

Structural Calculations

For

MEDVED RESIDENCE
4752 89TH AVE SE
MERCER ISLAND, WA 98040

STRUCTURAL REVISION

BE Project # 19125
March 12, 2020

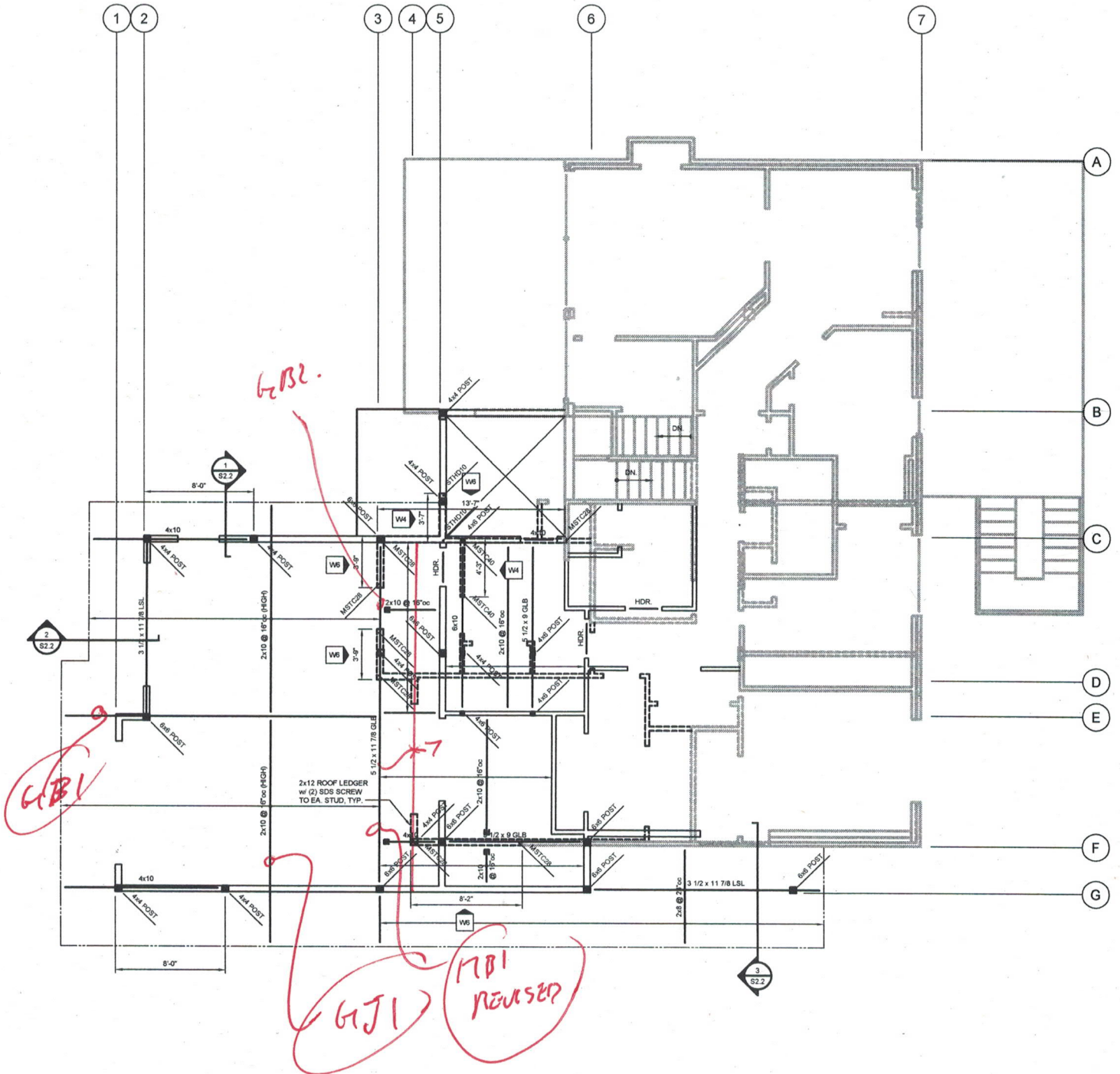
2015 International Building Code
Wind: 110 MPH, Exposure B, Kzt= 1.0
Seismic: Design Category D



MAIN FLOOR FRAMING PLAN.

3-13-2020 REVISION.

@ GARAGE ROOF FRAMING.



GJL, L= 12'6", @ 24" OC. USE. 2x12 @ 24" OC.

GJI, L= 19'3", TRIMBL= 12'6" USE 5 1/2 x 12 GLB.

GJL2, L= 12'9", TRIMBL= 2', PT LUMEN= 660# AL
1-1 K SL @ 8'

Wood Beam

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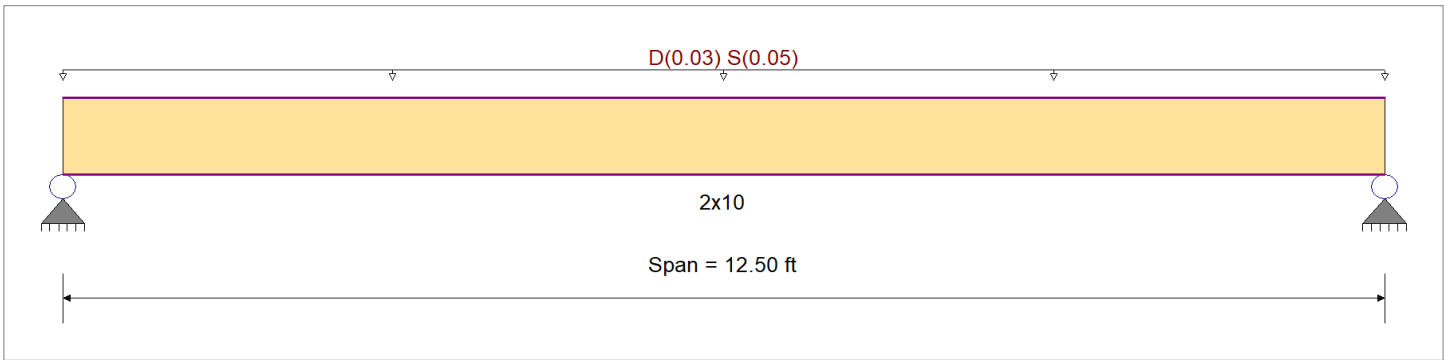
DESCRIPTION: GJ1

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method : Allowable Stress Design	Fb +	900.0 psi	E : Modulus of Elasticity	
Load Combination ASCE 7-16	Fb -	900.0 psi	Ebend- xx	1,600.0ksi
	Fc - Prll	1,350.0 psi	Eminbend - xx	580.0ksi
Wood Species : DouglasFir-Larch	Fc - Perp	625.0 psi		
Wood Grade : No.2	Fv	180.0 psi		
	Ft	575.0 psi	Density	31.210pcf
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling				



Applied Loads

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

Beam self weight calculated and added to loads
Uniform Load : D = 0.0150, S = 0.0250 ksf, Tributary Width = 2.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.799 : 1	Maximum Shear Stress Ratio	=	0.239 : 1
Section used for this span	=	2x10	Section used for this span	=	2x10
	=	909.50psi		=	49.54 psi
	=	1,138.50psi		=	207.00 psi
Load Combination	=	+D+S+H	Load Combination	=	+D+S+H
Location of maximum on span	=	6.250ft	Location of maximum on span	=	11.770ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1
Maximum Deflection					
Max Downward Transient Deflection		0.175 in	Ratio =		859 >=360
Max Upward Transient Deflection		0.000 in	Ratio =		0 <360
Max Downward Total Deflection		0.290 in	Ratio =		517 >=240
Max Upward Total Deflection		0.000 in	Ratio =		0 <240

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios									Moment Values			Shear Values							
			M	V	C _d	C _{F/V}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v					
+D+H	Length = 12.50 ft	1	0.406	0.122	0.90	1.100	1.00	1.00	1.00	1.00	1.00	1.00	0.64	361.66	891.00	0.00	0.00	0.00	0.00	0.00	162.00	
+D+L+H	Length = 12.50 ft	1	0.365	0.109	1.00	1.100	1.00	1.00	1.00	1.00	1.00	1.00	0.64	361.66	990.00	0.00	0.00	0.00	0.00	0.00	0.00	180.00
+D+Lr+H	Length = 12.50 ft	1	0.292	0.088	1.25	1.100	1.00	1.00	1.00	1.00	1.00	1.00	0.64	361.66	1237.50	0.00	0.00	0.00	0.00	0.00	0.00	225.00
+D+S+H	Length = 12.50 ft	1	0.799	0.239	1.15	1.100	1.00	1.00	1.00	1.00	1.00	1.00	1.62	909.50	1138.50	0.00	0.00	0.00	0.00	0.00	0.00	207.00
+D+0.750Lr+0.750L+H	Length = 12.50 ft	1	0.292	0.088	1.25	1.100	1.00	1.00	1.00	1.00	1.00	1.00	0.64	361.66	1237.50	0.00	0.00	0.00	0.00	0.00	0.00	225.00
+D+0.750L+0.750S+H	Length = 12.50 ft	1	0.679	0.203	1.15	1.100	1.00	1.00	1.00	1.00	1.00	1.00	1.38	772.54	1138.50	0.00	0.00	0.00	0.00	0.00	0.00	207.00
+D+0.60W+H						1.100	1.00	1.00	1.00	1.00	1.00	1.00			0.00			0.00	0.00	0.00	0.00	0.00

Wood Beam

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DESCRIPTION: GJ1

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values			
			M	V	C _d	C _{F/V}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v
Length = 12.50 ft	1	0.228	0.068	1.60	1.100	1.00	1.00	1.00	1.00	1.00	1.00	0.64	361.66	1584.00	0.18	19.70	288.00
+D+0.750Lr+0.750L+0.450W+H					1.100	1.00	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 12.50 ft	1	0.228	0.068	1.60	1.100	1.00	1.00	1.00	1.00	1.00	1.00	0.64	361.66	1584.00	0.18	19.70	288.00
+D+0.750L+0.750S+0.450W+H					1.100	1.00	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 12.50 ft	1	0.488	0.146	1.60	1.100	1.00	1.00	1.00	1.00	1.00	1.00	1.38	772.54	1584.00	0.39	42.08	288.00
+0.60D+0.60W+0.60H					1.100	1.00	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 12.50 ft	1	0.137	0.041	1.60	1.100	1.00	1.00	1.00	1.00	1.00	1.00	0.39	216.99	1584.00	0.11	11.82	288.00
+D+0.70E+0.60H					1.100	1.00	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 12.50 ft	1	0.228	0.068	1.60	1.100	1.00	1.00	1.00	1.00	1.00	1.00	0.64	361.66	1584.00	0.18	19.70	288.00
+D+0.750L+0.750S+0.5250E+H					1.100	1.00	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 12.50 ft	1	0.488	0.146	1.60	1.100	1.00	1.00	1.00	1.00	1.00	1.00	1.38	772.54	1584.00	0.39	42.08	288.00
+0.60D+0.70E+H					1.100	1.00	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 12.50 ft	1	0.137	0.041	1.60	1.100	1.00	1.00	1.00	1.00	1.00	1.00	0.39	216.99	1584.00	0.11	11.82	288.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+S+H	1	0.2897	6.296		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	0.519	0.519
Overall MINimum	0.313	0.313
+D+H	0.206	0.206
+D+L+H	0.206	0.206
+D+Lr+H	0.206	0.206
+D+S+H	0.519	0.519
+D+0.750Lr+0.750L+H	0.206	0.206
+D+0.750L+0.750S+H	0.441	0.441
+D+0.60W+H	0.206	0.206
+D+0.750Lr+0.750L+0.450W+H	0.206	0.206
+D+0.750L+0.750S+0.450W+H	0.441	0.441
+0.60D+0.60W+0.60H	0.124	0.124
+D+0.70E+0.60H	0.206	0.206
+D+0.750L+0.750S+0.5250E+H	0.441	0.441
+0.60D+0.70E+H	0.124	0.124
D Only	0.206	0.206
Lr Only		
L Only		
S Only	0.313	0.313
W Only		
E Only		
H Only		

Wood Beam

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DESCRIPTION: GB1

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : ASCE 7-16

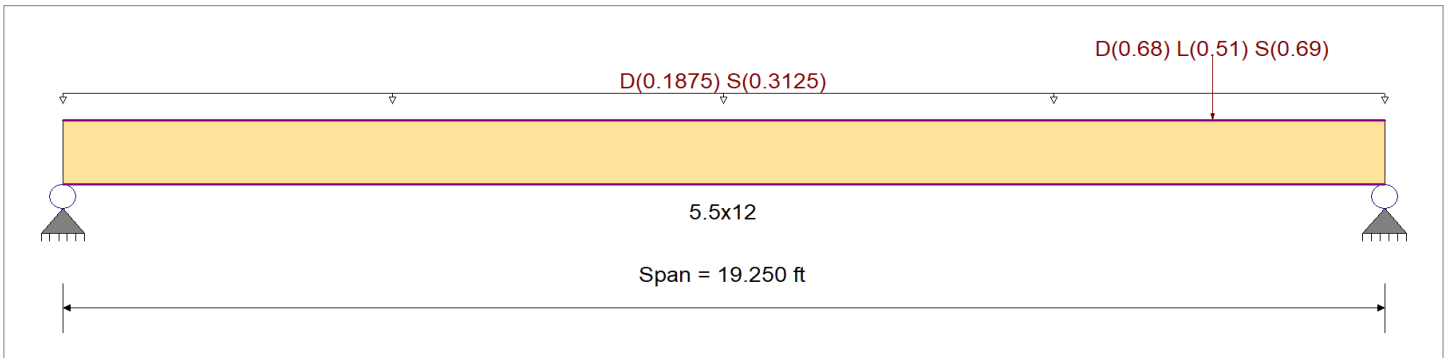
Material Properties

Analysis Method : Allowable Stress Design
Load Combination ASCE 7-16

Wood Species : DF/DF
Wood Grade : 24F - V4

Beam Bracing : Beam is Fully Braced against lateral-torsional buckling

Fb +	2,400.0 psi	E : Modulus of Elasticity	
Fb -	1,850.0 psi	Ebend- xx	1,800.0 ksi
Fc - Prll	1,650.0 psi	Eminbend - xx	950.0 ksi
Fc - Perp	650.0 psi	Ebend- yy	1,600.0 ksi
Fv	265.0 psi	Eminbend - yy	850.0 ksi
Ft	1,100.0 psi	Density	31.210 pcf



Applied Loads

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

Beam self weight calculated and added to loads

Uniform Load : D = 0.0150, S = 0.0250 ksf, Tributary Width = 12.50 ft

Point Load : D = 0.680, L = 0.510, S = 0.690 k @ 16.750 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.842 1	Maximum Shear Stress Ratio	=	0.420 : 1
Section used for this span	=	5.5x12	Section used for this span	=	5.5x12
	=	2,324.18psi		=	128.10 psi
	=	2,760.00psi		=	304.75 psi
Load Combination	=	+D+S+H	Load Combination	=	+D+S+H
Location of maximum on span	=	9.976ft	Location of maximum on span	=	18.266ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1
Maximum Deflection					
Max Downward Transient Deflection		0.729 in	Ratio =		316 >=240
Max Upward Transient Deflection		0.000 in	Ratio =		0 <240
Max Downward Total Deflection		1.216 in	Ratio =		190 >=180
Max Upward Total Deflection		0.000 in	Ratio =		0 <180

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios									Moment Values			Shear Values							
			M	V	C _d	C _{F/V}	C _i	C _r	C _m	C _t	C _L	M	f _b	F ['] _b	V	f _v	F ['] _v					
+D+H	Length = 19.250 ft	1	0.430	0.223	0.90	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.22	928.81	2160.00	0.00	0.00	0.00	2.34	53.08	238.50
+D+L+H	Length = 19.250 ft	1	0.413	0.238	1.00	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.89	990.39	2400.00	0.00	0.00	0.00	0.00	0.00	0.00
+D+Lr+H	Length = 19.250 ft	1	0.310	0.160	1.25	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.22	928.81	3000.00	0.00	0.00	0.00	2.34	53.08	331.25
+D+S+H	Length = 19.250 ft	1	0.842	0.420	1.15	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	25.57	2,324.18	2760.00	0.00	0.00	0.00	5.64	128.10	304.75
+D+0.750Lr+0.750L+H	Length = 19.250 ft	1	0.325	0.183	1.25	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.72	974.81	3000.00	0.00	0.00	0.00	2.67	60.65	331.25
+D+0.750L+0.750S+H	Length = 19.250 ft	1	0.732	0.384	1.15	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.23	2,020.65	2760.00	0.00	0.00	0.00	5.14	116.91	304.75

Wood Beam

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DESCRIPTION: GB1

Load Combination	Segment Length	Span #	Max Stress Ratios			Moment Values						Shear Values											
			M	V	C _d	C _{F/V}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v						
+D+0.60W+H	Length = 19.250 ft	1	0.242	0.125	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.22	928.81	3840.00	0.00	0.00	0.00	2.34	53.08	424.00
+D+0.750Lr+0.750L+0.450W+H	Length = 19.250 ft	1	0.254	0.143	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.72	974.81	3840.00	0.00	0.00	0.00	0.00	0.00	0.00
+D+0.750L+0.750S+0.450W+H	Length = 19.250 ft	1	0.526	0.276	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.23	2,020.65	3840.00	0.00	0.00	0.00	5.14	116.91	424.00
+0.60D+0.60W+0.60H	Length = 19.250 ft	1	0.145	0.075	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	6.13	557.29	3840.00	0.00	0.00	0.00	1.40	31.85	424.00
+D+0.70E+0.60H	Length = 19.250 ft	1	0.242	0.125	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	10.22	928.81	3840.00	0.00	0.00	0.00	2.34	53.08	424.00
+D+0.750L+0.750S+0.5250E+H	Length = 19.250 ft	1	0.526	0.276	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	22.23	2,020.65	3840.00	0.00	0.00	0.00	5.14	116.91	424.00
+0.60D+0.70E+H	Length = 19.250 ft	1	0.145	0.075	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	6.13	557.29	3840.00	0.00	0.00	0.00	1.40	31.85	424.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+S+H	1	1.2158	9.766		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	5.128	6.142
Overall MINimum	3.097	3.608
+D+H	2.031	2.534
+D+L+H	2.097	2.978
+D+Lr+H	2.031	2.534
+D+S+H	5.128	6.142
+D+0.750Lr+0.750L+H	2.080	2.867
+D+0.750L+0.750S+H	4.403	5.573
+D+0.60W+H	2.031	2.534
+D+0.750Lr+0.750L+0.450W+H	2.080	2.867
+D+0.750L+0.750S+0.450W+H	4.403	5.573
+0.60D+0.60W+0.60H	1.218	1.520
+D+0.70E+0.60H	2.031	2.534
+D+0.750L+0.750S+0.5250E+H	4.403	5.573
+0.60D+0.70E+H	1.218	1.520
D Only	2.031	2.534
Lr Only		
L Only	0.066	0.444
S Only	3.097	3.608
W Only		
E Only		
H Only		

Wood Beam

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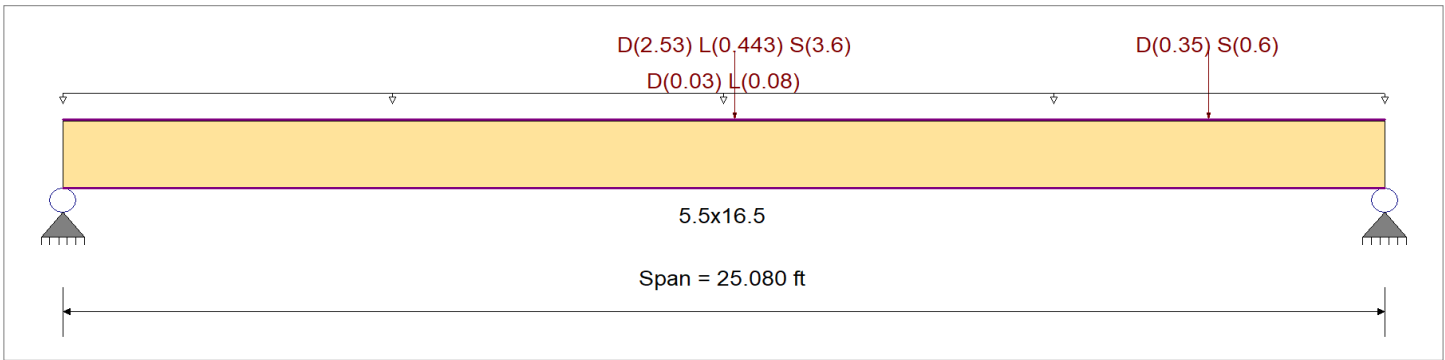
DESCRIPTION: MB1 Revised

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method : Allowable Stress Design	Fb +	2400 psi	E : Modulus of Elasticity
Load Combination ASCE 7-16	Fb -	1850 psi	Ebend- xx
	Fc - Prll	1650 psi	Eminbend - xx
Wood Species : DF/DF	Fc - Perp	650 psi	Ebend- yy
Wood Grade : 24F - V4	Fv	265 psi	Eminbend - yy
	Ft	1100 psi	Density
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling			1800ksi
			950ksi
			1600ksi
			850ksi
			31.21pcf



Applied Loads

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

Beam self weight calculated and added to loads
Uniform Load : D = 0.0150, L = 0.040 ksf, Tributary Width = 2.0 ft
Point Load : D = 0.350, S = 0.60 k @ 21.750 ft
Point Load : D = 2.530, L = 0.4430, S = 3.60 k @ 12.750 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.825	1	Maximum Shear Stress Ratio	=	0.257	: 1
Section used for this span	=	5.5x16.5		Section used for this span	=	5.5x16.5	
	=	2,152.45	psi		=	78.45	psi
	=	2,607.96	psi		=	304.75	psi
Load Combination	=	+D+0.750L+0.750S+H		Load Combination	=	+D+0.750L+0.750S+H	
Location of maximum on span	=	12.723ft		Location of maximum on span	=	23.707ft	
Span # where maximum occurs	=	Span # 1		Span # where maximum occurs	=	Span # 1	
Maximum Deflection							
Max Downward Transient Deflection		0.591	in	Ratio =		509	>=360
Max Upward Transient Deflection		0.000	in	Ratio =		0	<360
Max Downward Total Deflection		1.170	in	Ratio =		257	>=240
Max Upward Total Deflection		0.000	in	Ratio =		0	<240

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values								
			M	V	C _d	C _{F/V}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v					
+D+H	Length = 25.080 ft	1	0.479	0.149	0.90	0.945	1.00	1.00	1.00	1.00	1.00	1.00	1.00	20.32	977.11	2041.01	0.00	0.00	0.00	2.14	35.44	238.50
+D+L+H	Length = 25.080 ft	1	0.623	0.204	1.00	0.945	1.00	1.00	1.00	1.00	1.00	1.00	1.00	29.38	1,412.74	2267.79	0.00	0.00	0.00	3.26	53.93	265.00
+D+Lr+H	Length = 25.080 ft	1	0.345	0.107	1.25	0.945	1.00	1.00	1.00	1.00	1.00	1.00	1.00	20.32	977.11	2834.74	0.00	0.00	0.00	2.14	35.44	331.25
+D+S+H	Length = 25.080 ft	1	0.809	0.244	1.15	0.945	1.00	1.00	1.00	1.00	1.00	1.00	1.00	43.85	2,108.61	2607.96	0.00	0.00	0.00	4.49	74.29	304.75
+D+0.750Lr+0.750L+H	Length = 25.080 ft	1	0.460	0.149	1.25	0.945	1.00	1.00	1.00	1.00	1.00	1.00	1.00	27.12	1,303.83	2834.74	0.00	0.00	0.00	2.98	49.31	331.25
+D+0.750L+0.750S+H						0.945	1.00	1.00	1.00	1.00	1.00	1.00				0.00			0.00	0.00	0.00	0.00

Wood Beam

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BURT ENGINEERING PLLC

DESCRIPTION: MB1 Revised

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values		
			M	V	C _d	C _{F/V}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv
Length = 25.080 ft	1	0.825	0.257	1.15	0.945	1.00	1.00	1.00	1.00	1.00	44.76	2,152.45	2607.96	4.75	78.45	304.75
+D+0.60W+H					0.945	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 25.080 ft	1	0.269	0.084	1.60	0.945	1.00	1.00	1.00	1.00	1.00	20.32	977.11	3628.47	2.14	35.44	424.00
+D+0.750Lr+0.750L+0.450W+H					0.945	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 25.080 ft	1	0.359	0.116	1.60	0.945	1.00	1.00	1.00	1.00	1.00	27.12	1,303.83	3628.47	2.98	49.31	424.00
+D+0.750L+0.750S+0.450W+H					0.945	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 25.080 ft	1	0.593	0.185	1.60	0.945	1.00	1.00	1.00	1.00	1.00	44.76	2,152.45	3628.47	4.75	78.45	424.00
+0.60D+0.60W+0.60H					0.945	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 25.080 ft	1	0.162	0.050	1.60	0.945	1.00	1.00	1.00	1.00	1.00	12.19	586.27	3628.47	1.29	21.27	424.00
+D+0.70E+0.60H					0.945	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 25.080 ft	1	0.269	0.084	1.60	0.945	1.00	1.00	1.00	1.00	1.00	20.32	977.11	3628.47	2.14	35.44	424.00
+D+0.750L+0.750S+0.5250E+H					0.945	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 25.080 ft	1	0.593	0.185	1.60	0.945	1.00	1.00	1.00	1.00	1.00	44.76	2,152.45	3628.47	4.75	78.45	424.00
+0.60D+0.70E+H					0.945	1.00	1.00	1.00	1.00	1.00			0.00	0.00	0.00	0.00
Length = 25.080 ft	1	0.162	0.050	1.60	0.945	1.00	1.00	1.00	1.00	1.00	12.19	586.27	3628.47	1.29	21.27	424.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.750L+0.750S+0.5250E+H	1	1.1697	12.723		0.0000	0.000

Vertical Reactions

Load Combination	Support notation : Far left is #1		Values in KIPS	
	Support 1	Support 2		
Overall MAXimum	4.216	4.897		
Overall MINimum	1.850	2.350		
+D+H	1.913	2.213		
+D+L+H	3.134	3.441		
+D+Lr+H	1.913	2.213		
+D+S+H	3.763	4.563		
+D+0.750Lr+0.750L+H	2.829	3.134		
+D+0.750L+0.750S+H	4.216	4.897		
+D+0.60W+H	1.913	2.213		
+D+0.750Lr+0.750L+0.450W+H	2.829	3.134		
+D+0.750L+0.750S+0.450W+H	4.216	4.897		
+0.60D+0.60W+0.60H	1.148	1.328		
+D+0.70E+0.60H	1.913	2.213		
+D+0.750L+0.750S+0.5250E+H	4.216	4.897		
+0.60D+0.70E+H	1.148	1.328		
D Only	1.913	2.213		
Lr Only				
L Only	1.221	1.228		
S Only	1.850	2.350		
W Only				
E Only				
H Only				

Wood Beam

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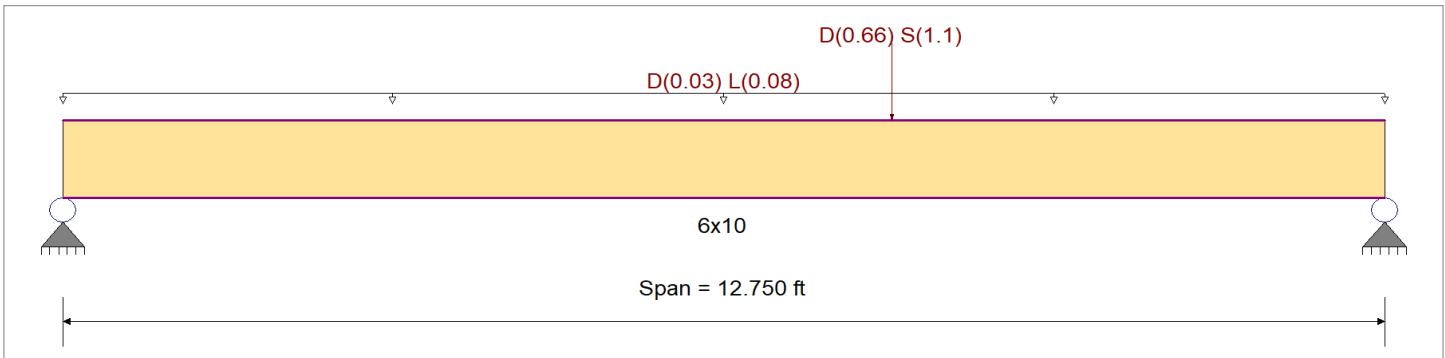
DESCRIPTION: GB2

CODE REFERENCES

Calculations per NDS 2018, IBC 2018, CBC 2019, ASCE 7-16
Load Combination Set : ASCE 7-16

Material Properties

Analysis Method : Allowable Stress Design	Fb +	900.0 psi	E : Modulus of Elasticity
Load Combination ASCE 7-16	Fb -	900.0 psi	Ebend- xx
	Fc - Prll	1,350.0 psi	Eminbend - xx
Wood Species : DouglasFir-Larch	Fc - Perp	625.0 psi	
Wood Grade : No.2	Fv	180.0 psi	Density
Beam Bracing : Beam is Fully Braced against lateral-torsional buckling	Ft	575.0 psi	31.210pcf



Applied Loads

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

Beam self weight calculated and added to loads
Uniform Load : D = 0.0150, L = 0.040 ksf, Tributary Width = 2.0 ft
Point Load : D = 0.660, S = 1.10 k @ 8.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio	=	0.890 : 1	Maximum Shear Stress Ratio	=	0.208 : 1
Section used for this span	=	6x10	Section used for this span	=	6x10
	=	920.65psi		=	42.99 psi
	=	1,035.00psi		=	207.00 psi
Load Combination	=	+D+0.750L+0.750S+H	Load Combination	=	+D+0.750L+0.750S+H
Location of maximum on span	=	8.004ft	Location of maximum on span	=	11.959ft
Span # where maximum occurs	=	Span # 1	Span # where maximum occurs	=	Span # 1
Maximum Deflection					
Max Downward Transient Deflection		0.120 in	Ratio =	1271	>=360
Max Upward Transient Deflection		0.000 in	Ratio =	0	<360
Max Downward Total Deflection		0.258 in	Ratio =	592	>=240
Max Upward Total Deflection		0.000 in	Ratio =	0	<240

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values			Shear Values						
			M	V	C _d	C _{F/N}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v			
+D+H	Length = 12.750 ft	1	0.493	0.114	0.90	1.000	1.00	1.00	1.00	1.00	1.00	2.75	398.96	810.00	0.00	0.00	0.00	0.64	18.51	162.00
+D+L+H	Length = 12.750 ft	1	0.688	0.174	1.00	1.000	1.00	1.00	1.00	1.00	1.00	4.27	619.37	900.00	0.00	0.00	0.00	0.00	0.00	0.00
+D+Lr+H	Length = 12.750 ft	1	0.355	0.082	1.25	1.000	1.00	1.00	1.00	1.00	1.00	2.75	398.96	1125.00	0.00	0.00	0.00	0.64	18.51	225.00
+D+S+H	Length = 12.750 ft	1	0.845	0.185	1.15	1.000	1.00	1.00	1.00	1.00	1.00	6.03	874.14	1035.00	0.00	0.00	0.00	1.34	38.33	207.00
+D+0.750Lr+0.750L+H	Length = 12.750 ft	1	0.502	0.125	1.25	1.000	1.00	1.00	1.00	1.00	1.00	3.89	564.27	1125.00	0.00	0.00	0.00	0.98	28.13	225.00
+D+0.750L+0.750S+H	Length = 12.750 ft	1	0.890	0.208	1.15	1.000	1.00	1.00	1.00	1.00	1.00	6.35	920.65	1035.00	0.00	0.00	0.00	1.50	42.99	207.00

Wood Beam

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DESCRIPTION: GB2

Load Combination	Segment Length	Span #	Max Stress Ratios			Moment Values						Shear Values								
			M	V	C _d	C _{F/V}	C _i	C _r	C _m	C _t	C _L	M	fb	F'b	V	fv	F'v			
+D+0.60W+H	Length = 12.750 ft	1	0.277	0.064	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.75	398.96	1440.00	0.00	0.00	0.00
+D+0.750Lr+0.750L+0.450W+H	Length = 12.750 ft	1	0.392	0.098	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	3.89	564.27	1440.00	0.00	0.00	0.00
+D+0.750L+0.750S+0.450W+H	Length = 12.750 ft	1	0.639	0.149	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	6.35	920.65	1440.00	0.00	0.00	0.00
+0.60D+0.60W+0.60H	Length = 12.750 ft	1	0.166	0.039	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.65	239.38	1440.00	0.00	0.00	0.00
+D+0.70E+0.60H	Length = 12.750 ft	1	0.277	0.064	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.75	398.96	1440.00	0.00	0.00	0.00
+D+0.750L+0.750S+0.5250E+H	Length = 12.750 ft	1	0.639	0.149	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	6.35	920.65	1440.00	0.00	0.00	0.00
+0.60D+0.70E+H	Length = 12.750 ft	1	0.166	0.039	1.60	1.000	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.65	239.38	1440.00	0.00	0.00	0.00

Overall Maximum Deflections

Load Combination	Span	Max. "-" Defl	Location in Span	Load Combination	Max. "+" Defl	Location in Span
+D+0.750L+0.750S+0.5250E+H	1	0.2584	6.701		0.0000	0.000

Vertical Reactions

Support notation : Far left is #1

Values in KIPS

Load Combination	Support 1	Support 2
Overall MAXimum	1.199	1.578
Overall MINimum	0.410	0.690
+D+H	0.509	0.678
+D+L+H	1.019	1.188
+D+Lr+H	0.509	0.678
+D+S+H	0.919	1.368
+D+0.750Lr+0.750L+H	0.892	1.060
+D+0.750L+0.750S+H	1.199	1.578
+D+0.60W+H	0.509	0.678
+D+0.750Lr+0.750L+0.450W+H	0.892	1.060
+D+0.750L+0.750S+0.450W+H	1.199	1.578
+0.60D+0.60W+0.60H	0.306	0.407
+D+0.70E+0.60H	0.509	0.678
+D+0.750L+0.750S+0.5250E+H	1.199	1.578
+0.60D+0.70E+H	0.306	0.407
D Only	0.509	0.678
Lr Only		
L Only	0.510	0.510
S Only	0.410	0.690
W Only		
E Only		
H Only		