

December 19, 2024

Intrinsic Development
Brian Maenner
3622 Endeavor Ave. Ste. 101
Columbia, MO



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Re: Addendum to 4/1/2024 Geotech Report

The Village at Discovery Park, Lot 13
At the intersection of NE Douglas & NW Colbern Rd
Lee's Summit, MO
OWN Proposal: SP31-24-018 / Project: 24SP30033

Dear Brian,

This addendum should be read in conjunction with geotechnical report for Lot #13 at Discovery Park, project #24SP30033 dated April 1, 2024. All values and calculations in that report remain valid unless noted otherwise in this addendum. The following recommendations are based on new information we received from Structural Engineer Jared Verslues with Crockett Engineering Consultants on December 10, 2024 and December 13, 2024.

We understand that the planned grades are similar to what was reported during our April 2024 investigation. During our original investigation, fill material was observed during installation in Lot 13 and was being tested for compaction by a third party testing agency. We understand this process was completed in Lot 13 six to nine months ago. If the placement of fill was not completed six to nine months ago and more fill is required to bring the site to final grade, we should be notified to check settlement calculations.

Settlement calculations were completed using the minimum recommended compaction for the placement of fills and the following loads:

Maximum Column Loads:

Dead Load = 50 kips
Live Load Full = 30 kips
Live Load Factored = 20 kips

Typical Loads:

Columns = 60 kips
Continuous Footings = 2.5 kips per linear foot

FOUNDATION DESIGN

Foundations should be designed so that the stresses transmitted to foundation soils and rock will not exceed allowable bearing pressures provided in this report. In addition, foundations should be sized and founded to limit the maximum anticipated total or differential movements to magnitudes which can be tolerated by the planned structural system. Construction factors such as the installation of foundation units, difficulty of excavation and fill placement, and surface and groundwater conditions must also be considered.


Based on the findings of this investigation, we recommend that the building foundation systems be founded on moist, stiff compacted structural fill. Additional recommendations for the foundation options are provided below.

1. Footings bearing on moist, stiff, native clay soils or properly compacted structural fill may use a maximum allowable bearing pressure of 2,500 pounds per square foot (psf). The recommended bearing capacity assumes the Site is prepared in accordance with the recommendations provided in the geotechnical engineering report dated April 1, 2024.
2. Excavate undocumented fill to stiff native clay.
3. Foundations constructed on moist, stiff, native clay soils or properly compacted structural fill may experience less than 1 inch of post-construction settlement. The expected differential settlement is half the total settlement over a distance of 40 feet.
4. Use minimum footing dimensions of 30 inches for isolated footings and 18 inches for continuous footings.
5. We recommend using an ultimate coefficient of sliding friction between concrete foundations and compacted base rock of 0.35.
6. The strength of the clays in the footing excavations will change if exposed to weather extremes. We recommend placing concrete the same day as footing excavations. If the clays are not protected, additional excavation of disturbed soil may be required. Highly plastic, expansive clay that is allowed to dry, will often become stronger at that time, but the potential for excessive swell becomes more likely after the footing is constructed.
7. If foundations are constructed in accordance with the recommendations provided in this addendum, the recommendations provided in the geotechnical engineering report dated April 1, 2024, and best construction practices, the recommended bearing pressures should provide a minimum factor of safety of approximately 3 against bearing capacity failure.
8. Exterior footings should bear a minimum of 3 feet below the finished exterior grade for frost protection.
9. Footing excavations should be examined by OWN to verify bearing capacity before the soil is compacted and reinforcing steel is placed.

10. After the footing excavations are completed and inspected by a representative of OWN, the bottom of the footing excavation should be cleaned of water, loose, and/or wet material. After inspection and cleaning, the bottom of the footing excavation should be thoroughly compacted with a mechanical tamper prior to installing reinforcing steel.
11. For foundations, if the exposed soil cannot be maintained in a moist condition before concrete placement, then the upper 18 inches below the foundation should be removed and replaced with LVC or base rock.
12. The ultimate passive pressure for depths greater than 2 feet is 250 pounds per cubic foot (pcf) equivalent fluid pressure. We recommend neglecting the passive pressure from shallower depths due to environmental effects.
13. Backfill against stem walls inside buildings should consist of base rock, to minimize settlement potential. The base rock should be placed and compacted in accordance with the recommendations provided in this report.
14. Careful inspection of excavations should be performed during construction to detect any unanticipated conditions such as voids, soft zones of soil, debris, filled mine prospect hole excavations, structures or other conditions that could affect the performance of the proposed structure foundation system. If such conditions are encountered, OWN should be notified before proceeding.

Sincerely,

OWN, Inc.



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12/19/2024



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