

Live Loads = 40 psf
 Roof Live Loads = 20 psf

Residential Dead Loads = 60 psf
 IF NO Load bearing walls = 30 psf
 Bearing Depth = 3"

12 kl - Grade 1 - Dimensional Lumber

$$1.6D + 1.4L$$

$$(1.6 \times 30) + (1.4 \times 40) = 104 \text{ psf}$$

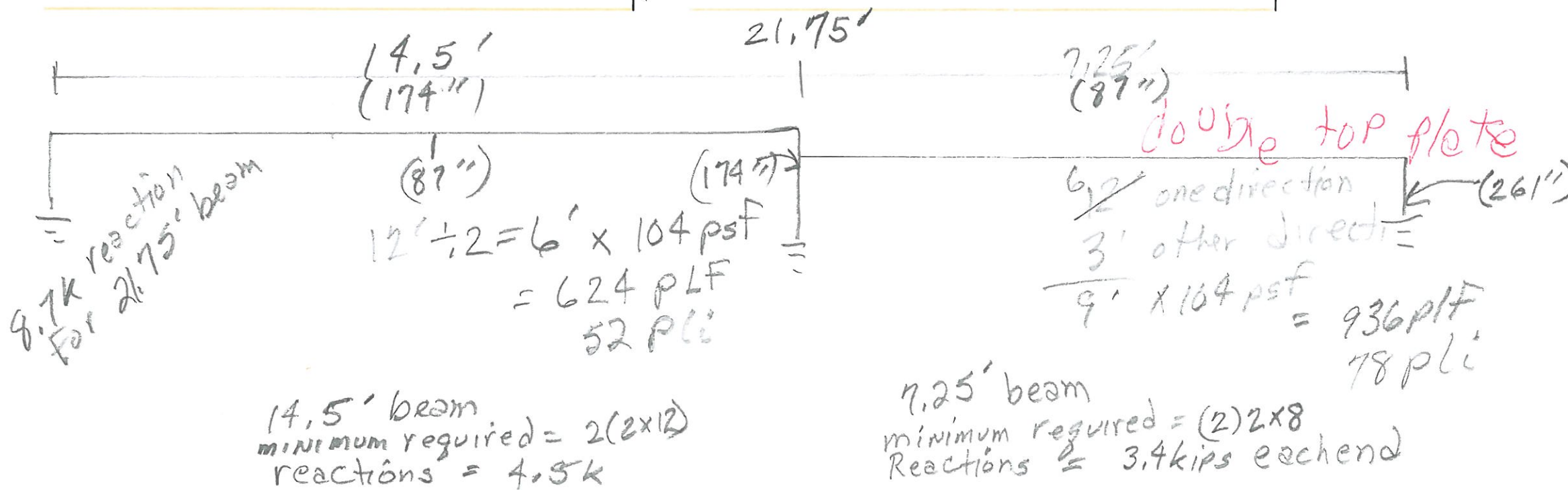
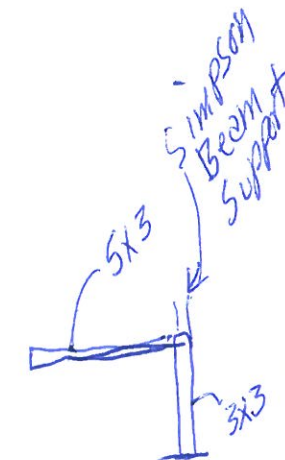
12 kl - Grade 2 - Dimensional Lumber

12 kl - Grade 3 Dimensional Lumber

Dimension lumber	
Fc (psi) = varies	Emin (psi) = 580,000
Column size	Capacity (lb)
2x4	270
2-2x4	1,268
3-2x4	4,106
2x6	424
2-2x6	1,989
3-2x6	6,418
2x8	559
2-2x8	2,619
3-2x8	8,434
2x10	713
2-2x10	3,338
3-2x10	10,725
2x12	866
2-2x12	4,055
3-2x12	12,998
4x4	3,320
4x6	5,202
4x8	6,847
4x10	8,721
4x12	10,587

Dimension lumber	
Fc (psi) = varies	Emin (psi) = 510,000
Column size	Capacity (lb)
2x4	237
2-2x4	1,115
3-2x4	3,610
2x6	373
2-2x6	1,751
3-2x6	5,657
2x8	491
2-2x8	2,305
3-2x8	7,432
2x10	627
2-2x10	2,937
3-2x10	9,449
2x12	762
2-2x12	3,567
3-2x12	11,447
4x4	2,919
4x6	4,580
4x8	6,027
4x10	7,676
4x12	9,317

Dimension lumber	
Fc (psi) = varies	Emin (psi) = 470,000
Column size	Capacity (lb)
2x4	218
2-2x4	1,009
3-2x4	3,157
2x6	342
2-2x6	1,581
3-2x6	4,911
2x8	451
2-2x8	2,080
3-2x8	6,437
2x10	575
2-2x10	2,649
3-2x10	8,162
2x12	699
2-2x12	3,215
3-2x12	9,861
4x4	2,620
4x6	4,097
4x8	5,385
4x10	6,851
4x12	8,305



Center Joist
 2x10

Beam
 8 ft Long HSS 5x3x1/4"
 max i = 10.7 in⁴

3" x 3" x 1/4"
 center Column = 8 kips
 5/8" x 8" x 8" base Plate