



# Orion MRL

COMMERCIAL ELEVATOR

## Planning Guide

### **Applicable Codes:**

ASME A17.1, Section 5.2

CAN/CSA B44, Section 5.2

**Part No. 001133**  
**11-m10-2019**

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## 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.

NOTE: The cab dimensions provided in this manual are based on a PLAM cab.

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](http://www.savaria.com)** for the most current drawings and dimensions.

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## Purpose of This Guide

This Planning Guide is designed to assist architects, contractors, and elevator professionals in planning for the Orion MRL Commercial Elevator to meet the requirements of the following codes and standards:

- ASME A17.1/CSA B44 2000, Section 5.2
- ASME A17.1/CSA B44 2004, Section 5.2
- ASME A17.1 2004, Addendum 2005, Section 5.2
- ASME A17.1/CSA B44 2007, Section 5.2
- ASME A17.1/CSA B44, Addendum 2008, Section 5.2
- ASME A17.1/CSA B44 2010, Section 5.2
- ASME A17.1/CSA B44 2013, Section 5.2
- ASME A17.1/CSA B44 2016, Section 5.2

We recommend 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 elevator.
- 2 Determine the local code requirements.
- 3 Determine the site installation parameters.
- 4 Determine the cab type and hoistway size requirements.
- 5 Plan for electrical requirements.

## Revision History of This Guide

September 13, 2019 – Initial release

September 16, 2019 – Added lifting beam specs on page 38; Added note re: seismic zones at top of pages 38 and 39; Added overhead note on page 40; Added RH version on page 41; Added "without controller" to illustration headings on pages 43 to 46; Added note on page 48; Added new page 49 for remote controller

September 18, 2019 – Revised daily cycle to 200 in specs table on page 5

October 11, 2019 – Rail support wall structure drawing added on page 41

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## Orion MRL Specifications

Specification type	Specification data
Load capacity	1400 lb (635 kg)
Rated speed	30 ft/min (0.15 m/sec)
Power supply (circuit by others)	208 Volt, three-phase, 30 Amps, 60 Hz or 240 Volt, single-phase, 40 Amps, 60 Hz
Lighting supply (circuit by others)	120 Volt, 15 Amps, 60 Hz
Drive system	Counterweight traction with slack cable safety device Geared motor 1:1 sheave Three 3/8" diameter steel cables (ropes) Rope wedge sockets
Cab size	W42" x L54" x H84" (1067 mm x 1372 mm x 2134 mm), Type 1, 2 W48" x L54" x H84" (1219 mm x 1372 mm x 2134 mm), Type 1, 2 W42" x L60" x H84" (1067 mm x 1524 mm x 2134 mm), Type 1, 2 W51" x L51" x H84" (1295 mm x 1295 mm x 2134 mm), Type 3, 4
Cab panel finish	Steel panel cab with optional laminates
Maximum travel	25 ft (7.6 m)
Control system	Automatic user interface; Programmable Logic Controller (PLC)
Temperature operating range	-10 degrees C to +40 degrees C (+14 degrees F to +104 degrees F)
Heat generated by motor	~ 2550 BTU/hr
Distance between 2 landings	18" (457 mm) minimum
Noise level (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: 200 Maximum starts in 1 hour on standard installation: 45 NOTE: Consult your Sales Representative if there's a chance you may exceed these amounts.
Levels serviced	Up to 6 stops
Pit depth required	14" (355 mm) minimum up to 96" (2438 mm)
Minimum overhead clearance	108" (2743 mm) for existing construction 134" (3404 mm) for new construction
Hall station and control panel finish	Rectangular stainless steel (standard) or brass (optional)
Standard features	8 lb/ft T-rail system Anti-creep device Architectural white ceiling Automatic cab ON/OFF lighting Car top stop switch Data plates, capacity tags and rope tags Digital floor and directional indicator Stop key switch and alarm buttons Emergency battery back-up for lighting, alarm and emergency lowering Floor specific battery lowering Illuminated cab operating buttons Magnetic floor selection, stopping and re-leveling Slack rope safety switch (manual reset) Pit prop (for maintenance) Car top prop (for maintenance) Car top safety rail (for maintenance) Pit switch (emergency stop) LED lights in stainless steel Recessed plywood floor Upper and lower terminal limits Overspeed governor Two-speed sliding doors for drywall or masonry hoistway finish

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## Orion MRL Specifications

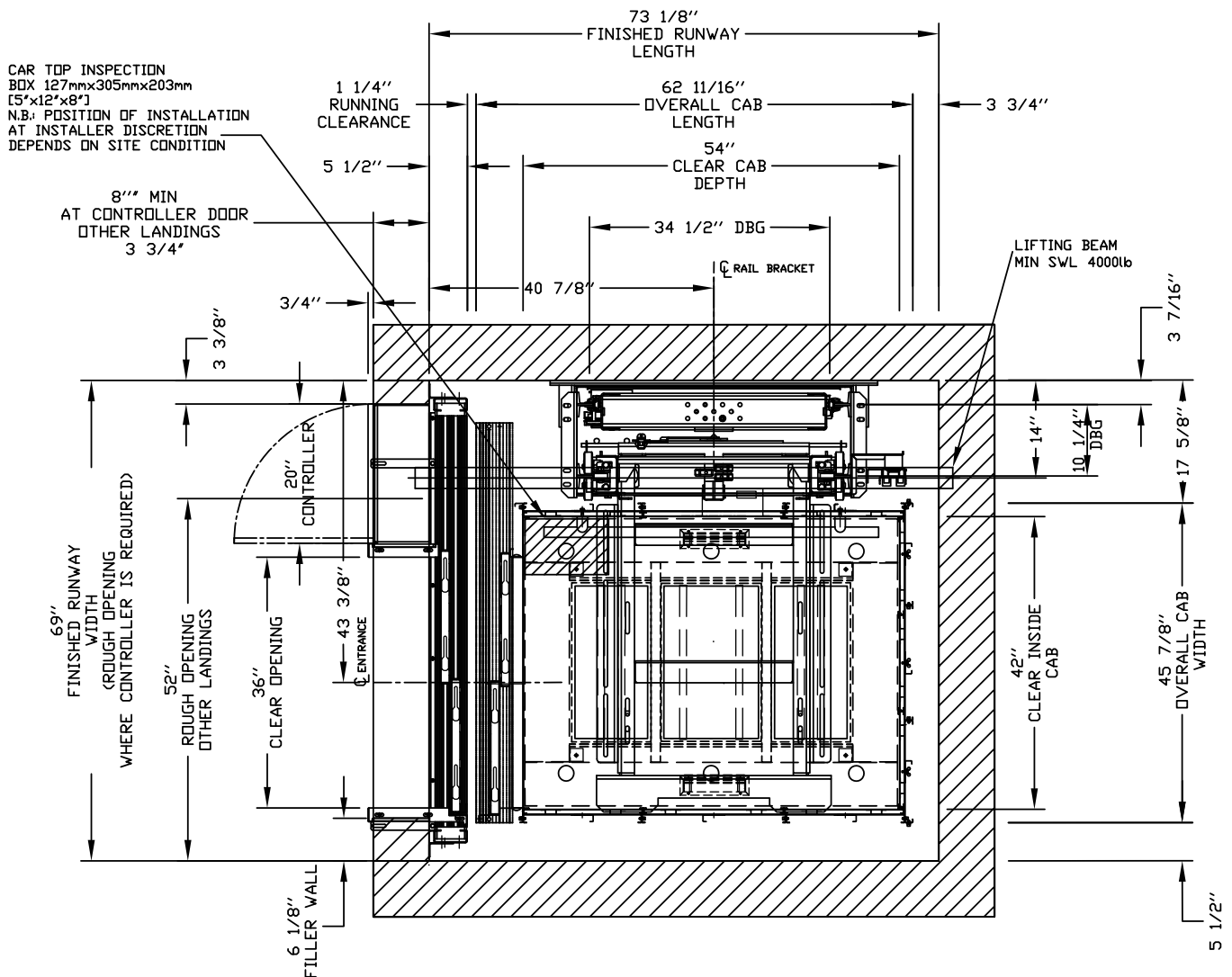
Specification type	Specification data
Options	Two- speed steel doors with infrared closing sensors in black, architectural white or stainless steel Steel panels with plastic laminate in a variety of colors 90 degree entry/exit cab Automatic cab operator and automatic hoistway door operator Automatic home landing to pre-selected floor Brass COP, hall call stations, handrail and recessed down lights Firefighter service - phase 1 and 2 (dependable on applicable code year) Hands-free telephone Recessed stainless steel or brass telephone cabinet

## 42" x 54" Type 1L Orion17 Cab

## IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION17 MRL-4254 (1L)



For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

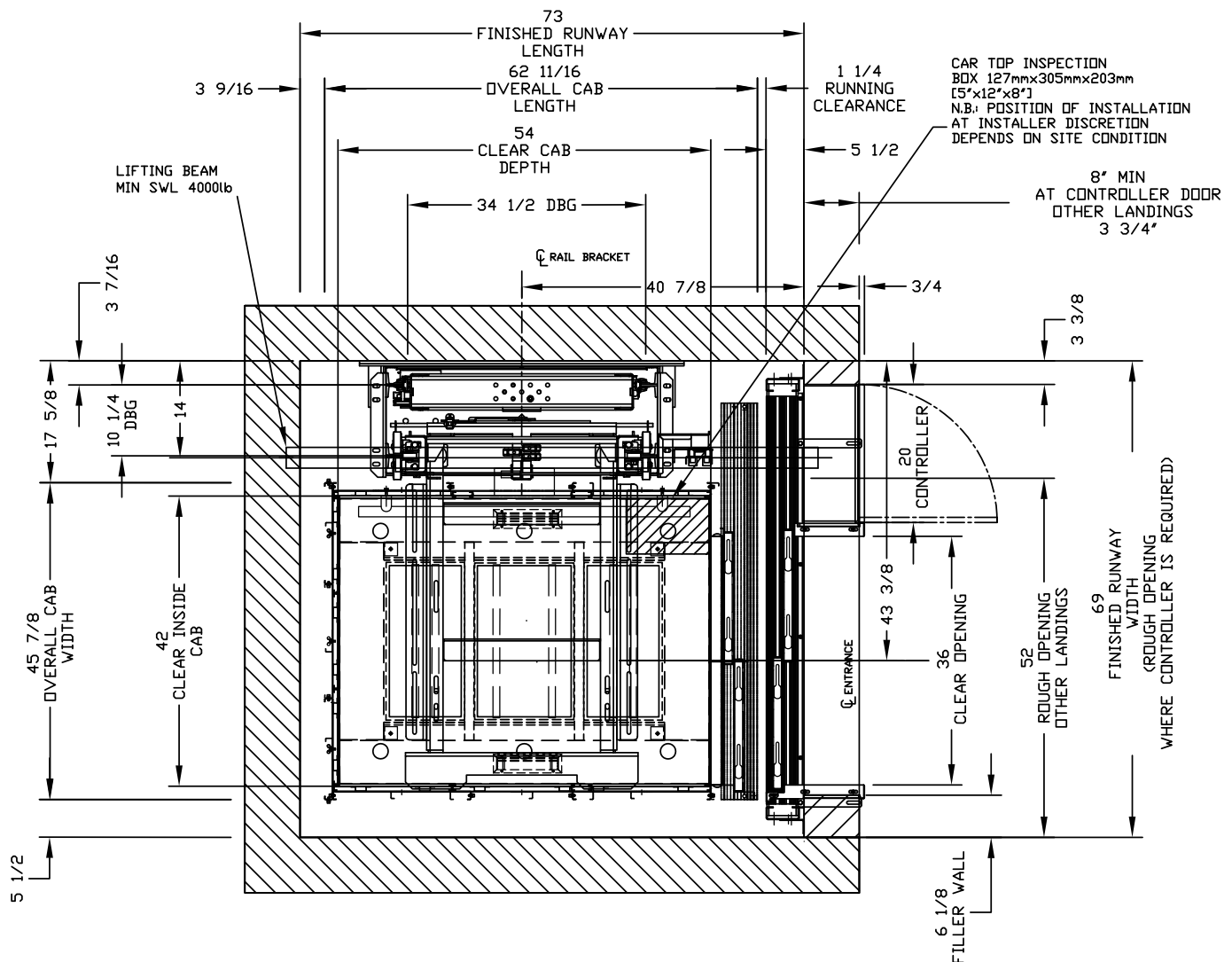
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 42" x 54" Type 1R Orion17 Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION17 MRL-4254 (1R)



For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

**NOTE: The cab dimensions provided are based on a PLAM cab.**

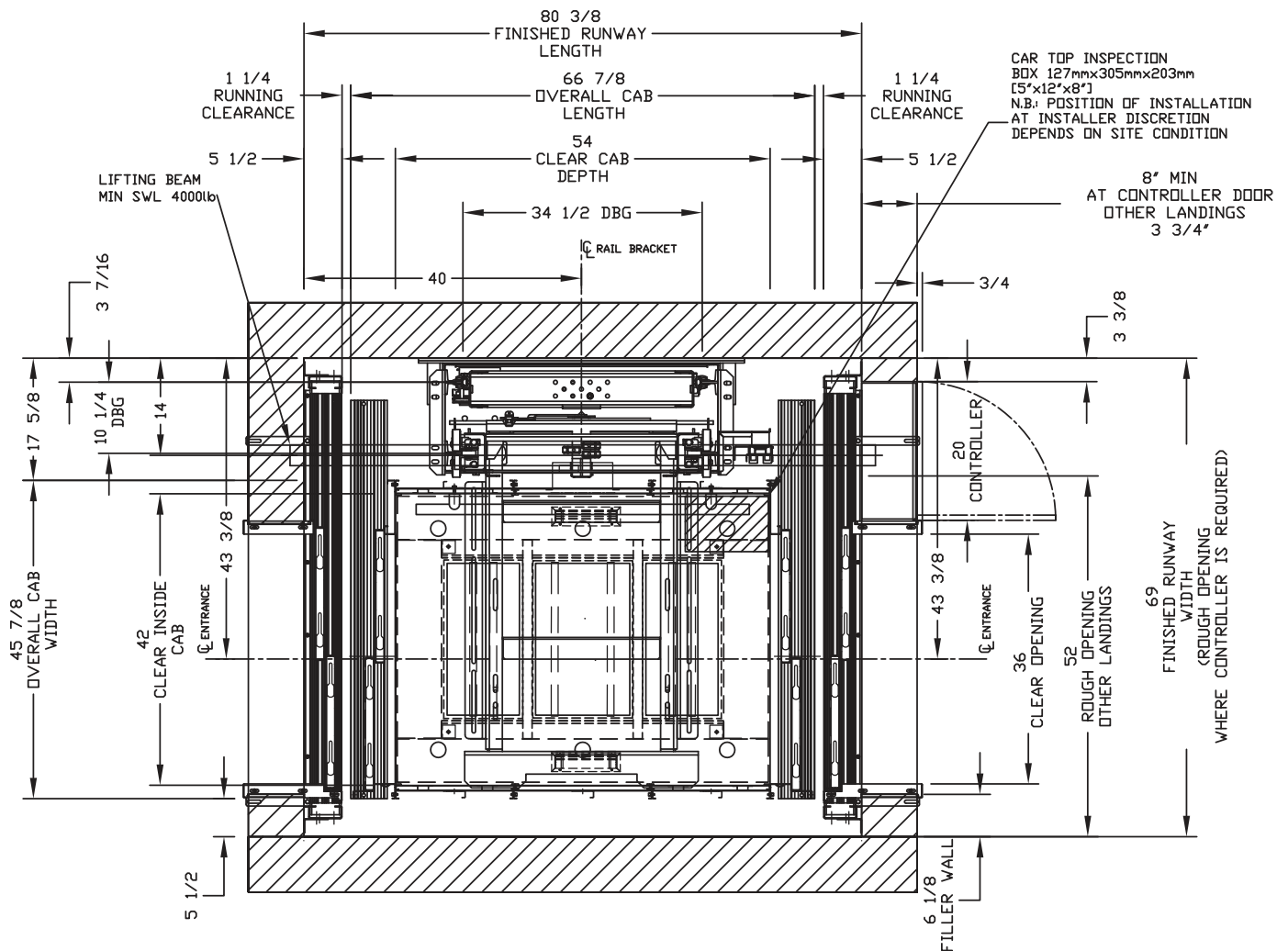


## 42" x 54" Type 2 Orion17 Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION17 MRL-4254 (2)



For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

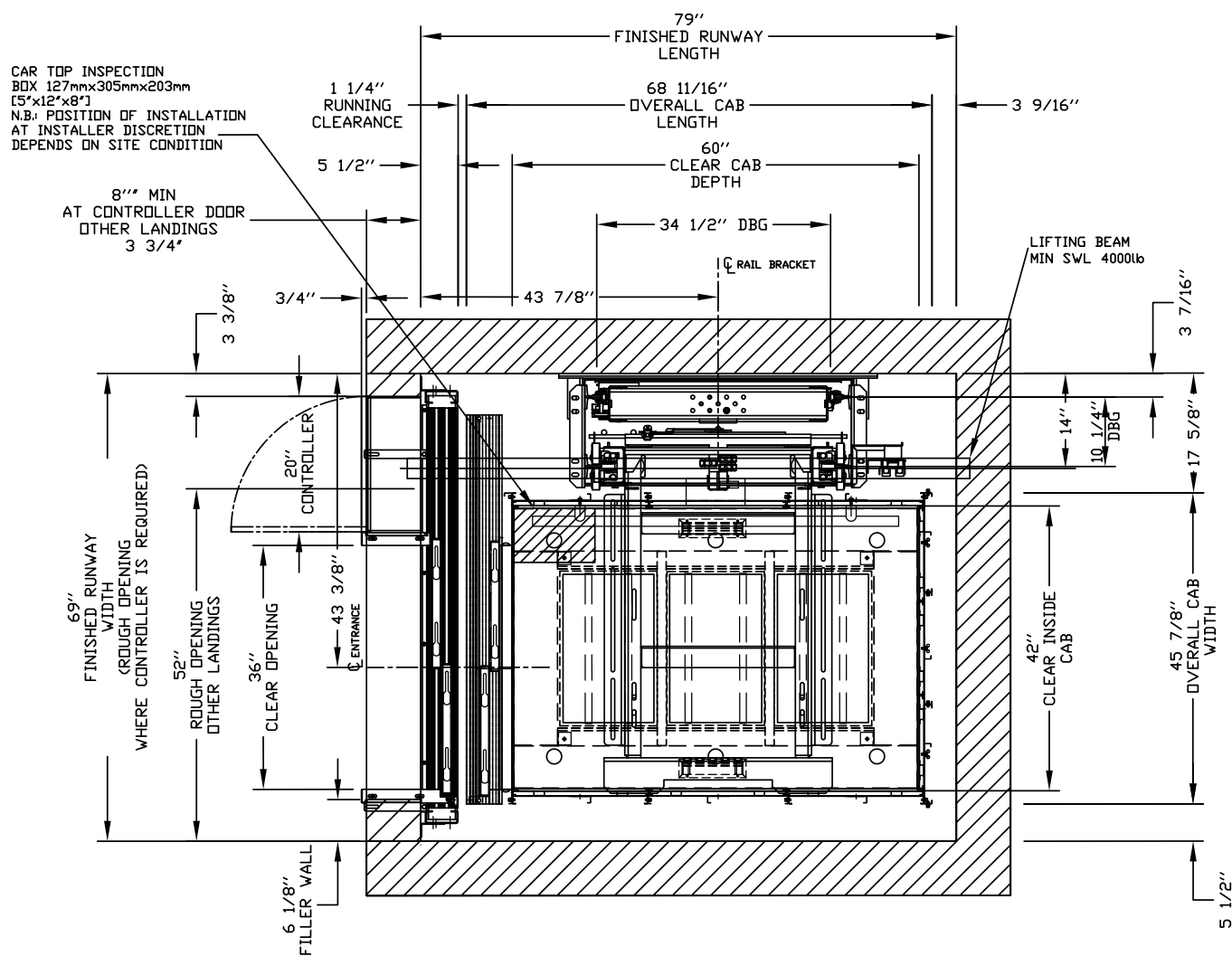
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 42" x 60" Type 1L Orion17 Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION17 MRL-4260 (1L)



For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

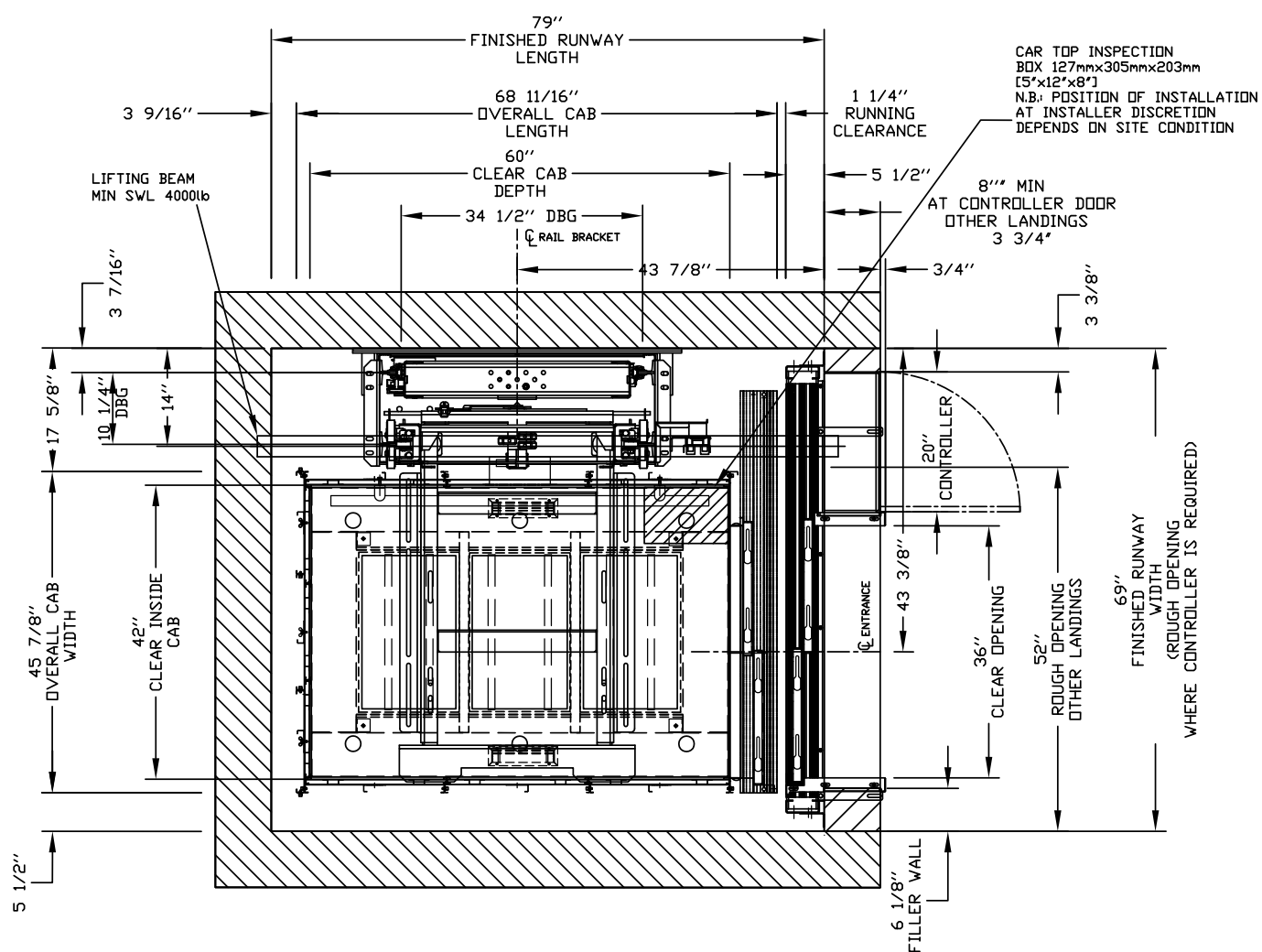
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 42" x 60" Type 1R Orion17 Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION17 MRL-4260 (1R)



For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

**NOTE: The cab dimensions provided are based on a PLAM cab.**

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

Technical drawing of a car top inspection box, showing dimensions and components. The drawing includes a top view and a side view.

**Top View Dimensions:**

- FINISHED RUNWAY LENGTH: 86 3/8"
- OVERALL CAB LENGTH: 72 7/8"
- CLEAR CAB DEPTH: 60"
- DBG (Door Bottom Guide): 34 1/2"
- RAIL BRACKET: 43 3/16"
- ENTRANCE: 43 3/8"
- ROUGH OPENING OTHER LANDINGS: 52"
- FINISHED RUNWAY WIDTH (ROUGH OPENING (ROUGH OPENING WHERE CONTROLLER IS REQUIRED)): 69"
- 6 1/8" FILLER WALL
- 36" CLEAR OPENING
- 20" CONTROLLER
- 3 3/8"
- 3 7/16"
- 10 1/4" DBG
- 14"
- 42" CLEAR INSIDE CAB
- 5 1/2"
- 17 5/8"
- 45 7/8" OVERALL CAB WIDTH
- 1 1/4" RUNNING CLEARANCE
- 5 1/2"
- 1 1/4" RUNNING CLEARANCE

**Side View Dimensions:**

- FINISHED RUNWAY LENGTH: 86 3/8"
- OVERALL CAB LENGTH: 72 7/8"
- CLEAR CAB DEPTH: 60"
- DBG (Door Bottom Guide): 34 1/2"
- RAIL BRACKET: 43 3/16"
- ENTRANCE: 43 3/8"
- ROUGH OPENING OTHER LANDINGS: 52"
- FINISHED RUNWAY WIDTH (ROUGH OPENING (ROUGH OPENING WHERE CONTROLLER IS REQUIRED)): 69"
- 6 1/8" FILLER WALL
- 36" CLEAR OPENING
- 20" CONTROLLER
- 3 3/8"
- 3 7/16"
- 10 1/4" DBG
- 14"
- 42" CLEAR INSIDE CAB
- 5 1/2"
- 17 5/8"
- 45 7/8" OVERALL CAB WIDTH
- 1 1/4" RUNNING CLEARANCE
- 5 1/2"
- 1 1/4" RUNNING CLEARANCE

**Notes:**

- CAR TOP INSPECTION BOX 127mmx305mmx203mm [5"x12"x8"]
- N.B. POSITION OF INSTALLATION AT INSTALLER DISCRETION DEPENDS ON SITE CONDITION
- 8" MIN AT CONTROLLER DOOR OTHER LANDINGS 3 3/4"
- WHERE CONTROLLER IS REQUIRED

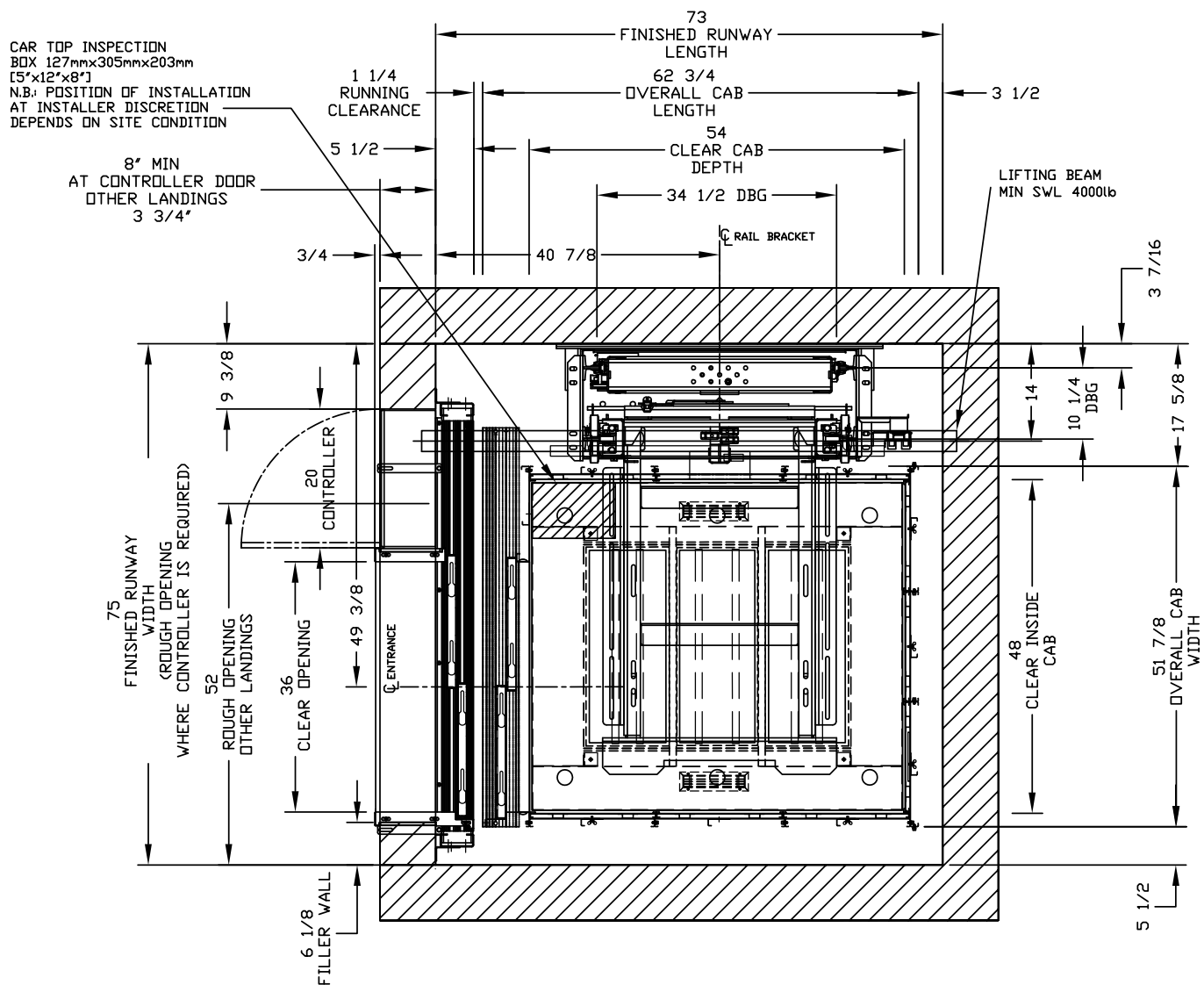
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 48" x 54" Type 1L Orion17 Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION17 MRL-4854 (1L)



For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

**NOTE: The cab dimensions provided are based on a PLAM cab.**

## IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

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For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

**NOTE: The cab dimensions provided are based on a PLAM cab.**

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

Technical drawing of a lift system showing side and top views with dimensions and labels.

**Labels and Dimensions:**

- 1 1/4" RUNNING CLEARANCE
- 5 1/2"
- LIFTING BEAM MIN SWL 4000lb
- 3 7/16"
- 17 5/8"
- 51 7/8" OVERALL CAB WIDTH
- 48" CLEAR INSIDE CAB
- 49 3/8" CLEARANCE
- 5 1/2"
- 80 5/8" FINISHED RUNWAY LENGTH
- 67 1/8" OVERALL CAB LENGTH
- 54" CLEAR CAB DEPTH
- 34 1/2" DBG
- 40 5/16"
- CL RAIL BRACKET
- 1 1/4" RUNNING CLEARANCE
- 5 1/2"
- CAR TOP INSPECTION BOX 127mmx305mmx203mm [5"x12"x8"]  
N.B: POSITION OF INSTALLATION AT INSTALLER DISCRETION DEPENDS ON SITE CONDITION
- 8" MIN AT CONTROLLER DOOR OTHER LANDINGS 3 3/4"
- 3/4"
- 20" CONTROLLER
- 9 3/8"
- 49 3/8" CLEARANCE
- 36" CLEAR OPENING
- 52" ROUGH OPENING OTHER LANDINGS
- 75" FINISHED RUNWAY WIDTH (ROUGH OPENING WHERE CONTROLLER IS REQUIRED)
- 2 1/2"
- 6 1/8" FILLER WALL

For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

**NOTE: The cab dimensions provided are based on a PLAM cab.**

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

CAR TOP INSPECTION  
BOX 127mmx305mmx203mm  
[5'x12'x8']  
N.B.: POSITION OF INSTALLATION  
AT INSTALLER DISCRETION  
DEPENDS ON SITE CONDITION

8" MIN  
AT CONTROLLER DOOR  
OTHER LANDINGS  
3 3/4"

1 1/4" RUNNING CLEARANCE

5 1/2"

73" FINISHED RUNWAY LENGTH

62 3/4" OVERALL CAB LENGTH

3 1/2"

54" CLEAR CAB DEPTH

34 1/2" DBG

40 1/4"

RAIL BRACKET

LIFTING BEAM  
MIN SWL 4000lb

3 15/16"

3/4"

20" CONTROLLER

43 7/8" C ENTRANCE

52" ROUGH OPENING OTHER LANDINGS

36" CLEAR OPENING

69" FINISHED RUNWAY WIDTH (ROUGH OPENING WHERE CONTROLLER IS REQUIRED)

5/8"

5 13/16" FILLER WALL

14" 10 1/4" DBG

42" CLEAR INSIDE CAB

17 5/8"

46 1/2" OVERALL CAB WIDTH

4 7/8"

3 7/16"

**NOTE: The cab dimensions provided are based on a PLAM cab.**

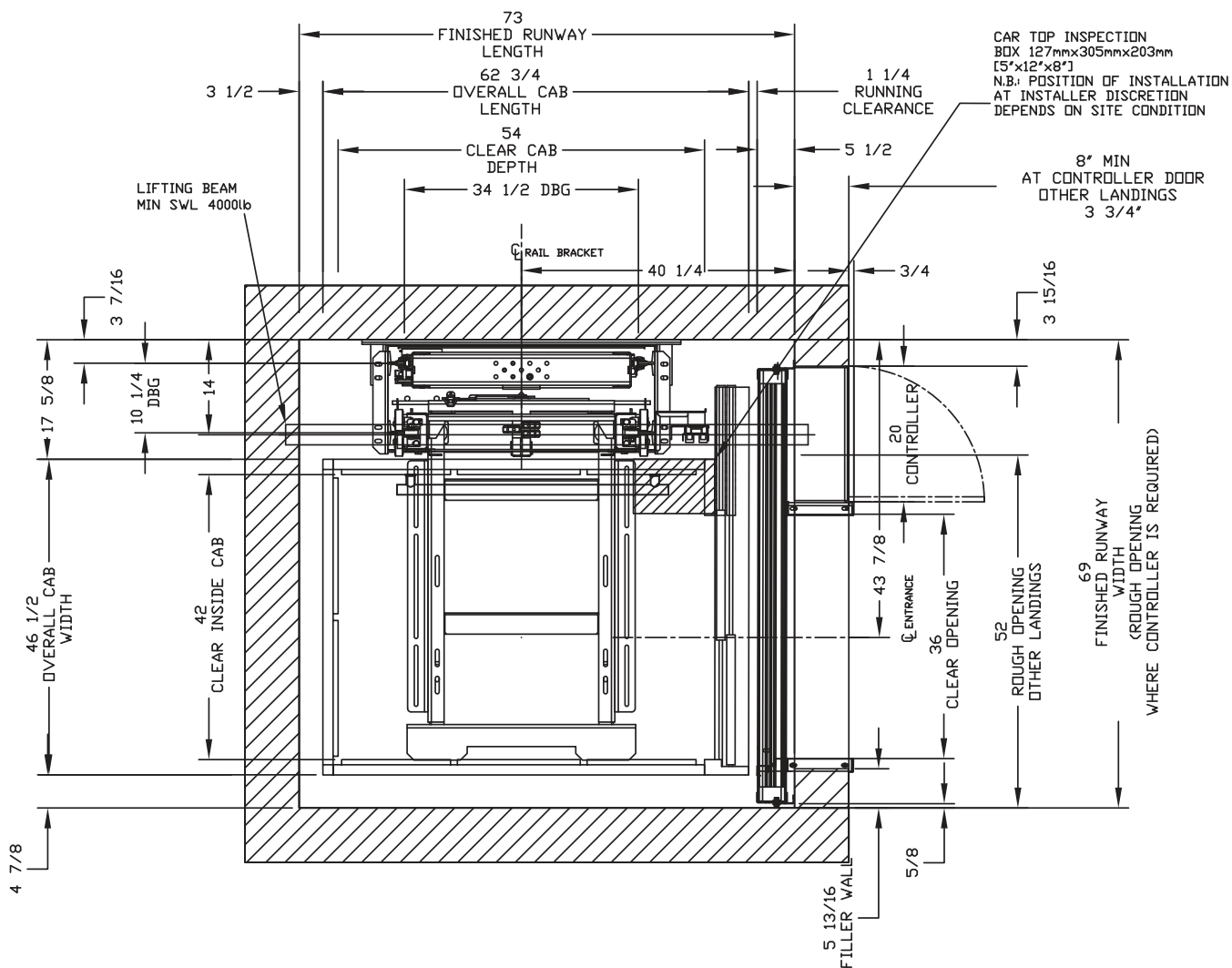


## 42" x 54" Type 1R Orion Standard Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION MRL-4254 (1R)



For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

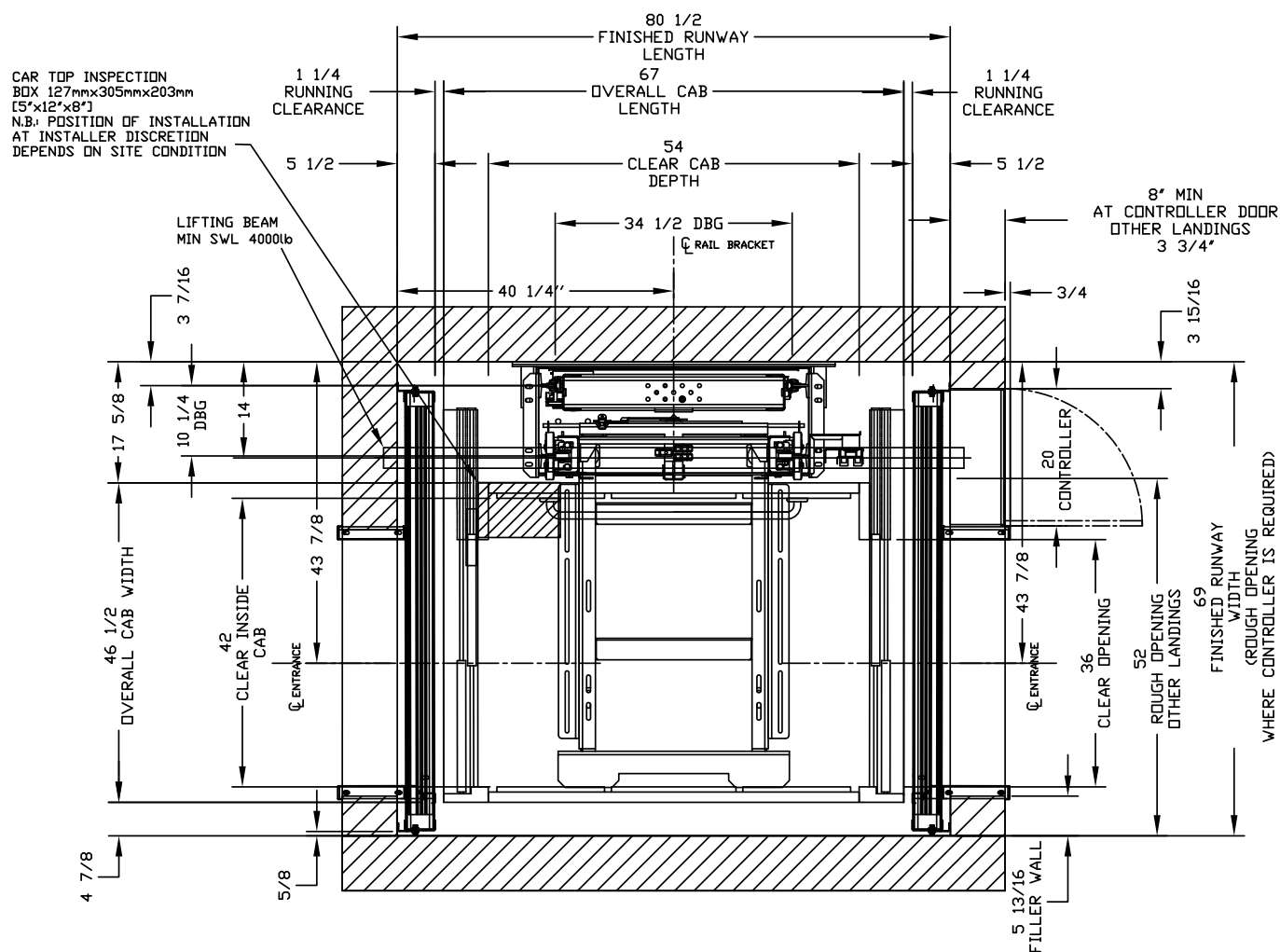
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 42" x 54" Type 2 Orion Standard Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION MRL-4254 (2)



For Masonry or Drywall  
 Entrance Details, refer to  
 drawings on pages 41-46.

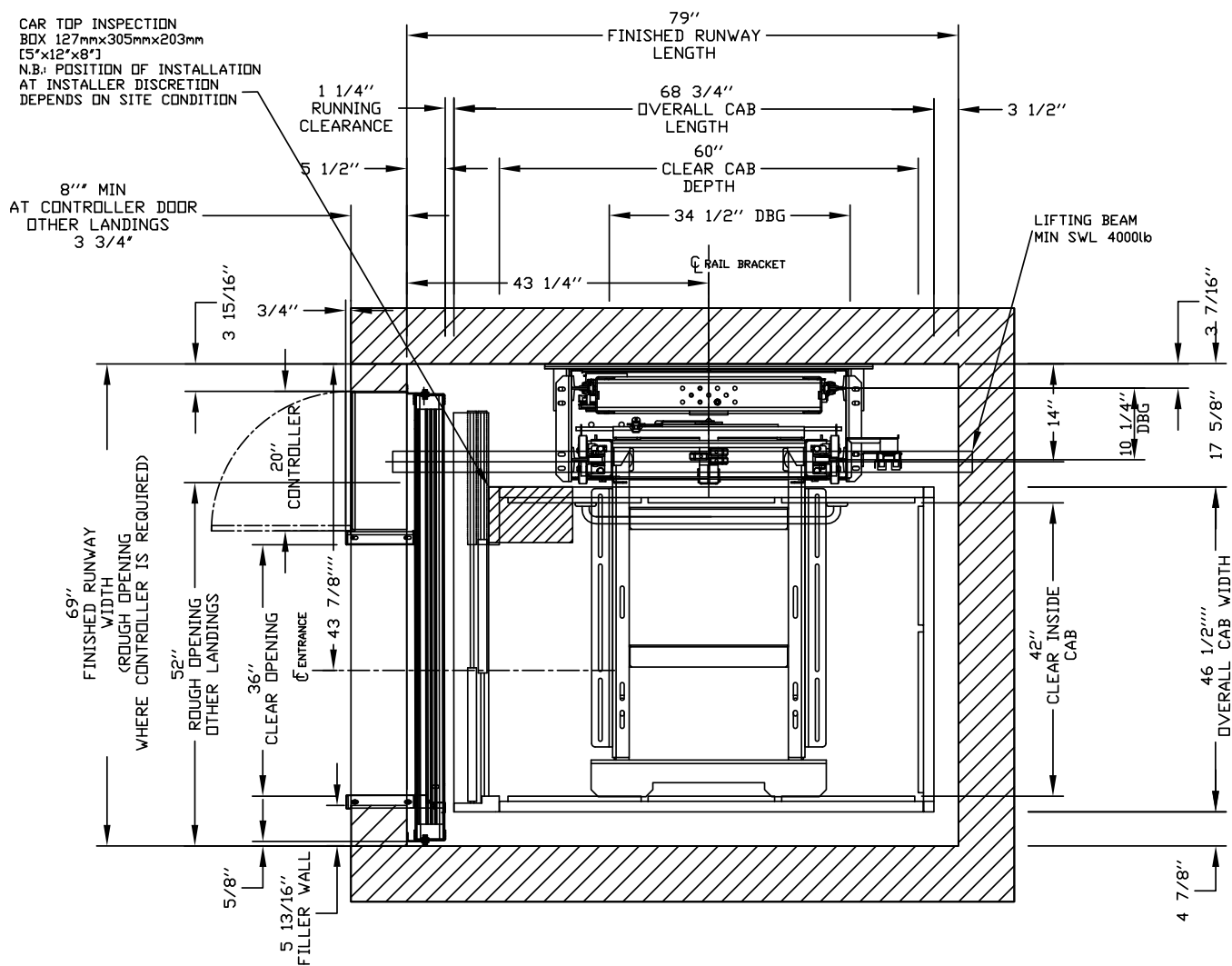
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 42" x 60" Type 1L Orion Standard Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION MRL-4260 (1L)



For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

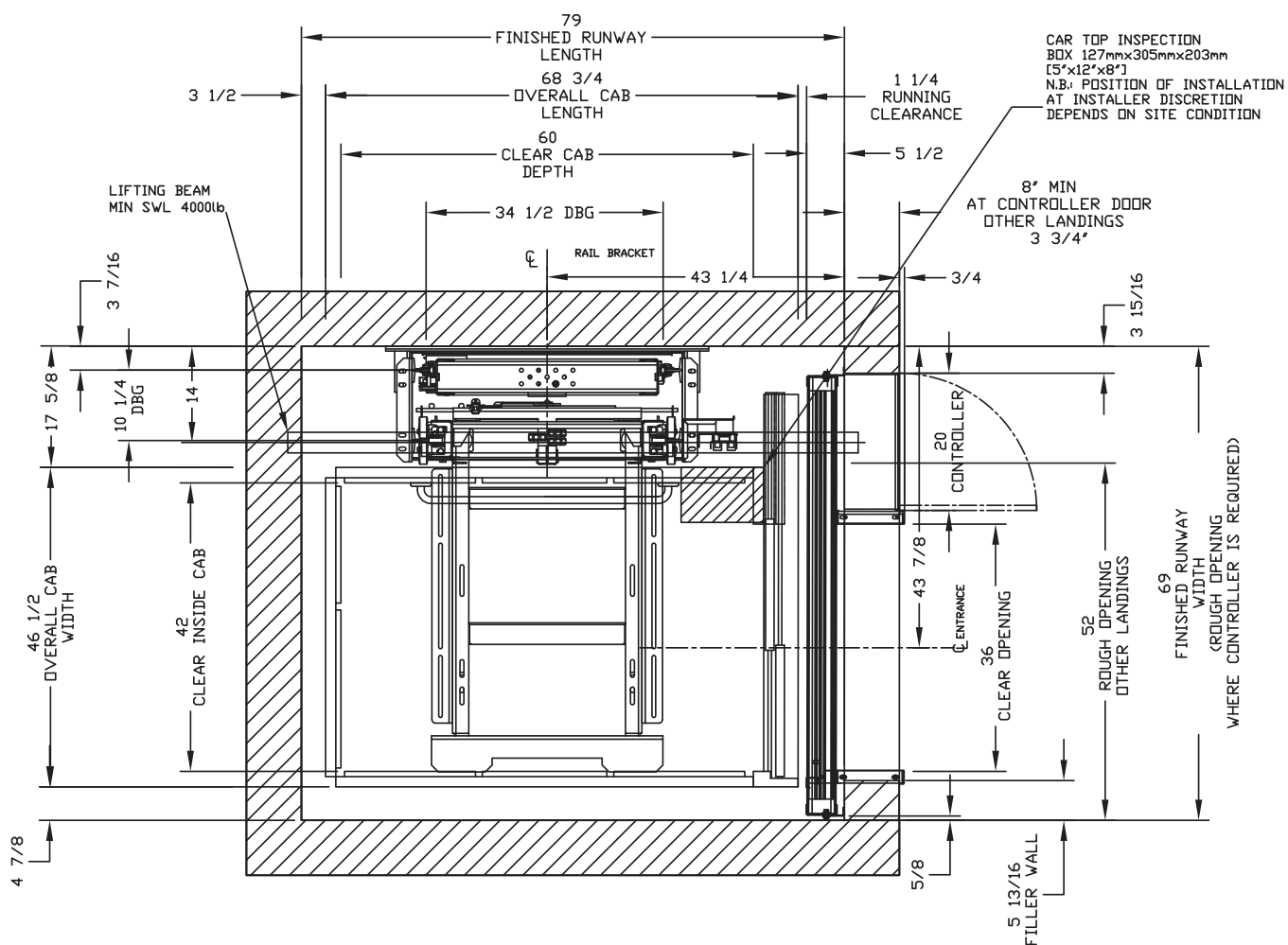
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 42" x 60" Type 1R Orion Standard Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION MRL-4260 (1R)



For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

**NOTE: The cab dimensions provided are based on a PLAM cab.**

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

Technical drawing of a lift system showing side and front elevations with dimensions and labels.

**Labels and Dimensions:**

- 1 1/4" RUNNING CLEARANCE
- 5 1/2"
- LIFTING BEAM MIN SWL 4000lb
- 3 7/16"
- 17 5/8"
- 10 1/4" DBG
- 14"
- 42"
- 43 7/8"
- 46 1/2" OVERALL CAB WIDTH
- 5/8"
- 86 1/2" FINISHED RUNWAY LENGTH
- 73" OVERALL CAB LENGTH
- 60" CLEAR CAB DEPTH
- 34 1/2" DBG
- 43 1/4"
- CL RAIL BRACKET
- 1 1/4" RUNNING CLEARANCE
- 5 1/2"
- 8" MIN AT CONTROLLER DOOR OTHER LANDINGS 3 3/4"
- 3 15/16"
- 3/4"
- 20" CONTROLLER
- 43 7/8"
- 36" CLEAR OPENING
- 52" ROUGH OPENING OTHER LANDINGS
- 69" FINISHED RUNWAY WIDTH (ROUGH OPENING (ROUGH OPENING IS REQUIRED) WHERE CONTROLLER IS REQUIRED)
- 5 13/16" FILLER WALL

**Notes:**

- CAR TOP INSPECTION BOX 127mmx305mmx203mm (5"x12"x8")
- N.B.: POSITION OF INSTALLATION AT INSTALLER DISCRETION DEPENDS ON SITE CONDITION

For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

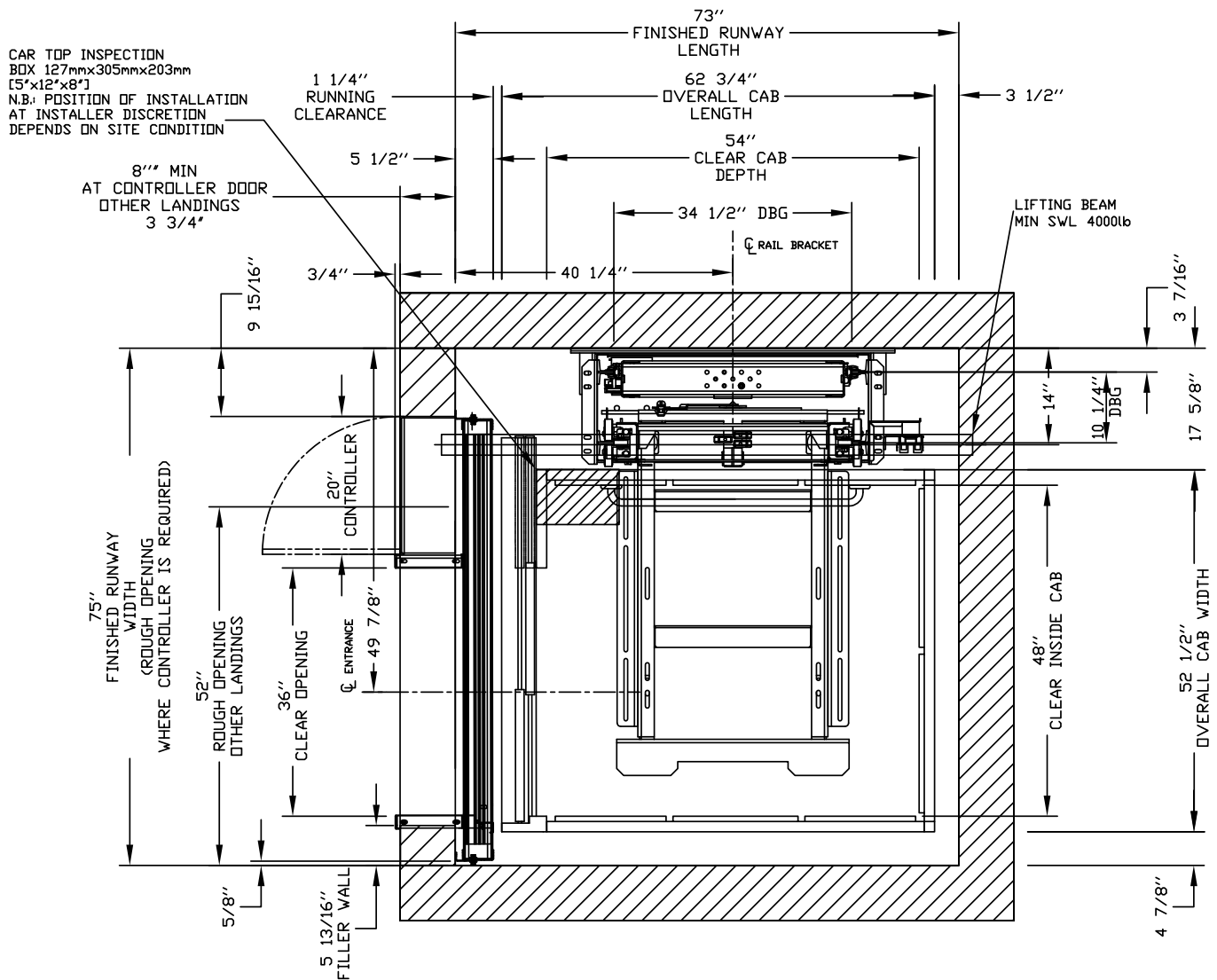
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 48" x 54" Type 1L Orion Standard Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall.  
Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION MRL-4854 (1L)



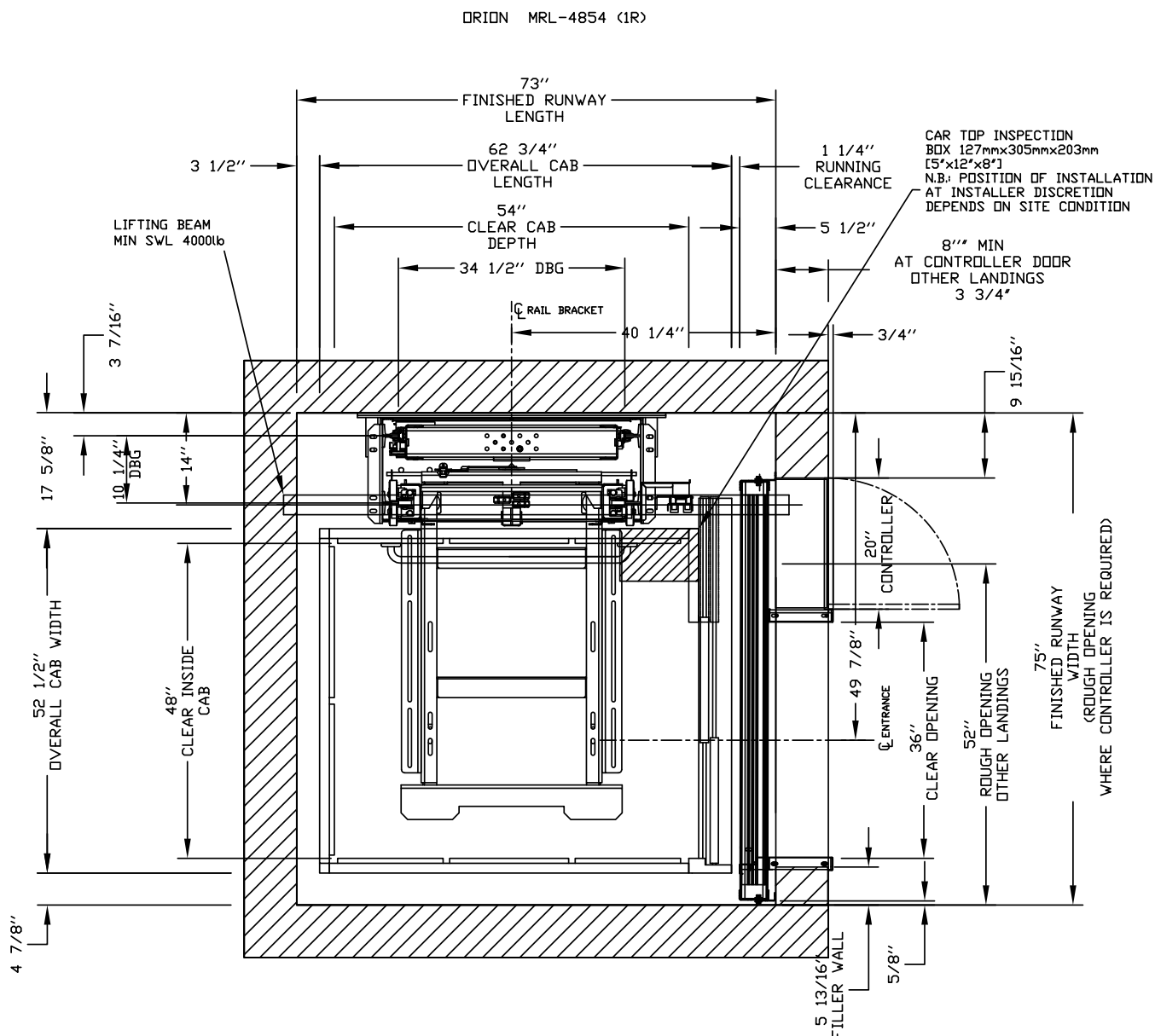
For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 48" x 54" Type 1R Orion Standard Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.



For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

**NOTE: The cab dimensions provided are based on a PLAM cab.**

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

Technical drawing of a lift installation showing side and top views with dimensions and labels.

**Labels and Dimensions:**

- Top View Labels:**
  - FINISHED RUNWAY LENGTH 80 1/2"
  - OVERALL CAB LENGTH 67"
  - 1 1/4" RUNNING CLEARANCE
  - 1 1/4" RUNNING CLEARANCE
  - 5 1/2"
  - 54" CLEAR CAB DEPTH
  - 34 1/2" DBG
  - 40 1/4"
  - CL RAIL BRACKET
  - 3/4"
  - 8" MIN AT CONTROLLER DOOR OTHER LANDINGS 3 3/4"
  - 9 15/16"
  - 20" CONTROLLER
  - 49 7/8" CLEAR OPENING
  - 52" ROUGH OPENING OTHER LANDINGS
  - 75" FINISHED RUNWAY WIDTH (ROUGH OPENING WHERE CONTROLLER IS REQUIRED)
  - 5 13/16" FILLER WALL
  - 5/8"
- Side View Labels:**
  - LIFTING BEAM MIN SWL 4000lb
  - 3 7/16"
  - 5 1/2"
  - 17 5/8"
  - 10 1/4" DBG
  - 14"
  - 52 1/2" OVERALL CAB WIDTH
  - 48" CLEAR INSIDE CAB
  - 49 7/8" CLEAR OPENING
  - CL ENTRANCE
  - 49 7/8" CLEAR OPENING
  - 52" ROUGH OPENING OTHER LANDINGS
  - 75" FINISHED RUNWAY WIDTH (ROUGH OPENING WHERE CONTROLLER IS REQUIRED)
  - 5 13/16" FILLER WALL
  - 5/8"
- Notes:**
  - CAR TOP INSPECTION BOX 127mmx305mmx203mm [5"x12"x8"]
  - N.B: POSITION OF INSTALLATION AT INSTALLER DISCRETION DEPENDS ON SITE CONDITION

**NOTE: The cab dimensions provided are based on a PLAM cab.**

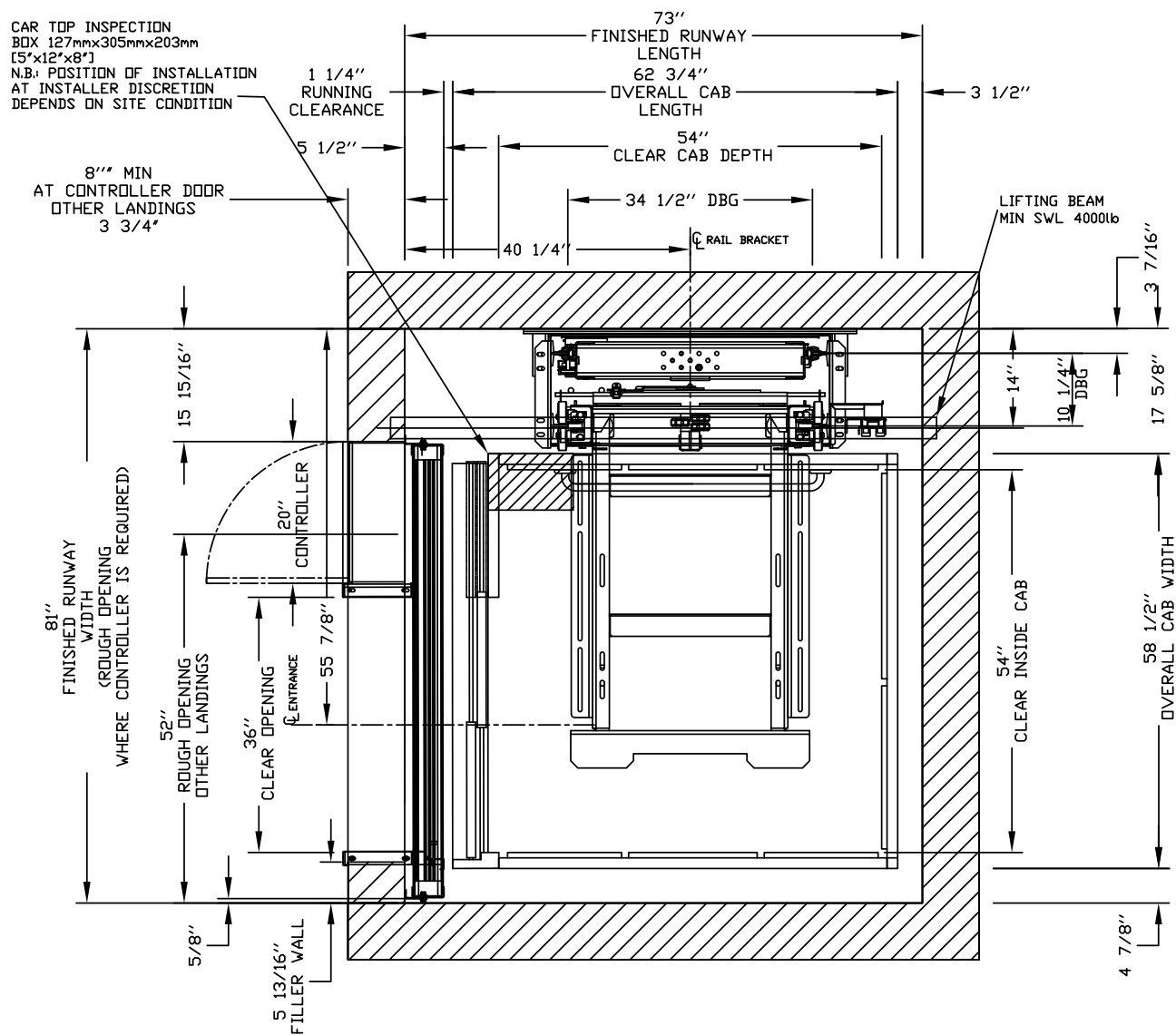


## 54" x 54" Type 1L Orion Standard Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall.  
Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION MRL-5454 (1L)



For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

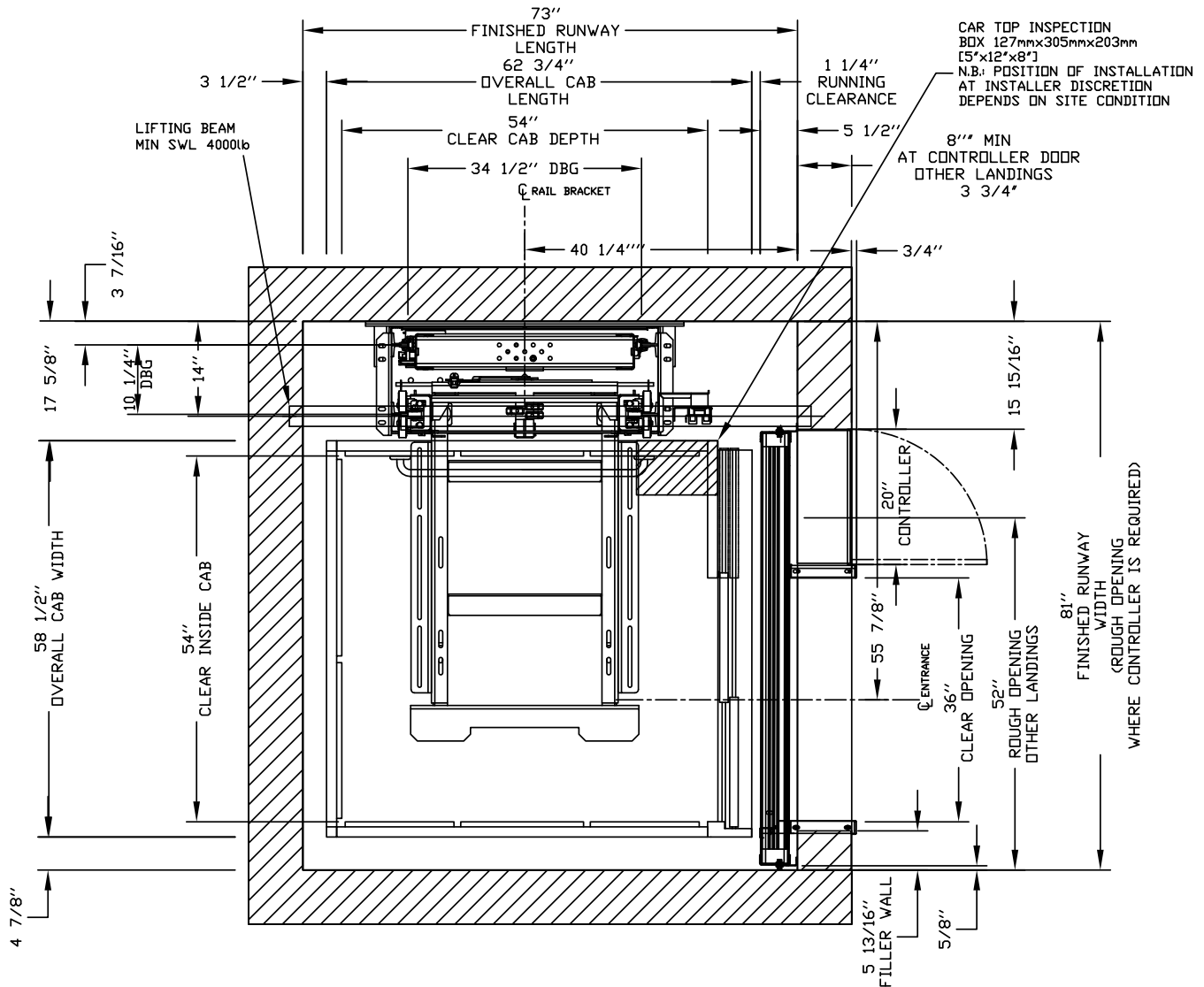
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 54" x 54" Type 1R Orion Standard Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION MRL-5454 (1R)



For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

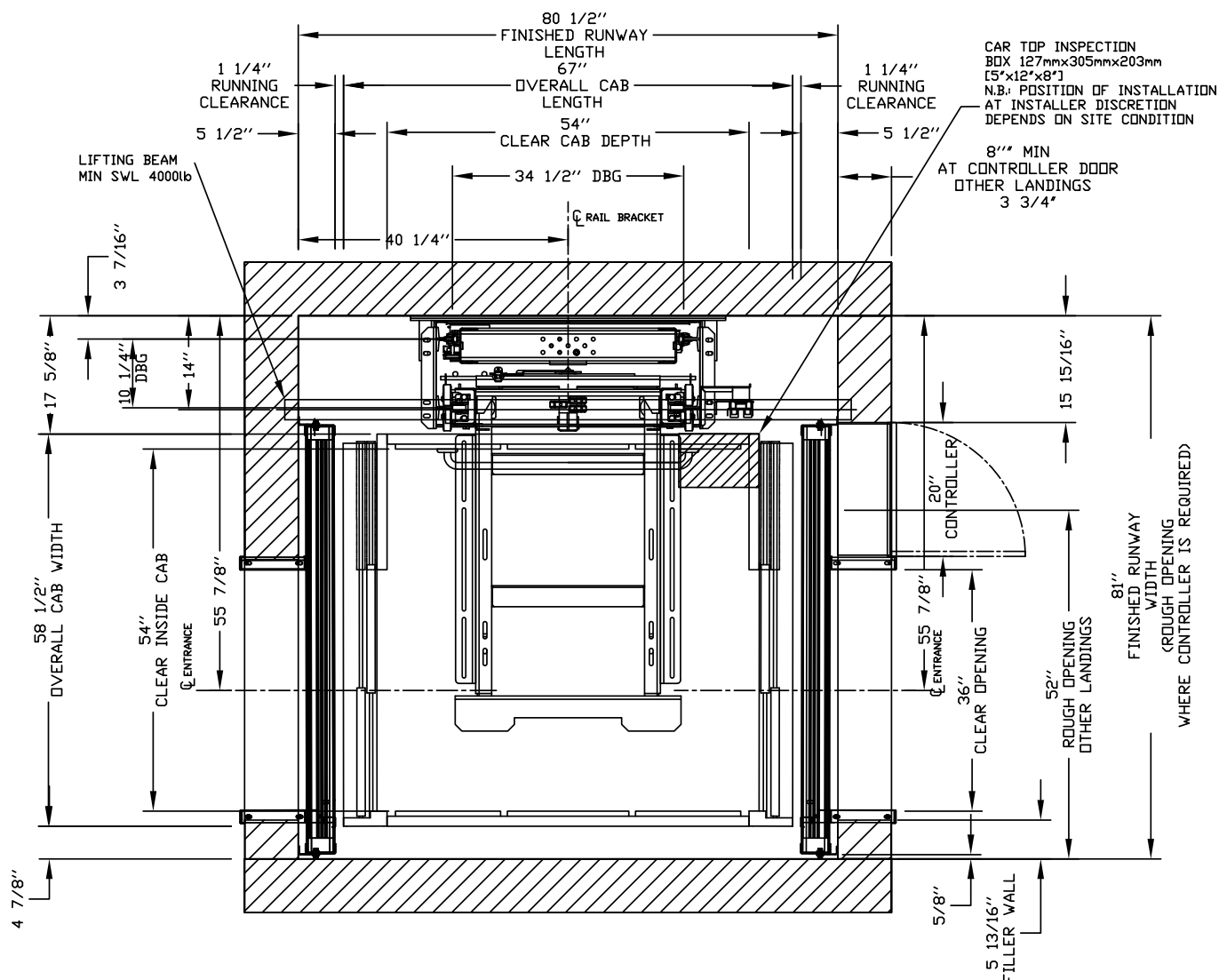
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 54" x 54" Type 2 Orion Standard Cab

## IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION MRL-5454 (2)



For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

**NOTE: The cab dimensions provided are based on a PLAM cab.**

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

[illegible]

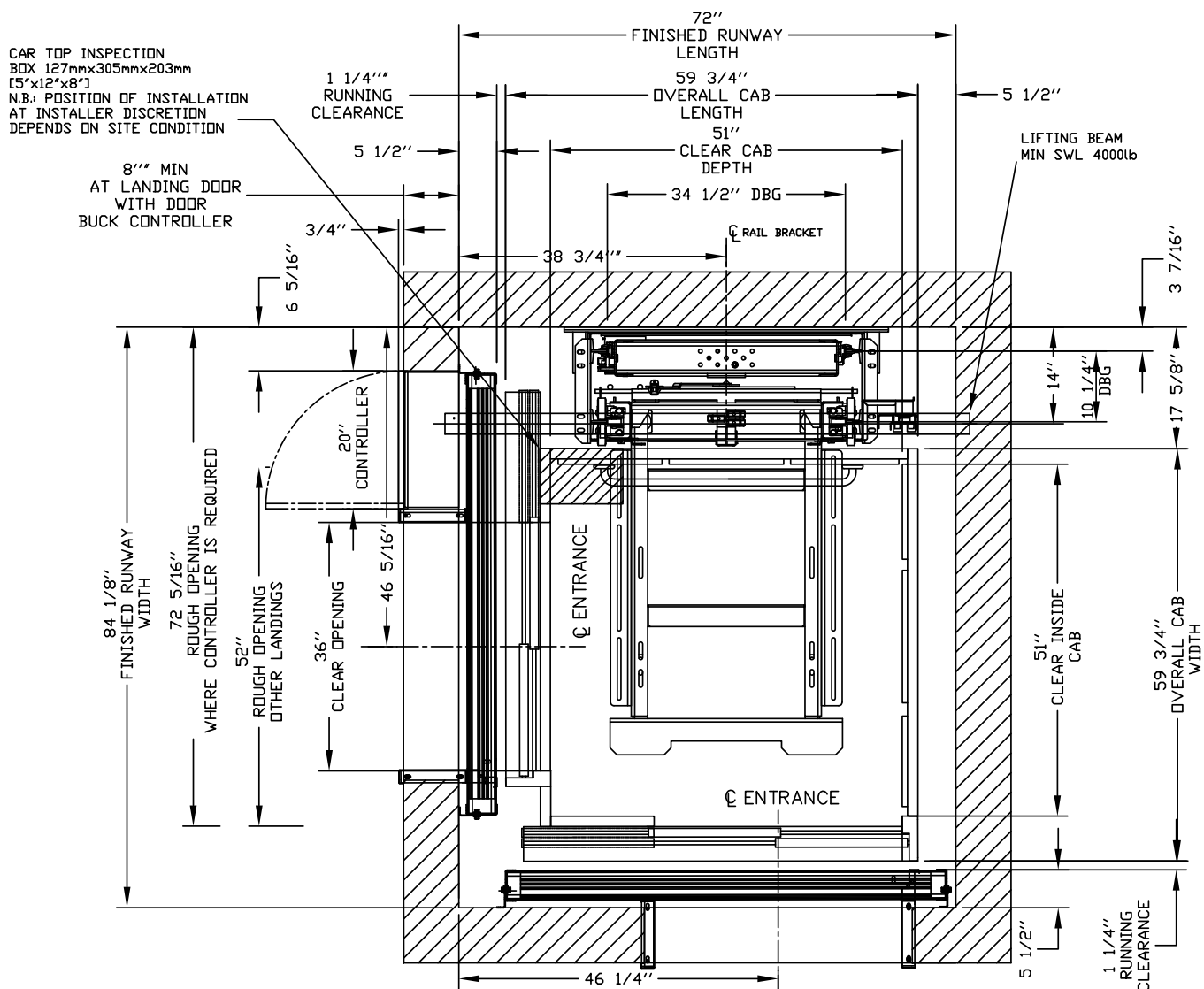
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 51" x 51" Type 4 Orion Standard Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION MRL-5151 (4)



For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

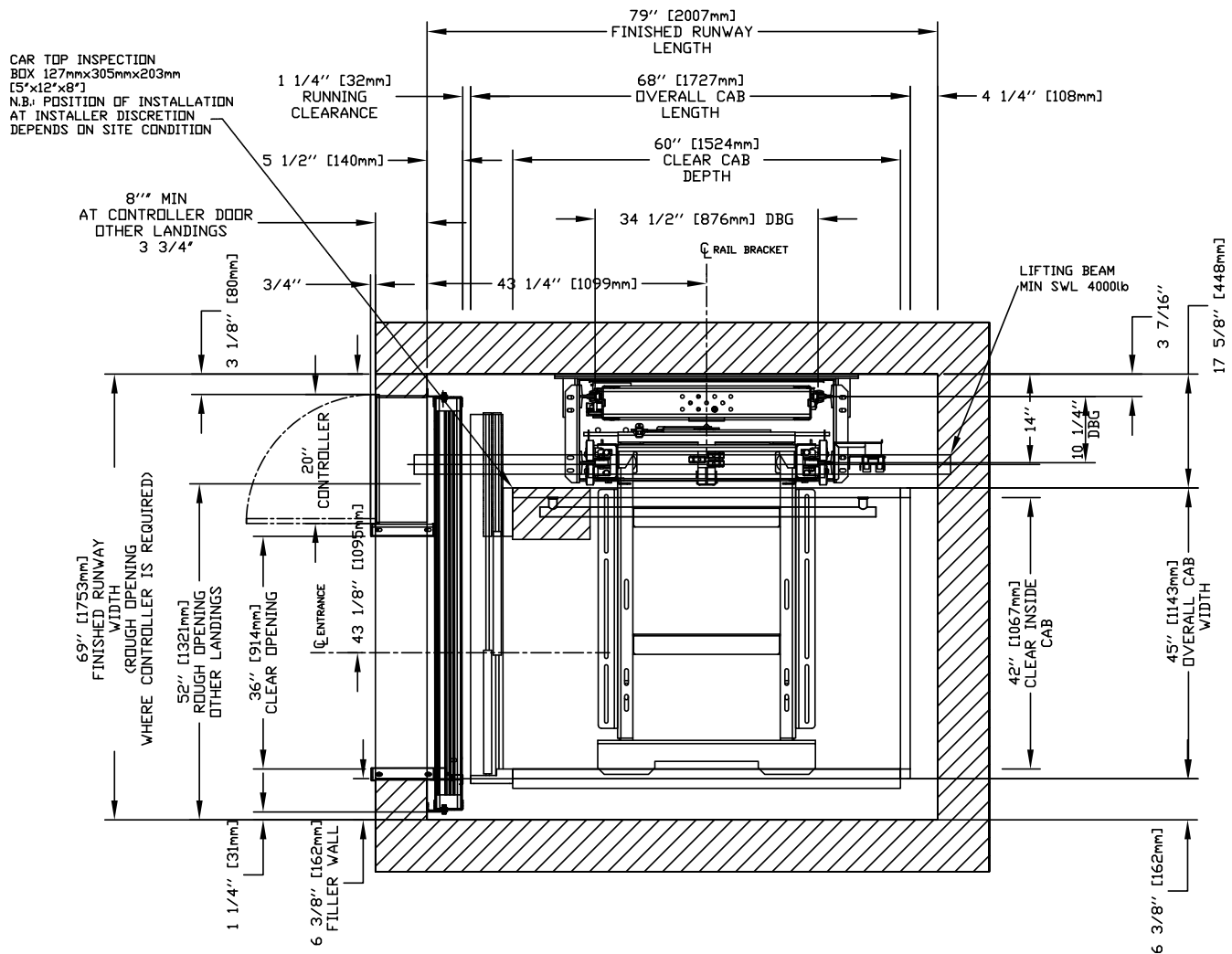
**NOTE: The cab dimensions provided are based on a PLAM cab.**

## 42" x 60" Type 1L Orion Steel Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION STEEL CAB MRL-4260 (1L)



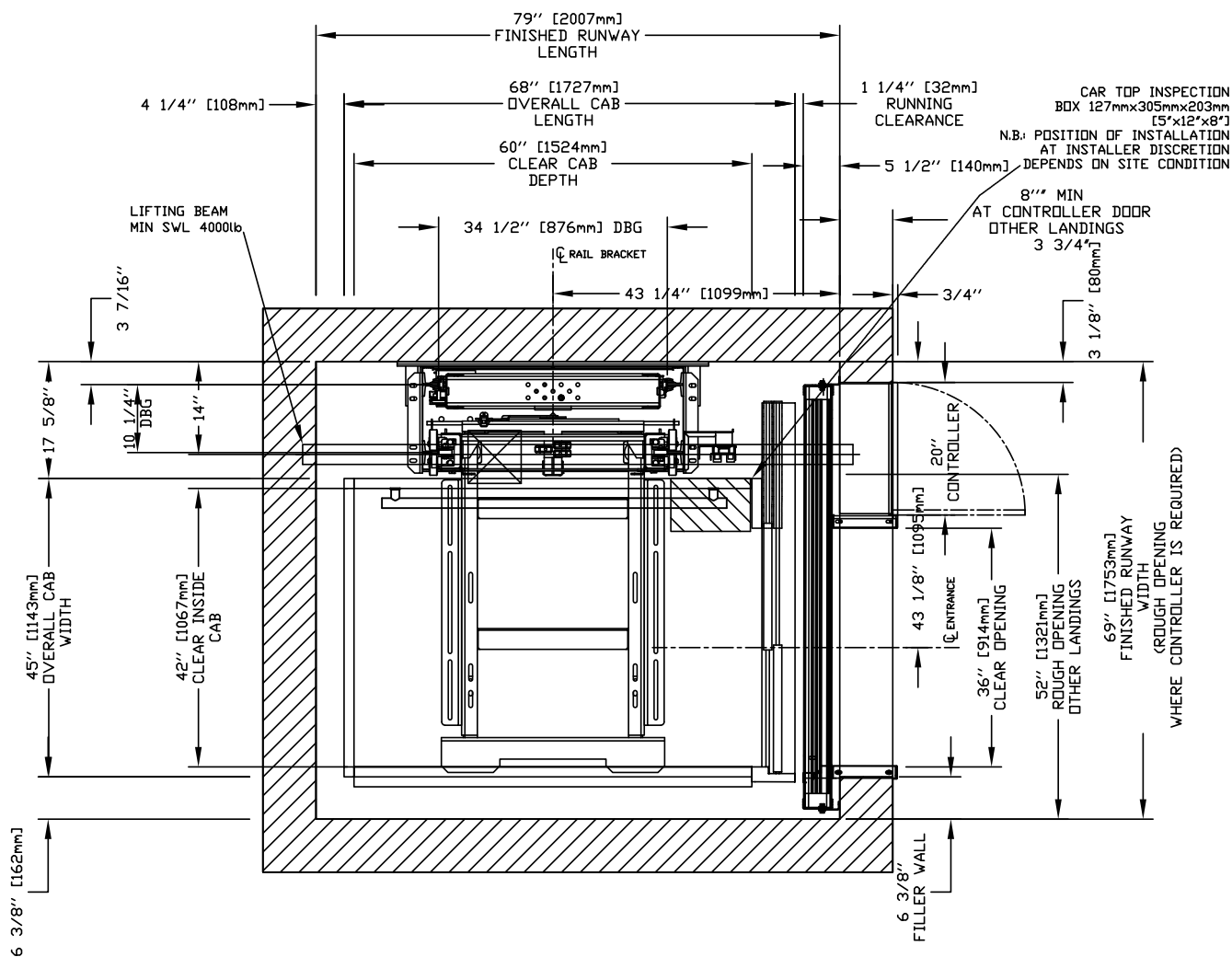
For Masonry or Drywall  
 Entrance Details, refer to  
 drawings on pages 41-46.

## 42" x 60" Type 1R Orion Steel Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION STEEL CAB MRL-4260 (1R)



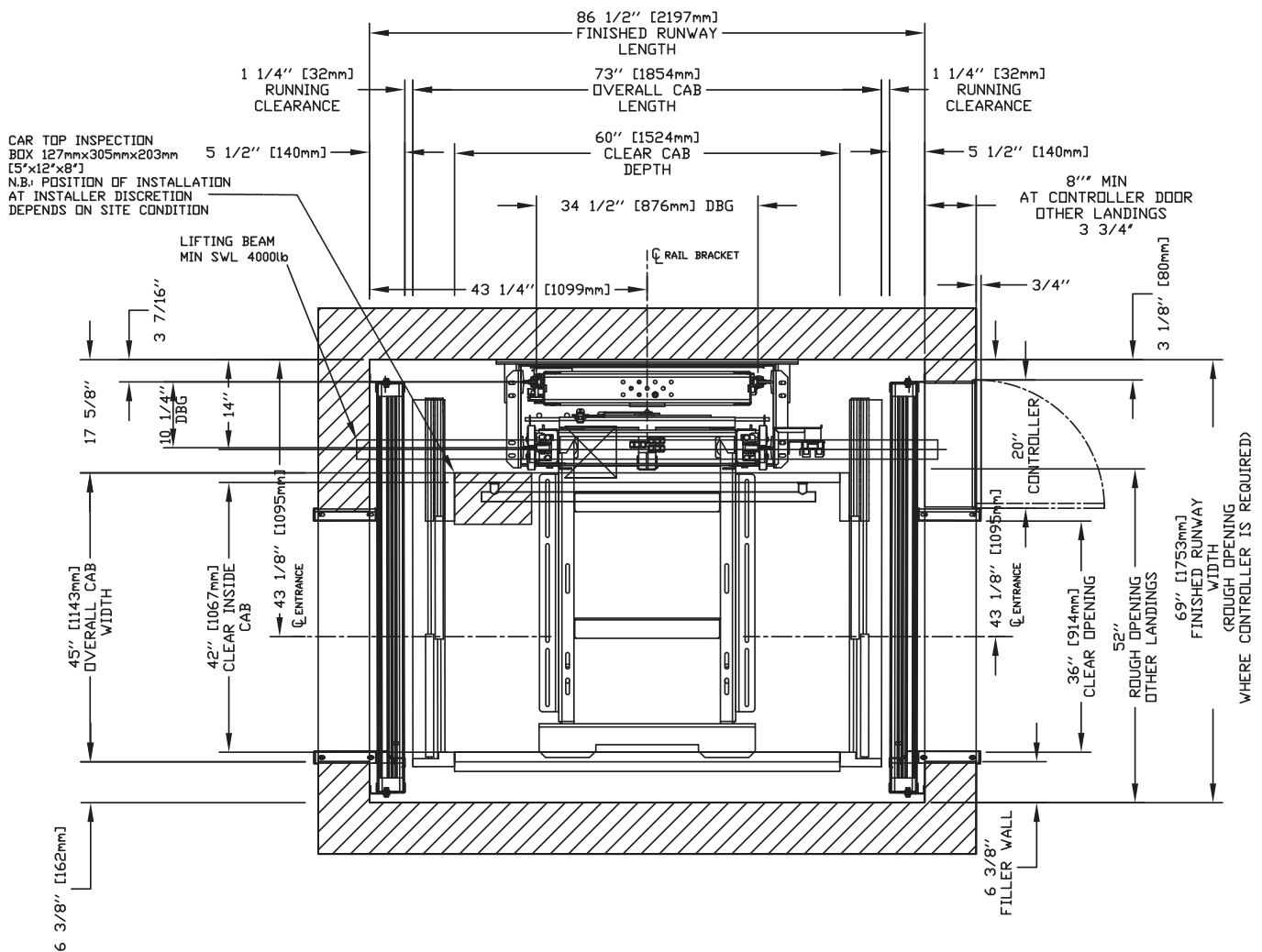
For Masonry or Drywall Entrance Details, refer to drawings on pages 41-46.

## 42" x 60" Type 2 Orion Steel Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION STEEL CAB MRL-4260 (2)



For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

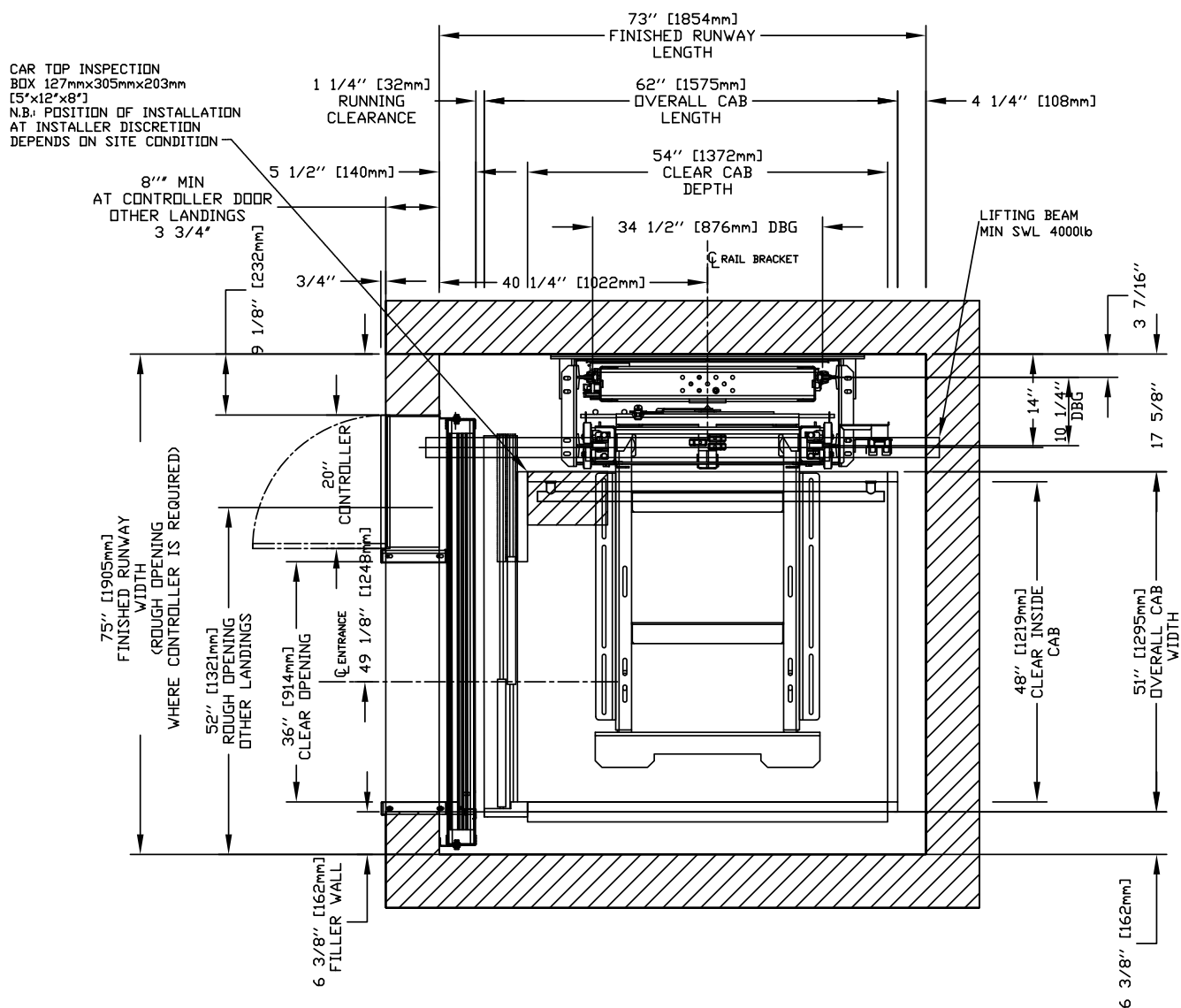


## 48" x 54" Type 1L Orion Steel Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION STEEL CAB MRL-4854 (1L)



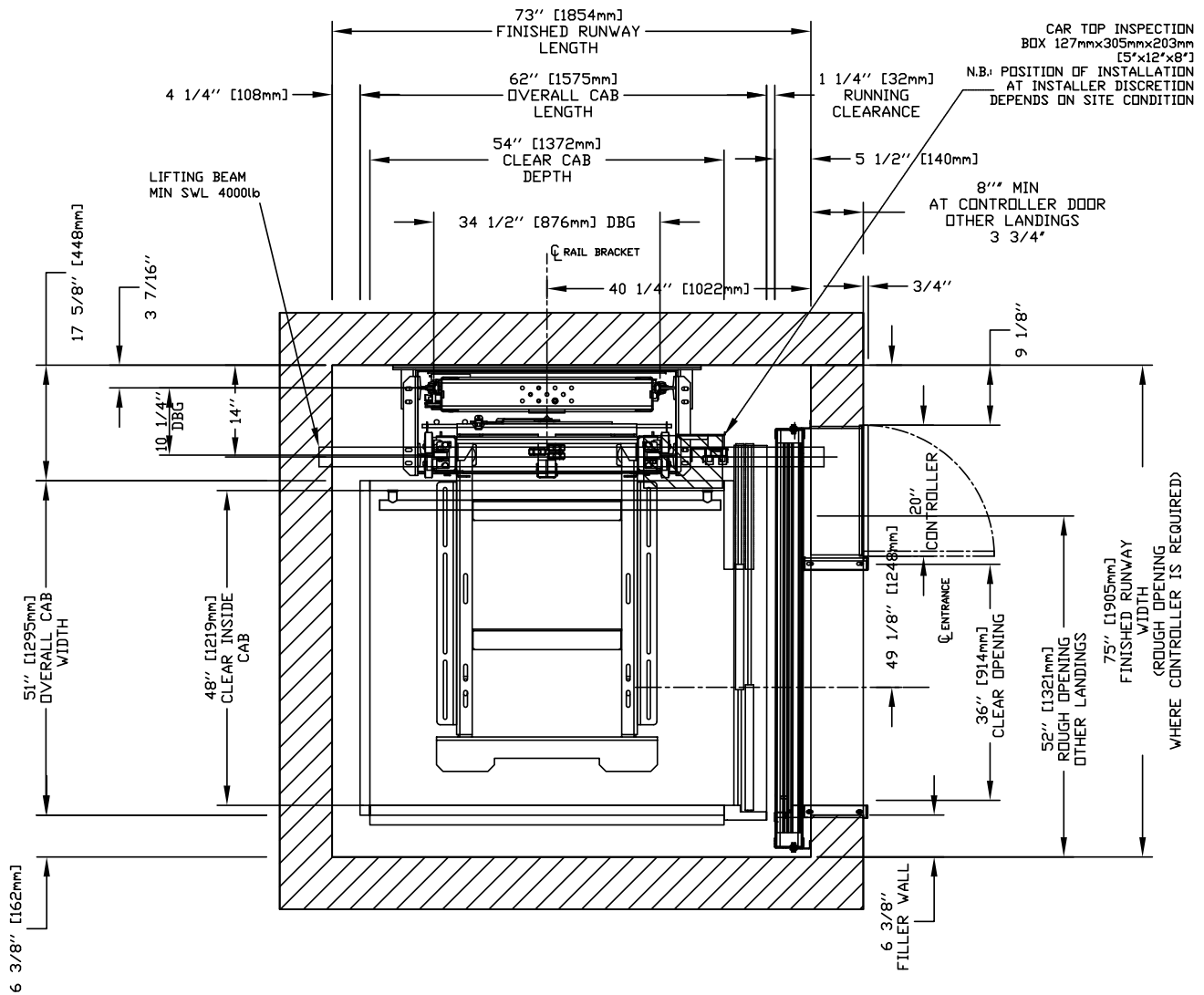
For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

## 48" x 54" Type 1R Orion Steel Cab

### IMPORTANT

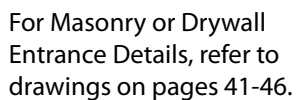
Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

ORION STEEL CAB MRL-4854 (1R)



For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

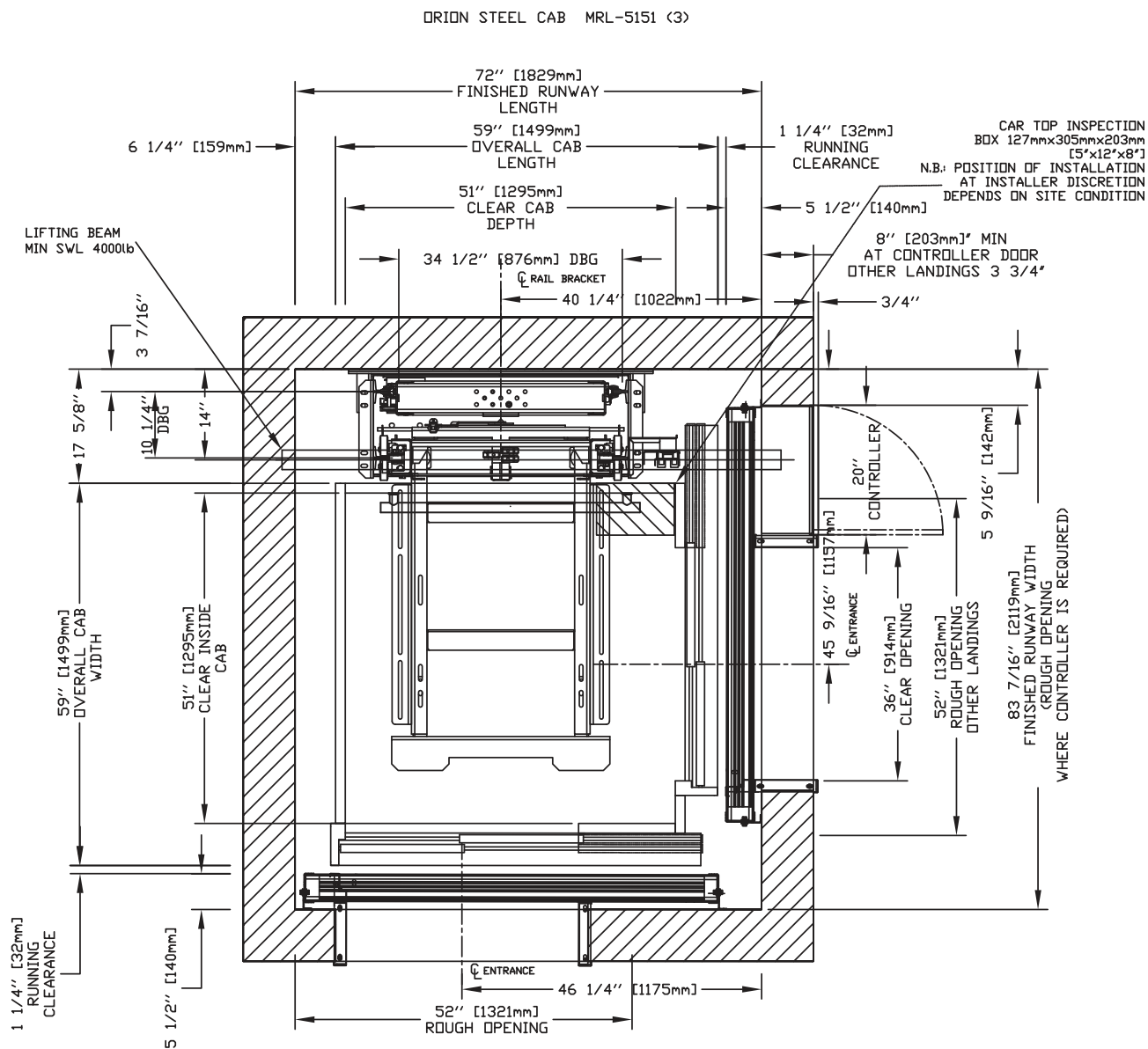
Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.



## 51" x 51" Type 3 Orion Steel Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.



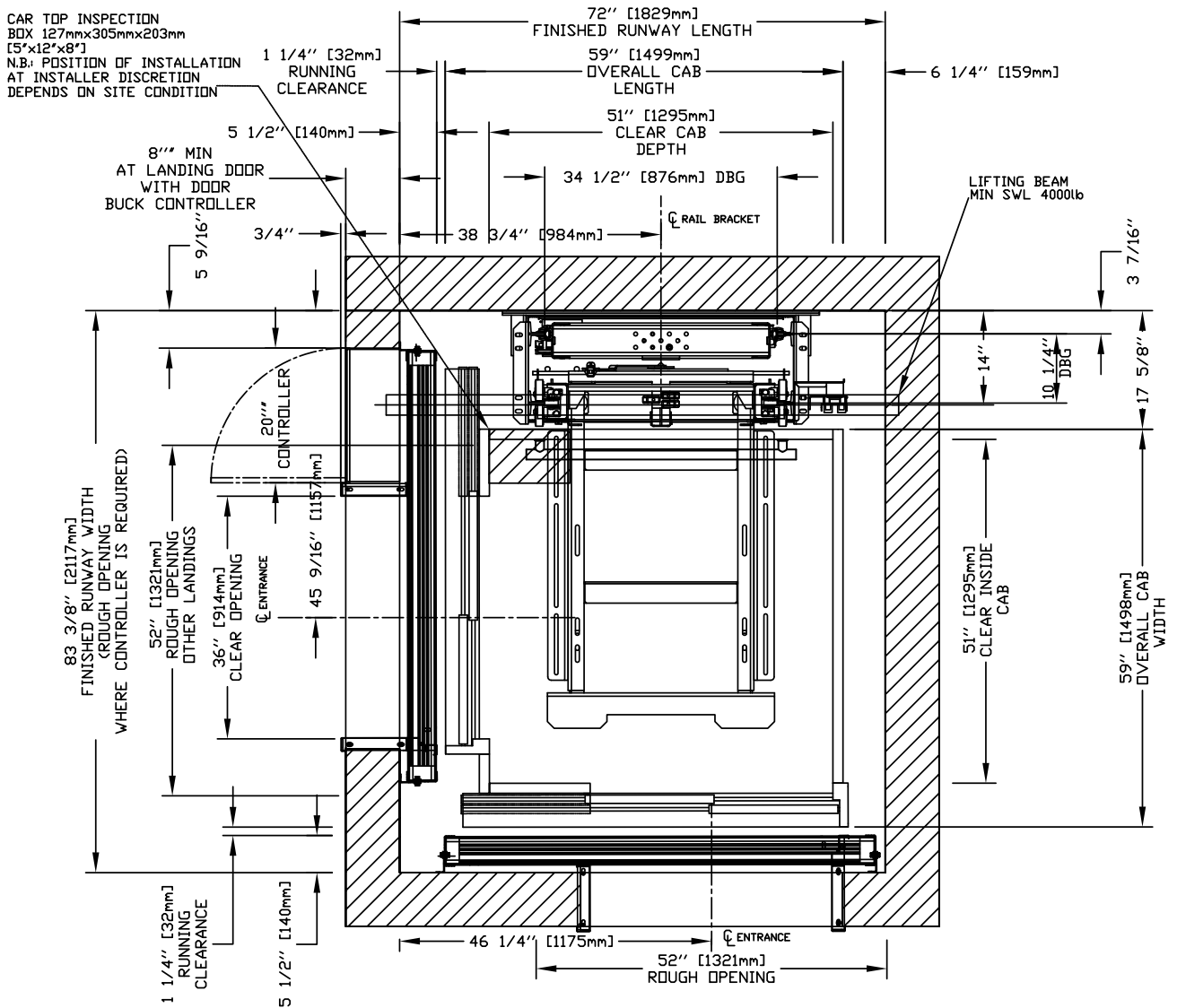
For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

## 51" x 51" Type 4 Orion Steel Cab

### IMPORTANT

Finished hoistway dimensions must include the drywall. Determine the fire rating of the hoistway and the type and layers of sheet rock. Build only from the final shop drawings specific to your installation.

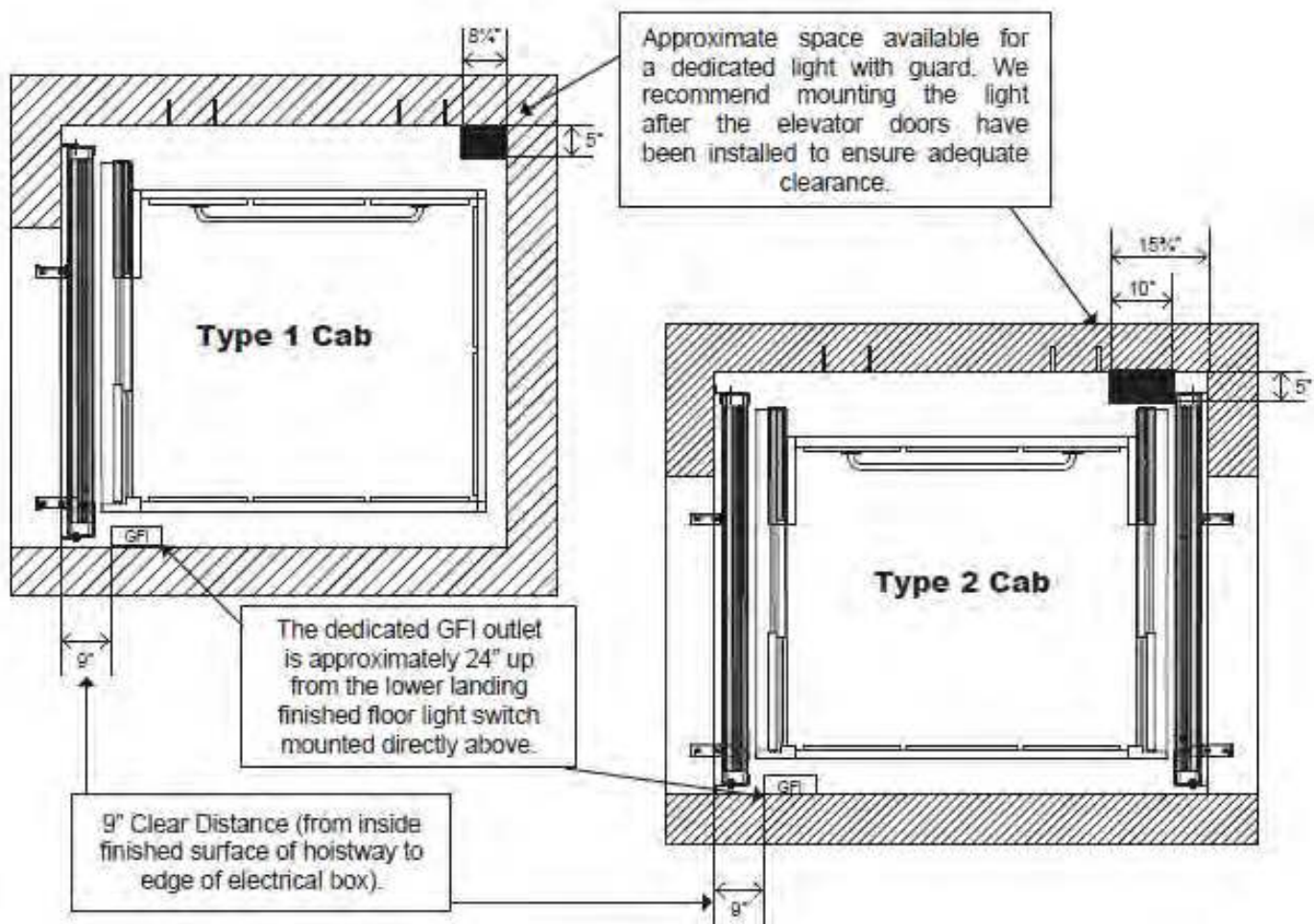
ORION STEEL CAB MRL-5151 (4)



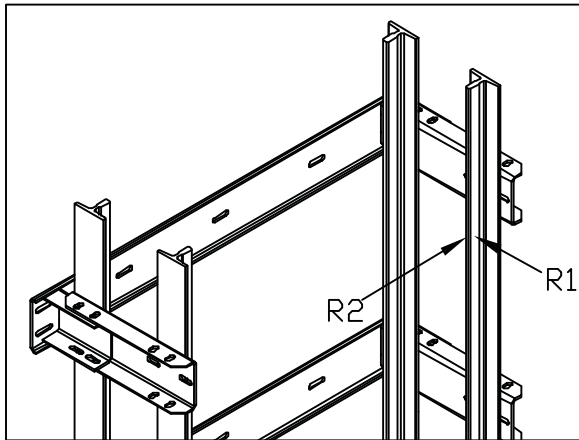
For Masonry or Drywall  
Entrance Details, refer to  
drawings on pages 41-46.

## Hoistway and Pit Notes

- A load bearing wall is required to sustain rail reactions. Refer to section on rail forces.
- Suggested hoistway pit floor construction consists of an 8" (203 mm) concrete slab poured on a natural or compacted soil with a minimum allowable bearing pressure of 1.0 KSF.
- The minimum compressive strength of the concrete at 28 days must be no less than 3000 PSI. #5 reinforcing steel (grade 60) must be placed at the bottom of the slab in 2 traverse directions and at a spacing of 12" (305 mm).
- Hoistway pit floor to support a load of 10 kips (10,000 lbs)/44.48KN (includes impact).
- 108" (2743 mm) minimum overhead clearance required above the top landing floor (for existing construction).
- 134" (3404 mm) minimum overhead clearance required above the top landing floor (for new construction).
- 14" (356 mm) minimum pit. (A clearance device is provided to attain required 36" (914 mm) refuge space).
- Hoistway sizes reflect running and access clearances only. Consult your local AHJ to assure compliance with local codes.
- Hoistway is required to be free of all pipes, wiring and obstructions not related to the operation of the elevator.
- If a dedicated pit light is required by your local AHJ, please follow the guidelines below for accommodating this in your hoistway.
- A 4000 lb SWL beam must be provided in the overhead. Beam to be positioned as shown in the elevation and plan views. For overhead of 108", position the underside of the beam at 104" and the beam must be temporary.



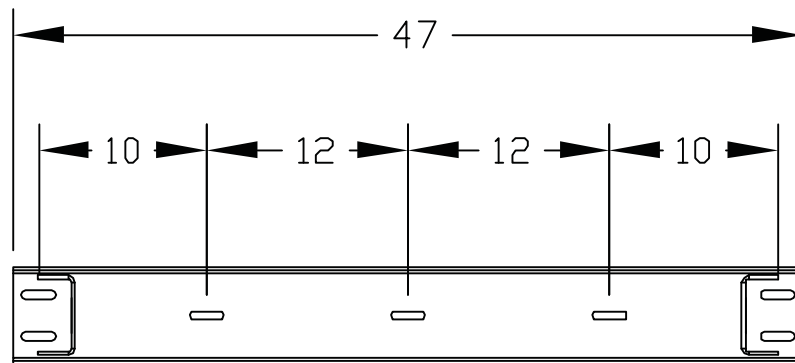
## Loads on Building and Pit Loading



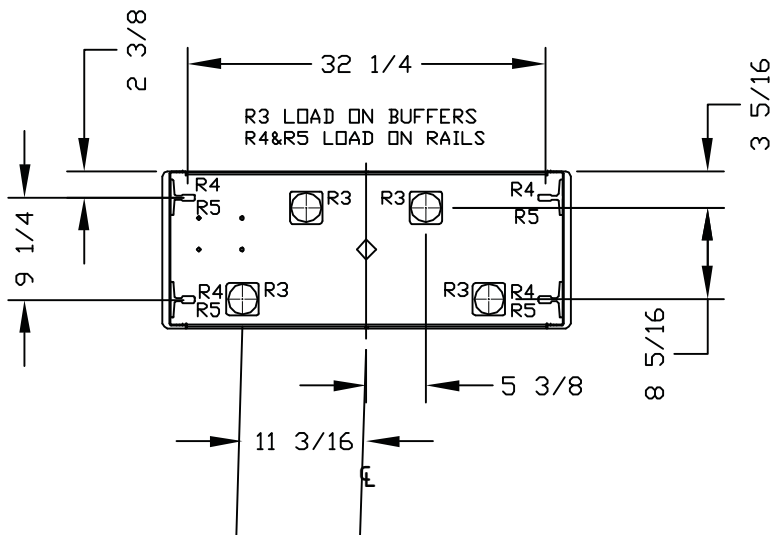
RAIL FORCES	
*R1	*R2
500 lbf	1570 lbf
RAIL WEIGHT : 8.0 lbs / ft	

FOR TOTAL PULL-OUT FORCE ON RAIL BRACKET,  
eg.  $2 \times 720 = 1440$  lbf  
FOR LOCAL APPLICATION OF PIT LOAD,  
R1 MUST BE DOUBLED.

Rail reactions do not include safety factors. Applicable safety factors must be considered in hoistway design.



RAIL BRACKET DIMENSIONS



RAIL BRACKETS

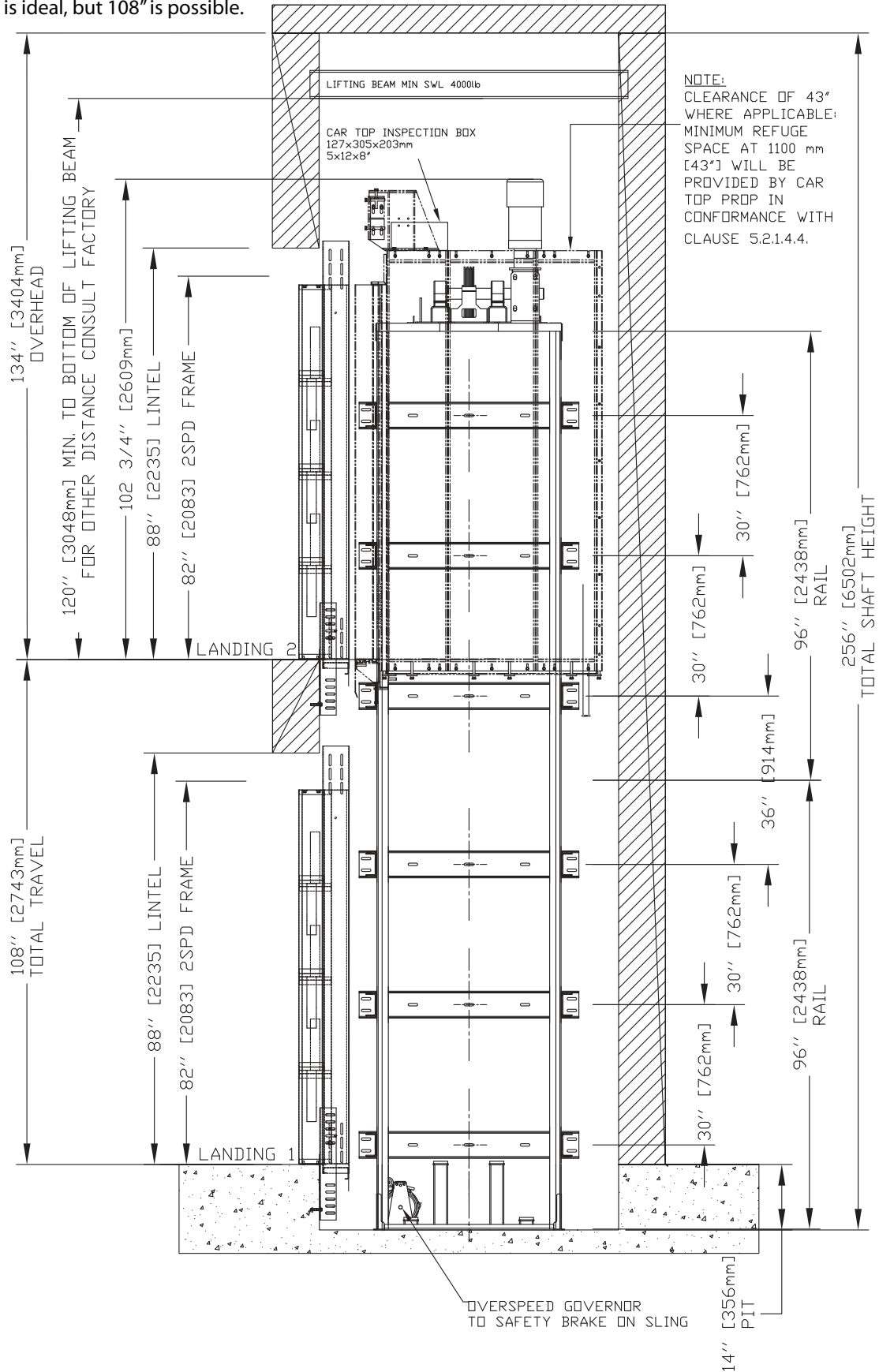
TABLE 2

PIT RE-ACTION FORCE	
R3	8000 LBS
R4	3000 LBS
R5	9500 LBS

LOADS ON PIT

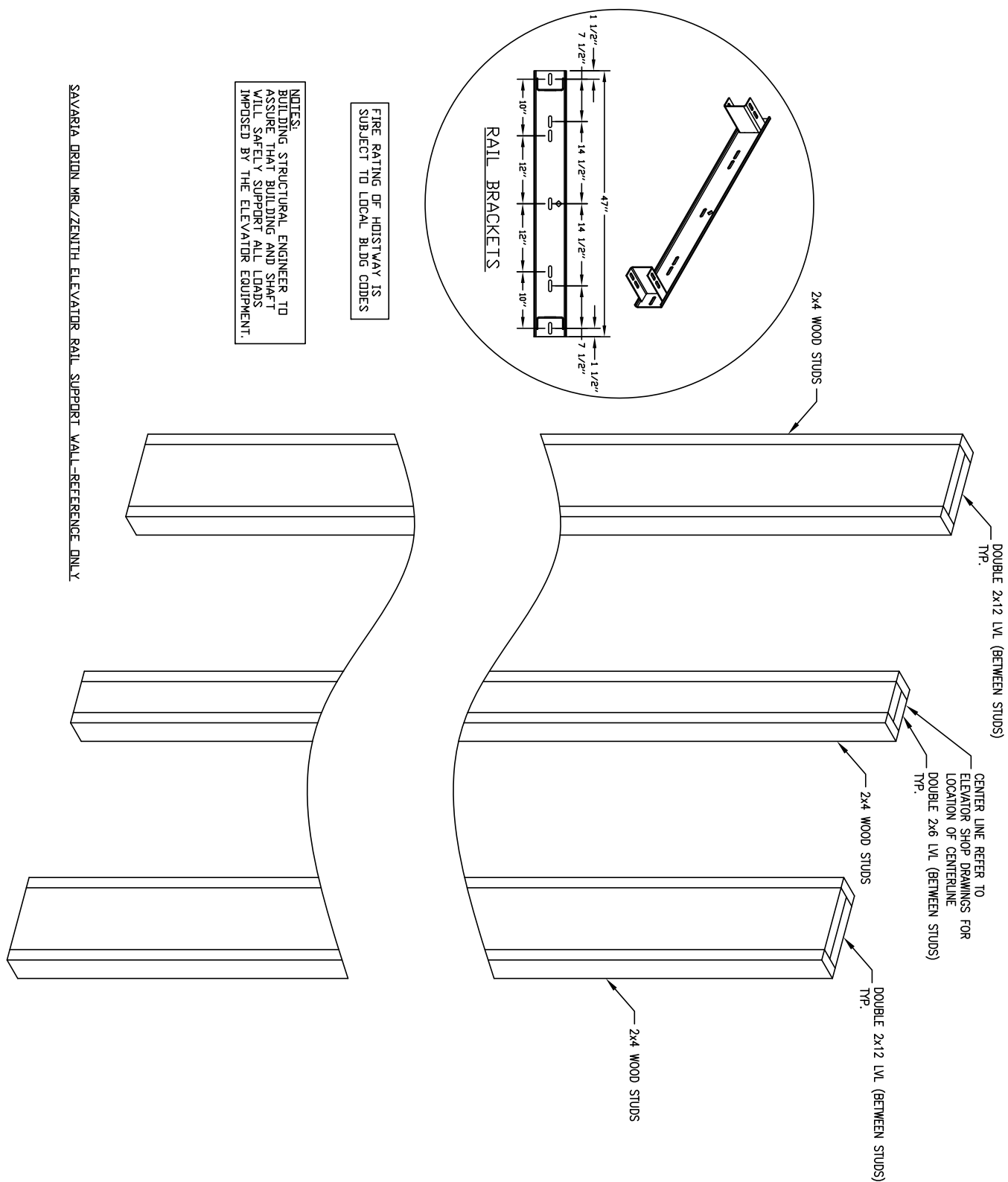
## Pit and Overhead Clearance Details

**NOTE:** 134" overhead is for new building.  
120" overhead is ideal, but 108" is possible.

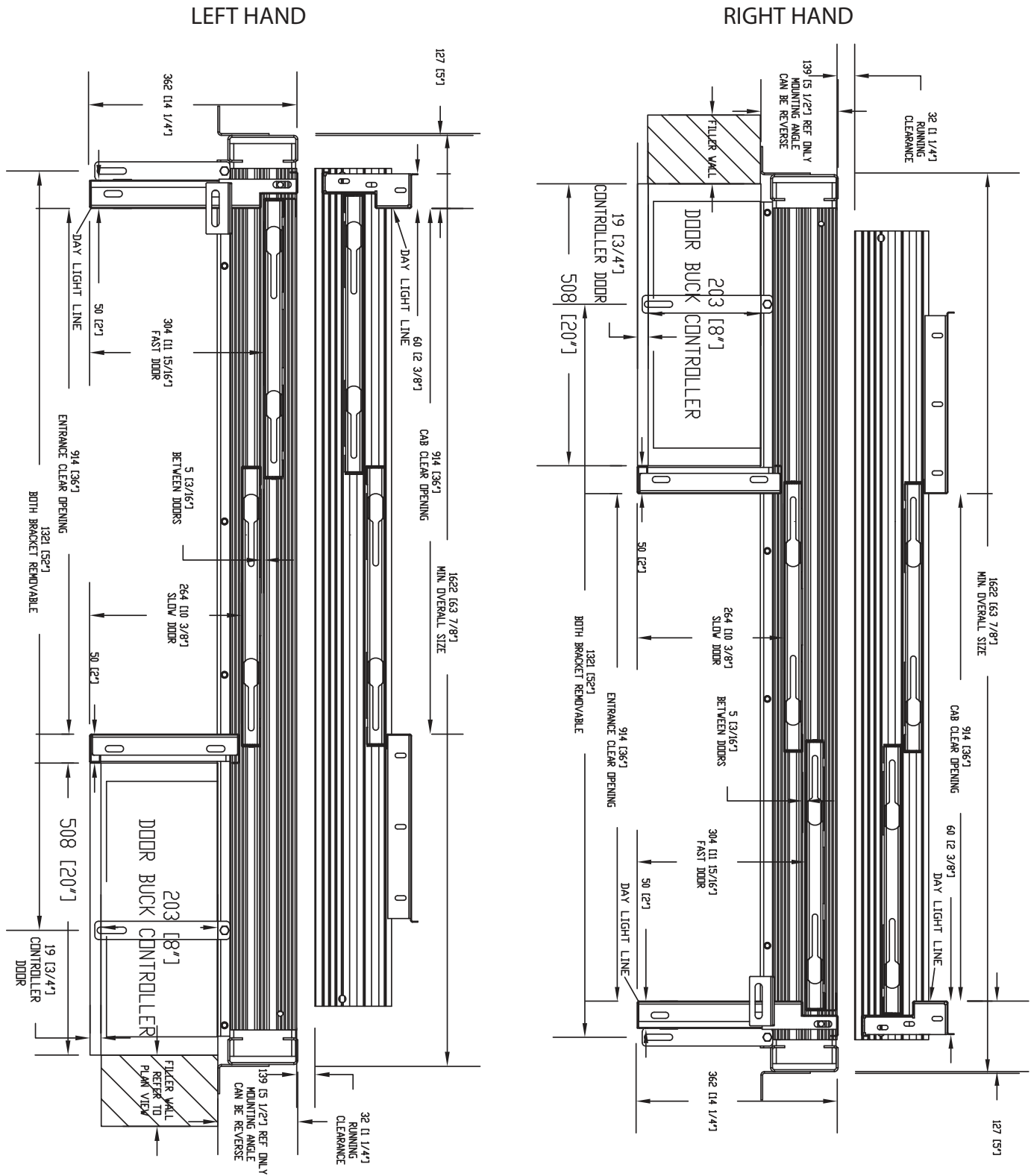




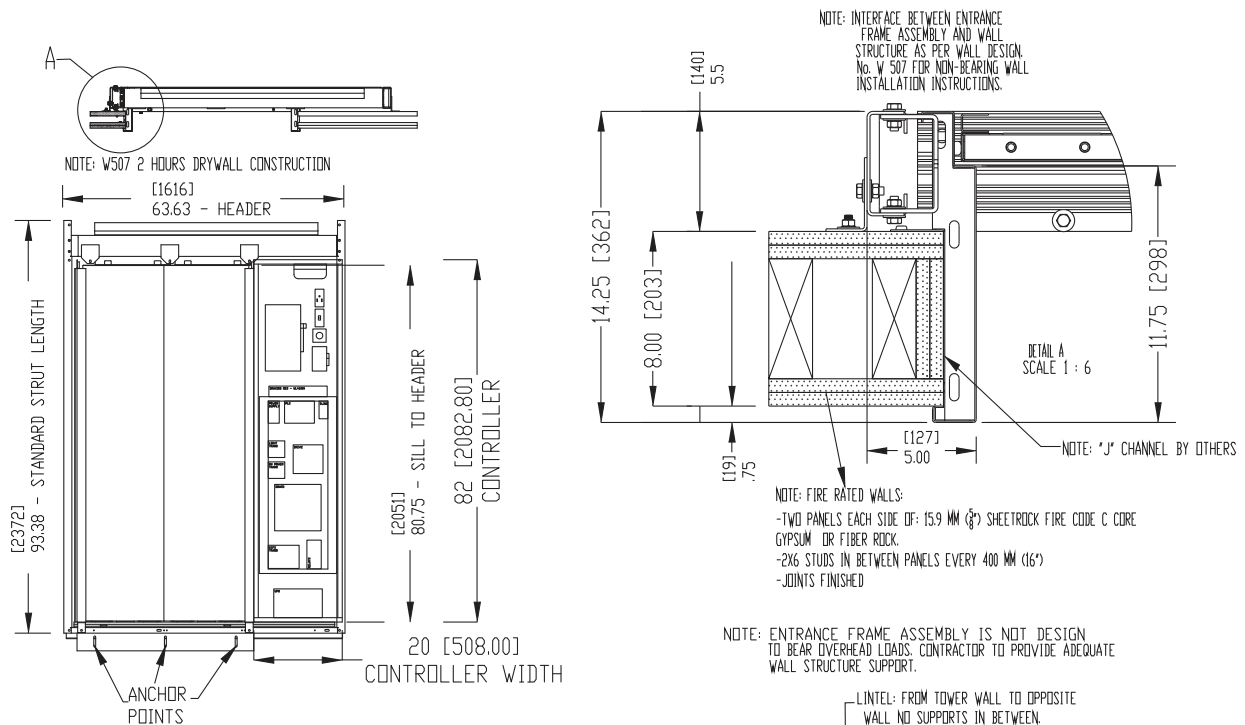
# Rail Support Wall Structure



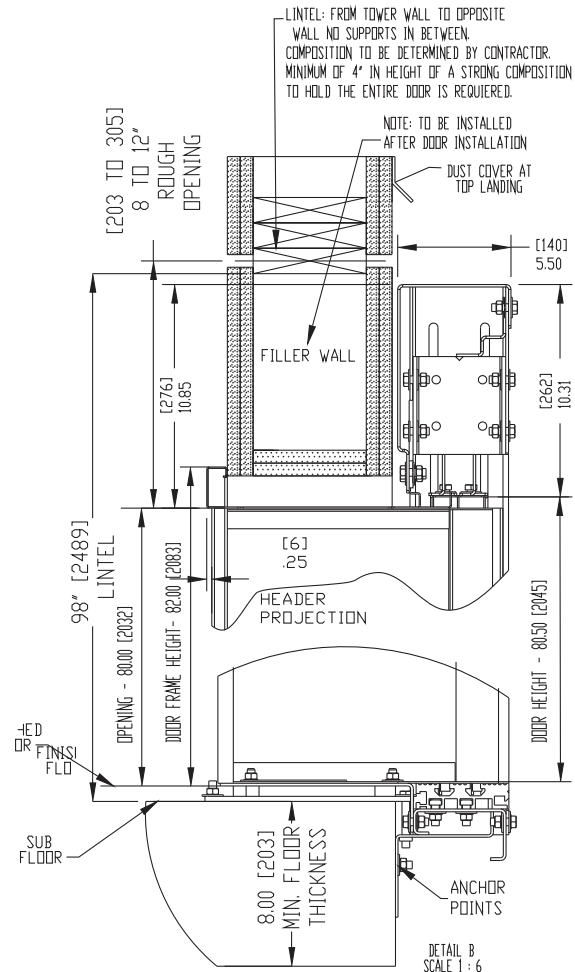
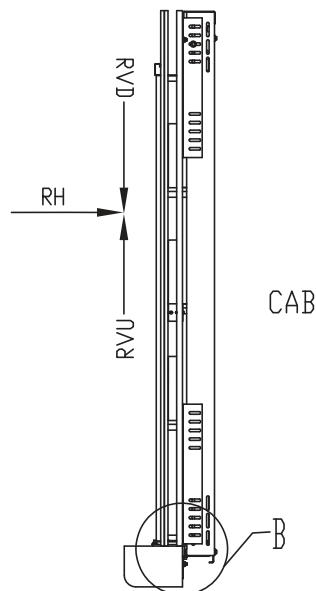
# Entrance Mounting Details (Controller Landing) Sheet 1 - Two-Speed Doors with Drywall Construction



# Entrance Mounting Details (Controller Landing) Sheet 2 - Two-Speed Doors with Drywall Construction

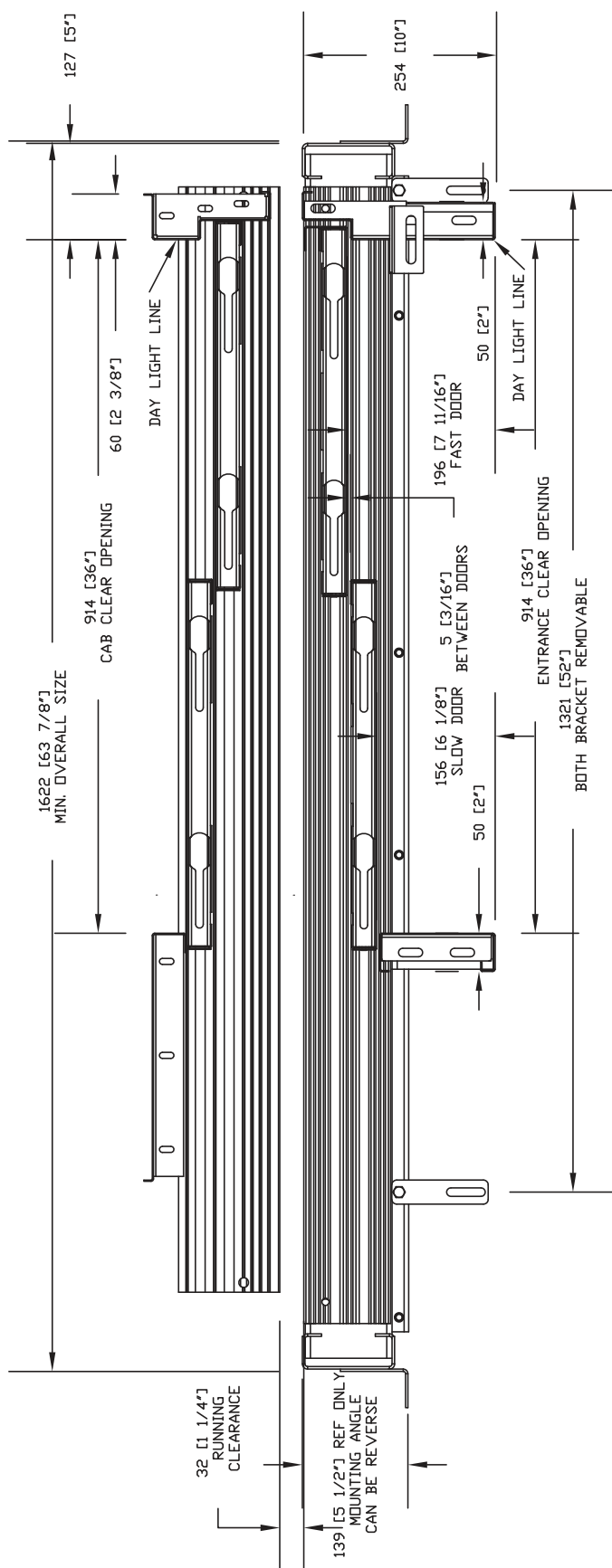


ENTRANCE LOADS ON BUILDING  
 RH = 5000 N (1125 lbf)  
 RVD = 1550 N (350 lbf)  
 RVU = 1000 N (225 lbf)  
 PER SECTION 2.11.11.8.

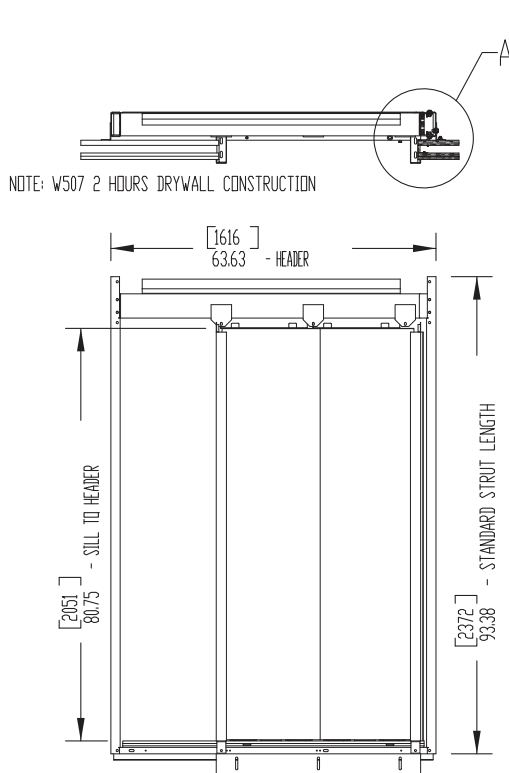


**Contractor please note that grouting at the sill may be required after the door frames are set.**

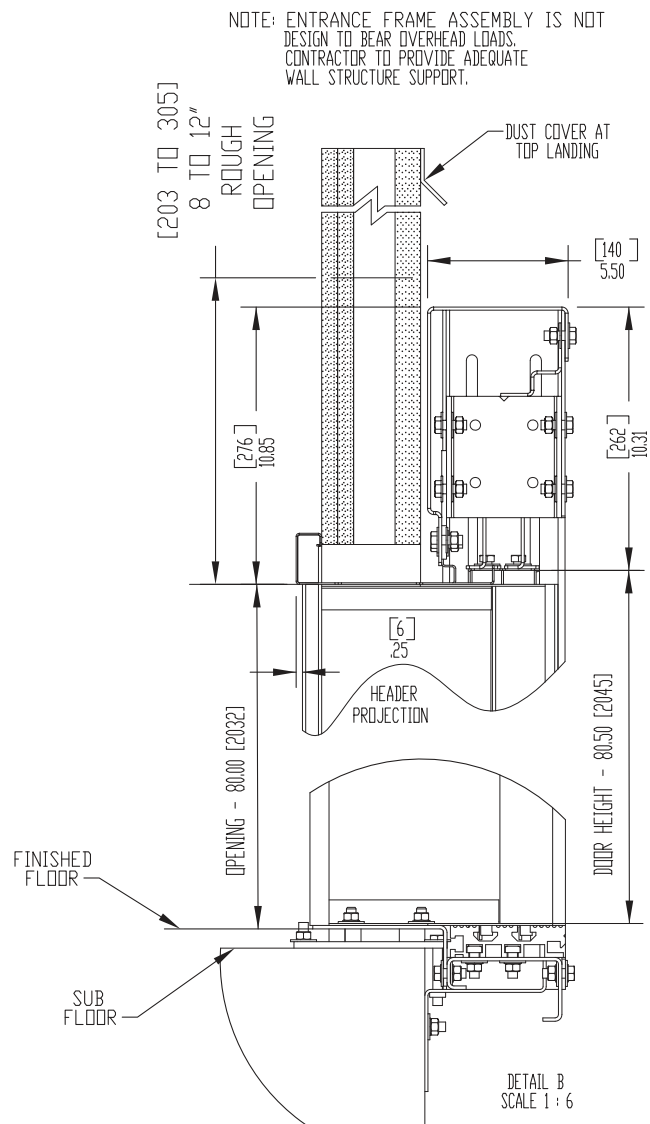
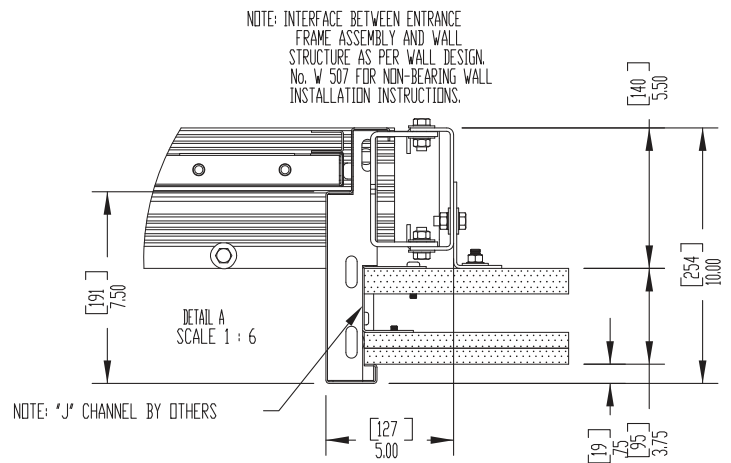
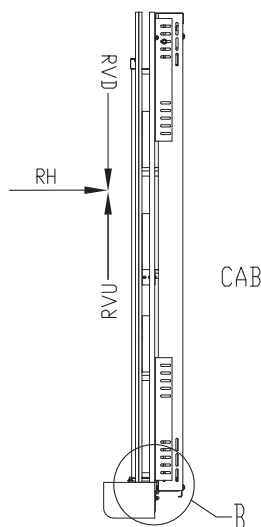
# Entrance Mounting Details (Without Controller) Sheet 1 - Two-Speed Doors with Drywall Construction



# Entrance Mounting Details (Without Controller) Sheet 2 - Two-Speed Doors with Drywall Construction

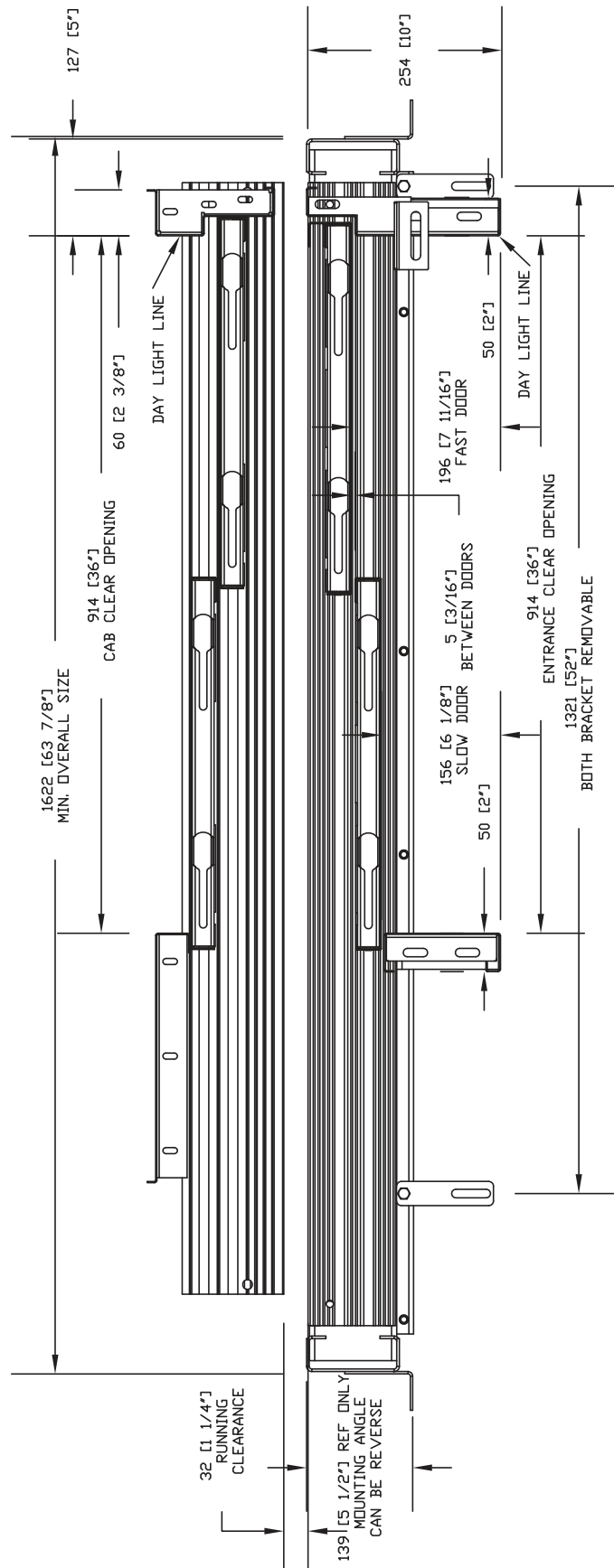


ENTRANCE LOADS ON BUILDING  
 RH = 5000 N (1125 lbf)  
 RVD = 1550 N (350 lbf)  
 RVU = 1000 N (225 lbf)  
 PER SECTION 2.11.11.8.

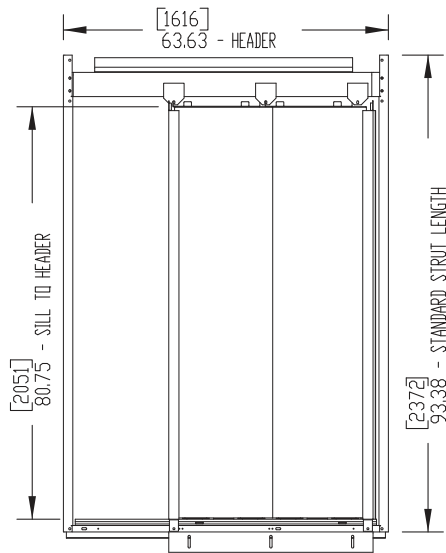
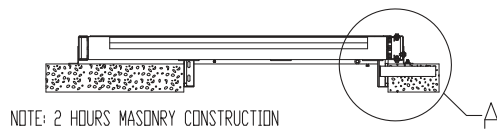


**Contractor please note that grouting at the sill may be required after the door frames are set.**

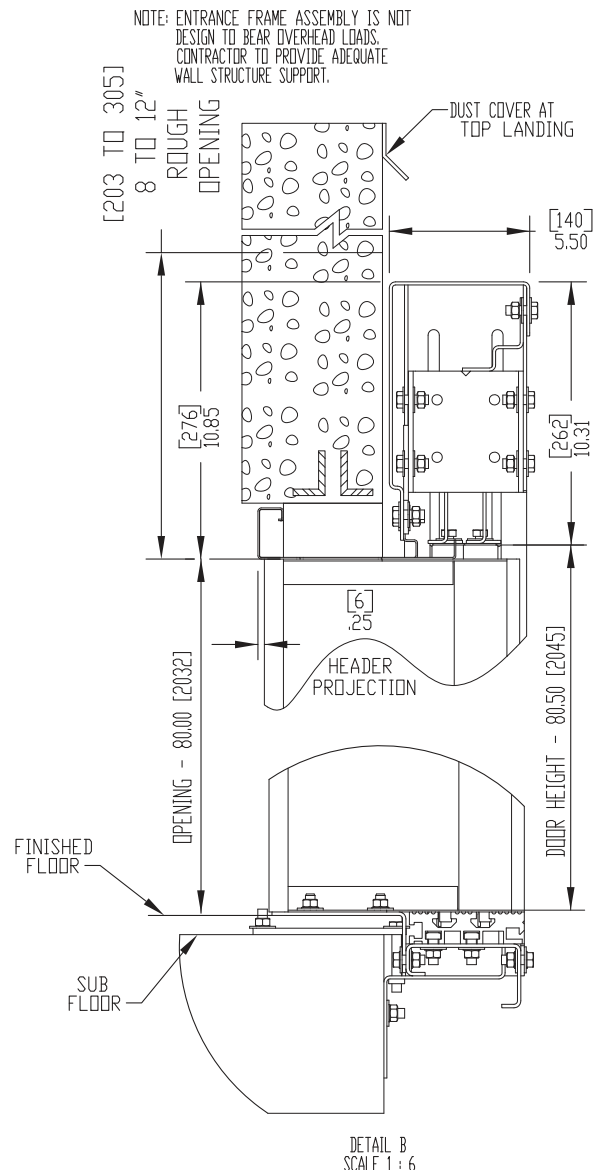
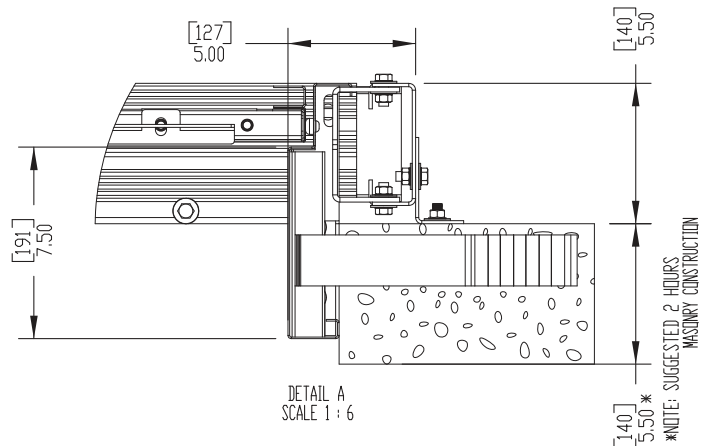
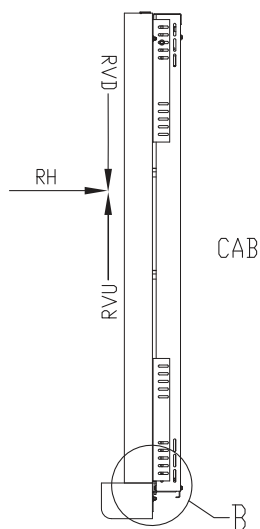
# Entrance Mounting Details (Without Controller) Sheet 1 - Two-Speed Doors with Masonry Construction



# Entrance Mounting Details (Without Controller) Sheet 2 - Two-Speed Doors with Masonry Construction

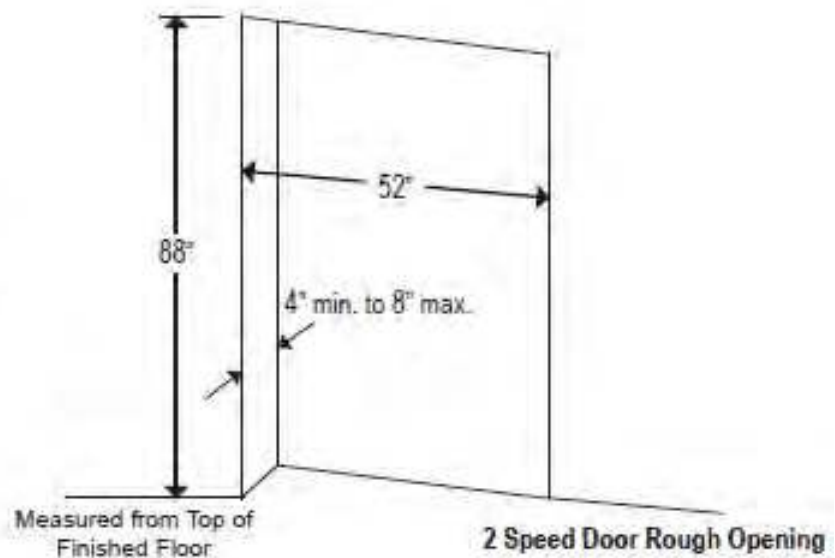
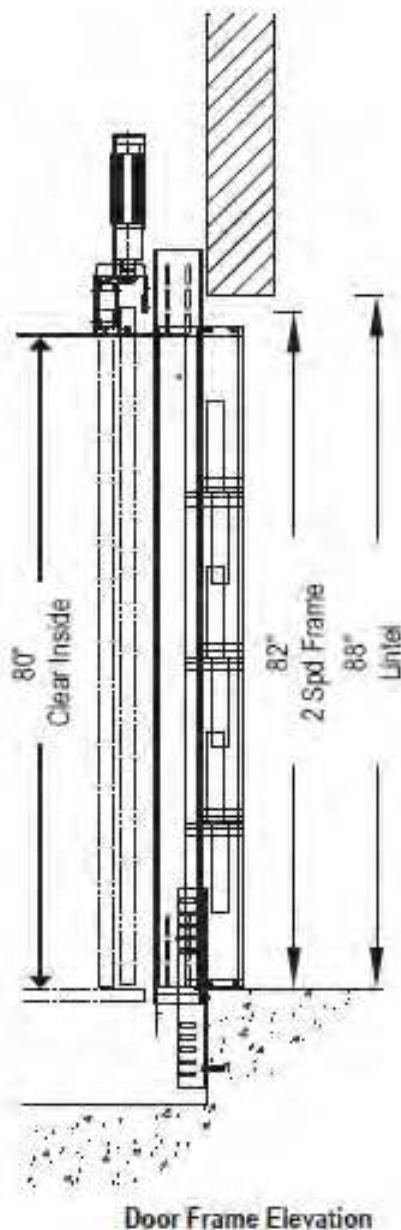


ENTRANCE LOADS ON BUILDING  
 RH = 5000 N (1125 lbf)  
 RVD = 1550 N (350 lbf)  
 RVU = 1000 N (225 lbf)  
 PER SECTION 2.11.11.8.



**Contractor please note that grouting at the sill may be required after the door frames are set.**

## Two-Speed Doors and Guide Rail Information

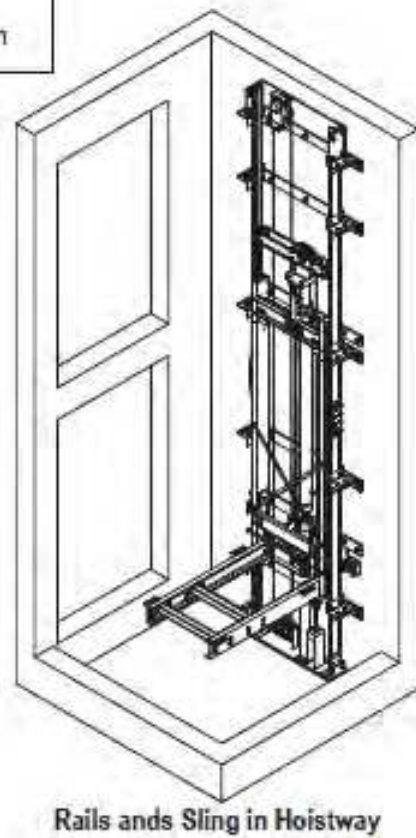


**For Metric Equivalents**  
Multiply inches times 25.4 for mm

**Example:**  
 $40.25" \times 25.4 = 1022.35 \text{ mm}$

### Notes:

1. See hoistway requirements for the location of the door centerline.
2. Door panels and frame are primed for painting.



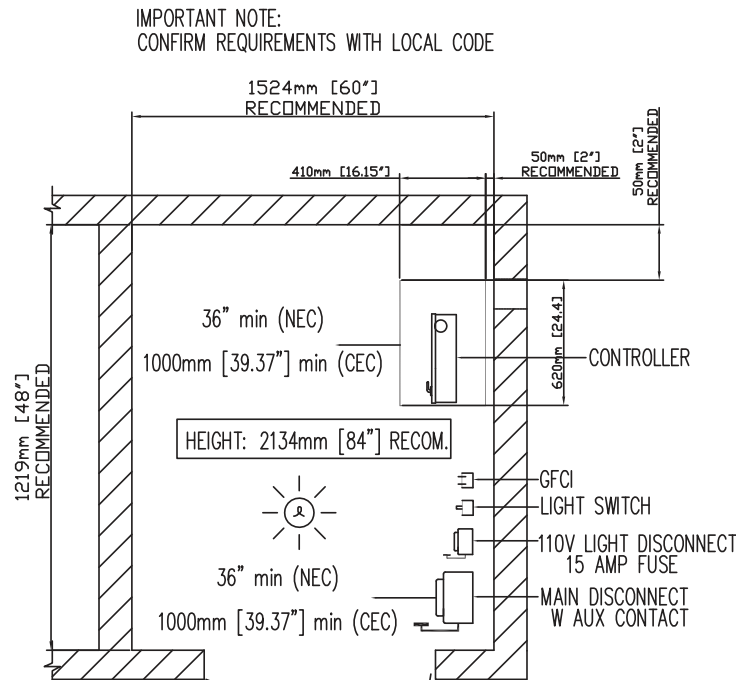


The floor plan illustrates the layout of the 1000 Series Control Room, which is 508 units wide and 2082.8 units long. The room is divided into several functional areas:

- Top Section:** Contains a large rectangular table, a smaller table, and a control console with a circular display and a small rectangular unit.
- Braking Resistor:** A large rectangular unit labeled "BRAKING RES - ULV1000" is located below the top section.
- Central Equipment Area:** This section includes a PSU, PLC, COMM, WFI, and a V1000-3 SML/V1000-1 LRG unit. Below these are NP, BK1, BK2, and P units. A "RELAY BOARD #1 BELOW" and "RELAY BOARD #2 ABOVE BDRP-BP" are also shown.
- Bottom Section:** Features a CCFX, LXF, EPXF, and ETSD BOARD. A "FT BLOCKS" unit is located near the center. A "FSW" unit is positioned below the relay boards. A "BDRP 5A" unit is located near the bottom right.
- Dimensions:** The overall width is 508 units. The overall length is 2082.8 units. A specific section of the room is 1727.2 units long, and a smaller section is 68.00 units long.

## Machine Room Specifications (if Controller Located Remotely)

- Machine room must be built in accordance with elevator manufacturer and applicable building codes and regulations.
- A convenience outlet of 115 VAC 15 Amp single-phase with G.F.I. shall be located next to the light switch in the machine room (provided and installed by others).
- Provide lockable, in open position, fused disconnect switches located adjacent to the elevator controller. Fusing must be selectively coordinated. Fuse either 208V three-phase w/30 Amp or 240V single-phase w/40 Amp service; fuse 120V for 15 Amp service for cab lighting. (Must comply with applicable codes.)
- The electrical circuit provided shall be either 30 Amp 208V three-phase or 40 Amp 240V single-phase, dedicated circuit with equipment ground. The circuit shall terminate on the line side terminal lugs of the disconnect. The electrical circuit is provided and installed by others.
- Disconnect switch to have auxiliary normally open interlock switch. Interlock equal to Square D EK-300-Z.
- 30" wide x 36" deep work space required in front of the disconnects and the elevator controller.
- Machine room lighting shall be a minimum of 19 foot-candles (204 lux) at working surfaces. The switch for the light must be within 18" of the strike side of the machine room door. The light must be guarded to prevent accidental breakage or contact with the hot bulb. The switch, light, wiring, and guard are provided and installed by others.
- A telephone line circuit is to be provided and installed by others. This circuit shall be brought to the machine room controller in conduit. This circuit must be connected to a dedicated outside line or a 24 hour central exchange.
- The elevator controller dimensions - 17.25" wide x 40" high x 7.5" deep with 39" clear space in front.
- Machine room access door must be self closing, self locking, key locked and have a spring return latch.
- Consult local building codes for door construction. The door and hardware are both provided and installed by others.
- Machine room is required to be free of all pipes, wiring and obstructions not related to the operation of the elevator. Provide a 4 inch conduit from the lift shaft to the remote machine room.



NOTE A:  
POSITION OF DOORS AND COMPONENTS CAN VARY  
AS LONG AS THE MINIMUM DISTANCE IN FRONT OF COMPONENTS IS RESPECTED

NOTE B:  
A RACEWAY BETWEEN THE MACHINE ROOM AND HOISTWAY WILL NEED TO BE PROVIDED.  
CONSULT YOUR INSTALLATION COMPANY FOR SIZE AND LOCATION

## Provisions By Others

### Hoistway

- The hoistway must be in accordance with the "Safety Code for Elevators and Escalators" (ASME A17.1) and all state and local codes.

### Plumb Hoistway

- Due to close running clearances, the owner/agent must ensure that the hoistway and pit (where provided) are level, plumb and square and are in accordance with the dimensions on the installation (shop) drawings.

### Minimum Overhead Clearance

- Owner/agent must ensure the minimum overhead clearance is in compliance with codes.

### Construction Site

- Owner/agent to provide all masonry, carpentry and drywall work as required and shall patch and make good (including finish painting) all areas where walls/floors may need to be cut, drilled or altered in any way to permit the proper installation of the lift.

### Dimensions

- Contractor/customer to verify all dimensions and report any discrepancies to our office immediately.

### Structural

#### Floor Support/Wall Loads

- Structure to anchor a crank shaft and safety harness, where applicable/needed, to be provided by contractor. Contractor to assure that the building and shaft will safely support all loads imposed by the lift equipment. Refer to the tables on the installation (shop) drawings for loads imposed by the equipment.

### Electrical

#### Power Supply

- Power supply with a lockable fused disconnect with auxiliary contact to brake the battery feed, or circuit breakers with a 3-pole breaker for battery feed required in compliance with electrical code. See disconnect details below.

Disconnect Switch Types & Accessories	Cutler Hammer	Federal Pioneer	Siemens
<b>Single Phase</b>			
2 Pole 240V 1 PH	1HD221N	1322SN	ID321
Required Auxiliary Contact	DS16CP	E1K-1AEV-W94	MSSAK 116
Required Type "D" Fuse (Buss type "FRN" or equal)	2@40 amp	2@40 amp	2@40 amp
<b>Three Phase</b>			
3 Pole 208V 3 PH	1HD321N	1332SN	ID321
Required Auxiliary Contact	DS16CP	E1K-1AEV-W94	MSSAK 116
Required Type "D" Fuse (Buss type "FRN" or equal)	3@30 amp	3@30 amp	3@30 amp
<b>Cab Lighting</b>			
1 Pole Solid Neutral 120V 1 PH	GP 111N	86211	CFN 211
Required Type "D" Fuse (Buss type "T" or equal)	1@15 amp	1@15 amp	1@15 amp

### Permanent Power

- Before installation can begin, permanent power must be supplied.

### Lighting

- The illumination shall not be less than 200 LX (19 FC) at the floor level in all machinery spaces. Ensure at least 100 LX (10 FC) ambient lighting over the lift area.

### Phone

- Need a dedicated phone land line (not VOIP) for the phone, where applicable. For VOIP, please contact Savaria.

**Hall Station**

- Remote hall station (when supplied) to be installed by the owner/agent at 42" from the landing floor.

**Entrances****Fascia Panel Below Upper Level Entrances**

- Where required, fascia panel must be fastened to a solid wall and be perpendicular to the floor and walls. Hoistway fascia is not self-supporting for long, continuous runs void of entrances. Adequate support for the fascia must be provided.

**Entrance Assemblies**

- Entrance assemblies must be adjusted to align with the platform and interlock equipment. Others to allow an adequate rough opening.

**Return Walls**

- Return walls at entrances must be built in by others after entrance assemblies are in place. Entrance assembly must be securely fastened to walls by the elevator contractor.

**Lifting Beam**

- A 4000 lb SWL beam must be provided in the overhead. Beam to be positioned as shown in the elevation and plan views. For overhead of 108", position the underside of the beam at 104" and the beam must be temporary.





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