**Adnan Numan Al Khatib, B.Sc. M.Eng (Professional Engineer)**

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**Career Synopsis**

***Summary***

An accomplished Civil / Geotechnical engineer with a sound academic background and more than 30 years of international experience in consulting and construction supervision; Worked for reputable firms in North America, Europe, China and the Gulf Region; Able to plan, review and supervise geotechnical investigations, perform studies and analysis, review designs of foundations (deep and shallow) and good track record in value engineering; Experienced in construction, project management and quality control of transportation projects and infrastructure (LRT, Roads, Bridges, Tunnels, etc.); Extensive experience in geotechnical investigations, deep excavation, shoring, installation and stressing of rock and soil anchors, instrumentation and deformation monitoring, materials selection and approval and pavement.

***Strengths***

* Master’s degree in geotechnical engineering; completed graduate courses in Advanced Soil Mechanics, Foundation Design, Rock Mechanics, **Flexible and Rigid Pavement Design**, Slope Stability, etc.
* Registered Professional Engineer in the Province of Ontario, Canada (Since 1987).
* Excellent verbal and written communication skills; Proficient in technical report writing; Experienced in developing forms for all activities; Good track record in keeping detailed records and diaries by self and subordinates
* Extensive experience in construction of **Flexible and Rigid Pavement**, Bored and Cut & Cover Tunnels; Deep Excavations; Shoring; Rock and Soil Anchors; Deep Foundations; De-Watering and Instrumentation and monitoring of deformation.
* Good track record in **value engineering.**
* Well informed in safety rules and regulations; Labor laws and environmental protection regulations.
* Knowledgeable in contractual matters and conversant in FIDIC Contracts’ Conditions.

***Education***

1986 master’s degree in civil engineering (Geotechnical) - **Carleton University, Ottawa, Ontario**

***Training***

* Two courses and three seminars in tunneling (soft soil and rock) - **Edmonton, Alberta (1981-1983).**
* Two seminars and three workshops in pavement design and Construction – **Ottawa, Canada (1985- 1987).**
* Five seminars and workshops about ground improvements, soil stabilization, geotextiles, liners, earth reinforcement; **Flexible and Rigid Pavement design and construction** - **Toronto, Ontario (1989 -1996).**
* Four seminars and five workshops in tunnel support systems (NATAM Method), dewatering and assessment of rock conditions – **Thessaloniki, Greece** **(1999 - 2002).**

**Work Experience**

***April 2021 – Present Director – Geo Tek Engineering Inc***

 ***Ottawa, Ontario, Canada***

Directing the operation of the geotechnical firm. The duties include:

* *Preparing proposals for geotechnical investigations, construction and quality control including instrumentations and deformation monitoring, engineering studies, design review (foundations and* ***pavement****) and value engineering.*
* *Managing the field and laboratory works of the geotechnical investigations, preparing the recommendations for design and geotechnical perimeters and finalizing the reports.*
* *Performing value engineering to owners and consultants.*
* *Reviewing the design of the temporary supports and excavation schemes during construction.*
* *Following up with design consultants and owners.*
* *Managing quality control and material selection during construction.*

***June 2019 – April 2021 Freelance Engineer – Geotechnical Engineering, Materials, Value Engineering and Construction / Project Management***

***May 2012 - June 2019 Parsons International Ltd –*** *a Subsidiary of*

**Parsons** (of Pasadena, California, USA)

 ***Doha, Qatar***

***July 2017 – June 2019* Senior Construction Supervision Staff, Doha, Qatar**

**May 2012– July 2017 Director of Construction Supervision – GEC Project,** Qatar

Directed the construction supervision / construction management of the multibillion dollars project in south Doha to prepare the city to host the 2022 FIFA. The geotechnical work included:

* Review and approval of the geotechnical investigation to verify the geotechnical parameters and finalize the design of the structures, the pavement and the excavation schemes.
* Review and approval of the deep excavation schemes and shoring systems for excavations up to 18m deep. Also, in charge of construction supervision, quality control and overall construction management.
* Review and approval of the construction techniques and overseeing the construction management of the micro tunneling in soil and rock.
* Participation in finalizing the design of the pavement based on the results of the geotechnical investigations.
* Involvement in value engineering based on the encountered soil and rock conditions.
* Supervision of **asphalt and concrete pavement** including review and approval of the mix design and quality control of the pavement structure.

***Sep 2010 - May 2012 AECOM Middle East Ltd –*** *a Subsidiary of*

**AECOM**(of Los Angeles, California, USA)

 ***Abu Dhabi, U.A.E.***

**Construction Supervision Manager Al Raha Beach Development,** Abu Dhabi, UAE

Lead a team of 50 engineering staff to direct the construction supervision of the infrastructure for the largest development project in Abu Dhabi. The infrastructure of this $12.0 Billion development included building roads, interchanges, LRT, canals, marine works and other infrastructure.

***The performed geotechnical work on this project is similar to the work on the previously described work with Parsons in Qatar. Involved in variations and problem solving related to high water table, horizontal and vertical pile loads tests, assessment of pavement materials, compaction, quality and construction control.***

***Oct 2008 - May 2010 SYSTRA Dubai –*** *a Subsidiary of*

**SYSTRA S.A.** (of Paris, France)

***Dubai. U.A.E***

**Civil Works Manager – Dubai Tram,** Dubai, UAE

SYSTRA was the Engineer on a $1.2 Billion, 10km, design-build tramway Project. The Engineer was responsible for the design review and construction supervision. The project included building of a 2 km long viaduct (post-tensioned precast segments) supported on piers with pile foundations. The rest of the tramway was at grade and part of it passes over existing bridges requiring assessment and strengthening. The at grade stations each has a basement 8m deep requiring deep excavation and shoring.

**Lead a team of 50 staff to review the design and supervise the construction of all civil works**. The study and review team composed of engineers and specialists to review the designs and studies. The studies included topographic surveys, pre-construction surveying to record the pre-construction conditions, geotechnical investigation, etc.

Reviewed the supplied geotechnical data from all adjacent properties along the alignment and established a comprehensive geotechnical investigation program. Supervised the geotechnical investigation and reviewed and approved the final report. The design review included reviewing and approving the designs of the alignment, the viaduct including the deep foundations, the bridges and the strengthening of existing bridges and rest of the civil works.

The site supervision team included three Resident Engineers with their staff of engineers, surveyors, inspectors, supervising the construction of 1.5m and 25m long cast in place caissons, the pre-casting and erection of the viaduct including the post-tensioning and construction of the rest of the civil works. ***Performed value engineering which resulted in reducing the diameters and lengths of the designed caissons with a saving exceeded 30% of the original cost.***

***April 2007 - Oct 2008* Salfo & Associates Ltd** (of Athens, Greece)

 ***Doha, Qatar***

**Project Manager – Infrastructures, Roads and Tunnels – Hamad Int. Airport ,** Doha, Qatar

Directed the Construction Supervision of a $200 Million upgrade of a road altered to function as the main accesses to the **New Airport and involved in supervision of Taxi Way Pavement.**  The project included building **800m long cut & cover tunnel in a challenging soil conditions of reclaimed land by the sea. The work required installation of a diaphragm wall and special shoring system.** Planned and implemented a comprehensive geotechnical investigation program where the results were used to design the excavation scheme, the shoring system and to reassess the bridge foundations as part of the value engineering exercise. ***Proposed an alternative foundation of the bridge from caissons to shallow foundations and an alternative pavement system inside the tunnel with substantial savings in cost and time. The alternative pavement design resulted in better driving conditions with less maintenance.***

***Jul 2006 – Apr 2007 Hill International (Middle East) -*** *a Subsidiary of*

 ***Hill International*** (of Marlton, N.J.,USA)

 ***Dubai, U.A.E.***

 **Project Manager – Highways, Roads and Infrastructures, Dubai and Al Ain,** U.A.E. Managed the design and all preconstruction activities for:

* Widening of a 52km long major highway and a 20km ring road, Al Ain, UAE.
* Roads, bridges and other infrastructure in Dubai Land, Dubai, UAE

***Both projects included building large bridges, underpasses, interchanges and diversion of utilities.*** Reviewed the collection of data and the design by the consultants and coordinated their activities with clients. The work included preparation of contract’s documents;Pre-qualification of the bidding contractors; Preparation of the construction supervision documents and staffing, etc.

***Apr 1999 - Jul 2006 Del Leuw, Cather Overseas Ltd -*** *a Subsidiary of* **Parsons** (*of Pasadena, California, USA)*

 ***Veria, Greece & Dubai, U.A.E***

**Sep 2002 – Jul 2006 Senior Resident Engineer - Roads & Transport Authority,** Dubai, UAE

Lead a team of 16 professionals to supervise the construction and quality control of a $50 Million access roads and tunnels to **Terminal 3 of Dubai Airport**. Supervised part of the **retaining walls of the underground parking of the Terminal 3 of Dubai Airport**. The work included excavating to depths between 6 and 12m. ***Big savings in time and money (more than $8 Million) achieved by cancelling the shoring system after implementing the results of a comprehensive geotechnical investigation to perform stepped monitored excavation. A trial excavation with surcharge load was used utilizing the results of the investigation and a dewatering and monitoring scheme. A stable and safe stepped excavation was implemented utilizing the results from the trial excavation and the geotechnical study.***

Managed the construction supervision of $60 Million interchange, four tunnels and access roads to the internet city and Palm Island. ***Similar to the previous job, stepped excavation was used to excavate to depths reaching 11m without shoring by implementing a geotechnical investigation results, slope stability study and monitoring and dewatering schemes.***

Both projects were completed on time and slightly below budgets in spite of many variations and design changes requested by the client. High quality and excellent workmanship were achieved on both projects.

**Apr 1999 – Sep 2002 Resident Engineer – Egnatia Odos Expressway,** Veria, Greece

Led a team of 20 members to supervise two contracts worth $160 Million in both soft soil plains and challenging rugged mountainous area of **northern Greece**. The contracts consisted of building **six twin bored tunnels totaling more than 5 Km in length (NATM Technique)**, four bridges with foundation in challenging deep valleys and earth work, interchanges, huge quantities of earth works, 16 large scale culverts, underpasses and other infrastructures.

*The first contract included building an embankment 2 to 4m high on a reclaimed swampy ground requiring installation of wick drains in two locations and per-loading. Comprehensive geotechnical investigation, soil testing and analysis were carried out to finalize the design, method of construction, pre-loading and settlement monitoring of the embankment.*

***The second contract included building six twin tunnels and four bridges spanning over very deep valleys in a rugged mountainous region. The tunnels were bored using the New Austrian Tunneling Method (NATM) where drilling, blasting, excavation methods and temporary support system depends on the rock conditions at every stage of boring. The supervision team has to assess the rock conditions at every stage using the Barton and Bieniawski methods and to determine the support system and the dewatering scheme, if required, at each stage of boring. The portals of few tunnels were redesigned and comprehensive instrumentation and monitoring schemes were used to deduct the deformations. One of the tunnels with low overburden has experienced large deformation requiring major anchoring and support system***. Worked directly with the well-known rock expert ***Dr. Evert Hoek*** who was the consultant on tunnels and rock excavation in the project.

Following implementation of comprehensive geotechnical investigation and detailed topographical survey, significant savings were achieved by cancelling three bridges and replacing them by high embankments over large culverts utilizing the rock excavated from the tunnels. Some of the embankment over the culverts reached 15m high which required soil and rock assessment, slope stability analysis, meticulous quality control, instrumentation and deformation / settlement monitoring.

***Jul 1989 – April 1999 Gecon Inc -*** *a subsidiary of*

**SNC-Lavalin** *(of Montreal, Canada)*

 ***Toronto, Canada***

**Mar 1996 – Apr 1999 Resident Engineer,** Xijang, China

Acted as Consultant to the owner and agent to the financier (World Bank) during the construction of an expressway project in Xinjang (Northwest China). The duties included supervision, direction of quality control, and advice on design changes and other challenges for two contracts in a mountainous area. The works included high rock cuts, construction of bridges and viaducts over flood washes and river crossings, 15km of retaining walls, 1.5 Million cubic meters of earthworks. ***Involved in the slope stabilities of the rock cuts, the assessment of the soil and rock conditions supporting the bridge piers and supervision of cast in-situ piles (caissons).***

**Jul 1992 – Mar 1996 Senior Geotechnical Engineer, Toronto, Ontario, Canada**

Planned, supervised and managed geotechnical investigations and studies, performed analysis and prepared comprehensive reports for over 65 projects. Involved in the quality control, instrumentation, monitoring of deformation and other geotechnical works during construction of many projects. Some of the interesting projects are mentioned below.

***Extension of a Causeway in Kingston, Ontario, Canada:*** Directed the geotechnical investigation, the testing on retrieved soil and rock cores, performed the analysis and prepared the report. Anchored barge was used to perform the drilling of the deep boreholes in the lake. Provided recommendations for the design and construction of the causeway across Lake Ontario to the structural engineer.

**Large Pavement Structures for Mail Processing Plant and Oil Depot, Hamilton, Ontario:** Managed the geotechnical investigation and provided recommendations for the rigid pavement design of the heavy-duty rigid pavement design and involved in design review and selection and control of pavement materials. Supervised the construction of the pavement and performed the quality control of granular materials and concrete pavement.

**Jul 1989 – Jul 1992 Geotechnical Engineer, Toronto, Ontario, Canada** Carried out geotechnical investigations, analysis and report preparation on a wide range of projects; Involved in the construction supervision and control of several projects including:

***Trafalgar Falls Hydroelectric Project,******Dominica in the Caribbean***:Supervised the installation of active and passive rock anchors to stabilize an 80m high rock cliff supporting a penstock tunnel leading to the powerhouse. Installed instruments and monitored the movement to ensure construction safety and proper stabilization of the vertically jointed volcanic rock face. *Kept detailed records which were a key element in dispelling many claims.* ***Participated as an expert witness in the arbitration between the owner and the contractor two years after the completion of the project.***

***Burt Dam Hydroelectric Project, Burt, New York, USA*:** Directed the quality control during the operations to improve the stability of the concrete gravity dam, spillway and powerhouse; Supervised the drilling, installation and all field tests during installation and stressing of 800tons capacity rock anchors; ***Prepared the as built report to show the proper performance of the anchoring system to get the approval of the U.S. federal regulatory authorities.***

***Mar 1987- Jul 1989* Trow Consulting Engineers,**

 ***Toronto, Canada***

**Geotechnical Engineer - Projects in Toronto and Southern Ontario, Canada**

Carried out geotechnical investigations, analysis and report preparation on a wide range of projects in the Toronto area. Represented the firm on **four shoring projects** in downtown Toronto where deep excavations in soil and rock were performed adjacent to tall buildings and **subway lines**. One project was located near an historical landmark, two near **subway tunnels** and another one on the shore of Lake Ontario. **The projects included installation, grouting and stressing of more than 400 rock and soil anchors.** The projects also included **dewatering, underpinning and installation of piles and caissons**. Comprehensive **instrumentation and meticulous monitoring** were adopted at the four projects.