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# CONSTRUCTION TECHNOLOGY

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## LUMBER ESTIMATING FORMULAS

- SILL PLATE (2"x6" or 2"x8" treated lumber that is fastened to the top of a foundation wall.) = Total linear feet of foundation wall broken down into 8' to 16' lengths.
- MAIN BEAM (2"x12" Dimensional Lumber) = Length of span of main beam *times* 4
  - Examples: (Must use dimensional lumber lengths between 8' and 16')
    - A span of 16' would require 4 – 2"x12"x16' pieces
    - A span of 24' would require 4 – 2"x12"x8' pieces and 4 – 2"x12"x16' pieces
- Number of FLOOR JOISTS = Length of run of main beam *times* 3/4 (.75) *plus* 1 (starting joist) *times* 2 (second side)
  - Add two per opening in floor
  - Add two for each internal wall running parallel to joists
  - 2"x12" Lumber for cottage/exam purposes
- RIM JOIST = Length of run of main beam *times* 2
  - If over 16' in length, a combination of two or more sizes are needed
  - 2"x12" Lumber for cottage/exam purposes
- SHEETS OF SUBFLOOR = Total Square Foot of Floor *divided by* 32
  - 3/4"x4'x8' T&G Plywood or OSB
- PRECUTS = Linear feet of all walls *times* 3/4 (.75) *plus* 2 for each wall penetration (door, window, outside corner, inside corner, partition intersection)
- TOP & BOTTOM PLATES = 3 per section for all interior and exterior walls
  - Take the total linear feet of all walls, add 10%, *divide by* 16 (longest standard size framing lumber) and *multiply by* 3 (one bottom sole plate and two top plates)
- DOOR HEADER = Width of Door *plus* 5 inches
  - Door header is made by doubling up two 2"x12" pieces of lumber.
  - Example: One 2"x12"x8' piece of lumber is needed to build the header for a 36" door.
- WINDOW HEADER = Rough Opening Width *plus* 3 inches
  - Window header is made by doubling up two 2"x12" pieces of lumber
  - Example: One 2"x12"x8' piece of lumber is needed to build the header for a window with a rough opening of 3'-2" x 4'-6".
- SHEETS OF WALL SHEETING (1/2"x4'x8' Plywood or OSB) =
  1. Linear feet of perimeter walls *divided by* 4 (8' Stud Walls)  
**plus**
  2. Height of truss *times* (1/2 of the Length of Span of Truss) *times* 2 *divided by* 32 (Gables)
- TRUSSES (Gable Roof) = Length of run *divided by* 2 *plus* 1
  - 2 of the trusses will be gable ends
- ROOF SHEATING (1/2"x4'x8' Plywood or OSB) = Square feet of entire roof including overhangs *divided by* 32