

Included components

- Anchor template, 12ft shelter
- Hardware pack #63152

Tools Required

- Phillips head screwdriver
- Tape measure

Landscape Forms is not responsible for site preparation and footings. Minimum 6" thick 4000 psi concrete slab is recommended. Threaded anchors allow for 2-3/8" of adjustability for slope.

WARNING! SHELTER MUST BE SECURELY ANCHORED.

INSTALLATION:

Note: Template is used to mark hole locations, and should not be used as a drilling template or for setting anchors. Holes at corner locations labeled "1" are for use with 24ft shelters. 12ft shelters should only use holes labeled "2" at the corner posts.

1. Layout template pieces as shown in Fig. A1. Install dowels.
2. Set template in position and mark hole locations.
3. Mark holes for front/back glass, if required.
4. Check for square across multiple corners.
5. Drill Ø9/16" holes to 3" depth.
6. Follow adhesive manufacturer's instructions for clearing holes of debris.

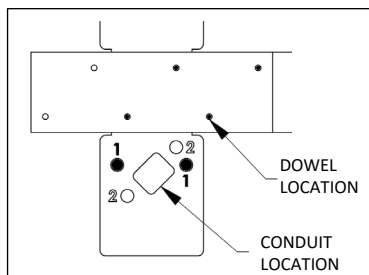


FIG. A – FRAME ANCHOR LOCATIONS

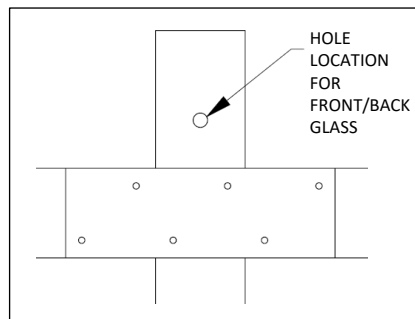


FIG. B – FRONT / BACK GLASS HOLE

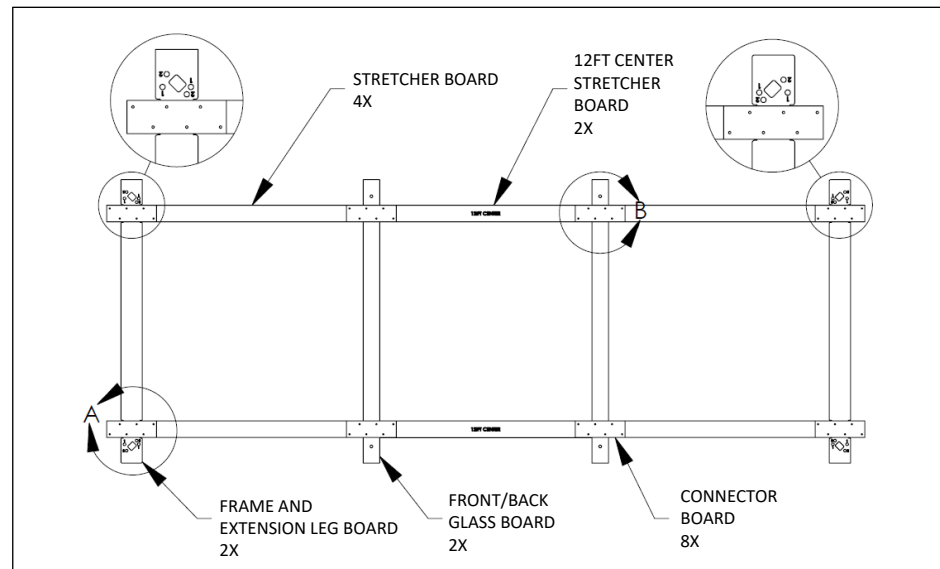


FIG A1 – TEMPLATE COMPONENTS

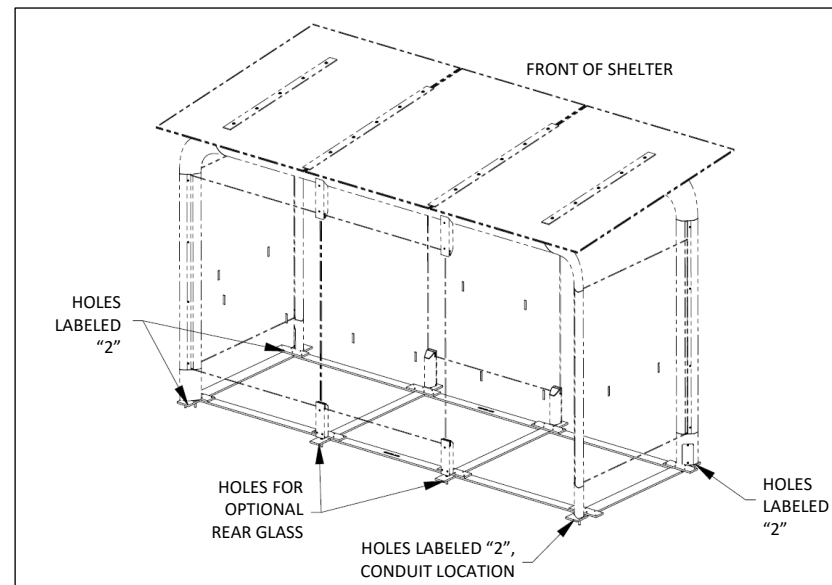
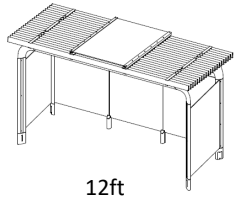
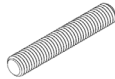


Fig. A2 – TEMPLATE PLACEMENT



12ft

Included hardware



12X – 1/2-13 x 8"
Threaded rod



24X – 1/2-13
hex nut



24X – 1/2"
washer

- (1) anchor template

Tools Required

- Safety glasses
- Ø9/16" masonry drill bit and drill
- 3/4" wrench
- Epoxy anchoring system for concrete, adhesive anchor HIT-HY 200 or equivalent recommended.
- Wire brush and compressed air for clearing holes of debris

Order of operations:

1. Anchor kit installation
2. Frame assembly
3. Roof assembly
4. Wall glass assembly
5. Wiring connections

Landscape Forms is not responsible for site preparation and footings.

Minimum 6" thick 4000 psi concrete slab is recommended. Threaded anchors allow for 2-3/8" of adjustability for slope.

WARNING! SHELTER MUST BE SECURELY ANCHORED.

INSTALLATION:

1. Set anchor template in position.
2. Mark hole locations – note if back or front glass is required on unit
3. Drill Ø9/16" holes 3" deep. Follow adhesive manufacturer's instructions for clearing holes of debris.
4. Fill holes with epoxy according to adhesive manufacturer's recommendations.
5. Set anchor rods in place. Remove excess epoxy before it cures.
6. After epoxy has cured, install one hex nut and washer on each threaded rod.
7. Adjust level across all hex nuts.
8. Proceed to Frame Assembly installation.

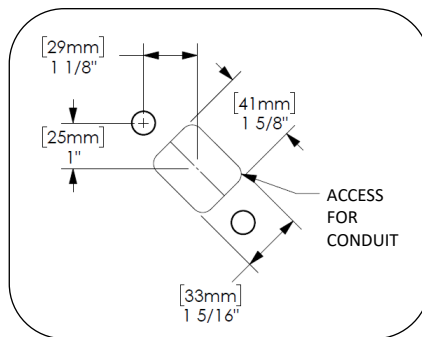


Fig. B1 – conduit access

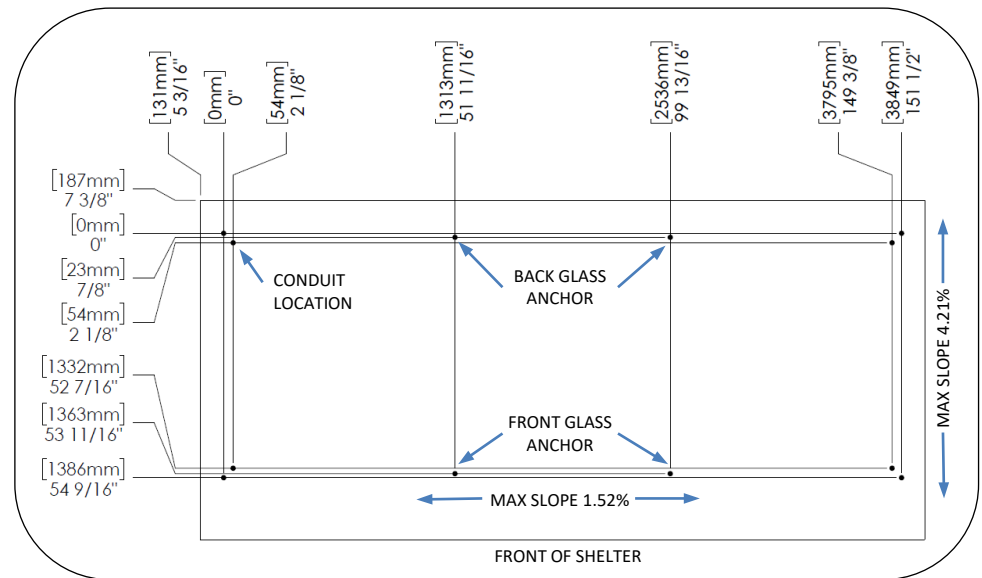
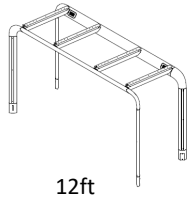


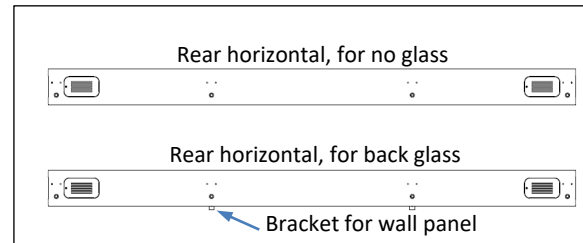
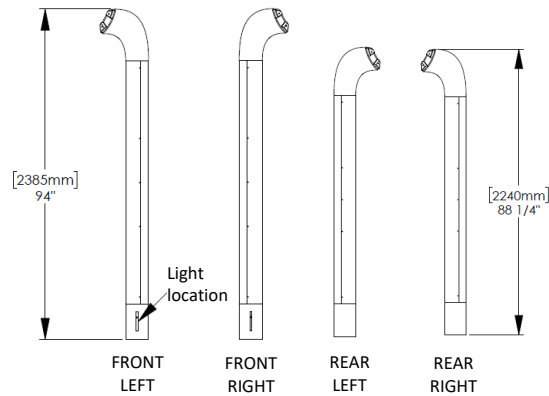
Fig. B2 – anchor locations for 12ft shelter



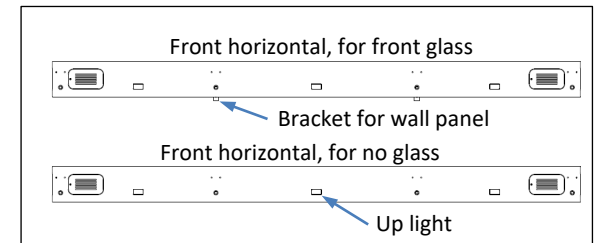
Order of operations:

1. Anchor kit installation
2. Frame assembly
3. Roof assembly
4. Wall glass assembly
5. Wiring connections

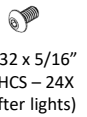
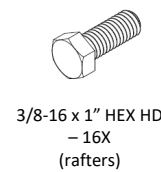
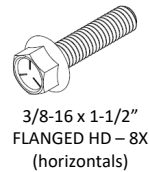
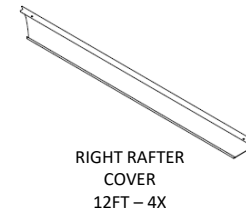
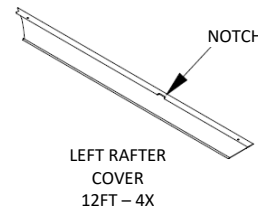
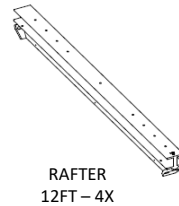
Included components:



Rear horizontal, 12ft: 1 included



Front horizontal, 12ft: 1 included



Tools Required

- Safety glasses
- protective padding
- 9/16" socket wrench
- 3/4" open end/12 pt box end wrenches
- 3/16" hex key
- 3/32" hex key
- 4ft level
- ladder
- proper personnel for lifting assembled frame components

ASSEMBLE WITH CARE! Pangard II® Polyester Powdercoat is a strong, long-lasting finish. To protect this finish during assembly, place unwrapped powdercoated parts on packaging foam or other non-marring surface. Do not place or slide powdercoated parts on concrete or other hard or textured surface - this will damage the finish causing rust to occur. Use touch-up paint on any gouges in the finish caused by assembly tools.

WARNING! SHELTER MUST BE SECURELY ANCHORED.

INSTALLATION: Note: front horizontal beam has uplights installed. Front verticals have pockets for LED lights near the base and are taller than the rear verticals. Shelters with back and/or front glass will have brackets welded to the horizontal beams.

1. On protective padding, set front verticals in approximate position. Place front horizontal in position. Remove access covers from horizontal beam.
2. Using flange head screws, attach horizontal beam to verticals. See Fig. C1. Do not overtighten.
3. Lift front frame assembly into position over anchors.
4. Install washers and nuts, see Fig. C2. Do not overtighten.
5. Check level of vertical posts on front and side faces. Adjust leveling nuts as necessary.
6. Repeat for rear verticals and horizontal assembly.
7. Install rafters using 3/8" washers and hex head screws, see Fig. C3. Front of rafter is indicated on part, see Fig. C3. Hand tighten.
8. Once all rafters are installed and unit is leveled and checked for square, fully tighten all hardware.
9. If shelter does not have any wall panels, the vertical filler strips should be installed. The front filler strips are taller than the rear strips. Install each one with (3) 1/4-20 x 1/2" socket head cap screws, see Fig. C3.
10. Rafter covers and foot cover plates will be installed after wiring connections have been completed.

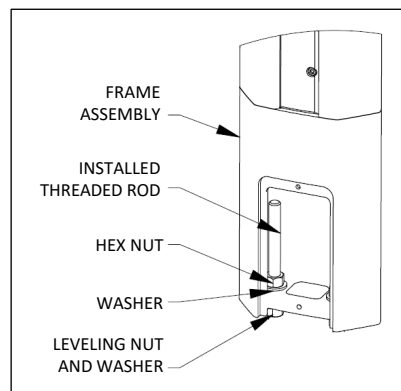


Fig. C2 – Install frame over anchors

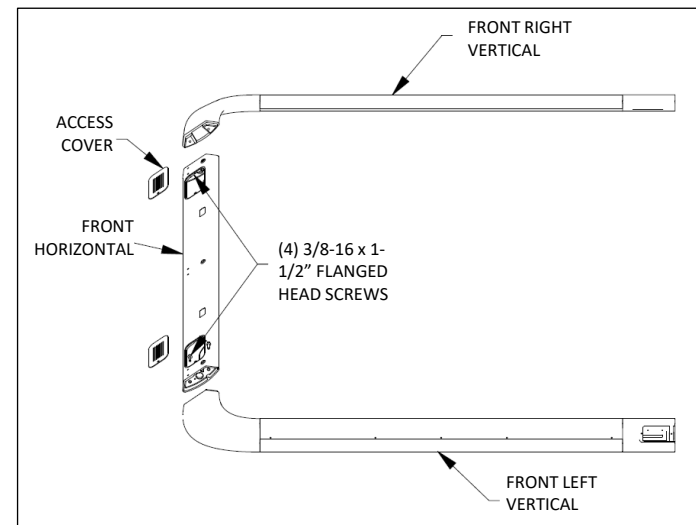


Fig. C1 – assemble horizontal beam to verticals

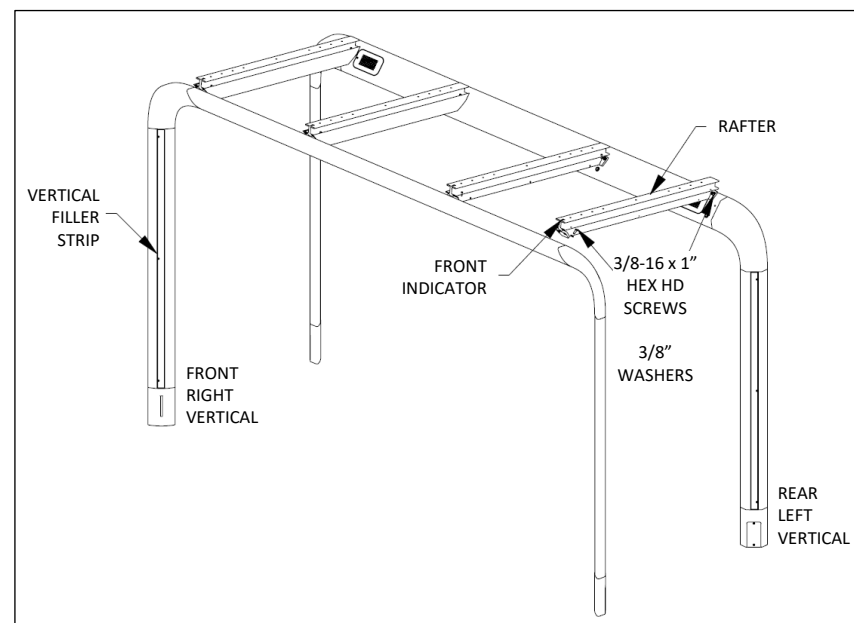
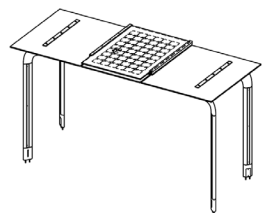


Fig. C3 – assemble horizontal beam to verticals



Order of operations:

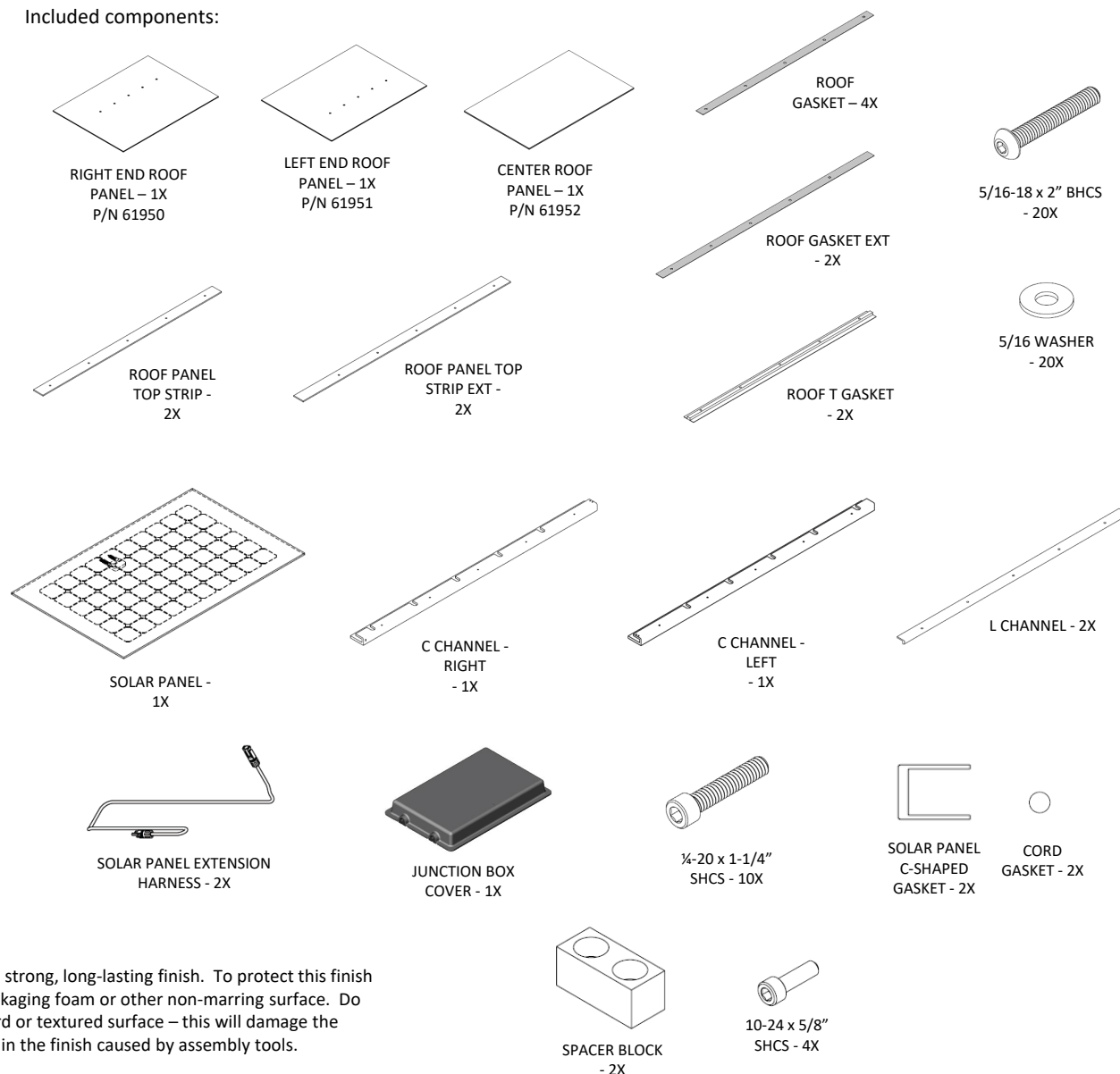
1. Anchor kit installation
2. Frame assembly
3. **Roof assembly**
4. Wall glass assembly
5. Wiring connections

Tools Required

- Safety glasses
- protective padding
- 3/16" hex key
- ladder
- proper personnel for lifting panels (75lbs)
- glass handling equipment, to lift 150lbs

GLASS STORAGE & HANDLING! The solar panel glass will arrive to the job site on a separate pallet from the metal components. Handling of the glass solar panel is potentially hazardous and proper procedures should be followed.

Included components:



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INSTALLATION: Glass roof panels should be installed with the frosted side down.

1. Install panel stop blocks on rear ends of c-channels, see Fig. D1, found in hardware pack #62946.
2. Place gaskets on rafters. T-gaskets are installed in intermediate locations, See Fig.D2.
3. Lubricate gaskets with soapy water. Place roof panels in position. See Fig. 2 for orientation of end panels.
4. Place gaskets on top of roof panels. See Fig. D2 for location of extended roof gaskets.
5. Place metal top strips in position on top of gaskets. See. Fig. D2 for location of extended metal top strips.
6. Place C channel extrusions on roof, with open channels facing each other as shown in Fig. D5. Center the pair of extrusions on the roof and then make small adjustments to the width between the inside faces of the extrusions until the dimension is 43-5/16". Install hardware to hold C channel extrusions in place loosely. Adjust position of the C channel until the width between them is 43-5/16" on both ends and the cross diagonal dimensions measure the same. See Fig D5.
7. Secure metal top strips and C-channel extrusions using washers and screws from hardware pack #62604. Check alignment of front of roof panels before tightening fully. Hand-tighten all screws to max 50 in-lbs. Trim off excess self-adhesive gasket if necessary.
8. Connect solar panel extension harnesses as shown in Fig. D4.
9. Install junction box cover on solar panel. See Fig. D3 for location. Remove backing on VHB strips and adhere to clean, dry solar panel.
10. Install U-shaped gaskets on long edges of solar panel, with edge of gasket flush along rear panel edge.
11. Using proper glass handling techniques, set solar panel in position on top of C-channels in center of roof. Route solar panel wires inside of C-channel and zip-tie to end as shown in Fig. D6. Connect wires to connectors that are factory-installed in front horizontal beam.
12. Set cord gaskets in position along edges solar panel, next to gaskets, see Fig. D7.
13. Install L-channels as shown in Fig. D6, placing on top of C-channels and compressing cord gaskets until mounting holes align. Use hardware pack #62946.

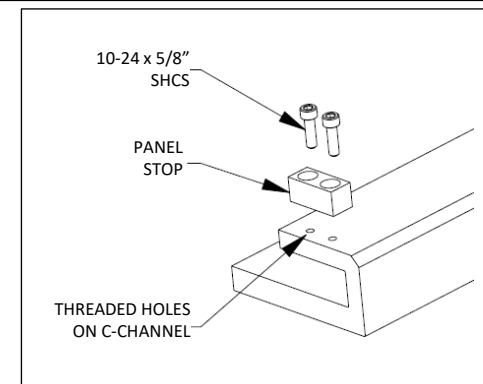


Fig. D1 – install panel stops

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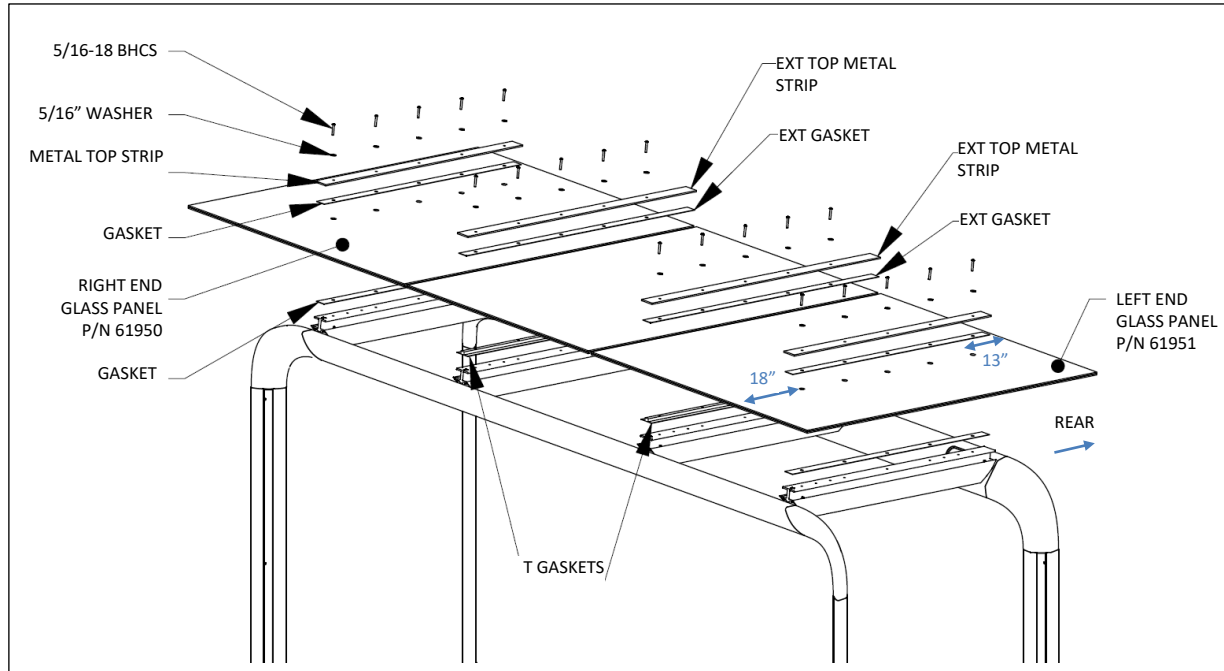


Fig. D2 – Glass roof installation

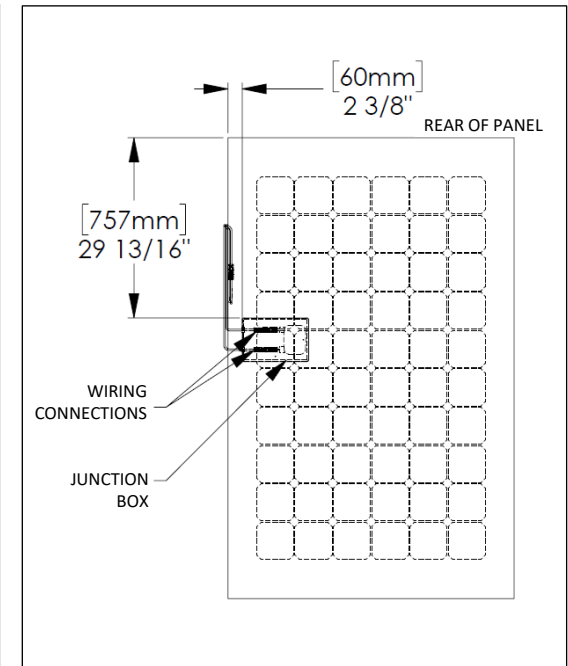


Fig. D3 – install junction box

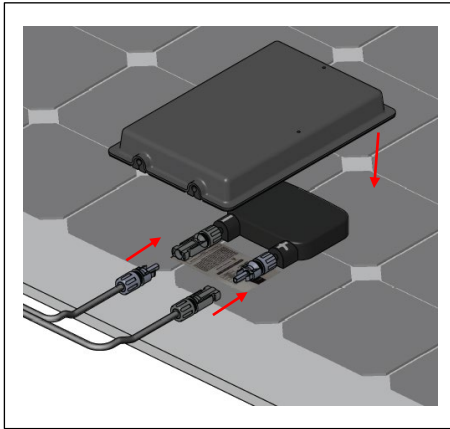


Fig. D4 – install junction box

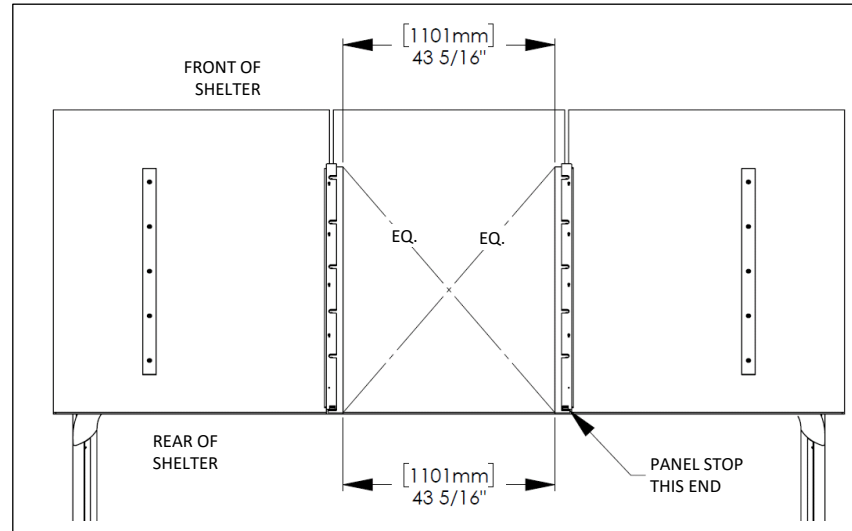


Fig. D5 – detail view of panel install

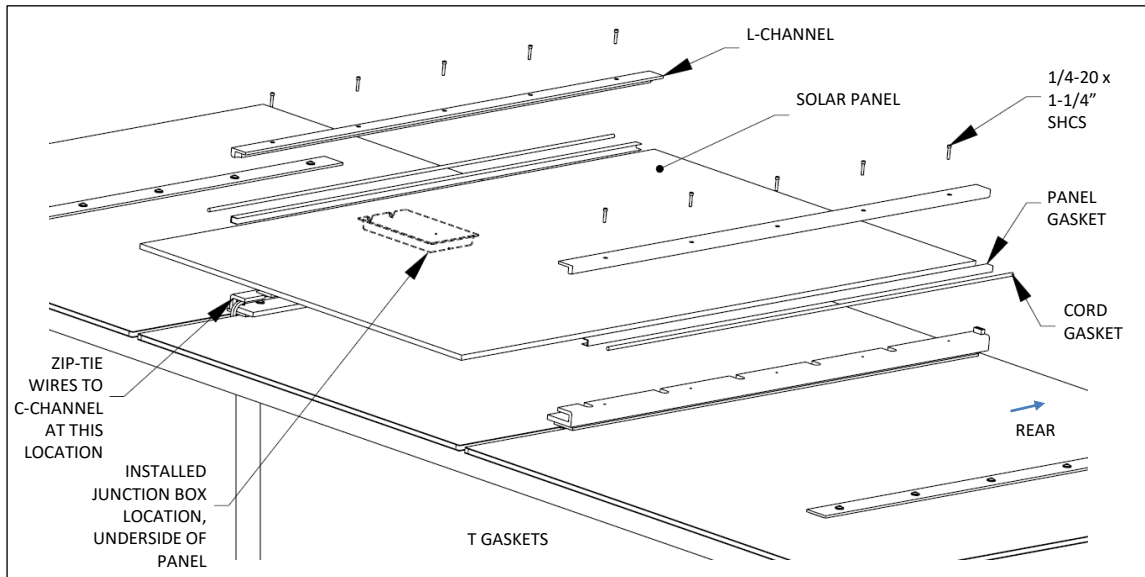


Fig. D6 – solar panel installation

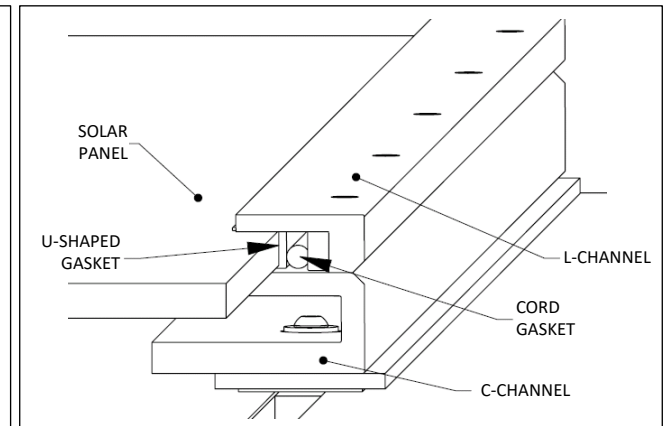
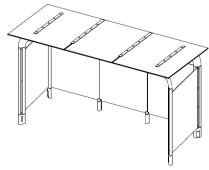
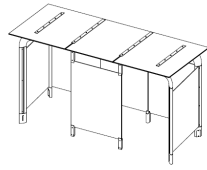


Fig. D7 – detail view of panel install



Back and side



Back, side and front center

Order of operations:

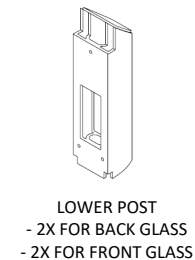
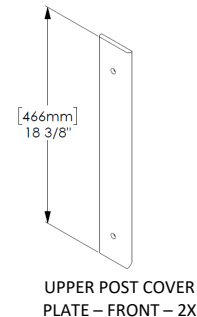
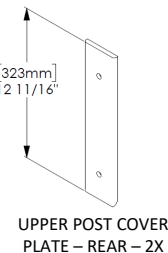
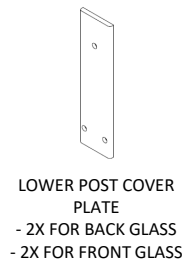
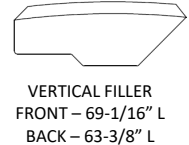
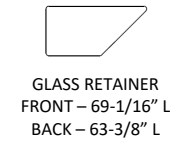
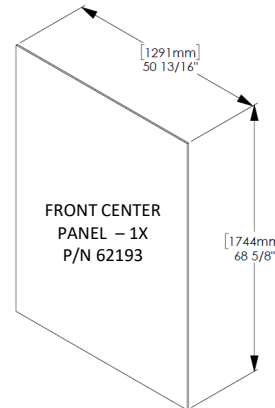
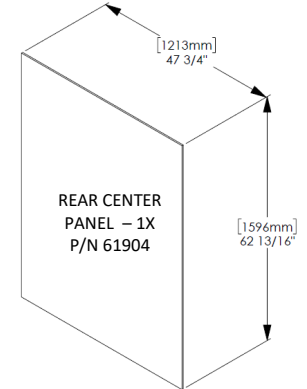
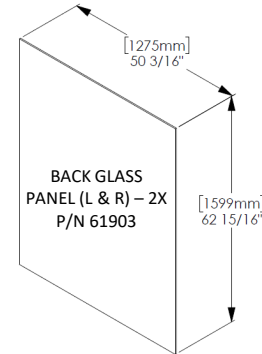
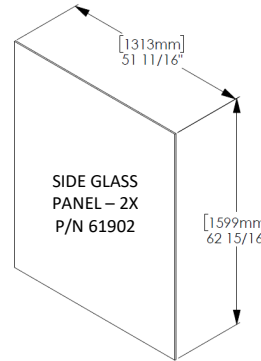
1. Anchor kit installation
2. Frame assembly
3. Roof assembly
4. Wall glass assembly
5. Wiring connections

Tools Required

- Safety glasses
- protective padding
- 3/16" hex driver with torque settings
- 3/4" open end wrenches (2)
- ladder
- proper personnel for lifting panels (110lbs)
- glass handling equipment
- soapy water
- structural grout
- small trowel

GLASS STORAGE & HANDLING! The glass will arrive to the job site on separate pallets from the metal components. Handling of the glass panels is potentially hazardous and proper procedures should be followed. The crate for the glass panels should be slightly elevated on the front side to prevent the glass panels from falling forward when the front is removed from the crate.

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Included components:

- gasket pack #62598 includes:
 - (4) #63061 rear vertical gasket pack. Each pack contains:
 - (1) 1" wide x 62-15/16" long glazing tape, one-sided adhesive backing
 - (2) 3/8" wide x 62-15/16" long glazing tape, one-sided adhesive backing
 - (1) 3/8" wide x 1-1/4" long angled end cut glazing tape, one-sided adhesive backing
 - (3) #63062 front vertical gasket pack. Each pack contains:
 - (1) 1" wide x 68-5/8" long glazing tape, one-sided adhesive backing
 - (2) 3/8" wide x 68-5/8" long glazing tape, one-sided adhesive backing
 - (1) 3/8" wide x 1-1/4" long angled end cut glazing tape, one-sided adhesive backing
- glass safety decals

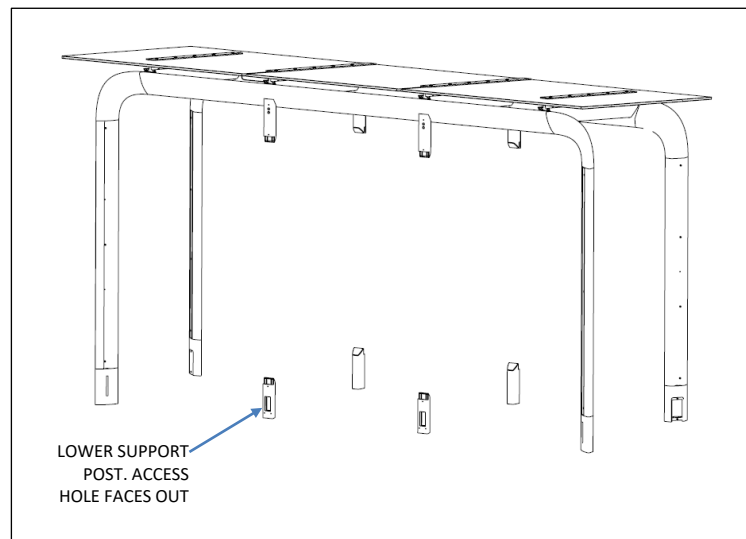


Fig. E1 – lower posts for glass walls

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INSTALLATION:

Note: 1/2-13 threaded rods for back and/or front posts should have been installed at the same time as the frame anchors. The safety etching on each glass panel should be installed at the bottom.

1. Set lower posts in position – note orientation of access hole. See Figs. E1 and E2. Secure with 1/2-13 nut and washer, included in hardware pack #62600. Do not fully tighten.
2. Attach upper posts to horizontal beams and check for level – note orientation, see Figs. E3 and E4. Securely tighten.
3. Install gaskets in verticals at locations that require glass panels. See Fig. E5 for orientation of gaskets. Remove paper backing to expose adhesive before attaching to vertical.
4. Install spacer gaskets in lower posts, see Figs. E6 and E7 for orientation. Bosses on spacer gasket for front glass should fit into post extrusion.
5. Attach gasket to glass retainer bar as shown in Fig. E8.
6. Lift glass panel into position. For side glass, slide panel in from one side, move into position on the opposite side, then slide panel over to center it on the verticals. See Fig. E9.
7. Attach glass retainer bar to the vertical beam, using 1/4-20 x 3/4" socket head cap screws. See Fig. E10. Do not fully tighten.
8. For front or back glass, place spacer gasket in position at top of glass before lifting panel into position. See Fig. E11. Bosses on spacer gasket for front glass should fit into post extrusion.
9. Install post cover plates, see Fig. E12. Do not fully tighten.
10. Once all wall panels have been installed, check for even gaps in back glass and alignment of top of wall panels. Adjust lower posts as necessary to level. Hand-tighten all screws that are used to secure glass panels to max 50 in-lbs. Fully tighten remaining hardware.
11. Clean areas on glass panels to receive glass safety decals and apply. See Fig. E13 for recommended locations.
12. Install vertical fillers in remaining locations that did not receive glass panels.
13. Apply structural grout according to manufacturer's recommendations under lower glass post locations.

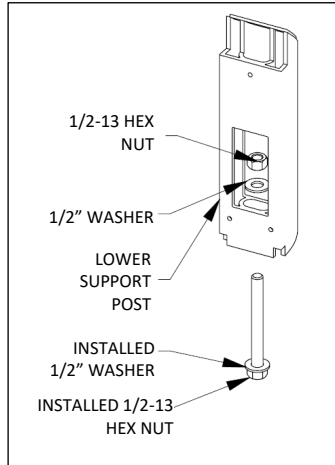


Fig. E2 – lower post install

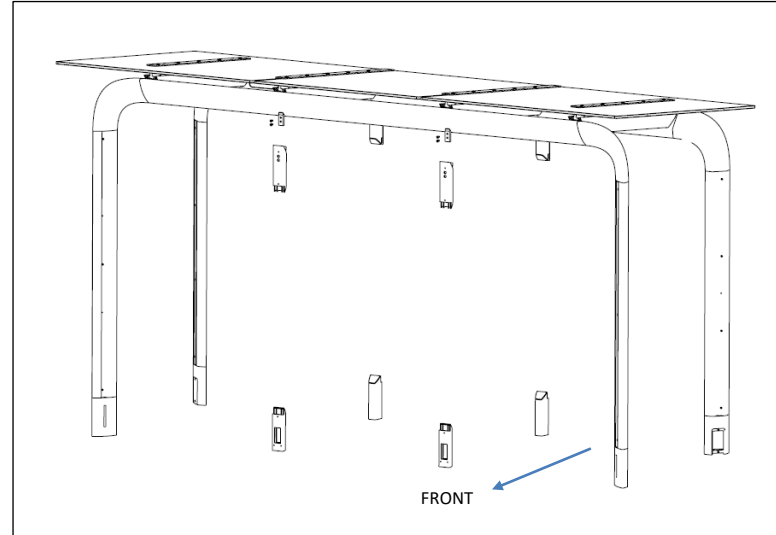


Fig. E3 – glass post orientation

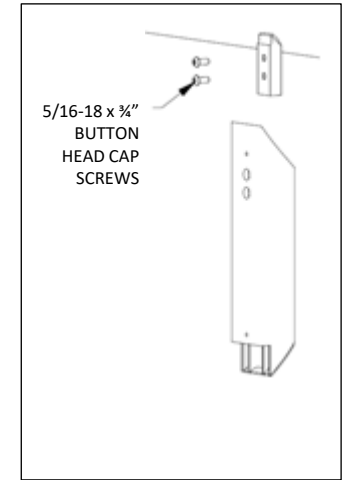


Fig. E4 – upper glass post

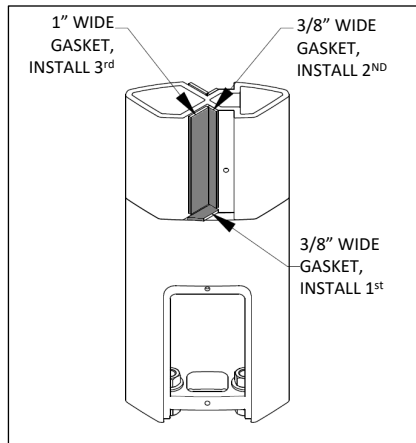


Fig. E5 – Gasket install on verticals

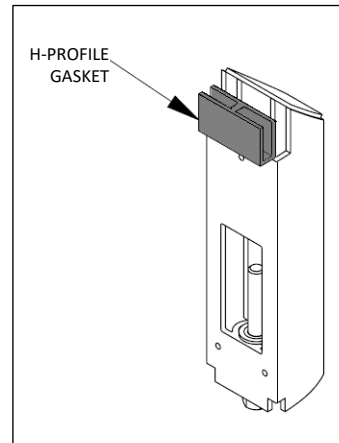


Fig. E6 – Rear glass spacer gasket

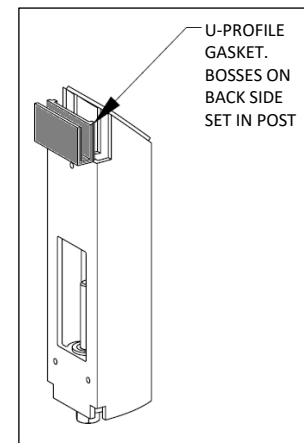


Fig. E7 – Front glass spacer gasket

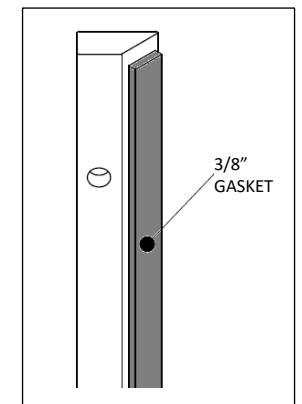


Fig. E8 – Gasket install on glass retainer

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Fig. E9 – Side glass panel install (shown on 8ft shelter)

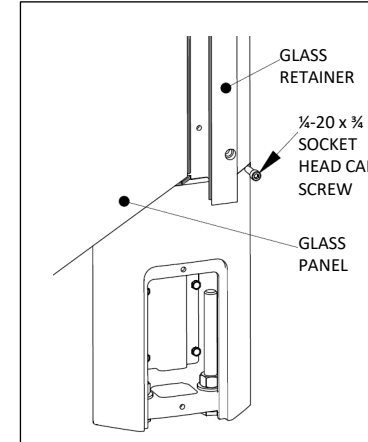


Fig. E10 – Glass retainer strip install

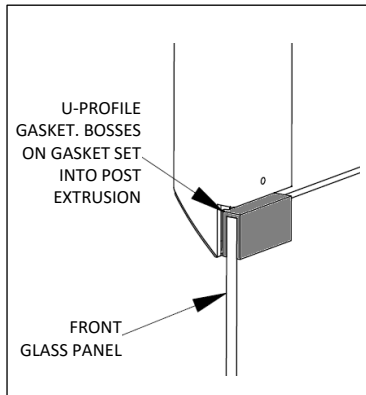


Fig. E11 – Top spacer gasket install

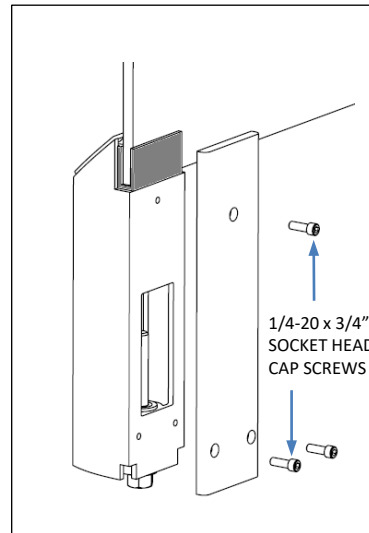


Fig. E12 – Install post cover plates

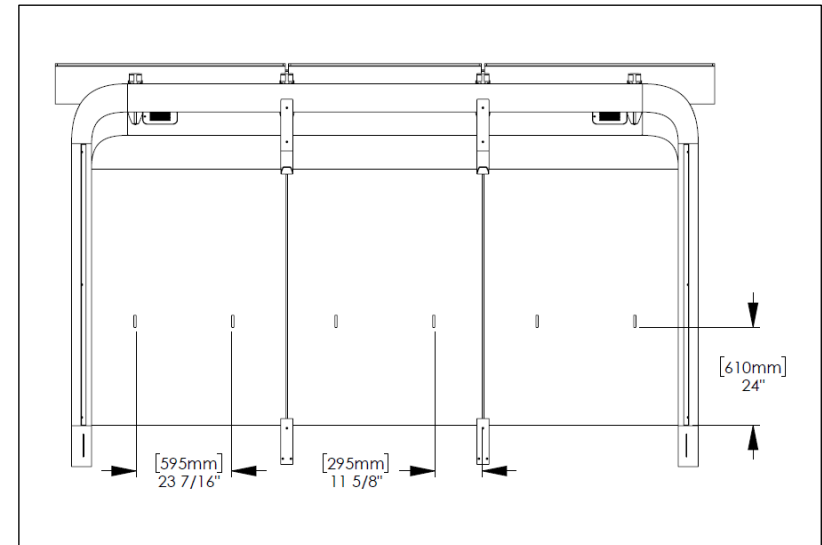


Fig. E13 – Install glass safety decals

ASSEMBLE WITH CARE! Pangard II® Polyester Powdercoat is a strong, long-lasting finish. To protect this finish during assembly, place unwrapped powdercoated parts on packaging foam or other non-marring surface. Do not place or slide powdercoated parts on concrete or other hard or textured surface – this will damage the finish causing rust to occur. Use touch-up paint on any gouges in the finish caused by assembly tools.

Order of operations:

1. Anchor kit installation
2. Frame assembly
3. Roof assembly
4. Wall glass assembly
5. Wiring connections

Tools Required

- wiring tools
- 3/32" hex key
- 3/16" hex key
- 5/16" Socket wrench
- Flat head screwdriver or 1/4" socket wrench

Included components:

- Uplights, with wiring harnesses, pre-installed in front horizontal beam
- Down lights, with wiring harness and connectors, one per rafter
- Wayfinding lights, with wiring harness, two per unit
- Glass solar panel with brackets and attaching hardware
- 16 batteries with wiring harness

WARNING!: LED cartridge and driver are not rated for connection or disconnection while energized. Doing so may damage LEDs and will void the warranty. Disconnect incoming power before making or breaking any electrical connections.

INSTALLATION:

Order of installation: Install batteries in front horizontal beam. Batteries are installed in a Velcro harness to facilitate easier removal, if needed. Install downlights. Install wayfinding lights. Connect wiring harnesses to driver. Install fuse. Run test of lights.

1. Remove access cover in horizontal beam near front right post. Ensure Velcro strip is installed on front horizontal beam. Secure one end of long Velcro harness to the top half of the strip mounted in the horizontal beam. Connect (-) lead of the battery harness to the first battery (-). Install short jumper harness to the positive pole of the battery as shown in Fig. 2F. Attach the other end of the jumper harness to the second battery. Install the second battery. Repeat this process for batteries 3 and 4, with the 4th battery hooking up to the main wire harness (+) connector. Repeat this process for the remaining batteries. See Fig. F4 for wiring reference. Slide each battery into Velcro harness as it is being installed. Once all batteries are installed, twist Velcro strap and secure it to the bottom of the mating Velcro strip in the horizontal beam, see Fig. F3.
2. First rafter downlight: make connection at front horizontal to quick disconnect. Push rafter light connection through grommet. Grommets may be removed to push wires through and then reinstalled, if necessary. See Fig. F5. Using a 3/32" hex key, attach downlight to rafter using (6) #8-32 x 5/16 socket button head cap screws, located in hardware pack #62599. Do not overtighten screws.
3. Install remaining rafter downlights: make connection to quick disconnects. Push connection through grommet on front horizontal beam. Attach downlight to rafter, see Fig. F5.
4. Unused grommets on rear horizontal beam can be sealed with clear or black silicone (supplied by others).
5. Install left and right side rafter skins, with the sharper angle of the skin toward the front of the rafter. See Fig. F6. Rafter skins have a boss on the bottom flange that hooks into the downlight, see Fig. F6. Hook the bottom of the skin into position and then rotate the top of skin up to the rafter beam. Using a 3/16" hex key, install (2) 1/4-20 x 3/4" socket head cap screws, located in hardware pack #62599. Tighten until gap between light and rafter skin is gone and rafter skin does not rattle. Do not overtighten screws.
6. Wayfinding lights: Run wiring harness up through front vertical post. On the front left side of the unit, remove the access cover on the front horizontal beam. Make connection from the wiring harness to the quick disconnect located in the beam. Secure LED to front vertical post, using (4) 8-32 x 1/2" hex head machine screws with external tooth lock washer, located in hardware pack #62810, see Fig. F7. Before final tightening of screws, ensure only the lens from the light is showing through the front opening. Repeat for opposite side. Install cover plates, using (2) 1/4-20 x 1/2" socket head cap screws, located in hardware pack #62607, see Fig. F8. Make connection to pre-installed wiring harness labeled "wayfinding light".
7. Driver plate assembly: Attach driver plate to front horizontal beam, in the front right access location, see Fig. F9.
8. Make connections to PDM as labeled: Uplight, Wayfinding (x2), Downlight, see Figs. F10 and F11. Make connections to Morningstar unit, in the order noted on the device. When all of the wiring connections are complete, install the fuse, see Fig. F9.
9. Follow the instructions for the Morningstar unit to test the lights. Replace access cover.

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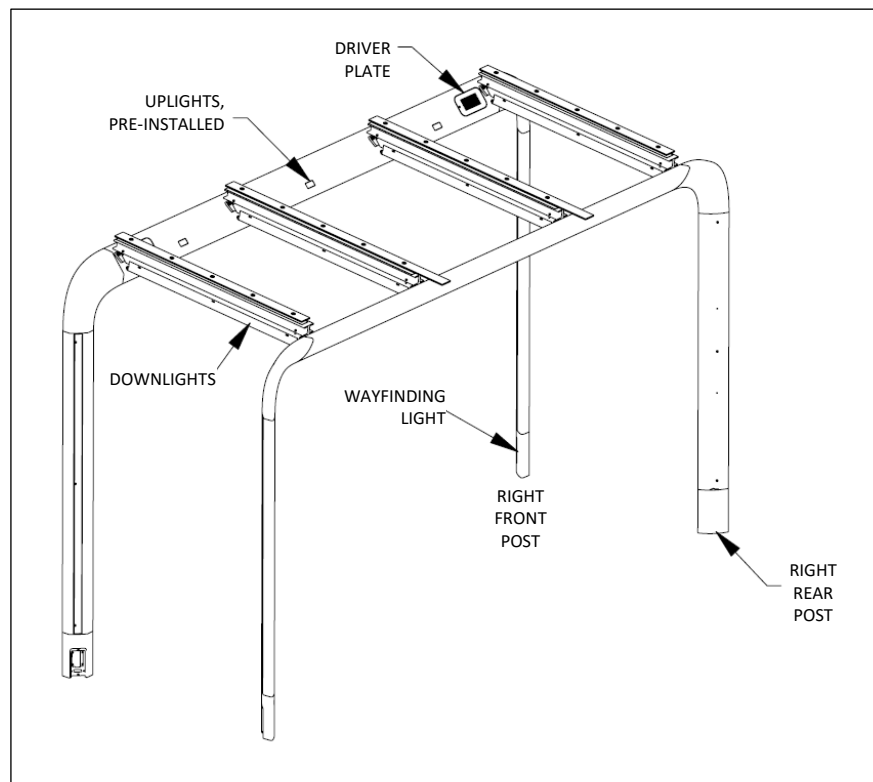


Fig. F1 – lighting component locations 12ft shelter

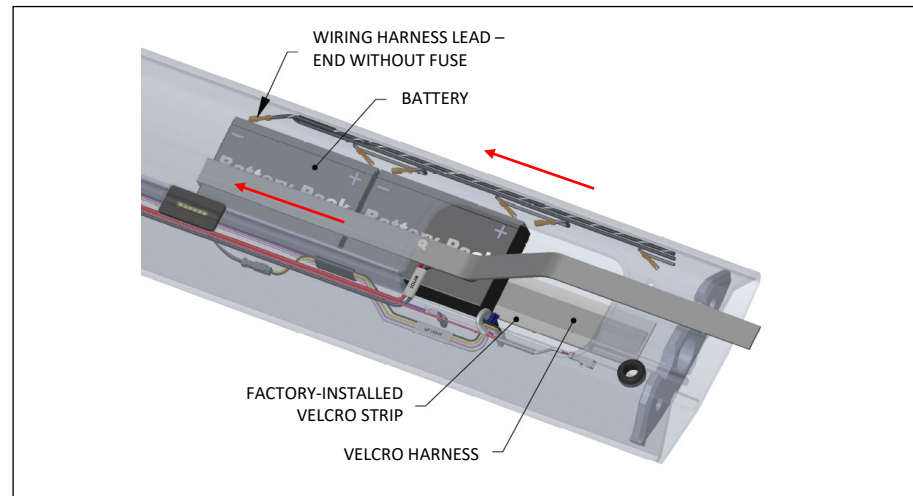


Fig. F2 – battery install in front horizontal

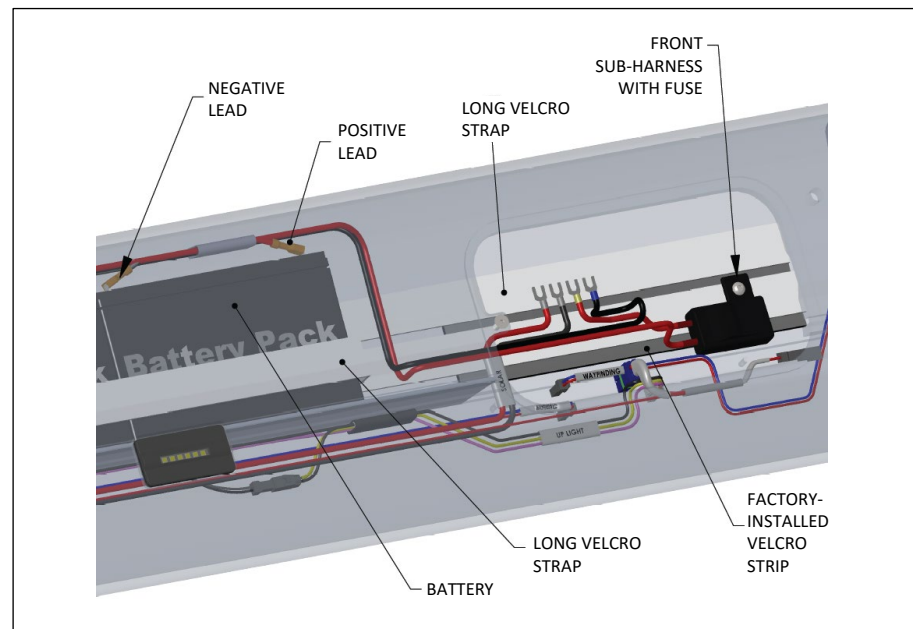


Fig. F3 – battery install in front horizontal

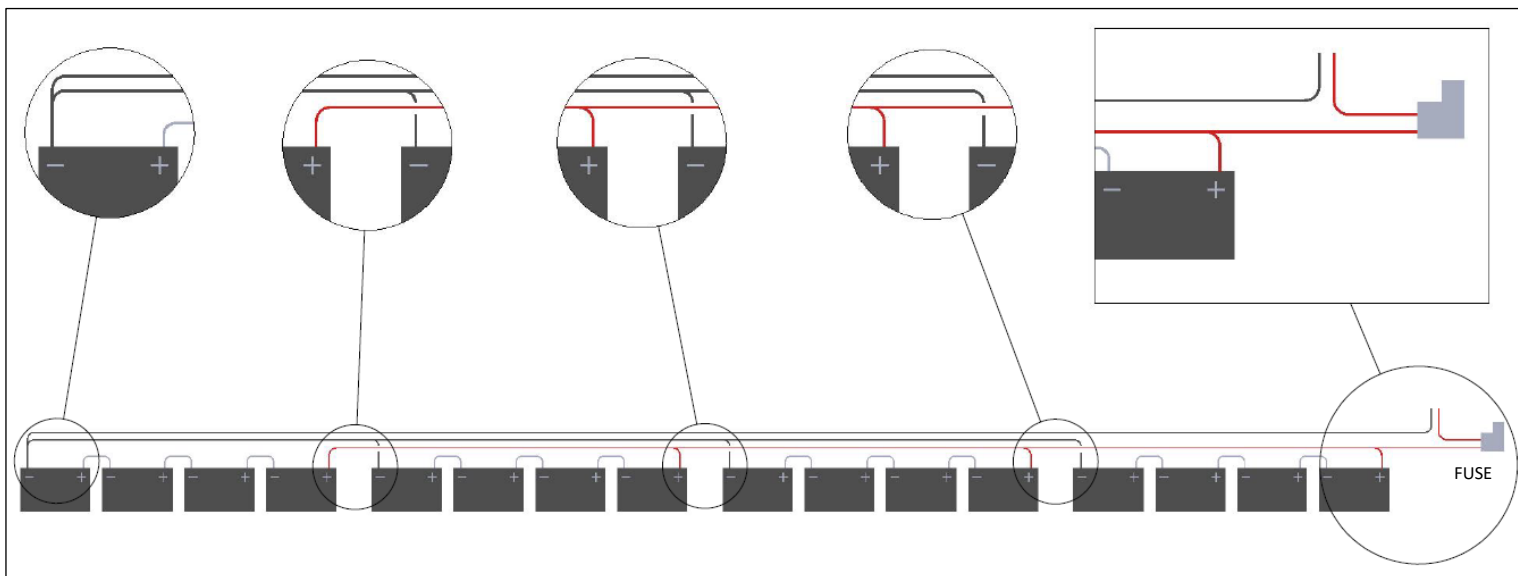


Fig. F4 – battery connection diagram for 12ft shelter

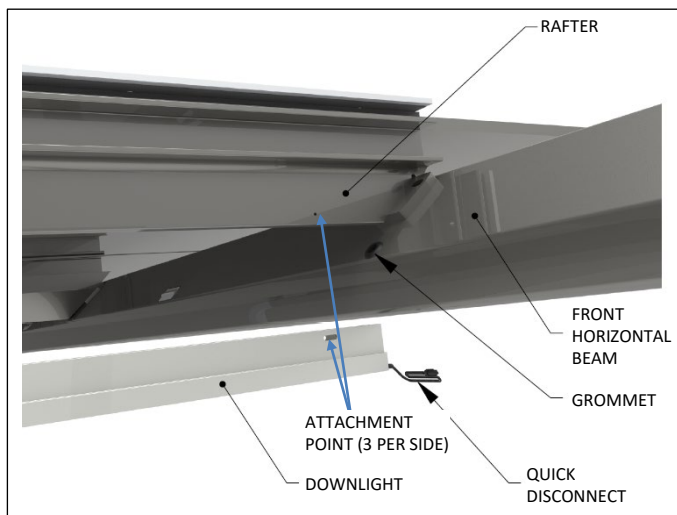


Fig. F5 – install rafter light

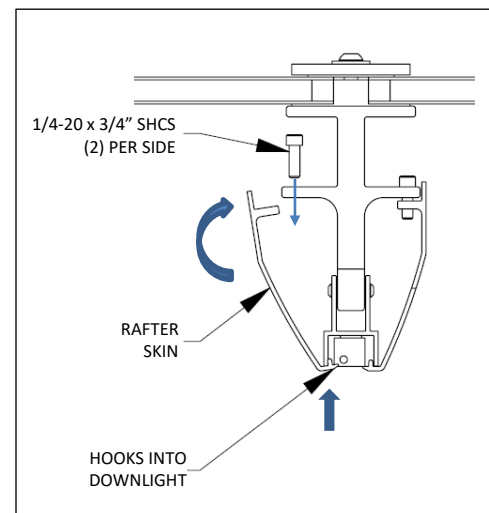


Fig. F6 – install rafter skins

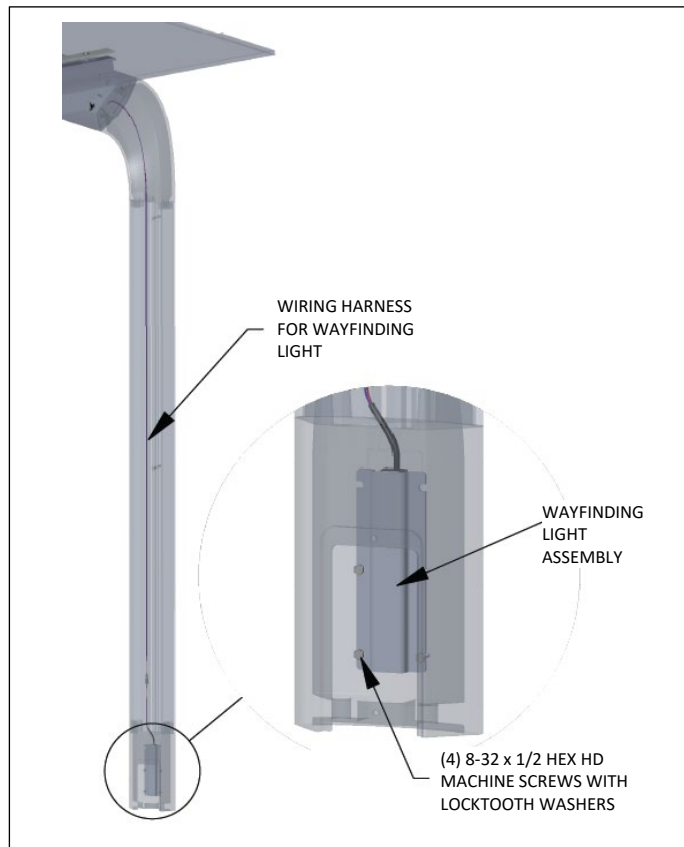


Fig. F7 – Install wayfinding lights

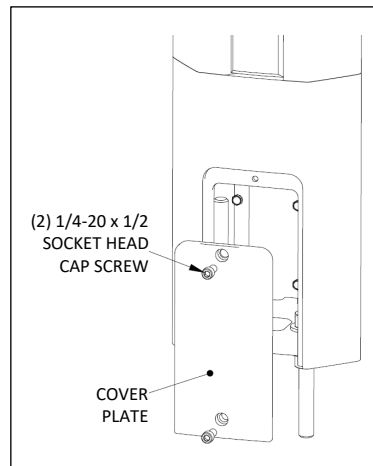


Fig. F8 – Install wayfinding light cover plate

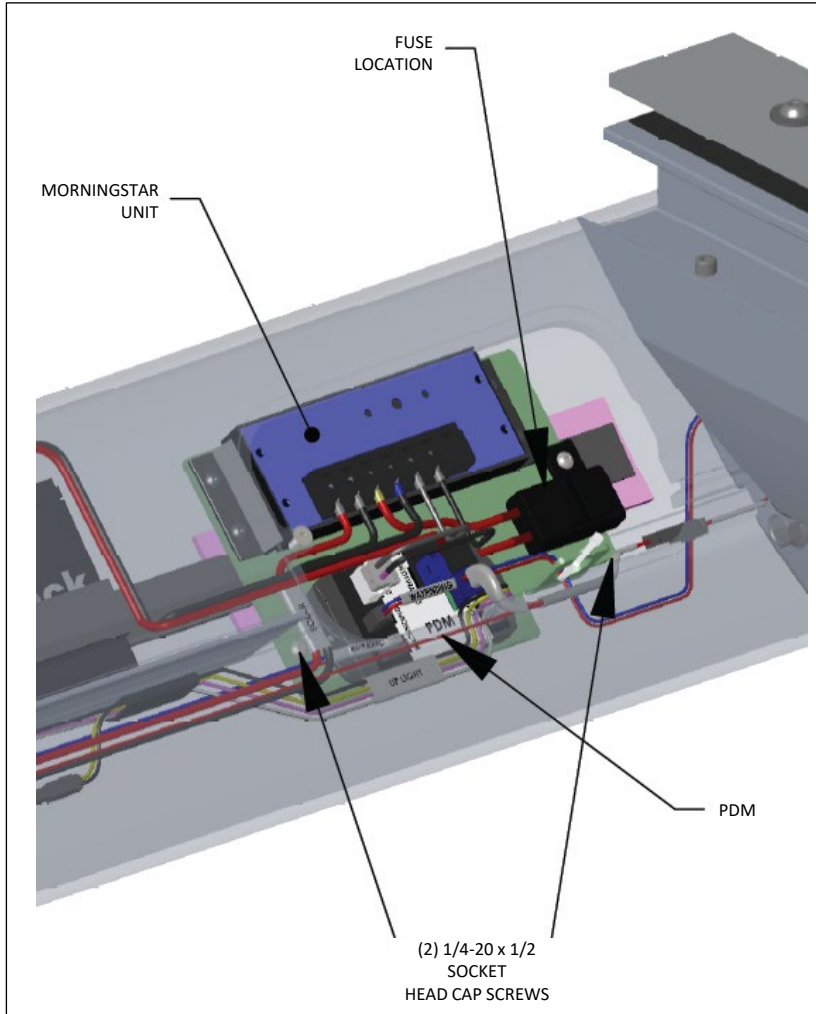


Fig. F9 – Install driver plate assembly, front right access hole

WARNING!: LED cartridge and driver are not rated for connection or disconnection while energized. Doing so may damage LEDs and will void the warranty. Disconnect incoming power before making or breaking any electrical connections.

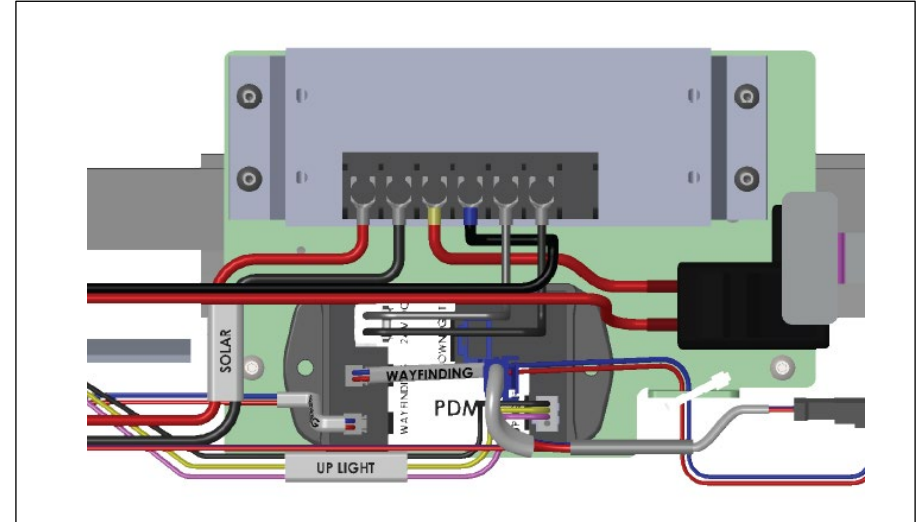


Fig. F10 – solar wiring connections

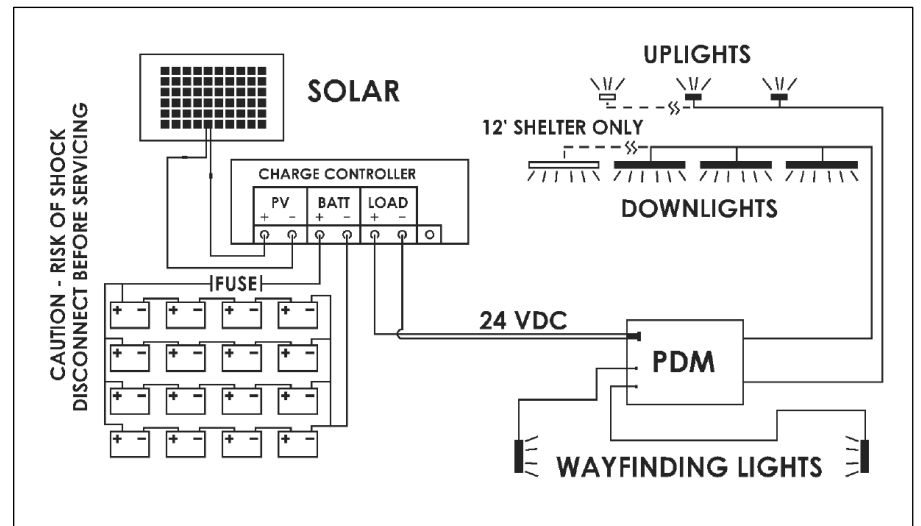


Fig. F11 – solar wiring diagram