DECEMBER 12, 2018

Wednesday, December 12, 2018
4:00 PM - 5:00 PM (1.0 PDH)

WORKSHOP
4:00 PM - 5:00 PM (1.0 PDH)

Title : **Geoforensic Evaluation of Concrete Pavements**

Speaker : Dr. Harry Nguyen, PhD. w/ *Geotech Engineering and Testing*

Dr. Nguyen is a project manager at DAE & Associates, Ltd, dba Geotech Engineering and Testing (GET) with the responsibility for the daily operations of geotechnical explorations, data analyses and the preparation of report recommendations. He has several years of experience in fields of geotechnical, environmental, materials and

forensic engineering. His experience is in public infrastructure, including water, wastewater, roads, bridges, freeways, retaining walls, embankments, commercial and high-rise buildings, rail, parks, underground utilities, airports, ports, flood control channel, and subdivisions. He has experience in design of industrial plants, hydropower, ports, structures, buildings, various foundations, piles, seepage analysis, slope stability, retaining walls, triaxial testing, consolidation testing, groundwater and contamination modeling.

ABSTRACT : Mr. Harry Nguyen, Ph.D. with Geotech Engineering and Testing will be discussing "Geoforensic Evaluation of Concrete Pavement". Some two-lane concrete roads located in a Subdivision in Harris County Texas have experienced cracking. These concrete pavements were constructed in 2014 and designed in accordance to Regulations of Harris County with a 25-ft width and 6-inch thickness. Cracking has occurred in the pavements since construction. The longitudinal and transverse cracks observed in the concrete pavements generally ranged from hairline to 0.2-inches in width.

An investigation program of the concrete pavement distress was performed including (1) site visit to observe the cracks and types of joints, (2) ground penetrating radar survey to evaluate the installed reinforcements, (3) coring concrete to evaluate thickness of constructed concrete pavement, (4) laboratory tests to evaluate the compressive strength of concrete, (5) the petrographic analysis to evaluate the water-cement ratio and air contents of concrete, (6) reviewing the documents and reports obtained from the client and (7) engineering analysis for the observed information, reviewed documents, collected data and the laboratory test data.

The analysis of the field exploration and laboratory test data indicates that the reinforcement, thickness, and compressive strength of concrete pavements meet Harris County's requirements for approval and acceptance of infrastructure. The principal cause of the cracks is attributed to the used coarse aggregates.

PAST PRESENTATION SUMMARIES

To read summaries of previous FPA presentations by Dr. Nguyen, please click:

April 2018 - Geoforensic Study for Retaining Wall