

BVH ARCHITECTURE

ADDENDUM

ADDENDUM NO.: #01

DATE: 05/07/2026

PROJECT: Nebraska State Capitol Elevator Modernization For Elevator 8

PROJECT #: 22042.2

TO: Prospective Bidders

This Addendum is issued by the Architect to all bidders of record prior to receipt of proposals. Bidders shall acknowledge receipt of this addendum by so indicating on the Proposal Form. Failure to do so may subject Bidder to disqualification. All information and instructions given herein shall become a part of the Contract Documents.

GENERAL

1. Answers to questions raised at the pre-bid meeting:
 - a. Question: What are the fault current requirements for the elevator controller?
Answer: The elevator controller shall be rated not less than 5kA SCCR.
 - b. Question: Emergency power?
Answer: The entire Capitol is fed with emergency power from a back-up engine/generator.
 - c. Question: Who is the Fire Alarm system vendor currently used in the Capitol?
Answer: Midwest Alarm Services is the current Fire Alarm vendor.
 - d. Question: Who is the Fire Sprinkler contractor who currently services the Capitol?
Answer: NIFCO Mechanical Systems.
 - e. Question: Where will access to the site be from?
Answer: Contractors will be able to access the building from the south basement docks. There are other simultaneous projects occurring at the capitol and this is a shared access point, so it will require coordination between teams.
 - f. Question: Where can materials, equipment and tools be staged?
Answer: Space in the basement can be coordinated and allocated for use by the contractor upon award to the successful bidder.
 - g. Question: Are there security requirements?
Answer: Yes, there are badging requirements. The successful bidder will need to coordinate with the owner and Capitol Security to obtain badges for workers. This will just require a list of all workers needing access to the site and a quick photo in the security office to produce the badges.
 - h. Question: Are there any restrictions on working hours?
Answer: Onsite work hours are typically between 7:30 am - 5:00 pm. Extended work hours can be coordinated with the owner if necessary.

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- i. Question: Under Elevator Scope of work it references a TV Security System for installation 2.11 K. page 14 24 13-49. Does the State Capitol have a preferred vendor for this system?

Answer: Page 14.24.23-49 Paragraph 2.11-K Closed Circuit Security System and Page 14.24.23-49 to Page 14.24.23-50 Paragraph 2.11-L Closed Circuit TV Security System have been removed. The elevator contractor is still responsible to ensure the traveling cables for wiring from the machine room to the elevator car are provided as part of this scope of work. See Page 14.24.23-32 Paragraph 2.6-C-2. There are no plans to install a security camera within the car at this time but the owner may elect to do so at a future time.

2. See the attached sign-in sheet from the mandatory pre-bid meeting on April 29, 2026.

PROJECT MANUAL

1. Division 14 - Section 14 24 23 Technical Specifications For One (1) Hydraulic Passenger Elevator (Elevator #8 / Legislature) At Nebraska State Capital Lincoln, Ne
 - a. Page 14.24.23-2 Paragraph 1.2-D-2a.
 - i. Capacity corrected from 2,500 lb to 2,100 lb.
 - b. Page 14.24.23-20 Paragraph 2.2-4.
 - i. Capacity corrected from 2,500 lb to 2,100 lb.
 - c. Page 14.24.23-21 Paragraph 2.3-A-1c and Paragraph 2.3-A-1l.
 - i. "RATH" was added as a pre-approved equipment manufacturer.
 - d. Page 14.24.23-29 Paragraph 2.5-A-2.
 - i. Line 2 was added. Subsequent lines were re-numbered.
 - e. Page 14.24.23-49 Paragraph 2.11-K
 - i. Section K removed. The subsequent paragraph was re-lettered.
 - f. Page 14.24.23-49 to Page 14.24.23-50 Paragraph 2.11-L.
 - i. Section L removed. The subsequent paragraph was re-lettered.
 - g. Page 14.24.23-51 Paragraph 2.12-B-1b.
 - i. Line b was added. Subsequent lines were re-lettered.

DRAWINGS

1. Sheet A1.0 ELEV-8; Enlarged Floor Plans And Sections
 - a. 3. Elev. 8 Basement Enlarged Demo Plan
 - i. See updated plan note as clouded on the attached drawing sheet.
 - b. 5. Elev. 8 Basement Enlarged Plan
 - i. See updated plan notes as clouded on the attached drawing sheet.
 - c. 12 Elevator 8 - Cab Interior Elevations
 - i. See updated East Elevation note as clouded on the attached drawing sheet.

- d. 9 Elevator 8 Entry Elevations
 - i. The two-way communication device was removed from the first floor elevation.
 - ii. See updated elevation notes as clouded on the attached sheet.
- 2. Sheet E1.0 ELEV-8; Electrical Symbols, Detail, Schedules, Enlarged Plans, And Partial Basement Floor Plan – Elevator 8 – Electrical
 - a. Flag Notes For Detail 1 Partial Basement Floor Plan.
 - i. Flag Note #6. Modify note to read as follows: “Existing feeder conduit to remain. Remove existing 3 #3/0, #6 GND conductors. Provide new conductors. See Flag Notes #14 and #20 for Details 2 and 3 on this sheet.
 - b. Electrical General Notes.
 - i. Add the following Note #11. “The entire Capitol is fed with emergency power from a back-up engine/generator.”
 - c. Detail 4 Elevator Interconnection Schematic
 - i. Add conduit and Flag Note #11 to the detail as clouded on the attached reissued sheet.
 - d. Elevator Interconnection Schematic Flag Notes.
 - i. Modify Flag Note #2 by adding the following to the end of the note: “5kA SCCR Minimum.”
 - ii. Add Flag Note #11 as follows: “Provide one 1” empty conduit with pull string to edge of existing communication cable tray in adjacent corridor for connection of in-car camera and voice communication system. Terminate conduit with insulating bushing.”
 - e. Detail 3 Elev. 8 Basement Plan – Electrical
 - i. In Elev Machine Rm E-8-M add a duplex receptacle with associated notes as clouded on the attached reissued sheet.
 - f. Flag Notes For Details 2, 3, 5 And 6
 - i. Add Flag Note #23 as follows: “Provide a new, surface mounted, red, GFCI receptacle for connection to in-car camera and communication unit furnished by elevator contractor. Coordinate proper location for receptacle before beginning rough-in.”

END OF ADDENDUM

BVH ARCHITECTURE

SIGN-IN SHEET

DATE: 04/29/2026

PROJECT: Nebraska State Capitol Elevator Modernization for Elevator 8
PROJECT #: 22042

	NAME	COMPANY/REPRESENTING	PHONE	EMAIL
1	Cameron Jones	Kidwell, Inc.	(402) 499-3424	Cjones@kidwellinc.com
2	Kyle Hoffir	Cormaci	402-720-2503	Kyle@cormaci.construction.com
3	Craig Clabaugh	Metro Elevator	515-681-7355	CraigClabaugh@metro-elevators.com
4	Jason Aaseby	Total Const. Solutions	616-720-5907	jason@tcsmidwest.com
5	Brett Abels	Schumacher Elevator	(402) 437-2367	brett.abels@schumacherelevators.com
6	Evag Rodenburg	TRK	402-306-345	
7	Cary McCoy	TRK	402-802-5538	Cary.mccoy@trkelevator.com
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15	Gene Neemann	ALVINE		
16	MIKE EISENBAUM	RO YORREN		

Paul Bauman - Alvine



DIVISION 14

SECTION 14 24 23

TECHNICAL SPECIFICATIONS FOR

ONE (1) HYDRAULIC PASSENGER ELEVATOR

(ELEVATOR #8 / LEGISLATURE)

AT

NEBRASKA STATE CAPITAL

LINCOLN, NE

DATE: June 12, 2023

Revised May 7, 2026

VDA No. 64803/DJR

DIVISION 14 – CONVEYING SYSTEMS

14 00 00 – Conveying Equipment

14 24 00 – Hydraulic Elevators

14 24 23 – Hydraulic Passenger Elevators

PART 1 - GENERAL

1.0 ADMONITION TO CONTRACTORS

- A. The United States Department of the Interior has recognized the Nebraska State Capitol as a Registered National Historic Landmark, possessing exceptional architectural, historic and cultural value for our nation. Original building and site details, finishes and furnishings are of the highest quality available, both in terms of material and craftsmanship. It is the mission of the Office of the Capitol Commission to ensure that the work performed under construction and service contracts, be of a quality equal or superior to the original construction. Only qualified, experienced contractors/craftsmen who recognize the exceptional value of this landmark and can perform to the highest standards will be employed

1.1 SUMMARY AND DEFINITIONS

- A. Related Documents
 - 1. Request for Proposal
 - 2. 14 24 13 - Hydraulic Freight Elevators
 - 3. 14 01 20 - Elevator Maintenance - Full Coverage Contract / Specifications

1.2 Description

- A. Work Included: The extent of the work is indicated on the drawings and as further specified herein.
- B. Work of this Section includes labor, materials, tools, equipment, appliances, and services required to modernize and update a limited number of selected components and equipment on one (1) existing borehole hydraulic passenger elevator shown on the drawings, as specified herein, and/or as required by job conditions.
 - 1. The specifications also require separate line-item pricing for Alternate #1, based on an accelerated work schedule to reduce the duration of the elevator outage as much as practical.
- C. The work and /or requirements specified in all sections is described in singular with the understanding that identical work shall be performed on all units or associated systems unless otherwise specified herein.

D. Intent

1. This section includes:
 - a. One (1) hydraulic passenger elevator
2. The following outlines the scope of work covered in this Section:
 - a. Limited modernization and upgrading of selected components and equipment on one (1) existing ~~2,500~~ 2,100 lb. capacity four-stop borehole hydraulic passenger elevator operating at 150 fpm with side slide doors and rated for Class A passenger loading as further specified herein.
3. Related equipment shall be designed, constructed, installed, and adjusted to produce the highest results with respect to smooth, quiet, convenient, and efficient operation, durability, economy of maintenance, and the highest standard of safety.
4. It is not the intent of these specifications to detail the construction and design of all parts of the equipment, but it is expected that the type, materials, design, quality of work and construction of each part shall be adequate for the service required, durable, properly coordinated with all other parts, and in accordance with the best commercial standards applicable and of the highest commercial efficiency possible.
5. Electric and magnetic circuits and related parts shall be of proper size, design, and material to avoid heating and arcing, and all other objectionable effects which may reduce the efficiency of operation, economy of maintenance and/or net-useful life of the apparatus.
6. Minimum requirements for design, materials, etc., are for certain parts of the equipment. Equivalent requirements approved by the Consultant shall apply to such parts as are of special design, construction, or material and to which the specified requirements are not directly applicable. These minimum requirements as a whole shall be considered as establishing proportionate general minimum standards for all parts of the equipment.
7. The Consultant may permit variations from the requirement of these specifications to permit use of the Contractor's standard equipment, provided such standard equipment is in every way adequate for the intended use and meets the full intent of these specifications. All such variations proposed by the manufacturer shall be called to the attention of the Consultant and shall only be made if approved in writing prior to the award of the contract.
8. General requirements for design, materials and construction are intended primarily to apply to the heavy-duty and important parts of the equipment specifically mentioned and to other parts of similar duty and importance. Less important and light-duty parts may be of the standard design, materials and construction provided that, in the opinion of the Consultant, such standards are in accordance with the best commercial practice and are fully adequate for the purpose of use. All such variations shall be made only on the Consultant's written approval.
9. All equipment and component parts installed, supplied, or provided under this contract shall be manufactured and distributed by a third-party, non-installer company servicing the vertical transportation industry.
 - a. Apparatus shall conform to the design and construction standards referenced herein and shall be rated the best commercial grade suitable for this application.

- b. Equipment and component systems shall not employ any experimental devices or proprietary designs that could hamper and/or otherwise prohibit subsequent maintenance repairs or adjustments by all qualified contractors.
 - c. Manufacturers of the apparatus shall provide technical support and parts replacements for their equipment and component systems for a minimum of twenty (20) years and issue such guarantee of support to the purchaser with written certification naming the final Owner of their product(s) to ensure the apparatus or systems remain maintainable regardless of who may be selected for future service.
10. All equipment provided shall be factory and field tested with a history of design reliability and net-useful life established.
- a. Contractor must be able to demonstrate the apparatus to be installed has been used successfully in a substantially similar manner under comparable conditions.
 - b. If the apparatus proposed differs substantially in construction, material composition, design, size, capacity, duty, or other such rating from the equipment previously used for the same purpose by the manufacturer, the Consultant may reject the apparatus or require the vendor test and demonstrate the adequacy and suitability for this particular situation. Any necessary tests shall be performed at the sole expense of the Contractor with no prior guarantee of acceptance after the testing procedure.
11. The Contractor shall not use as part of the permanent equipment any experimental devices, proprietary design, components, construction of materials which have not been fully tried out in at least substantially similar or under comparable service, except as may be especially approved by the Consultant. If any important equipment or devices to be used on this installation differ substantially in construction, materials, design, size, capacity, or duty from corresponding items previously used for the same purpose by the manufacturer, they shall pass such tests as the Consultant may require to fully show their adequacy and suitability. These tests shall be in addition to tests herein specified and shall be made at the expense of the Contractor.
12. Certain design limitations, tests, etc., are herein specified as a partial check of the adequacy of design, construction and materials used. These requirements do not cover all features necessary to ensure satisfactory and approved operation, etc., of the equipment.
13. It is understood, the entire system shall be designed, fabricated, modified and/or upgraded in full compliance with applicable local laws and code standards. The absence of a particular item or requirement shall not relieve the Contractor of the full and sole responsibility for such equipment, features and/or procedures.
14. With the exception of only those items specifically identified as being performed by others, the Specifications are intended to include all engineering, material, labor, testing, and inspections needed to achieve work specified by the Contract Documents. Inasmuch as it is understood that any incidental work necessary to complete the project is also covered by the Specifications, bidders are cautioned to familiarize themselves with the existing job site conditions. Additional charges for material or labor shall not be permitted subsequent to execution of the Contract.
15. Bidders must report discrepancies or ambiguities occurring in the Specifications to the Consultant for resolution prior to the bidding deadline, otherwise the Specifications shall be deemed acceptable in their existing form.

E. Termination of Existing Agreements

1. By submitting a bid, the existing maintenance provider agrees that any service contracts in effect shall be terminated by the Owner should the project be awarded to another vendor upon thirty (30) day written notice to the Contractor by the Owner.
 - a. The contracts shall be terminated with no penalty to the Owner or Contractor.
 - b. Owner will be responsible for money owed the Contractor for services provided and work performed up until the date of cancellation.

F. Abbreviations and Symbols

1. The following abbreviations, Associations, Institutions, and Societies may appear in the Project Manual or Contract Documents:

ADA	Americans with Disabilities Act
AHJ	Authority Having Jurisdiction
AIA	American Institute of Architects
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
IBC	International Building Code
IEEE	Institute of Electrical and Electronics Engineers
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Agency
OSHA	Occupational Safety and Health Act

G. Codes and Ordinances / Regulatory Agencies

1. Work specified by the Contract Documents shall be performed in compliance with applicable Federal, State, and municipal codes and ordinances in effect at the time of Contract execution. Regulations of the Authority Having Jurisdiction shall be fulfilled by the Contractor and Subcontractors. The entire installation, when completed, shall conform with all applicable regulations set forth in the latest editions of:
 - a. Local and/or State laws applicable for logistical area of project work.
 - b. Building Code applicable to the AHJ.
 - c. Elevator Code applicable to the AHJ.
 - d. Safety Code for Elevators and Escalators, ASME A17.1 and all supplements as modified and adopted by the AHJ.
 - e. Guide for Inspection of Elevators, Escalators, and Moving Walks, ASME A17.2.
 - f. Safety Code for Existing Elevators and Escalators, ASME A17.3 as modified and adopted by the AHJ.
 - g. Guide for emergency evacuation of passengers from elevators, ASME A17.4.
 - h. National Electrical Code (ANSI/NFPA 70).
 - i. American with Disabilities Act - Accessibility Guidelines for Building and Facilities and/or A117.1 Accessibility as may be applicable to the AHJ.
 - j. ASME A17.5/CSA-B44.1 - Elevator and escalator electrical equipment.

k. ECC (Energy Conservation Code) as may be applicable to the AHJ.

2. The Contractor shall advise the Owner's Representative of pending code changes that could be applicable to this project and provide quotations for compliance with related costs.

H. Reference Standards

1. ANSI/AWS D1.1 - Structural Welding Code, Steel.
2. ANSI/NFPA 80 - Fire Doors and Windows.
3. ANSI/UL 10B - Fire Tests of Door Assemblies.
4. ASTM D1785 - PVC Pipe.
5. ASTM D2466 – PVC Pipe Fittings.
6. ASTM D2564 – Cement for PVC Pipe and Fittings.
7. ANSI/IEEE - 519-Latest Edition.
8. ANSI/IEEE - Guide for Surge Withstand Capability (SWC) Tests.
9. ANSI Z97.1 – Laminated/Safety Tempered Glass.

I. Definitions

1. Defective Work: 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.
2. Provide: Where used in this document, provide shall mean to install new device, apparatus, system, equipment or feature as specified in this document.
3. Definitions in ASME A17.1 as amended or modified by the AHJ apply to work of this Section.

1.3 PERMITS AND SUBMITTALS

A. Permits

1. Prior to commencing work specified by the Contract Documents, the Contractor shall, at its own expense, obtain all permits or variances as may be required by the AHJ and provide satisfactory evidence of having obtained said permits and variances to both the Owner's Representative and Consultant. File necessary drawings for approval of all Authorities Having Jurisdiction.

B. All relative costs shall be included in the base bid proposal with the understanding that corrective actions are covered under the specified scope of work.

C. Submittals

1. Comply with the requirements of Division 01.
2. Submit the following:

a. Samples

Item No.	Quantity	Size	Description
S1	3	12" x 12"	Exposed finishes as requested by Architect
S2	1	Actual	Each fixture as requested by the Architect
S3	1	Actual	Mitered, corner construction of entrance frame
S4	1	Actual	Entrance Jamb and Car Braille plate

b. The samples shall be:

- 1) Held on site after inspection and used as a standard for acceptance or rejection of subsequent production units.
 - 2) Labeled to identify their intended use and relation to the documents, e.g., car finishes, control panel, etc.
 - 3) Returned to the elevator contractor at the completion of the project.
3. Drawings and submittal package shall be developed based on project specific details, dimensions and engineering unique to this project. Submission of generic or drawings, cut sheets or similar materials is not acceptable for this project.

a. Shop Drawings - Submit computer generated project specific layout drawings for approval. Include the following:

- 1) A listing of all components, devices, and sub-systems including:
 - a) Manufacturer and location of plant
 - b) Size and model number
- 2) Machine room plan indicating:
 - a) Location of equipment
 - b) Service connections
 - c) Power unit weight
 - d) Oil line and conduit routing
 - e) Reactions
- 3) Fully dimensioned hoistway plan and section of each unit indicating:
 - a) Platform (with cab), hoistway and entrance dimensions
 - b) All running clearances
 - c) Location of fixtures

- d) Buffers, service ladders and pit reactions
- e) Location of inserts
- f) Rail Reactions

- 4) Entrance details
- 5) Sill support detail
- 6) Fixture details including hall lanterns, hall pushbutton stations, car operating panel, etc.
- 7) Wiring diagrams
- 8) Insert diagrams
- 9) Cab details including wall, ceiling, base, handrail, lighting, fixtures, front return, and transom plans and sections
- 10) A material movement plan detailing sizes and weights of major components that may require special handling and/or access to the building. The elevator contractor shall identify and schedule any building modifications required in advance of the start of work on site.
- 11) A project schedule with work broken down by phase, including any building modifications identified as part of the material movement plan above.

4. Calculations

- a. Rail loads
- b. Pit and machine room reactions
- c. Heat emissions in machine room and hoistway.
- d. Electrical loads including accelerating and running currents. Include all auxiliary loads.
- e. Submit design calculations identifying seismic design forces and support capacities. Calculations shall be certified by a registered professional engineer.

D. Measurements and Drawings

- 1. Drawings or measurements included with the bidding material shall be for the convenience of the bidders only and full responsibility for detailed dimensions lies with the Contractor.
- 2. In the execution of the work on the job, the Contractor shall verify all dimensions with the actual conditions.
- 3. Where the work of the Elevator Contractor is to join other trades, the shop drawings shall show the actual dimensions and the method of joining the work of the various trades.

E. Substitutions

- 1. Requests for substitutions will be considered under the following time limitations and situations:
 - a. Not less than ten (10) calendar days before bids are due.
 - b. Work or equipment specified becomes unavailable through unforeseen events such as strikes, loss of manufacturer's plant through fire, flood, or bankruptcy.
- 2. Requested substitutions must be submitted to the Owner for review and approval in advance of any work to be provided. Failure of the Owner to raise objection shall not constitute a waiver of any of the requirements of the Contract Documents.

3. Request for substitutions shall include complete data with drawings and samples as required, including the following:
 - a. Quality Comparison - Proposed substitution versus the specified product.
 - b. Changes required in other work because of the substitution.
 - c. Effect on the construction schedule.
 - d. Cost Data - Resulting from the proposed substitution versus the specified product. The Contractor shall certify that the cost data presented is complete and includes all related costs under this Contract.
 - e. Safety Comparison – Proposed substitution shall provide equivalent or greater safety, with certification data provided where relevant.

 4. When proposing a substitution, the Contractor represents that:
 - a. They have investigated the proposed substitution and have determined that it is equal to or better than the product specified.
 - b. They will guarantee the substitution in the same manner as the product specified.
 - c. They will coordinate and make other changes as required in the work as a result of the substitution.
 - d. They waive all claims for additional costs as a result of the substitution, with the exception of those identified above under “cost data”.

 5. The Owner will be sole judge of the acceptability of the proposed substitution.
 6. The Owner and Consultant will have authority to approve or reject substitutions or to change the specified standards of quality. However, neither this authority to act under this provision nor any decision made in good faith, either to exercise or not to exercise this authority, shall give rise to any duty or responsibility of the Owner to the Contractor, any Subcontractor, any Sub-Subcontractor, any of their agents or employees or any other persons performing the work or offering to perform the work.
- F. Changes in Scope and Extra Work
1. The Owner may at any time make changes in the specifications, plans and drawings, omit work, and require additional work to be performed by the Contractor.
 - a. Each such addition or deletion to the Contract shall require the Owner and the Contractor to negotiate a mutually acceptable adjustment in the contract price, and, for the Contractor to issue a change order describing the nature of the change and the amount of price adjustment.
 - b. The Contractor shall make no additions, changes, alterations, or omissions or perform extra work except on written authorization of the Owner.
 - c. Each change order shall be executed by the Contractor, Owner, and the Consultant.
- G. Keys
1. Upon the initial acceptance of work specified by the Contract Documents on each unit, the Contractor shall deliver to the Owner, six (6) keys for each general key-operated device that is provided under these specifications in accordance with ASME A17.1, Part 8 standards as may be adopted and modified by the AHJ.

2. All other keying of access or operation of equipment shall be provided in accordance with ASME A17.1 Part 8 as may be adopted and modified by the AHJ.
3. All keying will match the tower elevators for the car and hall fixtures.

H. Diagnostic Tools

1. Prior to seeking final acceptance of the project, the Contractor shall deliver to the Owner any specialized tools required to perform diagnostic evaluations, adjustments, testing, and/or programming changes on any microprocessor-based control equipment installed by the Contractor. All such tools shall become the property of the Owner.
 - a. Owner's diagnostic tools shall be configured to perform all levels of diagnostics, systems adjustment, testing and software program changes which are available to the Contractor.
 - b. Owner's diagnostic tools that require periodic re-calibration and/or re-initiation shall be performed by the Contractor at no additional cost to the Owner for a period equal to the term of the maintenance agreement from the date of final acceptance of the project and subsequent extensions agreed to by both parties.
 - c. The Contractor shall provide a temporary replacement, at no additional cost to the Owner, during those intervals in which the Owner might find it necessary to surrender a diagnostic tool for re-calibration, re-initiation, or repair.
2. Contractor shall deliver to the Owner, printed instructions, access codes, passwords, or other proprietary information necessary to interface with the microprocessor-control equipment.

I. Service Support Requirements / Spare Parts

1. Software / Firmware Updates
 - a. During the life of the equipment and subject to the term of the maintenance agreement, where revisions to firmware and/or software are issued by the control manufacturer or manufacturer of solid state and microprocessor-based subsystems subsequent to the beneficial use of the equipment, updates shall be provided so that the installation and spare circuit boards are current with respect to software and firmware versions.

J. Wiring Diagrams, Operating Manuals and Maintenance Data

1. Deliver to the Owner two (2) identical volumes of printed information organized into neatly bound manuals prior to seeking final acceptance of the project.
2. The manuals shall also be submitted in electronic format on non-volatile media, incorporating raw 'CAD' and/or Acrobat 'PDF' file formats. Electronic manuals shall be properly indexed, bookmarked, and searchable.
3. Manuals, as well as electronic copies, shall contain the following:
 - a. Step-by-step adjusting, programming, and troubleshooting procedures that pertain to the solid-state microprocessor-control and motor drive equipment.
 - b. Passwords or identification codes required to gain access to each software program in order to perform diagnostics or program changes.
 - c. A composite listing of the individual settings chosen for variable software parameters stored in the software programs of both the motion and dispatch controllers.

- d. Method of control and operation.
4. Provide two (2) sets of “AS INSTALLED” straight-line wiring diagrams in both hard and electronic format in accordance with the following requirements:
- a. Displaying name and symbol of each relay, switch or other electrical component utilized including identification of each wiring terminal.
 - b. Electrical circuits depicted shall include all those which are hard wired in both the machine room and hoistway.
 - c. Supplemental wiring changes performed in the field shall be incorporated into the diagrams in order to accurately replicate the completed installation.
5. Furnish two (2) sets of bound instructions and recommendations for maintenance, with special reference to lubrication and lubricants along with the full Maintenance Control Program as required Part 8 of ASME A17.1.
6. Manuals or photographs showing controller replacement parts with part numbers listed.
- K. Training
- 1. Prior to seeking final acceptance of the project, the Contractor shall conduct an eight (8) hour training program on-site with building personnel selected by the Owner.
 - 2. The focus of the session shall include:
 - a. Instructions on proper safety procedures and who to contact for the purpose of assisting passengers that may become entrapped inside an elevator car.
 - b. Explain each control feature and its correct sequence of operation.
 - 3. Control features covered shall include but not be limited to:
 - a. Independent Service Operation.
 - b. Emergency Fire Recall Operation - Phase I.
 - c. Emergency In-car Operation - Phase II.
 - d. Emergency Power Operation.
 - e. Emergency Communications Equipment.
- L. Patents
- 1. Patent licenses which may be required to perform work specified by the Contract Documents shall be obtained by the Contractor at its own expense.
 - 2. The Contractor agrees to defend and save harmless the Owner, Consultant and agents, servants, and employees thereof from any liability resulting from the manufacture or use of any patented invention, process, or article of appliance in performing work specified in the Contract Documents.
- M. Advertising
- 1. Advertising privileges shall be retained by the Owner.
 - 2. It shall be the responsibility of the Contractor to keep the job site free of posters, signs, and/or decorations.

3. Contractor's logo shall not appear on faceplates or entrance sills without the approval of the Owner.

1.4 QUALITY ASSURANCE

A. Materials and Quality of Work

1. All materials are to be new and of the best quality of the kind specified.
2. Installation of such materials shall be accomplished in a neat manner and be of the highest quality.
 - a. Should the Contractor receive written notification from the Owner stating the presence of inferior, improper, or unsound materials or quality of installation, the Contractor shall, within twenty-four (24) hours, remove such work or materials and make good all other work or materials damaged.
 - b. Should the Owner permit said work or materials to remain, the Owner shall be allowed the difference in value or shall, at its election, have the right to have said work or materials repaired or replaced as well as the damage caused thereby, at the expense of the Contractor, at any time within one (1) year after the completion of the work; and neither payment made to the Contractor, nor any other acts of the Owner shall be construed as evidence of acceptance and waiver.

B. Electrical Design Requirements (General)

1. The following typical requirements shall apply to all parts of the work and are supplementary to other requirements noted under the respective headings.
 - a. The design and construction of the motors shall conform to the requirements of these specifications and to the ASME Standards for Rotating Electrical Machinery with revisions issued to the first day when the work of this Contract was advertised.
 - 1) Motors shall operate successfully under all loads and speeds and during acceleration and deceleration.
 - 2) Motors shall be designed for quiet operation without excessive heat.
 - 3) Insulation on motor coils and windings and on all insulated switch, relay, brake, and other coils shall conform to the requirements of minimum Class "F" insulation, as defined in ANSI Standards for Rotating Electrical Machinery. All motors shall be impregnated twice.
 - 4) Switches, relays, etc., on controller, starter and signal panels and similar items on other parts of the equipment shall be the latest improved type for the condition of use. They shall function properly in full accordance with the requirements of the machines controlled and with the specified operating requirements of the elevator. Any of these parts showing wear or other injurious effects during the guarantee period to the extent that abnormal maintenance is required or indicated shall be replaced with proper and adequate parts by the Contractor.
 - 5) Contacts in elevator motor circuits which are intended to be opened by governors or other safety devices shall be copper to carbon or other approved non-fusing type.

- 6) Where required, controllers and other component parts of the installation shall be labeled in accordance with the latest codes and standards as adopted and/or otherwise modified by the AHJ.
- 7) Electrical equipment, motors, controllers, etc., installed under this contract shall have necessary CSA/US or UL/US listing as may be required by the AHJ. Equipment shall be labeled or tagged accordingly.

C. Materials, Painting and Finishes

1. Two (2) coats of rust inhibiting machinery enamel shall be applied to exposed ferrous metal surfaces in the pit that do not have a galvanized, anodized, baked enamel, or special architectural finishes.
2. Two (2) coats of rust inhibiting enamel paint to the machinery located within the machine room and secondary level (where applicable) as well as to the machine room and pit floors.
3. Architectural metal surfaces of bronze or similar non-ferrous materials which are specified to be refinished, re clad and/or provided new, shall be sufficiently clear coated so as to resist tarnishing during normal usage for a period of not less than twelve (12) months after final acceptance by the Owner.
4. Identify all equipment including buffers, crosshead, safety plank, machine, controller, drive, governor, disconnect switch, etc., by four inch (4") high numerals which shall contrast with the background to which it is applied. The identification shall be either decalcomania or stencil type.
5. Paint or provide decal-type floor designation not less than six (6) inches high on hoistway doors (hoistway side), fascias and/or walls as required by Code at intervals not exceeding seven feet (7'-0"). The color of paint used shall contrast with the color of the surface to which it is applied.

D. Accessibility Requirements

1. An electronic door detector system with matrix of LED beams covering the full width of the door opening from three inches (3") above finish floor to seventy-two inches (72") above finish floor shall be provided.
2. Locate the alarm button and emergency stop switch at thirty-five inches (35"), and floor and control buttons not more than forty-eight inches (48") above the finished floor. The alarm button shall illuminate when pressed for visual acknowledgement to user.
3. Provide raised markings in the panel to the left of the car call and other control buttons. Letters and numbers shall be a minimum of five-eighths inch (5/8") and raised three-hundredths inch (.03") and shall be in contrasting color to the call buttons and cover plate.
4. The centerline of new hall push button shall be forty-two inches (42") above the finished floor.
5. The hall arrival lanterns, or cab direction lantern provided shall sound once for the "up" direction and twice for the "down" direction. Design and locate fixtures per Federal standards.
6. Provide floor designations at each entrance on both sides of jamb at a height of sixty inches (60") above the floor.
 - a. Use cast metal plates and polished numbers secured with tamper-proof hardware.
 - b. Designations shall be two inches (2") high, raised three-hundredths inch (.03") on a contrasting color background as selected by the Owner.
 - c. Adhesive mounting of metal plates is not acceptable for this project.



- 7. Provide an audible signal within the elevator to tell passenger that the car is stopping or passing a floor served by the elevator.
- 8. Where elevators operate at a speed greater than 200 fpm, provide a verbal annunciator to announce the floor at which the elevator is stopping where required by the AHJ.
- 9. Provide signal control timing for passenger entry/exit transitions per Federal and/or Local standards.
- 10. Ensure sill-to-sill running clearances do not exceed one and one-quarter inches (1-1/4") at all landings served.
- 11. Provide visual call acknowledgment signal for car emergency intercommunication device.

E. Qualifications

- 1. The work shall be performed by a company specialized in the business of manufacturing, installing, and servicing conveying systems of the type and character required by these specifications with a minimum of ten (10) years of experience.
 - a. Qualified companies must also have a local service office or Local Representative (LR) station located within a fifty (50) mile radius of Lincoln, Nebraska with sufficient staffing to respond to equipment shutdowns and entrapments within a one (1) hour response time twenty-four hours per day, seven days per week and 365 days per year.
- 2. Prior written acceptance is required for manufacturers other than those listed, before quoting this project. Requests for acceptance will not be considered unless they are submitted before bid date and are accompanied by the following information:
 - a. List of five (5) similar installations having exact equipment being proposed for this project arranged to show name of project, system description and date of completed installation. The list shall include the names, position and resumes of the construction team and field supervisor of the installations.
 - b. Complete literature, performance and technical data describing the proposed equipment. Include the names, position and resumes of the proposed construction team and field supervisor.
 - c. List of ten (10) service accounts by building name, building manager or owner, including phone numbers.
 - d. Location of closest service office from which conveying system will be maintained.
 - e. Location of closest parts inventory for this installation.
 - f. List of the names, positions and resumes of the construction teams and field supervisor for the installation.

F. Structural, Mechanical and Electrical Design Parameters

- 1. The mechanical and electrical systems and the building structure have been designed for the following design loads:
- 2. Power supply: 208-3PH-60Hz
- 3. Electrical Loads:(Elev. #8) 40 HP
150A. FLR (Full Load Running)
325A. FLA (Full Load Acceleration)

Heat Release: (Elev. #8) 26,000 BTU/HR/UNIT

4. Submit a written statement with the bid that the above design loads and the clearance requirements shown on the Architectural drawings are acceptable for the proposed equipment. If not, specifically state the design variances.
5. After the award, if the type of equipment provided requires structure, mechanical and electrical system changes and/or revisions, the Elevator Contractor shall be responsible for all additional design and construction costs.
6. Electrical equipment, motors, controllers, etc., installed under this contract shall have necessary CSA/US or UL listing as may be required by the AHJ. Equipment shall be labeled or tagged accordingly.

1.5 DELIVERY / STORAGE / HANDLING / COORDINATION

A. Delivery and Storage of Material and Tools

1. Delivery, Storage and Handling:

- a. Deliver materials to the site ready for use in the accepted manufacturer's original and unopened containers and packaging, bearing labels as to type of material, brand name and manufacturer's name. Delivered materials shall be identical to accepted samples.
- b. Store materials under cover in a dry and clean location, off the ground.
- c. Remove delivered materials which are damaged or otherwise not suitable for installation from the job site and replace with acceptable materials.

2. The Owner shall bear no responsibility for the materials, equipment or tools of the Contractor and shall not be liable for any loss thereof or damage thereto.
3. The Contractor shall confine storage of materials on the job site to the limits and locations designated by the Owner and shall not unnecessarily encumber the premises or overload any portion with materials to a greater extent than the structural design load of the Facility.

B. Work with Other Trades / Coordination

1. Coordinate installation of sleeves, block outs, equipment with integral anchors, and other items that are embedded in concrete or masonry for the applicable equipment. Furnish templates, sleeves, equipment with integral anchors, and installation instructions and deliver to Project site in time for installation.
2. Coordinate sequence of installation with other work to avoid delaying the Work.
3. Coordinate locations and dimensions of other work relating to the equipment scheduled for installation including pit ladders, sumps, and floor drains in pits; entrance subsills; machine beams; and electrical service, electrical outlets, lights, and switches in pits and machine rooms, secondary levels, overhead sheave rooms and hoistways as it relates to the specific equipment.

C. Removal of Rubbish and Existing Equipment

1. On a scheduled basis, the Contractor shall remove all rubbish generated in performing work specified in the Contract Documents from the job site.

2. Any component of the existing elevator plant that is not reused under the scope of work specified in the Contract Documents shall become property of the Contractor and, as such, shall be removed from the premises at the Contractor's sole expense.
3. The Contractor agrees to dispose of the aforementioned equipment and rubbish in accordance with any and all applicable Federal, State, and municipal environmental regulations, and further accepts all liability that may result from handling and/or disposing of said material.

D. Protection of Work and Property

1. The Contractor shall continuously maintain adequate protection of all their work from damage and shall protect the Owner's property from injury or loss arising out of this contract.
2. The Contractor shall make good any such damages, injury, or loss, except such as may be directly caused by agents or employees of the Owner.
3. The Contractor shall provide all barricades required to protect open hoistways or shafts per OSHA regulations. Such protection shall include any necessary guards or other barricades for employee protections during and after the modernization procedure.

1.6 RELATED WORK

A. Work by Elevator Contractor Included in the Base Bid

1. The following requirements shall be applicable based on prevailing conditions at the site of work and/or mandated modifications for code compliance.
 - a. Contractors base bid pricing shall include a \$5,000 labor allowance for operating or parking elevators to allow access to elevator spaces for related work by non-elevator trades.
 - 1) The Elevator contractor shall track and report all labor hours expended for this work to the Architect or Project Manager on a weekly basis. Labor hours shall be invoiced at the labor rates quoted in the RFP response.
 - 2) Any unused portion of the allowance shall be refunded to the Owner at completion of the project.
 - b. Provide the following signage, plates, and tags:
 - 1) Provide access doors to each electrical control room, or machinery space with signs that read "ELEVATOR MACHINE ROOM". Letters shall be not less than two inches (2") high.
 - 2) Provide all required manufacturer data plates and installation-specific tags and signs of the types and styles containing information as required by applicable Codes and Standards as adopted and/or modified by the AHJ.
 - c. Where the pit extends more than three (3) feet below the sill of the pit access door, provide a permanent fixed metal ladder.
 - 1) Ladder shall extend no less than forty-eight inches (48") above the sill of the access door. Handgrips shall extend from the ladder to a point no less than forty-eight inches (48") above the sill of the access door where the ladder does not comply.

- 2) The rungs shall be a minimum of sixteen inches (16") wide. Where prevailing conditions prevent a sixteen inch (16") wide rung, the rung may be reduced to no less than nine inches (9").
 - 3) The rungs shall be spaced twelve inches (12") on center.
 - 4) A clear distance of no less than four and a half inches (4-½") from the centerline of the rungs and handgrips to the nearest permanent object in back of the ladder shall be provided.
 - a) Where prevailing conditions prohibit the installation of the required ladder as specified above, the Elevator Contractor shall coordinate requirements necessary for compliance with the Authority Having Jurisdiction.
- d. Provide a standard railing conforming to Code on the outside perimeter of the car top on all sides where the perpendicular distance between the edges of the car top and the adjacent hoistway enclosure exceeds 300 mm (12 in.) horizontal clearance or as otherwise required by the Authority Having Jurisdiction.
- e. Subsequent to the contract execution, the Contractor shall perform the following procedures and engineering tasks relative to balance loading of system and cab work included under base specification requirements and alternative/optional upgrades:
- 1) Perform balance load testing to determine existing conditions and requirements applicable to new/modified equipment.
 - 2) Provide data for Purchaser and/or their agents to evaluate any limitations that may be placed on design/finish options due to prevailing conditions or total suspended loading.
- B. Work by Other (Non-Elevator) trades (*OCC/State to confirm specified scope for related work by others is coordinated with Division 14 code requirements and addressed as warranted*)
- a. Modifications to the existing elevator machine room to coordinate with new elevator design and equipment layout, including related work by other trades. Scope to include all revisions or new work required for compliance with current building, fire and electrical code requirements.
 - b. Modification of existing or installation of new main line power feed with related disconnect switch designed and located per local law requirements.
 - c. Modification of existing or installation of new auxiliary power feed with related distribution panel(s) and disconnect(s) designed and located per local law requirements.
 - 1) Voltage shall be 110 VAC with one (1) 15-Amp circuit breaker or fuse for lighting of each individual elevator car enclosure.
 - 2) Circuit breakers and/or fused disconnects shall be lockable in the "OFF" position in accordance with applicable code.
 - d. The top surface of any setback or projection in the hoistway that measures two inches (4") or more in width shall be beveled at an angle of not less than seventy-five (75) degrees from horizontal, constructed from prime painted 14 gauge cold-rolled steel and installed so as to conform with ASME A17.1 elevator safety code as modified by, and/or in addition to codes and standards accepted by the AHJ.

- e. Installation of new permanent lighting fixtures with protective guards and 110-volt duplex GFI receptacles inside the machine room. Illumination shall be no less than thirty (30) foot-candles at floor level. A light control switch shall be provided immediately adjacent to the machine room entrance door. Provide necessary receptacles as required by Elevator Contractor to supply power to auxiliary elevator equipment and/or remotely located monitors.
- f. Provide each elevator pit with a 110-volt GFI duplex receptacle and a permanent lighting fixture equipped with protective guard. Illumination shall be no less than ten (10) foot-candles at pit floor level. A light control switch shall be provided and so positioned as to be readily accessible from the pit entrance door or ladder.
 - 1) Pit shall have a dedicated circuit with GFCI protected receptacle for power to hydraulic oil scavenger pump at pit floor level.
- g. Installation of hoistway and machine room smoke relief provisions in accordance with local laws.
- h. Provide each machine room, secondary space and pit with a self-closing, self-locking access door. Locking means shall be spring-type arranged to permit the doors to be opened from the inside without a key.
- i. Provide a smoke detector system meeting the requirements of A17.1 and/or the Local Governing Authority.
- j. Installation of fire emergency control interface provisions for automatic recall of the elevator(s) through operation of the fire detection system. Provisions shall be made for alternate designated fire recall landing with connection contingent on Codes recognized by the local governing authority. The interfacing contacts shall be wired to an electrical junction box located inside each elevator machine room for connection to the elevator control systems by the Elevator Contractor. Each wire shall be clearly labeled with its control function. Coordinate the type of interface required for the specific elevator control apparatus with the Elevator Contractor.
- k. Where sprinkler fire protective systems are provided inside any elevator hoistway, machine room or associated machinery space, provisions shall be made for the disconnecting of the main line power supply from the affected elevator prior to activation. This means of disconnect shall be manually reset in accordance with code.
- l. Installation of emergency power control interface provisions to signal the elevator control apparatus of a transfer from normal (utility) power to the building emergency (generator) power supply. Also, provide additional control interface to give advanced notification to the elevator control apparatus that the power source will transfer from emergency (generator) power to normal (utility) power. Interfacing contacts shall be wired to an electrical junction box located inside each machine room for connection to the elevator control equipment by the Elevator Contractor. Coordinate the type of interface required for the specific elevator control apparatus with the Elevator Contractor.
 - 1) Normal Power/Emergency Power Control Signals consisting of two (2) dry contacts provided by others to function as follows:
 - a) One (1) dry contact normally open to make when Normal Power is available. (Logic state of dry contact is to be confirmed by the Manufacturer of the Elevator Control Equipment).

- b) One (1) dry contact normally open to make when emergency power is available. (Logic state of dry contact is to be confirmed by the Manufacturer of the Elevator Control Equipment).
- m. Installation of HVAC provisions inside the machine room so as to maintain ambient temperature and humidity levels that are within the range specified by the microprocessor-control equipment manufacturers.
- n. Provide a class “ABC” fire extinguisher in electrical machinery and control spaces. Locate the extinguisher in close proximity to the access door.
- o. Provide necessary telephone wiring with connection to local telephone service for remote elevator monitoring and/or two-way voice emergency communications systems.
 - 1) Terminate the telephone wiring in junction boxes or standard phone jack terminals in the machine room.
 - 2) Coordinate the quantity and termination method of individual phone connections with the Elevator Contractor.
 - 3) Identify each phone line for connection by the Elevator Contractor to the appropriate elevator device(s).
 - 4) Telephone wiring, where required by applicable codes, shall be installed in conduit.
- p. Where required by local building or plumbing codes, Sumps in pits where provided, shall be covered. The cover shall be level with the pit floor so as not to produce a tripping hazard.
- q. For two-way audio and visual communication equipment, provide Ethernet connection terminals in elevator machine rooms and location of elevator monitoring system by the building security office.

1.7 WARRANTY / MAINTENANCE SERVICES

A. Contract Close-Out, Guarantee and Warranties

1. Guarantee and Warranties:

- a. Warrant the equipment installed under these specifications against defects in material and quality of installation and correct any defects not due to ordinary wear and tear or improper use of car which may develop within one year from the date each unit is completed and placed in permanent operation and accepted by the Owner.
- b. This warrantee shall be written and issued at the completion of each unit prior to final payment.

B. Maintenance Coverage

1. The following maintenance coverage apply:

a. Interim Maintenance

- 1) Interim full comprehensive maintenance services shall be provided in accordance with Section 14 01 20, Owner’s Form of Agreement issued with the modernization documents for subsequent services.

- 2) Costs related to interim maintenance shall be included in the base bid quotation.

b. Guarantee Maintenance

- 1) Provide full comprehensive preventative maintenance services for a period of Twelve (12) months after the final completion and acceptance of the project.
- 2) Guarantee maintenance and related services shall be provided in accordance with Section 14 01 20, Owner's Form of Agreement issued with the modernization documents for subsequent services.
- 3) Costs related to guarantee maintenance shall be included in the base bid quotation.

c. Long-Term Maintenance

- 1) Long-term full comprehensive maintenance and related services shall be provided in accordance with Section 14 01 20, Owner's Form of Agreement issued with the modernization documents for subsequent services.
- 2) Costs related to long-term maintenance shall be indicated on the bid form in the space provided.

1.8 ALTERNATES AND VALUE ENGINEERING:

The following alternatives are elective upgrades which constitute changes to the base scope of work specified. Pricing for each alternate upgrade is requested from the bidder with costs indicated in the appropriate space in the Request for Proposal (RFP). Contractor shall take into consideration, as part of the alternative pricing, alternate work that is required either in lieu of, or in addition to, work specified in the base scope and shall not duplicate costs.

A. Alternate #1 - Shift Work

1. Bidders are required to submit a separate price quotation to perform all work described in the Specification on a shift-work basis whereby two (2) consecutive eight (8) hour shifts of field installation labor shall be employed Monday through Friday for the entire length of the project.
Note: Elevator 8 is the only ADA compliant elevator in the facility, the intent of the Alternate is to shorten the elevator outage time to the greatest extent practical.
2. Vendor bid form shall identify the applicable cost add and the total reduction in schedule (elevator outage duration) applicable for this option.

B. Contractor's Value Engineering Options

1. This alternative is provided for individual contractors to propose optional equipment or otherwise offer cost saving suggestions that will provide the same desired results or further enhance the safety, durability, or performance of the elevator systems.
2. Each suggestion must be fully detailed on the contractor's own letterhead with the associated price change specified on the form of proposal provided.

PART 2 - PRODUCTS

2.1 GENERAL DESCRIPTION

2.2 ELEVATORS

A. Passenger Elevator #8 (Legislature)

1.	Quantity	Retain, One (1) Hydraulic elevator with standard in-ground jack unit.
2.	Loading Class	Retain, Class A
3.	Type	Retain, Passenger
4.	Capacity (lbs.)	Retain, 2,500 <u>2,100</u>
5.	Speed (fpm)	Retain, 150
6.	Travel in Feet	Retain, See Architectural Drawings
7.	Number of Landings	Retain, Four (4)
8.	Number of Openings	Retain, Four (4)
9.	Front Opening	Retain @ All Floors
10.	Rear Opening	None
11.	Operation	Simplex, Selective / Collective
12.	Control	New, Microprocessor / AC for hydraulics
13.	Fireman's Control	New, Phase I and II
14.	Number of Push Button Risers	Retain, One (1) with new fixtures
15.	Platform Size	Retain existing
16.	Guide Rails	Retain existing
17.	Buffers	Retain existing
18.	Cab	Retain existing shell, new interior finishes as specified
19.	Entrance Size	Retain existing
20.	Door Operation	Single speed center opening

- | | | |
|-----|---------------|---|
| 21. | Machine Type | Retain, Submersible / Hydraulic pump unit, tank and control valve |
| 22. | Drive Type | New, VVVF Electronic Soft Start |
| 23. | Pump Location | Remote at lowest landing, “See Architectural drawings” |
| 24. | Power Supply | 208VAC – 3PH – 60H, EE to verify |

2.3 MANUFACTURERS

A. Pre-Approved Equipment Manufacturers

1. The following manufacturer’s equipment and materials have been pre-approved for use on this project. Other equipment not specifically mentioned shall be considered for approval on an individual basis.
 - a. Controller - GAL (GALaxy), Motion Control Engineering, Elevator Controls Corporation, Elevator Systems, Inc.
 - b. Tracks, Hangers, Interlocks and Door Operators - G.A.L., ECI.
 - c. Fixtures - G.A.L., Adams, EPCO, Monitor, E-Motive USA, C.E. Electronics, Innovation, PTL, MAD, National, RATH.
 - d. Door Protective Device - Janus, Adams, G.A.L., T.L. Jones, Tri-Tronics.
 - e. Cabs and Entrances/Entrance Door Panels - Accurate Elevator Door Corp, A&D Entrances, CEC Elevator Cab, EDI/ECI, Elite Elevator Cab, H&B Elevators, National Cab & Door, Tyler, Velis, Gunderlin, Peelle, Premier, Prestige, Regency, Columbia Elevator Products, United Cabs.
 - f. Motors - Imperial Electric, General Electric, Baldor, Reuland Electric.
 - g. VVVF Emergency Power Systems - MCE, Reynolds & Reynolds Electronics.
 - h. Guide Rails - AFD Industries, Savera, Monteferro.
 - i. Electrical Traveling Cables - Draka, James Monroe.
 - j. Hydraulic Systems/Components - Canton, ECS Corporation, Elevator Equipment Corporation, Mongrain Vertical Transport (MVT), MEI, Schumacher.
 - k. Guide Shoes/Rollers – ELSCO, G.A.L.
 - l. Intercommunications/Telephones - Webb Electronics, K-Tec, Ring, Wurtec, Janus, RATH, approved equal.

2.4 CONTROL FEATURES / OPERATION

A. Motion Control (New)

1. Smooth acceleration and deceleration of the elevator car shall be provided in either direction of travel during both single and multiple floor runs.
2. Acceleration, deceleration, jerk, maximum velocity, leveling accuracy, and elapsed flight time, for a typical elevator one (1) floor run, shall not exceed values as further specified.

B. Simplex Selective Collective Operation (New)

1. Provide simplex selective collective operation from a riser of hall push button stations.
2. The registration of one (1) or more car calls shall dispatch the car to the selected floors.
 - a. The car shall also respond to registered hall calls in the same direction of travel.
 - b. Car and hall calls shall be canceled when answered.
3. Stops in response to calls that are registered in either the car or hall push button stations shall occur in the natural order of progression in which the floors are encountered, depending on the direction of car travel, and irrespective of the order in which calls are registered.
4. When the car has responded to the highest or lowest call, and calls are registered for the opposite direction, the car shall reverse direction automatically and respond to those registered calls.
5. When the car arrives at its last stop and reverses direction of travel, all previously registered car calls shall be automatically cancelled.
6. When the car arrives at a landing where both up and down hall calls are registered, it will answer the call in the direction of travel.
 - a. After a pre-determined delay, if no car call is registered, the car shall respond to calls registered for the opposite direction. Car doors shall close immediately, re-open and respond to the call for the opposite direction.
 - b. Hall lantern operation shall always correspond to direction of service.
7. When an empty car reverses direction at a landing with no hall calls, the doors shall not open, and the hall lantern shall not operate.
8. If the car has no car calls registered and arrives at a floor where both up and down hall calls have been registered, the car shall respond to the hall call corresponding to the last direction of car travel. If, after making its stop, a car call is not registered and no other hall calls exist ahead of the car corresponding to its original direction of travel, the doors shall close and immediately reopen in response to the hall call for the opposite direction.
9. The car shall maintain its original direction at each stop until the doors are fully closed to permit a passenger to register a car call before the car reverses its direction of travel.

C. Independent Service Operation (New)

1. The car operating station shall be equipped with a key-operated switch labeled "IND SER".
2. Locate the switch in the locked service compartment.
3. When placed in the "on" position the following shall occur:
 - a. Group elevator - the elevator shall bypass corridor calls and travel directly to any floor chosen by registration of a car call. Hall calls shall remain registered for service by another elevator in the group.
 - b. Simplex elevator - existing hall call registrations shall extinguish and hall buttons shall remain inoperative as an indication to passengers that there is no elevator service.
4. During Independent Service Operation, the elevator doors shall remain open at any landing until the door close or a car call push button is pressed and maintained until the doors are fully closed.
5. If more than one (1) car call is registered, all registered car calls shall extinguish when the elevator stops in response to the first call.

6. Fire Emergency Recall shall automatically override Independent Service Operation and engage Phase I - Fire Emergency Recall Operation following a period of approximately forty-five (45) seconds.

D. Inspection Service Operation (New)

1. Provide a key operated switch in the main car operating panel (locked service panel) that, when turned to the 'ON' position, shall cause the elevator to be removed from service and placed in Inspection Service Operation.
2. Limited operation of the car shall be provided through pressing the Attendant Service up and down push buttons (if provided) or the highest or lowest car call push buttons (if up and down buttons are not provided) in the main car operating panel only.
3. The car shall move at a speed not to exceed 150 feet per minute (0.75 meters per second) as per code with both the hall and car door panels in the closed and locked position.
4. The Inspection Service switch shall be keyed differently than other typical keys used in the operation of the elevator. Keying shall be in accordance with Security Group Classifications as required by applicable code.
5. The top of the elevator car shall be equipped with a control for limited operation of the car during repairs, maintenance and inspection conducted in the hoistway. The transfer of control to the top of car operating device shall cause that device to be the sole means of control for the elevator.
 - a. Visual and audible indication shall be provided on the top of the car when Firefighters' Emergency Operation is initiated.
6. Power door operating equipment shall be rendered inoperative while the car is being operated in the Inspection Service mode with the exception of power closing of the door. The control system shall maintain closing power on the door while the elevator is moving under Inspection Service Operation.
7. The in-car Inspection Service switch shall be rendered ineffective when the top of car inspection control is activated.
8. Machine Room Inspection Operation and Inspection Operation with open door circuits shall be provided in accordance with A17.1 Safety Code, as modified and adopted, where required or allowed by the AHJ.

E. Hoistway Access Operation (New)

1. Provisions shall be made to allow access to the hoistway through the use of hoistway access switches.
2. Operating the access switch shall permit the car to move at a speed not to exceed 150 feet per minute (0.75 meters per second) as per code with the hall and car doors in the open position to obtain access to the top of the car or climb-in pit.
3. The car shall automatically stop motion when the car top is level with the hoistway door sill for access to top of car.
4. The access key switch(es) shall be keyed differently than other typical keys used in the operation of the elevator. Keying shall be in accordance with Security Group Classifications as required by applicable code.
5. Access operation shall be disabled when top of car inspection operation is in effect.

F. Firefighters' Emergency Operation / National (New)

1. Phase I Emergency Recall Operation shall be provided for each car in accordance with ASME A17.1 code as modified under the applicable local or State law.
2. Each main or auxiliary car operating station shall be provided with an indicator light and warning buzzer, each of which shall become activated whenever Phase I Operation is engaged.
 - a. The warning buzzer shall cease to function once the car has completed the recall sequence and is positioned at the designated recall landing.
 - b. The indicator light shall remain illuminated as long as Phase I Operation is activated.
3. A three-position, key-operated switch shall be provided on the designated recall landing to manually activate Phase I Operation.
 - a. When activated, Phase I Operation shall be arranged so that in order to reset normal service, all cars must first be returned to the designated recall landing, after which the Phase I key-switch must be turned to the "OFF" position.
4. A standardized Fire Recall Key shall be used where required by the codes and standards applicable to the AHJ.
5. A "Standardized Fire Recall Key" shall be used in accordance with the applicable Chapter of the Public Law. This key shall be a Yale #3502.
 - a. Multiple elevators within a group or building that are not affected by the scope of work specified herein, shall be upgraded to the "Standardized Fire Recall Key".
 - b. The "Standardized Fire Recall Key" shall apply to both Phase I and Phase II Operation.
6. Phase II Emergency Recall In-Car Operation shall be provided for each car in accordance with ASME A17.1 code as modified under local or State law.
7. Locate controls required for Phase II In-Car Operation in a locked access cabinet in the main car operating panel.
 - a. The cover of the locked access panel shall be engraved as required by local or State law.
 - b. The locked access panel shall contain:
 - 1) Phase II key switch.
 - 2) Fire indicator light.
 - 3) Call cancel push button.
 - 4) Door open push button.
 - 5) Door close push button.
 - 6) Run/Stop switch.
 - 7) Other devices as may be required by local law.
 - c. Engrave the Firefighters' Service operating Instructions on the inside of the locked cabinet door.

G. Emergency Power Operation / Sequential Recall (New)

1. Provisions shall be included in the elevator control system whereby all affected elevators in the facility shall automatically return to the fire recall designated landing in progressive numerical sequence at normal speed, unless otherwise specified, immediately after transferring to the emergency power system.
 - a. Car and corridor calls shall become inoperative, and all previously registered calls shall be canceled.
 - b. As each car arrives at the designated landing, it shall park out of service with its door(s) in the open position.
2. An illuminated signal marked “ELEVATOR EMERGENCY POWER” shall be provided in the elevator lobby at the designated level to indicate that the normal power supply has failed, and the emergency power is in effect.
3. In the event an elevator fails to respond to a recall command within forty-five (45) seconds under Emergency Power Operation, that car shall be bypassed and the next car in the sequence shall be recalled.
4. Upon completion of the recall process, one or more elevators shall be automatically selected to run on the emergency power source. Where more than one (1) elevator can operate on emergency power simultaneously, the Contractor shall coordinate the maximum number of elevators with Owner.
5. Coordinate the sequence of automatic recall operation of the elevators with the Owner.
6. Interlock all elevators to allow to operate the maximum number of elevators at a time.
7. An emergency power control panel for all elevators shall be provided where directed by the Owner containing an indicator light per elevator that becomes illuminated whenever a transfer to emergency power takes place.
 - a. Means shall be provided on or adjacent to the control panel to indicate that the elevator is at the designated level with the doors in the open position.
8. A key-operated override switch and a manual selector switch with a position indicator for each elevator shall be provided in the emergency control panel.
 - a. Activating the key-operated override switch while on emergency power shall cancel the previously mentioned automatic recall sequence and allow positioning of the manual selector switch to select a car for operation.
9. Prior to return to normal power, the building ATS shall provide a “pre-transfer” signal to the elevator equipment that will initiate the landing of elevators prior to transfer from emergency power to normal power.
 - a. Timer of the pre-transfer signal shall be adjustable from fifteen (15) to thirty (30) seconds.
10. The following additional requirements apply:
 - a. Firefighters’ Service Operation will remain active at all times during emergency power operation but limited to the elevator selected to be in operation.
 - b. All car lighting will remain active with car lighting on separate emergency power feeders in addition to battery back-up.

- c. Communications will remain active at all times via emergency power feeders in addition to battery back-up.
 - d. Remote monitoring will be active from each group dispatcher for selected elevators using an uninterrupted power supply (UPS) to maintain the central processing unit during power transfers.
 - e. Position indicator for each elevator will be active in the selected elevator and security room (where applicable), as well as lobby display panels.
11. Testing of elevators under emergency power shall be accomplished with the building ATS providing necessary “pre-transfer” signals to the elevator control apparatus.
- a. Prior to testing, the building ATS shall provide a “pre-transfer” signal to initiate the landing of the elevators prior to the transfer from normal to emergency power.
 - b. After testing, the building ATS shall provide a “pre-transfer” signal to initiate the landing of the elevators prior to the transfer from emergency to normal power.
12. Where modernization of elevators is to be performed in phases, emergency power operation shall be tested by the building personnel upon completion of each individual elevator, after regular business hours. Contractor shall provide all necessary labor and include all corresponding overtime cost in the base bid.
- H. Floor Lockout Feature / Keyless Security System / Car Only (New)
- 1. Provide a complete car call push button security access system for all landings, except the main floor egress, interfaced with primary dispatch signaling for automatic home landing at a designated floor.
 - 2. The system shall utilize a programmable, coded numerical touch pad to enable a corresponding car station push button that would allow a passenger to register a specific call.
 - 3. The security system shall be activated via a keyed switch located in the car operating panel and/or a controller timing device that would initiate the security function(s) during selected or predetermined hours as directed by the Owner.
 - 4. The system shall allow programming by authorized personnel (i.e., code changes, deletion of individual access codes per landing, additional codes, etc.).
 - 5. Locate the touch pad in accordance with applicable ADA or disabled access regulations in the car operating panel fixture.
 - 6. Design and interface security control with primary control signaling for Firefighters’ Service or other emergency control override features per local law.
 - 7. Provide a label on the door of the individual car controller cabinet identifying that the control system utilizes Floor Lockout Feature.
- a. Firefighters’ Emergency Operation override of Floor Lockout Feature shall be tested in accordance with applicable requirements.
- I. Floor Lockout Feature / Keyless - Card Reader Control / Wiring Provisions (New)
- 1. Wiring: Provide six (6) pair of 20 gauge two (2) flexible conductor low voltage cables with an overall braided shield in the traveling cable of all elevators for card reader interface.

- a. The cables shall extend from the security interface terminal cabinet in the elevator machine room to behind the elevator return panel above the space allotted for the card reader.
 - b. Terminate the cable to dual screw barrier terminal strips on each end.
2. Card Reader Space: Allocate card reader space in each main car station as directed by the Architect. Provide a flush Lexan lens and mounting provisions for the card reader unit which is provided by others.
 3. Interface: For floor programmable card access control in all elevators, provide a pair of terminals for all floors such that application of a momentary dry (no voltage present) contact closure across those terminals by the security system shall enable the selection of the corresponding floor from the floor selector button in the elevator cab.
 - a. Locate the terminals inside an interface terminal cabinet in the elevator machine room.
 - b. Provide all relays required to interface the elevator control system to the momentary dry contact closures provided for under another section of these specifications.
 - c. If applicable, the card reader shall be operable and compatible with the issued card keys used building wide.
 - d. Coordinate system requirements with the manufacturer of the issued card key system.
 4. Card Reader "Secure/Bypass" Switch: Provide separate card reader control bypass key switches for each elevator.
 - a. The bypass key switches shall be located in the Director's Control Panel.
 - b. The bypass key switches shall be a maintained contact type key switch with the key removable in the secure or bypass position.
 - 1) When the key switch is in the secure position, the card reader control mode shall be initiated.
 - 2) When in the bypass position, the card reader control mode shall be bypassed and the elevator shall return to normal operation, permitting free access to any floor.
 5. The card reader operation shall bypass floor cut-out switches.
 6. Firefighters' Service Operation shall override Floor Lockout Feature.
- J. Low Oil Protection and Protective Device (New)
1. Provide low oil protection operation and appropriate device(s) that will discontinue operation of the hydraulic elevator pump when:
 - a. The elevator stalls due to a low oil condition.
 - b. Fails to reach the landing in the up direction.
 2. Pressure Switch:
 - a. Where the top of the cylinder head is above the top of the tank, provide a pressure switch between the cylinder and the valve which shall be activated by the loss of pressure at the top of the cylinder, and control the operation of the elevator as required by Code.

3. Provide an additional protective device that shall automatically return the elevator to the bottom landing, open the door, and shut down the system.
4. The protective device shall be an integral part of the control system.

K. Door Operation (New)

1. Car and hoistway doors shall be arranged to operate in unison without excessive noise or slamming in either direction of travel.
 - a. Door opening speeds of two (2) feet per second shall be provided in conjunction with closing speeds of one (1) foot per second in accordance with governing code.
 - b. Door operation shall commence as the car stops level at the floor and the machine brake is applied. Pre-door opening shall not be permitted.
2. Where the hoistway door and the car door are mechanically coupled, the kinetic energy of the closing door system shall be based upon the sum of the hoistway and the car door weights, as well as all parts rigidly connected thereto, including the rotational inertia effects of the door operator and the connecting transmission to the door panels.
3. The force necessary to prevent closing of the car and hoistway door from rest shall not exceed thirty (30) lbf. This force shall be measured on the leading edge of the door with the door at any point between one-third (1/3) and two-thirds (2/3) of its travel.
4. Door open and door close time shall be measured between the moment car door operation in either direction begins and the instant at which that cycle is completed.
5. When responding to either a car or corridor call, the amount of time that the elevator door remains stationary in the open position shall be adjustable up to sixty (60) seconds.
 - a. Door open dwell time for a corridor call shall be separate of that for a car call, and in both cases, dwell time shall be canceled whenever the car door protection device is momentarily interrupted by passenger transfers, followed by a reduced door open dwell time of approximately one (1) second (adjustable) after the door protection device is cleared of obstructions.
6. The operation of the door protective device by interruption of one or more infrared light beams (dual or multi-beam non-contact) during the close cycle shall cause the immediate reversing of the doors to the full open position.
7. The door closing cycle shall be arranged so that, in the event the door protective devices become continually obstructed after the normal door open dwell time has expired and following a time interval of approximately thirty (30) seconds (adjustable), a warning tone shall sound and the door closing cycle shall commence at reduced speed and torque per applicable Code requirements.
8. Each car operating station shall be provided with a “door open” and “door close” push button.
 - a. Pressure on the “door open” button shall cause doors in the full open position to remain so, and doors engaged in the close cycle to reverse direction and assume the full open position so long as pressure remains applied to the button.
 - b. The “door open” buttons shall also control the open cycle during Phase II - Emergency In-car Operation.
 - c. The “door close” push button shall function on Independent Service, Attendant Service and Phase II - Emergency In-car Operation as well as during normal automatic operations.

9. Repeated attempts by the power door operator to open or close the door at any landing shall be monitored by the control system.
 - a. In the event the door fails to cycle properly after a preset (adjustable) number of attempts, the car shall either travel to the next stop or remove itself from service, depending upon whether the malfunction is in the open or close cycle.
10. Each hoistway door shall be provided with an automatic self-closing mechanism arranged so that the door shall close and lock if the car should leave the landing while the hoistway door is unlocked.
11. Car doors shall be arranged to prevent their being manually opened from inside the car unless the elevator is positioned within a floor landing zone.

2.5 MACHINE ROOM EQUIPMENT

A. Controller / Dispatcher (New)

1. The elevators shall have generic microprocessor-based controller/dispatchers.
- ~~1-2.~~ The controller must be rated for a minimum of 5kAIC SCCR rating
- ~~2-3.~~ System operating software shall be stored in non-volatile memory.
- ~~3-4.~~ Elevator control relays, contactors, switches, capacitors, resistors, fuses, circuit breakers, overload relays, power supplies, electronic circuit boards, microprocessors, static motor drive units, wiring terminal blocks and related components shall be totally enclosed inside a free-standing metal cabinet with hinged access doors.
 - a. Provide natural or mechanical ventilation for the controller cabinets.
 - b. Equip the vent openings and exhaust fans with filters.
- ~~4-5.~~ Mount equipment to moisture-resistant, noncombustible panels supported from the steel frame.
- ~~5-6.~~ Provide "noise filter" between hoistway wiring and controller/dispatchers to eliminate interference.
- ~~6-7.~~ Optically isolate communication cables between components.
- ~~7-8.~~ Provide a VVVF solid-state starter for the pump motor.
- ~~8-9.~~ Wiring: Wiring on the units, whether factory or field wiring, shall be done in neat order, and all connections shall be made to studs and/or terminals by means of grommets, solderless lugs, or similar connections. All wiring shall be copper.
- ~~9-10.~~ Terminal Blocks: Provide terminal blocks with identifying studs on units for connection of board wiring and external wiring.
- ~~10-11.~~ Marking: Identifying symbols or letters shall be permanently marked on or adjacent to each device on the unit, and the marking shall be identical with marking used on the wiring diagrams. In addition to the identifying marks, the ampere rating shall be marked adjacent to all fuse holders.
- ~~11-12.~~ The manufacturer's standard on-board "LCD" display shall be incorporated on the main processor board and/or otherwise incorporated in the controller cabinet. The "LCD" shall be capable of providing alpha-numeric characters to view the operational status of the elevator and/or group functions depending on the application. The display shall provide the user with necessary information for troubleshooting and reprogramming of the basic system parameters.

- a. Where the “LCD” is not an integral part of the controller and troubleshooting/reprogramming requires the use of a separate tool, the tool shall be maintained in the machine room and accessible to service personnel. This tool, along with all technical documentation for the correct use of the tool, shall remain the property of the Owner.
- b. Password protection of critical programming features is required to prevent accidental changes to life-safety and other non-typical control settings.
- c. Where a separate dispatch or group control panel is provided, a separate “LCD” display shall be provided to view group functions.

12.13. In the event diagnostics and monitoring is accomplished via Field Service Tools, provide the required Field Service Tools with related control system appurtenances for diagnostic evaluations, system monitoring and field adjustments.

- a. Provide instructions for proper use of such diagnostic tools and/or equipment with all coding and other operational requirements.
- b. Maintain and calibrate the diagnostic tools and update the associated instructions and other related documents under the service agreement.
 - 1) Should the agreement be cancelled for any reason by either party, maintenance and updating of diagnostic tools shall be provided to the Owner at the Contractor's cost without the need to purchase or lease additional diagnostic devices, special tools, or instructions from the original equipment provider.
 - 2) The Owner may request field and technical instructions be provided by the original installation contractor or manufacturer for proper servicing by other qualified elevator company personnel.
 - 3) The established cost-plus profit, as previously specified, shall be applicable for the life of the system.
 - a) If the equipment for fault diagnosis is not completely self-contained within the controllers but requires a separate detachable device, that device shall be furnished to the Owner as part of this installation.
 - b) Such device shall be in possession of and become property of the Owner.

13.14. Microprocessor Documentation

- a. Provide and/or obtain complete information on systems' design, component parts, installation and/or modification procedures, adjusting procedures and associated computer conceptual logic circuitry and field connection.
- b. Provide microprocessor upgrading and/or modifications to programs that have been assigned to enhance the operation of the equipment for a period of ten (10) years after project approval.

B. Hydraulic Power Unit / Motor (Reuse)

- 1. The existing power unit and tank shall be refurbished and reused.
 - a. Drain the reservoir, valve and all piping of all oil and clean reservoir interior.

1) Note: All hydraulic equipment should be cleaned in preparation for installation of biodegradable vegetable based hydraulic oil as further specified herein.

- b. Replace oil line strainers in the suction line.
- c. Check pipe attachments for solid connections.
- d. Renew valve solenoid wiring where necessary.
- e. Check tank for leaks. Repair or replace, as necessary.
- f. Check tank drip pan for solid connection and signs of leaks. Repair or replace as needed.
- g. Remove oil from external tank walls and paint.
- h. Renew oil level gauge assembly where required.
- i. Provide new oil fill strainer with air filter.

C. Hydraulic Oil and Mainline Oil Strainer (Retain)

- 1. Confirm existing oil is EPA / USDA approved Environmentally Acceptable Lubricant (EAL, BioPreferred™ ISO grade 32 hydraulic oil or equivalent or drain all oil from tank, piping and piston and provide new oil to this standard.
- 2. New hydraulic oil shall be biodegradable with high viscosity index, temperature stability, advanced rust and corrosion projection suitable for this application..
- 3. Provide a mainline hydraulic oil strainer of the self-cleaning, compact type, equipped with a 40-mesh element and installed in the oil line.
- 4. Design the strainer for maximum system working pressure.

2.6 HOISTWAY EQUIPMENT

A. Guide Rails / Inserts / Brackets (Reuse)

- 1. Car guide rails, fishplates, rail brackets, backing support and related attachments shall be inspected to determine if unfavorable conditions exist that diminish the structural integrity of any component.
 - a. In the event substandard conditions are disclosed by means of this inspection, the Contractor shall immediately inform the Consultant as to the exact nature of said problems and then undertake whatever repairs and/or replacements the Consultant may deem appropriate to remedy the situation.
- 2. Each stack of guide rails shall be individually examined to determine if excessive compression has occurred from building settlement.
 - a. In the event such conditions are found to exist, each affected stack shall be cut off enough to relieve pressure.
 - b. Jacking bolts shall be provided underneath each stack of both car and counterweight guide rails.
- 3. Each stack of guide rails shall be realigned so that total deviation from plumb in any direction does not exceed one-eighth inch (1/8") over the entire length of the hoistway and that DBG measurements never vary more than thirty-thousandths inch (.030").

4. As required, car guide rails joints shall be individually filled, filed, and sanded in order to eliminate minor variations in adjoining machined surfaces.

B. Roller Guides (New)

1. Provide roller guide shoes with adjustable mounting base, rigidly bolted to the top and bottom of each side of the car and counterweight frame.
 - a. Roller guides shall consist of a set of sound reducing [neoprene / polyurethane] wheels in precision bearings held in contact with the three (3) finished rail surfaces by adjustable stabilizing springs.
 - b. The bearings shall be sealed or provided with grease fittings for lubrication.
 - c. Equip roller guides with adjustable stops to control postwise float.
 - d. Fit the top car roller guides with galvanized, painted or powder coated steel guards.

C. Electrical Conduit / Wiring / Traveling Cable (New)

1. Electrical wiring shall be provided.
 - a. All wiring shall be stranded copper conductors, manufactured in compliance with ANSI/ASTM B174-71 and UL 62 requirements, and polyvinyl chloride insulation complying with ETT requirements of UL 62 and Article 400 of the National Electric Code.
 - b. Electrical wiring provided for hoistway interlock shall be of a flame-retardant type, capable of withstanding temperatures of at least 392 degrees Fahrenheit. Conductors shall be Type SF or equivalent.
 - c. Each run of electrical conduit or duct shall contain no less than ten percent (10%) spare wires and, in any case, no fewer than two (2) spare wires.
 - d. A minimum of two (2) RG-6 coaxial cables shall be provided between the elevator machine room/controller and the cab interior.
 - e. Crimp-on type wire terminals shall be used where possible.
2. Traveling cable shall be provided.
 - a. Each traveling cable shall be provided with a flame- and water-resistant polyvinyl chloride jacket.
 - b. Electrical wiring shall consist of stranded copper conductors, manufactured in compliance with ANSI/ASTM B174-71 and UL 62 requirements, and polyvinyl chloride insulation complying with ETT requirements of UL 62 and Article 400 of the National Electric Code.
 - c. Each traveling cable shall contain no less than ten percent (10%) spare wires.
 - d. Traveling cable exceeding 100' in length shall be provided with a steel wire rope support strand from which the cable shall be suspended.
 - e. Traveling cable must be contained within an approved electrical conduit to within six feet (6') of the final suspension point in the hoistway.
 - f. Each traveling cable shall be arranged to provide no fewer than six (6) individually shielded pairs of 20-gauge wire and arranged to contain no less than one (1) coaxial cable for CCTV remote monitoring.
 - g. Traveling cable conductors that terminate at a hoistway center box shall be connected to stud blocks provided for that purpose.

- 1) Each wiring terminal shall be clearly identified by its nomenclature as shown on the “as built” wiring diagrams and solderless, crimp-on type wire terminals shall be used where possible.
 - h. The attachment of a traveling cable to the underside of the elevator car shall be performed so that a minimum loop diameter of thirty times (30x) the cable diameter is provided.
 - i. Pre-hang the cables for at least twenty-four (24) hours with ends suitably weighted to eliminate twisting during operation.
3. Rigidly supported EMT conduit, flexible metal conduit and galvanized steel trough shall be utilized throughout the hoistway.
- a. Both EMT and flexible conduit shall be connected on either end by use of compression fittings and secured in place with metal clamps sized in accordance with the diameter of conduit utilized.
 - 1) Wire or plastic wire ty-raps shall not constitute an acceptable means of fastening.
 - b. The use of flexible metal conduit shall be limited to runs not greater than three feet (3') in length.
 - c. All abandoned or unused electrical conduit shall be removed from the hoistway.
 - d. Existing conduit and wiring duct may be reused if suitable for the application.
 - 1) Reuse of existing conduit/duct shall be at the discretion of the Consultant.
- D. Normal Terminal Stopping Devices (New)
1. Provide normal terminal stopping devices to stop the car automatically from any speed obtained under normal operation within the top and bottom overtravel, independent of the operating devices, final terminal stopping device and the buffers.
 2. The terminal stopping devices shall have rollers with rubber or other approved composition tread to provide silent operation when actuated by the cam fixed to the top of the car.
 - a. Terminal stopping devices that are not mechanically operated (i.e.: magnetic proximity) shall be provided by the manufacturer of the control equipment, intended for use as a terminal limit, and designed for reliable operation in the hoistway environment.

2.7 PIT EQUIPMENT

A. Car Buffer (Reuse)

1. Existing car buffers shall be reused.
 - a. Pit channels, related supports and fastenings shall be inspected for damage and to determine if the structural integrity of any component is diminished by the effects of rust or other unfavorable conditions.

- 1) In the event defects are found, the Contractor shall immediately inform the Consultant and undertake whatever repair and/or replacement the Consultant may deem appropriate.
 - b. Surface rust shall be removed from all reused components.
 - c. Where hydraulic buffers are used:
 - 1) Buffer plunger shall be honed free of all surface rust and blemishes and provided with a protective coating of machinist bluing.
 - 2) The hydraulic fluid reservoir on each buffer shall be drained, flushed, and refilled with fresh oil. The grade and amount of fluid added to each buffer shall conform to O.E.M. specification.
 - d. Provide a permanent buffer marking plate which indicates the manufacturer's name, identification number, rated impact speed and stroke.
 - e. Provide a permanent data plate in the vicinity of the counterweight buffer indicating the maximum designed counterweight runby in accordance with ASME A17.1 as may be modified by, and/or in addition to codes and standards accepted by the AHJ.
 - f. The buffer shall undergo testing in accordance with ASME A17.1 Code as modified by, and/or in addition to codes and standards accepted by the AHJ.
- B. Jack Unit (Reuse)
1. The existing borehole jack assembly shall be reused.
 2. The jack shall undergo the following work:
 - a. Check plunger for smooth surface and eliminate burrs where necessary.
 - b. Verify plunger sections are securely attached with minimum seam.
 - c. Check stop-ring for proper fit and pressure test per code.
 - d. Renew internal babbitt-lined, guide bearing, packing or seals where necessary.
 - e. Clean drip ring around cylinder top to provide adequate drainage.
 - f. Check mounting hardware and welds where applicable.
 - g. Check secure attachment of head.
 - h. Clean, remove rust and apply two (2) coats of rust inhibiting paint.
 3. Perform static load test of the jack unit to determine if there are any failures of the cylinder wall.
 4. Where double-walled cylinders are not provided, and where prevailing conditions allow, install a plunger gripper to prevent freefall of the elevator in the event of a catastrophic failure of the hydraulic jack.
- C. Pit Stop Switch (New)
1. Where pit depth does not exceed sixty-seven inches (67"), each elevator pit shall be provided with a push/pull or toggle switch that is conspicuously designated "EMERGENCY STOP" and located so as to be readily accessible from the hoistway entrance on the lowest landing served at a height of approximately eighteen inches (18") above the floor.
 - a. This switch shall be arranged to prevent the application of power to the hoist motor and machine brake when placed in the "OFF" position.

2.8 HOISTWAY ENTRANCES

A. Hoistway Entrances (Reuse and repaint)

1. Hoistway entrances, entrance frames, headers and header supports shall be reused, refurbished, and refurbished.
 - a. Hoistway entrances that have become distorted or bent shall be straightened, plumbed, reset to the proper width dimension, and reinforced, as necessary.
 - b. Provide 14-gauge steel fascia plates that extend at least the full width of the door and be secured at hanger support and sill with oval head machine screws.
 - 1) Reinforce fascia to allow not more than half an inch ($\frac{1}{2}$ ") of deflection.
 - 2) Provide fascia plates where the clearance between the edge of the loading side of the platform and the inside face of the hoistway enclosure exceeds the code allowed clearance.
 - c. Provide 14-gauge steel toe guards that extend twelve inches (12") below any sill not protected by fascia.
 - 1) The toe guards shall extend the full width of the door and shall return to the hoistway wall at a fifteen (15) degree angle and be firmly fastened.
 - d. Remove oil, dirt and impurities on new and existing apparatus and give a factory coat of rust inhibitive paint to all exposed surfaces of struts, hanger supports, covers, fascias, toe guards, dust covers and other ferrous metal.
2. Entrances and doors to be sanded and repainted with finish to be selected by owner.

B. Slide Type Hoistway Entrance Door Panels (Reuse and repaint)

1. Hoistway entrance door panels shall be reused and refurbished.
 - a. Provide each door panel with two (2) removable laminated plastic composition guides, arranged to run in existing sill grooves with a minimum clearance.
 - 1) The guide mounting shall permit their replacement without removing the door from the hangers.
 - 2) A steel wear indicator shall be enclosed in each guide.
 - b. Provide the meeting edge of center opening doors with necessary new continuous rubber astragal bumper strips.
 - 1) Astragal shall be relatively inconspicuous when the doors are closed.
 - 2) Provide rubber bumpers at the top and bottom of each section of door to stop them at their limit of travel in the opening direction.
2. In multi-speed door arrangements, provisions shall be made to interlock the individual panels so all panels close should the normal door panel relating means fail.

3. Provide a special key so that an authorized person can open any landing door when the car is elsewhere.
 - a. The key hole shall be not less than three-eighths inch (3/8") in diameter and shall be fitted with a stainless steel or bronze ferrule to match related equipment.
 - b. Where applicable, plug the abandoned hoistway door access hole in each door panel, secured from the hoistway side of the door, finished to match existing or as otherwise directed by the Owner/Architect.
 4. Where conditions warrant, or where otherwise required by code, equip all hoistway landing doors with one (1) piece full height non-vision wings of material and finish to match hall side of door panels.
 5. Entrances and doors to be sanded and repainted with finish to be selected by owner.
- C. Tracks / Hangers / Closers / Related Equipment (New)
1. Formed or extruded steel landing door hanger tracks shall be provided.
 2. Each landing door panel shall be suspended from a pair of door hanger assemblies that are compatible with the hanger tracks.
 - a. Hanger assemblies shall be directly mounted to the door panel using three-eighths inch (3/8") diameter or better hardware.
 - b. Solid steel blocks shall be used where job-site conditions dictate the use of spacers between hanger assemblies and the landing door panel.
 - c. Hanger assemblies shall be adjusted or shimmed so that door panels are suspended in a plumb manner with no more than three-eighths inch (3/8") vertical clearance to the cab entrance threshold.
 - d. Upthrust rollers shall be adjusted for minimal operating clearance against the bottom edge of the hanger track.
 - e. Means shall be provided to prevent hangers from jumping the track.
 - f. Blocks shall be provided to prevent rollers from overrunning the end of the track.
 3. Each set of center opening landing doors shall be provided with a cable driven relating mechanism which is compatible for use with the door hanger assemblies.
 - a. The relating mechanism shall be properly tensioned and adjusted so as to equalize the relationship between the door panels and the hoistway entrance.
 4. Each set of multi-speed center opening, or side slide landing doors shall be provided with a sill-mounted spring closing mechanism with necessary door panel relating hardware.
 5. In multi-speed door arrangements, provisions shall be made to interlock the individual panels so all panels close should the normal door panel relating means fail.
 6. Each set of single speed side slide landing doors shall be provided with a sill-mounted spring closing mechanism.
 - a. Spirator-type spring closers shall be acceptable should prevailing sill depth or runby clearance conditions require their use.

7. Where applicable, each hoistway door interlock assembly shall be provided with an emergency release mechanism utilizing manufacturers' standard type access key at all landings served.
 - a. Drill each hoistway door to accommodate manufacturers standard lock release key and install escutcheon.
 - 1) Escutcheon shall be brushed stainless steel to match door panels where required.
 - 2) Aluminum shall be provided at all other typical floors.
8. Where multi-speed side slide door panels exist, provide a secondary interlocking device that will prevent separation of the panels should the sill closer or relating cable(s) fail.

D. Interlocks / Unlocking Devices (New)

1. Each set of landing doors shall be provided with a complete electromechanical interlock assembly.
 - a. Each interlock assembly shall consist of:
 - 1) A switch housing with contacts.
 - 2) Lock keeper.
 - 3) Clutch engagement/release subassembly.
 - 4) Associated linkages.
 - b. Arrange the lock so that individual leading door panels (side slide or center opening) are locked when in the closed position.
2. Non-typical mounting arrangements for interlocks and/or related mechanisms must receive prior approval from the Consultant.
3. Each hoistway door interlock assembly shall be provided with an emergency release mechanism utilizing a drop-leaf type access key at all landings served.
 - a. Each hoistway door shall accommodate manufacturers standard lock release key with escutcheon.
 - 1) The key hole shall be fitted with a metal ferrule that matches the door finish.
 - 2) Drilling key holes in the field will not be accepted.

E. Hoistway Door Bottom Guides / Safety Retainers (New)

1. The bottom of each side sliding type hoistway door panel shall be equipped with a minimum of two (2) guiding members.
 - a. Metal mounting angles shall be secured to the integral panel frame structure; and when conditions warrant, additional external metal support plates or angles shall be installed to ensure the integrity of the panel frame is not compromised.

- b. Guides shall be manufactured of low friction non-metal material with sufficient strength to withstand forces placed on door panels per ASME A17.1 Standards.
 - c. Each guide assembly shall incorporate a steel wear indicator and be so designed to permit sliding member replacements without removal of door panel(s) from top hanger devices.
 - d. Panels shall be hung with a maximum vertical clearance of three-eighths (3/8) inch between top of sill and bottom of panel and the guide shall engage the sill groove by not less than one-quarter (1/4) inch.
2. The bottom of each side sliding type hoistway door panel shall be equipped with a guiding member safety retainer to prevent displacement in the event of primary guide means failure.
 - a. A metal reinforcement (12 gauge stainless or galvanized steel) shall be installed between the two (2) primary guiding members (a.k.a. "Z" bracket).
 - b. The reinforcement shall be designed with a minimum length of eight (8) inches or the maximum possible length that will fit between the primary members and a minimum overall height of two and one-half (2.5) inches secured on the internal face of the door panel. (Hoistway side)
 - c. The retainer shall be set with the supplemental safety angle three-eighths (3/8) inch into the corresponding sill groove; and be capable of preventing displacement of the panel no more than three-quarters (3/4) inch with an applied force of 1125 lbf at right angles over an area twelve (12) inches x twelve (12) inches at the approximate center of the door panel.

2.9 CAR EQUIPMENT / FRAME

A. Car Frame (Reuse)

1. The existing car frame assembly shall be refurbished to as new condition and reused.
2. Individual car frame members, platform isolation framework, door operator support structure, related bracing and hardware shall be inspected for any indication of damage or distortion.
 - a. Where damage is detected, the Contractor shall immediately inform the Consultant and then undertake corrective action deemed appropriate by the Consultant to remedy the condition.
3. Provide new elastomer isolation pads for all existing platforms where pads are presently installed.
4. The car frame, door operator support and related bracing shall be modified or reconfigured as necessary in order to accommodate new cab enclosure and/or master door operating equipment specified herein.
5. The elevator car shall undergo static balancing upon substantial completion of all work described in the project specifications and subsequent to any car interior refinishing or cab replacement work performed in conjunction with the project.

B. Car Platform (Reuse)

1. The existing platform shall be modified to accommodate the new apparatus specified herein.
 - a. Where necessary for code compliance, the underside of platform shall be refurbished and treated with fire-rated material.

- b. Existing sub-floor and finish flooring shall be retained and re-used unless unseen conditions warrant replacement.
 - c. At Contractor's option or when conditions warrant, provide a totally new platform in lieu of repairs, modifications and upgraded specified above.
- C. Automatic Leveling / Releveling / Positioning Device (New)
- 1. Equip the elevator with a floor leveling device which shall automatically bring the car to a stop within one-quarter inch (1/4") of any floor for which a stop has been initiated regardless of load or direction of travel.
 - 2. This device shall also provide for releveling which shall be arranged to automatically return the elevator to the floor in the event the elevator should move below or above floor level in excess of one-quarter inch (1/4").
 - 3. This device shall be operative at all floors served and whether the hoistway or car door is open or closed provided there is no interruption of power to the elevator.
 - 4. A positioning device shall be part of the controller microprocessor systems.
 - a. Position determination in the hoistway may be through fixed tape in the hoistway or by sensors fitted on each driving machine to encode and store car movement.
 - b. Design the mechanical features and electrical circuits to permit accurate control and rapid acceleration and retardation without discomfort.
 - 5. Where there are consecutive floors/stops that are short stops, the system shall be capable of distinguishing between the two (2) landing zones without error.
 - 6. All equipment and logic required for leveling system to properly function with short stops shall be included.
- D. Top-of-Car Inspection Operating Station (New)
- 1. An inspection operating station shall be provided on top of the elevator car.
 - 2. This station shall be installed so that the controls are plainly visible and readily accessible from the hoistway entrance without stepping on the car.
 - 3. When the station is operational, all operating devices in the car shall be inoperative.
 - 4. Provide the following control devices and features:
 - a. A push/pull or toggle switch designated "EMERGENCY STOP" shall be arranged so as to prevent the application of power to the hoist motor or machine brake when in the "off" position.
 - b. A toggle switch designated "INSPECTION" and "NORMAL" to activate the top of car Inspection Service Operation.
 - c. Push button designated "Up", "Down" and "Enable" to operate the elevator on Inspection Service (the "Enable" button shall be arranged to operate in conjunction with either the "Up" or "Down" button).
 - d. An indicator light and warning buzzer that are subject to activation under Phase I - Fire Emergency Recall Operation.
- E. Car Enclosure Work Light / Receptacle (New)

1. The top and bottom of each car shall be provided with a permanent lighting fixture and 110-volt GFI receptacle.
2. Light control switches shall be located for easy accessibility from the hoistway entrance.
3. Where sufficient overhead clearance exists, the car top lighting fixture shall be extended no less than twenty-four inches (24") above the crosshead member of the car frame.
4. Light bulbs shall be guarded so as to prevent breakage or accidental contact.

F. Emergency Exits / Top (Retain/Re-use)

1. Ensure they operate as per code and have proper electrical contacts and mechanical locks on the exterior of the cab enclosure.
2. The top of car emergency exit shall be so arranged that it can be opened from the car top in accordance with local code.
3. Seismic Zone 2 - The top emergency exit shall be provided with an electric contact so located as to be inaccessible from the inside of the car. The opening of the electrical contact shall limit the car speed to not more than 150 ft/min (0.76 m/s).

G. Master Door Power Operator System – VVVF/AC (New)

1. Provide a heavy-duty master door operator on top of the elevator car enclosure for power opening and closing of the cab and hoistway entrance door panels.
2. The operator may be of the pivot/lever or belted linear drive type.
3. Operator shall utilize an alternating current motor, controlled by a variable voltage, variable frequency (VVVF) drive and a closed-loop control with programmable operating parameters.
 - a. System may incorporate encoder feedback to monitor positions with a separate speed sensing device or an encoderless closed-loop VVVF-AC control to monitor motor parameters and vary power applied to compensate for load changes.
4. The type of system shall be designated as a high-speed operator, designed for door panel opening at an average speed of two (2.0) feet per second and closing at approximately one (1.0) foot per second.
 - a. Reduce the closing speed as required to limit kinetic energy of closing doors to within values permitted by ASME A17.1 as may be adopted and/or modified by the AHJ.
5. The door shall operate smoothly without a slam or abrupt motion in both the opening and closing cycle directions.
 - a. Provide controls to automatically compensate for load changes such as:
 - 1) Wind conditions (stack effect).
 - 2) Use of different weight door panels on multiple landings.
 - 3) Other unique prevailing conditions that could cause variations in operational speeds.
 - b. Provide nudging to limit speed and torque in conjunction with door close signaling/closing and timing devices as permitted by ASME A17.1 as may be adopted and/or modified by the

AHJ. Nudging shall be initiated by the signal control system and not from the door protective device.

6. In case of interruption or failure of electric power from any cause, the door operating mechanism shall be so designed that it shall permit emergency manual operation of both the car and corridor doors only when the elevator is located in the floor landing unlocking zone.
 - a. The hoistway door shall continue to be self-locking and self-closing during emergency operation.
 - b. The door operator and/or car door panel shall be equipped with safety switches and electrical controls to prevent operation of the elevator with the door in the open position as per ASME A17.1 Code Standards.
 - c. Provide zone-lock devices as required by ASME A17.1 as may be adopted and/or otherwise modified by the AHJ.
7. Construct all door operating levers of heavy steel or reinforced extruded aluminum members.
8. Belts shall be designed for long life and operate noise free.
9. All components shall be designed for stress and forces imposed on the related parts, linkages, and fixed components during normal and emergency operation functions.
 - a. All pivot points, pulleys and motors shall have either ball or roller-type bearings, oilite bronze bushings or other non-metallic bushings of ample size.
10. Provide operating data / data tag permanently attached to the operator as required by applicable code and standards.

H. Car Door Zone Lock Restrictor (New)

1. Incorporate a car door zone lock restrictor on the new car door operator and related equipment.
2. In case of interruption or failure of electric power from any cause, the door operating mechanism shall permit emergency manual operation of both the car door and the hoistway door within the floor landing zone.
 - a. The hoistway door shall continue to be self-locking and self-closing.
 - b. The door operator shall operate in conjunction with or be equipped with all gate switches and safety contacts required by ASME A17.1 Code.

I. Car Door Hangers / Tracks / Gate Switch (New)

1. Provide sheave type two-point suspension hangers and track for each car door.
 - a. Sheaves shall be hardened steel, not less than three and one-quarter (3-1/4) inches in diameter with sealed grease packed precision ball bearings.
 - b. The upthrust shall be taken by a roller mounted on the hanger and arranged to ride on the underside of the track.
2. The track shall be of formed cold rolled steel or cold drawn steel and shall be rounded on the track surface to receive the hanger sheaves.

- a. The track shall be removable and shall not be integral with the header.
- 3. Provide a gate switch that mounts directly to the car door track.
 - a. The gate switch shall prevent movement of the elevator until such time as it signals the control equipment that the car door has physically closed.
- J. Car Door Panel(s) (New)
 - 1. Provide standard one inch (1") thick, 14-gauge hollow metal flush construction panel(s), reinforced for power operation and insulated for sound deadening.
 - 2. Paint the hoistway side of each panel black and face the cab side with 16-gauge sheet steel matching the existing returns including flat finish brass finish as otherwise directed by Owner/Architect.
 - 3. The panels shall have no binder angles and welds shall be continuous, ground smooth and invisible.
 - 4. Drill and reinforce panels for installation of door operator hardware, door protective device, door gibs, etc.
 - a. Provide each door panel with two (2) removable laminated plastic composition guides, arranged to run in the sill grooves with minimum clearance.
 - b. The guide mounting shall permit their replacement without removing the door from the hangers.
 - 5. Provide the meeting edge of center opening doors with necessary continuous rubber astragal bumper strips.
 - a. These strips shall be relatively inconspicuous when the doors are closed.
- K. Door Reopening Device / "3D" (New)
 - 1. Provide a combination infrared curtain and 3D door protection system.
 - 2. The door shall be prevented from closing and will reopen when closing if any one of the curtain light rays is interrupted or should an object enter the 3D detection zone.
 - 3. The door shall start to close when the protection system is free of any obstruction.
 - 4. The infrared curtain and 3D zone protective system shall provide:
 - a. Protective curtain field not less than seventy-one inches (71") above the sill.
 - b. 3D protective zone field not less than sixty-one inches (61") above the sill.
 - c. Accurately positioned infrared lights to conform to the requirements of the applicable handicapped code.
 - d. Modular design to permit on board test operation and replacement of all circuit boards without removing the complete unit.
 - e. Self-contained, selectable 3D zone timeout feature to allow for closing at nudging speed with audible signal.
 - f. Automatic turning-off of the 3D zone in the event of three (3) consecutive 3D triggers.
 - 1) Light curtain shall continue to operate after 3D system timeout.

- g. Selectable control of the 3D zone operation on an “always-on” or “as doors close” basis.
- h. Controls to shut down the elevator when the unit fails to operate properly.
- i. Provide audible and visual notification of pending door close.

2.10 FINISH / MATERIALS / SIGNAGE

A. Material, Finishes and Painting

1. General

- a. Cold-rolled Sheet Steel Sections: ASTM A366, commercial steel, Type B
- b. Rolled Steel Floor Plate: ASTM A786
- c. Steel Supports and Reinforcement: ASTM A36
- d. Aluminum-alloy Rolled Tread Plate: ASTM B632
- e. Aluminum Plate: ASTM B209
- f. Stainless Steel: ASTM A167 Type 302, 304 or 316
- g. Stainless Steel Bars and Shapes: ASTM A276
- h. Stainless Steel Tubes: ASTM A269
- i. Aluminum Extrusions: ASTM B221
- j. Nickel Silver Extrusions: ASTM B155
- k. Bronze Sheet: ASTM B36(36M) alloy UNS No. C2800 (Muntz Metal)
- l. Structural Tubing: ASTM A500
- m. Bolts, Nuts and Washers: ASTM A325 and A490
- n. Laminated / Safety Tempered Glass: ANSI Z97.1

2. Finishes

- a. Reference Architectural
- b. Sheet Steel:
 - 1) Shop Prime: Factory-applied baked on coat of mineral filler and primer.
 - 2) Finish Paint: Two (2) coats of low sheen baked enamel, color as selected by the Architect.
 - 3) Steel Equipment: Two (2) coats of manufacturer’s standard rust-inhibiting paint to exposed ferrous metal surfaces in both the hoistway and pit that do not have galvanized, anodized, baked enamel, or special architectural finishes.

3. Painting

- a. Apply two (2) coats of paint to the machine room floor.
- b. Apply two (2) coats of clear lacquer to bronze or similar non-ferrous materials to prevent tarnishing during a period of not less than twelve (12) months after initial acceptance by the Owner or Agent.
- c. Identify all equipment including buffers, car apron, crosshead, safety plank, machine, controller, drive, governor, disconnect switch, etc., by four inch (4") high numerals which shall contrast with the background to which it is applied. The identification shall be either decalcomania or stencil type.

- d. Paint or provide decal-type floor designation not less than four (4) inches high on hoistway doors (hoistway side), fascias and/or walls as required by A17.1 as may be adopted and/or modified by the AHJ. The color of paint used shall contrast with the color of the surface to which it is applied.

B. Hoistway Entrances Finish and Design

1. Hoistway entrances and door panels shall be finished as specified by the Owner.
2. Where no finish is specified, finishes shall be baked enamel primer gray.
3. Refer to specifications for other design requirements.

C. Hoistway Entrances

1. Entrance Frames:
 - a. Passenger Elevator: All Floors, Retain existing
2. Door Panels:
 - a. Passenger Elevator: New, flat finish brass finish to match cabs as specified by architect.
3. Entrance Sills:
 - a. Passenger Elevator: All Floors, Retain existing

D. Car Interior Finishes

1. Car interior finishes shall be as selected by Owner and/or Architect.
2. Contractor shall provide samples of finishes as required for approval prior to fabrication.
3. Refer to specifications for other design requirements where provided.
4. Special attention shall be given to flooring materials and suitability for intended duty.

E. Designation and Data Plates, Labeling and Signage.

1. Provide an elevator identification plate on or adjacent to each entrance frame where required by the AHJ.
2. Provide floor designation cast plates at each elevator entrance, on both sides of the jamb at a height of sixty (60) inches to the baseline of floor indication.
 - a. Floor number designations and Braille shall be two inches (2") high, three-hundredths inch (0.03") raised and stud mounted.
3. Identify the designated medical emergency services elevator with three inch (3") high international symbol at each elevator entrance on both sides of the jamb.
4. Provide raised designations and Braille markings to the left of the car call and control buttons of the car operating panel(s).
 - a. Designations shall be a minimum of five-eighths inch (5/8") high, three-hundredths inch (0.03") raised and stud mounted.

5. Provide elevators with data and marking plates, labels, signages and refuge space markings complying with A17.1 Elevator Safety Code as may be adopted and/or otherwise modified by the AHJ.
6. Architect shall select the designation and data plates from manufacturer's premium line of plates.

2.11 FIXTURES / SIGNAL EQUIPMENT

A. General - Design and Finish

1. The design and location of the hall and car operating and signaling fixtures shall comply with the ADAAG and local requirements of the AHJ.
2. The operating fixtures shall be selected from the manufacturer's premium line of fixtures.
3. Custom designed operating and signaling fixtures shall be as shown on the drawings or as approved by the Owner / Architect.
4. The layout of the fixtures including all associated signage and engraving shall be as approved by the Owner / Architect.
5. Where no special design is shown on the drawings, the buttons shall be as follows:
 - a. Bronze vandal resistant fixtures as selected by the Owner from the manufacturer's premium line of push buttons, including up to bruiser and vandal resistant series
6. Where no special design is shown on the drawings, the faceplates shall be as follows:
 - a. Passenger Elevators
 - 1) All Floors: One-eighth inch (1/8") thick flat brass faceplate with vandal resistant fixture's as selector by owner. Final finish to be selected by owner / architect
7. Mount passenger elevator fixtures with tamperproof fasteners or screws. The screw/fastener and key switch cylinder finishes shall match faceplate finish.
8. Where key-operated switch and or key operated cylinder locks are furnished in conjunction with any component of the installation, four (4) keys for each individual switch or lock shall be furnished, stamped, or permanently tagged to indicate function.
9. All caution signs, pictographs, code mandated instructions and directives shall be engraved and filled with epoxy in code required colors.

B. Main Car Operating Panel

1. Provide a main car operating push button panel on the inside front return panel of the car
2. Car operating panel shall be a stationary return with flush mounted swing type, one (1) piece faceplate with heavy-duty concealed hinges.
 - a. Mount all key switches that are required to operate and maintain the elevators exposed on the car station except those specified within a locked service cabinet.
 - b. Coordination with car front manufacturer shall be the responsibility of the Elevator Contractor.

3. The push buttons shall become individually illuminated as they are pressed and shall extinguish as the calls are answered.
4. The operating panel shall include:
 - a. A call button for each floor served, located not more than forty-eight inches (48") above the cab floor.
 - b. "Door open" / "Door close" / "Door Hold" buttons.
 - c. "Alarm" button, interfaced with emergency alarm. The alarm button shall illuminate when pressed.
 - d. "Emergency Stop" switch per local law located at thirty-five inches (35") above the cab floor.
 - e. Self-dialing, hands-free emergency communication system actuation button with call acknowledging feature and ASME A17.1. design provisions.
 - f. Three (3) position firefighter key operated switch, call cancel button and illuminated visual/audible signal system with mandated signage engraved per ASME A 17.1 Standards as modified by the AHJ.
5. Locked Firemen's' Service cabinet, keyed in accordance with local Code, containing required devices and signals in accordance with ASME A17.1 Standards.
 - a. Automatic opening of the locked cabinet door may be provided with signals initiated by the fire detection and alarm system where approved by the Authority Having Jurisdiction.
6. Provide a locked service cabinet flush mounted and containing the key switches required to operate and maintain the elevator, including, but not limited to:
 - a. Independent service switch.
 - b. Light switch.
 - c. Fan switch.
 - d. G. F. I. duplex receptacle.
 - e. Emergency light test button and indicator.
 - f. Inspection Service Operation key switch.
 - g. Port for hand-held service tool where applicable.
 - h. Dimmer for cab interior lighting.
 - i. Security – On/Off key switch
7. Car operating panel shall incorporate:
 - a. An integral (no separate faceplate) digital L.E.D. floor position indicator.
 - b. Emergency light fixture (without a separate faceplate) and black-filled engraved unit I.D. number or other nomenclature, as approved by Owner.
 - c. A "No Smoking" advisory.
 - d. The rated passenger load capacity in pounds.
 - e. All keys will match the tower elevators.
8. Equip the main car operating panel with security car call proximity card reader to disconnect the corresponding floor push button.

- a. Security system shall be overridden by Phase II Firefighter's Emergency Operations in accordance with code.
- 9. Where posting of an advisory is permitted by the Governing Authority in lieu of the inspection certificate, engrave the following advisory on the hinged cover of the service cabinet, or where otherwise directed by the Owner.
 - a. Elevator Certificate is On File in Building Security Office.
- C. Car Position Indicator
 - 1. The position of the car in the hoistway shall be indicated by the illumination of the position indicator numeral corresponding to the floor at which the car has stopped or is passing.
 - a. Provide two-inch (2") high, ten (10) segment LED type position indicator with direction arrows, integral with the car operating panel.
 - b. Provide Lexan cover lens with hidden support frame behind fixture plate to protect the indicator readout.
 - c. Provide audible floor passing signal per ADA standards where not provided by the elevator signal control.
 - d. Flush mount fixture with cover to match selected car front or car operating panel finish as directed by the Owner.
- D. Voice Annunciator
 - 1. Provide a voice annunciator in each elevator.
 - 2. The device features shall comply with the requirements of ADAAG and local accessibility requirements.
 - 3. Coordinate size, shape, and design with Designer and other trades.
 - 4. The system shall include, but not limited to:
 - a. Solid state digital speech annunciator.
 - b. A recording feature for customized messages.
 - c. Playback option.
 - d. Built-in voice amplifier.
 - e. Master volume control.
 - f. Audible indication for selected floor, floor status or position, direction of travel, floor stop, seismic operation, firefighter service and nudging.
 - 5. Locate all associated equipment in a single, clearly labeled enclosure located either in the machine room and/or on car top.
- E. Corridor Push Button Stations / Riser
 - 1. A riser of push button signal fixtures shall be provided on all floors.
 - 2. Each signal fixture shall consist of the following:
 - a. A flush-mounted faceplate.

- b. Illuminating tamper-resistant push buttons measuring three-quarters inch (3/4") at their smallest dimension as selected by the Owner.
 - c. A recessed mounting box, electrical conduit, and wiring.
- 3. Intermediate landings shall be provided with fixtures containing two (2) push buttons while terminal landings shall be provided with fixtures containing a single push button.
 - 4. Include firefighter key switch in the main lobby level station or other designated recall landing fixture.
 - 5. Push button signal fixtures shall be installed within ADA reach range above the floor and shall be installed both plumb and flush to the finished wall.
 - a. Standardize the final distance on all floors.
 - 6. Fixture faceplates shall be installed adjacent to the entrance frame on front wall.
 - 7. All faceplates shall be engraved with fire logo and "In Case of Fire Use Stairs" to help fill the void created by the use of oversized covers.
 - 8. Provide a digital floor position indicator with 1" high numerals at all landings served, centered above door opening.
- F. Floor Position Indicator
- 1. Remove existing floor position indicator at each landing and provide new digital LED type unit.
 - 2. New plate shall completely cover the present cutout and provide two-inch (2") numerals located on center.
 - 3. Provide integral direction arrows that will indicate the direction in which the elevator is traveling.
- G. Floor Position Indicator
- 1. Provide a digital LED type floor position indicator at each landing.
 - 2. Indicator shall include two inch (2") high numerals with integral direction arrows that will indicate the direction in which the elevator is traveling.
 - 3. Indicator shall be located directly above the hoistway entrance frames.
- H. Hall Direction Lanterns
- 1. Provide a visual and audible signal at each entrance to indicate the direction of travel and, where applicable, which car shall stop in response to the hall call.
 - a. Design the lantern with up and down indication at intermediate landings and a single indication at terminal landings.
 - b. Lanterns shall sound once for the up direction and twice for the down direction.
 - 1) Provide an electronic chime with adjustable sound volume.
 - c. Provide adjustable signal time (three [3] to ten [10] seconds, with one [1] second increments) to notify passengers which car shall answer the hall call and preset per ADAAG notification standards.

2. Main Lobby fixture shall incorporate a two inch (2") high LED floor position indicator in the hall lantern fixture with direction arrows located on both sides of the indicator.
3. Locate the lantern above the corridor entrance.

I. Hoistway Access Switch (Retain/Re-Use)

1. A cylindrical type keyed switch shall be provided at top terminal in order to permit the car to be moved at slow speed with the doors open to allow authorized persons to obtain access to the top of the car.
2. Where there is no separate pit access door, a similar switch shall be installed at the lowest landing in order to permit the car to be moved away from the landing with the doors open in order to gain access to the pit.
3. Existing provisions that meet the aforementioned criteria may be updated with keyed switches to match new apparatus provided for uniformity of systems within the building.

J. Lobby Control Panel/Remote Lobby Security System

1. Modify the existing Lobby Control Panel in the security office on main lobby level to coordinate with all new, retained and/or modified provisions, fixtures and signage specified herein with final design and layout to be approved by the Architect.
2. Modify the existing faceplate or provide new bronze finish faceplate with tamperproof screws.
3. Coordinate panel location with the Owner.

~~K. Closed Circuit TV Security System~~

- ~~1. Provide a corner mounted, high resolution color camera with a wide angle for a Closed Circuit Television (CCTV) security system.~~
- ~~2. The camera is to be mounted diagonally across from the strike plate of the elevator door and able to view the position indicator and passenger traffic.~~
- ~~3. The camera shall be of the wide angle lens low light type.~~
- ~~4. Provide a fifteen inch (15) inch LCD color monitor in the Lobby or as otherwise directed by the Owner.~~
 - ~~a. Monitor shall be capable of displaying all cameras on a split screen (via separate splitter) and switching to a single camera utilizing the entire screen.~~
- ~~5. The receiving monitor shall be a self-contained unit designed for wall or shelf mounting with all necessary brackets, hardware and fixture component accessories as required.~~
- ~~6. Provide a Digital Video Recorder (DVR) with CD/DVD burner capable of saving up to thirty (30) days of video and a six (6) month supply of applicable recordable media (DVD, Video CD).~~
- ~~7. Provide a lockable storage cabinet for the CCTV operating system to be located in a climate-controlled location as directed by the Owner.~~
- ~~8. The CCTV security system shall be energized by an independent source of current, other than the current supply to the main elevator operation to avoid the possibility of system failure due to an interrupted current supply to the elevator equipment.~~
- ~~9. Provide a battery back-up unit located at the DVR to provide a minimum of two (2) hours of back-up power in the event of building power loss.~~

~~L. Closed Circuit TV Security System~~

- ~~1. Provide a complete Closed Circuit TV Security System, including all hardware and wiring as necessary, in accordance with specifications provided by the Owner / Architect attached and made part of this specification.~~

M.K. Emergency Power Control Panel

1. Provide the lobby console or other designated location with a control panel for emergency power operation as further specified.
 - a. New provisions shall be incorporated into the Lobby Control Panel located in the building security office on lobby level or a new emergency power control panel provided at a location selected by the Owner.
 - b. The panel shall contain:
 - 1) An indicator light that illuminates when a transfer to emergency power takes place.
 - 2) Indication that the elevators have arrived at the designated landing and have parked with the doors maintained in the open position.
 - 3) Key-operated override switch(es) and a manual selector switch(es) identified with positions for each elevator.
2. The control panel shall be engraved so as to identify the function of each control feature and device provided.
3. The Elevator Contractor shall provide all necessary electrical conduit and wiring between the elevator machine room(s), and the Emergency Power Control Panel.

2.12 CAR ENCLOSURES

A. Elevator Car Enclosure(s) and the Five Percent (5%) Rule:

1. In accordance with A17.1, Section 8.7, as adopted and/or modified by the AHJ, entitled "Alterations", where a new or remodeled elevator car enclosure is included in the base scope of work, the Contractor shall, within thirty (30) days after execution of the contract, weigh the elevator, or one (1) elevator of each group of elevators included in the base scope of work, to determine the present deadweight of the platform/sling/cab assembly.
2. The Contractor shall, when necessary, weigh the interior materials of a single cab to better estimate the total existing weight of existing materials being removed as part of the alteration.
3. The Contractor shall make every effort to provide accurate weight measurements while taking into consideration all weights that may present themselves at the time the measurement is taken such as compensation, compensating sheave, hoist ropes and traveling cables that may affect the measurement of the assembly itself.
4. The Contractor shall evaluate the actual counterbalance percentage for each sample elevator to identify prevailing conditions.
5. Measurements of actual cab weight shall be compared to the original deadweight of the car as stamped on the crosshead data tag.
6. Where no data tag exists, the Contractor shall make every effort to determine the original weight of the platform/sling/cab through calculations based on the current weight of the counterweight assembly and the verified percent of full load counterbalance.

7. The amount of weight that may be added to the car, so as to remain within the limits of the “Five Percent (5%) Rule”, shall be calculated based on the following:
 - a. $(\text{Original Deadweight} + \text{Capacity}) \times (0.05) = \text{Maximum Additional Weight Allowed}$
8. The Contractor shall document and notify the Owner and Consultant of the results of the measurements taken and what weight, if any, can be added or needs to be removed from the cab in order to maintain compliance with the Five Percent (5%) Rule.
9. The Contractor shall work diligently with the Owner and/or Owner’s Representative and/or Architect as well as the manufacturer of the car enclosure to minimize additional weights of the new or remodeled car enclosure so as to maintain compliance with the Five Percent (5%) Rule.
10. Contractor shall be responsible for proper adjustment of the counterbalance of the system, including the static balance of the platform/sling/car enclosure, upon completion of the car interior work.
11. Costs associated with this work shall be included in the base modernization price.
12. Provide a new data tag on the crosshead of the elevator indicating the new deadweight, the current percent counterbalance and the date of the alteration.
13. Contractor shall include all costs associated with coordination of cab-related work in the base modernization bid including static and dynamic balance of the system.

B. Elevator Cab / Refurbish / Remodel

1. The basis of design for the new cab interior finish package is the “Ascend” interior package by Inpro, Muskego, WI., see Architectural drawings and renderings included with the bid package for details.
 - a. The existing cab shell, platform and slate flooring shall be retained and modified as required to coordinate with new cab interior finishes, fixtures, lighting and other materials specified in the bid package.
 - a-b. The return, strike, and transom will be replaced with new, see architectural drawings.
 - b-c. All cab interior layout, design, materials, finishes, colors, lighting, flooring and signage shall be submitted to Owner for review and approval during the shop drawing/submittal review phase.
 - c-d. Retain and reuse car sill, clean and polish as necessary
 - d-e. Provide provisions for hidden security CCTV camera specified herein.
 - e-f. Installation of protection pads for all walls and returns (floor to ceiling) using pad buttons permanently attached at top and ring or snap hardware at bottom to maintain hanging tension.

C. Cab Fabrication and Installation

1. Maintain accurate relation of planes and angles with hairline fit of contacting panels and/or surfaces.
2. Any shadow gaps (reveals) between panels shall be consistent and uniform.
3. Unless otherwise specified or shown on the drawings, for work exposed to view use concealed fasteners.
4. Maximum exposed edge radius at corner bends shall be one-sixteenth inch (1/16"). There shall be no visible grain difference at the bends.

5. Form the work to the required shapes and sizes with smooth and even curves, lines, and angles. Provide necessary brackets, spacers and blocking material for assembly of the cab.
6. Interior cab surfaces shall be flat and free of bow or oil canning. The maximum overall deviation between the low and high points of twenty-four inches (24") x twenty-four inches (24") panel section shall not exceed 1/32".
7. Make weights of connections and accessories adequate to safely sustain and withstand stresses to which they will be subjected.
8. All steel work except stainless steel and bronze materials shall be painted with an approved coat of primer and one (1) coat of baked enamel paint.
9. Cab Finish Warranty Enhancement
 - a. Contractor shall be responsible for engineering and installing interior cab finishes in a manner that will withstand all code mandated inspections and test procedures. Failure of finishes during testing shall be repaired by the contractor without expense to the owner. Any objections or qualifications to material selection or design shall be identified during the engineering of the cab interior drawings for review by the owner.

D. Passenger Elevators

1. Wall Panels / Canopy / Front Return Panels/Transom/Car Doors / Ceiling:
 - a. Reference architectural drawings
2. Ceiling:
 - a. Suspended three-quarters inch (3/4") thick fire-retardant plywood or particleboard with all surfaces finished in the selected bronze sheet metal as shown on the Architectural drawings..
3. Handrails:
 - a. Handrails and bumper rails shall be provided as shown on the Architectural Drawings. Handrail construction shall be three-eighth inch (3/8") x four inches (4") bronze handrail with radius returns at the sides/rear wall(s).
 - b. Bumper rail construction shall be three-eighth inch (3/8") by six inches (6") flat bronze with radius returns at sides and rear wall
4. Lighting:
 - a. The cab lighting system shall be as shown on the drawings.
 - b. Fully recessed **LED** down light fixtures with bronze reflector. Unless otherwise shown on the drawings, provide a light fixture in each ceiling panel. LED color shall be 2700K, with intensity adjustable via controls located in locked service cabinet.
5. Base: Provide a four inch (4") high base in the material and finish selected by the Owner at the sides and rear of the cab enclosure.
6. All ventilation openings shall be concealed behind wall panels or above ceiling panels

E. Elevator Cab Enclosure Fan

1. Provide an exhaust type two (2) speed fan unit with cover grill, mounting accessories, and necessary cab enclosure modifications.
 - a. Fan unit shall include self-lubricating motor with housing rubber mounted for sound vibration isolation.
2. Provide a key switch in the elevator cab enclosure for control of fan unit.
3. Provide necessary wiring and approved conduit to properly connect fan unit with power source and control key switch.

2.13 EMERGENCY LIGHTING / COMMUNICATIONS / SIGNALING

A. Battery Back Up Emergency Lighting Fixture and Alarm

1. Provide a self-powered emergency light unit.
 - a. Arrange two (2) of the cab light fixtures to operate as the emergency light system.
 - b. Where cab lighting is utilized for emergency lighting, Contractor shall coordinate the battery back-up equipment so that it is compatible with the type of cab lighting specified by the Owner or Architect.
2. Provide a car-mounted battery unit including solid-state charger and testing means enclosed in common metal container.
 - a. The battery shall be rechargeable nickel cadmium with a ten (10) year minimum life expectancy. Mount the power pack on the top of the car.
 - b. Provide a six-inch (6") diameter alarm bell mounted directly to the battery/charger unit and connected to sound when any alarm push button or stop switch in the car enclosure is operated.
 - c. The bell shall be configured to operate from power supplied by the building emergency power generator. The bell shall produce a sound output of between 80-90 dBa (measured from a distance of ten feet (10')) mounted on top of the elevator car.
 - 1) Activation of this bell shall be controlled by the stop switch and alarm button in the car operating station.
 - 2) The alarm button shall illuminate when pressed.
3. Where required by Code for the specific application, the unit shall provide mechanical ventilation for at least one (1) hour.
4. The operation shall be completely automatic upon failure of normal power supply.
5. Unit shall be connected to normal power supply for car lights and arranged to be energized at all times, so it automatically recharges battery after use.

B. Emergency Voice Communication / Telephone

1. A hands-free emergency voice communication system shall be furnished in each car mounted as an integral part of the car operating panel.

- a. Necessary wires shall be included in the car traveling cable and shall consist of a minimum of one shielded pair of 20AWG conductors.
- b. 120V power shall be provided to power the hands-free device.
2. The telephone shall be equipped with an auto-dialer and illuminating indicator which shall illuminate when a call has been placed and begin to flash when the call has been answered.
 - a. Engraving shall be provided next to the indicator which says, "When lit help is on the way".
3. In addition to the standard "Alarm" button, a separate activation button shall be provided on the car operating panel to initiate the emergency telephone and place a call.
 - a. The telephone must not shut off if the activating button is pushed more than once.
 - b. The telephone shall transmit a pre-recorded location message only when requested by the operator and be provided with an adjustable call time which can be extended on demand by the operator.
 - c. Once two-way communication has been established, voice prompts shall be provided which instruct the operator on how to activate these functions as well as alerting the operator when a call is being attempted from another elevator in the building.
4. The system shall be compatible with ring-down equipment and PBX switchboards.
5. The system shall be capable of serving as the audio output for an external voice annunciation system.
 - a. Conversation levels shall measure 60 dbA or higher and measure 10 dbA above ambient noise levels.
 - b. Each device shall be provided with a self-diagnostic capability in order to automatically alert building personnel should an operational problem be detected.
6. The phone shall be able to:
 - a. Receive incoming calls from any On-Site Rescue Station (when provided or required).
 - b. Receive incoming calls from other off-site locations via the public telephone system.
 - c. Acknowledge incoming calls and automatically establishing hands-free two-way communications.
 - 1) If no On-Site Rescue Station is provided, each hands-free device shall have built in line consolidation which will allow up to six (6) elevators to be called individually from outside the building over a single telephone line and up to eighty (80) elevators if an On-Site Rescue Station is provided.
7. The emergency elevator communication system shall require a maximum of one (1) telephone line.
 - a. The system must provide line sharing capability to eliminate the need for a dedicated telephone line.
 - b. The line sharing function must ensure that the emergency telephones always receive dialing priority even if the line is in use and that the emergency telephones can be called into from an off-site location.

8. The system shall provide its own four (4) hour backup power supply in case of a loss of regular AC power.
9. The system must provide capability for building personnel to call into elevators and determine the charge state of any backup batteries provided for the emergency telephones.
10. Pushing the activation button in any of the elevator car stations will cause any on-site Rescue Station (where provided or required) or security telephone to ring.
 - a. If the on-site call is not picked up within thirty (30) seconds, the call will be automatically forwarded to a twenty-four (24) hour off-site monitoring service.
 - b. The arrangements and costs of the off-site monitoring and telephone line shall be by others.
11. All connections from the junction box in the elevator machine room to the telephone system in the elevator cab shall be done by the Elevator Contractor.
12. New telephone lines, where required, shall be provided, and interfaced by other (non-elevator trades).
13. All connections from the junction box to the building security / main telephone system shall be done by other non-elevator trades.
14. All electrical work shall conform to Division 16 requirements.
15. Existing phone systems removed shall be returned to the Owners for installation by others in other areas.

C. Two-Way Elevator Visual Communication System

1. Contractor to provide a complete system in compliance with Section 2.27.1.1 of ASME A17.1-2019 and local amendments by the Authority Having Jurisdiction.
2. The system shall provide audio and visual communication means, with a digital display in the elevator cab and push-buttons for registering responses.
3. System shall also provide a means of observing the elevator cab interior, with full view of floor and displaying the video at the monitoring station.
4. Instructions for use shall be located adjacent to the means of activation (e.g., "PHONE" button). All instructions shall be engraved in accordance with the requirements for fixtures herein before specified. Language shall be submitted to owner for approval during the submittal phase.
5. Systems may utilize common cab components (such as Position Indicators or Door Open/Door Close buttons) where allowed by the AHJ and approved by the Owner.
6. Contractor shall include all wiring as required to provide a complete system. Where conduit runs are provided by others, contractor shall coordinate size and routing with the construction manager.
7. Monitoring stations shall be provided in each machine room, the lobby panel, and security desk. Provide a unit price alternate for additional stations.
8. System shall have ability for connection to an external line, in accordance with code, for monitoring by a third-party provider. Coordinate with owner regarding location of outside line connection and provide adapters/converters as required to complete connection. Where subscription fees are required, they shall be included within the warranty period pricing and long-term maintenance pricing.
9. Approved Vendors: RATH® SmartView, MAD MosaicONE VMS, WURTEC Wur-Com or approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspection

1. Study the Contract Documents with regard to the work as specified and required so as to ensure its completeness.
2. Examine surface and conditions to which this work is to be attached or applied and notify the Owner in writing if conditions or surfaces are detrimental to the proper and expeditious installation of the work. Starting the work shall imply acceptance of the surfaces and conditions to perform the work as specified.
3. Verify, by measurements at the job site, dimensions affecting the work. Bring field dimensions which are at variance with those on the accepted shop drawings to the attention of the Owner. Obtain the decision regarding corrective measures before the start of fabrication of items affected.
4. Cooperate in the coordination and scheduling of the work of this section with the work of other sections so as not to delay job progress.

3.2 INSTALLATION / PROJECT PHASING

A. Installation

1. Install / Modernize the elevators, using skilled personnel in strict accordance with the final accepted shop drawings and other submittals.
2. Comply with the code, manufacturer's instructions, and recommendations.
3. Coordinate work with the work of other building functions for proper time and sequence to avoid delays and to ensure right-of-way of system. Use lines and levels to ensure dimensional coordination of the work.
4. Accurately and rigidly secure supporting elements within the shaftways to the encountered construction within the tolerance established.
5. Provide and install motor, switch, control, safety and maintenance and operating devices in strict accordance with the submitted wiring diagrams and applicable codes and regulations having jurisdiction.
6. Ensure sill-to-sill running clearances do not exceed one and one-quarter inches (1- $\frac{1}{4}$ ") at all landings served.
7. Erect guide rails plumb and parallel with a tolerance of one-eighth inch (1/8") (plus or minus one-sixteenth inch (1/16")).
8. Arrange door tracks and sheaves so that no metal-to-metal contact exists.
9. Reinforce hoistway fascias to allow not more than half an inch (1/2") of deflection.
10. Install elevator cab enclosure on platform plumb and align cab entrance with hoistway entrances.
11. Sound isolate cab enclosure from car structure. Allow no direct rigid connections between enclosure and car structure and between platform and car structure.
12. Isolate cab fan from canopy to minimize vibration and noise.
13. Remove oil, dirt and impurities and give a factory coat of rust inhibitive paint to all exposed surfaces of struts, hanger supports, covers, fascias, toe guards, dust covers and other ferrous metal.]

14. Prehang traveling cables for at least twenty-four (24) hours with ends suitably weighted to eliminate twisting after installation.
 15. Pack openings around oil line with fire resistant, sound isolating glass or mineral wool.
 16. Provide isolation pad between platen head and car structure.
 17. After installation, touch up in the field, surfaces of shop primed elements which have become scratched or damaged.
 18. Lubricate operating parts of system as recommended by the manufacturer.
- B. Project Phasing coordination of elevator outage with formal session schedule for the State Legislation schedule is absolutely critical for this project. Elevator cannot be out of service while the State Legislation is actively “In Session”.
1. Phase I - Final design development and contractors’ preliminary work procedures to be completed within six (6) weeks from date of contract award.
 - a. Prevailing conditions review and layout.
 - b. Selection meeting for aesthetic design and finishes with Owners’ designee.
 - c. Filing for required permits or other governing authorities work procedure requirements.
 2. Phase II - Submittal approvals and confirmations shall be completed within six (6) weeks from date of contract award.
 - a. Selection confirmations.
 - b. Manufacturer’s shop drawings applicable, i.e., fixtures, cab, machine room layouts, doors, etc.
 - c. Engineering data acknowledgment applicable, i.e., power, heat, structural loads.
 - d. Delivery dates for major component suppliers, i.e., controls, machinery, fixtures, cabs, etc.
 - e. Posting of permits or other governing agency authorizations to proceed.
 - f. Proposed work implementation schedule based on the aforementioned procedures/confirmations.
 3. Phase III - Mobilization of Final Design Approvals
 - a. Revision confirmations. (Equipment, etc.)
 - b. Preliminary work procedures.
 - c. Schedule confirmations.
 4. Phase IV – Implementation
 - a. See RFP Bid Package for project schedule and coordination requirements
 - b. All Materials must be onsite before start of project – no exceptions.
 5. Contractor shall provide a project schedule as part of the Bid based on the following:
 - a. Include three (3) days of simulated operation, with or without door operation, while not allowing passenger use.
 - b. Consultant punch list inspection report shall be performed after acceptance testing by the AHJ for each individual elevator.

- c. Contractor shall complete all punch list items issued by both the AJH and the Consultant prior to turn-over for beneficial use by the Owner and removal of the next elevator for modernization.

3.3 FIELD QUALITY CONTROL

A. Inspection and Testing

- 1. Upon completion of each work phase or individual elevator specified herein, the Contractor shall, at its own expense, arrange and assist with inspection and testing as may be required by the A.H.J. in order to secure a permit to operate.

B. Substantial Completion

- 1. The work shall be deemed “Substantially Complete” for an individual unit or group of units when, in the opinion of the Consultant, the unit is complete, such that there are no material and substantial variations from the Contract Documents, and the unit is fit for its intended purpose.
- 2. Governing authority testing shall be completed and approved in conjunction with inspection for operation of the unit; a certificate of operation or other required documentation issued; and remaining items mandated for final acceptance completion are limited to minor punch list work not incorporating any life safety deficiencies.
- 3. The issuance of a substantial completion notification shall not relieve the Contractor from its obligations hereunder to complete the work.
- 4. Final completion cannot be achieved until all deliverables, including but not limited to training, spare parts, manuals, and other documentation requirements, have been completed.

C. Contractor’s Superintendent

- 1. The Contractor shall assign a competent project superintendent during the work progress and any necessary assistant, all satisfactory to the Owner. The superintendent shall represent the Contractor and all instructions given to him shall be as binding as if given to the Contractor.

3.4 PROTECTION / CLEANING

A. Protection and Cleaning

- 1. Adequately protect surfaces against accumulation of paint, mortar, mastic and disfiguration or discoloration and damage during shipment and installation.
- 2. Upon completion, remove protection from finished surfaces and thoroughly clean and polish surfaces with due regard to the type of material. Work shall be free from discoloration, scratches, dents, and other surface defects.
- 3. The finished installation shall be free of defects.
- 4. Before final completion and acceptance, repair and/or replace defective work, to the satisfaction of the Owner, at no additional cost.
- 5. Remove tools, equipment, and surplus materials from the site.

B. Barricades and Hoistway Screening

1. The Contractor shall provide barricades where necessary in order to maintain adequate protection of areas in which work specified by the Contract Documents is being performed, including open hoistway entrances. Fabrication and erection as all barricades shall be in compliance with applicable OSHA regulations.
2. As required, the Contractor shall provide temporary wire mesh screening in the hoistway and of any elevator undergoing work specified in the Contract Documents. This screening shall be installed in such a manner as to completely segregate the hoistway from that of adjacent elevators. Screening shall be constructed from forty-one thousandths inch (.041") diameter wire in a pattern that rejects passage of a one-inch (1") diameter ball.

3.5 DEMONSTRATION

A. Performance and Operating Requirements

1. Passenger elevators shall be adjusted to meet the following performance requirements:
 - a. Speed: within $\pm 3\%$ in both directions of travel under any loading condition.
 - b. Leveling: within $\pm 1/4"$ as measured between the car entrance threshold and the landing sill on any given floor under any loading condition.
 - c. Typical Floor-to-Floor Time: (Recorded from the doors start to close on one floor until they are 3/4 open at the next floor) under various loading conditions.

Group Passenger Elevators	11.5 – 12.5 seconds.
---------------------------	----------------------

d. Door Operating Times:

Door Type	Opening	Closing
Two-speed side slide	3.5 sec.	4.5 sec.

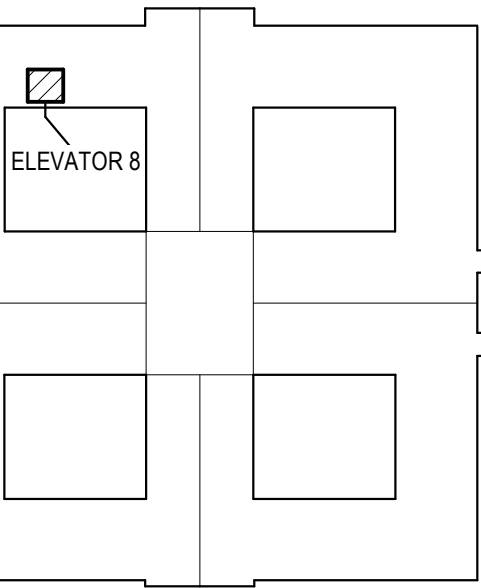
- e. Door dwell time for hall calls: 4.0 sec with Advance lantern signals
 - f. Door dwell time for hall calls: 5.0 sec without Advance lantern signals
 - g. Door dwell time for car calls: 3.0 seconds
 - h. Reduced non-interference dwell time: 1.0 second
2. Maintain the following ride quality requirements for the passenger elevators:
 - a. For speeds up to 1400 fpm, the speed of the car roller guides shall not exceed 500 rpm.
 - b. Where pit permits, extend bottom roller guides by not less than one half the distance from the centerline of the upper roller guides to the platform.
 - c. Noise levels inside the car shall not exceed the following:
 - 1) Car at rest with doors closed and fan off - 40 dba.
 - 2) Car at rest with doors closed, fan running - 55 dba.
 - 3) Car running at high speed, fan off - 50 dba.
 - 4) Door in operation - 60 dba.

- d. Vertical and horizontal accelerations shall not exceed 14 milli-g and horizontal accelerations shall not exceed 20 milli-g.
 - 1) The accelerometer used for this testing shall be capable of measuring and recording acceleration to nearest 0.01 m/s² (1 milli-g) in the range of 0-2 m/s² over a frequency range from 0-80 Hz with ISO 8041 filter weights applied. Accelerometer should provide contact with the floor similar to foot pressure, 60 kPA (8.7psi).
 - e. The amplitude of acceleration and deceleration shall not exceed 2.6 - 2.8 ft./sec² for geared and MRL traction, and 3.5 - 4 ft./sec² for gearless traction elevators.
 - f. The maximum jerk rate shall be 1.5 to 2.0 times the acceleration and deceleration.
 - g. The maximum velocity which the elevator achieves in either direction of travel while operating under load conditions that vary between empty car and full rated load shall be within ± 3% of the rated speed.
- B. Acceptance Testing
- 1. Comply with the requirements of Division 01.
 - 2. The Contractor shall provide at least five (5) days prior written notice to the Owner and Consultant regarding the exact date on which work specified in the Contract Documents will reach completion on any single unit of vertical transportation equipment.
 - 3. In addition to conducting whatever testing procedures may be required by local inspecting authorities in order to gain approval of the completed work, and before seeking approval of said work by the Owner, the Contractor shall perform certain other tests in the presence of the Consultant.
 - 4. The Contractor shall provide test instruments, test weights, and qualified field labor as required to safely operate the unit under load conditions that vary from empty to full rated load and, in so doing, to successfully demonstrate compliance with applicable performance standards set forth in the project specifications with regard to:
 - a. Operation of safety devices.
 - b. Sustained high-speed velocity of the elevator in either direction of travel.
 - c. Brake-to-brake running time and floor-to-floor time between adjacent floors.
 - d. Floor leveling accuracy.
 - e. Door opening/closing and dwell times.
 - f. Ride quality inside the elevator car.
 - g. Communication system.
 - h. Load settings at which anti-nuisance, load dispatch, and load non-stop features are activated.
 - 5. Upon completion of work specified in the Contract Documents on the last car in any group of elevators, and in conjunction with the aforementioned testing procedures, the Contractor shall carry out additional testing of group dispatch/supervisory control features in the presence of the Consultant.
 - 6. The Contractor shall provide test instruments and qualified field labor as required to successfully demonstrate:
 - a. The back-up operating mode for group dispatch failure.
 - b. Simulated and actual emergency power operation.

- c. Firefighter, attendant, and independent service operations.
 - d. Restricted access security features and card reader controls.
 - e. Zoning operations and floor parking assignments.
 - f. Up/down peak operation.
7. Upon completion of the modernization of each individual elevator, emergency power testing shall be conducted by the Building Management after normal business hours and/or weekends.
8. After hour tests of systems such as emergency generators, fire service, and security systems shall be conducted at no extra cost to the Owner.

END OF SPECIFICATION

REVISIONS SCHEDULE		
MARK	DATE	DESCRIPTION
1	05/07/2026	ADDENDUM #1



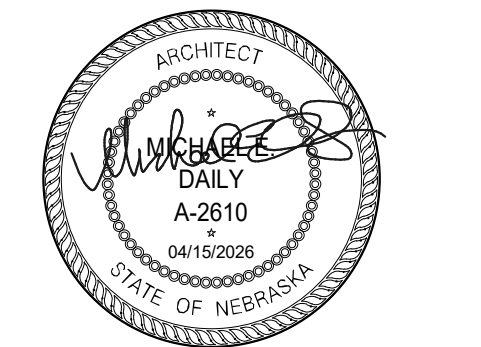
KEY PLAN

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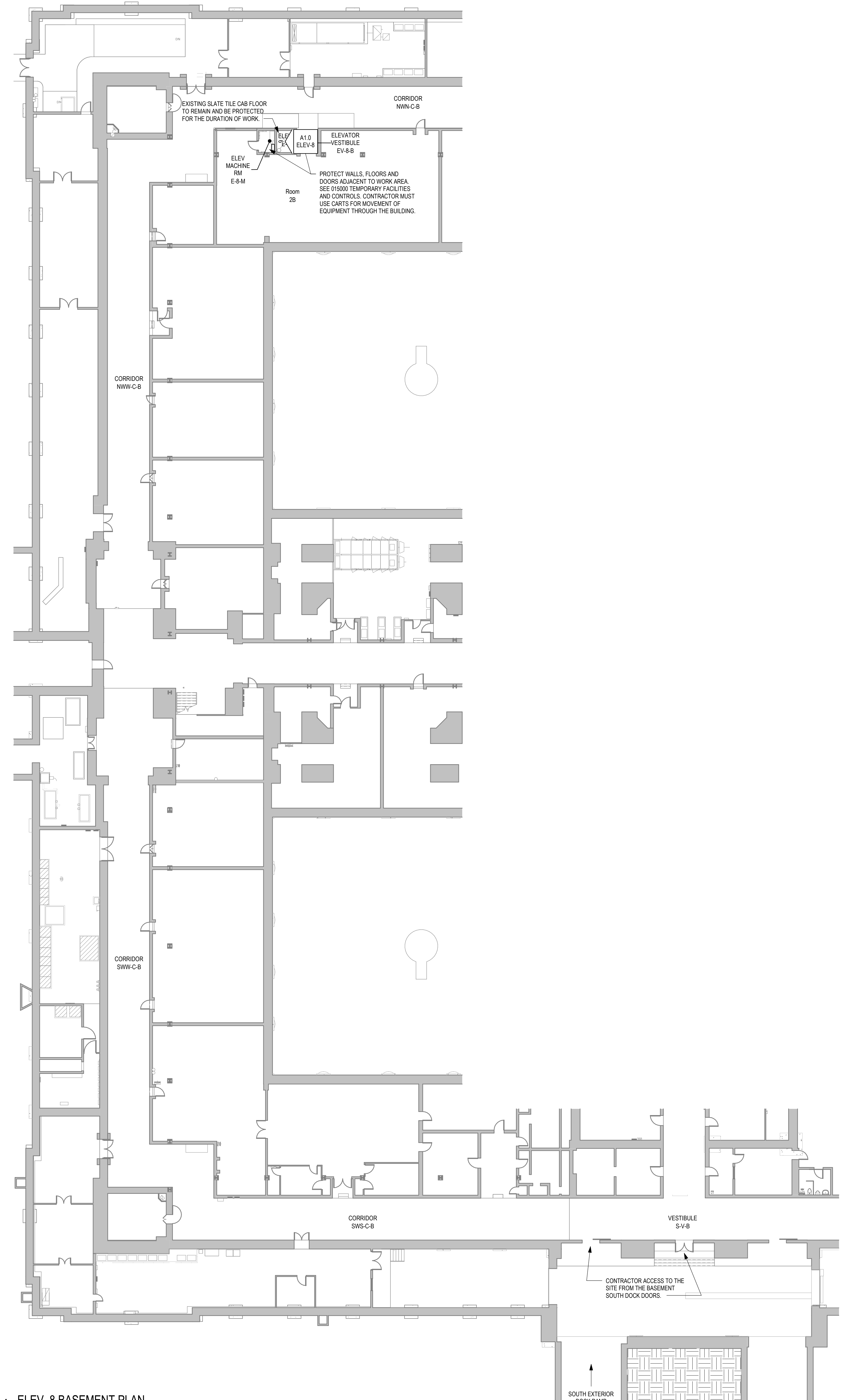
NEBRASKA STATE CAPITOL
 ELEVATOR MODERNIZATION FOR
 ELEVATOR 8
 1445 K STREET
 LINCOLN, NE 68508

PROJECT: OCC 23062 BVM 23042.2 DATE: APRIL 15, 2025

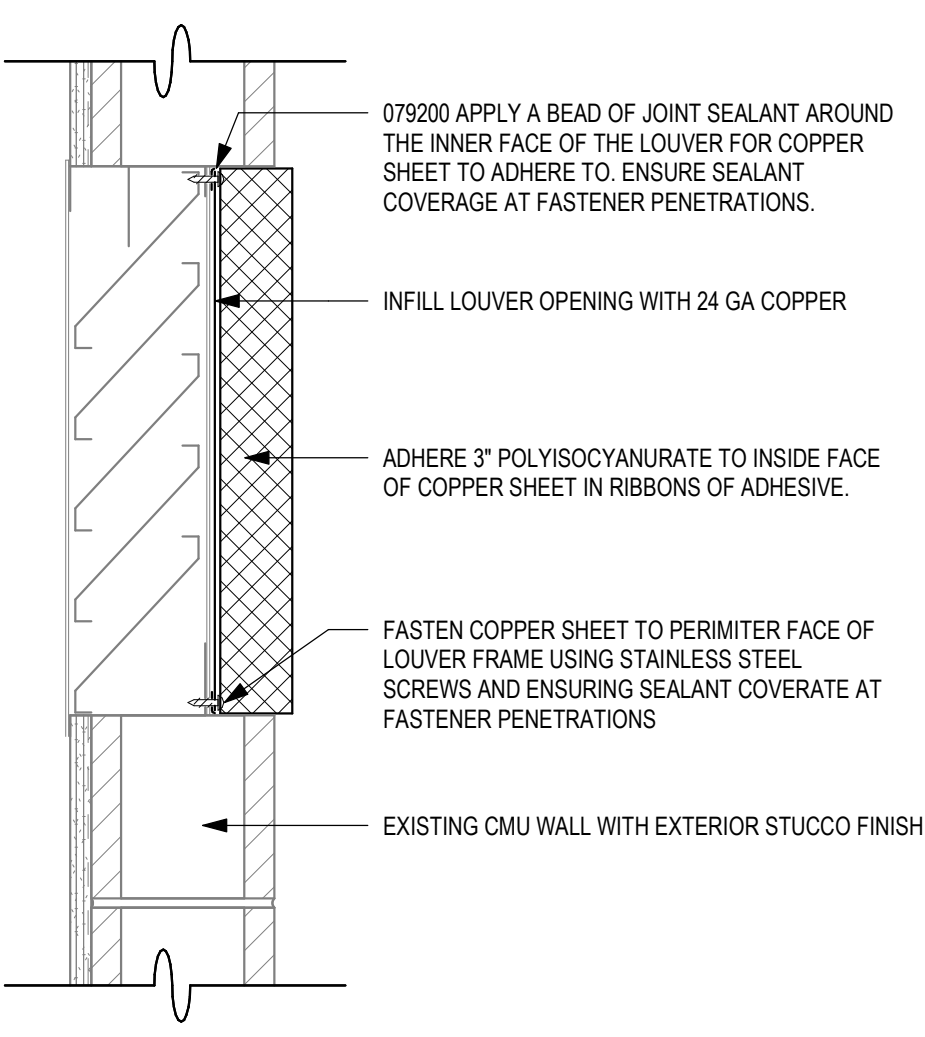


ENLARGED FLOOR PLANS AND SECTIONS

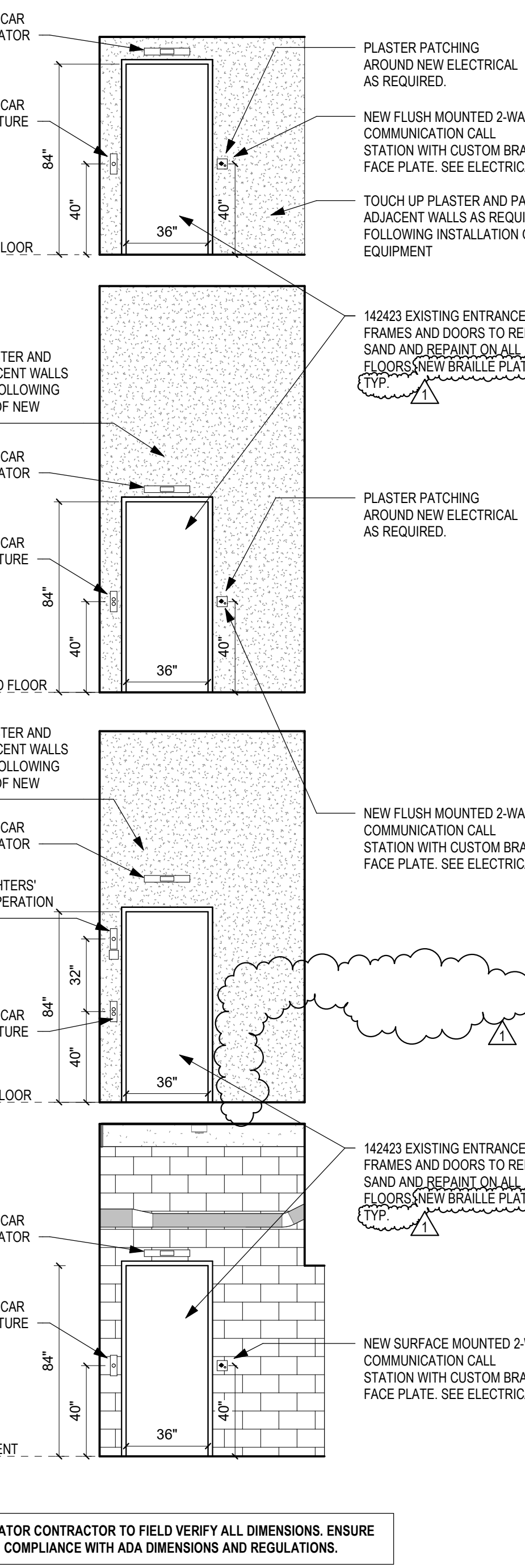
NORTH
**A1.0
 ELEV-8**



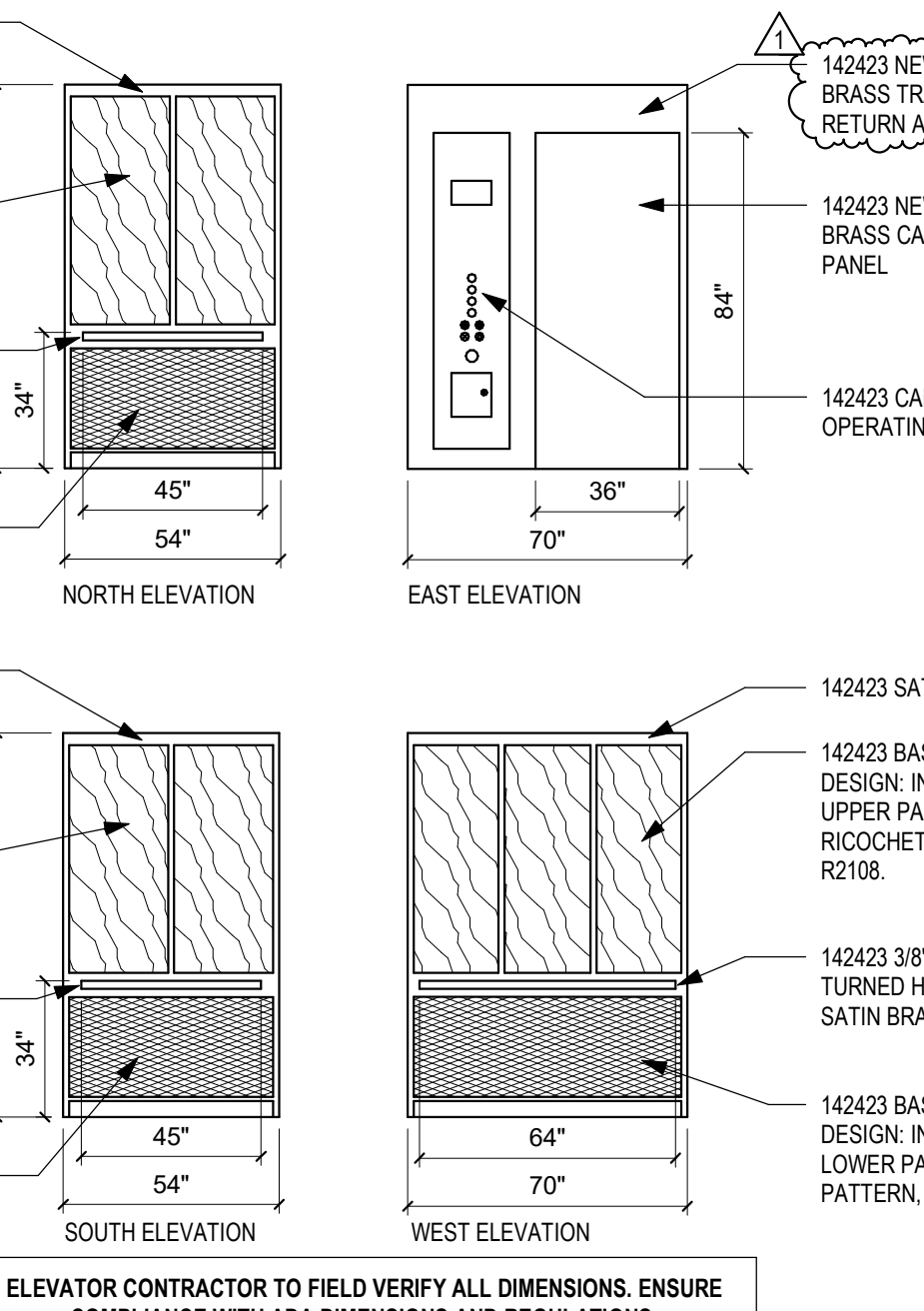
1 ELEV. 8 BASEMENT PLAN
 1/16" = 1'-0"



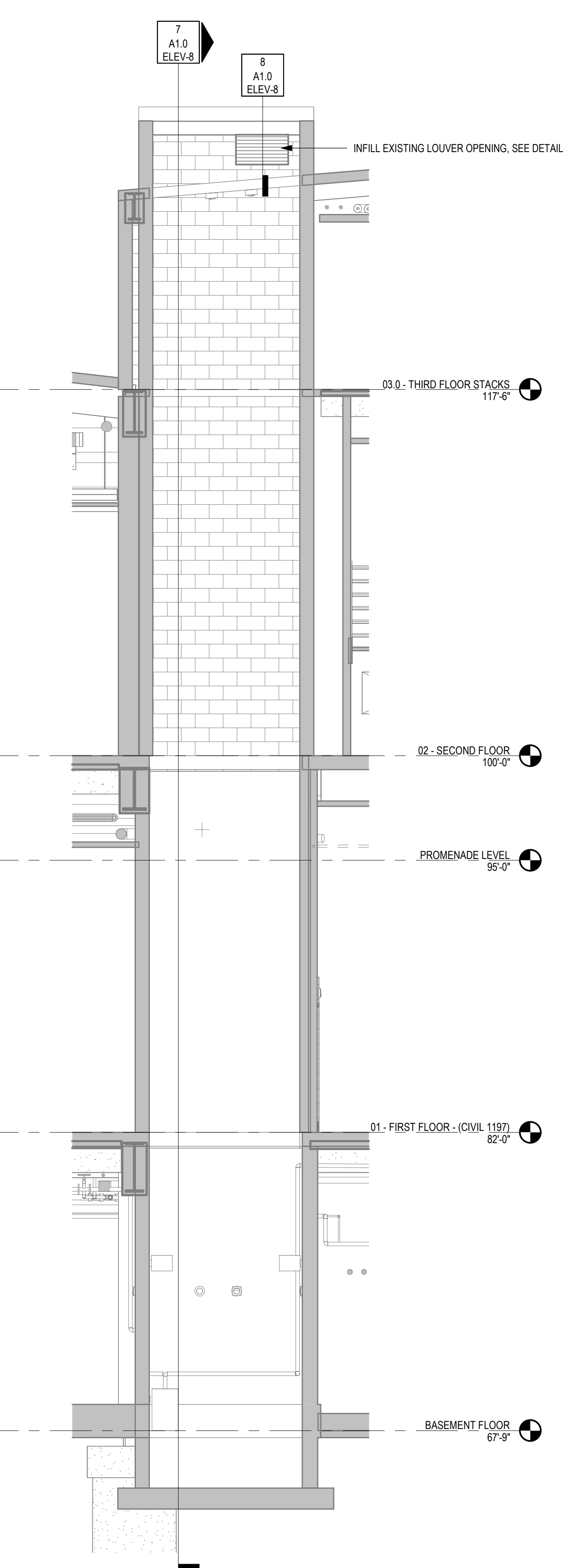
8 DETAIL - ELEV 8 LOUVER INFILL
 1 1/2" = 1'-0"



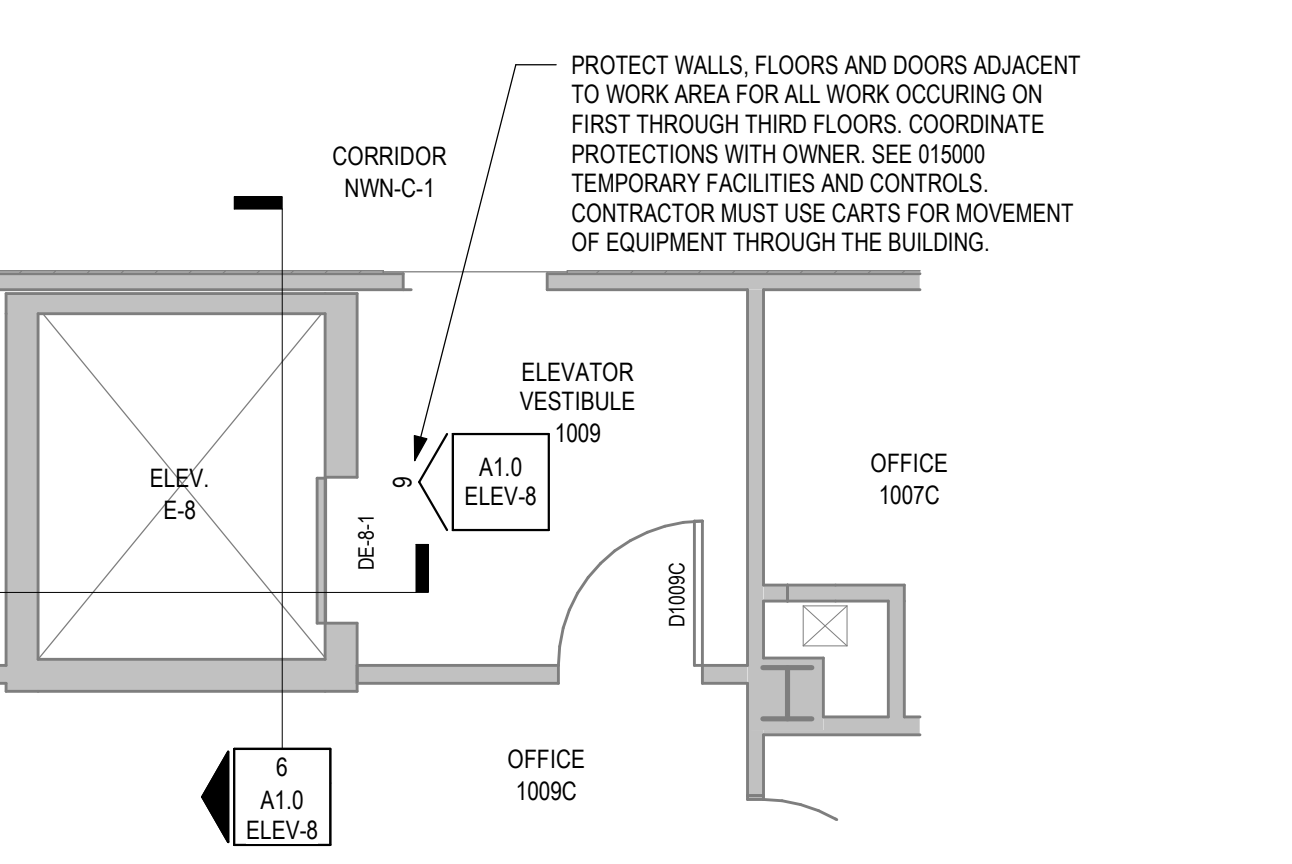
9 ELEVATOR 8 ENTRY ELEVATIONS
 1/4" = 1'-0"



12 ELEVATOR 8 - CAB INTERIOR ELEVATIONS
 1/4" = 1'-0"



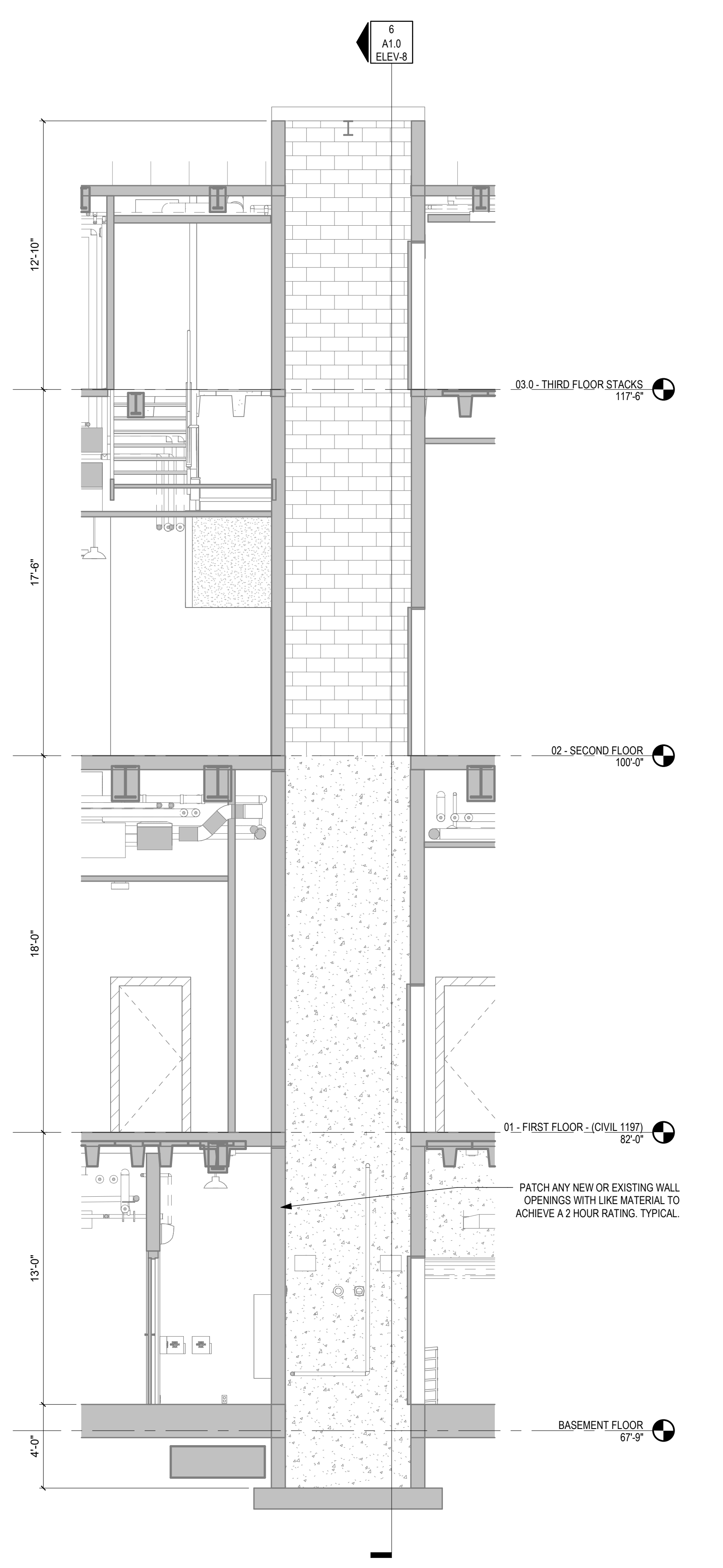
6 ELEV. 8 SECTION 1
 1/4" = 1'-0"



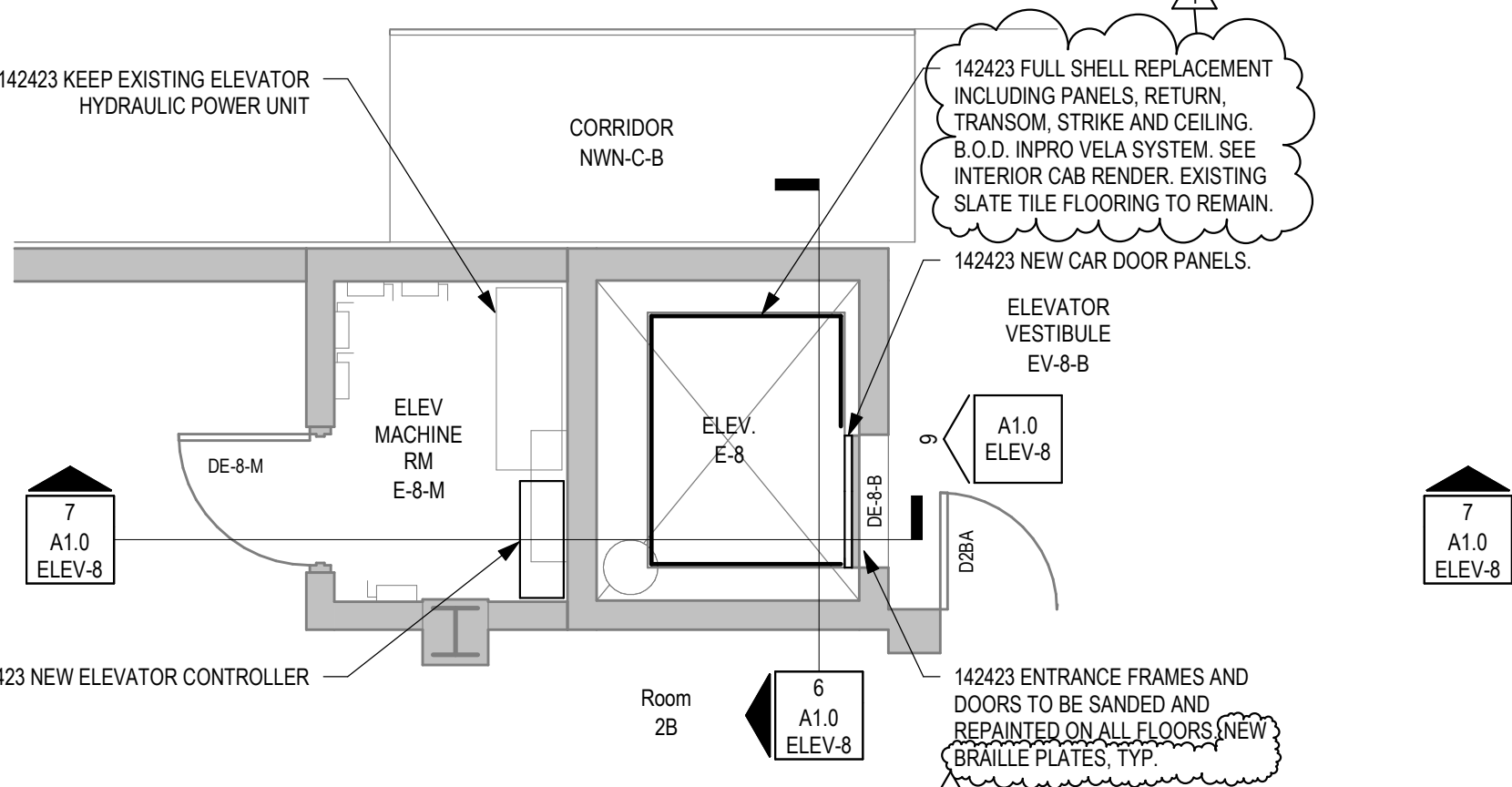
4 ELEV. 8 FIRST FLOOR ENLARGED PLAN
 1/4" = 1'-0"



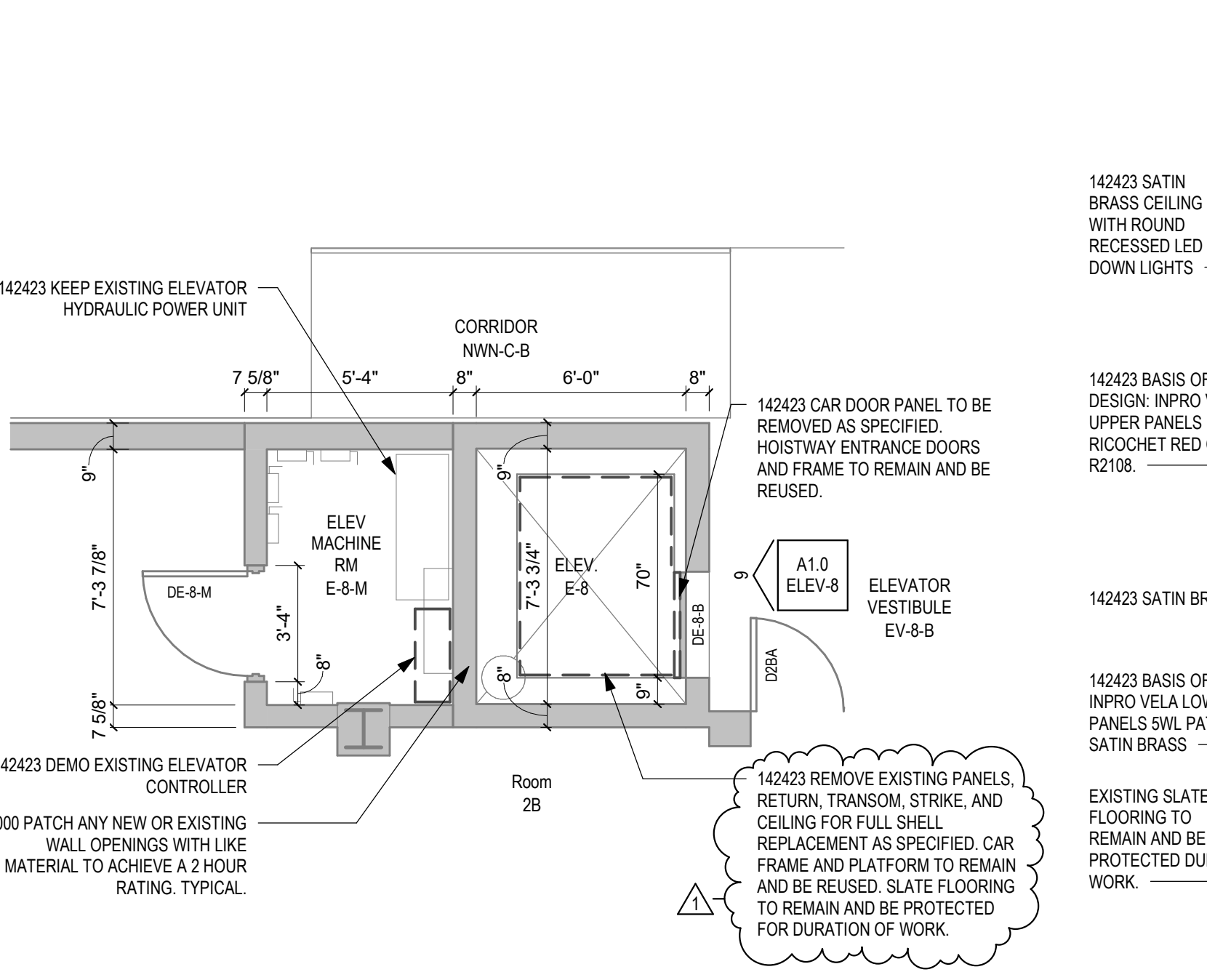
2 ELEV. 8 FINISHES RENDER
 NOT TO SCALE



7 ELEV. 8 SECTION
 1/4" = 1'-0"



5 ELEV. 8 BASEMENT ENLARGED PLAN
 1/4" = 1'-0"



3 ELEV. 8 BASEMENT ENLARGED DEMO PLAN
 1/4" = 1'-0"

REVISIONS SCHEDULE table with columns: MARK, DATE, DESCRIPTION

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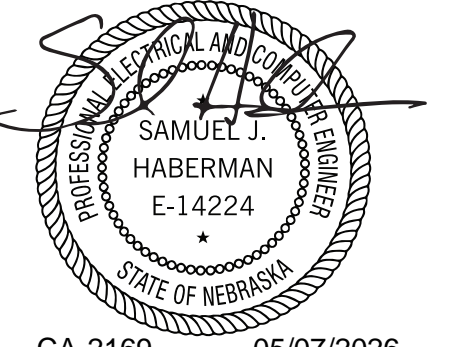
NOTE: DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, SHOP and other appropriate drawings or as built. Lay out and coordinate all work prior to installation or construction. Verify all dimensions, materials, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

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100% CONSTRUCTION DOCUMENTS

NEBRASKA STATE CAPITOL ELEVATOR MODERNIZATION FOR ELEVATOR 8 1445 K STREET LINCOLN, NE 68508

PROJECT: OCC 220402 BWC 220402.2 DATE: APRIL 15, 2025



CA-2169 05/07/2026

ELECTRICAL SYMBOLS, DETAIL, SCHEDULES, ENLARGED PLANS, AND PARTIAL BASEMENT FLOOR PLAN - ELEVATOR 8 - ELECTRICAL

E1.0 ELEV-8

ELECTRICAL SYMBOLS table with columns: SYMBOL, DESCRIPTION, SYMBOL, DESCRIPTION. Includes sections for LIGHTING AND POWER, FIRE DETECTION AND ALARM, and FIRE SPRINKLER.

SYMBOLS INDICATED HERE AND NOT USED IN THE CONTRACT DOCUMENTS DO NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS AND ABBREVIATIONS MAY BE INDICATED IN THE CONTRACT DOCUMENTS.

MECHANICAL / ELECTRICAL COORDINATION SCHEDULE table with columns: EQUIPMENT, ELECTRICAL SYSTEM, DISCONNECT, LINE VOLTAGE CONTROLLER, AVAILABLE FAULT CURRENT (AMPS), REMARKS.

LUMINAIRE SCHEDULE table with columns: MARK, MANUFACTURER, CATALOG NO., LUMENS, WATTAGE, COLOR TEMP (K), DIMMING PROTOCOL, VOLTAGE, DESCRIPTION, MOUNTING, ALTERNATE MANUFACTURERS, REMARKS.

5 PARTIAL SECOND FLOOR PLAN - ELEVATOR 8 - ELECTRICAL

6 PARTIAL THIRD FLOOR PLAN - ELEVATOR 8 - ELECTRICAL

1 PARTIAL BASEMENT FLOOR PLAN - ELEVATOR 8 - ELECTRICAL

3 ELEV. 8 BASEMENT PLAN - ELECTRICAL

4 ELEVATOR INTERCONNECTION SCHEMATIC

NO SCALE

3 ELEV. 8 BASEMENT PLAN - ELECTRICAL

4 ELEVATOR INTERCONNECTION SCHEMATIC

NO SCALE

3 ELEV. 8 BASEMENT PLAN - ELECTRICAL

4 ELEVATOR INTERCONNECTION SCHEMATIC

NO SCALE

3 ELEV. 8 BASEMENT PLAN - ELECTRICAL

4 ELEVATOR INTERCONNECTION SCHEMATIC

NO SCALE

3 ELEV. 8 BASEMENT PLAN - ELECTRICAL

4 ELEVATOR INTERCONNECTION SCHEMATIC

NO SCALE

3 ELEV. 8 BASEMENT PLAN - ELECTRICAL

4 ELEVATOR INTERCONNECTION SCHEMATIC

NO SCALE

FLAG NOTES FOR DETAIL 1 PARTIAL BASEMENT FLOOR PLAN

- 1 PROVIDE OPENING TRANSFER SIGNAL FROM AUTOMATIC TRANSFER SWITCH TO ELEVATOR CONTROLLER.
2 CONNECT NEW BRANCH CIRCUITS FOR ELEVATOR 8 TO SPARE 20A IP BRANCH CIRCUIT BREAKERS PANEL BE.
3 REVISE PANEL SCHEDULE TO SHOW NEW LOADS.
4 EXISTING BRANCH CIRCUIT BREAKER LABELED 'WV ELEV' RATING PLUS WITH 20A PLUG RETURN 20A PLUS TO OCC. EXISTING CIRCUIT BREAKER IS GENERAL ELECTRIC, SPECTRUM, H-BREAK, RATING PLUG TYPE IS SP8720A.
5 PROVIDE NEW PHENOLIC LABEL TO MATCH EXISTING LABELS. NEW LABEL: 'ELEV. 8'.
6 EXISTING FEEDER CONDUIT TO REMAIN. REMOVE EXISTING 3/4" Ø GND CONDUCTORS. PROVIDE NEW CONDUCTORS. SEE FLAG NOTES #14 AND #20 FOR DETAIL 2 AND 3 ON THIS SHEET.
7 EXISTING IRON HAS REMOTE 2-WAY COMMUNICATION CALL STATION FROM THIS LOCATION. EXTEND 1/2" TYPE UL LISTED 24 HOUR RATED CABLE INSTALLED IN EMT CONDUIT TO NEW CALL STATION LOCATIONS ON BASEMENT, SECOND, AND THIRD FLOORS IN ELEVATOR #8 VESTIBULE. SEE DETAILS 3, 5, AND 6.

ELEVATOR GENERAL NOTES

- 1 WHEN EXISTING (NON-INSULATED) CONDUCTORS ARE ENCOUNTERED, THEY SHALL BE REMOVED AND REPLACED WITH NEW CONDUCTORS.
2 MINIMUM SIZE FOR BRANCH CIRCUIT CONDUITS SHALL BE 1/2" SEE DRAWINGS FOR AREAS WHERE LARGER CONDUITS ARE REQUIRED.
3 CONICAL CONDUITS INSTALLED IN NEW WALLS AND EXISTING STUD WALLS.
4 REPAIR OR REPLACE BUILDING ELEMENTS THAT ARE DAMAGED AS PART OF ELECTRICAL WORK TO THE SATISFACTION OF THE OCC, WITH NO ADDITIONAL COST TO THE PROJECT.
5 SPECIFICATIONS LIST ACCEPTABLE WIRING METHODS AND MATERIALS. OTHER WIRING METHODS AND MATERIALS NOT LISTED IN THE SPECIFICATIONS SUCH AS MC CABLES ARE NOT ACCEPTABLE.
6 COORDINATE PHASING REQUIREMENTS, BOUNDARIES, ETC. WITH THE ARCHITECTURAL DRAWINGS AND DETAILS.
7 WHEN NEW LOADS ARE ADDED TO EXISTING PANELS, OR EXISTING LOADS ARE REMOVED, UPDATE THE PANEL CIRCUIT DIRECTORY TO REFLECT CHANGES. PROVIDE NEW TYPE - WRITTEN CIRCUIT DIRECTORY.
8 COORDINATE THE ROUTING OF EXPOSED CONDUITS WITH OTHER TRADES TO AVOID CONFLICTS AND TO BE INSTALLED IN A CONSISTENT ORGANIZED MANNER.
9 INSTALL GREEN INSULATED GROUND WIRE WITH EACH LIGHTING, RECEPTACLE AND EQUIPMENT BRANCH CIRCUIT.
10 PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT SECURING A NEUTRAL UNLESS OTHERWISE NOTED.
11 THE ENTIRE CIRCUIT, FEED WITH EMERGENCY POWER FROM A BRANCH EXCISE GENERATOR.

MISCELLANEOUS GENERAL NOTES

- 1 SEE ARCHITECTURAL GENERAL AND DEMOLITION SHEETS FOR PHASING, SITE ACCESS, AND STAGING.
2 REFER TO ARCHITECTURAL DRAWINGS FOR BUILDING PROTECTION PLANS AND ASSOCIATED DETAILS REQUIRED TO PROTECT EXISTING HISTORIC MATERIALS DURING THE ENTIRETY OF THE CONSTRUCTION. ALL PROTECTION MATERIALS SHALL BE INSTALLED PRIOR TO BEGINNING ANY DEMOLITION WORK.
3 CONTRACTOR SHALL ASSUME THAT ALL EXISTING WALLS EXTEND UP TO STRUCTURE UNLESS NOTED OTHERWISE.
4 CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS, METHODS AND SEQUENCES OF CONSTRUCTION AND THE SAFETY OF THE CONSTRUCTION PERSONNEL AND AUTHORIZED VISITORS.
5 REFER TO THE PROJECT MANUAL FOR ADDITIONAL PROJECT REQUIREMENTS.
6 CONTRACTOR SHALL COORDINATE THE SIZE AND LOCATION OF ALL NEW ELECTRICAL PENETRATIONS. CONTRACTOR SHALL PROVIDE AND INSTALL ALL REQUIRED PENETRATIONS INCLUDING CORE DRILLED HOLES FOR ALL NEW ELECTRICAL AND MASS NOTIFICATION SYSTEMS.
7 SEE FRONT END SPECIFICATION DIVISION 4 FOR GENERAL CONDITION REQUIREMENTS THAT AFFECT THIS CONTRACTOR'S WORK.
8 CONTRACTOR SHALL USE EXTREME CARE AND TAKE PRECAUTIONS DURING CONSTRUCTION SO AS NOT TO DAMAGE EXISTING HISTORIC FINISHES TO REMAIN. ANY DAMAGE TO EXISTING FINISHES DURING CONSTRUCTION SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER REPRESENTATIVE WITHOUT ADDITIONAL COST TO THE OWNER.

MASS NOTIFICATION GENERAL NOTES

- 1 MASS NOTIFICATION DEVICES ARE INDICATED SCHEMATICALLY FOR DESIGN INTENT. DEVICE QUANTITIES INDICATED ARE MINIMUM. PROVIDE ADDITIONAL DEVICES AS REQUIRED. MASS NOTIFICATION SUPPLIER SHALL SELECT CANDELA RATINGS OF STROBES TO PROVIDE REQUIRED COVERAGE.
2 MASS NOTIFICATION SYSTEM WIRING SHALL BE INSTALLED IN RED CONDUIT.
3 EXISTING FIRE ALARM DEVICES SHALL REMAIN IN AREAS WHERE WORK HAS NOT STARTED AND SHALL STAY OPERATIONAL.

ELEVATOR INTERCONNECTION SCHEMATIC FLAG NOTES

- 1 SMOKE DETECTORS AT MACHINE ROOM, ELEVATOR PIT, ELEVATOR LANDING, AND TOP OF ELEVATOR HOISTWAY PER PLAN. ALARM ACTIVATION OF THESE DETECTORS SHALL INITIATE ELEVATOR RECALL PER AHJ.
2 ELEVATOR CONTROLLER DISCONNECTING MEANS FUSIBLE SHUNT TRIP SAFETY SWITCH PER PLAN. MANUFACTURED BY RUSSMAN, HERSEN OR UTILIFUSE. PROVIDE WITH CONTROL POWER TRANSFORMER SHUNT TRIP VOLTAGE MONITOR. FIRE SAFETY INTERFERENCE RELAY TYPE 1 SURGE PROTECTION DEVICE (SPD) - 50 KA SURGE CURRENT CAPACITY, AND AUXILIARY CONTACTS (SET) PROTECT CLASS-FUSES USED PER ELEVATOR MANUFACTURER'S RECOMMENDATIONS. PROVIDE PHENOLIC NAMEPLATE ON ENCLOSURE WITH NUMBER CORRESPONDING TO IDENTIFYING NUMBER OF THE ELEVATOR CAR. SEE MANUFACTURER'S RECOMMENDATIONS.
3 PROVIDE TWO (2) EMPTY CONDUITS WITH PULL STRING TO EDGE OF EXISTING COMMUNICATION CABLE TRAY IN ADJACENT CORRIDOR FOR SECURITY ACCESS CONTROL SYSTEM AND ELEVATOR CAR TELEPHONE. TERMINATE CONDUITS WITH INSULATING BUSHING.
4 ELEVATOR RECALL PROVIDE CONTROL MODULES TO INITIATE ELEVATOR RECALL PER NFPA 72.
5 ELEVATOR CAR VISUAL SIGNAL.
6 30AMP ENCLOSED FUSIBLE SAFETY SWITCH LOCATION PER PLAN. SAFETY SWITCH PER PLAN. MANUFACTURED BY RUSSMAN, HERSEN OR UTILIFUSE. PROVIDE WITH CONTROL POWER TRANSFORMER SHUNT TRIP VOLTAGE MONITOR. FIRE SAFETY INTERFERENCE RELAY TYPE 1 SURGE PROTECTION DEVICE (SPD) - 50 KA SURGE CURRENT CAPACITY, AND AUXILIARY CONTACTS (SET) PROTECT CLASS-FUSES USED PER ELEVATOR MANUFACTURER'S RECOMMENDATIONS. PROVIDE PHENOLIC NAMEPLATE ON ENCLOSURE WITH NUMBER CORRESPONDING TO IDENTIFYING NUMBER OF THE ELEVATOR CAR. SEE MANUFACTURER'S RECOMMENDATIONS.
7 HEAT DETECTOR IN MACHINE ROOM AND BOTTOM OF HOISTWAY PER PLAN. PROVIDE DETECTORS WITH LOWER ALARM TEMPERATURE AND HIGHER SENSITIVITY THAN SPRINKLER HEADS PER ELEVATOR CODE. PROVIDE PROTECTION WITHIN 48" OF SPRINKLER HEADS PER NFPA 72. UNDER "VERIFIED ALARM" ACTIVATION OF SENSORS SHALL SHUT DOWN POWER TO ELEVATOR.
8 IMPENDING TRANSFER. PROVIDE CONDUCTORS IN CONDUIT TO AUTOMATIC TRANSFER SWITCH IN ROOM BE.
9 MONITOR MODULE FOR SHUNT TRIP VOLTAGE MONITORING. CONNECT TO SHUNT TRIP SWITCH. FIRE SAFETY INTERFERENCE RELAY TYPE 1 SURGE PROTECTION DEVICE (SPD) - 50 KA SURGE CURRENT CAPACITY, AND AUXILIARY CONTACTS (SET) PROTECT CLASS-FUSES USED PER ELEVATOR MANUFACTURER'S RECOMMENDATIONS. PROVIDE PHENOLIC NAMEPLATE ON ENCLOSURE WITH NUMBER CORRESPONDING TO IDENTIFYING NUMBER OF THE ELEVATOR CAR. SEE MANUFACTURER'S RECOMMENDATIONS.
10 PROVIDE ONE (1) EMPTY CONDUIT WITH PULL STRING TO EDGE OF EXISTING COMMUNICATION CABLE TRAY IN ADJACENT CORRIDOR FOR CONNECTION OF IN-CAR CAMERA AND VOICE COMMUNICATION SYSTEM. TERMINATE CONDUIT WITH INSULATING BUSHING.

FLAG NOTES FOR DETAILS 2, 3, 5 AND 6

- 1 REMOVE SAFETY SWITCH.
2 REMOVE WIRING DEVICE AND CONDUCTORS. BOX AND CONDUIT TO REMAIN FOR REUSE.
3 REMOVE LIGHTING FIXTURE.
4 NEW 20AMP FUSIBLE SHUNT TRIP SAFETY SWITCH. FUSE RER ELEVATOR CONTROLLER MANUFACTURER'S RECOMMENDATION.
5 CONNECT TO ELEVATOR CONTROLLER WITH 3/4" Ø AND 8" Ø GROUND IN 2" C.
6 PROVIDE NEW HEAT DETECTOR WITHIN 24" OF SPRINKLER HEADS. VERIFY QUANTITY WITH FIRE SPRINKLER CONTRACTOR. CONNECT TO EXISTING MASS NOTIFICATION SYSTEM.
7 ELEVATOR CAR LIGHTING DISCONNECT. LABEL 'ELEV. 8' CAR LIGHTS.
8 CONNECT TO EXISTING SPARE 20AMP BRANCH BREAKER. REVISE PANEL SCHEDULE TO SHOW NEW LOADS.
9 MOUNT VERTICALLY IN CORNER OF PIT. CENTER OF LIGHT AT 48" ABOVE PIT FLOOR. VERIFY LOCATION IS CLEAR OF ELEVATOR COMPONENTS.
10 LOCATE SWITCH AT ENTRY TO PIT POSITIONED TO BE READILY ACCESSIBLE FROM THE PIT ACCESS LADDER.
11 PROVIDE NEW WIRING DEVICE IN EXISTING LOCATION. PROVIDE NEW CONDUCTORS FOR ENTIRE CIRCUIT.
12 EXISTING ELEVATOR #8 FEEDER BACK TO SUB STATION 1. REMOVE EXISTING CONDUITS COMPLETE. EXISTING 2" CONDUIT SHALL REMAIN FOR REUSE.
13 PROVIDE NEW 3/4" Ø 848 GND IN EXISTING CONDUIT TO 20AMP CIRCUIT BREAKER IN SUB STATION 1. SEE CONTINUATION ON DETAIL 1 ON THIS SHEET.
14 EXISTING SMOKE DETECTOR TO REMAIN.
15 PROVIDE FIRE ALARM TAMPER SWITCH ON FIRE SPRINKLER ISOLATION VALVE SERVING SPRINKLER HEADS IN ELEVATOR MACHINE ROOM AND HOISTWAY.
16 30AMP FUSIBLE ELEVATOR AUXILIARY CAR DEVICES DISCONNECT. LABEL 'ELEV. 8' AUXILIARY CAR DEVICES.
17 30AMP FUSIBLE ELEVATOR OIL COOLER DISCONNECT. LABEL 'ELEV. 8' COOLER.
18 30AMP FUSIBLE ELEVATOR SECURITY DEVICES DISCONNECT. LABEL 'ELEV. 8' SECURITY DEVICES.
19 UNDER ALTERNATE BID NO. 2, PROVIDE A COST FOR AN ALTERNATE FEEDER SIZE FROM ELEVATOR #8 NEW CONTROLLER TO EXISTING CIRCUIT BREAKER IN SUB STATION 1. ALTERNATE FEEDER SHALL BE 3/4" Ø 848 GROUND IN EXISTING CONDUIT.
20 PROVIDE NEW SMOKE DETECTOR ON ELEVATOR PIT. CONNECT TO EXISTING MASS NOTIFICATION SYSTEM.
21 PROVIDE NEW IRON 8488 REMOTE 2-WAY COMMUNICATION CALL STATION WITH CUSTOM BRASS 2-GANG FACE PLATE. FACE PLATE SHALL BE SECURED WITH TAMPERPROOF MOUNTING SCREWS. PROVIDE ALL ACCESSORIES: WIRING, CABLES, PATHWAYS, AND SIGNAGE FOR A CODE COMPLIANT, COMPLETE AND OPERATIONAL COMMUNICATION SYSTEM FOR THE NEW LOCATIONS.
22 INSTALL PER MANUFACTURER'S INSTRUCTIONS. PROVIDE SHOP DRAWINGS SUBMITTAL FOR NEW WIRING EMERGENCY CALL SYSTEM COMPONENTS INCLUDING SIGNALING AND CABLES.
23 PROVIDE NEW SURFACE MOUNTED RED GFCI RECEPTACLE FOR CONNECTION TO IN-CAR CAMERA AND COMMUNICATION UNIT FURNISHED BY ELEVATOR CONTRACTOR. COORDINATE PROPER LOCATION FOR RECEPTACLE BEFORE BEGINNING ROUGH IN.

Alvine Doc#10377 - Nebraska State Capitol - HVAC/Electrical/MEP/2025/04

5/20/2025 10:26 AM