



PLANNING GUIDE

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Always Smooth Sailing

Introduction

This guide should be used to assist architects, contractors, home owners, and professional elevator installers who are planning for a SHE home elevator that meets the applicable ASME A17.1 code. It is extremely important to contact your local AHJ (authority having jurisdiction) in your area for all requirements governing the installation and use of elevators in a private residence.

This guide provides nominal dimensions and specifications for initial evaluation and planning. Before construction begins, final approval drawings with customer specifics should be reviewed and approved by all parties involved.

The SHE is configured to meet and exceed standards set forth by ASME A17.1 Section 5.3. Dimensions and specification are subject to change without notice due to product enhancements and evolving codes and/or product applications.

The SEES Home Elevator requires 230VAC single phase 60Hz circuit with a neutral and ground, 20 amp circuit for the counterweight drive system.

Basic Steps for planning the S.H.E:

1. Determine customers requirements and intent for use.
2. Determine code requirements for the site.
3. Determine installation constraints such as car type and hoistway size.

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SEES SHE RESIDENTIAL ELEVATOR SPECIFICATIONS

**This elevator meets the requirements of ASME A17.1 2000
Section 5.3 for a residential elevator.**

General:

40fpm
Minimum Pit Depth: 6"
Maximum Travel: 50'
Minimum Travel: 17"
Maximum number of Stops: 5
Rail System: 6-1/4 lb Rails
Rated Load: 950 lbs (430 kg)
Minimum over head 8'-6" for 84" cab
Minimum over head 9'-6" for 94" cab
230VAC, 60 Hz, 20 Amps Single Phase
2HP motor
Two #60 roller chains

Standard Car:

36" x 48" (12ft²) x 94"
3/4" Light Oak Walls and Ceiling
(4) Recessed halogen lights
Accordion car gate
Unfinished Plywood Flooring
Black powder-coated entrance

Controls:

Programmable Logic Controller
Automatic Operation
COP with handsfree phone Brushed Stainless
HOP Call Station Brushed Stainless
Automatic Car lighting
Automatic homing to desired landing
Emergency stop switch
Emergency alarm button
UPS backup battery for lowering

Safety Devices:

Upper and lower terminal limits
Pit Switch
Counterweight over travel switch
Car gate safety switch
Electromechanical interlocks
Emergency light and alarm
Slack chain safety device

Options:

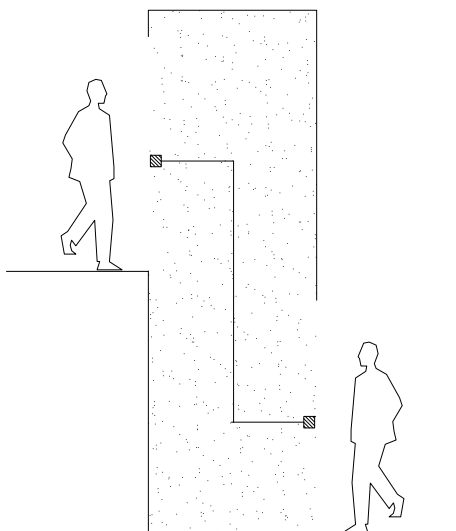
Car platform sizes, maximum 15ft²
84" or 94" Cab Height
Wood veneer options
Wood finishing options
Stainless or Brass COP/HOP
Stainless or Brass handrails
Automatic car gate operator
Automatic hoistway operator
Spring buffers
Gate finish options
Key switch controls for COP/HOP

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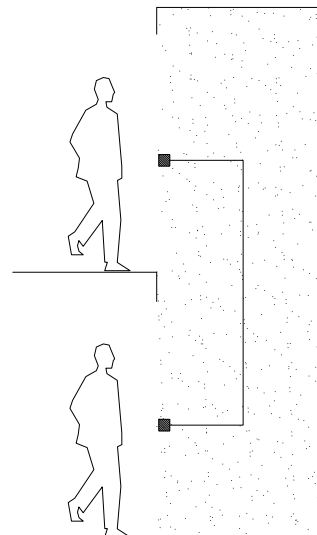
Cab Configurations and Hoistway Planning

The tables listed below are the standard car sizes with accordian gates. Optional pocket gates allow a larger clear opening in the doorway. Custom sizes are available in 2" increments from 36" to 42" width by 48" to 54" depth (12ft² minimum, 15ft² maximum)

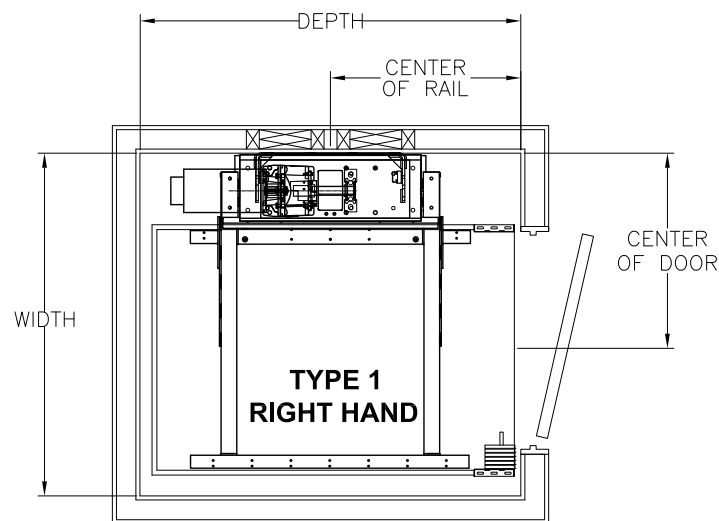
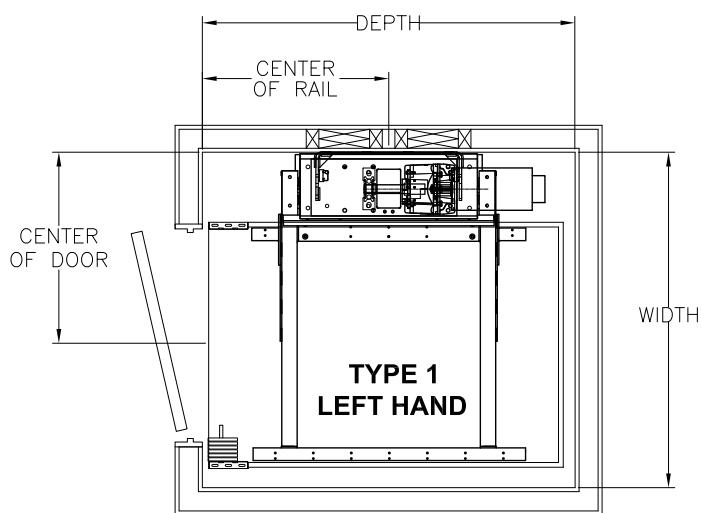
Pass-thru



Enter / Exit Same Side



Type 1 Car – Enter/Exit same side with standard gates



Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	50 ^{1/2} "	55"	28 ^{1/2} "	28 ^{1/2} "	28 ^{5/8} "
36 x 60	50 ^{1/2} "	67"	32 ^{7/8} "	28 ^{1/2} "	28 ^{5/8} "
40 x 54	54 ^{1/2} "	61"	30 ^{1/8} "	28 ^{1/4} " 32 ^{3/4} "†	32 ^{1/8} "

Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	50 ^{1/2} "	55"	26 ^{1/2} "	28 ^{1/2} "	28 ^{5/8} "
36 x 60	50 ^{1/2} "	67"	33"	28 ^{1/2} "	28 ^{5/8} "
40 x 54	54 ^{1/2} "	61"	30"	28 ^{1/4} " 32 ^{3/4} "†	32 ^{1/8} "

† Dimension when car gate is mounted opposite side from what is shown.

Cab Configurations and Hoistway Planning

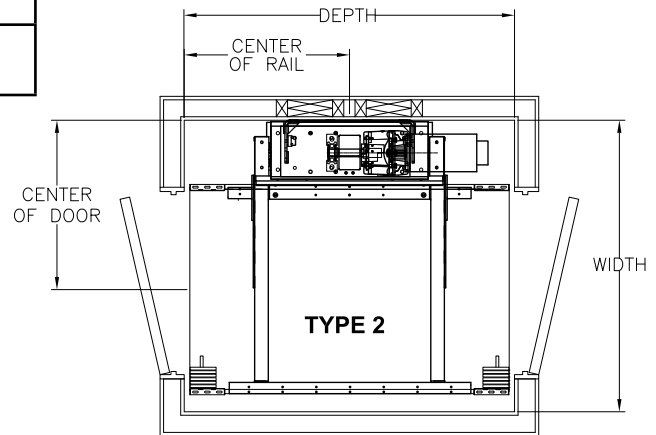
Type 2 Car – Straight-Thru with Standard Gates

Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	50 ^{1/2"}	55 ^{1/2"}	29 ^{1/4"}	28 ^{1/2"}	28 ^{5/8"}
36 x 60	50 ^{1/2"}	67 ^{1/2"}	33 ^{3/4"}	28 ^{1/2"}	28 ^{5/8"}
40 x 54	54 ^{1/2"}	61 ^{1/2"}	30 ^{3/4"}	28 ^{1/4"} 32 ^{3/4"} †	32 ^{1/8"}

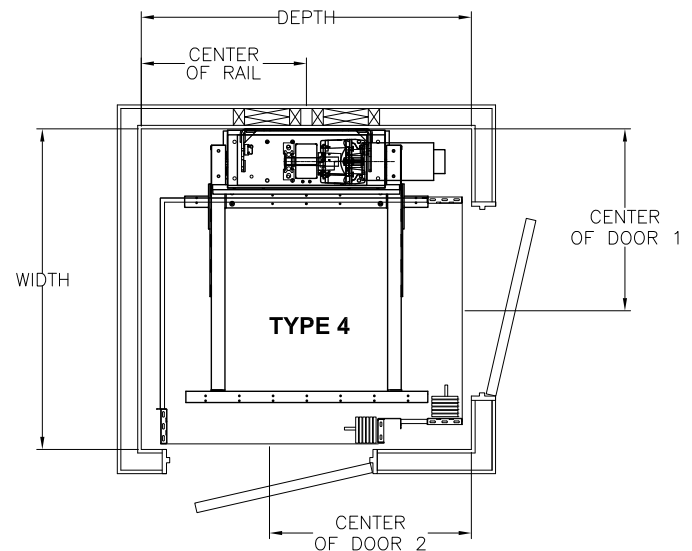
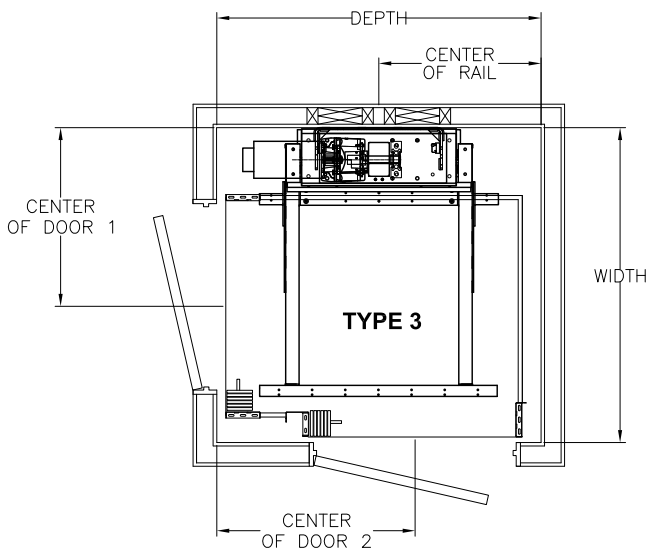
† Dimension when car gate is mounted opposite side from what is shown.

Note:

All hoistway sizes depicted are intended for use with standard electromechanical interlocks.



Type 3 and Type 4 Car – Enter/Exit 90deg side with standard gates



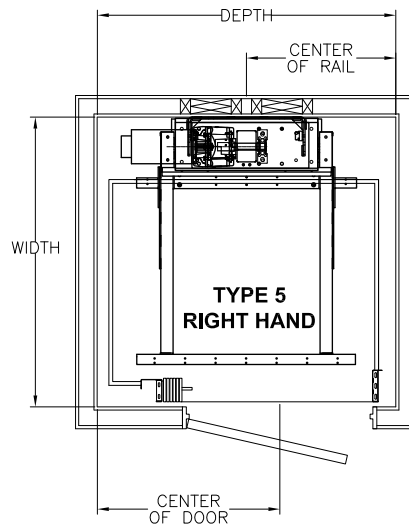
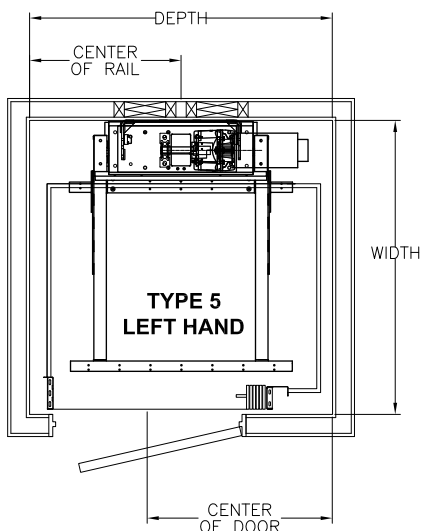
Car Size	Width	Depth	Center of Rail	Center of Dr 1	Center of Dr 2	Door 1 Opening	Door 2 Opening
36x48	52 ^{1/8"}	55"	28 ^{1/2"}	28 ^{1/2"}	33 ^{1/2"} 33 ^{1/4"} †	28 ^{5/8"}	28 ^{5/8"}
36x60	52 ^{1/8"}	67"	32 ^{7/8"}	28 ^{1/2"}	45 ^{1/2"} 45 ^{1/4"} †	28 ^{5/8"}	28 ^{5/8"}
40x54	56 ^{1/8"}	61"	30 ^{1/8"}	28 ^{1/4"} 32 ^{3/4"} †	39 ^{1/2"} 35 ^{1/4"} †	32 ^{1/8"}	32 ^{1/8"}

Car Size	Width	Depth	Center of Rail	Center of Dr 1	Center of Dr 2	Door 1 Opening	Door 2 Opening
36x48	52 ^{1/8"}	55"	26 ^{1/2"}	28 ^{1/2"}	33 ^{1/2"} 33 ^{1/4"} †	29"	28 ^{5/8"}
36x60	52 ^{1/8"}	67"	33"	28 ^{1/2"}	45 ^{1/2"} 45 ^{1/4"} †	29"	28 ^{5/8"}
40x54	56 ^{1/8"}	61"	30 ^{1/8"}	28 ^{1/4"} 32 ^{3/4"} †	39 ^{1/2"} 35 ^{1/4"} †	32"	32 ^{1/8"}

† Dimension when car gate is mounted opposite side from what is shown.

Cab Configurations and Hoistway Planning

Type 5 Car – Enter/Exit adjacent side with standard gates

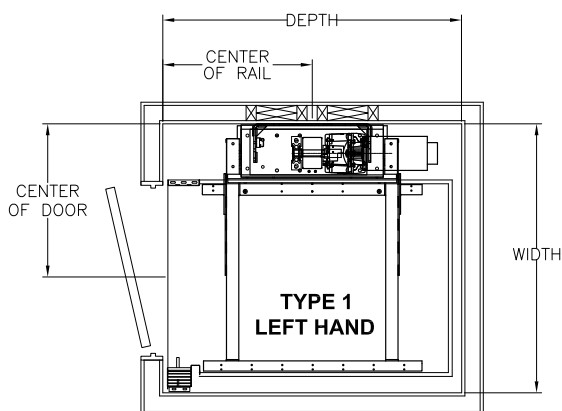


Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	52 ^{1/8"}	55"	25 ^{1/2"}	33 ^{1/2"} 29 ^{1/2"}	32 ^{1/8"}
36 x 60	52 ^{1/8"}	67"	33"	45 ^{1/2"} 41 ^{7/8"}	32 ^{1/8"}
40 x 54	56 ^{1/8"}	61"	30 ^{1/8"}	39 ^{1/2"} 35 ^{1/4"} †	32 ^{1/8"}

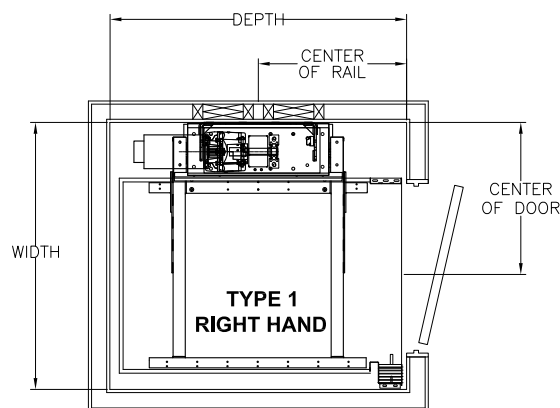
Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	52 ^{1/8"}	55"	28 ^{1/2"}	33 ^{1/2"} 29 ^{3/4"}	32 ^{1/8"}
36 x 60	52 ^{1/8"}	67"	32 ^{7/8"}	45 ^{1/2"} 41 ^{7/8"}	32 ^{1/8"}
40 x 54	56 ^{1/8"}	61"	30 ^{1/8"}	39 ^{1/2"} 35 ^{1/4"} †	32 ^{1/8"}

† Dimension when car gate is mounted opposite side from what is shown.

Type 1 Car – Left hand car with optional pocket gate (Gate stack – opposite rails)



Type 1 Car – Right hand car with optional pocket gate (Gate stack – opposite rails)

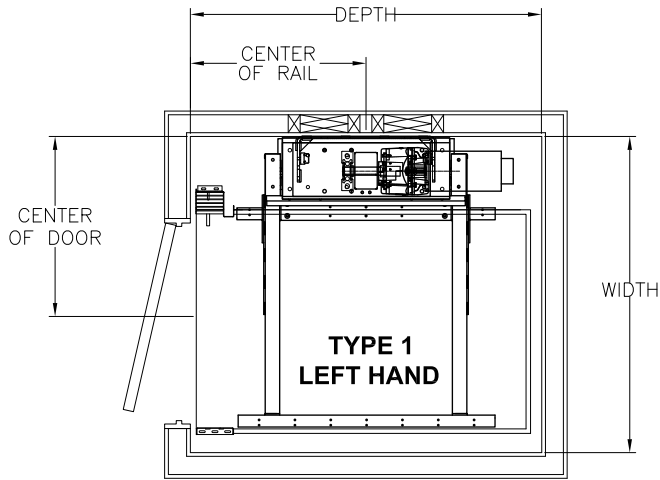


Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	54"	55"	28 ^{1/2"}	28 ^{1/2"}	32 ^{1/8"}
36 x 60	54"	67"	32 ^{7/8"}	28 ^{1/2"}	32 ^{1/8"}
40 x 54	58"	61"	30 ^{1/8"}	28 ^{1/2"}	35 ^{7/8"}

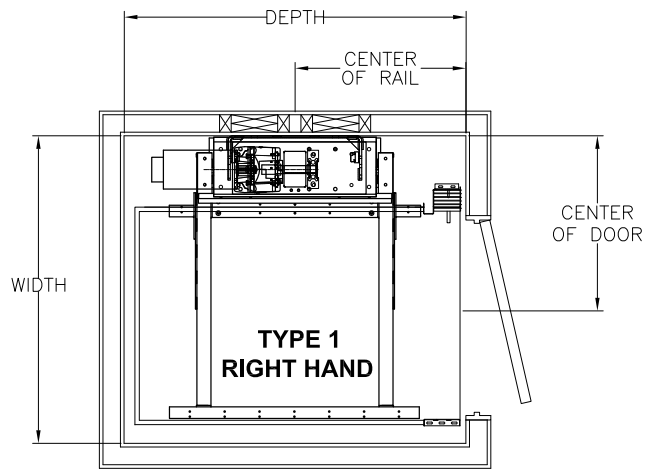
Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	54"	55"	26 ^{1/2"}	28 ^{1/2"}	32 ^{1/8"}
36 x 60	54"	67"	33"	28 ^{1/2"}	32 ^{1/8"}
40 x 54	58"	61"	30"	28 ^{1/2"}	35 ^{7/8"}

Cab Configurations and Hoistway Planning

Type 1 Car – Left hand car with optional pocket gate (Gate stack – rail side)



Type 1 Car – Right hand car with optional pocket gate (Gate stack – rail side)



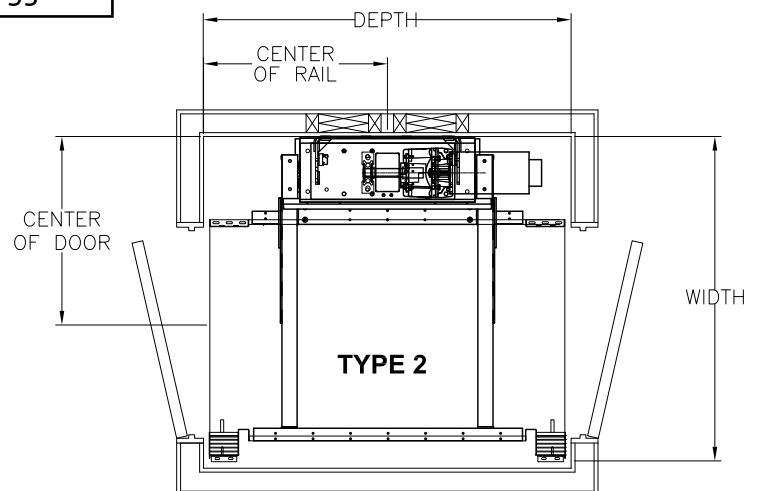
Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	50 ^{1/2"}	55"	28 ^{1/2"}	28 ^{1/2"}	32 ^{1/8"}
36 x 60	50 ^{1/2"}	67"	32 ^{7/8"}	28 ^{1/2"}	32 ^{1/8"}
40 x 54	54 ^{1/2"}	61"	30 ^{1/8"}	32 ^{3/4"}	35 ^{7/8"}

Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	50 ^{1/2"}	55"	26 ^{1/2"}	28 ^{1/2"}	32 ^{1/8"}
36 x 60	50 ^{1/2"}	67"	33"	28 ^{1/2"}	32 ^{1/8"}
40 x 54	54 ^{1/2"}	61"	30"	32 ^{3/4"}	35 ^{7/8"}

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Type 2 Car – Straight-Thru with optional pocket gates (Gate stack – opposite rails)

Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	54"	55 ^{1/2"}	29 ^{1/4"}	28 ^{1/2"}	32 ^{1/8"}
36 x 60	54"	67 ^{1/2"}	33 ^{3/4"}	28 ^{1/2"}	32 ^{1/8"}
40 x 54	58"	61 ^{1/2"}	30 ^{3/4"}	28 ^{1/2"}	35 ^{7/8"}



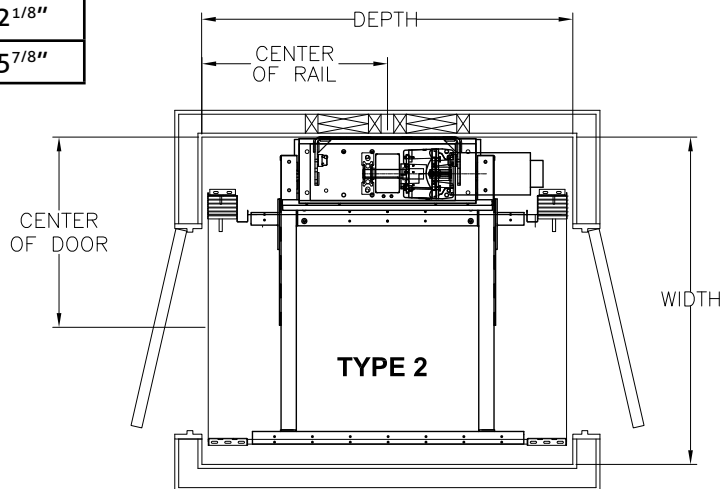
Cab Configurations and Hoistway Planning

Type 2 Car – Straight-Thru with optional pocket gates (Gate stack – rail side)

Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	50 ^{1/2"}	55 ^{1/2"}	29 ^{1/4"}	28 ^{1/2"}	32 ^{1/8"}
36 x 60	50 ^{1/2"}	67 ^{1/2"}	33 ^{3/4"}	28 ^{1/2"}	32 ^{1/8"}
40 x 54	54 ^{1/2"}	61 ^{1/2"}	30 ^{3/4"}	32 ^{3/4"}	35 ^{7/8"}

Note:

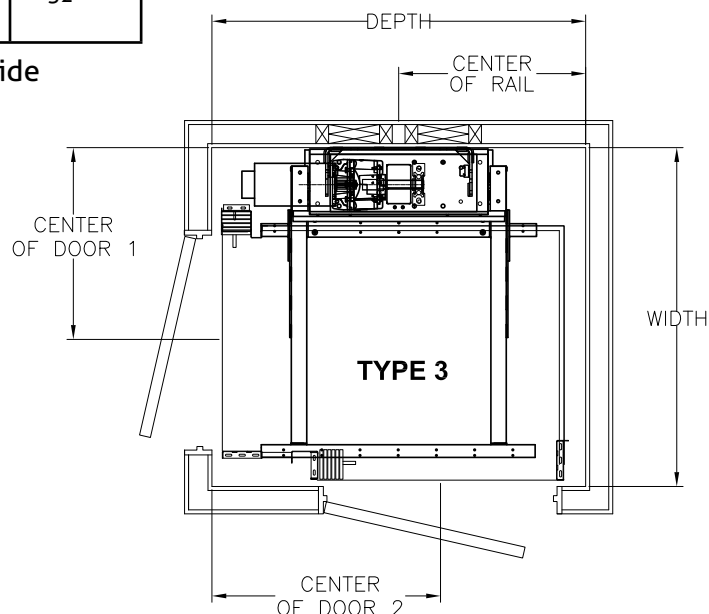
All hoistway sizes depicted are intended for use with standard electromechanical interlocks.



Type 3 – Enter/Exit 90deg side with optional pocket gates – (Gate Stack - rail side)

Car Size	Width	Depth	Center of Rail	Center of Dr 1	Center of Dr 2	Clearance of Dr 1	Clearance of Dr 1
36x48	52 ^{1/8"}	55"	28 ^{1/2"}	28 ^{1/2"}	33 ^{1/2"} 33 ^{1/4"} †	32 ^{1/8"}	28 ^{5/8"}
36x60	52 ^{1/8"}	67"	32 ^{7/8"}	28 ^{1/2"}	45 ^{1/2"} 41 ^{3/4"} †	32 ^{1/8"}	32 ^{1/8"}
40x54	56 ^{1/8"}	61"	30 ^{1/8"}	32 ^{3/4"}	39 ^{1/2"} 35 ^{1/4"} †	35 ^{1/8"}	32 ^{1/8"}

† Dimension when car gate is mounted opposite side from what is shown.

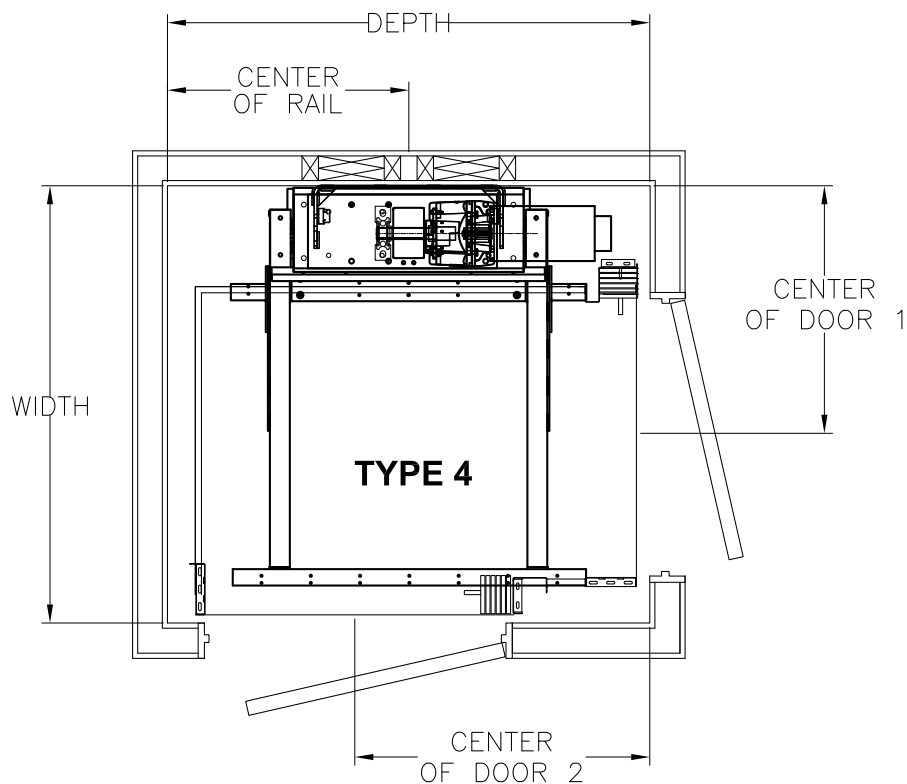


Cab Configurations and Hoistway Planning

Type 4 – Enter/Exit 90deg side with optional pocket gates – (Gate Stack - rail side)

Car Size	Width	Depth	Center of Rail	Center of Dr 1	Center of Dr 2	Clearance of Dr 1	Clearance of Dr 1
36x48	52 ¹ / ₈ "	55"	26 ¹ / ₂ "	28 ¹ / ₂ "	33 ¹ / ₂ " 33 ¹ / ₄ "†	32 ¹ / ₈ "	28 ⁵ / ₈ "
36x60	52 ¹ / ₈ "	67"	33"	28 ¹ / ₂ "	45 ¹ / ₂ " 41 ³ / ₄ "†	32 ¹ / ₈ "	32 ¹ / ₈ "
40x54	56 ¹ / ₈ "	61"	30 ¹ / ₈ "	32 ³ / ₄ "	39 ¹ / ₂ " 35 ¹ / ₄ "†	35 ¹ / ₈ "	32 ¹ / ₈ "

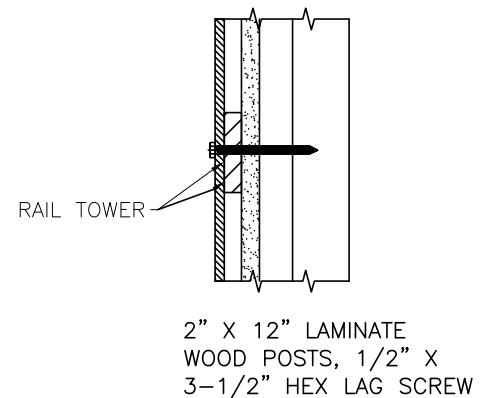
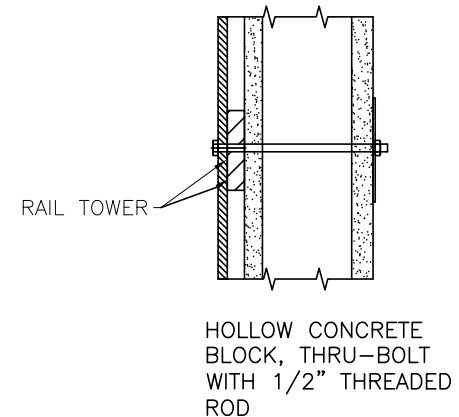
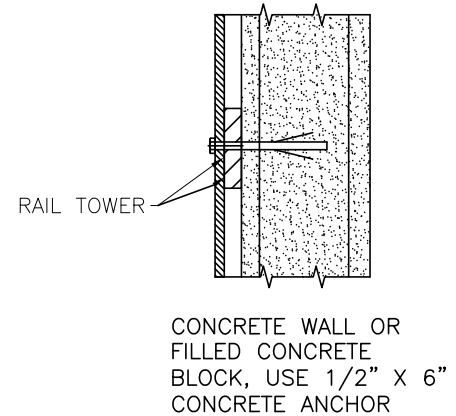
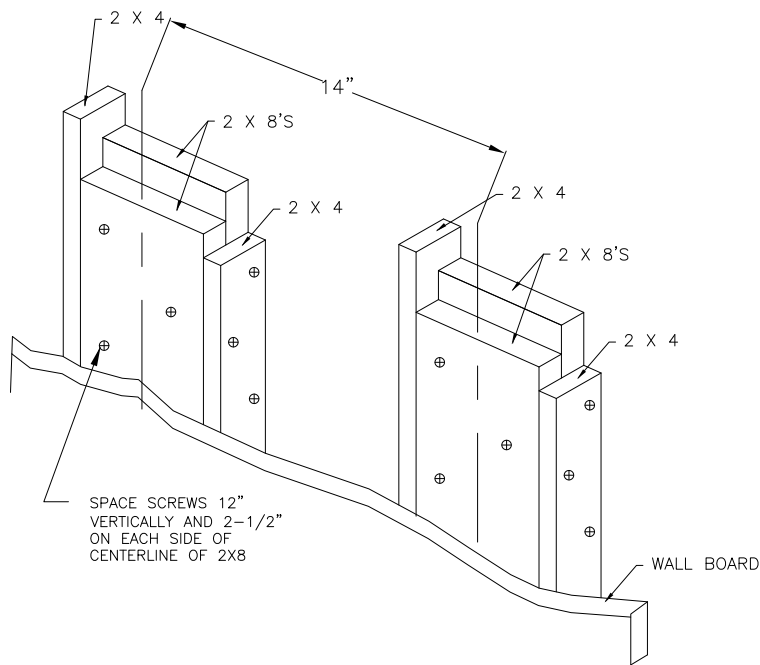
† Dimension when car gate is mounted opposite side from what is shown.



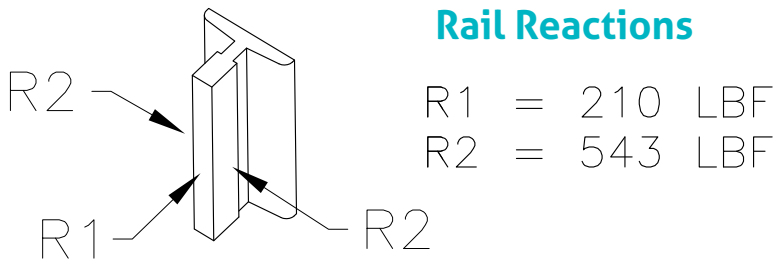
Hoistway Construction Notes

- At the top of the hoistway arrange a power supply before the delivery of the unit, both 230V and 115V. The 230V circuit should originate from a lockable 2 pole fused disconnect positioned near the residences incoming electrical panel. The electrical circuit should be single phase 230V dedicated with neutral and ground. Fusing must be selectively coordinated. Fuse 230V/20 Amp service for controller, fuse 115V/15 Amp service for car lights. A lockable auxiliary 230V and 115V disconnect should be provided and located inside at the top of the hoistway near controller. All electrical to disconnect should be provided and installed by others which comply with applicable codes.
- Electrical wiring and connections to interlocks, pit switch, and hall calls are provided.
- Machine space lighting should be a minimum of 10 foot candles. The light switch should be within 18" of the hoistway access hatch. The light must be guarded to prevent touching the hot bulb or breakage. The light, switch, and bulb are supplied and installed by others to meet code.
- A 115V/15 Amp single phase GFCI outlet must be installed next to the light switch at the top of the hoistway, by others.
- A telephone circuit and jack is provided and installed by others. This should be brought from the top of the hoistway and connected to the phone line of the residence as an extension of the incoming line.
- The elevator controller is 20-1/4"W x 20"H x 7"D and should be attached to the rail wall of the hoistway.
- Hoistway must have a minimum of 18" x 24" lockable access hatch located at the top of the hoistway. The access hatch must provide access to the controller and drive assembly.
- A load bearing wall is required to sustain rail reactions as specified in the rail reactions drawing.
- The pit needs to be level and walls straight and plumb throughout the hoistway. Hoistway construction and pit by others.
- The pit floor should be constructed to withstand an impact load of 3200 lbs. Ref ASME/ANSI A17.1 section 106.
- Hoistway requirements for construction may vary from state to state. Dimensions given are manufacturers recommended clearances. They reflect the access and running clearances. Consult local authority having jurisdiction to comply to state and local codes.
- Hoistway should be free from any pipes, wires, and obstructions not related to the operation of the elevator.
- Clearances from door sill to hoistway door to be 3" max and elevator car door to hoistway door to be 5" max.
- Hoistway doors must be aligned with the door centerline shown on plan view details.

Hoistway Construction Notes



Rail Reactions



$$R1 = 210 \text{ LBF}$$

$$R2 = 543 \text{ LBF}$$

RAIL REACTIONS DO NOT INCLUDE SAFETY FACTORS. APPLICABLE SAFETY FACTORS MUST BE INCLUDED
 *WALL ATTACHMENT PULL-OUT FORCE IS 147 LBF PER FASTENER

Guide Rail Backing

* RAIL BACKING CONSISTS OF TWO (2) RAILS, MOUNTED 14" APART AT CENTER. FOLLOW THE INSTRUCTIONS BELOW FOR EACH SEPARATE RAIL.

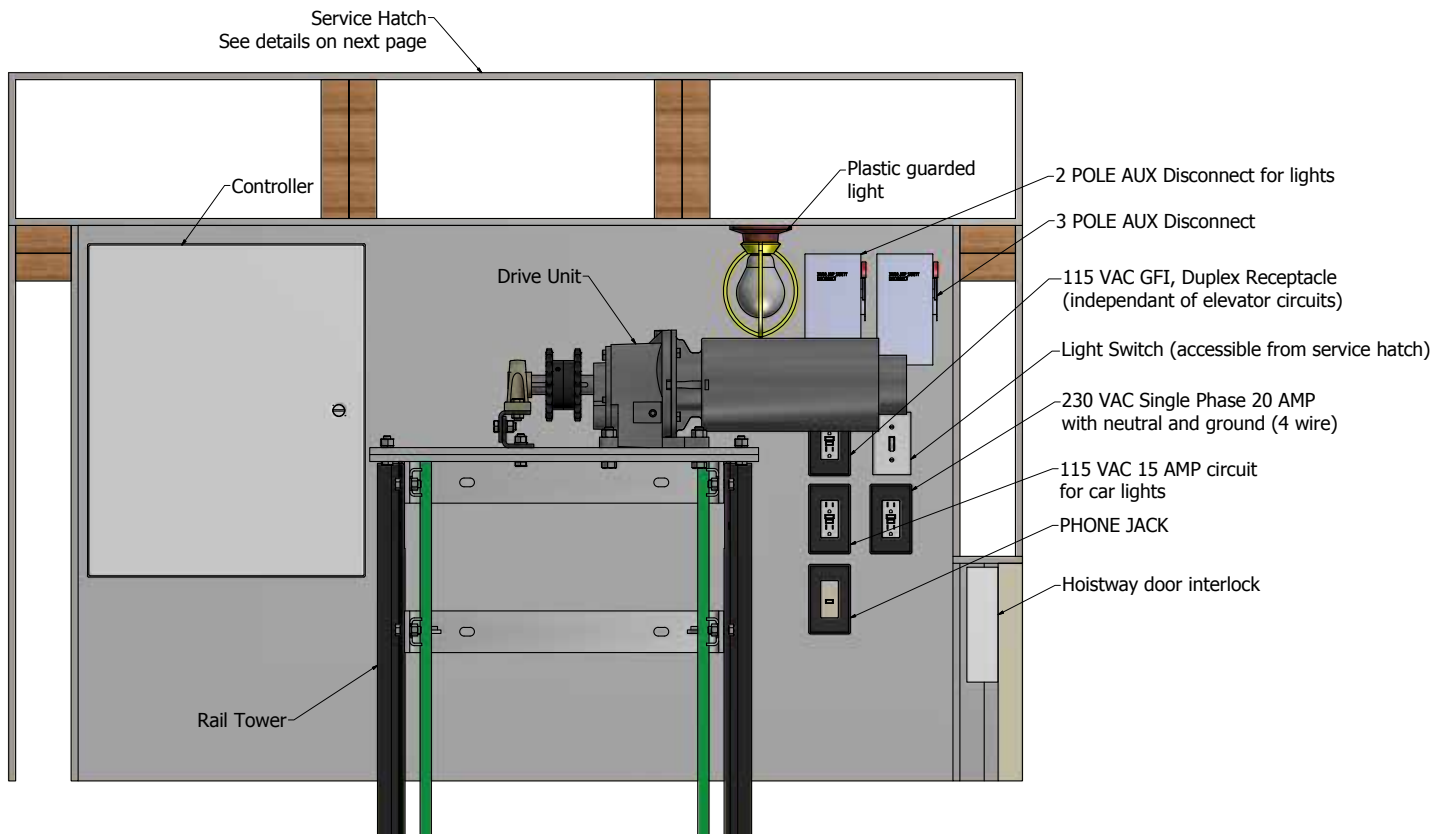
* LAMINATE (2) 2X8'S AND (2) 2X4'S WITH GLUE AND #8 2-1/4" WOOD SCREWS (MIN.)

* OVERLAP JOINTS OF THE LUMBER AS NECESSARY FOR STRUCTURAL RIGIDITY.

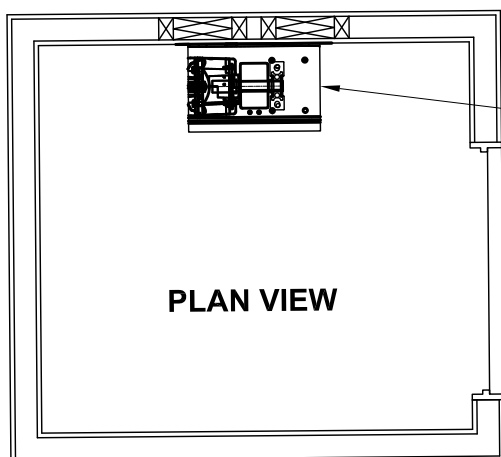
* GUIDE RAIL BACKING MUST BE TIED TO A HORIZONTAL STRUCTURAL MEMBER (HEADER OR FLOOR PLATE) AT TOP, BOTTOM, AND A MAXIMUM OF 10' BETWEEN.

Typical SHE Counterweight Chain Drive Construction

Typical SHE Counterweight Chain Drive Diagram



Service Access Hatch



Recommended access hatch location.
18" x 24" min. hatch opening above the controller and drive assembly.
If space is not available, access through a wall must be provide. Cannot be on the rail wall.
Door needs to be self closing and lockable.