
BALTIMORE-WASHINGTON INTERNATIONAL AIRPORT ASDE-X ANTENNA TOWERS

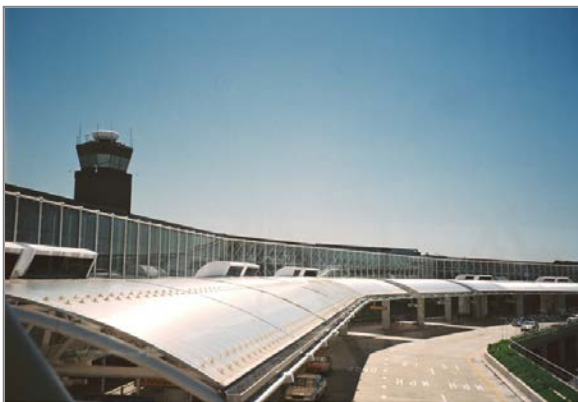


The Robert B. Balter Company performed a comprehensive geotechnical evaluation at new sites within the airport property that will support new ASDE-X antenna towers. These towers will monitor the aircraft ground traffic conditions across the extremely busy airport. The project consisted of 5 new towers which ranged in height from 50 feet to 107 feet tall. The Federal Aviation Administration, whom designed the towers, were anticipating the subsurface conditions would warrant shallow circular column footings for the shorter tower and deeper drilled shafts (caissons) for the taller towers.

The scope of services generally consisted of extensive subsurface explorations which included Standard Penetration Testing (SPT) sampling and testing with a truck-mounted drill rigs equipped with hollow stem augers. Prior to the subsurface explorations, extensive coordination with BWI and the FAA was required in order to access the locations as well as clear the utilities around the borings. The complicated underground utility network on the airport warranted further evaluation of the underground utilities by geophysical methods. Ground penetration radar (GPR) was utilized to locate utilities, which were drafted onto the individual tower plans and submitted to the airport for review. Once approved, the subsurface exploration program started.

Balter's geotechnical engineering staff (both engineers and geologists) oversaw and managed all field investigations. They also examined all split-spoon samples in our AASHTO- and Corps of Engineers certified laboratory. Representative samples of the soil and rock were selected for testing in accordance with ASTM and AASHTO regulations. Testing included the standard engineering "index" tests (Atterberg limits, gradations, and natural moistures) as well as consolidation testing, direct shear testing, unconsolidated-undrained compressive strength testing, and corrosivity testing. All boring logs and laboratory test results were incorporated into the Gint program for presentation in the final report.

Utilizing the field and laboratory data, a comprehensive geotechnical report was prepared. The report included a discussion of the site and subsurface conditions, and an estimation of the extent and type of unsuitable soils to be removed. Geotechnical evaluations were performed to develop shallow foundations recommendations, as well as allowable end-bearing and skin-friction parameter for the deeper drilled (Caissons) shafts. Site specific seismic design parameters, including spectral response acceleration, were also estimated using the collected site data and our general experience in the surrounding area.



Airport Surface Detection Equipment, Model-X (ASDE-X) is a runway-safety tool that enables air traffic controllers to detect potential runway conflicts by providing detailed coverage of movement on runways and taxiways.



THE ROBERT B. BALTER COMPANY

*Geotechnical and Geo-environmental Engineers
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