

CITY COUNCIL MEETING
AUGUST 20, 1986

27

REQUEST FOR PROPOSALS
APPROVED FOR COMPUTER
AIDED DRAFTING (CAD)
SYSTEM

Council approved "Request for Proposals - Computer Aided Drafting (CAD) System".

CC-12.1(b)

Council was informed that the approved 1986-87 Budget includes an allocation of \$63,600 for the acquisition of computer hardware, software, and training for a computer aided drafting (CAD) system. The system will handle the Public Works Department's mapping needs and will eventually be used to furnish base and special maps to other City departments.



CITY OF LODI

PUBLIC WORKS DEPARTMENT

COUNCIL COMMUNICATION

TO: City Council
 FROM: City Manager
 DATE: August 13, 1986
 SUBJECT: Request for Proposals - Computer Aided Drafting (CAD) System

RECOMMENDED ACTION: Approve the attached "Request for Proposals - Computer Aided Drafting (CAD) System."

BACKGROUND INFORMATION: The approved 1986/87 Budget includes an allocation of \$63,600 for the acquisition of computer hardware, software, and training for a computer aided drafting (CAD) system. The system will handle the Public Works Department's mapping needs and will eventually be used to furnish base and special maps to other City departments.

The main advantage of CAD systems is that the information to be shown need only be "drawn" once. It then can be combined to create maps at any scale. For example, street rights-of-way would be entered into a discrete "layer" and used as a basis for all the utility maps. Thus, changes are entered only once.

The request for proposals is essentially a description of the City's proposed applications, its needs, and the performance criteria for the computer hardware and software.

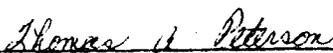

 Jack L. Ronsko
 Public Works Director

Attachment

cc: Finance Director, MIS Committee Chairman

JLR/RCP/ma

APPROVED:


 THOMAS A. PETERSON, City Manager

FILE NO.

CITY COUNCIL

FRED M. REID, Mayor
EVELYN M. OLSON
Mayor Pro Tempore
DAVID M. HINCHMAN
JAMES W. PINKERTON, Jr.
JOHN R. (Randy) SNIDER

CITY OF LODI

CITY HALL, 221 WEST PINE STREET
CALL BOX 3006
LODI, CALIFORNIA 95241-1910
(209) 334-5634

THOMAS A. PETERSON
City Manager

ALICE M. REIMCHE
City Clerk

RONALD M. STEIN
City Attorney

August 14, 1986

To Prospective Suppliers:

The City of Lodi is requesting proposals for a computer aided drafting (CAD) system. The system is to be used for mapping the City's streets, utilities and miscellaneous features and for general civil and mechanical drafting. The system is to support three to six users, sharing a common database. Proposals must be for a complete, compatible and fully supported software and hardware package. Detailed requirements are contained in the document "Request for Proposals - Computer Aided Drafting System for the City of Lodi" available at the office of the Public Works Director, City of Lodi, 221 W. Pine Street, Call Box 3006, Lodi, CA 95241-1910 (telephone 209-333-6706).

Proposals will be accepted until 5:00 p.m. Thursday, September 18, 1986, at the above office.

Jack L. Ronsko
Public Works Director

Enclosure

JLR/RPC/cag

CITY OF LODI
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

COMPUTER AIDED DRAFTING SYSTEM REQUEST FOR PROPOSALS

TABLE OF CONTENTS

- I INTRODUCTION
- II APPLICATION INFORMATION
 - A. General Background
 - B. Application Details
 - 1. Facility Mapping
 - 2. Construction Details
 - 3. Special Exhibits and Location Maps
 - 4. Construction Plans
- III SOFTWARE
 - A. General Requirements
 - B. Software Features
 - C. Software Support
- IV HARDWARE
 - A. General Requirements
 - B. Specific Requirements
 - 1. Computer (CPU)
 - 2. Data Storage
 - 3. Graphics Terminal
 - 4. Printer
 - 5. Plotter
 - 6. Miscellaneous
 - C. Hardware Support
- V INSTALLATION & TRAINING
 - A. Installation
 - B. Training
- VI PAYMENT
- VII PROPOSAL REQUIREMENTS
- APPENDIX

REQUEST FOR PROPOSALS
COMPUTER AIDED DRAFTING SYSTEM
for the
CITY OF LODI

I INTRODUCTION

The Computer Aided Drafting (CAD) System is to be used by the City of Lodi Public Works Department, Engineering Division to draft maps of City streets, utilities, and miscellaneous features and for general civil and mechanical drafting. The system is planned to be used initially with one terminal and with three terminals in two years. Additional terminals or stand alone workstations may be added by other Departments in subsequent years.

II APPLICATION INFORMATION

A. General Background

The City of Lodi has a population of 41,000 within 9.1 square miles (5,800 acres) of mostly developed land (approximately 18,000 parcels).

There are 132 miles of street and roughly 140 miles each of water, wastewater, and storm drain lines. The City has been growing at an average rate of 2% per year over the last 30 years.

The City's present data processing systems consist of the following:

- o IBM S/36 @ City Hall - used for accounting billing, word processing, building permit processing and general database applications
- o IBM S/36 @ Police Department - used for dispatch and incident records and analysis
- o IBM and HP PC's @ Public Works and Engineering - used for various engineering, maintenance and record keeping programs

It is not the City's intent to use the CAD system to replace any of these systems.

B. Application Details

1. Facility Mapping

The primary application of the CAD system is to draft maps of City facilities. Secondary applications include construction details (Standard Plans), special exhibits, location maps and construction plans. Facility maps will include single maps of the entire City with relatively little detail and maps of sections of the City with substantial detail.

It is desired that the system handle all this information in one "drawing" with multiple "layers." It is understood that this may seriously degrade system performance and that sectioning of the City may be more appropriate. The system must use a common data base with true ground coordinate capability. The proposal should discuss this aspect in detail including descriptions of how sectioned drawings/symbols are created, updated, rescaled, combined, and manipulated by the system.

The following table shows most City features and facilities and the way it is intended they be plotted:

<u>Entire City</u>	<u>Sections</u>
Street - Centerlines Rights-of-way Curblines Names	Street width dimensions Lane line and other striping Signs Lot dimensions
Property lines	Easements
Utilities - Water, wastewater & storm drain mains with sizes	Addresses Utility services Valves, manholes, etc.
Misc. facilities - Approximately 30 types such as: Fire hydrants Street lights Traffic signals Parks Major buildings	

Samples of portions of present maps are included in Appendix. (B-1a,b,& c).

The City intends to draft this database using information from record maps, construction plans and special surveys.

2. Construction Details

The City prepares "Standard Plans" for use as reference drawings on construction projects. There are presently 65 of these drawings. It is intended to draw these with the CAD system and use them as is or modify them as needed for specific projects. A sample is included in Appendix B2.

3. Special Exhibits and Location Maps

The City frequently prepares drawings showing proposed work and its relation to existing facilities. It is intended to extract the appropriate portion of the database, add the proposed work, and create a new drawing.

It is estimated there would be 40 such drawings stored at any given time. See Appendix B3 for an example.

4. Construction Plans

The City prepares roughly 60-24" X 36" construction drawings for civil engineering projects each year. It is intended that the basic street and utility information be extracted from the database and project details be added to create a new drawing.

Although civil design software and surveying/data collection hardware is not part of this purchase, the supplier is encouraged to describe other software/hardware packages compatible with the proposed CAD system.

III SOFTWARE

A. General Requirements

The drafting software shall be fully integrated including drawing creation, editing, and plotting; and system management. The software shall not rely on operator knowledge of the computer's operating system. However, access to the operating system must be easily available in the event the City wishes to use the computer for other programs.

Disc space required for storage of the operating system and CAD program shall be indicated in the proposal. The supplier shall estimate the storage requirements of the drawings indicated in Section II of this RFP.

Systems having optional modules or auxiliary programs shall be clearly identified as to what is included in the proposal. Options and interfaces to other programs/languages shall be described.

The proposal shall include discussion (including applicable costs) of the system's compatibility with other CAD systems and the Initial Graphics Exchange Specification.

B. Software Features

The complexity of drafting software precludes listing detailed requirements in this RFP. The proposal shall include sufficient descriptions of the software capabilities and command structure to allow the City to evaluate the system. Suppliers are encouraged to emphasize features applicable to the City's application. It is suggested that a set of actual user manuals be included in the proposal. (The City will return any proposal materials requested by the supplier at the end of the evaluation.)

C. Software Support

The proposal shall describe software support including the following:

- 1) Help with software questions and problems
- 2) Help with software/hardware interface questions and problems
- 3) User group program
- 4) Software updates and enhancements
- 5) Operating system updates and enhancements

IV HARDWARE

A. General Requirements

All system components shall be completely compatible with each other and the CAD software, and preferably made by the same well established manufacturer. All components shall have the following features:

- 1) 115 VAC (nominal) line voltage operation
- 2) Low noise operation
- 3) Attractive enclosures suitable for open placement, in an office
- 4) All hardware shall be movable and fit through 36" X 80" doors
- 5) Meet all Federal and State regulations regarding interference and radiation.

The supplier shall refer to the Application information provided in Section II of this RFP and Appendix C "System Configuration and Staging" for determining hardware requirements. The proposal shall include manufacturer's descriptive brochures for all hardware components.

B. Specific Requirements

1. Computer (CPU)

For the purposes of this RFP the CPU includes the central processor, power supply, system memory, peripheral controllers, and buses. The CPU design shall incorporate state-of-the-art electronics, and modular, plug-in circuit cards. All input and output shall be properly buffered and interfaced to reduce CPU performance degradation during data transfer or plotting.

The CPU shall utilize a 16 bit word (minimum) and be suitable for multi-user, multi-task operation so that each CRT operator can be viewing different displays or performing different operations while the CAD system is functioning. A hardware floating point processor shall be included. The CPU shall be furnished with sufficient ROM/RAM to quickly and efficiently operate the CAD system (See Appendix C).

2. Data Storage

Data storage shall be provided with a Winchester Disc drive and magnetic tape. Formatted capacities shall be a minimum of 120 mb and 60 mb respectively.

Disc controllers shall incorporate an error checking scheme during read/write operations with suitable correction or warning routines.

3. Graphics Terminal

All graphics terminals shall be flicker free and provide a sharp display of characters on a screen measuring 12" (minimum, diagonal).

The CRT shall be enclosed in a free standing enclosure for placement on the operator's desk.

The graphics terminal shall include both a separate keyboard with a numeric key pad and a separate command entry and cursor control pad compatible with the CAD software.

The following features are desired:

- o display 8 colors minimum
- o high resolution, minimum 512H X 390V
- o external power switch and brightness & contrast controls
- o tilt & swivel adjustment
- o anti-glare screen
- o silent operation-convection cooled preferred
- o screen saver feature (shut off display after user selected inactive period)
- o automatic degauss
- o 60Hz₂ refresh rate, non-interlaced

4. Printer

The CAD system shall include a system printer for hard copy listings of drawings and other system outputs. Graphics printing (screen dumps of drawings) is not required.

The printer shall have a minimum printing speed of 150 cps and utilize perforated tractor feed paper 8-1/2" or 15" wide. The system shall provide output formatting which skips the perforation.

5. Plotter

The CAD system shall be furnished with an "E-size" plotter (nominal 36" width X 48' length sheet size). Plotter performance specifications shall equal or exceed those of the HP7585B.

The plotter shall include the manufacturer's normal accessories

plus three pen holders and an assortment of roller ball or ball point, fiber tip and technical drafting pens, and paper and vellum drafting media.

Plotting shall be done in "background mode," i.e. data entry and other mapping work shall be capable of being accomplished while plotting other drawings.

6. Miscellaneous

The system shall be furnished with all data cables and power cords necessary to connect and operate the complete system. All cables shall be shielded. The initial system will be installed in one location; however the cables shall allow the graphics terminal to be located at least 10 feet from the CPU and the plotter 20 feet from the CPU.

All hardware documentation shall be included.

Static and power surge protection as recommended by the hardware manufacturer shall be included.

Power failure protection is not required, however the proposal shall discuss data loss and system integrity in the event of a power failure.

C. Hardware Support

The proposal shall include hardware service support for one year. The support level shall be on-site, next day service, all parts and labor included. The support shall be from the hardware manufacturer. The supplier may provide an option for third party support. In each case, the location of the support center shall be indicated. The proposal shall be clear as to the end of manufacturer's warranty period and the beginning of extended support service.

V INSTALLATION & TRAINING

A. Installation

The proposal shall include delivery, installation and testing of all hardware and software. The City can provide non-technical assistance, including the use of hand trucks. (The system is to be installed on the second floor of City Hall.) No cutting or wiring through ceiling or walls will be required.

B. Training

The proposal shall include software and hardware training. The training shall include two phases:

- 1) System overview and capabilities - primarily for the system manager (an Engineer) who will supervise overall system use and implementation
- 2) System operation - primarily for system operators (engineering technicians) who will actually use the system

On-line training courses and "help" screens shall be described. The proposal shall indicate the location and duration of all proposed training. All supplier expenses involved in training shall be included.

VI PRICE AND PAYMENT

The proposal shall clearly indicate the price of the hardware, software, support and miscellaneous items requested in this RFP. Training shall be itemized. The Initial, Year 2, Year 3 and Ultimate prices shall be indicated separately. All prices shall be current. Year 2 and subsequent prices will not be considered binding.

All quotations shall be protected from price increase for a minimum of 30 days. Sales tax on applicable items shall be included.

Upon completion of installation and testing of software and hardware, the City will pay 90% of the purchase price of the items included.

Upon completion of training, the City will pay 100% of the price for training.

During the 30 days following the completion of installation/testing or training, whichever is last, the City will use and test the system. Following satisfactory completion of this test period, final payment will be made.

Payment for maintenance and support will be in accordance with terms agreed to between the City and the supplier.

VII PROPOSAL REQUIREMENTS

In addition to the items specifically requested in this RFP, the proposal shall include the following information:

- 1) Background description of the software including introduction date, revision history and company background
- 2) List of users of the proposed system, preferably public agencies using the system for purposes similar to Lodi's application
- 3) A copy of the software license agreement
- 4) Availability of demonstrations
- 5) Complete Hardware list for the initial system and the three additional stages (See Appendix C).

- 6) Background description of the hardware (major components - CPU, disc, terminal and plotter) including introduction date, production history, company history, and anticipated support life.
- 7) Delivery time from date of order
- 8) Cost breakdown and total cost with options and "not-included" items clearly identified.
- 9) Name and telephone number of supplier contact person who can answer technical questions about the proposed system.

APPENDIX

- A City Map
- B-1a 8-1/2 X 11 section of 500 scale utility map
 - b 200 scale base map
 - c 200 scale utility map
- B2 Standard Plan
- B3 Typical Exhibit
- C System Configuration & Staging

EXHIBIT A

EACH GRID IS $\pm 1/2$ MILE PER SIDE.

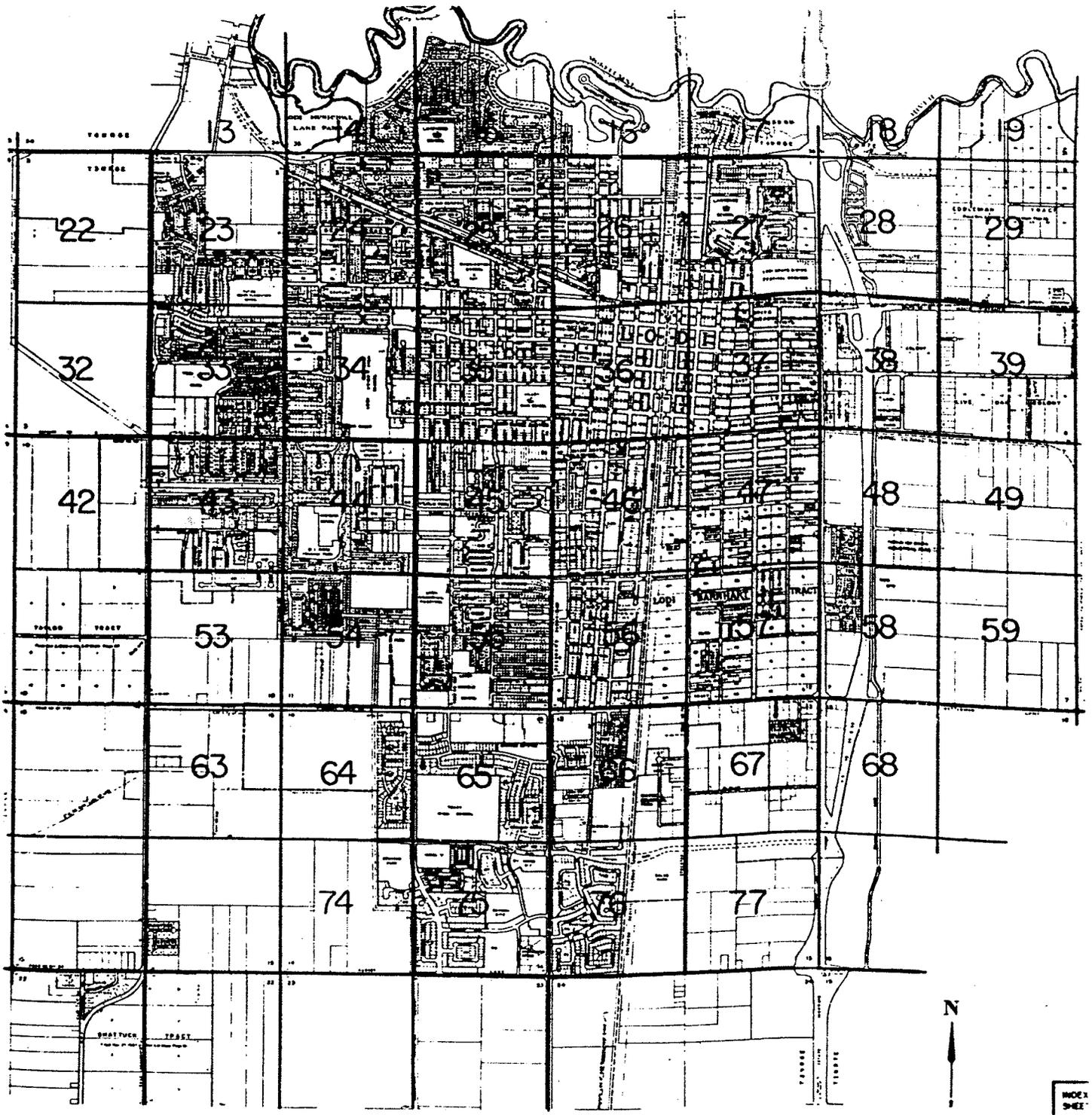
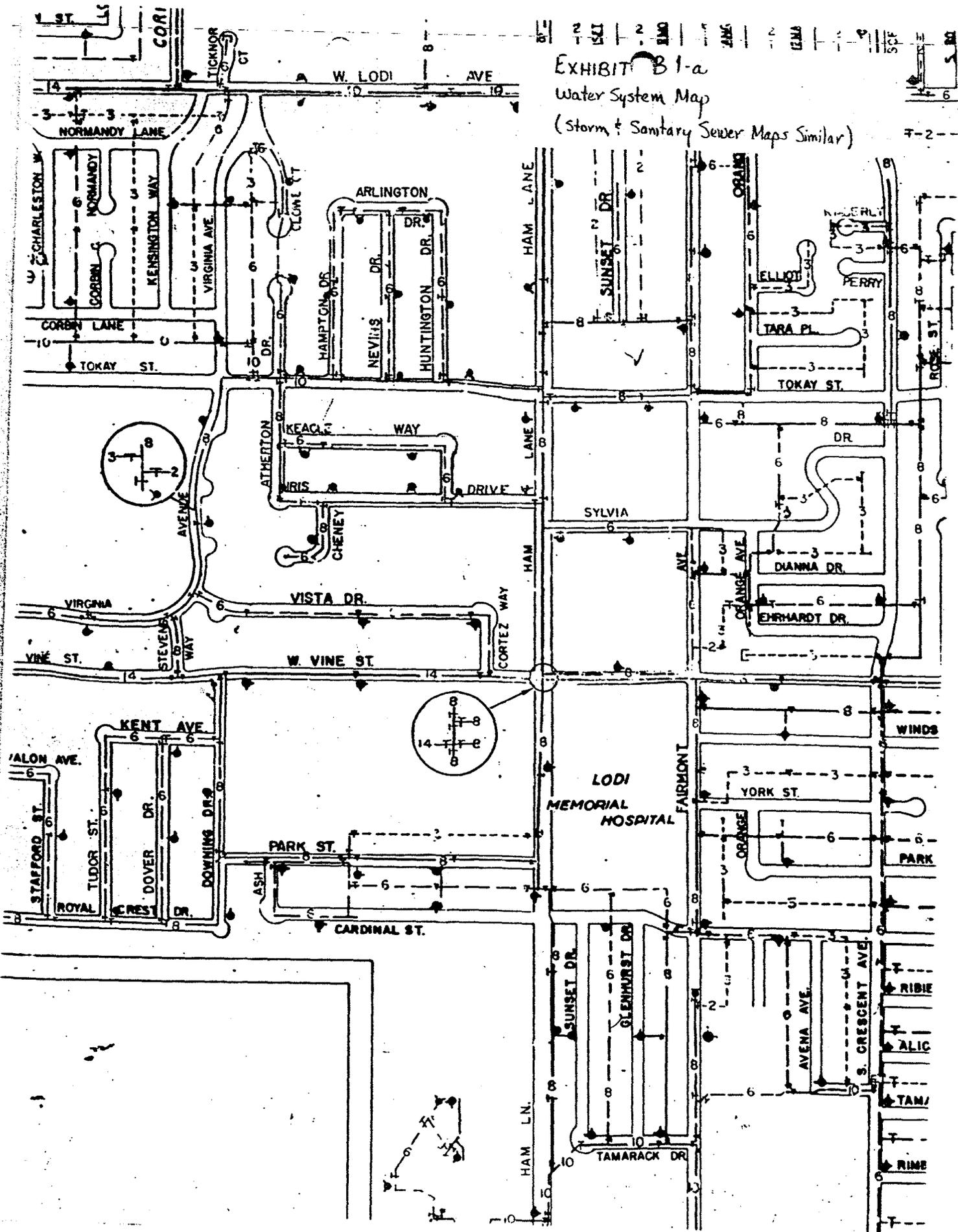


EXHIBIT B1-a
 Water System Map
 (Storm & Sanitary Sewer Maps Similar)



7-2--

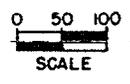
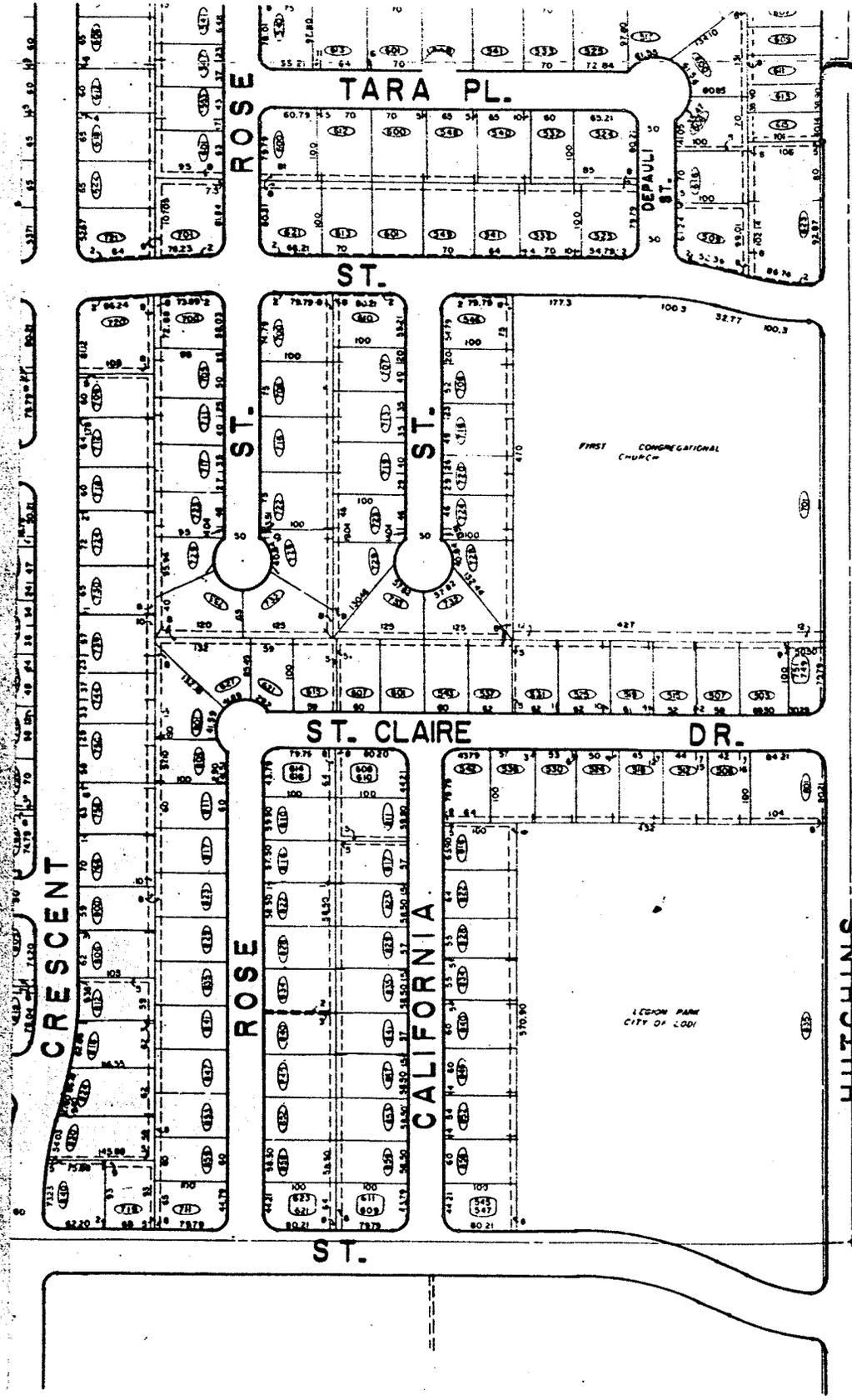


EXHIBIT B 16

SEE 46

<p>CITY OF LODI PUBLIC WORKS DEPARTMENT</p>	PRINT DATE	<p>INDEX NUMBER 45</p>
	DATE REVISED	
	1-2-21	

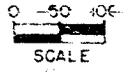
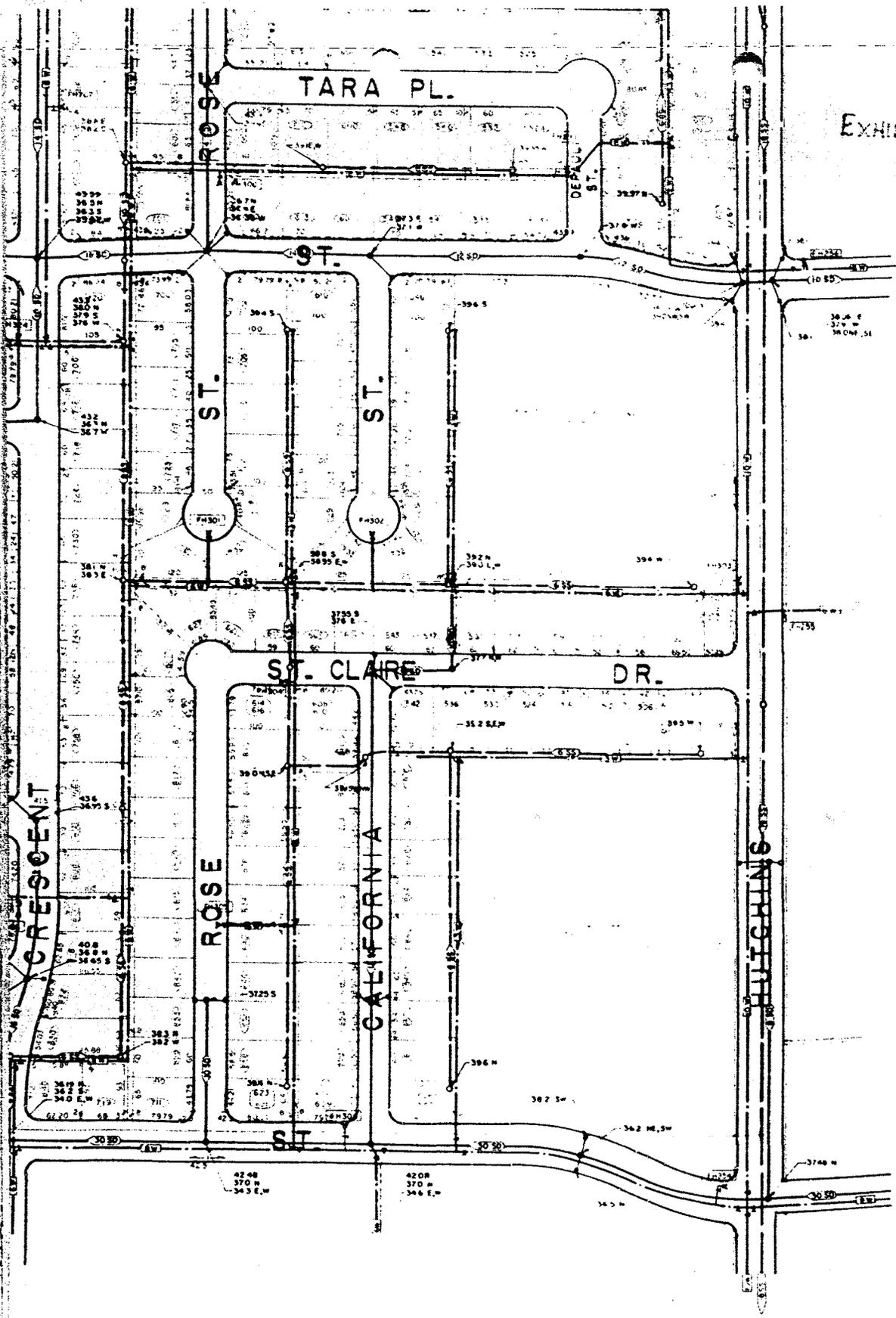


EXHIBIT B-1c

SEE 46



CITY OF LODI
PUBLIC WORKS DEPARTMENT

PRINT DATE
DATE REVISED

INDEX NUMBER
45

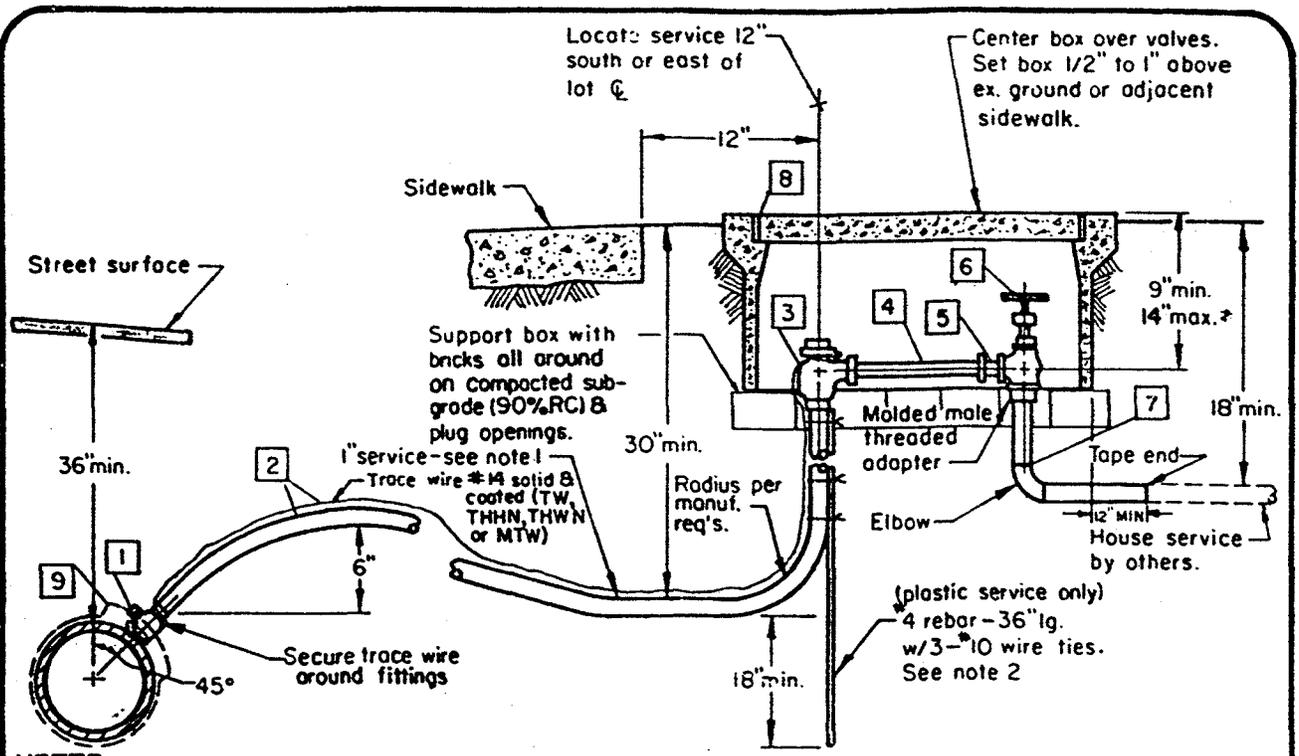


CITY OF LODI

PUBLIC WORKS DEPARTMENT

1"

WATER SERVICE

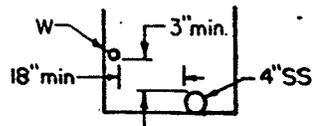


NOTES

1. Maintain 24" clearance between tap and any coupling, fitting or adjacent tap. Plastic services shall be looped approximately 6" vertically or laterally to provide slack in the line. If the service is installed in the same trench as the sanitary service, the water service shall be installed without splices and the trench section shown applies:
2. Backfill shall conform to Std Plan 501.
3. Alternate fittings must be approved by the Engineer.

MATERIALS

1 Corporation Stop	Mueller H-15006, 1"; Mueller H-15024 w/saddle
2 Service Pipe	C.T.S. PE 340B, CL. 160 trace wire
3 Angle Stop	Mueller H-14267, catalog size 5/8" x 3/4" x 1"
4 Spacer	Mueller H-10887, catalog size 3/4", or Sch 80 PVC (9" lg. 1" straight thread), w/washers
5 Coupling	Mueller H-10891, catalog size 5/8" x 3/4" x 1" w/ brass bushing or Ford SPH-23 (No bushing req'd)
6 Customer Valve	Mueller H-8130 or Stockham B-216 angle globe valve w/handwheel
7 Customer stub	IPS PVC Sch. 40 per Uniform Plumbing Code. Extend past edge of box (Same size as service pipe)
8 Service Box	Christy B-16 w/D-30 lid or 61D30 (Traffic areas)
9 Saddle	Ronac 101S, Mueller H-1349x series (req'd for PVC mains only)



TRENCH SECTION

Drawn	K.T.
Checked	R.C.P.
Date	SEPT. 1978

No	Revised	By
1	10-79	JK
2	4-84	JK
3	3-86	JK

Approved By
John L. Lombardi
 Public Works Director 12-12-78
 RAE 7509

STD PLAN 403

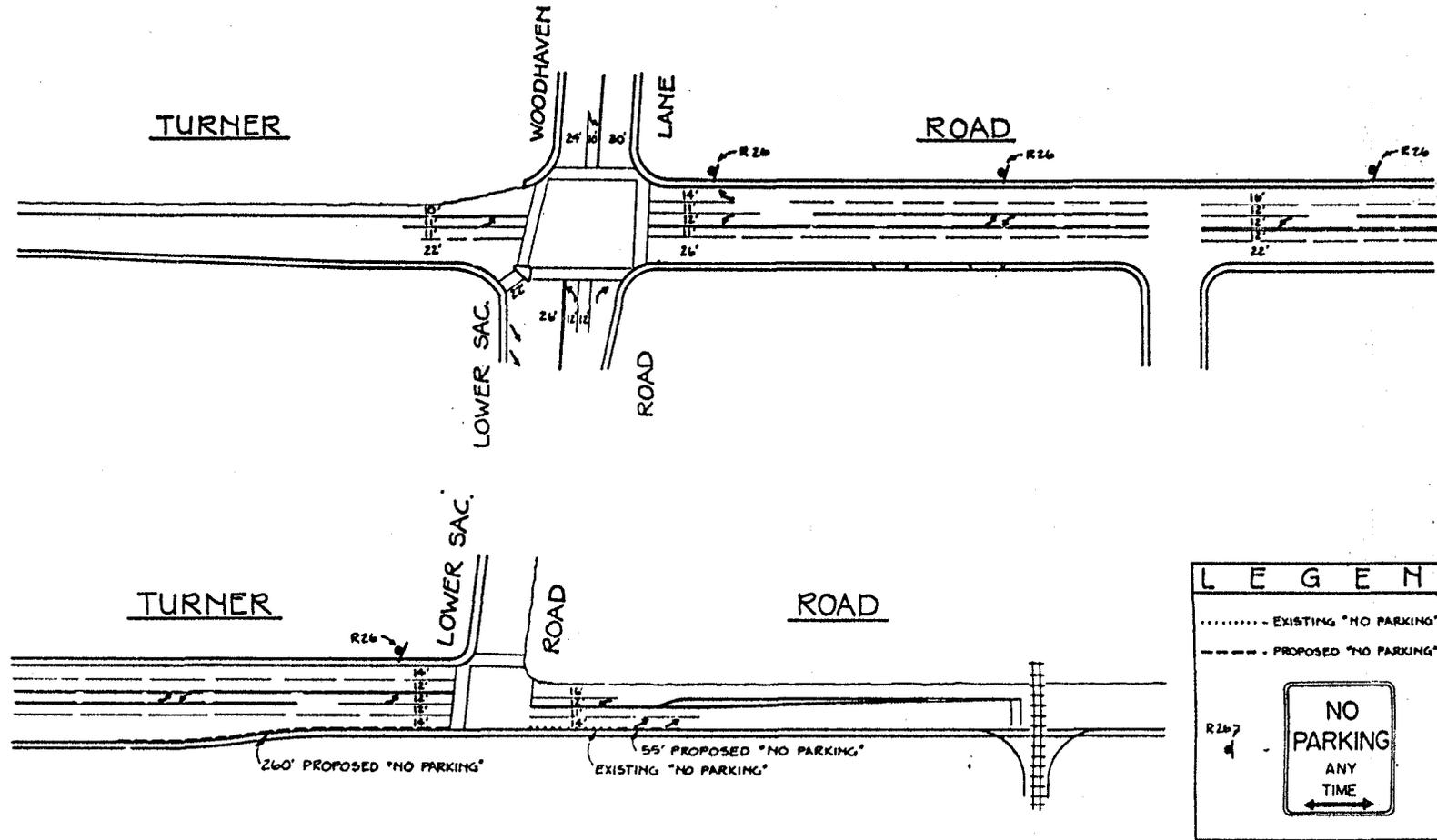


EXHIBIT B-3

Dr	No	Date	Revision	Appr	Approved By
R.K.					
Ch					
Date	7/86				



CITY OF LODI
PUBLIC WORKS DEPARTMENT

TURNER ROAD
LWR. SAC. SOUTH-LWR. SAC. NORTH
PROPOSED STRIPING PLAN



APPENDIX C
SYSTEM CONFIGURATION & STAGING

Initial	Year 2	Year 3	Ultimate
Computer w/ ROM/RAM	-	-	X
F.P. Processor	-	-	-
I/O Boards	-	X	X
Spare rack space	-	-	-
Enclosure	-	-	-
Hard Disc	-	-	o
Tape Backup	-	-	-
Terminal (1)	1 add'l	1 add'l	2 add'l
Printer	-	-	-
Plotter	-	-	-
Maintenance	X	X	X
Software License	X	X	X
Software Support	X	X	X

X provide as recommended/required
 - provide in initial system
 o not required