

# LEV<sup>®</sup> II

## The Next Level.™

### Planning Guide

for Residential Elevators

ASME A17.1, Part V, Section 5.3

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ThyssenKrupp Access



## Introduction

This planning guide is designed to assist architects, contractors, home owners and elevator professionals in planning for a home elevator that meets the requirements of ASME A17.1 Part V Section 5.3.

We strongly recommend you contact the codes authority having jurisdiction in the area(s) where the elevator will be installed. Become familiar with all requirements governing the installation and use of elevators in private residences. It is extremely important for you to know and adhere to all regulations concerning installation and use of elevators.

### IMPORTANT NOTICE:

This Planning Guide provides nominal dimensions and specifications useful for INITIAL planning of an elevator project. BEFORE beginning actual construction, be sure to receive application drawings customized with specifications and dimensions for your specific project. Call 1-800-829-9760 to find a dealer in your area or visit our website, [www.tkaccess.com](http://www.tkaccess.com) and click on "Request Information".

Elevator configurations and dimensions are in accordance with our interpretation of the standards set forth by ASME A17.1 Part V Section 5.3. Please consult ThyssenKrupp Access or an authorized dealer in your area for more specific information pertaining to your project, including any deviation between referenced standards and those of any local codes or laws. Always contact local codes authorities for any variation to standards.

The dimensions and specifications in this planning guide are subject to constant change (without notice) due to product enhancements and continually evolving codes and product applications.

This elevator requires 230 VAC, single phase 60 Hz circuit with **ground**. Fused 20 amp circuit for counterweighted chain drive. A separate 115 VAC, single phase 60 HZ circuit with ground fused 10 amp for light circuits.

## Steps of planning for a Lev® II Home Elevator:

1. Determine customer's intention for use.
2. Determine code requirements of site.
3. Determine installation parameters of site.
4. Determine the car type and hoistway size requirements (see pages 5 through 10).

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## EQUIPMENT FOR LEV RESIDENTIAL ELEVATOR

This elevator meets the requirements of ASME A17.1  
Part V, Section 5.3 for a residential elevator.

### General:

- Speed: 40 fpm (.20ms)
- Minimum pit depth: 6"
- Maximum travel: 50'
- Maximum number of stops: 6  
(minimum 17" travel between stops)
- Rated load: 950 lbs. (430 kg) (750 and 700 lbs. available)
- Minimum overhead clearance 9'-0"

### Mechanical Equipment:

- 230 VAC, 60 Hz, 20 amp single phase power supply with ground (3 wires)
- Two #60 roller chains
- Frequency controlled variable speed geared machine with counterweighted chain drive, 2 hp motor
- Modular Dual 6<sup>1</sup>/<sub>4</sub> lb. T-rail system
- Sling assembly

### Car and Appointments:

- 36" x 48" (12 ft<sup>2</sup>) x 84" high car size
- Melamine wall panels in choice of champagne, light oak, dark oak or white
- White ceiling
- Two recessed halogen lights
- Wooden handrail to match wall panels
- Unfinished plywood floor (with removable insert for 3/4" thick finished floor by others)
- Telephone

### Controls:

- Programmable Logic Controller (PLC) with digital signal processor
- Fully automatic operation
- Car operating panel (brushed stainless steel or brass) with LED floor position/diagnostic display and call acknowledgment
- Hall stations (brushed stainless steel or brass) with LED floor position/diagnostic display and call acknowledgment
- Automatic car lighting with constant on switch
- Automatic homing to a designated floor
- Run stop switch
- Emergency alarm button
- Hoistway wiring with conduit (hall stations / interlocks)
- Uninterruptible power supply (UPS) for lowering (elevator lowers to next floor) and automatic gate operation (if supplied) in case of a power failure

### Safety Devices:

- Slack chain safety device
- Service switch for car light circuit
- Service switch for elevator controller and drive
- Upper and lower terminal limits
- Final limits (2 upper, 1 lower)
- Pit switch
- Car top stop switch
- Battery backup emergency light and alarm
- Car gate safety switch
- Electromechanical interlocks (for doors by others)

### Options:

- Remote located electrical controller
- 36" x 60" (15 ft<sup>2</sup>) or 40" x 54" (15 ft<sup>2</sup>) car sizes (custom sizes are available in 1" increments from 36" to 42" width by 48" to 60" depth -12 ft<sup>2</sup> minimum, 15 ft<sup>2</sup> maximum)
- Special car size (15 ft<sup>2</sup> maximum, 12 ft<sup>2</sup> minimum)
- 88" or 94" inside car heights (requires additional overhead space)
- Unfinished wood veneer panels (oak, cherry or birch)
- Unfinished inset wood veneer panel walls (oak, cherry, maple or birch)
- Factory applied finish to wood veneer panels and handrail
- Raised wood panel walls (oak, cherry, maple or birch) with choice of finish. See available finishes at [www.tkaccess.com/minwax](http://www.tkaccess.com/minwax)
- Recessed telephone cabinet (brushed stainless steel or brass, or polished stainless steel or brass)
- Matching wood veneer ceiling panel\*
- Hall stations and car operating panel can be provided in polished stainless steel or brass
- Metal handrail (brushed stainless steel or brass, or polished stainless steel or brass)
- Automatic car gate operator
- Automatic hoistway door operator
- GAL Type 'N' interlocks (requires additional hoistway space)
- Buffer springs (requires 12" deep pit minimum)
- Overhead Refuge Device
- Access Hitch Switch

### Car Gate Upgrades:

- Accordion car gate with 3 clear vision panels
- Accordion car gate with all clear vision panels
- Deluxe Visifold® accordion car gate
- Accordion car gate with solid aluminum panels (clear or brass anodized finish)
- Accordion car gate with perforated aluminum panels (clear or brass anodized finish)
- Accordion car gate in choice of champagne, chalk, light oak, dark oak or white
- Non-Pocketed gate available on all Lev elevator cabs

### Control Upgrades:

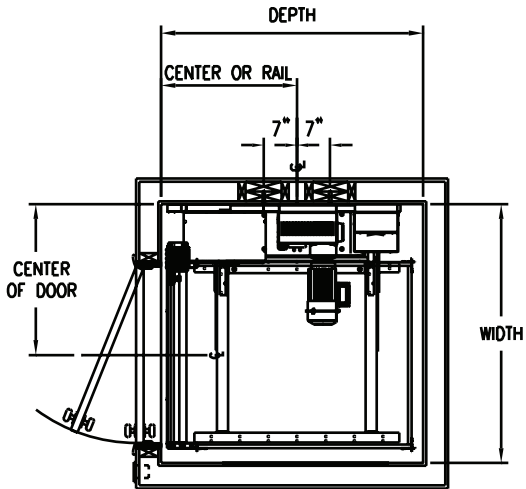
- Key switch controls in car operating panel and/or hall stations

\*Not available with melamine wall panels.

The tables on pages 5 - 7 illustrate standard pocket gates that allow a larger clear opening in the doorway. The tables on pages 8-10 illustrate the three standard car sizes with optional non-pocketed gates. Custom sizes are available in 1" increments from 36" to 42" width by 48" to 60" depth (12 ft<sup>2</sup> minimum, 15 ft<sup>2</sup> maximum). Consult ThyssenKrupp Access for hoistway details.

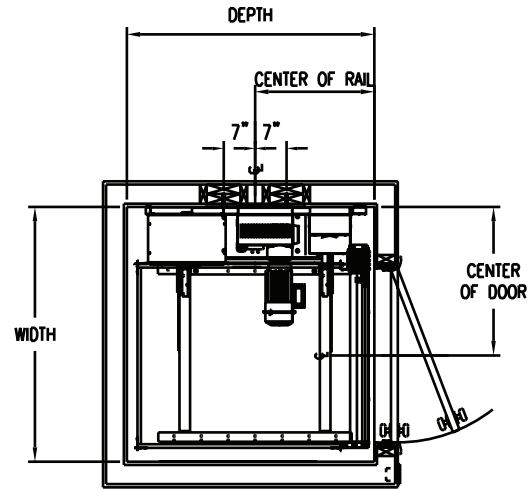
**Note: All dimensions are to inside finished walls.**

**Type 1 - Left Hand Car with Standard Pocket Gate**  
Gate Stack - Rail Side



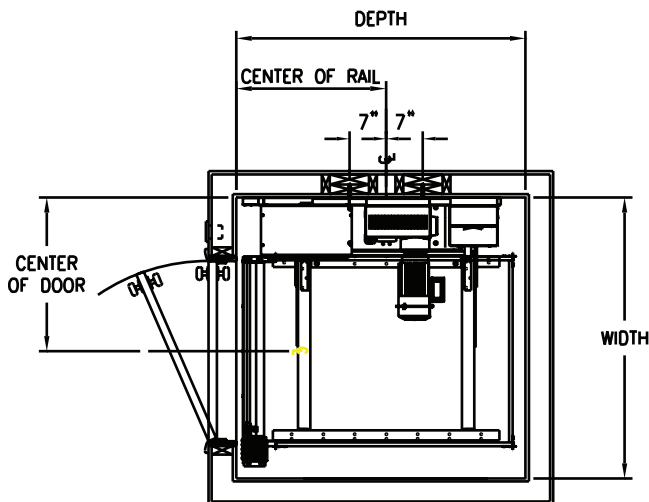
Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	52 <sup>3</sup> / <sub>4</sub> "	55"	28 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
36 x 60	52 <sup>3</sup> / <sub>4</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
40 x 54	56 <sup>3</sup> / <sub>4</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	34 <sup>3</sup> / <sub>4</sub> "	35 <sup>7</sup> / <sub>8</sub> "

**Type 1 - Right Hand Car with Standard Pocket Gate**  
Gate Stack - Rail Side



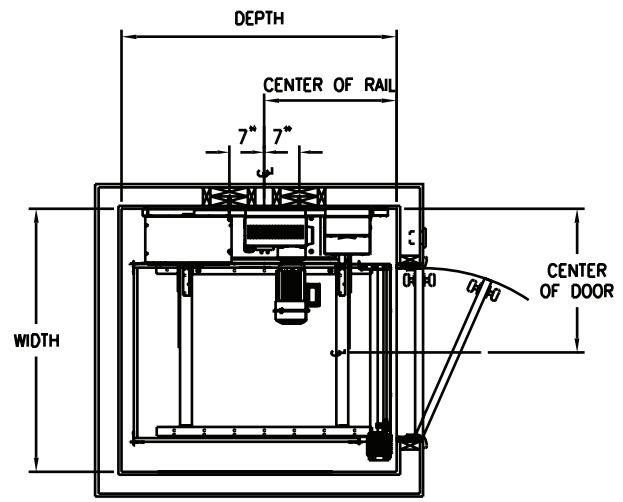
Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	52 <sup>3</sup> / <sub>4</sub> "	55"	26 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
36 x 60	52 <sup>3</sup> / <sub>4</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
40 x 54	56 <sup>3</sup> / <sub>4</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	34 <sup>3</sup> / <sub>4</sub> "	35 <sup>7</sup> / <sub>8</sub> "

**Type 1 - Left Hand Car with Standard Pocket Gate**  
Gate Stack - Opposite Rail



Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	56 <sup>1</sup> / <sub>4</sub> "	55"	28 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
36 x 60	56 <sup>1</sup> / <sub>4</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
40 x 54	60 <sup>1</sup> / <sub>4</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	35 <sup>7</sup> / <sub>8</sub> "

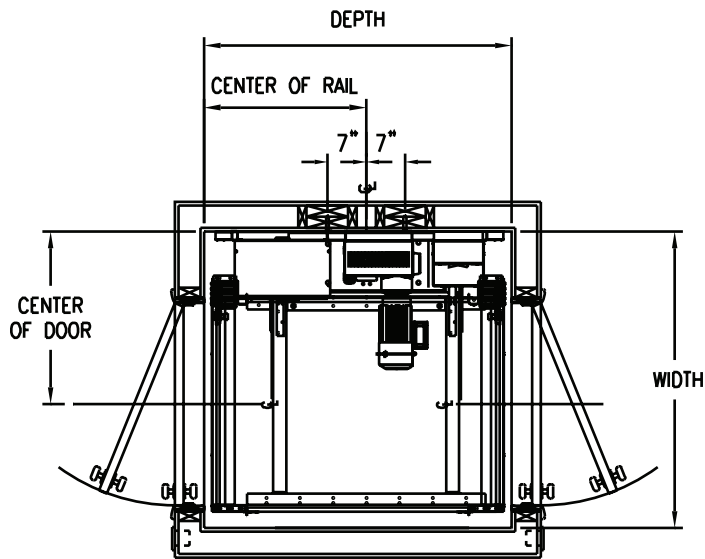
**Type 1 - Right Hand Car with Standard Pocket Gate**  
Gate Stack - Opposite Rail



Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	56 <sup>1</sup> / <sub>4</sub> "	55"	26 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
36 x 60	56 <sup>1</sup> / <sub>4</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
40 x 54	60 <sup>1</sup> / <sub>4</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	35 <sup>7</sup> / <sub>8</sub> "

## Type 2 - Straight-thru Car with Standard Pocket Gates

### Gate Stack - Rail Side



If this configuration is used with an automatic gate operator, a remote controller or 9'-0" overhead is required.

#### Note:

All dimensions are to inside finished walls.

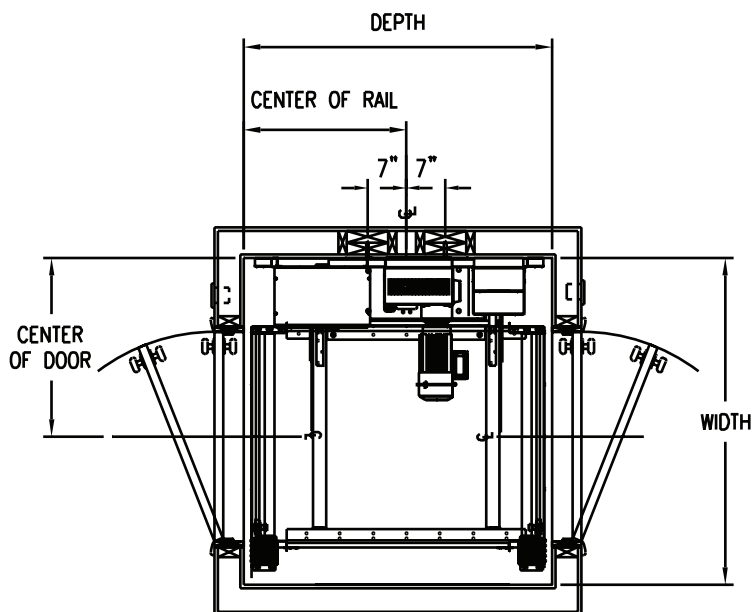
All hoistway sizes shown are for use with standard electromechanical interlocks.

Hoistway sizes change when using optional G.A.L. interlocks. For G.A.L. dimensions and more detailed information of all hoistway sizes, go to: [www.tkaccess.com/levhoistway](http://www.tkaccess.com/levhoistway)

Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	52 <sup>3</sup> / <sub>4</sub> "	55 <sup>1</sup> / <sub>2</sub> "	29 <sup>1</sup> / <sub>4</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
36 x 60	52 <sup>3</sup> / <sub>4</sub> "	67 <sup>1</sup> / <sub>2</sub> "	33 <sup>3</sup> / <sub>4</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
40 x 54	56 <sup>3</sup> / <sub>4</sub> "	61 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	34 <sup>3</sup> / <sub>4</sub> "	35 <sup>7</sup> / <sub>8</sub> "

## Type 2 - Straight-thru Car with Standard Pocket Gates

### Gate Stack - Opposite Rail



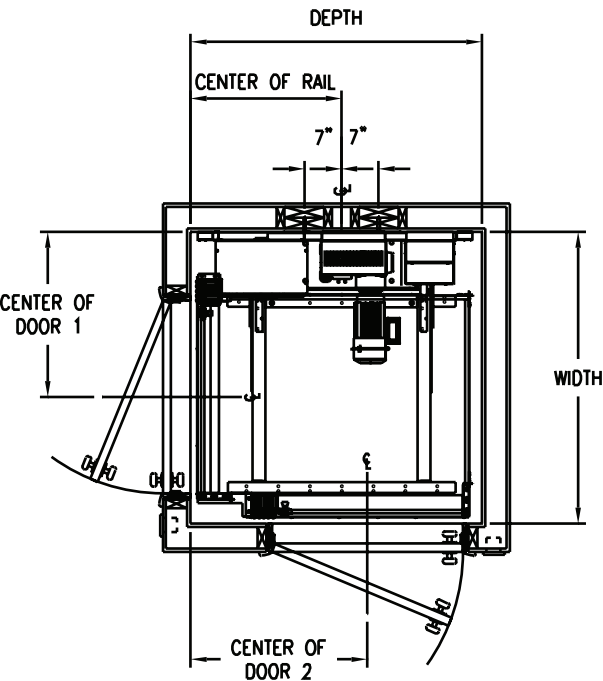
Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	56 <sup>1</sup> / <sub>4</sub> "	55 <sup>1</sup> / <sub>2</sub> "	29 <sup>1</sup> / <sub>4</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
36 x 60	56 <sup>1</sup> / <sub>4</sub> "	67 <sup>1</sup> / <sub>2</sub> "	33 <sup>3</sup> / <sub>4</sub> "	30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "
40 x 54	60 <sup>1</sup> / <sub>4</sub> "	61 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	30 <sup>3</sup> / <sub>4</sub> "	35 <sup>7</sup> / <sub>8</sub> "

Note: All dimensions are to inside finished

### Type 3 - Car with Standard Pocket Gate

Pocket gate only available with gate stack on rail side.

Note: All dimensions are to inside finished walls.



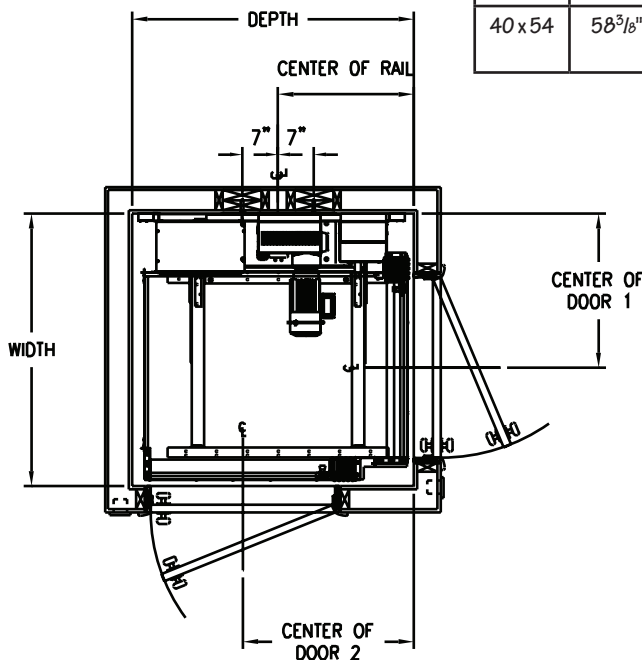
Car Size	Width	Depth	Center of Rail	Center of Door 1	Center of Door 2	Clearance Door 1	Clearance Door 2
36 x 48	54 <sup>3</sup> / <sub>8</sub> "	55"	28 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	33 <sup>3</sup> / <sub>8</sub> " †29 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "	32 <sup>1</sup> / <sub>8</sub> "
36 x 60	54 <sup>3</sup> / <sub>8</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	45 <sup>3</sup> / <sub>8</sub> " †41 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "	32 <sup>1</sup> / <sub>8</sub> "
40 x 54	58 <sup>3</sup> / <sub>8</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	34 <sup>3</sup> / <sub>4</sub> "	39 <sup>3</sup> / <sub>8</sub> " †35 <sup>1</sup> / <sub>2</sub> "	35 <sup>1</sup> / <sub>8</sub> "	32 <sup>1</sup> / <sub>8</sub> "

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

### Type 4 - Car with Standard Pocket Gate

Pocket gate only available with gate stack on rail side.

Car Size	Width	Depth	Center of Rail	Center of Door 1	Center of Door 2	Clearance Door 1	Clearance Door 2
36 x 48	54 <sup>3</sup> / <sub>8</sub> "	55"	26 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	33 <sup>3</sup> / <sub>8</sub> " †29 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "	32 <sup>1</sup> / <sub>8</sub> "
36 x 60	54 <sup>3</sup> / <sub>8</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	45 <sup>3</sup> / <sub>8</sub> " †41 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "	32 <sup>1</sup> / <sub>8</sub> "
40 x 54	58 <sup>3</sup> / <sub>8</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	34 <sup>3</sup> / <sub>4</sub> "	39 <sup>3</sup> / <sub>8</sub> " †35 <sup>1</sup> / <sub>2</sub> "	35 <sup>1</sup> / <sub>8</sub> "	32 <sup>1</sup> / <sub>8</sub> "



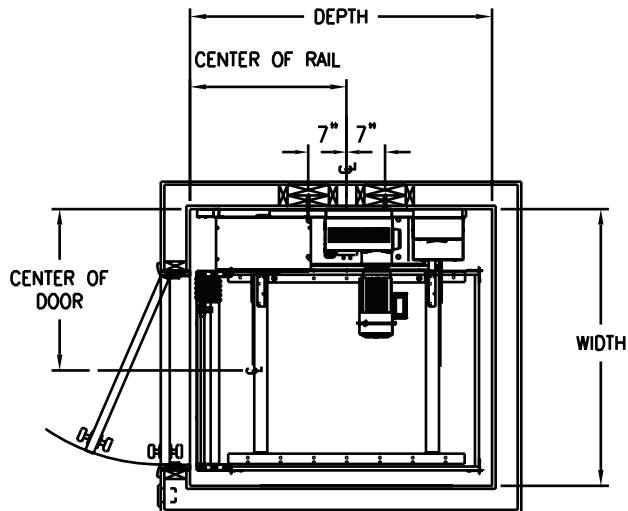
† Dimension when car gate is mounted opposite side from what is shown.

Note:  
All dimensions are to inside finished walls.

All hoistway sizes shown are for use with standard electromechanical interlocks.

Hoistway sizes change when using optional G.A.L. interlocks. For G.A.L. dimensions and more detailed information of all hoistway sizes, go to: [www.tkaccess.com/levhoistway](http://www.tkaccess.com/levhoistway)

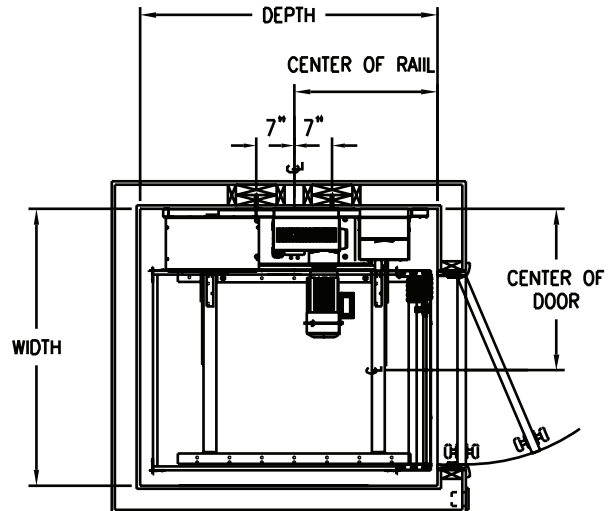
## Hoistway Construction: Type 1 Cars - Enter/Exit Same Side with Optional Non-Pocketed Gate



Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	52 <sup>3</sup> / <sub>4</sub> "	55"	28 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	28 <sup>5</sup> / <sub>8</sub> "
36 x 60	52 <sup>3</sup> / <sub>4</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	28 <sup>5</sup> / <sub>8</sub> "
40 x 54	56 <sup>3</sup> / <sub>4</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	34 <sup>3</sup> / <sub>4</sub> " †30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "

### Note:

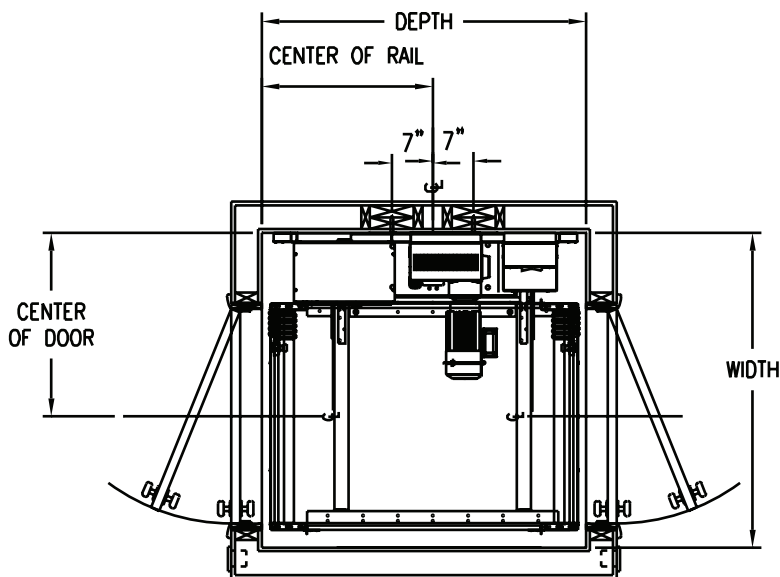
All dimensions are to inside finished walls.



Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	52 <sup>3</sup> / <sub>4</sub> "	55"	26 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	28 <sup>5</sup> / <sub>8</sub> "
36 x 60	52 <sup>3</sup> / <sub>4</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	28 <sup>5</sup> / <sub>8</sub> "
40 x 54	56 <sup>3</sup> / <sub>4</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	34 <sup>3</sup> / <sub>4</sub> " †30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "

† Dimension when car gate is mounted opposite side from what

## Hoistway Construction: Type 2 Car - Straight-Thru with Optional Non-Pocketed



Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	52 <sup>3</sup> / <sub>4</sub> "	55 <sup>1</sup> / <sub>2</sub> "	29 <sup>1</sup> / <sub>4</sub> "	30 <sup>3</sup> / <sub>4</sub> "	28 <sup>5</sup> / <sub>8</sub> "
36 x 60	52 <sup>3</sup> / <sub>4</sub> "	67 <sup>1</sup> / <sub>2</sub> "	33 <sup>3</sup> / <sub>4</sub> "	30 <sup>3</sup> / <sub>4</sub> "	28 <sup>5</sup> / <sub>8</sub> "
40 x 54	56 <sup>3</sup> / <sub>4</sub> "	61 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> "	34 <sup>3</sup> / <sub>4</sub> " †30 <sup>3</sup> / <sub>4</sub> "	32 <sup>1</sup> / <sub>8</sub> "

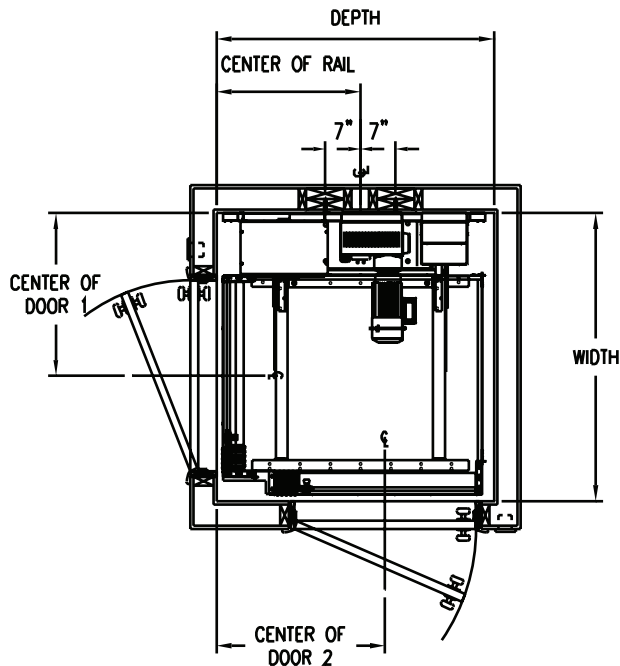
† Dimension when car gate is mounted opposite side from what

### Note:

All dimensions are to inside finished walls.

All hoistway sizes shown are for use with standard electromechanical interlocks. Hoistway sizes change when using optional G.A.L. interlocks. For G.A.L. dimensions and more detailed information of all hoistway sizes, go to: [www.tkaccess.com/levhoistway](http://www.tkaccess.com/levhoistway)

## Hoistway Construction: Type 3 & 4 Cars - Enter/Exit 90° Side with Optional Non-Pocketed Gates

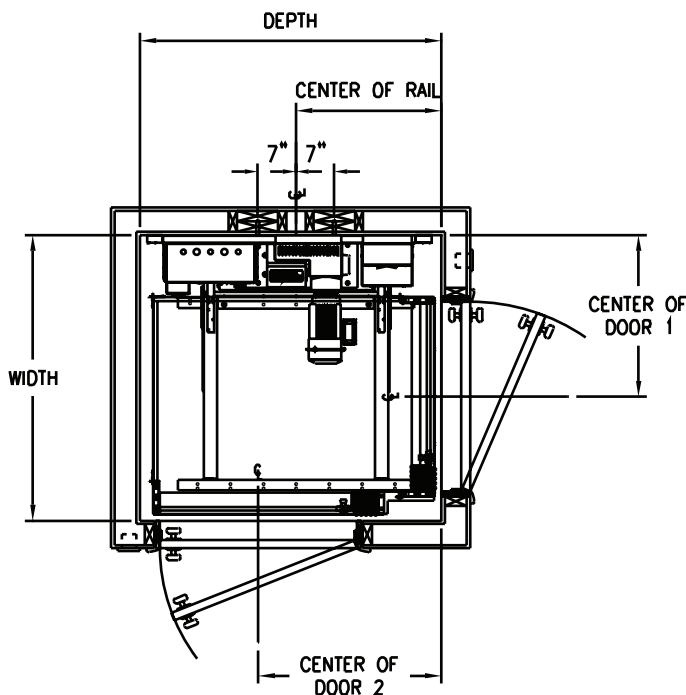


### Note:

All dimensions are to inside finished walls.

† Dimension when car gate is mounted opposite side from what

Car Size	Width	Depth	Center of Rail	Center Door 1	Center Door 2	Clear Opening
36 x 48	54 <sup>3</sup> / <sub>8</sub> "	55"	26 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> " †30 <sup>3</sup> / <sub>4</sub> "	33 <sup>3</sup> / <sub>8</sub> " †29 <sup>1</sup> / <sub>2</sub> "	28 <sup>5</sup> / <sub>8</sub> "
36 x 60	54 <sup>3</sup> / <sub>8</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> " †30 <sup>3</sup> / <sub>4</sub> "	45 <sup>3</sup> / <sub>8</sub> " †41 <sup>1</sup> / <sub>2</sub> "	28 <sup>5</sup> / <sub>8</sub> "
40 x 54	58 <sup>3</sup> / <sub>8</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> " †34 <sup>3</sup> / <sub>4</sub> "	39 <sup>3</sup> / <sub>8</sub> " †35 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "



### Note:

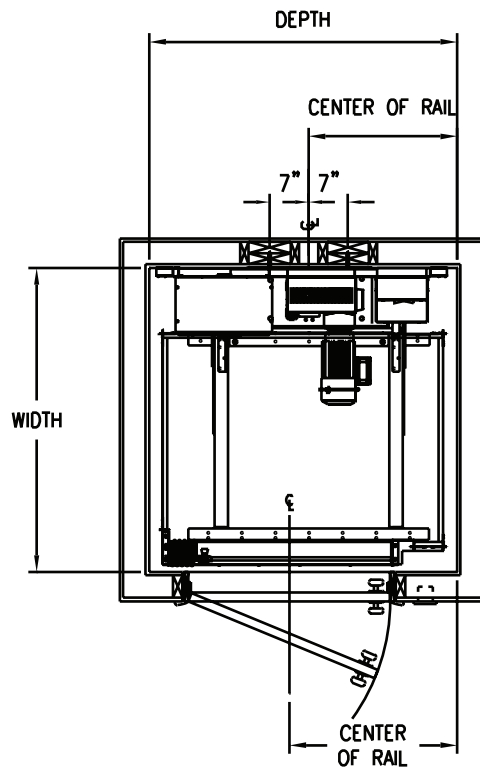
All dimensions are to inside finished walls.

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

Car Size	Width	Depth	Center of Rail	Center Door 1	Center Door 2	Clear Opening
36 x 48	54 <sup>3</sup> / <sub>8</sub> "	55"	26 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> " †30 <sup>3</sup> / <sub>4</sub> "	33 <sup>3</sup> / <sub>8</sub> " †29 <sup>1</sup> / <sub>2</sub> "	28 <sup>5</sup> / <sub>8</sub> "
36 x 60	54 <sup>3</sup> / <sub>8</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> " †30 <sup>3</sup> / <sub>4</sub> "	45 <sup>3</sup> / <sub>8</sub> " †41 <sup>1</sup> / <sub>2</sub> "	28 <sup>5</sup> / <sub>8</sub> "
40 x 54	58 <sup>3</sup> / <sub>8</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	30 <sup>3</sup> / <sub>4</sub> " †34 <sup>3</sup> / <sub>4</sub> "	39 <sup>3</sup> / <sub>8</sub> " †35 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "



## Hoistway Construction: Type 5 Cars - Enter/Exit Adjacent Side with Non-Pocketed Gate



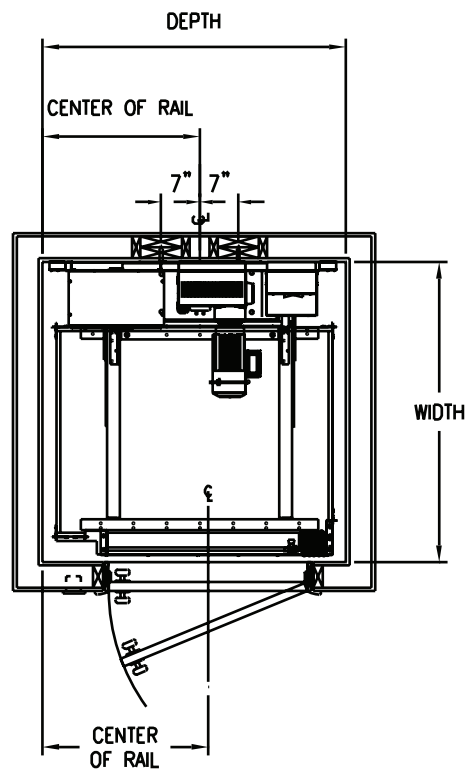
### TYPE 5 LEFT HAND

**Note:**

All dimensions are to inside finished walls.

† Dimension when car gate is mounted opposite side from what

Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	54 <sup>3</sup> / <sub>8</sub> "	55"	26 <sup>1</sup> / <sub>2</sub> "	30" †33 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "
36 x 60	54 <sup>3</sup> / <sub>8</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	42" †45 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "
40 x 54	58 <sup>3</sup> / <sub>8</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	36" †39 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "



### TYPE 5 RIGHT HAND

**Note:**

All dimensions are to inside finished walls.

† Dimension when car gate is mounted opposite side from what

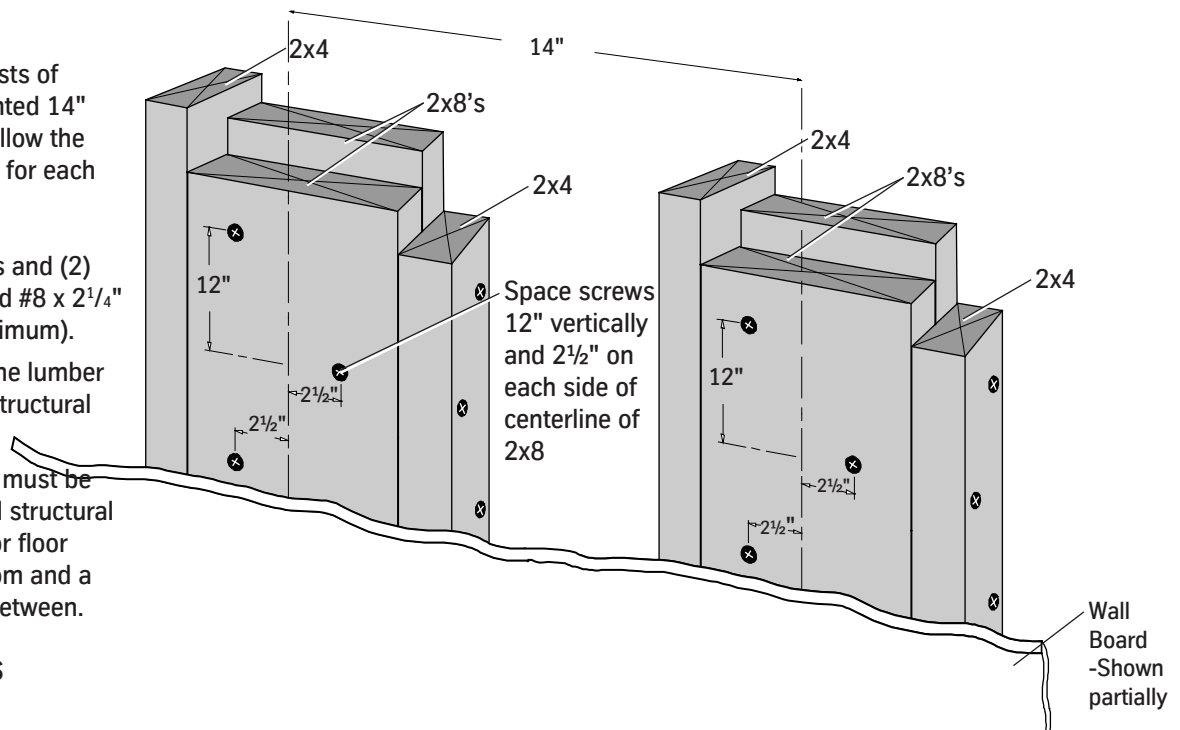
Car Size	Width	Depth	Center of Rail	Center of Door	Clear Opening
36 x 48	54 <sup>3</sup> / <sub>8</sub> "	55"	28 <sup>1</sup> / <sub>2</sub> "	30" †33 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "
36 x 60	54 <sup>3</sup> / <sub>8</sub> "	67"	33 <sup>1</sup> / <sub>2</sub> "	42" †45 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "
40 x 54	58 <sup>3</sup> / <sub>8</sub> "	61"	30 <sup>1</sup> / <sub>2</sub> "	36" †39 <sup>1</sup> / <sub>2</sub> "	32 <sup>1</sup> / <sub>8</sub> "

## Hoistway Construction Notes

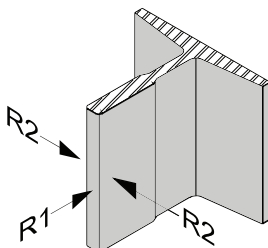
- Also see Drive Unit Area Construction Details on pages 12 and 13.
- A load bearing wall is required to sustain rail reactions.  
See Rail Reactions and Guide Rail Backing Construction below.
- All points of the pit floor must be a minimum of 6" below the lower landing finished floor.
- Pit floor construction should withstand a 3200 lb. impact load.
- Hoistway sizes reflect running and access clearances only. Consult your local authority to assure compliance with state and local codes.
- Minimum overhead clearance is 9'-0" above the top landing finished floor. (Optional 88" car height requires 9'-4", 94" car height requires 9'-10").
- Due to limited clearances, it is imperative that the walls are square and plumb throughout the hoistway. The finished hoistway must be within  $\frac{1}{4}$ " tolerance from top to bottom.
- Hoistway door provided by others. We recommend a 3'-0" x 6'-8" door.
- Hoistway is required to be free of all pipes, wiring and obstructions not related to the operation of the elevator.
- Service access hatch is required in the controller / drive assembly area. See page 14 for recommended location.
- Building structure must provide for a means of a chain hoist for hoisting rail and elevator materials to the top of the hoistway during installation.
- Controller to be mounted in a location from 32 to 104 degrees fahrenheit.

## Guide Rail Backing Construction Details:

- 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 x  $2\frac{1}{4}$ " wood screws (minimum).
- 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.



## Rail Reactions



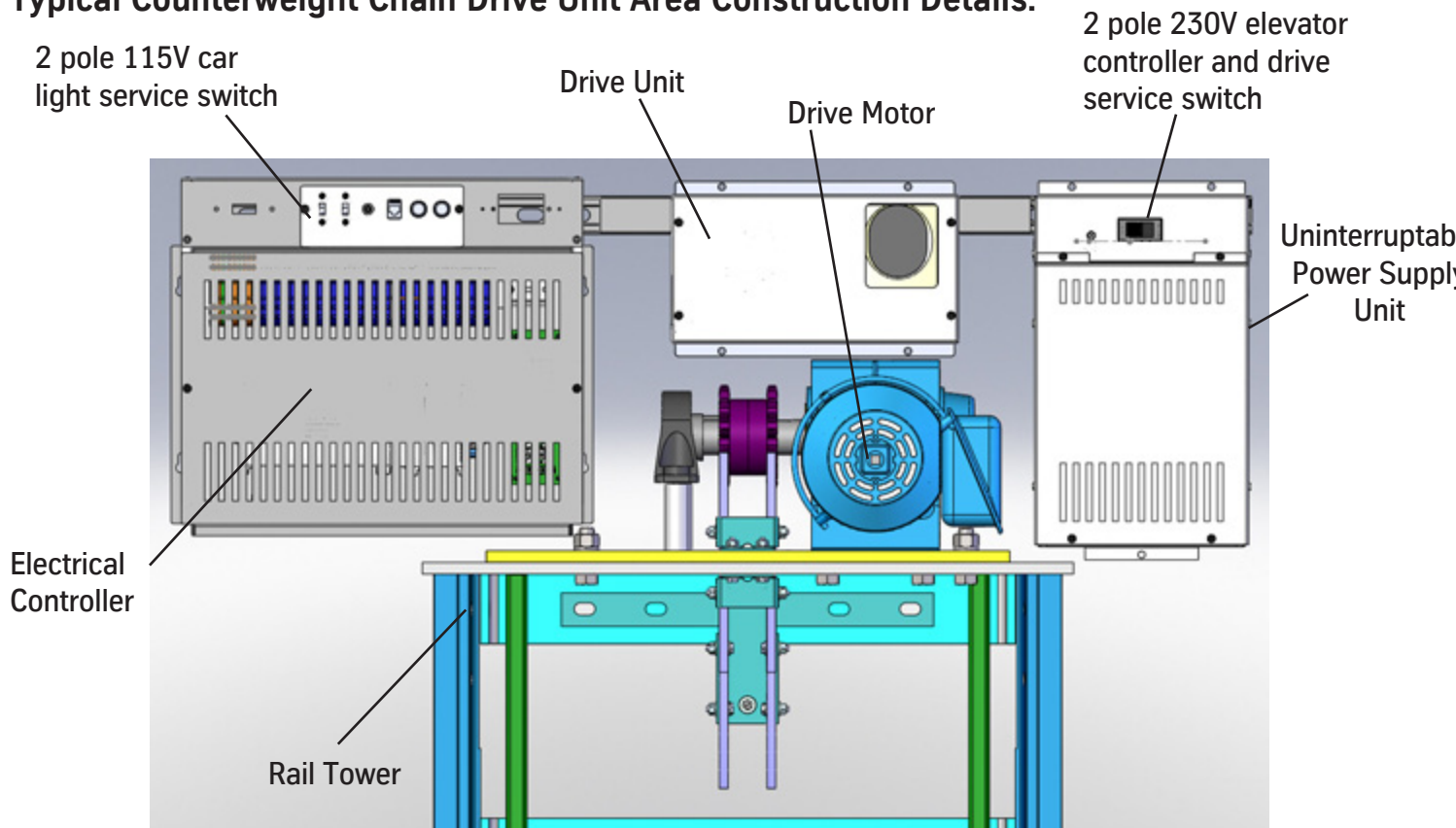
R1 = 177 LBF.

R2 = 351 LBF.

Rail reactions are for static loading and do not include safety factors. Applicable safety factors must be considered in hoistway design.

Wall attachment pull-out force is 265 LBF. per fastener.

## Typical Counterweight Chain Drive Unit Area Construction Details:



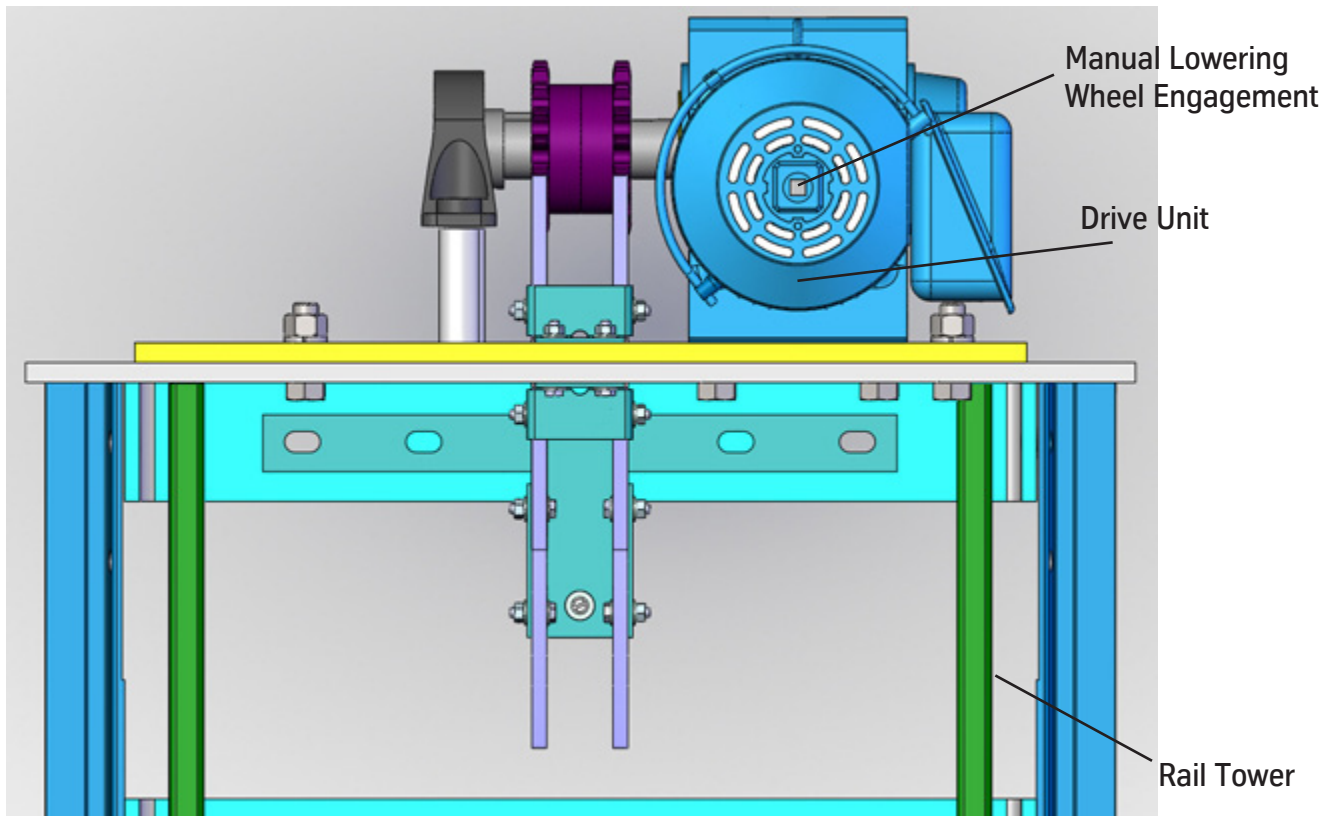
### Section Through Top of Hoistway

† If the elevator controller is installed in a remote machine room, these items are to be provided in the machine room, near the controller.

#### Construction Notes:

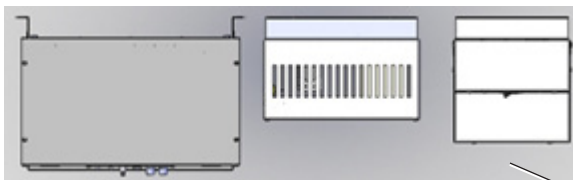
- Minimum overhead clearance for standard car is 9'-0" above the top landing finished floor.
- Light, light switch, receptacle, incoming electrical circuits and telephone jack to be located within 6 $\frac{1}{2}$ " of the hoistway door wall to avoid interference with wiring raceway (or may be located in ceiling).

## Optional Counterweighted Chain Drive Unit Area Construction Details with Remote Located Electrical Controller:



Section thru Top of Hoistway at Drive Unit

## Requirements for Counterweighted Chain Drive Remote Located Electrical Controller:



18<sup>3</sup>/<sub>16</sub>" wide x 15" high x 12" deep Remote Located Controller  
 -attaches to wall (outside of hoistway)  
 -must be located within 50' of the Drive Unit

30" wide x 36" deep work space required in front of the Disconnects and the Elevator Controller as required by NEC

Plan View of Controller Area

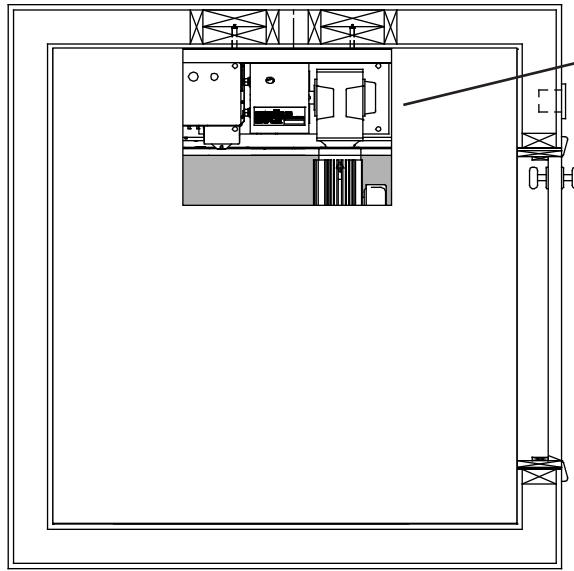
### Power Requirements:

Dedicated 230 volt, single phase, 20\*\* amp circuit with ground (3 wires) from lockable disconnect or non-G.F.I. circuit breaker.

Dedicated 115 volt, 15 amp circuit from lockable fused disconnect for car lights.

Telephone circuit.

## Service Access Hatch



18" x 24" minimum hatch opening above the controller and drive assemblies

- This is the recommended location of the access hatch. If sufficient attic space is not available, access through a wall must be provided. Cannot be through the rail wall (contact factory for alternatives).
- Construction of access hatch and door is by others.
- Door needs to be self closing and lockable.

Plan View

## Description of Features:

### Car Operating Panel



Used to control the elevator from inside the car.

- Automatic car controls; buttons illuminate when call is registered.
- LED floor position display with system diagnostics that alerts the homeowner of complications that the control system may see.
- Run stop switch.
- Emergency alarm switch. Battery powered during power failure.
- Battery backup emergency light, integrated into the top of the panel, illuminates during power failure.
- In case of power failure, elevator continues and stops at the next lower landing if going down or stops and travels to the next lower landing. Elevator returns into service when power is restored.
- Light switch to override the automatic car lights.
- Optional key switch available to limit access to authorized persons.
- Standard brushed stainless steel or brushed brass face. Also available in polished stainless steel or polished brass.

### Hall Stations



Used to call the elevator to your floor.

- Automatic control.
- LED floor position display with system diagnostics that alerts the homeowner of complications that the control system may see.
- One provided for each floor level. Additional hall stations available for more than one opening per floor level.
- Standard brushed stainless steel or brushed brass face. Also available in polished stainless steel or polished brass.
- Optional key switch available to limit access to authorized persons.

### Recessed Telephone Cabinet (optional)



Conceals standard telephone.

- Standard brushed stainless steel or brass door. Also, available in polished stainless steel or brass.
- Telephone circuit is required to be provided in the area of the elevator controller.
- If the telephone cabinet is not selected, a telephone is provided for surface mounting inside the car.

## Electrical Controller



Controls the electrical operation of the elevator.

- Located in the top of the hoistway near the drive unit.
- Programmable Logic Controller (PLC) with digital signal processor allows for SoftStart and SoftStop technology.
- Includes uninterruptible power supply (UPS) for lowering and operation of automatic car gate (if equipped).
- Includes run/stop switch, automatic/remote switch and plug for construction/inspection pendant control.
- Can be located in a remote machine room for areas that do not allow the electrical controller to be located inside the hoistway.

## Hoistway Door Interlocks



**Locks the hoistway door when the car is not there.**

- **Surface mounted electromechanical interlock.**
- **Can be opened with a special key from outside the hoistway in case of emergency or for servicing.**

## Car Lights



Two recessed halogen car lights provided.

- Provided with stainless steel bezels.
- Automatically turns on when gate or door is opened and turns off 5 minutes after the elevator is used.
- Switch is provided on the car operating panel to provide constant on lights.
- Separate battery backup emergency light is integrated in the car operating panel that illuminates during power failure.
- As an option, wiring can be provided to the car top for connection to consumer provided lights.

## Description of Features continued:

### Automatic Car Gate Operator (optional)



Automatically opens the car gate when car stops at a floor.

- Mounts to top of car.
- Closing speed slows the gate before full close.
- If car is already at floor level, the gate automatically opens when the hoistway door is opened.
- A door open button is provided on the car operating panel.

### Auto-Opener™ (optional)



Automatically opens hoistway door when car stops at a floor.

- Mounts to wall near top of door on the hinge side. Backing is required by contractor.
- Works in conjunction with the automatic car gate operator.
- Automatically reverses when an obstruction is encountered.
- If car is already at floor level, door can be opened by pressing hall station button.
- Requires 115 VAC outlet near the top of the door on the hinge side at each landing.

## Safety Devices

- The elevator slows to a smooth stop.
- Terminal limits. Stops the elevator if it overruns the normal limits at the top or bottom landing.
- 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.
- Pit switch and car top switch. Disables elevator for servicing purposes.
- Interlocks. Hoistway doors remain locked when the car is not at that floor and prevent the elevator from running until all doors are closed.
- Slack chain device. In the unlikely event that a drive chain would slacken or break, the device locks the car onto the T-rails, preventing the car from falling.
- Car run stop switch. Located on car operating panel. Manual toggle switch disables elevator from inside car.



## Counterweighted Chain Drive Overview

