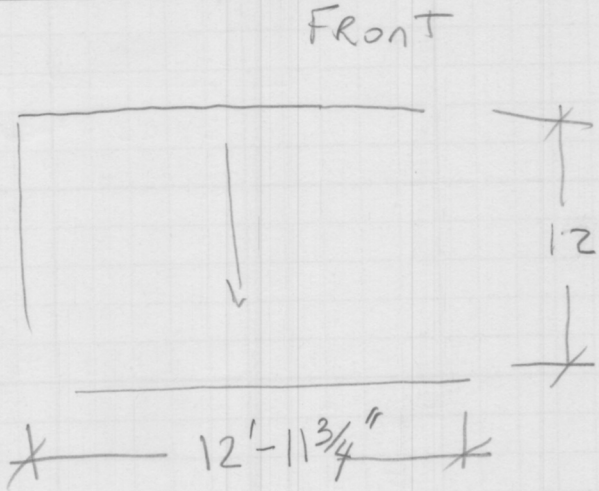


$(60\ psf)(2'-7\frac{3}{4}")(\frac{1}{2}) = 380\ plf \quad w$

$M = (380\ \#/ft)(13')^2/8 = 8{,}028'\#$

$M \quad 96{,}330"\#$

$V = 2470\ \#$

$F_b = 3100\ psi$

$F_v = 290\ psi$

$E = 2{,}000{,}000\ psi$

$5\frac{1}{4} \times 9\frac{1}{4} \times 13$

$$f_b = \frac{M}{S} \leftarrow \frac{bd^2}{6} \quad \leftarrow 3100 \text{ psi}$$

$$f_v = \frac{3V}{2bd} \quad \leftarrow 290 \text{ psi}$$

$$\delta = \frac{5 W l^3}{384 E I} \quad \leftarrow \frac{l}{360} = \delta$$

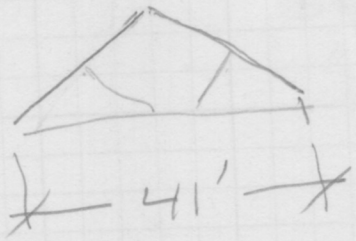
$$\leftarrow \frac{bd^3}{12}$$

$l = 100$

$w_c = (8')(30\ psf)$

$w_r = (11')(30\ psf)$

570 plf



$M = (570\ \#/ft)(8.33')^2/8 = 4944'\#$

$59,328''\#$

$V = 2374\ \#$

$5\frac{1}{2}\ d$

Allowable Design Properties – 1¾"

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10^6 lbs-in)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5½	1861	2140	2326	2623	3016	3279	49	2.51
7¼	2453	2821	3066	4336	4987	5421	111	3.30
9¼	3130	3599	3912	6756	7770	8445	231	4.22
9½	3214	3696	4018	7092	8156	8865	250	4.33
11¼	3806	4377	4758	9648	11095	12059	415	5.13
11⅞	4018	4620	5022	10645	12242	13306	488	5.41
14	4737	5447	5921	14364	16519	17955	800	6.38
16	5413	6225	6767	18315	21063	22894	1195	7.29
18	6090	7004	7613	22694	26098	28368	1701	8.19
20	6767	7782	8458	27491	31615	34364	2333	9.12
22	7443	8560	9304	32699	37603	40873	3106	10.03
24	8120	9338	10150	38309	44056	47877	4032	10.94

Allowable Design Properties – 3½"

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10^6 lbs-in)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
5½	3722	4280	4652	5246	6033	6557	97	5.01
7¼	4906	5642	6132	8673	9974	10841	222	6.61
9¼	6259	7198	7824	13512	15539	16890	462	8.43
9½	6428	7393	8035	14184	16312	17730	500	8.66
11¼	7613	8754	9516	19295	22189	24119	831	10.25
11⅞	8035	9241	10044	21290	24484	26613	977	10.82
14	9473	10894	11842	28728	33037	35910	1601	12.76
16	10827	12451	13533	36631	42126	45789	2389	14.58
18	12180	14007	15225	45388	52197	56736	3402	16.41
20	13534	15564	16916	54982	63230	68728	4666	18.23
22	14886	17120	18608	65398	75206	81746	6212	20.05
24	16240	18676	20300	76618	88112	95774	8064	21.87

Allowable Design Properties – 5¼"

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10^6 lbs-in)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
9¼	9389	10797	11736	20268	23309	25335	693	12.65
9½	9643	11089	12053	21276	24468	26595	750	12.99
11¼	11419	13132	14273	28943	33284	36178	1246	15.38
11⅞	12053	13861	15066	31936	36726	39919	1465	16.24
14	14210	16342	17763	43092	49556	53865	2401	19.14
16	16240	18676	20300	54946	63188	68683	3584	21.88
18	18270	21011	22838	68083	78295	85103	5103	24.61

Allowable Design Properties – 7"

Depth	Max. Vertical Shear (lbs)			Max. Bending Moment (ft-lbs)			EI (x 10^6 lbs-in)	Weight (plf)
	100%	115%	125%	100%	115%	125%		
9¼	12518	14396	15648	27024	31078	33781	923	16.86
9½	12857	14785	16071	28369	32624	35461	1000	17.32
11¼	15225	17509	19031	38590	44379	48238	1661	20.51
11⅞	16071	18481	20089	42581	48968	53226	1954	21.65
14	18947	21789	23683	57456	66074	71820	3201	25.52
16	21653	24901	27067	73262	84251	91577	4779	29.17
18	24360	28014	30450	90777	104394	113471	6804	32.81

2.0E LVL Allowable Design Stresses

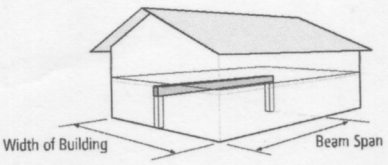
Bending F_b = 3100 psi (Adjust F_b value by a factor of $(12/d)^{0.18}$ where d = depth.)
Horizontal Shear F_v = 290 psi

Modulus of Elasticity E = 2.0
Compression Perpendicular to Grain F_c = 750 psi
Compression Parallel to Grain f_c = 3,200 psi

2.0E LVL Floor Beams

Application Table – 2.0E Floor Beams 1¾" Width

Width of Building	Beam Span									
	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'
24'	2 11¼	2 11¼	2 11⅞	2 14	2 14	2 16	2 16	2 16	2 18	2 18
	3 9¼	3 9½	3 11¼	3 11¼	3 - 11⅞	3 14	3 14	3 14	3 16	3 16
28'	2 - 11¼	2 11¼	2 14	2 14	2 14	2 16	2 16	2 18	2 18*	2 18*
	3 - 9¼	3 11¼	3 - 11¼	3 11⅞	3 - 14	3 14	3 14	3 - 16	3 16	3 16
32'	2 11¼	2 11⅞	2 14	2 14	2 16	2 16*	2 16*	2 18*	2 18*	3 18
	3 9½	3 11¼	3 11¼	3 11⅞	3 14	3 14	3 14	3 16	3 16	4 - 16
36'	2 11¼	2 - 14	2 - 14	2 - 14	2 - 16*	2 16*	2 18*	2 18*	3 - 16	3 18
	3 11¼	3 11¼	3 11⅞	3 - 14	3 - 14	3 14	3 16	3 16	4 16	4 - 16
40'	2 - 11⅞	2 - 14	2 14*	2 - 16*	2 16*	2 18*	2 18*	3 - 16	3 - 18	3 - 18
	3 - 11¼	3 11¼	3 - 11⅞	3 - 14	3 - 14	3 14	3 16	4 - 14	4 - 16	4 - 16



Notes
1. Table indicates the number of 1¾" wide LVL plies to be used for the given application.
2. Span is based on the more restrictive of simple of simple continuous beam span. Ratio of short span to long span should be greater than 0.4.
3. Beam must be centered in building if floor joists are continuous over the top. Beam may be located off-center and "width of building" may be taken as 80% of the actual width if joists hang from beam and are simple span.
4. Max beam deflection = L/360 LL L/240 TL.
5. 40 psf floor LL, 12 psf floor DL.
6. Min. 3" bearing each end, 7½" interior bearing length (*indicates 4½" end bearing and/or 11¼" interior bearing length).