



Galv-Econ Erection Manual



SALES AND MANUFACTURING LOCATIONS

Brookhaven, MS
19 E. Lincoln Drive NE
Brookhaven, MS 39601
601-823-6516

Lake Charles, LA
1909 Ruth Street
Sulpher, LA 70663
337-625-5051

Tupelo, MS
120 Industrial Park Rd
Salttillo, MS 38866
662-869-7797

Benton, AR
12655 I-30 South
Benton, AR 72015
501-776-3825

Jackson, TN
1070 S Highland Ave.
Jackson, TN 38301
731-300-3200

Holden, LA
5321 Arundel Rd
Meridian, Ms 39307
601-482-1500

Jasper, TX
3931 Hwy 96 S
Jasper, TX 75951
409-384-5777

Scott City, MO
1616 E. Rd.
Scott City, MO 63780
573-803-4700

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REQUIRED TOOLS

Drill/Driver
Hammer Drill
5/16" Metal Drill Bit
1/2" Concrete Drill Bit
3/4", 1/2", 5/16", 1/4" Driver Bits

Hammer
Metal Snips
Level
Tape Measure
Air Compressor or Shop Vac

PARTS LIST

Trusses
Wedge Bolts
Square tubing columns
Zee girts
Cee door jambs & header
Eave struts
Zee purlins
Miniclips
Base and rake angle
Drive anchors
1" no-washer metal fast screws

1-1/4" metal fast screws with washers
7/8" stitch screws with washers
Roll-up Door
Walk Door
Roof & Wall panels
Ridge cap
Eave trim
Gable rake trim
Outside corner trim
Door trim

Overview

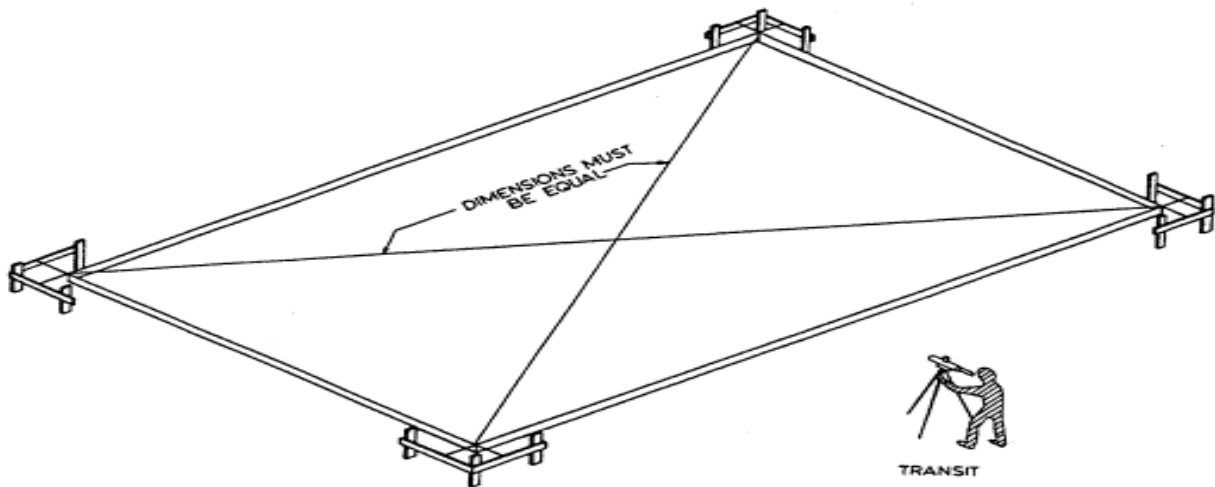
Reed's Galv-Econ Building is a sturdy, economical structure designed for light-duty, low-occupancy use. Made of 14 and 16 gauge galvanized framing with 26 gauge sheeting, Galv-Econ Buildings are available in 20 x 24', 20' x 30', 24 x 24, 24' x 30', 30' x 30', 30' x 40', 30' x 50' and 40' x 40' sizes in 10' or 12' eave height.

Basic packages include trusses, columns, purlins, girts, wall panels, roof panels, ridge cap, gable rake, eave trim, outside corner trim, door trim, roll-up door, and walk door. You can also order closures, insulation, liner panels and skylight panels.

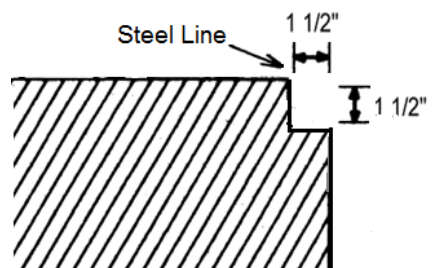
The Galv-Econ Building is designed for quick delivery and installation. The purpose of this manual is to provide a general overview for erection. It is intended for an installer with a general knowledge of building construction and understanding of steel structures. For best results, install components in the order directed.

Site Preparation

Reed's Galv-Econ buildings should be erected on a slab foundation or on concrete piers. Before the components arrive, the site and foundation should be prepared. This includes leveling the terrain and constructing the foundation. A concrete contractor is highly recommended for this phase of the construction. Consult your local building codes for requirements. A slab should have straight sides and square corners, poured at least the same size as the sales dimensions of the building (steel line).



A sheet ledge should be created when pouring the foundation for the wall sheets. This helps to keep unwanted pests out of the building. To create a 1-1/2" x 1-1/2" sheet ledge you will need to form the slab 3" wider and 3" longer than the dimension of your building.



Rip a 2x4 down the middle leaving you with 2 pieces 1 1/2" x 1 1/2". Nail these strips to the inside of the concrete forms at the top. This will bring you back to the desired steel lines matching your building dimensions.

Important: For erection purposes, on a foundation with a sheet ledge, the steel line is considered to be the top, inside edge of the ledge. (see diagram)

Components Delivery and Handling

If you have chosen to have your building delivered, the vehicle transporting your building components must be able to gain access to the building site from the adjacent highway or road. Such access should be studied and prepared in advance of arrival. All obstructions, overhead and otherwise, must be removed.

When the truck arrives with the building, unloading and placing the steel parts of the building in the most convenient place for assembly will make the process easier and faster. After unloading the truck and before the driver leaves, ensure that all parts have been delivered. If any of the parts are missing notify the driver. If damage or shortages are noted after delivery notify your Reed's Metals representative immediately. Have invoice numbers and detailed descriptions of the damage or shortage available. A shortage or damage discovered later can be caused by theft, misplacement, mishandling or other causes and is not the responsibility of Reed's Metals.

Bundles should remain banded (if possible) during the unloading process. Bundles should never be lifted by the banding material. Lift each bundle as close as possible to its center of gravity.

Components should be stored off the ground sufficiently high to allow air circulation underneath. All primed or painted parts should be stored at an angle to allow any water to drain away and permit air circulation for drying.

Water formed by condensation of humid air or from rain can become trapped between stacked panels or trim. If you cannot erect your building immediately and must store the components, store them under roof, in a warm, dry location if possible. If panels must be stored outside, the following precautions should be observed:

1. The storage area should be reasonably level, and located so as to minimize handling.
2. When stored on bare ground, place a plastic ground cover under the bundles to minimize condensation on the sheets from ground moisture.
3. Store bundles at least 12 inches above ground level to allow air circulation beneath the bundle, and to prevent damage from rising water.
4. Elevate one end of each bundle slightly to permit runoff of moisture from the top of the bundle or from between sheets. A waterproof cover should be placed over the bundles, allowing for air circulation under the cover.

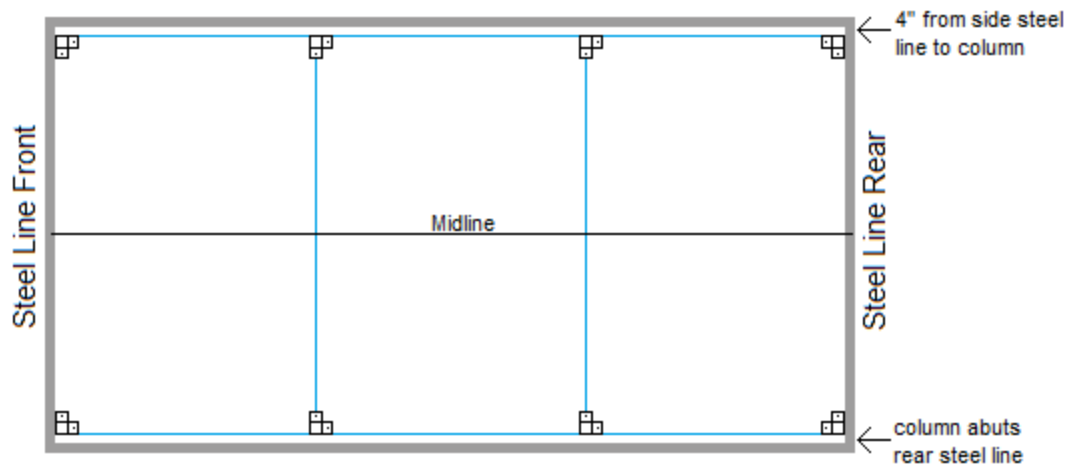
Under no circumstances should panels be handled roughly. After panel bundles are opened, individual sheets must be handled carefully to prevent panel buckling or damage to the panel coating. ***Do not drag one sheet off of the one under it. Lift the sheet along its long edge, roll it off the bundle and carry it in a vertical position.*** For sheets over 10' long, two or more people may be required to carry the sheet.

Frame Erection

Columns

Accurate column placement is vital to ensuring the square-ness and stability of your structure. Corner columns touch the front and rear steel lines, but are 4" inside the side steel lines. The remaining columns are centered every 10'. Align outside of columns 4" inside the side steel lines.

On each side of foundation, measure 4" from side steel line and mark chalk line from front to rear steel line. For each bay, measure 10' from front steel line and mark chalk line from side to side. At line intersections, place middle back of 4" square tubing leg. With columns in place, mark position of base-clip holes to drill for wedge anchors.

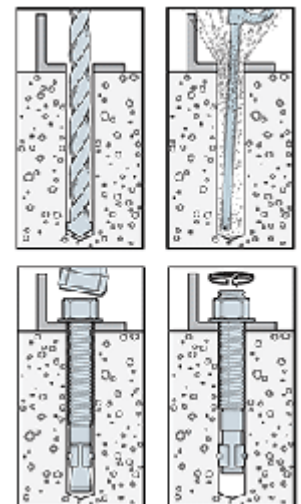


(diagram represents a 30' length Galv-Econ)

Drill 1/2" holes, 5-1/2" deep and blow hole clean using compressed air.

Caution: Oversized holes in the base material will make it difficult to set the wedge anchor and will reduce the anchor's load capacity

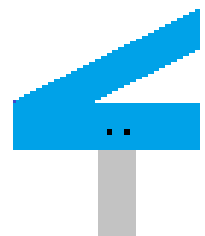
Replace column and place wedge bolts into holes with un-threaded end down. Tap wedge bolt with nut, and hammer into hole. Lightly tighten nuts until total frame is assembled. (Fully tighten all bolts after complete assembly.)



Trusses

Lift truss above columns and insert column top into openings on bottom edges of trusses. Webbed strapping or 2x4 wood blocking is recommended during erection to plumb the frame.

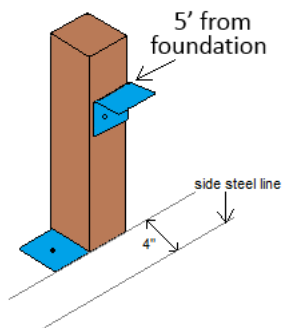
Using 1" no-washer metalfast screws, screw truss to top of column on each side of truss (2 screws on each side). Use level to assure columns are plumb before attaching sidewall girts.



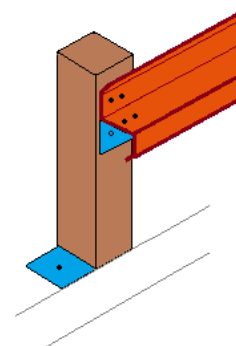
Sidewalls & Endwalls

Choose walk door location on sidewall or front end wall. Girt for location of walk door must be installed at 7' 4" from the foundation, instead of the regular 5' girt height. Follow instructions below for sidewall girts and endwall girts. For the bay sidewall or endwall with the walk door, measure up from foundation up column 7' 4" instead of 5'.

SIDEWALL GIRTS



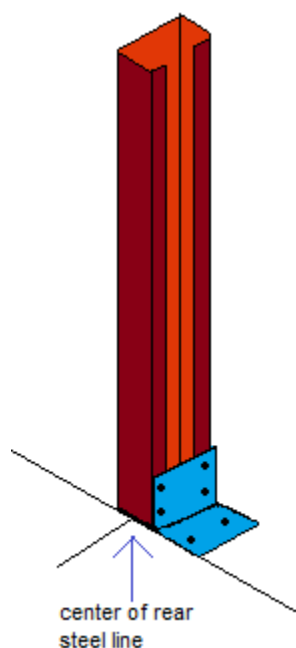
On outside of each column measure from foundation up column 5' and use level and draw a straight line to mark the location for the webbing of the bypass-mount zee girt. Place angle of miniclip at height marked. Repeat for each sidewall column. Attach miniclips to columns using two 1" no-washer metalfast screws.



Place zee girt atop clips. For girts meeting at 5' height, overlap ends of zee as able, ensuring outermost ends extend to building corners. Use 2x4 wood blocking to hold zeos in position before attaching to column.

Check for level and adjust as needed. Using 1" no-washer metalfast screws, attach zeos to clips (2 screws) and to columns (2 screws). Outside edge of zee girts should align with side steel line.

REAR ENDWALL CEE BRACE



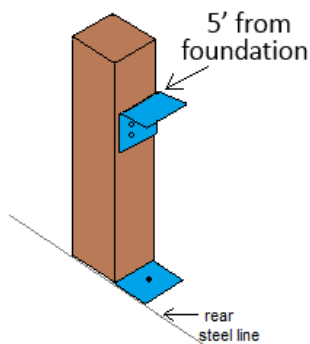
Galv-Econs wider than 24' include a cee brace to be installed at the midline of the rear endwall. At rear endwall measure from sides of foundation to direct center of rear steel line and mark foundation on steel line. Stand cee purlin brace on end with center of side leg on mark. Check for level.

Mark position of open side of cee on foundation and opposing closed side of cee on truss. These will be the positions of the angles of the miniclips. Set cee aside. Place angle of miniclip on truss at line marked and screw clip into truss bottom using two 1" no-washer metalfast screws.

With 5/16" drill bit make 2 holes in the bottom of leg of one miniclip. Place that leg of miniclip on foundation with back side on mark that shows cee brace placement. Through holes, drill foundation with 1/4" drill bit to depth of 1-1/2". Attach miniclip to foundation with drive anchors.

Reposition cee as shown with open side touching miniclip at foundation and closed side touching miniclip at truss. Check for level. Use 2x4 wood bracing to maintain plumb. Attach cee to miniclips using four 1" no-washer metalfast screws.

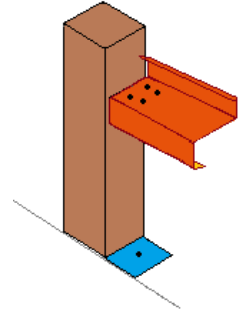
REAR ENDWALL GIRTS



On each rear endwall column place miniclip on inside of column toward mid-line of building. Measure from foundation up column 5' and use level and draw a straight line to mark the locations for miniclips. Position angle of miniclips at the marks. Using two 1" no-washer metalfast screws, attach miniclips to columns.

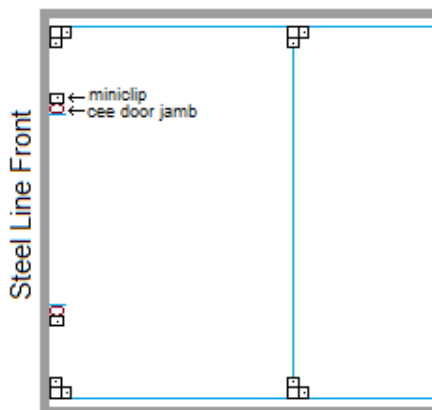
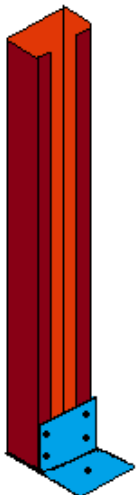
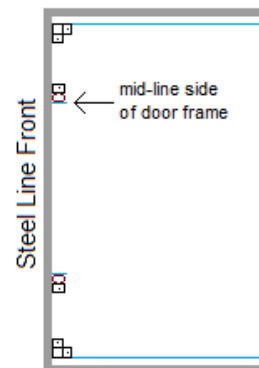
For buildings wider than 24', install clip on each side of cee brace, 5' up from foundation using 1" no-washer metalfast screws.

Place zee atop clips, from column to column or from column to cee brace. Check for level. Use 2x4's wood blocking to hold girt in place and fasten zee to miniclips using 1" no-washer metalfast screws.



FRONT ENDWALL ROLL-UP DOOR FRAME

JAMBS -- From inside of each front wall column measure toward center of foundation. For 20' wide building measure 4' 4". For 24' wide measure 6' 4". For 30' wide measure 9' 4". For 40' wide measure 14' 4". Mark foundation at a 90 degree angle to foundation edge. This is the location for the mid-line side of the door frame.



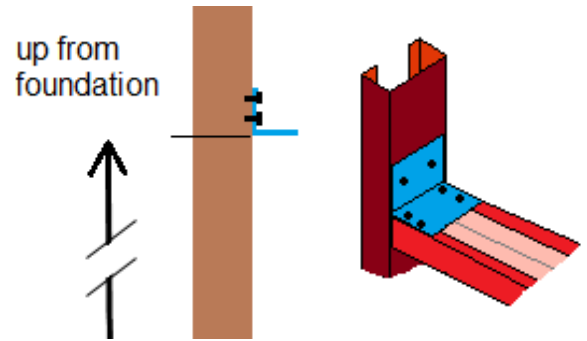
Stand cee purlin door jamb on end with closed side on mark. Check for level. Mark position of open side of cee on truss and on foundation. These will be the positions of the miniclips. Set cee aside. Place angle of miniclip on truss at line marked and screw clip into truss bottom.

With 5/16" drill bit make hole in center of leg of one miniclip. Place that leg of miniclip on foundation with back side on mark. Through hole, drill foundation with 1/4" drill bit to depth of 1-1/2". Attach miniclip to foundation with drive anchor.

Reposition cee with open side touching the back side of miniclip at truss and miniclip at foundation. Check for level. Use 2x4 wood bracing to maintain plumb. Attach cee to miniclips using 1" no-washer metalfast screws through flats on open side of cee. Repeat process for opposing door jamb.

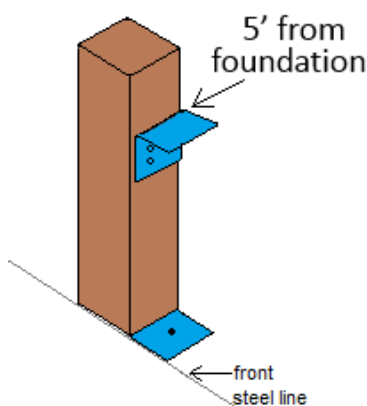
HEADER -- On solid side of each cee door jamb measure up from foundation 8' 2-1/2" for 10x8 roll-up door or 10' 2-1/2" for 10x10 roll-up door. This is the position for the bottom of the miniclips. (After attaching cee purlin header, the finished opening will be 8' for 10 x 8 door or 10' for 10 x 10 door.)

Use level and draw a straight line on each cee to mark the location. Place angle of miniclip along mark and attach to solid side of cee purlin door jamb using two 1" no-washer metalfast screws.



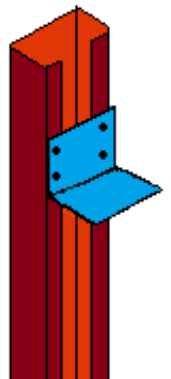
Place open end of cee door header underneath miniclips with open side up. Use 2x4 wood blocking to hold cee in position. Check for level. Attach cee to miniclips from top side of clips using four 1" no-washer metalfast screws.

FRONT ENDWALL GIRTS



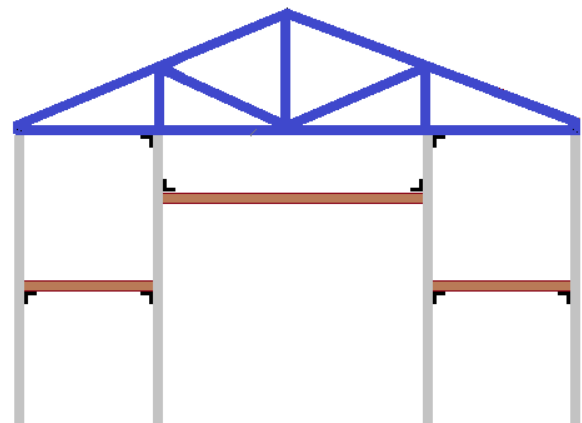
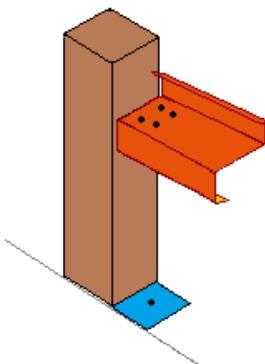
On each front endwall column measure from foundation up column 5' and use level and draw a straight line to mark the location for miniclips. Position angle of miniclips at the marks. Using 1" no-washer metalfast screws, attach miniclips to columns.

On the open side of each cee purlin door jamb measure from foundation up column 5'. Use level and draw a straight line to mark the location for a miniclip. Position angle of miniclips at the marks. Using 1" no-washer metalfast screws, attach miniclips to the cees.



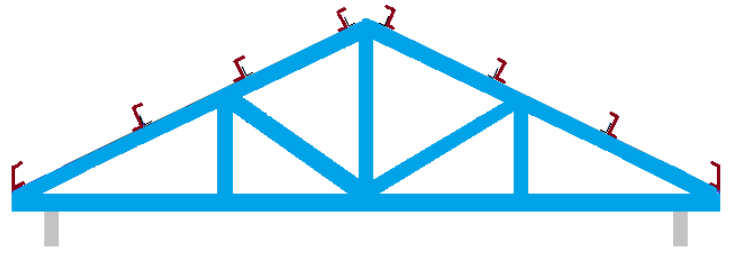
If walk door will be located on front endwall, for section that will include door frame, install girt at 7' 4". Follow directions for that section as above, but measure up 7' 4" from foundation on column and cee purlin door jamb.

After installing miniclips, with inner leg down place zee girt atop clips from column to jamb. Check for level. Use 2x4 wood blocking to hold cee in position then attach to miniclips using 1" no-washer metalfast screws.



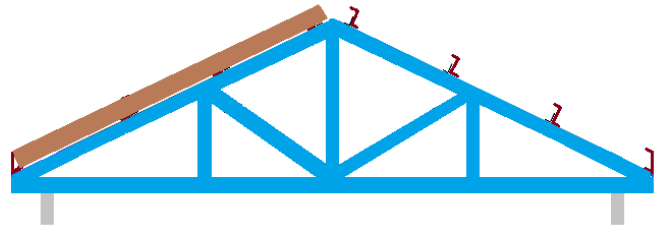
Purlins, Eave Struts & Rake Angle

Install eave struts to the ends of each truss. Align eave strut with closed side out, to match the roof pitch. Attach at each truss with 1" no-washer metal fast screws.



Zee purlins attach to the clips atop the trusses similar to the process for placement on the sidewall girts. Run a zee-purlin from the left topmost clip on the front truss to the corresponding clip on the next truss.

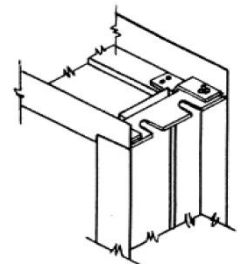
Screw into place on the first truss clip using 1" no-washer metal fast screws. Run a second zee-purlin directly beside the first zee-purlin on the middle truss to the corresponding clip on the next truss. Screw through both zeeps and clip. Repeat process for each level of truss clips.



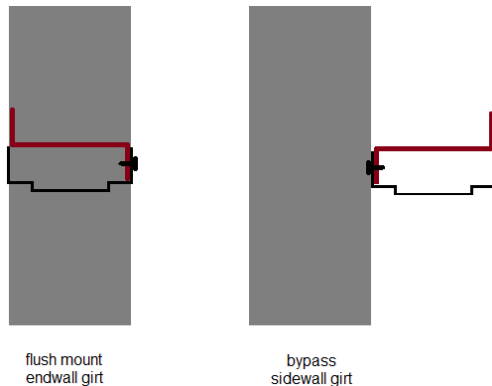
To finish the roof structure, install rake angle. Lay base angle with 2" leg atop eave strut and purlins. Attach where each intersects, using 1" no-washer metal fast screws.

Walk Door

Connect door frame sides to door header using 1-1/4" metal fast screws. Make sure the doorframe is square so the door will fit and open and close properly.

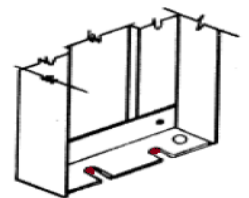


Determine location for walk door and insert frame under wall girt.



Seat top of door frame over back leg of zee. Attach with 1-1/4" metal fast screws. Connect door frame sides to foundation using drive anchors.

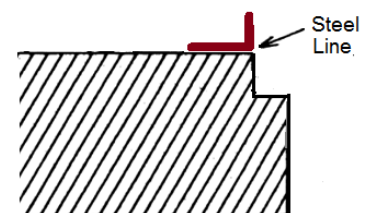
After the doorframe is installed and squared, the door can be placed on the hinges, the doorknob and locks installed and the threshold plate placed at the bottom of the door opening.



Base Angle

Connect Base Angle to foundation for metal sheeting attachment. No base angle should be used in openings for roll up door and walk door. Cut base angle as needed to install between jambs and columns.

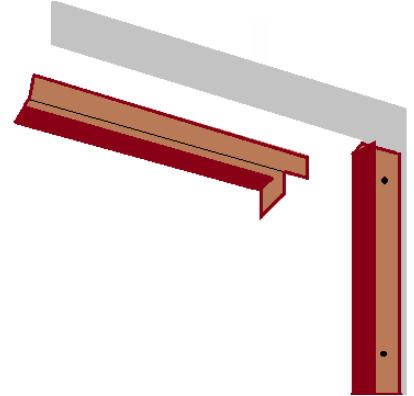
With 5/16" bit, drill base angle at 3-4' intervals, no closer than 2" from ends. Align base angles along steel lines as shown. Through base angle holes, drill foundation with 1/4" drill bit to depth of 1-1/2". Attach base angle to foundation at drilled locations using drive anchors.



Trim & Panel Installation

Walk Door Trim

Use metal snips to miter walk door j-channel. Trim opposing side pieces on top ends with angled front for mitered corner after placement. For side door trim cut tall leg and trough of jamb trim to 7'. Cut short leg of jamb trim to 7' 1-1/4". Miter front corner by snipping short leg from longest dimension to edge of trough. Repeat for opposing side door trim, mirroring cuts.



For top door trim cut j-channel to 3' 2-1/2". Snip sides of trough back 1-1/4" to create tab to be folded into side j-channels. On front leg, miter corner by snipping from long dimension at top to end of snip at trough. Repeat for opposite end, mirroring cuts.

Use trim stitch screws to attach j-channel on sides and top of door frame. Turn tabs down into side channel troughs.

Roll-up Door Trim

Use tin snips to miter roll-up door jamb trim and j-channel in same manner as for walk door.

For 8' roll-up door, cut tall leg and trough of jamb trim to 8'. Cut short leg of jamb trim to 8' 1-1/4". For 10' roll-up door cut tall leg and trough of jamb trim to 10'. Cut short leg of j-channel to 10' 1-1/4". Miter front corner by snipping short leg from longest dimension to edge of trough. Repeat for opposing side door trim, mirroring cuts.

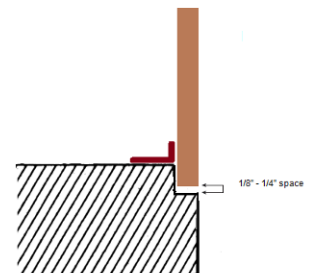
For top door trim cut j-channel to 10' 2-1/2". As with walk door trim, snip sides of trough back 1-1/4" to create tab to be folded into side j-channels. On front leg, miter corner by snipping from long dimension at top to end of snip at trough. Repeat for opposite end, mirroring cuts.

Use trim stitch screws to attach J-Channel on sides and top of door frame. Turn tabs down into side channel troughs.

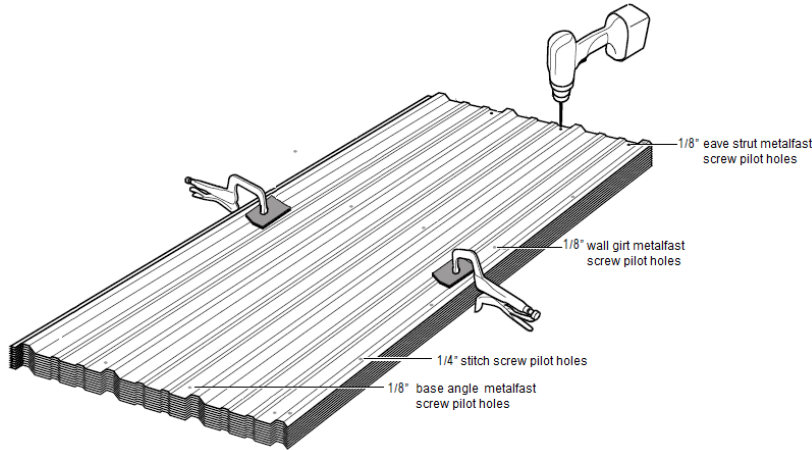
Wall Panels

Stand first wall panel from base angle to eave strut to mark screw locations. This panel can be used as a template for pre-drilling holes in other panels. Screw location on panels depends on foundation. To prevent moisture wicking from below, if foundation has sheet ledge, sheet bottom should have 1/8" to 1/4" space from foundation.

If foundation does not have sheet ledge, sheets should not be any closer to ground than 2".



Panels will need horizontal rows of 1-1/4" metalfast screws with washers at the base angle, wall girt and eave strut. Panels will also need vertical rows of 7/8" stitch screws with washers from bottom to top of the last ridge in the panel. To confirm the proper panels are being used, measure the panels then compare them to the area(s) to be covered.

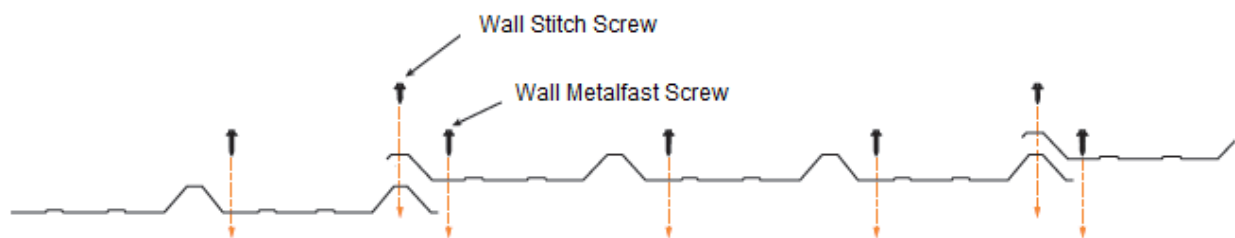


For best screw alignment on sidewalls, stack up to 10 panels making sure they are perfectly aligned. Use vice-grip clamps to secure the stack in preparation for drilling. This will help prevent misalignment.

It is important to clean metal filings off panel surfaces after drilling to avoid possibility of rust stains.

Start first panel at sidewall front corner with purlin bearing leg extending toward rear of structure.

Adjoining panels are installed with the overlapping rib toward the last erected panel. Position panel making sure that it is kept plumb and install fasteners at lapped rib. Check for proper coverage and correct as necessary. Install remaining fasteners.



Drive the fastener in until it is tight and the washer is firmly seated. **Do not overdrive fasteners.** There should be a slight extrusion of neoprene around the washer. Always use the proper tool to install fasteners. A fastener driver (screw gun) with an RPM of 1700-2500 should be used for self-drilling screws. **Do not use impact wrench.** Discard worn sockets as these can cause the fastener to wobble during installation.



Correct tightness.



Too tight. Sealant squeezed too thin.



Too loose. Sealant is not compressed.

Last panel may extend beyond structure depending on length of building. If so, trim panel to fit using metal snips. Repeat panel installation on opposing sidewall.

For rear endwall pre-drill base angle and wall girt pilot holes and stitch screw pilot holes. Position shortest panel at corner of endwall. Mark top edge of panel to trim excess that extends beyond rake angle. Trim panel, replace and attach to base angle, girt and rake angle. Repeat process for next panels, installing by height.

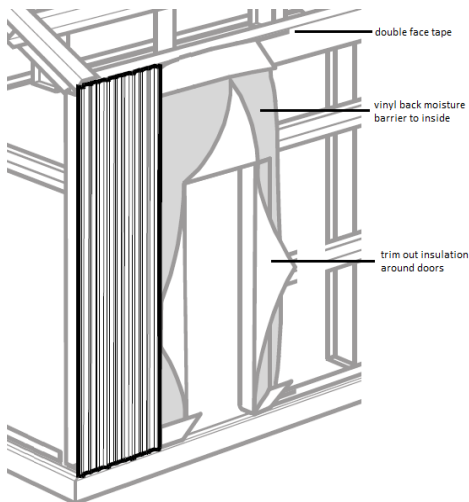
For front end wall, shortest panels will be located above framed opening for roll-up door. Start panel placement with panel that most closely matches eave height. Repeat process for pre-drilling and trimming panels.

For panels that extend beyond framed opening, trim panels so that they fit around frame and well into j-channel. Do the same for panels that extend where walk door has been located.

Wall Insulation (optional)

If wall Insulation is used, install it as you install the wall panels starting with a corner of a sidewall. Cut the insulation to length of wall panels. Use a small amount of double-faced tape to hold top in place.

Gently unroll insulation downward and pull taut. Tape bottom edge with a small amount of double-faced tape to outside of base angle.

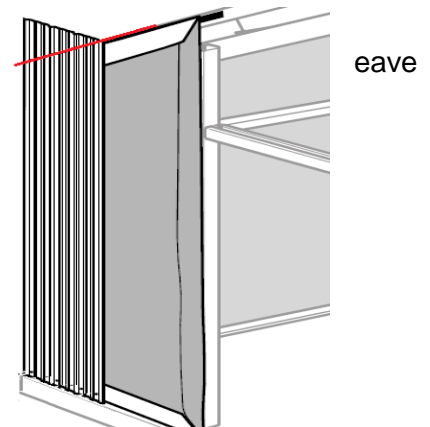
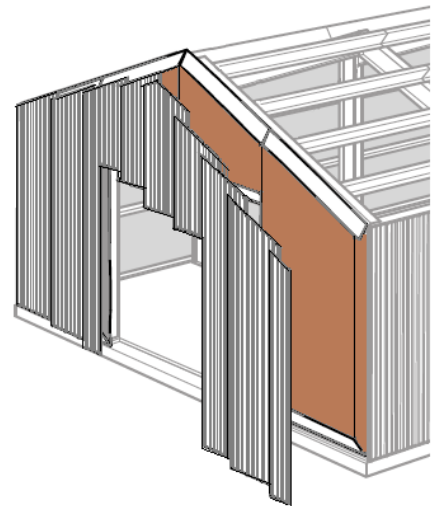


For framed openings, trim out insulation to match panel dimensions and tuck into j-channel trim before placing panel.

Attach panels to base, girt and strut through insulation.

Repeat similarly for endwalls. Place a small amount of double-faced tape, approximately 6 ft. in length, along the rake angle and base-angle. Unroll insulation gently from bottom to top, pulling taut.

Trim insulation to match the roof angle, using a utility knife, without cutting through the vinyl backing.

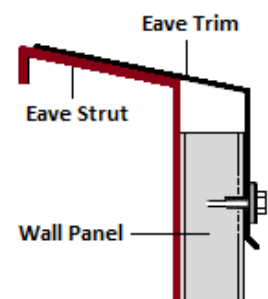


Eave Trim

Attach eave trim to top of wall panels as shown. Rest top leg of eave on eave strut. Snug front leg of eave trim against ridges of wall panels. Starting at sidewall front corner, extending eave toward rear endwall.

Use 7/8" stitch screws and screw through the trim into the first rib. Screw through a wall panel rib approximately every 3 feet for the length of the trim, leaving at least 2" at the end of the trim piece.

Rest the beginning end of the next trim piece over the final end of the previous trim piece, back lapping by 2". Again, attach eave trim with a stitch screw approximately every 3', into a wall panel rib. Backlap last piece of eave trim as many inches as necessary to align final end. Repeat on opposing sidewall.



If closures (optional) are purchased install them after placing the eave trim and before the panels are laid. For best performance run a strip of butyl tape along the top of the eave trim an inch from the outer edge of the building. Place 3' sections of closure or unroll vented closure along the butyl. Top closure with a bead of silicone sealant. Begin panel installation.

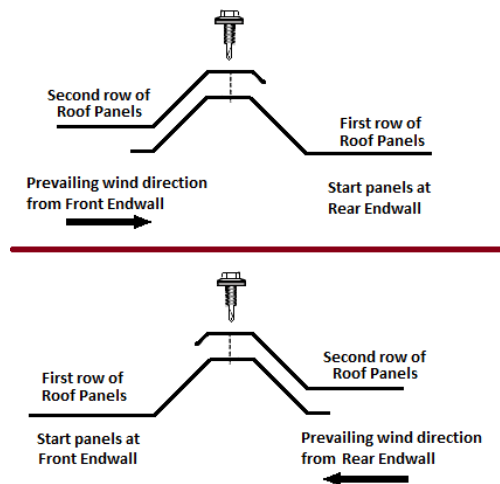
Roof Panels

First determine which end to start roof installation. For best wind resistance, panel laps should not face strong winds, so start installation at end of building that is opposite the prevailing winds, as shown. Plan to alternate installation from left to right side of the ridge of a building will be sheathed simultaneously. This will keep the insulation covered for the maximum amount of time.

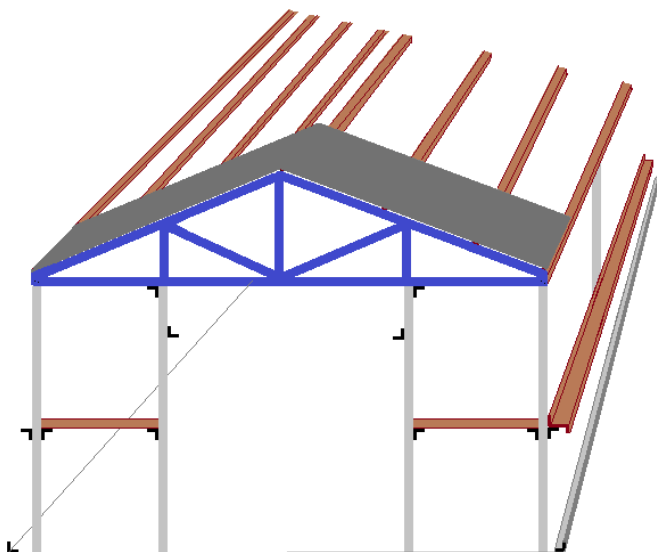
Create template for pre-drilling holes by placing first roof panel and marking purlin locations, from front sidewall corner toward ridge. Panel may be lowered toward sidewall to allow for some eave overhang, but do not leave more than 3" gap on either side of ridge. Hold panel in place with vice grip clamps and mark location of eave struts and purlins for horizontal screw rows.

Stack roof panels (up to 10), making sure they are perfectly aligned. Secure stack with vice-grip clamps. Drill holes for 1-1/4" metalfast screws at each purlin/eave strut, using same spacing as with wall panels. In last rib, drill holes for 7/8" stitch screws for panel laps. Be sure to clean metal filings off panels.

Set the first roof panel in place and fasten to eave strut and purlins with 1-1/4" metalfast screws with washers. Fasten second panel on opposing side of building, and align the ribs of the panels at the ridge for a uniform appearance. Lap first row of panels with second row and fasten. Continue with panels until roof is covered.



Roof Insulation (optional)



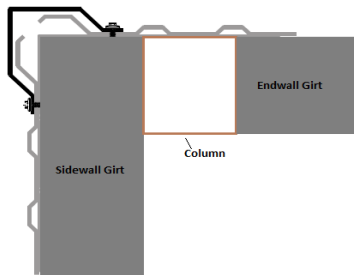
Pre-cut roof insulation to reach from eave to eave allowing for additional length on each side to facilitate handling. Roll out insulation across the purlins, with vinyl-backing toward foundation. Stretch the insulation to provide a tight and smooth inside surface.

To hold insulation in place while the roof sheets are being installed, use a small amount of double-faced tape on top of the eave trim top leg. As on the walls, the general sequence is to install the roof sheets in conjunction with the insulation. Similar to the wall panels, the roof panels may be pre-drilled for uniform screw placement.

Refer to insulation cut lists located at the end of this manual.

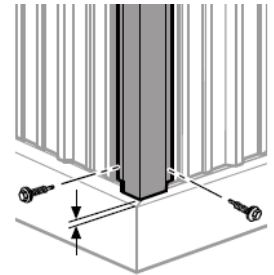
Final Trim

Outside Corners



Install corner trim over last major ribs of sidewall and endwall panels. At top snug corner trim under eave trim on side wall. At bottom, as with wall panels leave a space – 1/8" to 1/4" from foundation sheet ledge or at least 2" above ground for foundations without sheet ledge.

Fasten corner trim to wall panels using 7/8" stitch screws every 30".

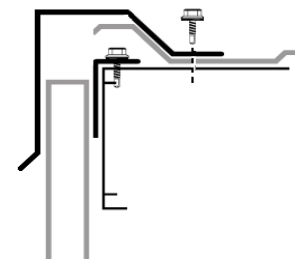


Gable Rake

Place gable rake trim over last major rib of roof. Hold outside leg of rake trim against sidewall major ribs. Top leg should cover at least one major rib of the first roof panel.

Attach rake trim through roof panels using a 7/8" stitch screw with washer. Place first screw 2" from bottom and add a screw every 12".

Butyl tape (optional – purchased separately) can be placed under top side of the gable rake for added water tightness. Run a line of butyl from ridge to eave where the gable rake screws will penetrate. Then attached gable rake as described above.



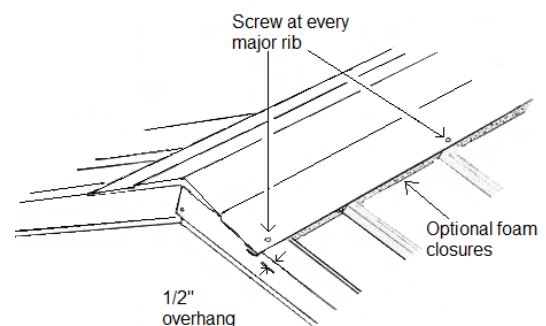
Ridge Caps

Ridge caps should follow the same wind direction as the panels. Ends of ridge caps should overlap roof panels at the peak and should extend over the top-most purlins on either side of the peak. Note the location of the purlin on each side of the ridge cap and run a line from one cap to the other. This line will be the screw line for the ridge caps.

Place trim atop panels starting 1/2" beyond the edge of the edge of the roof. Overlap each subsequent piece the previous one 1-2". Extend the final ridge cap 1/2" beyond the far roof edge.

Fasten ridge caps through roof panels and into top-most purlin using 1-1/4" metal fast screws with washers.

If closures (optional) are purchased separately, they should be installed before you place the ridge cap. For best performance apply butyl tape along the panel where the ridge cap screws will penetrate. Place 3' sections of closure or unroll vented closure along the butyl so that the outer edge will not extend beyond the edge of the ridge cap. Top closure with a bead of silicone sealant. Install ridge caps as described above.



Roll-up Door

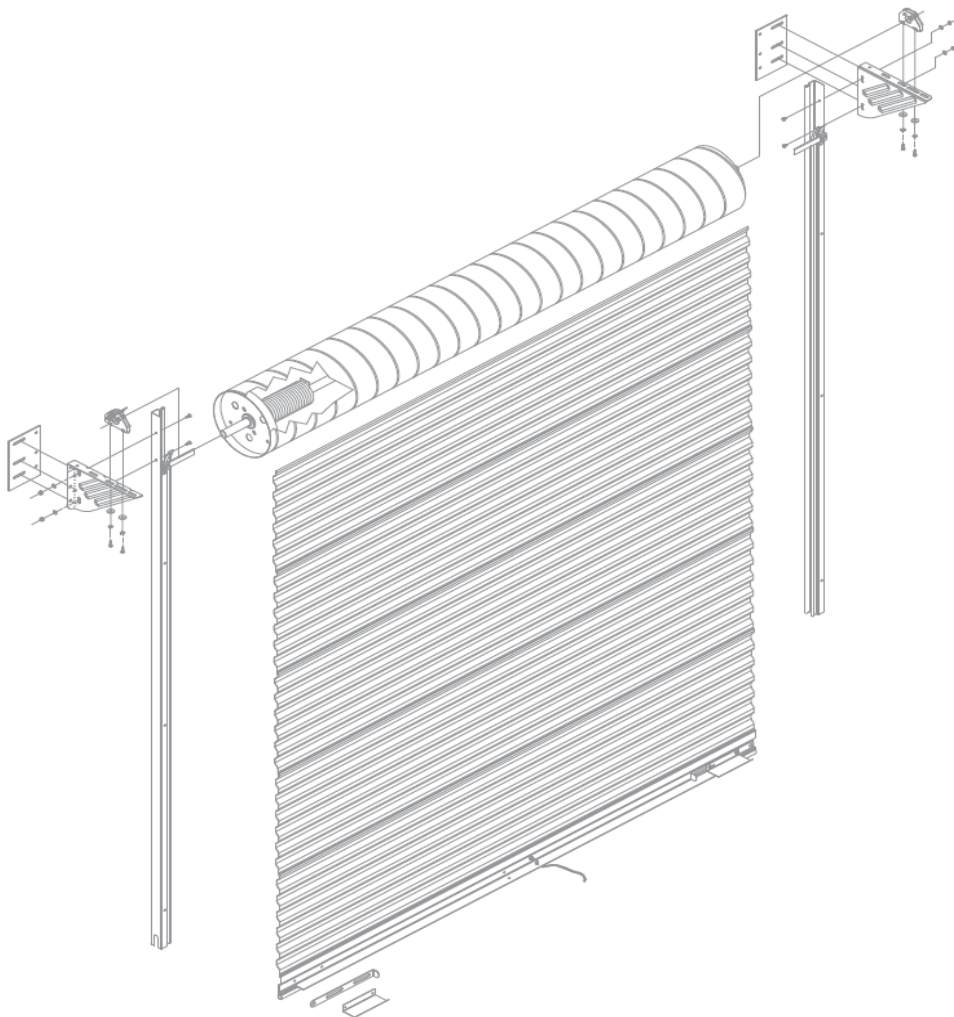
Follow the manufacturer's instruction for proper Roll-Up Door installation.

Per the instructions, install the door support brackets to the endwall door braces and door header. Ensure the brackets are spaced evenly up from the foundation

Raise the door to the top of the framed opening and place on door support brackets. Square the door with the opening. Attach the door axle to the support brackets using the bolts that are supplied with the door.

Apply tension to the door springs by rotating the door up and toward the wall two turns. Cut the bands that hold the door and pull the door curtain down about halfway to the bottom and support with 2x4's.

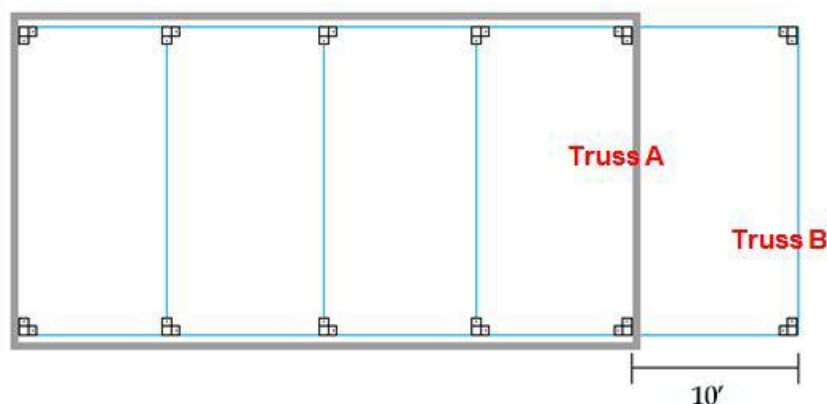
Install the guide rails using 1-1/4" no-washer metal fast screws. Test to see that the door curtain moves freely in the rails and adjust rails as needed. Then finish attaching the rails.



ROOF EXTENSION (OPTIONAL)

Roof extension is best installed while original building is being erected. For roof extension the eave struts and purlins will be fully extend to the outside edge of the building endwall truss.

Columns for roof extension will align with the building columns. Follow same procedure for installing columns as with main building.



Measure 10' from leading front side of building columns. Mark positions for outer edge of roof extension columns.

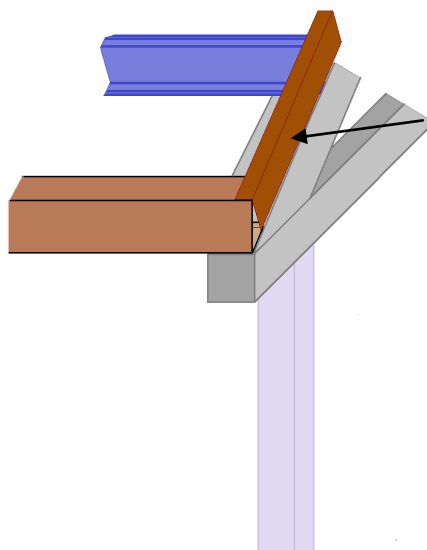
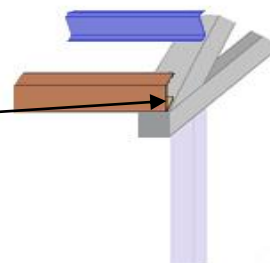
Align sidewall edge of roof extension columns with sidewall edge of building columns. Stand roof extension columns and mark position of holes. Drill $\frac{1}{2}$ " holes, 5-1/2" deep and blow hole clean using compressed air

Replace columns and place wedge bolts into holes with un-threaded end down. Tap wedge bolt with nut, and hammer into hole. Lightly tighten nuts until total frame is assembled. (Fully tighten all bolts after complete assembly.)

Lift truss above columns and insert column top into openings on bottom edges of trusses. Assure truss and columns are plumb with building frame. Using 1" no-washer metal fast screws, screw truss to top of column on each side of truss (2 screws on each side).

Purlins, Eave Struts & Rake Angle

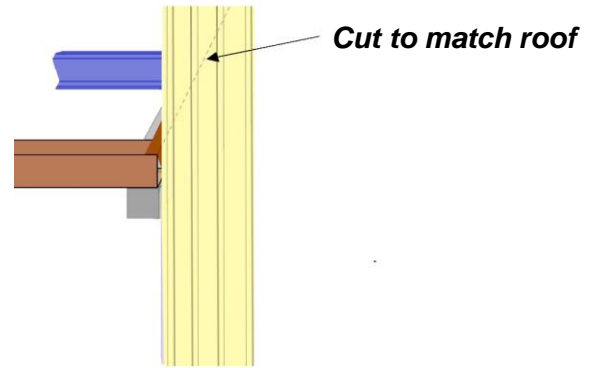
Keep zee purlins and eave strut flush to the outside edge of the endwall truss that the roof extension is connecting to.



Install rake angle on outside of roof purlins. Lay base angle with 2" leg atop eave strut and purlins. Attach where each intersects, using 1" no-washer metal fast screws.

Sheeting endwall

Prior to installing roof extension, cut endwall panels to fit flush to the top of the base angle previously installed on top of the roof purlins and eave strut as needed to fit the 4/12 roof slope and completely sheet endwall. Follow wall panel installation instructions in building erection guide. Finish with outside corners.

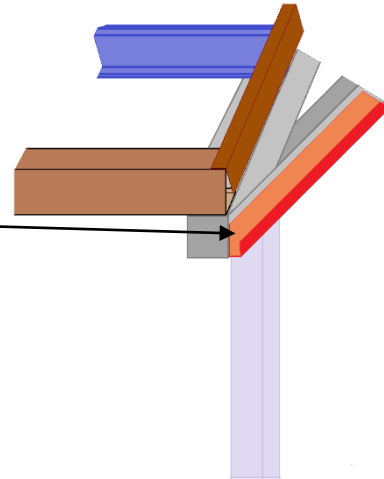


From inner, open side of eave strut to ridge of building roof truss, run a length of receiver channel. Solid web side of receiver should touch the end of last building purlin, with flange legs toward roof extension. Screw into place using 1" no-washer metalfast screws.

Insert roof extension eave strut and zee purlins into receiver channel, aligning with building zee purlins. Extend purlins to clips atop roof extension truss. Screw into place using 1" no-washer metalfast screws

Sheeting roof extension (Truss B)

From side to side on bottom chord of roof extension (Truss B) truss attach a row of j-channel. Fasten to truss using 1-1/4" metalfast screws with washers.

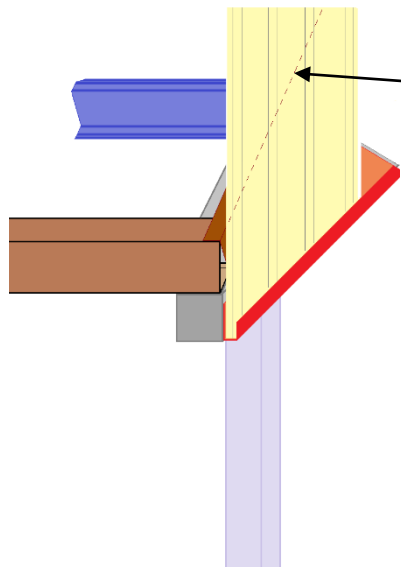


Sheeting roof extension (Truss B)

Position shortest endcap panel to one side of roof extension truss, inserting panel into j-channel. Mark top edge of panel to trim excess that extends beyond rake angle. Trim panel, replace and attach to truss. Repeat process for next panels, installing by height.

Sheet building roof and extension roof, following instructions for panel installation in building erection guide.

As described in building erection guide, miter gable rake to length and install over last roof panel and over endcap panels. Top with ridge cap. Fasten trim using 7/8" stitch screws with washers.



LEAN TO (OPTIONAL)

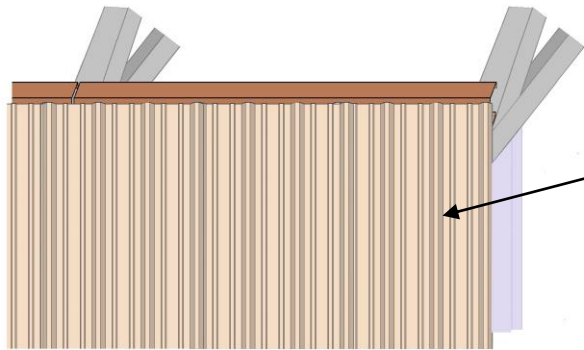
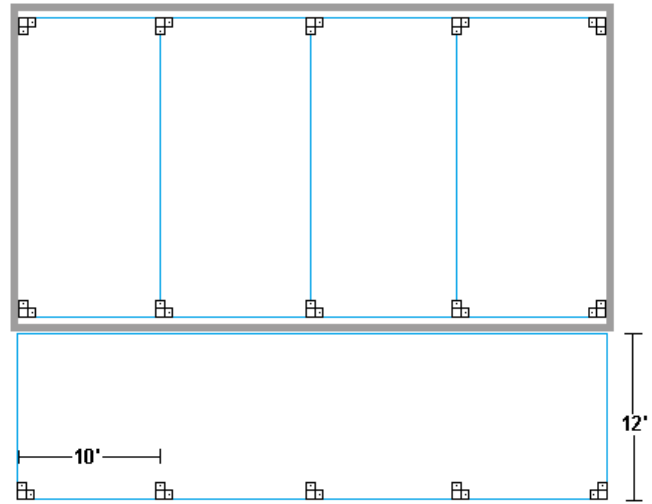
Columns for lean-to's will align with the building columns. Follow same procedure for installing columns as with main building.

Measure 12' from sidewall steel line to mark position for outside of lean-to column. Measure 10' from outside of lean-to corner column toward center of lean-to. Mark position for center of next column. Stand center of column at center point. Mark position of holes. Repeat for next columns.

Drill $\frac{1}{2}$ " holes, 5-1/2" deep and blow hole clean using compressed air

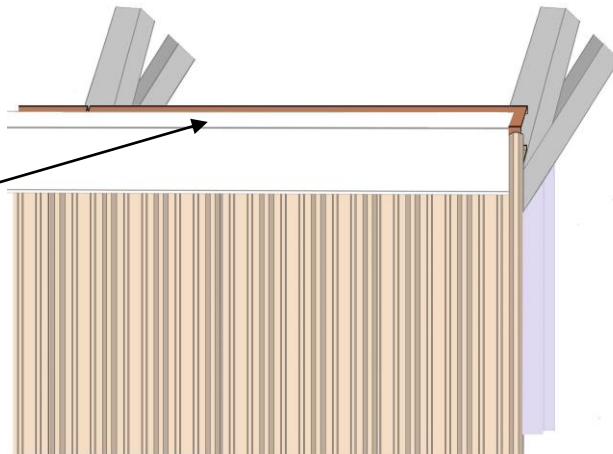
Replace column and place wedge bolts into holes with un-threaded end down. Tap wedge bolt with nut, and hammer into hole. Lightly tighten nuts until total frame is assembled. (Fully tighten all bolts after complete assembly.)

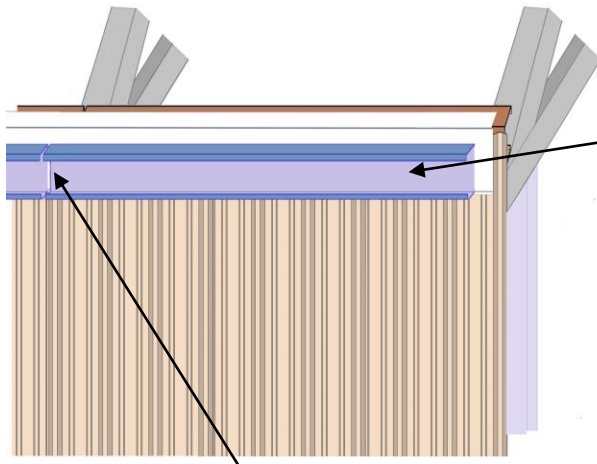
Top each column with 4" receiver channel cap, with legs downward. Using 1" no-washer metalfast screws, attach receiver caps to columns. This creates a solid base to attach the long receiver channels



Fully sheet the sidewall of the main building that the lean to is connecting to. Fasten wall panels to wall girts using 1-1/4" metalfast screws with washers.

After sidewall is sheeted, install building eave trim the continuous length of the main building. Only attach eave trim through the top of trim into the eave strut using 1-1/4" pancake screws without washers.

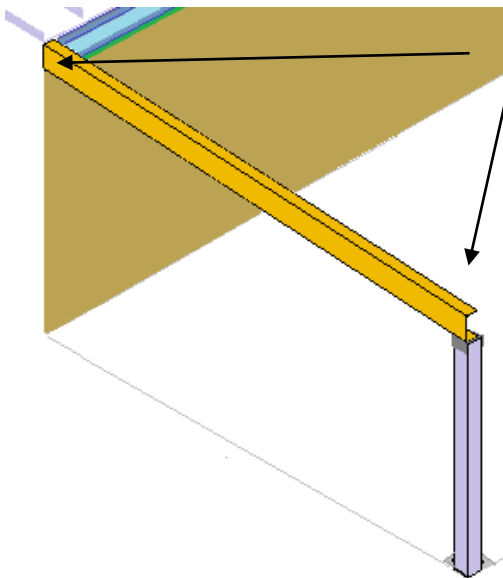




Attach 4" x 10'-12' sections of cee purlin with web side against main building **2"** lower the top of eave trim to allow room for the lean to roof panels to slide under panels on main roof.

Drill through eave trim and rib of wall panels using 3" metalfast screws with no washers to connect the lean to support cee purlin to eave strut on main building. 2' spacing is recommended.

Leave a small gap between the ends of the cees for receiver channel.

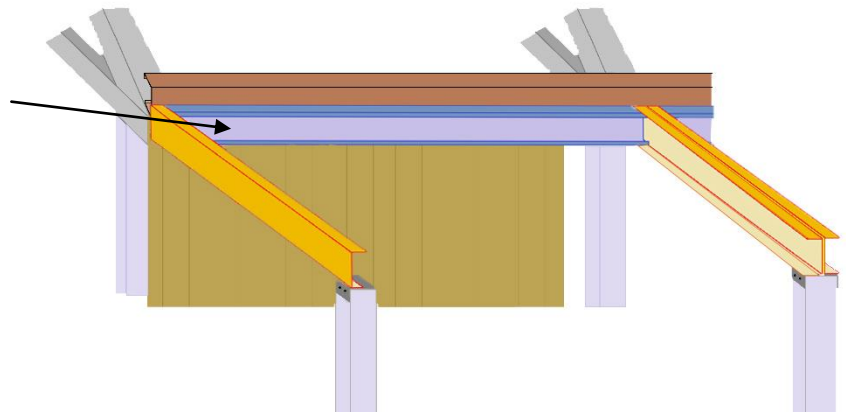


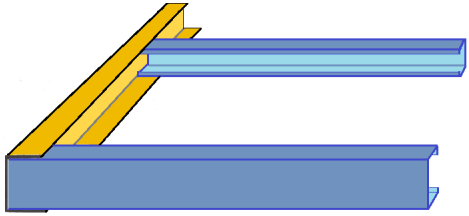
Run 12' receiver channel from the end of the line of cees to the top of the respective lean-to column. The flat web side of the receiver should face the end of the building.

Insert the end of the receiver around the cee purlin. Attach the bottom leg of the receiver channel to the receiver cap on top of the column.

For the middle columns, run 2 receiver channels back-to-back. Insert the web ends of the pair between the ends of 2 cees and attach the legs to the receiver caps on the columns.

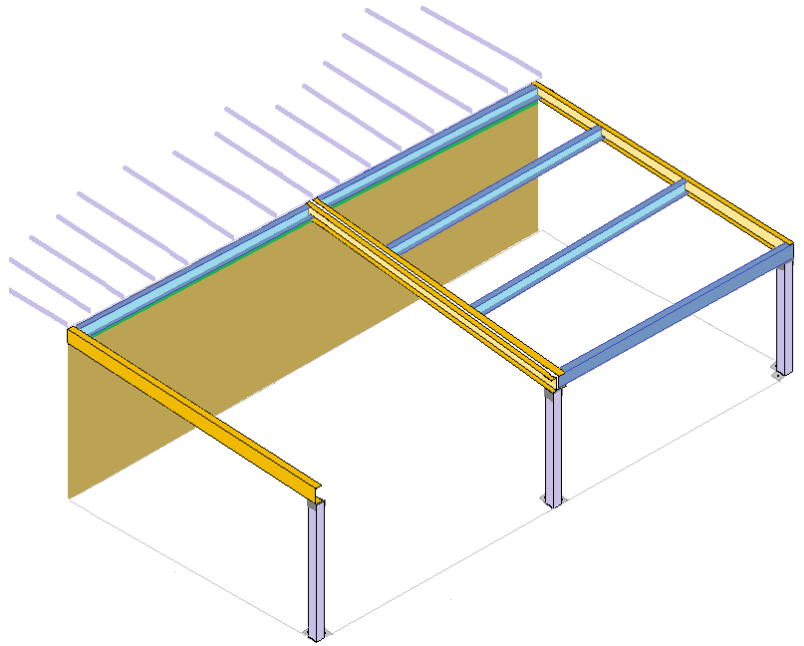
Depending on bay spacing of building, add either 10' or 12' cee purlins inside the receiver channels at 4' intervals. For the first and second rows of cee closest to the building frame, orient the flat web side of the cee toward the building frame. On the last row of cees, orient the flat web side of the cee away from the building.





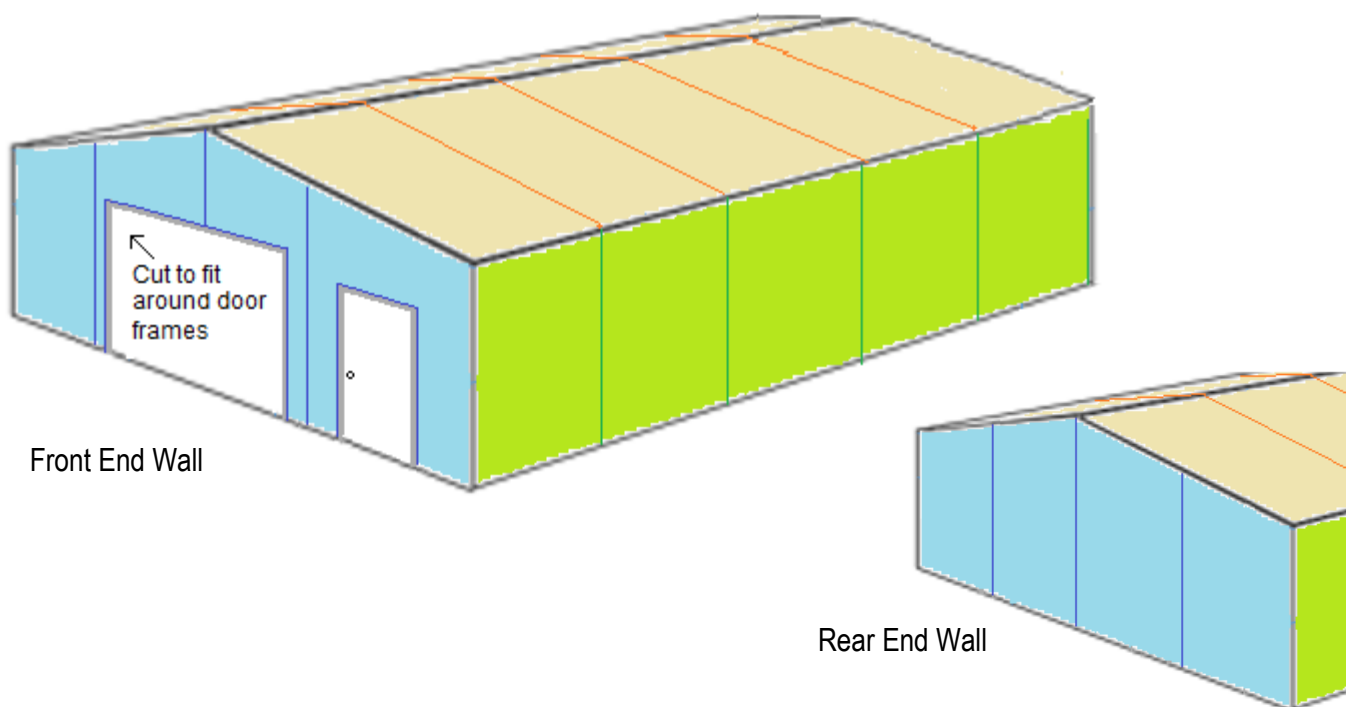
As building roof is installed, add transition flashing under eave end of panels that abut lean-to.

Lay the first roof panel in place. Slide panel end slightly under main building panel, under the transition flashing. Fasten to cee purlin through transition flashing with 1-1/4" metal fast screws with washers. Lap first panel with second and fasten. Continue with panels until roof is covered. Install gable rake over sides of outer panels.



INSULATION CUT LISTS

Insulation schematics for your building size are available. Diagram below depicts insulation for a 24x30x10 Gal-Econ. Insulation should be installed in conjunction with the panels with vinyl side toward inside of building. Roof insulation should be installed in solid runs from eave to eave.



6' X 125' INSULATION SCHEMATIC

20 X 24 X 10

ROOF ONLY	TOTAL: 1 ROLL	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF

20 X 24 X 12

ROOF ONLY	TOTAL: 1 ROLL	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 24'	6' WIDE	ROOF
3 @ 14'	6' WIDE	EW
1 @ 11'	6' WIDE	SW
ROLL 2		
4 @ 12'	6' WIDE	EW
7 @ 11'	6' WIDE	SW
ROLL 3		
1 @ 24'	6' WIDE	ROOF
1 @ 14'	6' WIDE	EW

ROOF & WALLS	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF
1 @ 16'	6' WIDE	EW
1 @ 13'	6' WIDE	SW
ROLL 2		
2 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
5 @ 13'	6' WIDE	SW
ROLL 3		
1 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
2 @ 13'	6' WIDE	SW

20 X 30 X 10

ROOF ONLY	TOTAL: 1 ROLL	
CUTS	SIZE	LOCATION
ROLL 1		
5 @ 24'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 24'	6' WIDE	ROOF
3 @ 14'	6' WIDE	EW
1 @ 11'	6' WIDE	SW
ROLL 2		
4 @ 12'	6' WIDE	EW
7 @ 11'	6' WIDE	SW
ROLL 3		
2 @ 24'	6' WIDE	ROOF
1 @ 14'	6' WIDE	EW
2 @ 11'	6' WIDE	SW

20 X 30 X 12

ROOF ONLY	TOTAL: 1 ROLL	
CUTS	SIZE	LOCATION
ROLL 1		
5 @ 24'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF
1 @ 16'	6' WIDE	EW
1 @ 13'	6' WIDE	SW
ROLL 2		
2 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
5 @ 13'	6' WIDE	SW
ROLL 3		
1 @ 24'	6' WIDE	ROOF
1 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
4 @ 13'	6' WIDE	SW

24 X 24 X 10

ROOF ONLY	TOTAL: 1 ROLL	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 27'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 27'	6' WIDE	ROOF
2 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
3 @ 11'	6' WIDE	SW
ROLL 2		
2 @ 27'	6' WIDE	ROOF
2 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
3 @ 11'	6' WIDE	SW

24 X 24 X 12

ROOF ONLY	TOTAL: 1 ROLL	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 27'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 27'	6' WIDE	ROOF
1 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
ROLL 2		
2 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
5 @ 13'	6' WIDE	SW
ROLL 3		
1 @ 27'	6' WIDE	ROOF

ROLL 3		
2 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW

1 @ 16'	6' WIDE	EW
3 @ 13'	6' WIDE	SW

24 X 30 X 10

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 27'	6' WIDE	ROOF
ROLL 2		
1 @ 27'	6' WIDE	ROOF

24 X 30 X 12

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 27'	6' WIDE	ROOF
ROLL 1		
1 @ 27'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 27'	6' WIDE	ROOF
2 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
3 @ 11'	6' WIDE	SW
ROLL 2		
2 @ 27'	6' WIDE	ROOF
2 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
3 @ 11'	6' WIDE	SW
ROLL 3		
1 @ 27'	6' WIDE	ROOF
2 @ 12'	6' WIDE	EW
4 @ 11'	6' WIDE	SW

ROOF & WALLS	TOTAL: 4 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 24'	6' WIDE	ROOF
1 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
ROLL 2		
2 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
5 @ 13'	6' WIDE	SW
ROLL 3		
2 @ 27'	6' WIDE	ROOF
5 @ 13'	6' WIDE	SW
ROLL 4		
1 @ 16'	6' WIDE	EW

30 X 30 X 10

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
2 @ 33'	6' WIDE	ROOF

30 X 30 X 12

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
2 @ 33'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 4 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 4 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF

1 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
ROLL 2		
2 @ 33'	6' WIDE	ROOF
1 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
3 @ 11'	6' WIDE	SW
ROLL 3		
1 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
2 @ 12'	6' WIDE	EW
5 @ 11'	6' WIDE	SW
ROLL 4		
1 @ 16'	6' WIDE	EW
2 @ 11'	6' WIDE	SW

2 @ 13'	6' WIDE	SW
ROLL 2		
2 @ 33'	6' WIDE	ROOF
4 @ 14'	6' WIDE	EW
ROLL 3		
1 @ 16'	6' WIDE	EW
8 @ 13'	6' WIDE	SW
ROLL 4		
2 @ 18'	6' WIDE	EW
3 @ 16'	6' WIDE	EW

30 X 40 X 10

ROOF ONLY	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
3 @ 33'	6' WIDE	ROOF
ROLL 3		
1 @ 33'	6' WIDE	ROOF

30 X 40 X 12

ROOF ONLY	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
3 @ 33'	6' WIDE	ROOF
ROLL 3		
1 @ 33'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 5 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
1 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
ROLL 2		
3 @ 33'	6' WIDE	ROOF
1 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
ROLL 3		
1 @ 33'	6' WIDE	ROOF
2 @ 15'	6' WIDE	EW
1 @ 14'	6' WIDE	EW
4 @ 11'	6' WIDE	SW
ROLL 4		
1 @ 14'	6' WIDE	EW
10 @ 11'	6' WIDE	SW

ROOF & WALLS	TOTAL: 5 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
2 @ 13'	6' WIDE	SW
ROLL 2		
3 @ 33'	6' WIDE	ROOF
2 @ 13'	6' WIDE	SW
ROLL 3		
1 @ 33'	6' WIDE	ROOF
7 @ 13'	6' WIDE	SW
ROLL 4		
2 @ 18'	6' WIDE	EW
3 @ 16'	6' WIDE	EW
3 @ 13'	6' WIDE	SW
ROLL 5		
1 @ 16'	6' WIDE	EW
4 @ 14'	6' WIDE	EW

ROLL 5		
2 @ 12'	6' WIDE	EW

30 X 50 X 10

ROOF ONLY	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
3 @ 33'	6' WIDE	ROOF
ROLL 3		
3 @ 33'	6' WIDE	ROOF

30 X 50 X 12

ROOF ONLY	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
3 @ 33'	6' WIDE	ROOF
ROLL 3		
3 @ 33'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 6 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
1 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
ROLL 2		
3 @ 33'	6' WIDE	ROOF
1 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
ROLL 3		
3 @ 33'	6' WIDE	ROOF
1 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
ROLL 4		
1 @ 14'	6' WIDE	EW
10 @ 11'	6' WIDE	SW
ROLL 5		
1 @ 16'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
8 @ 11'	6' WIDE	SW
ROLL 6		
1 @ 16'	6' WIDE	EW

ROOF & WALLS	TOTAL: 6 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
2 @ 13'	6' WIDE	SW
ROLL 2		
3 @ 33'	6' WIDE	ROOF
2 @ 13'	6' WIDE	SW
ROLL 3		
3 @ 33'	6' WIDE	ROOF
2 @ 13'	6' WIDE	SW
ROLL 4		
2 @ 16'	6' WIDE	EW
1 @ 14'	6' WIDE	EW
6 @ 13'	6' WIDE	SW
ROLL 5		
2 @ 16'	6' WIDE	EW
1 @ 14'	6' WIDE	EW
6 @ 13'	6' WIDE	SW
ROLL 6		
2 @ 18'	6' WIDE	EW
2 @ 14'	6' WIDE	EW

40 X 40 X 10

ROOF ONLY	TOTAL: 4 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 44'	6' WIDE	ROOF

40 X 40 X 12

ROOF ONLY	TOTAL: 4 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 44'	6' WIDE	ROOF

ROLL 2		
2 @ 44'	6' WIDE	ROOF
ROLL 3		
2 @ 44'	6' WIDE	ROOF
ROLL 4		
1 @ 44'	4' WIDE	ROOF

ROLL 2		
2 @ 44'	6' WIDE	ROOF
ROLL 3		
2 @ 44'	6' WIDE	ROOF
ROLL 4		
1 @ 44'	4' WIDE	ROOF

ROOF & WALLS	TOTAL: 6 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 44'	6' WIDE	ROOF
1 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
1 @ 11'	6' WIDE	SW
ROLL 2		
2 @ 44'	6' WIDE	ROOF
1 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
1 @ 11'	6' WIDE	SW
ROLL 3		
2 @ 44'	6' WIDE	ROOF
1 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
1 @ 11'	6' WIDE	SW
ROLL 4		
1 @ 14'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
9 @ 11'	6' WIDE	SW
ROLL 5		
2 @ 17'	6' WIDE	EW
4 @ 16'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 6		
1 @ 44'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 6 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 44'	6' WIDE	ROOF
2 @ 18'	6' WIDE	EW
ROLL 2		
2 @ 44'	6' WIDE	ROOF
2 @ 18'	6' WIDE	EW
ROLL 3		
2 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
5 @ 13'	6' WIDE	SW
ROLL 4		
2 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
5 @ 13'	6' WIDE	SW
ROLL 5		
2 @ 44'	6' WIDE	ROOF
1 @ 20'	6' WIDE	EW
1 @ 13'	6' WIDE	SW
ROLL 6		
1 @ 44'	6' WIDE	ROOF
1 @ 20'	6' WIDE	EW
3 @ 13'	6' WIDE	SW

4' & 6' X 100' INSULATION SCHEMATIC

20 X 24 X 10

ROOF ONLY	TOTAL: 1 ROLL	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF
ROLL 2		
4 @ 11'	6' WIDE	SW
4 @ 14'	6' WIDE	EW
ROLL 3		
4 @ 11'	6' WIDE	SW
4 @ 12'	6' WIDE	EW

20 X 24 X 12

ROOF ONLY	TOTAL: 1 ROLL	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 3.5 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF
ROLL 2		
3 @ 13'	6' WIDE	SW
2 @ 14'	6' WIDE	EW
2 @ 16'	6' WIDE	EW
ROLL 3		
3 @ 13'	6' WIDE	SW
2 @ 14'	6' WIDE	EW
2 @ 16'	6' WIDE	EW
ROLL 4(HALF)		
2 @ 13'	6' WIDE	SW

20 X 30 X 10

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF
ROLL 2		
1 @ 24'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 3.5 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF
ROLL 2		
1 @ 24'	6' WIDE	ROOF
1 @ 11'	6' WIDE	SW
4 @ 14'	6' WIDE	EW
ROLL 3		
9 @ 11'	6' WIDE	SW
ROLL 4(HALF)		

20 X 30 X 12

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF
ROLL 2		
1 @ 24'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 4 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
4 @ 24'	6' WIDE	ROOF
ROLL 2		
1 @ 24'	6' WIDE	ROOF
4 @ 14'	6' WIDE	EW
ROLL 3		
5 @ 13'	6' WIDE	SW
2 @ 16'	6' WIDE	EW
ROLL 4		

4 @ 12'	4' WIDE	SW
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5 @ 13'	6' WIDE	SW
2 @ 16'	6' WIDE	EW

24 X 24 X 10

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 27'	6' WIDE	ROOF
ROLL 2		
1 @ 27'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 27'	6' WIDE	ROOF
2 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 2		
2 @ 27'	6' WIDE	ROOF
2 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 3		
4 @ 11'	6' WIDE	SW
4 @ 14'	6' WIDE	EW

24 X 24 X 12

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 27'	6' WIDE	ROOF
ROLL 1		
1 @ 27'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 3.5 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 27'	6' WIDE	ROOF
3 @ 13'	6' WIDE	SW
ROLL 2		
2 @ 27'	6' WIDE	ROOF
2 @ 16'	6' WIDE	EW
1 @ 14'	6' WIDE	EW
ROLL 3		
2 @ 13'	6' WIDE	SW
3 @ 14'	6' WIDE	EW
2 @ 16'	6' WIDE	EW
ROLL 4(HALF)		
3 @ 13'	6' WIDE	SW

24 X 30 X 10

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 27'	6' WIDE	ROOF
ROLL 2		
2 @ 27'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 4 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 27'	6' WIDE	ROOF
2 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW

24 X 30 X 12

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 27'	6' WIDE	ROOF
ROLL 1		
2 @ 27'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 4 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 13'	6' WIDE	SW
2 @ 16'	6' WIDE	EW
3 @ 14'	6' WIDE	EW

ROLL 2		
2 @ 27'	6' WIDE	ROOF
2 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 3		
1 @ 27'	6' WIDE	ROOF
4 @ 11'	6' WIDE	SW
2 @ 14'	6' WIDE	EW
ROLL 4		
2 @ 11'	6' WIDE	SW
2 @ 14'	6' WIDE	EW

ROLL 2		
2 @ 27'	6' WIDE	ROOF
2 @ 16'	6' WIDE	EW
1 @ 14'	6' WIDE	EW
ROLL 3		
2 @ 27'	6' WIDE	ROOF
3 @ 13'	6' WIDE	EW
ROLL 4		
1 @ 27'	6' WIDE	ROOF
5 @ 13'	6' WIDE	SW

30 X 30 X 10

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
2 @ 33'	6' WIDE	ROOF

30 X 30 X 12

ROOF ONLY	TOTAL: 2 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
2 @ 33'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 4.5 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 33'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 2		
2 @ 33'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 3		
1 @ 33'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
5 @ 11'	6' WIDE	SW
ROLL 4		
1 @ 12'	6' WIDE	EW
4 @ 14'	6' WIDE	EW
2 @ 16'	6' WIDE	EW
ROLL 5(HALF)		
1 @ 11'	6' WIDE	SW

ROOF & WALLS	TOTAL: 5 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 33'	6' WIDE	ROOF
1 @ 18'	6' WIDE	EW
1 @ 16'	6' WIDE	EW
ROLL 2		
2 @ 33'	6' WIDE	ROOF
1 @ 18'	6' WIDE	EW
1 @ 16'	6' WIDE	EW
ROLL 3		
1 @ 33'	6' WIDE	ROOF
2 @ 14'	6' WIDE	EW
3 @ 13'	6' WIDE	SW
ROLL 4		
2 @ 16'	6' WIDE	EW
2 @ 14'	6' WIDE	EW
3 @ 13'	6' WIDE	SW
ROLL 5		
4 @ 13'	6' WIDE	SW

30 X 40 X 10

ROOF ONLY	TOTAL: 2.5 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
3 @ 33'	6' WIDE	ROOF
ROLL 3(HALF)		
1 @ 33'	4' WIDE	ROOF

ROOF & WALLS	TOTAL: 6 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 33'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 2		
2 @ 33'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 3		
2 @ 33'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 4		
4 @ 14'	6' WIDE	EW
4 @ 11'	6' WIDE	SW
ROLL 5		
1 @ 12'	6' WIDE	EW
4 @ 11'	6' WIDE	SW
ROLL 6		
1 @ 33'	4' WIDE	ROOF
4 @ 16'	4' WIDE	EW

30 X 40 X 12

ROOF ONLY	TOTAL: 2.5 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
3 @ 33'	6' WIDE	ROOF
ROLL 3(HALF)		
1 @ 33'	4' WIDE	ROOF

ROOF & WALLS	TOTAL: 6.5 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 33'	6' WIDE	ROOF
1 @ 18'	6' WIDE	EW
1 @ 16'	6' WIDE	EW
ROLL 2		
2 @ 33'	6' WIDE	ROOF
1 @ 18'	6' WIDE	EW
1 @ 16'	6' WIDE	EW
ROLL 3		
2 @ 33'	6' WIDE	ROOF
1 @ 18'	6' WIDE	EW
1 @ 16'	6' WIDE	EW
ROLL 4		
1 @ 16'	6' WIDE	EW
3 @ 14'	6' WIDE	EW
3 @ 13'	6' WIDE	SW
ROLL 5		
6 @ 13'	6' WIDE	SW
1 @ 14'	6' WIDE	EW
ROLL 6		
1 @ 33'	6' WIDE	ROOF
5 @ 13'	6' WIDE	SW
ROLL 7(HALF)		
1 @ 18'	4' WIDE	EW

30 X 50 X 10

ROOF ONLY	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
3 @ 33'	6' WIDE	ROOF

30 X 50 X 12

ROOF ONLY	TOTAL: 3 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
3 @ 33'	6' WIDE	ROOF
ROLL 2		
3 @ 33'	6' WIDE	ROOF

ROLL 3		
3 @ 33'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 6.5 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 33'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 2		
2 @ 33'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 3		
2 @ 33'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
2 @ 11'	6' WIDE	SW
ROLL 4		
1 @ 33'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
5 @ 11'	6' WIDE	SW
ROLL 5		
2 @ 16'	6' WIDE	EW
4 @ 14'	6' WIDE	EW
1 @ 11'	6' WIDE	SW
ROLL 6		
2 @ 33'	4' WIDE	ROOF
3 @ 11'	4' WIDE	SW
ROLL 7(HALF)		
3 @ 11'	6' WIDE	SW

ROLL 3		
3 @ 33'	6' WIDE	ROOF

ROOF & WALLS	TOTAL: 7 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 33'	6' WIDE	ROOF
1 @ 18'	6' WIDE	EW
1 @ 16'	6' WIDE	EW
ROLL 2		
2 @ 33'	6' WIDE	ROOF
1 @ 18'	6' WIDE	EW
1 @ 16'	6' WIDE	EW
ROLL 3		
1 @ 33'	6' WIDE	ROOF
2 @ 14'	6' WIDE	EW
3 @ 13'	6' WIDE	SW
ROLL 4		
1 @ 33'	6' WIDE	ROOF
2 @ 14'	6' WIDE	EW
3 @ 13'	6' WIDE	SW
ROLL 5		
1 @ 33'	6' WIDE	ROOF
5 @ 13'	6' WIDE	SW
ROLL 6		
2 @ 16'	6' WIDE	EW
5 @ 13'	6' WIDE	SW
ROLL 7		
2 @ 33'	4' WIDE	ROOF
3 @ 13'	4' WIDE	SW

40 X 40 X 10

ROOF ONLY	TOTAL: 4 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 44'	6' WIDE	ROOF
ROLL 2		
2 @ 44'	6' WIDE	ROOF
ROLL 3		
2 @ 44'	6' WIDE	ROOF
ROLL 4		
1 @ 44'	4' WIDE	ROOF

ROOF & WALLS	TOTAL: 7 ROLLS	
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30 X 50 X 12

ROOF ONLY	TOTAL: 4 ROLLS	
CUTS	SIZE	LOCATION
ROLL 1		
2 @ 44'	6' WIDE	ROOF
ROLL 2		
2 @ 44'	6' WIDE	ROOF
ROLL 3		
2 @ 44'	6' WIDE	ROOF
ROLL 4		
1 @ 44'	4' WIDE	ROOF

ROOF & WALLS	TOTAL: 7.5 ROLLS	
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CUTS	SIZE	LOCATION
ROLL 1		
2 @ 44'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
ROLL 2		
2 @ 44'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
ROLL 3		
2 @ 44'	6' WIDE	ROOF
1 @ 12'	6' WIDE	EW
ROLL 4		
4 @ 14'	6' WIDE	EW
4 @ 11'	6' WIDE	SW
ROLL 5		
1 @ 18'	6' WIDE	EW
3 @ 16'	6' WIDE	EW
3 @ 11'	6' WIDE	SW
ROLL 6		
1 @ 18'	6' WIDE	EW
1 @ 16'	6' WIDE	EW
1 @ 12'	6' WIDE	EW
5 @ 11'	6' WIDE	SW
ROLL 7		
1 @ 44'	4' WIDE	ROOF
2 @ 11'	4' WIDE	SW

CUTS	SIZE	LOCATION
ROLL 1		
1 @ 44'	6' WIDE	ROOF
1 @ 16'	6' WIDE	EW
1 @ 14'	6' WIDE	EW
2 @ 13'	6' WIDE	SW
ROLL 2		
1 @ 44'	6' WIDE	ROOF
1 @ 16'	6' WIDE	EW
1 @ 14'	6' WIDE	EW
2 @ 13'	6' WIDE	SW
ROLL 3		
1 @ 44'	6' WIDE	ROOF
1 @ 16'	6' WIDE	EW
1 @ 14'	6' WIDE	EW
2 @ 13'	6' WIDE	SW
ROLL 4		
1 @ 44'	6' WIDE	ROOF
1 @ 16'	6' WIDE	EW
1 @ 14'	6' WIDE	EW
2 @ 13'	6' WIDE	SW
ROLL 5		
1 @ 20'	6' WIDE	EW
3 @ 18'	6' WIDE	EW
3 @ 13'	6' WIDE	SW
ROLL 6		
2 @ 44'	6' WIDE	EW
ROLL 7		
1 @ 20'	6' WIDE	EW
1 @ 18'	6' WIDE	EW
4 @ 13'	6' WIDE	SW
ROLL 8(HALF)		
1 @ 44'	4' WIDE	ROOF