Voelker Engineering
193 N Shugart Flats Rd
Leavenworth, WA 98826
425-417-1122

JOB _Block House_ _96004.1_

SHEET NO. _1_ OF _2_

CALCULATED BY _____ DATE _4.16.24_

CHECKED BY _____ DATE _____

SCALE _____

Park Entrance monument.

Check Loads to ftgs:

$$F_{h_1} = 20 \times \frac{23}{2} + 90 \times \frac{12}{2} \times 1.25 = 380^{\#}$$

$$F_{h_2} = 20 \times \frac{10.5}{2} = 105^{\#}$$

$$OTM = 380 \times 11 + 105 \times 5.5 = 4757^{\#'}$$

$$TDL = 4.5 \times 4 \times 130 = 2.4^{k}$$

4/16/24

CHARLES B. VOELKER
STATE OF WASHINGTON
23280
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES 9/21/ 25

Sign Footing

Axial Load   **Moment**
$P =$ 2.40   kip $M=$ 4.80 k-ft

Footing Input   Conc. f'c   2500 psi   Rebar Grade
Length   3.50 ft   Soil Hgt   1.00 ft   60 ksi
Width   3.50 ft   Soil wt   125 pcf
Thickness   10.00 in

Column Size   Ftg DL   1.53 kips
Width1 =   6.00 in   Soil Wgt   1.53 kips
Width2 =   6.00 in

Footing Properties

A=   12.3 ft^2   I=   12.5 ft^4
S=   7.1 ft^3

Stability
Sum of Dead Loads   5.46 kips
Resisting Moment   9.56 k-ft   S.F. =   1.99
Soil Pressure
ecc=   0.88 ft   <== Outside Kern
P/A=   0.45 ksf
OTM Pressure=   1.19 ksf   Total =   1.19 ksf

Punching Shear

Width1 at critical section =   0.79 ft   Width2 =   0.79
Factored bearing pressure =   0.67 ksf
Bo=   38 in   Bo x D =   266 in^2
vu=   29 psi   Allowable vu =   170 psi

One-way Shear

Vu@ "D" =   3.82 kip   vu =   13.0 psi
                             Allow Vu=   85.0 psi

Flexure   Load Factor =   1.4

Direction W1   Minimum steel required
Mu=   6.7 (k-in)   .0018xAREA   4/3xAs
Req'd As=   0.02 (in^2)   0.76   0.03

Direction W2   Minimum steel required
Mu=   21.5 k-in/ft   .0018xAREA   4/3xAs
Req'd As=   0.07 (in^2/ft)   0.22   0.09