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December 19, 2022

WHD Management

PO Box 1059
Lee's Summit, Missouri

Attn: Mr. Josh Wilson

Re: Geotechnical Engineering Services Addendum
Proposed Lot 1 Development
NE Town Center Drive and NE Town Center Blvd
Lee's Summit, Missouri
PSI Project Number: 03382230 Addendum 1

Dear Mr. Wilson:

Professional Service Industries, Inc. (PSI), an Intertek Company, is pleased to provide this addendum to the original geotechnical report (Report no. 03382230 dated June 10, 2021) for the above referenced project. The recommendations provided in the original report remain valid.

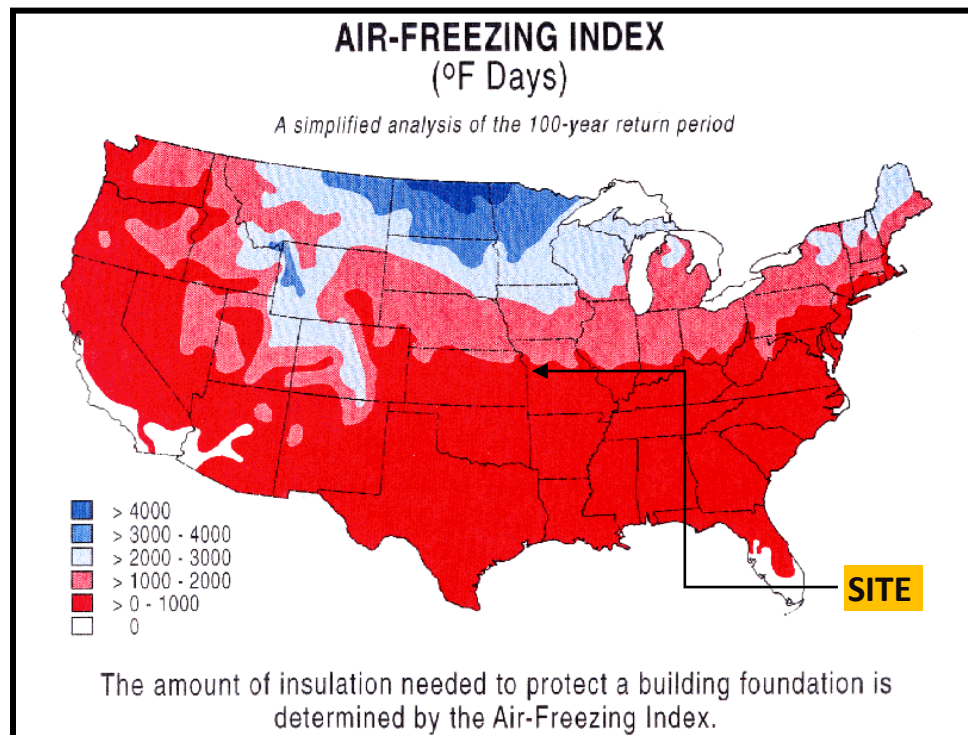
Based on conversations with Brianna McKenzie O'Neal and Jon Prueter with Davidson A+E, PSI understands that the client wants to use floating slab with thickened edges instead of the proposed shallow foundations bearing below the frost depth of 36-inches.

FROST-PROTECTED SHALLOW FOUNDATIONS

As an alternative to conventional shallow foundations with footings and foundation walls, PSI understands the client wishes to explore the use of supporting the proposed structures on a floating, thickened edge slab. To construct this alternative, the foundation system must be designed as a frost-protected shallow foundation (FPSF) in accordance with the 2018 International Building Code and ASCE 32 requirements. This will require both horizontal and vertical insulation at the exterior face of the foundations, including the thickened slab.

For the project site, the air freezing index from published contour maps in the FPSF design guide is approximately 900° F days. A copy of this contour map is included below. Using this air freezing index, the required insulation values can be found in the FPSF design guide. The R-value of the chosen insulation must consider the long-term moisture for below ground, freezing conditions. For this designation, the insulation values in the table below are required for the dimensions in the figure below:

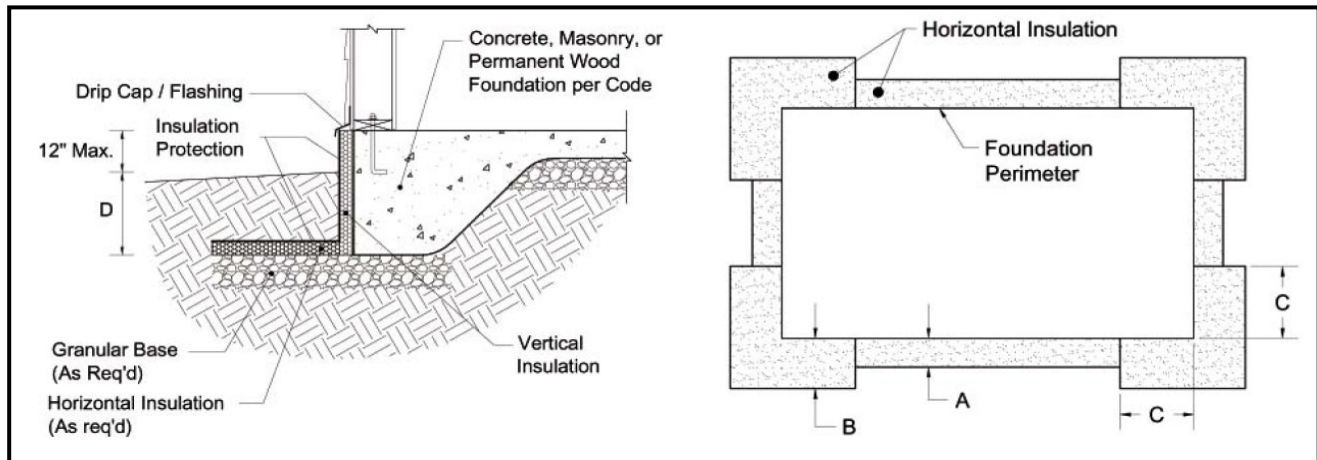




PARAMETER	MAGNITUDE	UNIT
Vertical Reinforcing R-Value ^{2,4}	4.5	UL
Horizontal Reinforcing R-value along walls	NR	UL
Horizontal Reinforcing R-value at corners	NR	UL
Minimum Embedment Depth D	12	Inch
Horizontal Dimension A	NR	Inch
Horizontal Dimension B	NR	Inch
Horizontal Dimension C	NR	Inch

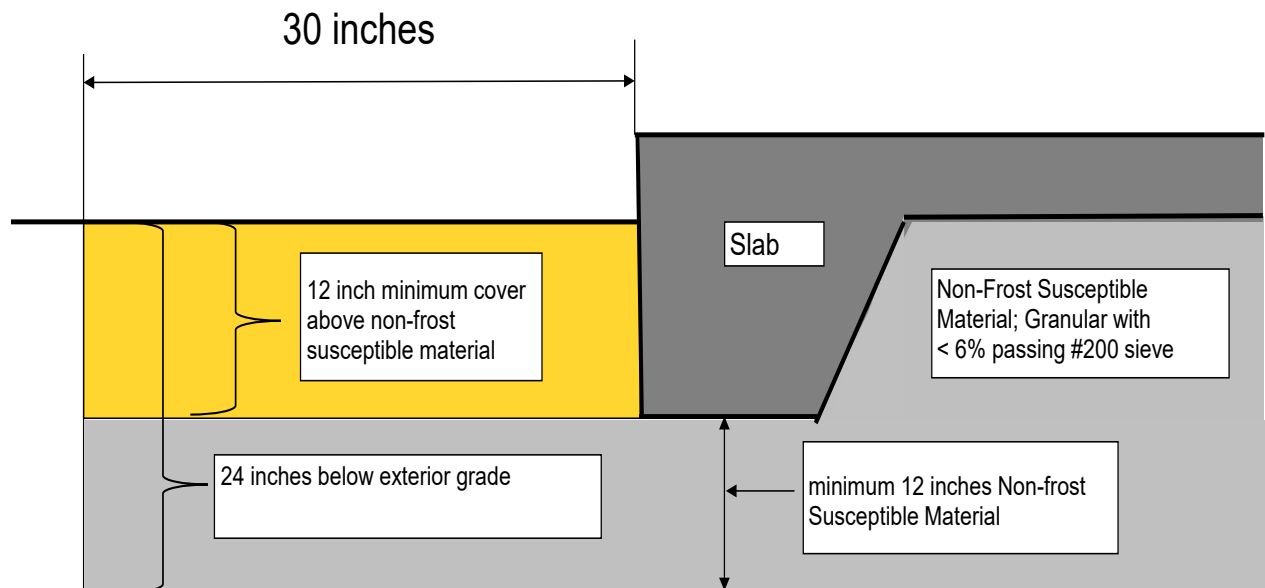
Notes:

1. Insulation requirements are for protection against frost damage in heated buildings.
2. Insulation materials shall provide the stated minimum R-values under long term exposure to moist, below ground conditions in freezing climates.
3. NR indicates that insulation is not required.
4. Vertical insulation shall be expanded polystyrene insulation or extruded polystyrene insulation.



UNHEATED SLAB RECOMMENDATIONS

Grade supported slab structures in unheated areas shall have a minimum of 12 inches of non-frost susceptible materials to a depth of 12 inches below the exterior grade with at least 12 inches below the bottom of the slab or perimeter footings. These materials shall extend at least 30 inches from the outside limits of the grade supported slab. The 30-inch dimension can be reduced by 1.25 inches for every additional inch below 12 inches that the non-frost susceptible material is extended below grade. Non-frost susceptible soil is defined as drained, granular material with less than 6% passing the #200 sieve. The non-frost susceptible soils shall be graded, and gravity drained such that it will not impound or trap water within the frost protected area.





All other recommendations, findings, conclusions, terms and conditions in the original geotechnical report, PSI report number 03382230 dated June 10, 2021, remain valid except as expressly stated in this addendum. Please contact us at (913) 310-1600 if you have any questions or if we may be of further service.

Respectfully submitted,
Professional Service Industries, Inc.

Syed Gous Andrabi
Department Manager
Geotechnical Services

Matthew R. Satterfield
Regional Director/Principal Engineer