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PRMU20241695

PROJECT: 2ND ST TRASH			SHEET NO.
BY: CF	DATE: 2/7/25	JOB NO. 25012	1/6

Calculations required to be provided by the Permittee on site for all Inspections

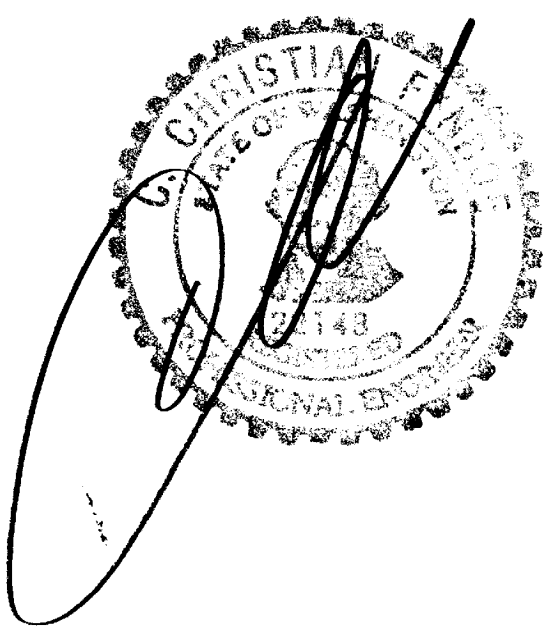
City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

City of Puyallup
Building
REVIEWED FOR COMPLIANCE
BSnowden
03/05/2025
12:23:13 PM

STRUCTURAL CALCULATIONS FOR THE 2ND STREET APTS TRASH ENCLOSURE (501 - 2ND ST NE)

- JAMES GURNEY ARCHITECTS

DESIGN PARAMETERS: 2021 IBC
SEE NOTES ON "S1.1" & "A7.1"



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PROJECT:			SHEET NO.
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CR WALL

$S_{DS} = 1.08$

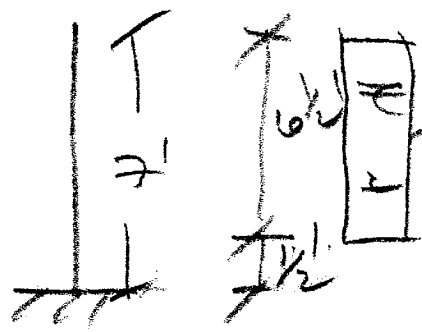
$R = 1.25$ GRND SUPPORTED CANTILEVER WALLS OTHER

$V = 1.08/1.25(1.4)\ W = .62W$ (ASD)

$W = .078k$

$WIRE = .0125/ft$

$V = .62(.078) = .048k$



$M = .31(3.75)12 = 13.9 k'$

$FS_{OT} = \left[.078(7) + (13.5)(1.5)\right]1.75 / 13.1(4.75) =$

$= 1.3$ OK

$E_m = 750(2000) = 1500 ksi$

$E_s = 29000 ksi$

$n = 29000/1500 = 19.3$

$\rho = .23/12(3.81) = .0050$ (#5 @ 11")

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$k = .33$

$j = 1 - .33/3 = .89$

$f_b = \frac{13.9}{12(3.81)^2\left(\frac{2}{.89(.33)}\right)} = .54 \text{ ksi} - \text{OK}$

$f_s = \frac{13.9}{.33(.89)3.81} = 17.8 \text{ ksi} - \text{OK}$

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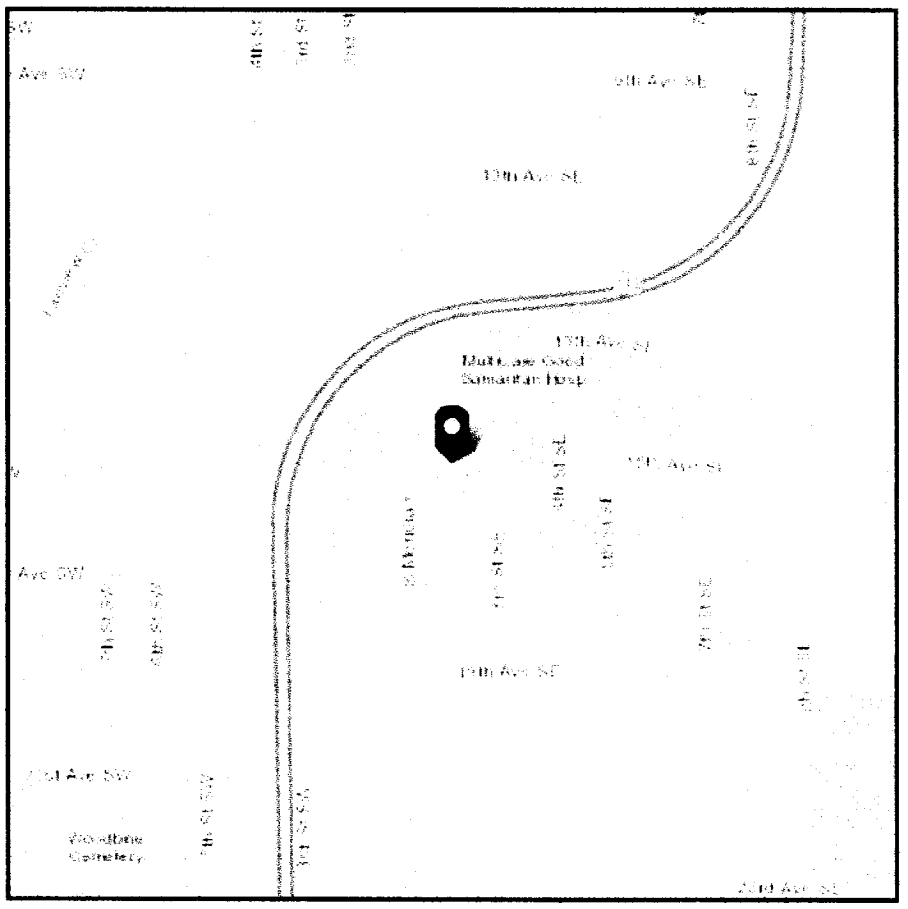
ASCE Hazards Report

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

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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.

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Seismic

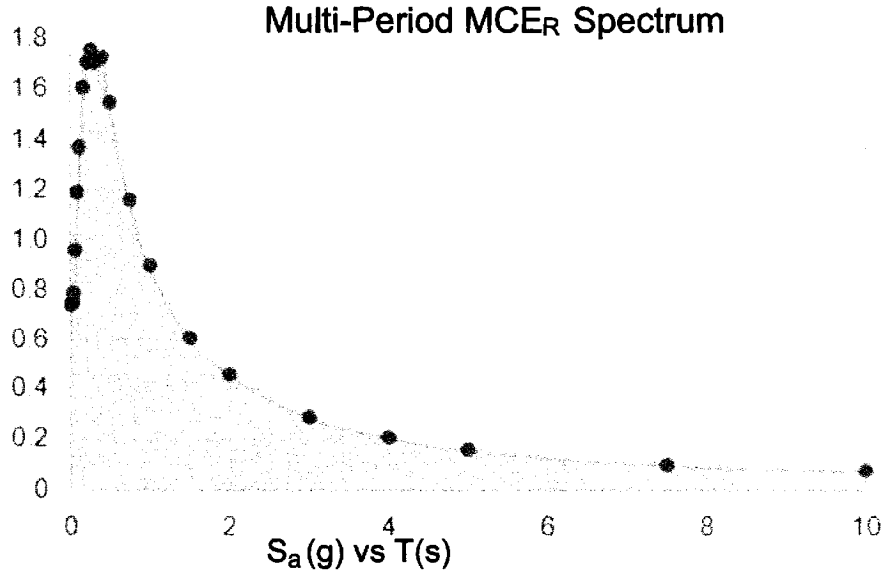
Site Soil Class: Default

Results:

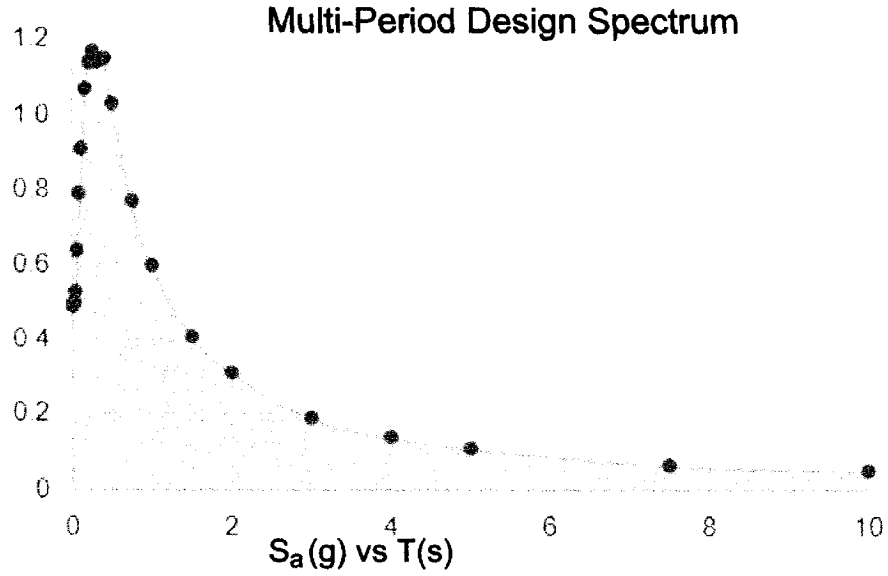
PGA_M :	0.56	T_L :	6
S_{MS} :	1.59	S_S :	1.44
S_{M1} :	0.9	S_1 :	0.42
S_{DS} :	1.06	V_{S30} :	260
S_{D1} :	0.6		

Seismic Design Category: D

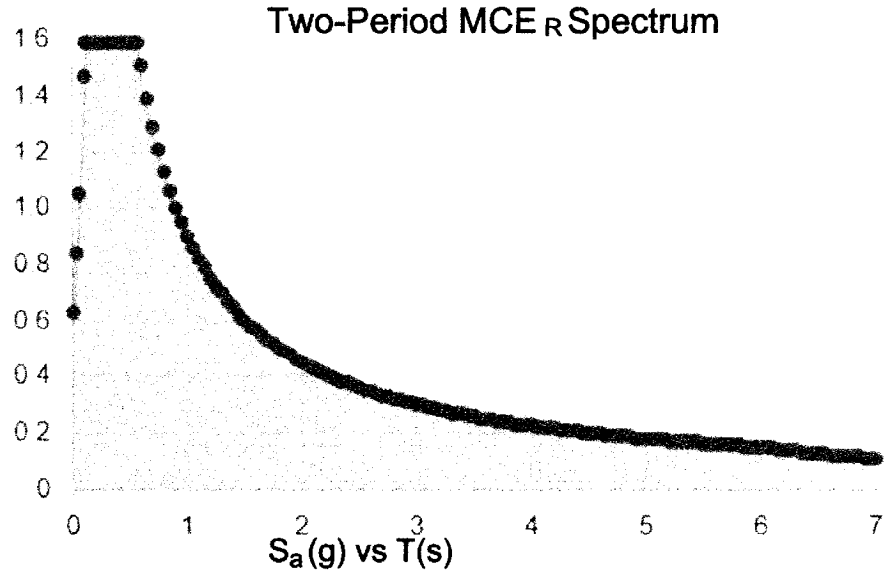
Multi-Period MCE_R Spectrum



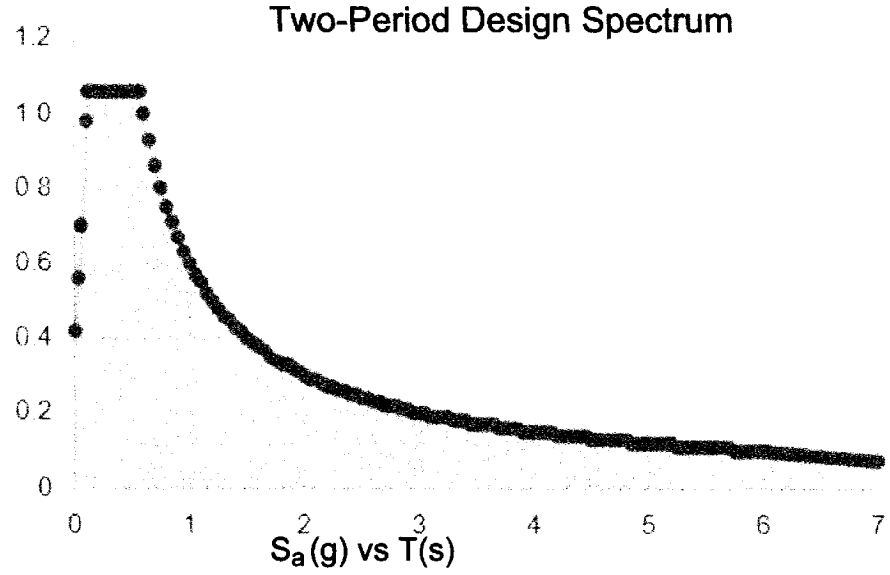
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R 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.