

# L2 ENGINEERS

17848 NE 198th Place  
Woodinville, WA 98072



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## Structural Calculations

### Hu Residence

2448 – 72<sup>nd</sup> Ave SE  
Mercer Island, WA

Project # 22-052  
October 21, 2022



10/21/2022



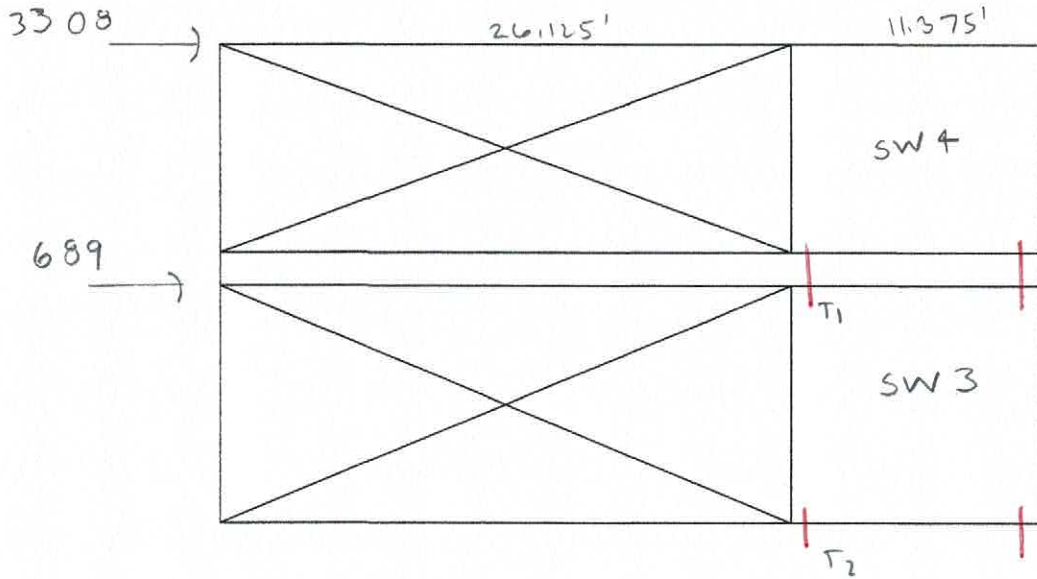
<b>Roof Dead Load</b>	<b>Weight (psf)</b>	
Composition Shingles & Felt Underlay	3.30	
5/8" Plywood	1.70	
Roof Rafters/Trusses	5.50	
Insulation	1.00	
R49 Batt Insulation - Assume 16"	0.62	
Miscellaneous	1.5	
	<hr/>	
	13.62	<b>15 psf</b>

<b>Floor Assembly Weight</b>	<b>Weight (psf)</b>	
Hardwood	4.00	
23/32" Plywood	2.40	
Floor Joists	5.50	
Insulation	1.00	
Miscellaneous	1.6	
	<hr/>	
	14.50	<b>15 psf</b>

<b>Exterior Wall Assembly</b>	<b>Weight (psf)</b>	
5/8" DensGlass	2.50	
15/32 Plywood	1.70	
2x6 Studs @ 16" OC	1.70	
Batt Insulation	0.25	
5/8" gypsum board	2.75	
	<hr/>	
	8.90	

<b>Exterior Wall Assembly W/ Veneer</b>	<b>Weight (psf)</b>	
Stone Veneer	15.00	
15/32 Plywood	1.70	
2x6 Studs @ 16" OC	1.70	
Batt Insulation	0.25	
5/8" gypsum board	2.75	
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	21.40	<b>25 psf</b>

<b>Interior Wall Assembly</b>	<b>Weight (psf)</b>	
5/8" Gypsum Wall Board	2.75	
2x4 Studs @ 16" OC	1.70	
5/8" Gypsum Wall Board	2.75	
	<hr/>	
	7.20	

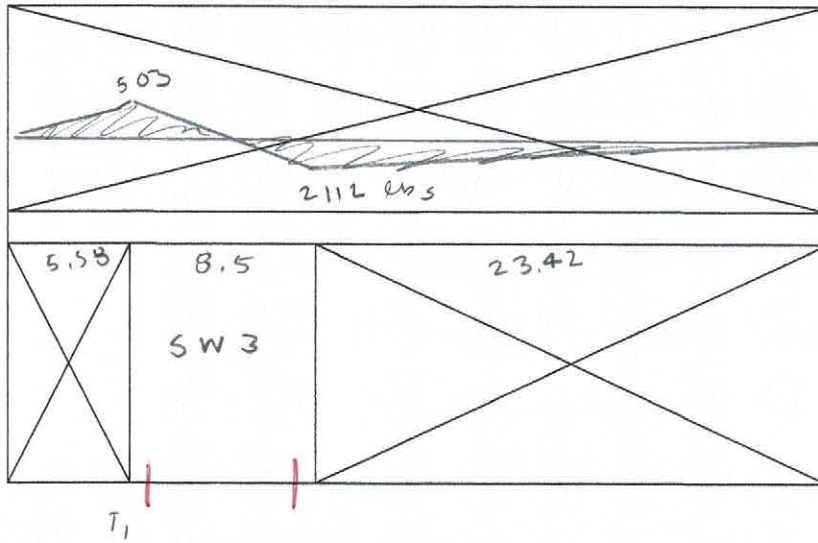


E5

$$T_1 = [3308(9.5) - 11.375(.6)(7.2)(9.5)(11.375/2)] / 10.875 = 2645 \text{ lbs} \quad \text{CMS5C16}$$

$$T_2 = [3308(22) + 689(11) - .6(11.375)(7.2)(11)(11.375/2)] / 10.875 = 7106 \text{ lbs} \quad \text{HDU11}$$

3385  
 +221 lbs (Wt Stone Veneer x Cs x p x 0.7)



E6

$$T_1 = 3385(11) / 8 = 4659 \text{ lbs} \quad \therefore \text{HDU8}$$

4958lbs

$$V = 40.26$$

$$V_D = 307.79$$

$$V_r = 390 \text{ plf}$$

Vr=424plf