

Check Pedestrian Bridge

Loads

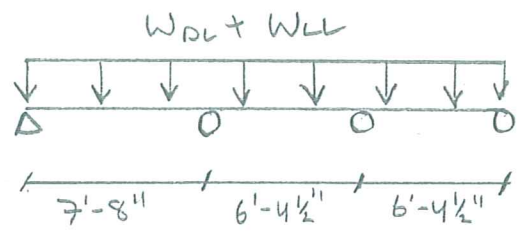
$2 \times \text{DECKING} = 3.7 \text{ PSF}$

$LL = 100 \text{ PSF}$

Joist Design.

Check 2×8 Joist @ $16'' \text{ OC}$

$\therefore 2 \times 8$ JOIST OK PER ENGR CALC



Stress Ratio = 0.762

$D_{LL} = 0.1''$

$D_{TOT} = 0.1''$

Beam Supporting Joist

Loads

$W_{DL} = 0.06 \text{ K/ft}$

$W_{LL} = 1.15 \text{ K/ft}$

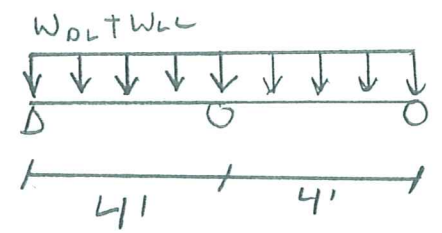
Check 6×8 BM

$L = 4'$

$\therefore 6 \times 8$ BEAM OK FOR JOIST LOADS

Stress Ratio = 0.663

$D_{LL} = 0.02''$



Pedestrian Bridge Cont

Footing Under Beam Post

Loads

$$P_D = 0.30$$

$$P_L = 5.75$$

Max Soil Pressure = 2000 psf

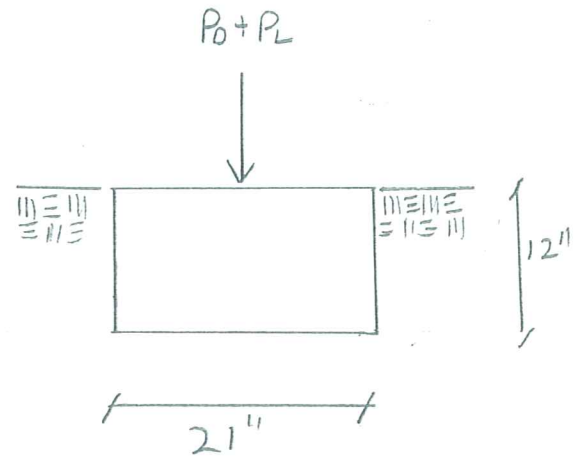
$$F_{tg} \text{ Area} = P_D + P_L / 2000 \text{ psf}$$

$$= 300 \text{ lb} + 5,750 \text{ lb} / 2000$$

$$= \underline{\underline{3.025 \text{ ft}^2}}$$

∴ USE 21" x 21" x 12" FOOTING

$$\text{AREA} = 3.063 \text{ ft}^2$$





CYS Structural Engineers, Inc.
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 Sacramento, CA 95833
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 Project Desc.:
 Project Notes :

Job #

Printed: 22 DEC 2010, 3:39PM

File: I:\Jobs10\10092 Iceland Arena Walls Evalwall seismic calcs.ec6
 ENERCALC, INC. 1983-2009, Ver: 6.1.00

Wood Beam Design

Lic. # : KW-06002490

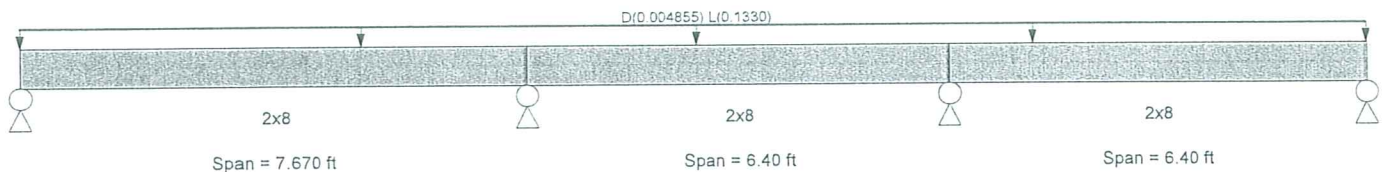
License Owner : COLE, YEE SHUBERT & ASSOCIATES

Description : Bridge Joists with added supports

Material Properties

Calculations per IBC 2006, CBC 2007, 2005 NDS

Analysis Method : Allowable Stress Design	Fb - Tension	850.0 psi	E : Modulus of Elasticity	
Load Combination 2006 IBC & ASCE 7-05	Fb - Compr	850.0 psi	Ebend-xx	1,600.0 ksi
	Fc - Prll	1,400.0 psi	Eminbend-xx	580.0 ksi
Wood Species : Douglas Fir - Larch (North)	Fc - Perp	625.0 psi		
Wood Grade : No. 1/No. 2	Fv	180.0 psi		
	Ft	500.0 psi	Density	31.570 pcf
Beam Bracing : Beam is Fully Braced against lateral-torsion buckling				



Applied Loads

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

Beam self weight calculated and added to loads

Loads on all spans...

Uniform Load on ALL spans : D = 0.003650, L = 0.10 k/ft, Tributary Width = 1.330 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.762	1	Maximum Shear Stress Ratio	=	0.435	1
Section used for this span		2x8		Section used for this span		2x8	
fb : Actual	=	777.42	psi	fv : Actual	=	78.22	psi
FB : Allowable	=	1,020.00	psi	Fv : Allowable	=	180.00	psi
Load Combination	+D+L+H, LL Comb Run (LL*)			Load Combination	+D+L+H, LL Comb Run (LL*)		
Location of maximum on span	=	7.670	ft	Location of maximum on span	=	7.087	ft
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward L+Lr+S Deflection		0.098	in	Ratio =		938	
Max Upward L+Lr+S Deflection		-0.042	in	Ratio =		1823	
Max Downward Total Deflection		0.102	in	Ratio =		899	
Max Upward Total Deflection		-0.042	in	Ratio =		1808	

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios			Summary of Moment Values			Summary of Shear Values		
			M	V	C _d	Mactual	fb-design	Fb-allow	Vactual	fv-design	Fv-allow
+D											
	Length = 7.670 ft	1	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.03	3.96	180.00
	Length = 6.40 ft	2	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.02	3.96	180.00
	Length = 6.40 ft	3	0.024	0.022	1.000	-0.03	24.78	1,020.00	0.02	3.96	180.00
+D+L+H, LL Comb Run (**L)											
	Length = 7.670 ft	1	0.069	0.034	1.000	0.08	69.89	1,020.00	0.04	6.08	180.00
	Length = 6.40 ft	2	0.348	0.329	1.000	-0.39	354.45	1,020.00	0.43	59.29	180.00
	Length = 6.40 ft	3	0.481	0.329	1.000	0.54	490.44	1,020.00	0.43	59.29	180.00
+D+L+H, LL Comb Run (*L*)											
	Length = 7.670 ft	1	0.256	0.281	1.000	-0.29	261.19	1,020.00	0.37	50.50	180.00
	Length = 6.40 ft	2	0.378	0.285	1.000	0.42	385.37	1,020.00	0.37	51.36	180.00
	Length = 6.40 ft	3	0.274	0.285	1.000	-0.31	279.47	1,020.00	0.07	51.36	180.00
+D+L+H, LL Comb Run (**LL)											
	Length = 7.670 ft	1	0.183	0.227	1.000	-0.20	186.21	1,020.00	0.30	40.95	180.00
	Length = 6.40 ft	2	0.597	0.363	1.000	-0.67	609.14	1,020.00	0.47	65.31	180.00



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 ENERCALC, INC. 1983-2009, Ver: 6.1.00

Wood Beam Design

Lic. #: KW-06002490

License Owner: COLE, YEE SHUBERT & ASSOCIATES

Description: Bridge Joists with added supports

Load Combination	Segment Length	Span #	Max Stress Ratios			Summary of Moment Values			Summary of Shear Values		
			M	V	C _d	Mactual	fb-design	Fb-allow	Vactual	fv-design	Fv-allow
	Length = 6.40 ft	3	0.597	0.363	1.000	-0.67	609.14	1,020.00	0.47	65.31	180.00
+D+L+H, LL Comb Run (L**)											
	Length = 7.670 ft	1	0.672	0.410	1.000	0.75	685.71	1,020.00	0.54	73.79	180.00
	Length = 6.40 ft	2	0.542	0.410	1.000	-0.61	552.49	1,020.00	0.13	73.79	180.00
	Length = 6.40 ft	3	0.104	0.410	1.000	0.12	106.06	1,020.00	0.04	73.79	180.00
+D+L+H, LL Comb Run (L*L)											
	Length = 7.670 ft	1	0.704	0.402	1.000	0.79	717.98	1,020.00	0.52	72.32	180.00
	Length = 6.40 ft	2	0.468	0.402	1.000	-0.52	477.51	1,020.00	0.41	72.32	180.00
	Length = 6.40 ft	3	0.537	0.402	1.000	0.60	547.84	1,020.00	0.41	72.32	180.00
+D+L+H, LL Comb Run (LL*)											
	Length = 7.670 ft	1	0.762	0.435	1.000	-0.85	777.42	1,020.00	0.57	78.22	180.00
	Length = 6.40 ft	2	0.762	0.435	1.000	-0.85	777.42	1,020.00	0.48	78.22	180.00
	Length = 6.40 ft	3	0.147	0.435	1.000	-0.16	150.42	1,020.00	0.04	78.22	180.00
+D+L+H, LL Comb Run (LLL)											
	Length = 7.670 ft	1	0.689	0.426	1.000	-0.77	702.44	1,020.00	0.56	76.75	180.00
	Length = 6.40 ft	2	0.689	0.426	1.000	-0.77	702.44	1,020.00	0.45	76.75	180.00
	Length = 6.40 ft	3	0.471	0.426	1.000	-0.53	480.09	1,020.00	0.45	76.75	180.00
+D+Lr+H, LL Comb Run (**L)											
	Length = 7.670 ft	1	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.03	3.96	180.00
	Length = 6.40 ft	2	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.02	3.96	180.00
	Length = 6.40 ft	3	0.024	0.022	1.000	-0.03	24.78	1,020.00	0.02	3.96	180.00
+D+Lr+H, LL Comb Run (*L*)											
	Length = 7.670 ft	1	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.03	3.96	180.00
	Length = 6.40 ft	2	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.02	3.96	180.00
	Length = 6.40 ft	3	0.024	0.022	1.000	-0.03	24.78	1,020.00	0.02	3.96	180.00
+D+Lr+H, LL Comb Run (*LL)											
	Length = 7.670 ft	1	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.03	3.96	180.00
	Length = 6.40 ft	2	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.02	3.96	180.00
	Length = 6.40 ft	3	0.024	0.022	1.000	-0.03	24.78	1,020.00	0.02	3.96	180.00
+D+Lr+H, LL Comb Run (**LL)											
	Length = 7.670 ft	1	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.03	3.96	180.00
	Length = 6.40 ft	2	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.02	3.96	180.00
	Length = 6.40 ft	3	0.024	0.022	1.000	-0.03	24.78	1,020.00	0.02	3.96	180.00
+D+Lr+H, LL Comb Run (L*L)											
	Length = 7.670 ft	1	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.03	3.96	180.00
	Length = 6.40 ft	2	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.02	3.96	180.00
	Length = 6.40 ft	3	0.024	0.022	1.000	-0.03	24.78	1,020.00	0.02	3.96	180.00
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	Length = 7.670 ft	1	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.03	3.96	180.00
	Length = 6.40 ft	2	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.02	3.96	180.00
	Length = 6.40 ft	3	0.024	0.022	1.000	-0.03	24.78	1,020.00	0.02	3.96	180.00
+D+Lr+H, LL Comb Run (LLL)											
	Length = 7.670 ft	1	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.03	3.96	180.00
	Length = 6.40 ft	2	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.02	3.96	180.00
	Length = 6.40 ft	3	0.024	0.022	1.000	-0.03	24.78	1,020.00	0.02	3.96	180.00
+D+S+H											
	Length = 7.670 ft	1	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.03	3.96	180.00
	Length = 6.40 ft	2	0.036	0.022	1.000	-0.04	36.26	1,020.00	0.02	3.96	180.00
	Length = 6.40 ft	3	0.024	0.022	1.000	-0.03	24.78	1,020.00	0.02	3.96	180.00
+D+0.750Lr+0.750L+H, LL Comb											
	Length = 7.670 ft	1	0.058	0.021	1.000	0.06	59.10	1,020.00	0.03	3.70	180.00
	Length = 6.40 ft	2	0.267	0.252	1.000	-0.30	272.03	1,020.00	0.33	45.27	180.00
	Length = 6.40 ft	3	0.366	0.252	1.000	0.41	373.46	1,020.00	0.33	45.27	180.00
+D+0.750Lr+0.750L+H, LL Comb											
	Length = 7.670 ft	1	0.201	0.214	1.000	-0.22	204.96	1,020.00	0.28	38.60	180.00
	Length = 6.40 ft	2	0.284	0.217	1.000	0.32	289.84	1,020.00	0.28	39.11	180.00
	Length = 6.40 ft	3	0.212	0.217	1.000	-0.24	215.80	1,020.00	0.06	39.11	180.00
+D+0.750Lr+0.750L+H, LL Comb											
	Length = 7.670 ft	1	0.146	0.175	1.000	-0.16	148.73	1,020.00	0.23	31.44	180.00
	Length = 6.40 ft	2	0.454	0.277	1.000	-0.51	463.05	1,020.00	0.36	49.78	180.00
	Length = 6.40 ft	3	0.454	0.277	1.000	-0.51	463.05	1,020.00	0.36	49.78	180.00
+D+0.750Lr+0.750L+H, LL Comb											
	Length = 7.670 ft	1	0.512	0.313	1.000	0.57	522.30	1,020.00	0.41	56.34	180.00
	Length = 6.40 ft	2	0.415	0.313	1.000	-0.46	423.43	1,020.00	0.10	56.34	180.00
	Length = 6.40 ft	3	0.078	0.313	1.000	0.09	79.42	1,020.00	0.03	56.34	180.00



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Description: Bridge Joists with added supports

Load Combination	Segment Length	Span #	Max Stress Ratios			Summary of Moment Values			Summary of Shear Values		
			M	V	C _d	Mactual	fb-design	Fb-allow	Vactual	fv-design	Fv-allow
	Length = 7.670 ft	1	0.536	0.307	1.000	0.60	546.50	1,020.00	0.40	55.23	180.00
	Length = 6.40 ft	2	0.360	0.307	1.000	-0.40	367.20	1,020.00	0.31	55.23	180.00
	Length = 6.40 ft	3	0.408	0.307	1.000	0.46	416.45	1,020.00	0.31	55.23	180.00
+D+0.750Lr+0.750L+0.750W+H, L											
	Length = 7.670 ft	1	0.581	0.331	1.000	-0.65	592.13	1,020.00	0.43	59.66	180.00
	Length = 6.40 ft	2	0.581	0.331	1.000	-0.65	592.13	1,020.00	0.36	59.66	180.00
	Length = 6.40 ft	3	0.117	0.331	1.000	-0.13	119.01	1,020.00	0.04	59.66	180.00
+D+0.750Lr+0.750L+0.750W+H, L											
	Length = 7.670 ft	1	0.525	0.325	1.000	-0.59	535.90	1,020.00	0.42	58.55	180.00
	Length = 6.40 ft	2	0.525	0.325	1.000	-0.59	535.90	1,020.00	0.34	58.55	180.00
	Length = 6.40 ft	3	0.359	0.325	1.000	-0.40	366.26	1,020.00	0.34	58.55	180.00
+D+0.750L+0.750S+0.750W+H, L											
	Length = 7.670 ft	1	0.058	0.021	1.000	0.06	59.10	1,020.00	0.03	3.70	180.00
	Length = 6.40 ft	2	0.267	0.252	1.000	-0.30	272.03	1,020.00	0.33	45.27	180.00
	Length = 6.40 ft	3	0.366	0.252	1.000	0.41	373.46	1,020.00	0.33	45.27	180.00
+D+0.750L+0.750S+0.750W+H, L											
	Length = 7.670 ft	1	0.201	0.214	1.000	-0.22	204.96	1,020.00	0.28	38.60	180.00
	Length = 6.40 ft	2	0.284	0.217	1.000	0.32	289.84	1,020.00	0.28	39.11	180.00
	Length = 6.40 ft	3	0.212	0.217	1.000	-0.24	215.80	1,020.00	0.06	39.11	180.00
+D+0.750L+0.750S+0.750W+H, L											
	Length = 7.670 ft	1	0.146	0.175	1.000	-0.16	148.73	1,020.00	0.23	31.44	180.00
	Length = 6.40 ft	2	0.454	0.277	1.000	-0.51	463.05	1,020.00	0.36	49.78	180.00
	Length = 6.40 ft	3	0.454	0.277	1.000	-0.51	463.05	1,020.00	0.36	49.78	180.00
+D+0.750L+0.750S+0.750W+H, L											
	Length = 7.670 ft	1	0.512	0.313	1.000	0.57	522.30	1,020.00	0.41	56.34	180.00
	Length = 6.40 ft	2	0.415	0.313	1.000	-0.46	423.43	1,020.00	0.10	56.34	180.00
	Length = 6.40 ft	3	0.078	0.313	1.000	0.09	79.42	1,020.00	0.03	56.34	180.00
+D+0.750L+0.750S+0.750W+H, L											
	Length = 7.670 ft	1	0.536	0.307	1.000	0.60	546.50	1,020.00	0.40	55.23	180.00
	Length = 6.40 ft	2	0.360	0.307	1.000	-0.40	367.20	1,020.00	0.31	55.23	180.00
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	Length = 6.40 ft	2	0.581	0.331	1.000	-0.65	592.13	1,020.00	0.36	59.66	180.00
	Length = 6.40 ft	3	0.117	0.331	1.000	-0.13	119.01	1,020.00	0.04	59.66	180.00
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	Length = 7.670 ft	1	0.525	0.325	1.000	-0.59	535.90	1,020.00	0.42	58.55	180.00
	Length = 6.40 ft	2	0.525	0.325	1.000	-0.59	535.90	1,020.00	0.34	58.55	180.00
	Length = 6.40 ft	3	0.359	0.325	1.000	-0.40	366.26	1,020.00	0.34	58.55	180.00
+D+0.750Lr+0.750L+0.5250E+H,											
	Length = 7.670 ft	1	0.058	0.021	1.000	0.06	59.10	1,020.00	0.03	3.70	180.00
	Length = 6.40 ft	2	0.267	0.252	1.000	-0.30	272.03	1,020.00	0.33	45.27	180.00
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+D+0.750Lr+0.750L+0.5250E+H,											
	Length = 7.670 ft	1	0.146	0.175	1.000	-0.16	148.73	1,020.00	0.23	31.44	180.00
	Length = 6.40 ft	2	0.454	0.277	1.000	-0.51	463.05	1,020.00	0.36	49.78	180.00
	Length = 6.40 ft	3	0.454	0.277	1.000	-0.51	463.05	1,020.00	0.36	49.78	180.00
+D+0.750Lr+0.750L+0.5250E+H,											
	Length = 7.670 ft	1	0.512	0.313	1.000	0.57	522.30	1,020.00	0.41	56.34	180.00
	Length = 6.40 ft	2	0.415	0.313	1.000	-0.46	423.43	1,020.00	0.10	56.34	180.00
	Length = 6.40 ft	3	0.078	0.313	1.000	0.09	79.42	1,020.00	0.03	56.34	180.00
+D+0.750Lr+0.750L+0.5250E+H,											
	Length = 7.670 ft	1	0.536	0.307	1.000	0.60	546.50	1,020.00	0.40	55.23	180.00
	Length = 6.40 ft	2	0.360	0.307	1.000	-0.40	367.20	1,020.00	0.31	55.23	180.00
	Length = 6.40 ft	3	0.408	0.307	1.000	0.46	416.45	1,020.00	0.31	55.23	180.00
+D+0.750Lr+0.750L+0.5250E+H,											
	Length = 7.670 ft	1	0.581	0.331	1.000	-0.65	592.13	1,020.00	0.43	59.66	180.00
	Length = 6.40 ft	2	0.581	0.331	1.000	-0.65	592.13	1,020.00	0.36	59.66	180.00
	Length = 6.40 ft	3	0.117	0.331	1.000	-0.13	119.01	1,020.00	0.04	59.66	180.00
+D+0.750Lr+0.750L+0.5250E+H,											
	Length = 7.670 ft	1	0.525	0.325	1.000	-0.59	535.90	1,020.00	0.42	58.55	180.00



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Project Desc.:
Project Notes :

Job #

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ENERCALC, INC. 1983-2009, Ver: 6.1.00

Wood Beam Design

Lic. # : KW-06002490

License Owner : COLE, YEE SHUBERT & ASSOCIATES

Description : Bridge Joists with added supports

Load Combination	Segment Length	Span #	Max Stress Ratios			Summary of Moment Values			Summary of Shear Values		
			M	V	C _d	Mactual	fb-design	Fb-allow	Vactual	fv-design	Fv-allow
	Length = 6.40 ft	2	0.525	0.325	1.000	-0.59	535.90	1,020.00	0.34	58.55	180.00
	Length = 6.40 ft	3	0.359	0.325	1.000	-0.40	366.26	1,020.00	0.34	58.55	180.00
+D+0.750L+0.750S+0.5250E+H, I	Length = 7.670 ft	1	0.058	0.021	1.000	0.06	59.10	1,020.00	0.03	3.70	180.00
	Length = 6.40 ft	2	0.267	0.252	1.000	-0.30	272.03	1,020.00	0.33	45.27	180.00
	Length = 6.40 ft	3	0.366	0.252	1.000	0.41	373.46	1,020.00	0.33	45.27	180.00
+D+0.750L+0.750S+0.5250E+H, I	Length = 7.670 ft	1	0.201	0.214	1.000	-0.22	204.96	1,020.00	0.28	38.60	180.00
	Length = 6.40 ft	2	0.284	0.217	1.000	0.32	289.84	1,020.00	0.28	39.11	180.00
	Length = 6.40 ft	3	0.212	0.217	1.000	-0.24	215.80	1,020.00	0.06	39.11	180.00
+D+0.750L+0.750S+0.5250E+H, I	Length = 7.670 ft	1	0.146	0.175	1.000	-0.16	148.73	1,020.00	0.23	31.44	180.00
	Length = 6.40 ft	2	0.454	0.277	1.000	-0.51	463.05	1,020.00	0.36	49.78	180.00
	Length = 6.40 ft	3	0.454	0.277	1.000	-0.51	463.05	1,020.00	0.36	49.78	180.00
+D+0.750L+0.750S+0.5250E+H, I	Length = 7.670 ft	1	0.512	0.313	1.000	0.57	522.30	1,020.00	0.41	56.34	180.00
	Length = 6.40 ft	2	0.415	0.313	1.000	-0.46	423.43	1,020.00	0.10	56.34	180.00
	Length = 6.40 ft	3	0.078	0.313	1.000	0.09	79.42	1,020.00	0.03	56.34	180.00
+D+0.750L+0.750S+0.5250E+H, I	Length = 7.670 ft	1	0.536	0.307	1.000	0.60	546.50	1,020.00	0.40	55.23	180.00
	Length = 6.40 ft	2	0.360	0.307	1.000	-0.40	367.20	1,020.00	0.31	55.23	180.00
	Length = 6.40 ft	3	0.408	0.307	1.000	0.46	416.45	1,020.00	0.31	55.23	180.00
+D+0.750L+0.750S+0.5250E+H, I	Length = 7.670 ft	1	0.581	0.331	1.000	-0.65	592.13	1,020.00	0.43	59.66	180.00
	Length = 6.40 ft	2	0.581	0.331	1.000	-0.65	592.13	1,020.00	0.36	59.66	180.00
	Length = 6.40 ft	3	0.117	0.331	1.000	-0.13	119.01	1,020.00	0.04	59.66	180.00
+D+0.750L+0.750S+0.5250E+H, I	Length = 7.670 ft	1	0.525	0.325	1.000	-0.59	535.90	1,020.00	0.42	58.55	180.00
	Length = 6.40 ft	2	0.525	0.325	1.000	-0.59	535.90	1,020.00	0.34	58.55	180.00
	Length = 6.40 ft	3	0.359	0.325	1.000	-0.40	366.26	1,020.00	0.34	58.55	180.00
+0.60D+W+H	Length = 7.670 ft	1	0.021	0.013	1.000	-0.02	21.75	1,020.00	0.02	2.38	180.00
	Length = 6.40 ft	2	0.021	0.013	1.000	-0.02	21.75	1,020.00	0.01	2.38	180.00
	Length = 6.40 ft	3	0.015	0.013	1.000	-0.02	14.87	1,020.00	0.01	2.38	180.00
+0.60D+0.70E+H	Length = 7.670 ft	1	0.021	0.013	1.000	-0.02	21.75	1,020.00	0.02	2.38	180.00
	Length = 6.40 ft	2	0.021	0.013	1.000	-0.02	21.75	1,020.00	0.01	2.38	180.00
	Length = 6.40 ft	3	0.015	0.013	1.000	-0.02	14.87	1,020.00	0.01	2.38	180.00

Overall Maximum Deflections - Unfactored Loads

Load Combination	Span	Max. "+" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
D+L+Lr, LL Comb Run (L*L)	1	0.1023	3.689	D+L+Lr, LL Comb Run (L*L)	0.0000	0.000
	2	0.0000	3.689		-0.0425	2.997
D+L+Lr, LL Comb Run (L*L)	3	0.0561	3.322		0.0000	2.997

Vertical Reactions - Unfactored

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2	Support 3	Support 4
Overall MAXimum	0.470	1.205	1.074	0.410
D Only	0.023	0.058	0.049	0.019
L Only, LL Comb Run (**L)	0.011	-0.080	0.551	0.369
L Only, LL Comb Run (*L*)	-0.032	0.453	0.474	-0.044
L Only, LL Comb Run (*LL)	-0.021	0.373	1.026	0.326
L Only, LL Comb Run (L**)	0.436	0.694	-0.132	0.022
L Only, LL Comb Run (L*L)	0.447	0.614	0.419	0.391
L Only, LL Comb Run (LL*)	0.404	1.147	0.342	-0.021
L Only, LL Comb Run (LLL)	0.415	1.067	0.893	0.348
D+L+S, LL Comb Run (**L)	0.033	-0.022	0.600	0.388
D+L+S, LL Comb Run (*L*)	-0.010	0.511	0.523	-0.025
D+L+S, LL Comb Run (*LL)	0.001	0.431	1.074	0.345
D+L+S, LL Comb Run (L**)	0.459	0.752	-0.084	0.041
D+L+S, LL Comb Run (L*L)	0.470	0.672	0.467	0.410
D+L+S, LL Comb Run (LL*)	0.427	1.205	0.390	-0.003
D+L+S, LL Comb Run (LLL)	0.438	1.125	0.942	0.367



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Wood Beam Design

Lic. # : KW-06002490

License Owner : COLE, YEE SHUBERT & ASSOCIATES

Description : Bridge Joists with added supports

Vertical Reactions - Unfactored

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2	Support 3	Support 4
D+L+Lr, LL Comb Run (**L)	0.033	-0.022	0.600	0.388
D+L+Lr, LL Comb Run (*L*)	-0.010	0.511	0.523	-0.025
D+L+Lr, LL Comb Run (*LL)	0.001	0.431	1.074	0.345
D+L+Lr, LL Comb Run (L**)	0.459	0.752	-0.084	0.041
D+L+Lr, LL Comb Run (L*L)	0.470	0.672	0.467	0.410
D+L+Lr, LL Comb Run (LL*)	0.427	1.205	0.390	-0.003
D+L+Lr, LL Comb Run (LLL)	0.438	1.125	0.942	0.367



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Wood Beam Design

Lic. #: KW-06002490

License Owner: COLE, YEE SHUBERT & ASSOCIATES

Description: 4' span 6x8 beam

Material Properties

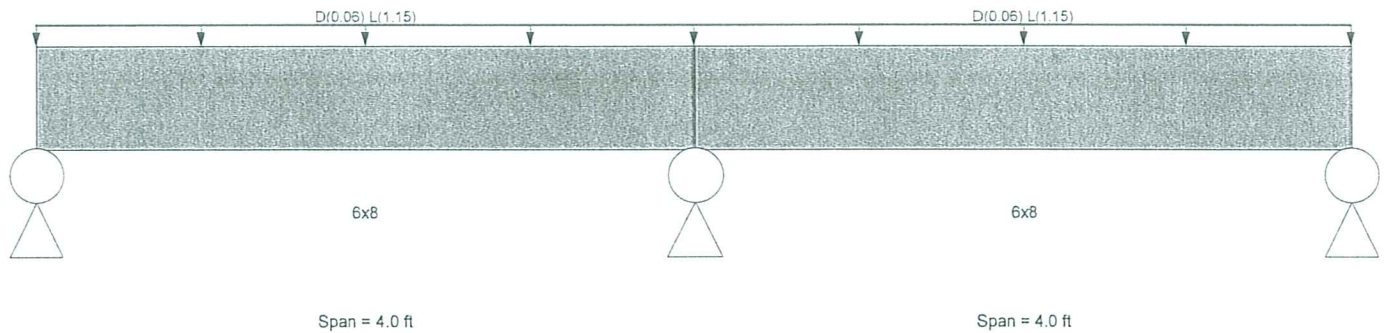
Calculations per IBC 2006, CBC 2007, 2005 NDS

Analysis Method: Allowable Stress Design
 Load Combination: 2006 IBC & ASCE 7-05

Fb - Tension	850.0 psi	E : Modulus of Elasticity	
Fb - Compr	850.0 psi	Ebend- xx	1,600.0 ksi
Fc - Prll	1,400.0 psi	Eminbend- xx	580.0 ksi
Fc - Perp	625.0 psi		
Fv	180.0 psi		
Ft	500.0 psi	Density	31.570 pcf

Wood Species: Douglas Fir - Larch (North)
 Wood Grade: No. 1/No. 2

Beam Bracing: Completely Unbraced



Applied Loads

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

Load for Span Number 1
 Uniform Load: D = 0.060, L = 1.150 k/ft, Tributary Width = 1.0 ft, (Unused)
 Load for Span Number 2
 Uniform Load: D = 0.060, L = 1.150 k/ft, Tributary Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio =	0.663 : 1	Maximum Shear Stress Ratio =	0.461 : 1
Section used for this span	6x8	Section used for this span	6x8
fb : Actual =	563.20psi	fv : Actual =	82.92 psi
FB : Allowable =	849.38psi	Fv : Allowable =	180.00 psi
Load Combination	+D+L+H	Load Combination	+D+L+H
Location of maximum on span =	4.000ft	Location of maximum on span =	4.000ft
Span # where maximum occurs =	Span # 1	Span # where maximum occurs =	Span # 1
Maximum Deflection			
Max Downward L+Lr+S Deflection	0.009 in Ratio =	5310	
Max Upward L+Lr+S Deflection	0.000 in Ratio =	0 <360	
Max Downward Total Deflection	0.010 in Ratio =	5047	
Max Upward Total Deflection	0.000 in Ratio =	0 <180	

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios			Summary of Moment Values			Summary of Shear Values		
			M	V	C _d	Mactual	fb-design	Fb-allow	Vactual	fv-design	Fv-allow
+D	Length = 4.0 ft	1	0.033	0.023	1.000	-0.12	27.93	849.38	0.11	4.11	180.00
	Length = 4.0 ft	2	0.033	0.023	1.000	-0.12	27.93	849.38	0.11	4.11	180.00
+D+L+H	Length = 4.0 ft	1	0.663	0.461	1.000	-2.42	563.20	849.38	2.28	82.92	180.00
	Length = 4.0 ft	2	0.663	0.461	1.000	-2.42	563.20	849.38	2.28	82.92	180.00
+D+Lr+H	Length = 4.0 ft	1	0.033	0.023	1.000	-0.12	27.93	849.38	0.11	4.11	180.00
	Length = 4.0 ft	2	0.033	0.023	1.000	-0.12	27.93	849.38	0.11	4.11	180.00
+D+0.750Lr+0.750L+H	Length = 4.0 ft	1	0.506	0.351	1.000	-1.84	429.38	849.38	1.74	63.22	180.00
	Length = 4.0 ft	2	0.506	0.351	1.000	-1.84	429.38	849.38	1.74	63.22	180.00



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Wood Beam Design

Lic. #: KW-06002490

License Owner : COLE, YEE SHUBERT & ASSOCIATES

Description : 4' span 6x8 beam

Overall Maximum Deflections - Unfactored Loads

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
D+L+Lr	1	0.0095	1.692		0.0000	0.000
D+L+Lr	2	0.0094	2.338		0.0000	0.000

Vertical Reactions - Unfactored

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2	Support 3
Overall MAXimum	1.815	6.050	1.815
D Only	0.090	0.300	0.090
L Only	1.725	5.750	1.725
D+L+S	1.815	6.050	1.815
D+L+Lr	1.815	6.050	1.815