DESIGN & ENGINEERING B&T

UPDATED
STRUCTURAL CALCULATIONS
FOR
THE MURRAY RESIDENCE
FOREST AVE SE
MERCER ISLAND, WA 98040

April 10, 2023
BNT JOB NO. 18156

ARCHITECT:
RF ARCHITECTURE
7421 214TH AVE E
BONNEY LAKE, WA 98391
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(425) 557-0779

BUILDING CODES:

2018 IBC
ASCE7-16

GRAVITY LOADS:

Roof :

COMPOSITION ROOFING	3.5	PSF
5/8" PLYWOOD	2.0	PSF
FRAMING @ 24"o.c.	3.0	PSF
INSULATION	2.0	PSF
GYPBOARD CEILING	2.8	PSF
MECH & ELEC	2.0	PSF
SPRINKLERS	2.0	PSF
SOLAR PANELS	3.0	PSF
MISC.	1.0	PSF
TOTAL DL =	21	PSF
x Slope factor =	24	PSF
TOTAL LL [SNOW - min] =	25	PSF
TOTAL Roof DESIGN LOAD =	49	PSF

ROOF SLOPES:

9.5 : 12	6 : 12	3.75 : 12
RISE = 10	RISE = 6	RISE = 4
RUN = 12	RUN = 12	RUN = 12
m = 1.275	m = 1.118	m = 1.048

VALLEY SLOPES:

6:12 TO 9.5:12	3.75:12 TO 9.5:12
RISE = 5.073	RISE = 3.488
RUN = 12	RUN = 12
m = 1.086	m = 1.041

DECK SLOPE:

RISE = 0.25
RUN = 12
m = 1.000

LD DUR = 115% [FOR WOOD MEMBERS]

Floor :

1 1/2" GYPCRETE	13.0	PSF
1 1/8" PLYWOOD	4.0	PSF
FRAMING @ 16"o.c.	3.5	PSF
GYPBOARD CEILING	2.8	PSF
SPRINKLERS	2.0	PSF
MECH & ELEC	2.0	PSF
MISC.	1.0	PSF
TOTAL DL =	28	PSF
TOTAL LL =	40	PSF
TOTAL Floor DESIGN LOAD =	68	

Attic :

3/4" PLYWOOD	0.0	PSF
FRAMING @ 16"o.c.	3.0	PSF
GYPBOARD CEILING	2.8	PSF
SPRINKLERS	2.0	PSF
MECH & ELEC	1.0	PSF
MISC.	1.0	PSF
TOTAL DL =	10	PSF
TOTAL LL =	20	PSF
TOTAL Attic DESIGN LOAD =	30	

Deck :

PAVERS	12.0	PSF
3/4" PLYWOOD	2.7	PSF
FRAMING @ 16"o.c.	3.0	PSF
MISC.	4.0	PSF
TOTAL DL [Wood] =	22	PSF
TOTAL LL =	60	PSF
TOTAL Deck DESIGN LOAD =	82	PSF

LL @ CORRIDORS & EXITS =	100	PSF
WOOD WALL WT =	8	PSF
8" CIP CONC WALL =	100	PSF
12" CIP CONC WALL =	150	PSF

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Structural Slabs on Grade :

Residence Slab thickness (in) =	6		Garage Slab thickness (in) =	6	
6 " STRUCTURAL SLAB =	75.0	PSF	6 " STRUCTURAL SLAB =	75.0	PSF
TOPPING SLAB =	25.0	PSF	TOPPING SLAB =	0.0	PSF
MECH & ELEC	2.0	PSF	MECH & ELEC	0.0	PSF
MISC.	1.0	PSF	MISC.	1.0	PSF
TOTAL DL =	103	PSF	TOTAL DL =	76	PSF
TOTAL LL =	40	PSF	TOTAL LL =	40	PSF
TOTAL DESIGN LOAD =	143		TOTAL DESIGN LOAD =	116	

LATERAL LOADS:

BUILDING RISK CATEGORY II

WIND:

BASIC WIND SPEED V (MPH) =	110	
Exposure =	C	
Wind Importance Factor I =	1.0	
Kzt =	1.0	
Load Factor for ASD combinations =	0.6	ASCE7-10 2.4.1 EQ. 5. & 7.

EXPOSURE & GUST FACTOR "Ce" =

	Height
1.53	45 ft
1.49	40 ft
1.45	35 ft
1.40	30 ft
1.35	25 ft
1.29	20 ft
1.21	15 ft

SEISMIC: CITY: Mercer Island ZIP CODE: 98040

(Site Class "E" - Seismic Design Category "D")

Ss =	1.44	g	REDUNDANCY FACTOR (rho) =	1.0
S1 =	0.55	g	SYSTEM OVERSTRENGTH FACTOR =	2.5
Fa =	1.200		FACTOR FOR PLAN IRREGULARITY =	1.0
Fv =	NULL			
SDS =	1.152	g		
SD1 =	NULL	g		
Load Factor for ASD combinations =	0.70	ASCE7-10 2.4.1 EQ. 5. & 8.		

Rbrg walls =	5	[SPECIAL REINFORCED CONCRETE SHEARWALLS]
Importance Factor I =	1.0	

v = 0.161 x W

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BUILDING GEOMETRY:

DIMENSIONS:

LENGTH (FT) =	113.83
WIDTH (FT) =	51.25

LEVEL:	Roof	Attic	Upper Floor	Garage Roof	Garage Upper Floor	Main Floor	Basement
LENGTH (FT) =	58.25	38.5	61.0	43.58	45.0	75.5	60.0
WIDTH max (FT) =	49.17	37.0	44.5	25.0	25.0	44.5	44.0
AVERAGE HEIGHT (FT) =	38.0	26.5	17.50	24.00	11.00	6.00	0.00
Overhang (FT) =	1.0	N.A.	N.A.	1.0	N.A.	N.A.	N.A.
WALL HT (FT) =	N.A.	6.5	8.0	N.A.	8.0	10.5	10.5
AREA (FT^2) =	2,525	1,315	2,585	1,110	1,070	2,960	2,250

GRID DIMENSIONS:

LONGITUDINAL

A	A.1	A.9	B	C	D	E	E.1
0.00	0.50	2.00	3.00	22.00	22.50	24.00	25.00
E.5	**F**	**G**	**H**	**I**	**J**		
28.58	34.00	45.00	47.00	50.00	51.25		

TRANSVERSE

3	4	5	5.7	6	7	7.5	8
0.00	2.50	11.33	13.83	15.33	24.33	33.0	42.33
8.7	**9**	**9.3**	**10**	**11**	**12**	**12.6**	**13**
48.58	51.33	55.44	62.33	66.33	75.33	101.54	113.83
14							
117.79							

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MATERIAL PROPERTIES

FOUNDATION:

qa (psf) =	500	soil weight (pcf) =	110
		weight of water (pcf) =	62.4
4" DIA. Pipe Piles (Tons) =	10		
6" DIA. Pipe Piles (Tons) =	15		

Lateral soil Loads

E.F.P. (active - unrestrained) (pcf) =	45	E.F.P. (PASSIVE) =	267
E.F.P. (active - unrestrained) sloping Backfill (pcf) =	55	Coefficient of friction (sliding) =	0.3
E.F.P. (at-rest) (psf) =	10	X "H"	
	8	X "H" added to active - for seismic "active"	
	8	X "H" added to active - for seismic "at-rest"	

Footing Schedule			
Mark	Width (ft)	Length (ft)	Capacity (lb)
F1.5	1.5	1.5	1,125
F2.0	2.0	2.0	2,000
F2.5	2.5	2.5	3,125
F3.0	3.0	3.0	4,500
F3.5	3.5	3.5	6,125
F4.0	4.0	4.0	8,000
F4.5	4.5	4.5	10,125
F5.0	5.0	5.0	12,500

CONCRETE:

Structural Slabs on Grade fc (psi) =	3,000	weight (pcf) =	150
Retaining Walls & Ftgs fc (psi) =	3,000	t S.O.G. (in) =	4
fs (psi) =	60,000	Ec (psi) =	1.71E+08

STEEL:

WF & WT Shapes - Fy (psi) =	50,000
HSS Shapes - Fy (psi) =	46,000
Channels & Angles - Fy (psi) =	36,000
Pipes - Fy (psi) =	36,000

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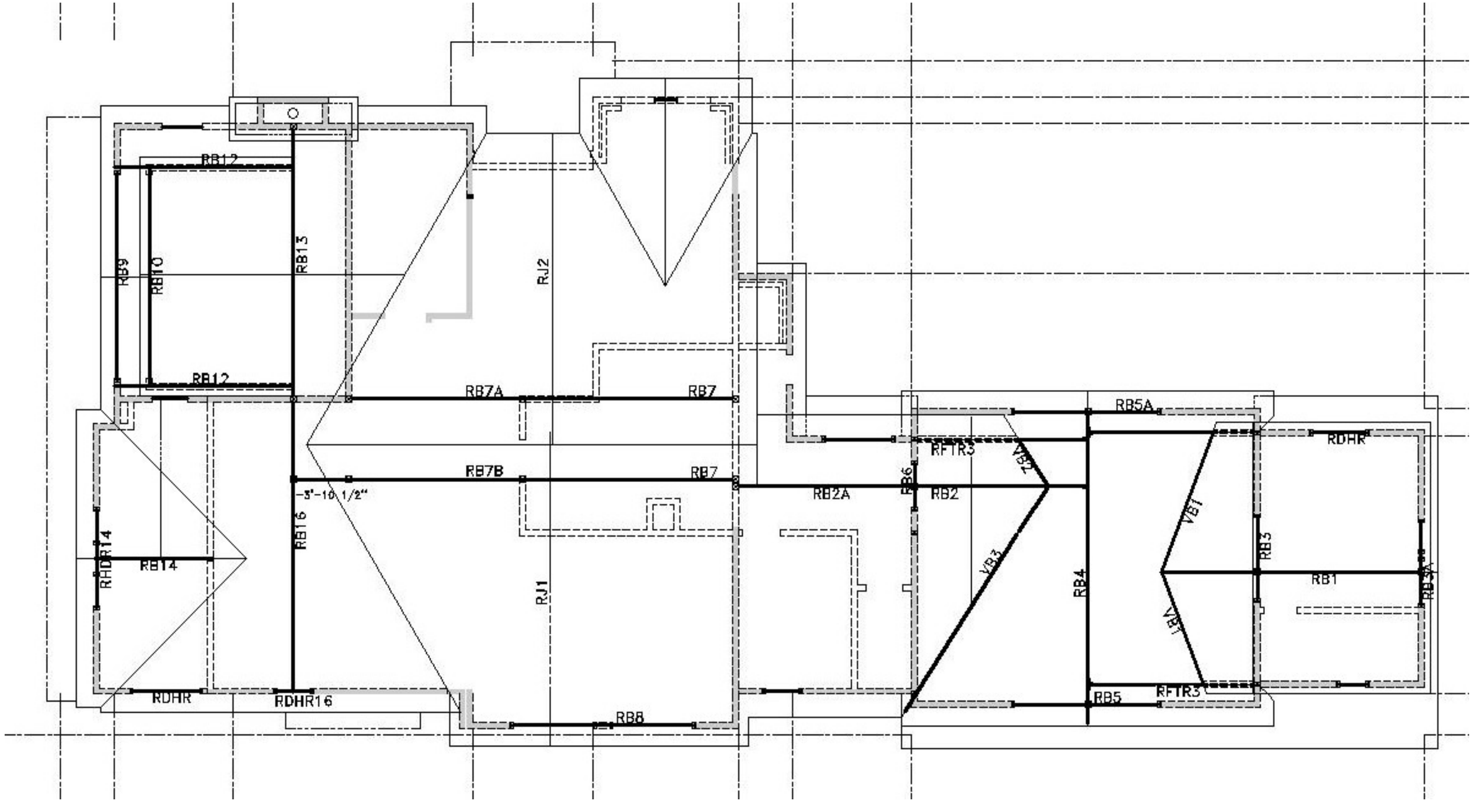
Roof Framing Plan
SHEET: 1 OF 1
4/10/2023



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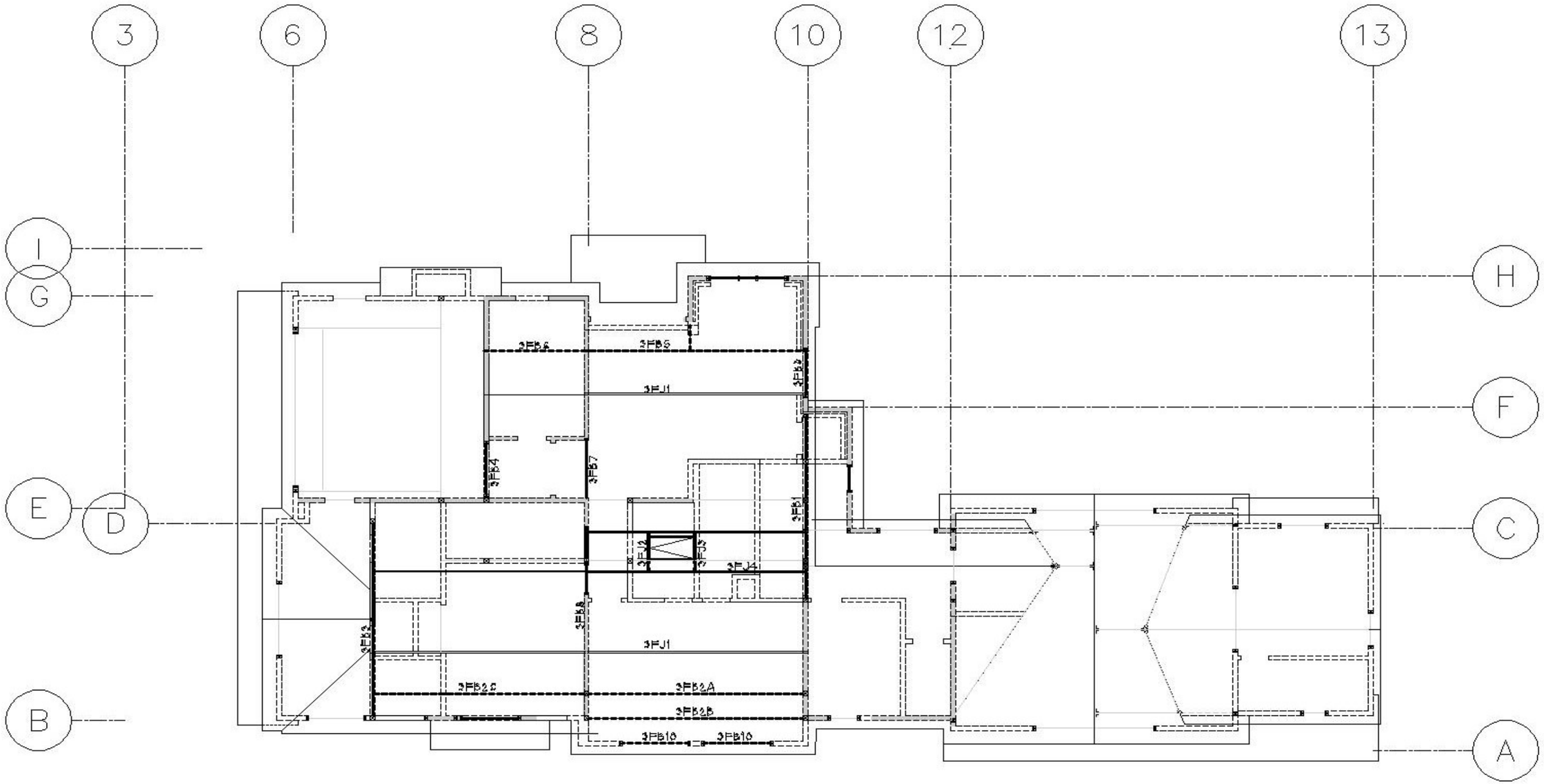
Attic Framing Plan
SHEET: 1 OF 1
4/10/2023



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Mark	Member	Length (ft)	Length of Cantilever (ft)	No. of Lams?	VaL (lb)	VaR (lb)	TOTAL Ra (lb)	Vb (lb)	TOTAL Rb (lb)
Rftr @ 9.5 : 12	2 X 12 DF#2	13.00	0.00	1	0	643	643	643	643
Rftr @ 6 : 12	2 X 12 DF#2	15.25	0.00	1	0	501	501	501	501
Rftr @ 3.75 : 12	2 X 12 DF#2	14.50	0.00	1	0	717	717	717	717
RJ1	2 X 12 DF#2	20.50	3.00	1	197	592	789	558	558
RJ1-ALT	14" Red-I65	21.50	0.00	1	0	1,063	1,063	1,063	1,063
RJ2	2 X 12 DF#2	21.50	7.17	1	471	351	822	115	115
RJ2 - ALT	1 3/4" x 14" Microlam 2.0E	21.50	7.17	1	709	886	1,595	531	531
RJ2 - ALT 2	11 7/8" Red-I65	21.25	0.00	1	0	1,050	1,050	1,050	1,050
RJ2 - ALT 3	11 7/8" Red-I65	21.25	0.00	1	0	1,088	1,088	1,088	1,088
RHDR	6 X 8 DF#2	8.00	0.00	1	0	2,373	2,373	2,373	2,373
RHDR16	6 X 8 DF#2	2.50	0.00	1	0	2,027	2,027	2,027	2,027
VB1	1 3/4" x 11 7/8" Microlam 2.0E	11.58	0.00	1	0	1,717	1,717	1,717	1,717
VB2	1 3/4" x 11 7/8" Microlam 2.0E	10.00	0.00	1	0	1,483	1,483	1,483	1,483
VB3	5 1/4" X 11 7/8" Parallam 2.0E	17.75	0.00	1	0	2,632	2,632	2,632	2,632
RB1A	5 1/4" X 11 7/8" Parallam 2.0E	12.50	0.00	1	0	2,935	2,935	2,935	2,935
RB1B	5 1/4" X 11 7/8" Parallam 2.0E	13.00	0.00	1	0	3,699	3,699	2,714	2,714
RB2	3 1/2" x 11 7/8" Parallam 2.0E	13.00	0.00	1	0	5,415	5,415	3,199	3,199
RFTR3	3 1/2" x 11 7/8" Parallam 2.0E	12.75	0.00	1	0	1,039	1,039	1,215	1,215
RB3	6 X 12 DF#1	6.00	0.00	1	0	3,121	3,121	3,121	3,121
RB3A	4 X 10 DF#2	3.17	0.00	1	0	2,323	2,323	925	925
RB4	5 1/4" X 20" Parallam 2.0E	21.00	0.00	1	0	8,063	8,063	11,889	11,889
RB5	3 1/2" x 14" Parallam 2.0E	11.00	0.00	1	0	4,758	4,758	4,392	4,392
RB5A	3 1/2" x 16" Parallam 2.0E	11.00	0.00	1	0	6,758	6,758	6,218	6,218
RB6	6 X 8 DF#2	3.17	0.00	1	0	3,267	3,267	3,248	3,248
RB7	5 1/4" X 11 7/8" Parallam 2.0E	16.00	0.00	1	0	5,932	5,932	5,932	5,932

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Mark	Member	Length (ft)	Length of Cantilever (ft)	No. of Lams?	VaL (lb)	VaR (lb)	TOTAL Ra (lb)	Vb (lb)	TOTAL Rb (lb)
RB7A	5 1/4" X 11 7/8" Parallam 2.0E	13.00	0.00	1	0	4,820	4,820	4,820	4,820
RB7B	5 1/4" X 11 7/8" Parallam 2.0E	17.00	4.00	1	5,561	5,202	10,763	2,510	2,510
RB9	3 1/2" X 9 1/4" Parallam 2.0E	15.00	0.00	1	0	1,483	1,483	1,483	1,483
RB10	6 X 12 DF#1	16.00	0.00	1	0	2,768	2,768	2,768	2,768
RB12	3 1/2" x 11 7/8" Parallam 2.0E	13.00	0.00	1	0	2,878	2,878	1,175	1,175
RB13	5 1/4" X 14" Parallam 2.0E	20.00	0.00	1	0	6,730	6,730	6,495	6,495
RB14	4 X 12 DF#2	8.50	0.00	1	0	1,996	1,996	1,996	1,996
RHDR14	4 X 12 DF#2	7.00	0.00	1	0	2,439	2,439	2,245	2,245
RB15	4 X 8 DF#2	7.00	0.00	1	0	1,038	1,038	1,038	1,038
RB16	5 1/4" X 14" Parallam 2.0E	21.50	0.00	1	0	3,188	3,188	3,188	3,188
3FJ1	9 1/2" TJI/110	20.00	0.00	1	0	396	396	396	396
3FJ1-ALT	2 X 8 DF#2	20.00	0.00	2	0	198	396	198	396
3FJ2	4 X 8 DF#2	4.00	0.00	1	0	298	298	298	298
3FJ3	4 X 8 DF#2	4.00	0.00	1	0	417	417	417	417
3FJ4	5 1/4" X 7 1/4" Parallam 2.0E	20.00	0.00	1	0	821	821	687	687
3FB1	5 1/4" X 14" Parallam 2.0E	13.50	0.00	1	0	10,641	10,641	8,249	8,249
3FB2A	5 1/4" X 11 7/8" Parallam 2.0E	19.50	0.00	1	0	4,097	4,097	4,097	4,097
3FB2B	5 1/4" X 9 1/4" Parallam 2.0E	19.50	0.00	1	0	1,446	1,446	1,446	1,446
3FB2C	5 1/4" X 11 7/8" Parallam 2.0E	19.50	0.00	1	0	4,097	4,097	4,097	4,097
3FB3	5 1/4" X 14" Parallam 2.0E	19.50	0.00	1	0	8,722	8,722	7,861	7,861
3FB4	4 X 8 DF#2	6.00	0.00	1	0	1,188	1,188	1,188	1,188
3FB5	5 1/4" X 11 7/8" Parallam 2.0E	19.50	0.00	1	0	4,146	4,146	4,146	4,146
3FB6	3 1/2" x 11 7/8" Parallam 2.0E	9.00	0.00	1	0	1,914	1,914	1,914	1,914
3FB7	4 X 8 DF#2	6.00	0.00	1	0	1,638	1,638	1,638	1,638
3FB8	5 1/4" X 11 7/8" Parallam 2.0E	16.00	0.00	1	0	4,768	4,768	4,768	4,768

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Mark	Member	Length (ft)	Length of Cantilever (ft)	No. of Lams?	VaL (lb)	VaR (lb)	TOTAL Ra (lb)	Vb (lb)	TOTAL Rb (lb)
3FB9	4 X 10 DF#2	5.00	0.00	1	0	708	708	708	708

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		LENGTH (ft)		LOADING CRITERIA			UNIFORM LOADS											
							Floor twDL (ft)		Floor twLL (ft)		Floor twLL2 (ft)		Deck twDL (ft)		Deck twLL (ft)		Attic twDL (ft)	
Mark	Member	Canti-lever	Back-span	No. of Lams?	Rep Use?	Slope Factor	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span
Rftr @ 9.5 : 12	2 X 12 DF#2	0	13	1	YES	1.2754	0	0	0	0	0	0	0	0	0	0	0	0
Rftr @ 6 : 12	2 X 12 DF#2	0	15.25	1	YES	1.118	0	0	0	0	0	0	0	0	0	0	0	0
Rftr @ 3.75 : 12	2 X 12 DF#2	0	14.5	1	YES	1.0477	0	0	0	0	0	0	0	0	0	0	0	0
RJ1	2 X 12 DF#2	3	17.5	1	YES	1.118	0	0	0	0	0	0	0	0	0	0	0	0
RJ2	2 X 12 DF#2	7.17	14.33	1	YES	1.118	0	0	0	0	0	0	0	0	0	0	0	0
RJ2 - ALT	1 3/4" x 14" Microlam 2.0E	7.17	14.33	1	NO	1.118	0	0	0	0	0	0	0	0	0	0	0	0
RHDR	6 X 8 DF#2	0	8	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RHDR16	6 X 8 DF#2	0	2.5	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
VB1	1 3/4" x 11 7/8" Microlam 2.0E	0	11.58	1	NO	1.0857	0	0	0	0	0	0	0	0	0	0	0	0
VB2	1 3/4" x 11 7/8" Microlam 2.0E	0	10	1	NO	1.0414	0	0	0	0	0	0	0	0	0	0	0	0
VB3	5 1/4" X 11 7/8" Parallam 2.0E	0	17.75	1	NO	1.0857	0	0	0	0	0	0	0	0	0	0	0	0
RB1A	5 1/4" X 11 7/8" Parallam 2.0E	0	12.5	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB1B	5 1/4" X 11 7/8" Parallam 2.0E	0	13	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB2	3 1/2" x 11 7/8" Parallam 2.0E	0	13	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB2A	3 1/2" x 11 7/8" Parallam 2.0E	0	13.5	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RFTR3	3 1/2" x 11 7/8" Parallam 2.0E	0	12.75	1	NO	1.2754	0	0	0	0	0	0	0	0	0	0	0	0
RB3	6 X 12 DF#1	0	6	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB3A	4 X 10 DF#2	0	3.17	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB5	3 1/2" x 14" Parallam 2.0E	0	11	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0

		UNIFORM LOADS								POINT LOADS			POINT LOADS			LOADING PER LAM			
		Attic twLL (ft)		Roof twDL (ft)		Roof twLL (ft)		Addtnl Load on Cant-ilever (plf)	Addtnl Load on Back-span (plf)	CANTILEVER			BACKSPAN			Uniform Load wTL (plf)		Point Load PTL (lb)	
Mark	Member	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span			PDL (lb)	PLL (lb)	x1 (ft)	PDL (lb)	PLL (lb)	x2 (ft)	Canti-lever	Back-span	Canti-lever	Back-span
Rftr @ 9.5 : 12	2 X 12 DF#2	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	99	0	0
Rftr @ 6 : 12	2 X 12 DF#2	0	0	0	1.33	0	1.33	0	0	0	0	0	0	0	0	0	66	0	0
Rftr @ 3.75 : 12	2 X 12 DF#2	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	99	0	0
RJ1	2 X 12 DF#2	0	0	1.33	1.33	1.33	1.33	0	0	0	0	0	0	0	0	66	66	0	0
RJ2	2 X 12 DF#2	0	0	1.33	1.33	1.33	0	0	0	0	0	0	0	0	0	66	32	0	0
RJ2 - ALT	1 3/4" x 14" Microlam 2.0E	0	0	2	2	2	2	0	0	0	0	0	0	0	0	99	99	0	0
RHDR	6 X 8 DF#2	0	0	0	12	0	12	0	0	0	0	0	0	0	0	0	593	0	0
RHDR16	6 X 8 DF#2	0	0	0	7	0	7	0	0	0	0	0	1,576	1,613	1.25	0	346	0	3,188
VB1	1 3/4" x 11 7/8" Microlam 2.0E	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	297	0	0
VB2	1 3/4" x 11 7/8" Microlam 2.0E	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	297	0	0
VB3	5 1/4" X 11 7/8" Parallam 2.0E	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	297	0	0
RB1A	5 1/4" X 11 7/8" Parallam 2.0E	0	0	0	9.5	0	9.5	0	0	0	0	0	0	0	0	0	470	0	0
RB1B	5 1/4" X 11 7/8" Parallam 2.0E	0	0	0	5	0	5	0	0	0	0	0	1,582	1,619	4.5	0	247	0	3,200
RB2	3 1/2" x 11 7/8" Parallam 2.0E	0	0	0	7	0	7	0	0	0	0	0	2,034	2,081	3	0	346	0	4,115
RB2A	3 1/2" x 11 7/8" Parallam 2.0E	0	0	0	9	0	9	0	0	0	0	0	0	0	0	0	445	0	0
RFTR3	3 1/2" x 11 7/8" Parallam 2.0E	0	0	0	2	0	2	0	0	0	0	0	491	503	7.5	0	99	0	994
RB3	6 X 12 DF#1	0	0	0	2	0	2	0	0	0	0	0	2,792	2,857	3	0	99	0	5,649
RB3A	4 X 10 DF#2	0	0	0	2	0	2	0	0	0	0	0	1,451	1,484	0.83	0	99	0	2,935
RB5	3 1/2" x 14" Parallam 2.0E	0	0	0	2	0	2	0	0	0	0	0	3,985	4,078	5.25	0	99	0	8,063

		SHEAR			SHEAR			MOMENT		MOMENT				DEFLECTION (in)				
Mark	Member	Horiz. Shear Vmax (lb)	VaL (lb)	VaR (lb)	Vb (lb)	V Allow (lb)	V / Vallow	Ma (lb-ft)	Point of +Mmax (ft)	+Mmax (lb-ft)	Mmax (lb-ft)	M Allowable (lb-ft)	M / Mallow	Canti-lever	L/?	Back-span	L/?	Okay?
Rftr @ 9.5 : 12	2 X 12 DF#2	825	0	643	643	4,017	21%	0	6.50	2,089	2,089	2,964	70%	0.000	N.A.	0.590	337	O.K.
Rftr @ 6 : 12	2 X 12 DF#2	660	0	501	501	4,017	16%	0	7.63	1,911	1,911	2,964	64%	0.000	N.A.	0.439	466	O.K.
Rftr @ 3.75 : 12	2 X 12 DF#2	936	0	717	717	4,017	23%	0	7.25	2,598	2,598	2,964	88%	0.000	N.A.	0.416	438	O.K.
RJ1	2 X 12 DF#2	796	197	592	558	4,017	20%	296	9.01	2,371	2,371	2,964	80%	-0.153	525	0.735	320	O.K.
RJ2	2 X 12 DF#2	615	471	351	115	4,017	15%	1,690	10.79	203	1,690	2,964	57%	0.619	311	0.106	1,820	O.K.
RJ2 - ALT	1 3/4" x 14" Microlam 2.0E	1,156	709	886	531	8,030	14%	2,541	8.96	1,426	2,541	13,949	18%	0.257	748	0.136	1,415	O.K.
RHDR	6 X 8 DF#2	3,022	0	2,373	2,373	7,796	39%	0	4.00	4,745	4,745	6,234	76%	0.000	N.A.	0.241	399	O.K.
RHDR16	6 X 8 DF#2	2,726	0	2,027	2,027	7,796	35%	0	1.25	2,263	2,263	6,234	36%	0.000	N.A.	0.009	3,247	O.K.
VB1	1 3/4" x 11 7/8" Microlam 2.0E	2,136	0	1,717	1,717	6,811	31%	0	5.79	4,972	4,972	10,248	49%	0.000	N.A.	0.341	442	O.K.
VB2	1 3/4" x 11 7/8" Microlam 2.0E	1,784	0	1,483	1,483	6,811	26%	0	5.00	3,707	3,707	10,248	36%	0.000	N.A.	0.161	778	O.K.
VB3	5 1/4" X 11 7/8" Parallam 2.0E	3,508	0	2,632	2,632	20,792	17%	0	8.88	11,681	11,681	34,292	34%	0.000	N.A.	0.628	368	O.K.
RB1A	5 1/4" X 11 7/8" Parallam 2.0E	3,705	0	2,935	2,935	20,792	18%	0	6.25	9,172	9,172	34,292	27%	0.000	N.A.	0.176	852	O.K.
RB1B	5 1/4" X 11 7/8" Parallam 2.0E	5,182	0	3,699	2,714	20,792	25%	0	4.50	14,143	14,143	34,292	41%	0.000	N.A.	0.260	599	O.K.
RB2	3 1/2" x 11 7/8" Parallam 2.0E	7,608	0	5,415	3,199	13,861	55%	0	3.76	14,786	14,786	22,861	65%	0.000	N.A.	0.446	350	O.K.
RB2A	3 1/2" x 11 7/8" Parallam 2.0E	3,844	0	3,003	3,003	13,861	28%	0	6.75	10,135	10,135	22,861	44%	0.000	N.A.	0.340	476	O.K.
RFTR3	3 1/2" x 11 7/8" Parallam 2.0E	1,675	0	1,039	1,215	13,861	12%	0	7.50	5,015	5,015	22,861	22%	0.000	N.A.	0.310	629	O.K.
RB3	6 X 12 DF#1	4,543	0	3,121	3,121	12,097	38%	0	3.00	8,919	8,919	15,010	59%	0.000	N.A.	0.045	1,606	O.K.
RB3A	4 X 10 DF#2	3,371	0	2,323	925	6,702	50%	0	0.83	1,894	1,894	5,166	37%	0.000	N.A.	0.007	5,274	O.K.
RB5	3 1/2" x 14" Parallam 2.0E	6,965	0	4,758	4,392	16,342	43%	0	5.25	23,619	23,619	31,236	76%	0.000	N.A.	0.261	506	O.K.

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		LENGTH (ft)		LOADING CRITERIA			UNIFORM LOADS											
							Floor twDL (ft)		Floor twLL (ft)		Floor twLL2 (ft)		Deck twDL (ft)		Deck twLL (ft)		Attic twDL (ft)	
Mark	Member	Canti-lever	Back-span	No. of Lams?	Rep Use?	Slope Factor	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span
RB5A	3 1/2" x 16" Parallam 2.0E	0	11	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB6	6 X 8 DF#2	0	3.17	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB7	5 1/4" X 11 7/8" Parallam 2.0E	0	16	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB7A	5 1/4" X 11 7/8" Parallam 2.0E	0	13	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB7B	5 1/4" X 11 7/8" Parallam 2.0E	4	13	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB9	3 1/2" X 9 1/4" Parallam 2.0E	0	15	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB10	6 X 12 DF#1	0	16	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB12	3 1/2" x 11 7/8" Parallam 2.0E	0	13	1	NO	1.2754	0	0	0	0	0	0	0	0	0	0	0	0
RB14	4 X 12 DF#2	0	8.5	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB15	4 X 8 DF#2	0	7	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RB16	5 1/4" X 14" Parallam 2.0E	0	21.5	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
3FJ2	4 X 8 DF#2	0	4	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	5
3FJ3	4 X 8 DF#2	0	4	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	7
3FB2A	5 1/4" X 11 7/8" Parallam 2.0E	0	19.5	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
3FB2B	5 1/4" X 9 1/4" Parallam 2.0E	0	19.5	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
3FB2C	5 1/4" X 11 7/8" Parallam 2.0E	0	19.5	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
3FB4	4 X 8 DF#2	0	6	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	5
3FB5	5 1/4" X 11 7/8" Parallam 2.0E	0	19.5	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	1
3FB6	3 1/2" x 11 7/8" Parallam 2.0E	0	9	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	1

		UNIFORM LOADS								POINT LOADS			POINT LOADS			LOADING PER LAM			
		Attic twLL (ft)		Roof twDL (ft)		Roof twLL (ft)		Addtnl Load on Cant-ilever (plf)	Addtnl Load on Back-span (plf)	CANTILEVER			BACKSPAN			Uniform Load wTL (plf)		Point Load PTL (lb)	
Mark	Member	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span			PDL (lb)	PLL (lb)	x1 (ft)	PDL (lb)	PLL (lb)	x2 (ft)	Canti-lever	Back-span	Canti-lever	Back-span
RB5A	3 1/2" x 16" Parallam 2.0E	0	0	0	2	0	2	0	0	0	0	0	5,876	6,013	5.25	0	99	0	11,889
RB6	6 X 8 DF#2	0	0	0	2	0	2	0	0	0	0	0	3,065	3,137	1.58	0	99	0	6,202
RB7	5 1/4" X 11 7/8" Parallam 2.0E	0	0	0	15	0	15	0	0	0	0	0	0	0	0	0	741	0	0
RB7A	5 1/4" X 11 7/8" Parallam 2.0E	0	0	0	15	0	15	0	0	0	0	0	0	0	0	0	741	0	0
RB7B	5 1/4" X 11 7/8" Parallam 2.0E	0	0	12	12	12	12	0	0	1,576	1,613	4	0	0	0	593	593	3,188	0
RB9	3 1/2" X 9 1/4" Parallam 2.0E	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	198	0	0
RB10	6 X 12 DF#1	0	0	0	7	0	7	0	0	0	0	0	0	0	0	0	346	0	0
RB12	3 1/2" x 11 7/8" Parallam 2.0E	0	0	0	2	0	2	0	0	0	0	0	1,368	1,400	2.5	0	99	0	2,768
RB14	4 X 12 DF#2	0	0	0	9.5	0	9.5	0	0	0	0	0	0	0	0	0	470	0	0
RB15	4 X 8 DF#2	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	297	0	0
RB16	5 1/4" X 14" Parallam 2.0E	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	297	0	0
3FJ2	4 X 8 DF#2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	149	0	0
3FJ3	4 X 8 DF#2	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	209	0	0
3FB2A	5 1/4" X 11 7/8" Parallam 2.0E	0	0	0	8.5	0	8.5	0	0	0	0	0	0	0	0	0	420	0	0
3FB2B	5 1/4" X 9 1/4" Parallam 2.0E	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	148	0	0
3FB2C	5 1/4" X 11 7/8" Parallam 2.0E	0	0	0	8.5	0	8.5	0	0	0	0	0	0	0	0	0	420	0	0
3FB4	4 X 8 DF#2	0	5	0	5	0	5	0	0	0	0	0	0	0	0	0	396	0	0
3FB5	5 1/4" X 11 7/8" Parallam 2.0E	0	1	0	8	0	8	0	0	0	0	0	0	0	0	0	425	0	0
3FB6	3 1/2" x 11 7/8" Parallam 2.0E	0	1	0	8	0	8	0	0	0	0	0	0	0	0	0	425	0	0

		SHEAR			SHEAR			MOMENT		MOMENT				DEFLECTION (in)				
Mark	Member	Horiz. Shear Vmax (lb)	VaL (lb)	VaR (lb)	Vb (lb)	V Allow (lb)	V / Vallow	Ma (lb-ft)	Point of +Mmax (ft)	+Mmax (lb-ft)	Mmax (lb-ft)	M Allowable (lb-ft)	M / Mallow	Canti-lever	L/?	Back-span	L/?	Okay?
RB5A	3 1/2" x 16" Parallam 2.0E	9,940	0	6,758	6,218	18,676	53%	0	5.25	34,119	34,119	40,197	85%	0.000	N.A.	0.251	525	O.K.
RB6	6 X 8 DF#2	4,812	0	3,267	3,248	7,796	62%	0	1.58	5,039	5,039	6,234	81%	0.000	N.A.	0.032	1,177	O.K.
RB7	5 1/4" X 11 7/8" Parallam 2.0E	7,797	0	5,932	5,932	20,792	38%	0	8.00	23,727	23,727	34,292	69%	0.000	N.A.	0.746	257	O.K.
RB7A	5 1/4" X 11 7/8" Parallam 2.0E	6,129	0	4,820	4,820	20,792	29%	0	6.50	15,664	15,664	34,292	46%	0.000	N.A.	0.325	480	O.K.
RB7B	5 1/4" X 11 7/8" Parallam 2.0E	7,461	5,561	5,202	2,510	20,792	36%	17,499	8.77	5,309	17,499	34,292	51%	0.332	289	0.176	888	O.K.
RB9	3 1/2" X 9 1/4" Parallam 2.0E	1,996	0	1,483	1,483	10,797	18%	0	7.50	5,561	5,561	13,871	40%	0.000	N.A.	0.488	369	O.K.
RB10	6 X 12 DF#1	3,666	0	2,768	2,768	12,097	30%	0	8.00	11,073	11,073	15,010	74%	0.000	N.A.	0.489	393	O.K.
RB12	3 1/2" x 11 7/8" Parallam 2.0E	4,171	0	2,878	1,175	13,861	30%	0	2.50	6,887	6,887	22,861	30%	0.000	N.A.	0.432	460	O.K.
RB14	4 X 12 DF#2	2,333	0	1,996	1,996	8,151	29%	0	4.25	4,241	4,241	7,004	61%	0.000	N.A.	0.083	1,229	O.K.
RB15	4 X 8 DF#2	1,288	0	1,038	1,038	5,253	25%	0	3.50	1,817	1,817	3,438	53%	0.000	N.A.	0.090	932	O.K.
RB16	5 1/4" X 14" Parallam 2.0E	4,264	0	3,188	3,188	24,512	17%	0	10.75	17,138	17,138	46,853	37%	0.000	N.A.	0.594	434	O.K.
3FJ2	4 X 8 DF#2	312	0	298	298	4,568	7%	0	2.00	298	298	2,989	10%	0.000	N.A.	0.005	9,946	O.K.
3FJ3	4 X 8 DF#2	437	0	417	417	4,568	10%	0	2.00	417	417	2,989	14%	0.000	N.A.	0.007	7,104	O.K.
3FB2A	5 1/4" X 11 7/8" Parallam 2.0E	5,521	0	4,097	4,097	20,792	27%	0	9.75	19,971	19,971	34,292	58%	0.000	N.A.	0.933	251	O.K.
3FB2B	5 1/4" X 9 1/4" Parallam 2.0E	1,997	0	1,446	1,446	16,196	12%	0	9.75	7,049	7,049	20,807	34%	0.000	N.A.	0.697	336	O.K.
3FB2C	5 1/4" X 11 7/8" Parallam 2.0E	5,521	0	4,097	4,097	20,792	27%	0	9.75	19,971	19,971	34,292	58%	0.000	N.A.	0.933	251	O.K.
3FB4	4 X 8 DF#2	1,424	0	1,188	1,188	5,253	27%	0	3.00	1,783	1,783	3,438	52%	0.000	N.A.	0.065	1,108	O.K.
3FB5	5 1/4" X 11 7/8" Parallam 2.0E	5,588	0	4,146	4,146	20,792	27%	0	9.75	20,213	20,213	34,292	59%	0.000	N.A.	0.944	248	O.K.
3FB6	3 1/2" x 11 7/8" Parallam 2.0E	2,239	0	1,914	1,914	13,861	16%	0	4.50	4,306	4,306	22,861	19%	0.000	N.A.	0.064	1,680	O.K.

		LENGTH (ft)		LOADING CRITERIA			UNIFORM LOADS											
							Floor twDL (ft)		Floor twLL (ft)		Floor twLL2 (ft)		Deck twDL (ft)		Deck twLL (ft)		Attic twDL (ft)	
Mark	Member	Canti-lever	Back-span	No. of Lams?	Rep Use?	Slope Factor	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span
3FB7	4 X 8 DF#2	0	6	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	15
3FB8	5 1/4" X 11 7/8" Parallam 2.0E	0	16	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	20
3FB9	4 X 10 DF#2	0	5	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	9.5

		UNIFORM LOADS								POINT LOADS			POINT LOADS			LOADING PER LAM			
		Attic twLL (ft)		Roof twDL (ft)		Roof twLL (ft)		Addtnl Load on Cant-ilever (plf)	Addtnl Load on Back-span (plf)	CANTILEVER			BACKSPAN			Uniform Load wTL (plf)		Point Load PTL (lb)	
Mark	Member	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span			PDL (lb)	PLL (lb)	x1 (ft)	PDL (lb)	PLL (lb)	x2 (ft)	Canti-lever	Back-span	Canti-lever	Back-span
3FB7	4 X 8 DF#2	0	15	0	2	0	2	0	0	0	0	0	0	0	0	0	546	0	0
3FB8	5 1/4" X 11 7/8" Parallam 2.0E	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	596	0	0
3FB9	4 X 10 DF#2	0	9.5	0	0	0	0	0	0	0	0	0	0	0	0	0	283	0	0

		SHEAR			SHEAR			MOMENT		MOMENT				DEFLECTION (in)				
Mark	Member	Horiz. Shear Vmax (lb)	VaL (lb)	VaR (lb)	Vb (lb)	V Allow (lb)	V / Vallow	Ma (lb-ft)	Point of +Mmax (ft)	+Mmax (lb-ft)	Mmax (lb-ft)	M Allowable (lb-ft)	M / Mallow	Canti-lever	L/?	Back-span	L/?	Okay?
3FB7	4 X 8 DF#2	1,962	0	1,638	1,638	5,253	37%	0	3.00	2,456	2,456	3,438	71%	0.000	N.A.	0.090	804	O.K.
3FB8	5 1/4" X 11 7/8" Parallam 2.0E	6,267	0	4,768	4,768	18,080	35%	0	8.00	19,072	19,072	29,819	64%	0.000	N.A.	0.600	320	O.K.
3FB9	4 X 10 DF#2	734	0	708	708	5,828	13%	0	2.50	885	885	4,492	20%	0.000	N.A.	0.011	5,566	O.K.

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RJ1-ALT | **14" Red-I65** | ***N.G.***

Length cantilever (ft) =	0
Length backspan (ft) =	21.5
No. of Lams?	1
Slope Factor =	1.275

V Allow (lb) =	2,540	V max (lb) =	1,063	V / Vallow =	42%
M Allow (lb-ft) =	8,030	M max (lb-ft) =	5,713	M / Mallow =	71%

Maximum deflections:

RED-I SERIES:	Red_I65
Floor joist nailed? =	YES
Floor joist glued? =	YES

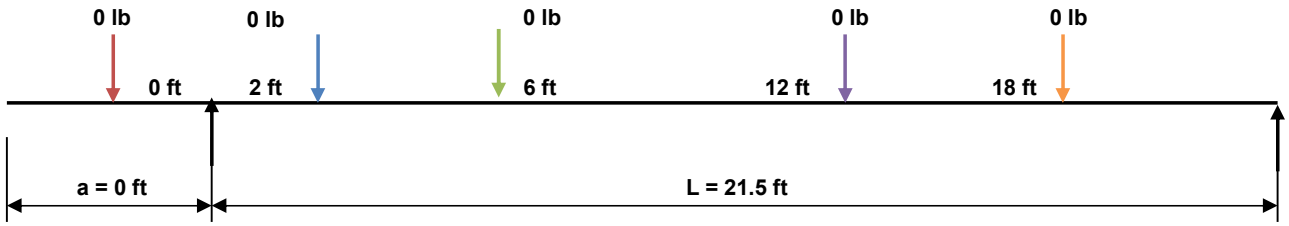
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	1.544	= L /	213

UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft)	0	0
Floor twLL (ft)	0	0
Floor twLL2 (ft)	0	0
Deck twDL (ft)	0	0
Deck twLL (ft)	0	0
Attic twDL (ft)	0	0
Attic twLL (ft)	0	0
Roof twDL (ft)	0	2
Roof twLL (ft)	0	2
Addtnl Load (plf)	0	0
Total Uniform Load (per lam - plf) =	0	99

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	0	0	0	0
PLL (lb) =	0	0	0	0	0
x (ft) =	0	2	6	12	18
Total Point Load (per lam - lb) =	0	0	0	0	0



V (lb) =	0	1,063		1,063
Mmax (lb-ft) =	0		5,713	

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RJ2 - ALT 2 | **11 7/8" Red-I65** | ***N.G.***

Length cantilever (ft) =	0
Length backspan (ft) =	21.25
No. of Lams?	1
Slope Factor =	1.275

V Allow (lb) =	2,255	V max (lb) =	1,050	V / Vallow =	47%
M Allow (lb-ft) =	6,750	M max (lb-ft) =	5,580	M / Mallow =	83%

Maximum deflections:

RED-I SERIES:	Red_I65
Floor joist nailed? =	YES
Floor joist glued? =	YES

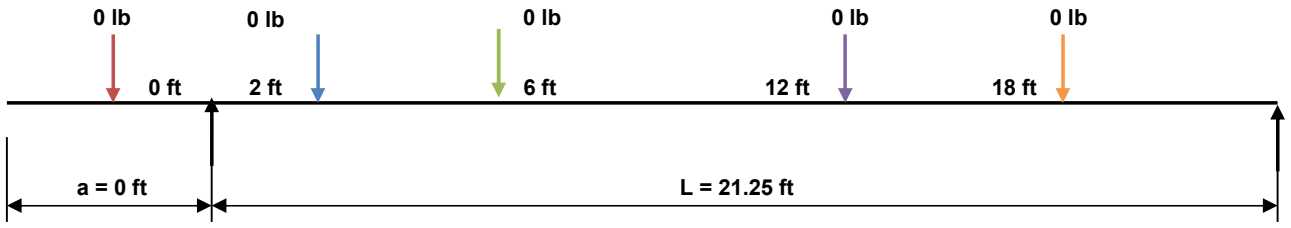
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	2.154	= L /	151

UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft)	0	0
Floor twLL (ft)	0	0
Floor twLL2 (ft)	0	0
Deck twDL (ft)	0	0
Deck twLL (ft)	0	0
Attic twDL (ft)	0	0
Attic twLL (ft)	0	0
Roof twDL (ft)	0	2
Roof twLL (ft)	0	2
Addtnl Load (plf)	0	0
Total Uniform Load (per lam - plf) =	0	99

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	0	0	0	0
PLL (lb) =	0	0	0	0	0
x (ft) =	0	2	6	12	18
Total Point Load (per lam - lb) =	0	0	0	0	0



V (lb) =	0	1,050		1,050
Mmax (lb-ft) =	0		5,580	

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RJ2 - ALT 3 | **16" TJI/210** | *N.G.*

Length cantilever (ft) =	0
Length backspan (ft) =	22
No. of Lams?	1
Slope Factor =	1.0

V Allow (lb) =	2,190	V max (lb) =	1,088	V / Vallow =	50%
M Allow (lb-ft) =	5,140	M max (lb-ft) =	5,981	M / Mallow =	116%

Maximum deflections:

TJI SERIES: 110 - 360

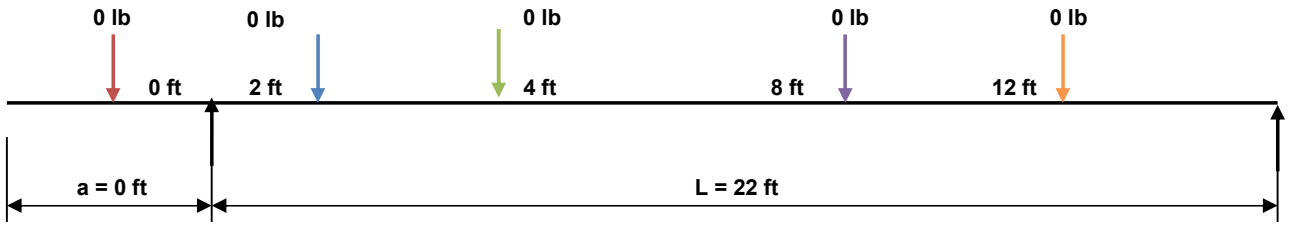
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.908	= L /	291

UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft)	0	0
Floor twLL (ft)	0	0
Floor twLL2 (ft)	0	0
Deck twDL (ft)	0	0
Deck twLL (ft)	0	0
Roof twDL (ft)	0	2
Roof twLL (ft)	0	2
Addtnl Load (plf)	0	0
Total Uniform Load (per lam - plf) =	0	99

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	0	0	0	0
PLL (lb) =	0	0	0	0	0
x (ft) =	0	2	4	8	12
Total Point Load (per lam - lb) =	0	0	0	0	0



V (lb) =	0	1,088		1,088
Mmax (lb-ft) =	0		5,981	

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RB4 5 1/4" X 20" Parallam 2.0E *O.K.*

Length cantilever (ft) =	0
Length backspan (ft) =	21
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	35,018	V / Vallow =	43%
M Allow (lb-ft) =	91,904	M / Mallow =	51%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.513	= L /	491
1.5 * DLΔ (in) =	0.253		
2000 ft R (in) =	0.331	*Governs*	

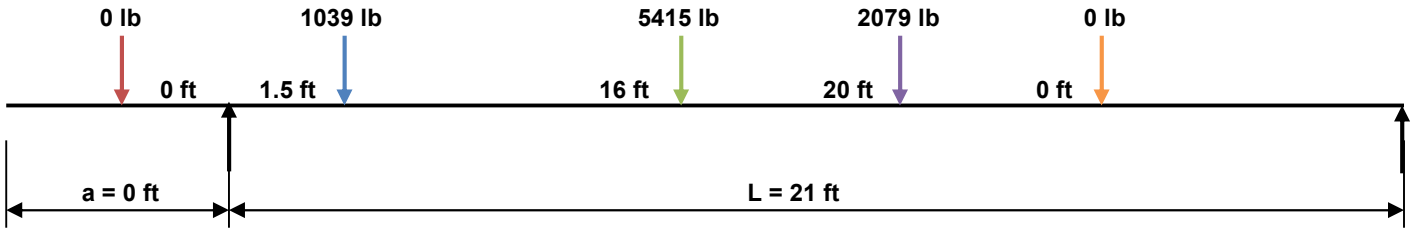
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	0
Floor twLL (ft) =	0	0
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	11
Roof twLL (ft) =	0	11
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	544

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	514	2,676	1,027	0
PLL (lb) =	0	526	2,738	1,051	0
x (ft) =	0	1.5	16	20	0
Total Point Load (per lam - lb) =	0	1,039	5,415	2,079	0

Horiz. Shear Vmax (lb) =	14,915
Maximum Moment (lb-ft) =	46,918



V (lb) =	0	8,063		11,889
Mmax (lb-ft) =	0		46,918	
x (ft) =			12.92	

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RB13 | **5 1/4" X 14" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	20
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	24,512	V / Vallow =	30%
M Allow (lb-ft) =	46,853	M / Mallow =	63%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.898	= L /	267
1.5 * DLΔ (in) =	0.444	*Governs*	
2000 ft R (in) =	0.300		

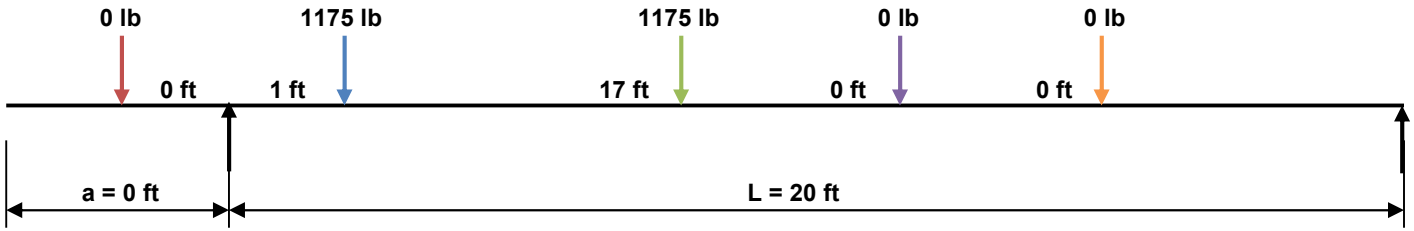
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	0
Floor twLL (ft) =	0	0
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	11
Roof twLL (ft) =	0	11
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	544

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	581	581	0	0
PLL (lb) =	0	594	594	0	0
x (ft) =	0	1	17	0	0
Total Point Load (per lam - lb) =	0	1,175	1,175	0	0

Horiz. Shear Vmax (lb) =	7,381
Maximum Moment (lb-ft) =	29,550



V (lb) =	0	6,730		6,495
Mmax (lb-ft) =	0		29,550	
x (ft) =			10.22	

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RHDR14 | **4 X 12 DF#2** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	7
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	8,151	V / Vallow =	43%
M Allow (lb-ft) =	7,004	M / Mallow =	81%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.069	= L /	1,225
1.5 * DLΔ (in) =	0.034		
2000 ft R (in) =	0.037	*Governs*	

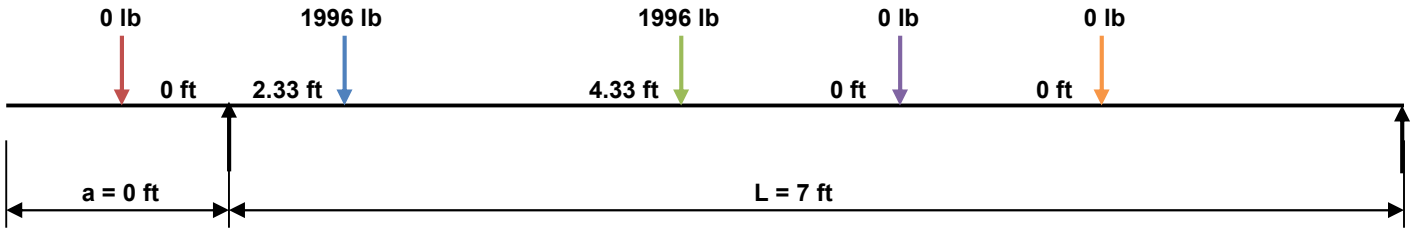
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	0
Floor twLL (ft) =	0	0
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	2
Roof twLL (ft) =	0	2
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	99

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	986	986	0	0
PLL (lb) =	0	1,009	1,009	0	0
x (ft) =	0	2.33	4.33	0	0
Total Point Load (per lam - lb) =	0	1,996	1,996	0	0

Horiz. Shear Vmax (lb) =	3,519
Maximum Moment (lb-ft) =	5,642



V (lb) =	0	2,439		2,245
Mmax (lb-ft) =	0		5,642	
x (ft) =			4.33	

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3FJ1 | **9 1/2" TJI/110** | ***O.K.***

Length cantilever (ft) =	0	V Allow (lb) =	1,220	V max (lb) =	396	V / Vallow =	32%
Length backspan (ft) =	20						
No. of Lams?	1	M Allow (lb-ft) =	2,500	M max (lb-ft) =	1,982	M / Mallow =	79%
Slope Factor =	1.0						

Maximum deflections:

TJI SERIES: 110 - 360

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.953	= L /	252

UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft)	0	0
Floor twLL (ft)	0	0
Floor twLL2 (ft)	0	0
Deck twDL (ft)	0	0
Deck twLL (ft)	0	0
Attic twDL (ft)	0	1.33
Attic twLL (ft)	0	1.33
Roof twDL (ft)	0	0
Roof twLL (ft)	0	0
Addtnl Load (plf)	0	0
Total Uniform Load (per lam - plf) =	0	40

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	0	0	0	0
PLL (lb) =	0	0	0	0	0
x (ft) =	0	0	0	0	0
Total Point Load (per lam - lb) =	0	0	0	0	0

V (lb) =	0	396		396
Mmax (lb-ft) =	0		1,982	

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3FJ1-ALT | **2 X 8 DF#2** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	20
No. of Lams?	2
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	1,958	V / Vallow =	14%
M Allow (lb-ft) =	1,117	M / Mallow =	89%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.936	= L /	256
1.5 * DLΔ (in) =	0.463	*Governs*	
2000 ft R (in) =	0.300		

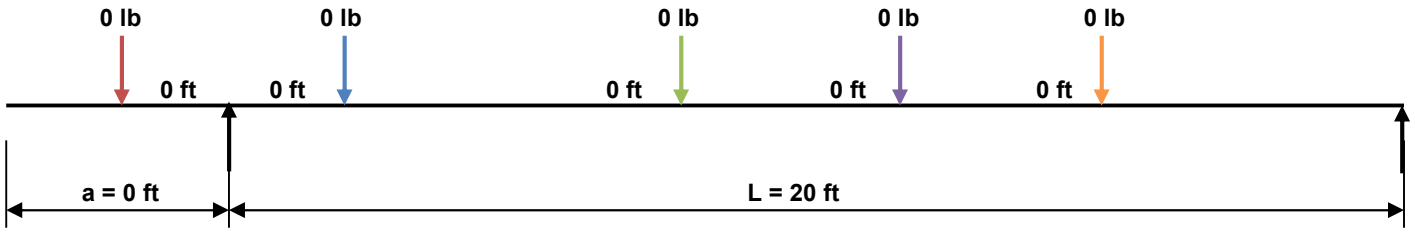
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	0
Floor twLL (ft) =	0	0
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	1.33
Attic twLL (ft) =	0	1.33
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	20

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	0	0	0	0
PLL (lb) =	0	0	0	0	0
x (ft) =	0	0	0	0	0
Total Point Load (per lam - lb) =	0	0	0	0	0

Horiz. Shear Vmax (lb) =	279
Maximum Moment (lb-ft) =	991



V (lb) =	0	198		198
Mmax (lb-ft) =	0		991	
x (ft) =			10.00	

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3FJ4 — **5 1/4" X 7 1/4" Parallam 2.0E** — *O.K.*

Length cantilever (ft) =	0
Length backspan (ft) =	20
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	11,038	V / Vallow =	11%
M Allow (lb-ft) =	11,115	M / Mallow =	44%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.979	= L /	245
1.5 * DLΔ (in) =	0.484	*Governs*	
2000 ft R (in) =	0.300		

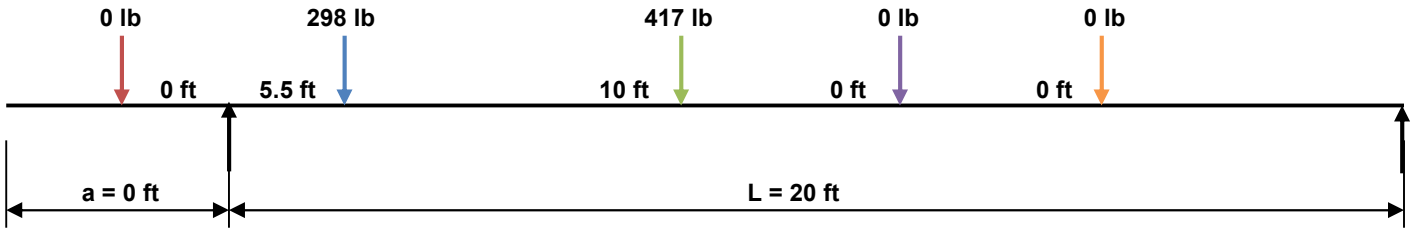
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	0
Floor twLL (ft) =	0	0
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	1.33
Attic twLL (ft) =	0	1.33
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	40

POINT LOADS:

	Cantilever	Backspan			
	P1	3FJ2	3FJ3	P3	P4
PDL (lb) =	0	98	137	0	0
PLL (lb) =	0	200	280	0	0
x (ft) =	0	5.5	10	0	0
Total Point Load (per lam - lb) =	0	298	417	0	0

Horiz. Shear Vmax (lb) =	1,196
Maximum Moment (lb-ft) =	4,887



V (lb) =	0	821		687
Mmax (lb-ft) =	0		4,887	
x (ft) =			10.00	

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3FB1 | **5 1/4" X 14" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	13.5
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	21,315	V / Vallow =	72%
M Allow (lb-ft) =	40,742	M / Mallow =	82%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.472	= L /	343
1.5 * DLΔ (in) =	0.233	*Governs*	
2000 ft R (in) =	0.137		

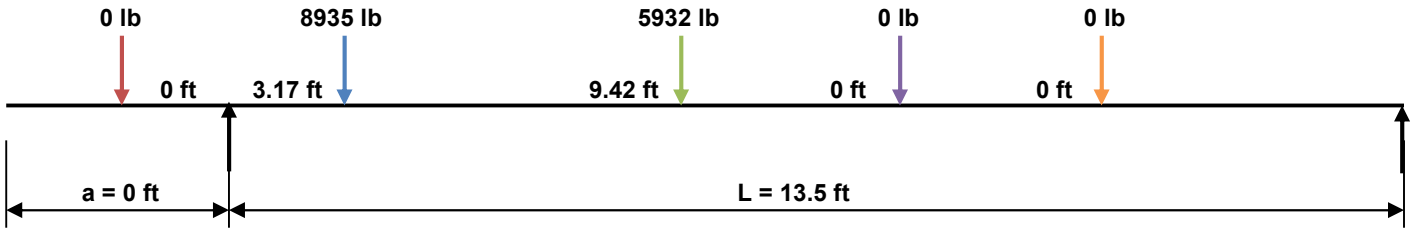
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	0
Floor twLL (ft) =	0	0
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	10
Attic twLL (ft) =	0	10
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	298

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	4,416	2,932	0	0
PLL (lb) =	0	4,519	3,000	0	0
x (ft) =	0	3.17	9.42	0	0
Total Point Load (per lam - lb) =	0	8,935	5,932	0	0

Horiz. Shear Vmax (lb) =	15,440
Maximum Moment (lb-ft) =	33,208



V (lb) =	0	10,641		8,249
Mmax (lb-ft) =	0		33,208	
x (ft) =			5.73	

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3FB3 | **5 1/4" X 14" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	19.5
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	24,512	V / Vallow =	50%
M Allow (lb-ft) =	46,853	M / Mallow =	74%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.960	= L /	244
1.5 * DLΔ (in) =	0.474	*Governs*	
2000 ft R (in) =	0.285		

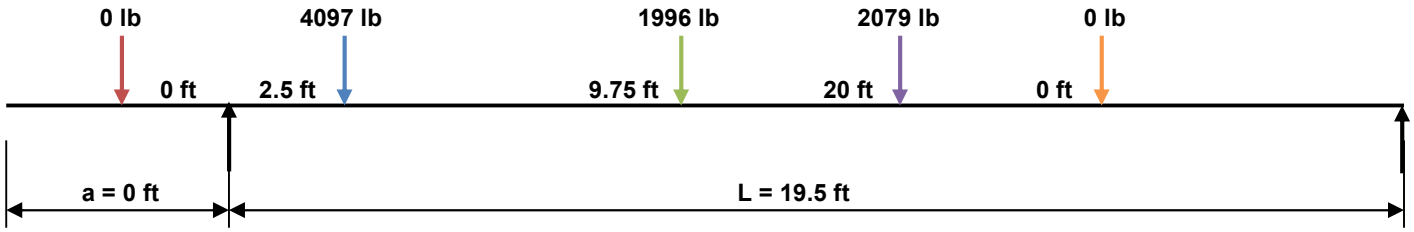
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	0
Floor twLL (ft) =	0	0
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	9.5
Attic twLL (ft) =	0	9.5
Roof twDL (ft) =	0	3
Roof twLL (ft) =	0	3
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	431

POINT LOADS:

	Cantilever	Backspan			
	P1	3FB2C	RB14	P3	P4
PDL (lb) =	0	2,025	986	1,027	0
PLL (lb) =	0	2,072	1,009	1,051	0
x (ft) =	0	2.5	9.75	20	0
Total Point Load (per lam - lb) =	0	4,097	1,996	2,079	0

Horiz. Shear Vmax (lb) =	12,328
Maximum Moment (lb-ft) =	34,836



V (lb) =	0	8,722		7,861
Mmax (lb-ft) =	0		34,836	
x (ft) =			9.75	

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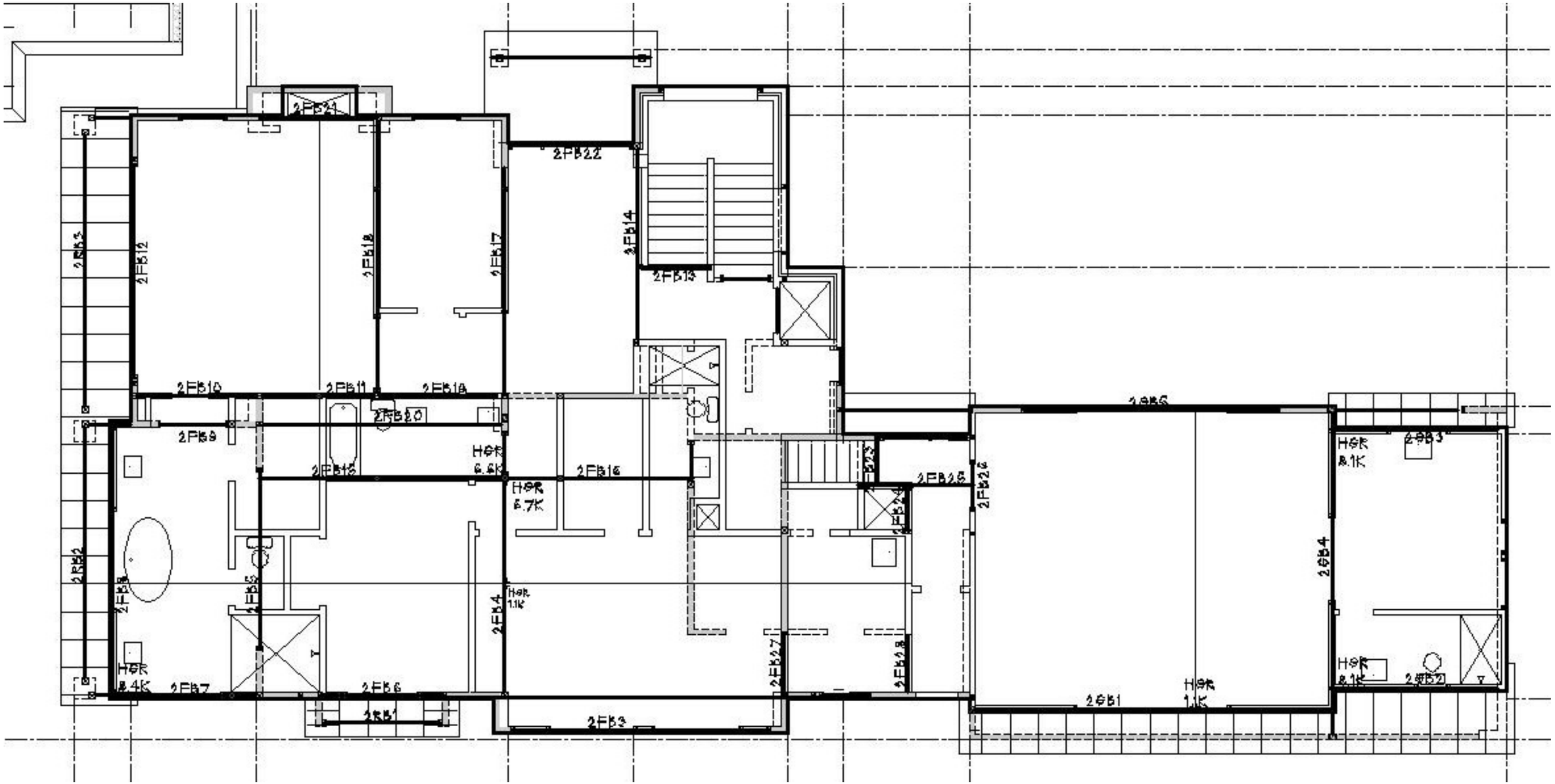
Upper Level Framing Plan
SHEET: 1 OF 1
4/10/2023



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Mark	Member	Length (ft)	Length of Cantilever (ft)	No. of Lams?	VaL (lb)	VaR (lb)	TOTAL Ra (lb)	Vb (lb)	TOTAL Rb (lb)	
2GB1	W12X65	25.50	0.00	1	0	15,986	15,986	15,885	15,885	O.K.
2GB2	3 1/2" x 16" Parallam 2.0E	12.00	0.00	1	0	7,954	7,954	7,954	7,954	O.K.
2GB3	3 1/2" x 16" Parallam 2.0E	12.00	0.00	1	0	7,954	7,954	7,954	7,954	O.K.
2GB4	W12X65	23.50	0.00	1	0	30,679	30,679	19,496	19,496	O.K.
2GB5	5 1/4" X 18" Parallam 2.0E	18.00	0.00	1	0	14,800	14,800	14,830	14,830	O.K.
2RB2	6 X 12 DF#1	18.50	0.00	1	0	1,600	1,600	1,600	1,600	O.K.
2FJ1	16" TJI/360	24.00	0.00	1	0	1,090	1,090	1,090	1,090	O.K.
2FB3	5 1/4" X 14" Parallam 2.0E	18.00	0.00	1	0	4,589	4,589	4,589	4,589	O.K.
2FB4	5 1/4" X 16" Parallam 2.0E	19.50	0.00	1	0	16,120	16,120	26,435	26,435	N.G.
2FB4 - ALT	W12X40	19.50	0.00	1	0	16,120	16,120	26,435	26,435	O.K.
2FB5 (NNO DR)	5 1/4" X 16" Parallam 2.0E	12.50	0.00	1	0	6,640	6,640	12,084	12,084	O.K.
2FB6	4 X 10 DF#2	9.00	0.00	1	0	2,991	2,991	1,640	1,640	O.K.
2FB7	5 1/4" X 16" Parallam 2.0E	12.00	0.00	1	0	13,983	13,983	14,025	14,025	O.K.
2FB8	5 1/4" X 16" Parallam 2.0E	19.50	0.00	1	0	8,356	8,356	8,305	8,305	O.K.
2FB9	4 X 12 DF#2	5.00	0.00	1	0	2,049	2,049	2,049	2,049	O.K.
2FB10	1 3/4" x 16" Microlam 2.0E	9.00	0.00	1	0	3,688	3,688	3,688	3,688	O.K.
2FB11	3 1/2" x 16" Parallam 2.0E	8.33	0.00	1	0	6,595	6,595	6,727	6,727	O.K.
2FB12 (NNO DOOR)	5 1/4" X 16" Parallam 2.0E	15.00	0.00	1	0	5,722	5,722	5,722	5,722	O.K.
2FB13	1 3/4" x 16" Microlam 2.0E	5.00	0.00	1	0	2,085	2,085	2,085	2,085	O.K.
2FB14	3 1/2" x 16" Parallam 2.0E	14.17	0.00	1	0	2,273	2,273	1,807	1,807	O.K.
2FB15	5 1/4" X 16" Parallam 2.0E	17.50	0.00	1	0	6,435	6,435	5,918	5,918	O.K.
2FB16	3 1/2" X 16" Parallam 2.0E	13.33	0.00	1	0	6,565	6,565	3,088	3,088	O.K.
2HDR16	4 X 12 DF#2	3.00	0.00	1	0	3,340	3,340	1,796	1,796	O.K.

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Mark	Member	Length (ft)	Length of Cantilever (ft)	No. of Lams?	VaL (lb)	VaR (lb)	TOTAL Ra (lb)	Vb (lb)	TOTAL Rb (lb)	
2FB17	5 1/4" X 16" Parallam 2.0E	16.50	0.00	1	0	6,778	6,778	11,031	11,031	O.K.
2FB18	5 1/4" X 16" Parallam 2.0E	19.67	0.00	1	0	7,345	7,345	7,812	7,812	O.K.
2FB19	1 3/4" x 16" Microlam 2.0E	8.33	0.00	1	0	3,414	3,414	3,414	3,414	O.K.
2FB20	1 3/4" x 16" Microlam 2.0E	17.50	0.00	1	0	2,391	2,391	2,391	2,391	O.K.
2FB21	3 1/2" X 16" Parallam 2.0E	8.50	0.00	1	0	7,046	7,046	6,650	6,650	O.K.
2FB22	6 X 10 DF#1	8.50	0.00	1	0	3,348	3,348	3,348	3,348	O.K.
2FB23	4 X 10 DF#2	3.17	0.00	1	0	813	813	813	813	O.K.
2FB24	4 X 10 DF#2	3.17	0.00	1	0	813	813	813	813	O.K.
2FB25	4 X 10 DF#2	8.00	0.00	1	0	2,196	2,196	1,484	1,484	O.K.
2FB26	6 X 8 DF#2	3.17	0.00	1	0	1,069	1,069	1,064	1,064	O.K.

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		LENGTH (ft)		LOADING CRITERIA			UNIFORM LOADS											
							Floor twDL (ft)		Floor twLL (ft)		Floor twLL2 (ft)		Deck twDL (ft)		Deck twLL (ft)		Attic twDL (ft)	
Mark	Member	Canti-lever	Back-span	No. of Lams?	Rep Use?	Slope Factor	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span
2GB2	3 1/2" x 16" Parallam 2.0E	0	12	1	NO	1.0	0	10	0	10	0	0	0	0	0	0	0	0
2GB3	3 1/2" x 16" Parallam 2.0E	0	12	1	NO	1.0	0	10	0	10	0	0	0	0	0	0	0	0
2RB1	4 X 8 DF#2	0	8	1	NO	1.0	0	0	0	0	0	0	0	0	0	0	0	0
2RB2	6 X 12 DF#1	0	18.5	1	NO	1.0	0	0	0	0	0	0	0	0	0	0	0	0
2FB4	5 1/4" X 16" Parallam 2.0E	0	19.5	1	NO	1.0	0	19	0	19	0	0	0	0	0	0	0	0
2FB4 - ALT	W12X40	0	19.5	1	N.A.	1.0	0	19	0	19	0	0	0	0	0	0	0	0
2FB5 (NNO DR)	5 1/4" X 16" Parallam 2.0E	0	12.5	1	NO	1.0	0	15	0	15	0	0	0	0	0	0	0	0
2FB6	4 X 10 DF#2	0	9	1	NO	1.0	0	1.33	0	1.33	0	0	0	0	0	0	0	0
2FB9	4 X 12 DF#2	0	5	1	NO	1.0	0	12	0	12	0	0	0	0	0	0	0	0
2FB10	1 3/4" x 16" Microlam 2.0E	0	9	1	NO	1.0	0	12	0	12	0	0	0	0	0	0	0	0
2FB11	3 1/2" x 16" Parallam 2.0E	0	8.33	1	NO	1.0	0	12	0	12	0	0	0	0	0	0	0	0
2FB12 (NNO DOOR)	5 1/4" X 16" Parallam 2.0E	0	15	1	NO	1.0	0	9	0	9	0	0	0	0	0	0	0	0
2FB13	1 3/4" x 16" Microlam 2.0E	0	5	1	NO	1.0	0	6.5	0	0	0	6.5	0	0	0	0	0	0
2FB14	3 1/2" x 16" Parallam 2.0E	0	14.17	1	NO	1.0	0	1.33	0	1.33	0	0	0	0	0	0	0	0
2FB15	5 1/4" X 16" Parallam 2.0E	0	17.5	1	NO	1.0	0	1.33	0	1.33	0	0	0	0	0	0	0	0
2FB16	3 1/2" X 16" Parallam 2.0E	0	13.33	1	NO	1.0	0	1.33	0	1.33	0	0	0	0	0	0	0	0
2HDR16	4 X 12 DF#2	0	3	1	NO	1.0	0	10	0	10	0	0	0	0	0	0	0	0
2FB19	1 3/4" x 16" Microlam 2.0E	0	8.33	1	NO	1.0	0	12	0	12	0	0	0	0	0	0	0	0
2FB20	1 3/4" x 16" Microlam 2.0E	0	17.5	1	NO	1.0	0	4	0	4	0	0	0	0	0	0	0	0

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		UNIFORM LOADS								POINT LOADS			POINT LOADS			LOADING PER LAM			
		Attic twLL (ft)		Roof twDL (ft)		Roof twLL (ft)		Addtnl Load on Cant-ilever (plf)	Addtnl Load on Back-span (plf)	CANTILEVER			BACKSPAN			Uniform Load wTL (plf)		Point Load PTL (lb)	
Mark	Member	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span			PDL (lb)	PLL (lb)	x1 (ft)	PDL (lb)	PLL (lb)	x2 (ft)	Canti-lever	Back-span	Canti-lever	Back-span
2GB2	3 1/2" x 16" Parallam 2.0E	0	0	0	13	0	13	0	0	0	0	0	0	0	0	0	1,326	0	0
2GB3	3 1/2" x 16" Parallam 2.0E	0	0	0	13	0	13	0	0	0	0	0	0	0	0	0	1,326	0	0
2RB1	4 X 8 DF#2	0	0	0	3.5	0	3.5	0	0	0	0	0	0	0	0	0	173	0	0
2RB2	6 X 12 DF#1	0	0	0	3.5	0	3.5	0	0	0	0	0	0	0	0	0	173	0	0
2FB4	5 1/4" X 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	7,148	10,103	15.58	0	1,298	0	17,251
2FB4 - ALT	W12X40	0	0	0	0	0	0	0	0	0	0	0	7,148	10,103	15.58	0	1,298	0	17,251
2FB5 (NNO DR)	5 1/4" X 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	2,452	3,466	12	0	1,025	0	5,918
2FB6	4 X 10 DF#2	0	0	0	2.5	0	2.5	0	75	0	0	0	1,002	1,025	1.5	0	289	0	2,027
2FB9	4 X 12 DF#2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	820	0	0
2FB10	1 3/4" x 16" Microlam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	820	0	0
2FB11	3 1/2" x 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	3,210	3,285	4.25	0	820	0	6,495
2FB12 (NNO DOOR)	5 1/4" X 16" Parallam 2.0E	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	763	0	0
2FB13	1 3/4" x 16" Microlam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	834	0	0
2FB14	3 1/2" x 16" Parallam 2.0E	0	0	0	0	0	0	0	50	0	0	0	864	1,221	5.5	0	141	0	2,085
2FB15	5 1/4" X 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	5,320	5,443	8.33	0	91	0	10,763
2FB16	3 1/2" X 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	4,172	4,269	3.92	0	91	0	8,442
2HDR16	4 X 12 DF#2	0	0	0	0	0	0	0	0	0	0	0	1,279	1,808	0.75	0	683	0	3,088
2FB19	1 3/4" x 16" Microlam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	820	0	0
2FB20	1 3/4" x 16" Microlam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	273	0	0

		SHEAR			SHEAR			MOMENT		MOMENT				DEFLECTION (in)				
Mark	Member	Horiz. Shear Vmax (lb)	VaL (lb)	VaR (lb)	Vb (lb)	V Allow (lb)	V / Vallow	Ma (lb-ft)	Point of +Mmax (ft)	+Mmax (lb-ft)	Mmax (lb-ft)	M Allowable (lb-ft)	M / Mallow	Canti-lever	L/?	Back-span	L/?	Okay?
2GB2	3 1/2" x 16" Parallam 2.0E	9,279	0	7,954	7,954	18,676	50%	0	6.00	23,861	23,861	40,197	59%	0.000	N.A.	0.259	556	O.K.
2GB3	3 1/2" x 16" Parallam 2.0E	9,279	0	7,954	7,954	18,676	50%	0	6.00	23,861	23,861	40,197	59%	0.000	N.A.	0.259	556	O.K.
2RB1	4 X 8 DF#2	881	0	692	692	5,253	17%	0	4.00	1,384	1,384	3,438	40%	0.000	N.A.	0.090	1,071	O.K.
2RB2	6 X 12 DF#1	2,157	0	1,600	1,600	12,097	18%	0	9.25	7,402	7,402	15,010	49%	0.000	N.A.	0.437	508	O.K.
2FB4	5 1/4" X 16" Parallam 2.0E	37,058	0	16,120	26,435	24,360	152%	0	15.58	93,656	93,656	52,430	179%	0.000	N.A.	1.926	122	N.G.
2FB4 - ALT	W12X40	26,435	0	16,120	26,435	234,000	11%	0	15.58	93,656	93,656	143,771	65%	0.000	N.A.	0.775	302	O.K.
2FB5 (NNO DR)	5 1/4" X 16" Parallam 2.0E	16,078	0	6,640	12,084	24,360	66%	0	12.00	5,914	5,914	52,430	11%	0.000	N.A.	0.171	876	O.K.
2FB6	4 X 10 DF#2	4,152	0	2,991	1,640	6,702	62%	0	3.33	4,648	4,648	5,166	90%	0.000	N.A.	0.187	579	O.K.
2FB9	4 X 12 DF#2	1,921	0	2,049	2,049	7,088	27%	0	2.50	2,561	2,561	6,091	42%	0.000	N.A.	0.017	3,459	O.K.
2FB10	1 3/4" x 16" Microlam 2.0E	3,893	0	3,688	3,688	7,980	49%	0	4.50	8,298	8,298	15,557	53%	0.000	N.A.	0.101	1,066	O.K.
2FB11	3 1/2" x 16" Parallam 2.0E	8,452	0	6,595	6,727	16,240	52%	0	4.25	20,626	20,626	34,954	59%	0.000	N.A.	0.094	1,067	O.K.
2FB12 (NNO DOOR)	5 1/4" X 16" Parallam 2.0E	7,058	0	5,722	5,722	28,014	25%	0	7.50	21,459	21,459	60,295	36%	0.000	N.A.	0.242	742	O.K.
2FB13	1 3/4" x 16" Microlam 2.0E	1,459	0	2,085	2,085	7,980	18%	0	2.50	2,606	2,606	15,557	17%	0.000	N.A.	0.010	6,112	O.K.
2FB14	3 1/2" x 16" Parallam 2.0E	3,129	0	2,273	1,807	16,240	19%	0	5.50	10,374	10,374	34,954	30%	0.000	N.A.	0.137	1,240	O.K.
2FB15	5 1/4" X 16" Parallam 2.0E	9,470	0	6,435	5,918	24,360	39%	0	8.33	50,449	50,449	52,430	96%	0.000	N.A.	0.631	333	O.K.
2FB16	3 1/2" X 16" Parallam 2.0E	9,665	0	6,565	3,088	16,240	60%	0	3.92	25,035	25,035	34,954	72%	0.000	N.A.	0.265	603	O.K.
2HDR16	4 X 12 DF#2	4,050	0	3,340	1,796	7,088	57%	0	0.75	2,313	2,313	6,091	38%	0.000	N.A.	0.005	7,157	O.K.
2FB19	1 3/4" x 16" Microlam 2.0E	3,481	0	3,414	3,414	7,980	44%	0	4.17	7,109	7,109	15,557	46%	0.000	N.A.	0.074	1,345	O.K.
2FB20	1 3/4" x 16" Microlam 2.0E	3,039	0	2,391	2,391	7,980	38%	0	8.75	10,458	10,458	15,557	67%	0.000	N.A.	0.483	435	O.K.

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		LENGTH (ft)		LOADING CRITERIA			UNIFORM LOADS											
							Floor twDL (ft)		Floor twLL (ft)		Floor twLL2 (ft)		Deck twDL (ft)		Deck twLL (ft)		Attic twDL (ft)	
Mark	Member	Canti-lever	Back-span	No. of Lams?	Rep Use?	Slope Factor	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span
2FB21	3 1/2" X 16" Parallam 2.0E	0	8.5	1	NO	1.0	0	12	0	12	0	0	0	0	0	0	0	0
2FB22	6 X 10 DF#1	0	8.5	1	NO	1.0	0	9	0	9	0	0	0	0	0	0	0	0
2FB23	4 X 10 DF#2	0	3.17	1	NO	1.0	0	4	0	0	0	4	0	0	0	0	0	0
2FB24	4 X 10 DF#2	0	3.17	1	NO	1.0	0	4	0	0	0	4	0	0	0	0	0	0
2FB26	6 X 8 DF#2	0	3.17	1	NO	1.0	0	3	0	3	0	0	0	0	0	0	0	0

		UNIFORM LOADS								POINT LOADS			POINT LOADS			LOADING PER LAM			
		Attic twLL (ft)		Roof twDL (ft)		Roof twLL (ft)		Addtnl Load on Cant-ilever (plf)	Addtnl Load on Back-span (plf)	CANTILEVER			BACKSPAN			Uniform Load wTL (plf)		Point Load PTL (lb)	
Mark	Member	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span			PDL (lb)	PLL (lb)	x1 (ft)	PDL (lb)	PLL (lb)	x2 (ft)	Canti-lever	Back-span	Canti-lever	Back-span
2FB21	3 1/2" X 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	3,326	3,404	4	0	820	0	6,730
2FB22	6 X 10 DF#1	0	0	0	3.5	0	3.5	0	0	0	0	0	0	0	0	0	788	0	0
2FB23	4 X 10 DF#2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	513	0	0
2FB24	4 X 10 DF#2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	513	0	0
2FB26	6 X 8 DF#2	0	0	0	0	0	0	0	0	0	0	0	615	869	1.58	0	205	0	1,484

		SHEAR			SHEAR			MOMENT		MOMENT				DEFLECTION (in)				
Mark	Member	Horiz. Shear Vmax (lb)	VaL (lb)	VaR (lb)	Vb (lb)	V Allow (lb)	V / Vallow	Ma (lb-ft)	Point of +Mmax (ft)	+Mmax (lb-ft)	Mmax (lb-ft)	M Allowable (lb-ft)	M / Mallow	Canti-lever	L/?	Back-span	L/?	Okay?
2FB21	3 1/2" X 16" Parallam 2.0E	8,930	0	7,046	6,650	16,240	55%	0	4.00	21,628	21,628	34,954	62%	0.000	N.A.	0.102	997	O.K.
2FB22	6 X 10 DF#1	4,111	0	3,348	3,348	9,946	41%	0	4.25	7,114	7,114	10,147	70%	0.000	N.A.	0.159	640	O.K.
2FB23	4 X 10 DF#2	627	0	813	813	5,828	11%	0	1.59	645	645	4,492	14%	0.000	N.A.	0.003	12,049	O.K.
2FB24	4 X 10 DF#2	627	0	813	813	5,828	11%	0	1.59	645	645	4,492	14%	0.000	N.A.	0.003	12,049	O.K.
2FB26	6 X 8 DF#2	1,418	0	1,069	1,064	6,779	21%	0	1.58	1,433	1,433	5,421	26%	0.000	N.A.	0.010	3,985	O.K.

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2FJ1 | **16" TJI/360** | ***O.K.***

Length cantilever (ft) =	0	V Allow (lb) =	2,190	V max (lb) =	1,090	V / Vallow =	50%
Length backspan (ft) =	24	M Allow (lb-ft) =	8,405	M max (lb-ft) =	6,540	M / Mallow =	78%
No. of Lams?	1						
Slope Factor =	1.0						

Maximum deflections: TJI SERIES: 110 - 360

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.904	= L /	318

UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft)	0	1.33
Floor twLL (ft)	0	1.33
Floor twLL2 (ft)	0	0
Deck twDL (ft)	0	0
Deck twLL (ft)	0	0
Attic twDL (ft)	0	0
Attic twLL (ft)	0	0
Roof twDL (ft)	0	0
Roof twLL (ft)	0	0
Addtnl Load (plf)	0	0
Total Uniform Load (per lam - plf) =	0	91

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	0	0	0	0
PLL (lb) =	0	0	0	0	0
x (ft) =	0	0	0	0	0
Total Point Load (per lam - lb) =	0	0	0	0	0

V (lb) =	0	1,090		1,090
Mmax (lb-ft) =	0		6,540	

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2GB1 | **W12X65** | *O.K.* | **Section Dimensions:** | **bf (in) =** 12 | **d (in) =** 12.10

Length cantilever (ft) =	0
Length backspan (ft) =	25.5
No. of Lams?	1
Rep Use?	N.A.
Slope Factor =	1.0

V Allow (lb) = 382,000 | V / Vallow = 4%
M Allow (lb-ft) = 245,388 | M / Mallow = 43%

Maximum deflections:
Cantilever - Δ max (in) = 0.000 | = L / N.A.
Backspan - Δ max (in) = 0.817 | = L / 374

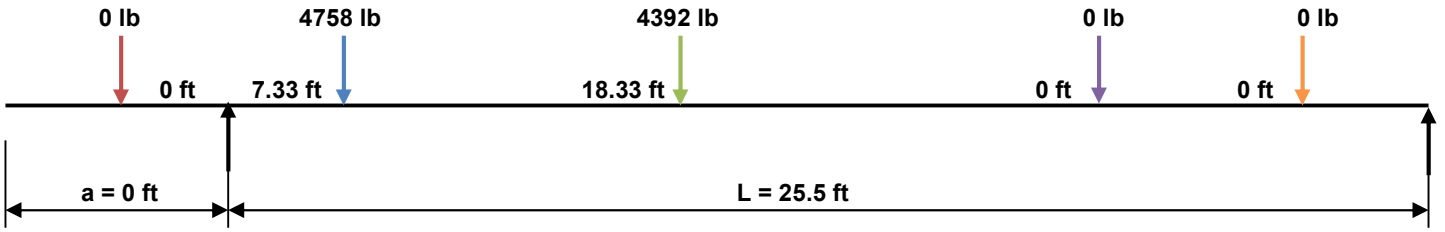
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	10.5
Floor twLL (ft) =	0	10.5
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	2
Roof twLL (ft) =	0	2
Addtnl Load (plf) =	0	75
Total Uniform Load (per lam - plf) =	0	891

POINT LOADS:

	Cantilever	Backspan			
	P1C	P1	P2	P3	P4
PDL (lb) =	0	2,352	2,171	0	0
PLL (lb) =	0	2,407	2,221	0	0
x (ft) =	0	7.33	18.33	0	0
Total Point Load (per lam - lb) =	0	4,758	4,392	0	0

Horiz. Shear Vmax (lb) = 15,986
Maximum Moment (lb-ft) = 105,617



V (lb) =	0	15,986		15,885
Mmax (lb-ft) =	0		105,617	
x (ft) =			12.60	

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7" X 20" Parallam 2.0E *N.G.*

Length cantilever (ft) =	0
Length backspan (ft) =	25.5
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	46,690	V / Vallow =	47%
M Allow (lb-ft) =	122,538	M / Mallow =	86%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	1.354	= L /	226
1.5 * DLΔ (in) =	0.669	*Governs*	
2000 ft R (in) =	0.488		

UNIFORM LOADS :

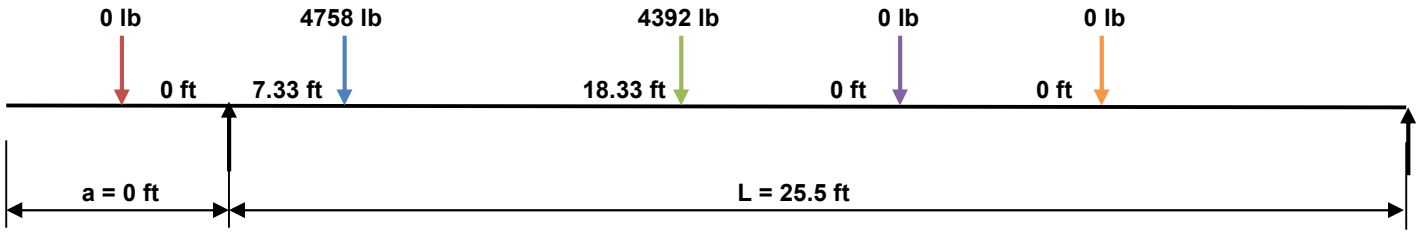
	Cantilever	Backspan
Floor twDL (ft) =	0	10.5
Floor twLL (ft) =	0	10.5
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	2
Roof twLL (ft) =	0	2
Addtnl Load (plf) =	0	75
Total Uniform Load (per lam - plf) =	0	891

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	2,352	2,171	0	0
PLL (lb) =	0	2,407	2,221	0	0
x (ft) =	0	7.33	18.33	0	0
Total Point Load (per lam - lb) =	0	4,758	4,392	0	0

Horiz. Shear Vmax (lb) = **21,751**

Maximum Moment (lb-ft) = 105,617



V (lb) =	0	15,986		15,885
Mmax (lb-ft) =	0		105,617	
x (ft) =			12.60	

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2GB4 | W12X65 | *O.K.* | Section Dimensions: | bf (in) = 12 | d (in) = 12.10

Length cantilever (ft) =	0
Length backspan (ft) =	23.5
No. of Lams?	1
Rep Use?	N.A.
Slope Factor =	1.0

V Allow (lb) =	382,000	V / Vallow =	8%
M Allow (lb-ft) =	245,388	M / Mallow =	38%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.620	= L /	455

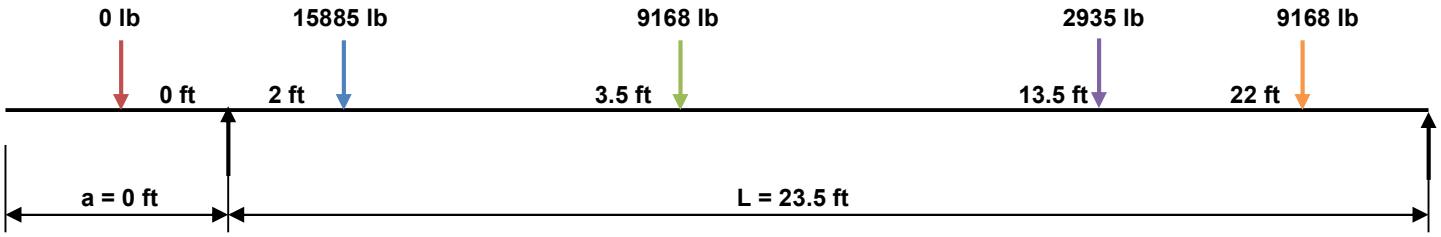
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	2.67
Floor twLL (ft) =	0	2.67
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	6
Roof twLL (ft) =	0	6
Addtnl Load (plf) =	0	75
Total Uniform Load (per lam - plf) =	0	554

POINT LOADS:

	Cantilever	Backspan			
	P1C	P1	P2	P3	P4
PDL (lb) =	0	6,582	4,532	1,451	4,532
PLL (lb) =	0	9,303	4,637	1,484	4,637
x (ft) =	0	2	3.5	13.5	22
Total Point Load (per lam - lb) =	0	15,885	9,168	2,935	9,168

Horiz. Shear Vmax (lb) =	30,679
Maximum Moment (lb-ft) =	92,426



V (lb) =	0	30,679			19,496
Mmax (lb-ft) =	0		92,426		
x (ft) =			10.16		

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2GB5 | **5 1/4" X 18" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	18
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	31,516	V / Vallow =	64%
M Allow (lb-ft) =	75,319	M / Mallow =	80%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.724	= L /	298
1.5 * DLΔ (in) =	0.358	*Governs*	
2000 ft R (in) =	0.243		

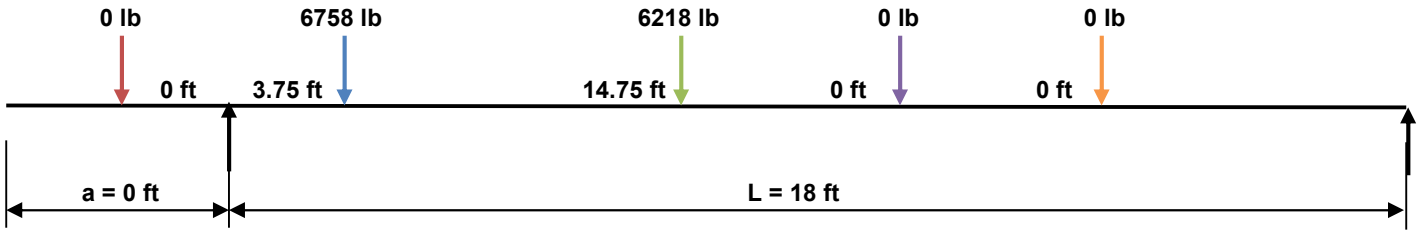
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	11
Floor twLL (ft) =	0	11
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	2
Roof twLL (ft) =	0	2
Addtnl Load (plf) =	0	75
Total Uniform Load (per lam - plf) =	0	925

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	3,340	3,073	0	0
PLL (lb) =	0	3,418	3,145	0	0
x (ft) =	0	3.75	14.75	0	0
Total Point Load (per lam - lb) =	0	6,758	6,218	0	0

Horiz. Shear Vmax (lb) =	20,163
Maximum Moment (lb-ft) =	60,290



V (lb) =	0	14,800		14,830
Mmax (lb-ft) =	0		60,290	
x (ft) =			8.69	

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2FB3 | **5 1/4" X 14" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	18
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	24,512	V / Vallow =	26%
M Allow (lb-ft) =	46,853	M / Mallow =	39%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.464	= L /	465
1.5 * DLΔ (in) =	0.229		
2000 ft R (in) =	0.243	*Governs*	

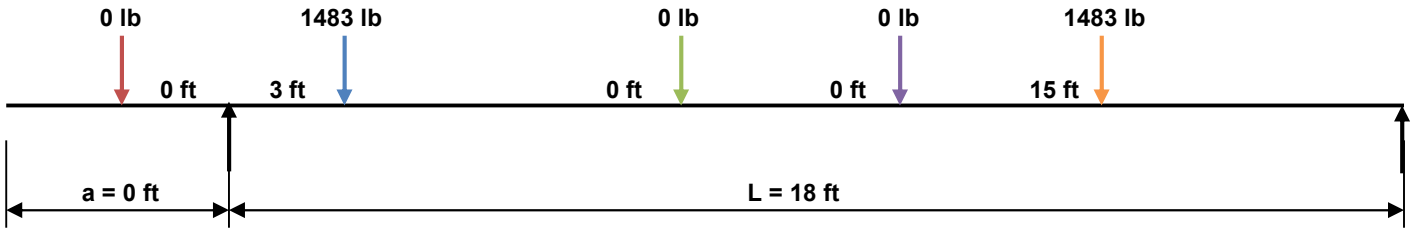
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	2
Floor twLL (ft) =	0	2
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	2
Attic twLL (ft) =	0	2
Roof twDL (ft) =	0	2
Roof twLL (ft) =	0	2
Addtnl Load (plf) =	0	50
Total Uniform Load (per lam - plf) =	0	345

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	733	0	0	733
PLL (lb) =	0	750	0	0	750
x (ft) =	0	3	0	0	15
Total Point Load (per lam - lb) =	0	1,483	0	0	1,483

Horiz. Shear Vmax (lb) =	6,279
Maximum Moment (lb-ft) =	18,424



V (lb) =	0	4,589		4,589
Mmax (lb-ft) =	0		18,424	
x (ft) =			9.00	

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2FB7 | **5 1/4" X 16" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	12
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	28,014	V / Vallow =	71%
M Allow (lb-ft) =	60,295	M / Mallow =	54%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.254	= L /	567
1.5 * DLΔ (in) =	0.126	*Governs*	
2000 ft R (in) =	0.108		

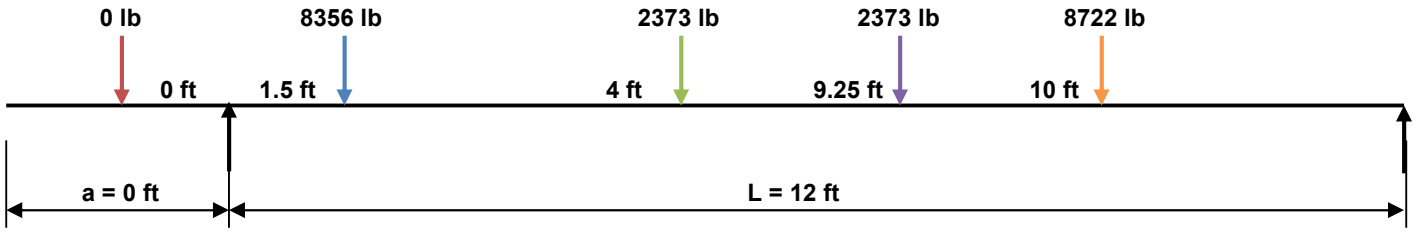
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	5
Floor twLL (ft) =	0	5
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	2
Roof twLL (ft) =	0	2
Addtnl Load (plf) =	0	75
Total Uniform Load (per lam - plf) =	0	515

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	3FB3
PDL (lb) =	0	4,130	1,173	1,173	3,614
PLL (lb) =	0	4,226	1,200	1,200	5,108
x (ft) =	0	1.5	4	9.25	10
Total Point Load (per lam - lb) =	0	8,356	2,373	2,373	8,722

Horiz. Shear Vmax (lb) =	20,007
Maximum Moment (lb-ft) =	32,299



V (lb) =	0	13,983		14,025
Mmax (lb-ft) =	0		32,299	
x (ft) =			6.31	

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2FB8 | **5 1/4" X 16" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	19.5
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	28,014	V / Vallow =	40%
M Allow (lb-ft) =	60,295	M / Mallow =	73%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.846	= L /	277
1.5 * DLΔ (in) =	0.418	*Governs*	
2000 ft R (in) =	0.285		

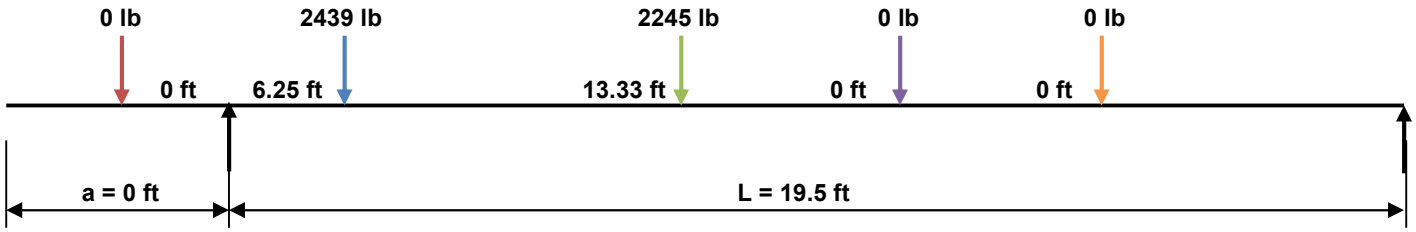
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	5
Floor twLL (ft) =	0	5
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	4
Roof twLL (ft) =	0	4
Addtnl Load (plf) =	0	75
Total Uniform Load (per lam - plf) =	0	614

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	1,205	1,110	0	0
PLL (lb) =	0	1,233	1,135	0	0
x (ft) =	0	6.25	13.33	0	0
Total Point Load (per lam - lb) =	0	2,439	2,245	0	0

Horiz. Shear Vmax (lb) =	11,306
Maximum Moment (lb-ft) =	43,746



V (lb) =	0	8,356		8,305
Mmax (lb-ft) =	0		43,746	
x (ft) =			9.63	

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2FB11 | **7" X 16" Parallam 2.0E** | ***N.G.***

Length cantilever (ft) =	0
Length backspan (ft) =	17
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	32,480	V / Vallow =	66%
M Allow (lb-ft) =	69,907	M / Mallow =	105%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.741	= L /	275
1.5 * DLΔ (in) =	0.366	*Governs*	
2000 ft R (in) =	0.217		

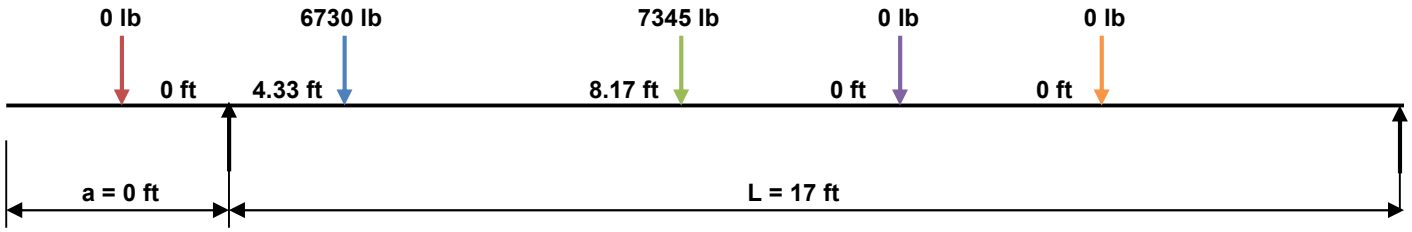
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	11
Floor twLL (ft) =	0	11
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	751

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	3,326	3,043	0	0
PLL (lb) =	0	3,404	4,301	0	0
x (ft) =	0	4.33	8.17	0	0
Total Point Load (per lam - lb) =	0	6,730	7,345	0	0

Horiz. Shear Vmax (lb) =	21,322
Maximum Moment (lb-ft) =	73,403



V (lb) =	0	15,217		11,630
Mmax (lb-ft) =	0		73,403	
x (ft) =			8.17	

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2FB11 - ALT | **W12X35** | *O.K.* | **Section Dimensions:** bf (in) = 6.56 | d (in) = 12.50

Length cantilever (ft) =	0
Length backspan (ft) =	17
No. of Lams?	1
Rep Use?	N.A.
Slope Factor =	1.0

V Allow (lb) =	206,000	V / Vallow =	7%
M Allow (lb-ft) =	127,300	M / Mallow =	58%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.429	= L /	476

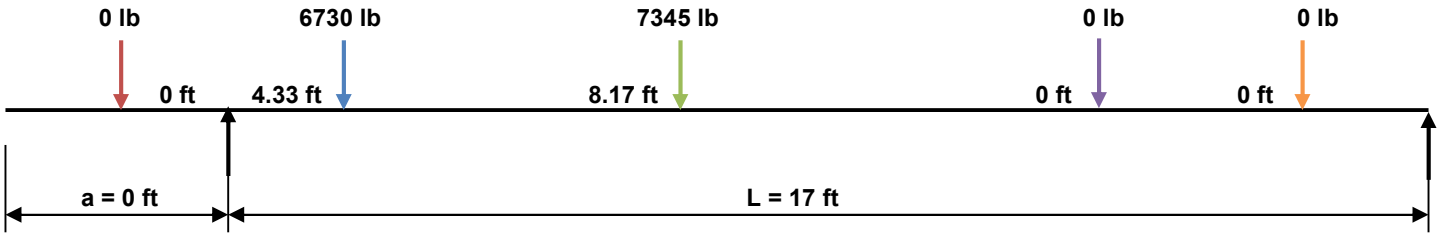
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	11
Floor twLL (ft) =	0	11
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	751

POINT LOADS:

	Cantilever	Backspan			
	P1C	P1	P2	P3	P4
PDL (lb) =	0	3,326	3,043	0	0
PLL (lb) =	0	3,404	4,301	0	0
x (ft) =	0	4.33	8.17	0	0
Total Point Load (per lam - lb) =	0	6,730	7,345	0	0

Horiz. Shear Vmax (lb) = 15,217
Maximum Moment (lb-ft) = 73,403



V (lb) =	0	15,217		11,630
Mmax (lb-ft) =	0		73,403	
			x (ft) = 8.17	

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2FB17 | **5 1/4" X 16" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	16.5
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	24,360	V / Vallow =	63%
M Allow (lb-ft) =	52,430	M / Mallow =	60%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.441	= L /	449
1.5 * DLΔ (in) =	0.218	*Governs*	
2000 ft R (in) =	0.204		

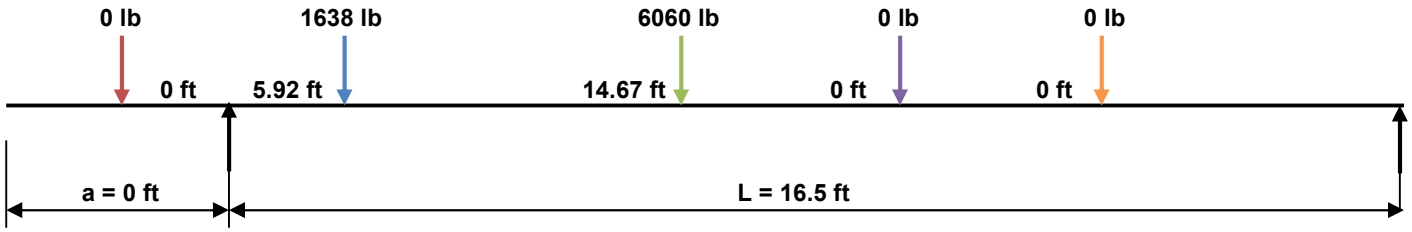
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	1.33
Floor twLL (ft) =	0	1.33
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	15
Attic twLL (ft) =	0	15
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	75
Total Uniform Load (per lam - plf) =	0	613

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	539	2,995	0	0
PLL (lb) =	0	1,099	3,065	0	0
x (ft) =	0	5.92	14.67	0	0
Total Point Load (per lam - lb) =	0	1,638	6,060	0	0

Horiz. Shear Vmax (lb) =	15,321
Maximum Moment (lb-ft) =	31,254



V (lb) =	0	6,778		11,031
Mmax (lb-ft) =	0		31,254	
x (ft) =			8.39	

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2FB18 | **5 1/4" X 16" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	19.67
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	24,360	V / Vallow =	43%
M Allow (lb-ft) =	52,430	M / Mallow =	72%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.750	= L /	315
1.5 * DLΔ (in) =	0.371	*Governs*	
2000 ft R (in) =	0.290		

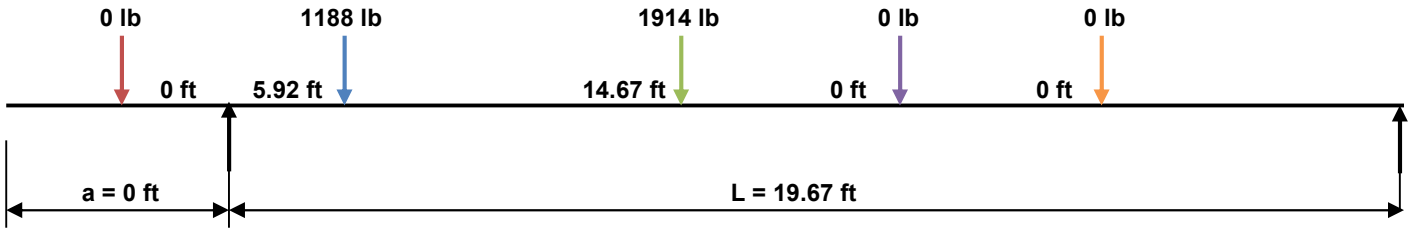
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	1.33
Floor twLL (ft) =	0	1.33
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	15
Attic twLL (ft) =	0	15
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	75
Total Uniform Load (per lam - plf) =	0	613

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	391	946	0	0
PLL (lb) =	0	798	968	0	0
x (ft) =	0	5.92	14.67	0	0
Total Point Load (per lam - lb) =	0	1,188	1,914	0	0

Horiz. Shear Vmax (lb) =	10,493
Maximum Moment (lb-ft) =	37,955



V (lb) =	0	7,345		7,812
Mmax (lb-ft) =	0		37,955	
x (ft) =			10.05	

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2FB25 | **4 X 10 DF#2** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	8
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	5,828	V / Vallow =	51%
M Allow (lb-ft) =	4,492	M / Mallow =	92%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.118	= L /	814
1.5 * DLΔ (in) =	0.058	*Governs*	
2000 ft R (in) =	0.048		

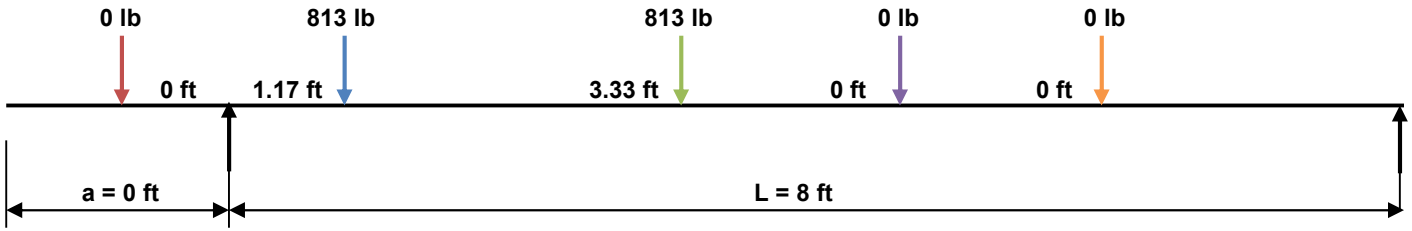
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	2
Floor twLL (ft) =	0	0
Floor twLL2 (ft) =	0	2
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	257

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	337	337	0	0
PLL (lb) =	0	476	476	0	0
x (ft) =	0	1.17	3.33	0	0
Total Point Load (per lam - lb) =	0	813	813	0	0

Horiz. Shear Vmax (lb) =	2,997
Maximum Moment (lb-ft) =	4,132



V (lb) =	0	2,196		1,484
Mmax (lb-ft) =	0		4,132	
x (ft) =			3.33	

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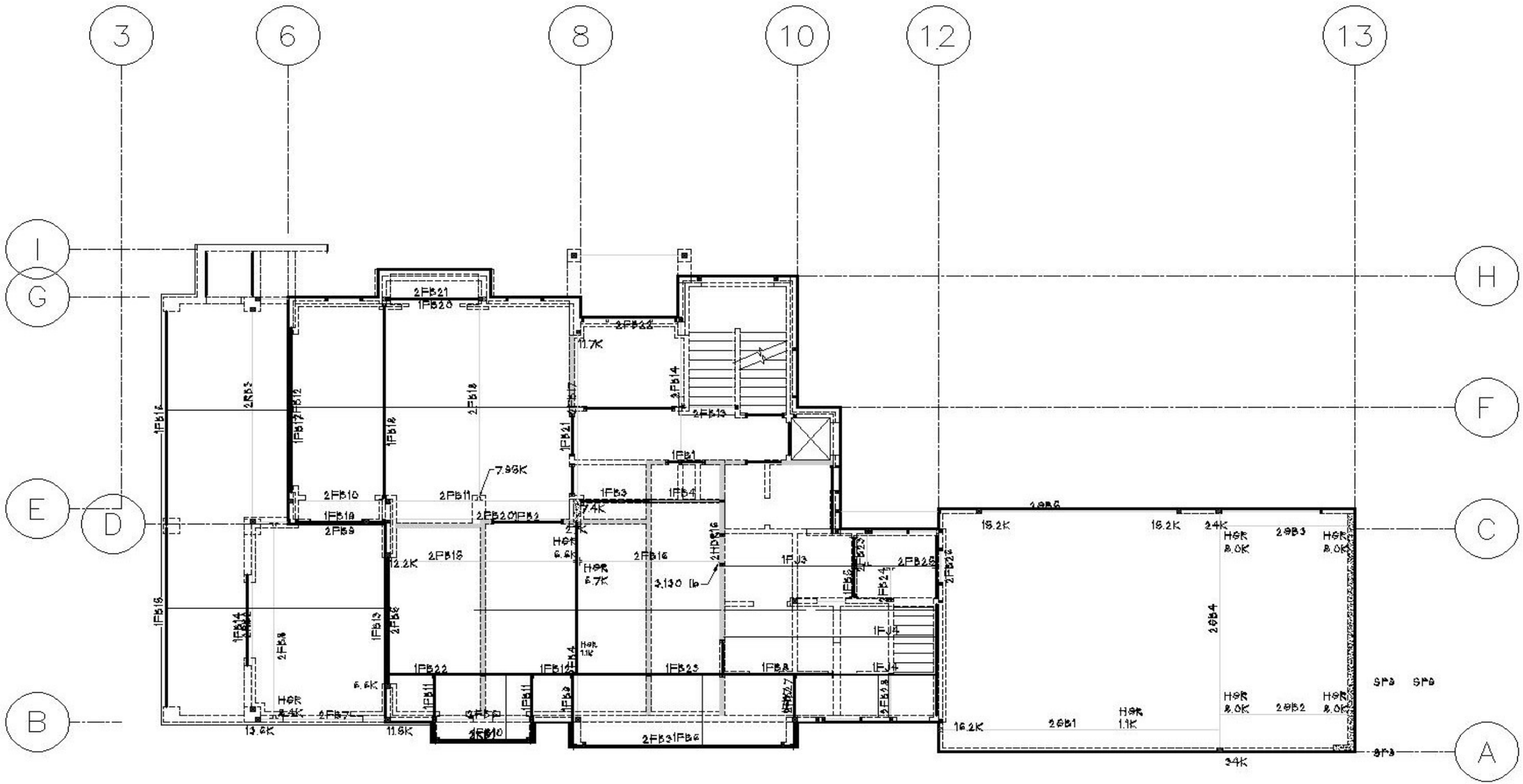
Main Level Framing Plan
SHEET: 1 OF 1
4/10/2023



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Mark	Member	Length (ft)	Length of Cantilever (ft)	No. of Lams?	VaL (lb)	VaR (lb)	TOTAL Ra (lb)	Vb (lb)	TOTAL Rb (lb)	
1FJ1	16" TJI/360	20.00	0.00	1	0	908	908	908	908	O.K.
1FJ3	16" TJI/360	12.00	0.00	1	0	818	818	818	818	O.K.
1FJ4	16" TJI/360	12.50	0.00	1	0	886	886	886	886	O.K.
1FJ5	16" TJI/360	12.50	0.00	2	0	762	1,524	762	1,524	O.K.
1FB1	4 X 8 DF#2	3.17	0.00	1	0	1,522	1,522	1,401	1,401	O.K.
1FB2	4 X 8 DF#2	6.17	0.00	1	0	632	632	632	632	O.K.
1FB3	3 1/2" x 16" Parallam 2.0E	6.00	0.00	1	0	6,939	6,939	8,731	8,731	O.K.
1FB4	1 3/4" x 16" Microlam 2.0E	6.75	0.00	1	0	2,766	2,766	2,766	2,766	O.K.
1FB4 - ALT	16" TJI/360	6.75	0.00	2	0	1,383	2,766	1,383	2,766	O.K.
1FB5	1 3/4" x 16" Microlam 2.0E	6.00	0.00	1	0	4,376	4,376	4,376	4,376	O.K.
1FB6	3 1/2" X 16" Parallam 2.0E	20.42	0.00	1	0	7,515	7,515	7,515	7,515	O.K.
1FB7	3 1/2" x 16" Parallam 2.0E	7.00	2.67	1	7,757	4,905	12,663	-4,512	-4,512	O.K.
1FB8	1 3/4" x 16" Microlam 2.0E	10.50	0.00	1	0	-570	-570	-1,790	-1,790	O.K.
1FB9	3 1/2" x 16" Parallam 2.0E	7.00	2.67	1	7,757	4,905	12,663	-4,512	-4,512	O.K.
1FB10	1 3/4" x 16" Microlam 2.0E	9.00	0.00	1	0	1,982	1,982	1,982	1,982	O.K.
1FB11	1 3/4" x 16" Microlam 2.0E	7.00	2.67	1	2,224	1,493	3,718	-1,100	-1,100	O.K.
1FB12	3 1/2" x 16" Parallam 2.0E	15.25	0.00	1	0	-1,284	-1,284	-1,203	-1,203	O.K.
1FB13	5 1/4" X 11 7/8" Parallam 2.0E	12.42	0.00	1	0	5,419	5,419	5,419	5,419	O.K.
1FB14 (NNO DR)	7" X 14" Parallam 2.0E	12.42	0.00	1	0	6,342	6,342	6,342	6,342	O.K.
1FB14 - ALT	W8X35	12.42	0.00	1	0	6,342	6,342	6,342	6,342	O.K.
1FB15	5 1/4" X 16" Parallam 2.0E	18.00	0.00	1	0	5,762	5,762	5,762	5,762	O.K.
1FB16	5 1/4" X 16" Parallam 2.0E	20.50	0.00	1	0	6,562	6,562	6,562	6,562	O.K.
1FB17	7" X 18" Parallam 2.0E	16.33	0.00	1	0	6,846	6,846	6,846	6,846	O.K.
DECK JOIST	1 3/4" x 7 1/4" Microlam 2.0E	13.00	0.00	1	0	706	706	706	706	O.K.

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Mark	Member	Length (ft)	Length of Cantilever (ft)	No. of Lams?	VaL (lb)	VaR (lb)	TOTAL Ra (lb)	Vb (lb)	TOTAL Rb (lb)	
1FB18	5 1/4" X 16" Parallam 2.0E	18.67	0.00	1	0	8,289	8,289	8,289	8,289	O.K.
1FB19	3 1/2" x 16" Parallam 2.0E	8.00	0.00	1	0	4,535	4,535	9,064	9,064	O.K.
1FB20	3 1/2" x 16" Parallam 2.0E	9.17	0.00	1	0	8,596	8,596	15,708	15,708	O.K.
1FB21	4 X 8 DF#2	3.67	0.00	1	0	2,381	2,381	2,381	2,381	O.K.
1FB22	3 1/2" x 16" Parallam 2.0E	8.75	0.00	1	0	378	378	315	315	O.K.
1FB23	3 1/2" x 16" Parallam 2.0E	6.75	0.00	1	0	692	692	692	692	O.K.
RDB2	6-3/4 X 12 GLB	14.33	0.00	1	0	1,948	1,948	1,948	1,948	O.K.
FJ1 - GARAGE	14" TJI/210	20.00	0.00	1	0	908	908	908	908	O.K.

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		LENGTH (ft)		LOADING CRITERIA			UNIFORM LOADS											
							Floor twDL (ft)		Floor twLL (ft)		Floor twLL2 (ft)		Deck twDL (ft)		Deck twLL (ft)		Attic twDL (ft)	
Mark	Member	Canti-lever	Back-span	No. of Lams?	Rep Use?	Slope Factor	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span
1FJ1	16" TJI/360	0	20	1	YES	1.0	0	1.33	0	1.33	0	0	0	0	0	0	0	0
1FB1	4 X 8 DF#2	0	3.17	1	NO	1.0	0	3	0	3	0	0	0	0	0	0	0	0
1FB2	4 X 8 DF#2	0	6.17	1	NO	1.0	0	3	0	3	0	0	0	0	0	0	0	0
1FB3	3 1/2" x 16" Parallam 2.0E	0	6	1	NO	1.0	0	12	0	12	0	0	0	0	0	0	0	0
1FB4	1 3/4" x 16" Microlam 2.0E	0	6.75	1	NO	1.0	0	12	0	12	0	0	0	0	0	0	0	0
1FB4 - ALT	16" TJI/360	0	6.75	2	YES	1.0	0	12	0	12	0	0	0	0	0	0	0	0
1FB5	1 3/4" x 16" Microlam 2.0E	0	6	1	NO	1.0	0	16	0	16	0	0	0	0	0	0	0	0
1FB7	3 1/2" x 16" Parallam 2.0E	2.67	4.33	1	NO	1.0	1.33	1.33	1.33	1.33	0	0	0	0	0	0	0	0
1FB8	1 3/4" x 16" Microlam 2.0E	0	10.5	1	NO	1.0	0	3	0	3	0	0	0	0	0	0	0	0
1FB9	3 1/2" x 16" Parallam 2.0E	2.67	4.33	1	NO	1.0	1.33	1.33	1.33	1.33	0	0	0	0	0	0	0	0
1FB11	1 3/4" x 16" Microlam 2.0E	2.67	4.33	1	NO	1.0	1.33	1.33	1.33	1.33	0	0	0	0	0	0	0	0
1FB13	5 1/4" X 11 7/8" Parallam 2.0E	0	12.42	1	NO	1.0	0	5	0	5	0	0	0	6.5	0	6.5	0	0
1FB14 (NNO DR)	7" X 14" Parallam 2.0E	0	12.42	1	NO	1.0	0	0	0	0	0	0	0	12.5	0	12.5	0	0
1FB14 - ALT	W8X35	0	12.42	1	N.A.	1	0	0	0	0	0	0	0	12.5	0	12.5	0	0
1FB15	5 1/4" X 16" Parallam 2.0E	0	18	1	NO	1.0	0	0	0	0	0	0	0	6	0	6	0	0
1FB16	5 1/4" X 16" Parallam 2.0E	0	20.5	1	NO	1.0	0	0	0	0	0	0	0	6	0	6	0	0
1FB17	7" X 18" Parallam 2.0E	0	16.33	1	NO	1.0	0	4.5	0	4.5	0	0	0	6.5	0	6.5	0	0
DECK JOIST	1 3/4" x 7 1/4" Microlam 2.0E	0	13	1	NO	1.0	0	0	0	0	0	0	0	1.33	0	1.33	0	0
1FB18	5 1/4" X 16" Parallam 2.0E	0	18.67	1	NO	1.0	0	13	0	13	0	0	0	0	0	0	0	0

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		UNIFORM LOADS								POINT LOADS			POINT LOADS			LOADING PER LAM			
		Attic twLL (ft)		Roof twDL (ft)		Roof twLL (ft)		Addtnl Load on Cant-ilever (plf)	Addtnl Load on Back-span (plf)	CANTILEVER			BACKSPAN			Uniform Load wTL (plf)		Point Load PTL (lb)	
Mark	Member	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span			PDL (lb)	PLL (lb)	x1 (ft)	PDL (lb)	PLL (lb)	x2 (ft)	Canti-lever	Back-span	Canti-lever	Back-span
1FJ1	16" TJI/360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	0	0
1FB1	4 X 8 DF#2	0	0	0	0	0	0	0	0	0	0	0	942	1,331	1.5	0	205	0	2,273
1FB2	4 X 8 DF#2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	205	0	0
1FB3	3 1/2" x 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	5,314	5,438	3.5	0	820	0	10,752
1FB4	1 3/4" x 16" Microlam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	820	0	0
1FB4 - ALT	16" TJI/360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	410	0	0
1FB5	1 3/4" x 16" Microlam 2.0E	0	0	0	0	0	0	0	0	0	0	0	910	1,286	3	0	1,093	0	2,196
1FB7	3 1/2" x 16" Parallam 2.0E	0	0	0	0	0	0	0	0	3,114	4,401	2.67	0	0	0	91	91	7,515	0
1FB8	1 3/4" x 16" Microlam 2.0E	0	0	0	0	0	0	0	0	0	0	0	-1,870	-2,642	6.67	0	205	0	-4,512
1FB9	3 1/2" x 16" Parallam 2.0E	0	0	0	0	0	0	0	0	3,114	4,401	2.67	0	0	0	91	91	7,515	0
1FB11	1 3/4" x 16" Microlam 2.0E	0	0	0	0	0	0	0	0	821	1,161	2.67	0	0	0	91	91	1,982	0
1FB13	5 1/4" X 11 7/8" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	873	0	0
1FB14 (NNO DR)	7" X 14" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,021	0	0
1FB14 - ALT	W8X35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,021	0	0
1FB15	5 1/4" X 16" Parallam 2.0E	0	0	0	0	0	0	0	150	0	0	0	0	0	0	0	640	0	0
1FB16	5 1/4" X 16" Parallam 2.0E	0	0	0	0	0	0	0	150	0	0	0	0	0	0	0	640	0	0
1FB17	7" X 18" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	838	0	0
DECK JOIST	1 3/4" x 7 1/4" Microlam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109	0	0
1FB18	5 1/4" X 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	888	0	0

		SHEAR			SHEAR			MOMENT		MOMENT				DEFLECTION (in)				
Mark	Member	Horiz. Shear Vmax (lb)	VaL (lb)	VaR (lb)	Vb (lb)	V Allow (lb)	V / Vallow	Ma (lb-ft)	Point of +Mmax (ft)	+Mmax (lb-ft)	Mmax (lb-ft)	M Allowable (lb-ft)	M / Mallow	Canti-lever	L/?	Back-span	L/?	Okay?
1FJ1	16" TJI/360	908	0	908	908	2,519	36%	0	10.00	4,542	4,542	9,666	47%	0.000	N.A.	0.394	609	O.K.
1FB1	4 X 8 DF#2	2,098	0	1,522	1,401	4,568	46%	0	1.50	2,053	2,053	2,989	69%	0.000	N.A.	0.017	2,209	O.K.
1FB2	4 X 8 DF#2	762	0	632	632	4,568	17%	0	3.09	975	975	2,989	33%	0.000	N.A.	0.038	1,971	O.K.
1FB3	3 1/2" x 16" Parallam 2.0E	11,457	0	6,939	8,731	16,240	71%	0	3.50	19,265	19,265	34,954	55%	0.000	N.A.	0.044	1,647	O.K.
1FB4	1 3/4" x 16" Microlam 2.0E	2,510	0	2,766	2,766	7,980	31%	0	3.38	4,668	4,668	15,557	30%	0.000	N.A.	0.032	2,528	O.K.
1FB4 - ALT	16" TJI/360	1,383	0	1,383	1,383	2,519	55%	0	3.38	2,334	2,334	9,666	24%	0.000	N.A.	0.023	3,512	O.K.
1FB5	1 3/4" x 16" Microlam 2.0E	4,379	0	4,376	4,376	7,980	55%	0	3.00	8,211	8,211	15,557	53%	0.000	N.A.	0.041	1,758	O.K.
1FB7	3 1/2" x 16" Parallam 2.0E	11,454	7,757	4,905	-4,512	16,240	71%	20,388	N.A.	N.A.	20,388	34,954	58%	0.091	701	-0.009	6,065	O.K.
1FB8	1 3/4" x 16" Microlam 2.0E	0	0	-570	-1,790	7,980	0%	0	19.24	7,822	7,822	15,557	50%	0.000	N.A.	-0.096	1,315	O.K.
1FB9	3 1/2" x 16" Parallam 2.0E	11,454	7,757	4,905	-4,512	16,240	71%	20,388	N.A.	N.A.	20,388	34,954	58%	0.091	701	-0.009	6,065	O.K.
1FB11	1 3/4" x 16" Microlam 2.0E	3,155	2,224	1,493	-1,100	7,980	40%	5,615	N.A.	N.A.	5,615	15,557	36%	0.050	1,289	-0.004	12,132	O.K.
1FB13	5 1/4" X 11 7/8" Parallam 2.0E	6,833	0	5,419	5,419	18,080	38%	0	6.21	16,825	16,825	29,819	56%	0.000	N.A.	0.319	467	O.K.
1FB14 (NNO DR)	7" X 14" Parallam 2.0E	7,726	0	6,342	6,342	28,420	27%	0	6.21	19,692	19,692	54,323	36%	0.000	N.A.	0.171	873	O.K.
1FB14 - ALT	W8X35	6,342	0	6,342	6,342	206,000	3%	0	6.21	19,692	19,692	87,100	23%	0.000	N.A.	0.148	1,004	O.K.
1FB15	5 1/4" X 16" Parallam 2.0E	7,362	0	5,762	5,762	24,360	30%	0	9.00	25,928	25,928	52,430	49%	0.000	N.A.	0.422	512	O.K.
1FB16	5 1/4" X 16" Parallam 2.0E	8,563	0	6,562	6,562	24,360	35%	0	10.25	33,631	33,631	52,430	64%	0.000	N.A.	0.710	347	O.K.
1FB17	7" X 18" Parallam 2.0E	8,382	0	6,846	6,846	36,540	23%	0	8.17	27,947	27,947	87,326	32%	0.000	N.A.	0.197	994	O.K.
DECK JOIST	1 3/4" x 7 1/4" Microlam 2.0E	961	0	706	706	3,616	27%	0	6.50	2,295	2,295	3,322	69%	0.000	N.A.	0.628	248	O.K.
1FB18	5 1/4" X 16" Parallam 2.0E	10,657	0	8,289	8,289	24,360	44%	0	9.34	38,687	38,687	52,430	74%	0.000	N.A.	0.677	331	O.K.

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		LENGTH (ft)		LOADING CRITERIA			UNIFORM LOADS											
							Floor twDL (ft)		Floor twLL (ft)		Floor twLL2 (ft)		Deck twDL (ft)		Deck twLL (ft)		Attic twDL (ft)	
Mark	Member	Canti-lever	Back-span	No. of Lams?	Rep Use?	Slope Factor	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span
1FB21	4 X 8 DF#2	0	3.67	1	NO	1.0	0	19	0	19	0	0	0	0	0	0	0	0
1FB22	3 1/2" x 16" Parallam 2.0E	0	8.75	1	NO	1.0	0	3	0	3	0	0	0	0	0	0	0	0
1FB23	3 1/2" x 16" Parallam 2.0E	0	6.75	1	NO	1.0	0	3	0	3	0	0	0	0	0	0	0	0
RDB2	6-3/4 X 12 GLB	0	14.33	1	NO	1.0	0	0	0	0	0	0	0	0	0	0	0	0
FJ1 - GARAGE	14" TJI/210	0	20	1	YES	1.0	0	1.33	0	1.33	0	0	0	0	0	0	0	0

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		UNIFORM LOADS								POINT LOADS			POINT LOADS			LOADING PER LAM			
		Attic twLL (ft)		Roof twDL (ft)		Roof twLL (ft)		Addtnl Load on Cant-ilever (plf)	Addtnl Load on Back-span (plf)	CANTILEVER			BACKSPAN			Uniform Load wTL (plf)		Point Load PTL (lb)	
Mark	Member	Canti-lever	Back-span	Canti-lever	Back-span	Canti-lever	Back-span			PDL (lb)	PLL (lb)	x1 (ft)	PDL (lb)	PLL (lb)	x2 (ft)	Canti-lever	Back-span	Canti-lever	Back-span
1FB21	4 X 8 DF#2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,298	0	0
1FB22	3 1/2" x 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	-456	-644	4.625	0	205	0	-1,100
1FB23	3 1/2" x 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	205	0	0
RDB2	6-3/4 X 12 GLB	0	0	0	5.5	0	5.5	0	0	0	0	0	0	0	0	0	272	0	0
FJ1 - GARAGE	14" TJI/210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91	0	0

		SHEAR			SHEAR			MOMENT		MOMENT				DEFLECTION (in)				
Mark	Member	Horiz. Shear Vmax (lb)	VaL (lb)	VaR (lb)	Vb (lb)	V Allow (lb)	V / Vallow	Ma (lb-ft)	Point of +Mmax (ft)	+Mmax (lb-ft)	Mmax (lb-ft)	M Allowable (lb-ft)	M / Mallow	Cantilever	L/?	Backspan	L/?	Okay?
1FB21	4 X 8 DF#2	2,396	0	2,381	2,381	4,568	52%	0	1.84	2,185	2,185	2,989	73%	0.000	N.A.	0.030	1,479	O.K.
1FB22	3 1/2" x 16" Parallam 2.0E	157	0	378	315	16,240	1%	0	7.21	242	242	34,954	1%	0.000	N.A.	0.000	413,008	O.K.
1FB23	3 1/2" x 16" Parallam 2.0E	628	0	692	692	16,240	4%	0	3.38	1,167	1,167	34,954	3%	0.000	N.A.	0.004	20,222	O.K.
RDB2	6-3/4 X 12 GLB	2,514	0	1,948	1,948	15,370	16%	0	7.17	6,979	6,979	37,260	19%	0.000	N.A.	0.147	1,166	O.K.
FJ1 - GARAGE	14" TJI/210	908	0	908	908	2,237	41%	0	10.00	4,542	4,542	5,164	88%	0.000	N.A.	0.708	339	O.K.

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1FJ3 | **16" TJI/360** | ***O.K.***

Length cantilever (ft) =	0	V Allow (lb) =	2,190	V max (lb) =	818	V / Vallow =	37%
Length backspan (ft) =	12	M Allow (lb-ft) =	8,405	M max (lb-ft) =	3,270	M / Mallow =	39%
No. of Lams?	1						
Slope Factor =	1.0						

Maximum deflections: TJI SERIES: 110 - 360

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.136	= L /	1,063

UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft)	0	1.33
Floor twLL (ft)	0	1.33
Floor twLL2 (ft)	0	0
Deck twDL (ft)	0	0
Deck twLL (ft)	0	0
Attic twDL (ft)	0	0
Attic twLL (ft)	0	0
Roof twDL (ft)	0	0
Roof twLL (ft)	0	0
Addtnl Load (plf)	0	0
Total Uniform Load (per lam - plf) =	0	91

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	226	0	0	0
PLL (lb) =	0	319	0	0	0
x (ft) =	0	6	0	0	0
Total Point Load (per lam - lb) =	0	545	0	0	0

V (lb) =	0	818	818
Mmax (lb-ft) =	0	3,270	

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1FJ4 | **16" TJI/360** | ***O.K.***

Length cantilever (ft) =	0	V Allow (lb) =	2,190	V max (lb) =	886	V / Vallow =	40%
Length backspan (ft) =	12.5	M Allow (lb-ft) =	8,405	M max (lb-ft) =	3,761	M / Mallow =	45%
No. of Lams?	1						
Slope Factor =	1.0						

Maximum deflections:

TJI SERIES: 110 - 360

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.164	= L /	914

UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft)	0	1.33
Floor twLL (ft)	0	1.33
Floor twLL2 (ft)	0	0
Deck twDL (ft)	0	0
Deck twLL (ft)	0	0
Attic twDL (ft)	0	0
Attic twLL (ft)	0	0
Roof twDL (ft)	0	0
Roof twLL (ft)	0	0
Addtnl Load (plf)	0	0
Total Uniform Load (per lam - plf) =	0	91

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	263	0	0	0
PLL (lb) =	0	372	0	0	0
x (ft) =	0	6.25	0	0	0
Total Point Load (per lam - lb) =	0	636	0	0	0

V (lb) =	0	886		886
Mmax (lb-ft) =	0		3,761	

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1FJ5 | **16" TJI/360** | ***O.K.***

Length cantilever (ft) =	0	V Allow (lb) =	2,190	V max (lb) =	762	V / Vallow =	35%
Length backspan (ft) =	12.5						
No. of Lams?	2	M Allow (lb-ft) =	8,405	M max (lb-ft) =	3,875	M / Mallow =	46%
Slope Factor =	1.0						

Maximum deflections:

TJI SERIES: 110 - 360

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.163	= L /	922

UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft)	0	1.33
Floor twLL (ft)	0	1.33
Floor twLL2 (ft)	0	0
Deck twDL (ft)	0	0
Deck twLL (ft)	0	0
Attic twDL (ft)	0	0
Attic twLL (ft)	0	0
Roof twDL (ft)	0	0
Roof twLL (ft)	0	0
Addtnl Load (plf)	0	0
Total Uniform Load (per lam - plf) =	0	45

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	792	0	0	0
PLL (lb) =	0	1,120	0	0	0
x (ft) =	0	6.25	0	0	0
Total Point Load (per lam - lb) =	0	956	0	0	0

V (lb) =	0	762		762
Mmax (lb-ft) =	0		3,875	

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1FB6 | **3 1/2" X 16" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	20.42
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	16,240	V / Vallow =	66%
M Allow (lb-ft) =	34,954	M / Mallow =	62%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.727	= L /	337
1.5 * DLΔ (in) =	0.359	*Governs*	
2000 ft R (in) =	0.313		

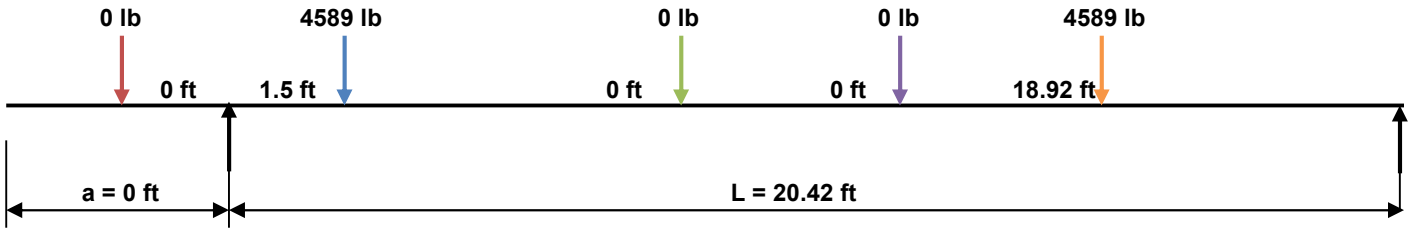
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	2
Floor twLL (ft) =	0	2
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	150
Total Uniform Load (per lam - plf) =	0	287

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	2,268	0	0	2,268
PLL (lb) =	0	2,321	0	0	2,321
x (ft) =	0	1.5	0	0	18.92
Total Point Load (per lam - lb) =	0	4,589	0	0	4,589

Horiz. Shear Vmax (lb) =	10,699
Maximum Moment (lb-ft) =	21,821



V (lb) =	0	7,515		7,515
Mmax (lb-ft) =	0		21,821	
x (ft) =			10.21	

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1FB10 | **1 3/4" x 16" Microlam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	9
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	7,980	V / Vallow =	17%
M Allow (lb-ft) =	15,557	M / Mallow =	21%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.040	= L /	2,669
1.5 * DLΔ (in) =	0.020		
2000 ft R (in) =	0.061	*Governs*	

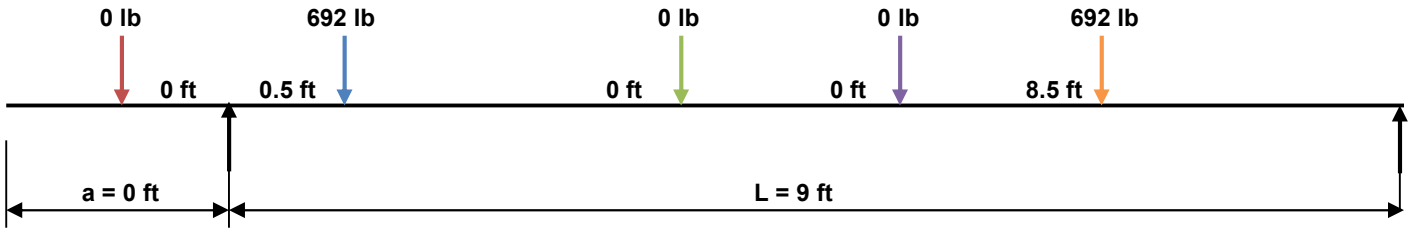
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	2
Floor twLL (ft) =	0	2
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	150
Total Uniform Load (per lam - plf) =	0	287

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	342	0	0	342
PLL (lb) =	0	350	0	0	350
x (ft) =	0	0.5	0	0	8.5
Total Point Load (per lam - lb) =	0	692	0	0	692

Horiz. Shear Vmax (lb) =	1,361
Maximum Moment (lb-ft) =	3,248



V (lb) =	0	1,982		1,982
Mmax (lb-ft) =	0		3,248	
x (ft) =			4.50	

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1FB12 | **3 1/2" x 16" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	15.25
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	16,240	V / Vallow =	0%
M Allow (lb-ft) =	34,954	M / Mallow =	0%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	-0.140	= L /	1,305
1.5 * DLΔ (in) =	-0.069		
2000 ft R (in) =	0.174	*Governs*	

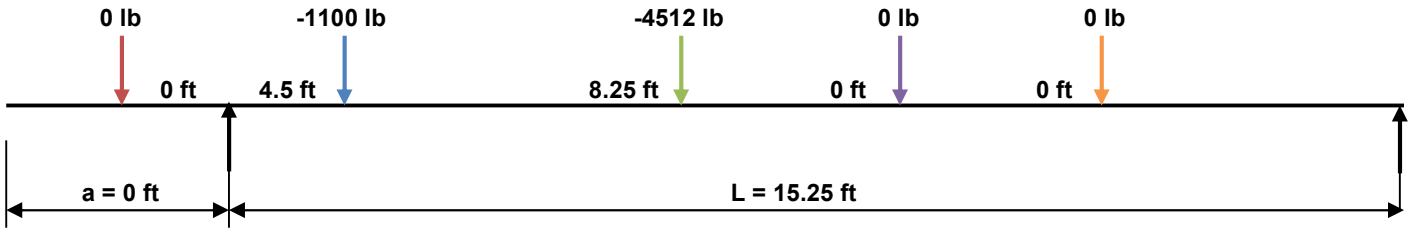
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	3
Floor twLL (ft) =	0	3
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	205

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	-544	-2,230	0	0
PLL (lb) =	0	-556	-2,282	0	0
x (ft) =	0	4.5	8.25	0	0
Total Point Load (per lam - lb) =	0	-1,100	-4,512	0	0

Horiz. Shear Vmax (lb) =	0
Maximum Moment (lb-ft) =	0



V (lb) =	0	-1,284		-1,203
Mmax (lb-ft) =	0		-7,853	
x (ft) =			4.50	

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1FB19 | **3 1/2" x 16" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	8
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	16,240	V / Vallow =	62%
M Allow (lb-ft) =	34,954	M / Mallow =	39%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.046	= L /	2,065
1.5 * DLΔ (in) =	0.023		
2000 ft R (in) =	0.048	*Governs*	

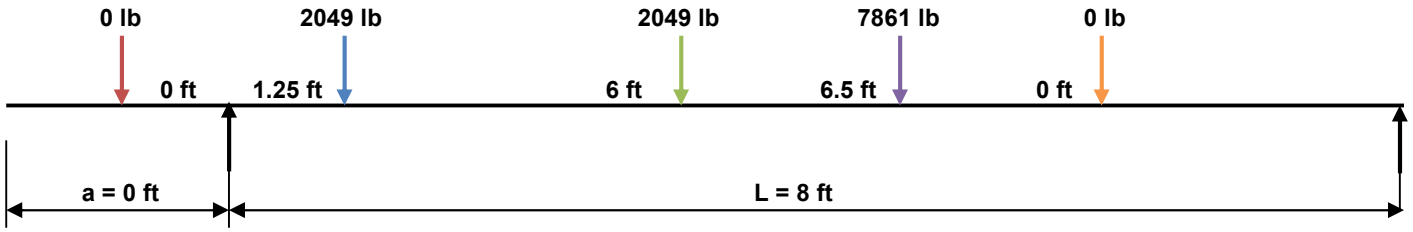
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	3
Floor twLL (ft) =	0	3
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	0
Total Uniform Load (per lam - plf) =	0	205

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	849	849	2,585	0
PLL (lb) =	0	1,200	1,200	5,276	0
x (ft) =	0	1.25	6	6.5	0
Total Point Load (per lam - lb) =	0	2,049	2,049	7,861	0

Horiz. Shear Vmax (lb) =	10,112
Maximum Moment (lb-ft) =	13,787



V (lb) =	0	4,535		9,064
Mmax (lb-ft) =	0		13,787	
x (ft) =			6.00	

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1FB20 | **3 1/2" x 16" Parallam 2.0E** | ***O.K.***

Length cantilever (ft) =	0
Length backspan (ft) =	9.17
No. of Lams?	1
Rep Use?	NO
Slope Factor =	1.0

V Allow (lb) =	16,240	V / Vallow =	76%
M Allow (lb-ft) =	34,954	M / Mallow =	21%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.052	= L /	2,123
1.5 * DLΔ (in) =	0.026		
2000 ft R (in) =	0.063	*Governs*	

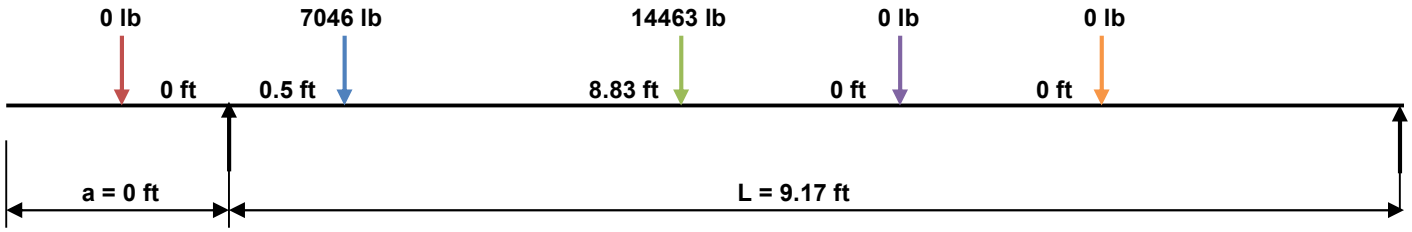
UNIFORM LOADS :

	Cantilever	Backspan
Floor twDL (ft) =	0	3
Floor twLL (ft) =	0	3
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	0
Roof twLL (ft) =	0	0
Addtnl Load (plf) =	0	100
Total Uniform Load (per lam - plf) =	0	305

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	2,920	5,993	0	0
PLL (lb) =	0	4,127	8,470	0	0
x (ft) =	0	0.5	8.83	0	0
Total Point Load (per lam - lb) =	0	7,046	14,463	0	0

Horiz. Shear Vmax (lb) =	12,384
Maximum Moment (lb-ft) =	7,463



V (lb) =	0	8,596		15,708
Mmax (lb-ft) =	0		7,463	
x (ft) =			5.08	

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18156 - The Murray Residence - REV

Post & Stud Design
SHEET: 1 OF 1
4/10/2023

								Vertical Loads		Vertical Loads	Horizontal Loads	Load Combinations				
												Case 1		Case 2		
												DL + S + LL + W/2		DL + S/2 + LL + W		
Location/Member	Item	Description	Height (ft)	No. of Lams?	% Area for Bearing of Beam end on Post?	Int or Ext?	TW Lateral Load (ft)	Roof DL + Floor TL (lbs)	Roof LL (lbs)	TL (lbs)	Uniform lateral load (psf)	Axial + Bending	Bearing	Axial + Bending	Bearing	Post size & grade okay?
2FB5 (NNO DR) & 1FB13	POST	4 X 10 DF#2 - POST	10.5	1	100%	Int	1	12,058	0	12,058	5	N.G.	0.60	N.G.	0.60	N.G.
2FB5 (NNO DR) & 1FB13	POST	4 X 10 DF#2 - POST	10.5	1	100%	Int	1	17,503	0	17,503	5	N.G.	0.87	N.G.	0.87	N.G.
1FB12 & 1FB22	POST	4 X 6 DF#2 - POST	10.5	1	100%	Int	1	-969	0	-969	5	0.06	-0.08	0.09	-0.08	O.K.
1FB12 & 1FB23	POST	4 X 6 DF#2 - POST	10.5	1	100%	Int	1	-512	0	-512	5	0.04	-0.04	0.08	-0.04	O.K.
2FB5 (NNO DR)	POST	6 X 6 DF#1 - POST	10.5	1	100%	Int	1	12,084	0	12,084	5	0.39	0.64	0.41	0.64	O.K.
2GB5	POST	6 X 6 DF#1 - POST	6	1	100%	Int	1	14,800	0	14,800	5	0.29	0.78	0.30	0.78	O.K.

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	Tributary Width (ft)			Concrete Wall				Grade Beam						
	roof	floor	Struc slab	Wall ht (ft)	Wall thcknss (in)	wDL (plf)	wLL (plf)	width	depth		wTL (plf)	Max 4" PP Spcg (ft)	Max 6" PP Spcg (ft)	wuTL (plf)
Grid 11	5.0	10.0	10.0	10.0	8.0	2,435	925	18.0	12.0	225	3,585	5.58	8.37	5,297
Grid 9.3	10.0	20.0	10.0	0.0	0.0	1,840	1,450	18.0	12.0	225	3,515	5.69	8.53	5,356
SS only	0.0	0.0	10.0	0.0	0.0	1,030	400	18.0	12.0	225	1,655	12.08	18.13	2,437
SS + Wall	0.0	0.0	10.0	10.0	12.0	2,530	400	18.0	12.0	225	3,155	6.34	9.51	4,537
middle supp	0.0	0.0	100.0	0.0	0.0	10,300	4,000	0.0	0.0	0	14,300	1.40	2.10	21,220

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ENCLOSED STRUCTURE, WIND SPEED = 110 MPH, EXPOSURE C - METHOD 1

Simplified Design Wind Pressure, ps30 (psf) (Exposure B at h = 30 ft, I = 1.0)

		ZONES									
		Horizontal Pressures				Vertical Pressures				Overhangs	
Roof Angle (degrees)	Load Case	A	B	C	D	E	F	G	H	E OH	G OH
0 - 5	1	19.3	-9.9	12.7	-5.9	-23.1	-13.1	-16.1	-10.2	-32.3	-25.3
10	1	21.6	-9.0	14.4	-5.2	-23.1	-14.1	-16.1	-10.9	-32.3	-25.3
15	1	24.1	-8.0	16.1	-4.5	-23.1	-15.1	-16.1	-11.6	-32.3	-25.3
20	1	26.6	-7.0	17.8	-3.9	-23.1	-16.1	-16.1	-12.2	-32.3	-25.3
25	1	24.1	3.9	17.4	4.0	-10.7	-14.6	-7.7	-11.7	-19.9	-16.9
	2	---	---	---	---	-4.0	-7.9	-1.2	-5.0	---	---
30 - 45	1	21.6	14.7	17.1	11.7	1.7	-13.1	0.5	-11.2	-7.5	-8.7
	2	21.6	14.7	17.1	11.7	8.4	-6.5	7.2	-4.7	-7.5	-8.7

WIND LOAD FACTORS:

Wind Importance Factor I = 1.0 ***Kzt =*** 1.00

lambda = 1.40 (max) ***Load Factor for ASD combinations =*** 0.60 ***ASCE7-10 2.4.1 EQ. 5. & 7.***

Building Dimensions:

L (ft) = 113.83

T (ft) = 51.25

Mean Roof Height (ft) = 31.00

wall ht (ft) = 24.00

roof ht (ft) = 38.00

Determine "a":

10% of B (ft) = 5.13

40% of h (ft) = 12.40

4% of B (ft) = 2.05

a (ft) = 5.13

Roof Angle (deg) = 38.37

Interpolation:

High Value (deg) = 45

Low Value (deg) = 45

Interpolation Factor = 1.00

ENCLOSED STRUCTURE, WIND SPEED = 110 MPH, EXPOSURE C - METHOD 1

Tansverse forces

		ZONES									
		Horizontal Pressures				Vertical Pressures				Overhangs	
Roof Angle (degrees)	Load Case	A	B	C	D	E	F	G	H	E OH	G OH
38.37	1	18.15	12.38	14.35	9.85	1.41	-10.97	0.42	-9.43	-6.33	-7.32
38.37	2	18.15	12.38	14.35	9.85	7.03	-5.49	6.05	-3.94	-6.33	-7.32

Longitudinal forces

		ZONES									
		Horizontal Pressures				Vertical Pressures				Overhangs	
Roof Angle (degrees)	Load Case	A	B	C	D	E	F	G	H	E OH	G OH
38.37	1	18.15	12.38	14.35	9.85	1.41	-10.97	0.42	-9.43	-6.33	-7.32
38.37	2	18.15	12.38	14.35	9.85	7.03	-5.49	6.05	-3.94	-6.33	-7.32

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WIND FORCES

2a (ft) =	10.3	Troof (ft) =	49.17	Lroof + LroofG (ft) =	101.83
		T Upper (ft) =	44.50	L Upper (ft) =	61.00
		T Garage Upper (ft) =	25.00	L Garage Upper (ft) =	45.00
		T Main (ft) =	44.50	L Main (ft) =	75.50

Transverse Forces

Level	Height (ft)	Wall Height (ft)	Ht/Exp Factor (lambda)	Zone A Minimum Dsn Pressure (psf)	Zone B Minimum Dsn Pressure (psf)	Zone C Minimum Dsn Pressure (psf)	Zone D Minimum Dsn Pressure (psf)	Total Shear (lb)
				18	12	16	10	
Roof	38.00	6.50	1.40	59	214	52	170	23,112
Upper Floor	17.50	8.00	1.29	109	----	96	----	5,977
Garage Upper Floor	11.00	8.00	1.21	173	----	152	----	7,054
Main Floor	6.00	10.50	1.21	110	----	97	----	7,442
							TOTAL BASE SHEAR (lb) =	43,586

Longitudinal Forces

Level	Height (ft)	Wall Height (ft)	Ht/Exp Factor (lambda)	Zone A Minimum Dsn Pressure (psf)	Zone B Minimum Dsn Pressure (psf)	Zone C Minimum Dsn Pressure (psf)	Zone D Minimum Dsn Pressure (psf)	Total Shear (lb)
				18	12	16	10	
Roof	38.00	6.50	1.40	59	214	52	170	11,429
Upper Floor	17.50	8.00	1.29	109	----	96	----	4,396
Garage Upper Floor	11.00	8.00	1.21	173	----	152	----	4,012
Main Floor	6.00	10.50	1.21	110	----	97	----	4,441
							TOTAL BASE SHEAR (lb) =	24,278

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SEISMIC FORCES

Level	Height	Area (sf)	DL (psf)	Addtnl DL (psf)	Weight (lb)	W*H	W*H / Sum(W*H)	V (lb)	v (psf)
Roof	38.00	2,525	24	4	71,791	2,728,073	0.503	20,243	8.02
Garage Roof	24.00	1,110	24	2	29,340	704,155	0.130	5,225	4.71
Upper Floor	17.50	2,585	28	2	78,326	1,370,696	0.252	10,171	3.93
Garage Upper Floor	11.00	1,070	28	2	32,421	356,631	0.066	2,646	2.47
Main Floor	6.00	1,480	28	2	44,844	269,064	0.050	1,997	1.35
		8,770			256,722	5,428,620	1.000	40,283	

Check governing forces for short shearwalls (h/l< or = 3.5)

Transverse Direction: EQ/Wind = 0.92 x 1.75 = ***1.62*** ***Check short shearwalls for E.Q. Forces***

Longitudinal Direction: EQ/Wind = 1.66 x 1.75 = ***N.A.***

WIND FORCES GOVERN IN TRANSVERSE DIRECTION

EQ FORCES GOVERN IN LONGITUDINAL DIRECTION

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Shearwall Schedule

Shearwall Types (plf):	15/32" PLYWD Capacity (plf)		Nailing	Max Stud Spacing (in)	SILL PLATE	
	Seismic	Wind			16d	#10 CTWS
Type G-1	125	125	5d cooler @ 7"o.c	N.A.	14	15
Type G-2	150	150	5d cooler @ 4"o.c	N.A.	11	12
Type P-1	240	335	8d @ 6"o.c.	N.A.	5	6
Type P-2	350	490	8d @ 4"o.c.	N.A.	3	4
Type P-3	480	670	8d @ 6"o.c.E.S.	N.A.	3	3
Type P-4	700	980	8d @ 4"o.c. E.S.	N.A.	2	2
Type P-5	980	1370	8d @ 3"o.c. E.S.	N.A.	1	1

Holdown Straps (for wood framing)

Mark	Capacity (lb)	NOTES
MSTC28	1,325	(16) 16d Sinkers
MSTC40	2,650	(32) 16d Sinkers
MSTC66	5,840	(68) 16d Sinkers
MST72	6,475	(62) 16d Sinkers

Holdowns (for concrete)

Mark	Capacity (lb)	NOTES	
HDU2-SDS2.5	2,215	(6) 1/4" x 2 1/2" SDS	DBL STUD MIN
HDU5-SDS2.5	4,065	(14) 1/4" X 2 1/2" SDS	DBL STUD MIN
HDU8-SDS2.5	5,020	(20) 1/4" x 2 1/2" SDS	4 X 4 POST MIN
HHDQ11-SDS2.5	11,810	(24) 1/4" x 2 1/2" SDS	6 X 6 POST MIN

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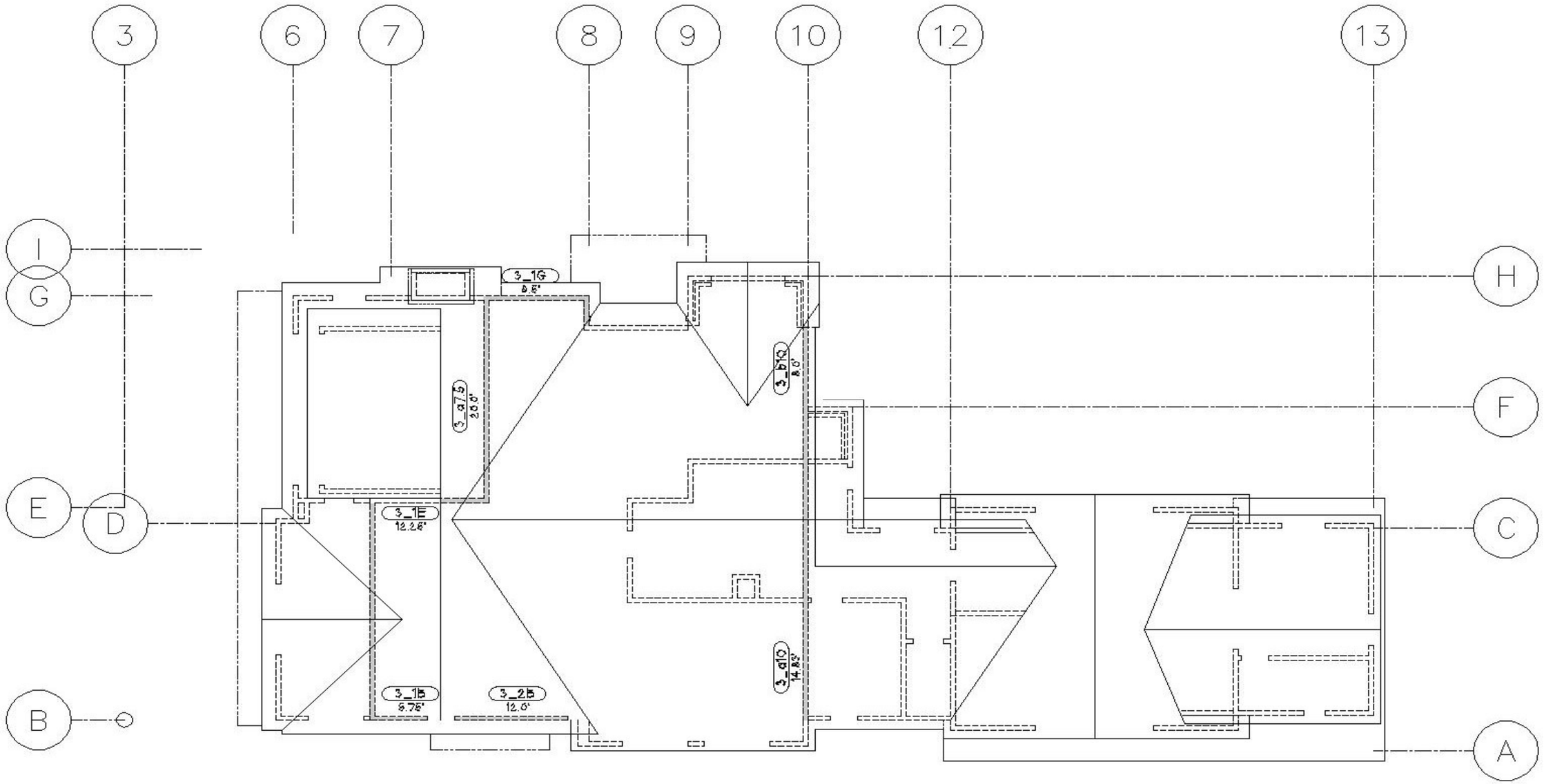

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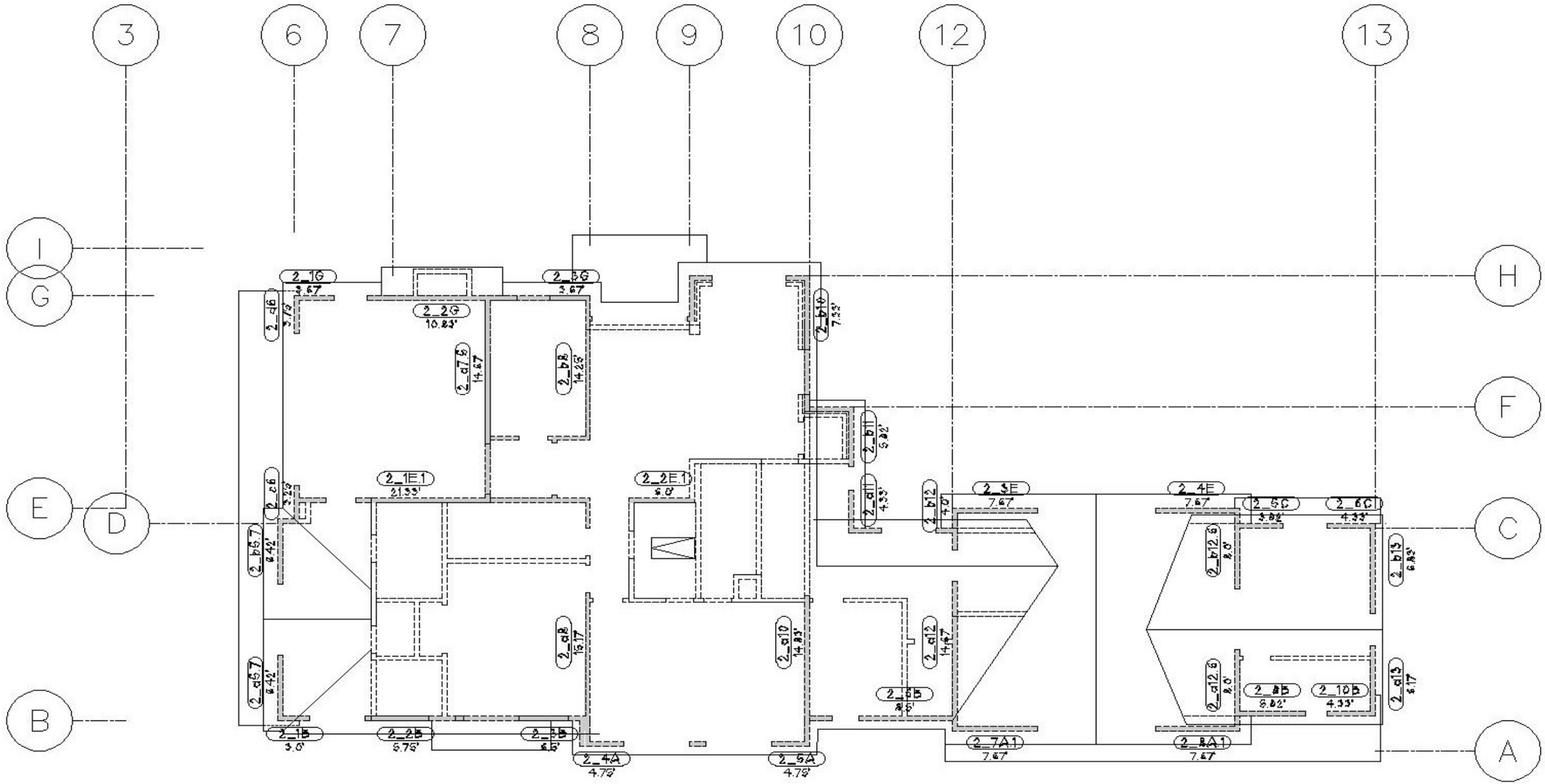

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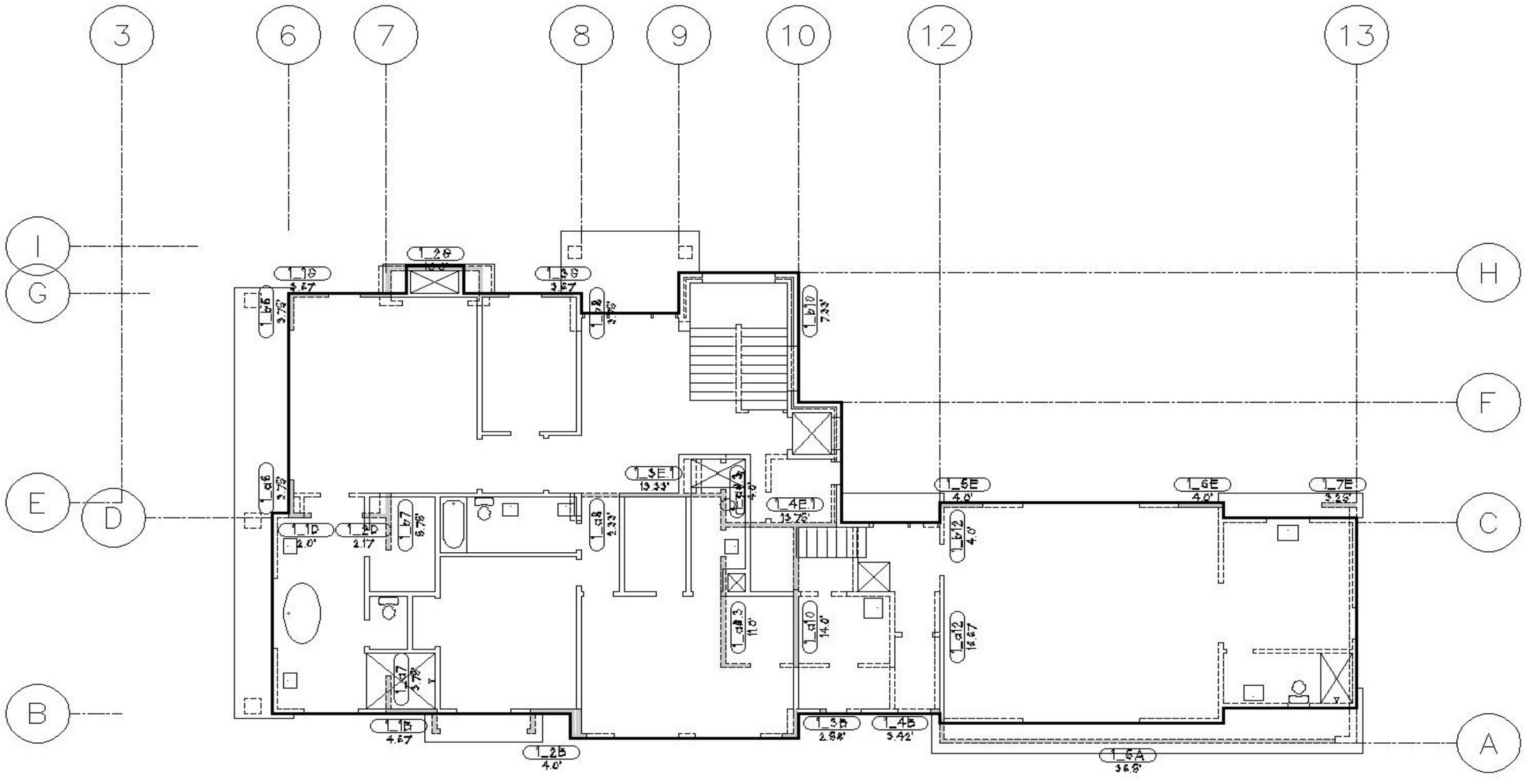

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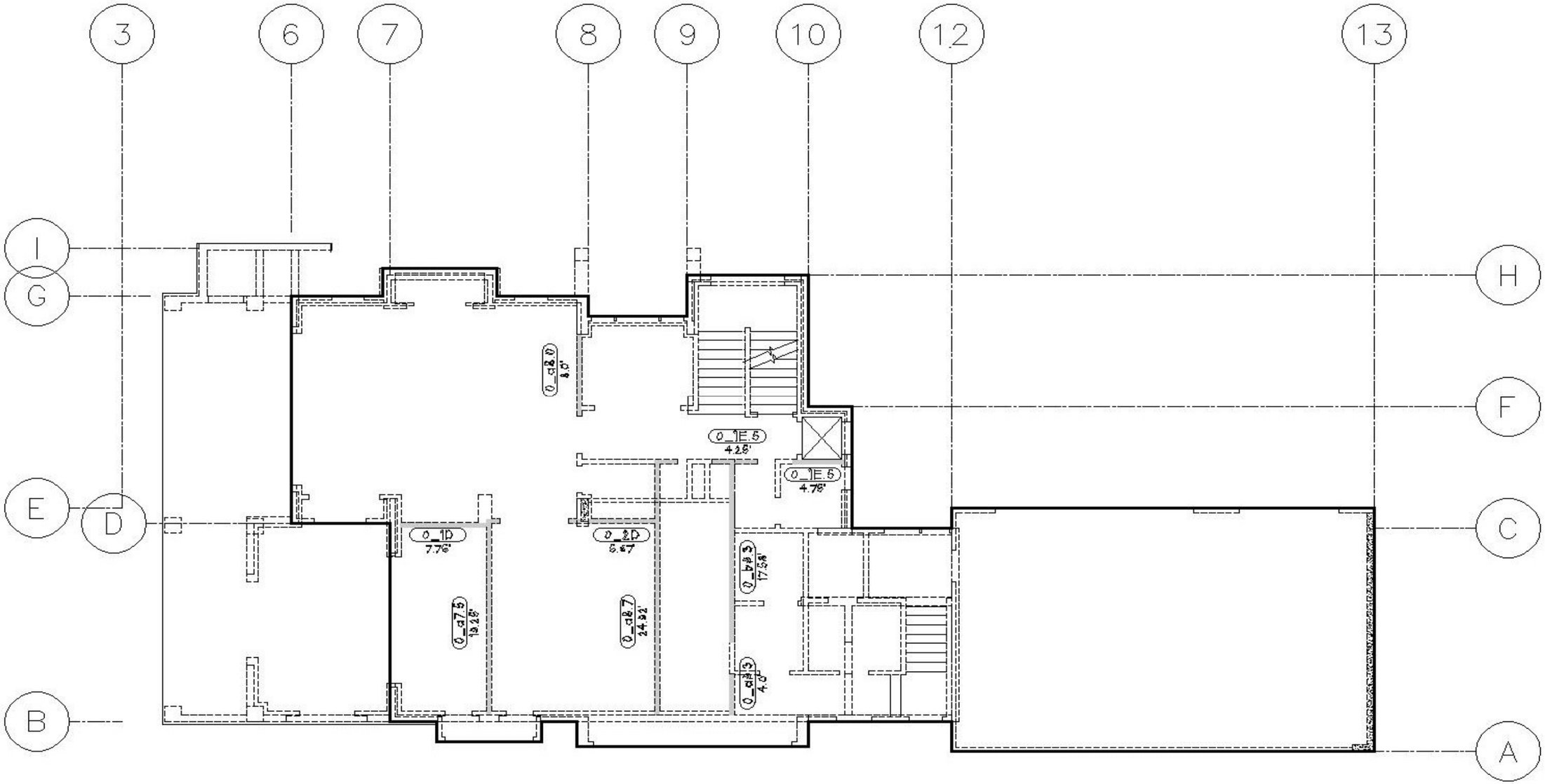

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APPLIED SHEARS:

Longitudinal - EQ Governs	
Roof + Attic	25,469
Upper Floor	10,171
Garage Upper Floor	2,646
Main Floor	1,997
	40,283

Transverse - WIND Governs	
Roof + Attic	23,112
Upper Floor	5,977
Garage Upper Floor	7,054
Main Floor	7,442
	43,586

DL Factor EQ =	75%
DL Factor Wind =	67%

Allowable Shear =	648	lb/bolt
Allowable Tension =	950	lb/bolt

Longitudinal uplift (psf) =	10.97
% Uniform Uplift Taken by Longitudinal Walls =	*100%*

UPLIFT DUE TO WIND FORCES AT TOP STORY SHEARWALLS: contributing wall length(ft) = 101.83; uplift (plf) = 237

EXTERIOR WALLS @ GRIDS A, A.1 & B

Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown	Max Anchor bolt spacing (ft)	Net uniform uplift (plf)	Drag Forces (lb)	Omega	% to Drag
Roof + Attic	101.83	12.50	33.9%	8,642	2_1B	3.17	8.00	2.29	185	Type P-1	240	*O.K.*	4,686	100%	7,201	N.A.	-942	Not Req'd	3.5	-34	146	1.0	25%
					2_2B	5.75	8.00	2.29	146	Type P-1	240	*O.K.*	6,737	100%	15,116	N.A.	-1,596	Not Req'd	4.4	-1	211	1.0	25%
					2_3B	6.50	8.00	2.29	146	Type P-1	240	*O.K.*	7,615	100%	17,763	N.A.	-1,691	Not Req'd	4.4	-1	238	1.0	25%
					2_4A	4.75	8.00	2.29	146	Type P-1	240	*O.K.*	5,565	100%	11,829	N.A.	-1,474	Not Req'd	4.4	-1	174	1.0	25%
					2_5A	4.75	8.00	2.29	146	Type P-1	240	*O.K.*	5,565	100%	11,829	N.A.	-1,474	Not Req'd	4.4	-1	174	1.0	25%
					2_6B	8.50	8.00	2.29	146	Type P-1	240	*O.K.*	9,959	100%	25,584	N.A.	-1,953	Not Req'd	4.4	-1	311	1.0	25%
					2_7A.1	7.67	8.00	2.29	146	Type P-1	240	*O.K.*	8,986	100%	22,204	N.A.	-1,843	Not Req'd	4.4	-1	281	1.0	25%
					2_8A.1	7.67	8.00	2.29	146	Type P-1	240	*O.K.*	8,986	100%	22,204	N.A.	-1,843	Not Req'd	4.4	-1	281	1.0	25%
					2_9B	5.92	8.00	2.29	146	Type P-1	240	*O.K.*	6,936	100%	15,703	N.A.	-1,617	Not Req'd	4.4	-1	217	1.0	25%
					2_10B	4.33	8.00	2.29	146	Type P-1	240	*O.K.*	5,073	100%	10,532	N.A.	-1,425	Not Req'd	4.4	-1	159	1.0	25%
						59.01																	
Upper Floor	100.00	12.50	33.8%	12,974	1-1B	4.67	10.50	3.00	285	Type P-2	350	*O.K.*	13,977	75%	12,614	0	327	Not Req'd					
					1_2B	4.00	10.50	3.00	333	Type P-3	480	*O.K.*	13,977	75%	10,453	0	1,007	HDU2-SDS2.5					
					1_3B	2.58	7.00	2.00	344	Type P-3	480	*O.K.*	18,636	75%	31,074	0	-5,980	Not Req'd					
					1_4B	3.42	7.00	2.00	259	Type P-3	480	*O.K.*	H =	10.50	L =	9.58	PORTAL WALL						
					1_5A	36.50	10.50	3.00	254	Type P-2	350	*O.K.*	97,174	75%	250,775	0	-4,267	Not Req'd					
						51.17																	

DBL STUD MIN - (6) 1/4" x 2 1/2" SDS

INTERIOR WALLS @ GRID C, D, E																		UPLIFT DUE TO WIND FORCES AT TOP STORY SHEARWALLS				
																		contributing wall length(ft) =	101.83	uplift (plf) =	408	
Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown	Max Anchor bolt spacing (ft)	Net uniform uplift (plf)	Drag Forces (lb)	Omega	% to Drag
Roof	101.83	18.58	50.4%	12,845	2_1E.1	21.33	8.00	2.29	252	Type P-2	350	O.K.	51,658	100%	146,454	N.A.	-4,551	Not Req'd	2.6	38	1,345	1.0	25%
					2_2E.1	6.00	8.00	2.29	252	Type P-2	350	O.K.	12,790	100%	23,333	N.A.	-1,917	Not Req'd	2.6	38	378	1.0	25%
					2_3E	7.67	8.00	2.29	252	Type P-2	350	O.K.	16,592	100%	32,315	N.A.	-2,193	Not Req'd	2.6	38	484	1.0	25%
					2_4E	7.67	8.00	2.29	252	Type P-2	350	O.K.	16,592	100%	32,315	N.A.	-2,193	Not Req'd	2.6	38	484	1.0	25%
					2_5C	3.92	8.00	2.29	257	Type P-2	350	O.K.	8,305	100%	13,660	N.A.	-1,566	Not Req'd	2.5	30	252	1.0	25%
					2_6C	4.33	8.00	2.29	252	Type P-2	350	O.K.	9,093	100%	15,434	N.A.	-1,656	Not Req'd	2.6	38	273	1.0	25%
						50.92																	
Upper Floor	100.00	18.62	50.3%	19,297	1_1D	2.00	7.00	2.00	795	Type P-5	980	O.K.	33,373	75%	41,712	0	-5,559	Not Req'd					
					1_2D	2.17	7.00	2.00	732	Type P-5	980	O.K.	H =	10.50	L =	9.00	PORTAL WALL					
					1_3E.1	13.33	10.50	3.00	454	Type P-3	480	O.K.	63,551	75%	73,410	0	-768	Not Req'd					
					1_4E.1	13.75	10.50	3.00	454	Type P-3	480	O.K.	65,553	75%	76,761	0	-846	Not Req'd					
					1_5E	4.00	10.50	3.00	596	Type P-4	700	O.K.	25,029	75%	15,323	0	2,773	HDU5-SDS2.5	DBL STUD MIN - (14) 1/4" X 2 1/2" SDS				
					1_6E	4.00	10.50	3.00	596	Type P-4	700	O.K.	25,029	75%	15,323	0	2,773	HDU5-SDS2.5	DBL STUD MIN - (14) 1/4" X 2 1/2" SDS				
					1_7E	3.25	10.50	3.00	733	Type P-5	980	O.K.	25,029	75%	12,012	0	4,734	HDU8-SDS2.5	4 X 4 POST MIN - (20) 1/4" x 2 1/2" SDS				
						42.50																	
Main Floor	40.00	21.00	28.4%	6,043	0_1D	7.75	10.50	3.00	450	Type P-5	980	O.K.	36,642	100%	51,549	0	-2,056	Not Req'd					
					0_2D	5.67	10.50	3.00	450	Type P-5	980	O.K.	26,808	100%	34,714	0	-1,529	Not Req'd					
						13.42																	

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EXTERIOR WALLS @ GRID G

UPLIFT DUE TO WIND FORCES AT TOP STORY SHEARWALLS: contributing wall length(ft) = 51.00; uplift (plf) = 354

Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown	Max Anchor bolt spacing (ft)	Net uniform uplift (plf)	Drag Forces (lb)	Omega	% to Drag
Roof	51.00	11.50	15.6%	3,982	2_1G	3.67	8.00	2.29	239	Type P-2	350	O.K.	7,040	100%	7,929	N.A.	-281	Not Req'd	2.7	4	219	1.0	25%
					2_2G	10.83	8.00	2.29	219	Type P-2	350	O.K.	20,917	100%	33,430	N.A.	-1,211	Not Req'd	3.0	33	593	1.0	25%
					2_3G	3.67	8.00	2.29	239	Type P-2	350	O.K.	7,040	100%	7,929	N.A.	-281	Not Req'd	2.7	4	219	1.0	25%
						18.17																	

EXTERIOR WALLS @ GRID G (cont'd)

Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown	
Upper Floor	51.00	11.50	15.9%	6,015	1_1G	5.00	10.50	3.00	317	Type P-2	350	O.K.	16,645	75%	12,687	0	880	HDU2-SDS2.5	DBL STUD MIN - (6) 1/4" x 2 1/2" SDS
					1_2G	10.17	10.50	3.00	302	Type P-2	350	O.K.	32,243	75%	32,274	0	-3	Not Req'd	
					1_3G	4.75	10.50	3.00	334	Type P-3	480	O.K.	16,645	75%	11,906	0	1,115	HDU2-SDS2.5	DBL STUD MIN - (6) 1/4" x 2 1/2" SDS
						19.92													

Roof	3,751	SF	100.0%
Upper Floor	3,698	SF	100.0%
Main Floor	840	SF	28.4%

Transverse uplift (psf) =	10.97
% Uniform Uplift Taken by Longitudinal Walls =	*100%*

UPLIFT DUE TO WIND FORCES AT TOP STORY SHEARWALLS			
contributing wall length(ft) =	49.17	uplift (plf) =	257

EXTERIOR WALLS @ GRIDS 5.7 & 6

Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown	Max Anchor bolt spacing (ft)	Net uniform uplift (plf)	Drag Forces (lb)	Omega	% to Drag
Roof	49.17	9.58	12.3%	2,844	2_a5.7	6.42	8.00	2.29	143	Type P-1	335	*O.K.*	7,737	100%	12,174	N.A.	-750	Not Req'd	4.5	20	229	1.0	25%
					2_b5.7	6.42	8.00	2.29	143	Type P-1	335	*O.K.*	7,737	100%	12,174	N.A.	-750	Not Req'd	4.5	20	229	1.0	25%
					2_c6	3.50	8.00	2.29	262	Type P-1	335	*O.K.*	7,327	100%	5,616	N.A.	570	Not Req'd	2.5	-126	229	1.0	25%
					2_d6	3.75	8.00	2.29	244	Type P-1	335	*O.K.*	7,327	100%	6,111	N.A.	374	Not Req'd	2.7	-101	229	1.0	25%
						20.09																	
Upper Floor	44.50	5.25	6.2%	3,649	1_a6	3.75	7.00	2.00	734	Type P-4	980	*O.K.*	57,833	100%	62,856	0	-1,545	Not Req'd					
					1_b6	3.75	7.00	2.00	734	Type P-4	980	*O.K.*	H =	10.50	L =	22.00	PORTAL WALL						
						7.50																	

INTERIOR WALL @ GRID 7 - Portal Wall

Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown
Upper Floor	44.50	20.80	24.5%	5,303	1_a7	3.75	7.00	2.00	843	Type P-4	980	*O.K.*	66,881	100%	203,975	0	-42,183	Not Req'd
					1_b7	5.75	7.00	2.00	558	Type P-4	980	*O.K.*	H =	10.50	L =	21.00	PORTAL WALL	
						9.50												

INTERIOR WALL @ GRID 7.5																		UPLIFT DUE TO WIND FORCES AT TOP STORY SHEARWALLS contributing wall length(ft) = 49.17		uplift (plf) = 524		
Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown	Max Anchor bolt spacing (ft)	Net uniform uplift (plf)	Drag Forces (lb)	Omega	% to Drag
Roof	49.17	14.25	18.3%	4,229	2_a7.5	14.67	8.00	2.29	288	Type P-3	670	*O.K.*	33,829	100%	57,085	N.A.	-1,641	Not Req'd	2.2	101	1,057	1.0	25%
						14.67																	

INTERIOR WALLS @ GRID 8																		UPLIFT DUE TO WIND FORCES AT TOP STORY SHEARWALLS contributing wall length(ft) = 49.17		uplift (plf) = 264		
Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown	Max Anchor bolt spacing (ft)	Net uniform uplift (plf)	Drag Forces (lb)	Omega	% to Drag
Roof	49.17	14.67	18.8%	4,352	2_a8	15.75	8.00	2.29	145	Type P-1	335	*O.K.*	21,535	100%	65,341	N.A.	-2,873	Not Req'd	4.5	26	571	1.0	25%
					2_b8	14.25	8.00	2.29	145	Type P-1	335	*O.K.*	19,203	100%	56,094	N.A.	-2,683	Not Req'd	4.5	26	517	1.0	25%
						30.00																	

CONCRETE WALLS AT GRID 8																			
Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	h	t (in)	h/d	R	% V	vu (psi)	OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Tension Force (lb)	Bar Size	No. of Bars
Upper Floor	44.50	15.55	18.3%	8,851	1_a8	2.33	10.50	8	4.51	0.21	20%	11	18,791	100%	9,816	-2,873	4,905	17,167	5	1.04
					1_b8	3.75	10.50	8	2.80	0.83	80%	27	74,141	100%	18,349	-2,683	17,167	60,084	6	2.52
						6.08				1.04										

INTERIOR WALLS @ GRID 9.3

Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown
Upper Floor	44.50	19.00	22.3%	2,912	1_a9.3	11.00	10.50	3.00	194	Type P-1	335	O.K.	22,426	100%	66,811	0	-4,227	Not Req'd
					1_b9.3	4.00	10.50	3.00	412	Type P-2	490	O.K.	17,311	100%	18,463	0	-329	Not Req'd
						15.00												
Main Floor	44.50	19.00	28.6%	5,038	0_a9.3	4.00	10.50	3.00	496	Type P-3	670	O.K.	20,815	100%	18,463	0	672	Not Req'd
					0_b9.3	17.58	10.50	3.00	233	Type P-1	335	O.K.	43,094	100%	130,867	0	-5,139	Not Req'd
						21.58												

UPLIFT DUE TO WIND FORCES AT TOP STORY SHEARWALLS

contributing wall length(ft) = 49.17 | uplift (plf) = 402

INTERIOR WALLS @ GRID 10

Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown	Max Anchor bolt spacing (ft)	Net uniform uplift (plf)	Drag Forces (lb)	Omega	% to Drag
Roof	49.17	16.50	21.2%	4,897	2_a10	14.83	8.00	2.29	221	Type P-2	490	O.K.	34,768	75%	51,025	N.A.	-1,134	Not Req'd	2.9	78	819	1.0	25%
					2_b10	7.33	8.00	2.29	221	Type P-2	490	O.K.	15,047	75%	18,473	N.A.	-502	Not Req'd	2.9	78	405	1.0	25%
						22.16																	
Upper Floor	44.50	9.95	11.7%	6,421	1_a10	14.00	10.50	3.00	301	Type P-3	670	O.K.	44,255	100%	51,720	-1,134	-1,687	Not Req'd					
					1_b10	7.33	10.50	3.00	349	Type P-3	670	O.K.	26,841	100%	21,093	-502	340	Not Req'd					
						21.33																	

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INTERIOR WALLS @ GRID 12

UPLIFT DUE TO WIND FORCES AT TOP STORY SHEARWALLS: contributing wall length(ft) = 25.00; uplift (plf) = 288

Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown	Max Anchor bolt spacing (ft)	Net uniform uplift (plf)	Drag Forces (lb)	Omega	% to Drag
Roof	25.00	19.61	12.8%	2,958	2_a12	14.67	8.00	2.29	158	Type P-1	335	O.K.	24,038	100%	76,814	N.A.	-3,724	Not Req'd	4.1	51	581	1.0	25%
					2_b12	4.00	8.00	2.29	256	Type P-1	335	O.K.	8,201	100%	13,181	N.A.	-1,423	Not Req'd	2.5	-88	256	1.0	25%
						18.67																	
Upper Floor	25.00	25.75	17.0%	6,628	1_a12	16.67	8.00	2.29	321	Type P-3	670	O.K.	42,764	50%	72,434	-3,724	-5,559	Not Req'd					
					2_b12	4.00	8.00	2.29	519	Type P-3	670	O.K.	16,597	50%	10,108	-1,423	431	Not Req'd					
						20.67																	

INTERIOR WALLS @ GRID 12.6

UPLIFT DUE TO WIND FORCES AT TOP STORY SHEARWALLS: contributing wall length(ft) = 25.00; uplift (plf) = 330

Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown	Max Anchor bolt spacing (ft)	Net uniform uplift (plf)	Drag Forces (lb)	Omega	% to Drag
Roof	25.00	19.25	12.6%	2,905	2_a12.6	8.00	8.00	2.29	182	Type P-1	335	O.K.	11,619	50%	16,498	N.A.	-651	Not Req'd	3.6	64	363	1.0	25%
					2_b12.6	8.00	8.00	2.29	182	Type P-1	335	O.K.	11,619	50%	16,498	N.A.	-651	Not Req'd	3.6	64	363	1.0	25%
						16.00																	

EXTERIOR WALLS @ GRID 13

UPLIFT DUE TO WIND FORCES AT TOP STORY SHEARWALLS: contributing wall length(ft) = 25.00; uplift (plf) = 130

Level	Trib Length (ft)	Trib Width (ft)	% Shear	Total Shear (lb)	Mark	wall length (ft)	wall height (ft)	minimum shearwall length (ft)	v (plf)	Wall Type	v allowable (plf)		OTM (lb-ft)	% TW to use for Mr	Mr (lb-ft)	Uplift from above (lb)	uplift (lb)	Holdown	Max Anchor bolt spacing (ft)	Net uniform uplift (plf)	Drag Forces (lb)	Omega	% to Drag
Roof	25.00	6.14	4.0%	927	2_a13	6.17	8.00	2.29	75	Type P-1	335	O.K.	3,691	100%	7,695	N.A.	-706	Not Req'd	8.7	-108	115	1.0	25%
					2_b13	6.83	8.00	2.29	71	Type P-1	335	O.K.	3,897	100%	8,842	N.A.	-781	Not Req'd	9.1	-108	122	1.0	25%
						13.00																	

Roof	3,829	SF	100.0%
Upper Floor	3,783	SF	100.0%
Main Floor	846	SF	28.6%