

## 8.) Permanent Bracing Specified by the Truss Designer

A) All permanent lateral bracing shown on sealed truss design drawings must be of the size and grade specified and must be fastened at the locations shown using the number and size of nail as specified on the truss design drawings. Example shown in Fig. 19.

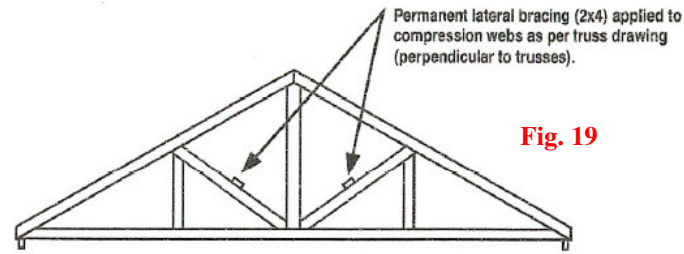


Fig. 19

B) Lateral movement of the lateral bracing shall be restraining by permanently installing diagonal bracing as shown in section 7D, or as per building designer.

C) As an acceptable alternative to a) and b) or if there are less than 3 similar trusses in a row, a T-Brace (Fig 20) or scab brace (not shown) may be installed.

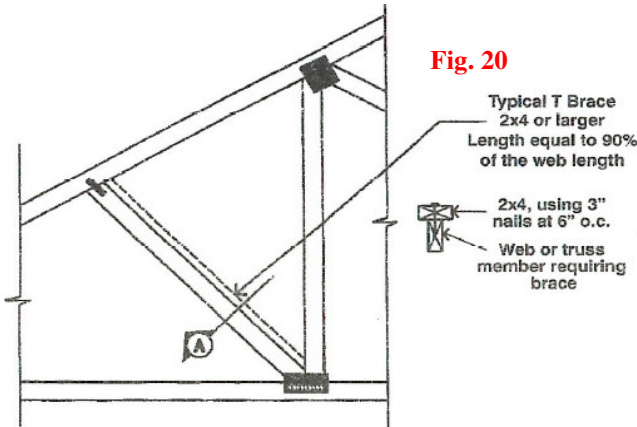


Fig. 20

## 9.) Top Chord Sheathing Plane

A) If plywood sheathing is used, it must be applied with staggered joints and adequate nailing.

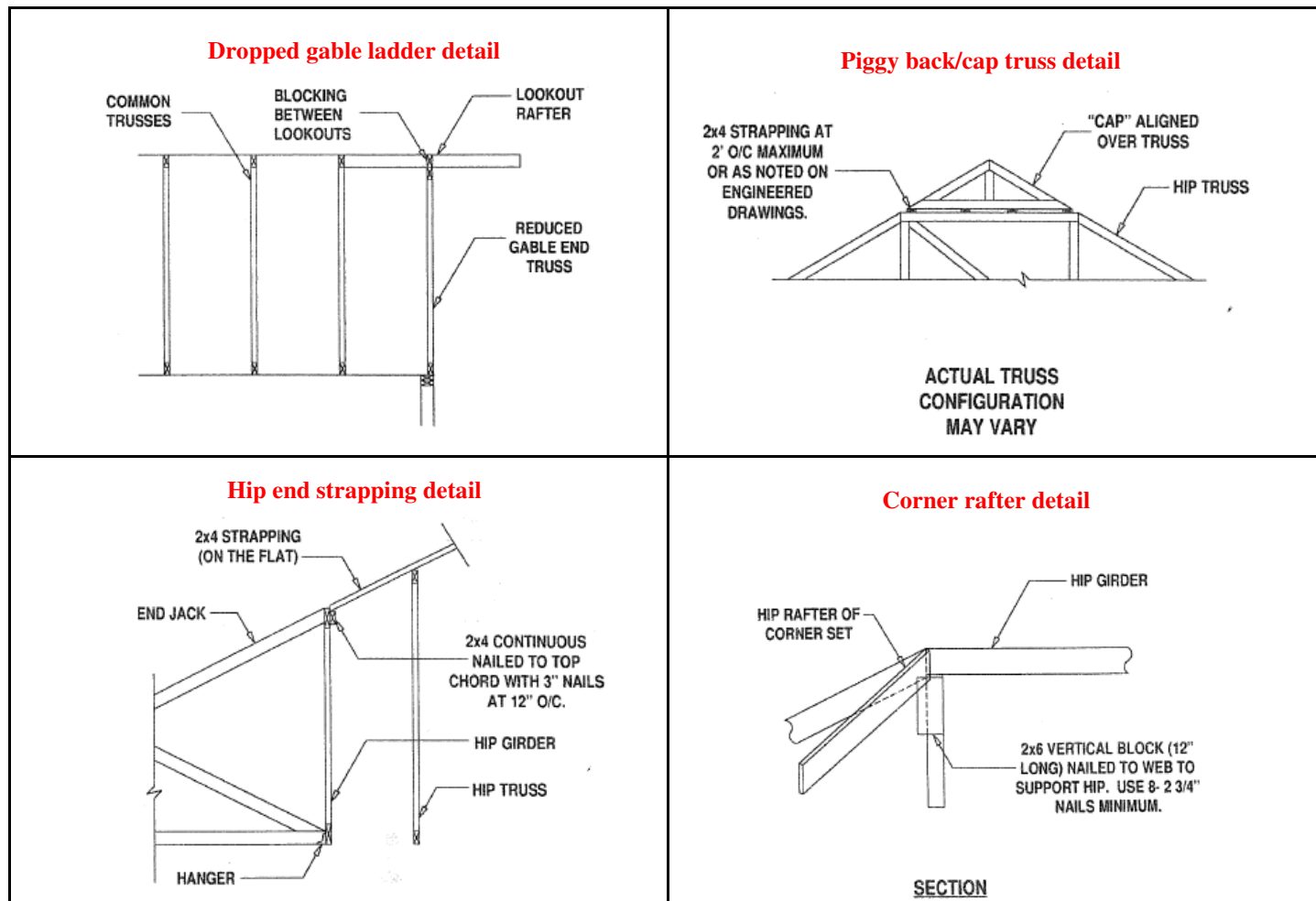
B) If purlins are used, spacing should not exceed the design buckling length of the top chord and should be adequately attached to the top chord.

C) If Valley Sets, Conventional Framing, Piggyback Trusses, etc. are installed on top of the trusses, the full length of the top chords of the trusses underneath must be restrained by sheathing or purlins. The top chords of trusses must always be restrained from lateral movement.

## 10.) Standard Details

Other details may be required, and are available on request.

A few additional standard details are shown below.



### GUIDELINES

**Trusses should not be installed until the installer understands these guidelines and has all other installation details including design drawings, truss layout and any other information supplied in the truss site package.**

While the guidelines for handling, erection and bracing contained herein are technically sound, it is not intended that they be considered the only method for erecting and bracing of a roof system. Neither should these guidelines be interpreted as superior to or a standard.

These guidelines originate from the collective experience of leading technical personnel in the wood truss industry, but must, due to the nature of responsibilities involved, be presented only as a guide for the use of a qualified building designer, building or erection contractor. Thus, Salmon Arm Truss Systems LTD & the Western Wood Truss Association expressly disclaims any responsibility for damages arising from the use, application, or reliance on the guidelines and information contained herein by building designers or by erection

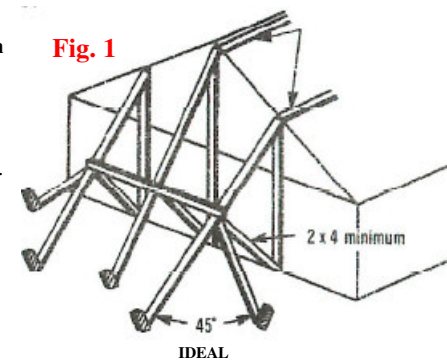
**IMPORTANT!**

### 1.) Check Trusses

- Count trusses to ensure that you have received the correct number for the job.
- Measure trusses for the correct pitch span and any special details.
- Check for damage, broken members, loose plates, etc.

### 2.) Erection Procedures

- Mark the bearing plates on both walls to required spacing of trusses, (IE: 24")
- Set the trusses in place, taking care not to bend or twist the trusses.
- If interior or end walls are available, trusses may be flat. (Interior or end wall must be braced)
- Shorter trusses (IE: under 32' x 6' high) can be hung inverted on the bearing plates in limited numbers. (Additional bracing of the bearing walls is required for this)
- Erect gable or end trusses and install braces (Fig. 1) Add extra bracing for sheathed gables, or long span gables.
- Install additional trusses starting from the gable. Use a string line if needed to ensure truss is installed properly aligned.
- Once the first group of trusses (2-4 trusses) are installed, add diagonal bracing to chords and webs to prevent truss system from toppling over or buckling
- Trusses may be marked at one end. Place trusses so that all marked ends are on the same side of the building.
- When flat trusses are used, ensure they are installed proper side up.
- Install sufficient X-bracing to prevent trusses from buckling or toppling over. Install permanent truss bracing and permanent building bracing, either before or as trusses are being set. Large span buildings (approx 50' and over) with only strapping on the top chords may require some roof areas to be sheathed in addition to strapping, to provide adequate bracing.
- Do not leave an un-braced building unattended.
- Complete roof by installing roof decking, gable end ladders, etc.
- Erection should not be commenced without considering weather forecasts/conditions.



### 2a.) Standard Notes

Individual truss bracing requirements are shown on the engineered sealed drawings. Materials for bracing are not included.

Bracing for overall building envelope has not been addressed by this document. Contact a qualified building designer or structural engineer to review your requirements.

Install h1 or h8 tie downs at all bearings (unless truss is in hanger) install 2 h1 or h8 tie downs at all girder bearings. Residential trusses may be toe nailed in lieu of tie downs.

Top chord of all wall girders must be braced. Refer to SA Truss detail do not install without reviewing detail first.

Girders more than 1 ply require 10d 3" x .148" common nails, nail girders over 2 plies from outside plies in, nailing must be visible for inspection. (see sealed drawing for nail pattern.)

Girders over 3 plies require 1/2" bolts (not included) at each joint location. Girder must be nailed first, then bolted. Do not drill holes through truss connector plates. (also see sealed drawing)

Recommend installing bearing blocks and scab bracing on trusses prior to installation of trusses. (refer to engineered sealed drawings.)

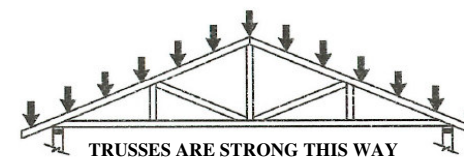
All hangers have specific nail requirements product catalogs are available at our office or at <http://www.strongtie.com/literature/>

Gable end ladder framing and gable end sheathing is not included.

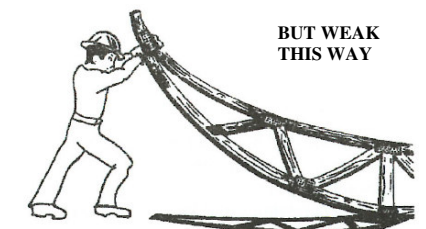
Do not cut, modify, notch or drill holes in any truss (other than bolt holes for girders). Overhangs may be trimmed if truss connector plate is not affected.

Call our office in any of the above information is missing or for questions regarding installation or modification before proceeding. 250-832-8238

Do not install trusses if you are unsure about fit, if its damaged, or if it needs to be modified.



The truss erector or the builder shall take the necessary precautions to ensure that erection procedures and handling methods do not damage the truss and thus reduce their load carrying capacity



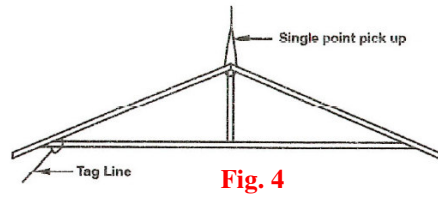
#### 4.) Mechanical Handling

Ideally when mechanical means are used, the trusses should be lifted in banded sets and lowered onto supports.

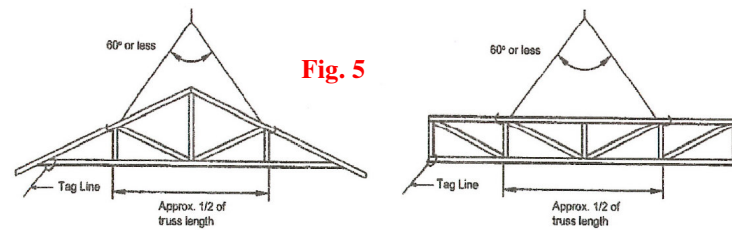
**When this method is used, extreme caution must be exercised when breaking the bands/straps. Trusses may domino, lose lateral stability, or totally collapse, if temporary braces and supports are not in place before releasing the bands/straps.**

If you are lifting trusses one at a time, use one of the following guidelines:

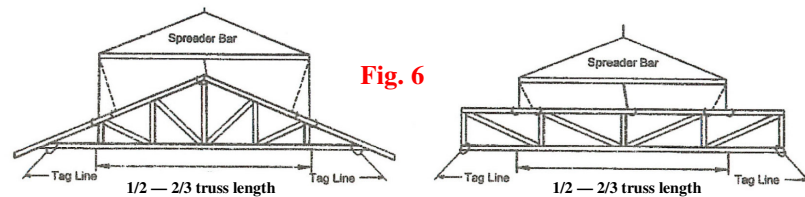
Trusses up to 20' in length, a single lift point may be used, with one tag line. (Fig. 4)



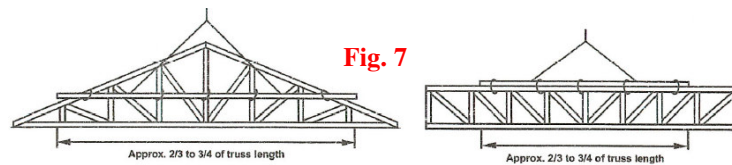
Trusses over 20' and under 30' should be lifted using two lift points located so the distance between them is approximately one-half the length of the truss. The angle between the two cables should be 60 degrees or less to reduce the tendency for the truss to buckle laterally during the lift. A tag line should be fastened to one end to prevent the truss from swinging and causing damage. (Fig. 5)



Trusses 30 to 60 should be lifted with a spreader bar. Cable strings should be vertical or "toed in". Two tag lines are required. (Fig. 6)



Trusses over 60 feet in length should be lifted with a strong back 2/3 to 3/4 the length of the truss, and stiff enough to prevent the truss from buckling. The strong back should be secured to the truss well above the center of gravity, and at 10' intervals maximum, or every point where 2nd web, whichever is less. Two tag line are required (not shown). (Fig. 7)



#### PRE-ASSEMBLY ON THE GROUND

This entails pre-assembling a group of trusses, properly sheathed, restrained and braced, and safely lifting the assembly onto the building. **CAUTION: It is important to obtain professional guidance to lift the entire assembly safely and effectively.**

#### 5.) Alignment: Vertical and Lateral

**ALL TRUSSES ARE Laterally UNSTABLE** until properly braced. The longer the span the more care required. Adequate restraint is necessary at all stages of construction.

**COMPLETE STABILITY** is not achieved until the bracing and decking is completely installed and properly fastened.

**ERECTION, BRACING AND PROCEDURES** as well as the safety of the workers are the responsibility of the builder, erector or owner.

**PROBLEMS MAY OCCUR** in attempts to realign or re-space trusses. Align each truss and place it permanently in position before it is connected to the bracing system. Once there is load, even from just the truss itself, large lateral forces are developed by attempts to realign or re-space trusses which are already attached to the bracing system. This may break the bracing system.

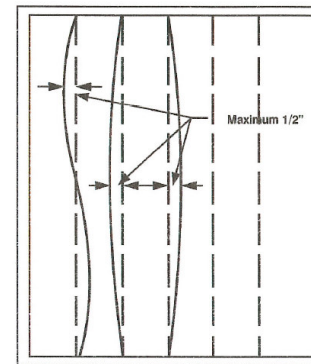


Fig. 9

When properly aligned, each top chord should not vary more than 1/2" from a straight line.

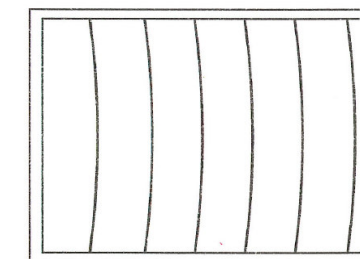


Fig. 11

**THE BRACING SYSTEM** should provide support at spacing at no greater than 10' unless specified by an engineer. All bracing material to be 2x4 minimum, or 1x4 for residential Part 9 code. Larger or higher grade bracing may be specified on sealed drawing, which must be followed.

D(in)	D/100
12"	1/8"
24"	1/4"
36"	3/8"
48"	1/2"
60"	5/8"
72"	3/4"
84"	7/8"
96"	1"
108"	1"

Fig. 10

"D" = truss depth in inches.

Out-of-plumb installation tolerances

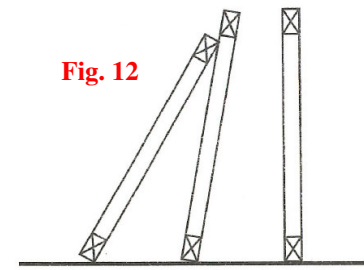


Fig. 12

**COLLAPSE CAN EASILY OCCUR** without a bracing system that will prevent horizontal sway (Fig. 11) or roll over (Fig. 12) Once rolled over, trusses will not be strong enough to hold up their own weight.

**DO NOT** permit cutting, drilling or any procedure that may damage truss components.

**DO NOT** remove webs (even temporarily)

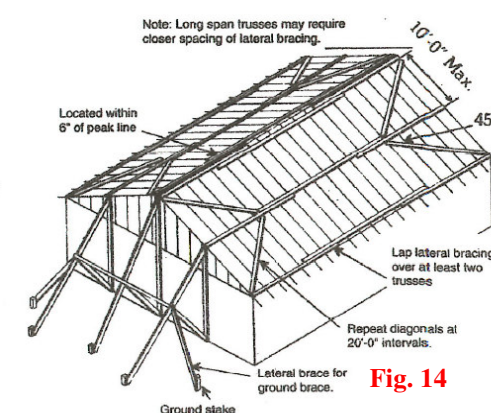
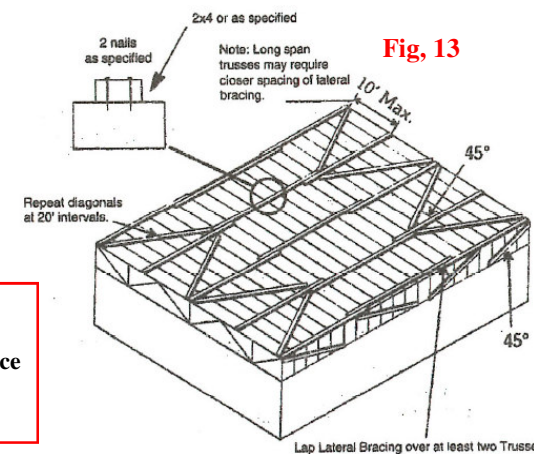
**DO NOT** make field repairs to trusses without an engineered repair detail (from manufacturer).

**DO NOT** overload single or groups of trusses with building material or tools.

**DO NOT** install damaged trusses, or trusses that have been dropped or have fallen. An engineer must inspect and certify these trusses.

#### 6.) Temporary Gable End & Top Chord Bracing

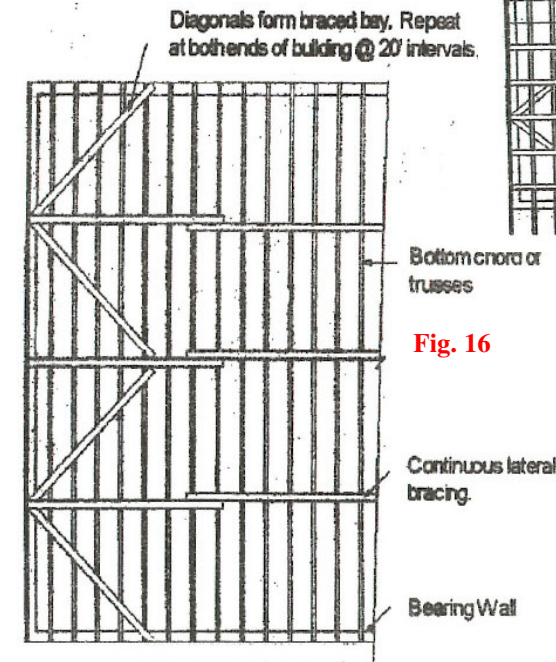
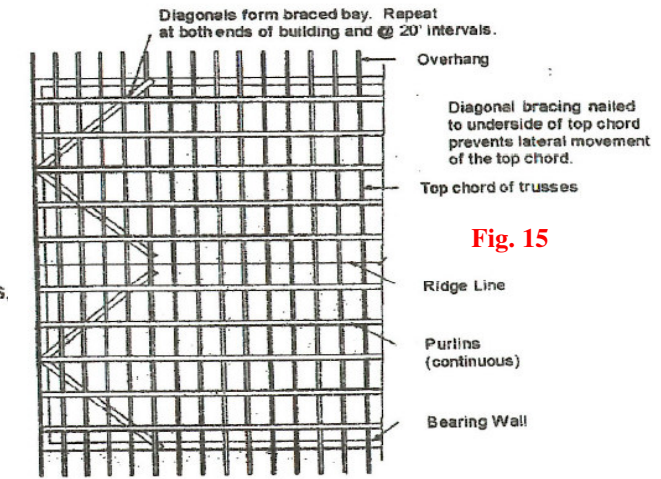
Proper installation of the temporary bracing is the responsibility of the builder, erector or owner. The application shown (Fig. 13 & Fig. 14) is a simply typical example only. It is important to have proper professional guidance for each construction project.



#### 7.) Permanent Bracing Specified by the Building Designer

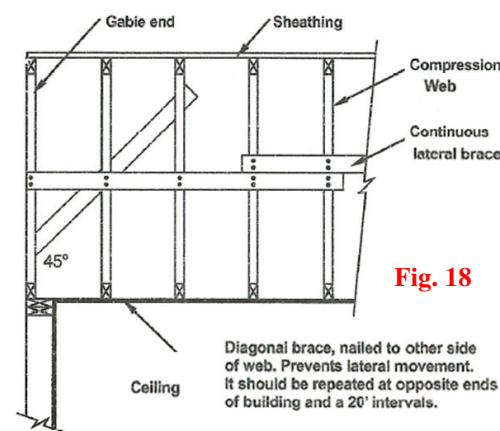
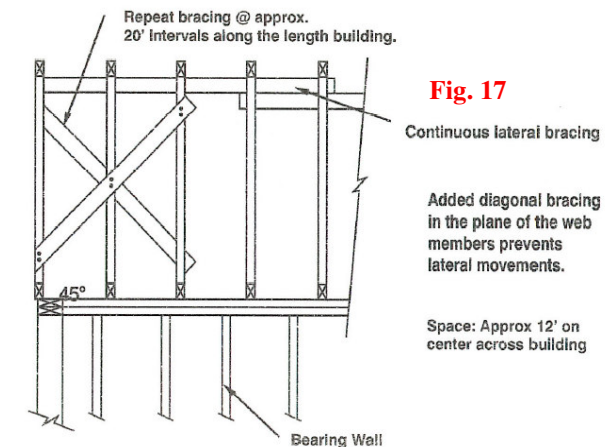
Permanent bracing is designed and specified for the structural safety of the building. It is the responsibility of the building designer or an authority other than the truss designer to indicate the size, location and attachments for all permanent bracing. Typical applications of permanent bracing to be specified by the building designer are as follows:

**A) Top Chord Bracing:** If purlins are used in place of sheathing, it is recommended that diagonal bracing be applied to the underside of the top chords (Fig. 15)



**B) Bottom Chord Bracing:** This lateral bracing is required to maintain the proper truss spacing and to transfer force due to lateral forces into the side walls, shear walls of other structural elements. (Fig. 16) Refer to sealed engineers drawings for size and spacing.

**C) Truss System Cross Bracing** is specified by the building designer (does not appear on engineer's sealed drawings) It is required to maintain proper spacing, distribute unequal loading, and to transfer lateral forces to the building diaphragms and shear walls. (Fig. 17)



**D) Anchoring of permanent lateral web bracing:** This bracing may appear on truss engineers sealed drawings, but it is the responsibility of the building designer to review an approve bracing whether it is specified or not. A typical method for anchoring permanent lateral web bracing (see section 8) is shown in (Fig 18.) Spacing of diagonal bracing not to exceed 20'