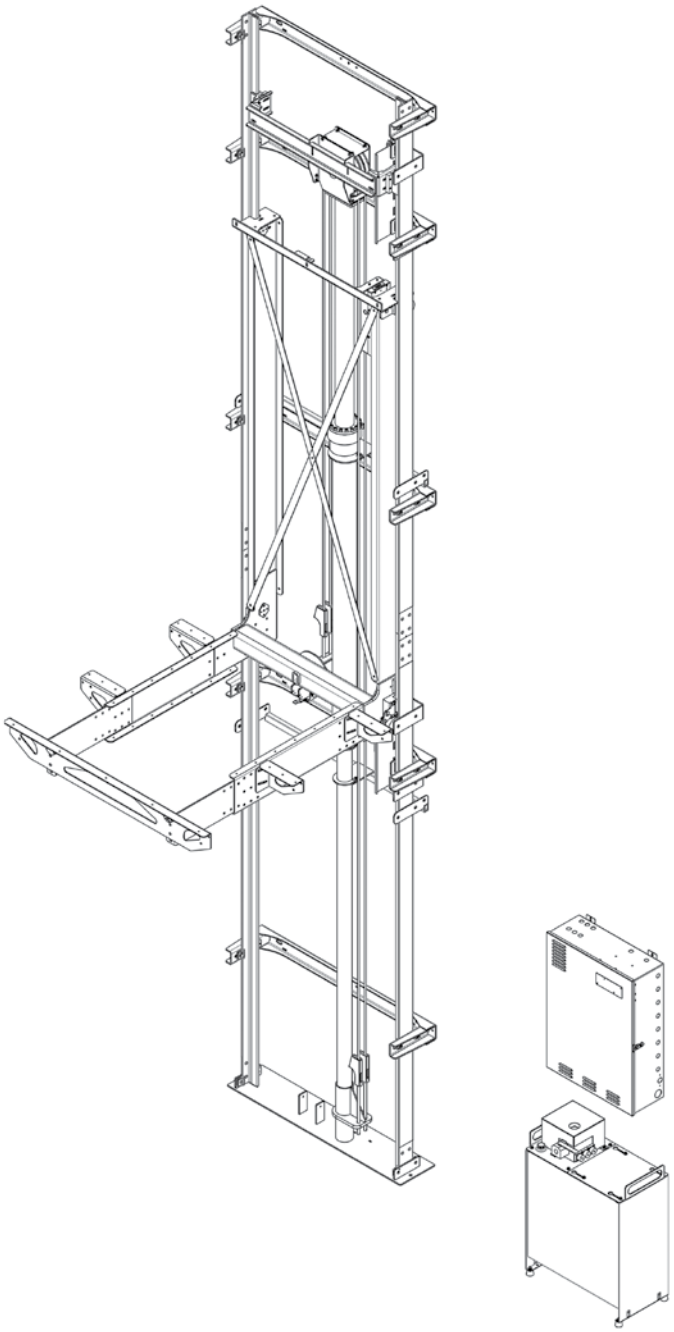
Cibes | symmetry

LIMITED USE/LIMITED APPLICATION
DESIGN GUIDE

ASME A17.1, Part V, Section 5.2



WELCOME

TABLE OF CONTENTS

ABOUT

CIBES SYMMETRY

Our company was founded in 2008, by an entrepreneurial group of people, driven by the vision of elevating life across the US. Today, Symmetry has become a household name for elevators in North America, with high rankings on the Forbes List for Best Home Elevators.

In 2022, we joined forces with global Swedish elevator manufacturer Cibes Lift Group and became Cibes Symmetry. Together, we offer you close to a century of consolidated knowledge, combining Swedish innovation and design with US craftsmanship and expertise. Our wide range of ADA and ASME compliant elevating solutions is manufactured in the US and in Sweden and distributed through our nationwide network of authorized dealers.

We provide beautifully crafted, expertly engineered accessibility related products across America. We market our residential elevators, home and commercial lifts, and low-rise commercial elevators through an exclusive network of carefully chosen Cibes Symmetry Partners.

Please note that this guide is for planning purposes only, applies exclusively to national code and should not be used for construction. Prior to construction, please contact your local Cibes Symmetry representative and request a job-specific set of plans to ensure that you obtain the accurate dimensions and requirements for your project.

Your representative will also assist you to identify resources to ensure that your project plans will comply with the applicable state and local codes and the permitting authorities.

WHAT IS A LIMITED USE/LIMITED APPLICATION ELEVATOR?

The Symmetry Elevation LULA elevator is designed to comply with ASME A17.1, Section 5.2 and the Americans with Disabilities Act (ADA). LULA elevators are intended to provide access for low occupancy/low rise commercial buildings where a traditional passenger elevator is not feasible or required by code. Due to the design intent, LULA elevators are limited by speed, travel distance, and capacity.

When only the highest level of safety is your standard, the Elevation LULA elevator is the optimal product for your project. Leading the industry in quality, style and design, Elevation by Symmetry is engineered and designed for limited commercial, as well as residential, use.

The Elevation is ideal for applications up to six stops and up to 50´of travel (with travel variance) and is designed for use in schools (and other educational settings), churches, multi-family housing units, libraries and more.

Ivory Cab with Williamsburg Cherry Laminate Applied Panels

SYMMETRY LULA ELEVATORS ARE AVAILABLE WITH:

› Shallowest pit depth required in the industry
  ›› 13" pit with elastomeric bumpers (ASME A17.1 year 2013 & prior)
  ›› 14" pit with buffer springs (ASME A17.1 year 2016)

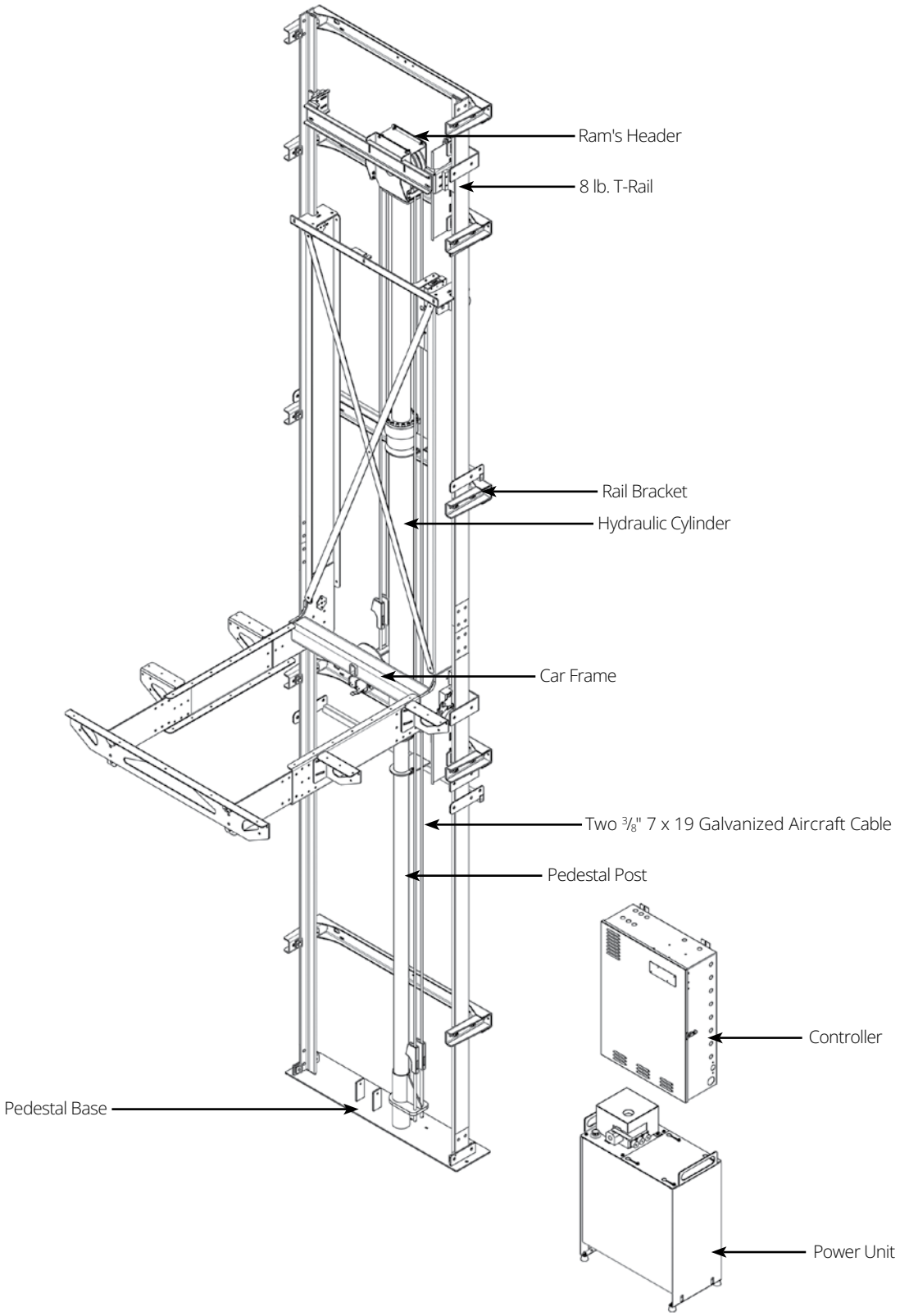
› Shortest overhead required in the industry for existing buildings
  ›› 104" with alternative means

› All light sources are powered by energy-efficient LED technology
  ›› Including car operating panel (COP), car lights and directional indicators

Gray Cab with Designer White Laminate Applied Panels

COMPONENT IDENTIFICATION

ROPED HYDRAULIC DRIVE



TECHNICAL SPECIFICATIONS

COMMON SPECIFICATIONS

Symmetry LULA elevators are designed to comply with ASME A17.1 Section 5.2 and the Americans with Disabilities Act (ADA). All LULA elevators are limited by speed, travel and capacity in order to comply with applicable code.

Standard Features	
Travel	Up to 25′ 0″
Speed	30 fpm (.15 M/S)
Rated Capacity	1,400 lbs. (635 kg)
Overhead	New construction 132″ existing construction as low as 104″ with alternative means
Pit Depth	13″, 14″ if buffer springs are required
Stops	Two
Opening	Single
Warranty	Three-year limited parts

Safety Features

- ADA hands-free phone
- Keyed in-car stop switch and alarm button
- Emergency lighting in car interior
- Uninterruptible Power Supply (UPS) for car lowering and power opening of the car and hoistway doors in the event of a power failure
- Service indicator
- Emergency manual lowering
- Broken/slack suspension safeties
- Overspeed valve
- ETL, UL or CSA certified components
- Tactile/braille characters
- Elastomeric bumpers (ASME A17.1 year 2013 and prior) or Buffer springs (ASME A17.1 year 2016 and later)

Controls

- Selective Collective Programmable Logic Controller (PLC)
- Car-mounted directional indicator with audible signals
- Homing timer
- Digital position indicator on COP

Car Features	
Car Height	7′ 0″
Interior Walls and Ceiling	Ivory powder-coat painted steel or Unfinished Red Oak flat panel car walls with matching ceiling*
Car Door	- Ivory powder-coat painted steel 3′ 0″ x 6′ 8″ Two Speed Doors - Brushed Stainless Steel car entrance on steel car (strike column, return column and transom) - Matching entrance on wood car
Entrance	Primed Hoistway Doors/Frames
Handrail/Car Sill	Brushed Stainless Steel
Floor Finish	Unfinished plywood floor with sill set for ¼″ (Flooring by others)
Lighting	4 recessed LED lights with Black trim rings

Platform Sizes (Custom sizes and designs available)

- 48″W x 54″D - 42″W x 54″D	- 42″W x 60″D - 51″W x 51″D (90° applications only)

Enter/Exit Configurations

- Same Side standard - Straight-Through - 90° Adjacent

Equipment

- 208/230 VAC, 1 PH, 30 amp, 60 Hz, 4 HP
- 2:1 roped hydraulic
- Automatic self-leveling
- 3′ 0″ x 6′ 8″ automatic horizontally sliding, two speed hoistway and car door; full-height light curtain
- 4 HP submersible pump and motor for quiet operation
- Two-speed control valve
- Low oil protection
- Single-stage hydraulic jack and two ⅜″ aircraft cables using wedge sockets
- 8 lb. T-rail
- Heavy-duty rollers and guides

Optional Features	
Stops	Up to 6 stops (w/ variance)
Power Supply	Three-Phase motor and controller (208 VAC; 3 PH, 20 amp, 60 Hz, 5 HP)
Car Finish	- Custom wood cars - Stainless Steel cars
Interior Walls	- Steel or wood car prepped for glass (glass by others) - Laminate applied car panels
Fixtures	- LED lights with Brushed Nickel, Bronze or White trim rings - Keyed controls
Communication	- Landing position indicator - Phone line monitoring system - Audio-visual two-way communication system (required by ASME A17.1-2019 & later)
Car Entrance Safety System	3D light curtain (required by ASME A17.1-2019 and later)
Fire Service	Phase 1 and 2 fire service
Warranty	Extended warranties available
Other	- Machine room less (MRL) - Keyed Hoistway access - Ventilation system - Buffer Springs (Minimum 14″ pit required) - Emergency Power Indicator

*****_Wood cars require fire coat to be added in commercial settings_

HOISTWAY
CONSTRUCTION OUTLINE

Rail Backing & General Hoistway

› Provide adequate rail backing per drawings. For vertical spans between floor systems that exceed 10′ 0″, please consult a structural engineer. The wall must be capable of supporting the loads without deflecting more than ⅛″.

› The hoistway must be constructed square and plumb within ⅛″ tolerance throughout.

› The hoistway must be free of any obstructions not related to the operation of the elevator (i.e. sprinklers, pipes, ducts, etc.).

› The structure of the hoistway must allow for installation of a chain hoist to transfer materials during installation.

› The maximum rail bracket spacing is 6′ 0″.

Pit Floor

› Provide a pit floor at a minimum of 13″ (14″ with buffer springs) from the top of the finished floor to the highest point in the pit.

› If required, the pit shall have means to prevent the collection of ground water.

› If provided with fire service, a drain or sump pump shall be provided to remove 3,000 gallons of water per hour.

› Provide a pit floor capable of supporting the loads below:

›› The maximum vertical force imposed on each guide rail upon application of the safety is approximately 4,800 lbs. for a total floor impact of 9,600 lbs. This load is applied at the respective T-rail locations on the base plate.

›› The impact load imposed on each buffer or bumper assembly is approximately 3,300 lbs. for a total floor impact load of 6,600 lbs. This load is applied at the respective buffer or bumper floor plate locations.

›› The approximate overall static net vertical load from the elevator system is 3,760 lbs. This value includes the capacity, car, sling, ram, ram's header and fluid weights and is applied at the ram location on the base plate.

Overhead

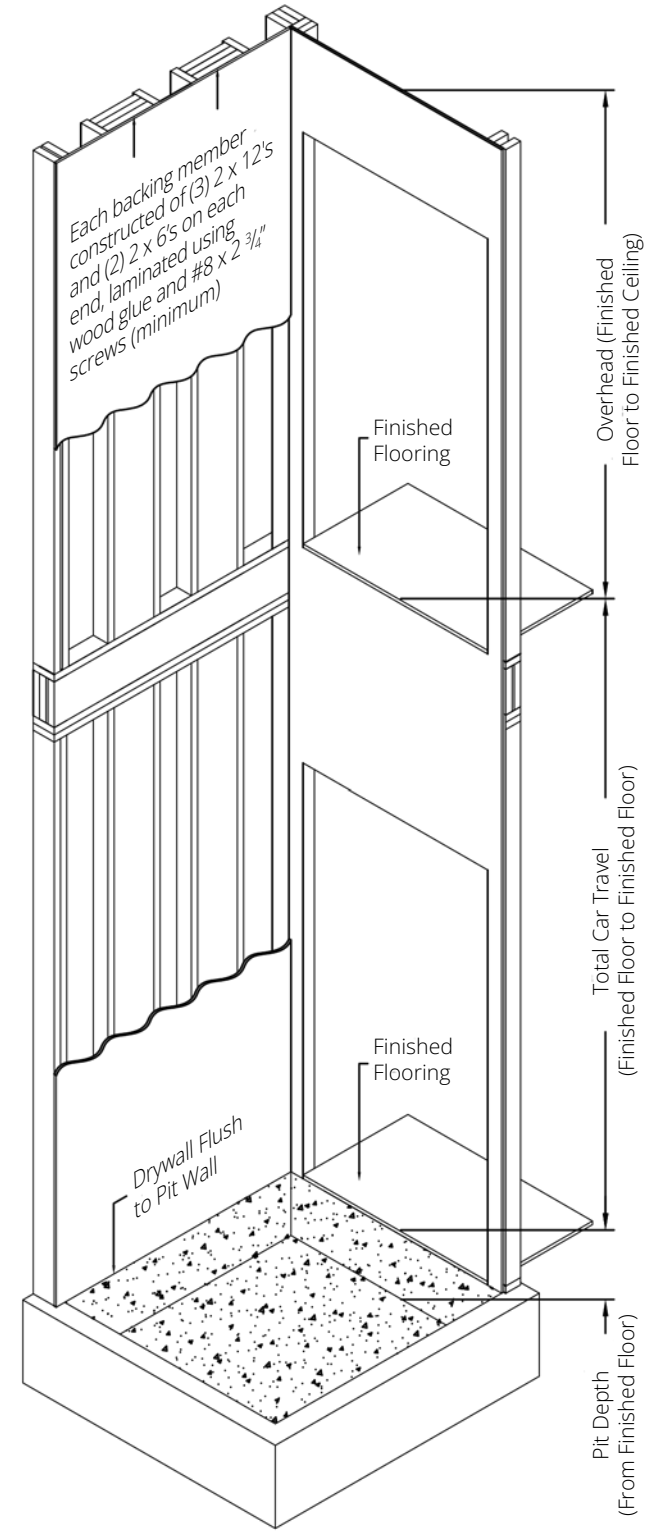
› Provide a minimum overhead of 8′ 8″ (104″) for existing construction.

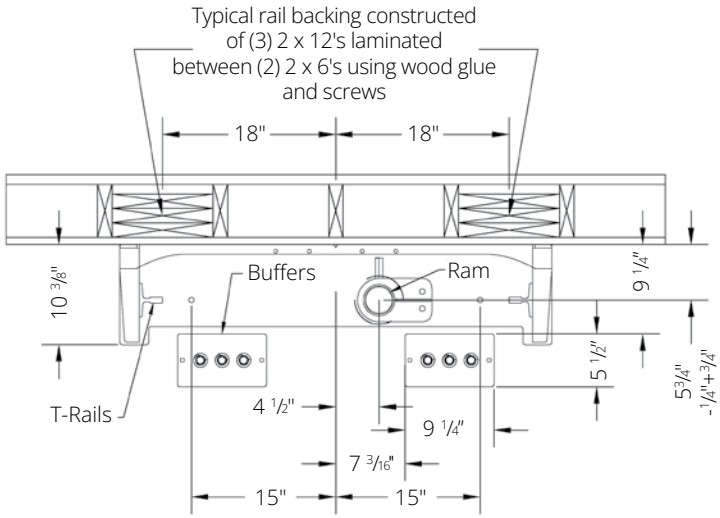
› Provide a minimum overhead of 11′ 0″ (132″) for new construction.

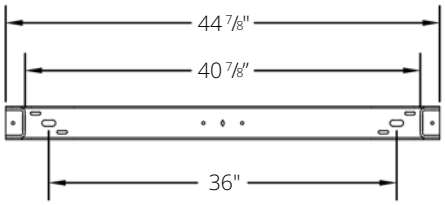
HOISTWAY
SHAFT

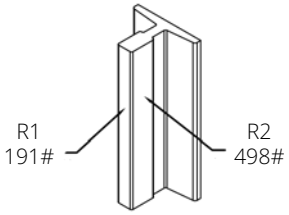
Each backing member is constructed of (3) 2 x 12's and (2) 2 x 6's on each end, laminated using wood glue and #8 x 2 ¾" screws (minimum).

If the backer span exceeds 10' or if the backing construction and/or materials are not as specified, please consult a structural engineer.





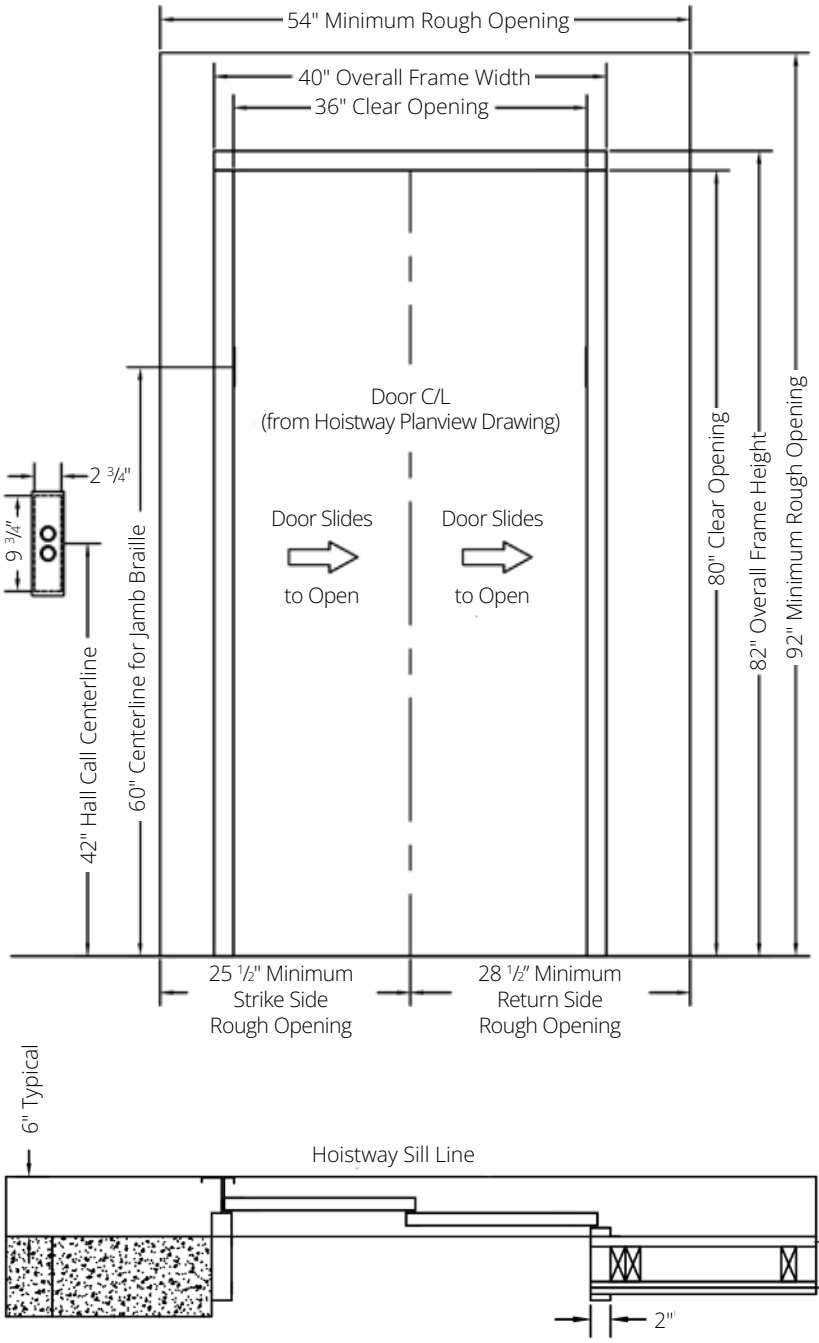




Static Rail Reaction
(per rail)

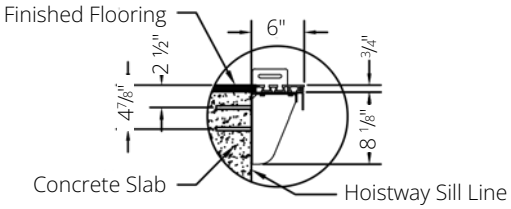
ENTRANCE FRAME

LEFT-HAND SHOWN, RIGHT-HAND OPPOSITE



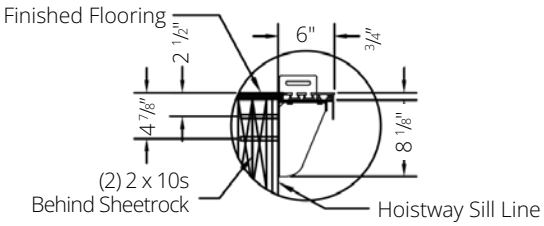
Masonry Construction
Sill Anchors

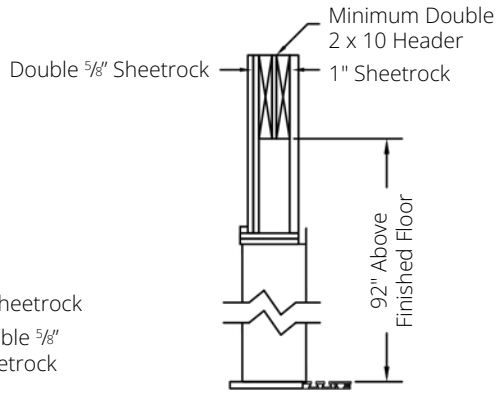
(6) ⅜"" x 3"
Wedge Concrete Anchors



Wood/ Dry Wall Construction
Sill Anchors

(6) ⅜" x 4"
Lag Bolts Zinc

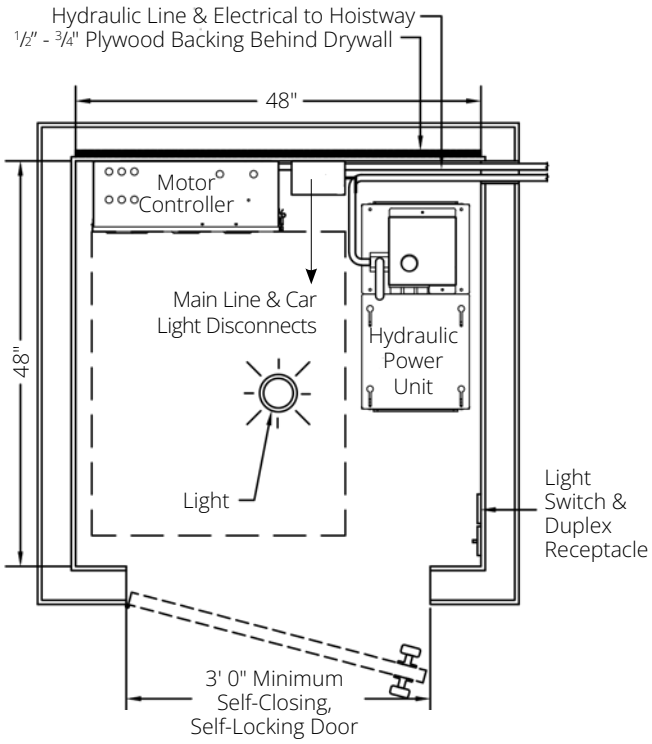


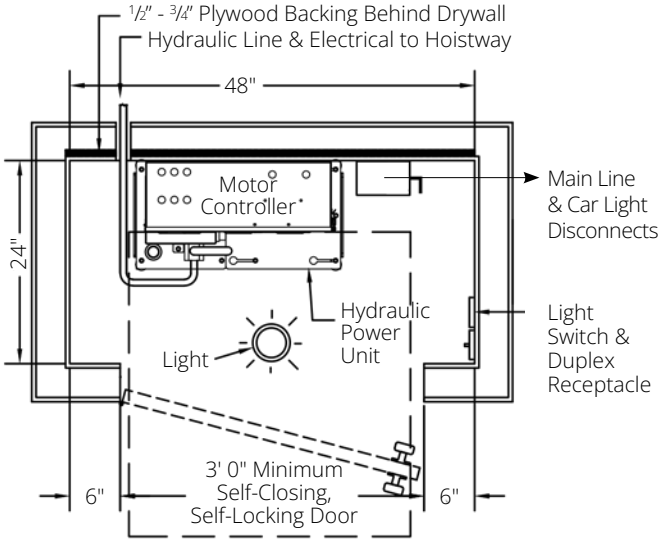


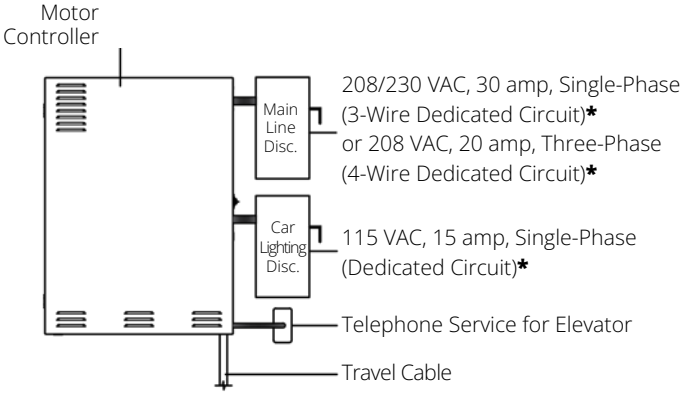
NOTES:

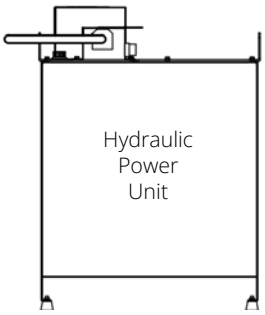
1) Hoistway entrances are manufactured in accordance with 1½ hour fire-rated construction.
2) Hoistway walls to have a fire endurance rating not less than required by Section 110 (1996) or Section 2.1 (2000+) ASME A17.1 Elevator Safety Code.
3) Furnishing, installing and maintaining the required fire rating of elevator hoistway walls, including the penetration of the fire wall by elevator fixture boxes, is not the responsibility of the elevator contractor or manufacturer.
4) The interface of the hoistway wall with the hoistway entrance shall be in strict compliance with the entrance manufacturer's requirements in order to retain fire rating and label validity of the elevator hoistway doors and frame.
5) Hoistway walls at entrances should be left open for the full width of the shaft until after door sills and frames are set in place. If this is not feasible, leave a 54"W x 92"H rough opening.
6) Filling and grouting by General Contractor.

HYDRAULIC DRIVE
MACHINE ROOMS









Motor Controller
22"W x 30"H x 8"D

Main Line Disconnect
Single-Phase
Square D-H322N or Equivalent
2 Pole with Auxiliary Contact or 3 Pole

Three-Phase
Square D-H321N or Equivalent
3 Pole with Auxiliary Contact

Car Lighting Disconnect
Square D-G221N or Equivalent

Hydraulic Power Unit
24 ¼"W x 33 ½"H x 12 ¾"D

NOTES:
1) The elevator machine room location and layout must meet the code requirements defined by the local authority having jurisdiction.
2) 30" wide x 36" deep clear working space in front of the motor controller and disconnects as required by National Electrical Code (NFPA 70).
3) The disconnects and light switch must be located on the strike side of the machine room door.
4) The hydraulic power unit must be located within 40' 0" of the cylinder.
5) The machine room must be free of all equipment not related to the elevator.
6) The minimum machine room headroom is 7' 0".
7) The machine room must be maintained between 50°F and 80°F, with relative humidity from 5% to 95%, non-condensing

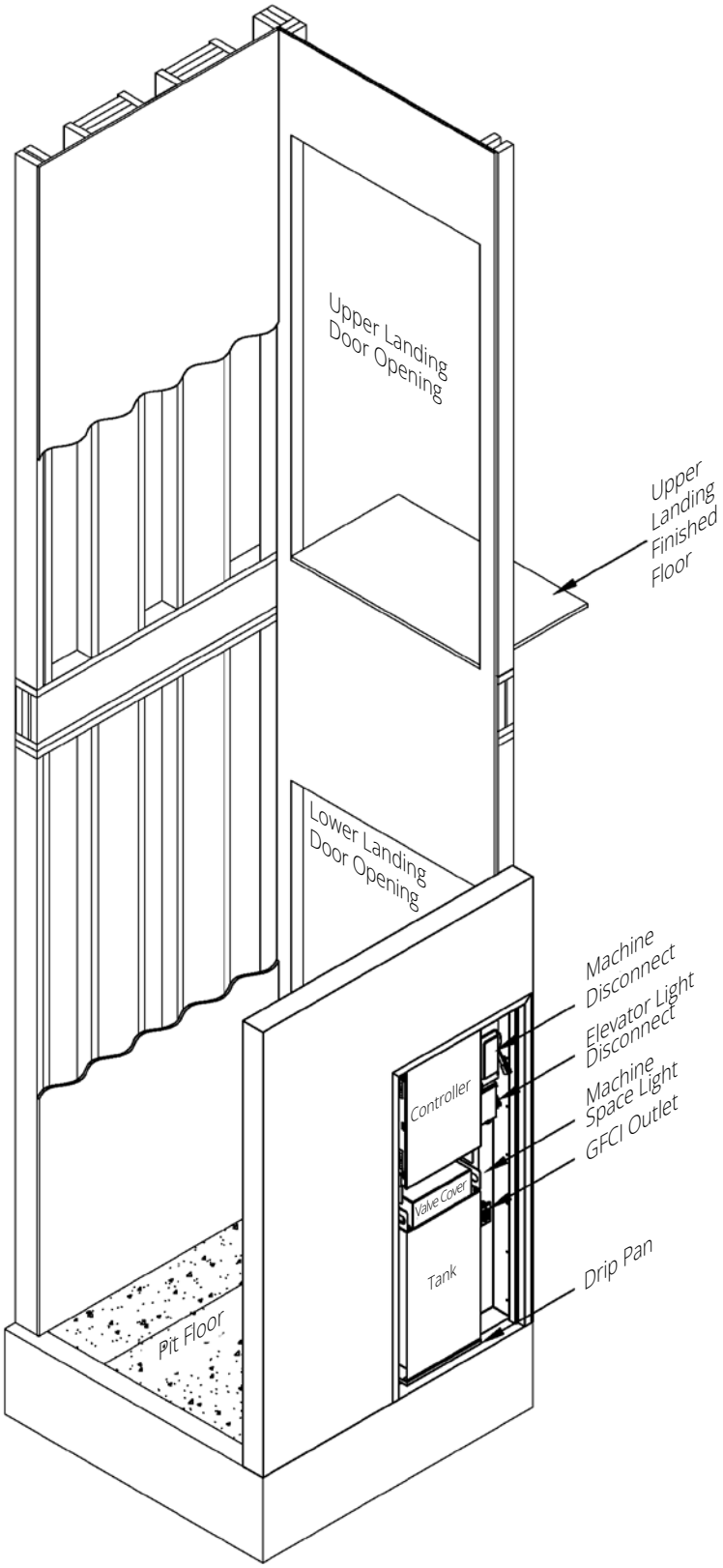
***Feeding breaker must not be a GFCI*

HYDRAULIC DRIVE
SHAFT WITH MRL MACHINE SPACE

LULA Elevator machine space for Machine Room-Less (MRL) application

Machine space door and Hoistway wall removed for clarity.

The machine space wall thickness must be 8" when disconnects are required to be in the machine space



1. Lighting: The machine space must have at a minimum 19 ftc at the floor level.
2. The outlet, lighting and disconnects must be located on the strike side of the door.
3. Self closing/self locking door required.
4. A 36" door is required when a fused disconnect is required inside the machine space.
5. The 36" door should be used when an 8" wall thickness is used.
6. A splash guard is required when the hoistway is sprinkled.
7. Do not block the door. Keep clear at all times.
8. Heat load: At two cycles per hour, the average heat load will be equivalent to an 80-Watt light bulb operating continuously; at five cycles per hour, the average heat load will be equivalent to a 200-Watt light bulb operating continuously.
9. The minimum machine space headroom is 7' 0".
10. The machine space must be maintained between 50°F and 80°F, with relative humidity from 5% to 95%, non-condensing.

HYDRAULIC DRIVE

MRL MACHINE SPACE

NOTES:

1) 3′ 0″ wide x 6′ 8″ tall x 8″ deep door shown with disconnects in the machine space.
- 2′ 8″ x 6′ 8″ x 5 ¾″ deep door available with disconnects mounted remotely.

2) Doors are available from elevator manufacturer or may be provided by others.

3) If providing machine and lighting disconnects in the machine space, an 8″ wall depth is required.

4) 30″ x 36″ working space in front of door as required by National Electrical Code (NFPA 70).

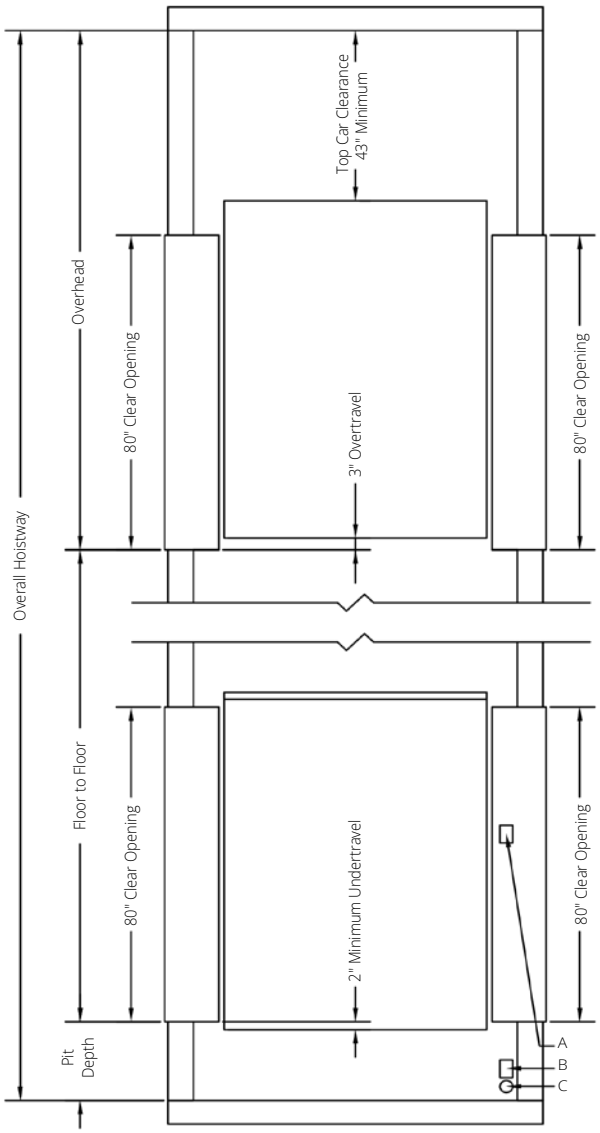
5) Filler panels will be provided to prevent entry into the hoistway
- There are moving parts behind the filler panels. The filler panels do not need to be removed to service the elevator.

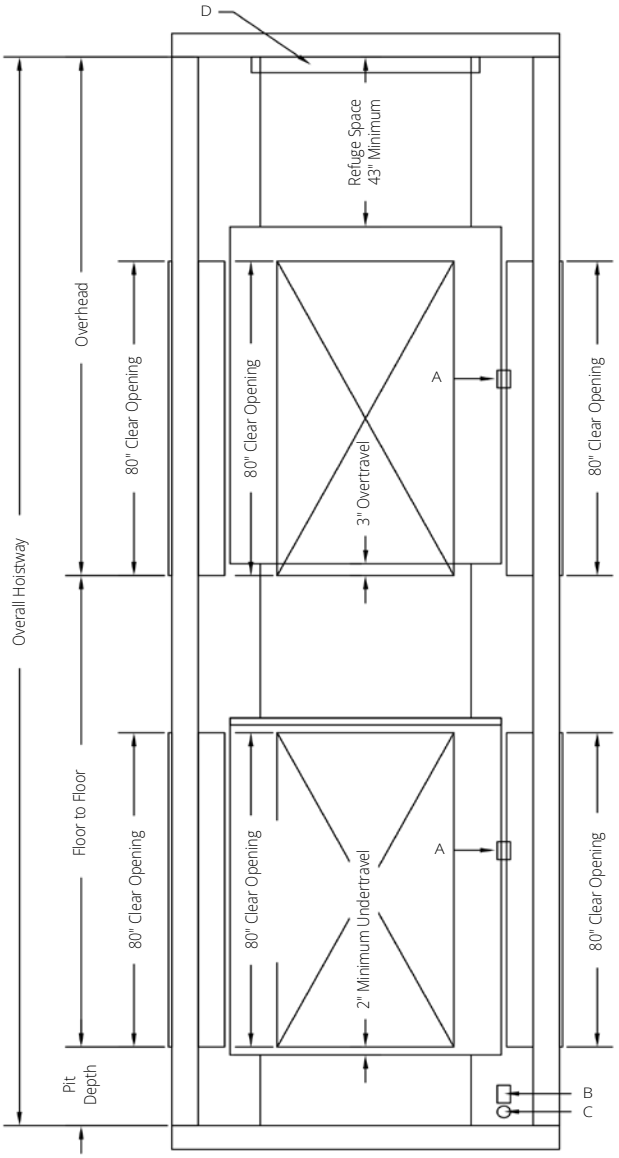
6) No material other than that related to the elevator's operation is permitted in the machine space.

7) Machine space access door must be accessible from inside the building and can be located at any landing, excluding entrance walls.

8) The door comes with a standard entry lockset. Since most installations will rekey the door to meet the building's security needs, it is recommended to install a storeroom lockset on-site.

HOISTWAY
CONFIGURATION





NOTES:

1) Hoistway must be free of any obstructions unrelated to the elevator operation (i.e. pipes, ducts, etc.).

2) The minimum floor-to-floor travel between any two entrances on the same wall is 98 ½" (8' 2 ½").

3) The minimum floor-to-floor travel between straight-through or 90° sides is 26".

4) The minimum floor-to-floor travel between any two landings is 16".

5) The minimum pit depth is 13" (14" if buffer springs are required).

6) The minimum overhead is 8' 8" for existing construction or 11' 0" for new construction.

WORK BY GENERAL CONTRACTOR (2022 CODE YEAR):

A) Pit**/**Hoistway Light Switch Installed 4' 0" above the finished floor for both the top and bottom floor.
- Both the pit and hoistway light shall be activated by either the Pit Light Switch or the Hoistway Light Switch. There is also an interface box in the machine room that will provide a normally open dry contact for activating the lights as well. The light switches may not turn the lights off when the dry contact is activated.
- The light switch needs to be coordinated with the elevator contractor to ensure it does not interfere with the elevator components.

B) Pit GFI Duplex Receptacle.

C) Pit Light.

D) Hoistway Light (minimum of 5,280 lumens).
- The hoistway light needs to be installed with the furthest edge of the light no more than 20" from the opposite wall and centered along the wall.

SINGLE OPENING

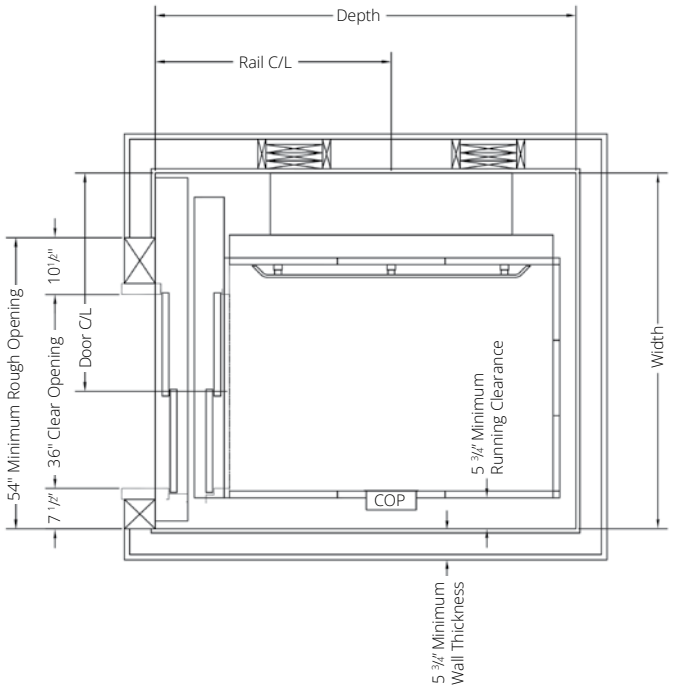
TYPICAL SINGLE OPENING

Rail Left, Right-Hand Door (shown)

Rail Right, Left-Hand Door (opposite)

Car Size	Width*	Depth	Rail C/L	Door C/L
42 x 54	66″	72″	40 3/4″	40 1/2″
42 x 60	66″	78″	43 3/4″	40 1/2″
48 x 54	68″	72″	40 3/4″	42 1/2″

*****Add 2″ to width if a fixed pit ladder is required*



SINGLE OPENING - MRL OPTION

Rail Left, Right-Hand Door (shown)

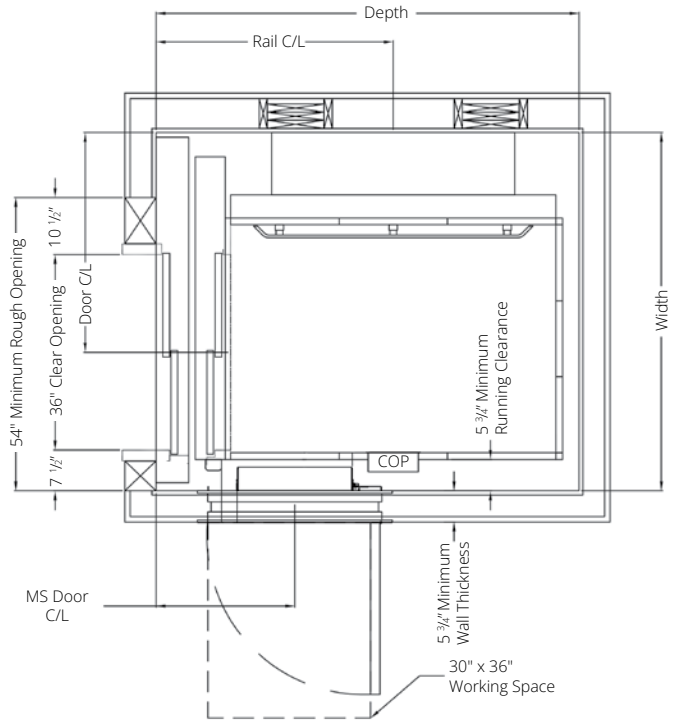
Rail Right, Left-Hand Door (opposite)

Car Size	Width*	Depth	Rail C/L	Door C/L	32″ MS Door C/L**	36″ MS Door C/L§
42 x 54	66″	72″	40 3/4″	40 1/2″	26 1/8″	20 7/8″
42 x 60	66″	78″	43 3/4″	40 1/2″	27 5/8″	20 7/8″
48 x 54	68″	72″	40 3/4″	42 1/2″	26 1/8″	20 7/8″

*****Add 2″ to width if a fixed pit ladder is required*

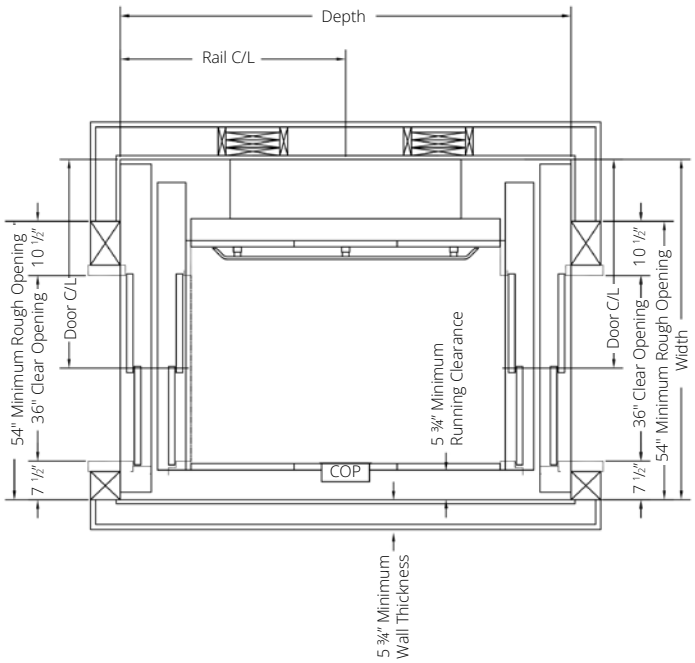
******Machine space must be opposite rail wall, but may be at any landing, not landing doors*

§*If fusible disconnects are required in the machine space, minimum wall thickness is 8″*



SIZES & DIMENSIONS

OPPOSITE OPENING

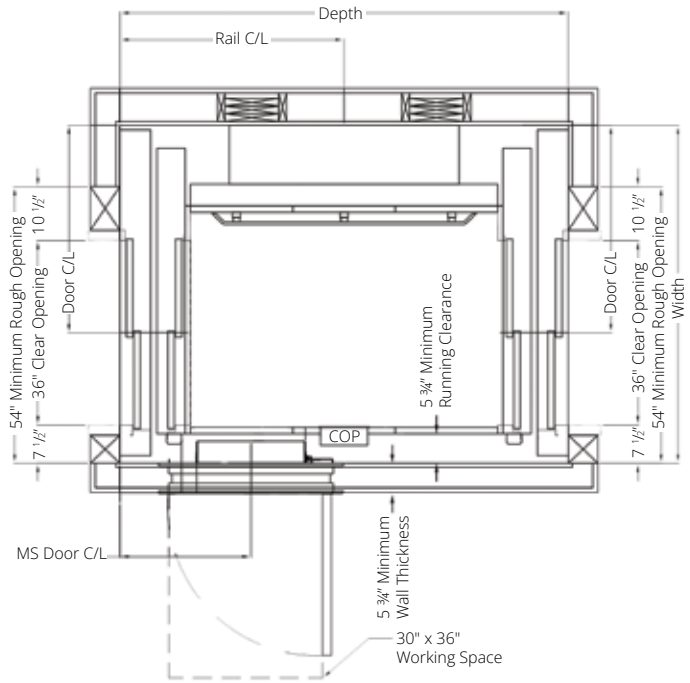


TYPICAL OPPOSITE OPENING

Rail Left, Right-Hand Door, Left-Hand Door Rail Right, Left-Hand Door, Right-Hand Door

Car Size	Width*	Depth	Rail C/L	Door C/L
42 x 54	66"	81 ½"	40 ¾"	40 ½"
42 x 60	66"	87 ½"	43 ¾"	40 ½"
48 x 54	68"	81 ½"	40 ¾"	42 ½"

*****Add 2" to width if a fixed pit ladder is required*



OPPOSITE OPENING - MRL OPTION

Rail Left, Right-Hand Door, Left-Hand Door Rail Right, Left-Hand Door, Right-Hand Door

Car Size	Width*	Depth	Rail C/L	Door C/L	32" MS Door C/L**	36" MS Door C/L§
42 x 54	66"	81 ½"	40 ¾"	40 ½"	26 ⅛"	20 ⅞"
42 x 60	66"	87 ½"	43 ¾"	40 ½"	27 ⅛"	20 ⅞"
48 x 54	68"	81 ½"	40 ¾"	42 ½"	26 ⅛"	20 ⅞"

*****Add 2" to width if a fixed pit ladder is required*

******Machine space must be opposite rail wall, but may be at any landing, not landing doors*

§*If fusible disconnects are required in the machine space, minimum wall thickness is 8"*

90° OPENING

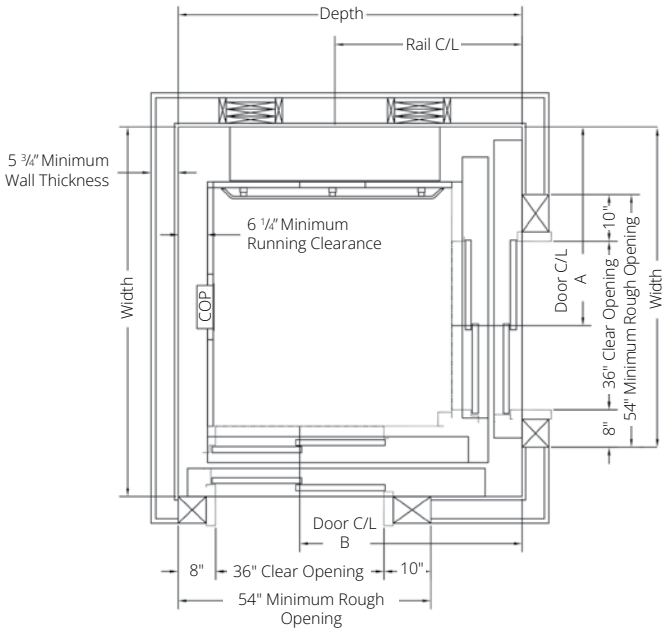
TYPICAL 90° OPENING

Rail Right, Left-Hand Doors (shown)

Rail Left, Right-Hand Doors (opposite)

Car Size	Width*	Depth	Rail C/L	Door C/L A	Door C/L B
51 x 51	79″	73 ½″	40″	36 ½″	47 ½″

*****Add 2″ to width if a fixed pit ladder is required*



90° OPENING - MRL OPTION

Rail Right, Left-Hand Doors (shown)

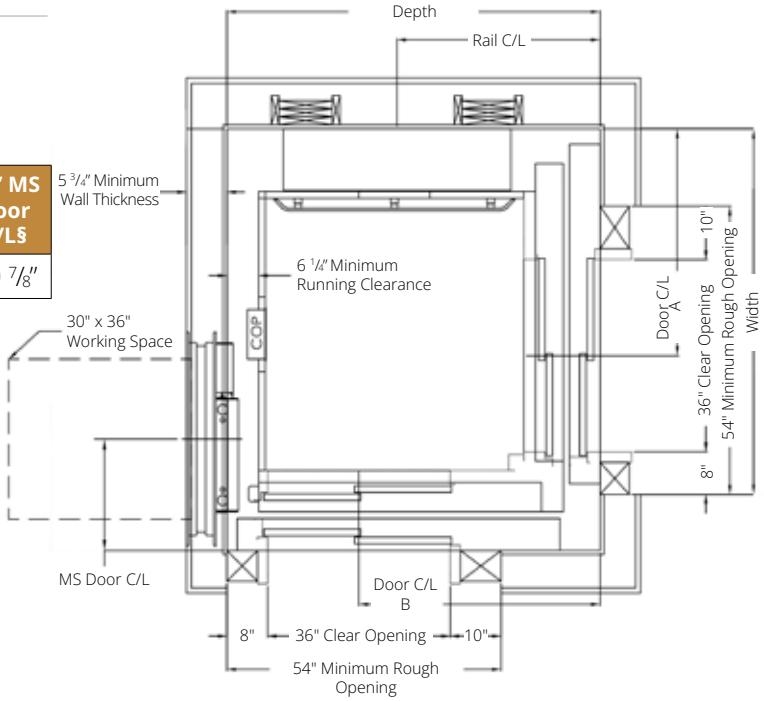
Rail Left, Right-Hand Doors (opposite)

Car Size	Width*	Depth	Rail C/L	Door C/L A	Door C/L B	32″ MS Door C/L**	36″ MS Door C/L§
51 x 51	79″	73½″	40″	42½″	47½″	26″	20 ⅞″

*****Add 2″ to width if a fixed pit ladder is required*

******Machine space must be opposite rail wall, but may be at any landing*

§*If fusible disconnects are required in the machine space, minimum wall thickness is 8″*



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