



Structural Calculations For:

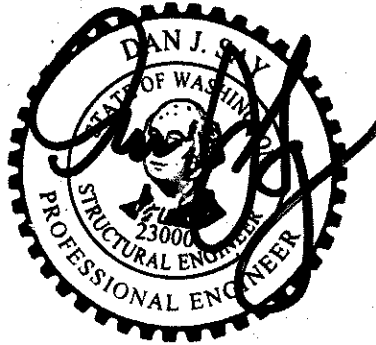
# Brenes Remodel

Hand Rail and LB3 Calculations.

2675 74<sup>th</sup> Ave SE  
Mercer Island, WA

Architect: Living Shelter Design Architects  
380 Newport Way NW  
Issaquah, WA

February 5, 2020



Project # 10592-2018-01



SEATTLE  
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⊕ [ssfengineers.com](http://ssfengineers.com)

PARAPET

USE 60 PPF W/ 12" PARAPET.

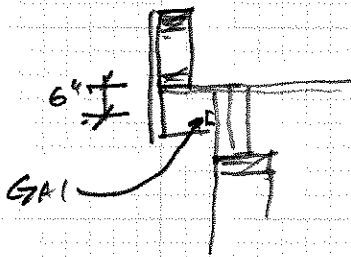
$60(2) = 120\# / 6\text{IN}$

$120(6\text{IN}) = 720\text{K}$

$720/25 = 288\# @ 24\text{IN}$

288/2 = 144\#A SIMPLIFIED PER W6

PLATE TO RAFTER. 200\# < 330\# 1/2" X 5" EPS



$\frac{720\text{K}}{6\text{IN}} = 120\# \text{ G.N. } 300\# \text{ UPLIFT}$

AXIAL RAIL

HEIGHT W/ BUILDUP = 48"

SPACE @ 4'-0"

P = 200\#

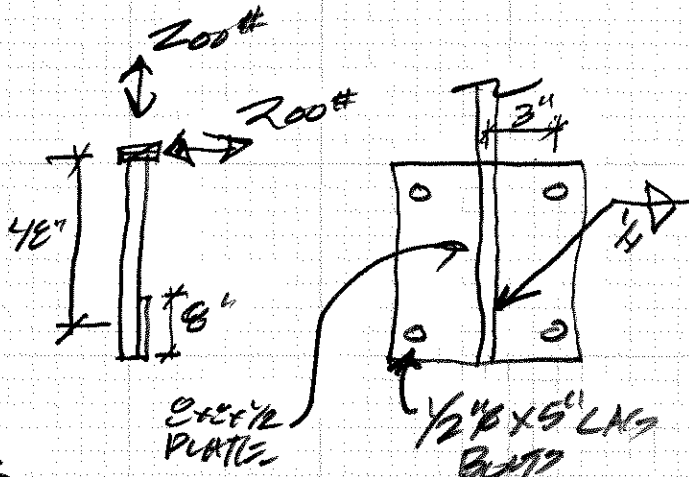
$200(48) = 9600\text{IN} = 9.6\text{K}$

SYREQD = .403

$.403 = b d^2/3$

$1.121 = b d^2$

$D = 1.75\text{IN}$   $b = 1.375\text{IN}$   $\therefore$  USE 1/2 X 1 3/4" A36 STEEL, SY = 15K



BRN/2 PLATE

$9600/6 = 1600\text{IN}$

$1600/2 = 800\# \text{ FASTENERS}$

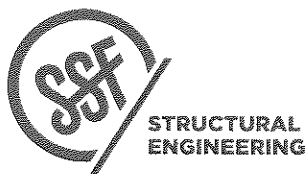
$302\text{IN}$

$800/32 = 2.65\text{IN } 1/2\text{ LAG}$

PLATE.  $800(3) = 24\text{K}$   
SYREQD = .1

T-E = 2.65" MIN. 5" LAG

$\frac{.1}{6} = b d^2$   $.256\text{IN} = 1/2\text{ PLATE OK}$



PROJECT BREMIES REMODEL.

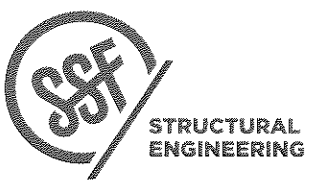
DATE 2/2/20  
10592-181  
PROJ. # KWK  
DESIGN RL  
SHEET

LB3 6x8 IN PLANE 016x10

Vc 546 lb  
M = 7638 lb-ft  
RDL 381 P11  
R = 184 lb  
A = 2134 = 2/440

11 91  
P 81 A S1  
-160 795 lb

R.T. Wagon



BREMES REMODEL  
PROJECT  
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\_\_\_\_\_  
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02/02/20  
DATE  
10592-187  
PROJ. #  
KMN  
DESIGN  
R2  
SHEET