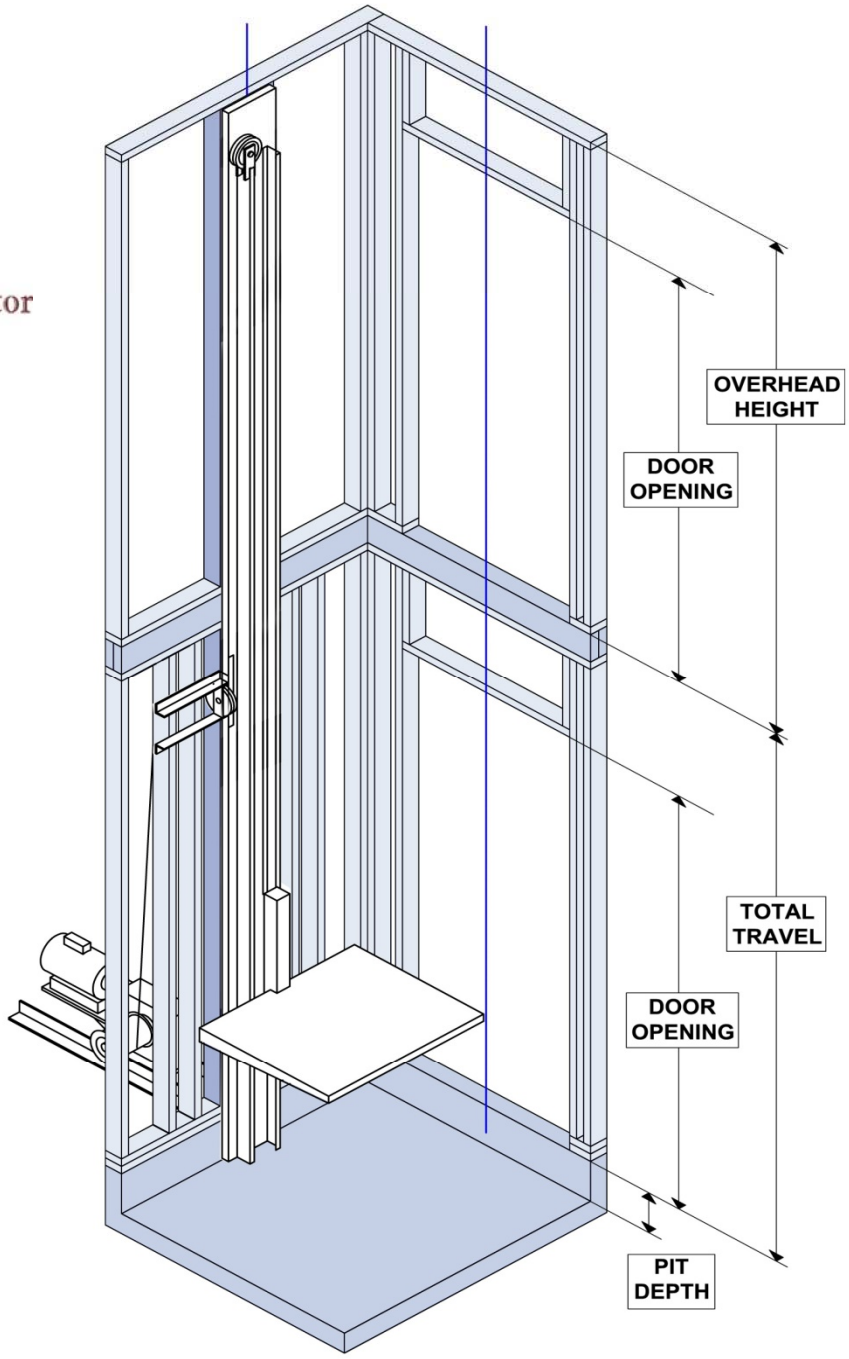
INCLINATOR ELEVETTE®

Marchal/Stevenson Elevator

Design Guide

CABLE DRUM
500 lb.

Requires attic space or adjacent machine area



DESIGNED EXCLUSIVELY FOR
AND BY MARCHAL/STEVENSON
ELEVATOR CO., INC.

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Planning Steps

Contact Marchal/Stevenson Elevator for the following information:

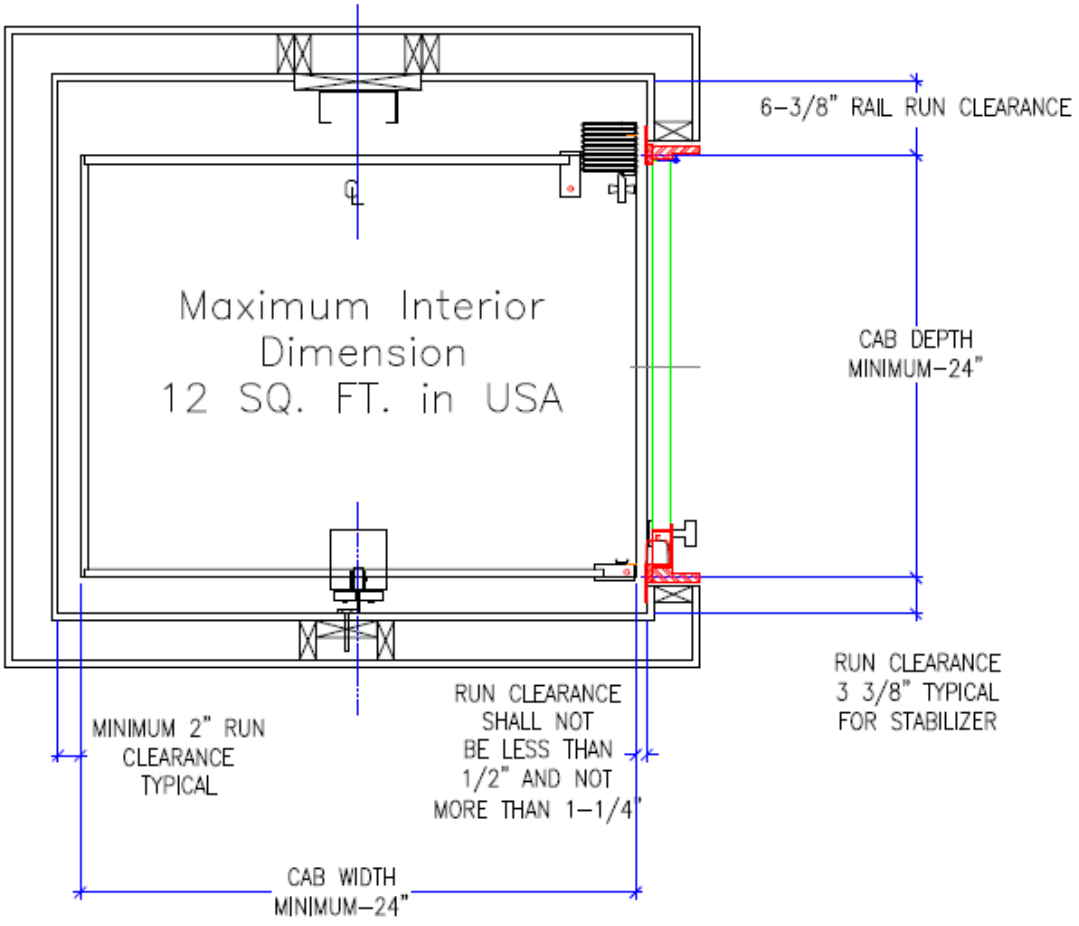
1. Verify appropriate drive system and design specifications for your project. Please contact us to arrange for plans to be reviewed. This Planning Guide provides nominal dimensions and specifications useful for the *initial* planning of an elevator project to meet or exceed ASME 17.1 - 2016.
2. Address national, state and local code requirements. Become familiar with all requirements governing the installation and use of elevators. It is extremely important for you to know and adhere to all regulations concerning installation. PLEASE NOTE: **Marchal/Stevenson Elevator is not responsible for determining project eligibility.** Permits are not pulled until initial deposit is received, so it is important you have your project cleared with your local code enforcement agency and homeowner's association, if applicable.
3. Set up for a site evaluation during early framing to obtain onsite hoistway layout and drawings, if necessary. (Low-voltage prewiring should be done just prior to sheetrock).
4. Coordinate with Marchal/Stevenson Elevator to order and install the elevator.

Work to be Done by General Contractor

The following specs are to be provided by the General Contractor (GC), except as noted, prior to Marchal/Stevenson Elevator installing the elevator equipment.

1. Enclosed, plumb and square hoistway with smooth interior surfaces. Include fascia and furring of hoistway interior, doors and frames. Fire rating of shaft to be prepared as required by local building codes. Hoistway should be free of any obstructions not related to elevator function (gas pipes, pilings, wiring, a/c ducts, etc.). It is recommended that the hoistway be maintained between 40° and 120° F and interior should not be exposed to the elements.
2. Provide 2x12 pine support #2 or better-full length of shaft (can be split), plumb and properly supported (alternate solutions also available – see page 12). Must be capable of supporting the loads imposed. Plank shall be fastened with deck screws or ring shank nails – use Liquid Nails between 2x4 & 2x12. Do not sheetrock 2x12. See page 13.
3. Provide 2x6 pine support-full length of shaft (can be split), plumb and properly supported. See page 13.
4. Provide pit – substantial level pit floor slab to support 2,700 lbs. impact load. Waterproof pit minimum 6" below lowest floor level. (Sump pump is not required.)
5. Adequate space for the elevator machinery. See page 18.
6. If the elevator equipment is housed in a room or closet on any floor other than the attic, the entrance door must be self-closing and self-locking to prevent unauthorized persons from entering the area.
7. Electrical work & phone line: motor -permanent 230 volt, single phase, 30 amp dedicated supply & disconnect by others -elevator lights- 120 volt, disconnect by others - leave 15'-20' extra wire to machine area. See page 17.
8. Finished openings as per Marchal/Stevenson Elevator's shop drawings.
9. All hoistway doors require door locking devices (provided by Inclinator) as well as a door handle and a latch set that meet ASME 17.1 requirements (i.e. adjustable ball or roller catch, flush cabinet pull, pull handle ring lock, etc). Standard knobs/levers will not fit appropriately unless a door baffle is applied and the area is cut-out.
10. All doors must be flush (or door baffles may be applied), swing type (single hinge) and 1-hour fire rated. See pages 13-14.
11. Provide door sills per ASME 17.1 – 2016 regulations. See page 13.
12. Overhead requirements: 12" above cab height – 9' overhead required for 8' inside cab height – 8' overhead required for 7' inside cab height – 7'8" required for 6'8" cab height. (Installing flooring by others will decrease the interior cab height by the thickness of the flooring. For example: ¾" flooring by others will result in a 7' 11¼" cab height if an 8' cab is selected.) If minimum overhead requirements are not available for the cab height you desire, contact Marchal/Stevenson Elevator about possible solutions.

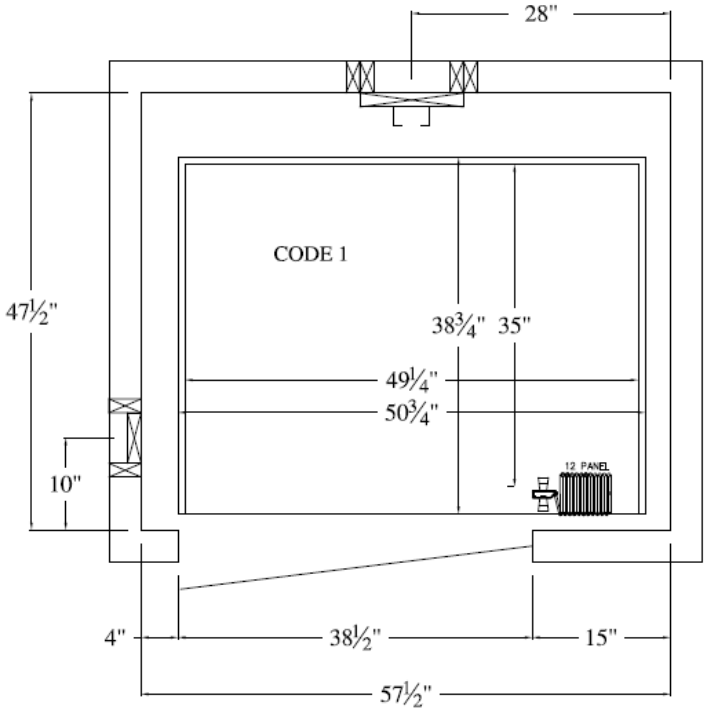
Hoistway Layout



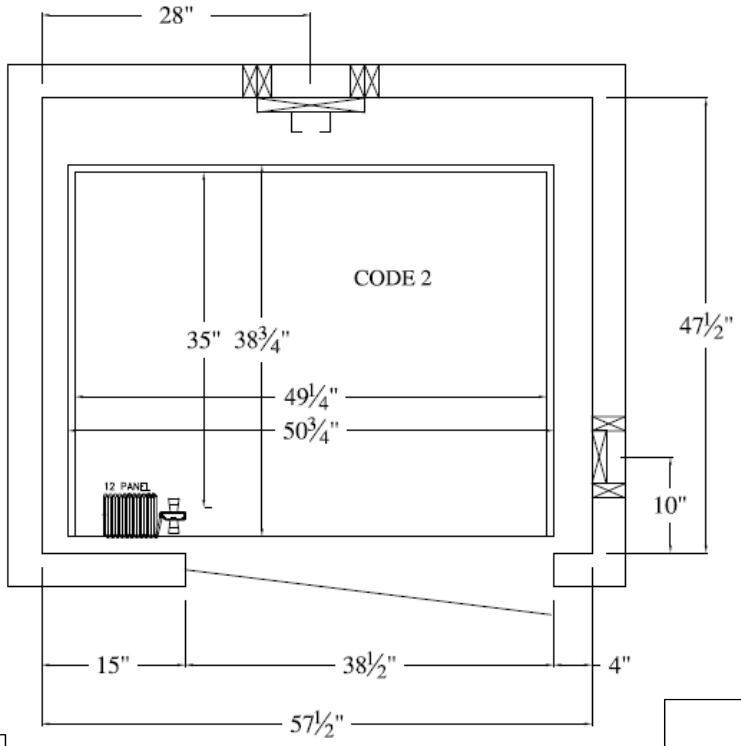
The drawings on the following pages represent typical elevator layouts. Custom cab sizes available in ¼" increments-not to exceed 12 SQ. FT-at no additional charge.

PLEASE NOTE: Cab sizes and clear dimensions subject to change depending on gate style selected. The following drawings represent cab sizes based on the accordion gate selection only.

SEE PAGES 11-12 FOR DETAILS



PIT DIMENSIONS SAME AS ROUGH OPENINGS. 6" minimum pit depth from finished floor.

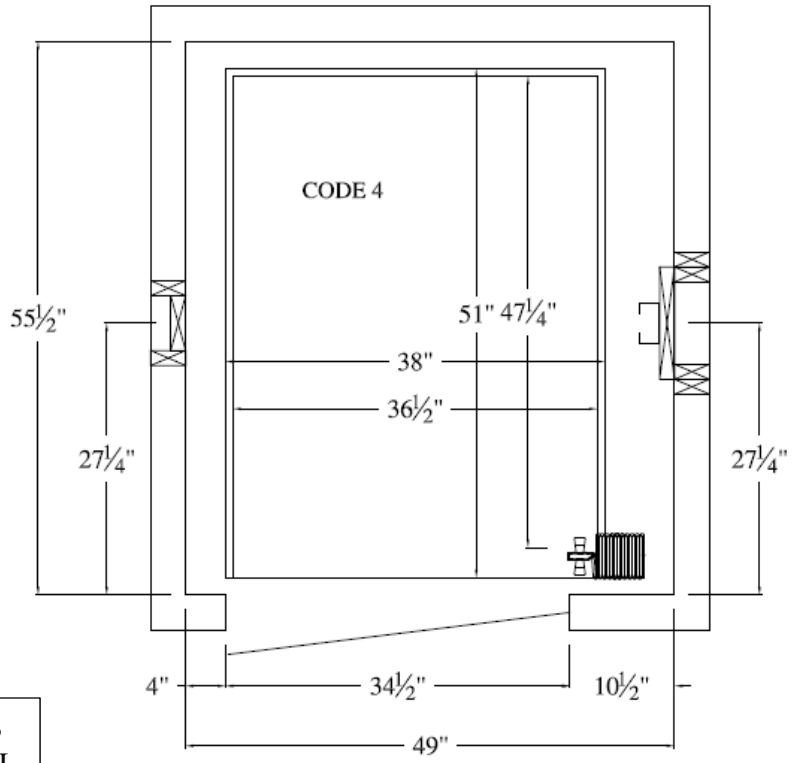


USE FLUSH DOORS

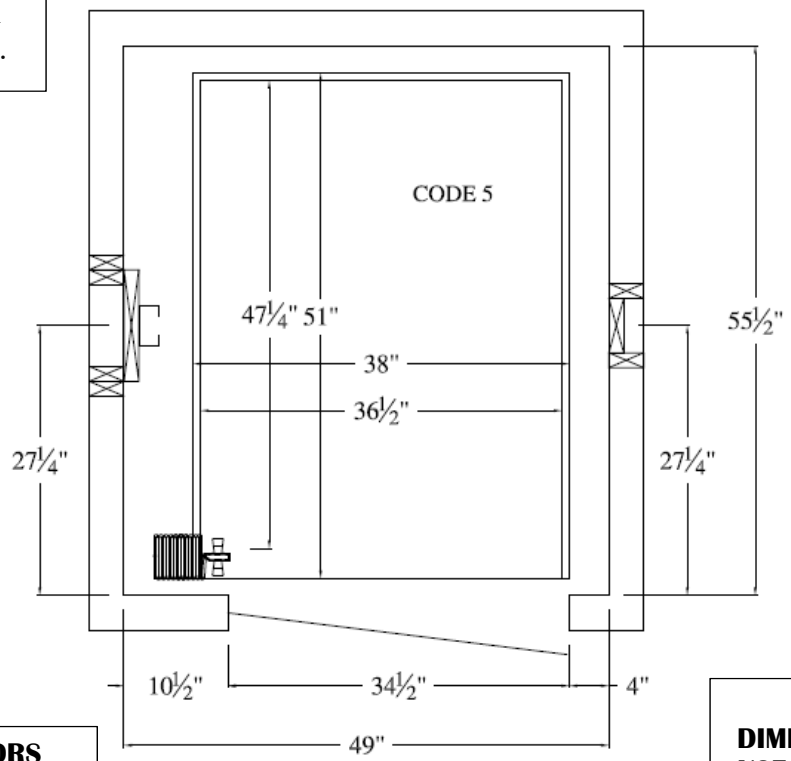
SEE DRAWING ON PAGE 13

****ALL HOISTWAY DIMENSIONS ARE ROUGH** USE 5/8" SHEETROCK FOR FIRE RATING**

SEE PAGES 11-12 FOR DETAILS



PIT DIMENSIONS SAME AS ROUGH OPENINGS. 6" minimum pit depth from finished floor.



USE FLUSH DOORS

SEE DRAWING ON PAGE 13

****ALL HOISTWAY DIMENSIONS ARE ROUGH** USE 5/8" SHEETROCK FOR FIRE RATING**

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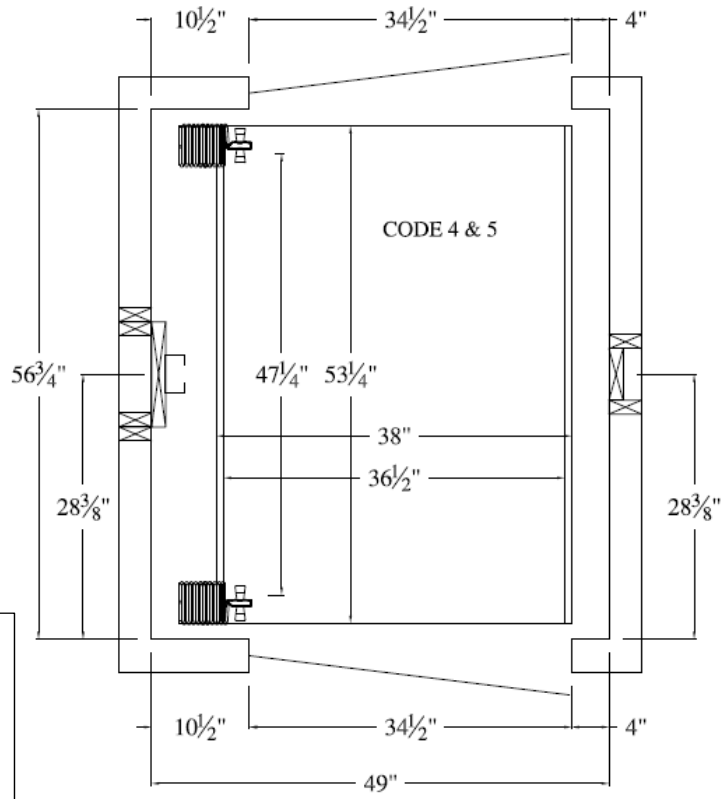
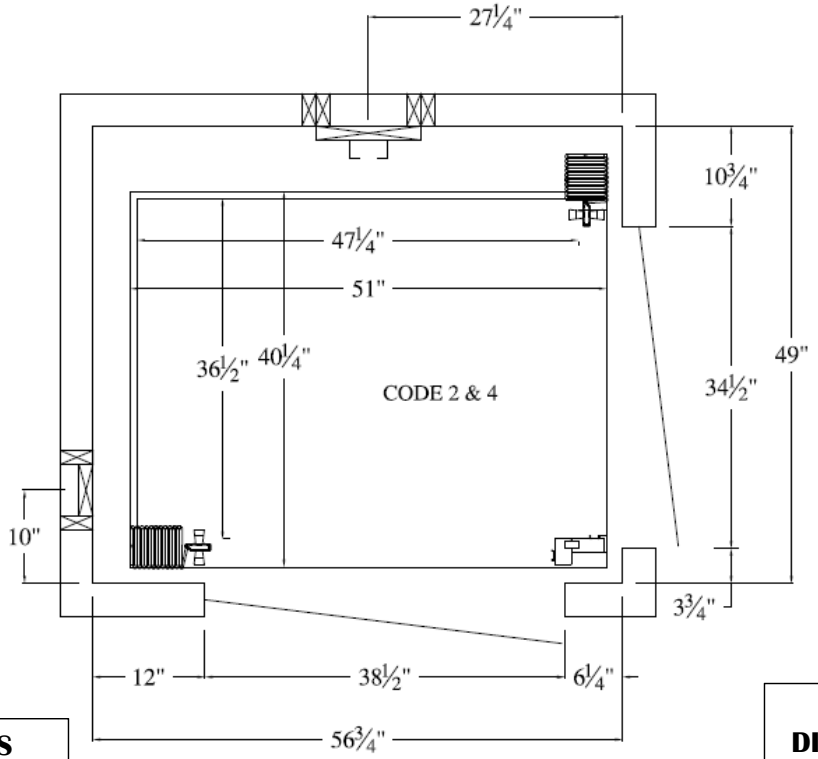


PIT DIMENSIONS SAME AS ROUGH OPENINGS. 6" minimum pit depth from finished floor.



USE FLUSH DOORS

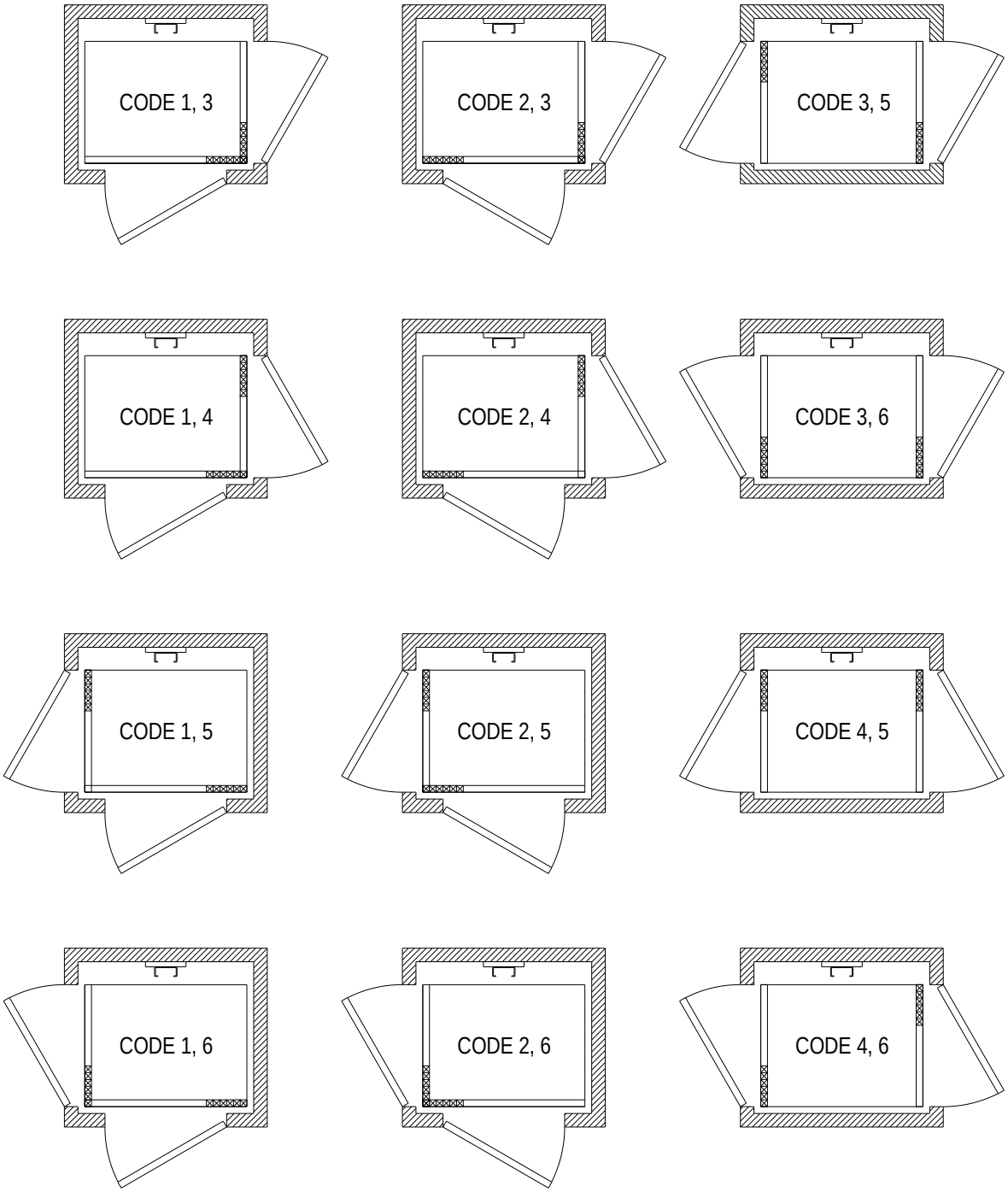
SEE DRAWING ON PAGE 13

****ALL HOISTWAY DIMENSIONS ARE ROUGH** USE 5/8" SHEETROCK FOR FIRE RATING**

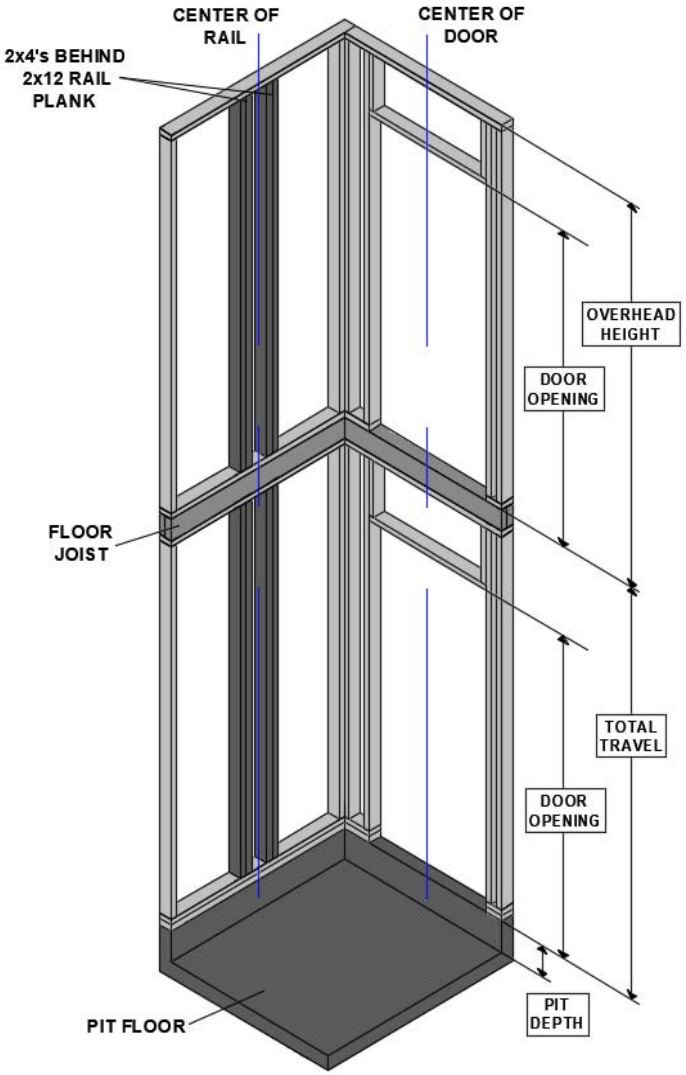
Hoistway Layout

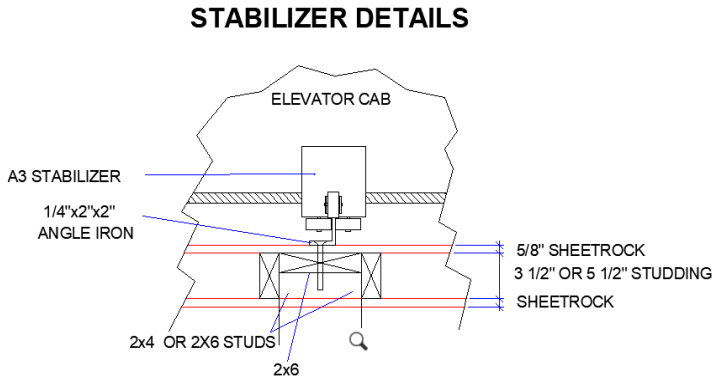
ADDITIONAL CONFIGURATIONS

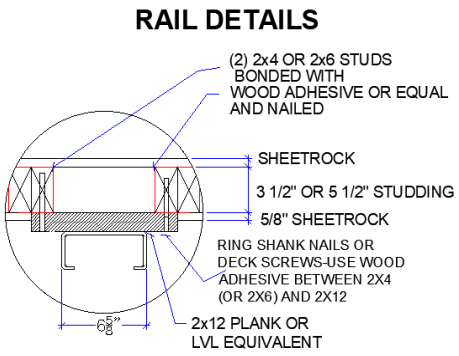
There are many additional layout options available. Please contact Inclinator or your local dealer for further assistance on shaft configurations.



Hoistway Construction







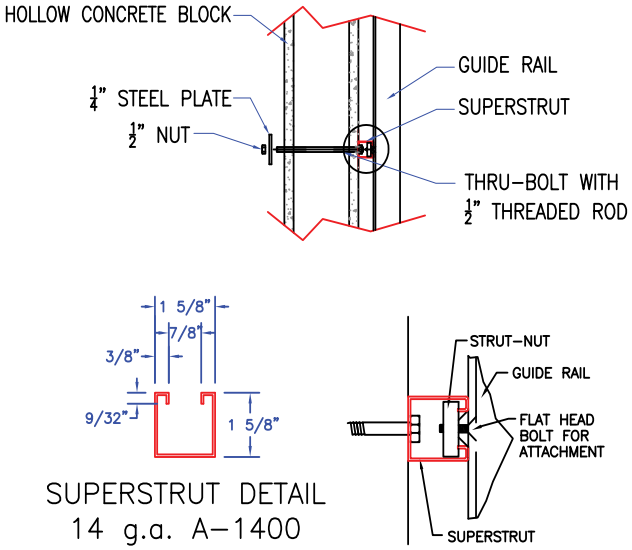
Alternate Hoistway Construction

The following recommendations are for hoistways constructed of concrete or hollow concrete block.

When mounting to a solid concrete wall or solid filled concrete block use (2) concrete screw anchors with a minimum ultimate strength in tension of 3000 lbs (i.e. Redhead LDT – Large Diameter Tapcon) per a mounting bracket.

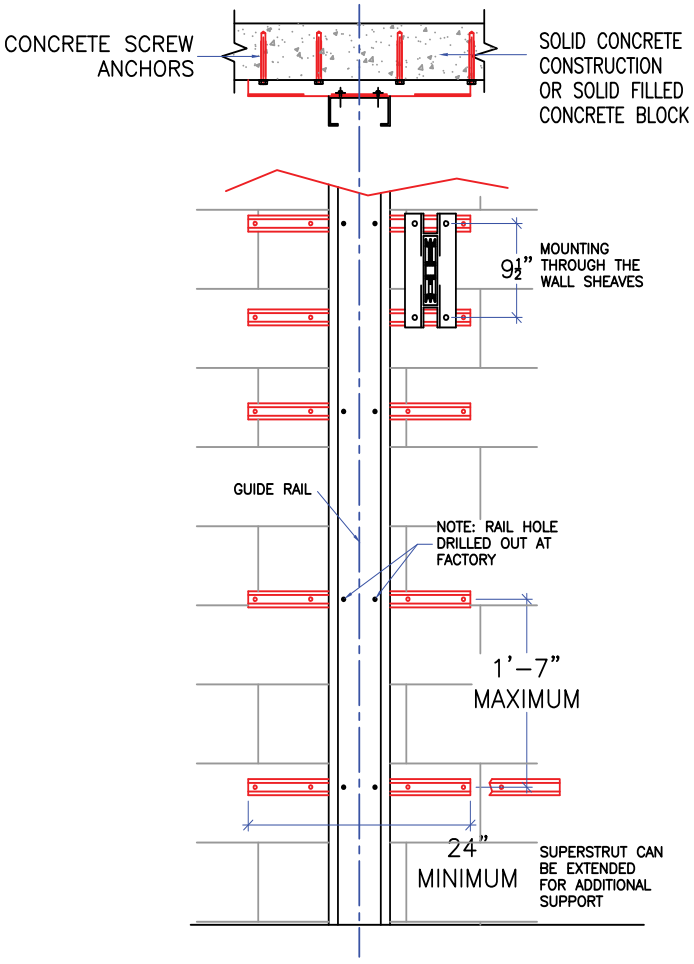
When mounting to hollow concrete block it is best to use ½" threaded rod and thru-bolt the superstrut to the wall. ¼" Steel plate should be used on the back side of the wall for additional strength.

HOLLOW CONCRETE



SUPERSTRUT DETAIL
14 g.a. A-1400

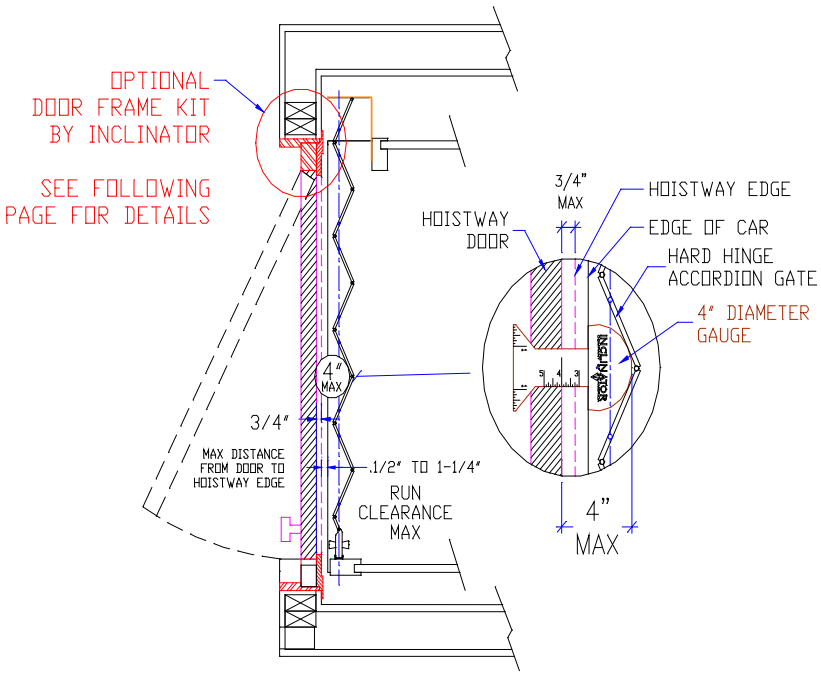
SOLID CONCRETE

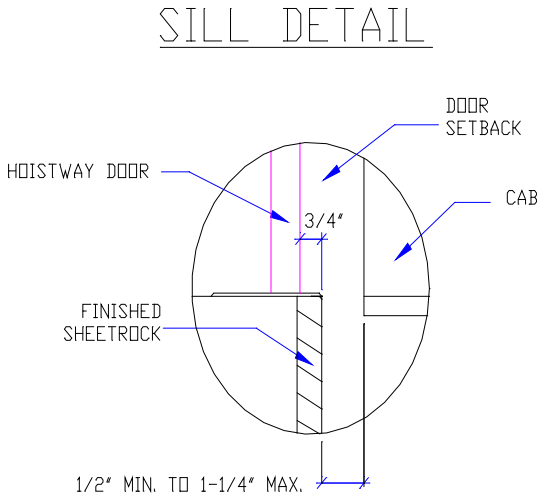


For existing, "elevator ready" hoistways, plywood can be used in lieu of 2x12 and 2x6. Contact Marchal/Stevenson for a site visit & custom drawings.

Flush Door/Sill Detail per ASME 17.1-2016

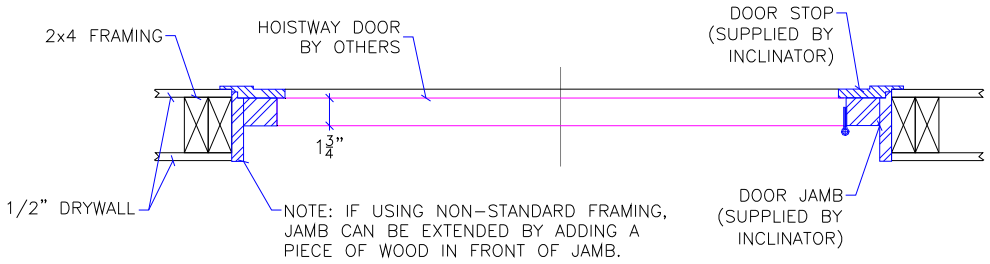
¾” X 4” RULE / DOOR FRAME DETAILS
Reference ASME 17.1-2016 5.3.1.4.2, 5.3.1.7.2, & 5.



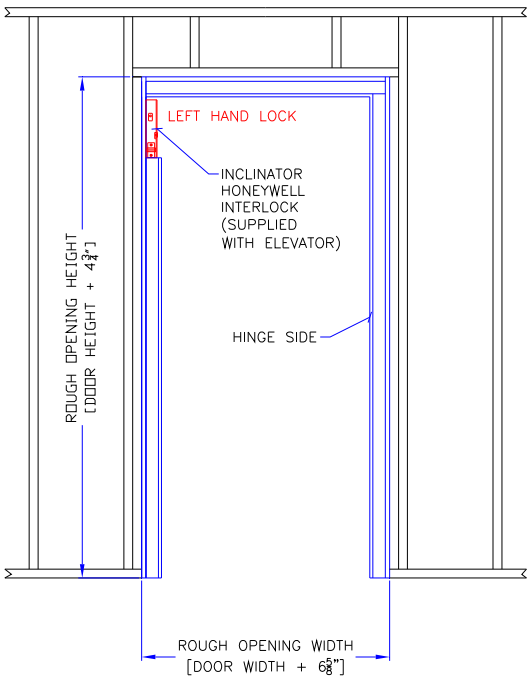


DOOR SILLS TO BE INSTALLED BY G.C. AFTER LIFT SUPPLIER HAS INSTALLED A RUNNING PLATFORM. RUN CLEARANCE TO BE NO LESS THAN 1/2" AND NOT MORE THAN 1-1/4" TO THE RUNNING PLATFORM.

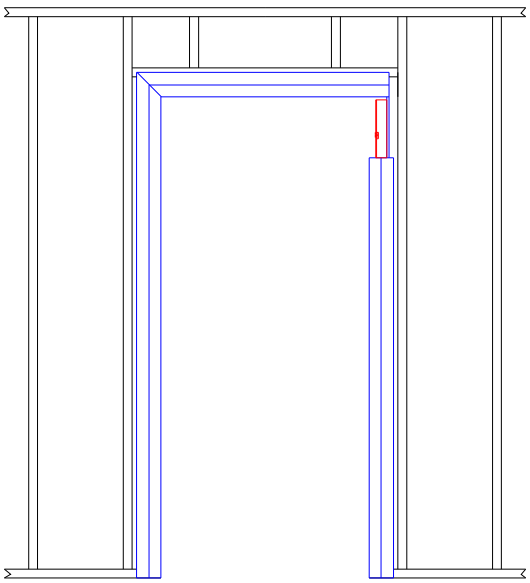
OPTIONAL: Flush Mount Door Frame Kit by Inclinator – Installed by Others



DOOR FRAME DETAIL
STANDARD 2x4 CONSTRUCTION WITH 1/2" DRYWALL (INSIDE & OUTSIDE OF HOISTWAY)



HALLWAY VIEW

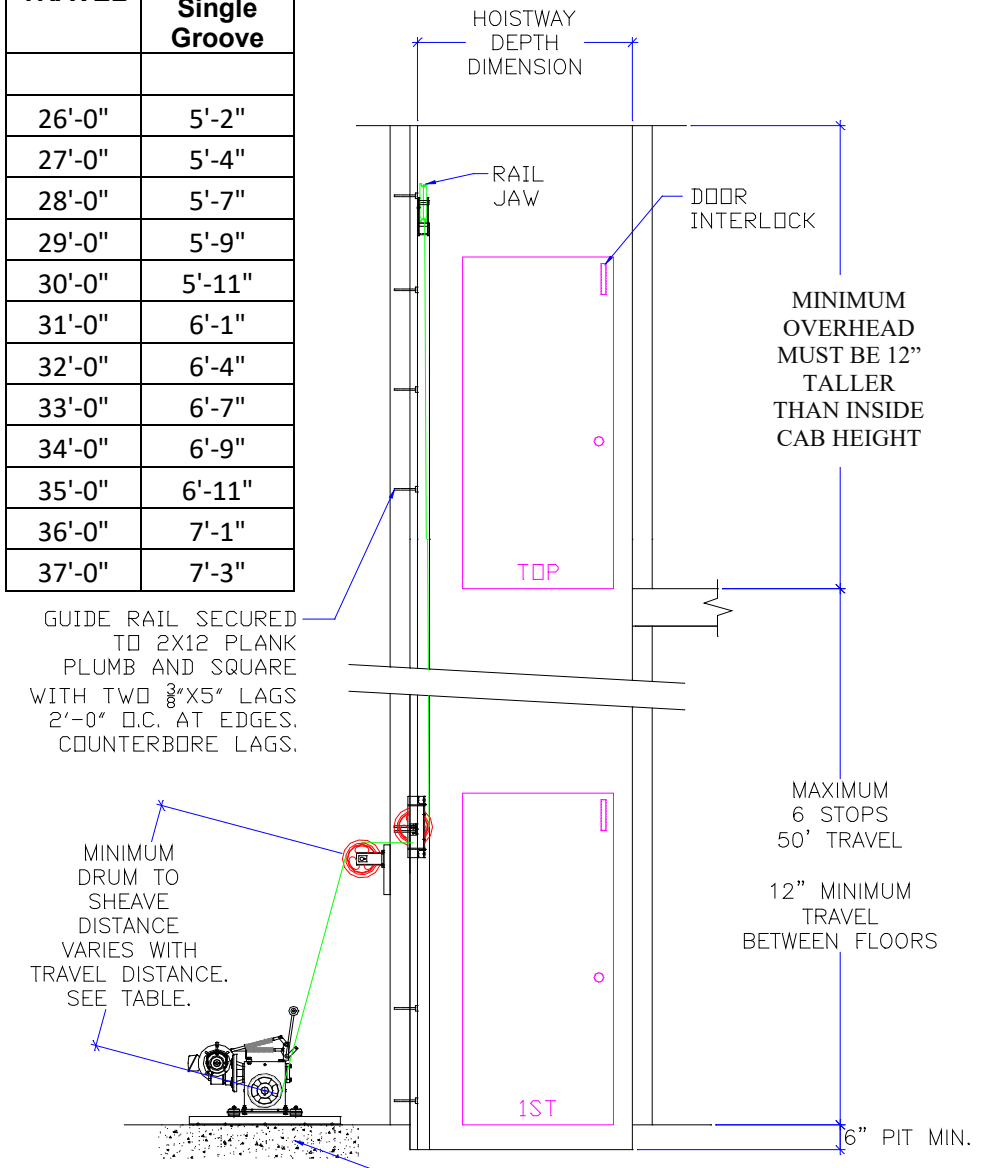


HOISTWAY VIEW

Hoistway Elevation

TRAVEL	Single Drum Double Groove	Double Drum Single Groove
8'-0"	3'-8"	1'-9"
8'-6"	3'-10"	1'-10"
9'-0"	4'-1"	1'-11"
9'-6"	4'-3"	2'-0"
10'-0"	4'-5"	2'-1"
10'-6"	4'-8"	2'-3"
11'-0"	4'-10"	2'-4"
11'-6"	5'-0"	2'-5"
12'-0"	5'-3"	2'-6"
12'-6"	5'-5"	2'-7"
13'-0"	5'-7"	2'-9"
13'-6"	5'-9"	2'-10"
14'-0"	6'-0"	2'-11"
14'-6"	6'-2"	3'-0"
15'-0"	6'-4"	3'-1"
15'-6"	6'-7"	3'-2"
16'-0"	6'-9"	3'-3"
16'-6"	6'-11"	3'-4"
17'-0"	7'-2"	3'-6"
17'-6"	7'-4"	3'-7"
18'-0"	7'-6"	3'-8"
18'-6"	7'-8"	3'-9"
19'-0"	7'-11"	3'-10"
19'-6"	8'-1"	3'-11"
20'-0"	8'-3"	4'-1"
21'-0"	8'-8"	4'-3"
22'-0"	9'-0"	4'-5"
23'-0"	9'-5"	4'-7"
24'-0"	9'-10"	4'-10"
25'-0"	10'-2"	5'-0"

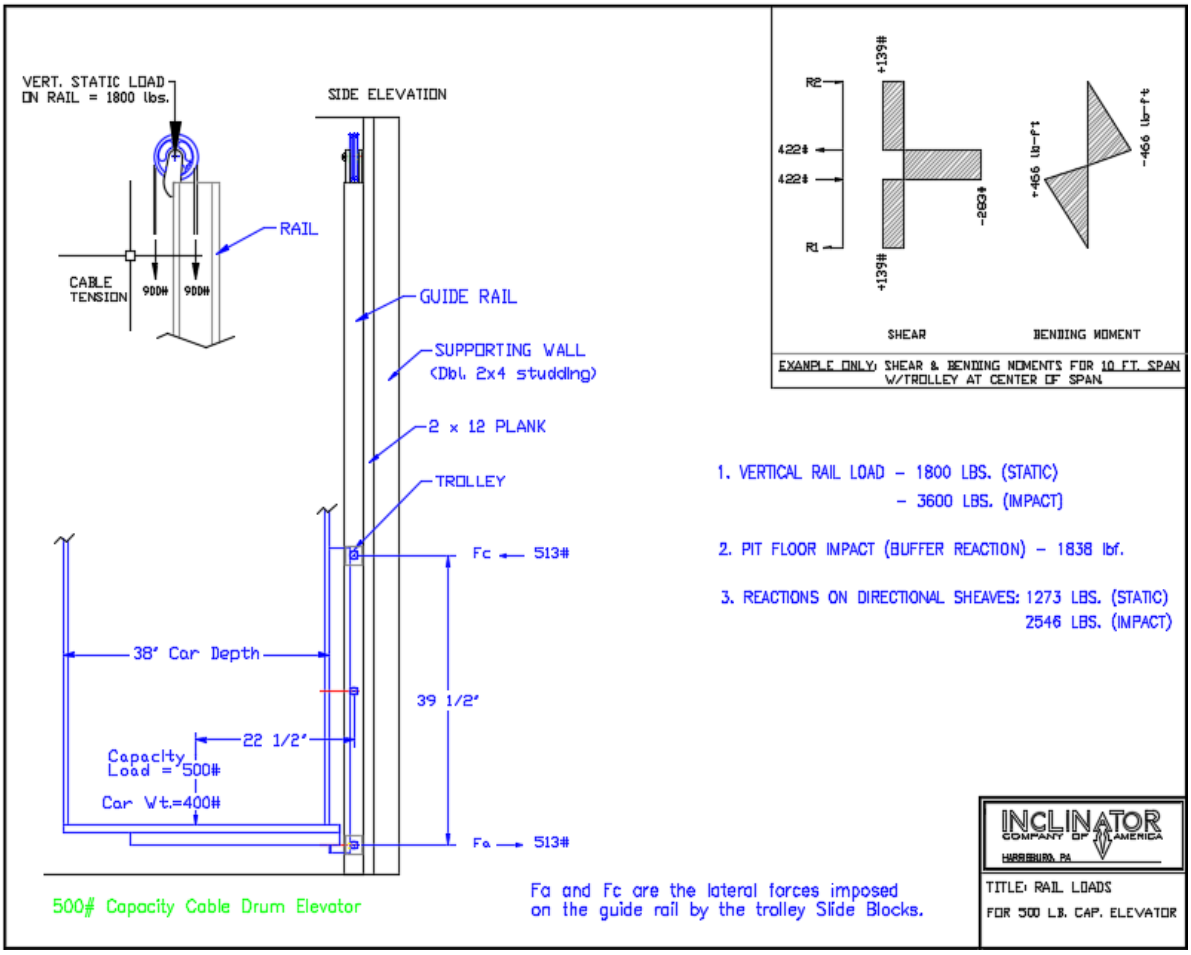
TRAVEL	Double Drum Single Groove
26'-0"	5'-2"
27'-0"	5'-4"
28'-0"	5'-7"
29'-0"	5'-9"
30'-0"	5'-11"
31'-0"	6'-1"
32'-0"	6'-4"
33'-0"	6'-7"
34'-0"	6'-9"
35'-0"	6'-11"
36'-0"	7'-1"
37'-0"	7'-3"



GEARBOX MUST BE MOUNTED ON SOUND BASE. SOUND BASE TO BE ANCHORED TO CONCRETE FLOOR WITH (10) – ½" CONCRETE ANCHORS, MIN. PULLOUT OF 6,000# EA.

SUBSTANTIAL LEVEL PIT FLOOR SLAB TO SUPPORT 2,700 LBS. IMPACT LOAD.

Technical Specifications



BOLT FASTENING OF CAR
TO TROLLEY ½" - 13 x 4"
SOCKET HD CAP SCREWS

RAIL FASTENING TO 2"x12" PLANK
#14 x 1 ¾" TYPE A S.M.S.
RAIL IS PRE-DRILLED AT FACTORY

ALL SHEAVE PITCH DIA. 5 3/4"

NOTE: All mounting points should meet or exceed the minimum pull out force for all rail reactions.

NOTE: Follow the anchor manufacturer's recommendations for type and size of drill bit to be used.

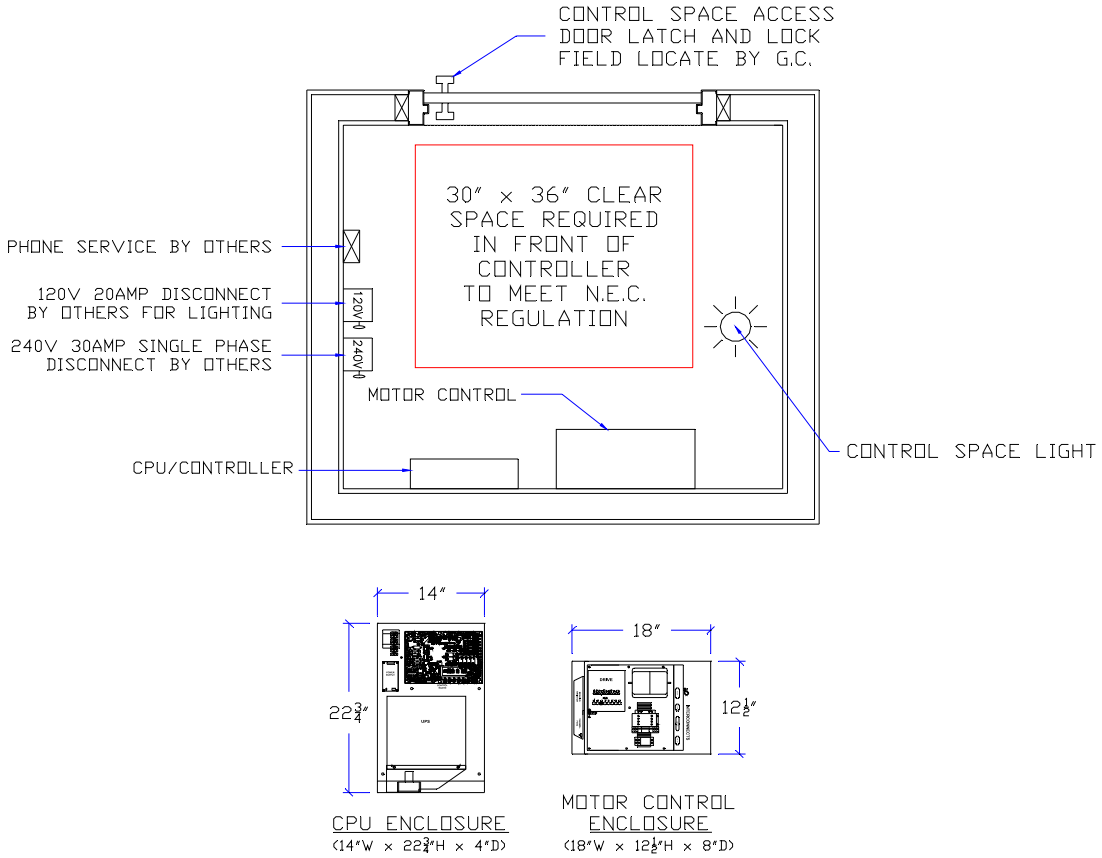
Substantial level pit floor slab to support 2,700 lbs. impact load.

See page 12 for loads for a main rail installed in a concrete hoistway. See page 20 for machinery installed in attic or adjacent room without concrete flooring.

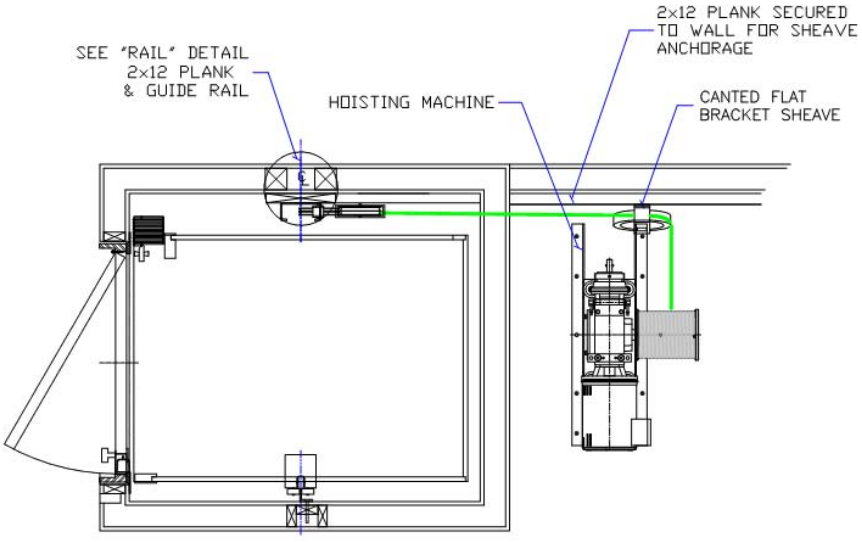
Machine Room Specifications

NOTE: The CPU/Controller and Motor Control is recommended to be mounted in the same location. However, up to 40' controller cables are available if needed.

1. Permanent 230 volt, single phase, 30 amp dedicated supply and disconnect by others to operate the elevator.
2. 120 volt lighting supply and disconnect by others.
3. Telephone connection: Code requires a telephone connection. A phone line must be installed leading to the controller. In the event of a power failure, VoIP systems lose connection – use battery backup.
4. CPU/Controller and Motor Control is recommended to be mounted in a temperature-controlled environment between 40^0 F to 120^0 F (4^0C to 49^0C).
5. CPU/Controller and Motor Control should not be exposed to outdoor elements.
6. Typical wiring distance from the Motor Control to the gearbox is 10'. Longer motor cables up to 50' are available. See wiring diagram on page 19 for more information.
7. N.E.C. regulations require a minimum of 30"x36" clear unobstructed floor space in front of the controller. N.E.C regulations also state the floor to ceiling height of the control space should be 6'-6" high.
8. If mounting the CPU/Controller or Motor Control inside the hoistway they should be located in such a way that they can be inspected and maintained without full body entry into the hoistway.



Machine Room Configurations

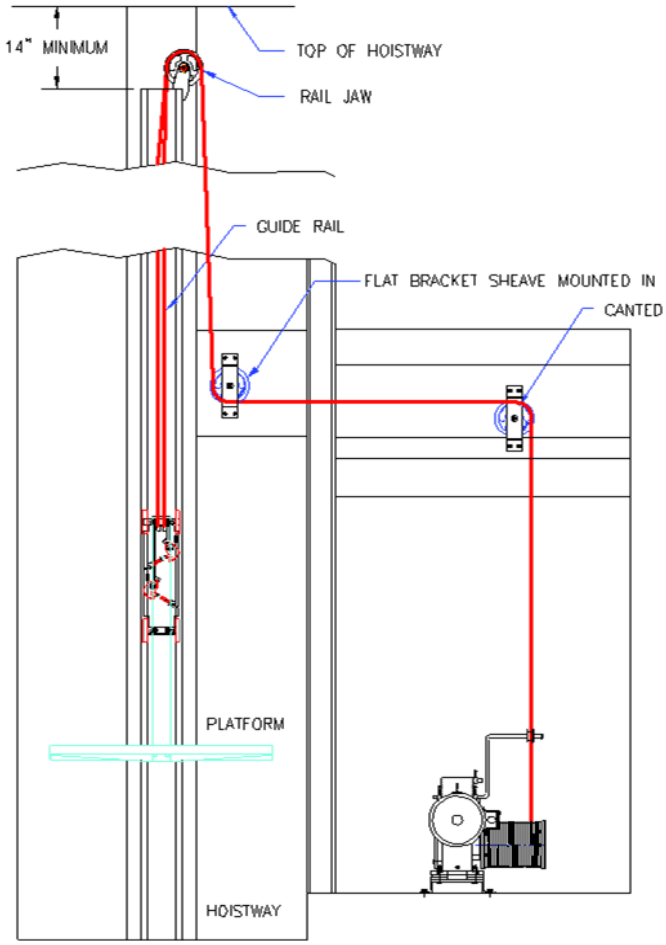


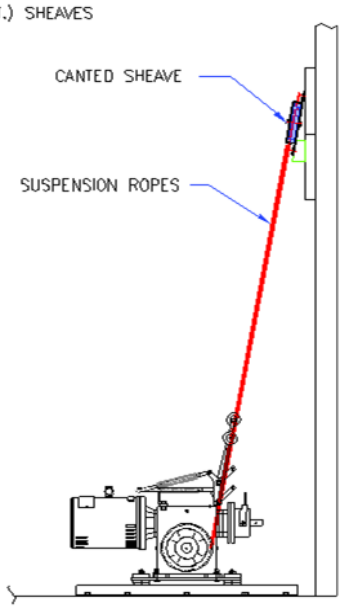
MACHINE ROOM ADJACENT

In this configuration the machine room is located either to the right or left of the guide rail. Requires:

(2) Flat Bracket Sheaves

(1) Rail Jaw





SEE PAGE 15 FOR DETIALS

Machine Room Configurations

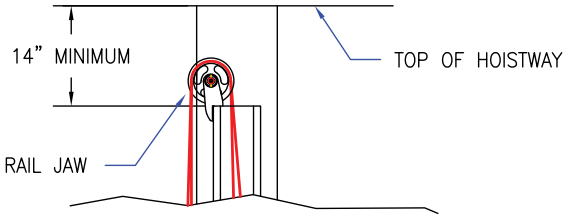
MACHINE ROOM BEHIND RAIL

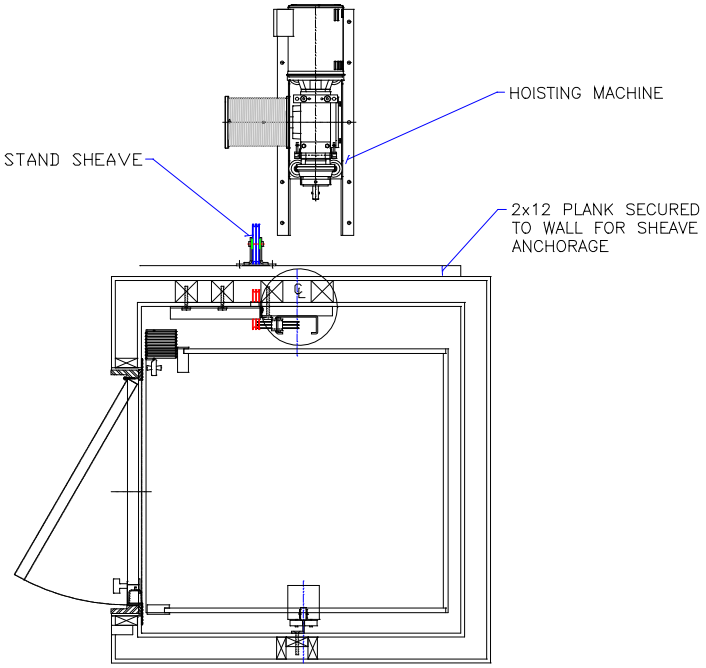
In this configuration the machine room is located directly behind the guide rail. Requires:

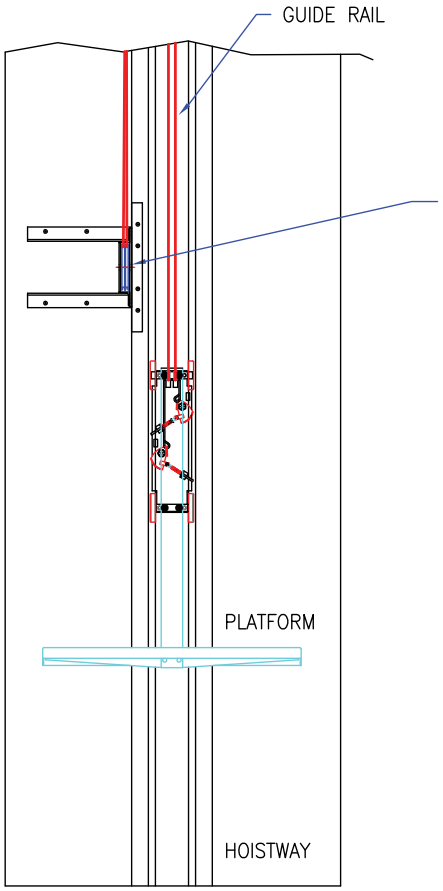
(1) Stand Sheave

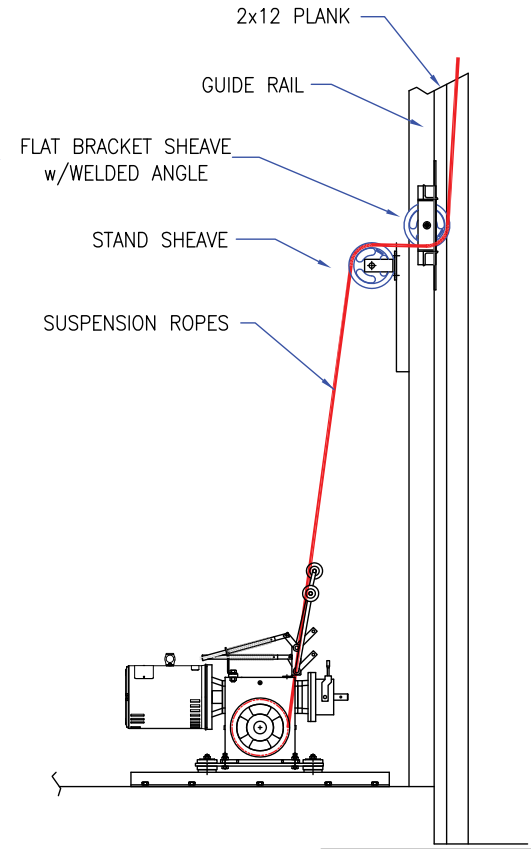
(1) Flat Bracket Sheave w/ Welded Angle

(1) Rail Jaw









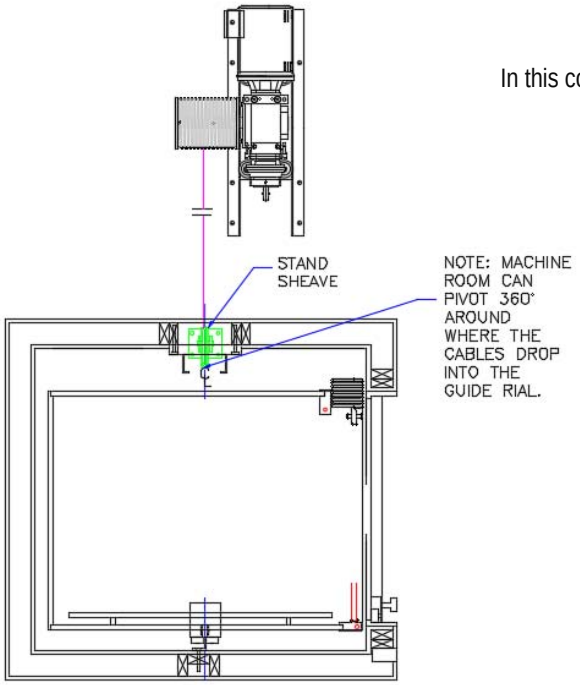
SEE PAGE 15 FOR DETIALS

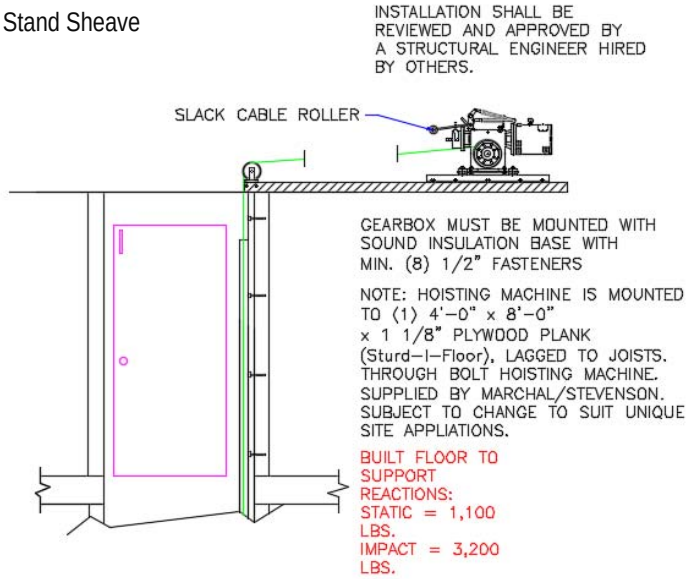
Machine Room Configurations

MACHINE ROOM OVERHEAD

In this configuration the machine room is located overhead in the attic. Requires:

(1) Stand Sheave





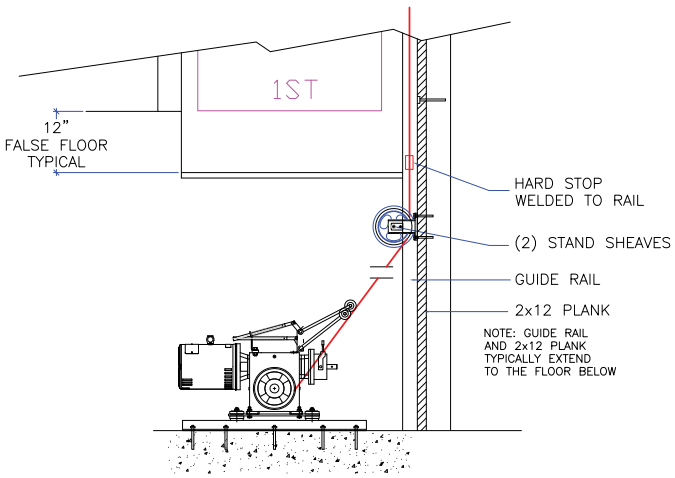
AREA MUST BE A MINIMUM OF 3'X4'X 4' TALL – 1' AROUND ALL SIDES TO BE FREE AND CLEAR OF ANY OBSTRUCTIONS – SEE PAGE 15 FOR "MINIMUM DRUM TO SHEAVE DISTANCE"

MACHINE ROOM BELOW

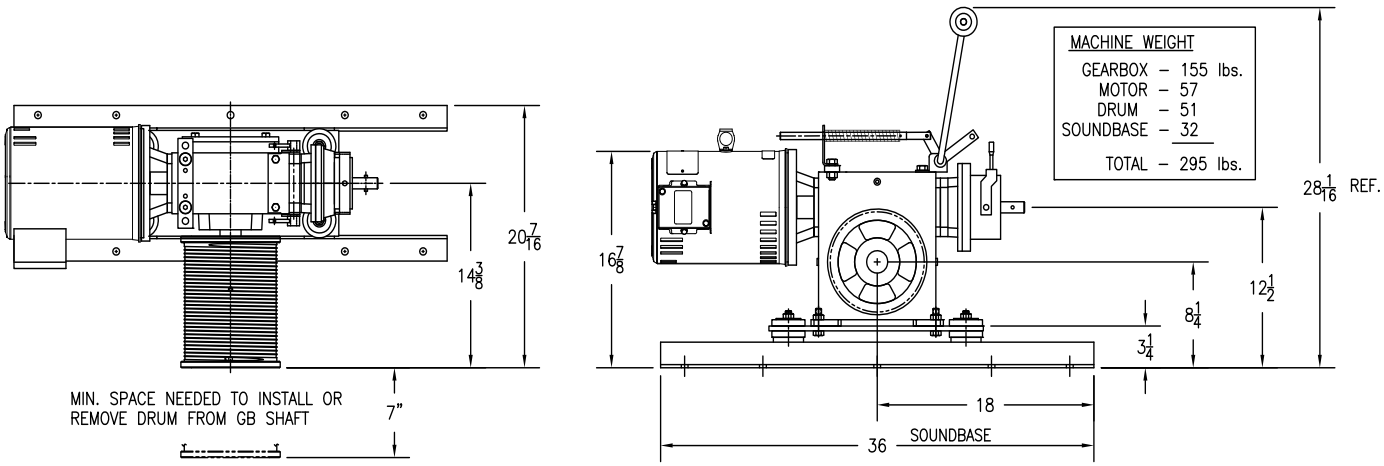
In this configuration the machine room is located below the hoistway. Requires:

(1) Stand Sheave

(1) Rail Jaw

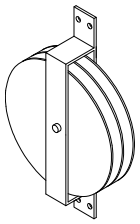


Gearbox Assembly

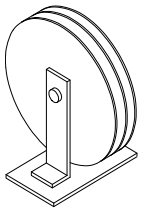


Travel Sheaves

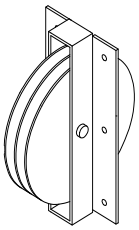
Reactions on all 500# cable drum sheaves rated at 1100lbs



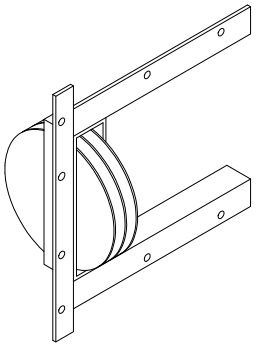
Flat Bracket Sheave



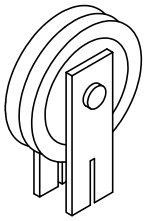
Stand Sheave



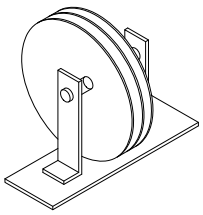
Center of Plank Sheave



Flat Bracket Sheave With Angle



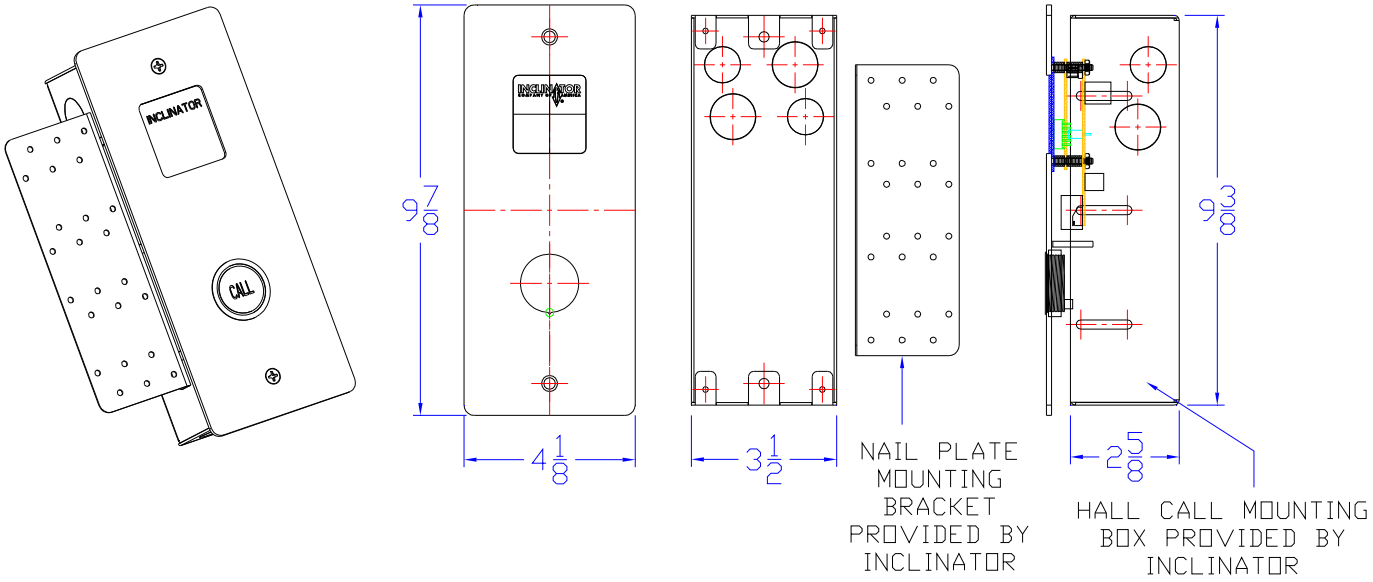
RAIL JAW



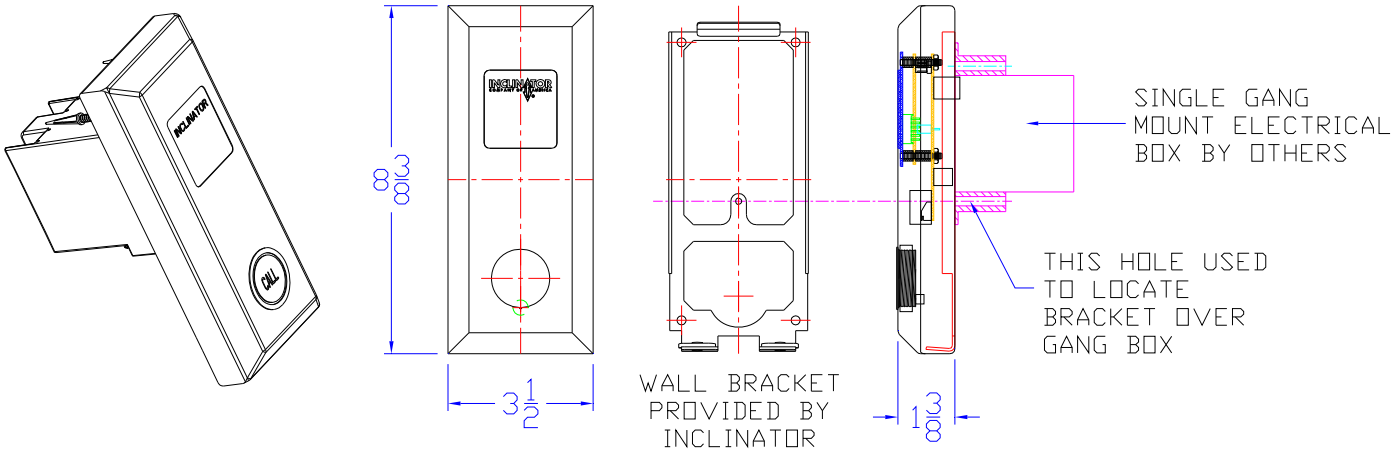
Floating Stand Sheave

Hall Call Stations

FLUSH MOUNT HALL CALL STATION

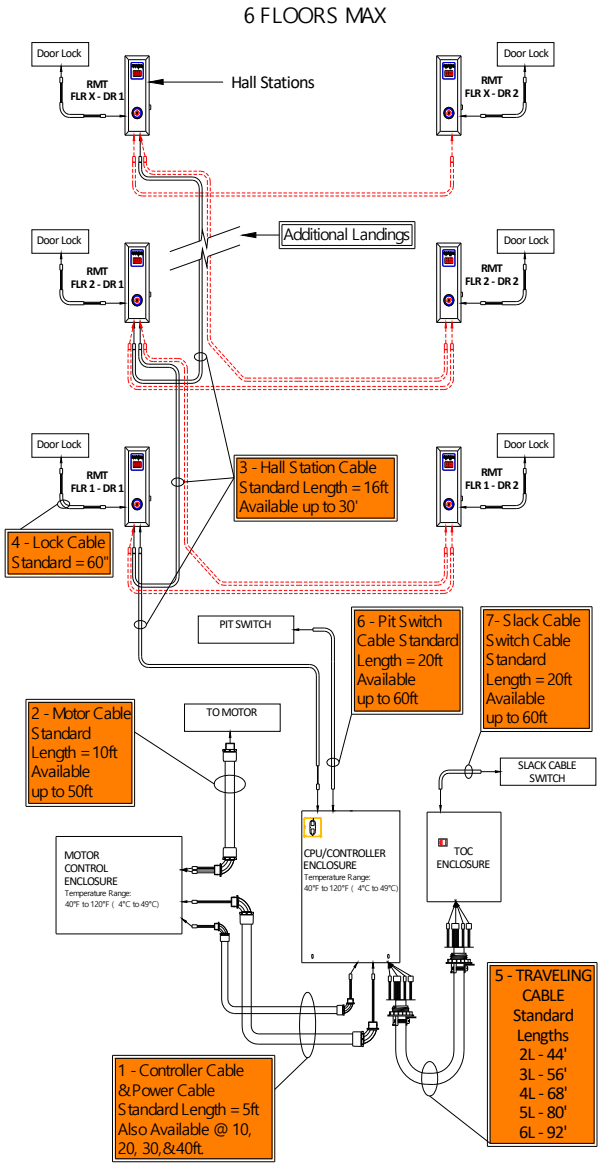


RAISED MOUNT HALL CALL STATION

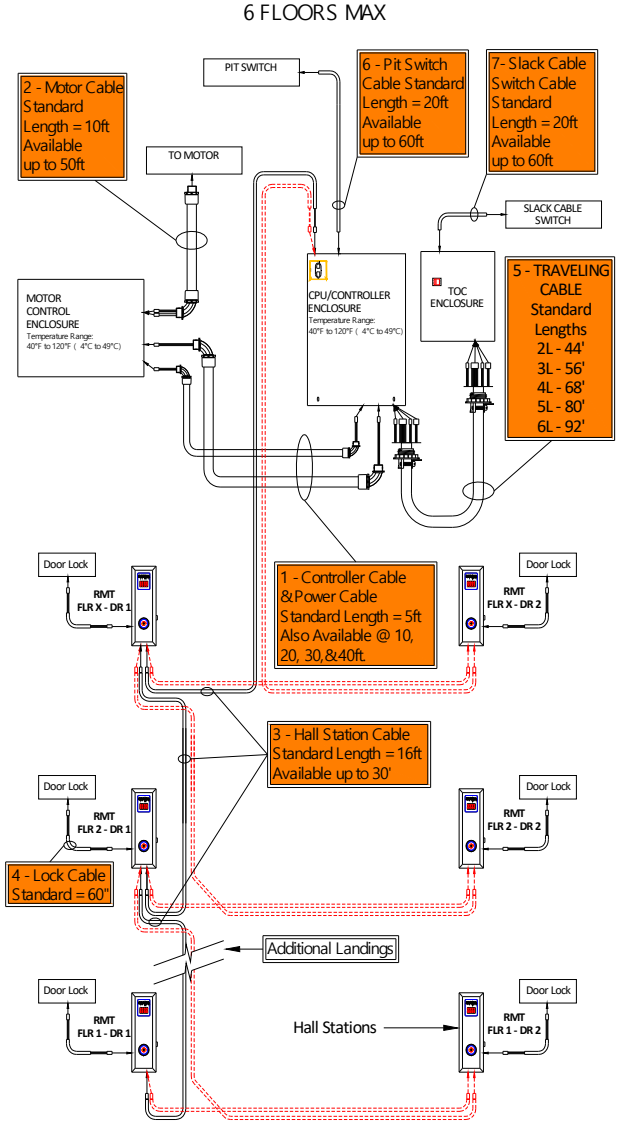


UC601 Cable Lengths and Components

STANDARD MOUNT



ATTIC MOUNT



Cable lengths shown are standard based on number of landings ordered. Inclinator offers additional cable length options to meet non-standard installations. Please see order form for additional information on longer cable lengths.#

Manufacturer's Warranty

INCLINATOR COMPANY OF AMERICA – LIMITED PRODUCT WARRANTY

LIMITED PRODUCT WARRANTY OF SELLER; SOLE AND EXCLUSIVE REMEDY

Coverage and length of warranty: This warranty applies to the repair or replacement, at Seller's option, of parts of the Product that fail due to defective workmanship or material. Seller may, at its option, provide factory reconditioned parts. The **basic coverage period for complete units** is twenty-four (24) months from the date that the equipment is shipped from Seller's factory, unless an additional multi-year extended warranty is purchased from Seller in accordance with the extended warranty terms below. The **basic coverage period for Buyer purchased parts**, representing less than a complete unit, is twelve (12) months from the date the part(s) are shipped from Seller's factory (collectively, the Warranty Period).

What is not covered.

- All labor costs that are incurred for removal, repair or replacement of warranty parts, including related travel time.
- Consumable items / parts such as light bulbs, lamps, batteries, UPS (Uninterruptible Power Supplies), oil seals, mechanical switches, guide shoe inserts, drive belts, hydraulic fluid, lubricants, etc.
- Structural or cosmetic components that are subject to normal wear and tear, external forces and/or misuse. This includes paint, stain, caulking, weather barriers, slide blocks, fluid seals, switches, metal panels, glass, Plexiglas, gates, travelling cable, doors, buttons, trim, upholstery, etc.
- Damage or malfunction caused by improper installation and/or repair, lack of maintenance in accordance with manufacturer's recommendations, improper or abnormal use, misuse, neglect, abuse or accident, improper adjustment, structural integrity of building and/or hoistway, exceeding weight limit, failure to follow operating instructions or acts of God.
- Damage or malfunction caused by the integration of any additional parts or items, the customization of any product or parts, and/or the use of non-Inclinator parts, if such integration, customization or use was performed without approval from Seller.
- Damage sustained in shipping. Buyer must file claim with shipping / freight company.

While necessary maintenance or repairs on Seller Product may be performed by any qualified elevator contractor with any appropriate parts, SELLER RECOMMENDS THAT ONLY AUTHORIZED INCLINATOR DEALERS PROVIDE SUCH SERVICES WITH PARTS SUPPLIED BY SELLER. IMPROPER OR INCORRECTLY PERFORMED MAINTENANCE OR REPAIR VOIDS THIS WARRANTY.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES WHATSOEVER, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND IS LIMITED TO A PERIOD OF TWO YEARS (UNLESS EXTENDED) FROM THE TIME THE PRODUCT IS SHIPPED FROM INCLINATOR'S FACTORY.

Buyer shall notify Seller of any warranty claim. Seller will provide a Return Material Authorization (RMA) number, ship replacement part(s) and issue an invoice for part(s) covered under warranty. Replacement part(s) will be shipped to the Buyer using standard shipping practices. Overnight and 2nd day shipment will be billed as an additional charge. Seller may, at its option, provide factory reconditioned parts for replacement. The warranted part(s) shall be returned from the Buyer to the Seller within 60 days from issuance of the RMA. Seller shall confirm that the parts are defective in materials or workmanship within two weeks of receipt from the Buyer and will issue credit for such parts confirmed to be defective. Should such defective parts not be promptly replaced, BUYER'S SOLE AND EXCLUSIVE REMEDY SHALL BE RECOVERY OF THE FULL PURCHASE PRICE OF THAT DEFECTIVE PART.

BUYER EXPRESSLY AGREES THAT THIS REMEDY IS THE SOLE AND EXCLUSIVE REMEDY OF BUYER AGAINST SELLER, AND THAT UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE TO BUYER FOR ANY OTHER LOSSES OR EXPENSES, INCLUDING BUT NOT LIMITED TO ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, CONTINGENT OR PUNITIVE DAMAGES, REGARDLESS OF WHETHER SUCH LIABILITY IS BASED ON BREACH OF CONTRACT, TORT, STRICT LIABILITY, BREACH OF WARRANTIES, FAILURE OF ESSENTIAL PURPOSE, INTELLECTUAL PROPERTY INFRINGEMENT OR OTHERWISE.

FURTHER, SELLER DISCLAIMS LIABILITY FOR ANY PERSONAL INJURY OR PROPERTY DAMAGE RESULTING FROM THE OPERATION OF A PRODUCT THAT HAS NOT BEEN FOUND TO BE DEFECTIVE. IN ADDITION, SELLER DISCLAIMS LIABILITY FOR ANY PERSONAL INJURY OR PROPERTY DAMAGE RESULTING FROM THE OPERATION OF A PRODUCT THAT HAS BEEN MODIFIED FROM THE ORIGINAL SELLER DESIGN OR TO WHICH ANY PARTS OR ITEMS HAVE BEEN ADDED WHETHER SUCH MODIFICATIONS OR ADDITIONS WERE MADE WITH OR WITHOUT THE WRITTEN AUTHORIZATION OF SELLER. NO PERSON OR COMPANY IS AUTHORIZED TO CHANGE THE DESIGN OR MAKE-UP OF THIS PRODUCT WITHOUT WRITTEN AUTHORIZATION BY SELLER.

THIS WARRANTY SUPERCEDES ALL OTHER PUBLISHED, PRINTED OR ORAL WARRANTIES WITH RESPECT TO THE PRODUCT.

EXTENDED WARRANTY Within 120 days from the date of shipment to Dealer, Dealer may purchase an additional multi-year warranty from Seller by signing and fulfilling the terms of the Dealer Extended Product Limited Warranty Purchase Form.

Rev. 2-20-2017

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