M&Z ENGINEERING ASSOCIATES

CONSULTING ENGINEERS

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CLIENT: *Vivek Patel*

Date: 03/31/2021

PROJECT: *Proposed new construction*
Block 12, Lots 21, 22, 23, 24, 25, 26

PB 22-01

ATTN: *Ms. Vivek Patel*

RE: *Subsurface investigation*

Dear Mr. Patel,

At your request, M&Z engineering has performed a subsurface investigation at the project mentioned above, including excavation, visual inspection and sampling of test pits within the property. The purpose of our investigation was to determine the nature of subsurface materials, allowable bearing capacity, the depth of ground water, and perform laboratory testing on a representative soil sample in order to determine the permeability.

The soil strata encountered in order from surface to bottom of excavation were top soil, followed by brown silt and clay with gravel and cobbles. The surface material was found to be top soil with a thickness of approximately 12 inches, followed by a stratum of undisturbed virgin ground. We recommend that building foundations be supported on the stratum of undisturbed virgin ground and be designed for a net allowable bearing capacity of 3,000 PSF.

Ground water was encountered at 72", 96" and 96" below the existing ground surface in test pits TP-1, TP-3 and TP-4 respectively, while no ground water was encountered in test pit TP-2. Water infiltration was observed in test pits TP-1 and TP-2 respectively, which may be attributed to surface water infiltration. It should be noted that ground water may fluctuate significantly in response to tides, precipitation and other external factors. Mottling was not identified during this investigation. Based on the available visual information, we recommend that the seasonal high water table be assumed at the depth of 72" below existing grade for test pits TP-1 and TP-2, and 96' below the existing grade for test pits TP-3 and TP-4.

A soil sample was collected from test pits TP-2 and TP-4 at the depth of 5 feet below the surface, and laboratory tests (ASTM-D 5084) were performed in order to obtain the soil permeability. Based on these tests we have concluded that the soil permeability rating is K0 for both samples, with a permeability rate of 3.52 x 10^{-3} in/hr (2.49 x 10^{-6} cm/sec) for test pit TP-2, and 3.24 x 10^{-3} in/hr (2.29 x 10^{-6} cm/sec) for test pit TP-4. Please contact us if we can be of further assistance.

Sincerely,
M&Z Engineering Associates, P.C.

Moin Khan, P.E.

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Test Pit Log			
Test Pit ID	Depth	Description	Ground Water
TP-1	0" to 12"	Top Soil	72"
	12" to 96"	Brown Silt and Clay with Gravel and Cobbles. Water infiltration at 60"	
	End of Test Pit at 96" below grade		
TP-2	0" to 12"	Top Soil	Not encountered
	12" to 96"	Brown Silt and Clay with Gravel and Cobbles. Water infiltration at 36"	
	End of Test Pit at 96" below grade		
TP-3	0" to 12"	Top Soil	96"
	12" to 96"	Brown Silt and Clay with Gravel and Cobbles.	
	End of Test Pit at 96" below grade		
TP-4	0" to 12"	Top Soil	96"
	12" to 96"	Brown Silt and Clay with Gravel and Cobbles.	
	End of Test Pit at 96" below grade		

Test Pit Location Plan