Sadat Associates, Inc.

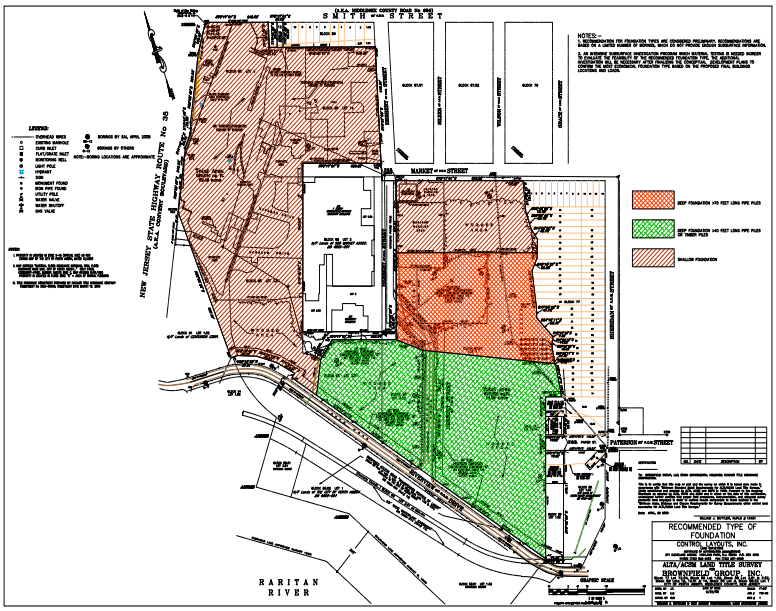
Project History

Geotechnical Services

Project Name
Former Celotex Complex and Landfill Site

Client
Terra Quest Group, LLC

Services Provided
- Geotechnical investigation, analysis and recommendations for the development of a former brownfields/landfill site
- Recommendations for different foundation systems for the construction of multi-story buildings



Project Description
The Celotex Complex and Landfill comprises approximately 36 acres, with the former landfill taking up 15 of those acres. The Complex portion of the site still has foundations of former buildings, even though the buildings themselves were demolished. The Client has proposed to develop the site as a residential duplex, with single-family homes and retail centers. SAI was retained by the owner to perform the geotechnical services for the proposed redevelopment.

Approach
SAI performed a geotechnical subsurface investigation, including Standard Penetration Test (SPT) borings extending to depths ranging from 25 to 60 feet below existing grades. Truck-mounted drill rigs and an all-terrain vehicle were used to access the more rugged parts of the site. All recovered soil samples were delivered to the laboratory for examination and testing. Soil samples were classified and test boring logs and subsurface cross-sections were prepared.

In order to determine the soil physical characteristics, Atterberg Limits, Gradation Analysis and Natural Moisture content tests were conducted. The shear strength of the natural soils was evaluated by performing Unconfined Compressive Strength Tests and Consolidated-Undrained (CU) and Unconsolidated-Undrained (UU) Triaxial Tests on undisturbed Shelby Tube samples. Soil permeability was evaluated by performing the Flexible Wall Permeameter Test on undisturbed samples. All tests were performed in accordance with ASTM standards.

Several aspects of the site redevelopment plan were considered, including handling of the buried slabs and old building foundations, properties of fill material to be utilized for site preparation, and earthwork and backfilling requirements.

Information obtained from the geotechnical investigations indicated that underlying the surface cover, the subsurface profile is characterized by manmade or fill material placed on top of soft organic marine tidal marsh deposits along the Raritan River and on top of inland glacial deposits. These glacial and marsh deposits are underlain in turn by sandy and clayey marine deposits of the Raritan formation extending to

significant depths. Based on this information, it was determined that the site could be divided into three areas in regard to the foundation option that is most suitable for the proposed structures in each area. SAI set forth recommendations for building both shallow and deep foundations. Economic considerations were also taken into account, resulting in a variety of recommended deep foundation systems.

Finally, SAI evaluated the anticipated settlement of the site, to estimate the maximum and the differential settlement under building foundations, as well as in the parking areas to be constructed on the closed landfill.

Project Impacts

SAI completed the geotechnical investigation of this site, and as a result, the Client is now poised to continue with their redevelopment plans.

Updated 4/10