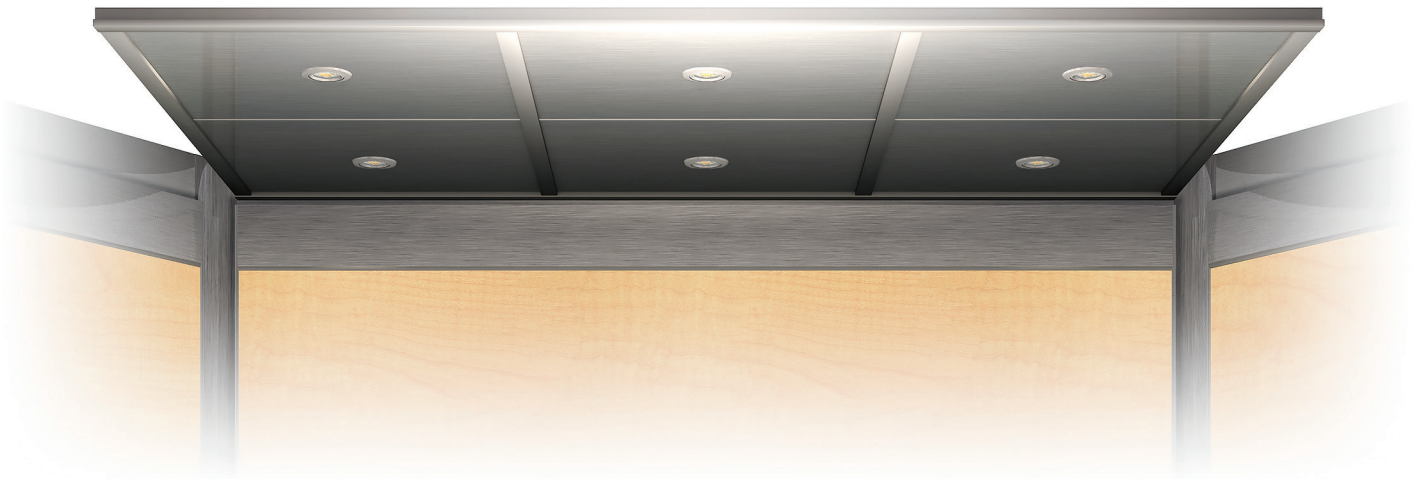




MASSIF CEILING

**INSTALLATION
INSTRUCTIONS**



TOOLS REQUIRED

- Measuring Tape
- Drill
- Ladder
- 3” Paint Brush and latex paint for painting the canopy (If required)

SECTION 1: UNPACKING

- 1.1. When your new Framed Ceiling arrives, transport it near to the cab you will be renovating and organize the crates so that they will be easily accessible.

The crates contents are itemized on its surface.

- 1.2. Carefully un-crate the ceiling package, making sure that none of the components are damaged.
- 1.3. Check the colours, features, and dimensions of the components against your order before you begin removing the existing elevator interior.

If you have any questions at this point, contact ECR before going ahead with any part of the installation.

For technical support on the Framed Ceiling installation, please contact us at:

Elevator Cab Renovations
Office: (613) 745-4870
Toll Free: 1-877-745-4870
ecr@elevatorcabs.ca

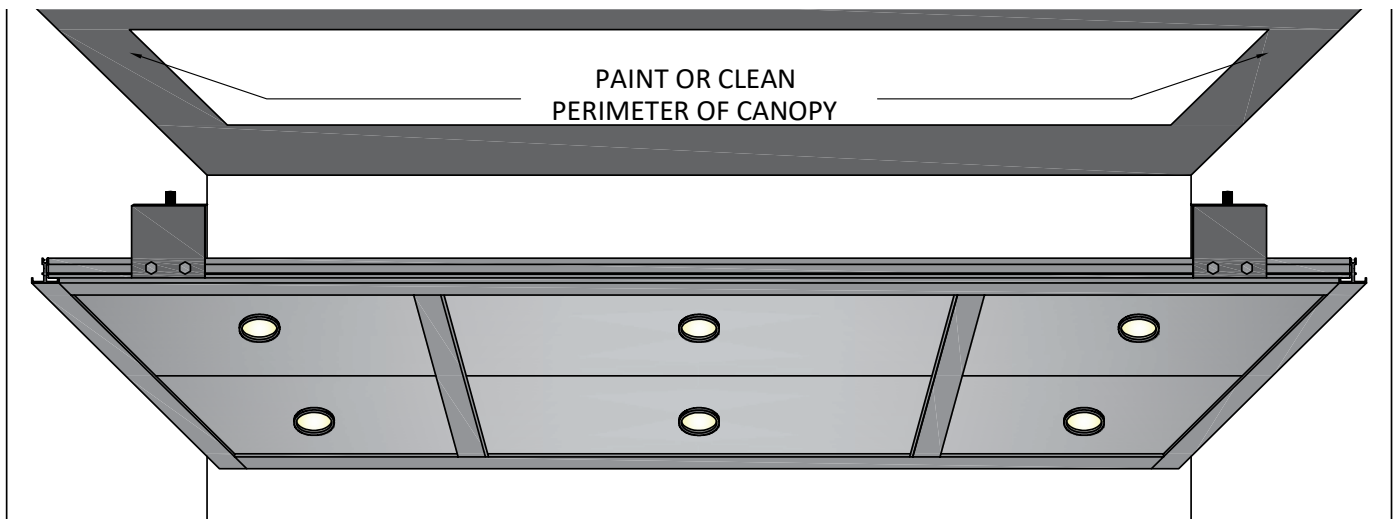
Office Hours : 6:30 AM to 3:30 PM Eastern Standard Time

SECTION 2: PREPARE CANOPY

- 2.1. Unless specified otherwise, your new Framed Ceiling will be inset from the shell walls by 2" on all sides. Please consult drawings accompanying ceiling.
- 2.2. Prepare canopy surface to accept new Framed Ceiling by completing one of the following options
 - a) Sand, clean & re-paint the perimeter of the canopy with a desired color. Black or white are typical for this type of application (Dia. 1).
 - b) If the canopy is in good condition, a simple cleaning may be all that is required.



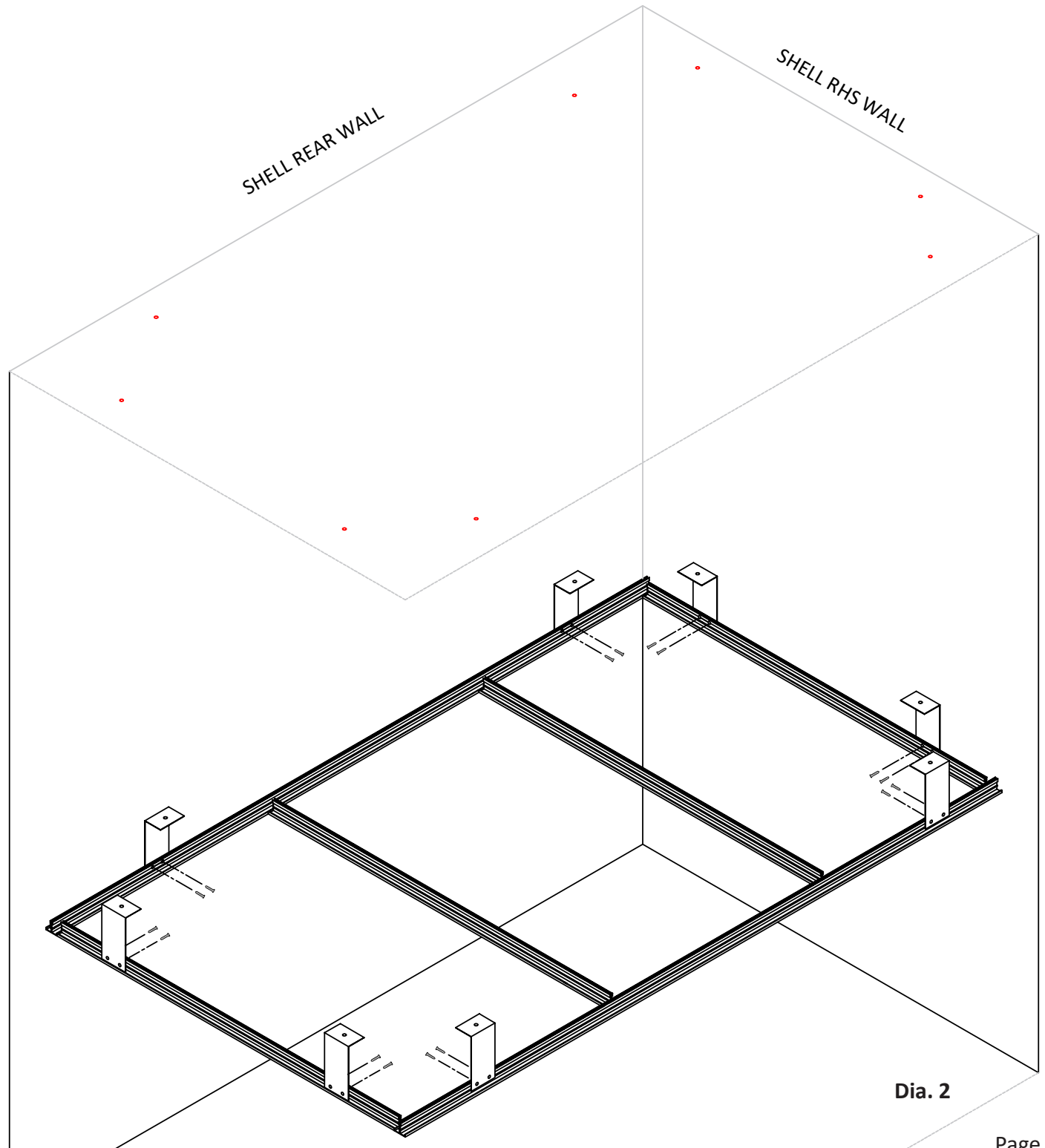
Note: It is suggested that for both options a or b, a minimum of 6" of the perimeter of the canopy should be addressed by the process chosen.



Dia. 1
Massif ceiling preparations.

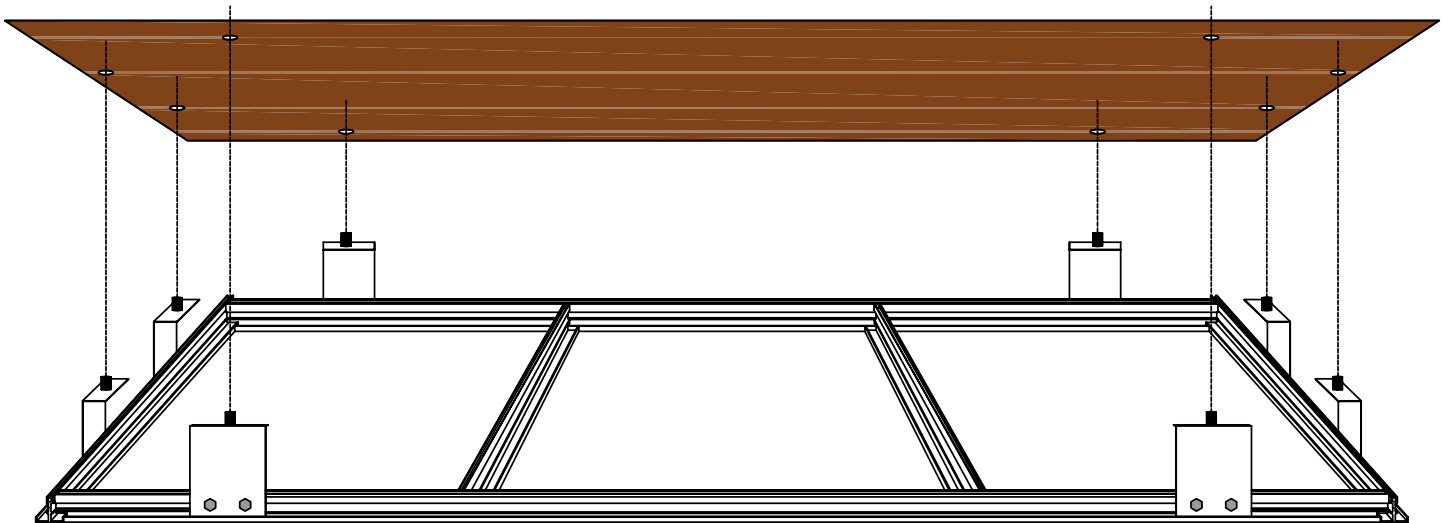
SECTION 3: PREPARE CEILING FRAME

- 3.1. Unless requested your framed ceiling will be shipped assembled with panels in place. Light kits are packed separately to be installed when ready. Support brackets are also packed separately.
- 3.2. The “T” frame comes with predrilled holes to attach the support brackets. The brackets can be attached to the frame using the 1/4 - 20 x 3/4 bolts provided (Dia. 2).



SECTION 3: PREPARE CEILING FRAME (CONTINUED)

- 3.3. Your ceiling includes a mounting template. This will be used to transfer hole locations from the Framed Ceiling brackets to the canopy of the cab. Determine safe locations on the car top where ceiling brackets can be installed so that fasteners are not obstructed by ribs, car top equipment, etc.
- 3.4. Place the template on top of the ceiling brackets and align it with the edge of the ceiling support frame. Once positioned, mark the mounting holes on the template and drill them out to at least 1/8" (Dia. 3).



Dia. 3

Framed Ceiling with mounting template.

- 3.5. Position the template against the canopy of the cab in the desired location (typically centered side to side - verify drawings accompanying ceiling) and temporarily secure into place with screws or tape. Copy the mounting holes to the canopy by marking through the template holes. Remove the template from the canopy.
- 3.6. Before drilling in the canopy, check the top of the car for any obstructions (i.e. ducts, cable, conduit etc). Progressively drill holes up to 1/2" diameter in the canopy.



Protect any exposed wall finishes prior to raising the framed ceiling into position.

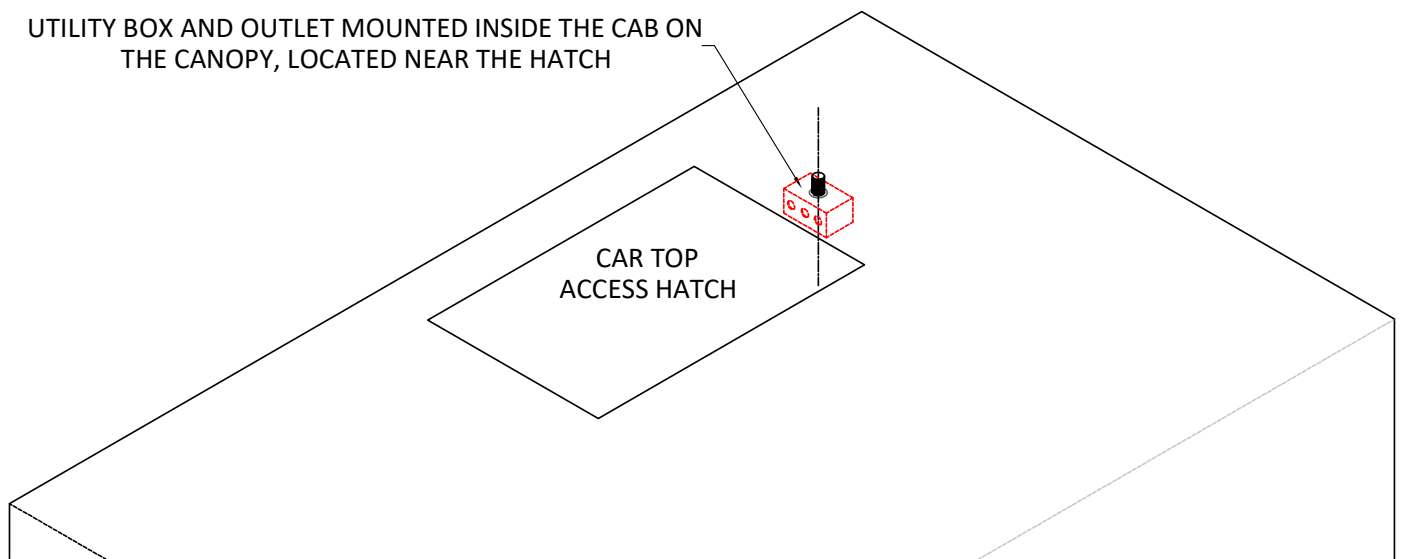
- 3.7. Remove the panels and center the frame onto the canopy to locate the attachment holes.



Note: Be sure to retain all the panel safety clips for re-installation.

SECTION 4: ELECTRICAL CONNECTIONS

- 4.1. The lighting system runs on 110 V AC through two low voltage power supplies; the installer must provide 110 V to the lighting system.
- 4.2. Mount an electrical utility box (provided) inside the cab on the canopy near the hatch. The low voltage power supplies will be plugged into the receptacle providing power to the disk lights (Dia. 4).



Dia. 4

Electrical box on canopy.

- 4.3. If a dimmer was purchased, the intensity can be adjusted by accessing the dimmer through the open hatch. The in-line dimmer can be installed (plug and play) onto the low voltage side of the power supply.
- 4.4. Set the required light level for you jurisdiction (ASME A17.1-2013/ CSA B44-13):
 - a) 50 lux for passenger elevators*
 - b) 25 lux for freight elevators*

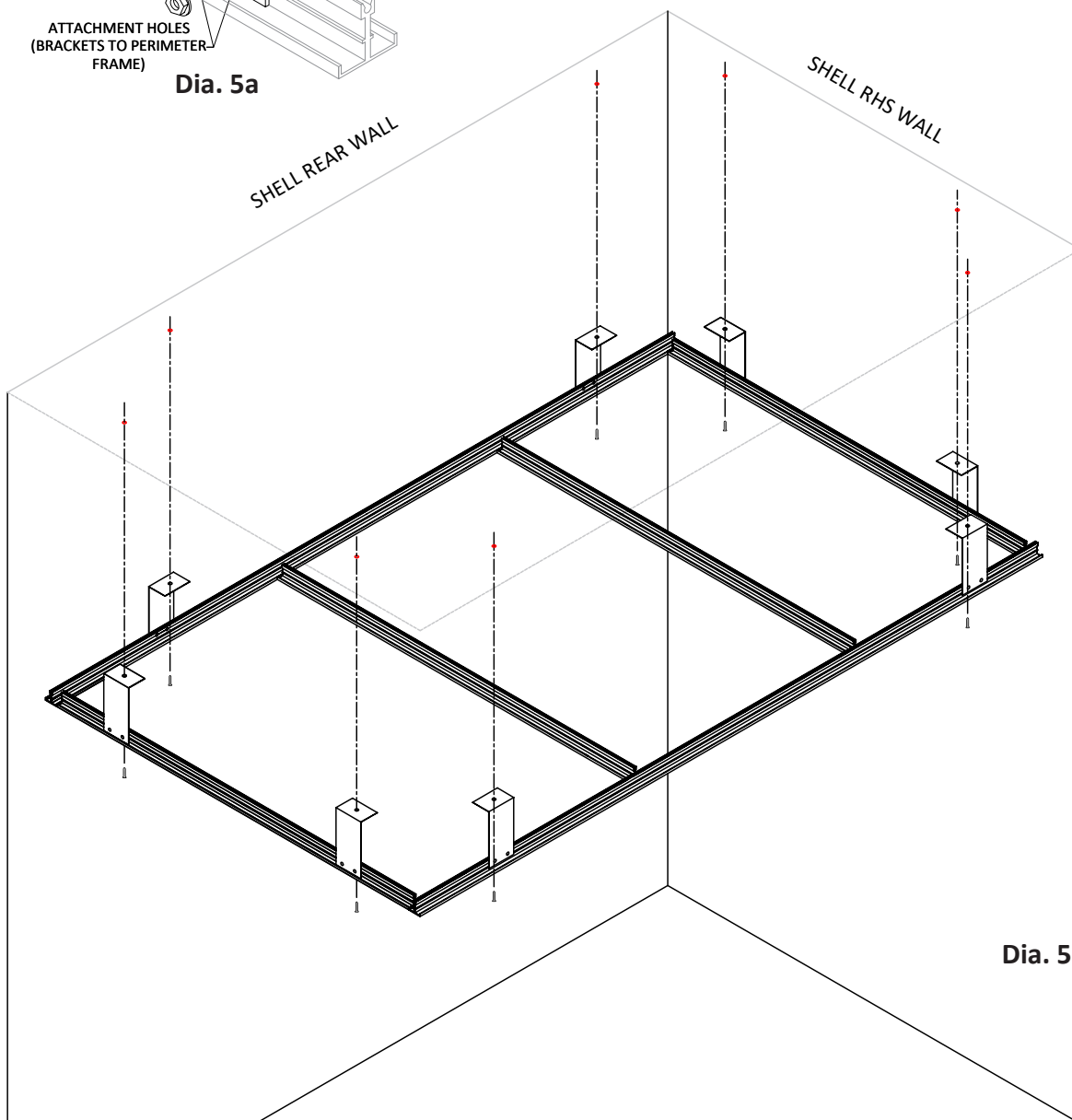
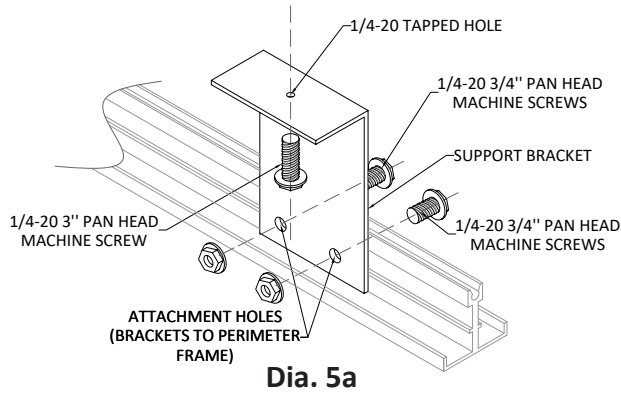
*Appendix E 100X for passenger

SECTION 5: INSTALL THE CEILING FRAME

- 5.1. The support bracket has a 1/4-20 tapped hole on the upper flange. Insert the 1/4-20 x 3" pan-head bolts provided (Dia. 5a).
- 5.2. Attach the ceiling frame to the canopy using the 1/4-20 x 3" bolts provided (Dia. 4). Trim any excess bolts protruding from the canopy. Loctite can be applied to the nut/bolt assembly (Loctite is not included).

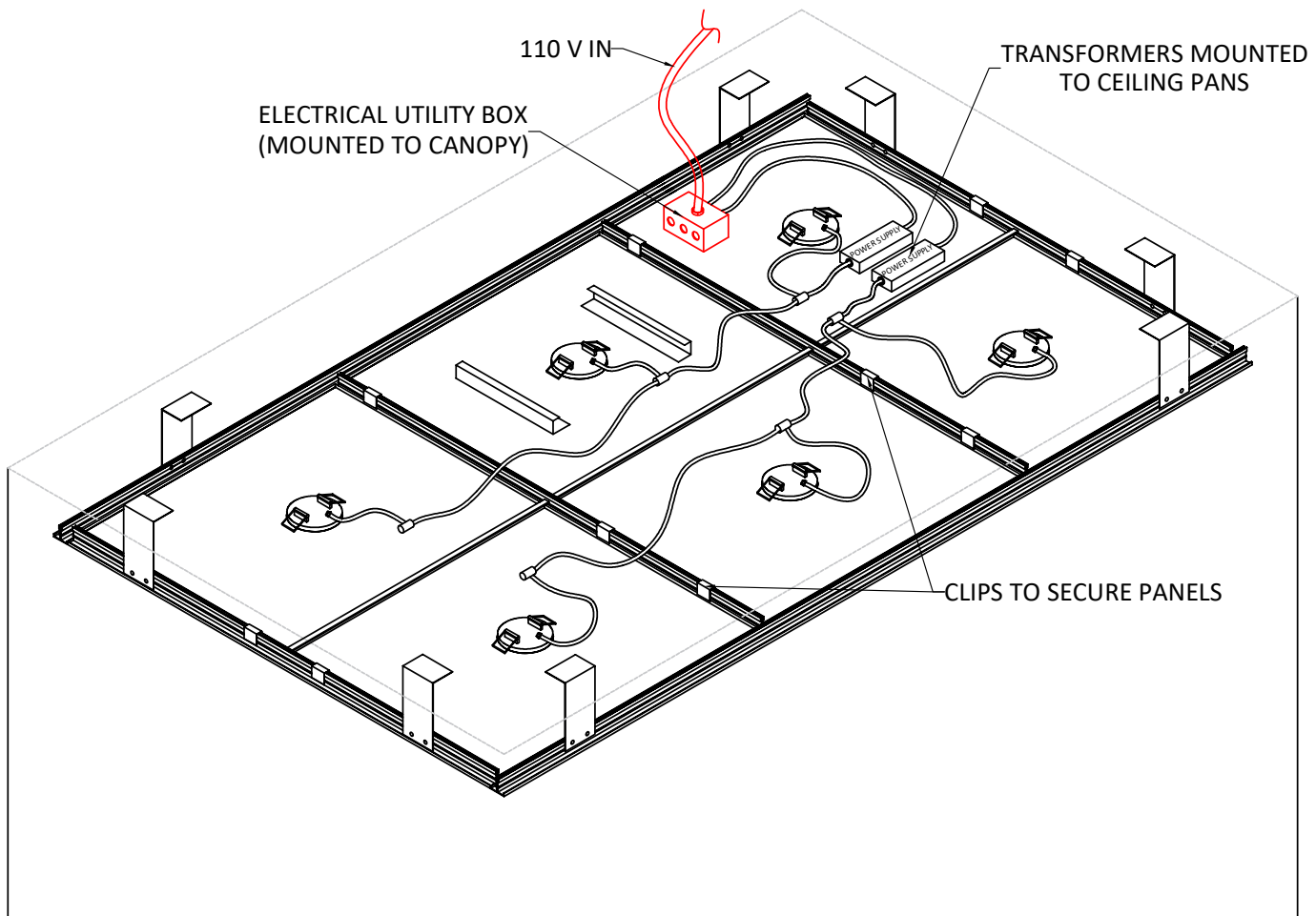


Note: Before drilling through the canopy, ensure that there are no encumbrances. If required, the brackets can be moved and re-installed to suit the site conditions.



SECTION 6: INSTALL MASSIF CEILING PANS

- 6.1. Before installing ceiling pans, remove the protective plastic film and ensure all disk lights are securely sitting in the opening in the center of the pans. Disk lights can be removed or re-installed by 'squeezing' the spring arms and moving them in or out of the opening in the ceiling pans.
- 6.2. Install the front ceiling pans, followed by the rear ceiling pans (the pan under the hatch will have handles pre-installed).
- 6.3. Fasten the power supplies to the appropriate ceiling pan using the pre-installed two way tape.
- 6.4. Plug each fixture into its power supply via the wiring harness; unless directed otherwise, connect three lights per power supply (Dia. 6).



Dia. 6

Assembled framed ceiling (typical), handles and safety cable on hatch panel.

SECTION 6: INSTALL MASSIF CEILING PANS (CONTINUED)

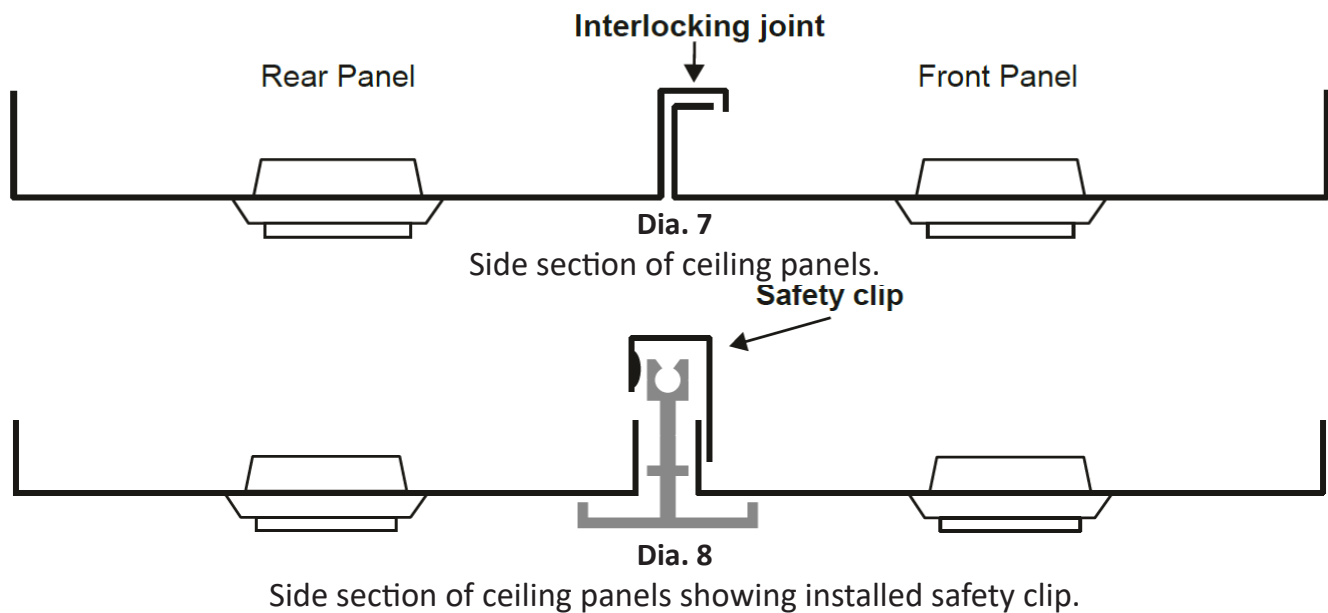


Ensure retainer clips are re-installed once the ceiling panels are in place.

6.5. Retainer clips have been provided to hold the ceiling panels in place during buffer testing. The clips also provide added security during normal operation of the elevator (Dia. 7 & 8).



Note: The retainer clips have been affixed to the frame with 'screws' for shipping only. The clips snap onto the frame and do not need to be screwed for normal use.

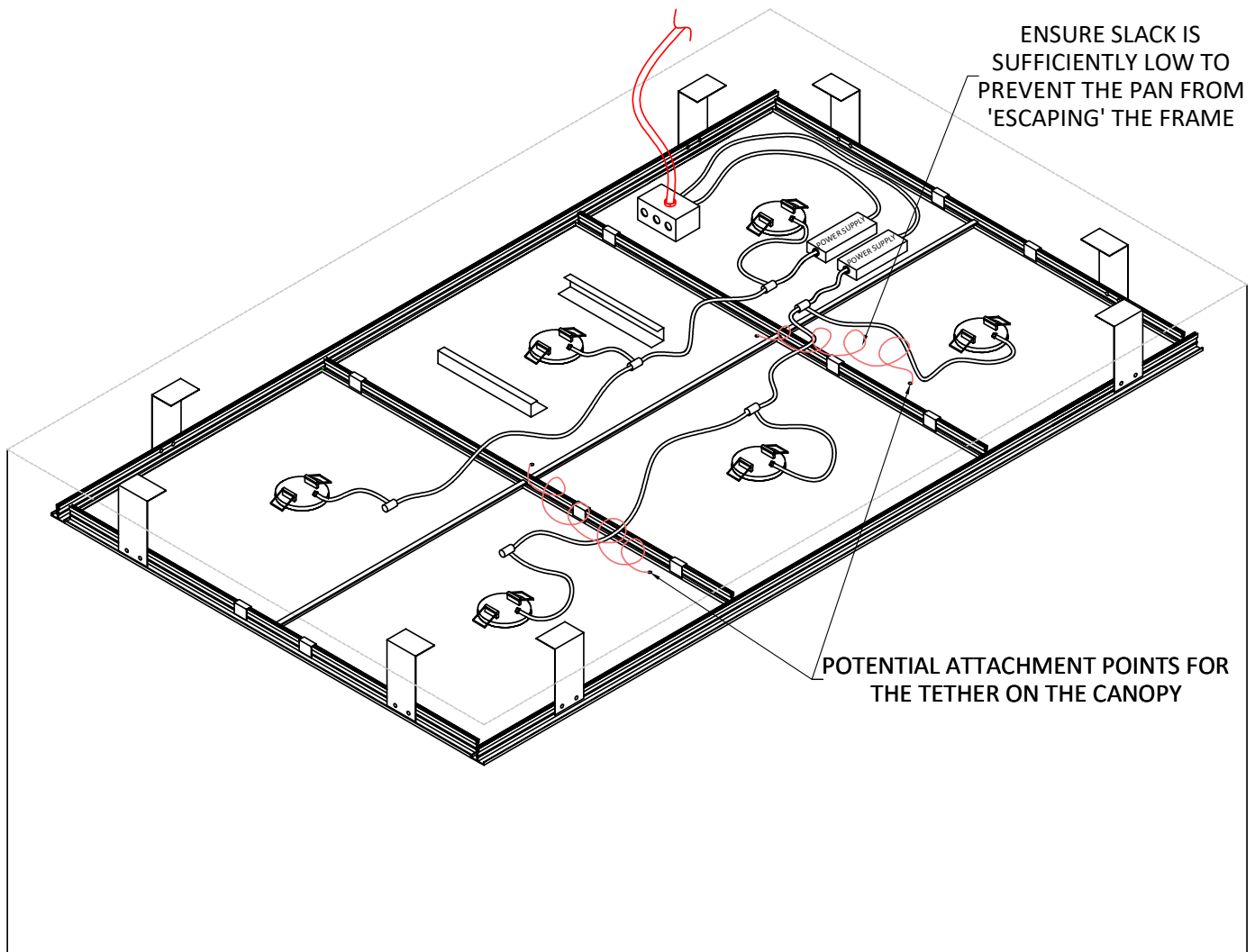


SECTION 6: INSTALL MASSIF CEILING PANS (CONTINUED)

- 6.6. To ensure the ceiling meets code requirements, the hatch pan in the massif ceiling will come with two tethers pre attached to the hatch pan.
- 6.7. Prevent the hatch from 'escaping' the frame by securing the tethers to the car canopy (towards the car front) with enough slack to remove the hatch pan.



Note: Ensure there is sufficient slack to remove the hatch pan, but enough tension to hold the hatch in place during a drop test to prevent it 'escaping' the frame and damaging wall finishes, etc.



Dia. 9

Hatch tethers installed into the shell canopy.

GLOSSARY

Canopy:

The roof of the cab.

The top structural component of the shell.

The canopy houses the emergency hatch.

The canopy may have various electrical and mechanical components attached to its surfaces, both interior and exterior.

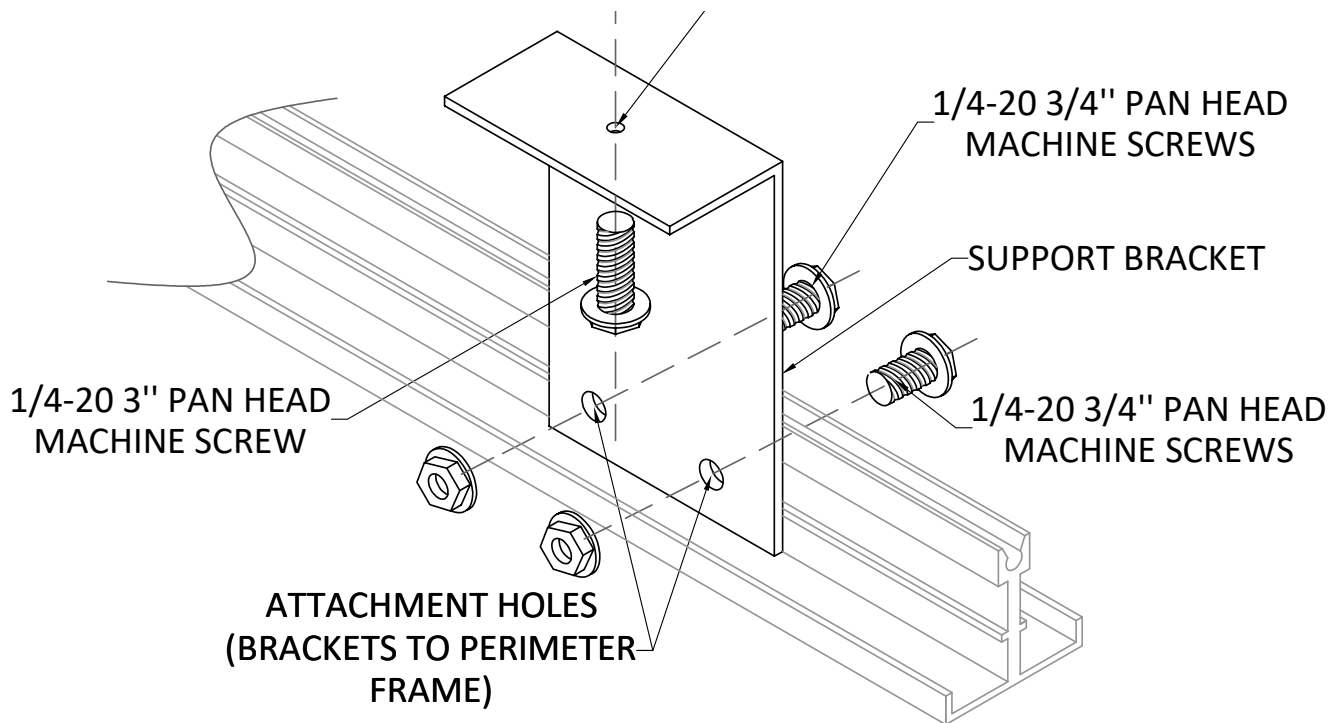
"T" Frame:

Extruded aluminum ceiling frame shaped in a "T".

Ceiling Brackets:

Ceiling brackets are "L-shaped" constructed of 1/16" thick steel.

Brackets are manufactured with mounting holes for 1/4-20 bolts for fast and easy installation.



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