SECTION 14 20 00 – ELECTRIC TRACTION ELEVATOR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Residential elevators

1.3 RELATED SECTIONS

A. Division 16 Sections for electrical service for elevators to and including disconnect and fused switches at machine room.

B. Division 16 Sections for standby power source, transfer switch, and connection from auxiliary contacts in transfer switch to controller.

C. Division 16 Section "Voice and Data Communication Cabling" for telephone service to elevators.

D. Section 03300 - Cast-in-Place Concrete: Concrete for elevator machine foundation, and pit.

E. Section 06100 - Rough Carpentry: Hoistway framing, building-in hoistway door frames and overhead hoist beams.

F. Section 08210 - Wood Doors: Hoistway doors.

G. Section 08710 - Door Hardware.

H. Section 09260 - Gypsum Board Assemblies: Gypsum shaft walls.

I. Section 09650 - Resilient Flooring: Floor finish in cab.

J. Section 09900 - Paints and Coatings: Interior transparent wood finish in cab.

K. Section 13850 - Detection and Alarm: Fire and smoke detectors and interconnecting devices..

1.4 REFERENCES

A. American National Standards Institute (ANSI) B-29.2 - Chain Standards for Inverted Tooth (Silent) Chains and Sprockets.

B. American Society of Mechanical Engineers (ASME) A17.1 - Safety Code for Elevators and Escalators

C. NFPA 70 - National Electric Code.

D. ANSI / UL 10B Fire Test of Door Assemblies

1.5 REQUIREMENTS OF REGULATORY AGENCIES

A. Fabricate and install work in compliance with applicable jurisdictional authorities.

B. File shop drawings and submissions with local authorities as the information is made available. Company pre-inspection and jurisdictional authority inspections and permits are to be made on timely basis as required.

1.6 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

C. Shop Drawings: Provide a complete layout of lift equipment detailing dimensions and clearances as required.

D. Selection Samples: For each finish product specified requiring selection of color or finish, two complete sets of color charts representing manufacturer's full range of available colors and patterns.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Minimum 5 years experience installing similar products, and acceptable to the manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

1.9 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install systems under environmental conditions outside manufacturer's recommended limits.

1.10 WARRANTY

A. Provide manufacturer’s standard 36-month limited warranty on parts from date of shipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Savaria, which is located at: 2 Walker Drive, Brampton, ON, Canada, L6T 5E1; Toll Free Tel: 800-661-5112; Tel: 905-791-5555; Fax: 905-791-2222; Email: request info; Web: www.savaria.com

B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 RESIDENTIAL ELEVATOR

A. Residential Elevator: Savaria Eclipse.

B. Equipment: Provide equipment, incidental material and labor required for complete, operable hydraulic elevator installation. The elevators shall be erected, installed, adjusted, tested and placed in operation by the elevator system manufacturer or manufacturer's authorized installer.

C. Performance: The elevator shall be designed and tested in accordance with ASME A17.1 part V. The testing shall consist of loading the platform to rated capacity for several cycles to insure proper operation. Mechanical failures and defects shall be corrected.

D. The following preparatory work to receive the elevator specified shall be the work provided by others:
1. Permanent 220 VAC, 30 amp single phase power to operate lift to be provided from a lockable fused/cartridge type disconnect switch with auxiliary contacts for battery operation. 110 VAC, 15 amp single phase power to operate the lighting circuit. Refer to Drawings for permanent power specifications and location of disconnects. Temporary power may be provided to expedite installation of lift.
2. Provide a plumb and square hoistway with smooth interior surfaces, including fascias or furring of the hoistway interior. Provide required rail blocking and structural support.
3. Provide rough openings per lift subcontractor's shop drawings.
4. Provide substantial, level pit floor slab as indicated on the lift contractor's shop drawings.
5. Solid hinged hall door.

E. Characteristics:
1. Rated Load: 950 lbs (431 kg)
2. Rated Speed: 40 fpm (0.20 m/s)
3. Car Dimensions: 40 inches W by 54 inches D (1016 mm by 1372 mm)
4. Operation: Automatic.
5. Power Supply: 230 Volt, Single Phase, 30 Amps.
6. Travel: 11 feet. Maximum of 60 feet (720 inches).
7. Pit Depth: 8 inches
8. Levels Serviced: 2
9. Cab Configuration: Enter/exit same side.
10. Lighting Supply: 110 Volt, 1 Phase, 60 Cycle, 15 Amps.
11. Geared Roller Chain #60.
12. Two Way Leveling.
13. Drive: Variable Frequency
14. Car Operating Panel: Automatic push buttons, digital floor position indicator, emergency stop/alarm button, on/off key switch and emergency light, and an alarm button mounted on a removable steel panel.
15. Hall Call Stations: Provide a keyless hall call station with an illuminated call button and a matching cover plate for each landing.
16. Emergency Operation: The car shall be equipped with a battery-operated light fixture,

emergency battery lowering device and alarm in case of normal building supply failure. The battery shall be the rechargeable type with an automatic recharging system. A manual lowering device shall be located in a lockable box positioned at the uppermost landing.

F. Car Enclosure:
1. Walls: Clear Finished Recessed Veneer.
   a. Species: Oak.
2. Ceilings: White Melamine (Standard) With Four (4) Recessed Down Lights.
3. Overhead lights in the car compartment shall turn ON automatically when the elevator door is opened and stay on while the elevator is in use. The elevator lights will shut off by a timer when the elevator is not in use.
   Elevator Lighting shall be provided by: 4 x Energy Saving LED Cab Lights
4. Cab Floor: Unfinished 1 ½ inch (38 mm) plywood sub-flooring.
5. Car Gate at each cab entrance:
   a. Bi-Fold Gate, stainless steel finish
6. Cab Fixtures: Anodized Bronze (Standard)

G. Systems and Components:
2. Machine Room-less: Not required (Standard) Controller outside the hoistway.
3. The controller shall be pre-wired and tested prior to shipment. It will incorporate the following features.
   a. Smooth stops at each landing.
   b. Automatic battery back-up to ensure the lift can travel to lower landing in the event of a power failure.
   c. Pre-set overload protection to prevent motor overloading.
   d. LED display to monitor output current, frequency, voltage, direction, etc. Also used for error message indication.
4. Drive Chain: Two #60 roller chains. Nominal breaking strength of 9020 lbs. (4091 kg) each.
5. Leveling Device: The lift shall be provided with an anti-creep device which will maintain the carriage level within 1/2 inch (13 mm) of each landing.
   a. All limit switches and leveling device switches shall be located in a position to be inaccessible to unauthorized persons. The switches shall be located in the hoistway. Micro-switches shall not be used.
6. Guide Rail and Brackets: Steel 6 lb/ft (8.9 kg/m) Modular "T" guide rails and brackets shall be securely fastened to the building structure. Car sling shall be fabricated from steel members with adequate bracing to support the platform and cab.
7. Wiring and electrical connections shall comply with applicable codes. Insulated wiring shall have flame-retardant and moisture-proof outer covering and shall be run in conduit or electrical wire way if located outside the unit enclosure. Quick disconnect harnesses shall be used when possible.
8. The door locks shall be a CSA and UL approved electrical mechanical elevator interlock.

H. Emergency Devices:
1. Terminal limits. Stops the elevator if it overruns the normal limits at the top or bottom landing.
2. Final limits. A redundant safety feature if the elevator overruns the terminal limits at the top or bottom, the final limit stops the elevator and renders all automatic controls inoperable. If this happens, the elevator must be serviced to determine and correct the fault.
3. Pit switch. Disables elevator for servicing purposes.
4. Interlocks. Hoistway doors remain locked when the car is not at that floor and prevent the elevator from running until all doors are closed and locked.
5. Slack/broken safety chain device. In the unlikely event that drive chain would slacken or break, the device locks the car onto the T-rails, preventing the car from falling.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not begin installation until hoistway and machine room has been properly prepared.

B. Site dimensions shall be taken to verify that tolerances and clearances have been maintained and meet local regulations.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 ELEVATOR INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install the components of the elevator system that are required and that are required by jurisdictional authorities to license the elevator.

C. Trained employees of the elevator contractor shall perform installation work.

D. Adjust elevator for proper operation and clean unit thoroughly.

E. Instruct users in operating procedures and owner's maintenance person in trouble-shooting and maintenance procedures.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 14 20 00