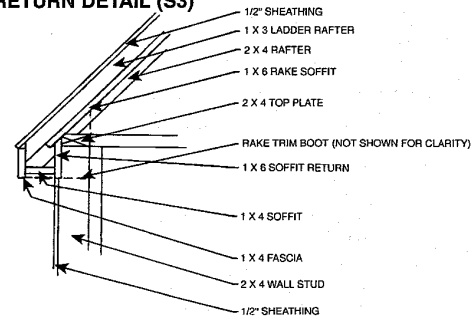


SOFFIT RETURN DETAIL (S3)



- With the ridge in its proper position, use a level and plumb up from the end of the entrance platform, and scribe a line on the ridge indicating the correct length for the ridge. If your level is not long enough, use a straight board to span the distance, and hold the level against it. This line should also be exactly even with the ends of the two entrance side walls. Double check it's location.
- Once the ridge is marked for the correct length, take it down and cut along the line scribed in Step 9. The end rafters fit flush with the end of the ridge, marking their position is not necessary. You will need to measure and mark the location for the second pair of rafters. On the Left and Right framing plans, this measurement is given as 13-1/4 inches from the end of the ridge up to the closest face of the rafters; if you determined in Step 1 that a different measurement was appropriate, use that measurement for the ridge also.
- Set the ridge back in its correct position, nail it to the main roof with two 8d toenails and nail the two rafter pairs in their correct positions with two 8d facenails through the ridge and into each rafter.
- Once the rafters are set, the front entrance wall can be completed. To frame the door opening, a "jack" stud is nailed alongside the end of each entrance side wall (See the Floor Plan and Front Framing Elevation). This stud doesn't set on a bottom plate, but extends to the plywood floor. Bavel cut the upper end of this stud at 45 degrees to fit under the rafter, in the same manner as the side wall gable studs. Measure and cut these two studs, and install them with 16d nails; two into the side wall bottom plate, every 8 inches into the side wall stud, and two into the side wall top plate. Also drive an 8d nail through the jack stud into the underside of the rafter.
- Measure between the two jack studs (this should be 20 inches) and cut a 2x4 header for the door opening. Install the 2x4 header so the bottom is 49 inches above the 3/4 inch plywood floor. Use four 8d toenails into each jack stud.
- Plywood sheathing for the front wall doesn't need to be cut from a new sheet of plywood. Use one of the large triangular pieces remaining from sheathing the left and right side walls. This piece should be large enough to cover the rafters, header, side wall top plates, and the top portion of the jack studs. Tying all these pieces together with one piece of plywood is much stronger than using smaller scraps. Fill in below this piece with strips ripped to 5 inches wide. Before nailing the plywood firmly in place, use a level and make sure the walls are plumb.
- Once the wall sheathing is installed, the gable overhang ladder framing can be installed. Use the same techniques as with the left and right side walls, although in this case, the members are only 26 inches long.
- Plywood sheathing is installed on the entrance roof in the same manner as for the main roof. Cutting dimensions are shown on the Roof Sheathing Layout, but double check that these measurements are correct on your building. If necessary, adjust the dimensions, then cut and install the sheathing. Remember to let the sheathing overhang the ends of the rafters by 3/4 inches in order to cover the fascia board.
- To protect the sheathing from moisture, cover it with 15 lb. roofing felt as soon as you have sheathed the roof. Start at the base of the roof and work towards the top, overlapping each row by 12 inches. At the "valley" (the intersection of the main roof and entrance roof), crease the felt at the intersection and let it run up the other roof 12 inches. Staple the felt in place every 6 inches along each edge and down the middle of each row. Let the felt overhang 1 inch along the gable rakes to cover the rake trim board.

FASCIA, RAKE, AND SOFFIT TRIM

- Install the 1x4 fascia board along the eaves of the rear roof surface first. Measure from the outside face of one gable overhang to the outside face of the opposite overhang, and cut the fascia board about an 1/8 inch longer than the measurement (letting it protrude slightly beyond the face of the framing ensures the gable rake trim will fit tightly to it, giving it a professional look). Hold the fascia board in place, letting equal amounts (about 1/16 inch) protrude at each end, and pushing it tightly up against the roof sheathing. Nail it in place with two 6d galvanized nails into the end of each rafter. Between rafters, use two 6d common nails, spaced evenly, driven down through the roof sheathing into the top of the fascia board. Make sure these nails do not protrude through the front of the fascia board.
- Install the 1x4 soffit for the rear eave. Cut it exactly the same length as the fascia and hold it in place against the underside of the rafter tails. Make sure the ends are flush with the ends of the fascia and the soffit is tight against the back of the fascia board. Nail it with two 6d galvanized nails into each rafter tail.
- Install the soffit board along each side of the front roof. Measure from the wall sheathing of the entrance to the outside of the gable overhang, and cut the soffit about a 1/16 inch longer than this measurement. Hold it in place against the underside of the rafter tails, tightly against the wall of the entrance, and nail in place with two 6d galvanized nails into each rafter tail. The soffit should cover, and be nailed to, the rear half of the entrance roof rafter tail.
- Install soffit boards for the entrance eaves in a similar manner, butting these soffit boards into the soffit boards installed in Step 3.
- The fascia boards along either side of the entry are installed next. Cut them the same length as the soffit boards; they also butt up against the front roof soffit at one end, and should protrude just slightly (about 1/16 inch) beyond the face of the entrance gable overhang. Use two 6d galvanized nails into each rafter tail, and two 6d common nails, spaced evenly between rafters, driven down through the roof sheathing, into the top of the fascia.
- Measure, cut, and install the fascia boards for the front roof. They fit tightly against the entrance fascia board, and extend just slightly (about 1/16 inch) beyond the gable overhang framing, fitting exactly even with the ends of the front soffit boards. Nail in place in the same manner as the other fascia boards.
- Apply the 1x4 rake trim boards along the gables, holding them flush with the top of the plywood roof sheathing. The same plumb cut used on the rafters is used where the pieces meet at the ridge. For the best fit, cut the top angle, temporarily tack the trim board in place, and scribe along the outside face of the fascia board. Use a level held against the bottom of the eave fascia to mark a level (horizontal) line on the rake trim board. Cut along the level line so the bottom of the rake board will be even with the bottom of the fascia, then cut the rake to length along the scribed line. Fasten the rake trim to the 1x3 overhang framing with a 6d galvanized nail every 6 inches. Drive two 6d galvanized nails through the rake trim board into the end of the fascia board.
- Measure and cut the 1x6 soffit boards for the gable overhangs. At their upper ends,

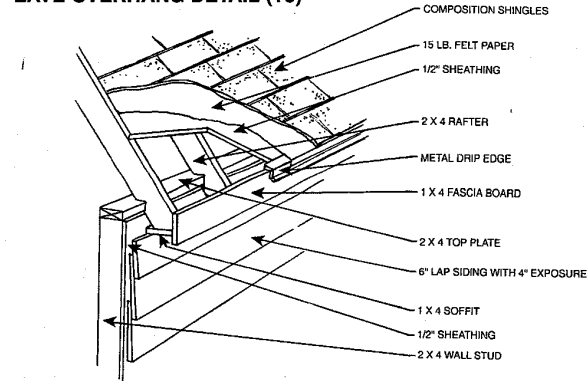
these boards meet below the centerline of the ridge, at their lower ends, these boards should protrude about 1 inch beyond (the vertical plane of) the face of the front and rear wall. Nail in place with 6d galvanized nails spaced 12 inches apart into each of the overhang members. (See Detail "S3".)

9) At this point, there are voids at the end of each fascia and soffit. Later in these instructions, these areas will be covered with trim boards that create soffit "returns" and a rake trim boot.

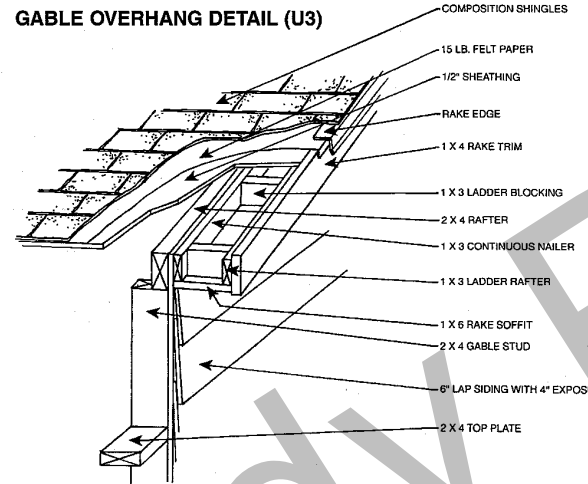
ROOF SHINGLES

- Install the metal drip edge along the eaves, slipping it under the roofing felt, holding it tightly against the fascia, and tacking it in place with roofing nails spaced 12 inches apart. (See Detail "T3".)
- Apply the metal rake edge along the gable end on top of the roofing felt and fasten with roofing nails spaced 12 inches apart. Hold it tightly against the rake trim board while nailing. (See Detail "U3".)
- Install the shingles according to the manufacturer's instructions. Be sure to cut the shingles to extend 1/2 inch beyond the drip edge along the rakes and the eaves. Shingle the entrance roof first and extend the shingles past the valley (the intersection where the entrance roof meets the main roof) and up onto the main roof. Install the ridge cap on the entrance roof next and extend the last piece up onto the main

EAVE OVERHANG DETAIL (T3)



GABLE OVERHANG DETAIL (U3)



roof. Next, shingle the main roof and install the ridge cap. Let the shingles at the valley extend onto and over the shingles on the entrance roof. Next, snap a chalk line down the middle of the valley. Cut along this line, being very careful to cut only the top layer of shingles. Do not cut into the lower layer or rainwater leakage may occur. When nailing the valley, keep the roofing nails at the upper and lower layers of shingles 6 inches away from the valley on both, the main and entrance roofs.

Note: Put a piece of scrap plywood under this area, so you will not cut into the valley.

DOOR AND WINDOW FRAMES

- The door and window frames are made of 1x6 material nailed inside the openings. To install the frames:
- Measure and cut the top and bottom pieces (except the door requires no bottom piece) to fit between the 2x4 framing members and nail them in place with a pair of 6d galvanized trim nails at each end and a pair in the middle.
 - Measure and cut the side frame pieces to fit snugly between the top and bottom (or the top and flooring at the door). Use a pair of 6d galvanized trim nails at each end, a pair in the middle at the windows, and a pair every 12 inches at the door. Hold the frames flush with the inside face of the wall framing so they protrude about 1-1/2 inches beyond the wall sheathing.

BASE AND CORNER TRIM

- 1 x 4 trim is applied to the exterior corners and around the base of the Teahouse.
- Install the corner trim to the left and right sides first. These boards have a 45 degree angle cut at the top so they fit tightly against the rake soffit board, and should extend 1/2 inch below the bottom of the plywood flooring, covering its exposed edges. Nail them in place with a pair of 6d galvanized trim nails about 2 inches from the top and bottom, and two pairs spaced evenly between. When positioning these pieces, they should fit tightly against the exposed edge of the eave soffit boards, flush with the face of the eave wall sheathing.
 - Install the trim boards which fit under the eaves next, cutting them to fit tightly against the eave soffit board and extending 1/2 inch below the bottom of the plywood flooring (they should be flush with the bottom of the gable side trim pieces). Position them so they fit flush with the face of the gable side trim pieces, creating an attractive corner. Nail them in the same manner as Step 1. Also nail the two trim pieces together with four 6d galvanized trim nails, one near the top, one near the bottom, and two spaced evenly between.
 - At the inside corner where the front wall meets the entrance wall, install a piece of 2x2, fitting it into the corner, and cutting it to fit tightly against the eave soffit board

- and to extend 1/2 inch below the plywood flooring. Use six 6d galvanized trim nails, three driven into each wall, spaced evenly along the length of the 2x2.
- Once all of the corner trim boards are installed, level around the building and cut 1x4 base trim boards to fit snugly between them. The siding starts at the top of these boards, so positioning them level is very important. The base trim boards should all be exactly level (although the bottoms of all the trim boards should be even, it is better to have minor discrepancies at the bottom of the trim boards than for the base trim to not be level), and all of the base trim boards should be at exactly the same height so the rows of siding will be uniform.

SOFFIT RETURNS AND RAKE TRIM BOOT

- Now it's time to finish the soffit returns and rake trim boot left undone several steps back. These are small pieces, so be very careful when cutting and nailing them.
- On the 5-1/2 inch side of the board, cut the end of a 1x6 at 45 degrees; so it will fit tightly against the underside of the rake soffit board. Hold it in place against the exposed edge of the eave soffit, with the bevel cut against the rake soffit, and adjust its position until it is perfectly level. Mark its location on the rake soffit. This vertical piece of trim should extend below the eave soffit board and be flush with the bottom of the eave fascia board, (See Detail "S3"). Make a mark indicating the bottom of the fascia board, square a line across the board at this mark, and cut this piece to length. Set it back in position, aligning its top edge with the mark on the rake soffit, and nail it with 6d galvanized trim nails, two into the edge of the eave soffit and two into the rake soffit.
 - Cut a triangular piece that fits directly below the rake trim board, and covers the exposed edges of the soffit boards. The lower end of this board should be level and even with the bottom of the fascia boards. The top edge follows the edge of the rake trim board, and the "rear" edge should extend out to the 1x4 corner board trim. Measuring and marking this piece takes patience and some trial and error. Take your time and be especially careful cutting this piece.

OPTIONAL DECORATIVE PANELS

Optional decorative panels are shown above the gable wall windows. If such panels are not available already manufactured, they will need to be fabricated on site. The curved trim consists of arcs cut to the correct size and radius from 3/4 inch plywood. (See Elevations For Arc Lengths) Cut the arc from the 3/4 inch CDX plywood and trace this pattern (the inner part of the arc) onto the 1/4 inch luan. Cut the luan and apply the fancy-cut shingles according to the manufacturer's directions. Now, from the back side of this panel, cut the shingles to conform to the shape of the arc. At this point the 3/4 inch trim should fit around the shingled panel. Install these panels now, before the siding is applied.

SIDING

To install the lap siding, work from the bottom to the top, using a level to keep each row straight. Because the rear wall has no openings, apply siding to it first, checking your work as you progress to make sure the same amount of siding is exposed for each row.

- When installing the siding, it is only necessary to drive nails along the lower edge (a 6d galvanized siding nail into each stud) of each piece. When installing the next row, it's nails will penetrate the top edge of the piece below. Only the very top row of siding needs to be nailed along the top and bottom edge.
- Work around the building, cutting and applying the siding to each wall. Take extra care to make sure the rows of siding are all at the same height on every side of the Teahouse. Achieve professional-looking results by taking the time to install the siding so it is straight, level, and all of the rows are aligned. You may elect to use vinyl or metal horizontal siding. The installation process is similar to regular lap siding, and the same quantities would be required. Follow the manufacturers instructions carefully.

DOORS AND WINDOWS

The Teahouse has a Dutch Door with separate upper and lower panels. The door is site built from 1/2 inch plywood with 1x3 trim. Refer to the Door Construction Details on the plans for dimensions, although you must double check that your door opening is the correct size and make any adjustments necessary in the door dimensions. The door should be about 1/2 inch smaller than the opening. The 1x3 trim along the bottom of the lower panel extends 1/2 inch below the plywood, creating a lip which closes against the plywood flooring. The 1x3 trim along the top edge of the lower panel stops 1/2 inch short of the end of the plywood, creating a lip for the upper panel to close against. The bottom trim of the upper panel protrudes 1/2 inch below the plywood panel, creating the lip which closes against the bottom panel.

Cut the decorative holes in the upper panel before applying the trim. Use two small butt hinges to attach each panel to the door frame. Once the door is installed, nail pieces of 1x2 doorstop to the door frame for the door to close against. Position them so when it is closed, the door is flush with the edge of the frame. The shutters are attached to the window frames with two small butt hinges for each shutter. Use small hooks and eyes to provide a means of fastening the shutters together when they are closed, and also to hold the shutters against the building when open.

FINISHING WORK

To build the decorative gable trim and eave brackets, cut pieces of 1x3 as shown on the plans. Nail them together with 6d galvanized finish nails, and install them as shown on the elevations, using 6d galvanized nails also. You may have to predrill nail holes on these small pieces of trim to avoid splitting them.

Note: Decorative trim pieces, such as these can often be pre-manufactured. Check with your local lumberyards for more information.

Optional planter boxes are also shown on the elevations. These are available pre-manufactured in many sizes.

Before painting the Teahouse, caulk the joints between siding and trim, and joints between fascia boards if necessary. Paint, seal or stain the exterior. Landscape with flowers, shrubs, and walkways to really enhance the appearance of your Teahouse.

A VERY IMPORTANT NOTE: Before allowing children to play in the Teahouse, inspect it thoroughly from the inside to make sure that no nails are protruding through from the outside.

MATERIALS LIST FOR TEAHOUSE

FRAMING	USAGE DESCRIPTION	QTY	UNIT	SIZE
	Floor Framing (Pressure Treated)	3	ea.	2 x 4 x 8'
	Floor Framing (Pressure Treated)	1	ea.	2 x 4 x 10'
	Floor Framing (Pressure Treated)	1	ea.	2 x 4 x 12'
	CDX Floor Sheathing	1	ea.	3/4" x 4 x 8
	CDX Floor Sheathing	1	ea.	3/4" x 4 x 4
	Studs	16	ea.	2 x 4 x 8'
	Top & Bottom Plates	7	ea.	2 x 4 x 8'
	CDX Wall Sheathing	4	ea.	1/2" x 4 x 8
	CDX Roof Sheathing	4	ea.	1/2" x 4 x 8
	Header	1	ea.	2 x 4 x 8'
	6" Horizontal Lap Siding	270	lf.	
	Fascia	2	ea.	1 x 4 x 10'
	Corner Trim Boards	6	ea.	1 x 4 x 8'
	Inside Corner Trim	1	ea.	2 x 2 x 8'
	Rake Trim	1	ea.	1 x 6 x 8'
	Rake Trim	1	ea.	1 x 6 x 14'
	Frieze Board	3	ea.	1 x 4 x 8'
	Ladder Blocking	1	ea.	1 x 3 x 8'
	Rafters	5	ea.	2 x 4 x 8'
	Rafters	1	ea.	2 x 4 x 10'
	Ladder Rafter	1	ea.	1 x 3 x 8'
	Ladder Rafter	1	ea.	1 x 3 x 14'
	Continuous Nailer	1	ea.	1 x 3 x 8'
	Continuous Nailer	1	ea.	1 x 3 x 14'
	Ridge Board	1	ea.	1 x 6 x 12'
	Gable Studs	1	ea.	2 x 4 x 8'
	Window Frame	2	ea.	1 x 6 x 8'
	Window Frame	1	ea.	1 x 6 x 10'
	Decorative Trim (Optional)	2	ea.	1 x 3 x 8'
	Shutters	4	Pair	6" x 18"
	Hinges for Shutters	8	Pair	3"
	15 lb. Felt Paper	1	roll	432 sq.ft./roll
	3 Tab Composition Shingles	4	Bundles	
	Drip Edge	2	ea.	10'
	Rake Edge	2	ea.	10'
	Eave Soffit	2	ea.	1 x 4 x 10'
	Rake Soffit	3	ea.	1 x 6 x 8'
	Front Door	2	ea.	1/2" x 4 x 4
	Front Door Heavy T Hinge	4	ea.	4"
	Front Door Barrel Bolt Latch	1	ea.	3"
	Front Door Safety Hook Latch	1	ea.	2"
	Door Trim	2	ea.	1 x 3 x 8'
	Door Stop	1	ea.	1 x 2 x 8'
	Door Frame	1	ea.	1 x 6 x 10'
	Roofing Nails	2	lbs.	1-1/4"
	Galvanized Siding Nails	4	lbs.	6d
	Galvanized Trim Nails	2	lbs.	6d
	Common Nails	3	lbs.	6d
	Common Nails	2	lbs.	8d
	Common Nails	5	lbs.	16d
	Planter Boxes (Supplied By Others)	4	ea.	Field Verify
	OPTIONAL DECORATIVE PANEL			
	Fancy Cut Shingles (Cedar)	5	sq. ft.	
	CDX Plywood	1	ea.	3/4" x 4 x 4
	Luan Plywood	1	ea.	1/4" x 4 x 4
	OPTIONAL VINYL SIDING & TRIM			
	Starter Strip	3	ea.	10'
	J Channel (windows, doors & gables)	5	ea.	3/4"x12'-6"
	Outside Corner Post	3	ea.	10'
	Inside Corner Post	1	ea.	10'
	Utility Trim	2	ea.	12'-6"
	Double 4" Vinyl Siding	15	pcs.	(1-1/4 square)
	Fascia Cap	3	ea.	6"x12'-6"
	Soffit J Channel	6	ea.	1/2"x12'-6"
	Vented Soffit Panel	2	ea.	12'-6"
	Galvanized Roofing Nails	1	lbs.	1-1/2"
	Aluminum Trim Nails	1	lb.	1-1/4"

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REV:790350

CHILDREN'S TEAHOUSE

90025

GARDINGHOUSE

Sheet No. 2 of 4

Alternate Rafter Load Sizing Chart

Rafter depths required at these

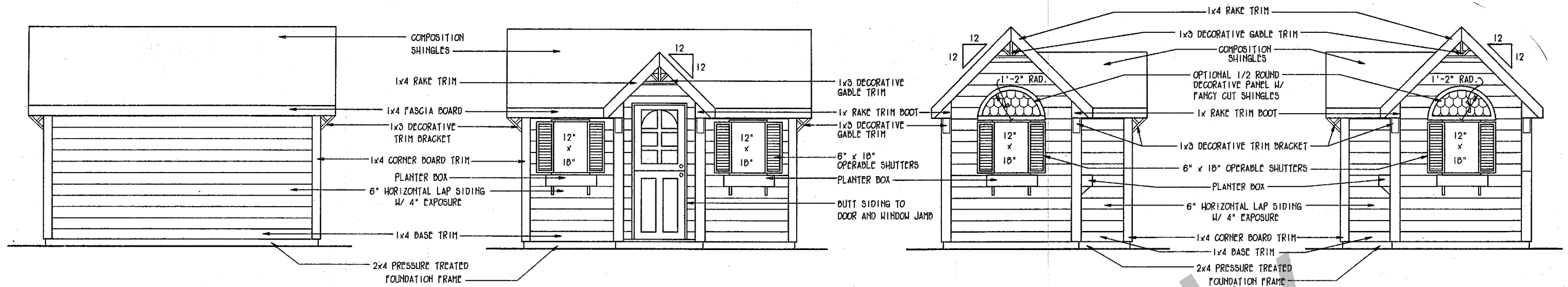
TOTAL POUNDS PER SF values (LL+DL)					
30	40	45	50	55	60
2x4	2x4	2x4	2x4	2x4	2x4

Legend:
 Shaded area indicates designed load value
 Design Lumber Specifications (Use #2 SPF or better)
 E = 1.4 x 10⁶ @ L/240
 Fb = 875 p.s.i. Base Value @ snow load

LL = Live Load
 DL = Dead Load (Weight of Materials)
 LL + DL = Total Load
 SF = Square Foot

NAIL SIZING CHART

LENGTH	PENNY	GAUGE
1 1/2"	4	12 1/2"
2"	6	11 1/2"
2 1/2"	8	10 1/4"
3"	10	9
3 1/4"	12	9
3 1/2"	16	8



REAR ELEVATION
4'-0" x 8'-0"

TEAHOUSE
SCALE: 1/2" = 1'-0"

FRONT ELEVATION
4'-0" x 8'-0"

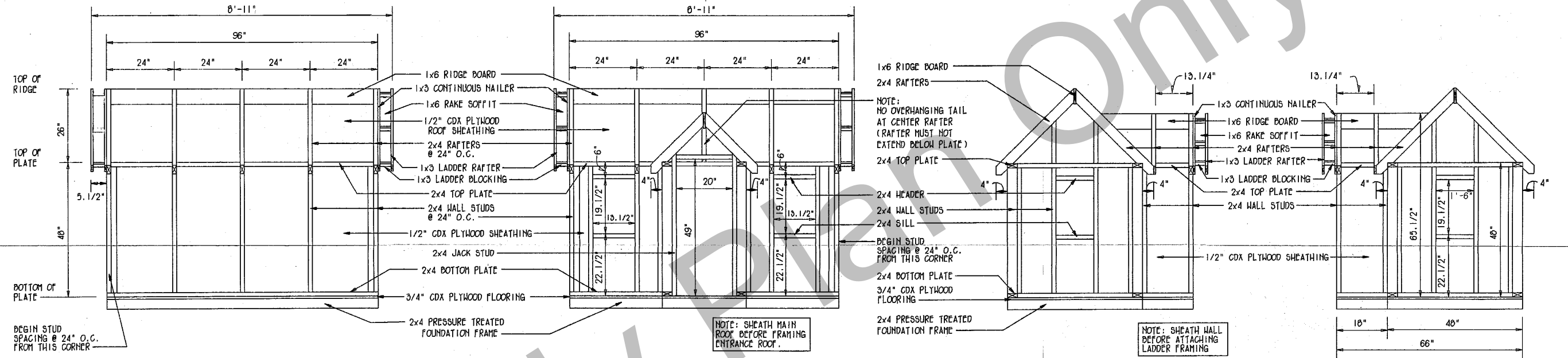
TEAHOUSE
SCALE: 1/2" = 1'-0"

LEFT SIDE ELEVATION
4'-0" x 8'-0"

TEAHOUSE
SCALE: 1/2" = 1'-0"

RIGHT SIDE ELEVATION
4'-0" x 8'-0"

TEAHOUSE
SCALE: 1/2" = 1'-0"



REAR FRAMING ELEVATION
4'-0" x 8'-0"

TEAHOUSE
SCALE: 1/2" = 1'-0"

FRONT FRAMING ELEVATION
4'-0" x 8'-0"

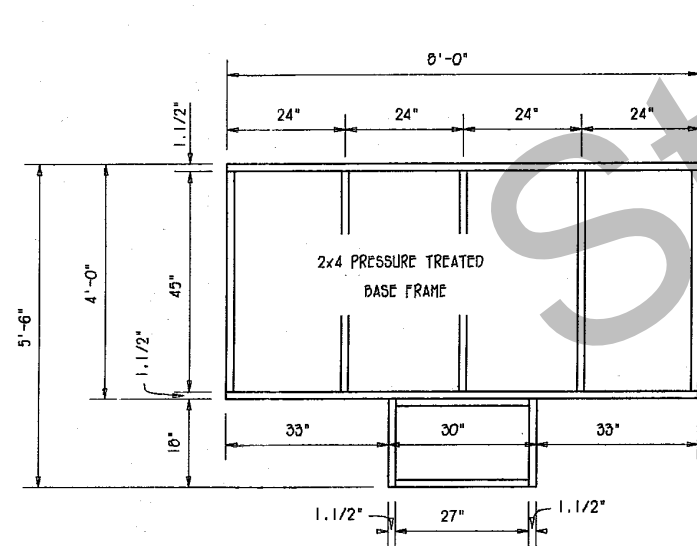
TEAHOUSE
SCALE: 1/2" = 1'-0"

LEFT SIDE FRAMING ELEVATION
4'-0" x 8'-0"

TEAHOUSE
SCALE: 1/2" = 1'-0"

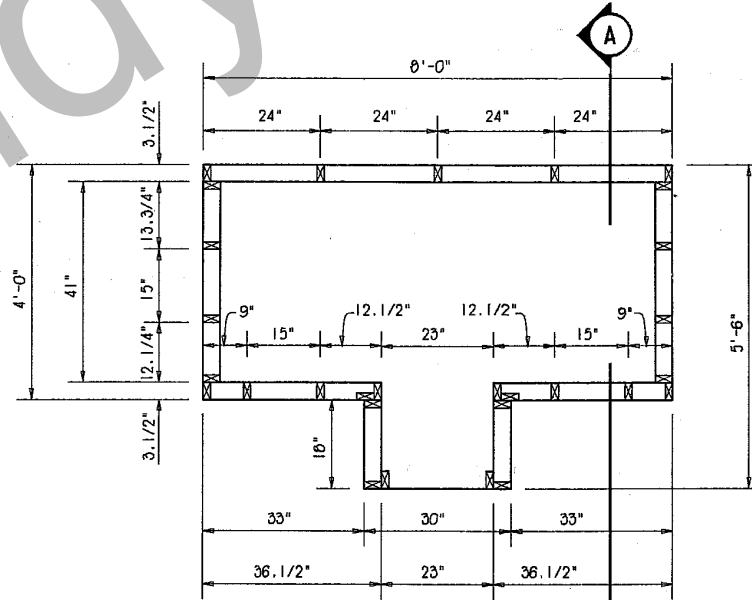
RIGHT SIDE FRAMING ELEVATION
4'-0" x 8'-0"

TEAHOUSE
SCALE: 1/2" = 1'-0"



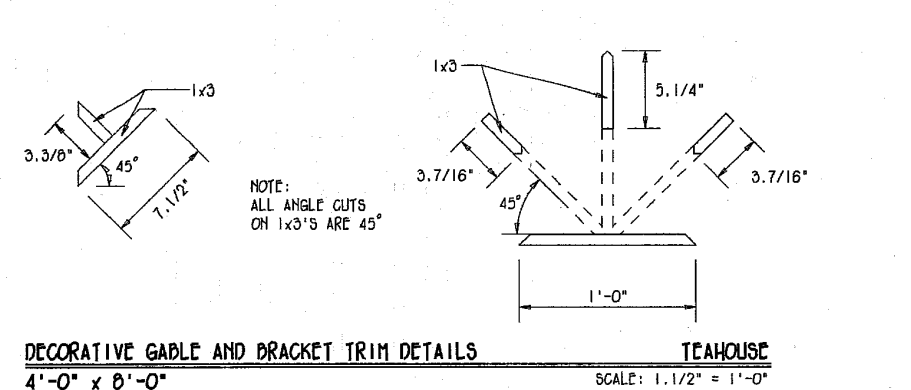
BASE FRAMING PLAN
4'-0" x 8'-0"

TEAHOUSE
SCALE: 1/2" = 1'-0"



FLOOR PLAN
4'-0" x 8'-0"

TEAHOUSE
SCALE: 1/2" = 1'-0"



DECORATIVE GABLE AND BRACKET TRIM DETAILS
4'-0" x 8'-0"

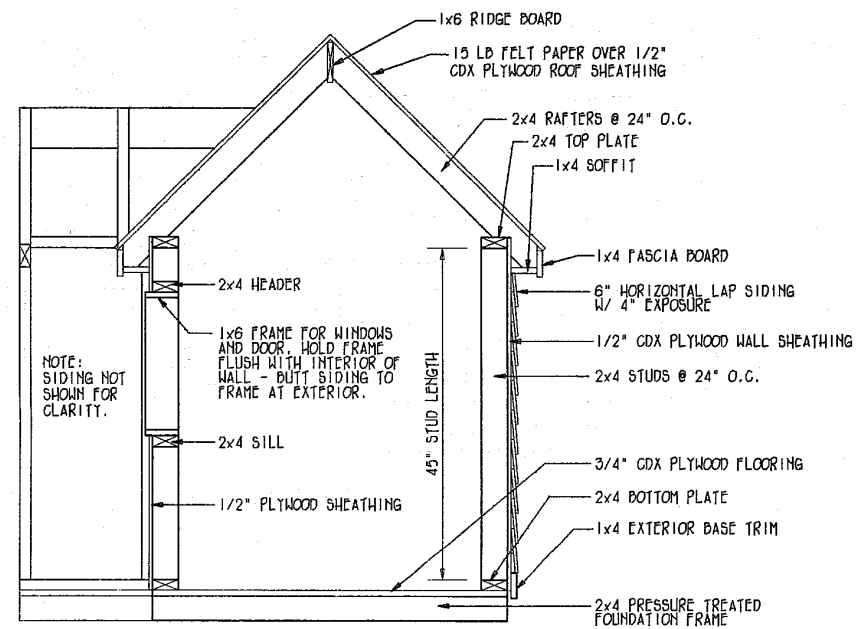
TEAHOUSE
SCALE: 1.1/2" = 1'-0"

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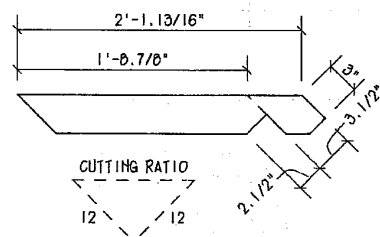
Sheet No. 3 of 4

CHILDREN'S TEAHOUSE

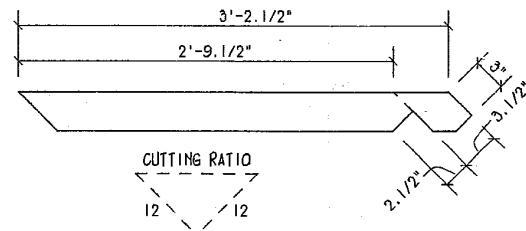
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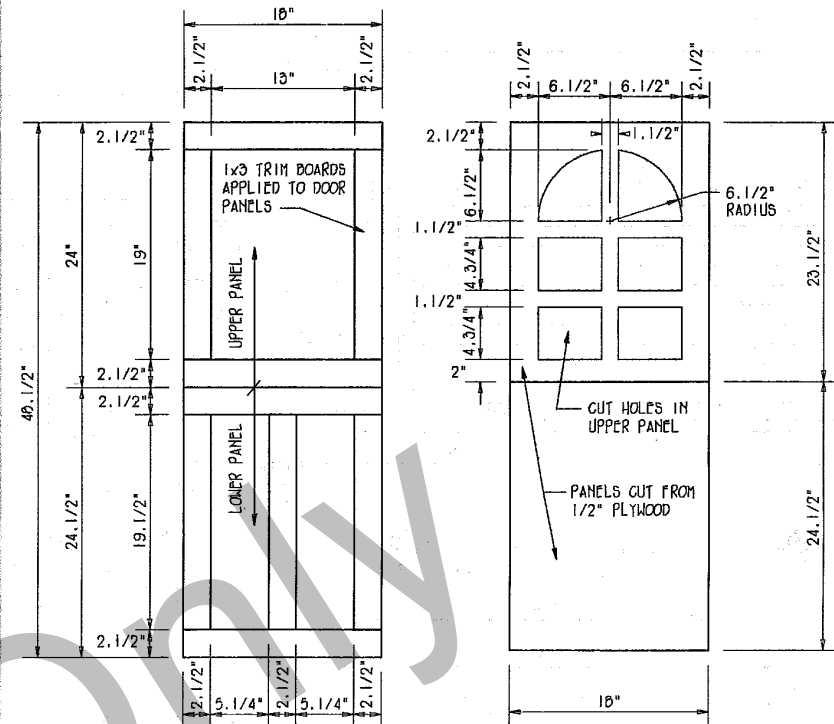
CROSS SECTION A
4'-0" x 8'-0" TEAHOUSE
SCALE: 3/4" = 1'-0"



ENTRANCE RAFTER TEMPLATE
4'-0" x 8'-0" TEAHOUSE
NO SCALE

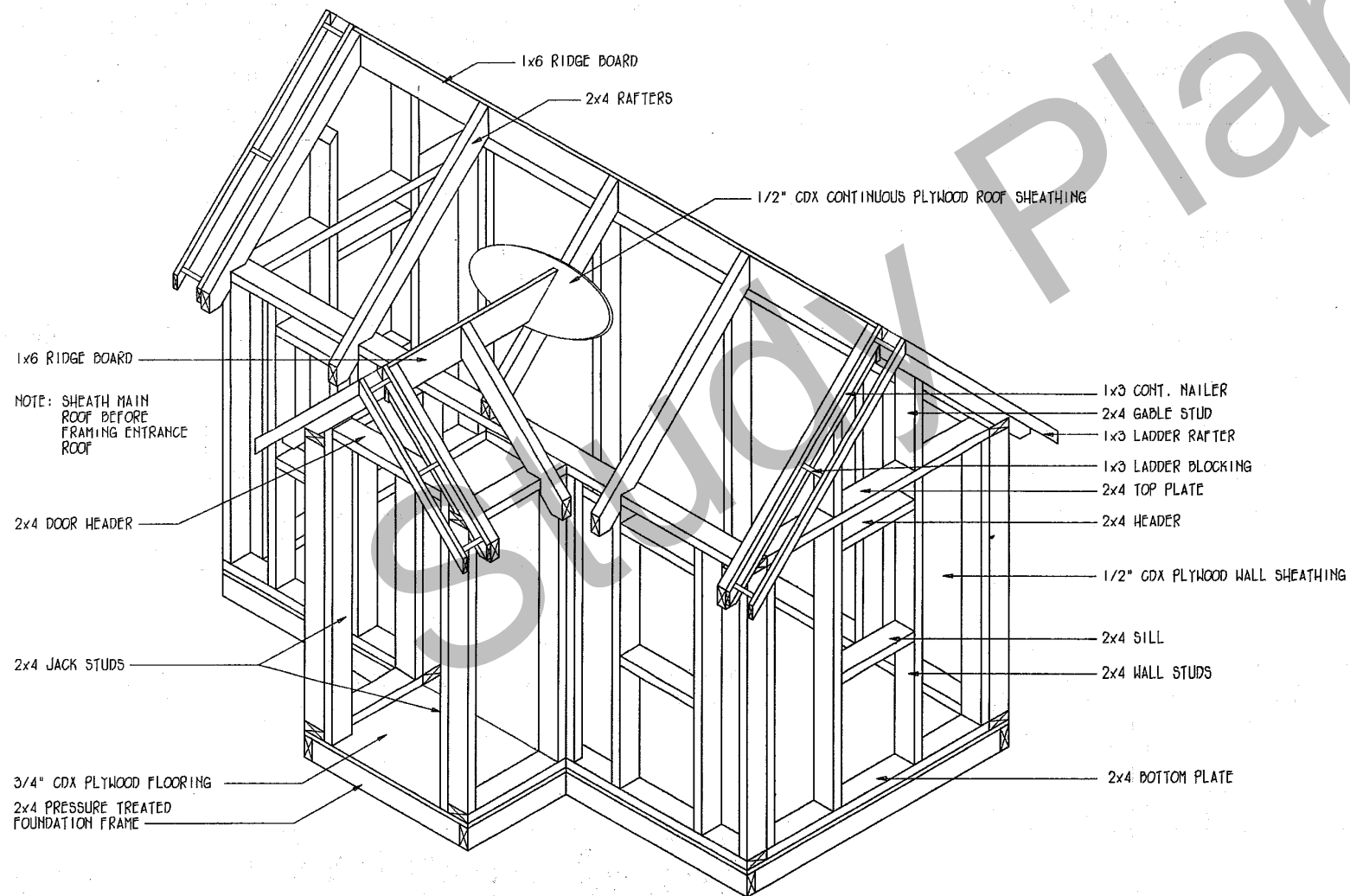


MAIN ROOF RAFTER TEMPLATE
4'-0" x 8'-0" TEAHOUSE
NO SCALE

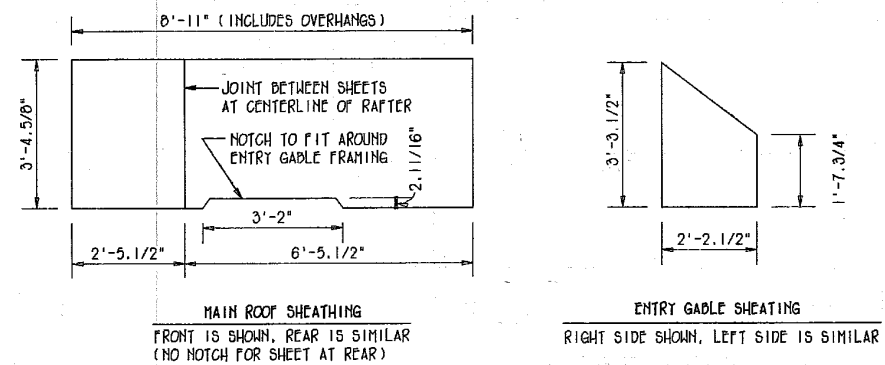


NOTE:
DIFFERENCES IN SIZE OF UPPER PLYWOOD PANEL AND UPPER TRIM BOARDS CREATES 1/2" LIP FOR UPPER DOOR TO CLOSE AGAINST BOTTOM DOOR. DIFFERENCES IN SIZE OF LOWER PANEL AND LOWER TRIM CREATES 1/2" LIP FOR LOWER DOOR TO CLOSE AGAINST TEAHOUSE FLOOR.

DOOR CONSTRUCTION DETAILS
4'-0" x 8'-0" TEAHOUSE
SCALE: 1/16" = 1'-0"



ISOMETRIC
4'-0" x 8'-0" TEAHOUSE
NO SCALE



ROOF SHEATHING LAYOUT
4'-0" x 8'-0" TEAHOUSE
SCALE: 3/8" = 1'-0"

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