2014

EARTHSPECTIVES

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GEOTECHNICAL SPECIALITY ENGINEERING

- **Deep Foundations Non Destructive Testing**
- **Pile Driving Analysis and Monitoring**
- **Static and Dynamic Load Testing**
- **Vibration Monitoring**

HOSSEIN K. RASHIDI
Principal Engineer

Dr. Rashidi has over 26 years of experience in geotechnical engineering in both the U.S. and abroad. His technical expertise includes piles and piers, ground improvement, seismic slope stability, dynamic soil structure interaction, and liquefaction. He is experienced with the newest numerical and experimental techniques for analyzing site response, liquefaction, and dynamic soil-pile interactions including earthquake loading. He is experienced in project management in both the construction and consulting industries. Dr. Rashidi has published 7 papers and has been actively involved in a number of conferences. He has been in charge of day to day operations of EarthSpectives since May of 1995.

Highest degrees earned by Dr. Rashidi are an M.S. in Structural Engineering from the University of Mangalore, India (1985), and a Doctorate in Geotechnical Engineering from the University of California, Davis (1992).

Major employment opportunities held by Dr. Rashidi include the following:

- Diaz. Yourman and Associates (1993-1995), Project Engineer in charge of geotechnical field investigation for port structures including liquefaction analysis and ground improvement recommendations.

- Hushmand Associates (1992-1993), Project Engineer in charge of seismic slope stability analysis of landfills and centrifuge model studies to investigate the stability of rock dikes for pier 400 in Port of Los Angeles.

- University of California, Davis (1987-1992), Research Engineer in the areas of non-destructive soil testing and centrifuge model studies of soil-pile interaction during earthquake.

- Fadak Consulting Engineers, Tehran, Iran (1985-1987), Project Engineer overseeing the design and construction of earth dams.

Dr. Rashidi is a Professional Engineer registered in California and Nevada and member of the following professional societies: ASCE, ASFE, ASNT, CGEA, DFI, ADSC. He is also the project manager for an on-call contract with the State of California, Department of Transportation, overseeing the non-destructive testing of drilled piers, constructed as part of Caltrans seismic retrofit of bridges in California.

Hossein K. Rashidi
Project experience with Deep Foundations Testing

Gerald Desmond Bridge Replacement Project, Long Beach, California – Provided gamma-gamma logging (GGL) for over 200 Cast-In Drilled Hole (CIDH) piles with nominal diameters of up to 96 inches and appromimately up to 180 feet-deep to test the structural integrity of the piles for Gerald Desmond Bridge Replacement Bridge in Long Beach, California. Anomalies that were found in GGL were verified using cross-hole sonic logging (CSL). This is an ongoing project. Client: Shimmick/FCC/Impregilo JV.

Port of Long Beach Middle Harbor Redevelopment – Stage 2, Port of Long Beach, Long Beach, California -Provided Pile Dynamic Analyzer (PDA) monitoring and interpretation for the piles driven at Pier E. Approximately 925 112-foot and 116-foot- long, 24-inch octagonal prestressed concrete piles were driven from a barge using ICE 1514 hammer and from land using Delmag 80 hammer. Recommendations were given regarding bearing capacity at the end of driving and upon retap and regarding integrity of the pile. Client: Manson Construction.

California High-Speed Rail – Seg 1. – Provided gamma-gamma logging (GGL) for 4 Cast-In Drilled Hole (CIDH) load test piles with nominal diameters of 120 inches and approximately between 80 and 110 feet-deep to test the structural integrity of the piles. This is an ongoing project, and the actual production piles will be starts by the end of 2015. Client: Becho, Inc.
Mid City / Exposition Light Rail Transit Project, Culver City, California – Provided gamma-gamma logging (GGL) for 31 drilled shafts and cross-hole ultrasonic logging (CSL) for 2 drilled shafts to confirm the anomalies that were found in GGL testing. 2 and 12 feet diameter shafts were approximately 60 and 80 ft deep and were cast under slurry. Client: Belfour Beatty Infrastructure, Inc.

Tenaska Solar Project, Calexico, California – Provided cross-hole ultrasonic logging (CSL) for a drilled shat with 104 inches nominal diameter and approximately 45 ft deep. Shaft sonic testing was requested at this juncture primarily to evaluate the structural integrity of the pile. Client: Aldridge Electric.

The Lincoln Runway, Playa Vista, California – Provided gamma-gamma logging (GGL) for 145 auger pressure grouted displacement (APGD) piles and Sonic Echo (SE) testing for 30 APGD piles with 14-in diameter and approximately 60 feet-deep that were constructed for an apartment complex to test the structural integrity of the pile. Client: Group Delta Consultants, Inc. Project Engineer: Dr. Ying Liu.

Michelson Water Reclamation Project Expansion, Irvine, California - Provided analysis and monitoring of vibrations resulting from demolition work and driving of 14-in concrete piles installed within 15 ft of sensitive water purification systems and pipelines. Monitoring of the vibration levels and frequencies in the vicinity of the buidings, tanks, and pipelines during demolition and pile driving confirmed that vibrations remained below acceptable levels, as indicated by the preliminary analysis and those set by the owner. Client: FILANC Construction Company. Owner: Irvine Ranch Water District.

I-405 Sepulveda Pass Project, Los Angles, California – Provided gamma-gamma logging for Cast-In Drilled Hole (CIDH) piles with nominal diameters between 48 inches and 120 inches for several bridges that were constructed in the project to test the integrity of the shafts. Anomalies found in GGL testing were confirmed using cross-hole ultrasonic logging (CSL). Client: RMA Group, Inc.

Cal Poly Pomona Recreational Center, Pomona , California – Provided gamma-gamma logging (GGL) for 285 Cast-In Drilled Hole (CIDH) piles with nominal diameter of 24 inches and approximately 30 and 40 feet-deep to test the structural integrity of the pile. Client: Geocon Incorporated, Inc. Project Engineer: Mr. Rod Mikesell

Hossein K. Rashidi
Project experience with Deep Foundations Testing

S405-E22 Connector Separation, Orange County, California - Provided cross-hole ultrasonic logging (CSL) for four drilled shafts that were constructed for sign foundations with 60 inches nominal diameter and approximately 30 feet-deep. Shaft sonic testing was requested at this juncture primarily to evaluate the structural integrity of the pile. Client: Gerco Contractors.

Anaheim Regional Transportation Intermodal Center (ARTIC), Anaheim , California – Provided gamma-gamma logging (GGL) for 48 Cast-In Drilled Hole (CIDH) load test piles with nominal diameters of 24 through 120 inches and approximately between 50 and 90 feet-deep to test the integrity of the pile. Anomalies that were found in GGL were then confirmed using cross-hole ultrasonic logging (CSL). Client: City of Anaheim.

I-405 Sepulveda Pass Widening Design-Build Project, Los Angeles County, California – Provided analysis and monitoring of vibrations resulting from traffic of freeway in Pico avenue bridge over Interstate 405 freeway. Client: Kiewit.

I-5 Improvements in Los Angeles, Glendale, and Burbank, Los Angeles County, California - Provided analysis and monitoring of vibrations resulting from pile driving operation on adjacent properties as well as existing abutments. Pile driving activities were done in multiple sections along Interstate 5 freeway. Vibration levels and frequencies were monitored to confirm that they remained within acceptable levels in accordance with project specifications. Client: Security Paving Company, Inc.

Hyundai Motor America Headquarters, Fountain Valley, California - Provided analysis and monitoring of vibrations resulting from pile driving operation on three sides of the property adjacent to potentially impacted structures to confirm that vibrations remained below acceptable levels. Client: LEIGHTON, Inc.

I-405/22 West County Connector, Orange County, California - Provided analysis and monitoring of vibrations resulting from the pile driving activities at Abutment 1 of bridge 55-1103E on the property located at 12836 Bailey Street, Garden Grove, California to confirm that vibrations remained within acceptable levels. Client: Foundation Pile, Inc.

Route 57 Widening Project, Route 57 North Over South Placentia Avenue, Placentia, California - Provided analysis and monitoring of vibrations resulting from pile driving operation at the southeast corner of Route 57 and South Placentia Avenue on two residences in Encinitas way to confirm that vibrations did not cause any damages to the wood structures. Client: Foundation Pile, Inc.

Port of Long Beach Maintenance Building, Long Beach, California - Provided analysis and monitoring of vibrations resulting from pile driving operation on the underground gas line as well as the surrounding structures. Vibration levels and frequencies were monitored on top of the pipe and at the ground surface during pile driving to confirm that vibrations remained below acceptable levels. Client: Foundation Pile, Inc.

I-405 Sepulveda Pass Widening Design-Build Project, Los Angeles County, California – Provided analysis and monitoring of vibrations resulting from driving of steel and concrete piles for various bridges driven within 25’ of Metropolitan Water District (MWD) concrete encased 96-inch pipeline (Sepulveda Feeder) passing along the Sepulveda Boulevard. Vibration levels and frequencies were monitored on top of the pipe and at the ground surface during pile driving to confirm that vibrations remained below acceptable levels, as indicated by the preliminary analysis and indicator program. Client: Earth Mechanics, Inc.

Sand Canyon Grade Separation, Irvine, California – Provided analysis and monitoring of vibrations resulting from vibrating thirty nine AZ17 Sheet piling pairs installed adjacent to Irvine Ranch Water Districts (IRWD) 48” water pipe which runs 12’ below grade in Sand Canyon Avenue. Vibration levels and frequencies were monitored on top of the pipe and at the ground surface during pile driving to confirm that

vibrations remained below acceptable levels, as indicated by the preliminary analysis and indicator program. Client: C C Myers, Inc.

The LEX on Orange, Glendale, California – Provided analysis and monitoring of vibrations resulting from driving of several soldier piles (Steel H-Piles) on close proximity of existing businesses and residences in relatively old buildings, warranting the consideration of a potential structural damage resulting from those activities. Vibration levels and frequencies were monitored to confirm that they remained within acceptable levels, as indicated by the preliminary analysis. Client: Hill Contracting Group.

Camden – Glendale Triangle, Glendale, California - Provided analysis and monitoring of vibrations resulting from pile driving operation on close proximity of existing buildings in San Fernando Avenue, Los Feliz Avenue and Central Avenue. Vibration levels and frequencies were monitored to confirm that they remained within acceptable levels in accordance with project specifications. Client: Bernards Construction.

Valley View Grade Separation Project, La Mirada, California – Provided analysis and monitoring of vibrations resulting from pile driving within close proximity of a high-precision manufacturing facility. Vibration levels and frequencies were monitored to confirm that vibrations remained within acceptable levels to prevent any damages caused to the building or the manufacturing equipments. Client: Griffith Company.

Pacific Avenue Arts Colony, Sand Pedro, California - Provided gamma-gamma logging (GGL) for 25 auger pressure grouted displacement (APGD) piles including 9 test piles with 14-in diameter and approximately 60 through 75 feet-deep to test the structural integrity of the pile. Client: Group Delta Consultants, Inc. Project Engineer: Dr. Ying Liu.

I-215 Widening, Scotts Road to Nuevo Road, Riverside County, California – Provided gamma-gamma logging for 135 Cast-In Drilled Hole (CIDH) piles with nominal diameters between 24 inches and 72 inches for several bridges that were constructed in the project to test the integrity of the shafts. Anomalies found in GGL testing were confirmed using cross-hole ultrasonic logging (CSL). Client: Jacobs Engineering Group, Inc.

Highway 101/46 Auxiliary Lane Overhead Sign Structure, Paso Robles, California - Provided gamma-gamma logging for a Cast-In Drilled Hole (CIDH) pile that was constructed for overhead sign structure with nominal diameter of 60 inches and approximately 23 ft long to test the structural integrity of the shaft. Client: Earth Systems Pacific.

LAC Central Utility Plant Replacement, Los Angeles International Airport, Los Angeles, California - Provided cross-hole ultrasonic logging (CSL) for three drilled shafts with 36 inches nominal diameter and approximately 60 feet-deep. Shaft sonic testing was requested at this juncture primarily to evaluate the structural integrity of the pile. Client: CLARK McCARTHY A JOIN VENTURE.

Brewer Road Bridge, Placer County, California – Provided gamma-gamma logging (GGL) for 2 Cast-In Drilled Hole (CIDH) piles with nominal diameter of 24 inches and approximately 50 feet-deep to test the structural integrity of the pile. Client: Holdrege & Kull

Jefferson Elementary School Addition and Modernization, Berkley, California – Provided gamma-gamma logging for 5 Cast-In Drilled Hole (CIDH) piles with nominal diameters between 24 inches with approximately 29 through 43 feet-deep. Anomalies found in GGL testing were confirmed using cross-hole ultrasonic logging (CSL). Client: Turner Construction Company.

Hossein K. Rashidi

Project experience with Deep Foundations Testing

Green Beach Road Bridge, P168A Operations Access Points, Camp Pendelton, California – Provided cross-hole ultrasonic logging (CSL) and gamma-gamma logging for 8 Cast-In Drilled Hole (CIDH) piles with nominal diameters between 90 inches with approximately 66 through 81 feet-deep. Client: Reyes Construction Inc.

10000 Santa Monica Boulevard, Los Angeles, California - Provided gamma-gamma logging (GGL) for 27 auger pressure grouted displacement (APGD) test and reaction piles with 14-in diameter and approximately 60 feet-deep that were built to support 40 story residence building to test the structural integrity of the pile. Client: SM 10000 Property LLC.

Cow Camp Road – Chiquita Canyon Bridge, Orange County, California – Provided gamma-gamma logging (GGL) for 10 Cast-In Drilled Hole (CIDH) piles with nominal diameters of 108 and 120 inches and approximately between 60 and 120 feet-deep to test the structural integrity of the piles. Client: GMU GEOTECHNICAL, INC.

Streeter Avenue Undercrossing, Riverside, California – Provided gamma-gamma logging (GGL) for 9 Cast-In Drilled Hole (CIDH) load test piles with nominal diameters of 72 inches and approximately between 90 and 100 feet-deep to test the structural integrity of the piles. Anomalies that were found in GGL were then confirmed using cross-hole ultrasonic logging (CSL) for one pile. Client: CHJ Incorporated.

Rose Canyon BOH widening – I805 Design Build Project, San Diego, California – Provided gamma-gamma logging (GGL) for 8 Cast-In Drilled Hole (CIDH) piles with nominal diameters of 36 inches and approximately 83 feet-deep to test the structural integrity of the piles. Client: Condon-Johnson & Associates, Inc.

Clinton Keith Road Overcrossing (Widen), Riverside, California – Provided gamma-gamma logging for 48 Cast-In Drilled Hole (CIDH) piles with nominal diameters between 24 inches with approximately 27 through 40 feet-deep. Client: Hill International, Inc.