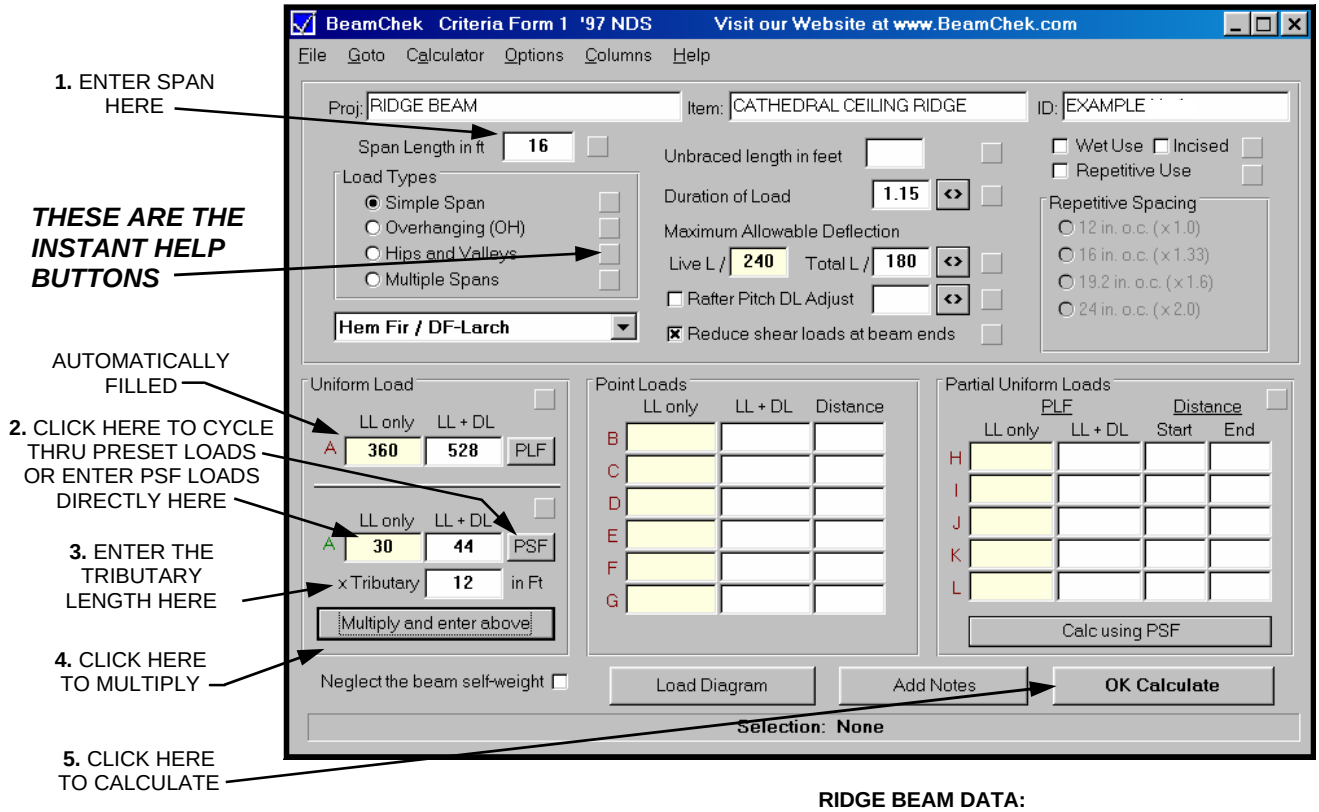
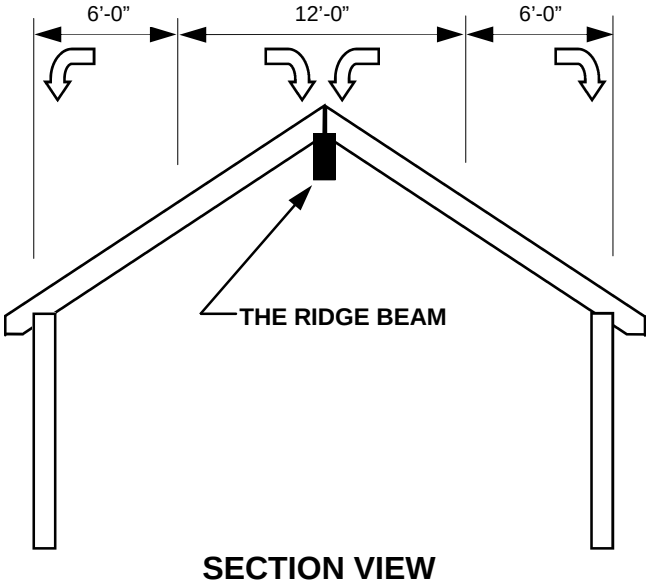
☑ BEAMCHEK™ EXAMPLES

NOTE: The BeamChek interface is often updated and buttons are occasionally relocated. The functions remain the same, but it may be necessary for you adjust between these examples and the current BeamChek interface.

RIDGE BEAM SIMPLE SPAN — EXAMPLE No. 1

ACTUAL MATERIALS, LOADS AND CODE REQUIREMENTS MAY VARY.
THIS IS AN ILLUSTRATION ONLY.





SECTION VIEW

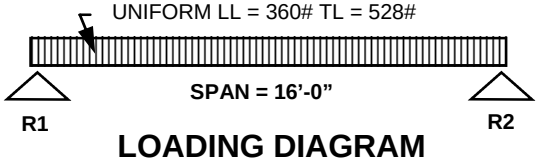
RIDGE BEAM DATA:

LIVE LOAD = 30 PSF
DEAD LOAD = 14 PSF
(DEAD LOAD MANUALLY INCREASED FOR ROOF SLOPE)
TOTAL LOAD = 44 PSF

SPAN IS 16'-0" TO CENTER OF POSTS SUPPORTING RIDGE BEAM.

DURATION OF LOAD IS 1.15 (SNOW)

TRIBUTARY LENGTH = 12'-0"
(EXCLUDE OUTER 6 FT OF RAFTERS WHICH BEAR ON OUTSIDE WALLS)



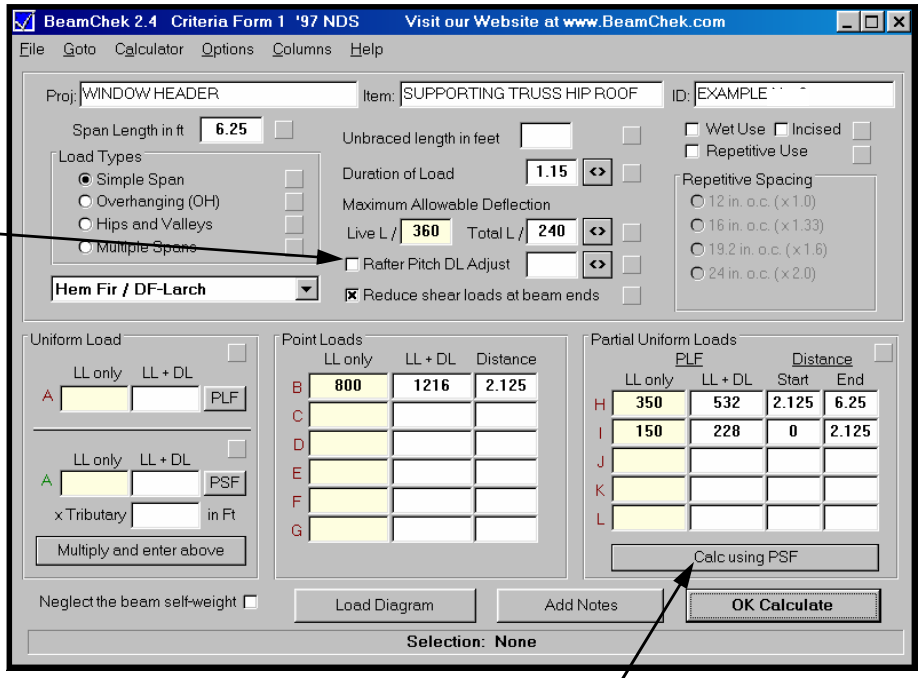
LOADING DIAGRAM

WINDOW HEADER EXAMPLE SIMPLE SPAN — EXAMPLE No. 2

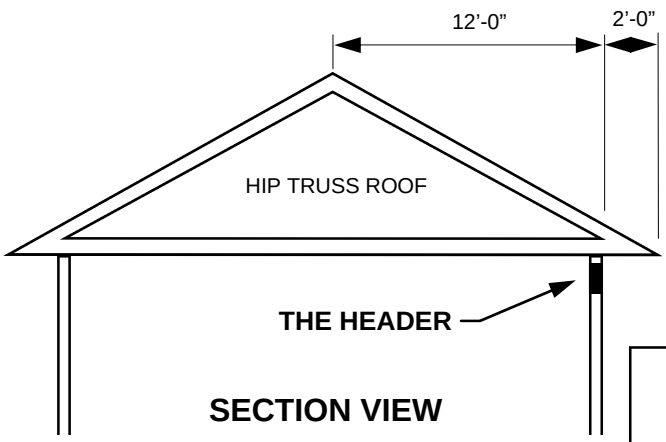
ACTUAL MATERIALS, LOADS AND CODE REQUIREMENTS MAY VARY. THIS IS AN ILLUSTRATION ONLY.

NOTE: SLOPE ADJUSTMENT WAS NOT USED IN THIS CASE. INSTEAD, THE DEAD LOAD WAS MANUALLY INCREASED TO ADJUST FOR THE ROOF SLOPE (ADDED TO THE LOADS BEFORE THEY WERE ENTERED).

THE AUTOMATIC RAFTER SLOPE DEAD LOAD ADJUSTMENT WOULD HAVE MULTIPLIED THE LOADS BY ADJUSTING THE ACTUAL LENGTH OF THE SPAN. IN THIS CASE, THE SPAN IS THE HEADER LENGTH, NOT THE LENGTH OF THE RAFTER.



Click here for window to multiply Partial Uniform Loads in PSF x tributary length



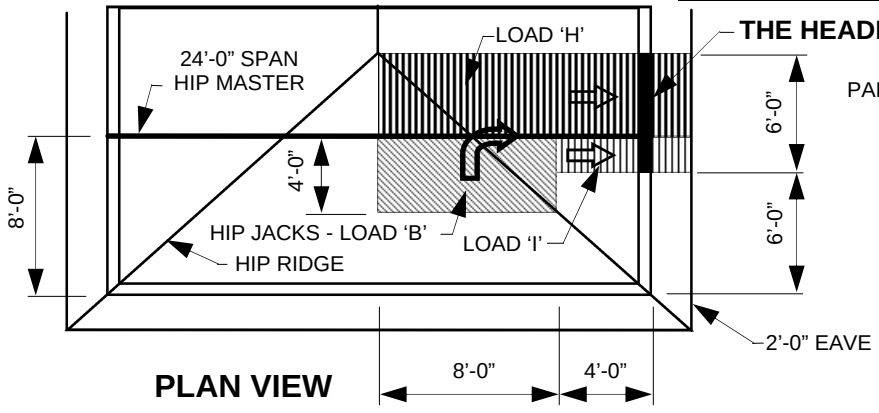
HEADER LOCATION: SUPPORTING HIP TRUSS ROOF LOAD AND UNDER HIP MASTER CONCENTRATED LOAD.

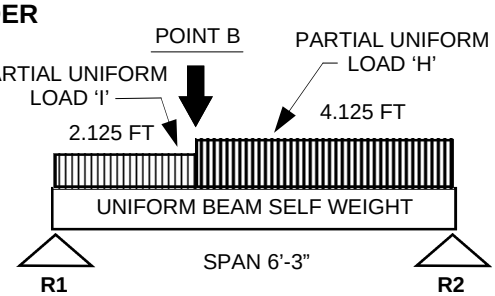
HEADER SPAN = 6'-3" (6"-0" ROUGH OPENING PLUS 1-1/2" AT EACH END FOR MINIMUM BEARING.)

LOAD DATA: LIVE = 25 PSF, DEAD = 13 PSF, TOTAL = 38 PSF
DURATION OF LOAD = 1.15 (SNOW)

LOAD H TRIBUTARY LENGTH = 12 FT + 2 FT EAVE = 14 FT
LOAD I TRIBUTARY LENGTH = 4 FT + 2 FT EAVE = 6 FT
LOAD B AREA = 8' x 4' = 32 SQ FT X 25# = 800# LIVE LD POINT
32 SQ FT X 38# = 1216# TOTAL LD POINT

APPROXIMATE LOAD CONDITIONS BASED ON A TRUSS CONFIGURATION THAT CAN VARY. EXAMPLE IS TO ILLUSTRATE THE USE OF PARTIAL UNIFORM LOADS. MORE ACCURACY COULD BE ACHIEVED BY TAKING EACH TRUSS AS AN INDIVIDUAL PT LOAD.

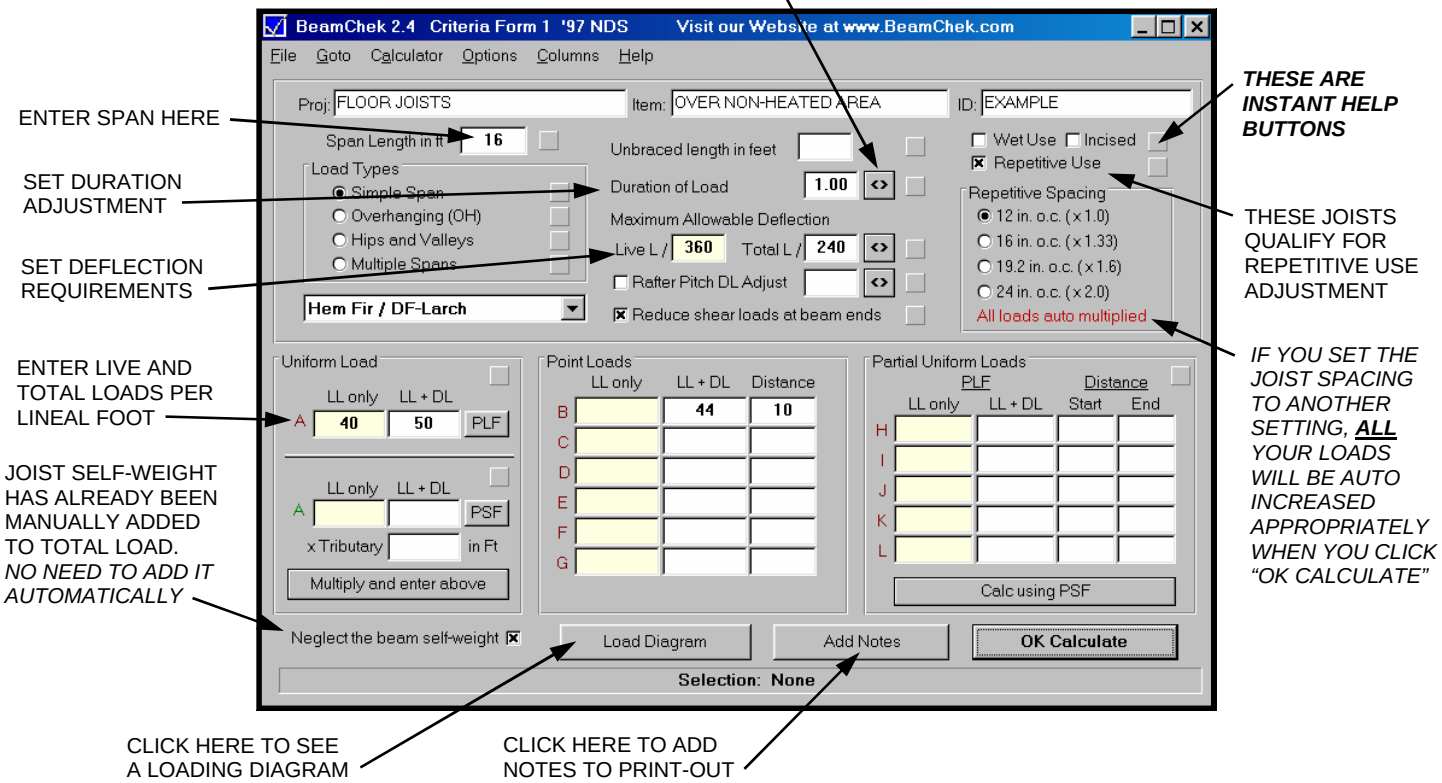




FLOOR JOIST EXAMPLE SIMPLE SPAN — EXAMPLE No. 3

ACTUAL MATERIALS, LOADS AND CODE REQUIREMENTS MAY VARY. THIS IS AN ILLUSTRATION ONLY.

QUICKLY CYCLE THRU TYPICAL SETTINGS BY CLICKING HERE



ENTER SPAN HERE

SET DURATION ADJUSTMENT

SET DEFLECTION REQUIREMENTS

ENTER LIVE AND TOTAL LOADS PER LINEAL FOOT

JOIST SELF-WEIGHT HAS ALREADY BEEN MANUALLY ADDED TO TOTAL LOAD. *NO NEED TO ADD IT AUTOMATICALLY*

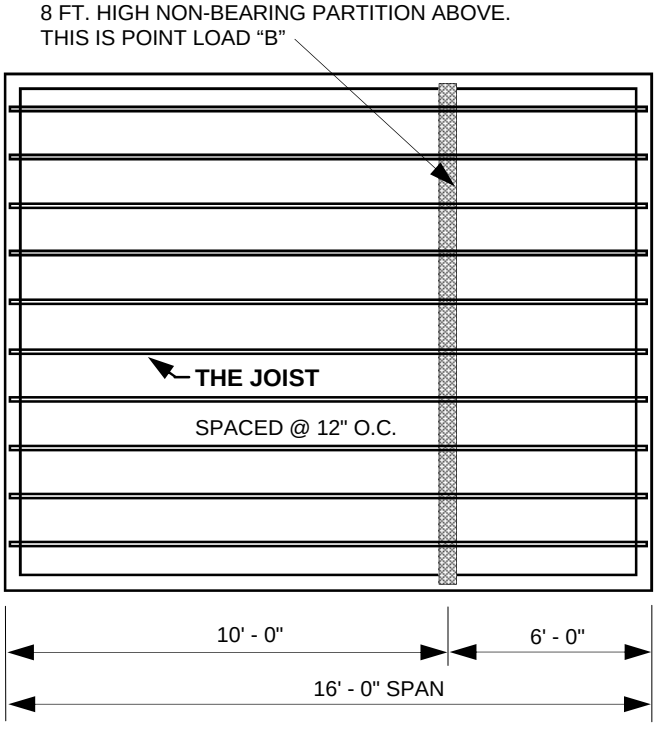
THESE ARE INSTANT HELP BUTTONS

THESE JOISTS QUALIFY FOR REPETITIVE USE ADJUSTMENT

*IF YOU SET THE JOIST SPACING TO ANOTHER SETTING, **ALL** YOUR LOADS WILL BE AUTO INCREASED APPROPRIATELY WHEN YOU CLICK "OK CALCULATE"*

CLICK HERE TO SEE A LOADING DIAGRAM

CLICK HERE TO ADD NOTES TO PRINT-OUT



PLAN VIEW

JOIST LOCATION:
FLOOR OVER NON-HEATED SPACE.
ASSUME JOIST SPACING OF 12' O.C.

LOAD DATA: LIVE = 40 PSF DEAD = 10 PSF TOTAL = 50 PSF

FLOOR DEAD LOAD:

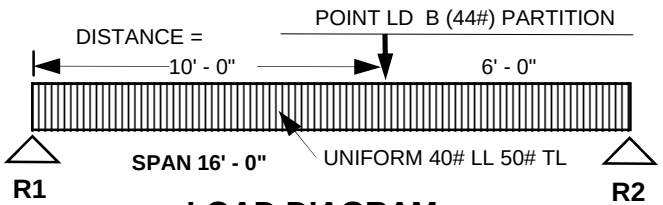
3/4" PLYWD SUBFLOOR	2.2 PSF
JOISTS	3.8 *APPROXIMATE*
6" INSULATION BATTS	1.5
5/8" WALLBOARD	2.5
TOTAL	10.0 PSF

NOTE: JOIST SELF-WEIGHT IS ALREADY INCLUDED.

PARTITION DEAD LOAD:

2X4S @ 16" O.C.	1.5 PSF
1/2" WALLBOARD	2.0
1/2" WALLBOARD	2.0
TOTAL	5.5 PSF

PARTITION HEIGHT:
8 FT X 5.5 PSF = 44 PLF THIS IS POINT LOAD 'B'
(44# DEAD LOAD + 0# LIVE LOAD = 44# TOTAL POINT LOAD)



LOAD DIAGRAM

RAFTER EXAMPLE SIMPLE SPAN EXAMPLE No. 4

ACTUAL MATERIALS, LOADS AND CODE REQUIREMENTS MAY VARY. THIS IS AN ILLUSTRATION ONLY.

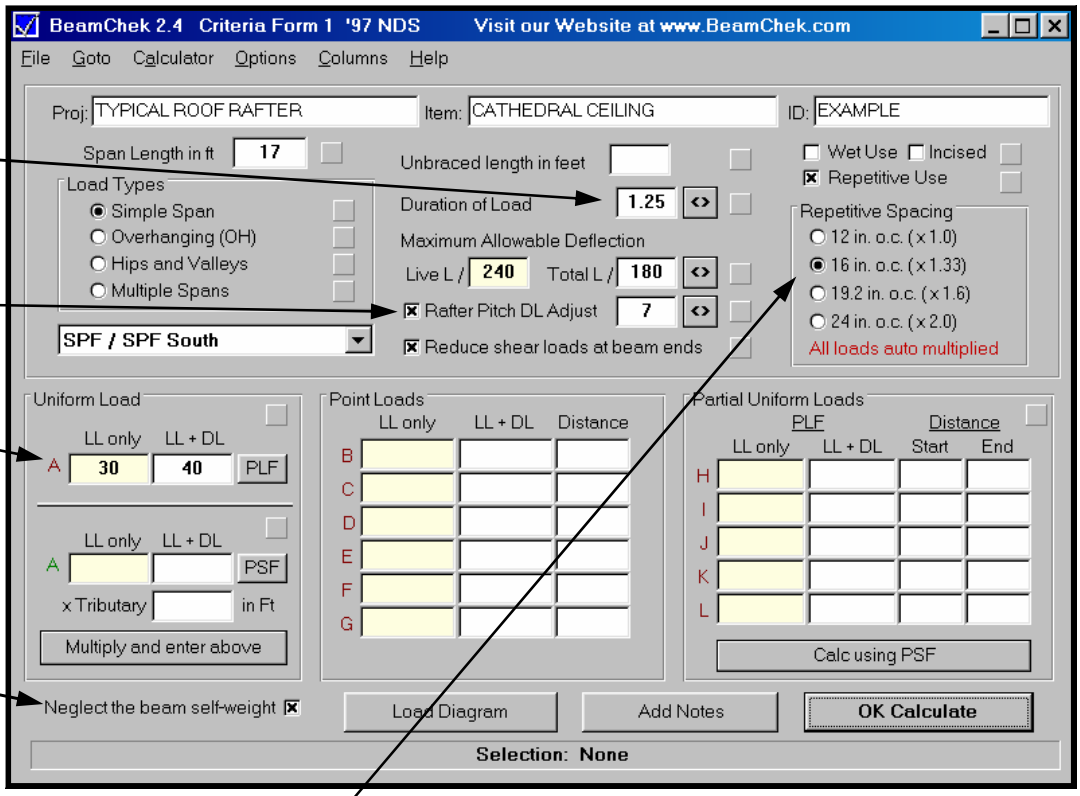
NO SNOW, DURATION OF LOAD SET FOR 7 DAY DURATION

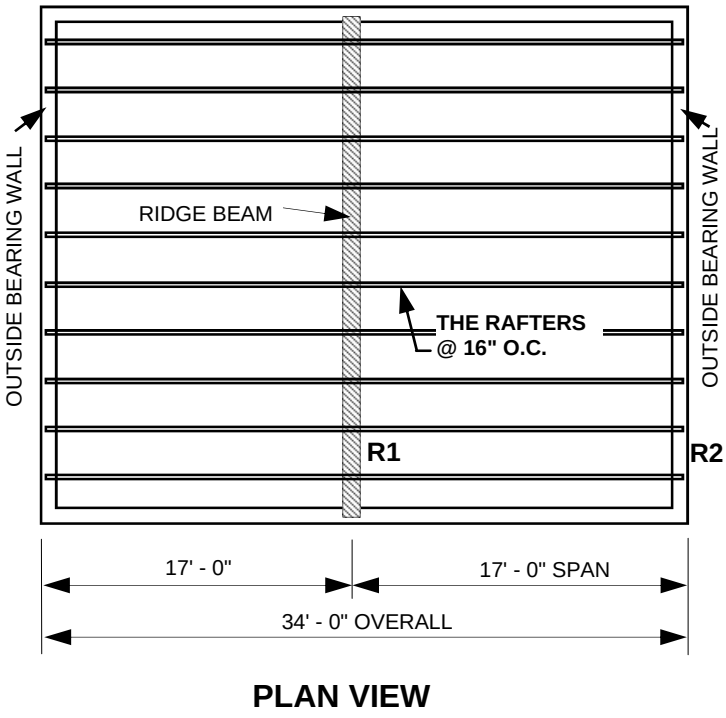
DEAD LOAD WILL BE AUTOMATICALLY INCREASED FOR ACTUAL LENGTH OF RAFTER AT 7:12 PITCH

ENTER UNIFORM LOADS HERE

BEAM SELF-WEIGHT HAS BEEN INCLUDED IN THE UNIFORM LOAD. NO NEED TO DUPLICATE IT

QUALIFIES FOR REP USE, TEST AT 16" OC SPACING (ALL LOADS WILL BE AUTO MULTIPLIED BY 1.33)





PLAN VIEW

TYPICAL ROOF RAFTER:
CATHEDRAL CEILING
LIVE LOAD = 30 PSF
DEAD LOAD = 10 PSF
TOTAL LOAD = 40 PSF

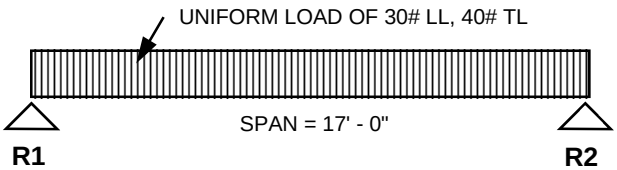
SPAN IS 17'-0" HORIZONTAL
EAVE OVERHANG: NONE

ROOF PITCH IS 7:12 (7 INCH RISE PER FT)
BEAMCHEK WILL AUTOMATICALLY ADD ADDITIONAL DEAD LOAD FOR ADDED LENGTH OF RAFTER DUE TO SLOPE.

ASSUMED RAFTER SPACING IS 16" OC
BEAMCHEK WILL AUTOMATICALLY MULTIPLY ALL THE LOADS BY 1.333 FOR THE 16" SPACING.

DURATION OF LOAD IS 1.25 (NO SNOW)

R1 IS THE REACTION AT THE RIDGE BEAM
R2 IS THE REACTION AT THE OUTSIDE BEARING WALL

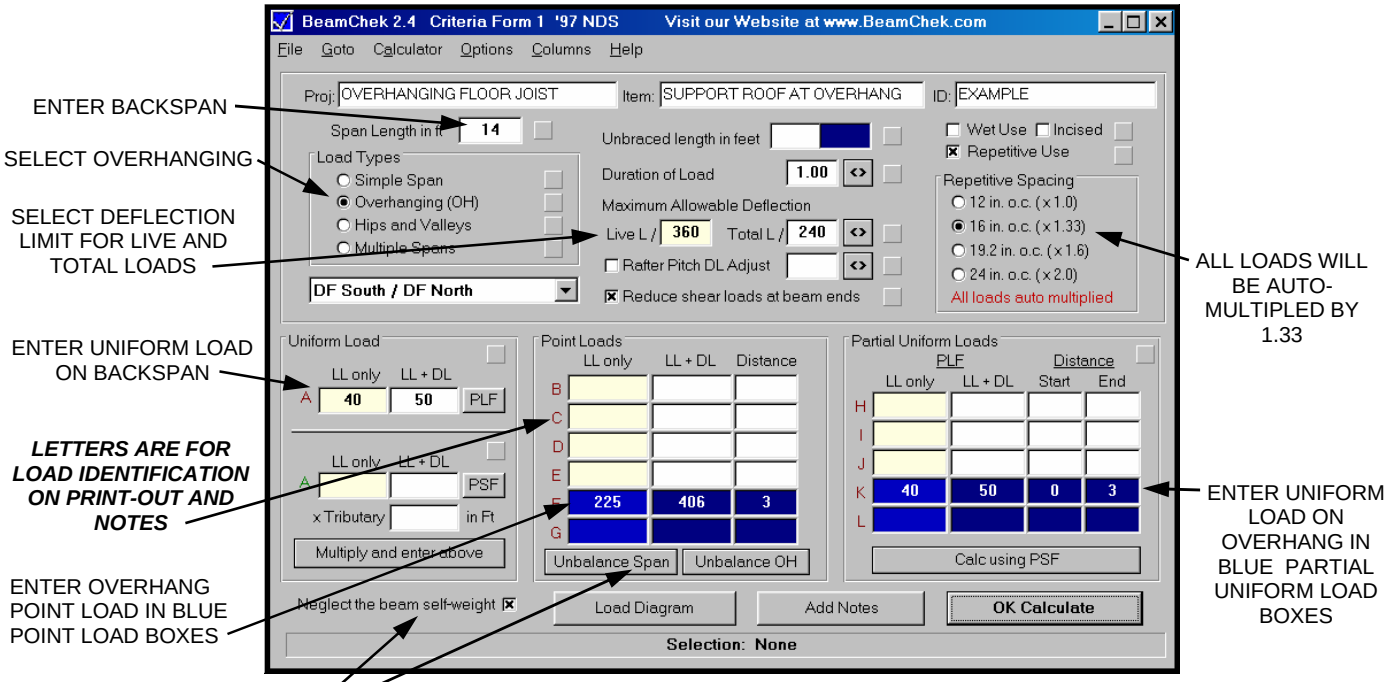


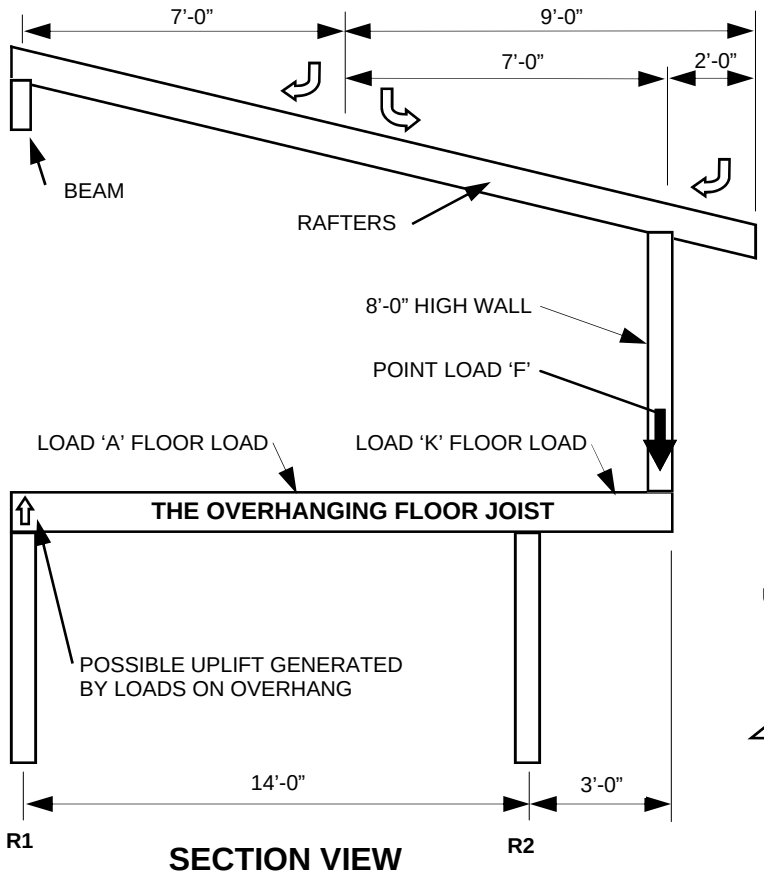
DIAGRAM

OVERHANGING JOIST EXAMPLE

EXAMPLE No. 5

ACTUAL MATERIALS, LOADS AND CODE REQUIREMENTS MAY VARY. THIS IS AN ILLUSTRATION ONLY.





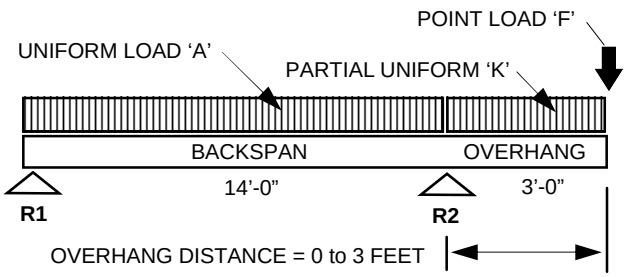
SECTION VIEW

OVERHANGING FLOOR JOIST DATA:
FLOOR PSF: LIVE = 40, DEAD = 10, TOTAL = 50
BACKSPAN = 14 FT, OVERHANG = 3 FT

ROOF TRIBUTARY LENGTH = 9 FT
ROOF PSF LIVE = 25, DEAD = 13, TOTAL = 38

LOAD F ROOF POINT LOAD
LIVE 9 FT X 25 = **225 LBS LIVE LOAD**
TOTAL 9 FT X 38 = 342 LBS
WALL DEAD LOAD = 8 PSF X 8 FT = 64 LBS
ROOF POINT LOAD TOTAL: 342 + 64 = **406 LBS TOTAL**
ASSUMED JOIST SPACING AT 16" O.C.
(LOADS WILL BE AUTO-MULTIPLIED BY 1.33)

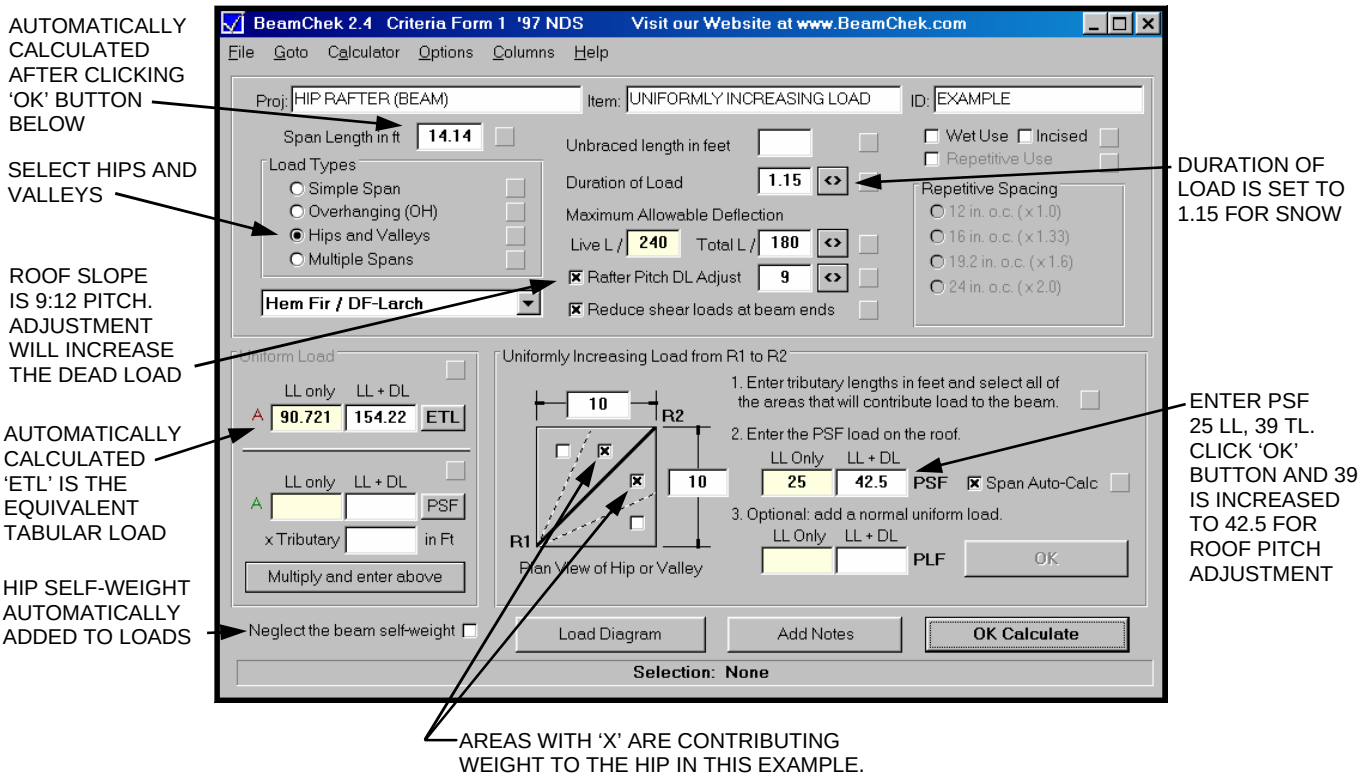
TEST UNBALANCED LOADS: CALCULATE A JOIST WITH ALL LOADS FIRST, THEN REMOVE THE LIVE LOADS FROM BACKSPAN ***(CHECK FOR UPLIFT AT R1),*** THEN REMOVE ONLY LIVE LOADS FROM OVERHANG AND CHECK AGAIN. YOU ARE LOOKING FOR THE MOST RESTRICTIVE LOAD COMBINATION OF LOADS.

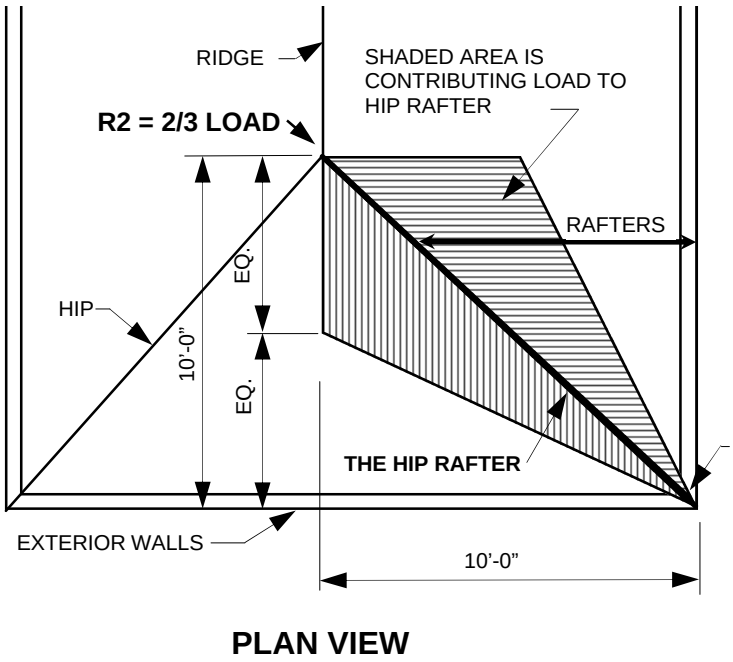


LOAD DIAGRAM

HIP RAFTER UNIFORMLY INCREASING LOAD EXAMPLE No. 6

ACTUAL MATERIALS, LOADS AND CODE REQUIREMENTS MAY VARY. THIS IS AN ILLUSTRATION ONLY.





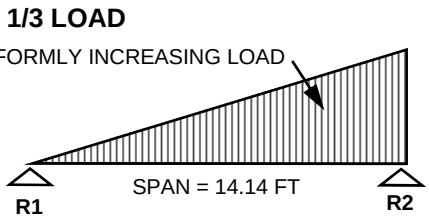
PLAN VIEW

HIP RAFTER DATA:
LIVE = 25 PSF (SNOW), DEAD = 14 PSF
TOTAL = 39 PSF

ROOF PITCH = 9:12 (9 INCH RISE PER FOOT)
BEAMCHEK WILL AUTOMATICALLY ADJUST THE DEAD LOAD FOR SLOPING INCREASE IN LENGTH OF THE RAFTERS.

SPAN: BEAMCHEK WILL AUTOMATICALLY CALCULATE THE HORIZONTAL LENGTH OF THE HIP.

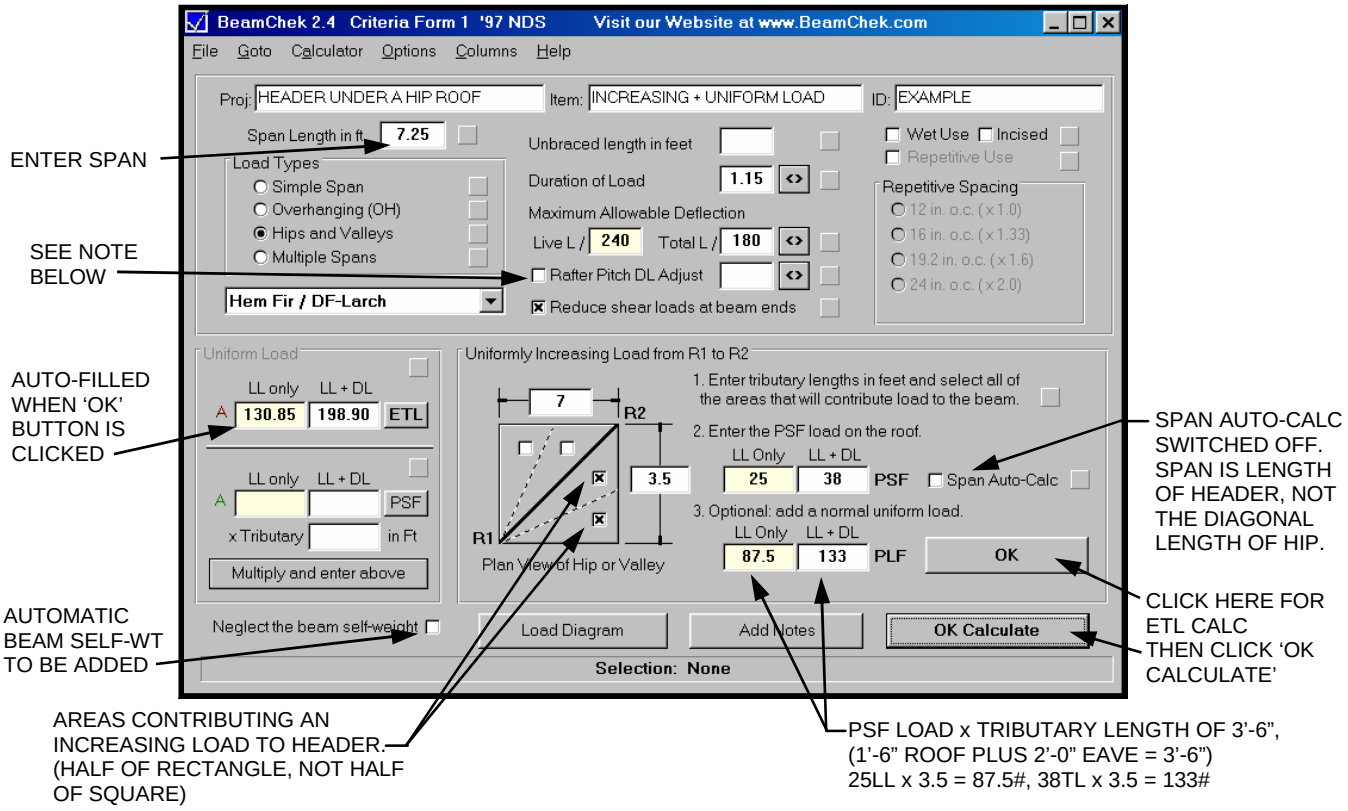
LOADS ARE ENTERED IN **PSF**, BEAMCHEK WILL AUTOMATICALLY CALCULATE THE AREA CONTRIBUTING LOAD TO THE HIP RAFTER.



DIAGRAM

HEADER BELOW HIP INCREASING LOAD + UNIFORM LOAD **EXAMPLE No. 7**

ACTUAL MATERIALS, LOADS AND CODE REQUIREMENTS MAY VARY. THIS IS AN ILLUSTRATION ONLY.



ENTER SPAN

SEE NOTE BELOW

AUTO-FILLED WHEN 'OK' BUTTON IS CLICKED

AUTOMATIC BEAM SELF-WT TO BE ADDED

AREAS CONTRIBUTING AN INCREASING LOAD TO HEADER. (HALF OF RECTANGLE, NOT HALF OF SQUARE)

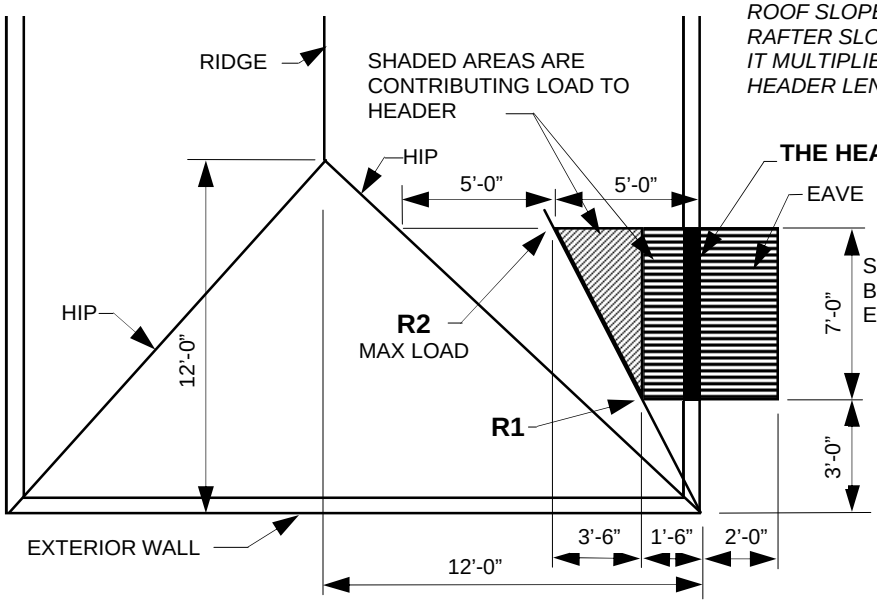
SPAN AUTO-CALC SWITCHED OFF. SPAN IS LENGTH OF HEADER, NOT THE DIAGONAL LENGTH OF HIP.

CLICK HERE FOR ETL CALC THEN CLICK 'OK CALCULATE'

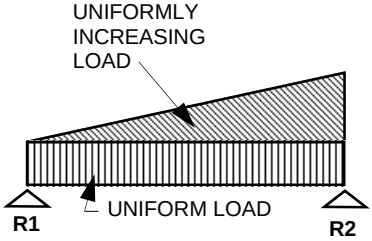
PSF LOAD x TRIBUTARY LENGTH OF 3'-6", (1'-6" ROOF PLUS 2'-0" EAVE = 3'-6") 25LL x 3.5 = 87.5#, 38TL x 3.5 = 133#

ROOF LOAD DATA:
LIVE = 25 PSF (SNOW), DEAD = 13 PSF
TOTAL LOAD = 38 PSF

NOTE: DEAD LOAD WAS MANUALLY INCREASED FOR ROOF SLOPE ADJUSTMENT TO DEAD LOAD. AUTOMATIC RAFTER SLOPE ADJUSTMENT DOES NOT APPLY BECAUSE IT MULTIPLIES BY AN ADJUSTED SPAN WHICH IS THE HEADER LENGTH, NOT THE TRIBUTARY LENGTH!



PLAN VIEW



LOAD DIAGRAM