RESOLUTION NO. 889

A RESOLUTION AUTHORIZING THE MAYOR TO ENTER INTO A PERSONAL SERVICES AGREEMENT FOR ENGINEERING SERVICES FOR THE DESIGN OF WATER RESERVOIR AND APPURTENANT WATER SYSTEM IMPROVEMENTS.

WHEREAS, the City has published a request for proposals to design and construct water system improvements including a 3 MG reservoir, waterline, and two well facilities; and

WHEREAS, 40 copies of the RFP's were distributed and seven engineering firms submitted formal proposals by the November 22, 1991, deadline; and

WHEREAS, the proposals were reviewed by the Acting City Engineer, George Jacob, P.E., and by the Community Development Director, Steve Starner; and

WHEREAS, the proposals were evaluated on the basis of a 13 point criteria including examples of comparable projects, overall experience, and conformance to the City's projected time schedule; and

WHEREAS, four firms were selected for interviews and interviews were conducted on January 10, 1992.

NOW, THEREFORE, THE CITY OF WILSONVILLE RESOLVES AS FOLLOWS:

1. Lee Engineering, Inc. of Oregon City has been selected as the engineer for this project.

2. The City Attorney is hereby directed to prepare a professional services contract.

3. The Mayor is hereby authorized to sign the contract on behalf of the City.

CONSIDERD by the Wilsonville City Council at a regular meeting thereof this 16th day of December, 1991 at which time the resolution was continued.

ADOPTED by the Wilsonville City Council at a regular meeting thereof this 21st day of January, 1992 and filed with the Wilsonville City Recorder this date.

GERALD A. KRUMMEL, Mayor

ATTEST:

Vera A Rojas

VERA A. ROJAS, CMC/AAE, City Recorder

SUMMARY OF VOTES:

Mayor Krummel	AYE
Councilor Chandler	ABSENT
Councilor Carter	AYE
Councilor Lehan	AYE
Councilor Van Eck	AYE

City of
WILSONVILLE
in OREGON
30000 SW Town Center Loop E • PO Box 220
Wilsonville, OR 97070
(503) 682-1011

COMMUNITY DEVELOPMENT DEPARTMENT
MEMORANDUM

DATE: JANUARY 16, 1992

TO: ARLENE LOBLE
CITY MANAGER

FROM: STEVE STARNER
COMMUNITY DEVELOPMENT DIRECTOR

RE: ENGINEERING SERVICES PROPOSAL FOR WATER SYSTEM IMPROVEMENTS

In response to the city's RFP, written proposals were received from seven engineering firms. The proposals were reviewed and evaluated by George Jacobs, Acting City Engineer, Jim Long, Design and Survey Technician, and myself. The results of our review may be presented as follows:

1.	Lee Engineering	256 points
2.	Westech Engineering	227 points
3.	HGE Engineers and Planners	227 points
4.	ASCG Incorporated	189 points
5.	Wallulis & Assoc., Inc.	155 points
6.	ACE Consultants, Inc.	136 points
7.	Zarosinski-Tatone Engineers, Inc.	77 points

In keeping with the specifications of the city's RFP, oral interviews were conducted on January 10, 1992. Based on the evaluation of the written proposals, five candidates with the highest number of points were invited to participate. Only Westech Engineering declined the invitation to an oral interview. The interview panel consisted of Gene Siebel, Tualatin Valley Water District Administrator, Mike Kohlhoff, City Attorney, Jim Long, Design and Survey Tech. and myself. Oral presentations were evaluated and given a point allocation of one (low) to ten (high) according to the following elements:

1. First impression (appearance, organization)
2. Depth of related engineering experience
3. Verbal communication and presentation skills
4. Wilsonville water system knowledge
5. Knowledge of Wilsonville geographical layout
6. Knowledge of State Health Division Rules, local land use requirements and environmental laws

The results of the oral interviews are:

1.	Lee Engineering	53.5 points
2.	HGE Engineers and Planners	48.5 points
3.	ASCG Incorporated	47.5 points
4.	Wallulis and Assoc.	35.0 points

Recommendation:
With council approval, authorize staff to enter into negotiations with Lee Engineering for the purpose of preparing an engineering service agreement between Lee Engineering and the Wilsonville City Council. Once prepared, the agreement would be presented to the City Council, acting as the City's Contract Review Board, for final approval.

ss:md

Attach:

pc IOC-CD

LEE ENGINEERING INC.

Formal Interview
for
Engineering Services
Design and Administration

CITY OF WILSONVILLE

WATER FACILITIES IMPROVEMENTS PROJECT

SCHEDULE A: WELL AND WELL BUILDINGS
SCHEDULE B: 30 MG RESERVOIR
SCHEDULE C: WATERLINES

JANUARY 10, 1992

LEE ENGINEERING, INC.
1300 John Adams Street
Oregon City, Oregon 97045

INTERVIEW

CITY OF WILSONVILLE
WATER FACILITIES IMPROVEMENTS

I.	INTRODUCTION	F. Duane Lee
II.	BACKGROUND OF LEE ENGINEERING	F. Duane Lee
III.	PAST PERFORMANCE AND QUALIFICATIONS	David Lee
	A. WORK EXPERIENCE	
	1. WELLS AND WELL BUILDINGS	
	2. RESERVOIRS	
	3. WATERLINES	
	4. SPECIAL DESIGN (TELEMETRY)	
	B. APPLICATION OF EXPERIENCE TO YOUR PROJECT	
	C. CONTRACT ADMINISTRATION	
IV.	PROPOSED WORK PROGRAM AND SCHEDULE	David Lee
V.	COMPENSATION FOR SERVICES	F. Duane Lee
VI.	QUESTIONS FROM INTERVIEWERS	Committee
VII.	SUMMARY	F. Duane Lee
VIII.	INTERVIEWERS' NOTES	Committee

III. PAST PERFORMANCE AND QUALIFICATIONS

A. WELL EXPERIENCE

1. General

Lee Engineering, Inc. is a consulting engineering firm which has been in business for 16 years. The firm's focus has been in the municipal engineering market with an emphasis on water works engineering.

2. Wells and Well Buildings

Lee Engineering, Inc. has designed and constructed numerous wells and pumping facilities. We have been directly responsible for drilling 11 municipal water wells and have installed pumping equipment and pump houses for several more. We have designed conventional utility buildings and have on several occasions also designed buildings to match or be compatible with adjacent architecture. Three situations required that pumping equipment be installed in underground vaults.

Lee Engineering, Inc. is very knowledgeable of pumping equipment and control valve applications to ensure that the desired results are achieved. We have a good working relationship with Knudson Engineers and know that they can design the necessary electrical controls and telemetry system to fully automate the proposed system. We have also installed chemical feed and chlorination feed systems on wells.

3. Reservoirs

Our original proposal provides detail as to our experience in the design and construction of reservoirs. We have been involved in the design and construction of most standard design reservoirs. We have built Dykman and Art James post-tensioned concrete reservoirs and have built conventionally reinforced buried tanks. We have been responsible for several steel reservoirs and steel standpipes. Our experience extends to elevated reservoirs and work on one pedestal mounted spheroid tank. We are knowledgeable of those coating systems currently approved by the National Sanitation Foundation for use in contact with potable water. We have evaluated several geology reports for reservoir sites. You can be assured that we will not design a reservoir for any site unless we are completely satisfied that the site is suitable and that the reservoir will be designed to the latest seismic standards.

4. Waterlines

Lee Engineering, Inc. has constructed more waterlines in Oregon than almost any other firm of our size. As demonstrated in our proposal, we have constructed many projects involving transmission mains in the 12" to 30" diameter size.

Without question, the members of our staff know how to design and construct waterline projects. We have designed pipelines for nearly all conditions, including aerial mounting, river and creek crossings, railroad crossings, rock cuts, boring and jacking, structurally mounted and simple buried installation.

5. Special Construction

The staff at Lee Engineering, Inc. has on numerous occasions designed special vaults to house system appurtenances such as air release valves, combination valves, altitude valves, pressure reducing and pressure sustaining valves and metering equipment.

Many of the facilities which we have designed have included as a necessary element the installation of telemetry equipment. Those include wells, reservoirs, booster stations, wastewater pumping stations, and treatment plants. We are knowledgeable of appropriate applications and can direct the subconsultants in the specific design of that equipment.

6. Integrated Projects

We have considerable experience in the engineering design and administration of major projects involving multiple contracts and schedules. We successfully completed a project for the City of Troutdale which was very similar to the project as proposed by the City of Wilsonville in that it included well construction, transmission pipelines, and reservoirs. However, on the Troutdale project the scenario was repeated for three separate pressure zones. The final project included 14 separate contracts and resulted in the construction of six wells, three reservoirs, and several thousand feet of pipeline.

I believe this résumé clearly demonstrates that we have the knowledge and experience to successfully complete this assignment to your complete satisfaction.

B. APPLICATION OF EXPERIENCE TO THIS PROJECT

1. Knowledge of Engineering and Construction

- Lee Engineering makes it a policy that its project engineers and designers stay with a project from design through construction.
- Our engineers get their feet and hands dirty in the field.
- We know what can be constructed and how it is constructed. We know theory and we know nuts and bolts engineering.
- The designer gets to deal with his mistakes and learns quickly how to avoid them in the next design. You do not need to experience the learning curve with Lee Engineering.
- We have had enough jobs that we can be relied upon to be the specialists in the field of waterworks engineering.

2. Technical Competence

- Our staff is technically competent. We know the waterworks industry.
- We have drilled numerous wells, built several reservoirs, and have seen miles of pipelines go into the ground. We know the right and the wrong way, so we will ensure that you will get the best possible job.
- We have the computer hardware and software to run detailed hydraulic analysis but also know the practical side of the industry.
- We can assist the City staff at whatever level of expertise is required by the needs of the project and the circumstances.

3. Ability to Anticipate

- We teach our people to look beyond the obvious task at hand and to anticipate the possible effects or consequences of design decisions. There is more to deciding which side of the street to put a line than calling out left or right.
- We also stress the importance of being ahead of our contractors.
    - For example, we do not allow excavation unless backfill material and compaction equipment are present on the site.

- We do not allow tie-ins before all required fittings and materials are present, assembled and tested.

- We insist that schedules be presented and that adequate notice provided before beginning any work such as road crossings.

- Our experience allows us to see things which others fail to see.

  - We know to look beyond the obvious when scheduling system shutdowns for tie-ins.

  - We learn to consider pressure testing and chlorinate as part of the design and the structure of the bid schedule.

  - We know that maintenance considerations must be incorporated into the design.

  - We know what makes for good well operation and provide for the protection of equipment and the system.

4. **Attention to Detail**

- Our engineers will walk each line segment well location and well site and take pictures before ordering the surveying and developing maps.

- The base maps will be taken into the field and compared against the actual condition before design.

- Final details such as evidence of conflicting utilities, details not picked up by the survey, and final field measurements will be made by the design engineer.

- Our plans typically will contain more detail than the average plans.

- All fittings, tie-ins, or non-standard construction will be detailed.

- Our current data collecting techniques and drafting capability produce very accurate plans.

5. **Ability to Communicate at All Levels**

- Our engineers are equally comfortable talking to engineers, technicians, contractors, public officials and the public.

- We actively recruit constructive input from everyone impacted by our design.

- We readily talk to the Owner's maintenance staff about existing conditions and receive their input on the proposed improvements.

- We also know that the public often has information not available from official records.

- We have found over the years that good communication with the contractor is essential to avoid misunderstandings and disputes.

- We may be regarded as experts, but we don't know everything and we are certainly not experts outside the field of engineering.

6. **Flexibility**

- We are not rigid in our thinking. If asked for an opinion, we will give an honest answer, but we know there are more than one legitimate answer to many applications of engineering.

- We know that projects can and do change during the design process. We will develop the project in a many phases or schedules as is necessary to match priorities and financial resources.

- Lee Engineering will work with the staff as requested to develop the final routing for the pipelines to be built. We know that the initial routes are preliminary and subject to change.

- Our goal is to work with the City to achieve the best end product.

- Our approach to structuring payment under the contract is to allow for flexibility in the field when appropriate.

7. **Understanding of the Needs of the Public**

- Traffic control is not a favorite topic for engineers or contractors, but we clearly understand that we must protect the safety of the public and recognize their needs.

- Experience on many projects has shown us the need to keep the public informed. We suggest that fliers be drafted and handed out to all property owners adjacent to each line segment and work site informing them of the project and probable construction schedules.

- Area-wide notification is helpful when construction involves principal or critical roadways.

- Particular attention must be paid to businesses, large employers and public institutions.

8. **Good Engineering Means Good Projects**

- Good engineering drawings and clear and concise technical specifications are the first step to a successful project.
- Historically, contractors have found our plans and specifications accurate and easy to work with.
- Our designs and the expertise in the field provide for quick decisions.
- We experience a minimal number of serious disputes and virtually no litigation.
- Our goal is to produce a good project and to provide the level of service which meets your need.

C. CONTRACT ADMINISTRATION

1. Subconsultant

We have a close working relationship with L.R. Squier Associates, Inc., Knudson Engineers and Compass Corporation.

2. CADD Capability

We use Softdesk (formerly DCA) operating inside AutoCAD. Both programs are the current Release 11. Our hardware is AREA/ALR (IBM-compatible) 386/33 mhz with 12-16 MB of memory.

3. Standard Specifications and Document Forms

It is our understanding that the City does not have standard specifications and contract document forms. We will use the documents which we have found to be successful and will recommend modifications where appropriate.

4. Contract Administration

We have administered hundreds of contracts of all types of civil engineering projects. Payment Estimates will be processed on Lotus or Quattro spreadsheets. All standard forms are set up as merge documents in Word Perfect 5.1.

5. Ongoing Communication

We will keep the City advised of progress throughout the project either through work meetings or through written weekly progress reports.

WATER FACILITIES IMPROVEMENT PROJECT

DESIGN AND ADMINISTRATION TASKS

A. PRELIMINARIES

1. Following the selection process, meet with City Engineer, George Jacobs and Public Works Director, Steve Starner and City Administrator, Arlene Loble, to establish the final scope of work, the final time schedule and the design criteria to be applied to this project.

2. Develop the work plan and the cost of engineering services.

3. Execute the Engineering Services Agreement.

4. Formal Notice to Proceed is issued.

B. PRELIMINARY DESIGN

1. Pre-design Conference.

2. Data Gathering

   a) Obtain utility maps of the existing facilities.

   b) Obtain and review pertinent elements of the Water System Master Plan, Wilsonville Comprehensive Plan and Facilities Element. Receive update from Planning Dept. on the progress of this project and proposed pipeline routing.

   c) Obtain geological data from the Dames and Moore report.

   d) Obtain a copy of the existing street rights-of-way and easements.

   e) Obtain "as-built" records for the existing system.

   f) Conduct a site visit and take pictures to aid in design.

   g) Obtain data for survey control such as record surveys, existing monuments, elevation data, recorded plats, etc.

   h) Review all collected data with the City to verify its accuracy and interpretation.

   i) Topographic maps prepared by Spencer Gross, Inc. will be used as base maps for the pipeline design.

3. Preliminary Design

a) Evaluate preliminary pipeline routing and reservoir siting based upon the preliminary plan.

b) Perform a limited hydraulic analysis of the proposed system configuration.

1) Review system average daily and peak day demands.

2) Review fire flow requirements based upon City of Wilsonville criteria.

3) Review pipeline sizing based on hydraulic requirements.

4) Evaluate the existing pump head-discharge curves with proposed system curve. Compare the horse power requirements with the existing units. Operating efficiency using existing units versus replacements shall be determined.

5) Evaluate the existing pump controls and optional control systems such as float switches, capacitance probe or sonic devices.

c) Determine probable costs for the system elements in pipeline work, reservoir, well pump, pump house structures and any additional land acquisition.

d) Prepare a preliminary engineering report and present to the City for review and comment.

e) Approval to proceed with Final Design. Modify the final scope of work and work schedule if preliminary design dictates a change.

C. <u>COORDINATION OF SUBSURFACE INVESTIGATION, SURVEYS AND ACQUISITION OF EASEMENTS</u>.

1. Lee Engineering, Inc. will use Compass Corporation to develop any additional design survey data. Survey data for the tank site may be required.

2. Subsurface review of conditions will be initiated for the reservoir site and for any other areas which may warrant further study. The Dames and Moore report will serve as the basis for reservoir siting and foundation design.

3. Compass Corporation will be available to provide any needed surveys for the establishment of easements, rights-of-way, or for permanent land acquisition.

D. FINAL DESIGN

1. Pipeline Design

a) The final pipeline route will be established relative to the new street centerline. A combination of tangents between standard fittings and segments of curvilinear design will be used to match the proposed street alignment.

The exact location of the pipeline relative to the centerline will vary. The pipeline may occupy an easement outside the future right-of-way, may be located inside the right-of-way, or may be placed in easements along the existing property lines.

b) Ductile iron pipe materials will be specified. Ductile iron pipe will be furnished in Class 50. Proper installation will be a specific objective of inspection.

c) Only those fittings approved by the City; i.e., Tyler, Tifco, Trinity Valley and Grinnel, will be specified and installed.

d) Tees, crosses, valves and fire hydrants will be installed as required to serve the City's development plan. Five hydrants will be M&H Model 129, Waterous WB 67 DDP, Clow F2500, Mueller Centurion or Kennedy K-81A. Valves will be double disc gate valves or resilient seat gate valves as the City may elect. Specified manufacturers are to be M&H, Kennedy, Iowa, or Mueller.

e) The pipe will be installed in accordance with the "Typical Trench Detail" as shown on the drawings.

f) Unless field conditions should dictate otherwise or if the City should direct an alternate location, the pipeline will be installed four (4) feet on the street side of the north or east curb.

g) The pipeline will be installed and tested in accordance with AWWA C-600 and the manufacturer's installation manuals.

2. Water Tank Design

a) Site Selection

It is our understanding that a site has been selected. Site selection was dictated by the water master plan, available property, the hydraulic needs of the system and the local geography and subsurface geology. We will assist the City in a review of all these criteria.

b) Site Survey

A topographic survey of the tank site will be required to determine the extent of site grading and to properly design access, yard piping, and landscaping if included in the scope of work.

c) Tank Geometry

Tank geometry will be determined by the capacity needs of the system established during the preliminary design, the overflow elevation as required by the established service level and the foundation elevation of the final site selection.

d) Tank Material

Since the City has indicated a desire to minimize the "first cost" for this installation, it is assumed based on market costs, that the tank will be made of steel. Capacity and geometry may eliminate concrete tanks from further consideration.

e) Foundation

Standard practice in the industry calls for a reinforced concrete tension ring foundation filled with compacted granular material and capped with oiled sand or asphalt pavement. A seismic analysis will be completed to determine if tie-downs are required and, if installed, the impact upon the tank shell design.

f) Yard Piping

Inlet/outlet piping will be designed for efficient operation and will provide for the isolation and draining of the tank for inspection and maintenance. An investigation will be made to ensure that the overflow/drain line is either connected to the storm sewer system or that overland flow or discharge to natural drainage course will not cause damage.

g) Steel Tank Design

It is standard practice in the industry for the Owner to furnish the tank geometry, foundation design and to specify buried piping, overflow piping, access hatches, ladder and stair assembly details, roof details, painting specification and other data relative to the site. A tank will be specified and designed in accordance with AWWA D-100. Shop drawings will be furnished by the manufacturer/erector and will be thoroughly reviewed by our structural engineer.

h) Concrete Tank Design

Specifications will be written for a Dykmann or Art James type of concrete storage reservoir with standard accessories as noted above under "Steel Tank Design." Final selection of steel or concrete tank will be made by the City of Wilsonville.

i) Painting

We propose at this time that the exterior surface be coated with a three-coat system of either epoxy polyurethane or epoxy ester with a finished coat thickness of 4.5 mils. The interior will be painted with a two-coat high-build epoxy enamel having a finished thickness of 8 mils. The interior coating will be NSF approved. Coal Tar and coal tar synthetics are no longer recommended for potable water use. Vinyls and chlorinated rubbers have not had histories of success in western Oregon and therefore may not be considered unless compelling reasons for their use can be developed.

j) Testing

Tank geometry, plate thicknesses, weld design, material selection and approaches to assembly will be reviewed during the shop drawing submittals. Compaction testing will be completed for the foundation, buried piping and fill materials inside the foundation. Both visual and spot radiographs will be used to check field welds. A review of welder qualifications will precede assembly. Field sand blasting will be inspected for conformance to SSPC-SPIO. Field painting will be tested in accordance with AWWA D-102. Initial application will be tested with a wet film thickness gauge and dry film thickness will be tested with a magnetic gauge. We also have equipment for holiday testing.

k) Telemetry

We propose capacitance probes be installed in the tank to control the well pumps and to maintain the desired water level in the reservoir. This will require that a conduit and electrical cables be installed in the trench with the water main between the well building and the reservoir.

l) Corrosion Protection

Corrosion protection can be addressed by specifying additional thicknesses of the steel shell plates or by installing cathodic protection systems. It is our initial position that the water and environment in Wilsonville are not aggressive, and that corrosion protection is of minimal concern. A good well-applied paint system should provide adequate protection.

m) Tank Security

Because of liability and the risk of vandalism, a security fence should be installed around the tank site. Power should also be supplied for security lighting.

3. Well Pumps

a) Pumping Units

We will specify a vertical turbine pump that will provide a flow of 1.0 MGD and head characteristics which will match the TDH for the new Mentor Well.

Pump control valves and surge relief valves vented to existing storm drainage facilities will be installed at both well sites.

b) Tank Level Controls

The motor controls will need to be rewired to accommodate the new tank level controls.

c) Pump House

Bill Lloyd, AIA, will assist us in developing a building design which will be both functional and compatible with adjacent architecture.

4. Final Design

a) Plans and Specifications

Design data for the pipeline design and for the tank site will be collected using a total station and computerized data collectors. The field information will be down-loaded to a useable, reduced format using an input/reduction software program. Digitized topographic maps will be down loaded into the prototype drawing. The final design will be formatted as a DXF file using AutoCAD Release 11 and DCA Release 11.

Three sets of the final design drawings, along with copies of the draft technical specifications and contract documents, will be submitted to the City for review.

b) Final Estimated Cost

A final Engineer's estimate of probable construction cost will be submitted.

c) Permits and Agency Review

Copies of the plans and specifications will be submitted to the Oregon State Health Division for review. A fee may be required if this project is outside an approved Master Plan.

The tank design and pump buildings will require building permits.

d) Final Documents

Following City and Agency approval, final corrections will be made and thirty (30) copies of the documents will be delivered to the City for formal bidding.

e) Easements and Land Acquisition

Legal descriptions for all necessary easements or land acquisitions will be submitted.

5. Bidding and Negotiating

a) Response to Bidders

The City will advertise the project and issue documents to bidders. The design engineer and project manager will be available during the bidding process to interpret the plans and specifications for bidders. Addendums will be issued if required.

b) Review of Proposal

The project manager will review all bids received and will evaluate those bids for responsiveness and accuracy. Following the review he will submit a written recommendation for award, including a tabulation of bids received.

c) Execution of the Contract

Following review by the City staff and award by the City Council, the Engineer will issue a Notice of Award. Four copies of the contract documents will be sent to the Contractor for execution.

d) Pre-Construction Conference and Notice to Proceed

Upon receipt of the executed documents the Engineer will review the bonds, insurance certificate, and contract for accuracy and completeness. The documents will be sent to the City for legal review and execution. The Engineer will arrange a date for a pre-construction conference to be

attended by all interested or affected parties. The Contractor and the City will have an opportunity for final coordination and scheduling of the work.

A Notice to Proceed will be issued when all coordination and construction schedules are approved.

6. Project Administration

a) Project Inspection

Lee Engineering, Inc. can assign an individual to full-time or part-time inspection as the City may desire. That individual can be a technician, engineer-in-training, or a professional engineer, depending on the level of service the City requires for the individual elements and the project as a whole.

b) Project Management

David A. Lee, P.E., will oversee the project as project engineer. Many years of experience derived from working on scores of projects have given him the skills to successfully complete the technical aspects of the project and work well with the Owner and Contractor.

All our project management forms, such as Notice of Award, Notice to Proceed, Pre-Construction Conference Notes, Payment Estimate, Approval of Payment, Memo's, Change Orders, Price Agreements, Certificates of Substantial Completion, Compliance Statements, etc. have been computerized to enhance our efficiency and to allow field personnel to complete this work from our field office with a minimum of secretarial support.

c) Communication

Weekly meetings and written summaries of progress will be initiated to better inform the City of progress and the status of the project.

d) Construction Staking

Surveying services will be provided by Compass Corporation, a local company which responds with a minimum of notice.

7. Post-Construction Services

a) Final Inspection and Project Close-out

The Engineer will participate with the City and the Contractor in a final inspection of the completed work. The Engineer will issue and submit to the City final documentation of the completed work. Documentation will be complete to show all completed work, all change orders, final payment and certification of compliance. The Engineer will provide certification to the Oregon State Health Division.

b) Operation and Maintenance

Lee Engineering, Inc. will supply any operation or maintenance manuals and instruction necessary for the City to assume operational responsibility of the completed or modified facilities.

c) As-Built Plans

Mylar reproducible drawings of the as-construction condition of the completed work will be furnished.

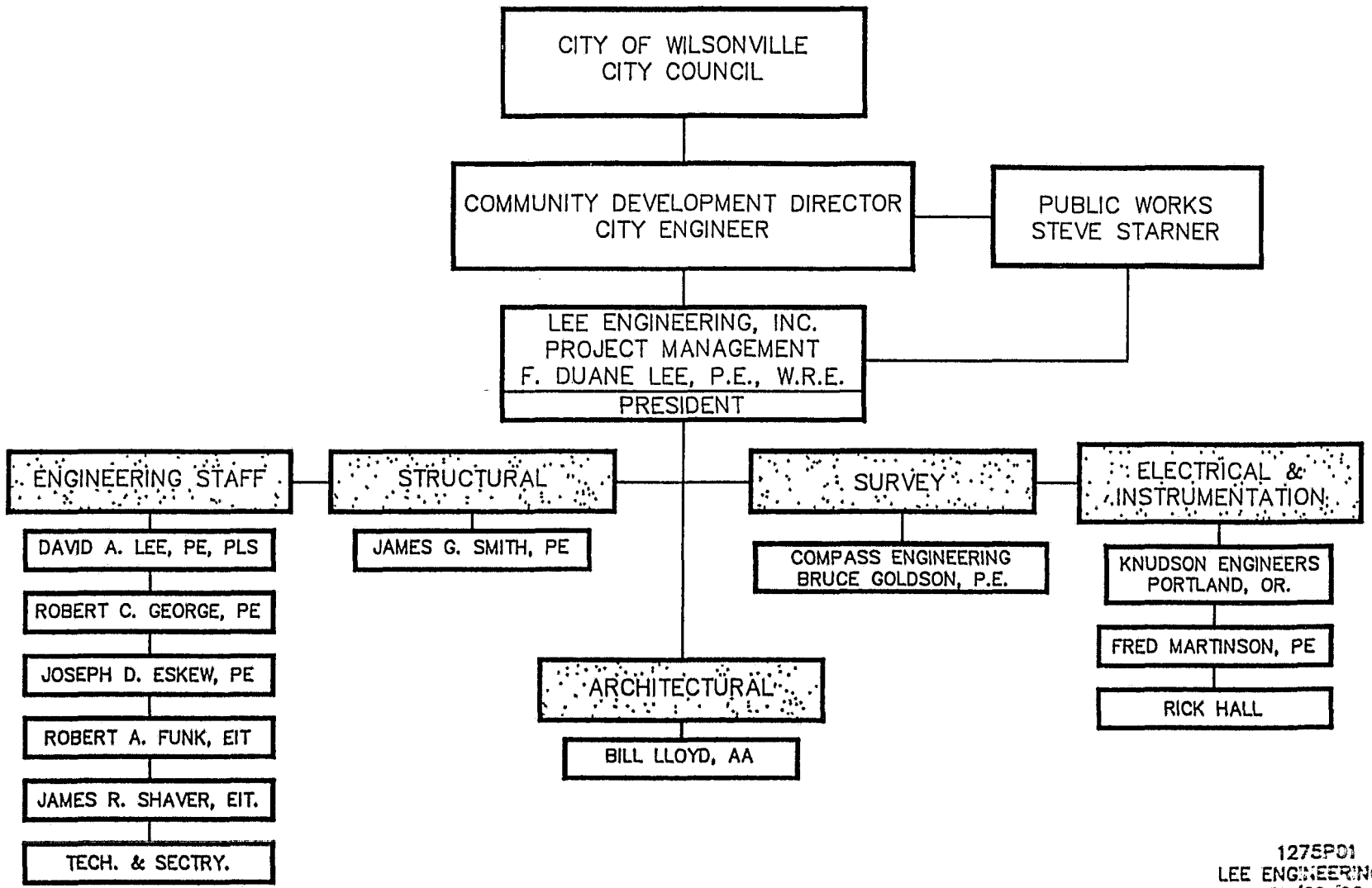
d) Recommendation for Acceptance

The Engineer will issue a project summary and a recommendation for acceptance.

e) Annual Inspection

The Engineer will be available to participate with the City in an eleventh-hour inspection to ensure that any corrective action for noted deficiencies is yinitiated prior to the expiration of the one-year warranty.

CITY OF WILSONVILLE
WATER FACILITIES IMPROVEMENT PROJECT
ORGANIZATIONAL CHART



1275P01
LEE ENGINEERING, INC
01/09/92

CITY OF WILSONVILLE
SCHEDULE A - WELL BLDG'S AND WELL
SCHEDULE B - RESERVOIR

DESIGN AND CONSTRUCTION SCHEDULE

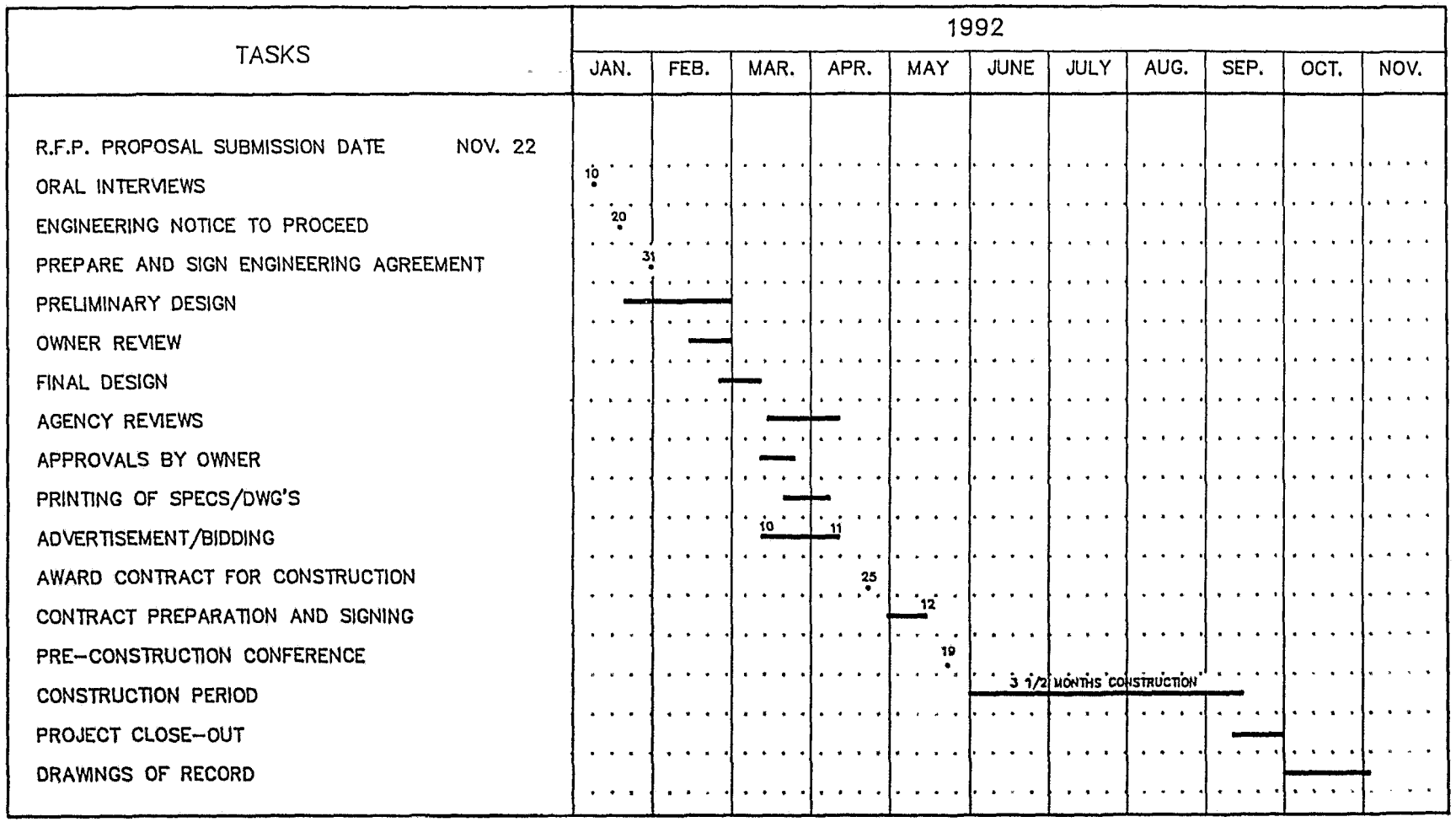


FIGURE 1

1275P02
LEE ENGINEERING, INC
01/09/92

CITY OF WILSONVILLE
SCHEDULE C - WATERLINES

DESIGN AND CONSTRUCTION SCHEDULE

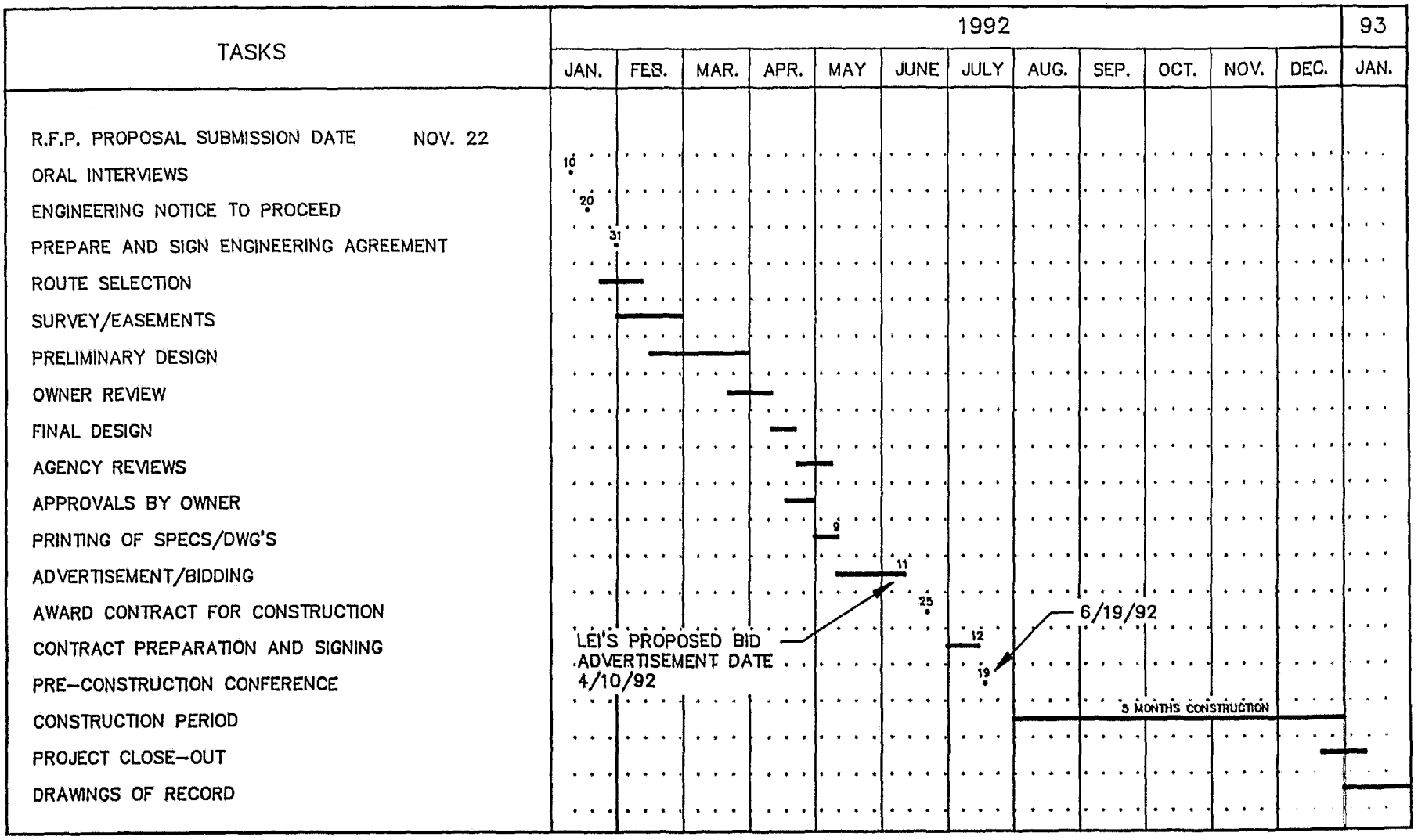


FIGURE 2

1275P03
LEE ENGINEERING, INC
01/03/92