



CITY OF SACRAMENTO

DEPARTMENT OF PUBLIC WORKS

ENGINEERING

Administration, Rm. 300	(916) 449-5307
Architecture, Rm. 302	(916) 449-5307
Civil Engineering, Rm. 207	(916) 449-5281
Construction, Rm. 207	(916) 449-5281
Electrical Engineering, Rm. 304	(916) 449-5287
Real Estate, Rm. 300	(916) 449-5307
Traffic Engineering, Rm. 300	(916) 449-5307

C.C. 1386

CITY MANAGER'S OFFICE

RECEIVED
NOV 28 1984

December 4, 1984

City Council
Sacramento, California

Honorable Members In Session:

SUBJECT: Resolution Approving Consultant Agreement for Services To Be Performed During Construction Of The City Landfill Expansion

SUMMARY

The construction contract for the City Landfill Expansion has been awarded. During construction, engineering services are required and a contract with Brown and Caldwell, the design engineers for the project, is recommended to provide those services.

BACKGROUND

Construction of the Landfill Expansion requires extensive and complex construction staking, soils testing and materials testing. This Consultant Agreement provides these services and also provides a Resident Engineer for complete construction, coordination and inspection services. The Agreement provides for any necessary engineering design modifications arising during construction as well as the preparation of the "as-built" drawings. Approval of this Agreement will help assure the timely completion of a quality landfill expansion with a minimum of problems.

FINANCIAL

The City Landfill Expansion project, including this consulting agreement, is listed for Certificate of Participation financing. There will be sufficient funding from the Certificate of Participation financing to cover the total cost of the project, including this agreement, which provides services during construction for an amount not to exceed \$249,700.

APPROVED
BY THE CITY COUNCIL

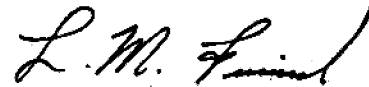
DEC 4 1984

OFFICE OF THE
CITY CLERK

RECOMMENDATION

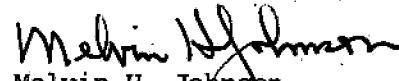
It is recommended that the Consultant Agreement with Brown and Caldwell be approved by passage of the attached Resolution and that no payment of funds be made prior to January 15, 1985.

Respectfully submitted,



L. M. Frink
Deputy Director of Public Works

APPROVED:



Melvin H. Johnson
Director of Public Works

Recommendation Approved

for: 
Walter J. Slipes
City Manager

LMF:GDC:bb
Attachment

December 4, 1984
ALL DISTRICTS

1911

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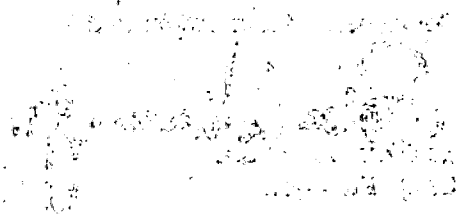
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RESOLUTION NO. 84-1003

Adopted by The Sacramento City Council on date of

DECEMBER 4TH, 1984

RESOLUTION AUTHORIZING THE CITY MANAGER AND THE CITY CLERK TO EXECUTE AN AGREEMENT BETWEEN BROWN AND CALDWELL AND THE CITY OF SACRAMENTO FOR PROVIDING CONSTRUCTION ENGINEERING SERVICES FOR THE CITY LANDFILL EXPANSION PROJECT

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SACRAMENTO:

That the City Manager and the City Clerk are hereby authorized to execute on behalf of the City of Sacramento an Agreement between Brown and Caldwell and the City of Sacramento for providing construction engineering services for The City Landfill Expansion Project in an amount not to exceed \$249,700.

MAYOR

ATTEST:

CITY CLERK

APPROVED
BY THE CITY COUNCIL
DEC 4 1984
OFFICE OF THE
CITY CLERK

December 12, 1984

Brown and Caldwell, Consulting Engineers
723 S Street
Sacramento, CA 95814

Dear Gentlemen:

On December 4, 1984, the Sacramento City Council adopted a resolution authorizing the execution of Agreement No. 84103 between the City of Sacramento and Brown and Caldwell, Consulting Engineers for providing construction engineering services for the City Landfill Expansion Project.

Enclosed are four (4) copies of said agreement executed by the City as authorized by the attached certified resolution.

Upon final execution, please return three (3) copies of said agreement to the Office of the City Clerk for the City's distribution.

Sincerely,

Lorraine Magana
City Clerk

Janice Beaman
Deputy City Clerk

LM/JB/dah/17
Enclosures

cc: Public Works

BROWN AND CALDWELL



CONSULTING ENGINEERS

RECEIVED
CITY OF SACRAMENTO
ENGINEERING DEPT.

NOV 02 1984

AM PM
7 8 9 10 11 12 1 2 3 4 5 6

November 2, 1984

4

Mr. Thomas M. Finley, Principal Engineer
Engineering and Transportation Division
Department of Public Works
City of Sacramento
City Hall, Suite 300
915 "I" Street
Sacramento, California 95814

017-84-53

Subject: Supplemental Information--Proposed
Services During Construction, City
Landfill Expansion Project

Dear Mr. Finley:

At the request of Mr. Andy Hunt of your office, we are providing supplemental information with regard to our September 17, 1984 proposal for services in construction of the City Landfill Expansion Project. This supplemental information deals with:

1. Brown and Caldwell insurance coverage.
2. Billing rates and estimated hours for Brown and Caldwell labor services.

Insurance Coverage

According to Mr. William Redmond of the City's General Services Department, Risk Management and Insurance Division, our proposed work on the Landfill Expansion Project will require the following insurance coverages:

1. Comprehensive general liability insurance with a limit of three million dollars with the City to be a named insured.
2. Errors and omissions insurance with a limit of three million dollars.
3. Workmans compensation insurance with a limit of one million dollars.

Mr. Thomas M. Finley
November 2, 1984
Page two

Brown and Caldwell can meet all of these insurance requirements and will provide the City with the necessary certificates and documentation upon execution of a contract for our services.

Billing Rates and Estimated Hours for Labor Services

With our letter of October 12, 1984, we provided an Exhibit A, 1984-1985 Hourly Billing Rate Ranges for Personnel Grades to be Used in Services During Construction for the City Landfill Expansion Project (Effective October 6, 1984). We have also included that exhibit in this letter with a minor revision to include the Billing Rate Range for Principal Construction Engineer/Principal Engineer.

Mr. Hunt has requested that we provide additional detail on:

1. The estimated hours by person and grade description.
2. The 1984-1985 individual hourly billing rates for the actual persons we expect to use in the work.

The attached exhibits provide this information for Resident Engineer and Inspection Services (Exhibit B) and design Consultation During Construction. (Exhibit C). The right hand columes of these two exhibits show the participation by each individual and grade description as percentage of both total estimated labor hours and total estimated labor cost. These percentages for the combined Resident Engineer and Inspection Services and Design Consultation During construction are as follows:

<u>Grade description</u>	<u>Percent of total hours</u>
Chief Engineer	1
Managing Engineer	7
Supervising Engineer	12
Principal Construction Engineer/Principal Engineer	47
Senior Engineer	1
Inspector/Engineer	20
Associate Inspector/Associate Engineer	6
Senior Draftsman	1
Typist IV	5
Total	100

Mr. Thomas M. Finley
November 2, 1984
Page three

As discussed in our previous submittals, we propose that compensation for labor services be based on the Direct Personnel Expense of persons actually used in the work with a markup (2.444) to cover overhead and profit. The billable hourly labor rates shown in Exhibits B and C are the current rates for those individuals named in the exhibits. These rates for those individuals are not expected to change until after September 30, 1985. The individuals shown in the exhibits are those we plan to use in the work.

In comparing the estimated labor costs shown in Exhibits B and C to those presented in our September 17, 1984 proposal you will note a difference of \$1,300 in the billable labor cost estimates. This decrease from our previous estimate results from a downward revision in the estimated hours for the Chief Engineer labor category. To reflect this change, we have revised our estimated cost for the work downward from \$251,000 to \$249,700.

I am available for further discussion of our proposal at your convenience.

Very truly yours,

BROWN AND CALDWELL



Albert A. Doyle
Project Manager

AAD:cb
Enclosures

cc/enc: Mr. L. Hoag, Brown and Caldwell
Mr. A. Hunt, City of Sacramento
Mr. H. Theisen, Brown and Caldwell

EXHIBIT A

1984-1985 HOURLY BILLING RATE RANGES
FOR PERSONNEL GRADES TO BE USED IN SERVICES
DURING CONSTRUCTION FOR THE
CITY LANDFILL EXPANSION PROJECT^a
(EFFECTIVE OCTOBER 6, 1984)

<u>Grade Description</u>	<u>Billing Rate Range,^{b,c} dollars/hour</u>
Chief Engineer	90.95 - 102.56
Managing Engineer	83.09 - 93.72
Supervising Engineer	75.24 - 84.81
Principal Construction Engineer/Principal Engineer	67.39 - 75.90
Senior Construction Engineer/Senior Engineer	59.47 - 67.06
Inspector/Engineer	51.68 - 58.21
Associate Inspector/Associate Engineer	43.03 - 50.03
Assistant Inspector/Assistant Engineer	36.76 - 42.70
Typist IV	30.56 - 35.50
Senior Draftsman	36.76 - 42.70
Draftsman	30.56 - 35.50

^aSubject to revision in October 1985.

^bBilling rate is billable price, including all markup.

^cRange shown covers seven salary steps within each grade.
Actual rate billed will reflect the salary step within the
grade of the individual working on the job.

Exhibit B. Individual Hourly Billing Rates and Estimated Hours and Cost for Brown and Caldwell Resident Engineer and Inspection Services During Construction, City Landfill Expansion Project

Name	Grade description	1984-85 ^a Individual hourly billing rate, dollars	Phase 1 ^b		Phase 2 ^b		Phase 3 ^b		Totals		Percent of			
			Hours	Billable cost, dollars	Hours	Billable cost, dollars	Hours	Billable cost, dollars	Hours	Billable cost, dollars	Hours	Cost	Percent of	
													Hours	Cost
Theisen	Chief Engineer	102.33	8	819	3	307	5	512	16	1,638	1	1		
Doyle	Managing Engineer	86.53	39	3,375	14	1,211	35	3,029	88	7,615	5	7		
Eichhorn	Principal Construction Inspector	71.54	192	13,736	300	21,462	480	34,339	972	69,537	56	62		
Yackzan	Inspector Engineer	54.85	88	4,827	100	5,485	256	14,042	444	24,354	25	22		
Palilla	Associate Inspector/ Associate Engineer	44.15	0	0	60	2,649	74	3,267	134	5,916	8	5		
Unnamed	Typist IV	33.00	29	957	21	693	38	1,254	88	2,904	5	3		
Totals			356	23,714	498	31,807	888	56,443	1,742	111,964	100	100		

^aThe rates shown are the current (November 1984) billing rates for the persons named in the tabulation. The billing rate is the billable price, including all markup. All rates shown are subject to revision in October 1985, the beginning of Brown and Caldwell's 1985-86 fiscal year.

^bPhase 1 is the period from Construction Contractor Notice-to-Proceed until April 30, 1985.

Phase 2 is the period May 1, 1985 through June 30, 1985.

Phase 3 is the period July 1, 1985 through October 31, 1985.

Exhibit C. Individual Hourly Billing Rates and Estimated Hours and Cost for Brown and Caldwell Design Consultation During Construction, City Landfill Expansion Project

Name	Grade description	1984-85 ^A Individual hourly billing rate, dollars	Project management and coordination		Office engineering		Field engineering		Totals		Percent of	
			Hours	Billable cost, dollars	Hours	Billable cost, dollars	Hours	Billable cost, dollars	Hours	Billable cost, dollars	Hours	Cost
Theisen	Chief Engineer	102.33	8	819	0	0	4	409	12	1,228	3	4
Doyle	Managing Engineer	86.53	44	3,807	0	0	24	2,077	68	5,884	16	18
Hunter	Supervising Engineer	78.34	0	0	162	12,691	87	6,816	249	19,507	58	60
Honniball	Principal Engineer	74.45	0	0	36	2,680	8	596	44	3,276	10	10
Pao	Senior Engineer	64.48	0	0	20	1,290	0	0	20	1,290	4	4
Unnamed	Senior Draftsman	39.66	0	0	16	635	0	0	16	635	4	2
Unnamed	Typist IV	33.00	10	333	12	396	0	0	22	726	5	2
Totals			62	4,959	246	17,692	123	9,898	431	32,546	100	100

^AThe rates shown are the current (November 1984) billing rates for the persons named in the tabulation. The billing rate is the billable price, including all markup. All rates shown are subject to revision in October 1985, the beginning of Brown and Caldwell's 1985-86 fiscal year.



October 12, 1984

Mr. Thomas M. Finley, Principal Engineer
Engineering and Transportation Division
Department of Public Works
City of Sacramento
City Hall, Suite 300
915 "I" Street
Sacramento, California 95814

017-802
017-84-53

Subject: Supplemental Information--Proposed Services
During Construction, City Landfill Expansion Project

Dear Mr. Finley:

This is in response to the telephone request from Mr. Andy Hunt of your office for additional information with regard to our September 17, 1984, proposal for services in construction of the City Landfill Expansion project. Mr. Hunt requested:

1. Clarification of the intent of the statement on page 2-3 of our proposal in the paragraph headed "Inspection" beginning at the end of the sixth line and stating that "It is understood that the City will supply inspection personnel for all electrical and instrumentation work."
2. A listing of hourly billing rates to be used for Brown and Caldwell labor services.

Our responses to Mr. Hunt's requests are as follow.

Intent of Statement on Inspection

According to Mr. Paul Schmidt of the City's Construction Management Division, electrical inspectors for City construction projects are normally assigned by the City's Electrical Engineering Division. We assumed that the City would wish to continue to handle electrical inspection in the same fashion and budgeted our proposal accordingly. Electrical and instrumentation project items are simple. They are:

1. Access road lights.
2. Caltrans meter relocation.
3. Power service and internal electrical work for the four pumping stations.

Mr. Thomas M. Finley
October 12, 1984
Page two

The "instrumentation" mentioned in our statement of understanding regarding City inspection of electrical and instrumentation work is the wet well level controllers which will turn on and off the pumps and the trouble lights which will be mounted atop the stations to warn of station malfunction.

Hourly Labor Rates

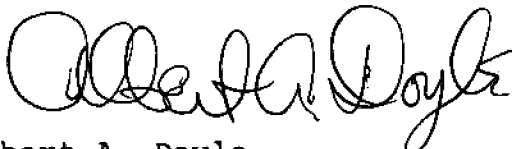
Exhibit A to this letter shows the ranges of 1984-1985 hourly labor billing rates which would apply to the project under our proposed method of compensation. The billing ranges are displayed by grade level (i.e., Supervising Engineer, Typist IV, Draftsman, etc.). There are seven salary steps within each grade level. Our proposed method of compensation is based on the actual hourly salary of the individuals to be used in the work. The hourly rates shown for the bottom and top of each range are the rates for persons in the lowest and highest salary steps in each grade (i.e., there are five other possible hourly billing rates in each grade which lie between the two extremes). Our proposal identifies key individuals to be used in the work. Their names and grade descriptions are as follow:

1. Mr. Hilary M. Theisen, Chief Engineer
2. Mr. Albert Doyle, Managing Engineer
3. Mr. Merle Hunter, Supervising Engineer
4. Mr. Paul Eichhorn, Senior Construction Engineer/Senior Engineer
5. Mr. Randolph Yackzan, Inspector/Engineer

We will be pleased to discuss any further questions which you have on the proposal.

Very truly yours,

BROWN AND CALDWELL



Albert A. Doyle
Project Manager

AAD:mjd
Enclosure

cc/enc: Mr. Andy Hunt, City of Sacramento

11

THE
CITY
OF
NEW
YORK
COUNTY
OFFICE
OF
THE
CLERK
IN
CHIEF
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NASSAU
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NEW
YORK
N.Y.
10038

IN SENATE
January 11, 1961

REPORT
OF THE
COMMISSIONERS OF THE
LAND OFFICE
ON THE
LANDS BELONGING TO THE
STATE OF NEW YORK
IN CONNECTION WITH THE
RECONSTRUCTION OF THE
PORT AUTHORITY

ALBANY:
J.B. LIPPINCOTT COMPANY,
1961

FOR SALE BY
THE
NEW YORK STATE
DEPARTMENT OF
GENERAL SERVICES
100 NASSAU ST
NEW YORK, N.Y. 10038

EXHIBIT A

1984-1985 HOURLY BILLING RATE RANGES
FOR PERSONNEL GRADES TO BE USED IN SERVICES
DURING CONSTRUCTION FOR THE
CITY LANDFILL EXPANSION PROJECT^a
(EFFECTIVE OCTOBER 6, 1984)

<u>Grade Description</u>	<u>Billing Rate Range, ^{b,c} dollars/hour</u>
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Managing Engineer	83.09 - 93.72
Supervising Engineer	75.24 - 84.81
Principal Engineer	67.39 - 75.90
Senior Construction Engineer/Senior Engineer	59.47 - 67.06
Inspector/Engineer	51.68 - 58.21
Associate Inspector/Associate Engineer	43.03 - 50.03
Assistant Inspector/Assistant Engineer	36.76 - 42.70
Typist IV	30.56 - 35.50
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Draftsman	30.56 - 35.50

^aSubject to revision in October 1985.

^bBilling rate is billable price, including all markup.

^cRange shown covers seven salary steps within each grade.
Actual rate billed will reflect the salary step within the
grade of the individual working on the job.

Proposal

SERVICES DURING CONSTRUCTION
CITY LANDFILL EXPANSION PROJECT
CITY OF SACRAMENTO

SEPTEMBER 17, 1984

1. Errors & omissions insurance
2. Submit testing program w/ costs for review.
3. Submit labor breakdown & how estimate was derived - man loading of project.
4. Brown & Caldwell notes & justification of 2.44 DPE
5. City will provide ^{GIS markup instrumentation} work.
6. City aide. in inspection.
How much do you need.



September 17, 1984

Mr. Thomas M. Finley, Principal Engineer
Engineering and Transportation Division
Department of Public Works
City of Sacramento
City Hall, Suite 300
915 "I" Street
Sacramento, California 95814

017-802
017-84-53

Subject: Proposal for Services During Construction,
Sacramento City Landfill Expansion Project

Dear Mr. Finley:

Enclosed per your request is our proposal for services during construction of the City Landfill Expansion Project. The proposal is for:

1. Resident Engineer and Inspection Services
2. Construction Staking
3. Design Consultation During Construction

Our proposal is in six sections as follows:

- Section 1--Proposed Organization and Staff
- Section 2--Scope of Services
- Section 3--Estimated Cost
- Section 4--Proposed Method of Compensation
- Section 5--J. H. Kleinfelder & Associates Proposal
to Brown and Caldwell
- Section 6--Resumes

Estimated Cost

The estimated cost for our services, including the services of our two proposed subcontractors (J. H. Kleinfelder & Associates and Roy Carter) is \$251,000.

The breakdown of this estimate to the three service categories is as follows:

Mr. Thomas M. Finley
September 17, 1984
Page two

<u>Services</u>	<u>Estimated cost, dollars</u>
1. Resident Engineer and Inspection	170,430
2. Construction Staking	39,820
3. Design Consultation During Construction	<u>40,760</u>
Total	251,000

The actual cost of our services will depend heavily on the construction contractor's schedule and the extent of problems and possible design modifications which may be encountered in the construction. Our services cost estimate is a best estimate based on certain assumptions as to the contractor's possible schedule and our experience in other similar projects.

We have identified one area in which the cost of our service for inspection could be reduced through the use of City inspection staff.

A major reduction in the total cost for our services could be made by elimination of the Construction Staking assignment. We have previously discussed options of either (1) having the construction staking done by City staff or (2) changing the current construction contract specifications to require construction staking by the Contractor.

In this instance, we do not favor having the staking done by the Contractor. The project lines and grades are complex. Staking by a surveying team under the direct control of the Resident Engineer will allow prompt identification and correction before construction of line and grade discrepancies which may be present in the design. This will avoid the possible added construction expense and delay of a Contractor's surveyor rigidly following the design in his staking with the result that discrepancies are not eliminated prior to partial or complete construction.

We will be pleased to discuss our cost estimate and ways in which costs can be minimized.

Proposed Method of Compensation

In view of the several factors which could act to decrease or increase the actual cost for our services from that shown in our current cost estimate, we propose that our services be

*Expedite
Construction*

working relationship

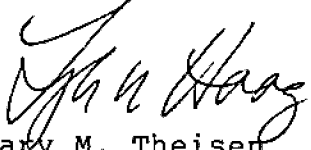
Mr. Thomas M. Finley
September 17, 1984
Page three

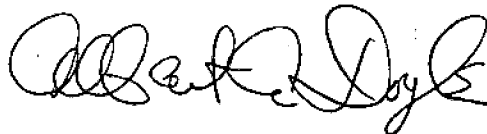
provided on a time-and-expense basis with a limiting amount not to be exceeded without prior City agreement. Details of the proposed basis for compensation are provided in Section 4 of our proposal.

We appreciate the opportunity to propose on these services. We will welcome a discussion of the details of the proposal and ways in which the scope and cost of our services can be adjusted to minimize the expense of our services without jeopardizing project quality.

Very truly yours,

BROWN AND CALDWELL

for 
Hilary M. Theisen
Vice President



Albert A. Doyle
Project Manager

HMT:AAD:mjd
Enclosure

SECTION 1

PROPOSED ORGANIZATION AND STAFF

The proposed services to the City of Sacramento (City) during construction of the Landfill Expansion Project would be provided by Brown and Caldwell acting as an agent of the City. Brown and Caldwell would employ two subcontractors in the work. These are (1) J. H. Kleinfelder & Associates and (2) Roy Carter.

TEAM ORGANIZATION

The proposed organization of the Brown and Caldwell Project Team is shown on Figure 1-1.

PROPOSED STAFF

The proposed key staff for the work and their responsibilities and experience are summarized below. Resumes are provided in Section 6.

Principal-in-Charge

Principal-in-charge for the proposed work is Mr. Hilary M. Theisen, vice president of Brown and Caldwell. The principal-in-charge maintains a corporate management overview of the work and represents the firm in contractual matters. Mr. Theisen was principal-in-charge for planning and design of the Landfill Expansion Project.

Project Manager

Project manager for the proposed work is Mr. Albert A. Doyle, managing engineer in our Sacramento office. Mr. Doyle was project manager for planning and design of the Landfill Expansion Project. Mr. Doyle will be responsible for overall management and coordination of the work. He will be the primary contact with the City on matters relating to performance of all services under the City/Brown and Caldwell agreement and will be responsible for budget and schedule control for those services. He will maintain an overview of the project and will insure that the project, as constructed, fully conforms to the design intent.

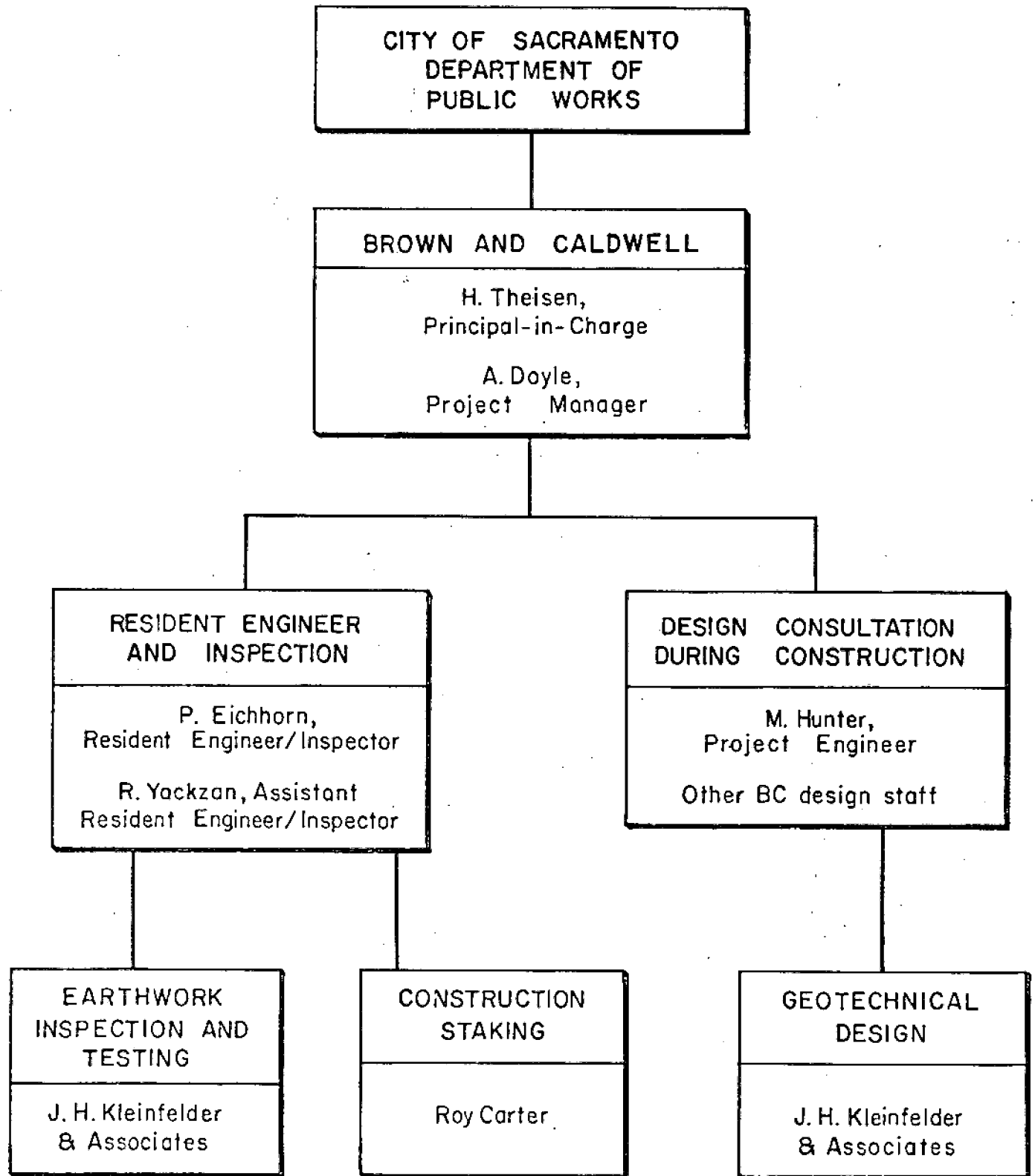


Figure I-1. Team Organization

Mr. Doyle is a Professional Engineer with 20 years of experience. He was project manager for engineering services during construction of the \$50 million Sacramento Combined Wastewater Control System. He is currently project manager for engineering and inspection services in construction of the \$3.8 million Leviathan Mine Pollution Abatement Project, a project involving 800,000 yards of earthwork plus 16 acres of lined (hazardous waste) ponds and site drainage improvements.

Resident Engineer/Inspector

The Resident Engineer/Inspector will be Mr. Paul J. Eichhorn. Mr. Eichhorn is a Professional Engineer with 29 years of experience. Twenty-four years of his experience are in project construction. He has been resident engineer on a wide variety of construction projects over the past nine years. Mr. Eichhorn will supervise the day-to-day activities of the inspection and surveying teams at the site.

/site supervision

Assistant Resident Engineer/Inspector

Mr. Randolph K. Yackzan will be the designated Assistant Resident Engineer/Inspector with authority to act for the Resident Engineer in his absence. Mr. Yackzan is a Professional Engineer with six years of experience in project planning, design, and construction.

Day to day inspection

Project Engineer for Design Consultation

Mr. Merle L. Hunter will lead the project design team on matters relating to interpretation of the contract drawings and specifications and modifications to the project design. Mr. Hunter is a Professional Engineer with 30 years of experience. He was Project Engineer for design of the Landfill Expansion Project.

J. H. Kleinfelder & Associates, Geotechnical Subcontractor

Section 6 of this proposal contains resumes for the key Kleinfelder personnel which we anticipate to be involved with this project. Geotechnical engineering services would be handled by Ron Perisho and Maurice Gallarda whom worked on the design phases of the project. Mr. Perisho was the senior reviewer on the project and has been familiar with the development of the project since the environmental impact reports. Kleinfelder recommends the use of an associate level technician (between three and seven years of experience) to do quality control work for the earth embankments and foundation preparation. During the periods of the placement of the lining, Kleinfelder recommends that a senior level technician be used inasmuch as this is a more critical phase of the construction.

This individual would most likely be either Mr. Robert Antel or Mr. Robert Solomon. Individuals working on the project will be selected based upon the schedule of the contractor and the time that the project is started.

Normal

Roy Carter, Surveying Subcontractor

Construction staking for the project will be provided by Roy Carter. Mr. Carter provided all survey work used in the Landfill Project design. All work will be supervised by Mr. Carter.

SECTION 2

SCOPE OF SERVICES

The proposed scope of services consists of:

1. Resident Engineer and Inspection Services
2. Construction Staking
3. Design Consultation During Construction

The estimated man-hour requirements and associated costs for these services are presented in the proposal section on Estimated Cost and Proposed Method of Compensation. Man-hours and costs will be heavily influenced by the Contractor's construction schedule and unexpected problems which may be encountered during construction. Cost estimates for our services assume that Contractor activity at the site commences in December of 1984 and proceeds at a modest level until the end of April 1985. Thereafter, we have assumed that an intense Contractor effort through the late spring and summer produces project completion by the end of October 1985. Specifics of our costing assumptions are presented with the estimated costs.

Resident Engineer and Inspection Services

Brown and Caldwell will provide the services of a registered Civil Engineer to act as an agent of the City of Sacramento in the performance of the duties of the Resident Engineer at the site. The Resident Engineer will be assisted in construction inspection activities by:

1. J. H. Kleinfelder & Associates, acting as a subcontractor to Brown and Caldwell for: (1) the conduct of inspection and testing of foundation preparation, berm embankment construction, and placement of the clay liner and (2) laboratory testing of concrete. The scope of services to be provided by J. H. Kleinfelder & Associates is described in a letter proposal from Messrs. Ronald J. Perisho and Robert L. Ehlers of Kleinfelder to Mr. Al Doyle of Brown and Caldwell (see Section 5 of this proposal). The Kleinfelder proposal covers both inspection services and design consultation during construction. Estimated costs for these two kinds of Kleinfelder services are shown separately in the cost section of our proposal. *= if necessary*
2. Roy Carter, acting as a subcontractor to Brown and Caldwell for construction staking.

3. Electrical inspection staff provided by the City of Sacramento for inspection of all electrical work on the project. ok
4. Other City inspection staff to be used on an intermittent basis to assist Brown and Caldwell's Resident Engineer/Inspector during periods of peak construction activity. Possible needs for City inspection personnel will be identified in monthly progress reports and meetings with the City. At that time, it will be determined on a case-by-case basis whether the peak activity inspection needs will be met by the use of City personnel or by the use of additional Brown and Caldwell personnel. ok

The Resident Engineer's responsibilities will generally be as follow:

Preconstruction Conference. The Resident Engineer will participate with the City in a preconstruction conference with the Contractor to discuss the lines of communication for the project, the Contractor's expected schedule of work, the submittal process, and other items of a meeting agenda to be provided by the City. This conference will also be attended by the Brown and Caldwell Project Manager and by such other members of the Brown and Caldwell team as the Resident Engineer and City deem appropriate. ✓

Progress Reports. The Resident Engineer will maintain daily records of construction activities, inspections, and progress, including all significant oral or written communications with the Contractor. These records will be the basis for written progress reports which will be submitted monthly to the City. ✓

Construction Meetings. The Resident Engineer will conduct regularly scheduled meetings (at least monthly) with the Contractor and City to discuss project progress and issues important to the successful conduct of the work. Additional meetings will be scheduled as deemed appropriate by the Resident Engineer and City. ✓

Contractor Requests for Progress Payments. The Resident Engineer will review Contractor requests for progress payment and will forward the reviewed requests with his recommendations to the City. Approval of progress payments will be the City's responsibility. ✓

Submittal Process. The Resident Engineer will receive and log all Contractor submittals for the work. As he deems necessary, he will forward copies of the submittals for review by the design engineer. Upon completion of the review of each ✓

submittal, the Resident Engineer will forward the reviewed submittal to the City with his recommendation regarding City action. Approval of submittals will be the City's responsibility.

Administrative Functions. The Resident Engineer will be responsible for:

1. Preparation of general correspondence regarding the work.
2. Maintaining orderly files at the project site.
3. Issuance of directives (field memos, change orders, etc.) dealing with the quality, conduct, and scope of the construction work.
4. Control of the activities of the earthwork inspection and surveying subcontractors.

Clerical support for the Resident Engineer's administrative functions will be provided from Brown and Caldwell's Sacramento office. Resident Engineer correspondence will be issued on City of Sacramento letterhead. Final Report
?

Inspection. The Resident Engineer will conduct or supervise the conduct of all inspection activities at the site. It is anticipated that the schedule of construction operations will be such that the Resident Engineer will be personally able to conduct the majority of the inspection work beyond that shown in this proposal for conduct by J. H. Kleinfelder & Associates. It is understood that the City will supply inspection personnel for all electrical and instrumentation work. If the Contractor's scheduled operations are such that, in the Resident Engineer's opinion, additional inspection assistance is needed to ensure project quality during peak activity periods, this assistance will be provided by either: (1) temporary use of additional Brown and Caldwell personnel or (2) temporary use of City personnel. These two alternatives for meeting inspection needs will be reviewed with the City on a case-by-case basis.

Liaison with the Design Engineer. The Resident Engineer will be responsible for all communications with the design engineer regarding interpretation of the design intent and information shown on the plans. With City concurrence, the Resident Engineer will request that the design engineer prepare drawings and technical specifications for any necessary change orders. At his discretion, the Resident Engineer will request that the design engineer visit the site and/or participate in meetings with the Contractor. In this context, the "design engineer" refers to professional staff of Brown and Caldwell

and professional staff of J. H. Kleinfelder & Associates. [Note: Services by the design engineer are presented separately in this proposal under the heading "Design Consultation During Construction".]

Preparation of Punchlist. The Resident Engineer will be responsible for preparation and distribution of a project punchlist showing defective or incomplete construction items to be corrected by the Contractor prior to final acceptance of the work.

~~Advise~~ Advise of conflict of interest

w/ City approval

As-Built Drawings. The contract documents require that the Contractor provide a marked set of contract drawing sepias showing changes made in the project as originally designed. The Resident Engineer will receive these marked sepias, review them against his records, require any additional Contractor marking he deems necessary, and forward them to the City.

Except those for which plans issued

Final Inspection and Report. The Resident Engineer will be responsible for the final inspection of the project. The final inspection report will consist of submittal to the City of the completion slips used by the City for this purpose on City projects.

w/ City Copies of records of const. for future city wal.

Construction Surveys and Staking

This work will be performed by Roy Carter, surveying consultant to Brown and Caldwell under the direction of the Resident Engineer. The surveying work will include the following:

1. Rough Grade Staking for Excavation. This staking will establish sufficient control stakes to enable the Contractor to move bulk quantities of earth.
2. Fine Grade Staking on Site Bottom. This staking will insure correct sub-base slopes and grades as designed prior to placement of the clay liner.
3. Berm Slope Stakes with Offsets. This staking will enable bulk construction of the berm along the freeway.
4. Berm Centerline and Top of Berm Staking. The centerline and top of berm will be staked with "blue tops" to insure proper berm finish grade and alignment.
5. Staking for All Pipe Structures. This staking will be for alignment and grade.
6. Staking for Drain Swales. This staking will be for drain swales both inside and outside the future landfill area.

7. Staking for Fence Alignment.
8. Staking for 28-Foot Access Road. Both rough and final alignment and grade staking will be provided from the existing scale house to the landfill expansion area and within the expansion area along the northern perimeter of the site bottom.
9. Staking for Ramp from "B" Street.
10. Staking for Miscellaneous Structures.

Specifics of the construction staking will be resolved by the Resident Engineer and Surveyor in cooperation with the Contractor. The above description of the work assumes that normal methods of construction for this type project will be used.

Design Consultation During Construction

These services will be performed by staff of Brown and Caldwell and J. H. Kleinfelder & Associates who participated in the project design. The services will be provided under the direction of the Brown and Caldwell project manager who managed the project design. The services are generally as defined in ASCE - Manuals and Reports on Engineering Practice - No. 45 for basic services during a project construction phase. These services are in the following categories:

Office Engineering. Office engineering services will consist of:

1. Assistance to the City in securing bids, tabulation and analysis of bid results, and furnishing recommendations on the award of construction contracts. ✓
2. Consultation with and advice to the City as to the acceptability of subcontractors and other persons and organizations proposed by the Prime Contractor or Contractors, when such advice is required by the bidding documents. ✓
3. Consultation with and advice to the City as to the acceptability of substitute materials and equipment proposed by the Contractor or Contractors when substitution prior to the award of contracts is allowed by the bidding documents. ✓
4. Consultation with and advice to the Resident Engineer during construction. ✓

5. Preparation of elementary and supplementary sketches required to resolve problems due to actual field conditions encountered.
6. Checking detailed construction drawings and shop and erection drawings submitted by the Contractor or Contractors for compliance with design concepts.
7. Reviewing laboratory, shop, and mill test reports on materials and equipment.

Field Engineering. This service consists of:

1. Making periodic visits to the project site at intervals appropriate to the various stages of construction to observe, as an experienced and qualified design professional, the progress and the quality of the executed work, and then informing the Resident Engineer.
2. Issuing necessary interpretations and clarifications of contract documents, preparing required change orders, and assisting in decisions as to acceptability of the work.
3. Assisting the Resident Engineer in determining amounts of progress payments due, based on completion of the work, and in recommending issuance of such payments by the City.
4. Observing initial operation of the project, or of performance tests required by the specifications.
5. Participating in the final inspection and reporting on completion of the project, including any requested assistance to the Resident Engineer in making of recommendations concerning final payments to Contractors and release of retained percentages, if any.

SECTION 3

ESTIMATED COST

The estimated billable cost to the City for services under this proposal is summarized in Table 3-1. The cost estimate is subdivided into the three categories of services identified in Section 2 (Scope of Services) of this proposal. A breakdown of costs within each of the three service categories is provided in Tables 3-2 through 3-4. The actual cost of Resident Engineer and Inspection Services will be heavily influenced by the rate at which the Contractor proceeds at the site, including whether or not construction work is attempted during the 1984-85 wet season.

Resident Engineer and Inspection Services

The cost estimate for Resident Engineer and Inspection Services is based on the following assumptions:

1. Phase 1. The Contractor's activity will be minimal in the period from notice-to-proceed until May 1, 1985. This period is identified as Phase 1 in the cost estimate tables. During this period, the Contractor may choose to construct works such as the main access road, lighting, and a portion of the new drain line (excavation of the drain line through the levee is not permitted after November 15). We have assumed that the major excavation of the site will not commence until May 1, 1985. The Contractor may choose to file all of the required submittals during the December 1, 1984 - May 1, 1985, period. Our cost estimate assumes that Resident Engineer and Inspection Services during the Phase 1 period will not exceed one-third time. An allowance of 356 hours of Brown and Caldwell labor and 4 hours of Kleinfelder labor is shown in Table 3-1 and detailed in Table 3-2.
2. Phase 2. We have assumed that work at the site will proceed on a full-time basis beginning on May 1, 1985. If the early completion requirement for Area A of the site remains in the contract requirements, we have assumed that the Contractor will proceed on a 50-hour per week basis for 8 weeks until the early completion requirement is met. During the period between May 1, 1985, and completion of Area A, we have assumed that our Resident Engineer will be present at the site on a full-time basis and that he will be assisted by a Brown and Caldwell inspector on a 15 percent of time

Table 3-1. Summary of Estimated Costs for Services During Construction, City Landfill Expansion^a

Service	Brown and Caldwell				J. H. Kleinfelder & Associates				Roy Carter		Totals			
	Labor		Direct cost, dollars	Total cost, dollars	Labor		Direct cost, dollars	Total cost, dollars	Crew hours ^b	Cost, ^c dollars	Labor		Direct cost, dollars	Job cost, dollars
	Hours	Cost, dollars			Hours	Cost, dollars					hours	Cost, dollars		
1. Resident Engineer and Inspection														
a. Phase 1	356	23,890	1,630	25,520	4	200	240	440	--	--	360	24,090	1,870	25,960
b. Phase 2	498	31,840	2,330	34,170	371	19,090	2,190	21,280	--	--	869	50,930	4,520	55,450
c. Phase 3	888	56,240	3,970	60,210	463	24,620	4,190	28,810	--	--	1,351	80,860	8,160	89,020
Subtotal	1,742	111,970	7,930	119,900	838	43,910	6,620	50,530	--	--	2,580	155,880	14,550	170,430
2. Construction Staking	--	--	--	--	--	--	--	--	362	39,820	362	39,820	--	39,820
3. Design Consultation During Construction														
a. Project Management and Coordination	71	5,700	110	5,810	--	--	--	--	--	--	71	5,700	110	5,810
b. Office Engineering	236	18,070	280	18,350	20	1,380	0	1,380	--	--	256	19,450	280	19,730
c. Field Engineering	124	10,070	300	10,370	61	4,850	0	4,850	--	--	185	14,920	300	15,220
Subtotal	431	33,840	690	34,530	81	6,230	0	6,230	--	--	512	40,070	690	40,760
Total	2,173	145,810	8,620	154,430	919	50,114	6,620	56,760	362	39,820	3,454	235,777	15,240	251,000

^aCost shown is billable price to City and includes all markup.

^bThree-man surveying crew.

^cIncludes all support cost.

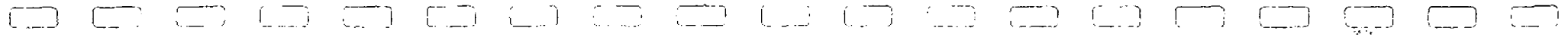


Table 3-2. Estimated Cost for Resident Engineer and Inspection Services, Sacramento City Landfill Expansion^a

Service	Brown and Caldwell				J. H. Kleinfelder & Associates				Total	
	Labor		Direct cost, dollars	Total cost, dollars	Labor		Direct cost, dollars	Total cost, dollars		
	Hours	Cost, dollars			Hours	Cost, dollars				
Project Management and Coordination (all phases)	124	10,210	40	10,250	--	--	--	--	124	10,250
Phase 1:										
1. Resident Eng/Inspector	280	18,360	1,500	19,860	--	--	--	--	280	19,860
2. Inspector (Gen. Civil)	0	0	0	0	--	--	--	--	0	0
3. Inspector (earthwork)	--	--	--	--	4	200	--	200	4	200
4. Earthwork and Materials Tests	--	--	--	--	--	--	240	240	--	240
5. Clerical Support	20	920	110	1,030	--	--	--	--	20	1,030
Subtotals	300	19,280	1,610	20,890	4	200	240	440	304	21,330
Phase 2:										
1. Resident Eng/Inspector	400	26,710	2,260	28,970	--	--	--	--	400	28,970
2. Inspector (Gen. Civil) ^b	60	2,580	0	2,580	--	--	--	--	60	2,580
3. Inspector (earthwork)	--	--	--	--	371	19,090	--	19,090	371	19,090
4. Earthwork and Materials Tests	--	--	--	--	--	--	2,190	2,190	--	2,190
5. Clerical Support	16	740	60	800	--	--	--	--	16	800
Subtotals	476	30,030	2,320	32,250	371	19,090	2,190	21,280	847	53,630
Phase 3:										
1. Resident Eng/Inspector	736	47,790	3,850	51,640	--	--	--	--	736	51,640
2. Inspector (Gen. Civil) ^b	74	3,180	0	3,180	--	--	--	--	74	3,180
3. Inspector (earthwork)	--	--	--	--	463	24,620	--	24,620	463	24,620
4. Earthwork and Materials Tests	--	--	--	--	--	--	4,190	4,190	--	4,190
5. Clerical Support	32	1,480	110	1,590	--	--	--	--	32	1,590
Subtotals	842	52,450	3,960	56,410	463	24,620	4,190	28,810	1,305	85,220
Resident Engineer and Inspection Totals	1,742	111,970	7,930	119,900	838	43,910	6,620	50,530	2,580	170,430

^aCost shown is billable price to City and includes all markup.

^bAt City option, this inspector could be supplied from City staff. This would reduce the estimated cost for Brown and Caldwell services by \$5,760.



Table 3-3. Estimated Cost for Construction Staking Services,^a
Sacramento City Landfill Expansion

Construction staking item	Crew Hours ^b	Total cost, ^c dollars
1. Rough Grade Staking for Excavation	40	4,400
2. Fine Grade Staking on Site Bottom	40	4,400
3. Berm Slope Stakes with Offsets	16	1,760
4. Berm Centerline and Top of Berm Staking	16	1,760
5. Staking for All Pipe Structures	124	13,640
6. Staking for Drain Swales	32	3,520
7. Staking for Fence Alignment	24	2,640
8. Staking for 28-Foot Access Road	40	4,400
9. Staking for Ramp from "B" Street	6	660
10. Staking for Miscellaneous Structures	24	2,640
Total	362	39,820

^aCost shown is billable price to City and includes all markup.

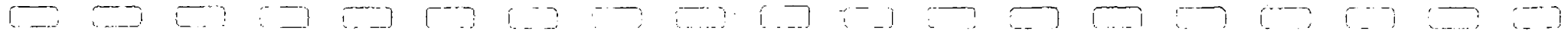
^bThree-man surveying crew.

^cIncludes all support cost.

Table 3-4. Estimated Cost for Design Consultation During Construction, Sacramento City Landfill Expansion Project^a

Service	Brown and Caldwell				J. H. Kleinfelder & Associates				Total	
	Labor		Direct cost, dollars	Total cost, dollars	Labor		Direct cost, dollars	Total cost, dollars	Hours	Cost, dollars
	Hours	Cost, dollars			Hours	Cost, dollars				
1. Project Management and Coordination	71	5,700	110	5,810	--	--	--	--	71	5,810
2. Office Engineering										
a. Bid Evaluation	8	630	40	670	--	--	--	--	8	670
b. Submittals Review	52	4,400	20	4,420	--	--	--	--	52	4,420
c. Consultation with Resident Engineer	128	9,840	110	9,950	20	1,380	0	1,380	148	11,330
d. Change Orders	48	3,200	110	3,310	--	--	--	--	48	3,310
Subtotal	236	18,070	280	18,350	20	1,380	0	1,380	256	19,730
3. Field Engineering										
a. Site Visits:										
• Phase 1	26	2,080	40	2,120	--	--	--	--	26	2,120
• Phase 2	38	2,990	110	3,100	30	2,340	0	2,340	68	5,440
• Phase 3	38	3,020	110	3,130	31	2,510	0	2,510	69	5,640
Subtotal	102	8,090	260	8,350	61	4,850	0	4,850	163	13,200
b. Final Inspection	22	1,980	40	2,020	--	--	--	--	22	2,020
Total	431	33,840	690	34,530	81	6,230	0	6,230	512	40,760

^aCost shown is billable price to City and includes all markup.



basis. (This results in an estimated total Brown and Caldwell Resident Engineer and Inspection man-hour requirement of 498 hours between May 1, 1985, and completion of Area A). During this same period, Kleinfelder estimates that approximately 371 man-hours of earthwork and liner inspection will be required using their personnel. Details of these estimates are in Table 3-2.

3. Phase 3. After completion of Area A (assumed to occur by June 30, 1985), we have assumed that construction will proceed on a 40-hour per week basis to completion of the project by November 1, 1985. During this period, our Resident Engineer or the Assistant Resident Engineer will be present at the site on a full-time basis. We have assumed that the need for an additional Brown and Caldwell staff person to assist with General Civil inspection during peak construction periods will not exceed 10 percent of the Resident Engineer/Inspector time. (These assumptions result in an estimated total Brown and Caldwell labor requirement of 888 man-hours in the period June 30 through October 31, 1985. During this same period, Kleinfelder estimates that approximately 463 man-hours of earthwork and liner inspection will be required using their personnel. Details of these estimates are in Table 3-2.

The man-hours and costs of providing Resident Engineer and Inspection Services are best estimates based on information now available. The various items of the construction work may progress more (or less) rapidly than we now estimate, leading to less (or more) man-hours and cost than shown. As indicated in the discussion of our cost estimates for Phases 2 and 3, we have included allowance for a General Civil Inspector at the site during peak construction periods. The actual need for this inspector will depend upon the Contractor's schedule and whether or not our Resident Engineer/Inspector believes the additional inspector is needed to insure the quality of the work. This additional inspector will be requested only if the Resident Engineer/Inspector's workload is such that he cannot otherwise give adequate attention to all aspects of his duties. Although for cost estimating purposes, we have assumed that the additional General Civil Inspector would be provided from our staff, that responsibility could equally well be assigned to a City inspector. A footnote in Table 3-2 indicates an estimated \$5,760 reduction in the cost for Brown and Caldwell services if the City wishes to supply this inspector.

The need for laboratory services (number of tests and analyses) from Kleinfelder will depend on conditions actually encountered during earthwork construction. The cost estimate

for laboratory tests and analyses by Kleinfelder is based on the following assumptions as to numbers of various tests:

1. Foundation preparation compaction curves--2 - 4-6
2. Subdrain gradation analyses--6
3. Side slope fill compaction curves--2
4. Embankment compaction curves--4
5. Liner compaction curves--6
6. Liner gradation analyses--8
7. Liner permeability tests--5
8. Concrete cylinder compression tests--5 sets - *where*
of 3 cylinders
9. Access road compaction curves--2
10. Aggregate base tests--1 set

Construction Staking

The cost estimate detailed in Table 3-3 for construction staking is based on the assumption that the general staking approach described in the Scope of Work section will be acceptable to the Contractor and City. Details of the construction staking will be worked out with the Contractor at the outset of construction. The construction staking cost estimate is therefore a best estimate based on available information.

Design Consultation During Construction

The estimated cost for these services is detailed in Table 3-4. Two of the Office Engineering items ("Consultation with Resident Engineer" and "Change Orders") are highly influenced by problems encountered in the construction work. The allowance for "Consultation with the Resident Engineer" provides an average of about 12 hours per month (3 hours per week) for consultation over the estimated 11-month construction period (December 1984 through October 1985). The allowance for "Change Orders" is minimal and reflects our confidence in the job as designed. Change orders in the underdrain system might be necessary based on conditions encountered in the construction. Changes in the clay liner, berms, and other earthwork features are less likely but still a possibility if unexpected soil conditions are encountered. A total of 102 hours has been allotted to site visits. This is an average of 9-1/4 hours per month over the 11-month construction period.

SECTION 4

PROPOSED METHOD OF COMPENSATION

We propose that compensation for services described in this proposal be on the basis of actual time and expenses with agreed upon limiting amounts for each of the three service categories (i.e., Resident Engineer and Inspection Services, Construction Staking, and Design Consultation During Construction). These limiting amounts would be periodically reviewed with the City and would be adjusted downward or upward as necessary to reflect actual project conditions. No limiting amount would be exceeded without prior written approval of the City.

Compensation for Brown and Caldwell Labor and Direct Costs

We propose that compensation for Brown and Caldwell labor be based on Direct Personnel Expense (i.e., salary plus fringe benefits) for our personnel engaged on the project with a markup of 2.444 to cover overhead and profit. *

We propose that compensation for Brown and Caldwell direct costs be based on our cost with a markup of 10 percent to cover our administrative costs. ✓

Compensation for Subcontractor Services

We propose that subcontractor services by J. H. Kleinfelder & Associates and Roy Carter be based on their actual hourly labor and direct costs as invoiced to Brown and Caldwell with a markup of 10 percent to cover our administrative costs. Kleinfelder's current hourly rates for the labor classifications they expect to use on the project are shown in their letter proposal to Brown and Caldwell (see Section 5 of this proposal). Kleinfelder's unit charges to Brown and Caldwell for the various kinds of laboratory services are also shown in their letter proposal. The current Kleinfelder rates will be in effect through April 1, 1985, and are subject to change after that time. The hourly rate (\$100/crew hour) to be invoiced to Brown and Caldwell by Roy Carter for surveying services will remain in effect through October 1985 and is subject to increase thereafter.

SECTION 5

J. H. KLEINFELDER & ASSOCIATES PROPOSAL
TO BROWN AND CALDWELL

This section contains the letter proposal from J. H. Kleinfelder & Associates to Brown and Caldwell for assistance in inspection and design consultation during construction of the City Landfill Expansion Project.

J. H. KLEINFELDER & ASSOCIATES

GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

LAND & WATER RESOURCES

9795 BUSINESS PARK DRIVE, SUITE A

SACRAMENTO, CA 95827-1794

(916) 366-1701

September 6, 1984

File: A-1763-3

Brown and Caldwell
723 "S" Street
Sacramento, California 95814

Attention: Mr. Al Doyle

Subject: PROPOSAL FOR CONSTRUCTION TESTING
AND OBSERVATION SERVICES
CITY OF SACRAMENTO LANDFILL
SACRAMENTO, CALIFORNIA

Gentlemen:

J. H. Kleinfelder & Associates is pleased to present this proposal for providing the materials testing services during construction of the proposed expansion to the City of Sacramento Landfill. This proposal is prepared based upon discussions with Mr. Al Doyle of Brown and Caldwell to determine the scope of work that our firm would be providing during the construction period. Presented herein is the anticipated scope of services along with anticipated time that will be required to complete the work, and an estimated cost for budgetary purposes.

GENERAL INFORMATION

J. H. Kleinfelder & Associates has provided the geotechnical design for the proposed landfill expansion to be located adjacent to and east of the existing landfill. This work has been completed in conjunction with Brown and Caldwell. Our work has included the environmental impact statement through the final design for the project.

It is anticipated that during this project our firm would act as a consultant to Brown and Caldwell to complete the geotechnical testing and observation phases during construction. Brown and Caldwell is anticipated to provide a resident engineer at the site to handle the contract management and overall inspection responsibilities. Our firm will provide the specialized testing and observation services required with geotechnical phases of the project. Several phases of the project are considered to be critical. These phases will require sufficient testing and observation services in order that our firm can provide the City

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with a letter stating that the construction was completed to the intent of the plans and specifications. Of particular concern are the construction of the lining (in order to provide an adequately low permeability), the dewatering system (in order to provide stability to the lining) and the stability of the embankments.

SCOPE OF SERVICES

The scope of our testing and observation services will be generally that required for earthwork construction and testing. Field density tests will be provided on the foundation preparation and embankment construction as well as that of the placement of the liner. It is anticipated that nuclear gauge testing methods will be used for much of the density testing services. Observation services will include the stripping and subgrade preparation as well as that of compaction of the existing materials. A great deal of observation will be required during the placement of the bentonite and the mixing of the bentonite to assure that uniformity has been obtained. In addition to the on-site testing requirements, our Sacramento laboratory will provide soil and concrete testing which is anticipated to include compaction curves, gradation determinations, and concrete compression testing.

The above work will be under the observation and supervision of a registered civil engineer who will make periodic site visits in order to assure that the testing is being completed in the appropriate manner, as well as to consult with Brown and Caldwell and representatives of the City as required during the project.

For your information, we have provided resumes of several of the key personnel which we anticipate to be involved with this project. The engineering services would be handled by Ron Perisho and Maurice Gallarda whom worked on the design phases of the project. Mr. Perisho was the senior reviewer on the project and has been familiar with the development of the project since the environmental impact reports. We would anticipate to provide an associate level technician (which has between 3 and 7 years of experience) to do quality control work for the earth embankments and foundation preparation. It should be noted that during the periods of the placement of the lining we are recommending that a senior level technician be used during this more critical phase of the construction. This individual would most likely be either Mr. Robert Antel or Mr. Robert Solomon. Individuals working on the project will be selected based upon the schedule of the contractor and the time that the project is started.

ENGINEERING FEES

We have enclosed a copy of our current fee schedule of engineering fees dated January 1984, which would be in effect for this project through April 1, 1985. This is the end of our fiscal year at which time a new fee schedule is anticipated. The following rates will be in effect for the first portion of this job. These rates include all direct expenditures including vehicle and mileage. Additional expenditures would include the reporting of the test results, supervision and administrative work along with engineering consulting work that would be charged at an hourly basis. The following rates are anticipated to be the most commonly used for this project.

	<u>Rate/Hour</u>
Technician with vehicle and nuclear gauge for soil density testing (associate technician)	= \$ 45.00
Senior technician with vehicle and nuclear gauge for testing and observation of liner	= 50.00
Concrete cylinder testing	= 12.00
Project Engineer	= 72.00
Senior Engineer	= 75.00

TIME ESTIMATES

All costs for our services are proposed to be based upon our standard schedule of fees in force at the time our services are provided. The following time of work and cost estimate is provided for your budgetary expenses. It should be understood that the costs presented below are estimated costs based upon the data available at this time. Some of the items may progress considerably faster than anticipated in our estimate and will result in lessor overall costs. By the same token, some items may require more testing and observation than anticipated. The numbers should be used as budgetary numbers and reviewed during the progress of the project based upon the status of the project.

Clearing and Grubbing

It is anticipated that the project engineer will visit the site to observe the finalize clearing and grubbing for verification that the site has been adequately cleaned of organic



material prior to construction of the embankment and excavation. It is anticipated that this would require approximately two to three visits since the constructor is likely to clear and grub the site in phases. The clearing and grubbing operation prior to completion would be observed by representative of Brown and Caldwell.

Foundation Preparation

In areas where fill will be placed for both the new embankments as well as the basis of the fills that are placed along the river levee and railroad embankment, the existing subgrade is to be prepared for the foundation of the embankment. This will include scarification, moisture compaction, and densification of the existing materials. This is anticipated to be tested on a part-time basis with intermittent observation by an engineer.

Installation of Sub-Drains

The installation of sub-drains will be observed mostly by the representative of Brown & Caldwell. An engineer from our firm is anticipated to visit the site on a periodic basis to verify that the drains are being installed as recommended. It is also anticipated that several gradation tests will be performed on the proposed backfill to verify that this meets the required specifications.

Compaction of Side Slope Fills

These fills are the partial embankments that will be constructed along the existing river levee and the railroad berm located on the northern and eastern portion of the site. Due to the fact that it is important to adequately key and bench into the existing slopes of these structures will be relatively critical. We feel that the construction work should be observed on a nearly full-time basis by the technician and on an intermittent basis by the project engineer. The time for placement has been estimated on a placement rate of 2,000 yards per day. It is anticipated that if the contractor is not meeting this placement rate, the testing would be reduced on a time per day basis to meet the estimated time, thus, part-time or half-time testing may be required on the slower days. An estimated ten days will be required.



Embankment Construction

The density testing and observation of the embankments will be observed and tested on a nearly full-time basis with intermittent observation by an engineer. In order to evaluate the amount of time that would be required for a full-time inspection the amount of time anticipated for this has been based upon the contractor placing at least 6,000 cubic yards of embankment material per day. Approximately 140 thousand cubic yards will be placed resulting in an estimated 25 days of full-time inspection.

Liner Construction

This is considered to be one of the most critical portions of the project and is recommended that full-time observation be completed during the liner installation. The liner may be constructed in phases which will make it critical that the observation of the interfaces be observed on a full-time basis. The liner will be constructed in three lifts, each lift being 6 inches in thickness, with each lift consisting of the native materials mixed with bentonite clay. Observation services will include the calculation and observation of the spreading of the bentonite, the mixing to obtain uniformity and compaction of the bentonite-native soil mixture. Based upon the areas to be covered, it is anticipated that Area A would require approximately 3 weeks of time for placement while the remainder of this site would require approximately 7 weeks of time for placement of the structure. Gradational analysis with a hydrometer are anticipated to be completed in the laboratory. At least five permeability tests will be completed on the compacted liner materials. These permeabilities will be on samples obtained from the compacted liner in order to verify that the permeabilities used in design are being achieved in the field.

Concrete Cylinders

It is anticipated that the resident engineer with Brown, & Caldwell will cast concrete cylinders during his observation and testing for the concrete of the headwalls and pumps structures. These concrete cylinders will be tested by our laboratory and will be picked up by a representative from our firm.

Access Road

It is anticipated that an aggregate base placed in the access road area will be tested for density. It is anticipated for this that we will verify that the aggregate base meets the requirements of the specifications as well as complete the density testing on the aggregate base.



The following is a summary of the above items with the time required along with the estimated cost for each service.

Clearing and Grubbing

Project Engineer - 8 hours @ \$72/hour = \$ 576.00

Foundation Preparation

Associate Technician - 60 hours @ \$45/hour = 2,700.00
Project Engineer - 6 hours @ \$72/hour = 432.00
Compaction Curve - 2 @ \$110/each = 220.00

Installation of Subdrains

Project Engineer - 8 hours @ \$72/hour = 576.00
Senior Engineer - 2 hours @ 75/hour = 150.00
Gradation Analysis - 6 @ \$70/each = 420.00

Slide Slope Fills

Associate Technician - 80 hours @ \$45/hour = 3,600.00
Compaction Curve - 2 @ \$110/each = 220.00
Project Engineer - 6 hours @ \$72/hour = 432.00

Embankment Construction

Associate Technician - 200 hours @ \$45/hour = 9,000.00
Project Engineer - 12 hours @ \$72/hour = 864.00
Senior Engineer - 6 hours @ \$75/hour = 450.00
Compaction Curves - 4 @ \$110/each = 440.00
Supervisory Technician - 8 hours @ \$45/hour = 360.00

Liner Construction

Senior Technician - 400 hours @ \$50/hour = 20,000.00
Compaction Curves* - 6 @ \$110/each = 660.00
Project Engineer - 16 hours @ \$72/hour = 1,152.00
Supervisory Technician - 10 hours @ \$45/hour = 450.00
Gradation Analysis - 8 @ \$155/each = 1,240.00
Permeability - including obtaining the
sample - 5 @ \$300/each = 1,500.00

*previous curves can not be used for the bentonite mixture

Concrete

Compression Tests - 5 sets of 3 cylinders	=	180.00
15 @ \$12/each	=	175.00
Pick-up - 5 @ \$35/trip	=	

Access Road

Associate Technician - 8 hours @ \$45/hour	=	360.00
Compaction Curve - 2 @ \$110/each	=	220.00
Aggregate Base Tests - 1 set @ \$225/each	=	225.00

Contingency - Approximately 9%	=	<u>4,398.00</u>
	=	\$51,000.00

AUTHORIZATION AND CONTRACT

It is anticipated that we will be issued a contract from Brown and Caldwell and will service as a subcontractor as a representative to the City.

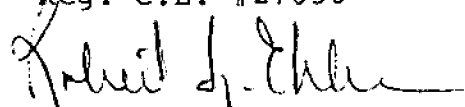
We appreciate the opportunity of presenting this proposal and would be most happy to discuss any aspect with you after you have had the opportunity to review it.

Very truly yours,

J. H. KLEINFELDER & ASSOCIATES



Ronald J. Perisho, P.E.
Engineering Manager
Reg. C.E. #27630



Robert L. Ehlers
Technical Manager

RJP:RLE:crt



SECTION 6

RESUMES

This section contains resumes for key Brown and Caldwell and J. H. Kleinfelder & Associates personnel to be assigned to the Landfill Expansion Project construction services.

BROWN AND CALDWELL

Resumes for key Brown and Caldwell personnel are presented in the following order.

Hilary M. Theisen
Albert A. Doyle
Paul J. Eichhorn
Randolph K. Yackzan
Merle L. Hunter

J. H. KLEINFELDER & ASSOCIATES

Resumes for key J. H. Kleinfelder & Associates personnel are presented in the following order.

Ronald J. Perisho
Maurice W. Gallarda
Robert Solomon
Robert J. Antel

HILARY M. THEISEN

Education:

B.S., Civil Engineering, University of Minnesota, 1960
M.B.A., Business Administration, University of Santa Clara,
1973

Registration:

Registered Civil Engineer 18711, California
Registered Professional Engineer 7682, Oregon
Registered Professional Engineer 03006, Hawaii
Registered Professional Engineer 13906, Washington

Experience:

1977-Present

Joined Brown and Caldwell as a managing engineer. Appointed vice president and manager of the Resource Recovery and Energy Conservation Division in October 1978. Program manager for:

- Procurement of a 1,300 ton-per-day waste-to-energy plant in San Juan, Puerto Rico.
- Design of a 5,000 ton-per-day sanitary landfill in Buenos Aires, Argentina.
- Investigation, design, and construction for cleanup and abatement of PCBs at a 24-acre site.
- Preliminary designs for waste-to-energy facilities at Santa Clara and Santa Monica, California.

1974-1977

Employed by the County of Sacramento, Department of Public Works, as chief of Solid Waste Management Division. The position included full management responsibility for a 256-man organization which provided solid waste collection, transfer, recovery, and disposal services to an unincorporated area of about 400,000 people. Responsibilities included an annual budget of about \$8 million and the construction of a \$1 million transfer station. Typical activities covered were:

- Two transfer stations handling 600 tons per day.
- Residential collection routes picking up 500 tons per day.
- Sanitary landfills receiving approximately 1,100 tons per day.
- Development of a solid waste management plan for Sacramento County (population 700,000).
- Planning and implementation of waste newspaper collection on all residential collection routes.

Coauthored a text on solid wastes which brings together a wide body of knowledge concerning the rapidly changing and expanding field of solid waste management. It has been adopted by numerous colleges and universities around the world.

1965-1973

Employed by Metcalf & Eddy, Inc., consulting engineers. Project director and manager responsible for the development of solid waste management plans for the following communities:

- Region comprising Multnomah, Clackamas, Washington, and Columbia counties, Oregon.
- Anchorage, Alaska.
- Honolulu, Hawaii.
- Contra Costa County.
- San Francisco International Airport.
- State of California.

Additionally, project manager for a study of water resources for Atlantic Richfield Company oil shale developments in western Colorado. Project cost of about \$400,000.

Other experience during this period included work as a project engineer on sewerage and industrial waste system designs, water system designs, and water resources planning.

1960-1964

Public works assignments as an officer with the U.S. Navy, Civil Engineer Corps.

Membership:

American Society of Civil Engineers
American Public Works Association
California Water Pollution Control Association
Governmental Refuse Collection and Disposal Association

Publications:

1. Solid Wastes-Engineering Principles and Management Issues, with H.M. Tchobanoglous and R. Eliasser, McGraw-Hill, New York, 1977.
2. "Solid Waste Management Planning: A Methodology," with P.L. Maxfield, and G.E. Lynch, Journal of Environmental Health, Vol. 38, No. 3, 1975.
3. "Planning Solid Waste Systems - A Public Works Challenge or Crisis," Proceedings, 27th California Transportation and Public Works Conference, The Institute of Transportation and Traffic Engineering, University of California, 1975.
4. "Hawaii's Environmental Planning Aims at Flexibility for Solid Waste Management," with M. Brown Public Works, Vol. 103, No. 9, 1972.
5. "Pragmatic Approaches to Regulation and Control," Proceedings, 28th California Transportation and Public Works Conference, 1976.

ALBERT A. DOYLE

Education:

B.C.E., Ohio State University, 1964

Registration:

Registered Professional Engineer 17734, California

Experience:

1973-Present

Joined Brown and Caldwell as project manager. Project management responsibility for:

- Feasibility study, facility plan, environmental impact report, project design, and engineering services during construction for the Sacramento combined wastewater overflow control system.
- Facility plans and EIRs for the Sacramento Regional County Sanitation District's City, Northeast, and Natomas Interceptor Systems (85 miles of large-diameter pipelines and associated pumping stations).
- Sacramento Regional Wastewater Treatment Plant river outfall facility plan and EIR.
- Central City sewer study for City of Sacramento that involved (1) computer model analysis of hydraulics of combined storm and sanitary sewers in older part of the city, (2) recommendations for system changes to reduce flooding and improve capacity, (3) evaluation of sewer structural conditions and appropriate methods for sewer rehabilitation, and (4) prioritization of rehabilitation or replacement of structurally deteriorated sewers.
- Storm drainage master planning for a 1,500-acre area in the north area of the City of Sacramento.
- Reliability evaluation of the Sacramento Regional Wastewater Treatment Program.
- Preparation of pipeline evaluation and rehabilitation sections of a U.S. Department of Housing and Urban Development technical manual on Utilities Technology for Urban Development.
- Sewer rehabilitation program seminars conducted throughout the country by Brown and Caldwell.
- Site technical study and EIR for Sacramento landfill expansion.
- Solid waste transfer station initial environmental study for the City of Sacramento.
- EIS for San Juan (Puerto Rico) Metro Waste-to-Energy Project (power generation using solid waste as fuel).
- High technology industry siting study for the City of Sacramento.

- Planning, design, and construction management for improvements to abate water pollution caused by acid drainage and other chemical pollution from the Leviathan Mine in Alpine County, California, for the California Regional Water Quality Control Board, Lahontan Region.
- Development and conduct of predischage water quality monitoring program for an open pit gold and silver mining operation at the Zaca Mine in Alpine County, California.
- Review of the environmental monitoring program proposed by Homestake Mining Company for its McLaughlin Gold Project.

In addition, conducted the wastewater reclamation-reuse studies included in the Draft EIS for the County Sanitation Districts of Orange County wastewater facilities plan and participated in an EPA-sponsored preliminary study of wastewater solids management alternatives and practices in Southern California.

1972-1973

Employed by State Water Resources Control Board as head of the enforcement section. Supervised the review and preparation of reports and recommendations on the technical aspects of appeals to the state board on regional board actions or failures to act. Prepared testimony presented to legislative committees on water quality problems in California. Supervised preparation of the draft statewide plan entitled "Water Quality Control Plan for Groundwaters of California."

1968-1972

Employed by California Regional Water Quality Control Board, Lahontan Region, as Southern District engineer. Responsible for the board's regulatory program in the 32,000-square-mile South Lahontan Basin. Planned and executed investigations of groundwater and surface water pollution in cooperation with USGS and other agencies. Supervised preparation of the Interim Water Quality Control Plan for the South Lahontan Region and was responsible for preparing waste discharge requirements and monitoring programs.

1964-1968

Employed by California State Department of Water Resources. Participated in water quality studies of the Delta and San Francisco Bay.

Memberships:

American Water Works Association
California Water Pollution Control Association
Water Pollution Control Federation
Air Pollution Control Association

PAUL J. EICHORN

Education:

B.S., Civil Engineering, University of Maryland, 1953
Additional courses in wastewater treatment and construction technology

Registration:

Registered Civil Engineer 14937, California

Experience:

1982-Present

Assigned as construction manager on a second project to expand the wastewater treatment facilities for the Dublin San Ramon Services District. This project involves a cogeneration system that uses heat recovery and generates electricity from methane. Construction includes a new 600-kw cogeneration plant, a maintenance building, and modifications to the operations building, digester gas management system, chemical conditioning system, waste gas burner, piping, and heat reservoir system. Total project cost is \$3.6 million. Responsibilities include construction inspection, project administration, change order management, submittal review, daily reports, and liaison with the engineering group and the contractor.

1981-1982

Assigned as construction manager for expansion of wastewater treatment facilities for the Dublin San Ramon Services District. The first project involved construction of a secondary clarifier, pumping station, distribution box, digester modifications, and related piping to increase plant capacity to 9 mgd. Total project cost was \$1.4 million. Responsible for administering the contract and conducting and coordinating daily inspections.

1980

Served as resident engineer for construction of \$4.24 million in modifications to the 5.5-mgd wastewater treatment facilities for Selma-Kingsburg-Fowler County Sanitation District. Responsible for administering project activities and inspecting all work in progress. Coordinated change orders and clarifications, maintained administrative correspondence on contracts, prepared daily and monthly progress reports, and carried out administrative procedures as directed by the project manager.

Also served as resident engineer for construction management for Pyramid Lake Fish Hatchery No. 2. Monitored administrative procedures and field inspections and assisted resident inspectors with inspection reporting procedures.

1976-1980

Joined Brown and Caldwell as senior engineer at the Walnut Creek office. Responsibilities included:

- Resident engineer for improvements to the City of Newman wastewater treatment facilities. Duties included field inspection and correspondence for the

general administration of the project. Reviewed contractors' submittals, coordinated field soil testing, and reviewed concrete tests from laboratory.

- Assistant resident engineer for final inspection of expansions to the wastewater treatment plant for Santa Rosa Sanitation District.
- Chief inspector for construction of a \$10.4 million tertiary treatment plant at Sunnyvale. Conducted daily field inspections of all construction work in progress; coordinated field testing and lab reports; and prepared daily reports, field memoranda to contractors, and schedules for monitoring contractors' activities.
- Construction inspector for plant expansion at Central Contra Costa Sanitary District. Scope of inspections included concrete work, piping and equipment installation, field welding, and coating systems.

1970-1975

Responsible for the quality control program with the general contractor on two major Navy building projects. Prepared an inspection program and conducted all required construction inspections and tests.

1968-1970

Worked as an estimator-engineer for a steel subcontractor who furnished and installed metal decking and steel framing systems.

1965-1968

Worked as an estimator-engineer for a general contractor on preparing bids for various commercial and industrial projects.

1961-1965

Assisted the resident engineer in the field inspection of foundations and superstructures during the construction of two power plant units for Pacific Gas and Electric. Also assisted the construction manager in developing both existing and new substations throughout the utility district.

1955-1961

Prepared structural plans and calculations for industrial structures and buildings. Coordinated structural requirements with the other design groups which included mechanical, electrical, and architectural.

RANDOLPH K. YACKZAN

Education:

B.S., Soil and Water Science, University of California at Davis, 1975
M.S., Civil Engineering, California State University at Sacramento, 1980

Registration:

Registered Civil Engineer 33717, California

Experience:

1978-Present

Employed by Brown and Caldwell as a project engineer. Varied assignments have included:

- Project engineer on site investigations of soil and groundwater contamination by metals and organic pollutants for chemical manufacturing and processing companies and rail transportation companies.
- Project engineer on hazardous waste management study for a chemical intermediates manufacturing plant including development of Operations Plan (RCRA Part B permit application).
- Energy audits of the Nevada Women's Correctional Center, Carson City, and the Sacramento Regional Wastewater Treatment Plant. Projects involved analysis of heating, ventilating, and air conditioning (HVAC) equipment, lighting, and nonlighting electrical equipment.
- Responsibilities in design, construction, and start-up of the Sacramento Regional Wastewater Management Program. Also assisted in design and authored specifications and operations and maintenance manuals for the regional plant.
- Development of a stormwater drainage system for North Sacramento. Determined drainage basins and participated in evaluation and design of a stormwater collection system.
- Responsibilities in planning and design of major improvements to the combined sewer system for the City of Sacramento. Tasks included storm flow data collection, structural rehabilitation analysis, and sewer design.

1978

Employed by CH2M/Hill. Authored sections of the Secondary Treatment Waiver for the City of San Francisco. Assisted in the design of the Southwest Ocean Outfall Project (SWOOP) on the San Francisco Bay Side Facilities Project.

1976-1978

Project engineer for the Sanitary Engineering Research Laboratory, University of California at Berkeley. Participated in evaluation and design of facultative and isolation wastewater ponds for the City of Woodland.

1973-1976

Research associate for the Environmental Studies Department, University of California at Davis, on a variety of water resources and environmental projects.

Membership:

American Society of Civil Engineers
California Water Pollution Control Association
Water Pollution Control Federation
Association of Energy Engineers

MERLE L. HUNTER

Education:

B.S., Civil Engineering, University of California,
Berkeley, 1954

Registration:

Registered Civil Engineer 12366, California

Experience:

1975-Present

Supervising engineer, Brown and Caldwell. Typical projects and duties include:

- Design of emergency storage basins including a 15-million-gallon, concrete-lined basin with spillway, a 20-million-gallon earth basin with concrete spillway and a 170-million-gallon earth basin at the Sacramento Regional Wastewater Treatment Plant. Office engineering during the construction phase.
- Design of twelve 30-million-gallon solids storage basins, five 37-acre sludge injection sites and 20-acre ash landfill site with related roads, piping, mechanical equipment, storm drainage piping, and a storm drainage pumping station at the Sacramento Regional Wastewater Treatment Plant. Office engineering during the construction phase.
- Design of site work, storm drainage, sewer lines, piping, and roads for Pioneer Reservoir for Sacramento Regional County Sanitation District.
- Office engineer during construction for the general additions contract and the tertiary treatment facility contract for Stockton Regional Wastewater Control Facility.
- Design of oxidation ponds renovation for Stockton Regional Wastewater Control Facility. Office engineer during the construction phase.
- Project manager for renovation of flow equalization basin for Dublin San Ramon Services District.
- Project manager for waterline and meter installation for U.S. Navy at Mare Island.
- Design of corrective measures for a site contaminated by hazardous wastes, General Electric Company, Oakland, California. Performed office engineering during construction.
- Project manager for design of dissolved air flotation thickener, City of Chico, California.
- Project engineer for design of domestic water well, Lawrence Livermore Laboratory, Livermore, California.

- Project engineer for design of four 4-acre facultative sludge lagoons, a 55-acre sludge injection site, a 3-million-gallon concrete paved flow equalization basin, and a 3-million-gallon earthen flow equalization basin for Dublin San Ramon Services District.
- Project engineer for preliminary engineering and design for upgrading and expanding roads and utilities at the Presidio of Monterey for the U.S. Army Corps of Engineers.

1972-1974.

Office engineer at Sandis and Associates, Walnut Creek, California. Served as design engineer on various residential developments, including apartment complexes, townhouses, condominiums, single-family subdivisions.

1956-1972

Associate engineer with Farnum Kerr Associates of Napa, California, performing design and/or resident engineering services on sewage collection and treatment systems, storm drainage systems, recreational facilities, road and street projects, and residential construction. Typical projects included:

- Sewage collection and treatment system for American Canyon County Water District, including 33,000 feet of 6- to 12-inch ACP and four 4-acre waste stabilization ponds.
- 16,000 feet of 66-inch RCP outfall sewage line, four waste stabilization ponds totaling 350 acres, and a domestic water well for Napa Sanitation District.
- Roadways, water system, picnic area, and restroom facilities for John F. Kennedy Memorial Park, City of Napa.
- Multipurpose earthfill dam, spillway and appurtenances, Pope Valley, Napa County.
- Single-family and townhouse residential projects, including roads, sewers, water and storm drainage plans.

1954-1956

Served as construction inspector, resident engineer, and/or design engineer on road and bridge projects for the State of California Bridge Department, Division of Bay Toll Crossings, Napa County Engineering Department and the Contra Costa County Public Works Department.

Membership:

American Society of Civil Engineers
Water Pollution Control Federation

RONALD J. PERISHO
Senior Engineer

Education: University of Illinois, B.S., 1971, Civil Engineering
University of Illinois, M.S., 1972, Soil and Rock
Mechanics, Civil Engineering

Registration: California, North Carolina, South Carolina - Civil
Engineer

Professional
Affiliations: American Society of Civil Engineers
Association of Engineering Geologists
International Society of Soil Mechanics and Foundation
Engineers
Society of Exploration Geophysicists
Structural Engineers Association of Central California

Experience:

1977 - Present

Senior Engineer, J. H. Kleinfelder & Associates. In charge of geotechnical investigations including supervision, data analysis, and report preparation for the Sacramento regional office of the firm. Projects include powerlines and substation foundation design for Sacramento Municipal Utility District and numerous projects in the Sierras and foothills. Several studies concerning rock excavation and slope stability in the Sierra Nevada granitic materials have been completed.

1972 - 1977

Staff and Project Engineer, Law Engineering Testing Company, Raleigh, North Carolina and Columbia, South Carolina. Projects include six months of resident inspection engineer, refraction seismic investigation, dike and dam designs, dike failure investigations, and subsurface investigations for shopping centers, industrial facilities, power plants, and parking structures.

Projects include several geotechnical investigations for Carolina Power and Light and South Carolina Electric and Gas. Projects concerned rock excavation for tunnels, foundations on rock, rock slope stability, and dam design, include the Shearon Harris nuclear power plant, Mayo Creek hydroelectric plant, Wilmington, North Carolina and Darlington, South Carolina gas fueled power plants along with Fairfield pump storage power plant near Columbia, South Carolina. Numerous studies were completed concerning rock excavation, including seismic refraction investigations. Mr. Perisho has served as an expert witness for the State of South Carolina in a large rock excavation case.

RONALD J. PERISHO
Senior Engineer

1970 - 1972 Research Assistant, Rock Mechanics Laboratory,
University of Illinois. Research assistant evaluating
data and performing tests on rock excavation and tunnel
liner design research programs.

Project Experience

Industrial Projects

- Union Camp - Franklin, CA
- National Environmental Health Study Center - Raleigh, NC
- Diamond Shamrock - Castle Hayne, NC
- Weyerhaeuser Expansion - New Bern, NC
- DuPont - Wilmington, NC
- Proctor and Gamble - Greenville, NC
- Darlington Gas Power Plant (Carolina Power & Light) - Harsville, SC
- Panel Assembly Plant - Wilmington, NC
- Western Electric - Columbia, SC
- Chemical Plant, Cayce, SC
- Burlington Industries - Roanoke, CA
- LNG Assembly Panel - Morehead City, NC
- Aluminum Recycle Smelting Plant - Columbia, SC
- *Weyerhaeuser - Port of Sacramento, CA
- *Collier Chemical - Port of Sacramento, CA
- *Port of Sacramento, CA
- *PJE Terminal - Sacramento, CA
- *CLA Warehouse - Fairfield, CA
- *Best Pipe Storage Yard, Port of Sacramento, CA

Dam Projects

- Large Storage Lagoons Treatment, Union Camp Paper Co. - Franklin, VA
- Pasquotank Reservoir, City Water - Edenton, NC
- Burlington Dam - City of Burlington, NC
- Mayo Creek, CP&L Power Plant - Roxboro, NC
- Shearon Harris Nuclear Power Plant, Main Emb., CP&L - Raleigh, NC
- Ash Pond, SCE & Gas, Lake Murry Power Station, Highway 215 - Fairfield, SC
- Levee, Dike Failures - City of Columbia, SC
- *Hinkle Reservoir - Folsom, CA
- *Nevada City Reservoir - Nevada City, CA
- *Vacaville Sewage Ponds - Vacaville, CA
- *Grass Valley Treatment Plant - Grass Valley, CA

RONALD J. PERISHO
Senior Engineer

Hospital Projects

- Charter Medical - Raleigh, NC
- Mary Elizabeth - Raleigh, NC
- Columbus County Hospital - Whitesville, NC
- New Hanover Memorial Addition - Wilmington, NC
- Memorial Hospital Addition - Chapel Hill, NC

Multi-story Structures

- Barracks, 6-story - Camp Le Jeune, NC
- Civic Center, 8-story - Raleigh, NC
- Parking Deck, 7-story - City of Raleigh, NC
- See Hospitals (All multi-story)
- Federal Office, 15-story - Columbia, SC
- Dorm and Gym, 6-story, University of North Carolina - Wilmington, NC
- *Parking, 5-story, Downtown - Sacramento, CA
- *Holiday Inn, 13-story - Sacramento, CA
- *Energy State Office Building, 5-story - Sacramento, CA
- *Office Building & Parking, 11th & J Street, 8-story, Sacramento, CA
- *Department of Justice, 4- to 6-story - Sacramento, CA
- *Dental Complex, 4-story - Fairfield, CA

*Kleinfelder Project

RESUME

MAURICE W. GALLARDA
Geotechnical Engineer

Education: California State University, Sacramento, B.S., 1977, Civil Engineering; University of Missouri, Rolla, 1979, Advanced Geotechnical Engineering Studies; California State University, Sacramento, 1981, Civil Engineering Masters Candidate

Registration: California - Civil Engineer
Arizona - Civil Engineer

Professional Affiliations: American Society of Civil Engineers
Structural Engineers Association of Central California
International Society of Soil and Foundation Engineers
National Water Well Association
Society of American Military Engineers

General Background: An extensive background and broad experience in geotechnical field and office engineering analysis. Currently with the Sacramento regional office of J.H. Kleinfelder & Associates. Other responsibilities include geohydrologic field studies and data evaluation in support of hazardous waste management studies. Recent accomplishments have involved mitigation parameters for methane gas migration through soils at an abandoned landfill site.

Experience:

1981 to Present Geotechnical Engineer, J.H. Kleinfelder & Associates. Responsibilities include direction of field exploration and laboratory analysis for geotechnical investigations. Compiled field and laboratory data into technical reports. Projects include field studies and analysis of heavy construction foundations, slope stability, subsurface vibration analysis associated with high technology foundation design and cut-off walls and groundwater monitoring networks around existing hazardous disposal sites.

1977 - 1981 Staff Engineer, J.H. Kleinfelder & Associates. Experience includes extensive geotechnical investigations and environmental assessments. Specific project involvement included special studies in hazardous deposits: Beale Air Force Base, CA; Aerojet, Inc., Sacramento, CA; McClellan Air Force Base, Sacramento, CA; and Southern Pacific Railroad Terminal, Sacramento, CA. Other duties included field exploration and assimilation of data for: high-rise buildings, wastewater treatment facilities and subdivisions. Responsible for: in-situ and landfill settlement analysis, retaining wall and foundation design, and pavement design analysis.



1976-1977

Research and Teaching assistant, California State University, Sacramento. Prepared and presented introductory surveying exercises in classroom environment utilizing both lecture and laboratory.

1975-1976

Engineering Assistant, State of California, Department of Water Resources. Assisted professional engineers in research projects for the California Aqueduct network.

Selected
Project
Experience:

- McClellan Air Force Base - Groundwater Contamination, Sacramento, California
- The Clorox Company - Soil Contamination, Oakland, California
- Fairchild Camera - Groundwater Contamination, San Jose, California
- Southern Pacific Railroad - Soil Contamination, Sacramento, California
- Aerojet, Incorporated - Groundwater Contamination, Rancho Cordova, California
- Beale Air Force Base - Hazardous Waste Containment, Marysville, California
- Numerous Gasoline Spill Evaluation Studies

RESUME

Education:

College of San Mateo, San Mateo, California - A.A. - 1965
San Jose State University, San Jose, California - Bus. Admin. - 1967
University of Maryland Extension Courses of Higher Education
Osar, Korea - 1967-68
Evergreen College, San Jose, California - Courses taken in Guide
to Soils and Concrete (1978-79)
Sierra College, Rocklin, California - Courses taken in Geology
of California - 1981-82

Registrations:

Nuclear Radiation Certificate for Soil Gauges

Experience:

1982-Present

Technician for the Sacramento Office with duties including fill monitoring and compaction compliance in conjunction with all hillside and flat sites. Assistance in sub-drain placements and Keyway construction. Asphaltic concrete monitoring in both slumps and cylinder casting. Lab assistance in logging, capping and breaking cylinders. Compaction curves in terms of ASTM and California Impact requirements, reinforced steel pulling and all general lab functions.

1977-1982

Field supervisor for Terraresearch, Inc. of San Jose, California. Supervised and controlled 5-16 employees in areas of work assignment and job responsibilities. Oversaw all field jobs to maintain correct work standards. Experience also includes contact with clients on a promotional basis along with field meetings. Work was also performed in drilling and logs.

1975-1977

Technician for Soil Services, Inc. of San Jose, California. Experience of lab functions include: direct and residual shears, all forms of compaction curves, moisture-density determination, R-value analysis, and material preparation. Field experience entailed all forms of soil compactions monitoring and subdrain training. Reading and interpreting plans became more prevalent at this phase of my training.

1974-1975

Training for all phases of field technician responsibilities with Bud Parker Testing Service of Mt. View, California.

Selected Project Experience:

Rancho Murrieta Dam Projects

Assorted Soils work for Atation, William, Lyon and Morrison Homes in the Bay Area

Commercial and Industrial Projects for Bay Area, Sacramento, Auburn and Placerville areas.

Capitol Christian Center, Sacramento

Rio Consumnes Correctional Center, Elk Grove, California

J. H. KLEINFELDER & ASSOCIATES

RESUME

ROBERT J. ANTEL
ENGINEERING TECHNICIAN

Education: Benedictine High School - Cleveland, Ohio
Sacramento City College - Arts Major

Experience: Engineering Technician, J. H. Kleinfelder & Associates
Sacramento, California
I am presently responsible for construction materials testing and inspection on a variety of projects. The testing is to evaluate the conformance of various types of construction materials, including soils, to the requirements of the plans and specifications and/or other standards such as ASTM, Cal Trans and AASHTO. Field duties include inspection of reinforced concrete, masonry and earthwork construction. Laboratory test methods performed include concrete aggregates (grading, soundness, sand equivalency, mix design verifications, etc.) and soils (moisture-density relationships, Cal Impact, Atterburg Limits, plasticity index, etc.).

1980 - 1983 Engineering Technician, Capitol Engineering Laboratories
Sacramento, California
I was responsible for testing and inspection for several projects at Tecon-Pacific in West Sacramento. The work involved inspection of precast architectural panels being fabricated at the plant. The inspection was to evaluate conformance of the precast members to ICBO standards and to sample the materials being used as required by the specs. Included in my duties were inspection of formwork, placement of reinforcing steel, inserts, embedded items and rustications, sampling of concrete and daily reports on each member cast.

1978 - 1980 Senior Soils Technician, Geomechanics, Inc.
Sacramento, California
I was responsible for soils testing and inspection on a variety of housing subdivisions and commercial projects. While I was primarily a field technician, I occasionally performed laboratory tests and acted as a driller's helper on the drilling rig.

1976 - 1978 Engineering Technician, Lowry & Associates
Sacramento, California
I served as a field and laboratory technician performing conventional testing and inspection of construction materials and soils on a variety of projects. My principal duties were the same as at the present time.

1976 Engineering Technician, Law Engineering and Testing Company
Nashville, Tennessee
I served as a field and laboratory technician performing conventional testing and inspection of construction materials and soils on a variety of projects.



J. H. KLEINFELDER & ASSOCIATES

RESUME

ROBERT J. ANTEL
ENGINEERING TECHNICIAN

Experience:

1975 - 1976

Engineering Technician, Law Engineering and Testing Co.
Atlanta, Georgia

I received my basic training in materials testing and inspection during this period, eventually enabling me to work in the field with minimal supervision. Worked on several major projects in the Atlanta area.

1974 - 1975

Instrument Operator, Mayes Sudderth and Etheredge
Atlanta, Georgia

I worked during this period as a crew member on a survey party starting as a rodman, then progressing to instrument operator. I was responsible for operating the transit, level and occasionally the rod and chain. Most of the projects were construction related, with some boundary surveying.

Major Projects
Experience:

Tower Place - Atlanta, Georgia
Peachtree Center Plaza - Atlanta, Georgia
Union Carbide Electrode Plant - Clarksville, Tenn.
Maury County Hospital - Columbia, Tenn.
Preston Co. Schools - Preston County, W. Virginia
Pioneer Tower II - Sacramento, California
Willow Tree Plaza Shopping Center - Lakeport, California

Registration:

Radiation Safety and Use of Nuclear Soil Gauges

