Title Block Line 1
You can change this area using the "Settings" menu item and then using the "Printing & Title Block" selection.
Title Block Line 6

Project Title:
Engineer:
Project Descr:

Project ID:

Printed: 7 SEP 2016, 11:53AM

Wood Beam

File = z:\-CALCU~1\6700\6704\6704.ec6
ENERCALC, INC. 1983-2016, Build:6.16.6.7, Ver:6.16.6.7

Lic. # : KW-06003986 | Licensee : mike mahmoudian & associates

Description : CEILING BEAM, #2

CODE REFERENCES

Calculations per NDS 2012, IBC 2012, CBC 2013, ASCE 7-10
Load Combination Set : ASCE 7-10

Material Properties

Analysis Method : Allowable Stress Design
Load Combination ASCE 7-10

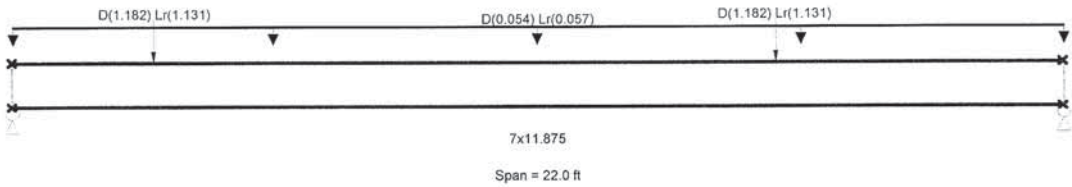
Wood Species : Trus Joist
Wood Grade : Parallam PSL 2.0E

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling

Fb - Tension	2,900.0 psi
Fb - Compr	2,900.0 psi
Fc - Prll	2,900.0 psi
Fc - Perp	750.0 psi
Fv	290.0 psi
Ft	2,025.0 psi

E : Modulus of Elasticity

Ebend- xx	2,000.0 ksi
Eminbend - xx	1,016.54 ksi
Density	45.050 pcf



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loads
Uniform Load : D = 0.0180, Lr = 0.0190 ksf, Tributary Width = 3.0 ft
Point Load : D = 1.182, Lr = 1.131 k @ 3.0 ft, (FROM BM 1)
Point Load : D = 1.182, Lr = 1.131 k @ 16.0 ft, (FROM BM 1)

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.384 : 1	Maximum Shear Stress Ratio	=	0.199 : 1
Section used for this span		**7x11.875**	Section used for this span		**7x11.875**
fb : Actual	=	1,390.27 psi	fv : Actual	=	72.24 psi
FB : Allowable	=	3,625.00 psi	Fv : Allowable	=	362.50 psi
Load Combination		+D+Lr+H	Load Combination		+D+Lr+H
Location of maximum on span	=	13.328 ft	Location of maximum on span	=	0.000 ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1

Maximum Deflection

Max Downward Transient Deflection	0.408 in	Ratio =	646 >=360.
Max Upward Transient Deflection	0.000 in	Ratio =	0 <360.0
Max Downward Total Deflection	0.891 in	Ratio =	296 >=240.
Max Upward Total Deflection	0.000 in	Ratio =	0 <240.0

Maximum Forces & Stresses for Load Combinations

Load Combination		Max Stress Ratios									Moment Values			Shear Values		
Segment Length	Span #	M	V	C_d	$C_{F/V}$	C_i	C_r	C_m	C_t	C_L	M	fb	F'b	V	fv	F'v
+D+H													0.00	0.00	0.00	0.00
Length = 22.0 ft	1	0.288	0.148	0.90	1.000	1.00	1.00	1.00	1.00	1.00	10.32	752.87	2610.00	2.15	38.73	261.00
+D+L+H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 22.0 ft	1	0.260	0.134	1.00	1.000	1.00	1.00	1.00	1.00	1.00	10.32	752.87	2900.00	2.15	38.73	290.00
+D+Lr+H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 22.0 ft	1	0.384	0.199	1.25	1.000	1.00	1.00	1.00	1.00	1.00	19.06	1,390.27	3625.00	4.00	72.24	362.50
+D+S+H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 22.0 ft	1	0.226	0.116	1.15	1.000	1.00	1.00	1.00	1.00	1.00	10.32	752.87	3335.00	2.15	38.73	333.50
+D+0.750Lr+0.750L+H					1.000	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00