

# **Framing Methods**

## **Structural Components**

# Balloon Framing

\*Balloon framing or Eastern framing the exterior studs run from the top of the foundation to the top of the highest level.

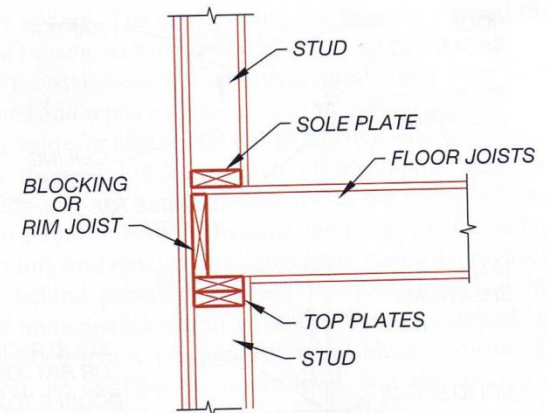
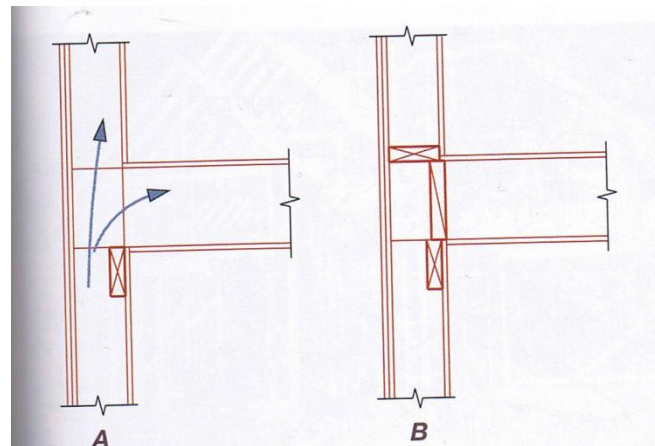
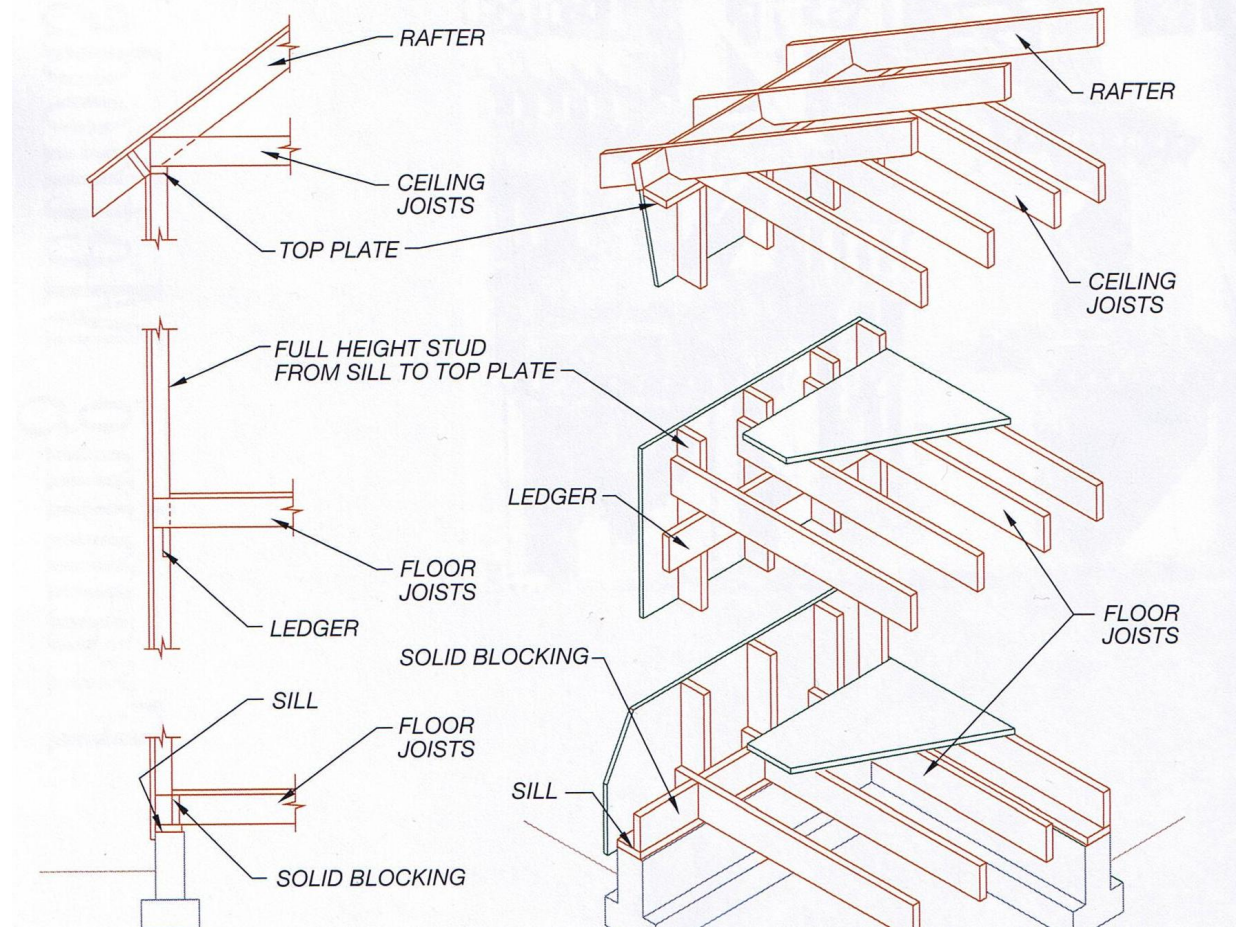
Benefits of this type of construction is that wood tends to shrink more in width than in length

Because the wall members are continuous from foundation to roof, fewer horizontal members are used, resulting in less shrinkage.

The flaw with this type of framing is the danger of fire. A fire starting in the lower level could quickly race through the cavities formed in the wall or floor systems.

ced in Chapter 26.

structure is the maximum that can be built easily.

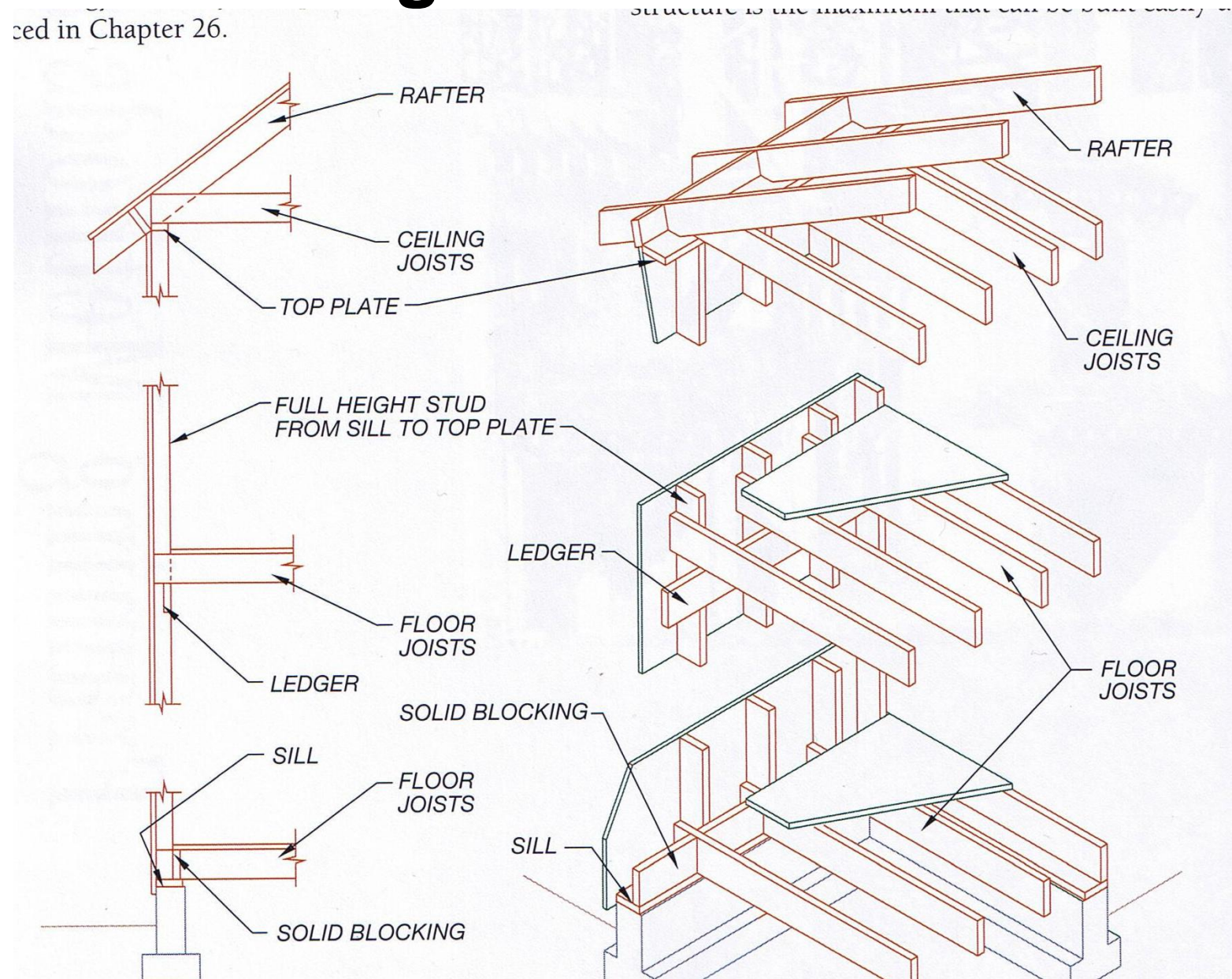


# Balloon Framing

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**Floor framing at the mid-level is supported by a ledger set into the studs.**

**\*The most common type of wood that is used for framing is Douglas fir.**



# Platform Framing



**Platform or Western Platform framing is the most common framing system now in use.**

**\*Platform framing gets its name from the platform created by each floor as the building is being framed.**

**The framing crew is able to use the floor as a platform to assemble the walls for that level.**



FIGURE 25.5 ■ A western platform floor system constructed using

# Floor Joist

**\*The most common spacing of floor joist is 16" O.C. They can be placed at 12" and 24" O.C. depending upon the load.**



# AFT Systems

## *Advanced Framing Techniques*

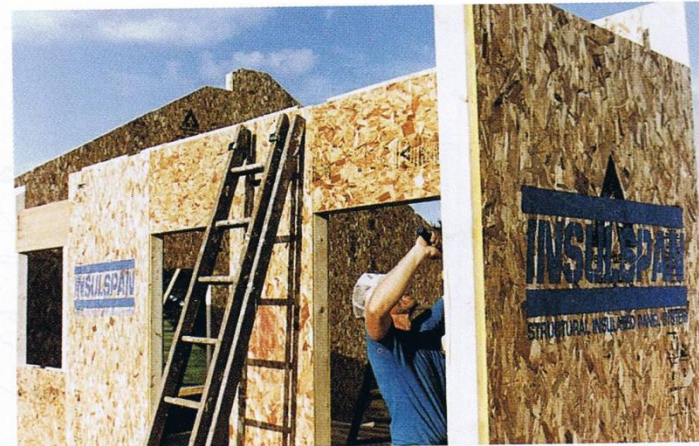
AFT systems eliminate nonstructural wood from the building shell and replace it with insulation.

Reducing the amount of wood in the structure increases the energy efficiency.

AFT usually include 24" stud spacing, insulated corners, insulation in exterior walls behind partition intersections, and insulation headers.

Many municipalities limit AFT systems to one level construction

For multilevel residence, AFT can be used on the upper level, and the stud spacing on the 1<sup>st</sup> level is altered to 16" O.C.



# SIP System

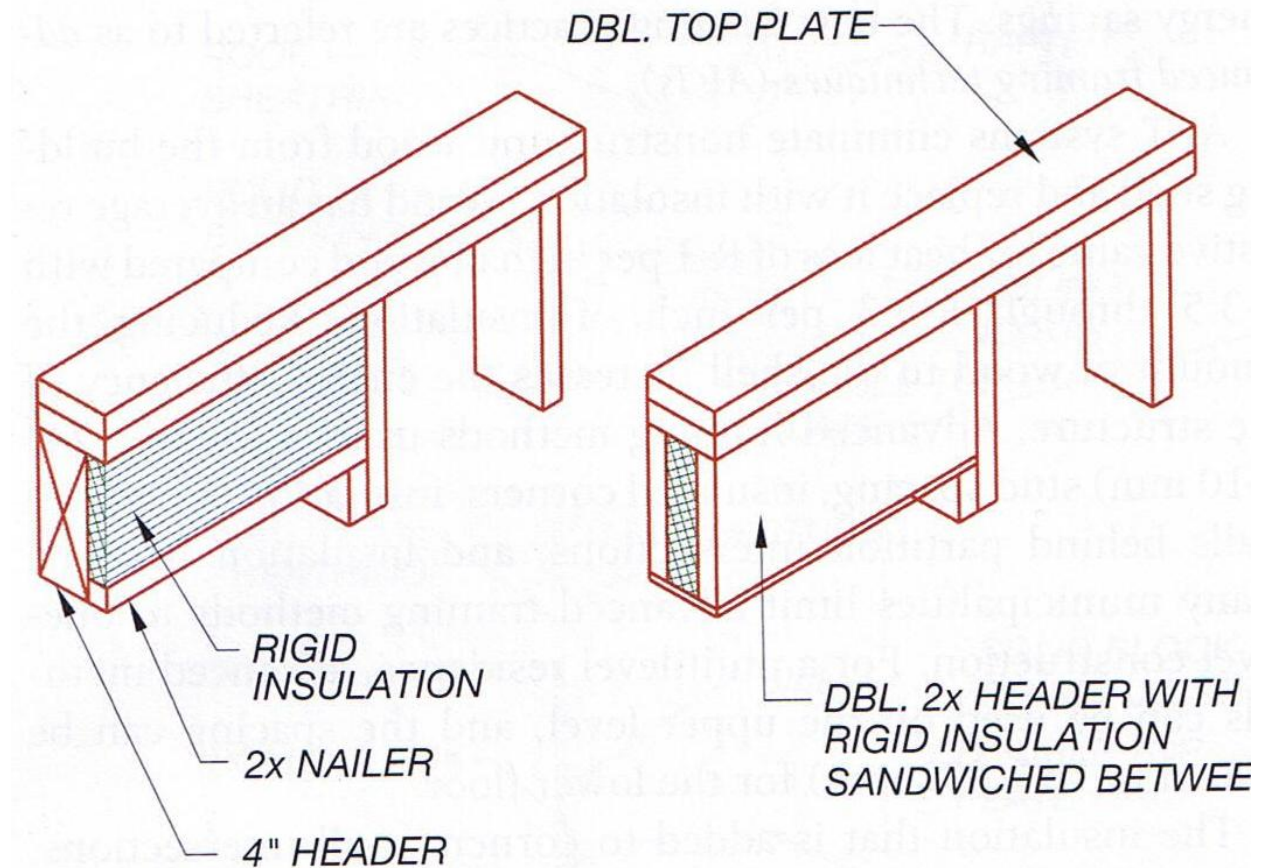
## *Structural Insulated Panels*

SIP System is rigid foam insulation laminated between 2 layers of structural board.

SIPs have been used for decades in the construction of refrigerated buildings, where thermal efficiency is important.

Because the panels do not contain studs, the SIPs do not create a thermal bridge from the exterior face to the interior face.

SIPs offer increased construction savings by combining framing, sheathing, and insulation procedures into one step during construction.

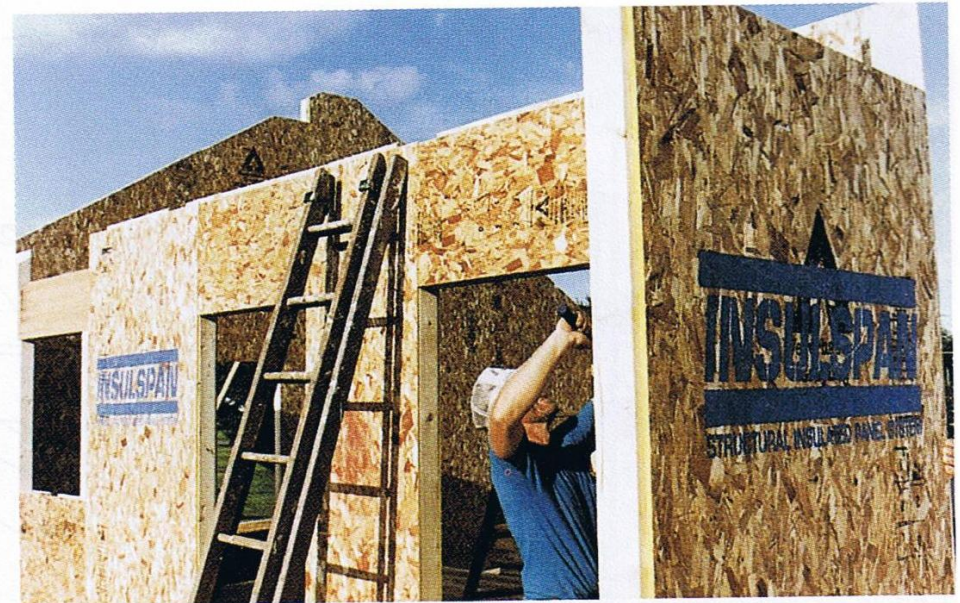


# EPS System

## *Expanded Polystyrene Foam*

Expanded Polystyrene Foam is used as the insulation material used with the SIP system.

EPS retains its shape throughout the life of the structure to offer uniform resistance to air infiltration and increased R values over a similar-sized wood wall with batt insulation.





# OSB System

## *Oriented Strand Board*

Oriented Strand Board (OSB) is the outer shell of the SIP wall and roof exterior sheathing.

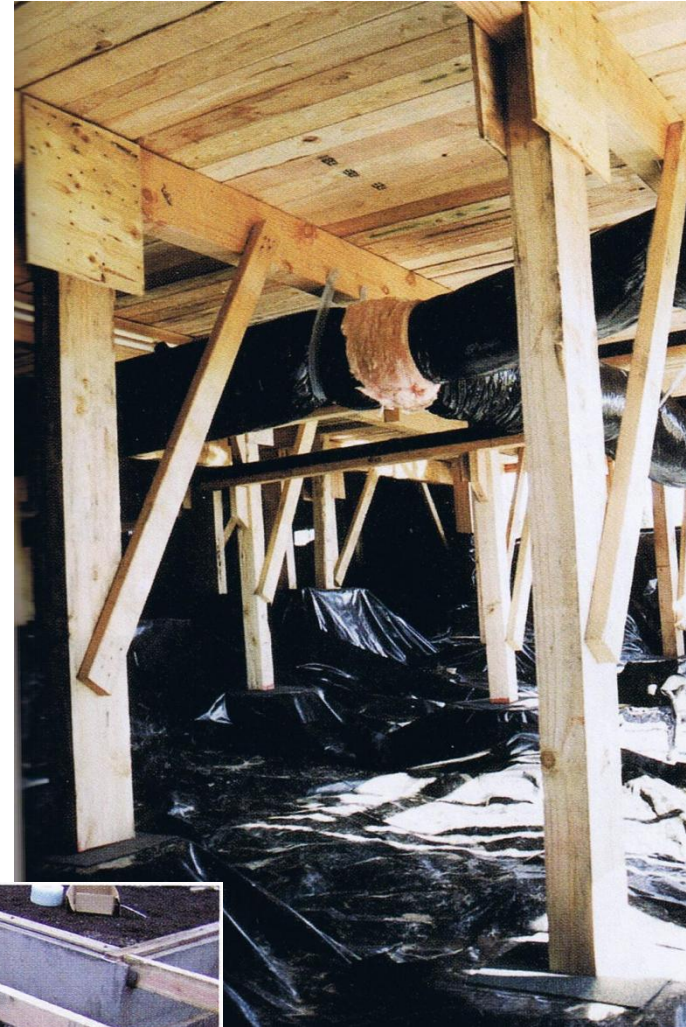


# Post-and-Beam Framing

Post-and-beam or timber framing construction places framing members at greater distances apart than platform methods.

\*The sub-flooring and roofing over the beams are commonly 2x6, 2x8, or 1 1/8 tongue-and-groove (T&G) plywood.

Many contractors use the post-and-beam system for supporting the lower floor (when no basements is required) and then use conventional framing methods for the walls and upper levels.

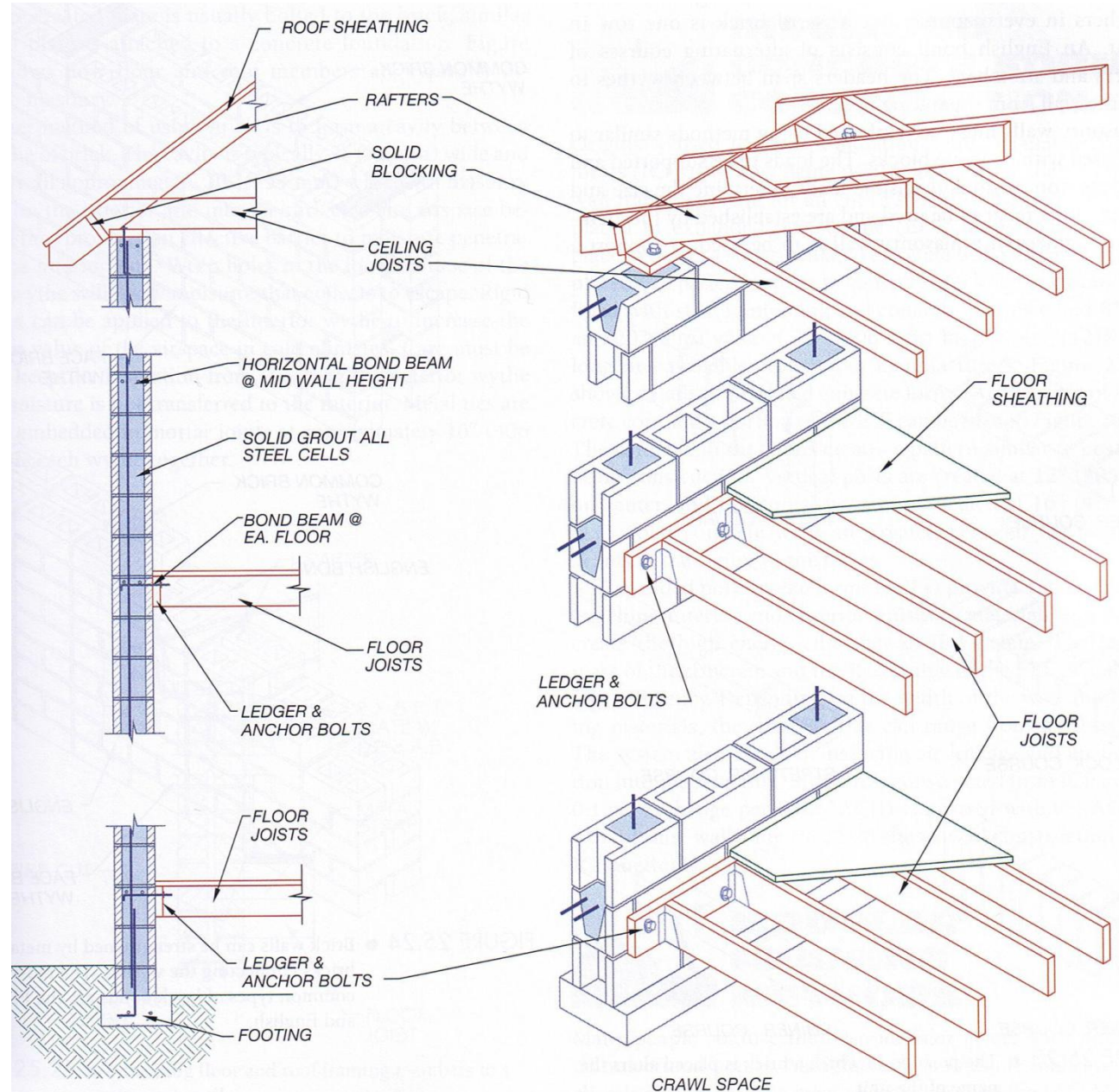


# Concrete Masonry Units (CMUs)

**Concrete Masonry Units (CMUs) are durable, economical building material that provides excellent structural and insulation values.**

**CMUs can be waterproofed with cement based paints and used as the exterior finish, or they can be covered with stucco.**

**Waterproof wood furring strips are normally attached to the interior side of the block to support sheet rock.**



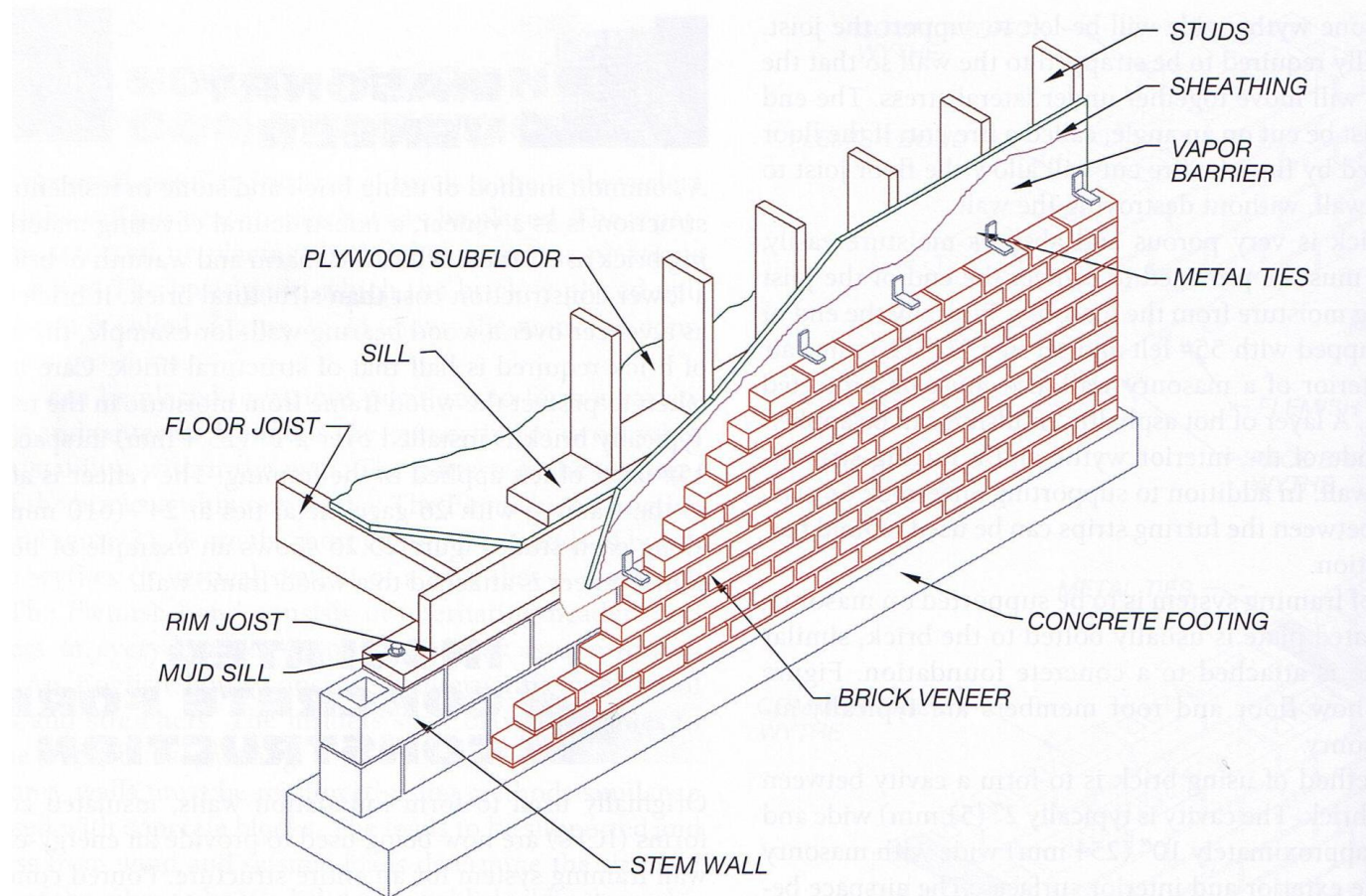
# Masonry Veneer

A common method of using brick and stone in residential construction is as a veneer, a nonstructural covering material.

Care must be taken to protect the wood frame from moisture.

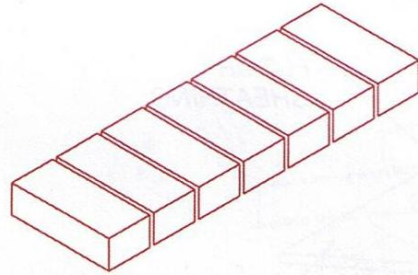
Typically brick is installed over a 1" airspace and a 15# layer of felt applied to the framing.

The veneer is attached to the framing with 26-gage metal ties at 24" O.C.

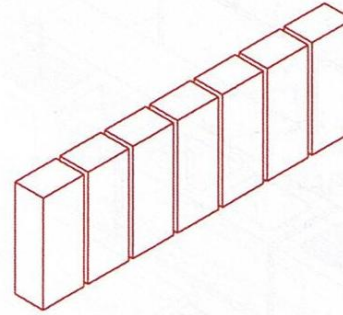


# Brick Patterns

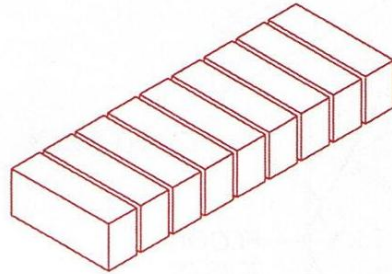
The position in which a brick is placed alters the name of the unit.



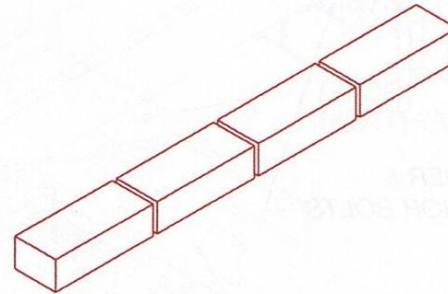
HEADER COURSE



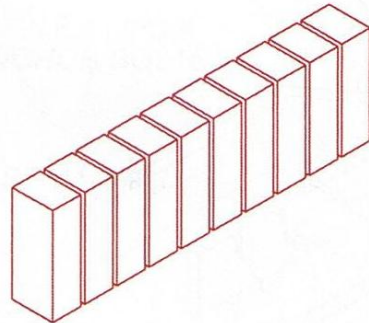
SAILOR COURSE



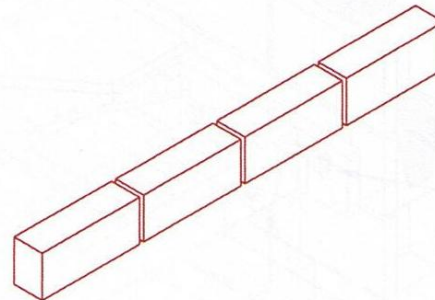
ROWLOCK COURSE



STRETCHER COURSE



SOLDIER COURSE

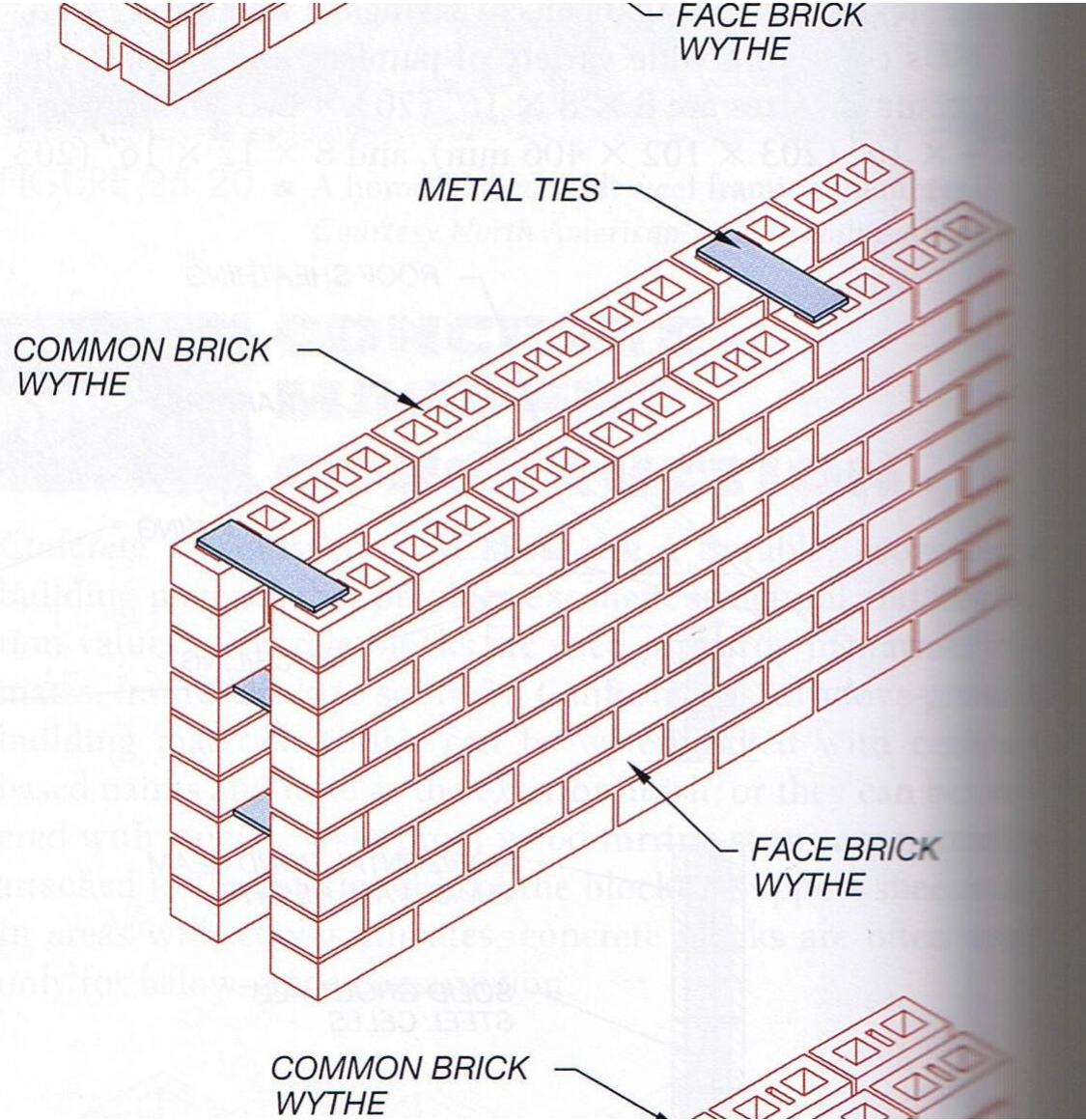


SHINER COURSE

FIGL

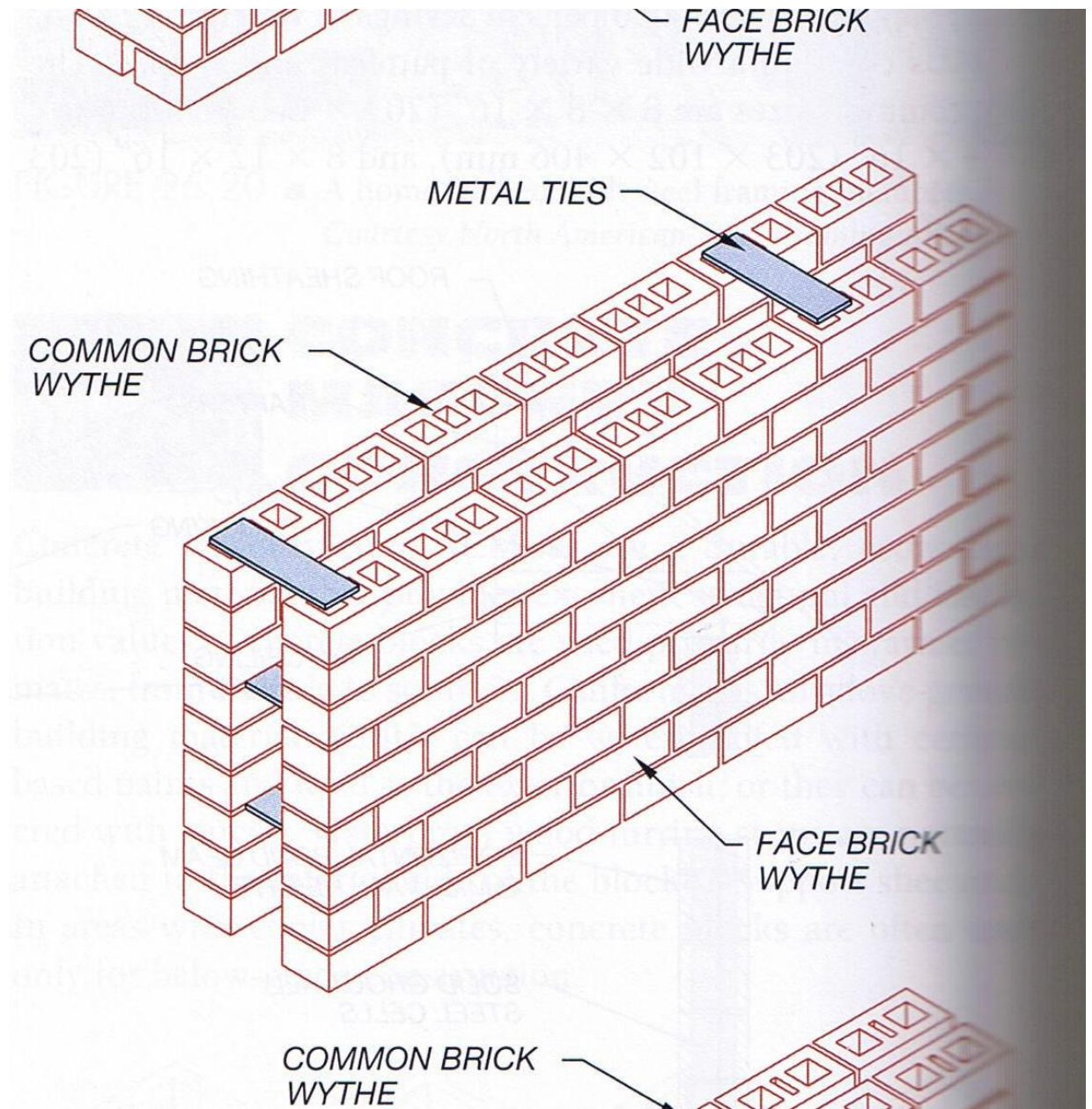
# Wythe

Vertical section of wall that is one brick thick.



# Bond

The connecting of 2 wythe to form stability within the wall.



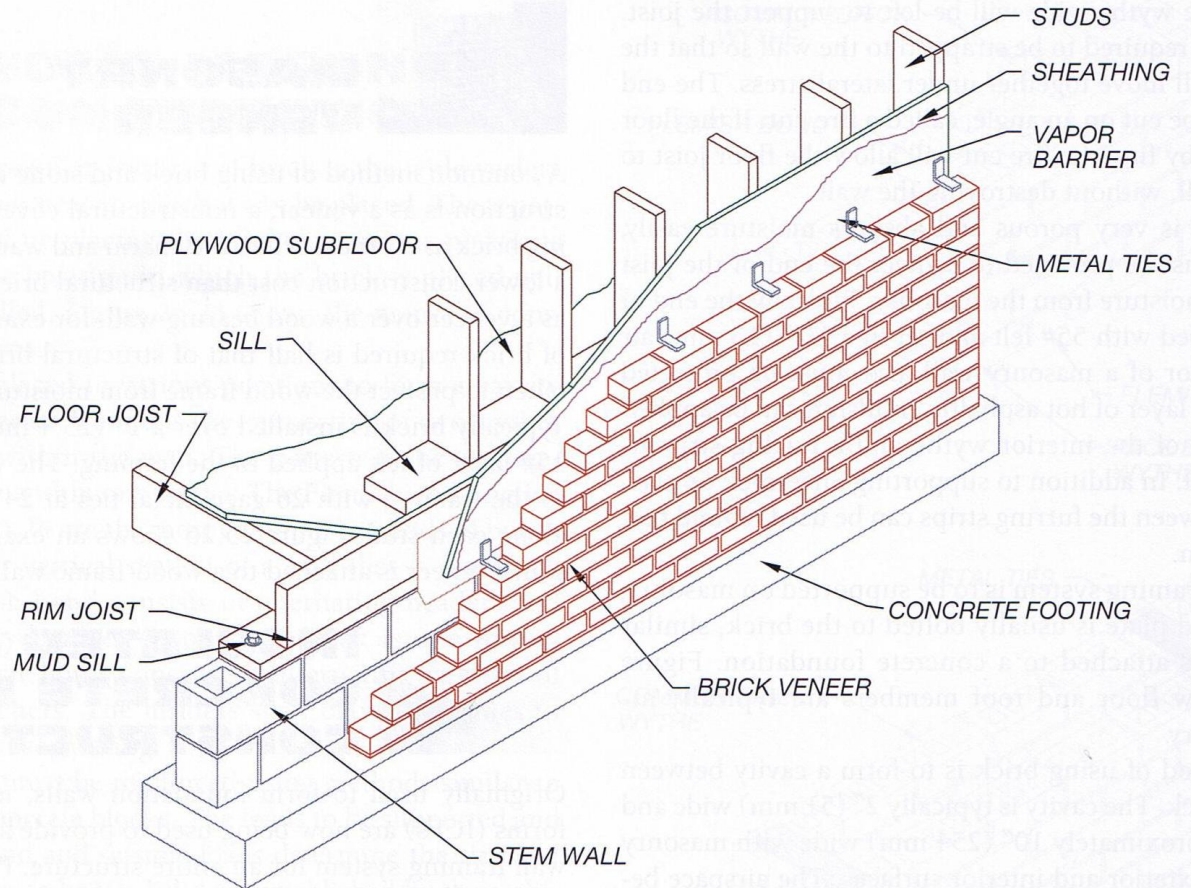
# Fire Cut

If a masonry wall is to be used to support a floor, a space one wythe wide will be left to support the joist.

Joists are usually required to be strapped to the wall so that the wall and floor will move together under lateral stress.

The end of the joist must be cut on an angle, called a fire cut.

If the floor joist is damaged by fire, the fire cut will allow the floor joist to fall out of the the wall, without destroying the wall.





# Mudsill

\*The mudsill or sill plate is the wooden member which rests on the masonry foundation and provides a base for all framing above. It is attached to the foundation wall with an anchor bolt and is either redwood or pressure treated to prevent moisture damage.

