

April 6th , 2021

Aitkin County Planning & Zoning / Environmental Services

Attn: Shannon Westerlund

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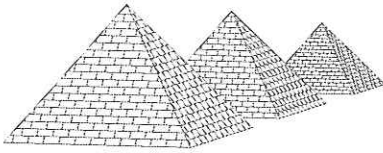
Email: aitkinpz@co.aitkin.mn.us

RE: Project: Tiny home with screen porch and Deck
Address: 22109 512th Lane McGregor, MN 55760
PSE's Project No.:RS Design 222-402 MN

Dear sir/Madam:

- 3" x Continuous clear open space provided between the finished grade and bottom of the lattice screen of the porch for free flow of water in case of high water flooding situation flooding situation shown on sheet A4 meets the required conditions as per ASCE24-14 equation/FEMA recommended open space around the entire perimeter of the building structure & as per below calculations.
- Assuming the proposed residence is in Flood Zone-A
 - $A_0 = 0.033 [1/c] R A_e$
 - Where: A_0 = total net area of opening required (in²)
 - 0.033 = coefficient corresponding to a factor of safety of 5.0 (in² • hr/ft³)
 - $c = 0.40$, opening coefficient as per ASCE 24, Table 2-2)
 - $R = 5\text{ft/hr}$, assumed worst case rate of rise and fall (ft/hr)-
 - A_e = total enclosed area (338 ft²)

 - $A_0 = 0.033 \times 1/0.40 \times 5\text{ft/hr} \times 338 \text{ft}^2 = 139.425 \text{in}^2$



PSE Consulting Engineers₂

As per code we require 1 sq.ft of flood venting / every 150 sq.ft of under floor space for flood venting

- required = $338/150 = 2.25$ sq. ft
- we are providing 3" continuous clear open space around the entire perimeter of the building structure
- $3"/12 \times 13' \times 2$ Sides = 6.5 sq.ft
- $3" \times 12' \times 26'$ (long side) = 6.5 sq.ft
- Total area of the flood venting provided under screened porch = 13 sq. ft >> way more than required of 2.25 sq.ft

Based on the above points 3" x Continuous clear open space provided between the finished grade and bottom of the lattice screen of the porch for free flow of water in case of high water flooding situation flooding situation shown on sheet A4 are adequate and meet the code requirements.

If you have any question, please contact us.

Thank you so much for giving us the opportunity to serve you on this nice project. We hope we have provided you with excellent engineering service. If you have any question, please feel free to contact us.

Sincerely yours,


Bill, Nabil, Taha, Ph.D., P.E.
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