SALEM
engineering group, inc.

7887 East Belleview Ave, Suite 1100
Denver, Colorado 80111
(303) 848-3945 Office
(303) 848-3946 Fax

October 26, 2021 **Job No. 7-221-1136**

Mr. Zach Lauterbach
Vice President
Evergreen Devco
2390 East Camelback Road, Suite 410
Phoenix, Arizona 85016

SUBJECT: **ADDENDUM TO GROUND ENGINEERING REPORT**
CHANGE OF CONSULTANT (SOILS ENGINEER OF RECORD)
PEER REVIEW OF GEOTECHNICAL REPORTS
PROPOSED RETAIL DEVELOPMENT
NEC E. ALAMEDA PKWY AND S. AIRPORT BLVD
AURORA, COLORADO

References: Ground Engineering, Geotechnical Subsurface Exploration Program, Buckley Yard, Lot 1, Trace E, and Preliminary Study (Lots 2-5 and Infrastructure), Northeast Corner of E. Alameda Pkwy. And S. Airport Rd., Aurora, Colorado, Job Number: 21-3621, Dated October 1, 2021

Cole Garner Geotechnical, Proposed Retail Development, South Airport Boulevard and East Alameda Parkway, Aurora, Colorado, CGG Project No.: 17.22.233, Dated January 2, 2018

CTL Thompson Incorporated, Due Diligence and Preliminary Geotech Investigation, Aurora Centretech, Northeast of East Alameda Parkway and East Alameda Drive, Aurora, Colorado, Dated July 11, 2017

Dear Mr. Lauterbach:

In accordance with your request, Salem Engineering Group, Inc. (SALEM) has prepared this addendum to the report prepared by Ground Engineering and to confirm that SALEM will be the Geotechnical Consultant of Record (Soils Engineer-of-Record) and providing geotechnical engineering services for the subject project, and has replaced the previous geotechnical engineering consultant, Ground Engineering (GE).

SALEM has reviewed the referenced reports, concurred with their findings, conclusions and recommendations, and will act in accordance with geotechnical engineering recommendations in the referenced reports, as well as the requirements of the 2018 International Building Code.

Based on the data presented in the referenced reports, additional recommendations for site preparation and foundation design are provided herein for the proposed development.

Site Preparation for Shallow Foundation

GE report recommends that footings should bear on a fill prism consisting of properly moisture-conditioned and compacted on-site generated materials or approved import materials. The fill prism thickness of **11 feet** should be constructed beneath the underslab gravel layer. The fill prism should extend laterally at least 10 feet beyond the buildings and beneath any building appurtenances including entryways, patios, courtyard, etc. The fill section should be laterally consistent and of uniform thickness to reduce differential, post-construction foundation movement. Footing may be designed for an allowable soil bearing pressure of 1,500 psf for footings up to feet in width (assuming maximum load of 70 kips). GE anticipated potential movements associated with settlement on the order of approximately 1 to 1½ inches and differential movements on the order of ½ to ¾ inch over a distance of 40 feet. Realized movements should be expected to exceed these estimates in localized areas and may result in structural/aesthetic damage requiring repairs.

SALEM recommends the fill prism thickness for the proposed building areas may be reduced to **8 feet** below existing grade or **5 feet below proposed footing bottom**, whichever is deeper. In addition, low expansive soils with a plasticity index of 15 or less (PI≤15) should be separated from excavation and reused for the upper layer of the building pad. Expansive soils with a plasticity index of more than 15 (PI>15) should not be placed within 4 feet of finish grade.

Prior to placement of fill, the subgrade soil should be scarified to a depth of 10 to 12 inches, moisture conditioned to 3 to 5% over moisture content and recompacted to at least 98% of maximum density as determined by ASTM D698. Fill soils should be moisture conditioned to at least 3 to 5% over optimum moisture to minimize swell potential. Total settlement is anticipated to be on the order of 1 inch and differential settlement to be on the order of ½ inch over 20 feet. The footing excavations should not be allowed to dry out any time prior to pouring concrete. The foundation subgrade should be sprinkled as necessary to maintain a moist condition without significant shrinkage cracks as would be expected in any concrete placement. Prior to placing rebar reinforcement, foundation excavations should be evaluated by a representative of SALEM for appropriate support characteristics and moisture content. Moisture conditioning may be required for the materials exposed at footing bottom, particularly if foundation excavations are left open for an extended period.

All recommendations and limitations presented in the referenced Report apply to this letter.

Construction Observation and Testing Services

The recommendations provided in this report are based on the assumption that we will continue as Geotechnical Engineer of Record throughout the construction phase. It is important to maintain continuity of geotechnical interpretation and confirm that field conditions encountered are similar to those anticipated during design.

If we are not retained for these services, we cannot assume any responsibility for others interpretation of our recommendations, and therefore the future performance of the project. SALEM should be present at the site during site preparation to observe site clearing, preparation of exposed surfaces after clearing, and placement, treatment and compaction of fill material.

SALEM's observations should be supplemented with periodic compaction tests to establish substantial conformance with these recommendations. Moisture content of footings and slab subgrade should be tested immediately prior to concrete placement. SALEM should observe foundation excavations prior to placement of reinforcing steel or concrete to assess whether the actual bearing conditions are compatible with the conditions anticipated during the preparation of this report.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (909) 980-6455.

Respectfully Submitted,

SALEM ENGINEERING GROUP, INC.

Clarence Jiang, GE
Senior Geotechnical Engineer

R. Sammy Salem, MS, PE
Principal Managing Engineer
PE No. 45178 – Expires 04/30/2023