



Addendum #1

Project: BL000B – BL181 Simon MSC LBR REC, BL6008 MESH – Replace Elevator Controls
IU 20210409

Date: April 21, 2025

This Addendum, issued prior to bidding, alters, amends, corrects, or clarifies the Construction Bid Documents to the extent stated herein and does thereby become a part of the Construction Bid Documents, and will become part of the Contract Documents of the successful bidder. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

ITEMS INCLUDED IN THIS ADDENDUM

MEETING NOTES

- Virtual pre-bid meeting – 03-18-2025
- Bids are due by 2pm April 24, 2025
- Questions will be taken in email form until April 18, 2025
- Addendum 1 will be submitted to Eastern Engineering on April 21, 2025
- Elevator Contractor will be responsible for all code updates.
- Mesh Hall is a secure building. The Elevator Contractor will need to make prior arrangements for access.
- Questions sent via email to tony@elevatorinspection.com.
- David Riffel will be IU Construction Manager - 812-325-5560

QUESTIONS

Can the Alpha Motion Controller be used as a substitution. Please see the attached revised specification below.

Answer:

- Yes

Are there electrical drawings available?

- The IU Capital Projects Office should have current drawings for both buildings.

Please contact: Lynn Vornheder, PE
Sr. Electrical Engineer
IU Engineering Services
317-502-6776
glvornhe@iu.edu



INDIANA UNIVERSITY

PRE-BID SIGN IN SHEET

Darrin Middendorf McNally - American Elevator, darrin@americanelevator.net, 513-997-9717

Dan Gollnick - Murphy Elevator – dan@murphyelevator.com, 317-800-9106

Tony Stuard – Stuard & Associates Inc. – tony@elevatorinspection.com, 765-346-3748

Dan Backler – IU Team Lead – dbackler@iu.edu, 812-855-4379

SECTION 14 24 00 - HYDRAULIC ELEVATOR

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the alteration of two (2) hydraulic passenger/service elevators located in the Simon Music Library, as well as a single (1) hydraulic elevator located at the Multidisciplinary Engineering and Sciences Building, both on IU Bloomington's Campus.
 - 1. Complete commercial pre-engineered hydraulic elevator system that complies with all applicable codes and elevator standards of Indiana University:
 - a. Microprocessor controller supplied by Smartrise or Alpha Controls.
 - b. Submersible systems may be used.
 - c. Elevator Equipment Corporation (EECO) valves only.
 - 1) Rebuilt valves are not acceptable.
 - d. GAL Manufacturing Corporation high speed door operator and equipment.
 - e. Talk-A-Phone, Model ETP-100MBV two-way communication device.
 - f. Standard IU language for signage.
 - 2. Reuse the existing underground cylinders and pistons:
 - a. Remove all existing hydraulic fluid and replace with new.
 - b. Replace Packing gland after modernization has been complete.
- B. Additional work to satisfy code upgrades.
 - 1. Machine Room:
 - a. Dedicated circuits for GFI outlet and car light disconnect need to be verified by the Elevator Contractor.
 - b. Need to add a flashing hat relay for fire service code upgrade.
 - 2. Pit Areas:
 - a. Enhance the pit lighting to 100lx.
 - b. GFI outlet needed.
 - c. Dedicated circuit needs to be verified by the Elevator Contractor.

3. IU Standards:

a. Add service lighting inside the hoistway at each floor.

- 1) Lighting shall have a switch at the uppermost landing reachable from the lobby entrance.
- 2) Lighting shall be a minimum of 100lx (10fc).

C. All Deliverables (O&Ms, Drawings files, etc.) will be per IU-Capital Projects Standards.

D. This is considered a turnkey project.

1.2 DEFINITIONS

- A. Definitions in ASME A17.1 apply to work of this Section. Use current edition as adopted by the State of Indiana.
- B. AHJ: Authority Having Jurisdiction. State of Indiana, Elevator Safety Division a department of Homeland Security.
- C. COP: Car Operating Panel
- D. CDI: Car Direction Indicator
- E. MCP: Maintenance Control Program as described in A17.1—2019
- F. CPO: Capitol Projects Office
- G. Substantial Completion: That date the last elevator is completed and restored to public service.
- H. Defective Elevator Work:
 1. Operation or control system failure, including excessive malfunctions; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.

1.3 ACTION SUBMITTALS

- A. Product Data:
 2. Include capacities, sizes, performances, operations, safety features, finishes, and similar information. Include product data for car enclosures, hoistway

entrances, hoistway door equipment and operation, control, and signal systems. Also supply hoist motor HP, voltage type and FLA.

B. Shop Drawings:

1. Show plans, elevations, sections, and large-scale details indicating a machine room layout, coordination with building structure, and relationships with the locations of machine room equipment, car & Hall fixtures, GAL and Peelle door equipment and cab interiors and any other such equipment.

C. Samples:

1. For exposed finishes signal equipment; 3-inch- square samples of sheet materials; and 4-inch lengths of running trim members.

D. Shop Drawings/Submittals:

1. Include plans and large-scale details indicating the machine space layout, control space layout, coordination with building structure, relationships, and locations of equipment.
2. Include large-scale layout of car-control stations, lobby fixtures operation control panel.
3. The electronic version of the submittal package shall be sent to Tony Stuard, tony@elevatorinspection.com of Stuard & Associates, Inc. Elevator Consulting Services for review
4. Provide BTU output of machine room equipment.

E. Samples for Verification:

1. For exposed car, hoistway door and frame, and signal equipment finishes; 3-inch- square Samples of sheet materials; and 4-inch lengths of running trim members.

F. Manufacturer/Installer Certificates:

1. Signed by elevator manufacturer/installer certifying that hoistway, pit, and machine room layout and dimensions, as shown on Drawings, and electrical service, including emergency generator if provided, as shown, and specified, are adequate for elevator system being provided.

G. Contractor Licenses:

1. The Contractor shall show proof of licensing for the company and any personnel working on the project.

1.2 CLOSEOUT SUBMITTALS

A. Maintenance (Owner's) Manuals:

1. Provide a bound or binder filled Owner's Manuals at the end of the installation. Send an electronic draft copy to Tony Stuard, Stuard & Associates, Inc., tony@elevatorinspection.com for review and approval. Following approval, one (1) bound set shall be submitted for project closeout to the Owner.
2. Include diagnostic and repair information available to manufacturer's and Installer's maintenance personnel including all inputs as well as outputs which are to be included on the "as-built" drawings.
3. Upon acceptance, provide the remaining two copies to the Owner.

B. Maintenance Control Program:

1. Before Substantial Completion, submit one (1) initial electronic draft copy of the (Rule 8.6.1.2.1) MCP to Tony Stuard, tony@elevatorinspection.com for review and approval.
 - a. The Maintenance Control Program shall consist of but not be limited to examinations, maintenance, and tests of equipment at scheduled intervals to ensure that the installation conforms to the requirements of 8.6.
2. At Substantial Completion and the approval of the initial MCP, provide three hard copies to the Owner.

C. Inspections, Acceptance Tests, Certificates, Operating Permits, Annual Tests:

1. Apply and pay for all new Installation Permits.
 - a. Upon receipt, provide copy of Installation Permits to the Owner.
 - b. Upon project mobilization, post original or copy of Installation Permits in elevator machine room spaces.
2. Pay for the initial operating permits for all vertical transportation equipment specified.
3. Coordinate and pay for each final elevator inspections.
4. Perform Code required Annual Tests on all vertical transportation equipment during the 12th and 24th month of the warranty period.

D. Project Electrical Drawing:

1. Supply all updated electrical drawings.

1.3 QUALITY ASSURANCE

A. Installer Qualifications:

1. Elevator manufacturer or an experienced installer who has completed elevator installations similar in material, design, and extent to that indicated for this Project and with a record of successful service and installation performance with Indiana University.
2. Installer Residency:
 - a. Unless an installer has been previously approved for IU projects, the installer shall have had an established presence in the Indianapolis area for a period of not less than 5 years prior to the bid date.
3. Regulatory Requirements:
 - a. In addition to local governing Building Codes and regulations, comply with applicable provisions in ASME A17.1—2007 editions including adopted supplements or newly adopted versions, "Safety Code for Elevators and Escalators", ASME A17.5—Electrical Equipment for Elevators and Escalators, NEII-1-2000, "Building Transportation Standards and Guidelines, current adopted edition of the NEC, "National Electrical Code."
4. Accessibility Requirements:
 - a. Use current ADA Standards for Accessible Design.
5. Product Options:
 - a. Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of elevator. Aesthetic effects are indicated by dimensions and arrangements as they relate to pit, hoistway, and machine room requirements and to adjoining construction.
 - b. Do not revise intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If revisions are proposed, submit comprehensive explanatory data to Architect for review.
 - c. Physical, electrical, and mechanical characteristics of elevator specified for this Project are based on requirements indicated in Contract Documents. Contractor shall coordinate all changes to the Project required by use of equipment on Project. All coordination with and changes to Contract Documents, including but not limited to hoistway, pit, machine room, building electrical system, and building mechanical system shall be included in Base Bid. All costs shall be borne by

Contractor. No additional costs to Owner or other contractors will be accepted.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials, components, and equipment in manufacturer's protective packaging.
- B. Store materials, components, and equipment off ground, under cover, and in a dry location. Handle according to manufacturer's written recommendations to prevent damage, deterioration, or soiling.
- C. Elevator Contractor will be responsible for removal of all discarded materials, trash and other related items not needed for the completion of the project scope of work.

1.5 COORDINATION

- A. Coordinate locations and dimensions of other work relating to each elevator including pit ladders and electrical service, electrical outlets, lights, switches in pits, machine rooms, and conductors from the fire control panel to the elevator equipment rooms.
- B. The Contractor shall provide the Owner 14 days' notice before mobilizing and removing either elevator from service.
- C. Use only "Rigid Galvanized Steel" conduit in elevator machine rooms.
- D. Coordinate sequence of elevator installation with other work to avoid delaying the Work.
- E. Coordinate locations and dimensions of other work relating to traction elevators including electrical service, electrical outlets, lights, and switches in pits and machine rooms.
- F. Coordinate final inspection with the AHJ, Stuard & Associates, Inc., and Owner's Project Manager.

1.6 WARRANTY

- A. Warranty Period: Twenty-four (24) months from date of Substantial Completion.
 - 1. The substantial completion will be that date at which any passenger elevator is restored to public service. It is understood that the warranty will have different starting dates.

2. Prior to placing the elevator into service, IU Elevator Consultant will schedule a final inspection of the equipment. The final inspection will include representatives of the Elevator Contractor, the A/E, the General Contractor, and IU Elevator Maintenance Staff. A State of Indiana operating permit for the elevator must be issued before the elevator can be used by any General Contractor, Sub-Contractor, or Owner.

1.7 MAINTENANCE SERVICE

A. Initial Maintenance:

1. At the time of either Substantial Completion, the Contractor shall provide twenty-four (24) months of what is commonly referred to in the elevator industry as full maintenance service using skilled, licensed employees of the Contractor. Include preventive maintenance examinations, common repairs and/or typical replacement of worn or defective components. Provide routine lubrication, cleaning, and adjusting as required for proper elevator operation. Provide parts and supplies as used in the manufacture and installation of original equipment.
 - a. Perform no less than MONTHLY routine maintenance and include emergency callback service during normal working hours. Requests for any service made outside of normal hours shall be provided by the Contractor upon request. The Owner shall be responsible for only the bonus portion of the hourly rate should overtime callbacks be requested. Callbacks made necessary because of vandalism or other causes beyond the control of the Contractor shall be billed at the Contractor's regular rates.
 - 1) Emergency service requests for service shall be initiated by the IU Elevator Maintenance Staff which will verify the condition of the elevator and will communicate to the Elevator contractor the status of the elevator by fax or email.
 - 2) Response Time Routine Callback: Within 24 hours.
 - 3) Check in Procedure: Following any routine service, a response to a callback, repair, and/or test, the Contractor shall be required to provide the IU Bloomington elevator shop Service Manager a copy of any/all work done.
 - 4) The IU Elevator Shop will initially respond to elevator related issues. Once having determined a problem exists, the contractor will be called to dispatch a technician. The Elevator Shop will not service or repair elevators during warranty.
2. The Contractor shall maintain a log within each elevator machine room. All service examinations, callbacks, repairs, replacements, Fire Service tests, and

safety tests shall be recorded. At the end of the warranty, provide a complete copy of the log for the Owner.

3. The Contractor shall be required to perform an Annual during the 12th and 24th (final) month of the warranty. All tests shall be recorded in the machine room log.
4. The Contractor shall perform and record the Fire Service testing monthly. A log shall be kept in the machine room.

PART 2 - PRODUCTS

2.1 ELEVATORS

A. Elevator 1 Description: (Simon Music Library)

1. IU Asset Elevator Number: 63674
2. State Number: LD47404C
3. Type: Conventional Bored Hole Hydraulic
4. Rated Load: 9000 lb. Maintain Existing
5. Rated Speed: 110 fpm . Maintain Existing
6. Openings: 3 – In Line
7. Floors Served: G,2 &3
8. Operation System: Simplex, Selective collective automatic operation.
9. Auxiliary Operations:
 - a. Firefighter's Service
 - b. Battery-powered lowering.
 - c. Hoistway Access.
 - d. Independent Service.
10. Security Features: None.
11. Car Enclosures:
 - a. Inside Width: Field Verify
 - b. Inside Depth: Field Verify
 - c. Inside Height: Field Verify
 - d. Cab Return/Strike Jamb: Retain Existing
 - e. Car Fixtures: Stainless steel 300 series.
 - f. Side and Rear Wall Panels: Retain Existing.
 - g. Door Faces (Interior): Retain Existing.
 - h. Door Sills: Retain Existing.
 - i. Ceiling: Retain Existing.
 - j. Floor:

- 1) Manufacturer: Mohawk

- 2) Style: First Step II
- 3) Color: Iron Ore 983
- 4) Size: 24" x 24"

12. Hoistway Entrances:

- a. Reuse Existing.
 - 1) Width: 72 inches.
 - 2) Height: 94 inches.
 - 3) Type: Two Speed Center Opening.
 - 4) Fire-Protection Rating: 1-1/2 hours.
 - 5) Frames: Retain Existing.
- b. Doors: Retain Existing.
- c. Sills: Retain Existing

13. Hall Fixtures:

- a. Replace the Ground Floor existing lobby pushbuttons with all new vandal resistant as specified. Also supply code compliant fire service phase 1&2 key switch in the face plate.
- b. Add a new set of vandal resistant lobby buttons at each elevator lobby and G, 2 & 3. Button fixtures shall have hall position and directional indicators built in.
- c. Satin stainless steel, No. 4 finish.
- d. Remove all hall direction indicators.
 - 1) Patch all holes and match existing wall finish.

B. Elevator 2 Description: (Simon Music Library)

- 1. IU Asset Elevator Number: 63673
- 2. State Number: LD47403C
- 3. Type: Conventional Bored Hole Hydraulic
- 4. Rated Load: 6500 lb. Maintain Existing
- 5. Rated Speed: 145 fpm . Maintain Existing
- 6. Openings: 4 – In Line, 2 - Rear
- 7. Floors Served: G,1F,1R,2F,2R & 3
- 8. Operation System: Simplex, Selective collective automatic operation.
- 9. Auxiliary Operations:
 - a. Firefighter's Service
 - b. Battery-powered lowering.
 - c. Hoistway Access.
 - d. Independent Service.

10. Security Features: None.
11. Car Enclosures:
 - a. Inside Width: Field Verify
 - b. Inside Depth: Field Verify
 - c. Inside Height: Field Verify
 - d. Cab Return/Strike Jamb: Retain Existing
 - e. Car Fixtures: Stainless steel 300 series.
 - f. Side and Rear Wall Panels: Retain Existing.
 - g. Door Faces (Interior): Retain Existing.
 - h. Door Sills: Retain Existing.
 - i. Ceiling: Retain Existing.
 - j. Floor:
 - 1) Manufacturer: Mohawk
 - 2) Style: First Step II
 - 3) Color: Iron Ore 983
 - 4) Size: 24" x 24"
12. Hoistway Entrances:
 - a. Reuse Existing.
 - 1) Width: 50 inches.
 - 2) Height: 94 inches.
 - 3) Type: Two Speed Center Opening.
 - 4) Fire-Protection Rating: 1-1/2 hours.
 - 5) Frames: Retain Existing.
 - b. Doors: Retain Existing.
 - c. Sills: Retain Existing
13. Hall Fixtures:
 - a. Replace the Ground Floor existing lobby pushbuttons with all new vandal resistant as specified. Also supply code compliant fire service phase 1&2 key switch in the face plate.
 - b. Add a new set of vandal resistant lobby buttons at each elevator lobby and G,1F,1R,2F,2R & 3.
 - c. Button fixtures shall have hall position and directional indicators built in.
 - d. Satin stainless steel, No. 4 finish.
 - e. Remove all hall direction indicators.
 - 1) Patch all holes and match existing wall finish.

C. Elevator 1 Description: (MESH HALL)

1. IU Asset Elevator Number: ????
2. State Number: LD40831C
3. Type: Conventional Bored Hole Hydraulic
4. Rated Load: 3500 lb. Maintain Existing
5. Rated Speed: 100 fpm. Maintain Existing
6. Openings: 2 – In Line, 1- Rear
7. Floors Served: G,1 & 1R
8. Operation System: Simplex, Selective collective automatic operation.
9. Auxiliary Operations:
 - a. Firefighter's Service
 - b. Battery-powered lowering.
 - c. Hoistway Access.
 - d. Independent Service.
10. Security Features: None.
11. Car Enclosures:
 - a. Inside Width: Field Verify
 - b. Inside Depth: Field Verify
 - c. Inside Height: Field Verify
 - d. Cab Return/Strike Jamb: Retain Existing
 - e. Car Fixtures: Stainless steel 300 series.
 - f. Side and Rear Wall Panels: Retain Existing.
 - g. Door Faces (Interior): Retain Existing.
 - h. Door Sills: Retain Existing.
 - i. Ceiling: Retain Existing.
 - j. Floor:
 - 1) Manufacturer: Mohawk
 - 2) Style: First Step II
 - 3) Color: Iron Ore 983
 - 4) Size: 24" x 24"
12. Hoistway Entrances:
 - a. Reuse Existing.
 - 1) Width: 48 inches.
 - 2) Height: 84 inches.
 - 3) Type: Two Speed Side Sliding.
 - 4) Fire-Protection Rating: 1-1/2 hours.
 - 5) Frames: Retain Existing.
 - b. Doors: Retain Existing.

- c. Sills: Retain Existing

13. Hall Fixtures:

- a. Replace the Ground Floor existing lobby pushbuttons with all new vandal resistant as specified. Also supply code compliant fire service phase 1&2 key switch in the face plate.
- b. Add a new set of vandal resistant lobby buttons at each elevator lobby and G,1 & 1R
- c. Button fixtures shall have hall position and directional indicators built in.
- d. Satin stainless steel, No. 4 finish.
- e. Remove all hall direction indicators.

- 1) Patch all holes and match existing wall finish.

2.2 ELEVATOR CONTRACTORS

A. IU Approved Elevator Contractors :

- 1. American Elevator, 2067 600 S, Anderson, IN 46017, 765-374-0429, www.americanelevatorinc.com
- 2. KONE Elevators, 5201 Park Emerson Dr., Suite E, Indianapolis, IN 46203 (317) 788-0061, www.kone.com.
- 3. DC Elevator Co., 140 E. Woodlawn Avenue, Louisville, KY 40214 (502) 363-5961, www.dcelevator.com.
- 4. Oracle Elevator Company, 6242 La Pas Trail, Indianapolis, IN 46268, www.oracleelevator.com
- 5. Murphy Elevator Co. Inc., 2525 N Shadeland Ave, B12, Bldg. 30, Indianapolis, IN 46219, 317-247-9690, www.murphyelevator.com.
- 6. ThyssenKrupp Elevator, 7217 East 87th Street, Indianapolis, IN 46256, (317) 595-1125, www.thyssenkruppelevator.com.

2.3 HYDRAULIC SYSTEMS AND COMPONENTS

A. General:

- 1. IU relies on the IU Elevator Shop to maintain elevators under a preventative maintenance contract. For this reason, it is important that **only IU approved, and non-proprietary elevator control equipment be installed** when specified and that all required tools, passwords, equipment and training necessary to service the conveying equipment be provided by the Elevator Contractor.

B. Pump Units:

- 1. Positive-displacement type with a maximum of 10 percent variation between no

load and full load and with minimum pulsations. Provide the following:

- a. Submersible Type: The hydraulic pump, motor, and valve shall be located within the tank and each power unit shall be placed on isolation pads.
- b. Use only EECO valves properly sized for duty specified.
 - 1) Rebuilt valves are not permissible.
- c. Provide motor with solid-state starting.

C. Hydraulic Silencers:

- 1. Provide hydraulic silencers containing pulsation-absorbing material in a blowout-proof housing at pump unit.

D. Piping:

- 1. Provide size, type, and weight of piping recommended by manufacturer, and provide flexible connectors to minimize sound and vibration transmissions from power unit.
- 2. Supply a properly rated oil supply line shut-off valves shall be required. One shall be located within machine room and one valve shall be located within pit. Existing valves found to be Code compliant may be reused.

E. Hydraulic Fluid:

- 1. Use only hydraulic fluid as recommended by valve manufacturer. Drain and properly dispose of any/all existing fluid.
- 2. Remove existing fluid from within each cylinder.
- 3. Replace packing gland after the modernization has been completed.

F. Roller Guides:

- 1. Retain Existing.

G. Guide Rails:

- 1. Reuse existing.
 - a. Check alignment of existing rails and adjust if necessary to ensure that they are straight and plumb within 1/16" per 100'.
 - b. File all rail joints to a smooth and seamless condition.

H. Top of Car Equipment:

1. A car top light and GFCI outlet shall be permanently mounted at the crosshead.
 - a. The light shall be provided with a protective cover.
 2. Provide a secondary car top lighting source attached to a cable of suitable length to allow elevator personnel to operate the device from various locations on the car top.
 - a. Light shall be provided with a protective cover.
 3. Car top illumination shall be no less than 100 lx
 4. Emergency escape hatch shall be supplied with an electrical switch in which the contacts are closed in normal operation.
- I. Hoistway Limit Switches:
1. Provide new limit switches, cams, brackets, and hardware.
- J. Pit Stop Switch:
1. Locate a new pit stop switches adjacent to each pit ladder in accordance with ASME A-17.1-2007
- K. Wiring:
1. Furnish and install all wiring, conduit, traveling cables and hardware necessary to complete the Work as specified.
 2. All traveling cables shall have low voltage wiring for in-car communications and future card reader access. There shall be no less than 5 shielded pairs within the traveling cable.
 3. Traveling cables shall maintain a minimum of 5% spare wires.
 4. All mechanical space requires Rigid conduit according to University Standards.
 5. Where appropriate, existing conduit and duct "may" be reused provided they meet or exceed NEC standards and requirements as published in the latest edition.
 6. NONE of existing elevator control wiring including traveling cables is to be reused.
 7. Coordinate the wiring of smoke detectors and card readers. Provide information to other disciplines as to required signal needs of the elevator controller.
 8. Provide car light disconnects, pit GFIC's and switches, pit lights, secondary lighting and GFIC, and specified.
 9. Main line disconnect may be use if code compliant.
- L. Pit Ladders:

1. Reuse existing.
 - a. Ensure ladder is code compliant.

M. Pits:

1. Clean and dry each pit at the conclusion of the Work.

2.4 OPERATION SYSTEMS

A. Non-Proprietary Elevator Controller:

1. Products: Subject to compliance with requirements, provide products by one of following:
 - a. Smartrise – SRH
 - b. Alpha – Lykos Hydraulic
2. Provide a simplex selective/collective, solid state starting, microprocessor-based control system requiring no external tools or computers.
 - a. Controller shall provide for on-board programming of basic functions with alphanumeric keypad and digital display.
 - b. Controller shall be equipped in on-board diagnostics.
 - c. Controller requiring removable service tool or hand-held computer for diagnostic, adjusting, or set-up shall be permanently mounted within elevator controller and shall be included as an integral part of controller provided as work of this Section. All such equipment and devices shall become property of Owner, have permanently based system memory, and shall not require licensing. Device shall provide unrestricted access to all parameters, flags, inputs, and outputs for maintenance and troubleshooting of controller.
 - d. Service and diagnostic tools may be programmed to work specifically/only for elevator system included in Work of this Section.
 - e. Should tool be stolen, lost, damaged, or cease to function, a replacement shall be provided by manufacturer at listed/published replacement cost.
 - f. Software:
 - 1) Software shall have permanent memory, shall not expire over time, nor shall system require special passwords or key unknown to Owner. No licensing agreement shall be required.
 - 2) Should controller software suffer memory loss or become corrupted, new software shall be provided to Owner at listed/published replacement cost.
 - 3) Owner shall be notified of software updates and recalls that may

be developed. Changes directly related to safety shall be provided to Owner at no charge.

g. Training:

- 1) If requested by Owner, the Contractor shall provide a four-hour training session for Owner and Owner's elevator service provider's representative within first 30 days of warranty. The Contractor shall instruct Owner's representatives on the manner in which any service tool or diagnostic device is accessed and utilized. The Contractor shall discuss and identify the contents of the Owner's Manuals at this time with Owner personnel present. Parameters and capabilities of device shall be demonstrated.

h. Technical Support:

- 1) Should Owner require telephone or on-Site technical support or product assistance, the Contractor shall provide support at current field labor rates for an individual/single service technician and within a reasonable time as determined by Owner.
- 2) Project manuals, wiring diagrams, and prints shall be provided as full and complete set with circuitry information for all systems and components. Information required for troubleshooting, maintenance, and repair of entire system shall be included. Updates, field notifications, and modifications shall be provided for each elevator controller system.

B. Landing System:

- a. Provide controller manufacturer's standard landing system. Use vanes, magnets, and necessary hardware.
- b. The elevator shall be capable of stopping level (1/8" maximum) with any floor regardless of load and/or direction of travel.

C. Auxiliary Operations:

1. In addition to primary operation system features, provide the following operational features for elevators where indicated:
 - a. Elevator Recall:
 - 1) Provide Phase I and Phase II firefighter's service. Use FEO-K1 keys.
 - b. Independent Service:
 - 1) Provide Independent Service inside car.
 - 2) Locate rocker switch within a Service Cabinet.

c. Hoistway Access:

- 1) By use of a Hoistway Enable switch located within a Service Cabinet located in each COP, provide Hoistway Access.
- 2) Seven pin Best Lock interchangeable systems shall be required at all terminal landings.
- 3) Owner will supply Cores
- 4) Utilize a separate fixture located adjacent to the lobby entrance.

d. Top-Of-Car Operation:

- 1) Provide a new top of car operating station.
- 2) Included all the normal code required operating features.
- 3) The operating device shall be secured to a flexible cord that allows the unit to be safely stored near the door operator and accessible from the lobby entrance.
 - a) The cable shall be long enough to allow usage at the rear of the elevator from a standing position.

e. Battery Power Lowering:

- 1) The battery-operated lowering system shall consist of a battery and charging system, terminal points in the elevator control panel for the auxiliary contact output coming from the main line disconnects switch located in the machine room.
- 2) Operation: In the event of a normal power supply failure, the elevator system shall lower to the lowest floor level and stop. Doors shall open to allow persons trapped the opportunity to exist after which time the doors shall close and remain closed. The elevator shall remain inoperative, except for the door open button located inside the elevator which shall continue to open and close the doors.
- 3) The Electrical Contractor shall provide an auxiliary contact with the disconnecting means, with wiring to the controller.
- 4) The auxiliary contact shall be positively open when the main disconnecting means is open.
- 5) The auxiliary contact shall cause the battery power source to be disconnected from its load when the disconnecting means is in the open position.

2.5 CAR DOOR EQUIPMENT

- A. Replace operator including interlocks, closures, clutch, gate switches, restrictors, closures, guides, restraints, hanger tracks, hangers, and rollers.

1. Replace door operator with GAL solid state MOFVR type high speed systems.
2. See 2.7.C for hoistway door equipment requirements.
3. Upon completion of the elevator, the door operator and lobby doors shall be adjusted for smooth and quiet operation and hoistway doors shall attain a full open.

2.6 DOOR REOPENING DEVICES

A. Infrared Array:

1. Provide door reopening devices with uniform array of 36 or more microprocessor-controlled, infrared light beams projecting across car entrance. Interruption of one or more of the light beams shall cause doors to stop and reopen.

B. Nudging Feature:

1. After car doors are prevented from closing for predetermined adjustable time, through activating door reopening device, a loud buzzer shall sound, and doors shall begin to close at reduced kinetic energy.

2.7 HOISTWAY ENTRANCES

A. Hoistway Entrance Assemblies:

1. Reuse all existing.
 - a. Provide braille plates and raised numerals on both sides of jambs.
 - 1) 60" to center line
 - 2) Characters shall be 2" inches minimum height.
 - b. Current Braille may be reused if code compliant.

B. Hoistway Doors:

1. Reuse Existing

C. Hoistway Door Equipment:

1. Replace all existing door equipment with new GAL.

2. The header can remain if found to be appropriate and can work in conjunction with the new GAL equipment.
3. Required replacements includes:
 - a. hanger tracks
 - b. hangers, rollers
 - c. relating cables
 - d. interlocks
 - e. door retainers
 - f. pick-up rollers and linkage.

2.8 CAR ENCLOSURES

- A. Reuse Existing Cab Enclosures.
- B. Flooring.
 1. Manufacturer: Mohawk
 2. Style: First Step II
 3. Color: Iron Ore 983
 4. Size: 24" x 24.

2.9 SIGNAL EQUIPMENT

- A. General:
 1. Supply only Innovation Type Products.
 2. Provide vandal-resistant hall-call and car-call buttons that light when activated and remain lit until call has been fulfilled.
 3. Fabricate lighted elements with LEDs.
- B. Car Operating Panel:
 1. Provide manufacturer's standard recessed car control stations. Mount in return panel adjacent to car door, unless otherwise indicated.
 - a. Mark buttons and switches with standard identification and Braille for required use or function that complies with ASME A17.1-2007. Use both tactile symbols and Braille.
 - b. Provide "No Smoking" sign matching car control station, either integral with car control station or mounted adjacent to it, with text and graphics as required by authorities having jurisdiction.

- c. Provide Owner's standard language indicating permit is on file at Physical Plant.
 - d. Provide "Emergency Stop" rocker switch in Service Cabinet.
 - e. Provide digital-type car position indicator near upper end of car control panel.
 - f. Provide emergency light located near upper end of car control station.
 - g. Provide Service Cabinet within car control panel.
 - h. Use only Best Lock system cylinder to secure cabinet door.
 - i. Owner will furnish core for elevator company installation.
 - j. Locate within cabinet:
 - 1) Locate the hoistway enable
 - 2) stop switch
 - 3) independent service
 - 4) light and fan rockers
 - 5) emergency light test switch
 - 6) GFI outlet within the cabinet
 - 2. Provide Code-required firefighter's service control cabinet. Provide Code-required functions with instructions on inside of cabinet door.
 - 3. Where non-Best Lock cylinders are provided, supply Owner with no less than 3 keys per cylinder.
- C. Emergency Communication System:
- 1. Provide system that complies with ASME A17.1 and the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG).
 - a. On activation, system dials preprogrammed number of monitoring station and identifies elevator location to monitoring station.
 - b. System shall provide two-way voice communication without using a handset and shall provide visible signals that indicate when system has been activated and when monitoring station has responded.
 - c. System shall be contained in flush-mounted cabinet, with identification, instructions for use, and battery backup power supply.
 - d. Talk-A-Phone, Model ETP-100MBV two-way communication device.
- D. Car Position Indicator:
- 1. Provide illuminated, digital-type car position indicator, located above car control station.
 - a. Also provide audible signal to indicate to passengers that car is either stopping at or passing each of the floors served.

- E. Lobby Position Indicator:
 - 1. Include new indicator within the lobby pushbuttons.
- F. Hall Push-Button Stations:
 - 1. Provide only vandal-resistant fixtures.
 - a. Provide units with flat faceplate for mounting with body of unit recessed in wall.
 - b. utilizing LED lighting.
- G. Car Direction Indicator:
 - 1. Remove current fixtures repair void and match existing wall finish.
 - 2. Include new indicator within the lobby pushbuttons.
- H. Provide new emergency pictorial signs

PART 3 - FINISH MATERIALS

- A. General: Provide the following materials for exposed parts of elevator car enclosures, car doors, hoistway entrance doors and frames, and signal equipment as indicated.
- B. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, commercial steel, Type B, exposed, matte finish.
- C. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, commercial steel, Type B, pickled.
- D. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 430.
- E. Stainless-Steel Bars: ASTM A 276, Type 304.
- F. Stainless-Steel Tubing: ASTM A 554, Grade MT 304.
- G. Aluminum Extrusions: ASTM B 221, Alloy 6063.

PART 4 - EXECUTION

4.1 EXAMINATION

- A. Examine elevator areas, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance. Verify critical dimensions and examine supporting structure and other conditions under which elevator work shall be installed.

1. For record, prepare a written report, endorsed by installer, listing dimensional discrepancies and conditions detrimental to performance, or indicating that dimensions and conditions were found to be satisfactory.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

4.2 INSTALLATION

A. Welded Construction:

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

B. Sound Isolation:

1. Mount rotating and vibrating equipment on vibration-isolating mounts designed to effectively prevent transmission of vibrations to structure and thereby eliminate sources of structure-borne noise from elevator system.

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

D. Leveling Tolerance:

1. 1/8 inch, up or down, regardless of load and direction of travel.

E. All cutting, patching and touch up painting will be performed by the Elevator Contractor.

F. Elevator Contractor will be responsible for the removal of all trash, parts and components related to the modernizations.

4.3 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel in basic and general operation of elevator. Refer to Division 01 Section "Demonstration and Training."
- B. Check operation of elevator with Owner's personnel present and before date of Substantial Completion. Determine that operation systems and devices are functioning properly.
- C. Check operation of elevator with Owner's personnel present not more than one month before end of warranty period. Determine that operation systems and devices

are functioning properly.

END OF SECTION 142400