ZIEHLER ENGINEERING, INC
STRUCTURAL CONSULTING

September 30, 2022

Julie Esterl
Town of Fraser Planning Department
153 Fraser Avenue
Fraser, Colorado 80442

RE: **Job No. 21013**
Site Observation Visit - Preliminary Soil Findings
461 Muse Drive
Fraser, Colorado 80442

Dear Julie,

Ziehler Engineering, Inc. was at the aforementioned site on August 27, 2022 to observe and report on the preliminary soil findings. The following are our observations:

Project Description:

- Two (2) new residential townhome buildings are planned. The proposed structures will be two (2) stories tall, with three (3) dwelling units each, over crawlspaces. The structures will have steel reinforced concrete foundations and will be built with conventionally framed wood walls, floors and roofs. The structural loading will be relatively light, on the order of 1,000 to 4,000 pounds per linear foot.

Test Holes:

- The site is currently a vacant lot with gently sloping ground. The preliminary subsurface exploration was performed by digging two (2) test holes, one at each proposed building location. The subsurface conditions were as follows:

Test Hole	Depth	Description
TH-1 (Building 1)	0' - 1'	Fill - Sandy, Clayey, Slightly Moist, Light Brown
TH-1 (Building 1)	1' - 8'	Course Sand, Gravel Cobble, Medium Dense, Slightly Moist, Light Brown
TH-2 (Building 2)	0' - 2'	Fill - Sandy, Clayey, Slightly Moist, Light Brown
TH-2 (Building 2)	2' - 9'	Course Sand, Gravel Cobble, Medium Dense, Slightly Moist, Light Brown

- Groundwater was not encountered in either test hole at the time of the visit.

Foundation Design:

- A spread footing foundation supported on native soils or properly compacted structural fill will be utilized. We expect a maximum allowable soil bearing pressure of 1,500 pounds per square foot (psf) for foundations at the crawlspace/porch elevation, about 3 to 4 feet below current grade.
- Spread footings should have a minimum width of 16 inches for continuous footings placed on material as described above and 24 inches for isolated pads.
- Footings placed beneath unheated areas should have at least 36 inches of covering soils to protect from frost.
- **A representative of the Geotechnical Engineer must observe the foundation excavation prior to foundation construction and/or fill placement and provide a final report.**

Should you have any questions, please feel free to contact us.

Sincerely,

COLORADO LICENSED
MICHAEL SCOTT ZIEHLER
39879
9/30/22
PROFESSIONAL ENGINEER

Michael S. Ziehler, P.E. (CO License #: 39879)
President
Ziehler Engineering, Inc.

7428 Fairway Lane
Parker, Colorado 80134

Phone: (720) 394-6061