# RESUME

**Shan Sivakumaran, P.E.**

## Senior Geotechnical Engineer/Construction Engineer Level 2/Soil and Aggregate Inspector/Level 2 Asphalt Technician

**Years with PGI:** 14
**Years with Other Firms:** 25

**Education:**
B.S. Civil Engineering, 1984, University of Peradeniya, Sri Lanka

**Continual Education**
Geotechnical Consultant Workshop 2004 through 2019, and 2021, 2022 by Office of Geotechnical Engineering, ODOT Central Office
Pavement Condition Rating/Transportation Asset Management by the Ohio LTAP Center
Permeable Pavement Workshop by the Ohio LTAP Center
Pipeline Awareness for Excavator Operations by Paradigm
FHWA-NHI-132079 Subsurface Investigation Qualification by National Highway Institute
Classification Course for Geotech. Logging of Soil and Rock Stratum by University of Akron
Dynamic Foundation Testing Seminar and Workshop 2008 by GRL Engineers, Case Western Reserve University, Cleveland
ODOT – AASHTO LRFD Foundation Design training course by Dr. Robert Y. Liang, Ph. D., P.E. Professor of Civil Engineering, University of Akron
Civil Engineering Seminar by Mr. Jerry DiMaggio, P.E. Manager, National Geotechnical Engineering Program, FHWA, University of Akron
Earth Retaining Structures Training Course By Mr. Jerry DiMaggio, P.E., Manager, National Geotechnical Engineering Program, FHWA
AutoCAD 2004: Basic Level 1 Course – University of Akron
Working with Synchronicity Course – Applied Synergistic International, Inc.
Analysis of Slope Stability by Dr. Robert Y. Liang, Ph. D., P.E. Professor of Civil Engineering, University of Akron
Project Manager's Boot Camp – PSMJ Resources, Inc.
New Development in Municipal Materials and Technology Courses (Environmental and Soils) - Ministry of Transportation of Ontario, Canada

**Registrations:**
2000/Professional Engineer-Ohio

**Certification:**
US DOT Hazmat Certification – Refresher Training for Portable Nuclear Gauges
Pipeline Awareness for Excavator Operations (Safety Training Program)
10 Hour Health and Safety Training & Confined Space Certification - per OSHA 29 CFR 1910.120
Radiation Safety Officer for the safe use of Nuclear Density Gauges
ACI Level I Concrete Technician
ACI Laboratory Strength Technician
ODOT Soil & Aggregate Inspector

# RESUME

ODOT Construction Engineer Level 2
ODOT Level 2 Asphalt Quality Control Technician

***General Qualifications***:
Mr. Sivakumaran has provided Geotechnical Engineering, Laboratory Testing, and Construction Monitoring/Materials Testing Services for a wide variety of infrastructure projects including bridges, culverts, embankments, retaining walls, roadway/runway pavements, WWTP/WTP, and toll plaza structures. He is also responsible for managing and controlling these projects. His geotechnical experience includes planning and site reconnaissance, compiling and evaluation of existing soil information from ODNR, evaluation of subsurface soils and groundwater conditions, classification of soils/bedrock, preparation of boring logs, engineering analysis and recommendations, and preparation of detailed technical reports. His laboratory testing experienced included construction materials testing of aggregate, concrete, asphalt, and geotechnical laboratory testing of soils.
He also managed numerous construction infrastructure projects for providing construction inspection and materials testing services. His experience included coordinating with client for inspector's site visits, providing technical assistance to inspector at the site, reviewing inspector's daily field reports, asphalt compaction and concrete test result reports, and laboratory test results, performing sampling and testing of soil/asphalt/concrete, inspecting drilled shaft/piles installation, verifying strip/spread/mat footings for bearing capacity, evaluating roadway/runway/bikeway subgrades, inspecting embankments, MSE walls, and asphalt & concrete pavements construction, monitoring compaction of granular pads for bridge & building foundations, inspecting storm/sanitary sewers installation, and serving as acting Resident Engineer at the site.
In addition, he prepared scope and fee proposals for numerous infrastructure construction bids. He is familiar with codes and specifications of the Ohio Department of Transportation (ODOT), Federal Highway Administration (FHWA), Federal Aviation Administration (FAA), American Association of State Highway Transportation Officials (AASHTO), American Society for Testing and Materials (ASTM), Unified Building Code (UBC), and International/Ohio Building Codes.

**Experience:**

**Trumbull County Correctional Institution - TCI - Employee Parking Lot Reconstruction**
**September 2022 – December 2022**
Pro Geotech, Inc. (PGI) was retained by Osborn Engineering to provide Construction inspection for Employee Parking Lot Reconstruction. The project also involved the full depth of removal and replacement of parking lot pavement. Mr. Sivakumaran served as a Project Engineer to oversee the earthwork inspection to ensure contractor's works were in compliance with project specifications. He performed inspection at the site on an "as needed" basis. His responsibilities included observing proof rolling of the subgrade, marking the undercut areas, determining the undercut depth of excavation, calculating the excavation quantities, and preparing daily field reports.

**Cuyahoga County Airport, Cleveland - Apron & Taxiway "B" Reconstruction**
**May 2021 – October 2021**

Pro Geotech, Inc. (PGI) was retained by C & S Engineers to provide Quality Assurance services for this project. The project also involved the full depth of removal and replacement of Apron and Taxiway B pavement. Mr. Sivakumaran served as Project Engineer to monitor the construction inspection of the project to ensure contractor's work in compliance with contract drawings, specifications and special provisions. Inspection was performed at the site on an "as needed" basis. His responsibilities included coordination with client for inspector's visits at the site, providing technical assistance to the inspector at the site, reviewing inspector's daily field reports, compaction test result reports, and laboratory concrete and beam test result reports.

**Youngstown-Warren Regional Airport, Ohio - Taxilane J1 and Associated Aprons Reconstruction**
**June 2020 – September 2020**
Pro Geotech, Inc. (PGI) was retained by C & S Engineers to provide Quality Assurance services for this project. The project also involved the removal and replacement of Taxilane J1 and associated aprons pavement. Mr. Sivakumaran served as Project Engineer to monitor the construction inspection of the project to ensure contractor's work in compliance with contract drawings, specifications and special provisions. Inspection was performed at the site on an "as needed" basis. His responsibilities included coordination with client for inspector's visits at the site, providing technical assistance to the inspector at the site, reviewing the inspector's daily field reports. He monitored the QC tests and obtained split samples for verification at the asphalt plant.

**Concrete Testing Services for Road Repairs at Various Cities in Cuyahoga County, Ohio**
**4/2020 – Current**
Pro Geotech, Inc. (PGI) was retained by Set in Stone Contracting to provide construction material testing services for Cities of Seven Hills, Olmstead Falls, Parma, Pepper Pike, and Brunswick in Cuyahoga County, Ohio. Mr. Sivakumaran served as a Project Engineer to oversee the overall materials testing services to ensure contractor's works were in compliance with project specifications. His responsibilities included coordination with contractor for inspector's site visits, providing technical assistance to inspector at the site, reviewing inspector's daily field reports, concrete test result reports, and laboratory concrete and beam test result reports.

**Project No. 43-18-04 – Bridge Deck Replacement and Rehabilitation**
**4/2018 – 9/1/2019**
Pro Geotech, Inc. (PGI) was retained by Ohio Turnpike and Infrastructure Commission to provide construction inspection and material testing services for two bridge projects; Ohio Turnpike over Wheeling & Lake Erie Railway, M.P. 186.0 and I-480 EB over Ohio Turnpike, M.P. 186.8 in Portage County, Ohio. Mr. Sivakumaran served as a Project Engineer to oversee the overall inspection and materials testing services to ensure contractor's works were in compliance with project specifications. His responsibilities included coordination with site resident engineer for inspector's site visits, providing technical assistance to inspectors at the site, reviewing inspector's daily field reports, asphalt compaction and concrete test result reports, and laboratory concrete strength and asphalt test result reports. He also monitored the QC tests and obtained split samples for verification at the asphalt plant.

**Project No. 43-17-05 – Bridge Deck Repair and Rehabilitation**
**5/2017 – 11/2017**
Pro Geotech, Inc. (PGI) was retained by Ohio Turnpike and Infrastructure Commission to provide QA/QC inspection and material testing services for three bridge projects; Boston Mills Road over Ohio Turnpike, M.P. 178.0, Olde Eight Road over Ohio Turnpike, M.P. 179.5, and Nichols Road over Ohio Turnpike, M.P 199.2 in Summit and Portage Counties, Ohio. Mr. Sivakumaran served as a Project Engineer to oversee the overall inspection and materials testing services to ensure contractor's works were in compliance with project specifications. His responsibilities included coordination with site resident engineer for inspector's site visits, providing technical assistance to inspectors at the site, reviewing inspector's daily field reports, asphalt compaction and concrete test result reports, and laboratory concrete strength and asphalt test result reports.

**Cuyahoga County Construction Inspection Contract**
**5/2014 – 11/2014**
Pro Geotech, Inc. (PGI) was retained by Cuyahoga County Engineer's office to provide QA/QC inspection and material testing services for a variety of county projects in Cuyahoga County. The projects included Clifton Avenue, Ridge Road and Columbus Road pavement replacement. Services included performing soil compaction testing and concrete testing. Mr. Sivakumaran served as a Project Engineer to oversee the overall inspection and materials testing services to ensure contractor's works were in compliance with project specifications. His responsibilities included coordination with client for inspector's site visits, providing technical assistance to inspector at the site, reviewing inspector's daily field reports, asphalt compaction and concrete test result reports, and laboratory test results.

**Proposed ODOT Maintenance Facility Euclid, Cuyahoga County, Ohio**
**February 2013 – April 2013**
Pro Geotech, Inc. (PGI) was retained by Precision Engineering & Contracting Inc. to provide geotechnical engineering and subsequent construction inspection and material testing for the proposed ODOT Maintenance Facility. This project involved design and construction of a new maintenance facility. The proposed maintenance facility included a single story administrative and maintenance building with no basement, a cold storage building, salt storage building, a mix building, and parking areas. The largest structure was the administrative and maintenance building measuring 255X152 feet in approximate dimensions. Mr. Sivakumaran served as a Project Engineer to oversee the overall inspection and materials testing services to ensure contractor's works were in compliance with project specifications. His responsibilities included coordination with the client for inspector's visit to the site, providing technical assistance to inspector at the site, reviewing inspector's daily field reports, soil compaction and concrete test result reports, and laboratory test results.

**Slide Repair in the vicinity of I-271 Bridge over Cuyahoga River, Summit County, Ohio**
**September 2009 – October 2009**
Pro Geotech, Inc. (PGI) was retained by KCI to provide materials testing services for the Slide Repair in the vicinity of I-271 Bridge over Cuyahoga River, Summit County, Ohio. PGI's Inspector performed compaction testing on soils and aggregate base and tested concrete during concrete placement for the I-271 shoulder. Mr. Sivakumaran was PGI's Project Manager to

oversee the testing of construction materials to ensure work performed by contractor was in compliance with project specifications.

**Akron Canton Airport Runway 5/23 Safety Area Improvements, Green Township, Summit County, Ohio**
**July 2007 – February 2009**
Pro Geotech, Inc. (PGI) which is formally known as Prime Engineering & Architecture, Inc. (PRIME) was retained by Baker & Associates (Pittsburg Office) to provide geotechnical engineering and subsequent construction inspection, and instrumentation services for this project. This project involved extending Runway 5/23 to the south in order to satisfy the FAA Safety Area requirements. This extension required construction of an embankment approximately 1525 feet in length. The height and width of the embankment ranged from approximately 45 feet to 70 feet, and 875 feet to 1000 feet, respectively. The approximate quantity of fill required to construct this embankment was 5.1 million cubic yards. Mr. Sivakumaran served as a PGI's Project Engineer to provide consultant services for the embankment construction. His responsibilities included performing inspection on an "as needed" basis, approving the on-site materials used for embankment construction, providing recommendations for minimizing slope erosion. He also oversaw the instrument installation and monitoring, correlation and analyses of field instrumentation data, and preparation of reports.

**Port Columbus International Airport Taxiway "E" Rehabilitation and Taxiway E Safety Corrections, Columbus, Ohio**
**May 2006 – September 2006**
PGI which is formally known as PRIME was retained by Woolpert, LLP to provide geotechnical engineering and subsequent construction inspection and material services for this project. This project involved rehabilitation to the pavement of Taxiway E and safety corrections to sections of the south shoulder of Taxiway E. The Taxiway E pavement was rehabilitated by applying a thin overlay using the micro surfacing rehabilitation method. These sections of the south shoulder were widened by construction of a retaining wall along the toe of the slope. The proposed retaining wall was extended approximately 600 feet to the east and 400 feet to the west from Taxiway Connector E-2. Mr. Sivakumaran served as a Project Engineer to oversee the overall inspection and materials testing to ensure contractor's works were in compliance with project specifications. His responsibilities included performing inspection at the site on an "as needed" basis, coordination with client for inspector's visits at the site, providing technical assistance to the inspector at the site, reviewing the inspector's daily field reports, asphalt compaction test results, and laboratory test results. He also monitored the QC tests and obtained split samples for verification at the asphalt plant.

**Port Columbus International Airport, Misc. Pavement Rehabilitation & Cargo Pad – Columbus, OH**
**October 2005 – November 2005**
PGI which is formally known as PRIME was retained by Woolpert, LLP to provide construction inspection and materials testing services for the construction of a concrete loading pad at the Cargo Building at Port Columbus International Airport. PGI's inspector performed proof rolling on subgrade, compaction testing on aggregate base and tested concrete during concrete placement, measured pay quantities of materials. Mr. Sivakumaran was PGI's Project Manager

to oversee the inspection and testing of the loading pad to ensure work performed by contractor was in compliance with project specifications.

**Nottingham Water Treatment Plant Improvements - Cleveland, OH**
**April 2005 – September 2005**
PGI which is formally known as PRIME was retained by DLZ to provide geotechnical engineering and subsequent construction inspection and materials testing services for the improvements; Backwash Clarifier project and the Administration Building project at this WTP in Cleveland, Ohio. The Backwash Clarifier project involved the design and construction of two new 50-foot diameter backwash water clarifiers adjoining the new Backwash Water Clarifier Sludge Pump Building, a new electrical/storage room, and a new Attenuation Basin. A new 12-foot diameter tunnel was installed connecting the new Backwash Water Attenuation Pump Building to the new Backwash Water Clarifier Sludge Pump Building below grade. The Administration Building project involved the design and construction of a new single story administration building and parking lot. Mr. Sivakumaran served as PGI's Project Engineer to oversee the testing of materials and inspections performed on an "as needed" basis to ensure work performed by contractor was in compliance with project specifications. Inspection performed at the site were bearing capacity verification of clarifier foundation, drilled shaft inspection of the Backwash Water Clarifier Sludge Pump Building foundation, parking lot subgrade proof rolling, and asphalt field compaction and laboratory testing.

**Akron Canton Airport Concourse Expansion (Phase2), Green Township, Summit County, Ohio**
**October 2004 – November 2004 and April 2005 – August 2006**
PGI which is formally known as PRIME was retained by HNTB to provide geotechnical engineering and inspection services for this project. The project involved design and construction of a proposed two-story concourse expansion that was constructed north and south of the existing concourse building. The north expansion measures approximately 65 X 56 feet and the south expansion measures approximately 370 X 65 feet. The proposed 22,000± square foot expansion included passenger loading bridges, gate check-in counters, ticket lift podiums, an airline operations area, hold rooms, circulation and common areas, restrooms, retail concession areas, and a baggage service area. The project also involved the replacement and renovation in the aircraft parking and taxi areas. Mr. Sivakumaran served as Project Engineer to monitor the overall construction of the project to ensure contractor's work in compliance with contract drawings, specifications and special provisions. His responsibilities included assisting the Construction Manager at the site and performing inspection on an "as needed" basis. He performed inspection of Taxiway subgrade, performed proof rolling, verified the asphalt base compaction performed by others, and verified the soil bearing capacity of building footing and prepared inspection reports.

**NEORSD Parking Lot Rehabilitation - Cleveland, OH**
**June 2004 – August 2004**
PGI which is formally known as PRIME was retained by URS Greiner to provide construction inspection and materials testing services for parking lot rehabilitation at the E.49$^{th}$ Street facility. Mr. Sivakumaran served as PGI's Project Manager to oversee the inspection and testing materials to ensure contractor's work was in compliance with project specifications. His

responsibilities included coordination with the client for inspector's site visits, providing technical assistance to the inspector at the site, reviewing inspector's daily field reports, asphalt compaction test results, and laboratory test results.

**ODOT District 4 Yearly Construction Inspection Contract, Summit County Ohio**
**June 2001 – September 2001**
PGI which is formally known as PRIME provided construction-monitoring services for a variety of projects located in ODOT District 4. Mr. Sivakumaran served as a construction inspector for two bridge replacement projects and a section of I-77 rehabilitation project to ensure contractor's work was in compliance with contract drawings, specifications and special provisions. Two replacement bridge projects included were SUM-77 Bridge over Yellow Creek and SUM-77 Bridge over Bath Road and a section of I-77 asphalt resurfacing in Summit County. His responsibilities included monitoring pile driving, checking reinforcements, inspecting concrete placements, monitoring asphalt paving, calculating pay item quantities, and writing detailed daily field reports.

**Ohio Turnpike/Interstate 77 /SR 21Interchange Project - Summit/Cuyahoga County, OH**
**February 2001 – May 2001**
PGI which is formally known as PRIME was retained by the Dick Corporation to provide geotechnical engineering and subsequent construction inspection and materials testing services for this project. This project involved reconstructing Ohio Turnpike existing Gate 11/S.R. 21 Interchange as well as constructing a new I-77/I-80 Interchange connecting to Gate 11 Toll Plaza. Gate 11 Toll Plaza was also reconstructed. PGI's inspection services included monitoring the earthwork during construction of the ramps, and testing the concrete of the pavement from SR 21 to the Toll Plaza for quality assurance purposes. Mr. Sivakumaran served as PRIME's project engineer to oversee the earth work construction of the project to ensure contractor's was in compliance with the contract drawings and specifications. His responsibilities included attending project meetings, providing technical assistance to PGI's construction inspectors in the field, and performing inspection on an "as needed" basis, reviewing compaction test results, and concrete test results.

**Columbus Convention Center Parking Garage – Columbus, OH**
**July 2000 – August 2000**
PGI which is formally known as PRIME was responsible for the preparation of site development plans for this five-level parking garage in downtown Columbus. As part of our scope, PGI provided geotechnical engineering and subsequent construction inspection and materials testing services. Mr. Sivakumaran was PGI's Project Manager to oversee the inspection of the bearing soils that support the parking garage foundation to ensure contractor's was in compliance with project specifications.

**City of Reynoldsburg, Lancaster Avenue Improvements, Reynoldsburg, OH**
**July 1999 - December 1999**
PGI which is formally known as PRIME was retained by EMH&T to provide construction inspection services for this project. Mr. Sivakumaran served as construction inspector for this roadway reconstruction project to ensure contractor's work was in compliance with the project

specifications. His responsibilities included monitoring water main installation, checking the quality of incoming materials, subgrade proof rolling, monitoring asphalt paving, measuring pay item quantities, and preparing detailed daily field reports.

**Akron-Summit County Public Library Building Additions at Ellet, Green, Nordonia, Wooster, and Mogadore Branches - Summit County, Ohio**
**December 1998 - June 1999**
PGI which is formally known as PRIME was retained by Summit Construction to provide construction inspection services during the construction of building foundations at the above library branches. Mr. Sivakumaran served as construction inspector to ensure work performed by the contractor was in compliance with the contract specifications. His responsibilities included verifying and approving the bearing soils of the building footers, concrete testing and sampling, and preparing daily field reports.

**A.P. O'Horo, Westfield Center WWTP, Const. Inspection Services - Medina County, OH**
**June 1998 – July 1998**
PGI which is formally known as PRIME was retained by A.P. O'Horo Construction to provide an experienced construction inspector to the Westfield Center WWTP in Medina County, Ohio. This project involved removal of all below grade backfill which caused damaged to new building addition adjacent to the Pump Station structure. Mr. Sivakumaran served as construction inspector to oversee the removal of all soft backfill and replacement with compacted 304 aggregate. He monitored the compaction of the 304 aggregate using a nuclear density meter to approve the 304 aggregate pad for supporting the new replacement structure.

**Aurora Westerly Wastewater Treatment Plant Improvements - Aurora, OH**
**March 1998 – December 1999**
PGI which is formally known as PRIME was retained by Finkbeiner, Pettis & Strout, Inc. to provide geotechnical engineering and subsequent construction inspection and materials testing services for the improvements made to the existing Westerly Wastewater Treatment Plant located in Aurora, Portage County, Ohio. Mr. Sivakumaran served as acting Resident Engineer at the site on an "as needed" basis to ensure contractor's to ensure work performed by contractor was in compliance with the contract drawings and specifications. His responsibilities included inspecting construction activities, coordinating between the designer and the contractor, and preparing daily field reports. He also oversaw the testing materials and reviewed the soil compaction and concrete test result sheets to ensure contractor's work was in compliance with the project specifications.

**Tuppers Plains Wastewater Facilities Improvements - Meigs County, Ohio.**
**July 1997 – September 1997**
PGI which is formally known as PRIME was retained by URS Greiner, Inc. to provide an experienced construction inspector to the Tuppers Plains Wastewater Facility in Meigs County, Ohio. This project included the construction of two new earth lagoons, two pump stations, gravity sewer lines, and an access road. Mr. Sivakumaran served as construction inspector/engineer to oversee the testing of materials and to document work to ensure that the work performed by the contractor was in compliance with project specifications. He approved borrow soils used in berm construction and performed subsequent compaction testing on-site

using a nuclear density meter to ensure contractor's compaction effort met the project specifications. Many undisturbed and re-compacted soil samples were collected from the berm for performing permeability tests and index tests to determine whether their hydraulic and index properties were in compliance with project specifications.

**Highway 407 - Six Lanes Toll Road – Toronto, Canada**
**April 1995 – April 1997**
Agra Earth and Environmental (formally known as Dominion Soil Investigation) was responsible for inspection and testing of this new multi-lane highway (69 km long, 125 bridges, and 27 interchanges). This highway was built in three years. Mr. Sivakumaran was part of a QA/QC team and served as construction inspector for a section of HW 407 between HW 404 and Duffrin Road to ensure work performed by the contractors were in compliance with the contract drawings, specifications and special provisions. His responsibilities included inspecting the approach fill embankments for bridge, scaffolding pads for flyovers, bridge and culvert structure backfill, MSE Walls, asphalt and concrete pavements, and monitoring compaction of granular pads for bridge abutments. He also oversaw the quality assurance of construction materials and coordinated with the laboratory.

**Dominion Soil Investigation - Toronto, Canada**
**April 1989 – April 1995**
Mr. Sivakumaran worked as a Soil Inspector/Laboratory technician while he was employed at Dominion Soil Investigation. His geotechnical experiences included evaluation of subsurface soils and groundwater conditions, classification of soils/bedrock, preparation of boring logs, and assisted in preparation of subsurface exploration reports. His laboratory testing experiences included construction materials testing of aggregate gradation, concrete strength, asphalt content/gradation, and geotechnical laboratory testing of moisture content, sieve and hydrometer analyses, Atterberg limits, Standard and Modified proctors, organic content and Unified Soil Classification. His materials testing experience in the field included sampling and testing of soil/asphalt/concrete. He monitored the installation of drilled shaft/piles, verified the soil bearing capacity of strip/spread/mat footings, evaluated the roadway/runway/bikeway subgrades, performed proof rolling, and inspected the construction of concrete pavements, storm /sanitary sewers, and monitored the compaction of building foundations to ensure work performed by contractors were in compliance with the contract drawings, specifications, and special provisions. He also performed drilling supervision for numerous subsurface exploration projects.