

**The Philadelphia Parking Authority
Mellon Independence Center
701 Market Street, Suite 5400
Philadelphia, PA 19106**

**Bid No. 15-13 – Replace Existing Elevators at AutoPark Olde City
Addendum One**

To: See Email Distribution List
From: Mary Wheeler
Manager of Contract Administration
Date: September 3, 2015
No Pages: 20, (including this cover page)

This addendum is issued on September 3, 2015 prior to the proposal due date to add, delete, modify, clarify and/or to respond to questions submitted by prospective proposers regarding the work included in the above referenced bid request.

CLARIFICATIONS, CHANGES AND ADDITIONS TO THE RFP DOCUMENTS

Replace Section 14 22 00 with Attachment A. Specifically, the following changes were made:

1. Page 14 22 00 - 2: 1.06.A.2.b: There is no fire suppression system in the Garage to be integrated. This paragraph has been deleted.
2. Page 14 22 00 - 4: 1.09.I: There is no fire suppression system in the hoistway to be integrated. This paragraph has been deleted.
3. Miscellaneous clarifications provided for equipment basis of design.

QUESTION

1. **Question:** As an elevator contractor, we're submitting our bid to the general contractor? We won't be required to fill out all of the paperwork, correct?

Response: Elevator contractors may bid to a general contractor as a sub, or directly as a prime. If bidding as a prime, all the required bidding documentation must be submitted as detailed in Instructions to Bidders - Article 24.

END OF ADDENDUM ONE

Attachment A

SECTION 14 22 00
ELECTRIC TRACTION ELEVATOR MODERNIZATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. All engineering, equipment, labor and permits required to satisfactorily complete elevator modernization of two existing electric traction elevators.
 - 1. Passenger type.
- B. Cartage and Hoisting: All required staging, hoisting, and movement to, on, and from the site including new equipment, reused equipment, or dismantling and removal of existing equipment.
- C. Additional equipment or finishes furnished under other sections, installed under this section:
 - 1. In car Firefighters telephone jack(s).
- D. Hoistway, pit, and machine room barricades as required.
- E. Elevator Maintenance Contract.

1.02 RELATED REQUIREMENTS

- A. Section 00 73 00 - Supplementary Conditions: Warranty.
- B. Section 02 41 00 - Demolition: Selective demolition of existing elevator equipment.
- C. Section 05 50 00 - Metal Fabrications: Includes prefabricated ladders and accessories.
- D. Section 07 84 00 - Firestopping: Fire rated sealant in hoistway.
- E. Section 08 80 00 - Glazing: Laminated glass for cab interiors.
- F. Section 09 65 19 - Resilient Tile Flooring: Floor finish in cab interiors.
- G. Section 09 90 00 - Painting and Coatings: Field painting of existing hoistway steel guide rails and frames.
- H. Section 22 30 00 - Plumbing Equipment: Pit sump pumps.
- I. Section 23 34 16 - Centrifugal HVAC Fans: Required ventilation and temperature control of elevator equipment room.
- J. Section 23 81 27 - Small Split-System Heating and Cooling: Required cooling and temperature control for elevator logic controllers.
- K. Section 26 27 17 - Equipment Wiring: Electrical connections to elevator equipment.

1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.
- B. AISC 360 - Specification for Structural Steel Buildings; American Institute of Steel Construction, Inc.; 2010.
- C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2012.
- D. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.
- E. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength, Low Alloy, and High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2013.
- F. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2013.
- G. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes [Metric]; 2013.
- H. ASME A17.1 - Safety Code for Elevators and Escalators; 2000 w/ Addenda 2002 and 2003.
- I. ASME A17.2 - Guide for Inspection of Elevators, Escalators, and Moving Walks; 2012.

- J. ASME QEI-1 - Standard for the Qualification of Elevator Inspectors; 2013.
- K. AWS D1.1/D1.1M - Structural Welding Code - Steel; American Welding Society; 2011 w/Errata.
- L. ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities; 2003 w/ Errata 2005.
- M. NEMA MG 1 - Motors and Generators; National Electrical Manufacturers Association; 2011.
- N. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- O. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; National Fire Protection Association; 2013.
- P. PS 1 - Structural Plywood; 2009.
- Q. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition.

1.04 DEFINITIONS

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

1.05 DOCUMENTATION AND SITE VERIFICATION

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

1.06 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other installers to provide conduits necessary for installation of wiring including but not limited to:
 - a. To elevator equipment devices remote from elevator machine room or hoistway.
 - b. To elevator pit for lighting and sump pump.
 - c. To automatic transfer switch from controller cabinet.
 - d. To fire alarm panel from controller cabinet.
 - 2. Coordinate the work with other installers for equipment provisions necessary for proper elevator operation including but not limited to:
 - a. Automatic transfer switches with auxiliary contacts for emergency power transfer status indication.
 - b. Overcurrent protection devices selected to achieve required selective coordination.
- B. Preinstallation Meeting: Convene a meeting one week prior to starting work.
 - 1. Review schedule of installation, installation procedures and conditions, and coordination with related work.
 - 2. Review use of elevator for construction purposes, hours of use, scheduling of use, cleanliness of car, employment of operator, and maintenance of system.
- C. Construction Use of Elevator: Provide one elevator for transport of construction personnel and materials in compliance with ASME A17.1.
 - 1. Owner to negotiate with manufacturer/installer for construction use of elevator in accordance with terms and conditions of manufacturer's temporary acceptance form.
 - 2. Make elevator available for construction use as scheduled.
 - 3. Enclose car with protective plywood on floor and walls.

4. Provide temporary lighting.
5. Provide control panel with manual and emergency operation.

1.07 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on the following items.
 1. Signal and operating fixtures, operating panels, and indicators.
 2. Car design, dimensions, layout, and components.
 3. Car and hoistway door and frame details.
 4. Electrical characteristics and connection requirements.
- C. Shop Drawings: Provide drawings on the following items.
 1. Locations of Elevator Machine Equipment: Driving machines, power units, controllers, governors and other components.
 2. Hoistway Components: Car machine beams, guide rails, buffers, ropes, and other components.
 3. Rail bracket spacing; maximum loads imposed on guide rails requiring load transfer to building structural framing.
 4. Individual weight of principal components; load reaction at points of support.
 5. Loads on hoisting beams.
 6. Clearances and over-travel of car and counterweight.
 7. Locations in hoistway and machine room of traveling cables and connections for car lighting, telephone, and surveillance cameras.
 8. Location and sizes of doors and frames.
 9. Calculated heat dissipation of elevator equipment in machine room.
 10. Applicable seismic design data; certified by a licensed Professional Structural Engineer.
 11. Interface with building surveillance system.
 12. Electrical characteristics and connection requirements.
 13. Show arrangement of elevator equipment and allow for clear passage of equipment through access openings.
- D. Samples: Submit samples illustrating car interior finishes, car and hoistway door and frame finishes, and handrail material and finish in the form of cut sheets, finish color selection brochures, or verification samples.
 1. Submit three (3) copies; one (1) of which will be retained by Architect.
- E. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- F. Initial Maintenance Contract.
- G. Subsequent Maintenance Contract: Submit proposal to Owner for standard one (1) year continuing maintenance contract agreement in accordance with ASME A17.1 and requirements as indicated, starting on date initial maintenance contract is scheduled to expire.
 1. Indicate in proposal the services, obligations, conditions, and terms for agreement period and for renewal options.
- H. Operation and Maintenance Data:
 1. Parts catalog with complete list of equipment replacement parts; identify each entry with equipment description and identifying code.
 2. Operation and maintenance manual.
 3. Schematic drawings and wiring diagrams.

1.08 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum ten years documented experience.

- B. Installer Qualifications: Company specializing in performing the work of this section and approved by selected elevator equipment manufacturer, Owner and Architect.
 - 1. Alternate installers must receive approval of Owner and Architect at least fourteen (14) calendar days prior to bid date.
- C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.
 - 1. Perform tests in accordance with ASME A17.2.
- D. Products Requiring Fire Resistance Rating: Listed and classified by testing agency acceptable to the authorities having jurisdiction.
- E. Products Requiring Electrical Connection: Listed and classified by testing agency acceptable to the authorities having jurisdiction as suitable for the purpose indicated in construction documents.

1.09 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with ASME A17.1, applicable local codes, authorities having jurisdiction (AHJ), and other requirements listed in Section 01 41 00. Refer to Section 01 41 00.
- B. Accessibility Requirements: Comply with ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- C. Perform structural steel design, fabrication, and installation in accordance with AISC 360.
- D. Comply with seismic design requirements in accordance with ASME A17.1, applicable local codes, and authorities having jurisdiction (AHJ).
 - 1. Comply with Elevator Safety Requirements for Seismic Risk Zone in accordance with ASME A17.1 and other related requirements.
 - 2. Provide earthquake emergency operations in accordance with ASME A17.1 requirements.
- E. Perform welding of steel in accordance with AWS D1.1/D1.1M.
- F. Fabricate and install door and frame assemblies in accordance with NFPA 80 and in compliance with requirements of authorities having jurisdiction.
- G. Perform electrical work in accordance with NFPA 70.
- H. Comply with venting or pressurization of the hoistway design in accordance with HVAC system requirements and the authorities having jurisdiction.

1.10 PERMITS, TEST AND INSPECTION

- A. Obtain and pay for all State and City permits, licenses, and inspection fees necessary to complete installation.
- B. Perform test required by Governing Authority in accordance with procedure described in ASME A17.2 Guide for Inspection of Elevators, Escalators, and Moving Walks in the presence of Authorized Representative.
- C. Supply personnel and equipment for test and final review by Architect as required in Section 01 70 00.

1.11 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Provide five (5) year manufacturer general warranty for elevator operating equipment and devices as stipulated in the Supplementary Conditions of the Contract. Refer to Section 00 73 00.
- C. Material and workmanship of installation shall comply in every respect with Contract Documents. Correct defective material or workmanship which develops within five (5) years from date of final acceptance of all work to the satisfaction of Owner and Architect at no additional cost, unless due to ordinary wear and tear or improper use or care by Owner.

- D. Defective is defined to include, but not be limited to: Operation or control system failures, car performance below required minimum, excessive wear, unusual deterioration, or aging of materials or finishes, unsafe conditions, the need for excessive maintenance, abnormal noise, or vibration, and similar unsatisfactory conditions.
- E. Retained Equipment: All retained components, parts, and materials shall be cleaned, checked, modified, repaired, or replaced so each component and its parts are in like new operating condition. Retained equipment must be compatible for integration with new systems. All retained equipment shall be covered under the general warranty provisions listed above.
- F. Make modifications, requirements, adjustments, and improvements to meet performance requirements of Sections 01 70 00 and 14 22 00.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Electric Traction Elevators The following are approved elevator manufacturers:
 - 1. Fujitect America, Inc.: www.fujitecamerica.com].
 - 2. Otis Elevator Company: www.otis.com.
 - 3. Schindler Elevator Corporation: www.us.schindler.com.
 - 4. ThyssenKrupp Elevator: www.thyssenkruppelevator.com.
 - 5. Schumacher Elevator Company: www.schumacherelevator.com.
 - 6. Kone U.S.: www.kone.us.
- B. Substitutions: See Section 01 60 00 - Product Requirements.
 - 1. Products other than those from approved manufacturers are subject to compliance with specified requirements and prior approval of Architect. By using products other than those from approved manufacturers, the Contractor accepts responsibility for costs associated with any necessary modifications to related work, including any design fees.
- C. Source Limitations: Provide elevator and associated equipment and components produced and/or provided by the same manufacturer.

2.02 MODERNIZATION SCOPE OF WORK

- A. Modernization of two (2) existing passenger elevators serving a six (6) level public parking garage facility operating 24-hours, 7-days a week.
- B. The Work shall be performed in phases so as to maintain one (1) elevator in service at all times.
- C. Unless specifically identified as "Retain Existing"; provide new equipment.

	<u>Existing Equipment</u>	<u>Disposition</u>
1. Number:	Cars 1 & 2	Retain Existing
2. Capacity:	Cars 1 & 2: 2500#	Retain Existing
3. Class Loading:	Passenger Class A	Retain Existing
4. Contract Speed:	350 FPM	350 FPM
5. Roping:	1:1	Retain Existing
6. Hoist Machine:	Cars 1 & 2: Geared	Retain Existing
7. Machine Location:	Overhead	Retain Existing
8. Operational Control:	Two-Car Selective Collective	Retain Existing

ELECTRIC TRACTION ELEVATOR MODERNIZATION

	Relay Logic-Based	Microprocessor-Based System
9. Motor Control:	DC Voltage	New AC VVVF
10. Power Characteristics:	480V 3-Phase	Retain Existing
11. Stops:	Cars 1 & 2: 6 Levels	Retain Existing
12. Openings:	Cars 1 & 2: 6 Front	Retain Existing
13. Levels Served:	Cars 1 & 2: All Levels	Retain Existing
14. Travel:	58'-0"; Field Verify	Retain Existing
15. Platform Size:	Cars 1 & 2: 4'-3.5" W x 6'-9.25" L	Retain Existing; Field Verify
16. Entrance Size:	Cars 1 & 2: 3'-6" W x 7'-0" H	Retain Existing; Field Verify
17. Door Operation:	Cars 1 & 2: Single Speed, Center Opening	As Specified
18. Door Protection: with	Infrared, Full Screen Device	Infrared, Full Screen Device Differential Timing, Nudging and Interrupted Beam Time
19. Guide Rails:	Planed Steel Tees	Refurbish Existing
20. Buffers:	Oil	Refurbish Existing
21. Car Enclosure:		Refurbish Existing; Assure battery powered emergency car lighting.
22. Car Operating Panel:		As Specified
23. Lobby Hall Stations:		As Specified
24. Hall Lanterns:		N/A
25. Hoistway Access Stations:		As Specified
26. Lobby Car Position Indicators:		As Specified
27. Communication System:		Intercom with Distress Signal
D. Additional Features:		
1. Car Top Inspection Station.		
2. Firefighters' Service, Phase I and II, including Alternate Level Return.		
3. Hoistway Access Switches, Top and Bottom Levels.		
4. Hoistway Door Unlocking Device, All Levels.		
5. Platform Isolation.		

6. Independent Service Feature.
7. Machine, Power Conversion Unit, and Controller Sound Isolation.
8. Tamper Resistant Fasteners for All Fastenings Exposed to the Public.
9. One Year Warranty Maintenance with 24-Hour Call-Back Service.
10. Firefighters' Telephone Jack.
11. Emergency Paging Speaker Installation.
12. Signage Engraving Filled with Black Paint or Approved Etching Process.
13. No Visible Company Name or Logo.
14. Wiring Diagrams, Operating Instructions, and Parts Ordering Information.
15. Monitoring System.
16. System Diagnostic Means and Instructions.
17. Non-Proprietary Control System and Diagnostics Provisions without the purchase of additional tools or devices.
18. Traction Control.

2.03 ELECTRIC TRACTION ELEVATORS

- A. Electric Traction Passenger Elevator, [Nos. 1 & 2]: As described in Section 2.02; Modernization Scope of Work.

2.04 COMPONENTS

- A. Machine Room Equipment:
 1. Arrange equipment in existing machine room spaces in accordance with equipment manufacturers' recommendations.
 2. Motors: Refer to Electrical Equipment Section below.
 3. Geared Traction Hoist Machine: Provide new in accordance with equipment manufacturers' recommendations.
 4. Controller: Basis of Design; GAL Manufacturing Corp., Model: GALaxy.
 - a. Other Acceptable Manufacturers: Products of equal quality and performance from any of the following manufacturers are approved for use:
 - 1) GAL Manufacturing Corp.: www.gal.com.
 - 2) Elevator Controls Corporation: www.elevatorcontrols.com.
 - 3) C.J. Anderson & Company: www.cjanderson.com.
 - b. Provide a new compatible non-proprietary design system in accordance with elevator equipment manufacturers' requirements.
 - c. The system shall be UL/CSA labeled.
 - d. Compartment: Securely mount all assemblies, power supplies, chassis switches, relays, etc., on a substantial, self-supporting steel frame. Completely enclose equipment with covers. Provide means to prevent overheating.
 - e. Wiring: CSA labeled copper for factory wiring. Neatly route all wiring interconnections and securely attach wiring connections to studs or terminals.
 - f. Permanently mark components (relays, fuses, PC boards, etc.) with symbols shown on wiring diagrams.
 - g. Monitoring System Interface: Provide controller with serial data link through RJ45 Ethernet connections. Provide monitoring node in each controller and wire terminals to all devices to be monitored. Elevator contractor shall be responsible to wire and connect monitoring system compartment to machine room monitoring interface.
 - h. Remote Monitoring and Diagnostics: Equip each controller with standard ports, interface boards, and drivers to accept maintenance, data logging, fault finding diagnostic and monitoring computers, keyboards, modems, and programming tools. The system shall be capable of driving remote color LCD monitors that continually scan and display the status of each car and call. Provide each group with a full, interactive elevator monitoring (EMS) system.
 - i. Provide controller or machine mounted auxiliary, lockable disconnect if mainline disconnect is not in sight of controller and/or machine.

ELECTRIC TRACTION ELEVATOR MODERNIZATION

5. Sleeves and Guards: Provide or replace steel angle guards around cable or duct slots through floor slabs or grating. Provide or replace rope guards for sheaves, cables, and cable slots in machine room levels.
 6. Machine and Equipment Support Beams: Retain existing in place or replace as required by the elevator manufacturer. Provide all required supplemental supports and attachments.
 7. Governor: Provide new in accordance with equipment manufacturers' recommendations.
 8. Emergency Brake: Provide new in accordance with equipment manufacturers' recommendations.
 - a. Provide means to prevent ascending car over-speed and unintended car movement per Code.
 - b. Mount the auxiliary brake on suitable structural steel supports. Provide a drawing showing the supports, stamped by Professional Engineer verifying the adequacy of the support provided.
 - c. Provide control circuits to enable the device to function as required by Code.
- B. Hoistway Equipment:
1. Guide Rails: Retain main and counterweight guide rails in place.
 - a. Clean rails and brackets. Remove rust.
 - b. Check all rail and bracket fastenings and tighten.
 - c. Realign rails as required to provide smooth car ride.
 - d. Provide supplemental rail brackets and/or backing as required by Code or to enhance car ride quality.
 2. Buffers: Refurbish existing.
 - a. Drain, flush, refill, and test.
 - b. Rebuild as required and paint.
 - c. Retrofit switch to limit elevator speed if buffer is compressed.
 3. Sheaves: Provide new in accordance with equipment manufacturers' recommendations.
 4. Counterweight: Provide new in accordance with equipment manufacturers' recommendations.
 5. Hoist and Governor Ropes: Provide new in accordance with equipment manufacturers' recommendations.
 6. Electrical Wiring and Wiring Connections:
 - a. Conductors and Connections: Copper throughout with individual wires coded and connections on identified studs or terminal blocks. Use no splices or similar connections in wiring except at terminal blocks, control compartments, or junction boxes. Provide 10% spare conductors throughout. Run spare wires from car connection points to individual elevator controllers in the machine room. Provide four pair of spare shielded communication wires in addition to those required to connect specified items. Tag spares in machine room.
 - b. Conduit: Painted or galvanized steel conduit, EMT, or duct. Conduit size, 1/2" or as required for conductor count. Flexible heavy-duty service cord may be used between fixed car wiring and car door switches for door protective devices.
 - c. Traveling Cables: Flame and moisture-resistant outer cover. Prevent traveling cable from rubbing or chafing against hoistway or equipment within hoistway. Provide four (4) pair of shielded wires wire for communications and surveillance equipment.
 - d. Auxiliary Wiring: Connect fire alarm initiating devices, emergency two-way communication system, firefighters' phone jack, paging speaker, intercom, and announcement speaker in each car controller in machine room.
 7. Entrance Equipment: Provide new in accordance with equipment manufacturers' recommendations.
 8. Hoistway Door Unlocking Device: Provide unlocking device with escutcheon in door panel at all floors, with finish to match adjacent surface.

9. Hoistway Access Switches: Mount in wall at top and bottom floors. Provide switch with faceplate.
 10. Floor Numbers: Stencil paint 4" high floor designations in contrasting color on inside face of hoistway doors or hoistway fascia in location visible from within car.
- C. Hoistway Entrances:
1. Frames: Retain existing frames in place. Recover with new satin stainless steel frame covers.
 2. Door Panels: Replace all with new satin stainless steel panels.
 3. Sight Guards: Replace all sight guards.
 4. Sills: Retain existing. Clean and polish. Check and tighten all fastenings.
 5. Fascia, Toe Guards, and Hanger Covers: Replace all. Check and tighten all fastenings.
 6. Struts and Headers: Replace as required. Check and tighten all fastenings.
 7. Hoistway Entrances; Each Floor Elevator Landing:
 - a. Framed Opening Material and Finish: Satin stainless steel.
 - b. Door Material and Finish: Satin stainless steel.
 - c. Hoistway Fire Rating: 2 Hours.
 - d. Door Fire Rating: 1-1/2 Hours.
 8. Car Doors:
 - a. Car Door Material and Finish: Satin stainless steel.
 - b. Car Doors: 16 gage, 0.0598 inch minimum sheet thickness, rigid sandwich panel construction.
 - c. Door Fire Rating: 1-1/2 Hours.
 - d. Sills: Manufacturer's standard.
 9. Hoistway Entrances and Car Doors:
 - a. Width: 42 inch.
 - b. Height: 84 inch.
 - c. Door Type: Double leaf.
 - d. Door Operation: Center opening, single speed.
 10. Thresholds: Configure to align with frame return and coordinate with floor finish.
 11. Gasketing: Provide acoustic type gasketing at hoistway doors and frames to eliminate audible noise due to car activities in the hoistway, and air pressure differential between hoistway and landing floors.
- D. Car Equipment:
1. Frame: Retain Existing. Inspect and repair as required. Check and tighten all fastenings.
 2. Safety Device: Retain existing. Check and tighten all fastenings. Disassemble, clean, and inspect components. Replace all worn or damaged parts. Reassemble and test for proper operation.
 3. Platform: Retain existing. Reinforce as required. Check and tighten all fastenings.
 4. Platform Apron: Provide new extended platform apron to meet Code. Minimum 14 gauge steel, reinforced and braced to car platform front with black enamel.
 5. Guide Shoes: Provide new in accordance with equipment manufacturers' recommendations.
 6. Sills: Provide new in accordance with equipment manufacturers' recommendations.
 7. Doors: Provide new in accordance with equipment manufacturers' recommendations.
 8. Door Hangers: Provide new in accordance with equipment manufacturers' recommendations.
 9. Door Track: Provide new in accordance with equipment manufacturers' recommendations.
 10. Door Header: Provide new in accordance with equipment manufacturers' recommendations.
 11. Door Electrical Contact: Provide new in accordance with equipment manufacturers' recommendations.

12. Door Clutch: Provide new in accordance with equipment manufacturers' recommendations.
 13. Door Operator: Provide new in accordance with equipment manufacturers' recommendations.
 14. Door Control Device: Provide new in accordance with equipment manufacturers' recommendations.
 15. Car Operating Panel (COP): Basis of Design; Innovation Industries Inc., Model: Bruiser.
 - a. Other Acceptable Manufacturers: Products of equal quality and performance from any of the following manufacturers are approved for use.
 - 1) Innovation Industries Inc.: www.innovationind.com.
 - 2) MAD Elevator Fixtures Inc.: www.madfixtures.com.
 - 3) MEI - Total Elevator Solutions: www.meielevatorsolutions.com.
 - b. Provide as detailed on drawings.
- E. Car Enclosure:
1. Car Enclosure Passenger/Service Elevator: Retain Existing. Inspect and repair as required. Check and tighten all fastenings.
- F. Hall Control Stations: Basis of Design; Innovation Industries Inc.
1. Other Acceptable Manufacturers: Products of equal quality and performance from any of the following manufacturers are approved for use.
 - a. Innovation Industries Inc.: www.innovationind.com.
 - b. MAD Elevator Fixtures Inc.: www.madfixtures.com.
 - c. MEI - Total Elevator Solutions: www.meielevatorsolutions.com.
 2. Provide as detailed on drawings.
- G. Signals: Basis of Design; Innovation Industries Inc.
1. Other Acceptable Manufacturers: Products of equal quality and performance from any of the following manufacturers are approved for use.
 - a. Innovation Industries Inc.: www.innovationind.com.
 - b. MAD Elevator Fixtures Inc.: www.madfixtures.com.
 - c. MEI - Total Elevator Solutions: www.meielevatorsolutions.com.
 2. Provide as detailed on drawings.
- H. Electrical Equipment:
1. Motors: NEMA MG 1.
 - a. Polyphase squirrel cage induction motor designed for use with VVVF drives, low slip (2% Nominal) with high breakdown torque (250% minimum), or high slip (10% nominal) with high starting torque (275% minimum).
 - b. Mechanical construction with cast iron frame & brackets, hot rolled steel shaft, regreaseable ball bearings, open drip-proof, totally enclosed fan cooled.
 - c. If required, motor shall be supplied with motor mounted shaft driven optical encoder rated at 1,024 pulses per revolution.
 - d. Insulation system shall be standard Class B with stator winding of copper insulated magnet wire. Insulation processing shall include minimum of 2 dips and bakes of polyester varnish.
 - e. Duty for VVVF applications shall be 60 minute for low slip and 30 minute for high slip designs at name plate rating.
 - f. Motor temperature rise in a 40°C maximum room ambient at nameplate rating shall be 60°C by resistance.
 - g. Laminations to be fully processed core plated electrical grade steel of suitable gauge.
 - h. Rotor shall be of die cast aluminum construction.
 - i. Motors shall comply with all applicable NEMA standards per publication MG-1 latest edition and revisions. Motors shall be CSA listed and have appropriate CSA marking on the motor nameplate.
 2. Boxes, Conduit, Wiring, and Devices: As required by NFPA 70.

3. Sump Pump in Pit: Refer to Section 22 30 00.
4. Spare Conductors: Include 10 percent extra conductors and two pairs of shielded audio and data cables in traveling cables.
5. Include wiring and connections to elevator devices remote from hoistway and between elevator machine rooms. Provide additional components and wiring to suit machine room layout.

2.05 CAR PERFORMANCE

- A. Car Speed: $\pm 3\%$ of contract speed under any loading condition.
- B. Car Capacity: Safely lower, stop and hold 125% of rated load.
- C. Car Stopping Zone: $\pm 1/4"$ under any loading condition.
- D. Door Opening Time: Seconds from start of opening to fully open:
 1. 2.3 seconds.
- E. Door Closing Time: Seconds from start of closing to fully closed:
 1. 4.0 seconds.
- F. Car Ride Quality:
 1. Horizontal and vertical acceleration within car during all riding and door operating conditions. Not more than 20 mg peak to peak (adjacent peaks) in the 1 - 10 Hz range.
 2. Measurement Standards: Measure and evaluate ride quality consistent with ISO 18738, using low pass cutoff frequency of 10 Hz and A95 peak-to-peak average calculations.
- G. Noise and Vibration Control
 1. Airborne Noise: Measured noise level of elevator equipment and its operation shall not exceed 60 dBA inside car under any condition including door operation and car ventilation exhaust blower on its highest speed. Limit noise level in the machine room relating to elevator equipment and its operation to no more than 80 dBA. All dBA readings to be taken 3'-0" off the floor and 3'-0" from the equipment using the "A" weighted scale.
 2. Vibration Control: All elevator equipment provided under this contract, including power unit, controller, oil supply lines, and their support shall be mechanically isolated from the building structure and electrically isolated from the building power supply and to each other to minimize the possibility of objectionable noise and vibrations being transmitted to occupied areas of the building.

2.06 MATERIALS

- A. Rolled Steel Sections, Shapes, Rods: ASTM A36/A36M.
- B. Steel Sheet: ASTM A1008/A1008M, Designation CS, with matte finish.
- C. Stainless Steel Sheet: ASTM A666, Type 304; No. 4 Brushed finish unless otherwise indicated.
- D. Extruded Aluminum: ASTM B221 and ASTM B221M, natural anodized finish unless otherwise indicated.
- E. Plywood: PS 1, Structural I, Grade C-D or better, sanded.
- F. Powder Coat on Steel: Clean and degrease metal surface; apply one coat of primer; two coats of powder coat.
- G. Finish Paint for Metal Surfaces: Alkyd enamel, semi-gloss, color as selected, complying with VOC limitations of authorities having jurisdiction.

2.07 OPERATION CONTROLS

- A. Elevator Controls: Provide Car Operating Control Panel, Lobby Hall Stations and Lobby Position Indicators as detailed on drawings..
 1. Car Operating Control Panel: Vandal-resistant metallic type, with illuminated push buttons.
 2. Hall Stations: Vandal-resistant metallic type, one for originating "Up" and one for originating "Down" calls, one button only at terminating landings; with illuminated push buttons.

ELECTRIC TRACTION ELEVATOR MODERNIZATION

3. Lobby Position Indicators: LED display.
4. Comply with Accessibility Requirements for elevator controls.
- B. Interconnect elevator control system with building fire alarm, smoke alarm, and surveillance systems.
- C. Door Operation Controls:
 1. Program door control to open doors automatically when car arrives at floor landing.
 2. Render "Door Close" button inoperative when car is standing at dispatch landing with doors open.
 3. Door Safety Devices: Moveable, retractable safety edges, quiet in operation; equipped with photo-electric light rays.
- D. Provide "Firefighter's Emergency Operation" in accordance with ASME A17.1, applicable building codes, and authorities having jurisdiction (AHJ).
 1. Designated Landing: At ground level.

2.08 OPERATION CONTROL TYPE

- A. Two-Car Selective Collective Automatic (Duplex Collective Automatic) Operation Control:
Applies to cars in two elevator shafts.
 1. Park one car at ground level and designate other as free car, at landing last served or at a predetermined upper floor landing.
 2. Arrange free car to answer landing calls either above or below landing where car is standing except ground level landing calls.
 3. When free car is answering calls, automatically start an alternate car to answer landing calls under any of the following conditions:
 - a. Registration of up calls from landings below the free car while it is traveling up by alternate car below.
 - b. Registration of up or down calls from landings above the free car while it is traveling down by alternate car.
 4. Register and answer calls by momentary pressure on one or more car buttons; cause car to respond.
 5. Once started, either in response to car button calls, or to landing button calls, respond to calls registered for the direction of the traveling car in the order that landings are reached, regardless of sequence that calls were registered.
 6. Allow only one car to stop in response to any one landing call.
 7. Return first free car to ground level after answering landing calls.
 8. Should both cars finish their calls at ground level, designate one car as the free car.
 9. If no car buttons are pressed and car starts up in response to several landing down calls, proceed first to the highest landing down call, then reverse to collect other landing down calls. Collect up calls similarly when car starts down in response to such calls.
 10. If a car stops for a landing call, and car button matching direction the car was traveling is pressed within a predetermined time interval after a landing stop, proceed in the same direction regardless of other landing calls that are registered.
 11. If down landing buttons are pressed while car is traveling up, do not stop at those landings but allow those calls to remain registered for answering by the next down traveling car.
 12. After the highest car has responded to up landing calls, reverse car automatically and respond to down landing calls.
 13. When traveling down, a car will not respond to up calls. Allow those up calls to remain registered to be answered by next available car on an up trip.
 14. Include a time delay to hold car for an adjustable time interval at landings where stops are made to enable passengers to enter or leave the car. Cancel the time interval upon registration of a car call or pressure on the car door close button.
 15. Permit a registered car call to establish the direction of travel when a car has answered the farthest car call, even if other landing calls are registered.
 16. If a car is removed from service, the other car shall answer landing calls.

2.09 SERVICE CONTROL TYPE

- A. Independent Service Control:
 - 1. Provide key operated "Independent Service" on car operating panel. Key activation will remove that car from normal operation and cancel pre-registered car calls.
 - 2. Car will respond to selected floor. Car will not respond to any calls from landing call buttons. Car will only respond to calls placed on the car operating panel. Doors will remain open at last landing requested. Doors will close with a constant pressure on "Door Close" button.
 - 3. Key activation to normal operation will return car to normal operation.

2.10 EMERGENCY POWER

- A. Set-up elevator operation to run with building emergency power supply when the normal building power supply fails.
- B. Building Emergency Power Supply: Building emergency power; provide for emergency power characteristics and phase rotation same as for normal power.
 - 1. Provide connections to existing transfer switches and auxiliary contacts.
- C. Provide operational control circuitry for adapting the change from normal to emergency power.
- D. Upon transfer to emergency power, operate both elevators in normal operation mode.

2.11 MACHINE ROOM FITTINGS

- A. Key Cabinet: Wall-mounted, lockable, for control and operating panel keys.
 - 1. Provide two key cabinet keys.
 - 2. Provide three (3) control/operating panel keys.
- B. Monitoring Device Interface:
 - 1. Fabricate one multiple terminal block in controller relay panel or selector, in location indicated, for connection of monitoring devices for:
 - a. Landing and car registration circuits.
 - b. Motor generator running circuits.
 - c. Independent service switches.
 - 2. Label terminals for use with alligator test clips.

2.12 CAR FINISH MATERIALS

- A. Manufacturers: Basis of Design; SnapCab, Model: Imperial I.
- B. Other Acceptable Manufacturers: Products of equal quality and performance from any of the following manufacturers are approved for use.
 - 1. SnapCab: www.snapcabs.com.
 - 2. Gunderlin Ltd. Inc.: www.gunderlin.com.
 - 3. Draper Elevator Cab Co.: www.draperelevator.com.
- C. Car Operating Panel: Provide main; flush-mounted applied face plate, with illuminated call buttons corresponding to floors served, and other features as indicated on drawings.
 - 1. Provide matching Firefighters' service cabinet integral with car operating panel, with hinged door and lock in each car.
 - 2. Provide keyed switches for independent service, inspection control, fan, light, and stop.
- D. Position Indicator: integral with car operating panel with illuminating digital position indicators.
- E. Comply with Accessibility Requirements for operating panel and interior layout of car.
- F. Interior Cab Panel Systems:
 - 1. Wall Panels 2, 3 and 4 Construction: Fire-rated panel substrate faced with stainless steel finish.
 - 2. Toe Kick Panel 1 Construction: Powder coat finish 20 guage stainless steel,
 - 3. Panel Finishes:
 - a. SS-1: #5.WL.

- b. SS-2: Satin Stainless Steel.
- c. PC-1: Black Powder Coat Finish.
- G. Stainless Steel Hand Rail: Round, 1-1/2 inch diameter, with satin stainless steel finish.
- H. Rails: Provide 1-1/2 inch clearance space from wall.
- I. Ceiling System: Modular Downlight Ceiling.
 - 1. Exposed frame suspended ceiling system.
 - 2. Frame Finish: Brush finished aluminum.
 - 3. Lay-in Panel: Fire-rated panel substrate faced with plastic laminated.
 - 4. Panel Finish: Type PLAM-1; Wilsonart, Color: Slate Grey #D91-60.
 - 5. Lighting: Fixture Type B as specified in Luminaire Schedule.
- J. Glass for Car Enclosures: Type LG-1 as specified in Section 08 80 00; laminated, 1/2 inch minimum thickness, and in compliance with ASME A17.1, 16 CFR 1201 and ASTM C1172 laminated glass requirements.
- K. Resilient Flooring: Type LVT-1; luxury vinyl tile flooring as specified in Section 09 65 19.
- L. Protective Pads: Canvas cover, padded with cotton wadding fill material, sewn with piping edges; brass grommets and hooks sized and spaced to match panel's pad hook channel, covering side and rear walls and front return, except cut-out for control panel; provide one set.
 - 1. Color: Grey.
- M. Emergency Lighting: Comply with ASME A17.1 elevator lighting requirements.
- N. Ventilation: Two speed fan; perforations in wall base sufficient in area to provide the required amount of make-up air to match the CFM rating of the exhaust fan.

2.13 MONITORING SYSTEM

- A. General: Provide an interactive system to monitor and manage the elevator system; compatible and integrated in accordance with elevator controller manufacturer's specifications.
 - 1. Data collection, data storage, and real-time monitoring portion of the system shall be based on Microsoft Windows operating systems.
 - 2. Network based, capable of interfacing with control systems via either serial data link or hardwired interface connections.
 - 3. Operate on any TCP/IP based network system.
 - 4. Expansion capability to add unlimited number of monitoring terminals on the network.
 - 5. Monitoring terminals shall operate peer-to-peer or with a single client server. Failure of a single network device shall not affect the operation of the remainder of the system.
 - 6. Complete backup of system data shall be accomplished at any single terminal/server location.
- B. Monitoring Equipment: As specified by monitoring system.
- C. Monitoring Requirements: As provided by monitoring system.
- D. Reporting Requirements: As provided by monitoring system.
- E. Paging Feature: The monitoring system shall be capable of paging a service technician or other personnel based on pre-defined parameters of elevator faults or conditions. The paging system shall provide the ability to page multiple numbers determined by the type of event and Owner's paging protocol.
- F. Remote Access Feature: The monitoring system shall be capable of allowing approved individuals under multi-level password control to access all system features via the local area network or internet to review the performance of the equipment or to evaluate a fault condition. The remote access feature shall be integrated into the monitoring system and shall not use third party "remote control" software products.
- G. Data Transmission to Central Support Location: The system shall be capable where desired of transmitting fault, car usage and other data to a remote service desk or other office location for

further processing, technician dispatch or other purposes. The data may be transmitted via the local area network or internet.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting this work.
- B. Verify that hoistway, pit, machine room, and other areas where equipment is to be installed are ready for work of this section.
- C. Verify hoistway shaft and openings are of correct size and within tolerance.
- D. Verify location and size of machine foundation and position of machine foundation bolts.
- E. Verify that electrical power is available and of correct characteristics.
- F. Do not proceed with installation until existing conditions conform to project requirements.

3.02 PRODUCT DELIVERY, STORAGE, AND HANDLING

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

3.03 PREPARATION

- A. Arrange for temporary electrical power for installation work and testing of elevator components. Comply with requirements of Section 01 50 00.
- B. Maintain elevator pit free of construction debris and water.

3.04 INSTALLATION

- A. Install all equipment in accordance with manufacturer's instructions, referenced codes, specification, and approved submittals.
- B. Install machine room equipment with clearances in accordance with referenced codes, and specification.
- C. Install all equipment so it may be easily removed for maintenance and repair.
- D. Install all equipment for ease of maintenance.
- E. Install all equipment to afford maximum accessibility, safety, and continuity of operation.
- F. Install system components, and connect equipment to building utilities.
- G. Provide conduit, electrical boxes, wiring, and accessories.
- H. Mount machines on vibration and acoustic isolators.
 - 1. Place on structural supports and bearing plates.
 - 2. Securely fasten to building supports.
 - 3. Prevent lateral displacement.
- I. Install new hoistway jamb and header frames covers over existing ones.
- J. Maintain and refinish existing hoistway door sills in place.
- K. Insure hoistway floor entrances are in alignment with car openings and align plumb with hoistway.
- L. New Structural Metal Surfaces: Clean surfaces of rust, oil or grease; wipe clean with solvent; prime two coats.
- M. New Machine Room Components: Clean and degrease; prime one coat, finish with two (2) coats of enamel.

- N. Existing Metal Surfaces: Remove oil, grease, scale, and other foreign matter from the following equipment and apply two (2) coat of field-applied enamel.
 - 1. All exposed equipment and metal work installed as part of this work which does not have architectural finish.
 - 2. Machine room equipment, and pit equipment.
 - 3. Neatly touch up damaged factory-painted surfaces with original paint color. Protect machine-finish surfaces against corrosion.
- O. Field Welds: Chip and clean away oxidation and residue with wire brush; spot prime with two (2) coats.
- P. Adjust equipment for smooth and quiet operation.

3.05 ERECTION TOLERANCES

- A. Guide Rail Alignment: Plumb and parallel to each other in accordance with ASME A17.1 and ASME A17.2.
- B. Car Movement on Aligned Guide Rails: Smooth movement, without any objectionable lateral or oscillating movement or vibration.

3.06 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for additional requirements.
- B. Testing and inspection by regulatory agencies certified in accordance with ASME QEI-1 will be performed at their discretion.
- C. Testing and inspection shall be performed by regulatory agencies certified in accordance with ASME QEI-1.
 - 1. Schedule tests with agencies and notify Owner and Architect.
 - 2. Obtain permits as required to perform tests.
 - 3. Document regulatory agency tests and inspections in accordance with requirements.
 - 4. Perform tests required by regulatory agencies.
 - 5. Furnish test and approval certificates issued by authorities having jurisdiction.
- D. Perform testing and inspection in accordance with requirements.
 - 1. Inspectors shall be certified in accordance with ASME QEI-1.
 - 2. Inspectors shall be authorized to operate in Pennsylvania.
 - 3. Perform tests in accordance with ASME A17.2.
 - 4. Provide at least two (2) weeks written notice of date and time of tests and inspections.
 - 5. Supply instruments and execute specific tests.
- E. Operational Tests:
 - 1. Perform operational tests in the presence of the State Inspector of the authorities having jurisdiction, Owner and Architect.
 - 2. At an agreed time, and the building occupied with normal building traffic, conduct tests to verify performance specified in the Operation Control Type Requirements.

3.07 ADJUSTING

- A. Adjust for smooth acceleration and deceleration of car so not to cause passenger discomfort.
- B. Insure rails are plumb and align vertically with tolerance of 1/16" in 100'-0". Verify joints are without gaps and file any irregularities to a smooth surface.
- C. Static balance car to equalize pressure of guide shoes on guide rails.
- D. Lubricate all equipment in accordance with manufacturer's instructions.
- E. Adjust motors, brakes, controllers, leveling switches, limit switches, stopping switches, door operators, interlocks, and safety devices to achieve required performance levels.
- F. Adjust with automatic floor leveling feature at each floor landing to reach 1/4 inch maximum from flush with sill.

3.08 CLEANING

- A. Keep work areas orderly and free from debris during progress of project. Remove packaging materials on a daily basis.
- B. Remove all loose materials and filings resulting from work.
- C. Remove protective coverings from finished surfaces.
- D. Clean surfaces and components and make ready for inspection.
 - 1. Clean machine room equipment and floor.
 - 2. Clean hoistways, car, car enclosure, entrances, operating and signal fixtures.

3.09 CLOSEOUT ACTIVITIES

- A. See Section 01 78 00 - Closeout Submittals, for closeout submittals.
- B. Demonstration: Demonstrate operation of system to Owner's designated personnel and Architect.
 - 1. Use operation and maintenance data as reference during demonstration.
 - 2. Conduct walking tour of project.
 - 3. Briefly describe function, operation, cleaning and maintenance of each component.
- C. Training: Train Owner's designated personnel on cleaning and operation and maintenance of system.
 - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
 - 2. Provide minimum of two hours of training.
 - 3. Instructor: Manufacturer's training personnel.
 - 4. Location: At project site, unless noted otherwise.

3.10 PROTECTION

- A. Coordinate and manage construction traffic within activated cars after final cleaning.
- B. Protect installed products until Date of Substantial Completion.
- C. Touch-up, repair, or replace damaged products and materials before Date of Substantial Completion.

3.11 MAINTENANCE

- A. Refer to Section 01 70 00 - Execution and Closeout Requirements, for additional requirements relating to initial maintenance service.
- B. Provide Initial Maintenance Contract of elevator system and components in accordance with ASME A17.1 and requirements as indicated for one (1) year from Date of Substantial Completion.
- C. Submit proposal for continuation of Maintenance Contract in accordance with ASME A17.1 and requirements as indicated for installed elevator equipment.
- D. Perform maintenance contract services using competent and qualified personnel under the supervision and direct employ of the elevator manufacturer or installer.
- E. Maintenance contract services shall not be assigned or transferred to any agent or other entity without prior written consent of Owner.
- F. Maintenance Schedule: Examine system components as stipulated in the maintenance contract.
- G. Include systematic examination, adjustment, and lubrication of elevator equipment. Maintain and repair or replace parts whenever required using parts produced by the original equipment manufacturer.
- H. Replace wire ropes when necessary to maintain the required factor of safety.
- I. Perform work without removing cars from use during peak traffic periods.

Carlos Raul Rodriguez Architect

PHILADELPHIA PARKING AUTHORITY
Existing Elevator Replacements at AutoPark Olde City
114-24 South Front Street, Philadelphia, PA 19106

- J. Provide emergency call back service anytime throughout period of this maintenance contract.
- K. Maintain an adequate stock of parts for replacement or emergency purposes, and have personnel available to ensure the fulfillment of this maintenance contract without unreasonable loss of time.

END OF SECTION