

# INTERIOR TRIM

## *Approved Methods*

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# Introduction to the Interior Trim Section

## This Section Includes

- Task Lists
- Safety Review
- Tool, Equipment and Material List
- Material Description
- Construction Details and Drawings

## Schedule: Interior Trim Days 1, 2 & 3

On most Habitat projects, Interior Trim will be completed during two scheduled workdays. A third (and possibly on a none consecutive day) workday may be needed for installation of lower kitchen cabinets and to finish up the baseboard. This third day work occurs after the floor covering is installed. It is assumed that the floor covering installation is sub contracted out. See the site supervisor for scheduling.

## Crew Assignments

Trim Carpentry is the work that is most visible in a house and must be done by the most experienced volunteer crews. The work needs to look like it was installed by professional carpenters. The staff supervisor may decide that certain parts of the interior trim work should be done by staff members and not volunteers.

It is suggested that approximately 8-12 volunteers, including one task leader and a minimum of 5 crew leaders, be recruited for Interior Trim. Divide the crews up by distributing the experience level among the crew leaders. Each crew is then assigned to certain rooms or tasks. Dividing into crews is a little trickier for interior trim than for other tasks. Habitat has found starting the days as follows works well:

<b>Day One</b>		
Doors/casing	2 Crews of 2	Split jamb doors are installed. Depending on the skill level of the volunteers, this may be done by the staff.
Baseboard	1 Crew of 2	This can be installed in parallel with the door crew. Just hold off on the baseboards that are impacted by the door casing. Once the doors are installed, finish the baseboards.
Window Trim	1 Crew of 2	
<b>Day Two</b>		
Shoe Molding	1 Crew of 2	After all the flooring and baseboards are installed. Hold off on the baseboard and shoe molding in kitchen and bath until cabinets are installed.
Upper Cabinets	1 Crew of 3-4	
<b>Day Three</b>		

Base Cabinets, remaining baseboard and shoe molding	1 Crew of 2	Install base cabinets in kitchen; vanity in bathrooms; Finish remaining baseboard and shoe molding.
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## Interior Trim Safety Guidelines

Review these guidelines with each crew member at the start of the day or as they arrive on site.

**“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”**

**Speak up** if something looks unsafe. An observer can spot danger quicker than a worker.

Know where **water** & a **first aid** kit are located. Tell the site supervisor immediately in the event of an injury.

Habitat **requires safety glasses** not just when using power saws, but at all times.

**Utility knives** - keep your hand out of the blade’s path. Retract blade when not in immediate use. A sharp blade is safer than a dull one. Safely dispose of used blades.

### Power Saws:

- Only crew members with power saw **experience** can use them. A busy work day is not the time to teach saw skills nor is it the time to learn saw skills.
- Habitat requires that **ear and eye protection** be used when using power saws. Don’t bind the blade of any saw – listen for it. Back off and re-support lumber. Keep electric cords out of the way of the saw and out from underfoot.
- Don’t cross hands over to stabilize material on the miter saw. Find another way or get help.
- **Guards** on saws must be in place & operating.

### Nail Guns:

Though most nail guns are prohibited at Habitat, under certain conditions trim guns are allowed. Habitat’s policy regarding nail guns is as follows:

- Crews need the **site supervisor’s approval** before using nail guns.
- Nail guns are dangerous and only **experienced** crew members should use them. Crews should hand nail material in place so nail gun use is limited to one or two qualified users. It should not be passed around for general use.
- All **manufacturer’s safety precautions** must be followed, including eye protection.

**Remove nails** before discarding lumber. Discarded material must be placed in the designated area.

Be careful when lifting cabinets. Support securely.

Do not use an empty drywall bucket as a ladder. Choose an appropriate **ladder** for the work.

No loose clothing or hair that can get caught in power tools.

Wear appropriate clothing for the task including work boots that protect from falling objects, have a nonskid sole & resist nail penetrations. No open toed shoes allowed.

Tools must be in a safe condition (meet OSHA standards, i.e. no nicks in cords or missing ground prongs.)

**Think** & concentrate on your task.

**If you are uncertain about how to do a task, or how to operate a power tool, ask your crew leader.**

# Task List-Interior Trim Day 1

## Staffing

House Leader

Interior Trim Task Leader

Four-Five Crew Leaders

4-5 Additional Volunteers

## Tasks to Be Completed and Crew Sizes

_____	Hang interior door units	2 crews
_____	Baseboards installed	2-3 crews
_____	Attic Stair Unit Installed	1 crew
_____	Window sills and aprons installed	1 crew

## Quality Checkpoints

- \_\_\_\_\_ Attic stair unit shimmed, securely nailed, and legs cut to length
- \_\_\_\_\_ Doors properly hung: plumb, equal margins around doors, not hinge bound
- \_\_\_\_\_ No opened miter joints in casing, check nailing pattern
- \_\_\_\_\_ Joints in baseboard properly mitered or coped, check nailing pattern
- \_\_\_\_\_ Minimum gaps around window stools in drywall openings
- \_\_\_\_\_ Nails set  $\frac{1}{16}$ " below surface of all trim
- \_\_\_\_\_ All materials re-stacked, site cleaned, tools accounted for and put away

## Task List - Interior Trim Day 2

### Staffing

- House Leader
- Interior Trim Task Leader
- Four-Five Crew Leaders
- 4-5 Additional Volunteers

### Tasks to Be Completed and Crew Sizes

_____	Kitchen and bath wall cabinets installed	1-2 crews
_____	Attic stair and exterior door casing	1 crew

### Quality Checkpoints

- \_\_\_\_\_ Wall cabinets configuration (as per plan) properly fitted against walls
- \_\_\_\_\_ Wall cabinets anchored to blocks or studs at mounting point.
- \_\_\_\_\_ Wall cabinets secured to each other at the stiles
- \_\_\_\_\_ Nails set  $\frac{1}{16}$ " below surface of all trim
- \_\_\_\_\_ All materials re-stacked, site cleaned, tools accounted for and put away

# Task List - Interior Trim Day 3

## Staffing

House Leader

Interior Trim Task Leader

Two Crew Leaders

2 Additional Volunteers

## Tasks to Be Completed and Crew Sizes

\*May have been done on Day Two

_____	*Lower kitchen cabinets and countertops installed	1 crew
_____	*Bath cabinets installed	1 crew
_____	Finish installing baseboards and shoe molding	1 crew
_____	Door hardware Installed	1 crew
_____	Miscellaneous hardware in bathroom	1 crew
_____	Fire extinguisher	1 person
_____	Closet shelving installed	2 people
_____	Door stops installed	

## Quality Checkpoints

- \_\_\_\_\_ \*Base cabinets properly fitted against walls in kitchen and bathroom
- \_\_\_\_\_ \*Countertops securely fastened
- \_\_\_\_\_ Bathroom Towel bars, toilet paper holder and shower curtain hardware secure
- \_\_\_\_\_ Closet shelving installed
- \_\_\_\_\_ House numbers on porch beam & visible from street
- \_\_\_\_\_ Door stops installed

# **Interior Trim Tool, Equipment & Material List**

## **Tools Each Interior Trim Crew Member Will Need**

Hammer (16 oz. min./not with a waffle head)  
Nail Apron  
Retractable Utility Knife with Extra Blades  
Measuring Tape (16' Min.)  
Square (Speed or Combination)  
Two Pencils  
Safety Glasses  
Work Gloves  
Water

## **Tools Each Trim Crew Will Need**

50' 12 Gauge Drop Cord  
25' Measuring Tape  
4' Level Framing Square  
Hand Saw  
Chalk Line  
Cats Paw  
Wood Chisel  
Two Coping Saws with extra fine grade wood blades  
Tiny Screw Driver for Bath Accessories  
Sand Paper (100 Grit)  
Nail Set  
Note Pad for Recording Measurements of baseboards and shoe molding.

## **Tools and Equipment Needed On Site**

Ear Protection/Glasses  
Sliding T Bevel (sills)  
Circular Saw (7¼")  
Nail Gun (if approved), compressor, air lines, nails for the nail gun  
100' - 12 Gauge Drop Cord  
4-Way Electrical Box (Splitter)  
Electric Miter Saw (10") with Saw Table  
Electric Jig Saw with a set of sharp wood blades (fine cutting)  
Electric Drill  
2¼" Hole Saw Bit  
1" Spade Bit  
Power Screw Gun with Cabinet Screw Bits  
Two 6' Step Ladders  
Handy Bar or Crow Bar  
Broom  
Four Saw Horses  
Lights

Two wall cabinet preachers or cleats to hold the wall cabinet while installing  
Face frame cabinetry clamps (set of 2) for kitchen cabinets.



## Material List

### Nails/Screws/Fasteners

3" Cabinet Screws

1<sup>5</sup>/<sub>8</sub>" Counter Top Fasteners

<sup>3</sup>/<sub>4</sub>" Wood Screws (T.P. Holder)

1<sup>1</sup>/<sub>2</sub>" and 2" nails for trim gun (if approved)

Mirror brackets

Plastic anchors

### Spacers/Shims -(most made on site)

OSB Door Shims

Bundles of Split Shims

Temporary shims - doors and baseboard:

<sup>1</sup>/<sub>8</sub>", <sup>1</sup>/<sub>4</sub>", <sup>3</sup>/<sub>8</sub>", <sup>7</sup>/<sub>16</sub>", <sup>1</sup>/<sub>2</sub>"

<sup>1</sup>/<sub>2</sub>" Baseboard Blocks (for Behind Baseboard)

Two 1x4 Boards (for Installing Attic Stair)

### Trim/Hardware Components

Interior Doors

Baseboard

Shoe Molding

Colonial Casing

Window Stool Material

Attic Stair Unit

Countertops/Vanity Tops & Back Splashes

Kitchen & Bath Cabinets

Interior Door Locks

Door Bumpers

House Numbers

Fire Extinguisher

Glue

### Miscellaneous

Silicone Caulk

# **Interior Trim Material Description**

## **Vinyl Planking flooring**

Installed by subcontractors. Resembles the look and feel of laminate flooring. Can be glued down on concrete floor. Typically snapped together to interlock. May have foam padding.

## **Pre-Hung Interior Door Units**

Pre-hung door units consist of hollow-core door panels in varying sizes (1'-6" to 5'-0" wide by 6'-8" high). The door panels are pre-hung in "split" door jambs with 442 Colonial casing attached to both sides of the jambs. The door unit is completely assembled by the manufacturer and comes wrapped in protective cardboard packaging. The doors are designed so the split jambs can be separated for installation.

## **356 Colonial Casing**

356 Colonial Casing is 2¼" wide, molded trim used to trim around the inside of the exterior doors, at the attic stair opening, and is used for aprons beneath the window stools. The material generally comes in 10' to 16' lengths.

## **Kitchen and Bath Cabinets**

Kitchen and bath cabinets are pre-finished plywood units, which have been custom- designed and pre-measured for a particular house. A cabinet layout plan is included with each cabinet order. (Typically can be found in a drawer.)

## **Countertops**

Kitchen countertops are normally preformed tops, which have been custom measured and fabricated for a particular house. Bath vanity tops are normally one-piece, imitation marble sink and top combinations.

## **Baseboard**

Baseboard is 3¼" wide, molded trim used at the base of all the walls. The material normally comes in 16' lengths.

## **Window Stool**

Window stools are cut from 1x material already routed along one edge.

## **Attic Stair Unit**

The attic stairs comes as a pre-assembled unit consisting of a folding ladder mounted in a wood frame with a plywood panel to cover the opening in the ceiling. The unit is packaged in a cardboard carton and comes complete with installation instructions. In lieu of an Attic Stair Unit an attic access may be installed consisting of 3/4" plywood with a minimum of 1" insulation board attached.

**Nails and Fasteners**

3" cabinet screws

Fasteners for nail guns are specific to the gun's manufacturer

**Baseboard Shims**

1/2"x3"x3/4" pieces of OSB that are used to keep the baseboard from turning under when nailed at the bottom. They are placed on the floor behind the baseboard against the bottom plate at each stud location.

**Baseboard and Door Lifters**

Temporary shims placed under the baseboard and door casing in rooms that have yet to receive carpet, or vinyl plank flooring.

## General Instructions for Interior Trim

### General Instructions for Cutting and Nailing Interior Trim

Avoid hammer marks on material. Nail heads must be set below the surface.

All interior trim joints should be tight, with no space between the pieces. Good joints are obtained by making accurate measurements and careful cuts. Do not use caulk or putty to “improve” a bad joint; simply recut or reposition the piece of trim.

Attach interior trim by nailing through the drywall and into framing using appropriately sized finish nails.

NOTE: Joints can be strengthened by applying a small amount of carpenter’s glue (or “adhesive” caulk) to the two pieces before nailing. Also, small pieces of baseboard (between the edge of door and the corner of a room, for example) can be attached to the wall with glue (such as Liquid Nails) since nailing may split the wood.

- 2" finish nails in baseboard at each stud and at each joint.
- 2" nails for door casings.

### Nail Guns

#### **“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”**

Though most nail guns are prohibited at Habitat, under certain conditions trim guns and automatic staplers are allowed. Habitat Charlotte’s policy regarding trim nail guns is as follows:

Crews need the site supervisor’s approval before using nail guns.

Nail guns are dangerous and only experienced crew members should use them.

Crews should hand nail material in place so nail gun use is limited to one or two qualified users. It should not be passed around for general use.

All manufacturer’s safety precautions must be followed, including eye protection.

### Setting Nails

If the site supervisor has given permission to use a pneumatic nail gun, keep the pressure adjusted to automatically set nails. When using a hammer, drive finish nails only part way in (leave about ¼" exposed) to prevent hammer marks on the wood trim material and to allow the nail to be pulled in the event the trim needs to be adjusted. If a nail must be pulled, cushion the hammer head with a block of wood to avoid denting the trim. After each piece of trim is properly installed, the nails can be set. Set nails so the head is approximately 1/16" to 1/8" below the surface of the wood.

NOTE: Practice cutting mitered corners and coped corners on scrap pieces of wood.

## Pre-Hung (Split Jamb) Interior Door Units

### Qualities of a Properly Installed Door

- Operate freely with only the light touch of a finger.
- Remain shut in the closed position (not “hinge bound”).
- Equal margins between the edge of the door panel and the door jambs across the top and down each side of the unit.
- Makes contact with the door stop from top to the bottom at the same time.

### Steps to Install Pre-hung Doors

1. **Check the Plan** to ensure that the proper sized door is being installed and that it will swing in the correct direction. The rough opening is approximately ½" wider and 1" to 1½" higher than the door unit. Before beginning, place all units in position throughout the house.
2. **Separate the two halves.**



3. **Left or Right Hand Door?**

Doors were ordered according to the floor plan so install accordingly. With the plan in hand, mark the rough framing on the hinge side with “LH” or “RH”. To determine if a door is a Left or Right, put your back to the hinge side of the jamb. If the door opens to the right, it is a Right Hand door. If to the left, it is a Left Hand door.

**4. Remove all of the packaging material, staples, and nails.** Remove clips that hold the door in the closed position during shipping. It is critical that all nails are removed from top and bottom because they can easily damage the casing as it is being removed.

**5. Place Door in opening**

Place door jambs either 1/8" above hard floors, or 1/2" above carpet floors. Typically, hard floors are installed by time of door/trim installation starts. Note, that Energy Star requirements may mean adding air ventilation above doors between doors. The bottom of the jamb and casing may be cut with a jamb saw to handle the different finish floor material (laminated, carpet, linoleum).



**6. Place the door tight against the rough framing on the hinge side (do not push).**

A level can be placed against the hinge pins if necessary. If the door is close to a wall, set it an even distance from the wall at the top and bottom, which in this case is more noticeable to the eye than plumb (above).

**Note:** If the door opening is too close to a wall, you may need to trim the side and top casing to accommodate the intersecting wall.

7. **Nail the casing near the upper hinge corner.** Leave casing nails out an inch in case they need readjusting.

The first nail is placed in the casing in the upper corner hinge side. Place a (2nd) nail in the casing near the middle hinge.

HINT: Installing doors properly can be tricky. It is strongly suggested that the door be checked to make sure it is “in the plane”, “vertical” and “square” after every nail. If a problem is found using this method, its source is easily identifiable.



**“NO JOB IS SO IMPORTANT  
THAT IT CAN’T BE DONE  
SAFELY”**

Habitat **requires safety glasses** not just when using power saws, but at all times.

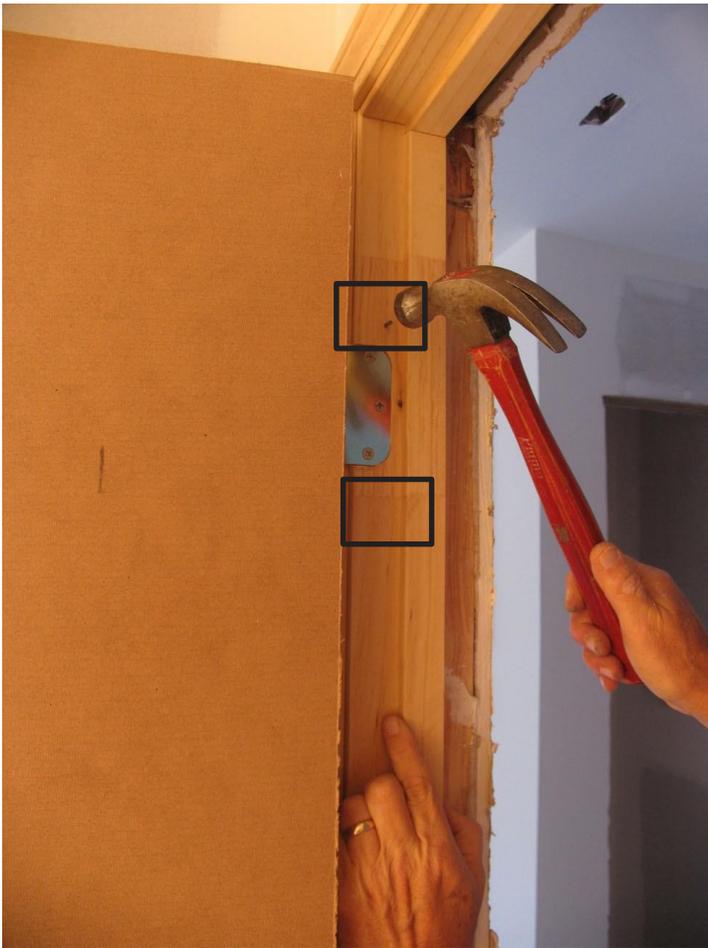
8. **Establish an even margin across the top** of the jamb by moving the lock side of the door jamb up or down as needed. **Nail (3rd) the upper corner of the lock side casing.** (Thickness of an 8d finish nail works well as a margin gauge.)
9. **Establish an even margin down the lock side of the jamb.** Hold the jamb so the margin on that side is the same from top to bottom, then **nail (4th) through the casing at the center.**

**10. Check to see if the door unit is in “plane”.** Make sure that the door is not hinge bound and that it makes contact with the door stop at the top, bottom and center at the same time. Consult the site supervisor if it out of plane. A knowledgeable carpenter can shim to fix this problem easily before the door is completely installed.



**11. Nail both lower (5th, 6th) corners.** (It is not necessary to plumb lock side of jamb.)

**12. Finish nailing the casing,** still leaving the nail heads exposed. The nailing pattern is five nails, equally spaced, on each side casing and one centered across the top. After nailing the casing, check the door again for proper operation and adjust as required.



**13. Double nail at each hinge.** After every nail, shut the door and see if one finger will bring it against the stop, top to bottom, and that when released it does not spring open.

If the door is binding the problem is most likely with the hinge side and the most likely causes are:

- Shimmed too tight (if shimmed)
- Twisted stud
- Jamb unit was pushed out of square when setting to hinge framing.

**14. Correct shimming methods reduce hinge bind.** Carefully insert the shims so as not to move or twist the door jambs. The shims should be just tight enough not to fall out. Adjust the shims as necessary to eliminate the problems of hinge bind and uneven margins. Use a piece of ½" OSB when possible as this is sturdier than piling up split shims. When using split shims together, place them thick end to thin end. Check the door stop and reveal again.



**15. Shim and nail the lock side** between the door jamb and the rough frame opening at the top, bottom, and to either side of the lock. Use one 8d finish nail at each shim location on the lock side. Do not nail or shim the header jambs. Do not to nail through the female portion of the split jamb.

**Recheck the operation of the door one last time. It should close and open with no rubbing; the reveal should be uniform around the sides and top.**



**Place shims thick end to thin end when stacking. Cut them off short of the edge of the drywall so they won't interfere with the door's casing.**

**“NO JOB IS SO IMPORTANT  
THAT IT CAN'T BE DONE  
SAFELY”**

Utility knives - **hands out of the path of the blade!** Retract the blade when not in immediate use.

**16. Install the second half of the door** by positioning it so the tongue slips into the groove of the installed jamb. Once in place, nail only through the casing using 8d finish nails in the same pattern as before. Do not nail through the jamb.



Slip the casing into the jamb.



Nail the backside of the split jamb only through the casing.

### **Bi-Hung Doors**

Bi hung doors are installed so that the margins at the top is even and down the center is even. The jamb nails will draw apart the doors. For that reason, it is best to have the two doors barely rubbing when the casing is first nailed.



Bi-hung doors are harder to install than singles. The margin, exaggerated in the photo, must be even when the installation is completed.

# Folding Attic Stairway Installation

The attic stair unit comes with a packet of detailed instructions specific to the manufacturer and model. The following example comes from Century Folding Attic Stairways. Steps 1-4 were completed during framing.

## INSTALLING TEMPORARY SUPPORTS

It is necessary to temporarily support the stairway in the prepared rough opening by using 1" x 4" slats that extend from edge to edge across each end of the rough opening. The slats form a ledge to support the stairway before it is permanently secured. Care is important in positioning the slats. Nail the slats below the ceiling onto the headers as close to the edges of the rough openings as practical for maximum strength. They should extend only 3/8" - 5/8" into the rough opening. The plywood panel must be free to swing open (see FIGURE 4).

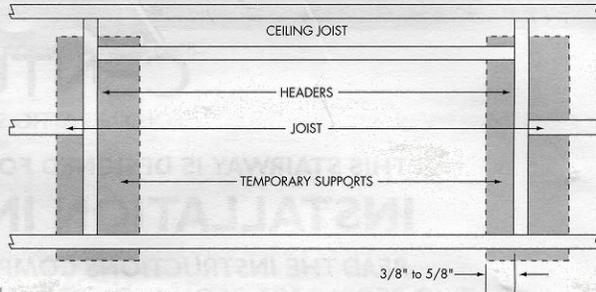


FIGURE 4 - FRAMED OPENING WITH TEMPORARY SUPPORT SLATS READY TO RECEIVE STAIRS

The slats must be nailed securely enough to temporarily support the weight of the stairway when it is placed in the rough opening.

**CAUTION: DO NOT PLACE ANY WEIGHT ON THE STAIRWAY UNTIL PERMANENT NAILING IS COMPLETED.**

## PLACING STAIRWAY INTO OPENING

**A.** While closed, the stairway should now be raised into the rough opening and positioned on the ledges formed by the slats. Working above with a helper below, raise the stairway through the rough opening at an angle so it will clear the slats. Position the stairway in the rough opening. **DO NOT STAND ON OR OPEN THE STAIRWAY AT THIS TIME.** Make sure you have a helper, below, who can open the stairway to allow completion of the installation.

**B.** Using at least three evenly spaced 8d nails per side, temporarily affix the stairway in the opening by nailing, at an angle, the well sides to the adjacent joists. Do not drive these nails in all the way so they can be removed later after the permanent nailing is completed.

**C.** Once the temporary nailing has been completed, have your helper, below, open the stairway door panel and lower the stair sections so that the area for permanent nailing is exposed. **DO NOT STAND ON THE STAIRWAY AT THIS TIME.**

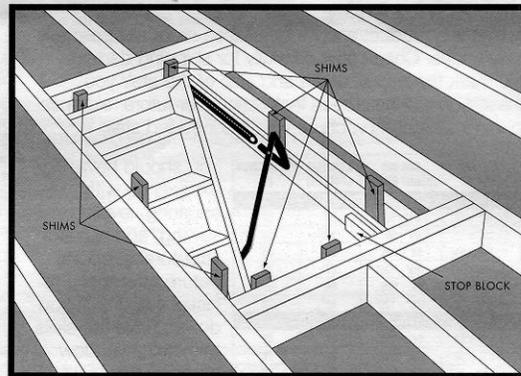
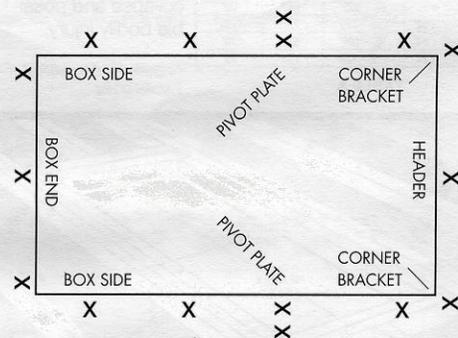


FIGURE 5

## PERMANENT MOUNTING OF STAIRWAY

**A.** Be sure stairway is square and level in the rough opening. If the stair frame has bowed while the stairway was in inventory, nails and blocks of wood used as shims will straighten it. Bowing is normal since wood parts are subjected to strong spring tension for some time before purchase and installation (see FIGURE 5).

**B.** Nail the sides (jambs) of the stairway frame to the rough opening frame, using 16d nails or 3" lag screws. Holes are provided in the pivot plates and piano hinge brackets. Also nail through the end boards into the rough opening headers. Complete permanent installation by using 16d nails or 3" lag screws to secure stairway frame on all four sides of the rough opening according to the diagram in FIGURE 6. Use *at least* three evenly spaced fasteners on each box end and *at least* five evenly spaced fasteners on each box side. Remove the 8d nails and the slats used for temporary support.



X - INDICATES RECOMMENDED LOCATION OF 16d NAILS OR 3" LAG SCREWS

FIGURE 6

### ADJUSTING STAIRWAY TO CEILING HEIGHT

Pull stairway down, applying pressure so that hardware arms are fully extended. Open the stair sections, folding bottom section under the middle section. The top and middle sections should form a straight line. Aligning your ruler on the same plane as the two upper sections, measure the distance from the bottom of the middle section to the floor on the front and back (see FIGURE 7). Mark the distances obtained on the front and back sides of the ends of the bottom section, and trim bottom sections at the proper length and angles by cutting across them. With the bottom section cut to the proper length and angle, joints will be tight at each section with weight on the stairs.

**WARNING:** The bottom section must fit flush with the floor. Failure to cut properly could result in undue stress on the component parts of the stairway, resulting in serious injury (see FIGURES 8 and 9).

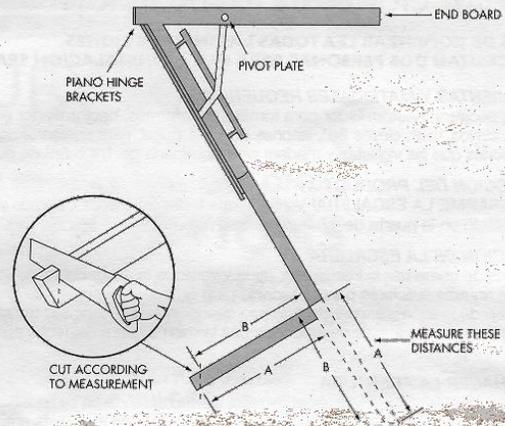


FIGURE 7 - ADJUSTMENT TO CEILING HEIGHTS AND NAIL POSITIONS

### ADJUSTING THE SPRING TENSION

Your stairway is equipped with a unique and easy way to adjust the tension on each of the two springs. With the stairway in the closed position, use an adjustable or 7/16" wrench and tighten (turn clockwise) the locknuts on the J-hooks that attach the springs to the door panel. Alternate the tightening of each spring to raise the door panel evenly so it ends up flush with the ceiling.

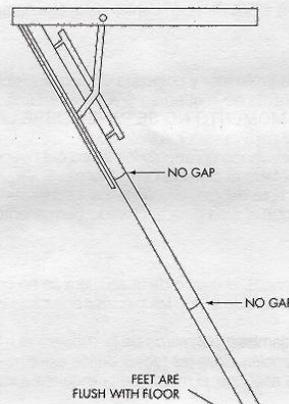


FIGURE 8 - CORRECT SETUP

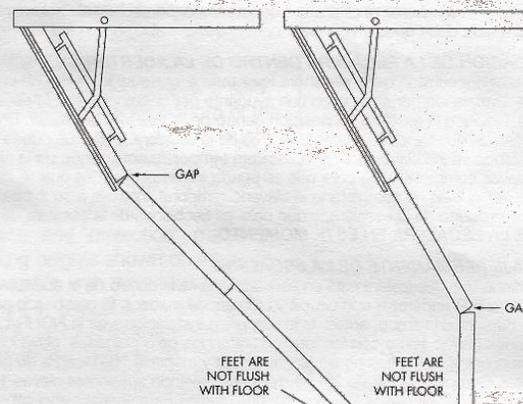


FIGURE 9 - INCORRECT SETUPS

## Attic Stair Summary

- Temporary 1x4 boards will hold the stairway in the rough opening. They extend across the rough opening and form a ledge on which the stairwell can rest.
- First, drill enough holes in the frame so that a total of sixteen 16d nails or 3" lag screws can be used. (The nailing pattern is shown on the diagram.)
- Raise the unit into place with the hinge side against the 2x10 blocking.
- Install temporary supports with 3" screws into the truss. Use a spacing that leaves a 1/2" ledge at the hinge end and just enough ledge at the pull cord end to allow clearance for the door to open.
- Nail per diagram (three at each end, five along the sides, double nailing at the pivot plate.)
- Cut stair runners to fit flush with the floor. There are no second chances with this step so double check your work prior to cutting.

## Build Insulated Attic Box

After the attic stairs are installed, during the final punch stage of construction, build a box out of 1x10 or 1x12 lumber (Site Supervisor will determine specific size to use). The box should sit atop the frame of the stairs and will be screwed into the trusses/framing of the house. The long dimensions of the box will be approximately 54" since attic stair casing is that size opening, but obviously measure the stair casing. Similarly, the two end pieces will be approximately 22-23".

You will need to shim the top upper edge of the long box sides to attach to the angle portion of the truss since the truss will be approximately  $\frac{3}{4}$  to 1" back from the attic stair casing. You want the box squared at top so that it can easily support the Attic Hinged Lid that will be attached later in the process.



On the short end near the attic entrance, most of the attic stair casings coming with suspension springs, so the box must be cut out to fit around the spring attachment



Due to supply chain issues currently, some of our attic stairs come with hydraulic lifts, so cutting out at the ends for the suspension chains as shown above is not necessary. However, the bolt attaching the hydraulic lift arm is on the side of the attic stair assembly requiring a very slight cut out along the long panels in order for you to be able to seat the long panels down snugly to the attic stair casing.

Attach all four (4) corners of the Attic box to each other with screws at the top of each corner as shown below.



The finished end pieces should look as shown below, attached both along the bottom edge of the attic stair assembly and the truss/framing of the house as well as at all four upper corners.



Seal the edges of the box with caulk or great stuff. Make sure the two edges of the box are even with each other. Then add foam window seal to the top. Then attach a hinged lid made of OSB with R30 insulation stapled to the top of it. Finally add a barrel bolt to the trusses which will be used to keep the lid open while people are working in the attic space. This box should be built before the attic insulation is blown in, acting as baffles for the insulation and providing an extra insulated layer to the attic, needed for final system vision inspections.



### **Attic Stairs Casing**

Casing around the attic stair opening is installed in much the same way as for doors. Leave a  $\frac{3}{8}$ " reveal

between the door panel and the trim at the hinge end of the stairway to provide clearance when the stairway is opened. The balance of the trim may be placed  $\frac{1}{8}$ " from the edges of the plywood door panel. Make sure that the two side pieces and the two end pieces are the same length.



## Casing at Exterior Doors

### Exterior Door Casing

Using a combination square, mark short pencil lines around the inside face of the door jambs,  $\frac{3}{16}$ " from the edge of the jamb (the "reveal").

Lay a piece of casing across the top of the opening, and mark for width at the reveal lines. Cut to length with these points as the short points of the  $45^\circ$  miter cuts. Nail to the head jamb with 4d finish nails. Do not nail in the grooves of the casing as this makes puttying difficult.

Use a tape or hold a piece of side casing off the floor by placing it on a shim ( $\frac{1}{4}$ " for slab floors getting vinyl plank floors). Mark for height and cut to length. (Hint: Roughly mark for the direction of the cut). Attach with 4d finish nails along the inside of the casing.

Nail the outer edges of the casing through to the framing using 8d (or about 2") finish nails every eighteen inches.



**A tri-square is used to mark the  $\frac{3}{16}$ " reveal around the perimeter of the door**



**Casing is set to the reveal marks. Place the thick side of the material to the outside. It doesn't matter if the sides or the top is set first, as long as the miter joints are tight.**



**A shim spacer is used under this door casing.**

## Baseboards

Though the installation of baseboard can be completed only after doors are hung, exterior doors are cased, vinyl plank flooring is down, and cabinets installed, it works well for at least one crew to start on baseboard at the beginning of the first interior trim day.

### Mark for Studs

The baseboards need to be nailed to a solid backing. You should be able to catch the stud locations at the bottom plate with your nailing. Stud locations were marked on the floor during drywall. Remark if necessary. If necessary, use a good electronic stud finder to help locate the studs. If the drywall is not painted, the putty coverage can give you a sense of the stud locations.

### Blocks behind Baseboard

Blocks are used to support the back of the baseboard at the bottom and to keep it from turning under when nailed. (There is always a gap between the floor and the bottom of the drywall.) Cut  $\frac{1}{2}$ " scrap material into blocks approximately 3" long and  $\frac{3}{4}$ " high. Place them between the floor and the bottom edge of the drywall at every stud location, on both sides of any corner, and at the edge of any door casings.



**Blocks behind the baseboard keep it from turning under when nailed. (Blocks and shims are seen in this photograph.)**



**$\frac{1}{2}$ " temporary shims under the baseboard leave room for carpet. Shim thickness is determined by flooring material.**

### Temporary Shims under Baseboard

Make temporary shims that will hold the baseboard off the floor and allow for finish floor material. Be sure the shims are resting on a cleaned floor surface. The size of the shims depends on what floor material is to be used.

- Carpet:  $\frac{7}{16}$ " shim (piece of base or  $\frac{1}{2}$ " OSB).
- Vinyl planks on slab:  $\frac{1}{4}$ ".
- Vinyl planks on wood floor:  $\frac{1}{2}$ ".

If the floor is not level, it will be necessary to flex the baseboard as it is being nailed so that the gap is

uniform.

## Making a Cut Sheet

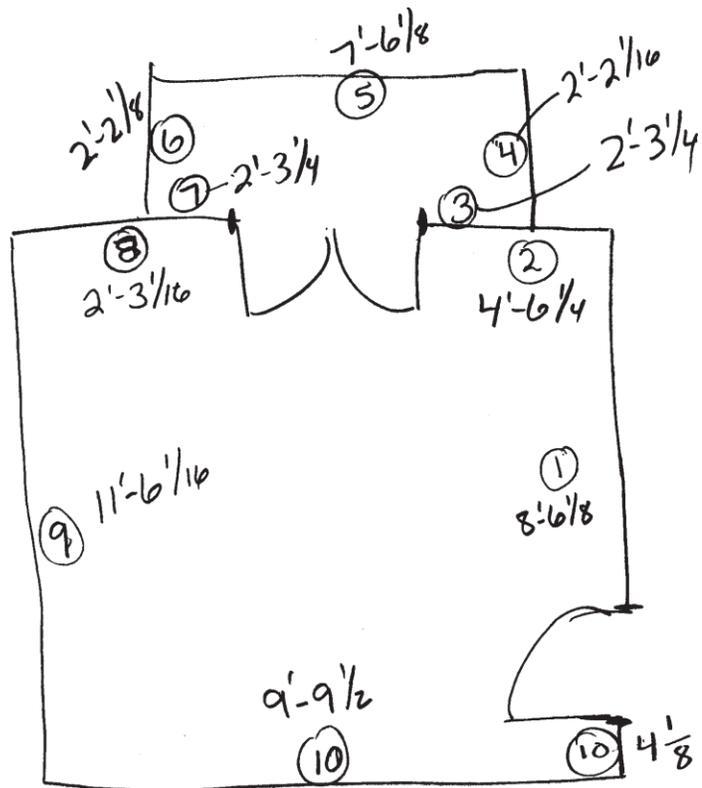
Measuring for baseboard must be done accurately to avoid excessive cutting and waste. Measure, cut and install the baseboard for one room at a time.

Measure in the same direction that the baseboard will be installed, normally beginning at the edge of the entry door casing and moving around the room counterclockwise. This method eliminates any guess work as to which end of a particular piece of baseboard is to be coped, since all coped cuts will be on the right end of the material.

On paper, draw a rough sketch of the room (including closets) where baseboard is to be installed. Measure each wall surface and record the measurements on the plan, working counterclockwise. Number the walls on the plan. This will be your "cut sheet" and will reduce the time spent going back and forth from saw to room.

Make all measurements approximately 3" above the floor along the wall where the baseboard is to be installed. (From corner to corner or from door casing to corner, etc.) Measure the full length of each section, from the face of the drywall to the face of the drywall (or door casing). NOTE: Do not deduct from the measurement the thickness of the baseboard material itself.

**A cut sheet tells the saw person all that is needed to know about how to cut baseboard for a room. It is obvious from the sketch the boards are being installed counterclockwise, overall lengths, and if cuts are butt, outside corners, or coped.**



Another technique is to compile the cut list as follows:

S=Straight Cut, C=Cope Cut; O=Outside Corner cut; E=End cut of 30 degrees ):

Left Size Right Number

S	8'6"	S	1	
S	4'6"	C	2	
O	6'	C	3	Outside corners are measured from short side
S	4'	O	4	Outside corners are measured from short side

Very small pieces may be too hard to cope. Cut them square on both ends and glue into place. This means that the previous piece of baseboard will be coped on both ends. Make this clear on the cut sheet

### General Cutting

Baseboard is cut with either an electric miter saw or a hand-held coping saw or a combination of both. The miter saw should be placed on a solid surface at a comfortable height so measurements and cutting can be done quickly and accurately. A sufficient supply of baseboard material should be stacked close by. For efficiency, it is helpful to have much of this baseboard coped (right ends if going counterclockwise in rooms) as soon as possible, when it can be quickly cut to length.



A coping saw works best when the blade is sharp.

### Square Cuts

The first piece of baseboard for most rooms is usually cut square on both ends and abuts a wall or a door casing on both ends.

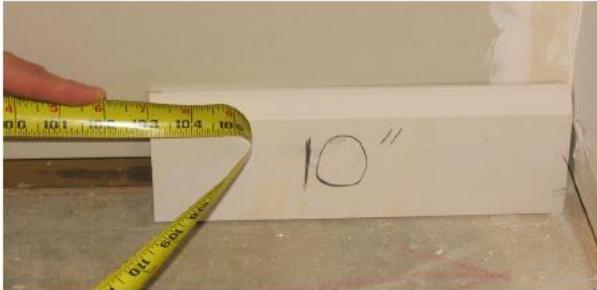
1. Cut the right end of the material to square it. (Trim material is generally not cut square by the supplier.)
2. Cut to length with another square cut per the cut sheet.
3. Re-measure after cutting to insure that the piece is the proper length, then **number it on the back side per the cut sheet and set aside until time for installation.**



## Measuring Tips

Measuring to a scrap piece of baseboard that has been placed into the corner makes reading the tape measure easier. Use a scrap piece cut to exactly 10" to make the math easy.

Another example of this trick is used on long walls. Measure an even number of feet from the left wall, make a mark, measure from the other wall to the mark and add the two.



**A 10" block pushed into other corner makes the tape easier to read. It also helps in regards to uneven drywall corners. (If both blocks are used, add 20" to your length.)**



**A 10" block pushed tight into the corner can make measuring for baseboard a one person job. Add the block's length to your measurement.**

## Inside Corner Cuts - Coping

A coped joint is used where two pieces of baseboard meet at an inside corner. The first piece of baseboard is cut square. The other piece, to the left of the corner, is coped and fits over the first.

For quality purposes, it is helpful to have one or two people cutting coped corners for all the crews. The coped boards can then be cut to length. Coping each board to length as it is needed can create a waiting line at the saw.



**The coped piece installs over the square cut end of the first piece to form a 90° inside corner.**



**This square cut goes into the corner first. The coped piece will be installed over it. This room is being worked counterclockwise.**



**“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”**

**Power Saws:**

Only crew members with power saw **experience** can use them. A busy work day is not the time to teach saw skills nor is it the time to learn saw skills. Habitat requires that **ear and eye protection** be used when using power saws.

**Don’t bind the blade** of any saw – listen for it. Back off and resupport lumber.

Keep electric cords out of the way of the saw and not underfoot.

**Don’t cross hands** over to stabilize material on the miter saw. Find another way or get help.

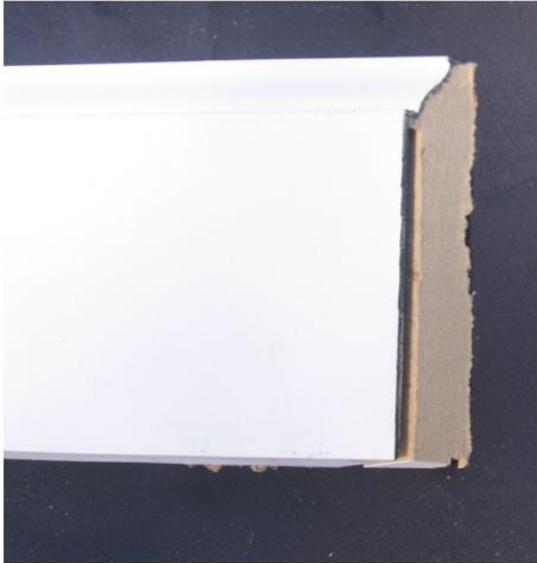
**Guards** on saws must be in place & operating.

1. To make coped cuts, saw a 45° miter cut on the right end of the piece of baseboard leaving the backside of the material long.
2. Measure from the long end of the cut for length, according to the cut sheet. Mark the top edge of the material - but don’t cut to length unless you are experienced with coping.



3. The exposed face of the 45° cut is then cut away using a coping saw. To make it go faster, turn the board over and cut the straight cut with a miter saw, taking care to stay right on the miter line. (Carpenters use anywhere from about a 12 to a 45° backcut when cutting off the excess with a miter saw.)

The straight part of the cope can be cut on the miter saw - but stop the saw before it cuts into the curved profile.



4. The coping saw follows the line of the painted/non-painted surface. This piece was backcut 45° on the miter saw and is ready for a coping saw to follow the curved profile. Length was measured before coping because the fragile tip often breaks off.

There are times when it is easier to measure from the straight part of the cut, not the tip. When measuring in this way, remember to subtract the thickness of the intersecting piece baseboard ( $\frac{7}{16}$ " ) from the overall length.

Test for fit of the baseboard, trim if necessary.

### **Outside Corner Cuts**

The outside mitered joint is used where two pieces of baseboard meet to form an outside corner.

1. Measure for length along the top edge of the material. If measuring from a coped end, hook on the tip (remember, the measurement is from wall to wall). If the tip is broken, measure from the straight section of the cope but add back  $\frac{7}{16}$ " to make up for the thickness of the intersecting baseboard.
2. Mark the top rear edge and cut at a 45° angle with this point as the short point of the cut.
3. Cut the second piece at the opposite 45° angle.

Test for fit of the baseboard, trim if necessary.



Outside corners consist of two 45° cuts.



Joint should come together tight with no need for caulk, which would dry up with time.



Scarf joints are made with a 45° angle miter joint, the center of which is centered at a stud. (Joint exaggerated in photo.)



Notice the scarf joint is centered on a stud.

## Scarf Joints

A scarf joint (lap joint) is needed where two pieces of baseboard meet in the center of a long wall. Measure and cut so that the center of the joint is centered on a stud.

1. The first piece is cut at a 45° angle so the long point of the miter is at the back of the baseboard material. This piece is installed first.
2. The second piece is cut to the desired length at the same 45° angle.

## Nailing Baseboard

The nailing pattern for baseboard is two 6d finish nails (or 1½" to 2" for nail guns) at each stud and at every joint. **Place them ½" from the top and ½" from the bottom of the material.** Do not nail in the baseboard's groove or puttying will be difficult.

NOTE: When installing a short piece of baseboard (6" or less), it is important to predrill the holes to prevent splitting the wood. If that is not an option, simply glue the piece in place without nailing.

## Window Stools

The window stool (sill) is typically pre-routed MDF that must be cut to length. The apron consists of a piece of 2¼" colonial door casing. (Before installing window aprons, use the long casing material for exterior doors and attic casing.)

Cut the stools 3" longer than the width of the window openings.

Clean off any protruding joint compound.

Window openings for the same size window units vary slightly, so decide on a common overall dimension for all the windows of the same size. There is no need to spend time custom cutting each stool for overall width.

If the stool is not pre-routed, use a ¾" bull nose router bit to shape the top front edge of the stool on the front three sides.

Next, notch the ends of the stool so the un-routed edge fits snugly against the window frame and extends 1½" on each side beyond the edges of the opening. The size, depth, and angle of the notch cut will vary from window to window, so each notch will have to be custom cut. A sliding T bevel is useful in determining the depth and angle of the notch cuts as the corners may not be square or uniform in depth.

When the stool has been properly cut (no gap greater than 1/16") and fitted in place, nail it to the rough-framed sill with 8d finish nails approximately every 12".



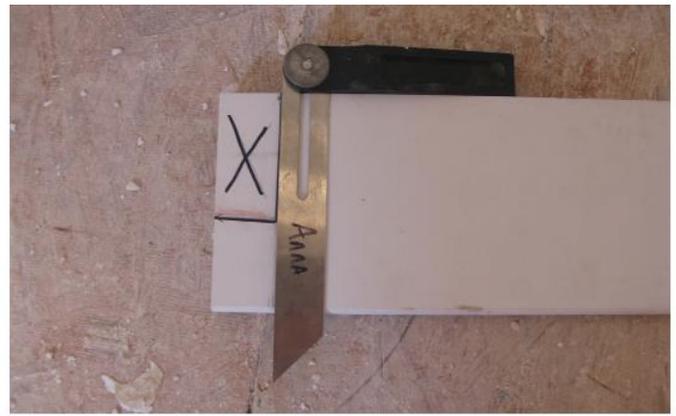
It is this cut that must be made custom to each window corner. This cut is ready for an electric jig saw.



Window Stool and Apron in place.



**1. Mark for stool to extend 1<sup>1</sup>/<sub>2</sub>" past the edge of the window.**



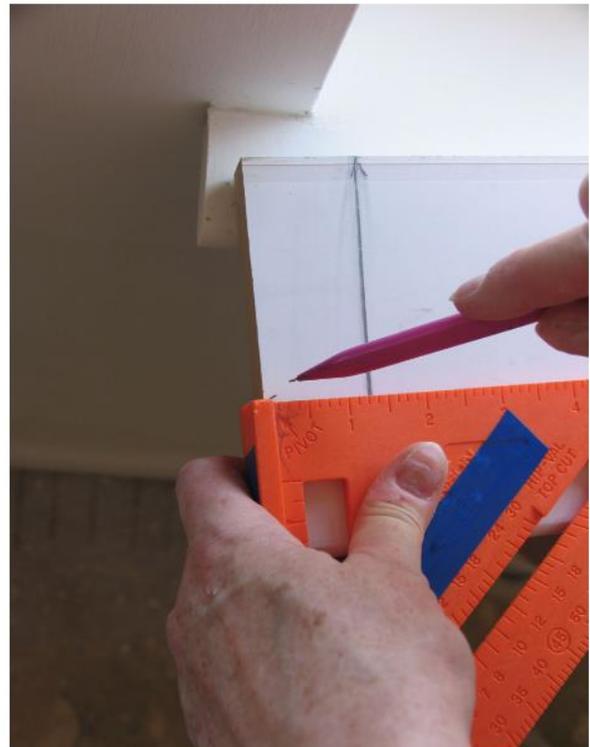
**3. Transfer angle to stool.**



**4. Measure depth of notch.**



**2. Adjust sliding T bevel to fit in corner.**



**5. Mark depth of notch. A square cut is typically adequate.**

## Window Aprons

The apron fits beneath the stool and covers the gap between bottom of the stool and the top of the drywall opening. Cut pieces of 2¼" door casing approximately 2" longer than the drywall opening (one inch shorter than the stool). There is no need to custom cut each apron. Cut the two ends of the apron on the miter saw at a seven- degree angle with the long points of the miter at the thick edge of the casing.

Install the apron with the thick edge against the bottom of the stool. Nail the apron to the wall using 8d finish nails approximately every 12".



**Before cutting notches, compare width of window at front and back of notch to that of marked up stool. Check depth of cuts as well.**



**The stool extends past the window opening by 1½". The apron extends 1" past the opening, is cut at a 7° angle and is installed thick side up (to support stool).**

**“NO JOB IS SO IMPORTANT THAT IT  
CAN’T BE DONE SAFELY”**

**Think** & concentrate on your task.

**Speak up** if something looks unsafe. An observer can spot danger quicker than a worker.

## Cabinets in Kitchen and Bath

Always refer to the cabinet plans for the house.

Custom built, pre-finished wood cabinets are installed in the kitchen and bath rooms according to the plan provided by the cabinet manufacturer. Base cabinets are best installed before the floating vinyl planking flooring is installed. Before installing any cabinets, mark the locations of the wall studs behind where the cabinets are to go.

Make sure the kitchen range vent wire was pulled through the drywall at 32½" down or that there is an electrical box in its place.

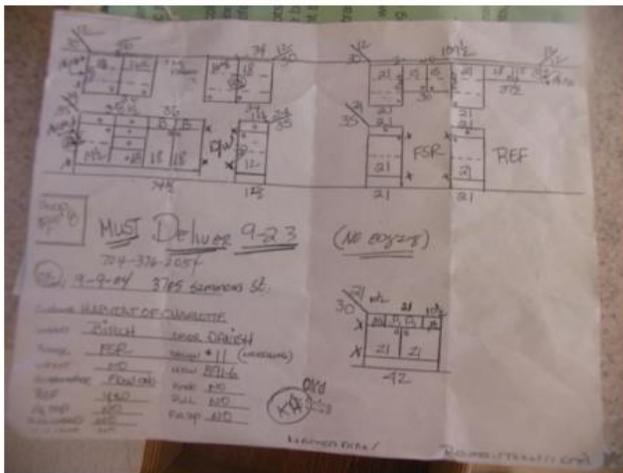
Typically wall cabinets are 30" high. On a typical 8' wall, base cabinet blocking is measured 34" from the floor to the center line, and 14" down from the bottom of the trusses to the center line. No blocking is added to catch the bottom of wall cabinets, but instead securing of the bottoms of wall cabinets is done by screwing into studs. Always check with the cabinet plans to make sure that there is ample blocking to support the wall cabinets.

### Confirm Cabinet Blocking

Once the wall board is installed you will need to check with the cabinet plan to see if 2x4 blocking for the wall cabinet was centered at 34" from the floor to the center line, and 14" down from the bottom of the trusses to the center line. Check by driving a nail in several areas that will be hidden by the cabinets.

**“NO JOB IS SO IMPORTANT THAT IT  
CAN’T BE DONE SAFELY”**

Be careful when lifting cabinets. Support  
securely.



Each set of cabinets comes with shop drawings from the cabinet maker.

### Upper Cabinets

Be sure to run a level line on the wall to where the bottom of the wall cabinets will be set. You can use cabinet preachers to help support the weight of the cabinets. Be sure that there is a cushion of some type where the preachers contact the wall cabinet, to avoid scratching the wall cabinet. In some cases it may be appropriate to install a support cleat on the wall board flush with the level line that you drew. The wall cabinets can rest on these cleats. Use screws to install this cleat so it can be removed with minimal wall patching and painting.

Upper cabinet height is measured 42" down from the ceiling to the bottom of the cabinet. It is recommended that you check your marks for level as drywall finishing may result in uneven ceiling. Ensure that there will be 18" minimum space between the bottom of the wall cabinets and to the top of the countertop as required by code. It is easier to install the wall cabinets by installing temporary cleats flush with the line on the wall that denotes the bottom of the cabinet to help support the weight of the cabinets.

Use the special cabinet mounting screws (3" long) to screw the cabinets to each wall stud and to the blocking every 12". The cabinet manufacturer includes two hanging rails at the back of each unit, one at the top and one below the middle shelf for this purpose.

Habitat requires that the screw holes be pre-drilled from the inside of the cabinet. By doing this it will be obvious that the screw has or has not gone into a stud. You need to secure the top and bottom of the wall cabinet into the studs or blocking from outside the cabinet.



1. Lightly secure upper wall cabinets to wall, then use face frame clamp attached to the stiles of cabinets (to make sure that they are tight and flush) before fully securing the wall. When you fully secure each of the cabinet to the wall be sure to check for levelness, and shim if necessary.
2. Screw second cabinet to the wall being sure that the faces still line up.
3. Once you have mounted the two cabinets, use your "C" clamps to clamp the vertical frame members (stiles) tightly together, being careful to line up the bottom horizontal edges.
4. Now, drill a pilot hole through the stile of the first cabinet into the stile of the second cabinet. Using the screws supplied inside each cabinet, draw the two stiles tightly together. (A little wax such as paraffin on the screws will help seat them easily.) You can now remove the "C" clamps.

5. Continue installing the wall cabinets next to each other in a similar manner. When you have fastened several cabinets in the line together and have checked for levelness, you can thoroughly tighten the screws holding the cabinets to the wall.
6. Fillers for cabinets with extended stiles:
  - a. If it is necessary to use a filler, place the filler(s) at the ends of the cabinet runs or next to the blind corner cabinets, rather than between cabinets in the middle of the run.
  - b. Cut the fillers to fit the space.
  - c. Clamp, Pre-drill and Screw the Filler Strip into place.

## Base Cabinets

Base units are attached to studs and blocking with cabinet mounting screws through the hanging rail along the back of each unit. Before installing the base cabinets, drill holes for plumbing pipes and electrical wires through the backs of the units as needed. Use a 2 ¼" hole saw bit for plumbing drain pipes and a 1" spade bit for water pipes or electrical wires.

The range requires 30 ¼" clear space. Be sure to take this into account before setting cabinets. Dishwasher cabinets are screwed only to the stiles of the adjoining cabinets so they can be easily removed. If a dishwasher is to be installed, leave a clearance of 24¼" for 24" dishwashers.

Sometimes there is a standalone cabinet at one end of the lineup. Determine the location of the cabinet and mark the outside of the front corners on the floor. Measure the distance between the inside bottoms of the wall, then cut a cleat from scrap 2x4 or 2x6 ½" shorter than that length. Align the cleat on the floor centered between the corner marks and back from the front the thickness of the cabinet toe kick. Screw the cleat to the floor using two 2½" drywall screws. Set the standalone unit in place over the cleat and verify the position is correct. Secure the base of the cabinet to the cleat using two 1⅝" drywall screws through each end of the toe kick into the cleat. Use this technique when you are installing base cabinets on a short wall where the kitchen is designed to be the open concept.

**NOTE:** The wall stud spacing or the missing installation of blocking may be such that that one cannot attach the base unit with screws into a stud. If so, use a toggle bolt to attach the cabinet to the wall.

**NOTE:** If the Cabinet Plan includes a cabinet that may be removed for a future dishwasher, minimize the number of screws during installation. Cut a separate toe board for this cabinet so the toe board can then be easily removed without affecting the adjoining toe boards.

### Here are the details to install the base cabinets:

1. Remove all the drawers from the base cabinets to facilitate the installation process. It may be helpful and avoids damage to also remove the doors. Label the doors and drawers with painter tape.
2. Start with the corner cabinets. If you are using a base blind corner cabinet, pull it out of the corner to the proper dimension, as shown on your kitchen layout. Shim this cabinet up to sit level.
3. Blind base corner cabinet comes with a 3" filler that must be used as an extension of the adjacent cabinet to provide necessary door and drawer clearance.
4. Once you have positioned the corner cabinet into the corner, use the stud marks on the wall to locate the position of the screws for mounting the base cabinets to the wall.
5. Install the next cabinet in the same manner
  - a. Use your two clamps to clamp the stiles tightly together, making sure the horizontal frame member rails form a level and straight line.
  - b. Drill a pilot hole through the frame stile of the second cabinet.
  - c. Use the screws to fasten the two stiles.  
Tip: (A little wax or soap on the screws will help seat them easily.)
  - d. Draw the two stiles tightly together.
  - e. Remove the clamps.
6. After you have securely fastened all base cabinets to the wall, reinstall the doors and drawers, and check each for proper alignment.
7. Fine-tuning:

- i. At times, you may have to fine-tune your cabinetry after the installation.
  - ii. Install the doors and make hinge adjustments so reveals between doors and drawers are equal.
8. Install pulls or knobs.
  9. In some cases, end cabinets (wall and base) will come with a finish board to match the front color/finish of the cabinets as well as to close any cabinet gap with the plaster wall. The toe board on the base cabinet may also need to have a finish board installed. These are installed with small staples.

### **Shimming Base Cabinets**

If cabinets are not level, or if they don't fit evenly together and against the wall, it may be necessary to shim. Do this only when needed, because it makes shoe molding necessary.



### **Kick Plate at bottom of base cabinets**

Install toe kicks with glue and 1¼" Paslode finish nails.



**1. Mark for plumb on one edge of the upper cabinet.**



**2. Mark for level on the lower edge of the upper cabinet.**



**3. The cabinet's side trim will hold it off the wall. This tape is held off the edge by that much, so that stud locations can be marked, the holes predrilled, and screws started before it is raised into position. Even with blocking in place, it is good to get some screws into the studs.**



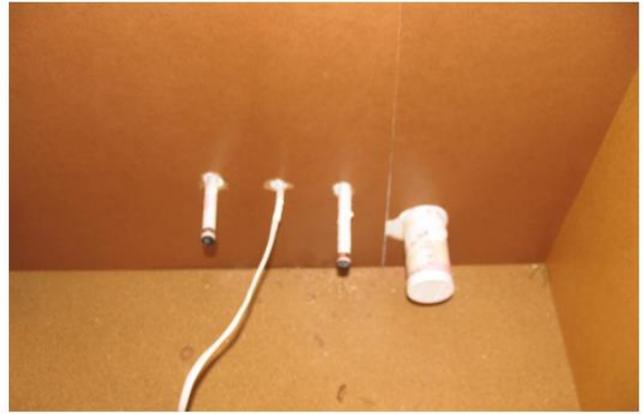
**5. A screw is being placed in the nailing strip for an upper cabinet. The cabinet is being held in place on the plumb line and the level line.**



**4. Predrill for every screw - it is the safest way to feel if screw has solidly driven into framing.**



**Measure and cut for the outlet the same as you would with drywall.**



**Neat cuts for plumbing in a base cabinet.**



**Checking across the diagonal for level.**



**Checking the sink cabinet for level.**



**Attaching a base cabinet to the wall through the nailing strip.**



**Cabinets installed and floor protected.**

## **Countertops**

Kitchen countertops are preformed tops with back splash already attached.

Drill pilot holes through each of the diagonal support blocks in the cabinet. Use wafer-head screws to fasten the counter top to the cabinets from the bottom of the cabinet corner supports into the mounting strips under the counter top. Due to different cabinet suppliers and manufacturer, there is a difference in how they construct these cabinets. One of the ways they differ is in the location of the bit of material they place in the corners of the cabinets through which you place a screw to attach the countertop above it. Our typical usage is to use 1 5/8" screws .

**CAUTION:** Check length of screws to avoid screwing up through the top of the counter, ruining the unit.

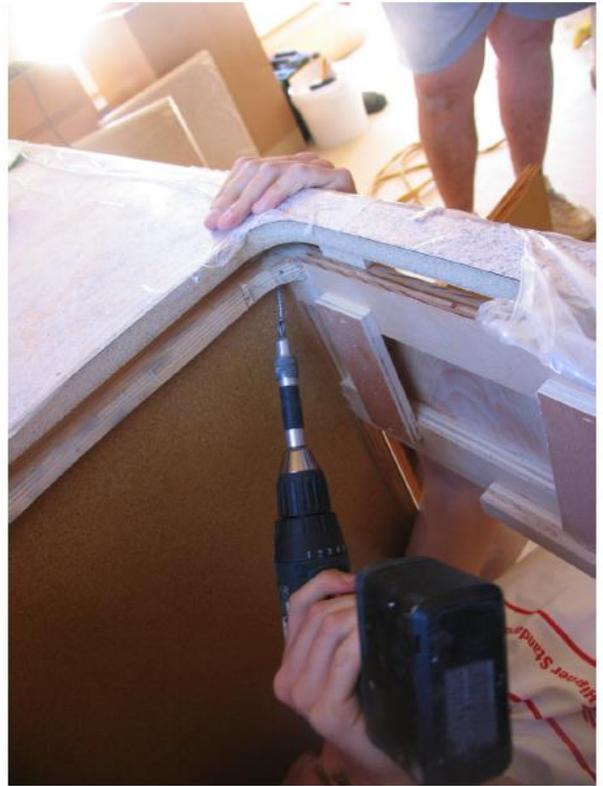
The fasteners are screwed through the 1"x 2" mounting strips into the underside of the countertops. Depending on how the tops were made, it may be necessary to notch the base cabinet at the range so that the countertop will drop into place.

Bath vanity tops are one-piece sink units, which are installed by the plumbing subcontractor.

Splashes in the kitchen and bathroom(s) are installed using silicone caulk between the splash and the drywall. They may require coping for a decent fit. The other joints should also be caulked with silicone.



**It was necessary to trim this cabinet in order to make room for the sink.**



**Cabinet tops are installed with 1<sup>5</sup>/<sub>8</sub>" drywall screws.**



**The end splash is applied with silicone and comes pre-cut to fit.**

## **Shoe Molding**

Use the same coping technique for inside corners that is described above for the baseboard. Use a 30 degree for the angle to cut when molding end without a joint.

After all base cabinets are in place, shoe molding can be installed as necessary.



Stained shoe molding goes at the base of cabinets as necessary (i.e. if they were shimmed).



Cut back shoe molding that ends without a joint.

**“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”**

**Power Saws:**

- Only crew members with power saw **experience** can use them. A busy work day is not the time to teach saw skills nor is it the time to learn saw skills.
- Keep electric cords out of the way of the saw and not underfoot.
- **Don’t cross hands** over to stabilize material on the miter saw. Find another way or get help.
- **Guards** on saws must be in place & operating. Habitat requires **eye and ear protection**.



Shoe molding is coped for inside corners.



When coped corners come together, there should be no need for caulk.



Outside corners are mitered.

## Door Hardware

### Interior Door Locks

Following the manufacturer's instruction, install a privacy lock on each bedroom and bathroom door and a passage lock on all closet doors. (The doors are predrilled to receive the hardware.)

Install dummy knobs on any bi-hung closet doors with the center of the knob at 36" above the floor and very close to the edge of the door. Install dummy knobs with the screw holes horizontal and make sure at least one screw hits the solid wood found along the perimeter of the door, not just the thin veneer door facing.

### Door Bumpers

Install spring style door bumpers in the baseboard behind each interior and exterior door to prevent the door knob from coming in contact with the wall. Use a nail set, drill bit, or a 16d nail to make a pilot hole in the baseboard, then screw the bumper in by hand (or use an open end or crescent wrench). Install the bumper so it contacts the solid part of the door, which is approximately 1" around its perimeter.

### Magnetic Catches

Door catches come pre-installed and are located at the head jamb of all bi-hung doors. Be sure to test the doors to make sure that they can be opened and closed with no difficulty.

## Miscellaneous Hardware

### House Numbers

Nail the house numbers to the porch beam or on one of the porch posts using the nails provided. If possible, ask the homeowner where they would prefer the numbers. Review location with the site superintendent prior to installation.



Center house numbers over the front entrance.

### **“NO JOB IS SO IMPORTANT THAT IT CAN’T BE DONE SAFELY”**

Use a **ladder** that will reach the work. Move the ladder with your work. For every 4 feet of height, move the bottom of the ladder one foot away from the wall. Place ladders on solid footing. Block extension ladders at the top to prevent sideways movement.

Keep the entire work area, inside and out, **free of trip and fall hazards.**

## **Fire Extinguisher**

Install the fire extinguisher in a visible location in the kitchen. Use long screws and be sure to attach directly to a stud for strength.

# Interior Trim Appendix

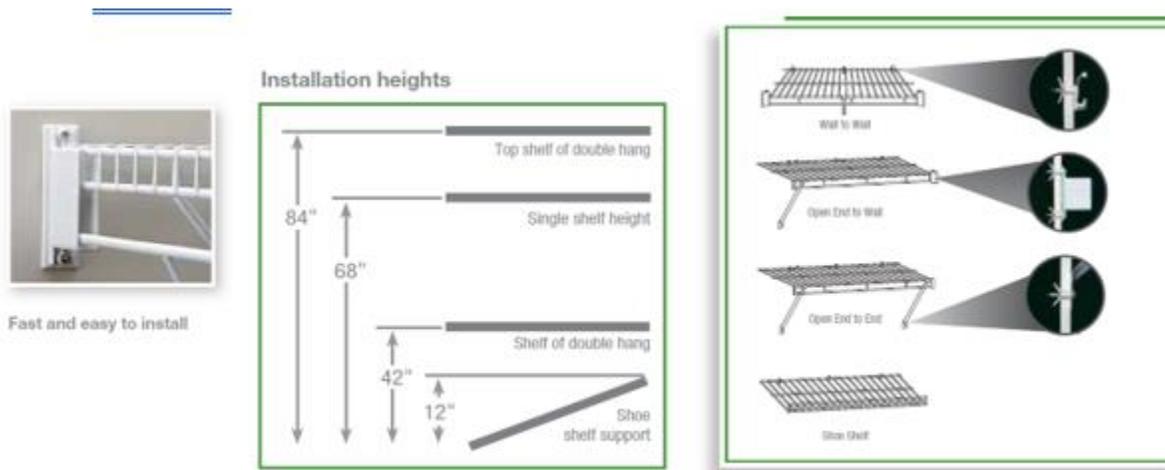
## Closet Shelving and Rod Supports

When installing the shelving, the following measurements should be used:

- Hanging Closet Shelves - 67" from floor
- Pantry or Linen Closet Shelves - 24", 36", 48", 60" and 72" from the floor

Habitat has a shelving jig that can be used to properly layout the shelf hardware.

### Wire Shelving



#### Material:

Back Clips

Support Brace

Wall Bracket

End Caps

Hanging Shelves

Linen Shelves

#### Tools:

1/4" drill bit

Drill

Pencil

Hammer

Level

Measuring Tape

FastSet hardware is designed to be used with 1/2" dry wall.

#### Use the following shelves:

- 16" or 20" shelf in the laundry room and pantry.
- 12" wardrobe shelf in coat closets
- 12" shelf in linen and pantry closets

Locate the back clips in a straight line at desired heights starting 2 1/2" from any side wall. Maximum span of 12". Use two Back Clips, spaced 1" apart, on the ends of any open ended shelf.

Located the Wall Bracket so that the shelf will be level and on side wall 12" or 16" from rear wall

(depending on shelf depth). All holes should be drilled using only a ¼" diameter drill bit. (DO NOT punch in a hole or use an oversize bit).

When locating holes in studs drill ¼" diameter hole at least 1" deep.

All hardware having the FastSet feature with pre-installed drive pins should be installed all the way into the hole before driving pin.

When installing FastSet hardware into studs remove pre-installed pin, tap Back Clip into hole at stud, reinstall pin and tap into Back Clip.

Drive Pins should be driven in by tapping with hammer with only enough force as needed to seat. This will open back of fastener behind wall.

Use Support Braces for spans exceeding 42". To measure for shelf length, measure total distance from side wall to side wall, then subtract one inch. Cut the wire shelving using a bolt cutter or hacksaw. (Shelves should be pre-cut at the warehouse.)

If you can attach the clips and brackets to studs, use screws instead of the FastNet and drive pins.

## **Bathroom Hardware**

The bath accessory kit includes two towel bars, a soap dish, a tooth brush holder, and a toilet paper holder. Each item includes mounting brackets which can be attached directly to the surface of the drywall.

### **Towel Bars**

Install the longest towel bar near the bath tub, at exactly 54" above the floor (blocking centered at 54" above the floor should have been installed during framing). Using a short level, hold the towel bar level and mark a point at each end of the bar. Then attach the mounting bracket to the wall using one screw at the center hole in the bracket. Attach the towel bar ends (with the bar in place) to the wall brackets by tightening the set screws. Install the shorter towel bar near the vanity at 54" from the floor using the same method as above.

### **Toilet Paper Holder**

Install the toilet paper holder near the toilet 24" from the floor, either on the end of the bath vanity cabinet or on the drywall. Blocking should have been centered at 24" above the floor. Mount as described above or attach the wall bracket to the cabinet with ¾" wood screws.

Blocking should have been installed if the cabinet is not located next to the toilet.

## Shower Rod

Install the aluminum shower rod just above the top of the shower walls. Use a hack saw to cut the rod to the required length. It is helpful to cut the bar  $\frac{1}{8}$ " (max.) short. Then put the holders on each end of the rod and install the rod at the desired location. Make sure that the shower rod is level.

## Bathroom Mirrors

You will likely be using the following mirror hanging hardware:



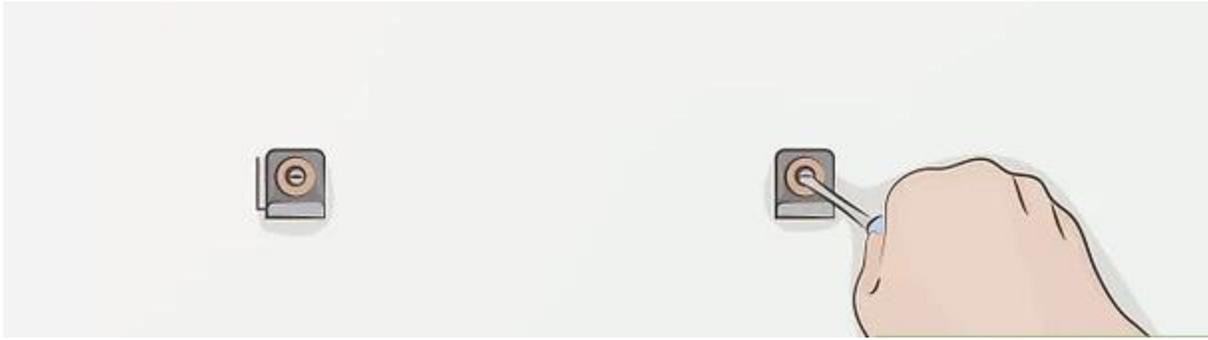
One set of these hangers is for the bottom of the mirror and the other (spring loaded) is for the top of the mirror.

**Mark the spot on the wall where you want the mirror to hang.** Typically the mirror is mounted centered over a vanity. Using a stud finder determine if there are studs to support the mirror hangers. If not you will need to use special self tapping drywall anchors. They look like the following:

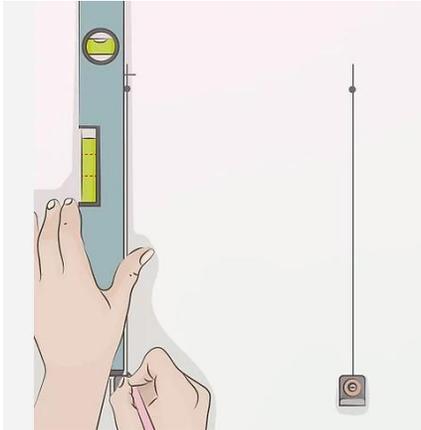


Locate the bottom mirror hangers against the wall in your desired position (typically over the vanity back splash). Measure an equal distance from the edge of the mirror location to locate the hole for the bottom hanger. Using a pencil, mark bottom holes for the hangers. Pre-drill a small hole at the marked locations and insert the self tapping drywall hanger.

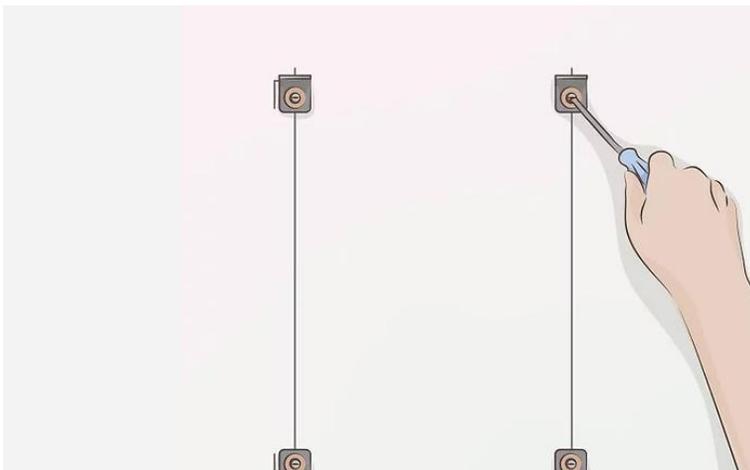
- Mount the bottom hanger into the self tapping drywall anchors.



Draw a vertical line upwards from the locations of the bottom hangers, centered over the screw – this will identify the locations of the top hangers.



- Place the mirror in the bottom hangers, centered over the vanity. Mark the wall at the top of the mirror.
- This step will be easier with the help of another person who can hold the mirror in place while you make the markings.
- Remove the mirror from the bottom hangers.
- Mark the locations of the top hangers by dropping about ½” down from the top line for the mirror. Drill the pilot holes for the top hangers and then insert the self tapping drywall anchor into the wall. Screw the top bracket into the drywall anchor.



Place the mirror into the top spring hangers and push up so that the bottom of the mirror can slide into the bottom hangers. Be sure the mirror is centered over the vanity and that the top spring loaded hanger is resting on the top of the mirror.