

FREEDOM 1500

Benefits...

- Hydraulic elevator with large capacity – 1500 lb capacity
- Automatic side-sliding cab door
- Automatic side-sliding landing doors
- Large cab sizes (40"x48", 44"x 54", 44"x 60")
- 96" ceiling is standard

The right situation...

- Looking for an upgrade to typical accordion gates found in most residential elevators
- Looking for large capacity elevator

Watch out for...

- Permits – technically, ASME code does not allow platforms greater than 15 sq ft for residential use
- 3 stops or higher will require a long hydraulic jack – make sure it can be moved into the hoistway
- Travel greater than 384" will require a split jack – make sure you plan for \$1000 upgrade

Additional Information...

- The installation takes approximately 3-4 days
- The customer must have site prepared with permanent power to a fuseable disconnect box
- Power and low voltage cable should be run to machine room
- Should have a functional telephone jack run to machine room
- Hoistway must be built to follow specs with special attention to reinforced rail wall
- The dimensions in the drawings are FINISHED dimensions, after sheetrock is installed
- The hoistway, must be sheetrocked, and doors must be hung prior to start of installation
- The hoistway should have a service light and power outlet
- Pit must be at least 8" in depth, and pit walls must be flush with hoistway walls (no lip)

Information to capture...

- Capture floor to floor measurements – must be within 1/4"
- Capture overhead distance on upper floor – must be at least 108" for 96" cab
- Capture finished hoistway dimensions – make sure you figure in sheetrock thickness
- Capture pit depth
- Note door locations and door swings
- Note location of rail wall
- Capture customer's preferences regarding wall finishes, controller finish, and call stations

FREEDOM 1500

Residential Elevator

Planning Guide

**ASME A17.1 Part V
CSA B44.0**

Effective November 15, 2005

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Introduction

This planning guide is provided to assist architects, builders, contractors, home owners and elevator professionals in planning for a home elevator installation that meets the requirements of ASME A17.1 Part V/CSA B44.0.

Please note that this guide provides nominal dimensions and specifications and is useful for initial planning. Before starting construction please consult the specific application drawings provided by Nationwide Lifts that indicate exact dimensions for your project.

Please note that due to product enhancements and continually evolving codes, the information in this guide is subject to change without notice.

Planning a FREEDOM 1500 Elevator Installation

The following planning procedure is strongly recommended:

1. Determine the customer's intention for use.
2. Determine code requirements of site.
3. Use pages 6 – 9 to determine car and hoistway size requirements.
4. Use pages 10 and 11 to plan hoistway construction.
5. Use page 12 to plan for landing door requirements.
6. Use page 13 and 14 to plan for machine room and electrical requirements.

Description of Elevator Equipment

General

- Rated load: 1500 lb.
- Nominal speed: 40 feet per minute
- Minimum pit depth: 8"
- Minimum overhead clearance: 108"
- Maximum travel: 50 feet
- Maximum number of stops: 6

Mechanical Equipment

- 208/230 VAC, 60 Hz, 40 Amp single phase power supply
- Dual 8 lb. modular T-rail system
- Two 3/8" diameter, 17 x 9 wire ropes
- Sling assembly
- Forged rope sockets
- 2:1 roped hydraulic single stage cylinder
- 3.5 hp submersed pump with two-speed valve

Cab and Appointments

- Cab floor sizes:
40" x 48"
44" x 54"
44" x 60"
Custom sizes available
- Cab height: 96"
- Four (4) recessed halogen cab lights
- Unfinished plywood walls (finishing by others)
- Unfinished plywood floor (finishing by others)

Gates and Doors

- Option 1: Swing door for each landing with automatic sliding cab door
- Option 2: Automatic sliding door frames at each landing with automatic sliding cab door
- Finishes available for sliding doors: Stainless steel or beige epoxy

Controls

- Relay logic controller
- Fully automatic operation
- Stainless steel car operating panel (COP), telephone box and hall call stations
- Automatic timed cab lighting
- Illuminated, position indicating push buttons on COP
- Emergency stop switch on COP

Safety Devices

- Three (3) stainless steel handrails in cab (subject to cab configuration)
- 208/230 VAC lockable disconnect for power unit
- Final limit
- Slack rope safety switch
- Pit stop switch
- Car top stop switch
- Line rupture valve
- Low pressure switch
- Automatic releveling
- 72" light beam safety curtain
- Emergency battery lowering, lighting and door opening
- Electromechanical door interlocks
- Manual lowering device
- Telephone in cab

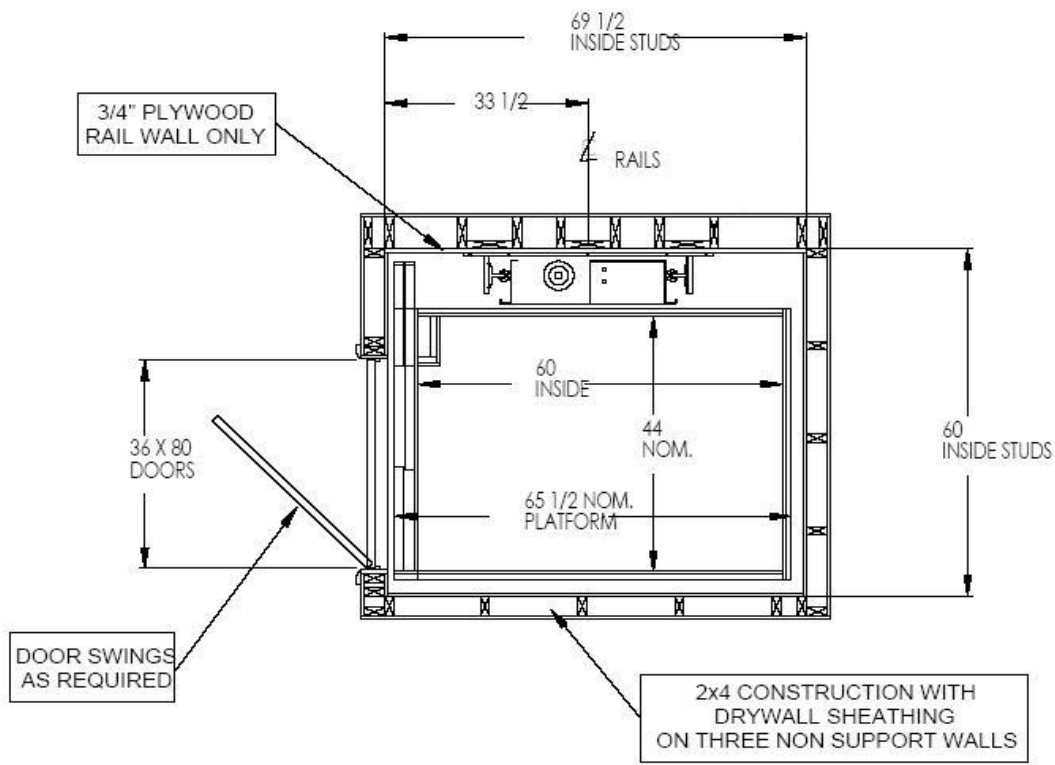
Options

- Custom cab sizes available
- Pre-finished oak, maple or cherry hardwood raised panel cab walls and ceiling
- Brass COP, telephone box and hall call stations
- Brass handrails
- Two piece hydraulic jack
- Handrail COP

Hoistway and Cab Dimensions

‘In-Line’ Cab Design (enter/exit same side)

Option 1 model

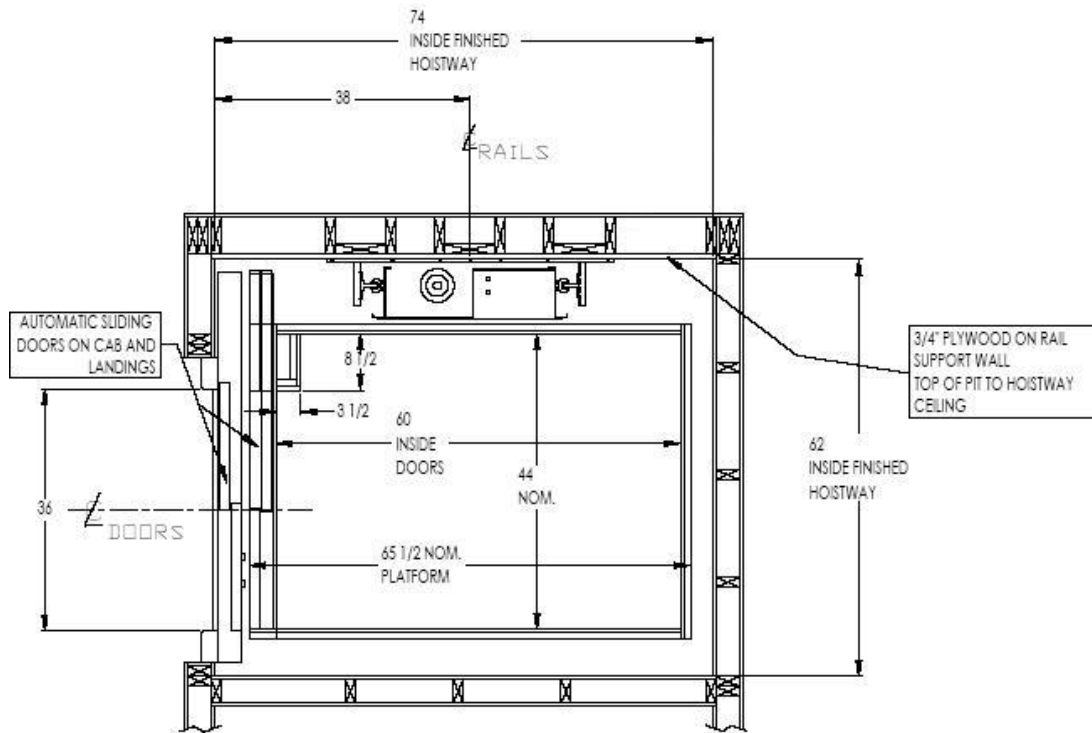


	Hoistway Dimensions [Width x Length]	Platform Dimensions [Width x Length]
Option 1 In-Line	56" x 58"	40" x 48"
	60" x 64"	44" x 54"
	60" x 69 1/2"	44" x 60"
	<i>Custom sizes available</i>	

Hoistway and Cab Dimensions

‘In-line’ Cab Design (enter/exit same side)

Option 2 model

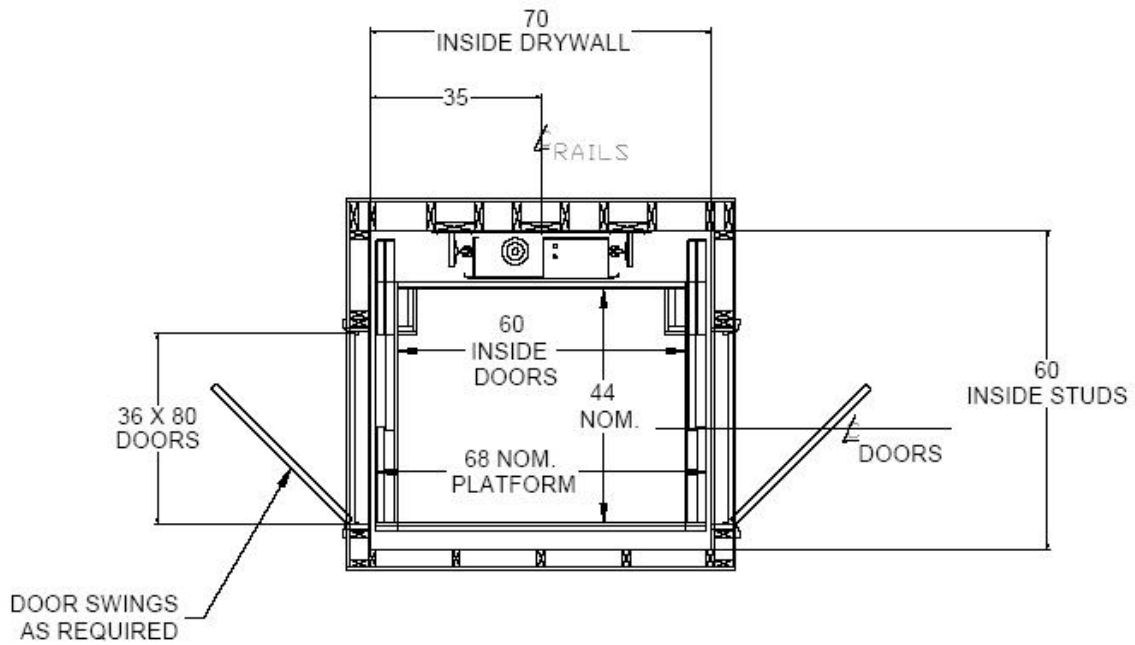


	Hoistway Dimensions [Width x Length]	Platform Dimensions [Width x Length]
Option 2 In-Line	60" x 62"	40" x 48"
	62" x 68"	44" x 54"
	62" x 74"	44" x 60"
	<i>Custom sizes available</i>	

Hoistway and Cab Dimensions

'Thru' Cab Design (enter/exit opposite side)

Option 1 model

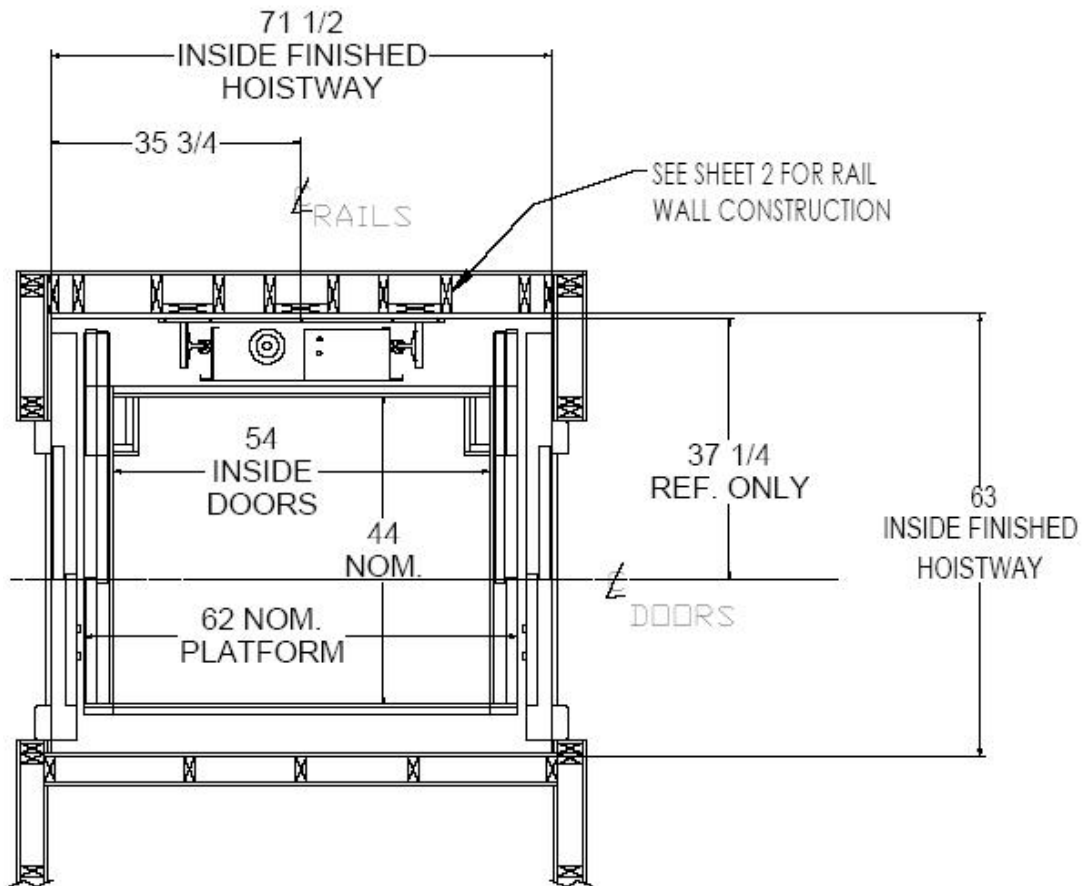


	Hoistway Dimensions [Width x Length]	Platform Dimensions [Width x Length]
Option 1 Thru	56" x 58"	40" x 48"
	60" x 64"	44" x 54"
	60" x 70"	44" x 60"
<i>Custom sizes available</i>		

Hoistway and Cab Dimensions

‘Thru’ Cab Design (enter/exit opposite side)

Option 2 model

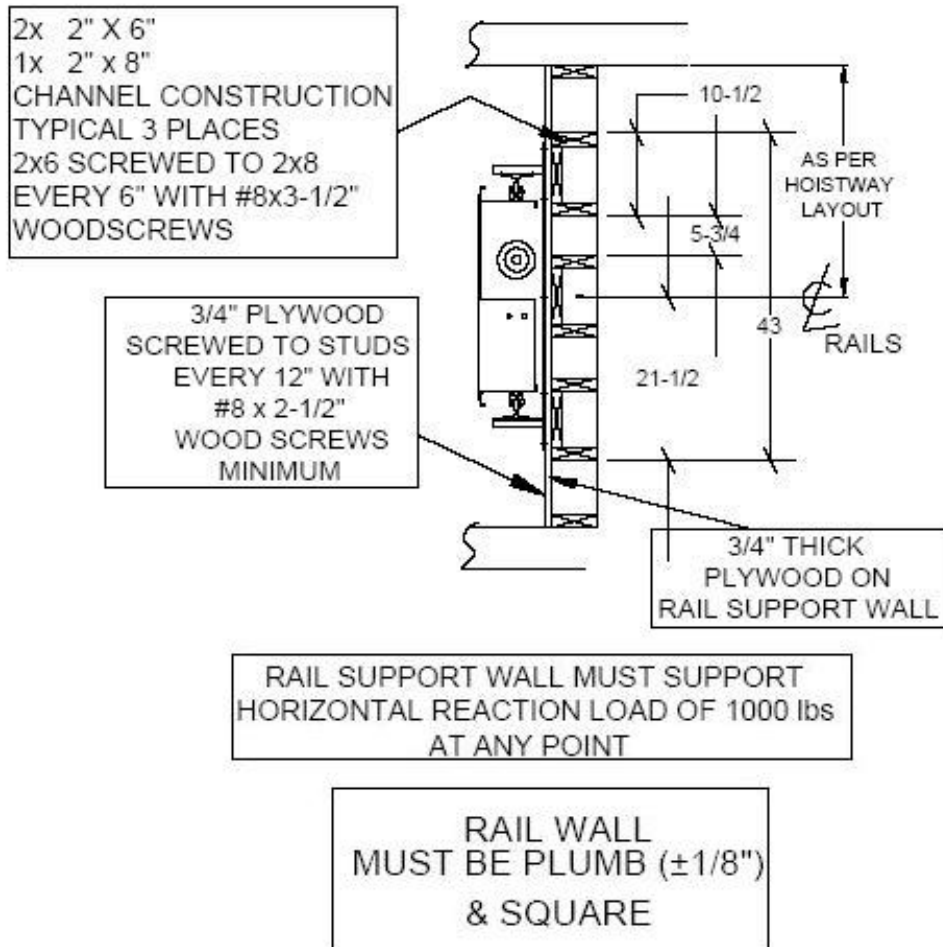


Option 2 Thru	Hoistway Dimensions [Width x Length]	Platform Dimensions [Width x Length]
	60" x 66"	40" x 48"
	63" x 71 1/2"	44" x 54"
	63" x 78"	44" x 60"
	<i>Custom sizes available</i>	

Hoistway Construction

- A load bearing wall is required to sustain rail reactions; please see *Guide Rail Backing Construction* for detail.
- Hoistway must be in accordance with ASME A17.1/CSA B44.0, as well as all local codes and regulations.
- Pit floor construction must withstand a 5000 lb. load.
- Due to limited clearances, it is necessary that hoistway walls be square and plumb. Maximum permissible deviation from hoistway top to bottom is 3/16".
- Building structure must sustain a chain hoist for hoisting elevator materials to the top of the hoistway during installation.
- A structural engineer must ensure that building and hoistway can safely support all loads imposed by the elevator equipment.

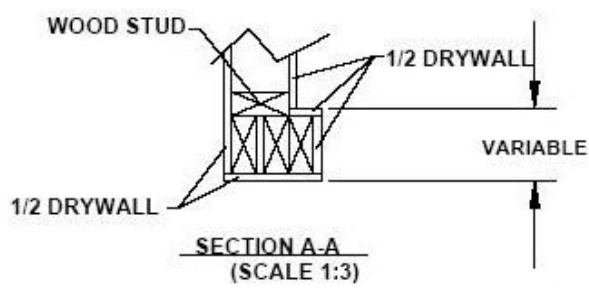
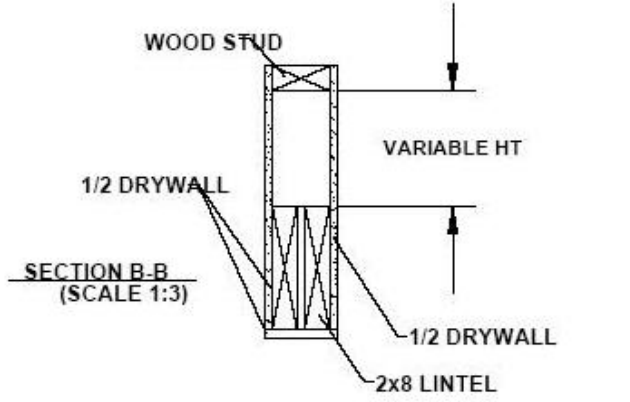
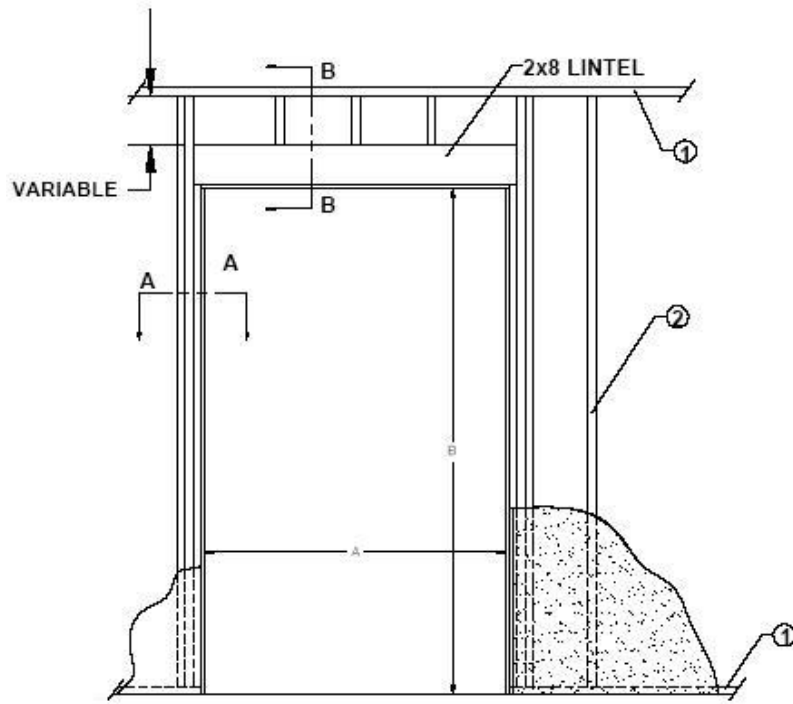
Guide Rail Backing Construction



Plan View of Hoistway

Wood studs to run the full height of the hoistway. Please consult the application drawing provided by Nationwide Lifts for exact placement of studs.

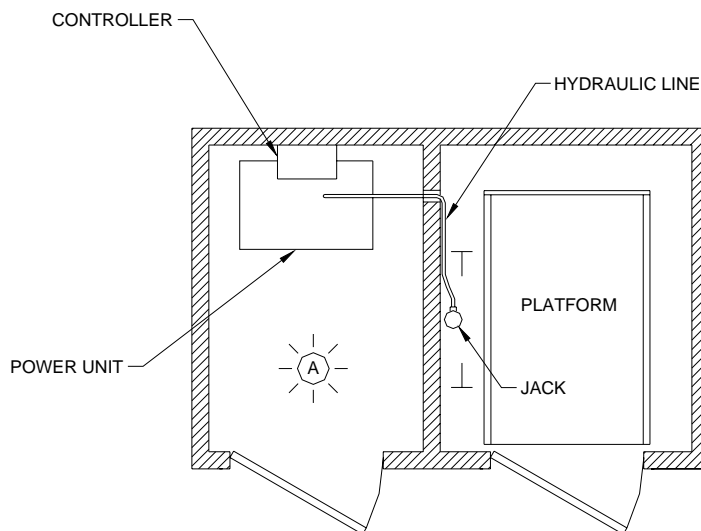
Landing Door Opening Construction



Door Size	A Dimension	B Dimension
35 1/2" x 78 3/4"	46"	86 3/4"

Machine Room and Electrical Requirements

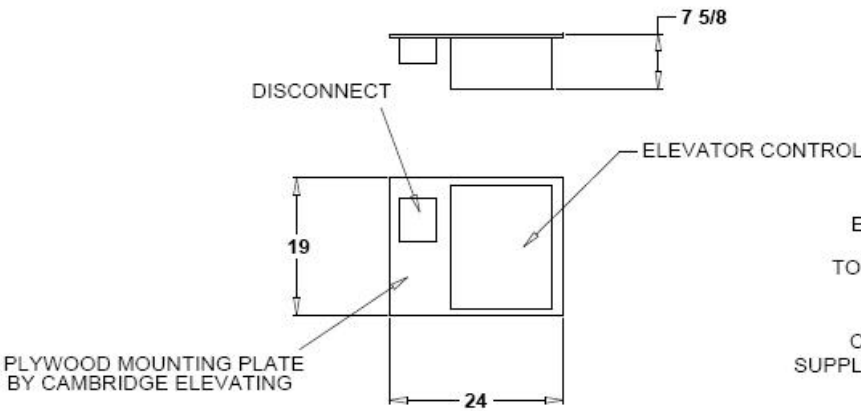
- Machine room must be in accordance with all codes and regulations.
- A 208/230 VAC, 60 Hz, 40 Amp single phase power source in the machine room to be provided.
- A telephone line circuit to be provided. This circuit must be connected to an outside line.
- A 120 VAC, 60 Hz, 15 Amp dedicated circuit for car lighting to be provided.



Plan View of Machine Room

Elevator Control Panel and Pump Unit Specifications

Elevator Control Panel



ELECTRICAL CONTRACTOR TO SUPPLY ONE DEDICATED CIRCUIT

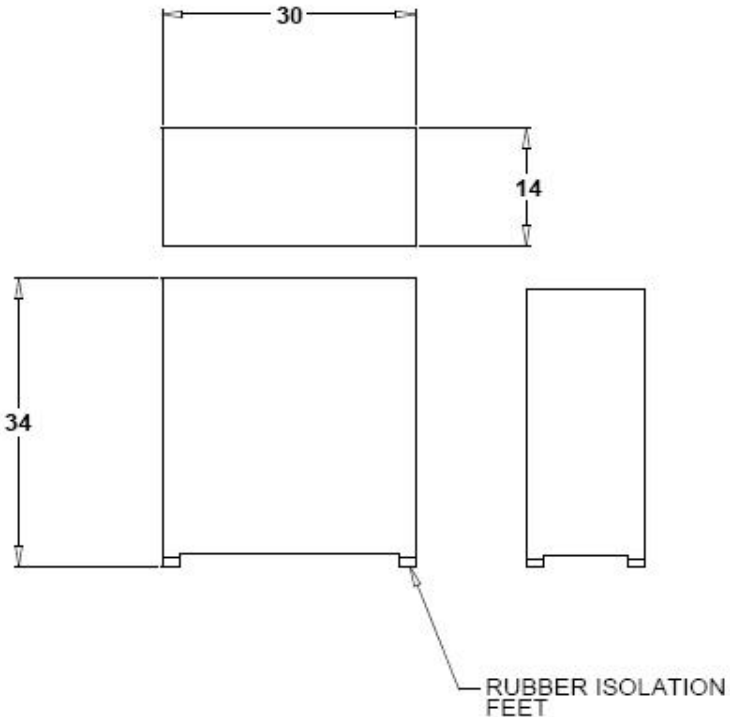
220 VAC
40 AMP
10/3 CONDUCTOR
(BLK, RED, WHITE, GRD)

ELECTRICAL CONTRACTOR TO SUPPLY 10/3 CABLE TO LOCATION OF POWER UNIT. LEAVE EXCESS CABLE.

CAMBRIDGE ELEVATING TO SUPPLY DISCONNECT AT POWER UNIT

CONTROL PANEL TO BE MOUNTED ON WALL WITHIN 6 FEET OF POWER UNIT

Hydraulic Power/Pump Unit



TO BE LOCATED WITHIN 20 FEET OF ELEVATOR SUPPORT WALL FOR LONGER DISTANCES CONSULT CAMBRIDGE ELEVATING

ACCESS REQUIRED TO TOP OF UNIT FOR OIL FILLING AND PIPING

Elevator Specifications for ASME A17.1 Part V Compliance

PART 1 – GENERAL

1.1 Product Description

A private residence 2:1 roped hydraulic elevator.

1.2 Quality Assurance

The elevator shall be designed, tested and installed in compliance with all applicable regulations and in accordance with ASME A17.1/CSA B44.0 standards. Elevator may be subject to state, local and city approval prior to installation and subject to inspection after installation.

1.3 Applicable Codes and Standards

1.3.1 ASME A17.1/CSA B44.0, *Private residence Elevators*

1.3.2 ASME A17.5/CSA B44.1, *Elevator and Escalator Electrical Equipment*

1.3.3 ICC/ANSI A117.1-1998, *Accessible and Usable Buildings and Facilities*

1.3.4 NFPA 70-1999, *National Electric Code*

1.3.5 ADAAG, *Americans with Disabilities Act Accessibility Guidelines*

PART 2 – PREPARATORY WORK BY OTHERS

2.1 Hoistway

Provide an enclosed, plumb and square hoistway with smooth interior surfaces. Provide fascias or furring of hoistway interior where required.

2.2 Machine Room

Provide a machine room as required by applicable codes and standards.

2.3 Electrical

Provide a 208/230 VAC, 60 Hz, 40 Amp single phase power source in the machine room.

Provide a 120 VAC, 60 Hz, 15 Amp dedicated circuit for car lighting.

PART 3 – SUBMITALS

3.1 Approval Drawings

Approval drawings shall show a complete layout of elevator equipment, including plan and elevation views.

PART 4 – PRODUCT

4.1 Equipment Manufacturer

The elevator shall be manufactured by Cambridge Elevating.

4.2 Components

The elevator will have the following components.

4.2.1 Cab

Standard cab dimensions:

40" x 48" x 96"

44" x 54" x 96"

44" x 60" x 96"

Custom cab dimensions: please consult our engineering department.

4.2.2 Hydraulic Power unit and Motor

Power unit consists of submersible 3.5 hp squirrel-cage induction motor, adjusting screw for the pressure relief valve, adjusting screw for down speed, pressure gage, manual lowering device and a hand pump.

4.2.3 Controller

Certified relay logic controller.

4.2.4 Cylinder

Single stage jack with rupture valve, 750 psi working pressure.

4.2.5 Ropes

Two 3/8" diameter, 17 x 9 wire ropes.

4.2.6 Guide rail

Dual 8 lb. steel modular T-rail system.

4.2.7 Car Sling

The elevator cab shall be supported by the car sling. The car sling shall be made of structural and formed steel and equipped with guide shoes.

4.2.8 Gates and doors

Option 1: Swing door for each landing with automatic sliding cab door

Option 2: Automatic sliding door frames at each landing with automatic sliding cab door

4.2.8 Safety Devices

The elevator will have the following safety devices.

4.2.8.1 208/230 VAC lockable disconnect for power unit

4.2.8.2 Final limit

4.2.8.3 Slack rope safety switch

4.2.8 Safety Devices (continued)

4.2.8.4 Pit stop switch

4.2.8.5 Car top stop switch

4.2.8.6 Line rupture valve

4.2.8.7 Low pressure switch

4.2.8.8 Automatic releveling

4.2.8.9 72" light beam safety curtain

4.2.8.10 Emergency battery lowering and door opening

4.2.8.11 Electromechanical door interlocks

4.2.8.12 Manual lowering device

4.2.8.13 Handrail(s) inside cab

PART 5 – EXECUTION

5.1 Examination

All site dimensions shall be verified to ensure they meet specifications, codes and regulations.

5.2 Installation

Elevator shall be installed by trained technicians in accordance with approved plans, specifications and manufacturer's installation instructions.

5.3 Maintenance

Elevator shall be maintained in accordance with the manufacturer's instructions and all applicable codes.

5.4 Warranty

Elevator shall carry twenty-four (24) month limited warranty on parts only.

FOR PROJECTS SOLD WITH AUTOMATIC SLIDING DOORS ON LANDINGS

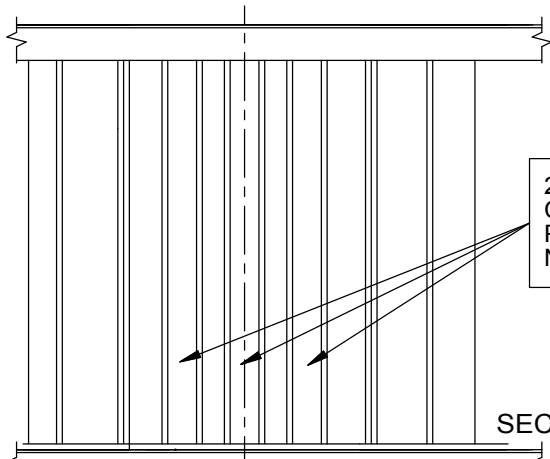
DOOR ROUGH OPENING DETAILS

STUD CONSTRUCTION

DOOR OPENING TO BE LEFT FULL HEIGHT
FLOOR TO CEILING
HEADER AND SLIP STUDS TO BE INSTALLED AT
TIME OF ELEVATOR INSTALLATION
OPENINGS TO BE FULL WIDTH OF HOISTWAY

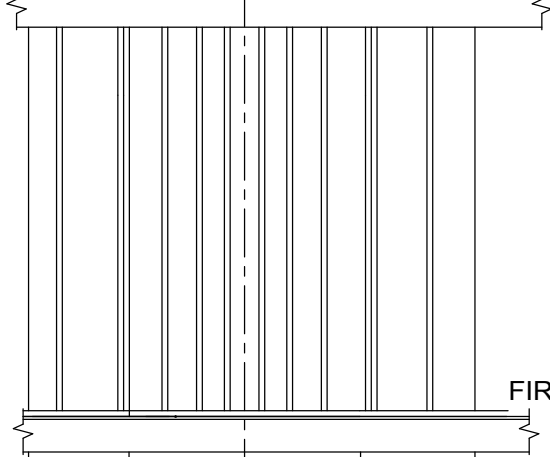
CONCRETE CONSTRUCTION

DOOR OPENING TO BE LEFT FULL HEIGHT
FLOOR TO CEILING, WOOD HEADER
AND SLIP STUDS TO BE INSTALLED AT TIME OF
ELEVATOR INSTALLATION
OPENINGS TO BE FULL WIDTH OF HOISTWAY



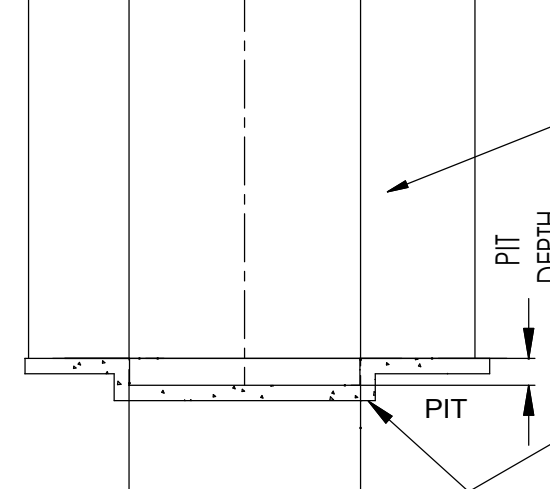
2x6 AND 2x8
CHANNEL CONSTRUCTION
PLYWOOD SHEATHING
NOT SHOWN

SECOND



2x 2" X 6"
1x 2" x 8"
CHANNEL CONSTRUCTION
TYPICAL 3 PLACES
2x6 SCREWED TO 2x8
EVERY 6" WITH #8x3-1/2"
WOODSCREWS

FIRST



CONCRETE FOUNDATION

PIT
DEPTH

PIT FLOOR UNDER BASEPLATE
(6 3/4" X 32 1/2") MUST SUPPORT
A VERTICAL LOAD OF 4000 LBS

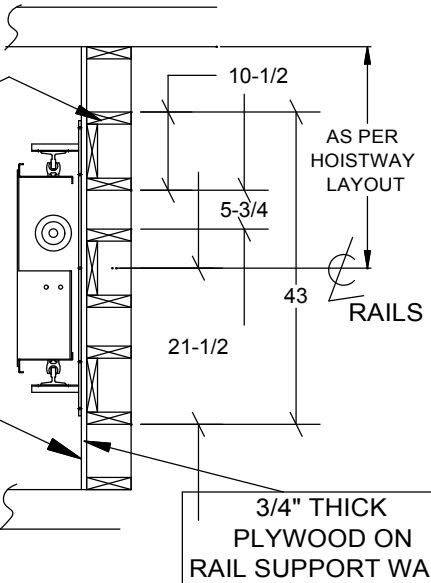
DOOR OPENINGS
FULL WIDTH OF HOISTWAY

DO NOT SCALE DRAWING

PIT DEPTH= 8" FINISHED MINIMUM **

** PIT DEPTH DEPENDENT ON CAB LAYOUT
AND ELEVATOR CAPACITY

TYPICAL SUPPORT WALL CONSTRUCTION



3/4" PLYWOOD
SCREWED TO STUDS
EVERY 12" WITH
#8 x 2-1/2"
WOOD SCREWS
MINIMUM

RAIL SUPPORT WALL MUST SUPPORT
HORIZONTAL REACTION LOAD OF 1000 lbs
AT ANY POINT

**RAIL WALL
MUST BE PLUMB (±1/8")
& SQUARE**

CAMBRIDGE ELEVATING INC.

PART DESCRIPTION
HOISTWAY LAYOUT DRAWING

SIZE A DWG NUMBER CAMBRIAN STANDARD

SCALE 1/4" = 1'-0" MASS SHEET 4 OF 5