

## HADI – BARGHAMADI

Mahab Ghodss Consulting Engineering, Takharestan St. Vahid dastgerdi (Zafar) Ave.  
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### CAREER OBJECTIVES

Remarkably talented and experienced Civil and Geotechnical Engineer with over 12 years of experience in rock mechanics studying of 10 storage dams of Iran and two dams, tunnel & powerhouse of Sri-Lanka and managing of more than 20 geotechnical engineering projects. Presently working at Mahab Ghodss Consulting Engineering Company as a senior geotechnical engineer and geotechnical project manager. Now seeking to secure the professional and creative position as a geotechnical engineer in a high growth company in design and achievements of surface and underground rock and soil structures such as dams, tunnels, roads, trenches and foundations rehabilitation.

### KEY QUALIFICATIONS

- More than 10 years of experience in rock mechanics studying of storage dams and designing of underground spaces and rock slopes
- Supervision of field and laboratory soil and rock mechanics tests
- The exploratory galleries design and supervising galleries excavation
- Estimation of the rock mass properties and the discontinuity surface characteristics
- Estimation of the physical and mechanical properties of the sub-surface soil strata
- Deterministic and probabilistic analysis of underground spaces and rock slopes stability and designing the temporary rock support systems
- Study of the appropriate foundation type and estimation of dam foundation, shallow foundation and pile bearing capacity and settlement analysis
- Deterministic and probabilistic evaluation of the liquefaction potential of the soil strata and recommending the different soil improvement methods to improve the engineering properties of the soil strata
- Evaluation the problematic soils (expansive, collapsible and dispersive soils) and recommended the different soil improvement methods such as compaction, vibroflotation, sand drain, soil stabilization by admixture (lime, cement and fly ash), stone column, geogrid and pre-loading to improve the engineering properties of the soil strata.
- The rock excavations and rock support systems drawings design for the rock slopes and underground spaces and performing the quantity survey and cost estimating for the rock support systems
- Preparing rock mechanics studies and geotechnical reports

- Utilization of the engineering principles of soil and rock mechanics, geology and construction to understand their affects on the physical environment
- Able to communicate effectively and work on a team of hydraulics, geologists, construction engineers, structural engineers and clients
- Management of the rock mechanics team members including junior experts and technicians to follow the objects of the project and being always in time according to the timetable of the project
- Reliability and risk analysis, using Monte Carlo simulation method
- Probabilistic and statistical analysis
- Designing and supervision of steel and concrete structures

## LANGUAGES

- Persian Native Language
- English IELTS Test Score 09/Jul/2011: Speaking (7.5), Reading (6.0), Writing (6.0)

## PROFESSIONAL EXPERIENCE

### Employment Record:

From: 2001/12 To Present  
 Employer: MAHAB GHODSS CONSULTING ENGINEERS CO.  
 Positions held: Geotechnical (Soil and Rock Mechanics) Project Manager  
 Rock Mechanics Specialist  
 Soil Mechanics and Foundation Specialist

From: 1999/04 To 2001/12  
 Employer: MANDRO GEOTECHNICAL ENGINEERING CO.  
 Positions held: Project Manager  
 Soil Mechanics and Foundation Specialist

### MAHAB GHODSS CONSULTING ENGINEERS CO. (2002 up to present)

<http://www.mahabghodss.com>

**Name of project: Garmsiri Project, Kermanshah, Iran, (2013/9-Present)**

### Main project features:

- **Three earth-fill dams (Ezgeleh, Emam hasan and Konjancham Earth-fill Dams)**
  - **Ezgeleh Earth-fill Dam:** An earth fill dam with the height of 61 meters and reservoir's volume of 30 million cubic meters.
  - **Emam hasan Earth-fill Dam:** An earth fill dam with the height of 80 meters and reservoir's volume of 82 million cubic meters.

- **Konjancham Earth-fill Dam:** An earth fill dam with the height of 90 meters and reservoir's volume of 101 million cubic meters.
- **Three water conveying tunnels (T2, Sarpol Zahab and Bazideraz Tunnels)**
  - **T2 Tunnel:** Water Conveying tunnel with total length of about 3 km and diameter of about 5.5 m will be excavated by drilling and blasting.
  - **Sarpol Zahab Tunnel:** Water Conveying tunnel with total length of about 1.5 km and diameter of about 5 m will be excavated by drilling and blasting.
  - **Bazideraz Tunnel:** Water Conveying tunnel with total length of about 8.4 km and diameter of about 5.5 m will be excavated by TBM.
- **About 357 km Water Conveying System (Canals, Pipeline, Flume, Box, ...)**

**Positions held:** Geotechnical (Soil and Rock Mechanics) Project Manager

**Activities Performed:**

Responsible for managing and supervising geotechnical, Soil and Rock Mechanics, activities including:

- Construction of earth-fill dams
- Excavations and support systems installation of the underground spaces and rock and soil slopes
- Installation and monitoring of the geotechnical and structural instrumentations
- Evaluation the problematic soils (expansive, collapsible and dispersive soils) and recommended the different soil improvement methods
- Study of the appropriate foundation type and estimation of dam foundation, shallow foundation and pile bearing capacity and settlement analysis

Direct the preparation of technical memos, reports, construction specifications and other written documentation.

Management of the rock and soil mechanics team members including junior experts and technicians in the field

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**Name of project:** Uma Oya Multipurpose Project, Sri Lanka (2009-2012)

**Main project features:** The project consists of Civil and Hydro-mechanical parts of the Power Plant, two Dams and Water Conveying tunnels with total length of about 23 km will be excavated by Tunnel Boring Machine (TBM) and drilling and blasting, a 700m long vertical shaft, also Power Plant equipment including Electromechanical and auxiliaries, Switchyard and Transmission Line. The project phases are as follows:

- Phase 0 - Review Existing Documents and Prepare General Plan
- Phase I - Basic Studies Common to All Parts and Feasibility Studies
- Phase II - Detail Design (Reports and Drawings)

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for rock mechanics studies and supervision of field and laboratory rock mechanics tests, analysis of the tunnels and rock slopes' stability and designing the temporary rock support systems. In this project POYRY consulting engineers from Swiss (<http://www.poyry.com>) is joint venture with MAHAB GHODSS.

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**Name of project:** T2 Tunnel, Garmsiri Project, Kermanshah, Iran, (2012-2013)

**Main project features:** Water Conveying tunnel with total length of about 3 km and diameter of about 5.5 m will be excavated by drilling and blasting.

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for rock mechanics studies of phase 2, Supervision of laboratory rock mechanics tests, analysis of the underground spaces and rock slopes' stability and designing the temporary rock support systems. Responsible for visiting the site and supervision of the rock slopes and underground spaces excavation and rock support systems installation.

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**Name of project:** Sarpol Zahab Tunnel, Garmsiri Project, Kermanshah, Iran, (2012-2013)

**Main project features:** Water Conveying tunnel with total length of about 1.5 km and diameter of about 5 m will be excavated by drilling and blasting.

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for rock mechanics studies of phase 2, Supervision of laboratory rock mechanics tests, analysis of the underground spaces and rock slopes' stability and designing the temporary rock support systems. Responsible for visiting the site and supervision of the rock slopes and underground spaces excavation and rock support systems installation.

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**Name of project:** Ezgeleh Earth-fill Dam, Garmsiri Project, Kermanshah, Iran, (2012-213)

**Main project features:** An earth fill dam with the height of 61 meters and reservoir's volume of 30 million cubic meters.

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for rock mechanics studies of phase 2, Supervision of laboratory rock mechanics tests, analysis of the underground spaces and rock slopes' stability and designing the temporary rock support systems. Responsible for visiting the site and supervision of the rock slopes and underground spaces excavation and rock support systems installation.

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**Name of project:** Khersan II Concrete Arch Dam and Power Plant, Bakhtiyari, Iran (2005-2009)

**Main project features:** Khersan 2 dam, a concrete arch dam with the height of 240 meters from the foundation and the reservoir volume of 2142 million cubic meters, consists of two tunnels with total length of about 1150 m and diameter of about 10 m and a power plant, was designed to generate 1497 GWh/year electrical energy.

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for rock mechanics studies of phase I, Supervision of field and laboratory rock mechanics tests, analysis of the underground spaces and rock slopes' stability and designing the temporary rock support systems. Management of the rock mechanics team members.

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**Name of project:** **Shahryar (Ostour) Concrete Arch Dam, E. Azarbaijan, Iran (2005-Present)**

**Main project features:** A concrete arch dam with the height of 141 meters from the foundation. Responsible for reviewing and approving the rock mechanics studies carried out by the Stucky-Electrowatt (Switzerland) joint venture.

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for visiting the site and supervision of the rock slopes and tunnels excavation and rock support systems instalation.

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**Name of project:** **Safa Earth-fill Dam, Kerman, Iran (2009-Present)**

**Main project features:** An earth dam with the height of 85 meters and reservoir's volume of 126 million cubic meters.

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for visiting the site and supervision of the rock slopes and diversion tunnels excavation and rock support systems instalation. Responsible for reviewing the rock mechanics studies carried out in phase II.

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**Name of project:** **Bakhtiyari Storage Dam, Lorestan, Iran (2004)**

**Main project features:** A concrete arch dam with the height of 315 meters from the foundation and reservoir's volume of 4800 million cubic meters.

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for Supervision of in-situ rock mechanics tests carried out by ROCTEST TELEMAT (HORIZON ENGINEERING ING) company.

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**Name of project:** **Jarreh Earth-fill Dam, Khuzestan, Iran (2004-Present)**

**Main project features:** An earth fill with clay core dam with a height of 113 m, the dam body volume of 7 million cubic meters, the reservoir volume of 180 MCM and the power plant capacity of 9 MW.

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible visiting the site and supervision of the rock slopes and diversion tunnels excavation and rock support systems installation.

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**Name of project: Polroud Earth-fill Dam, Guilan, Iran**

**Main project features:** An earth fill dam with the height of 75 meters and reservoir's volume of 65 million cubic meters.

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for rock mechanics studies of phase II and pile bearing capacity and settlement analysis of a bridge.

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**Name of project: Kuran bozan Storage Dam, Kermanshah, Iran (2002-2004)**

**Main project features:** A rock-fill dam with the height of 160 m, the dam body volume of 15,100,000 m<sup>3</sup>, the reservoir volume of 4,022 MCM and power plant capacity of 278 MW (in two units).

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for rock mechanics studies of phase I, Supervision of field and laboratory rock mechanics tests, analysis of the underground spaces and rock slopes' stability and designing the temporary rock support systems.

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**Name of project: Siminerood Earth-fill Dam, W. Azarbaijan, Iran (2005-2007)**

**Main project features:** An earth fill dam with the height of 47.5 meters and reservoir's volume of 364 million cubic meters.

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for rock mechanics studies of phase 2, Supervision of laboratory rock mechanics tests, analysis of the underground spaces and rock slopes' stability and designing the temporary rock support systems. Responsible for visiting the site and supervision of the rock slopes and underground spaces excavation and rock support systems installation.

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**Name of project: Bar Earth-fill Dam, Khorasan, Iran (2003)**

**Main project features:** An earth fill dam with the height of 60 meters and reservoir's volume of 59 million cubic meters.

**Positions held:** Rock Mechanics Specialist

**Activities Performed:** Responsible for rock mechanics studies of phase II and Supervision of laboratory rock mechanics tests.

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**Name of project: Karkheh Irrigation, Drainage Network, Gravitational Water Offtake and Conveyance to Azadegan and south Karkheh Lands, Khuzestan (2002)**

**Main project features:** The Karkheh irrigation and drainage network consist of 27.5 km of main canals, 104 km of primary canals, 246.5 km of secondary canals, 28 km of main drains, 73.5 km of primary drains, 356 km of secondary drain and waste-ways and 23 pumping stations.

**Positions held:** Soil Mechanics and Foundation Specialist

**Activities Performed:** Responsible for foundation and soil mechanics studies, supervision of laboratory soil mechanics tests, estimation the physical and mechanical properties of the sub-surface strata, evaluation the problematic soils (expansive, collapsible and dispersive soils) and recommended the different soil improvement methods such as compaction, vibroflotation, sand drain, soil stabilization by admixture (lime, cement and fly ash), stone column, geogrid and pre-loading to improve the engineering properties of the soil strata.

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**Name of project: Irrigation, Drainage Network of North and South of Abadan and Khoramshahr, Khuzestan (2002)**

**Main project features:** The North and South of Abadan and Khoramshahr irrigation and drainage network consist of 67 km of main canals, 11 km of primary canals and 2 secondary pumping stations.

**Positions held:** Soil Mechanics and Foundation Specialist

**Activities Performed:** Responsible for foundation and soil mechanics studies, supervision of laboratory soil mechanics tests, estimation the physical and mechanical properties of the sub-surface strata, evaluation the problematic soils (expansive, collapsible and dispersive soils) and recommended the different soil improvement methods.

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**Name of project: Barezu Irrigation and Drainage Network and Diversion Dam, Khorasan**

**Main project features:** The Barezu irrigation and drainage network consist of 73.1 Km pressurized pipeline with 421 structures and a concrete diversion dam with the head from the bed of river of 5 m and free spillway of 54.5 m length.

**Positions held:** Soil Mechanics and Foundation Specialist

**Activities Performed:** Responsible for foundation and soil mechanics studies.

**MANDRO GEOTECHNICAL ENGINEERING CO. (2000-2002)**

<http://www.chase-mandro.com>

**Positions held:** Project Manager, Soil Mechanics and Foundation Specialist

**Activities Performed:** Responsible for managing and supervising geotechnical investigation and soil mechanics studies, providing the geotechnical investigation and soil mechanics studies report, assessment of laboratory and field tests, studying the appropriate foundation type and determining the load bearing capacity of the surface and the deep foundations, assessment of the problematic soils (liquefied, expansive, collapsible and dispersive soils) and recommending the different soil improvement methods such as dynamic compaction, pre-loading, vibroflotation, sand drain, soil stabilization by admixture (lime, cement and fly ash), stone column, geogrid and pre-loading to improve the engineering properties of the soil strata, for a variety of structures, including urban and industrial buildings, refineries, canals, pipelines and, etc. such as:

**Name of project: Geotechnical Investigation and Soil Mechanics Studies of Ship Building Complex of Caspian Sea, Neka (2001)**

**Main project features:** The project consists of an off-shore concrete platform resting on steel piles, which can lift ships by the weight of 3000 tons and dimension of 20mx100m (max.), Rails to transfer ships from lift area to workshops and four rails with total width of 12.5m laying on a concrete mat foundation.

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**Name of project: Geotechnical Investigation and Soil Mechanics Studies of Kazeroon Gas Power Plant, Kazeroon**

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**Name of project: Geotechnical Investigation and Soil Mechanics Studies of Gordan Pipe Line, Gordan**

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**Name of project: Geotechnical Investigation and Soil Mechanics Studies of Electric Line of Force of Hamedan-Saveh Power Plant, Hamedan-Saveh**

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**Name of project: Geotechnical Investigation and Soil Mechanics Studies of Dry Dock Construction Site, Hormozgan, Project Manager**



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**Name of project: Geotechnical Investigation and Soil Mechanics Studies and Liquefaction Analysis for Talghan Dam Foundation, Talghan,**

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**Name of project: Geotechnical Investigation and Soil Mechanics Studies of Railway Stations, Gharchak & Varamin**

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**Name of project: Geotechnical Investigation and Soil Mechanics Studies of Mosque of Tehran Medical Science University, Tehran**

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**Name of project: Geotechnical Investigation and Soil Mechanics Studies of Electric Stations, Shooshtar & Mahshahr & Khorramshahr**

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**Name of project: Geotechnical Investigation and Soil Mechanics Studies of Masoomeh Holy Shrine Development, Ghom**

#### **IRANIAN CONSTRUCTION ENGINEERS ORGANIZATION (2001 up to present)**

<http://www.irceo.org/default.asp>

**Activities Performed:** Responsible for modeling, analysis, and design of four four-story buildings with steel moment and flexibility-connected frame, assessment and approve of 10 four-story steel and concrete building design reports and construction drawings, and supervision of more than 20 four-story steel and concrete buildings construction.

#### **PROFESSIONAL MEMBERSHIP**

- Iranian Construction Engineers Organization
- Iranian Society of Rock Mechanics (IRSRM)
- Iranian Tunnelling Association (IRTA)

#### **EDUCATION**

- M.Sc. Geotechnical Engineering, Tehran University, 2000, thesis : Liquefaction potential analysis by using the Monte Carlo simulation method

- B. Sc. Civil Engineering, Sharif Technical University , 1998

#### LEARNING & TRAINING COURSES

- "Hydraulic fracturing, theory and applications" workshop, 15 December 2007, Iranian Society of Rock Mechanics (IRSRM), presented by Dr. F. Rummel, Tehran, Iran
- "Rock engineering for drill and blast and TBM tunneling and important aspects of rock joints and rock mass behavior" workshop, 4-5 February 2008, Iranian Society of Rock Mechanics (IRSRM), presented by Dr. N. Barton, Tehran, Iran
- "Tunnel excavation by Tunnel Boring Machine (TBM)" workshop, 18 February, 2010, Iranian Committee On Large Dams, Tehran, Iran
- "Mechanical Excavation & Tunnelling Short Course", 28-29 December, 2010, Nashrefan, Training Center, presented by Dr. G. Rostami ,Tehran, Iran
- English training courses
- Advanced training in Autocad and Microsoft Office software

#### PAPER PUBLICATIONS

- H. Barghamadi, M. Latifi Namin, "*Probabilistic evaluation of liquefaction potential*", 1st International Conference of Geotechnical engineering for disaster mitigation and rehabilitation, Singapore, 12 - 13 December 2005.
- H. Barghamadi, M. Ebrahim Bakhtiari, "*Determination of the probability distribution functions of discontinuity shear strength parameters by using the Monte-Carlo simulation method*", 3st Conference of Rock mechanics, Iran, 25 – 27 Ordibehesht 1386.

#### COMPUTER SKILLS

- Rock slope & Tunnel software: Udec, Phase2, Rocsupport, Swedge, Unwedge, Roclab, Rocplane, Slide
- Geotechnical software: Plaxis, Flac 4.0, Shake, Feadam, Seepage, Stabile, Geoslope
- Structural software: Sap, Safe, Etabs
- Miscellaneous software: Autocad, Office, Surfer, Spss, Statistica, @Risk

#### PERSONAL

**Marital Status:** Married **Date of Birth:** 1975 **Nationality:** Iranian  
References are available upon request.