

APPROVED  
SACRAMENTO HOUSING AUTHORITY  
CITY OF SACRAMENTO



Agency Rpt  
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SACRAMENTO HOUSING AND REDEVELOPMENT AGENCY

APR 26 1983

APR 26 1983

April 18, 1983

Redevelopment Agency of the  
City of Sacramento  
Sacramento, California

CITY MANAGER'S OFFICE  
**RECEIVED**  
APR 20 1983

Honorable Members in Session:

SUBJECT: "K" Street Mall Study and Repair - Retention of  
Geotechnical Consultant.

SUMMARY:

The attached resolution authorizes the Executive Director to execute the enclosed agreement with J. H. Kleinfelder and Associates, Geotechnical Consultants, to conduct a geotechnical study and prepare a report concerning soils and building movement causing potentially hazardous condition for users, and causing severe maintenance problems along "K" Street Mall from 4th Street to 7th Street.

BACKGROUND

The "K" Street Mall from 4th Street to 7th Street has a problem of differential settlements in some areas. These differential settlements (difference in earth caused movements between structure and backfill areas) have been occurring since the construction of Macy's in 1960 and have continued at varying rates depending upon the additional construction design, techniques, ground water, and soil types affecting the other structures built in the area (i.e. garages, Weinstock's, Liberty House, etc.).

The result of the differential settlements is movement causing cracks and displacement of tile areas, sinking of planter boxes, and elevation differences between buildings and adjacent hard surfaced areas. The settlement caused problems are significant enough to produce potentially injurious hazards. Maintenance to avoid or reduce hazards is a major continual problem.

In May, 1982, Raney Geotechnical conducted a record research of documents and plans used in construction of the mall and the

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# SACRAMENTO HOUSING AND REDEVELOPMENT AGENCY

Redevelopment Agency of the  
City of Sacramento

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structures, and a physical inspection of the mall area. The conclusion of the report which was to preliminarily identify some reasons for the problems and recommend that an in-depth study and report should be done with extensive testing and site movement monitoring, in order to evaluate as best technically possible the causes, and therefore formulate a program to effect a long term solution.

This project is proposed as a sole source without going through the usual consultant selection procedure since several local firms with background information and qualified experience in this area of expertise were consultants to the various mall projects. This procedure has been discussed and recommended by both Agency and City staff.

J. H. Kleinfelder is a large firm with significant expertise in these types of problems, has a large Sacramento office with extensive geological and geophysical background, and historical knowledge of the Sacramento waterfront and downtown area, and has not been involved in the design or construction of the mall or structures within the mall. Therefore, it is felt that they are better qualified to give an independent evaluation of the area. The work is expected to take four (4) to six (6) months to complete.

### FINANCIAL DATA

J. H. Kleinfelder has proposed to perform the necessary services for a fee not to exceed thirty-five thousand dollars (\$35,000). The fee will be billed on a time and material basis according to a schedule in the agreement.

It is staff opinion that this expenditure will be beneficial toward reducing the long term maintenance costs by identifying areas where improvements can be made which would reduce hazards and maintenance costs, and define a preventive maintenance program. Sixty thousand dollars (\$60,000) has been budgeted for this study and any interim construction and/or maintenance necessary before implementing recommendations from the report.

Monies for this study and report have been budgeted and appropriated in the March 10, 1983 budget revision.

### VOTE AND RECOMMENDATION OF COMMISSION

At its regular meeting of April 18, 1983, the Sacramento

# SACRAMENTO HOUSING AND REDEVELOPMENT AGENCY

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City of Sacramento

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Housing and Redevelopment Commission adopted a motion recommending adoption of the attached resolution. The votes were as follows:

- AYES: Angelides, Hall, Luevano, Miller, Ose, Pettit, Teramoto, Vargas, Walton
- NOES: None
- ABSENT: None

### POLICY IMPLICATION

The action(s) proposed in this staff report are not consistent with previously approved policy because of the following reasons:

- a. A need for a qualified consultant that has not been involved in design or construction observation with the study area.

Therefore, based on the above, the following changes are being recommended:

None

### RECOMMENDATION

The staff recommends adoption of the attached resolution authorizing the Executive Director to execute the agreement with J. H. Kleinfelder and Associates Geotechnical Consultants for a geotechnical study and report on the "K" Street Mall Area from 4th Street to 7th Street.

Respectfully submitted,

*William H. Edgar*

WILLIAM H. EDGAR  
Executive Director

TRANSMITTAL TO COUNCIL:

*Walter J. Slipe*  
WALTER J. SLIPE  
City Manager

Contact Person: Leo Goto

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# RESOLUTION NO. 83-036

ADOPTED BY THE REDEVELOPMENT AGENCY OF THE CITY OF SACRAMENTO  
ON DATE OF

April 26, 1983

AUTHORIZING EXECUTION OF AGREEMENT WITH  
KLEINFELDER & ASSOCIATES FOR GEOTECHNICAL STUDY  
AND REPORT--K STREET MALL, 4TH TO 7TH STREETS

BE IT RESOLVED BY THE REDEVELOPMENT AGENCY OF THE CITY  
OF SACRAMENTO:

Section 1. The Executive Director is authorized to  
execute the agreement, attached hereto as Exhibit "A", with  
J. H. Kleinfelder and Associates for a geotechnical study and  
report on the K Street Mall from 4th Street to 7th Streets.

\_\_\_\_\_  
CHAIRMAN

ATTEST:

\_\_\_\_\_  
SECRETARY

APPROVED  
SACRAMENTO HOUSING AUTHORITY  
CITY OF SACRAMENTO

.....  
**APR 26 1983**

CITY OF SALT LAKE  
GENERAL INVESTMENT

APR 5 8 1983

CONTRACT FOR PROFESSIONAL SERVICES

PART I - AGREEMENT

THIS AGREEMENT, made and entered into as of this \_\_\_\_\_ day of \_\_\_\_\_, 1983, by and between the REDEVELOPMENT AGENCY OF THE CITY OF SACRAMENTO (herein referred to as "Agency"), and J. H. KLEINFELDER & ASSOCIATES (herein referred to as "Contractor").

IT IS MUTUALLY AGREED AS FOLLOWS:

1. SCOPE OF SERVICES

Agency hereby engages Contractor and Contractor agrees to provide the geotechnical engineering services for the evaluation of the settlement of the K Street Mall extending along the Downtown Plaza from west of Macy's in Fourth Street to Seventh Street, as follows:

- (a) Phase I Services--Research  
Review available report and files; interview personnel associated with project (Soils Engineers, City and Contractors).
- (b) Phase II Services--Exploration  
Drill exploration borings; survey settlement and movements; monitor groundwater; laboratory testing.
- (c) Phase III Services--Evaluate Causes and Solution  
Anlalysis, discussions, meetings, drafting, report preparation.

Contractor shall perform the services outlined above in accordance with Contractor's Proposal Letter dated February 15, 1983, attached hereto as Exhibit "A".

2. CONSULTANTS

In the performance of the work under this Contract, Contractor shall employ such consultants as it deems necessary; provided, however, that such consultants must first be approved by the Agency.

3. TIME OF PERFORMANCE

- (a) Contractor shall commence the Phase I Services, outlined in Section 1(a) above, upon execution of this Agreement and shall complete

such services within two (2) months from the date hereof.

- (b) Contractor shall complete the Phase II Services, outlined in Section 1(b) above, within two (2) months after receipt of Agency authorization to proceed.
- (c) Contractor shall complete the Phase III Services, outlined in Section 1(c) above, within two (2) months after receipt of Agency authorization to proceed.
- (d) Notwithstanding the provisions of subsections (a), (b) and (c) of this Section 3, all of the services required hereunder shall be completed within six (6) months from the date hereof.

4. COMPENSATION

Agency shall compensate Contractor in accordance with the Fee Schedule dated January, 1983, attached hereto as Exhibit "B".

5. METHOD OF PAYMENT AND MAXIMUM COMPENSATION

(a) Agency shall compensate Contractor monthly upon submission by Contractor to Agency of a statement specifying the work performed, hours expended, and that such work was in conformance with this Contract. Such compensation shall constitute full and complete compensation for all services required hereunder.

(b) Subject to the limitations set forth in subsections (1), (2) and (3) below, it is expressly understood and agreed that in no event will the total compensation, if any, to be paid hereunder exceed the maximum sum of THIRTY-FIVE THOUSAND and NO/100 DOLLARS (\$35,000.00) for all of the services required.

(1) Maximum Compensation--Phase I Services. For Contractor's services under Phase I, as outlined in Section 1(a) hereof, Contractor shall be paid an amount not to exceed EIGHT THOUSAND TWO HUNDRED and NO/100 DOLLARS (\$8,200.00);

(2) Maximum Compensation--Phase II Services. For Contractor's services under Phase II, as outlined in Section 1(b) hereof, Contractor shall be paid an amount not to exceed SEVENTEEN THOUSAND FOUR HUNDRED and NO/100 DOLLARS (\$17,400.00);

(3) Maximum Compensation--Phase III Services. For Contractor's services under Phase III, as outlined in Section 1(c) hereof, Contractor shall be paid an amount not to exceed NINE THOUSAND FOUR HUNDRED and NO/100 DOLLARS (\$9,400.00).

6. AGENCY INFORMATION AND DATA

The Agency shall furnish to the Contractor any and all pertinent data,

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plans, information and specifications which the Agency may possess during the time of performance of the duties under this Contract.

7. CARE OF WORK

The Contractor shall be responsible for all damages to persons or property that occur as a result of his fault or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all work performed until completion and final acceptance, whether or not the same has been covered in whole or in part by payments made by the Agency.

8. ACCIDENT PREVENTION

(a) The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, which occur as a result of his prosecution of the work. The safety provisions of applicable laws shall be observed and the Contractor shall take or cause to be taken such additional safety and health measures as the Agency may determine to be reasonably necessary.

(b) The Contractor shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work arising out of and in the course of employment on work under the Contract. The Contractor shall promptly furnish the Agency with reports concerning these matters.

9. INDEMNIFICATION OF AGENCY

The Contractor shall indemnify and save harmless the Agency from liability for any injury or damages to persons or property resulting from his prosecution of work under the Contract.

10. INSURANCE

The Contractor shall carry or require that there be carried Workers' Compensation Insurance for all his employees and those of his subcontractors engaged in work at the site, in accordance with State Workers' Compensation Laws.

11. OWNERSHIP OF PROFESSIONAL AND TECHNICAL INFORMATION DEVELOPED UNDER THIS CONTRACT

(a) The parties hereto mutually understand and agree that all professional and technical information, in the form of original drawings, data, computations, specifications, report texts, estimates and any and all other material, data and information collected or developed in connection with the work under this Contract, and all original documents shall be forwarded to and become the sole



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property of the Agency, and neither the Contractor nor any and all of his associates and/or consultants shall have any rights in interest thereto.

(b) The Contractor and/or his associates and consultants may retain such copies and/or reproductions, at their expense, of the original documents as necessary for their files, records and/or reference.

12. TERMS AND CONDITIONS

This Contract is subject to and incorporates the provisions attached hereto as Part II - Terms and Conditions (Form SHRA 10/82).

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

REDEVELOPMENT AGENCY OF THE CITY OF SACRAMENTO

By \_\_\_\_\_ Executive Director

APPROVED AS TO FORM:

\_\_\_\_\_ Agency Counsel

APPROVED:

\_\_\_\_\_ Finance Department

Cost Code \_\_\_\_\_

Organization No. \_\_\_\_\_

\_\_\_\_\_ Organizational Approval

J. H. KLEINFELDER & ASSOCIATES

By \_\_\_\_\_

Title \_\_\_\_\_

9795 Business Park Drive, Suite A  
Sacramento, California 95827

Employer ID # \_\_\_\_\_

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EXHIBIT "A"

DIRECTORS  
JAMES H. KLEINFELDER  
CYRIL M. MCRAE  
EARL C. KLEINFELDER  
MICHAEL E. MAHONEY  
RICHARD M. WARY

# J. H. KLEINFELDER & ASSOCIATES

GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

9795 BUSINESS PARK DRIVE, SUITE A

SACRAMENTO, CA 95827

TELEPHONE (916) 366-1701

ROBERT D. HOWELL  
WILLIAM E. ELLIS  
ROBERT A. WILKINSON  
P. MIGUEL VIARNES  
RAYMOND COSTA, JR.

File: PA-83-012  
February 15, 1983

Sacramento Housing and Redevelopment Agency  
630 "I" Street  
Sacramento, CA 95814

Attention: Mr. Kirk Gilley

Subject: Proposal and Statement of Qualifications  
Geotechnical Engineering Services  
"K" Street Mall  
Settlement Evaluation  
Sacramento, California

**S. H. R. A.**  
**FEB 17 1983**  
Technical Services Division

Gentlemen:

J. H. Kleinfelder & Associates is pleased to submit this proposal for providing the geotechnical engineering services for the evaluation of the settlement along the "K" Street Mall. Included in this proposal is a summary of our qualifications and a discussion of the anticipated services that would be provided along with the associated costs for these services.

### GENERAL INFORMATION

It is our understanding that the Redevelopment Agency is desiring to proceed with an investigation in an attempt to resolve the long time problem of differential settlements within portions of the "K" Street Mall. Areas in question extend along the downtown plaza from west of Macys in Fourth Street to Seventh Street. Differential settlements have been observed between adjacent structures and in backfill adjacent to structures. Settlement has been occurring since the construction of Macys in late 1960's and has occurred at varying rates depending upon construction in the area, groundwater, and other factors.

The result of the differential settlements is movements within the mall area tile, loss of ground in the planter boxes, and differential movements between structures and adjacent pavement area. A hazard has been the result of the differential movements which increases the liability of the city due to the potential for tripping and injuring. Maintenance of the mall has been a continual process for the last few years. It is now the plan of the Redevelopment Agency to evaluate the situation, in an effort to determine a feasible long term solution.



This proposal has been based upon the information obtained at a meeting on January 26, 1983, with representatives of the City and the Redevelopment Agency, along with our own review of the site and knowledge of the foundations and construction procedures used in this area. Our firm has not been involved with the design nor construction observation for the structures along the "K" Street Mall, thus we feel that we can provide a independent third party approach to the review, in an effort to determine the potential causes and problems that have resulted.

GENERAL QUALIFICATIONS

J. H. Kleinfelder & Associates was established over 21 years ago to provide geotechnical engineering and materials testing services in northern California. The firm has the full capabilities and provide geotechnical studies, seismic hazard evaluations, and construction testing and observation services.

The Sacramento office was established by Michael E. Mahoney in 1968 and he remains as principal in charge of this office and other central California valley offices. The present Sacramento staff is managed by Ronald J. Perisho and has a staff of four licensed professional engineers and geologists. Overall, the firm is staffed with approximately 30 professional engineers and engineering/geologists and a similar number of construction inspectors. This allows any of J. H. Kleinfelder & Associates offices to draw upon a rather large reservoir of experience on various types of projects throughout the California and Nevada area. The firm has continued throughout its history to have close principal involvement in all major projects and it has been the conclusion of our management that the principal involved with all major technical projects is necessary to maintain the highest quality of work and to provide continuity of experience in various geographic areas.

Our firm operates seven drill rigs capable of providing several types of subsurface exploration. The Sacramento office has a completely equipped soils engineering and materials testing laboratory to provide all testing required for Sacramento area projects.

The Sacramento office of J. H. Kleinfelder & Associates has had extensive experience with projects throughout the Sacramento area. Our personnel have been involved with several geotechnical studies for high-rise structures within the downtown area. These include the Holiday Inn, Site 3 State Office Building, 1100 "J" Street Office Complex, Ping Yuen Center, along with several banks and other structures. Our Sacramento staff has had experience in



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the Old Sacramento area with construction on the compressible silts of downtown Sacramento. Another major project built on these silts that our firm completed the design and consolidation study for is Pioneer Reservoir. J. H. Kleinfelder & Associates has designed and observed the installation of several thousand precast concrete piles along with drilled piers, auger cast piles, and mat foundations in the Sacramento area. Our staff has completed considerable research in underground water conditions in the downtown area as a result of the numerous projects which have required excavations below the maximum groundwater level. Through these projects our staff has become experienced with the general conditions in the Sacramento area. This experience should be important in the evaluation of the conditions for the "K" Street Mall.

#### SCOPE OF SERVICES

We would propose that the project be divided into three major phases. These phases would include: 1) Research, 2) Evaluating existing conditions, 3) Determination and evaluation of potential repair methods and solutions. It is anticipated that this problem could be relatively complex with the involvement of several potential causes of failure. Conditions which need evaluation are differential movements between structures supported on different foundation systems, construction at different times, differential movement between structures supported on fill and pile supported structures, movements of backfill adjacent to structures, as well as differential movements caused due to loss of ground or groundwater fluctuations. Thus, there is a strong potential for several combinations of possible causes of differential settlements to occur at any one location. Thus, it is anticipated that the areas would be divided into several sections and analyzed as individual areas, as well as on a regional basis. In order to obtain as much information as possible on the history, past construction, problems with the movements in the past, measurements of movement, and other available information; the first phase of our work would be to research and to gather together all available information on the "K" Street Mall. This would include interviews with soils engineers that have been involved with the design of the structures, review of the engineering reports completed, review of as-built drawings and review of the City files for construction inspection, and discussions with City personnel involved during construction as well as after construction maintenance. This work would be an effort to bring together all available information that could be pertinent to the cause of the movements.

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Phase 2 would be the evaluation of the existing conditions at one or several locations. These locations would be selected based upon the feasibility of access, importance of area, magnitude of differential movement that has occurred, as well as to the anticipated causes and conditions that have been developed during the research evaluation. It is anticipated that approximately one week of drilling would be completed at the site to evaluate the existing conditions. In addition, laboratory tests would be completed upon samples as well as potential settlement survey and groundwater monitoring.

The final phase of the investigation would be the actual determination of the anticipated causes for differential movement and the evaluation of potential solutions for individual locations. It is anticipated that if the causes can be determined, that the solutions would be orientated towards a long term alternative as well as to the potential for reviewing a maintenance short term solution. Discussions would be held with the representatives from the City to discuss the feasibility on the potential solutions. A report would then be developed to provide the Redevelopment Agency with the required information to make the fiscal decision as to which approach and solutions are desired for individual locations.

#### ENGINEERING FEES

All costs for our services would be based upon our standard schedule of fees dated January 1983. Based on the above scope of work we have estimated that our total cost for the entire investigation would be approximately \$32,000 to \$34,000. At this time it is relatively difficult to pinpoint the anticipated costs due to the anticipated variability in the amount of work that is to be completed and the amount of field exploration that will be required. Attached is a breakdown of the anticipated fees by phase.

#### SCHEDULING

It is anticipated that each phase would take approximately one month. The length of time will be dependent upon co-operation of other firms and agencies to help co-ordinate the time involved for the scheduling of the different meetings. It is anticipated that our work will be very closely co-ordinated with and reported to the Redevelopment Agency or a signed individual. Bi-weekly meetings could be held for an update on progress of the work.



J. H. KLEINFELDER & ASSOCIATES

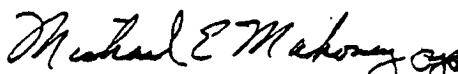
File: PA-83-012  
February 15, 1983  
Page 5

J. H. Kleinfelder & Associates appreciates this opportunity of submitting this proposal and this opportunity of working on this very intriguing and interesting project. If you have any questions concerning our experience or capabilities or with regards to the scope of work that is anticipated, please contact us at your earliest convenience.

Very truly yours,  
J. H. KLEINFELDER & ASSOCIATES



Ronald J. Perisho, P.E.  
Engineering Manager



Michael E. Mahoney, P.E.  
Senior Vice-President

RJP:jmg  
Enclosure



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EXHIBIT "B"

# J. H. KLEINFELDER & ASSOCIATES

GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

## JANUARY, 1983 FEE SCHEDULE

### INTRODUCTION

J. H. Kleinfelder & Associates is a consulting firm specializing in geotechnical engineering, engineering geology, hydrogeology, environmental studies, agricultural engineering, and materials testing services. The firm has provided consulting services since 1961.

### REGIONAL OFFICES

**WALNUT CREEK**  
1901 Olympic Boulevard, Suite 300  
Walnut Creek, California 94596  
(415) 938-5610

**STOCKTON**  
2825 East Myrtle Street  
Stockton, California 95205  
(209) 948-1345

**SACRAMENTO**  
9795 Business Park Drive, Suite A  
Sacramento, California 95827  
(916) 366-1701

**FRESNO**  
1975 E. Street  
Fresno, California 93706  
(209) 486-0750

**RENO**  
3189 Mill Street  
Reno, Nevada 89502  
(702) 323-7182

**LAS VEGAS**  
5115 South Industrial Road, Suite 605  
Las Vegas, Nevada 89118  
(702) 736-2936

**BERKELEY**  
2718 Telegraph Avenue, Suite 200  
Berkeley, California 94705  
(415) 548-0313

### TESTING LABORATORIES

**FAIRFIELD**  
260 Link Road, Suite C  
Cordelia (Fairfield), California 94585  
(707) 864-1393

**MERCED**  
1575 West Main Street  
Merced, California 95340  
(209) 722-7552

**ST. GEORGE**  
212 North 1000 East  
(P.O. Box 1017)  
St. George, Utah 84770  
(801) 628-3897



### BASIS OF CHARGES

1. Listed herein are typical prices for services most frequently performed by J. H. Kleinfelder & Associates. Prices for other services not listed will be given upon request, as well as special quotations for programs involving volume work.
2. All sampling and testing is conducted in accordance with the latest applicable or designated specifications of the American Society for Testing Materials, American Association of State Highway and Transportation Officials, or other pertinent agencies. For convenience, A.S.T.M. specification numbers are quoted in the schedule, unless noted otherwise.
3. The client agrees to limit the consultant's liability to the client and to all contractors and subcontractors on the project, due to professional negligent acts, errors or omissions of the consultant, to the sum of \$50,000 or the consultant's fee, whichever is greater.
4. Invoices will be issued on a monthly basis, or upon completion of a project, whichever is sooner. Invoices are payable when received unless otherwise agreed. A late payment service charge will be computed at the periodic rate of 2% per month, which is an annual percentage rate of 24% and will be applied to any unpaid balance commencing 30 days after date of the original invoice.
5. A two hour minimum charge will be made for all field services. A four hour minimum charge will be made for hours in excess of two hours. An eight hour minimum charge will be made for field services in excess of four hours per day.
6. An overtime premium of \$10.00 per hour will be charged for all personnel services in excess of eight hours per day or Saturday, and \$20.00 per hour on Sundays or Holidays.
7. Per diem will be charged at a rate of \$45.00 per day per person or expenses + 15%, whichever is greater.
8. Outside services will be charged at cost + 15% unless otherwise noted.
9. Prices shown for laboratory work include reporting of routine results not calling for comment, recommendations or conclusions. Sampling, specification review, discussion, and report preparation for field testing, are charged at hourly rates.
10. We are protected by Worker's Compensation Insurance (and/or Employer's Liability Insurance), and by Public Liability Insurance for bodily injury and property damage, and will furnish certificates thereof upon request. We assume the risk of damage to our own supplies and equipment. If your contract or purchase order places greater responsibilities upon us or requires further insurance coverage, we, if specifically directed by you, will take out additional insurance (if procurable) to protect us at your expense, but we shall not be responsible for property damage from any cause, including fire and explosion, beyond the amounts of coverage of our insurance.
11. All samples of soil or rock will be destroyed 30 days after submission of final report unless prior arrangements are made.





J. H. KLEINFELDER & ASSOCIATES

Fee Schedule

JANUARY, 1983

PROFESSIONAL STAFF RATES

Engineer or Geologist	\$ 48.00/hr.
Staff Engineer or Geologist	58.00/hr.
Project Engineer or Geologist	70.00/hr.
Senior Engineer or Geologist	80.00/hr.
Principal Engineer or Geologist	85.00/hr.
Special Consultants	Cost Plus 15%

TECHNICAL STAFF RATES

Technical Aid	30.00/hr.
Technician (concrete, soils, reinforcing, steel and other conventional observation & testing services)	35.00/hr.
Senior Technician (prestressed concrete, welding, steel fabrication, masonry and other specialized observation & testing services)	40.00/hr.
Non-destructive Testing Technician (ultrasonic, magnetic particle, dye penetrant)	37.00/hr.
Supervisory Technician	48.00/hr.
Technical Typist	30.00/hr.
Special Laboratory Testing	50.00/hr.
Drafting	32.00/hr.

EQUIPMENT CHARGES\*

<b>Drilling &amp; Sampling Services**</b>	
Truck-mounted Drilling Equipment	85.00/hr.
Flight or Hollow Stem Auger with Operator	110.00/hr.
Flight or Hollow Stem Auger with Operator & Helper	120.00/hr.
Rotary, Wash or Air, with Operator & Helper	120.00/hr.
Diamond Bit Coring (NX size)	
Travel to and from site charged at hourly rates	
Track-mounted Drilling Equipment	95.00/hr.
Flight or Hollow Stem Auger with Operator	120/hr.
Flight or Hollow Stem Auger with Operator & Helper	130.00/hr.
Rotary Wash or Air with Operator & Helper	130.00/hr.
Diamond Bit Coring (NX size)	
Travel to and from site at cost + 15%	
Skid-mounted Drilling Equipment	85.00/hr.
Flight or Hollow Stem Auger with Operator	110.00/hr.
Flight or Hollow Stem Auger with Operator & Helper	
Travel to and from site charged at hourly rate for truck transport or at cost + 15% for other transport	
Hand-carried Power Drilling & Sampling Equipment	25.00/hr.
Dutch Cone Penetrometer Mounted on Drill Rig	Drill Rig Rate + 1.50/ft.
<b>Drilling &amp; Sampling Supplies and Support Equipment</b>	
Diamond Bit Core Charge (NX size)	7.00/ft.
Borehole Vapor Monitor	25.00/day
Casing, Drilling Mud, Shelby Tubes, Drilling Bits and other Expendable Supplies	Cost + 15%
Special Safety Equipment Required for sites containing hazardous substances	Cost + 15%
Dozers, Backhoes, Tow Trucks or other special equipment	Cost + 15%

\*\*4-hour minimum rate for all drilling equipment. Premium for drilling and sampling on sites requiring respiratory protection from hazardous substances 15.00/man-hour  
 \*Does not include operator unless otherwise noted



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# J. H. KLEINFELDER & ASSOCIATES

## Fee Schedule

### GEOPHYSICAL EXPLORATION EQUIPMENT

Seismograph, Single Channel Bison Model 1570C	\$ 120.00/day
Seismograph, Twelve Channel Nimbus Model E5-1210F	350.00/day
Resistivity Meter, Bison Model #2390	100.00/day
Soil Test Model R-40C	75.00/day
Megger Earth Tester	60.00/day
Magnetometer, Portable Proton-Geometrics Model 6816	85.00/day
Downhole Shear Wave Velocity Measurement	On Request
Blast and Vibration Monitor, VM-100	275.00/day
Blast and Vibration Monitor with operator	50.00/hr. or 350.00/day

### WATER RESOURCES EQUIPMENT

Water Quality Field Test Equipment	20.00/day
Electrical Conductivity, pH, Temperature Test Kit	50.00/day
Hach Field Test Kit	20.00/day
Water Level Probe	20.00/day
Teflon Bailers	25.00/day
Suction Pump with Teflon Line	25.00/day
Suction Pump with Teflon Line	25.00/day
Infiltration and Percolation Test Equipment	On Request
Well Pump Testing Development Equipment	35.00/day
Current Meter/Flow Measurement Equipment	
Suspended Sediment Samplers	10.00/day
DH48 Hand-Held, Low-Flow	37.00/day
D49, D74 High-Flow with Suspension System and Winch	
Bedload Sediment Samplers	10.00/day
Hand-Held, Low-Flow	37.00/day
High-Flow with Suspension System and Winch	30.00/day
Level or Transit and Rod	

### VEHICLES

Vehicle, 2 Wheel Drive	2.00/hr.
Vehicle, 4 Wheel Drive	2.50/hr.
Mileage, 2 Wheel Drive	.40/mi.
Mileage, 4 Wheel Drive	.45/mi.

### MATERIALS TESTING EQUIPMENT - FIELD

Vehicle Equipped with Standard Field Testing Equipment	4.50/hr.
Vehicle Equipped with Nuclear Density Testing Equipment	13.00/hr.
Vehicle Equipped with Ultrasonic, Magnetic Particle, and Dye Penetrant Testing Equipment	10.00/hr.
Skidmore Wilhelm Bolt Tension Calibrator	20.00/day
Torque Wrench	20.00/day
with Multiplier	25.00/day
Schmidt Hammer	40.00/day
R Meter (Pachometer)	40.00/day
Windsor Probe	12.00/shot
Anchor Bolt Testing Device	90.00/day
Generator	35.00/day
Coring Machine with Generator	60.00/day
Diamond Bit Core Barrel Charge	
2" Diameter	4.00/inch of core
3" Diameter	6.00/inch of core
4" Diameter	8.00/inch of core
6" Diameter	10.00/inch in core

### OFFICE EQUIPMENT

Microcomputer	30.00/hr.
Mainframe Computer Time Sharing	70.00/hr.



MATERIALS TESTING SERVICES - LABORATORY

SOIL AND AGGREGATE TESTS

COMPACTION CURVES

Standard	D-698 Method A	\$ 95.00/ea.
Standard	D-698 Method B, C, D	108.00/ea.
Modified, 4"	D-1557	110.00/ea.
Modified, 6"	D-1557	120.00/ea.
California Impact	216-G	120.00/ea.
Check Point	CE-55	55.00/ea.
UBC (70-1)		105.00/ea.

SOIL AND AGGREGATE STABILITY

R-Value, California State Highway, Untreated Material or Field Sample	CAL 301	140.00/ea.
R-Value, California State Highway, Cement, Lime or other Additives, Laboratory Mixed or Reproportioned Samples	CAL 301	160.00/ea. 35.00/ea.
Correction for oversized material in sample		325.00/ea.
C.B.R. 100% Compaction ASTM D-1833 or AASHTO T-180		440.00/ea.
C.B.R. Other Compaction Effort		On Request
Soil Cement or C.T.B. Mix Design		35.00/ea.
C.T.B. Compression Test (Without Preparation)		210.00/ea.
Lime Treated Compression Test (Without Preparation)	CAL 373	

BASIC SOIL AND AGGREGATE PROPERTIES

Sieve Analysis, Coarse and Fine Including Wash	C-136/D-422	70.00/ea.
Sieve Analysis, Coarse	C-136	35.00/ea.
Sieve Analysis, Fine Including Wash	C-136	55.00/ea.
Sieve Analysis, Wash (% Finer than No. 200 Sieve)	C-117	36.00/ea.
Specific Gravity - Soils	D-854	40.00/ea.
Specific Gravity - Aggregate, Bulk, S.S.D.	C-127	40.00/ea.
Sand Equivalent, Average of 3 State Highway	CAL 217-H	55.00/ea.
Sand Equivalent, One Point Method		42.00/ea.
Plasticity Index	D-424	76.00/ea.
Liquid Limit	D-423	44.00/ea.
Swell Test (F.H.A. Specifications)		82.00/ea.
Swell Pressure, Per Point		45.00/ea.
Chemical Expansion Test		50.00/ea.
Moisture Determination and Unit Weight		22.00/ea.
Moisture Determination Only		12.00/ea.
Permeability Tests (Undisturbed Samples)		150.00/ea.
Permeability Tests (Remolded Samples)		175.00/ea.
Resistivity of Soil (Laboratory Measurement)		55.00/ea.
pH Test (Laboratory Measurement)		26.00/ea.
Organic Content - Soils		30.00/ea.
Hydrometer (Without Specific Gravity)	D-422	80.00/ea.

SHEAR STRENGTH AND CONSOLIDATION TESTS

Unconfined Compression, Including Moisture Content and Unit Weight	D-2166	49.00/ea.
Triaxial Compression (Quick) Per Point		75.00/pt.
Triaxial Compression (Other Types)		50.00/hr.
Direct Shear (Quick) Per Point		50.00/pt.
Consolidation, Per Load Increment, With Time Rate	(275.00 minimum)	45.00/load
Constant Rate of Strain Consolidation, With Time Rate		325.00/test
Consolidation, Without Time Rate		100.00/test



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**J. H. KLEINFELDER & ASSOCIATES**

**Fee Schedule**

**AGGREGATE QUALITY**

Injurious Organic Matter	C-40	\$ 25.00/ea.
Absorption, Gravel	C-127	25.00/ea.
Absorption, Sand	C-128	25.00/ea.
Unit Weight	C-29	27.00/ea.
Unit Weight (Average of 3)	C-29	50.00/set
Los Angeles Rattler Test - 500 Revolutions	C-131	80.00/ea.
Los Angeles Rattler Test - 1,000 Revolutions	C-131	110.00/ea.
Sulfate Soundness (5 Cycles) Per Sieve Size	C-88	48.00/ea.
Mortar Making Properties of Sand (2 ages)	C-87	175.00/ea.
Potential Reactivity Test	C-289	On Request
Cleanness Test (Referee Test)	CAL 227-E	95.00/ea.
Crushed Particles on Sieved Sample	CAL 205	58.00/ea.
Flat and Elongated Particles on Sieved Sample		60.00/ea.
Clay Lumps and Friable Particles	C-142	54.00/ea.
Lightweight Pieces in Aggregate	C-123	58.00/ea.
Durability Index - Coarse or Fine	CAL 229-E	90.00/ea.

**CONCRETE**

Concrete Mix Design or Review: Not including Laboratory Tests		100.00/ea.
Laboratory Trial Batch, Not Including Testing of Specimens		220.00/ea.
Compression Test, Concrete Cylinder	C-39	13.00/ea.
Concrete Cylinder Handled and Cured, But Not Tested		11.00/ea.
Compression Test, Lightweight Insulating Concrete	C-495	19.00/ea.
Unit Weight of Concrete Cylinders	C-138	22.00/ea.
Flexural Strength, Concrete Beam	C-293	38.00/ea.
Air Content of Freshly Mixed Concrete	C-231	12.00/ea.
Compression Test, Gunitite		27.00/ea.
Compression Test on Cored Specimens (Includes End Preparation)		35.00/ea.
Cylinder Molds		1.60/ea.
Drying Shrinkage Test by ASTM or California Test Method, Set of 3		240.00/ea.
Modulus of Elasticity of 6" x 12" Concrete Cylinder		125.00/ea.
Splitting Tensile Strength of 6" x 12"	C-496	40.00/ea.
Cement Content of Hardened Concrete	C-85	On Request

**FLY ASH, POZZOLAN & CEMENT**

Chemical Analysis	ASTM C-618	On Request
Fineness (-325 Size)		40.00/ea.
Pozzolan Activity with Cement, set of 3	C-311	100.00/set
Pozzolan Activity with Lime, set of 3	C-311	100.00/set
Soundness by Autoclave, set of 3	C-311	175.00/set
Specific Gravity	C-188	30.00/ea.
Fineness by Air Permeability (Blaine)	C-204	30.00/ea.

**MASONRY**

Compression Test, Grout		22.00/ea.
Compression Test, Mortar		20.00/ea.
Compression Test, Masonry Units	C-140	37.00/ea.
Absorption and Received Moisture, Masonry Units	C-140	40.00/ea.
Lineal Shrinkage, Masonry Units	Title 21 or C-426	70.00/ea.
Compression Strength, Brick	C-67	27.00/ea.
Modulus of Rupture, Brick	C-67	37.00/ea.
Absorption Test, Brick, 5-Hour with Coefficient	C-67	54.00/ea.
Shear Test on Masonry Cores	CAL 604	57.00/ea.
Tensile Test of Masonry Units		74.00/ea.
Grout or Mortar Specimen, Handled and Cured But Not Tested		15.00/ea.



J. H. KLEINFELDER & ASSOCIATES

Fee Schedule

ASPHALT

Penetration Test, Each Temperature	D-5	\$ 43.00/ea.
Flash Point	D-92	85.00/ea.
Specification Tests- AR Grades		450.00/ea.
- Liquid Asphalt Grades		550.00/ea.
- Emulsions		450.00/ea.
Other Asphalt Tests		On Request
Centrifuge Kerosene Equivalent, % Oil Retained or Coarse Aggregate (Kc) or Fine Aggregate (Kf)	Cal 303	125.00/ea.
Extraction, % Bitumen	ASTM of Calif. 310	75.00/ea.
Stabilometer Test and Mixing of Sample	Calif. 304	100.00/ea.
Stabilometer Test on Premixed Sample		60.00/ea.
Swell	AASHOT-101	60.00/ea.
Moisture Vapor Susceptibility, in Addition to Stabilometer	Cal 307	125.00/ea.
Complete Design of Wearing Surface for a Given Asphalt and Aggregate, Hveem or Marshall Method		On Request
Marshall Stability and Flow - Set of 3 (Without Mixing)	ASTM D-1559	175.00/set
Marshall Stability and Flow - Set of 4 (Lab Mixed)		225.00/set
Unit Weight of Asphalt Core or Compacted Sample	ASTM D-2726	25.00/ea.
Moisture Content (Xylene Reflux Method)	ASTM D-1461	125.00/ea.
Maximum Density of Mix by Marshall Method		100.00/set
Set of 3 (Without Mixing)		50.00/ea.
Maximum Theoretical Specific Gravity (Rice Method)	ASTM D-2041	500.00/ea.
Index of Retained Strength	ASTM D-1075	See Page 4
Coring Charges		

METALS

Tensile and Bend as a Set, Up to 1/4" Cross Sectional Area (Not Including Machining Costs)		32.00/set
Greater than 1/4"		42.00/set
Tensile, Up to 1/4" (Not Including Machining Costs)		27.00/ea.
Greater than 1/4"		35.00/ea.
Bend Only		20.00/ea.
Deformation, Reinforcing Steel	E-16	150.00/ea.
Pre-Stress Strands, Tensile and Elongation	A-416	60.00/ea.
Pre-Stress Wire, Tensile and Elongation	A-421	On Request
Proof Test on Post-Tension Assembly		At Cost + 20%
Machining Costs		80.00/set
Weight of Coating (Set of 3)		22.00/ea.
Bolts - Proof Load		32.00/ea.
Ultimate Load		27.00/ea.
Hardness		22.00/ea.
Nuts - Proof Load		27.00/ea.
Hardness		27.00/ea.
Washers - Hardness		27.00/ea.

WELDING QUALIFICATIONS — STRUCTURAL STEEL  
(PHYSICAL TEST METHOD - ASME, AWS, API, TITLE Z1)

OPERATOR PERFORMANCE AND PROCEDURE TESTS		40.00/hr.
Witnessing Time and Specimen Preparation Time		At Cost + 20%
Machining and Material Costs		22.00/ea.
Laboratory Testing: Guided Bend Test, face or root		22.00/ea.
Side Bend Test		22.00/ea.
Free Bend Test		30.00/ea.
Tensile Test (reduced section)		30.00/ea.
Macroetch Test		22.00/ea.
Fracture Test		40.00/ea.
T Bend Test		22.00/ea.
Notch Test		
Qualification tests also available by X-ray procedures on request		



