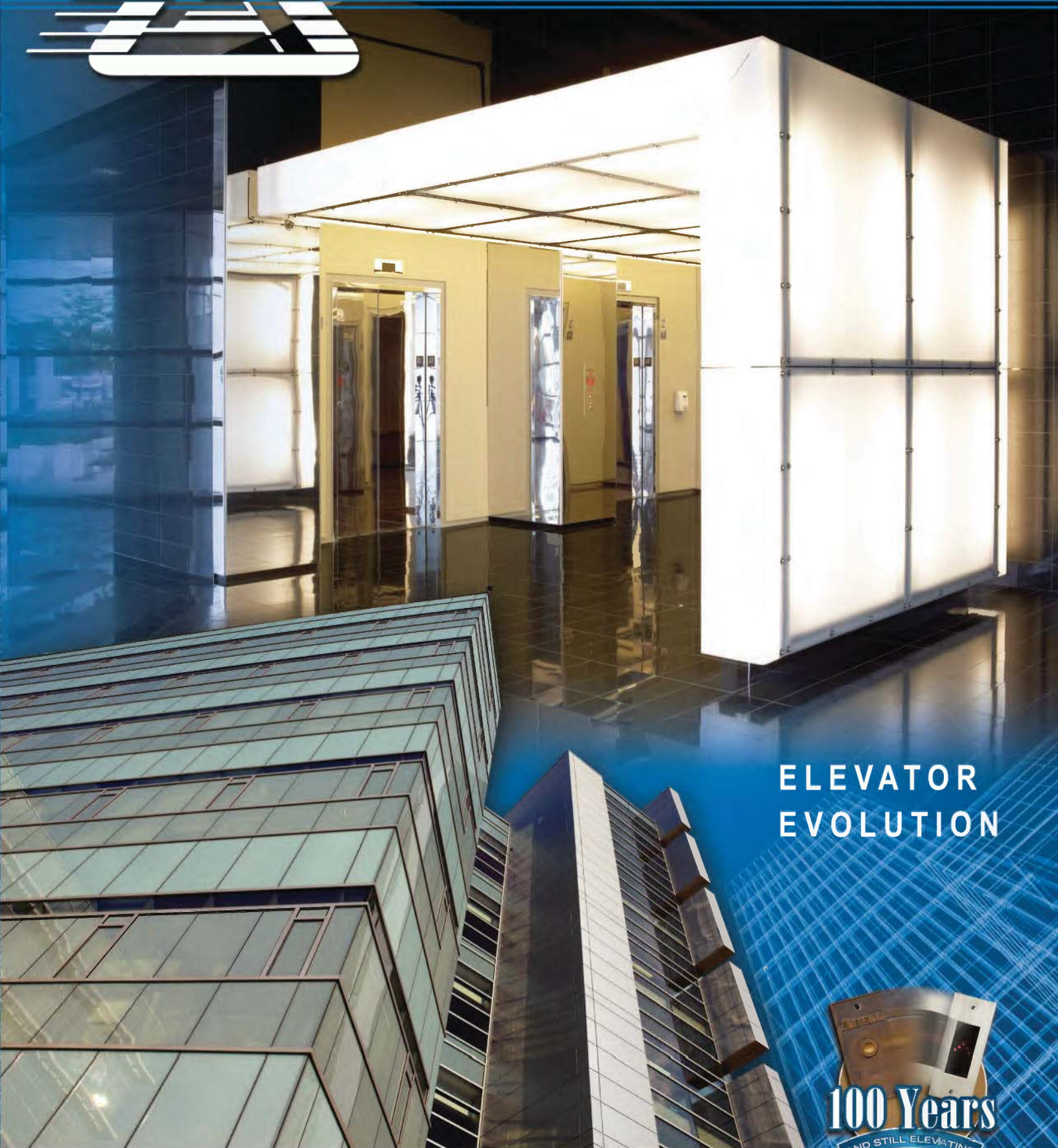




# ABELL LIFT SYSTEMS



ELEVATOR  
EVOLUTION



## PLANNING GUIDE





# Elevators

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## INTRODUCTION

Abell is an organization for the purpose of supplying elevator packages to a network of like minded independent elevator contractors. We are a single source supplier for the elevator contractor.

Abell offers a full line of plug and play elevator packages including holeless, inground, and roped hydraulic systems. We also offer machine-roomless traction packages. Our supply of packages is open to independent elevator contractors who meet Abell's eligibility criteria relative to financial and technical strength, duration of time in business, level of participation in local and regional markets and demonstrated expertise as a member of the elevator industry.

Abell can also offer partial package purchase of some components such as cabs, entrances, and door operators for new installation and modernization projects.

For more information about Abell, our products and services, please visit our website at [www.abellinternational.com](http://www.abellinternational.com) or contact us by phone, fax or mail.

**Abell Lift Systems**  
1256 Logan Street  
Louisville, KY 40204

Phone: 502-634-3350  
Toll Free: 1-866-294-4552  
Fax: 502-636-9291

### *Photos shown:*

*At top left - Green Building sign in University of Louisville's (U of L) Biotechnology Building*

*At left - Exterior of U of L's Biotech Building*

*Opposite page - Atrium view of Embassy Suites Hotel elevators*

**Disclaimer:** Please note that all drawings on this Planning Guide are for information purposes only and not meant for construction. Designs could change without notice.



### BENEFITS OF CHOOSING ABELL LIFT SYSTEMS

#### Quality Control

Stringent quality control guidelines that must be met by vendors minimize problems; and when coupled with our vendor problem resolution program, profitability is improved.

#### Feedback

Having a voice that is heard by the vendors, input on product enhancements, and systems improvements makes the independent elevator company more efficient, improving their competitiveness in the market!

#### Networking

A key benefit of partnering with Abell Lift Systems is the opportunity for its client companies to communicate with other like minded elevator contractors either directly or through Abell Lift Systems' administration, to share resources, ideas for business improvement, and potential problem identification before it is too late. This saves both time and money for our partners.

#### Turn-Key Packages

Abell can supply an installation service for your convenience. You can now add new units to your maintenance accounts without added layers of overhead expense. Contact Abell to discuss your installation needs.

#### Field Efficient Plug and Play System

Abell's plug and play MRL and hydraulic packages are quick and easy to install. A three (3) stop twin post holeless unit is routinely installed in forty team hours. Our system has efficiencies engineered into all of our standard units that expedite the installation. *A few of our efficiencies are:*

- No scaffolding necessary – The platform is used as an installation tool for the guide rails.
- Easy assembly – Our sling components have all the nuts preinstalled.
- Controller – The controller is preinstalled on the pumping unit.
- Wiring harnesses – Wiring is precut and connectorized.
- Fixtures – Hall and car fixtures are prewired and connectorized.
- Car top – The cab canopy is fully assembled, prewired, and connectorized.
- Door operator – The door operator emerges from its container preassembled and ready for attachment to the elevator cab.







## MRL INTRODUCTION

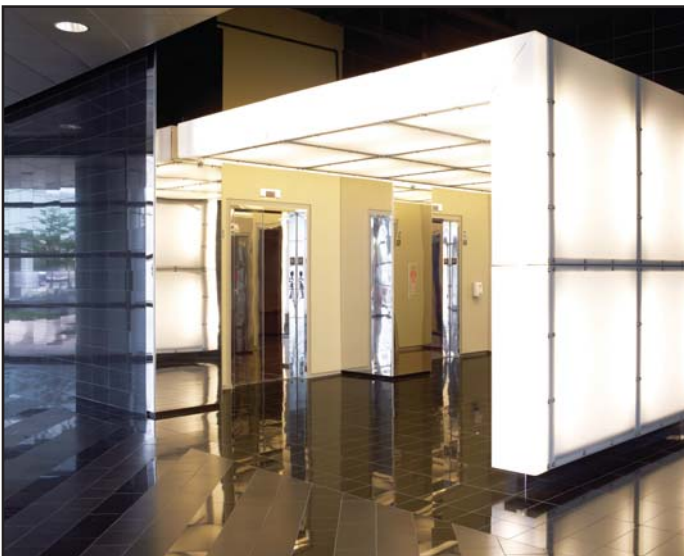
Abell is proud to roll out our most recent product line, our Machine Room Less traction packages.

- Equipped with all the field efficient features of our plug and play hydraulics packages, our Machine Room Less traction units are efficient and easy to install.

- Self contained in the hoistway overhead for an efficient, customer friendly fit, our passenger cars have built in cost benefits for building designers and contractors.

- Our packages range from 2100# capacity passenger cars through 5000# capacity hospital style cars at speeds up to 500fpm.

If you would like to explore your options regarding our MRL packages, please give us a call to speak with one of our sales representatives.



**Photos shown:**

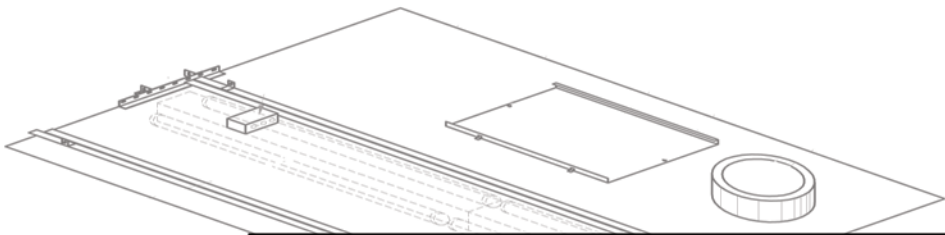
*At top left - Elevator in U of L Biotechnology Building*

*At left - Lobby in University of Louisville's Biotech Building*

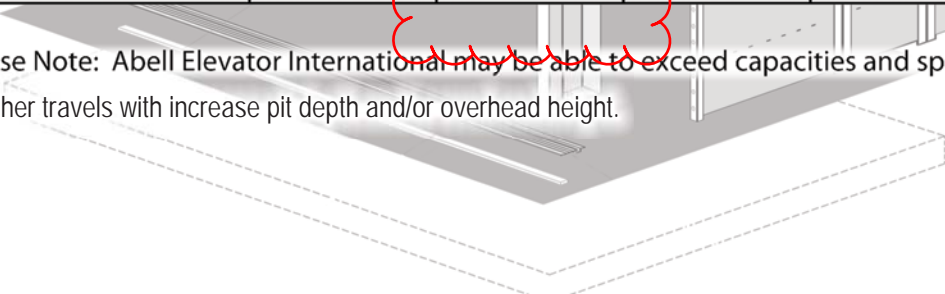
*Above - Open and closed door views of Embassy Suites Hotel elevator overlooking the lobby atrium.*

# ELEVATOR DRAWINGS

## ABELL LIFT SYSTEMS CAPABILITIES



		TRACTION		HYDRAULIC		
		TRACTION	MRL	HOLELESS TWIN JACK- SINGLE STAGE	HOLELESS TWIN JACK-2/3 STAGE	INGROUND
<b>PASSENGER</b>	<b>2,100 lb -5,000 lb</b>	✓	✓	✓	✓	✓
	Standard & Custom Cabs	✓	✓	✓	✓	✓
	Front & Rear Openings	✓	✓	✓	✓	✓
	Maximum Travel (ft)	No Limit	200'	12' 6" *	24'	75'
	Maximum Car Speed (FPM)	1500	500	125	125	150
	Class A, C1 & C3 Loading	✓	✓	✓	✓	✓
<b>HOSPITAL</b>	<b>3,500 lb -5,000 lb</b>	✓	✓	✓	✓	✓
	Standard & Custom Cabs	✓	✓	✓	✓	✓
	Front & Rear Openings	✓	✓	✓	✓	✓
	Maximum Travel (ft)	No Limit	200'	12' 6" *	24'	75'
	Maximum Car Speed (FPM)	500	350	125	125	150
	Class A, C1 & C3 Loading	✓	✓	✓	✓	✓

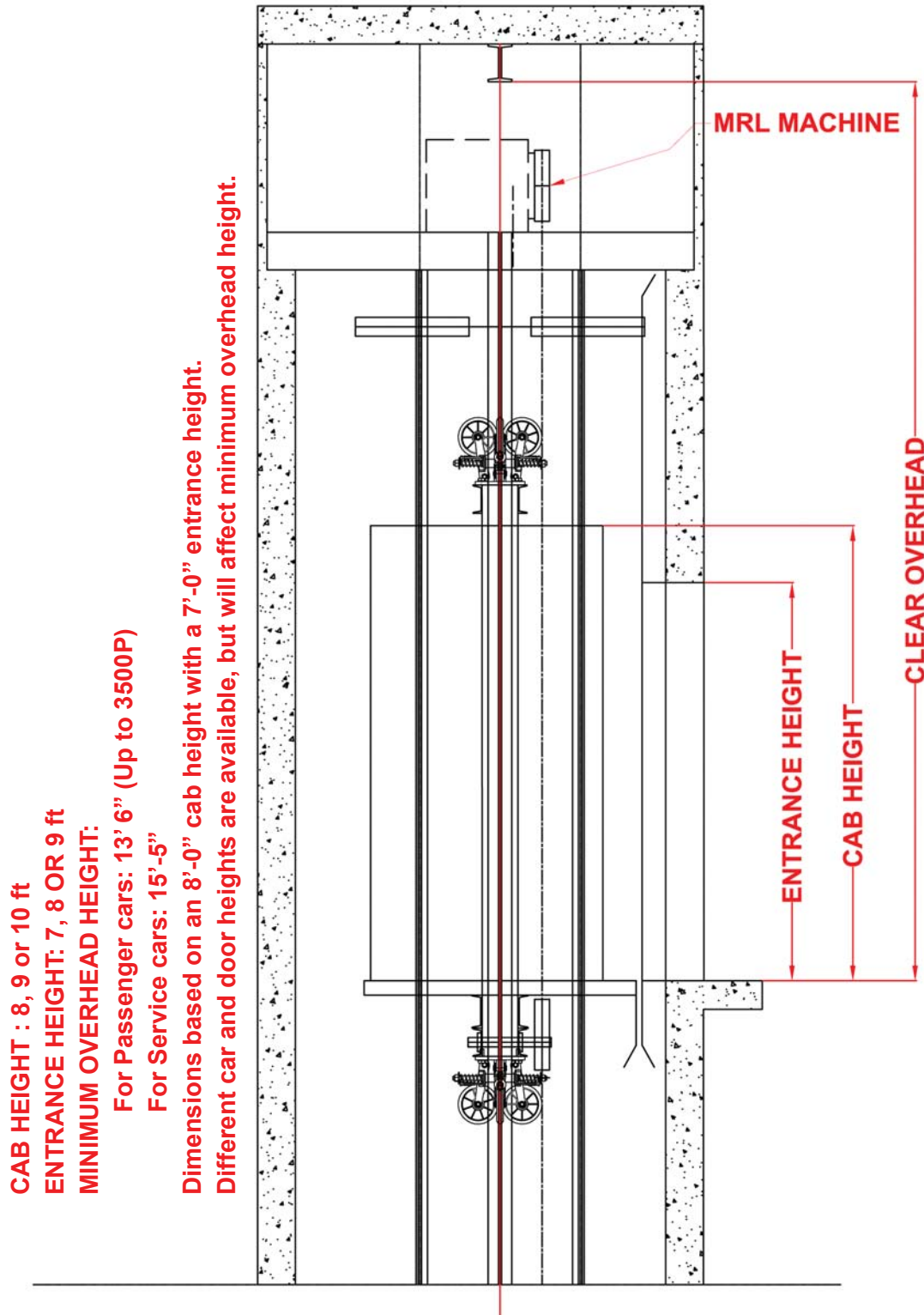


Please Note: Abell Elevator International may be able to exceed capacities and speeds listed

\* Higher travels with increase pit depth and/or overhead height.

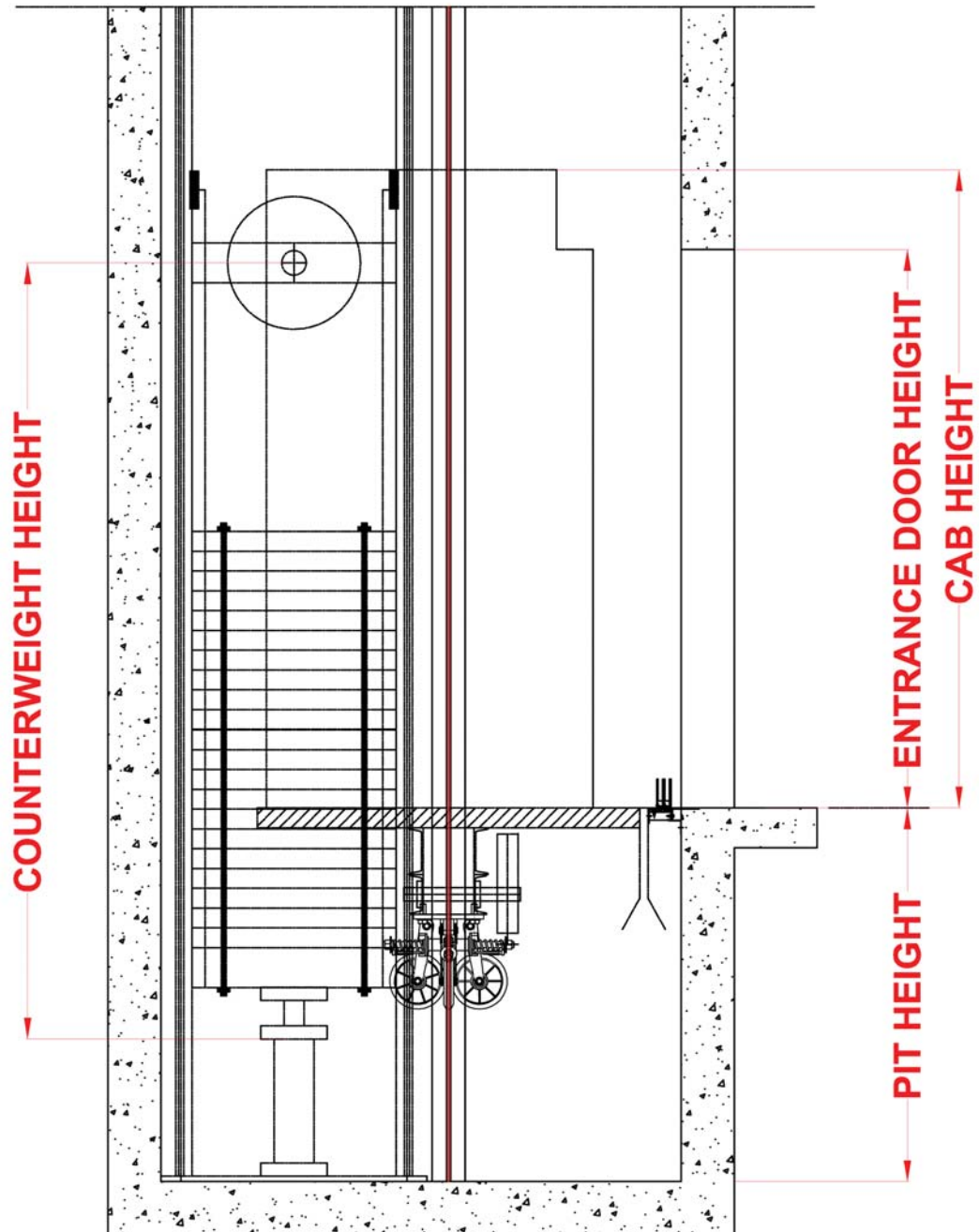


## OVERHEAD REQUIREMENTS



MACHINE ROOM LESS TRACTION

## PIT REQUIREMENTS



**CAB HEIGHT : 8, 9 or 10 ft**

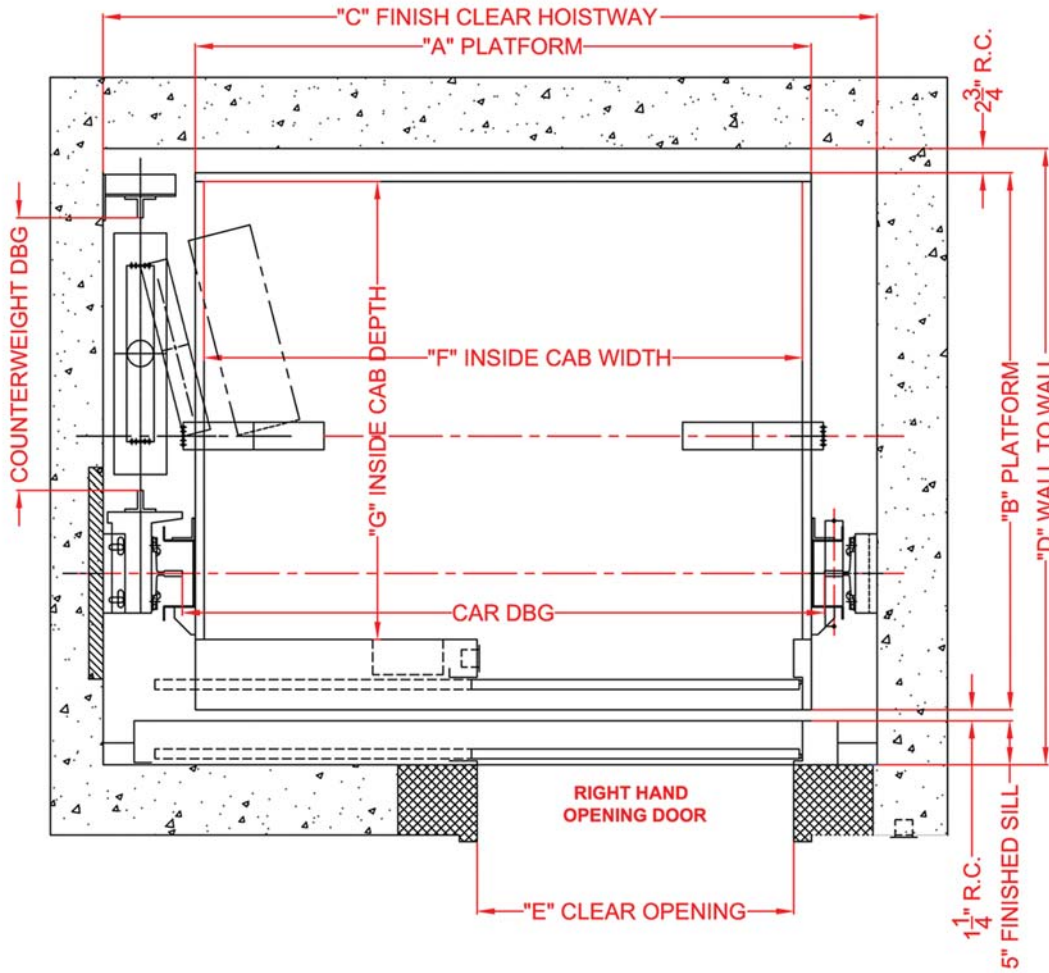
**ENTRANCE HEIGHT: 7, 8 OR 9 ft**

**MINIMUM PIT DEPTH: 5 ft**

**Up to 300fpm - for speeds of 350fpm or more,  
deeper pit required.**

**MACHINE ROOM LESS TRACTION**





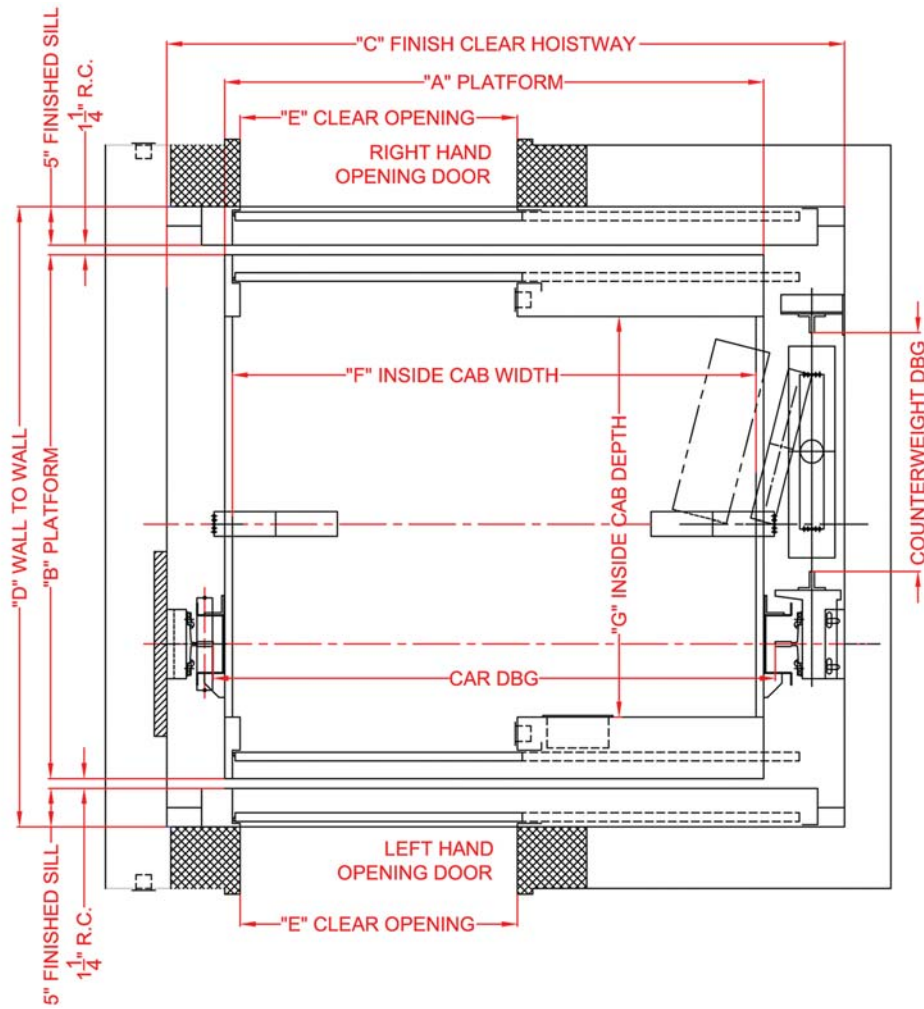
MRL FRONT OPENING DIMENSIONS

Capacity (Lbs)	A (Platform Width)	B (Platform Depth)	C (Hoistway Width)	D (Hoistway Depth)	E (Clear Opening)	F (Inside Car Width)	G (Inside Car Depth)	DOOR TYPE AVAILABLE		
P2100-FO	5'-10"	5'-1"	7'-4"	5'-10"	3'-0"	5'-6"	4'-4"	S.Sp		
P2500-FO	6'-10"	5'-1"	8'-4"	5'-10"	3'-6"	6'-6"	4'-4"	S.Sp	C/O	
P3000-FO	6'-10"	5'-6"	8'-4"	6'-2"	3'-6"	6'-6"	4'-9"	S.Sp	C/O	
P3500-FO	6'-10"	6'-2"	8'-4"	6'-11"	3'-6"	6'-6"	5'-5"	S.Sp	C/O	
P4000-FO	7'-10"	6'-2"	9'-4"	6'-11"	3'-0" 4'-0"	7'-6"	5'-8"	S.Sp S.Sp	C/O C/O	
S3500-FO	5'-10"	7'-9 1/2"	8'-2"	8'-7 1/2"	4'-0"	5'-6"	6'-10"			2.Sp
S4000-FO	5'-10"	8'-2 1/2"	8'-2"	9'-0 1/2"	4'-0"	5'-6"	7'-3"			2.Sp
S4500-FO	5'-10"	8'-10 1/2"	8'-2"	9'-8"	4'-0"	5'-6"	7'-11"			2.Sp
S5000-FO	5'-10"	9'-4 1/2"	8'-2"	10'-2 1/2"	4'-0"	5'-6"	8'-5"			2.Sp

The hoistway dimensions C & D are the minimum clear inside requirements. Shorter installation times can be obtained by increasing these dimensions by up to 2". For seismic zones 2 and up, add 4" to dimension C for all sizes to comply with code requirements. Use of 8mm and 10mm ropes for traction elevator was approved by A17.6-2010 effective 1st July 2010.

## MACHINE ROOM LESS TRACTION

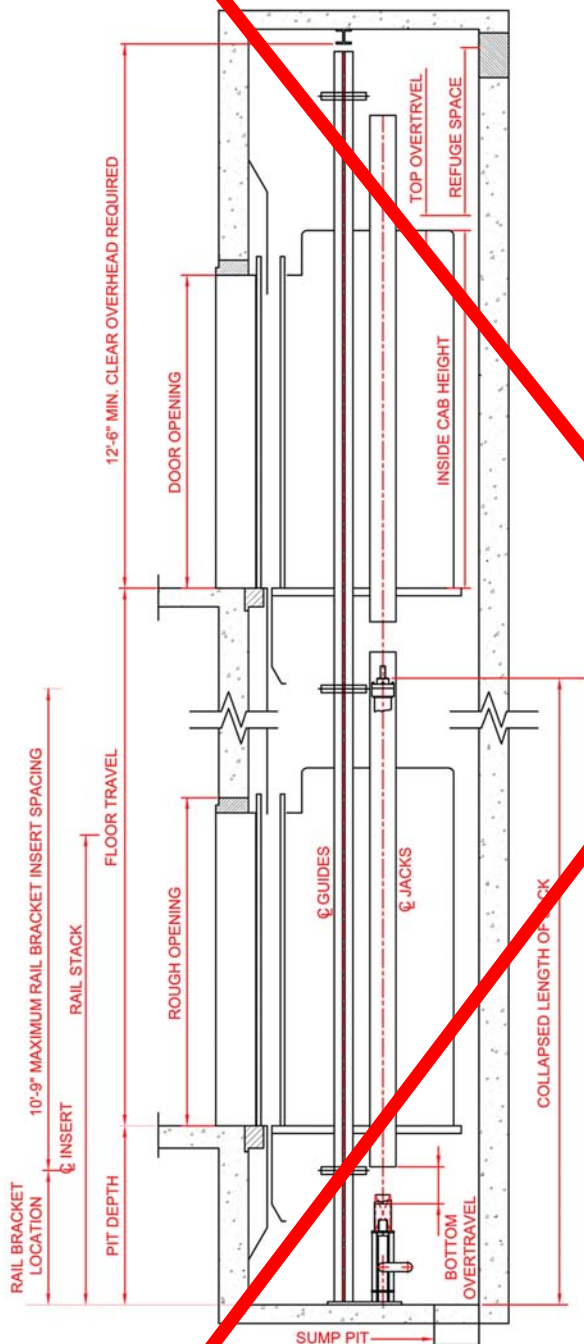




MRL FRONT REAR-OPENING DIMENSIONS									
Capacity (Lbs)	A (Platform Width)	B (Platform Depth)	C (Hoistway Width)	D (Hoistway Depth)	E (Clear Opening)	F (Inside Car Width)	G (Inside Car Depth)	DOOR TYPE AVAILABLE	
P2100-FR	5'-10"	5'-8"	7'-4"	6'-8 1/2"	3'-0"	5'-6"	4'-4"	S.Sp	
P2500-FR	6'-10"	5'-8"	8'-4"	6'-8 1/2"	3'-6"	6'-6"	4'-4"	S.Sp	C/O
P3000-FR	6'-10"	6'-1"	8'-4"	7'-1 1/2"	3'-6"	6'-6"	4'-9"	S.Sp	C/O
P3500-FR	6'-10"	6'-9"	8'-4"	7'-9 1/2"	3'-6"	6'-6"	5'-5"	S.Sp	C/O
P4000-FR	7'-10"	6'-9"	9'-4"	7'-9 1/2"	3'-0" 4'-0"	7'-6"	5'-5"	S.Sp S.Sp	C/O C/O
S3500-FR	5'-10"	8'-4 1/2"	8'-2"	9'-8"	4'-0"	5'-6"	6'-9 1/2"		2.Sp
S4000-FR	5'-10"	8'-10"	8'-2"	10'-1 1/2"	4'-0"	5'-6"	7'-3"		2.Sp
S4500-FR	5'-10"	9'-5 1/2"	8'-2"	10'-9"	4'-0"	5'-6"	7'-10 1/2"		2.Sp
S5000-FR	5'-10"	10'-0"	8'-2"	11'-3 1/2"	4'-0"	5'-6"	8'-5"		2.Sp

The hoistway dimensions C & D are the minimum clear inside requirements. Shorter installation times can be obtained by increasing these dimensions by up to 2". For seismic zones 2 and up, add 4" to dimension C for all sizes to comply with code requirements. Use of 8mm and 10mm ropes for traction elevator was approved by A17.6-2010 effective 1st July 2010.

## MACHINE ROOM LESS TRACTION

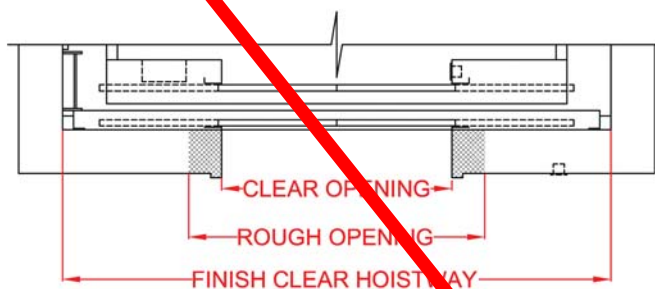


Front only Dimensions

Capacity (Lbs)	A (Platform Width)	B (Platform Depth)	C (Hoistway Width)	D (Hoistway Depth)	E (Clear Opening)	F (Inside Car Width)	G (Inside Car Depth)
2100	6'0"	5'1"	7'4"	5'10"	3'0"	5'8"	4'4"
2500	7'0"	5'1"	8'4"	5'10"	3'6"	6'8"	4'4"
3000	7'0"	5'6"	8'4"	6'3"	3'6"	6'8"	4'9"
3500	7'0"	6'2"	8'4"	6'11"	3'6"	6'8"	5'5"
4000	8'0"	6'2"	9'4"	6'11"	3'6"	7'8"	5'5"

Front & Rear Dimensions

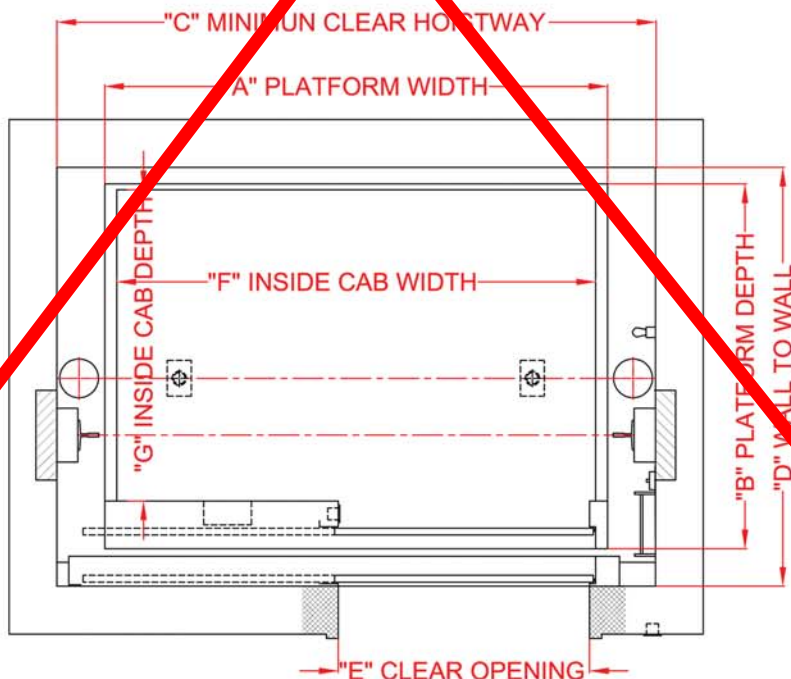
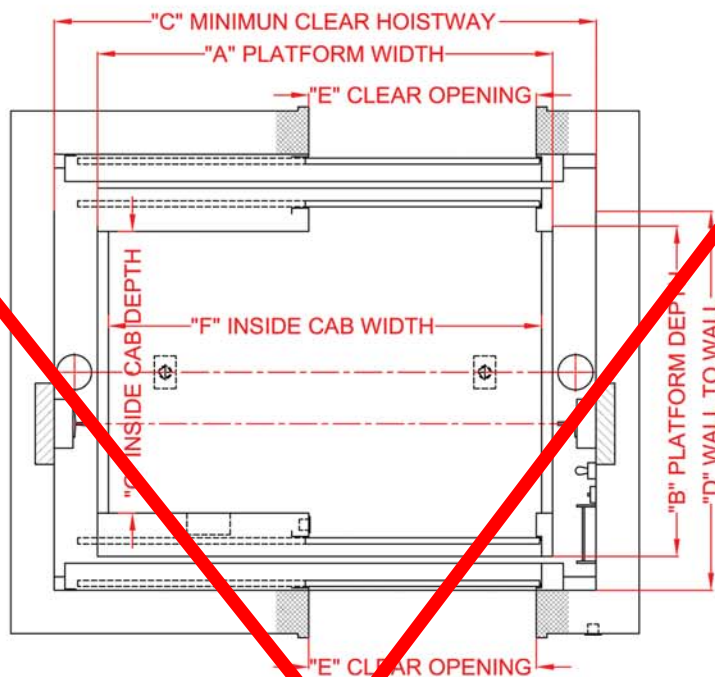
2100	6'0"	5'1"	7'4"	6'8 1/2"	3'0"	5'8"	4'4"
2500	7'0"	5'8"	8'4"	6'8 1/2"	3'6"	6'8"	4'4"
3000	7'0"	6'1"	8'4"	7'1 1/2"	3'6"	6'8"	4'9"
3500	7'0"	6'9"	8'4"	7'9 1/2"	3'6"	6'8"	5'5"
4000	8'0"	6'9"	9'4"	7'9 1/2"	3'6"	7'8"	5'5"



PLEASE NOTE THAT ALL THE DRAWINGS ARE FOR INFORMATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION USE.

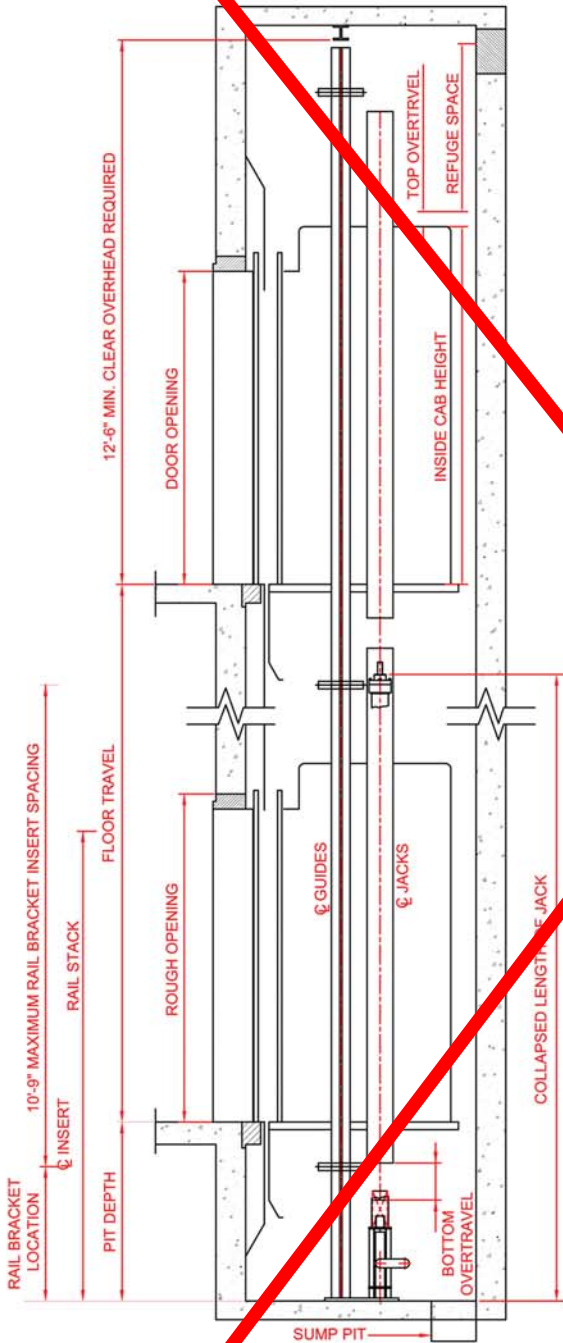
STANDARD SPEEDS AVAILABLE ARE 100 AND 125 FPM. SPEEDS AND TRAVEL MAY VARY DEPENDING UPON SPECIFIC JOB REQUIREMENTS





The hoistway dimensions C & D are the minimum clear inside requirements. Shorter installation times can be obtained by increasing these dimensions by up to 2". For seismic zones 2 and up, add 4" to dimension C for all sizes to comply with code requirements.

## PASSENGER HOLELESS HYDRAULIC ELEVATORS

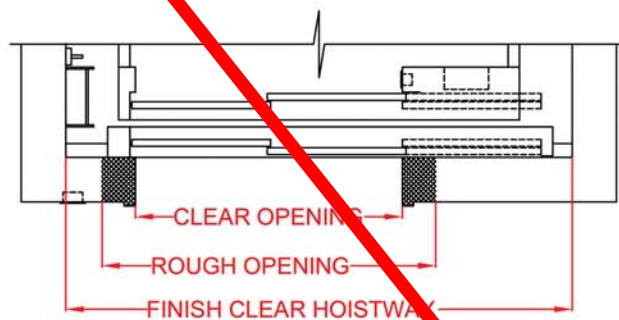


Front only Dimensions

Capacity (Lbs)	A (Platform Width)	B (Platform Depth)	C (Hoistway Width)	D (Hoistway Depth)	E (Clear Opening)	F (Inside Car Width)	G (Inside Car Depth)
3500	6'0"	7'9 1/2"	7'7"	8'7 1/2"	4'0"	5'8"	6'10"
4000	6'0"	8'2 1/2"	7'7"	9' 1/2"	4'0"	5'8"	7'3"
4500	6'0"	8'10"	7'7"	9'8"	4'0"	5'8"	7'10 1/2"
5000	6'0"	9'4 1/2"	7'7"	10'2 1/2"	4'0"	5'8"	8'5"

Front & Rear Dimensions

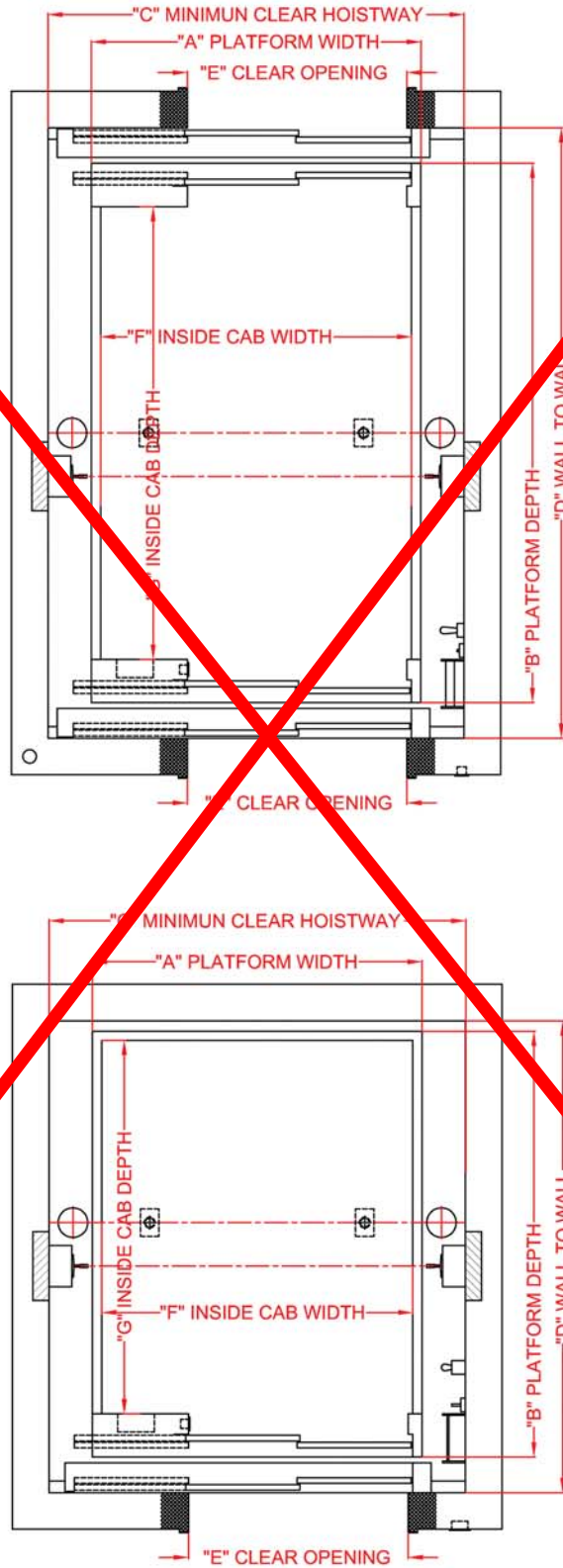
3500	6'0"	8'4 1/2"	7'7"	9'8"	4'0"	5'8"	6'9 1/2"
4000	6'0"	8'10"	7'7"	10'1 1/2"	4'0"	5'8"	7'3"
4500	6'0"	9'5 1/2"	7'7"	10'9"	4'0"	5'8"	7'10 1/2"
5000	6'0"	10'0"	7'7"	11'3 1/2"	4'0"	5'8"	8'5"



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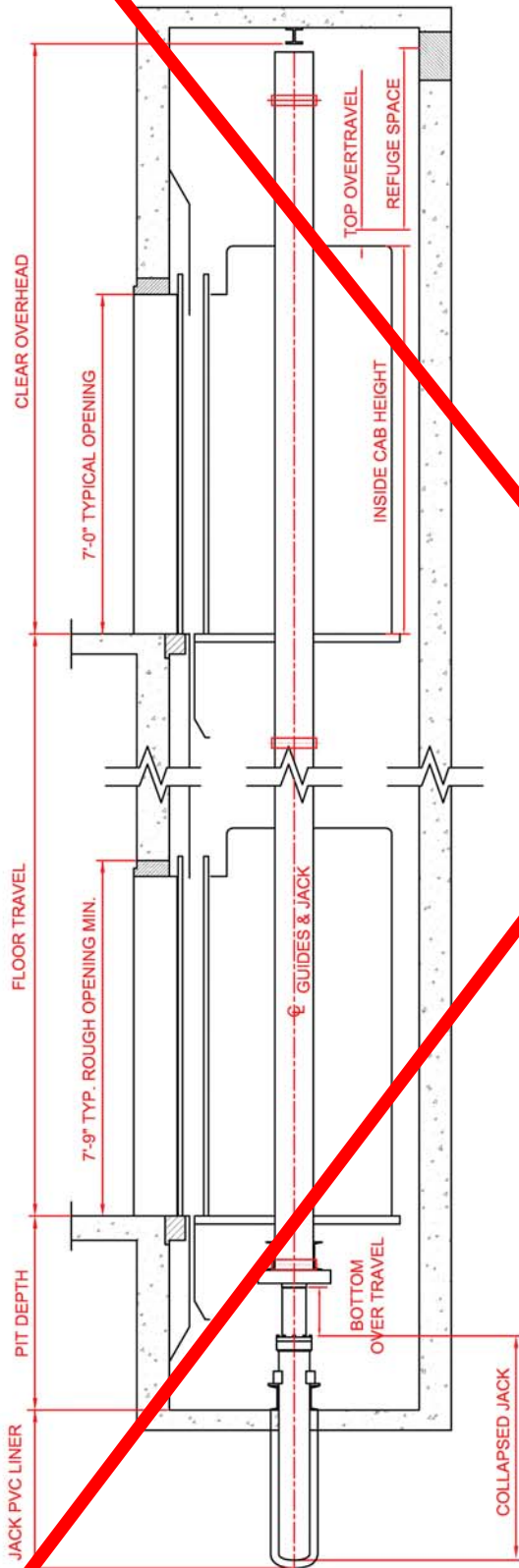
STANDARD SPEEDS AVAILABLE ARE 100 AND 125 FPM. SPEEDS AND TRAVEL MAY VARY DEPENDING UPON SPECIFIC JOB REQUIREMENTS





The hoistway dimensions C & D are the minimum clear inside requirements. Shorter installation times can be obtained by increasing these dimensions by up to 2". For seismic zones 2 and up, add 4" to dimension C for all sizes to comply with code requirements.

## HOSPITAL HOLELESS HYDRAULIC ELEVATORS

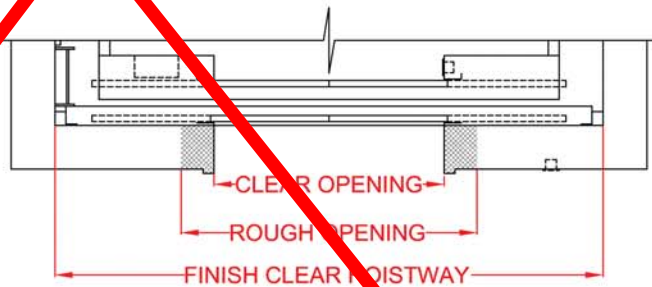


Front only Dimensions

Capacity (Lbs)	A (Platform Width)	B (Platform Depth)	C (Hoistway Width)	D (Hoistway Depth)	E (Clear Opening)	F (Inside Car Width)	G (Inside Car Depth)
2100	6'0"	5'1"	7'4"	5'10"	3'0"	6'8"	4'4"
2500	7'0"	5'1"	8'4"	5'10"	3'6"	6'8"	4'4"
3000	7'0"	5'6"	8'4"	6'3"	3'6"	6'8"	4'9"
3500	7'0"	6'2"	8'4"	6'11"	3'6"	6'8"	5'5"
4000	8'0"	6'2"	9'4"	7'11"	3'6"	7'8"	5'5"

Front & Rear Dimensions

Capacity (Lbs)	A (Platform Width)	B (Platform Depth)	C (Hoistway Width)	D (Hoistway Depth)	E (Clear Opening)	F (Inside Car Width)	G (Inside Car Depth)
2100	6'0"	5'8"	7'4"	6'8 1/2"	3'0"	5'8"	4'4"
2500	7'0"	5'8"	8'4"	6'8 1/2"	3'6"	6'8"	4'4"
3000	7'0"	6'1"	8'4"	7'1 1/2"	3'6"	6'8"	4'9"
3500	7'0"	6'9"	8'4"	7'9 1/2"	3'6"	6'8"	5'5"
4000	8'0"	6'9"	9'4"	7'9 1/2"	3'6"	7'8"	5'5"

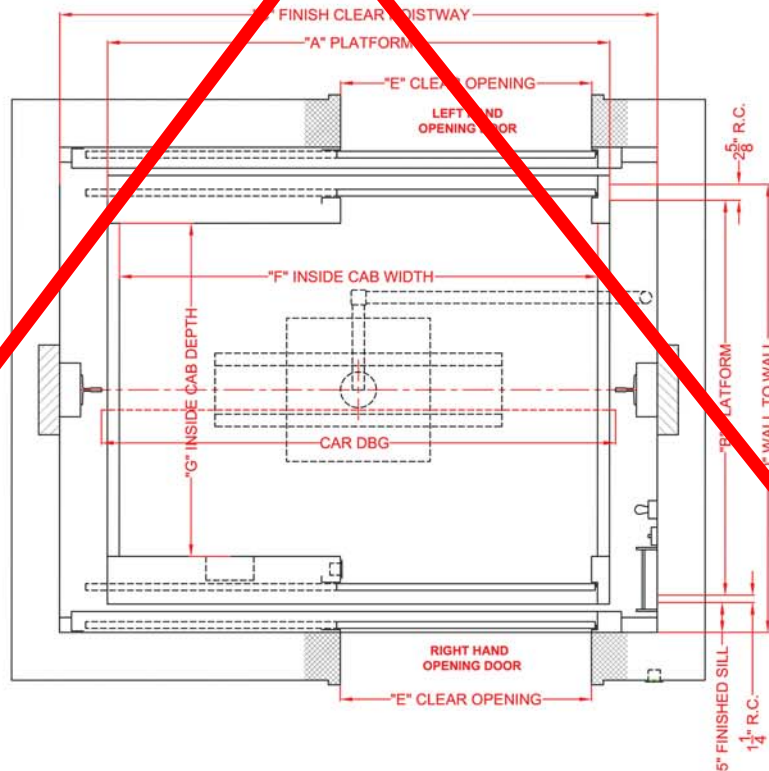
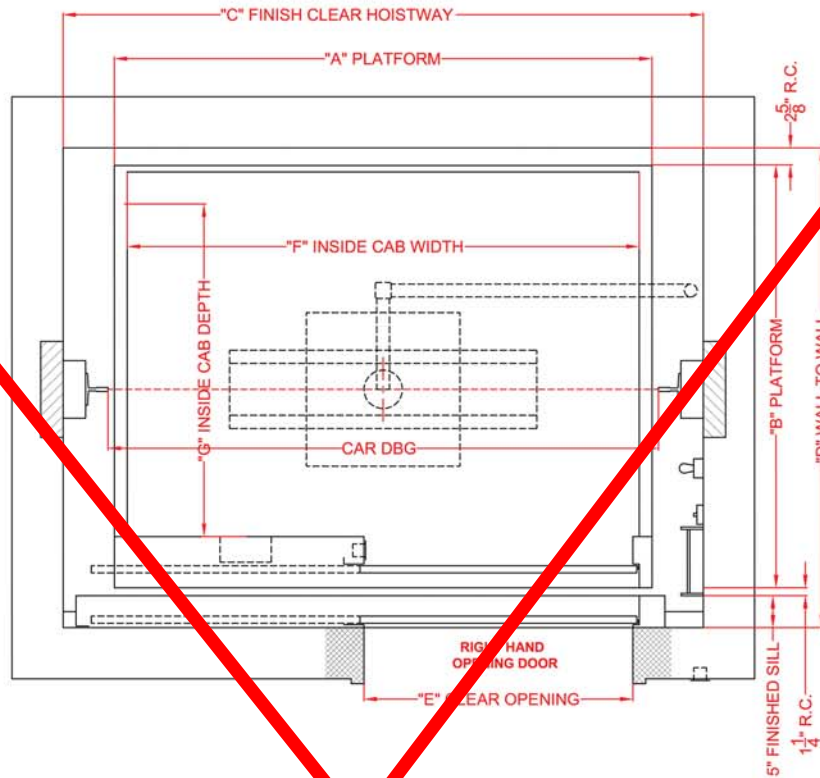


PLEASE NOTE THAT ALL THE DRAWINGS ARE FOR INFORMATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION USE.

STANDARD SPEEDS AVAILABLE ARE 100 AND 125 FPM. SPEEDS AND TRAVEL MAY VARY DEPENDING UPON SPECIFIC JOB REQUIREMENTS

MINIMUM OVERHEAD = 12'-6" • CAB HEIGHT = 8'-0"





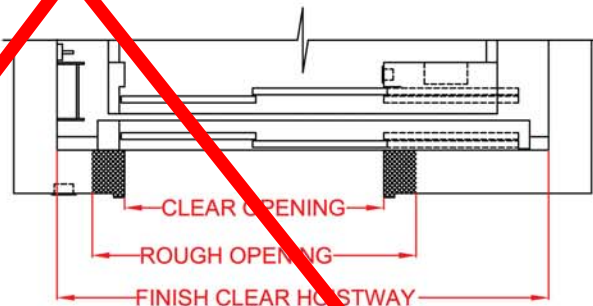
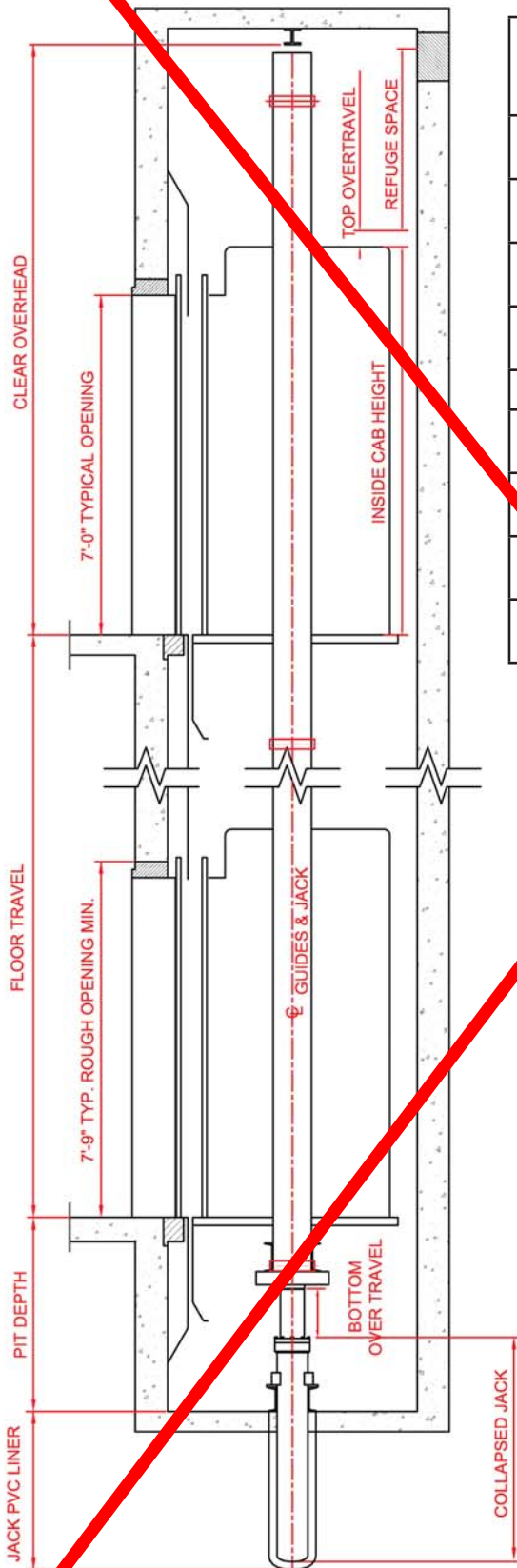
The hoistway dimensions C & D are the minimum clear inside requirements. Shorter installation times can be obtained by increasing these dimensions by up to 2". For seismic zones 2 and up, add 4" to dimension C for all sizes to comply with code requirements.

## PASSENGER INGROUND ELEVATORS



Front only Dimensions

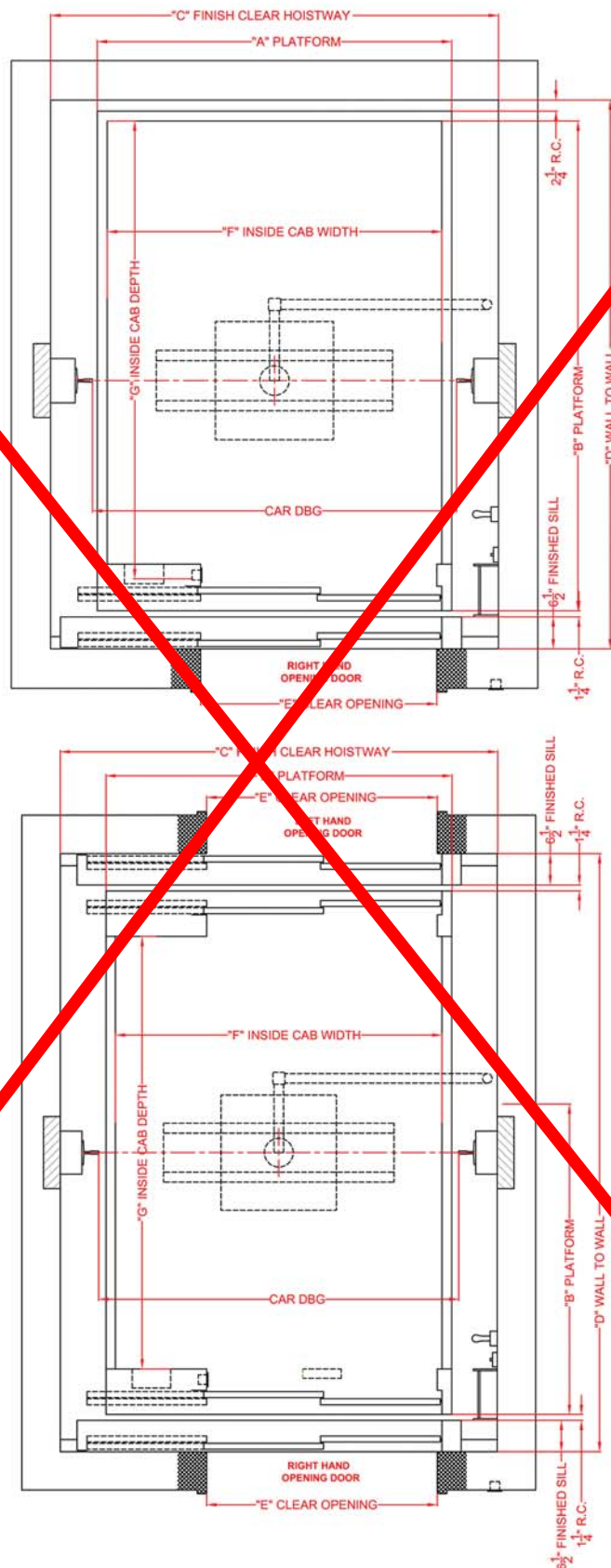
Capacity (Lbs)	A (Platform Width)	B (Platform Depth)	C (Hoistway Width)	D (Hoistway Depth)	E (Clear Opening)	F (Inside Car Width)	G (Inside Car Depth)
3500	6'0"	7'9 1/2"	7'4"	8'7 1/2"	4'0"	5'8"	6'10"
4000	6'0"	8'2 1/2"	7'4"	9'0 1/2"	4'0"	5'8"	7'3"
4500	6'0"	8'10"	7'4"	9'8"	4'0"	5'8"	7'10 1/2"
5000	6'0"	9'4 1/2"	7'4"	10'2 1/2"	4'0"	5'8"	8'5"
Front & Rear Dimensions							
3500	6'0"	8'4 1/2"	7'4"	9'8"	4'0"	5'8"	6'9 1/2"
4000	6'0"	8'10"	7'4"	10'1 1/2"	4'0"	5'8"	7'3"
4500	6'0"	9'5 1/2"	7'4"	10'9"	4'0"	5'8"	7'10 1/2"
5000	6'0"	10'0"	7'4"	11'3 1/2"	4'0"	5'8"	8'5"



PLEASE NOTE THAT ALL THE DRAWINGS ARE FOR INFORMATION PURPOSES ONLY AND ARE NOT MEANT FOR CONSTRUCTION USE.

STANDARD SPEEDS AVAILABLE ARE 100 AND 125 FPM. SPEEDS AND TRAVEL MAY VARY DEPENDING UPON SPECIFIC JOB REQUIREMENTS

MINIMUM OVERHEAD = 12'-6" • CAB HEIGHT = 8'-0"

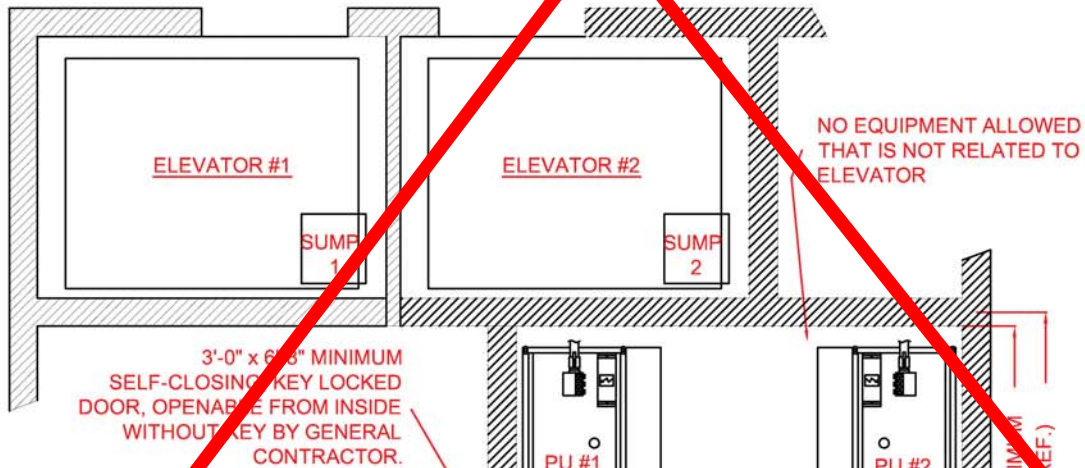
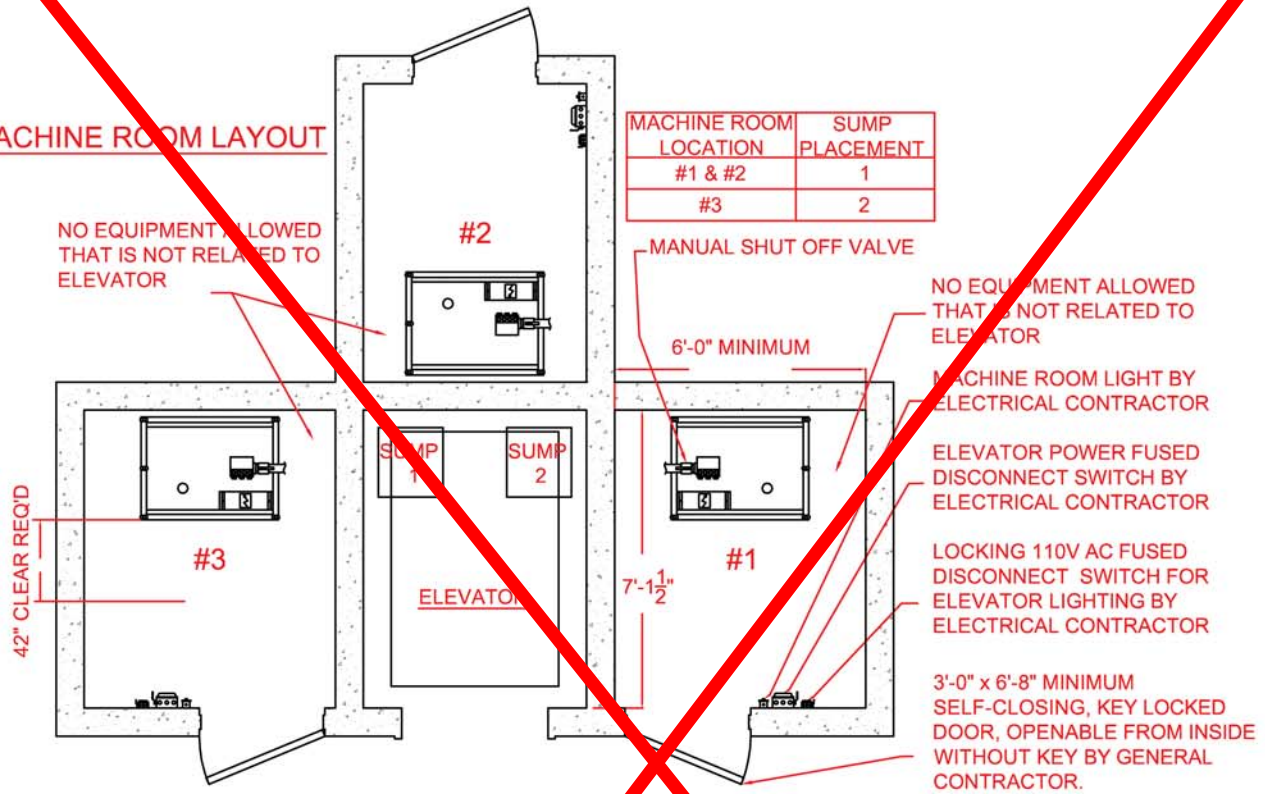


The hoistway dimensions C & D are the minimum clear inside requirements. Shorter installation times can be obtained by increasing these dimensions by up to 2". For seismic zones 2 and up, add 4" to dimension C for all sizes to comply with code requirements.

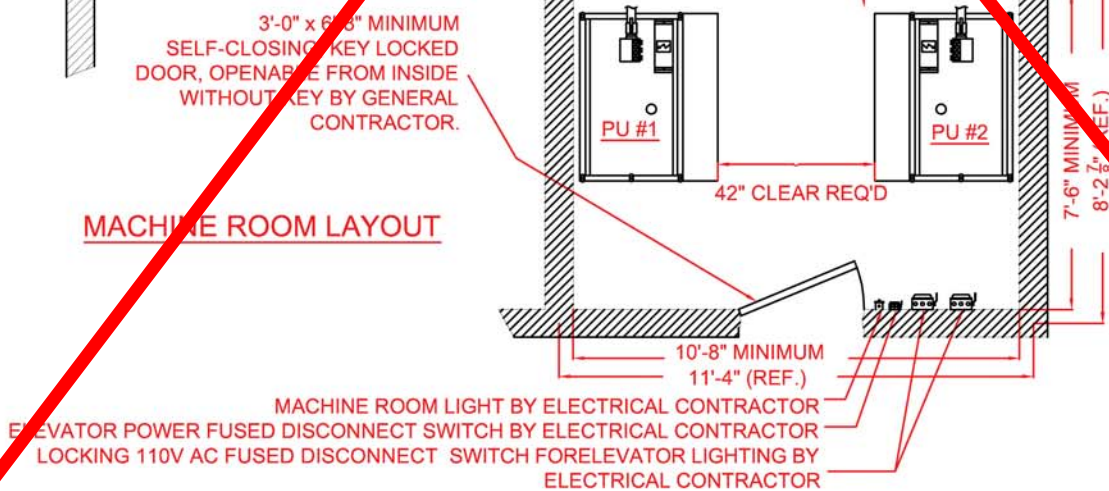


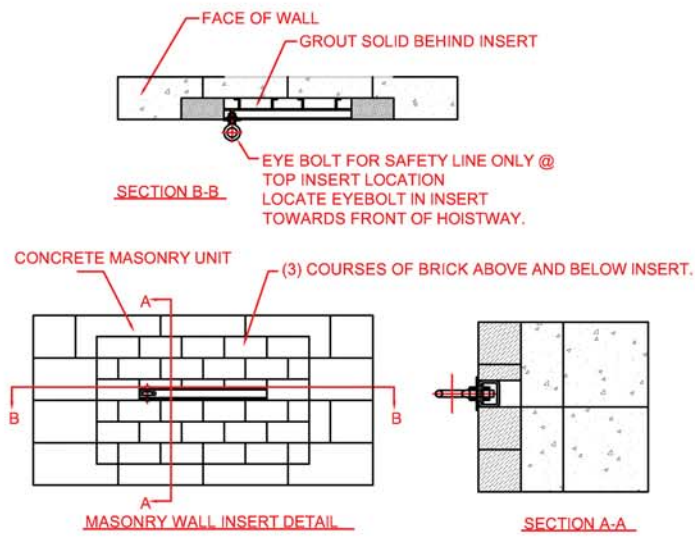
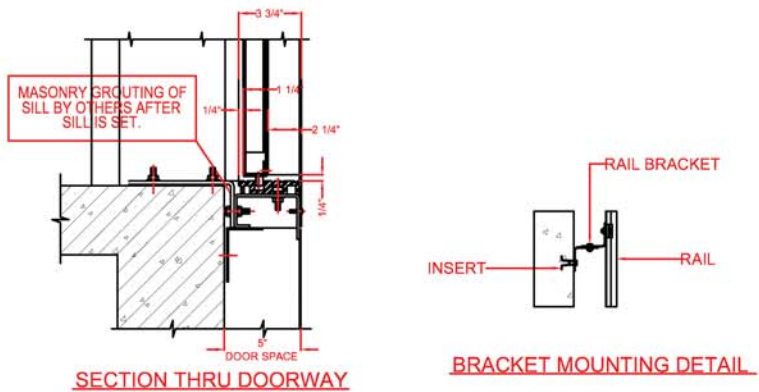


MACHINE ROOM LAYOUT

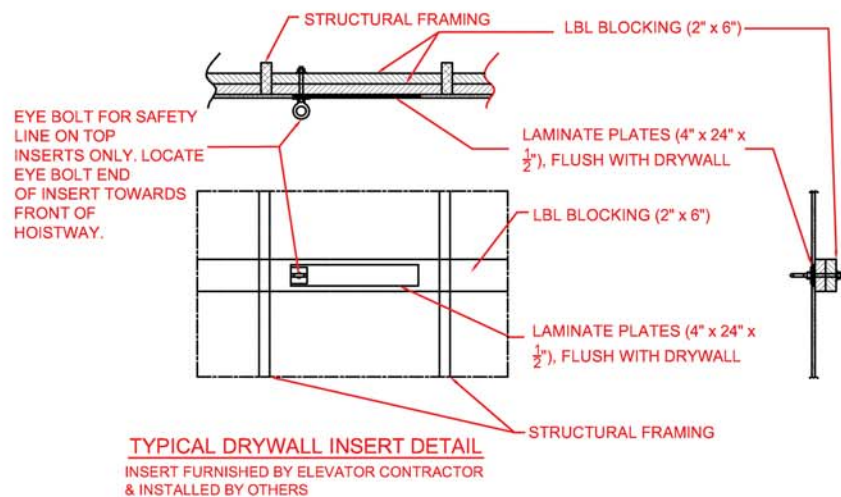


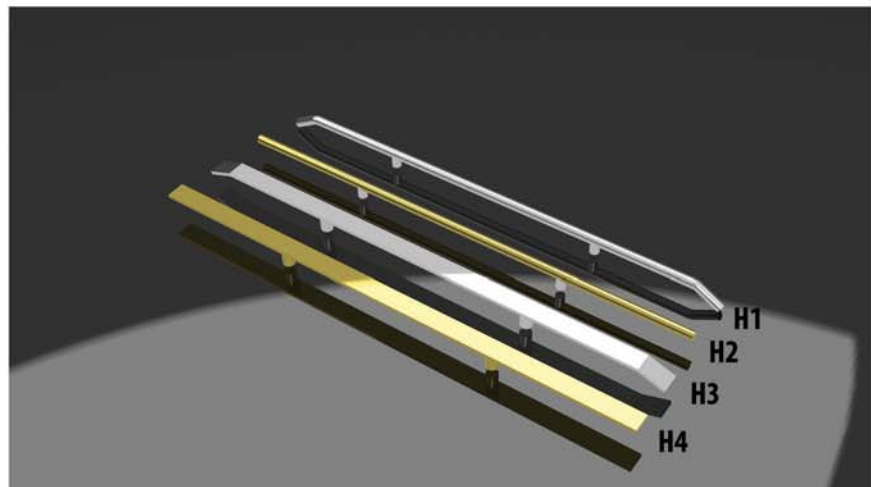
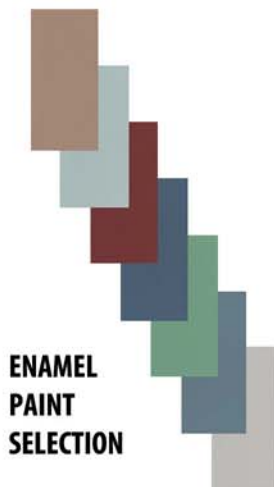
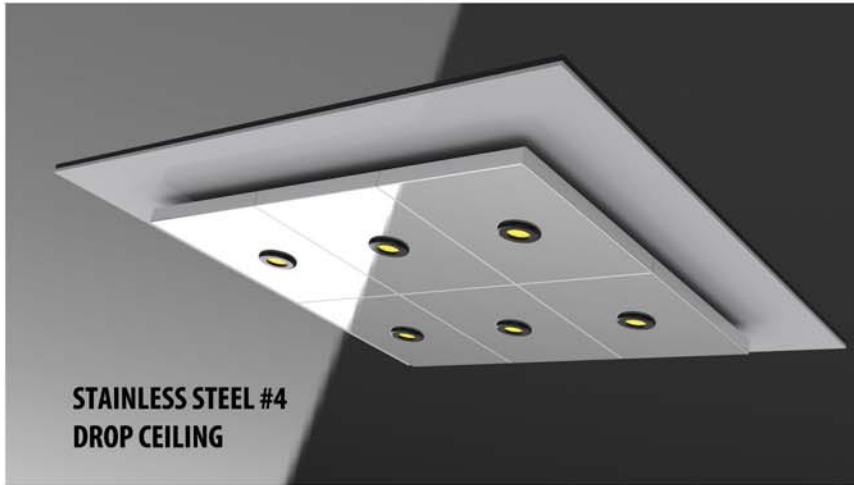
MACHINE ROOM LAYOUT





INSERT FURNISHED BY ELEVATOR CONTRACTOR AND INSTALLED BY OTHERS  
NOTE: PLEASE LOCATE INSERTS AS SHOWN ON MAIN LAYOUT. IT IS IMPERATIVE THAT THE INSERTS WITH THE EYE BOLTS BE INSTALLED @ THE TOP LOCATION ON BOTH SIDES OF THE HOISTWAY. PLEASE LOCATE THE INSERTS AT THE FRONT OF THE HOISTWAY INSURING THAT THEY CAN SUPORT A 5000 LBS. LIVE LOAD AS REQ'D BY OSHA REGULATIONS.





**CAB FINISHING OPTIONS**



## ELEVATOR CABS

The standard car enclosure is fabricated using wood shell construction. This design meets all local, city, state and county fire code requirements while providing improved sound attenuation characteristics. The standard cab is provided as follows:



1. Walls – 400 style cabs have flush wood construction, and plastic laminate face; customer choice of standard laminate colors
2. Roof – steel with reflective white finish
3. Ceiling – fully illuminated suspended translucent panels mounted in a natural finish extruded aluminum frame
4. Car Lighting – fluorescent
5. Entrance Columns, Return Face and Header – stainless steel #4 finish
6. Car Door – stainless steel #4
7. Car Direction Lanterns
8. Ventilation – two speed fan
9. Car Sill – natural finish extruded aluminum non-slip
10. Hand Rails – rear wall stainless steel #4 flat bar with return ends standard.

### OPTIONAL FEATURES:

- A. Reveals & Base – available in stainless steel, bronze or anodized finishes
- B. Handrails – on side walls, available in stainless steel, bronze, and other architectural designs
- C. Cab Protection – cab protective pads and hooks
- D. Cab Height – standard cab height is 8 feet; taller heights are available
- E. Ceiling Lighting – custom decorative architectural finishes on face are available with a variety of light fixture options
- F. 500 Style Cab Walls – wood core or steel shell construction with black plastic laminate raised panels, faced with choice of standard plastic laminate colors, architectural metals, hardwood veneer, or patterned architectural metals
- G. Hand Rails – stainless steel #4 cylindrical handrails are available for rear or side walls with either straight or returned ends.
- H. Sills - options available include aluminum, stainless steel, nickel, silver and bronze sills



Abell has many options available for your cab interiors. The options can be combined to create a custom cab that enhances your building's interior.

Abell's cab options let you choose from over 1,000 custom interiors. Ceilings, walls and handrails are available in a variety of finishes and configurations that allow you to put together a custom look for your cab interior. All materials in our cab components are long wearing to help your elevator cabs maintain their new look for years.



## PACKAGE CONTENTS

All Abell Lift Systems Packages come with the following standard contents which we have broken down into the major sub categories.

### • Mechanical

- Jacks
- Rupture Valve (Seismic Only)
- PVC (On Holed Units)
- Pumping Unit
- Spring Buffers
- Rails
- Guide Shoes
- Rail Brackets
- Pit Ladder
- Complete Sling and Platform
- General Layout Drawings

### • Wiring

- 95% Pre-wired Plug and Play
- Hatch Wiring Stack
- Duct Wiring Harness
- Limit Switches
- Traveling Cable with Hangers
- All Necessary Brackets
- Pit Stop Switch
- Car Top Inspection Switch
- Car Top Light
- Car Top Bell
- Car Top GFCI
- Hall boxes with Pig Tail
- Oil Line and Fittings from Jack to Pumping Unit
- Serial link hall fixtures via CAT 5 Cable

### • Entrances

- Door Panels
- Integral Door Frames
- Sill
- Sill Support and Interlocks
- Fascia
- Jamb Markings
- Hangers
- Gibbs
- Door Track (Pre-mounted)

### • Fixtures

- Swing Return
- Hall Faceplates (Pre-wired)
- ADA Compliant
- Code Complaint
- Handicap Phone Integral with COP
- Traveling Lantern Standard
- Car PI In Return Standard
- Tilt Out COP
- Emergency Lighting Integral w/COP

### • Cab

- Wood Core shell with flush laminate panels (see standard selection)
- Steel Shell available upon request
- Door Panel with Stainless Steel #4 Finish
- Sensor Edge
- Linear Drive Door Operator (Integrated with Cab Transom)
- Steel Dome
- Aluminum Frame Drop Ceiling
- Fluorescent Lighting
- Stainless Steel #4 Return with Integral Tilt Out COP
- Emergency Light
- Two Speed Fan
- Exit Switch

### • Controller

- Serial Link Microprocessor A17.1 Compliant
- Non Proprietary

### • Items Not Furnished

- Hydraulic Oil  
(Note: On high usage telescopic units we recommend using AW65 hydraulic oil in lieu of standard AW32)



## NOT INCLUDED IN ABELL LIFT SYSTEM PACKAGES

The following items must be considered by the purchaser:

All material (unless noted otherwise) is in accordance with ASME A17.1

The purchaser must provide the following in accordance with ASME A17.1 code requirements or local code requirements, whichever are more stringent.

### Hoistway:

1. A clear hoistway of the dimensions shown, plumb within 1: total. Hoistway shown is minimum. Any out of plumb condition must not encroach on hoistway size envelope from top to bottom.
2. Venting of hoistway as required by code.
3. A dry pit, reinforced to sustain the vertical loads as shown. Sump and sump pump may be required. Check with your local authorities.
4. Adequate supports for guide rail brackets, to support horizontal loads as shown. Support locations must not exceed spacing as required by code, and as shown. When maximum spacing is exceeded, rail reinforcement, or additional supports must be provided at purchaser's expense.
5. Guide rail support locations must have steel inserts (supplied by the elevator contractor) installed in brick, concrete, or filled concrete block. (See page 21 of this guide). For wood or metal stud construction 2" x 6" blocking horizontal reinforcement must be installed from front to back of hoistway between studs. 2" x 24" x 1/2" laminate plates (supplied by the elevator contractor) must be installed on the face of the lbl at the insert locations specified. Drywall must be trimmed around these plates so that the plates are approximately flush with the face of the drywall, (see page 2 for details). Hoistway walls must be designed to withstand loads specified in the rail reaction chart located on page 1 of the layout drawings. (See page 21 of this guide for details).
6. Projections or recesses in the hoistway of two inches or more, on sides not used for loading or unloading, shall be beveled at an angle not less than 75 degrees from the horizontal.
7. A hoist beam, hook, or eye bolt shall be furnished at the top of the hoistway, located on the center line of car and guides, designed for a load capacity of 6000 lbs minimum.
8. Clear access for moving jack unit in to the hoistway. (Size as shown on drawing)
9. Entrance walls are to be erected (or rough opening filled in) after doorframes and sills are installed.
10. Required sleeves in hoistway wall, or any trenching and filling, for oil line and wiring duct for each elevator as may be required.
- 11 Any cutting and patching of building construction required to install signal fixtures, or other elevator apparatus, and any repairs, grouting, patching, or painting made necessary by the same.
12. Barricades required per attached drawing, for safety, during construction, in accordance with OSHA requirements.

### Machine Room:

13. A machine room properly lighted and ventilated per code requirements with temperature maintained between 65 and 95 degrees Fahrenheit. Door of size to permit access for hydraulic machine, to be self-closing and locking, but can be opened from inside without a key. Machine room door minimum size 3'-0" x 7'-0".

### Electrical:

(All electrical work must be in accordance with ANSI and NEC 620, NFPA 72, and local codes)

14. A fused disconnect switch for each elevator, of ample capacity, with wiring to the elevator motor starter control. Disconnect means shall disconnect the normal power supply as well as any emergency power supply if provided. Separate 110 volt 15 amp lighting circuit to lockable disconnect in the machine room, terminated on the designated terminal on the main elevator controller.
15. Light and switch in elevator machine room, with switch located adjacent to access. Standard duplex GFI outlet (110 vac 15 amp) in machine room.
16. Light, switch, and convenience GFI outlet (110 vac) in elevator pit, light switch accessible from lower landing opening. Install light so as to clear elevator car.
17. Smoke detector located in each elevator lobby with necessary wiring to elevator control panel when fire service is specified. Need 3 relays – one for machine room detector, one for main lobby detector, and one for all other lobbies.
18. If elevator is equipped with a battery emergency lowering kit, an auxiliary contact is required on main power disconnect in elevator machine room. These contacts (supplied by others) shall be UL approved and located in disconnect.
19. Necessary power for installing, erecting, and testing, without charge.
20. Any features or equipment required, but not specifically specified as being furnished by elevator contractor.
21. A secure and dry place to store elevator equipment and tools before and during construction.
22. Where sprinklers are provided, shunt trips are required for the elevator machine room disconnect—see applicable codes.





## THE CASE FOR "NON-PROPRIETARY" CONTROLS

Many Original Equipment Manufactures (OEM's) build elevator control systems that can only be accessed by using a special programmable device. These tools typically utilize patented or copyrighted and highly "proprietary" software to communicate with the elevator control system's on-board computers. Purchase of the OEM's special tool by any competing elevator service company is not allowed. When such copyrighted software and special equipment is required to service an elevator control system the building owner has only one option for all-future elevator maintenance and repairs—the original manufacturer.

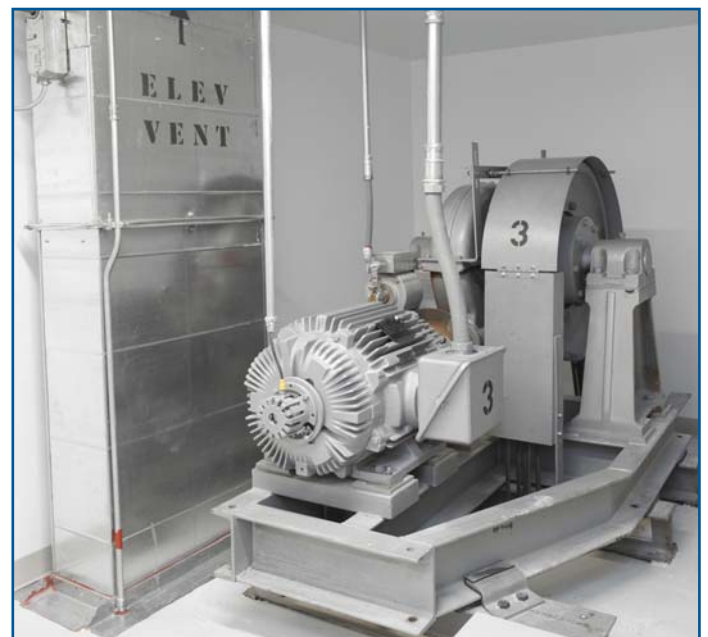
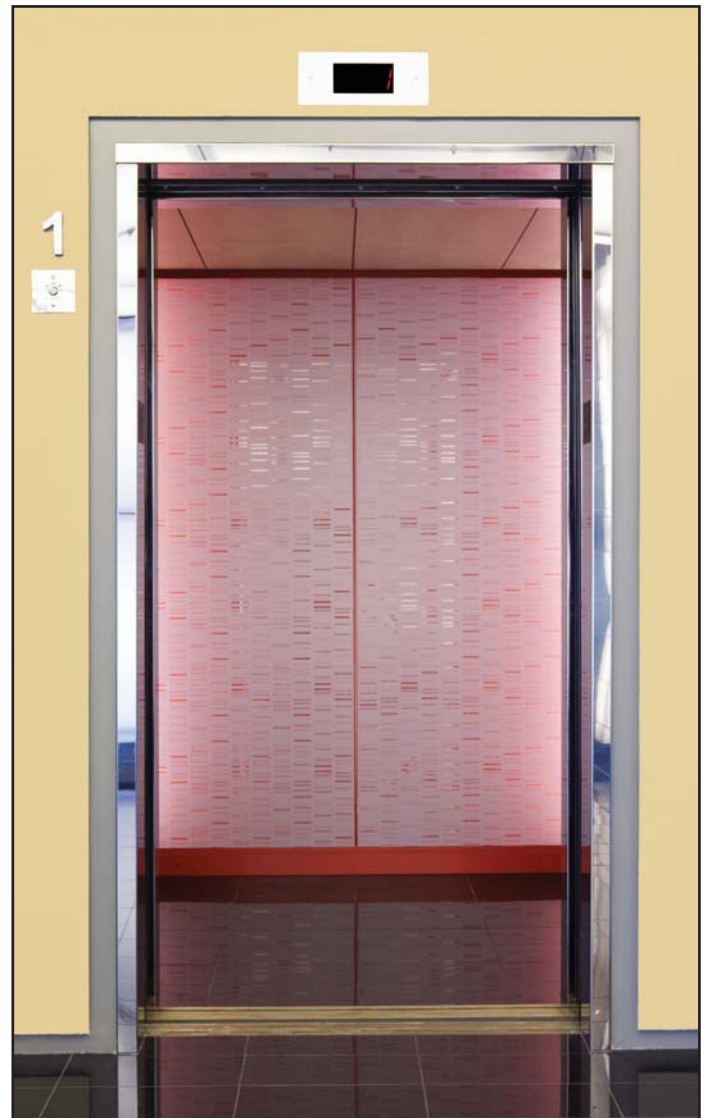
If only one company can provide service for "proprietary" equipment, how does the building owner control maintenance costs? Quite simply the owner is trapped. We commonly see maintenance pricing on proprietary equipment at more than double the market price.

Even if the diagnostic tool is sold, leased, or given to the owner, the functionality of the particular tool may be limited. Furthermore, use of the tool may be contractually restricted to the equipment owner and not his designees.

How essential is the programming tool to system operation? The programming tool is essential for reprogramming the system's microprocessor and adjusting the drive that controls the motion of the elevator.

Perhaps the term "proprietary" is not black and white – contractors, manufactures and elevator professionals suggest that all elevator control systems are basically "proprietary" in nature, by virtue of their design. The degree of "proprietary restraint" can be measured by the ability of service companies, other than the original control manufacturer, to maintain the equipment.

Abell Lift Systems requires no special programming tools, thereby imposing no restraints on the ability to service and maintain our elevator control systems. All Abell products are open market "non-proprietary". Every Abell control system is manufactured with complete and comprehensive on-board diagnostics. There are no special electronic tools.



**Photos shown:**

At top right - Elevator cab in UofL Biotech Building with DNA motif  
At right - Machine Room in University of Louisville's Biotech Building

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings present.





# ABELL

LIFT SYSTEMS

