AGREEMENT TO FURNISH ENGINEERING SERVICES
FOR THE NEVADA STREET, PARK AVENUE, ALABAMA STREET, CENTER STREET
WATER TRANSMISSION MAIN

This Agreement is made and entered into this 6th day of October, 1998 by and between the City of Redlands, a municipal corporation (hereinafter "City") and Boyle Engineering Corporation, (hereinafter "Engineer").

In consideration of the mutual promises, covenants and conditions hereinafter set forth, City and Engineer hereby agree as follows:

ARTICLE 1 - ENGAGEMENT OF ENGINEER

1.1 City hereby engages Engineer, and Engineer hereby accepts the engagement, to perform engineering services ("Services") for Nevada Street, Park Avenue, Alabama Street, Center Street Water Transmission Main Design ("Project").

1.2 The Services shall be performed by Engineer in a professional manner, and Engineer represents that it has the skill and the professional expertise necessary to provide high quality Services for the Project at the level of competency presently maintained by other practicing professional Engineers in the industry providing similar types of services.

ARTICLE 2 - SERVICES OF ENGINEER

2.1 The specific Services which Engineer shall perform are more particularly described in Attachment "A," entitled "Scope of Services," which is attached hereto and incorporated herein by this reference.

ARTICLE 3 - RESPONSIBILITIES OF CITY

3.1 City shall make available to Engineer information in its possession that is pertinent to the performance of Engineer's Services.

3.2 City will provide access to and make provisions for Engineer to enter upon City-owned property or rights-of-way as required by Engineer to perform the Services.

3.3 City designates Tom Fujiwara, Project Manager, to act as its representative with respect to the Services to be performed under this Agreement.

ARTICLE 4 - PERIOD OF SERVICE

4.1 Engineer shall perform the Services in a diligent manner and in accordance with the schedule set forth in Attachment B - Project Schedule.

ARTICLE 5 - PAYMENTS TO THE ENGINEER

5.1 The total compensation for Engineer's performance of the Services shall not exceed $51,970 in accordance with Attachment C - Project Fee. City shall pay Engineer on a time and materials basis at the hourly rates shown in Attachment D - Rate Schedule.

5.2 Engineer shall bill City within ten days following the close of each month by submitting an invoice indicating the Services performed, who performed the Services, indirect costs, and the detailed cost of all Services including backup documentation. Payments by City to Engineer shall be made within 30 days after receipt and approval of Engineer's invoice, by warrant payable to Engineer.

5.3 All contractual notices, bills and payments shall be made in writing and may be given by personal delivery or by mail. Notices, bills and payments sent by mail shall be addressed as follows:

City
Tom Fujiwara
Municipal Utilities Department
35 Cajon Street
P. O. Box 3005
Redlands CA 92373

Engineer
Steven B. Frieson
Boyle Engineering Corporation
1131 West Sixth Street, Suite 285
Ontario CA 91762

When so addressed, such notices shall be deemed given upon deposit in the United States Mail. In all other instances, notices, bill and payments shall be deemed given at the time of actual delivery. Changes may be made in the names and addresses of the person to whom notices, bills, and payments are to be given by giving notice pursuant to this paragraph.

ARTICLE 6 - INSURANCE AND INDEMNIFICATION

6.1 Engineer shall maintain worker's compensation insurance and, in addition, shall maintain insurance to protect City from claims for damage due to bodily injury, personal injury and death, and claims for injury to or destruction of tangible property while performing the Services required by this Agreement. Said public liability and property damage insurance shall be on an "occurrence" basis in a minimum combined single limit of $1,000,000, and $3,000,000 in the aggregate. Engineer shall maintain comprehensive automobile liability insurance with a combined single limit of $1,000,000 for bodily injury and property damage. Engineer shall maintain professional liability insurance in the aggregate amount of $1,000,000 with a minimum of $500,000 per claim. City shall be named as an additional insured under all policies for public liability, property damage and comprehensive automobile liability, and such insurance shall be primary with respect to City and non-contributing to any insurance or self-insurance maintained by the City. Engineer shall provide City with certificates of insurance evidencing such insurance coverage prior to commencing the Services.

6.2 Engineer shall indemnify, hold harmless and defend City and its elected officials, officers, agents and employees from and against all claims, loss, damage, charges or expense, to which it or any of them may be put or subjected to the extent that they arise out of or result from, or are caused by any negligent act or actions, omission or failure to act on the part of the Engineer, its contractors, its suppliers, anyone directly or indirectly employed by any of them or anyone for whose acts or omissions any of them maybe liable in the performance of the Services required by this Agreement.

ARTICLE 7 - GENERAL CONSIDERATIONS

7.1 In the event any action is commenced to enforce or interpret any of the terms or conditions of this Agreement the prevailing party shall, in addition to any costs and other relief, be entitled to the recovery of its reasonable attorneys' fees.

7.2 Engineer shall not assign any of the Services required by this Agreement, except with the prior written approval of City and in strict compliance with the terms, provisions and conditions of this Agreement.

7.3 Engineer's key personnel for the Project are:

Project Manager:	Steven B. Frieson
Project Engineer:	Philip E. Stone

Engineer agrees that the key personnel shall be made available and assigned to the Project, and that they shall not be replaced without concurrence from City.

7.4 All documents, records, drawings, designs, costs estimates, electronic data files and databases and other Project documents developed by the Engineer pursuant to this Agreement shall become the property of City and shall be delivered to City upon completion of the Services or upon the request of City. Any reuse of such documents for other projects and any use of incomplete documents will be at City's sole risk.

7.5 Engineer is for all purposes an independent contractor. All personnel employed by Engineer are for its account only, and in no event shall Engineer or any personnel retained by it be deemed to have been employed by City or engaged by City for the account of or on behalf of City.

7.6 Unless earlier terminated, as provided for below, this Agreement shall terminate upon completion and acceptance by City of the Services.

7.7 This Agreement may be terminated by either party, without cause, by providing thirty (30) days prior written notice to the other (delivered by certified mail, return receipt requested) of intent to terminate.

7.8 Upon receipt of a termination notice, Engineer shall (1) promptly discontinue all services affected, and (2) deliver or otherwise make available to City, copies (in both hard copy and electronic form, where applicable), of any data, design calculations, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by Engineer in performing the Services required by this Agreement.

7.9 Engineer shall maintain books and accounts of all Project related payroll costs and all expenses. Such books shall be available at all reasonable times for examination by the City at the office of Engineer.

7.10 This Agreement, including the attachments incorporated herein by reference, represents the entire agreement and understanding between the parties and any prior negotiations, proposals or oral agreements are superseded by this Agreement. Any amendment to this Agreement shall be in writing, approved by the City Council of City and signed by City and Engineer.

7.11 This Agreement shall be governed by and construed in accordance with the laws of the State of California.

IN WITNESS WHEREOF, duly authorized representatives of the City and Engineer have signed in confirmation of this Agreement.

City of Redlands
("City")

By: _____
WILLIAM E. CUNNINGHAM
Mayor

Boyle Engineering Corporation
("Engineer")

By: _____
BOYLE

ATTEST:

_____
City Clerk, City of Redlands

Nevada Street, Park Avenue, Alabama Street,
Center Street Water Transmission Main Design
Boyle Engineering Corporation
October 6, 1998

ENGINEERING SERVICES FOR THE NEVADA STREET, PARK AVENUE, ALABAMA STREET, CENTER STREET WATER TRANSMISSION MAIN DESIGN

ATTACHMENT A

SCOPE OF SERVICES

EXHIBIT A

City of Redlands
Waterlines in Nevada Street, Park Avenue, Alabama Street and Center Street

SCOPE OF WORK

The work tasks described herein are to be performed for the development of plans, specifications, and opinion of probable construction cost for installation of 12" waterline at the following locations:

- Nevada Street, from south of Citrus Avenue to north of Park Avenue;
- Park Avenue, from Nevada to Alabama Streets;
- Alabama Street, from south of Park Avenue to North of Park Avenue;
- Center Street, from the Ridge Street intersection to approximately 660' west.

PRELIMINARY ENGINEERING PHASE

101 **Attend "kick-off" meeting** – Boyle and City staff will meet to discuss the project requirements and obtain pertinent information. Boyle staff will record and distribute copies of the meeting minutes to all present.

102 **Establish the pipeline design criteria** – Boyle will prepare preliminary design criteria for review by City staff. The design criteria will be finalized following receipt of City staff comments prior to commencement of final design. The design criteria will include, pipe material, general location of pipeline appurtenances such as operating valves, blow-offs, air and vacuum release valves, trenching details, depth of cover, method of pipe restraint and other applicable information.

103 **Research location of underground utilities** – This involves making both field and office contacts with public, private and municipal utilities. This includes main line facilities only (not service connections), for such underground utilities as water, sewer, storm drain, oil or fuel, gas, telephone, electrical, T.V. cable, irrigation and traffic control systems

104 **Gather street improvement plans and right-of-way documents** – These will be utilized without independent review by Boyle.

105 **Provide field surveys** – Field surveys for preparation of mapping used for the project design and for preparation of the plans will be provided by Boyle. The field survey will consist of cross-sectioning of the project streets, at 100' OC, from curb face to curb face or from pavement edge to pavement edge, as appropriate. The survey data will be compiled into an AutoCadd v 14 base map.

106 **Preparation of preliminary plan sheets** – Preliminary plan sheets will be prepared to illustrate the concept of the project and submitted to the City for review. The plans will have progressed

to the point where the streets have been mapped, underground utility lines are shown in the plan view and a tentative alignment for the new waterlines are shown in the plan view. The alignment will be dimensioned from the street centerline, although stationing will not yet be developed.

107 **Prepare traffic control concept** – A traffic control concept in narrative form will be prepared for review by the City. The narrative will outline the proposed approach to providing traffic control on the project streets during construction.

108 **Submit preliminary plans and traffic control concept to the City** – Five copies of the preliminary plan sheets and traffic control concept memorandum will be submitted to the City for review and comment.

FINAL DESIGN AND BID DOCUMENT PREPARATION

201 **Geotechnical investigation** – A geotechnical investigation will provide soils related criteria for the project design as well as information useful during the construction of the waterlines. AGRA Earth & Environmental will provide this work under a subcontract. The specific tasks to be performed by AGRA are as follows:

AGRA will provide geotechnical parameters to aid in design and preparation of specifications for the installation and backfilling of the proposed water lines. The proposed study will include subsurface exploration, laboratory testing, engineering analysis and the preparation of a written report. The study will focus on selected physical properties of the subsurface soils and will not include sampling, testing or assessment of any toxic or hazardous substances or other environmental factors. If during the performance of the planned subsurface exploration, visually foreign or odoriferous materials are encountered, drilling will be terminated at that location and the client will be notified of the condition.

This proposal does not include observation and/or testing services which may be required by the geotechnical engineer during construction of the project.

Subsurface exploration - The subsurface exploration will consist of drilling 8 hollow stem auger exploratory borings to depths of about 8 feet along the pipeline alignment. One of these borings will be extended to a depth of 20 feet to provide information for pipe jacking at the crossing of the drainage channel.

Sampling will be conducted at 2.5-foot intervals and will consist of obtaining relatively undisturbed ring samples, standard penetration tests, and bulk samples. All field operations will be conducted under the supervision of an engineer or geologist. Borings will be backfilled with drill cuttings and the surface will be patched with cold mix. There is no allowance for the use of hot mix.

Laboratory testing - Engineering properties of the subsurface materials will be determined by the field and laboratory tests. Samples will be obtained from the borings for subsequent examination and laboratory testing. Earth materials will be visually classified in the field in general conformance with local geologic practice and/or the Unified Soil Classification System.

The field classification will be verified in the laboratory by visual observation and confirming tests where necessary. We presently anticipate the following laboratory tests will be performed:

- In-Situ Moisture and Density
- Maximum Density/Optimum Moisture Content
- Fine Content Analysis
- Direct Shear
- Sand Equivalent
- Sulphate Content
- Resistivity and pH

Engineering analyses and report - Based on engineering and geologic analysis of the field and laboratory data, a written report will be prepared. The report will summarize the physical data acquired during the study in a convenient form for reference and will present recommendation and comments to aid in the design of the project and preparation of specifications. We presently anticipate that the following subjects will be covered in the report:

- Existing street pavement sections and soil stratigraphy at boring locations.
- Groundwater conditions.
- Passive pressure for thrust blocks and jacking pits.
- Excavation and shoring for pipeline trench and jacking pits.
- General conditions for pipe jacking.
- Adequacy or improvements necessary for trench bottom.
- General consideration of bedding.
- Trench backfill requirements.
- Concrete and metallic corrosion potential.

202 **Perform the pipeline design** – The City will select one pipe material for design of the waterlines before design is commenced. The plans will not reflect alternative pipe materials. Basic subtasks involved are:

- Develop and calculate the pipeline alignments, including channel crossings.
- Pipeline structural design. This includes thrust restraint requirements.
- Design of pipeline appurtenances.

It is our understanding that the crossing of Zanja Creek is to be accomplished by hanging the waterline on the west side of the existing culvert.

203 **Prepare traffic control plan** – Traffic control plans will be prepared for Alabama Street. The plans will denote work areas, temporary channelization and signing requirements. It is anticipated that traffic control requirements for the remaining project streets will be shown as a typical detail on the plans.

204 **Prepare the plans** – Plans will be prepared in AutoCad, Release 14 at a scale of 1" = 40'. The plan sheets will be comprised of a plan view only, and will be double-paneled. A profile will be included for the Zanja Storm Channel crossing in Nevada Street. Details of connections and appurtenances will be included as necessary. The following is a preliminary listing of plan sheets:

- Title sheet with location map, sheet index, agency index and general notes.
- 4 plan sheets.
- 1 sheet of details.
- 2 traffic control sheets

The City will provide Boyle with an electronic copy of the City's standard title sheet.

205 **Prepare specifications** – The special provisions will be prepared for incorporation with the City's contract documents and general provisions to form the bidding package. One bidding package, including the Center Street waterline, is assumed. The special provisions will include, in addition to the material related items, special construction requirements. The special provisions will incorporate requirements in areas relating to such items as traffic control, pavement removal and replacement, and utility requirements. City standards will be referenced as much as possible. The City will provide the "boiler plate" portion of the specifications to Boyle for review and comment.

206 **Process plans through utilities** – Preliminary plans will be submitted to affected utilities for verification of the location of their facilities. Any required environmental processing shall be performed by the City.

207 **Prepare an opinion of probable construction cost** – An opinion of probable construction cost will be prepared to aid the City in its' further planning and for the purpose of evaluating bids. The opinion will be broken down in accordance with the schedule of work items contained in the contract documents. Since Boyle has no control over actual costs of labor or materials submitted at the time of bid, we cannot guarantee the accuracy of the opinion of probable construction costs.

208 **Progress submittals** – A progress submittal will be made to the City at the 90% completion stage of design for review. Four sets of the plans and specifications will be submitted. Boyle will meet with City staff to review comments. The plans, specifications and opinion of probable construction cost will then be revised for final submittal to the City.

209 **Deliver originals to the City** – The original plans (on mylar) and reproducible specifications will be delivered to the City for copying for bidding and record purposes. Electronic files of the plans on disk in AutoCad, Release 14 format and of the specifications in Word Perfect will be provided to the City.

210 **Quality Control** –Boyle will perform a quality control review of the project documents prior to all submittals.

211 **Coordination/Permit Processing** – Boyle shall coordinate with the San Bernardino County Flood Control District for processing of permits required for construction of the waterline facilities through District right of way. Any required fees shall be paid by the City of Redlands.

ASSUMPTIONS

1. Boyle will rely on documents provided by the City and other agencies without independent review.
2. Any environmental analysis, documentation and processing will be performed by others.
3. The City will select one pipe material for design of the waterlines before design is commenced. The plans will not reflect alternative pipe materials.
4. All right-of-way required for the subject facilities is available or will be acquired by the City. No allowance for the preparation of legal descriptions or exhibits for right-of-way acquisition is included in this proposal.
5. Certain assumptions have been made in preparing the scope of work. To the extent possible they are stated herein, and are reflected in the estimated fees.

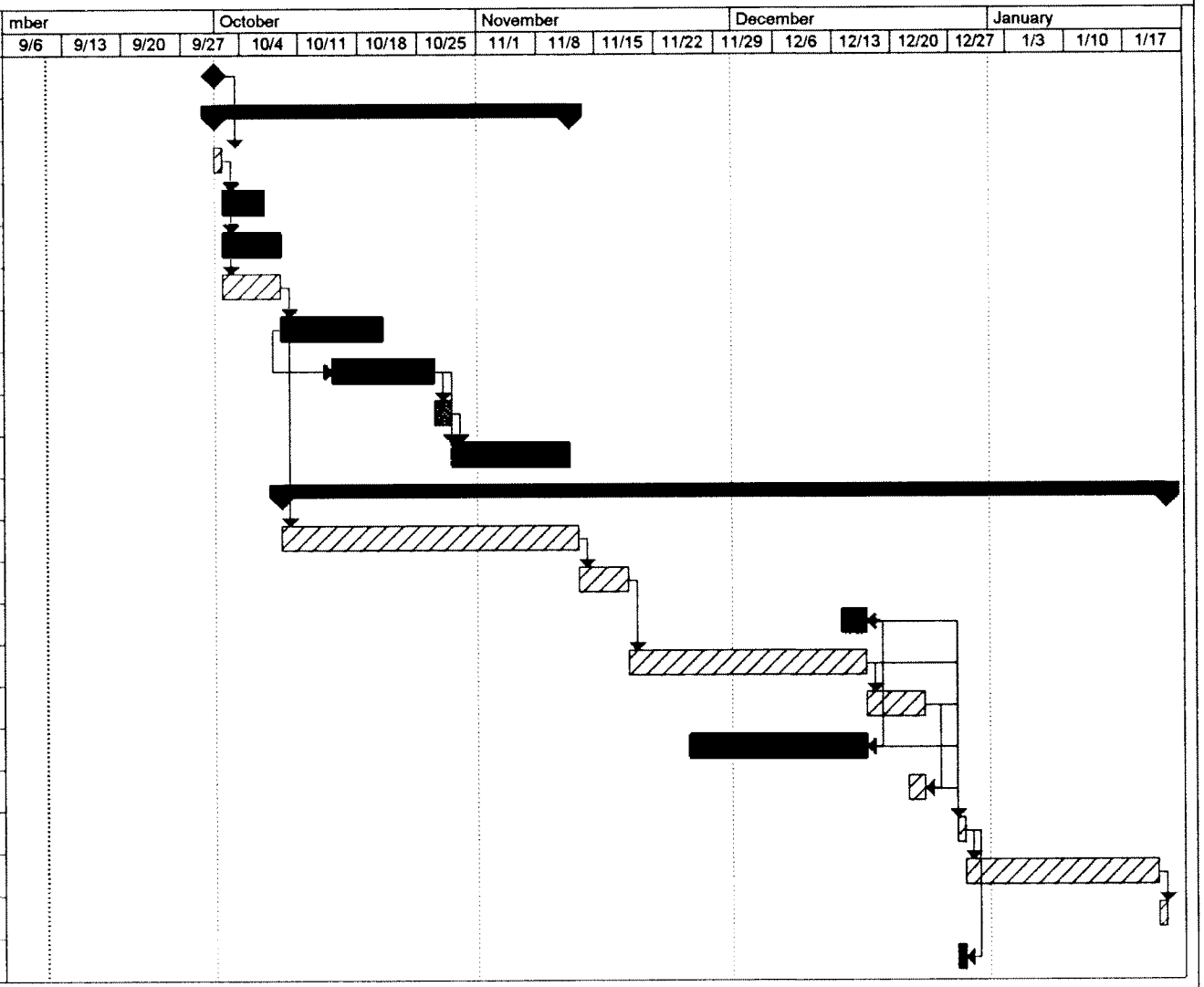
ENGINEERING SERVICES FOR THE NEVADA STREET, PARK AVENUE, ALABAMA STREET, CENTER STREET WATER TRANSMISSION MAIN DESIGN

ATTACHMENT B

PROJECT SCHEDULE

Exhibit B
Project Schedule

ID	Task Name
1	Notice to Proceed
2	**Preliminary Engineering Phase**
3	Kickoff Meeting
4	Establish Design Criteria
5	Utilities Research
6	Data Collection
7	Field Survey
8	Prepare Preliminary Plans
9	Prepare Traffic Control Concept
10	City Review prel. Plans and traffic ctrl cncpt
11	**Final Design and Bid Document Preparation**
12	Geotechnical Investigation
13	Pipeline Design
14	Prepare Traffic Control Plans
15	Prepare Plans
16	Prepare Specifications
17	Utilities processing
18	Opinion of Probable Construction Cost
19	90% Submittal
20	City Review
21	Deliver Originals to City
22	Quality Control



Project: Redlands Schedule
Date: Fri 9/11/98

Task
Critical Task
Progress
Milestone
Summary
Rolled Up Task
Rolled Up Critical Task
Rolled Up Milestone
Rolled Up Progress
Split
External Tasks
Project Summary

ENGINEERING SERVICES FOR THE NEVADA STREET, PARK AVENUE, ALABAMA STREET, CENTER STREET WATER TRANSMISSION MAIN DESIGN

ATTACHMENT C

PROJECT FEE

Exhibit C - Project Budget

Waterlines in Nevada St., Park Ave., Alabama St. and Center St.

CITY OF REDLANDS

Task Description	Personnel Hours						Labor	Non-Labor	Total
	Principal Engineer	Senior Engineer	Associate Engineer	Design CADD Operator	Word Processor	Total Hours			
PRELIMINARY ENGINEERING									
101 Attend "kick-off" meeting	4	4			2	10	$ 1,190	$ 50	$ 1,240
102 Establish pipeline design criteria	2		8		2	12	$ 1,150		$ 1,150
103 Research location of underground utilities			16			16	$ 1,520	$ 50	$ 1,570
104 Gather street improvement plans & right-of-way documents			16			16	$ 1,520	$ 50	$ 1,570
105 Provide field surveys		2	8			10	$ 1,010	$ 4,500	$ 5,510
106 Prepare preliminary plan sheets	2		16	40		58	$ 4,420	$ 1,000	$ 5,420
107 Prepare traffic control concept		4	8			12	$ 1,260		$ 1,260
108 Submit preliminary plans to City			2			2	$ 190	$ 50	$ 240
						-	$ -		$ -
Subtotal	**8**	**10**	**74**	**40**	**4**	**136**	**$ 12,260**	**$ 5,700**	**$ 17,960**
FINAL DESIGN AND BID DOCUMENT PREPARATION									
201 Secure geotechnical investigation		2				2	$ 250	$ 5,350	$ 5,600
202 Perform pipeline design	2		24			26	$ 2,580		$ 2,580
203 Prepare traffic control plans		8	16			24	$ 2,520		$ 2,520
204 Prepare plans			40	120		160	$ 11,600	$ 1,600	$ 13,200
205 Prepare specifications	4		20		16	40	$ 3,220		$ 3,220
206 Process plans through utilities			16		2	18	$ 1,610	$ 10	$ 1,620
207 Prepare opinion of probable construction cost	1		8			9	$ 910		$ 910
208 Progress submittal	2		4			6	$ 680		$ 680
209 Deliver originals to City	1		2		2	5	$ 430	$ 50	$ 480
210 Quality control reviews	8					8	$ 1,200		$ 1,200
211 Coordination/Permit Processing		16				16	$ 2,000		$ 2,000
Subtotal	**18**	**26**	**130**	**120**	**20**	**314**	**$ 27,000**	**$ 7,010**	**$ 34,010**
Total	**26**	**36**	**204**	**160**	**24**	**450**	**$ 39,260**	**$ 12,710**	**$ 51,970**

Amounts shown are fee.

Personnel Category	$/HR
Principal Engineer	$ 150.00
Senior Engineer	$ 125.00
Associate Engineer	$ 95.00
Design CADD Operator	$ 65.00
Word Processor	$ 45.00

ENGINEERING SERVICES FOR THE NEVADA STREET, PARK AVENUE, ALABAMA STREET, CENTER STREET WATER TRANSMISSION MAIN DESIGN

ATTACHMENT D

RATE SCHEDULE

Standard Hourly Rate Schedule
Boyle Engineering Corporation
Effective January 31, 1998

Engineers, Planners, Architects, Geologists, and Scientists	Billing Rate
Principal	$150.00 per hour
Senior II	$125.00 per hour
Senior I	$100.00 per hour
Associate	$ 90.00 per hour
Assistant II	$ 75.00 per hour
Assistant I	$ 65.00 per hour
Technical Support Staff	**Billing Rate**
Senior Designer/Technician	$ 85.00 per hour
Drafter/Technician	$ 75.00 per hour
Drafter /Assistant CADD Operator	$ 51.00 per hour
CADD Operator	$ 58.00 per hour
Design CADD Operator	$ 71.00 per hour
Design CADD Supervisor	$ 91.00 per hour
Support Staff	**Billing Rate**
Special Consultant	$150.00 per hour
Word Processing Operator	$ 45.00 per hour
Data Entry/Computer Operator	$ 39.00 per hour
Word Processing Supervisor	$ 42.00 per hour
Programmer	$ 80.00 per hour
Accounting Clerk I	$ 31.00 per hour
Accounting Clerk II	$ 46.00 per hour
Junior Staff Accountant	$ 40.00 per hour
Staff Accountant	$ 45.00 per hour
Administrative Specialist (non-exempt)	$ 55.00 per hour
Administrative Specialist (exempt)	$ 65.00 per hour
Clerk I	$ 31.00 per hour
Clerk II	$ 34.00 per hour
Secretary I	$ 40.00 per hour
Secretary II	$ 43.00 per hour
Senior Secretary I	$ 45.00 per hour
Senior Secretary II	$ 56.00 per hour
Direct Project Expense	**Billing Rate**
Photocopies - Color 8.5 x 11/11 x 17/8.5 x 11 transparency	$1.66//1.68//4.04 per page
Photocopies - Black & White 8.5 x 11/8.5 x 14/11 x 17 & Fax	$0.28//0.32//0.36 //0.32 per page
Communication Charge (telephone/cellular)	$1.50 per hour of direct hours billed
Plan Sheet Printing - In House Bond/Vellum/Mylar	$1.10//1.24//1.64 per square foot
Travel - Automobile/Truck	$0.75 per mile
Travel - Other Than Automobile	Actual Cost + 15%
Subconsultant Services	Actual Cost + 15%
Subcontrtacted Services/Reproduction	Actual Cost + 15%

Computer Services and Computer Aided Design — **See Separate Schedule**

If overtime is authorized by the client, an overtime premium multiplier of 1.5 will be applied to the billing rate of hourly personnel who work overtime in order to meet a deadline which cannot be met during normal hours. Applicable sales taxes, if any, will be added to these rates. Corporate officers and consulting engineers will be billed at 1.2 times the stated rate for Principal. Invoices will be rendered monthly. Payment is due upon presentation.