

SECTION 8.

PUBLIC INFRASTRUCTURE ELEMENT

8.1 Water

8.1.1 Water Supply

Domestic water is provided within the Specific Plan area, a part of the El Dorado Hills service area, by the EID, which has contracts with the U. S. Bureau of Reclamation (USBR) to receive 7,550 acre-feet of water per year from Folsom Lake to serve the El Dorado Hills service area.

As of May 15, 1987, the total allocation of water to existing users in the El Dorado Hills service area was 1,297 acre-feet annually. The total amount available to future development in the service area is 6,253 acre-feet, coming from the existing USBR contracts for Folsom Lake. The current EID standard of water consumption per equivalent dwelling unit is 0.67 acre-feet per unit per year. At this rate of consumption, the current contracts could accommodate 9,332 additional equivalent dwelling units. (Note: 3.07 acre-feet equals 1 million gallons.)

Within the El Dorado Hills service area, there are approximately 10,000 dwelling units proposed for development over a period of 15-20 years. The currently assured firm supply of 6,253 acre-feet from Folsom Lake is not sufficient to meet the total demand generated by projected buildout of the current plans. However, the supply is certainly sufficient to meet the demand for water for several years of development. In the period of development for which water supply is available, significant new supplies identified and in various stages of planning will be developed by EID.

Assessment District No. 3 (AD No. 3) was formed to provide for the initial expansion of water and wastewater facilities to the El Dorado Hills area. The 25-year, seven-phase construction project will provide for installation of major transmission, storage, and treatment facilities in conjunction with development of the El Dorado Hills area. Phase 1 improvements are financed by the AD No. 3 bond proceeds, with subsequent phases to be funded by supplemental connection fees. The Folsom Lake allocation is committed to serving the requirements of AD No. 3.

The future demand for water for west El Dorado County will be provided by EID from a variety of sources. An additional 5,000-6,000 acre-feet of water is available to EID under contract with PG&E. Approximately 7,000 acre-feet of water can be made available pursuant to EID's rights to water from the north fork of the Cosumnes River and Crawford Ditch, which would be treated and filtered at Reservoir No. 7, upstream from Diamond Springs. EID has prepared an interim facilities plan (not yet adopted) for the continuing and future development of water sources and delivery systems to serve the El Dorado Hills area. These facilities are illustrated in Figure 20.

The time available to develop these new facilities required to meet the demand can be estimated by comparing an assumed growth rate to the available water reserve. Figure 19 charts the amount of water available relative to the demand for additional water in the service area as the El Dorado Hills Community grows. At an assumed rate of 500 new dwelling units per year, the current water supply from the USBR contract would accommodate additional growth for approximately 16 years, or through 2005, if construction begins in 1989.

The actual water rate consumption within the El Dorado Hills service area will be affected by several variables. The actual rate of development may be accelerated and consumption of the available supply may occur at a more rapid rate. The golf courses will require temporary irrigation in the Specific Plan area until additional treated wastewater from the EID sewage treatment plant becomes available. The demand for water for each golf course is estimated at 1,000 acre-feet per year. Thus, the demand will be higher in the initial years of operation of the golf courses, but will decrease as the demand for fresh water is replaced with treated wastewater.

Adequate volumes of treated water are provided to the existing golf course and other contractual users by the existing El Dorado Hills Sewage Treatment Plant. Treated water produced at buildout of the Specific Plan area is projected to be 3,035 acre-feet per year. Buildout of approximately 3,500-3,700 additional residences will produce enough treated water for use by each proposed golf course. Development adjoining the Plan Area will generate additional treated water, which may be used on the golf course.

8.1.2 Existing and Planned System

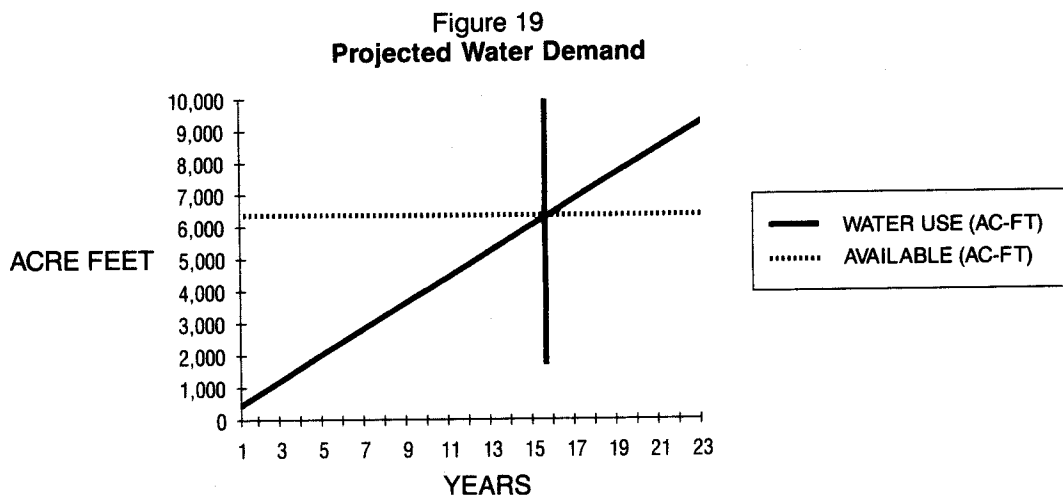
Water treatment capacity is currently 5.9 million gallons per day (MGD). During summer months, approximately 75 percent of capacity is used. Ultimate capacity will be 20.3 MGD.

As shown in Figure 21, a 20-inch diameter line is located in El Dorado Hills Boulevard south of the reservoir, and a 24-inch line exists north of the reservoir. An 18-inch line, constructed as a part of Phase 1 of AD No. 3, bisects the Plan Area, connecting the line in El Dorado Hills Boulevard with the 3-million-gallon reservoir above Oak Ridge High School and a pump station at Bass Lake. Additional storage facilities outside the Plan Area boundary include a 1-million-gallon reservoir at Ridgeview and a 1-million-gallon reservoir at the El Dorado Hills Business Park. A 3-million-gallon reservoir is proposed at the south end of Village C as part of AD No. 3. Pump stations are located near Bass Lake and at the extreme southeastern edge of the Plan Area. A 12-inch line exists in the vicinity of the southeastern Plan Area boundary and connects the Bass Lake pump station with the El Dorado Hills Business Park.

8.1.3 Specific Plan Area System

The proposed water system for Plan Area development is shown in Figure 21, Water Plan. As shown, a majority of the water line extensions will be 10- and 12-inch diameter lines located within street rights-of-way. Additional lines through the service area will be 8 or 10 inches in diameter. No additional reservoirs or pump stations are proposed.

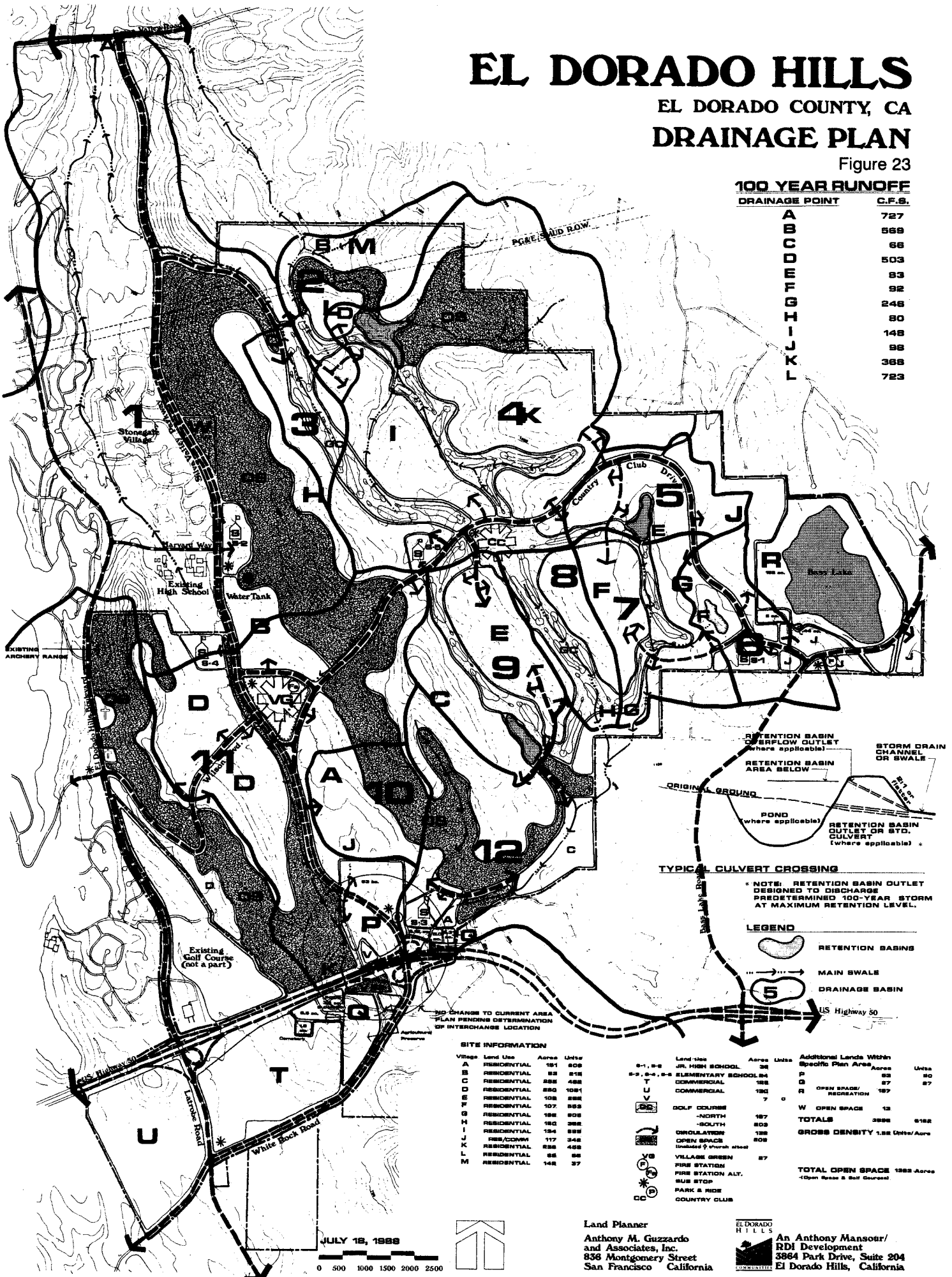
Based on EID's average use rate, Plan Area residential development will require a total of 4,128 acre-feet per year.



EL DORADO HILLS

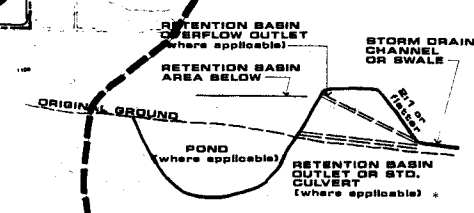
EL DORADO COUNTY, CA DRAINAGE PLAN

Figure 23



100 YEAR RUNOFF

| DRAINAGE POINT | C.F.S. |
|----------------|--------|
| A | 727 |
| B | 588 |
| C | 66 |
| D | 503 |
| E | 93 |
| F | 92 |
| G | 246 |
| H | 80 |
| I | 148 |
| J | 98 |
| K | 368 |
| L | 723 |



TYPICAL CULVERT CROSSING
 * NOTE: RETENTION BASIN OUTLET DESIGNED TO DISCHARGE PREDETERMINED 100-YEAR STORM AT MAXIMUM RETENTION LEVEL.

LEGEND

- RETENTION BASINS
- MAIN SWALE
- DRAINAGE BASIN

| Additional Lands Within Specific Plan Area | Acres | Units |
|--|------------------------|-------------|
| P | 82 | 30 |
| Q | 87 | 87 |
| R | 187 | |
| W | 13 | |
| TOTALS | 3888 | 6182 |
| GROSS DENSITY | 1.58 Units/Acre | |
| TOTAL OPEN SPACE | 1983 Acres | |
| *Open Space = Golf Course | | |

SITE INFORMATION

| Village | Land Use | Acres | Units |
|---------|-------------|-------|-------|
| A | RESIDENTIAL | 191 | 808 |
| B | RESIDENTIAL | 93 | 418 |
| C | RESIDENTIAL | 288 | 488 |
| D | RESIDENTIAL | 890 | 1081 |
| E | RESIDENTIAL | 108 | 888 |
| F | RESIDENTIAL | 107 | 898 |
| G | RESIDENTIAL | 188 | 908 |
| H | RESIDENTIAL | 180 | 388 |
| I | RESIDENTIAL | 134 | 888 |
| J | RES/COMM | 117 | 348 |
| K | RESIDENTIAL | 888 | 428 |
| L | RESIDENTIAL | 88 | 88 |
| M | RESIDENTIAL | 148 | 37 |

| Land Use | Acres | Units | Additional Lands Within Specific Plan Area | Acres | Units |
|---------------|-------|-------|--|-------|-------|
| 1-1, 1-2 | 38 | | | | |
| 2-1, 2-2, 2-3 | 188 | | | | |
| T | 188 | | | | |
| U | 130 | | | | |
| V | 7 | | | | |
| W | 187 | | | | |
| X-NORTH | 808 | | | | |
| Y-SOUTH | 138 | | | | |
| Z | 808 | | | | |
| AA | 87 | | | | |
| BB | 87 | | | | |
| CC | 87 | | | | |

JULY 18, 1988
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Land Planner
 Anthony M. Guzzardo
 and Associates, Inc.
 836 Montgomery Street
 San Francisco California

EL DORADO HILLS
 An Anthony Mansour/
 RDI Development
 3864 Park Drive, Suite 204
 El Dorado Hills, California

The dense character of the Plan Area soil and the proximity of bedrock to the surface will allow most existing drainageways to be left in a completely natural, unaltered condition. Riparian vegetation will be allowed to grow in channels to the extent that efficient functioning is not impaired. In limited instances, where additional channelization is required to accommodate peak flows, channel banks will be graded to a slope of 4:1 or flatter. Channel width will vary to approximate a natural appearance. In areas where higher water velocities and turbulence are expected, such as on outside banks of curves and at culvert outfalls, natural or altered channels may require the addition of revetment material. In such instances, use of native stone rip-rap and gabion structures will be explored as a first choice. Poured cement will be used only where native stone cannot be effectively used.

The drainage plan includes a system of retention ponds designed to accept excess storm runoff during heavy storms and reduce downstream flows. Retention ponds will be irregular in shape and shallow in depth with banks graded to a slope of 4:1 or flatter. Riparian vegetation will be allowed to grow where efficient functioning of the ponds is not impaired. Where located in golf course areas, the ponds will be incorporated into the landscape design of the course.

Storm drainage under streets will be conveyed through corrugated steel pipes ranging in size from 42 to 72 inches in diameter, depending upon anticipated water volumes. Drainage from streets and paved parking areas will be conveyed through open, asphalt, or concrete-lined swales and gutters. Catch basins will intercept runoff from paved areas where it can be conveyed to the larger drainageways described above. It is intended that closed culverts be used only to convey drainage under streets.

8.4 Gas

Natural gas is provided to the Plan Area by PG&E. The nearest gas transmission line is located within the El Dorado Hills Boulevard right-of-way. PG&E indicates that sufficient capacity and facilities exist to serve all development proposed in the Plan Area.

PG&E indicates that the construction cost for gas line extensions into the Plan Area will be approximately \$12.42/lineal foot. An inspection charge of \$7.50-\$10.00/lineal foot is also charged. Gas and electrical facilities are generally located in a joint trench.

8.5 Electricity

PG&E provides electricity to the Plan Area. An overhead 115 kilovolt (kV) transmission line is contained within a joint Sacramento Municipal Utility District (SMUD)/PG&E easement located near the northern boundary of the Plan Area. A 12 kV overhead transmission line is located adjacent to Highway 50. Local transmission lines are located within the El Dorado Hills Boulevard right-of-way. PG&E indicates that sufficient capacity and facilities exist to service all residential and commercial development proposed in the Plan Area.

All new electrical transmission lines in the Plan Area will be installed underground. Transformers will be installed at grade and screened from view as required by the Design Guidelines. PG&E indicates that the current construction cost of extending underground electrical lines into the Plan Area is \$12.72/lineal foot. An inspection charge of \$7.50-\$10.00/lineal foot is also charged.

8.6 Streets and Street Lighting

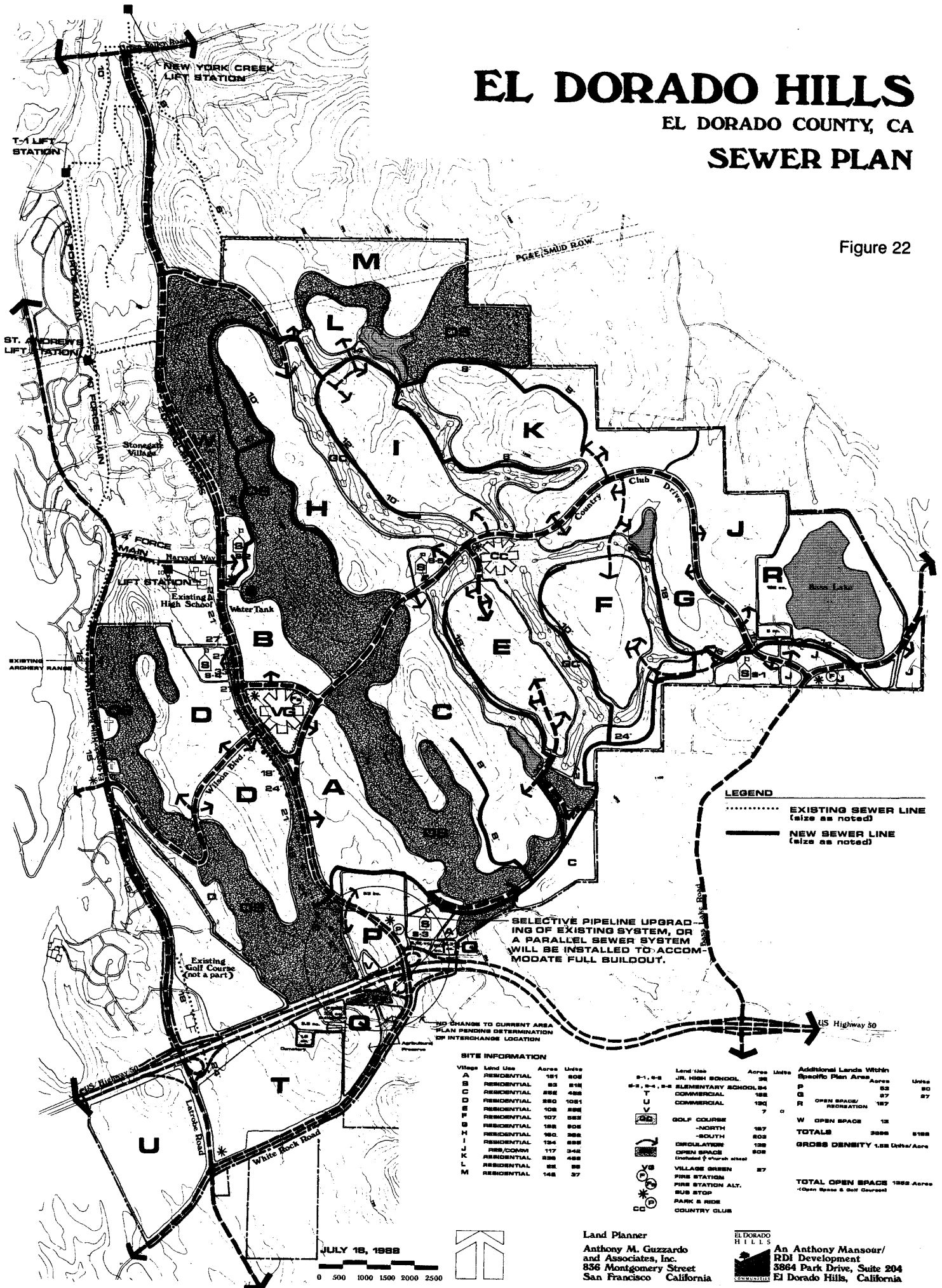
A description of the street system is contained in the Circulation Element. Street lights will be installed along all arterial streets at intersections with collector streets and other arterial streets in accordance with the objectives of the Design Guidelines.

EL DORADO HILLS

EL DORADO COUNTY, CA

SEWER PLAN

Figure 22



LEGEND
 EXISTING SEWER LINE (size as noted)
 ——— NEW SEWER LINE (size as noted)

SELECTIVE PIPELINE UPGRADING OF EXISTING SYSTEM, OR A PARALLEL SEWER SYSTEM WILL BE INSTALLED TO ACCOMMODATE FULL BUILDOUT.

NO CHANGE TO CURRENT AREA PLAN REGARDING DETERMINATION OF INTERCHANGE LOCATION

SITE INFORMATION

| Village | Land Use | Acres | Units | Additional Lands Within Specific Plan Area | Acres | Units |
|---------|-------------|-------|-------|--|-----------------|----------------------------|
| A | RESIDENTIAL | 181 | 808 | P | 53 | 80 |
| B | RESIDENTIAL | 83 | 818 | G | 87 | 87 |
| C | RESIDENTIAL | 886 | 488 | R | 187 | |
| D | RESIDENTIAL | 380 | 1081 | W | OPEN SPACE | 13 |
| E | RESIDENTIAL | 108 | 888 | TOTALS | 3888 | 8188 |
| F | RESIDENTIAL | 107 | 883 | GROSS DENSITY | 1.88 Units/Acre | |
| G | RESIDENTIAL | 188 | 808 | TOTAL OPEN SPACE | 1388 Acres | (Open Space & Golf Course) |
| H | RESIDENTIAL | 180 | 388 | | | |
| I | RESIDENTIAL | 134 | 888 | | | |
| J | RES/COMM | 117 | 348 | | | |
| K | RESIDENTIAL | 838 | 488 | | | |
| L | RESIDENTIAL | 88 | 88 | | | |
| M | RESIDENTIAL | 148 | 37 | | | |
| | | | | S-1, S-2 | 38 | |
| | | | | S-3, S-4, S-5 | 84 | |
| | | | | T | 188 | |
| | | | | U | 181 | |
| | | | | V | 7 | |
| | | | | GOLF COURSE | | |
| | | | | -NORTH | 187 | |
| | | | | -SOUTH | 803 | |
| | | | | REGULATORY | 128 | |
| | | | | OPEN SPACE | 808 | |
| | | | | (Included & shown above) | | |
| | | | | VILLAGE GREEN | 87 | |
| | | | | FIRE STATION | | |
| | | | | FIRE STATION ALT. | | |
| | | | | SUB STOR. | | |
| | | | | PARK & RIDE | | |
| | | | | COUNTRY CLUB | | |

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Land Planner
 Anthony M. Guzzardo
 and Associates, Inc.
 836 Montgomery Street
 San Francisco California

EL DORADO HILLS
 An Anthony Mansour/
 RDI Development
 3884 Park Drive, Suite 204
 El Dorado Hills, California

8.2 Sewer

8.2.1 Existing and Planned System

The Plan Area is served by EID and is within AD No. 3. This district funds the construction of major trunklines ranging from 12- to 33-inch-diameter lines, pump stations, and treatment plant expansion. Construction is to be done in three phases over 25 years. These improvements will increase treatment capacity from the existing volume of 0.75 MGD to 4.1 MGD. Phase 1 improvements were funded through AD No. 3. (Subsequent phases are being funded by connection fees and are projected in Supplement No. 1 to the Preliminary Design Report for EID Assessment District No. 3, dated April 1984.)

The existing sewage treatment facility, the El Dorado Hills Sewage Treatment Plant located off Latrobe Road south of Highway 50, was designed for a capacity of 0.8 MGD. Expansion of this plant to a capacity of 1.6 MGD has been completed under AD No. 3 and it is now operating at approximately one-third capacity. Sewage is subjected to secondary treatment with biofiltration. The entire volume of treated discharge is currently piped to the existing El Dorado Hills golf course for irrigation and to the Golden State Building Products facility for use in production. Sewage facilities existing in the Plan Area include an 18- to 33-inch-diameter gravity pipeline and a 20-inch-diameter force main constructed under Phase 1 of AD No. 3. These facilities are situated in the vicinity of the proposed location of Silva Valley Parkway. Beyond the Plan Area in St. Andrews Village, Phase 1 improvements include 12-inch-diameter force mains and a pump station. A 12- to 24-inch-diameter line exists in El Dorado Hills Boulevard south of the high school. A lift station located near the high school conveys sewage to a line in El Dorado Hills Boulevard via a force main.

The AD No. 3 sewage facilities are intended to serve all development proposed within the Plan Area.

8.2.2 Specific Plan Area System

The proposed sanitary sewer required for Plan Area development is shown in Figure 22, Sewer Plan. All new lines within the Plan Area will be gravity-fed, ranging in size from 8 to 30 inches in diameter. Lines will be installed in accordance with topography, either in street rights-of-way or within easements on private property. No additional pump stations are proposed.

Based on average discharge rates, development of the Plan Area will generate a total of 2.4 MGD of effluent.

8.3 Storm Drainage

8.3.1 Existing Conditions

There are presently no storm drainage structures in the Plan Area. All storm drainage is conveyed offsite by sheet flow action and natural drainageways. Most of the drainageway flows are intermittent, carrying water only during rainy periods. Existing drainageways and watersheds are described in Figure 23, Drainage Plan.

8.3.2 Specific Plan Area System

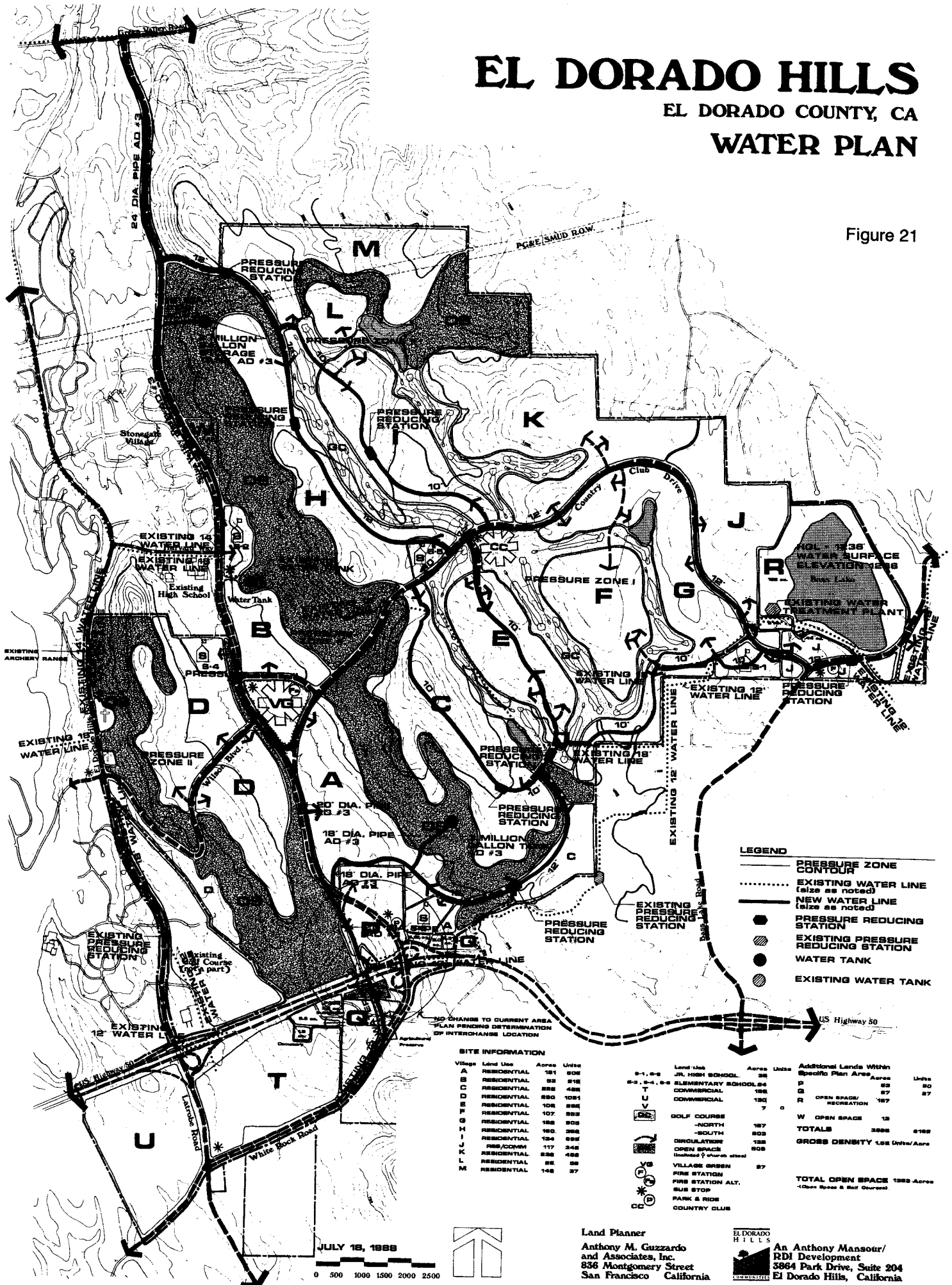
Development of the Plan Area with buildings and other impervious surfaces such as streets and parking lots will result in greater total peak flow volumes and a redistribution of runoff. To safely and efficiently convey all stormwater from the Plan Area, a drainage system including natural channels, retention ponds, and culverts (under streets) has been designed. Except as needed at road crossings, most storm drainage will be disposed of within existing natural, unaltered surface drainageways. It is the intent of the Specific Plan that storm channels be as natural in appearance as possible while serving the intended purpose of efficiently conveying storm drainage through and from the Plan Area.

EL DORADO HILLS

EL DORADO COUNTY, CA

WATER PLAN

Figure 21



- LEGEND**
- PRESSURE ZONE CONTOUR
 - - - - - EXISTING WATER LINE (size as noted)
 - NEW WATER LINE (size as noted)
 - PRESSURE REDUCING STATION
 - EXISTING PRESSURE REDUCING STATION
 - WATER TANK
 - EXISTING WATER TANK

SITE INFORMATION

| Village | Land Use | Acres | Units |
|---------|-------------|-------|-------|
| A | RESIDENTIAL | 181 | 806 |
| B | RESIDENTIAL | 93 | 816 |
| C | RESIDENTIAL | 228 | 428 |
| D | RESIDENTIAL | 880 | 1081 |
| E | RESIDENTIAL | 102 | 288 |
| F | RESIDENTIAL | 107 | 883 |
| G | RESIDENTIAL | 198 | 808 |
| H | RESIDENTIAL | 180 | 268 |
| I | RESIDENTIAL | 194 | 888 |
| J | RES/COMM | 117 | 348 |
| K | RESIDENTIAL | 228 | 488 |
| L | RESIDENTIAL | 28 | 28 |
| M | RESIDENTIAL | 148 | 27 |

| Land Use | Acres | Units | Additional Lands Within Specific Plan Area | Acres | Units |
|---------------------|-------|-------|--|------------------------|-------------|
| 9-1, 9-2 | 38 | | P | 23 | 20 |
| 9-3, 9-4, 9-5 | 188 | | Q | 27 | 27 |
| T | 192 | | R | 187 | |
| U | 7 | | W | OPEN SPACE | 13 |
| V | | | TOTALS | 3888 | 8788 |
| GOLF COURSE - NORTH | 187 | | GROSS DENSITY | 1.68 Units/Acre | |
| GOLF COURSE - SOUTH | 803 | | | | |
| ORCHARD | 128 | | | | |
| OPEN SPACE | 808 | | | | |
| VILLAGE GREEN | 27 | | | | |
| FIRE STATION | | | | | |
| FIRE STATION ALT. | | | | | |
| SUB STOP | | | | | |
| PARK & RIDE | | | | | |
| COUNTRY CLUB | | | | | |

TOTAL OPEN SPACE 1282 Acres
 *Open Space & Golf Course

JULY 18, 1988

0 500 1000 1500 2000 2500



Land Planner
 Anthony M. Guzzardo
 and Associates, Inc.
 836 Montgomery Street
 San Francisco California

EL DORADO HILLS
 AN ANTHONY MANSOUR/RDI DEVELOPMENT
 3864 Park Drive, Suite 204
 El Dorado Hills, California

