DESIGN & ENGINEERING B&T

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

March 29, 2021
BNT JOB NO. 18156

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

BUILDING CODES:

2015 IBC
ASCE7-10

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 =	25	PSF
TOTAL LL [SNOW - min] =	25	PSF
TOTAL Roof DESIGN LOAD =	50	PSF

ROOF SLOPES:

	11 : 12	6 : 12	5 : 12
RISE =	11	6	5
RUN =	12	12	12
m =	1.357	1.118	1.083

VALLEY SLOPES:

	6:12 TO 11:12	5:12 TO 11:12
RISE =	5.267	4.552
RUN =	12	12
m =	1.092	1.070

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	2.7	PSF
FRAMING @ 16"o.c.	3.0	PSF
GYPBOARD CEILING	2.8	PSF
SPRINKLERS	2.0	PSF
MECH & ELEC	2.0	PSF
MISC.	1.0	PSF
TOTAL DL =	14	PSF
TOTAL LL =	20	PSF
TOTAL Attic DESIGN LOAD =	34	

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 "D" - Seismic Design Category "D")

Ss =	1.391	g
S1 =	0.535	g
Fa =	1.000	
Fv =	1.500	
SDS =	0.927	g
SD1 =	0.535	g
Load Factor for ASD combinations =	0.70	ASCE7-10 2.4.1 EQ. 5. & 8.

REDUNDANCY FACTOR (rho) =	1.0
SYSTEM OVERSTRENGTH FACTOR =	2.5
FACTOR FOR PLAN IRREGULARITY =	1.0

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

v = 0.130 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
F	**G**	**H**	**I**	**J**			
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
9	**9.3**	**10**	**11**	**12**	**12.6**	**13**	
51.33	55.44	62.33	66.33	75.33	101.54	113.83	

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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) =	35	E.F.P. (PASSIVE) =	200
E.F.P. (active - unrestrained) sloping Backfill (pcf) =	45	Coefficient of friction (sliding) =	0.3
E.F.P. (at-rest) (pcf) =	40		
	5	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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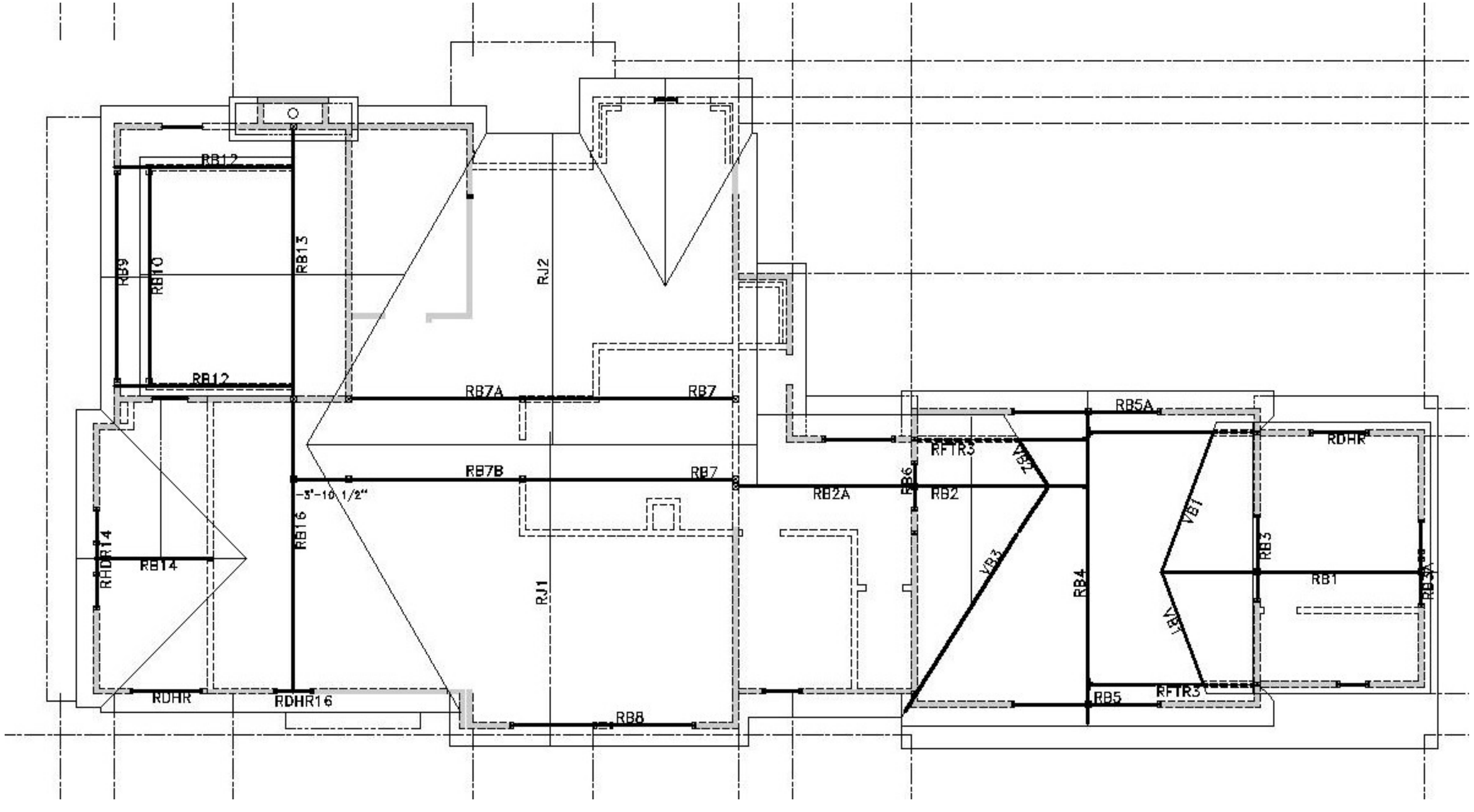
Roof Framing Plan
SHEET: 1 OF 1
3/29/2021



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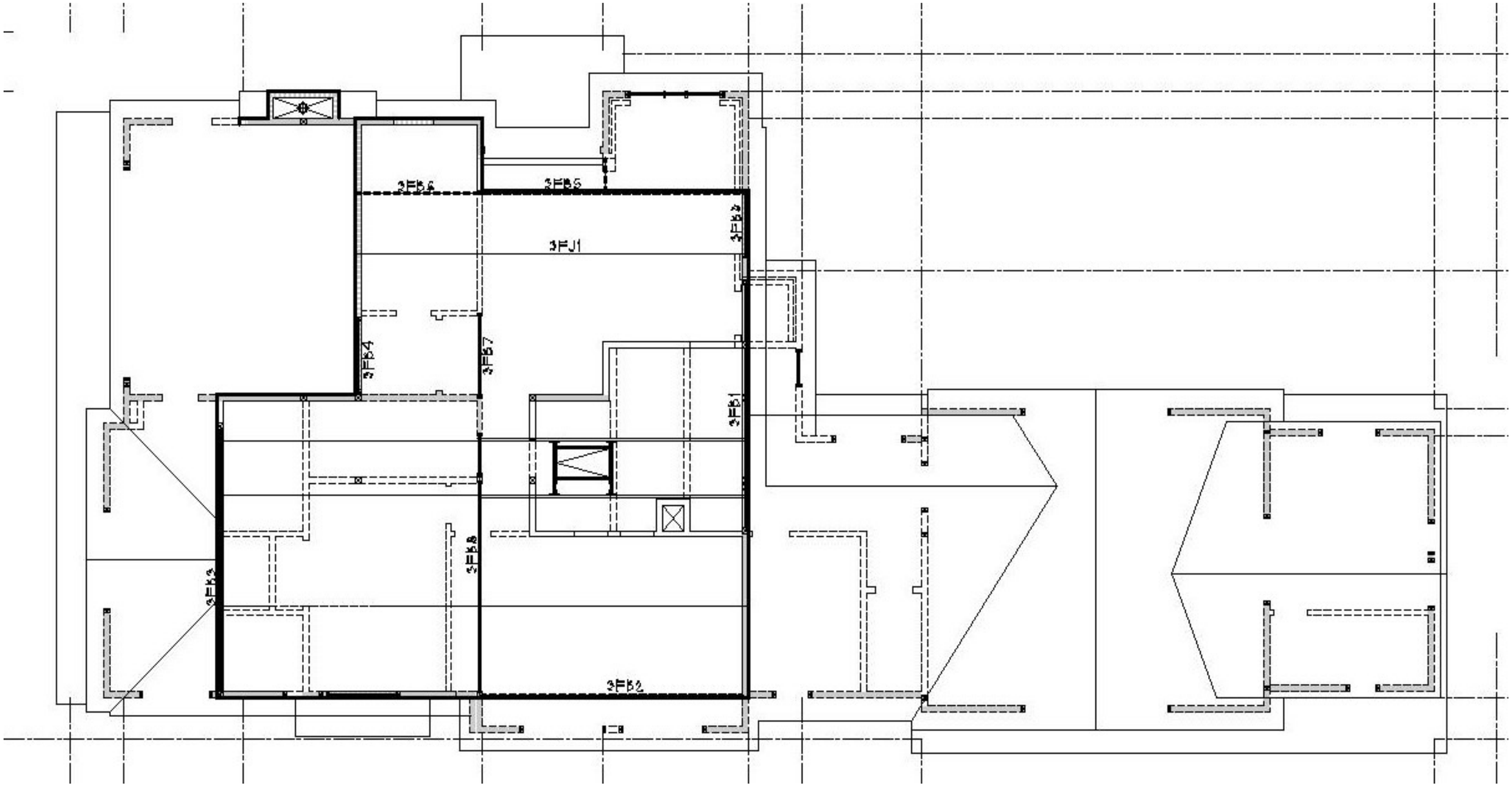
Attic Framing Plan
SHEET: 1 OF 1
3/29/2021



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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 @ 11 : 12	2 X 12 DF#2	13.00	0.00	1	0	653	653	653	653
Rftr @ 6 : 12	2 X 12 DF#2	15.25	0.00	1	0	510	510	510	510
Rftr @ 5 : 12	2 X 12 DF#2	14.50	0.00	1	0	729	729	729	729
RJ1	2 X 12 DF#2	20.50	3.00	1	201	602	803	568	568
RJ1-ALT	14" Red-I65	21.50	0.00	1	0	1,081	1,081	1,081	1,081
RJ2	2 X 12 DF#2	21.50	7.17	1	479	361	840	121	121
RJ2 - ALT	1 3/4" x 14" Microlam 2.0E	21.50	7.17	1	721	901	1,621	540	540
RJ2 - ALT 2	11 7/8" Red-I65	21.25	0.00	1	0	1,068	1,068	1,068	1,068
RJ2 - ALT 3	11 7/8" Red-I65	21.25	0.00	1	0	1,106	1,106	1,106	1,106
RHDR	4 X 10 DF#2	8.00	0.00	1	0	2,413	2,413	2,413	2,413
RHDR16	4 X 10 DF#2	2.50	0.00	1	0	2,061	2,061	2,061	2,061
VB1	1 3/4" x 11 7/8" Microlam 2.0E	11.58	0.00	1	0	1,746	1,746	1,746	1,746
VB2	1 3/4" x 11 7/8" Microlam 2.0E	10.00	0.00	1	0	1,508	1,508	1,508	1,508
VB3	5 1/4" X 11 7/8" Parallam 2.0E	17.75	0.00	1	0	3,569	3,569	3,569	3,569
RB1	7" X 14" Parallam 2.0E	19.00	6.50	1	4,561	5,016	9,577	952	952
RB2	3 1/2" x 11 7/8" Parallam 2.0E	13.00	0.00	1	0	6,192	6,192	3,458	3,458
RFTR3	3 1/2" x 11 7/8" Parallam 2.0E	12.75	0.00	1	0	1,057	1,057	1,235	1,235
RB3	6 X 12 DF#1	6.00	0.00	1	0	6,686	6,686	3,494	3,494
RB3A	4 X 10 DF#2	3.17	0.00	1	0	862	862	409	409
RB4	5 1/4" X 16" Parallam 2.0E	21.00	0.00	1	0	8,361	8,361	12,611	12,611
RB5	3 1/2" x 14" Parallam 2.0E	11.00	0.00	1	0	4,924	4,924	4,544	4,544
RB5A	3 1/2" x 16" Parallam 2.0E	11.00	0.00	1	0	7,145	7,145	6,572	6,572
RB6	6 X 8 DF#2	3.17	0.00	1	0	3,425	3,425	3,405	3,405
RB7	5 1/4" X 11 7/8" Parallam 2.0E	16.00	0.00	1	0	6,031	6,031	6,031	6,031
RB7A	5 1/4" X 11 7/8" Parallam 2.0E	13.00	0.00	1	0	4,900	4,900	4,900	4,900

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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)
RB7B	5 1/4" X 11 7/8" Parallam 2.0E	17.00	4.00	1	5,654	5,289	10,943	2,552	2,552
RB8	3 1/2" X 9 1/4" Parallam 2.0E	12.00	0.00	1	0	2,714	2,714	2,714	2,714
RB9	3 1/2" X 9 1/4" Parallam 2.0E	15.00	0.00	1	0	1,508	1,508	1,508	1,508
RB10	6 X 12 DF#1	16.00	0.00	1	0	2,815	2,815	2,815	2,815
RB12	3 1/2" x 11 7/8" Parallam 2.0E	13.00	0.00	1	0	2,927	2,927	1,195	1,195
RB13	5 1/4" X 14" Parallam 2.0E	20.00	0.00	1	0	6,843	6,843	6,604	6,604
RB14	4 X 12 DF#2	8.50	0.00	1	0	2,029	2,029	2,029	2,029
RHDR14	4 X 12 DF#2	7.00	0.00	1	0	2,480	2,480	2,283	2,283
RB15	4 X 8 DF#2	7.00	0.00	1	0	1,055	1,055	1,055	1,055
RB16	5 1/4" X 14" Parallam 2.0E	21.50	0.00	1	0	3,242	3,242	3,242	3,242
Attic Joist	11 7/8" TJI/210	20.00	0.00	1	0	446	446	446	446
3FB1	5 1/4" X 14" Parallam 2.0E	13.50	0.00	1	0	11,036	11,036	8,603	8,603
3FB2	5 1/4" X 11 7/8" Parallam 2.0E	19.50	0.00	1	0	4,165	4,165	4,165	4,165
3FB3	5 1/4" X 14" Parallam 2.0E	19.50	0.00	1	0	5,588	5,588	5,588	5,588
3FB4	4 X 6 DF#2	6.00	0.00	1	0	1,256	1,256	1,256	1,256
3FB5	5 1/4" X 11 7/8" Parallam 2.0E	19.50	0.00	1	0	4,247	4,247	4,247	4,247
3FB6	3 1/2" x 11 7/8" Parallam 2.0E	9.00	0.00	1	0	1,960	1,960	1,960	1,960
3FB7	4 X 8 DF#2	6.00	0.00	1	0	1,809	1,809	1,809	1,809
3FB8	5 1/4" X 11 7/8" Parallam 2.0E	16.00	0.00	1	0	5,360	5,360	5,360	5,360
3FB9	4 X 10 DF#2	5.00	0.00	1	0	796	796	796	796

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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 @ 11 : 12	2 X 12 DF#2	0	13	1	YES	1.3566	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 @ 5 : 12	2 X 12 DF#2	0	14.5	1	YES	1.0833	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	4 X 10 DF#2	0	8	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	0
RHDR16	4 X 10 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	1.0921	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	1.0695	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	1.0921	0	0	0	0	0	0	0	0	0	0	0	0
RB1	7" X 14" Parallam 2.0E	6.5	12.5	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	1.3566	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
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

		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 @ 11 : 12	2 X 12 DF#2	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	101	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	67	0	0
Rftr @ 5 : 12	2 X 12 DF#2	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	101	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	67	67	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	67	34	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	101	101	0	0
RHDR	4 X 10 DF#2	0	0	0	12	0	12	0	0	0	0	0	0	0	0	0	603	0	0
RHDR16	4 X 10 DF#2	0	0	0	7	0	7	0	0	0	0	0	1,629	1,613	1.25	0	352	0	3,242
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	302	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	302	0	0
VB3	5 1/4" X 11 7/8" Parallam 2.0E	0	0	0	8	0	8	0	0	0	0	0	0	0	0	0	402	0	0
RB1	7" X 14" Parallam 2.0E	0	0	4	9.5	4	9.5	0	0	1,635	1,619	6.5	0	0	0	201	477	3,254	0
RB2	3 1/2" x 11 7/8" Parallam 2.0E	0	0	0	7	0	7	0	0	0	0	0	2,551	2,525	3	0	352	0	5,076
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	452	0	0
RFTR3	3 1/2" x 11 7/8" Parallam 2.0E	0	0	0	2	0	2	0	0	0	0	0	508	503	7.5	0	101	0	1,010
RB3	6 X 12 DF#1	0	0	0	2	0	2	0	0	0	0	0	4,813	4,763	2	0	101	0	9,577
RB3A	4 X 10 DF#2	0	0	0	2	0	2	0	0	0	0	0	479	474	0.83	0	101	0	952
RB5	3 1/2" x 14" Parallam 2.0E	0	0	0	2	0	2	0	0	0	0	0	4,202	4,159	5.25	0	101	0	8,361
RB5A	3 1/2" x 16" Parallam 2.0E	0	0	0	2	0	2	0	0	0	0	0	6,338	6,273	5.25	0	101	0	12,611

		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 @ 11 : 12	2 X 12 DF#2	839	0	653	653	4,017	21%	0	6.50	2,124	2,124	2,964	72%	0.000	N.A.	0.768	275	O.K.
Rftr @ 6 : 12	2 X 12 DF#2	671	0	510	510	4,017	17%	0	7.63	1,943	1,943	2,964	66%	0.000	N.A.	0.446	458	O.K.
Rftr @ 5 : 12	2 X 12 DF#2	952	0	729	729	4,017	24%	0	7.25	2,642	2,642	2,964	89%	0.000	N.A.	0.484	390	O.K.
RJ1	2 X 12 DF#2	809	201	602	568	4,017	20%	301	9.01	2,411	2,411	2,964	81%	-0.156	516	0.747	314	O.K.
RJ2	2 X 12 DF#2	625	479	361	121	4,017	16%	1,718	10.73	217	1,718	2,964	58%	0.627	307	0.109	1,758	O.K.
RJ2 - ALT	1 3/4" x 14" Microlam 2.0E	1,175	721	901	540	8,030	15%	2,584	8.96	1,450	2,584	13,949	19%	0.262	736	0.138	1,392	O.K.
RHDR	4 X 10 DF#2	2,921	0	2,413	2,413	6,702	44%	0	4.00	4,825	4,825	5,166	93%	0.000	N.A.	0.150	638	O.K.
RHDR16	4 X 10 DF#2	2,684	0	2,061	2,061	6,702	40%	0	1.25	2,301	2,301	5,166	45%	0.000	N.A.	0.006	5,195	O.K.
VB1	1 3/4" x 11 7/8" Microlam 2.0E	2,171	0	1,746	1,746	6,811	32%	0	5.79	5,055	5,055	10,248	49%	0.000	N.A.	0.355	427	O.K.
VB2	1 3/4" x 11 7/8" Microlam 2.0E	1,814	0	1,508	1,508	6,811	27%	0	5.00	3,770	3,770	10,248	37%	0.000	N.A.	0.182	706	O.K.
VB3	5 1/4" X 11 7/8" Parallam 2.0E	4,756	0	3,569	3,569	20,792	23%	0	8.88	15,835	15,835	34,292	46%	0.000	N.A.	0.872	267	O.K.
RB1	7" X 14" Parallam 2.0E	6,689	4,561	5,016	952	32,683	20%	25,398	10.51	950	25,398	62,471	41%	0.488	320	0.054	2,769	O.K.
RB2	3 1/2" x 11 7/8" Parallam 2.0E	8,765	0	6,192	3,458	13,861	63%	0	3.17	16,997	16,997	22,861	74%	0.000	N.A.	0.501	312	O.K.
RB2A	3 1/2" x 11 7/8" Parallam 2.0E	3,909	0	3,053	3,053	13,861	28%	0	6.75	10,305	10,305	22,861	45%	0.000	N.A.	0.346	468	O.K.
RFTR3	3 1/2" x 11 7/8" Parallam 2.0E	1,703	0	1,057	1,235	13,861	12%	0	7.50	5,099	5,099	22,861	22%	0.000	N.A.	0.392	529	O.K.
RB3	6 X 12 DF#1	9,888	0	6,686	3,494	12,097	82%	0	2.00	13,171	13,171	15,010	88%	0.000	N.A.	0.064	1,122	O.K.
RB3A	4 X 10 DF#2	1,177	0	862	409	6,702	18%	0	0.83	681	681	5,166	13%	0.000	N.A.	0.003	13,774	O.K.
RB5	3 1/2" x 14" Parallam 2.0E	7,210	0	4,924	4,544	16,342	44%	0	5.25	24,464	24,464	31,236	78%	0.000	N.A.	0.270	488	O.K.
RB5A	3 1/2" x 16" Parallam 2.0E	10,517	0	7,145	6,572	18,676	56%	0	5.25	36,126	36,126	40,197	90%	0.000	N.A.	0.266	496	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
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
RB8	3 1/2" X 9 1/4" Parallam 2.0E	0	12	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	1.3566	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
3FB2	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
3FB3	5 1/4" X 14" Parallam 2.0E	0	19.5	1	NO	1	0	0	0	0	0	0	0	0	0	0	0	9.5
3FB4	4 X 6 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
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
RB6	6 X 8 DF#2	0	0	0	2	0	2	0	0	0	0	0	3,273	3,239	1.58	0	101	0	6,512
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	754	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	754	0	0
RB7B	5 1/4" X 11 7/8" Parallam 2.0E	0	0	12	12	12	12	0	0	1,629	1,613	4	0	0	0	603	603	3,242	0
RB8	3 1/2" X 9 1/4" Parallam 2.0E	0	0	0	9	0	9	0	0	0	0	0	0	0	0	0	452	0	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	201	0	0
RB10	6 X 12 DF#1	0	0	0	7	0	7	0	0	0	0	0	0	0	0	0	352	0	0
RB12	3 1/2" x 11 7/8" Parallam 2.0E	0	0	0	2	0	2	0	0	0	0	0	1,415	1,400	2.5	0	101	0	2,815
RB14	4 X 12 DF#2	0	0	0	9.5	0	9.5	0	0	0	0	0	0	0	0	0	477	0	0
RB15	4 X 8 DF#2	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	302	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	302	0	0
3FB2	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	427	0	0
3FB3	5 1/4" X 14" Parallam 2.0E	0	9.5	0	3	0	3	0	0	0	0	0	1,020	1,009	9.75	0	469	0	2,029
3FB4	4 X 6 DF#2	0	5	0	5	0	5	0	0	0	0	0	0	0	0	0	419	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	436	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	436	0	0
3FB7	4 X 8 DF#2	0	15	0	2	0	2	0	0	0	0	0	0	0	0	0	603	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	670	0	0
3FB9	4 X 10 DF#2	0	9.5	0	0	0	0	0	0	0	0	0	0	0	0	0	318	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?
RB6	6 X 8 DF#2	5,047	0	3,425	3,405	7,796	65%	0	1.58	5,287	5,287	6,234	85%	0.000	N.A.	0.034	1,122	O.K.
RB7	5 1/4" X 11 7/8" Parallam 2.0E	7,928	0	6,031	6,031	20,792	38%	0	8.00	24,125	24,125	34,292	70%	0.000	N.A.	0.759	253	O.K.
RB7A	5 1/4" X 11 7/8" Parallam 2.0E	6,232	0	4,900	4,900	20,792	30%	0	6.50	15,927	15,927	34,292	46%	0.000	N.A.	0.331	472	O.K.
RB7B	5 1/4" X 11 7/8" Parallam 2.0E	7,586	5,654	5,289	2,552	20,792	36%	17,793	8.77	5,398	17,793	34,292	52%	0.338	284	0.179	874	O.K.
RB8	3 1/2" X 9 1/4" Parallam 2.0E	3,548	0	2,714	2,714	10,797	33%	0	6.00	8,142	8,142	13,871	59%	0.000	N.A.	0.457	315	O.K.
RB9	3 1/2" X 9 1/4" Parallam 2.0E	2,029	0	1,508	1,508	10,797	19%	0	7.50	5,654	5,654	13,871	41%	0.000	N.A.	0.496	363	O.K.
RB10	6 X 12 DF#1	3,727	0	2,815	2,815	12,097	31%	0	8.00	11,259	11,259	15,010	75%	0.000	N.A.	0.497	386	O.K.
RB12	3 1/2" x 11 7/8" Parallam 2.0E	4,241	0	2,927	1,195	13,861	31%	0	2.50	7,003	7,003	22,861	31%	0.000	N.A.	0.542	390	O.K.
RB14	4 X 12 DF#2	2,372	0	2,029	2,029	8,151	29%	0	4.25	4,312	4,312	7,004	62%	0.000	N.A.	0.084	1,209	O.K.
RB15	4 X 8 DF#2	1,310	0	1,055	1,055	5,253	25%	0	3.50	1,847	1,847	3,438	54%	0.000	N.A.	0.092	917	O.K.
RB16	5 1/4" X 14" Parallam 2.0E	4,335	0	3,242	3,242	24,512	18%	0	10.75	17,425	17,425	46,853	37%	0.000	N.A.	0.604	427	O.K.
3FB2	5 1/4" X 11 7/8" Parallam 2.0E	5,614	0	4,165	4,165	20,792	27%	0	9.75	20,306	20,306	34,292	59%	0.000	N.A.	0.949	247	O.K.
3FB3	5 1/4" X 14" Parallam 2.0E	7,561	0	5,588	5,588	24,512	31%	0	9.75	32,187	32,187	46,853	69%	0.000	N.A.	0.861	272	O.K.
3FB4	4 X 6 DF#2	1,597	0	1,256	1,256	3,985	40%	0	3.00	1,885	1,885	1,979	95%	0.000	N.A.	0.157	458	O.K.
3FB5	5 1/4" X 11 7/8" Parallam 2.0E	5,724	0	4,247	4,247	20,792	28%	0	9.75	20,704	20,704	34,292	60%	0.000	N.A.	0.967	242	O.K.
3FB6	3 1/2" x 11 7/8" Parallam 2.0E	2,294	0	1,960	1,960	13,861	17%	0	4.50	4,410	4,410	22,861	19%	0.000	N.A.	0.066	1,641	O.K.
3FB7	4 X 8 DF#2	2,167	0	1,809	1,809	5,253	41%	0	3.00	2,714	2,714	3,438	79%	0.000	N.A.	0.099	728	O.K.
3FB8	5 1/4" X 11 7/8" Parallam 2.0E	7,045	0	5,360	5,360	18,080	39%	0	8.00	21,440	21,440	29,819	72%	0.000	N.A.	0.674	285	O.K.
3FB9	4 X 10 DF#2	825	0	796	796	5,828	14%	0	2.50	995	995	4,492	22%	0.000	N.A.	0.012	4,952	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 =	1.357

V Allow (lb) =	2,540	V max (lb) =	1,081	V / Vallow =	43%
M Allow (lb-ft) =	8,030	M max (lb-ft) =	5,808	M / Mallow =	72%

Maximum deflections:

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

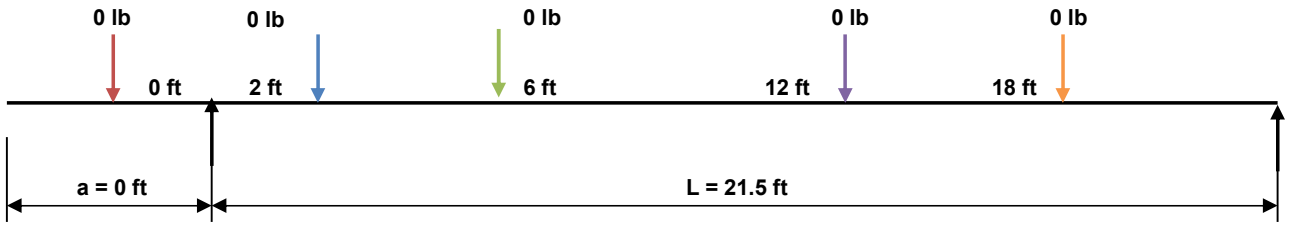
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	2.007	= L /	174

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	101

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	1,081		1,081
Mmax (lb-ft) =	0		5,808	

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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 =	1.357

V Allow (lb) =	2,255	V max (lb) =	1,068	V / Vallow =	47%
M Allow (lb-ft) =	6,750	M max (lb-ft) =	5,674	M / Mallow =	84%

Maximum deflections:

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

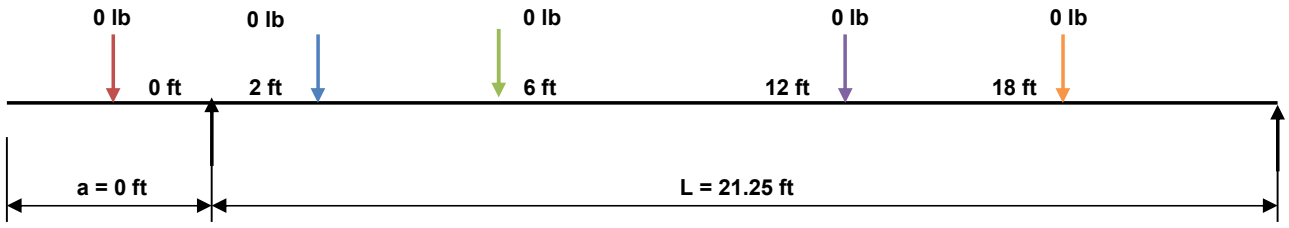
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	2.800	= L /	124

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	101

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	1,068		1,068
Mmax (lb-ft) =	0		5,674	

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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) =	1,106	V / Vallow =	50%
M Allow (lb-ft) =	5,140	M max (lb-ft) =	6,082	M / Mallow =	118%

Maximum deflections: TJI SERIES: 110 - 360

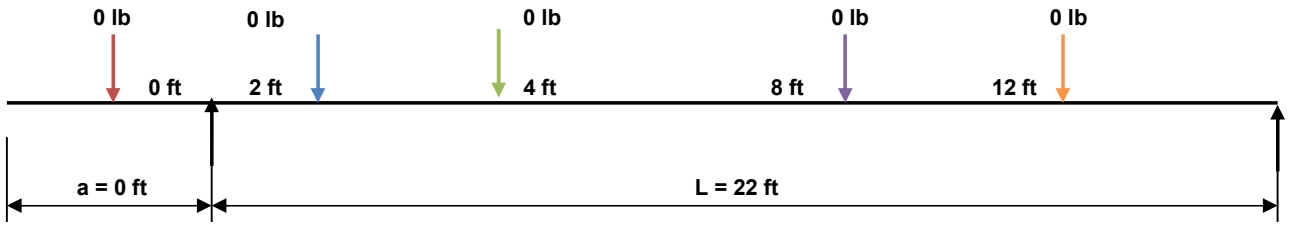
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.924	= L /	286

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	101

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	1,106		1,106
Mmax (lb-ft) =	0		6,082	

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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 =	31%
M Allow (lb-ft) =	46,853	M / Mallow =	64%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.913	= L /	263
1.5 * DLΔ (in) =	0.459	*Governs*	
2000 ft R (in) =	0.300		

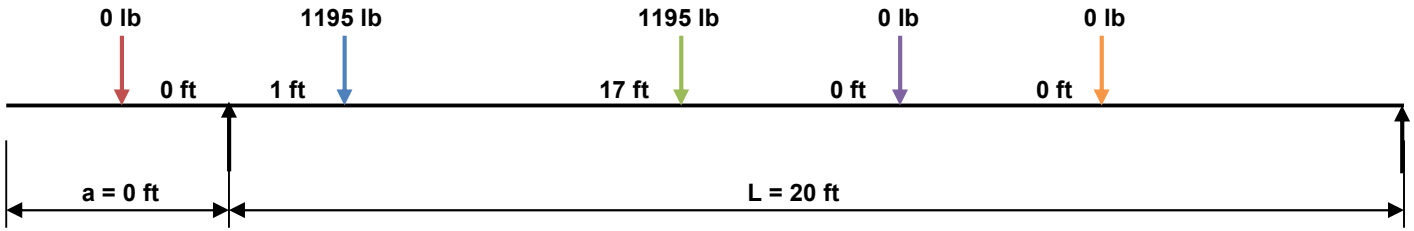
UNIFORM LOADS :

	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	553

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	600	600	0	0
PLL (lb) =	0	594	594	0	0
x (ft) =	0	1	17	0	0
Total Point Load (per lam - lb) =	0	1,195	1,195	0	0

Horiz. Shear Vmax (lb) =	7,505
Maximum Moment (lb-ft) =	30,046



V (lb) =	0	6,843		6,604
Mmax (lb-ft) =	0		30,046	
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 =	44%
M Allow (lb-ft) =	7,004	M / Mallow =	82%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.070	= L /	1,205
1.5 * DLΔ (in) =	0.035		
2000 ft R (in) =	0.037	*Governs*	

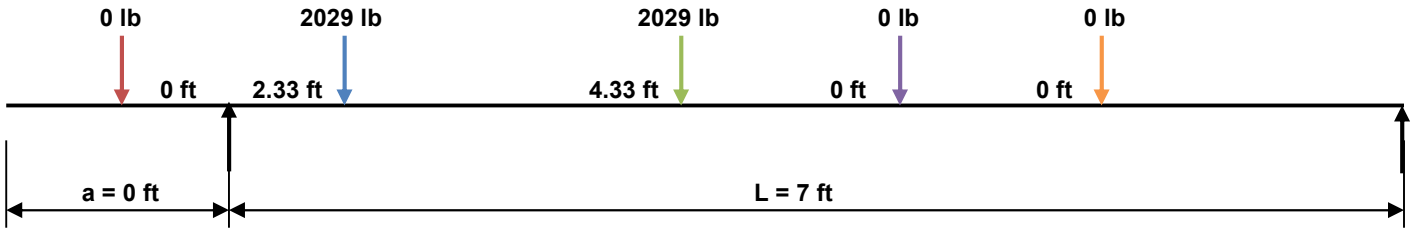
UNIFORM LOADS :

	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	101

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	1,020	1,020	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	2,029	2,029	0	0

Horiz. Shear Vmax (lb) =	3,578
Maximum Moment (lb-ft) =	5,736



V (lb) =	0	2,480		2,283
Mmax (lb-ft) =	0		5,736	
x (ft) =			4.33	

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Attic Joist | **11 7/8" TJI/210** | ***O.K.***

Length cantilever (ft) =	0	V Allow (lb) =	1,655	V max (lb) =	446	V / Vallow =	27%
Length backspan (ft) =	20						
No. of Lams?	1	M Allow (lb-ft) =	3,795	M max (lb-ft) =	2,228	M / Mallow =	59%
Slope Factor =	1.0						

Maximum deflections:

TJI SERIES: 110 - 360

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.549	= L /	437

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	45

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	446		446
Mmax (lb-ft) =	0		2,228	

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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 =	75%
M Allow (lb-ft) =	40,742	M / Mallow =	85%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.492	= L /	329
1.5 * DLΔ (in) =	0.247	*Governs*	
2000 ft R (in) =	0.137		

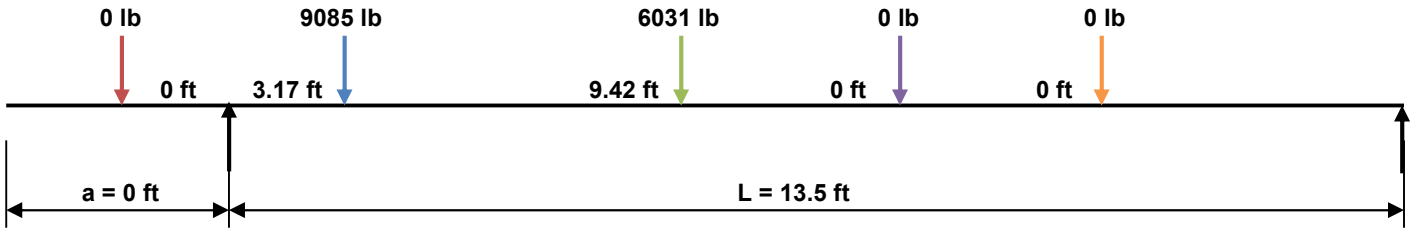
UNIFORM LOADS :

	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	335

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	4,566	3,031	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	9,085	6,031	0	0

Horiz. Shear Vmax (lb) =	15,967
Maximum Moment (lb-ft) =	34,479



V (lb) =	0	11,036		8,603
Mmax (lb-ft) =	0		34,479	
x (ft) =			5.82	

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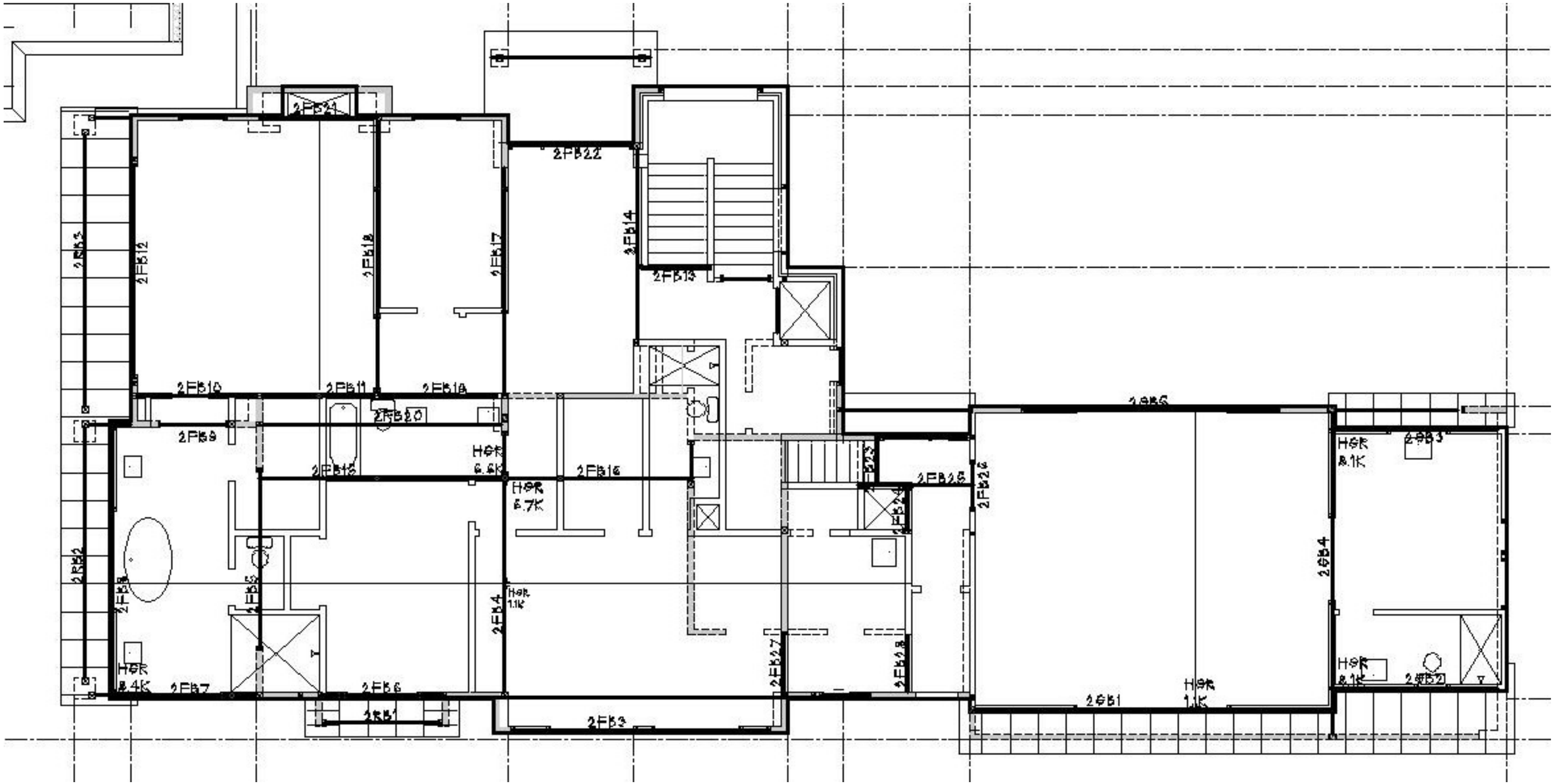
Upper Level Framing Plan
SHEET: 1 OF 1
3/29/2021



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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	16,167	16,167	16,063	16,063	O.K.
2GB2	3 1/2" x 16" Parallam 2.0E	12.00	0.00	1	0	8,018	8,018	8,018	8,018	O.K.
2GB3	3 1/2" x 16" Parallam 2.0E	12.00	0.00	1	0	8,018	8,018	8,018	8,018	O.K.
2GB4	W12X65	23.50	0.00	1	0	33,804	33,804	23,477	23,477	O.K.
2GB5	5 1/4" X 18" Parallam 2.0E	18.00	0.00	1	0	15,185	15,185	15,215	15,215	O.K.
2RB2	6 X 12 DF#1	18.50	0.00	1	0	1,627	1,627	1,627	1,627	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	4,695	4,695	4,695	4,695	O.K.
2FB4	5 1/4" X 16" Parallam 2.0E	19.50	0.00	1	0	16,277	16,277	27,057	27,057	N.G.
2FB4 - ALT	W12X40	19.50	0.00	1	0	16,277	16,277	27,057	27,057	O.K.
2FB5 (NNO DR)	5 1/4" X 16" Parallam 2.0E	12.50	0.00	1	0	6,643	6,643	12,167	12,167	O.K.
2FB6	4 X 10 DF#2	9.00	0.00	1	0	3,029	3,029	1,655	1,655	O.K.
2FB7	5 1/4" X 16" Parallam 2.0E	12.00	0.00	1	0	13,569	13,569	11,476	11,476	O.K.
2FB8	5 1/4" X 16" Parallam 2.0E	19.50	0.00	1	0	8,428	8,428	8,376	8,376	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	6,648	6,648	6,783	6,783	O.K.
2FB12 (NNO DOOR)	5 1/4" X 16" Parallam 2.0E	15.00	0.00	1	0	5,741	5,741	5,741	5,741	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	6,529	6,529	6,004	6,004	O.K.
2FB16	3 1/2" X 16" Parallam 2.0E	13.33	0.00	1	0	6,664	6,664	3,130	3,130	O.K.
2HDR16	4 X 12 DF#2	3.00	0.00	1	0	3,372	3,372	1,807	1,807	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	7,362	7,362	11,682	11,682	O.K.
2FB18	5 1/4" X 16" Parallam 2.0E	19.67	0.00	1	0	7,950	7,950	8,413	8,413	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	7,106	7,106	6,703	6,703	O.K.
2FB22	6 X 10 DF#1	8.50	0.00	1	0	3,360	3,360	3,360	3,360	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	1,336	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	1,336	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	176	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	176	0	0
2FB4	5 1/4" X 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	7,470	10,558	15.58	0	1,298	0	18,028
2FB4 - ALT	W12X40	0	0	0	0	0	0	0	0	0	0	0	7,470	10,558	15.58	0	1,298	0	18,028
2FB5 (NNO DR)	5 1/4" X 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	2,488	3,516	12	0	1,025	0	6,004
2FB6	4 X 10 DF#2	0	0	0	2.5	0	2.5	0	75	0	0	0	1,036	1,025	1.5	0	291	0	2,061
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	3,319	3,285	4.25	0	820	0	6,604
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	765	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	5,500	5,443	8.33	0	91	0	10,943
2FB16	3 1/2" X 16" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	4,314	4,269	3.92	0	91	0	8,583
2HDR16	4 X 12 DF#2	0	0	0	0	0	0	0	0	0	0	0	1,297	1,833	0.75	0	683	0	3,130
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	9,355	0	8,018	8,018	18,676	50%	0	6.00	24,055	24,055	40,197	60%	0.000	N.A.	0.261	552	O.K.
2GB3	3 1/2" x 16" Parallam 2.0E	9,355	0	8,018	8,018	18,676	50%	0	6.00	24,055	24,055	40,197	60%	0.000	N.A.	0.261	552	O.K.
2RB1	4 X 8 DF#2	896	0	704	704	5,253	17%	0	4.00	1,407	1,407	3,438	41%	0.000	N.A.	0.091	1,053	O.K.
2RB2	6 X 12 DF#1	2,193	0	1,627	1,627	12,097	18%	0	9.25	7,526	7,526	15,010	50%	0.000	N.A.	0.444	500	O.K.
2FB4	5 1/4" X 16" Parallam 2.0E	37,990	0	16,277	27,057	24,360	156%	0	15.58	96,092	96,092	52,430	183%	0.000	N.A.	1.959	119	N.G.
2FB4 - ALT	W12X40	27,057	0	16,277	27,057	234,000	12%	0	15.58	96,092	96,092	143,771	67%	0.000	N.A.	0.789	297	O.K.
2FB5 (NNO DR)	5 1/4" X 16" Parallam 2.0E	16,201	0	6,643	12,167	24,360	67%	0	12.00	5,955	5,955	52,430	11%	0.000	N.A.	0.171	875	O.K.
2FB6	4 X 10 DF#2	4,206	0	3,029	1,655	6,702	63%	0	3.32	4,699	4,699	5,166	91%	0.000	N.A.	0.189	573	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	8,535	0	6,648	6,783	16,240	53%	0	4.25	20,853	20,853	34,954	60%	0.000	N.A.	0.095	1,056	O.K.
2FB12 (NNO DOOR)	5 1/4" X 16" Parallam 2.0E	7,081	0	5,741	5,741	28,014	25%	0	7.50	21,529	21,529	60,295	36%	0.000	N.A.	0.243	740	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	9,612	0	6,529	6,004	24,360	39%	0	8.33	51,237	51,237	52,430	98%	0.000	N.A.	0.641	328	O.K.
2FB16	3 1/2" X 16" Parallam 2.0E	9,815	0	6,664	3,130	16,240	60%	0	3.92	25,427	25,427	34,954	73%	0.000	N.A.	0.269	594	O.K.
2HDR16	4 X 12 DF#2	4,097	0	3,372	1,807	7,088	58%	0	0.75	2,337	2,337	6,091	38%	0.000	N.A.	0.005	7,097	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	3,439	3,404	4	0	820	0	6,843
2FB22	6 X 10 DF#1	0	0	0	3.5	0	3.5	0	0	0	0	0	0	0	0	0	791	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	9,020	0	7,106	6,703	16,240	56%	0	4.00	21,867	21,867	34,954	63%	0.000	N.A.	0.103	987	O.K.
2FB22	6 X 10 DF#1	4,126	0	3,360	3,360	9,946	41%	0	4.25	7,140	7,140	10,147	70%	0.000	N.A.	0.160	638	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
Length backspan (ft) =	24
No. of Lams?	1
Slope Factor =	1.0

V Allow (lb) =	2,190	V max (lb) =	1,090	V / Vallow =	50%
M Allow (lb-ft) =	8,405	M max (lb-ft) =	6,540	M / Mallow =	78%

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 = 44%

Maximum deflections:
Cantilever - Δ max (in) = 0.000 | = L / N.A.
Backspan - Δ max (in) = 0.828 | = L / 370

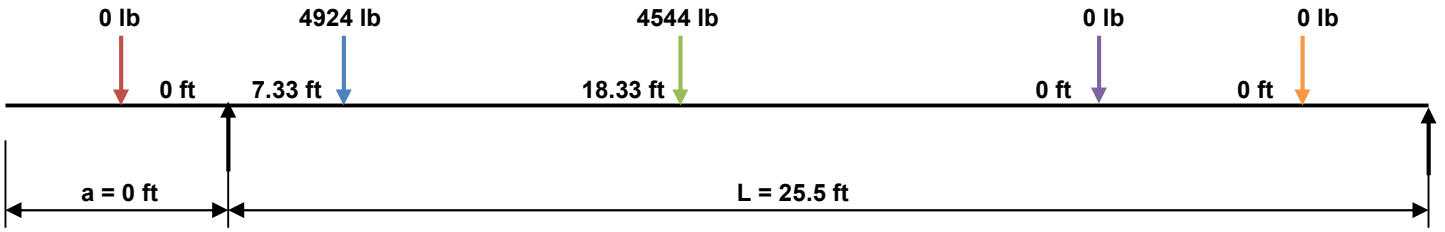
UNIFORM LOADS :

	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	893

POINT LOADS:

	Cantilever	Backspan			
	P1C	P1	P2	P3	P4
PDL (lb) =	0	2,475	2,284	0	0
PLL (lb) =	0	2,449	2,260	0	0
x (ft) =	0	7.33	18.33	0	0
Total Point Load (per lam - lb) =	0	4,924	4,544	0	0

Horiz. Shear Vmax (lb) = 16,167
Maximum Moment (lb-ft) = 106,902



V (lb) =	0	16,167		16,063
Mmax (lb-ft) =	0		106,902	
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 =	87%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	1.371	= L /	223
1.5 * DLΔ (in) =	0.689	*Governs*	
2000 ft R (in) =	0.488		

UNIFORM LOADS :

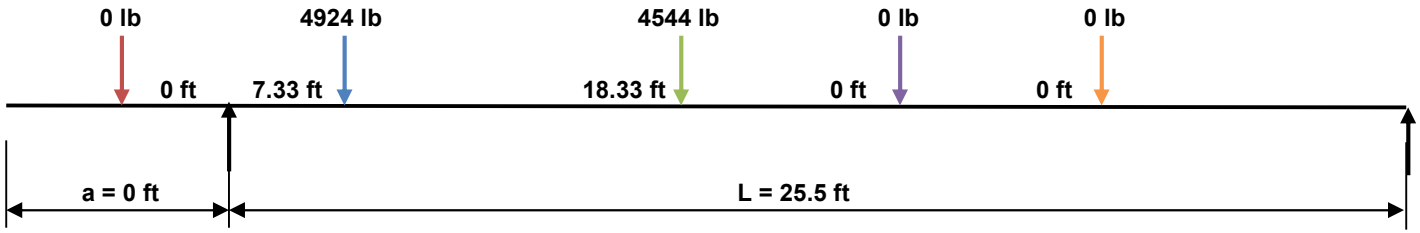
	Cantilever	Backspan
Floor twDL (ft) =	0	10.5
Floor twLL (ft) =	0	10.5
Floor twLL2 (ft) =	0	0
Deck twDL (ft) =	0	0
Deck twLL (ft) =	0	0
Attic twDL (ft) =	0	0
Attic twLL (ft) =	0	0
Roof twDL (ft) =	0	2
Roof twLL (ft) =	0	2
Addtnl Load (plf) =	0	75
Total Uniform Load (per lam - plf) =	0	893

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	2,475	2,284	0	0
PLL (lb) =	0	2,449	2,260	0	0
x (ft) =	0	7.33	18.33	0	0
Total Point Load (per lam - lb) =	0	4,924	4,544	0	0

Horiz. Shear Vmax (lb) = **22,019**

Maximum Moment (lb-ft) = 106,902



V (lb) =	0	16,167		16,063
Mmax (lb-ft) =	0		106,902	
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 =	9%
M Allow (lb-ft) =	245,388	M / Mallow =	52%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.800	= L /	352

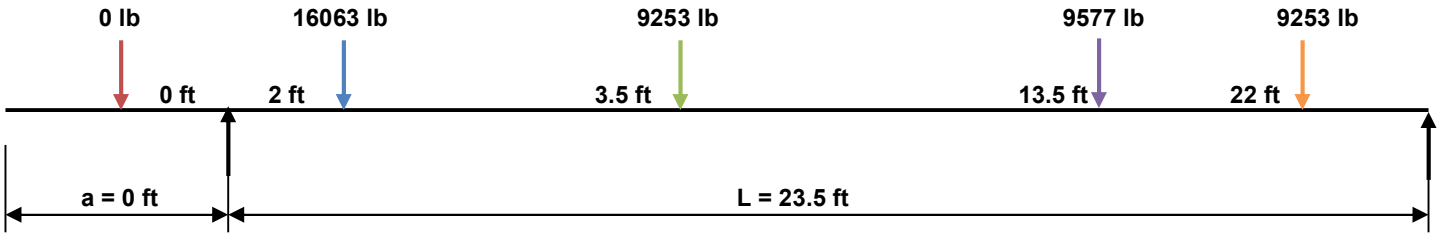
UNIFORM LOADS :

	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	559

POINT LOADS:

	Cantilever	Backspan			
	P1C	P1	P2	P3	P4
PDL (lb) =	0	6,656	4,651	4,813	4,651
PLL (lb) =	0	9,407	4,603	4,763	4,603
x (ft) =	0	2	3.5	13.5	22
Total Point Load (per lam - lb) =	0	16,063	9,253	9,577	9,253

Horiz. Shear Vmax (lb) =	33,804
Maximum Moment (lb-ft) =	128,169



V (lb) =	0	33,804			23,477
Mmax (lb-ft) =	0		128,169		
x (ft) =			13.50		

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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 =	66%
M Allow (lb-ft) =	75,319	M / Mallow =	82%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.741	= L /	291
1.5 * DLΔ (in) =	0.373	*Governs*	
2000 ft R (in) =	0.243		

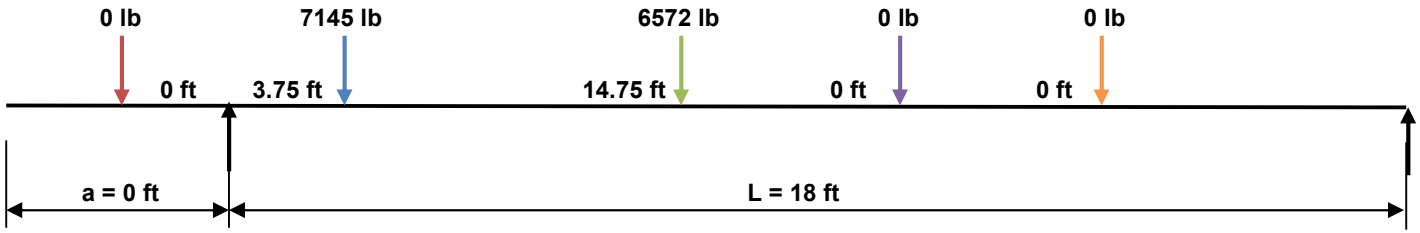
UNIFORM LOADS :

	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	927

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	3,591	3,303	0	0
PLL (lb) =	0	3,554	3,269	0	0
x (ft) =	0	3.75	14.75	0	0
Total Point Load (per lam - lb) =	0	7,145	6,572	0	0

Horiz. Shear Vmax (lb) =	20,738
Maximum Moment (lb-ft) =	61,662



V (lb) =	0	15,185		15,215
Mmax (lb-ft) =	0		61,662	
x (ft) =			8.67	

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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 =	40%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.475	= L /	454
1.5 * DLΔ (in) =	0.239		
2000 ft R (in) =	0.243	*Governs*	

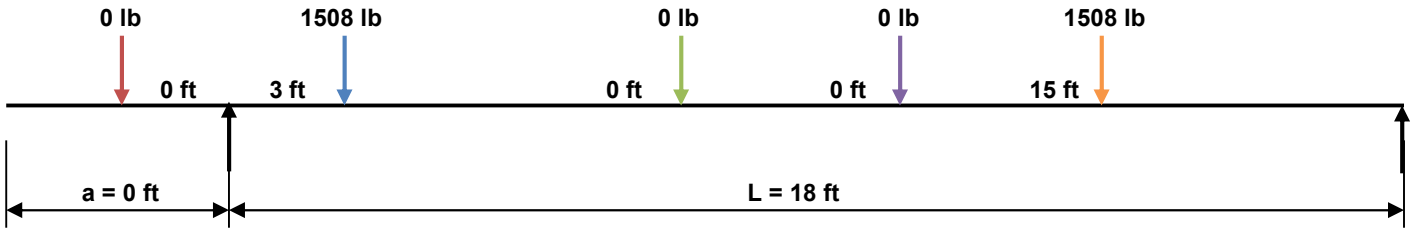
UNIFORM LOADS :

	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	354

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	758	0	0	758
PLL (lb) =	0	750	0	0	750
x (ft) =	0	3	0	0	15
Total Point Load (per lam - lb) =	0	1,508	0	0	1,508

Horiz. Shear Vmax (lb) =	6,423
Maximum Moment (lb-ft) =	18,865



V (lb) =	0	4,695		4,695
Mmax (lb-ft) =	0		18,865	
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 =	69%
M Allow (lb-ft) =	60,295	M / Mallow =	49%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.227	= L /	635
1.5 * DLΔ (in) =	0.114	*Governs*	
2000 ft R (in) =	0.108		

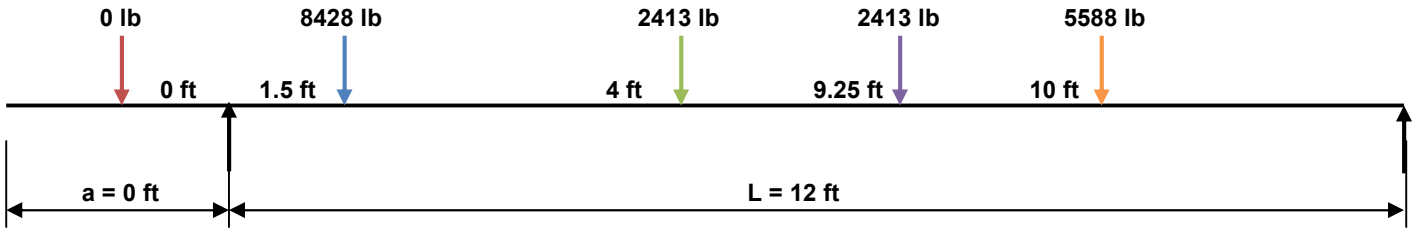
UNIFORM LOADS :

	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	517

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	4,236	1,213	1,213	2,315
PLL (lb) =	0	4,192	1,200	1,200	3,272
x (ft) =	0	1.5	4	9.25	10
Total Point Load (per lam - lb) =	0	8,428	2,413	2,413	5,588

Horiz. Shear Vmax (lb) =	19,320
Maximum Moment (lb-ft) =	29,493



V (lb) =	0	13,569		11,476
Mmax (lb-ft) =	0		29,493	
x (ft) =			5.28	

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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 =	41%
M Allow (lb-ft) =	60,295	M / Mallow =	73%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.854	= L /	274
1.5 * DLΔ (in) =	0.429	*Governs*	
2000 ft R (in) =	0.285		

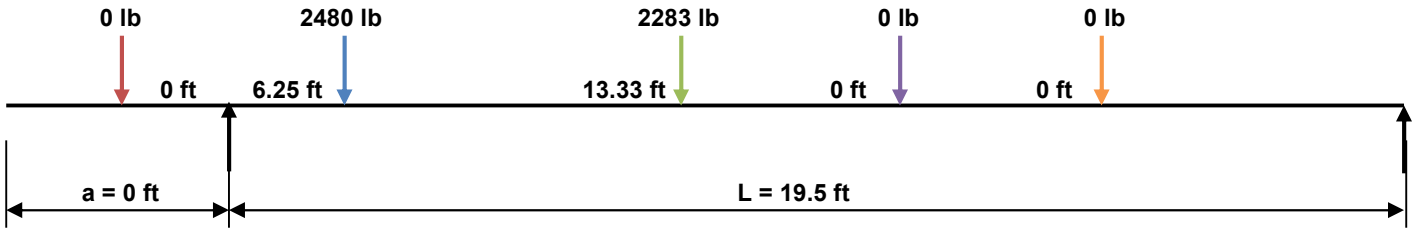
UNIFORM LOADS :

	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	618

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	1,246	1,147	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	2,480	2,283	0	0

Horiz. Shear Vmax (lb) =	11,407
Maximum Moment (lb-ft) =	44,148



V (lb) =	0	8,428		8,376
Mmax (lb-ft) =	0		44,148	
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 =	67%
M Allow (lb-ft) =	69,907	M / Mallow =	109%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.767	= L /	266
1.5 * DLΔ (in) =	0.385	*Governs*	
2000 ft R (in) =	0.217		

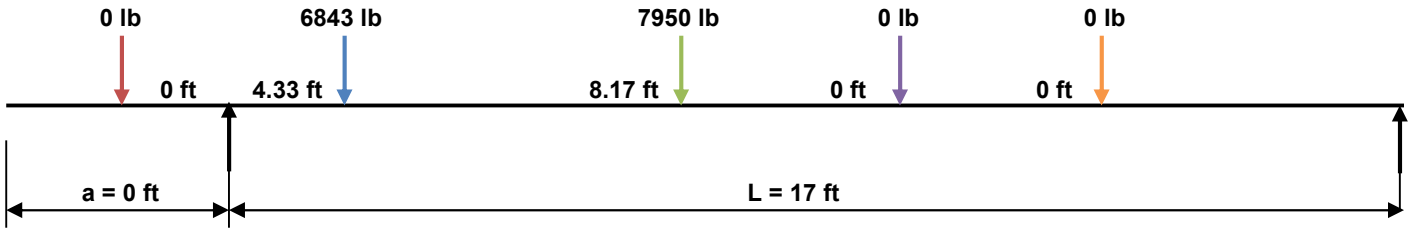
UNIFORM LOADS :

	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	3,439	3,294	0	0
PLL (lb) =	0	3,404	4,656	0	0
x (ft) =	0	4.33	8.17	0	0
Total Point Load (per lam - lb) =	0	6,843	7,950	0	0

Horiz. Shear Vmax (lb) =	21,920
Maximum Moment (lb-ft) =	76,225



V (lb) =	0	15,615		11,949
Mmax (lb-ft) =	0		76,225	
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 =	8%
M Allow (lb-ft) =	127,300	M / Mallow =	60%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.443	= L /	460

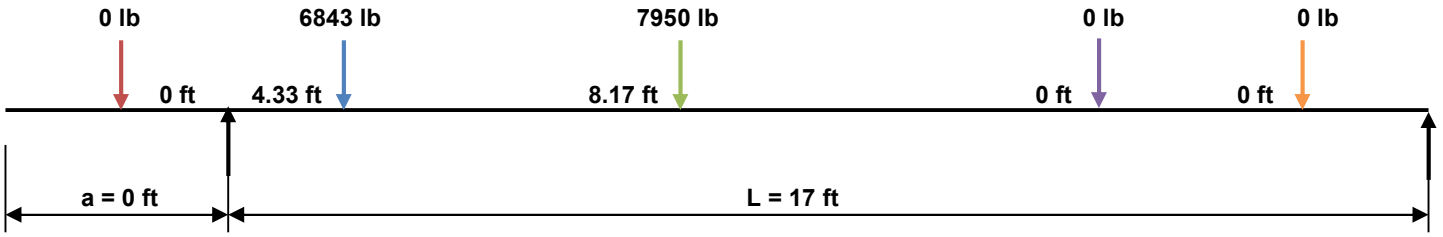
UNIFORM LOADS :

	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	3,439	3,294	0	0
PLL (lb) =	0	3,404	4,656	0	0
x (ft) =	0	4.33	8.17	0	0
Total Point Load (per lam - lb) =	0	6,843	7,950	0	0

Horiz. Shear Vmax (lb) =	15,615
Maximum Moment (lb-ft) =	76,225



V (lb) =	0	15,615			11,949
Mmax (lb-ft) =	0		76,225		
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 =	66%
M Allow (lb-ft) =	52,430	M / Mallow =	64%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.476	= L /	416
1.5 * DLΔ (in) =	0.239	*Governs*	
2000 ft R (in) =	0.204		

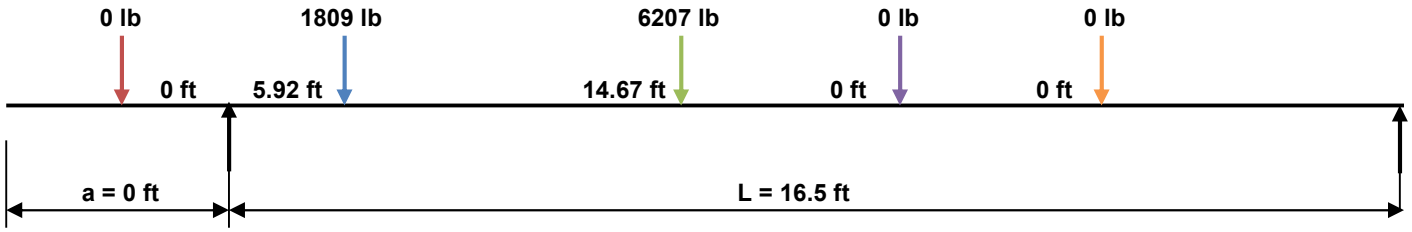
UNIFORM LOADS :

	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	668

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	729	3,120	0	0
PLL (lb) =	0	1,080	3,087	0	0
x (ft) =	0	5.92	14.67	0	0
Total Point Load (per lam - lb) =	0	1,809	6,207	0	0

Horiz. Shear Vmax (lb) =	16,186
Maximum Moment (lb-ft) =	33,780



V (lb) =	0	7,362		11,682
Mmax (lb-ft) =	0		33,780	
x (ft) =			8.31	

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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 =	46%
M Allow (lb-ft) =	52,430	M / Mallow =	78%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.809	= L /	292
1.5 * DLΔ (in) =	0.406	*Governs*	
2000 ft R (in) =	0.290		

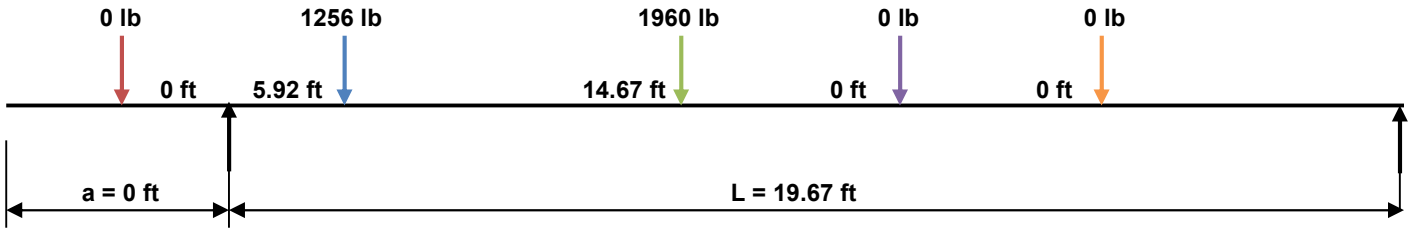
UNIFORM LOADS :

	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	668

POINT LOADS:

	Cantilever	Backspan			
	P1	P1	P2	P3	P4
PDL (lb) =	0	506	985	0	0
PLL (lb) =	0	750	975	0	0
x (ft) =	0	5.92	14.67	0	0
Total Point Load (per lam - lb) =	0	1,256	1,960	0	0

Horiz. Shear Vmax (lb) =	11,283
Maximum Moment (lb-ft) =	40,953



V (lb) =	0	7,950		8,413
Mmax (lb-ft) =	0		40,953	
x (ft) =			10.01	

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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) =	0.059	*Governs*	
2000 ft R (in) =	0.048		

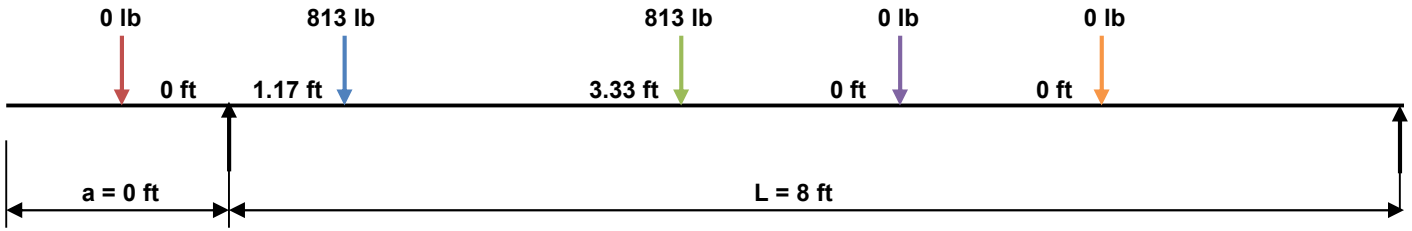
UNIFORM LOADS :

	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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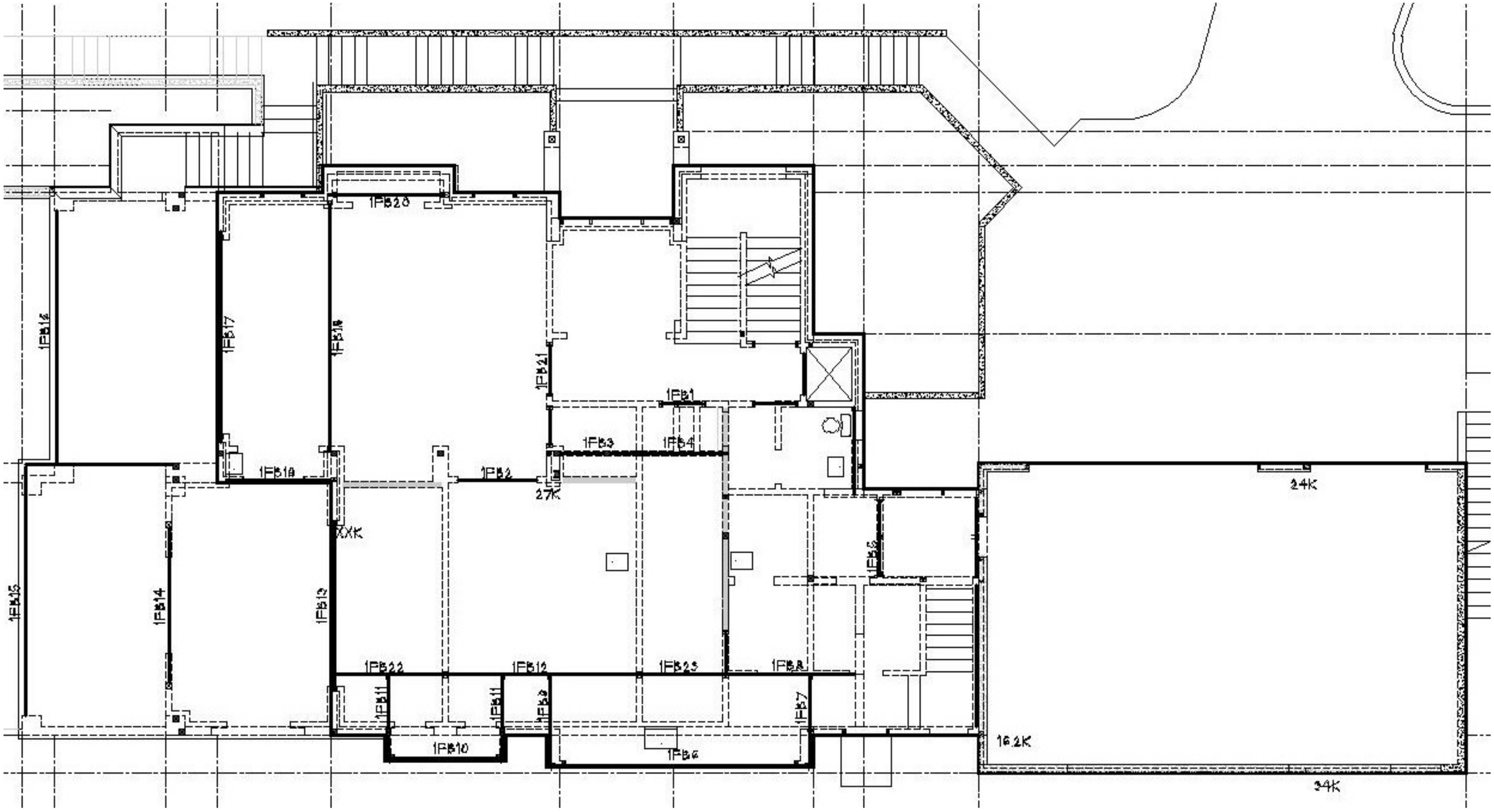
Main Level Framing Plan
SHEET: 1 OF 1
3/29/2021



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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	7,014	7,014	8,836	8,836	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	7,621	7,621	7,621	7,621	O.K.
1FB7	3 1/2" x 16" Parallam 2.0E	7.00	2.67	1	7,864	4,971	12,835	-4,578	-4,578	O.K.
1FB8	1 3/4" x 16" Microlam 2.0E	10.50	0.00	1	0	-594	-594	-1,832	-1,832	O.K.
1FB9	3 1/2" x 16" Parallam 2.0E	7.00	2.67	1	7,864	4,971	12,835	-4,578	-4,578	O.K.
1FB10	1 3/4" x 16" Microlam 2.0E	9.00	0.00	1	0	1,993	1,993	1,993	1,993	O.K.
1FB11	1 3/4" x 16" Microlam 2.0E	7.00	2.67	1	2,236	1,501	3,737	-1,107	-1,107	O.K.
1FB12	3 1/2" x 16" Parallam 2.0E	15.25	0.00	1	0	-1,319	-1,319	-1,241	-1,241	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 14" Parallam 2.0E	18.00	0.00	1	0	5,762	5,762	5,762	5,762	O.K.
1FB16	5 1/4" X 14" Parallam 2.0E	19.50	0.00	1	0	5,178	5,178	5,178	5,178	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	4,108	4,108	7,217	7,217	O.K.
1FB20	3 1/2" x 16" Parallam 2.0E	9.17	0.00	1	0	8,677	8,677	16,342	16,342	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	374	374	311	311	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	1,981	1,981	1,981	1,981	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 14" 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 14" Parallam 2.0E	0	19.5	1	NO	1.0	0	0	0	0	0	0	0	6.5	0	6.5	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

		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	5,494	5,438	3.5	0	820	0	10,932
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	3,158	4,463	2.67	0	0	0	91	91	7,621	0
1FB8	1 3/4" x 16" Microlam 2.0E	0	0	0	0	0	0	0	0	0	0	0	-1,897	-2,681	6.67	0	205	0	-4,578
1FB9	3 1/2" x 16" Parallam 2.0E	0	0	0	0	0	0	0	0	3,158	4,463	2.67	0	0	0	91	91	7,621	0
1FB11	1 3/4" x 16" Microlam 2.0E	0	0	0	0	0	0	0	0	826	1,167	2.67	0	0	0	91	91	1,993	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 14" 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 14" Parallam 2.0E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	531	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	11,614	0	7,014	8,836	16,240	72%	0	3.50	19,528	19,528	34,954	56%	0.000	N.A.	0.044	1,626	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	11,614	7,864	4,971	-4,578	16,240	72%	20,672	N.A.	N.A.	20,672	34,954	59%	0.093	691	-0.009	5,979	O.K.
1FB8	1 3/4" x 16" Microlam 2.0E	0	0	-594	-1,832	7,980	0%	0	19.44	8,191	8,191	15,557	53%	0.000	N.A.	-0.098	1,287	O.K.
1FB9	3 1/2" x 16" Parallam 2.0E	11,614	7,864	4,971	-4,578	16,240	72%	20,672	N.A.	N.A.	20,672	34,954	59%	0.093	691	-0.009	5,979	O.K.
1FB11	1 3/4" x 16" Microlam 2.0E	3,172	2,236	1,501	-1,107	7,980	40%	5,646	N.A.	N.A.	5,646	15,557	36%	0.050	1,281	-0.004	12,056	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 14" Parallam 2.0E	7,522	0	5,762	5,762	21,315	35%	0	9.00	25,928	25,928	40,742	64%	0.000	N.A.	0.630	343	O.K.
1FB16	5 1/4" X 14" Parallam 2.0E	6,837	0	5,178	5,178	21,315	32%	0	9.75	25,241	25,241	40,742	62%	0.000	N.A.	0.720	325	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.

		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

		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	-459	-648	4.625	0	205	0	-1,107
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	276	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	Canti-lever	L/?	Back-span	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	152	0	374	311	16,240	1%	0	7.23	236	236	34,954	1%	0.000	N.A.	0.000	575,975	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	2,556	0	1,981	1,981	15,370	17%	0	7.17	7,096	7,096	37,260	19%	0.000	N.A.	0.150	1,147	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						
No. of Lams?	1	M Allow (lb-ft) =	8,405	M max (lb-ft) =	3,270	M / Mallow =	39%
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						
No. of Lams?	1	M Allow (lb-ft) =	8,405	M max (lb-ft) =	3,761	M / Mallow =	45%
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
Length backspan (ft) =	12.5
No. of Lams?	2
Slope Factor =	1.0

V Allow (lb) =	2,190	V max (lb) =	762	V / Vallow =	35%
M Allow (lb-ft) =	8,405	M max (lb-ft) =	3,875	M / Mallow =	46%

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 =	67%
M Allow (lb-ft) =	34,954	M / Mallow =	63%
Maximum deflections:			
Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.733	= L /	334
1.5 * DLΔ (in) =	0.368	*Governs*	
2000 ft R (in) =	0.313		

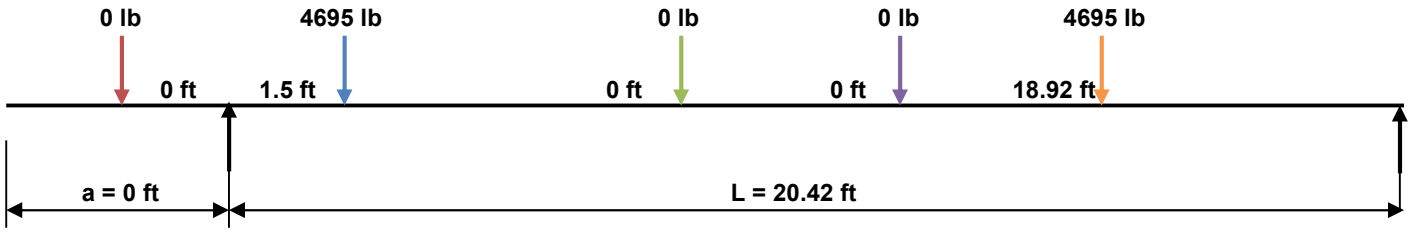
UNIFORM LOADS :

	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	2,360	0	0	2,360
PLL (lb) =	0	2,335	0	0	2,335
x (ft) =	0	1.5	0	0	18.92
Total Point Load (per lam - lb) =	0	4,695	0	0	4,695

Horiz. Shear Vmax (lb) =	10,858
Maximum Moment (lb-ft) =	21,981



V (lb) =	0	7,621		7,621
Mmax (lb-ft) =	0		21,981	
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) =	0.041	= L /	2,664
1.5 * DLΔ (in) =	0.020		
2000 ft R (in) =	0.061	*Governs*	

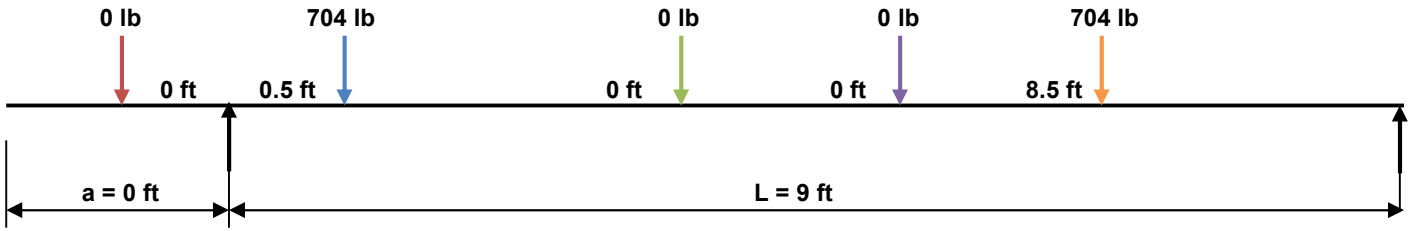
UNIFORM LOADS :

	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	354	0	0	354
PLL (lb) =	0	350	0	0	350
x (ft) =	0	0.5	0	0	8.5
Total Point Load (per lam - lb) =	0	704	0	0	704

Horiz. Shear Vmax (lb) =	1,361
Maximum Moment (lb-ft) =	3,254



V (lb) =	0	1,993		1,993
Mmax (lb-ft) =	0		3,254	
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) =	-0.143	= L /	1,278
1.5 * DLΔ (in) =	-0.072		
2000 ft R (in) =	0.174	*Governs*	

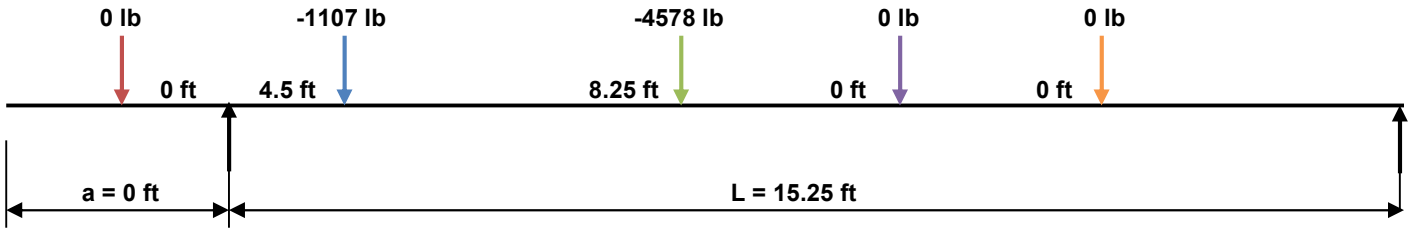
UNIFORM LOADS :

	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	-557	-2,301	0	0
PLL (lb) =	0	-551	-2,277	0	0
x (ft) =	0	4.5	8.25	0	0
Total Point Load (per lam - lb) =	0	-1,107	-4,578	0	0

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



V (lb) =	0	-1,319		-1,241
Mmax (lb-ft) =	0		-8,012	
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 =	45%
M Allow (lb-ft) =	34,954	M / Mallow =	32%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.039	= L /	2,491
1.5 * DLΔ (in) =	0.019		
2000 ft R (in) =	0.048	*Governs*	

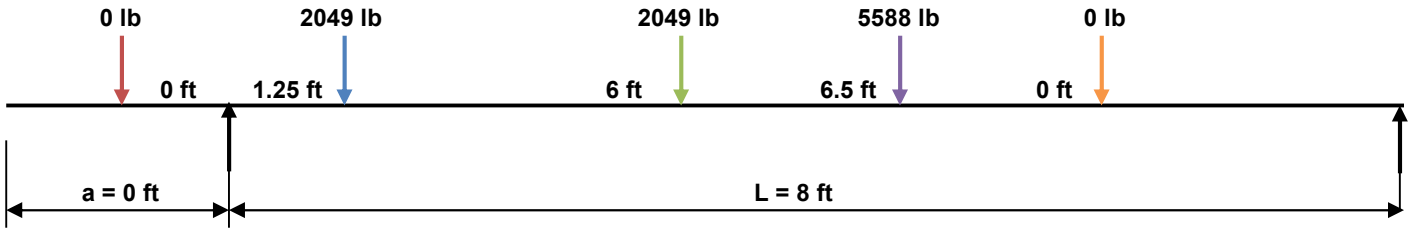
UNIFORM LOADS :

	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	2,252	0
PLL (lb) =	0	1,200	1,200	3,336	0
x (ft) =	0	1.25	6	6.5	0
Total Point Load (per lam - lb) =	0	2,049	2,049	5,588	0

Horiz. Shear Vmax (lb) =	7,342
Maximum Moment (lb-ft) =	11,229



V (lb) =	0	4,108		7,217
Mmax (lb-ft) =	0		11,229	
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 =	82%
M Allow (lb-ft) =	34,954	M / Mallow =	22%

Maximum deflections:

Cantilever - Δ max (in) =	0.000	= L /	N.A.
Backspan - Δ max (in) =	0.053	= L /	2,091
1.5 * DLΔ (in) =	0.026		
2000 ft R (in) =	0.063	*Governs*	

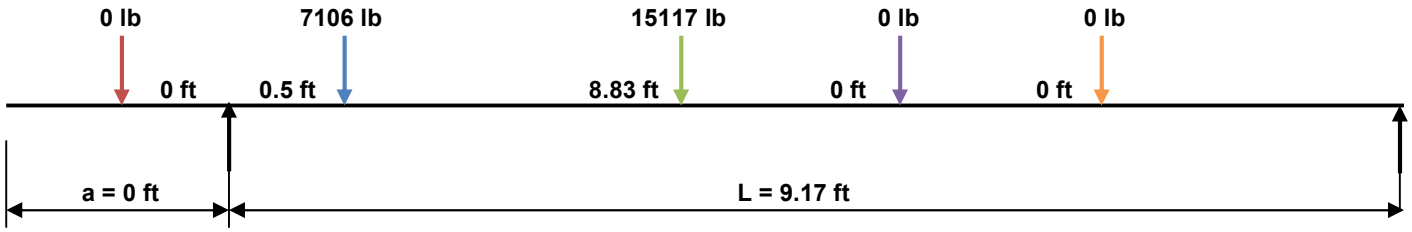
UNIFORM LOADS :

	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	2,944	6,264	0	0
PLL (lb) =	0	4,162	8,853	0	0
x (ft) =	0	0.5	8.83	0	0
Total Point Load (per lam - lb) =	0	7,106	15,117	0	0

Horiz. Shear Vmax (lb) =	13,244
Maximum Moment (lb-ft) =	7,600



V (lb) =	0	8,677		16,342
Mmax (lb-ft) =	0		7,600	
x (ft) =			5.15	

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								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	12,062	0	12,062	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	17,585	0	17,585	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	-1,008	0	-1,008	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	-549	0	-549	5	0.04	-0.05	0.08	-0.05	O.K.
2FB5 (NNO DR)	POST	6 X 6 DF#1 - POST	10.5	1	100%	Int	1	12,167	0	12,167	5	0.39	0.64	0.42	0.64	O.K.
2FB7	POST	6 X 6 DF#1 - POST	6	1	100%	Int	1	13,569	0	13,569	5	0.25	0.72	0.25	0.72	O.K.
2GB5	POST	6 X 6 DF#1 - POST	6	1	100%	Int	1	15,185	0	15,185	5	0.31	0.80	0.31	0.80	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	2,439	925	18.0	12.0	225	3,589	5.57	8.36	5,303
Grid 9.3	10.0	20.0	10.0	0.0	0.0	1,849	1,450	18.0	12.0	225	3,524	5.68	8.51	5,368
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) = 42.51

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
42.51	1	18.15	12.38	14.35	9.85	1.41	-10.97	0.42	-9.43	-6.33	-7.32
42.51	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
42.51	1	18.15	12.38	14.35	9.85	1.41	-10.97	0.42	-9.43	-6.33	-7.32
42.51	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
TAttic (ft) =	37.00	L Attic (ft) =	38.50
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) 18	Zone B Minimum Dsn Pressure (psf) 12	Zone C Minimum Dsn Pressure (psf) 16	Zone D Minimum Dsn Pressure (psf) 10	Total Shear (lb)
Roof & Attic	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) 18	Zone B Minimum Dsn Pressure (psf) 12	Zone C Minimum Dsn Pressure (psf) 16	Zone D Minimum Dsn Pressure (psf) 10	Total Shear (lb)
Roof & Attic	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	25	5	76,410	2,903,576	0.424	19,531	7.74
Attic	26.50	1,315	14	5	24,328	644,679	0.094	4,336	3.30
Garage Roof	24.00	1,110	25	5	33,590	806,162	0.118	5,423	4.89
Upper Floor	17.50	2,585	28	5	86,081	1,506,409	0.220	10,133	3.92
Garage Upper Floor	11.00	1,070	28	5	35,631	391,941	0.057	2,636	2.46
Main Floor	6.00	2,960	28	5	98,568	591,408	0.086	3,978	1.34
		11,565			354,607	6,844,175	1.000	46,037	

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

Transverse Direction: EQ/Wind = 1.06 x 1.75 = ***N.A.***

Longitudinal Direction: EQ/Wind = 1.90 x 1.75 = ***N.A.***

EQ FORCES GOVERN IN TRANSVERSE DIRECTION

EQ FORCES GOVERN IN LONGITUDINAL DIRECTION

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Shearwall Schedule						
	15/32" PLYWD Capacity (plf)				SILL PLATE	
Shearwall Types (plf):	Seismic	Wind	Nailing	Max Stud Spacing (in)	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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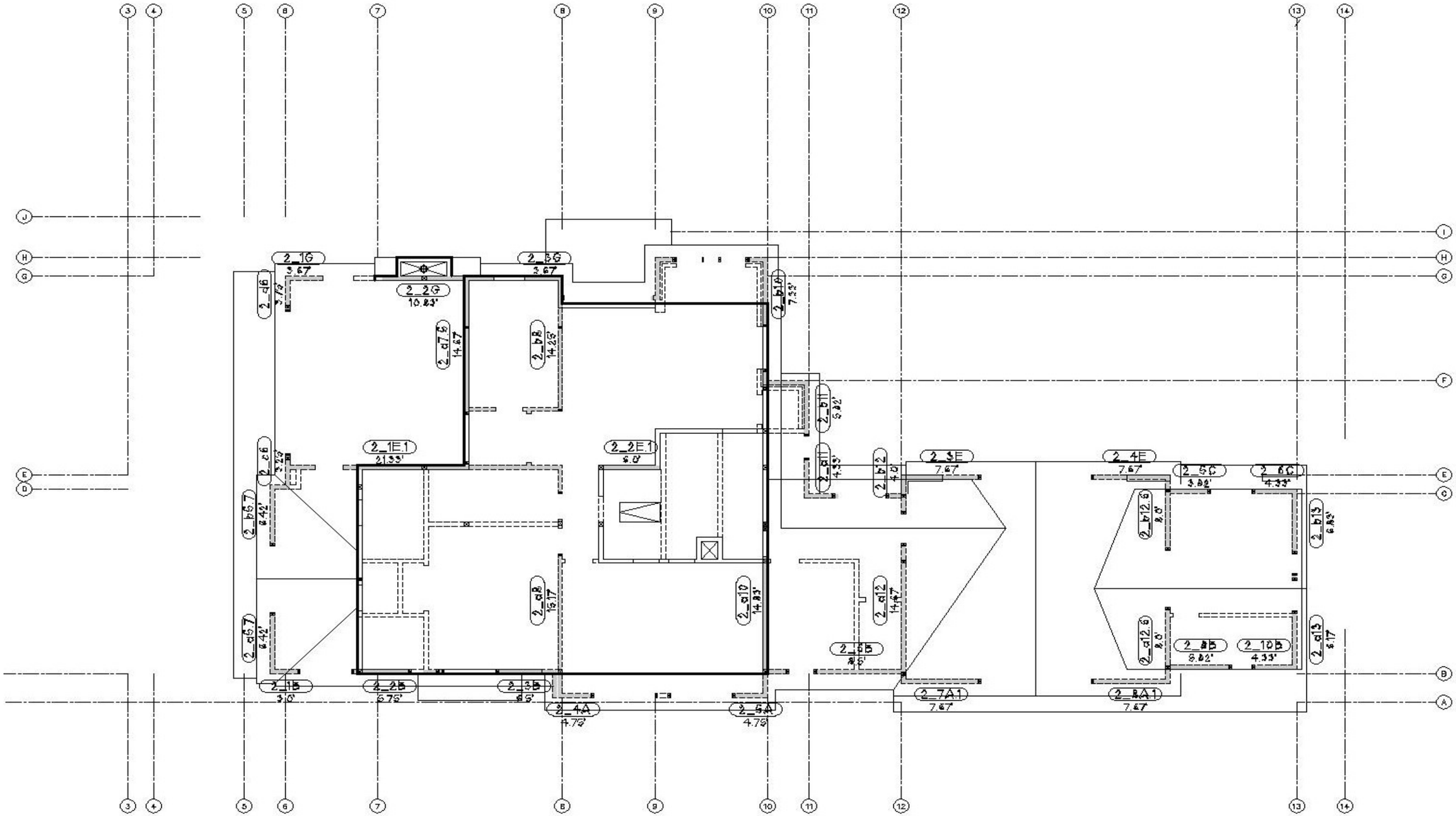

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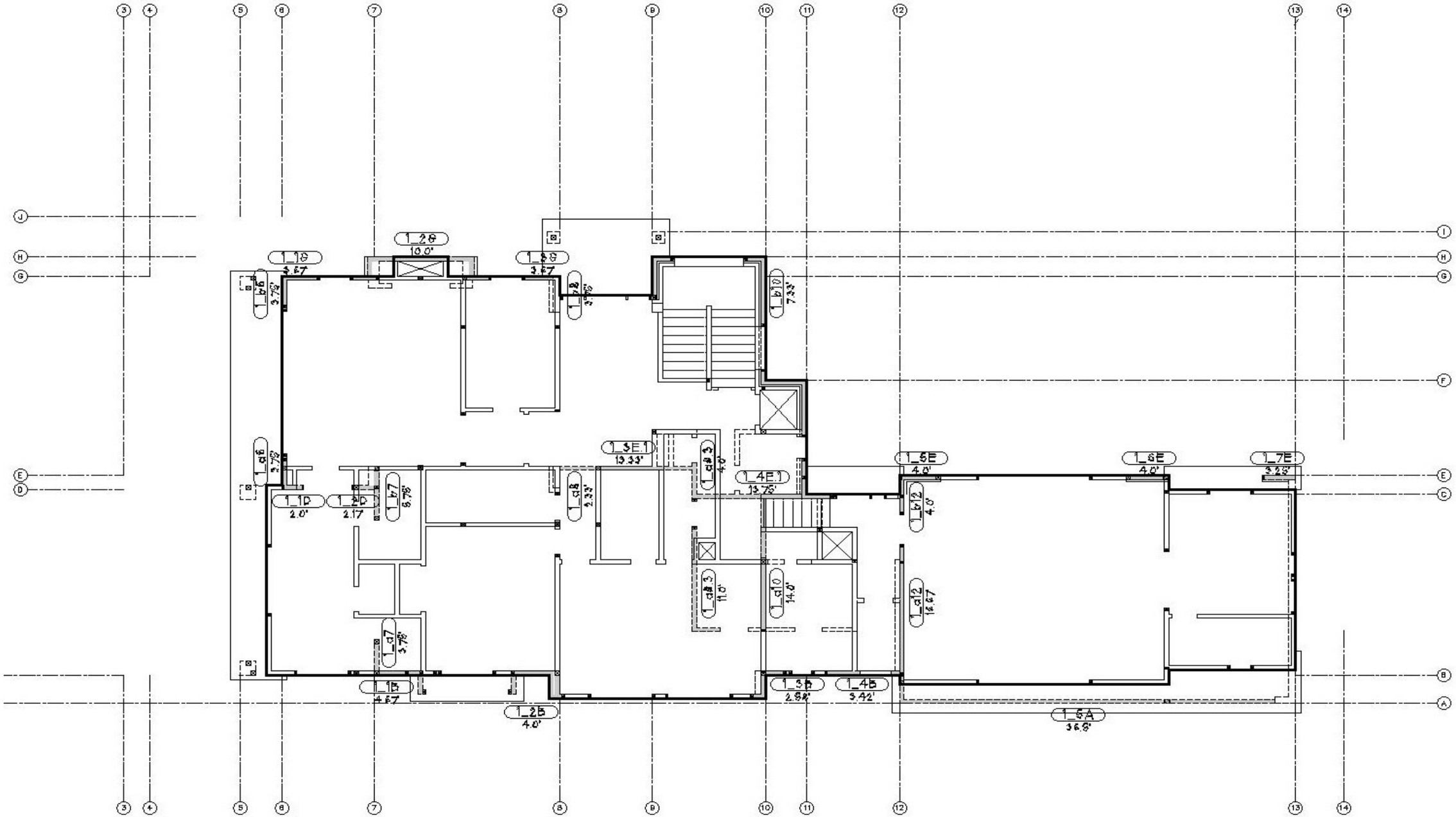

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APPLIED SHEARS:

Longitudinal - EQ Governs	
Roof + Attic	29,290
Upper Floor	10,133
Garage Upper Floor	2,636
Main Floor	3,978
	46,037

Transverse - EQ Governs	
Roof	29,290
Upper Floor	10,133
Garage Upper Floor	2,636
Main Floor	3,978
	46,037

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%	9,939	2_1B	3.17	8.00	2.29	213	Type P-1	240	*O.K.*	5,390	100%	7,437	N.A.	-767	Not Req'd	3.0	-75	168	1.0	25%
					2_2B	5.75	8.00	2.29	168	Type P-1	240	*O.K.*	7,748	100%	15,602	N.A.	-1,496	Not Req'd	3.8	-10	242	1.0	25%
					2_3B	6.50	8.00	2.29	168	Type P-1	240	*O.K.*	8,758	100%	18,332	N.A.	-1,596	Not Req'd	3.8	-10	274	1.0	25%
					2_4A	4.75	8.00	2.29	168	Type P-1	240	*O.K.*	6,400	100%	12,213	N.A.	-1,368	Not Req'd	3.8	-10	200	1.0	25%
					2_5A	4.75	8.00	2.29	168	Type P-1	240	*O.K.*	6,400	100%	12,213	N.A.	-1,368	Not Req'd	3.8	-10	200	1.0	25%
					2_6B	8.50	8.00	2.29	168	Type P-1	240	*O.K.*	11,453	100%	26,393	N.A.	-1,868	Not Req'd	3.8	-10	358	1.0	25%
					2_7A.1	7.67	8.00	2.29	168	Type P-1	240	*O.K.*	10,335	100%	22,910	N.A.	-1,754	Not Req'd	3.8	-10	323	1.0	25%
					2_8A.1	7.67	8.00	2.29	168	Type P-1	240	*O.K.*	10,335	100%	22,910	N.A.	-1,754	Not Req'd	3.8	-10	323	1.0	25%
					2_9B	5.92	8.00	2.29	168	Type P-1	240	*O.K.*	7,977	100%	16,207	N.A.	-1,519	Not Req'd	3.8	-10	249	1.0	25%
					2_10B	4.33	8.00	2.29	168	Type P-1	240	*O.K.*	5,834	100%	10,874	N.A.	-1,316	Not Req'd	3.8	-10	182	1.0	25%
						59.01																	
Upper Floor	100.00	12.50	33.8%	14,255	1-1B	4.67	10.50	3.00	313	Type P-2	350	*O.K.*	15,356	75%	12,614	0	658	Not Req'd					
					1_2B	4.00	10.50	3.00	366	Type P-3	480	*O.K.*	15,356	75%	10,453	0	1,401	HDU2-SDS2.5					
					1_3B	2.58	7.00	2.00	378	Type P-3	480	*O.K.*	20,475	75%	31,074	0	-5,096	Not Req'd					
					1_4B	3.42	7.00	2.00	285	Type P-3	480	*O.K.*	H =	10.50	L =	9.58	PORTAL WALL						
					1_5A	36.50	10.50	3.00	279	Type P-2	350	*O.K.*	106,764	75%	250,775	0	-4,000	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%	14,772	2_1E.1	21.33	8.00	2.29	290	Type P-2	350	O.K.	49,502	100%	151,053	N.A.	-4,875	Not Req'd	2.2	-18	1,547	1.0	25%
					2_2E.1	6.00	8.00	2.29	290	Type P-2	350	O.K.	13,925	100%	24,095	N.A.	-1,849	Not Req'd	2.2	-18	435	1.0	25%
					2_3E	7.67	8.00	2.29	290	Type P-2	350	O.K.	17,800	100%	33,363	N.A.	-2,171	Not Req'd	2.2	-18	556	1.0	25%
					2_4E	7.67	8.00	2.29	290	Type P-2	350	O.K.	17,800	100%	33,363	N.A.	-2,171	Not Req'd	2.2	-18	556	1.0	25%
					2_5C	3.92	8.00	2.29	296	Type P-2	350	O.K.	9,283	100%	14,111	N.A.	-1,412	Not Req'd	2.2	-26	290	1.0	25%
					2_6C	4.33	8.00	2.29	290	Type P-2	350	O.K.	10,049	100%	15,942	N.A.	-1,539	Not Req'd	2.2	-18	314	1.0	25%
						50.92																	
Upper Floor	100.00	18.62	50.3%	21,200	1_1D	2.00	7.00	2.00	873	Type P-5	980	O.K.	36,664	75%	41,712	0	-3,365	Not Req'd					
					1_2D	2.17	7.00	2.00	805	Type P-5	980	O.K.	H =	10.50	L =	9.00	PORTAL WALL						
					1_3E.1	13.33	10.50	3.00	499	Type P-4	700	O.K.	69,818	75%	73,410	0	-280	Not Req'd					
					1_4E.1	13.75	10.50	3.00	499	Type P-4	700	O.K.	72,018	75%	76,761	0	-358	Not Req'd					
					1_5E	4.00	10.50	3.00	655	Type P-4	700	O.K.	27,498	75%	15,323	0	3,479	HDU5-SDS2.5	DBL STUD MIN - (14) 1/4" X 2 1/2" SDS				
					1_6E	4.00	10.50	3.00	655	Type P-4	700	O.K.	27,498	75%	15,323	0	3,479	HDU5-SDS2.5	DBL STUD MIN - (14) 1/4" X 2 1/2" SDS				
					1_7E	3.25	10.50	3.00	806	Type P-5	980	O.K.	27,498	75%	12,012	0	5,631	HHDQ11-SDS2.5	6 X 6 POST MIN - (24) 1/4" x 2 1/2" SDS				
						42.50																	
Main Floor	40.00	21.00	28.4%	7,145	0_1D	7.75	10.50	3.00	532	Type P-5	980	O.K.	43,326	100%	51,549	0	-1,134	Not Req'd					
					0_2D	5.67	10.50	3.00	532	Type P-5	980	O.K.	31,698	100%	34,714	0	-583	Not Req'd					
						13.42																	

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%	4,579	2_1G	3.67	8.00	2.29	275	Type P-2	350	O.K.	8,065	100%	8,187	N.A.	-39	Not Req'd	2.4	-49	252	1.0	25%
					2_2G	10.83	8.00	2.29	252	Type P-2	350	O.K.	21,836	100%	34,469	N.A.	-1,223	Not Req'd	2.6	-15	682	1.0	25%
					2_3G	3.67	8.00	2.29	275	Type P-2	350	O.K.	8,065	100%	8,187	N.A.	-39	Not Req'd	2.4	-49	252	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%	6,605	1_1G	5.00	10.50	3.00	348	Type P-2	350	O.K.	18,277	75%	12,687	0	1,242	HDU2-SDS2.5
					1_2G	10.17	10.50	3.00	332	Type P-2	350	O.K.	35,405	75%	32,274	0	324	Not Req'd
					1_3G	4.75	10.50	3.00	366	Type P-3	480	O.K.	18,277	75%	11,906	0	1,499	HDU2-SDS2.5
						19.92												

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

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

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) = 254

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%	3,604	2_a5.7	6.42	8.00	2.29	177	Type P-1	240	*O.K.*	9,101	100%	14,056	N.A.	-837	Not Req'd	3.7	-6	284	1.0	25%
					2_b5.7	6.42	8.00	2.29	177	Type P-1	240	*O.K.*	9,101	100%	14,056	N.A.	-837	Not Req'd	3.7	-6	284	1.0	25%
					2_c6	3.75	8.00	2.29	189	Type P-1	240	*O.K.*	5,671	100%	7,061	N.A.	-428	Not Req'd	3.4	-23	177	1.0	25%
					2_d6	3.75	8.00	2.29	189	Type P-1	240	*O.K.*	5,671	100%	7,061	N.A.	-428	Not Req'd	3.4	-23	177	1.0	25%
						20.34																	
Upper Floor	44.50	5.25	6.2%	4,393	1_a6	3.75	10.50	3.00	820	Type P-5	980	*O.K.*	32,287	100%	5,613	-428	7,780	HHDQ11-SDS2.5	6 X 6 POST MIN - (24) 1/4" x 2 1/2" SDS				
					1_b6	3.75	10.50	3.00	820	Type P-5	980	*O.K.*	32,287	100%	5,613	-428	7,780	HHDQ11-SDS2.5	6 X 6 POST MIN - (24) 1/4" x 2 1/2" SDS				
						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%	5,804	1_a7	3.75	7.00	2.00	611	Type P-4	700	*O.K.*	60,941	100%	203,975	0	-44,010	Not Req'd
					1_b7	5.75	7.00	2.00	611	Type P-4	700	*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%	5,359	2_a7.5	14.67	8.00	2.29	365	Type P-3	480	*O.K.*	42,872	100%	65,895	N.A.	-1,625	Not Req'd	1.8	-12	1,340	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%	5,516	2_a8	15.75	8.00	2.29	184	Type P-1	240	*O.K.*	23,166	100%	75,423	N.A.	-3,427	Not Req'd	3.5	-6	724	1.0	25%
					2_b8	14.25	8.00	2.29	184	Type P-1	240	*O.K.*	20,959	100%	64,757	N.A.	-3,185	Not Req'd	3.5	-6	655	1.0	25%
						30.00																	

CONCRETE WALLS																			
					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%	10,531	1_a8	2.33	10.50	8	4.51	0.21	20%	13	22,359	100%	11,014	-3,427	6,200	21,699	5	1.31
					1_b8	3.75	10.50	8	2.80	0.83	80%	33	88,218	100%	20,608	-3,185	20,803	72,811	6	3.05
						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%	2,854	1_a9.3	11.00	10.50	3.00	190	Type P-1	240	O.K.	21,974	100%	74,788	0	-5,030	Not Req'd
					1_b9.3	4.00	10.50	3.00	250	Type P-2	350	O.K.	10,487	100%	20,668	0	-2,909	Not Req'd
						15.00												
Main Floor	44.50	19.00	28.6%	3,990	0_a9.3	4.00	10.50	3.00	243	Type P-2	350	O.K.	10,192	100%	20,668	0	-2,993	Not Req'd
					0_b9.3	17.58	10.50	3.00	185	Type P-1	240	O.K.	34,130	100%	146,493	0	-6,579	Not Req'd
						21.58												

INTERIOR WALLS @ GRID 10

UPLIFT DUE TO WIND FORCES AT TOP STORY SHEARWALLS

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

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%	6,206	2_a10	14.83	8.00	2.29	280	Type P-2	350	O.K.	33,224	75%	58,876	N.A.	-1,790	Not Req'd	2.3	-9	1,038	1.0	25%
					2_b10	7.33	8.00	2.29	280	Type P-2	350	O.K.	16,422	75%	21,337	N.A.	-720	Not Req'd	2.3	-9	513	1.0	25%
						22.16																	
Upper Floor	44.50	9.95	11.7%	7,700	1_a10	14.00	10.50	3.00	361	Type P-3	480	O.K.	53,064	100%	57,896	-1,790	-2,148	Not Req'd					
					1_b10	7.33	10.50	3.00	361	Type P-3	480	O.K.	27,783	100%	23,612	-720	-109	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%	3,749	2_a12	14.67	8.00	2.29	201	Type P-1	240	O.K.	23,567	100%	88,729	N.A.	-4,599	Not Req'd	3.2	-6	736	1.0	25%
					2_b12	4.00	8.00	2.29	201	Type P-1	240	O.K.	6,426	100%	15,242	N.A.	-2,519	Not Req'd	3.2	-6	201	1.0	25%
						18.67																	
Upper Floor	25.00	25.75	17.0%	7,763	1_a12	16.67	8.00	2.29	376	Type P-3	480	O.K.	50,083	50%	81,082	-4,599	-6,516	Not Req'd					
					2_b12	4.00	8.00	2.29	376	Type P-3	480	O.K.	12,017	50%	11,315	-2,519	-2,318	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%	3,681	2_a12.6	8.00	8.00	2.29	230	Type P-1	240	O.K.	14,725	50%	19,042	N.A.	-576	Not Req'd	2.8	-7	460	1.0	25%
					2_b12.6	8.00	8.00	2.29	230	Type P-1	240	O.K.	14,725	50%	19,042	N.A.	-576	Not Req'd	2.8	-7	460	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%	1,175	2_a13	6.17	8.00	2.29	90	Type P-1	240	O.K.	4,461	100%	8,875	N.A.	-779	Not Req'd	7.2	-108	139	1.0	25%
					2_b13	6.83	8.00	2.29	90	Type P-1	240	O.K.	4,938	100%	10,195	N.A.	-830	Not Req'd	7.2	-108	154	1.0	25%
						13.00																	

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