

## 6 Sizer: Concept Mode Tutorial 6 – Example from Concept Mode Demo (US)

### 6.1 Software Version and Standard

This tutorial was completed using WoodWorks® US 2019, and NDS 2018.

### 6.2 Introduction

This tutorial goes through the creation and design of the structural model described in the [Sizer US – Concept Mode Overview](#) video.

Click [here](#) to download a copy of the Sizer file (.wwa) created from going through this tutorial.

### 6.3 Settings

1. Click on the **New Concept Mode File** button on the toolbar.
2. Click on the **Settings** tab located in the menu bar.
3. Click on the **View** tab in the **Settings** window.
4. Under the **Viewing area** section, specify **15 (ft)** as **North-South**.
5. Under the **Viewing area** section, specify **40 (ft)** as **East-West**.
6. Under the **Snap increment** section, specify **36 (in)** as **North-South**.
7. Under the **Snap increment** section, specify **36 (in)** as **East-West**.
8. Click **OK**.

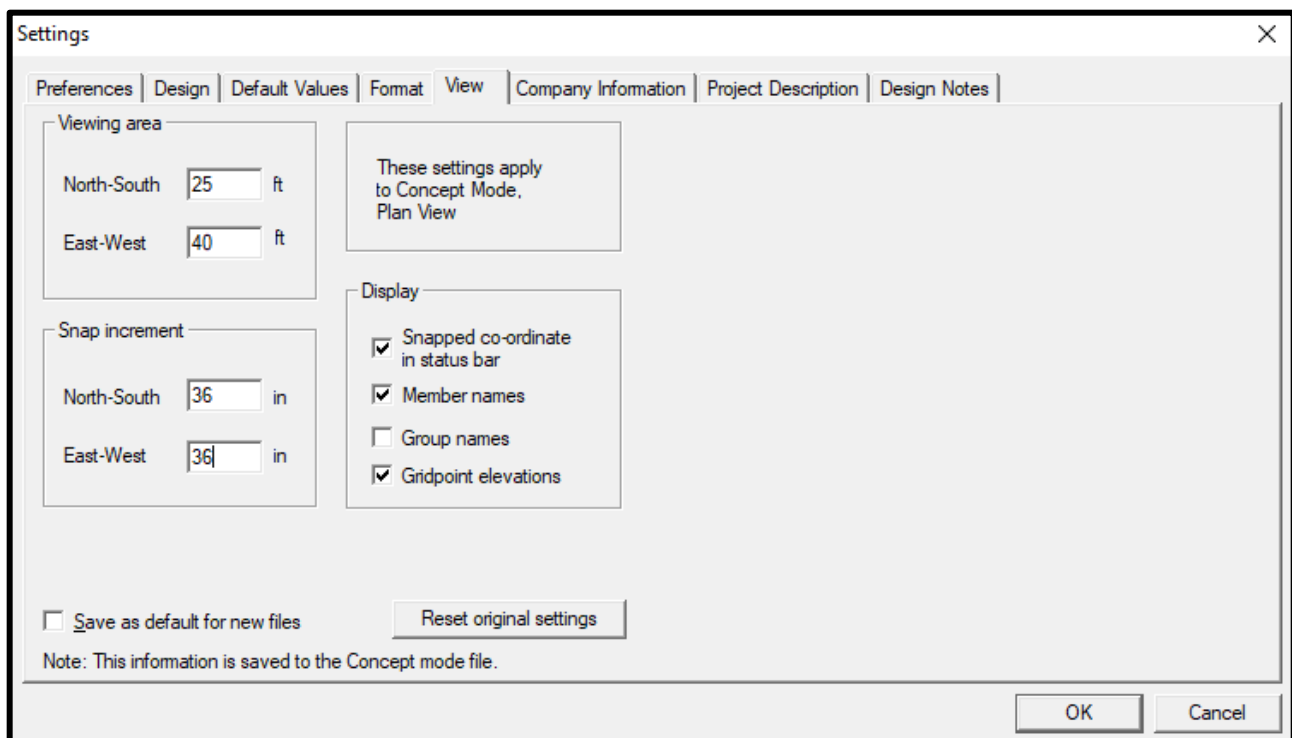


Figure 1: Sizer: Concept Mode – Tutorial 6 – View Settings

## 6.4 Roof Level

1. Click on the **Levels** button on the toolbar.
2. Enter a **Roof** elevation of **12 (ft)**.
3. Click **Modify**.
4. Press **OK**.

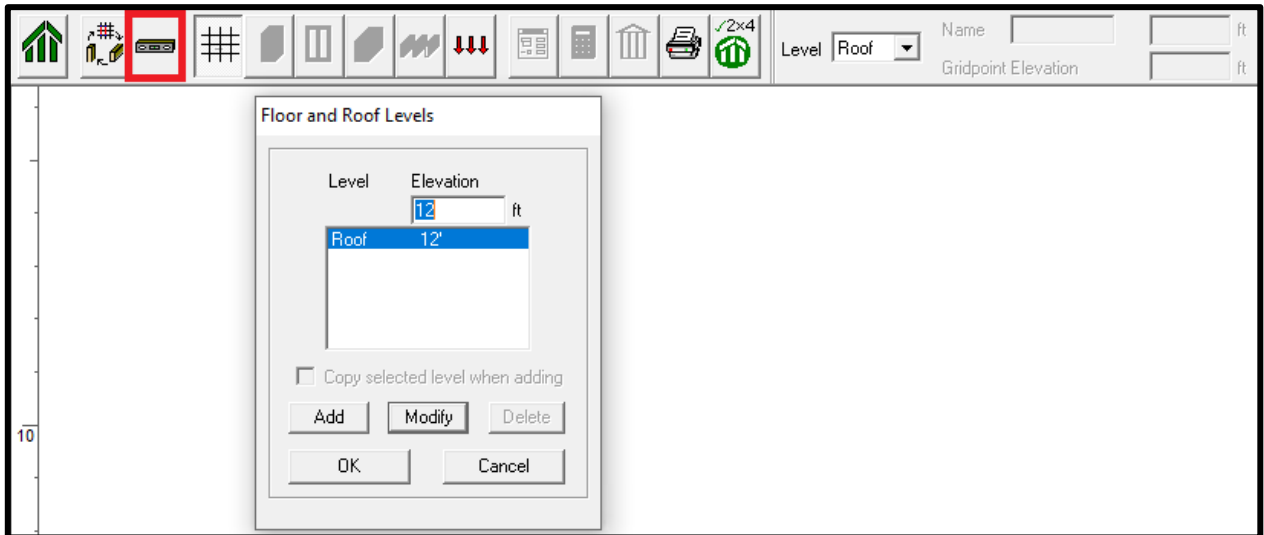


Figure 2: *Sizer: Concept Mode – Tutorial 6 – Roof Level*

## 6.5 Generate Gridlines

1. Click on the **Edit** tab located in the menu bar.
2. Click on **Generate Grid**.

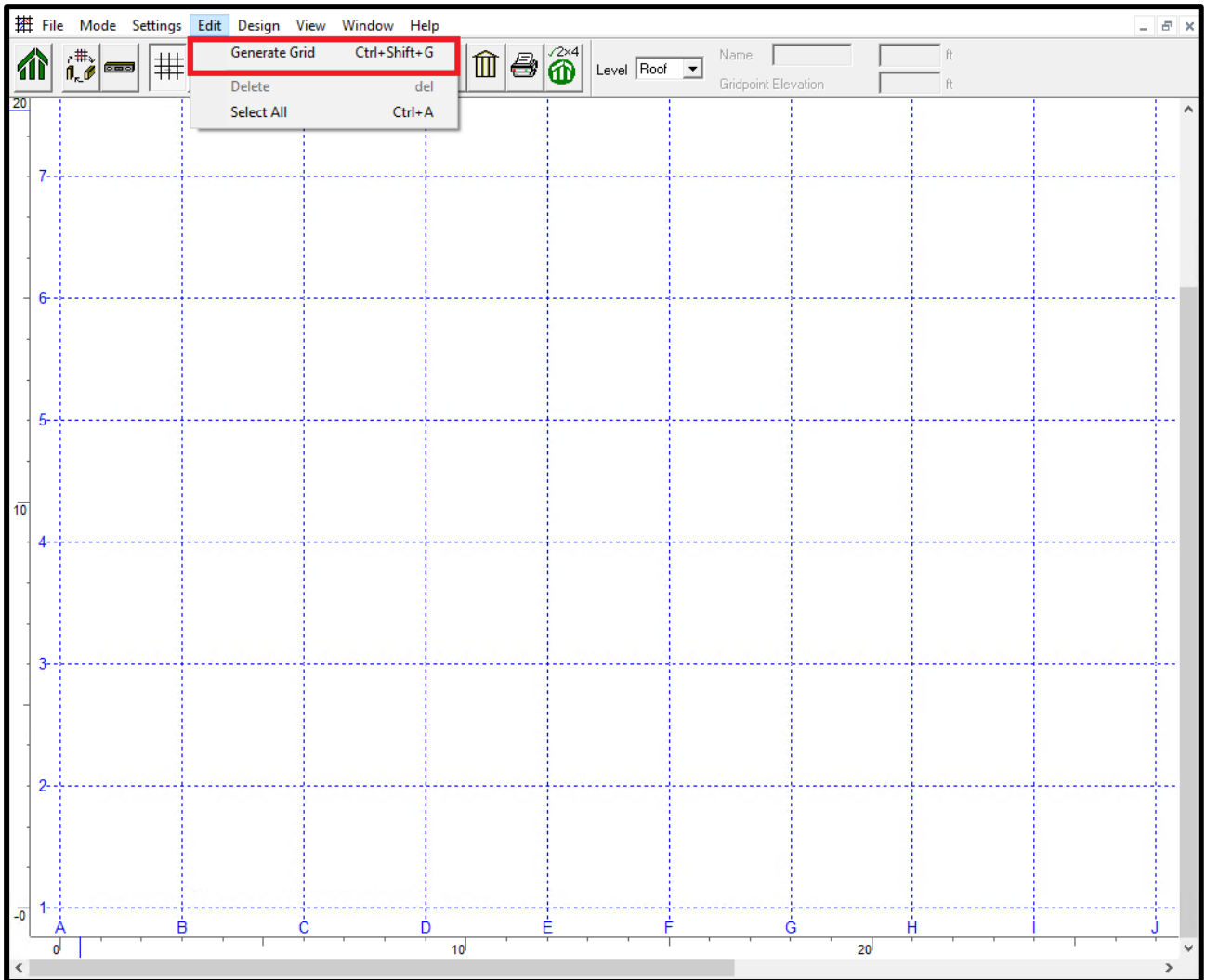


Figure 3: *Sizer: Concept Mode – Tutorial 6 – Generate Gridlines*

## 6.6 Columns

1. Click on the **Column View** buttons on the toolbar.
2. Add columns at the following locations: **C-7** and **G-7**.

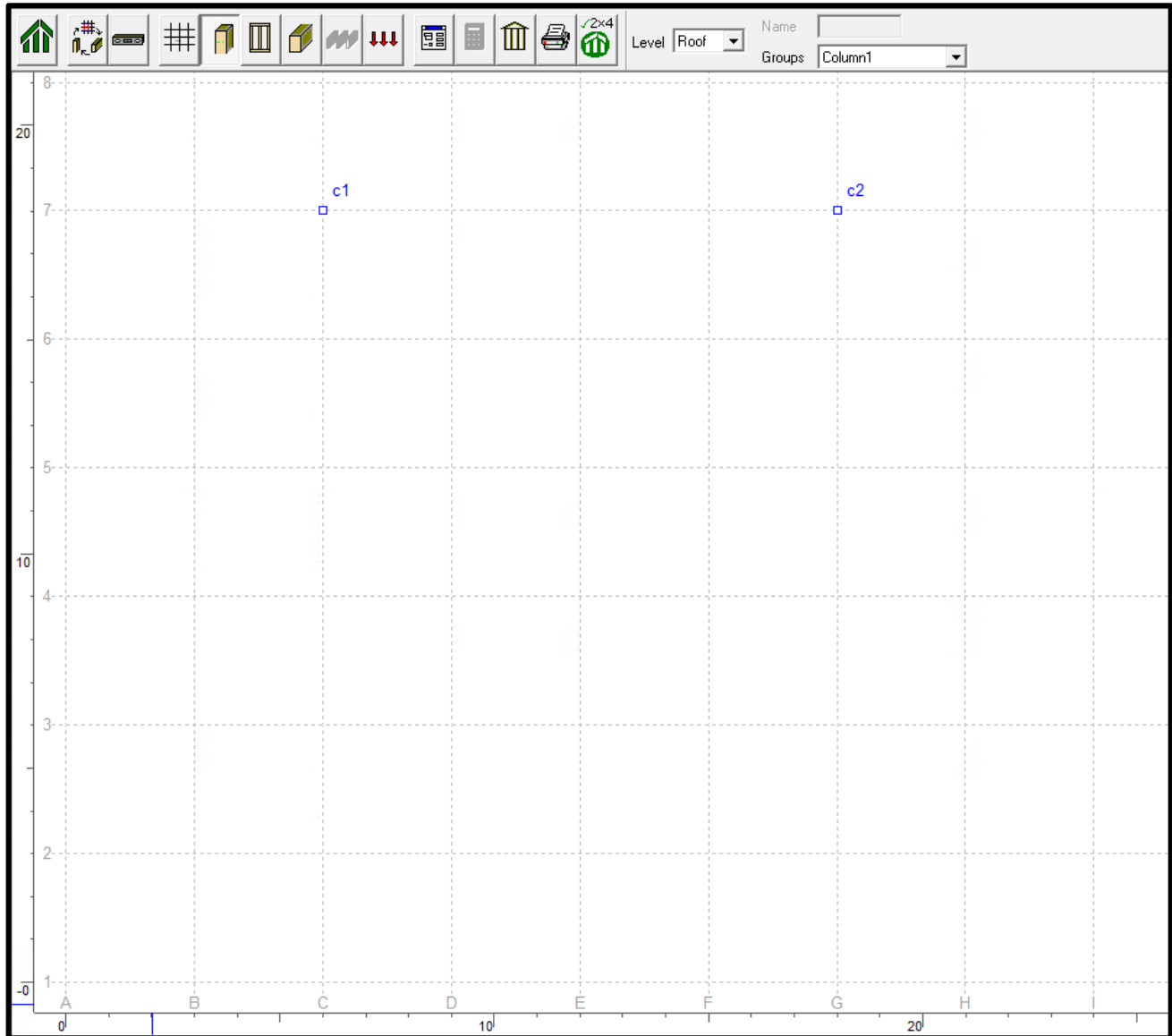


Figure 4: Sizer: Concept Mode – Tutorial 6 – Column Locations

## 6.7 Walls

1. Click on the **Wall View** buttons on the toolbar.
2. Click on **B-3** and drag the wall to **H-3**.

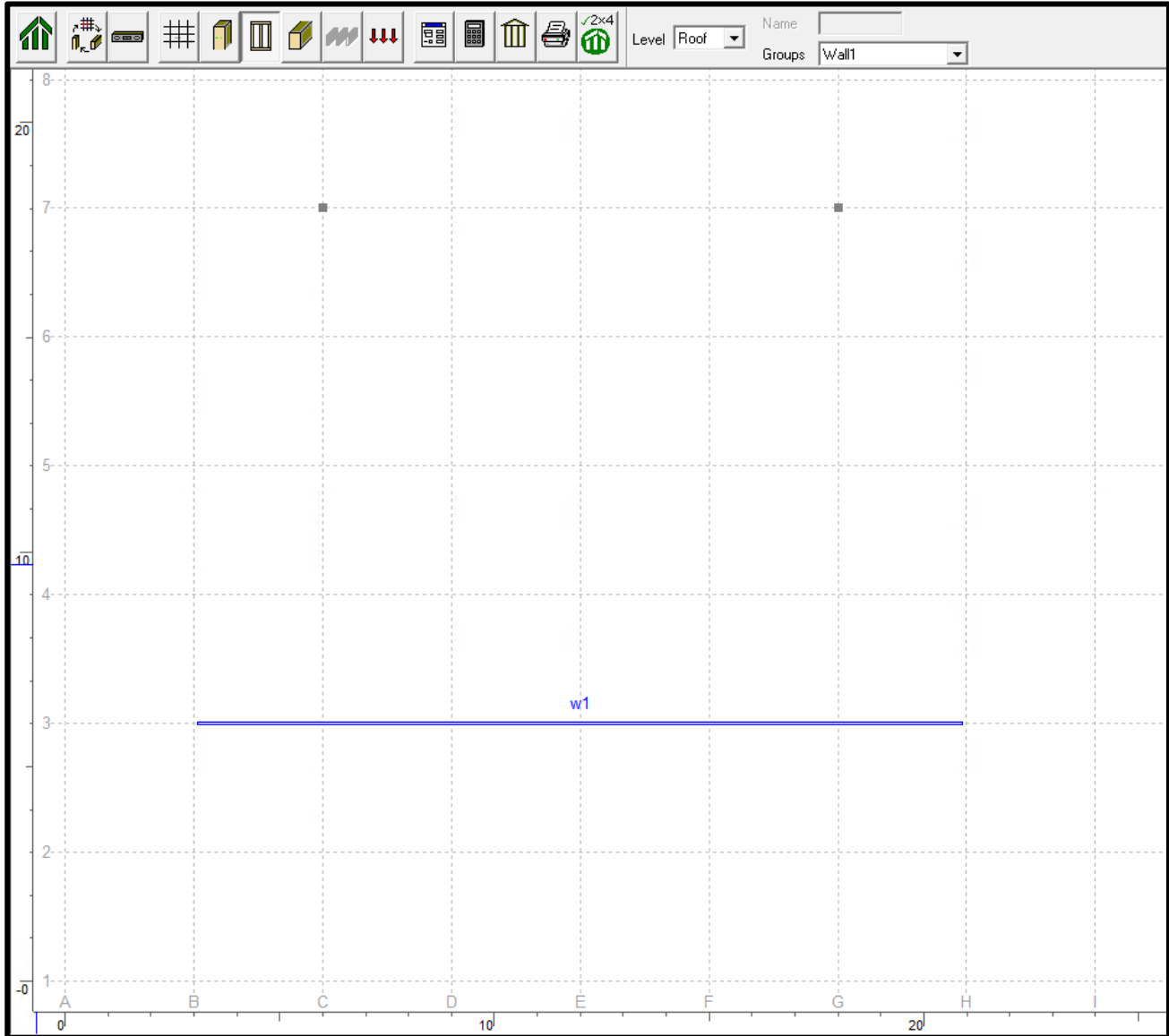


Figure 5: *Sizer: Concept Mode – Tutorial 6 – Wall Location*

## 6.8 Beams

1. Click on the **Beam View** buttons on the toolbar.
2. Click on **B-7** and drag the wall to **H-7**.

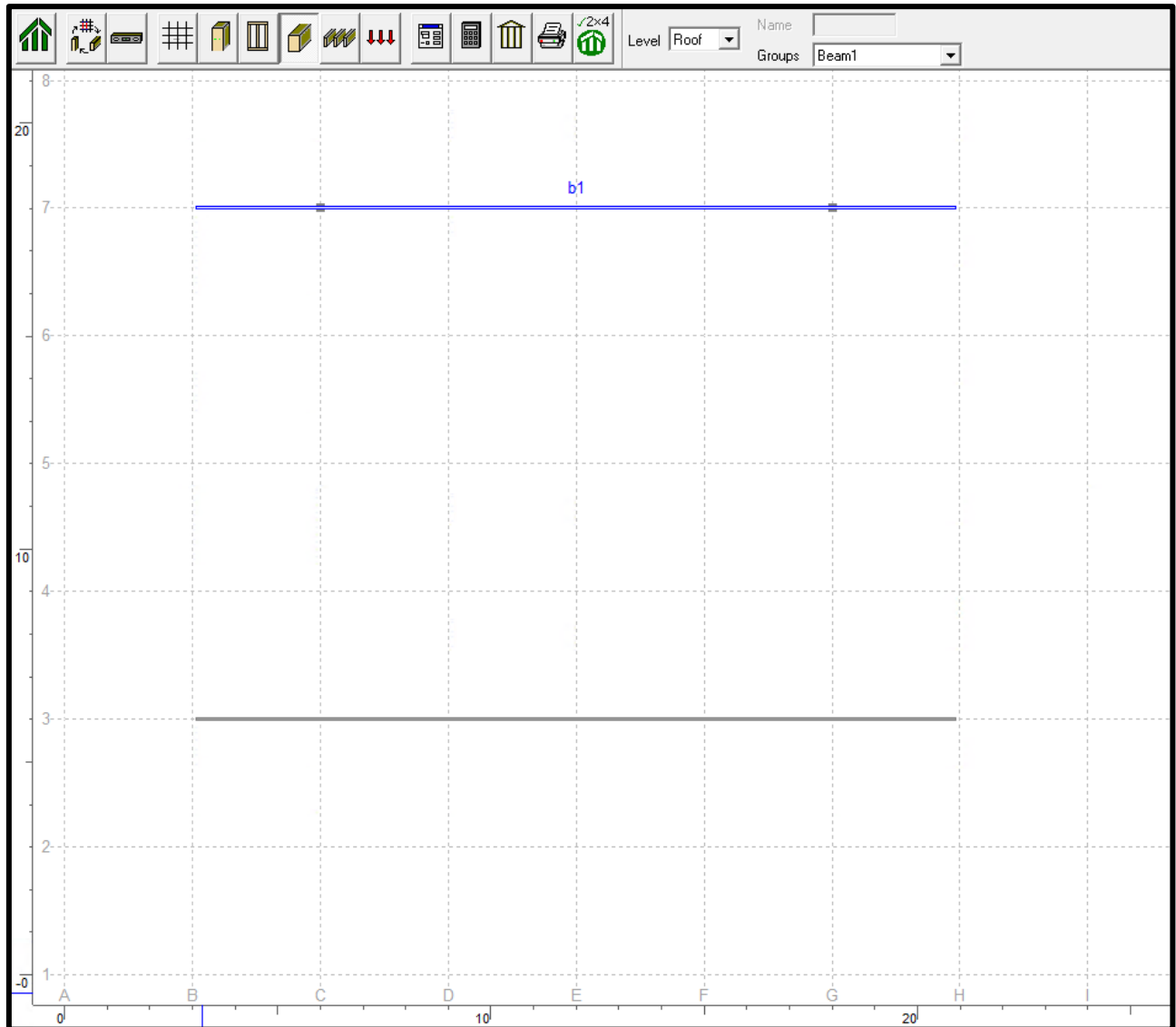


Figure 6: Sizer: Concept Mode – Tutorial 6 – Beam Location

## 6.9 Joists

1. Click on the **Joist View** button on the toolbar.
2. Create a joist area by clicking on gridpoints **B-8**, **H-8**, **H-2**, and **B-2**.

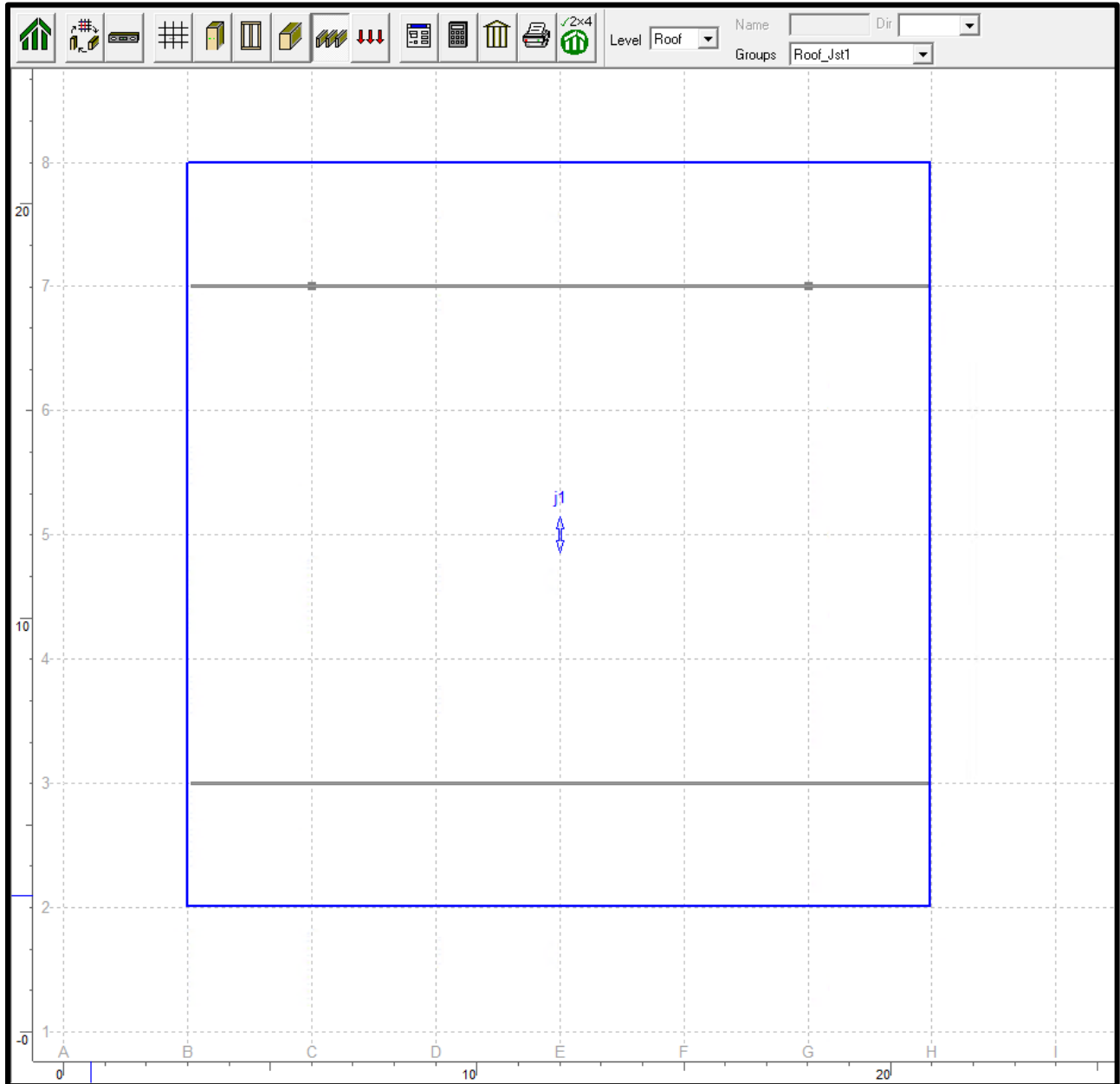


Figure 7: Sizer: Concept Mode – Tutorial 6 – Joist Locations (North-South Direction)

## 6.10 Modify Gridline Elevation

1. Click on **Grid View** button on the toolbar.
2. Select gridpoint **C-7** (gridlines **C** and **7** should be selected and appear in red).
3. In the **Gridpoint Elevation** field enter a value of **14 (ft)**.
4. Press the **Enter** key on the keyboard.
5. Click **OK** in the warning window.
6. Repeat steps 2-5 for gridpoint **G-7**.

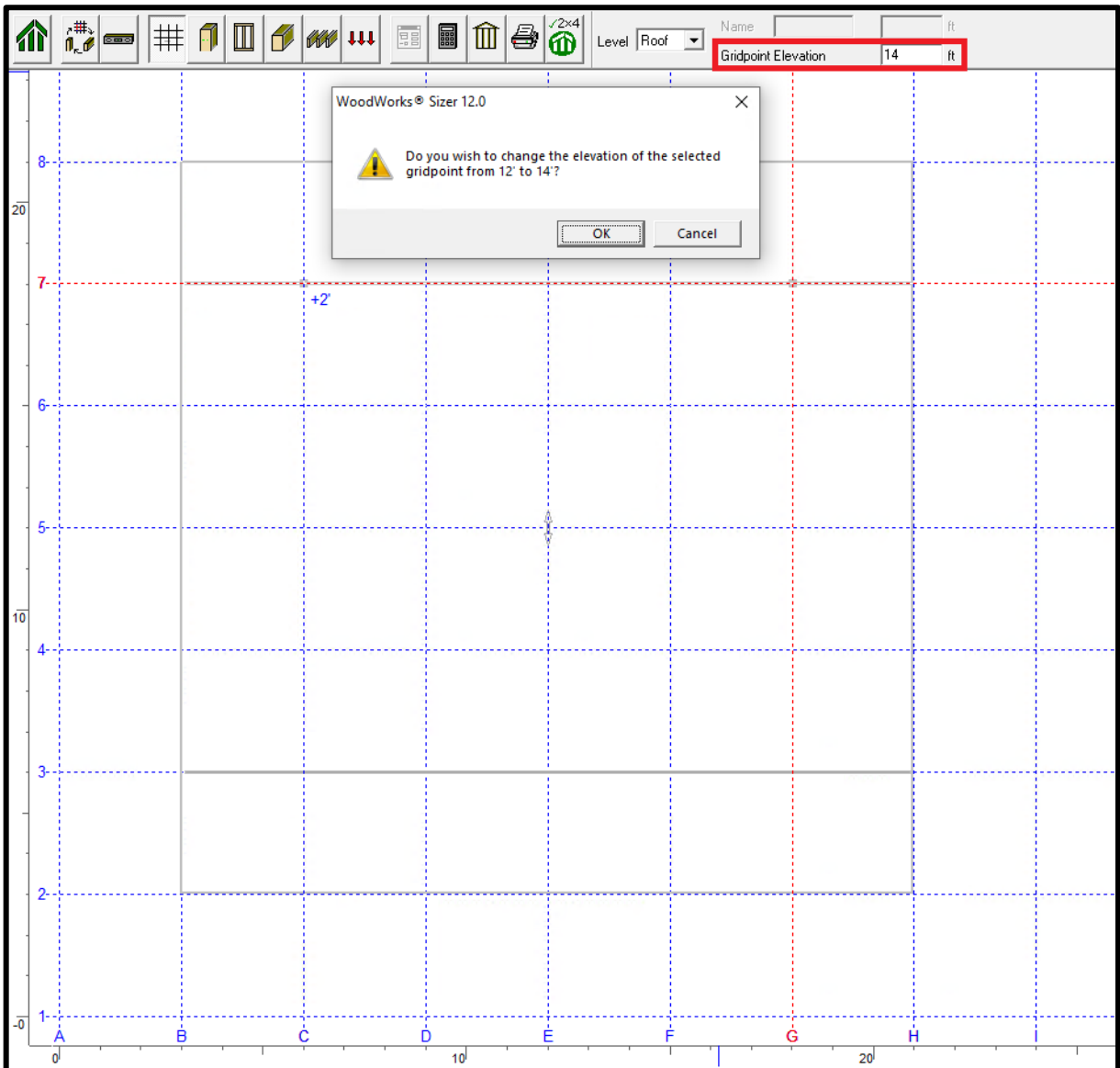


Figure 8: Sizer: Concept Mode – Tutorial 6 – Adjusting Gridline Elevation



## 6.11 Loads

1. Click **Loads View** button on the toolbar.
2. Select **Dead** from the **Type** drop-down list located on the toolbar.
3. Specify **Area** from the **Distribution** drop-down list located on the toolbar.
4. In the **Magnitude** field enter a value of **30 (psf)**.
5. Create a load area by clicking on gridpoints **B-8**, **H-8**, **H-2**, and **B-2**.

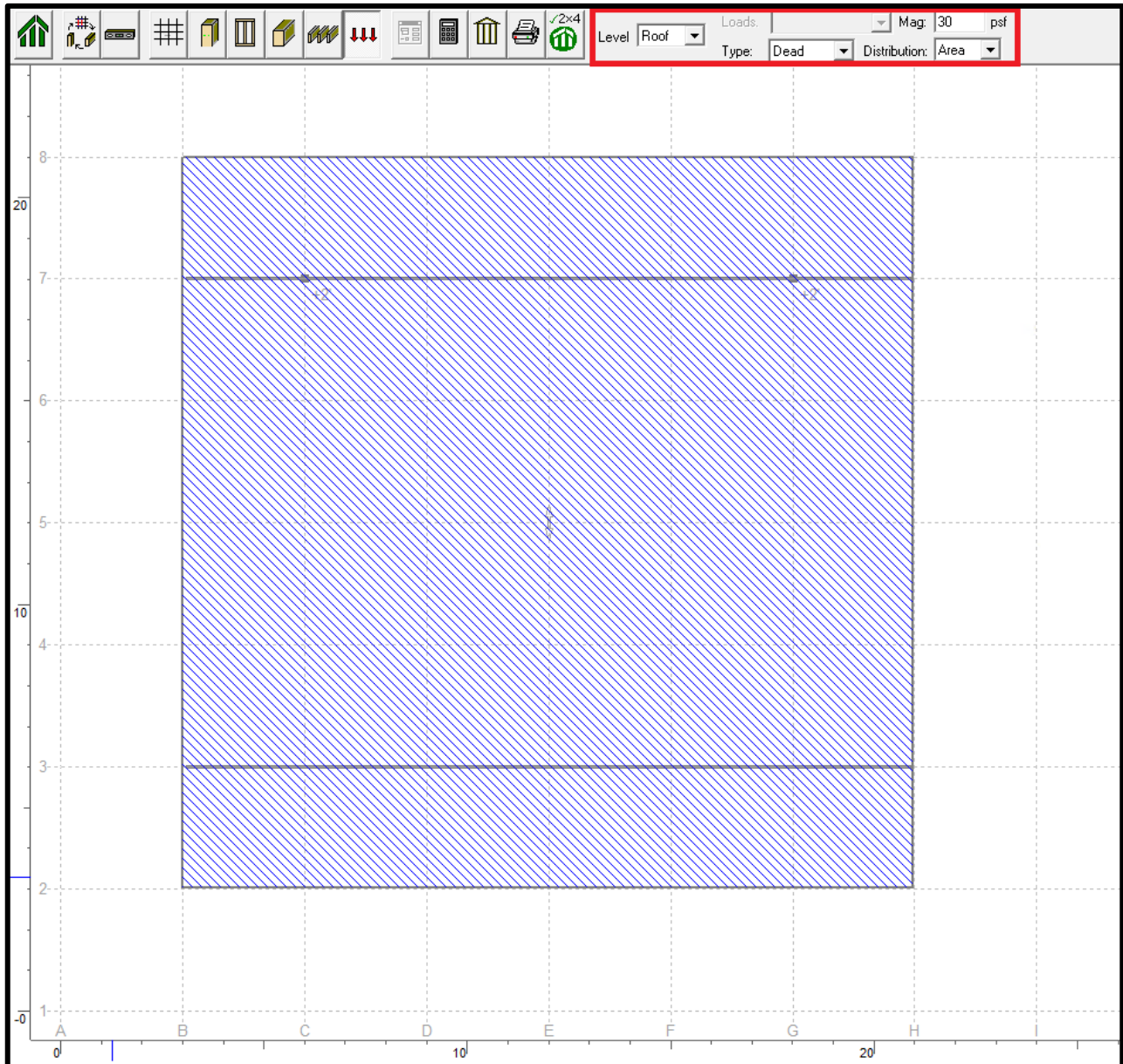


Figure 9: Sizer: Concept Mode – Tutorial 6 – Dead Load (Roof)

6. Repeat steps 2-5 for a **Snow** load type with **Magnitude of 45 (psf)** and a **Wind** load type with **Magnitude of -20 (psf)**.

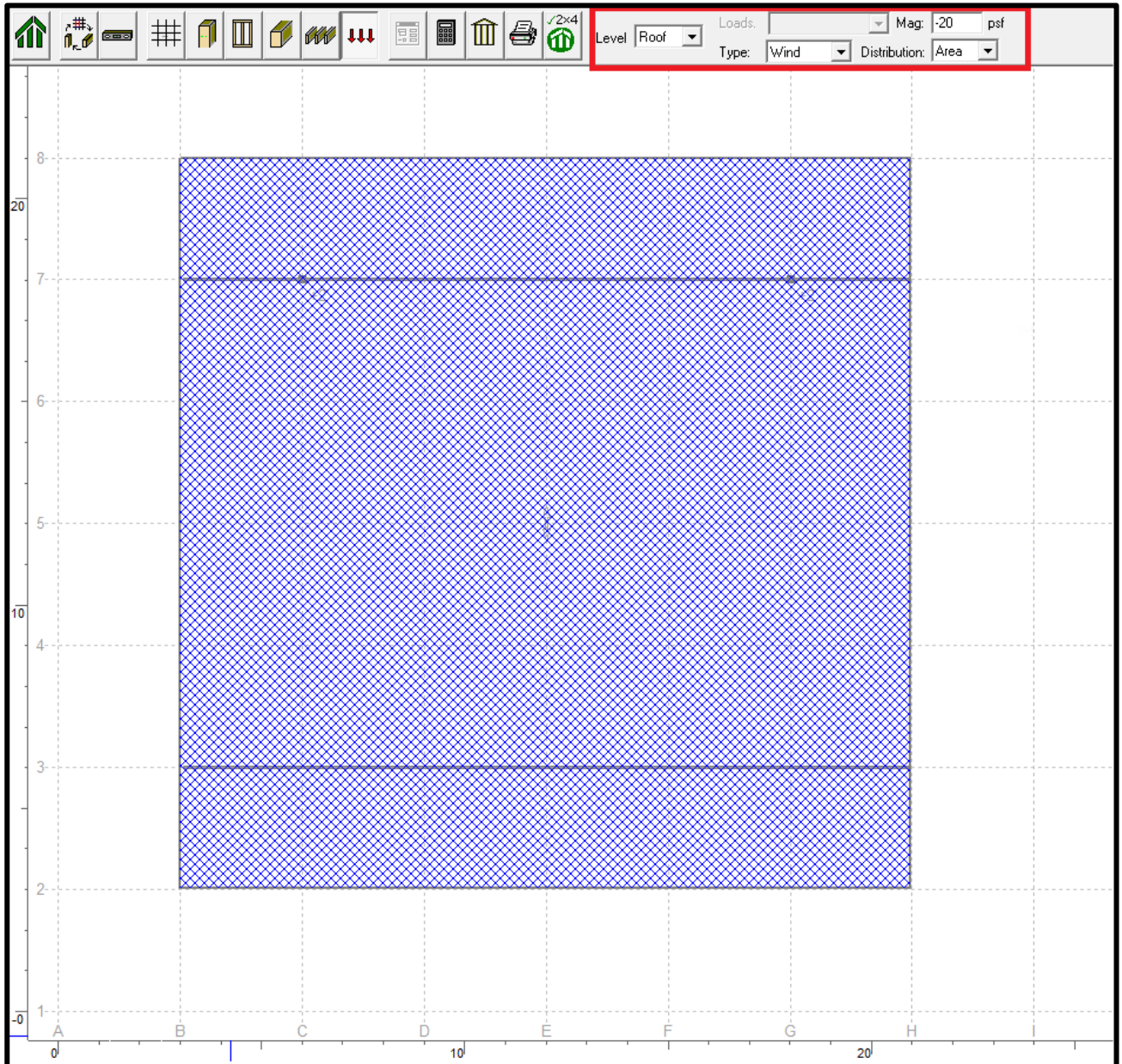


Figure 10: Sizer: Concept Mode – Tutorial 6 – Snow and Wind Load (Roof)

## 6.12 Design the Structure

1. Click the **Run** button on the toolbar.

*Sizer* will complete the design, and will automatically generate the **Results by Group**, **Results by Member**, **Material List**, and **Reactions at Base**.

Note: To view the result pages, click on the **View** tab on the menu bar.

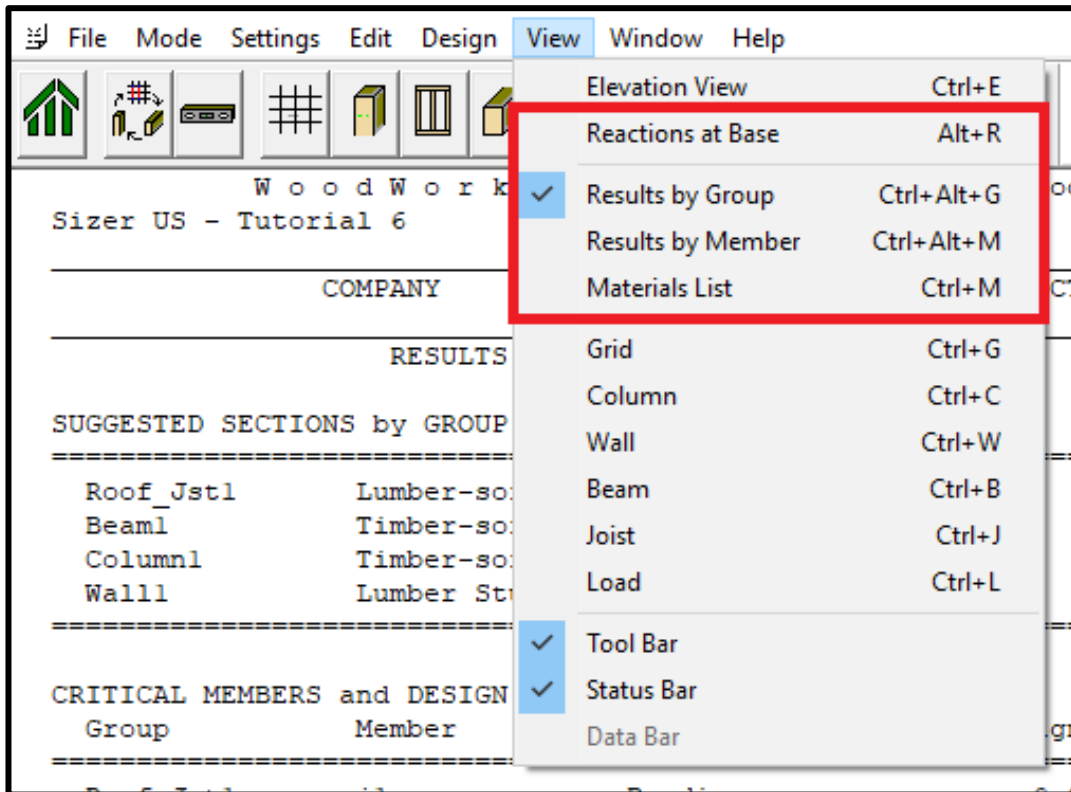


Figure 11: Sizer: Concept Mode – Tutorial 6 – View Results

### 6.13 View Results

The **Results by Group** will appear and summarizes the suggested sections, for each floor, for each group specified in the project file (e.g., columns, walls, beams, and joists). Critical members and design criteria are also shown.

Click [here](#) to download a PDF of the results by group

Click [here](#) to download a PDF of the results by member.

Click [here](#) to download a PDF of the material list.

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COMPANY | PROJECT

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RESULTS by GROUP - NDS 2015

SUGGESTED SECTIONS by GROUP for LEVEL 1 - ROOF

Group	Member	Material	Grade	Section
Roof_Jst1	Lumber-soft	D.Fir-L	No.3	3x10 @ 24
Beaml	Timber-soft	D.Fir-L	No.2	6x12
Column1	Timber-soft	D.Fir-L	No.2	6x6
Wall1	Lumber Stud	D.Fir-L	Stud	2x6 @ 24

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CRITICAL MEMBERS and DESIGN CRITERIA

Group	Member	Criterion	Analysis/Design Values
Roof_Jst1	jl	Bending	0.93
Beaml	bl	Bending	0.95
Column1	cl	Axial	0.61
Wall1	wl	Axial	0.34

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DESIGN NOTES:

- Please verify that the default deflection limits are appropriate for your application.
- DESIGN GROUP OCCURS ON MULTIPLE LEVELS: the lower level result is considered the final design and appears in the Materials List.
- ROOF LIVE LOAD: treated as a snow load with corresponding duration factor. Add an empty roof level to bypass this interpretation.
- BEARING: the designer is responsible for ensuring that adequate bearing is provided.
- Sawn lumber bending members shall be laterally supported according to the provisions of NDS Clause 4.4.1.
- FIRE RATING: Joists, wall studs, and multi-ply members are not rated for fire endurance.

Figure 12: Sizer: Concept Mode – Tutorial 6 – Results by Group

## 6.14 Transfer Member into Beam Mode

1. Click on **Beam View** button on the toolbar.
2. Select beam **b1**.
3. Click on the **Switch Modes** button on the toolbar.

Note: Sizer will automatically transfer the selected beam into beam mode.

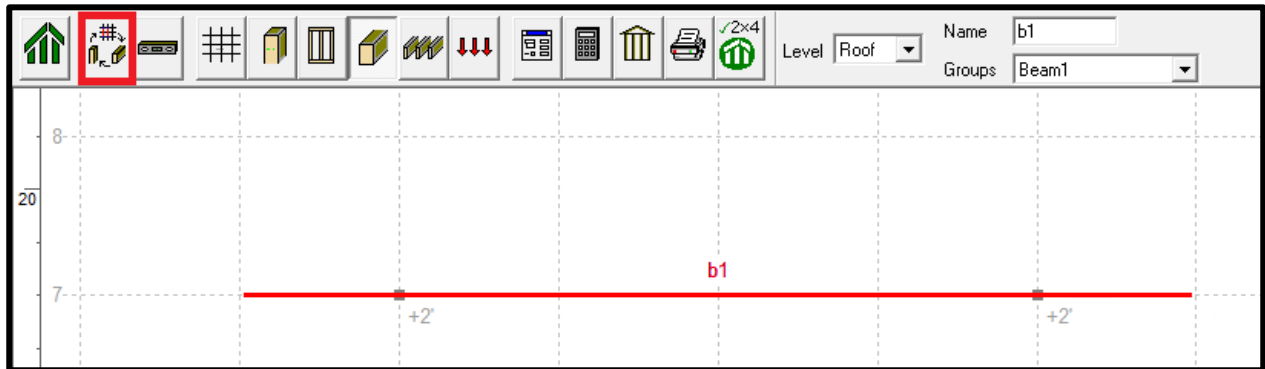


Figure 13: Sizer: Concept Mode – Tutorial 6 – Switch Modes Button

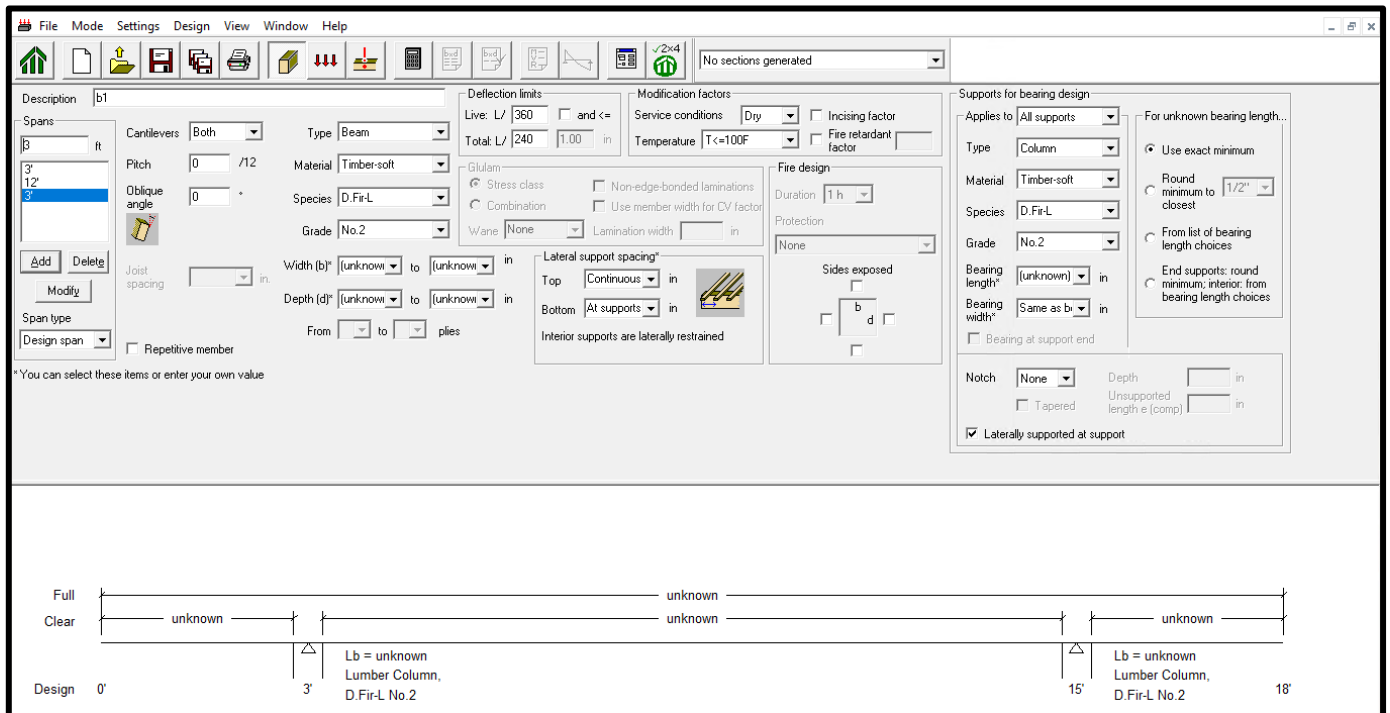


Figure 14: Sizer: Concept Mode – Tutorial 6 – Transferring Member into Beam Mode

## 6.15 Transfer Member into Column Mode

4. Click on **Column View** button on the toolbar.
5. Select beam **c1**.
6. Click on the **Switch Modes** button on the toolbar.

Note: Sizer will automatically transfer the selected column into column mode.

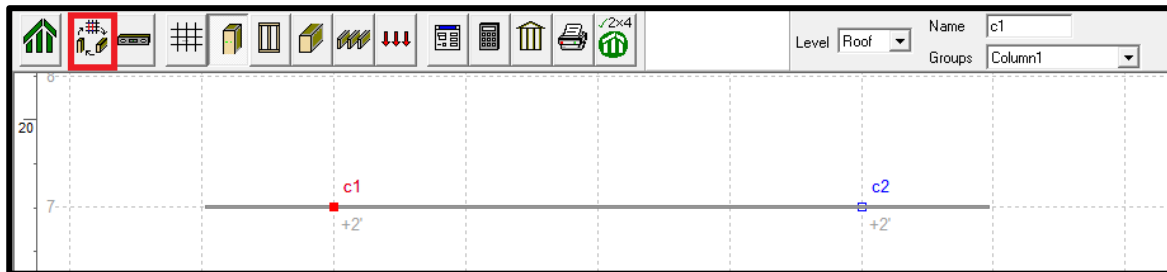


Figure 15: Sizer: Concept Mode – Tutorial 6 – Switch Modes Button

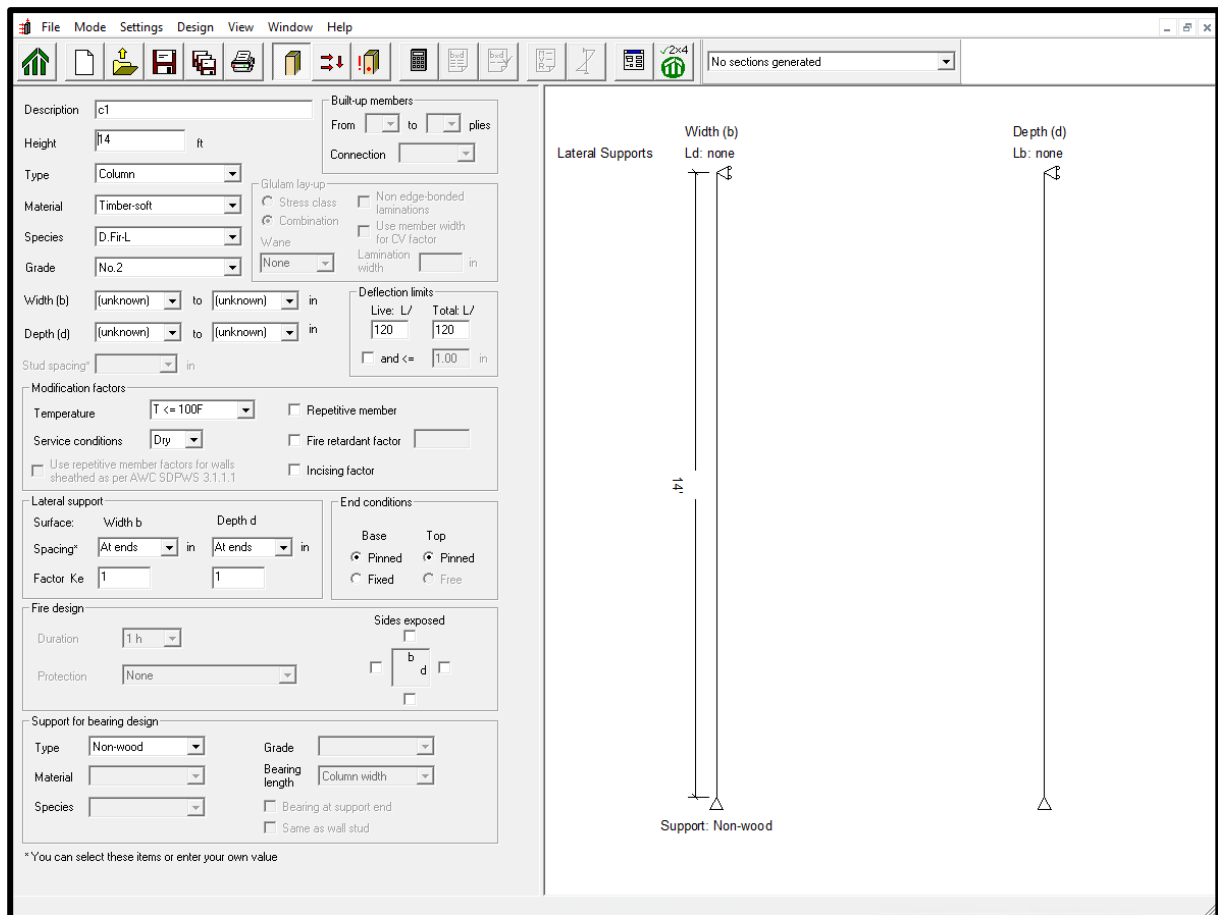


Figure 16: Sizer: Concept Mode – Tutorial 6 – Transferring Member into Column Mode