



Eclipse

RESIDENTIAL ELEVATOR

Planning Guide

Applicable Codes:

ASME A17.1/CSA-B44

Safety Code for Elevators and Escalators

Section 5.3 – Private Residential Elevators

Part No. 000623
15-m06-2016

Purpose of this guide

This guide assists architects, contractors, and lift professionals to incorporate the Eclipse Residential Elevator into a residential building design. The design and manufacture of the Eclipse Residential Elevator meets the requirements of the following codes and standards:

- ASME A17.1/CSA B44 2000, Section 5.3
- ASME A17.1/CSA B44 2004, Section 5.3
- ASME A17.1 2004, Addendum 2005, Section 5.3
- ASME A17.1/CSA B44 2007, Section 5.3
- ASME A17.1/CSA B44, Addendum 2008, Section 5.3
- ASME A17.1/CSA B44 2010, Section 5.3
- ASME A17.1/CSA B44 2013, Section 5.3
- ASME A17.1 1996, Part 5

We commend that you contact your local authority having jurisdiction to ensure that you adhere to all local rules and regulations pertaining to residential elevators.

How to use this guide

- 1 Determine your client's intended use of the lift.
 - 2 Determine the local code requirements.
 - 3 Determine the site installation parameters.
 - 4 Determine the cab type and hoistway size requirements.
- NOTE:** If the Eclipse has Auto Slim Doors, do not refer to the tables on pages 6 and 7; refer to Appendix A.
- 5 Plan for electrical requirements.

History

April 2, 2008 – Added rail forces
 July 31, 2008 – Added rail forces diagram
 January 8, 2008 – Added component weights to specifications; modified center of door for type 5 center
 June 4, 2009 – Added WARNING on page 6 not to install pipes conveying steam, gas or liquid in the hoistway
 June 23, 2009 – Added dimension to structural view drawing Figure 1-11 on page 8 (centerline to center of vertical support stack = 18.5")
 September 25, 2009 – Corrected power supply and lighting supply specifications on pages 2, 12, 13 and 14
 February 9, 2010 – Added recommended manufacturers for circuit breakers at the distribution panel on page 12
 March 31, 2010 – Corrected Type 3 cab measurements on page 4; Corrected Type 4 cab measurements on page 5
 September 9, 2010 – Added note at bottom of tables on pages 4 and 5; Corrected Type 5 cab measurements on page 5; Corrected controller and brake resistor dimensions on page 13
 February 23, 2011 – Added note to step 4 above under "How to use this guide"; Reformatted specifications table on pages 4 and 5; Added "Auto slim doors" to "Options" in specification table on page 5; Updated IMPORTANT note at bottom of pages 6 and 7; Added Appendix A with Auto Slim Doors planning information
 April 25, 2011 – Updated standard features and options in specifications table on pages 4 and 5; Updated Auto Slim Door entrance assembly and elevation drawings in Appendix A
 July 20, 2011 – Updated to 6 stops in specifications table on page 4
 August 12, 2011 – Revised Slim Door drawings on pages 18 and 19
 August 24, 2011 – Removed 208V reference throughout manual
 September 15, 2011 – Revised Slim Door drawings on pages 18 and 19
 October 11, 2011 – Clarified the meaning of "centerline" in the drawings on pages 10 and 11
 October 21, 2011 – Corrected the "Center of door B" dimensions in Tables for Type 3 and Type 4 cabs on pages 6 and 7
 August 30, 2012 – Revised slim door drawings on pages 20 - 30
 October 9, 2012 – Removed motor brake resistor from drawing on page 15
 November 6, 2012 – Added door recommendation on page 13
 December 3, 2012 – Revised note at bottom of Electrical Requirements on page 14
 February 21, 2013 – Changed pot lights from incandescent to halogen in specifications table on page 4
 April 25, 2013 – Revised options in specifications table on page 5
 July 8, 2013 – Added Noise Level to specifications table on page 4
 October 21, 2013 – Revised power supply information in specifications table on page 4 and electrical requirements on page 14
 March 13, 2014 – Revised specifications table on pages 4 and 5
 April 29, 2014 – Revised "rough opening" dimension in drawings on pages 18, 20, 22, 24, 26, 28, and 30; Changed "Minimum Overhead" spec on page 4 from 114" to 112" for 96" cab
 August 29, 2014 – Added controller box dimensions on page 16
 November 5, 2014 – Revised Applicable codes on page 3
 March 4, 2015 – Revised drawing on page 15
 August 31, 2015 – Revised load capacity spec on page 4
 September 24, 2015 – Added Daily Cycle to specifications table on page 4
 March 2, 2016 – Removed copyright from cover page; Savaria Corporation back to Savaria Concord Lifts, Inc.
 June 15, 2016 – Revised electrical requirements on page 14

IMPORTANT NOTICE

This Planning Guide provides nominal dimensions and specifications useful for the initial planning of a project. Before beginning actual construction, make sure you have the installation (shop) drawings customized with specifications and dimensions for your specific project.

Lift configurations and dimensions are in accordance with our interpretation of the standards set forth by the codes listed on the front cover of this Planning Guide. Please consult Savaria or the authorized Savaria dealer in your area for more specific information pertaining to your project, including any discrepancy between referenced standards and those of any local codes or laws.

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

Visit our website www.savaria.com for the most current Eclipse drawings and dimensions.

Table 1: Eclipse specifications




Specification type	Specification data															
Load capacity	Standard 750 lbs. (341 kg), 950 lbs. (431 kg), and 1000 lbs. (454 kg)															
Component weights	367 lbs. - sling and base rail section 170 lbs. - middle rail Variable weight - top rail/bed plate 600 lbs. - control wall stack (variable) 440 to 660 lbs. cab (+ 263 lbs. speedy sling) 100 lbs. motor drive 50 lbs. controller 2 lbs. per foot chain (two runs)															
Rail forces	<table><tr><th colspan="2">RAIL FORCES</th><th>R3 NOTE</th></tr><tr><td colspan="2"></td><td>PIT FLOOR TO SUPPORT LOAD OF: 6400 .LBS * (INCLUDES IMPACT)</td></tr><tr><td>*R1</td><td>*R2</td><td>4 WALL ANCHOR POINTS MIN. PER BRACKET. 2 PER SIDE OF RAIL BRACKET CENTER LINE. PULL OUT FORCE PER FASTENER 152 .LBS.</td></tr><tr><td>304 lbf</td><td>194 lbf</td><td></td></tr><tr><td colspan="2">Rail Weight 6.0 lbs / ft</td><td></td></tr></table>	RAIL FORCES		R3 NOTE			PIT FLOOR TO SUPPORT LOAD OF: 6400 .LBS * (INCLUDES IMPACT)	*R1	*R2	4 WALL ANCHOR POINTS MIN. PER BRACKET. 2 PER SIDE OF RAIL BRACKET CENTER LINE. PULL OUT FORCE PER FASTENER 152 .LBS.	304 lbf	194 lbf		Rail Weight 6.0 lbs / ft		
RAIL FORCES		R3 NOTE														
		PIT FLOOR TO SUPPORT LOAD OF: 6400 .LBS * (INCLUDES IMPACT)														
*R1	*R2	4 WALL ANCHOR POINTS MIN. PER BRACKET. 2 PER SIDE OF RAIL BRACKET CENTER LINE. PULL OUT FORCE PER FASTENER 152 .LBS.														
304 lbf	194 lbf															
Rail Weight 6.0 lbs / ft																
Rated speed	40 fpm (0.20 mps) standard.															
Power supply (circuit by others)	230 volt, single phase, 60 Hz, 30-Amp fused disconnect box with 20-Amp fuse															
Lighting supply (circuit by others)	120 volt, 60 Hz, 2 amps (consumption)															
Drive system	Automatic 2HP-g geared roller chain variable frequency drive, complete with counterweight															
Temperature operating range	- 10°C to + 40°C / 14°F to 104°F															
Noise level (for typical installation)	68.2 dBA (up direction); 65.1 dBA (down direction) Measured at a height equal to motor, distance of 1m, in front of motor, no hoistway															
Daily cycle	Normal: 40 Heavy: 80 Excessive: 150 Maximum starts in 1 hour on standard installation: 20 NOTE: Please consult your Sales Representative if there a chance you may exceed these amounts.															
Cab size	<ul style="list-style-type: none">• W36" x L48" x H80" (914 mm x 1219 mm x 2032 mm), Type 1, 2, 3, 4, 5• W36" x L54" x H80" (914 mm x 1371 mm x 2032 mm), Type 1, 2, 3, 4, 5• W36" x L60" x H80" (914 mm x 1524 mm x 2032 mm), Type 1, 2, 3, 4, 5• W40" x L54" x H80" (1067mm x 1371 mm x2032 mm), Type 1, 2, 3, 4, 5															
Cab panel and finish	Solid melamine or MDF panels (standard), unfinished oak veneer panels (optional), finished recessed veneer panels (optional), solid hardwood raised panels (optional)															
Maximum travel	50 feet (12.24 m) - 60 feet (18.29 m) available where code permits															
Control system	Relay logic controller complete with diagnostic LEDs															
Levels and openings	Up to 6 stops / up to 2 cab openings															
Pit depth requirement	6" (152 mm) minimum up to 96" (2845 mm), 11" (279 mm) minimum with buffer springs															
Minimum overhead clearance	96" (2438 mm) for standard 80" cab, 100" (2540 mm) for 84" cab, 112" (2896 mm) for 96" cab Units with auto slim doors: Minimum overhead is 104" (2642 mm) for doors with clear opening of 82-3/4" (2100 mm)															
Hall station and control panel finish	<ul style="list-style-type: none">• Clear or bronze anodized aluminum (standard), or stainless steel (optional), or brass (optional)• Rectangular (standard) or oval (optional) hall stations, keyless (standard) or keyed (optional)															

Table 1: Eclipse specifications

Specification type	Specification data
Standard features	<ul style="list-style-type: none"> • Automatic cab on/off lighting • Recessed gate pocket • Digital display in car operating panel • Clear or bronze anodized aluminum cab entrance trim and handrail • Data plates, capacity tags • Proximity floor selection, stopping and two-way levelling • Motor access cover (locked and switched) • Home landing feature • Plan drawings • Modular rail sections • Unfinished plywood sub-floor • White ceiling with four halogen pot lights • MDF cab with or without finish, melamine cab in choice of finishes • Stainless steel, clear or bronze anodized aluminum cab operating panel and hall call stations
Safety features	<ul style="list-style-type: none"> • Cab gate safety switch • Pit run/stop switch and car top run/stop switch • Emergency stop and alarm buttons • Uninterruptible power supply (UPS)/battery back-up system for lowering, automatic gate operation (if equipped), and electrical interlock operation and lighting in the event of a power failure • Upper and lower terminal limits • Final limit switch • Mechanical rail shoring blocks • Sling: factory pre-assembled speedy sling c/w pre-set slack chain safety brake and switch
Options	<ul style="list-style-type: none"> • Custom cab size • 96" (2438 mm) high cab; 84" (2133 mm) high cab • Rated speed - (50 fpm (0.250 mps) available where code permits) • Accordion car gate (choice of style) • Stainless steel trim pack • Brass trim pack • Automatic gate operator • Automatic swing landing door operator • Buffer springs (11" pit depth minimum) • Interlocks for <i>doors by others</i> • Keyed on/off control panel and hall stations • Optional cab finishes: raised hardwood, unfinished veneer • Optional fixture finishes: brass #4 finish (handrail, cab operating panel, hall call stations); hall call stations available in rectangular or oval • Telephone cabinet to match trim • Automatic slim doors • Digital position indicator (PI) in hall calls

Eclipse cab types (without auto slim doors)

NOTE: For Eclipse with auto slim doors, refer to Appendix A.

Figure 1-1: Type 1 left hand

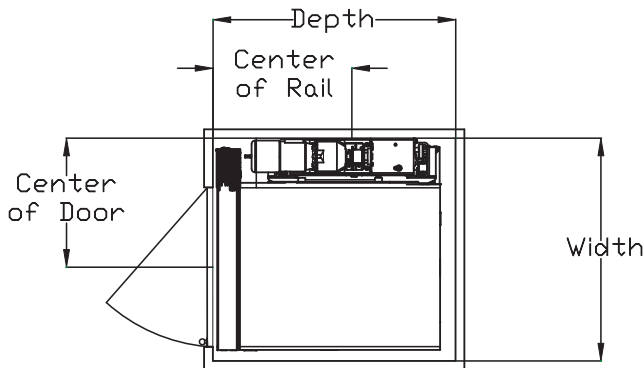


Table 1-1: Type 1 left hand

Cab size	Width	Depth	Center of rail	Center of door	Clear opening
36 x 48	50 $\frac{1}{2}$	55	31*	29 $\frac{1}{4}$	36
36 x 54	50 $\frac{1}{2}$	61	33	29 $\frac{1}{4}$	36
36 x 60	50 $\frac{1}{2}$	67	36	29 $\frac{1}{4}$	36
40 x 54	54 $\frac{1}{2}$	61	33	33 $\frac{1}{4}$	36

Note: * 30" if right hand motor

Figure 1-3: Type 2

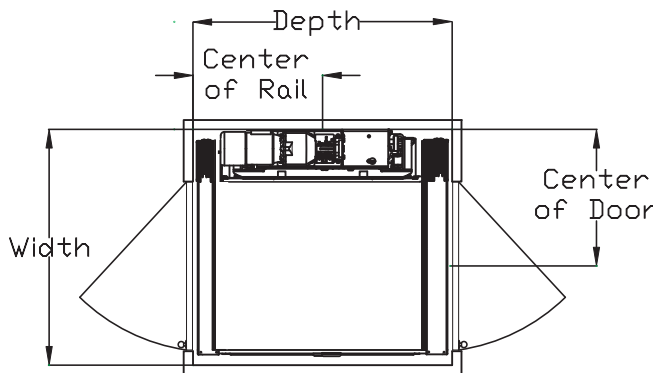


Table 1-3: Type 2

Cab size	Width	Depth	Center of rail	Center of door	Clear opening
36 x 48	50 $\frac{1}{2}$	55 $\frac{1}{2}$	27 $\frac{3}{4}$	29 $\frac{1}{4}$	36
36 x 54	50 $\frac{1}{2}$	61 $\frac{1}{2}$	30 $\frac{3}{4}$	29 $\frac{1}{4}$	36
36 x 60	50 $\frac{1}{2}$	67 $\frac{1}{2}$	33 $\frac{3}{4}$	29 $\frac{1}{4}$	36
40 x 54	54 $\frac{1}{2}$	61 $\frac{1}{2}$	30 $\frac{3}{4}$	33 $\frac{1}{4}$	36

Note: All measurements in inches (").

Figure 1-2: Type 1 right hand

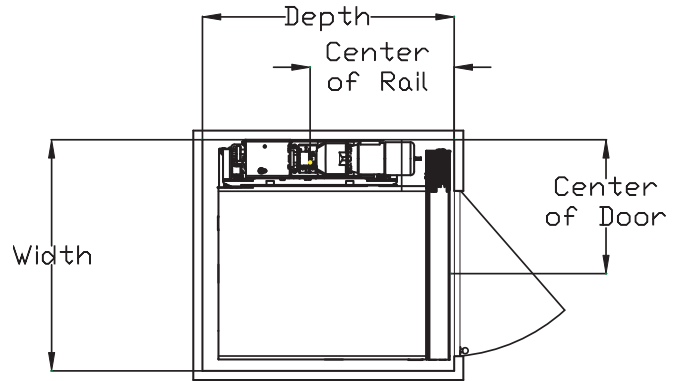


Table 1-2: Type 1 right hand

Cab size	Width	Depth	Center of rail	Center of door	Clear opening
36 x 48	50 $\frac{1}{2}$	55	31*	29 $\frac{1}{4}$	36
36 x 54	50 $\frac{1}{2}$	61	33	29 $\frac{1}{4}$	36
36 x 60	50 $\frac{1}{2}$	67	36	29 $\frac{1}{4}$	36
40 x 54	54 $\frac{1}{2}$	61	33	33 $\frac{1}{4}$	36

Note: * 30" if left hand motor

Figure 1-4: Type 3

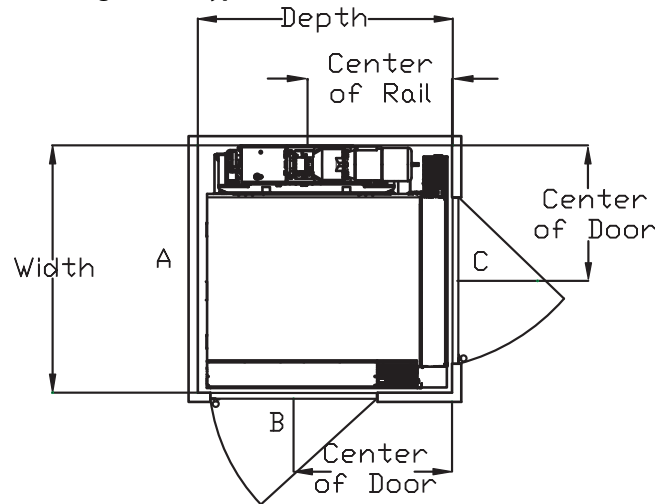


Table 1-4: Type 3

Cab size	Width	Depth	Center of rail	Center of door C	Center of door B	Clear opening C	Clear opening B
36 x 48	52 $\frac{1}{8}$	55	31	27 $\frac{7}{8}$	34 $\frac{1}{4}$	34 $\frac{5}{8}$	36
36 x 54	52 $\frac{1}{8}$	61	33	27 $\frac{7}{8}$	38 $\frac{3}{4}$	34 $\frac{5}{8}$	36
36 x 60	52 $\frac{1}{8}$	67	36	27 $\frac{7}{8}$	46 $\frac{1}{4}$	34 $\frac{5}{8}$	36
40 x 54	56 $\frac{1}{8}$	61	33	31 $\frac{7}{8}$	38 $\frac{3}{4}$	36	36

IMPORTANT: Measurements in the above tables are only valid for the cab and hoistway sizes listed. For non-standard cab and/or hoistway sizes, always refer to your plan drawings.

For Eclipse with Auto Slim Doors, DO NOT use the above tables; refer to Appendix A instead.

Figure 1-5: Type 4

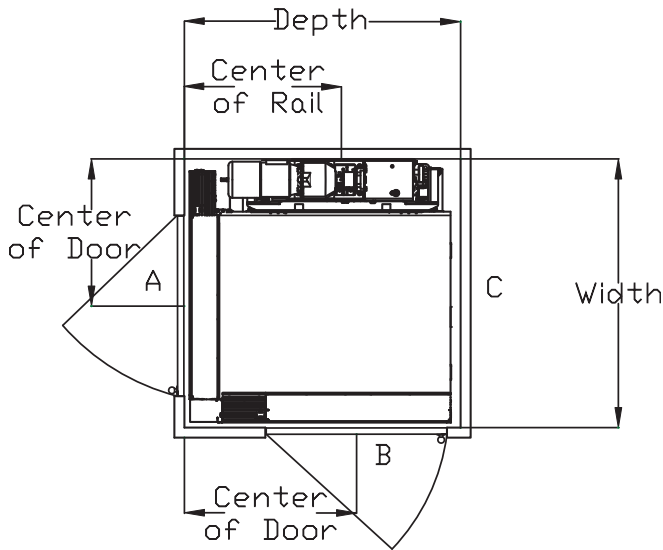


Table 1-5: Type 4

Cab size	Width	Depth	Center of rail	Center of door A	Center of door B	Clear opening A	Clear opening B
36 x 48	52 $\frac{1}{8}$	55	31	27 $\frac{7}{8}$	34 $\frac{1}{4}$	34 $\frac{5}{8}$	36
36 x 54	52 $\frac{1}{8}$	61	33	27 $\frac{7}{8}$	38 $\frac{3}{4}$	34 $\frac{5}{8}$	36
36 x 60	52 $\frac{1}{8}$	67	36	27 $\frac{7}{8}$	46 $\frac{1}{4}$	34 $\frac{5}{8}$	36
40 x 54	56 $\frac{1}{8}$	61	33	31 $\frac{7}{8}$	38 $\frac{3}{4}$	36	36

Figure 1-7: Type 5 left hand

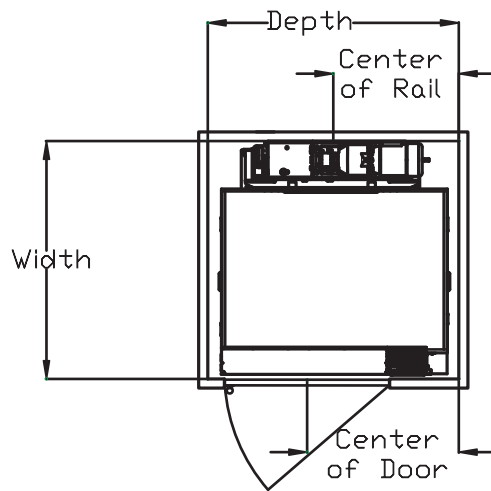


Table 1-7: Type 5: left hand

Cab size	Width	Depth	Center of rail	Center of door	Clear opening
36 x 48	52 $\frac{1}{8}$	55	27 $\frac{1}{2}$	33 $\frac{1}{4}$	36
36 x 54	52 $\frac{1}{8}$	61	30 $\frac{1}{2}$	39 $\frac{1}{4}$	36
36 x 60	52 $\frac{1}{8}$	67	33 $\frac{1}{2}$	45 $\frac{1}{4}$	36
40 x 54	56 $\frac{1}{8}$	61	30 $\frac{1}{2}$	39 $\frac{1}{4}$	36

Figure 1-6: Type 5 center

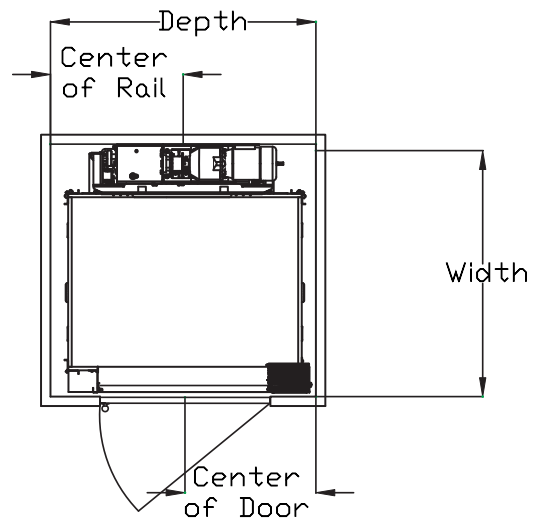


Table 1-6: Type 5 center

Cab size	Width	Depth	Center of rail	Center of door	Clear opening
36 x 48	52 $\frac{1}{8}$	56 $\frac{1}{4}$	28 $\frac{1}{8}$	29	36
36 x 54	52 $\frac{1}{8}$	62 $\frac{1}{4}$	31 $\frac{1}{8}$	29	36
36 x 60	52 $\frac{1}{8}$	68 $\frac{1}{4}$	34 $\frac{1}{8}$	34 $\frac{5}{8}$	36
40 x 54	56 $\frac{1}{8}$	62 $\frac{1}{4}$	31 $\frac{1}{8}$	29	36

Figure 1-8: Type 5 right hand

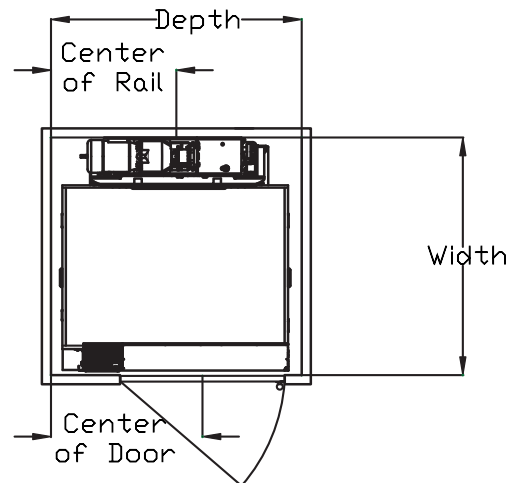


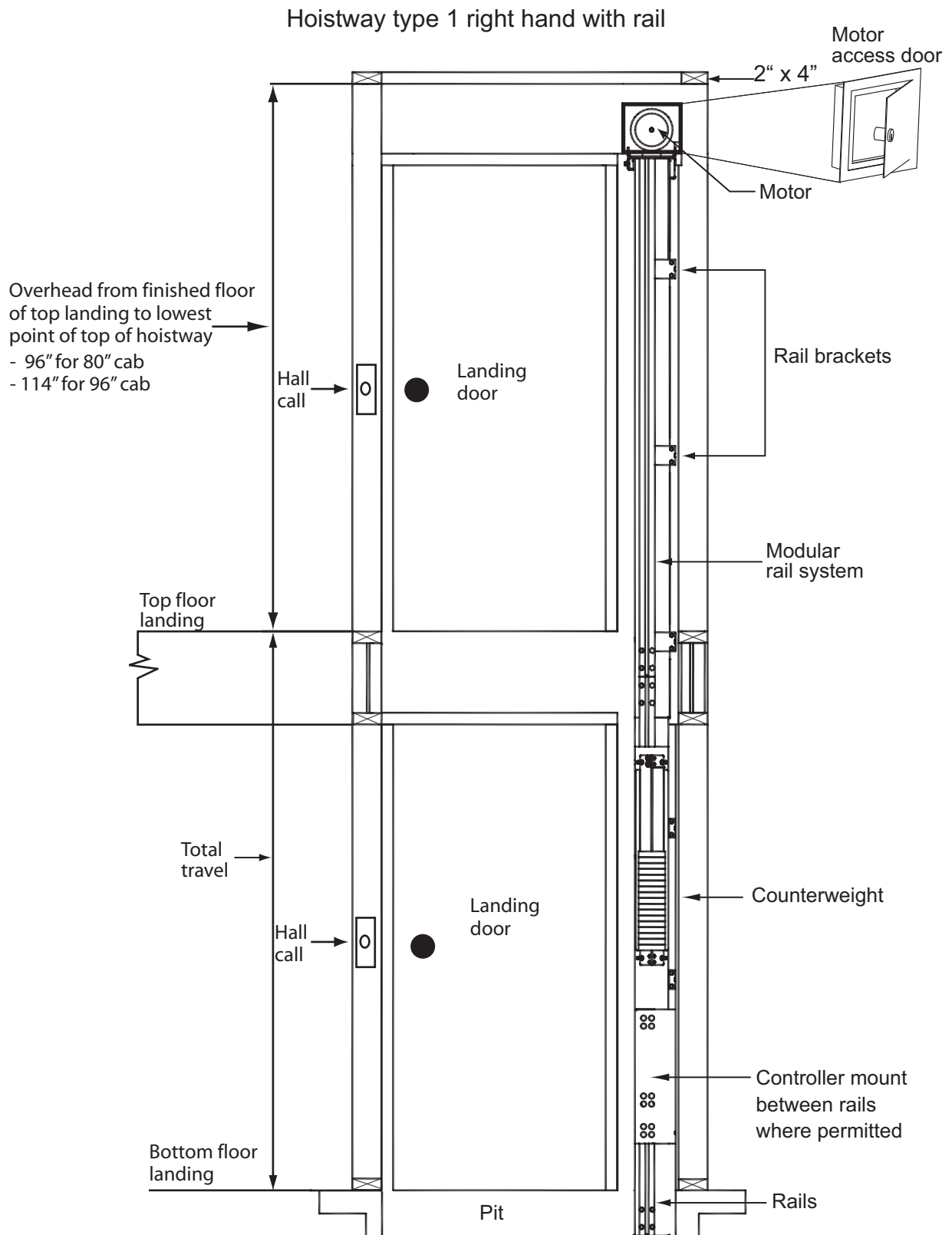
Table 1-8: Type 5: right hand

Cab size	Width	Depth	Center of rail	Center of door	Clear opening
36 x 48	52 $\frac{1}{8}$	55	27 $\frac{1}{2}$	33 $\frac{1}{4}$	36
36 x 54	52 $\frac{1}{8}$	61	30 $\frac{1}{2}$	39 $\frac{1}{4}$	36
36 x 60	52 $\frac{1}{8}$	67	33 $\frac{1}{2}$	45 $\frac{1}{4}$	36
40 x 54	56 $\frac{1}{8}$	61	30 $\frac{1}{2}$	39 $\frac{1}{4}$	36

IMPORTANT: Measurements in the above tables are only valid for the cab and hoistway sizes listed. For non-standard cab and/or hoistway sizes, always refer to your plan drawings.

For Eclipse with Auto Slim Doors, DO NOT use the above tables; refer to Appendix A instead.

Figure 1-9: Eclipse hoistway with rail

**WARNING**

Pipes conveying steam, gas or liquids, which, if discharged into the hoistway would endanger life, shall not be installed in the hoistway.

Figure 1-10: Eclipse hoistway mount

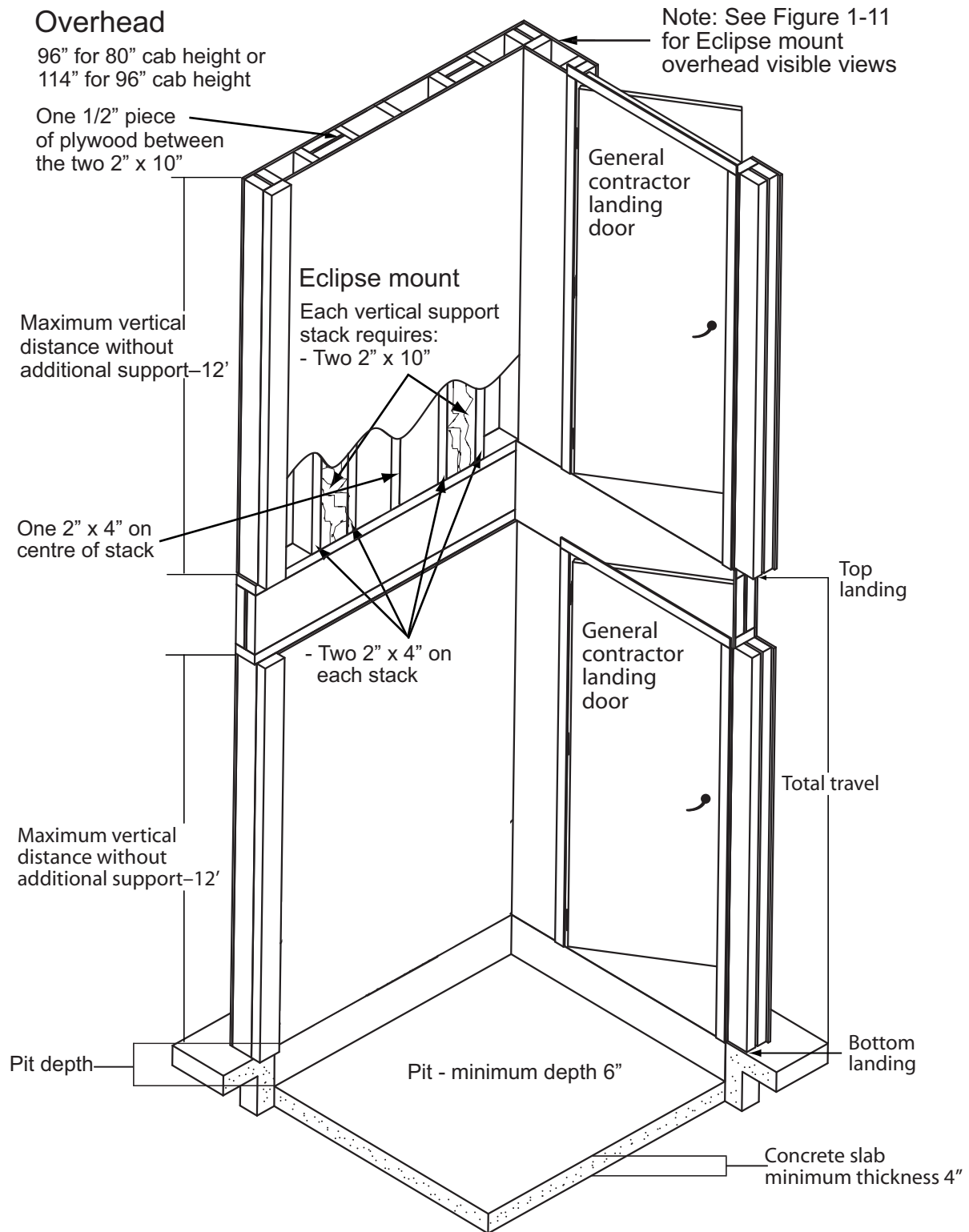
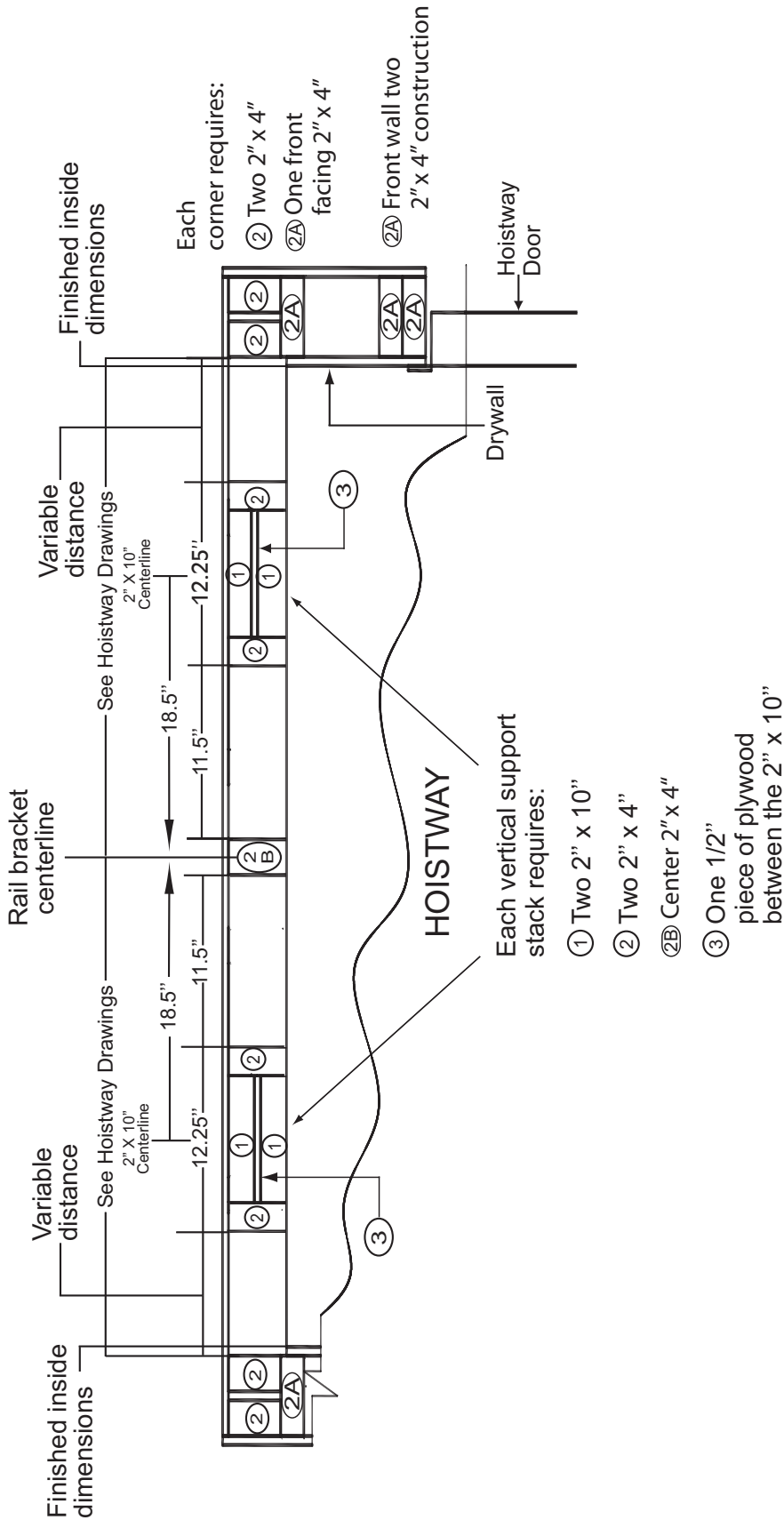


Figure 1-11: Eclipse top of hoistway view for wood construction

Structural views for elevator

Overhead view of Eclipse support wall



Structural views for elevator shaft (continued)

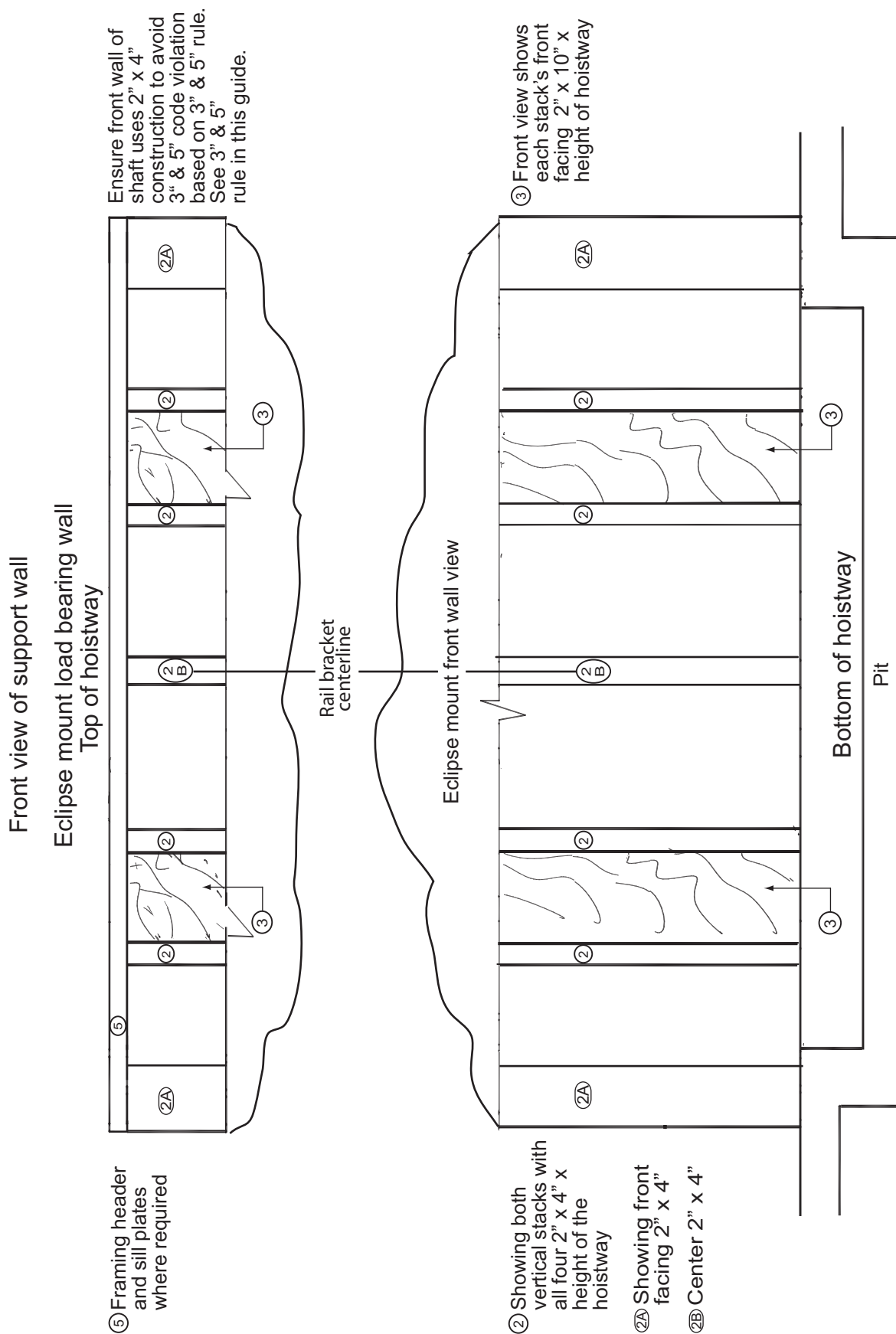



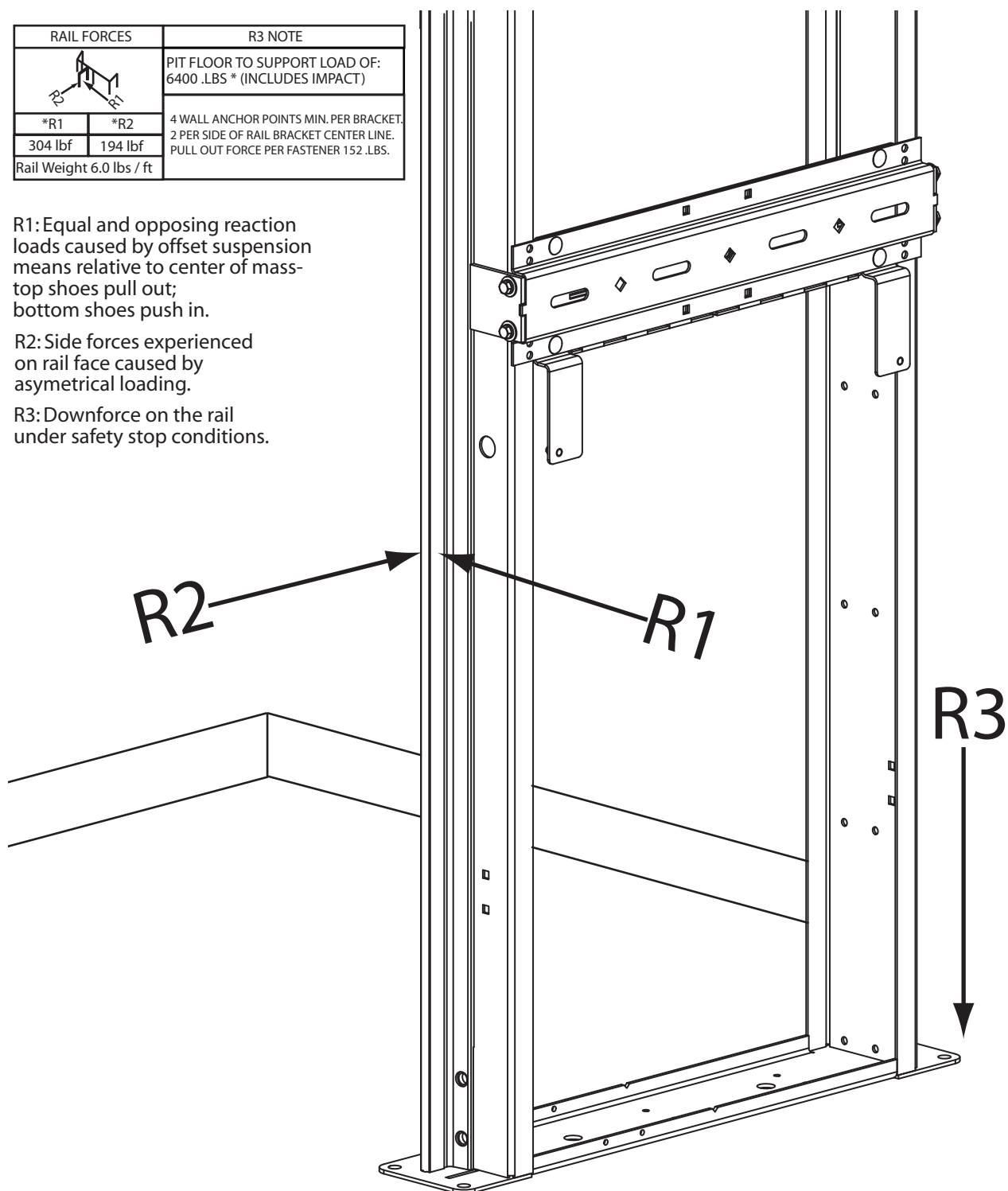
Figure 1-13: Loads on building and forces on rails

RAIL FORCES		R3 NOTE
		PIT FLOOR TO SUPPORT LOAD OF: 6400 .LBS * (INCLUDES IMPACT)
*R1	*R2	4 WALL ANCHOR POINTS MIN. PER BRACKET. 2 PER SIDE OF RAIL BRACKET CENTER LINE. PULL OUT FORCE PER FASTENER 152 .LBS.
304 lbf	194 lbf	
Rail Weight 6.0 lbs / ft		

R1: Equal and opposing reaction loads caused by offset suspension means relative to center of mass- top shoes pull out; bottom shoes push in.

R2: Side forces experienced on rail face caused by asymmetrical loading.

R3: Downforce on the rail under safety stop conditions.



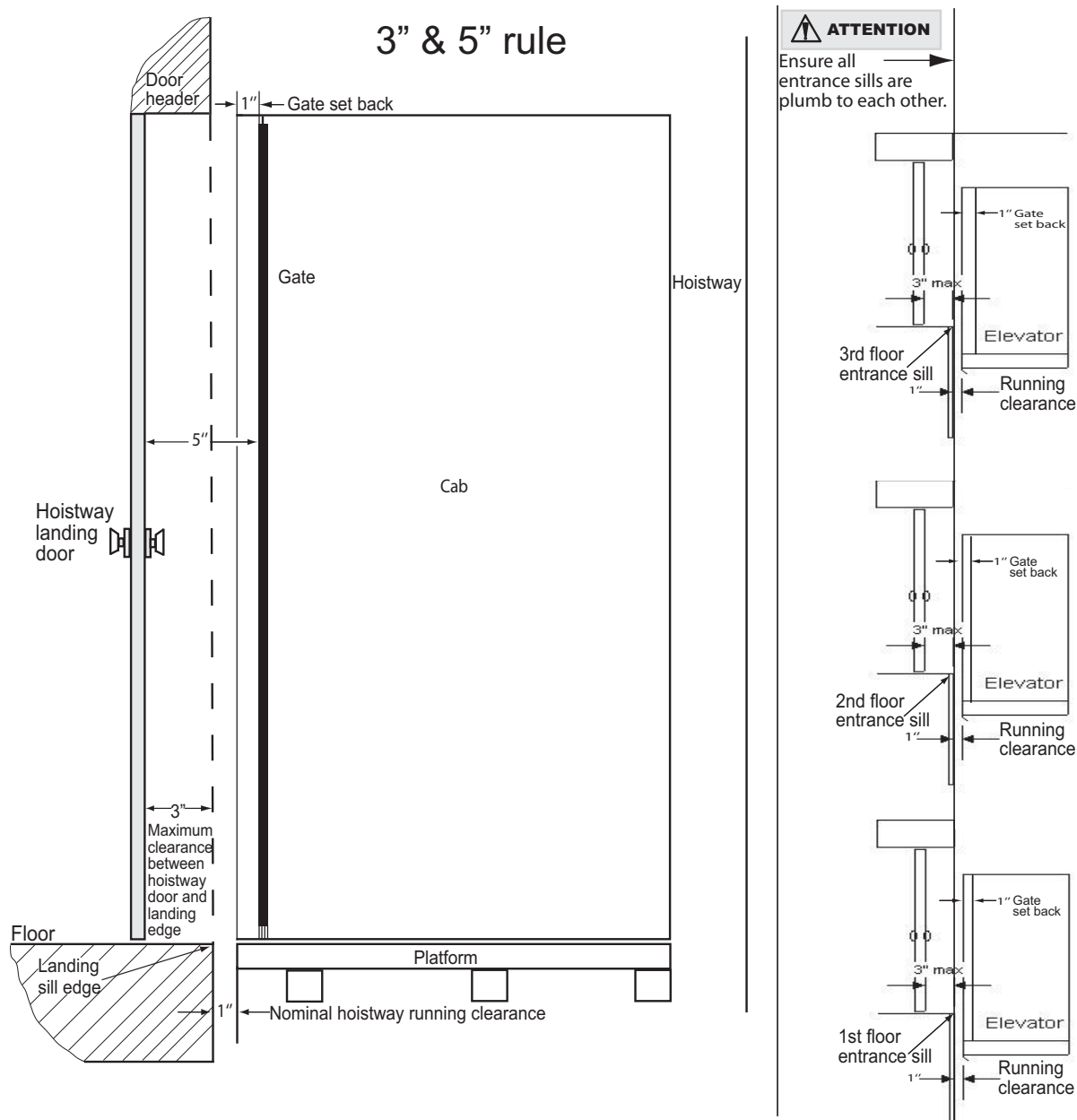
Safety first-3 & 5 rule

The ASME A17.1/CSA-B44–Safety Code for Elevators and Escalators mandates the following maximum hoistway door clearances:

- Clearance between the hoistway side of the landing door and the edge of the landing sill shall not exceed 3 in. (76 mm).
- Distance between the hoistway face of the landing door or gate and the car door or gate shall not exceed 5 in. (127 mm).
- Eclipse Residential Elevator design is with a 1 inch running clearance and a 1 inch gate set back on the car; thus the hoistway doors must maintain a maximum set back of 3 inches.

NOTE: Concrete block/masonry shafts and some commercial metal door frames often create 3 & 5 rule violations.

Figure 2: 3 & 5 rule



Recommendation: We recommend installation of a solid door as a hollow door may be too flexible and cause potential lock issues.

Eclipse electrical requirements

By General Contractor/Owner

Your electrician and phone installer supply the following connections:

Main disconnect - One (1) 230V single-phase 30 Amp fused disconnect box with 20 Amp fuse/breaker (if voltage is not 230V minimum, a buck-boost transformer is required)

Lighting disconnect - One (1) 120V 15 Amp fused disconnect or circuit breaker for cab lighting

Telephone line - One (1) telephone line jack in close proximity to the controller

NOTE: Savaria Corporation does not provide power cable to main disconnect.

Recommended manufacturers for fused disconnect

Square D

- Main disconnect: 230V single-phase disconnect model # H221N
- 240V - 30 Amp with Interlock Kit - ELK031 Aux Contacts (normally opened/normally closed)
- In addition, two each - 250V, 20 Amp, RK5 fuses
- Lighting disconnect: 120V 15 Amp fused disconnect or circuit breaker

Siemens

- Main disconnect: 230V single-phase disconnect model #HF221N
- 240V - 30 Amp with Interlock Kit-HA 161234 Aux Contacts (normally opened/normally closed)
- In addition, two each - 250V, 20 Amp, RK5 fuses
- Lighting disconnect: 120V 15 Amp fused disconnect or circuit breaker

G.E.

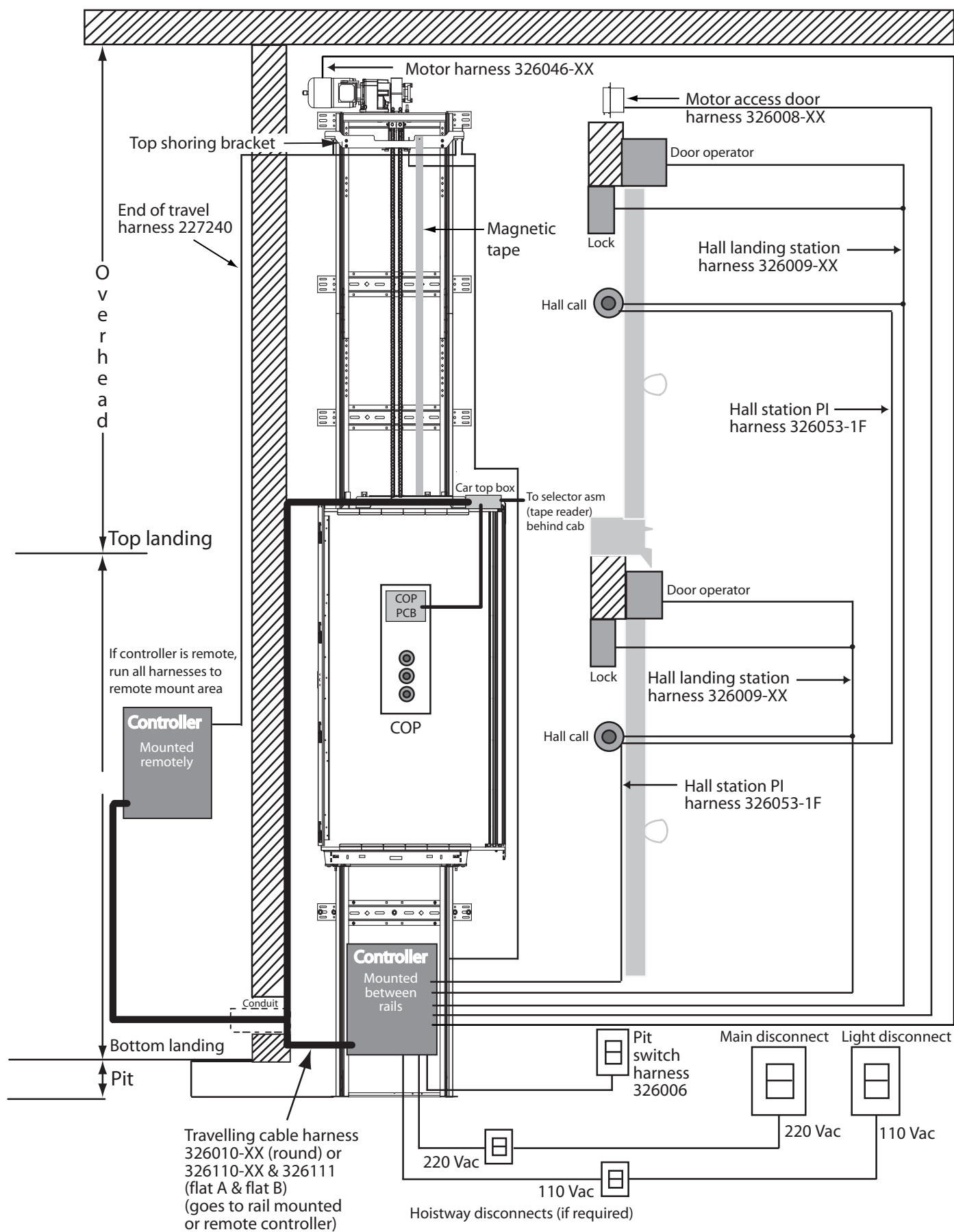
- Main disconnect: 230V single-phase disconnect model # TH3221
- 240V - 30 Amp with Interlock Kit - THAUX21D Aux Contacts (normally opened/normally closed)
- In addition, two each - 250V, 20 Amp, RK5 fuses
- Lighting disconnect - 120V 15 Amp fused disconnect or circuit breaker

Cutler Hammer

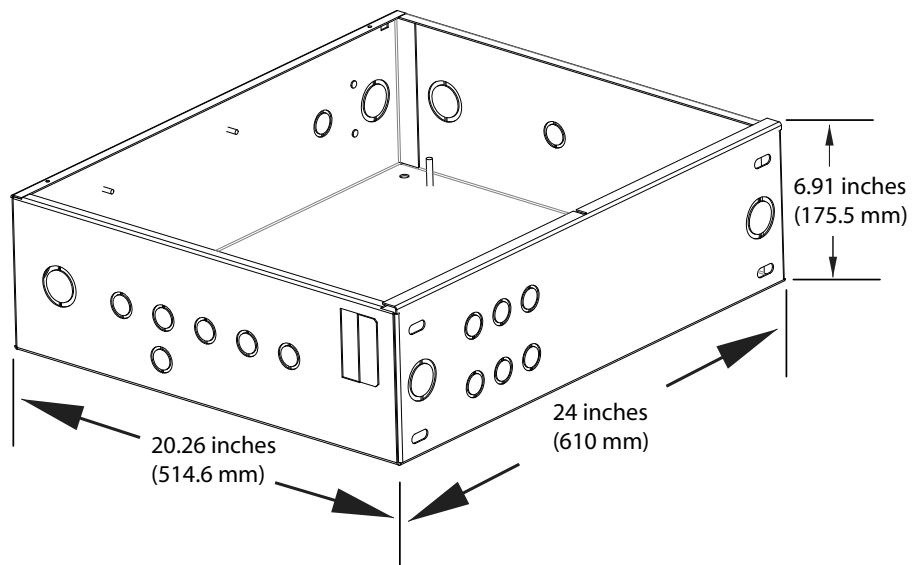
- Main disconnect: 230V single-phase disconnect model # DH221NGK
- 240V - 30 Amp with Interlock Kit - THAUX21D Aux Contacts (normally opened/normally closed)
- In addition, two each - 250V, 20 Amp, RK5 fuses
- Lighting disconnect: 120V 15 Amp fused disconnect or circuit breaker

Recommended manufacturers for circuit breakers at the distribution panel (and the distribution panel itself): Square D or Siemens only.

WIRING - USE AS REFERENCE



Controller box dimensions



Appendix A

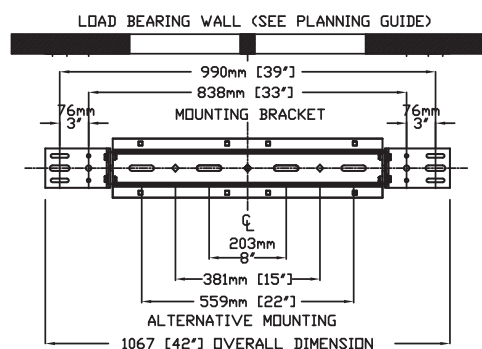
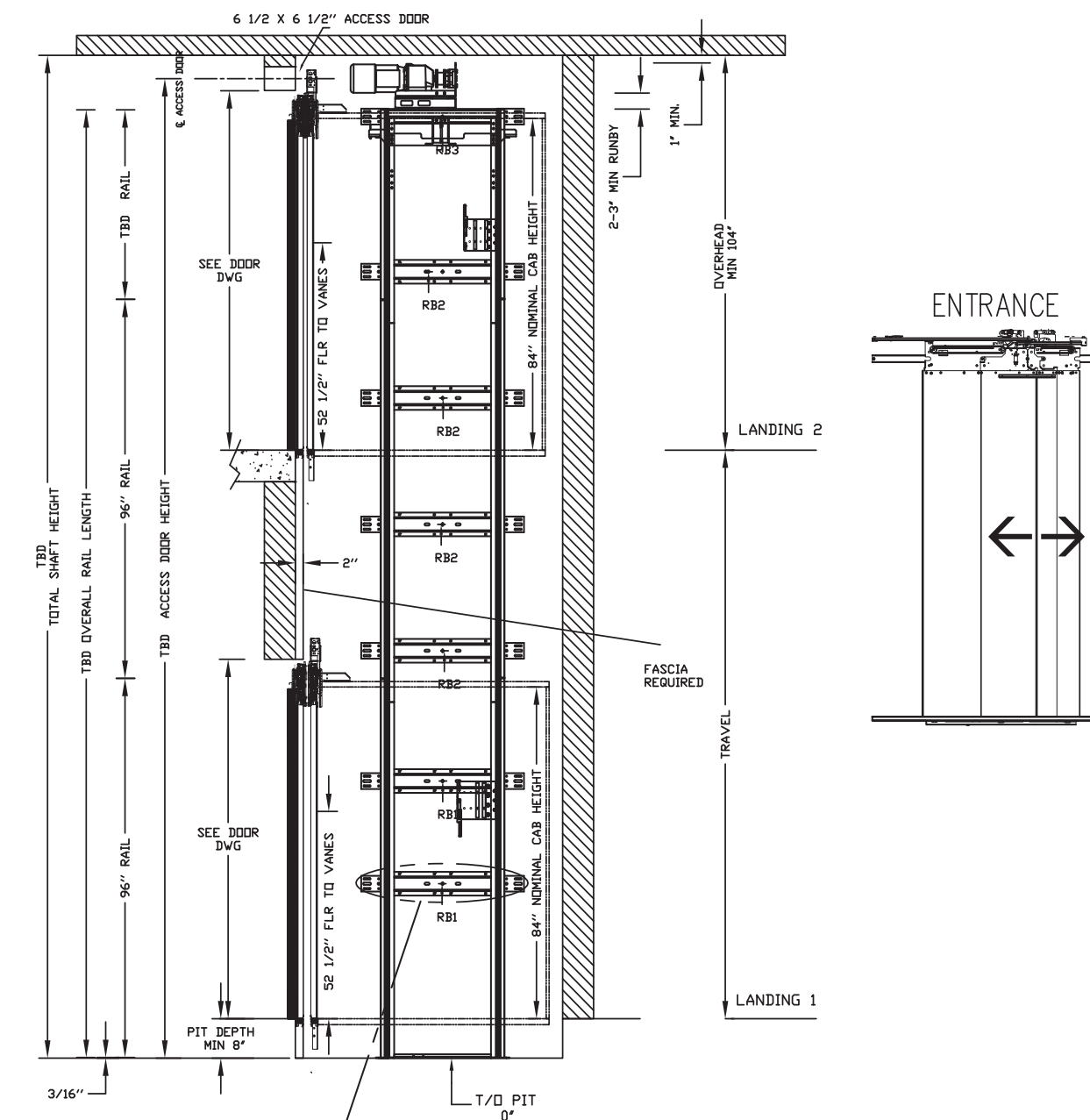
Eclipse with Auto Slim Doors

This appendix provides elevation and plan view drawings for the various Eclipse cab types with Auto Slim Doors.

Drawings for the auto slim doors entrance assembly are provided on the next two pages.



Elevation view – Type 1L with auto slim doors



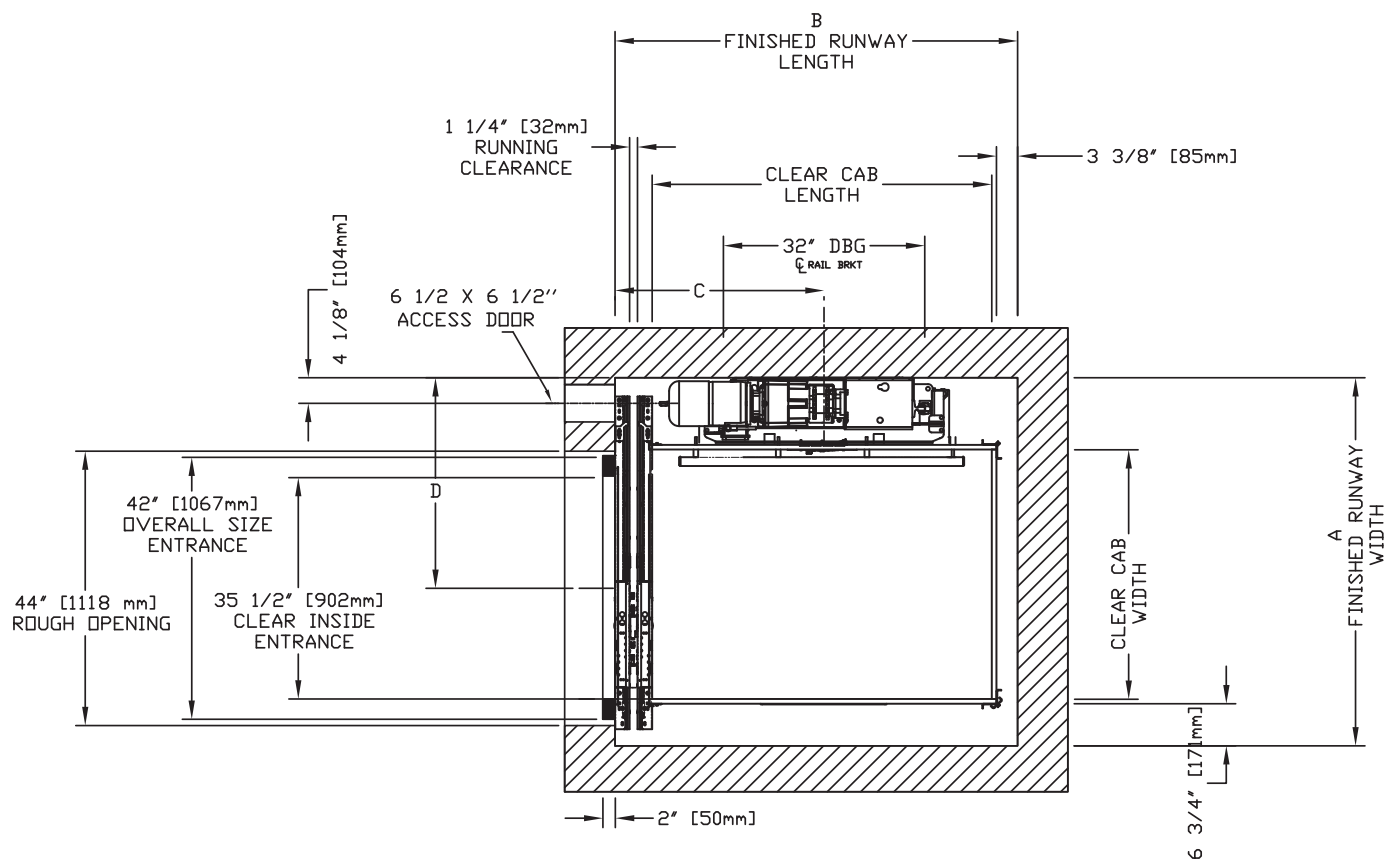
MOUNTING BRACKET

4 WALL ANCHOR POINTS MIN. PER BRACKET
2 PER SIDE OF RAIL BRACKET CENTER LINE
PULL OUT FORCE PER FASTENER 69 kg [152 LBS]

CANNOT HAVE HABITABLE SPACE BELOW PIT

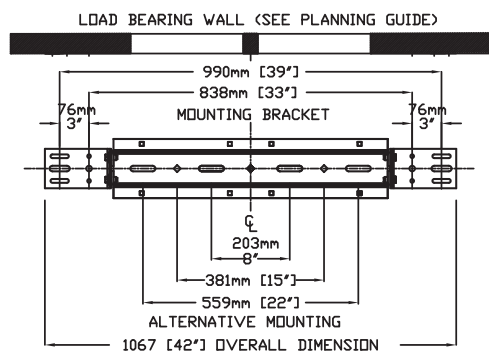
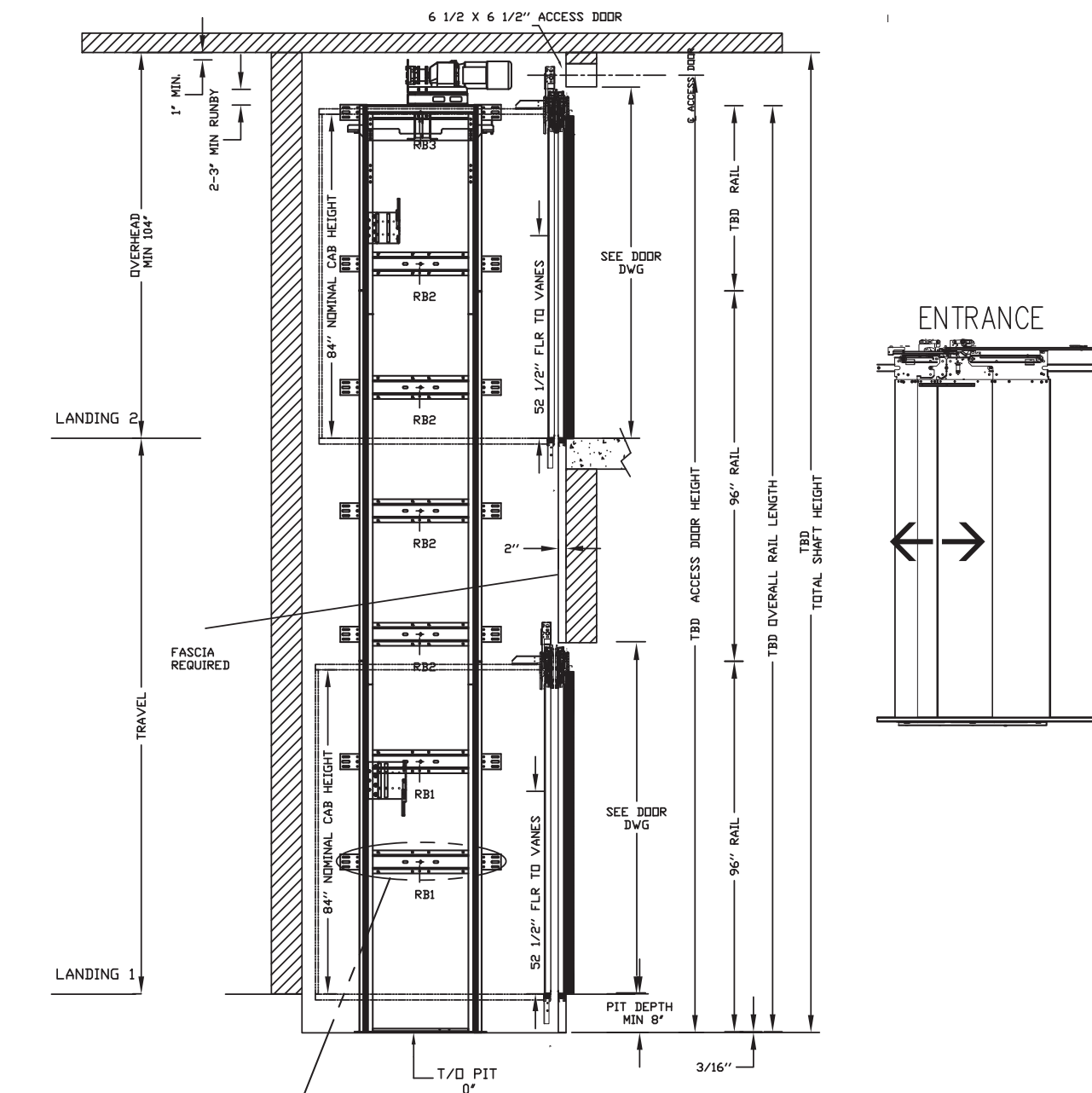
FINAL RAIL BRACKET	BELOW THE MOTOR CONSULT YOUR CONCORD REPRESENTATIVE FOR EXACT LOCATION	<div>RAIL FORCES</div>	
RB3		*R1	*R2
		138.2 kg [304 lbf]	88.2 kg [194 lbf]
INTERMEDIATE RAIL BRACKET	32" [813mm] INTERVALS AFTER 2nd BOTTOM BRACKET	RAIL ASSY	24.5 kg / m
RB2		WEIGHT:	[18.0 lbs / ft.]
		PIT FLOOR: R3	
BOTTOM RAIL BRACKET	39" [991mm] & 71" [1804MM] ABOVE PIT FLOOR	PIT FLOOR TO SUPPORT LOAD OF (INCLUDES IMPACT)	
RB1		2909 kg [6400 lbf]	

Plan view – Type 1L with auto slim doors



CLEAR INSIDE CAB WIDTH		CLEAR INSIDE CAB LENGTH		A FINISHED RUNWAY WIDTH		B FINISHED RUNWAY LENGTH		C RAIL CENTER LINE		D DOOR CENTER LINE	
mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches
914	36	1219	48	1499	59	1473	58	794	31 1/4	838	33
914	36	1372	54	1499	59	1626	64	845	33 1/4	838	33
914	36	1524	60	1499	59	1778	70	921	36 1/4	838	33
1016	40	1372	54	1524	60	1626	64	845	33 1/4	883	34 3/4

Elevation view – Type 1R with auto slim doors



MOUNTING BRACKET

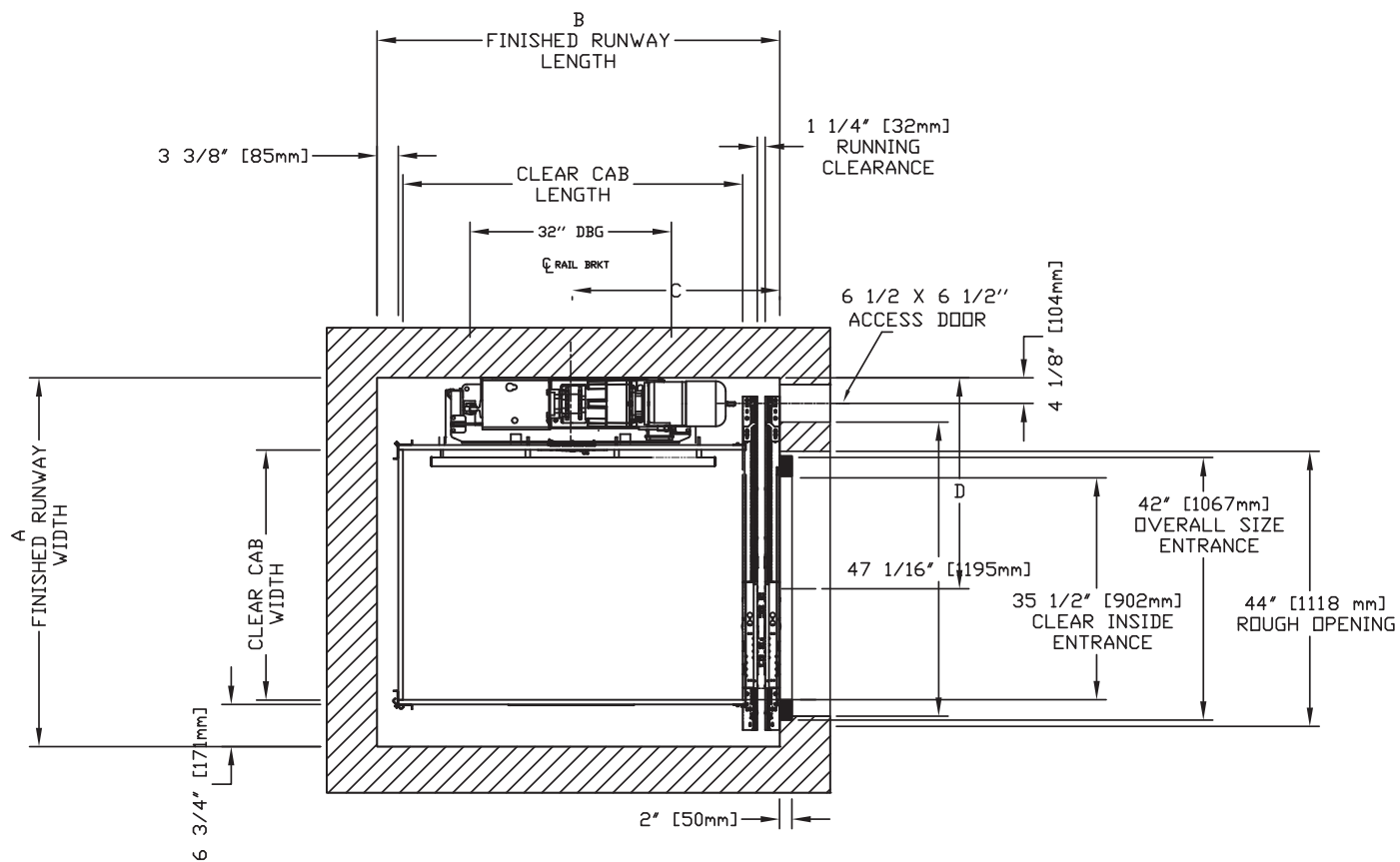
4 WALL ANCHOR POINTS MIN. PER BRACKET
2 PER SIDE OF RAIL BRACKET CENTER LINE
PULL OUT FORCE PER FASTENER 69 kg [152 LBS]

CANNOT HAVE HABITABLE SPACE BELOW PIT

FINAL RAIL BRACKET RB3	BELOW THE MOTOR CONSULT YOUR CONCORD REPRESENTATIVE FOR EXACT LOCATION
INTERMEDIATE RAIL BRACKET RB2	32" [813mm] INTERVALS AFTER 2nd BOTTOM BRACKET
BOTTOM RAIL BRACKET RB1	44" [1118mm] & 71" [1804mm] ABOVE PIT FLOOR

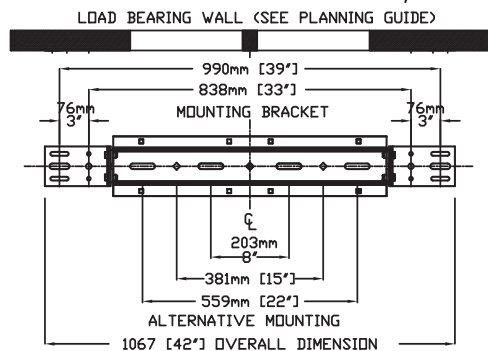
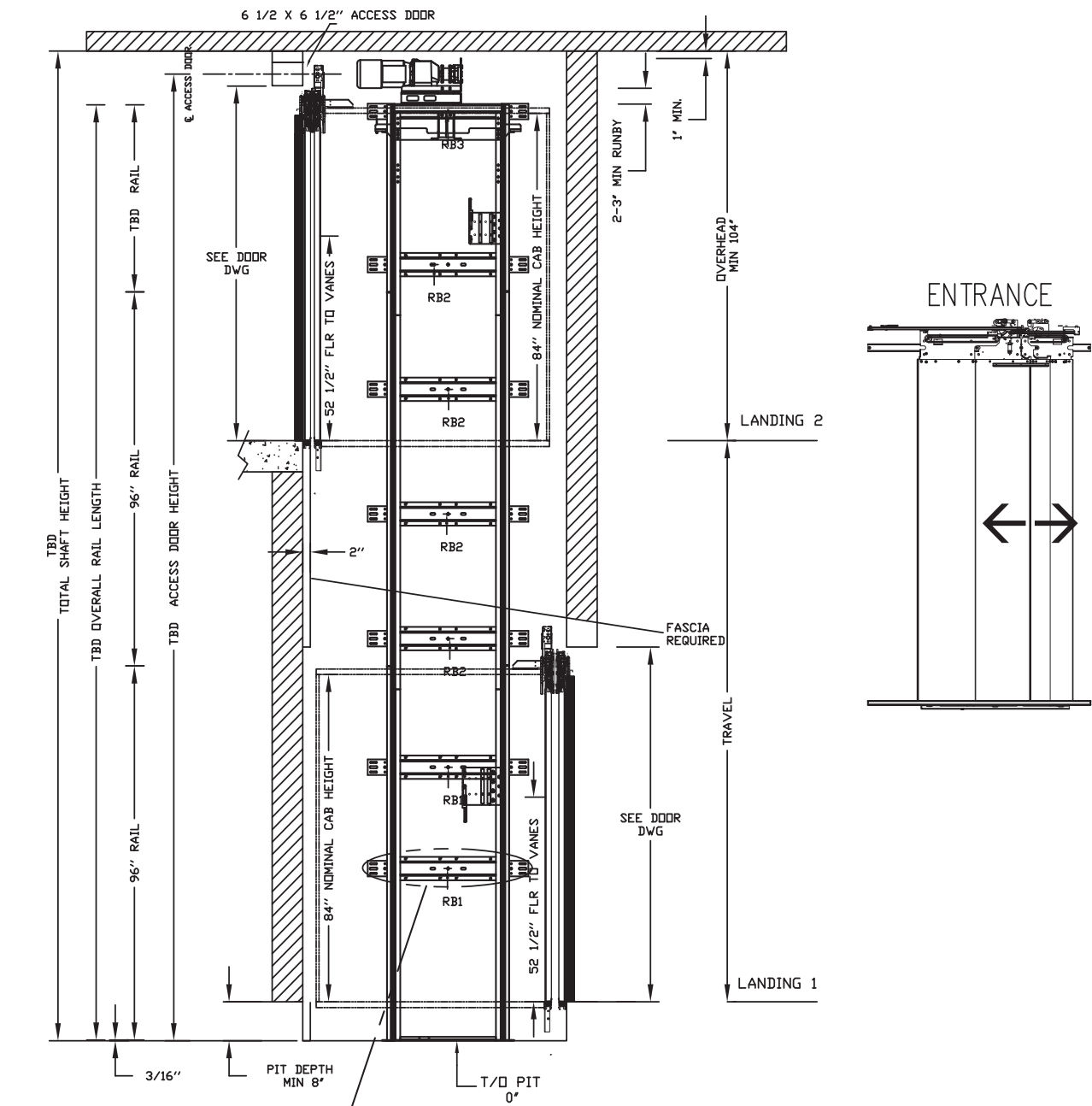
RAIL FORCES	
*R1	*R2
138.2 kg [304 lbf]	88.2 kg [194 lbf]
RAIL ASSY WEIGHT: 24.5 kg / m [18.0 lbs / ft]	
PIT FORCE: R3	
PIT FLOOR TO SUPPORT LOAD OF (INCLUDES IMPACT) 2909 kg [6400 lbs]	

Plan view – Type 1R with auto slim doors



CLEAR INSIDE CAB WIDTH		CLEAR INSIDE CAB LENGTH		A FINISHED RUNWAY WIDTH		B FINISHED RUNWAY LENGTH		C RAIL CENTER LINE		D DOOR CENTER LINE	
mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches
914	36	1219	48	1499	59	1473	58	794	31 1/4	838	33
914	36	1372	54	1499	59	1626	64	845	33 1/4	838	33
914	36	1524	60	1499	59	1778	70	921	36 1/4	838	33
1016	40	1372	54	1524	60	1626	64	845	33 1/4	883	34 3/4

Elevation view – Type 2 with auto slim doors



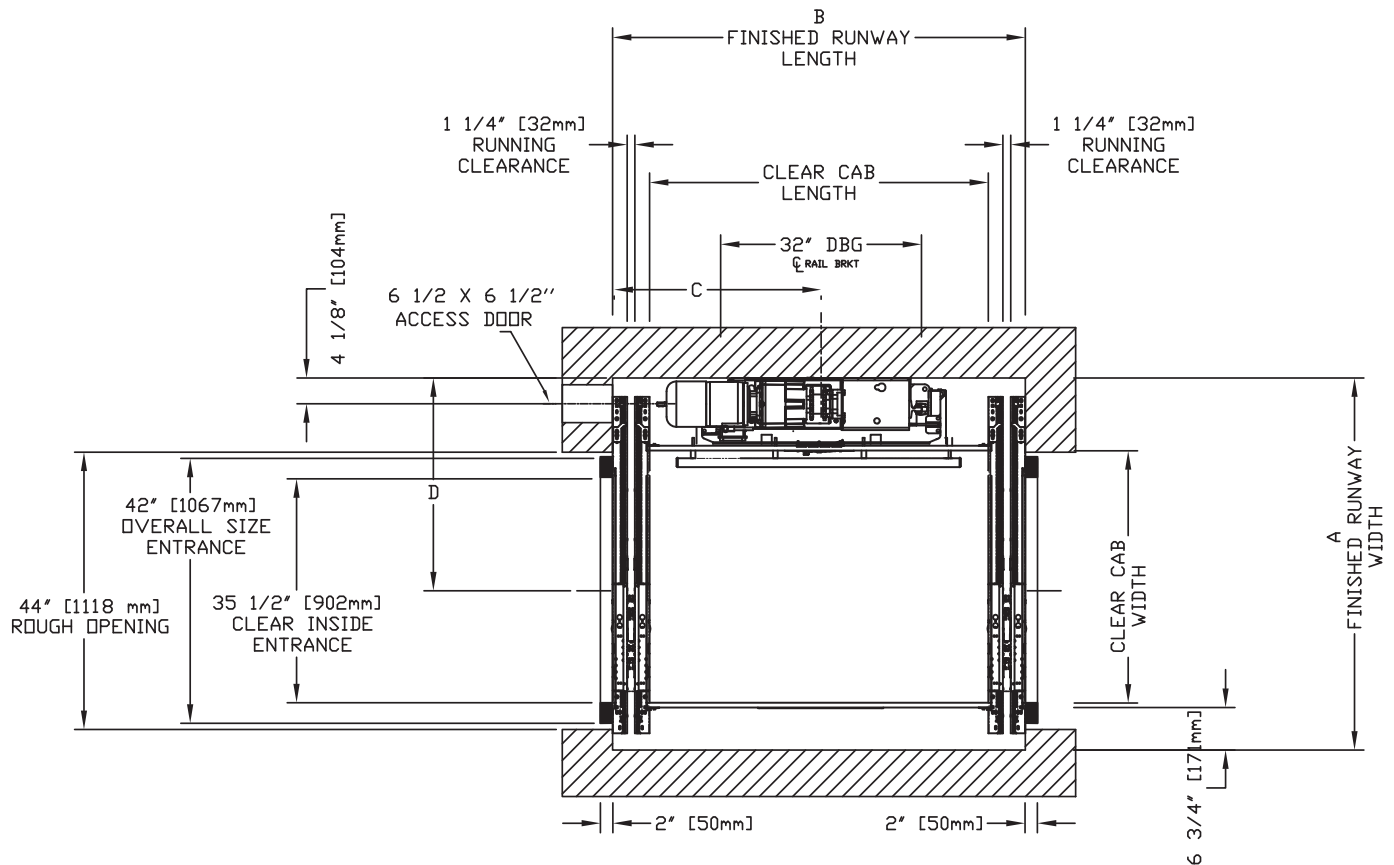
MOUNTING BRACKET
4 WALL ANCHOR POINTS MIN. PER BRACKET
2 PER SIDE OF RAIL BRACKET CENTER LINE
PULL OUT FORCE PER FASTENER 69 kg [152 LBS]

CANNOT HAVE HABITABLE SPACE BELOW PIT

FINAL RAIL BRACKET RB3	BELOW THE MOTOR CONSULT YOUR CONCORD REPRESENTATIVE FOR EXACT LOCATION
INTERMEDIATE RAIL BRACKET RB2	32" [813mm] INTERVALS AFTER 2nd BOTTOM BRACKET
BOTTOM RAIL BRACKET RB1	39" [991mm] & 71" [1804mm] ABOVE PIT FLOOR

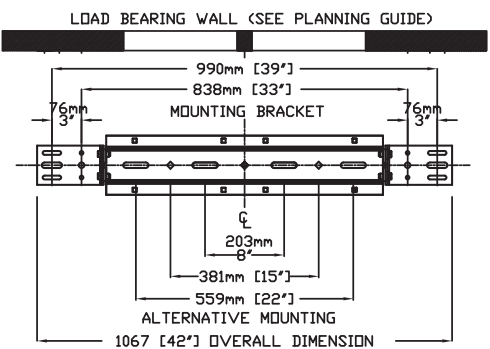
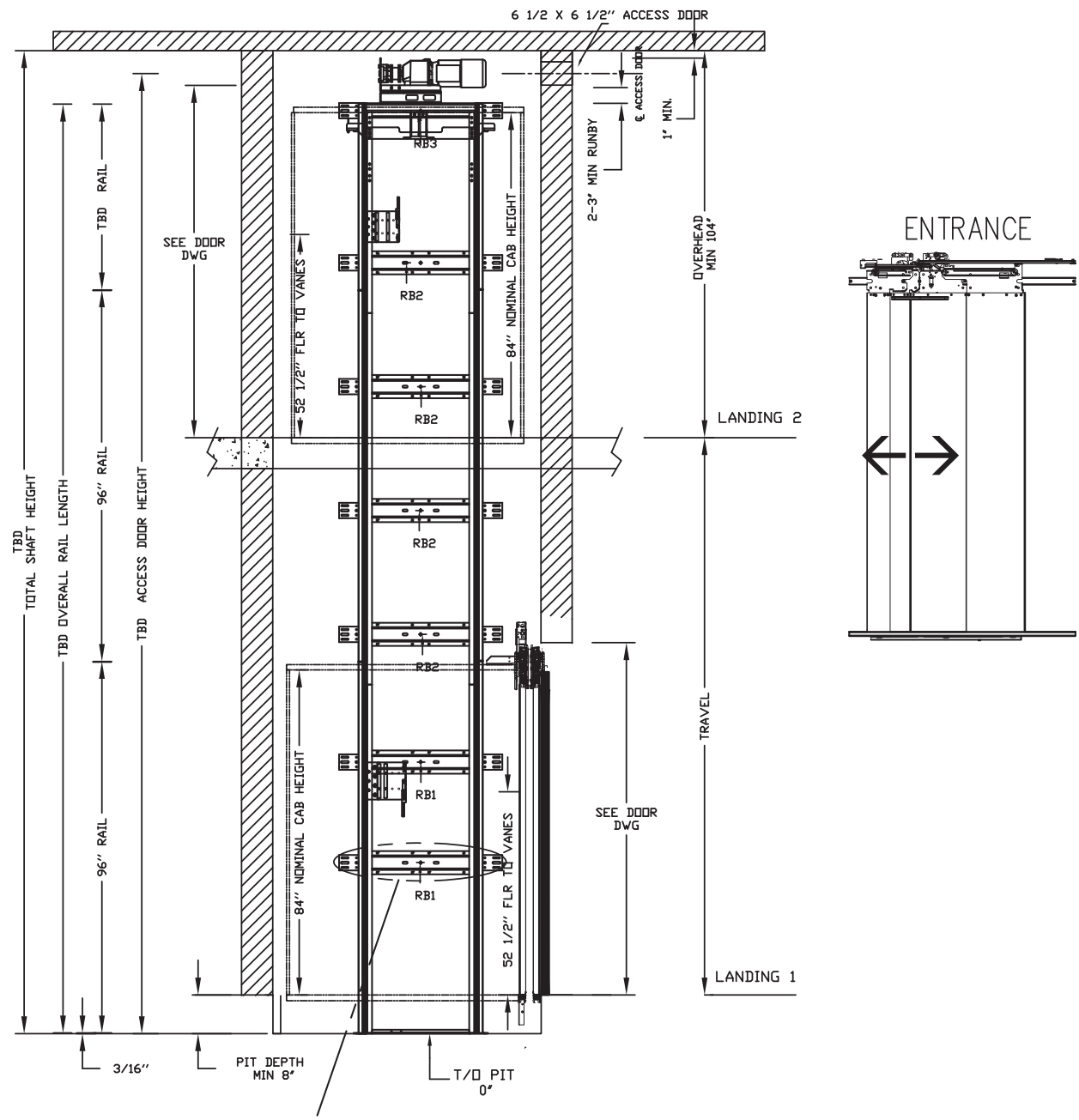
RAIL FORCES	
*R1	*R2
138.2 kg [304 lbf]	88.2 kg [194 lbf]
RAIL ASSY WEIGHT: 24.5 kg / m [18.0 lbs / ft]	
PIT FORCE: R3	
PIT FLOOR TO SUPPORT LOAD OF (INCLUDES IMPACT) 2909 kg [6400 lbs]	

Plan view – Type 2 with auto slim doors



CLEAR INSIDE CAB WIDTH		CLEAR INSIDE CAB LENGTH		A FINISHED RUNWAY WIDTH		B FINISHED RUNWAY LENGTH		C RAIL CENTER LINE		D DOOR CENTER LINE	
mm	Inches	mm		mm	Inches	mm	Inches	mm	Inches	mm	Inches
914	36	1219	48	1499	59	1518	59 3/4	759	29 7/8	838	33
914	36	1372	54	1499	59	1670	65 3/4	835	32 7/8	838	33
914	36	1524	60	1499	59	1822	71 3/4	911	35 7/8	838	33
1016	40	1372	54	1524	60	1670	65 3/4	835	32 7/8	883	34 3/4

Elevation view – Type 3 with auto slim doors



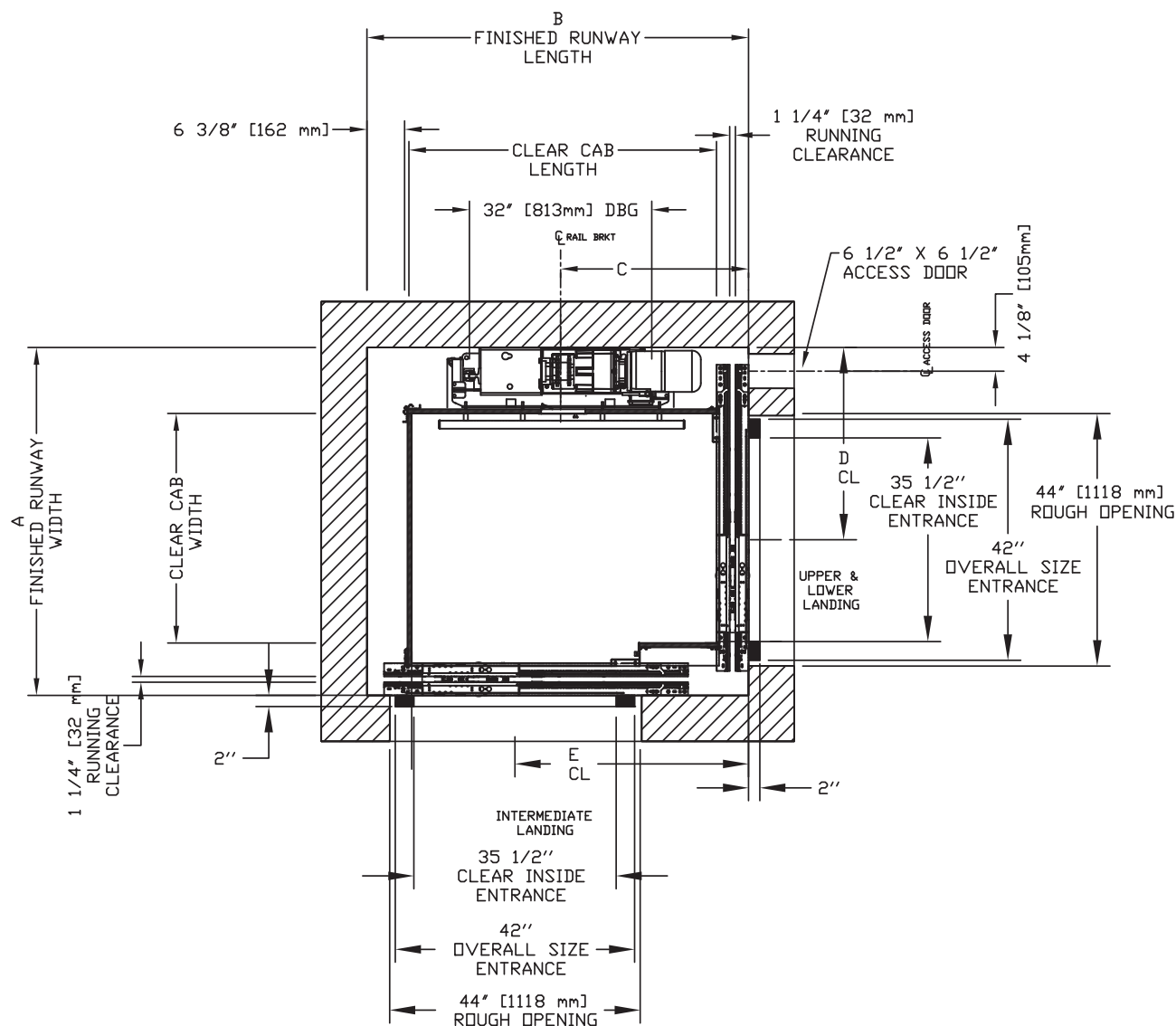
MOUNTING BRACKET
4 WALL ANCHOR POINTS MIN. PER BRACKET
2 PER SIDE OF RAIL BRACKET CENTER LINE
PULL OUT FORCE PER FASTENER 69 kg [152 LBS]

CANNOT HAVE HABITABLE SPACE BELOW PIT

FINAL RAIL BRACKET RB3	BELOW THE MOTOR CONSULT YOUR CONCORD REPRESENTATIVE FOR EXACT LOCATION
INTERMEDIATE RAIL BRACKET RB2	32" [813mm] INTERVALS AFTER 2nd BOTTOM BRACKET
BOTTOM RAIL BRACKET RB1	39" [991mm] & 71" [1804mm] ABOVE PIT FLOOR

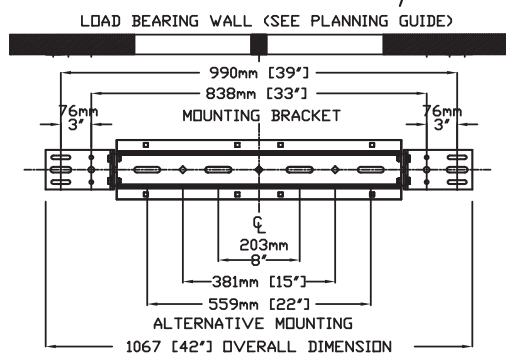
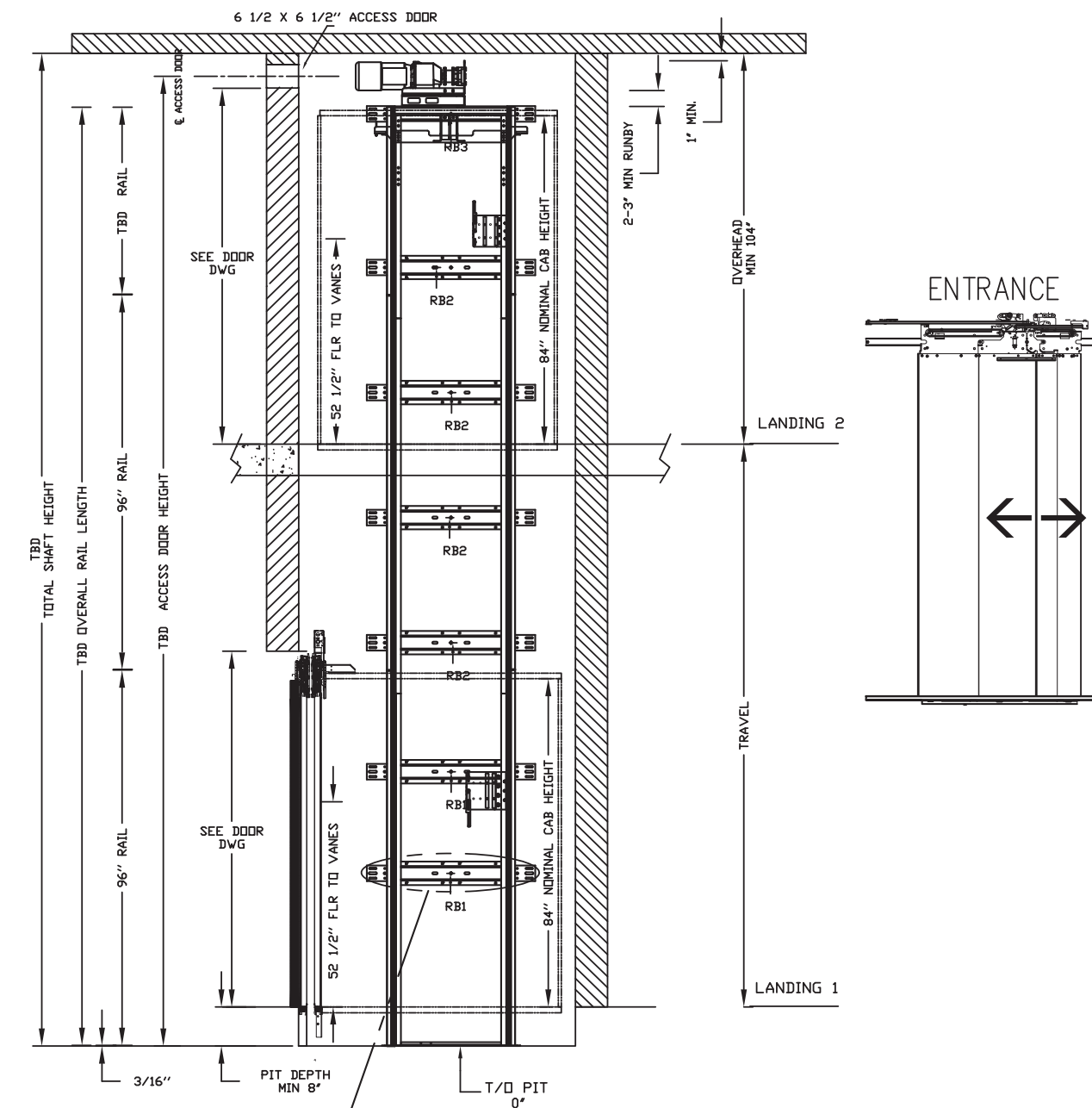
RAIL FORCES	
*R1	*R2
138.2 kg [304 lbf]	88.2 kg [194 lbf]
RAIL ASSY WEIGHT: 24.5 kg / m [18.0 lbs / ft]	
PIT FORCE: R3	
PIT FLOOR TO SUPPORT LOAD OF (INCLUDES IMPACT) 2909 kg [6400 lbs]	

Plan view – Type 3 with auto slim doors



CLEAR INSIDE CAB WIDTH		CLEAR INSIDE CAB LENGTH		A FINISHED RUNWAY WIDTH		B FINISHED RUNWAY LENGTH		C RAIL CENTER LINE		D DOOR CENTER LINE		E DOOR CENTER LINE	
mm	Inches	mm		mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches
914	36	1372	54	1540	60 5/8	1702	67	838	33	838	33	1064	41 7/8
914	36	1524	60	1540	60 5/8	1854	73	914	36	838	33	1216	47 7/8
1016	40	1372	54	1581	62 1/4	1702	67	838	33	883	34 3/4	1064	41 7/8

Elevation view – Type 4 with auto slim doors



MOUNTING BRACKET

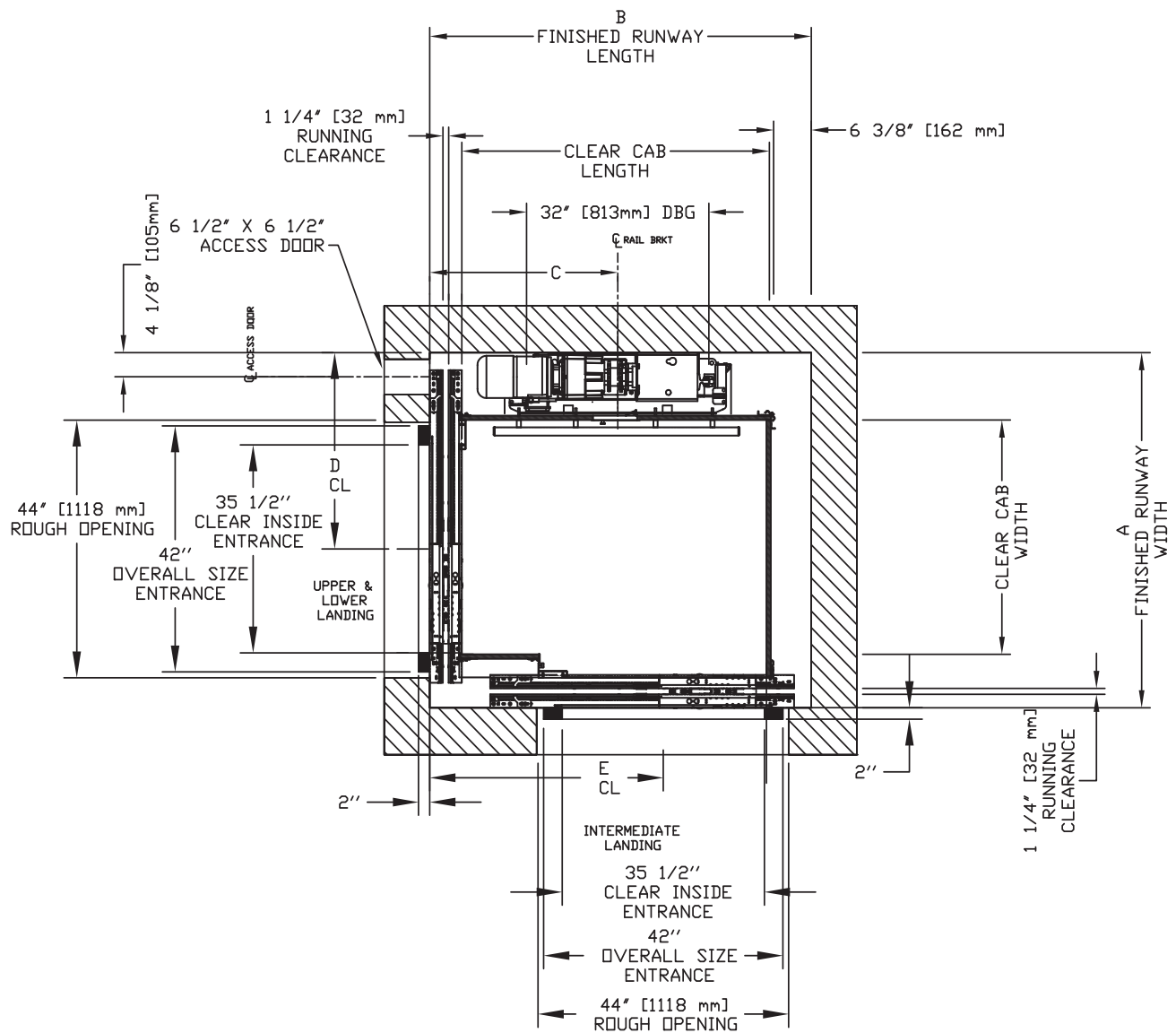
4 WALL ANCHOR POINTS MIN. PER BRACKET
2 PER SIDE OF RAIL BRACKET CENTER LINE
PULL OUT FORCE PER FASTENER 69 kg [152 LBS]

CANNOT HAVE HABITABLE SPACE BELOW PIT

FINAL RAIL BRACKET RB3	BELOW THE MOTOR CONSULT YOUR CONCORD REPRESENTATIVE FOR EXACT LOCATION
INTERMEDIATE RAIL BRACKET RB2	32" [813mm] INTERVALS AFTER 2nd BOTTOM BRACKET
BOTTOM RAIL BRACKET RB1	39" [991mm] & 71" [1804MM] ABOVE PIT FLOOR

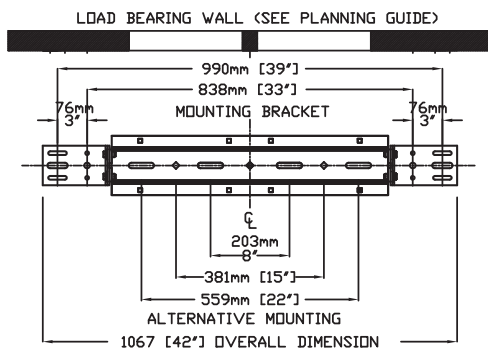
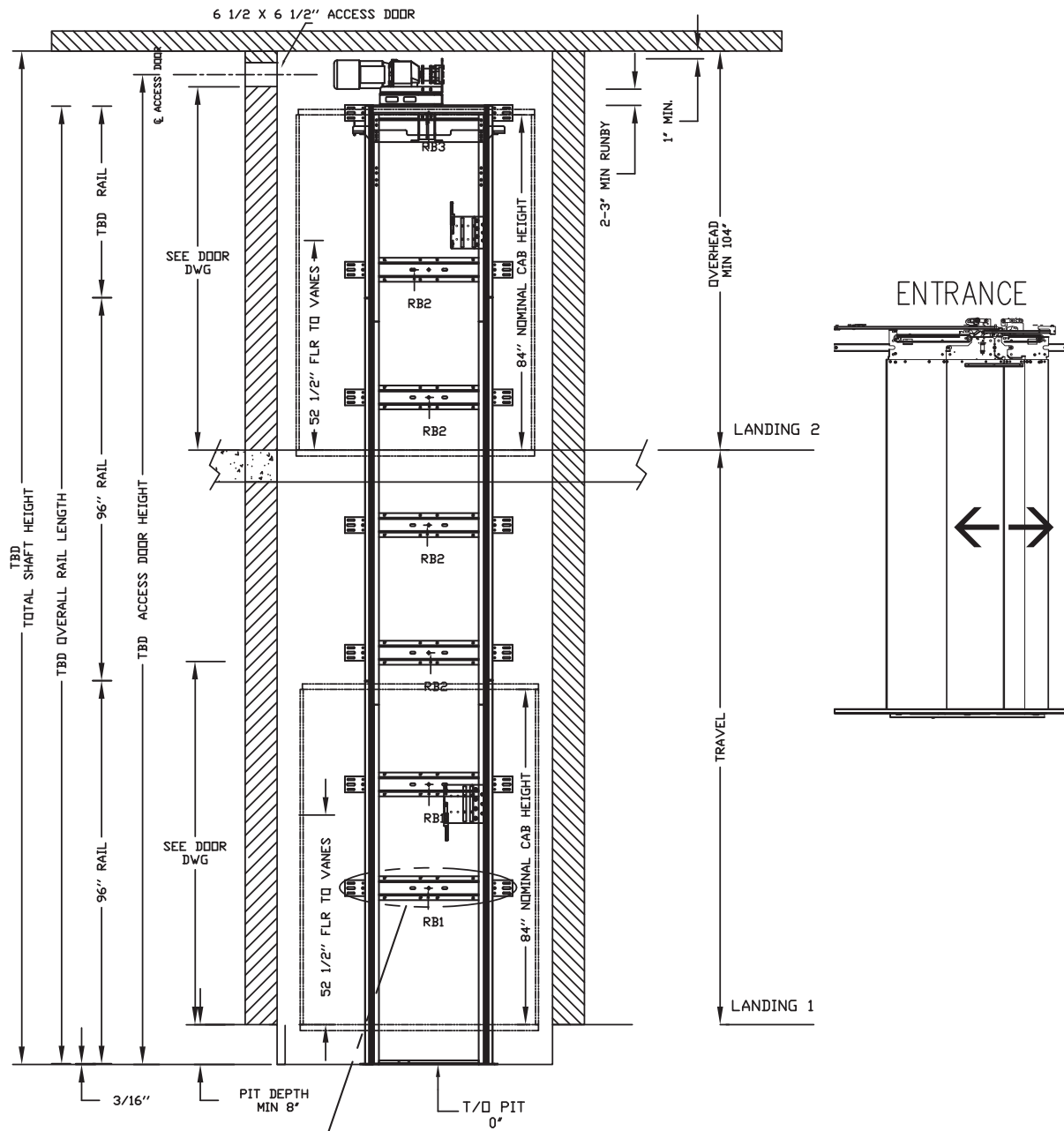
RAIL FORCES	
* R1	* R2
138.2 kg [304 lbf]	88.2 kg [194 lbf]
RAIL ASSY WEIGHT:	24.5 kg / m [18.0 lbs / ft]
PIT FORCE: R3	
PIT FLOOR TO SUPPORT LOAD OF (INCLUDES IMPACT)	
2909 kg [6400 lbs]	

Plan view – Type 4 with auto slim doors



CLEAR INSIDE CAB WIDTH		CLEAR INSIDE CAB LENGTH		A FINISHED RUNWAY WIDTH		B FINISHED RUNWAY LENGTH		C RAIL CENTER LINE		D DOOR CENTER LINE		E DOOR CENTER LINE	
mm	Inches	mm		mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches
914	36	1372	54	1540	60 5/8	1702	67	838	33	838	33	1064	41 7/8
914	36	1524	60	1540	60 5/8	1854	73	914	36	838	33	1216	47 7/8
1016	40	1372	54	1581	62 1/4	1702	67	838	33	883	34 3/4	1064	41 7/8

Elevation view – Type 5 with auto slim doors



MOUNTING BRACKET

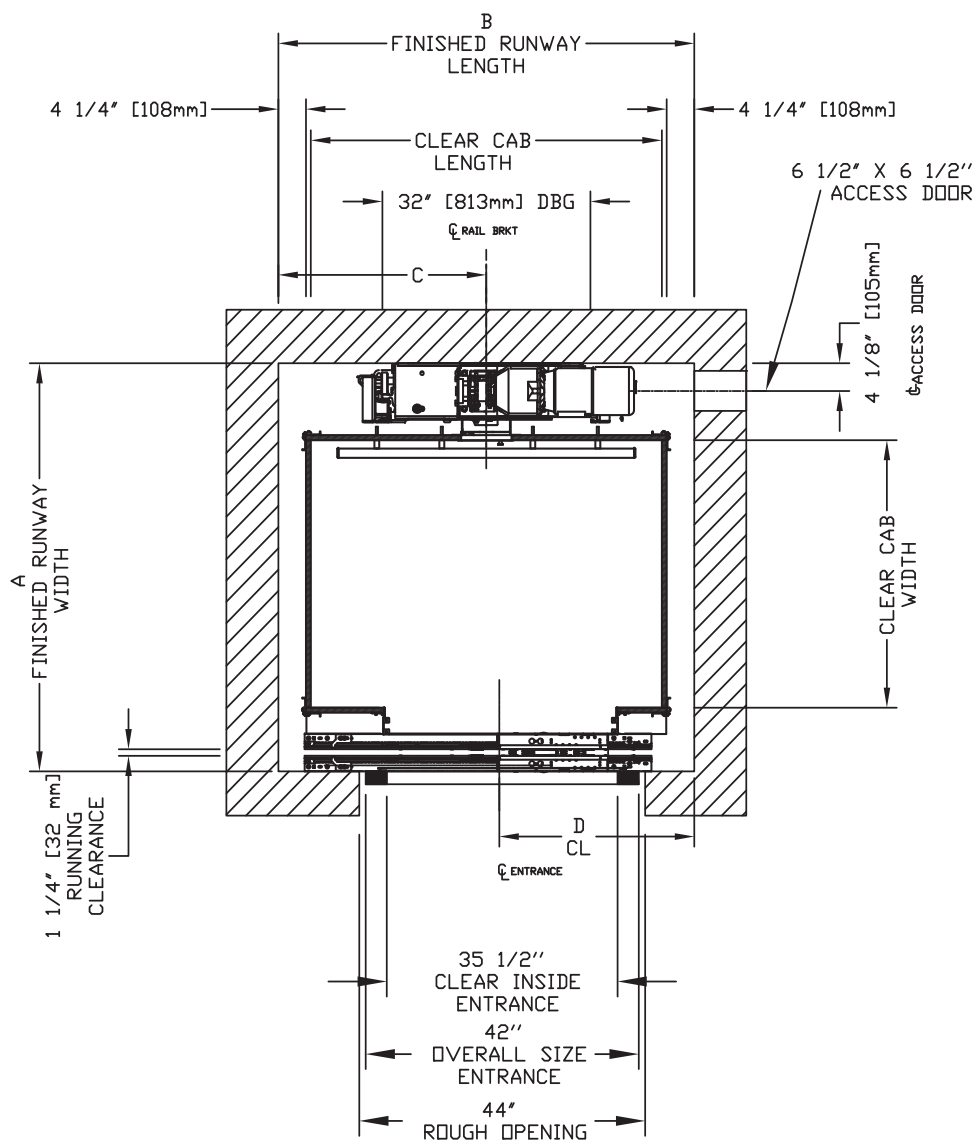
4 WALL ANCHOR POINTS MIN. PER BRACKET
2 PER SIDE OF RAIL BRACKET CENTER LINE
PULL OUT FORCE PER FASTENER 69 kg [152 LBS]

CANNOT HAVE HABITABLE SPACE BELOW PIT

FINAL RAIL BRACKET RB3	BELOW THE MOTOR CONSULT YOUR CONCORD REPRESENTATIVE FOR EXACT LOCATION
INTERMEDIATE RAIL BRACKET RB2	32" [813mm] INTERVALS AFTER 2nd BOTTOM BRACKET
BOTTOM RAIL BRACKET RB1	39" [991mm] & 71" [1804mm] ABOVE PIT FLOOR

RAIL FORCES	
*R1	*R2
138.2 kg [304 lbf]	88.2 kg [194 lbf]
RAIL ASSY WEIGHT: 24.5 kg / m [18.0 lbs / ft]	
PIT FORCE: R3	
PIT FLOOR TO SUPPORT LOAD OF (INCLUDES IMPACT)	
2909 kg [6400 lbs]	

Plan view – Type 5 with auto slim doors



CLEAR INSIDE CAB WIDTH		CLEAR INSIDE CAB LENGTH		A FINISHED RUNWAY WIDTH		B FINISHED RUNWAY LENGTH		C RAIL CENTER LINE		D DOOR CENTER LINE	
mm	Inches	mm		mm	Inches	mm	Inches	mm	Inches	mm	Inches
914	36	1372	54	1486	58 1/2	1626	64	813	32	762	30
914	36	1524	60	1486	58 1/2	1778	70	889	35	762	30
1016	40	1372	54	1588	62 1/2	1626	64	813	32	762	30



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