

AGREEMENT TO PERFORM PROFESSIONAL ENGINEERING SERVICES
FOR THE
CAPITAL IMPROVEMENT PROGRAM WATER PIPELINE REPLACEMENT PROJECT
PHASE III

This agreement for engineering services for Redlands' Capital Improvement Program Water Pipeline Replacement Project Phase III ("Agreement") is made and entered into this 6th day of May, 2008 ("Effective Date"), by and between the City of Redlands, a municipal corporation ("City") and Ludwig Engineering ("Consultant"). City and Consultant are sometimes individually referred to herein as a "Party" and, together, as the "Parties."

In consideration of the mutual promises contained herein, City and Consultant agree as follows:

ARTICLE 1 - ENGAGEMENT OF CONSULTANT

- 1.1 City hereby engages Consultant to perform engineering design services for the City's Capital Improvement Program Water Pipeline Replacement Project Phase III (the "Services").
- 1.2 The Services shall be performed by Consultant in a professional manner, and Consultant represents that it has the skill and the professional expertise necessary to provide the Services to City at a level of competency presently maintained by other practicing professional consultants in the industry providing like and similar types of Services.

ARTICLE 2 - SERVICES OF CONSULTANT

- 2.1 The Services which Consultant shall perform are more particularly described in Exhibit "A," entitled "Scope of Services," which is attached hereto and incorporated herein by this reference.
- 2.2 Consultant shall comply with all applicable Federal, State and local laws and regulations in the performance of this Agreement including, but not limited to, the Americans with Disabilities Act, the Fair Employment and Housing Act and prevailing wage laws commencing at Labor Code section 1770 *et seq.* and non-discrimination laws including the Americans with Disabilities Act. Pursuant to Labor Code section 1773.2, copies of the prevailing rates of per diem wages as determined by the Director of the California Department of Industrial Relations for each craft, classification, or type of worker associated with the performance of the Services are on file at the City of Redlands office of the Municipal Utilities and Engineering Department, Civic Center, 35 Cajon Street, Suite 15A (P.O. Box 3005 mailing), Redlands, California 92373.
- 2.3 Consultant acknowledges that if it violates the Labor Code provisions relating to prevailing wage, City may enforce those provisions by issuing a notice of the withholding of contract

payments to Consultant pursuant to Labor Code section 1771.6.

- 2.4 If Consultant executes an agreement with a subcontractor to perform any of the Services, Consultant shall comply with Labor Code sections 1775 and 1777.7, and shall provide the subcontractor with copies of the provisions of Labor Code sections 1771, 1775, 1776, 1777.5, 1813 and 1815. Consultant acknowledges that the statutory provisions imposing penalties for the failure to comply with state wage and hour laws and to pay prevailing wages may be enforced by City pursuant to Labor Code sections 1775 and 1813.
- 2.5 Consultant and its subcontractors shall comply with the provisions of Labor Code section 1776 regarding payroll records' maintenance, certifications, retention and inspection.
- 2.6 Consultant acknowledges that eight (8) hours constitutes a legal day's work pursuant to Labor Code section 1810.
- 2.7 If applicable, Consultant shall comply with the provisions of Labor Code section 1777.5 relating to apprenticeships, and Labor Code sections 1771, 1775, 1776, 1777.5, 1813 and 1815.

ARTICLE 3 - RESPONSIBILITIES OF CITY

- 3.1 City shall make available to Consultant information in its possession that may assist Consultant in performing the Services.
- 3.2 City will make reasonable provision for Consultant to enter upon City-owned property, as required by Consultant, to perform the Services.
- 3.3 City designates Rudy Victorio as City's representative with respect to performance of the Services, and such person shall have the authority to transmit instructions, receive information, interpret and define City's policies and decisions with respect to performance of the Services.

ARTICLE 4 - PERFORMANCE OF SERVICES

- 4.1 Consultant shall perform the Services in a prompt and diligent manner and in accordance with the schedule set forth in Exhibit "B," entitled "Project Schedule."
- 4.2 At any time during the term of this Agreement, City may request that Consultant perform Extra Services. As used herein, "Extra Services" means any work which is determined necessary by City for the proper completion of the project or work for which the Services are being performed, but which the Parties did not reasonably anticipate would be necessary at the time of execution of this Agreement. Provided the Extra Work does not exceed twenty percent (20%) of the compensation to be paid by City to Consultant for the Services, such Extra Work may be agreed to by the Parties by written amendment to this Agreement,

executed by City's City Manager. Consultant shall not perform, nor be compensated for, Extra Work without such written authorization from City.

ARTICLE 5 - PAYMENTS TO CONSULTANT

- 5.1 The total compensation for Consultant's performance of the Services shall not exceed the amount of Three Hundred Thirty Nine Thousand Five Hundred Dollars (\$339,500). City shall pay Consultant on a time and materials basis up to the not to exceed amount, in accordance with Exhibit "C" entitled "Project Costs," and based upon the hourly rates shown in Exhibit "D," entitled "Rate Schedule." Both Exhibits "C" and "D" are attached hereto and incorporated herein by this reference.
- 5.2 Consultant shall submit monthly invoices to City describing the work performed during the preceding month. Consultant's invoices shall include a brief description of the Services performed, the dates the Services were performed, the number of hours spent and by whom, and a description of reimbursable expenses, if any. City shall pay Consultant no later than thirty (30) days after receipt and approval by City of Consultant's invoice, provided (1) the Services reflected in the invoice were performed to the reasonable satisfaction of City in accordance with the terms of this Agreement, (2) that the number of hours of Services set forth in the invoice reflects the amount of time ordinarily expended for such Services by members of the profession currently practicing in the same locality under similar conditions, and (3) that all expenses, rates and other information set forth in the invoice are consistent with the terms and conditions of the Agreement.
- 5.3 All notices shall be given in writing by personal delivery or by mail. Notices sent by mail should be addressed as follows:

City

Rudy Victorio
Municipal Utilities and Engineering Dept.
City of Redlands
35 Cajon Street, Suite 15A
PO Box 3005 (mailing)
Redlands, CA 92373

Consultant

Jim Fry
Ludwig Engineering
109 East Third Street
San Bernardino, CA 92410

When so addressed, such notices shall be deemed given upon deposit in the United States Mail. Changes may be made in the names and addresses of the person to who notices and payments are to be given by giving notice pursuant to this section 5.3.

ARTICLE 6 - INSURANCE AND INDEMNIFICATION

- 6.1 All insurance required by this Agreement shall be maintained by Consultant for the duration of its performance of the Services. Consultant shall not perform any Services unless and until all required insurance listed below is obtained by Consultant. Consultant shall provide City with certificates of insurance and endorsements evidencing such insurance prior to commencement of the Services. All insurance policies shall include a provision prohibiting cancellation or modification of the policy except upon thirty (30) days prior written notice to City.
- 6.2 Workers' Compensation and Employer's Liability.
- Consultant shall secure and maintain Worker's Compensation and Employer's Liability insurance throughout the duration of its performance of the Services in accordance with the laws of the State of California, with an insurance carrier acceptable to City.
- 6.3 Hold Harmless and Indemnification. Consultant shall defend, indemnify and hold harmless City and its elected officials, employees and agents from and against any and all claims, losses or liability, including attorneys' fees, arising from injury or death to persons or damage to property occasioned by Consultant's and its officers', employees' and agents' sole negligent acts or omissions in performing the Services.
- 6.4 Assignment. Consultant is expressly prohibited from assigning any of the Services without the express prior written consent of City. In the event of agreement by the Parties to assign a portion of the Services, Consultant shall add the assignee as an additional insured and provide City with the insurance endorsements required by this Agreement prior to the performance of any Services by the assignee. Assignment does not include printing or other customary reimbursable expenses that may be provided for in this Agreement.
- 6.5 Comprehensive General Liability Insurance. Consultant shall secure and maintain in force throughout the term of this Agreement comprehensive general liability insurance with carriers acceptable to City. Minimum coverage of One Million Dollars (\$1,000,000) per occurrence and Two Million Dollars (\$2,000,000) aggregate for public liability, property damage and personal injury is required. City shall be named as an additional insured. Such insurance shall be primary and non-contributing to any insurance or self-insurance maintained by City.
- 6.6 Professional Liability Insurance. Consultant shall secure and maintain professional liability insurance throughout the term of this Agreement in the amount of One Million Dollars (\$1,000,000) per claim made.

- 6.7 Business Auto Liability Insurance. Consultant shall have business auto liability coverage, with minimum limits of One Million Dollars (\$1,000,000) per occurrence, combined single limit for bodily injury liability and property damage liability. This coverage shall include all Consultant owned vehicles used in connection with Consultant's provision of the Services, hired and non-owned vehicles, and employee non-ownership vehicles. Such insurance shall be primary and non-contributing to any insurance or self insurance maintained by City. City shall be named as an additional insured.

ARTICLE 7 - CONFLICTS OF INTEREST

- 7.1 Consultant covenants and represents that it does not have any investment or interest in real property that may be the subject of this Agreement or any other source of income, interest in real property or investment which would be affected in any manner or degree by the performance of Consultant's Services. Consultant further covenants and represents that in the performance of its duties hereunder, no person having any such interest shall perform any Services under this Agreement.
- 7.2 Consultant agrees it is not a designated employee within the meaning of the Political Reform Act because Consultant:
- A. Does not make or participate in:
- (i) the making or any governmental decisions regarding approval of a rate, rule or regulation, or the adoption or enforcement of laws;
 - (ii) the issuance, denial, suspension or revocation of permits, licenses, applications, certifications, approvals, orders or similar authorizations or entitlements;
 - (iii) authorizing City to enter into, modify or renew a contract;
 - (iv) granting City approval to a contract that requires City approval and to which City is a party, or to the specifications for such a contract;
 - (v) granting City approval to a plan, design, report, study or similar item;
 - (vi) adopting, or granting City approval of, policies, standards or guidelines for City or for any subdivision thereof.
- B. Does not serve in a staff capacity with City and in that capacity, participate in making a governmental decision or otherwise perform the same or substantially all the same duties for City that would otherwise be performed by an individual holding a position specified in City's Conflict of Interest Code under Government Code section 87302.

- 7.3 In the event City officially determines that Consultant must disclose its financial interests by completing and filing a Fair Political Practices Commission Form 700, Statement of Economic Interests, Consultant shall file the subject Form 700 with the City Clerk's office pursuant to the written instructions provided by the Office of the City Clerk.

ARTICLE 8 - GENERAL CONSIDERATIONS

- 8.1 **Attorneys' Fees.** 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, including fees for the use of in-house counsel by a Party.
- 8.2 **Prohibition Against Assignment.** Consultant shall not assign any of the Services, except with the prior written approval of City and in strict compliance with the terms, and conditions of this Agreement.
- 8.3 **Documents and Records.** All documents, records, drawings, designs, cost estimates, electronic data files, databases and other documents developed by Consultant in connection with its performance of the Services, and any copyright interest in such documents, 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, and any use of incomplete documents, shall be at City's sole risk.
- 8.4 **Independent Contractor Status.** Consultant is for all purposes under this Agreement an independent contractor and shall perform the Services as an independent contractor. Neither City nor any of its agents shall have control over the conduct of Consultant or any of Consultant's employees, except as herein set forth. Consultant shall supply all tools and instrumentalities required to perform the Services. All personnel employed by Consultant are for its account only, and in no event shall Consultant 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. Consultant shall have no authority, express or implied, to act on behalf of City in any capacity whatsoever as an agent, nor shall Consultant have any authority, express or implied, to bind City to any obligation.
- 8.5 **Termination.**
- A. Unless earlier terminated as provided for below, this Agreement shall terminate upon completion and acceptance of the Services by City.
- B. This Agreement may be terminated by City, in its sole discretion, by providing thirty (30) days' prior written notice to Consultant (delivered by certified mail, return receipt requested) of City's intent to terminate.

C. If this Agreement is terminated by City, an adjustment to Consultant's compensation shall be made, but (1) no amount shall be allowed for anticipated profit or unperformed Services, and (2) any payment due Consultant at the time of termination may be adjusted to the extent of any additional costs to City occasioned by any default by Consultant.

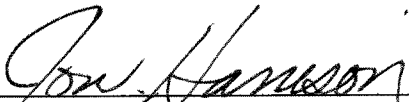
D. Upon receipt of a termination notice, Consultant shall immediately discontinue its provision of the Services and, within five (5) days of the date of the termination notice, deliver or otherwise make available to City, copies (in both hard copy and electronic form, where applicable) of any data, design calculations, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by Consultant in performing the Services. Consultant shall be compensated on a pro-rata basis for Services completed up to the date of termination.

- 8.6 Books and Records. Consultant shall maintain any and all books, ledgers, invoices, accounts and all other records and documents evidencing costs and expenses related to the Services for a period of three (3) years, or for any longer period required by law, from the date of final payment to Consultant pursuant to this Agreement. Such books shall be available at all reasonable times for examination by City at the office of Consultant.
- 8.7 Entire Agreement/Amendment. This Agreement, including the Exhibits incorporated herein by reference, represents the entire agreement and understanding between the Parties as to the matters contained herein, and any prior negotiations, written proposals or verbal agreements relating to such matters are superseded by this Agreement. Except as otherwise provided for herein, any amendment to this Agreement shall be in writing, approved by City and signed by City and Consultant.
- 8.8 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of California.
- 8.9 Severability. If one or more of the sentences, clauses, paragraphs or sections contained in this Agreement is declared invalid, void or unenforceable by a court of competent jurisdiction, the same shall be deemed severable from the remainder of this Agreement and shall not affect, impair or invalidate any of the remaining sentences, clauses, paragraphs or sections contained herein, unless to do so would deprive a Party of a material benefit of its bargain under this Agreement.

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

CITY OF REDLANDS

LUDWIG ENGINEERING

By: 
Jon Harrison, Mayor

By: 

Attest:

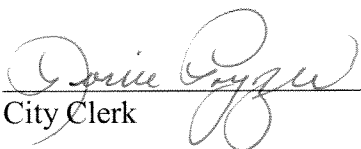

City Clerk

EXHIBIT "A"
SCOPE OF SERVICES
City of Redlands
Water Replacement Project, Phase III
Ludwig Engineering – Scope of Design Services
April 2, 2008 (Revised)

The scope of design services and our understanding of the work is as follow.

Design Survey – Research record maps at the County of San Bernardino and City of Redlands GIS System to compile information necessary to establish street centerlines. Perform field survey utilizing GPS (RTK) and control provided by the City of Redlands GIS System. This will allow Ludwig to establish horizontal and vertical control for street centerlines and aerial mapping control. Once control is established, Ludwig will submit aerial control to DMI for mapping and process centerline control for base sheets.

After mapping is received from DMI, Ludwig will evaluate it to see what additional information (utilities and physical features) need to be picked up by conventional methods by a survey crew using GPS (RTK) or total station. Field shots will then be collected in the field and brought into the office for processing. The field data will be combined with the aerial mapping for design purposes.

As the design progresses, additional survey work may be necessary for missing data or to clarify potential conflicts between utilities for the design work.

Utility Research – One of the first tasks of this water replacement project is to obtain good records of the existing wet and dry utilities within each pipeline area of work. Contact with Underground Service Alert will be a first priority. Underground Service Alert services will send a contact list of each utility registered with them for the areas in question. Phone contacts and complete project location maps will be sent to each utility for information and locations of their facilities.

As the utility information comes in, Ludwig will locate and plot the information on our plan blanks, which will already be done, showing centerlines, rights of way and will be combined with the mapping base which will show curbs, houses, manholes, meters and the ground elevations using contours.

As the design of each water main progresses, additional field information may be needed to verify physical features not clear from the mapping. Field time may include inspecting the physical features needed for proper design, coordinate possible pot holing needed, and measure field markings for Underground Service Alert field locations.

Plan Blank Work – When enough information and data is available (centerlines, rights of way, property lines, mapping base) from either City of Redlands GIS information or survey work and research of available records, Ludwig will organize and establish the plan sheets in our computer system. The title sheet can be set up during the beginning of the work and refined toward the end of the job.

LUDWIG ENGINEERING

Design Work – Design of each pipeline will include alignment determination, bedding and backfill details, anchorage and thrust restraints, connection points to the existing system, vertical alignment details as needed and appurtenances connecting to the new water main, such as fire hydrants, existing services, blow-offs and air-vac release valves. Some consultation may be necessary with the City during this stage of the design. connection details will be developed for each project and may need City input so we understand what the City's needs are and to minimize any down time for the customers.

The City will have the 50% review of the design and Ludwig will work with the City to address any concern of the City Staff.

Technical specifications will be developed toward the end of the job along with the preparation of the bidding schedule, Special Provisions and General Requirements (Sections up to 02000).

Ludwig will prepare an Engineer's estimate of probable construction costs based upon actual construction plan quantities.

Personnel from Ludwig will attend project meetings.

Drafting Work – After the sheet blanks are done and the design work has started CAD drafting of the design will be done concurrently. The drafter will have a redline of the design and the designer will supervise to CAD work as it progresses for each project location. The connection details can be done concurrently with the basic design drafting or later in the work process. The design process will be a team effort with the engineer, designer and CAD drafter.

The City will have a 50% review as the alignments are designed and the a 90% review as the plans near completion.

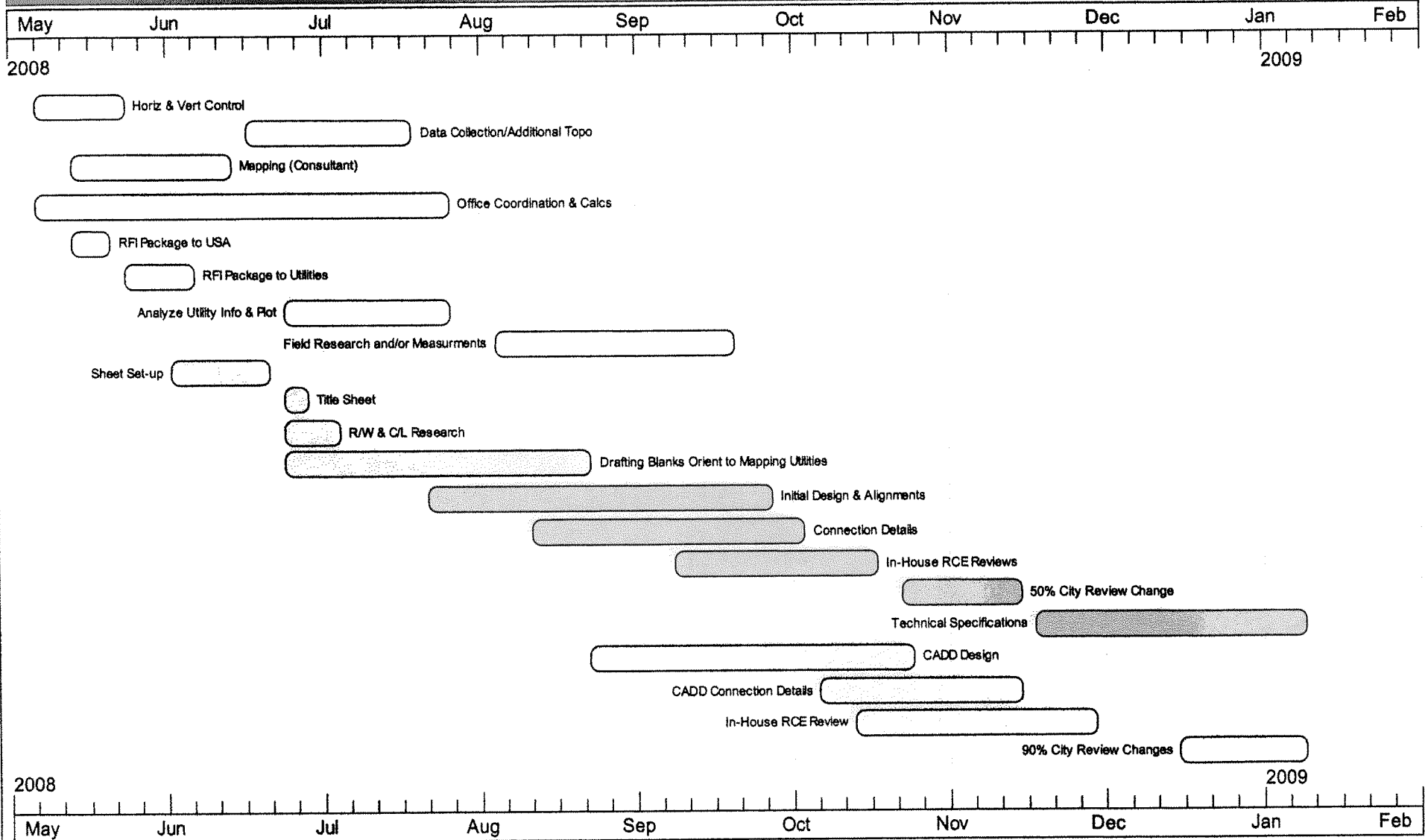
The City and Ludwig will coordinate on any concerns or comments at the 90% review stage.

Two sets of prints will be submitted to the City at 50% and 90% completion stages. Ludwig will present the City with a set of signed mylars at 100% design completion. As-builts will be accomplished after the construction is done according to any field changes noted by the contractor or inspector. Ludwig will present the City with a set of signed as-built mylars when construction is complete. These materials will be billed per our schedule of rates. Other design reproduction will not be charged. Ludwig will also give the City Auto-CAD files of the as-built drawings.

EXHIBIT "B" PROJECT SCHEDULE

City of Redlands

Water Replacement Project, Phase III



Legend:

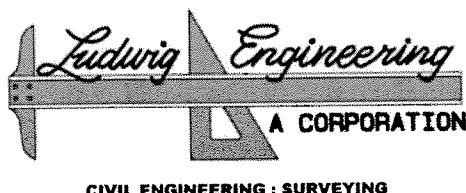
☐ Design Survey
 ☐ Utility Research
 ☐ Plan Blanks
 ☐ Design Work
 ☐ Drafting Work

EXHIBIT "C"
PROJECT COSTS
City of Redlands Water Replacement Project, Phase III
Engineering Cost Estimate - 4/2/2008

<u>Item</u>	<u>Task Description</u>	<u>Hours</u> <u>Units</u>	<u>Personnel</u> <u>Description</u>	<u>Unit Cost</u>	<u>Cost</u>
<u>Design Survey</u>					
1.	Establish horizontal and vertical control	50	2-Man Survey Crew w/GPS	\$346.00	\$17,300.00
2.	Data collection/topographic survey of physical features	151	2-Man Survey Crew w/GPS	\$346.00	\$52,246.00
3.	Mapping	1	Subconsultant	\$28,794.00	\$28,794.00
4.	Office coordination, meetings & calculations	75	Field Crew Supervisor II	\$130.00	\$9,750.00
5.	Mileage and materials	1		\$650.00	<u>\$650.00</u>
Subtotal Design Survey					\$108,740.00
<u>Utility Research</u>					
1.	RFI package to USA	11	Project Engineer I	\$107.00	\$1,177.00
2.	RFI packages to each utility for location maps	26	Project Engineer I	\$107.00	\$2,782.00
3.	Analyze utility location maps, locate & plot on plan sheets - 6.5 hrs. per sheet for 29 plan sheets	188.5	Designer/CADD V	\$104.00	\$19,604.00
4.	Field research, measurement & analysis of questionable utility locations	88	Project Manager III	\$130.00	<u>\$11,440.00</u>
Subtotal Utility Research					\$35,003.00
<u>Plan Blank Work</u>					
1.	Computer sheet set-up	5.5	Designer/CADD V	\$104.00	\$572.00
2.	Title sheet, notes, location & index maps	21	Designer/CADD V	\$104.00	\$2,184.00
3.	Right of way research, checking, orientation to survey control	10.5	Project Manager III	\$130.00	\$1,365.00
4.	Computer drafting of plan sheet with centerlines, R/W, property lines, utilities, orient to mapping - use 8 hrs. per sheet for 29 plan sheets	200	Designer/CADD V	\$104.00	\$20,800.00
5.	Computer charge	250		\$15.00	<u>\$3,750.00</u>
Subtotal Plan Blank Work					\$28,671.00

<u>Item</u>	<u>Task Description</u>	<u>Hours Units</u>	<u>Personnel Description</u>	<u>Unit Cost</u>	<u>Cost</u>
<u>Design Work</u>					
1.	Initial design, alignment, valves, clearance to utilities - use 7 hrs. per sheet for 29 sheets	203	Project Manager III	\$130.00	\$26,390.00
2.	Design/details of connections - use 2 hrs. per sheet for 29 plan sheets	174	Project Manager III	\$130.00	\$22,620.00
3.	R.C.E. in-house review - use 2 hrs. per sheet for 29 sheets	58	Sr. Prof. Engineer	\$146.00	\$8,468.00
4.	50% City review - address design changes - use 3 hrs. per sheet for 29 sheets & meetings	87	Project Manager III	\$130.00	\$11,310.00
5.	Technical Specifications	80	Project Manager III	\$130.00	\$10,400.00
6.	Clerical	40	Engineering Aide IV	\$75.00	\$3,000.00
7.	Repro, computer charge, miscellaneous	1		\$2,100.00	<u>\$2,100.00</u>
Subtotal Design Work					\$84,288.00
<u>Drafting Work</u>					
1.	CADD for pipeline design - use 7 hrs. per sheet for 29 plan sheets	203	Designer/CADD V	\$104.00	\$21,112.00
2.	CADD for connection details - use 45 details at 3.5 hrs. per detail	157.5	Designer/CADD V	\$104.00	\$16,380.00
3.	R.C.E. in-house review - use 3.5 hrs. per sheet for 29 sheets	101.5	Sr. Prof. Engineer	\$146.00	\$14,819.00
4.	Mtgs & 90% City review - address chgs, design - 30 hrs., drafting - 64 hrs. utilities, orient to mapping - use 8 hrs. per sheet for 29 plan sheets	30 64	Project Manager III Designer/CADD V	\$130.00 \$104.00	\$3,900.00 \$6,656.00
5.	Repro, computer charge, miscellaneous	1		\$6,306.00	<u>\$6,306.00</u>
Subtotal Drafting Work					\$69,173.00
<u>As-Builts (Record Drawings)</u>					
1.	Analyze & draft as-built revisions - use 3 hrs. per sheet for 29 sheets	87	Designer/CADD V	\$104.00	\$9,048.00
2.	Digital conversions - Terramodel to AutoCAD	1		\$4,577.00	<u>\$4,577.00</u>
Subtotal Drafting Work					\$13,625.00
Grand Total					\$339,500.00

EXHIBIT "D"
RATE SCHEDULE



109 East Third Street, San Bernardino, California 92410
Phone (909) 884-8217 ♦ Fax (909) 889-0153

Rates: Effective August 1, 2007 – August 1, 2008

Office:

Engineering Aide I	\$48.00/hr.	Project Manager III	\$130.00/hr.
Engineering Aide II	\$54.00/hr.	Senior Professional Engineer	\$146.00/hr.
Engineering Aide III	\$59.00/hr.	<u>Field</u>	
Engineering Aide IV	\$68.00/hr.	Field Crew Supervisor I	\$107.00/hr.
Engineering Aide V	\$75.00/hr.	Field Crew Supervisor II	\$130.00/hr.
Designer/CADD Operator I	\$78.00/hr.	Professional Land Surveyor	\$136.00/hr.
Designer/CADD Operator II	\$83.00/hr.	1-Man Survey Crew w/RMD ⁽³⁾	\$198.00/hr.
Designer/CADD Operator III	\$88.00/hr.	1-Man Survey Crew w/GPS ⁽²⁾	\$250.00/hr.
Designer/CADD Operator IV	\$95.00/hr.	2-Man Survey Crew w/EMD ⁽¹⁾	\$302.00/hr.
Designer/CADD Operator V	\$104.00/hr.	2-Man Survey Crew w/RMD ⁽³⁾	\$324.00/hr.
Project Engineer I	\$107.00/hr.	2-Man Survey Crew w/GPS ⁽²⁾	\$346.00/hr.
Project Engineer II	\$112.00/hr.	3-Man Survey Crew w/EMD ⁽¹⁾	\$371.00/hr.
Project Engineer III	\$124.00/hr.	3-Man Survey Crew w/GPS ⁽²⁾	\$402.00/hr.
Senior Planner	\$130.00/hr.	Mileage	\$.50/mi.
Architect III	\$124.00/hr.	Computer Charge CADD	\$.25/min.
Project Manager I	\$117.00/hr.	Materials and Outside	
Project Manager II	\$124.00/hr.	Contract Work	Cost Plus 20%

⁽¹⁾ EMD – Electronic Measuring Equipment (Total Station)

⁽²⁾ GPS – Real Time Global Positioning Survey Equipment

⁽³⁾ RMD – Robotic Measuring Device (Total Station)