Bus Shelter with Standing Seam Roof Installation Instructions

DUO-GARD STANDING SEAM GABLE or HIP ROOF WITH BUS SHELTER WALLS INSTALLATION INSTRUCTIONS

TABLE OF CONTENTS

A.	Common Shelter Extrusions	Pages 1-3
B.	Tool List	Page 4
C.	Generic Elevation & Floor Plan	Pages 5-6

Your Specific Floor Plan(s) and Packing List will accompany your shelter.

D.	Wall Assembly	Pages 7-8
E.	Anchoring and Boot Details	Page 9
F.	Installing the Roof	Pages 10-18
G.	Care and Cleaning Instructions	Page 19

OPTIONAL ACCESSORIES -- that may apply to your shelter

Installing Aluminum Bench and Back

Installing Wood Bench and Back

Installing Manual Store Front Out-Swing Doors

Wind Skirting Installation Instructions

Installing Automatic Closing Doors -- See Manufactures Instructions

Side-to-Side (XO) Opening Windows

Electrical Circuit Wiring Installation

Light Installation & Infrared Heater Installation

Forced -Air Heater Installation

Exhaust Fan Installation

Insulated Ceiling Systems Installation

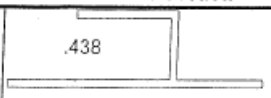
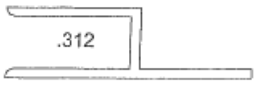
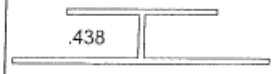
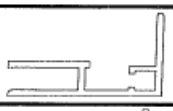
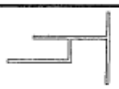
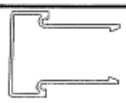
A/C Installation

Smoke-Eater Installation

Flip Type Ash Urn

die book

COMMON AIR-FLOW SMOKING SHELTER EXTRUSIONS

Part #	Description	Dwg #	Cross-section
E-12	edge sash for **6mm w foam**	E-12 solid	
E-6	edge sash for **6mm**	E-6 solid	
E-8 (E-3A)	edge sash for **8mm**	E-8 solid	
M-12	mullion for **12mm or 6mm w foam**	M-12 solid	
Snap Cap	snap cap for **6mm**	roof-1 solid	
Snap Base	snap base for **6mm**	roof-2 solid	
???	outer sill for **6mm**	sill-1 solid	
???	modified sill for **6mm**	sill-2 solid	
???	inner sill for **12mm or** 6mm w foam	sill-3 solid	
SP-3	**SP-3**	SP-3 solid	
SP-4	**SP-4**	SP-4 solid	

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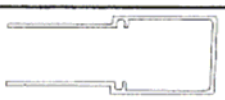
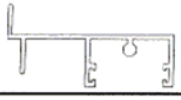
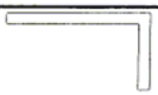
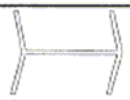
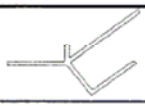
Part #	Description	Dwg #	Cross-section
COMMON AIR-FLOW SMOKING SHELTER EXTRUSIONS			
SP-B	**SP-B**	SP-B solid	
DE-6	double edge sash **6mm**	DE-6 solid	
D-2	door frame for **roller**	D-2 solid	
D-3	sliding door **track**	D-3 solid	
D-4	sliding door **threshold**	D-4 solid	
3/4 cap	"3/4 cap" **7/16" x 3/4" x 1/16" thick angle**	ANG-1 solid	
3/4x3/4 angle	**3/4" x 3/4" x 1/16" angle**	ANG-2 solid	
1 x 1 angle	**1" x 1" x 1/16" angle**	ANG-3 solid	
1 1/4" angle	**1 1/4" x 1 1/4" x 1/8" angle**	ANG-4 solid	
2 x 2 angle	**2" x 2" x 1/8" angle**	ANG-5 solid	
1x2 1/2 angle	**1" x 2 1/2" x 1/8" angle**	ANG-6 solid	

die book

Part #	Description	Dwg #	Cross-section
COMMON AIR-FLOW SMOKING SHELTER EXTRUSIONS			
I-Beam	Modified I-Beam	I-1 solid	
Rake	Roof Panel Channel	Roof-3 solid	
Drip Edge	Drip Edge	Roof-4 solid	
Bench Slat	2" x 10" Stadium Seat	bnch2x10 solid	
Backrest Slat	2" x 6" Universal Stadium Seat	bnch2x6 solid	
Seam or Splice	Bench Seam Sleeve	bnchsplc solid	
Endcap	Bench Endcap	bnchendc solid	
1/8" Flat Bar	1/8" x 2" flat bar	Bar-1 solid	
1 1/2" tube	1 1/2" x 2 1/2" x 1/8" Tube	25x15tub hollow	
2 1/2" square tube	2 1/2" x 2 1/2" x 1/8" Square Tube	25sqtube hollow	
2 1/2" x 4" tube	2 1/2" x 4" x 1/8" Tube	25x4tube hollow	

Bus Shelter with Standing Seam Roof Installation Instructions

6/7/2004

TOOL LIST

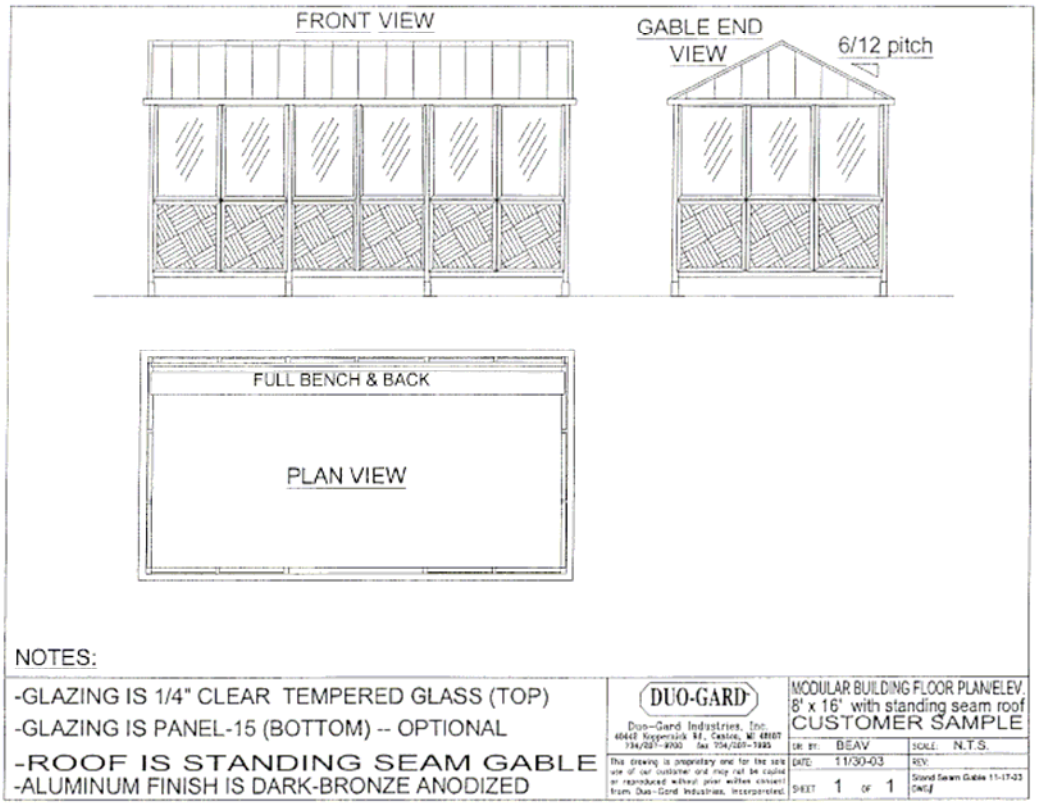
Duo-Gard recommends the following tools, to effectively and efficiently; complete your smoking shelter installation. If you don't have all of them, use an appropriate substitute. If you have any questions please give us a call at **(800) 872-4404**.

- **(1) Screw Gun, $^1/_4$", and Electric Drill**
- **(1) $^5/_{16}$" Magnetic Socket with Extension**
- **Hammer Drill with necessary Drill Bits (used for shelter anchoring procedure)**
- **Anchoring Fasteners-appropriate for your foundation type**
- **Screw Drivers (Flat and Phillips)**
- **Power Source and Extension Cords**
- **(2) Ladders -- 6' or higher**
- **Rubber or Leather Mallet**
- **Square**
- **Level**
- **Electrical Tape (only if your shelters has electrical package)**
- **Sheet Metal Snips**
- **Utility Knife**
- **Clear Caulk and Caulk Gun**
- **2" x 4" stud 8 - 10' long (depending upon size of shelter you may need to cut a 10' stud down)**
- **Needed for Bench Assembly:**

  $^3/_8$" Drill Bit and Drill

  $^1/_2$" Wrenches and Sockets

Bus Shelter with Standing Seam Roof Installation Instructions



Standing Seam Gable Roof Shelter

IMPORTANT:

In general, floor and elevation drawings will resemble the enclosed generic drawings. Your, specific floor plan(s), and any special notes or drawings regarding your shelter, is located following this page. The regular instructions, however, will continue with page numbers starting with page 9.

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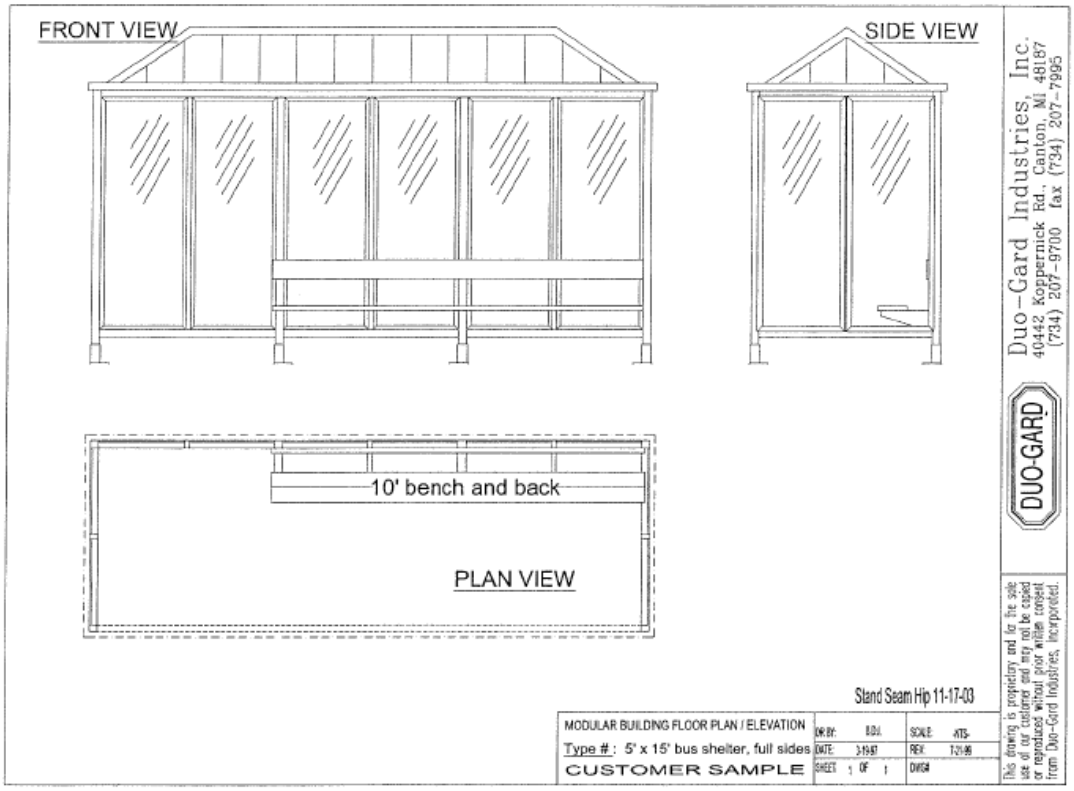
Bus Shelter with Standing Seam Roof Installation Instructions



Standing Seam Hip Roof Shelter

IMPORTANT:

In general, floor and elevation drawings will resemble the enclosed generic drawings. Your, specific floor plan(s), and any special notes or drawings regarding your shelter, is located following this page. The regular instructions, however, will continue with page numbers starting with page 9.

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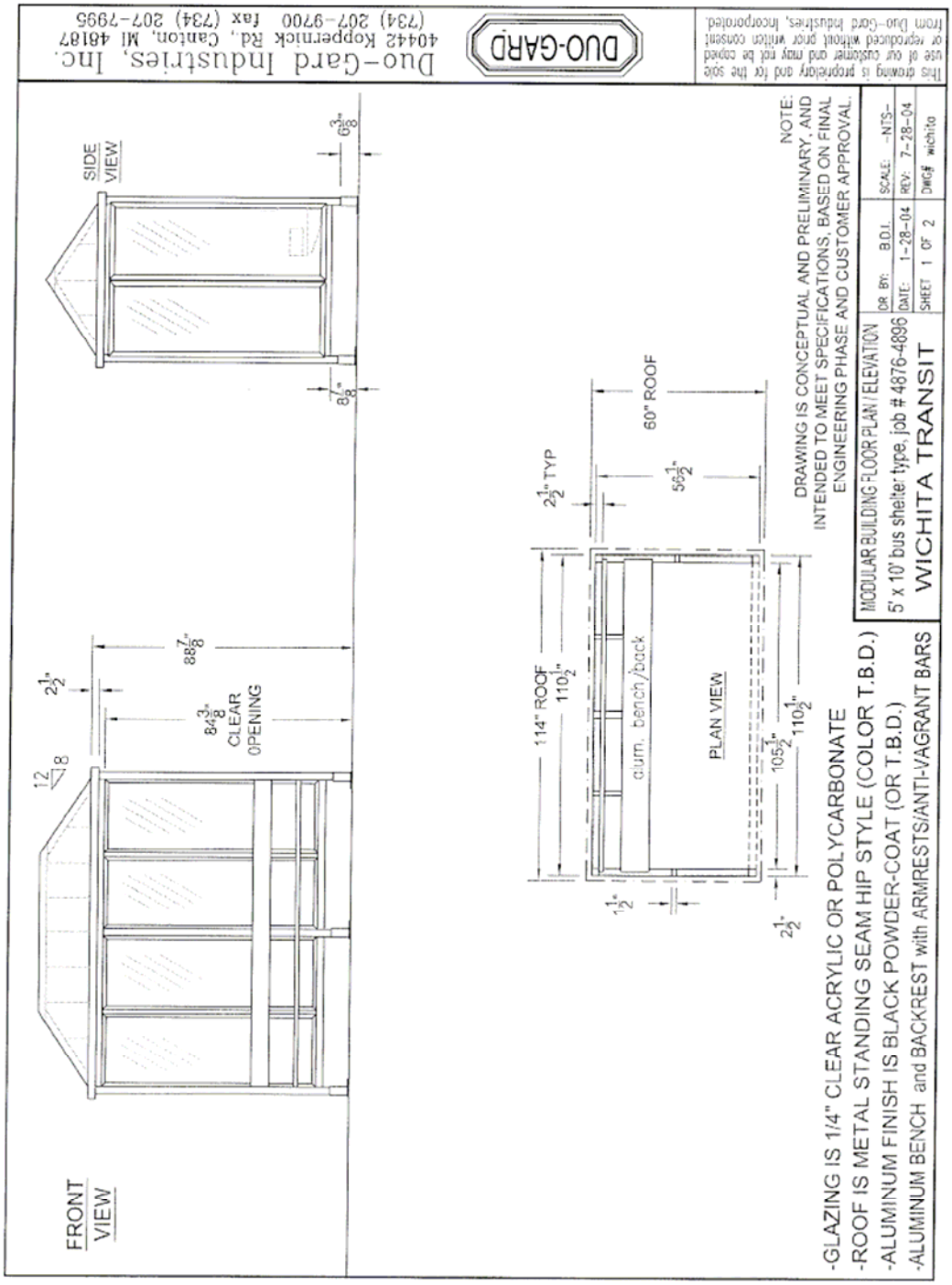
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DUO-GARD
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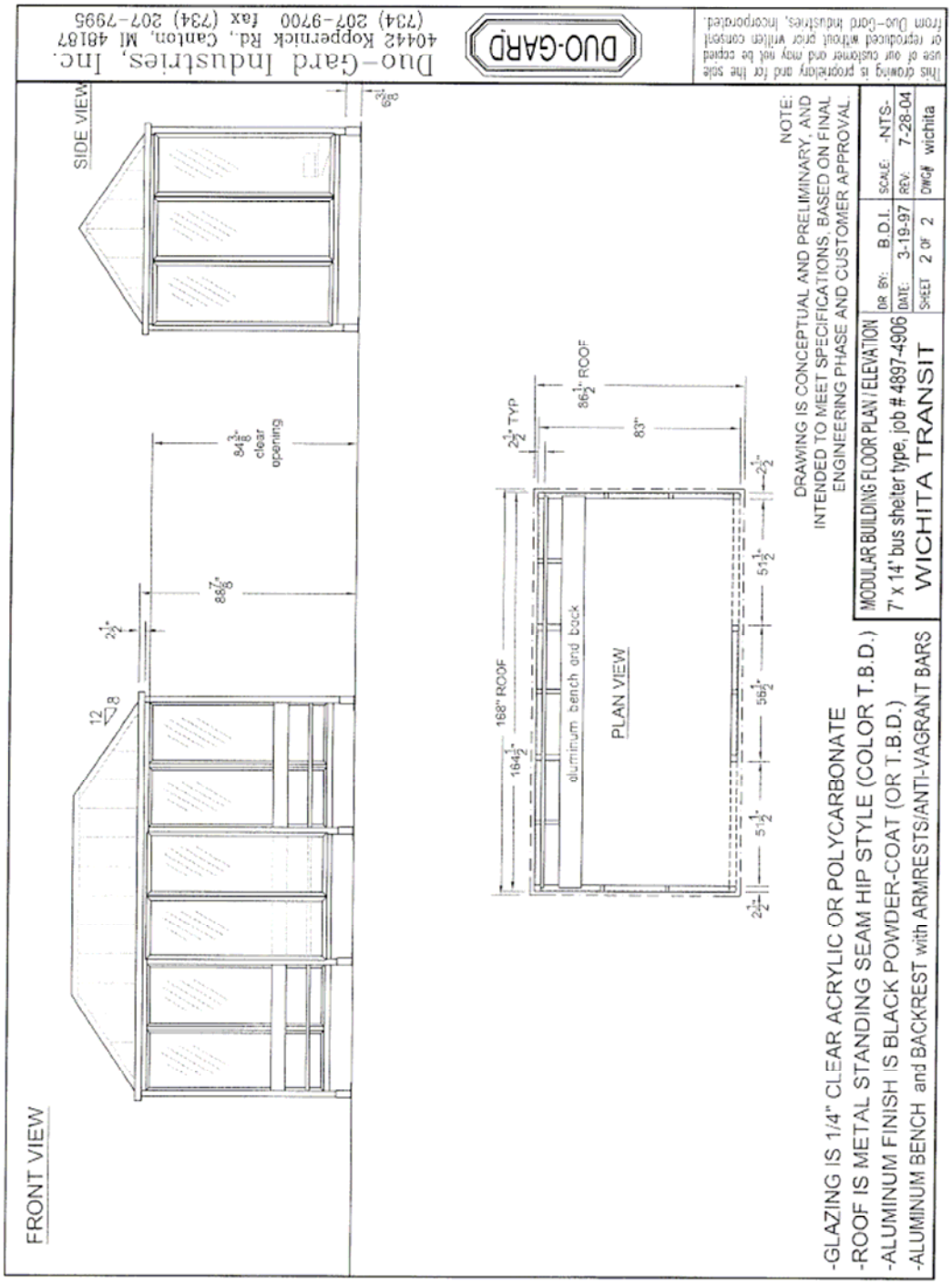
NOTE:
DRAWING IS CONCEPTUAL AND PRELIMINARY, AND INTENDED TO MEET SPECIFICATIONS, BASED ON FINAL ENGINEERING PHASE AND CUSTOMER APPROVAL.
MODULAR BUILDING FLOOR PLAN / ELEVATION
5' x 10' bus shelter type, job # 4876-4896
WICHITA TRANSIT
DR BY: B.D.I.
DATE: 1-28-04
SHEET 1 OF 2
SCALE: -NTS-
REV: 7-28-04
DWG# wichito
FRONT VIEW
SIDE VIEW
PLAN VIEW
CLEAR OPENING
114" ROOF
60" ROOF
alum. bench/back
-GLAZING IS 1/4" CLEAR ACRYLIC OR POLYCARBONATE
-ROOF IS METAL STANDING SEAM HIP STYLE (COLOR T.B.D.)
-ALUMINUM FINISH IS BLACK POWDER-COAT (OR T.B.D.)
-ALUMINUM BENCH and BACKREST with ARMRESTS/ANTI-VAGRANT BARS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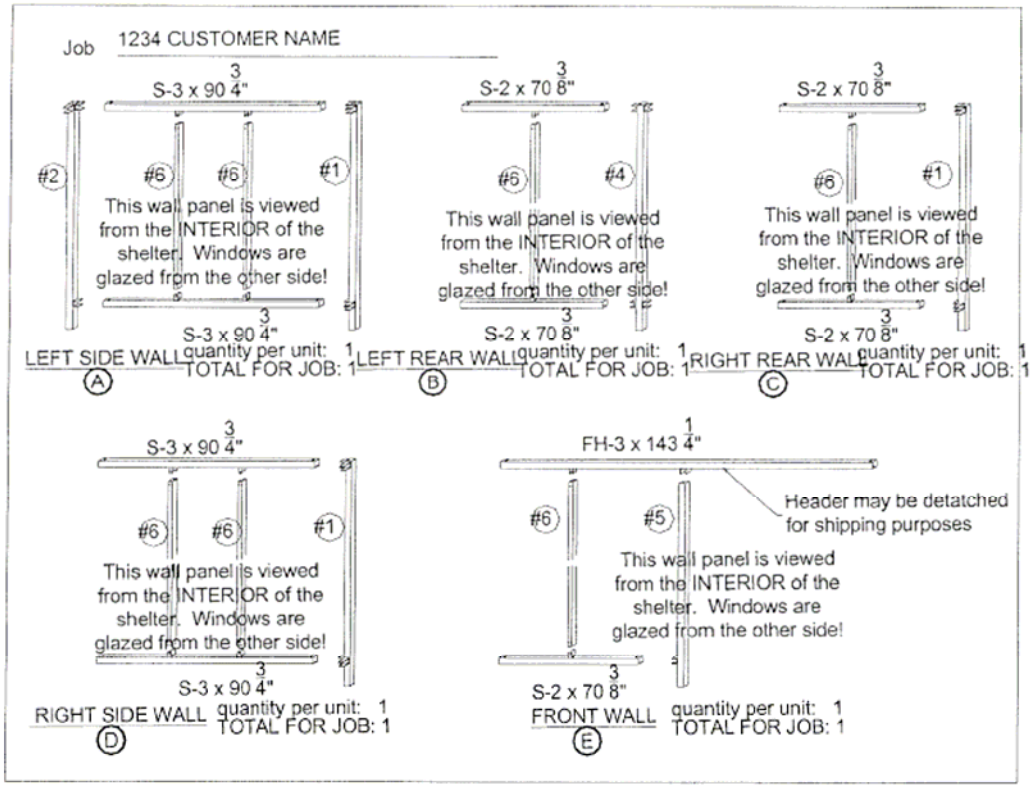
SIDE VIEW
FRONT VIEW
PLAN VIEW
aluminum bench and back
168" ROOF
86½" ROOF
83"
NOTE:
DRAWING IS CONCEPTUAL AND PRELIMINARY, AND INTENDED TO MEET SPECIFICATIONS, BASED ON FINAL ENGINEERING PHASE AND CUSTOMER APPROVAL.
-GLAZING IS 1/4" CLEAR ACRYLIC OR POLYCARBONATE
-ROOF IS METAL STANDING SEAM HIP STYLE (COLOR T.B.D.)
-ALUMINUM FINISH IS BLACK POWDER-COAT (OR T.B.D.)
-ALUMINUM BENCH and BACKREST with ARMRESTS/ANTI-VAGRANT BARS
MODULAR BUILDING FLOOR PLAN / ELEVATION
7' x 14' bus shelter type, job # 4897-4906
WICHITA TRANSIT
DR BY: B.D.I.
DATE: 3-19-97
SHEET 2 OF 2
SCALE: -NTS-
REV: 7-28-04
DWG# wichita

Bus Shelter with Standing Seam Roof Installation Instructions

Figure A - WALL ASSEMBLY

1) When assembling the wall panels, please note that the wall panels are viewed from the inside (**see Figure A below for a sample Wall Configuration Layout**). Always start with **Panel (A) unless noted on your specific floor plan drawing**:



STEP 1 Unpack ALL of the wall modules and become familiar with the final location of each one, according to your specific floor plan. Make sure variables such as module size and type (noting the label on each panel: (A, B, C, etc.) designation, door location, and any electrical fittings, are taken into consideration. The long Header Beam may be detached to accommodate packing &shipping.

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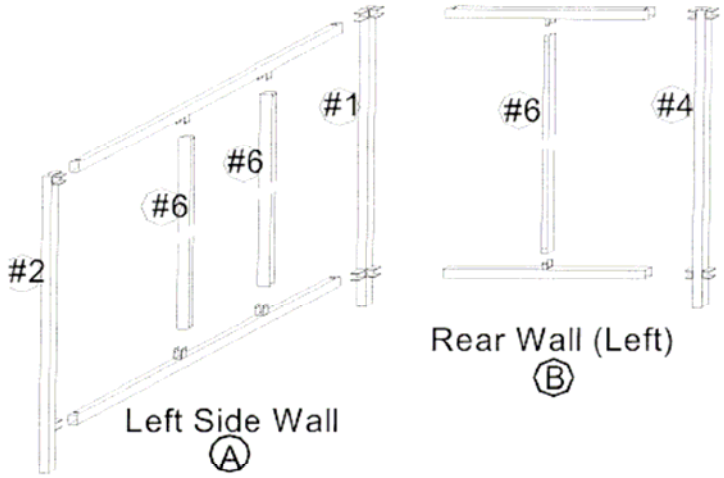
Bus Shelter with Standing Seam Roof Installation Instructions

NOTE: If your shelter includes sliding windows, be sure the sliding window panel on each operable module has the slide latches facing toward the inside of the shelter. Consult your specific floor plan, after page 5, of this booklet, to insure proper module sequence.



2 ERECTING THE WALLS:

Starting with the wall sections (A) and (B), or any adjacent corner sections, attach by sliding the open tube end of the first wall panel into the clips on the next. You may need to use a rubber mallet or a hammer and block of wood to fully engage tubes over clips. Using a 1/4" drill bit, drill into the holes in the horizontal tubes through the 1/4" thick clips (if necessary). Secure with 1/4" x 3/8" grip range drive rivets as follows -- two flat head rivets into the top of the header (unexposed), two dome-head rivets each into the underside of the header and top of the sill beam, and on the interior of the mullion.

1. Continue attaching the walls in this manner, adding the remaining walls according to the drawing.
2. Attach the free ends of the glazing sash of each wall panel to the next wall panel, using 3/16" dia. X 1/4" (grip range) dome head pop rivets, finish to match. Pre-drill holes using #11 drill bits, into the small groove provided in the sash. Be sure that the rivet locations line up with the ones already in place. Prior to riveting, you may need to tap close some of the miter joints. Also, from time to time there may be a mitered tip of the sash that does not sit flush with the adjoining frame members: tap them down with a hammer and block of wood, etc.

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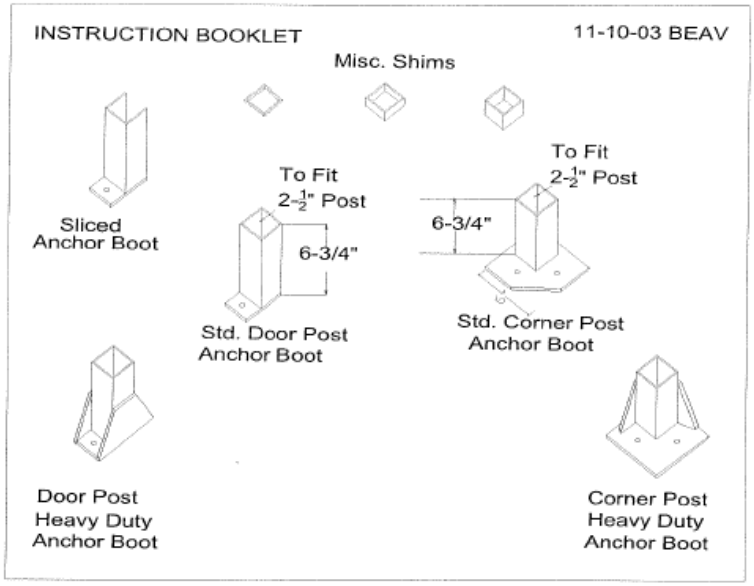
ANCHORING THE SHELTER:



1. For any adjustments in the slope deemed necessary, a quantity of shims, are provided to place inside the anchor shoes under the posts. You can also make adjustments by cutting off parts of the legs (with a hack saw or circular saw), but this is not recommended because then the changes are permanent and the shelter will not easily fit another location. However, if your shelter has bottom wind-skirts, take note that any drastic slope changes will affect these as well.
2. With the shelter in the exact position you want it, mark the hole locations for the anchor bolts in the concrete.
3. Slide the shelter a few inches to the side, if necessary, and drill 1/2" dia. Holes into the concrete using a hammer drill and masonry bit.
4. Slide the shelter back into place (if necessary), and install the anchor bolts as follows: put the washers and nut on the bolt, with the nut half way off (to protect threads from hammer blows), and hammer completely into the concrete. Turn nut until tight. Depending on the condition of the concrete, the nut may keep turning and not tighten completely. If this is the case, continue until 1/4"-1/2" of thread appears and stop. The pull out strength of the bolts will still be intact if this is the case.
5. For tamper-resistance of the bolts, peen the threads with a hammer.
6. Using a 1/4" drill bit, drill into the four holes in the side of the anchor shoes into the shelter posts. Secure with 1/4" dia. X 3/8" (grip range) dome-head drive rivets.

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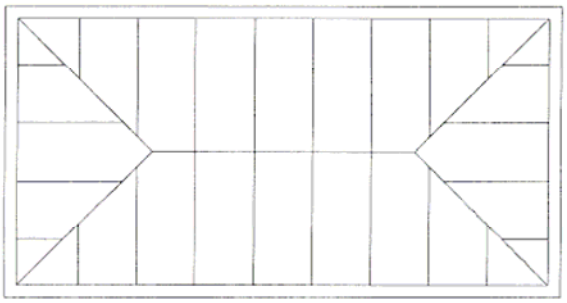
Bus Shelter with Standing Seam Roof Installation Instructions

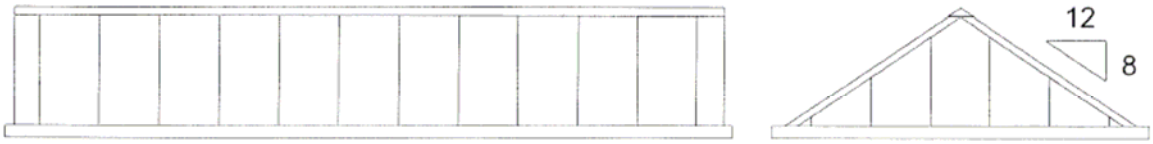
INSTALLING THE ROOF:

Now that the walls have been assembled and are in place, you can install the Standing Seam roof.

HIP ROOF LAYOUT



Gable Roof Layout



PRE-ASSEMBLED STANDING SEAM ROOFS for SMALLER ROOFS):

1/2" -- 5/8" Space between Gutter and Header Beam

1. Set the completed roof module onto the shelter walls and center. There should be approximately 1/2"-- 5/8" space around the walls between the header beams and the inside edge of the gutter. Re-square the shelter, if necessary, and be sure the two roof sections are tight against each other.
2. Secure the roof assembly with the 1/4" x 1/4" Dome Head Rivets, 12" to 18" o/c.

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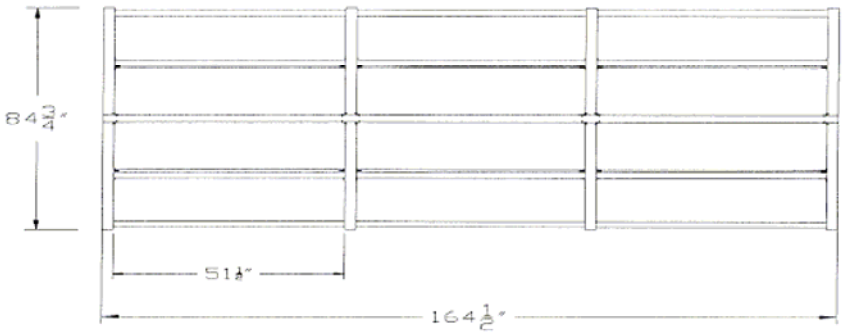
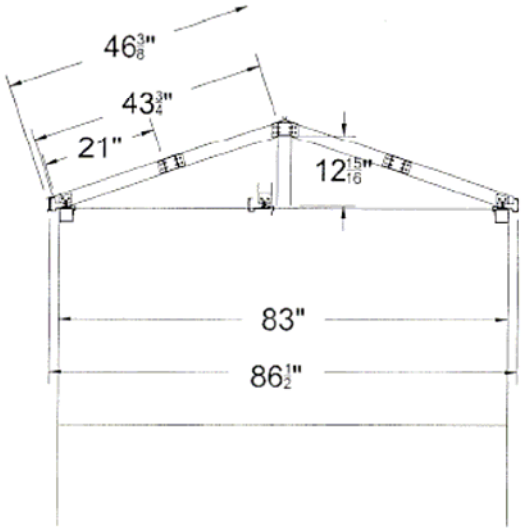
ROOF RAFTER LAYOUT



Gable End View of Standing Seam Gable Roof



Note: **Clips have been pre-attached to the rafters and the Ridge Beam.**

The next step is to attach the riser tubes to the top of the Gable End walls. Note the bottom end of the riser has been notched to nest into the Gutter.

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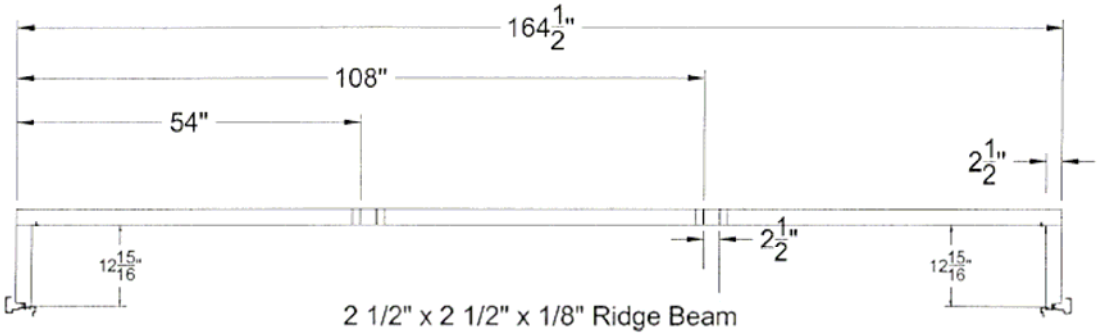
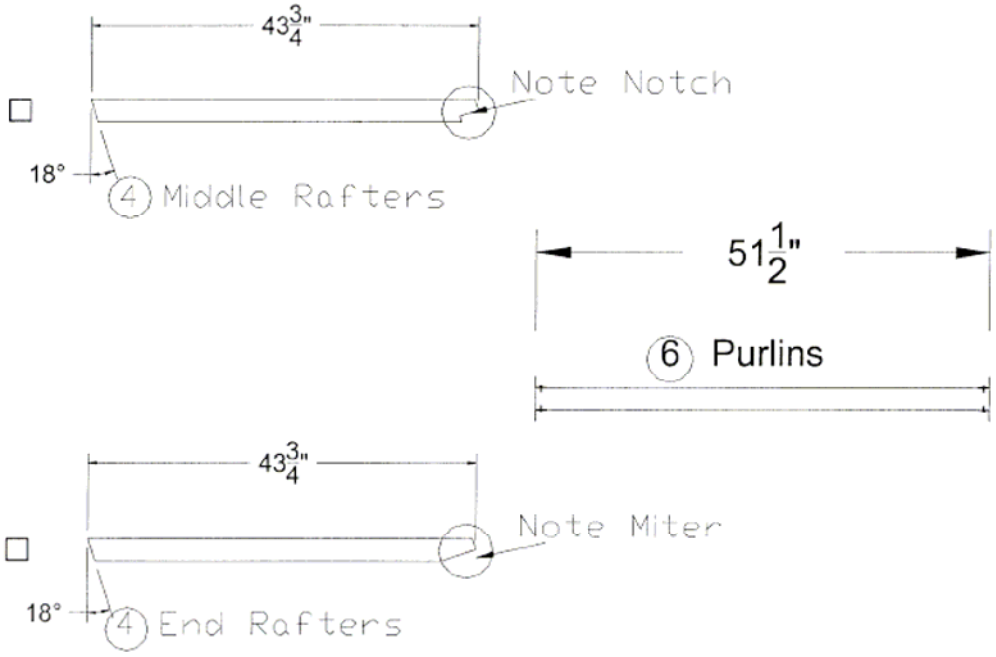


Attaching the Rafters and Purlins --

Note, there are four (4) middle rafters, gutter end is notched and four end rafters have miter cuts.



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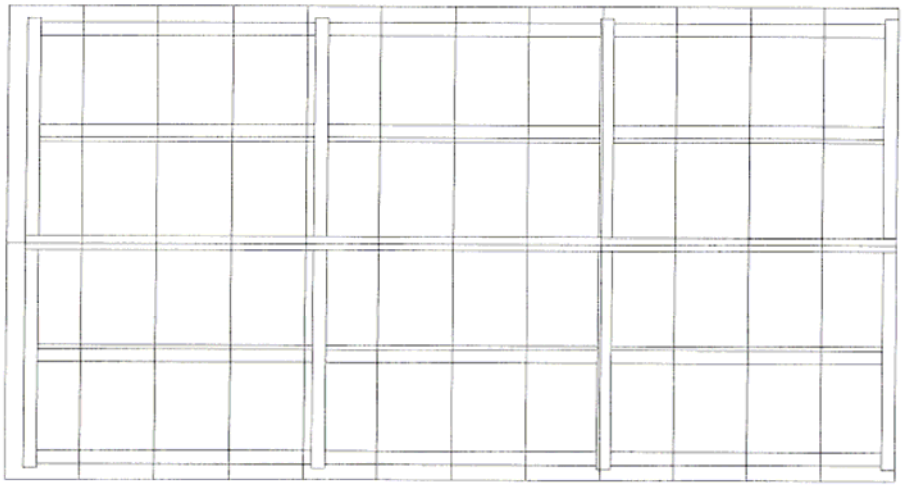
Bus Shelter with Standing Seam Roof Installation Instructions

Once the Rafters and Purlins have been aligned and attached, you can begin the process of attaching the Standing Seam Pans.

ROOF PAN LAYOUT



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FIELD ROOF ASSEMBLY

Shown on the previous pages are typical Gable or Hip Roof components. Occasionally, on larger shelters, you will be required to assemble these components, on the job. Therefore --

It is extremely important that you identify the parts and components as relates to your specific job. See Packing List. These are:

(2) Gutter pieces per shelter's width + 3-1/2" (End View)

(2) Gutter pieces per shelter's length + 3-1/2" (Front & Rear) -- (4) - 7/8" Weep Holes are typically drilled into the rear gutter) -- see drawing of your specific shelter.

(4) Outside Corner clips (4 Angles - 2" x 2" x 1/8" -- 2-1/4" long) -- per corner connection.

(2) Inside Corner clips (4 angles - 2" x 2" x 1/8" -- 5/8" long) -- per corner connection.

(16) 3/16" x 1/4" Aluminum pop rivets

Depending on the type of Roof (Gable or Hip), varying quantities of Rafters, Stringers, Ridge Beam, Clips and Fasteners are provided to fabricate the roof structure -- see drawing and packing list for your specific shelter.

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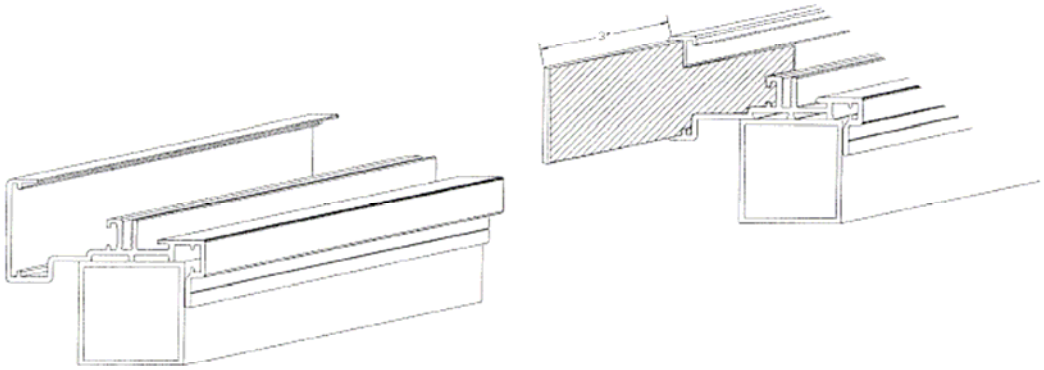
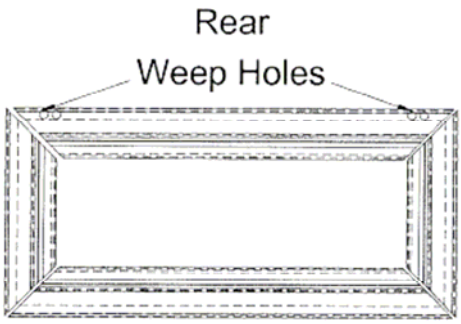
Bus Shelter with Standing Seam Roof Installation Instructions



1. Now that the Gutter is assembled and square, lay down a bead of caulk over the tops of the wall header beams. Set the gutter onto the wall framing and center. There should be a 1/2" space around the walls between the header beams and the inside edge of the gutter.
2. Weep holes may or may not be pre-drilled. If not, drill a series of 1" drain holes into the bottom of the gutters at the following preferably towards the outside edge of the gutter: depending on the slopes of the shelter, at the corners at the low end of the slope, or away from traffic. Drill a pair at either locations, side of the miter joints away from traffic.
3. Secure the roof assembly with the 1/4" x 1/4" Dome Head Rivets, 12" to 18" o/c.



Gutter Layout
Hip & Gable Standing Seam Roof

Identify all roof parts and lay them out on the ground similar to the finished assembly.

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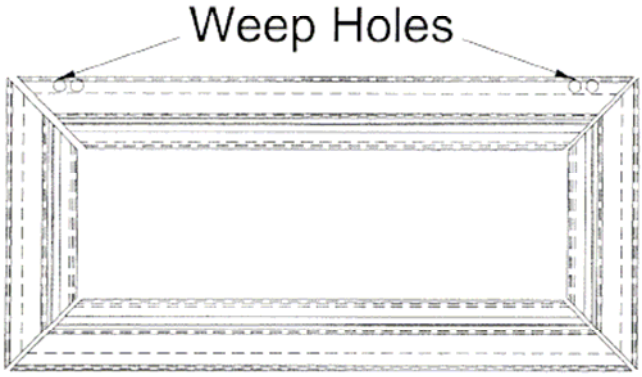
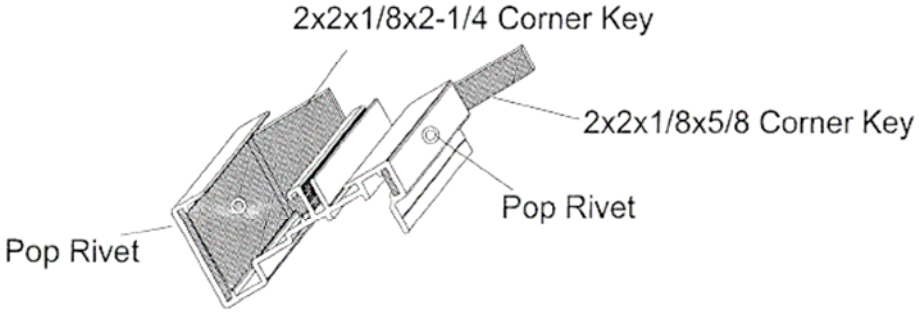


Gutter Layout
Hip & Gable Standing Seam Roof

FABRICATION PROCEDURE --

(1) Place the Gutter extrusions in the configuration of your shelter approximately as they will be when assembled.



(2) Insert the corner angles in the first corner. Pre-drill holes for 1/4" aluminum pop rivets.
(3) Assemble a short and long side (use a rubber mallet to seat the corner to assure that the mitered corners are tight).

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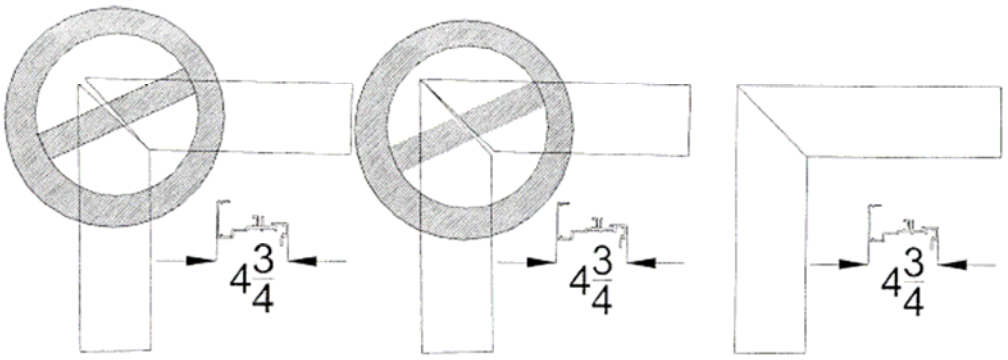

(4) After all four (4) corners are assembled, check for square ness.

INSTALLING THE ROOF:

If the gutter(s) require a splice in order to span the length of the shelter, insert the splice plate into one end of the square cut of the gutter. Caulk generously to insure a seal. Then push the mating square end of the gutter onto the splice plate. Secure the connection with #10 x 5/8" tek screws with neoprene washers.

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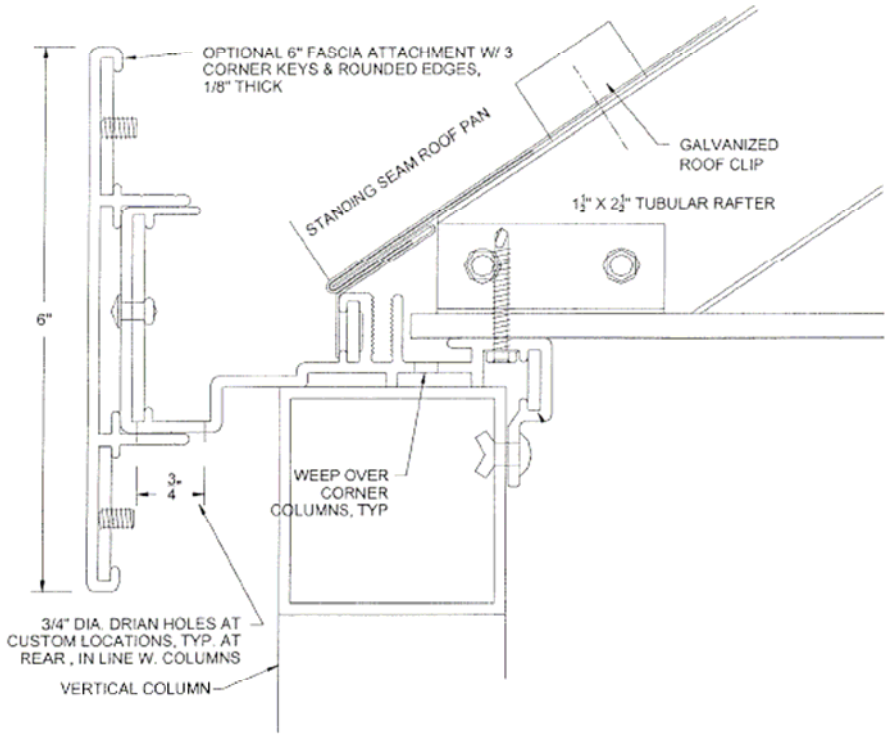
If a 6" Fascia is specified, on the work order, then -- Installing optional 6" fascia attachment is as follows. Insert the 2" x 2" x 1/8" angular corner keys into the ends of the shorter pair of 6" fascia attachments, top and bottom key channels. Set the longer pair over the 2 1/2" fascias on the just-installed roof. Do not attach fascias until they are all in place and adjusted. Make sure the notched flanges correspond to the drain holes in the roof. Slide the shorter 6" fascias onto the ends of the longer 6" fascias, inserting the corner keys as you go. Tap the miter joints tight and tighten the setscrews with an allen wrench. Do not tighten the set too much, as the fascia may dimple. Square up fascias on roof and start attaching. Use a #12 x 1" stainless steel tek screw through the flange in the top of the fascia into the 2 1/2" fascia/gutter, 6" from each end and 12"-18" o.c. Use 3/16" dia. x 1/4" stainless steel pop rivets into the bottom flange in the same manner, pre-drilling with a #11 drill bit, and a corresponding quantity with the tek screws. Use caulk and touch-up paint in the miter joints as necessary.



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Bus Shelter with Standing Seam Roof Installation Instructions

CARE AND CLEANING INSTRUCTIONS

CLEANING TIPS: Use warm, soapy water and rinse thoroughly to remove all soap film. Never use abrasive or highly alkaline cleaners. Do not scrape with razor blades or other sharp instruments. Paint splashes, grease, glazing compounds, etc. can be removed by rubbing lightly with cotton moistened with dry cleaning naphtha, kerosene, white spirits, denatured alcohol, or petroleum ether. A final wash should be made with warm soapy water. Aqueous solutions of **MILD** commercial cleaners may be used.

RECOMMENDED CLEANERS: Formula 409, Top Job, Joy, Palmolive Liquid, VM & P Grade Naphtha, and Windex with Ammonia D.

SCRATCHES AND ABRASIONS: Scratches and mild abrasions can be minimized by using a **mild** automobile POLISH (DO NOT USE RUBBING COMPOUND) such as Johnson Paste Wax, Novus Plastic Polish #1 and #2 Novus Inc. Minneapolis, MN., and Mirror Glaze Plastic Polish Mirror Bright Polish Co., Pasadena, Ca. We suggest you test a sample with the product selected, following the polish manufacturer's instructions.

IMPORTANT DON'TS:

- **DO NOT** use abrasive or highly alkaline cleaners such as Lysol, Pinesol or Isopropanol.
- **NEVER** scrape with squeegees, razors, blades or other sharp instruments.
- **NEVER** clean with gasoline, benzene, acetone or carbon tetrachloride.
- **DO NOT** clean in hot sun or at elevated temperatures.

For assistance with products or procedures please call us at

1-800-872-4404

Formula 409 is a registered trademark of the Clorox Company.
Palmolive Liquid is a registered trademark of Colgate Palmolive.
Top Job and Joy are registered trademarks of Proctor & Gamble.
Windex with Ammonia D is a registered trademark of Drackett Products Company.
Lysol is a registered trademark of Sterling Drugs.
Pinesol is a registered trademark of the American Cyanamid.

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Bus Shelter with Standing Seam Roof Installation Instructions

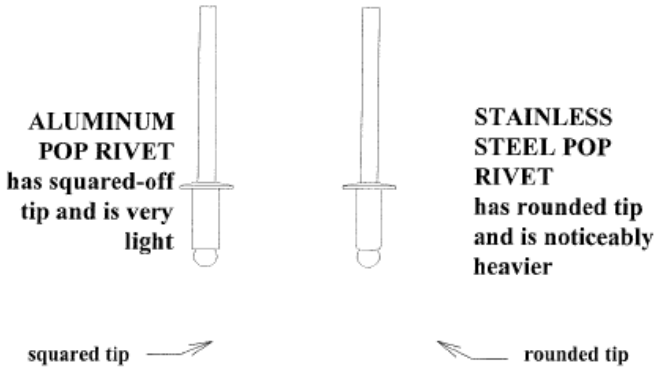
Bus/Smoking Shelter Aluminum Bench Installation Instructions

BEFORE YOU BEGIN:

Please read through all of the instructions and become familiar with the parts before you begin installation. If you have any questions before, during, or after your installation, please call our **Toll-Free Installation Hot Line at 800/872-4404.**

IMPORTANT:

Bench and backrest attachments are made with ***stainless steel*** pop rivets. To distinguish between stainless and aluminum pop rivets, look for the rounded tip on the stainless, plus they weigh significantly more (see below).



TOOLS NEEDED:

- Power driver with long 5/16" hex bit (magnetic if possible)
- Drill motor with 1/4", 5/16" and #11 drill bits
- Heavy-duty Pop rivet tool
- tape measure
- level
- grease/lead pencil
- power source (extension cords and or generator)
- "C"-clamps or vice-grip clamps, min. 2" clamping range

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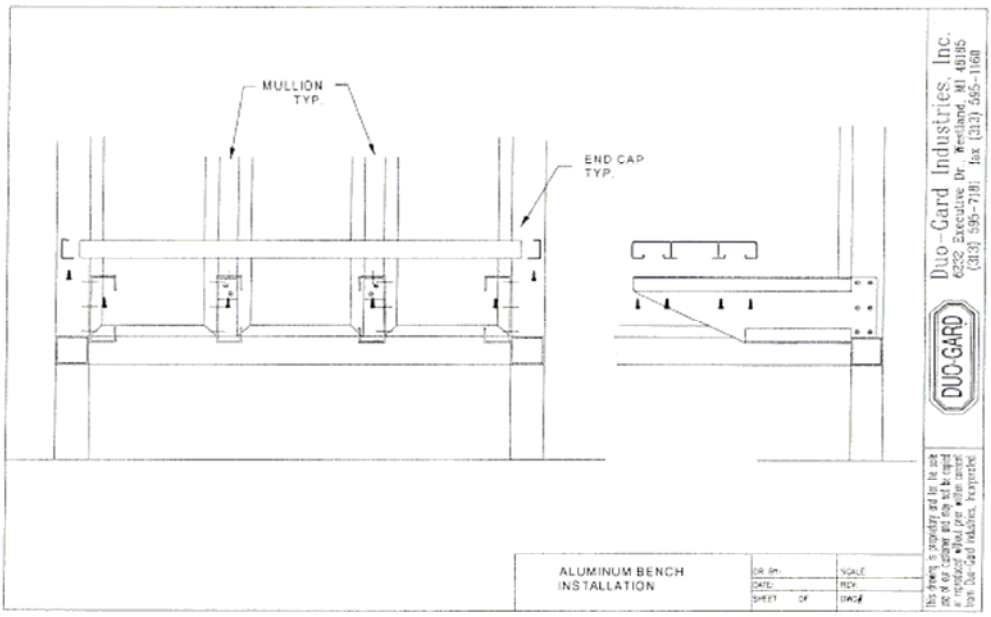
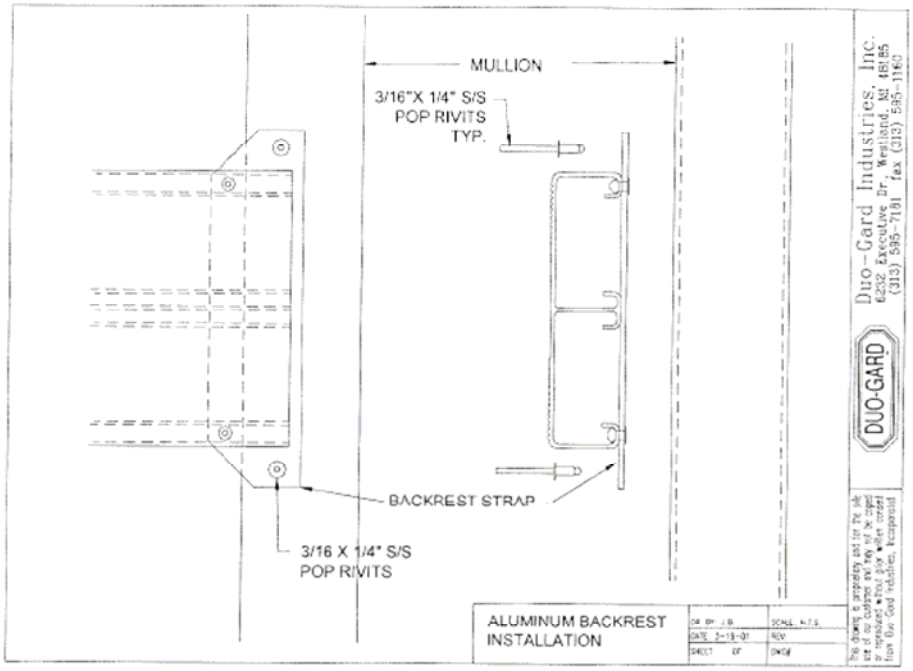


INSTALLING THE BENCH:

1. Locate the bench brackets and lay them out, lefts and rights, in front of their respective vertical mullion and/or post. There will be one bench bracket (in a few cases, two) per vertical post or mullion bench lines up to. Facing the wall in which the bench attaches, left bench brackets go on the left half of the wall, and right brackets on the right half. The brackets set on the top of the sill, with the attachment flange against the vertical post or mullion. On the ends, the top channels on the brackets extend out from the posts, while the middle bracket channel extends out from the middle of the mullion (see drawing). If there are more brackets than posts/mullions, then install two brackets at the middle post/mullion, the channel of each facing the corresponding ends of the bench.
2. Attach the bench bracket to the vertical mullions/posts through the vertical flange with the pre-punched holes, using six (or more) 3/16" x ¼" **stainless steel** pop rivets, pre-drilling with #11 drill bit.
3. Set the nom. 2x10 bench slat centered on the brackets, with the slat hanging ½" over the front edge of the brackets, and clamp to brackets.
4. Attach the bench to the brackets with #12 x 1" stainless steel tek screws or 3/16" x ¼" **stainless steel** pop rivets into the flanges on the underside of the bench slat (4 per bracket min.). For a tamperproof connection, use 3/16" x ¼**" stainless steel** pop rivets, pre-drilling with #11 drill bit, or tek screws and pop rivets in conjunction.
5. Attach bench end caps with #12 x 1" stainless steel tek screws (2 min.), into the underside of the end cap (the larger flange). For a tamperproof connection, use 3/16" x 1/4**"** aluminum or stainless pop rivets, pre-drilling with #11 drill bit.

Bus Shelter with Standing Seam Roof Installation Instructions

INSTALLING THE BACKREST:



1. Hold the nom. 2" x 6" backrest slat up to the shelter wall, parallel to the bench, with the ends lining up. Mark with a pencil where the posts and mullions come up against the slat (see drawing).
2. Lay the slat down and line up a 1/8" x 2" x 7-5/8" backrest strap over each post and mullion location, such that the squared end is over the post/mullion position, and the chamfered portion is offset from the post/mullion position. Clamp the straps to the back of the slat and attach with two or three #12 x 1" stainless steel tek screws (or 3/16" x 1/4" **stainless steel** pop rivets, pre-drilling with #11 drill bit), 1/2" in from the chamfered edge of the strap (see drawing). On the ends, the strap should overlap the end caps, screwing or riveting through all three parts.

Hold the backrest slat back up to the shelter wall, so that the top of the slat is 16" above the top of the bench brackets. Pre-drill, with #11 drill bit, through the pre-punched holes in the backrest strap and attach to posts and mullions using two 3/16" x 1/4" **stainless steel** pop rivets.