ORION™

LIMITED USE/LIMITED APPLICATION ELEVATOR

Planning Guide

for Limited Use/Limited Application Elevator

ASME A17.1 - 2004 Section 5.2
CAN/CSA B44-04

Effective June 1st, 2005

AUTHORIZED DEALER

AM ELEVATOR SERVICE CO., INC.
1748 INDEPENDENCE BLVD., G-3
SARASOTA, FL 34234
(941) 359-2292 PHONE
(941) 359-2295 FAX

www.amelevator.com

CONCORD®
ELEVATORS and LIFTS

Limited Use/Limited Application Elevator (A17.1/B44 Compliant)

This Planning Guide is designed to assist architects, contractors, building owners and elevator professionals in planning for an ORION Elevator that meets the requirements of ASME A17.1-2004 Section 5.2.
This unique elevator is designed to help solve accessibility problems in commercial buildings and meet state and national codes covering the Limited Use/Limited Application (LULA) elevators.
We strongly recommend you contact the Authority Having Jurisdiction (AHJ) in the region where the equipment will be installed. Become familiar with all requirements governing the installation and use of elevators in public and private buildings. It is extremely important for you to know and adhere to all regulations concerning installation and use of elevators.

IMPORTANT NOTICE:
This Planning Guide provides dimensions and specifications useful for INITIAL planning of an elevator project. BEFORE beginning actual construction, be sure to receive application drawings customized with specifications and dimensions for your specific project.
Elevator configurations and dimensions are in accordance with Concord Elevator's interpretation of the standards set forth by ASME A17.1-2004 Section 5.2. Please consult Concord Elevator or Concord dealer in your area for more specific information pertaining to your project, including any deviation between referenced standards and those of any local AHJ. The dimensions and specifications in this Planning Guide are subject to constant change (without notice) due to product enhancements and continually evolving codes and product applications.

Steps of planning for an ORION LU/LA Elevator from Concord Elevator Inc.:

1. Determine customer's intention for use.
2. Determine code requirements of site.
3. Determine installation parameters of site.
4. Determine the car type from the hoistway requirement pages.
5. Determine the interior size of the car.
6. Use the appropriate chart to determine the hoistway requirements.
7. Use page 16 to plan for hoistway door requirements
8. Use page 17 to plan for hoistway and hoistway pit electrical requirements.
9. Use page 18 to plan for machine room and electrical requirements.

Contents

STANDARD EQUIPMENT FOR LU/LA COMPLIANCE

ORION™
LU/LA ELEVATOR

The Concord Orion meets the requirements of ASME A17.1-2004 Section 5.2 for a Limited Use/Limited Application Elevator.

General

Rated Load: 1400 lbs. (635kg)
Nominal Speed: 30 fpm (0.15 m/s)
Travel Distance Maximum 25’ (7.6m)
Levels Served Maximum 4
Number of openings per level - Maximum 2
Data Plates, capacity tags and rope tags
Minimum pit depth: 14" (355 mm)
Minimum overhead clearance:
- Existing Construction 120" (3048 mm)
- New Construction 131” (3327 mm)

84" (2743 mm) clear cab height
Presentation drawings

Mechanical Equipment

1:2 roped hydraulic single stage cylinder
5 hp submersible motor
Electronic proportional valve assembly
208V, 3PH, 60 Hz, 30 Amp power supply or
230V, 1PH, 60 Hz, 50 Amp power supply
8 lb./ft. T-Rail system
Two 3/8“ (8 mm) diameter aircraft cables
Sling assembly
Rope wedge sockets

Standard Cab and Appointments

Cab Size: 48" x 54" (1219 mm x 1371 mm)
Cab Height: 84" (2134 mm)
Cab Walls: Steel Panel Cab w/Optional Laminates
Cab Ceiling: Architectural white steel ceiling with four (4) recessed incandescent down lights
Stainless steel flush mounted cab operating panel
Digital floor and directional indicator
Illuminated cab operating buttons
Recessed plywood flooring

Controls

Programmable Logic Controller (PLC)
Fully automatic operation
Stainless steel rectangular hall call stations
Automatic cab lighting with battery back-up operation
Emergency alarm and stop key switch
Floor specific battery lowering
Magnetic tape reader for floor selection and leveling

Safety Devices

Emergency battery back-up for lighting, alarm and lowering
Emergency manual lowering
Upper and lower terminal limits
Manual reset slack rope safety switch
Automatic bi-directional leveling
Anti creep device
Pit switch
Pump run timer
Car top stop switch
Pit clearance device
Maintenance Pit Props
Car Top Prop (Where Required)

Other Options - All Models

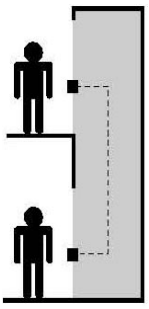
Automatic cab gate operator
Automatic operators for hoistway doors
90 degree entry/exit cab
2 Exit openings at one landing
3 or 4 stops with up to 50 ft. (15.24 m) of travel (where excess travel is permissible)

Other Options Available

Raised Plastic Laminated Panels in a choice of 7 colors
Recessed telephone cabinet in stainless steel or brass
Hands Free Phone
2 Speed Sliding Doors
Fire Rated Automatic Swing Doors with Accordion Style Car Gates
Brass C.O.P, Brass hall/call stations, Brass Handrail & Brass recessed down lights.
Optional Cab Sizes – 42” x 60” (1067 mm x 1524 mm), 51” x 51” (1295 mm x 1295 mm),
Automatic home landing to pre-selected floor
Firefighters Service – Phase I & II

ORION 48” X 54” TYPE 1 LEFT HAND OR RIGHT HAND W/ 2 SPEED DOORS – ENTER/EXIT SAME SIDE
NOTE: PLAN VIEW DRAWING CAN BE REVERSED FOR RIGHT HAND APPLICATIONS

Type 1



Important Note: Finished hoistway dimensions must include the drywall (where applicable). Determine the fire rating of the hoistway, the type and layers of sheet rock and build only off shop drawings specific to your project.

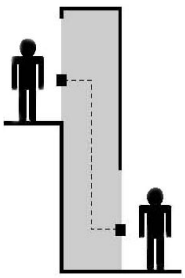
For Metric Equivalents
Multiply Inches
times 25.4 for mm

Example:

40.25” x 25.4 = 1022.35 mm

ORION 48” X 54” TYPE 2 WALK THROUGH w/ 2 SPEED DOORS – ENTER/EXIT EITHER SIDE
NOTE: PLAN VIEW DRAWING CAN BE REVERSED FOR RIGHT HAND APPLICATIONS

Type 2



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ORION 51” X 51” TYPE 3 OR 4 w/ 2 SPEED DOORS – ENTER/EXIT FRONT OR SIDE
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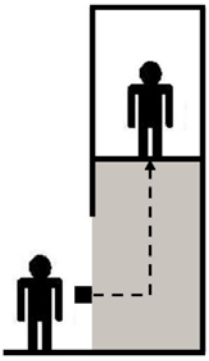
Type 3 or 4



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FOR MASONRY OR DRYWALL ENTRANCE DETAILS SEE DRAWINGS ON PAGES 12-15

ORION 42” X 60” TYPE 1 LEFT HAND OR RIGHT HAND W/ 2 SPEED DOORS – ENTER/EXIT SAME SIDE
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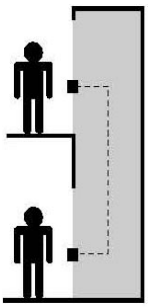

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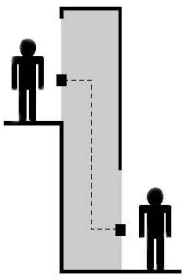

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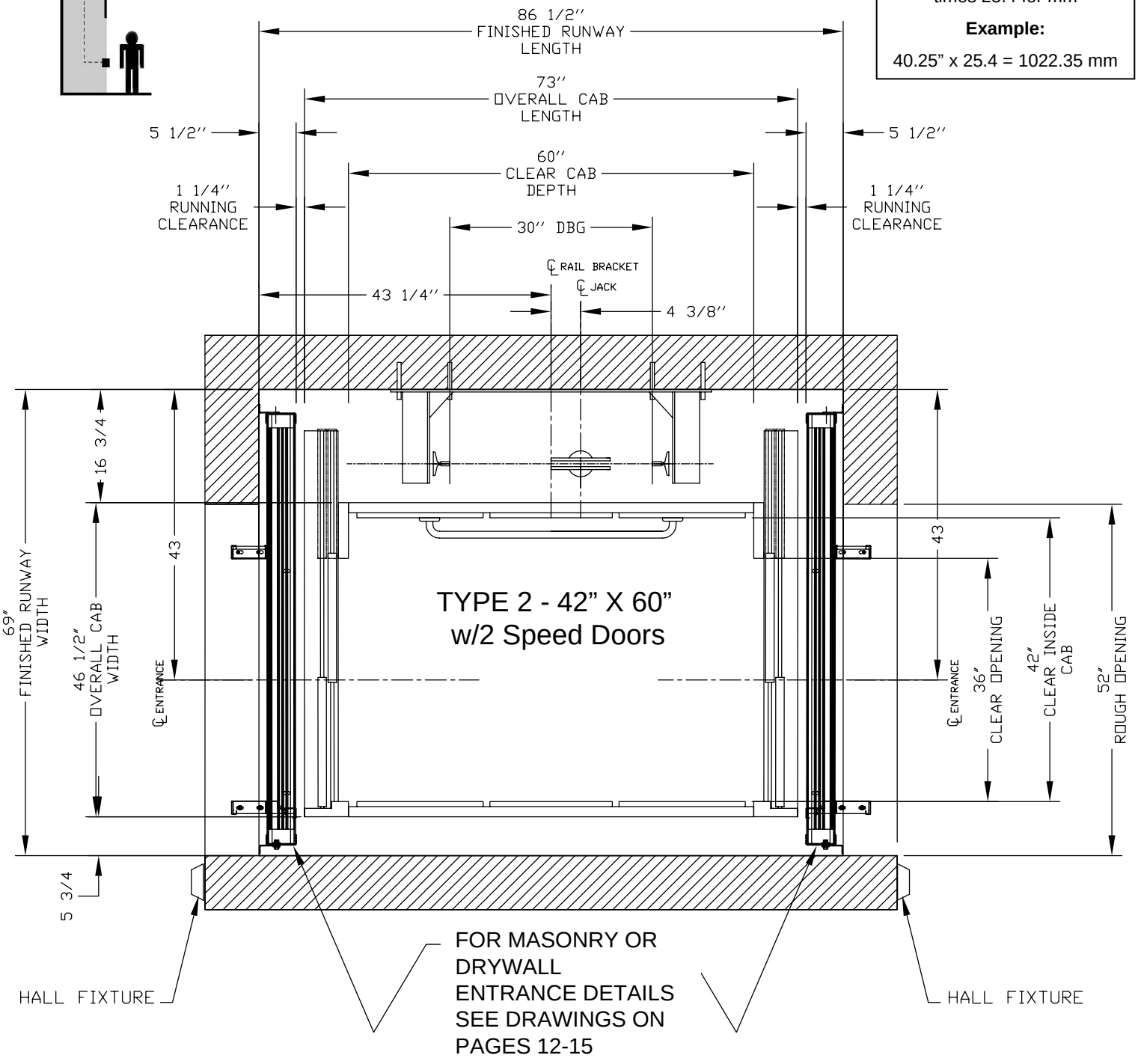

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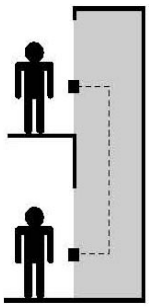

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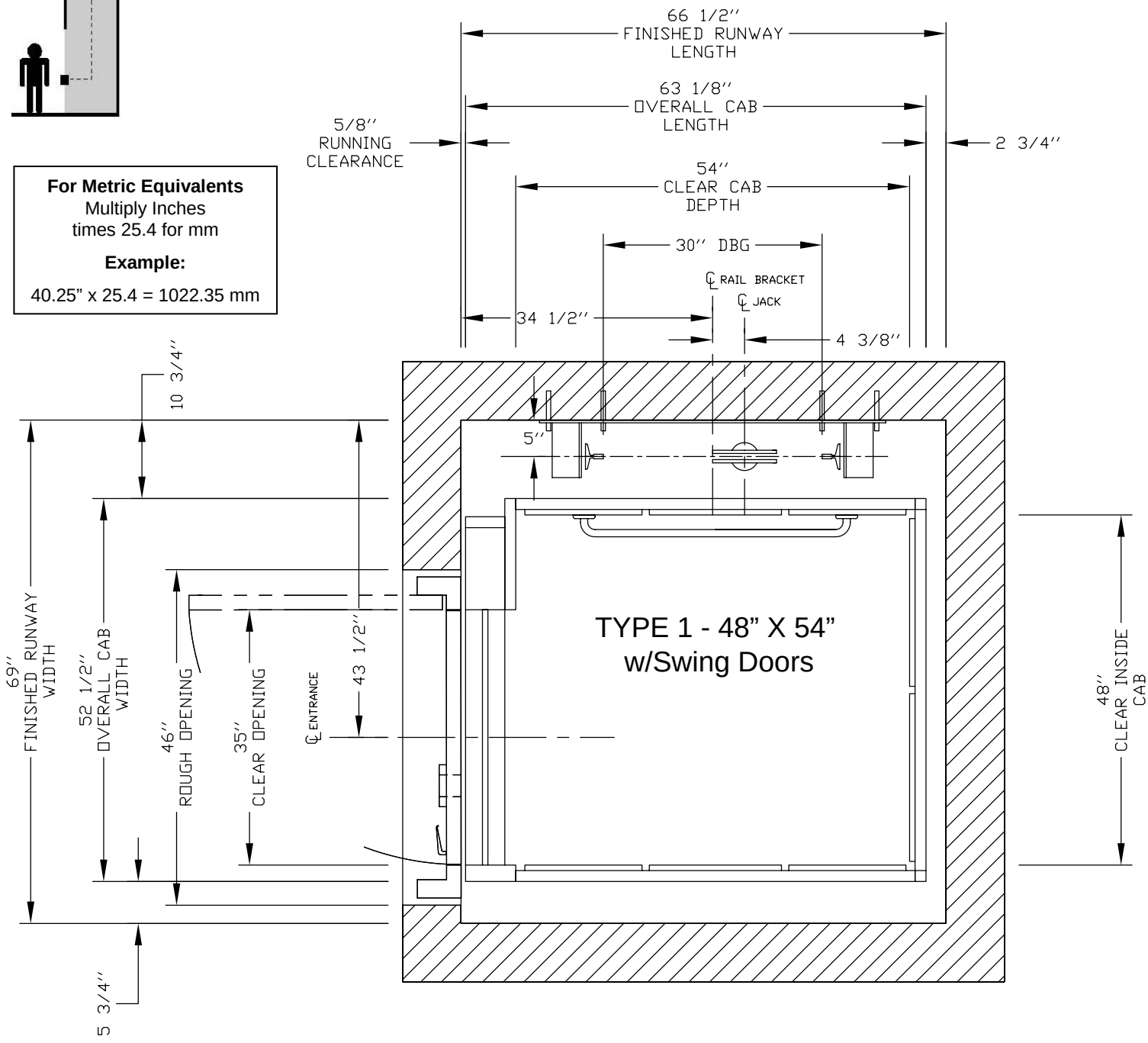

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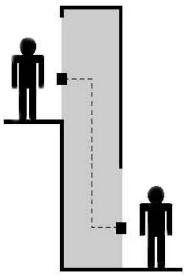

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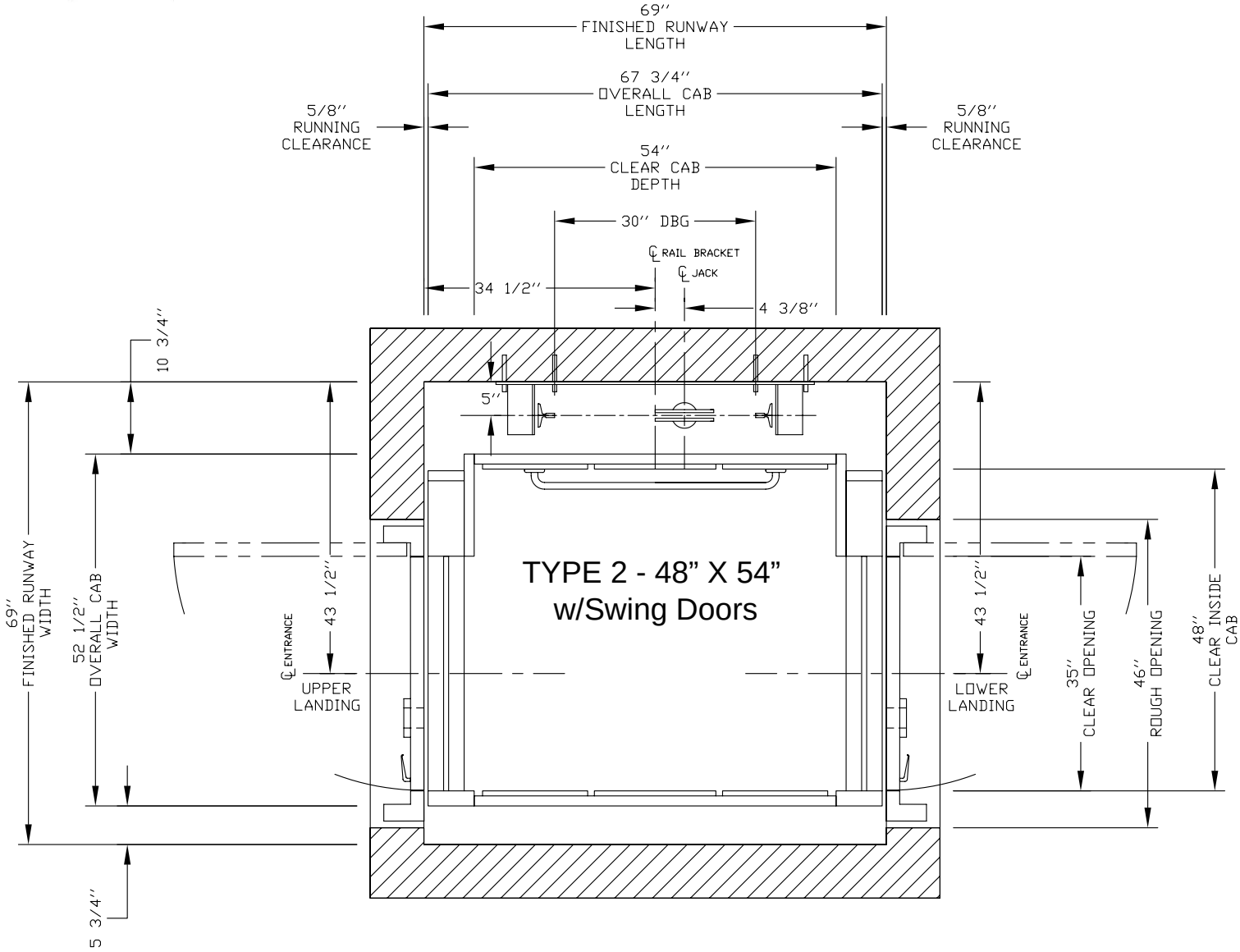

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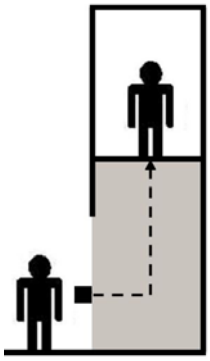

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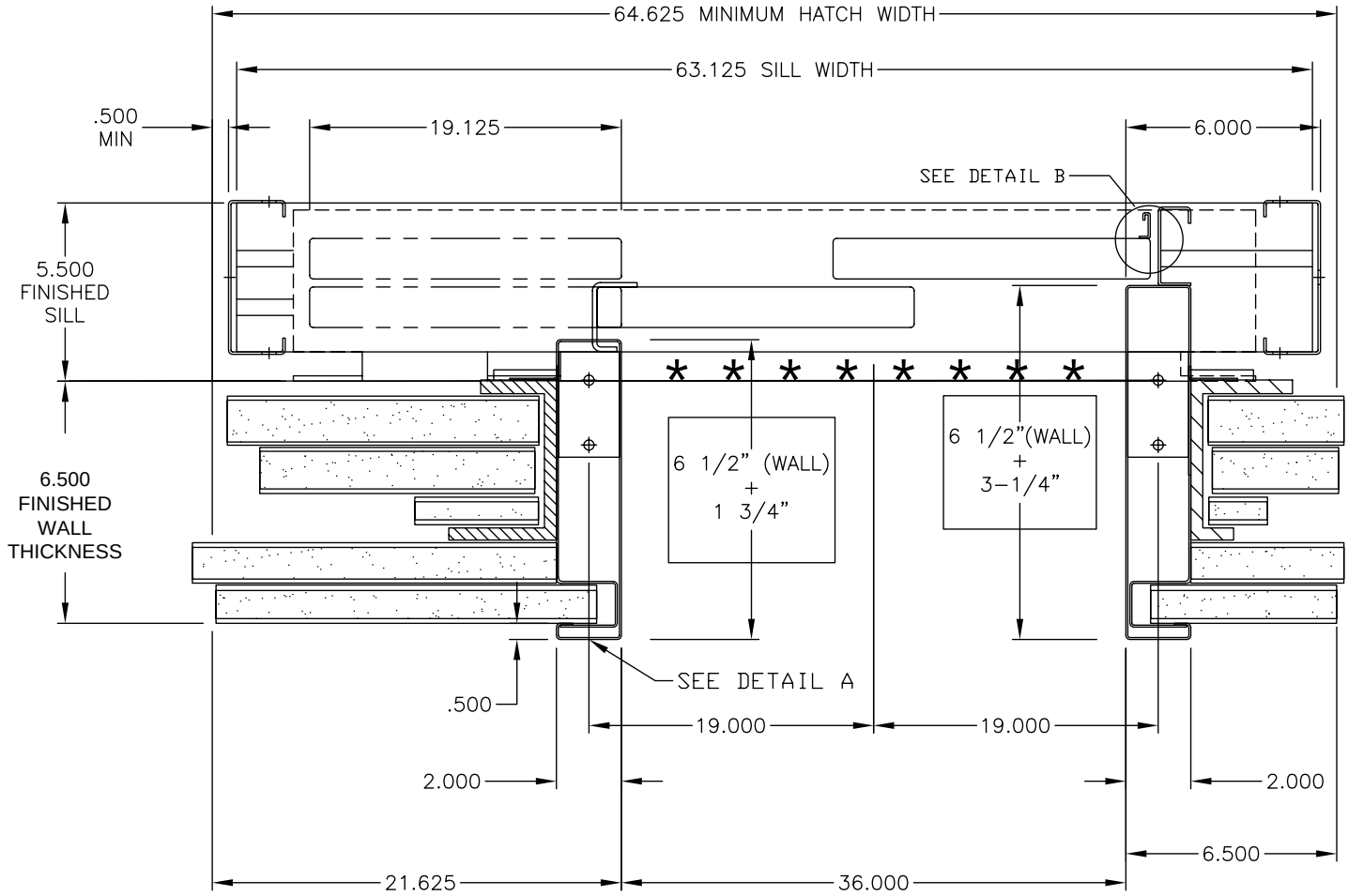
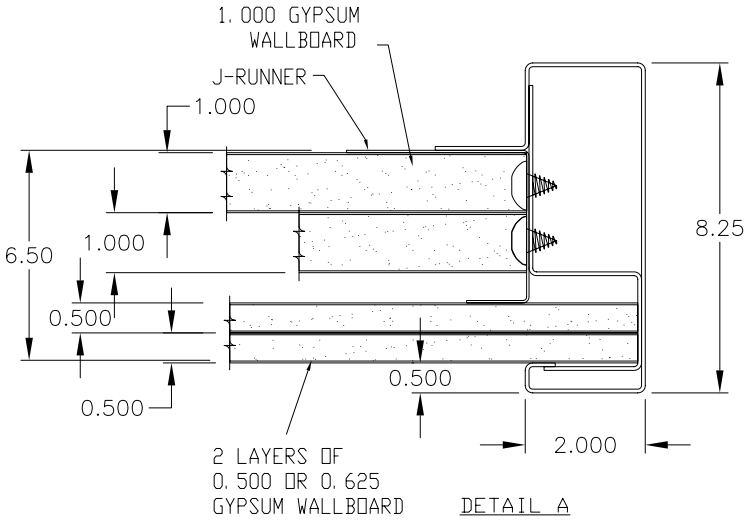
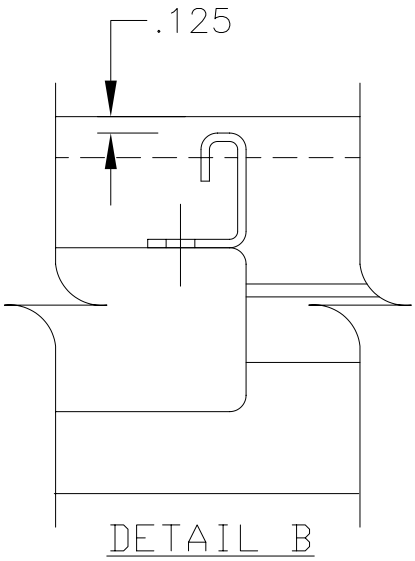
ENTRANCE MOUNTING DETAILS FOR 2 SPEED DOORS WITH DRYWALL







CONTRACTOR PLEASE NOTE:

*GROUTING AT THE SILL MAY BE REQUIRED AFTER THE DOOR FRAMES ARE SET

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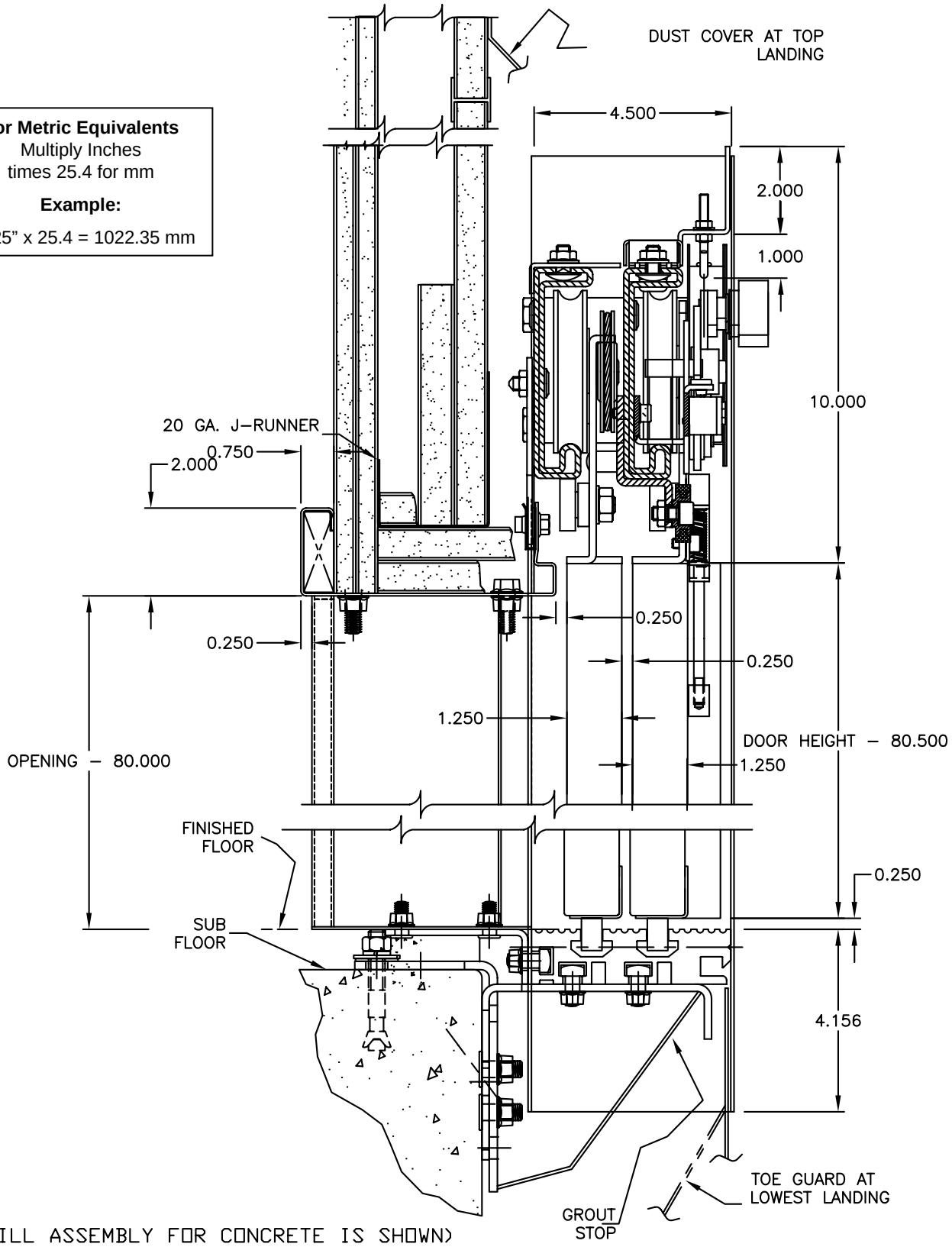
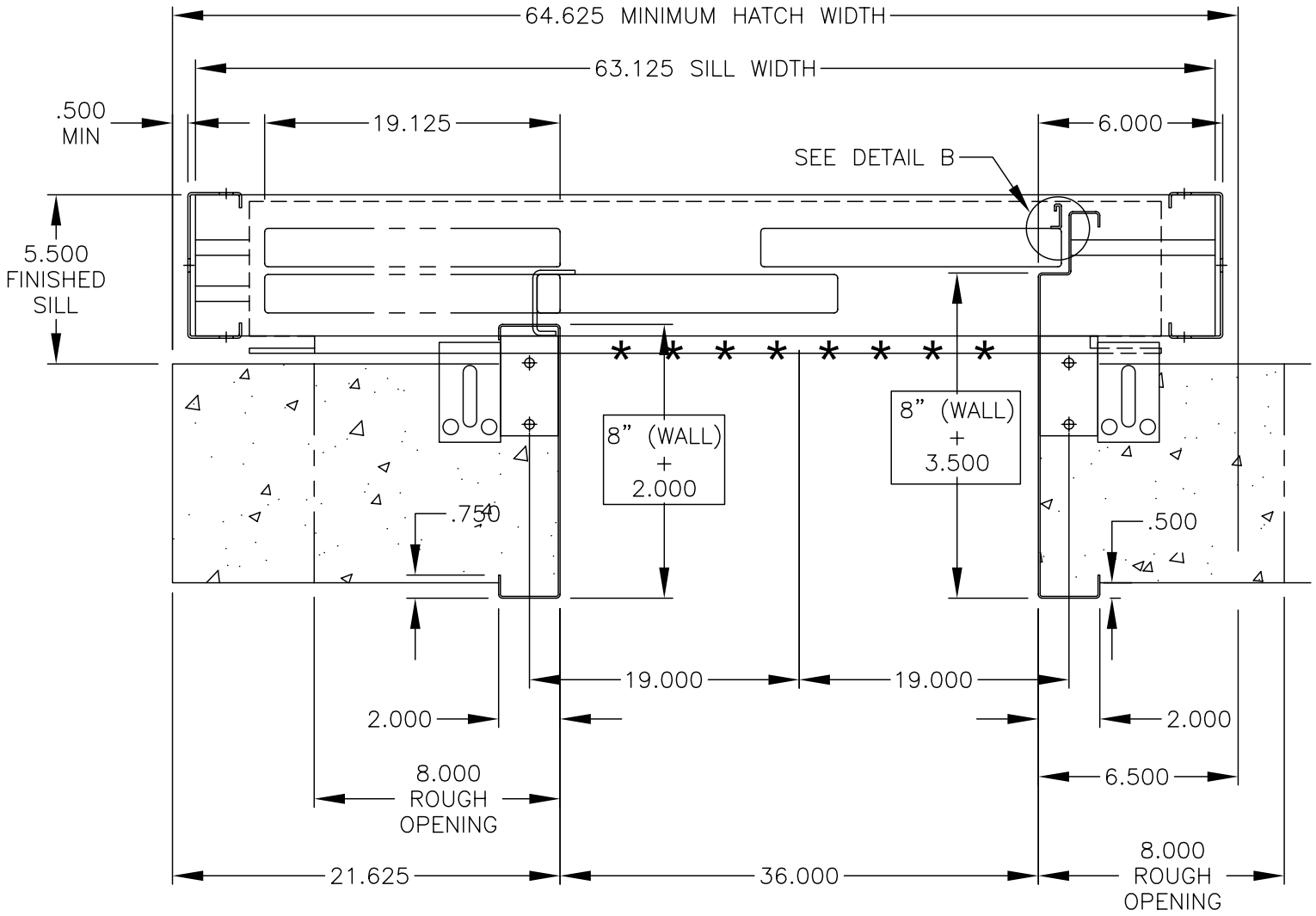
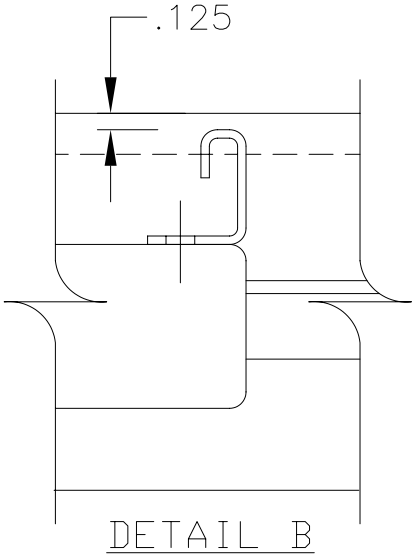


TYPICAL SECTION

ENTRANCE MOUNTING DETAILS FOR 2 SPEED DOORS WITH MASONRY CONSTRUCTION





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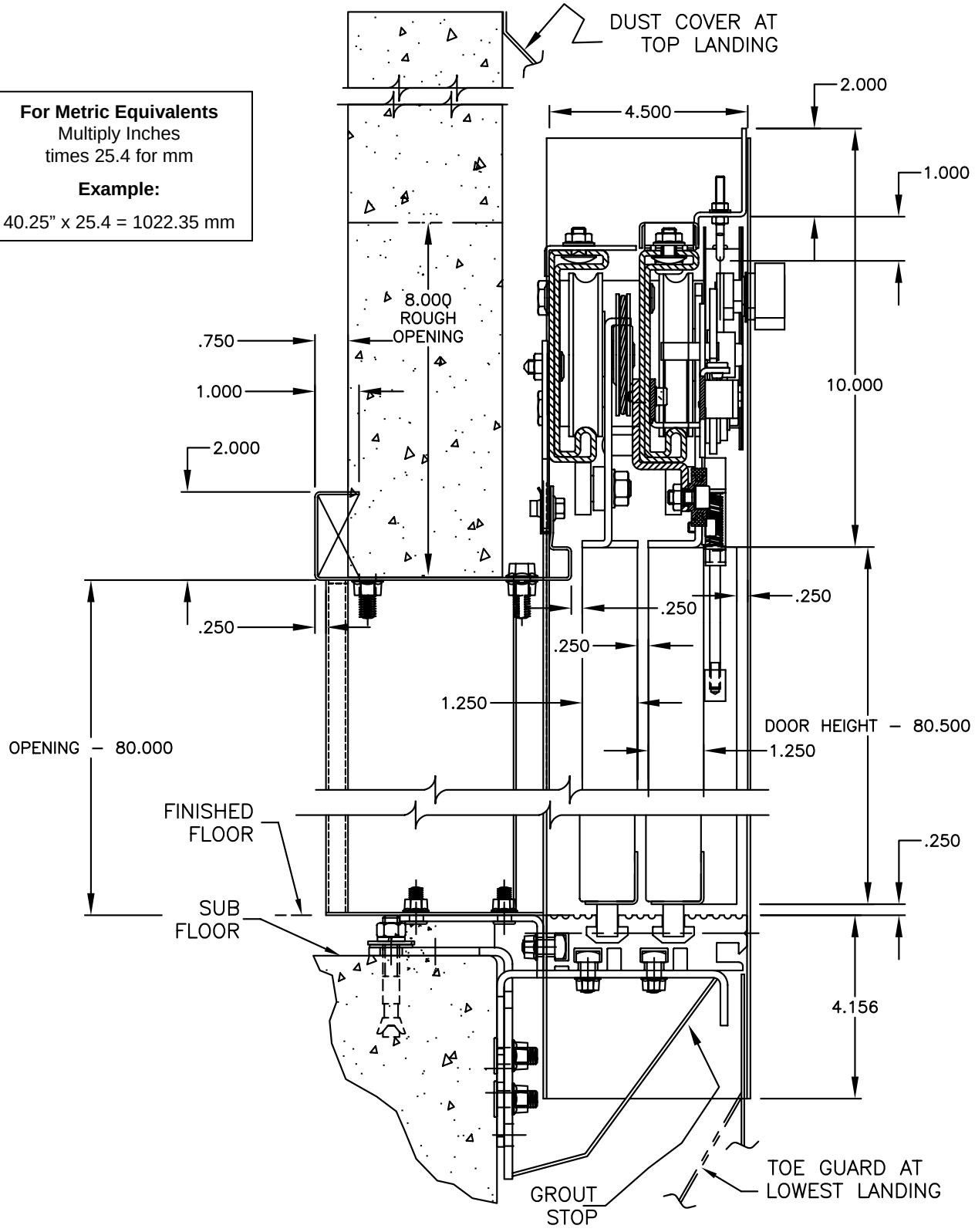

TYPICAL SECTION

(SILL ASSEMBLY FOR CONCRETE IS SHOWN)

2 SPEED AUTOMATIC DOOR AND GUIDE RAIL INFORMATION

Notes:

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

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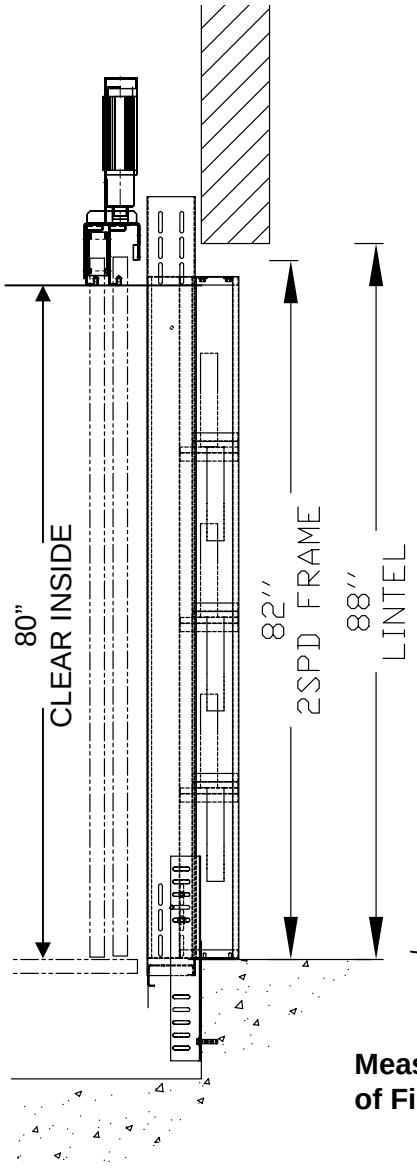
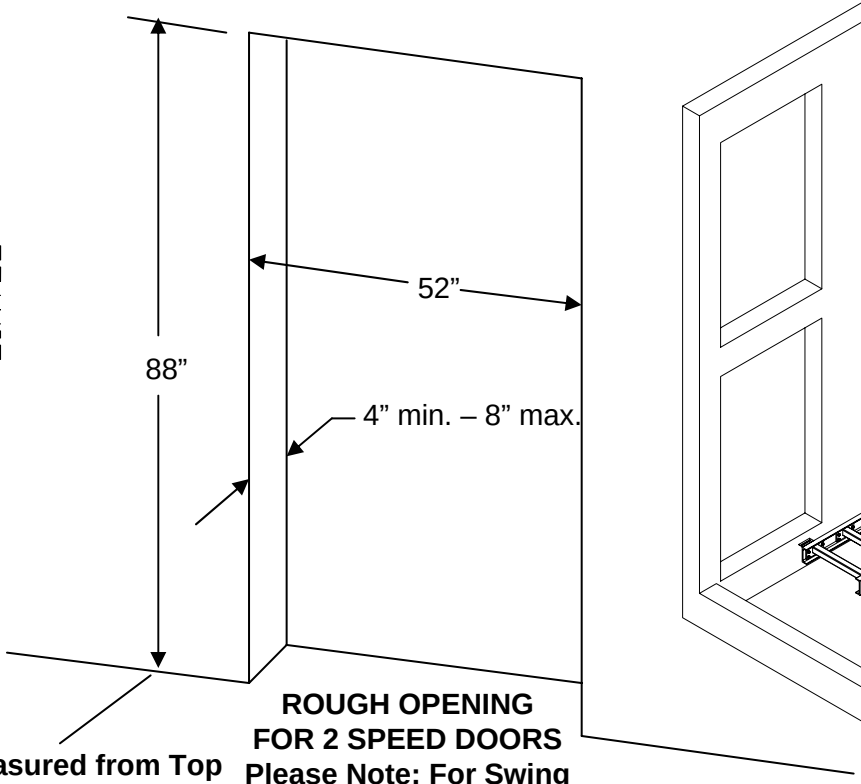
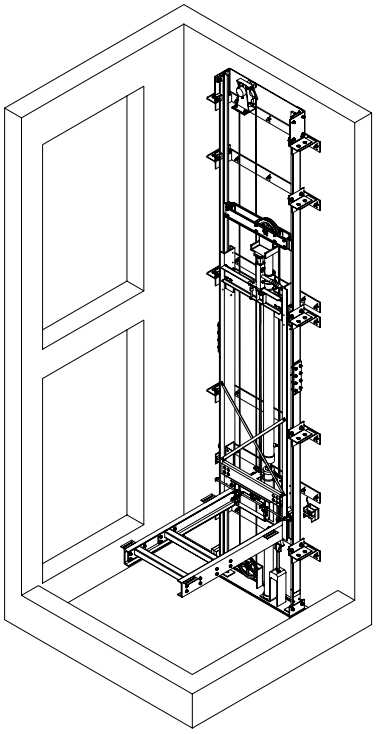




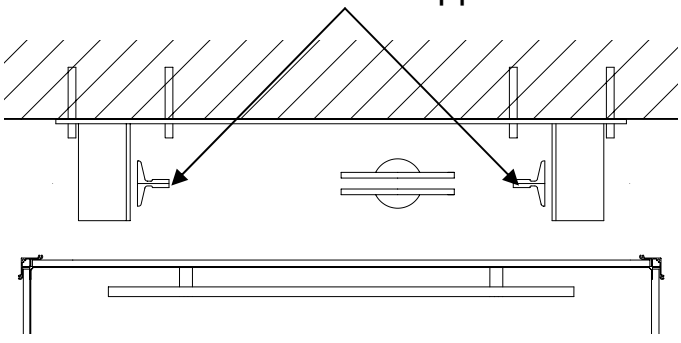
Measured from Top of Finished Floor

ROUGH OPENING FOR 2 SPEED DOORS Please Note: For Swing Doors - Rough Opening is only 46” Wide

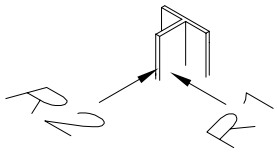


LOADS ON THE BUILDING (RAIL REACTIONS)

Rail Orientation to Support Wall



RAIL FORCES



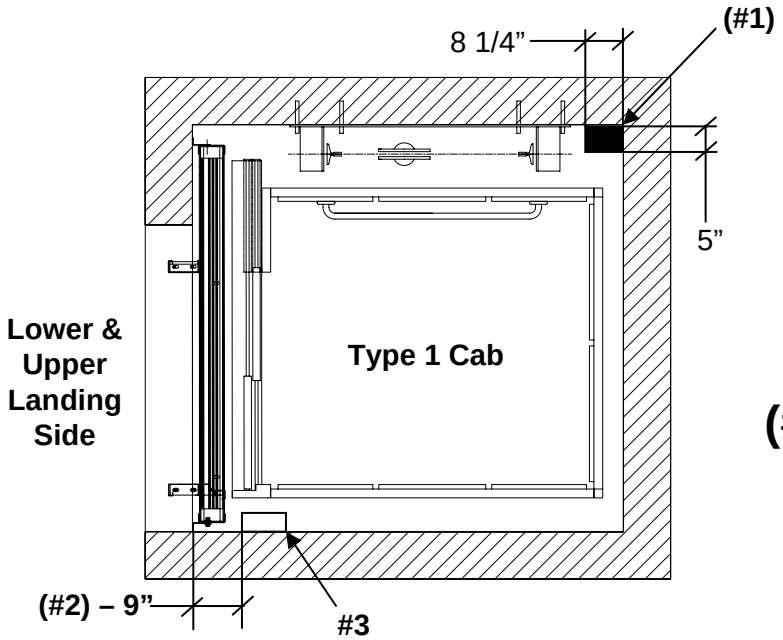
✳R1	✳R2
720 lbf/3.2KN	260 lbf/1.16KN
RAIL WEIGHT : 8.0 lbs / ft	

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

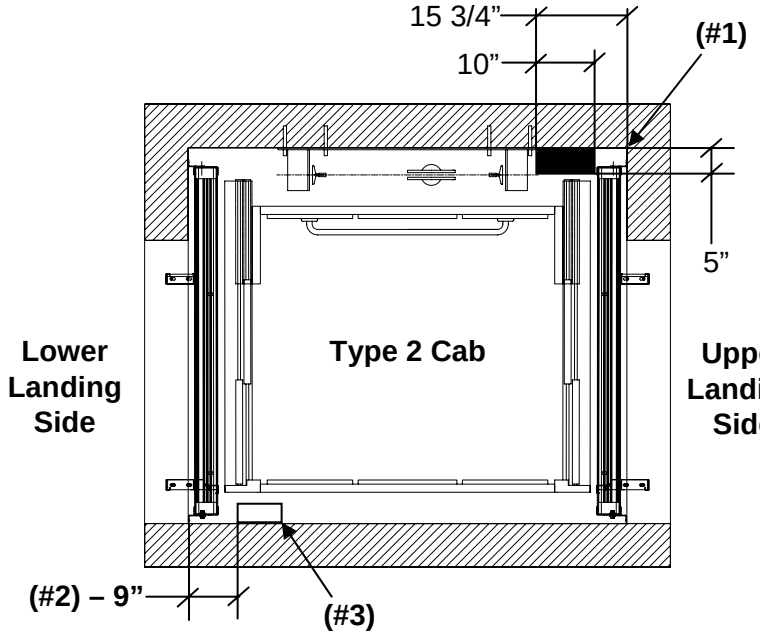
Hoistway Notes:

- A load bearing wall is required to sustain rail reactions. See page 16 for rail reactions.
- 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)
- 120“(3048 mm) overhead clearance required above the top landing floor w/top prop (existing construction)
- 131” (3327 mm) overhead clearance required above the top landing floor w/o top prop (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.

Hoistway Pit & Electrical Notes: If a Dedicated Pit Light is required by your local AHJ, please follow the guidelines below for accommodating this in your hoistway



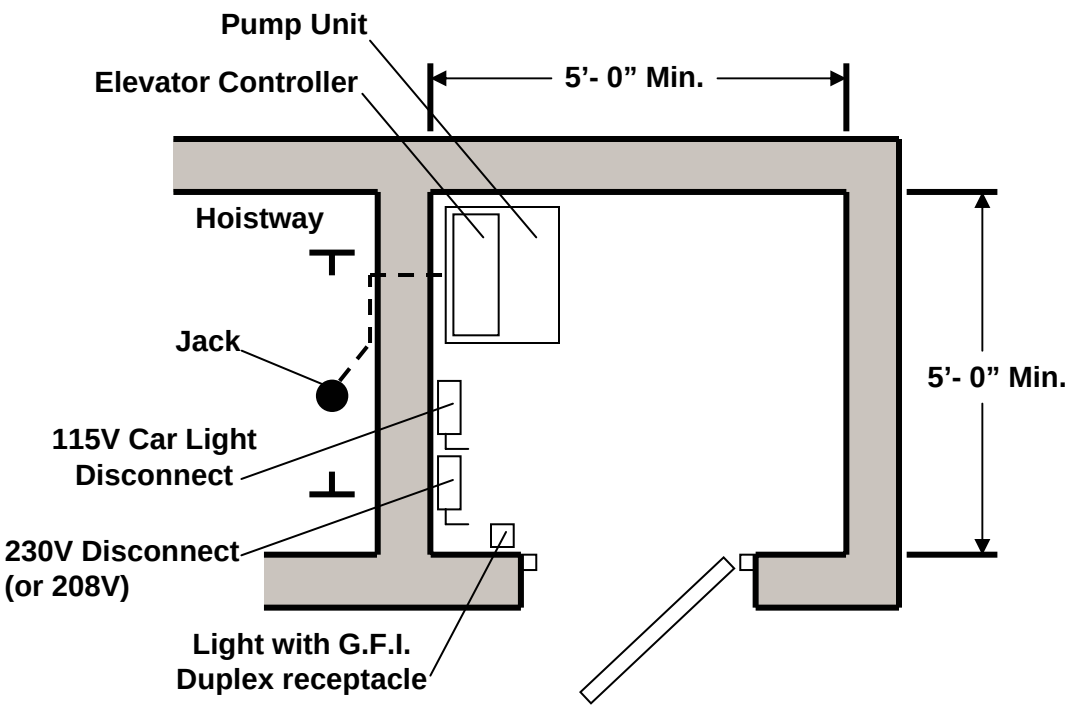
(#1) Approximate Space Available For Dedicated Light w/Guard. We recommend surface mounting the light after the elevator doors have been installed to ensure adequate clearance.



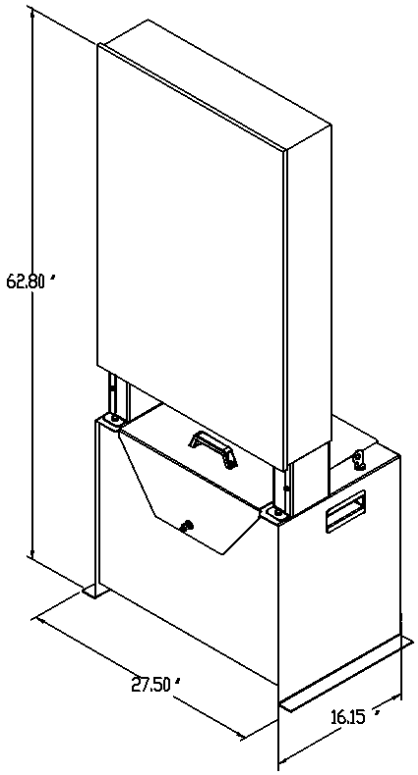
(#2) 9” Clear Distance (From Inside Finished Surface of Hoistway to Edge of Electrical Box)

(#3) For the Dedicated GFI Outlet: Height of Outlet is Approximately 24” up from the lower landing finished floor with the light switch mounted directly above.

Orion Machine Room Requirements



Controller/Pump Unit



- **Notes:**
- Machine room must be built in accordance with elevator manufacturer and applicable building codes and regulations. Adequate ventilation is required to maintain a temperature of 50° to 100°F for output of 3600 BTU per hour.
- A convenience outlet, 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 230V Single Phase w/50 AMP service, fuse 115V for 15 AMP service for car light. (Must comply with applicable codes.) The electrical circuit provided shall be either 30 AMP, 208V three phase or 50 AMP 230V 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 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/pump unit dimensions - 27.5" wide x 62.8" high x 16.15" deep w/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.

ORION ELEVATOR SPECIFICATIONS FOR A17.1/B44 COMPLIANCE

Part 1 GENERAL

1.01 SUMMARY

A. The product described herein, manufactured by Concord Elevator Inc, is an elevator designed and dimensioned to provide Limited Use/Limited Application (LULA) elevator to suit individual building requirements for use by persons with disabilities.

1.02 REFERENCES

A. Elevator shall be designed, manufactured and installed in accordance with the following standards:

1. American National Standards Institute (ANSI).
2. American Society of Mechanical Engineers (ASME).
3. National Electrical Code (NEC) Canadian Electrical Code (CEC)
4. American Society for Testing Materials (ASTM).
5. American Welding Society (AWS). Canadian Welding Bureau (CWB)

1.03 SYSTEM DESCRIPTION

A. 5 hp submersed motor and pump with electronic proportional valve assembly; Programmable logic controller with collective operation; 1:2 roped hydraulic single stage cylinder with line rupture valve.

B. Number of Stops: (specify:) Two to Four.

C. Car Configuration: (specify:) straight-thru, 90° side exit or enter/exit same side.

D. Maximum Travel: (specify:) Up to 25’ (7.62 m)

E. Rated Load: (specify:) 1400 lbs. (635 kg)

F. Rated Speed: 30 fpm (.15m/s)

G. Car Size:

1. 48” x 54” (1219 mm x 1372 mm) platform (standard)
2. 84” (2134 mm) high ceiling

H. Car Walls: (specify:) Steel panels (black or architectural white) with (optional) raised laminate panels (white oxide, stone graphix, desert erosion, natural oak, white, contract mahogany or fog plastic laminate panels.

I. Car Ceiling: White panel.

J. Car Lighting: Four recessed lights.

K. Operating Features:

1. Car Operating Panel: (specify:) Brushed stainless steel or brushed brass panel with illuminated automatic controls, keyed light switch, emergency stop switch and alarm button.
2. Hall Stations: (specify:) Brushed stainless steel or brushed brass panel with illuminated button and (specify option:) key lock provided at each landing.
3. Car Door(s): Fully automatic, side opening, sliding car door with electromechanical interlocks, obstruction sensor, and automatic re-open system.
4. Hoistway Doors: 1-1/2 hour fire rated fully automatic side opening, sliding hoistway doors with two side opening panels in steel frame with electromechanical interlocks.
5. Handrail: (specify:) Stainless steel or brass.
6. Pit Switch
7. Car top inspection station with UP and DOWN test switches, emergency stop, light outlet
8. Automatic homing to the lowest floor (optional)
9. Slack rope safety.
10. Anti-creep device.
11. Overspeed governor (may not be required) – consult AHJ
12. Dual direction leveling.
13. Upper and lower terminal limit.
14. Pump run timer.
15. Pit clearance device (where required)
16. Automatic battery powered and manual emergency lowering control devices.
17. Minimum pressure switch.
18. Maintenance stop blocks.
19. (specify option:) Fire Fighters Service (available).
20. (specify option:) Hall lanterns with chime.
21. (specify option:) Recessed telephone cabinet (brushed stainless steel or brushed brass).
22. (specify option:) Buffer springs (requires 24" pit).

1.04 QUALITY ASSURANCE

A. Manufacturer: Provide elevator manufactured by a firm with a minimum of 10 years experience in fabrication of elevators equivalent to those specified.

B. All designs, clearances, workmanship and material, unless specifically accepted, shall be in accordance with all codes having legal jurisdiction.

C. All load ratings and safety factors shall meet or exceed those specified by all governing agencies with jurisdiction and shall be certified by a professional engineer.

D. Elevator shall be subject to applicable state, local and city approval prior to installation and subject to inspection after installation. Determination of and adherence to these regulations is the responsibility of the elevator contractor.

E. Welders certified in accordance with requirements of AWS D1.1 or CWB shall perform all welding of all parts.

F. Substitutions: No substitutions permitted.

1.05 WARRANTY

A. Warranty: Manufacturer shall warrant component parts of the Orion elevator for a period of 26 months from shipping date. This warranty only applies to products installed and maintained by a Concord Elevator Authorized Dealer in conformance with all applicable local and national codes. The warranty is void if regular inspection and maintenance of product is not being carried out by an Authorized Concord Dealer in accordance with the recommendations contained in the Owner’s Manual. It is the Owner’s responsibility to keep records of all such service.

1.06 MAINTENANCE

A. The Orion elevator must be maintained in accordance with manufacturer’s instructions.

PART 2 PRODUCT

2.01 MANUFACTURER

A. Provide the Orion Commercial LU/LA Elevator manufactured by Concord Elevator Inc.
Toll Free Number (800) 661-5112 and (905) 791-5555,
Fax (905) 791-2222 ;
Email: sales@concordelevator.com;
Web site: http://www.concordelevator.com

CONTINUED…

ORION ELEVATOR SPECIFICATIONS FOR A17.1/B44 COMPLIANCE
Continued

PART 2 PRODUCT (CONTINUED)

2.02 MATERIAL
A. Guide Rail: Dual 8 lbs./ft. machined steel T-rail system.
B. Wire Rope: Two 3/8" diameter 7 x 19 ga. IWRC aircraft cables with rope wedge sockets.
C. Sling: Structural and formed steel plates with guide shoes.
D. Platform Floor: Unfinished plywood flooring.

2.03 FINISHES
A. Components shall be prepared with 1) pre-treatment, 2) alkaline detergent wash, 3) clear water rinse, 4) iron phosphate coating, 5) clear water rinse and finished with electrostatically applied and baked thermostatic powder coat finish. Standard color is architectural white. (continued on next page)

2.04 ELECTRICAL SYSTEMS
A. The electrical contractors shall provide:
1. 208V three phase 30 AMP 60 Hz or 230 V single phase 50 AMP 60 Hz source in the machine area with manually operated fused line disconnect.
2. 15 VAC, single phase, 15 amp, 60 Hz, single phase power source with manually operated fused line disconnect for car lighting and a light outlet inside the hoistway.
3. Telephone circuit in the machine area.

PART 3 EXECUTION

3.01 ACCEPTABLE INSTALLERS
A. Installers shall be experienced in performing work of this section who have specialized in work comparable to that required for this project.
B. Installers shall be certified and trained by the manufacturer.

3.02 EXAMINATION
A. Use field dimensions and approved manufacturer's shop drawings to examine substrates, supports and other conditions under which this work is to be performed. Do not proceed with work until unsatisfactory conditions are corrected.

3.03 INSTALLATION
A. The Orion elevator shall be installed in accordance with manufacturer's instructions and as specified and approved by architect.

3.04 DEMONSTRATION
A. The elevator contractor shall make a final check of the elevator's operation with the Owner or Owner's representative present prior to turning the elevator over for use. The elevator contractor shall determine that operating and safety devices are functioning properly.

END OF SECTION

Notes: Intent of specification is to broadly outline equipment required but does not cover details of design and construction. Dimensions and specifications are subject to constant change and continually evolving codes and product applications. For additional technical information, contact Concord Elevator Inc. at (800) 661-5112 or www.concordelevator.com.

Concord Elevator Inc.
107 Alfred Kuehne Blvd.
Brampton, ON L6T 4k3
Phone: 905-791-5555
Fax: 905-791-2222
Sales: 800-661-5112
email: info@concordelevator.com
www.concordelevator.com