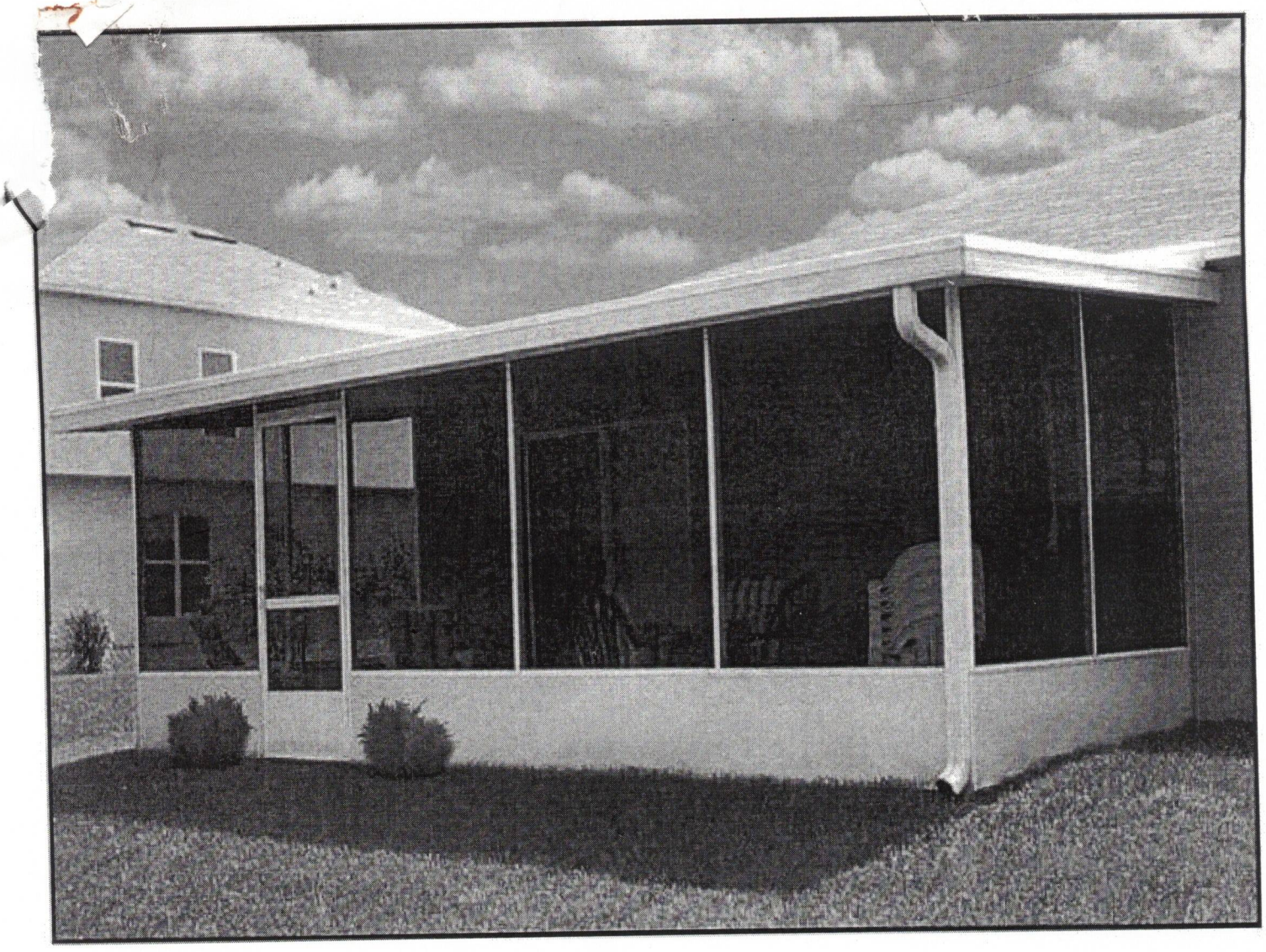


Screen Room Walls & Aluminum Roof

Do It Yourself Instructions

Updated to include:
- Estimating guides
- Worksheets for material lists
- Suggested material lists for common sizes

Section 1
Screen Room Walls Instructions

Important Caution

These instructions are written only as a general guide to the procedures of planning and constructing a screen room enclosure. The reader is cautioned that Building Code and design / construction requirements are different and particular to a given area, and **these instructions are not represented to be in compliance with the requirements of any particular building department code.**

Before commencing this project, we recommend that you consult your local building department to determine the particular design, construction and permitting requirements for your particular area. **We specifically disclaim any expressed or implied liability for the actual design or construction of your project.**

COMPONENTS:

2" x 3" Framework
2" x 2" Framework
1" x 2" Framework
Castle clips
Capri clips
Screen and flat spline
Silicone caulking - clear
2" x 2" x 1/8" Angle Anchor
16" x .024 Kickplate coil (optional)
Quickset anchors - weatherproof coated 1/4" x 2-1/4"
#10 x 2" Hex washer head sheet metal screws – weatherproof coated
#8 x 9/16" Tek (self-tapping) hex washer head sheet metal screws - weatherproof coated
Prehung screen door and accessories
Closer kit adapter (optional) Figure 14

TOOLS YOU WILL NEED:

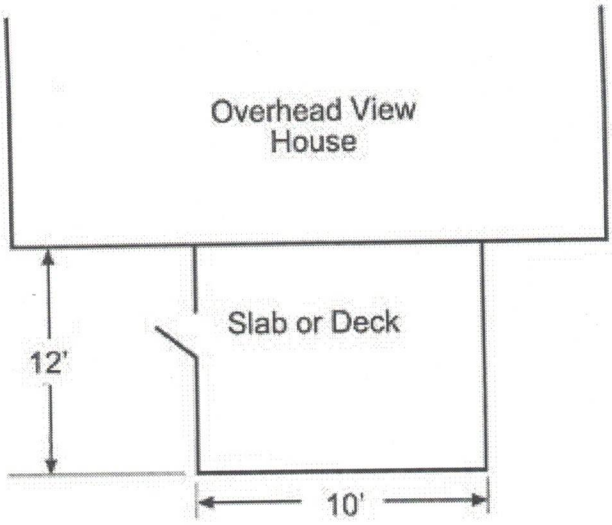
Circular saw with plywood blade or hacksaw
Variable speed drill, bits and drivers
4' Carpenter's level
Safety goggles
Spline roller
Caulking gun
Tape measure
Utility knife or tin snips

NOW'S LET GET STARTED....

STEP 1. ESTABLISH DESIGN AND DIMENSIONS

First establish the dimensions of the screen room. For example, we have chosen a room to be built 10' wide by 12' long (See note below **).

Begin by making a drawing of your house and the length and width of the proposed screen room as shown in Figure 1.



(Figure 1)

Measure the perimeter of the concrete slab or deck as shown in Figure 1 to determine the dimensions of the front and two side walls. The edge of the perimeter wall needs to be 1½" from the edge of the concrete slab.

Example: 12' + 10' + 12' = 34'

Most roofs have a 'slope' or 'pitch', therefore, the height of the front of the room will be less than the height of the rear of the room to allow for drainage.

Normally you would allow ½" per foot for the 'slope' on the roof, which would determine your height on the front wall.

In cases where the screen room is larger than this example, additional material such as a 2" x 6" self-mating beam may be needed, secured from side wall to side wall, to limit the span of the roof panels. The 2" x 6" beam is available by special order.

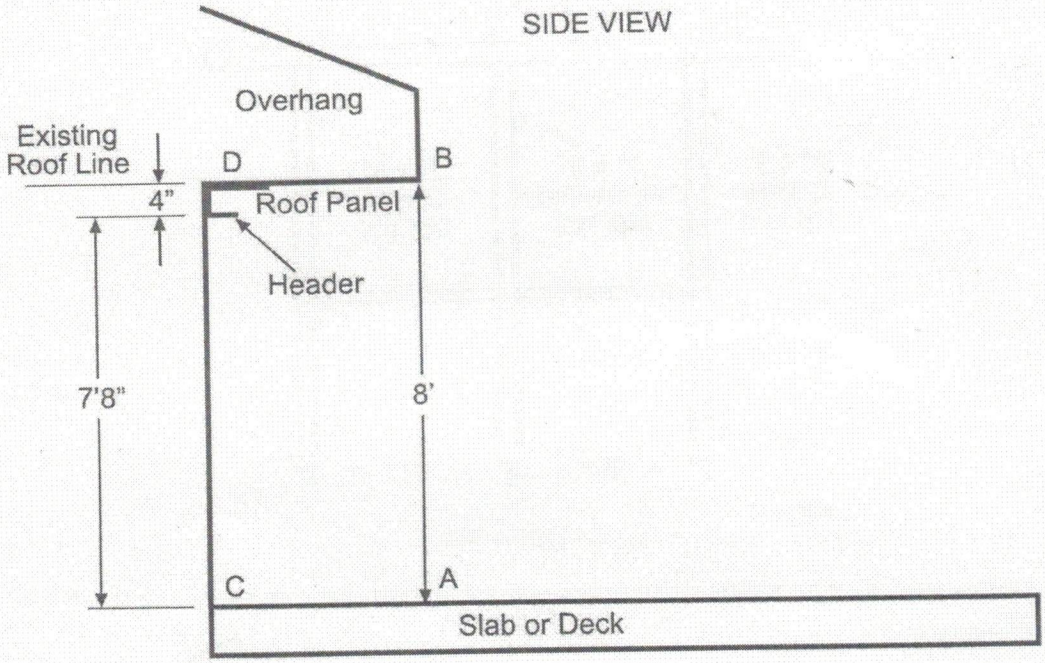
Using Figure 2, measure the height of the rear wall.

If your enclosure does not have an overhang on the existing roof line, take your measurements from C to D.

If you have an existing roof line as shown, take measurements from A to B and again from C to D. This simply assures that you have made allowances for any unevenness in the concrete slab or deck.

Write all of these measurements in the appropriate space on your drawing.

Note: If you are installing an aluminum roof (see following section "Aluminum Roof Instructions"), allow a minimum of 4" for header and roof panel.



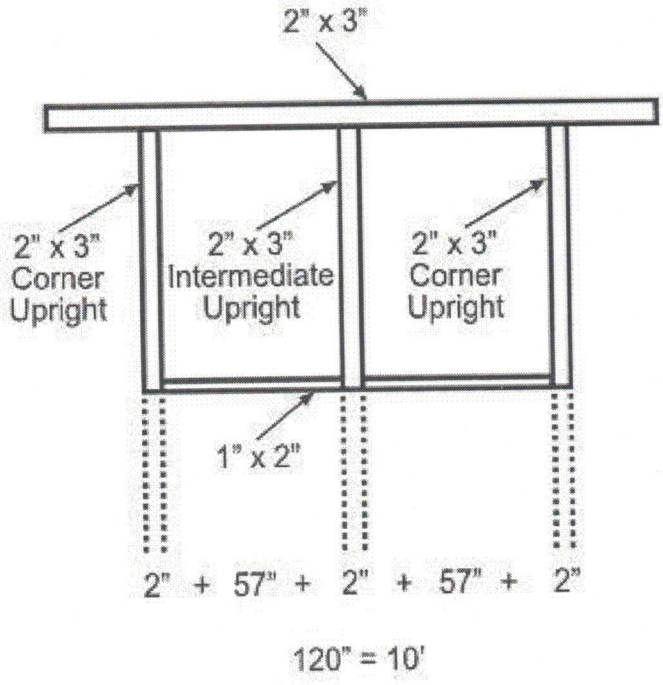
(Figure 2)

For this example, the screen room to be built is 10' wide and 12' long. The height at the high wall is 7'8", allowing for a pitch for the aluminum structural roof panels of ½" per foot for a 12' width, the low wall would be 7'2".**

Let's begin with the 10' front wall (low wall). The spacing of uprights should be 5' or less (consult a licensed professional engineer for spacing of uprights greater than 5').

For this example, we have chosen to place the screen door on the side wall. The spacing of the verticals (2" x 3" framework) will be approximately 57" wide on the front wall. See Step 4 for assembling side wall with screen door.

Refer to the diagram in Figure 3 for placement of the 1" x 2" framework and the 2" x 3" framework as shown.



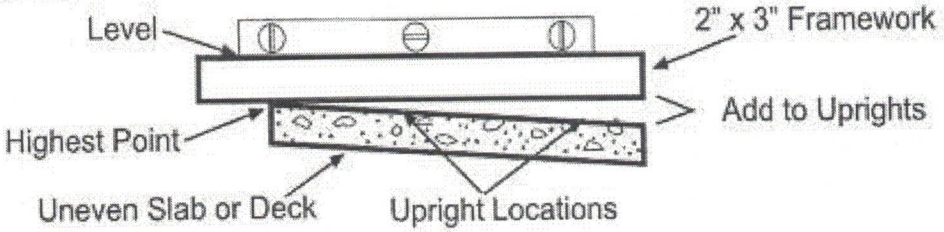
(Figure 3)

To assure a professional job, be certain that all aspects of the project are plumb and level, as well as square.

** If the door is to be located in the front wall, 7'4" is the minimum height. This is to allow the door to open without being obstructed by the gutter.

Based on 57" spacing, three 2" x 3" uprights are needed: two corner uprights 7' high (7'2" wall height minus 2" for header) and one intermediate upright 7' (7'2" wall height minus 2" for the header), if the slab or deck is level.

If the slab or deck is uneven, adjustments of the uprights will be needed. This can be done by using a 4' level to find the highest part of the slab or deck where the front wall will be. Place a 2" x 3" framework at the highest point, level it where each upright will be and measure to find what you need to add to that upright to make the top header level. See Figure 3A.

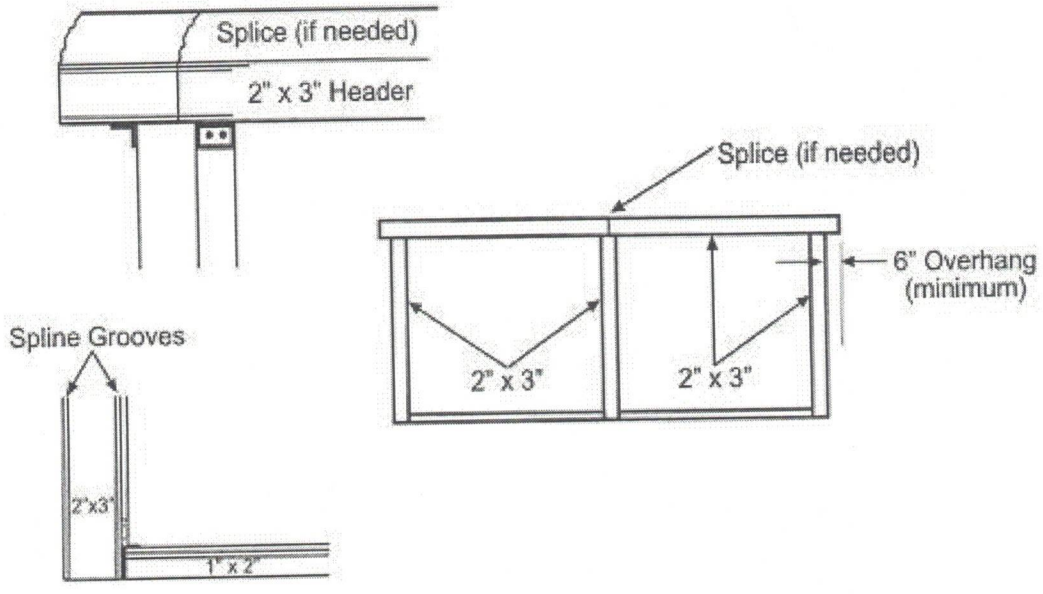


(Figure 3A)

Also needed is 9'8" of 1" x 2" framework to go against the floor and 11' of 2" x 3" framework for the top header. This will allow a 6" overhang on either end of the corner posts. If needed, the 2" x 3" framework header can be spliced, but only directly over an upright.

Cut the 1" x 2" framework and the 2" x 3" framework as necessary to conform to the measurements of your screen room for length, width and height of the front wall.

Lay the framework pieces on the ground to resemble the layout in Figure 4. Make sure the spline grooves face outward. **THIS IS CRITICAL!**



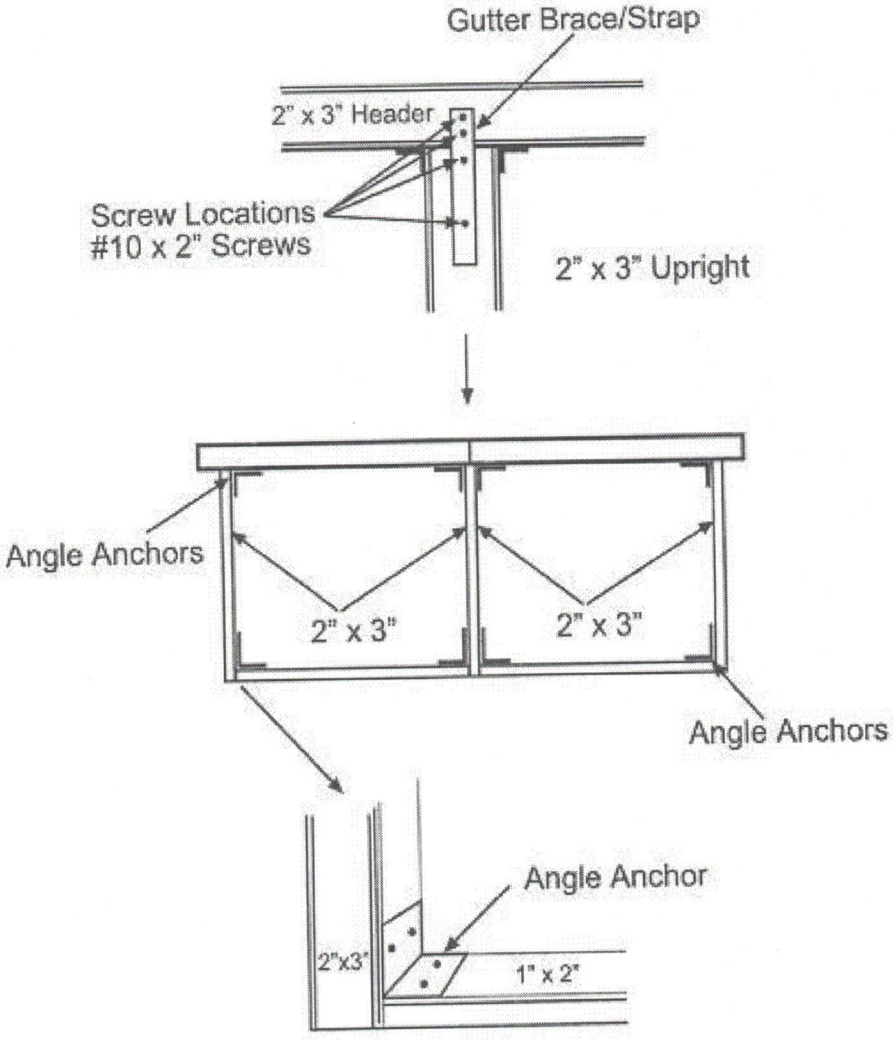
(Figure 4)

STEP 2. ASSEMBLING THE FRONT WALL

FASTENING METHOD

Use the angle anchors and the #8 x 9/16" self-drilling screws to secure the 1" x 2" and 2" x 3" framework pieces at most abutting angles. See Figure 5. A strap is needed from the horizontal 2" x 3" framework header to each vertical upright. Four #10 x 2" screws and a gutter brace/strap can be used as illustrated.

Also, angle anchors need to be used at intersections of front wall uprights and 1" x 2" framework on the floor. See illustration at Figure 6. The angle is to be secured through the 1" x 2" framework and into the concrete with 3/8" x 3½" long concrete anchors and into the upright with three #10 x 2" sheet metal screws.



(Figure 5)

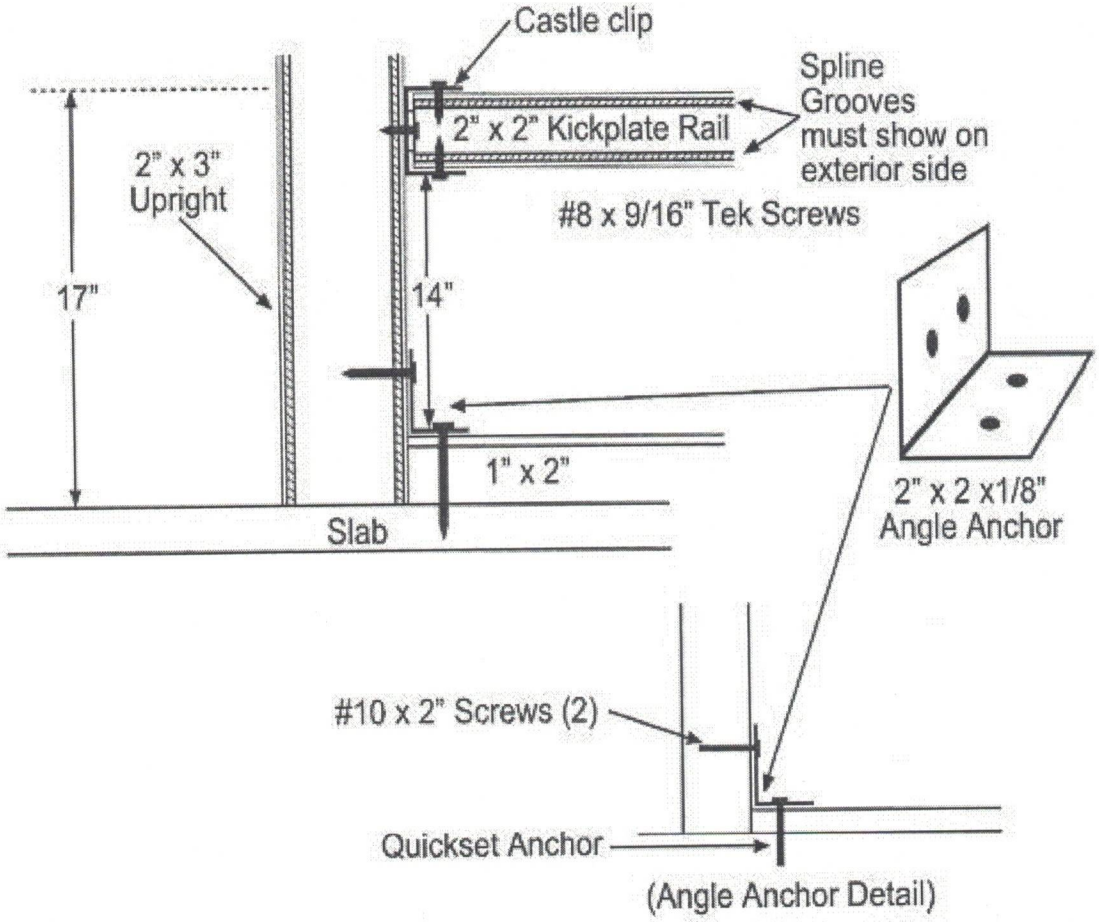
STEP 3. COMPLETING THE FRONT WALL

If you choose to use the kickplate coil option, the next step is to attach the horizontal 2" x 2" kickplate rail into place. To do this, cut the 2" x 2" framework to fit between each 2" x 3" upright. The 16" x .024 kickplate coil will be attached to this rail so place the top of the 2" x 2" framework at a point 17" up from the slab.

Using a castle clip as shown in Figure 6, attach the kickplate rail to the verticals using a #8 x 9/16" self-drilling screw.

The kickplate coil is not attached until the front and side wall(s) are in place and anchored to the slab or deck.

If you are not using kickplate coil, you will have to screen the area below the kickplate rail. See Step 8.

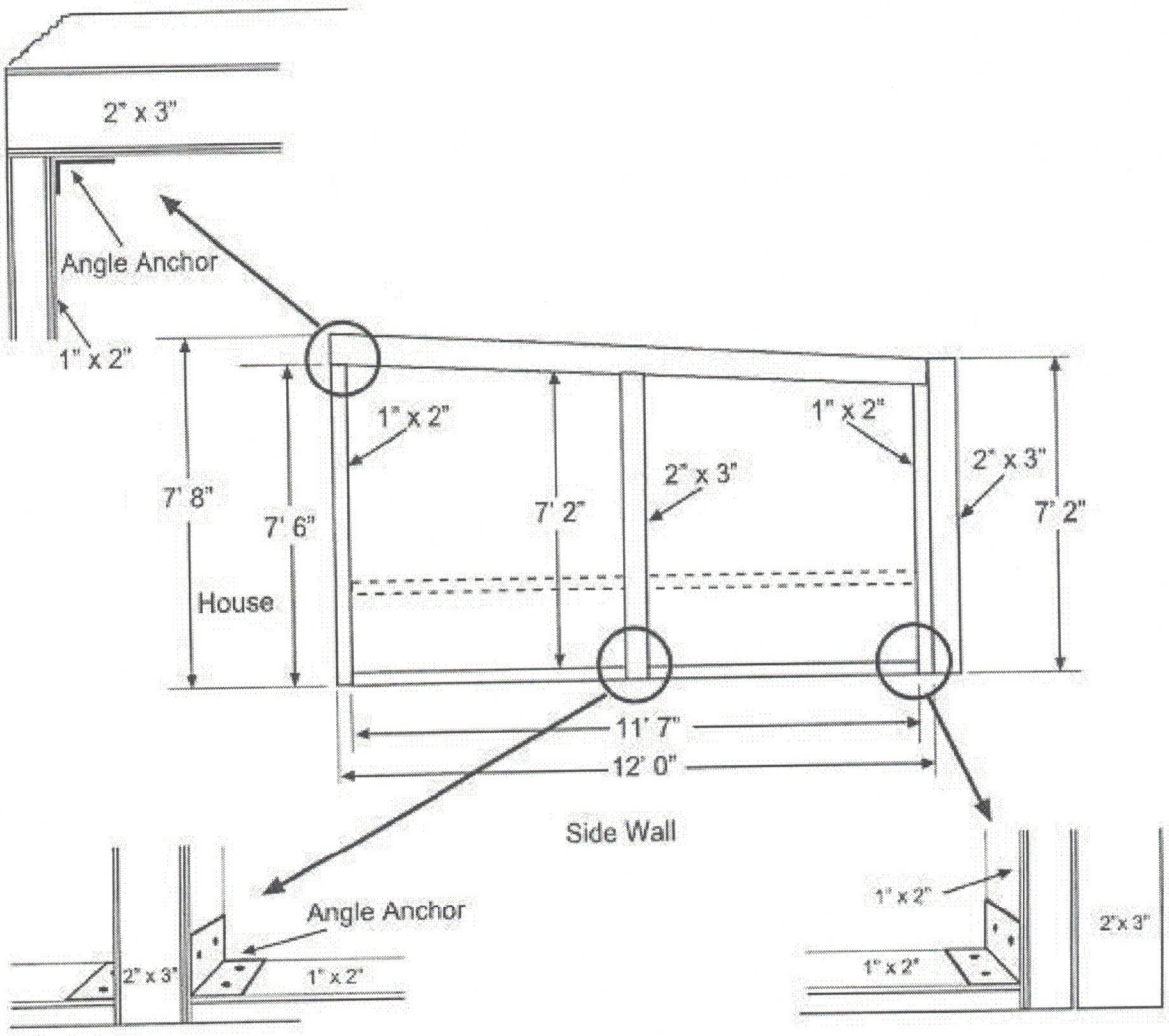


(Figure 6)

STEP 4. ASSEMBLING THE SIDE WALL

We have already determined the height of the low and high wall as 7'2" and 7'8", respectively. Since the side wall is only 12' and the screen will span 6', only one 2" x 3" vertical upright is required. This 2" x 3" extrusion should be cut to 7'3" (which is equal to 7'5", the height of the assembled wall due to the pitch, less the height of the 2" x 3" header).

Also, two additional vertical uprights are required; one piece of 1" x 2" framework 7'6" long to be attached to the house; and one piece of 1" x 2" framework 7'0" long for the outside corner. The vertical uprights should be cut at a slight angle (5 degrees) at the top to allow for the slope of the roof.*** See Figure 8. Horizontal members will consist of 11'7" of 1" x 2" framework to be anchored to the concrete slab, and 11'8" of 2" x 3" header. Again, if needed, the 2" x 3" header can only be spliced directly over an upright. See Figure 4. Using the angle anchors, attach all upright and horizontal members as shown in Figure 7. Use the same technique as with the front wall. Attach kickplate rail with castle clips.

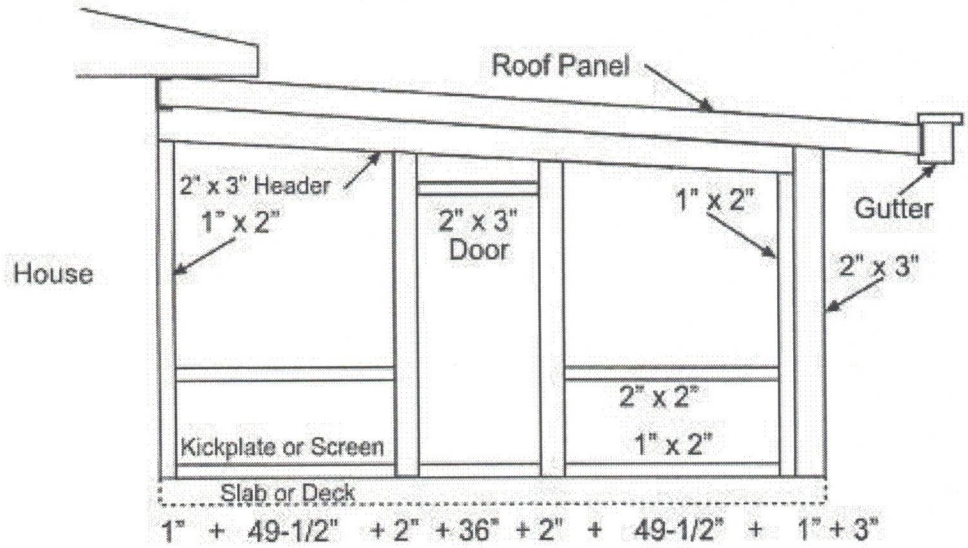


(Figure 7)

*** An easy way to be sure you have the proper angle on the 2" x 3" upright is to attach the 1" x 2" framework that is to be attached to the house to the 1" x 2" framework that will be anchored to the slab. Then attach the 1" x 2" framework that is to be attached to the front wall. Now cut your 2" x 3" horizontal header to fit between the house and the front wall. Fasten with clips as shown in Figure 7. Using the 2" x 3" header as a marker, place the 2" x 3" upright and scribe to fit between 2" x 3" header and the slab. Cut the 2" x 3" upright at the angle where the header crosses.

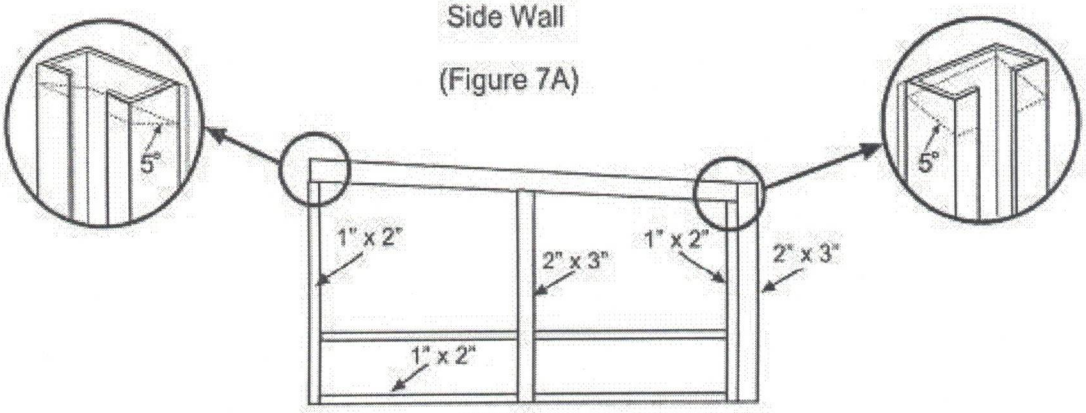
STEP 4A. ASSEMBLING THE SIDE WALL WITH DOOR

The spacing of uprights on this wall are as in Figure 7A. Two vertical uprights are required, one on either side of the 3'0" x 6'8" door. One piece of 1" x 2" framework 7'6" long to be attached to the house; and one piece of 1" x 2" framework 7'0" long on outside corner post. The vertical uprights should be cut at a slight angle (5 degrees) at the top to allow for the slope of the roof*** (see Figure 8). Horizontal members will consist of two pieces of 1" x 2" framework to go against the floor on both sides of the door 49½", 11'8" of 2" x 3" header, and 36" of 2" x 3" framework for above the door.



Side Wall

(Figure 7A)

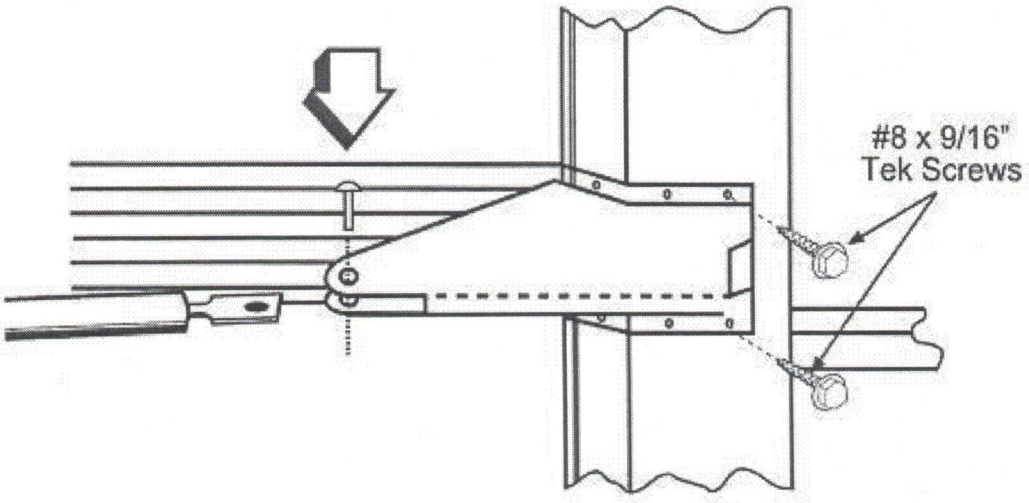


(Figure 8)

STEP 7. HANGING THE DOOR

In this example, the door is to be placed on the side wall (Step 4A) and we have left an opening for a 36" x 80" prehung door. The door will face screw onto the vertical 2" x 3" uprights. A piece of 2" x 3" framework cut 36" long will serve as a header above the door; it is attached with castle clips as indicated in Figure 6. There is no framework below the screen door frame itself.

Refer to the instructions included in hardware kit for mounting the closure kit. Figure 10 shows how a closure kit adapter (not included in the hardware kit) helps attach the door closer to the upright sturdier and easier with only six screws.



Closure Kit Adapter (Optional)

(Figure 10)

STEP 5. COMPLETING THE JOB ON SITE

All three walls are now fabricated and ready to be put in place. Start by attaching the high end of each side wall to the house. If the house is masonry (concrete block or brick), predrill with a 3/16" drill bit a minimum of 2½" through the 1" x 2" framework and into the house. The ¼" by 2¼" quickset anchor is then screwed through the framework and into the house, 12" on center, using a 5/16" driver.

If house is wood, predrill with a 5/64" drill bit through the 1" x 2" framework. The #10 x 2" hex head screw is then screwed through the framework and into the house 12" on center, using a 5/16" driver. Make sure the wall is attached at a 90 degree angle and is square.

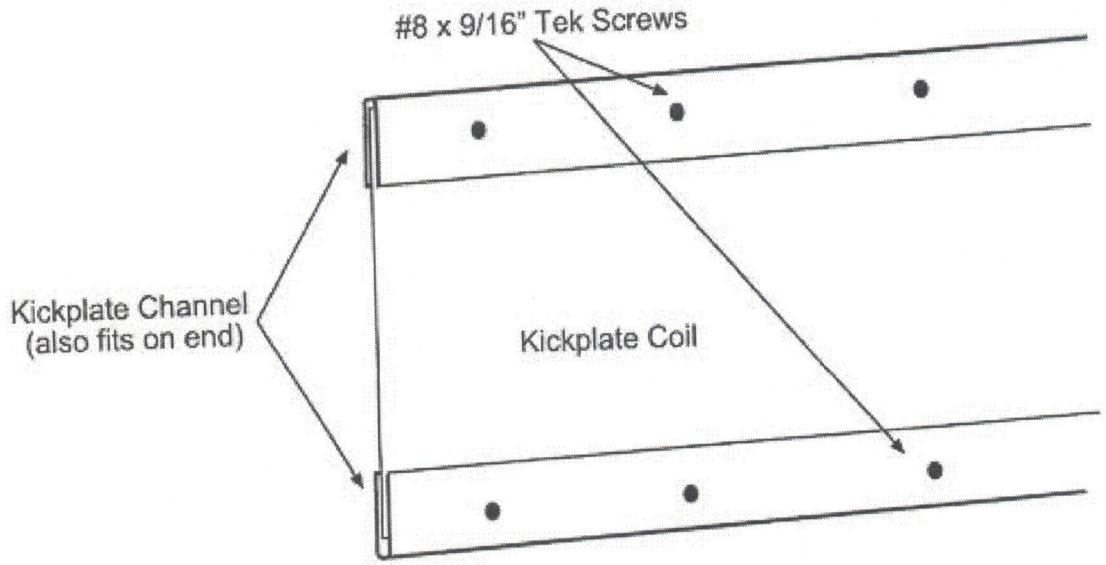
After the two side walls are attached to the house, secure the front by using #10 x 2" hex head screws and screwing through the 1" x 2" framework of the side wall to the 2" x 3" corner uprights posts of the front wall, 12" on center.

At this point, you will be able to square up the room by sliding it to the proper position. Once you have done this, anchor the front and side walls into the concrete slab with quickset anchors every 12".

STEP 6. ATTACHING THE KICKPLATE COIL (Optional)

The coil is not attached until the front and side walls are in place and anchored to the concrete. To attach the kickplate, cut and slip the kickplate channel over the ends of the coil (top, bottom and both sides). Using #8 x 9/16" self-drilling screws, screw through the kickplate channel into the 1" x 2" floor framework and 2" x 2" kickplate rail. See Figure 9.

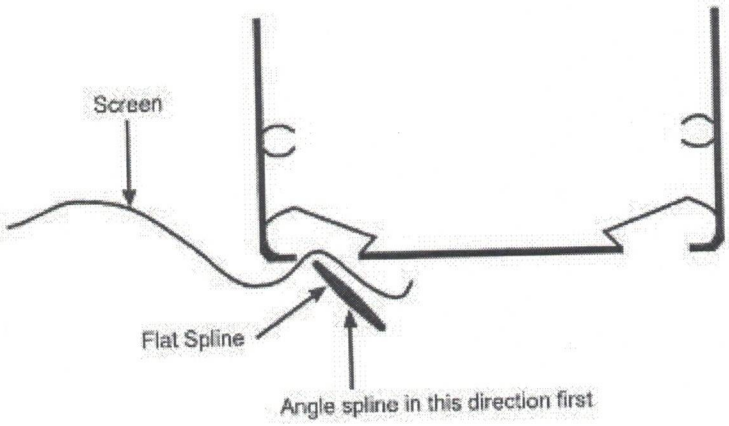
** HINT: Placing screws 6" apart helps prevent the coil from rattling in the wind.



(Figure 9)

STEP 8. INSTALLING THE SCREEN

At this point, the walls are ready for screening. The spline grooves in the framework are made to accept flat spline. The screen should be placed squarely over the spline grooves and the spline is angled toward the closest side of the framework (Figure 11). Using a spline roller, roll in the top side first, the bottom second and then the sides. This method will help ensure a tight fitting screen. Use a utility knife to trim off excess screen and spline.



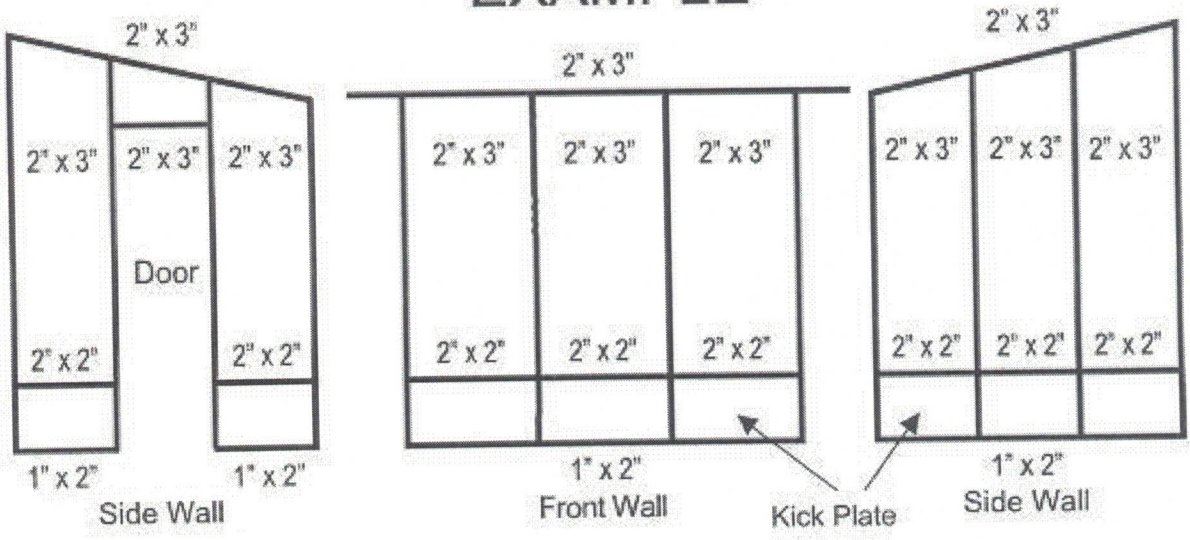
(Figure 11)

Use the silicone caulking to fill the holes between the 1" x 2" framework and the house, but do not caulk the 1" x 2" bottom framework so that blown in water can drain out.

The job is now complete and ready for installation of the aluminum roof panels, gutters and downspouts as detailed in the Section 2, "Aluminum Roof Instructions."

ESTIMATING GUIDE FOR SCREEN ROOM WALLS

EXAMPLE

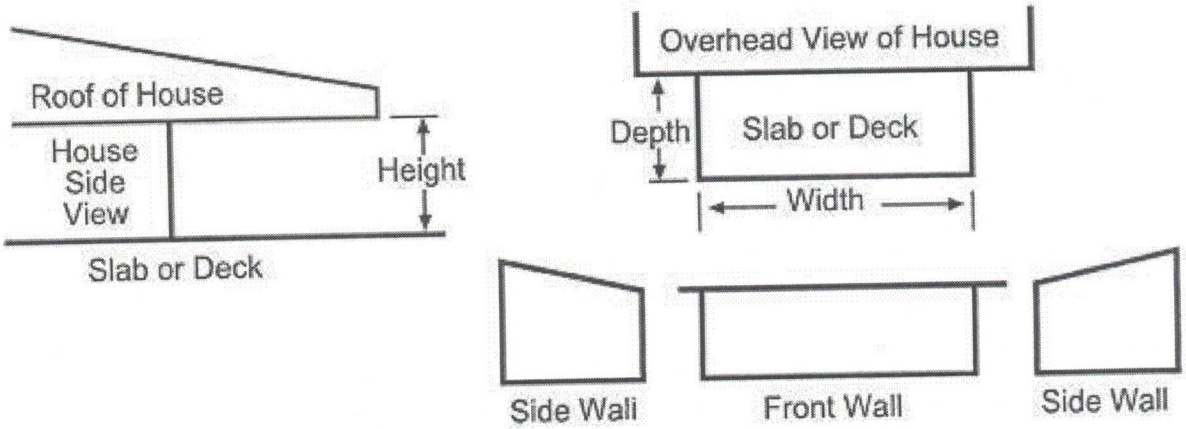


On diagram below:

- Label material as in example
- Fill in dimensions of slab or deck and height to overhang

Height_____ Depth_____ Width_____

- Select color of framework _____Bronze _____White
- Draw in location(s) of door(s)
- Mark locations of uprights (spacings should comply with local building codes)
- Draw in kickplate rail (optional)



MATERIAL LIST AND JOB COST FOR WALLS

	AMOUNT NEEDED	COST	TOTAL
FRONT WALL			
1" x 2" Framework 8'			
1" x 2" Framework 10'			
2" x 2" Framework 8'			
2" x 2" Framework 10'			
2" x 3" Framework 8'			
ONE SIDE WALL			
1" x 2" Framework 8'			
1" x 2" Framework 10'			
2" x 2" Framework 8'			
2" x 2" Framework 10'			
2" x 3" Framework 8'			
OTHER SIDE WALL			
1" x 2" Framework 8'			
1" x 2" Framework 10'			
2" x 2" Framework 8'			
2" x 2" Framework 10'			
2" x 3" Framework 8'			
Castle Clips: approx. 2 per kickplate rail section			
Screen: approx. sq. ftg. of walls less kickplate			
Flat Spline: approx. linear footage of framework			
Caulking: approx. 1 tube per room			
Angle Anchors: 4 per front wall upright			
Quicksets (25/bag): approx. every 2' of linear foot of room walls and every 2' on walls against concrete house			
#10 x 2" screws (25/bag): approx. every foot of corner uprights and every 2' on walls against wood house			
#8 x 9"16" self-drilling screws (100/bag): approx. 4 per angle anchor; 6 per castle clip, 2 per linear foot of kickplate coil and 20 per door and adapter			
Prehung screen door and accessories			
Closer kit adapter – 1 per door			
16" x .024 kickplate coil: approx. linear footage of room walls less width of door			
Kickplate channel: approx. 1 piece per 4' of 16" kickplate coil			

Approx. Job Cost (Walls) _____

SUGGESTED MATERIAL LIST – MOST COMMON SIZES
WALLS

Side Wall	8'	10'	10'	12'	10'	12'	10'	12'	12'
Front Wall	10'	10'	12'	10'	20'	20'	24'	24'	28'
Side Wall	8'	10'	10'	12'	10'	12'	10'	12'	12'
1"x2"x8'	6	5	7	8	5	6	8	9	6
1"x2"x10'	1	2	1	1	3	3	1	1	4
2"x2"x8'	2	1	3	4	1	2	5	6	7
2"x2"x10'	1	2	1	1	3	3	1	1	1
2"x3"x8'	10	12	12	12	15	15	16	16	17
Castle Clip	12	12	12	14	16	16	16	20	24
Screen (84")	26LF	30LF	32LF	36LF	40LF	44LF	44LF	48LF	52LF
Flat Spline	228'	234'	240'	256'	272'	288'	288'	352'	416'
Caulking	1	1	1	1	1	1	1	1	1
Angle Anchors	9	9	9	9	13	13	17	17	17
Quicksets (25/bag)	1	1	1	1	1	1	1	2	2
#10x2" Screws (25/bag)	1	1	1	1	1	1	1	1	1
#8x9/16" self-drilling screws (100/bag)	2	3	3	3	3	3	3	4	4
Prehung Door	1	1	1	1	1	1	1	1	1
Closer Adapter	1	1	1	1	1	1	1	1	1
16" Kickplate Coil	23'	27'	29'	33'	37'	41'	41'	45'	49'
Kickplate Channel	6	7	8	9	10	11	11	12	13

NOTE: Table is to be used vertically (read downward).

If sidewall is greater than 12', consult a licensed professional engineer.

Section 2

Aluminum Roof Instructions

Important Caution

These instructions are written only as a general guide to the procedures of planning and constructing a screen room enclosure with an aluminum roof. The instructions are engineered to meet the Florida Building Code in most areas of Florida. It also meets the requirements of the International Residential Model Building Code. The reader is cautioned that Building Code and design / construction requirements are different and particular to a given area and **these instructions are not represented to be in compliance with the requirements of any particular building department code.**

Before commencing this project, we recommend that you consult your local building department to determine the particular design, construction and permitting requirements for your particular area. **We assume no liability for the actual design or construction of your project, or for the finished product and we specifically disclaim any express or implied warranty (including any warranties of merchantability or fitness for a particular use).**

COMPONENTS:

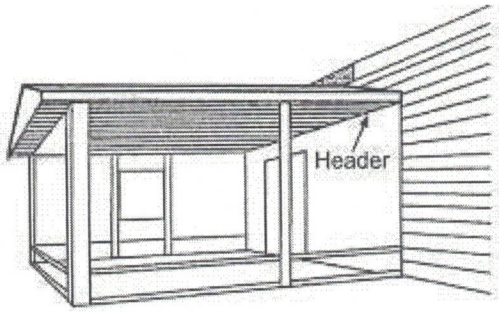
Header
#10 x 3" hex washer head sheet metal screws – weatherproof coated or Quicksets – weatherproof coated
3" Structural roof panels
#8 x 3/4" hex washer head sheet metal screws weatherproof coated with neobond washer
#8 x 9/16" self-drilling hex washer head sheet metal screws – weather proof coated
Gutter
Valance
Gutter brace/strap
Dropouts, downspouts and elbows
Silicone caulking - clear
16" aluminum flashing
2" x 3"x11 7/8" Styrofoam plugs

TOOLS YOU WILL NEED:

Circular saw with plywood blade or hacksaw
Safety goggles
Variable speed drill, bits and ¼" and 5/16" drivers
4' carpenter's level
Tape measure
Tin snips
Pop rivet gun
Caulking gun

NOW, LET'S GET STARTED...

NOTE:
Before beginning work, consult instructions covering screen room walls (Section 1). Throughout installation, make certain that all aspects of the project are plumb and level, as well as square.

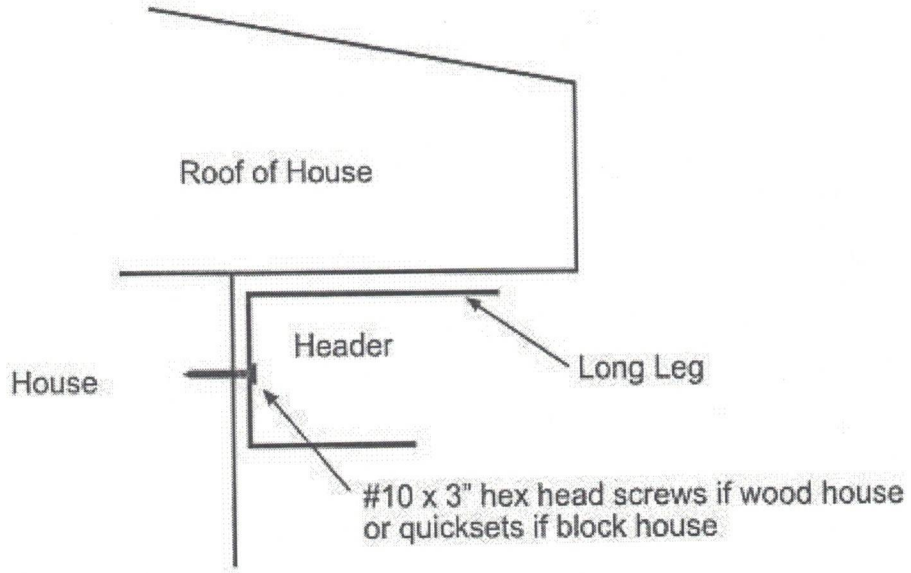


1. Attaching header

Having completed installation instructions "Screen Room Walls – When Using and Aluminum Roof ", you are now ready to attach the header to the house. Remember, you have allowed for a 6" side overhang for the roof (12" wider than the width of the screen room). The header against the house and the 2" x 3" front wall header also needs to be 12" wider than the width of the screen room.

DIRECTLY TO HOUSE:

Attach directly to house by centering header on top of the side walls with the long leg up. Caulk along back of header to prevent leaks. If needed, header may be spliced by notching at seam and sliding together for a better fit. If house is a wood structure, fasten by using #10 x 3" hex washer head screws every 12" on center. On concrete block walls, drill ¼" holes with a masonry bit 12" on center and fasten with quickset masonry anchors.

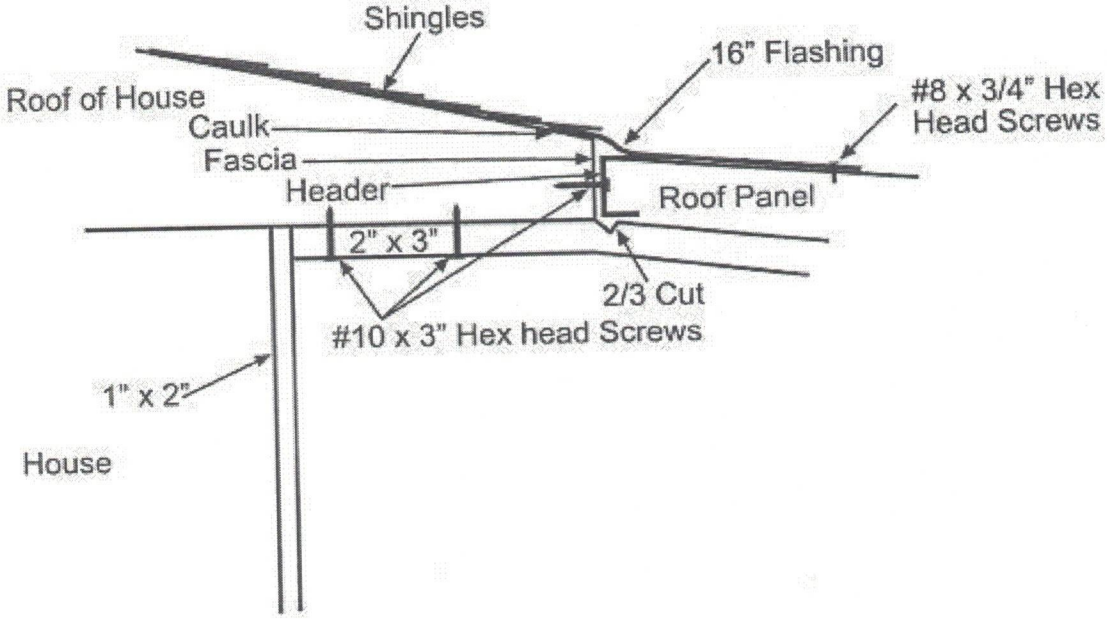


(Figure 1A)

DIRECTLY TO FASCIA (Optional)

To attach directly to fascia, various adjustments need to be made. Directly below the fascia, the 2" x 3" header of the side wall needs to be cut two thirds down so it will bend and conform to the pitch of the roof. It can then be fastened into the overhang with #10 x 3" hex washer head screws. Center header on top of the side walls with the long leg up. Caulk along the back of header to prevent leads. If needed, header may be spliced by notching at seam and sliding together for a better fit. Fasten by using #10 x 3" hex washer head screws every 12" on center.

After attaching the roof panels, the critical area where the header meets the fascia needs to be protected to prevent leads. This can be done by installing 16" aluminum flashing under the first row of shingles, caulking the top of the flashing and attaching the other end of the flashing to the roof panels with #8 x ¾" hex head screws and caulking the heads.

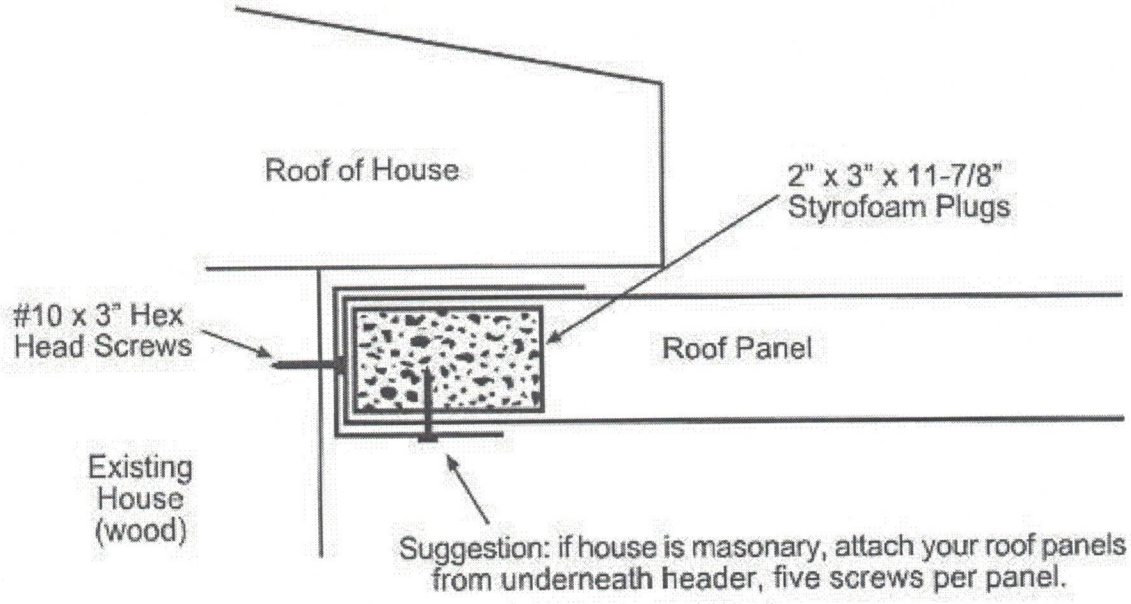


(Figure 1B)

2. ORDERING AND INSTALLING ROOF PANELS

When ordering 3" structural roof panels, order 12" longer than the distance to the outside of the front wall to provide a 12" overhang. Also, as noted previously, provide a minimum 6" side overhang.

Set an end roof panel in place making sure it is square with the house. Screw the panel through the boxed end into the header using five #8 x 3/4" hex head screws. Caulk area where the screws have penetrated pans. You may want to place optional Styrofoam plugs at this point to prevent water from being blown into this area (Figure 2).

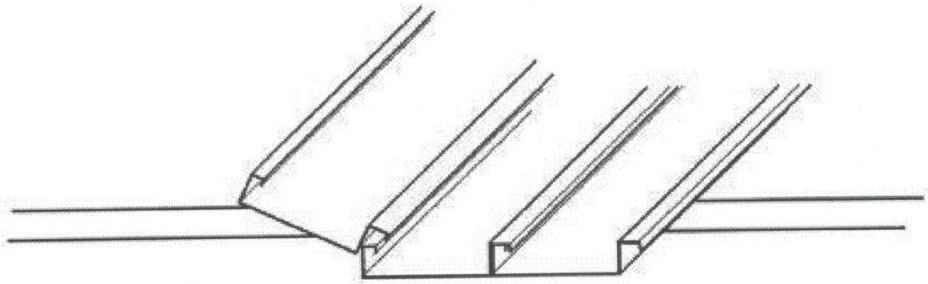


(Figure 2)

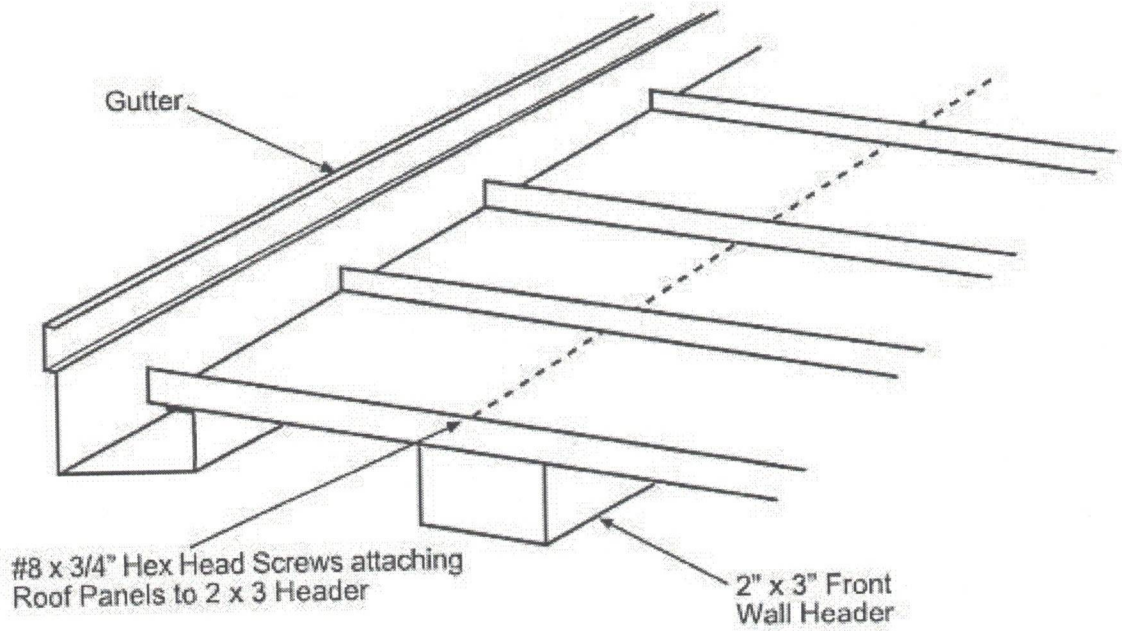
3. INSTALLING ROOF PANELS

Panels will slide easily into position as shown in Figure 3 when panel B is tilted upward slightly. Make certain that every panel is pushed tightly against the next so as to prevent gaps seen from under the roof.

The outside end of roof panel is screwed into the top of the 2" x 3" front wall header (see Figure 4) using five #8 x ¾" hex head screws with neobond washers per panel. Continue this installation until all roof panels are in place. Panels will roll and lock into place. Caulk over head of each screw when installation is complete.



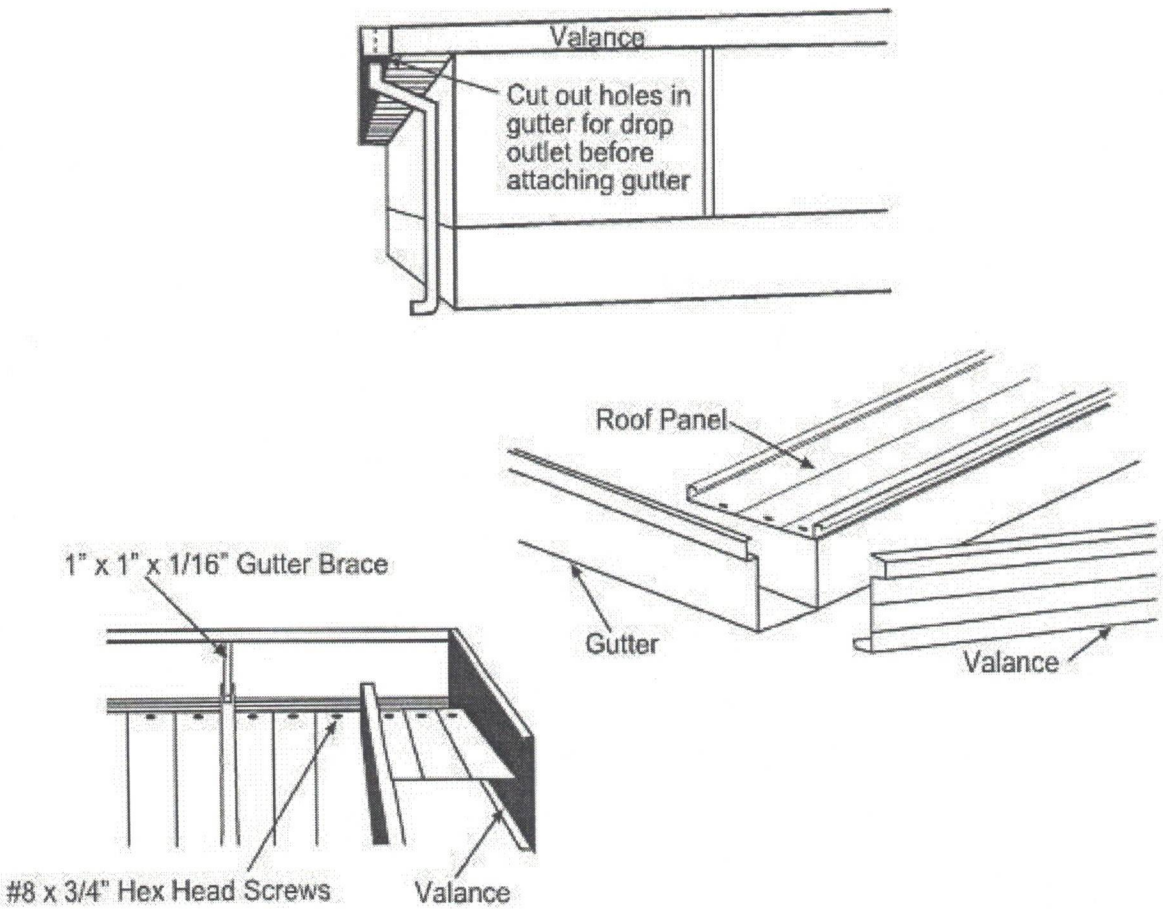
(Figure3)



(Figure 4)

4. COMPLETING THE JOB WITH INSTALLATION OF GUTTER, DOWNSPOUTS AND VALANCE (Optional)

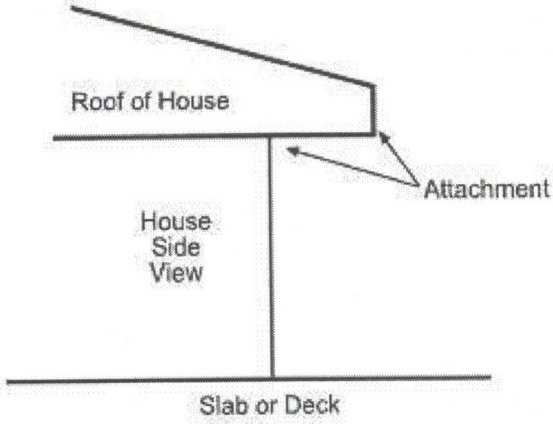
After installing roof panels, it will be time to install the gutter and valance (Figure 5). Measure the length of the roof along the front wall and cut the gutter to the same length. Locate where the downspouts will go and cut a hole in the bottom of the gutter and pop rivet the drop outlet in place. Screw the gutter onto the roof panels using #8 x ¾" hex head screws, three screws per panel. Screw will go through panel and lip on gutter. Attach a 1" x 1" x 1/16" gutter brace every four panels. The gutter brace is used to ensure a straight face on the gutter. The gutter may be spliced by notching at an end, overlapping and caulking seam.

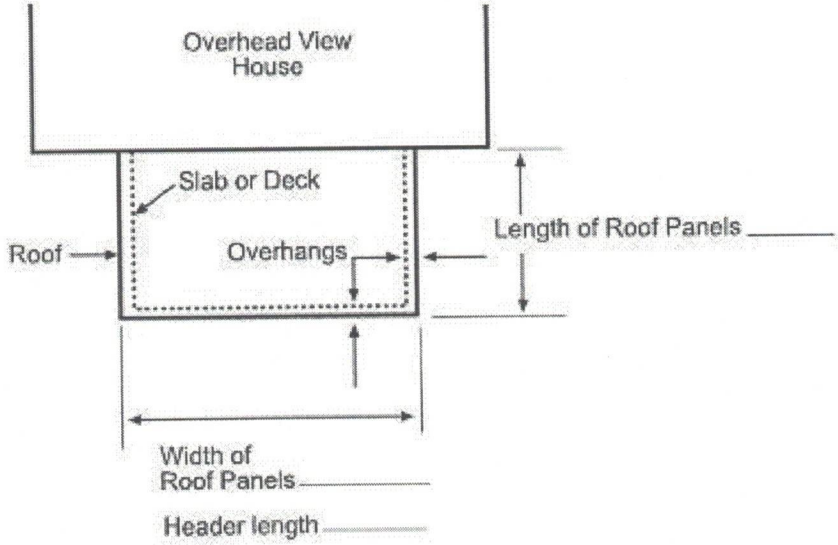


(Figure 5)

Measure the distance from the header at the house to the outside face of the gutter. Valance caps end of gutter. Attach valance through lip to side of roof panels. Caulk where valance and gutter meet. Pop rivet elbows to drop outlet and downspout at elbow to complete installation.

ESTIMATING GUIDE FOR ALUMINUM ROOF





ON DIAGRAM:

Locate where the header and roof will attach to the house
Fill in length of roof panels (include overhang at front wall)
Fill in width of roof (include overhang on both sides)
Fill in length of header (same as width of roof)
Gutter: Same as width of roof
Valance: 6" longer than length of roof panels, both sides

Options:

Gutter _____ feet Valance _____ pcs _____ feet

MATERIAL LIST AND JOB COST FOR ROOF

	AMOUNT NEEDED	COST	TOTAL
Roof panels			
Header			
#10 x 3" screws (25/bag) for every 1' against wood house or fascia OR Quicksets (25/bag) every 1' against concrete house			
#8 x ¾" screws with neobond washer (100/bag) 6 per roof panel, 3 per roof panel into gutter, every 2' in flashing coil			
Silicone caulking: 3 to 5 tubes per roof, cover all screws			
Styrofoam plugs: 1 per roof panel			
Gutter			
Valance			
Gutter brace: 1 for every 3 roof panels			
Dropouts: 1 per down spout			
Downspouts: 1 or 2 per room			
Elbows: 3 per downspout			
#8 x 9/16" self-drilling screws: 4 per elbow			
16" Aluminum flashing coil			

Approx. Job Cost (Roof) _____

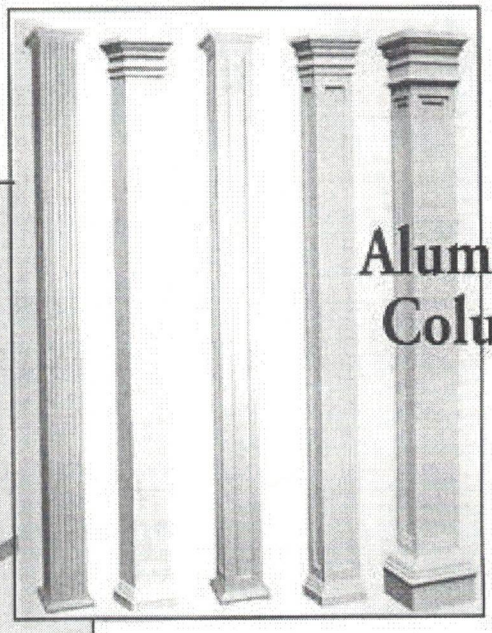
SUGGESTED MATERIAL LIST – MOST COMMON SIZES
ROOF

# Panel (width)	12	12	14	14	22	22	26	26	30
Length	9'	11'	11'	13'	11'	13'	11'	13'	13'
Header	12'	12'	14'	14'	22'	22'	26'	26'	30'
#10 x 3" screws (25/bag) or Quicksets (25/bag)	1	1	1	1	1	1	1	1	1
#8 x ¾" Neobond (100/bag)	1	1	1	1	2	2	2	2	2
Silicone caulk	3	3	3	3	4	4	4	4	5
Styrofoam plugs	12	12	14	14	22	22	26	26	30
Gutter	12'	12'	14'	14'	22'	22'	26'	26'	30'
Valance	19'	23'	23'	27'	23'	27'	23'	27'	27'
Gutter brace	4	4	5	5	8	8	9	9	10
Dropout	1	1	1	1	1	1	2	2	2
Downspout	1	1	1	1	1	1	2	2	2
Pipe band	2	2	2	2	2	2	4	4	4
#8 x 9/16" self-drilling screws (100/bag)	1	1	1	1	1	1	1	1	1
16" Flashing coil	12'	12'	14'	14'	22'	22'	26'	26'	30'

NOTE: Table is to be used vertically (read downward).

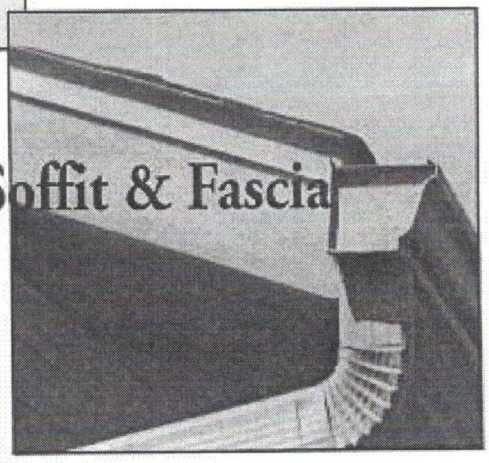
If sidewall is greater than 12', consult a licensed professional engineer.

Also Available

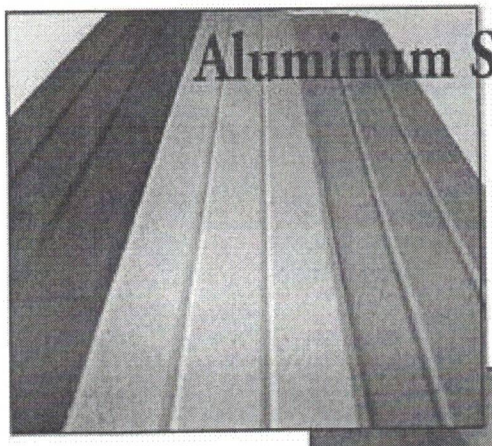


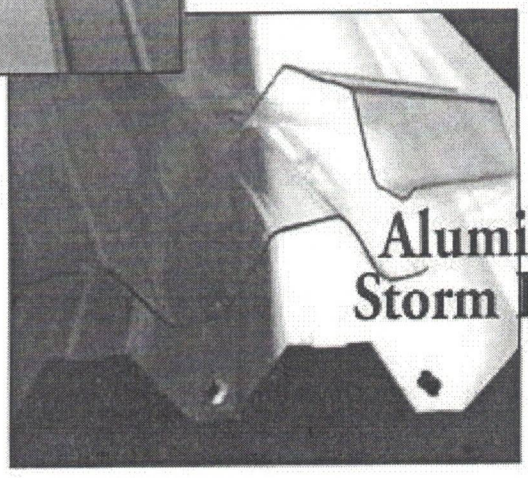
Aluminum Columns

Aluminum Window Awnings



Aluminum Soffit & Fascia





Aluminum Storm Panels