## ELEVATIONS Residential Elevator Planning Guide

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

200

### ROCKY MOUNTAIN ELEVATOR PRODUCTS LIVE LIFE ELEVATED

ELEL

### Mission

At Rocky Mountain Elevator Products LLC it is our mission to improve safety and customer experience by providing a superior level of design and innovation. We aspire to create industry-wide change by setting a higher level of excellence and always exceeding customer expectations.



We are a proud member of the American Society of Mechanical Engineers and the Accessibility Equipment Manufacturers Association.





Rocky Mountain Elevator Products is a fellow contractor member of the National Association of Elevator Contractors.



Made in the USA American Owned and Operated





### Introduction

This Planning Guide is to be used as a reference to determine parameters of installation and the steps to achieve a proper elevator installation. This guide may be used by the architect, contractor, dealer or home owner. The information in this guide is intended as an overview. Each installation will have site-specific specifications that must be followed. Do not attempt to construct a hoistway on this information. Before beginning actual construction, be sure you have and follow specific shop drawings engineered to fit your site conditions.

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

Elevator installation is to be done by an authorized elevator contractor, and in accordance with instructions provided by the manufacturer. Installation must also be in compliance with requirements of the National Electric Code, American Society of Mechanical Engineer's safety code, and local building codes. We strongly recommend you contact the code authority in your jurisdiction where the elevator will be installed. Rocky Mountain Elevator's products are designed to meet the requirements of ASME - A17.1 Part V Section 5 for residential elevators. Rocky Mountain Elevator's products, where installed under the proper parameters, are warranted for 3 years. Rocky Mountain Elevator Products assumes no liability for equipment not installed in compliance with these codes.

### Advantages

- $\checkmark$  More options and features than any other manufacturer.
- ✓ Child safe gate systems.
- ✓ Superior design and innovation.
- ✓ Multiple drive options: machine room-less to save space.
- ✓ Plug and play wiring system for fast installation.
- ✓ Pre-tested components to ensure reliability.
- ✓ Smooth and quiet operation: Smooth Ride technology using the industry's only self-adjusting valve on hydraulic models.
- ✓ On-board LCD screen with self-diagnosis offers easy troubleshooting.
- ✓ Low Maintenance: the elevator is designed for minimal maintenance and the visual service alert and fault codes will tell you when it's time to consider a service inspection.
- ✓ All models have emergency battery lowering and lighting in case of power interruption.
- ✓ Stylish and modern: Our smooth stylish features are timeless and will blend with any décor for years to come. The fixtures feature LED push buttons for that classic elevator feel right in your own home!



### **Table of Contents**

Pre-Planning	5
Hoistway Illustration	6
Drive Systems Overview	8
Standard Car Layouts	9
Hoistway Doors	
Car Sizes	
Hoistway Layouts Accordian Gate	
Hoistway Layouts Wrap Gate	
Hoistway Layouts 2 Speed	13
Hoistway Layouts 2 Speed Swing	
Hoistway Layouts 3 Speed	15
Hoistway Layouts 3 Speed Swing	16
Work by Others	



### **Pre-Planning**

Locate a local dealer and together plan your elevator. Please use the steps below to guide you in the planning process. Many aspects affect what drive system will best suit your needs: car size, car and shaft door systems, ceiling heights, machine room size and location; all affect what type of drive system you use. This is why Rocky Mountain Elevator Products has a vast offering of drive systems to meet your application needs. Please refer to the Drive System Overview on page 8 and the Drive System Quick Reference below.

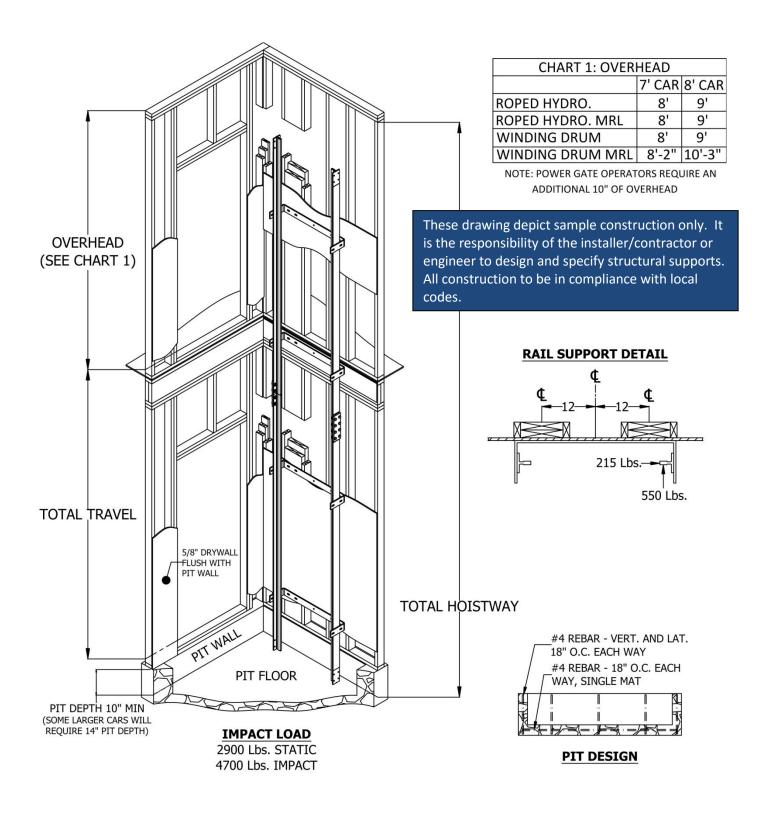
#### Pre-planning considerations

- 1. Determine what pit depth you can provide.
- 2. Determine what overhead space you can provide.
- 3. Determine machine room space and location you can provide.
- 4. Coordinate with your dealer to go over your options, interior finishes and upgrades.

Drive System	Capacity/ Speed	Pit Depth	Machine Room	Hoistway Ceiling Height (overhead)	Car Door Options	Hoistway Door Options	Power Supply
2:1 roped hydraulic	750-950 lbs. 40 FPM	<ul> <li>10" for standard car up to 15 sq. ft.</li> <li>14" for oversize car up to 18 sq. ft.</li> </ul>	Machine Room required, preferred adjacent to shaft, can be up to 25' remote		<ul> <li>Accordion Gate</li> <li>Wrap Around Gate</li> <li>2 Speed Side Slide Gate</li> <li>3 Speed Side Slide Gate</li> </ul>	Swing door 2 Speed Side Slide 3 Speed Side Slide	230V 1Ph 30 Amp
MRL 2:1 roped hydraulic	750-950 lbs. 40 FPM	<ul> <li>10" for standard car up to 15 sq. ft.</li> <li>14" for oversize car up to 18 sq. ft.</li> </ul>	No Machine Room - all equipment in shaft	<ul> <li>8'6" for 8' car</li> <li>9'6" for all cars</li> <li>over 15 sa ft</li> </ul>	<ul> <li>Accordion Gate</li> <li>Wrap Around Gate</li> <li>2 Speed Side Slide Gate</li> <li>3 Speed Side Slide Gate</li> </ul>	Swing door 2 Speed Side Slide 3 Speed Side Slide	230V 1Ph 30 Amp
Winding Drum	750-950 lbs. 40 FPM	10" for standard car up to 15 sq. ft.	Machine Room required adjacent to rail on bottom floor		<ul> <li>Accordion Gate</li> <li>Wrap Around Gate</li> <li>3 Speed Side Slide Gate</li> </ul>	Swing door 3 Speed Side Slide	230V 1Ph 30 Amp
MRL Winding Drum	750-950 lbs. 40 FPM	10" for standard car up to 15 sq. ft.	No Machine Room - all equipment in shaft	• 123" with 8' car	<ul><li>Accordion Gate</li><li>Wrap Around Gate</li><li>3 Speed Side Slide Gate</li></ul>	Swing door 3 Speed Side Slide	230V 1Ph 30 Amp

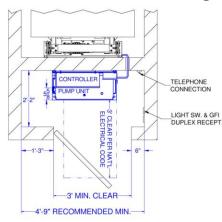


### Hoistway Illustration

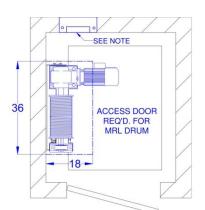




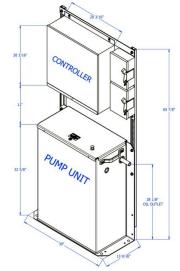
### Machine Room Designs and Controller Space



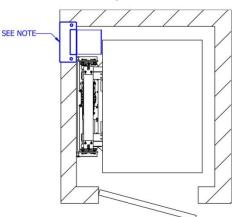
Machine Room - Hydraulic



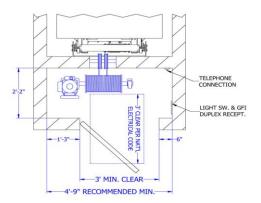
Machine Room Less -Drum



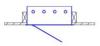
Hydraulic Controller and Pump



Machine Room Less - Hydraulic



Machine Room - Drum



#### \*NOTE:

MRL CONTROLLER RECESSED IN WALL ONE LOCATION AS NOTED, SPACE NEEDED 14.50" WIDE x 36.50" TALL. (IF BEING REMOTELY MOUNTED PLEASE ADVISE US). MAIN LINE POWER 230 V 1 PHASE 30 AMP WITH NEUTRAL AND GROUND. CAR LIGHT 120 VAC 15 AMP. PHONE WIRE BY OTHER TO BE LOCATED AT THE TOP OF CONTROLLER LOCATION.





### Steps to Planning Your Home Elevator

- 1. Determine the drive type that best fits your home.
- 2. Determine the car layout that best fits your design: front opening, front and rear openings, front and side openings.
- 3. Determine a car gate system: accordion gate, wrap around, 2 speed side slide, 3 speed side slide doors.
- 4. Determine hoistway door type that best fits your design: swing door, 2 speed side slide, 3 speed side slide.
- 5. Determine your car size: standard, 36"x48", 36"x60", 40"x54", upgraded size of 42"x60" (requires additional cost and larger equipment space). Custom sizes are available in 1" increments. Layouts for custom applications must be ordered from manufacturer.
- 6. Select and use the proper shop drawings

## Drive Systems Overview

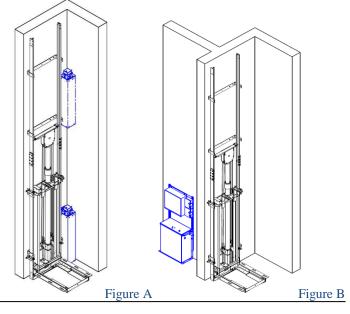
Rocky Mountain Elevator Products offers you the choice of two configurations in both the roped hydraulic and winding drum, giving you the flexibility to select the best drive system for your application.

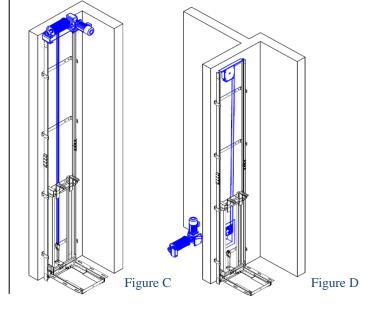
#### Roped Hydraulic:

- ✓ 2:1 roped hydraulic unit utilizing (2) 3/8" 7x19 wire ropes running over a sheave mounted atop a 70/80/90mm diameter hydraulic cylinder
- ✓ 950 lbs. capacity (750 lbs. optional)
- Smooth Ride Technology using the industry's only self-adjusting valve
- ✓ MRLH Machine Room-less Hydraulic (Figure A) or remote machine room up to 40' away (Figure B).
- ✓ Submerged motor for quiet operation
- ✓ Floor specific battery descent, standard
- ✓ 40 FPM travel speed (increased speed requires a variance)
- ✓ Slack cable safety device
- ✓ 230 V 1Phase 30 Amp with neutral and ground (4 wires)

#### Winding Drum:

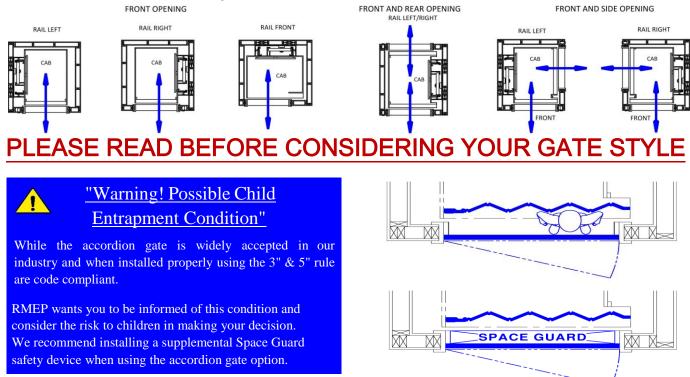
- Inverter controlled variable speed winding drum utilizing (2) 3/8" 7X19 steel core wire ropes as suspension means
- ✓ 950 lbs. capacity standard (750 lbs. optional)
- ✓ MRLD Machine Room-less Drum (requires overhead access) (Figure C)
- ✓ Standard drum behind the rail (Figure D)
- ✓ Variable speed for a quality ride
- ✓ Floor specific battery descent (optional)
- ✓ 40 FPM travel speed
- ✓ 230V 1 Phase 30 Amp with neutral and ground (4 wires)
- ✓ Slack cable safety device



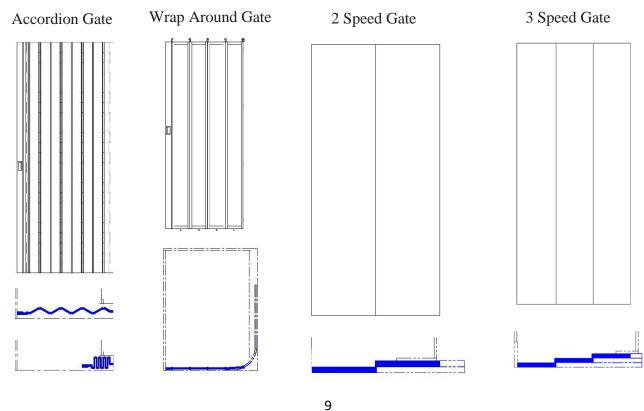




# Estandard Car Layouts



## **Gate Styles**

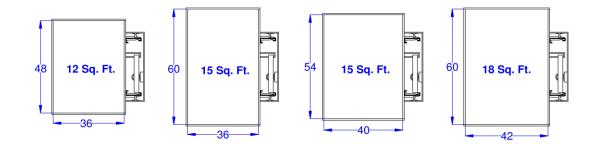




## Hoistway Doors



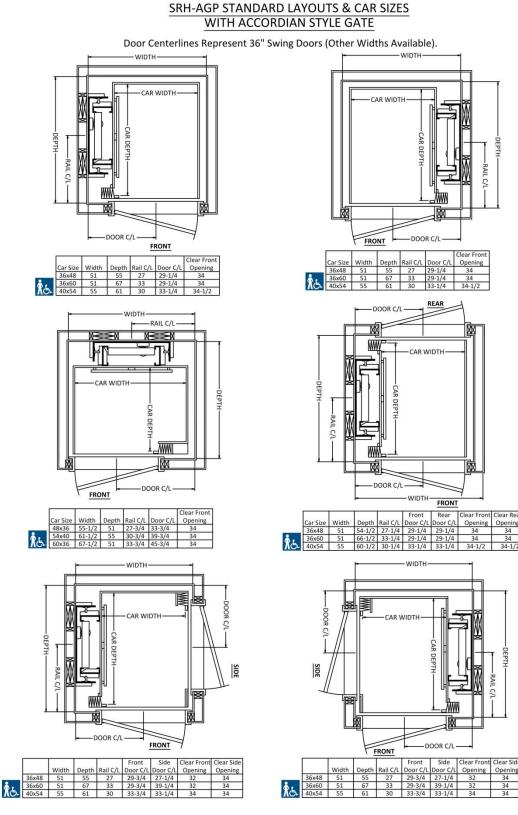
## light Car Sizes







Hoistway Layouts This symbol is listed beside the car size we believe to be best suited for use by the wheelchair passengers and their accompanying attendant.





RAIL C/I

Clear Rea

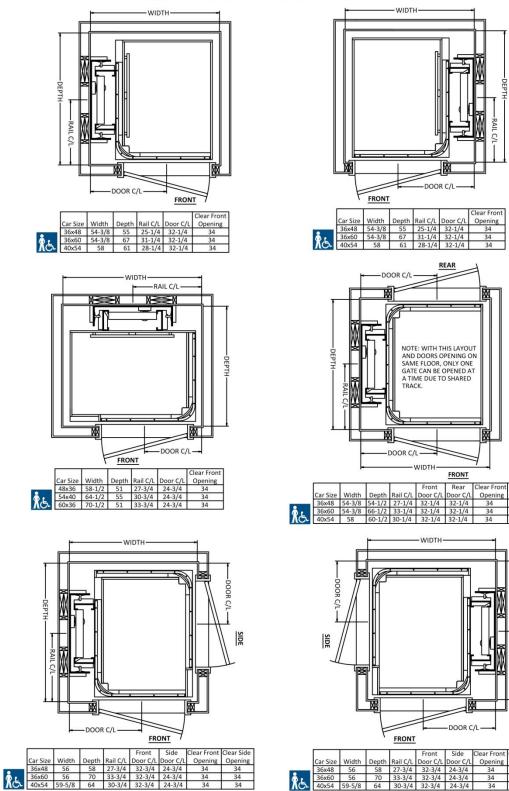
Opening 34

RAIL C/L

Opening

#### SRH-WG STANDARD LAYOUTS & CAR SIZES WITH WRAP-AROUND STYLE GATE

Door Centerlines Represent 36" Swing Doors (Other Widths Available).





RAIL C/L

Clear Front

Opening 34 34

XX

X

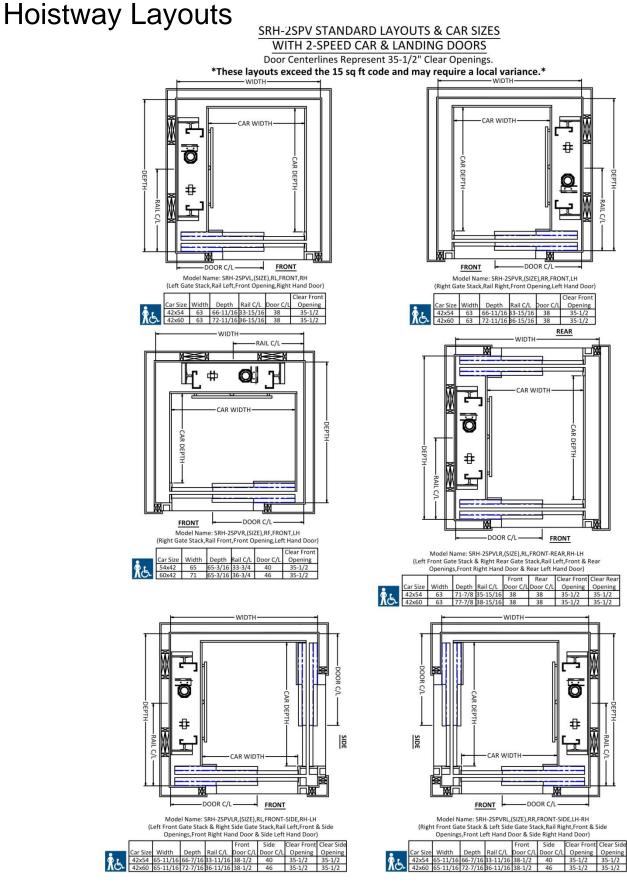
Clear Front Opening

Clear Sid

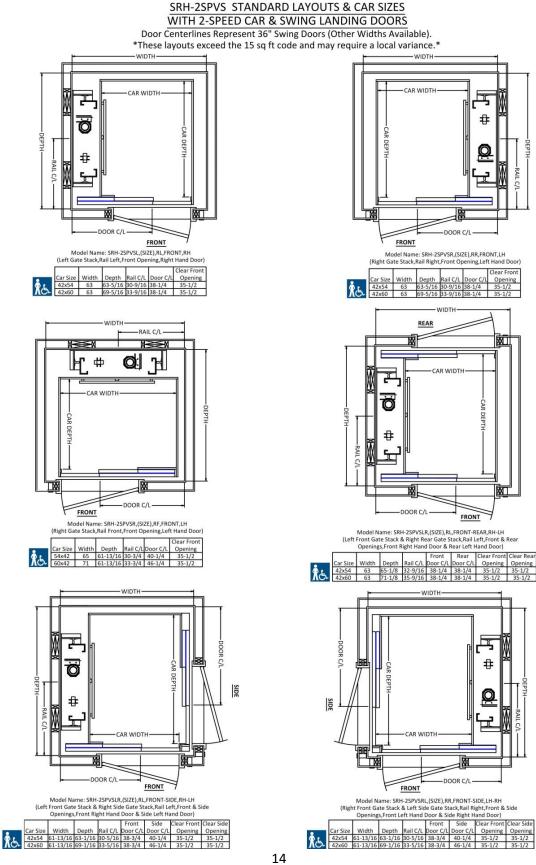
Opening

Clear Rear

Opening 34

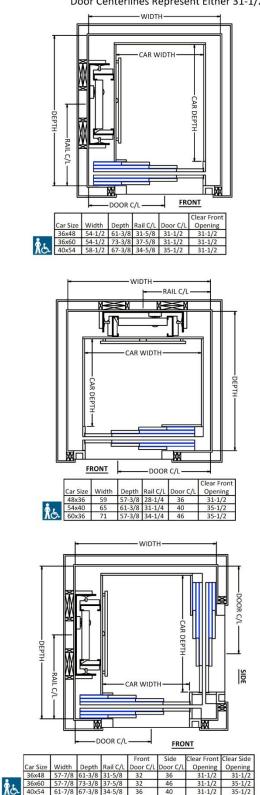


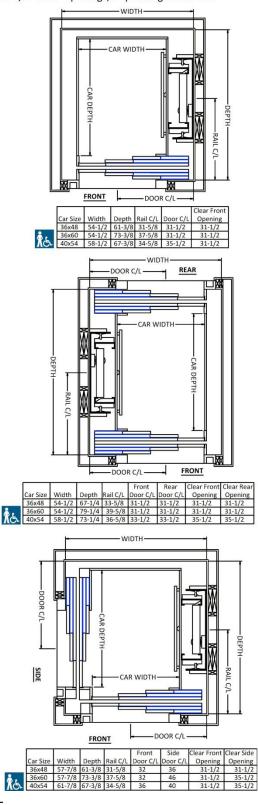






#### SRH-3SPV STANDARD LAYOUTS & CAR SIZES WITH 3-SPEED CAR & LANDING DOORS





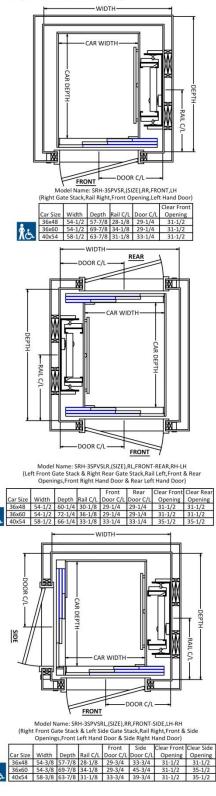
Door Centerlines Represent Either 31-1/2" or 35-1/2" Clear Openings, Depending on Model.



Å.

#### SRH-3SPVS STANDARD LAYOUTS & CAR SIZES WITH 3-SPEED CAR & SWING LANDING DOORS







### Work by Others

#### <u>Delivery</u>

1. Provide smooth (roll-able) access as close as possible to the installation area.

#### <u>Hoistway</u>

- 1. Hoistway wall must be framed on each level as per site-specific equipment shop drawings, not architectural drawings. (All dimensions are to finished wall)
- 2. Hoistway must be plumb and square within <sup>1</sup>/<sub>4</sub>".
- 3. Hoistway doors must be installed on all floors/landings as per site-specific shop drawings.
- 4. Casing trim inside hoistway cannot protrude more than <sup>3</sup>/<sub>4</sub>" from wall.
- 5. Drywall and taping must be complete by time of install.
- 6. No other pipes, wires, liquids, gases, etc. are allowed in hoistway by code.
- 7. Hoistway temperature must be maintained within 60 to 100 degrees Fahrenheit.
- 8. Contractor will furnish appropriate rail backing for T-Rail.
- 9. Rail backing wall must be a load-bearing wall.
- 10. Consult Dealer for span greater than 10' between floor joists.
- 11. Maintain below 1/8" tolerances throughout hoistway.
- 12. The structure of the hoistway must allow for installation of a chain hoist to transfer materials to the upper landings during elevator installation (Eye bolt of 1,000 lb. capacity).
- 13. 8'0" minimum hoistway overhead above the finished floor at the top landings required for 7'0" car with remote controller.
- 14. Provide an access hatch for servicing the controller/drive unit.

#### Doors

- 1. Doorways must be framed with 2x4 construction for proper clearances by codes (reference shop drawings and/or hoistway door detail).
- 2. Doors must be a solid core (or equivalent) 20 minute minimum fire rating unless serving a garage, then a 1 hour fire rating is required.
- 3. The doors, hardware and closers (spring loaded hinges) are to be supplied and installed prior to installation.
- 4. When closed, the landing doors/jambs must leave only 3" of threshold space from inside of hoistway to the backside of the door to allow proper spacing for the hoistway door interlocks, and to meet code (reference shop drawings and/or hoistway door detail).
- 5. Door openings must be laid out and framed per elevator shop drawings, not architectural drawings.

#### <u>Pit</u>

- 1. Pit must be poured to proper depth and size (reference shop drawings).
- 2. A clean, dry pit must be maintained.
- 3. Pit floor must be a minimum of 8" (10" preferred) below the finished floor of the lowest landing.
- 4. Construction of pit floor must withstand an impact load of 4,700 lbs.

#### Machine Room/Equipment Room

- 1. Elevator Equipment must be within 40' of hoistway.
- 2. Must have a minimum of 3'0" clear area in front of controller as per electrical code.
- 3. Permanent telephone line to controller. Telephone must be live before inspection.
- 4. Machine room temperature must be maintained within 60-100 degrees Fahrenheit.
- 5. 230V 30Amp Single Phase service whip needs to be ran to Controller.
- 6. 120V 15Amp Single Phase dedicated car light service whip needs to be ran to Controller.

#### Cab and Finish

1. All cab choices and any materials being supplied for finishes of this elevator must be provided a minimum of 10 weeks prior to the installation of the elevator.

#### <u>Safety</u>

1. Hoistway doors or OSHA approved removable barricades must be installed and secured.

#### Storage

1. A dry, clean and secure area needs to be provided for the elevator equipment not installed at time of delivery.

#### Acceptance/Final Inspection

- 1. The elevator phone with dial tone must be present prior to inspection.
- 2. Cab interior, door hardware, door trim and door finishes must be complete prior to inspection.
- 3. The elevator cannot be turned over and/or used for construction until it has passed final inspection.

### **Contact Information**

For more information please contact us.

Phone: (970) 242-2554

Mail: Sales at RMEP 416 29 Road Grand Junction, CO 81504

www.RockyMountainElevatorProducts.com

