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April 7, 2009

Mr. Evin G. Dugas, Attorney at Law
2303 RR 620 S. STE 135 PMB 361
Austin, TX 78731

Ref: 240 Canterbury Arbitration – Calculations
Job #1954

Dear Mr. Dugas:

I have not been able to locate any calculations furnished and/or PE sealed by MLAW. Without the calculations, I cannot confirm that the roof girder truss repair designed by MLAW will work.

This afternoon, as you know, Mr. Cain asked me to testify as to whether or not I “rounded up” or “rounded down” my calculations. This indicates to me that the defense strategy might hinge around the accuracy of arithmetic to decimal precision rather than the accuracy of the procedures that engineers use while exercising their professional judgment and experience.

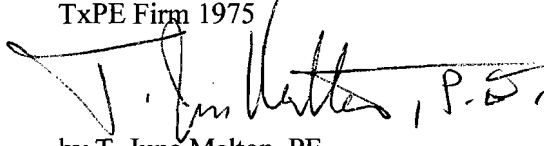
I have refined my calculations down to an accuracy of two decimal places to illustrate to Mr. Kilgore how rounding up or rounding down makes little difference to structural engineers in determining the outcome of the analysis of a building component, which in this illustration is a laminated wood floor beam. Also, I can usually be more accurate in my analyses when I have been furnished a proper set of plans that I can legibly read which did not occur in this particular case.

Attached are two computer-generated calculation spreadsheets. Canterbury240A.xls utilizes the center to center bearing point span of 15.0 feet as indicated in my original calculations. Canterbury240B.xls utilizes the span of 14.4375 feet indicated on Bates CPH000187. (Please be aware that the calculations indicated on Bates CPH000187 are incorrect insofar as no consideration has been shown for the second floor load bearing walls). Regardless of calculation method utilized, the beam furnished is overstressed and therefore too small and it must be replaced.

There is one other point I should point out. Neither of the span lengths I have indicated in the calculations can be used in the design of a replacement beam. As a result of the misalignment of the beam with the grade beam in the concrete foundation during the original construction, the length of the replacement beam will need to be increased in order to reach the exterior wall top plates as I testified to earlier. That will require a larger replacement beam.

I sent a final invoice to our clients earlier this evening so please advise them that there is no charge for this extra little service. I am leaving on the early flight to Fayetteville in the morning but I should be available by cell phone around noon if you have any questions. My cell phone number is 512-699-3665.

Yours truly,
AMSTAR ENGINEERING, INC.
TxPE Firm 1975



by T. June Melton, PE

encl.



Canterbury240A.xls

Readable (normal size) plans have not been provided. Assume rough cross span lengths.

Assume 15 foot span to center of bearing

Span =	15.00	ft							
Roof load TL =	35.00	psf							
2nd floor TL =	55.00	psf							
Beam wt =	13.60	plf							
RJ1	Span =	11.00	Lds =	35.00	V=	192.50			
RJ2	Span =	5.30	Lds =	35.00	V=	92.75			
RJ3	Span =	10.50	Lds =	35.00	V=	183.75			
RJ4	Span =	14.30	Lds =	35.00	V=	250.25			
RJ5	Span =	5.50	Lds =	35.00	V=	96.25			
RJ6	Span =	7.00	Lds =	35.00	V=	122.50			
2J1	Span =	17.50	Lds =	55.00	V=	481.25			
2J2	Span =	13.90	Lds =	55.00	V=	382.25			
W1	192.50	+	92.75		sum =	285.25			
W2	92.75	+	183.75		sum =	276.50			
W3	250.25	+	96.25		sum =	346.50			
W4	96.25	+	122.50		sum =	218.75			
W5	122.50	+	0.00		sum =	122.50			
P1	0.00	+	764.50	+	13.60		sum =	778.10	
P2	778.10						sum =	778.10	
P3	962.50	+	764.50	+	13.60		sum =	1740.60	
P4	962.50	+	764.50	+	1996.75	+	13.60	sum =	3737.35
P5	962.50	+	764.50	+	13.60		sum =	1740.60	
P6	962.50	+	764.50	+	2494.80	+	13.60	sum =	4235.40
P7	962.50	+	764.50	+	1935.50	+	13.60	sum =	3676.10
P8	962.50	+	764.50	+	1575.00	+	13.60	sum =	3315.60
VA=	7484.92	#							
VB=	12516.94	#							
Mc=	38291.28	ft-#							
SxR=	191.46	in3							

For beam measured SxFurn= 124.03 in3
OVERSTRESS = 1.54

For beam (theoretical) SxFurn= 133.33 in3
OVERSTRESS = 1.44

Ref Bates CPH000187



T. June Melton
4/7/09

Canterbury240B.xls

Readable (normal size) plans have not been provided. Assume rough cross span lengths.

Assume 14.4375 foot span to center of bearing per Bates CPH000187

Span =	14.44	ft							
Roof load TL =	35.00	psf							
2nd floor TL =	55.00	psf							
Beam wt =	13.60	plf							
RJ1	Span =	11.00	Lds =	35.00	V=	192.50			
RJ2	Span =	5.30	Lds =	35.00	V=	92.75			
RJ3	Span =	10.50	Lds =	35.00	V=	183.75			
RJ4	Span =	14.30	Lds =	35.00	V=	250.25			
RJ5	Span =	5.50	Lds =	35.00	V=	96.25			
RJ6	Span =	7.00	Lds =	35.00	V=	122.50			
2J1	Span =	17.50	Lds =	55.00	V=	481.25			
2J2	Span =	13.90	Lds =	55.00	V=	382.25			
W1	192.50	+	92.75		sum =	285.25			
W2	92.75	+	183.75		sum =	276.50			
W3	250.25	+	96.25		sum =	346.50			
W4	96.25	+	122.50		sum =	218.75			
W5	122.50	+	0.00		sum =	122.50			
P1	0.00	+	764.50	+	13.60		sum =	778.10	
P2	778.10						sum =	778.10	
P3	962.50	+	764.50	+	13.60		sum =	1740.60	
P4	962.50	+	764.50	+	1996.75	+	13.60	sum =	3737.35
P5	962.50	+	764.50	+	13.60		sum =	1740.60	
P6	962.50	+	764.50	+	2494.80	+	13.60	sum =	4235.40
P7	962.50	+	764.50	+	1935.50	+	13.60	sum =	3676.10
P8	962.50	+	764.50	+	1575.00	+	13.60	sum =	3315.60
VA=	7412.87	#							
VB=	12588.98	#							
Mc=	35454.99	ft-#							
SxR=	177.27	in3							

For beam measured SxFurn= 124.03 in3
OVERSTRESS = 1.43

For beam (theoretical) SxFurn= 133.33 in3
OVERSTRESS = 1.33

Ref Bates CPH000187

