

## Chapter 13. Ceiling Sheetrock

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#### Tools needed by volunteers:

Nail apron  
Tape measure  
Utility knife  
Pencil

#### Materials needed:

½” Ceiling rated sheetrock  
1¼” Sheetrock screws  
Red poly tape

#### Tools and equipment needed:

Generator  
Extension cords  
Lighting  
Drills/drivers  
Sheetrock bits (dimpler bits)  
RotoZip Spiral Saw  
4½” Hole saw  
Sheetrock T-squares (2’ and 4’)  
Sheetrock rasps  
Sheetrock hand saws  
Sheetrock lifts  
Step ladders/stools  
Putty or drywall knives  
Ratcheting T-drivers  
Black felt-tipped pen  
Shop-vac

#### Personal Protection Equipment:

Safety glasses (required)  
Dust mask (recommended)

**Safety First! Review the Safety Checklist before performing tasks in this chapter.**

### **13.1. PREPARATION**

1. Verify that ceiling blocking has been installed where required. Install where missing. See Section 10.5.3 for blocking requirements.
2. Verify that the poly vapor barrier in the corners is not bunched up. Poly should be neatly tucked into corners to allow sheetrock to fit squarely into corners. Refold and re-staple if necessary and tape any holes that develop with red poly tape. Also, verify that all red poly taped areas will not prevent sheetrock from fitting tight to the trusses.
3. Where ceiling trusses cross interior walls, mark the truss center locations on the wall top plate with a felt-tipped pen. Where ceiling trusses cross exterior walls, no mark is necessary - they will be aligned with wall studs.

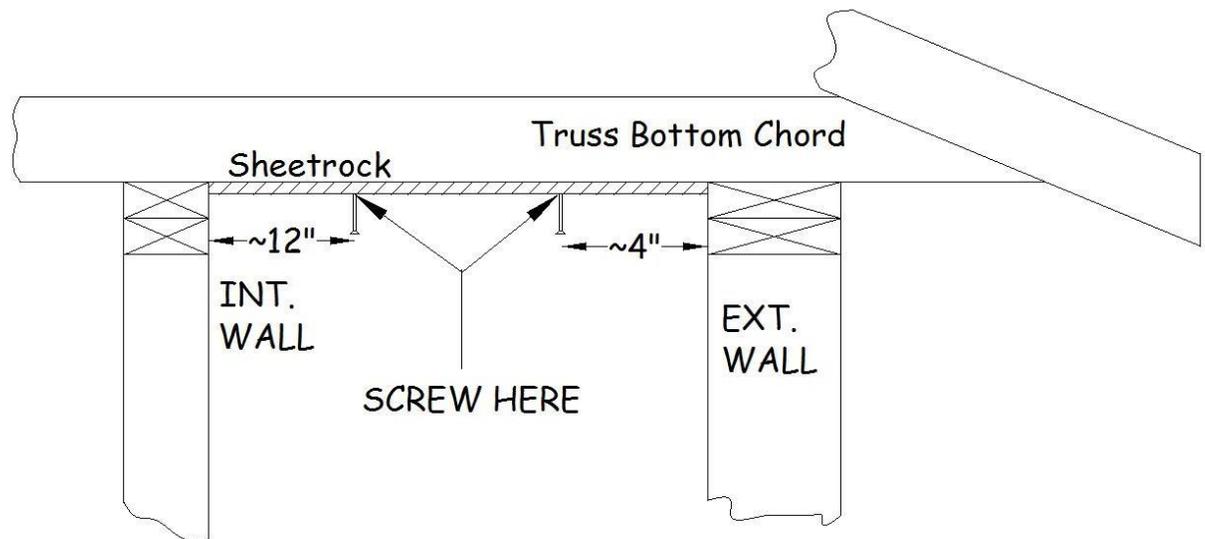
### **13.2. PLANNING**

1. Develop an installation plan to maximize efficient use of people and material to minimize building costs.
2. Determine whether to start the 1<sup>st</sup> row with a full 4' sheetrock piece or trim to a narrower dimension. Measure the room parallel to the trusses and estimate how wide the last row will be (if started with a full 4' sheet). It is preferred that the final row be a minimum of 16". If it will be less than 16", plan on cutting the first row to something less than 4' to ensure the 16" minimum. If possible, start the first row on an interior wall so the last row ends up on the exterior wall, where truss movement will be minimal.
3. Divide the task of installing sheetrock into two functions, with a separate team for each function. For example, one team conducts the measuring and cutting, and installs each sheet with enough staggered 1¼" drywall screws to secure the sheet to the ceiling. Another team pencil marks the truss centerlines using a 4' T-square, completes sheetrock securement, and conducts quality checks of all the screws (see Section 13.4.3 for quality check instructions).
4. Determine the best individual sheetrock lengths required to complete each row (see Section 13.4.1 and accompanying note).

### **13.3. GENERAL INSTALLATION RULES**

1. All sheetrock pieces must be attached to at least three trusses or two trusses and end blocking (i.e., each sheet must have at least three rows of screws).
2. Each full width sheet must be fastened with seven screws on each end and five in the field.
3. Factory edges of sheetrock should butt to factory edges of adjacent pieces wherever possible (i.e. keep cut edges toward the walls).

4. End joints on each successive row should be staggered a minimum of two and preferably three trusses.
5. After cutting sheetrock, measure and record the length on the drop and set the drop aside. To maximize efficiency, always check the drop pile first before cutting from a longer sheet.
6. Undercut sheetrock pieces  $\frac{1}{4}$ " -  $\frac{1}{2}$ ". For fitting between a factory end and a truss center or end blocking, undercut the length by  $\frac{1}{4}$ " versus the measured gap. However, if the entire sheet will be installed between two short walls, (e.g., a closet or pantry), undercut the sheet by  $\frac{1}{2}$ ".
7. When fastening sheetrock to trusses that cross interior or exterior walls, hold the screws about 12" away from interior walls, and about 4" away from exterior walls. Where the trusses run parallel to the walls, screw into blocking on top of the walls unless a truss is less than 12" from the wall. In this case, use the truss since there should be no blocking on the top of the wall (see Figure 13-1). This process prevents plaster from cracking if the roof trusses move with changes in the weather.



**Figure 13-1. Screw Locations for Ceiling Sheetrock.**

8. Use a RotoZip Spiral Saw to cut out all ceiling electrical boxes (see Section 13.4.6 for roto-zipping instructions). Sheet rock pieces covering the scuttle access can be roto-zipped or cut with a hand saw. Prior to sheet installation, cut the fan opening with a hand saw so the perimeter of the cut is flush with the inside edge of the fan duct, or up to  $\frac{1}{2}$ " larger.

**NOTE:** Do not use a RotoZip to cut openings for bath fans.

9. Use a  $\frac{4}{8}$ " hole saw to cut an access for basement HVAC adjustment dampers. See Section 13.4.8 for cutting instructions.

10. Ceiling rock areas that intersect interior walls should be cut around those areas at least 6" (like L-pieces over doors and windows) to reduce chance of cracking. Notch around wall ends a minimum of 6" in from the end. (See Figure 13-2 for examples.)

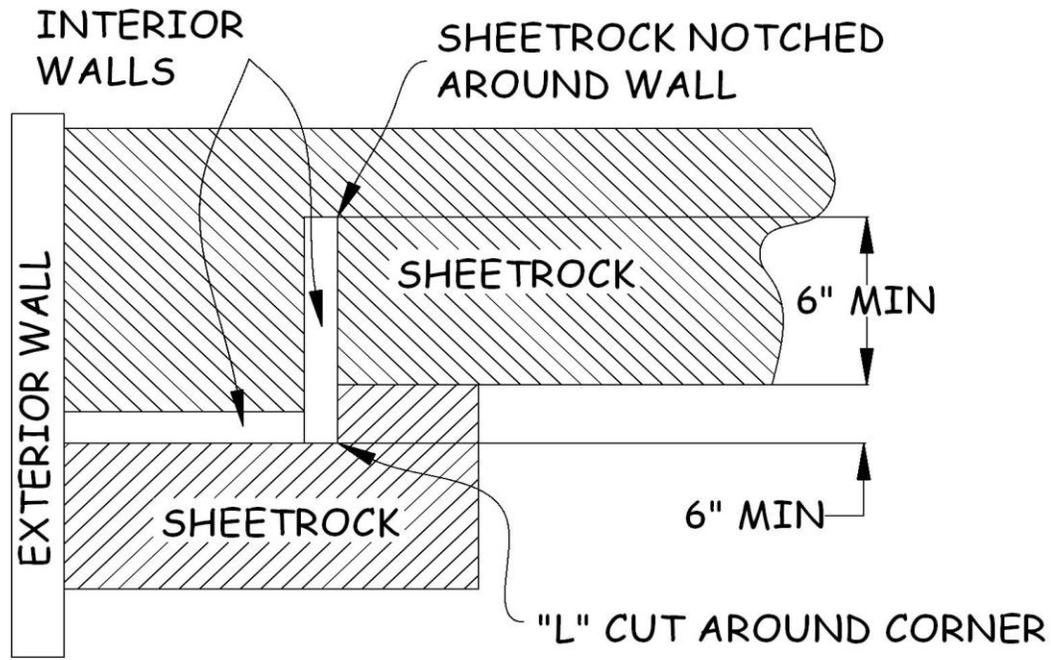


Figure 13-2. "L" and Notch Cuts Around Interior Walls

#### 13.4. INSTALLING CEILING SHEETROCK

1. Begin installing sheetrock at an **interior** wall corner, perpendicular to the trusses. Determine the total length of the first row by measuring the room width (perpendicular to the trusses). Next, determine how many full-length sheetrock pieces can be used to fill the length and the size required for the end sheets. The standard size used for main floor ceiling sheetrock is 12' long; basement sheets are 8' long.

**NOTE:** Every sheet must be attached to at least three trusses or two trusses and end blocking. Also, all butt joints must be centered on a truss.

2. Place the sheet on the lift and raise it until it almost touches the ceiling. Push the sheet tight against adjacent edges and make sure all factory ends are centered on a truss. While raising the sheet tight to the trusses, verify tight placement to the walls and that all factory ends are still centered on the trusses. Secure with several screws in at least three trusses (ends and middle) before lowering the lift. Continue installing all pieces before moving to the next row.

3. Conduct the quality control checks listed below on **every screw**. When completed, mark “OK” on every sheet with a piece of sheetrock used as a chalk.

**NOTE:** Never write on sheetrock with marking crayons or felt tipped marking pens.

- a. Use a putty/drywall knife to make certain the head of each screw is recessed below the surface of the sheetrock (a slight dimple is best). If the screwhead is exposed, tighten until recessed.
  - b. If a screw “spins” during driving or seems loose during tightening, it is not secured to a truss or blocking and must be removed and relocated.
  - c. If the screwhead or dimple has completely broken the exterior paper layer of the sheetrock, remove and relocate the screw.
  - d. Check screw count on each full width sheet to ensure there are seven screws on each end and five in the field. Add screws if the actual number is short of the desired count
  - e. Remove and relocate any screws located less than about 12” to an interior wall or 4” from an exterior wall where trusses run perpendicular to that wall.
4. After completing the first row, continue to the next row (adjacent where the first row ended). Start with a full sheet if possible, but select a length that will allow for a joint stagger of at least two and preferably three trusses.
  5. Before covering electrical boxes and scuttle access with sheetrock, measure from the center of the opening to the edges of two adjacent surfaces oriented 90° to each other. Write these dimensions on an adjacent panel or scrap piece for reference when cutting out the opening. Install the sheetrock over electrical box openings with enough screws to hold the panel, but don’t fasten within 24” of electrical boxes until after the opening has been cut.
  6. To roto-zip around an electrical box, locate the mid-point of the box from the instructions in Step 5 above and mark this point on the sheetrock. Verify that the depth of the saw bit is  $\frac{5}{8}$ ”- $\frac{3}{4}$ ”. Insert the saw bit 3”-4” away from the mid-point and move it horizontally until resistance from the outside edge of the box is encountered. Then proceed to move the bit counterclockwise around the outside perimeter of the box. Moving the saw in a counterclockwise direction helps hold the saw bit against the outside surface of the electrical box.

**NOTE:** It is important to keep the bit outside the electrical boxes to prevent cutting the wires. If a wire is cut, or insulation is damaged, report it to the Site Leader or Construction Supervisor.

7. To roto-zip the scuttle opening, insert the bit near the scuttle frame, work the bit toward the framing, and cut counterclockwise around the inside edge of the framing.

8. Cut out holes for damper access prior to sheet installation. Determine the center of the damper control lever from two adjacent references, transfer the center to the sheet, and cut with a 4<sup>1</sup>/<sub>8</sub>" hole saw. Verify adequate access before securing the sheet.

### **13.5. ASSEMBLING SCUTTLE BOX COVER**

1. If the scuttle box cover is on-site, proceed to Section 13.6; otherwise, assemble the cover using the following steps.

**NOTE:** The scuttle box cover is constructed in two pieces to aid in inserting the insulation into the scuttle box.

2. Locate the piece of 3/4" OSB pre-cut earlier to 25" x 27<sup>1</sup>/<sub>2</sub>" for the cover. If not found, cut a new piece.
3. Cut two pieces of poly about 48" x 48".
4. Cut 25" x 27<sup>1</sup>/<sub>2</sub>" pieces of 1" and/or 2" foamboard totaling 8" of thickness.
5. Center the OSB on one of the poly pieces and place a 3"-thick stack of foamboard on the OSB. Wrap the poly tightly up and over the foamboard and tape all poly edges tight to the foamboard with Weathermate™ Construction Tape.
6. Center the remaining 5"-thick stack of foamboard on the second piece of poly. Again, wrap and tape the poly edges tight to the foamboard with Weathermate™ Construction Tape.

### **13.6. FINISHING SCUTTLE BOX COVER**

1. Finish the scuttle opening with four 3<sup>1</sup>/<sub>2</sub>" wide sheetrock strips installed flush with the bottom of the scuttle box. Secure with 1<sup>1</sup>/<sub>4</sub>" drywall screws.
2. Cut a piece of ceiling rock 25" x 27<sup>1</sup>/<sub>2</sub>" for the scuttle box cover. Attach it to the OSB portion of the scuttle box cover with 1<sup>1</sup>/<sub>4</sub>" screws and set aside for the plasterers.