

Orion MRL

Commercial Elevator

Planning Guide

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Applicable Codes:

ASME A17.1, Section 5.2
CAN/CSA B44, Section 5.2

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** for the most current drawings and dimensions.

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
- ASME A17.1/CSA B44 2019, 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 lift.
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.

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Revision History

- 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
- December 3, 2019 – Revised drawing on page 39
- February 27, 2020 – Revised to powered emergency lowering in specs table on page 5; Changed 115V to 120V on page 50; Removed 54x54 cabs
- March 3, 2020 – Revised noise level spec on page 5
- March 11, 2020 – Revised noise level spec on page 5; Added Savaria Link to options on page 6 and to provisions by others on page 52
- May 1, 2020 – Added Note to Minimum Overhead spec on page 5 re: counterweight safety option; Added counterweight safeties to Options on page 6
- May 12, 2020 – Added new spec "floor by others (in cab)" to specs table on page 5
- May 27, 2020 – Added line to options on page 6 re: service key; Revised electrical specs on page 48
- June 17, 2020 – Added 2019 code to list above
- June 24, 2020 – Added manual lowering winch info to Electrical section of Provisions by others on page 49
- October 22, 2020 - Added heavy and excessive cycle values on page 5
- June 20, 2022 - updated temperature operation range on page 5
- August 02, 2022 - Updated cover
- December 02, 2022 - added ASEMME A17.1 2019 LU/LA Code Update to page 4.
- December 08, 2022 - revised daily cycle specifications on page 7
- May 03, 2023 - Revised specifications for rated speed, pit depth and overhead clearances.
- July 21, 2023 - Revised specifications for Ontario on page 7, revised graphic on page 39
- April 25, 2024 - Revised lighting description on page 5, added revision number
- February 5, 2025 - Revised edits throughout
- November 28, 2025 - Revised 2019 codes on page 4-5, Updated document format
- April 21, 2026 - Revised specifications on page 9

ASME A17.1 2019 LU/LA Code Update

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Summary: This document highlights two major changes on commercial elevators with respect to the ASME A17.1 2019 code year. This change brings an increase in cost, an added complexity to project management/installation, and new requirements for ongoing 24/7 remote monitoring.

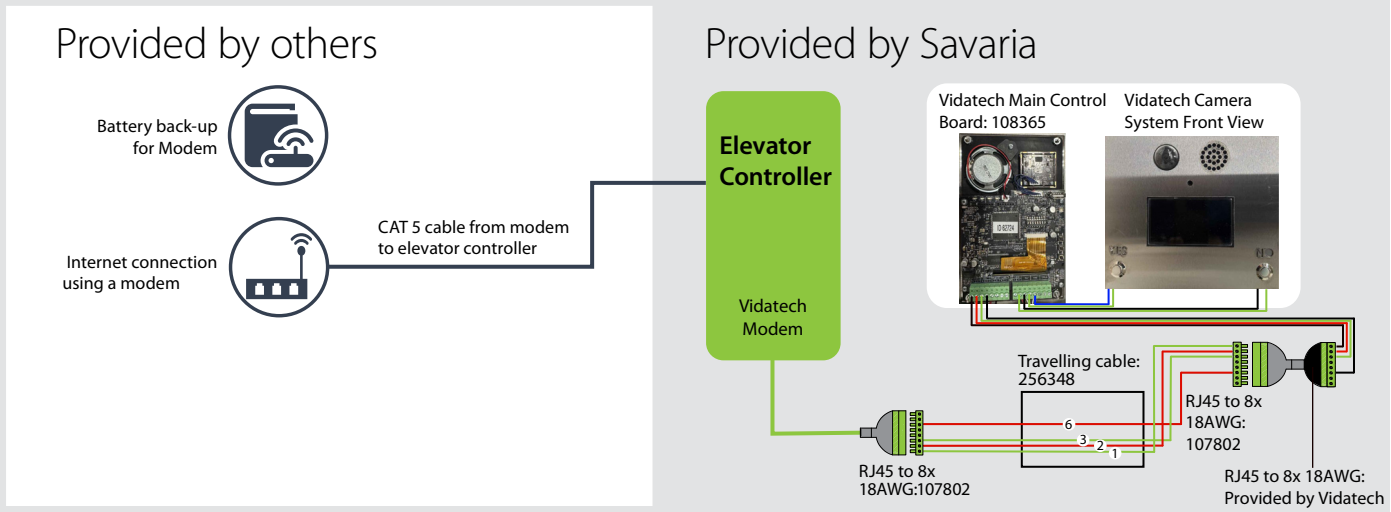
Reason for the change: Provide hearing-impaired riders with an improved method of communication with emergency services and monitor the elevator entrance space to assist approaching traffic.

Solution: The elevator will now be equipped with an audio/visual, two-way communication and 3D cab entrance monitoring device on each entrance. Remote monitoring services must be able to see the entire cab and communicate via LCD screen.

Elevator Equipment

When quoting and ordering the equipment from Savaria it is imperative that you select the correct code year. If the 2019 code is not selected, these additional items—that have a substantial cost—will not be budgeted.

Savaria provides the main components. However, there are several items that need to be supplied by others to accommodate the system.



Component	Provided by Savaria
Vidatech System: Adjustable camera, Vidatech main control board, LCD display	YES
3D cab entrance monitoring device	YES
Battery backup for modem	NO
Vidatech Modem	YES
Modem CAT5 cable	NO
Internet	NO

ASME A17.1 2019 LU/LA Code Update

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Key Points

- The supplied connection must use Internet (Modem).
- Vidatech provides VOIP (Voice over Internet Protocol) for the required phone.
- At the time of installation, the elevator contractor must set up a pre-recorded message to identify the location and note the elevator camera's Elevator ID number. This ID number is located on the back of the camera and will be provided to the owner and monitoring company.

24/7 Remote Monitoring

The monitoring company you currently recommend and/or use may not be set up to handle the new system, or even know what's involved. It's important that you understand what's needed under the new code and ensure you work with someone who has the capabilities to support this system.

Here's how it works

1. When an emergency call is received by the monitoring company, they will need to understand if the elevator in question is installed in accordance with 2019 code and has emergency audio/visual capabilities.
2. The elevator will have VOIP system. The monitoring company can either identify the unit from the incoming phone number and cross reference the camera elevator ID number on file, or the pre-recorded message will notify the monitoring company of which specific elevator and location is dialing in.
   The elevator contractor must set up the pre-recorded message at time of install. The message can include the business name, building address. If there are multiple elevators in the same location, the pre-recorded messages mus be set up to uniquely identify each unit.
3. If there is no audio communication on the received emergency call, the monitoring company will need to view the inside of the elevator cab by going online to **Vidatechstorm.com** and inputting the specific Elevator ID number.
4. Once connected through Vidatech, the monitoring company will be able to see inside the elevator and communicate with any riders using text on the LCD screen and yes and no buttons on the COP.

Other Useful Links

Link to Vidatech website Elevator ID Page:
https://www.vidatechstorm.com/

3D Cab Entrance Monitoring Device

The monitoring device is mounted inside the cab above the entrance.



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Technical Specifications

Specification	Specification Data
Load capacity	1400 lb (635 kg)
Rated speed	25 ft/min (0.13m/sec), 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
Floor by others (in cab)	5/8" (15.9 mm) maximum
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) - 5%-90% relative humidity (non-condensing)
Heat generated by motor	~ 2550 BTU/hr
Distance between 2 landings	18'' (457 mm) minimum
Noise level (typical installation)	54 dBA (up direction); 53 dBA (down direction) Measured 1m in front of the motor (no hoistway) with 600 lb (272 kg) in the cab
Daily cycle	Maximum starts in 1 hour on standard installation: 45 (not to exceed max daily cycle) Normal: 200 Heavy: 250 Excessive: 300 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 for 25ft/min (0.13 m/sec) 17'' (432 mm) minimum for 30 ft/min (0.15 m/sec) 96'' (2438 mm) maximum **NOTE**: Ontario requires 17'' (432 mm) min pit for all configurations
Minimum overhead clearance	108'' (2743.2 mm) for 25 ft/min (0.13m/sec) 111'' (2819 mm) for 30 ft/min (0.15 m/sec) **NOTE**: If there is habitable space below the hoistway, code requires you to install the Counterweight Safety Option. With the Counterweight Safety Option installed, the minimum overhead becomes 112.5'' (2858 mm) or an additional 4.5'' (114 mm) of pit depth is required. For new construction the minimum overhead of 134'' (3404 mm) still applies. **NOTE**: Ontario requires a 111'' (2819 mm) min overhead for all configurations

Specification	Specification Data
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 Powered emergency 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
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 Hands-free telephone Recessed stainless steel or brass telephone cabinet Savaria Link remote monitoring Counterweight safeties

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 - FOR REMOTE MACHINE ROOM

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
1 Phase 5 H.P. Pump Unit			
2 Pole Solid Neutral 240V 1 PH	1HD222N	1622SN	ID322
Required Auxiliary Contact	DS16CP	E1K-1AEV-W94	MISSAK 116
Required Type "D" Fuse (Buss type "FRN" or equal)	2@40 amps	2@40 amps	2@40 amps
3 Phase 5 H.P. Pump Unit			
2 Pole Solid Neutral 240V 1 PH	1HD321N	1332SN	ID321
Required Auxiliary Contact	DS16CP	E1K-1AEV-W94	MISSAK 116
Required Type "D" Fuse (Buss type "FRN" or equal)	3@30 amps	3@30 amps	3@30 amps
Cab Lighting			
1 Pole Solid Neutral 120V 1 PH	GP 111N	86211	CFN 211
Required Type "D" Fuse (Buss type "T" or equal)	1@15 amps	1@15 amps	1@15 amps

Power Supply - FOR MACHINE ROOMLESS (MRL) BY SAVARIA

30 amp three-phase supply or 40 amp single-phase supply (main line)

120V, 15 amp dedicated line (for cab lights)

120V, 15 amp dedicated line for machine room light and GFCI

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, including pit and top of hoistway. 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.

SAVARIA LINK OPTION
If you have the Savaria Link Ethernet remote monitoring option, ensure that you have an Ethernet connection with Internet capability in the vicinity of the unit's controller.

If you have the Savaria Link Wireless remote monitoring option, ensure that you have a wireless signal with Internet capability in the vicinity of the unit's controller.

DRAWINGS

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 120 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.

Machine Room Dimensions

NOTICE

Confirm Requirements with local codes
Position of Doors and Components are subject to vary. Maintain minimum distance in front of components.
Raceway between the machine room and hoistway will need to be provided. Consult your installation company for size and location.

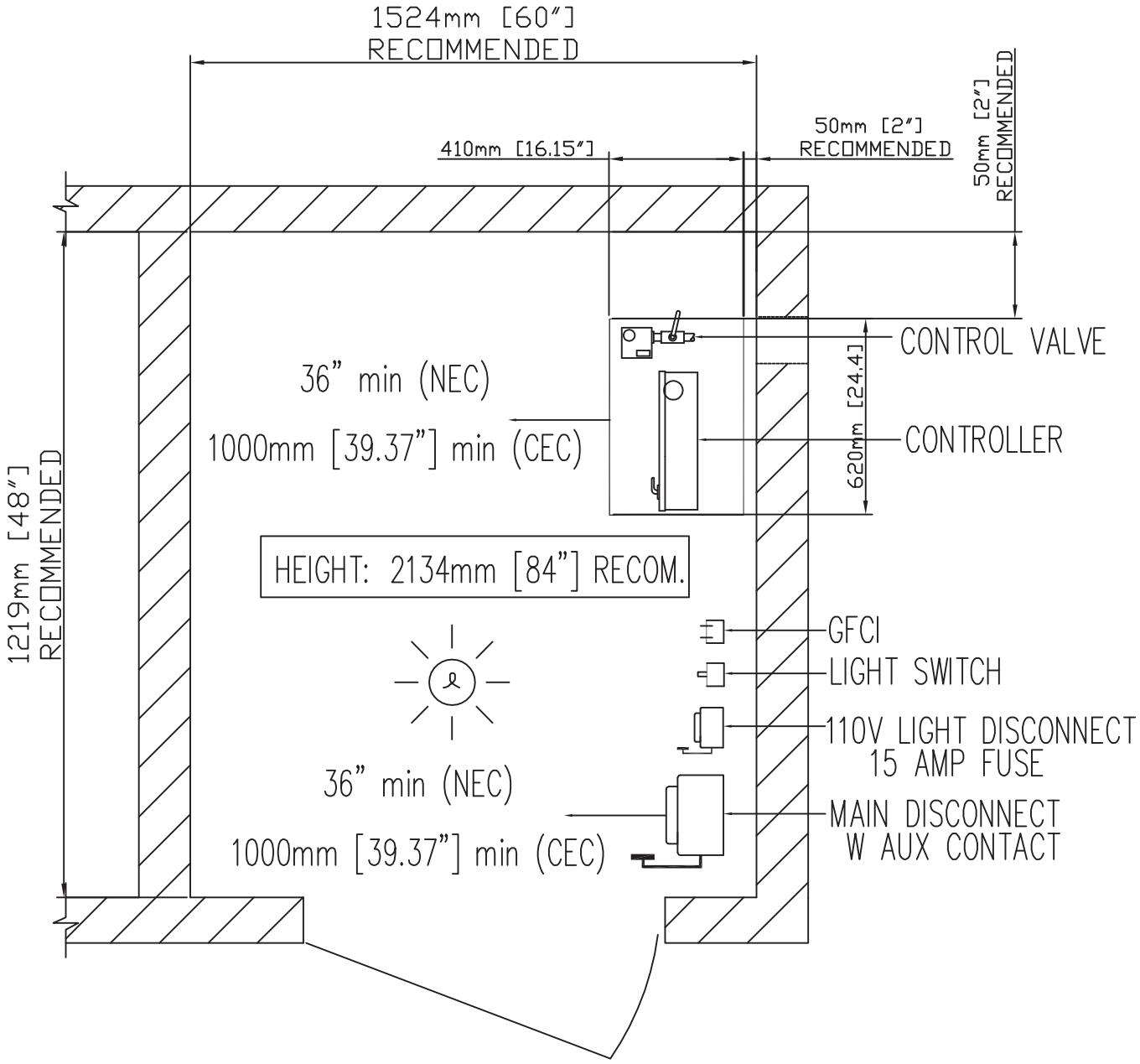


Figure 1: Machine Room Dimensions

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.

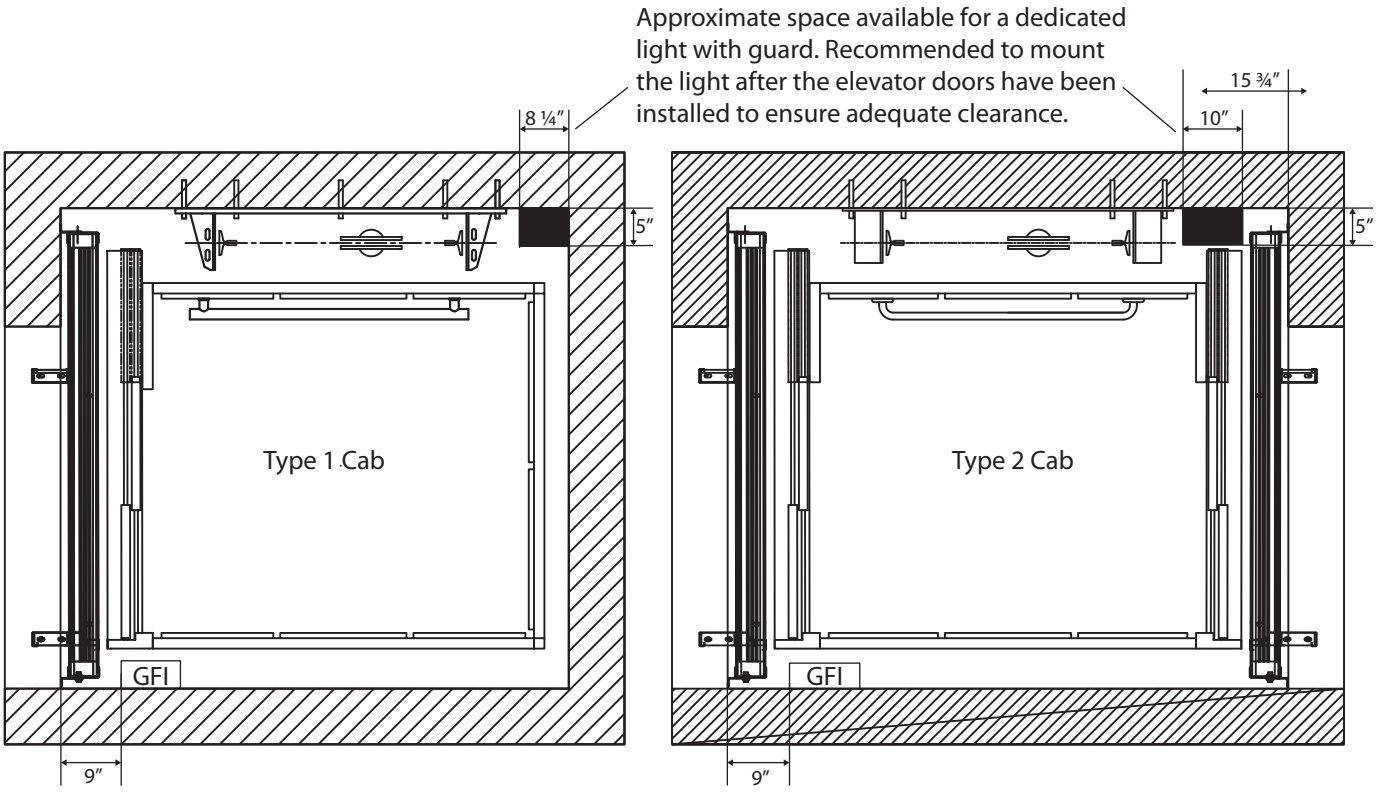


Figure 2: Hoistway Measurements

42" x 54" Type 1L Orion17 Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

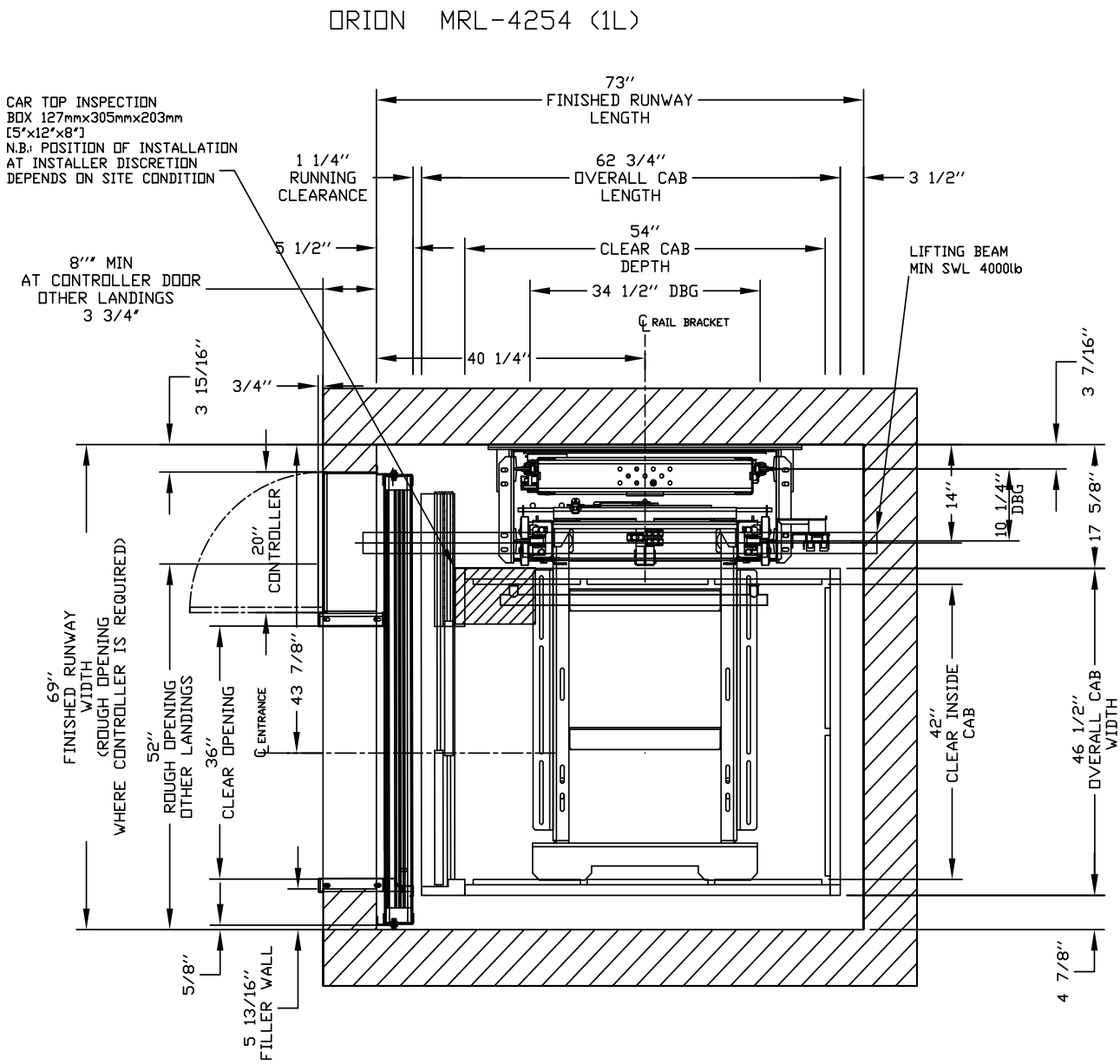


Figure 3: 42" x 54" Orion17 Cab Type 1L

42" x 54" Type 1R Orion17 Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

IMPORTANT

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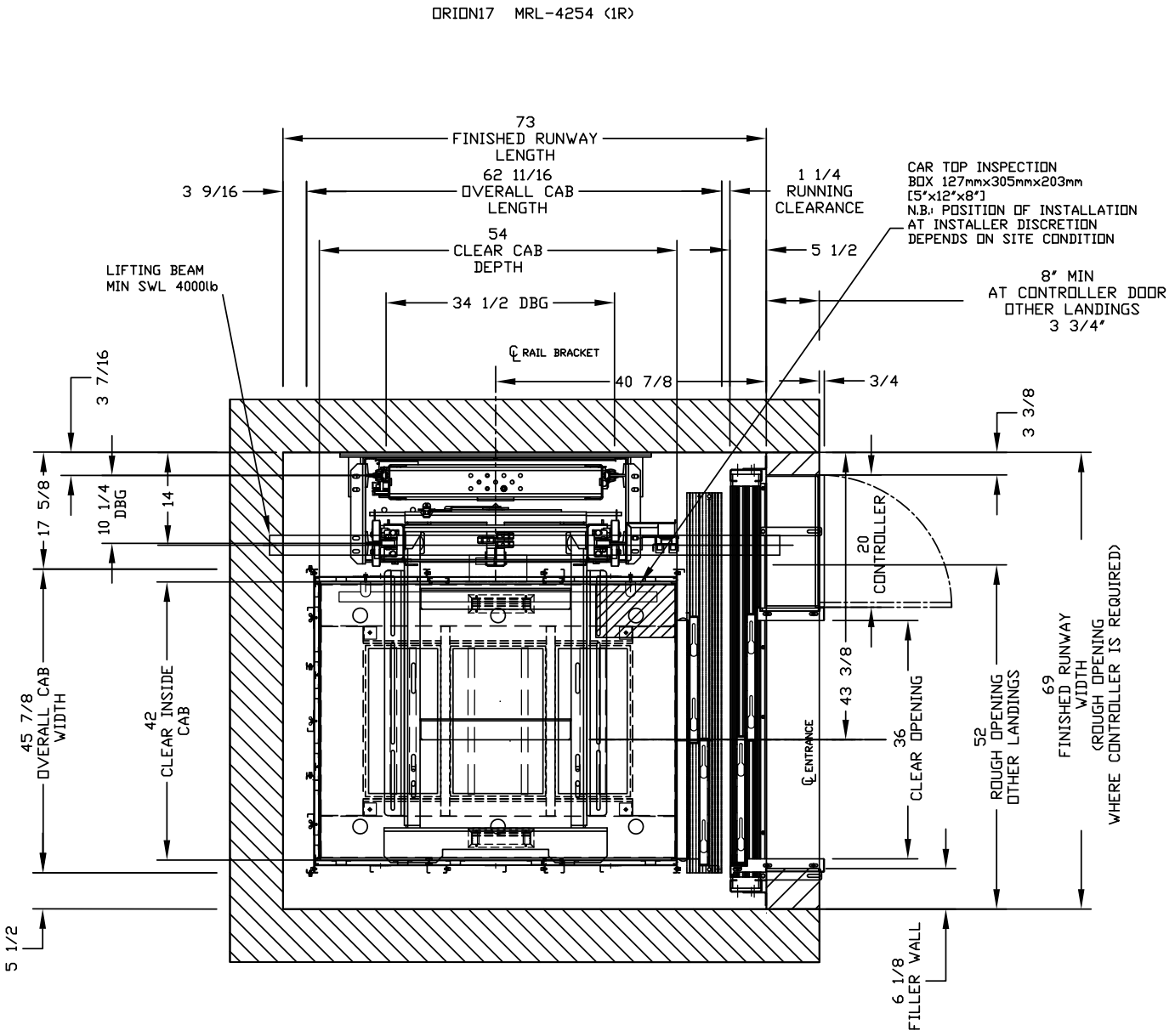


Figure 4: 42" x 54" Orion17 Cab Type 1R

42" x 54" Type 2 Orion17 Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

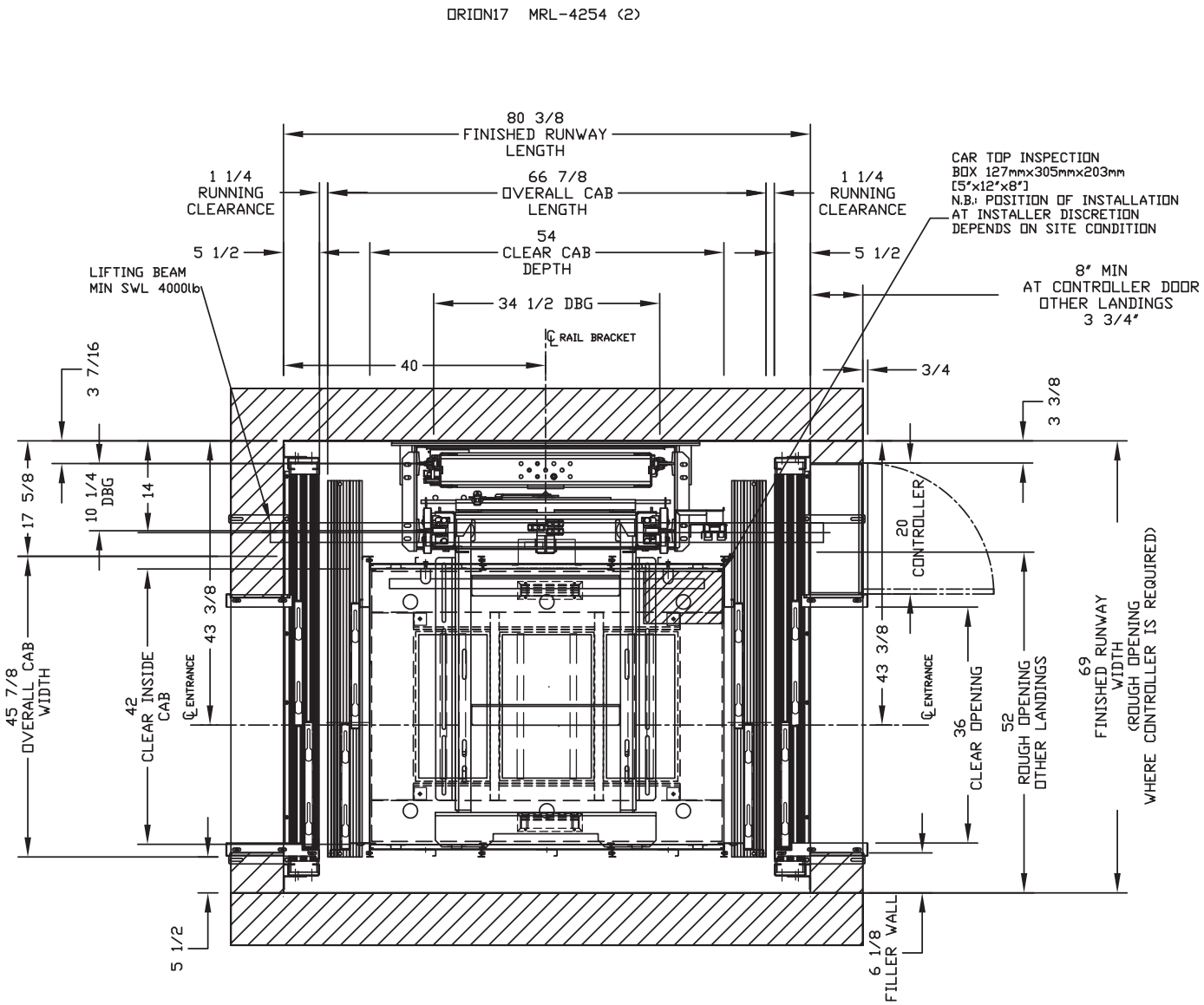


Figure 5: 42" x 54" Orion17 Cab Type 2

42" x 60" Type 1L Orion17 Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

IMPORTANT

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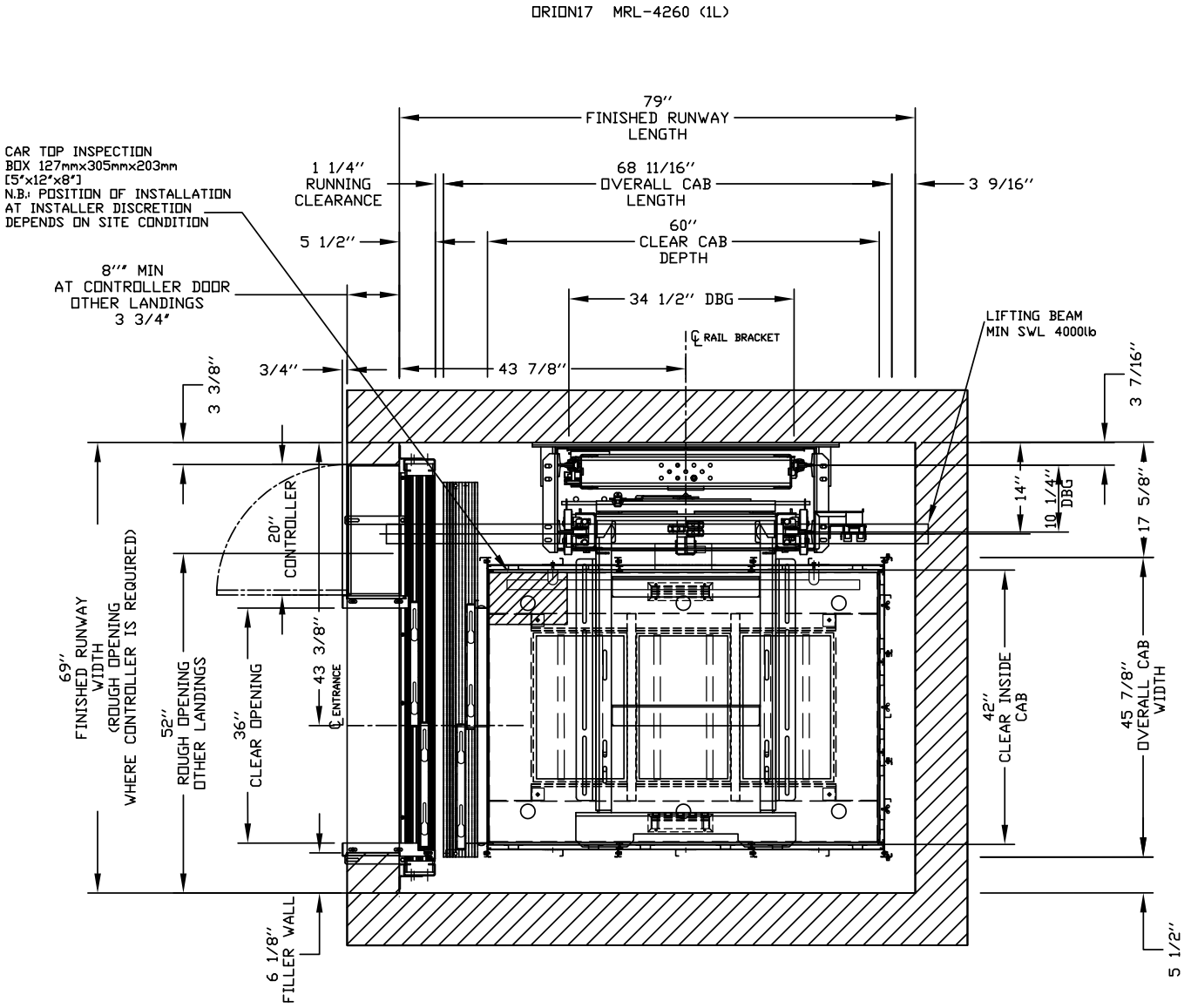


Figure 6: 42" x 60" Orion17 Cab Type 1L

42" x 60" Type 1R Orion17 Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

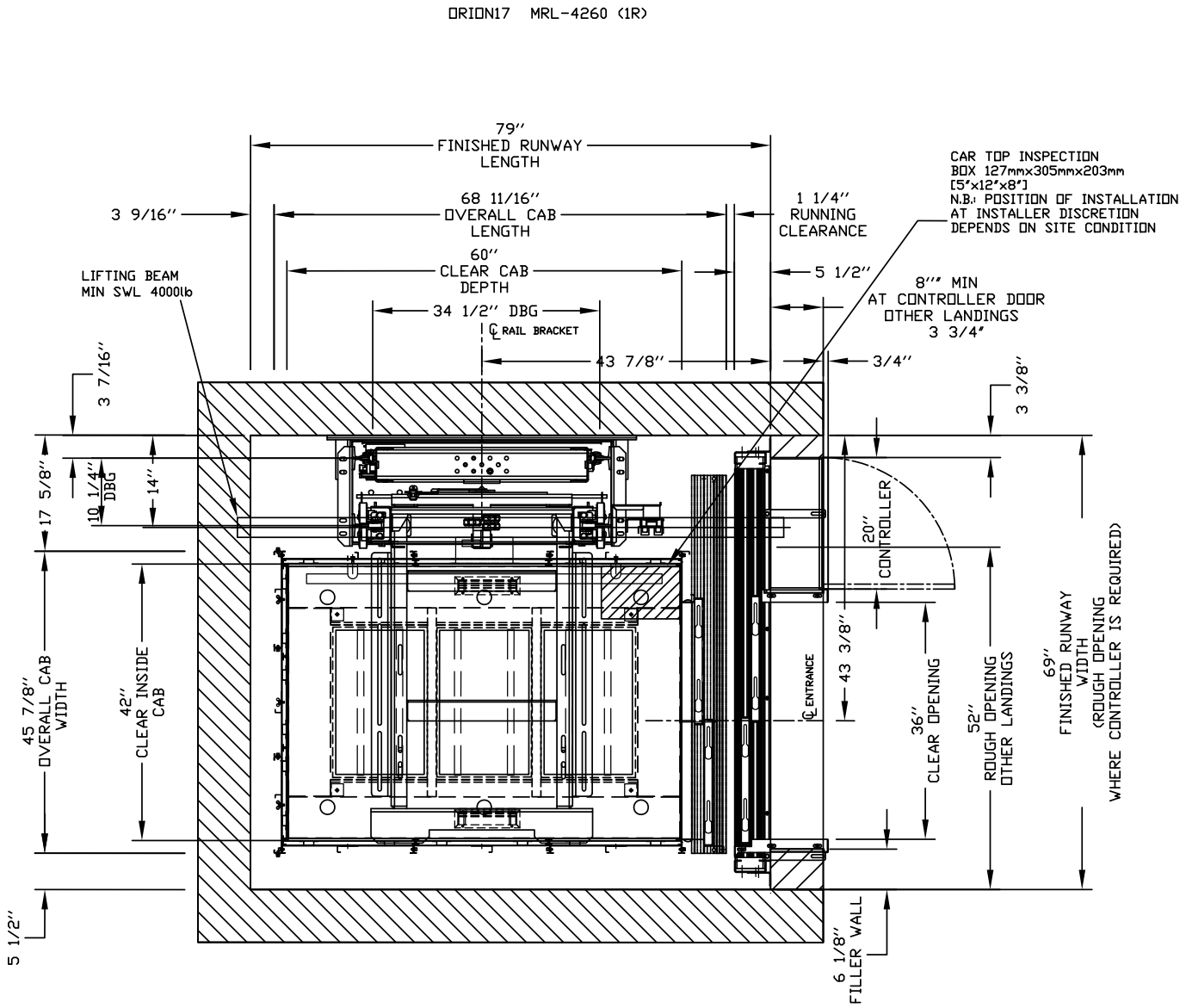


Figure 7: 42" x 60" Orion17 Cab Type 1R

42" x 60" Type 2 Orion17 Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

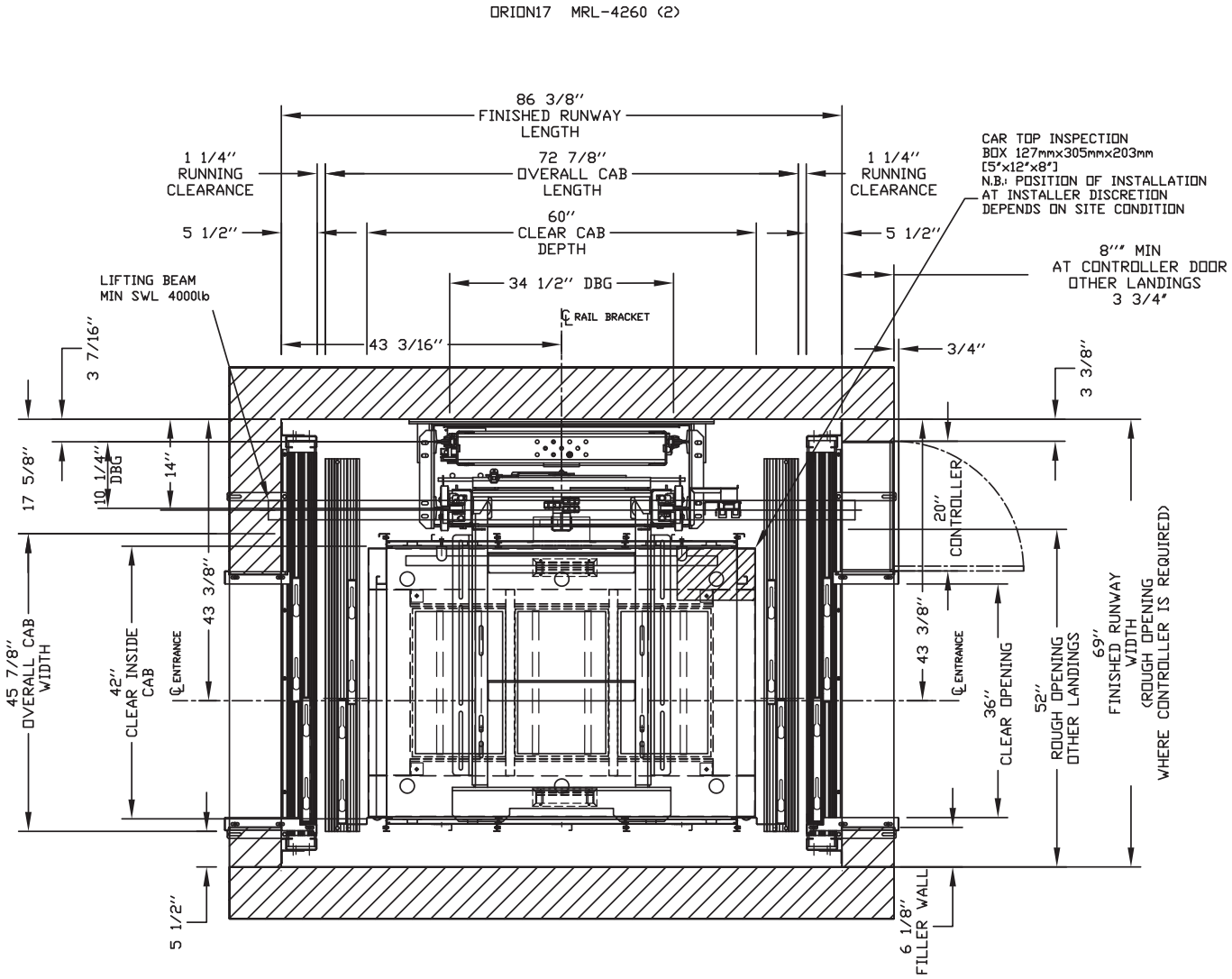


Figure 8: 42" x 60" Orion17 Cab Type 2

48" x 54" Type 1L Orion17 Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

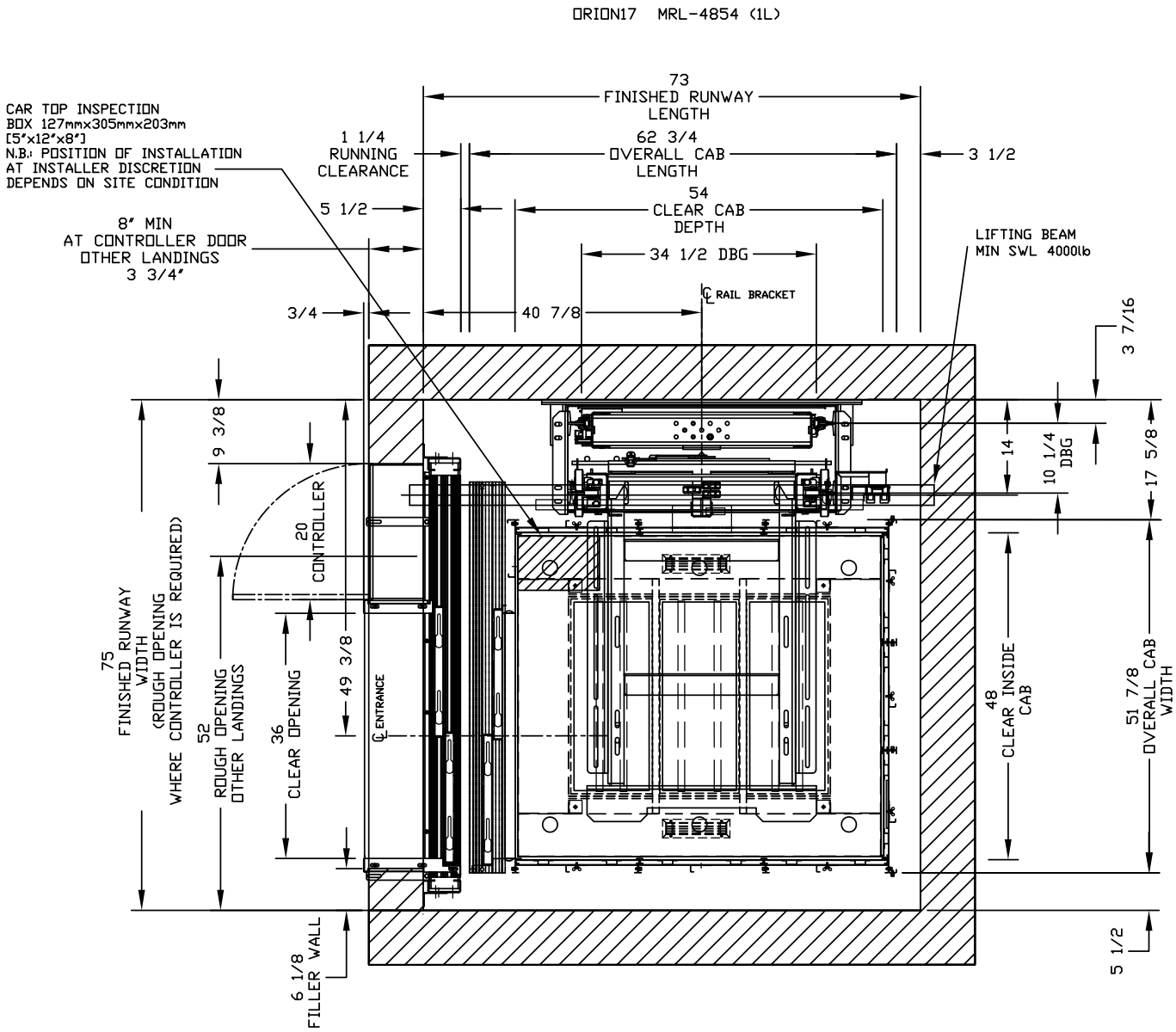


Figure 9: 48" x 54" Orion17 Cab Type 1L

48" x 54" Type 1R Orion17 Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

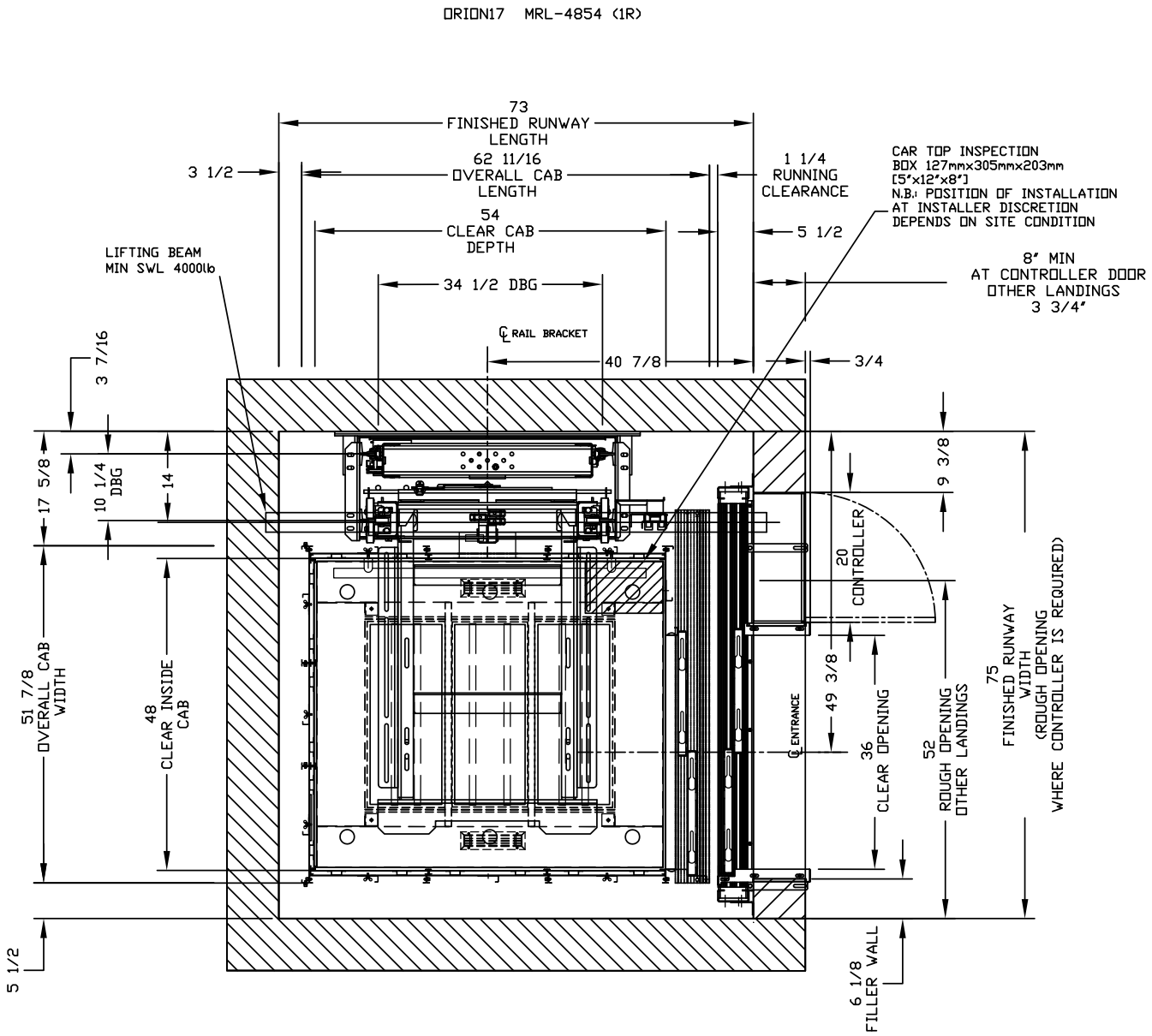


Figure 10: 48" x 54" Orion17 Cab Type 1R

48" x 54" Type 2 Orion17 Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

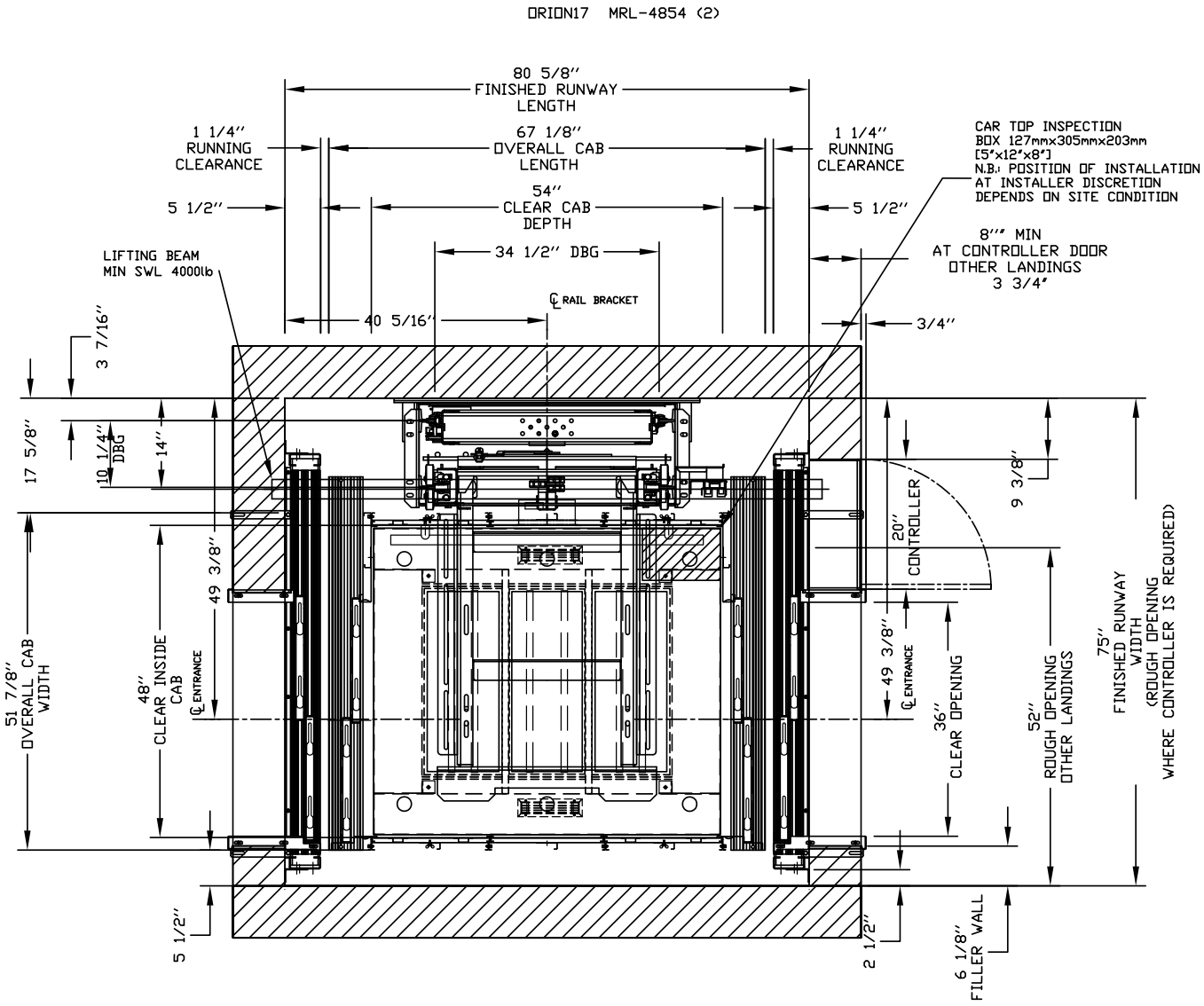


Figure 11: 48" x 54'' Orion17 Cab Type 2

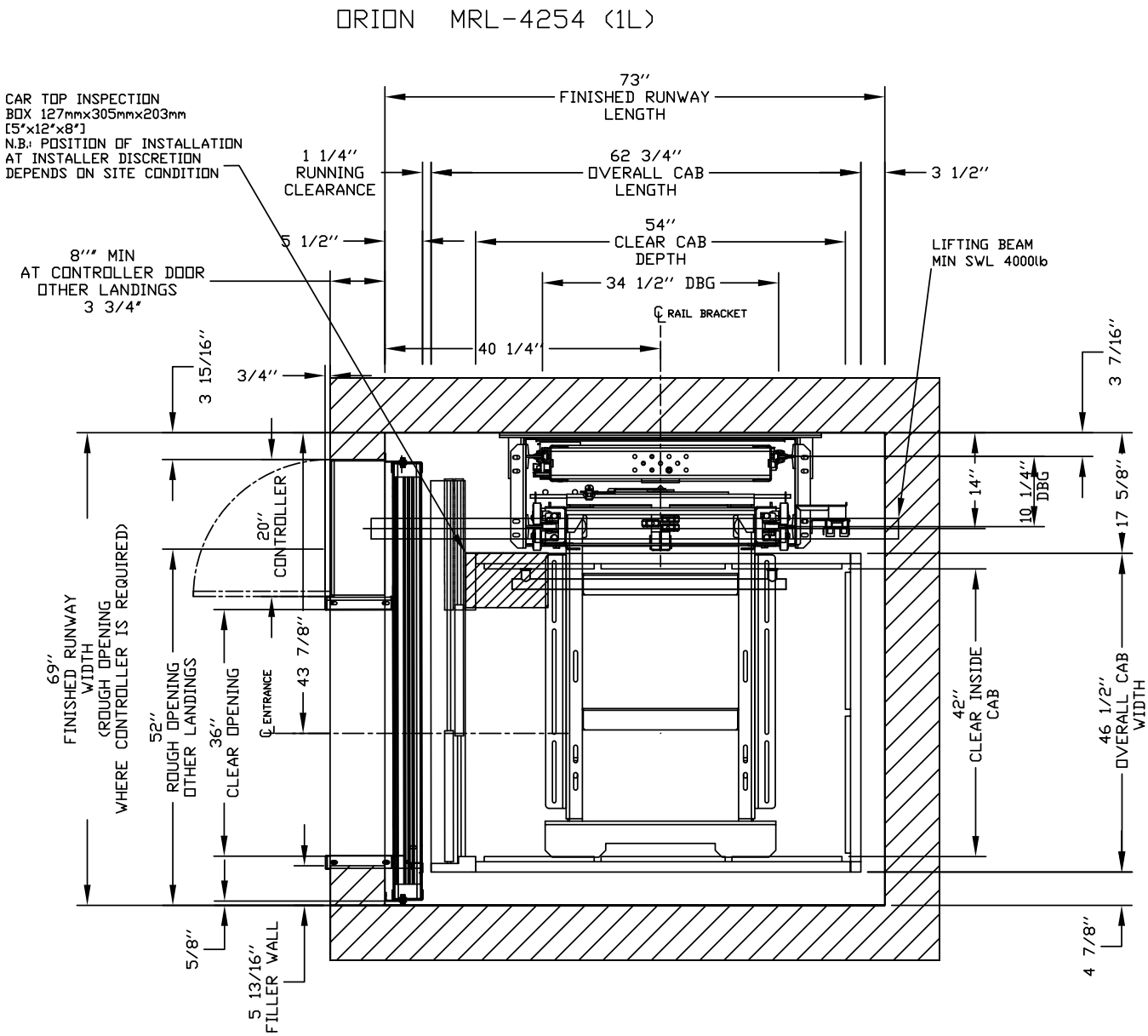
42" x 54" Type 1L Orion Standard Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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

Figure 12: 42'' x 54" Orion Cab Type 1L

42" x 54" Type 1R Orion Standard Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

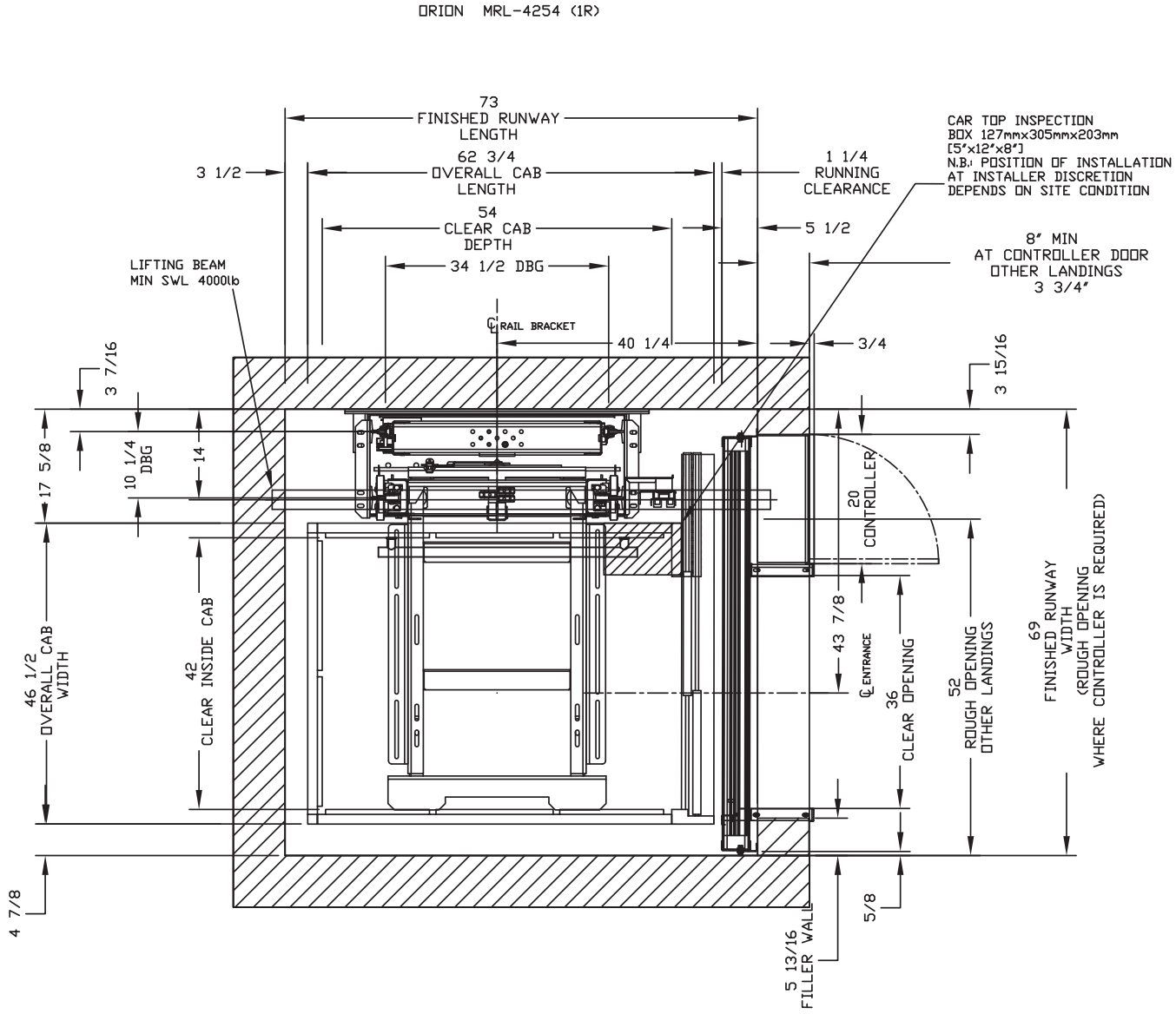


Figure 13: 42" x 54" Orion Cab Type 1R

42" x 54" Type 2 Orion Standard Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

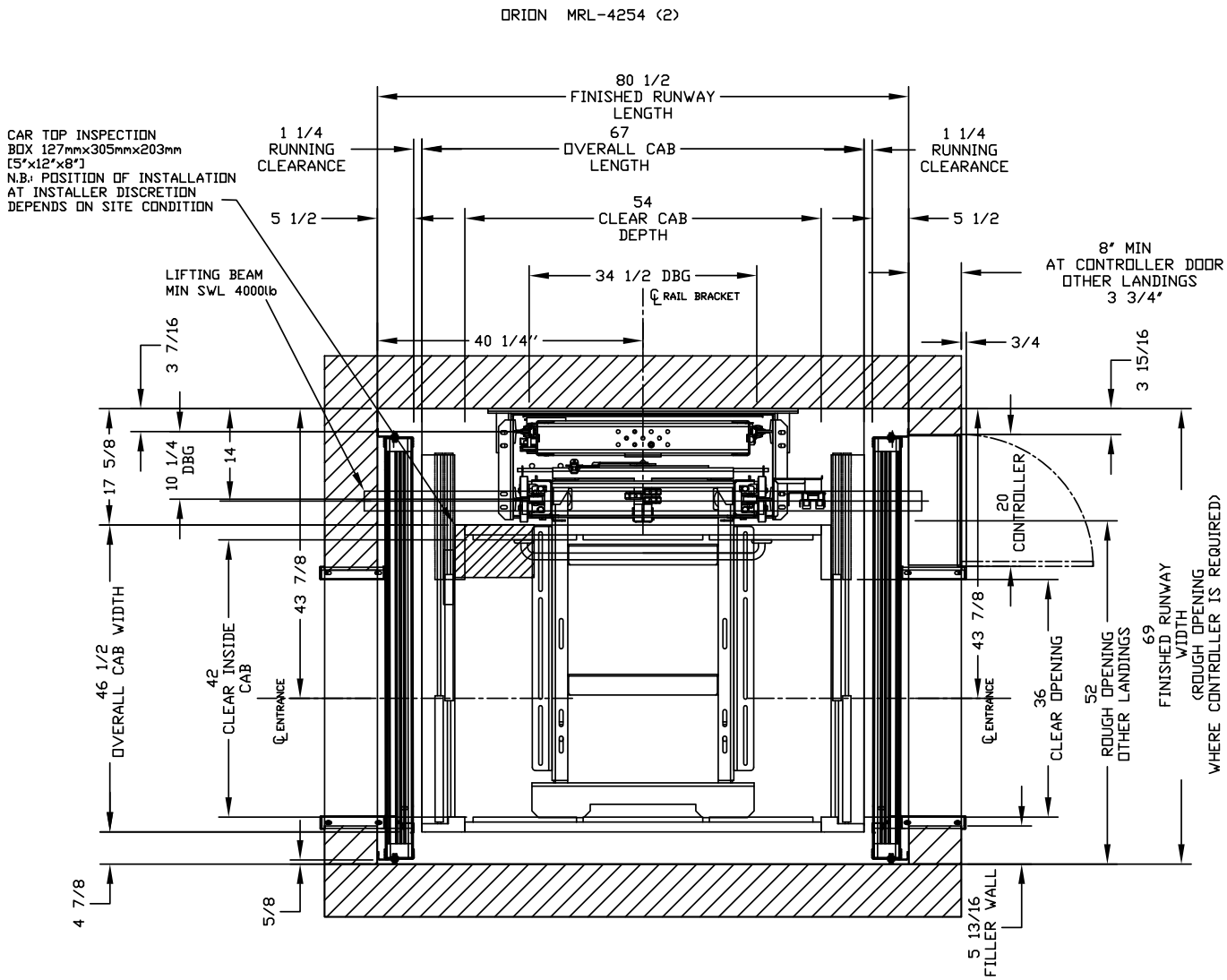


Figure 14: 42" x 54" Orion Cab Type 2

42" x 60" Type 1L Orion Standard Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

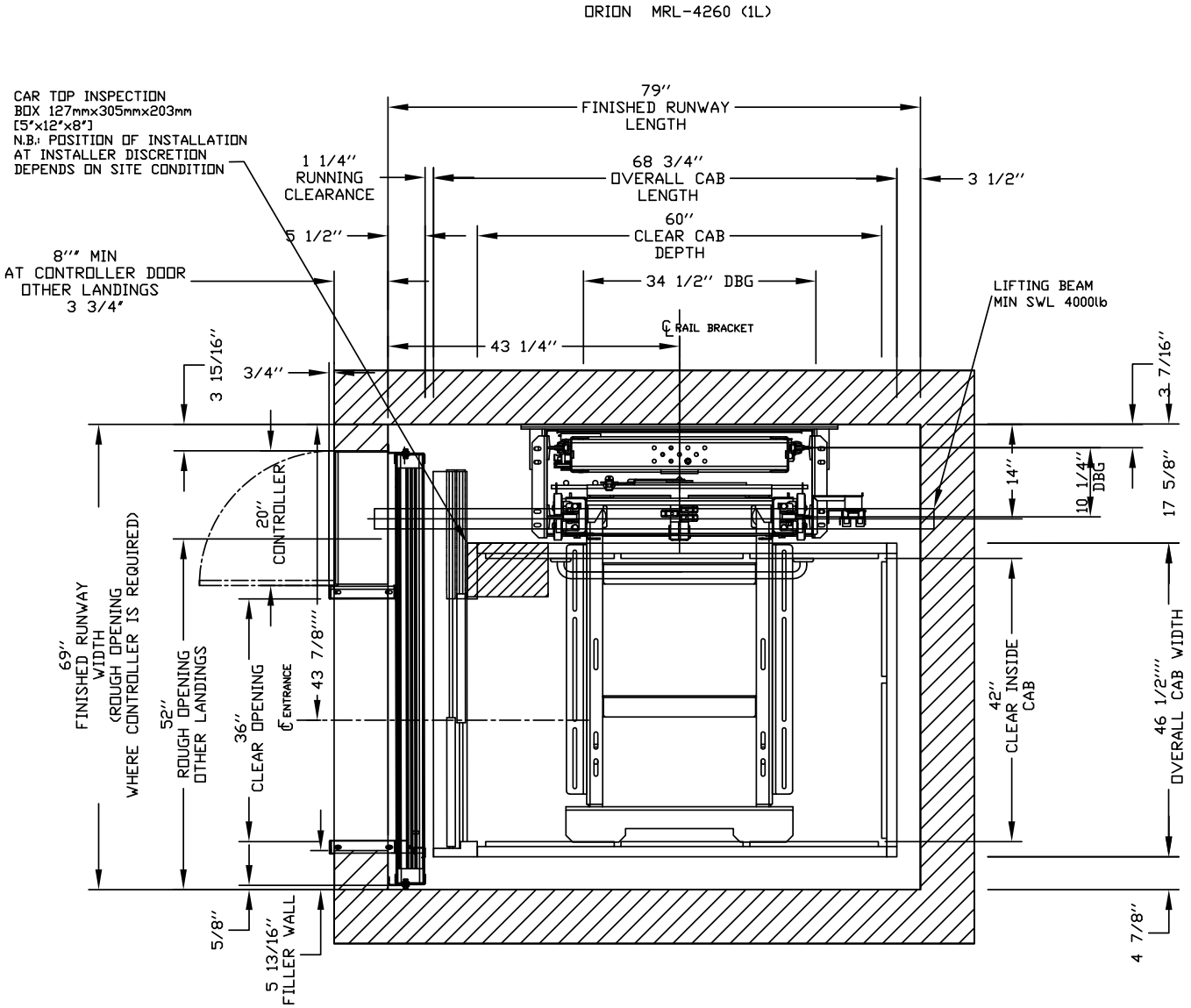


Figure 15: 42'' x 60" Orion Cab Type 1L

42" x 60" Type 1R Orion Standard Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

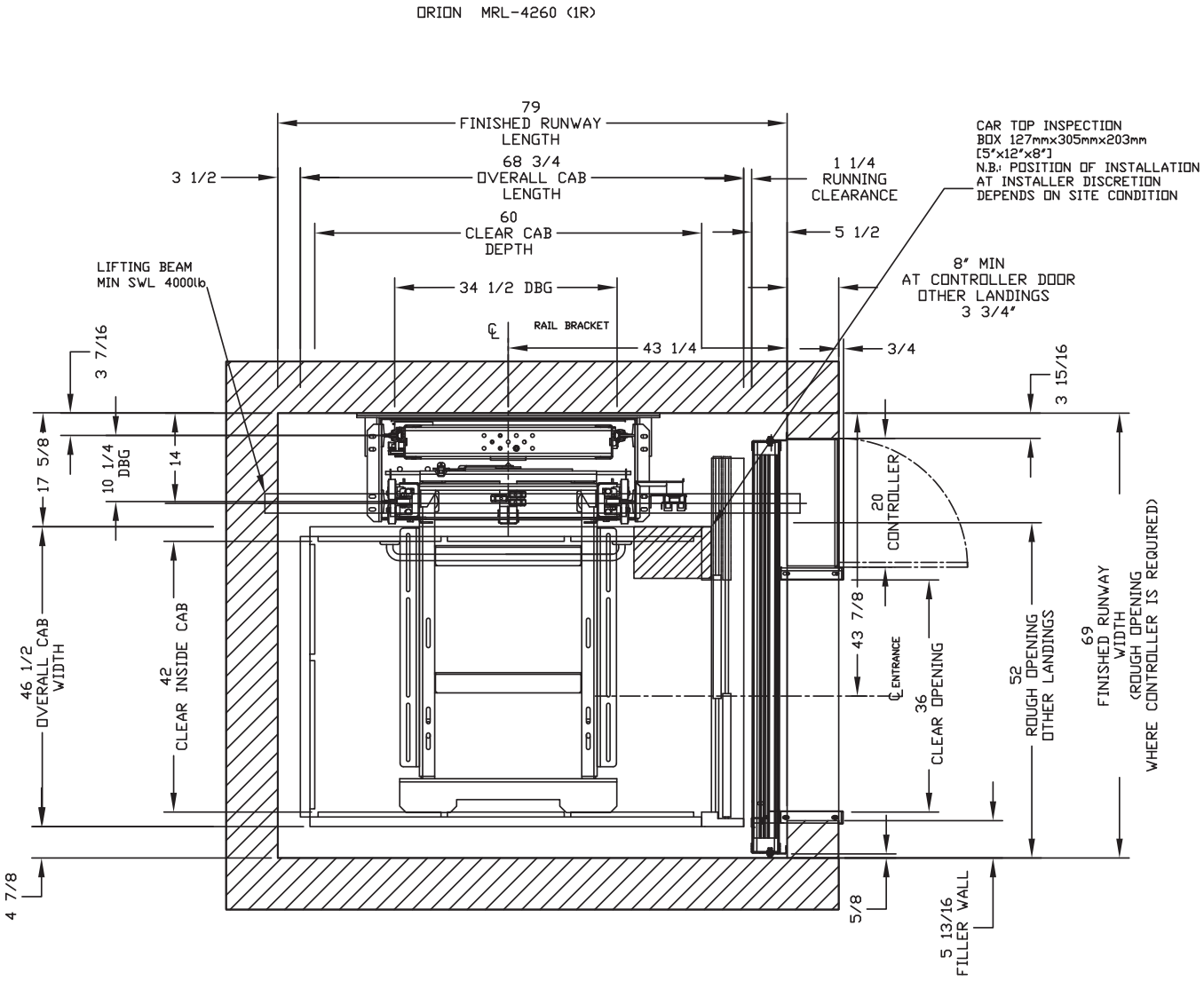


Figure 16: 42" x 60" Orion Cab Type 1R

42" x 60" Type 2 Orion Standard Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

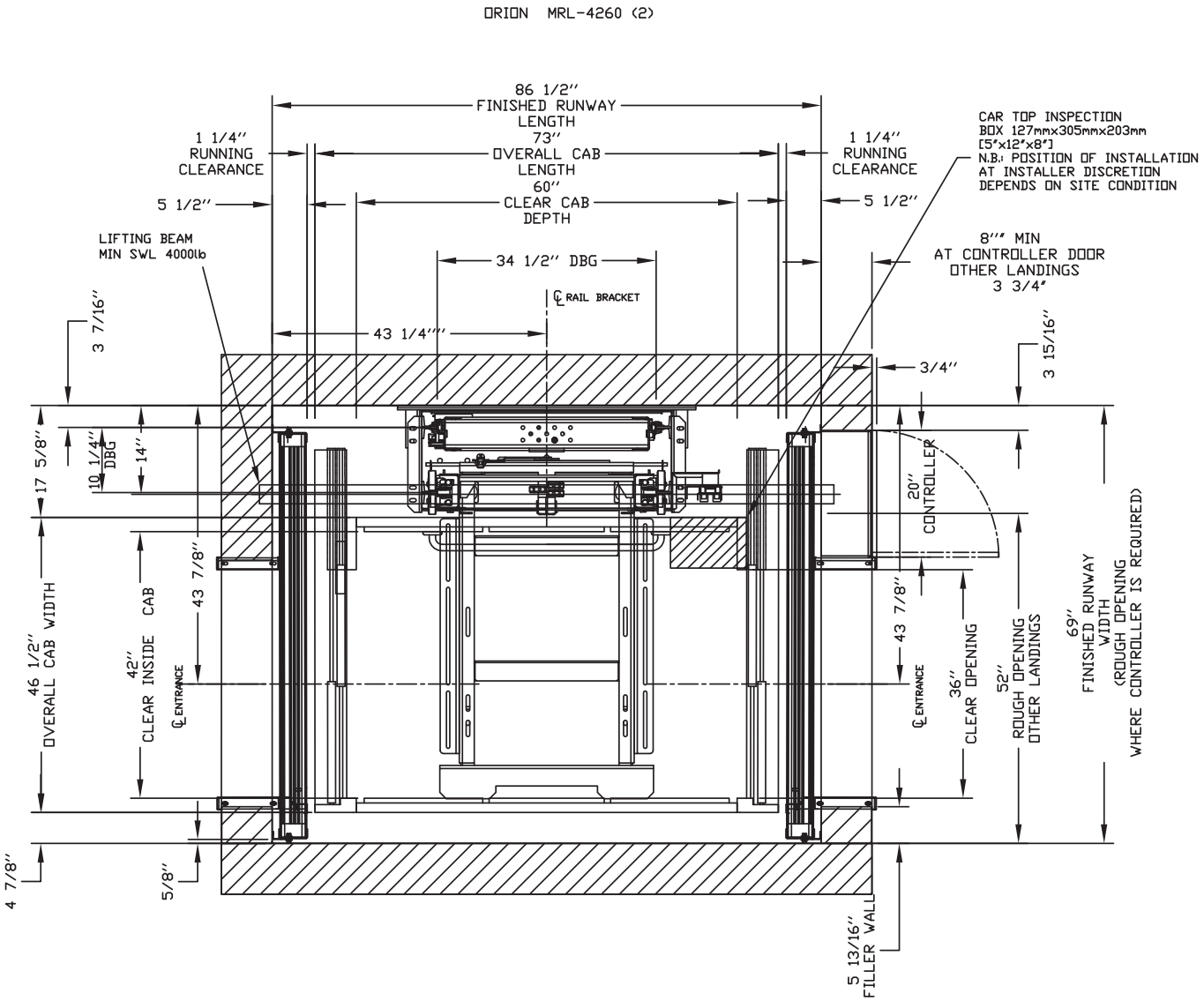


Figure 17: 42" x 60" Orion Cab Type 2

48" x 54" Type 1L Orion Standard Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

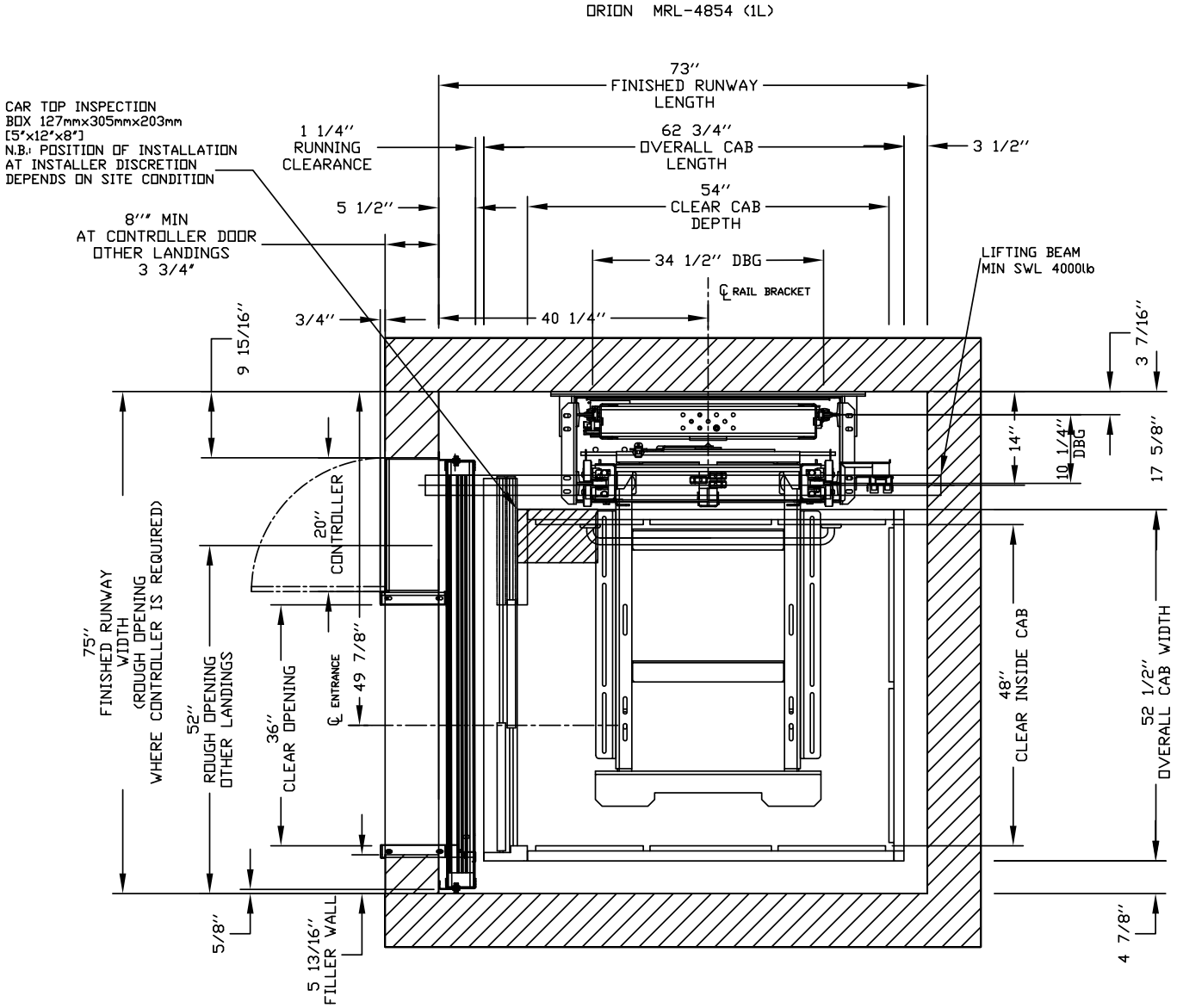


Figure 18: 48'' x 54'' Orion Cab Type 1L

48" x 54" Type 1R Orion Standard Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

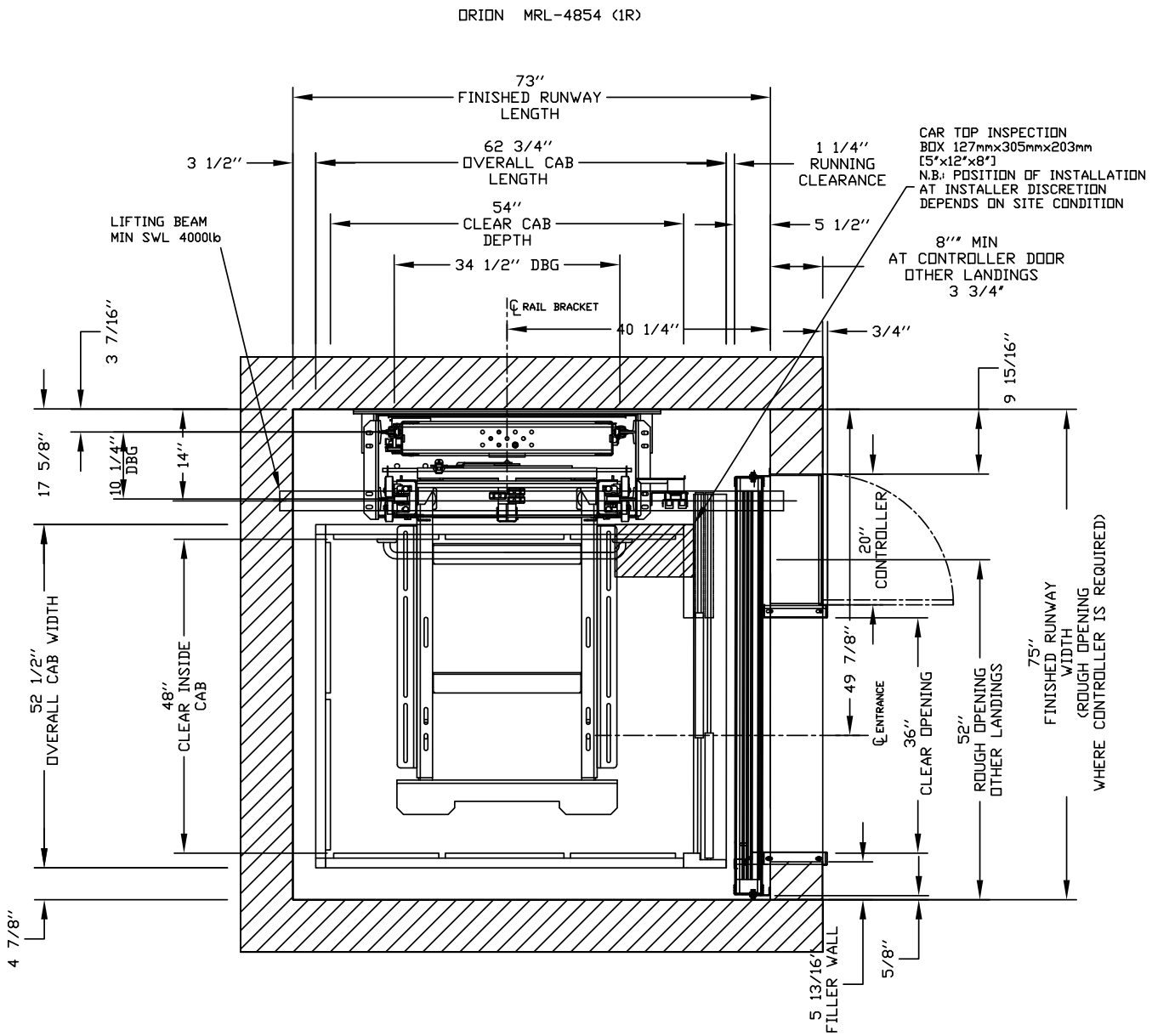


Figure 19: 48" x 54" Orion Cab Type 1R

48" x 54" Type 2 Orion Standard Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

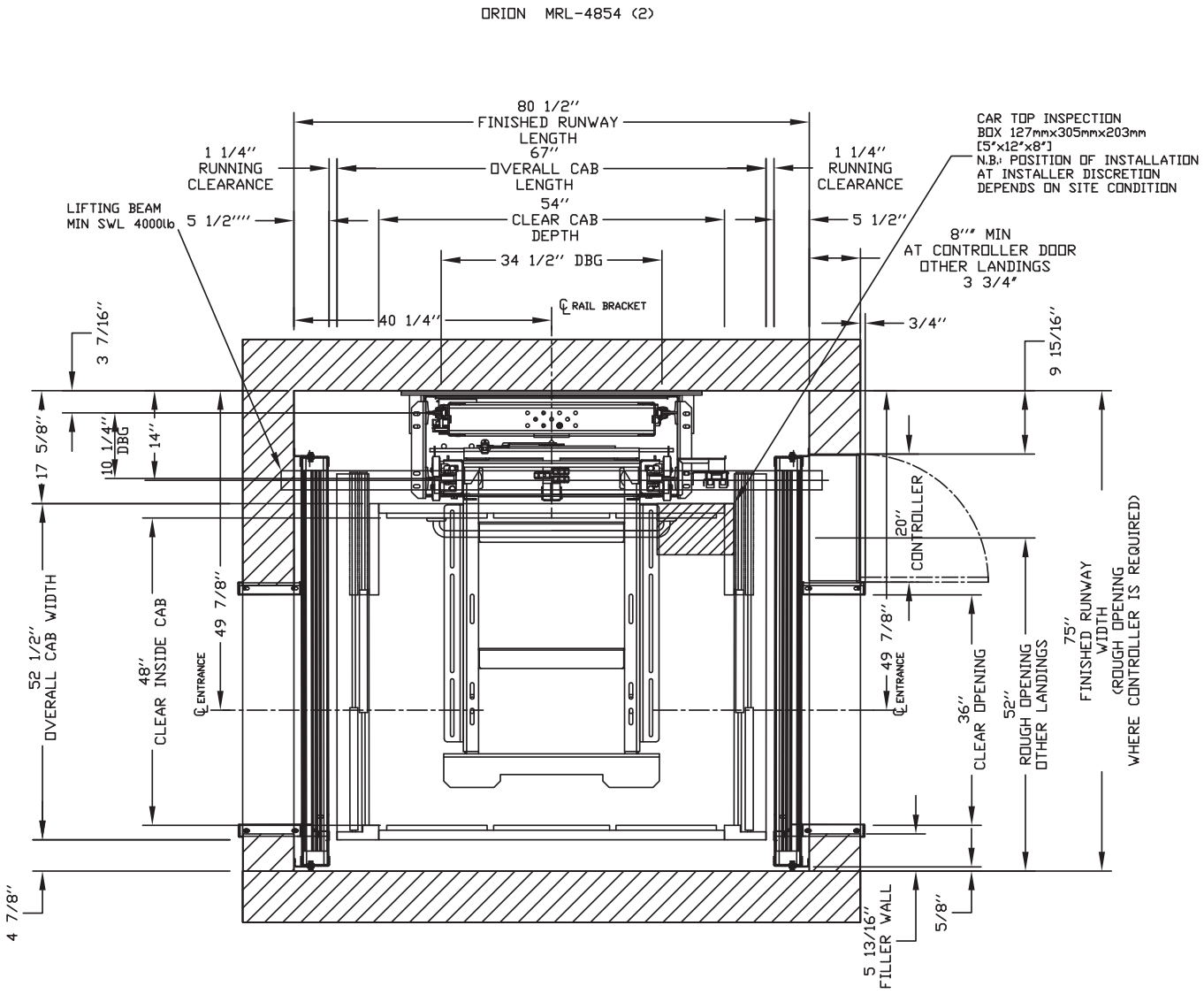


Figure 20: 48" x 54" Orion Cab Type 2

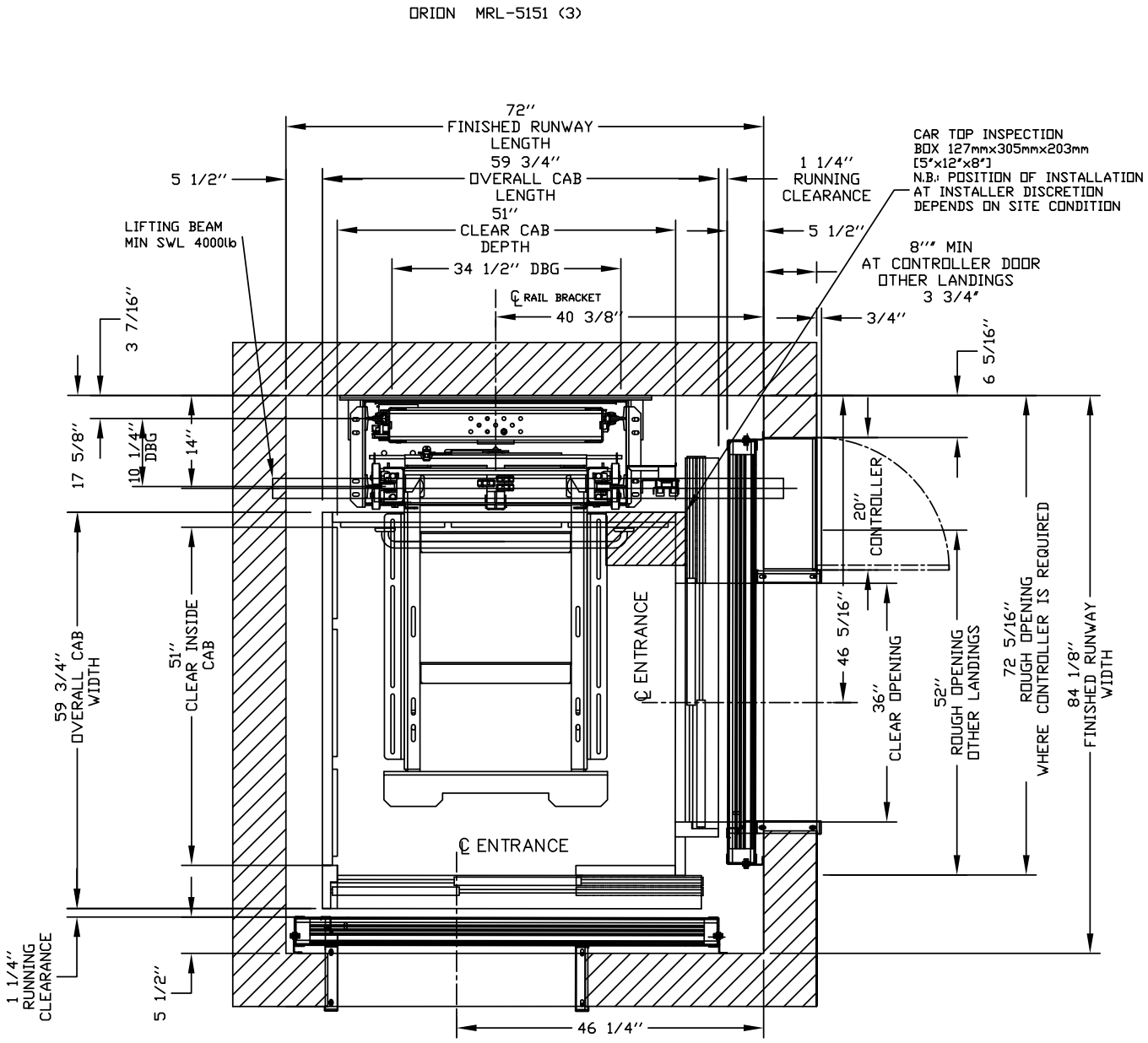
51" x 51" Type 3 Orion Standard Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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

Figure 21: 51" x 51" Orion Cab Type 3

51" x 51" Type 4 Orion Standard Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

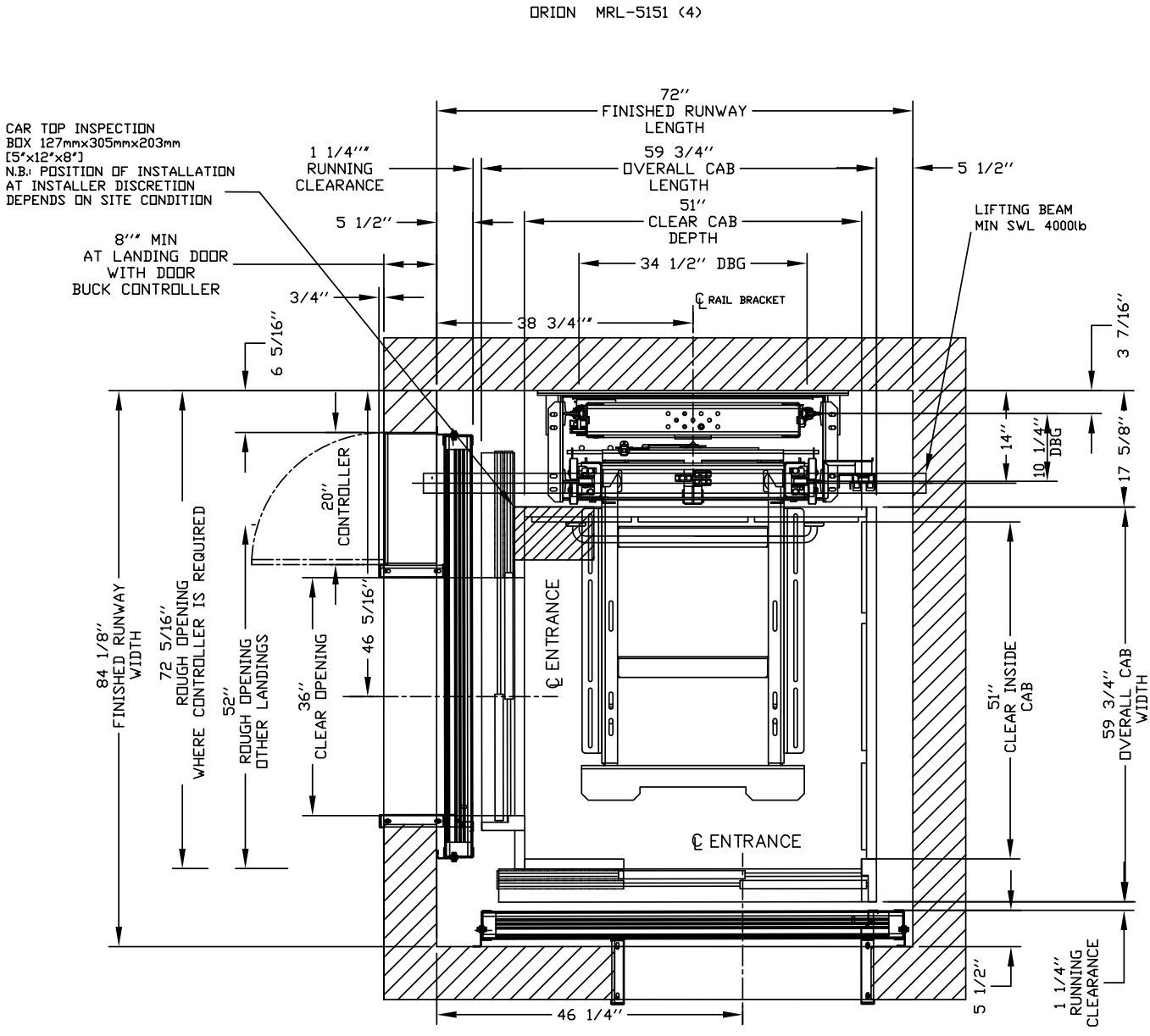


Figure 22: 51" x 51" Orion Cab Type 4

42" x 60" Type 1L Orion Steel Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

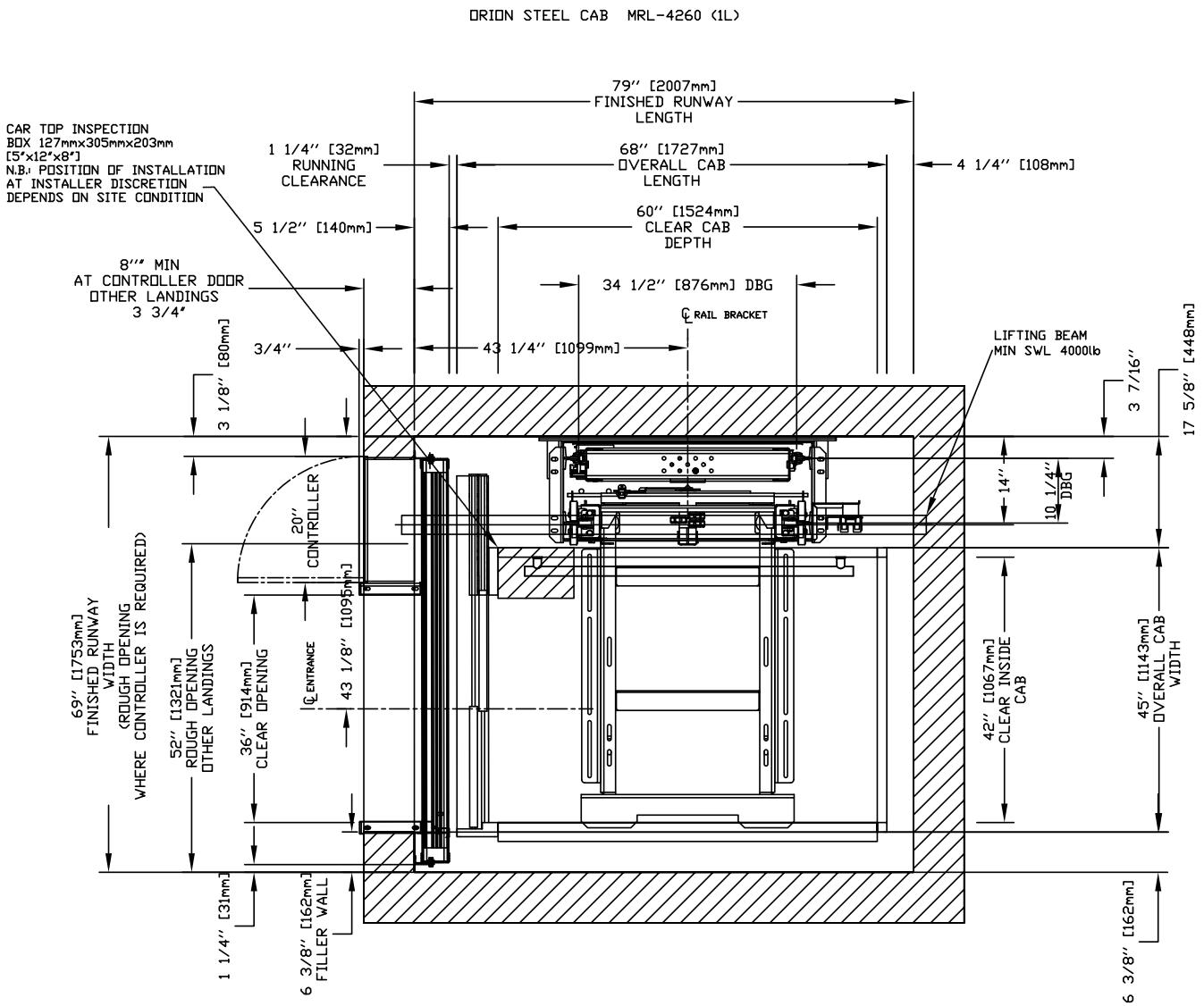


Figure 23: 42" x 60" Orion Steel Cab Type 1L

42" x 60" Type 1R Orion Steel Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

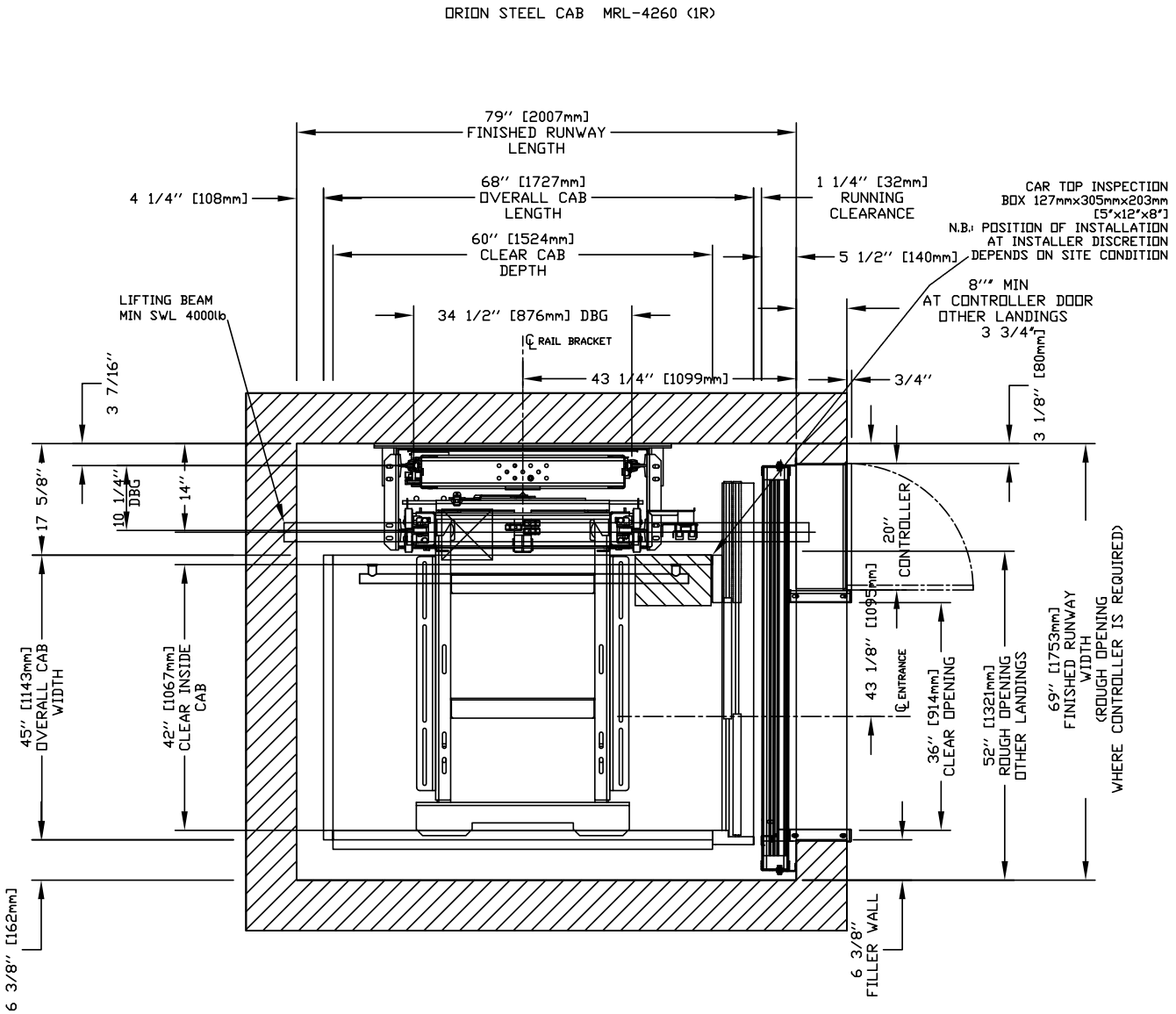


Figure 24: 42" x 60" Orion Steel Cab Type 1R

42" x 60" Type 2 Orion Steel Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

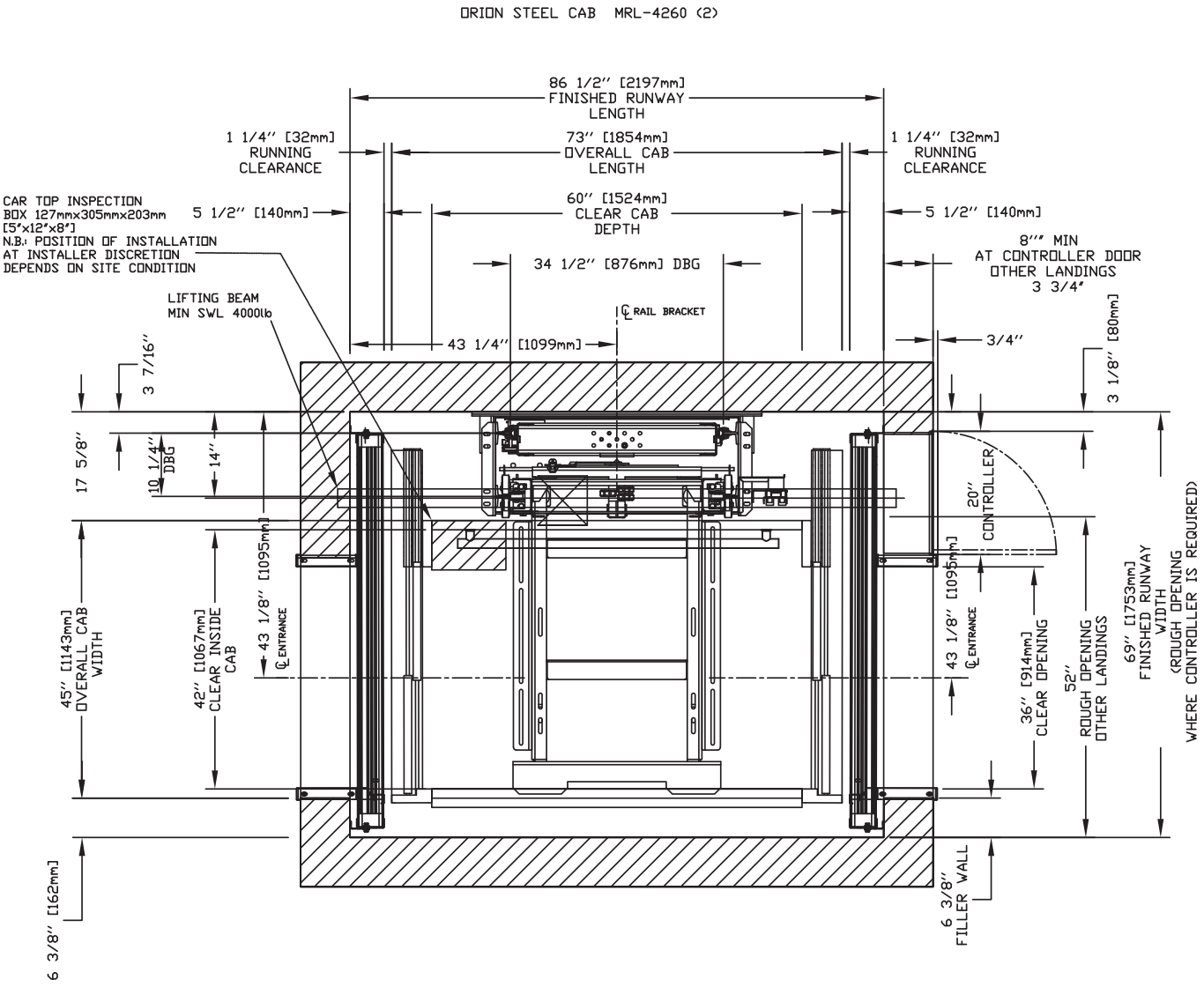


Figure 25: 42" x 60" Orion Steel Cab Type 2

48" x 54" Type 1L Orion Steel Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

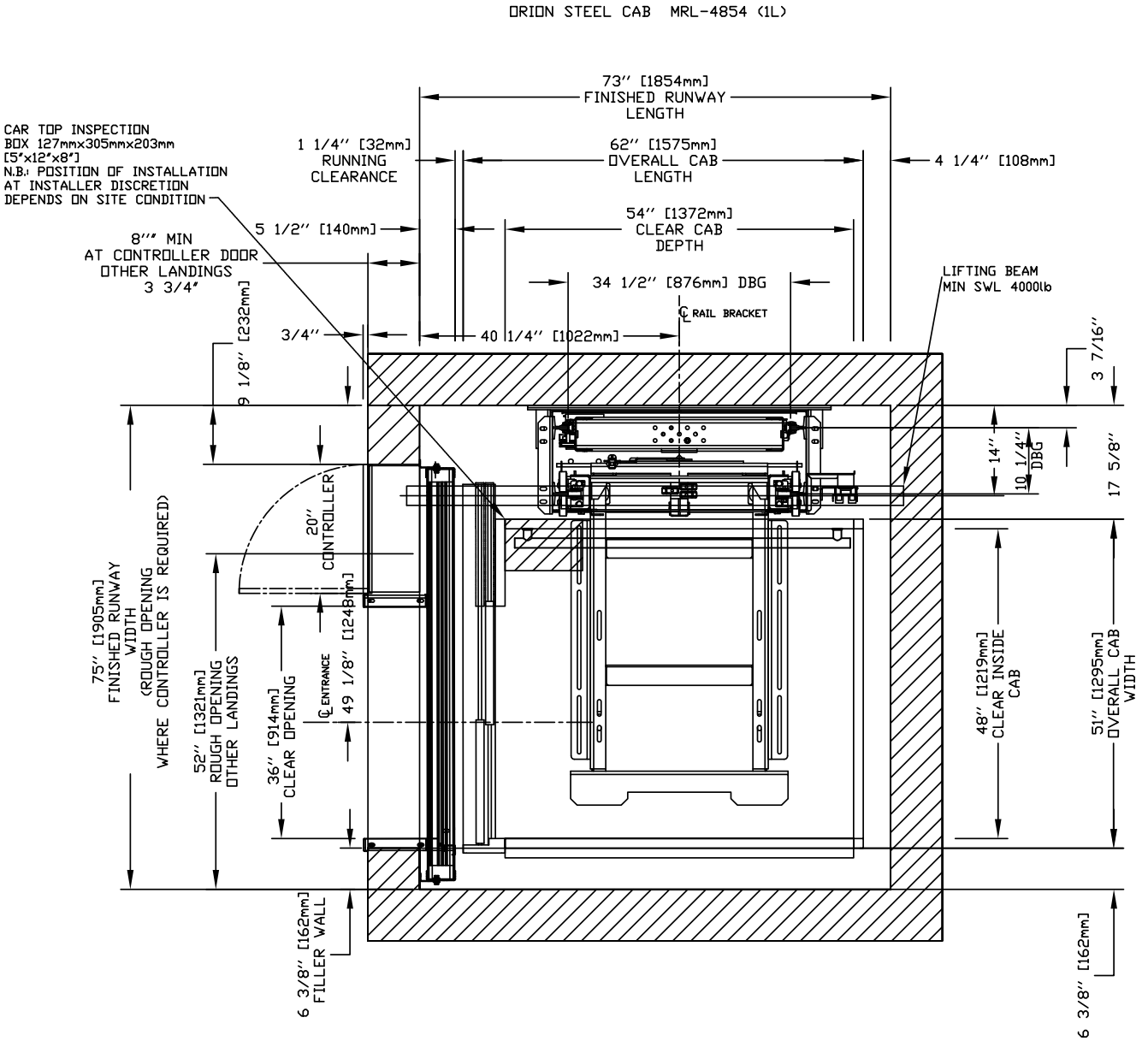


Figure 26: 48" x 54" Orion Steel Cab Type 1L

48" x 54" Type 1R Orion Steel Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

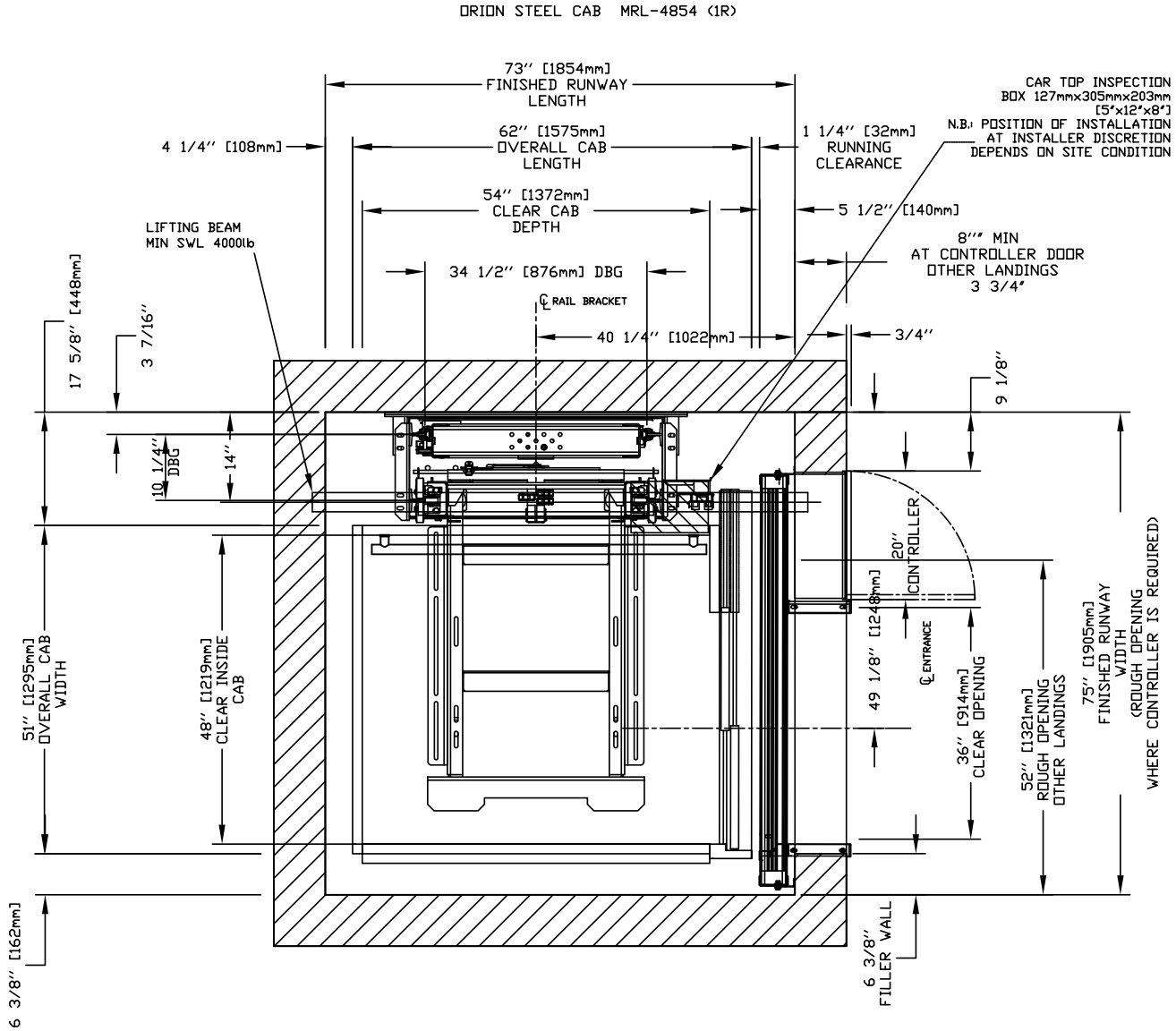


Figure 27: 48" x 54" Orion Steel Cab Type 1R

48" x 54" Type 2 Orion Steel Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

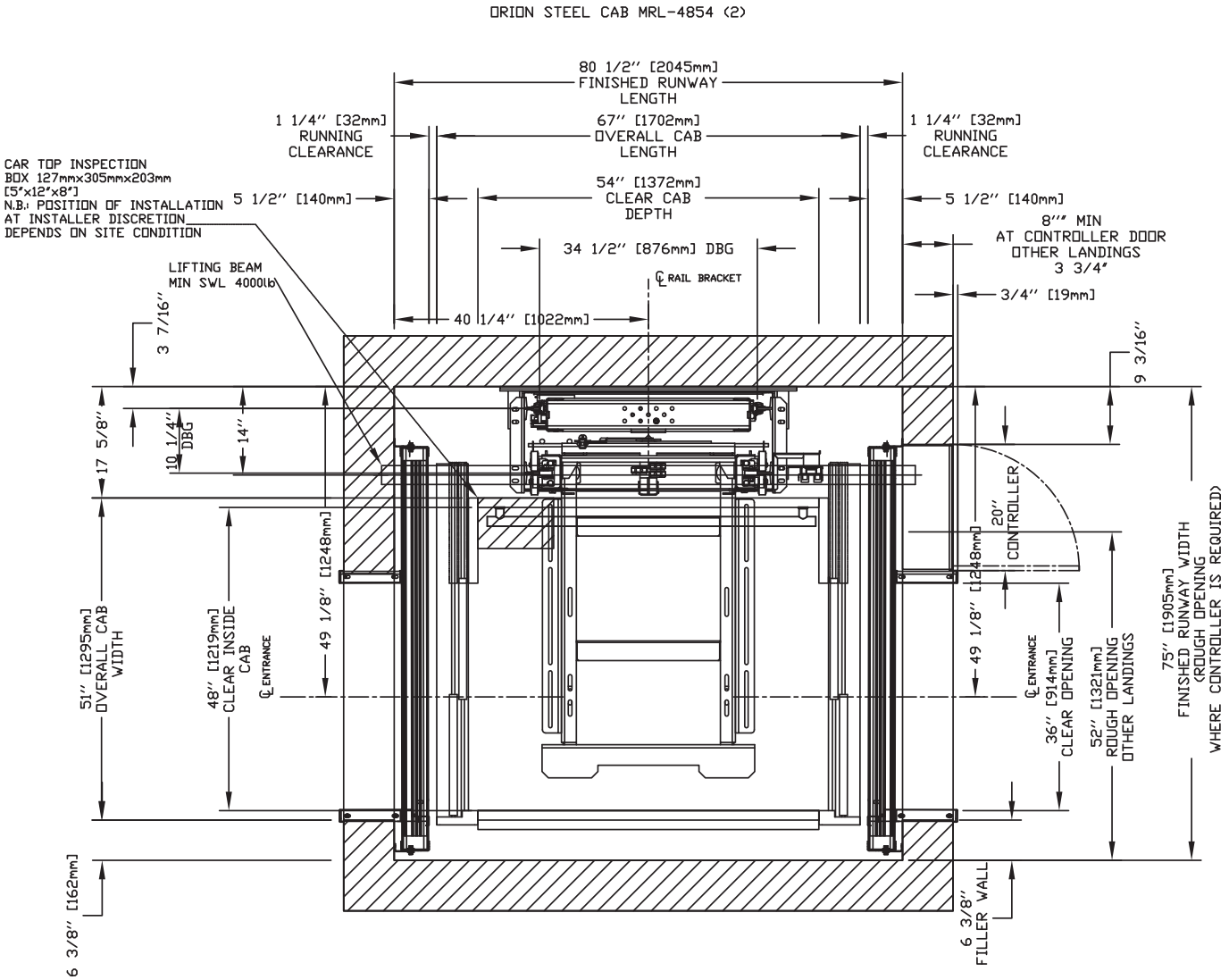


Figure 28: 48" x 54" Orion Steel Cab Type 2

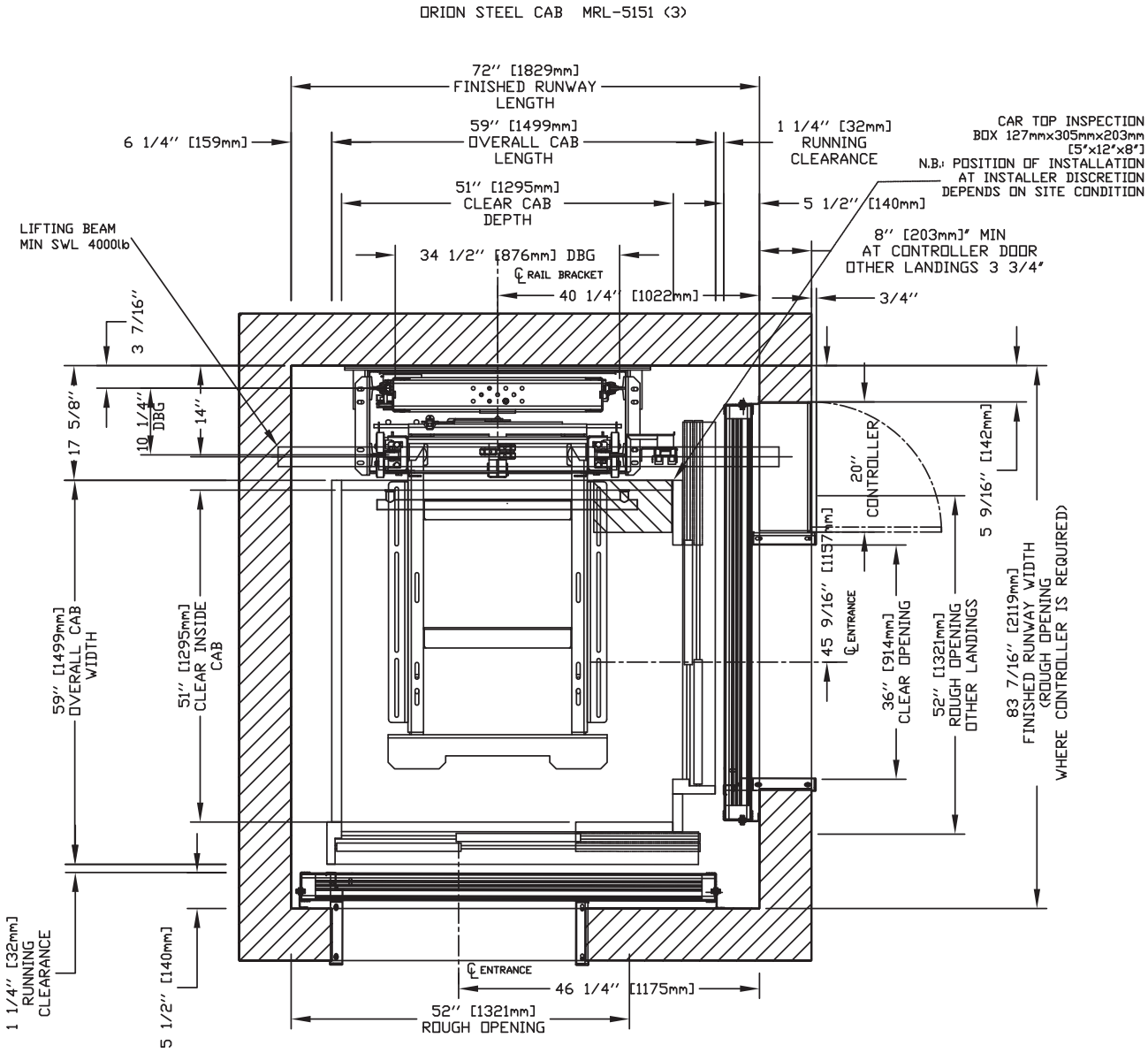
51" x 51" Type 3 Orion Steel Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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

Figure 29: 42" x 54" Orion17 Cab Type 3

51" x 51" Type 4 Orion Steel Cab

NOTICE

The cab dimensions provided based on a PLAM cab.
For Masonry or Drywall Entrance Details, refer to drawings on pages 45-50

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.

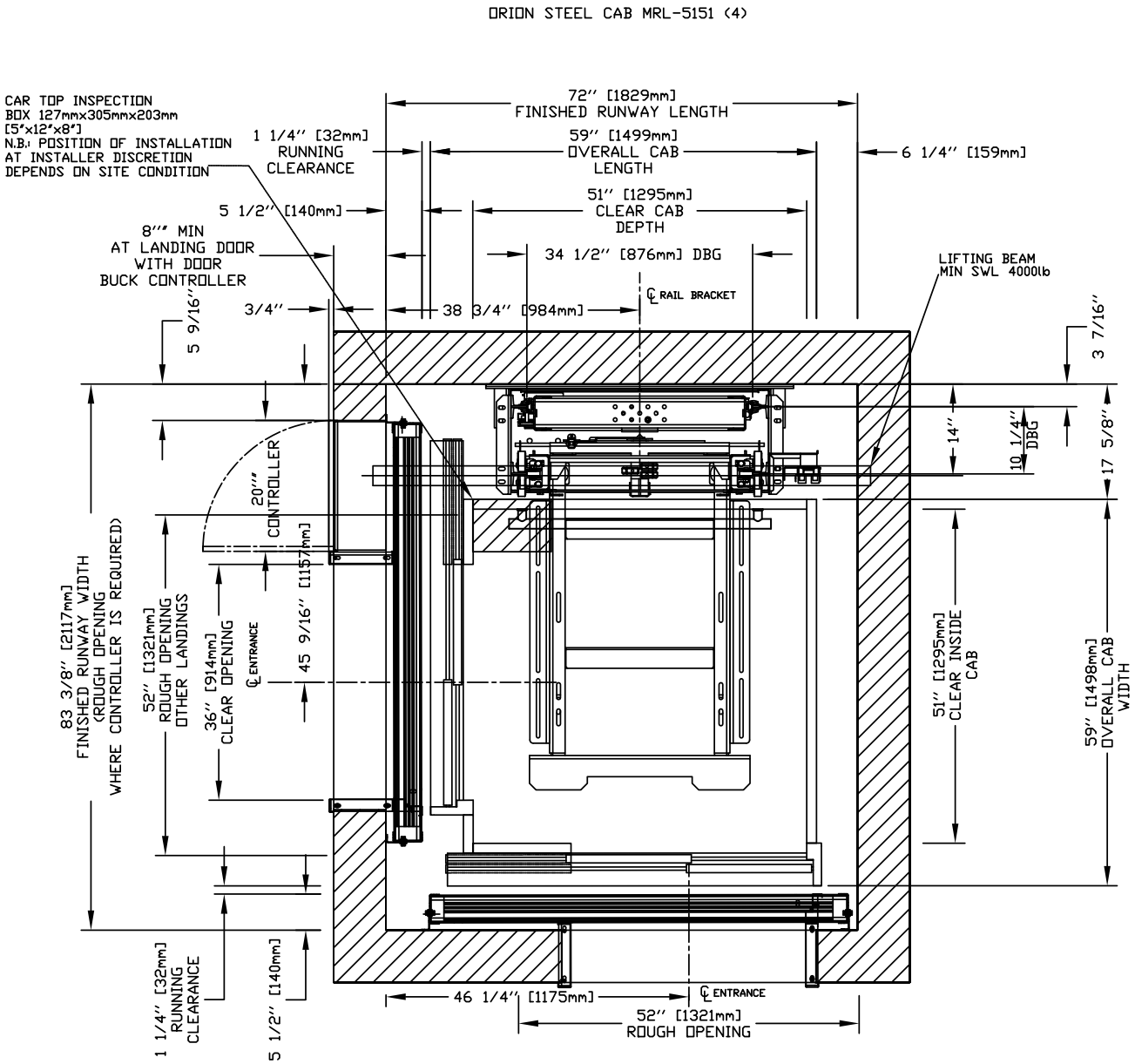
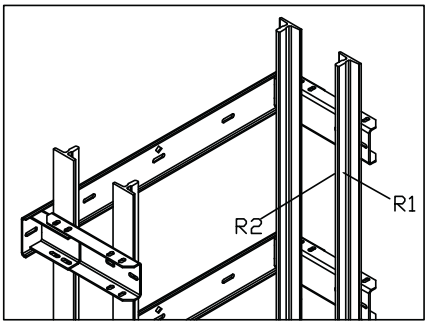


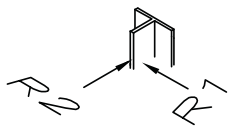
Figure 30: 51" x 51'' Orion17 Cab Type 4

Loads on Building and Pit Loading

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

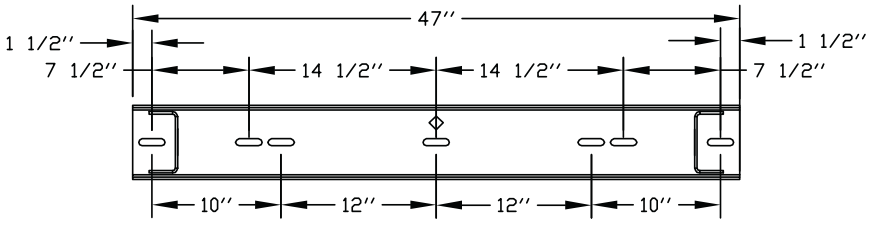


RAIL FORCES



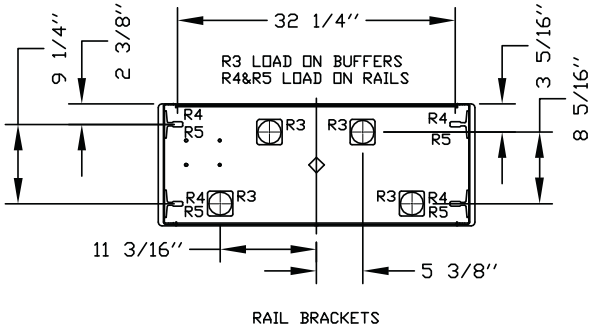
✳R1	✳R2
932 lbf	260 lbf
RAIL WEIGHT :	8.0 lbs / ft

FOR TOTAL PULL-OUT FORCE ON RAIL BRACKET,
eg.2 x 932 =1864 lbf
FOR LOCAL APPLICATION OF PIT LOAD,
R1 MUST BE DOUBLED.



RAIL BRACKETS

R1 LOAD ON EACH FIXING POINT EQUALS
466 LBF BASED ON FOUR MOUNTING HOLES



PIT PLATE LAYOUT

PIT RE-ACTION FORCE		
R3	8000 LBS	PER LOAD POINT 2000 LBS
R4	3000 LBS	PER LOAD POINT 750 LBS
R5	9500 LBS	PER LOAD POINT 2375 LBS

Figure 31: Building and Pit Load

Pit and Overhead Clearance Details

NOTICE

Clearance of 43" where applicable:
Minimum refuge space at 1100 mm (43") will be provided by car top prop in conformance with clause 5.2.1.4.4.
*Additional pit equipment required when over 36" deep, consult your local dealer for details
*Ontario requires 17" pit and 111" min overhead for all configurations.

PIT/OVERHEAD REQUIREMENTS				
SPEED (ft/min)	PIT	TOAL TRAVEL	MINIMUM OVERHEAD	
30	17"*		134" (3404)	111" (2819)
25	14"*		134" (3404)	108" (2743)

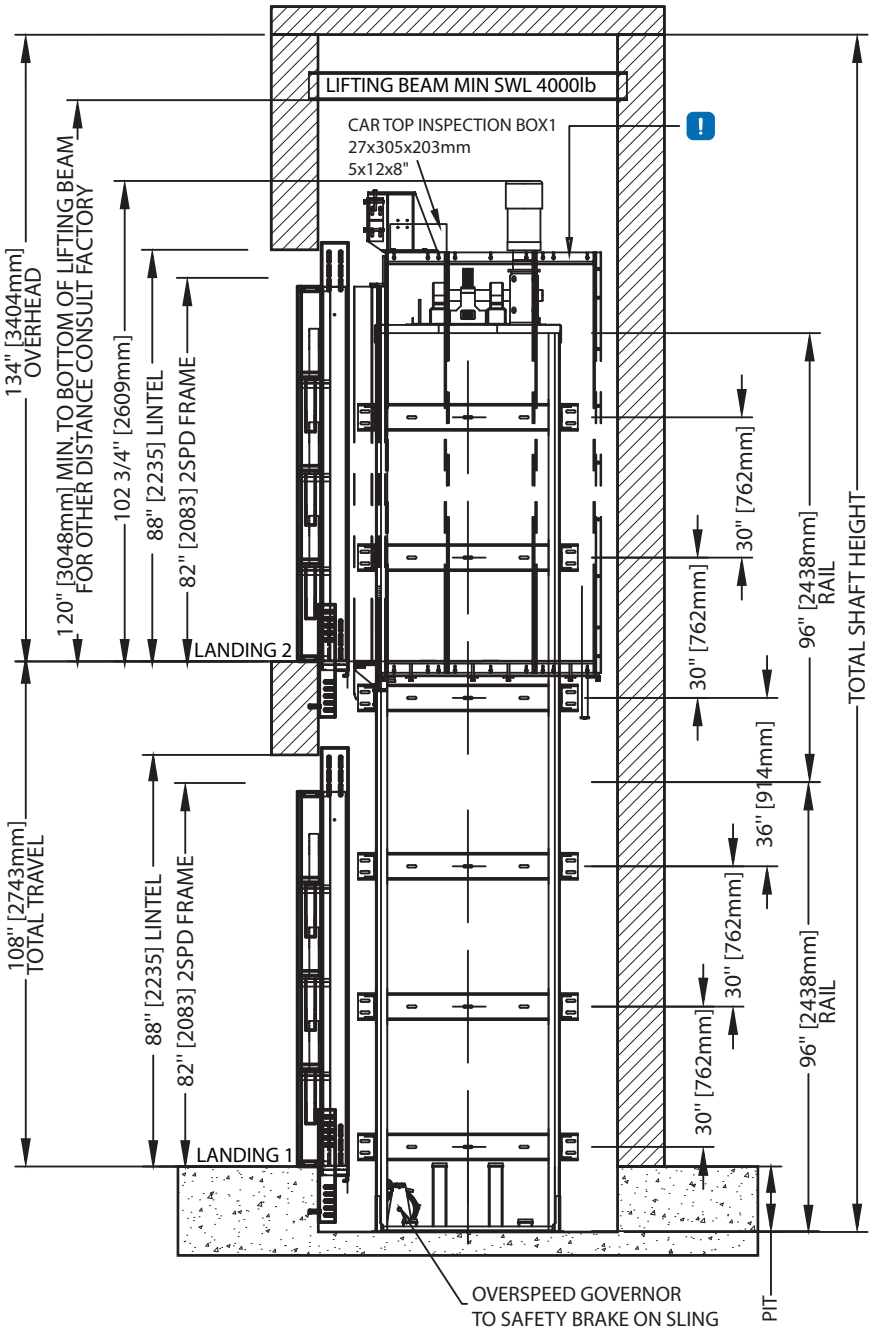


Figure 32: 42" x 54" Orion17 Cab

Rail Support Wall Structure

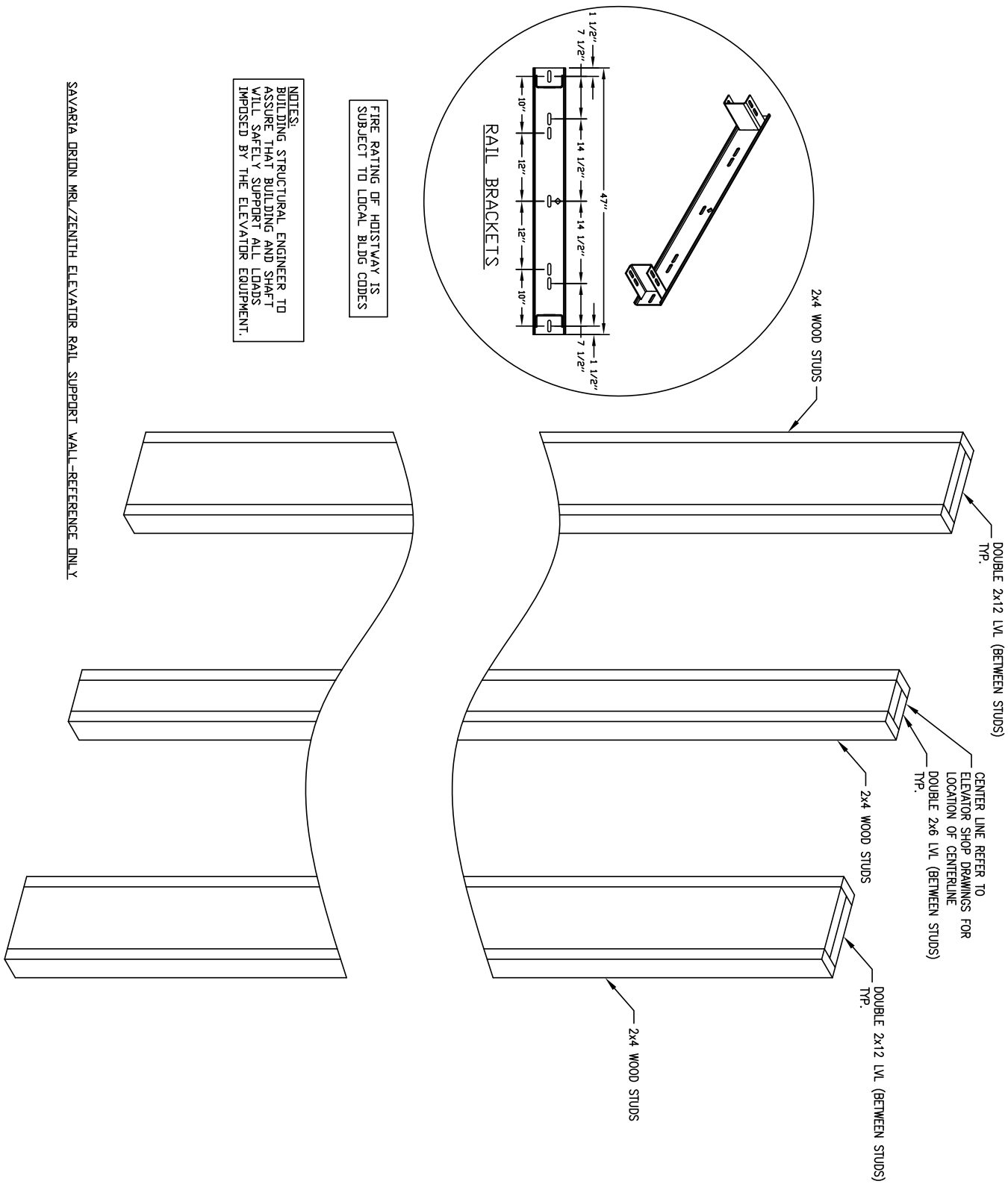


Figure 33: Rail Support

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

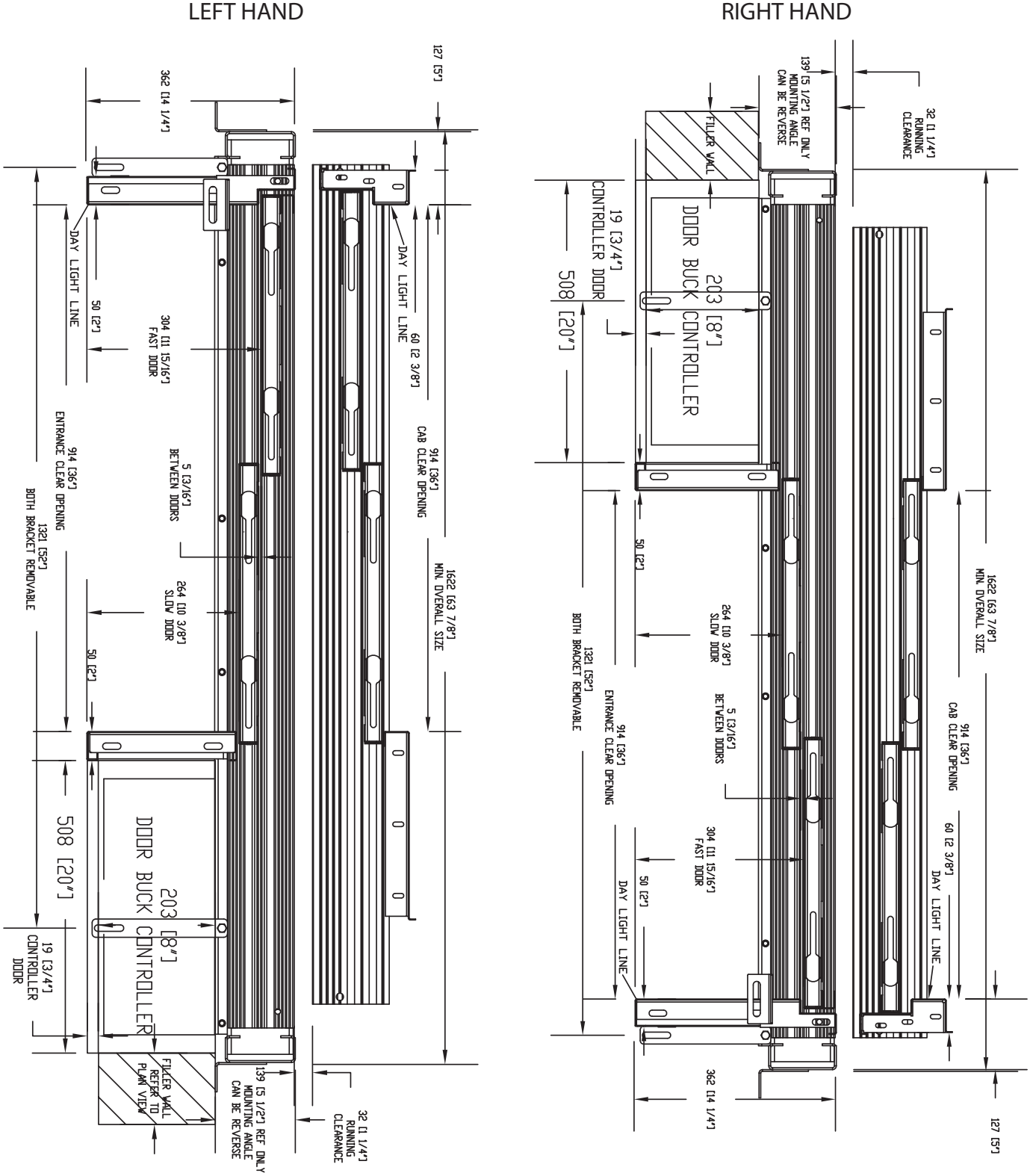


Figure 34: Drywall Construction - Two Speed Door (Controller Landing)

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

NOTICE

Entrance frame assembly is not designed to bear overhead loads. Contractor to provide adequate wall structure support
Lintel: No supports in between, composition to be determined by contractors, minimum of 4" in height of strong composition to hold the entire door is required.
Filler Wall to be installed after door installation.
Grouting at the sill may be required after the door frames are set.

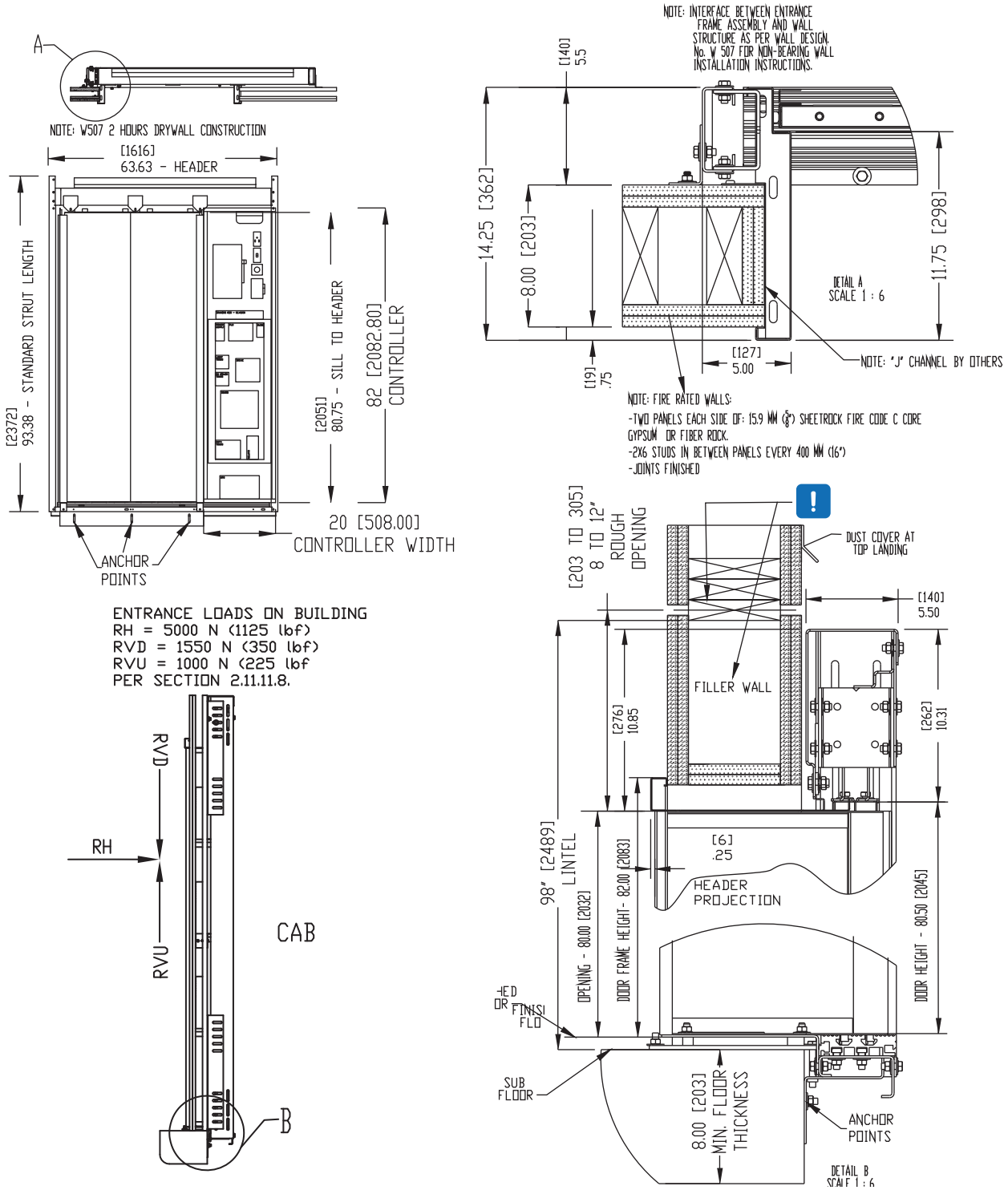


Figure 35: Drywall Construction - Two Speed Door (Controller Landing)

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

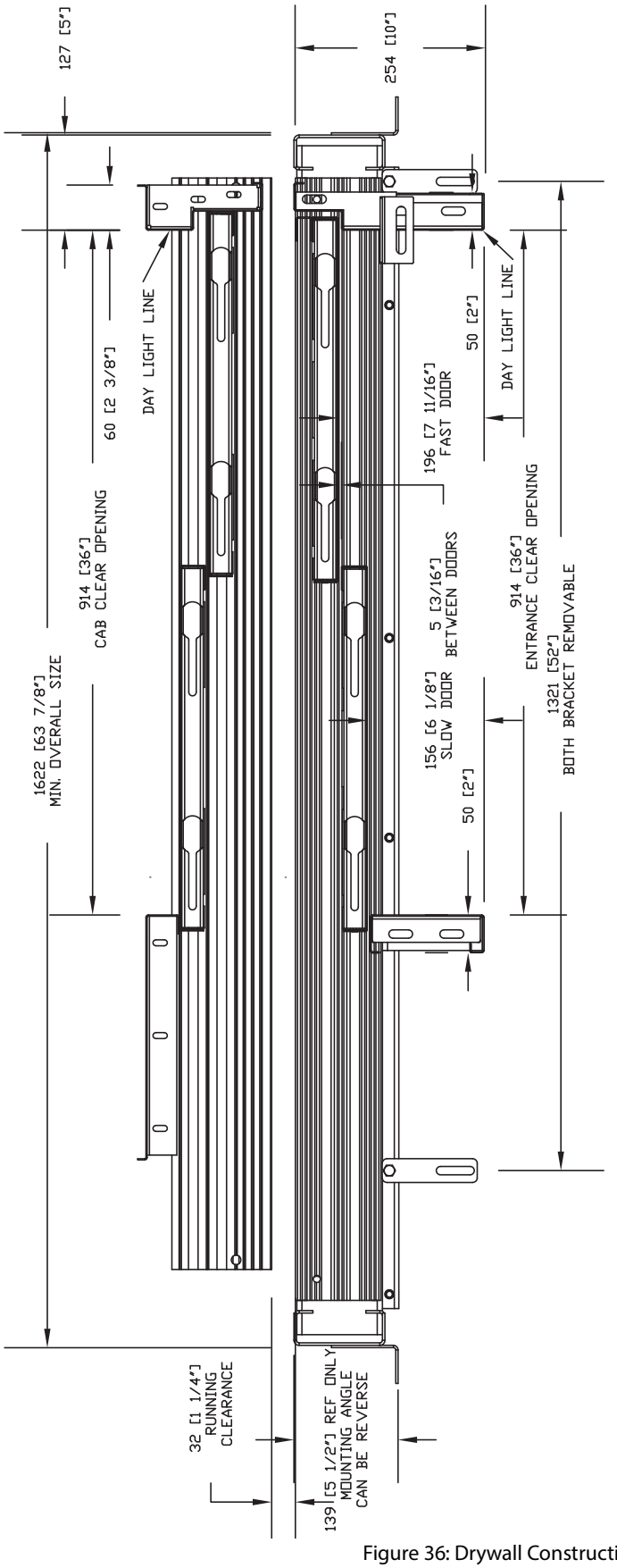


Figure 36: Drywall Construction - Two Speed Door (No Controller)

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

NOTICE

Entrance frame assembly is not designed to bear overhead loads. Contractor to provide adequate wall structure support

Grouting at the sill may be required after the door frames are set.

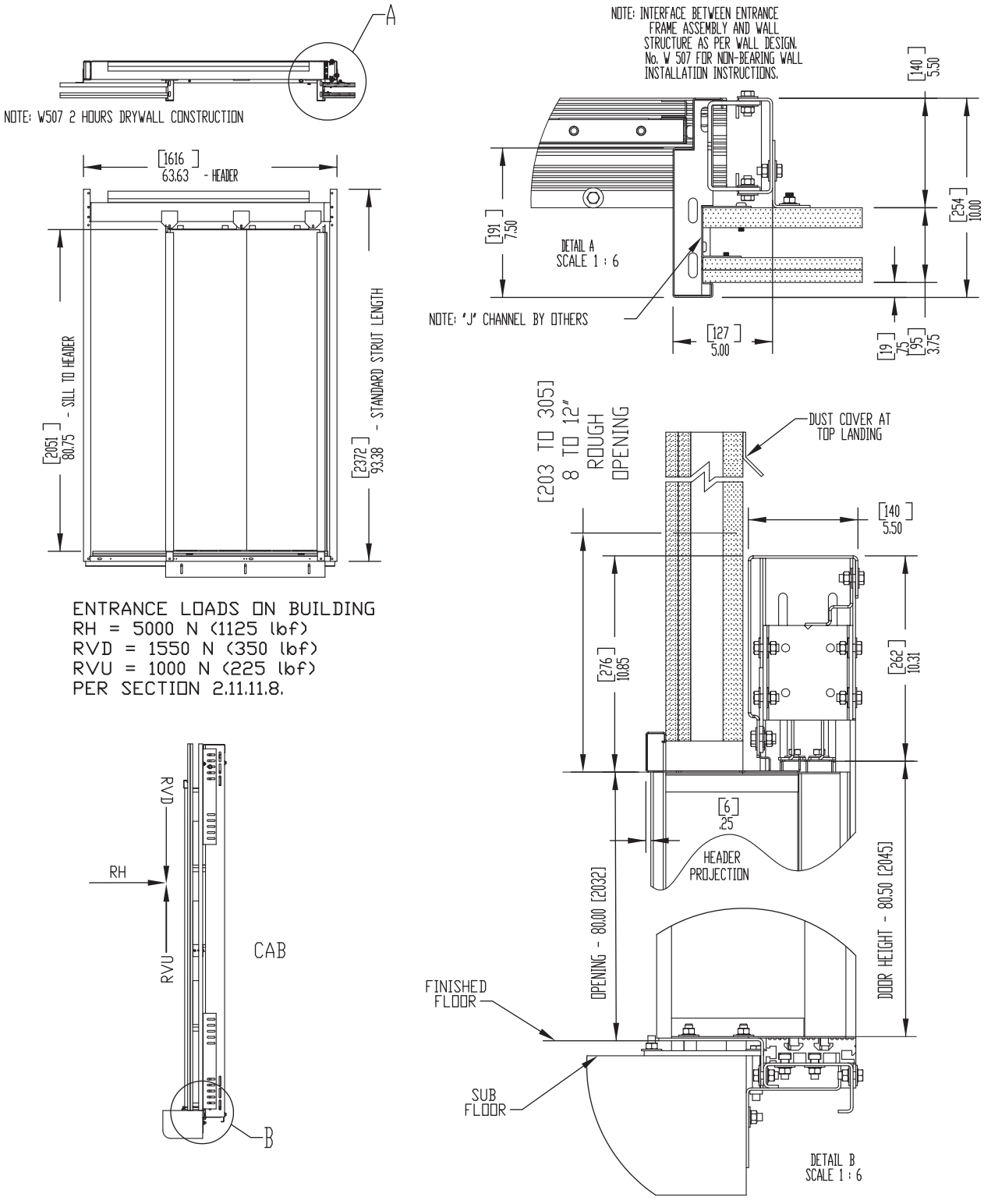


Figure 37: Drywall Construction - Two Speed Door (No Controller)

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

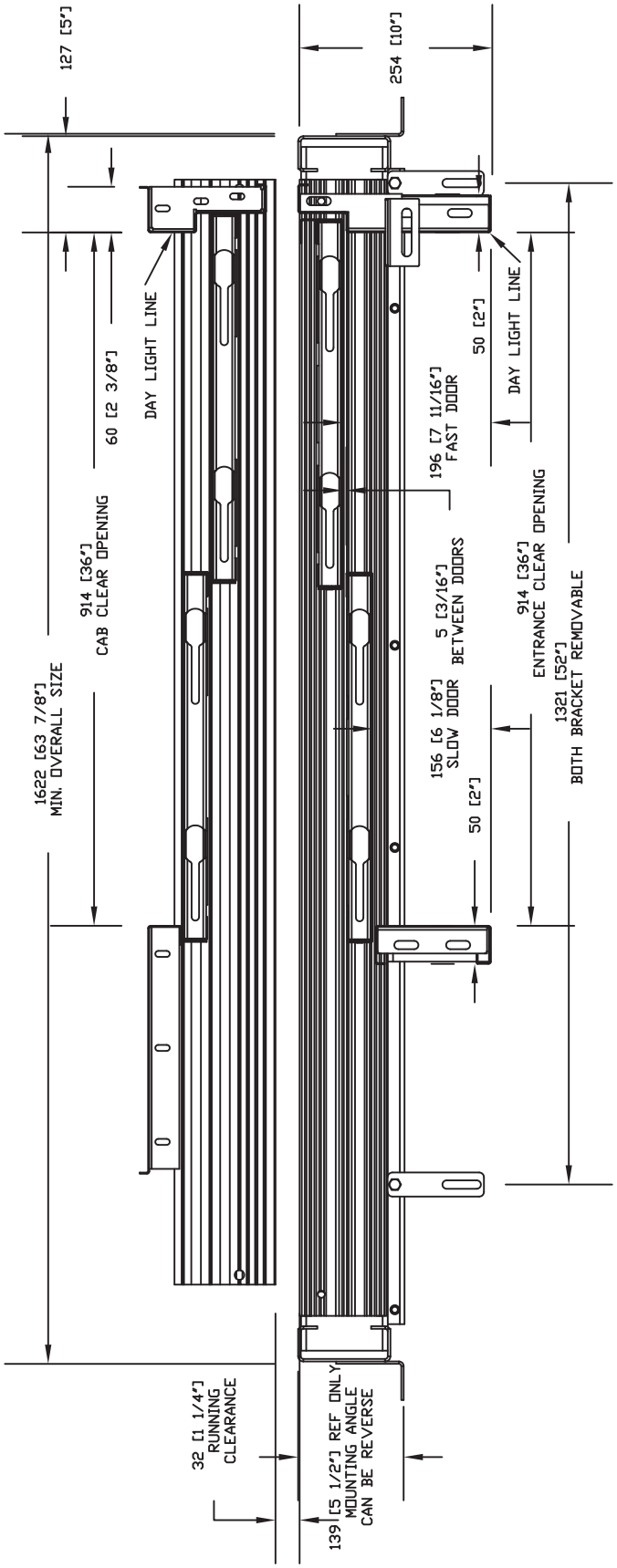


Figure 38: Masonry Construction - Two Speed Door (No Controller)

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

NOTICE

Entrance frame assembly is not designed to bear overhead loads. Contractor to provide adequate wall structure support

Grouting at the sill may be required after the door frames are set.

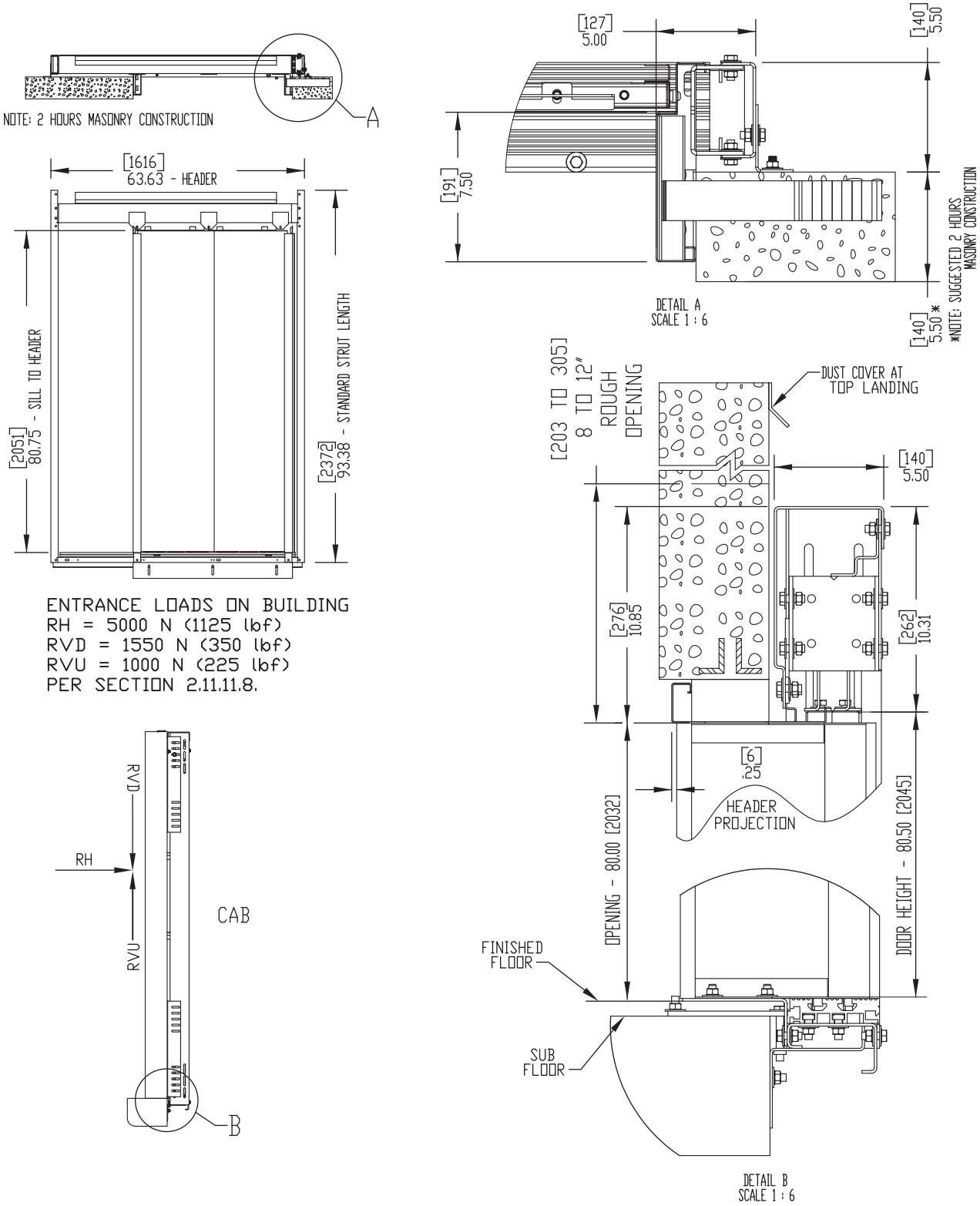
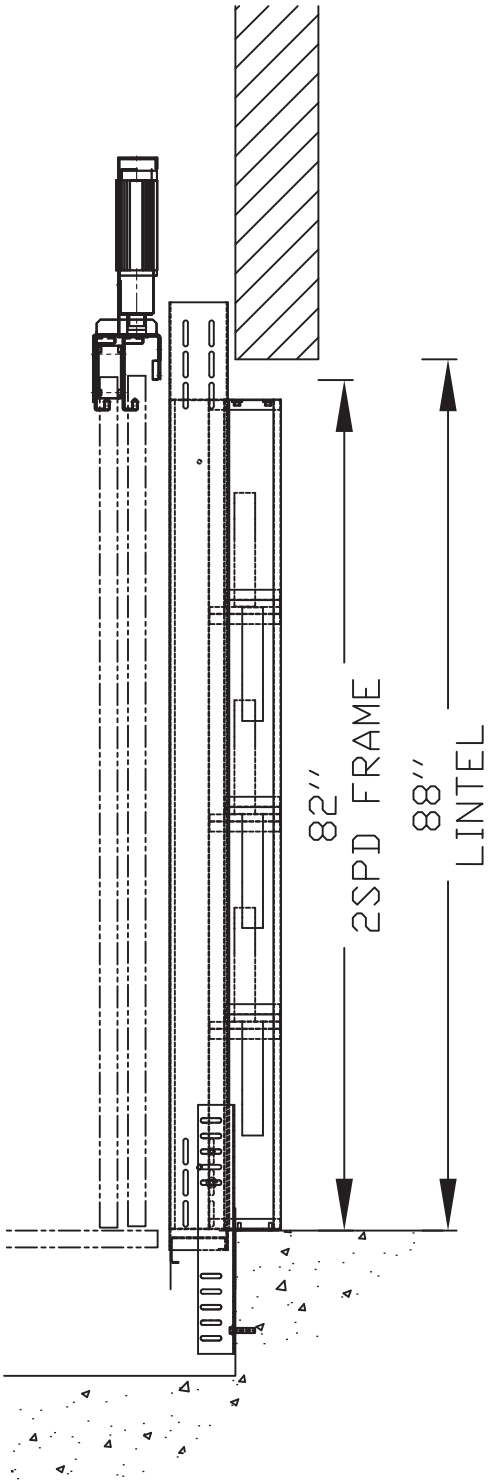


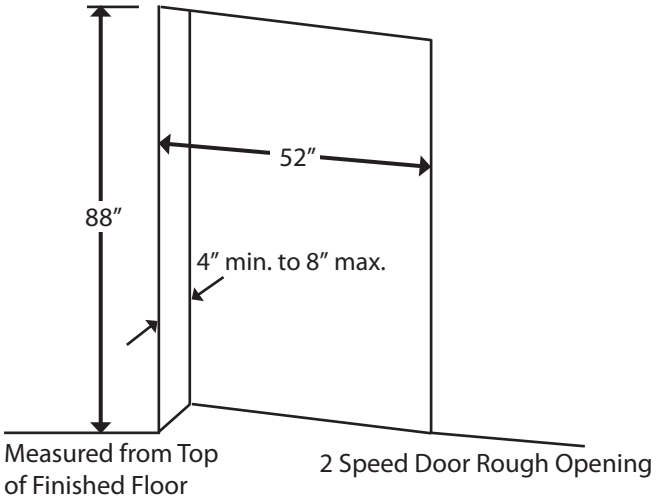
Figure 39: Masonry Construction - Two Speed Door (No Controller)

Two-Speed Doors and Guide Rail Information

NOTICE

See Hoistway requirements for the location of the door centerline.
Door Panels and frame are primed for painting.
For Metric equivalents: Inches x 25.4 = *x* mm





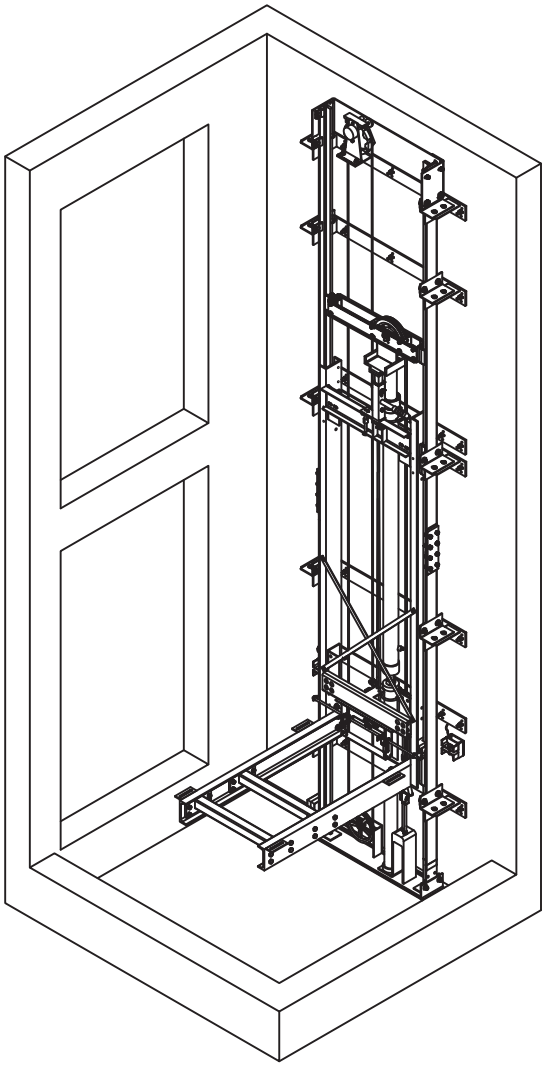


Figure 40: 42" x 54" Orion17 Cab

Controller Cabinet Layout (if Door Buck Controller Cabinet at Landing)

NOTICE

Applicable only when option “MRL on landing” is selected

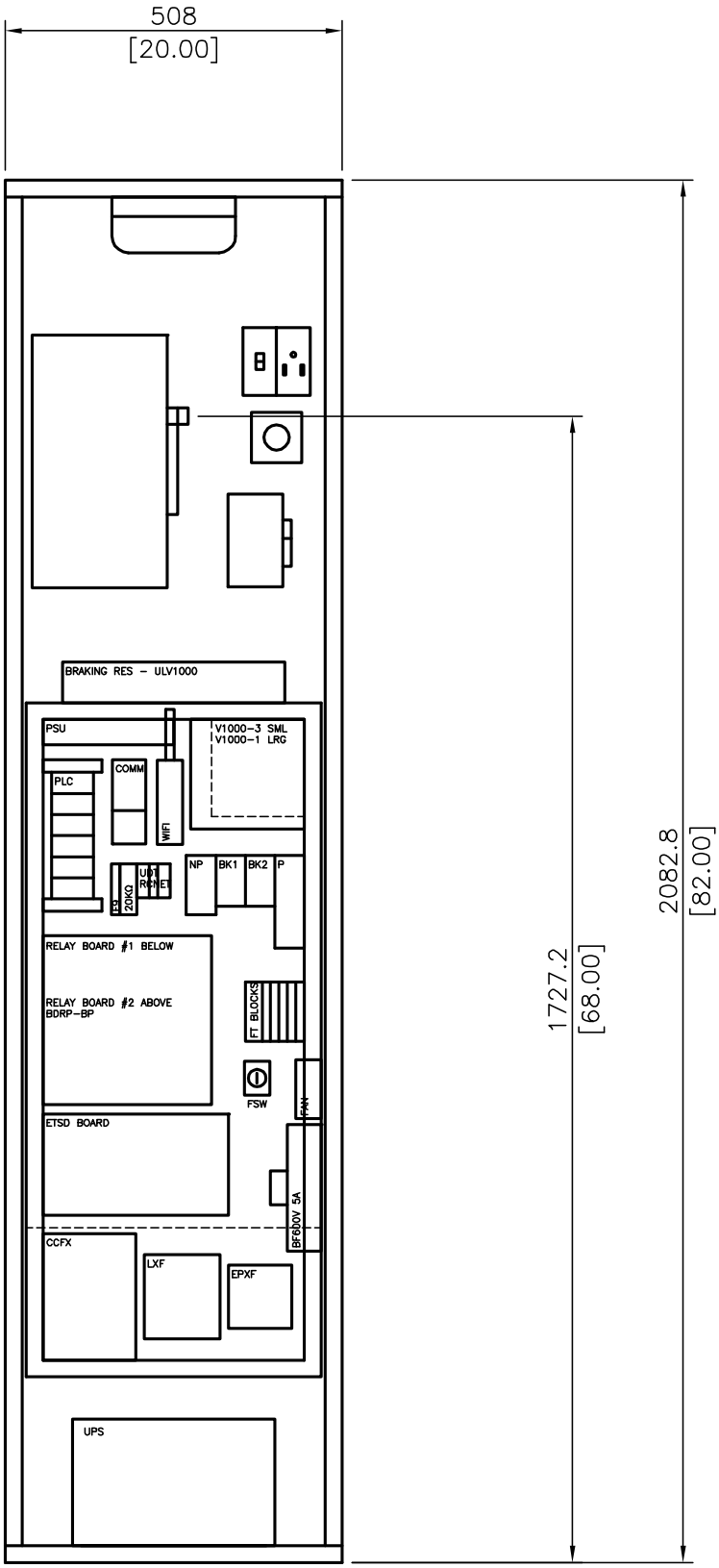


Figure 41: Controller Cabinet Measurements

Orion MRL

Commercial Elevator
PLANNING GUIDE

Part No. 001133, Rev. 022
21-m04-2026

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