Final

TECHNICAL MEMORANDUM

TO: Dan Carlson, City of Santa Rosa

FROM: John Hake, Parsons Engineering Science

DATE: 15 September 1995

RE: Urban Irrigation Component of the Alternative Projects

INTRODUCTION

The purpose of this technical memorandum is to describe those elements of the urban irrigation component which are part of the Santa Rosa Subregional Long-Term Wastewater Project. Urban irrigation is a floating component that may be considered as part of any of the project alternatives. The urban irrigation component is divided into two primary areas: (1) Fountaingrove, and (2) East Santa Rosa/Bennett Valley. These areas are shown on the attached figures: Sheets E-2 and F-2.

The urban irrigation component is comprised of three elements: irrigation areas, pipelines, and pump stations. The preliminary design of these elements was completed by CH2M Hill in the March 1991 *Interim Period Reclamation System Master Plan*. The preliminary design was updated in an April 1992 memorandum titled, *Santa Rosa Subregional Water Reclamation System Preliminary Environmental Assessment of Urban Landscape Reuse Projects* - Appendix B. The updated preliminary design contained in the April 1992 memorandum is the basis for the urban irrigation component of this project. Parsons ES has field checked the proposed alignments and service areas of the two proposed urban irrigation projects and concurs with the changes made to the alignments between the 1991 and 1992 configurations. The figures attached to this TM show the pipeline alignments in general. Most of the proposed pipelines would be along urban streets, but some sections would be across parks or school yards or along flood control channels. These sections of the alignments have been field verified by Parsons ES and are shown on the latest detailed drawings prepared by Parsons ES for the project alternatives. The following description of urban irrigation elements is a summary of the contents of the April 1992 CH2M Hill memo which is incorporated as Attachment A. The entire memo is attached for clarity and includes the Rohnert Park pipeline which is not a part of this evaluation. This project has been constructed already and is part of the "existing" conditions/system.

FOUNTAINGROVE

The Fountaingrove urban irrigation system would be supplied with reclaimed water from the West College Ponds. As shown on Sheet E-2, the primary transmission line runs north/northeast across U.S. 101. From the east side of U.S. 101, the pipeline runs southeast to the Fountaingrove business park and the northeast through the business park to the golf course. The primary user on the pipeline is the Fountaingrove Country Club. There is about 27,000 feet of pipeline ranging in size from 6 to 16 inches in diameter. The total irrigation area is about 200 acres. Irrigation site areas and demands are listed in Table 1 of Attachment A.

The source pump station would be used to lift reclaimed water to the Fountaingrove Country Club. Two 150-horsepower pumps (duty/standby operation) would be located at the source pump station adjacent to the West College Ponds. A booster pump station with two 125-horsepower booster pumps (duty/standby operation) would be located adjacent to Fountaingrove Business Park. The location of the booster pump station has been changed from its position in Attachment A, south of the business park, to northwest of the business park, as shown on Sheet E-2. The country club would provide a booster pump station for its own landscape irrigation distribution. The source pump station would operate for 24 hours a day and the booster pump station at Fountaingrove Business Park would operate up to 12 hours a day. Each source and booster pump would have a capacity of up to 1,600 gpm.

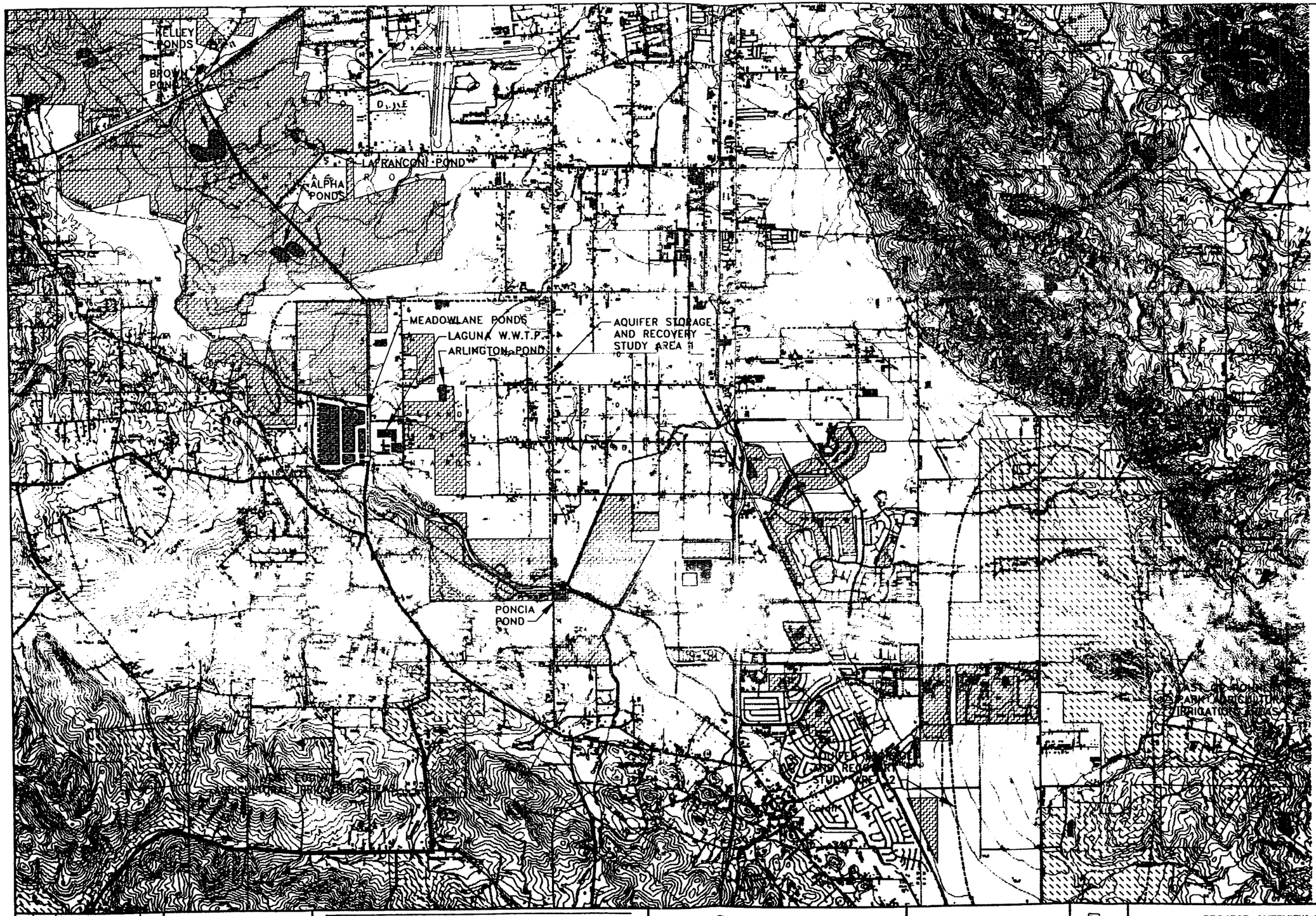
EAST SANTA ROSA/BENNETT VALLEY

The East Santa Rosa/Bennett Valley urban irrigation system involves the irrigation of parks, schools, and a golf course along the Highway 12 corridor, primarily on the east side of U.S. 101. As shown on Sheets E-2 and F-2, the primary transmission line runs due east from the West College Ponds paralleling Highway 12 to just east of the Sonoma County Fairgrounds. The primary line splits into two main branches, one traveling northeast and terminating at Howarth Park, the other traveling southeast and terminating at the Bennett Valley Golf Course and Galvin Park. The pipeline crosses Highway 101 using a bore and jack technique. There is approximately 50,000 feet of pipeline ranging from 6 to 18 inches in diameter. The total irrigation area is about 360 acres. Irrigation site areas and demands are listed in Table 2 of Attachment A. In the time since this table was prepared, a second golf course adjacent to the existing Bennett Valley golf course is under consideration by the City. This would increase the estimated irrigation area by approximately 150 acres.

The East Santa Rosa/Bennett Valley urban irrigation system would be supplied with reclaimed water from the West College Ponds. Source pumps for the East Santa Rosa/Bennett Valley system would be located in the same source pump station as for the Fountaingrove system. Two 325-horsepower pumps (duty/standby operation) with a capacity of 2,800 gpm each would be required at the source pump station. Two 75-horsepower booster pumps (duty/standby operation) with a capacity of 1,550 gpm each would be required at the booster pumpstation.

Both sets of pumps would operate at night for direct deliveries to the night-time irrigation sites and during the day to fill the storage ponds at the Bennett Valley Golf Course. A second golf course, as currently being considered, would not change the pipeline alignment, and would not significantly change the pipe sizes or pumping requirements.

cc: Robin Cort, Parsons ES
Andy Hauge, HBA
Rich Maurer, Parsons ES



NO	DATE	REVISIONS	BY

PROJECT NO.	723129	DATE
DESIGNED BY:	J. TRISLER, T. WOODING	6/95
DRAWN BY:	L. FLURER	6/95
CHECKED BY:	R. MAURER	6/95

HARLAND BARTHOLOMEW AND ASSOCIATES
PARSONS ENGINEERING SCIENCE
PARSONS
OFFICES IN PRINCIPAL CITIES

SANTA ROSA SUBREGIONAL LONG-TERM WASTEWATER PROJECT

2000' 0 2000' 4000'
SCALE: 1"=2000'
CONTOUR INTERVAL: 40ft./20ft.

SHEET LOCATION

PROJECT OVERVIEW MAP

PROJECT FACILITIES ALTERNATIVES 1 – 5

SCALE 1" = 2
SHEET NO F-2
SHEET

ATTACHMENT A

MEMORANDUM CH2MHILL

TO: Dan Carlson/City of Santa Rosa

COPIES: Randy Piazza/City of Santa Rosa
Scott Stinebaugh/City of Santa Rosa
Dave Richardson/CH2M HILL, Emeryville
Carol Abramson/CH2M HILL, Santa Rosa

FROM: Jeff Smith/CH2M HILL, Redding

DATE: March 24, 1992

SUBJECT: Description of Reclamation System Projects for Environmental Assessment

PROJECT: SFO19445.IA

Introduction

The purpose of this memorandum is to provide a description of three proposed reclamation system improvement projects. These projects will increase the reliability and capacity of the existing water reclamation system and allow the system to continue to meet North Coast Regional Water Quality Control Board (RWQCB) requirements which stipulate that irrigated land and storage be added to the system to meet increases in wastewater flow. The three projects that are being considered for expansion of the reclamation system include the following:

- Fountaingrove Pipeline
- East Santa Rosa Pipeline
- Rohnert Park Pipeline Extension

A description of the components of each of these projects is described in the Interim Period Reclamation System Master Plan (CH2M HILL, 1991). However, there have been a few minor modifications to the project components since this report was issued; therefore, a current description of the projects follows.

RDD/dac/jfs/3_92/005.51

Description of Projects

Fountaingrove Pipeline

The Fountaingrove Pipeline project consists of irrigating approximately 227 acres of land with reclaimed water. The largest potential user on this pipeline is the Fountaingrove Country Club. The other users are adjacent to the pipeline leading to Fountaingrove Country Club. This project is composed of about 27,000 feet of pipeline ranging in size from 6 to 16 inches in diameter, a 150-horsepower source pump station, and a 125-horsepower booster pump station. The irrigated acreage, demand, and delivery time for each site on the Fountaingrove Pipeline are given in Table 1. The proposed irrigation sites and pipeline route are shown in Figure 1.

Table 1
Fountaingrove Pipeline User Information

Irrigation Site	Acreage	Demand (gpm)	Delivery Time
Brendon Park	1	10	Night
Jennings School	5	50	Night
Jennings Park	10	100	Night
Monroe School	10	100	Night
Northwest Community Park	20	200	Night
Comstock Junior High School	7	70	Night
Caltrans	10	100	Night
Fountaingrove Business Park	10	100	Night
Fountaingrove Country Club	130	1,500	Day
Cloverleaf Ranch	25	250	Night
Total	227		

The proposed pipeline route starts from the West College Reclamation Ponds at the 150-horsepower source pump station. From the source pump station, the 16-inch-diameter pipeline goes east to Stony Point Road where it then goes north along Stony Point Road. The 16-inch-diameter pipeline crosses West College Avenue and continues up Marlow Road (Stony Point Road changes to Marlow Road at West College Avenue) to Jennings Avenue where it goes east on Jennings Avenue to a split at Ridley Avenue. A branch pipeline will continue on Jennings to Jennings School and Park. The main pipeline will go north on Ridley Avenue, across Northwest Community Park and Comstock Junior High School, to Apache Avenue. The pipeline continues north on Apache Avenue to the railroad tracks, then along the southeast side of the tracks to Piner Creek. The pipeline route goes under the railroad tracks, and then along Piner Creek to Interstate 101, crosses 101 to the Cloverleaf Ranch, goes south along the Old Redwood Highway, then east on Fountaingrove Parkway to Fountaingrove Lake.

The source pump station would be located at the West College Reclamation Ponds, and a booster pump station would be located near the intersection of Mendocino Avenue and Fountaingrove Parkway. The source pump station would be used only to lift the reclaimed water up to Fountaingrove Country Club. The pump station would operate 24 hours a day, and the booster pump would operate for about 12 hours during the day only. Each pump station would need to pump approximately 1,550 to 1,600 gpm. The country club would provide its own pump station to distribute reclaimed water for irrigation of its landscaped area.

East Santa Rosa Pipeline

The East Santa Rosa Pipeline project involves the irrigation of parks and schools along the Highway 12 corridor, primarily on the east side of Interstate 101. The total increase in irrigated acreage will be about 352. The main components of this project include two central pump stations and about 50,000 feet of pipeline ranging in size from 6 to 18 inches in diameter. The irrigated acreage, demand, and delivery time for each of the sites on the East Santa Rosa Pipeline are given in Table 2. The proposed irrigation sites and pipeline route are shown in Figure 2.

Table 2
East Santa Rosa Pipeline User Information

Irrigation Site	Acreage	Demand (gpm)	Delivery Time
Jacobs School and Park	15	150	Night
Hewett Park	1	10	Night
Olive Park	2	20	Night
Julliard Park and Burbank Gardens	20	200	Night
Sonoma County Fairgrounds and Golf Course	70	700	Night
Martin Luther King, Jr. Park	15	150	Night
Calvary Cemetery	10	100	Night
Yulupa School and Mesquite Park	10	100	Night
Bennett Valley Golf Course	100	1,000	Day
Dan Galvin Park	40	500	Night
Doyle Park and School	20	200	Night
Montgomery High School	20	200	Night
Matanzas Park and School	7	70	Night
Village School	2	20	Night
Herbert Slater School	15	150	Night
Howarth Park	20	200	Night
Total	352		

The proposed pipeline route begins on the south end of the West College Reclamation Ponds and goes east along Santa Rosa Creek and then 8th Street to Madison Street. The route continues south along Madison, across 6th Street, then continues south along Pearson, east along 3rd Street, south on Hazel, and then east along Laurel to Interstate 101. The pipeline will cross Interstate 101 using a bore and jack technique and daylighting on the east side of the interstate near Julliard Park. The pipeline continues south and east on A Street, then south on Santa Rosa Avenue, and then east along Bennett Avenue to a split at Hendley Avenue. A small pipeline goes south along Hendley Avenue to King Park and the fairgrounds, while the main pipeline continues east along Bennett Avenue to another split at Farmers Lane. From this split, a pipeline goes southeast along Bennett Valley Road to the Bennett Valley Golf Course and Dan Galvin Park. Yulupa School and Mesquite Park

are also served off this pipeline. The other pipeline at the Farmer Lane split goes north on Farmers Lane to another split at Hoen Frontage Road. From the split, a small pipeline continues north on Farmers Lane, and west on Hoen Avenue to Doyle Park and School. The main pipeline continues east on Hoen Frontage Road, then north on Yulupa Avenue, and east on Sonoma Avenue to Howarth Park.

A 325-horsepower source pump station would be located at the West College Reclamation Ponds and would have a rated capacity of about 2,800 gpm. A 75-horsepower booster pump station would be located near the Sonoma County Fairgrounds and have a rated capacity of about 1,550 gpm. Both of these pumps would operate at night for direct deliveries to the nighttime irrigation sites and during the day to fill the storage ponds at Bennett Valley Golf Course.

Rohnert Park Pipeline Extension

The Rohnert Park Pipeline Extension project involves the irrigation of landscaping in the City of Rohnert Park. The Poncia Pipeline would be used as the source of water to a connection point near Poncia Pond. A 250-horsepower central pump station would be located at this connection point, which supplies the entire system peak demand of approximately 2,760 gpm. This project would include 46,000 feet of pipelines ranging in size from 6 to 18 inches in diameter. The pipeline would cross Interstate 101 and the Northwest Pacific railroad using a bore and jack crossing. All irrigation would occur during the nighttime. The irrigated acreage and demand for each site on the Rohnert Park Pipeline are given in Table 3. The proposed irrigation sites and pipeline route are shown in Figure 3.

Table 3
Rohnert Park Pipeline Extension User Information

Irrigation Site	Acreage	Demand (gpm)
El Camino High School	3	36
Municipal Baseball Stadium	3	36
Caltrans	6	72
John Reed Elementary School	2	18
Alicia Park	5	66
Rohnert Park Jr. High School	10	120
Waldo Rohnert Elementary School	3	36
State Farm Insurance	20	240
Dorotea Park	3	36
Eagle Park	5	60
Evergreen Elementary School	3	42
Community and Recreation Center	3	36
Sunrise Park	2	36
Rancho Cotate Sr. High School	15	200
El Collegio Elementary School	10	130
Collegio Vista Park	3	36
Caterpillar Park	1	18
"M" Park	15	192
La Fiesta Elementary School	3	42
Ladybug Park	2	24
Hewlett-Packard	20	360
"R" Park	3	36
Sonoma State University	80	960
Total	220	2,832

The proposed pipeline route begins at Poncia Pond located near the intersection of the Laguna de Santa Rosa and the Willfred-Bellevue flood control channel. The pipeline is routed east along the south side of the Laguna until it crosses near the

confluence of Hinebaugh Creek. After crossing the Laguna, it goes east along the Rohnert Park Expressway to the Interstate 101 interchange, then south along the west side of the interstate to a point just south of the southbound onramp. The pipeline then crosses Interstate 101 using a bore and jack crossing and continues east along Enterprise Drive to a location where it splits and a smaller pipeline goes south across the creek and then along Almond Street to serve four sites. The main pipeline continues east along Enterprise Drive to the railroad and then south along Seed Farm Drive. The pipeline then goes east along Copeland Creek to a split near Country Club Drive. One pipeline goes north along Country Club Drive to Emily Avenue and Santa Dorotea Circle where it branches to serve three sites. Another small pipeline goes south to serve Collegio Vista Park. The main pipeline continues east along Copeland Creek to Snyder Lane where it splits and goes both north and south. The northern pipeline goes up to Sunrise Park, and the southern pipeline goes to Cotati Avenue. At the intersection of Snyder Lane and Cotati Avenue, the pipeline again splits with one pipe going east to Sonoma State University and the other continuing down Cotati Avenue to Camino Colegio and south to the Hewlett-Packard site.

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CH2M HILL

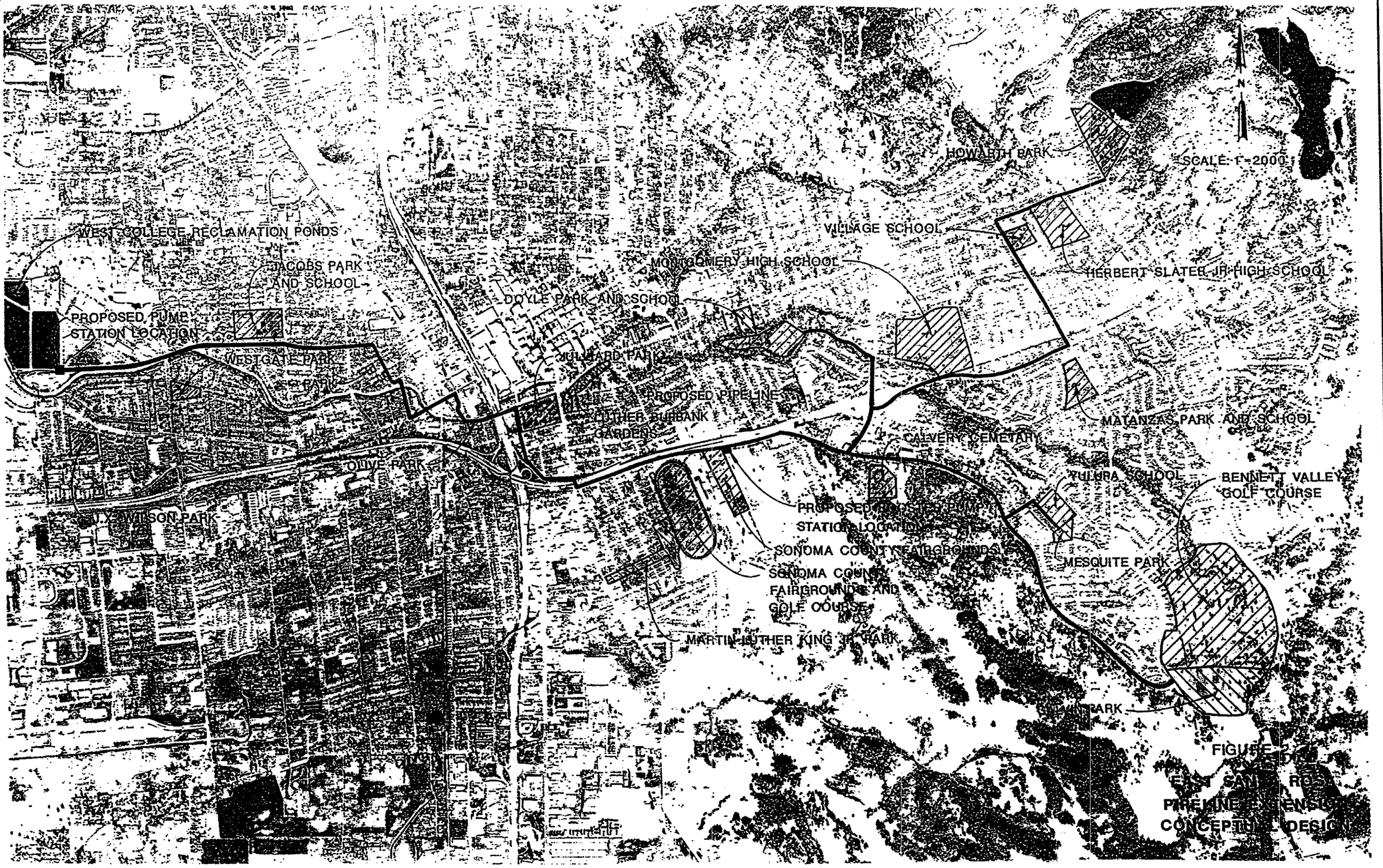

FIGURE 2
EAST SANTA ROSA
PIPELINE EXTENSION
CONCEPTUAL DESIGN

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CH2MHILL

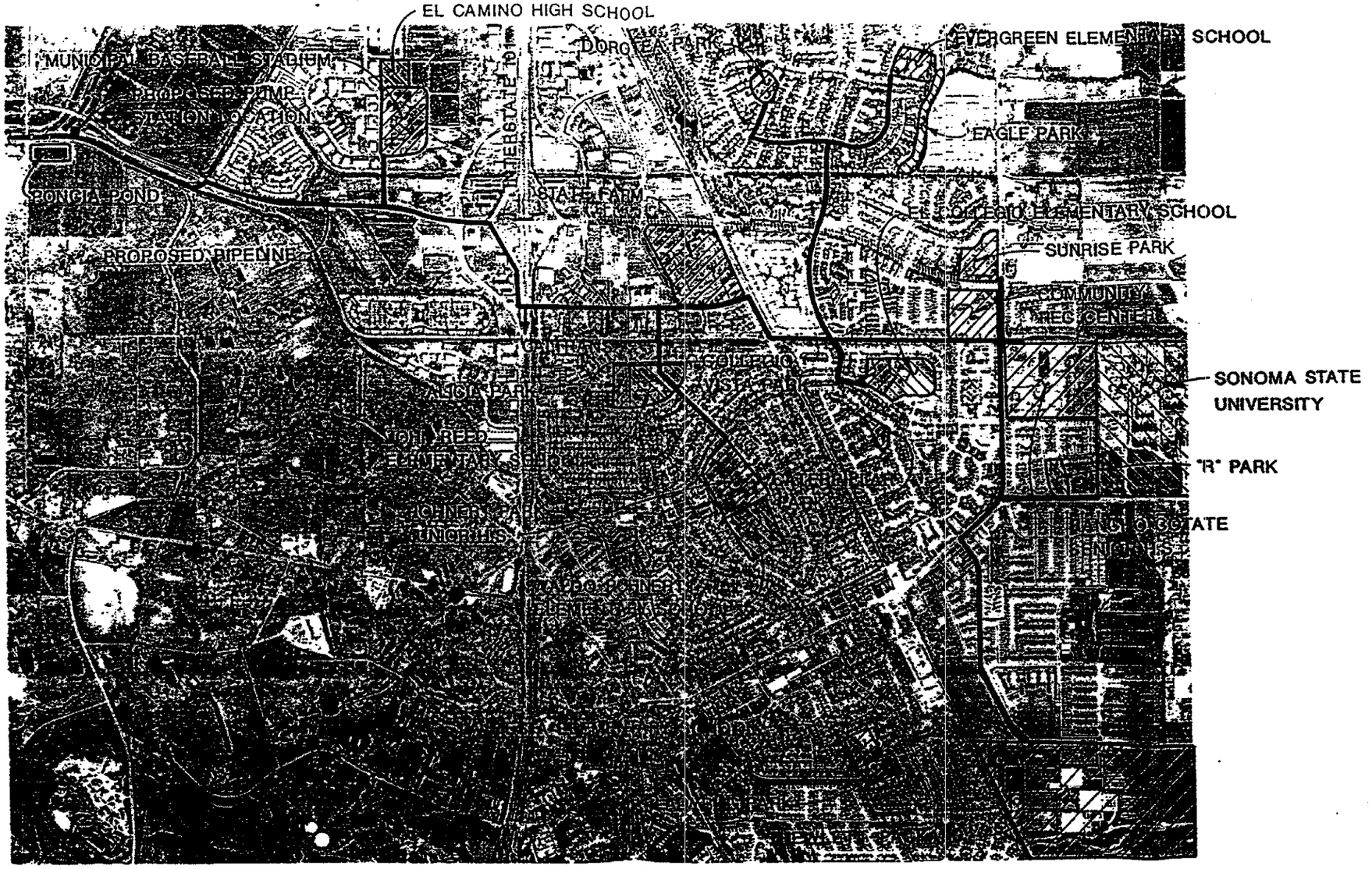

FIGURE 3

ROHNER PARK
PIPELINE EXTENSION
CONCEPTUAL DESIGN