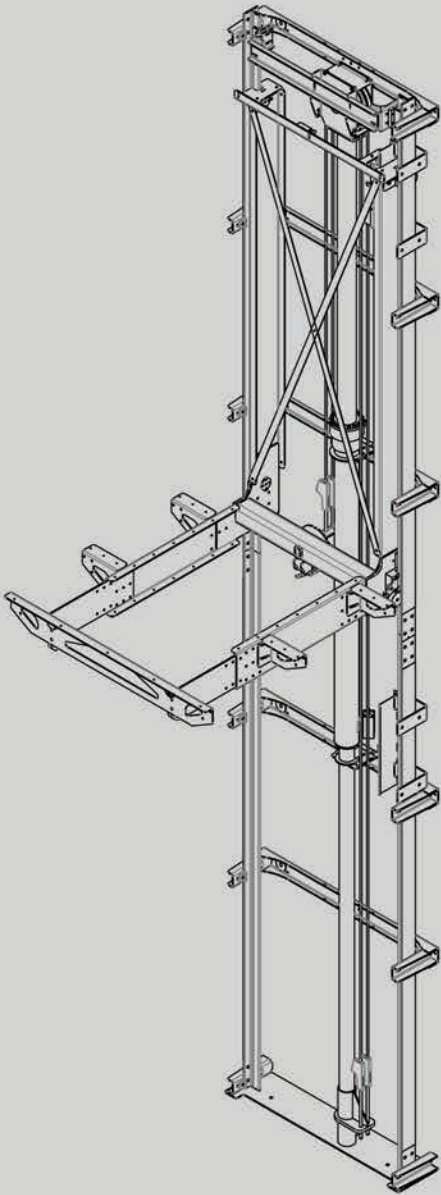




Limited Use/Limited Application Elevator

Design Guide

ASME A17.1, Part V, Section 5.2



www.SymmetryElevator.com

National Reach. Local Service.

Symmetry LU/LA Elevator

Limited Use/Limited Application

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About Symmetry

Beautifully Crafted, Expertly Engineered, Thoughtfully Constructed

Symmetry is committed to its quest to develop innovative accessibility products, rigorous in its commitment to beautiful craftsmanship, expert engineering, thoughtful construction, and affordability.

Symmetry is committed to being the leading provider of lift products in North America. We are focused on being your complete lift solutions provider.

Symmetry Elevating Solutions dealer network possesses over 120 combined years of hands-on, real-world home elevator and lift equipment experience.

Symmetry is committed to an unwavering, relentless, honest pursuit of excellence. The result? A visionary product expertly installed, unrivaled in the accessibility industry.



Symmetry Elevating Solutions

National Reach. Local Service.

At Symmetry, we are your complete lift solutions provider! Please visit us at www.symmetryelevator.com to see our full line of lift solutions.

- Residential Elevators
- Dumbwaiters
- Stairlifts
- Limited Use/Limited Access Elevators
- Vertical Wheelchair Lifts
- Auto Parking Solutions - Vasari
- Vertical Reciprocating Conveyors
- Auto Gate Operators
- Material Handling Equipment
- Specialty Elevator Fixtures
- Planned Maintenance and Service

Elevation

by Symmetry Elevating Solutions

What is a Limited Use/Limited Application Elevator?

When only the highest level of safety is your standard, the Elevation LU/LA (Limited Use Limited Application) elevator is the select product for your project. Leading the industry in quality, style and design, the Elevation by Symmetry is engineered and designed for limited commercial as well as residential use.

The LU/LA elevator is designed to meet the requirements of the ADA and provide access for low occupancy / low rise commercial buildings where a traditional passenger elevator is not feasible or required by code. The Elevation is ideal for applications up to six stops and 50 feet of travel. The Elevation is designed for use in schools and other educational settings, churches, multi-family housing units, libraries and more.

The Symmetry Difference?

What makes the Symmetry Elevation better than other elevators available

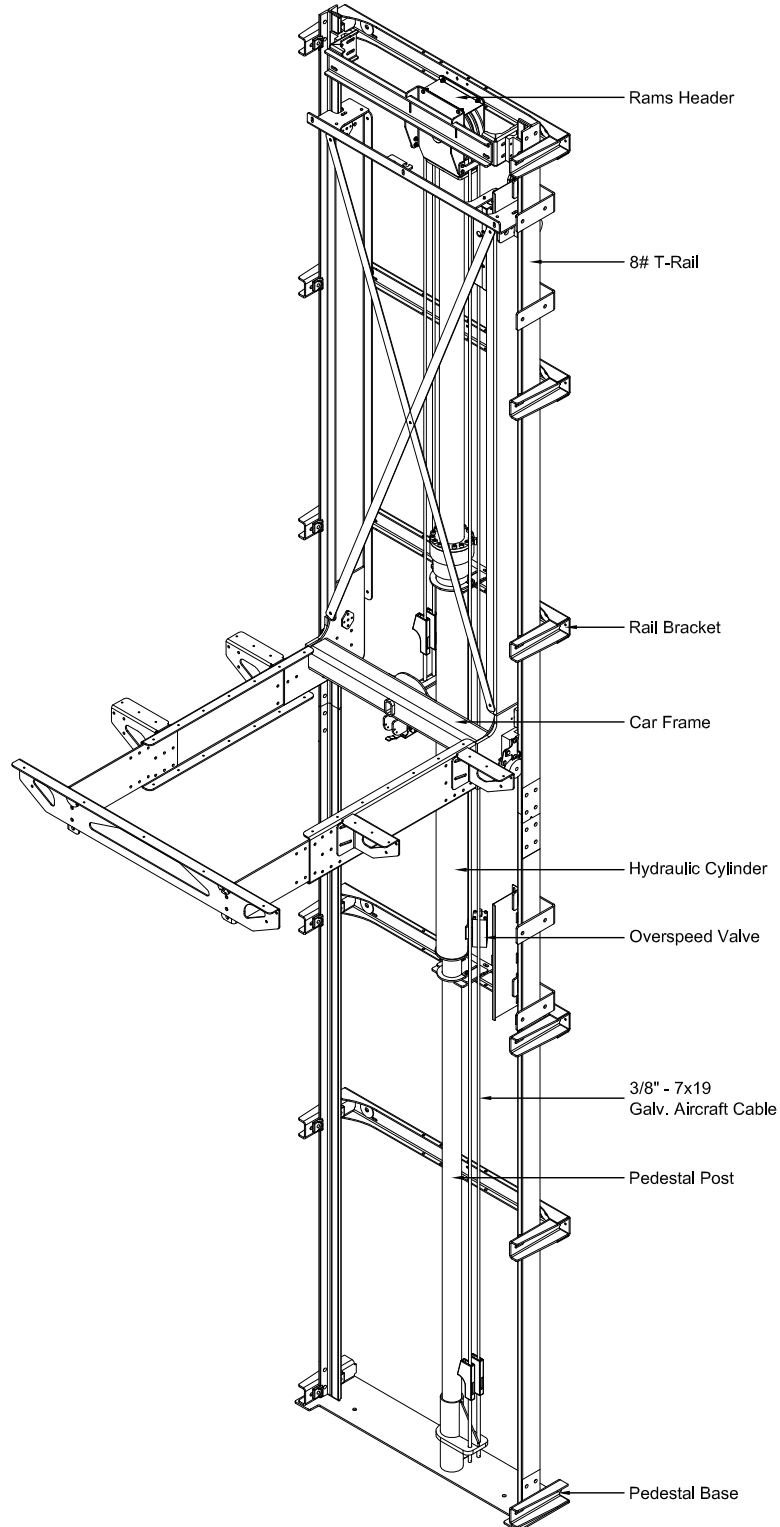
- * Shallowest pit depth required in the industry (13" pit)
- * Shortest overhead required in the industry (106")
- * All lights are energy saving LED, including COP & Car lights. Includes directional indicators





Component Identification

Limited Use/Limited Application (LU/LA)



Equipment for Symmetry LU/LA Elevator

Limited Use/Limited Application

Standard Features

- Automatic Self-leveling
- 1:2 cable hydraulic drive system
- Smooth start and stop
- 2 stop operation which can be increased up to 6 stops
- 36" wide doors, automatic horizontally sliding, two speed hoistway and car door; full height electric screen
- Pit depth: Standard 13" with alternative means (bottom of car clearance device)
- Overhead: 11' standard or 8'10" (106") with alternative means (top car clearance device)
- Selective collective Programmable Logic Controller (PLC), single automatic push button operation
- Homing Timer, car indicator lights with audible and visual brake
- 4 HP submersible pump and motor quiet operation
- 2 speed control valve
- Low oil protection
- Single stage hydraulic jack and two 3/8" aircraft ropes using wedge sockets
- Green drive system by adding environmentally biodegradable hydraulic oil
- 8# T-rail
- Heavy duty rollers and guides

Optional Features

- Custom wood cabs
- Stainless steel and colored laminate interior finishing
- Overspeed governor
- Speed: 40 FPM with variance
- Fire rated cab gates
- 50' travel with variance and derated capacity
- 3 phase motor & Controller (208, 3 PH, 30 AMP)
- Phase 1 & Phase 2 Fire Service

Safety Features

- Emergency stop and alarm button, keyed
- Emergency lighting in cab interior
- Emergency lowering with battery back up system
- Emergency manual lowering
- Instantaneous safety brake system
- Automatic bidirectional floor leveling
- Slack/broken cable safety brake device
- Over speed valve
- ETL, UL or CSA certified components
- Emergency backup power supply for lights and door operators
- Tactile/Braille characters
- Buffers

This brochure is intended for informational purposes only and should not be used for construction. Please contact your local Symmetry representative for a job specific drawing.

Platform Sizes

- 48" W x 54" D Standard
- 42" W x 54" D Standard
- 42" W x 60" D Optional
- 90 degree 51" W x 51" D Optional

Specifications

- Power Supply: 230, 1 PH, 30 AMP, 60 HZ
- Capacity: 1400# (635 kg)
- Speed 30 FPM (.15 m/s)
- Travel: 25' standard
- Two year limited parts warranty

LU/LA Specifications limited by

- Travel - 25 feet (check the regulations for your jurisdiction)
- Speed - 30 FPM (0.15 m/s)
- Maximum Platform Size - 18 square feet (1.67 square meters)
- Maximum Capacity - 1400 lbs (635 kg)

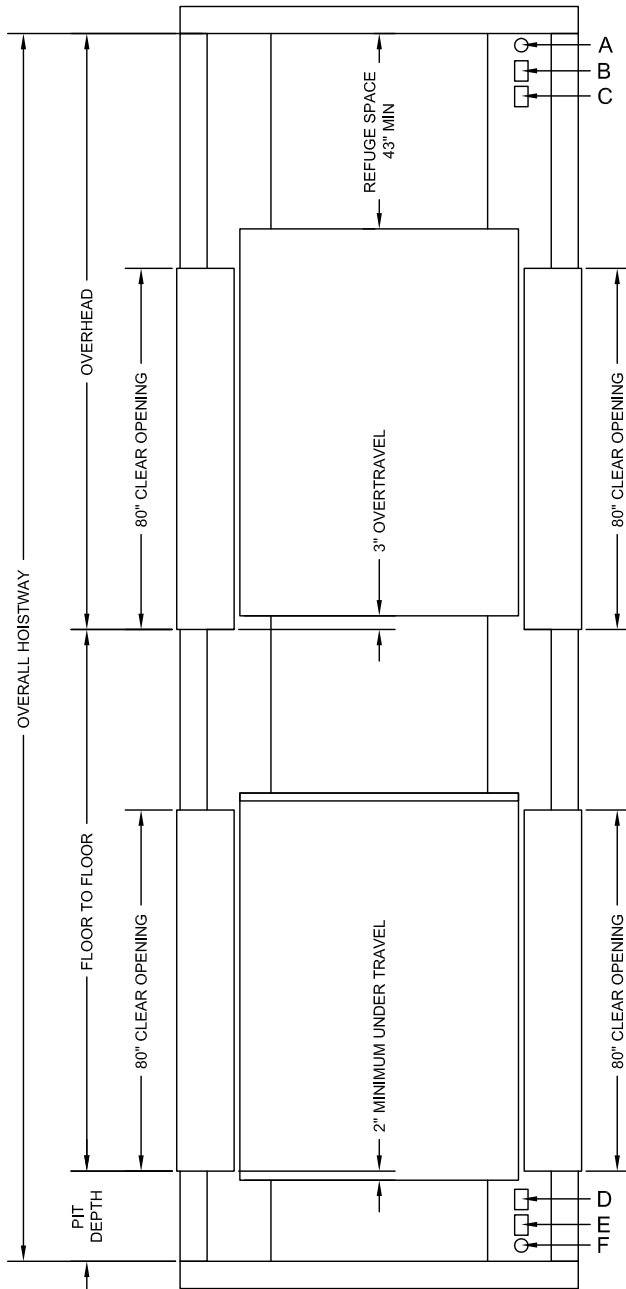
Warranty

- Standard Warranty: Provides a 24 month limited warranty covering replacement of defective parts and excluding labor. Preventative maintenance agreement required
- Extended Warranty: Provides an addition 5 year limited warranty covering replacement of defective parts and excluding labor, for a total of 7 years. Preventative maintenance agreement required



2 Stop Elevation

Limited Use/Limited Application (LU/LA)



Notes:

1. Hoistway must be free of any obstructions unrelated to the elevator operation. (i.e. pipes, ducts, etc.)
- 2.

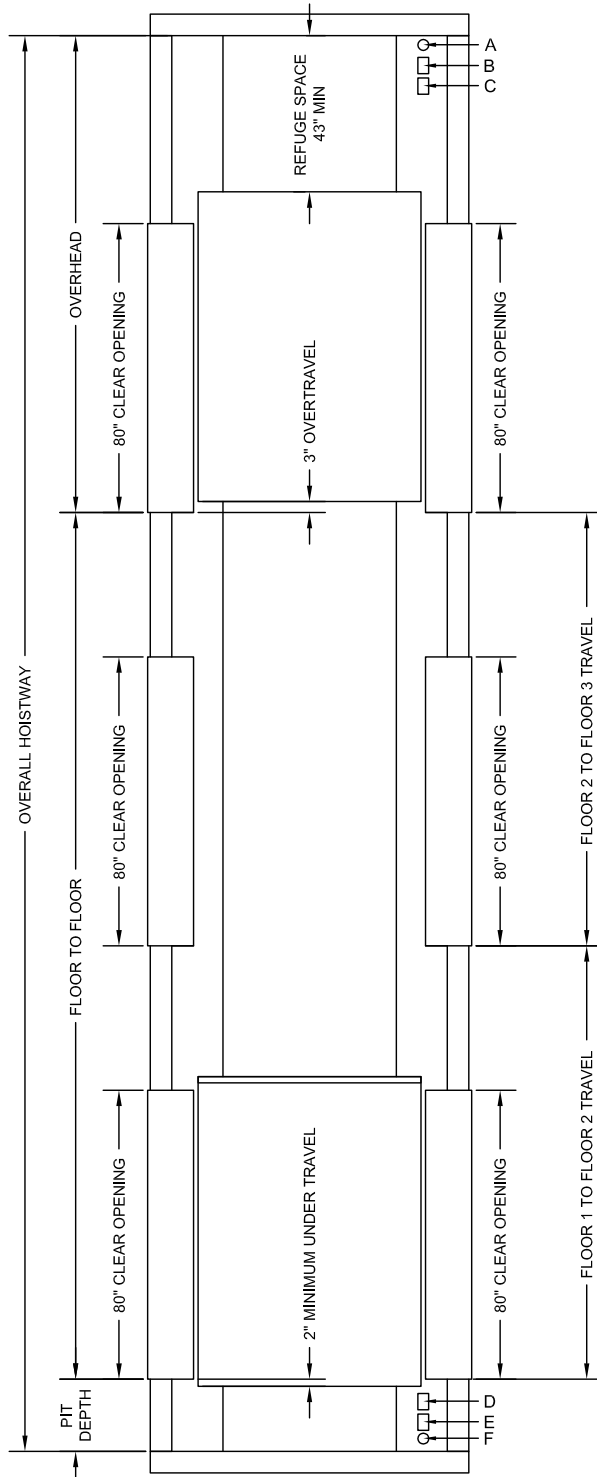
Work By GC:

- A. Overhead Light.
- B. Overhead Light Switch.
- C. Overhead GFI Duplex Receptacle.
- D. Pit Light Switch Installed 4'0" above the finished floor.
- D. Pit GFI Duplex Receptacle.
- D. Pit Light.

| Hoistway Information | |
|-----------------------|------|
| Overall Hoistway | 266" |
| Overhead | 132" |
| Floor to Floor Travel | 120" |
| Pit Depth | 14" |

3 Stop Elevation

Limited Use/Limited Application (LU/LA)



Notes:

1. Hoistway must be free of any obstructions unrelated to the elevator operation. (i.e. pipes, ducts, etc.)
- 2.

Work By GC:

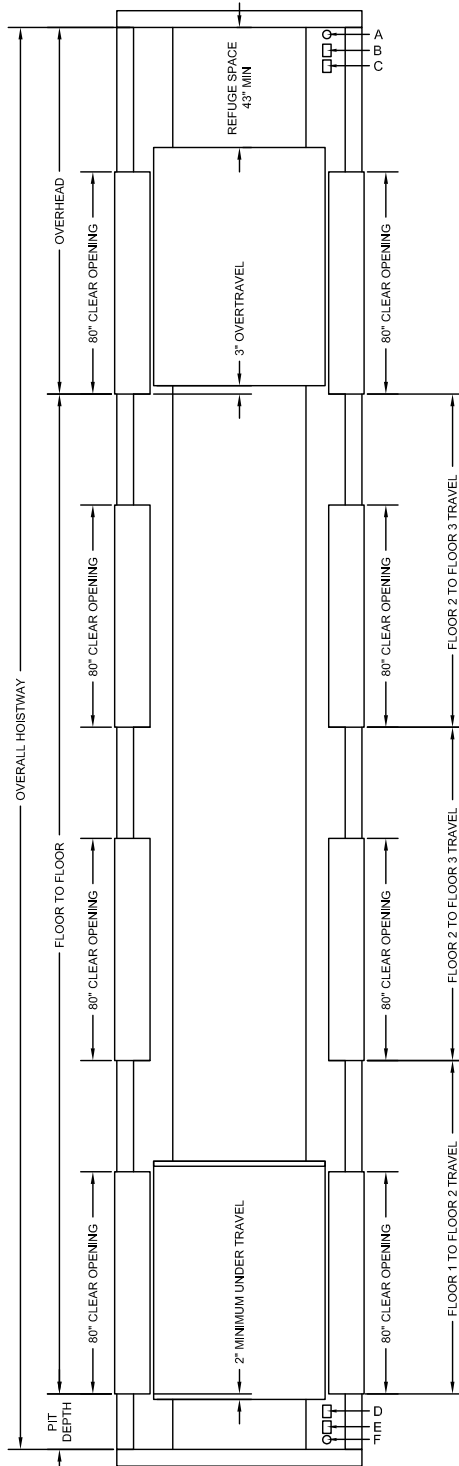
- A. Overhead Light.
- B. Overhead Light Switch.
- C. Overhead GFI Duplex Receptacle.
- D. Pit Light Switch Installed 4'0" above the finished floor.
- D. Pit GFI Duplex Receptacle.
- D. Pit Light.

| Hoistway Information | |
|-----------------------|------|
| Overall Hoistway | 386" |
| Overhead | 132" |
| Floor to Floor Travel | 240" |
| Pit Depth | 14" |

| Floor to Floor Information | |
|----------------------------|------|
| Floor 1 to Floor 2 Travel | 120" |
| Floor 2 to Floor 3 Travel | 120" |

4 Stop Elevation

Limited Use/Limited Application (LU/LA)



Notes:

1. Hoistway must be free of any obstructions unrelated to the elevator operation. (i.e. pipes, ducts, etc.)

Work By GC:

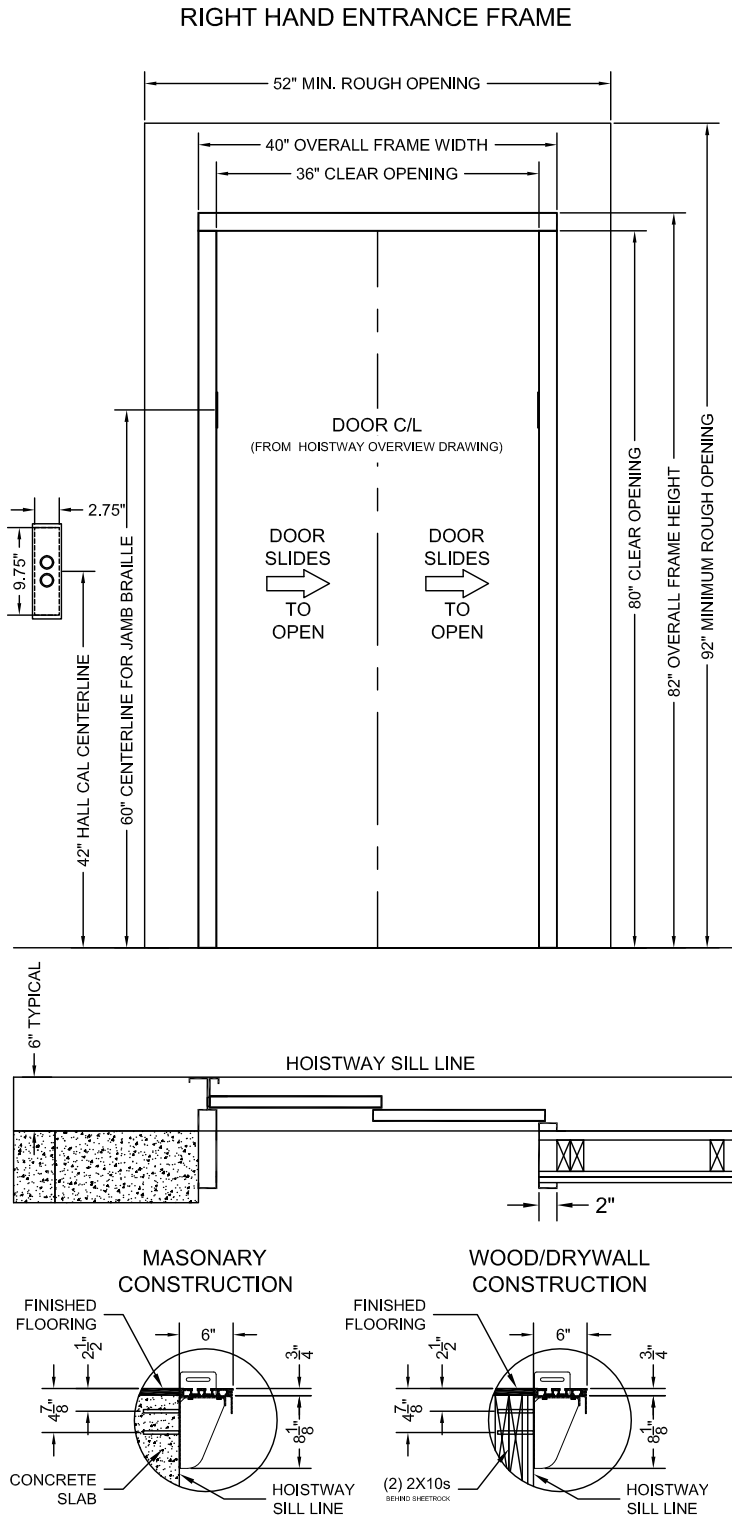
- A. Overhead Light.
- B. Overhead Light Switch.
- C. Overhead GFI Duplex Receptacle.
- D. Pit Light Switch Installed 4'0" above the finished floor.
- D. Pit GFI Duplex Recetade.
- D. Pit Light.

| Hoistway Information | |
|-----------------------|---|
| Overall Hoistway | " |
| Overhead | " |
| Floor to Floor Travel | " |
| Pit Depth | " |

| Floor to Floor Information | |
|----------------------------|---|
| Floor 1 to Floor 2 Travel | " |
| Floor 2 to Floor 3 Travel | " |
| Floor 3 to Floor 4 Travel | " |

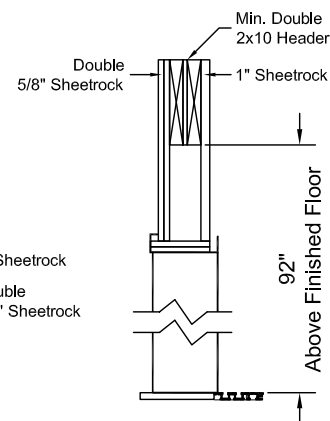
Left Handed Entrance

Limited Use/Limited Application (LU/LA)



Notes:

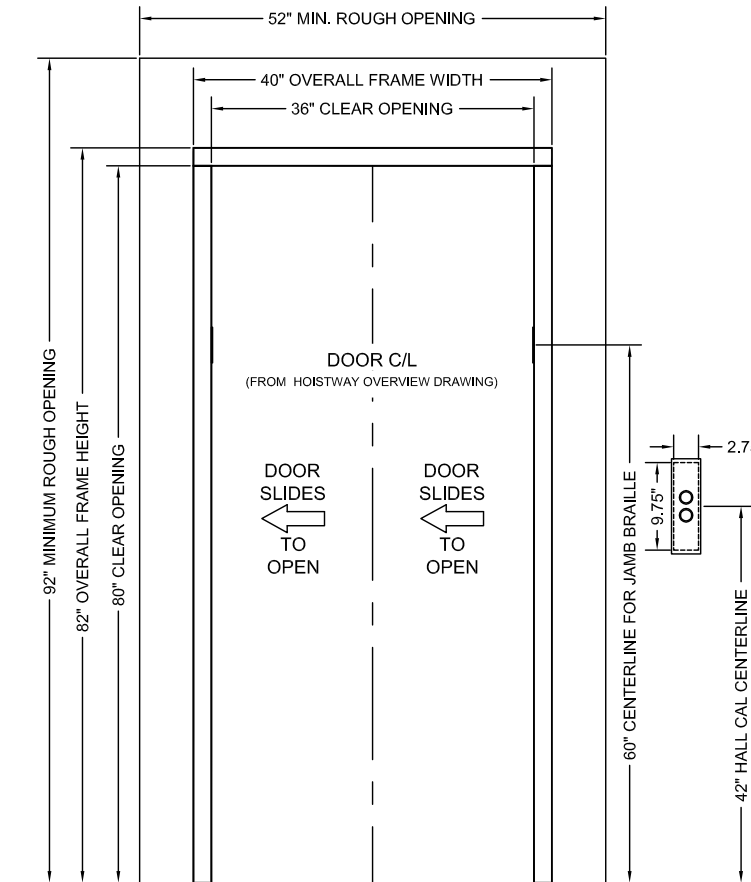
1. Hoistway entrances are manufactured in accordance with 1 1/2 Hr. fire rated construction.
2. Hoistway walls to have a fire endurance rating not less than required by Section 110 (1996) or Section 2.1 (2000+) ASME A17.1 Elevator Safety Code.
3. Furnishing, installing, and maintaining the required fire rating of elevator hoistway walls, including the penetration of the fire wall by elevator fixture boxes, is not the responsibility of the elevator contractor or manufacturer.
4. The interface of the hoistway wall with the hoistway entrance shall be in strict compliance with the entrance manufacturer's requirements in order to retain fire rating and label validity of the elevator hoistway doors and frame.
5. Hoistway walls at entrances should be left open for the full width of the shaft until after door sills and frames are set in place. If this is not feasible, leave a 54"W x 92"H rough opening.
6. Filling and grouting by GC.



Right Handed Entrance

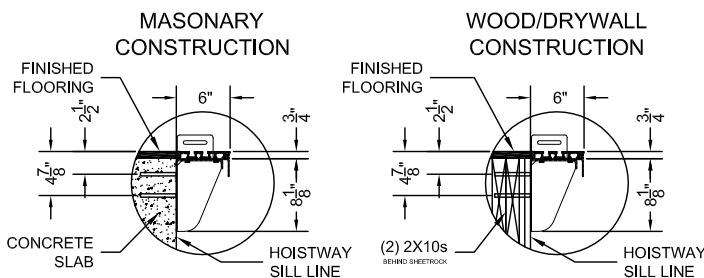
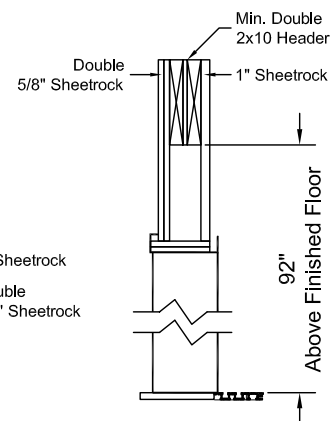
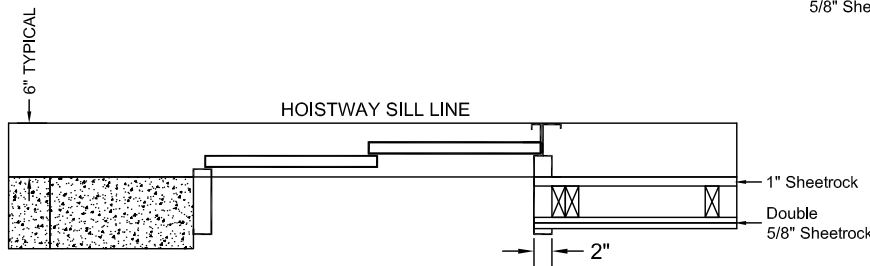
Limited Use/Limited Application (LU/LA)

RIGHT HAND ENTRANCE FRAME



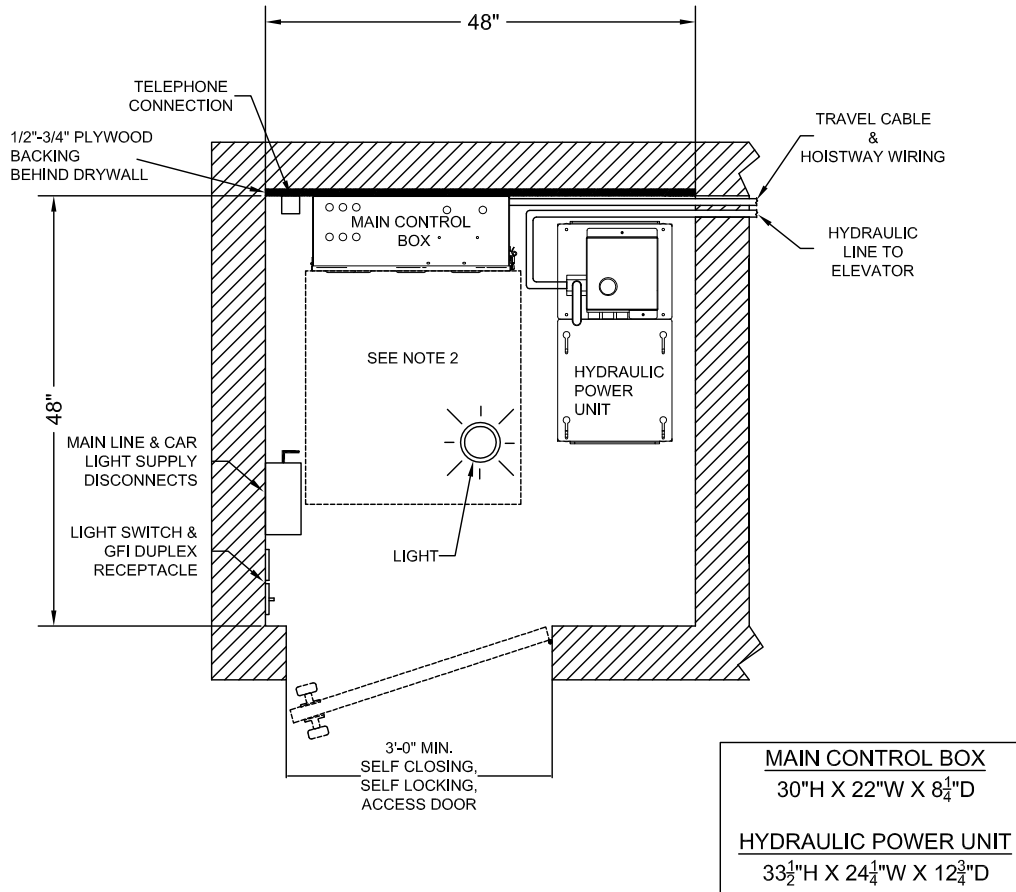
Notes:

1. Hoistway entrances are manufactured in accordance with 1½ Hr. fire rated construction.
2. Hoistway walls to have a fire endurance rating not less than required by Section 110 (1996) or Section 2.1 (2000+) ASME A17.1 Elevator Safety Code.
3. Furnishing, installing, and maintaining the required fire rating of elevator hoistway walls, including the penetration of the fire wall by elevator fixture boxes, is not the responsibility of the elevator contractor or manufacturer.
4. The interface of the hoistway wall with the hoistway entrance shall be in strict compliance with the entrance manufacturer's requirements in order to retain fire rating and label validity of the elevator hoistway doors and frame.
5. Hoistway walls at entrances should be left open for the full width of the shaft until after door sills and frames are set in place. If this is not feasible, leave a 54"W x 92"H rough opening.
6. Filling and grouting by GC.



Machine Room

Limited Use/Limited Application (LU/LA)



NOTES:

- 1) THE ELEVATOR MACHINE ROOM LOCATION AND LAYOUT MUST MEET CODE REQUIREMENTS DEFINED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- 2) 30" WIDE x 36" DEEP CLEAR WORKING SPACE REQUIRED IN FRONT OF THE MAIN CONTROL BOX AND DISCONNECTS BY NEC.
- 3) DISCONNECTS TO BE LOCATED ON THE STRIKE SIDE OF THE MACHINE ROOM DOOR.
- 4) MAIN LINE DISCONNECT FUSIBLE AND CAPABLE OF BEING LOCKED IN THE OPEN POSITION.
- 4) LIGHT SWITCH TO BE LOCATED ON THE STRIKE SIDE OF THE MACHINE ROOM DOOR.
- 5) THE HYDRAULIC POWER UNIT SHOULD BE LOCATED WITHIN 40' FROM THE CYLINDER.
- 6) THE MINIMUM MACHINE ROOM HEADROOM IS 84".
- 7) MAINTAIN MACHINE ROOM FROM 50°F TO 90°F WITH HUMIDITY FROM 5 TO 95% NON-CONDENSING.

MAIN LINE DISCONNECT
SINGLE PHASE

SQUARE D - H322N OR EQUIVALENT
2 POLE W/ AUX. CONTACT OR 3 POLE

THREE PHASE

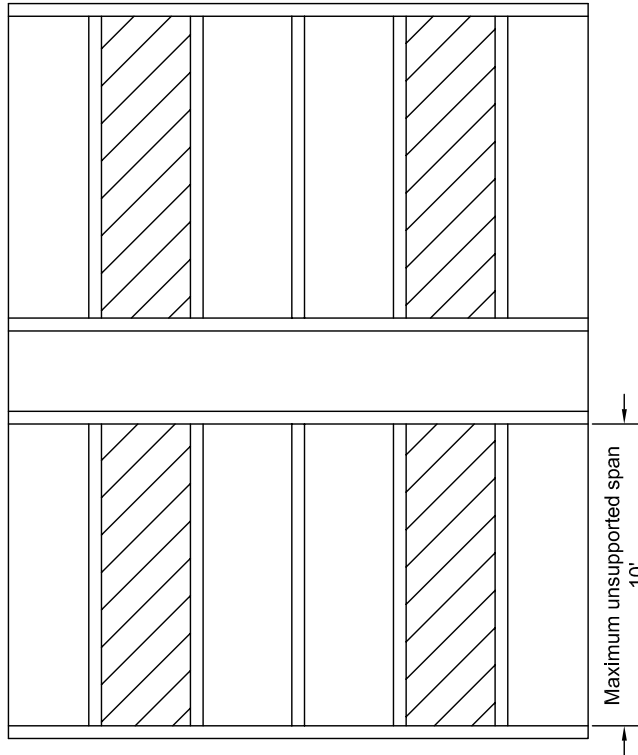
SQUARE D - H321N WITH AUXILLARY CONTACT OR EQUIVALENT
3 POLE W/ AUX. CONTACT

CAR LIGHT DISCONNECT

SQUARE D - G221N OR EQUIVALENT.

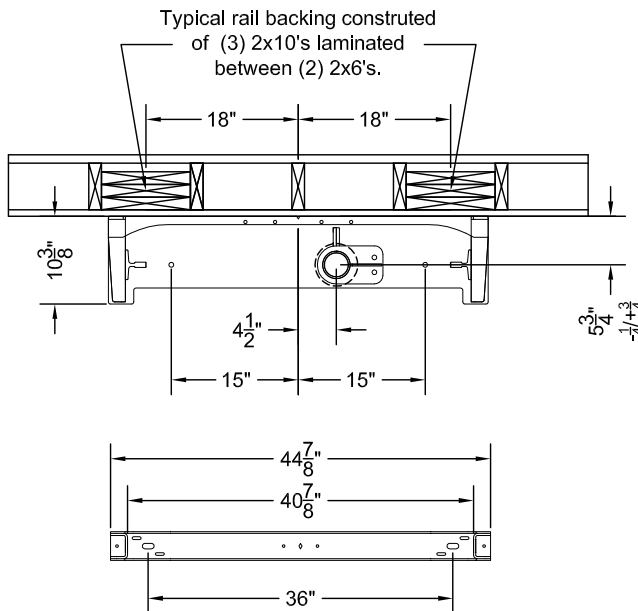
Rail Backing

Limited Use/Limited Application (LU/LA)

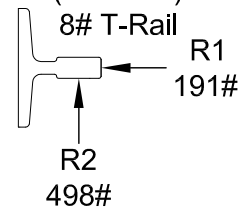


Notes:

1. The maximum rail bracket spacing is 6'.
2. The maximum vertical force imposed on the guide rails on application of the safety is 4,800 lbs.
3. The impact load imposed on the pit floor is 9,600 lbs.
4. The impact load imposed on the buffer/bumper is 665 lbs per buffer/bumper.
5. The net vertical load from the elevator system is 3,710 lbs.
6. The maximum working pressure of the hydraulic system is 750psi.
7. The hydraulic line shall be $\frac{3}{4}$ " hydraulic tubing with a .065 wall thickness or $\frac{3}{4}$ " schedule 80 seamless pipe.
8. The rated speed in the down direction is 30fpm.
9. Hoistway to be constructed plumb and vertical within $\frac{1}{4}$ " from top to bottom.

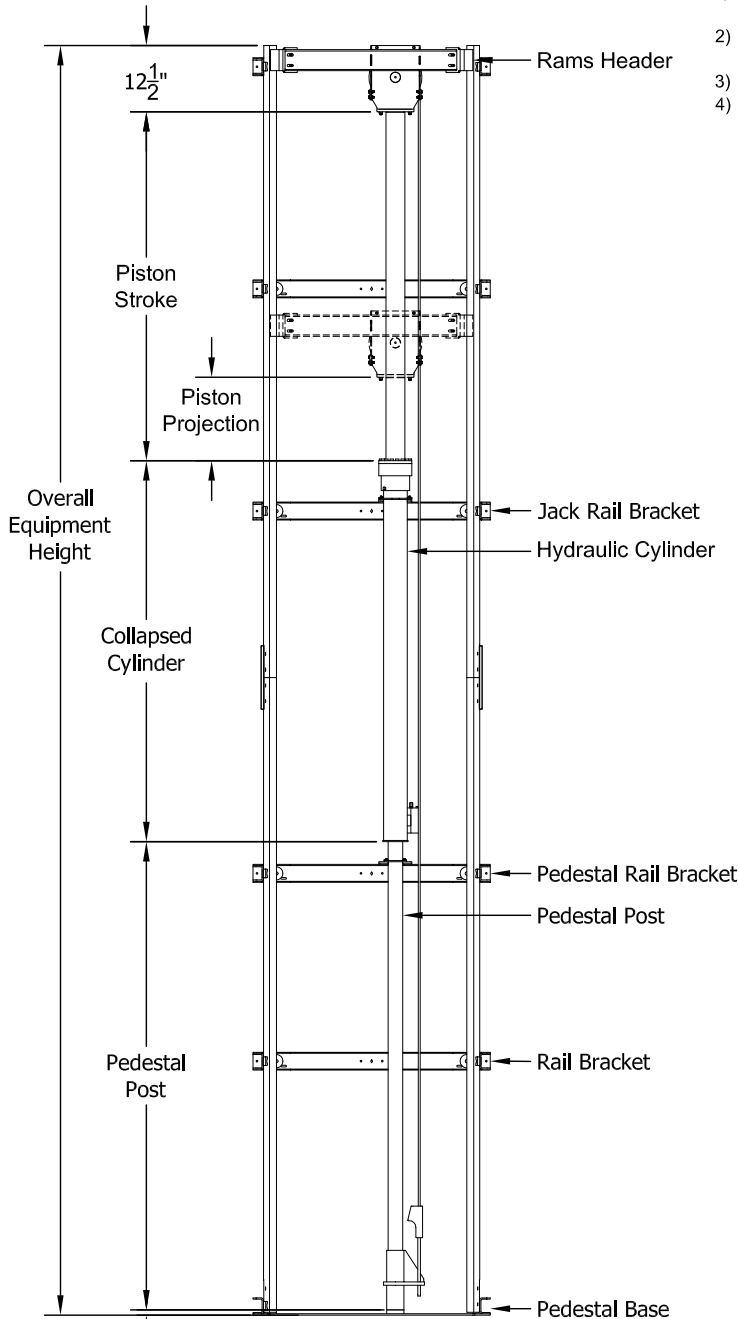


Rail Forces (each rail)



Rail Bracket Elevation

Limited Use/Limited Application (LU/LA)



Please note that this is a typical drawing.
There may be more or less brackets than shown in this view.

Notes

- 1) All bracket elevations are reference from the pit floor to the center of the bracket.
- 2) Each rail section shall have a minimum of one bracket.
- 3) The maximum rail section length is 10'-0"
- 4) The maximum space between brackets is 6'-0".

| Hoistway Information | |
|-----------------------|------|
| Pit Depth | 14" |
| Floor To Floor Travel | 120" |
| Overhead | 132" |
| Overall Hoistway | 266" |

| Equipment Information | |
|---------------------------|---------|
| Overall Equipment Height | 240" |
| Pedestal Post Length | 88 1/2" |
| Cylinder Length | 73" |
| Piston Stroke | 65" |
| Piston Projection | 2 1/2" |
| Safety Bulkhead Clearance | 1" Min. |

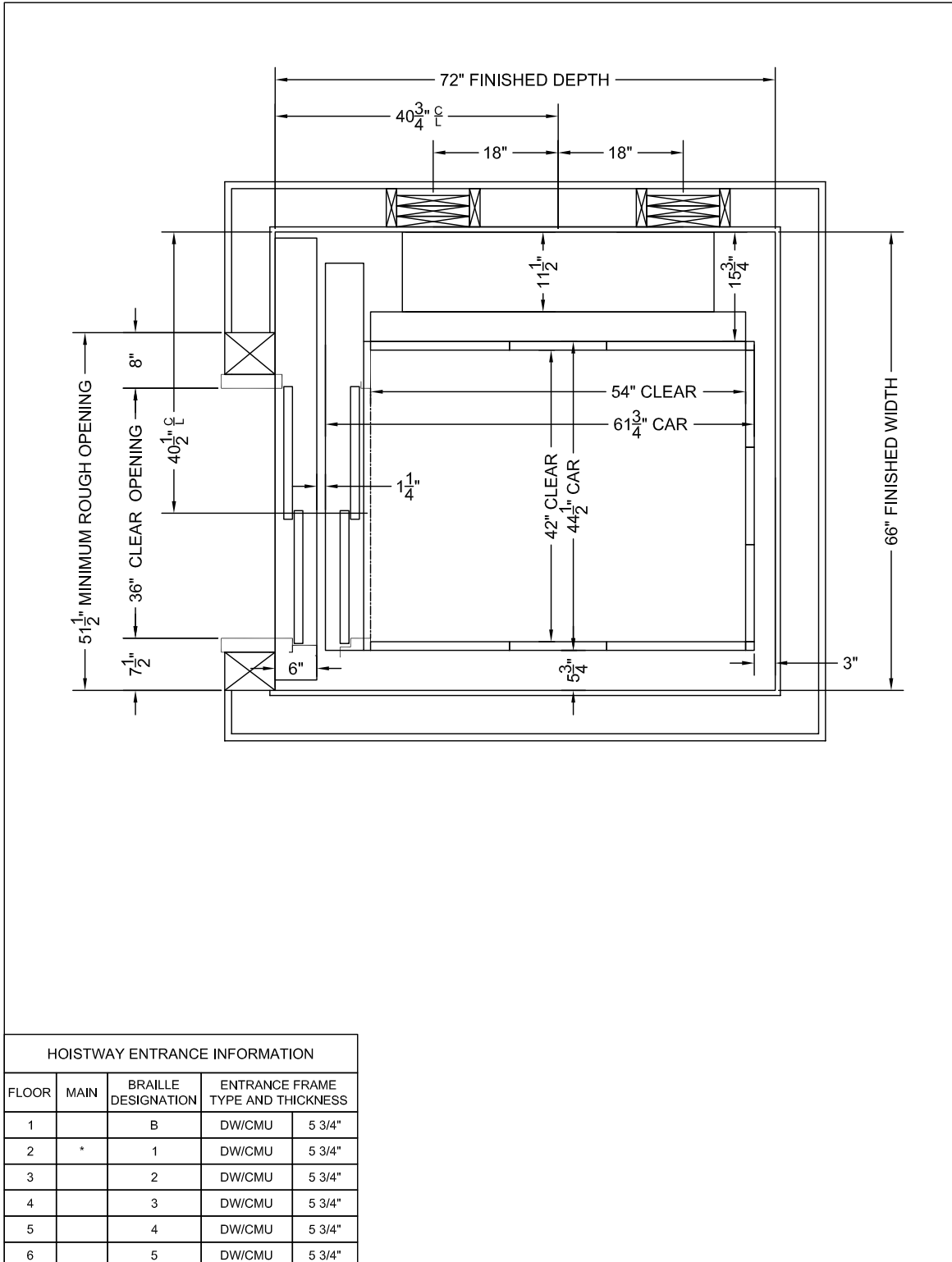
| Rail Information | |
|--------------------|------|
| Total Rail Height | 240" |
| Top Rail Length | 120" |
| Bottom Rail Length | 120" |

| Cylinder Information | |
|-------------------------|----------------|
| Cylinder Diameter | 114mm 4.49" |
| Cylinder Wall Thickness | 4mm .16" |
| Piston Diameter | 90mm 3.54" |
| Piston Wall Thickness | 7.5mm .30" |

| Bracket Locations | | |
|-------------------|------------------|------|
| #6 | Rail Bracket | 236" |
| #5 | Rail Bracket | 194" |
| #4 | Jack Bracket | 152" |
| #3 | Pedestal Bracket | 84" |
| #2 | Rail Bracket | 48" |
| #1 | Pedestal Base | 0" |

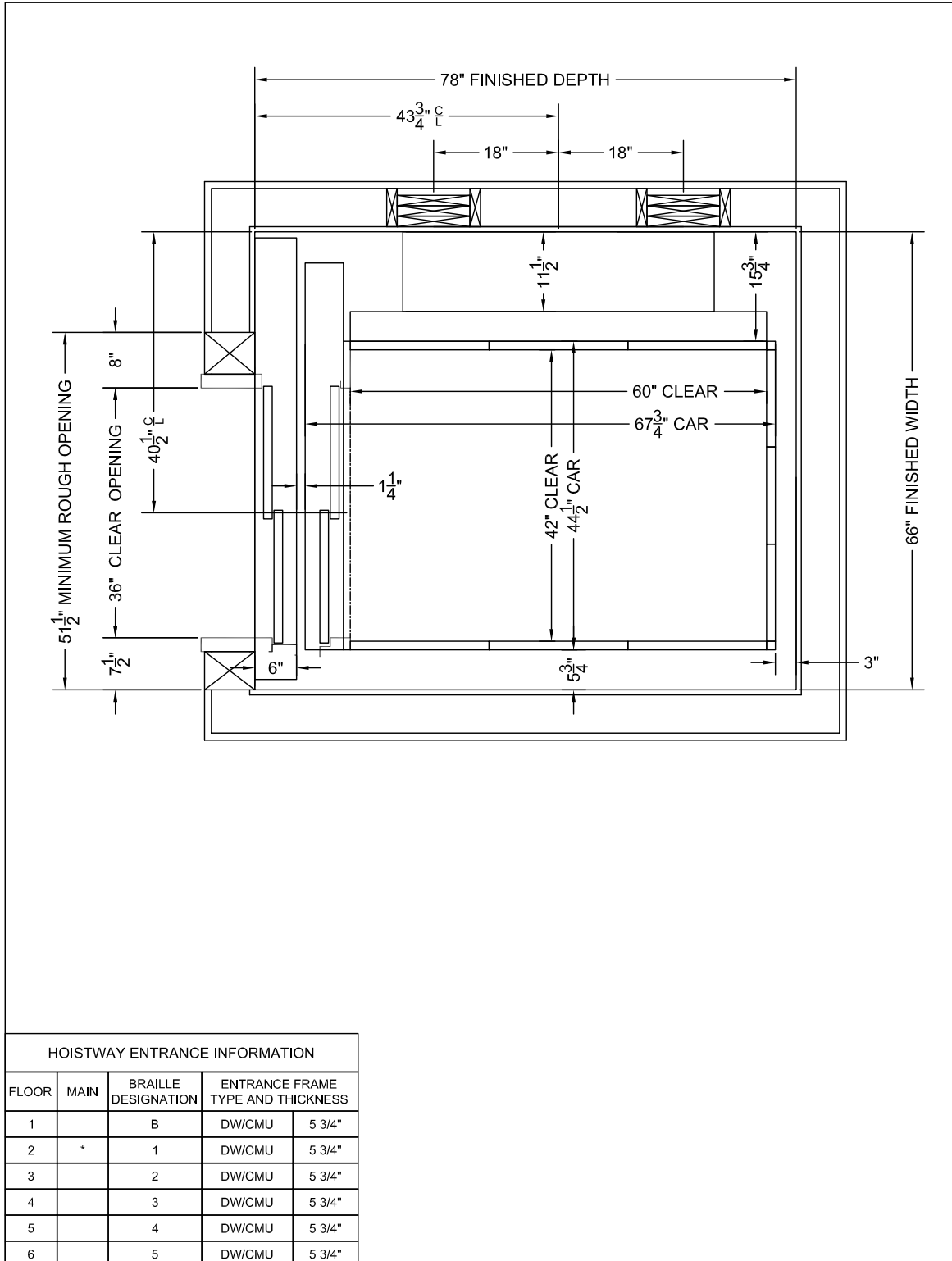
42" x 54" Rail Left

Limited Use/Limited Application (LU/LA)



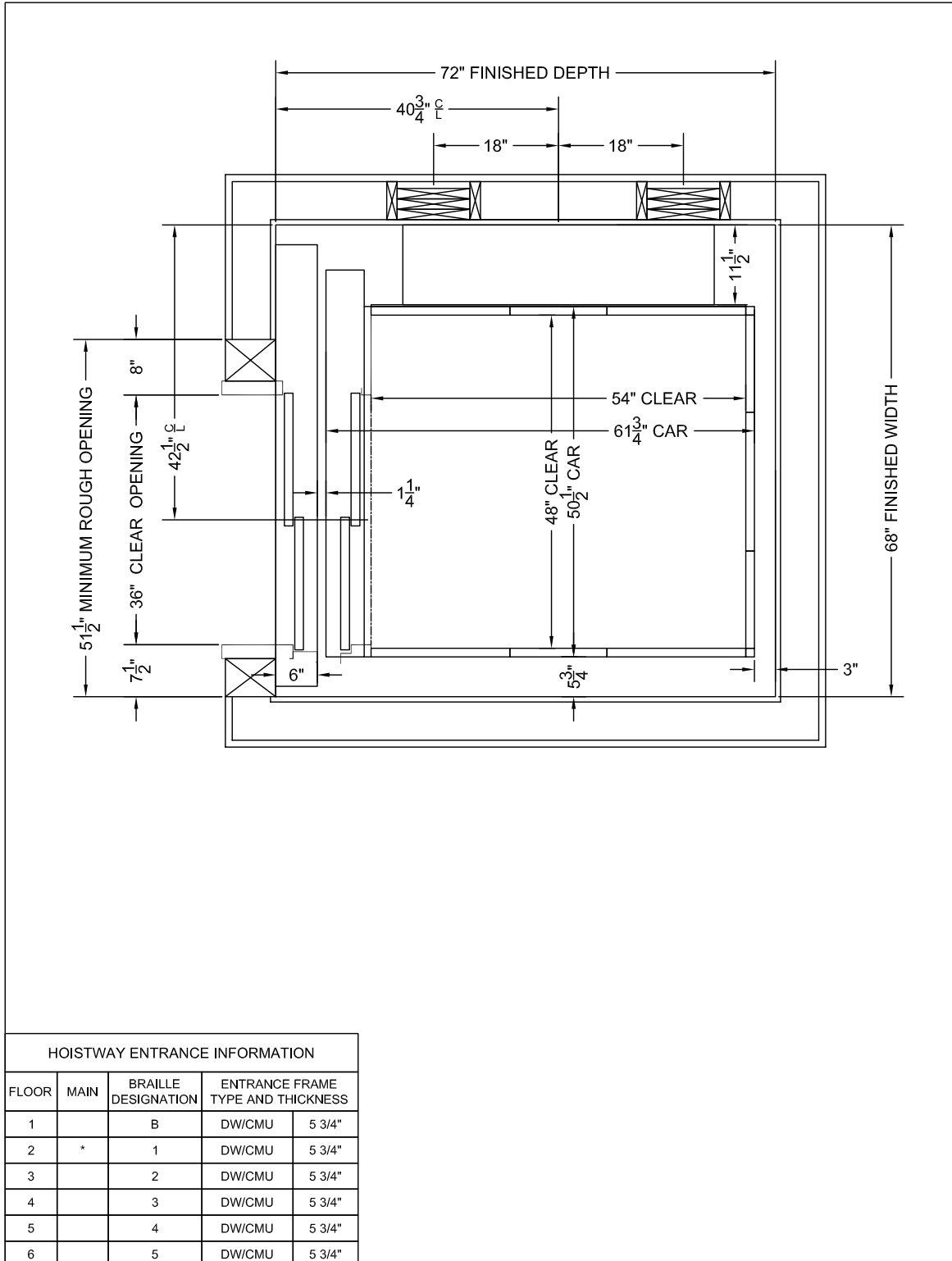
42" x 60" Rail Left

Limited Use/Limited Application (LU/LA)



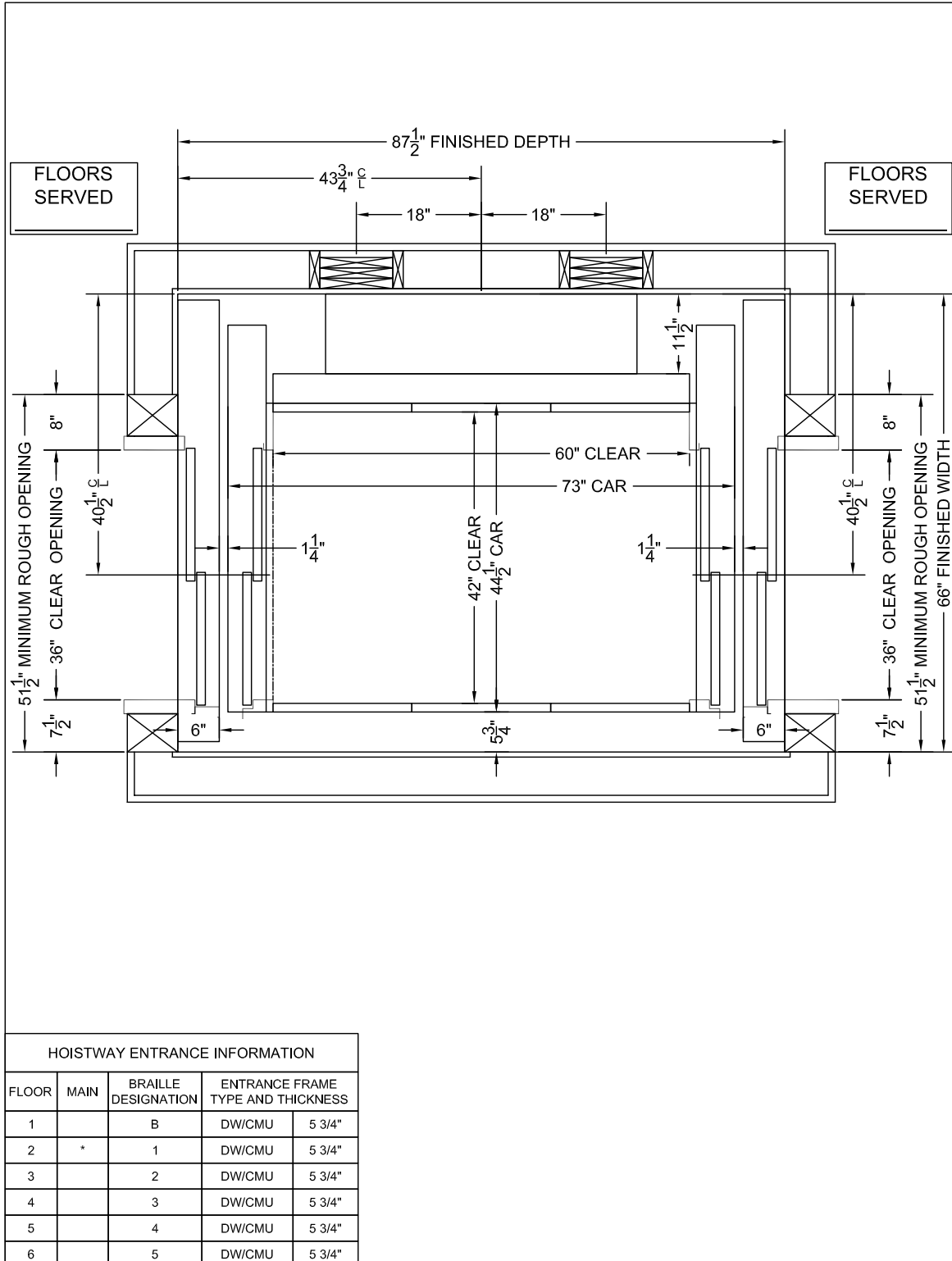
48" x 54" Rail Left

Limited Use/Limited Application (LU/LA)



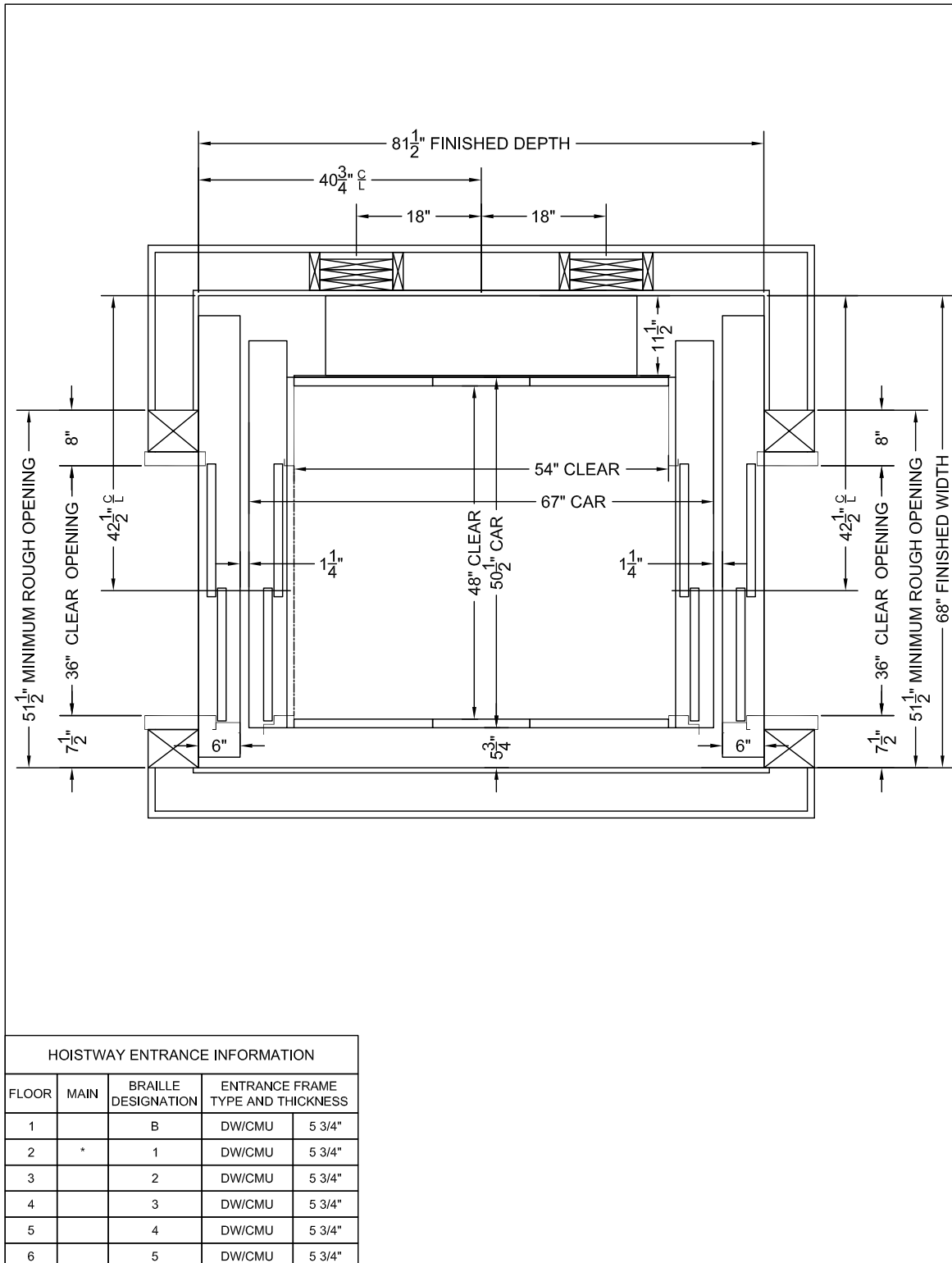
42" x 60" Forward Rail

Limited Use/Limited Application (LU/LA)



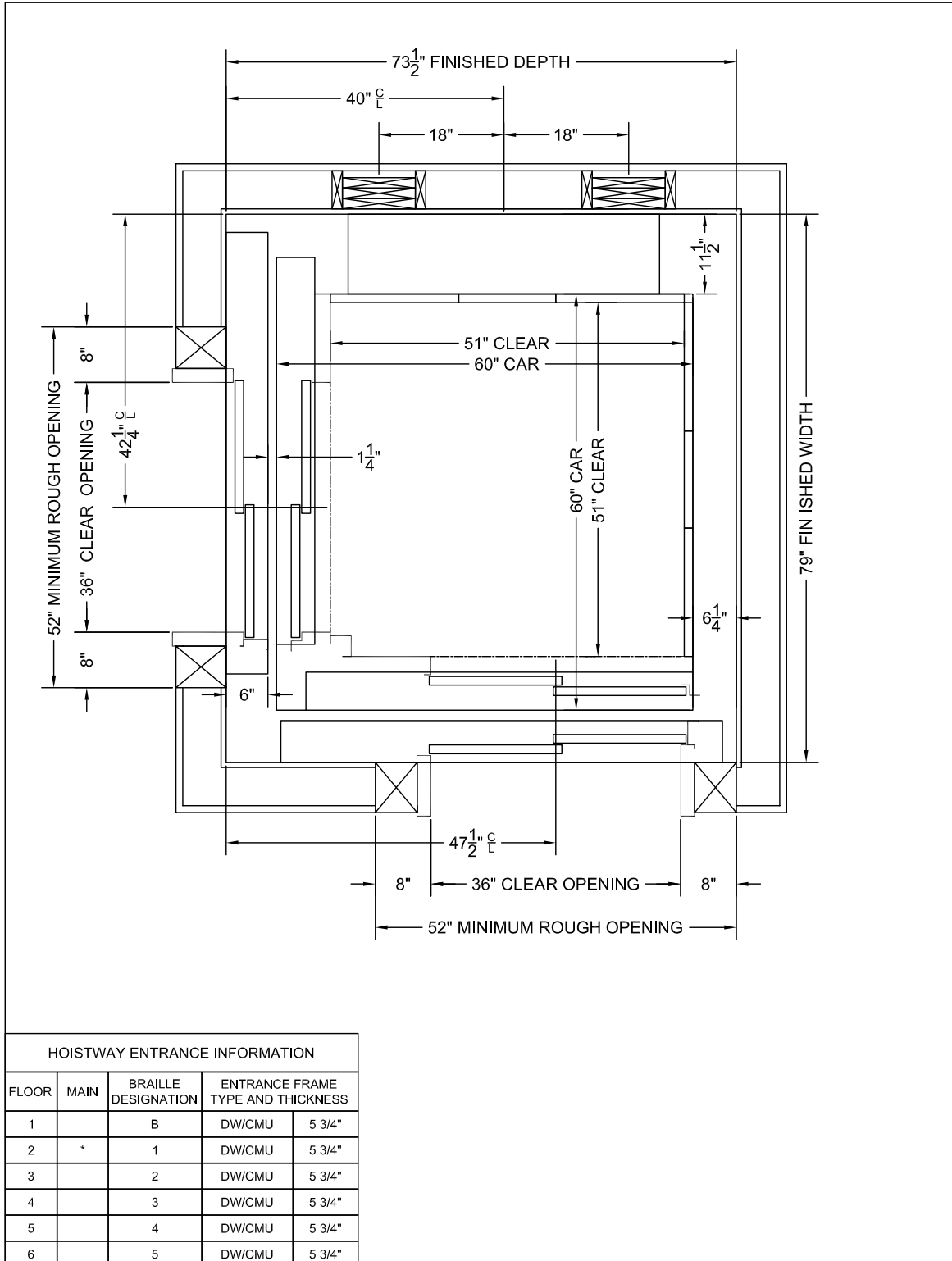
48" x 54" Forward Rail

Limited Use/Limited Application (LU/LA)



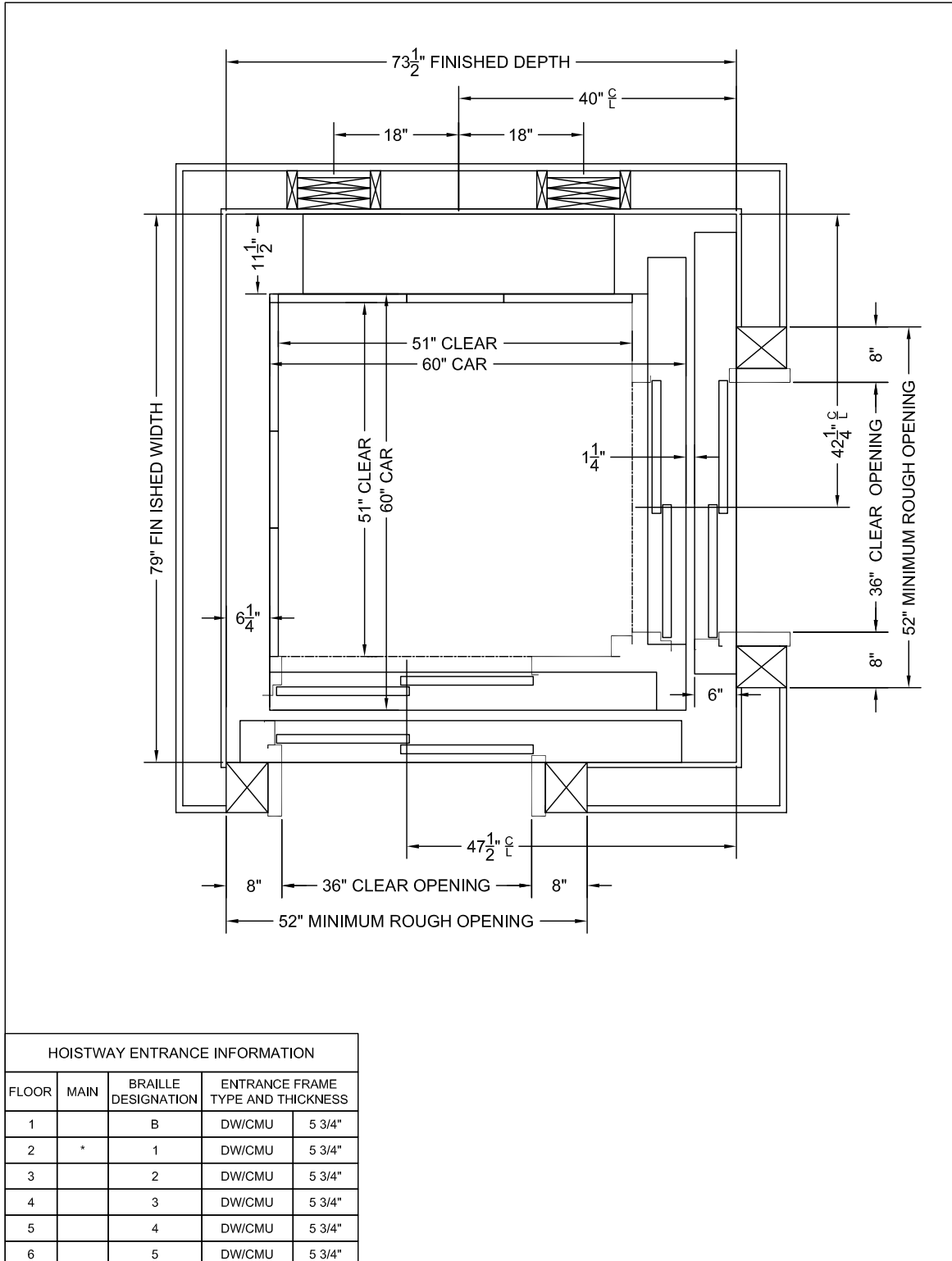
51" x 51" 90 Degree Right

Limited Use/Limited Application (LU/LA)



51" x 51" 90 Degree Left

Limited Use/Limited Application (LU/LA)



Section 14260 – Bid Specifications

Symmetry Elevation Roped Hydraulic Limited Use/Limited Application Elevator

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Professionally engineered LU/LA elevator with 1:2 roped hydraulic drive system and shallow pit provisions.

1.02 WORK INCLUDED

A. Furnish all labor and materials, equipment and incidentals necessary to assemble and erect a Limited Use/Limited Application elevator, complete with a remote power unit and all hoses, rails, brackets, connections and controls essential for proper operation.

1.03 WORK BY OTHERS

A. **Construct a hoistway** of the size required by the manufacturer, complete with all demolition, additional framing, headers, and framing components necessary to prepare the existing building to receive the elevator. Provide patching as needed following installation.

1. If constructed of engineered lumber & drywall, the hoistway shall be vertically plumb & square to within 1/8" throughout the entire height. If constructed of concrete block, the block shall be core-filled as specified and the hoistway shall be vertically plumb & square to within 1/4" throughout the entire height.
2. Provide and fasten vertical support & structural members in hoistway, per manufacturer's shop drawings.
3. Pit requirements: Standard 13" with alternative means (bottom of car clearance device) Install reinforcement and concrete as necessary. Floor must sustain load specified in job drawings.
4. Overhead requirements: 11' standard or 8'10" (106") with alternative means (top car clearance device) clear overhead inside of the shaft as measured at the top landing (existing construction only). Provide 132" clear overhead for new construction.
5. Provide switched, guarded service light(s) & GFCI receptacle within the hoistway on separate, dedicated 115 VAC 15 A supply. Must provide minimum illumination of 10 ft-candles at pit floor.
6. Provide OSHA-compliant hoistway barriers at landing openings until completion of elevator installation.

B. **Construct a machine room:**

1. Provide elevator motor circuit: single , 208/230 VAC 30A supply with ground & neutral – provide with fused AC/DC disconnect with auxiliary low voltage contact.
2. Provide elevator car lighting electrical circuit: 115 VAC 15A supply with ground & neutral – provide with fused disconnect.
3. Provide switched, guarded machine room light & GFCI receptacle on a separate, dedicated 115 VAC 15 A supply. Must provide minimum illumination of 19 ft-candles at controller.
4. If machine room is of drywall construction, provide backing in wall to mount elevator electrical equipment.
5. Provide minimum 10 lb. Class ABC fire extinguisher.
6. Provide self-closing, self-locking machine room door with store room function latch set.
7. Provide machine room door signage reading "ELEVATOR EQUIPMENT ROOM."
8. Construct room to meet building code fire rating requirements (if applicable).

Section 14260 – Bid Specifications

Symmetry Elevation Roped Hydraulic Limited Use/Limited Application Elevator

- C. **Provide system** to provide natural or mechanical ventilation to ensure machine room temperature is maintained between 50-90 degrees Fahrenheit.
- D. **Field locate electrical fixtures** with electrician & Dealer.
- E. **Provide trim carpentry** as necessary to install hoistway doors & trim and trim elevator cab (as needed).
- F. **Provide & install flooring** in cab and at each landing.
- G. **Paint or finish** hoistway, machine room, & cab interior if needed.
- H. **Provide a working, dedicated phone line** to the elevator machine room.
- I. **Provide a Staging Area for Elevator Equipment, Tools, & Provisions** until completion of elevator installation.

1.04 REFERENCES:

- A. General: The applicable provisions of the following standards shall apply as if written here in their entirety.
- B. American Society of Mechanical Engineers / American National Standards Institute (ASME/ANSI) publications: ASME/ANSI A17.1 "Safety Codes for Elevators and Escalators", Section 5.2.
- C. National Fire Protection Association (NFPA) publications: NFPA 70 National Electrical Code

1.05 SYSTEM DESCRIPTION:

- A. Travel: NOT TO EXCEED 25'0" (Price varies on travel)
- B. Stops: Up to 6 stops.
- C. Load Capacity: 1400 lb.
- D. Speed: 30 fpm

1.06 SUBMITTALS:

- A. Submittals shall be in accordance with Section 01300.
- B. Product Data: Submit product data, including manufacturer's specifications.
- C. Shop Drawings:
 - 1. Shop drawings showing all field construction & dims.
 - 2. Hoistway dimensions shall be per Shop Drawings
 - 3. Maintenance options shall be offered in close-out packet

1.07 QUALITY ASSURANCE

A. Qualifications:

Contractor Qualifications: The elevator shall be installed by a **Symmetry Elevating Solutions Authorized Dealer**. The installer shall hold an Elevator Contractor License which is recognized by the Authority Having Jurisdiction (AHJ).

Manufacturer Qualifications: The manufacturer shall be a US owned & operated company specializing in the manufacture of custom & limited use elevators. Elevator shall be manufactured in the USA.

B. Regulatory Requirements:

The complete manufacture, fabrication and erecting of the elevator shall be in compliance with ASME A17.1 (latest adopted edition) as well as any additional Federal, State and local codes and ordinances. Dealer shall verify requirements of the local authority having jurisdiction and shall comply with all local codes and ordinances.

Section 14260 – Bid Specifications

Symmetry Elevation Roped Hydraulic Limited Use/Limited Application Elevator

1.08 DELIVERY, HANDLING & STORAGE

All components shall be shipped to the site in substantial crates to protect from damage during shipping and handling. Upon arrival, inspect components and keep under cover until installed.

1.09 WARRANTY

- A. Manufacturer shall furnish a two (2) year limited parts warranty.
- B. Dealer shall furnish a full one (1) year labor warranty covering all service performed during standard business hours.

1.10 MAINTENANCE:

- A. Maintenance of the LU/LA elevator shall consist of regular cleaning and inspection at intervals not longer than every three (3) months.
- B. Inspection: Acceptance test as required by State or local AHJ.
- C. Annual Testing & Inspection as required by the AHJ shall be performed by Elevator Personnel contracted by Owner or Owner's Agent.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturer: US OWNED & OPERATED.** "Symmetry Elevation Hydraulic Drive LU/LA" model by Bella Elevator Co., Inc. Peoria, IL.
- B. Substitutions:** No substitution shall be considered unless written request for approval has been submitted and received by the architect at least ten (10) days prior to the bid date. Substitutions must be accompanied by Specifications & include documentation of conformance to Qualifications, including US Ownership of Mfg.

2.02 COMPONENTS

- A. Car:
 - 1. Car size: 42" W x 54" D clear inside and shall accommodate multi-speed sliding car doors at each opening.
 - 2. Enclosure: Securely fastened to the car frame and platform. The car shall be constructed of minimum 1 ¼" wood walls. Floorboard shall be constructed of 1" AC plywood.
 - 3. Car Door(s): Two-speed, automatic sliding car doors shall be provided at each opening. ASME A17.1 Compliant Door Restrictor shall be provided at each Car Door.
 - 4. Handrail: One, located on the car wall.
 - 5. Telephone: ADA hands-free automatically dialing phone with call-back capability shall be integrated into Car Operating Panel.
 - 6. Control panel: Provide one momentary pressure illuminated button for each landing, emergency stop and alarm button, and a digital position indicator; all mounted in a control panel having a stainless steel or brass cover.
 - 7. Interior lighting: Provide overhead low power consumption LED light fixtures that automatically turn on when the car is in operation and turn off by means of a timer circuit.

Section 14260 – Bid Specifications

Symmetry Elevation Roped Hydraulic Limited Use/Limited Application Elevator

B. Hoistway door:

1. Size: Minimum Dimensions 3'0"W x 6'8"H Multi-Speed Elevator Doors.
2. Dealer shall furnish and install hoistway doors, frames, and sills at each landing. The type and installation of the doors and frames must comply with ASME A17.1, all local codes and manufacturer's layout drawings.
3. Locking Device: Door shall have a concealed locking device, interlocked with the car operation, to interrupt electrical power when the door is not securely closed and a car is not at the landing. The door shall be locked when car is not in the landing zone.

C. High Efficiency Hydraulic Power Unit:

1. The pump shall utilize a 4 HP high efficiency, low power consumption motor.
2. The pump, submerged motor and valve shall be pre-wired, ready for connection to the controller in the field.
3. Acceleration, deceleration, and leveling speed controls shall be provided in the Up and Down directions. Full speed adjustment shall be provided in the Down direction only.
4. Two speed operation shall be provided.
5. Adjustable pressure relief valves shall be provided.
6. Manual emergency lowering valve shall be provided.
7. Pressure gauges and pressure gauge isolation valves shall be provided.
8. Manual valve isolation between pump unit and jack shall be provided.
9. Negative pressure switch shall be provided.
10. Testing: Shall be factory tested prior to shipment.
11. Muffler shall be provided for vibration & noise damping during elevator operation.

D. Cylinder:

1. Construction: Steel pipe with cylinder head having an internal guide ring and self-adjusting & self-lubricating packing.
2. Safety valve: Cylinder shall be equipped with an overspeed safety valve to prevent uncontrolled car descent.

E. Plunger:

1. Construction: Shall be a machined steel shaft equipped with a stop, electrically welded to bottom end, to prevent plunger from leaving shaft cylinder.
2. Diameter: 90 mm

F. Suspension system: 1:2 system using (2) 3/8" – 7x19 aircraft cables integrated with rams header sheave mounted to the plunger.

G. Guide rail: Shall consist of two 8 lb. tee rails assembled and fastened. Provide brackets to hold rail assembly to walls. Rail shall be furnished with steel splice plates and hardware.

H. Car frame: Shall be equipped with non-metallic faced roller guide wheels.

Section 14260 – Bid Specifications

Symmetry Elevation Roped Hydraulic Limited Use/Limited Application Elevator

- I. Leveling device: Provide Hall-Effect Sensor based device integrated with tapeless Selector Package to maintain car within ¼” of the landing.
- J. Control systems: Non-Selective collective PLC-based controller (Programmable Logic Controller) with Hardware Circuit Monitoring. All Elevator Electrical Systems shall conform to ASME A17.5.
- K. Wiring:
 - 1. Provide flexible traveling cable for electrical lights and controls in car, installed in raceway into the shaft.
 - 2. All other electrical wiring shall be insulated, flame retardant and moisture proof, installed in metal raceway, flexible metal conduit, or electrical metal tubing.
- L. Safety Devices:
 - 1. Slack cable protection: Provide an electronically monitored and mechanically actuated hardened steel device that stops and sustains the car in the event of breakage or slackening of cables.
 - 2. Terminal stopping device: Shall be provided at the top and bottom of the car travel.
 - 3. Provide a platform toe guard at the car entrance.
- M. Battery powered emergency operation system:
 - 1. Powers a light in the car.
 - 2. Powers an emergency alarm system.
 - 3. Powers a system to allow car to descend to floor selected by passenger.
 - 4. The batteries shall be a re-chargeable type complete with an automatic re-charging system.
- N. “Self Diagnostic System” utilizing diagnostic codes displayed in car to provide information in the event the elevator will not operate.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Dealer shall inspect the hoistway and determine if the hoistway meets the manufacturer’s requirements for clearances and plumb. If hoistway does not conform to specifications the non-conforming elements shall be rectified by Owner or Owner’s Agent upon notification.
- B. All components shall be assembled and erected by Dealer in strict compliance with manufacturer’s printed instructions and applicable codes.
- C. All wiring shall be in accordance with the wiring diagram furnished by the manufacturer and NEC.

3.01 FIELD QUALITY CONTROL

- A. Static/Running Load Test: All load rating and safety factors shall meet or exceed those specified in ASME A17.1
- B. Witnessed Safety Testing to conform to ASME A17.1 shall be performed by Dealer in coordination with the AHJ.

3.03 ADJUSTING

- A. Dealer shall test the elevator to assure proper operation. Make proper adjustments and review operating components for proper operation.



Limited Use/Limited Application Elevator

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