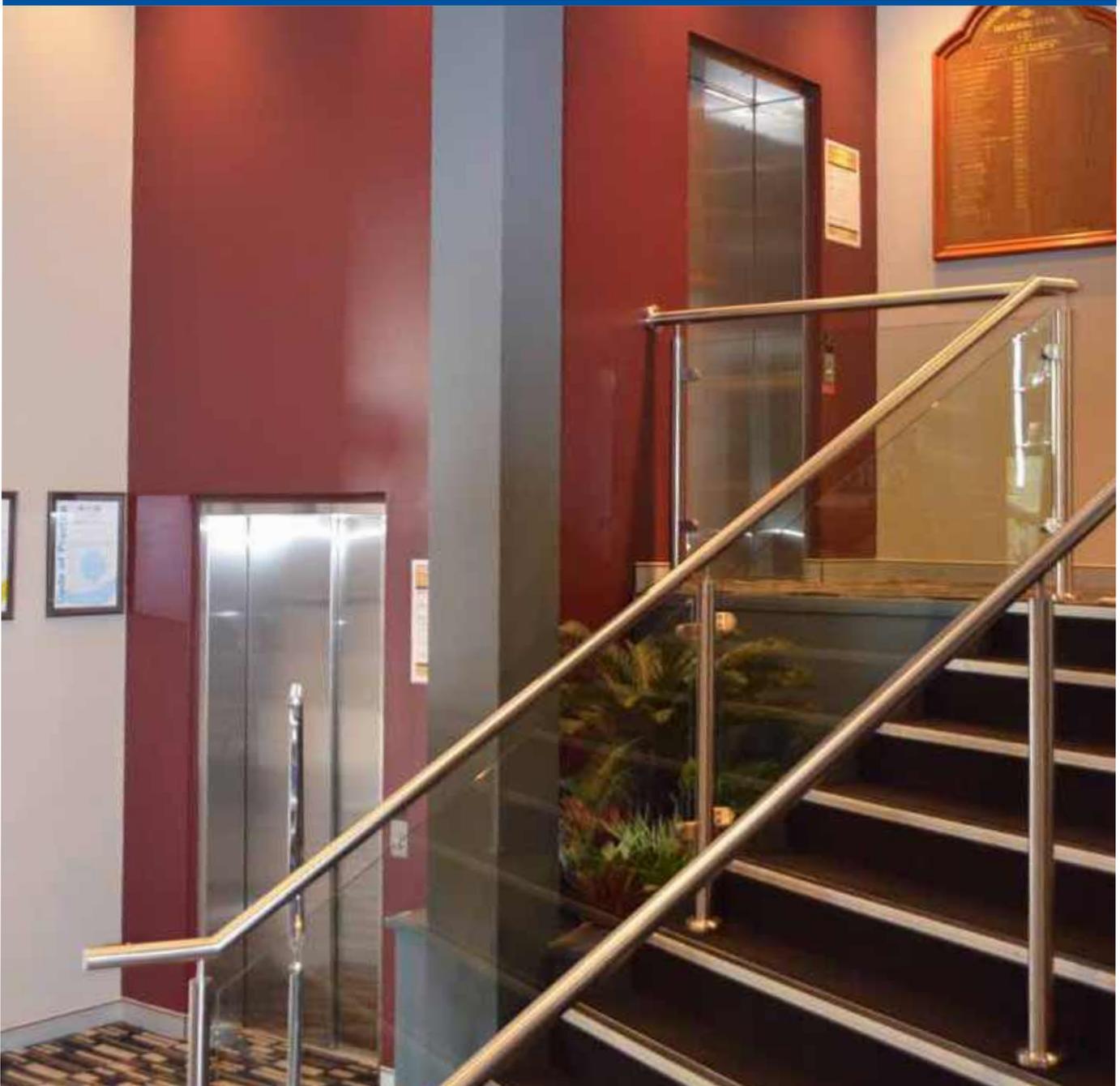


# ELVORON LU/LA ELEVATOR

## DESIGN AND PLANNING GUIDE



### **Please note:**

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Dimensions provided in this Guide are for **REFERENCE ONLY** and should not be used for site preparation or construction.

# Table of Contents

<b>What is a LU/LA Elevator?</b> .....	4
Design Assistance .....	4
<b>Finishes</b> .....	4
<b>How It Works</b> .....	5
<b>Hoistway</b> .....	6
<b>Construction of Pit</b> .....	7
Overhead Clearance (Refuge Space) .....	7
Pit Lighting .....	7
<b>Loading Diagram</b> .....	8
<b>Car Sizes &amp; Configurations</b> .....	9
<b>Layouts &amp; Clearances</b> .....	10
<b>Operating Controls</b> .....	16
Car Operating Panel (COP) .....	16
Hall Stations .....	16
Car Direction Lantern .....	16
<b>Doors - Entrance and Car Doors</b> .....	17
Door Details – Masonry Walls .....	18
Door Details – Wood and Drywall Walls .....	19
<b>Technical Information</b> .....	20
<b>Machine Room Requirements</b> .....	21
<b>Machine Room Layouts</b> .....	22
<b>Mains Power Requirements</b> .....	23

## What is a LU/LA Elevator?

The Elvoron LU/LA (Limited Use Limited Application) elevator is a cost effective way to transport the public from one landing to another. A LU/LA elevator is a power passenger elevator in which the use and application is limited by size, capacity, speed and rise. The Elvoron LU/LA elevator provides a code compliant automatic elevator with a variety of platform configurations and can service up to 6 landings. The wide selection of cab finishes and options ensure that it will blend into any setting.

### What is Limited about a LU/LA elevator?

- Travel – 25 feet (7.6 meters) (check the regulations for your jurisdiction)
- Speed – 30 fpm (0.15 m/sec) nominal
- Maximum Platform Size – 18 square feet (1.67 square meters)
- Maximum Capacity – 1400 lbs (635 Kg)

### Why a LU/LA Elevator?

**Cost Effective** - LU/LA elevators are much more cost effective than a regular passenger elevator.

**Application** - The LU/LA elevator is intended to be used in low rise buildings with low occupancy, where a full passenger elevator is not required. Its' application in buildings is self limiting due to the restricted travel, speed, capacity and size.

### Meets ADA Requirements (USA) -

The Elvoron LU/LA elevator meets the requirements of the Americans with Disabilities Act and most other Accessibility Codes and Requirements.

## Design Assistance

With over 40 years of experience, Garaventa Lift has the expertise to overcome almost any design challenge you face. Please call our Design Hotline.

**1-800-663-6556 or 1-604-594-0422**

## Finishes

Your Elvoron elevator will be a key feature in your building. Interior design and finish are important considerations. We offer a variety of attractive and durable wall and ceiling finishes. If you're looking for something a little different, our custom shop can design an elevator to fit your vision. All Elvoron cars are supplied with basic plywood floors ready for installation of your preferred flooring material, as supplied by others.

### Car Walls

Car walls are covered in Laminate Panel Sections – Fire rated, tough, easy to clean and offered in a choice of 8 standard colors. Custom laminates are also available.

### Car Wall Trim

Car Wall Trim separates the car wall panels and adds the finishing touch to your elevator cab. The standard trim is available in black or white. Custom colors and stainless steel trims are optional.

### Entrance Door and Car Doors

Like a commercial elevator, the Elvoron LU/LA is equipped with two-speed horizontal sliding landing entrances and car doors. The car doors are finished to match your car wall trim. The landing entrance doors are primed and ready to be painted to match your building décor. All doors can be supplied in brushed stainless steel.

### Ceiling and Halogen Lighting

All Elvoron LU/LA's are equipped with four recessed low-voltage halogen lamps that illuminate automatically when the doors open. Ceiling choices are white, black, stainless steel or custom. White lamps are fitted into white ceilings and black into all other options.

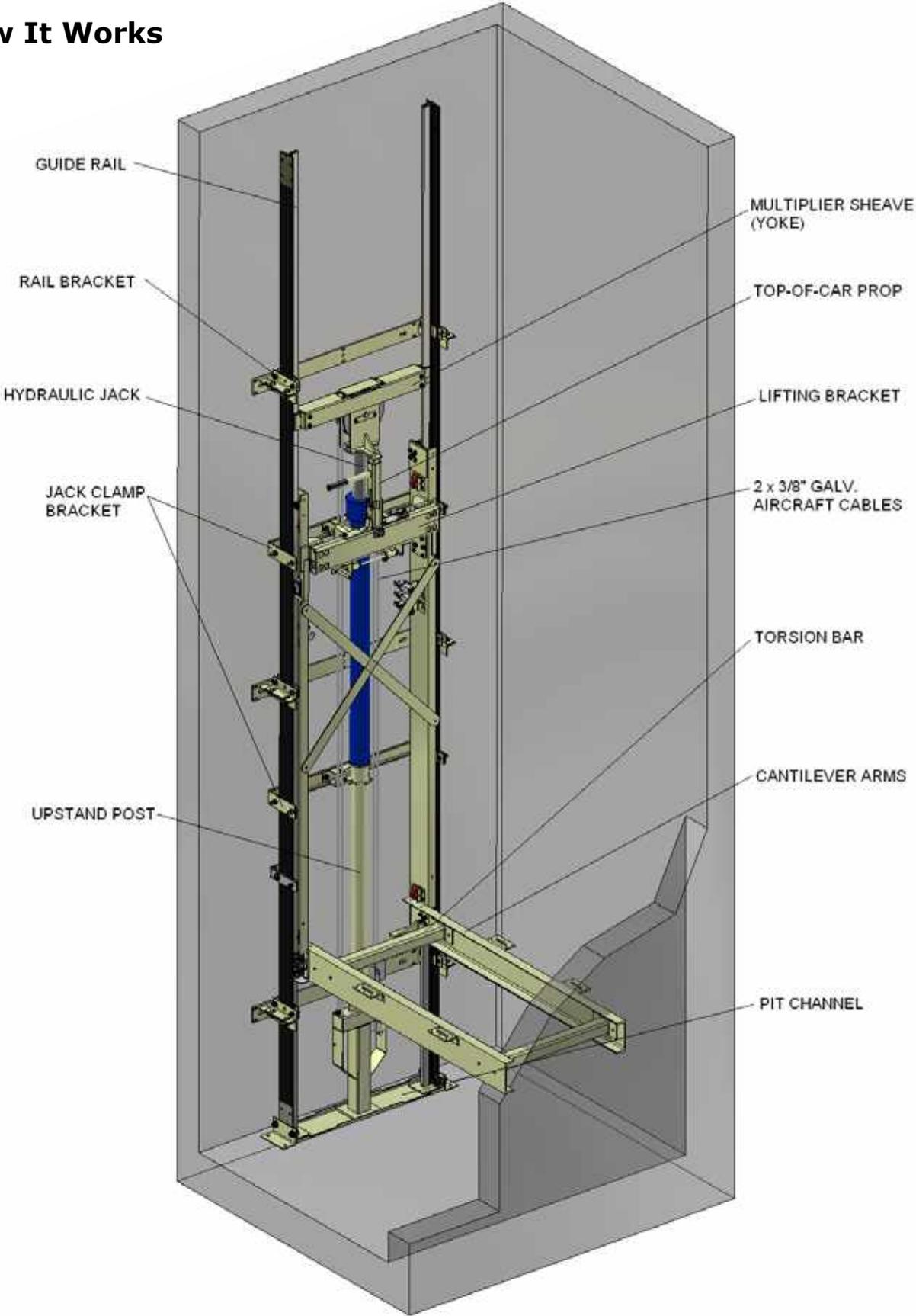
### Custom Car Finishes

Your car interior can be customized to whatever unique design best suits your building project. Our custom shop offers a wide variety of wall, ceiling and fixture alternatives. We can also create elegant stainless steel and glass cars (panoramic).

### Handrail

All Elvoron cars are equipped with one brushed stainless steel handrail on the control wall. Additional handrails can be mounted on the other car walls.

# How It Works



## Hoistway

The walls of the elevator hoistway can be constructed of wood, poured concrete or concrete block. The wall behind the cylinder and guide rails must be load bearing and able to withstand the loads imposed by the elevator.

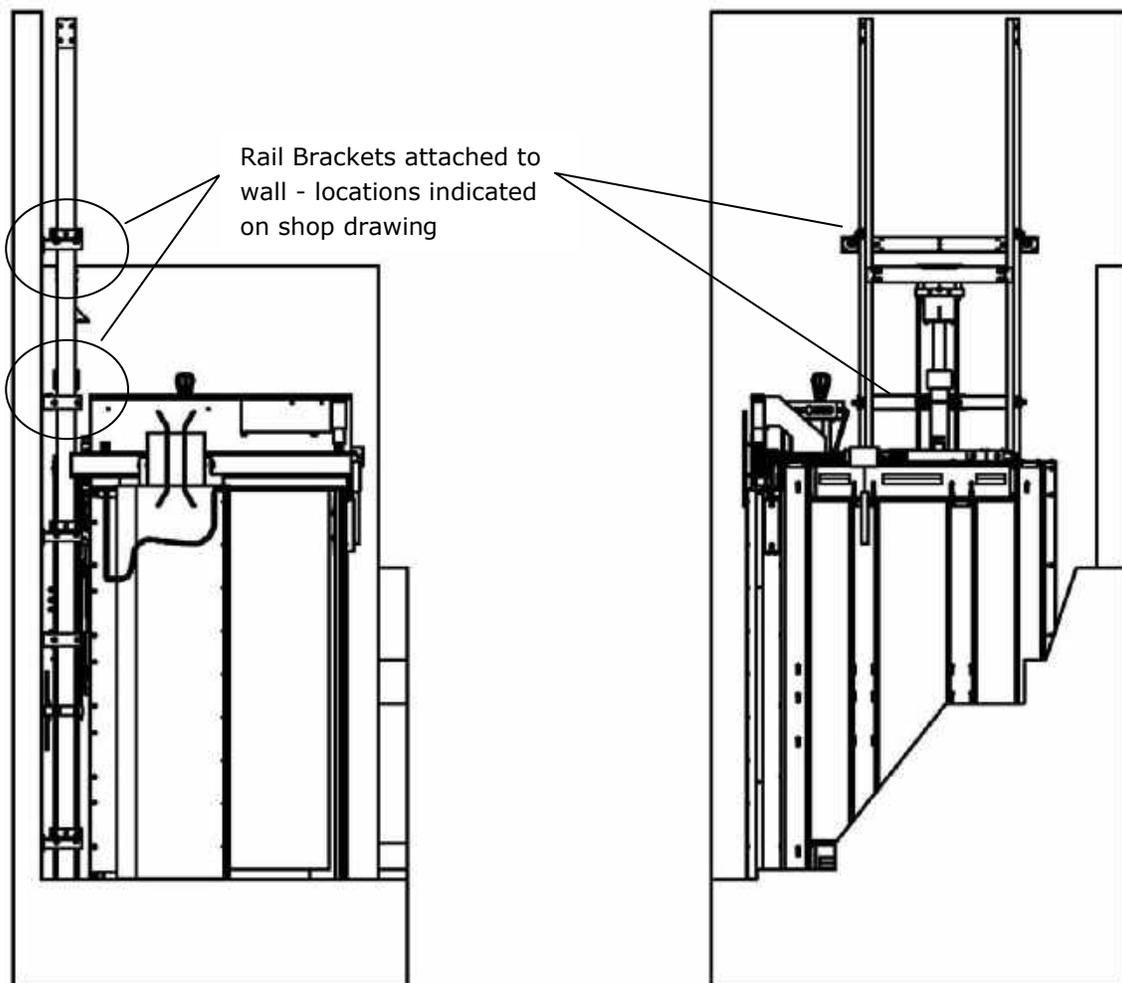
The cylinder and guide rails are mounted to the wall with steel brackets. These rail brackets are fastened to the load bearing wall at regular intervals.

The rail bracket spacing is determined during the design phase. The rail brackets are generally every 4' apart, measured vertically, depending on the load

capacity, size of cab and travel height. Please see final elevator shop drawings for actual locations.

All the walls of the hoistway, especially the wall behind the rails and the entrance walls, need to be flush and plumb from floor to ceiling to within  $\pm 1/8"$ . This is to allow for the required running clearances.

No light is required at the top of the hoistway as the car top is equipped with a standard caged light fixture for use by the mechanic during his maintenance visits. A light is required in the pit (see Construction of Pit for details).



## Construction of Pit

The pit must be the same width and length as the hoistway. The majority of the weight of the lift is borne by the plunger (ram). Reactions are indicated on each project's shop drawings. A minimum 14" (355 mm) pit is required.

### Overhead Clearance (Refuge Space)

135" (3429mm) is required above the upper landing level finished floor to the ceiling above to meet the refuge space required by code. On existing construction, a car top prop can be used to reduce the overhead to 114" (2895 mm).

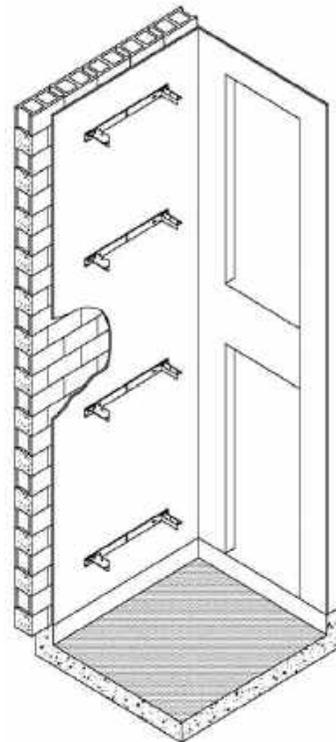
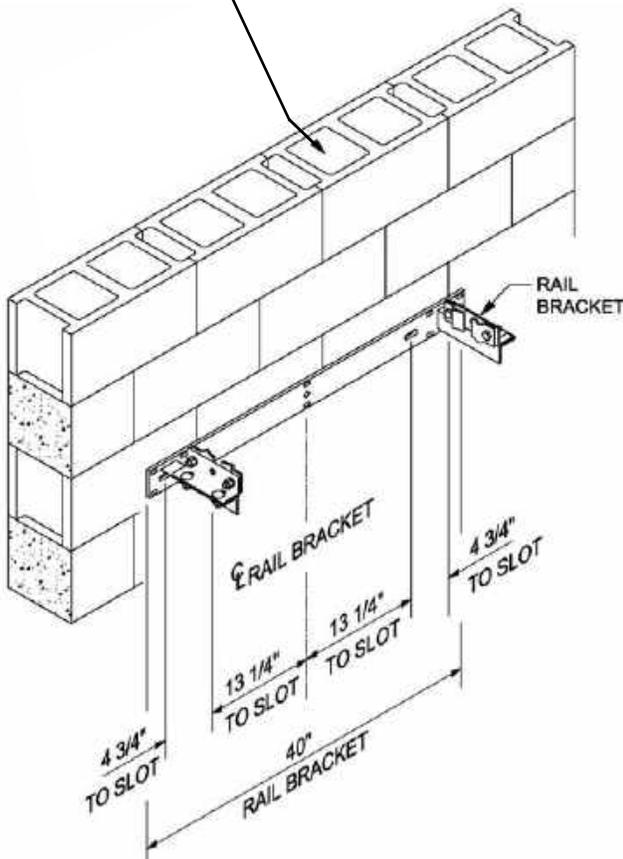
A **pit ladder** is required only if the pit depth exceeds 35" (900mm). Consult your Garaventa Lift representative for details as changes to finished hoistway are required.

### Pit Lighting

A pit light and GFI duplex receptacle, supplied by the General Contractor, are required in the pit of your Elvoron LU/LA for use by the mechanic during his maintenance visit. Consult Garaventa Lift dealer for location and routing of conduit.

Habitable space below hoistway will require the pit to be increased in depth to a minimum 16" (406mm) to accommodate the required **buffer springs**.

It is preferable to fill concrete blocks with concrete

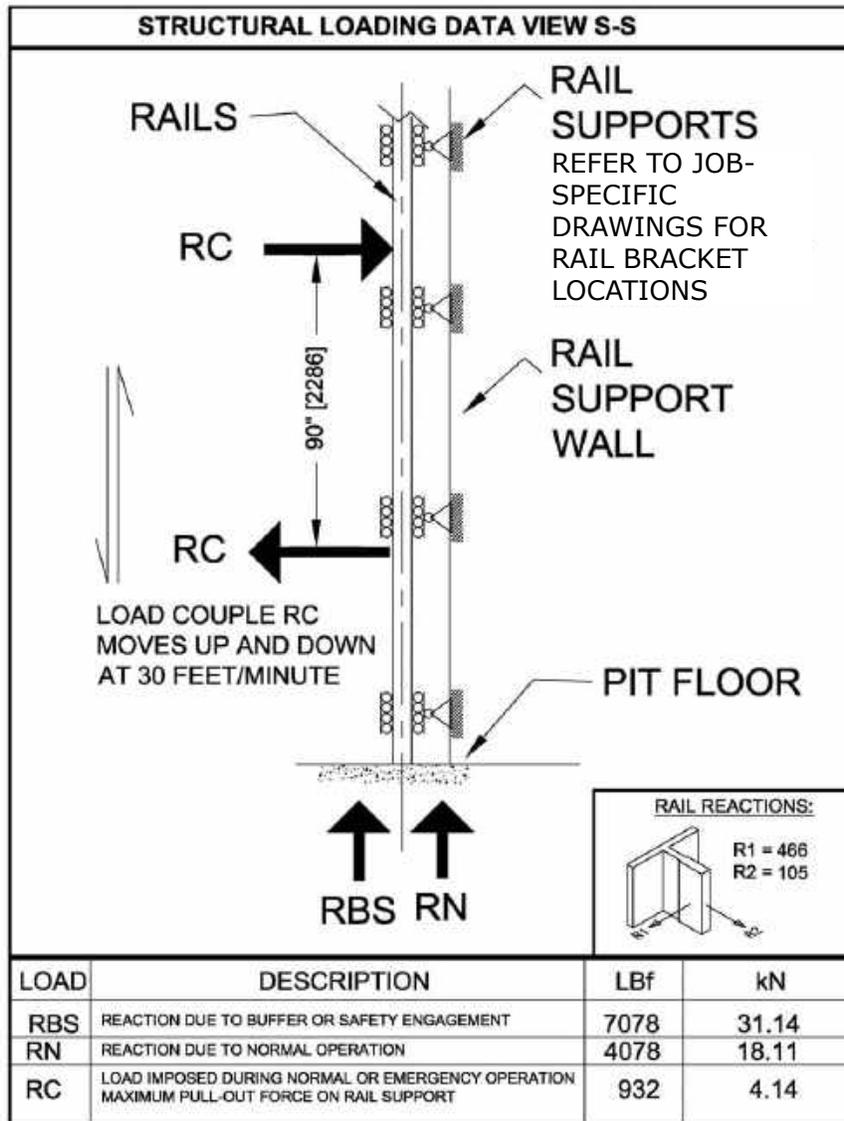


### Typical construction shown:

For alternate construction methods (wood or steel stud walls), refer to a structural engineer to ensure construction method will support the loads shown on the loading diagram, page 8.

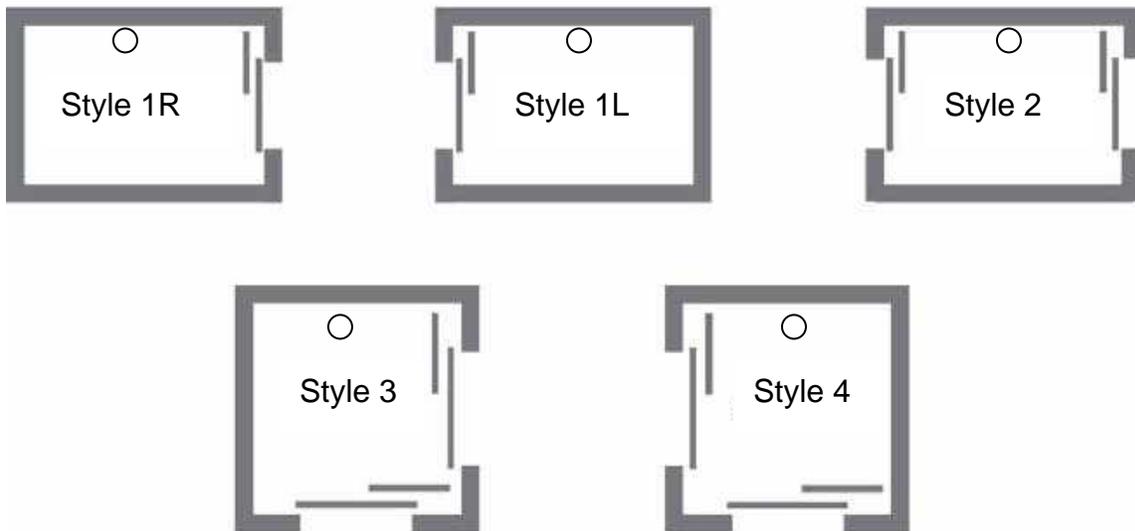
Dimensions shown are for **REFERENCE ONLY** and should not be used for site preparation or construction.

## Loading Diagram



## Car Sizes & Configurations

The Elvoron LU/LA is available in 5 different configurations to suit your building. Each configuration has specific car sizes. Limited custom car sizes are available - please contact Garaventa Lift.



### Style 1L & 1R Car sizes:

- 48" x 54" (1220 x 1372 mm)
- 42" x 60" (1067 x 1524 mm)

### Style 2 Car sizes:

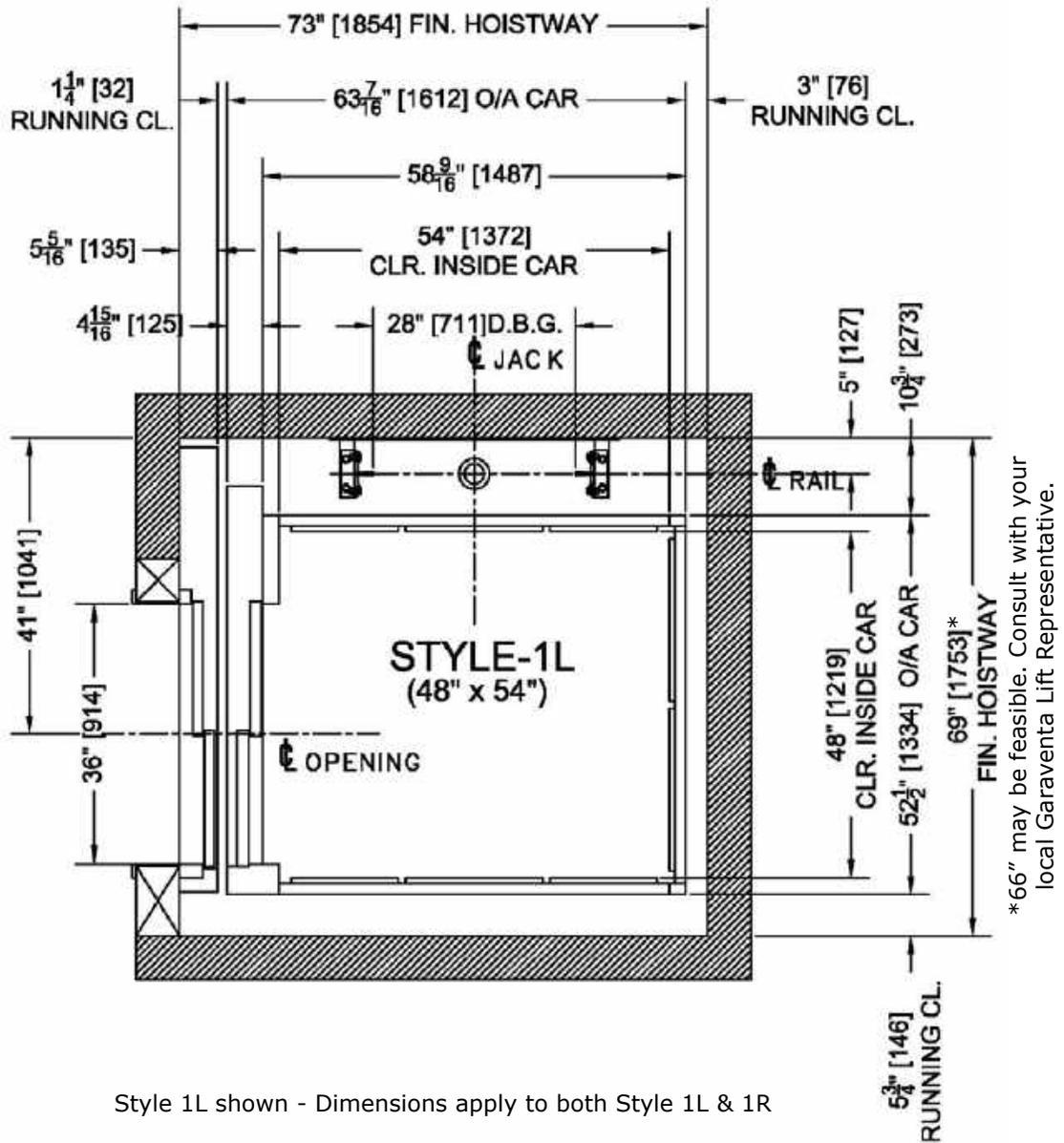
- 48" x 54" (1220 x 1372 mm)
- 42" x 60" (1067 x 1524 mm)

### Style 3 & 4 Car sizes:

- 51" x 51" (1295 x 1295 mm)

## Layouts & Clearances

### 48 x 54 Cab - Style 1L

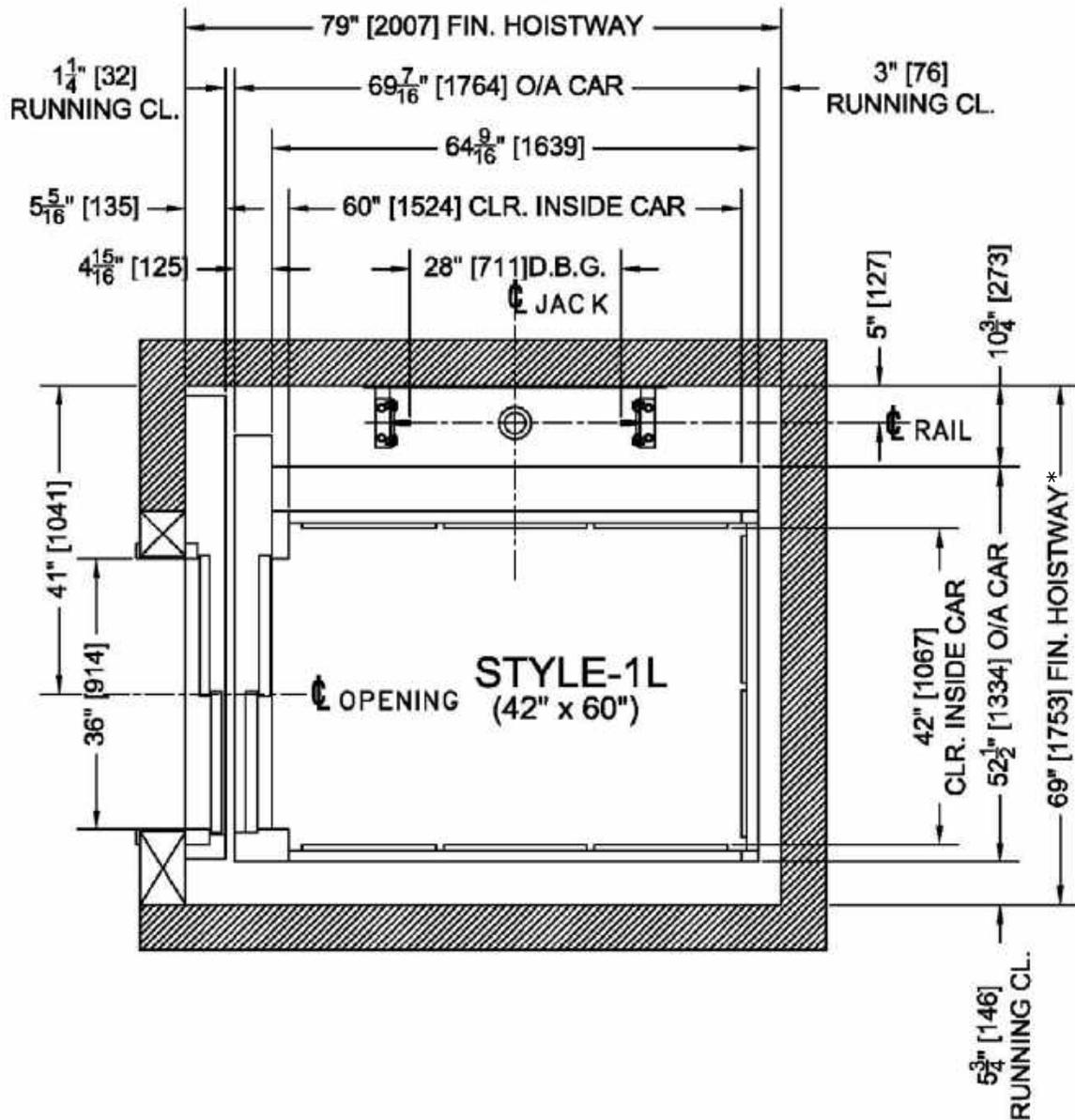


Style 1L shown - Dimensions apply to both Style 1L & 1R

Dimensions shown are for **REFERENCE ONLY** and should not be used for site preparation or construction.

## Layouts & Clearances

### 42 x 60 Cab - Style 1L

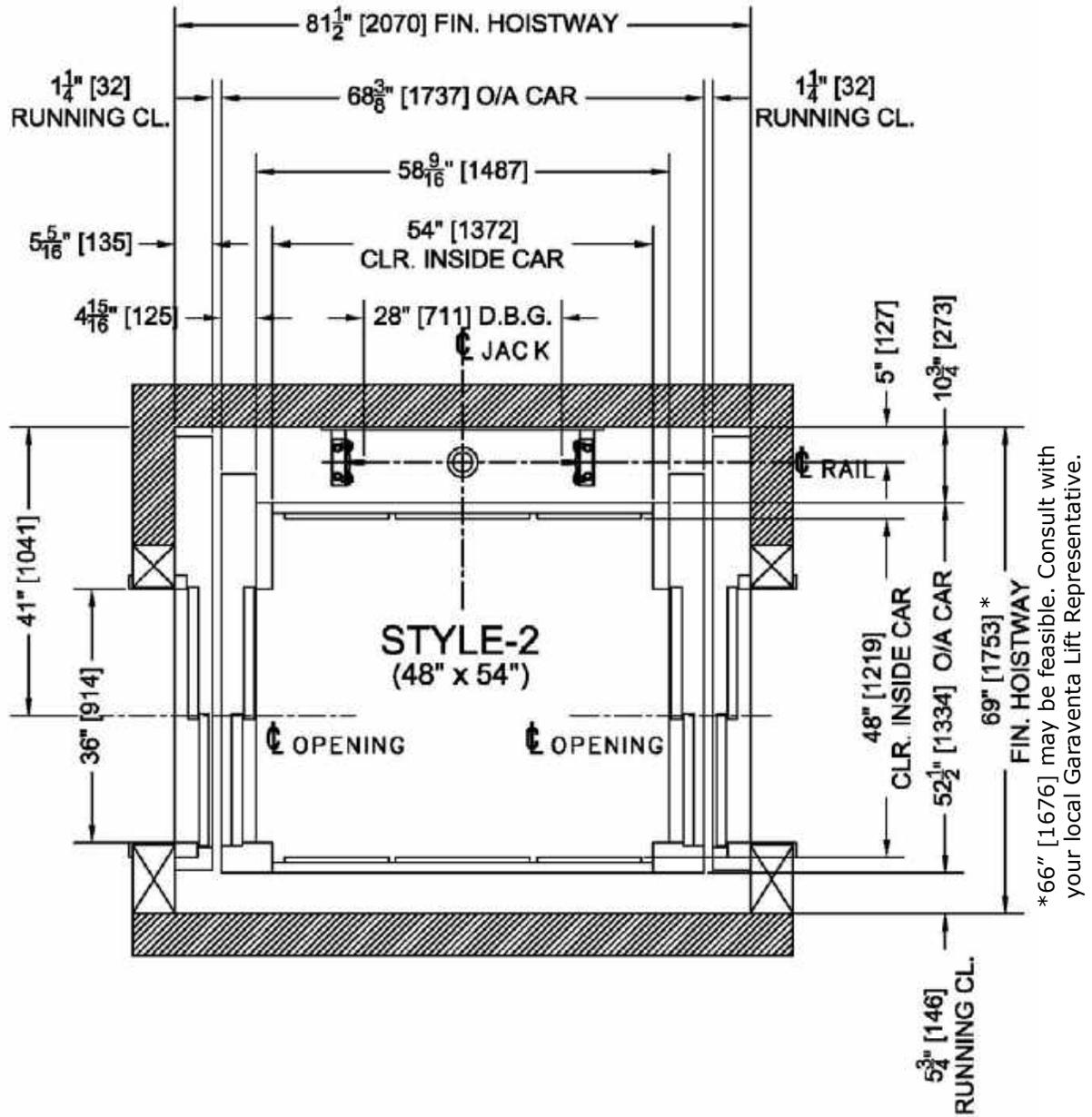


\*66" may be feasible. Consult with your local Garaventa Lift Representative.

Dimensions shown are for **REFERENCE ONLY** and should not be used for site preparation or construction.

## Layouts & Clearances

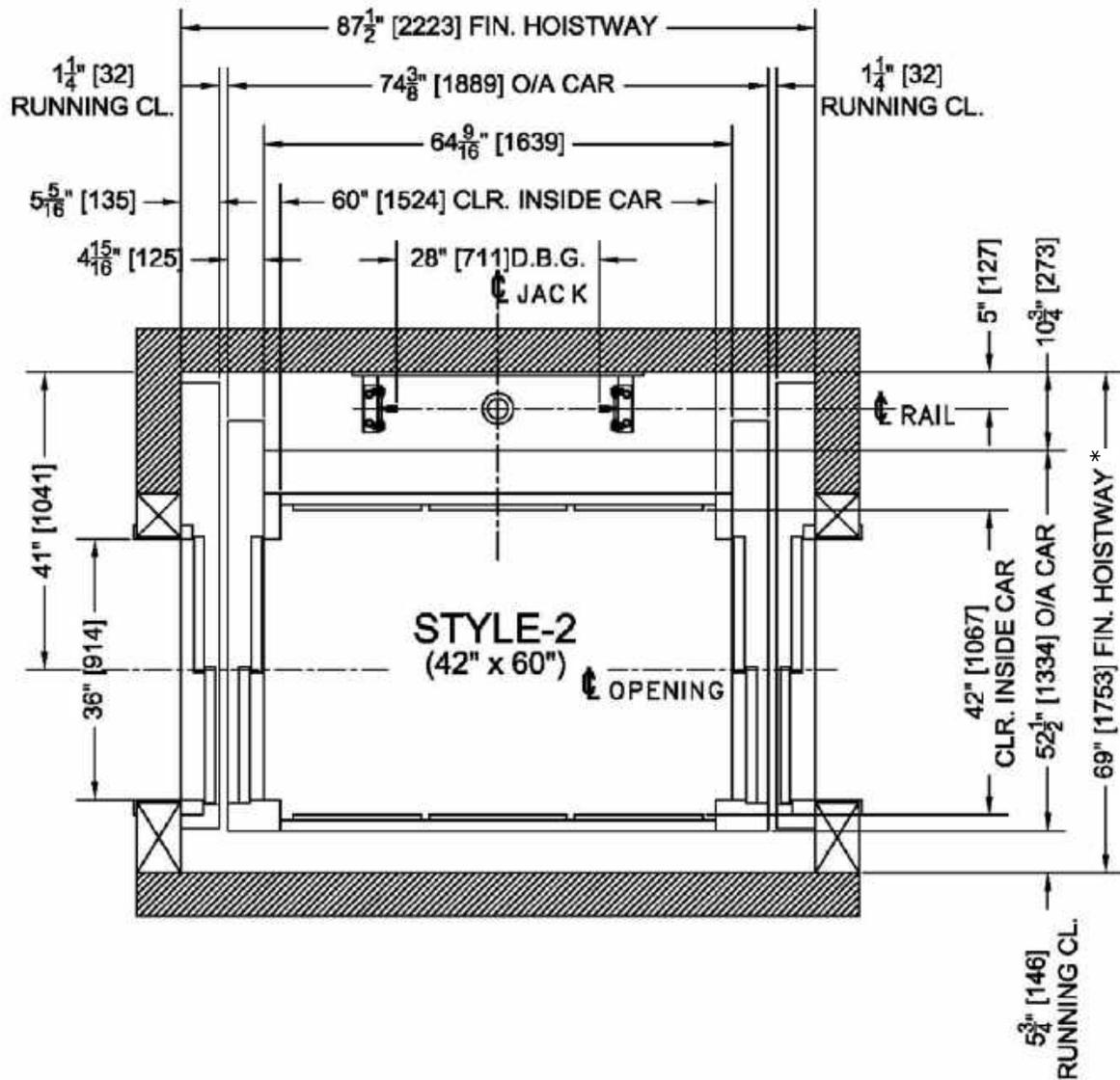
### 48 x 54 Cab - Style 2



Dimensions shown are for **REFERENCE ONLY** and should not be used for site preparation or construction.

## Layouts & Clearances

### 42 x 60 Cab - Style 2

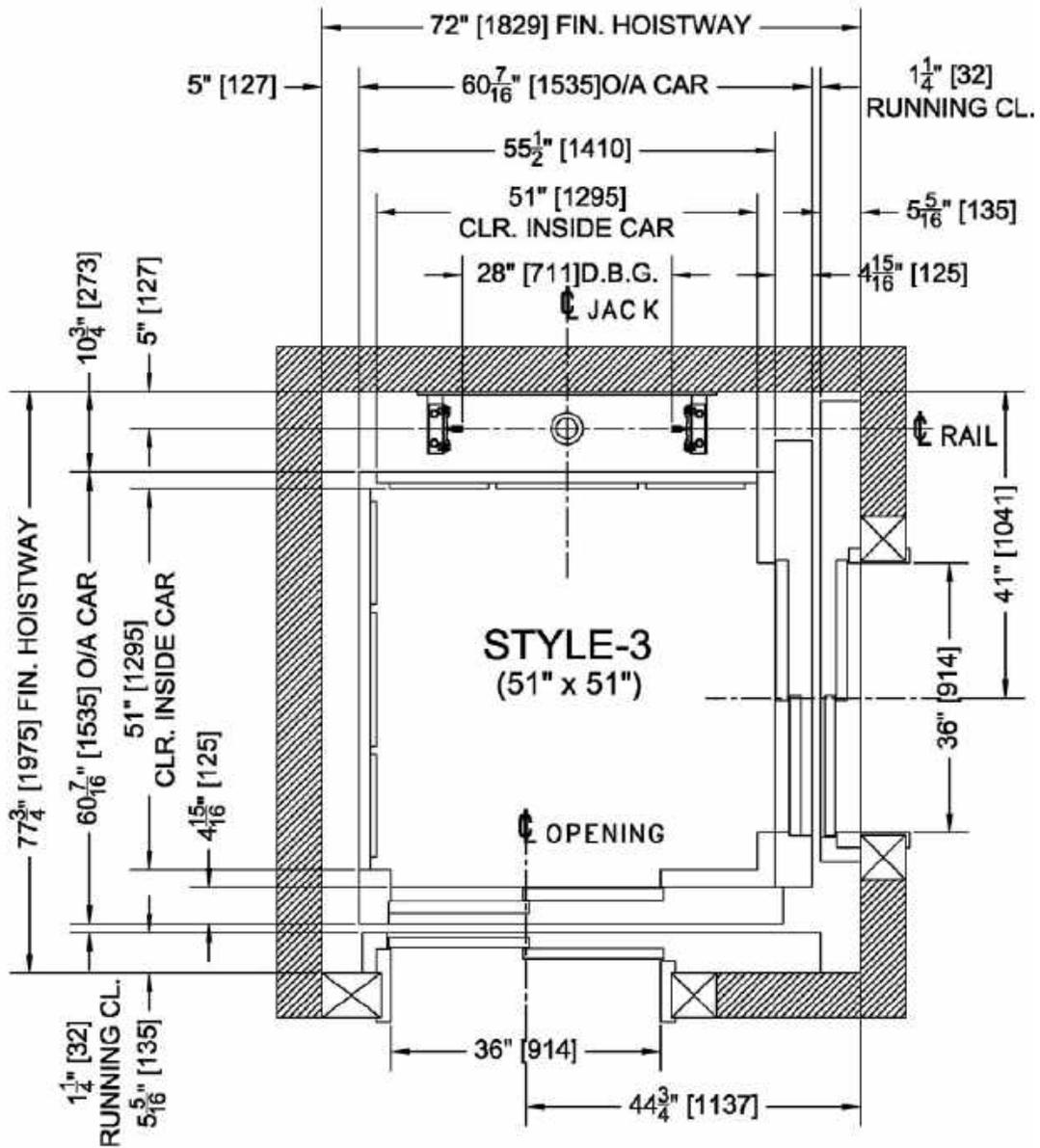


\*66" [1676] may be feasible. Consult with your local Garaventa Lift Representative.

Dimensions shown are for **REFERENCE ONLY** and should not be used for site preparation or construction.

## Layouts & Clearances

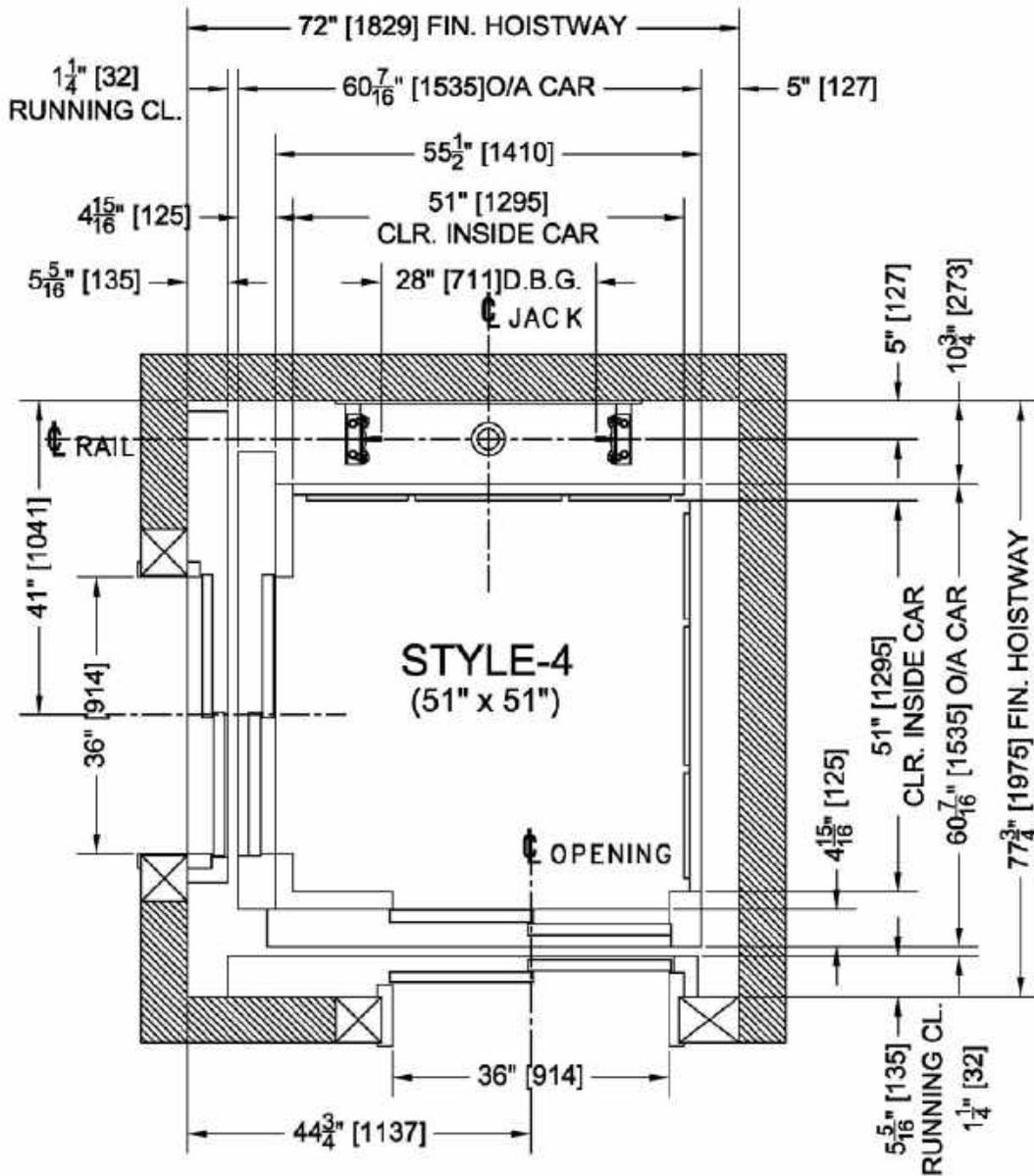
### 51 x 51 Cab - Style 3



Dimensions shown are for **REFERENCE ONLY** and should not be used for site preparation or construction.

## Layouts & Clearances

### 51 x 51 Cab - Style 4



Dimensions shown are for **REFERENCE ONLY** and should not be used for site preparation or construction.

## Operating Controls

The controls of the Elvoron LU/LA are the same as would be found on a commercial elevator. Operation is fully automatic.

**Braille Markings** for the COP, Hall Stations and Hall landings are included as standard equipment.

### Car Operating Panel (COP)

The Elvoron LU/LA COP is equipped with a digital floor indicator, illuminated floor buttons, alarm button, door open and door close buttons and a keyed emergency stop switch. An optional **integrated hands free phone** is available.

### Hall Stations

The Hall Station buttons illuminate when pushed. The push button itself is always made of stainless steel for maximum durability. For increased safety and security, an optional key switch allows the entire elevator to be deactivated.

### Car Direction Lantern

Mounted in the car to the car slam post opposite the COP, the Car Direction Lantern is an audio and visual signaling device that indicates direction of travel and arrival at the floor.



**Car Operating Panel (COP)**



**Hall Stations**



**Car Direction Lantern**

## Doors - Entrance and Car Doors

The Elvoron LU/LA uses commercial elevator entrance and car doors. When open the doors provide a **36" (915mm) x 80" (2032mm) clear opening**. They are two-speed horizontal doors and are equipped with full height photo-electric presence/obstruction sensors. The doors have an hour and a half fire rating.

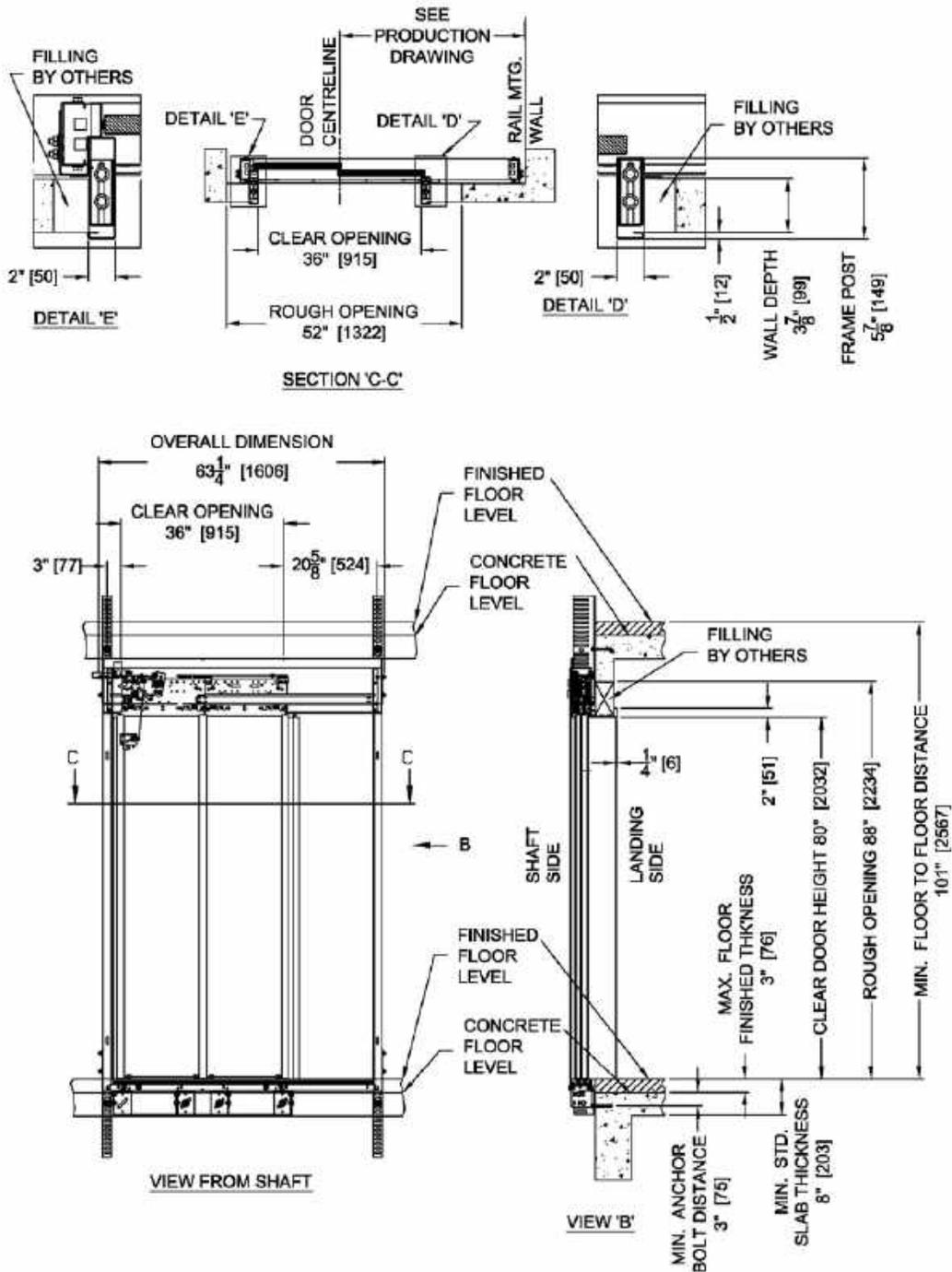
The car doors are finished to match your car wall trim and the entrance doors are primed and ready to be painted to match your building décor. All doors can be supplied in brushed stainless steel.



## Door Details - Masonry Walls

Garaventa Lift recommends that the walls on the entrance side of the hoistway be left open until the door frames are set. Or a rough opening can be left to accommodate for the doors to be placed. This allows the doors to be aligned with the centerline of the car.

Contact your local authorized Garaventa Lift representative for further details.

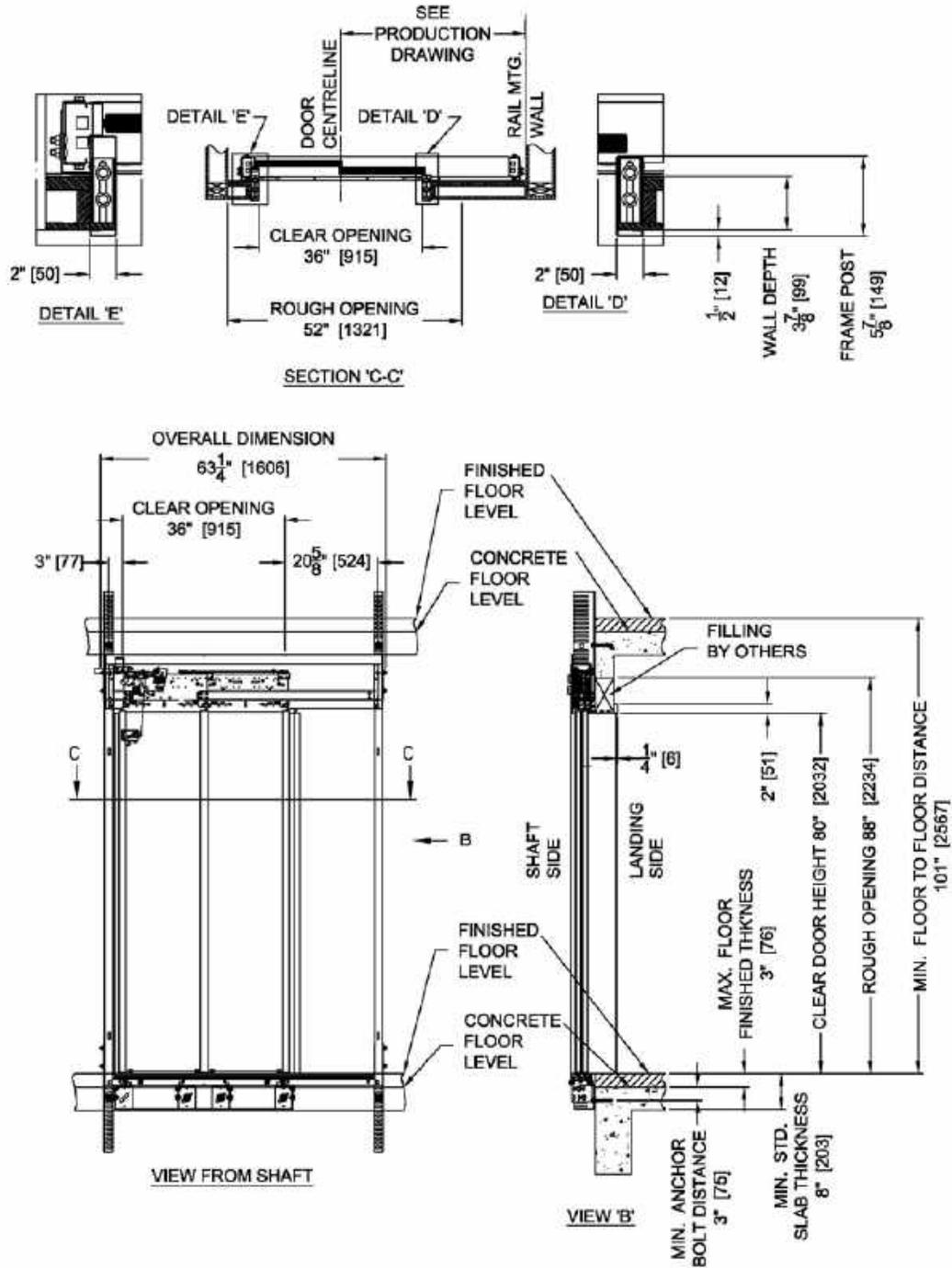


See Layouts & Clearances for door centerlines

## Door Details - Wood and Drywall Walls

Garaventa Lift recommends that the walls on the entrance side of the hoistway be left open until the door frames are set. This allows the doors to be aligned with the centerline of the car.

Contact your local authorized Garaventa Lift representative for further details.



See Layouts & Clearances for door centerlines

## Technical Information

### Car Sizes:

48" x 54" (1220 x 1372mm) Style 1 + 2 only

42" x 60" (1067 x 1524mm) Style 1 + 2 only

51" x 51" (1295 x 1295mm) Style 3 + 4 only

**Rated Load:** Standard: 1400 lbs (635 kg)

**Speed:** Standard: 30 fpm (0.15 m/s) nominal speed

Optional\*: 40 fpm (0.2 m/s)

### Travel Range:

Standard: 25 ft (7.6 meters)

Optional\*: 30 ft (9.1 meters)

**Stops:** Up to 6 stops

**Pit Depth:** Recommended pit depth of 14" (355 mm), Pit Prop standard equipment with elevator. 16" if Buffer Springs are required.

### Overhead Clearance (Refuge Space):

135" (3429mm) min. standard overhead

\*114" (2895mm) min. overhead in existing construction with the use of a Car Top Prop

**Drive System:** 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 (5 HP), Factory pre-set and tested 2-speed valve for smooth start and stop.

### Power Supply:

Elevator:

Standard: 208 VAC three phase

Optional: 230 VAC single phase

Lighting: 110 VAC single phase, 15 amps

### Controls:

Fully automatic push button operation, PLC Controller, integrated self-diagnostics. Digital floor indicator in car, automatic car lighting upon entry, illuminated push buttons, car arrival lanterns in car door jamb.

### Doors:

36" x 80" (914 x 2032mm) two-speed horizontal sliding hoistway and car doors with 1.5 hour fire rating

### \*Contact Garaventa Lift

### Safety Features:

Uninterruptible Power Supply (UPS) emergency backup power lowering system, emergency manual lowering valve, safety brake system, 2 speed door operators with integral gate switch, automatic bi-directional floor leveling, emergency alarm button in car, emergency keyed stop switch in car, overspeed valve, final limit switch and low oil protection timer circuit

### Unique Standard Features:

Braille markings, car direction lantern comes with audio and visual signals, full height photo-electric presence/obstruction sensors, automatic home park feature

### Code Compliance

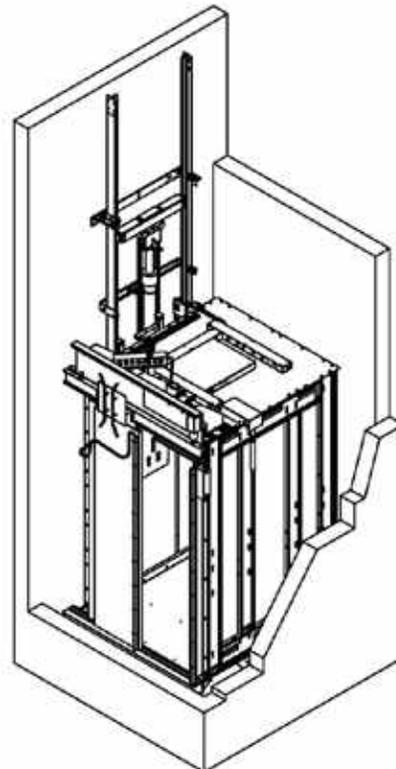
ASME A17.1, Section 5.2 LU/LA Elevators

CSA B-44, Section 5.2 LU/LA Elevators

ADA (Americans with Disabilities Act)

### Popular Options:

Integrated hands free telephone, custom car finishes, additional handrails, Fireman service (Phase 1), car top prop, buffer springs (increases your pit depth), keyed hoistway access.



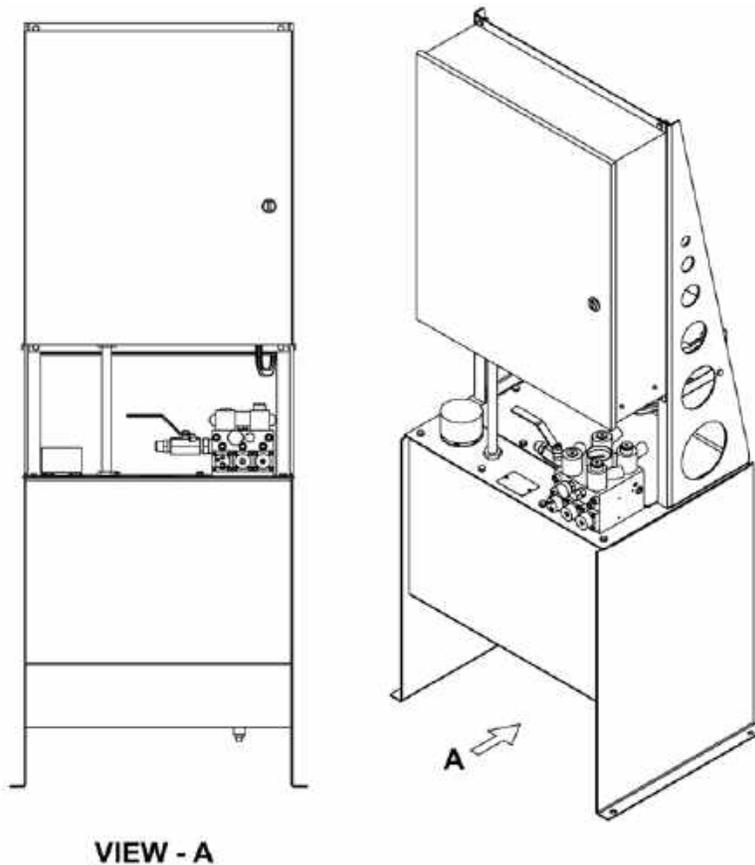
## Machine Room Requirements

In order to meet the code requirements, the hydraulic pump unit, GFI duplex receptacle and fused disconnect switches (elevator lighting) must be located in a dedicated machine room with a minimum overhead of 7' (2134 mm). Adequate working space in the machine room includes, clearance in front of the pump unit and the proper location of the light switch and disconnect switches. Please refer to your job specific shop drawings or contact your local authorized Garaventa Lift representative for further details.

The optimum location for your machine room is at the lowest level of the building, adjacent to the hoistway, preferably on the same side as the guide rails. The dimensions of the pump unit are 30" wide x 19 1/2" deep x 66 1/4" high (762 x 495 x 1683 mm).

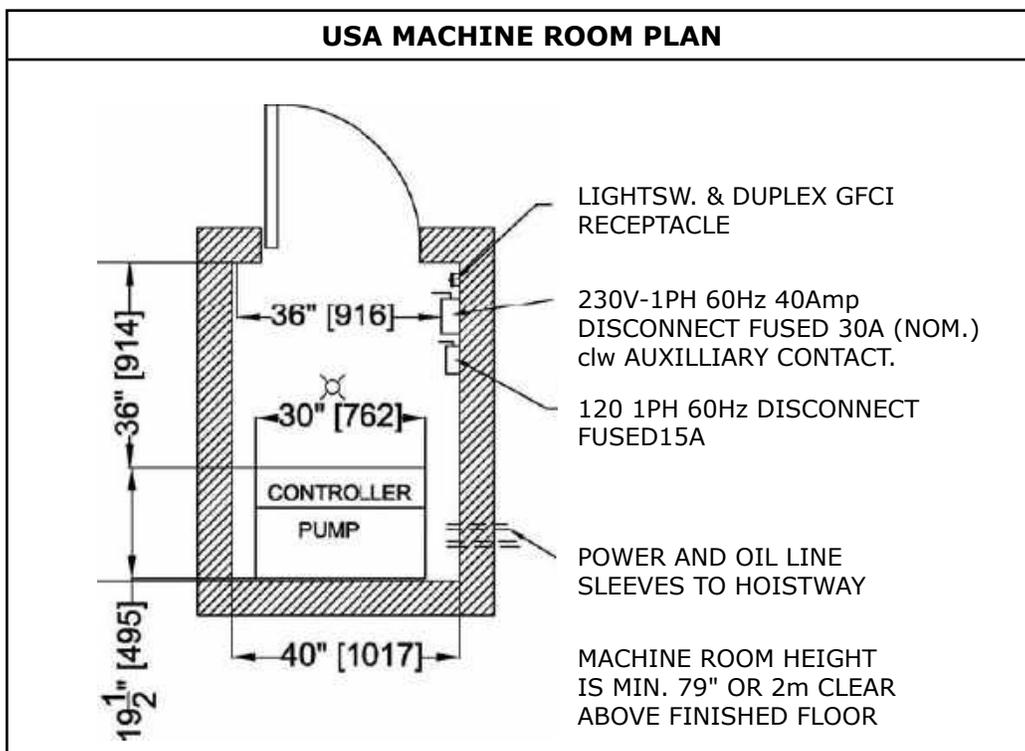
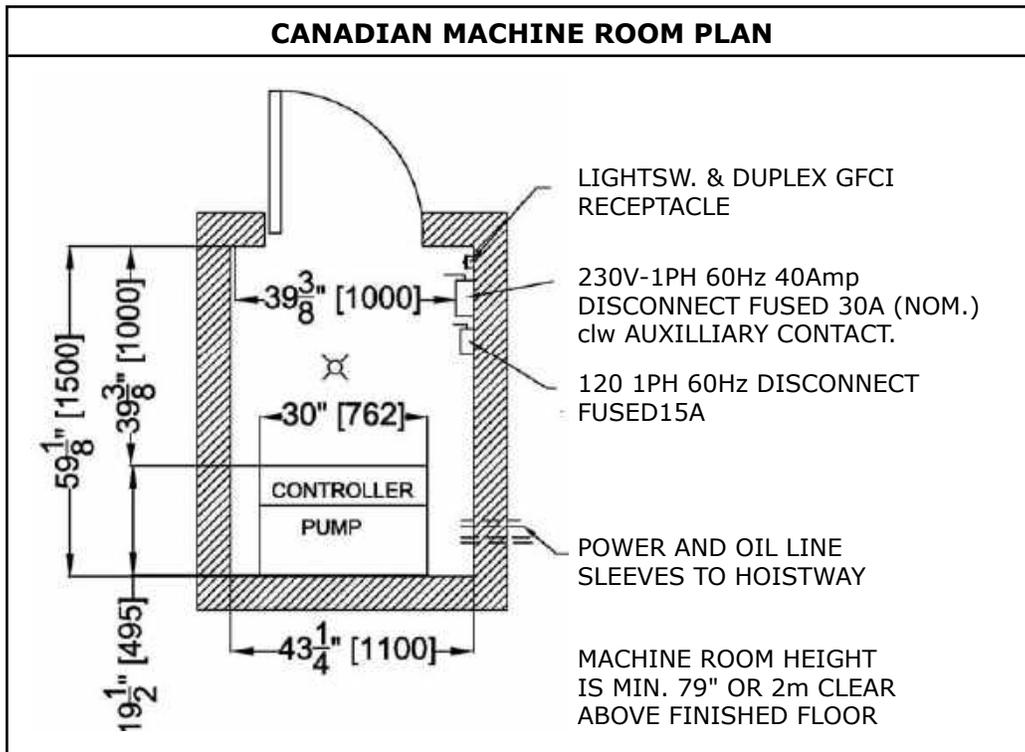
The controller pump assembly can be located up to 25' (7.6 m) from the hydraulic jack.

The controller and pump tank can be separated from each other by a maximum of 10'.



**Please contact your Local Garaventa Lift representative for specific Machine Room Code Requirements.**

## Machine Room Layouts



**Please contact your Local Garaventa Lift representative  
for specific Machine Room Code Requirements.**

## Machine Room Layouts (Continued)

Two dedicated PVC sleeves, at least 3" (76 mm) in diameter, will be required between the hoistway and the machine room, one sleeve for the hydraulic hose and one for the electrical conduit. This is to enable the installers to make the connection between the cylinder and the pumping unit. The sleeves should enter the hoistway at either corner of the support wall.

**Contact your local authorized Garaventa Lift representative for code specific requirements and further details.**

### Lighting:

The machine room must be provided with at least 100 lx lighting over the pumping unit and disconnect switches.



### Electrical Disconnects:

In the machine room you will need to provide two lockable fused disconnects – one 15 amp for lighting and one 30 amp for the pumping unit. Disconnect switches should be located on the strike (lock) side of the machine room door. In accordance to the electrical code, you must provide a minimum of 36" (915mm) in the United States and 39 3/8" (1000mm) in Canada of working space in front of each disconnect switch.

The 30A disconnect switch for the pump unit requires an auxiliary contact.

The fused disconnect switch rating and fuse rating for the lift will be shown on the shop drawings for your project.

At least one GFCI duplex receptacle connected to a 15 amp branch circuit shall be installed in the machine room.

### Ventilation Requirements:

No special requirements. The elevator drive unit will generate approximately 3200 BTU per hour under normal operating conditions. Recommended temperature for elevator equipment is 50° – 90° F (15° – 32° C) and 5% – 90% non-condensing.

## Mains Power Requirements

The standard motor on the pump unit is 5 HP and it can be ordered to suit either three phase or single phase power.

**Standard: 208 VAC Three phase 30 amps**  
**Optional: 230 VAC Single phase 40 amps**

### Emergency Battery Lowering

In case of a power outage the elevator is provided with a second power source that allows the car to be lowered to the lowest landing. While descending, the car can stop and the passenger can exit the car on any landing along the way.



Creating An Accessible World

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