Atlantic Wood WORKS

Getting Back to Wood:
Engineered Wood Products

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Why getting back to wood?

- Was a common practice in the past.
- Large dimension lumber scarce.
- Steel and concrete stepped up.
- Wood settled on the residential market; their bread & butter.
- Wood engineering stepped-up their game:
  - Truss connector plates in 1950's.;
  - I joists in 1969;
  - Engineered Wood : LSL, LVL, PSL, Glulam, Cross-Lam, OSB, etc.;
  - Software (Sapphire, Woodworks, Graytec, Forte).

Us and Roof Trusses

Established in 1977, father's garage in Balmoral, moved to the Industrial Park two years later.

Newly built truss plant in 1998 in Eel River Crossing, with offices in Edmundston and Moncton. New wall panel plant since 2009. New floor truss plant in 2014.

On staff engineer since 1989, registered in NB, NS, QC and ME, 2 EIT, 8 technicians and an IT.

We supply wood roof trusses, engineered wood floor systems (floor truss, Open Joist and wood-I's), wood wall panels, engineered wood beams (LVL, LSL and PSL) and columns (PSL). We cater to contractors and DIY individuals.).

Us and roof trusses continued…

- Our truss production facility has 74 ft. clear span wood roof trusses with 94 ft. to longest built to date. 12 ft. high limit due to transportation but we can build to max height of 13’ 8” in. x 120 ft. long (table limit).
- Most common questions:
  - How much snow?
  - Attic truss room size? How much more?
  - Which slope does the snow slide off?
  - Can I hang my moose from the bottom chord?

- Roof truss fabricators are considered a supplier of an engineered product, just like a window supplier. Basically, we design in a 2D environment.

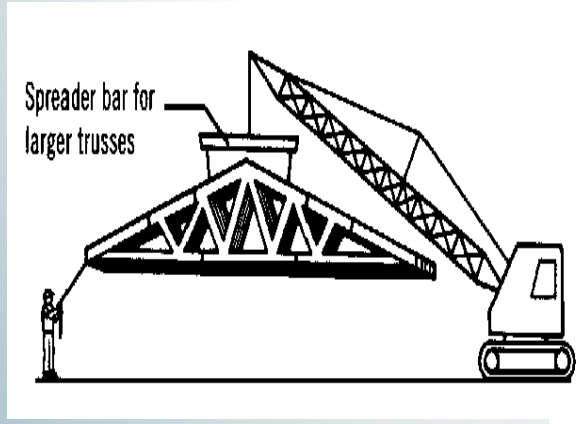
- A roof truss is a component of a roof truss system, the design of the roof truss system is the building designer responsibility (TPIC 2011, a NBCC referenced standard and Cécobois roof truss guide).
- Permanent, gable end and in between piggy-back bracing are all part of the roof truss system.
- We require the importance factor, the roof load (and drift loads if applicable), the dead load and wind load from the building designer when we design a Part 4 designed roof truss.
- Temporary bracing is the responsibility of the site superintendent.

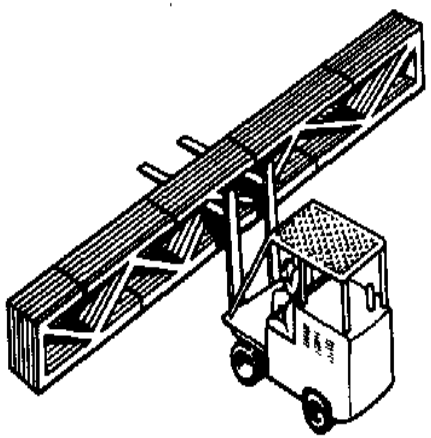
- Most roof truss collapses happen during the weekend due to improper temporary bracing, for example:
  - Bowling alley;
  - Too much weight – plywood bundles;
  - Temporary column – snow;
  - Tied off to a tree!
  - Hip surfing, wall collapse;
  - Trusses cannot be used unless load tested;
  - Other issues, no lateral bracing under the valleys, piggy-back bracing, improper header, truss cutting.

Part 9 = descriptive (span book)
Part 4 = engineered

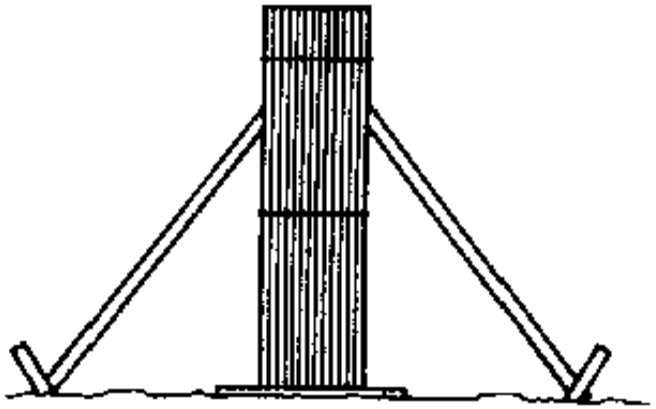
- Square area over 600m^2 (6400 $ft.^2$).
- Truss span over 40 ft., walls over 12 ft.
- Building occupancy (use).
- Additional snow loading (unbalanced/drift), wind analysis (tie-down or 3 - 3 ¼ ” nails).
- Professional Engineer.

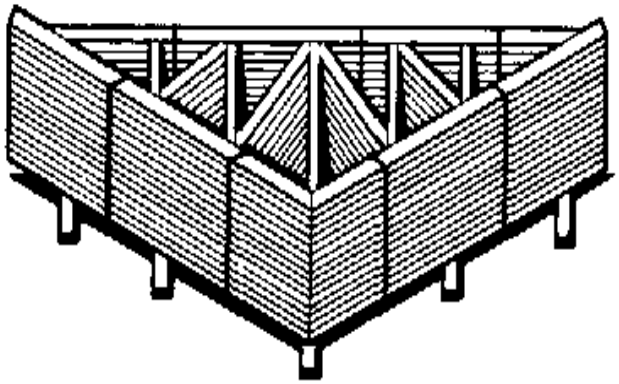
Truss manipulation

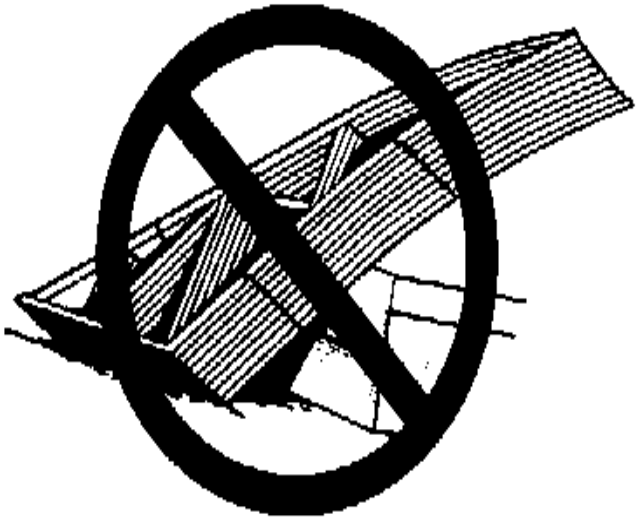




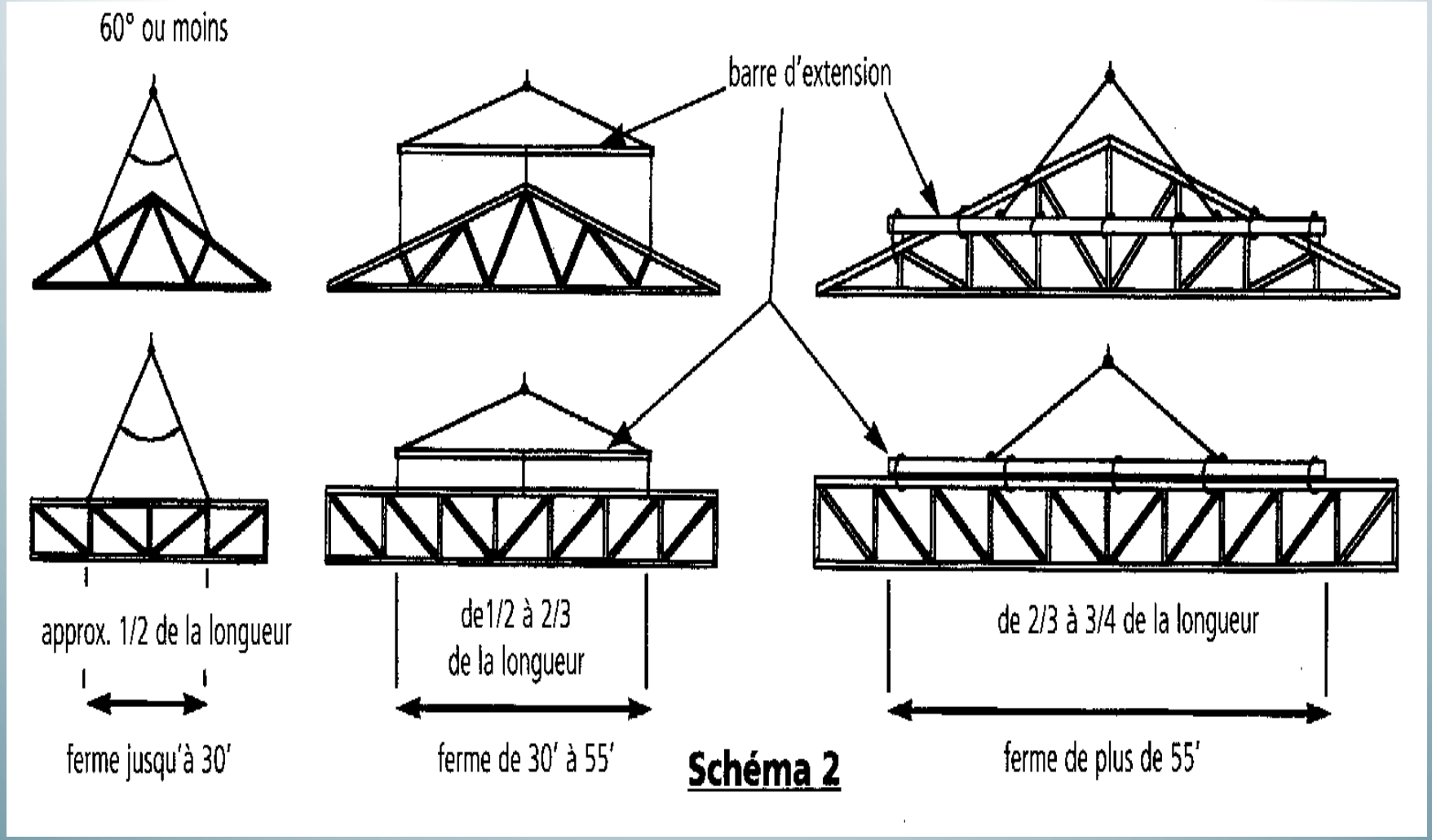
Jobsite storage





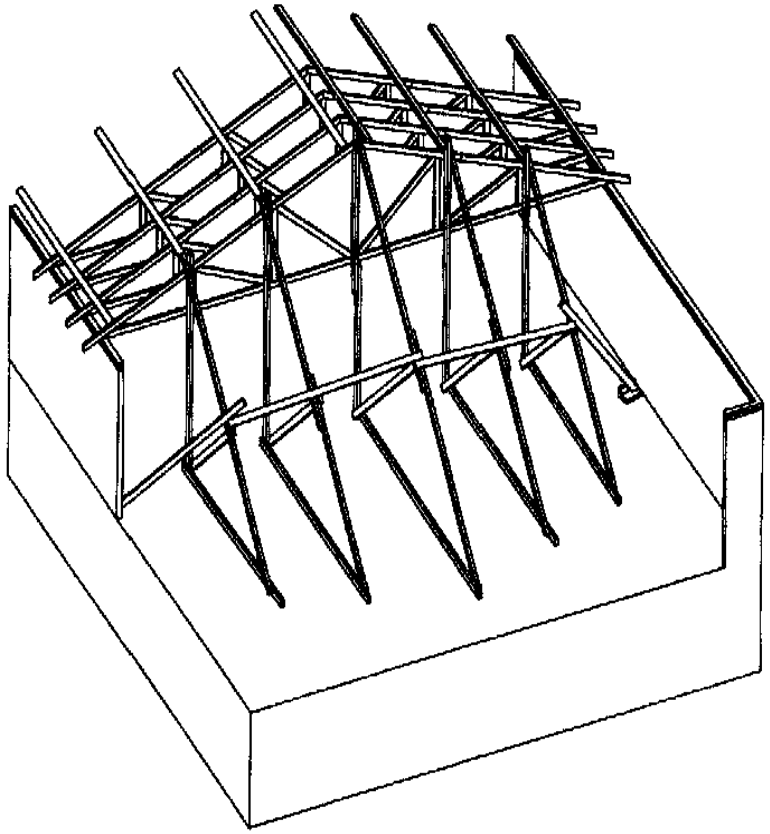


Lifting procedure



1st truss bracing (temporary bracing)

En s'appuyant sur le plancher



En s'appuyant sur le sol extérieur

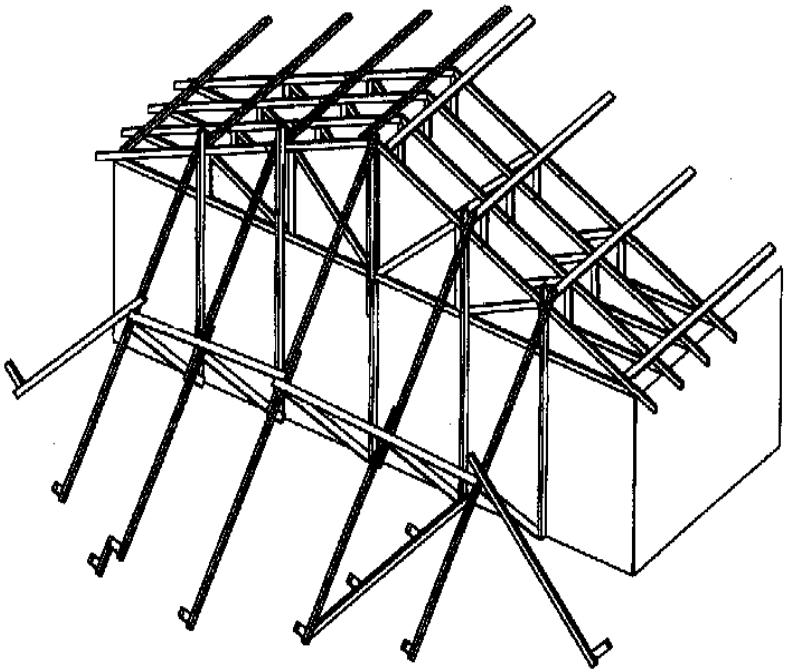
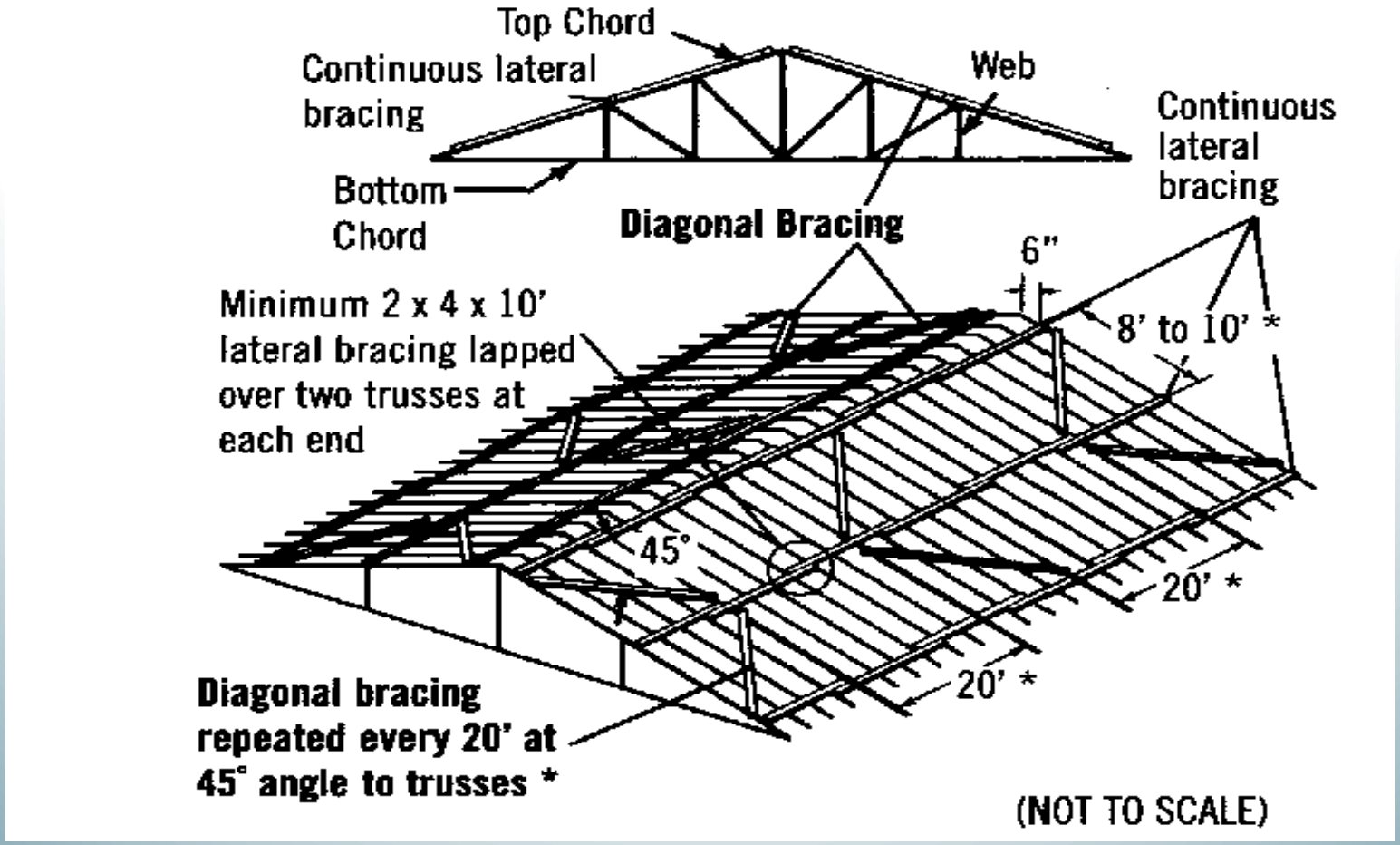
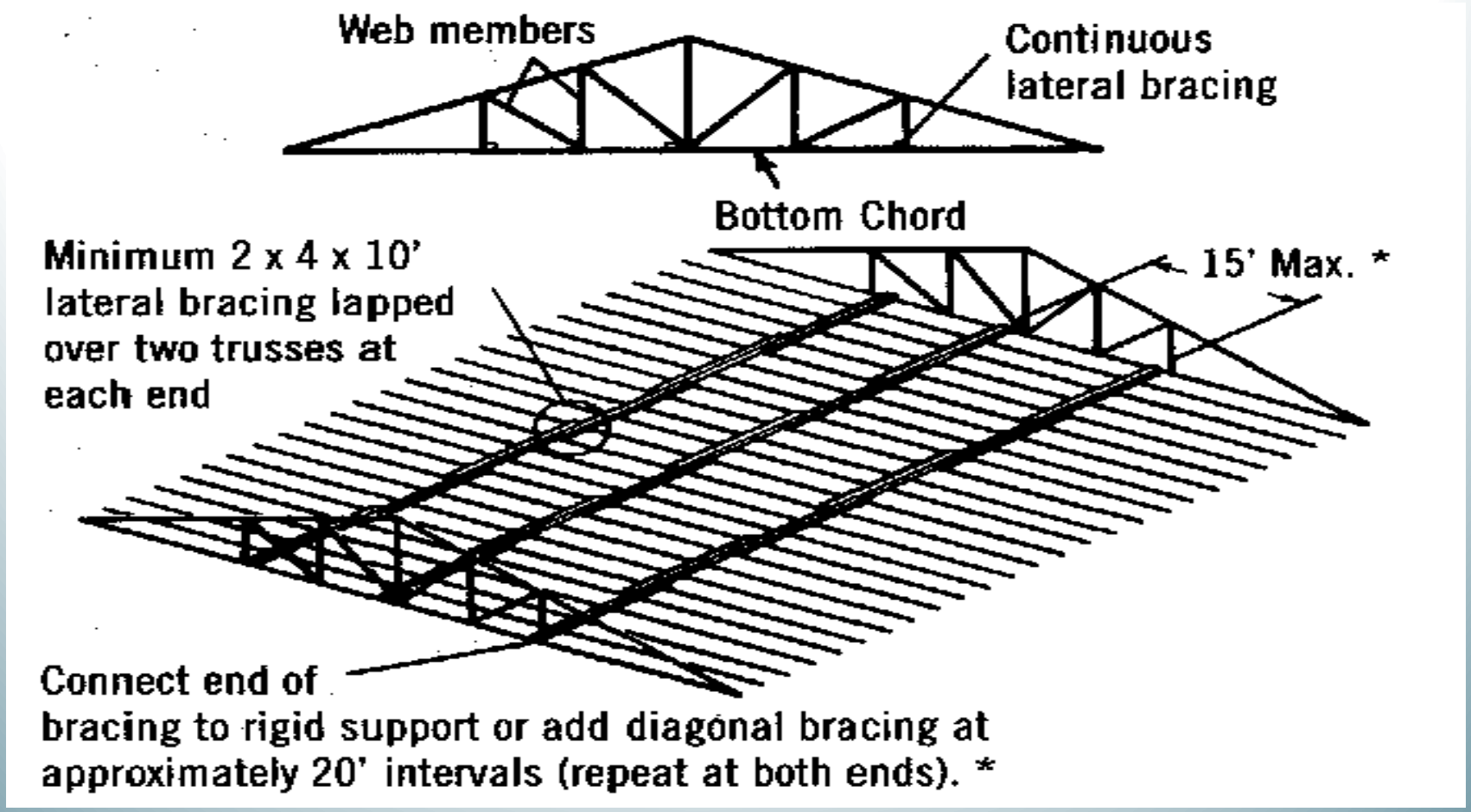


Schéma 3

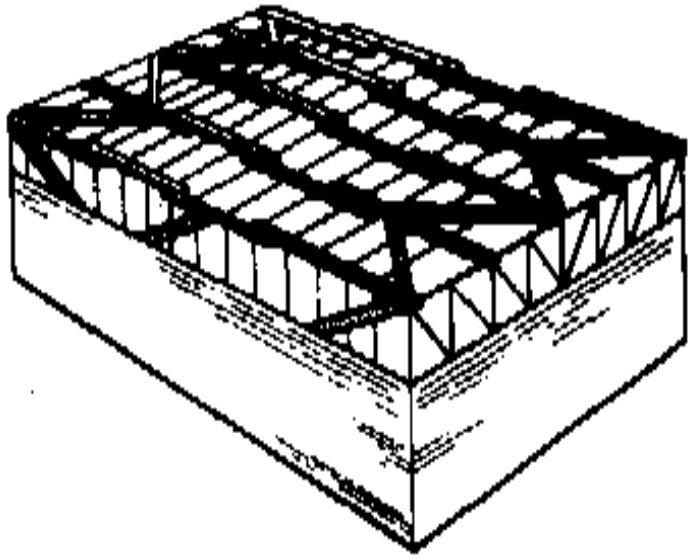
Temporary bracing along the top chord of the truss

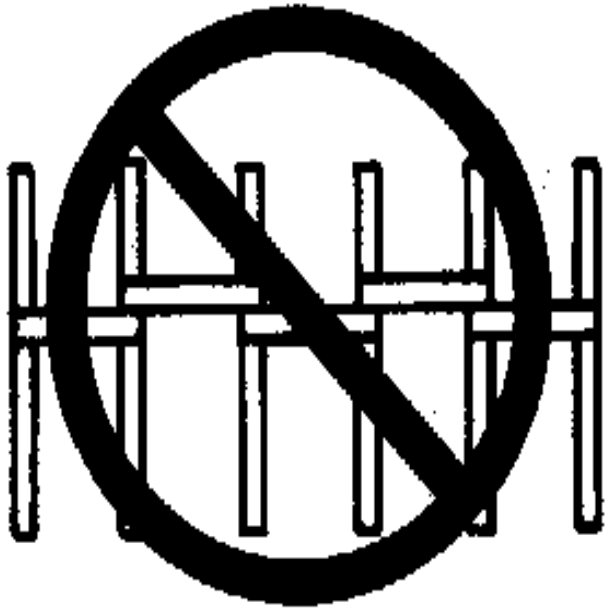


Temporary bracing along the bottom chord of the truss

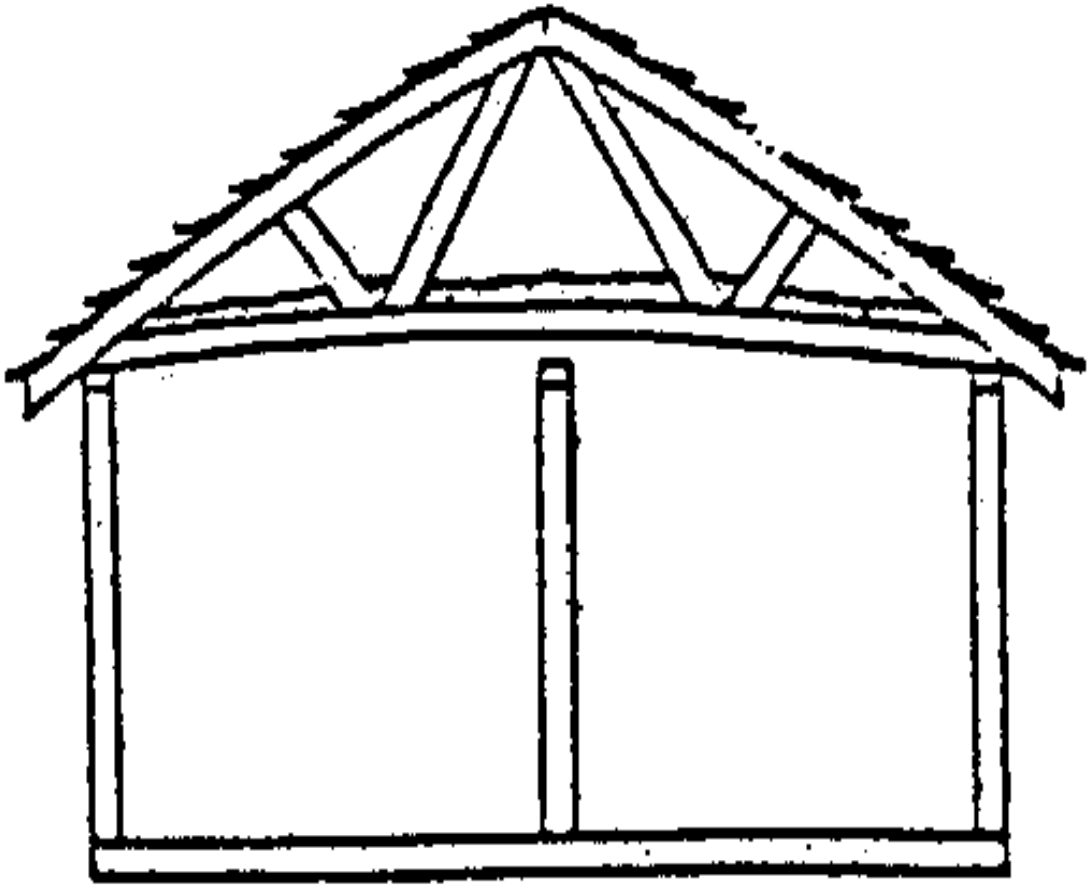


Temporary bracing and permanent bracing

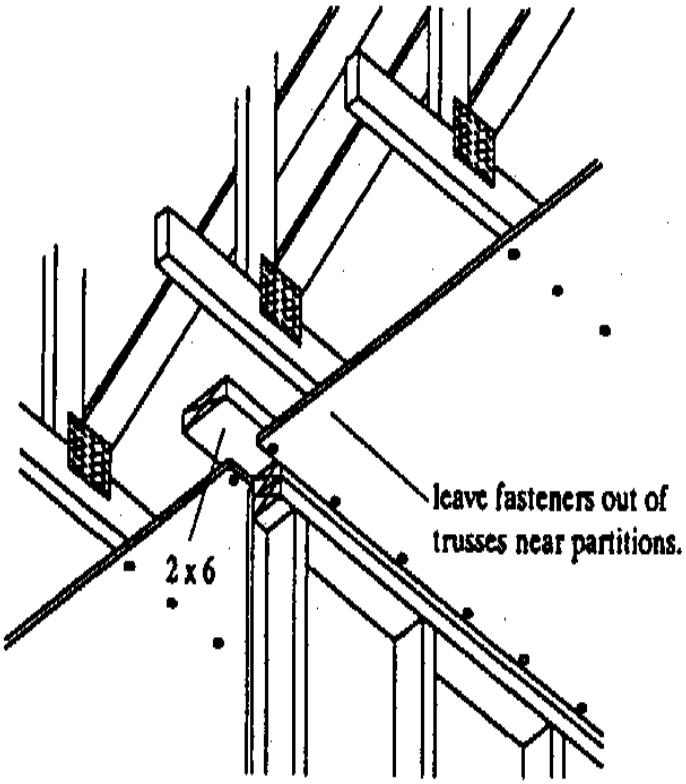




Truss uplift



Floating sheetrock joint details for interior non-bearing partitions



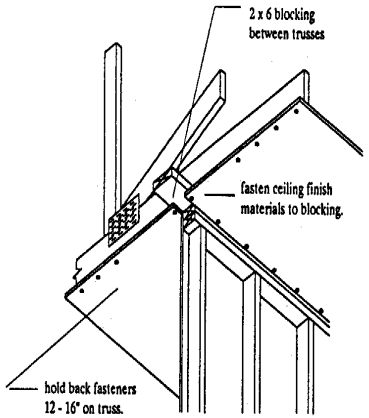


Figure 6. For trusses perpendicular to partitions, install "dead wood" blocking for attaching ceiling finish materials.

Wall panels

- Wall panels are built just like they would have been done onsite with nail or staple guns per Part 9 of the NBCC or per the building designer's specifications with a few exceptions:
    - Due to the 12 ft. transportation limit, wall panels are a maximum 12 ft. high by 24 ft. wide or up to 20 ft. high (wood stud limit) x 12 ft. wide;
    - Laser jigging, butt joints with 2 wall studs, 2 bottom plates when built on a slab;
    - No engineering involved other a stud or header check where warranted;
    - Wall placement and wall drawings to be reviewed by the contractor;
- Various composition.

Floor joists

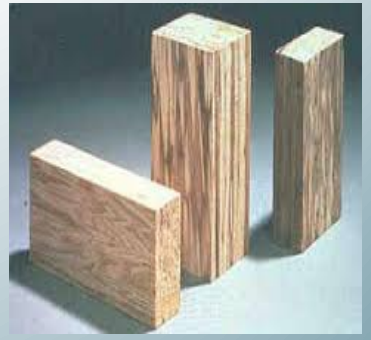
- Wood open web floor trusses and Open Joist:
  - Strong back lateral bracing;
  - Floor trusses built to suit and take advantage of a top chord bearing;
  - Open Joist offers some adjustability but no top chord bearing allowed;
  - Single span only;
- Wood I Joist:
  - Adjustability, cut to fit, can also be used a hoist;
  - Multiple spans;
  - Bearing enhancers.

Engineered Wood

- LSL = laminated strand lumber (1.3E to 1.55E); beams, wall studs, rim boards, stair stringers:
  - 24 ft. (wall studs) to 56 ft. (beams) lengths, very little shrinkage;
  - So dense they actually reduced it so it can be nailed together;
  - Be conscious about the bearing, columns and footing support.

- LVL = laminated veneer lumber (1.8E to 2.2E); beams:
  - 56 ft. lengths, very little shrinkage.

- PSL = parallel strand lumber (1.8E to 2.2E); beams and columns:
  - 56 ft. lengths, very little shrinkage, nice appearance.



Questions?

Thank you