KEATING ASSOCIATES, 847 PACIFIC STREET, PLACERVILLE, CA 95667
TEL.(530)622-9013,FAX(530)622-420,email:joekeating@sbcglobal.net

PERSONAL RESUME: Joseph M. Keating, Professional Engineer

PROFESSIONAL STATUS:
Professional Registration -California, Civil Engineer, No.20289
-Colorado, Professional Engineer
Charter Member, Dispute Review Board Foundation

Licensed Contractor, California:
Class A - General Engineering Contractor No. 260411.
- Hazardous Waste Certification

EDUCATION:
Professional Engineer's Degree in Petroleum Engineering, Colorado School of Mines, Golden, Colorado,

PROFESSIONAL HISTORY:

2006 - 1970 Keating Associates - Owner
Consulting Engineering Firm
Placerville, CA

My expertise and experience have involved numerous assignments in the following areas related to underground construction projects:

PROJECT ESTIMATING - Both for Contractors and Owners. Complete or partial estimates for heavy construction work with specialization in underground construction facilities.

FEASIBILITY REPORTS - Preliminary, alternative design studies and related cost estimates for heavy construction projects.

CLAIMS ENGINEERING - Review and preparation of documentation and reports to qualify and quantify merit and quantum for both claim support and rebuttal.

PROJECT PLANNING - Independent evaluation or in conjunction with contractor or owner's staffs to optimize design, equipment selection and methods of construction. Evaluation of support requirements and design of temporary and final support systems for open-cut and underground construction.

VALUE ENGINEERING - Review project plans and specifications at all stages of development to identify and quantify possible opportunities to reduce construction cost.

HYDROELECTRIC DEVELOPMENT -

Supervised preparation and submitted of fifteen License applications for FERC Licensing as a private developer.

Supervised all licensing work and engineering submittals for four issued FERC licenses. One pending project is in the initial construction startup phase.

Work as consultant to developers and public owners involved with FERC licensed projects.

DISPUTE RESOLUTION BOARDS -

I have served on fifteen Dispute Resolution Boards. Two of these Boards are active at this time. Total value of these projects is $910,000 million. On six of these projects I served as Board Chairman.

Current Active Projects:

Name: Main Spine Tunnel and Ancillary Facilities, Providence, RI
Owner: Narragansett Bay Commission
Contractor: Shank/Balfour Beatty
Contract Value: $167,000,000

Name: Claremont Tunnel Seismic Upgrade, Berkeley, CA
Owner: East Bay Municipal Utility District
Contractor: Atkinson Construction, Inc.
Contract Value: $ 25,000,000

I have been involved in approximately twenty-six hearings related to these Boards.

REVIEW OF WORK EXPERIENCE:

"Hands on" experience as an employee prior to forming my consulting business:

I have worked in the following capacities:
Laborer, chuck tender, miner, estimator, senior estimator, embankment superintendent, project engineer, assistant project manager-dam construction, tunnel superintendent. I worked for Colorado Constructors, Bechtel Corporation and Dravo Corporation.

Work Experience as a consulting engineer has included assignments in the following areas:

Rapid Transit Projects: Over thirty-contractor type estimates for subway projects in U.S. for both contractors and design engineers. My work has included claims analysis and value

engineering proposals.

Hydroelectric Projects: Over twenty assignments directly related to large-scale hydroelectric development including pump storage schemes. One of these assignments involved nearly one year of a foreign assignment through all phases of development including engineer's estimates for construction.

Mining Development: Fifteen assignments related to the expansion or development of ore deposits. Involved open-pit, shaft and incline tunneling access methods.

Water and Sewer Supplies: Over sixteen studies, evaluations, designs and cost evaluation of tunnels, pipelines and related storage facilities.

General Civil Construction: Numerous other engineering evaluations for diverse construction projects. Consultant to owners in evaluating and selecting firms for engineering services. Provided technical support to attorneys in litigation matters and served as an expert witness in matters related to underground construction.

Agent: Agent for American Hydro Corporation, York, PA, in India, for a two-year period. Investigated and recommended replacement turbines and necessary related civil modifications to both private and government owners to upgrade generation capacities.

USAID: Prepared seminar papers related to new hydroelectric development and upgrade parameters for existing projects. Responsible for report content and directed five Country Managers for a collective report on the existing hydroelectric potentials in India, Sri Lanka, Nepal, Bangladesh and Bhutan. Involved several overseas trips, meetings, working sessions and the final report.

RECENT CONSULTING ASSIGNMENTS and RELATED REFERENCES:

City of San Diego - Preparation of engineer's estimate for the Ocean Outfall Tunnel. This consisted of 20,000 LF ocean outfall tunnel, construction of access shaft and ocean diffuser shaft. Contact person:

Mr. Fred Estep, Resident Engineer, Phone (916) 933 3435

City of Portland - Proposal preparation assistance for the successful proposer, Impregilo-Healy. Follow-up work after award in the preparation of estimates and value engineering recommendations for the Westside CSO project.

Thomas Kilmartin, V.P., Impregilo-Healy, Phone (630)678-3140
Richard Sage, Const.Mang.Eng. Sound Transit,Seattle,WA, Phone (206) 398-5226

San Diego County Water Authority- Value Engineering Panel for the San Vicente Tunnel project consisting of 50,000 LF of a water supply tunnel and related facilities. Assignments involved 10% and 30% VE reviews and follow up studies.

Zachary Ahinga, Project Manager, SCWA Phone (858) 522-6600

City of Portland - Consultant to Parson-Brinckeroff, design engineers, providing assistance in preparing the preliminary cost estimates and value engineering for the new Eastside collection tunnel system including: shafts, surface collection features, and 22 FT ID slurry TBM tunneling.

Roy Cook, Project Manager, Parsons Brinckerhoff, Phone (503)823-9683

City of Sacramento - Ongoing consulting services related to the SCRSD program related to their CSO program system consisting of pipelines, EPB tunneling and river crossings. Assignments involved specification reviews and assistance in recommendations in selection of DRB members.

Joel Nonnweiler, Senior Civil Eng., Phone (916) 876-6052

Joseph M.Keating, Civil Engineer