

MEMORANDUM

TO: Mr. Kevin Leahey, (Broad Street Owner LLC) **PROJECT NO.:** 11246

FROM: Bruce A. LaPenta, P.E., Michael St Pierre, P.E., Jose Rodriguez, P.E.

DATE: 06/07/2022

SUBJECT: Rock Removal, dewatering memo for 44 Broad Street, Port Chester, NY

As indicated in the *Geotechnical Summary Letter* prepared by SESI Consulting Engineers, dated 7/13/2020, four (4) preliminary geotechnical borings were completed to depths between approximately nine (9) and 32 feet below existing site grades. The site's stratigraphy is predominantly made up of a layer of uncontrolled fill, overlying alluvial deposits, a relatively thin layer of decomposed/weathered rock, and bedrock. This Memo is based in part on our review of the *Site Plan Submission* drawing dated January 28, 2022, last revised April 4, 2022, prepared by Lessard Design.

It is our understanding that the sequence of construction will involve the excavation of the fill layer, the alluvial soils, the decomposed/weathered rock, and approximately three (3) to 20 feet of competent rock based on the lower basements finished floor elevation of approximately +4 designated in the Site Plan Submission. At certain stages, the use of a hydraulic hammer and line drilling will be utilized for removal of the bedrock. Line drilling around the perimeter of the site will help control any over-breaking of the rock material during removal. Traditional excavation methods for the uncontrolled fill, alluvial materials and portions of the decomposed/weathered rock will be utilized. The involvement of more invasive techniques, such as blasting, are not anticipated at this time. Should invasive techniques be necessary, a detailed plan outlining the duration of activities and mitigation measures will be developed and coordinated between the geotechnical engineer, construction team and the Village building department. The SESI Geotechnical Summary Letter, referenced above, has been included in the filings for municipal review. As the project progresses, additional borings, a support of excavation plan, and adjacent structure monitoring plan will be developed prior to the new building design and demolition of the existing structures.

While excavation of the surface soils can be performed via traditional excavation techniques, once the excavation reaches depths of approximately five (5) to 23 feet below existing grade, the rock appears to become more competent. A final foundation design will be determined upon completion of the supplemental geotechnical investigation and final building plans.

In response to question 3(f)(iii) from the villages comments on the previous submission, and as presented in the Geotechnical Summary Letter, groundwater was encountered at an elevation ranging from approximately +17.8 to elevation +25. Based on the proposed basement finished floor elevation of approximately +4, groundwater would need to be lowered to and maintained at about elevation 0 during basement construction. Considering the presence of rock on site, regional information, and reported discussions with a specialty dewatering contractor, the discharge rates may range from 30 to 70 gallons per minute. The discharge rate may need to be adjusted, however, based on a number of factors, including the performance of additional subsurface investigations, the performance of pump testing, the potential need to recharge some of the water back into the formation and the support of excavation design. The Applicant's contractor shall follow all Westchester County dewatering discharge requirements, including obtaining a Westchester County permit for construction dewatering discharge if necessary. Any such permits should be secured prior to issuance of a building permit and any excavation activity.