Invitation to Bid (ITB)

The Florida State University Facilities Purchasing will receive sealed bids until the dates and times shown for the following projects. Bids may be brought to the bid opening or sent to:

Florida State University
Facilities Maintenance, Purchasing
114F Mendenhall Building A
Tallahassee, Florida 32306

prior to bid opening. Bidder must reference bid number, opening date and time on outside of bid package to insure proper acceptance. **Bids submitted by facsimile are not acceptable.** For information relating to the Invitation(s) to Bid, contact the

Bid Number	FAC530219-10
Procurement Associate:	Betty-Jean (BJ) Lewis, Facilities
Mandatory Pre-Bid:	**July 27, 2010 @ 10:00AM, EDT**
Location:	Front Entrance of Rovetta "B"
Public Bid Opening:	**August 20, 2010**
Time:	**2:00 PM, EDT**
	FSU-Facilities Maintenance
	Facilities Maintenance Purchasing
	969 Learning Way
	114 Mendenhall, Building A
	Tallahassee. Florida 32306-4150

Bid Documents: Electric Traction Passenger Elevator Renovation Work

Contact Person: Betty-Jean (BJ) Lewis, Purchasing Agent
Email: blewis@admin.fsu.edu

NOTICE TO BIDDERS

THERE WILL BE A PUBLIC BID OPENING

BID NUMBER: **FAC530219-10**
Purchasing Agent: **B.J. Lewis, Facilities Purchasing**
Location: **969 Learning Way, 114 MMA, FSU Campus**
Tallahassee, Florida 32306
TITLE: **Electric Traction Passenger Elevator Renovation Work**
Rovetta "B" Building
Public Bid Opening: August 20, 2010 @ 2:00PM,EDT

Bids may be brought directly to the bid opening or delivered to the Facilities Purchasing Department, 114 Mendenhall Building A, Tallahassee, Florida 32306 prior to the scheduled opening time. Bids, which for any reason, are not delivered to this location at the prescribed time will not be considered. **Delivery of a bid to the University Post Office or any other point on the University campus other than the Facilities Purchasing Department Office is not acceptable. It is the bidder's responsibility to insure that his/her bid is delivered at the proper time and place for the bid opening.** To insure your **BID** or **NO BID** response remains sealed until opening time, place **BID NUMBER, DATE, AND TIME OF OPENING ON OUTSIDE** envelope of Federal Express package, etc.

Please indicate on envelope if this is a "NO BID"

Failure to comply with any of the above conditions may be grounds to reject the offending vendor's bid.

I certify by the signing of this invitation to bid that the prices offered to Florida State University on the items included are less than or equal to those offered other stat universities for the same or similar items.

Betty-Jean (BJ) Lewis, Purchasing Agent
Facilities, Florida State University
969 Learning Way
114 Mendenhall, Building A
(P) 850-644-7639; (F) 850-644-5071
blewis@admin.fsu.edu

SECTION 14220 – ELECTRIC TRACTION PASSENGER ELEVATOR RENOVATION WORK

PART 1 GENERAL

1.01 SUMMARY

A. Section includes: Major renovation work on one (1) Otis Elevator Company brand electric traction passenger elevator system, State of Florida elevator serial No. 3227, located in the Rovetta Building, Business No. 52, as specified herein. Refer to all of the Bidding Documents for instructions for site examination or inspection, project schedule, bid requirements, project drawings, qualifications of bidders, general and special conditions, work hours, and all other general or special requirements relating to the work covered under these and project specifications. The Elevator Contractor shall be responsible for renovating the elevator system, which includes, but not limited to, performing all of the following:

1. Furnish and install new mechanical components on driving machine, including worm, bronze gear, drive sheave, seals, bearings, gaskets, brake shoe assemblies, and high quality, elevator grade, alternating current drive motor on the existing Otis Elevator Company driving machine. As a voluntary alternative, the Elevator Contractor is permitted to furnish and install a complete new driving machine, which would include a new high quality alternating current drive motor.
2. Furnish and install new over-speed governor device, complete with required electrical switch, as specified hereinafter. Provide a new governor rope tail sheave and weight assembly in the pit area. Governor shall be a self-resetting type, designed for remote resetting of the device.
3. Furnish and install new hoist ropes and governor ropes, all of the proper sizes and construction for the elevator equipment.
4. Furnish and install new bearings, grease seals and other wearing components on the following sheaves: two (2) overhead mounted sheaves; one (1) counterweight compounding sheave assembly; and on two (2) under-car sheaves, all as specified hereinafter.
5. Furnish and install a new electronically operated microprocessor type elevator control system, including fully programmable type electronic motor control system, all as specified hereinafter.
6. Furnish and install new elevator control wiring to all devices; provide all new traveling cords or cables. Provide all new wiring conductors to new operating stations and electrical devices as required for the proper operation of this elevator, all as specified hereinafter.
7. Furnish and install new high quality, spring loaded, rubber tired, roller guide assemblies, equal to Elsco model "B" for elevator car guides, and model "D" for counterweight guides.
8. Furnish and install all new signal fixtures, signal fixture electrical boxes, in the car and at all landings, as specified hereinafter. Signal fixtures shall be of suitably labeled construction, including the required boxes to be mounted in the corridor walls. Elevator Contractor shall provide all necessary cutting and patching to accept new flush mounted landing signal fixture stations. Cutting of walls and wall tiles shall be professionally accomplished to prevent undue damage to the walls or surrounding surfaces, thus eliminating need for additional finish work.
9. Retain and reuse the hoist way door panels. Furnish and install all new hanger equipment, including tracks, interlocks, closers, and door relating equipment as specified hereinafter. Clean and repaint existing cast iron hoist way thresholds at all floors, as specified hereinafter.
10. Furnish and install a complete new elevator cab, with all of the design features as specified

hereinafter. Furnishing and installing of new cab flooring, and platform sub-flooring, shall be included in the elevator contract.

11. Furnish labor and materials for adjustment of the weight in the elevator counterweight, including the additional weight to compensate for increase in cab weight and other equipment.
12. Furnish and install a new ascending car rope gripper assembly, including suitable structural steel mounting base, electrical circuitry and wiring, and required equipment.
13. Furnish and install a new elevator code approved ladder in the pit area. Ladder shall extend to at least 48" above the lowest landing. Install a hinged ladder with safety switch, if required for this elevator application.
14. Remove the existing elevator equipment, which is not being expressly retained, from the job site on a daily basis, and lawfully dispose of the materials.
15. Furnish and install new elevator equipment that will fit the existing building conditions, which will be in compliance with applicable code requirements, and meet Owner's expectations for suitable long-term maintenance and operational requirements.
16. All related work necessary to restore the elevator system to proper operation, and all of the necessary tests required by the State Of Florida, the latest edition of the ASME A17.1 Safety Code for Elevators and any other authorities having jurisdiction over this work. Test weights shall be required for operational and load tests before the work will be accepted by the Owner.
17. Provide all safety related work, including 7'-0" (approximate height) high solid barricade at any of the openings where work is being performed. Design the enclosure(s) to comply with the requirements of the Owner. Provide all safety protection for workmen, students and Owner's employees while the Elevator Contractor is on the site. No pit or hoist way entrance openings shall be left unattended, or open, at any time, unless being used by the Elevator Contractor's employees. Safety is extremely critical since this is an occupied building, and all safety provisions are subject to approval by the Owner and the Elevator Consultant. At the end of each work day, all of the work areas are required to be fully secured and locked to prevent access by any unauthorized persons.
18. Furnish and install a removable (in sections) 12 gauge, non-perforated sheet metal, enclosure between the machine area and hoist way area. Fully comply with the specifications listed hereinafter. At the option of the Elevator Contractor, a portion or all of the existing framing can be utilized in connection with meeting this requirement. Provide hand grips on sections that are to be removed from maintenance purposes, and paint both sides of the entire barrier system.
19. All other requirements described or referred to hereinafter.

B. **The following is non-elevator work, which shall be part of the elevator contract requirements**:

1. If required to meet all current electrical code requirements, furnish and install new power supply to the elevator electrical controller, including elevator power disconnect and dual element fuses of the proper size as determined by the elevator contractor. Disconnect shall be lockable in the off position. Provide, shunt-trip type protection to remove power from elevator controls prior to allowing sprinklers to apply water to the equipment, if the machine room or hoist way areas are to be protected by sprinklers. Power supply must have a good quality, positive electrical ground to avoid operational problems with the equipment.
2. Firemen's recall system modifications, revisions and related work. Emergency recall system shall have three (3) addressable zones in connection with the elevator system, namely machine room, main floor and all other floors. Additionally, Emergency Communication wiring for elevator cab telephone shall be provided to the elevator machine room and attached to the elevator electrical controller, as directed by the Elevator Contractor.
3. Mechanical machine room cooling system to control machine room temperature. Heat load

during heavy usage of the elevator is approximately 6,000 BTU's, per hour. Temperature should be kept in the range of 65-80 degrees at all times, with average temperature at 75 degrees F. Provide an electronic thermostat to control the temperature in the room. The existing cooling system is most likely adequate for the elevator renovation work.

4. NEC and Elevator Code machine room lighting requirements, at least 19 foot candles in all portions of the room, measured at the floor level, with light switch near the entry door. Lighting shall be increased above the existing level.
5. Sump pump, when used, shall be connected to single non-GFCI protected electrical outlet. If no sump is currently provided, the elevator inspector is not likely to require a permanent pump in an existing building. However, a single 115 volts electrical outlet should be provided for future use, suitably marked for sump pump use only.
6. Required suitable code approved ventilation of hoist way area, including louvers with bird screens, rain deflectors, etc. This ventilation may be required to meet new code requirements.
7. Machine room walls, and suitable access door to the machine room, swinging out, including self-locking door hardware, door closer and related danger warning signs on the door. Paint all walls and ceiling as part of this non-elevator work. The existing controller room entry door must be replaced with a metal, fire resistant door without ventilation grills in the door. Door to machine area must be lockable with level II security lock, and equipped with an approved door closer.
8. Provide all patching of machine room walls, building walls and hoist way, as may be required by Owner, fire code and elevator code. This includes all painting, sealing and other coatings.
9. Emergency power system, wiring, time delay mechanism, transfer switches and related work. This is not required unless the Owner elects to provide an emergency generator to power this elevator. Battery powered emergency lighting shall be provided in elevator machine room area if there is no emergency generator power supply.
10. Required pit lighting and related work. Pit lighting shall have at least two (2) light fixtures light tubes,with protective guards, and switch located at the top of the new pit access ladder location. Replace the existing damaged lighting fixture.
11. Duplex GFCI protected electrical outlets are required in machine room and pit areas. Machine room shall have at least three (3) duplex type GFCI outlets in locations required by Elevator Contractor.
12. Provide at least four (4) guarded lights in the top of the elevator hoist way area, located as required by the elevator contractor. Provide the light switch where it is accessible from the governor mounting area. Also, provide a duplex type GFCI protected electrical outlet in the area of the over-speed governor in the overhead area.
13. Temporary electrical power of the voltage and current necessary for installation of the elevator equipment, as needed.
14. Electrical power for the operation of machine room air conditioning equipment, including disconnect in the machine room. This power supply already exists, and should be sufficient.
15. Any other building related work required by codes or that is not included in the elevator specifications.
16. Provide electrical power supply wiring for emergency intercommunication system.
17. Miscellaneous other non-elevator related work that is needed to comply with the elevator inspector's requirements.

1.02 SUBMITTALS

A. Submit all product and shop drawings, and all other required submittals, to the Owner within the time frame shown in the bid documents. All materials must be submitted at one time.

B. Product Data and Shop Drawings: Submit product data for the following, at least five (5) copies:
   1. Provide information on the elevator renovation materials, including the following:
      a. Catalog information or drawings on all the materials to be provided in connection with the complete renewal of the driving machine (or complete replacement of the driving machine and motor assembly),and hoist way/car mounted cable sheaves.
      b. Catalog information and layout drawings on the signal fixtures for the car and landings stations.
      c. Catalog information and/or layout drawings for the elevator controller panel, listing features, weight, mounting details, controller cooling arrangement, access door arrangement, dimensions of controller and other details.
      d. Catalog information for the roller guides, door operator equipment, emergency alarm, emergency intercom system, emergency telephone device, cab lighting and emergency lighting system.
      e. Shop drawings on new elevator cab design, including all features, materials types, material gauges, construction details, LED cab lighting system, cab emergency lighting system, top exit and other details of the cab.
      f. Details and manufacturer of the new over-speed governor, governor tail sheave assembly and electrical switch arrangement.
   2. Provide data on new hoist and governor ropes. Details on lubricator for hoist ropes.

C. Other Layout Drawings (Provide five [5] copies of drawings):
   1. Show mounting and location of the ascending car hoist rope gripper equipment.

D. Certificates: Any required building department inspection and acceptance certificates of the elevator system installation and other work. Provide a copy of the permit for alteration work issued by the Bureau of Elevators, State Of Florida. Provide a copy of the test certificate prepared by the QEI Certified Elevator Inspector who inspects the work upon completion.

E. Operation and Maintenance Data: Job Specific Data, Lists and Instructions, as Follows:
   1. Installation, adjustment and troubleshooting data on all new equipment installed under this contract, including four (4) bound copies. Provide materials in heavy duty three-ring binder.
   2. Complete parts lists on the new equipment and new part, to be provided in four (4) bound copies, or in heavy duty three-ring binder.
   3. Provide one (1) set of any hand held and lap-top type computer equipment necessary to install, adjust, trouble-shoot or repair the elevator controller equipment, along with required instructions. This equipment shall be serialized, not suitable for any other project, and shall become the "limited use" property of the Owner. Include all controller codes, passwords, SIM cards, designations, legends and other information necessary to completely analyze, adjust, maintain or repair the elevator controller and door operator controller system without the need for other information.
   4. One (1) set of laminated wiring diagrams that are mounted on a hanger in the elevator machine room. Drawing hanger shall be designed for easy removal of drawings by maintenance technicians. The drawings are permitted to be sized 8" by 11", or similar in size, for ease of use and portability.

F. Operational Performance, trouble-shooting and Adjustment Computer: The Elevator Contractor shall also provide a 15.4" screen lap-top computer to the Owner for use on this elevator. This computer

shall be serialized to this elevator, and shall be mounted in the machine room. A heavy gauge steel cabinet shall be wall mounted in the machine room, in which the computer shall remain for use by the elevator maintenance technicians. This cabinet shall be large enough for the lap-top computer, with a door that has a heavy duty keyed lock to prevent unauthorized entry. The cabinet shall be of the type suitable for this purpose. Provide a suitable connection between the elevator controller and the computer. A duplex type GFCI protected 110 volts power supply for the computer, adjacent to the security cabinet, shall be provided by the electrical contractor. This computer shall be suitably programmed to allow the Elevator Contractor to analyze the elevator controls, including the complete operational adjustments, performance times, velocity, car position and position of doors, hall calls, car calls, operational faults and related information. This computer must be in place at turnover to Owner, and shall remain the property of the Owner, for exclusive use on this elevator system.

1.03 QUALITY ASSURANCE

A. Manufacturers Qualifications: An approved manufacturer regularly engaged in the manufacturing of high quality traction elevator grade components, as listed in Part II of the specifications shown hereinafter:
   1. The major operating components of the elevator equipment shall be manufactured in the North America.
   2. The manufacturers shall have a documented, on-going quality assurance program.
   3. Only new components shall be acceptable. No rebuilt, reconditioned or used equipment is allowed to be brought onto this site by the elevator equipment installer, all as specified hereinafter.
   4. At bid time, a letter shall be provided by the Elevator Contractor that the parts, tools and materials needed to maintain the equipment, after warranty period, can be purchased directly from the equipment manufacturer or the Elevator Contractor by the Elevator Maintenance Contractor servicing the elevator equipment for Florida State University.

B. Elevator Contractor Qualifications: The Elevator Contractor shall be elevator equipment manufacturer, or wholly owned and authorized subsidiary of the elevator equipment manufacturer, whom shall not have less than ten (10) years of satisfactory experience installing and servicing equipment equal in character and performance to the project elevator. Additionally, Elevator Contractor must have a fully staffed sales, elevator maintenance, elevator repair and services office, within 10 miles of the project location prior to submitting a bid for this elevator work:
   1. Elevator Contractor bidders must attend a pre-bid conference and site inspection to be held on the date and time specified in the invitation to bid.
   2. With his or her bid, the Elevator Contractor bidder shall submit a detailed plan of how the work would be executed at the building site. This detailed explanation or plan must include all essential elements of the contract requirements, including the following:
      a. How the elevator equipment will be removed from the building in a manner that will not damage the building structure or present safety issues. Additionally, describe how the new equipment will be moved into the building without causing damage to the area.
      b. Size of the crew to accomplish the work on this project.
      c. Time required from award of contract to perform the following: provide submittals for approval; existing equipment removal; on-site elevator system replacement work; clean-up; adjustments; painting; State Inspection and load testing with test weights.

3. All elevator mechanics performing installation work, maintenance, call-backs, or repair work under this contract must hold a current "Certificate of Competency" that is issued by the State Of Florida, Department of Business and Professional Regulation, Bureau of Elevator Safety. Elevator mechanics that do not have a current "Certificate of Competency" will not be permitted to work on the project. Proof of required certification must be provided to the Owner and Elevator Consultant at least one week prior to commencing work on the site. Elevator mechanics must have at least ten (10) years experience installing and maintaining like elevator equipment. "Temporary mechanics" are not permitted to work as mechanics on this project.
4. The following firms are afforded prior approval to submit a bid on this work, subject to their complete compliance with the elevator specifications and other project requirements:
   a. Otis Elevator Company
   b. Schindler Elevator Corporation
   c. ThyssenKrupp Elevator Corporation

C. Regulatory Requirements:
1. ASME A17.1-2004, Safety Code for Elevators, including all published addenda, or the latest edition of the ASME 17.1 Safety Code, as adopted by State of Florida as of bid date for this elevator work, whichever is the latest.
2. Florida Building Code, 2007 addition.
3. NFPA 70, National Electrical Code, latest edition adopted in Florida.
4. ASME A17.5, Code for Elevator Electrical Equipment, latest edition.
5. Florida Statute 399, Chapter 30, Florida Chapter 4A-47, Chapter 61-C5 Elevator Safety Code, All other applicable Florida Codes or Statutes.
6. AWS, American Welding Society, for welding certifications and procedures.
7. NFPA 101, Life Safety Code, latest edition.
8. Any other code requirements as may apply to the elevator renovation.

D. Inspection and Testing: Elevator Contractor shall obtain and pay for all required inspections, permits and fees for the elevator renovation work.
1. Arrange for State Of Florida elevator inspection by retaining the services of a fully qualified and Certified Elevator Inspector (with State of Florida CEI license) to be present when the elevator equipment inspected, and is load tested with test weights for the capacity of the elevator, during testing at completion of the elevator renovation.
2. Elevator Contractor shall arrange and pay for two (2) additional inspections and tests during the course of his obligation under this contract. Inspections shall occur at the end of one (1) year and two (2) years, during the warranty and maintenance period. Same conditions apply as shown in no. 1 above, except test weights are not required.
3. Deliver three (3) copies of the test report, and any other documents associated with the test, to the Owner.

1.04 DELIVERY, STORAGE AND HANDLING

A. Deliver elevator materials, components and equipment in the protective packaging. All packaging materials and related refuse shall be properly disposed of at the sole expense of the Elevator Contractor.

B. Store materials in a dry protected area. Protect and handle the materials in accordance with elevator equipment manufacturer's recommendations to prevent damage to materials. Elevator

Contractor must arrange for and pay for all storage facilities that he may need in connection with this work. The Owner shall not incur any additional costs for storage, demurrage, handling or other material related storage costs. Storage at the building site is very limited, consequently, the Elevator Contractor should anticipate the possible need for off-site storage of all materials and tools for this project.

C. Equipment not being reused in the execution of this contract shall be removed from the site at the sole expense of the Elevator Contractor. The materials removed from the elevator system shall be removed daily and not allowed to accumulate at the building site. No materials shall be allowed to block the hallways, exit doors or building lobbies in this building. Under no circumstances shall the Elevator Contractor reuse or incorporate any of the materials removed from this elevator system into any other elevator system located on the Florida State University Campus. Disposal of waste materials must be in an entirely lawful manner.

1.04 PROJECT CONDITIONS

A. Prohibited Use: This elevator equipment shall not be used for construction purposes before Final Acceptance by the Owner.

B. The Elevator Contractor shall perform the elevator work on this project on a two (2) shift basis, working two (2) shifts, five (5) days per week, except on legal holidays or holidays that may be included in a union contract. This is a "time is of the essence" contract, and the Elevator Contractor shall make every effort to complete the elevator work as expeditiously as possible using the two (2) shift work schedule. Once the elevator is removed from service, the work shall continue without interruptions until the project is completed. Additionally, elevator maintenance and repair work is required during overtime hours, as required by the Warranty and Maintenance requirements of these specifications.

At least 95% of the work required for this elevator renovation shall be on a two (2) shift basis.

C. Painting:
1. Except as otherwise specified, paint all new and existing metal work as part of this contract.
2. Clean and paint the guide rails and guide rail supports, fascia, door headers, car frame & platform, under-car sheaves, car safety equipment, overhead and compounding sheaves, all sheave support beams, over-speed governor, governor rope tail sheave and weight assembly, driving machine and motor, drive sheave, junction boxes and duct work, cab top, roller guide assemblies, isolation transformer, controller cabinet, maintenance computer storage cabinet, ascending car rope brake assembly, buffers, counterweight assembly and all other exposed metal work in the hoist way and machine room. If the controller cabinet and computer storage cabinets have a power coated finish from the factory, it is not necessary to repaint the equipment if the finish is not damaged.
3. Add machinist layout bluing material to the machined blades of the elevator car and counterweight guide rails after the machined surfaces are thoroughly cleaned of dirt, grease and other debris.
4. Paint the cast iron thresholds (with two coats of gloss black enamel) after they have been completely cleaned of dirt and debris.
5. Paint metal wall or barrier, both sides, between the machine area and the hoist way.

6. Perform all painting work prior to Final Acceptance.
7. Elevator machine room floor areas, and pit floor area.
8. **All painting work, except for low odor application, shall be performed during times when the building is not being occupied.**

1.05 WARRANTY & MAINTENANCE:

A. Warranty & Maintenance: Submit elevator contractor's warranty and maintenance certificate for materials and workmanship. The materials and labor and workmanship warranty furnished under the contract, shall be for a period of two (2) years after Final Acceptance of the work. Provide complete monthly routine preventive maintenance, repairs, testing and call-back service, on the entire elevator system for two (2) years from the date of Final Acceptance. Regular time call-backs shall be answered within 30 minutes of the time it is reported. Emergency over time call-backs shall be answered within one (1) hour, 24 hours per day, seven (7) days per week, including holidays, without additional charges because of overtime hours. Overtime call-backs require that the elevator technician report to the building within one (1) hour from the time the call for service is placed by the Owner. Repair work is to be included during regular working hours, and during overtime hours, so long as repair work does not exceed four (4) hours of time on the job, during overtime hours.

All work shall be preformed certified elevator mechanics that hold State of Florida "Certificate of Competency" classification, and whom are in the direct employment of the elevator contractor that performs the elevator renovation work. Routine maintenance shall be performed semi-monthly, with at least 2.0 hours per month, in the building, performing preventive maintenance work, adjustments and related work. The required time period of at least 2.0 hours per month shall not include call-backs, scheduled or unscheduled repairs, testing or other required work in connection with the elevator maintenance.

Routine maintenance shall be performed during overtime hours, at a time convenient to Owner.

All repairs, parts, supplies, replacements, tests and adjustments of any type made necessary by normal wear and tear or minor misuse, except for major damage or misuse beyond the control of the Elevator Contractor, shall be covered by the Warranty & Maintenance requirements of this contract.

FSU designed and furnished Elevator Maintenance and Repair Tickets will be provided to the Elevator Contractor, and must be completely filled out after any/all Elevator Work is completed on this elevator. The completed tickets must be returned to the Vertical Transportation Contract Administrator no later than the next working day after the work has been completed.

Near the end of the two (2) years Warranty and Maintenance period, the Elevator Contractor shall provide the additional work required under paragraph 3.09, which requires complete cleaning, adjustments, repairs, testing and other work as specified.

B. Non-warranty Parts and Equipment: The only parts and equipment that the Elevator Contractor shall not be required to warrant for two (2) years, as part of his responsibility, are those not being replaced under this contract or made necessary as a result of major acts of vandalism, abuse, fire, floods, windstorm, or other major losses. Minor repairs necessitated by acts of vandalism, abuse or misuse are to be included under this contract.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Products manufactured by the following firms will be acceptable on this project so long as they fully comply with the requirements of the technical specifications contained herein:
   1. Otis Elevator Company (governor and tail sheave assembly; roller guide assemblies; cab; door operator equipment {closed loop design}, door hangers, tracks (replaceable type only) and door interlocks; car top operating station; signal fixtures; driving machine renewal parts and motor or complete new driving machine and motor, sheave bearings, seals and related parts; and miscellaneous hardware.) Controller equipment shall be manufactured by firm listed in no. B-1 below.
   2. Schindler Elevator Corporation (governor and tail sheave assembly; roller guide assemblies; cab; door operator equipment {closed loop design}, door hangers, tracks and door interlocks; car top operating station; signal fixtures; driving machine and motor, and miscellaneous hardware.) Controller equipment shall be manufactured by firm listed in no .B-1 below.
   3. ThyssenKrupp Elevator (governor and tail sheave assembly, roller guide assemblies; cab; door operator equipment {closed loop design}, door hangers, tracks and interlocks; car top operating station; signal fixtures, driving machine and motor, and miscellaneous hardware.) Controller equipment shall be manufactured by firm listed in no. B-1 below.

B. The following components or items are approved to be incorporated into the elevator equipment work to be furnished by the approved elevator manufacturers listed in 1, 2 & 3 above:
   1. Motion Control Engineering; Elevator Controls, Inc.; Computerized Elevator Controls (elevator controller manufacturers, all with Magnetek 600 HPV digitally controlled motor drive controller)
   2. Delco (roller guide assemblies)
   3. Reuland; Imperial; Baldor (drive motor for hoisting machine)
   4. Unitec (worm, gear, bearings, drive sheave, brake assembly, seals, miscellaneous hardware for existing elevator driving machine assembly)
   5. ELSCO (roller guide assemblies)
   6. Elevator Components, Inc., model VFE 2500-HL {closed loop}, heavy duty (door operator equipment; door relating equipment; interlocks and miscellaneous equipment)
   7. MAC {closed loop}, heavy duty harmonic motion (door operator equipment, door relating equipment, interlocks and miscellaneous door equipment.)
   8. GAL (door hangers & tracks, interlocks, car door clutch, door closers & relating equipment only.)
   9. Janus (electronic door safety equipment, with Panachrome and 3-D features)
   10. Quality Elevator Products (car top operating station, alarm bell system.)
   11. Architectural Elevator Cab Interiors; E-Cab, Retro Elevator; Gunderlin; Tyler (elevator cab equipment.)
   12. Sherwin Williams, Martin Senour or Pratt & Lambert (paint and coatings.)
   13. EPCO (signal fixtures and alarm bell system.)
   14. Innovation Industries (signal fixtures and emergency alarm bell system.)
   15. Monitor Controls (signal fixtures.)
   16. Hollister-Whitney Elevator Corporation (driving machine assembly, ascending car hoist rope brake system & over-speed governor/tail sheave assembly.)
   17. Man-D-Tec (exhaust blower)
   18. K-Tec Model 5200 (digitally controlled load weighing system)
   19. Magnatek 600 HPV (programmable, digitally controlled, electronic motor drive.)

20. Electronic Controls, Inc. (LED type cab lighting, emergency lighting system and car top operating station with emergency light.)
21. Entrada, Inc. (hoist way door frame cast stainless steel metal marking plates)
22. J Fillips; Technicom; HALMA-EMS (Intercommunication equipment)
23. Rath (emergency telephone device for elevator)
24. Atlantic Metals (wall mounted, lockable lap-top computer cabinet)

2.02 HOIST WAY, MACHINE ROOM AND PIT EQUIPMENT

A. Driving Machine, Brake and Drive Motor: The existing driving machine shall be retained in the present location. The following new materials shall be installed on the driving machine:
1. New drive sheave of the same diameter and fit as the existing drive sheave. Provide new bolts for attachment of the drive sheave assembly.
2. New steel worm and bronze gear assembly. New bolts for attachment of bronze gear to spider assembly.
3. New bearings for the entire driving machine assembly, including sheave shaft, worm shaft, thrust bearings and drive sheave support.
4. New seals, gaskets and related materials for the entire driving machine assembly.
5. New grease fittings shall be installed. Grease, where appropriate, shall be installed prior to operation of the driving machine. Use the grease recommended by the machine manufacturer.
6. New brake shoes complete, including metal shoes and friction lining materials.
7. New brake hinge point pins and bushings complete.
8. New components for entire brake assembly. No parts that are subject to wear, fatigue or deterioration shall be retained and reused.
9. New electrical switch and mounting hardware shall be added to the brake assembly to prevent machine operation unless the driving machine brake has been released electrically. This switch shall be purchased from Unitec-Otis, and properly mounted and adjusted according to Otis field manual instructions.
10. New alternating current drive motor designed for 460 volts alternating current operation. Motor shall have type "F" insulation on windings, sealed motor bearings and designed for heavy duty elevator service.
11. Make all other needed repairs to the driving machine so that it functions "like new" when the machine renovation work has been completed. Any additional equipment, parts or work shall be at the sole expense of the Elevator Contractor, under this contract.
12. Motor shall be aligned with worm shaft to an accuracy of +/- .0005", and be free of any vibration, noise or wobbling motion while in operation. A suitable motor connection flange system is required which provides for accurate, quiet operation between the motor and gear box assembly.
13. Machine gear alignment shall be properly set to eliminate any noise or vibration, and in accordance with manufacturer's field manual for this work. Any noises or vibration shall be corrected at the expense of the Elevator Contractor prior to final payment.
14. All brake and machine parts, machine supplies, machine gaskets and bearings shall be purchased directly from Unitec-Otis. Copies of all purchase orders to and invoices from Unitec-Otis shall be provided to Owner and Elevator Consultant to verify that all of the new components were purchased from the original equipment manufacturer. Driving machine and machine brake parts from any other supplier are not acceptable substitutes for this work.
15. The gear housing shall be completely flushed before re-assembly, and after assembly it shall be filled with proper grade of high quality full synthetic type worm gear oil. A label shall be

permanently mounted on the gear case indicating the type, grade and manufacturer of synthetic oil that was installed in the driving machine.

16. The complete driving machine, including drive sheave, brake assembly, drive motor electrical box, and drive motor, shall be thoroughly cleaned of loose paint, dirt and grease, and painted prior to installing the hoist ropes.
17. No worm gear oil leaks shall be permitted on the driving machine.
18. **As a voluntary alterative to rebuilding the existing driving machine**, the Elevator Contractor shall be permitted to completely replace the existing driving machine assembly and drive motor with a complete new driving machine and motor. The drive sheave shall be the same size as the existing sheave. The following conditions shall apply if a complete new machine is installed:
    a. New machine shall be free from all vibrations, operational noise and oil leakage.
    b. Worm shaft and bronze gear ring shall be properly aligned to provide long life and low backlash clearance.
    c. New machine installation shall not require any additional expense or modifications by the Owner.
    d. New machine shall have either a drum or disc type braking system, which operates with little or no noise during the operation.
    e. New machine shall be anchored in a matter that will be structurally sound to support the loads of the elevator and driving machine, consistent with the requirements of ASME A17.1.
    f. If this option is elected by the Elevator Contractor, he shall indicate that a new machine is included in bid for this work.

B. Compounding Sheaves Under-Car, Over-head Sheaves and Counterweight Compound Sheave: All of these sheaves shall be retained and reused. The following shall be provided under the contract:
    1. Complete new bearings, grease seals and grease fittings shall be replaced under this contract.
    2. Any bearing shafts that are damaged shall be replaced under this contract.
    3. Check the mountings for the sheaves, and replace any worn or damaged materials during this renovation work. All needed replacement shall be included in the contract price.
    4. Clean and paint entire area of all of the sheaves prior to installing the hoist ropes on the sheaves.
    5. In the event any of the sheaves or sheave support or attachment equipment is damaged or excessively worn, those items shall be replaced under this contract, at the sole expense of the Elevator Contractor.

C. Elevator Electrical Control Equipment: Furnish and install complete new single elevator car type microprocessor based and software oriented elevator electrical controller equipment of the highest quality available, using control equipment manufactured by a controller manufacturing firm shown on the pre-approved list of controller manufacturers shown under 2.01, B,1.

The system shall operate in real time, continuously analyzing the position and condition of the elevator car. Elevator control design shall be capable of providing serial communications with all signal devices such as operating buttons, car riding lanterns and other similar devices. Control of the car shall be by means of pushbuttons in the car and at all landings, with "up-down" buttons at all intermediate landings and single call buttons at terminal landings. The elevator control systems shall be capable of resetting and resuming normal operation after a power failure, unless the system is damaged by the power failure or an electrical overload has been tripped.

Additional features of the elevator electrical control system shall include the following:

1. Selective collective operation, with service to four (4) floor levels.
2. Must comply with all requirements of ASME A17.1-2004 Safety Code for Elevators, plus all addenda.
3. Independent service operation.
4. Emergency power operation provisions for future when generator power is provided.
5. Car riding lantern operation at all floors.
6. Firemen's Recall Operation, using ASME A17.1-2004, including all addenda required features. Provide flashing jewel in main floor landing station in the event of smoke in machine room area.
7. Door operator control interface features.
8. Digital position indicator feature for car, with direction arrows.
9. Floor passing chime operation.
10. Emergency service "recall" to main floor, which cancels all existing car and landing calls. Key switch shall be located at main floor, in landing station. Key shall be same as for independent service operation. a
11. Electronic, digitally controlled, programmable type motor control equipment (Magnatek model 600 HPV).
12. Load weighing system improve motor control system and to prevent car from operating during overloaded condition. Digitally controlled load weighing system, K-Tech model 5200.
13. Door closing operation, but does not close unless the doorway is clear. The delayed closing operation shall fully comply with ASME A17.1 Safety Code for Elevators during fire recall operation. Sound buzzer during all delayed closing operation, to warn passengers to clear to doorway when the door is waiting to close. Do not attempt to close doors until doorway is cleared of obstructions. When doorway is clear, close doors at normal closing speed.
14. Dual feed-back motion control system, which will provide for exceptionally smooth and accurate stops.
15. Drive motor pre-torque system to prevent roll-back and sling shot starts.
16. Controller shall be mounted in the elevator machinery control room area, on the wall or on the floor. Controller is to be mounted in a separate room from the driving machine.
17. Controller shall have hinged, swing type door(s). Lift-off type covers are not acceptable.
18. Cab lighting dimming mode when car is not in use. (requires 24 volt DC input, optically isolated) Refer to Electronic Controls, Inc. for design information. Call 800-633-9788.
19. Turn off the cab ventilation blower after 30 minutes of non-use of the elevator. Restart when call is registered.
20. Relay fault output sends a message to elevator controller in case of battery or emergency lighting fault. (dry contact 4a/250V) Contact Electronic Controls, Inc. (800-633-9788 for design information.)
21. Provide on-board diagnostics system on the elevator controller, capable of showing fault codes, and the ability to make adjustments in control operation. The adjustment, troubleshooting and operational performance functions and systems features shall also be accessible by way of lap-top computer attached to the controller by way of Ethernet type cable.
22. Special control feature that controls the elevator speed, while on car top inspection operation, to no more than 30 feet per minute when traveling above the next to top landing. This is to improve safety of elevator technicians since the overhead clearance is very low.
23. Controller cabinet shall have a built in dual cooling fans to prevent overheating of components inside the controller. When the elevator has not been in operation for 30 minutes, the cooling

fans shall be turned off to save energy and prolong life of the fans. Restart fans when call is registered.

24. Provide a high quality, electronic type, continuous duty, quiet operating contactor assembly that Automatically disconnects the power to the isolation transformer after a period of approximately 30 minutes of non-use, in order to reduce power consumption due to the transformer being energized. Provide a timer that permits adjustment from 15 minutes to one hour. The contactor shall close the circuit when a call button is pushed. Design of contractor shall be for a long service life.
25. Ascending car brake operation circuitry for Holister-Whitney rope brake assembly.
26. Hoist way access control, top and bottom floors.
27. Any other features as may be required for project, and by ASME A17.1-2004 Safety Code for Elevators.
28. Provide all necessary circuits and switches to permit safe remote testing of the over-speed governor.

Furnish and install a heavy gauge metal wall mounted lap-top computer cabinet, with electronic type coded lock, in the elevator machine room near the elevator controller panel. This cabinet shall be constructed of 22 gauge metal, and fabricated to the size of 19.5 inches wide, 3.75 inches deep, and 15.5 inches high, with fold down door to use as a rest for lap-top computer. The lap-top computer shall be used for most electronic adjustments, viewing the performance criteria for the elevator, position of the elevator, position of the car doors and all other related elevator system maintenance and operational information. Connect the lap-top to the elevator controller via an Ethernet type cable. The Atlantic Steel brand cabinet is available from C & H Distributors, phone number 888.316.2223.

The project specific serialized lap-stop shall be programmed, furnished and installed as part of this elevator renovation contract, and shall remain the property of the Owner for use exclusively on this elevator.

D. Motion Control System: This system shall be vector controlled pulse-width modulated type A.C. drive. The variable voltage, variable frequency drive shall convert the AC power supply using a two-step process to a variable frequency power supply to the hoist machine drive motor. Speed control shall be by a vector control providing independent excitation and torque current. Furnish a digital velocity encoder on the driving motor, providing feedback to the controller as to the car speed and position in the hoist way. Additionally, provide an additional source of velocity feedback to the control system using similar means, mounted on the governor or other suitable location. Elevator Contractor shall provide a voltage boosting type isolation transformer in the machine room, floor mounted or mounted on a wall rack near the elevator control system. The secondary voltage for the isolation transformer shall be 460 volts, 3 phase, for operation of the hoist machine motor. Provide all of the necessary filters and other devices in the elevator system to minimize the total airborne noise, harmonic distortion and any other electrical distortion, which could be generated by the elevator control equipment. Motor controls shall be Magnetek, model 600 HPV, digitally operated, programmable system, of suitable capacity to provide excellent, consistent, elevator motion control operation.

The motor drive system shall include **regenerative power feature**, which returns the regenerated power from the drive motor back into the power feeder system. No resistors are permitted to burn off the regenerated power caused by overhauling loads from the drive system.

E. Leveling Switches, Limit Switches and Cams: The Elevator Contractor shall install all new landing, leveling and stopping switches, cams, brackets, electronics, controls and other equipment associated with the stops, leveling, speed control and other operation for the elevator.

F. Hoist way Door Frames: Professionally wrap the existing hoist way door frames with stainless steel materials. The new material shall be at least 16 gauge thickness, and shall return to the wall on each floor level. Secure the frame wraps with concealed fasteners on the hoist way side. Wraps shall be installed to achieve a "first class" look when completed, with only hairline joints at the top where the head jamb contacts the side jambs. Wraps shall have a small urethane caulk joint where the frame meets the wall at each opening. Install cast stainless steel floor identification plates, with black background color, on both sides of the openings. Provide pins to secure the plates from easy removal. Finish on the stainless steel wrapping materials shall be no. 4 satin.

Provide new rubber bumpers at each hoist way door jamb, top and bottom locations.

Frame material finish shall match the finish on the existing door panels.

The existing fascia inside the hoist way may be retained and reused; however, it must be cleaned and repainted. At the option of the Elevator Contractor, the existing fascia can be placed with new galvanized metal materials that are to be painted after installation.

Clean all of the existing cast iron thresholds, and remove any burrs or sharp edges in the threshold grooves. Paint the thresholds with two (2) coats of extremely durable, semi-gloss black enamel.

G. Hoist way Door Panels: Retain and reuse the existing two-speed, stainless steel faced, hoist way door panels at each landing of the elevator. The existing door panels shall be equipped with new corrosion resistant door hangers, tracks, closers, interlocks, relating equipment and miscellaneous hardware.

Fully clean and polish all door panels, and replace all of the door guide shoes under this contract. Secure any sight guards that are not properly attached. Replace any damaged sight guards.

The rear of the hoist way door panels shall be equipped with 4" high floor designation numbers as required by ASME A17.1.

H. Door Operator and Door Hanger Equipment: The door operator equipment shall all be new, including the new heavy duty door operator machine with ½ horsepower alternating current type drive motor, car door switch, car and hoist way door hangers, door interlocks, door closers, door relating cables, car door clutch, car door restrictor and related materials.

The controls for the door operator equipment shall be equipped with a microprocessor system, and an operator drive motor with a digital encoder. Operator design without an encoder on the drive motor or drive shaft is not acceptable. The door operator control system shall measure velocity of the door movement, door closing pressure, door position, and current demand. The operation of the door equipment shall be adjustable from the door operator controller mounted on the car top, by making adjustments to the microprocessor system. The door operator shall be adjusted to provide

the following opening and closing operation, door closing pressure and standing open time:

1. Fully open the doors in 1.8 seconds.
2. Fully close the doors in 3.5 seconds.
3. Door closing pressure shall be set at approximately 18 pounds, measured between 1/3 & 2/3 closed. Doors shall automatically reopen once the closing pressure reaches18 pounds in the closing direction.
4. Door stand open time shall be set at 5 seconds for both car and landing calls.

Provide elevator code required car door restrictor device on elevator car to prevent opening of the car door outside the landing zone area.

Door tracks and door hanger equipment shall be zinc, galvanized or cadmium coated to reduce rusting or corrosion.

When the door closing is delayed to the point of sounding of the delayed closing buzzer, the door Shall not close on passengers or other objects. However, the nudging buzzer will sound indicating doorway has been blocked. When the doorway has been cleared, the door will close at normal closing speed with the buzzer continuing to sound until the door has fully closed. Comply with elevator code.

I. Electronic Door Safety Protection: The car door shall be equipped with a Janus electronic type door safety screen that protects the passengers from being struck by the closing of the doors. The door protection shall be equipped with **3-D feature** and **Panachrome feature** that projects green lighting when it is safe to enter the doorway, and red/orange color when the doors are ready to close or are in the closing mode.

J. Elevator Car Sling & Platform: The existing car frame and platform shall be retained and reused during this elevator renovation. A new toe guard or safety apron shall be installed on the platform designed for the height as required by elevator code. Install an elastomeric type protective sheet on the platform before the cab is installed.

Replace wood subflooring on platform, using marine grade ¾" plywood, for proper installation of new cab and finished flooring materials. New cab finished flooring shall be highest quality *Norament* brand flooring, No. 925 Strada, color no. 4750, Midnight, or other color as selected by Owner. Approximate weight of flooring materials is 65 pounds.

Arrange the car frame for attachment of the new roller guide assemblies, as specified hereinafter.

K. Pit Buffers for Car and Counterweight: The pit buffers shall be retained and reused, if they are suitable for continued use. If buffers are unsuitable, they shall be replaced under this contract. Buffers shall be cleaned and painted.

L. Over-speed Governor, Car Safety Device and Release Mechanism: The existing car safety and release mechanism shall be retained and reused during this elevator renovation. The safety device shall be cleaned, examined, repaired as necessary, lubricated and tested during the renovation work. A new electrical switch assembly shall be furnished and installed on the safety equipment to prevent the elevator from operating unless the safety is in the fully retracted position. All operable

components of the safety equipment shall be protected against rust and corrosion, and all points that are subject to binding shall be properly lubricated.

Replace the existing elevator over-speed governor device with a new device, equipped with new electrical switches, self-resetting design feature to allow the governor to be remotely reset to safe operating condition. The elevator electrical controller shall have the proper electrical features to permit this operation.

M. Guide Rails and Rail Brackets: The existing guide rails shall be retained, if the rails meet current elevator code requirements. Where required by the elevator code, the elevator contractor shall add any materials and labor to properly support the guide rails, or provide any rail backing that may be required, solely at the elevator contractor's expense.

The Elevator Contractor shall cut off the top ends of the guide rails if they are currently contacting or are imbedded in the roof slab above the elevator.

Guide rail machined surfaces, for both car and counterweight rails, shall be cleaned and blued with fast drying machinist layout bluing material. The non-machined surfaces shall be repainted.

N. Roller Guide Assemblies: The Elevator Contactor shall provide the elevator car with new spring adjustable roller guide assemblies, with roller diameters equal to the diameters of ELSCO model "B" rollers. The counterweight assembly shall be equipped with new spring loaded roller guide assemblies, with rollers equal to ELSCO model "D" rollers and overall design. The tires for all guides shall be neoprene rubber type. Polyurethane tires are not acceptable substitutes. Roller guide assemblies shall be repainted.

O. Counterweight Assembly: The Elevator Contractor shall retain and reuse the existing counterweight assembly during the renovation. The overall weight of the counterweight assembly shall be adjusted to compensate for the added weight of the elevator cab assembly. The cost of adding additional weight shall be at the sole expense of the Elevator Contractor, and cost shall be included in the bid for this work. The entire counterweight shall be painted.

Counterweight guard assembly shall be retained, cleaned and repainted.

P. Elevator Cab Replacement: The elevator cab shall be completely replaced with a new cab which includes the following design and features:
   1. Provide new cab walls on two sides constructed of heavy gauge 5WL patterned, rigidized stainless steel with no. 4 satin finish. Provide rear wall constructed of 16 gauge satin finished stainless steel.
   2. Provide removable, replaceable, ¾" thickness wood core panels on rear wall of the cab, only. The removable cab panels shall be faced with no. 5WL design decorative stainless steel. Back the panels with laminate plastic to aid in stabilizing the panels. Panels shall be secured From the rear to prevent easy removal from inside the cab. Design panels to allow cab ventilation without the use of exposed ventilation grilles in the base of the cab. The panel and rail design shall be as follows:
      a. The panels shall be divided into approximately 2/3 of their height above the hand rails and 1/3 below the handrails. The rear wall shall have two (2) panels above, and two (2)

panels below for handrails. Finished panels shall be approximately 7/8" total thickness. Space for the handrails, between the panels on the rear wall, shall be approximately 5-6"

b. The edges of the panels shall all be wrapped with 1/8" thickness stainless steel, formed into an angle and attached with countersunk screws on the rear of the panels. Miter the corners and remove any sharp edges on all edge materials. The edge material shall extend approximately 1/8" beyond the front edge of the panels to protect the edge of the facing materials. Joints shall be tight between the edging materials and the face materials.
c. Provide hidden ventilation means behind lower panels.
d. Provide 1-1/2" diameter round, heavy gauge stainless steel handrails, on three sides of the cab, with closed ends returned to toward the walls. Provide suitable number of solid stainless steel supports for the handrails.
e. Provide 3/8" thickness by 3" wide solid stainless bumper rails on the bottom panels, on three (3) sides of the cab. The ends of the bumper rails shall be returned toward the walls. Provide a suitable number of solid stainless steel supports for the bumper rails.

3. Provide full width, wrap around type, swing panel on front of the cab, in which the operating buttons and signal devices shall incorporated. Front return swing panel shall be heavy gauge satin finish stainless steel material, equipped with heavy duty hinges and suitable locking mechanism to prevent unauthorized opening of the panel; and is to be constructed to prevent assembly rattles or squeaks.
4. Suspended ceiling shall be wood core panel faced and edged with # 4 satin finished stainless steel materials. Lighting shall be by use of six (6) silver finish "CABLITE" LED down lights suitable spaced in the ceiling. The lighting level shall be adjustable on lighting power module, which also contains necessary features for emergency lighting, battery charging, emergency light testing, light dimming feature when elevator is not in use, and emergency lighting failure warning. Cab lighting system requires one (1) electronic power supply to power the lighting assembly. Electronic power supply assembly shall have an adjustable feature to allow manual setting of normal lighting level in the cab. Specified LED lighting system is available from Electronic Controls, Inc., 7073 N. Atlantic Avenue, Cape Canaveral, Florida 32920, Phone no. 800-633-9788. Include two (2) spare can-light assemblies complete that are to be delivered to the Owner at turnover. Provide emergency exit panel, neatly arranged, in ceiling design. Elevator cab manufacturer shall provide suitable design, fabrication and installation arrangements for gaining easy access to all the ceiling light fixtures in the event lighting fixture replacement is required. Additionally, the removable section of the cab suspended ceiling, which allows access to the cab top emergency exit, shall have two hand grips and two security chains of suitable length, securely attached to the panel. The cab ceiling exit panel shall be designed to be lifted out of the top exit.
5. Car doors shall be faced with 16 gauge stainless steel materials, with no. 4 satin finish, laminated to equal strength furniture steel panel. Threshold for cab shall be nickel silver type, with matching countersunk fasteners.
6. Furnish a two-speed squirrel cage exhaust blower of suitable capacity. Output on high speed shall be approximately 500 CFM. Interrupt the power supply to the exhaust blower approximately 30 minutes after the elevator comes to rest without any calls in the system. Restart the exhaust blower when another call is placed in the system.
7. Provide car top exit panel with electrical switch to prevent movement of car unless panel is closed.

8. Provide a no. 4 satin finished base around the cab, constructed of 14 gauge stainless steel. Remove the sharp edge on the top of the base.
9. Provide high quality vinyl protection pads and satin stainless steel pad support buttons. Attach the buttons using "Loctite" thread sealer to prevent easy removal without proper tools.
10. Provide emergency telephone device (only Rath brand, which will function with Florida State University telecommunications system already in place. Verify the proper instrument type and part number before fabrication and installation of the cab.
11. Provide a flush design certificate holder with a thick Lexan brand cover that fits flush with front return panel. Size of the opening shall be equal to the standard size of operating certificate size for the State of Florida. Combine in the door for service cabinet if space is not available otherwise.
12. Provide any other features as required by the elevator code.
13. All stainless steel shall be grade 304 stainless steel material with no. 4 satin finish.
14. Overall cab height shall be approximately 7'-6" from the floor to the top of the cab enclosure. The clearance under the cab suspended ceiling shall be approximately 7'-1", measured from the finished floor to the underside of the ceiling. Elevator Contractor shall field measure to verify the existing dimensions and required clearances for a cab of this height.
15. Finished flooring shall be provided by the elevator contractor. The flooring shall be highest quality materials manufactured by *Norament* brand, 925 Strada, color number 4750 Midnight, or any other color selected by the Owner. Flooring installation shall be first class in every respect, with the top of the flooring set flush with the top of the cab threshold.
16. The elevator cab shall be completely cleaned and polished prior to acceptance by the Owner.

Q. Car Operating Panel: Furnish and Install a new car operating buttons with vandal resistant, mirror finish, stainless steel materials. Each button shall have a center jewel with illumination from red LED lamps. The operating devices shall be equipped with replaceable type handicapped "fish-tail" design markings set nearly flush with the surrounding panel, attached from the rear of the panel. The markings shall be black with contrasting colored characters, numbers and symbols. All devices shall be mounted in a swing type return panel that runs the full height of the doorway. Provide suitable vandal resistant type locking devices for the swing panel. Comply with all Florida State University elevator standard requirements in terms of design, key types, emergency telephone device (only Rath brand telephone model no. 2100-967DVCA , or other model required by Telecommunications Department) purchased by elevator contractor, equipment to be verified prior to purchase), recessed certificate frame and other features. Alarm bell button shall have center jewel that illuminates red when pressed. Locked stainless steel service cabinet, mounted in the lower portion of the swing panel, shall contain the independent service key switch, key operated light switch, key operated two-speed blower switch, key operated hoist way access switch, push-to-test emergency lighting switch, as well as any other appropriate switch or device not normally used by the public.

Provide the recessed inspection certificate holder flush mounted in the cover for the elevator service cabinet panel.

Include jewel and buzzer to indicate an elevator overload condition.

Install a duplex type, GFCI protected electrical outlet in the bottom area of the swing return area, located approximately 4"-6" above the floor level.

Provide floor passing chime.

Provide a digital type car position indicator, with direction arrows, near the top of the panel.

Engrave the elevator serial number, no smoking (symbol and words), and capacity rating in pounds and passengers in the front return panel.

Provide the floor selections in a single vertical line. Buttons shall have positive stops for increased reliability. Adjacent to each floor selection button, provide adjacent key operated cut-out switches to allow elevator service to the individual floors to be locked off, at the option of the Owner. On basement floor only, provide a Medco brand lock assembly for increased security. Elevator Contractor shall verify all locking arrangements with Owner prior to fabrication of cab and operating station.

Lock-out provisions shall have an override feature in case of Phase II firemen's operation. The key switch to lock out basement floor shall be high security type, keyed as required by Owner.

Front return panel shall also contain a flush mounted, hinged type, satin stainless door to cover the compartment containing the firemen's recall devices, with a key lock as required to meet the code conditions. Comply with all of the latest elevator and fire code requirements, including providing the instructions for Phase II operation inside the compartment cover.

Car operating panel shall be constructed of grade 304 stainless steel, with no. 4 satin finish. All lamps and indicators shall be LED or electronic type; incandescent lamps of any type are not approved.

Locate the medical emergency key switch above the floor buttons, but not in the service cabinet. Key the switch the same as independent service key switch.

Provide grill punched in panel, behind which shall be installed the speaker and microphone for the emergency intercommunication system. Provide the master station in the machine room area, and connect to the speaker and microphone in car panel. Provide a battery powered back-up system for the intercommunications system. The speaker and microphone in the car shall be hands –free design.

Provide any other features required by elevator code and as required by Owner.

R. Car Riding Lanterns: Install new car riding lanterns on each side of the cab opening entrance, in the ASME A117.1 required location. Car riding lanterns shall have the follow features:
   1. Vandal resistant design.
   2. Heavy gauge stainless steel cover plates with vandal resistant screws securing the cover plates. Cover plates shall be type 304 stainless steel with no. 4 satin finish.
   3. Arrows shall illuminate brilliant white in up direction and brilliant red in down direction.
   4. Electronic chimes shall ring one (1) time for up traveling car and two (2) times for down traveling car.
   5. All lamps or indicators must be LED type.
   6. Professional appearance and installation.

S.. Landing Stations: Furnish and install completely new landing stations at all floors served by this elevator. These flush mounted landing stations shall contain the following features:

1. Call buttons for elevator. Provide single buttons at terminal floors and two (2) buttons at intermediate floors. Cover plates shall be stainless steel materials, with no. 4 satin finish. Buttons shall be mirror finished, type 304, stainless steel with center jewels that illuminate red from high intensity LED lamps. Buttons shall have positive stops for increased reliability. Cover plates shall be approximately 6" wide.
2. Provide digital type, electronic type, position indicator in each floor landing station cover plate.
3. Provide visible notification to not use the elevator in event of fire or other emergency. Include flame pictograph symbols and warning notice, all in station cover plates, with notice to comply with latest code requirements. Separately mounted signs are not acceptable.
4. Include fire recall switch in the main floor station (1st floor landing), along with proper instructions for usage. Signage for Phase I operation shall be engraved into or inset into the landing station. Key for the landing station fire recall switch shall comply with latest fire and elevator code. Jewel in main floor station shall flash if a smoke detector in machine room or in the hoist way has been activated.
5. Mount hoist way access switches at terminal landings, in landing call station.
6. At the main floor (1st floor level), install a key operated emergency call switch to cause the elevator to cancel all car and hall calls already registered, and return to the main level as soon as possible. Key this switch the same as independent service key switch.
7. Elevator Contractor shall be responsible for all cutting and patching work associated with landing stations. Requirements shall be communicated to the project manager for such work, including cutting, patching and painting. Elevator Contractor shall coordinate the work, as appropriate, to be performed by his forces or by a specialty sub-contractor.
8. Use matching vandal resistant screws to secure the landing station cover plates.
9. All stainless steel covers for operating devices shall be grade 304, with no. 4 satin finish.

T. Car Top Station: Furnish and install a completely new car top operating station that complies with the elevator code, and includes a car top light with protective guard. Additionally, provide a second lighting fixture on the car top for added illumination. Second fixture shall be attached to the safety railing on the rear of the car, using a two (2) lamp fluorescent fixture. Use compact type fluorescent lamp, rated at least 150 watts on the front lighting fixture.

U. Emergency Alarm System: Provide a new alarm system, with back-up battery power supply and battery charger system.

V. Ascending Car Rope Brake System: Furnish and install an ascending car rope brake system that functions automatically when the car moves in the up direction without intended motion. The system shall be manufactured by Holister-Whitney Elevator Corporation, or equal if approved in advance.

W. Hoist and Governor Ropes: Install new hoist and governor ropes of the type and size required by the elevator equipment manufacturer. Install a rope lubricator on the hoist ropes, and ground the lubricator to the driving machine. Adjust the lubricator to apply only a small amount of lubrication to the ropes.

X. Metal Barrier Between Hoist Machine Area & Hoist way Area: A 12 gauge un-perforated sheet metal guard shall be furnished and installed by Elevator Contractor. The barrier shall be installed using

suitably sized panels that can be easily removed in sections for maintenance and repair purposes. Provide hand grips on panels that are to be removed for maintenance and repair purposes.

The panels are to be secured in the existing opening by installation of an angle iron framework to which the panels are attached in a manner that they do not rattle or interfere with the elevator driving machine and other elevator car equipment. Provide some small ventilation louvers at top and bottom of the metal wall to permit air circulation between the hoist way area and machine location. The existing metal frame in the opening can be retained if elected by the Elevator Contractor.

Y. Electrical Wiring Materials: Provide all materials and labor to replace the electrical wiring duct work, raceways and conduit in the hoist way, machine room and on the car top, unless the raceways, a portion of electrical duct work or conduit materials is found to be in good condition, in proper location and meets current NEC and Elevator Code requirements. Any metallic materials that do not meet all of these requirements shall be completely replaced under this contract. Any metal conduit or duct work that requires relocation shall not be reused.

All electrical wiring, including traveling cables and other conductors, shall be completely replaced under this contract.

Provide at least 25% additional spare wires in the traveling cords, and wiring from the machine room to the hoist way. Provide spare communication wires from the machine room to the elevator car, as well as wiring conductors (Cat. 6 or higher) that would support a future security camera on the elevator car.

The traveling cords shall be run from the elevator car devices to the elevator controller panel, without the use of a mid-point junction box. Provide suitable cable grips on the bottom of elevator car and in the hoist way overhead, to suspend the cables without damage to the conductors or covering.

Provide the master station for the emergency intercommunication system in the elevator electrical controller location. A battery back-up is required. Provide all associated wiring.

Install a pit stop switch near the pit access ladder, and install a stop switch near the over- speed governor in the overhead, in a position that is easily accessible from the governor location.

Provide a stop switch in the driving machine location.

Electrical wiring shall neatly arranged and tied in all junction box, car operating panel and controller locations. Unprofessional electrical work is not acceptable.

Grounding of all components as required by NEC and Elevator Code.

Z. Furnish and install a new pit ladder of the size and type required by the elevator code. Locate new ladder to the right hand side of the hoist way. Elevator Contractor shall furnish a retractable ladder, if required, including a safety switch, to prevent elevator from operating unless the ladder is retracted and locked in retracted position.

PART 3 EXECUTION

3.01 EXAMINATION

A. Before fabricating the new equipment piping and other equipment, inspect the complete hoist way and equipment, dimensions, machinery to be reused, pit depth and area, machine room area, as constructed; verify all critical dimensions, and examine supporting structures and all other conditions under which elevator work is to be installed or performed. Do not proceed with the equipment installation until all conditions have been reviewed.

B. Installation constitutes acceptance of all existing conditions and responsibility for satisfactory performance, code compliance and Owner satisfaction.

3.02 INSTALLATION

A. Install elevator system components and incorporate the equipment that is being reused into a completely satisfactory installation.
   1. Work to be performed by completely competent, fully trained elevator installation personnel in accordance with ASME A17.1, manufacturer's installation instructions, American Welding complete compliance with the contract and approved shop drawings. Elevator mechanics must hold current State Of Florida "Certificate of Competency" certifications. "Temporary Mechanics" are not permitted to work as mechanics on this elevator.

B. Perform work with competent, skilled workmen under the direct control of the Elevator Contractor's experienced foreman or superintendent.

C. Coordination: Coordinate elevator work with any other work of other trades, for proper time and sequence to avoid delays in the project. Adhere to the scheduling requirements.

D. Mount all moving elevator components on vibration absorbing mounts, designed to effectively prevent the transmission of vibrations to the structure, and eliminate sources of structure borne noise from the elevator system.

3.03 FIELD QUALITY CONTROL

A. Acceptance testing: Upon completion of the elevator installation, and before permitting use of the elevator, performance acceptance tests are required to demonstrate that the equipment will sustain and lift the loads for which the elevator was initially designed. Test weights are required to perform these tests, and must be used to demonstrate the performance in the presence of representatives of the Owner, Elevator Consultant and a QEI certified elevator inspector. Elevator Inspector shall not be a current or former employee of the Elevator Contractor.

B. Advise the Owner, Elevator Consultant and QEI certified elevator inspector at least seven (7) days in advance of date and time the test is to be performed on the elevator equipment.

3.04 ADJUSTING

A. Make all necessary adjustments of operating devices and equipment to ensure elevator equipment operates smoothly and accurately. This work should be performed prior to performing the required tests. Provide documentation of all safety and governor tests on the system.

3.05 CLEANING

A. Before final acceptance, remove all protection from any finished surfaces. All of the elevator equipment must be thoroughly cleaned prior to inspection for Final Acceptance.

B. At Completion of the elevator work, remove all tools, equipment and surplus materials from the site. Remove all trash and debris during the clean-up. Thoroughly clean up all oil spills or residue.

3.06 DEMONSTRATION & TRAINING

A. Instruct Owner's personnel in the proper use, operations and regular maintenance of the traction elevator control system. Provide information on the procurement of all required components that are necessary to repair the elevator controls, door equipment, driving machine and any other materials provided under this contract. Advise Owner's personnel the requirements of daily maintenance to keep the elevator equipment functional. Provide at least eight (8) hours of instructions on the equipment operation and functionality, using trained personnel.

B. Make a final check of the elevator operation, with the Owner and Elevator Consultant's personnel present, immediately before the scheduled completion.

3.07 TURNOVER OF DOCUMENTS

A. The Elevator Contractor shall turn over the previously specified documents.

B. The documents shall be provided to the Owner prior to Final Acceptance of the work.

C. The Elevator Contractor shall provide at least twelve (12) copies of all keys.

3.08 COMPLETION DATE

A. The installation is not considered complete until the complete project has been considered to have been performed in a first-class, professional manner and completely acceptable to the, Owner and Elevator Consultant. Additionally, all adjustments, load tests and punch-lists must be completed. All required documents must be turned over to the Owner prior to establishing the final completion date.

B. The Owner, Elevator Contractor and Elevator Consultant must be in agreement upon the completion date and date the warranty will commence.

3.09 ELEVATOR SCHEDULE

A. Number of Elevators – One (1) Existing Otis Elevator Company brand elevator to be modernized.

B. Elevator Type – Electric Geared Traction, with basement set machine on side of elevator.

C. Speed – Speed shall be at least 100 feet per minute in both directions, with full load on platform.

D. Capacity – 1,300 pounds.

E. Control System – Microprocessor type, selective collective, as specified herein.

F. Car Size – Approximately 5'-0" wide by 4'-5" front to back. Verification of car size shall be the responsibility of the elevator contractor, prior to fabrication of elevator equipment.

G. Travel Distance – Maintain the existing travel distance, approximately 34'-0"". Elevator Contractor shall be responsible for verifying the exact travel distance prior to fabrication of the equipment.

H. Number of Floors Served – Four (4) in line, B-1-2-3. Verify the landings prior to submitting bid.

I. Door Type – Two-speed, side sliding type, 3'-0" wide by 7'-0" high. Elevator Contractor to field verify the width of the doorways prior to providing shop drawings.

J. Power Supply – 208 volts, three phase, 60 cycles. Elevator Contractor shall verify the voltage prior to bidding the contract; and shall provide a boost type isolation transformer in the machine room to increase the operating voltage to 460 volts for the elevator equipment.

K. Elevator Cab – As required by the elevator technical specifications, and by Elevator Contractor's verified field measurements of platform and car frame height prior to submittal of cab design drawings and the fabrication of the cab.

L. Maintenance & Warranty – Twenty-four (24) Months after Final Acceptance.

Additional Requirements of the Elevator Contractor under this Contract:
All performance tests on door closing and opening times as listed herein, door closing pressure setting as listed herein, car leveling accuracy as shown herein, roller guide adjustments, operating device lamps, interlock and car door clutch adjustments, hoist rope tensions, governor rope length, presence of any objectionable noises or vibrations, any visual detractions, overall Owner satisfaction and car ride comfort, shall be examined and/or performed again at the end of the two (2) years warranty and maintenance period at the expense of the Elevator Contractor. All necessary repairs or adjustments shall be made by the Elevator Contractor at his expense. Elevator equipment, pit area, top of elevator, hoist way area and machine room, must be fully cleaned as a part of this warranty and maintenance completion requirement. Any squeaks and rattles in the elevator system must be corrected under this work. Appearance and operation of the elevator equipment shall be equal to new equipment in every manner, except for wear to the architectural finishes during the two (2) year period of use. All remedial work performed by the Elevator Contractor must be reported on FSU provided forms for elevator work. Report of successful testing, cleaning and compliance must be provided to Owner prior to release from contract requirements under the warranty and maintenance provisions. Representative of Owner shall be present when the tests are performed.

END OF SECTION 142410

Schedule of Events:

- **July 27, 2010** @ 10:00 am, EST - Mandatory Pre-Bid
- **August 3, 2010** - Deadline no later than 2:00pm est. to have questions submitted. Questions must be emailed or faxed to B.J. Lewis, Purchasing Agent at blewis@admin.fsu.edu or 850-644-5071. Verbal questions to anyone or written questions to anyone other than Mrs. Lewis are non-existent and will not be part of the contract documents.
- **August 6, 2010** - Answers to properly present questions available by 4:00 pm EST.
- **August 20, 2010** Bid Opening; 2:00 pm EST, 969 Learning Way, Mendenhall Bldg A, Room 114.

Invoicing: Will be submitted on the basis of the equipment number provided by FSU Facilities. Billing must include work order number, phase number, equipment type, equipment #, building name, and building number.

RIGHTS OF TERMINATION: Either party for any reason or without cause damages or penalty can cancel this bid contract with a 30 day written notice to the other. However, during the (30) day period after such notice is given the rights, obligation, and liability of each party to this agreement will remain full force and affect. Such cancellation will end the obligations of both parties with regard to the purchase order.

FAILURE OF VENDOR TO PERFORM: In the event that the vendor violates any of the provisions of the agreement, the University may serve written notice upon such vendor of its intention to terminate the agreement. Such notice is to the state the reasons of such intention to terminate the agreement, and unless within (10) ten days after serving such notice upon the vendor. Such violation has ceased and satisfactory arrangements for correction is made, the agreement will upon expiration of said ten (10) days, cease and terminate. But the liability of such vendor and his surety for any and all such violation(s) will not be affected by any such termination.

TAX EXEMPTION: Florida State University does not pay Federal Excise or State Sales Tax on direct purchase of tangible personal property.

The Florida State University
Facilities Operations and Maintenance
Purchasing Agent
114F Mendenhall Building A
Tallahassee, Florida 32306-4150
P: (850) 644-7639 F: (850) 644-5071

BIDDER PRICING SHEET
BID NUMBER: FAC530219-10
DATE: August 20, 2010 @ 2:00 pm
LOCATION: Facilities, 969 Learning Way, 114 MMA

_____
COMPANY NAME

_____
CONTACT PERSON

_____ / _____
PHONE NUMBER FAX NUMBER

_____
E-MAIL ADDRESS

DESCRIPTION:

BASE BID: _____

_____
Print Individual or Firm Name
(Apply Seal if Corporation)

SIGNATURE: _____

TITLE: _____