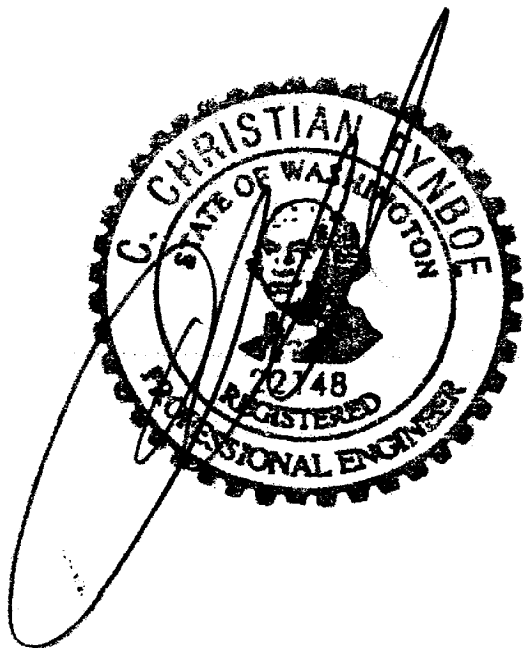


PROJECT: GOLDGATE WALL		SHEET NO. 1/E	
BY: CF	DATE: 10/10/24	JOB NO. 24121	

STRUCTURAL CALCULATIONS  
FOR THE  
GOLDGATE WATER WALL  
(110 - 9th AVE SW)

-JEFF BROWN ARCHITECTURE

DESIGN PARAMETERS: 2021 IBC  
SEE NOTES ON "51"



#25121 2/6

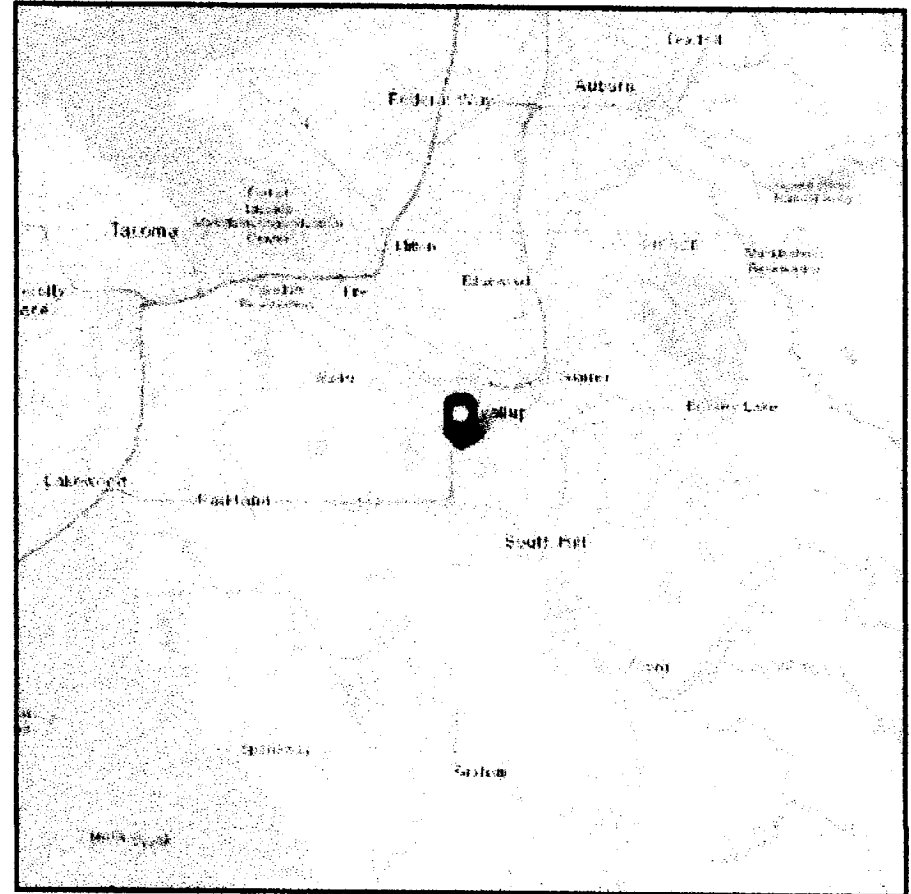
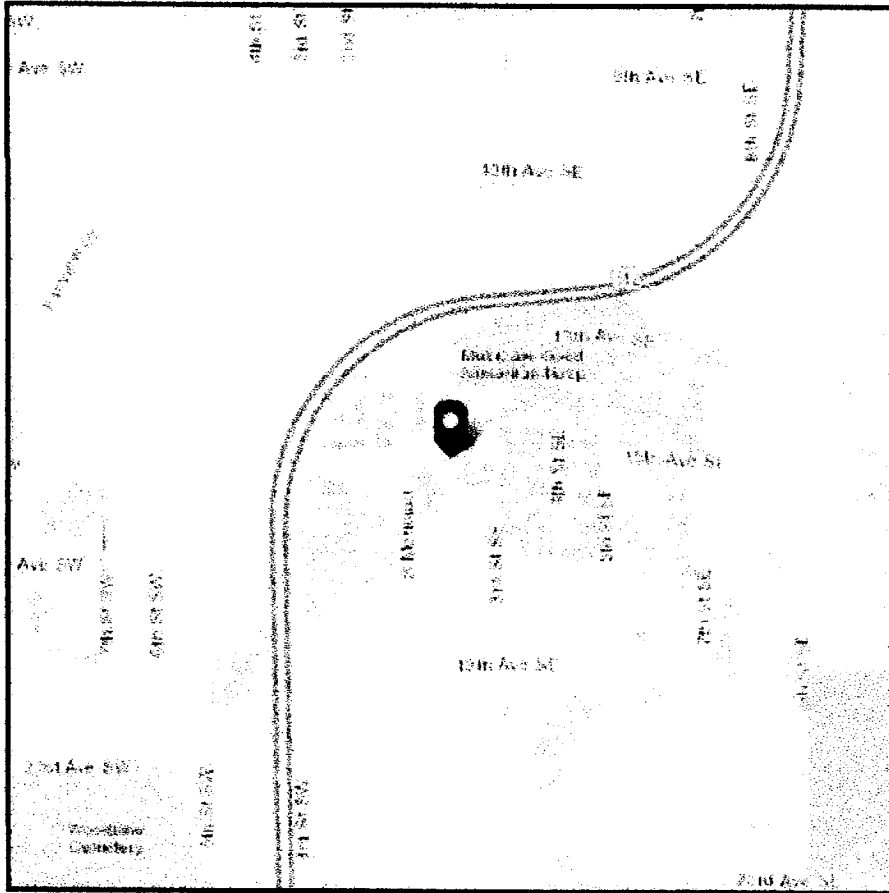


# ASCE Hazards Report

**Address:**  
Puyallup  
Washington,

**Standard:** ASCE/SEI 7-22  
**Risk Category:** II  
**Soil Class:** Default

**Latitude:** 47.177438  
**Longitude:** -122.292318  
**Elevation:** 114.73208016092777 ft  
(NAVD 88)



## Wind

### Results:

Wind Speed	97 Vmph
10-year MRI	67 Vmph
25-year MRI	73 Vmph
50-year MRI	78 Vmph
100-year MRI	83 Vmph
300-year MRI	92 Vmph
700-year MRI	97 Vmph
1,700-year MRI	104 Vmph
3,000-year MRI	108 Vmph
10,000-year MRI	118 Vmph
100,000-year MRI	136 Vmph
1,000,000-year MRI	154 Vmph

Data Source:

ASCE/SEI 7-22, Fig. 26.5-1B and Figs. CC.2-1-CC.2-4, and Section 26.5.2

Date Accessed:

Mon Apr 15 2024

#24121

3/6



Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

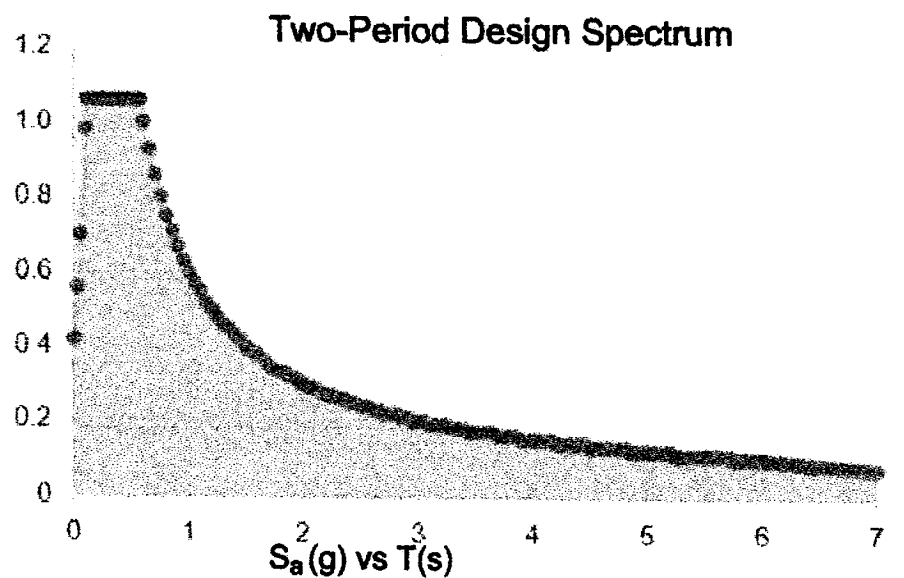
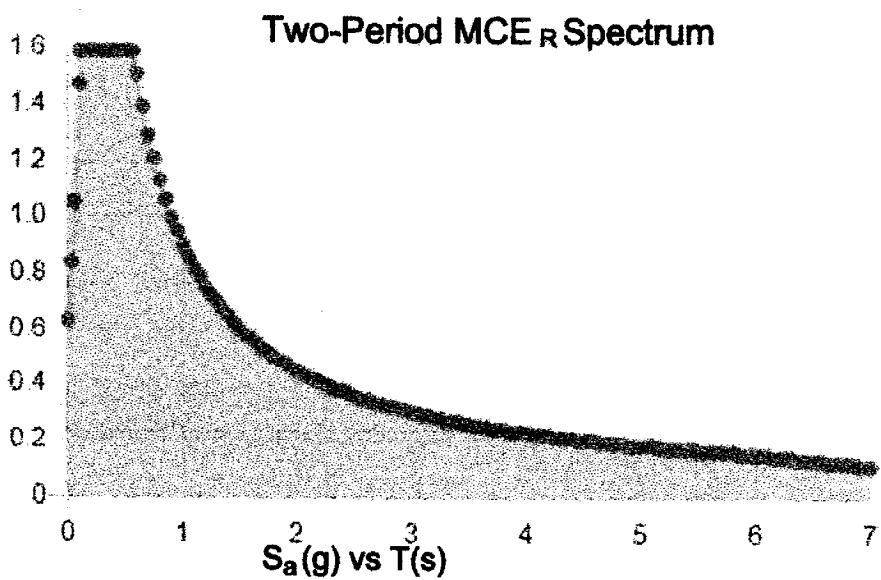
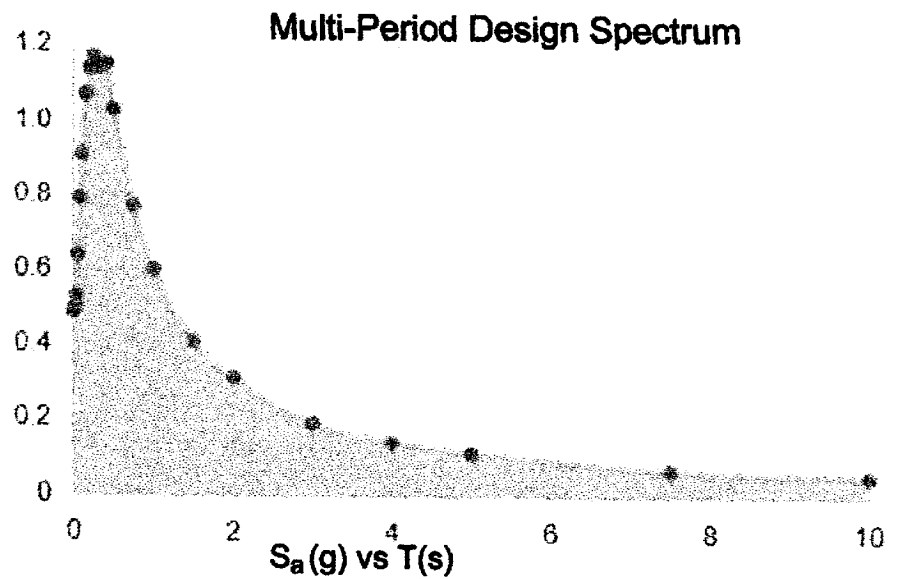
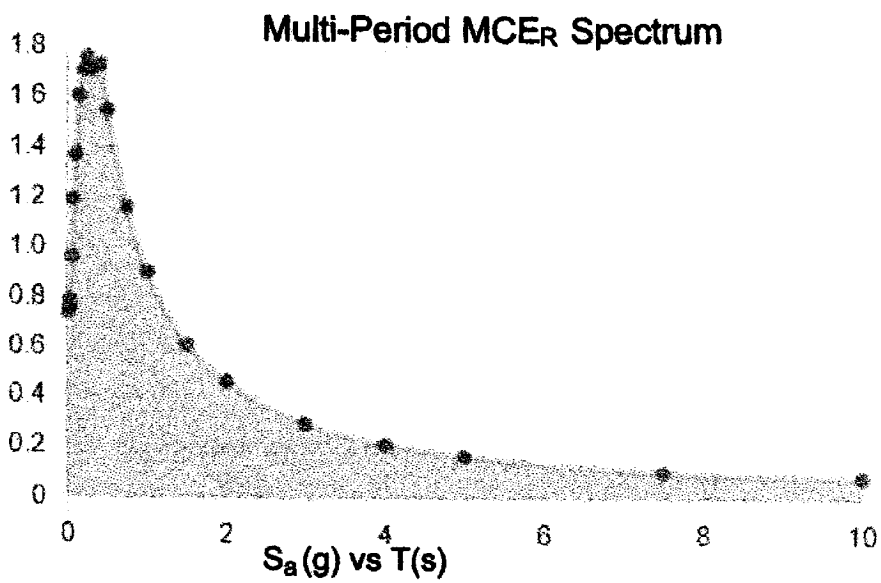
Site is not in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2.

Site Soil Class: Default

Results:

PGA <sub>M</sub> :	0.56	T <sub>L</sub> :	6
S <sub>MS</sub> :	1.59	S <sub>S</sub> :	1.44
S <sub>M1</sub> :	0.9	S <sub>1</sub> :	0.42
S <sub>DS</sub> :	1.06	V <sub>S30</sub> :	260
S <sub>D1</sub> :	0.6		

Seismic Design Category: D



MCE<sub>R</sub> Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

PROJECT:			SHEET NO. 5/E
BY:	DATE:	JOB NO. 24124	

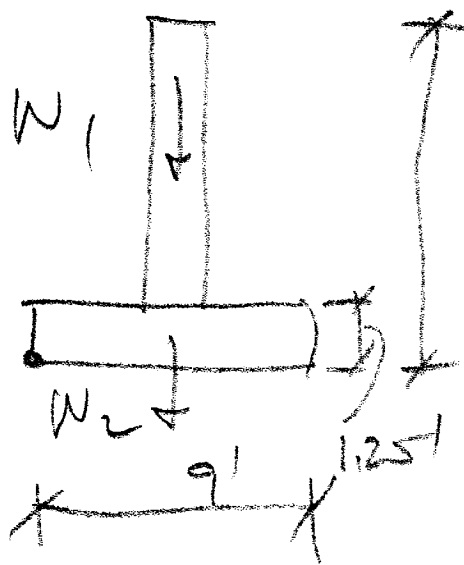
$$V_{SEIS} = 1.06 / 15(4.75) \quad W = .50 W \text{ (ASD)}$$

$$W = 17.75 / 12 (1.5) = 122 \text{ kg}$$

$$V_{SEIS} = 122 (1.50) = 111 \text{ kg} \leftarrow \text{CONTROL}$$

$$V_{WIND} = 10125 \text{ kg}$$

14'



$$H = 111 (14.75) = 1.6 \text{ k}$$

$$W_1 = 17.75 / 12 (1.5) (4.75) = 3.3 \text{ k}$$

$$W_2 = 1.25 (9) (1.5) = 1.7 \text{ k}$$

$$F_{TOT} = (3.3 + 1.7) 4.75 / 1.6 (8.16) = 1.6 \text{ OK}$$

$$e = 1.6 (8.16) / (3.3 + 1.7) = 2.75' \quad \begin{matrix} 5.2' \\ 5.0' \end{matrix}$$

$$f_s = 5.0 (2) / 5.2 = 1.9 \text{ ksf} - \text{OK}$$

WALL

$$M_0 = 1.6 (1.6) 7.7 (12) = 227 \text{ k'}$$

$$R_u = 227 / (.7 (12) (17.75)) = .067$$

$$A_s = .00333 \left( \frac{.067}{.12} \right) 1.5 (12) (17.75) = 136 \text{ in}^2 \text{ } \#6 \text{ } 12" \text{ } \text{VERT}$$

PROJECT:			SHEET NO. 6/E
BY:	DATE:	JOB NO. 29124	

FR

$$W = 50k$$

$$M_U = 1.6(5)(3/2) = 288k'$$

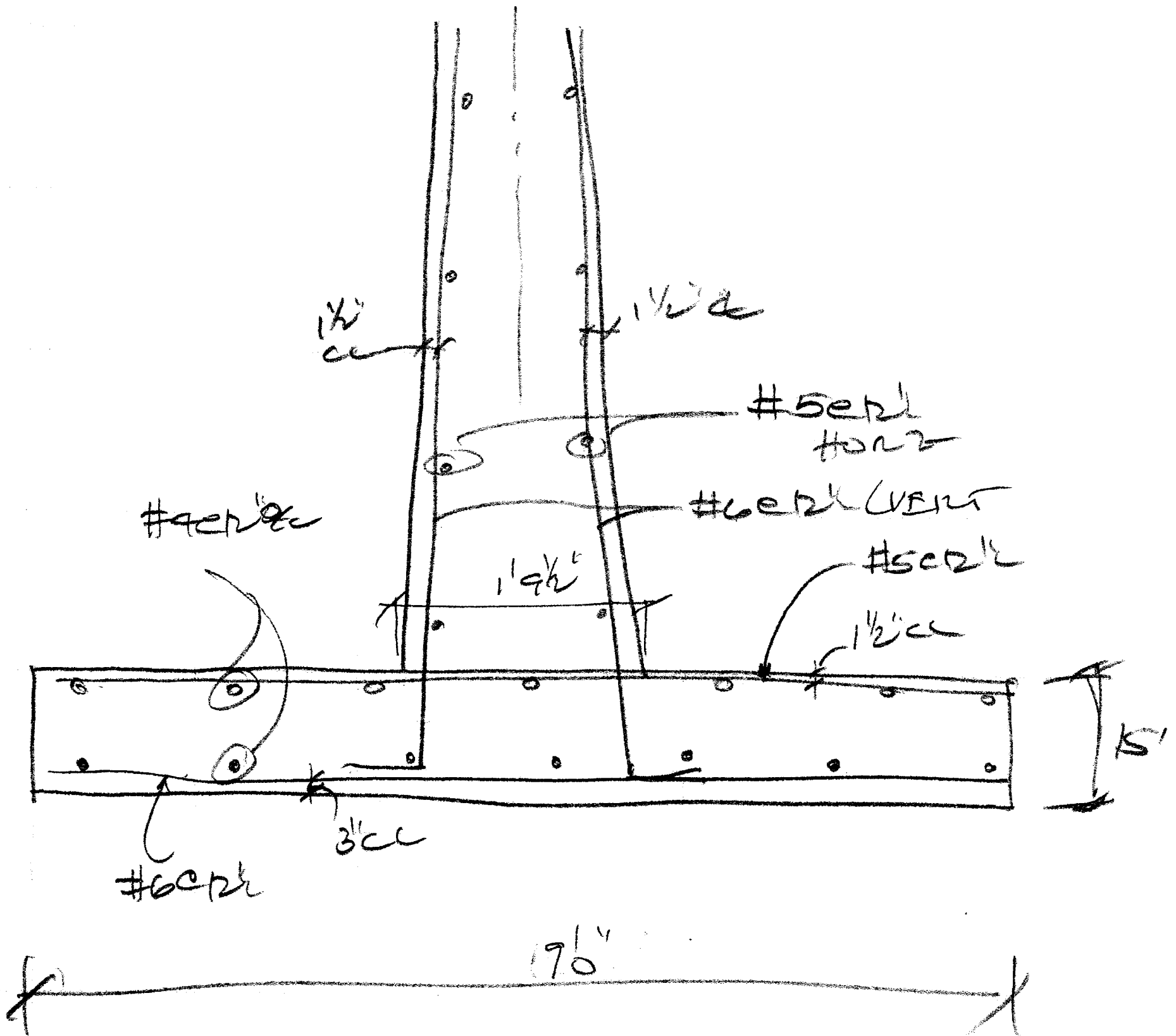
$$R_U = \frac{288}{1.9(12)12} = 1185k'$$

$$A_g = 1.00333(12)12 = 1480 \text{ in}^2$$

#6 @ 12" LOW

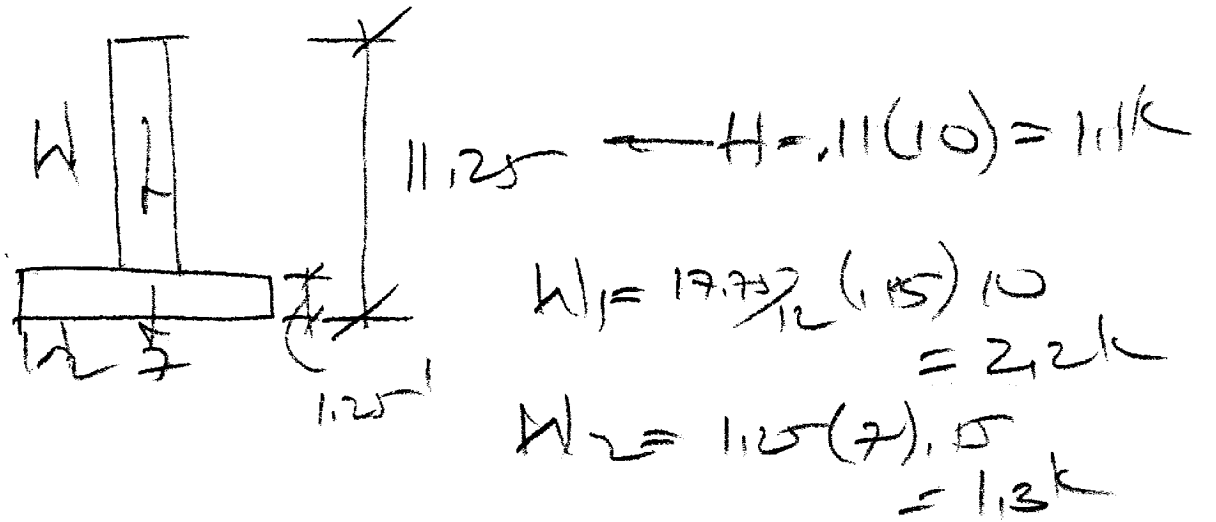
#5 @ 12" HIGH

PROJECT:		SHEET NO.	
BY:	DATE:	JOB NO.	77E
		2/12	



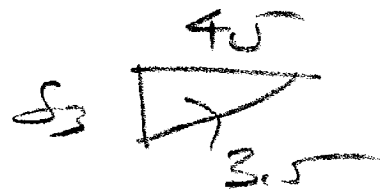
PROJECT:		SHEET NO.	
BY:	DATE:	JOB NO.	8/E
		24121	

10' HILH



$$F_{SGT} = \frac{(2.2 + 1.3) 3.5}{1.1(6.25)} = 1.8k \quad -OK$$

$$e = \frac{1.1(6.25)}{3.5} = 2.0$$



$$f_s = \frac{3.5(2)}{4.5} = 1.56k \quad OK$$

SÄTZE BEITRÄGEND