SECTION 14205

RESIDENTIAL ELEVATOR

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\*\* NOTE TO SPECIFIER \*\* Garaventa Lift; Elvoron Residential Elevators.  
  
This section is based on the products of Garaventa Lift, which is located at:  
 United States  
 P.O. Box 1769  
 Blaine, WA 98231-1769

Canada  
 18920 36th Avenue   
 Surrey, BC V3Z 0P6

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 [[click Here] for additional information.](http://www.garaventalift.com/en.html)

Garaventa Lift is an international company specializing in the manufacturing of accessibility products. A world leader in the accessibility industry with a reputation for quality and reliability, Garaventa Lift has over 50,000 installations worldwide and many innovative products.

**Garaventa Lift offers three models of Home Elevator. This specification covers the standard Elvoron Home Elevator with either a hydraulic drive system or an in-line drive system and load capacity of either 750 or 1000 lbs. The Elvoron Stella is a 1400 lb. luxury hydraulic home elevator that is described in a separate specification document.**

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Residential Elevator.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03300 - Cast-in-Place Concrete: Concrete hoistway, anchor placement and required sleeves for service penetrations.
    2. Section 04800 - Masonry Assemblies: Masonry hoistway and anchor placement.
    3. Section 06100 - Rough Carpentry: Blocking in framed construction for lift attachment.
    4. Section 08200 - Solid Core Wood Doors: Access doors at hoistway landings.
    5. Section 09260 - Gypsum Board Assemblies: Gypsum shaft walls.
    6. Section 09650 - Resilient Flooring: Floor finish in cab.
    7. Section 09680 - Carpet: Floor finish in cab.
    8. Section 13850 - Detection and Alarm: Fire and smoke detectors and interconnecting devices.
    9. Division 16 - Electrical:
       1. Electrical characteristics and wiring connections.
       2. Electrical service and wiring connections.
       3. Telephone service and wiring connection.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASME A17.1, /CSA B-44 - Safety Code for Elevators and Escalators.
    2. ASME A17.5 - Elevator and Escalator Electrical Equipment.
    3. NFPA 70 - National Electric Code.
    4. CSA C22.1 - Canadian Electrical Code.
  1. REGULATORY REQUIREMENTS

\*\* NOTE TO SPECIFIER \*\* Verify local regulatory requirements. Delete one of the two following paragraphs as required to suit local requirements. First paragraph is for installations in the United States as applicable. Second paragraph is for installations in Canada as applicable.

* + 1. Provide passenger elevator in compliance with:
       1. ASME A17.1 - Safety Code for Elevators and Escalators.
       2. ASME A17.5 - Elevator and Escalator Electrical Equipment.
       3. NFPA 70 - National Electric Code.
    2. Provide passenger elevator in compliance with:
       1. CSA B44.1/ASME A17.5 - Elevator and Escalator Electrical Equipment.
       2. CSA C22.1 - Canadian Electric Code.
  1. SUBMITTALS
     1. Submit under provisions of Section 01300.
     2. Product Data: Manufacturer's data sheets on elevator, including:
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Installation methods.
     3. Shop Drawings:
        1. Show typical details of assembly, erection and anchorage.
        2. Include wiring diagrams for power, control, and signal systems.
        3. Show complete layout and location of equipment, including required clearances and coordination with hoistway.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
    2. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Store products in manufacturer's unopened packaging until ready for installation.
     2. Store components off the ground in a dry covered area, protected from adverse weather conditions.
  2. PROJECT CONDITIONS
     1. Do not use elevator for hoisting materials or personnel during construction period.
  3. WARRANTY

\*\* NOTE TO SPECIFIER \*\* The manufacturer's basic warranty is a limited 2 year warranty for the replacement at no cost of defective parts but does not include the labor costs required to replace the defective parts. Warranty requires maintenance agreement during period of the warranty. Note the Extended Warranty is optional delete if not required. Delete if not required.

* + 1. Warranty: Provide a two year limited warranty covering replacement of defective parts and excluding labor. Preventive maintenance agreement required.
    2. Extended Warranty: Provide an additional five year limited warranty covering replacement of defective parts and excluding labor for a total of seven years. Preventive maintenance agreement required.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph if warranty is specified above and delete if not required. Adjust to match extended warranty period above.

* 1. MAINTENANCE SERVICE
     1. Furnish service and maintenance for elevator system and components for the following period from Date of Substantial Completion.
        1. One year.
        2. Two years.
        3. Three years.
        4. Four years.
        5. Five years.
     2. Include systematic examination, adjustment, and lubrication of elevator equipment. Repair or replace parts whenever required. Use parts produced by manufacturer of original equipment. Replace wire ropes when necessary to maintain required factor of safety.
     3. Provide emergency call back service for this maintenance period.
     4. Perform maintenance work using competent and qualified personnel approved by elevator manufacturer or original installer.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Garaventa Lift, which is located at: 18920 – 36th Ave. ; Surrey, BC; Canada V3Z 0P6; Toll Free Tel: 800-663-6556; Tel: 604-594-0422; Fax: 604-594-9915; Email:
      2. [request info (product info@garaventalift.com)](mailto:request%20info%20(product%20info@garaventalift.com)); Web: [www.garaventalift.com](http://www.garaventalift.com)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01600.

\*\* NOTE TO SPECIFIER \*\* Select the elevator required from the following paragraph and delete the one not required.

* 1. RESIDENTIAL ELEVATORS
     1. Garaventa Elvoron Residential Elevator:
        1. Capacity:

\*\* NOTE TO SPECIFIER \*\* Select one of the following capacity paragraphs and delete the one not required.

* + - * 1. 750 pounds (340 kg).
        2. 1,000 pounds (454 kg).

\*\* NOTE TO SPECIFIER \*\* Select one of the following car size paragraphs and delete the ones not required. Verify that 42 and 48 inch by 60 size is permitted by the local code. Custom Cab Sizes are also available. Contact Garaventa Lift for details.

* + - 1. Car Size: Maximum of 15 SF (1.39 sm).
         1. 36 inches by 48 inches (914 mm by 1219 mm).
         2. 36 inches by 54 inches (914 mm by 1372 mm).
         3. 36 inches by 60 inches (914 mm by 1525 mm).
         4. 40 inches by 50 inches (1016 mm by 1270 mm).
         5. 40 inches by 54 inches (1016 mm by 1372 mm).
         6. 42 inches by 60 inches (1067 mm by 1525 mm).
         7. 48 inches by 60 inches (1219 mm by 1525 mm).
      2. Car height and Overhead Clearance:

a. Nominal 84 inch car height:

Total overhead clearance required is 96 inches (2238 mm) above the upper landing level with the following exception. Total overhead clearance for In-line Drive System with Electrical Control box located inside hoistway is 108 inches (2743 mm).

b. Nominal 96 inch car height\*:

\* Not available with Upgrade or Premium Door Packages.

Total overhead clearance required is 108 inches (2743 mm) above the upper landing level with the following exception. Total overhead clearance for In-line Drive System with Electrical Control box located inside hoistway is 120 inches (3048 mm).

* + - 1. Platform Configuration:

\*\* NOTE TO SPECIFIER \*\* Select one of the following platform configuration paragraphs and delete the ones not required.

* + - * 1. Styles 1L & 1R: On/Off Same Side Entry/Exit, Adjacent to rails: One side opening only.
        2. Style 2: Straight Through Entry/Exit: Front and rear openings.
        3. Styles 3 & 4: 90 Degree Entry/Exit: Front and side openings.
        4. Style 5: On/Off Same Side Entry/Exit, Opposite rails: One front opening only.

\*\* NOTE TO SPECIFIER \*\* Select one of the following two travel paragraphs and delete the one not required. Enter total travel in feet as required. This series has a standard travel of 50 feet (15.2 m). Minimum distance between floors is 10 inches (254 mm).

* + - 1. Travel:
         1. \_\_\_\_\_ feet \_\_\_\_ inches.
         2. As indicated on the Drawings.

\*\* NOTE TO SPECIFIER \*\* Select one of the following stop paragraphs and delete the ones not required. Enter total number of stops as required. This series has a maximum of 6 stops with automatic operation.

* + - 1. Stops:
         1. 2 stops.
         2. 3 stops.
         3. 4 stops.
         4. 5 stops.
         5. 6 stops.
         6. As indicated on the Drawings.
      2. Speed: Nominal 40 feet per minute (0.2 m/sec).
      3. Pit Depth: As per manufacturers shop drawings.
      4. Drive System:

\*\* NOTE TO SPECIFIER \*\* Select one of the following two drive system paragraphs and delete the one not required.

* + - * 1. Hydraulic Drive: 1:2 Cable Hydraulic, heavy duty car sling with roller guide shoes running on 8 lb. per foot steel T-rails, quiet submersed pump and motor, factory pre-set and tested 2-speed valve for smooth start and stop. Pump unit to be located in a machine room outside of the hoistway.
        2. In-line Geared Drive: Counterweighted geared drive , heavy duty car sling with roller guides running on 8 lb. per foot steel T-rails. Motor mounted above guide rails. No machine room required. Electronic control box can be located at the top of the hoistway or remotely located. A 6 inch by 6 inch (152 mm by 152 mm) access hatch located at the upper landing is required for emergency manual lowering.
      1. Power Requirements:

\*\* NOTE TO SPECIFIER \*\* Select one of the following three power paragraphs and delete the ones not required.

* + - * 1. 230 VAC, 30 Amp, Single Phase (Hydraulic Drive).
        2. 208 VAC, 20 Amp, Three Phase (Hydraulic Drive).
        3. 230 VAC, 15 Amp, Single Phase (In-Line Geared Drive).
        4. A Separate 115-Volt, 15 Amp Circuit is always required for car lighting.
      1. Controls:
         1. Garaventa-Design PLC Controller with integrated self diagnostics.
         2. Fully automatic push button at car and hall landings.
         3. Automatic car lighting.
         4. Digital floor indicator in Car.

\*\* NOTE TO SPECIFIER \*\* Select one of the following three door package paragraphs and delete the ones not required.

* + - 1. Doors and Door Interlocks:

Standard Door Package: swinging hoistway landing doors and an accordion car gate

1) A passage door (swing type) that protects entrance into the hoistway to be supplied as specified in Section 08200 at each landing.

\*\* NOTE TO SPECIFIER \*\* Select one of the following three landing door paragraphs and delete the ones not required.

a) Hallway landing doors and flush frames provided by others. Flush frames are special door frames that allow for the door to sit substantially flush to the elevator side of the hoistway wall and open away from the elevator.

b) 36” x 80” x 1-3/4” solid core hallway landing doors provided by others. Flush door frames provided by manufacturer for each landing. Landing doors fitted to flush frames by others. c) 36” x 80” x 1-3/4” six panel steel landing doors prehung on flush frames provided by manufacturer.

2) A door interlock shall be provided at each door entrance, which will prevent operation of the elevator unless the hoistway door is closed and locked or prevent opening of the hoistway door from the landing unless the elevator car is within the landing zone.

3) Accordion style gate equipped with a gate safety switch to be mounted on all opening sides of the car. Gate safety switch is to prevent car from leaving landing zone when gate is open.

4) Finish on Accordion Gate Hardware:

a) Nickel

b) Bronze

5) Finish on Accordion Gate Panels:

a) 3 clear acrylic panels located closest to the handle, the remainder of the panels to be white.

b) 3 clear acrylic panels located closest to the handle, the remainder of the panels to be antique white.

c) 3 clear acrylic panels located closest to the handle, the remainder of the panels to be black.

d) All panels to be white.

e) All panels to be antique white.

f) All panels to be black.

g) All panels to be clear acrylic

h) All panels to be bronze acrylic.

i) All panels to be perforated aluminum.

6) Power Door Operator: Automatically opens the door/gate when platform arrives at a landing. Will also open at landing by pressing the call button.

a) ADA Compliant and obstruction sensitive.

b) Low voltage, 24 VDC with all wiring concealed.

c) Provide power operators at the following locations:

1. Car Gate(s).

2. Hall door(s). Indicate floors\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

b) Upgrade Door Package: swinging hall landing doors and automatic three speed side sliding elevator car door(s).

1) A passage door (swing type) that protects entrance into the hoistway to be supplied as specified in Section 08200 at each landing.

\*\* NOTE TO SPECIFIER \*\* Select one of the following three landing door paragraphs and delete the ones not required.

a) Hallway landing doors and flush frames provided by others. Flush frames are special door frames that allow for the door to sit substantially flush to the elevator side of the hoistway wall and open away from the elevator.

b) 36” x 80” x 1-3/4” solid core hallway landing doors provided by others. Flush door frames provided by manufacturer for each landing. Landing doors fitted to flush frames by others. c) 36” x 80” x 1-3/4” six panel steel landing doors prehung on flush frames provided by manufacturer.

2) A door interlock shall be provided at each door entrance, which will prevent operation of the elevator unless the hoistway door is closed and locked or prevent opening of the hoistway door from the landing unless the elevator car is within the landing zone.

3) Power Door Operator: Automatically opens the door when platform arrives at a landing. Will also open at landing by pressing the call button.

a) ADA Compliant and obstruction sensitive.

b) Low voltage, 24 VDC with all wiring concealed.

c) Provide power operators at the following locations:

1. Hall door(s). Indicate floors\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4) Three speed side sliding elevator door(s) to be mounted on all opening sides of the car. Fully automatic operation. A safety light obstruction sensor opens the door if an obstruction is sensed while the door is closing.

a) White powdercoat finish

b) Black powdercoat finish

c) Brushed stainless steel finish

c) Premium Door Package: tandem three speed side sliding elevator hall and car doors.

1) Three speed side sliding elevator door(s) to be mounted on all opening sides of the car. Fully automatic operation. A safety light obstruction sensor opens the door if an obstruction is sensed while the door is closing.

a) White powdercoat finish

b) Black powdercoat finish

c) Brushed stainless steel finish

2) Three speed side sliding elevator doors to be mounted at all hoistway entrances. Sliding hall landing doors engage with sliding car doors as elevator car approaches each landing. Sliding doors operate in tandem. A safety light obstruction sensor opens the door if an obstruction is sensed while the door is closing.

a) Primer finish

b) Brushed stainless steel finish.

* + - 1. Safety Features:
         1. Manual lowering device.
         2. Safety brake system.
         3. Car operator with integral gate switch (standard door package only)
         4. Safety light door obstruction sensor. (Upgrade and Premium door packages only)
         5. Automatic bi-directional floor leveling.
         6. Emergency alarm button in car, Emergency keyed stop switch in car.
         7. Overspeed valve is provided for hydraulic drive only.
         8. Final limit switch.
         9. Low oil protection timer circuit is provided for hydraulic drive only.
         10. Pit prop.
      2. Standard Features:
         1. Automatic home parking feature to be field set.

\*\*\* NOTE TO SPECIFIER \*\* Select the power operator options required from the following paragraphs and delete the ones not required.

* + - 1. Options:

\*\*\* NOTE TO SPECIFIER \*\* Select the options required from the following paragraphs and delete the ones not required.

* + - * 1. Integrated telephone.
        2. Telephone box.
        3. Buffer springs (increases your pit depth).
        4. Keyed hall station(s).

\*\* NOTE TO SPECIFIER \*\* Include the following paragraphs for hydraulic drive system only. Various arrangements are available to accommodate most machine room configurations. Coordinate the machine room size and location with the installer.

* + - 1. Machine Location:
         1. As indicated on the Drawings.
  1. CAB DESIGN

\*\* NOTE TO SPECIFIER \*\* Edit the following cab design paragraphs as required. Delete those not required. Floors are wood construction and are provided unfinished with finishes provided by others.

* + 1. Cab Design:
       1. Interior Walls: Panel sections.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the ones not required. Include optional Clear Coat paragraph if required.

* + - * 1. 1/2 inch MDF.\*

\* Not available with Upgrade or Premium door packages

* + - * 1. 3/4 inch MDF.
      1. Interior Walls: Finish.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the ones not required. Include optional Clear Coat paragraph if required.

* + - * 1. Unfinished MDF.
        2. Mahogany unfinished wood veneer.
        3. Birch unfinished wood veneer.
        4. Maple unfinished wood veneer.
        5. Walnut unfinished wood veneer.
        6. Red Oak unfinished wood veneer.
        7. Hickory unfinished wood veneer.
        8. Cherry unfinished wood veneer.
        9. Bamboo unfinished wood veneer.
        10. Makore unfinished wood veneer.
        11. Recessed panel unfinished Red Oak Hardwood.
        12. Recessed panel unfinished Maple Hardwood.
        13. Recessed panel unfinished Cherry Hardwood.
        14. Raised panel unfinished Red Oak Hardwood.
        15. Raised panel unfinished Maple Hardwood.
        16. Raised panel unfinished Cherry Hardwood.

\*\* NOTE TO SPECIFIER \*\* Select the following optional Clear Coat paragraph if required.

* + - * 1. Provide with Clear Coat finish over wood veneer or hardwood.
        2. White Melamine.\*
        3. Antique White Melamine.\*
        4. Light Maple Melamine.\*
        5. Dark Maple Melamine.\*
        6. Gray Melamine.\*
        7. Oak Melamine.\*
        8. Walnut Melamine.\*

\* Not available with Upgrade or Premium door packages.

* + - 1. Ceiling Finish: ¾ inch MDF.

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the ones not required.

* + - * 1. Mahogany unfinished wood veneer.
        2. Birch unfinished wood veneer.
        3. Maple unfinished wood veneer.
        4. Walnut unfinished wood veneer.
        5. Red Oak unfinished wood veneer.
        6. Hickory unfinished wood veneer.
        7. Cherry unfinished wood veneer.
        8. Bamboo unfinished wood veneer.
        9. Makore unfinished wood veneer.
        10. Recessed panel unfinished Red Oak Hardwood.
        11. Recessed panel unfinished Maple Hardwood.
        12. Recessed panel unfinished Cherry Hardwood.
        13. Raised panel unfinished Red Oak Hardwood.
        14. Raised panel unfinished Maple Hardwood.
        15. Raised panel unfinished Cherry Hardwood.

\*\* NOTE TO SPECIFIER \*\* Select the following optional Clear Coat paragraph if required.

* + - * 1. Provide with Clear Coat finish over wood veneer or hardwood.
      1. Handrails:

\*\* NOTE TO SPECIFIER \*\* Select one of the following handrail finish paragraphs and delete the ones not required.

* + - * 1. Stainless Steel, brushed finish
        2. Premium Stainless Steel, brushed finish
        3. Premium Stainless Steel, polished finish
        4. Premium Brass, brushed finish
        5. Premium Brass, polished finish
      1. Car Operating Panel Finish:

1. \*\* NOTE TO SPECIFIER \*\* Select one of the following operating panel finish paragraphs and delete the ones not required.
   * + - 1. Stainless Steel, brushed finish
         2. Premium Stainless Steel, brushed finish
         3. Premium Bright Gold finish
         4. Premium Midnight Blue finish
         5. Premium Antique Black finish
       1. Floor: Unfinished 3/4 inch plywood construction.
       2. Lighting: Four recessed L.E.D. down lights,
          1. 110 VAC, 1single phase, 15 Amps.
          2. Failure of one lamp shall not cause the remaining lamps to extinguish.
          3. Lights shall turn on automatically when the elevator door is opened and stay on while the elevator is in use. Lights will automatically turn off after a predetermined time interval when the elevator is not in use.
          4. Finish:.

\*\* NOTE TO SPECIFIER \*\* Select one of the following finish paragraphs and delete the one not required. White trim is standard with white ceilings and Black is standard for all other finishes. Chrome is optional.

White Trim.

Black Trim.

Optional Chrome Trim.

* + 1. Hall Call Stations:
       1. Hall Station Type:

\*\* NOTE TO SPECIFIER \*\* Select one of the following paragraphs and delete the one not required.

* + - * 1. Standard Keyless Push Button
        2. Premium Keyless Push Button
        3. Standard Keyed Push Button
        4. Premium Keyed Push Button
        5. Premium Keyless Push Button with Digital Position Indicator
        6. Premium Keyed Push Button with Digital Position Indicator
      1. Hall Station Finish:

1. \*\* NOTE TO SPECIFIER \*\* Select one of the following finish paragraphs and delete the ones not required.
   * + - 1. Standard Stainless Steel, brushed finish
         2. Premium Stainless Steel, brushed finish
         3. Premium Bright Gold finish
         4. Premium Midnight Blue finish
         5. Premium Antique Black finish
2. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until preliminary work including hoistway, landings and machine space has been properly prepared.
      2. Verify shaft and machine space are of correct size and within tolerances.
      3. Verify required landings and openings are of correct size and within tolerances.
      4. Verify hoistway shaft and machine room temperature is designed to have maintainable temperatures between 60 degrees F (16 degrees C) and 110 degrees F (43 degrees C).
      5. Verify machine room, when required, is provided with lighting, light switch, convenience outlets and meets the clear space requirements of ASME A17.1 /CSA B-44, NFPA 70 (CSA/C22.1) and all local codes.
      6. Verify hoistway and openings are of correct size and within tolerance.
      7. Verify electrical power is available and of correct characteristics.
      8. If preliminary work is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   2. PREPARATION
      1. Clean surfaces thoroughly prior to installation.
      2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   3. INSTALLATION
      1. Install elevator in accordance with applicable regulatory requirements including ASME A17.1 /CSA B-44 and the manufacturer's instructions.
      2. Install system components and connect to building utilities.
      3. Accommodate equipment in space indicated.
      4. Startup equipment in accordance with manufacturer's instructions.
      5. Adjust for smooth operation.
   4. FIELD QUALITY CONTROL
      1. Perform tests in compliance with ASME A17.1 /CSA B-44 and as required by authorities having jurisdiction.
      2. Schedule tests with agencies and Architect, Owner, and Contractor present.
   5. CLEANING
      1. Remove protective coverings from finished surfaces.
      2. Clean surfaces and components.
   6. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION