractor's Warranty is only subject to the exclusions specified in the Contract or herein.

2) The guarantee excludes ordinary wear and tear or improper use, vandalism, abuse, misuse, or neglect or any other causes beyond the control of the Elevator Contractor and this express warranty is in lieu of all other warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose. Any defective condition or workmanship not mutually agreeable as satisfactory to building owner and Elevator Contractor shall be determined by the independent elevator consultant as final for the replacement, repair or continued use or product or part in question.

3) Elevator Contractor shall promptly correct Work rejected by the Owner or failing to conform to the requirements of the Contract Documents, and shall correct any Work found to be not in accordance with the requirements of the Contract Documents within a period of one year from the date of completion of the Work.

4) In addition to Elevator Contractor's above-mentioned warranties, Elevator Contractor shall, for the benefit of the Owner, obtain and assign to Owner if necessary, warranties from the manufacturers, producers and suppliers whose products are incorporated into or used in the work performed hereunder. All work and materials provided pursuant to the warranties hereunder shall be performed at no charge to the Owner.

5) Elevator Contractor warrants that (a) the Work shall be completed in accordance with the Contract Documents and in compliance with all federal, state and local laws, ordinances and regulations, and (b) all materials and equipment furnished by Elevator Contractor will be of good quality and new, unless otherwise specified in the Contract Documents.

CONTRACT PREVENTIVE MAINTENANCE

1) **Existing Elevator Maintenance Agreement:** Existing maintenance contract will continue for these elevators, but will be held in abeyance for the warranty/maintenance period. There will be no follow-on maintenance contract awarded for any elevator scheduled for modernization under this specification. Upon the conclusion of each elevator warranty/maintenance period the current Elevator Maintenance Contractor for the City of Gainesville will resume normal maintenance on each elevator.

   a) The elevator modernization contractor will assume maintenance on all elevator(s) that are the subject of this modernization specification once on-site modernization work commences on each elevator.

   b) Elevator(s) taken out of service for modernization will not be billed for maintenance during any time the elevator is under modernization.

c) Upon completion of the modernization of each of elevator no additional maintenance charges will be due for the elevator until after the maintenance period detailed in Contract Preventive Maintenance section herein subpart #2, Modernization Maintenance Period, as detailed below has ended.

2) **Modernization Maintenance Period**: Maintenance service consisting of a minimum of monthly examinations, adjustments and lubrication of the elevator equipment shall be provided by the Elevator Contractor for a period of twelve (12) months after the elevator has been turned over for the customer's use. This service shall not be subcontracted, but shall be performed by the Elevator Contractor. All work shall be performed by competent employees during regular working hours of regular working days and shall include emergency 24-hour callback service. This service shall not cover adjustments, repairs or replacement of parts due to negligence, misuse, abuse or accidents caused by persons other than the Elevator Contractor. Only genuine parts and supplies as used in the manufacture and installation of the original equipment shall be provided.

3) Elevator Contractor shall provide a service manual for each elevator describing monthly, quarterly and annual maintenance tasks. Each task shall include an area for signature by a Certified Elevator Technician upon completion of task. Service manual shall also include page/s for documenting all required inspections and tests. Service manual shall contain a section to record all related maintenance, repair and replacement information in accordance with ASME A17.1, Part 8.6 and remain on site.

4) Elevator Contractor shall provide monthly maintenance to all elevators that are the subject of this modernization contract starting at the time the elevator is turned over for modernization and shall continue for a 12-month period upon the completion of each elevator modernization. The Elevator Contractor shall provide one (1) hour per month per elevator dedicated to maintenance of these elevators.

5) The "per month" time is to be dedicated to ongoing comprehensive P.M. service with the goal to reduce unit shutdowns and to extend the useful life of the equipment.

6) The "per month" time shall not include call back times required for correction of calls placed with the elevator Contractor to correct operational issues with elevators.

7) Elevator Contractor shall provide documentation and shall perform monthly testing of fire service recall operation as per ASME A17.1 and ASME A17.2.

8) Submit parts catalog and show evidence of local parts inventory with complete list of recommended spare parts. Manufacturer of original equipment shall produce parts.

9) Manufacturer shall have a service office and full time service personnel within 50-mile radius of the project site.

10) Maintenance service shall include all required tests for inspection services as required by Florida Elevator Bureau and ASME A17.1Safety Code for Elevators and Escalators.

PRODUCTS

ACCEPTABLE MANUFACTURER

1) Only products and components produced or provided by manufacturer(s) regularly engaged in the manufacture of elevator products, and that complies with ASME A17.1Safety Code for Elevators and Escalators in its entirety, ASME A17.2, Florida Statutes, Chapter 399, Florida Administrative Code 61C-5, all applicable sections of the Florida Building Code in its entirety, and additional requirements specified herein are acceptable. Only Bidders deemed qualified shall be notified by Request for Bid.

MATERIALS, GENERAL

1) Colors, patterns, and finishes: As selected by the City of Gainesville from manufacturer's full range of standard colors, patterns, and finishes.
   a) Steel:
      i) Shapes and bars: ASTM A 36.
      ii) Sheet: ASTM A 366, cold-rolled steel sheet, commercial quality, Class 1, matte finish, stretcher leveled.
      iii) Finish: Factory-applied baked or powder coated enamel.
   b) Stainless steel:
      i) Shapes and bars: ASTM A 276, Type 300 (18-8).
      ii) Tubing: ASTM A 269, Type 300 (18-8).
   c) 60/40 Muntz/Bronze:
      i) Sheet: ASTM B36

HOISTING / LIFTING EQUIPMENT

1) **Platform**: Existing platforms and frames shall be retained.
   a) The underside of wood platforms shall be protected against fire by painting with an approved fire-retardant paint, having flame spread rating of not over 50, applied in accordance with the instructions of the manufacturer. Such ratings shall be based on the test procedure specified in ANSI/ASTM E 84.
2) **Platform Guards**:
   a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.):
      i) Existing platform guard shall be removed and replaced with new platform guard no less than 525 mm (21 in.) with the lower portion of the guard bent back at an angle of not less than 60 degrees nor more than 75 degrees from the horizontal.
      ii) New platform guard is required to be properly braced in accordance with A17.1 which requires the guards to be securely braced and fastened in place to withstand a constant force of not less than 650 N (145 lbf) applied at right angles to and at any position on its face without deflecting more than 6 mm (0.25 in.), and without permanent deformation.
   b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. “A”): Existing platform guard shall be retained and reutilized.

i) Existing guard is required to be properly braced in accordance with A17.1 which requires the guards to be securely braced and fastened in place to withstand a constant force of not less than 650 N (145 lbf) applied at right angles to and at any position on its face without deflecting more than 6 mm (0.25 in.), and without permanent deformation.

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): Existing platform guard shall be retained and reutilized.

i) Existing guard is required to be properly braced in accordance with A17.1 which requires the guards to be securely braced and fastened in place to withstand a constant force of not less than 650 N (145 lbf) applied at right angles to and at any position on its face without deflecting more than 6 mm (0.25 in.), and without permanent deformation.

3) **Sling**: Existing steel stiles affixed to a steel crosshead and bolstered with bracing members to remove strain from the car enclosure shall be retained.

4) **Car Top Guard Railing:** A standard railing conforming to ASME A17.1 shall be provided on the outside perimeter of the car enclosure top on all sides where the perpendicular distance between the edges of the car enclosure top and the adjacent hoistway enclosure exceeds 300 mm (12 in.) horizontal clearance and on sides where there is no hoistway enclosure.

a) If clearances require the standard railing to be located more than 100 mm (4 in.) from the edge of the outside perimeter of the car enclosure top, the top of the car enclosure outside of the railing shall be clearly marked.

b) The marking shall consist of alternating 100 mm (4 in.) diagonal red and white stripes. The forces specified in ASME A17.1 shall not deflect the railing beyond the perimeter of the car top.

5) **Guide Rails**: Existing guide rails shall be retained and lubricated with equipment manufacturer's recommended lubricating material. The guide rails are to be fastened to the building with steel brackets verified in alignment, secure to wall and brackets with surface planed smooth. Existing guide rails shall be cleaned and aligned as necessary for the proper performance of the elevator.

6) **Slide Type Guides**: Elevator shall have the inserts replaced with new inserts and properly adjusted for smooth operation

7) **Steadying Plates**: Replace or rebuild steadying plates and adjust for proper alignment between guide rails

8) **Cross Head Data Tags:** Cross Head Data Tags that are not completed shall have all information completed for Capacity, Gross Load and Speed.

9) **Buffers**: Existing buffers shall be retained and reutilized.

a) All buffers shall be cleaned and painted.

b) Verify that pit buffer channels are securely attached to the pit floor surface. Verify the spring buffers comply with the stroke and load requirements of the A17.1 Safety Code for Elevators and Escalators.

c) Buffer data plates shall be maintained or replaced for compliance with A17.1 Safety Code for Elevators and Escalators.

10) **Traveling Cable**: Existing traveling cables shall be removed and replaced with new traveling cables.

a) Traveling cables shall terminate at numbered terminal blocks in car and machine room.

b) Traveling cable shall be provided with a separate shielded circuit for communication system and hang to obtain proper size of loop. Traveling cable outer covering will be of fire resistant and meet UL standard testing.

c) Traveling cable will be hung free of all contact from hoistway or car equipment and shall be provided with 10 percent spare conductors for each car

11) **Hoistway & Machine Room Wiring**:

a) Provide and install all new wiring throughout the elevator machine room and hoistway, adequately sized and constructed for the proper operation of the equipment. Multi-conductor type wiring for light and signal circuits shall be used in the elevator hoistway. All conductors will be copper and the minimum size of conductors, excluding those which form an integral part of control devices, shall be No. 14 for lighting circuits and No. 18 for operating, control and signal circuits. All wiring will be installed in accordance with applicable NEC and latest applicable edition of ASME A17.1 codes. Hoistway door interlock wiring will be replaced with new SF-2 high heat resistance wiring and shall include a grounding conductor. All other new wiring will have flame retarding and moisture resistant outer covering.

b) Equipment grounding shall be provided. The equipment grounding conductor will be run with the circuit conductors and shall be a copper conductor. Ground all conductors, supports, controller enclosure, and other non-current conducting metal enclosures for electrical equipment in accordance with NEC. The ground wires shall be solid or stranded; insulated, covered, or bare copper, sized as required by NEC, and shall be colored green if less than #6, and have green marking if #6 or larger.

c) Retain and reutilize to the maximum extent possible all ducts and conduit in machine room and hoistway. Install new ducts and conduit as required.

d) Hoistway travel cable and associated wiring shall be coordinated with controller manufacture for wiring configuration requirements to match all controller wiring color coded and numbered diagrams for installation

12) **Pit Stop Switch**: Provide and install new pit stop switch as required by latest applicable edition of ASME A17.1 code.

13) **Pit Light**: New pit light will be installed by electrical contractor as detailed in the Electrical Requirements section of this specification.

14) **Pit Ladder**:

a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): Existing pit ladder shall be retained and reutilized.

b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. “A”): Provide and install new pit ladder as detailed below.

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): Provide and install new pit ladder as detailed below.

d) New Pit Ladders:

i) Install new pit ladders in both elevator pits. Pit ladders are to be in compliance as required by latest applicable edition of ASME A17.1 code.

ii) Clearance behind ladder shall be not less than 115 mm (4.5 inches) from the centerline of the rungs, cleats, or steps to the nearest permanent object in back of the ladder.

iii) If this clearance cannot be maintained due to obstructions a retractable pit ladder shall be installed in conformance to requirements of A17.1, Part 2.2.4.

iv) Any retractable pit ladder must be approved by consultant prior to installation.

Hydraulic Lifting Equipment:

2) **Shutoff Valves**:

a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.):

i) Install new manually operated ball type shutoff valve in the machine room as detailed below.

ii) Retain and reutilize existing manually operated shutoff valve in elevator pit.

b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A"):

i) Install new manually operated ball type shutoff valve in the machine room as detailed below.

ii) Install new manually operated ball type shutoff valve in the elevator pit as detailed below.

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"):

i) Install new manually operated ball type shutoff valve in the machine room as detailed below.

ii) Install new manually operated ball type shutoff valve in the elevator pit as detailed below.

d) **New Manually Operated Shutoff Valves:** Provide and install new manually operated ball type shutoff valves as designated above.

i) **Valve Certification**: Hydraulic Elevator shut off valves must be labeled and tested to comply with ASME A17.1/CSA B44 at a 5:1 Safety Factor. Valves shall be in compliance with the currently adopted edition of ASME A17.1 Safety Code for Elevators and Escalators.

ii) Shut off ball valve shall be specifically designed for use in hydraulic elevators.

iii) Valves, fittings, and mufflers shall be pressure rated, and shall bear the manufacturer's name or trademark by which the organization that manufactured the product can be identified, and identification symbols to indicate the materials and service designations for which the manufacturer's rating applies.

iv) Shut off valve to be Maxton hard chrome plated carbon steel ball valve with blow out proof stem or pre-approved equal.

3) **Pump Assembly Noise Levels**:

a) The Elevator Contractor shall have replacement pump assembly noise measurements taken prior to the modernization. These noise readings shall be witnessed by the Elevator Consultant and shall be recorded.

b) The replacement hydraulic pump assembly shall be at or below the recorded noise readings for this machine room due to the close proximity of work spaces to the machine room.

4) **Replace Hydraulic Pump Unit:**

a) Elevator Contractor shall verify that current power at mainline disconnect is acceptable for operation of submersible pump unit at rated speed with rated load in the elevator car, as detailed below. If the current power at the mainline disconnect is not capable of operating the car at rated speed with rated load with a submersible pump unit, then contractor shall be responsible for providing a dry type pumping unit as detailed below.

b) Submersible Type Hydraulic Pump Unit:

i) The hydraulic system shall be of compact design suitable for operation under the required pressure. The power component shall be mounted in the hydraulic-fluid storage tank. The control valve by Maxton, EECO or pre-approved equal, shall control flow for up and down directions hydraulically and shall include an integral check valve. A control section including control solenoids shall direct the main valve and control: up and down starting, acceleration, transition from full speed to leveling speed, up and down stops, pressure relief and manual lowering. All of these functions shall be fully adjustable for maximum smoothness and to meet contract conditions. Complete assembly shall have isolation pads installed under the supporting framework of the assembly.

ii) The tank assembly shall be constructed of steel and shall be provided with a removable cover containing a removable oil dip stick. The pump and submersible motor shall be mounted on reinforced isolation. The control valve shall be mounted in the discharge line above the oil level and easily accessible from the top of the tank.

(1) SEES Quiet Tank manufactured by SEES (Southern Elevator & Electric Supply), Pompano Beach, FL, (800) 526-0026 / (954) 971-1115. Pre-approved.

(2) MEI Submersible Power Unit manufactured by MEI – Total Elevator Solutions, Mankato, MN 56001, (507) 245-3060, www.meielevatorsolutions.com . Pre-approved.

(3) or pre-approved equal.

c) Dry Type Hydraulic Pumping Unit:

i) **Tank – Dry Type**. The storage tank shall be constructed of 12-gauge steel and shall be provided with a removable cover. A combination oil level sight gauge / thermometer shall be mounted to the side of the tank. The pump and belt-driven motor shall be mounted on a special reinforced isolation frame beneath the tank. The control valve shall be mounted in the discharge line immediately beneath the tank. Isolation shall be

provided between pump/motor assembly and main framework. Complete assembly shall have isolation pads installed under the supporting framework of the assembly.

ii) **Motor**: The motor shall be of the alternating current, polyphase squirrel cage induction type and shall be of a design especially adapted to electro-hydraulic requirements.

iii) **Pump**: The pump shall be an IMO positive displacement screw type pump to give smooth operation and shall be especially designed and manufactured for elevator service.

iv) **Control Valve**: The control valve by Maxton, EECO or pre-approved equal, shall control flow for up and down directions hydraulically and shall include an integral check valve. A control section including control solenoids shall direct the main valve and control: up and down starting, acceleration, transition from full speed to leveling speed, up and down stops, pressure relief and manual lowering. Down speed and up and down leveling shall be controlled at the main valve sections. All of these functions shall be fully adjustable for maximum smoothness and to meet contract conditions. The valve shall provide a regulated speed in the down direction with no load to maintain the down speed of the elevator at design speed of 100 fpm. All of these functions shall be fully adjustable for maximum smoothness and to meet contract conditions. The manual lowering feature will permit lowering the elevator at slow speed in the event of power failure or for adjusting purposes.

d) **Silencer**: An air-bladder silencer (muffler) manufactured by MEI, or pre-approved equal, shall be provided at the control valve discharge for noise suppression. Muffler shall be designed to minimize transmission of fluid pulsations in the pipelines between pumping units and cylinder heads

e) **Vibration Pads**: Provide and mount vibration pads under the power unit assembly to isolate the unit from building structure. Such isolators should achieve static deflections between 3mm to 7mm (0.1 to 0.25 inches).

f) **Hydraulic Fluid**: Replace existing hydraulic fluid throughout the system including removing all debris and waste oil from old system and proper disposal from property of all waste products.

g) **Tank Heater**: Provide and install tank heater to maintain temperature of oil at minimum of 100 degrees regardless of ambient temperature in order to maintain proper viscosity of hydraulic oil in tank assembly. Tank heater to be thermostat controlled with an indicator switch mounted on the exterior of the tank assembly. Tank heater shall be separately fused in controller enclosure.

5) **Motor Starter**: Replace existing starter with new IEC type compact solid state starter sized as appropriate for pump motor. Existing electronic starter shall be turned over to the Building Representative for future use.

6) **Automatic Terminal Limits**: Replace Automatic slow down and final limit switches. Place electric limit switches in the hoistway near the terminal landings. Limit switches shall be designed to cut off the electric current, slow down and stop the car if it runs beyond either terminal landing.

7) **Automatic Self-Leveling**: Provide elevator car with a self-leveling feature to automatically bring the car to the floor landings and correct for overtravel or undertravel. Self-leveling shall,

within its zone, be automatic and independent of the operating device. The car shall be maintained level to less than 1/4" with the landing irrespective of its load.

HOISTWAY ENTRANCES

1) **Interlocks**: Rebuild or Replace All Interlocks as detailed below. Equip each hoistway entrance interlock shall include SF-2 wiring and grounding. Interlock shall be designed to prevent operation of the car away from the landing until the doors are locked in the closed position as defined by code and shall prevent opening the doors at any landing from the corridor side unless the car is at rest at that landing or is in the leveling zone and stopping at that landing.

   a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): Existing Hoistway door interlocks shall be reutilized and rebuilt with direct OEM parts necessary to deliver interlock in as new condition.

      i) Equip each hoistway entrance with SF-2 wiring and grounding as required by code.

      ii) Interlock shall be designed to prevent operation of the car away from the landing until the doors are locked in the closed position as defined by code and shall prevent opening the doors at any landing from the corridor side unless the car is at rest at that landing or is in the leveling zone and stopping at that landing.

      iii) Means to unlock the access door from inside the pit shall be provided in accordance with latest applicable edition of ASME A17.1 code requirements. This means shall be located in a plane not more than 1 000 mm (39 in.) horizontally from a rung, cleat, or step of the pit ladder with the door in the closed position and not more than 1 825 mm (72 in.) vertically above a rung, cleat, or step.

   b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A"): Existing Hoistway door interlocks shall be replaced with direct OEM replacement interlock assembly.

      i) Equip each hoistway entrance with SF-2 wiring and grounding as required by code.

      ii) Interlock shall be designed to prevent operation of the car away from the landing until the doors are locked in the closed position as defined by code and shall prevent opening the doors at any landing from the corridor side unless the car is at rest at that landing or is in the leveling zone and stopping at that landing.

      iii) Means to unlock the access door from inside the pit shall be provided in accordance with latest applicable edition of ASME A17.1 code requirements. This means shall be located in a plane not more than 1 000 mm (39 in.) horizontally from a rung, cleat, or step of the pit ladder with the door in the closed position and not more than 1 825 mm (72 in.) vertically above a rung, cleat, or step.

   c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): Existing Hoistway door interlocks shall be replaced with direct OEM replacement interlock assembly.

      iv) Equip each hoistway entrance with SF-2 wiring and grounding as required by code.

      v) Interlock shall be designed to prevent operation of the car away from the landing until the doors are locked in the closed position as defined by code and shall prevent opening the doors at any landing from the corridor side unless the car is at rest at that landing or is in the leveling zone and stopping at that landing.

vi) Means to unlock the access door from inside the pit shall be provided in accordance with latest applicable edition of ASME A17.1 code requirements. This means shall be located in a plane not more than 1 000 mm (39 in.) horizontally from a rung, cleat, or step of the pit ladder with the door in the closed position and not more than 1 825 mm (72 in.) vertically above a rung, cleat, or step.

2) **Door Hangers, Sheaves, and Tracks**:

a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): Existing Door Hangers, Tracks and Closers shall be retained for all landings. Components listed below shall be rebuilt with OEM components for an as new condition:

i. Sheaves: Polyurethane tires with ball bearings properly sealed to retain grease.

ii. Gibs: Replace with new OEM manufactured door gibs.

b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A"): Existing Door Hangers and Tracks shall be retained for all landings. Components listed below shall be replaced with OEM components:

i. Door Hangers: Replace all hoistway door hangers with new hanger assemblies and provide an adjustable slide to accommodate the up-thrust of the doors.

ii. Sheaves: Polyurethane tires with ball bearings properly sealed to retain grease.

iii. Door Closer: All hoistway door closers shall be replaced with new closers.

iv. Gibs: Replace with new OEM manufactured door gibs.

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): Existing Door Hangers and Tracks shall be retained for all landings. Components listed below shall be replaced with OEM components:

i. Door Hangers: Replace all hoistway door hangers with new hanger assemblies and provide an adjustable slide to accommodate the up-thrust of the doors.

ii. Sheaves: Polyurethane tires with ball bearings properly sealed to retain grease.

iii. Door Closer: All hoistway door closers shall be replaced with new closers.

iv. Gibs: Replace with new OEM manufactured door gibs.

3) **Hoistway Doors:** Reutilize existing Hoistway Doors.

a) Refurbish as required and replace all parts necessary to deliver doors in as new condition. Verify and adjust as required to maintain all door gaps less than 3/8 inch in accordance with latest applicable edition of ASME A17.1 code.

b) Hoistway doors that are unable to be adjusted to maintain the door gaps to less than 3/8 inch shall be replaced with new door panels. Bidders are cautioned to verify the capability of all hoistway doors to be properly adjusted to maintain code required clearances and gaps as no request for any change order will be approved for this purpose. It is the Elevator Contractors responsibility to verify this prior to submission of a bid on this project.

c) Bottom Door Slide Guides including primary and secondary retainers shall be retained and reutilized on all hall and cab doors.

d) Elevator modernization contractor is responsible for all required door adjustments required for hoistway door work; no additional charges will be allowed for any door adjustments.

4) **Painting and Rust Remediation:**

a) Except as otherwise specified, paint all metal work provided by the elevator manufacturer and installer.

b) Provide all ferrous metals installed in the hoistway shop primed with a rust inhibitive primer.

c) Remove rust, clean, degrease and paint any existing parts or components for a like new condition, including but not limited to the door panel surfaces, door track assemblies and door frame surfaces inside the hoistway.

d) All hoistway metal to be painted with industrial grade oil based enamel or pre-approved alternate paint in accordance with the painting section of this specification.

5) **Hoistway Door Sills:** Existing Hoistway Door sills shall be retained and reutilized. Existing Hoistway Door sills shall be thoroughly cleaned and polished to present a bright finish.

6) **Hoistway Entrances General:** Existing hoistway entrance assembly consisting of the elevator entrance frame, head jamb, strike jamb & return jamb shall be retained and reutilized unless detailed below. Verify and adjust as required to maintain all door gaps less than 3/8 inch in accordance with latest applicable edition of ASME A17.1 code.

7) **Hoistway Entrances & Door Panels Lobby Level Thomas Center, Buildings A & B:** The hoistway entrance assembly consisting of the elevator entrance frame, head jamb, strike jamb & return jamb shall be retained and reutilized unless detailed below.

a) Furnish and install new Satin Muntz Cladding to the existing Hoistway Frame and Center parting doors. Included are new standard Braille plates, rubber astragals and Satin Muntz finish site guards. The existing surface shall be cleaned and prepared to accommodate new metal cladding.

8) **Escutcheon Tubes:** Hoistway doors shall have all escutcheon holes fitted with stainless steel escutcheon tubes fitted with a zinc plated push nut.

9) **Door Bumpers:** Provide and install new rubber door bumpers on all hoistway door jambs and on car door jamb. Bumpers shall be installed at top and bottom of door jambs.

10) **Sight Guards:** Sight guards, as required to reduce the opening between the leading edge of the hoistway door and the car door to maintain code required clearances, will be furnished and shall be satin finish Stainless Steel to match door panels

11) **Hoistway Floor Numbers:** After painting has been completed, the hoistways shall have floor numbers, not less than 100 mm (4 in.) in height, painted on the hoistway side of the enclosure or hoistway doors.

12) **Entrance Markings:** Existing floor markings with Braille shall be retained and reutilized. Markings shall be maintained on both sides of the entrance.

13) **Floor Designations:** Floor designations shall be as listed in Elevator System Description, Number of Stops and Openings section of this specification

CAR OPERATING PANEL

1) **New Car Operating Station, General:** The main car control shall contain the devices required for specific operation mounted directly to an aluminum backing plate with a stainless steel no. 4 brush finish applied faceplate. The panel shall consist of a series of modules, key switches or approved buttons for optimum viewing and accessibility. All engraving shall be on flush mounted hairline faceplates securely mounted to the aluminum backing plate.

   a) Any existing swing return panel shall be rigidly secured to accept the installation of the new car operating panel.

   b) The lowest section shall contain the "door open," "door close," "alarm" buttons and a keyed "emergency stop" switch.

   c) Intermediate section shall contain floor buttons, which illuminate when a call is registered and remain illuminated until the call is answered. Raised floor indications and handicap symbols shall be located immediately adjacent to the floor buttons.

   d) Door Open and Door Close buttons shall be in a single row.

   e) Provide a lockable service compartment with recessed flush door. Door material and finish to match car station face plate or car return panel. Inside surface of door shall contain an integral flush window for displaying the elevator operating permit. Service cabinet shall contain all required and accessory key switches including independent service, fan switch, key stop switch, service receptacle and an emergency light test button in service cabinet.

   f) The top section shall contain fire service features inside a locked cabinet in accordance with the currently adopted edition of ASME A17.1 Safety Code for Elevators and Escalators, including operating instructions.

   g) Car operating panels shall swing open with the hinged side closest to the sidewall.

   h) Car stations shall be pre-wired by the car station manufacture with terminal strip connection to control wiring.

   i) Swing of panel shall match car door configuration. Panel shall swing to open only to the open car side.

2) **Specific Style of Car Operating Fixtures:** The car operating fixtures, position indicators, directional lanterns and hall station fixtures shall be as identified below:

   a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): All car fixtures by Innovation Industries, “Prestige Series” Stainless Steel #4 brushed finish, or pre-approved equal. All pushbuttons to be tamper resistant, Innovation Industries PB 39, Flush Button with Illuminated Halo and Center Jewel or pre-approved equal. No adhesive type applied plates will be accepted at either car or hall stations. Halo to be Blue LED light source.

   b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. “A”): All car fixtures by Monitor Controls, “Imperial Series” #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal. All pushbuttons to be tamper resistant, Monitor Controls, Model TR1100, Flat Button with Illuminated Halo and Center Jewel, Innovation Industries PB 39, Flush Button with Illuminated Halo and Center Jewel or pre-approved equal. No adhesive type applied plates will be accepted at either car or hall stations. Halo to be Blue LED light source.

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): All car fixtures by Monitor Controls, "Imperial Series" #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal. All pushbuttons to be tamper resistant, Monitor Controls, Model TR1100, Flat Button with Illuminated Halo and Center Jewel, Innovation Industries PB 39, Flush Button with Illuminated Halo and Center Jewel or pre-approved equal. No adhesive type applied plates will be accepted at either car or hall stations. Halo to be Blue LED light source.

3) **Position Indicator**: A 2" electronic segmented digital position indicator mounted in the control panel for optimum viewing. As the car travels, its position in the hoistway shall be indicated by the illumination of the alpha/numeric character corresponding to the landing which the elevator is stopped or passing. On one side of digital numeric indicator in the car panel will also be a matching indicator with direction of travel. Position Indicator shall have a Blue LED lighting source.

4) **Emergency Light:** An emergency light and capacity plate shall be attached to the aluminum backing plate in the Car Operating Panel. Emergency light shall illuminate automatically upon loss of the building's normal power supply.

5) **Emergency Communications System**: Provide a Kings III, Wurtec S3, Electronic Micro Systems PNB, or equal, emergency communications device mounted in the car station panel. Emergency communications device shall comply with Americans with Disabilities Act (ADA) and the ASME A17.1b-2009 Safety Code for Elevators and Escalators requirements. All elevator phones will have phone serviced provided by the Building owner utilizing VOIP.

6) **Special accessories in each car station panel**:

a) Located in Service Compartment Subpanel w/ Clear Certificate Window (6 " x 9")

i) Light Keyed Switch.

ii) Fan Keyed Switch.

iii) Independent Operation Keyed Switch

iv) Access Keyed Switch (if required)

v) Emergency Light Test Button

vi) 110 volt convenience GFCI receptacle

b) Keyed Stop Switch

c) All push buttons and key switches as required for fire service operation.

d) No applied plates.

e) Braille and engraving to include

i) Engraved Capacity and Serial Number of elevator.

ii) Fire service instructions.

iii) No Smoking sign to meet minimum size requirements of the Florida Building Code and shall be engraved on flush mounted hairline faceplate.

f) Fire Fighters Service Key switches as required by the Florida Building Code including operations required by A17.1 shall be engraved on a flush mounted hairline faceplate.

i) The "FIRE OPERATION" switch, the "CALL CANCEL" button, the "STOP" switch, the door open button(s), the door close button(s), the additional visual signal, and the operating instructions shall be grouped together at the top of the main car operating panel behind a locked cover.

ii) The firefighters' operation panel cover shall be openable by the same key that operates the "FIRE OPERATION" switch. The cover shall be permitted to open automatically when the car is on Phase I Emergency Recall Operation and at the recall level. When the key is in the "FIRE OPERATION" switch, the cover shall not be capable of being closed. When closed, the cover shall be self-locking.

iii) All buttons and switches shall be readily accessible, located not more than (72 in.) above the floor.

iv) The front of the cover shall contain the words "FIREFIGHTERS' OPERATION" in red letters at least 0.4 in. high.

v) Firemans, Service Operation Key: The designated fire key shall be of a tubular, 7 pin, style 137 construction and shall have a bitting code of 6143521 starting at the tab sequenced clockwise as viewed from the barrel end of the key. The key shall be coded "FEO-K1."

g) **Voice Annunciation**: The Elevator Contractor shall furnish wiring to the elevator cab and a speaker for voice annunciation. The annunciator shall announce the floor number, the intended direction of travel and audio cues for passengers who may not be able to see, or may fail to notice, visual cues of door movement

h) All required Braille for buttons and other switches as required by the Florida Building Code shall be securely fastened to the aluminum backing plate or directly engraved.

i) Integral telephone including engraved directly into the car-operating panel ADA required telephone instructions.

j) There shall be NO ADHESIVE APPLIED PLATES, SIGNS or PANELS affixed to the car-operating panel or other locations inside or outside the elevator cab.

7) Car Operating Stations must be approved by consultant prior to contractor ordering fixtures.

CAR RIDING LANTERN

1) **Column Mounted Car Riding Lantern**: A new tamper resistant, arrows thru engraved, clear epoxy filled, car-riding lantern shall be installed in the elevator cab and located in the entrance. The lantern bars, when illuminated, will indicate the intended direction of travel. The lantern will illuminate and a signal will sound when the car arrives at a floor where it will stop. The lantern shall remain illuminated until the door(s) begin to close.

2) **Specific Style of Car Riding Lantern:** The car riding lanterns (directional lanterns) shall be as identified below:

a. Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): Car riding lantern fixture by Innovation Industries, "Prestige Series" Stainless Steel #4 brushed finish, or pre-approved equal.

b. Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A"): Car lantern fixture by Monitor Controls, "Imperial Series" #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal.

c. Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): Car lantern fixture by Monitor Controls, "Imperial Series" #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal.

3) Car Riding Lanterns must be approved by consultant prior to contractor ordering fixtures.

CAR TOP LIGHTING & CAR TOP INSPECTION STATION

1) **Car Top Lighting**: The elevator shall be provided with lighting and a duplex receptacle fixture on the car top. The lighting shall be permanently connected, fixed, or portable, or a combination thereof, to provide an illumination level of not less than 100 lx (10 fc) measured at the point of any elevator part or equipment, where maintenance or inspection is to be performed from the car top. All lighting shall be equipped with guards. The light switch shall be accessible from the landing when accessing the car top.

2) **Car Top Inspection Station**: Provide a new car top inspection station with an "emergency stop" switch and constant pressure "up-down" direction buttons to make the normal operating devices inoperative and give the inspector complete control of the elevator. Car top Inspection unit manufactured by Vator Accessories, Inc., (630) 876-8370, Nylube Products Company, LLC. (248) 852-6500, Monitor Controls, or equal. Mount the car top inspection station as required by ASME A17.1 Safety Code for Elevators and Escalators.

a) When the elevator is on inspection operation or when the hoistway access switch has been enabled, a continuous audible signal, audible at the location where the operation is activated shall sound when the "FIRE RECALL" switch is in the "ON" position or when the fire alarm initiating device is activated to alert the operator of an emergency.

b) Car Top Inspection Station must be approved by consultant prior to contractor ordering fixtures.

DOOR OPERATION

1) **New Door Operator**: Provide a direct current motor driven heavy duty door operator as detailed below:

a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): Provide and install a UNITEC AT400 Door Operator or pre-approved equal door operator.

b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A"): Provide and install a OEM ThyssenKrupp Linear Door Operator, UNITEC AT400 Door Operator or pre-approved equal door operator.

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): Provide and install a OEM ThyssenKrupp Linear Door Operator, UNITEC AT400 Door Operator or pre-approved equal door operator.

d) Door operator shall be a closed loop, microprocessor based system. The door operator will facilitate smooth operation under varying environmental influences such as, temperature, wind, friction, and component variation. The processor will monitor the

door's actual position and velocity compared to its desired position and velocity. If variations are detected in the profile the command will be automatically corrected. The Closed Loop Door Operator control system shall not require machine room door control equipment.

e) Door operation to comply with A17.1 requirements for Restricted Opening of Hoistway or Car doors of passenger elevator.

f) Door Operator shall be provided with adjustable parameters, at a minimum, for the following:

i) Adjustable Parameters in the closing cycle for high speed, final speed, nudging speed, acceleration, deceleration, and slow speed torque.

ii) Adjustable parameter for stall reversal – automatic reversal if the door meets an obstruction.

iii) Adjustable parameter for door reversal – to accomplish a quick but smooth reversal

g) .Door noise not to exceed 58 dBA.

h) Door control to open doors automatically when car arrives at a landing in response to a normal hall or car call.

i) Install door operator data plate as per A17.1 Safety Code for Elevators and Escalators.

j) Door operator must be mounted so completely isolated from the car top. Mounting to car stiles by brackets as configured by manufacturer of door operator will be accepted for isolation.

2) **Door Zone Lock**: Existing restricted door opening system that is in conformance with current requirements of A17.1 shall be retained and reutilized. Door zone lock system not in conformance with current requirements of A17.1 shall be replaced with new GAL LWZ-2 clutch and combination zone locking system or OEM clutch and zone locking system.

a) Intermediate flags shall be installed to so that when the car is outside the unlocking zone, as defined in A17.1, the hoistway doors or car doors cannot be opened more than 4 in. (102 mm) from inside the car. When the car is outside the unlocking zone, the car doors shall be openable from outside the car without the use of special tools.

3) **Door Clutch:** A new door vane or door retracting device shall be installed to operate with the interlock assemblies. New door clutch assembly shall be provided and installed; OEM, GAL, or preapproved equal.

4) **Door Protection Device**: New Door Protection Device shall be provided. Door protection shall be an infrared light screen type with a minimum of 154 criss-cross light beams. The Elevator Cab Door shall be provided with a new reopening device that will stop and reopen the car doors and hoistway door automatically should the doors become obstructed by an object or person. The beams shall project across the car opening detecting the presence of a passenger or object. If door movement is obstructed, the doors shall immediately reopen. A mechanical reopening device shall not be acceptable.

a) The light screen is to be totally immune to ambient light, including strobes, fluorescent, and direct sunlight (100,000 lux). Maximum allowable installed misalignment shall be plus or minus 30 degrees @ 3 feet. The receiver and light array cables shall be hi-flex

robotic grade, a minimum of 15 feet in length, connector on each end, and interchangeable when connected to the power supply.

b) Light beam and receiver arrays to operate independent of the power supply, allowing the use of any 18 – 25Vdc supply, and provide a continuously short-circuit protected NPN transistor output. The arrays shall incorporate Automatic Dynamic Gain Sensitivity Adjustment to compensate for severe misalignment, condensation, damaged or contaminated lenses, and provide automatic on-the-fly dynamic adjustment as the doors open and close.

c) The power supply shall be dual voltage input (120-240Vac, 50/60Hz), provide LED indicators for power applied and relay operation, simulator test button for beam break, and push-to-test button for manual operation of master control relay. Nudge feature to be field installable in standard power supply with accessory relay to operate in either the delayed nudge mode or redundant mode, switch selectable. Nudge feature also to incorporate buzzer with enable/disable switch, and delay timer adjustable from 5 to 45 seconds for nudge operation.

d) Provide nylon fasteners, which attach to array studs for mounting array to jam of side parting door. Molded tool for attaching fasteners to be included.

e) All configurations shall meet or exceed ADA requirements, be CE certified, and UL/cUL listed. Door protection will be per these specifications and be manufactured by Janus Elevator Products Inc. Model "Panachrome 3D" including green and red illuminating visual warning signals to warn users of door movement. The device shall illuminate GREEN when opening, RED when closing and flash RED a couple of seconds prior to closing. The safety edge shall be capable of projecting light beams across the entire opening and the 3D portion will project beams on a 45 deg angle out into the hoistway. The 3D protection zone should move with the doors, so that if a person or object enters the zone after the doors have begun to close, the doors shall stop, and then reverse to reopen. The doors shall remain open until the expiration of an adjustable time interval (3D Timeout option only) and then close automatically.

f) The Panachrome 3D shall be provided with Voice Annunciator. The Panachrome with Voice Annunciator option will provide audio cues for passengers who may not be able to see, or may fail to notice, visual cues of door movement. Customer selected messages such as "Doors are opening, safe to enter," and "Doors are closing, please use caution," are to factory pre-recorded for quick installation. Volume shall be controlled and adjusted on-site.

5) **Nudging Operation**: The doors shall remain open as long as the electronic detector senses the presence of a passenger or object in the door opening. If door movement is obstructed for a field programmable time, a buzzer will sound and the doors will close at reduced speed. If the infra-red door protection system detects a person or object while closing, the doors will stop and resume closing after the obstruction has been removed.

CAR ENCLOSURE

1) Existing elevator cabs shall be retained and reutilized.

a) Cab interiors at the two (2) existing Thomas Center elevators shall be upgraded by a Cab Interior Sub-Contractor to the Elevator Modernization Contractor (see Bid Alternates).

b) Elevator Modernization Contractor shall coordinate with Cab Interior Sub-Contractor to schedule the cab refurbishment work.

c) Elevator Modernization Contractor is responsible to provide schedule that allows for coordination of the cab interior refurbishment. This schedule will have all cab interior work performed prior to Elevator Modernization Contractor making final acceptance inspection and testing of this elevator.

d) Elevator Modernization Contractor is responsible for all required door adjustments required for Cab Interior Sub-Contractor to complete all cab modernization work; no additional charges will be allowed for any door adjustments.

e) Elevator Modernization Contractor shall be responsible for all work detailed in this section.

2) **Finish of Cab Cladding**:

a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): Cab & cab door cladding shall be Stainless Steel #4 brushed finish, or pre-approved equal.

b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A"): Cab & cab door cladding shall be #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal.

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): Cab & cab door cladding shall be #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal.

3) **Cladding of Cab Front**: Elevator Modernization Contractor shall be responsible for the following:

a) **Car Return Panel**: Install cladding material as detailed above and extend one piece to cover all existing car box openings in return panel and wrap around car return panel.

b) **Car Door Header Assembly**: Install cladding material as detailed above and extend one piece to cover all existing car box openings in car head jamb assembly.

c) **Car Strike Jamb**: Install cladding material as detailed above and extend one piece to cover all existing openings in car door strike jamb assembly.

4) **Car Door Panel:** Retain and reutilize.

a) Car doors shall have new cladding material installed as detailed above on door panel applied to each car door.

b) Existing laminate and binders shall be removed and new cladding installed. New cladding shall wrap around ends of each car door to present a smooth surface with no edges.

5) Cab Interior Renovations:

a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): Cab interior finishes will be retained and reutilized for all cab interior surfaces not identified differently in this specification.

b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A") & Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): Furnish and install new code compliant elevator interior finishes as follows:

i) **Flooring:** Cab interior company to remove all existing flooring prior to installing new approved interior finishes. The Owner (City of Gainesville) will then be responsible for furnishing and installing new selected finished flooring upon completion of installing new interiors.

ii) **Handrails:** Furnish and install new Satin Muntz 1½" tubular handrail on rear wall only, ends returned.

iii) **Wall Finishes:** Furnish and install Wilson Art Premium Laminate panels and applied hardwood moldings. Rear wall shall contain three vertical panels, center panel to be twice as wide as the left and right flanking panels. Each side wall shall contain two vertical panels, equal in width. All panels shall be faced with selected Wilson Art laminate. All panels shall contain one hardwood molding set above handrail height and two hardwood molding sets on each panel below handrail height. Seven (7) total vertical panels with applied moldings as indicated. All moldings shall be finished to match selected laminate and shall be back screwed through each panel and the panels applied to the shell walls with z-clips to allow for future removal/replacement if needed.

iv) **Reveals and Base:** All recessed reveals to be black laminate ½" vertically separating all panels and vertically in cab corners/car front area as needed. Exposed frieze area and 6" tall base to be black laminate. Base to have incorporated code required ventilation as needed.

v) **Ceiling:** Furnish and Install a new LED downlight ceiling faced with Satin Muntz. Ceiling face to be divided into six (6) sections separated by ¼" wide black painted reveals. Each section to contain an individual light fixture with two applied Harwood molding sets per panel, finished to match wall panels. Each fixture to contain a black trim bezel and Man-D-Tech Eye Beam LED bulbs to comply with code. Edge to be painted black to match ceiling reveals. Included is a low voltage driver unit to be mounted on car top. Emergency escape hatch shall be incorporated into ceiling based on existing location of escape hatch in elevator canopy and shall have hairline joints in ceiling finish. Edge of ceiling to be held approximately 1" from transom & centered between side walls.

6) Car Door Equipment:

a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): Existing Door Hangers, Sheaves, and Tracks for car doors shall be replaced with all new components. Provide sheave type two point galvanized suspension hangers and tracks for each car sliding door, product GAL or pre-approved equal.

i) Sheaves: Polyurethane tires with ball bearings properly sealed to retain grease.

ii) Hangers: Provide an adjustable slide to accommodate the up-thrust of the doors.

iii) Tracks: Drawn steel shapes, smooth surface and shaped to conform to the hanger sheaves.

iv) Door hangers, sheaves, interlocks and tracks shall be manufactured by GAL or pre-approved equal.

b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A"): Existing Door Hangers, and tracks for car doors shall be retained and reutilized. Existing door hangers, sheaves

and door guiding members shall be replaced with all new components for each car sliding door, product OEM, GAL or pre-approved equal.

i) Sheaves: Replace existing with new polyurethane tires with ball bearings properly sealed to retain grease.

ii) Replace all door gibs including all required primary door retainers.

iii) New slide guides shall be installed with fire tabs installed as per manufactures design. Bottom slide guides as manufactured by original manufacture, OEM replacement or preapproved equal.

c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): Existing Door Hangers, and tracks for car doors shall be retained and reutilized. Existing door hangers, sheaves and door guiding members shall be replaced with all new components for each car sliding door, product OEM, GAL or pre-approved equal.

i) Sheaves: Replace existing with new polyurethane tires with ball bearings properly sealed to retain grease.

ii) Replace all door gibs including all required primary door retainers.

iii) New slide guides shall be installed with fire tabs installed as per manufactures design. Bottom slide guides as manufactured by original manufacture, OEM replacement or preapproved equal.

d) New car door close contact switch including zone locking device shall be installed.

e) Provide new car door clutch with integrated door lock, door top adapter bars (if required) and hanger roller assembly.

7) **Cab Enclosure Vents**: Cab enclosure vents shall be verified to be code compliant. Openings for natural ventilation shall be installed in cove base with appropriate covers. Openings shall be appropriately sized and be guarded to prevent straight through passage in accordance to the applicable requirements of the current A17.1 safety code.

8) **Car Door Sills:** Existing Car Door sills shall be retained and reutilized. Existing Car Door sills shall be thoroughly cleaned and polished to present a bright finish.

9) **Car Top Exit**: Car top exit shall be verified that it is hinged or securely attached with a chain when in both the open and closed positions. If a chain is used, it shall be not more than 300 mm (12 in.) in length. The exit cover shall only be openable from the top of the car, where it shall be openable without the use of special tools.

10) **Car Top Exit Switch**: Car top escape panels shall have switch assemblies including all wiring to install proper safety circuit as required by A17.1 Safety Code for Elevators and Escalators.

11) **Car Fan**: Provide and install new 2 speed quiet run fan manufactured by Nylube securely mounted in ceiling with flush cover that prevents possible contact with fan blades.

12) **Car Emergency Lighting**: New emergency lighting, integrated in car operating panels as specified.

13) All openings left from removal of current car devices, which are not re-clad as detailed above, shall be filled to present a solid surface and covered with solid covers. Surface will have

coating that closely matches existing surface. All edges shall be finished in a manner that presents no sharp edges or corners.

CONTROL AND LANDING SYSTEM

1) **Elevator Control System:** New Motion Control Engineering Inc., Controller Model Motion 2000, GAL Galaxy, Smartrise SRH Hydraulic Controller or pre-approved equal. The elevator controller shall use a microprocessor based logic system and shall comply with all applicable elevator and electrical safety codes to include the following:

   a) Provide "automatic operation" as defined in the currently adopted edition of ASME A17.1 Safety Code for Elevators and Escalators.

   b) Motor starter to be solid-state, soft starter, seamlessly integrated into the controller. Starter shall be solid state with fault contactor to mechanically disconnect the line voltage from the motor if the starter detects a problem. Starter to have built in reverse phase sensor with diagnostic monitoring, current limit starting and be capable of bypassing SCR's once the motor is up to speed. Solid-state starter to provide soft starting control, motor overload protection, phase reversal and phase loss detection, open load detection, phase imbalance detection, shorted SCR detection and controller over-temperature detection. Motor starter to be supplied and installed by and as a part of the single controller cabinet assembly.

2) Programmable Logic

   a) All available programming options or parameters shall be field programmable, without need for any external device or knowledge of any programming languages. Programmable options and parameters shall be stored in nonvolatile memory. At a minimum, there shall be a 32-character alphanumeric display used for programming and diagnostics. Programmable parameters and options shall include, but are not limited to, the following:

      i) Number of Stops/Openings Served (Each Car)

      ii) Simplex/Duplex/Group

      iii) Single Automatic Pushbutton Selective Collective

      iv) Programmable Fire Code Options/Fire Floors (Main, Alternates)

      v) Serial Car Operating Panel Selection

      vi) Floor Encoding (Absolute PI)

      vii) Digital Position Indicators/Single Wire Position Indicators

      viii) Programmable CE Microcom floor labels

      ix) Programmable Door Times

      x) Programmable Motor Limit Timer

      xi) Programmable Car Fan and Light Timer

      xii) Programmable timer for Wye to Delta transitions

      xiii) Door Nudging, Automatic and Fire Operation

      xiv) External Car Shutdown Input (e.g., battery lowering device)

xv) External Low Oil Sensor Input

xvi) External Viscosity Control Input

xvii) Emergency Power

xviii) Parking Floors

xix) Lobby Floor

xx) Door Pre-opening

xxi) Hall or Car Gong Selection

xxii) Standard Security

xxiii) Integral Voice Annunciation

xxiv) High Speed Inspection Enable

xxv) Door behavior selections

xxvi) Door type selection

xxvii) Fault Bypass – Inspection Operation

xxviii) Fault Bypass – Automatic Operation

3) ADA Requirements

a) The elevator shall comply with ICC/ANSI A117.1, the American National Standard for Accessible and Usable Buildings and Facilities and the Florida Building Code, Chapter 11.

b) Leveling Accuracy: The controller shall have a self-leveling feature that shall automatically bring the car to floor landings within a tolerance of 0.25" (6.35 mm) or better under all loading conditions up to the rated load.

c) Hall Lanterns: The controller shall have outputs to drive the visible and audible signals that are required at each hoistway entrance to indicate which elevator car is answering a call. Audible signals shall sound once for up, twice for down. (In-car lanterns located in cars, visible from the vicinity of hall call buttons, and conforming to the above requirements, shall be acceptable.)

d) Car Position Indicators: The controller shall have a position indicator output to drive the required position indicator which shall indicate the corresponding floor numbers as the car passes or stops at a floor. An audible signal shall sound as the position indicator changes floors.

e) Voice Annunciation: The controller shall have a voice annunciator output to facilitate announcement of car direction and floor number.

4) Environmental Considerations

a) The elevator control shall be capable of operating within the following environmental conditions:

i) Ambient temperature: 32°F to 104°F (0°C degrees to 40°C degrees).

ii) Humidity: Non-condensing up to 95%

iii) Altitude: Up to 7500 feet (2286 m)

5) Building and System Configuration

a) The elevator controller shall be microprocessor based and designed specifically for elevator applications. Elevator and drive logic shall be implemented independently of safety functions.

b) Elevator logic shall be implemented to facilitate tight coordination between subsystems and enhance reliability. The implementation shall utilize a real-time, multi-tasking operating system to allow the processors to simultaneously execute elevator control logic, drive control logic, operator interface logic, and communication support.

c) The elevator controller shall have an independent safety system in order to implement safety features required by ASME A17.1 code. The safety system shall incorporate check redundant, multi-processor, multi-path, solid-state, ASME compliant implementation that meets CSA and CE standards.

d) The elevator controller shall be configured and packaged in such a way that external "jumpers" cannot be used (intentionally or unintentionally) while the elevator is running in any passenger mode of operation. Non-passenger modes of operation shall be provided, along with means to bypass safety functionality, to allow inspection testing and other setup and/or troubleshooting operations.

e) The elevator control logic configuration shall be fully field programmable. Changes in number of floors, I/O configuration, starter setup, eligibility etc. shall not require the replacement/reprogramming of EEPROMs or other storage devices. Further, changes in the controller configuration shall be user adjustable in the field.

6) Diagnostics

a) The control system shall provide comprehensive means of accessing the computer memory for elevator diagnostic purposes. It shall have permanent indicators for important elevator status conditions as an integral part of the controller.

b) The microprocessor boards shall be equipped with on-board diagnostics for ease of troubleshooting and field programmability of specific control variables. Field changes shall be stored permanently, using nonvolatile memory. The microprocessor board shall provide the features listed below:

i) On-board diagnostic switches and an alphanumeric display to provide user friendly interaction between the mechanic and the controller.

ii) An on-board event log shall store and display time-stamped events for diagnostic purposes. (Viewable only with monitoring software.)

iii) An on-board real time clock shall display the time and date and be adjustable by means of on-board switches.

iv) Field programmability of specific timer values (i.e., door times, etc.) may be viewed and/or altered through on-board switches and pushbuttons.

v) The elevator controller shall have extensive diagnostic capability. A built-in LCD display or equivalent shall allow access to major user functions and diagnostic features. The display shall be a multi-character, multi-line type with associated

keypad to allow users to enter information. The display shall show data and menus in readily understood character format. No numeric, hexadecimal, or binary codes are acceptable.

vi) Dedicated indicators shall be provided in a conspicuous location on the elevator controller to indicate important system statuses, such as when the safety string is made, when the door locks are made, when the elevator is on Inspection/Access, etc. In addition, other special or error conditions detected by the main processor or safety subsystem shall be displayed.

7) CAN Bus Connectivity

a) Circuit boards within the controller shall communicate through CAN Bus connections for reliable performance and simplified board replacement. Power for individual circuit boards shall also be distributed through the CAN Bus connection. Communication and power connection shall radiate from a central, multi-connection point such that single-point board failure shall not affect operation of other boards.

8) Universal I/O

a) Field I/O boards shall be universal in that 24V to 120V AC or DC connections shall be accepted without requirement for unique circuit boards for each. I/O boards shall provide built-in current limiting protection.

9) Intended Operation of Critical Components

a) Failure of any single magnetically operated switch, contactor, or relay to release in the intended manner; the failure of any static control device, speed measuring circuit, or speed pattern generating circuit to operate as intended; the occurrence of a single accidental ground or short circuit shall not permit the car to start or run if any hoistway door or gate interlock is unlocked or if any hoistway door or car door or gate contact is not in the made position. Furthermore, while on car top inspection or hoistway access operation, failure of any single magnetically operated switch, contactor or relay to release in the intended manner, failure of any static control device to operate as intended or the occurrence of a single accidental ground, shall not permit the car to move even with the hoistway door locks and car door contacts in the closed or made position.

10) Status Indicators

a) Dedicated permanent status indicators shall be provided on the controller to indicate when the safety string is made, when the door locks are made, when the elevator is operating at high speed, when the elevator is on independent service, when the elevator is on Inspection or Access, when the elevator is on fire service, when the elevator out of service timer has elapsed, and when the elevator has failed to successfully complete its intended movement. A means shall be provided to display other special or error conditions detected by the microprocessor.

b) Every field connection input or output shall have a dedicated LED such that no volt meter or other test equipment is required to see when and input or output is active.

11) Parking Floor Function

a) Parking floor: Each car shall be capable of individually parking on a designated floor after a predetermined time period. Any landing may be the parking floor. The car will go to the

parking floor when it is free of call demand. A Parking Delay Timer will cause a free car to wait for a short time before parking. The timer shall be adjustable, with a value between 0.0 minutes (no delay) and 6.0 minutes. The first free car will go to the first parking floor and the second car will stay at the last call answered.

12) Out of Service Timer

a) An out of service timer (T. O. S.) shall be provided to take the car out of service if the car is delayed in leaving the landing while calls exist in the system.

13) Motor Limit Timer

a) Motor limit timer function shall be provided which, in case of the pump motor being energized longer than a predetermined time, shall cause the car to descend to the lowest landing and park, open the doors automatically, and then close them. Calls shall be appropriate canceled and the car taken out of service automatically. Operation may be restored by cycling the main line disconnect, putting the car on inspection operation, or pressing the Fault Reset button. Door reopening devices shall remain operative.

14) Valve Limit Timer

a) A valve limit timer shall be provided which shall automatically cut off current to the down valve solenoids if they have been energized longer than a predetermined time. Calls shall be appropriate canceled and the car taken out of service automatically. Operation may be restored by cycling the main line disconnect, putting the car on inspection operation, or pressing the Fault Reset button. Door reopening devices shall remain operative.

15) High or Low Speed Inspection

a) A selection shall be provided on the controller to select high or low speed during access or inspection operation as long as contract speed does not exceed 150 feet per minute.

16) Door Operation

a) Door protection timers shall be provided for both opening and closing directions to protect the door motor and help prevent the car from getting stuck at a landing. The door open protection timer shall cease attempting to open the door after a predetermined time if the doors are prevented from reaching the open position. In the event that the door closing attempt fails to make up the door locks after a predetermined time, the door close protection timer shall reopen the doors for a short time. If, after a predetermined number of attempts, the doors cannot successfully be closed, the doors shall be opened and the car removed from service.

b) A minimum of four different door standing open times shall be provided. A car call time value shall predominate when only a car call is canceled. A hall call time value shall predominate whenever a hall call is canceled. In the event of a door reopen caused by the safety edge, photo eye, etc., a separate short door time value shall predominate. A separate door standing open time shall be available for lobby return.

c) If the doors are prevented from closing for longer than a predetermined time, door nudging operation shall cause the doors to move at slow speed in the closed direction. A buzzer shall sound during nudging operation.

17) Door Pre-opening

a) When selected, this option shall start to open the doors when the car is in final leveling, 3" (76.2 mm) from the floor. If pre-opening is not selected, the doors shall remain closed until the car is at the floor, at which time the doors shall commence opening.

18) Car and Hall Call Registration

a) Car and hall call registration and lamp acknowledgment shall be by means of a single wire per call, in addition to the ground and the power bus. Systems that register the call with one wire, and light the call acknowledgment lamp with a separate wire can be accommodated.

b) The user shall be able to register car calls via the on-board LCD display and keypad.

19) Fire Service Operation

a) Fire Phase I emergency recall operation, alternate level Phase I emergency recall operation and Phase II emergency in-car operation shall be provided according to latest applicable edition of ASME A17.1 and current Florida Statute 399.

20) Independent Service

a) Independent service operation shall be provided in such a way that actuation of a key switch in the car operating panel will cancel any existing car calls, and hold the doors open at the landing. The car will then respond only to car calls. Car and hoistway doors will only close with constant pressure on a car call pushbutton or door close button. While on independent service, hall arrival lanterns or jamb mounted arrival lanterns shall be inoperative.

21) Integral Voice Annunciation

a) The controller shall include, as an integral part of the controller, a computer voice annunciator. The contractor shall only need to furnish wiring to the elevator cab and a speaker. The annunciator shall announce the floor number, the intended direction of travel and audio cues for the door protection.

22) Leveling

a) The car shall be equipped with two-way leveling to automatically bring the car level at any landing, within the required range of leveling accuracy, with any load up to full load.

23) Test Switch

a) A controller test switch shall be provided. In the test position, this switch shall allow independent operation of the elevator with the door open function deactivated for purposes of adjusting or testing the elevator. The elevator shall not respond to hall calls and shall not interfere with any other car in a duplex or group installation.

24) Inspection

a) To enhance safety, an inspection switch, enable switch, and an up/down toggle switch shall be provided in the controller and on the car top to place the elevator on inspection operation and allow the user to move the car. Activation of the car top inspection switch shall render the controller inspection switch inoperative.

25) Uncanceled Call Bypass

a) A timer shall be provided to limit the amount of time a car is held at a floor due to a

defective hall call or car call, including stuck pushbuttons. Call demand at another floor shall cause the car, after a predetermined time, to ignore the defective call and continue to provide service in the building.

26) Anti-nuisance (Photo Eye)

a) The controller shall cancel all remaining car calls, if a user-determined number of car calls are answered without the computer detecting a change in the photo eye input (indicating that no one is passing through the car door).

27) Absolute Floor Encoding

a) The controller shall include absolute floor encoding, which upon power up, shall move the car to the closest floor to identify the position of the elevator.

28) Reflex 3.14 Landing System

1) Controller shall include the Reflex 3.14 leveling system that monitors oil temperature and adapt slowdown distance to load changes in the elevator to provide for significantly faster floor to floor time, reduced energy, and a cooler running power unit.

2) The landing system shall be mounted in a NEMA-1 enclosure to be installed on the elevator car top location.

29) Service Enhancements

a) The manufacturer shall make software updates for controller and/or group control available via Internet download, email attachment, or physical EEPROM shipment. Internet downloads and email attachment deliveries require an optional, hand-held user interface to facilitate software transfer from the user's PC to the elevator or group.

30) Viscosity Control

a) Viscosity control (valve design must allow the use of this option) shall cause the car to accomplish the following operation. If a temperature sensor determines the oil is too cold, and if there are no calls registered, the car shall go to the bottom landing and, as long as the doors are closed, the pump motor shall run without the valve coils energized to circulate and heat the oil to the desired temperature. In the event that the temperature sensor fails, a timer shall prevent continuous running of the pump motor.

31) Battery Lowering Device

a) Provide the Hydraulic Controller with a battery lowering device pre-wired, pre-tested and integrated into the standard enclosure for elevators not provided with emergency generator power.

32) Service Enhancements

a) The manufacturer shall make software updates for controller and/or group control available via Internet download, email attachment, or physical EEPROM shipment. Internet downloads and email attachment deliveries require an optional, hand-held user interface to facilitate software transfer from the user's PC to the elevator or group.

HALL STATIONS

1) **New Hall Stations, General**: Hall station shall be flush mounted and located adjacent to the entrance jamb. Buttons shall illuminate to indicate call has been registered at that floor for the indicated direction. Faceplates shall be finished as detailed below. Provide one sets of risers. Riser shall include 1 for elevator front.

2) **Specific Style of Hall Station Fixtures:** The hall station operating fixtures shall be as identified below:

   a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): All car and hall fixtures by Innovation Industries, "Prestige Series" Stainless Steel #4 brushed finish, or pre-approved equal. All pushbuttons to be tamper resistant, Innovation Industries PB 39, Flush Button with Illuminated Halo and Center Jewel or pre-approved equal. No adhesive type applied plates will be accepted at either car or hall stations. Halo to be Blue LED light source.

   b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A"): All car and hall fixtures by Monitor Controls, "Imperial Series" #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal. All pushbuttons to be tamper resistant, Monitor Controls, Model TR1100, Flat Button with Illuminated Halo and Center Jewel, Innovation Industries PB 39, Flush Button with Illuminated Halo and Center Jewel or pre-approved equal. No adhesive type applied plates will be accepted at either car or hall stations. Halo to be Blue LED light source.

   c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): All car and hall fixtures by Monitor Controls, "Imperial Series" #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal. All pushbuttons to be tamper resistant, Monitor Controls, Model TR1100, Flat Button with Illuminated Halo and Center Jewel, Innovation Industries PB 39, Flush Button with Illuminated Halo and Center Jewel or pre-approved equal. No adhesive type applied plates will be accepted at either car or hall stations. Halo to be Blue LED light source.

3) Hall stations shall be of one piece construction, flush mounted.

4) All push buttons to be tamper resistant Monitor Controls, Model TR1100, Flat Button with Illuminated Halo and Center Jewel, Innovation Industries PB 39, Flush Button with Illuminated Halo and Center Jewel or pre-approved equal.

5) Hall Stations shall be Stainless Steel #4 brush finish.

6) In case of fire use stair signs shall be engraved into the hall station panel with exact signage as per Florida Building Code. No adhesive type applied signage plates will be accepted at this hall station.

7) All hall and car push button assemblies shall include long life LED type lamps.

8) Each terminal station shall contain one illuminating push button and other applicable accessories.

9) No hoistway access switches will be required at the bottom terminal landing or at the top terminal landing as the rated speed is not greater than 150 FPM. Elevator Contractor shall verify that the distance between the top of the car and the sill is less than 35 in. If this distance is verified to be less than 35 inches, no hoistway access switches will be required at the top terminal landing.

10) Each intermediate station shall consist of two illuminating push buttons, one for the up direction and one for the down position.

11) Phase 1 Firefighter's Service key switch, with instructions, shall be incorporated into the hall station at the designated level. Fire Service instructions as per A17.1 Safety Code for Elevators and Escalators shall be engraved in the main floor hall station panel.

12) **Local Telephone Line Status Monitoring:** The telephone system for the elevators shall be compliant with the requirements of the A17.1b-2009 Safety Code for Elevators and Escalators Requirement 2.27.1.1.6 and will include a verification means as required by the A17.1 code. If the verification means determines that the telephone line or equivalent means is not functional, an audible and illuminated visual signal shall be activated. A minimum of one visual and one audible signal shall be provided for each group of elevators controlled by a "FIRE RECALL" switch.

13) **Floor Identification Plates:** Replace all door jamb plates at each floor. Jamb plates shall comply with Americans with Disabilities Act (ADA) and Florida Building Code 2010 requirements. Braille Jamb Plate finishes will match finishes of hall fixtures as detailed below:

    a) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): Braille Jamb Plates shall be Stainless Steel #4 brushed finish, or pre-approved equal.

    b) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A"): Braille Jamb Plates shall be #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal.

    c) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): Braille Jamb Plates shall be #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal.

14) **Fixture Approval**: Hall and car operating stations must be approved prior to ordering fixtures by contractor.

HALL POSITION INDICATOR

1) Elevator SN# 4647, Elevator # 1 (Old Library Bldg.): Hall Position Indicator fixture by Innovation Industries, "Prestige Series" Stainless Steel #4 brushed finish, or pre-approved equal.

    a) A new 2" electronic segmented digital position indicator shall be provided and mounted in a module for optimum viewing for each elevator. As the car travels, its' position in the hoistway shall be indicated by the illumination of the alpha/numeric character corresponding to the landing which the elevator is stopped or passing. The position indicator shall be provided at the first-floor landing with a faceplate mounted at a 20-degree angle for viewing. Faceplates shall match hall and car stations.

    b) The position indicator shall be installed either above the hoistway entrance assembly or adjacent to the door jamb. Position shall be determined for maximum visibility at the landing.

2) Elevator SN# 25165, Elevator # 1 (Thomas Center Bldg. "A"): Hall Position Indicator fixture by Monitor Controls, "Imperial Series" #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal.

    a) A new 180 Degree Position Indicator shall be provided and mounted in a module for optimum viewing for each elevator. As the car travels, its' position in the hoistway shall

be indicated by the illumination of the alpha/numeric character corresponding to the landing which the elevator is stopped or passing. Faceplates shall match hall and car stations.

b) The position indicator shall be installed above the hoistway entrance assembly and centered over the hoistway door opening.

3) Elevator SN# 23860, Elevator # 1 (Thomas Center Bldg. "B"): Hall Position Indicator fixture by Monitor Controls, "Imperial Series" #4 Brushed 60/40 Muntz/Bronze finish, or pre-approved equal.

a) A new 180 Degree Position Indicator shall be provided and mounted in a module for optimum viewing for each elevator. As the car travels, its' position in the hoistway shall be indicated by the illumination of the alpha/numeric character corresponding to the landing which the elevator is stopped or passing. Faceplates shall match hall and car stations.

b) The position indicator shall be installed above the hoistway entrance assembly and centered over the hoistway door opening.

4) Elevator Contractor shall provide detailed drawings and rendering of Hall Position Indicators.

5) Hall and car operating stations must be approved prior to ordering fixtures by contractor.

EXECUTION

1) **Elevator Contractor Responsibility**: The Elevator Contractor shall be responsible to the Owner for the acts, omissions and negligence of the Elevator Contractor's employees, Subcontractors and their agents or employees, and other persons or entities performing portions of the Work for or on behalf of the Elevator Contractor or any of its Subcontractors.

2) **Examination**:

a) Before starting elevator modernization, inspect hoistway, hoistway openings, pits and machine room, as constructed, verify all critical dimensions, and examine supporting structures and all other conditions under which elevator work is to be installed. Do not proceed with elevator modernization until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

b) Modernization constitutes acceptance of existing conditions and responsibility for satisfactory performance.

3) Elevator Contractor shall coordinate crane services, if required, for the removal the existing equipment from the machine rooms and placement of the new equipment in the machine rooms with building owner's representative.

4) **Scheduling**: Only one elevator hoistway at a time shall be turned over to the Elevator Contractor for modernization. Once the elevator hoistway is turned over to the Elevator Contractor for modernization work, including successful completion of all required inspections and tests, the City will not have use of the elevator until all work is completed.

a) Elevator Contractor shall be responsible for screening and protection of hoistway door openings and all other protections.

5) **Signage**:

a) The City of Gainesville facilities project representative, in accordance with this specification, will approve all signage in order to maintain consistent appearance for entire elevator installation.

b) All signage as required by current edition of the Florida Building Code, A17.1 Safety Code for Elevators and Escalators, NFPA 70 National Electrical Code and NFPA 72 Fire Alarm Code to be posted in elevator lobbies, fire alarm panels, disconnects, machine rooms and machine room doors.

c) All existing elevator signage shall be replaced by the Elevator Contractor in conformance with the Current edition of the Florida Building Code, A17.1 Safety Code for Elevators and Escalators, NFPA 70 National Electrical Code and NFPA 72 Fire Alarm Code requirements as a part of this specification.

6) **Installation**:

a) Install elevator systems components and coordinate repairs of hoistway wall construction.

b) Competent licensed elevator installation personnel in accordance with Florida Statute 399 and A17.1 Safety Code for Elevators and Escalators, manufacturer's installation instructions and approved shop drawings shall perform work.

c) Comply with the NFPA 70 National Electrical Code for electrical work required during installation.

d) Perform work with competent, skilled workmen under the direct control and supervision of the elevator manufacturer's experienced foreman.

e) Supply in ample time for installation by other trades, inserts, anchors, bearing plates, brackets, supports, and bracing including all setting templates and diagrams for placement.

f) Welded construction: Provide "Hot-Work" protocols and safety procedures for all welding Work to all parties and Owner prior to beginning the Work. Provide welded connections for installation of 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 B2.1 Standard Welding Procedure and Performance Qualification.

g) Coordination: Coordinate elevator work with the work of other trades, for proper time and sequence to avoid construction delays. Use benchmarks, lines, and levels designated by the Elevator Contractor, to ensure dimensional coordination of the work.

h) Install machinery, guides, controls, car and all equipment and accessories to provide a quiet, smoothly operating installation, free from side sway, oscillation or vibration.

i) Sound isolation: Mount rotating and vibrating elevator equipment and components on vibration-absorption mounts, designed to effectively prevent the transmission of vibrations to the structure, and eliminate sources of structure-borne noise from the elevator system.

j) Lubricate operating parts of system, including ropes, as recommended by the manufacturer.

7) **Data Plates & Tags**: Elevator Contractor shall be required to install all data plates as required by A17.1 Safety Code for Elevators and Escalators on complete elevator system including alteration and original equipment.

a) <u>Code Data Plates & Alteration code Data Plates: All data plates shall be manufactured and printed with proper data for each elevator by CodeDataPlate.com or approved equal.</u>

d) **Alteration Code Data Plate shall be provided to include hydraulic cylinder replacement that was performed as documented on cabinet of existing controller for Elevator SN# 4647, Elevator # 1 (Old Library Bldg.). Alteration was permitted on 5/21/2009 with cylinder replacement performed under the A17.1a-2005 edition of A17.1. Alteration requirement numbers for this alteration should be 8.7.3.23.3 & 8.7.3.24 with alteration code year to be A17.1a-2005.**

b) Cross Head Data Tags:

i) Cross Head Data Tags that are not completed shall have all information completed for Capacity, Gross Load and Speed.

ii) Required signs and data plates that are damaged or missing shall be repaired or replaced.

iii) No ink markers shall be used for any data plates or tags. All data plates, tags & miscellaneous signage shall be stenciled, etched or pre-printed.

8) **Field Quality Control:** The Elevator Contractor shall perform pre-testing of all required acceptance tests of the elevator system(s) prior to the scheduled Alteration Acceptance Testing and Inspection. The Elevator Contractor shall ensure the installation conforms to all applicable safety codes and contract requirements.

9) Acceptance Testing & Inspection:

a) **Acceptance Testing:** Upon completion of the elevator modernization perform and satisfactorily complete all acceptance tests as required by the State of Florida, AHJ (Authority Having Jurisdiction) and required by all applicable codes and governing regulations. Perform other tests, if any, as required by governing regulations or agencies.

b) Advise Owner, Elevator Consultant, and governing authorities in advance as required of dates and times tests are to be performed on the elevator.

c) **Acceptance Inspection:** The City of Gainesville has designated VTE Solution, as their consultant on this project.

i) The Elevator Contractor shall be responsible, in accordance with A17.1 Safety Code for Elevators and Escalators for all acceptance inspections for this elevator.

ii) Elevator Installer in accordance with A17.1 Safety Code for Elevators and Escalators, Inspection and Test Requirements will perform all acceptance tests for this elevator.

iii) Elevator Contractor must notify building owner and elevator consultant 5 days prior to inspection advising of the date and time of all inspections and tests.

iv) Elevator inspector other than Florida Bureau of Elevator Safety must be approved prior to inspection date by consultant.

v) **Alteration Acceptance Inspection Report:** At the conclusion of the alteration inspection of the elevator(s) the inspector shall provide a completed DBPR Form HR 5023-003 with signatures executed on the form.

10) **Keys for Elevator Key Switches:** Provide a minimum of two (2) keys per cylinder used on all key switches for a single elevator. If there is more than one elevator, two (2) additional keys per cylinder will be required for each additional elevator. Each numbered set of keys shall be identified with their function on a labeled plastic tag with a split ring for each numbered set.

11) **Adjusting**:

a) Make necessary adjustments of operating devices and equipment to ensure elevator operates smoothly and accurately.

b) The Elevator Contractor shall be required to perform and pass all required testing of all equipment as per A17.1 Safety Code for Elevators and Escalators and ASME A17.2.

12) **Cleaning**:

a) Elevator Contractor shall keep the premises and surrounding areas free from accumulation of waste materials or rubbish caused by its operations. Upon completion of the Work, the Elevator Contractor shall remove all waste materials, construction equipment and surplus materials. Elevator Contractor shall police the work area daily and any common area used by the Elevator Contractor each day and shall remove trash and debris from the work area and common area. Any trash that is stored on the common area shall be protected from wind so as to prevent trash being blown around the common area.

b) Elevator Contractor shall ensure that no hazardous conditions exist as a result of any Work, including the removal of nails in the parking area and walkway.

c) Elevator Contractor shall store all materials, supplies and equipment in a neat and orderly manner and dispersed to minimize fire hazards. The unloading of materials, supplies or equipment in the roadways or landscaped areas by vehicles, cranes or forklifts shall be coordinated at least 24 hours in advance with the Owner.

d) Before final acceptance, remove protection from finished surfaces and clean and polish surfaces in accordance with manufacturer's recommendations for type of material and finish provided.

e) For duration and/or completion of elevator work, remove tools, equipment, and surplus materials from site daily.

f) Clean equipment rooms and hoistway.

g) Remove trash and debris daily from premises.

13) **Protection**:

a) During all elevator work, or portion thereof, provide suitable protective coverings, barriers, devices, signs, or other such methods to protect elevator work from damage or deterioration. Protect all areas of work from public access or dangers including tripping or fall hazards. Maintain protective measures throughout construction. period.

14) **Demonstration**:

a) The Elevator Contractor shall make a final check of each elevator operation with the Elevator Consultant, and the Owner's representative present prior to turning each elevator over for use. The Elevator Contractor shall demonstrate that control systems and operating devices are functioning properly.

b) Instruct Owner's personnel in proper use, operations, and daily care or operation of elevator. Review emergency provisions, including emergency access and procedures to be followed at time of failure in operation and other building emergencies.

c) Train Owner's personnel in normal procedures to be followed in checking for sources of operational failures or malfunctions.

d) Make a final check of each elevator operation, with Owner's personnel present, immediately before date of substantial completion.

e) Demonstrate that control systems and operating devices are functioning properly.

f) Final Electrical Schematics and Drawings

g) Maintenance Requirements.

15) **Elevator Consultant's Punch-Out List Items**:

a) Complete all of the consultant's punch-out list items as may be required. The elevator consultant shall provide a review and written punch list of deficiencies. The elevator consultant shall verify one time that the items from the punch list are completed after notice by the Elevator Contractor. If the work is not complete and the consultant is required to make return visits, the Elevator Contractor shall be charged for consultant at a rate of $175.00 per hour including travel time for any additional return visits, reviews or work of any type.

END OF HYDRAULIC MODERINZATION SECTION