

## BACK FRAMING

Back Framing is required to aide future steps in the construction process, ie cabinet installation, hanging drywall, towel bar installation etc.

### VERIFY ALL DOOR ROUGH OPENINGS AND KITCHEN WINDOW AND KITCHEN INTERIOR WALL LOCATION:

Entry doors 37 ½" X 82" high

Garage Utility ( people) Door 38 ½" X 82 ½"

Bedroom, Bathroom **Swing** doors 38" wide X 82 ½" high

Basement Door **ONLY** 34" wide X 82 ½" high

**Closet/ Bifold doors** Width of door + 1 ½" ie 24" door, 25 ½" RO etc X **81" high**

A Kitchen window must be 78 ½" from garage wall to center of window.

A Kitchen interior wall must be 12' 1" form garage wall, Rough to Rough

### INSTALLING HURRICANE CLIPS:

This fastening devise is used to secure the trusses to the exterior walls' top plates. They will be used on **both** the HOUSE and GARAGE trusses.

Install 1 clip per truss **at** both ends of truss with 10D Simpson galvanized nails (Tico). Drive nails fully into truss.

Because of the size of the nail, a pair of pliers is helpful to hold it to start the nail.

There are 2 different styles of clip. Position the clip as shown and nail, **Put a nail in EVERY hole.**



## KITCHEN CABINET BLOCKING:

### MATERIALS

2 X 4 and 2 X 6 of various lengths.

Kitchen cabinet blocking is needed for a timely and reduced stress cabinet installation. Full blocking is required on **ALL** 3 kitchen walls and the bathroom wall behind the vanity.

### LAYOUT

Snap chalk lines at the following heights **off the floor**



80- 1/2" – 84" for **TOP** of the upper cabinets with a **2x4** wall cleat. #

52" – 57- 1/2" for the **BOTTOM** of the upper cabinets with a **2x6** wall cleat \*

32" – 35- 1/2" for the **TOP** of the base cabinets with a **2x4** wall cleat &

30" – 33- 1/2" for the **TOP** of the vanity with a **2x4** wall cleat &

### **PROCESS**

Set circular saw to just over 1-1/2" depth. Run saw across front of wall studs to make 6-8 cuts between the chalk lines. Clear waste wood with a hammer and do final clean up with a chisel.



Place 2x4/ 2x6 wall cleats in cutouts and nail to each wall stud, with 2- 16d nails. Make cleats full length and attach to all studs.



**OR**

Cut 2 x 4/2 x 6 pieces to length and nail ( w 4-16d's per block) between the wall studs, and **BETWEEN THE CHALK LINES** laid out above.



### HANDICAP ACCESSIBLE

# 75" — 78- 1/2" (IF USING 24" CABINETS 69" — 72- 1/2")

\* 46- 1/2" — 52- 1/4"

& 30- 1/2" — 34"

### **BUILD ATTIC SKUTTLE/ACCESS:**

This will be used as Attic access and insulation dam.

Locate in Master Bedroom in the truss bay above the doorway, back 3" from the **shower head wall or not to conflict with the rat runs**. Rough dimension is 31" x 22 1/2" to fit in between the trusses.

Cut OSB as follows: 2 pieces 31x16, and 2 pieces 21 1/2 x 16.





Layout the dimensions on the bottom chord of the trusses.



Nail the 31" pieces of OSB **INSIDE** the lines, with edges, flush with the bottom of the truss.

Nail 2 pieces of 2 x 4, 22 1/2" long into the trusses to form the ends of the box. Nail the 21 1/2" pieces of OSB in to the 2x 4's, flush to the bottom of the truss.



### **INSTALL BASEMENT HANDRAIL BLOCKING:**

Use 2 x 6 for this step to provide secure mounting for the hand rail.

Mark a Framing square **1" DOWN from the TOP of the LONG leg**, with a piece of tape or sharpie.

Place the framing square on top of the stair stringer, with the **long leg** pointing up. Make a pencil mark, **at the 1" down mark**, on several wall studs, and then snap a line from the landing to the top of the steps.



You have just established the **BOTTOM** of the blocking.

The 2 x 6 blocking will be installed between the studs, **ABOVE** the snapped line.

Hold the 2 x 6 in place and scribe the angle (it should be 40 degrees), cut and nail securely to wall studs.

### **CATHEDRAL DRYWALL BACKERS/INTERIOR 2 x 4 KITCHEN WALL:**

**Follow this sequence for the next steps.**

Cut and install an 18"- 2 x 4 block on top of the 2 x 4 interior kitchen wall. It should fit between the last 2 trusses

Install an additional full height 2 x 4 at the end of the interior kitchen wall.

Plumb the 2 x 4 wall and attach an "L" shaped truss clip to the truss and the wall. Proceed to the next 2 truss bays and install 2 x 4 blocks **BETWEEN** the trusses, 1 going up the cathedral angle and 1 on the "flat".



In the 3rd bay, only put 1- 2 x 4 on the “flat” nailed into the interior Gable truss.

#### **CATHEDRAL BEDROOM WALL TRUSS PACK OUT:**

Place level on bottom chord of at least 2 living room cathedral trusses with one end against the bedroom wall gable truss. Mark location on the gable truss at the X's.

Snap a chalk line from the lower X to the upper X. Nail a 2 X 4 to the gable truss above the chalk line to match the “plane” of the cathedral truss.

#### **FRONT GABLE TRUSS BUILD OUT:**

Living Room Area

If not previously removed, cut off the short piece of 2 x 6 extending beyond the wall, above front door.

**CUTS** - Cut 8 pieces of 2 x 6 to 24” from a 2 x 6- 12’ or available scraps. Cut a notch, 1 ¾” wide by 2” high in one corner.



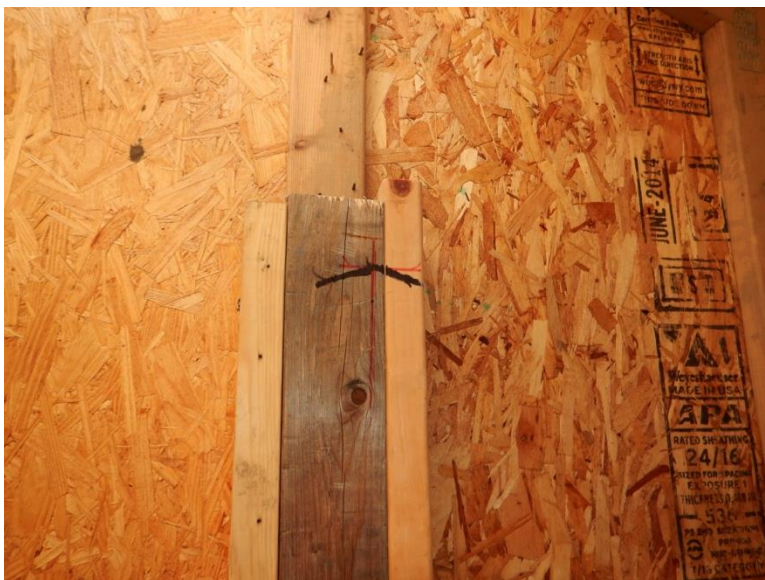


## ASSEMBLY:

Place the 2 x 6 with the notch against truss web, as shown. Nail through the 2 x 6 in to the side of the truss web with 4-16d nails.



Place 2- 2 x 6 at the peak of the cathedral truss, where the nailers will meet. Also, cut a piece of 2 x 4-- 12" long and nail between the 2 x 6 's.



Place a 6' level on the bottom chord of at least 2 truss's, at the PEAK. Mark the 2 x 4 where the level touches it. Repeat the process on the other side of the PEAK.

Snap a chalk line from the top of the Exterior Side wall to the mark at the peak. Snap a chalk line from the top of the Kitchen wall to the peak.



Cut 2-2 x 4's to length and nail to 2 x 6 blocks, using the chalk line as a reference.



## DRYWALL NAILERS:

Check for drywall nailers at wall intersections, inside corners and other spots where drywall meets. Check for missing double top plates and mending plates, used to tie the tops of the walls together and tying interior walls to exterior walls.

## CUT OUT BOTTOM PLATES IN DOOR OPENINGS:

Use a sawzall, with blade installed **BACKWARDS/UPSIDE DOWN**, and cut out bottom plates **CAREFULLY**. **DO NOT CUT THROUGH THE SUBFLOOR.**



## INSTALL BATHTUB BACKERS:

**Step 1.** Install  $\frac{3}{4}$ " OSB/or equivalent (aprox size 60-  $\frac{3}{4}$ " x 48") behind tub, placed **HORIZONTALLY**, with the **TOP** edge set at 72" off the subfloor.

**Step 2.** Place OSB (aprox size 32  $\frac{1}{2}$ " x 48") on shower head wall at same height. **RE-PLUMB THIS WALL BEFORE** nailing OSB in place.



## INSTALL BATHROOM BLOCKING:

Grab bars **optional by HOUSE**

Toilet paper holder 2 x 6 24" center of blocking from subfloor



Towel racks 2 x 6 blocking 42" center of blocking from subfloor

Mirror 2 x 6 blocking 69" center of blocking from subfloor

Future medicine cabinet 2 x 6 39" center of blocking from subfloor

## INSTALL DOOR KNOB BLOCKING:

Blocking will be installed at all interior doors, centered at 36" off the subfloor, behind the doors in the stud bay that is 36" from the rough opening.



## **BUILD BASEMENT STAIRS LOAD BEARING WALL:**

**CRITICAL STEP:** check plans for exact location of REAR Kitchen Pantry wall. **IF NOT IN THE CORRECT LOCATION, STOP AND GET THE HOUSE LEADER.**

Check final install/location of basement stairs before starting this step. There should be Pressure Treated furring strips on the outside basement wall, the little “triangles” at the top of the stair stringer cut off, and 3-1/2” wide OSB spacers on the sides of the stairs.



### **IF NOT,**

Cut and install 3- 1 x 4 Pressure Treated furring strips, evenly spaced, on the Landing wall, with sub floor adhesive and 1-1/4” Ramset pins.

Cut and install 4-1 x 4 PT furring strips, evenly spaced, following the above steps, on the basement wall. The **OUTSIDE EGDE** of the last 1 x 4 should be plumbed down from TJI # 3.

Verify that the stairs are 39-1/2” wide.

Cut and install 1 x 4 strips as spacers on the sides of the stair stringer.

Cut off the “triangles” at the upper corners of the stairs.

Start 3-16d in the top riser of the stairs.

Continue Prep work BEFORE final stair install.



### **STAIR LOAD BEARING WALL INSTALL:**

Plumb **DOWN** from the interior wall directly above the stairs. Mark the LVL and continue the line down to the landing and to the Basement floor.

With the line to floor, mark the **REAR** and **SIDE** location of bottom plate.

Plumb down from TJI # 3 and mark the floor. This will locate the end of the bottom plate.

Cut a **PRESSURE TREATED** 2 x 4 that will extend between the marks on the floor. Attach the bottom plate to the floor with a Powder Actuated Nailer (Ramset).



The first stud will go from the **Bottom plate** to the **Bottom** of the 1<sup>st</sup> floor sub floor. Measure and cut to length and **nail into the LVL, the landing, and the bottom plate.**

Next, locate the TOP PLATE of the basement wall, **which will be DOUBLED.**

Use a 2 x 4 and a 6' level to locate the position of the double top plates.

The 2 x 4 top plates will be attached to the bottom of the LVL/floor joists and extend to the **far edge** of the TJI # 3. Mark the end of the top plates, cut to length and nail Plate #1. Nail Plate # 2 securely to Plate #1.



Cut the 2 x 4 studs to length and **position directly under TJI/floor joists and LVL.**



After plumbing the studs, toe nail them into the plates. Use Galvanized ( **SILVER**) nails in to the **P T bottom** plate.

Use **double** 2 x 4's, nailed together for the last studs, at the **end** of the **bottom plate**. Plumb the end 2 x 4's and nail in to the top plate. **IN THE PIC BELOW, THE DOUBLED 2 X 4'S SHOULD BE AT THE END OF THE TOP PLATES.**



**AFTER STUDS ARE PLACED, PLUMBED AND NAILED,** Place the stairs into opening **against the NEW INTERIOR wall.** Flush the stairs to the top of the landing and secure with the 3 nails in the top riser.

**NOTE:** Any gap between the stairs and the **outside** wall will be fixed **AFTER** drywalling.

Next, cut out the LVL and the first 2 TJI's **FLUSH** with the new basement Interior wall.

The outside edge is already short of the RIM and will come out without cutting. Cut out the subfloor flush with the **REAR KITCHEN PANTRY WALL**, washer/dryer wall and exterior garage walls.

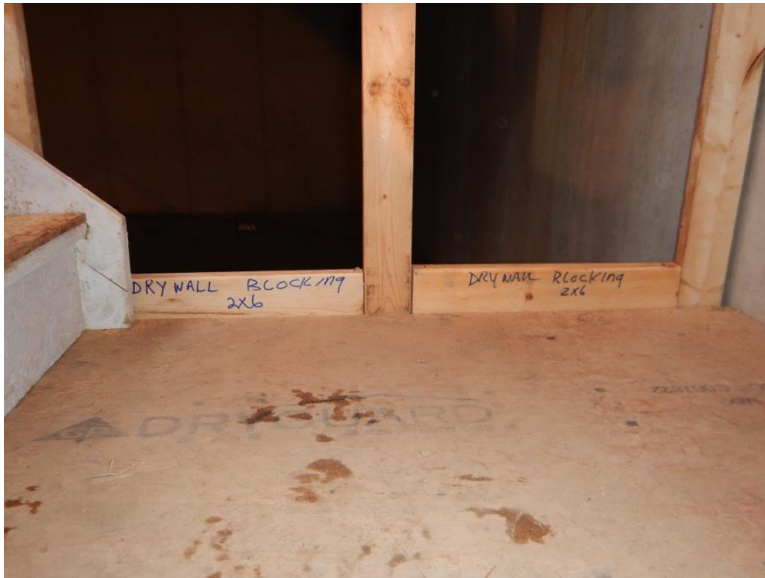
Cut 2-2 x 6's ( 54 1/2"), and nail together, for the new stair header to support the REAR kitchen pantry wall.





Cut 2 short pieces of 2 x 6, as shown, to support the new header.

Nail small pieces of 2 x 6, between the studs, on the **back side** of the landing for drywall blocking and for attaching base molding.



Install hand rail blocking on the new wall, as previously described.

Check with the House Leader as there may some additional work on the 1<sup>st</sup> floor level, above the stairs.

**Dearborn ONLY**: Build walls for basement bathroom, per plan.

### FOAM INTERIOR DOOR HEADERS:

Measure and cut Blue Board foam to fit “snugly” inside openings at the top of doors and windows in exterior walls. Several layers will be used to build up thickness to be close to flush with inside wall.



### NAIL OFF RAT RUNS:

Rat runs are 2 x 4's, laid on the flat, on TOP of the BOTTOM truss chord. They are used to brace the house and keep the trusses on 24OC layout.



Starting at the rear of the house, measure the distance between the Gable truss and the 1<sup>st</sup> truss, **AT THE OUTSIDE WALL**, on each side of the house. It will be less than 24”.

Nail the end of the 2 x 4 into the bottom chord of the Gable truss with 2-16d nails.

Measure over the distance from the previous step. That will be the BACK edge of the 1<sup>st</sup> truss. Nail the 2x4 into the 1<sup>st</sup> truss with 2-16d nails.

Hook your tape on the 1<sup>st</sup> truss and continue towards the front of the house, 24"OC. **This means that from the right edge of truss 1 to the right edge of truss 2 is 24"**.

### **INSTALL REAR GARAGE WALL BLOCKING:**

Because the **REAR** garage wall is over 8', blocking needs to be installed at the top of the wall **under the top plate**.

Cut blocks of 2 x 4, most should be 14 1/4", and nail into the bottom of the top plate in every stud bay.

Complete the job by nailing the OSB, **from the back of the garage**, in to the blocking. If the garage is already sided, use sub floor adhesive on the back edge of the blocking.

### **INSTALL EXTERIOR DOORS:**

See separate Document for Procedure

### **INSULATE WALLS:**

2x6 walls will be insulated with R-19.

The paper side, which is the vapor barrier, should be installed towards the conditioned space (inside, for walls).

Cut insulation to fit for odd size cavities. Insulation should completely fill the cavity to limit the bypassing of air (no gaps!), but don't over-compress.

Where there are obstructions, like wires or pipes, slice through the insulation side (not the paper) so that the insulation can "flow" around the obstruction.

Also, be sure that there is insulation behind all electrical boxes.

To hold the insulation in place, staple it to the studs, on the **FACE** of the stud cavity.

Quality Control - check each wall systematically - it's easy to miss an almost hidden cavity at a corner, for example. Fill any gaps with scraps of insulation.

### **INSTALL INSULATION BAFFLES:**

**Styrofoam** baffles will be installed, with staples, against the bottom of the roof sheeting.

Install 1 baffle in each truss bay STARTING AT THE OUTSIDE WALL and going towards the peak.

The purpose of the baffle is to allow air circulation and to keep the roof deck cool.

Batt insulation will be installed on top of the walls, between the truss tails, to prevent blown insulation from getting into the soffit area.

### **MARK STUD LOCATIONS ON SUBFLOOR:**

Use orange spray paint to mark the location of every stud and cripples on the sub floor.

Sweep the area clean, then spray a line straight out from the stud approx. 6", directly in front of the stud.

Be accurate – these markings will be used later to find studs when installing drywall, baseboard, etc.



### **INSTALL TRUSS CLIPS:**

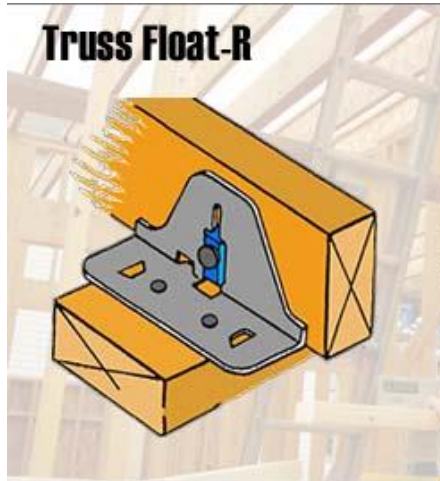
**NOTE:** Never toe-nail trusses to interior walls - trusses can lift up, resulting in drywall cracks. Instead, use truss clips.

Truss clips should be installed on top of the rat runs on a long interior wall which is perpendicular to the trusses and near the center of the house.

Check the truss spacing. If rat runs have been installed correctly the truss spacing should be correct. If adjustment is necessary remove nails from the rat runs, adjust and re- nail.

Hold the truss clip, sitting on the rat run, up against the truss. Nail (2) 8d nails thru the truss clip

into the rat run. Depress the truss to contact the rat run and nail (1) 8d nail through the plastic slider and into the truss chord.



**CAULK FRAMING:**

Seal all gaps in the framing with caulk – bottom plates to the decking on the inside of all exterior walls, at each exterior corner, gaps in the top plates, gaps between studs, etc.

**SEAL THE RETURN AIR OPENING:**

The HVAC contractor will install the return air rough opening. Make sure that solid blocking has been installed at the return air vent and caulk for air sealing. This is an Energy Star requirement, see Appendix A.

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TT 2/24/2015