PULLMAN *BUILDING DEPARTMENT* NEWSLETTER

APRIL 2006

ROOF TRUSS INSTALLATION AND BRACING

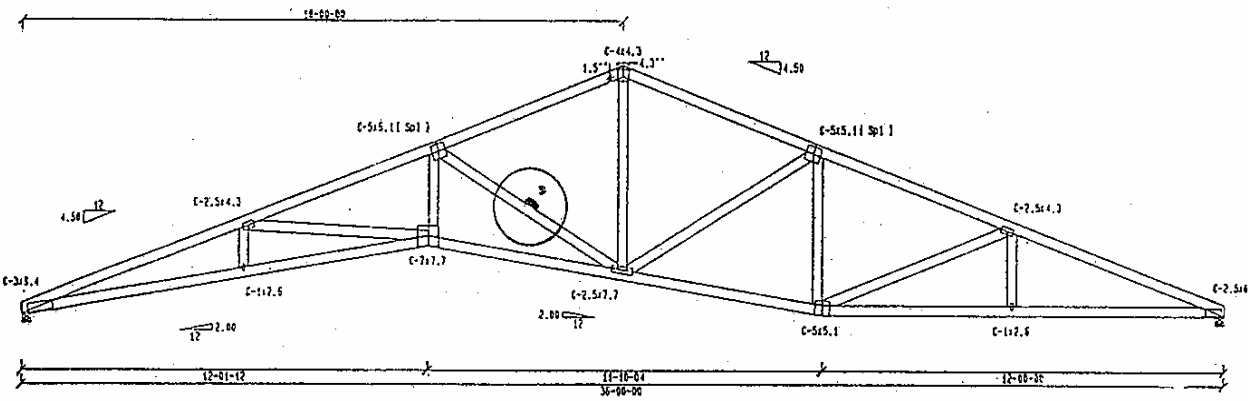

Figure 1.

Today's housing market seems to have an insatiable appetite for elaborate roof systems. The installation procedures which worked fine for the 4:12 pitch trusses over a typical ranch house of the past falls short of the installation requirements for today's more complicated roofs.

In order to have a roof system which will meet all of the snow and wind loads that the truss members are designed for, the trusses must be properly installed and braced.

One of the first items that an inspector checks on the truss engineering is whether permanent lateral bracing is specified for the webs. During truss design, individual members are checked for buckling. If a member is likely to buckle under the design load of the truss, permanent lateral bracing for the member is specified. The webs which require permanent lateral bracing are usually designated with an "*" or the end view of the brace as shown in figure 1.

The building designer should specify how this permanent lateral bracing is to be anchored or restrained to prevent lateral movement should all the truss members tend to buckle together as shown in figure 2.

Restraining or anchoring the web lateral bracing may be accomplished by:

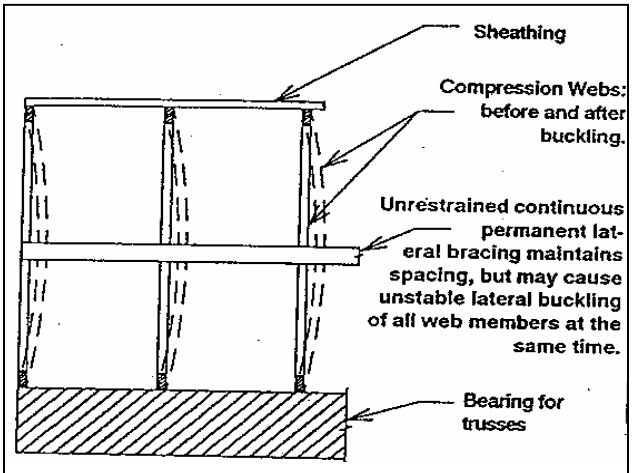

Figure 2. Web members could buckle together if not properly restrained.

Anchorage to solid end walls (figure 3);

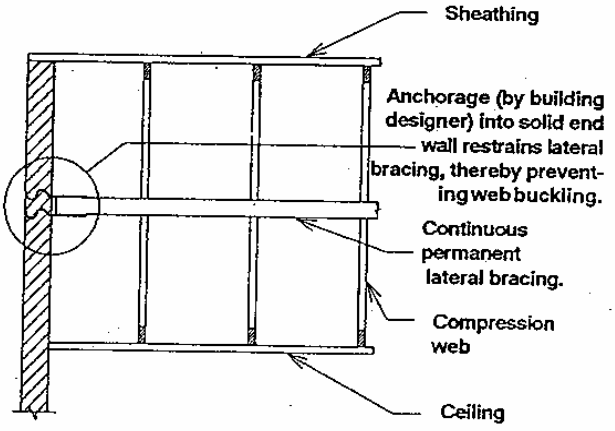

Figure 3. Anchorage to solid end wall.

Permanent diagonal bracing in the plane of the web members (figure 4); or

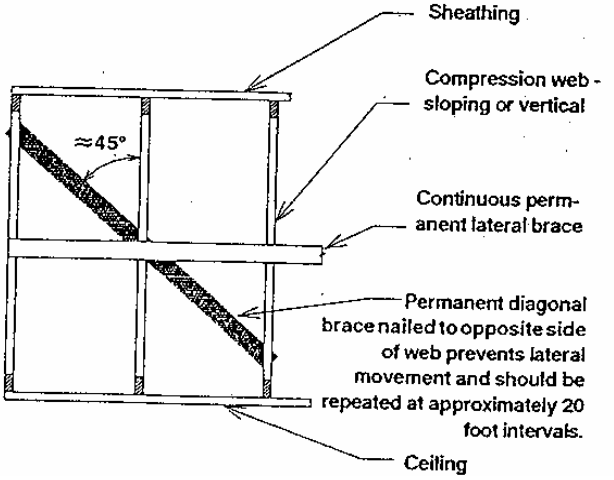

Figure 4. Permanent diagonal bracing in the plan of the web members.

Other means determined by the building designer. For example, if you have a truss which needs a web stiffener, and bracing with a diagonal or an end wall is not feasible, then a member of the same size as the web can be attached to form a "T" or "L" girt. By using the "L" or "T" girt, each of the webs which are shown on the engineering sheets as needing a brace can be effectively stiffened (Figure 5).

Another important aspect of the truss engineering which must be verified by the inspector relates to adequate support of the various elements of the roof system. For example, the capacity of the connection between a truss and a girder truss is specified in the truss engineering. The inspector will confirm that the connector meets or exceeds the reaction quoted on the truss sheets. The columns and footings which support girder trusses must also meet or exceed the reaction specified on the truss engineering.

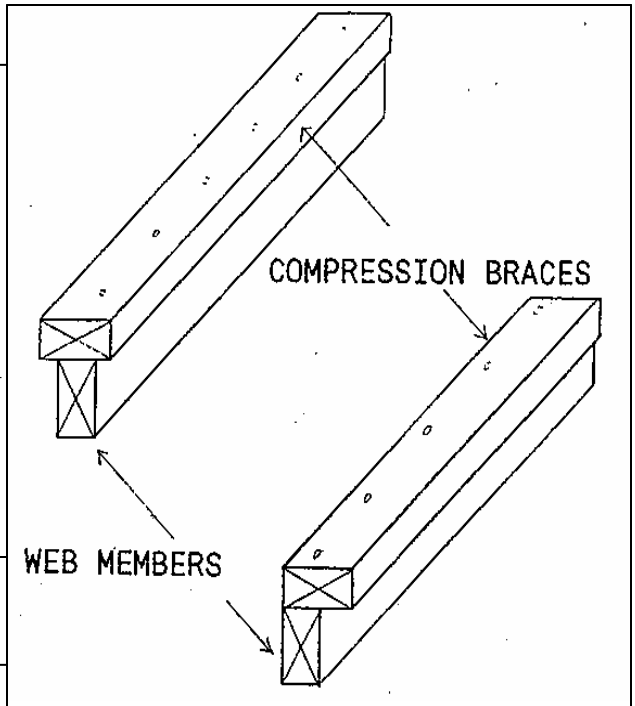

Figure 5.

In addition to providing adequate connections, bracing and support, it is important to remember that cutting or drilling of truss members in the field without approval from a qualified registered engineer is strictly prohibited. If the inspector sees that the trusses have been drilled or cut, he must require that the repair be performed as detailed by a qualified engineer which can be time consuming and costly to perform.

MARCH PERMITS

Below are building permit and valuation totals for March 2006, March 2005, year-to-date 2006 and comparable 2005.

March 2006: 55 permits valued at $5,062,462
March 2005: 64 permits valued at $5,198,309
YTD 2006: 122 permits valued at $8,566,710
YTD 2005: 125 permits valued at $7,438,139