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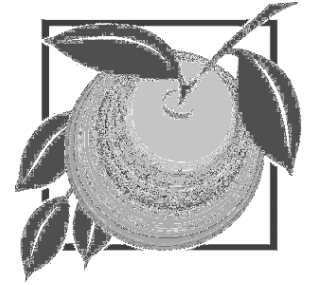
INVITATION FOR BIDS

FOR

INTERNAL OPERATIONS CENTRE II ELEVATOR MODERNIZATION

**PART H
TECHNICAL SPECIFICATIONS**

**PART H
Volume II**



Internal Operations Center | Elevator Modernization

Orange County Government
Orange County, Florida

CONSTRUCTION DOCUMENTS

SPECIFICATIONS

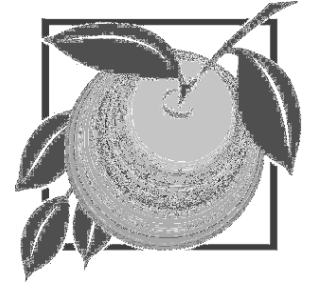
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Capital Projects
400 East South Street, Suite 500
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Internal Operations Center | Elevator Modernization

Orange County Government
Orange County, Florida

CONSTRUCTION DOCUMENTS

SPECIFICATIONS

June 19, 2018



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SECTION 00 01 00

INSTRUCTIONS TO CONTRACTOR

PART 1 GENERAL

1.01 EXAMINATION

- A. In order to discover and resolve conflicts or lack of definition which might create problems, Contractor must review Contract Documents, existing site conditions, and existing equipment specified to be retained for compatibility with its product prior to submitting Bid. Site review shall include, but not be limited to: adequacy of access, retained equipment, elevator hoistways, pits, machine rooms, overhead clearances, electrical power characteristics, structural supports, etc. Investigation and structural calculations required to determine compliance of existing elevator components including machine support beams, with ASME A17.1 are responsibility of Contractor. Owner will not pay for change to building structure, structural supports, mechanical, electrical, or other systems required to accommodate Contractor's equipment.
- B. Submission of Bid is considered evidence that Contractor has visited and is conversant with the site facilities, site conditions, requirements of the Contract Documents, pertinent state and local codes, state of labor and material markets, and has made due allowance in his Bid for all contingencies. Should Contractor's investigation of site conditions or local codes or rules reveal requirements contrary to Contract Documents, or if Contractor finds any discrepancies or omissions from Contract Documents, or if Contractor is in doubt as to their meaning, it shall contact the Owner for clarification at least ten (10) working days prior to Bid due date.
- C. No oral explanation will be made and no oral instructions will be given before Bid due date. Contractor shall act promptly and allow sufficient time for a reply to reach it before submission of its Bid. Any required interpretation or supplemental instructions will be issued in the form of an addendum to the specifications and forwarded to all Contractors.
- D. Provide everything necessary for and incidental to the satisfactory completion of work required by Contract Documents. All required preparations and hoisting and movement of equipment, or removal of existing equipment shall be the responsibility of Contractor.

END OF SECTION

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SECTION 00 16 00
MATERIAL AND HANDLING

PART 1 GENERAL

1.01 SITE CONDITION INSPECTION

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

1.02 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

1.03 INSTALLATION REQUIREMENTS

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

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1.04 MANUFACTURER'S NAMEPLATES

- A. Manufacturer's name plates and other identifying markings shall not be affixed on surfaces exposed to public view. This requirement does not apply to Underwriter's Laboratories and code required labels.
- B. Each major component of mechanical and electrical equipment shall have identification plate with the Manufacturer's name, address, model number, rating, and any other information required by governing codes.

1.05 COLORS OF FACTORY-FINISHED EQUIPMENT

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

1.06 MATERIALS AND FINISHES

- A. Steel:
 - 1. Sheet Steel (Furniture Steel for Exposed Work): Stretcher-leveled, cold-rolled, commercial quality carbon steel, complying with ASTM A366, matte finish.
 - 2. Sheet Steel (for Unexposed Work): Hot-rolled, commercial quality carbon steel, pickled and oiled, complying with ASTM A568/A568M-03.
 - 3. Structural Steel Shapes and Plates: ASTM A36.
- B. Stainless Steel: Type 316 complying with ASTM A240, with standard tempers and hardness required for fabrication, strength and durability. Apply mechanical finish on fabricated work in the locations shown or specified, Federal Standard and NAAMM nomenclature, with texture and reflectivity required to match Architect's sample. Protect with adhesive paper covering.
 - 1. No. 4 Satin: Directional polish finish. Graining directions in vertical dimension.
- C. Aluminum: Extrusions per ASTM B221; sheet and plate per ASTM B209.
- D. Fire-Retardant Treated Particle Board Panels: Minimum $\frac{3}{4}$ " thick backup for natural finished wood and plastic laminate veneered panels, edged and faced as shown, provided with suitable anti-warp backing; meet ASTM E84 Class "I" rating with a flame-spread rating of 25 or less, registered with local authorities for elevator finish materials.
- E. Paint: Clean exposed metal parts and assemblies of oil, grease, scale, and other foreign matter and factory paint one shop coat of standard rust-resistant primer. After erection, provide one finish coat of industrial enamel paint. Galvanized metal need not be painted.
 - 1. Paint Black: Pit channel, buffers, counterweight guards, cross head, machine block up beams.
 - 2. Paint Grey: Pit floor, machine room floor, car top, counterweights, counterweight frames.
 - 3. Paint Blue: Machine, motor
 - 4. Paint White: Machine room walls, machine room railings.
 - 5. Patch/Paint any area in which was damaged during project to return to condition prior to modernization work.

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- F. Prime Finish: Clean all metal surfaces receiving a baked enamel paint finish of oil, grease, and scale. Apply one coat of rust-resistant primer followed by a filler coat over uneven surfaces. Sand smooth and apply final coat of primer.

END OF SECTION

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SECTION 01 11 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. When the titles such as Engineer, Project Engineer, or Owner are used throughout the specification, this implies Orange County as property owner and/or an officially appointed County Representative.

1.2 PROJECT DESCRIPTION

- A. Performance of all tasks specified in the contract documents shall be the responsibility of the contractor unless specified otherwise.

1.3 SCOPE OF WORK

A. Summary Of Work:

- 1. Electrical:
 - a. To disconnect existing elevator power, cab-light power, and fire alarm interface to prepare for replacement.
 - b. Reconnect new elevator power, cab-light power, and fire alarm interface.
 - c. Replace Elevator Pit and machine room receptacles and lighting as specified.
 - d. Replace Elevator disconnects as specified.
 - e. Reconnect and provide any additional fire alarm programming and devices as specified.
- 2. Modernize 2 Hydraulic elevators (Summary)
 - a. New Power Unit
 - b. New Controller
 - c. New Car Operating Panels
 - d. New Hall Stations
 - e. New Lanterns and Signal devices
 - f. New Door Equipment as specified.
 - g. New Inspection Car Top Station
 - h. New Cab Interior work as specified
 - i. Conform to the Most Applicable Stringent Codes.
- 3. Provide all labor, engineering, tools, transportation, services, supervision, materials, and equipment necessary for and incidental to satisfactory completion of required work as indicated in Contract Documents.
- 4. Provide all required staging, hoisting, and movement of new equipment, reused equipment, or removal of existing equipment.
- 5. Applicable conditions of Owner's General, Special, and Supplemental Conditions.
- 6. Prime contracts are defined below and each is recognized to be a major part of required work to be performed concurrently in close coordination with work of other Contractors.
- 7. Scope of Contract includes, but is not limited to, the following:
 - a. Coordination, scheduling, and management of work of component suppliers and subcontractors.
 - b. Modernize or furnish and install equipment as specified utilizing existing and/or modified hoistways and machine rooms or newly constructed hoistways and machine rooms.
 - c. Specific item of required work which cannot be determined to be included in another contract is thereby determined to be included in prime contract.
 - d. Coordinating with and assisting all subcontractors. No additional fees will be

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accepted for coordination and assisting subcontractors.

1.4 CONTRACTOR RESPONSIBILITIES

- A. The contractor shall have all submittals approved by the Engineer and accepted by the Owner prior to the start of active construction.
- B. The contractor shall have all equipment and material onsite prior to the start of active construction.
- C. The contractor shall submit to the Owner prior to the project pre-construction meeting the following:
 - Schedule of Values
 - Construction Schedule
 - Submittal Schedule
 - Emergency Telephone List including subcontractors and suppliers
- D. The contractor shall field verify existing conditions of construction prior to start of active construction.
- E. The contractor shall coordinate with the Owner on the operation of the existing fire alarm system prior to the start of active construction. There shall be an action plan for the operation of the fire alarm system during construction submitted by the contractor to the Owner for acceptance. This action plan shall be in place prior to the start of active construction. Any false fire alarms that occur during construction and deemed by the Owner to be the fault of the contractor, the contractor shall pay all costs incurred from the local fire department for responding to a false alarm.
- F. The contractor is responsible for moving furniture and/or equipment if necessary to perform the work included in the contract. The contractor is responsible for placing the furniture and/or equipment back in its original location. The contractor is responsible for any damages to furniture, equipment, etc., which occur during construction. The contractor shall provide protection for floors, walls, furniture, equipment and any other items that may be subject to damage during the construction periods and will be required to repair or replace to original or better condition.
- G. The contractor shall coordinate with the Owner on the operation of the security alarm system prior to the start of active construction. The contractor shall submit an action plan for operation of the security alarm system during construction to the Owner for acceptance prior to start of active construction. This action plan shall be in place prior to the start of active construction. Any false security alarms that occur during construction and deemed by the Owner to be the fault of the contractor, the contractor shall pay all cost incurred from the local police and/or sheriff department for responding to a false alarm.
- H. The contractor shall take digital pictures or video of pre-existing conditions of the interior and exterior of the building prior to the start of active construction. Failure to provide digital pictures or video prior to start of construction places the responsibility on the Contractor to complete the necessary replacement, repairs, and/or cleaning as determined by the Owner, at no additional cost to the Owner. One CD copy of digital pictures or video of the existing site conditions shall be submitted to the Owner.
- I. The contractor shall at all times maintain daily cleanup of construction areas. Costs for work areas that are not cleaned by the contractor will be cleaned by the Owner and those costs shall be charged back to the contractor via change order.
- J. The contractor shall provide a construction schedule to the Owner's Project Manager prior to the pre-construction meeting.
- K. The contractor shall update the construction schedule weekly and submit it to the Owner's

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Project Manager for review.

L. Elevator Contractor's duties include the following:

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

1.5 WORK UNDER OTHER CONTRACTS

- A. Separate contracts may be issued to perform certain construction operations at the site. The contractor of this project will allow reasonable access and coordination to the other contractor/s.

1.6 WORK SEQUENCE

- A. The facility shall remain occupied and operational while work is in progress. All work shall be performed during normal business hours. Normal business hours are defined as 7:00 a.m. to 5:00 p.m. Monday thru Friday unless the work impacts the normal operation of the facility, at which point the work shall be scheduled outside of normal business hours at no additional cost to the facility. Material and equipment deliveries shall be made during normal business hours.

1.7 CONTRACTOR USE OF PREMISES

- A. General: During the construction period, the contractor shall have full use of the premises for construction operations, including use of the site. The contractor's use of the premises is limited only the Owner's right to perform construction operations with its own forces or to employ separate contractors on portions of the project.
- B. General: Limited use of the premises to construction activities in areas indicated within the limit of the premises. The Contractor may only use portion(s) of the site for storage or work areas only with prior approval from Orange County Project Manager.
1. Confine operations to areas within Contract limits indicated on the Drawings. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
 2. Keep driveways and entrances serving the premises clear and available to the Owner and the Owner's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
 3. Burial of Waste Materials: Do not dispose of organic and hazardous material on site, either by burial or by burning.
 4. Where appropriate, maintain the existing building in a watertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.
 5. Confine construction operations to the areas permitted by the contract documents and

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- other Owner directives.
6. Provide protection and safekeeping of material and equipment stored on premises.
 7. Contractor will move any stored material and equipment, which interfere with operations of the Owner or other contractors at no additional cost to the Owner.
 8. Comply with Owner's requirements for ingress and egress procedures, prohibitions against firearms, procedures for transportation of workers, safety and fire prevention requirements and all applicable pollution control requirements. Refer to the following reference requirements:
 - a) Orange County Safety and Health Manual
<http://www.orangecountyfl.net/VendorServices/OrangeCountySafetyandHealthManual.aspx>
 - b) Orange County Policy Manual page 96 regarding Firearms
<http://www.orangecountyfl.net/portals/0/resource%20library/employment%20-%20volunteerism/Policy%20Manual.pdf>
 9. Contractor to require all employees and subcontractors to wear non-objectionable clothing; prohibit revealing clothing and articles of clothing with offensive writings displayed. The contractor shall require offending personnel to leave the premises until such clothing is changed.
 10. Contractor employees and subcontractors will not fraternize with County employees or the general public during the entire construction period.
 11. Use of sound equipment (such as boom boxes, stereos, radios, etc.) is not allowed.
 12. Contractor and their personnel shall abide to Orange County Tobacco free policy while on any Orange County Convention Center property. This policy shall apply to building, parking lots, parks, break areas and worksites. Tobacco is defined as tobacco products, including but not limited to: Cigars, cigarettes, pipes, chewing tobacco and snuff. Failure to abide by the policy may result in civil penalties levied under Chapter 386, Florida Statutes and/or Contract enforcement remedies. Refer to the following documents:
 - a) Orange County Smoking Policy:
<http://www.orangecountyfl.net/Portals/0/resource%20library/employment%20-%20volunteerism/Employee%20Handbook.pdf>
 13. Conduct that is disrespectful, abusive or otherwise objectionable to the Owners' employees or general public will not be allowed at any time during the construction period. Repetitive complaints and violations of the requirements listed above will be cause for dismissal and or permanent removal of offending personnel from the project.
 14. Contractor to coordinate with the Owner the site location for storage of equipment, machinery, materials, tools and a construction waste dumpster.
 15. Contractor shall at all times keep the premises free of all waste or surplus materials, rubbish and debris, which is caused by contractor employees or subcontractors resulting from their work. Contractor shall maintain a safe work environment to all building occupants during the construction period.

1.8 SECURITY AND IDENTIFICATION

- A. The building shall be secured from unwarranted entry at the end of each workday.
- B. All costs for background investigations will be Contractor's responsibility. The County shall have the right to request any additional investigative background information including, but limited to, the employment record, Right-To-Know records, E-Verify system records (if the Contractor uses this service as a means to determine employment eligibility, available through www.uscis.gov), training records, payroll records, position for which hired including site location of any personnel assigned to perform the services. The Contractor shall furnish,

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in writing, such information to the extent allowed by law, prior to commencement of services. The County reserves the right to conduct its own investigation of any employee of the Contractor.

- C. Background Checks for the contractor’s staff must be approved by Orange County’s Security team prior to working in any County facility. Contractors are responsible for obtaining the necessary forms for background checks for work at Orange County. All contractors’ staff background checks will be sent to the Orange County Project Manager for approval.
- D. For security purposes and to maintain privacy, please submit a FDLE Background Checks via e-mail the subject line of the email must contain the following *****EXEMPT*****
- E. Orange County will inform the contractor of their Background Check results. Upon Background Check approval, the contractor’s staff shall arrange an appointment with the Orange County staff to obtain an Orange County photo ID badge. An affidavit of Identity form (issued by the contractor) and a State of Florida ID or Drivers License will be required.
- F. Contractor’s employees will not be allowed in Orange County facilities without completed and approved background investigations.
- G. Work hours will be scheduled around business activity. Business activity is considered to be Orange County office/administrative staff located in or adjacent to construction/renovation site or Orange County Clients renting convention space located in or adjacent to construction/renovation site.
- H. Private Security Vendors:
 - 1. All non-escorted personnel (vendors and/or contractors) with access to any Orange County Sheriff’s Office facility(s) will have a background check **AND** will be fingerprinted by a member of the Orange County Sheriff’s Office, Facilities Security Section or designee, prior to the start of work. The vendor and/or contractor being checked must meet the Orange County Sheriff’s Office, “Access Criteria”. The final decision to grant or deny access to any Orange County Sheriff’s Office Facility will come from the Facilities Security Section Lieutenant.
 - 2. The perpetration of any act that would constitute a felony or misdemeanor criminal offense, **whether criminally prosecuted or not**, will be reviewed and could be cause for disqualification. Multiple offenses of ANY crimes generally result in a recommendation to disqualify.

VENDOR AND CONTRACTORS CRITERIA

CRIMES	FELONY	MISDEMEANOR
WEAPONS RELATED	NO ACCESS	NO ACCESS
SEXUAL RELATED	NO ACCESS	NO ACCESS
FALSE STATEMENTS OR CRIMES OF MORAL TURPITUDE	NO ACCESS	NO ACCESS
DRUG SALES OR DISTRIBUTION	NO ACCESS	NO ACCESS
POSSESSION OF DRUGS	>5 YEARS = YES	>2 YEARS = YES
BATTERY	NO ACCESS	>5 YEARS = YES
ASSAULT	NO ACCESS	>5 YEARS = YES
THEFT	NO ACCESS	>5 YEARS = YES
ALCOHOL RELATED	NO ACCESS	>2 YEARS = YES
TRESPASSING	NO ACCESS	>2 YEARS = YES

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RESISTING THE POLICE	NO ACCESS	>5 YEARS = YES
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*** This list is not all inclusive ***

Requirements: Full name – first, last, and middle initial
Complete social security number
Driver's license number
Date of birth

1.9 OWNER OCCUPANCY

- A. Owner Occupancy: The Owner will be occupying the building during construction. Normal occupancy hours are 7:00 a.m. to 6:00 p.m. Monday through Friday. The contractor is to coordinate with the Owner's representative for areas in the building that work can be performed on during normal business hours. Work performed after normal business hours can be done provided the area where work is done is fully operational and back in original condition prior to beginning of the next business day. Such placing of equipment and partial occupancy shall not constitute acceptance of the total work.
1. A Certificate of Substantial Completion will be executed for each specific portion of the Work to be occupied prior to Owner occupancy.
 2. Obtain a Certificate of Occupancy from local building officials prior to Owner occupancy.
 3. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy, the Owner will provide operation and maintenance of mechanical and electrical systems in occupied portions of the building.

1.10 DISTRIBUTION OF RELATED DOCUMENTS

- A. The Contractor is solely responsible for the distribution of ALL related documents/drawings to ALL appropriate vendors/subcontractors to ensure proper coordination of all aspects of the project and its related parts during bidding and construction.

1.11 CONTRACT DOCUMENT FILE

- A. Copies of the Contract Documents, Plans, Specifications, Addenda, Change Orders, Engineers Supplemental Instructions, approved Shop Drawings, Substitution Acceptances, etc. shall be placed and maintained at the project site by the Contractor throughout the entire contract period. These said documents shall be filed in a manner that allows for ease of retrieval. Documents shall be made available to the Engineer and the County's representatives throughout this same period.

1.12 CONCURRENT MODERNIZATION WORK AND BUILDING OPERATION

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

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all hazards in accordance with OSHA Standards due wholly or partially to its operations.

PART 2 - PRODUCTS

2.1 ASBESTOS FREE MATERIAL

- A. Contractor shall provide a written and notarized statement on company letterhead(s) to certify and warrant that ONLY ASBESTOS FREE MATERIALS AND PRODUCTS were provided AS REQUIRED BY THE Engineer. Such statement shall be submitted with the final payment request. Final payment shall not be made until such statement is submitted. Contractor agrees that if materials containing asbestos are subsequently discovered at any future time to have been included in the construction, the Contractor shall be liable for all costs related to the redesign or modification of the construction of the project so that materials containing asbestos are removed from the facility. If construction has begun or has been completed pursuant to a design that includes asbestos containing materials, the Contractor shall also be liable for all costs related to the abatement of such asbestos.

PART 3 - EXECUTION (Not applicable).

END OF SECTION 01 11 00

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SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.0 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and supervisory requirements necessary for project coordination including, but not necessarily limited to:
 - 1. Coordination
 - 2. Administrative and supervisory personnel
 - 3. General installation provisions
 - 4. Cleaning and protection
- B. Progress meetings, coordination meetings and Pre-installation conferences are to be included.
- C. Requirements for the Contractor's Construction Schedule are included in Section 01 33 00 "Submittal Procedures".

1.3 COORDINATION

- A. Coordination: Coordinate construction activities included under various Sections of these Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specification that are dependent upon each other for proper installation, connection, and operation.
 - 1. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
 - 2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required: notices, reports, and attendance at meetings.
 - 1. Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Schedules
 - 2. Installation and removal of temporary facilities
 - 3. Delivery and processing of submittals

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4. Progress meetings
 5. Project close-out activities
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
1. Salvage materials and equipment (if any) involved in performance of, but not actually incorporated in, the Work.
- E. Lack of coordination as specified in this and other sections of the contract documents are in grounds for assessment of back charges and/or termination in order to remediate the situation.

1.4 SUBMITTALS

- A. Coordination Drawings: Prepare and submit coordination Drawings where close and careful coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space availability necessitates maximum utilization of space for efficient installation of different components.
1. Show the interrelationship of components shown on separate Shop Drawings.
 2. Indicate required installation sequences.
 3. Comply with requirements contained in Section "Submittals".
- B. Staff Names: At the Preconstruction Conference submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.
1. Post copies of the list in the project meeting room, the temporary field office, and each temporary telephone.

PART 2 ELEVATOR CONTRACTOR INFORMATION

2.01 APPLICABLE CODES

- A. Compliance with Regulatory Agencies: Comply with most stringent applicable provisions of following Codes, laws, and/or Authorities, including revisions and changes in effect:
1. Safety Code for Elevators and Escalators, ASME A17.1
 2. Guide for Inspection of Elevators, Escalators, and Moving Walks, ASME A17.2
 3. Elevator and Escalator Electrical Equipment, ASME A17.5
 4. National Electrical Code, NFPA 70
 5. Americans with Disabilities Act, ADA and Florida Accessibility Codes
 6. Local Fire Authority
 7. Requirements of most stringent provision of local applicable building code.
 8. Life Safety Code, NFPA 101
 9. Uniform Federal Accessibility Standard, UFAS

2.02 STAGING AREA

- A. One parking space will be provided for a storage container provided by Contractor. Parking is first come first served.

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2.03 WORK PHASE

- A. Perform work by removing only one elevator from service at a time with the exception for testing and interfacing purposes which shall be performed during afterhours per the Owner's approval.

2.04 OCCUPANCY AND WORK BY OTHERS

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

PART 3 EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.
- D. Provide attachment and connection devices and methods necessary for securing work. Secure work true to line and level. Allow for expansion and building movement.
- E. Visual Effects: Provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to Project Manager for final decision.
- F. Recheck measurements and dimensions, before starting each installation.
- G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible

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material as necessary to prevent deterioration.

- H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- I. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Project Manager for final decision.

3.2 CLEANING AND PROTECTION

- A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- B. Clean and maintain completed construction as directed by the Project Manager and as frequently as necessary to ensure its integrity and safety through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where the applicable, such exposures include, but are not limited to, the following:
 - 1. Excessive static or dynamic loading
 - 2. Excessively high or low temperatures
 - 3. Excessively high or low humidity
 - 4. Air contamination or pollution
 - 5. Water
 - 6. Solvents
 - 7. Chemicals
 - 8. Soiling, staining and corrosion
 - 9. Rodent and insect infestation
 - 10. Combustion
 - 11. Destructive testing
 - 12. Misalignment
 - 13. Excessive weathering
 - 14. Unprotected storage
 - 15. Improper shipping or handling
 - 16. Theft
 - 17. Vandalism

END OF SECTION 01 31 00

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SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including:

1. Contractor's Construction Schedule
2. Submittal Schedule
3. Daily Construction Reports
4. Shop Drawings
5. Product Data
6. Samples

- B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

1. Permits
2. Applications for Payment
3. Performance and Payment Bonds
4. Insurance Certificates
5. List of Subcontractors with start and finish dates (update as necessary)
6. Schedule of Values
7. Construction Schedule

1.3 ELECTRONIC SUBMITTAL PROCEDURES

- A. General: Submittals shall be submitted electronically directly to the Engineer from the General/Mechanical/Electrical Contractor.

1. **All shop drawings and other submittals as specified herein, shall be submitted in electronic format.** All electronic CAD generated drawings shall be in Acrobat PDF format and all product data or other information shall be submitted in Acrobat PDF format. Coordinate with Engineer prior to submitting. All electronic submittals shall be posted to the Engineer's FTP site. Information regarding the username and password shall be distributed to all parties prior to the pre-construction meeting.

- B. Electronic copies of CAD drawings made from the Construction/Contract Documents will not be provided by Engineer without a written indemnification. Indemnification form will be provided by the Engineer at Pre-Construction Meeting to the General/Mechanical/Electrical Contractor upon written request.

- C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

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1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Project Manager reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 3. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.
 - a. Allow two weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Project Manager will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow two weeks for reprocessing each submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the Work to permit processing.
- D. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Engineer.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 221116.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 221116.01.A).
 - 2) Where multiple products are shown, highlight/circle or identify product intended to be used
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
- E. Contractor shall be responsible for cost of re-review of rejected submittals, shop drawing, etc. Costs for re-review shall be reimbursed to the County by deducting the cost from the

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Contractors monthly progress payments. Costs to be determined by applying the consultants standard billing rates, plus 10% handling by the County.

- F. Substitution request to specified products will be made within 30 days of Notice to Proceed. After the 30 day period, no requests for substitutions from the Contractor will be considered.
 - 1. Substitution submitted within the first 30 days will have product data from specified and requested substitute submitted together and demonstrate better quality, cost savings if of equal quality, or show benefit to the County for excepting the substitute.
- G. Once electronic submittals are approved or approved as noted, they will be transmitted to the owner.

1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Critical Path Method (CPM) Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule.
 - 1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the work as indicated in the Schedule of Values.
 - 2. Within each time bar, indicate estimated completion percentage in 10 percent increments. As work progresses, place a contrasting mark in each bar to indicate Actual Completion.
 - 3. Prepare the schedule on a sheet, series of sheets, stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
 - 4. Secure time commitments for performing critical elements of the work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the work.
 - 5. Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment request and other schedules.
 - 6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Engineer's procedures necessary for certification of Substantial Completion.
- B. Phasing: Provide notations on the schedule to show how the sequence of the work is affected by requirements for phased completion to permit work by separate Contractors and partial occupancy by the Owner prior to Substantial Completion.
- C. Work Stages: Indicate important stages of construction for each major portion of the work, including testing and installation.
- D. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the work. Indicate where each element in an area must be sequenced or integrated with other activities.
- E. Cost Correlation: At the head of the schedule, provide a two item cost correlation line, indicating precalculated and actual costs. On the line show dollar-volume of work performed as the dates used for preparation of payment requests.

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1. Refer to Section Applications for Payment for cost reporting and payment procedures.
- F. Distribution: Following response to the initial submittal, print and distribute copies to the Engineer, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the project meeting room and temporary field office.
 1. When revision are made distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- G. Schedule Updating: Revise the schedule monthly or activity, where revisions have been recognized or made. Issue the updated schedule concurrently monthly pay request.

1.5 SUBMITTAL LOG

- A. After development and acceptance of the Contractor's construction schedule, prepare a complete log of submittals.
 1. Coordinate submittals log with the list of subcontracts, schedule of values and the list of products as well as the Contractor's construction schedule.
 2. Prepare the log in chronological order; include all submittals required. Provide the following information:
 - a. Scheduled date for the first submittal
 - b. Related Section number
 - c. Submittal category
 - d. Name of subcontractor
 - e. Description of the part of the work covered
 - f. Scheduled date for resubmittal
 - g. Scheduled date for the Engineer's final release or approval.
 3. All submittals must be received within the first 25% of contract time.
- B. Distribution: Following response to initial submittal, print and distribute copies to the Project Manager, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the project meeting room and field office.
 1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- C. Log Updating: Revise the log after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

1.6 DAILY CONSTRUCTION REPORTS

- A. Prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Project Manager at weekly intervals:
 1. List of subcontractors at the site
 2. Approximate count of personnel at the site
 3. High and low temperatures, general weather conditions
 4. Accidents and unusual events
 5. Meetings and significant decisions

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6. Stoppages, delays, shortages, losses
7. Meter readings and similar recordings
8. Emergency procedures
9. Orders and requests of governing authorities
10. Change Orders received, implemented
11. Services connected, disconnected
12. Equipment or system tests and start-ups
13. Partial completions, occupancies
14. Substantial Completions authorized

1.7 SHOP DRAWINGS

- A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered a Shop Drawings and will be rejected.
- B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:
 1. All required dimensions
 2. Identification of products and materials included
 3. Compliance with specified standards
 4. Notation of coordination requirements
 5. Notation of dimensions established by field measurement
 6. Sheet Size: Except for templates, patterns and similar full-size Drawings on sheets at least 8" x 11" but no larger than 24" x 36".
 7. Number of Copies: Submit one (1) electronic copy of each submittal to the County's Representative, unless copies are required for operation and maintenance manuals. Submit one (1) electronic copy where copies are required for operation and maintenance manuals. Engineer will retain 1 electronic copy. Mark up and retain one returned electronic copy as a Project Record Drawing.
 8. Submit one (1) hard copy once approved for legal seal stamping if needed at jobsite. Coordinate with Engineer and County's Representative.
 9. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connections with construction.
- C. Coordination drawings are a special type of Shop Drawing that show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or function as intended.
 1. Preparation of coordination Drawings is specified in section Project Coordination and may include components previously shown in detail on Shop Drawings or Product Data.
 2. Submit coordination Drawings for integration of different construction elements. Show sequence and relationships of separate components to avoid any conflict including conflicts in use of space.
 3. Contractor is not entitled to additional payments due to lack of compliance with this Section.

1.8 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions,

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catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawing".

1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations
 - b. Compliance with recognized trade association standards
 - c. Compliance with recognized testing agency standards
 - d. Application of testing agency labels and seals
 - e. Notation of dimensions verified by field measurement
 - f. Notation of coordination requirements
 - g. Manufacturers local representative and phone number.
2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
3. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.
4. Submittals: Submit six (6) copies of each required submittal. The Project Manager will return two (2) sets to the Contractor marked with action taken and corrections or modifications required.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
 - a. Do not proceed with installation until an applicable copy of Product Data applicable is in the Installer's possession.
 - b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.9 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of materials, color range sets, and swatches showing color, texture and pattern.
 1. Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Prepare Samples to match the Engineer's/Owner's Sample. Include the following:
 - a. Generic description of the Sample
 - b. Sample source
 - c. Product name or name of manufacturer
 - d. Compliance with recognized standards
 - e. Availability and delivery time
 2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.

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- a. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units (not less than 3), that show approximate limits of the variations.
 - b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
3. Preliminary submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.
 - a. Preliminary submittals will be reviewed and returned with the Engineer's/Owner's mark indicating selection and other action.
 4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 3 sets; one will be returned marked with the action taken.
 5. Maintain sets of Samples, as returned, at the project site, for quality comparisons throughout the course of construction.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.
1. Field Samples specified in individual sections are special types of Samples. Field Samples are full-size examples erected on site to illustrate finishes, coatings, or finish materials and to establish the standard by which the work will be judged.
 - a. Comply with submittal requirements. Process transmittal forms to provide a record of activity.

1.10 ENGINEER'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Engineer/Project Manager will review each submittal, mark to indicate action taken, and return promptly.
 1. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The Engineer/Project Manager will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, similarly as follows, to indicate the action taken:
 1. Final Unrestricted Release: Where submittals are marked No Exceptions Taken, that part of the work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 2. Final-But-Restricted Release: When submittals are marked Made Corrections Noted that part of the Work covered by the submittal may proceed provided it

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- complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
3. Returned for Resubmittal: When submittal is marked Revise and Resubmit, do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - a. Do not permit submittals marked Revise and Resubmit to be used at the Project site, or elsewhere where work is in progress.
 4. Rejected: Submittal does not comply with requirements of the Contract Documents. Submittal must be discarded and entirely new submittal shall be forward to the Project Manager without delay.

1.11 ELEVATOR CONTRATOR

A. SUBMITTALS

1. ALL ELEVATOR SUBMITTALS MUST BE SUBMITTED AT ONE TIME. NO PHASED SUBMITTALS WILL BE REVIEWED OR ACCEPTED.
 2. Within 30 calendar days after award of contract and before beginning equipment fabrication, submit shop drawings, and required material samples for review.
 3. Scaled or Fully Dimensioned Layout: Plan of pit, hoistway, and machine room indicating equipment arrangement, and car/hall signal fixtures.
 4. Design Information: Indicate equipment lists, reactions, and design information on layouts.
 5. Power Confirmation Information: Design for existing conditions.
 6. Fixtures: Cuts, samples, or shop drawings.
 7. Finish Material: Submit 3" x 12" samples of actual finished material for review of color, pattern, and texture. Compliance with other requirements is the exclusive responsibility of the Contractor. Include, if requested, signal fixtures, lights, graphics, Braille plates, and detail of mounting provisions.
 8. Design Information: Provide calculations verifying the following:
 - a. Adequacy of existing electrical provisions.
 - b. Machine room heat emissions in B.T.U.
 - c. Adequacy of existing car platform structure for intended loading.
 - d. Adequacy of plunger wall thickness for intended loading.
 9. Written Maintenance Control Program (MCP) specifically designed for the equipment included under this contract. Include any unique or product specific procedures or methods required to inspect or test the equipment. In addition, identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedures, including statutory and other required equipment tests.
- B. Submittal review shall not be construed as an indication that submittal is correct or suitable, or that the work represented by submittal complies with the Contract Documents. Compliance with Contract Documents, code requirements, dimensions, fit, and interface with other work is Contractor's responsibility.
- C. Acknowledge and/or respond to review comments within 14 calendar days of return. Promptly incorporate required changes due to inaccurate data or incomplete definition so that delivery and installation schedules are not affected. Identify and cloud drawing revisions, including Contractor elective revisions on each re-submittal. Contractor's revision response time is not justification for equipment delivery or installation delay.

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PART 2 - PRODUCTS (Not Applicable)

PART 3- EXECUTION (Not Applicable)

END OF SECTION 01 33 00

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SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project close-out, including but not limited to:
 - 1. Inspection procedures
 - 2. Project record document submittal. (substantial completion requirements)
 - 3. Operating and Maintenance Manual Submittal (substantial completion requirements).
 - 4. Submittal of warranties (substantial completion requirement).
 - 5. Final cleaning
- B. Final Payment to be made when the County has reviewed and accepted all required close-out documents.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for Certification of Substantial Completion, complete the following: List exceptions in the request.
 - 1. In the Application for Payment that coincided with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the work is not complete.
 - 2. Advise Owner of pending insurance change-over requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 - 4. Obtain and submit releases enabling the Owner unrestricted use of the work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
 - 5. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
- B. Inspection Procedures: On receipt of a request for inspection, the Project Manager will either proceed with inspection or advise the Contractor of unfilled requirements. The Project Manager will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
 - 1. Results of the completed inspection will form the basis of requirements for final acceptance.

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2. Should the project fail to meet the standards required for Substantial Completion as defined in the documents, the Contractor will pay the expense of a second inspection by the Engineer and the Owner. Cost will be deducted from the Contractor's retainage.

1.4 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following list exceptions in the request:
 1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and complete operations where required.
 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 3. Submit a certified copy of the Engineer or Owner's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Project Manager.
 4. Submit final meter readings for utilities, a measured record of stored fuel and similar data as of the date of Substantial Completion, or when the Owner took possession of the responsibility for corresponding elements of the Work.
 5. Submit consent of surety to final payment.
 6. Submit a final liquidated damages settlement statement
 7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Reinspection Procedure: The Engineer will reinspect the work upon receipt of notice that the work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Engineer.
 1. Upon completion of reinspection, the Engineer will prepare a certification of final acceptance, or advise the contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

1.5 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purposed; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Engineer's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation; where the installation varies substantially from the work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the
- C. Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date. Provide for project photographs if deemed necessary by Owner's representative.
 1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the work.
 2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
 3. Note related Change Order numbers where applicable.

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4. **Submit one (1) hardcopy of the most current record set of drawings when the project is considered 50% substantially complete for review and comment by Owner.**
 5. Organize record drawing sheets, and print. suitable titles, dates and other identification on the cover of each set.
 6. Provide three (3) additional sets of black line drawing sets of As-Built Drawings.
 7. Provide one (1) CD-ROM with all As-Built Drawings in AutoCAD and PDF format.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual work performed in comparison with the text of the specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Project Data.
1. Upon completion of the Work, submit record Specifications to the Engineer for the Owner's records.
- D. Record Project Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variation in actual work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.
1. Upon completion of mark-up, submit complete set of record Product Data in the three ring binder (indexed) to the Engineer for the Owner's records.
- E. Record Sample Submitted: Immediately prior to the date or dates of substantial completion, the Contractor will meet at the site with the Engineer and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.
- F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the work. Immediately prior to the date or dates of substantial completion, complete miscellaneous record and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Project Manager for the Owner's records.
- G. Maintenance Manuals: Organize operating and maintenance data into four (4) suitable sets of manageable size and electronically as PDFs on one (1) CD-ROM compact disc. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:
1. Emergency instructions
 2. Spare parts list
 3. Copies of warranties
 4. Wiring diagrams
 5. Recommended turn-around cycles
 6. Inspection procedures
 7. Shop Drawings and Product Data

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8. Fixture lamping schedule

1.6 ELEVATOR FINAL OBSERVATIONS AND REVIEW REQUIREMENTS

- A. Review procedure shall apply for individual elevators, portions of groups of elevators and completed groups of elevators accepted on an interim basis, or elevators and groups of elevators completed, accepted, and placed in operation.
- B. Contractor shall perform review and evaluation of all aspects of its work prior to requesting Consultant's final review. Work shall be considered ready for Consultant's final contract compliance review when all Contractor's tests are complete and all elements of work or a designated portion thereof are in place and elevator or group of elevators are deemed ready for service as intended.
- C. Furnish labor, materials, and equipment necessary for Consultant's review. Notify Consultant five (5) working days in advance when ready for final review of elevator or group of elevators.
- D. Consultant's written list of observed deficiencies of materials, equipment, and operating systems will be submitted to Contractor for corrective action. Consultant's review shall include as a minimum:
 - 1. Workmanship and equipment compliance with Contract Documents.
 - 2. Contract speed, capacity, floor-to-floor, and door performance comply with Contract Documents.
 - 3. Performance of following is satisfactory:
 - a. Starting, accelerating, running
 - b. Decelerating and stopping accuracy
 - c. Door operation and closing force
 - d. Equipment noise levels
 - e. Signal fixture utility
 - f. Overall ride quality
 - g. Performance of door control devices
 - h. Operations of emergency two-way communication device
 - i. Operations of firefighters' service
 - 4. Test Results:
 - a. In all test conditions, obtain specified contract speed, performance times, stopping accuracy without re-leveling, and ride quality to satisfaction of Owner and Consultant. Tests shall be conducted under both no load and full load condition.
 - b. Temperature rise in motor windings limited to 50° Celsius above ambient. A full-capacity one (1) hour running test, stopping at each floor for ten (10) seconds in up and down directions, may be required.
- E. Performance Guarantee: Should Consultant's review identify defects, poor workmanship, variance or noncompliance with requirements of specified codes and/or ordinances, or variance or noncompliance with the requirements of Contract Documents, Contractor shall complete corrective work in an expedient manner to satisfaction of Owner and Consultant at no cost as follows:
 - 1. Replace equipment that does not meet code or Contract Document requirements.
 - 2. Perform work and furnish labor, materials, and equipment necessary to meet specified operation and performance.
 - 3. Perform retesting required by Governing Code Authority, Owner, and Consultant.

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- F. A follow-up final contract compliance review shall be performed by Consultant after notification by Contractor that all deficiencies have been corrected. Provide Consultant with copies of the initial deficiency report marked to indicate items which Contractor considers complete.

1.07 OWNERS INFORMATION REGARDING ELEVATOR

- A. Non-Proprietary Equipment Design: Provide three sets of neatly bound written information necessary for proper maintenance and adjustment of equipment within 30 days following final acceptance. Final retention will be withheld until data is received by Owner and reviewed by Consultant. Include the following as minimums:
1. Straight-line wiring diagrams of "as-installed" elevator circuits with index of location and function of components. Mount one set wiring diagrams on panels, racked, or similarly protected, in elevator machine room. Provide remaining set rolled and in a protective drawing tube. Maintain all drawing sets with addition of all subsequent changes. These diagrams are Owner's property. A legend sheet shall be furnished with each set of drawings to provide the following information:
 - a. Name and symbol of each relay, switch, or other apparatus.
 - b. Location on drawings, drawing sheet number and area, and location of all contacts.
 - c. Location of apparatus, whether on controller or on car.
 2. Written Maintenance Control Program (MCP) specifically designed for the equipment included under this contract. Include any unique or product specific procedures or methods required to inspect or test the equipment. In addition, identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedures, including statutory and other required equipment tests.
 3. Printed instructions explaining all operating features.
 4. Complete software documentation for all installed equipment.
 5. Lubrication instructions, including recommended grade of lubricants.
 6. Parts catalogs listing all replaceable parts including Contractor's identifying numbers and ordering instructions.
 7. Four sets of keys for all switches and control features properly tagged and marked.
 8. Diagnostic test devices together with all supporting information necessary for interpretation of test data, troubleshooting of elevator system, and performance of routine safety tests.
 9. The elevator installation shall be a design which can be maintained by any licensed elevator maintenance company employing journeymen mechanics, without the need to purchase or lease additional diagnostic devices, special tools, or instructions from the original equipment Contractor.
 - a. Provide on site capability to diagnose faults to the level of individual circuit boards and individual discrete components for the solid state elevator controller.
 - b. Provide a separate, detachable device, as required, to the Owner as part of this installation if the equipment for fault diagnosis is not completely self-contained within the controller. Such device shall be in possession of and become property of the Owner.
 - c. Installed equipment not meeting this requirement shall be removed and replaced with conforming equipment at no cost to the Owner.
 10. Provide upgrades and/or revisions of software during the progress of the work, warranty period and the term of the ongoing maintenance agreement between the Owner and Contractor.
- B. Acceptance of such records by Owner/Consultant shall not be a waiver of any Contractor deviation from Contract Documents or shop drawings or in any way relieve Contractor from his responsibility to perform work in accordance with Contract Documents.

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PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 CLOSE-OUT PROCEDURES

A. Operating and Maintenance Instructions: Arrange for each installer of equipment that required regular maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. All items to be provided or completed prior to Certificate of Substantial Completion being issued by the Owner. Include a detailed review of the following items:

1. Maintenance manuals
2. Record documents
3. Spare parts and materials
4. Tools
5. Lubricants
6. Fuels
7. Identification systems
8. Control sequences
9. Hazards
10. Cleaning
11. Warranties and bonds
12. Maintenance agreements and similar continuing commitments
13. On site instructions to County maintenance personnel on major systems operations such as HVAC as per technical specifications.

B. As part of instruction for operating equipment, demonstrate the following procedures, prior to the Owner issuing Certificate of Substantial Completion:

1. Start-up
2. Shutdown
3. Emergency operations
4. Noise and vibration adjustments
5. Safety procedures
6. Economy and efficiency adjustments

3.2 PROJECT CLOSE-OUT MANUALS AT SUBSTANTIAL COMPLETION

A. Submit Project Close-out Manuals prior to issuance of final application for payment. Provide one (1) hardcopy.

B. Bind in commercial quality 8 1/2" x 11" three ring binder, indexed with hardback, cleanable, plastic covers.

C. Label cover of each binder with typed title PROJECT CLOSE-OUT MANUAL, with title of project; name, address, and telephone number of Contractor and name of responsible Principal.

D. Provide table of contents: Neatly typed, in the following sequence:

1. Final Certificate of Occupancy
2. Warranty Service Subcontractors Identification List
3. Final Lien Waivers and Releases
4. Warranties and Guarantees
5. Systems Operations and Maintenance Instruction

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6. Manufacturer's Certificates and Certifications
 7. Maintenance Service Contracts
 8. Spare Parts Inventory List
 9. Special Systems Operating Permits or Approvals
 10. Asbestos free materials notarized statement
- E. Provide all documents for each section listed. List individual documents in each section in the Table of Contents, in the sequence of the Table of Contents of the Project Manual.
- F. Identify each document listed in the Table of Contents with the number and title of the specification section in which specified, and the name of the product or work item.
- G. Separate each section with index to sheets that are keyed to the Table of Contents listing.
- H. Warranty Service Subcontractors List shall identify subcontractor supplier, and manufacturer for each warranty with name, address and emergency telephone number.
- I. Electronic Close-out DVD: At the completion of the project, submit one copy of a DVD with entire project close out information below in PDF format. All letter, legal and brochure size sheets shall be portrait and the As-built drawings will be landscape. All fonts will be Arial. All items will be in PDF with OCR (Optical Character Recognition). This will enable a search engine to identify words on the scanned documents.
1. Contacts: Set up a separate PDF for the contacts. No bookmarks are needed for this section.
 2. As-Built: All as-built drawings will be landscape.
 3. Submittals: All technical submittal items (approved and approved as noted) will be provided and sorted by the 16 standard divisions. Bookmarks will be needed for the appropriate divisions.
 4. Operations and Maintenance Manual: Specify the division name only in the bookmarks (1-46). Please note that all items will be in PDF with OCR (Optical Character Recognition). This will enable a search engine to identify works on the scanned documents.
 5. Permitting: This should include the Certificate of Occupancy and any other document that the Project Manager may include pertaining to the permitting for the project.

3.3 FINAL CLEANING

- A. General: General cleaning during construction is required by the General Conditions.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - c. Clean exposed exterior and interior hard-surfaced finished to a dust-free condition, free of stains, films and similar foreign substances. Restore

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- reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
- d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - e. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface. Remove waste and surplus materials from the site in an appropriate manner.
- C. Removal of Protection: Remove temporary protection and facilities installed for protection of the work during construction.
- D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
- 1. Where extra materials of value remaining after completion of associated work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION 01 77 00

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SECTION 01 85 00
ELEVATOR MAINTENANCE

PART 1 GENERAL

1.01 INTERIM MAINTENANCE

- A. The Contractor whom is awarded the modernization work shall not be required to perform Interim Maintenance until construction commencement, at which point the elevator contractor is responsible for all elevators in the facility in accordance with the County Elevator Service Agreement.
- B. The responsibility for any maintenance, testing or service between the time of assuming elevator service responsibility through the 12 month warranty is the responsibility of the Elevator Contractor that performed the elevator modernization. The time between turn over and warranty period is considered Interim Maintenance and costs associated with performing interim maintenance shall be included in the Contractor's base bid.
- C. It is the intent that a final review of the completed modernization work once inspected by all Authorities Having Jurisdiction shall occur within 20 business days of the elevator being turned over for beneficial public use. Deficiencies, if observed, shall be corrected expeditiously and a follow up review shall commence within 15 business days to ensure all items have been corrected. The 12 Month Warranty Start date shall be once all punch list items in the project are confirmed corrected. The Contractor shall be responsible for performing interim maintenance at no additional monthly cost to the County from the time in which the elevator contractor takes over the maintenance and service responsibility through the 12 month warranty period.
- D. Perform all services in accordance with the Orange County Maintenance Agreement.
- E. Use competent personnel, acceptable to Purchaser, employed and supervised by the Contractor.
- F. The cost for interim maintenance period shall be included in the Elevator Contractors modernization bid and estimated based on the duration outlined in 1.01.

1.02 WARRANTY MAINTENANCE

- A. The 12 Month Warranty Start date shall be once all punch list items in the project are confirmed corrected. Warranty commencement shall not be staggered from elevator to elevator. All elevators shall have the same warranty effective date.
- B. Perform all services in accordance with the Orange County Maintenance Agreement.
- C. Use competent personnel, acceptable to the Purchaser, supervised and employed by Contractor.
- D. The cost for warranty maintenance period shall be included in the Elevator Contractors modernization bid.
- E. The warranty maintenance period for all elevators specified in Item 1.02, A. above shall be extended one (1) month for each three (3) month period in which one or more elevators have equipment related failures that average more than .25 per unit per month.

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1.03 CONTRACT PREVENTIVE MAINTENANCE

A. Extended Maintenance beyond the Warranty Period is not part of this bid.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01 85 00

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SECTION 14 24 00
HYDRAULIC ELEVATOR

PART 1 GENERAL

1.01 WORK INCLUDED

- A. 2 hydraulic passenger elevators: Cars A (Left), B (Right)
- B. All engineering, equipment, labor, and permits required to satisfactorily complete elevator modernization required by Contract Documents.
- C. Applicable conditions of General, Special, and Supplemental Conditions, Division 01, and all sections listed in Contract Documents "Table of Contents."
- D. Preventive maintenance as described in the COUNTY Maintenance Agreement.
- E. Cartage and Hoisting: All required staging, hoisting and movement to, on, and from the site including new equipment, reused equipment, or dismantling and removal of existing equipment.
- F. Unless specifically identified as "Reuse," "Retain," or "Refurbish," provide new equipment.
- G. Hoistway, pit, and machine room barricades as required.

1.02 RELATED WORK PROVIDED UNDER OTHER SECTIONS

- A. Corridor
 - 1. Provide all cutting, patching of wall around the hall fixtures to accommodate new fixtures. Utilize a specialist for cutting the marble walls.
- B. Hoistway and Pit:
 - 1. Provide NEMA 4 guarded lights and switch in each pit to achieve a minimum of 10 foot candles of lighting at floor level throughout the entire pit.
 - 2. Provide one 110VAC GFCI protected outlet in each elevator pit.
 - 3. All stop switches and pit light switches should be located adjacent to the top run of the pit ladder and accessible from outside the hoistway, clearly labeled and not installed behind pit ladder rungs.
- C. Machine Room and Equipment Spaces:
 - 1. Provide additional fluorescent lighting ballasts or replace existing lighting ballasts to achieve 20 foot candles of lighting at floor level throughout the entire machine room.
 - 2. Provide a minimum of 1 GFCI convenience outlet in each machine room.
 - 3. Provide new Three-phase mainline copper power feeder wire in solid conduit to terminals of each elevator controller in the machine room. Provide new Square D 480VAC 100amp (verify existing and retain design) disconnects to replace the existing. Label the disconnects with power source as currently labeled utilizing engraved plate.
 - 4. Provide new Single-phase copper power feeder wire in solid conduit to each elevator controller for car lighting and exhaust blower. Provide new Square D 240VAC 30 amp (verify existing and retain design) disconnects to replace the existing for cab lights and fan. Label the disconnects with power source as currently labeled utilizing engraved plate.

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5. Provide new emergency telephone line to each individual elevator controller in solid conduit in elevator machine rooms. Label telephone wire conduit with telephone number. Line sharing may be acceptable if the two-way communication device has conference function. Elevator phone line shall not be shared with any other communication or signal devices.
 6. Provide 3 fire initiation signaling to elevator equipment in machine room and all applicable related work to include but not limited to 4 sets of dry contacts, one for each signal device: main, secondary, fire hat modules and shunt trip, pipe signalization wire to controller (connections by elevator contractor), programing, testing.
- D. Standby Power Provision:
1. Provide all related work associated with ensuring elevators operate on emergency power per code and elevator manufacturer's requirements.
 2. Standby power of normal voltage characteristics via normal electrical feeders to run one elevator at a time.
 3. Provide Conductor from auxiliary form "C" dry contacts, located in the standby power transfer switch to a designated elevator control panels.
 4. Standby single-phase power to each elevator controller for car lighting and exhaust fan.
- E. Testing/Permitting
1. Provide all applicable local and state permitting required for all building related work. Permit's MUST be posted in each respective elevator equipment room.
 2. All building systems shall be tested as per code. All testing costs shall be included, regardless of re-mobilizations required to achieve proper operation certification. Testing that requires the disabling of public use of all elevators in a group shall be done at a time most convenient for the facility.

1.03 DEFINITIONS

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

1.04 QUALITY ASSURANCE

- A. Qualified Contractors will be at the discretion of the COUNTY.
- B. Compliance with Regulatory Agencies
- C. Warranty:
 1. Material and workmanship of installation shall comply in every respect with Contract Documents. Correct defective material or workmanship which develops within one year from date of final acceptance of all work to satisfaction of Architect, Owner and Consultant at no additional cost. Perform maintenance in accordance with terms and conditions indicated in the COUNTY Preventive Maintenance Agreement.
 2. Defective is defined to include, but not be limited to: Operation or control system failures, car performance below required minimum, excessive wear, unusual

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deterioration, or aging of materials or finishes, unsafe conditions, the need for excessive maintenance, abnormal noise, or vibration, and similar unsatisfactory conditions.

3. Retained Equipment: All retained components, parts, and materials shall be cleaned, checked, modified, repaired, or replaced so each component and its parts are in like new operating condition. Retained equipment must be compatible for integration with new systems. All retained equipment shall be covered under the warranty provisions. No prorations of equipment or parts shall be allowed on preventive maintenance contract, between the Contractor and Owner.
4. Make modifications, requirements, adjustments, and improvements to meet performance requirements.

1.05 DOCUMENT AND SITE VERIFICATION

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

1.06 SUBMITTALS

- A. As called for in this section

1.07 PERMIT, TEST AND INSPECTION

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

1.08 MAINTENANCE

- A. Interim: Contractor will perform interim maintenance and services as outlined in the County Elevator Maintenance Agreement. Commencement of Interim maintenance on all elevators shall be when Construction commences.
- B. Warranty Maintenance: 12 Month Warranty Shall Commence at the conclusion of all elevators passing all required alteration inspections and receiving final acceptance after all punch list items are confirmed cleared. Service standards and requirements shall be referenced in the County Elevator Maintenance Agreement.

PART 2 PRODUCTS

2.01 SUMMARY

- A. Passenger Elevator A and B, (AHJ Serial # 38963, 38963)

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B. Unless specifically identified as "retain existing," provide new equipment.

	Existing Equipment	Disposition
Number:	Elevator A, B	Retain Existing
Capacity:	3,500lbs	Retain Existing
Contract Speed:	200FPM <i>*Verify Retain Existing Speed*</i>	Retain Existing
Machine:	Hydraulic Pump	Provide New
Machine Location:	Adjacent at 1 st floor	Retain Existing
Operational Control:	Duplex Selective Collective	Provide New Duplex Selective Collective Microprocessor-Based System
Motor Control:	Single Speed AC with Wye Delta Start	Single Speed AC with Soft Start with Closed Transition
Power Characteristics:	480 Volts, 3 Phase, 60 Hertz <i>*Verify Existing*</i>	Retain Existing
Stops:	Five (5)	Retain Existing
Openings:	Five (5)	Retain Existing
Floors Served:	*1, 2, 3, 4, 5	Retain Existing
Entrance Size:	42"x108"	Retain Existing
Entrance Type:	Single Speed Center Opening	Retain Existing
Door Operation:	Medium Duty	Provide New GAL MOVFR11
Door Protection:	Light Ray Device	Provide New Janus Pana 40
Guide Rails:	Planed Steel Tees	Retain Existing
Buffers:	Spring	Retain Existing
Signal Fixtures:		LED Illumination
Hall and Car Pushbutton Stations:		Single Hall Pushbutton Riser Single Car Operating Panel
Car Position Indicators:		Single Digital with Car Direction Arrows Integral with Car Operating Panel

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Existing Equipment	Disposition
Communication System:	Self-Dialing, Vandal Resistant, Push to Call, Two-Way Communication System with Recall, Tracking and Voiceless Communication. Provide telephone line operability device with audible tone as required by code.

2.02 MATERIALS

- A. All materials shall be new and provided by industry suppliers that have been in business a minimum of 10 years.

2.03 CAR PERFORMANCE

- A. Car Speed: $\pm 5\%$ of contract speed under any loading condition.
- B. Car Capacity: Safely lower, stop and hold 125% of rated load.
- C. Car Stopping Zone: $\pm 1/4"$ under any loading condition.
- D. Door Opening Time: Seconds from start of opening to fully open:
 - 1. 1.5-2.0 seconds.
- E. Door Closing Time: Seconds from start of closing to fully closed:
 - 1. 3.0-3.5 seconds.
- F. Pressure: Fluid system components shall be designed and factory tested for 500 p.s.i. Maximum operating pressure shall be 400 p.s.i.
- G. Car Ride Quality:
 - 1. Horizontal and vertical acceleration within car during all riding and door operating conditions. Not more than 20 mg peak to peak (adjacent peaks) in the 1 - 10 Hz range.
 - 2. Acceleration and Deceleration: Smooth constant and not less than 3 feet/second² with an initial ramp between 0.5 and 0.75 second.
 - 3. Sustained Jerk: Not more than 6 feet/second³.
 - 4. Measurement Standards: Measure and evaluate ride quality consistent with ISO 18738, using low pass cutoff frequency of 10 Hz and A95 peak-to-peak average calculations.
- H. Noise and Vibration Control
 - 1. Airborne Noise: Measured noise level of elevator equipment and its operation shall not exceed 55 dBA inside car under any condition including door operation and car ventilation exhaust blower on its highest speed. Limit noise level in the machine room relating to elevator equipment and its operation to no more than 80 dBA. All

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- dBa readings to be taken 3'-0" off the floor and 3'-0" from the equipment using the "A" weighted scale.
2. Vibration Control: All elevator equipment provided under this contract, retained, refurbished or replaced shall be mechanically isolated from the building structure and electrically isolated from the building power supply and to each other to minimize the possibility of objectionable noise and vibrations being transmitted to occupied areas of the building.
 - a. CE Electronics-Acoustics products must be utilized for mechanical isolation of the following:
 - 1) CE Electronics-Acoustics Group, CQuiet Cab Isolation Kit located between the piston and platen plate.
 - 2) CE Electronics-Acoustics Group, CQuiet Hydro Tank Isolation Kit located under the oil tank reservoir.
 - 3) CE Electronics-Acoustics Group, CQuiet FireStop Noise Putty located between the pipe and concrete penetrations.
 - 4) CE Electronics-Acoustics Group, CQuiet Pipe ISO² hangers for any pipe that requires hanging from ceiling.
 - 5) CE Electronics-Acoustics Group, CQuiet Pipe Stand Isolation for any pipe stand application utilized.

2.04 OPERATION

- A. Duplex Selective Collective Microprocessor Based:
 1. Operate cars without attendants from pushbuttons in cars and located at each floor. When cars are available, park one car at main floor ("home" car). Park other car where last used ("free" car).
 2. Respond to car calls and hall calls above main floor using the free car. Once a car has started, respond to registered calls in the direction of travel and in the order the floors are reached.
 3. Do not reverse car direction until all car calls have been answered, or until all hall calls ahead of the car and corresponding to the direction of car travel have been answered.
 4. Slow cars and stop automatically at floors corresponding to registered calls in the order in which they are approached in either direction of travel. As slowdown is initiated for a hall call, automatically cancel hall call. Cancel car calls in the same manner. Hold car at arrival floor an adjustable time interval to allow passenger transfer.
 5. Answer calls corresponding to direction in which car is traveling unless call in the opposite direction is the highest (or lowest) call registered.
 6. When the free car is clearing calls, start home car to respond to:
 - a. A call registered on home car pushbuttons.
 - b. An up hall call registered below free car.
 - c. An up or a down call registered above free car while free car is traveling down.
 - d. A hall call when free car is delayed in its normal operation for a predetermined period.
 7. When both cars are clearing calls, stop only one car in response to any registered hall call. Return the first car to clear its calls to main floor. Should last service required bring both cars to main floor, the first arriving car becomes the free car.
 8. Illuminate appropriate pushbutton to indicate call registration. Extinguish light when call is answered.
- B. Other Items:
 1. Low Oil Control: In the event oil level is insufficient for travel to the top floor, provide controls to return elevator to the main level and park until oil is added.

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2. Independent Service: Provide controls for operation of each car from its pushbuttons only. Close doors by constant pressure on desired destination floor button or door close button. Open doors automatically upon arrival at selected floor.
- C. Firefighters' Service: Provide equipment and operation in accordance with code requirements.
- D. Automatic Car Stopping Zone: Stop car within 1/4" above or below the landing sill. Maintain stopping zone regardless of load in car, direction of travel, distance between landings.
- E. Motion Control: AC type with unit valve suitable for operation specified and capable of providing smooth, comfortable car acceleration and retardation. Limit the difference in car speed between full load and no load to not more than $\pm 5\%$ of the contract speed in either direction of travel.
- F. Door Operation: Automatically open doors when car arrives at main floor. At expiration of normal dwell time, close doors. Reopen doors when car is designated for loading. Provide "heavy door/variable air pressure" feature for consistent specified door operation within appropriate speed and inertia limits.
- G. Standby Lighting and Alarm: Car mounted battery unit with solid-state charger to operate alarm bell and car emergency lighting. Battery to be rechargeable with minimum 5-year life expectancy. Include required transformer. Provide constant pressure test button in service compartment of car operating panel.
- H. Standby Power Operation
 1. The elevators are currently connected to emergency power.
 2. Upon loss of normal power, adequate standby power will be supplied via building electrical feeders to simultaneously start and run one car in each group and single cars at contract car speed and capacity.
 3. Automatically return one car at a time in each group and single car, nonstop to designated floor, open doors for approximately 3.0 seconds, close doors, and park car. During return operation, car and hall call pushbuttons shall be rendered inoperative. As each car parks, system shall immediately select the next car until all cars in a group have returned to the designated floor. If a car fails to start or return within 30 seconds, system shall automatically select the next car in the group to automatically return.
 4. When all cars in a group have returned to the designated floor, one car in each group shall be designated for automatic operation. When a service demand exists for 30 seconds and designated car fails to start, next available car in the group shall be automatically selected for operation.
 5. Contactor to ensure signal wire from Automatic Transfer Switch to the elevator controller.
- I. Card/Proximity Reader Security System: Provide provisions inside car operating panel for reader unit. Mount reader (if provided) behind tinted screen and cross connect from car pushbuttons to control module in machine room. If no reader is currently utilized or provided as part of this project, label spare wires for future reader in car operating panel and controller in machine room.

2.05 MACHINE ROOM EQUIPMENT

- A. Arrange equipment in existing machine room spaces and in accordance with Code.

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- B. Pump Unit: Assembled unit consisting of positive displacement pump, induction motor, master-type control valves combining safety features, holding, direction, bypass, stopping, manual lowering functions, shut off valve, oil reservoir with protected vent opening, oil level gauge, outlet strainer, drip pan, muffler, all mounted on isolating pads. Enclose entire unit with removable sheet steel panels lined with sound-absorbing material. Provide soft start with closed transition. Design unit for heavy duty 24/7 type use. Pump unit must meet specification standards and in accordance with noise, vibration, performance and existing electrical conditions. A dry mount type pumping unit is currently installed and shall be replaced with a dry mount type pumping unit.
1. Must include MEI Silencer
 2. Must include Maxton Valve
- C. Landing Systems: Solid-state, magnetic, or optical type.
- D. Controller: UL/CSA labeled.
1. Motion Control Engineering (MCE) 2000.
 2. Compartment: Securely mount all assemblies, power supplies, chassis switches, relays, etc., on a substantial, self-supporting steel frame. Completely enclose equipment with covers. Provide means to prevent overheating.
 3. Relay Design: Magnet operated with contacts of design and material to insure maximum conductivity, long life, and reliable operation without overheating or excessive wear. Provide wiping action and means to prevent sticking due to fusion. Contacts carrying high inductive currents shall be provided with arc deflectors or suppressors.
 4. Microprocessor-Related Hardware
 - a. Provide built-in noise suppression devices which provide a high level of noise immunity on all solid-state hardware and devices.
 - b. Provide power supplies with noise suppression devices.
 - c. Isolate inputs from external devices, such as pushbuttons, with opto-isolation modules.
 - d. Design control circuits with one leg of power supply grounded.
 - e. Safety circuits shall not be affected by accidental grounding of any part of the system.
 - f. System shall automatically restart when power is restored.
 - g. System memory shall be retained in the event of power failure or disturbance.
 - h. Equipment shall be provided with Electro Magnetic Interference (EMI) shielding within FCC guidelines.
 5. Wiring: CSA labeled copper for factory wiring. Neatly route all wiring interconnections and securely attach wiring connections to studs or terminals.
 6. Permanently mark components, relays, fuses, PC boards, etc., with symbols shown on wiring diagrams.
 7. Controller shall have brownout circuitry and surge protection integral with the controller design.
- E. Muffler: Provide New MEI Silencer.
- F. Piping and Oil:
1. Elevator A: Retain existing piping and provide new oil for the system. Where existing piping cannot be retained due to location, design or condition, provide new.
 2. Elevator B: Provide new piping routed above ground. Utilize a minimum number of bends in the oil line and provide new oil. Oil line shall be sized properly and shall be isolated from the building structure as specified in the vibration control section. Provide new oil for the system.

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G. Shutoff Valve: Provide New.

2.06 HOISTWAY EQUIPMENT

- A. Guide Rails: Retain main guide rails in place.
 - 1. Clean rails and brackets. Remove rust.
 - 2. Check all rail and bracket fastenings and tighten.
 - 3. Realign rails as required to provide smooth car ride.
 - 4. Provide supplemental rail brackets and/or backing as required by code or to enhance car ride quality.

- B. Buffers: Retain existing.

- C. Pit Ladder: Retain Existing. Alter as needed to ensure code compliance.

- D. Hydraulic Jack Assembly: Retain existing.
 - 1. Cylinders: Retain existing. Replace packing seal.
 - 2. **Alternate #1:** Elevator B Jack Replacement
 - a. Provide a new jack assembly for Elevator B based on the following minimum scope of work:
 - b. Provide all labor and materials used for removal of existing cylinder, construction of new cylinder and installation of new cylinder assembly in strict accordance with the latest ASME A17.1 code requirements.
 - c. Provide all labor and material for rigging and suspensions means necessary to suspend and secure the elevator in the uppermost portion of hoist way utilizing a minimum of two suspension means. If required, provide structural load analysis to ensure suspension means can be adequately supported by the location(s) of attachment.
 - d. Provide all labor and material associated with removing the hydraulic plunger from the cylinder and set aside and protected for re-use.
 - e. Provide all labor and material to remove the oil line & pit channels from cylinder.
 - f. Provide all labor and material to remove the oil line & pit channels from cylinder.
 - g. Provide all labor and material to remove concrete surrounding jack head.
 - h. Provide all labor and material to remove existing oil from the hydraulic system and dispose of.
 - i. Provide all labor and material to remove existing cylinder and dispose of properly.
 - j. Provide all labor and material to remove hazardous debris from inside of present well casing. Removal from job site of any hazardous waste should be daily.
 - k. Provide all labor and material to install ASME Code Compliant protective PVC, "Sock" type enclosure or protective coating to new cylinder to aid in protection against corrosion.
 - l. Provide and install sealed PVC liner for cylinder with two (2) 1" PVC tubes at the top of the sealed liner, one (1) to extend to the bottom of the liner and one (1) to just below the top cap of the liner for the purpose of monitoring and removal of oil or other liquids from the liner through pressurization of the liner.
 - m. Provide all labor and material to weld cylinder sections together, allow coupling and protective wrap at joints & re-install head to cylinder.
 - n. Provide all labor and material to install new hydraulic cylinder with double bulkhead bottom made of steel pipe compliant with the most stringent ASME A.17.1 Elevator Safety Code.

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- o. Provide all labor and material to reinstall hydraulic plunger into new cylinder and plumb cylinder unit.
 - p. Provide all labor and material to attach hydraulic plunger to platen plate on underside of elevator and properly align.
 - q. Install new jack seal/gasket/packing.
 - r. Provide and affix data plate in pit near jack head indicating at minimum: Jack Replacement Date, Contractor Name and Phone Number, Original Installation Code, Alteration Codes, Alteration Permit #, Elevator State #, Alteration Acceptance Date.
 - s. Cost shall be valid from the date of bid due date through the following two years after the final acceptance date should the client elect to perform this work separate from the elevator modernization.
- E. Terminal Stopping: Provide normal and final devices. Provide emergency terminal speed limiting devices.
- F. Electrical Wiring and Wiring Connections:
- 1. Conductors and Connections: Copper throughout with individual wires coded and connections on identified studs or terminal blocks. Use no splices or similar connections in wiring except at terminal blocks, control compartments, or junction boxes. Provide 10% spare conductors throughout. Run spare wires from car connection points to individual elevator controllers in the machine room. Provide 5 pair of spare shielded communication wires in addition to those required to connect specified items. Tag spares in machine room.
 - 2. Conduit: Retain existing conduit where feasible. All other times provide galvanized steel conduit, EMT, or duct. Conduit size, 1/2". Flexible heavy-duty service cord may be used between fixed car wiring and car door switches for door protective devices.
 - 3. Traveling Cables: Flame and moisture-resistant outer cover. Prevent traveling cable from rubbing or chafing against hoistway or equipment within hoistway.
 - 4. Auxiliary Wiring: Connect fire alarm initiating devices, emergency two-way communication system, firefighters' phone jack where present, in each car controller in machine room.
 - 5. Provide CCTV wiring for future camera installation within elevator.
- G. Entrance Equipment:
- 1. Provide GAL.
 - 2. Door Hangers: Provide New.
 - 3. Door Tracks: Provide New.
 - 4. Door Interlocks: Provide New.
 - 5. Door Closers: Provide New. Design and adjust to insure smooth, quiet mechanical close of doors.
 - 6. Hoistway Door Unlocking Device: Provide New. Provide unlocking device with escutcheon in door panel at all floors, with finish to match adjacent surface.
- H. Hoistway Access Switches: Provide new. Mount at top and bottom landings in entrance jam.

2.07 HOISTWAY ENTRANCES

- A. Frames: Provide New Braille. Retain existing frames.
- B. Transom Panels: Retain existing.

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- C. Door Panels: Retain Existing. Retrofit dual gibs, one at trailing edge and one at leading edge of each panel.
- D. **Alternate #2:** Provide New Hoistway door and entrance frame cladding in mirror #8 stainless.
 - 1. The Contractor may elect to provide new hoistway doors in lieu of cladding the existing.
 - 2. The Contractor must provide new hoistway doors in lieu of cladding if the existing doors cannot be adjusted properly to ensure proper clearance with the hoistway frames.
 - 3. Provide new astragals.
- E. Sight Guards: Retain existing. If sight guard(s) have physical damage, replace new. Facility responsible for painting to match doors.
- F. Sills: Retain Existing. Thoroughly polish and tighten fasteners.
- G. Sill Supports: Retain existing. Check and tighten all fastenings.
- H. Fascia, Toe Guards, and Hanger Covers: Retain existing. Provide where damaged or missing. Check and tighten all fastenings.
- I. Struts and Headers: Retain existing. Check and tighten all fastenings. Remove any rust and paint all headers flat black with rust preventative paint.

2.08 CAR EQUIPMENT

- A. Frame: Retain Existing. Check and tighten all fastenings.
- B. Platform: Retain existing. Reinforce if required. Check and tighten all fastenings.
- C. Platform Apron: Provide new extended platform apron per code. Minimum 14 gauge steel, reinforced and braced to car platform for all car openings.
- D. Guide Shoes: Provide New. Solid type with renewable oilless inserts.
- E. Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
- F. Doors: Provide New. Provide in polished mirror stainless.
- G. Door Hangers: Provide New. Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.
- H. Door Track: Provide New. Bar or formed, cold-drawn removable steel track with smooth roller contact surface.
- I. Door Header. Retain existing and modify as needed.
- J. Door Electrical Contact: Provide New. Prohibit car operation unless car door is closed.
- K. Door Clutch: Provide New. Heavy-duty clutch, linkage arms, drive blocks and pickup rollers or cams to provide positive, smooth, quiet door operation. Design clutch so car doors can be closed, while hoistway doors remain open.

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- L. Restricted Opening Device: Provide New. Provide means for restricting door opening per code requirements if existing means cannot be retained. Plunger type restrictors not acceptable.
- M. Door Operator:
 - 1. Provide New GAL MOVFR11
- N. Door Control Device:
 - 1. Infrared Reopening Device: Provide new.
 - 2. Nudging Operation: After beams of door control device are obstructed for a predetermined time interval (minimum 20.0 - 25.0 seconds), warning signal shall sound and doors shall attempt to close with a maximum of 2.5 foot pounds kinetic energy. Activation of the door open button shall override nudging operation and reopen doors.
 - 3. Interrupted Beam Time: When beams are interrupted during initial door opening, hold door open a minimum of 3.0 seconds. When beams are interrupted after the initial 3.0 second hold open time, reduce time doors remain open to an adjustable time of approximately 1.0 - 1.5 seconds after beams are reestablished.
 - 4. Differential Door Time: Provide separately adjustable timers to vary time that doors remain open after stopping in response to calls.
 - a. Car Call: Hold open time adjustable between 3.0 and 5.0 seconds.
 - b. Hall Call: Hold open time adjustable between 5.0 and 8.0 seconds. Use hall call time when car responds to coincidental calls.
- O. Car Operating Panel:
 - 1. PROVIDE INNOVATION WITH PB35 LED BLUE ILLUMINATED BUTTON
 - 2. Provide applied car operating panel where currently existing.
 - 3. Car operating panels with faceplates, consisting of a metal box containing fixtures, Faceplates shall be hinged and constructed of stainless steel, mirror finish.
 - 4. Suitably identify floor buttons, alarm button, door open button, door close button with SCS, Visionmark, or Entrada cast tactile symbols recessed flush mounted. Configure plates per local building code accessibility standards including Braille. Locate operating controls no higher than 48" above the car floor; no lower than 35" for emergency push-to-call button and alarm button.
 - 5. Provide minimum 3/4" diameter flush floor pushbuttons which illuminate to indicate call registration.
 - 6. Provide alarm button to ring bell located on car. Illuminate button when actuated.
 - 7. Provide keyed stop switch at bottom of car operating panel in locked car service compartment. Mark device to indicate "run" and "stop" positions.
 - 8. Provide "door open" button to stop and reopen doors or hold doors in open position.
 - 9. Extended Door Hold Open Button: Provide button to extend normal door hold open period up to 30 seconds. Cancel extended time by registration of car call or actuation of door close button. When activated, illuminate the door hold open button and the door close button. Cancel the hold open time when the door close button is activated. If a hall call is entered at another floor, sound a buzzer to indicate call waiting is activated.
 - 10. Provide "door close" button to activate door close cycle. Cycle shall not begin until normal door dwell time for a car or hall call has expired, except firefighters' operation.
 - 11. Provide firefighters' locked box as required by code.
 - 12. Provide firefighters' Phase II key switch with engraved instructions filled red. Include light jewel, audible signal, and call cancel button. Locate in locked cabinet in accordance with code requirements.
 - 13. Provide lockable service compartment with recessed flush door. Door material and finish shall match car return panel or car operating panel faceplate. Inside surface of

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- door shall contain an integral flush window for displaying the elevator operating permit.
14. Include the following controls in lockable service cabinet with function and operating positions identified by permanent signage or engraved legend:
 - a. Inspection switch.
 - b. Light switch.
 - c. Three-position exhaust blower switch.
 - d. Independent service switch.
 - e. Constant pressure test button for battery pack emergency lighting.
 - f. 120-volt, AC, GFCI protected electrical convenience outlet.
 - g. Card reader override switch (for future card reader installation)
 - h. Stop switch.
 15. Provide black paint filled (except as noted), engraved, or approved etched signage as follows with approved size and font:
 - a. Phase II firefighters' operating instructions on main operating panel above corresponding keyswitch filled red.
 - b. Car number
 - c. "No Smoking" with symbol
 - d. Car capacity in pounds
- P. Car Top Control Station: Provide New with ENABLE function. Mount to provide safe access and utilization while standing in an upright position on car top.
- Q. Work Light and Duplex Plug Receptacle: Provide New
 1. GFCI protected outlet at top and bottom of car.
 2. Provide a minimum of 10 foot candle of lighting on entire car top.
 3. Include on/off switch and lamp guard.
- R. Car Top Ventilation Fan: Retain existing. If not operational at time of inspection or consultant review, replace new with comparable model.
- S. Car Top Handrail: Provide code compliant car top handrail. Make every effort to isolate noise and vibration from being transmitted from handrail to cab interior.
- T. Communication System:
 1. "HELP" two-way communication instrument in car with automatic dialing, tracking, and recall features with shielded wiring to car controller in machine room. Provide dialer with automatic rollover capability with minimum two numbers.
 - a. "HELP" button or adjacent light jewel shall illuminate and flash when call is acknowledged. Button shall match car operating panel pushbutton design. Provide uppercase "HELP" engraved signage adjacent to button.
 - b. Provide "HELP" button tactile symbol, engraved signage, and Braille adjacent to button mounted integral with car front return panel.
 2. Provide emergency phone line operability detection system with audible tone and visual signal as required by code.
 3. Program phone to County Security Dispatch Center, ensure phone has programmed message for elevator location.

2.09 CAR ENCLOSURE

- A. Car Enclosure:
1. Provide modification as needed to accept new pushbutton and signal fixtures.
 2. Ceiling: Provide new LED down light ceiling faced with 20ga. satin stainless steel (Type 304). Ceiling face to be divided into a minimum of six (6) sections separated

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by 1/4" wide black painted reveals. Each section to contain an individual light fixture. Each fixture to contain a black trim bezel and 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. Lighting shall achieve code compliant foot candles and be protected from breakage.

3. Shell: Retain existing.
4. Canopy: Retain existing.
5. Return Panel, Transoms, Strike Jamb, Entrance Columns: Re-clad in mirror stainless and provide cutouts for signal and car operating fixtures. Delaminate surfaces as needed to ensure proper adhesion of new cladding and proper clearance and fitment.
6. Base: Satin stainless steel with concealed ventilation cutouts.
7. Interior Wall Finish: Provide flat laminate to side walls.
 - a. Laminate shall be standard Wilsonart. Specific color and pattern to be determined during the submittal phase.
 - b. Provide 14 Panel Design. Furnish and install new Raised Panels faced with Standard Grade Plastic Laminate surface onto the Side and Rear Walls. Each panel to be finished with black PVC edge-banding and installed on Z-Clips to allow for future removal. Reveals separating panels shall be black.
 - c. Rear wall to contain three upper and three lower panels, each side wall to contain two upper and two lower panels.
 - d. All material to be treated to meet Flame Spread and Smoke Density code requirements.
8. Handrails: Minimum 1-1/4" diameter stainless steel flat grab bar with returned ends across rear wall. Provide standoffs with threaded set pins.
9. Flooring: Retain Existing
10. Elevator Contractor to provide all door adjustment for proper clearances.

2.10 HALL CONTROL STATIONS

- A. Provide 1 riser with flush mounted faceplate in POLISHED stainless finish with approved etched decorative border. Include pushbuttons for each direction of travel which illuminate to indicate call registration. Provide any cutting and patching required. Pushbuttons shall match car station.
- B. Provide all applicable Fire Recall, Phone Line Operability Device Monitoring and Alarm, Emergency Power and Emergency Signage as required based on code and site functionality. Fixture design to be pre-approved by client.
- C. Rendering of Hall Fixture design intent is provided. Fixtures shall be provided by Innovation Industries.

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2.11 SIGNALS

- A. Car Position Indicator: Provide CE Electronics 5.7 Mini-PI. When a car leaves or passes a floor, illuminate indication representing position of car in hoistway. Illuminate proper direction arrow to indicate direction of travel. Mount fixture in each car operating panel.
- B. Hall Position Indicator: Provide New at Lobby Floor. Utilize CE Electronics 5.7 Mini-PI with engraved Elevator Designation and arrow pointing to the elevator it pertains to.
- C. Car Lantern: Provide flush-mounted Blue digital car lantern in each entrance column, ensure coverage of existing hole. Illuminate up or down LED lights and sound electronic tone once for up and twice for down direction travel as doors open. Sound tone once for up direction and twice for down direction. Sound level shall be adjustable from 0 - 80 dBA measured at 5'-0" in front of hall control station and 3'-0" off floor. Provide adjustable car door dwell time to comply with ADA requirements relative to hall call notification time.
- D. Faceplate Material and Finish: POLISHED Stainless Steel
- E. Floor Passing Tone: Provide an audible tone of no less than 20 decibels and frequency of no higher than 1500 Hz, to sound as the car passes or stops at a floor served.

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PART 3 EXECUTION

3.01 SITE CONDITION INSPECTION

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

3.02 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

3.03 INSTALLATION

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

3.04 FIELD QUALITY CONTROL

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

3.05 ADJUSTMENTS

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

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

3.06 CLEANUP

- A. Keep work areas orderly and free from debris during progress of project. Remove packaging materials on a daily basis.
- B. Remove all loose materials and filings resulting from work.
- C. Clean machine room equipment and floor.
- D. Clean hoistways, car, car enclosure, entrances, operating and signal fixtures.
- E. Painting:
 - 1. Black: Pit Support Channel, buffers, car frame and crosshead.
 - 2. Grey: Machine room flooring, pit flooring, pit walls from floor to 6 feet off floor and car top
 - 3. White: Machine room walls from floor to ceiling.

3.07 ACCEPTANCE REVIEW AND TESTS

- A. See Section 01 77 00

3.08 PURCHASER'S INFORMATION

- A. See Section 01 77 00

END OF SECTION 14 24 00