

Resume of Steven K. Abe, PE

Professional Engineering Licenses and Certifications

- California No. C055277
- Nevada No. 15825
- Foundation QA Pty. Ltd. (Dynamic Pile Testing Certificate - Advanced Level)

Education

- 1986-1988- MSCE Cleveland State University, Cleveland, Ohio
- 1980-1984- BS Geological Sciences; University Of Michigan, Ann Arbor, Michigan

Professional Experience

Steven K. Abe has over twenty years experience in geotechnical engineering specifically in the deep foundation industry specializing in the area of pile testing and pile driving analysis. He has performed pile testing and consulting services on piling projects around the world including major bridge projects such as the San Francisco Bay Bridge, Carquinez Bridge, and San Mateo Bridge in California; Major Port projects at The Ports of Los Angeles, CA, Long Beach, CA, Oakland, CA, and Tacoma, WA; and Several Off-shore Oil Platform installation projects in Africa, China, and the Persian Gulf. He has extensive experience in providing the following specialty testing and analysis services for the deep foundation industry:

- **Dynamic Pile Testing using the Pile Driving Analyzer® (PDA)**, to measure pile capacity, pile, soil and hammer performance during driving or restrike. Performed on all types of driven piles, including steel piles, concrete, or timber piles, as well as on drilled piles and auger-cast piles.
- **CAPWAP® Analysis-** a **signal matching** program for calculating soil resistance distribution and dynamic soil parameters using pile top force and velocity measured during pile driving by a PDA.
- **GRLWEAP™**, a **wave equation analysis** program for prediction of capacity, blow count, and stresses during pile driving.
- **Pile Driveability Analysis-** Required for most Caltrans projects to evaluate the suitability of proposed pile driving equipment prior to construction. The process involves estimating soil resistance profiles based on static capacity analysis procedures and performing GRLWEAP analysis.
- **Static Pile Capacity Analysis-** Perform pile design based on the project geotechnical data and structural load requirements.
- **PIT (Pile Integrity Testing)-** A “low strain” non-destructive testing procedure, which uses the pulse-echo method to check the length of, or detect defects in cast-in-place or driven piles. Routinely used to determine pile lengths for existing piles under existing structures.
- **SPT energy measurements**, using the PDA and instrumented SPT rods to measure and calibrate the energy efficiency of SPT hammers used for geotechnical investigations. Required for ASTM D6066 standard when SPT is used for liquefaction evaluation.
- **CSL (Cross-hole Sonic Logging)-** Non-destructive test, which involves pulling Sonic, probes through inspection pipes to evaluate concrete quality and detect defects in drilled shafts or slurry walls. The result consists of logs of wave velocity, which correlates to concrete quality.
- **GGL (Gamma-gamma Logging)-** A non-destructive test performed on CIDH piles or concrete walls, which uses a nuclear density probe to create a log of average bulk density vs. pile depth. Deviations in average bulk density are used to identify pile anomalies or defects and to assess pile/concrete quality.
- **Vibration and Sound Monitoring-** Vibration and noise compliance monitoring services for pile driving projects. Experienced in ground vibration monitoring and sound monitoring in air and water.
- **Magnetic Field Induction Logging-** Downhole logging method used to determine in-situ lengths of steel piles and sheet piles
- **Becker Testing-** Monitor Becker hammer and drill with the PDA in a manner similar to SPT energy measurements, to evaluate hammer performance and soil; resistance vs. depth.

Employment History

- 2002-Present- Owner/Principal Engineer, Abe Construction Services, Inc., Walnut Creek, CA; Deep foundation testing and analysis.
- 1995-2002- Branch Manager/ Sr. Engineer, GRL Engineers, Inc., Walnut Creek, CA; Deep foundation testing and analysis.
- 1988-2002- Engineer, GRL Engineers, Inc., Cleveland, OH; Deep foundation testing and analysis.
- 1986-1988- Research Engineer, NASA Lewis Research Center, Cleveland, OH; Non-destructive evaluation, fatigue analysis, and fracture mechanics of composite materials.

Project Experience

A partial project experience list for Steve Abe is attached.

Professional Affiliations

ABE Engineering is an active member of ASCE, the Deep Foundation Institute, and the Pile Driving Contractors Association.

Publications and seminars

Mr. Abe has authored and presented several technical papers for publications and conferences such as Geotechnical News, the Deep Foundation Institute, The International Stress-wave Conference, and ASCE (American Society of Civil Engineers). He has also presented and participated in numerous seminars regarding dynamic pile testing, wave equation analysis, and non-destructive pile integrity testing.

ABE Engineering- Partial Project Experience List for Dynamic Pile Testing

Job Description	City	State	Country	Client
San Francisco Bay Bridge	San Francisco	CA	USA	Kiewit Pacific/ KFM
Concord Naval Weapons Station, Pier 3	Concord	CA	USA	Dillingham
Alpha Bravo Wharf Improvements	Polaris Point	Guam		Black Construction
Emergent Repair Shop	Polaris Point	Guam		Black Construction
San Mateo Bridge Retrofit	San Mateo	CA	USA	MK Construction
Carquinez Bridge	Crockett	CA	USA	FCI Constructors
Port of Long Beach- Pier T	Long Beach	CA	USA	Leighton & Assoc.
NDOT Us 95A Interchange	Fernley	NV	USA	Jarrett Foundation
NDOT Hwy 50 A Interchange	Fernley	NV	USA	Jarrett Foundation
Carson Bybass	Carson City	NV	USA	Ames Construction
Port of Los Angeles- New Dock Street	Los Angeles	CA	USA	Geofon, Inc.
New Benicia Bridge	Benicia	CA	USA	Kiewit Pacific
Port of Los Angeles, Pier 301	Los Angeles	CA	USA	Geofon, Inc.
NDOT- Kings Canyon Canal Bridge	Carson City	NV	USA	Jarrett Foundation
Lopez Dam	Arroyo Grande	CA	USA	Hayward Baker
Port of Oakland, Berths 57-58	Oakland	CA	USA	Manson / Dutra
Port of Oakland-Berth 59	Oakland	CA	USA	Subsurface Consultants, Inc.
MCON Project 262R; Pier 7 Upgrade, Naval Station	San Diego	CA	USA	General Construction Company
NDOT- Tungsten Rd Bridge	Lovelock	NV	USA	Foundation Constructors
Carnival Cruise Terminal	Los Angeles	CA	USA	Kajima
Sacramento Airport	Sacramento	CA	USA	Kleinfelder
ZAP Platform Installation	Congo		Africa	Chevron
ACT Production Platform	South China Sea		China	Texaco/ Chevron
Lake Las Vegas	Las Vegas	NV	USA	Kiewit Pacific
Delta Energy Center	Antioch	CA	USA	Foundation Constructors
Pearl Harbor Container Facility	Pearl Harbor	HI	USA	Nordic Construction
US Coast Guard Station	Honolulu	HI	USA	Lahaina Pile
Coast Guard Island Bridge	Alameda	CA	USA	Dutra Construction
US Navy Hazmat Facility	Guam		USA	Black Construction
NDOT- Boulder Hwy @ Flamingo Wash	Las Vegas	NV	USA	Nevada DOT
UC Mission Bay Student Housing	San Francisco	CA	USA	Kiewit Pacific
AMTRAK Maintenance Facility	Oakland	CA	USA	Kiewit Pacific
Salinas River Bridge	Monterey County	CA	USA	Kiewit Pacific
Port of Panama City	Panama City		Panama	Productos De Concreto, SA
Cushing Parkway Bridge	Freemont	CA	USA	URS Corporation
San Jose Civic Center	San Jose	CA	USA	URS Corporation
Port of Stockton Deepening Study	Stockton	CA	USA	Han-Padron
Oakland Aviation Maintenance Facility	Oakland	CA	USA	Foundation Constructors
Homeport Carrier Complex	Everett	WA	USA	General / Manson, JV
Metcalf Energy Center	San Jose	CA	USA	Dillingham Construction
T2, Port of Vancouver	Vancouver	WA		URS /Woodward
Port of Guam- Typhoon Repair	Guam		USA	Black Construction
Hwy. 101 over Santa Clara River	Ventura	CA	USA	MCM Construction
Cosumnes Power Plant	Stockton	CA	USA	Foundation Constructors
Lopez Dam Stone Column Seismic Retrofit	San Luis Obispo	Ca	USA	Hayward Baker
SR 126 over I-5	Valencia	CA	USA	Foundation Pile, Inc.
Valley Transportation Authority, Hwy 101/85 Bridges	Santa Clara	CA	USA	FCI Constructors

Abe Engineering- Partial Project List for CSL and GGL Testing

Job Description	City	State	Test	Client
Richmond-San Rafael Bridge	San Rafael	CA	CSL	Agra / Caltrans
Mountainhouse Blvd Overcrossing	Livermore	CA	CSL	Biggs Cardosa
Carquinez Bridge	Crockett	CA	CSL	FCI Constructors
Freport Water Intake Structure	Freeport	CA	CSL	Freeport Water Authority
US Border Patrol	Calexico	CA	CSL	Geomatrix Consultants
Stony Creek Bridge	Glenn County	CA	CSL	Glenn County
Cache Creek Bridge	Yolo County	CA	CSL	Jarrett Construction
Highway 101 Viaduct	San Francisco	CA	CSL	Malcolm Drilling
Oyster Point Blvd.	San Francisco	CA	CSL	Malcolm Drilling
Piney Creek Bridge	King City	CA	CSL	Malcolm Drilling
Thornton Road Bridge	Thornton	CA	CSL	MCM Construction
Lockheed Martin	Santa Clara	CA	CSL	Smith Emery
Milpitas City Hall	Milpitas	CA	CSL	Smith Emery
East Contra Costa Canal	Antioch	CA	GGL	Biggs Cardosa
Mountainhouse Blvd Overcrossing	Livermore	CA	GGL	Biggs Cardosa
Pilarcitos Creek Pedestrian Bridge	Half Moon Bay	CA	GGL	Biggs Cardosa
Santa Cruz Ave Bridge	Menlo Park	CA	GGL	Biggs Cardosa
Trilogy Development	Rio Vista	CA	GGL	Biggs Cardosa
Windemere Pkwy. Bridge	San Ramon	CA	GGL	Cornerstone Structural Engineering
Dunmore Homes	Fresno	CA	GGL	Dunmore Homes
Alum Rock Rd. / Silver Creek Bridge	San Jose	CA	GGL	Harris & Associates
Church Street Bridge	Gilroy	CA	GGL	Harris Associates
Hetch Hetchy Overpass	Fremont	CA	GGL	Kleinfelder
Hwy. 101 over Van Duzen River	Fortuna	CA	GGL	MCM Construction
Liesuretown Road Overcrossing	Vacaville	CA	GGL	Parikh Consultants
Welburn Ave. Bridge	Gilroy	CA	GGL	Parikh Consultants
Joiner Parkway	Roseville	CA	GGL	Parsons Brinkerhoff
Uvas Creek Bridge	Santa Clara	CA	GGL	Santa Clara County
Hwy 237/Guadalupe River Bridge	San Jose	CA	GGL	Santa Clara Valley Water District
Santa Clara Valley Water District	San Jose	CA	GGL	Smith Emery
Wheeler Ranch Road Bridge	Olivehurst	CA	GGL	Tiechert Construction
Crocker Rd. Bridge	Cloverdale	CA	GGL	Vali Cooper
Hwy 580/680 Springtown Road	Dublin	CA	GGL	Kleinfelder

Abe Engineering- Partial Project List for PIT Sonic Pulse Echo Testing

Job Description	City	State	Client
Casa Vallecita Bridge	Alamo	CA	Summit Associates
Webster Street Tube	Oakland	CA	Parsons Brinkerhoff
Port of Oakland, Pier 32 Retrofit	Oakland	CA	Parsons Brinkerhoff
Freeport Water Intake Structure	Freeport	CA	Freeport Water Authority
US Border Patrol	Calexico	CA	Geomatrix Consultants
386 Glen Canyon	Santa Cruz	CA	Bauldry Engineering
Del Piero Drive	Watsonville	CA	Kleinfelder
Chollas Creek Bridge	San Diego	CA	Mactec
Oakley Pedestrian Bridge	Oakley	CA	Parikh Consultants
Stanford Linear Accelerator	Stanford	CA	Stanford University
San Jose International Airport	San Jose	CA	Foundation Constructors
Highway 4 Bypass	Antioch	CA	FCI Constructors
No. 2 Rousseau St.	San Francisco	CA	North Construction
360 Market St.	San Jose	CA	Foundation Constructors
Greenback Lane	Sacramento	CA	North Construction
Freeport Intake Structure	Freeport	CA	Freeport Water Authority
Sacramento Light Rail	Sacramento CA	CA	Kiewit Pacific
El Monte Water Tower	El Monte	CA	Lowney Associates
San Jose Civic Center	San Jose	CA	URS
Pearl Harbor Hazmat Facility	Fresno	CA	North Construction

ABE Engineering- Partial Project Experience List for Vibration and Sound Monitoring

Job Description	City	State	Country	Client
Metcalf Energy Facility	San Jose	CA	USA	Dillingham
Foster City Water Tank	Foster City	CA	USA	Foundation Constructors
Santa Clara Valley Water Lab	Santa Clara	CA	USA	Foundation Constructors
San Jose International Airport	San Jose	CA	USA	Foundation Constructors
Hartnell College	Salinas	CA	USA	Stroer and Graff
EBMUD Grit System	Oakland	CA	USA	Proven Management
Kaiser Hospital	Modesto	CA	USA	Consolidated Engineering Labs
Kaiser Hospital	Antioch	CA	USA	Kiewit Construction
Auburn Canal	Auburn	CA	USA	Consolidated Engineering Labs
Capital Mall	Sacramento	CA	USA	Foundation Constructors
Sacramento Towers	Sacramento	CA	USA	Treadwell Rollo
Oakland International Airport	Oakland	CA	USA	Foundation Constructors
4 th Street Bridge	San Francisco	CA	USA	Mitchell Engineering
White Cap Supply	San Francisco	CA	USA	Stroer & Graff
Tiburon Mist	Tiburon	CA	USA	Watt Communities
Estuary Cove	Oakland	CA	USA	Nelson Lewis Construction
San Jose Parking Garage	San Jose	CA	USA	Swinerton Builders
Carmel Water Treatment Plant	Carmel	CA	USA	Foundation Constructors
Northstar Village	Truckee	CA	USA	Foundation Constructors
Humboldt State Boating Center	Eureka	CA	USA	SHN Engineers
Tassajara Creek Bridge	San Ramon	CA	USA	Greenbriar Homes