EXTERIOR BEAM CALCULATIONS

Carefully follow these steps for finding the correct EXTERIOR BEAM:

Step 1 - Enter the following data from your "Structural Layout" or "Truss Calculations Sheets":

TOTAL ROOF LOAD = _____ lbs./sq.ft. SPAN (Length of truss) _____ feet

SPACING (between trusses) _____ feet WEIGHT of Interior Truss _____ lbs./lin.ft.

LENGTH of BEAM (space between Columns) _____ ft.

No. of Trusses on BEAM _____ (Do not count trusses sitting on columns)

Step 2 - Find the amount of roof supported by an exterior beam:

Half of the SPAN x "Length of Beam" = AREA of Roof supported by the BEAM in sq.ft.

Step 3 - Find the weight of this ROOF AREA :

Total Roof Load x Area of Roof = Weight of Roof in lbs.

Step 4 - Find the weight of the TRUSSES:

Half of the SPAN x Weight of Truss/lin.ft. x Number of trusses = TOTAL Weight of Trusses

Step 5 - Find the total weight on an EXTERIOR BEAM:

Add "Weight of Roof" + "Weight of Trusses" = TOTAL Weight on Beam in lbs.

Step 6 - Consult the "Structural Steel Tables" to find the correct size:

- Convert the total weight in Kips (1 KIP = 1000 lbs)

Then start with the "Length of the Beam" and look down the table for the "Load" that is equal to or slightly larger than the TOTAL WEIGHT. There are two figures for each truss size; the upper number is Max. Allow. Wt. including the weight of the truss and the lower number is the SAFE LOAD that can be supported. USE THE LOWER NUMBERS.

Step 7 - Make note of the following:

Beam Designation _____ Depth of Beam _____ inches

Weight of Beam _____ lbs./lin.ft. Max. Allow. Wt. _____ lbs.

Step 8 - Assign a CODE LETTER to this BEAM: _____ Examples: AA or B1 or EB

Place this letter next to the corresponding beams on your Structural Plan.