

City of Portland, Maine - Building or Use Permit Application
 389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

PERMIT ISSUED		Permit No: 02-0017	Issue Date: JAN 16 2002	CBL: 134 D008001
Location of Construction: 94 Best St	Owner Name: Rowe Howard A Jr &	Owner Address: 94 Best St CITY OF PORTLAND		Phone: 207-773-4372
Business Name: n/a	Contractor Name: Winter Green Solariums	Contractor Address: 536 Riverside Street Portland		Phone: 2077973778
Lessee/Buyer's Name n/a	Phone: n/a	Permit Type: Additions - Dwellings		Zone: R5

Past Use: Single Family	Proposed Use: Single Family / Replace & Build new 20' x 18' deck with model 230 patio room covering deck.
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Permit Fee: \$282.00	Cost of Work: \$36,429.00	CEO District: 3
FIRE DEPT: <input type="checkbox"/> Approved <input type="checkbox"/> Denied <i>N/A</i>	INSPECTION: Use Group: <i>R3</i> Type: <i>SB</i> <i>Boca 99</i>	
Signature: <i>N/A</i>	Signature: <i>DC</i>	

Proposed Project Description:
Build new 20' x 18' deck with patio room covering deck.

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

Action: Approved Approved w/Conditions Denied

Signature: *N/A* Date:

Permit Taken By: gg	Date Applied For: 01/07/2002	Zoning Approval	
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1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. 2. Building permits do not include plumbing, septic or electrical work. 3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..	Special Zone or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>1/15/02 OK</i>	Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date: <i>N/A</i>	Historic Preservation <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>1/15/02 DC</i>
	<i>Existing Deck Footprint</i>		

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

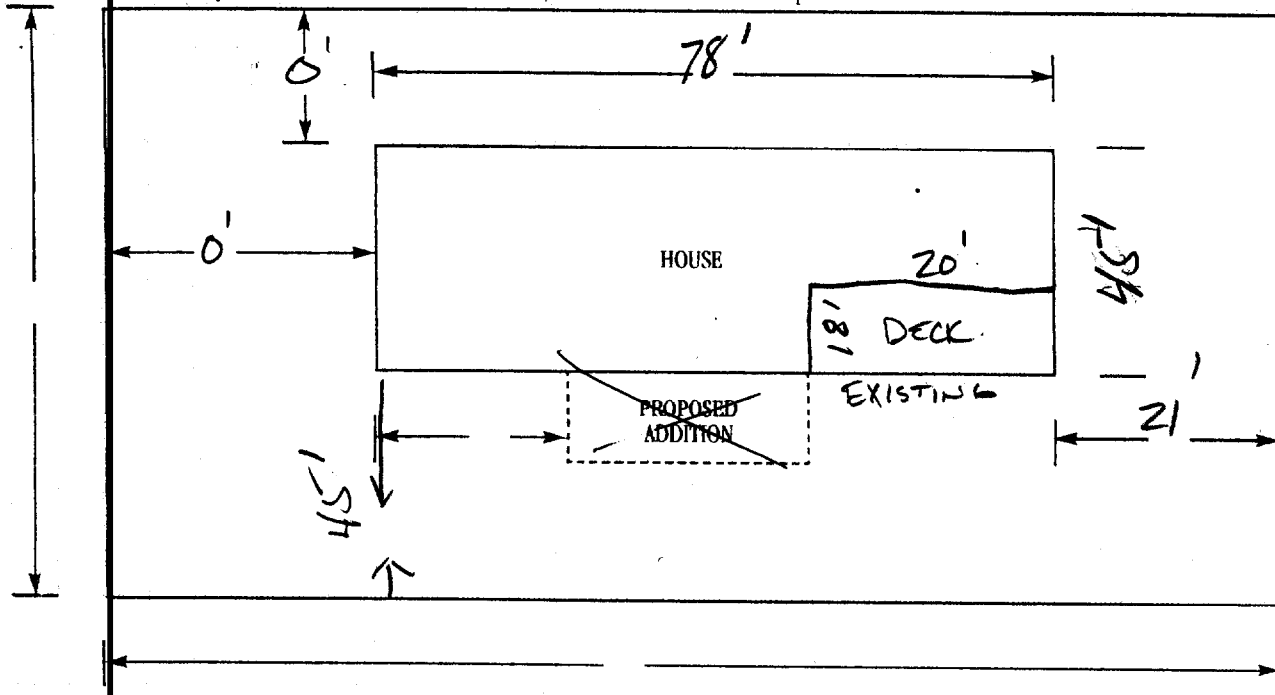
SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

SITE SURVEY

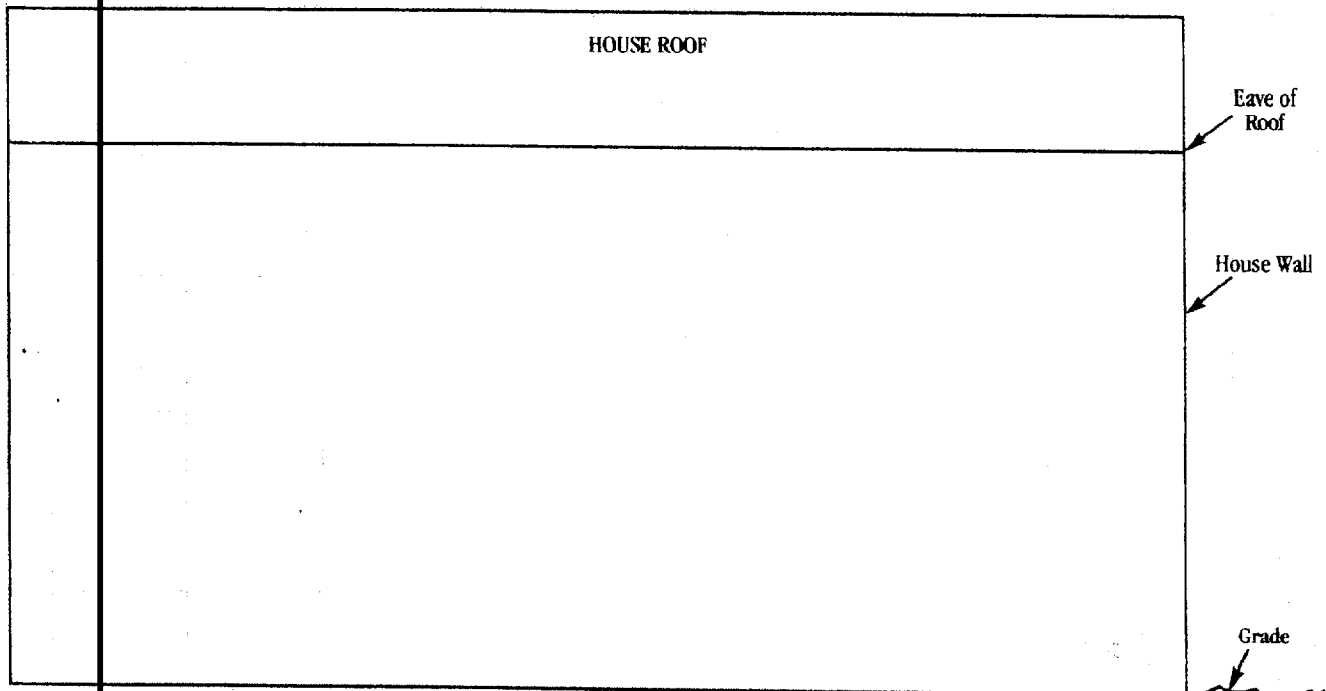
SCALE: 1 BOX = ___ FEET

(OR PROVIDE HOMEOWNER'S SITE SURVEY WITH SEAL FOR PERMIT APPLICATION)

If site survey is not available from homeowner, all measurements are required below.



HOUSE WALL ELEVATION



NOTE: Site window, door and chimney locations and dimensions and then site sunroom against house wall elevation.

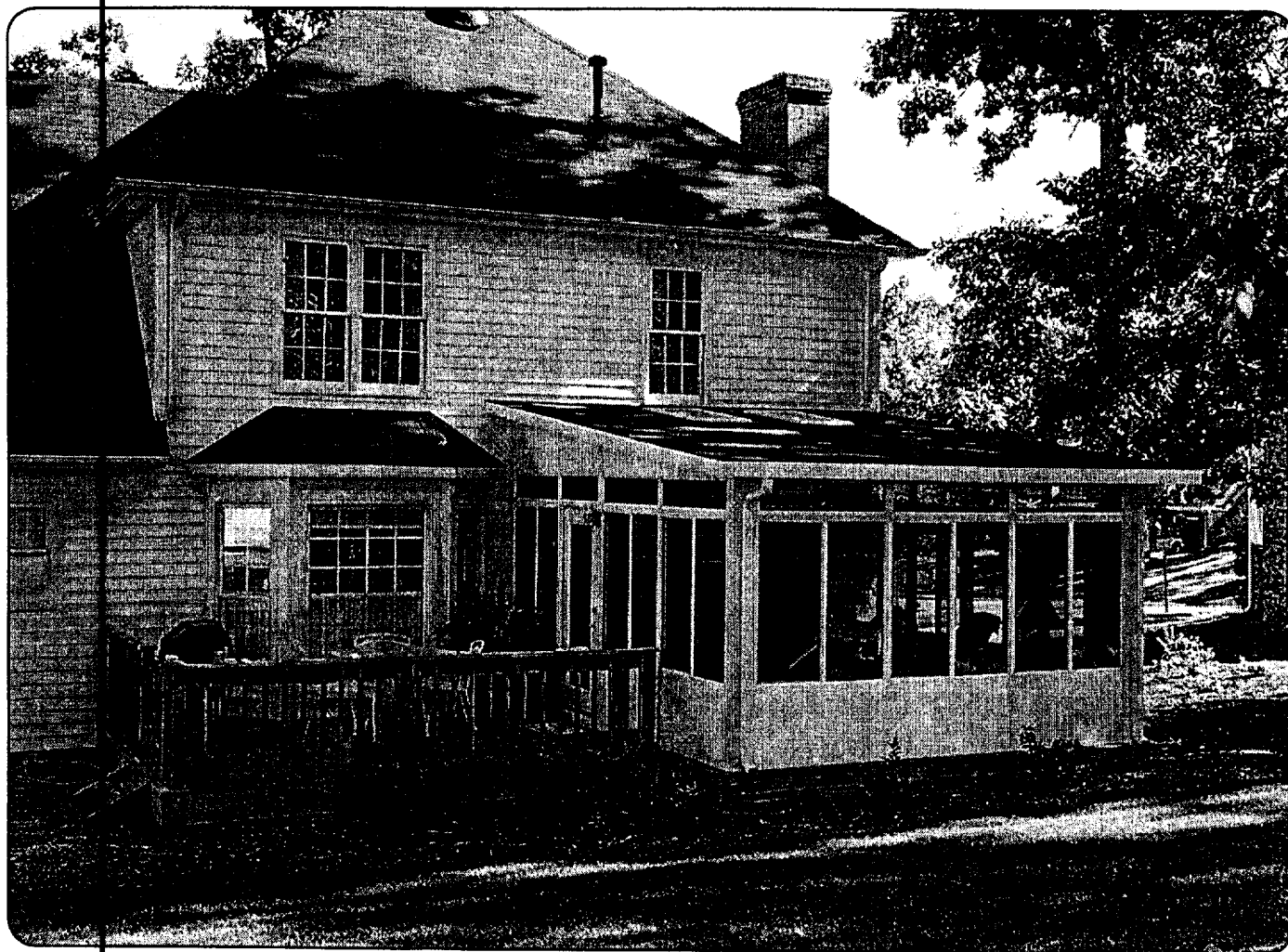


**FOUR SEASONS
SUNROOMS**

Four Seasons Sunrooms

Series 230 Lean-To Patio Shade Room

Assembly & Installation Manual



*Four Seasons Sunrooms, 5005 Veterans Memorial Hwy., Holbrook, NY 11741
1-800-FOUR-SEASONS (1-800-368-7732)*

*Manual P/N: PN230-MANSR
Effective Date: 12/99*



INTRODUCTION

*Thank you for purchasing a **Four Seasons® SERIES 230 LEAN-TO PATIO SHADE ROOM**. Please read the enclosed instructions carefully and thoroughly before assembling and installing your **Patio Room**. Pay close attention to all the drawings and details which have been designed to assist you with your installation.*

*Four Seasons® would enjoy seeing before and after photographs of your **Patio Room** installation. For best results we recommend using Kodachrome 64, 35mm slide film. When your installation is complete, please send your slides to the attention of our "**Series 230 - Product Manager**".*

*Should you need advice or technical assistance in assembling your **Patio Room**, do not hesitate to call your local **Four Seasons** sunroom location from whom you purchased your **Series 230 Patio Room**.*

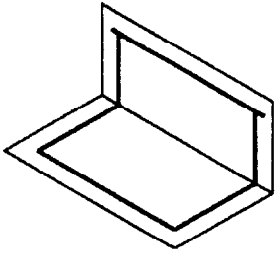
Sincerely,

Four Seasons Solar Products Corp.®

INSTALLATION OVERVIEW

STEP I

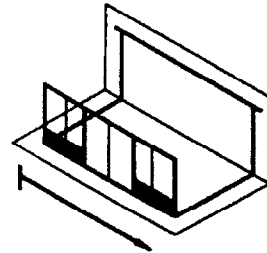
LAYOUT



1. Miter sills, flash, install.
2. Cut ridge, flash, install.
3. Cut wall extrusions, flash, install.

STEP II

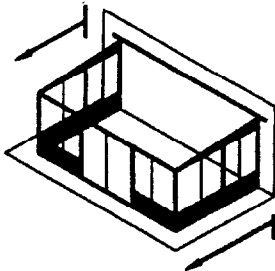
FRONT WALL INSTALLATION



1. Cut all front wall vertical extrusions.
2. Cut end fill panels (if required).
3. Built front wall.

STEP III

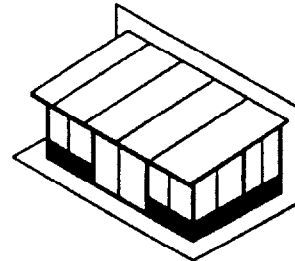
GABLE END WALL(S)



1. Build gable walls.
2. Establish vertical cut height for extrusions.
3. Establish and install extrusions and fill panel against house.

STEP IV

ROOF INSTALLATION



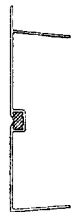
1. Install roof panels.
2. Install gutter, fascia, and downspout.
3. Caulk and seal units as required.

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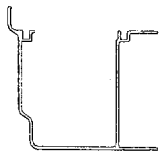
ROOF COMPONENTS

RIDGE EXTRUSION



AW7*RR...

GUTTER



A*7•G...

FASCIA



A*7•AF...

ROOF SCREW & WASHER



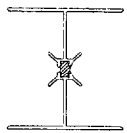
3" = 7M980
4" = 7M981

OPTIONAL THRU-BOLT & NUT AVAIL.



3" = 7M980TB
4" = 7M981TB

ROOF 'H' BEAM
3" OR 4 1/4"



AW7•RB...

STD. ROOF PANEL AVAIL.
3" OR 4 1/4",
1LB. & 1.5LB. FOAM
MAX. LENGTH PNL = 21'



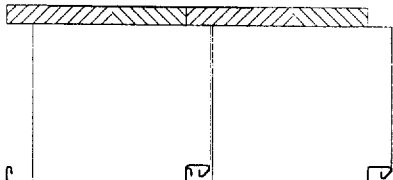
7•R15E244...

ROOF PNL W/FAN BEAM
AVAIL. 3" OR 4 1/4"
1.5 LB. FOAM ONLY
MAX. LENGTH PNL = 21'



7•E15E244...

OSB ROOF PANEL 4 1/4" ONLY
OSB LENGTHS OVER 16'
WILL BE PIECED
MAX. LENGTH PNL = 18'



7*401EM4...

KEY:

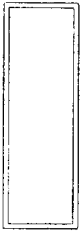
- * = W FOR WHITE, B FOR BRONZE, A FOR SANDTONE
- = 3 FOR 3", 4 FOR 4 1/4"
- ... = LENGTH IN INCHES EXCEPT ROOF PANEL EXPRESSED IN FEET

ALUMINUM BEAM



AW7TB...

STEEL INSERT
(MUST BE PRIMED ON SITE)



CN7144 (20' ONLY)

ALUMINUM POST



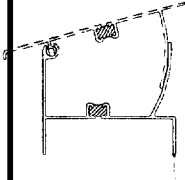
AW7BP132U (11' ONLY)

NOTE:

THESE PARTS ARE USED TYPICALLY IN GREATROOM APPLICATIONS. HOWEVER, THEY MAY BE USED IN THE LEAN-TO WHERE ENGINEERING/LIVE LOAD CONDITIONS NEED TO BE ADDRESSED

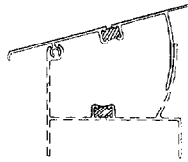
WALL COMPONENTS

ADJUSTABLE EAVE
BOTTOM



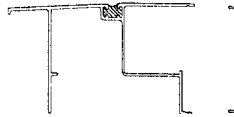
A*7EB...

ADJUSTABLE EAVE
TOP



A*7ET...

ELECTRIC EAVE



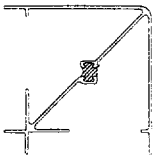
A7*144...

ELECTRIC EAVE
& 'H' COVER



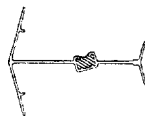
A*5GT...

90 DEG. CORNER



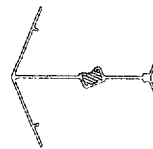
A*7C9...

30 DEG. CORNER



A7*137-...

45 DEG. CORNER



A7*118-...

'L' ANGLE



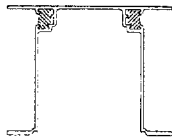
A7*120-222U
(18'-6")

1/2" TEK SCREW



7*150-100
(100 PC. BAG)

ELECTRIC 'H' CHANNEL



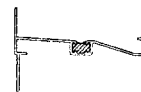
A7*145-...

STANDARD 'H'
CHANNEL



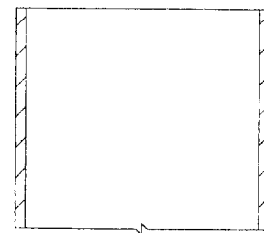
A7*111-...

TRANSITION 'H'



A*7HH...

3" WALL PANEL



ALUM. = 7*3W1E24...
STUCCO = 7K704 (WHITE)
7K760 (BRONZE)
7K773 (SANDTONE)
CENTREX = 7*3W1EC412 (4' x 12')

EXTENDED SILL



A*7XS...

CLOSED SILL



A*7CS...

KEY:

- * = W FOR WHITE, B FOR BRONZE, A FOR SANDTONE
- = 3 FOR 3", 4 FOR 4 1/4"
- ... = LENGTH IN INCHES EXCEPT WALL PANEL EXPRESSED IN FEET

GETTING STARTED

NOTE

The first thing that should be accomplished is to check with your local building department regarding permits, zoning restrictions, and building codes.



There are three basic ways to go about preparing for and installing your Four Seasons 230 Patio Room.

- ✓ 1. **TURN KEY INSTALLATION:** We take care of everything! Design, plans, permits, foundation, site preparation, installation and clean up. *You simply enjoy the results!*
- ✓ 2. **CUSTOMER PARTICIPATION:** You take care of various parts, such as permits and site preparation. *We install the sunroom!*
- ✓ 3. **DO-IT-YOURSELF:**
 - (a) We usually provide an on-site assistant for one or two days to get you started. You finish the job (Instruction Manual included);

OR

- (b) Hire a contractor yourself.

Whichever way you choose to go about your project, please be sure to acquire a detailed copy of your local building codes in order to comply with the rules.

In addition to a step by step demonstration on how to erect your Four Seasons Series 230 Patio Room, this manual will help you work with your contractors intelligently and provide a working knowledge of building techniques.

NOTES

New Concrete Slabs:

It is best to prepare the slab with a 6-mil poly vapor barrier under a layer of sand with wire mesh on top of the sand. Concrete footings may have to be poured prior to pouring the foundation and slab. Please check with your local building department for the required specifications for footings and foundation. (See Pages 9 & 10 for more details).

Pier And Post Decks:

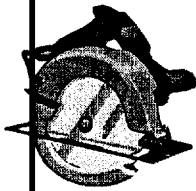
Most existing decks are constructed strong enough to support the additional weight of a Patio Room, although you may be required by your building department to have the deck verified by a local engineer. Please check with your local building department for code requirements.

DELIVERY & TOOL REQUIREMENTS

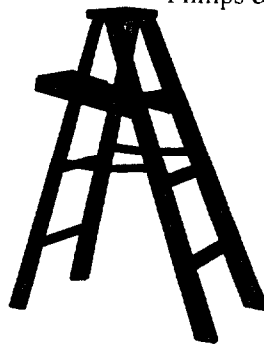
IMPORTANT
Check all boxes for damage; check that the correct number of boxes have been delivered as listed on your freight bill.

- ✓ If any boxes are missing, note this on the freight bill (i.e. received two boxes short. etc.). If there is any physical damage, fully describe the damage on the freight bill.
- ✓ Carefully unload all boxes and store them in a safe location. Just prior to installation, carefully unpack and inspect windows for concealed damage. Exercise extreme care and attention. Take the sliding sashes and screens out of the windows. They will be much lighter while moving them around and also while installing them. The screens are delicate so it is wise to store them, and then install them at the very end of the project. Also take out the shipping blocks located at the bottom of the sliding window sash at this time.
- ✓ Report any concealed damage to the Freight Company.
- ✓ The codes found on your shipping order paperwork will correspond with the codes on the boxes.

Tool Requirements



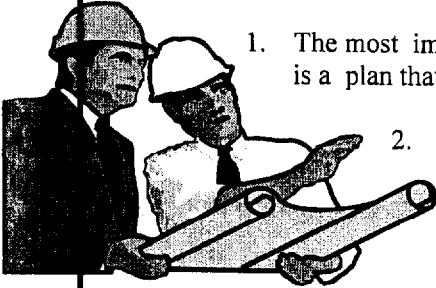
- Tape Measure
- Saw Horses
- 4' Level
- Circular Saw (preferable 14")
- Chalk Line
- Plumb Bob & Line
- Metal Snips
- Safety Glasses
- Power Miter Box Saw



- Aluminum Break
- Cordless Drill/Screw Gun
- Framing Square
- Philips & Square Head Drivers for Screw Gun
- Ladders
- Caulking Gun
- Rubber Mallet
- Hammer
- Utility Knife



PLANNING YOUR INSTALLATION



1. The most important element in planning your installation is a scale drawing of the site. This is a plan that includes all of the pertinent construction dimensions.
2. Provide all information requested on **Pages 6, 7, and 8**.
3. One of the superior aspects of the 230 Patio Room is that it can be adapted to almost any job site condition. The roof pitch can vary which offers plenty of versatility to adapt to almost any ridge height.

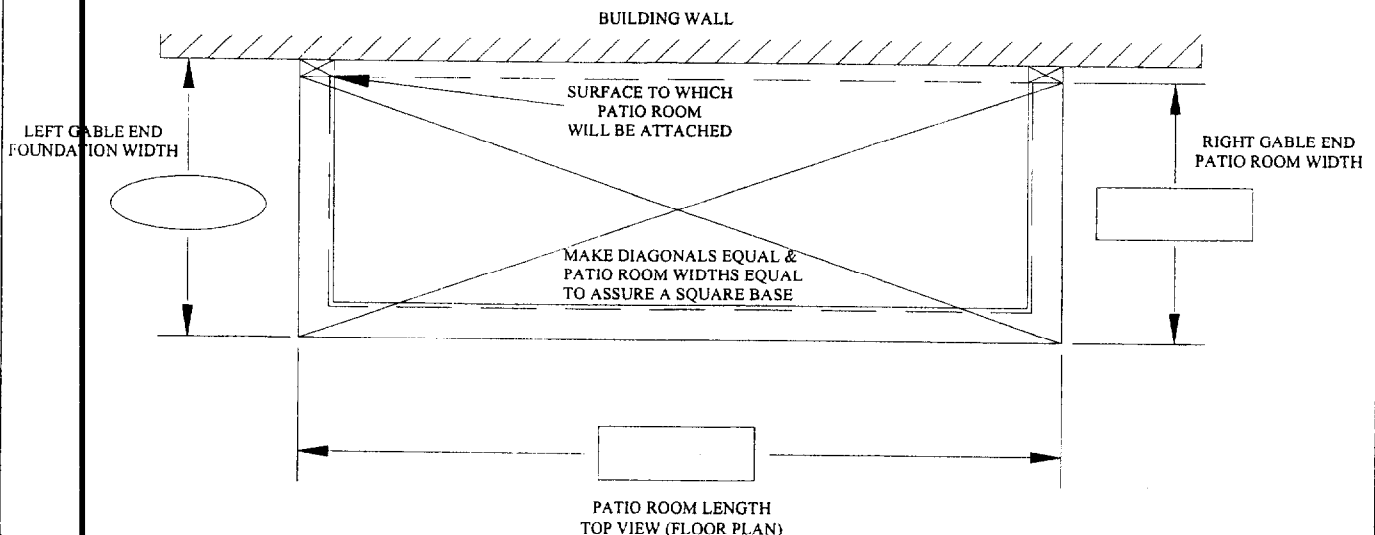
NOTE

When installing a lean-to style unit with a pitch greater than 3" in 12" you should consider using our optional adjustable eave. You will also be required to shim the ridge to accommodate for the steeper angle). The front length is infinite and the projection can be up to 20' utilizing our longest 21' roof panels. (Live loads for your area must be taken into consideration and additional support may be required).

4. Before filling out **Page 8** you must understand the following. Ridge height is to the top of the ridge, inclusive of the 1" flashing tab. Eave height is to the top of the front vertical wall (see **Pages 20 & 21**). The two most typical front height/layouts used are on **Page 20**. Section J-J is 94" high and Section K-K is 82 3/8" high. It is your choice whether or not you want glass or solid above or below the window(s).

KEY

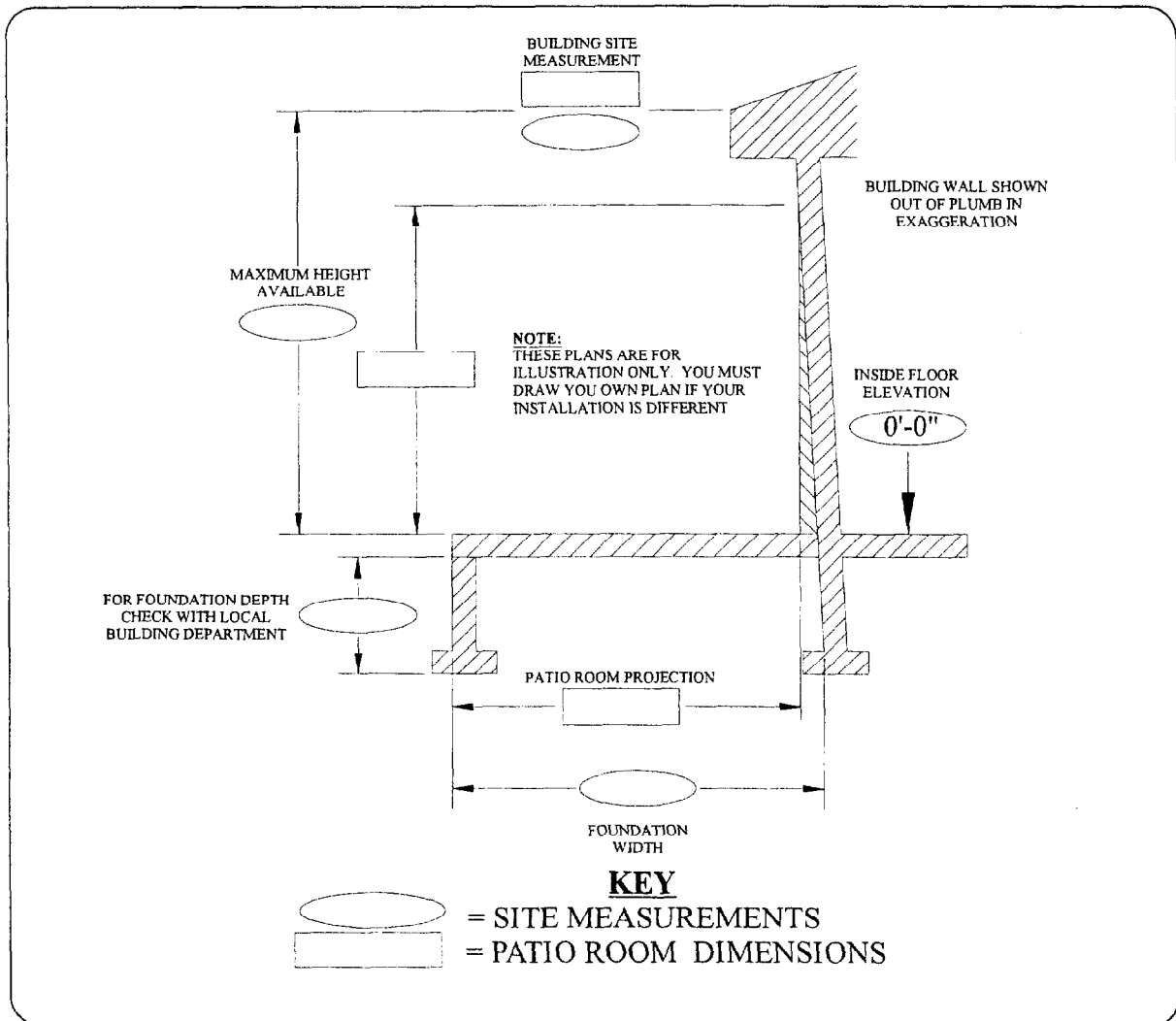
-  = SITE MEASUREMENTS
-  = PATIO ROOM DIMENSIONS



PLANNING YOUR INSTALLATION (Cont'd)

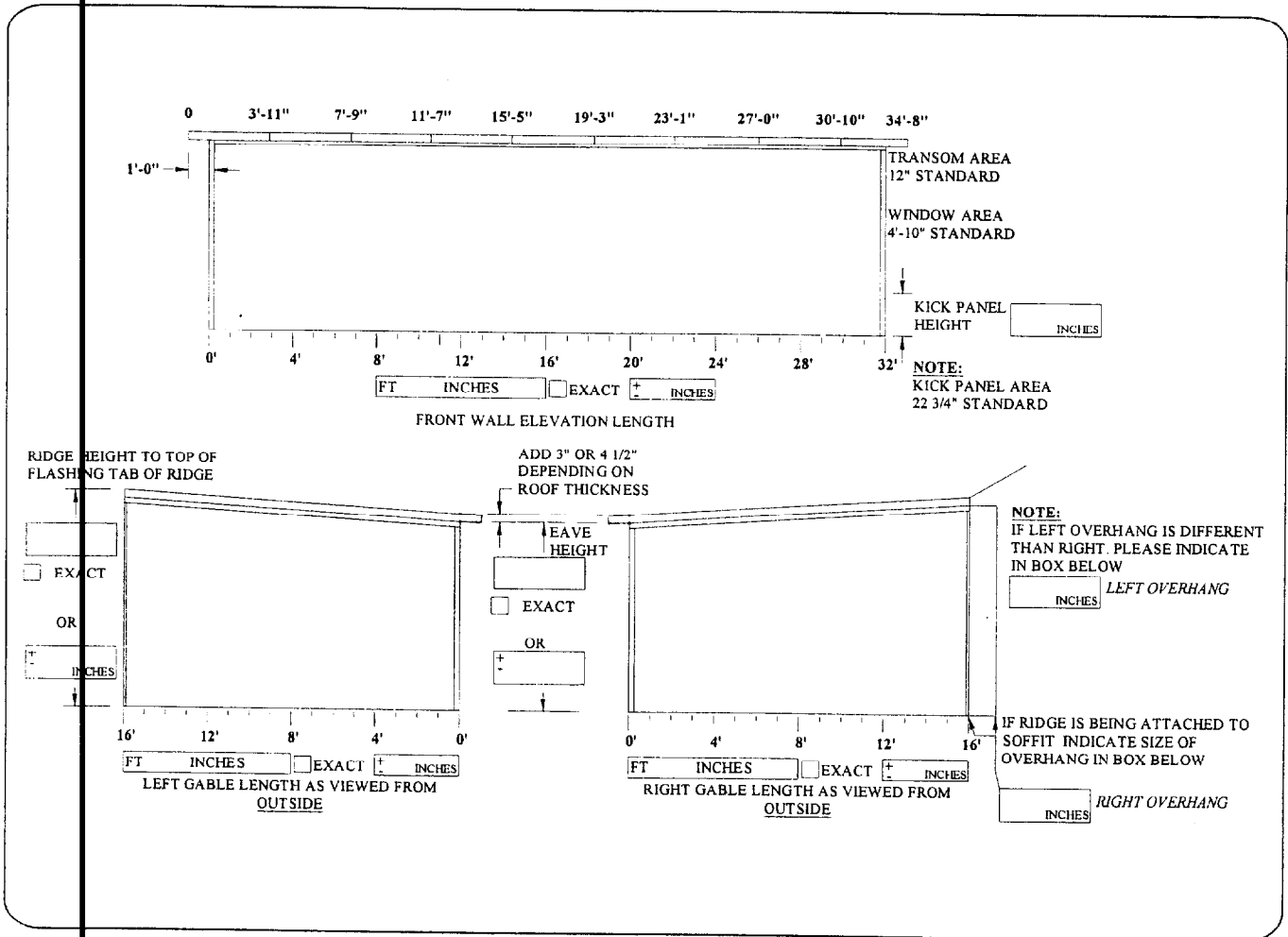
5. Next determine the interior floor level of the house. Once the interior floor level is determined, all other elevations can be determined by utilizing the illustration below as a guide. Determine whether you intend to step down into the Patio Room from the house, or have the new Patio Room floor level match the existing interior floor level. If you intend to step down into your new Patio Room it is important to note that each step must have a legal rise usually between 6 1/2" – 8". Please check with your local building department. To locate the interior floor elevation you must use a point of reference. If you have a door in the wall that the Patio Room is being attached to, just open the door calculate and mark the exterior wall for interior floor height. If there is no door in the wall, take a measurement inside the house at a window. Use something as a point of reference such as the top of a horizontal window sash. Take the dimension from the top of the floor to the reference point. Next go to the exterior, measure down from your point of reference, and mark the exterior wall. This represents the top of the interior finished floor. Deduct the thickness of the patio room's finish flooring material (example 3/4" oak flooring) to determine the height of your sub-floor. Mark that height accordingly.

6. The projection of the unit is measured from the house wall/point of attachment as long as the wall is plumb. For illustrative purposes, the vertical wall shown below is out of plumb in exaggeration. In most cases you can compensate for this by cutting the solid fill panel provided with the Patio Room on a taper.



PLANNING YOUR INSTALLATION (Cont'd)

7. As an aid in planing your layout, mark the locations of any door(s) and or windows on the elevation plans below. Be careful not to overload any wall(s) with more components than will fit. Refer to **Pages 6 & 7**, if necessary. Once you have completed the elevation plans below, you will have all the information necessary for the construction of your Patio Room. You also may be able to use a copy of these plans to obtain your building permit.



SITE PREPARATION

I. Foundation & Concrete Slab

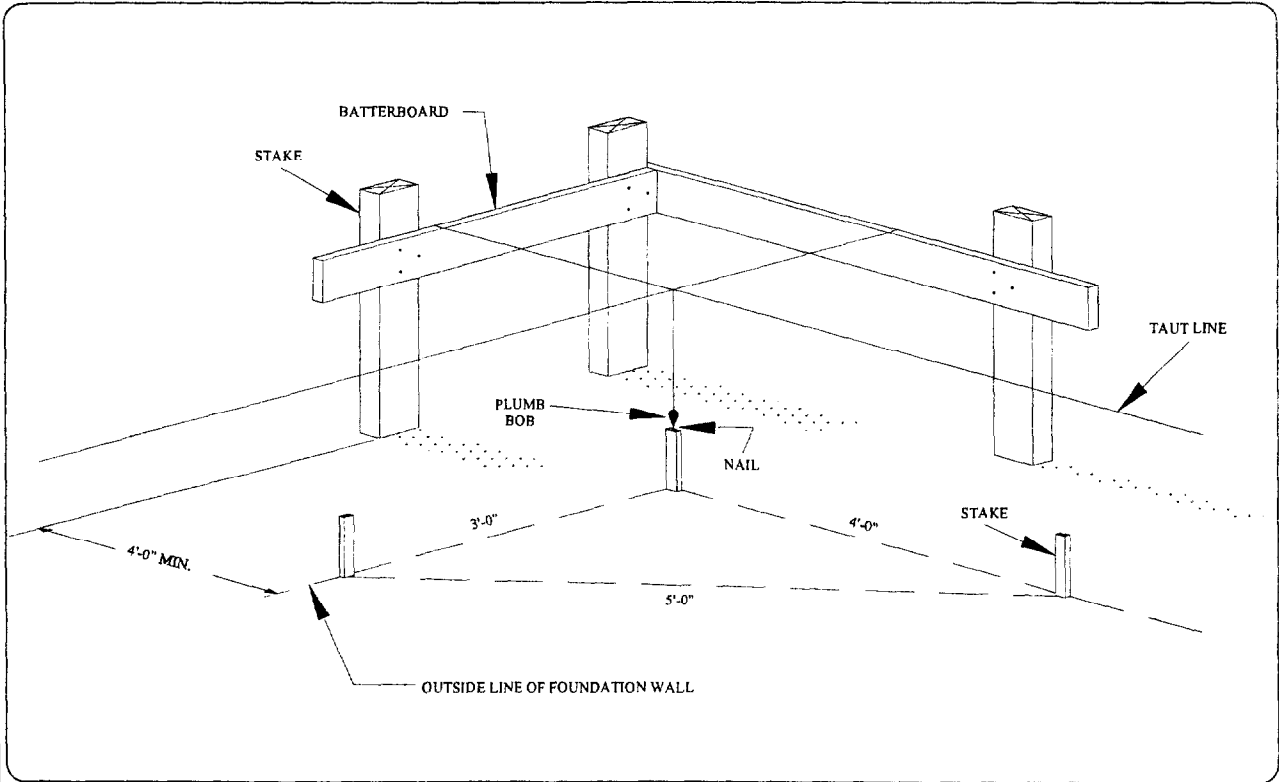
In order to install the Patio Room against the existing structure, a reasonably smooth plumb vertical surface is required. In many instances, a smooth brick, block, or wood surface is acceptable. However, rough surfaces such as wood shingles and aluminum siding should be removed down to the sheathing. With a little care and planning you can use a circular saw to cut out only what is needed and avoid unnecessary work.

With the siding removed down to the sheathing (if necessary) the wall(s) must be checked to make sure they are plumb. If the walls are out of plumb you must first mark a plumb reference point and then from that point take your foundation dimensions. Remember when you install your room you will either shim the wall sill to plumb it, or you can cut the solid fill panel provided with your Patio Room at a taper to correct this situation.

Outside foundation lines for the Patio Room are staked out and batter boards erected. The batter boards consist of stakes and horizontal ledgers to identify the foundation grade. String lines are fastened to the batter boards to locate the outside of the foundation. The job site is then excavated and concrete forms are erected utilizing the proper reference dimensions. Remember to check with you local building department regarding code regulations concerning the type and depth of your foundation, footing, and slab if required.



NOTE
Using the 3'-4'-5' triangle method, check and adjust the concrete forms to make sure they are square!



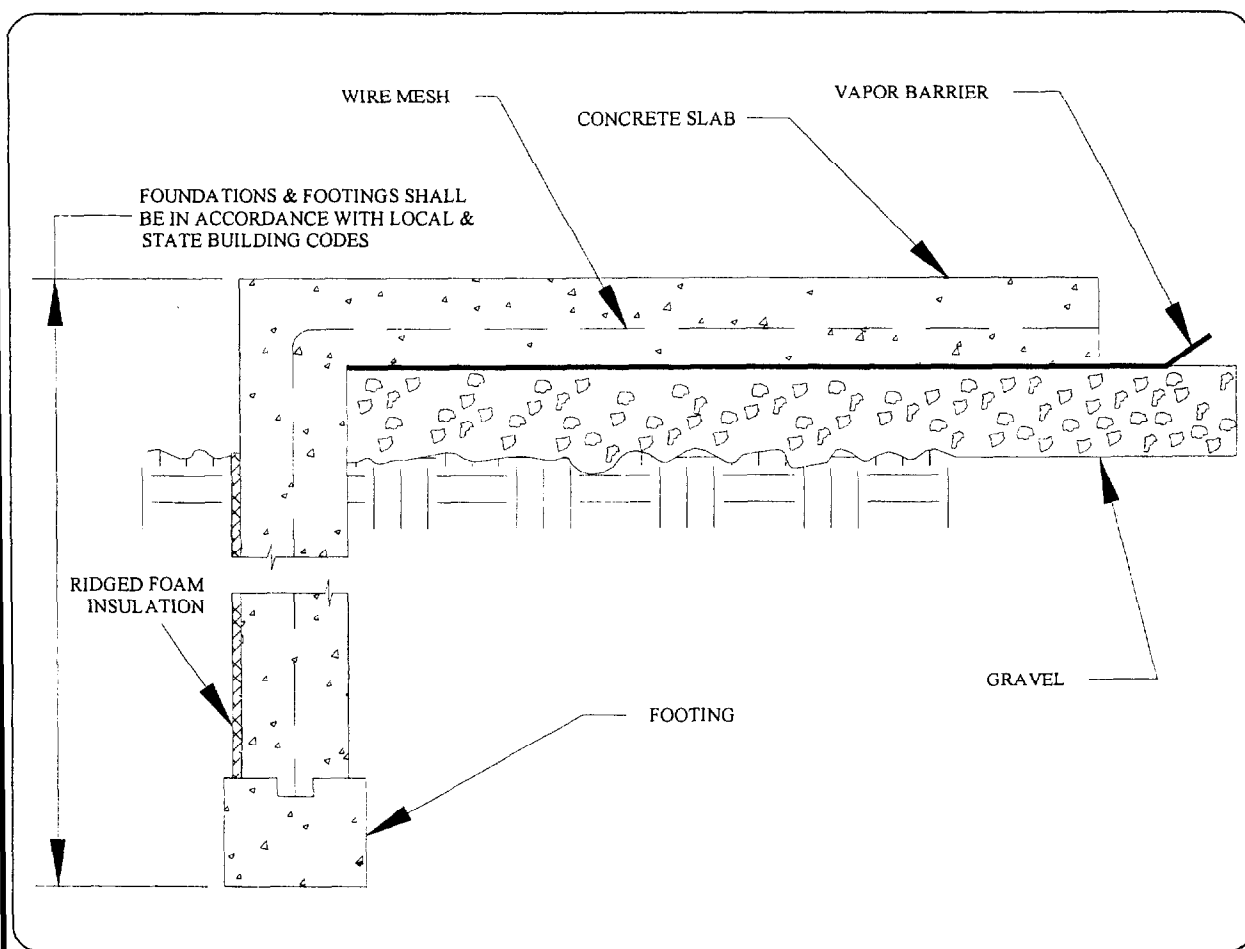
SITE PREPARATION (Cont'd)

I. Foundation & Concrete Slab (Cont'd)

It is recommended that prior to pouring the slab, a vapor barrier consisting of either heavy plastic such as polyethylene, or asphalt sheet, be placed under the concrete slab. The vapor barrier should be strong enough to resist puncturing during the pour. It is also important to use a wire reinforcing mesh in the concrete slab and in some cases the foundation to strengthen the entire slab.

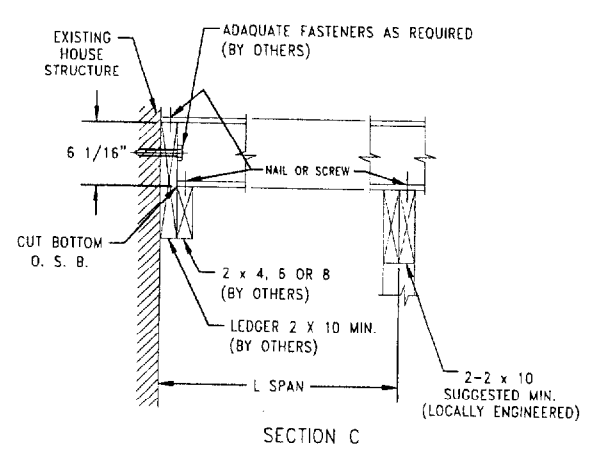
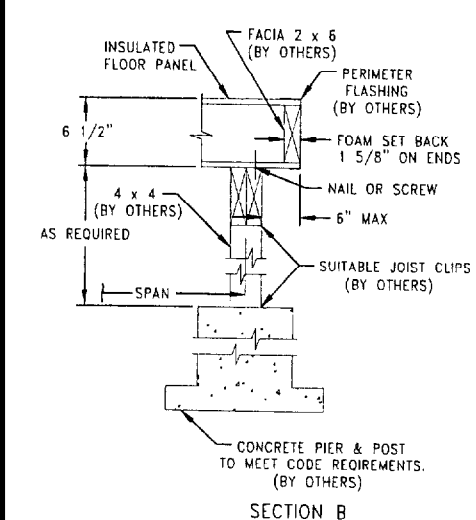
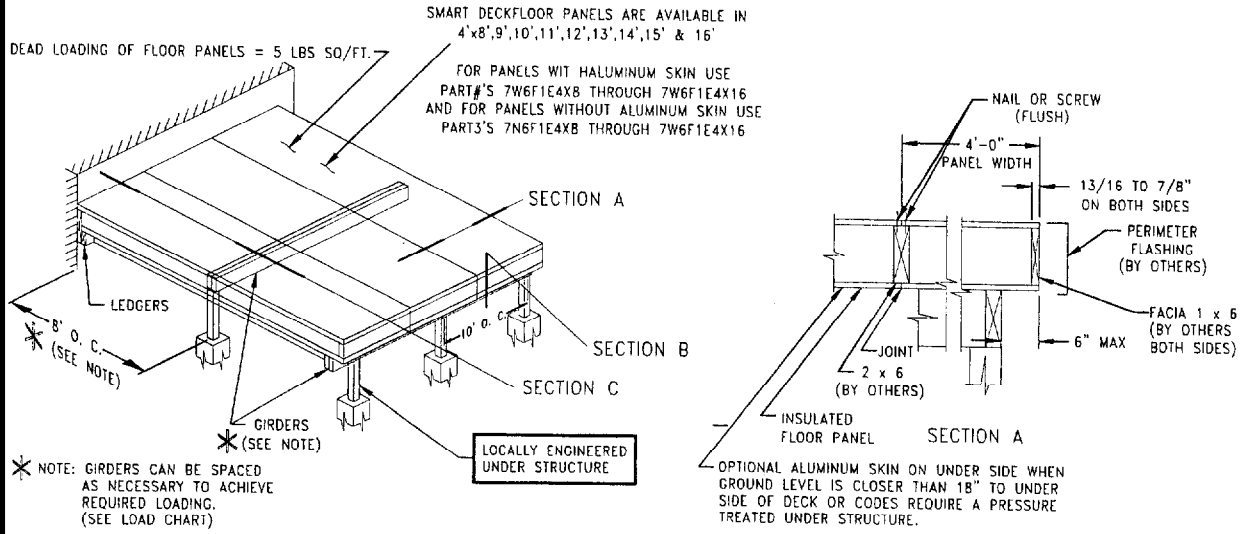
In some states you are required to install a permanent, waterproof, non-absorbent, rigid foam insulation around the entire foundation. Please check with your local building department to see if this is required.

Remember most communities require a building permit. If a permit is required, apply, and acquire one before starting the project! The details shown below are of a typical footing, foundation, and slab construction. Please check with your building department for any special requirements that may be necessary to meet your local building codes.



SITE PREPARATION (Cont'd)

II. Four Seasons SMARTDECK™



PANEL TYPE	SPAN		EFFECTIVE DATE: 10-24-97	
			MAXIMUM ALLOWABLE LIVE LOAD DEFLECTION = L/360	
			PSF	KG/M ²
7/16" OSB 5 5/8" EPS (1LB PER CU/FT) 7/16" OSB	6 FT	1.83M	203	991
	7 FT	2.13M	174	849
	8 FT	2.44M	152	742
	9 FT	2.74M	130	635
	10 FT	3.05M	95	464
	11 FT	3.35M	71	347
	12 FT	3.66M	54	264
	13 FT	3.96M	42	205
	14 FT	4.27M	33	161
	15 FT	4.57M	27	132
	16 FT	4.88M	21	103

STEP 1: SILL FLASHING

It is extremely important on all Four Seasons Patio Rooms that the caulking and flashing details are followed and that the flashing is installed correctly. It is especially important at the sill area. If not done properly it may be difficult to remedy a problem later on. There are many job site conditions that can present problems, but if we follow some of these general rules, leaks will be prevented.

NOTE

- There is no prefabricated sill flashing provided with the Series 230 Patio Rooms.
- All flashing discussed in this section must be fabricated on site by the installer utilizing an aluminum break and coil stock.

IMPORTANT

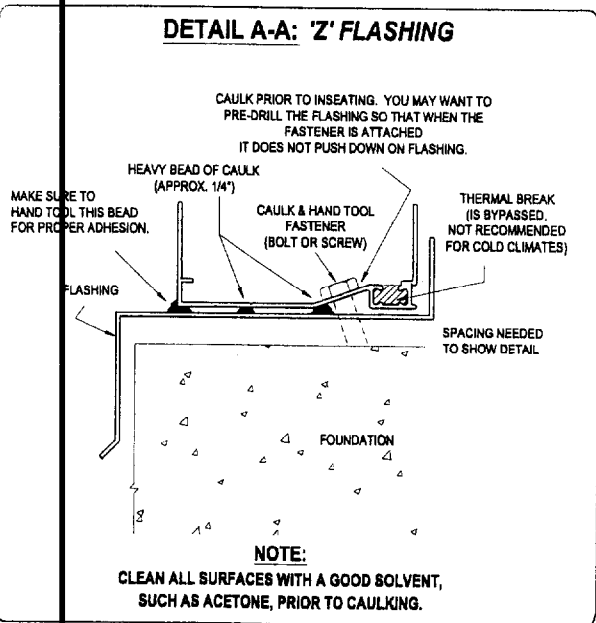
- It is highly recommended that when using caulking, all aluminum surfaces should be cleaned with solvent alcohol prior to applying the silicone caulking.
- Never mix flashing materials of dissimilar metals. Electrolysis may take place over time causing the flashing to deteriorate.

There are many flashing designs that can be used. We have listed below, and have also illustrated two different types of sill flashing, as each job site condition is different. The type of flashing you use is up to you.

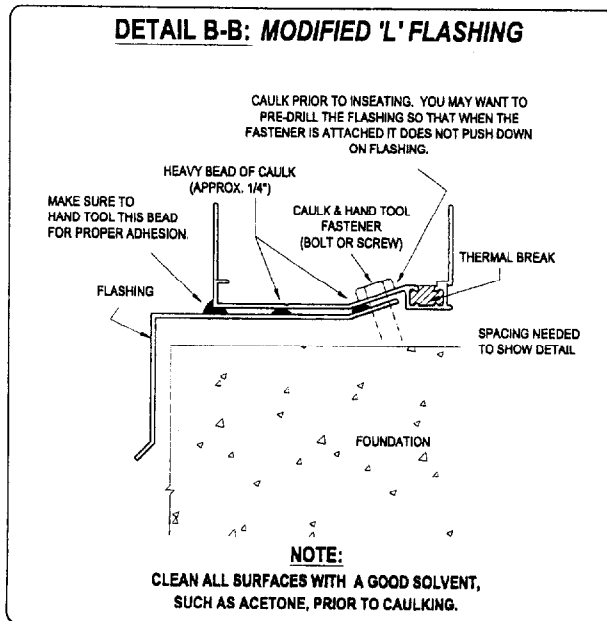
The **“Z” flashing** or “pan” flashing is a popular choice for preventing leaks. It is usually designed with a 3/4” lip that returns at 90 degrees up the back edge of the sill. (See **Detail A-A** below). One problem that may exist with the use of this flashing design is that it will bypass the sills thermal break. This can cause a condensation or frosting problem in colder climates at the sill area.

The **modified “L” flashing design** can provide the best performance of the two choices listed here. This version will provide a slight upward bend just before the thermal break under the sill. Multiple beads of silicone are then used under the sill, and a bead is also applied on the sills outside face where the sill and flashing meet. (See **Detail B-B** below). The caulking bead on the outside edge should be hand tooled to assure adhesion. The sills flashing should never pitch back toward the unit causing water to lay against the sill. If possible a slight pitch away is recommend.

DETAIL A-A: 'Z' FLASHING



DETAIL B-B: MODIFIED 'L' FLASHING



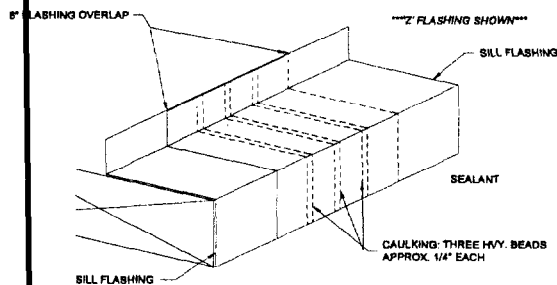
STEP 1: SILL FLASHING (Cont'd)

Over-Lap Flashing: In most cases it is necessary to use more than one piece of flashing because the length of the sill exceeds the size of the your aluminum break. In these cases, a minimum overlap of 6" is recommended. Use three beads of caulk by starting from the front to the back on the first piece. Then lay the second piece over the first. A heavy bead should be applied at the edge joint. (See **Detail C-C**, below). The edge joint should be hand tooled to each side forming a small expansion joint. Most silicone caulking has the ability to expand or contract at a ratio of approx. 50% of the actual bead size. So a 1/8" bead will have the ability to move approx. 1/16" before tearing and causing a leak!

Corner Flashing & Gable End Flashing At House Wall: This step is performed once the sills have been installed. We have left it in this section since we are addressing sill flashing at this point. The corners of the sill(s) should first be cleaned, then a heavy 3/8" bead of silicone applied along the miter cut. (See **Detail D-D**, below). This bead should be hand tooled from the center of the bead out to both sides, you can use a putty knife to get into any area that you can't get with your fingers. Again, the bead should remain large enough to form an expansion joint as well as seal the miter. It is important to form a dam of caulking where the sill rests against the house wall to prevent the water from simply flowing out of the sill and causing a leak.

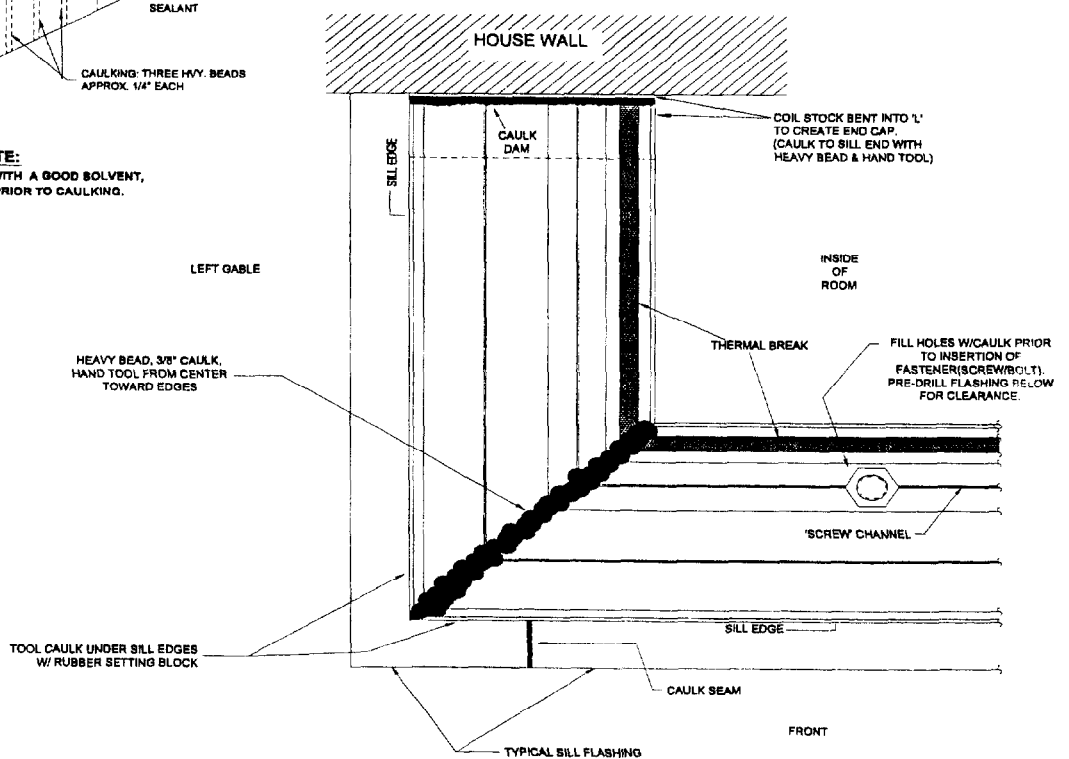
NOTE
It is recommended that you first cut a piece of flashing to make an end cap for the sill at the house wall. Then apply a heavy bead of caulk and hand tool for better adhesion.

DETAIL C-C: OVERLAP FLASHING METHOD



NOTE:
CLEAN ALL SURFACES WITH A GOOD SOLVENT, SUCH AS ACETONE, PRIOR TO CAULKING.

DETAIL D-D: CORNER & GABLE END FLASHING



STEP 2: PREPARING & INSTALLING THE SILLS

NOTE

First identify the inside and outside of sill prior to making any miter cuts. The thermal break (the black filled area in the sill) is toward the inside of the room. The longest dimension, after the sill is cut at the 45° miter will be the outside edge of the sill.

1. Cut the front sill to the front overall wall dimension with a 45° cut at each end. (For example: with a front wall length of 14' the outside sill dimension should measure exactly 14' from point to point of the 45° cut on either end. (See [Page 13](#) for detail).
2. Cut the gable end sill(s) to length in the same manor as the front sill with a 45° cut where the gable sill intersects the front sill but with a 90° cut where the sill contacts the house wall.
3. Layout the sill(s) and check your over all sill dimensions. Square your sills by measuring diagonally from opposite corners, and adjust until both measurements are exact. Make sure you are using the same points of reference when measuring. When you are satisfied that your sills are square, mark their location. (You can also use a large framing square but this is less accurate).
4. Next drill 1/4" -5/16" holes (depending on anchor diameter being used) in the sill 24" on center. The holes should be located toward the rear of the sill where the sill starts to incline upward. Use the scribed line for hole placement. (See [Page 13](#) for detail).
5. Prior to installing the sill(s) it is important to read and understand [Pages 12 and 13](#). Once you have decided on the type of flashing you will be using at the sill area, the flashing must be bent using an aluminum break and coil stock. (Most good rental locations will have aluminum breaks). You can purchase coil stock from any good roofing and siding supply house, or through Four Seasons. First install the flashing, then install multiple beads of caulking on the bottom of the sill. (See detail below). The sill is shown inverted so caulking can be applied. Place sills on top of flashing and install adequate anchors (provided by others).

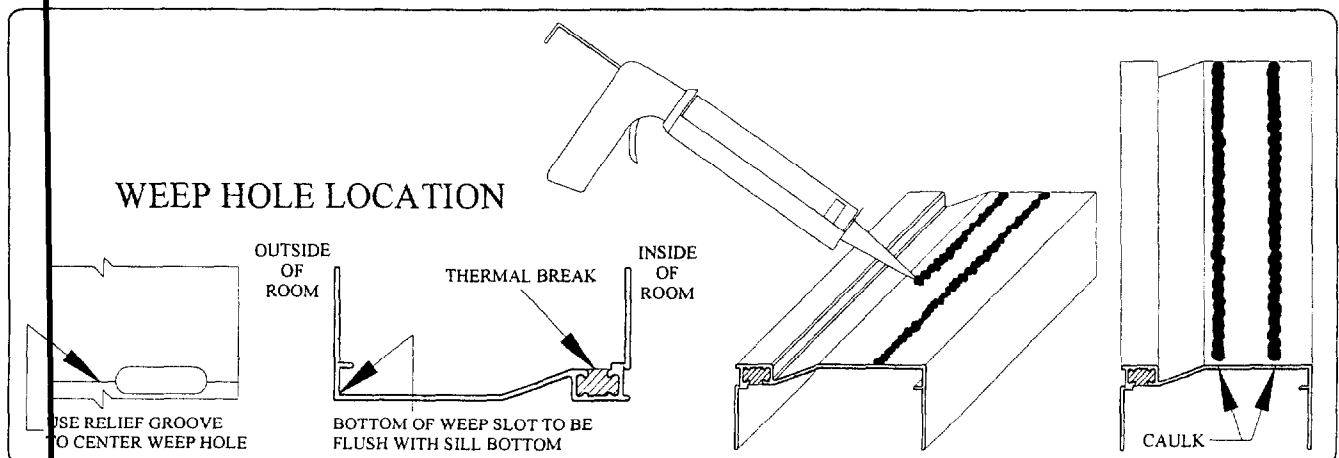
NOTE

The sills surface must be completely dry and free of oil and debris prior to applying sealant. Use solvent alcohol to clean areas to be caulked.

6. Generously apply caulking to the front mitered corners, splices and where the sill(s) meet the back wall. (See [Page 13, Detail D-D](#)). Hand tool the caulking and leave a 3/8" thick bead of caulk that will act as an expansion joint at the corners. Also caulk the sill were it butts against the house wall forming a dam so that water can't run out of the end of the sill.

NOTE

There will be weep holes punched into the sill(s) after all of the walls have been installed. See detail below for visual weep hole location.

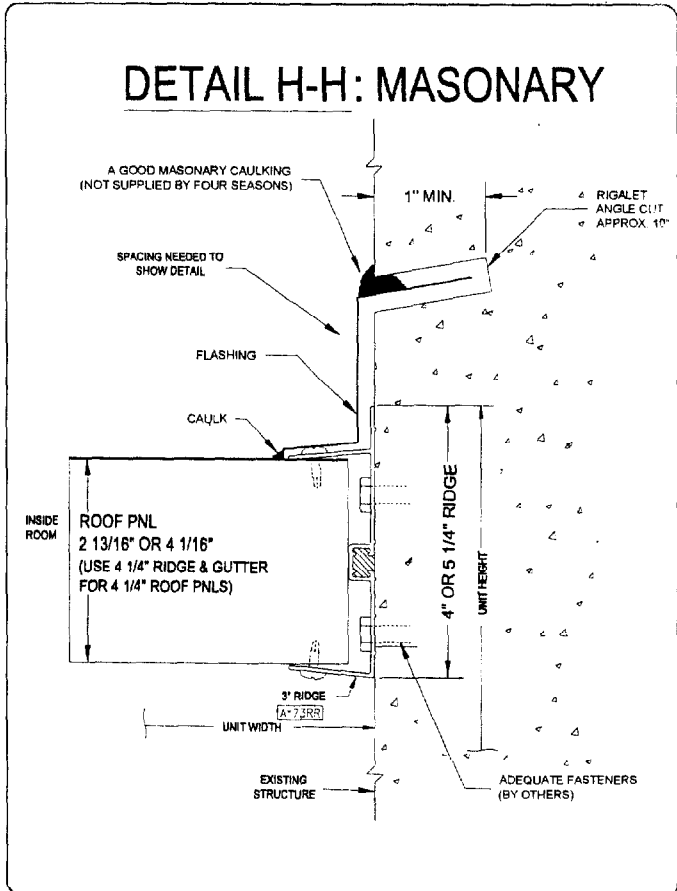
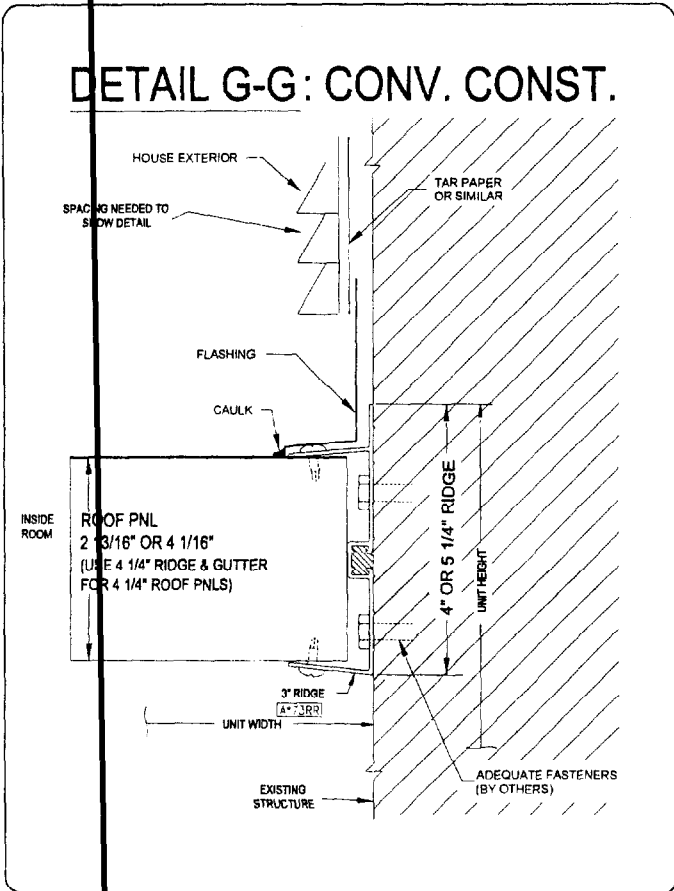


STEP 3: RIDGE FLASHING

NOTE
There is no prefabricated ridge flashing provided with the Series 230 Patio Rooms. All flashing discussed in this section must be fabricated on site by the installer utilizing an aluminum break and coil stock.

Special attention must be given to the ridge flashing on all units. The actual flashing you bend on site will differ in shape or style from unit to unit, but the purpose is the same. Keep water on the outside. Follow some general rules and the results will be effective.

The ridge flashing must always end up under the tar paper whether you are installing the ridge on a house fascia or against a vertical wall. (See **Detail G-G** below). The only exception to this will be when installing the ridge against a masonry wall where a rigalet is cut into the masonry along the length of the ridge. (See **Detail H-H** below). A minimum cut depth of 1" is recommended using a diamond blade. The wall must next be cleaned to remove the cement dust caused by the cut. The ridge flashing is then inserted into the rigalet cut and sealed. The sealant should be tooled to assure a good seal. **A masonry sealant must be used** (supplied by others) and we strongly suggest following the manufacturer's instructions in regard to its application.



STEP 4: INSTALLING THE RIDGE

NOTE
The thermal ridge extrusion measures 4" or 5 1/4" overall, depending on the roof panel thickness. The 1" lip is the top of the ridge and this lip is to be counter flashed as shown on Page 15.

- The total length of the ridge is dependent on the amount of roof panels that are supplied with the unit and whether or not roof H's/beams are being used in your particular roof configuration. The chart below will give you the widths of the various combinations. Approximately a one-foot overhang per side is typical but, because the front wall can vary in length indefinitely, your combined roof length may work out with more or less than a 1-foot overhang per side. If your roof length exceeds the overhang desired you may cut a roof panel or panels. Keep this in mind when cutting your ridge to size, as this will effect its overall length.

Roof Panel Length Chart Lean-To Shade Rooms

Roof Width/# Of Panels (No Roof H-Beams)	Roof Width/# Of Panels (With Roof H-Beams)
3 Roof Panels 11' 7"	3 Roof Panels w/ Two Roof H-Beams 11' 9"
4 Roof Panels 15' 5"	4 Roof Panels w/ Three Roof H-Beams 15' 8"
5 Roof Panels 19' 3"	5 Roof Panels w/ Four Roof H-Beams 19' 7"
6 Roof Panels 23' 1"	6 Roof Panels w/ Five Roof H-Beams 23' 6"
7 Roof Panels 26' 11"	7 Roof Panels w/ Six Roof H-Beams 27' 5"
8 Roof Panels 30' 10'	8 Roof Panels w/ Seven Roof H-Beams 31' 4"
9 Roof Panels 34' 8"	9 Roof Panels w/ Eight Roof H-Beams 35' 2"
10 Roof Panel 38' 6"	10 Roof Panels w/ Nine Roof H-Beams 39' 1"

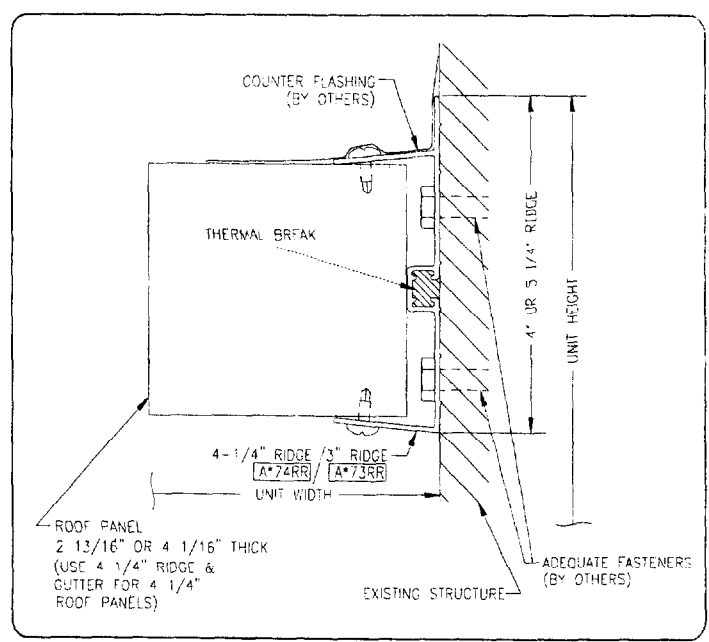
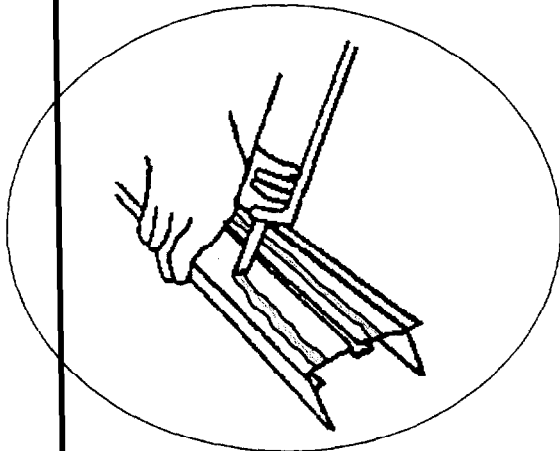
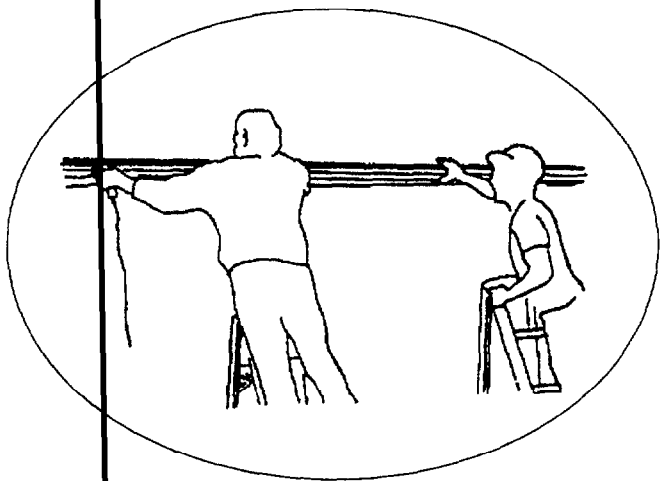
NOTE
If you have more than 10 roof panels add 3' 10 1/8" per additional panel (no roof H-Beams) or 3' 10 7/8" per panel (with roof H-Beams).

STEP 4: INSTALLING THE RIDGE (Cont'd)

2. Cut the ridge to the proper dimension. Remember there is a direct correlation between the total roof panel length (including overhang) and the length of the ridge.
3. Take your ridge height from your drawing on **Page 8**. Make a hash mark representing the top of your ridge at both ends. Next, snap a line from one hash mark to the other. This will represent the top of your ridge.

NOTE
The height of any Patio Room is given to the top of the 1" lip on the ridge.

4. Take your level, and mark a line up to where the ridge is to be mounted representing the outside of the walls. (Use the outside of the gable sills already installed as a starting point). Center the ridge leaving the same amount of ridge on each side of your wall lines; mark both ends of the ridge accordingly.
5. Starting from one end of your ridge and working to the other, drill the appropriate size holes 24" on center (see **Detail** below) above and below the thermal break. If your ridge is more than one piece due to the length of the unit, make sure to drill holes for fasteners at each end.
6. Put two beads of caulking behind the ridge as shown in the illustration below. This will guard against air and water infiltration. Lift the ridge and install at its predetermined location using the appropriate fasteners (supplied by others). Counter flash the ridge as illustrated on **Page 15**.



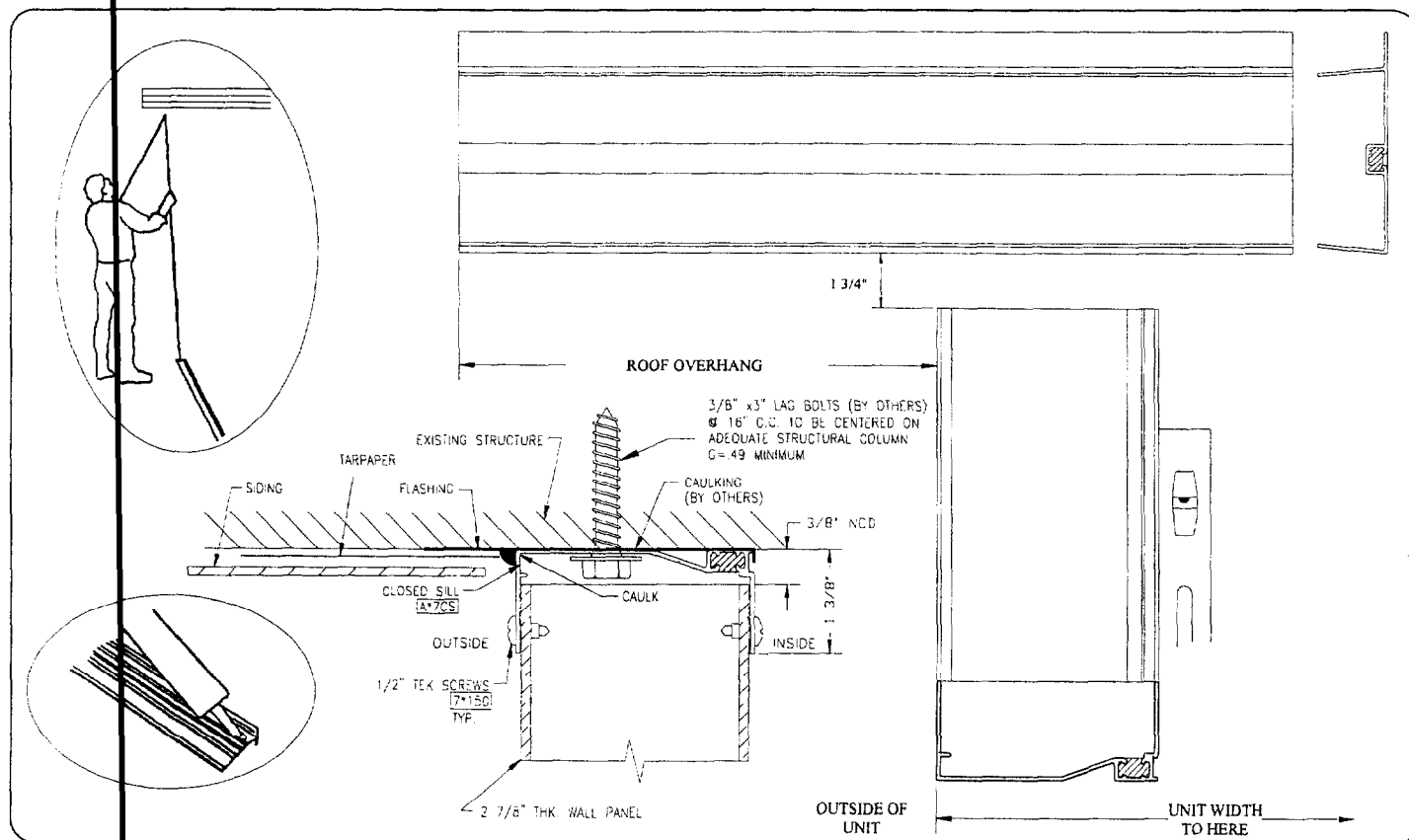
STEP 5: INSTALLING THE WALL SILLS

1. First, cut the wall sill(s) to size. The measurement is taken at the house wall where the gable end floor sill(s) meet the house wall. Measure from the top edge of the floor sill to the bottom of the ridge. Take that dimension and deduct 1 3/4". This deduction is to allow room for the electric eave which will fit between the ridge and the wall sill when the gable end walls are capped-off with the electric eave.

NOTE

There are two exceptions to this rule. One is if you are installing a single glazed 230 Patio Room which normally uses a sill instead of an electric eave to cap the top of the gable walls. You will then dry fit a piece of sill under the ridge to acquire your dimension. The top of the wall sill will not go into the upper sill and should be mitered at the proper angle. (Your measurement must reflect this). The other exception is when the ridge is mounted to an overhang and the 230 Patio Room gable walls are being used to fill under the soffit area. (If you are filling in under the soffit with conventional construction then the procedure will be as above in # 1). If not, the wall sill is then placed under the overhang against the back wall. A piece of sill is normally mounted to the underside of the soffit. An H channel will then be used at the vertical transition point from the electric eave to the horizontal sill mounted under the soffit, above a door or window. At times you may have to use your own discretion, as each job will be a little different.

2. Flashing the wall sills may be required were high winds are present. If so, make sure the flashing is installed under the tarpaper as noted in the drawing below.
3. Place two beads of caulking behind the wall sill(s) prior to mounting them to the house wall.
4. Drill the appropriate size holes in the wall sill, and fasten to the house wall with adequate fasteners (supplied by others).



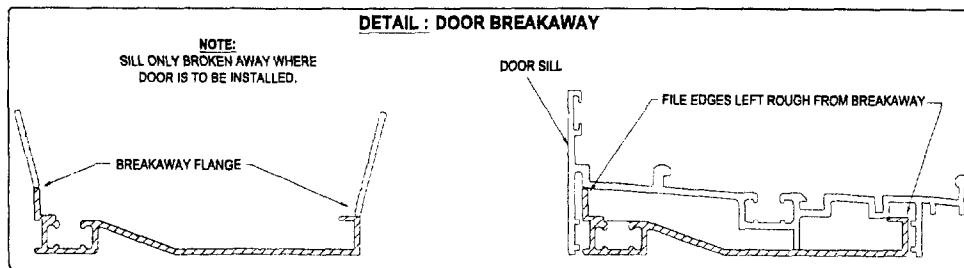
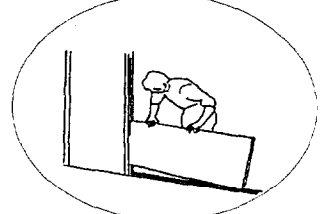
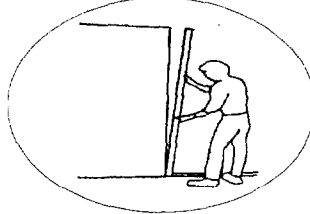
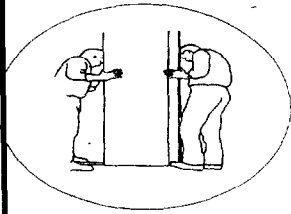
STEP 6: FRONT WALL INSTALLATION

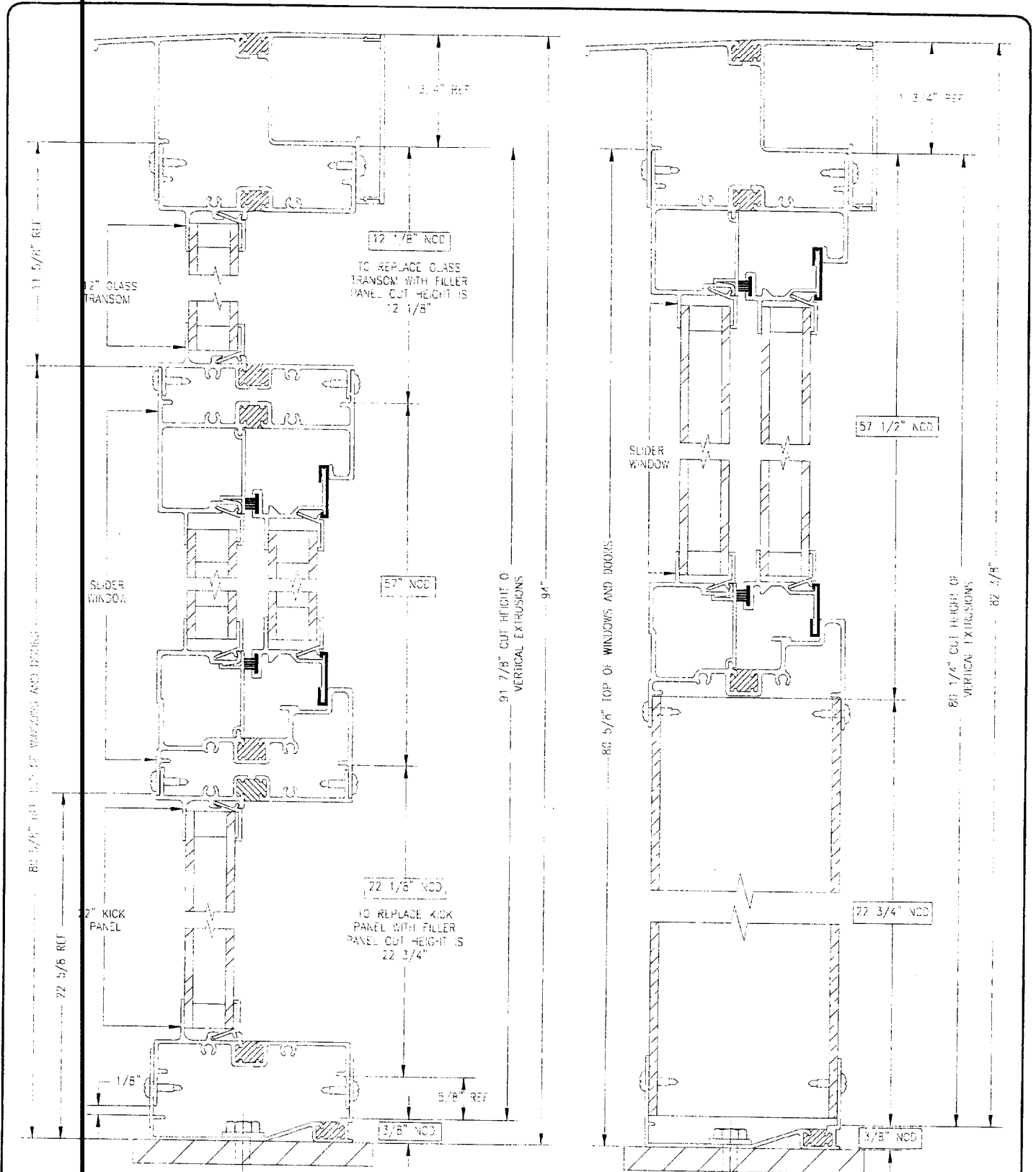
1. Measure and cut the front electric eave to length. The length is the same as the front sill and is mitered in the same fashion at 45 deg. This component will be installed on the top of the vertical wall once it has been assembled. It will also help you level and square the wall later on.
2. There are many combinations of components that can be stacked to determine the front wall vertical lay out as it relates to the height of the wall. Therefore it is imperative that you know the appropriate combination specified. Review the Series 230 front wall sections on **Pages 20 or 21** to determine the cut heights of the vertical extrusions and solid fill under the windows. (If glass kicks panels are specified, they will be used in place of the solid kick panel). Cut the appropriate vertical extrusions and wall panels to the specified height. The width of the solid kick panels will be the same as the outside dimension of the windows they go under. (See **Page 24 "Overall Width"** column).
3. There is a simple method to laying out the front wall components. Take small pieces of the appropriate vertical extrusions (provided by the waste after completing step two above) starting from the corner on the left and working your way to the right (as viewed from the outside of the unit), lay the front wall out temporarily. You can use either the glass kick panels (if they have been specified for this particular job), the actual windows going into the front wall, or the exposed dimensions shown on **Pages 22 & 24**. When you reach the right hand corner there may be space that must be filled. First plumb and level the wall temporarily. Then measure the daylight opening between the last vertical H and the corner. Divide the daylight opening by two then add 1". This will give you an equal amount of solid fill for each side. (For example, a 22" daylight-opening divided by two equals 11" plus 1" equal 12" of fill for the right side and 12" of fill for the left). Refer to the wall layout chart on **Page 22** for a visual understanding of a typical wall layout.

NOTE

*If a sliding door or swing door is going into the front wall use the actual door frame or the exposed width dimension shown on **Page 24** for the dimension between vertical H's. The sill also has to be modified after you are satisfied with your layout. The front and rear fins of the sill have to be cut away for the exposed width of the door. See modified sill detail on the bottom of this page. (After this step is performed correctly the door sill will fit over the actual floor sill).*

4. Take out the temporary components. Cut the left and right solid fill (the height will be the same as the front vertical extrusions). You can then start building the front wall. Left corner first, then fill, then H, then kick, then window and so on. Stack your components vertically as determined from **Pages 20 or 21**. Keep components tight and plumb as you dry fit the wall. You will probably have to brace the wall temporarily. Keep the wall plumb and level as you proceed. When you have successfully finished dry fitting the walls, the electric eave is to be fitted on the top of the front wall. The eave cover can be installed at the end of the job once the wiring has been run (if electric is being installed). The Tec screws provided are then used to tie the components together. They should be placed at the bottom and the top of all vertical extrusions and, at the intersection of the windows, kicks and, if required, transoms.





SECTION "J-J" 22" GLASS KICKPANEL-WINDOW
GLASS TRANSOM

SECTION "K-K" SOLID KICK PANEL-WINDOW-
NO TRANSOM

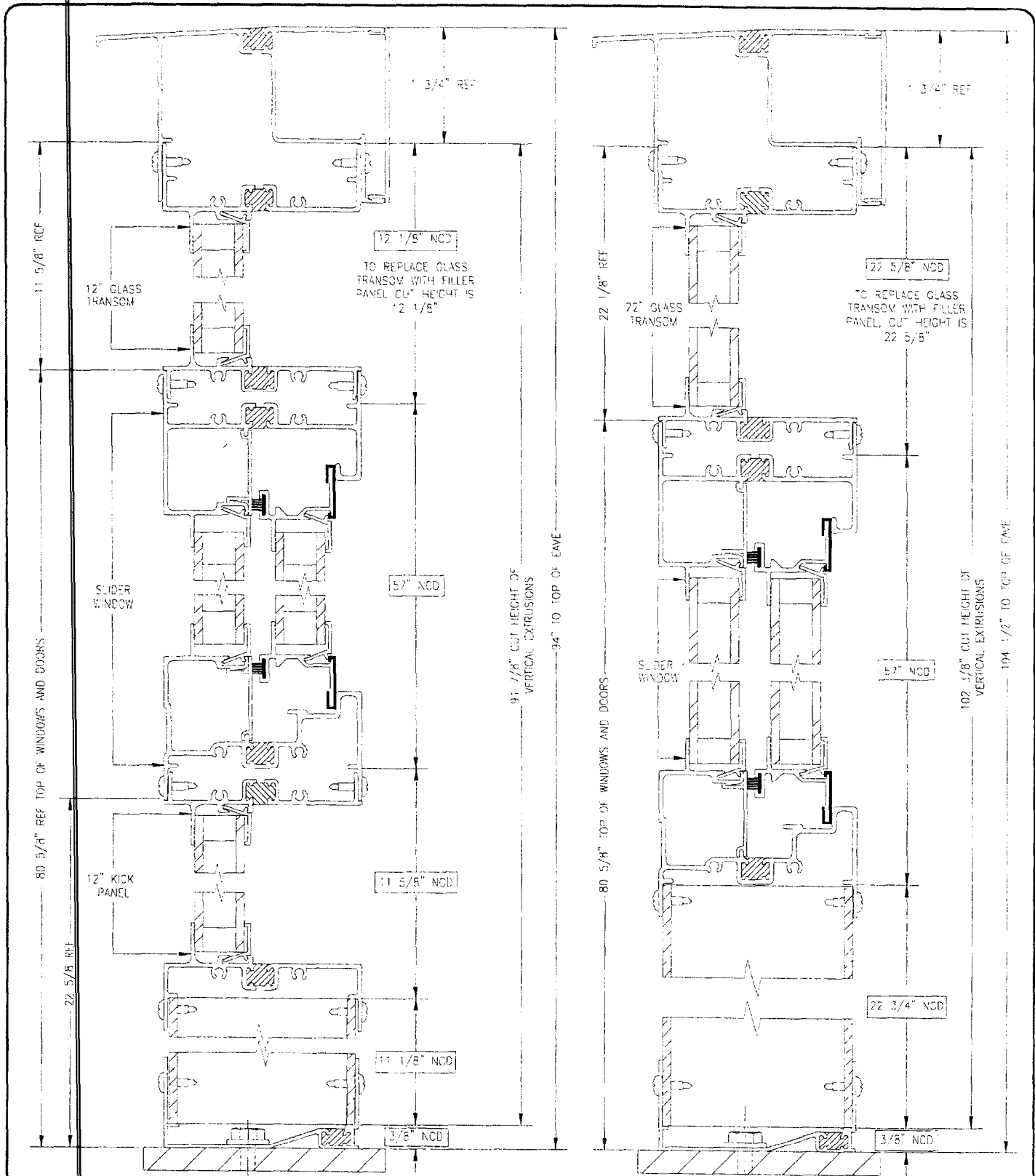
NOTE:

1. " " INDICATES EXTRUSION COMES IN SANDTONE, BRONZE OR WHITE. SUBSTITUTE THE " " WITH "B" FOR BRONZE, "W" FOR WHITE AND "A" FOR SANDTONE.



SERIES 230 FRONT WALL SECTIONS
(GABLE END WALLS SIMILAR)

DWG. NO. 230-5	PAGE 1
DATE: 10-30-86	OF 2



SECTION "J-J" 22" GLASS KICKPANEL-WINDOW
GLASS TRANSOM

SECTION "K-K" SOLID KICK PANEL-WINDOW-
GLASS TRANSOM

NOTE:

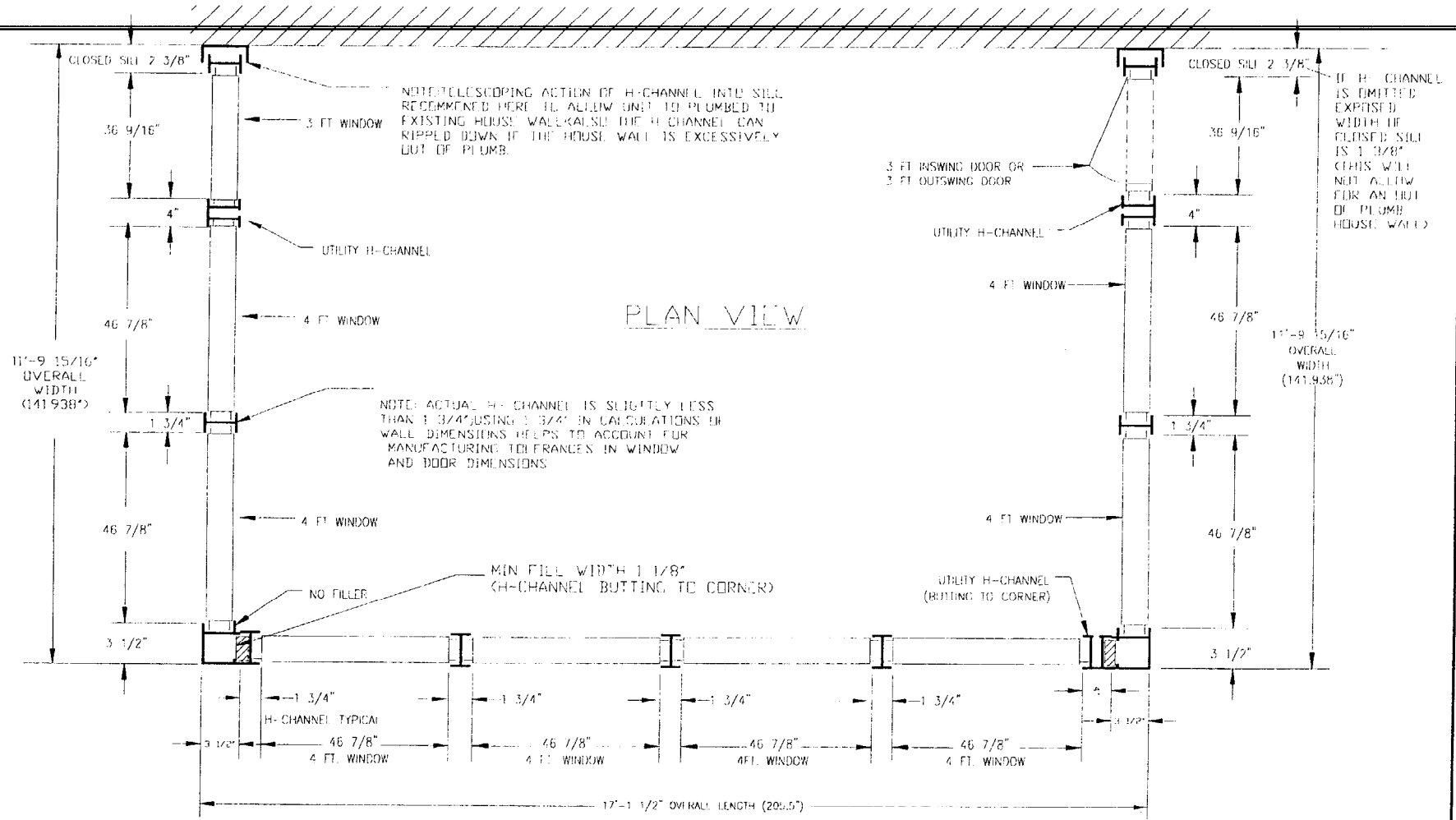
"*" INDICATES EXTRUSION COMES IN SANDTONE, BRONZE OR WHITE. SUBSTITUTE THE "*" WITH "B" FOR BRONZE, "W" FOR WHITE AND "A" FOR SANDTONE.



SERIES 230 FRONT WALL SECTIONS
GABLE END WALLS SIMILAR WALLS

DWG. NO. 230-5	PAGE 2
DATE: 10-30-96	OF 2

WALL LAYOUT OF 230 PATIO SHADE ROOM WITH EXPOSED DIMENSIONS FOR NO FILL WALLS



NOTE:
 TO ACHIEVE MINIMUM DIMENSIONS FOR GABLES TAKE H-CHANNELS OUT OF SILL ON THE GABLE ENDS
 TO ACHIEVE MINIMUM DIMENSIONS ON THE FRONT TAKE OUT H-CHANNEL AND UTILITY H-CHANNEL FROM CORNER POSTS. ** SEE NOTES BELOW FOR CALCULATIONS **

FRONT WALL = $(3 \frac{1}{2} + 1 \frac{3}{4} + 46 \frac{7}{8} + 1 \frac{3}{4} + 46 \frac{7}{8} + 1 \frac{3}{4} + 46 \frac{7}{8} + 1 \frac{3}{4} + 46 \frac{7}{8} + 4 + 3 \frac{1}{2}) = 17' - 1 \frac{1}{2}" (205.5')$

** MINIMUM FRONT WALL = $17' - 1 \frac{1}{2}" - (3 \frac{1}{4} + 4) = 16' - 7 \frac{3}{4}"$ (WITH 4 FT WINDOWS FITTING DIRECTLY INTO CORNER)

LEFT GABLE END = $(3 \frac{1}{2} + 46 \frac{7}{8} + 1 \frac{3}{4} + 46 \frac{7}{8} + 4 + 36 \frac{9}{16} + 2 \frac{3}{8}) = 11' - 9 \frac{15}{16}" (141.938')$

** MINIMUM LEFT GABLE END = $11' - 9 \frac{15}{16}" - 1" = 11' - 8 \frac{15}{16}"$ (DELETING H-CHANNEL AT WALL) REDUCE SIZE FURTHER BY $2 \frac{1}{4}"$ BY REPLACING UTILITY-H WITH H-CHANNEL

RIGHT GABLE END = $(3 \frac{1}{2} + 46 \frac{7}{8} + 1 \frac{3}{4} + 46 \frac{7}{8} + 4 + 36 \frac{9}{16} + 2 \frac{3}{8}) = 11' - 9 \frac{15}{16}" (141.938')$

** MINIMUM RIGHT GABLE END = $11' - 9 \frac{15}{16}" - 1" = 11' - 8 \frac{15}{16}"$ (DELETING H-CHANNEL AT WALL) REDUCE SIZE FURTHER BY $2 \frac{1}{4}"$ BY REPLACING UTILITY-H WITH H-CHANNEL

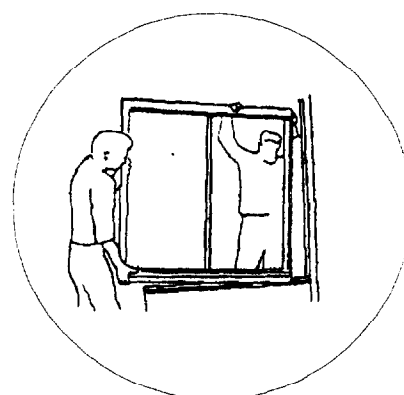
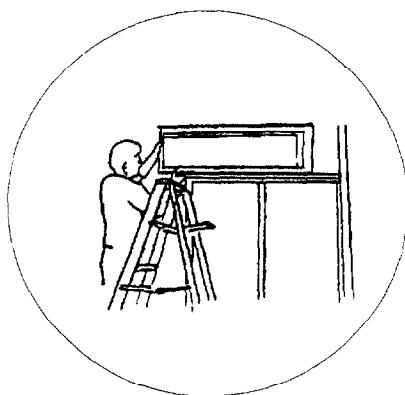
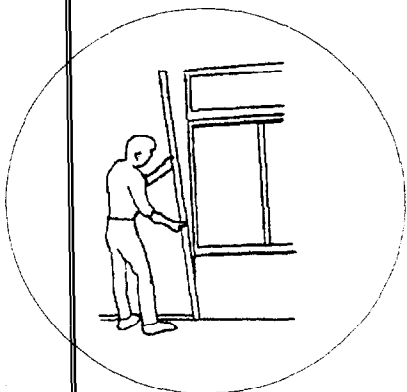
STEP 7: GABLE WALL(S) INSTALLATION

1. With the front wall held in place, plumb, and level we can proceed to install the gable wall(s). The first extrusion that will have to be measured and cut will be the electric eave for the top of the gable wall(s). The cut on the back side (the side that contacts the house wall) will be cut at the same angle that the roof is pitching. (Example: ½"/12" pitch would be approx. a 2.5° miter).
2. Next, cut the electric eave to length by placing it on top of the vertical wall sill against the house wall and on top of the front wall. Mark the electric eave and allow about ½" extra on the length of the cut. This will allow you to trim the electric eave a little at a time to get an exact fit. This cut is actually a compound miter cut. Not only must it be cut at a 45° miter but, it also must be cut at the angle that reflects the pitch. If you do not have access to a compound miter saw you can rig the saw up so that the electric eave is held firmly in place at the appropriate angle before making your 45° cut. **(Think before you cut and use all the proper safeguards when using power tools).** Once your eave(s) is properly cut to size put it to the side to be used after all the gable wall components have been installed.
3. Laying out the gable walls is basically the same as the front wall. (Refer to **Step 6, Para. 3 on Page 19** for the layout of the front wall components). The only difference is that you have a choice to either split the solid fill as you have done on the front wall or put all the fill against the house wall. The choice is yours although it will be easier to install the entire piece of vertical fill against the house wall. If a door is being installed in the gable walls, also refer to **Step 6, Para. 3 on Page 19**.
4. The vertical H channels and/or electric H channels in the gable end are cut at different lengths due to the pitch of the room. As you build from the house wall out toward the front wall, use the electric eave (cut prior and held in place temporarily) to determine what length to cut each vertical H.

NOTE

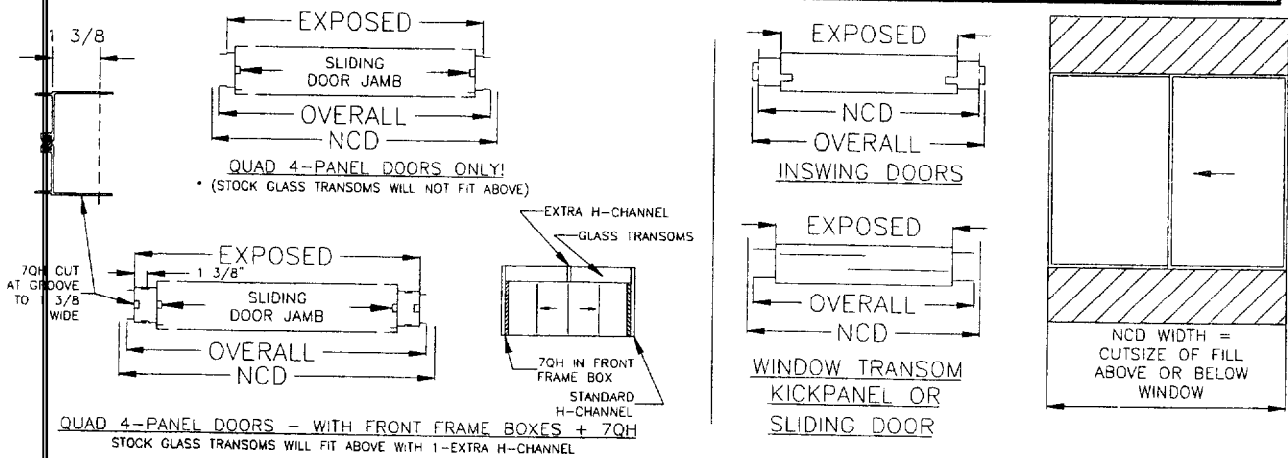
The H channels must go up into the electric eave so that they can be fastened after the wall is built. (Do not cut the vertical H channels short). Once you dry fit all the components, and everything is plumb and level, you can cut the solid fill required above each component. The solid fill will fit down into the top of a widow or door. Make sure you take this into consideration when taking the vertical dimensions of the fill. The vertical dimension is to the top of the H channel on each side. The width will be daylight opening plus one inch. Fit all of the solid fill in place, install the electric eave, and fasten the components together.

5. Weep holes should now be punched in the outside edge of the sill. Use a ¼" chisel, or flat screwdriver and hammer to drive a weep hole at the center of each vertical extrusion. The hole should be low enough (approx. 1/16" below the relief in the front lower face of the sills) to allow water to flow out avoiding water build up in the sill. See **Page 14** for the visual location of the weep holes.



230/330 PATIO SUNROOMS WALL COMPONENT DIMENSIONAL CROSS REFERENCE SHEET

DESCRIPTION	NCD WIDTH	EXPOSED WIDTH (BETWEEN H-CHANNELS)	OVERALL WIDTH
1'-9" FIXED WINDOW	22 1/8"	20 7/8"	21 3/4"
2'-6" FIXED WINDOW	30 1/8"	28 7/8"	29 3/4"
2'-11" FIXED WINDOW	36 1/8"	34 7/8"	35 3/4"
3'-0" SLIDING WINDOW	37 13/16"	36 9/16"	37 7/16"
NEW NARROW 4'-0" SLIDING WINDOW	44 5/8"	43 3/8"	44 1/4"
4'-0" STANDARD SLIDING WINDOW	48 1/8"	46 7/8"	47 3/4"
5'-0" SLIDING WINDOW	60 3/4"	59 1/2"	60 3/8"
6'-0" SLIDING WINDOW	72 3/4"	71 1/2"	72 3/8"
2'-6" INSWING/OUTSWING DOOR	31 3/8"	30 1/8"	31 7/16"
3'-0" INSWING/OUTSWING DOOR	37 13/16"	36 9/16"	37 3/8"
5'-0" FRENCH IN/OUTSWING DOOR	60 3/4"	59 1/2"	60 3/8"
6'-0" FRENCH IN/OUTSWING DOOR	72 3/4"	71 1/2"	72 3/8"
2'-6" FIXED PANEL ONLY DOOR	30 13/16"	29 9/16"	30 9/16"
3'-0" FIXED PANEL ONLY DOOR	36 13/16"	35 9/16"	36 9/16"
3'-6" FIXED PANEL ONLY DOOR	42 13/16"	41 9/16"	42 9/16"
5'-0" SLIDING DOOR (2 PANEL)	60 3/4"	59 1/2"	60 3/8"
6'-0" SLIDING DOOR (2 PANEL)	72 3/4"	71 1/2"	72 3/8"
7'-0" SLIDING DOOR (2 PANEL)	84 5/8"	83 3/8"	84 3/8"
7'-6" SLIDING DOOR (3 PANEL)	91 3/8"	90 1/8"	91 1/8"
8'-0" SLIDING DOOR (3 PANEL)	97 3/8"	96 1/8"	97 1/8"
9'-0" SLIDING DOOR (3 PANEL)	109 3/8"	108 1/8"	109 1/8"
10'-6" SLIDING DOOR (3 PANEL)	127 3/8"	126 1/8"	127 1/8"
3'-6" TRANSOM (FOR 10'-6" 3 PANEL DOOR)	42 1/4"	41"	41 7/8"
* 10'-0" QUAD 4-PANEL SLIDING DOOR ONLY !!	119 1/4"	118"	119"
10'-0" QUAD-DOOR WITH FRONT FRAME BOX. (FITS TWO 5FT TRANSOMS ABOVE) FRONT FRAME BOXES 7W5S4FRTZF	122"	120 3/4"	121 3/4"
* 12'-0" QUAD PANEL SLIDING DOOR ONLY !!	143 1/4"	142"	143"
12'-0" QUAD-DOOR WITH FRONT FRAME BOX. (FITS TWO 6FT TRANSOMS ABOVE) FRONT FRAME BOXES 7W6S4FRTZF	146"	144 3/4"	145 3/4"
* 14'-0" QUAD PANEL SLIDING DOOR ONLY !!	167 1/4"	166"	167"
14'-0" QUAD-DOOR WITH FRONT FRAME BOX. (FITS TWO 7FT TRANSOMS ABOVE) FRONT FRAME BOXES 7W7S4FRTZF	170"	168 3/4"	169 3/4"



230/330 PATIO SUNROOMS

WINDOW CHART	PAGE 1
DATE: 11/23/98	OF 1

STEP 8: INSTALLATION OF THE ROOF PANELS

- Starting at one end of the ridge install the first roof panel into the ridge. The outside edge of the roof panel should be even with the end of the ridge leaving you the appropriate overhang. Square the roof panel using a framing square and secure the roof panel from below with 1/2" Tec screws through the ridge into the roof panel. Use six screws per panel evenly spaced.

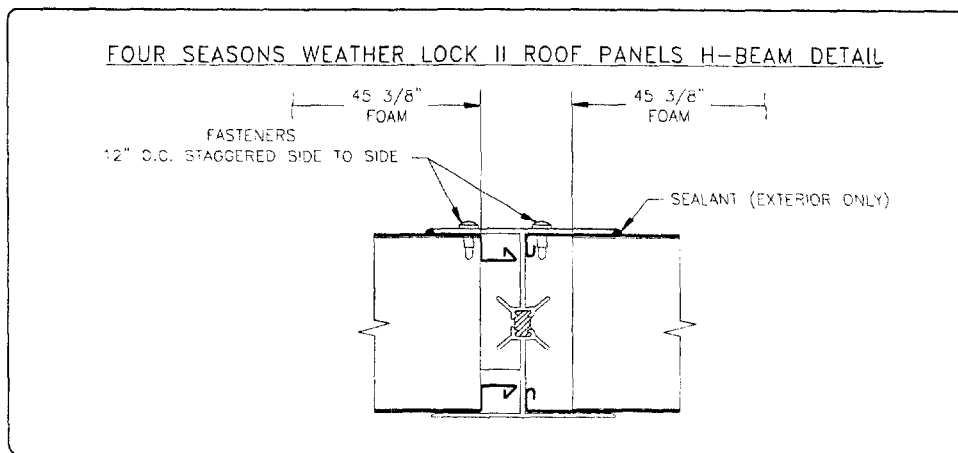
NOTE

If you have ordered your particular roof system with a fan beam panel remember that the fan beam panel is normally centered in the room. If this is the case you must lay out your roof panels accordingly prior to installing any roof panels. Also note there is a male and female edge to the roof panel and they must be installed male to female. Installing the roof is a two-man operation.

- Once you have located and installed your first roof panel, install the long roof screws with washers at the front end of the panel (**Part # 7M980 for 3" roofs and # 7M981 for 4 1/4" roofs**) through the top of the first roof panel and into the electric eave. Screws should be located approx. 8" on center. Make sure that the screws are located and penetrate the outside flange of the electric eave, preventing the screws from penetrating the rear electric raceway. (See **Page 26** for detail). It is also important to seal the heads of the screws to prevent water infiltration. This should be done once the entire roof has been installed. Also see alternate thru-bolt detail for high wind areas on **Page 26**.
- Seam foam is optional. When required, install a length of roof seam foam (**Part # 7F1X2-13 for 3' roofs or # 7F1X3-13 for 4 1/4" roofs**) into the edge of the roof panel. Remember to separate the plastic edging to expose the adhesive prior to installing to seam foam.
- Lift the next panel in place, holding the panel approx. 6" out of the ridge. Tilt the roof panel so that you can hook it into the first panels upper lip. Push the panel down quickly so that the panels snap lock together. Check both the top and bottom edges visually to make sure the panels have been joined properly. If not, you must repeat the procedure. Once the panel is snap locked together, slide it up into the ridge and fasten it in place. An optional way to install roof panels is to line up the male and female edges and slide them together. It is wise to temporarily put some masking tape on top of the electric eave to reduce the possibility of scratching the roof panel.

NOTE

If you have chosen OSB style roof panels you must slide the roof panels together as they do not have a snap lock detail. If your particular roof has optional roof-H beams, an H beam must be installed after installing each roof panel. First cut your roof H beams 7/8" shorter than your roof panels. (This will allow for the gutter to butt the H beams). The roof H beam is then inserted completely into the ridge and will butt against your gutter (once installed). Slide your next roof panel into the H beam and up into the ridge. Secure the panel along the entire outside edge of the H-Beams. Repeat this process as many times as required. (See Detail below).



STEP 8: INSTALLATION OF THE ROOF PANELS (Cont'd)

5. Once the entire roof has been installed, secure the top edge of the roof panels at the ridge using six ½" Tec screws per roof panel. Depending on how you flashed your ridge, you can if necessary, fasten through the flashing into the ridge and the roof panel as long as you seal the screw heads properly when done.
6. Caulk and hand tool each exterior roof panel seam. On units with a low pitch you may also choose to install optional Tedlar® roof and wall sealing tape over all of the roof's seams for greater protection. The Part # is CN4907 and, it comes in 100 foot rolls of 4" wide.

NOTE

It may be necessary to cut your roof panels to a specific length or width. If this is necessary, it is much easier to do on the ground on sawhorses prior to installing the panels. You must make a double cut as most circular saws will not cut a 3" or 4 ¼" thick panel in one pass. Use a chalk line to mark the panels prior to cutting.

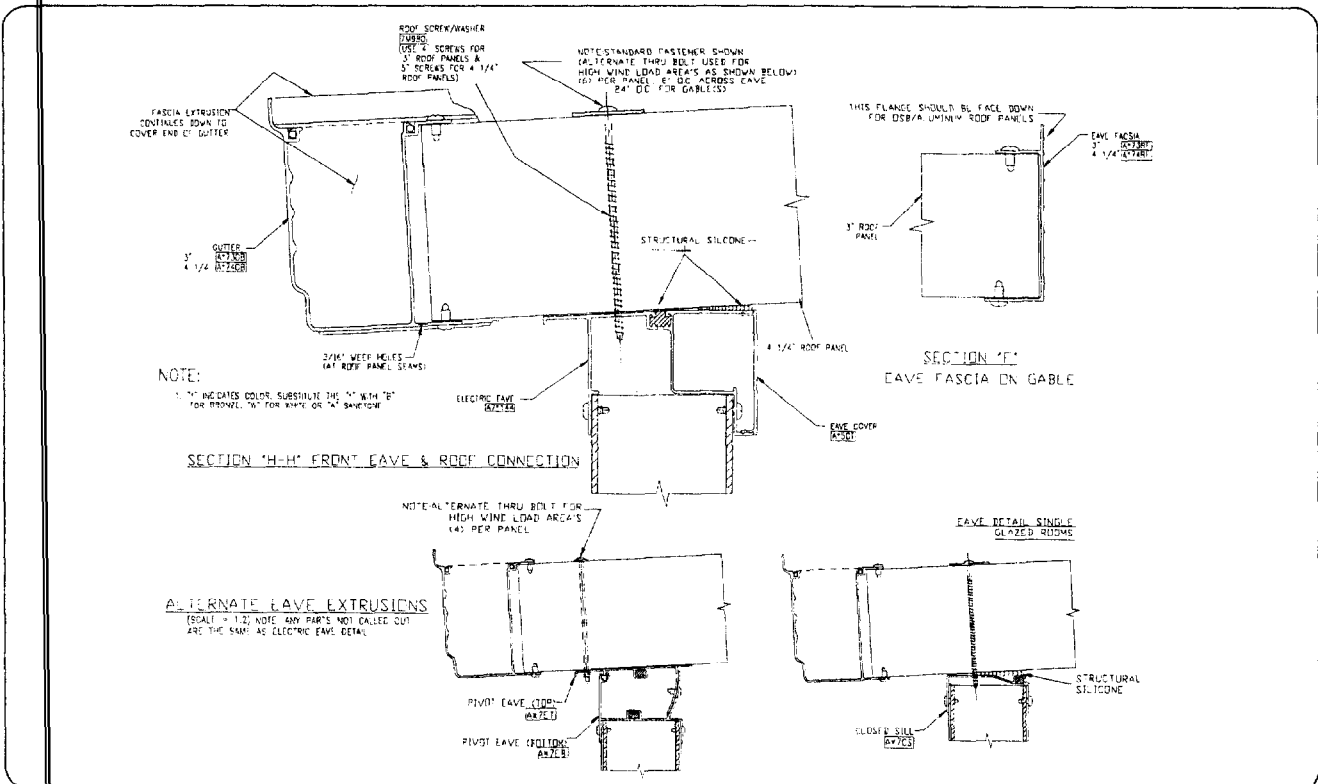
STEP 9: INSTALLATION OF GUTTER, FACIA & DOWNSPOUTS

1. First, measure the front total length of roof panels. This will be the exact length to cut your gutter. If your roof is wider than 20' then you will have to join two separate lengths of gutter. Install your gutter on the front face of your roof panels and fasten with 1/2" Tec screws provided. You should space the screw's approx. 1" from the edge of each panel with two additional screws spaced evenly in-between. Both the top and bottom edges are to be fastened through the gutter and into the roof panel. Try to space your screws in the same locations on each roof panel.
2. Next, the fascia is to be cut to size. First miter cut the end that will wind up against the house wall. It is safer to dry fit the Patio Room fascia on the roof panel; you can then mark it for length.

NOTE

The total cut length will allow the fascia to cover the end of the gutter acting as an end cap. Once you have cut the fascia to length you can tool it with a file or jigsaw to conform to the exact shape of the gutter. Install the fascia to the roof panel using the 1/2" Tec screws provided. Caulk the gutter at both ends and at any splices. Hand tool the caulk, if necessary.

3. Install your down spout kit(s) making sure to seal around the down tube in the gutter. Make sure you dry-fit all of the components prior to fastening them together.
4. Drill 3/16" holes along the underside of the gutter at each roof seam. This will allow any water that may get into the roof panels gutter system to escape (see **Drawing** below). Notice that you will not be drilling into the interior of the gutter, which would ruin the gutter. The weep holes are drilled in the fastening flange at the intersection of the roof panels.
5. The gutter is manufactured with a spline groove along the top of it's front and rear edges. As an option, you can install standard fiberglass screen to keep debris out. Screen and spline can be purchased through Four Seasons or if you prefer locally.

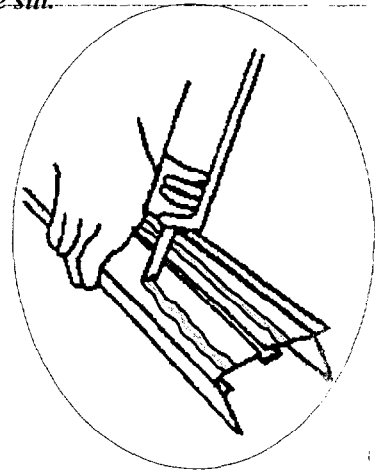


STEP 10: CAULKING/SEALING REQUIREMENTS AND WINDOW TIPS

Caulking Tips

Once the unit has been installed it is wise to detail the outside with caulking. There are two purposes for doing so. The first is to prevent water and air infiltration. The second is purely for aesthetic reasons. When using a caulking gun for the purpose's stated, take your time and do the cleanest possible job, hand tool when necessary. It is necessary to caulk the following areas:

- *Caulk where the solid fill panel or glass kick panels have been inserted into the sill.*
- *Caulk any gaps at the corners of the windows or doors.*
- *Caulk where the vertical components are inserted into the vertical H channels, or corner posts from top to bottom. Please take your time and use caulking sparingly.*
- *Caulk around the entire outside perimeter where the roof panels make contact with the electric eave. As an option you can also caulk the inside perimeter. This is just for aesthetic purposes only.*
- *Caulk across the top of each window or door where a solid fill panel or glass transom has been inserted.*
- *Caulk the top edge of the gutter and fascia where the roof panels were inserted.*
- *Caulk around the entire base between sill and the flashing. Be careful not to clog the weep holes!*



Window Tips

Make sure you take the shipping blocks from the bottom of the window sashes prior to reinstalling them back into the window frames.

- *If necessary, use a spray silicone lubricant at the top and bottom of the windows at the points where the sash makes contact with the frame. This will keep your windows sliding freely.*
- *Clean any window sealant from around the perimeter of the sliding windows using a strait edge razor. It is also helpful to first spray the area with Windex to reduce the possibility of scratching the glass surface.*

230 PATIO ROOM EXPLODED DRAWING

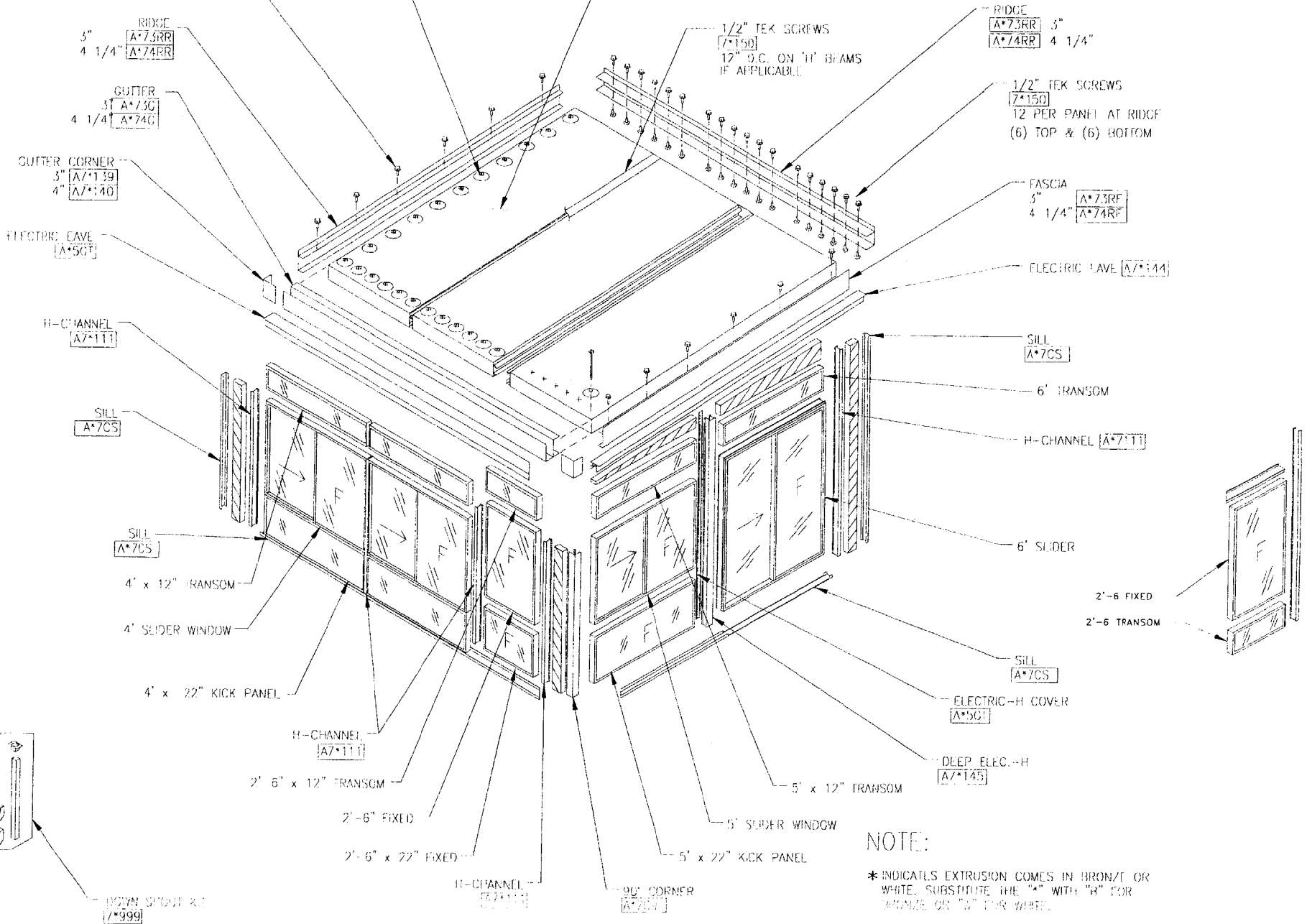
10 GC x 5 BAYS w/ ONE GABLE END SHOWN

4" OR 5" SCREWS WITH WASHERS
LOCATE 24" O.C. FOR GABLE(S)
ACROSS EAVE (6) REQ'D @ APPROX. 8" O.C.

#8 x 1/2" TEK SCREWS
6' O.C.
TYP.

4" [A*7980]
5" [A*7981]

SEE ORDER FORM PAT-OC2
FOR COMPLETE INFORMATION FOR
ROOF PANELS & WALL PANELS.



NOTE:

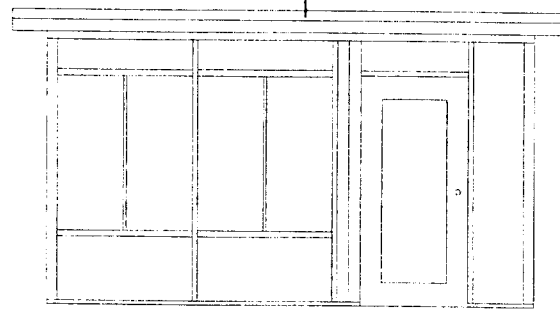
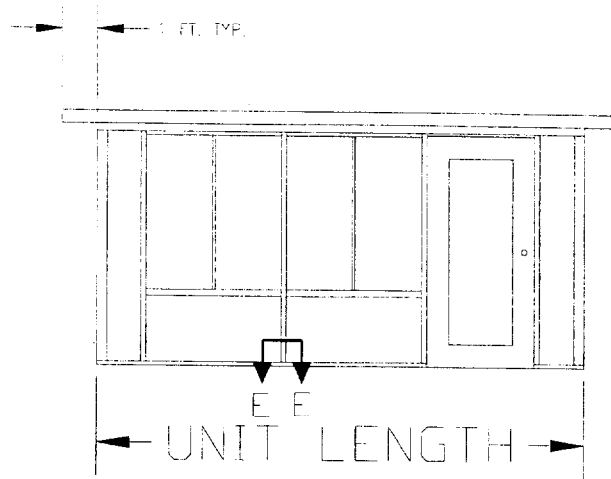
* INDICATES EXTRUSION COMES IN BRONZE OR WHITE. SUBSTITUTE THE "A" WITH "B" FOR BRONZE OR "W" FOR WHITE.



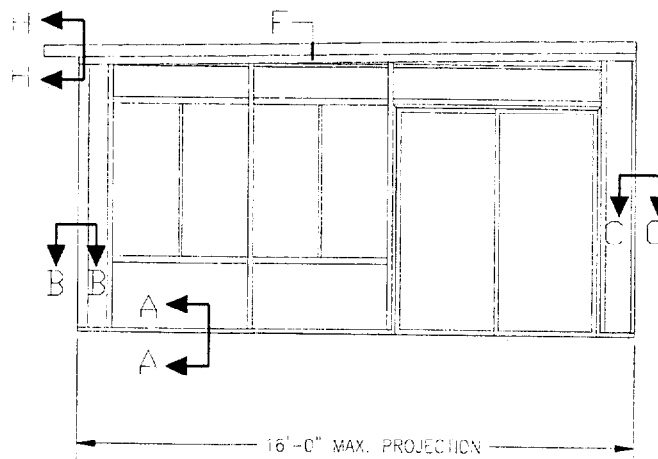
Series 230 Lean-To Patio Shade Room

DRAWINGS & DETAILS

SERIES 230 PATIO ROOM KEY DRAWING FOR CROSS SECTION DETAILS

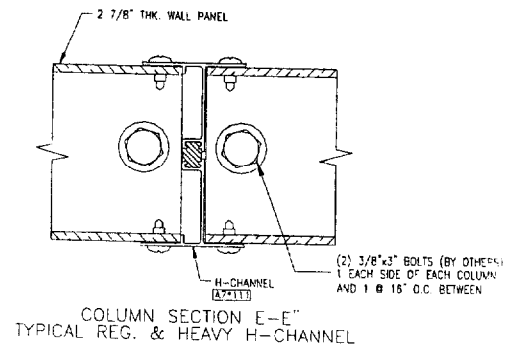
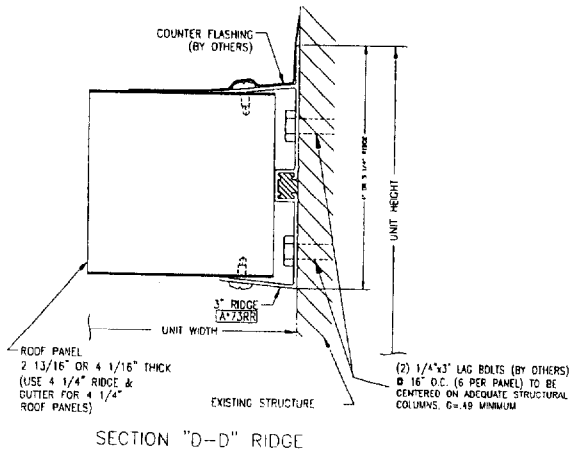
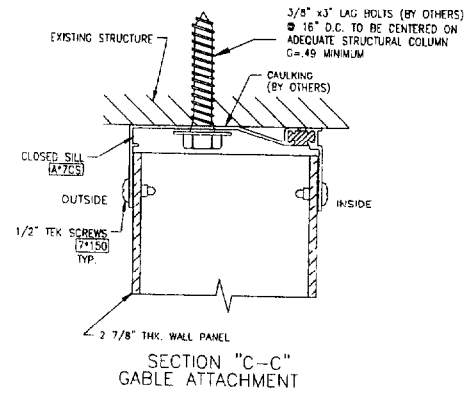
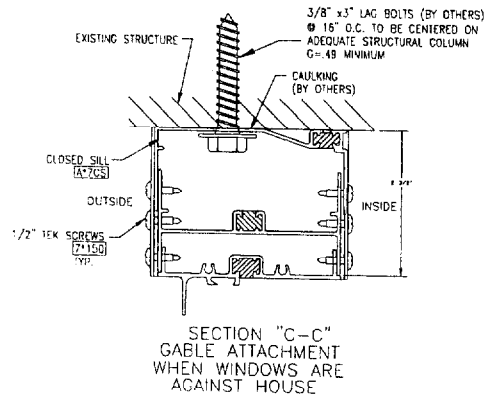
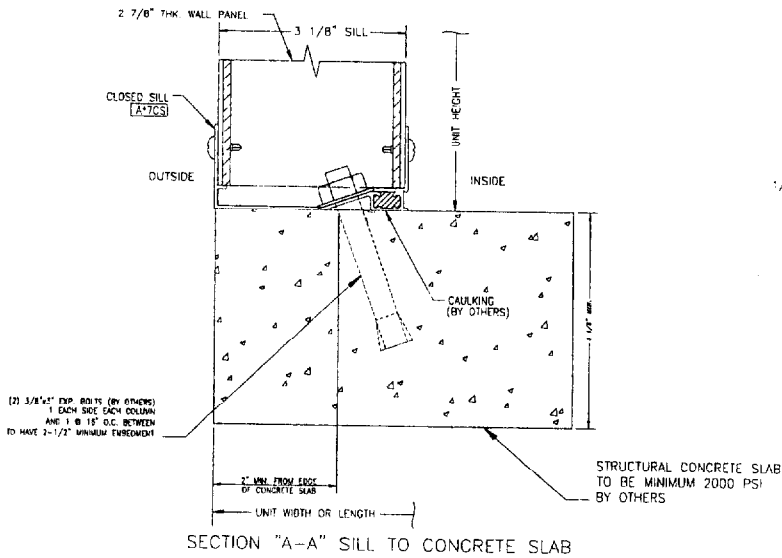
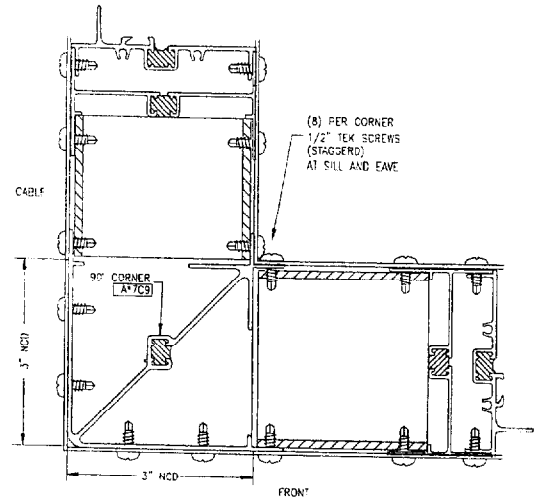
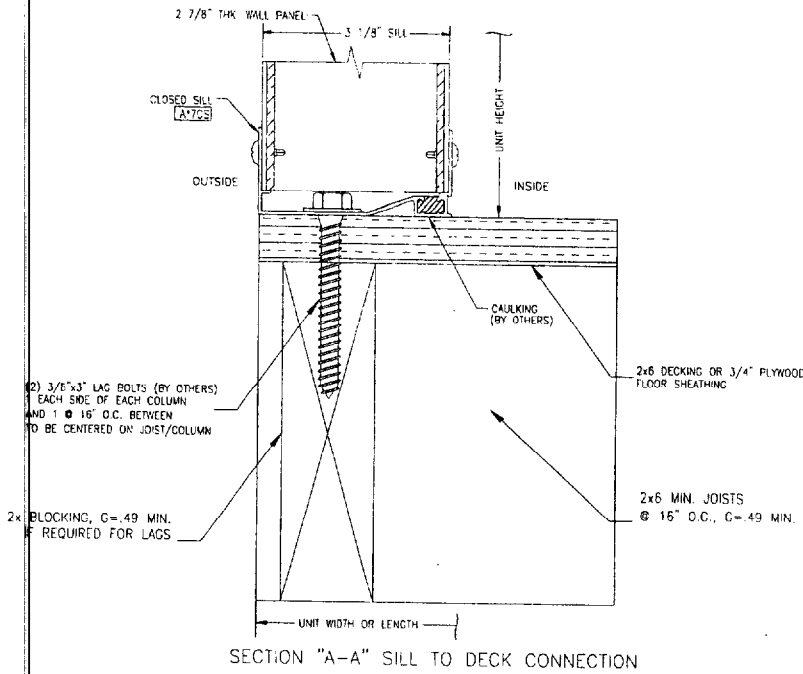


FRONT ELEVATION
(WITH TRANSOMS OR
PANELS ABOVE WINDOWS)



GABLE END ELEVATION

230 PATIO SHADE ROOM CROSS SECTION DETAILS



SERIES 230 PATIO ROOM CROSS SECTION DETAILS

NOTE: STANDARD FASTENER SHOWN
 A: BERNAL THRU BOLT USED FOR
 HIGH WIND LOAD AREAS AS SHOWN BELOW
 (6) PER PANEL. REQ'D ACROSS LAVE IF 8" DIA
 FOR GABLES 24" LIT.

FASCIA EXTRUSION
 CONTINUES DOWN TO
 COVER END OF GUTTER

GUTTER
 3" [A*73CB]
 4 1/4" [A*74CB]

ROOF SCREW/WASHER
 [M980]
 (USE 4" SCREWS FOR
 3" ROOF PANELS &
 5" SCREWS FOR 4 1/4"
 ROOF PANELS)

4 1/4" ROOF PANEL

STRUCTURAL SILICONE

3/16" WEEP HOLES
 (AT ROOF PANEL SEAMS)

NOTE:

1. "*" INDICATES COLOR. SUBSTITUTE THE "*" WITH "B" FOR BRONZE, "W" FOR WHITE OR "A" SANDTONE.

ELECTRIC EAV.
 [A*714E]

[AVE. COVER
 [A*56F]

SECTION "H-H" FRONT EAVE & ROOF CONNECTION

THIS FLANGE SHOULD BE FACE DOWN
 FOR USB/ALUMINUM ROOF PANELS

EAVE FASCIA
 3" [A*73RF]
 4 1/4" [A*74RF]

NOTE: ALTERNATE THRU BOLT FOR
 HIGH WIND LOAD AREAS

3" ROOF
 PANEL

PIVOT EAVE (TOP)
 [A*7C1]

PIVOT EAVE (BOTTOM)
 [A*7E.B.]

EAVE DETAIL SINGLE
 GLAZED ROOMS

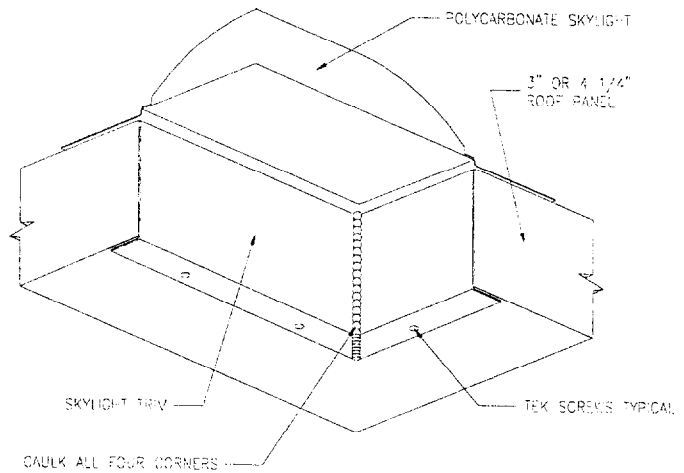
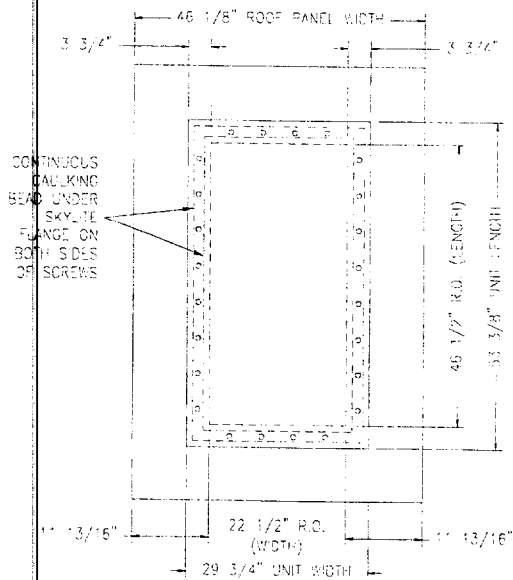
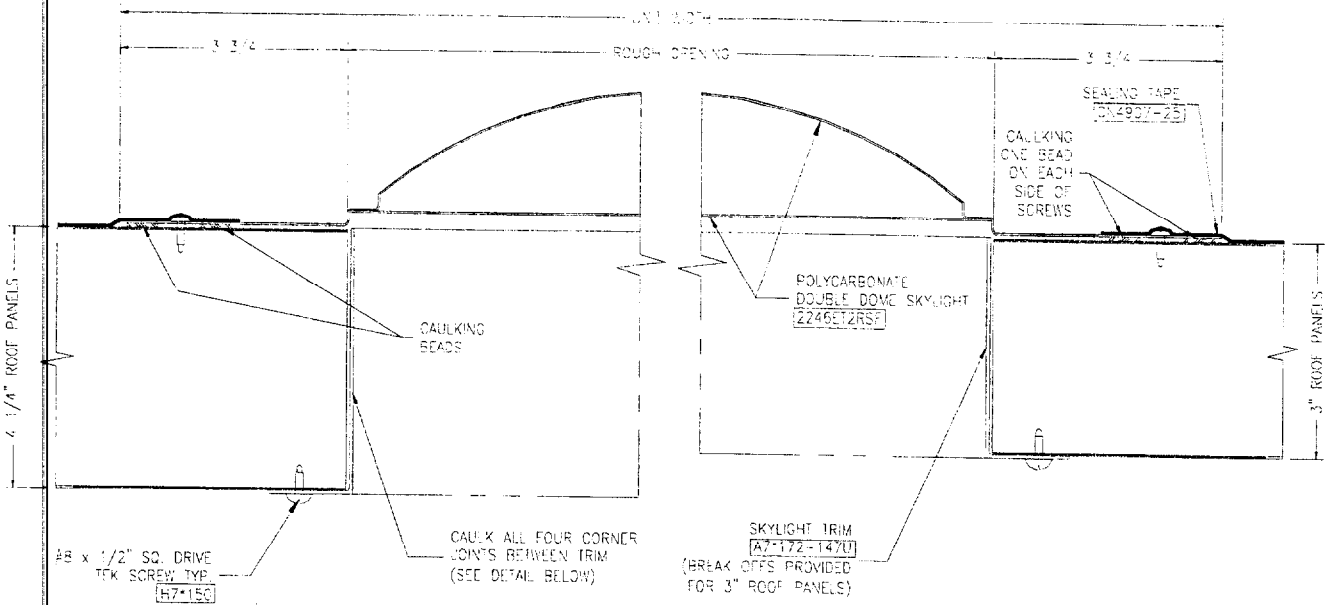
STRUCTURAL
 SILICONE

CLOSED SILL
 [A*7CS]

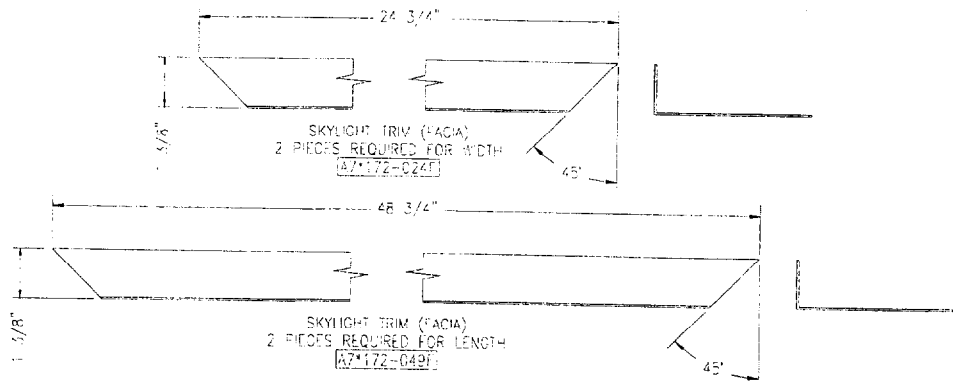
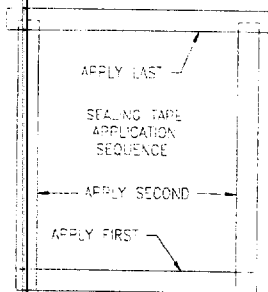
SECTION "F"
 LAVE FASCIA ON GABLE

ALTERNATE EAVE EXTRUSIONS

(SCALE = 1:2) NOTE: ANY PARTS NOT CALLED OUT ARE THE SAME AS ELECTRIC EAVE DETAIL.



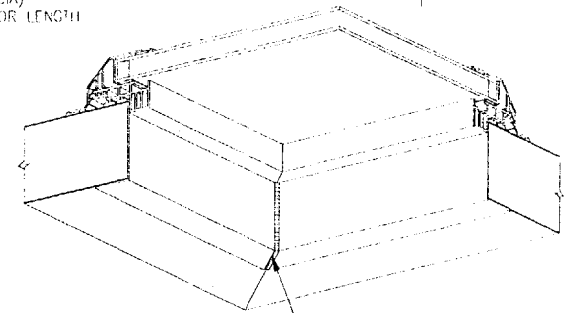
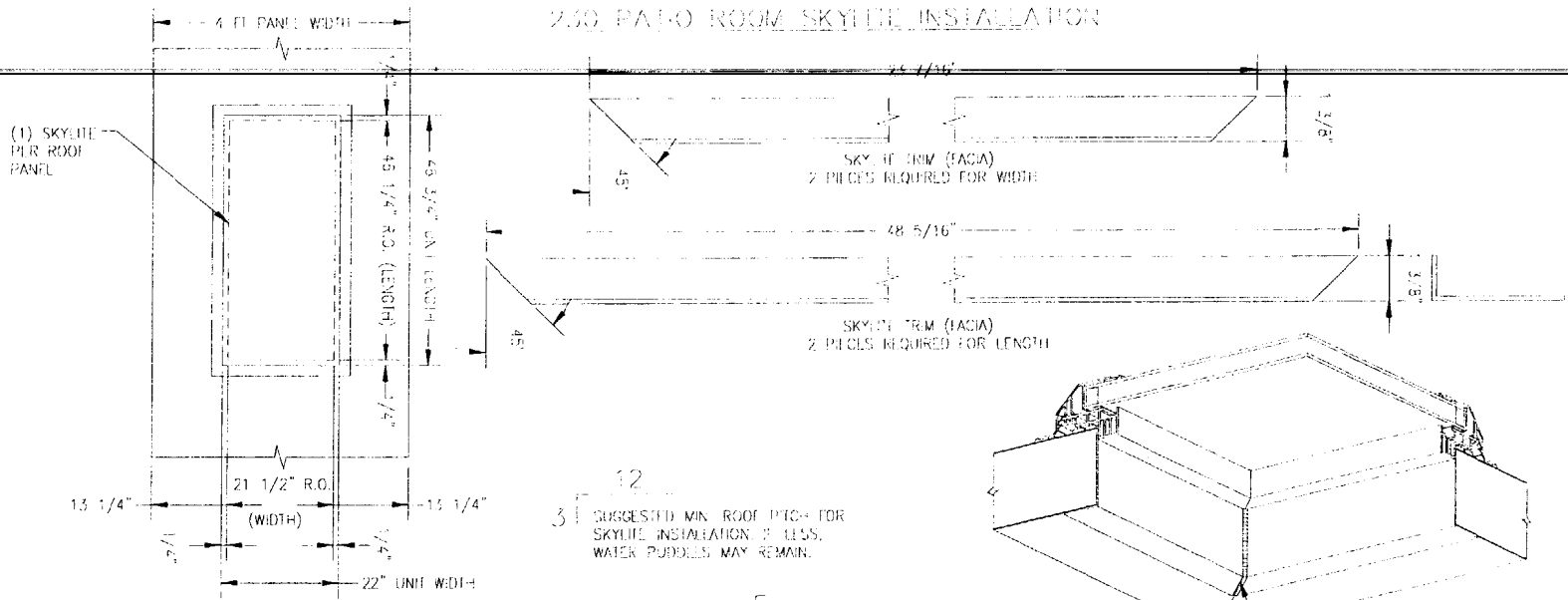
NOTES:
TRIM IS INCLUDED WITH SKYLIGHT



SYSTEM 230 PATIO ROOM POLY-DOME SKYLIGHT KIT# 7M991POLY INSTALLATION

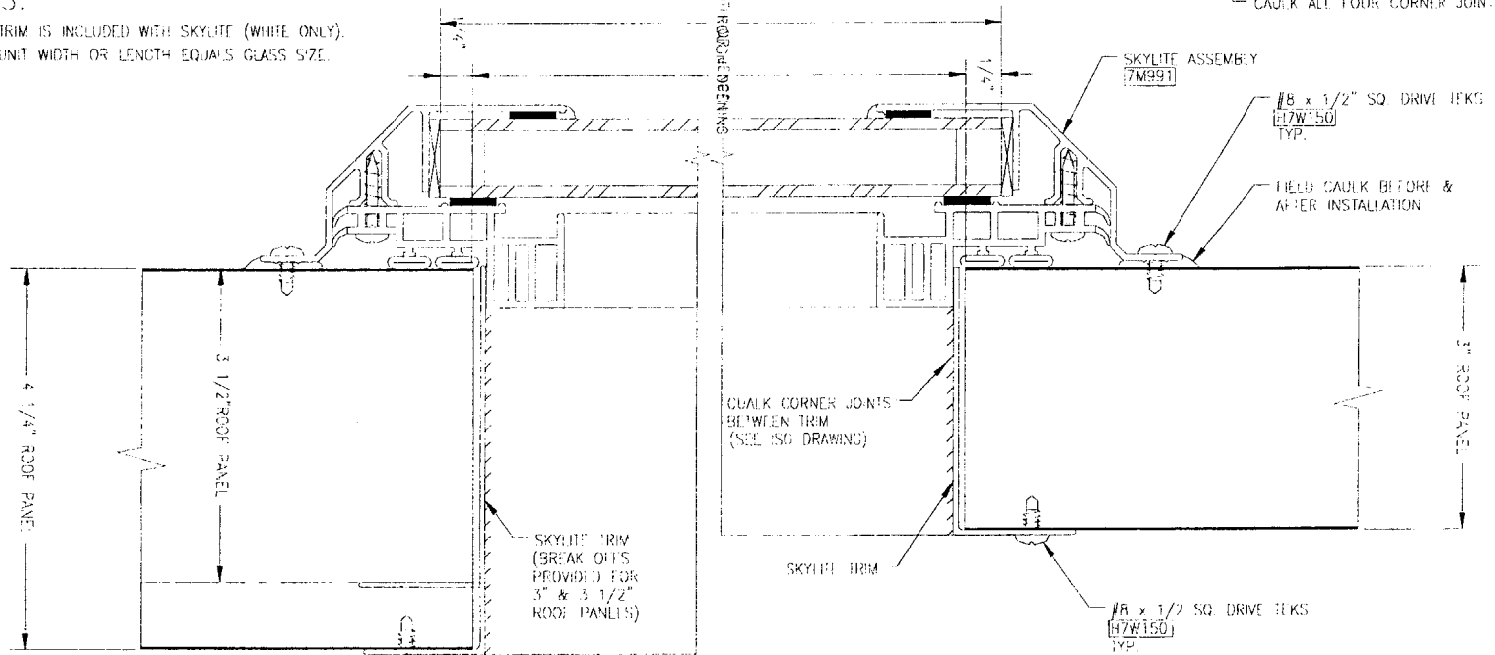
DWG. NO. L-041	PAGE 1
DATE: 11-1-97	OF 1

2.50 PATIO ROOM SKYLITE INSTALLATION



NOTES:

1. TRIM IS INCLUDED WITH SKYLITE (WHITE ONLY).
2. UNIT WIDTH OR LENGTH EQUALS GLASS SIZE.

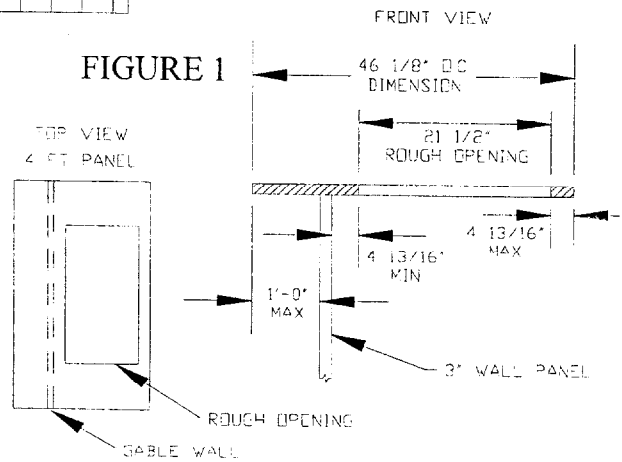
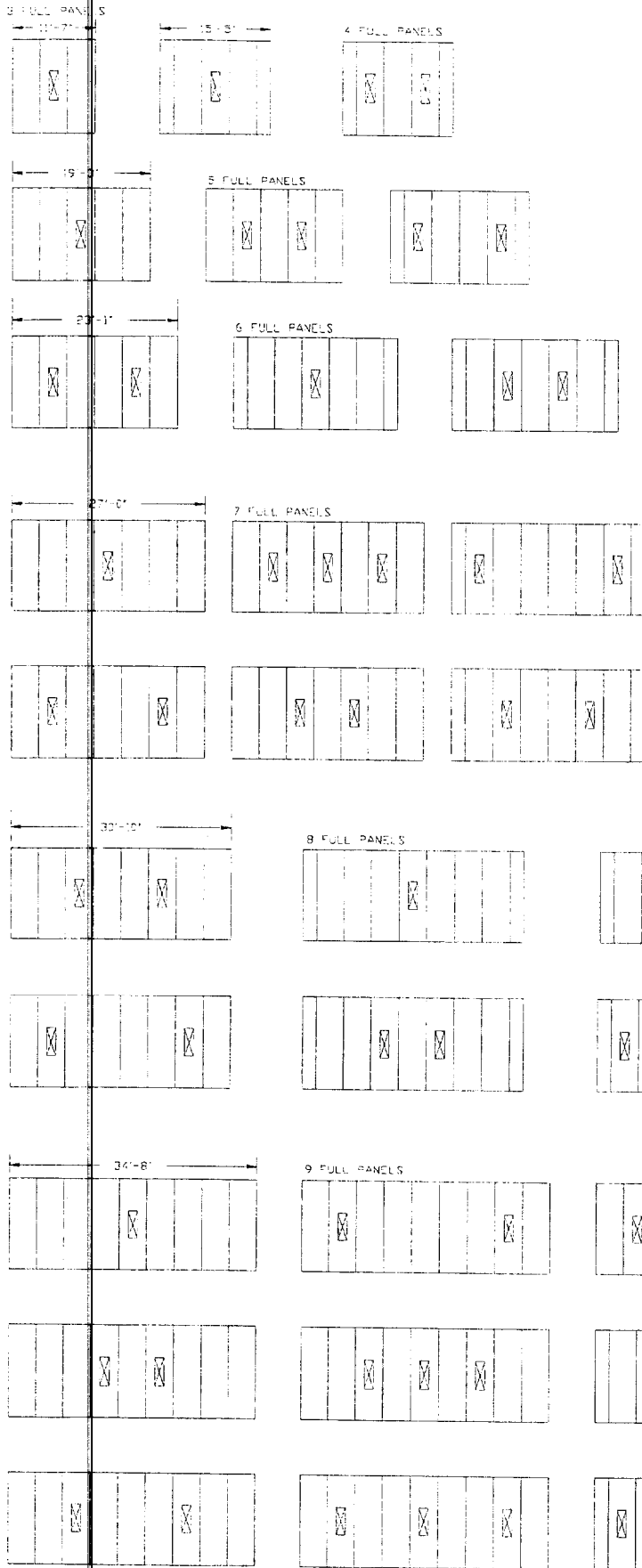


SKYLITE CENTERING OPTIONS

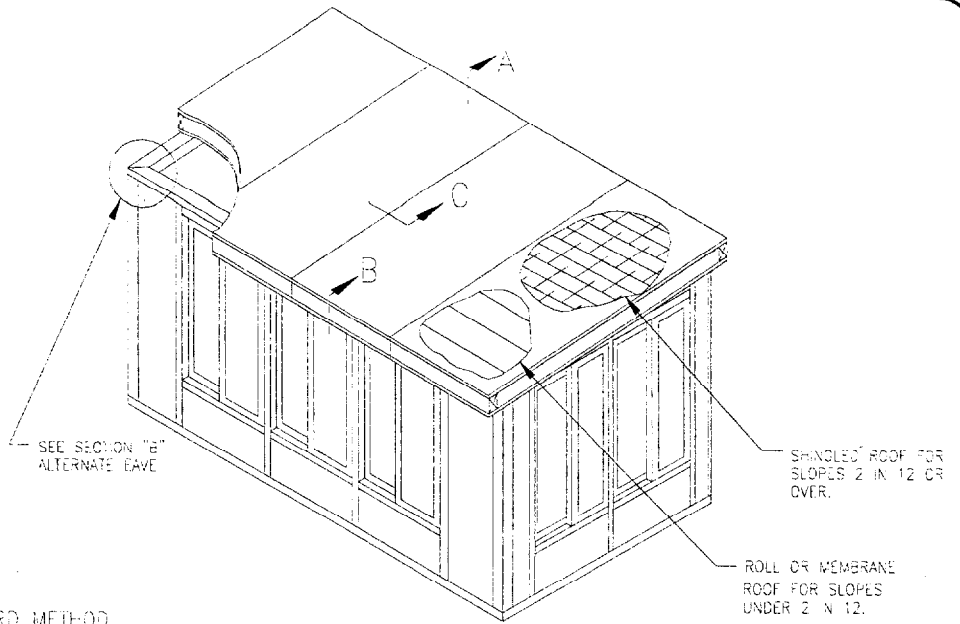
(WITH 4 FT ROOF PANELS)

NOTES:

1. SKYLITES CAN ONLY BE CENTERED IF YOU CHOOSE A ROOF LENGTH SHOWN BELOW WHERE FOUR SEASONS SHIPS ALL FULL PANELS.
2. SHADED AREAS DESIGNATE HALF 4 FT PANELS (CUT BY INSTALLER)
3. SKYLITES MAY BE INSTALLED IN THE TWO GABLE END PANELS ONLY IF THEY ARE FULL PANELS AND THERE IS A MAXIMUM OVERHANG OF 12" OR IF THERE IS NO GABLE END WALL. (SEE FIGURE 1)
4. DIMENSIONS SHOWN ARE ACTUAL ROOF LENGTHS. YOU MUST SUBTRACT THE OVERHANG X2 TO DETERMINE THE LENGTH OF THE FRONT WALL

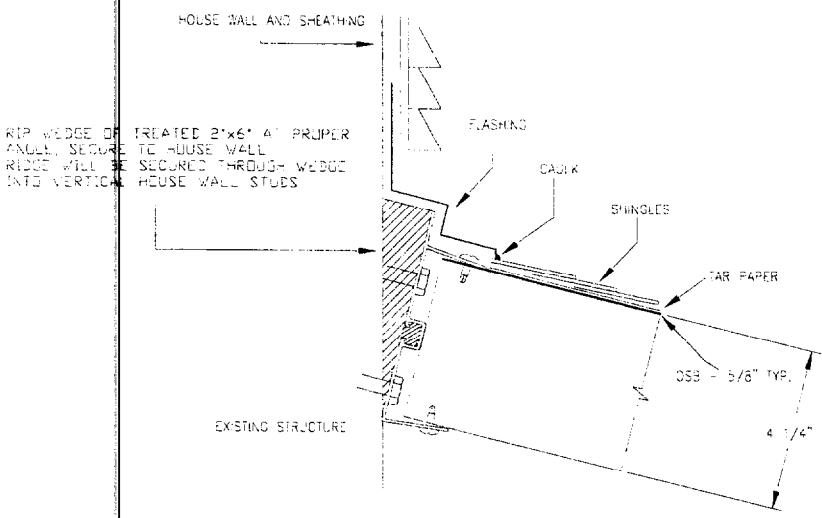


OSB 4-1/4" ROOF PANEL DETAILS

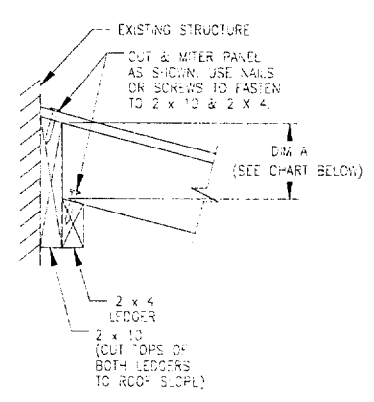


SECTION A

RIDGE STANDARD METHOD



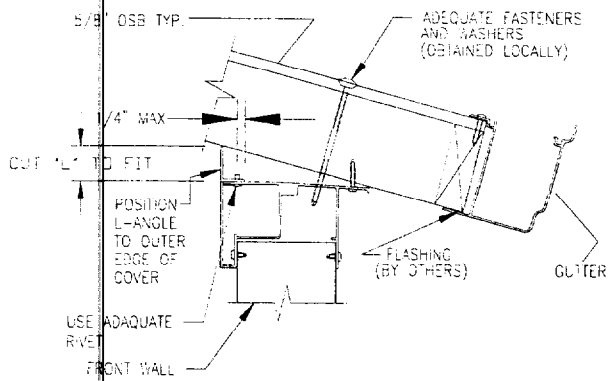
ALTERNATE RIDGE METHOD



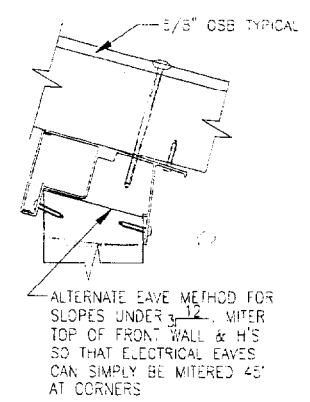
SECTION B

EAVE STANDARD METHOD

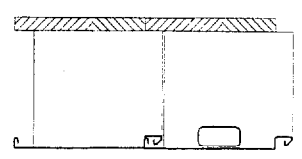
END OF GABLE WALL EAVE MUST BE CAPPED WITH FLASHING OR ALUMINUM ANGLE



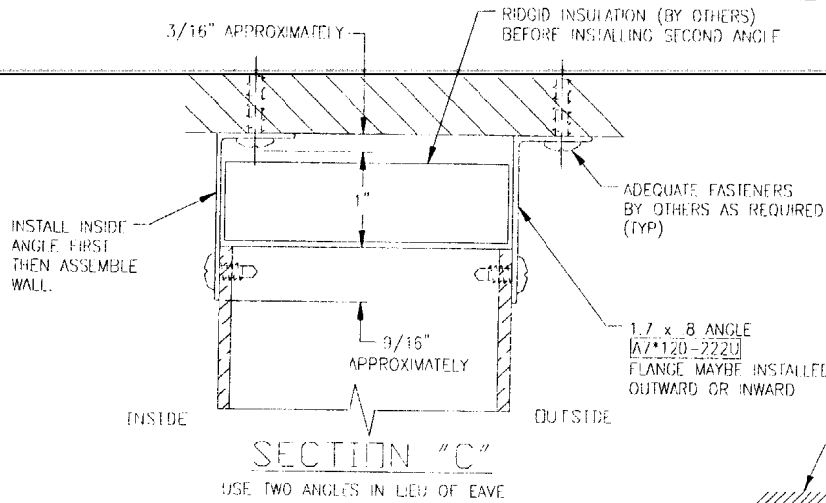
ALTERNATE EAVE



SECTION C

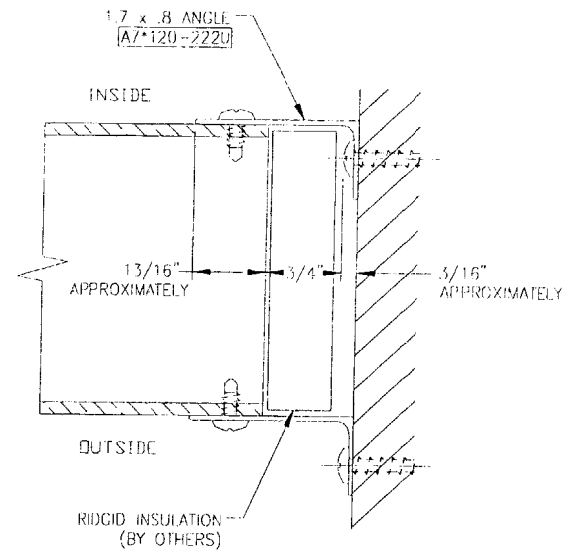
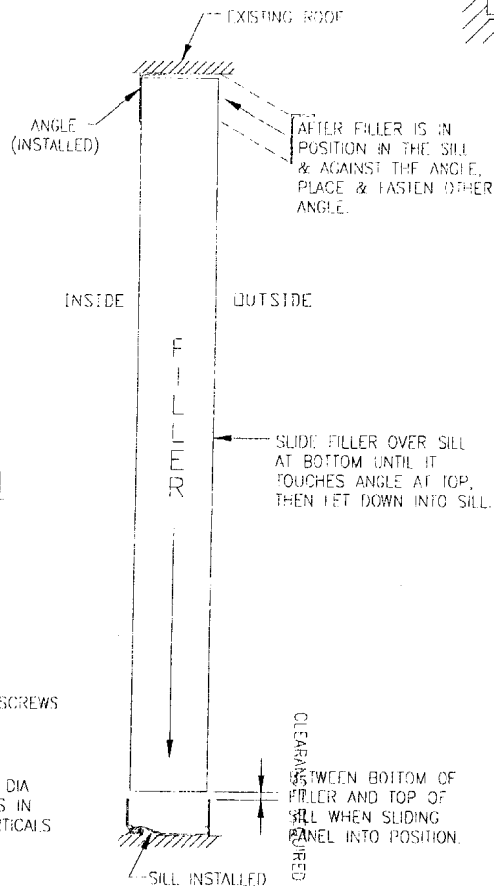
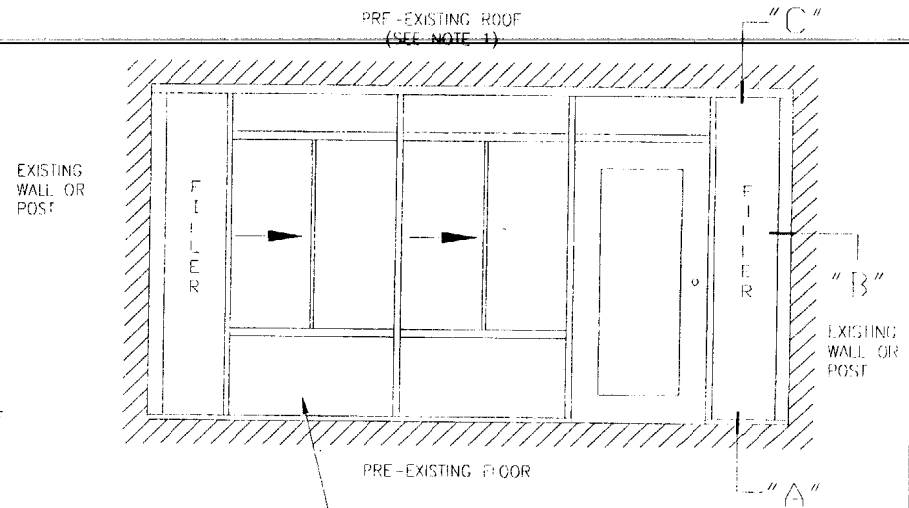
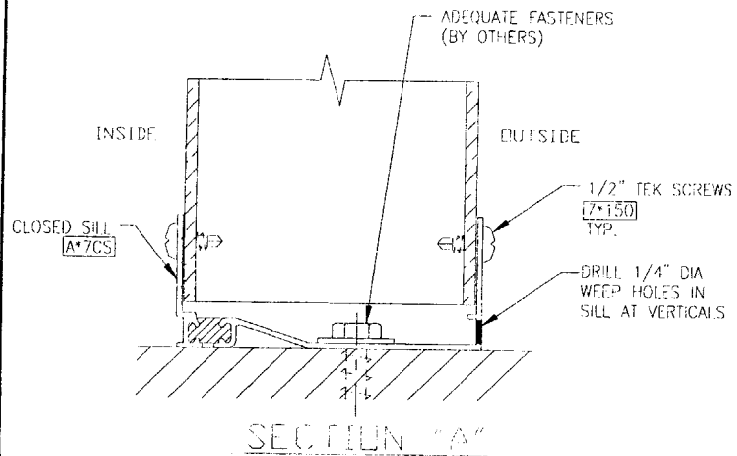
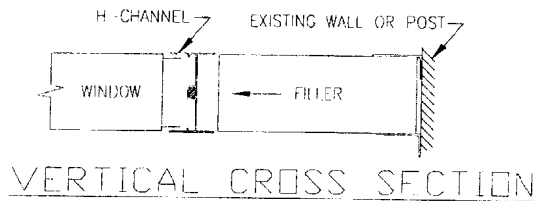


SERIES 230 PATIO SHADE ROOM PORCH ENCLOSURE DETAILS



NOTES:

1. PATIO ROOM WALL MAY OR MAY NOT BE ABLE TO SUPPORT PRE-EXISTING ROOF WITHOUT POST. HAVE LOCAL ENGINEER / ARCHITECT VERIFY.
2. (*) INDICATES COLOR. SUBSTITUTE THE (*) WITH "B" FOR BRONZE OR "W" FOR WHITE & "A" FOR SANDTONE.



NOTE: ALL EXTRUSION CUT LENGTHS ARE PROVIDED IF YOU CHOOSE TO FABRICATE YOUR OWN JAMB, HEAD & THRESHOLD. (SEE FIGURE TWO)

- STEP 1: CREATE ROUGH OPENING IN SUNROOM SILL BY BREAKING AWAY VERTICAL LEGS AS PER FIGURE 1 FOR A LENGTH OF 35 5/8" WHERE DOOR IS TO BE INSTALLED. (SEE SECTION A-A, B-B & ISOMETRIC DRAWING)
- STEP 2: INSTALL STORM DOOR THRESHOLD INTO SILL ROUGH-OPENING. SECURE ALONG INSIDE THRU BOTTOM OF THRESHOLD USING #8 x 1/2" TEK'S SCREWS. CENTER H-CHANNELS ABOUT SILL AT 36 13/16" APART. (SEE ISOMETRIC DRAWING & SECTION B-B)
- STEP 3: INSTALL SUNROOM JAMBS. TO INSTALL HEAD EXTRUSION CAREFULLY MEASURE 80 1/2" FROM BOTTOM OF SUNROOM SILL TO INSIDE OF HEAD AND MAINTAIN 35 5/8" ACROSS INSIDE OF JAMB TO JAMB. FASTEN JAMB AND HEAD TOGETHER USING ONE CLIP ANGLE AT EACH TOP CORNER. SECURING FROM THE INSIDE OF JAMB & HEAD WITH FOUR #8 x 1/2" TEK SCREWS. FASTEN JAMBS TO H-CHANNEL ON INSIDE ONLY. (SEE ISOMETRIC DRAWING)
- STEP 4: MODIFY Z-BAR HEAD AND JAMBS BY CUTTING DOWN TO DIMENSIONS IN FIGURE 3 & SECTION B-B.
- STEP 5: REFER TO INSTRUCTIONS PACKED IN STORM DOOR BOX.
- STEP 6: HARDWARE CONSIDERATIONS: SECURE JAMB BRACKET AS SHOWN IN SECTION A-A.

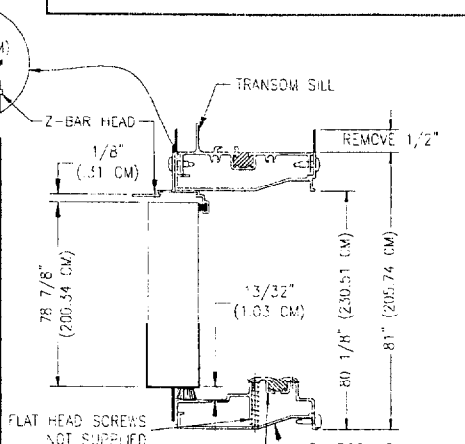
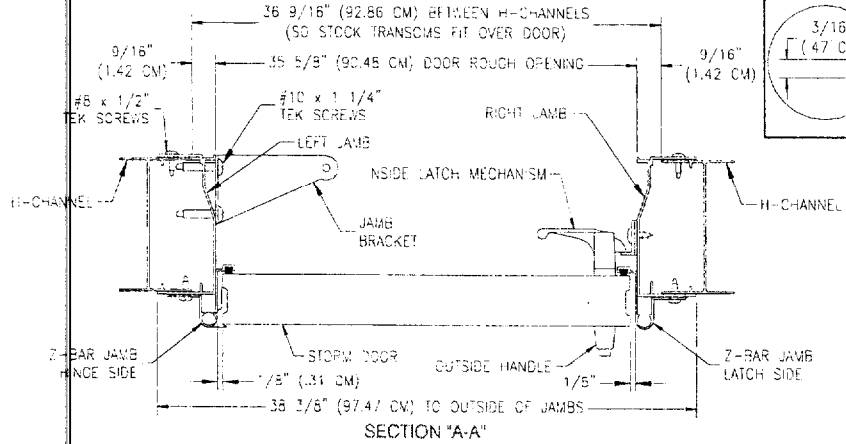
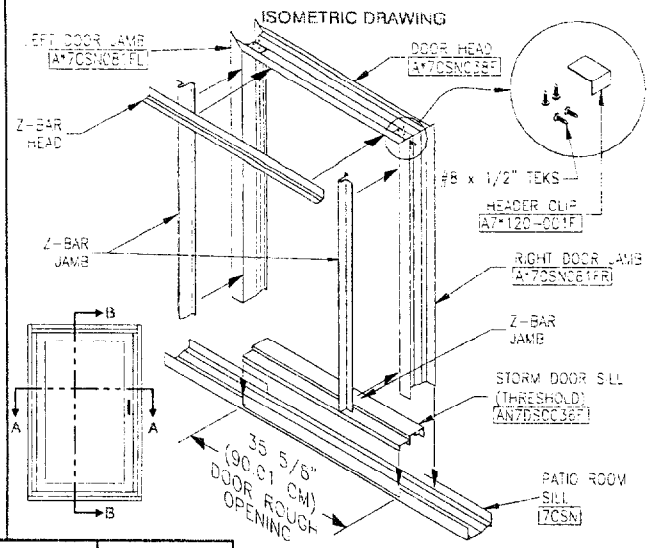
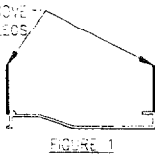


FIGURE 2
THESE PARTS ARE PACKED IN THE FOUR SEASONS BOX
7*3STM-CST
OR
7*3STM-XST

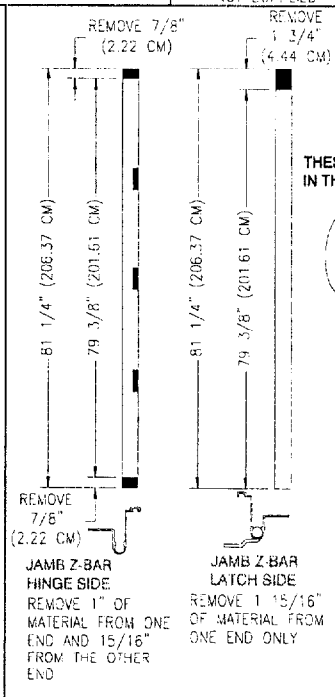
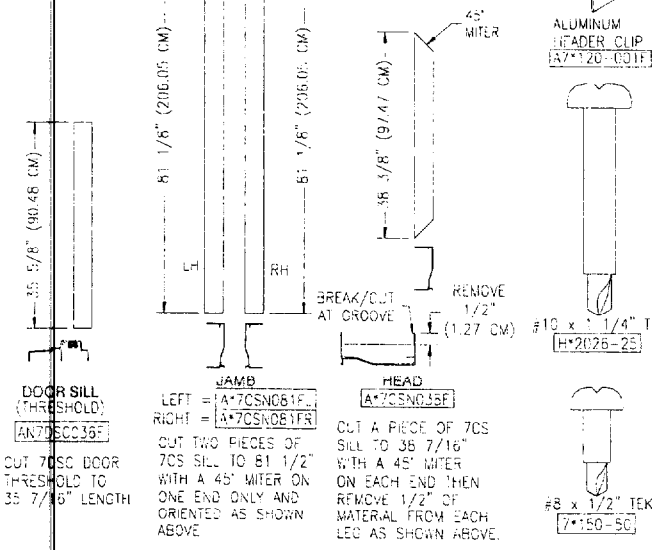
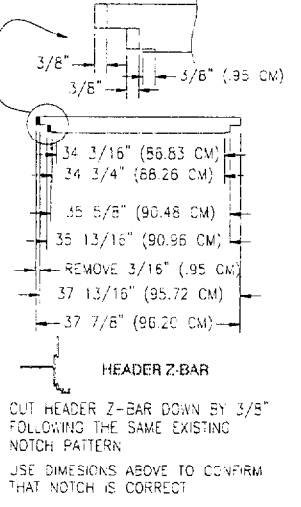


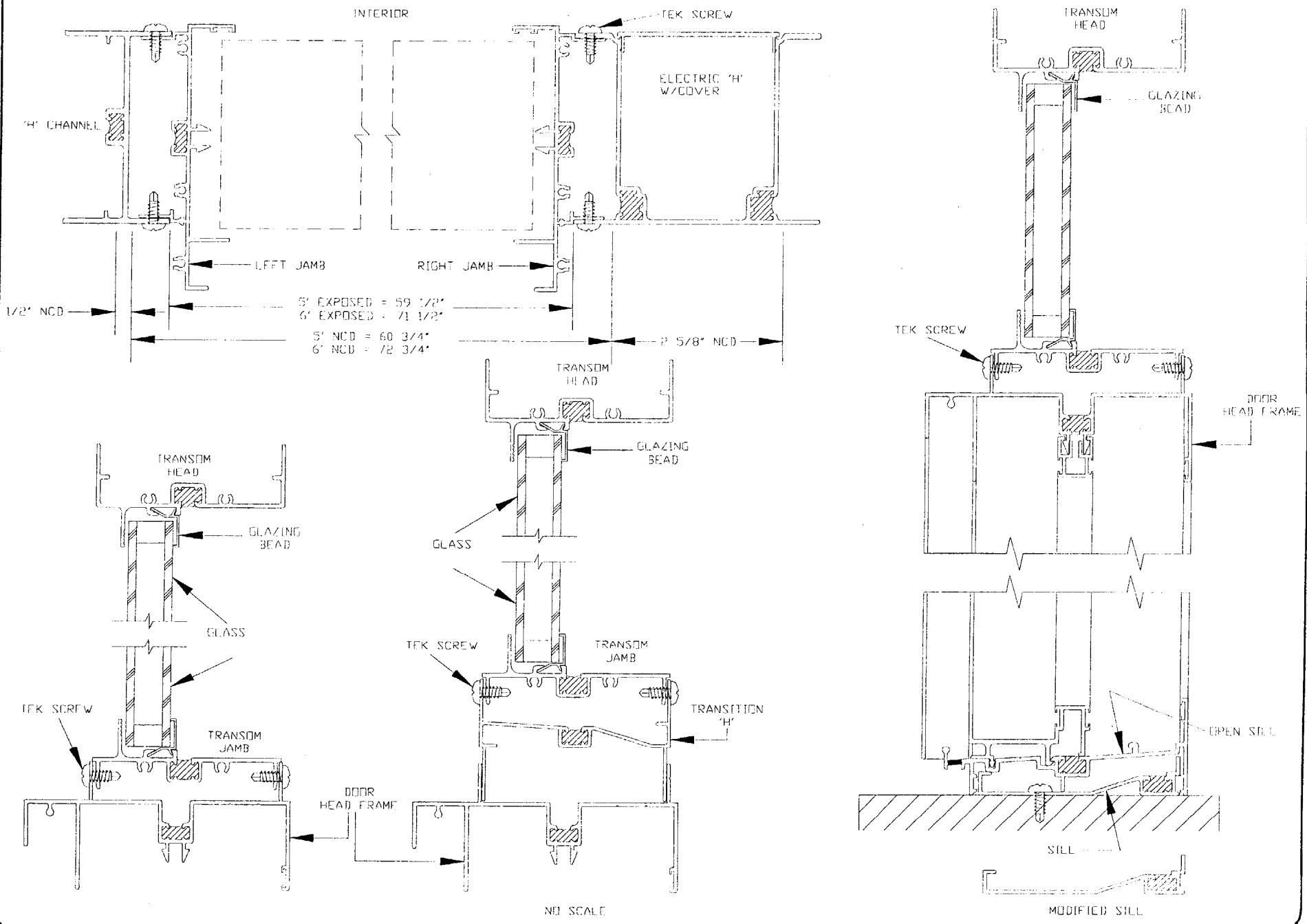
FIGURE 3
THESE PARTS ARE PACKED IN THE STORM DOOR BOX



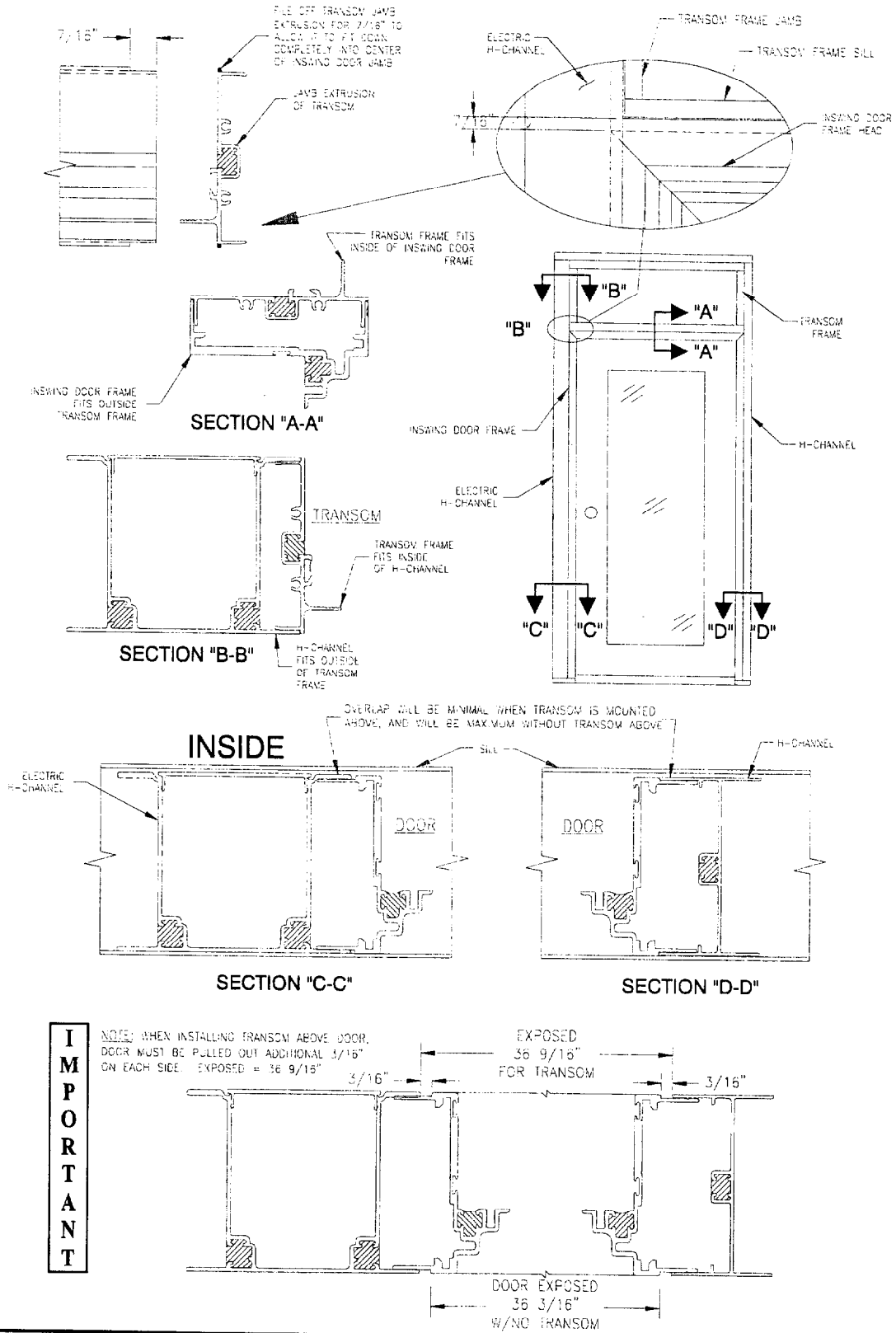
SERIES 230 PATIO ROOM SINGLE GLAZED STORM DOOR INSTALLATION INSTRUCTIONS

DWG NO 7-132	PAGE 1
DATE: 11-1-97	OF 1

230/330 PATIO ROOM SLIDING DOOR DETAIL

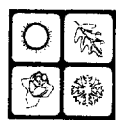


INSTALLATION OF INSWING DOOR WITH REDESIGNED FRAME IN SERIES 230 / 330 ROOMS



DRAWN BY
 CHECKED BY
 DATE 3-28-99

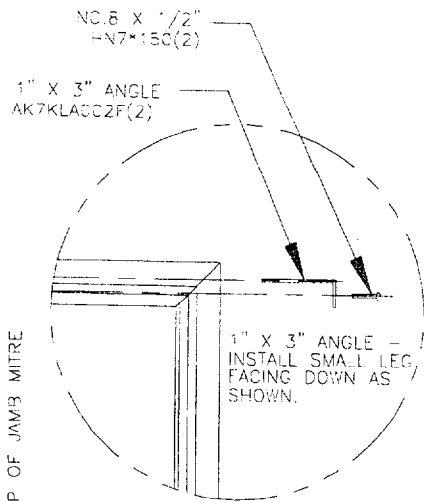
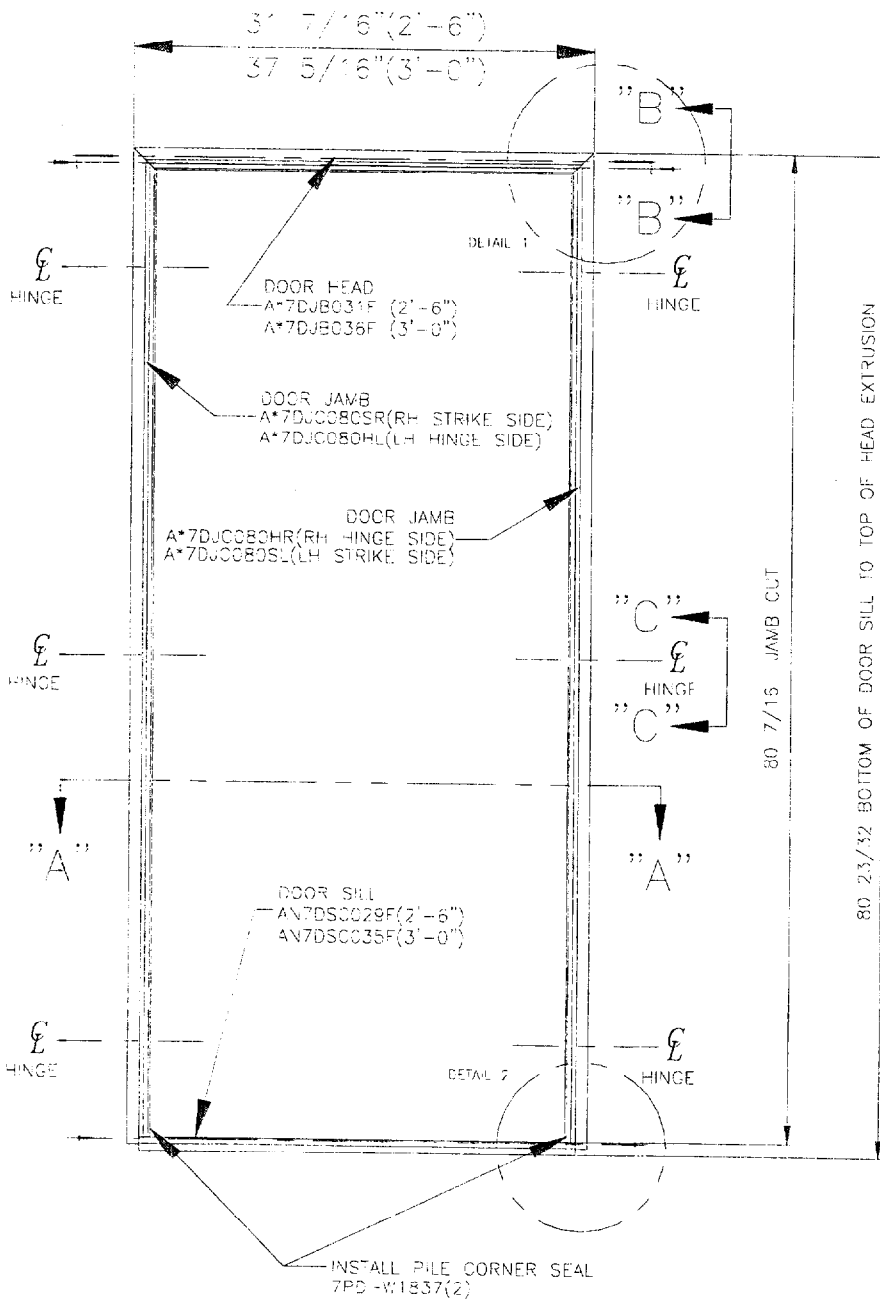
SCALE NONE
 DWG#
 PAGE 1 OF 1



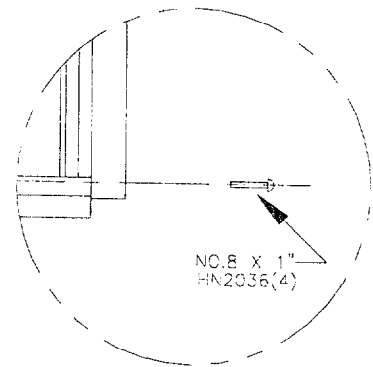
FOUR SEASONS SOLAR PRODUCTS CORP.
 5005 VETERANS MEMORIAL HIGHWAY
 HOLBROOK, NEW YORK, 11741
 DESIGNERS AND MANUFACTURERS OF FOUR SEASONS SUNROOMS

REVISION	BY

SINGLE INSWING DOOR FRAME ASSEMBLY – EXTERIOR VIEW




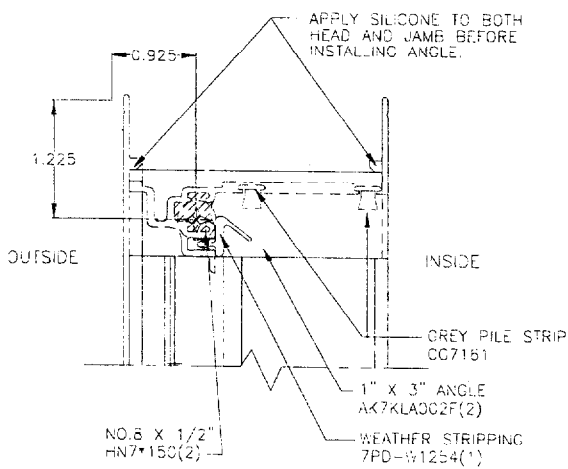
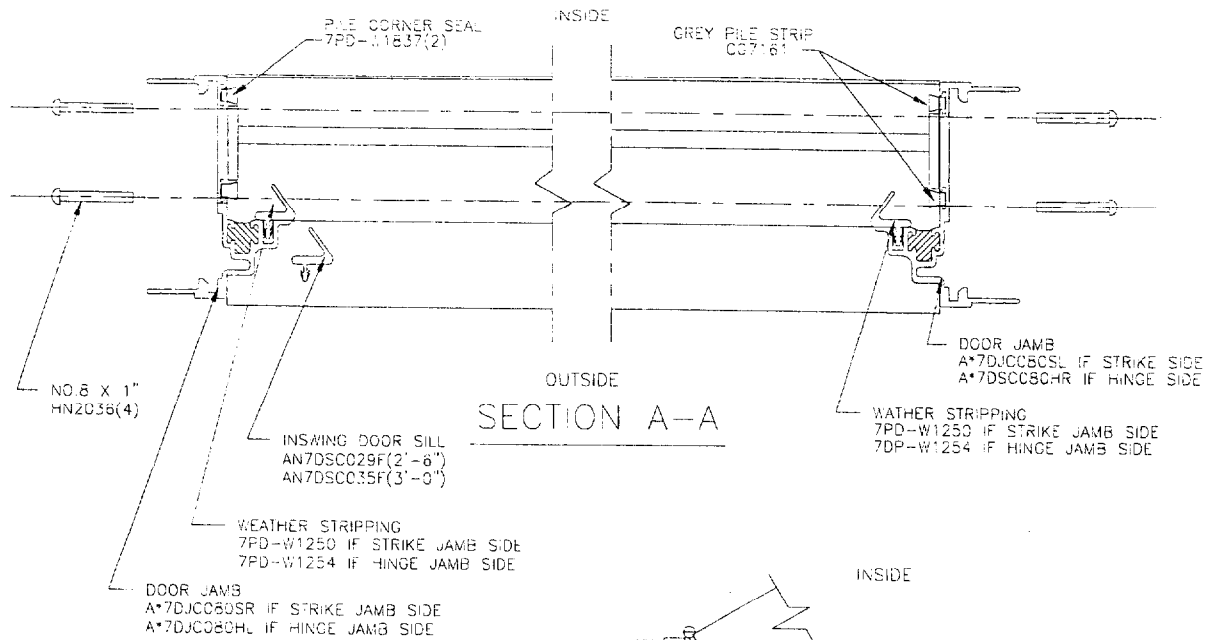
DETAIL 1



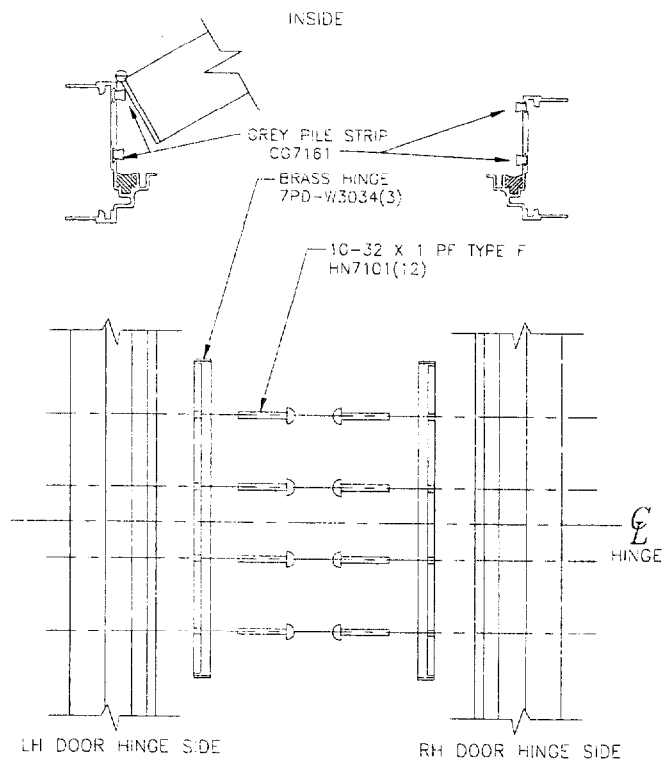
DETAIL 2

ACAD12\SYSTEM\7-110-1

NO.	REVISION	BY	FOUR SEASONS SOLAR PRODUCTS CORP.			ALLOY TEMPER
1	REDRAWN	JFR		5005 VETERANS MEMORIAL HIGHWAY HOLBROOK, NEW YORK 11741		TYPICAL WALL FINISH
2	10-15-97	MT		DESIGNERS AND MANUFACTURERS OF FOUR SEASONS SUNROOMS		DIE NO.
3	1/28/98	MT		PART NAME: 2'-6"/3'-0" SINGLE INSWING DOOR FRAME ASSEMBLY		PART NO.
4						
5			DO NOT SCALE DRAWINGS	SCALE	DRAWN BY JFR	DWG NO. 1 OF
6			TOLERANCES + ~ - ~	APPROVED	DATE: 05/15/98	7-110




SECTION B-B



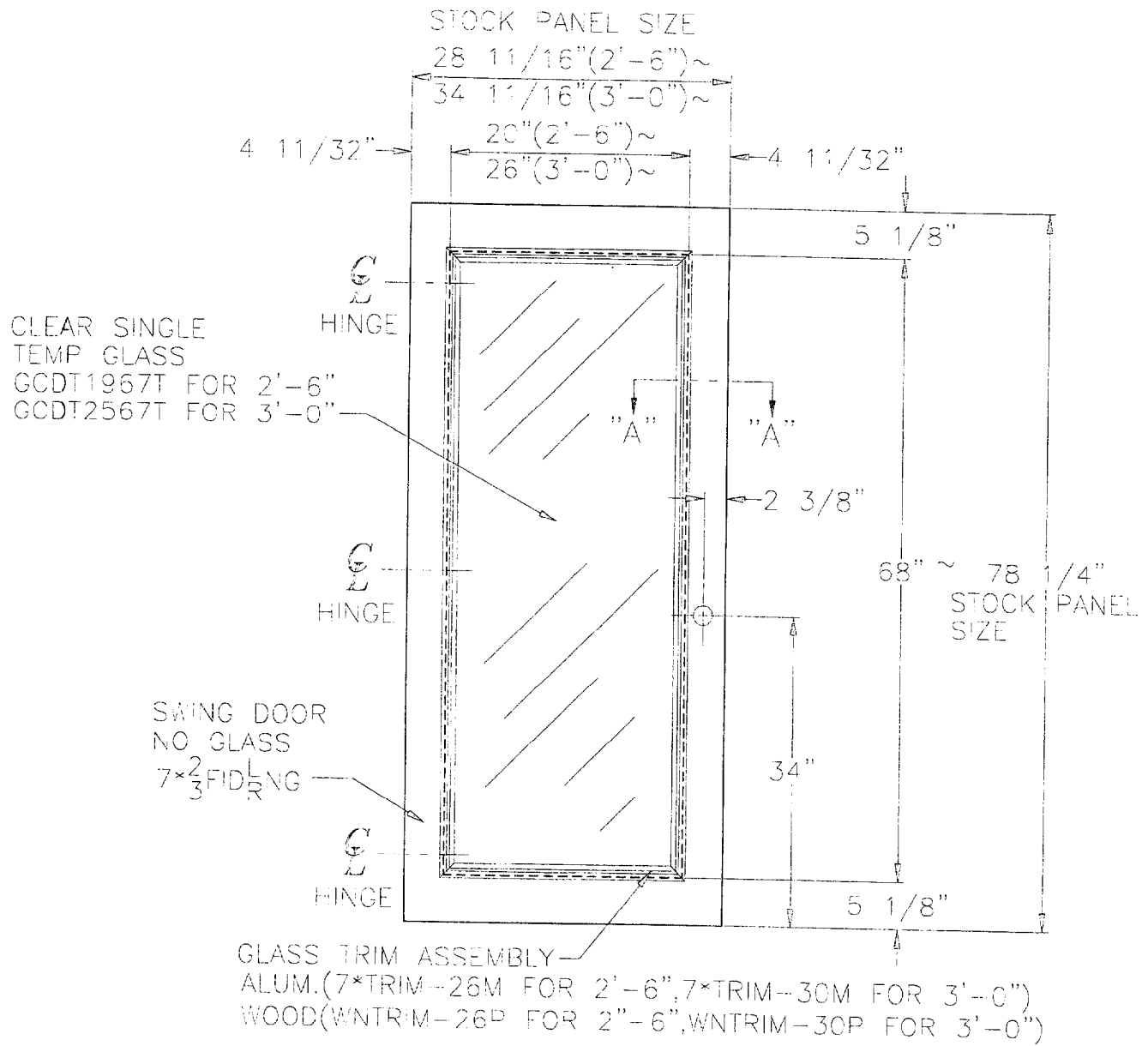
SECTION C-C

NOTES:
 * INSERT COLOR CODE - "B"BRONZE,"W"WHITE,"A"SANDTONE

ACAD12\SYS7P7RM\7-110-2


NO.	REVISION	BY	 FOUR SEASONS SOLAR PRODUCTS CORP. 5005 VETERANS MEMORIAL HIGHWAY HOLBROOK, NEW YORK 11741 DESIGNERS AND MANUFACTURERS OF FOUR SEASONS SUNROOMS			ALLOY TEMPER
1	REDRAWN	JFR				TYPICAL WALL
2	10-15-97	MT	PART NAME: 2'-6"/3'-0" INSWING DOOR FRAME SECTIONAL VIEWS			FINISH
3						DIE NO.
4			DO NOT SCALE DRAWINGS			PART NO.
5						SCALE
6			TOLERANCES + ~ - ~	APPROVED	DATE: 05/16/96	7-110

SINGLE INSWING DOOR ASSEMBLY

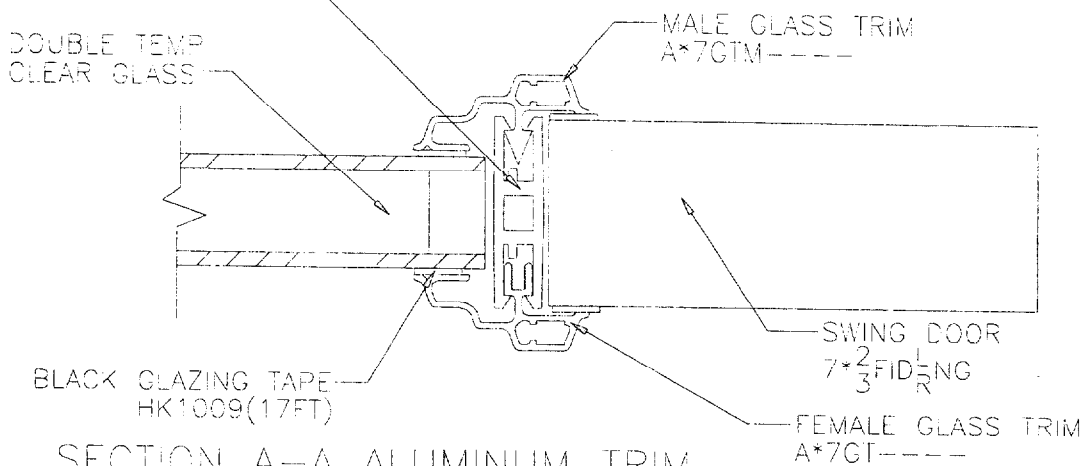


NOTES:
 * INSERT COLOR CODE - "W" WHITE, "B" BRONZE, "A" SANDTONE
 THIS DOOR AVAILABLE IN LEFT OR RIGHT HINGED POSITIONS
 ~ = 1/16
 - = 1/8

ACAD12\SYS7PTRM\7-110-3

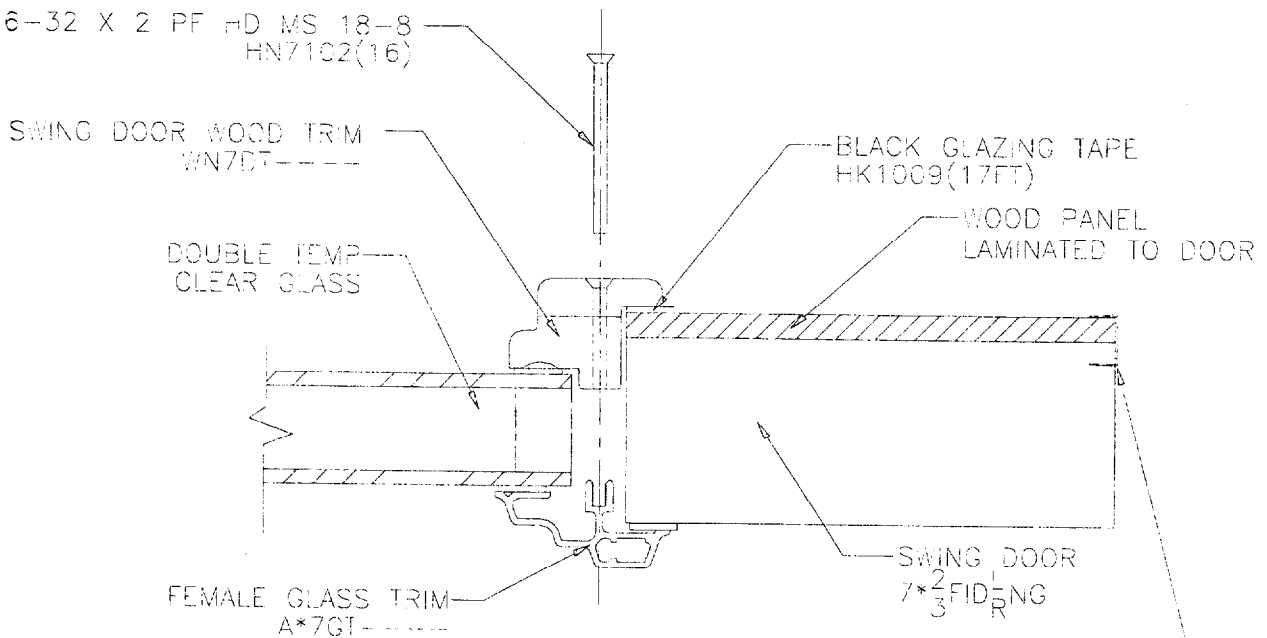
NO.	REVISION	BY	 <p>FOUR SEASONS SOLAR PRODUCTS CORP. 5005 VETERANS MEMORIAL HIGHWAY HOLBROOK, NEW YORK 11741 DESIGNERS AND MANUFACTURERS OF FOUR SEASONS SUNROOMS</p>	ALLOY	TEMPER
1	REDRAWN	JFR		TYPICAL	WALL
2					FINISH
3				PART NAME: SINGLE INSWING DOOR ASSY.	
4				DIE NO.	
5				PART NO.	
5			DO NOT SCALE DRAWINGS	SCALE	DRAWN BY JFR
6			TOLERANCES + ~ - ~	APPROVED	DATE: 05/20/96
					DWG NO. 3 OF 7-110

7/8" GLAZING CLIP
 CN1102(5 ON EACH SIDE, 3 ON TOP
 AND BOTTOM, 16 TOTAL)



SECTION A-A ALUMINUM TRIM

#6-32 X 2 PF HD MS 18-8
 HN7102(16)




SECTION A-A WOOD TRIM

ALUMINUM TRIM, CN8121(1)
 STRIKE SIDE OF DOOR ONLY!

NOTES:

- * INSERT COLOR CODES - "W"WHITE, "B"BRONZE, "A"SANDTONE
- INSERT UNFINISHED OR FINISHED LENGTHS

ACAD12\SYS7PTRM\7-110-4

NO.	REVISION	BY	FOUR SEASONS SOLAR PRODUCTS CORP.			ALLOY
1	REDRAWN	JFR	 <p>5005 VETERANS MEMORIAL HIGHWAY HOLBROOK, NEW YORK 11741 DESIGNERS AND MANUFACTURERS OF FOUR SEASONS SUNROOMS</p>	TYPICAL WALL FINISH		
2				DIE NO.		
3				PART NO.		
4				DRAWN BY JFR		
5				DATE: 05/21/96		
6				APPROVED		
			PART NAME: SINGLE INSWING DOOR TRIM SECTION VIEWS		DWG NO. 4 OF 7-110	