

Final Environmental Impact Report

EIR-79-2

EL RANCHO DEL REY  
LONG CANYON SECTIONAL AREA PLAN  
A 650-ACRE ANNEXATION TO THE  
CITY OF CHULA VISTA

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## SUMMARY/ABSTRACT

This EIR describes the overall impacts of the development of the 650 acre Long Canyon portion of El Rancho del Rey. The project consists of an annexation to the City of Chula Vista and subsequent development of 824 dwelling units including a 56 unit apartment complex along Otay Lakes Road. The 768 single family units will be built primarily on large lots and will be oriented toward equestrian activities. Most of the construction will be restricted to the ridge-tops and flatter slopes; 320 acres of open space will be dedicated to the City.

The project lies along the northeastern boundary of the City and southeast of the community of Bonita. It encompasses an area of irregular terrain with steep-sided canyons and considerable native vegetation. Its other features include erodible and expansive soils, some ancient landslides, high runoff due to low soil permeability, and two significant archaeological sites.

The major factors of concern are associated with topographic changes (cutting ridge-tops up to 30'), off-site flooding, the destruction of biological resources (a number of uncommon species and unique habitat associations will be affected), the destruction of archaeological resources, tax related items (post-Proposition 13 annexations' property taxes are in dispute) and the City's ability to pay for public services, impacts on near-capacity schools, and traffic impacts on existing over-capacity major road networks. These and other factors are discussed throughout the EIR.

Considerable mitigation of these concerns is possible through actions which may be taken by the project proponent, the City, and other agencies. For example, control of existing off-site flooding is the jurisdiction of the County and the project proponent may be required to contribute towards solving the problem; most of the more significant biological resources (with one important exception) are located on the steeper slopes and will not be disturbed; the archaeological resources will be salvaged; resolving property tax problems related to annexations must be accomplished by the state legislature; school impacts can be partially mitigated by requiring larger fees from the developer; in order to avoid significant impacts to the circulation system, developer contributions to off-site road improvements will be required.

It is anticipated that there will be major unresolved issues related to property tax distribution, school impacts, completion of "H" Street, and off-site flooding in Long Canyon.

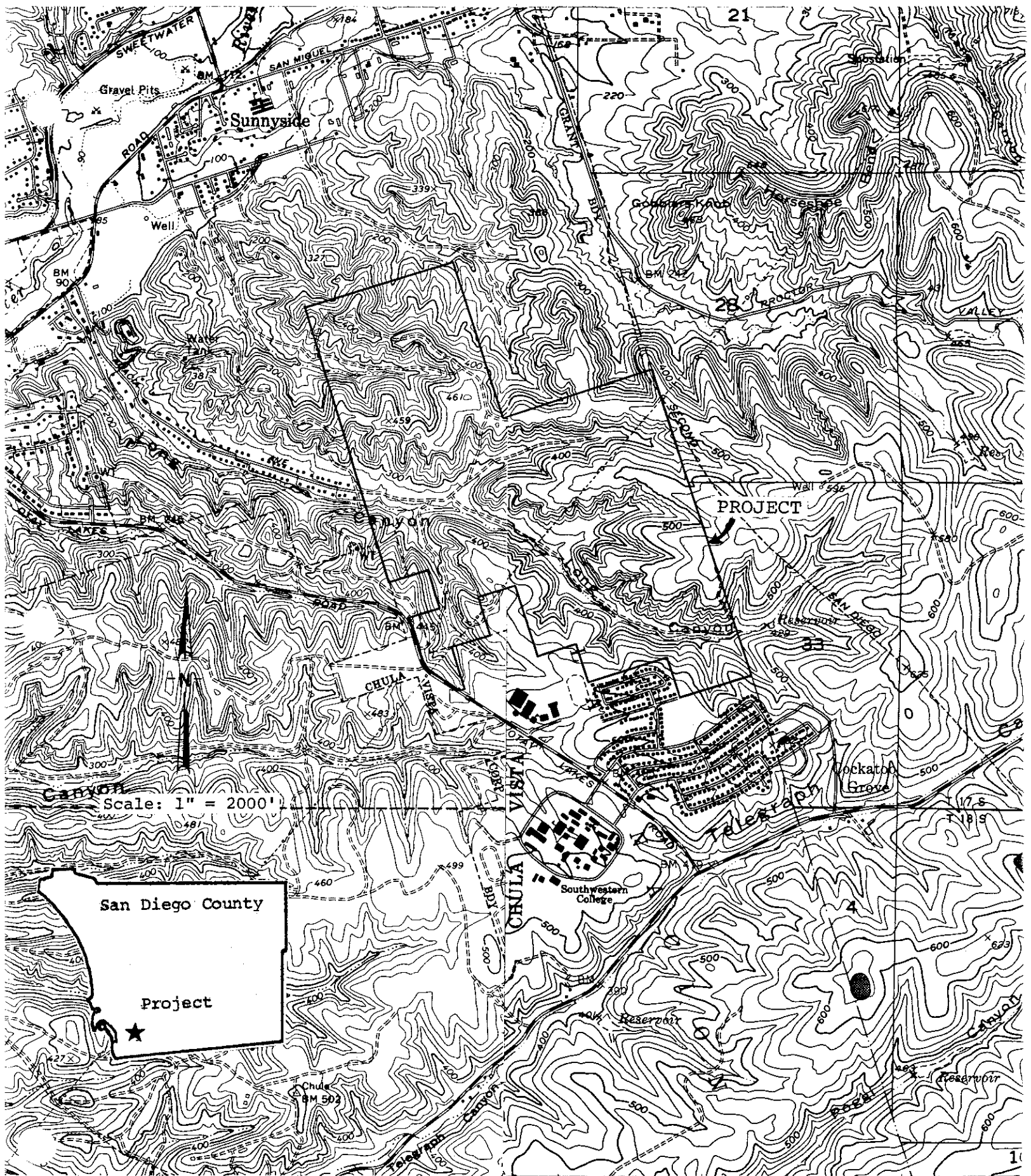


Figure 1. U.S. Geological Survey Maps, National City 15" Quad and Jamul Mountain 15" Quad. The inset map indicates the location of the project within San Diego County.

## 1.0 INTRODUCTION

### 1.1 Purpose

This EIR is intended to meet the environmental requirements of the City of Chula Vista acting as the lead agency and the responsible agencies (LAFCO, Department of Fish and Game, and the County of San Diego). It is also intended to comply with the California Environmental Quality Act and presents the potential environmental impacts which may result from the development of this land. Such impacts include disturbance of native vegetation and wildlife habitats, loss of archaeological resources, grading on steep slopes, traffic impacts, and socio-economic factors relating to the availability of public services. These impacts and others have been analyzed, and where necessary, appropriate mitigating measures have been suggested.

### 1.2 Executive Summary

The project essentially consists of annexing the site to the City of Chula Vista and subsequently subdividing 650 acres east of the City of Chula Vista and southeast of the community of Bonita (Figure 1) into 768 lots for single family dwellings and construction of a 56-unit apartment complex. Implementation of the project will require consideration of a Sectional Area Plan, approval of annexation by the Local Agency Formation Commission (LAFCO), acquisition of a Department of Fish and Game permit to alter a stream course, and approval of tentative maps. The site, which lies on the hills and valleys tributary to the Sweetwater River, is surrounded on three sides by single family dwellings either constructed or being constructed and on the fourth side by vacant land. Because of the availability of vacant land and the interests of the residents, equestrian activities are popular in the area and this activity will be perpetuated by dedication of 320 acres of steep hillsides as open space and by providing horse trails and an equestrian center in the project. The 100 year flood area of Long Canyon, which extends through the property, will be crossed in two locations and otherwise will not be disturbed.

The project is presently County-zoned T(2) and is designated as Rural Residential by the Sweetwater Community Plan. The City of Chula Vista rezoned the property PC in 1972 and the General Plan designation is low and medium density residential with the exception of one apartment site. The County's Growth Management Plan designates the area for 1995 future urban development.

The objective of the Bonita Long Canyon project is to provide low density, single family housing within reasonable commuting distance to urban centers as well as to retain the country atmosphere which is the main attraction of the area.

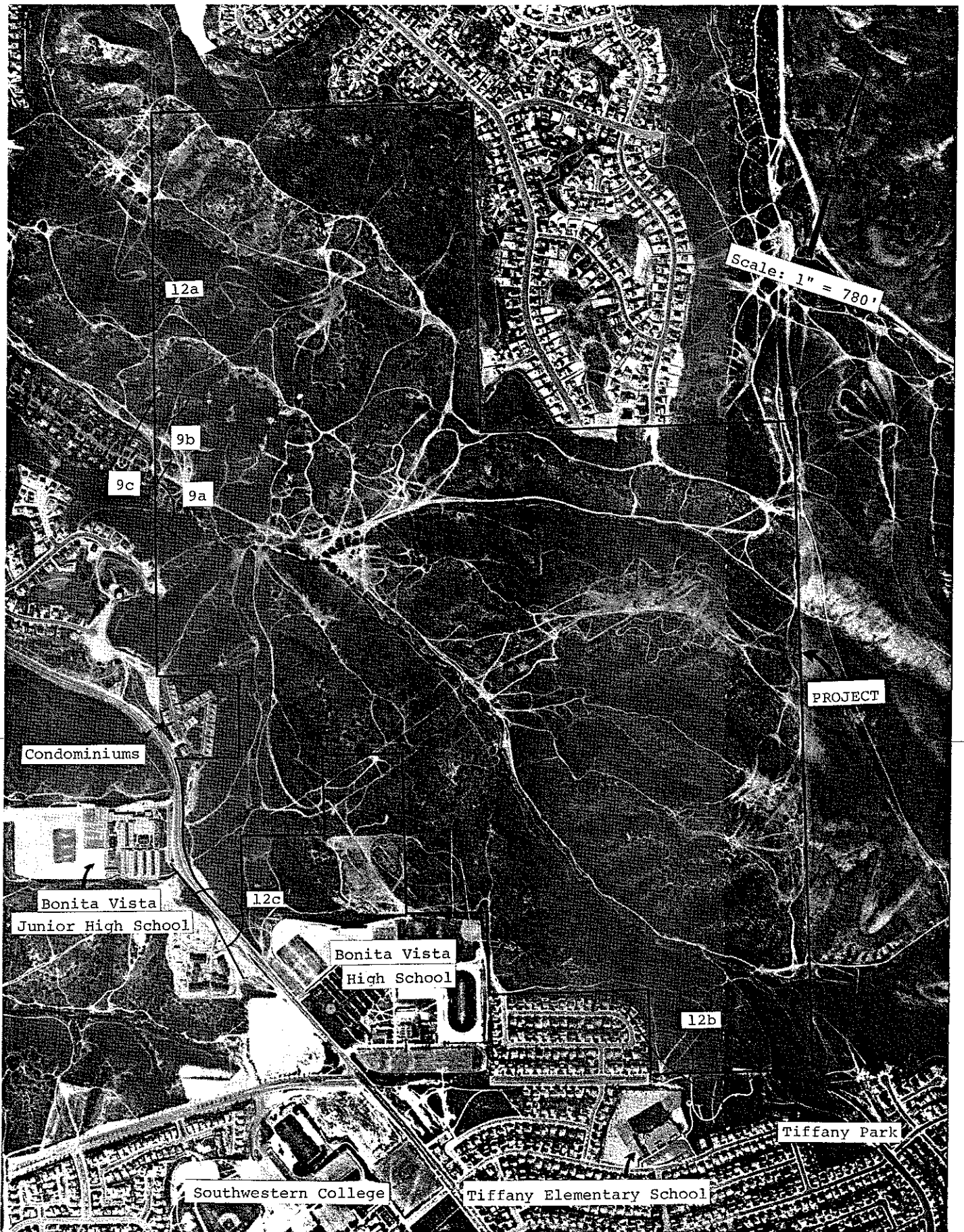


Figure 2. Aerial photograph taken February, 1978, showing site and vicinity and location of ground panoramic photographs.

## 2.0 PROJECT DESCRIPTION

### 2.1 LOCATION

The project is located adjacent to the northeastern boundary of the City of Chula Vista on the hills and valleys southeast of Bonita as shown in Figures 1 and 2. It is legally described as that portion of the west  $\frac{1}{2}$  of the N.W.  $\frac{1}{4}$  of Quarter Section 18, line easterly of the center line of Otay Lakes Road, the N.E.  $\frac{1}{4}$  of the N.W.  $\frac{1}{4}$  of Quarter section 18, the easterly  $\frac{1}{2}$  of the N.E.  $\frac{1}{4}$  of Quarter section 18, Quarter section 9 excepting the south  $\frac{1}{2}$  of the S.W.  $\frac{1}{4}$  of Quarter section 9, Quarter Section 19 except the S.W.  $\frac{1}{4}$  of the S.W.  $\frac{1}{4}$  of Quarter section 19. Quarter section 8 and Quarter section 20, all being a portion of Rancho de la Nacion, Map 166, filed May 11, 1869.

### 2.2 THE PROJECT

The project encompasses 650 acres and, when completed, will consists of 768 single family dwellings on 646 acres and 56 apartments on 4 acres. A 10-acre park site, a 20-acre school site and a 17-acre equestrian center site are included in the development. Approximately 320 acres will be in dedicated open space. Single family densities vary from 2.39 to .8 dwelling units per acre. Lots will vary from 6000 sq. ft. to several acres and most lots will be between 10-20,000 sq. ft. These features are shown in Figure 3.

Because of the 100-year storm inundation line, Long Canyon will be limited in development. The steeper portions of the canyon will remain in either dedicated open space or as undeveloped "backyards" of the larger lots. A network of equestrian trails will connect the main equestrian center with the local riding trails.

Access to the site will be by way of Corral Canyon Road and Country Trails Lane on the north, Acacia Avenue, Tim Street, and Canyon Drive on the west, and through Baylor Avenue, East "H" Street extension, an extension of Rutgers Avenue, and Otay Lakes Road on the south.

Grading will consist of 3,328,300 cubic yards of fill and 2,659,600 yards of cut. The most extensive fill will be required to extend Corral Canyon Road southeasterly across a tributary of Long Canyon. The highest cut bank will be 28' and the highest fill bank will be 75'. Underground utilities and storm drains will be installed. After grading, the new slopes will be landscaped and irrigated.

### 2.3 IMPLEMENTATION

The project will be constructed in six phases. The phasing and the amount of acreage involved is listed in Table 1 and is also shown on the project map, Figure 3.



# BONITA LONG CANYON EQUESTRIAN ESTATES

sectional planning area

	i	ii	iii	iv	v	vi	SCHOOL PARK ED. CTR.	total
GROSS AREA (acres)	80.0	112.0	87.0	141.0	179.0	4.0	47.0	650.0
STREET R/W (acres)	7.2	15.0	11.2	12.3	8.8	0.7	19	57.1
NET AREA (acres)	72.8	97.0	75.8	128.7	170.2	3.3	45.1	592.9
NO. OF LOTS (or d.u.)	191	164	149	113	151	56		824
DENSITY (d.u./acre)	2.39	1.46	1.71	0.80	0.84	14.0		1.27
TOTAL LOT AREA (acres)	47.3	53.9	40.5	52.3	65.7	3.1		262.8
AVERAGE LOT SIZE (square feet)	10800	14300	11800	20200	24700			
DEDICATED OPEN SPACE (acres)	32.7	58.1	46.5	58.7	93.3	0.9		320.2

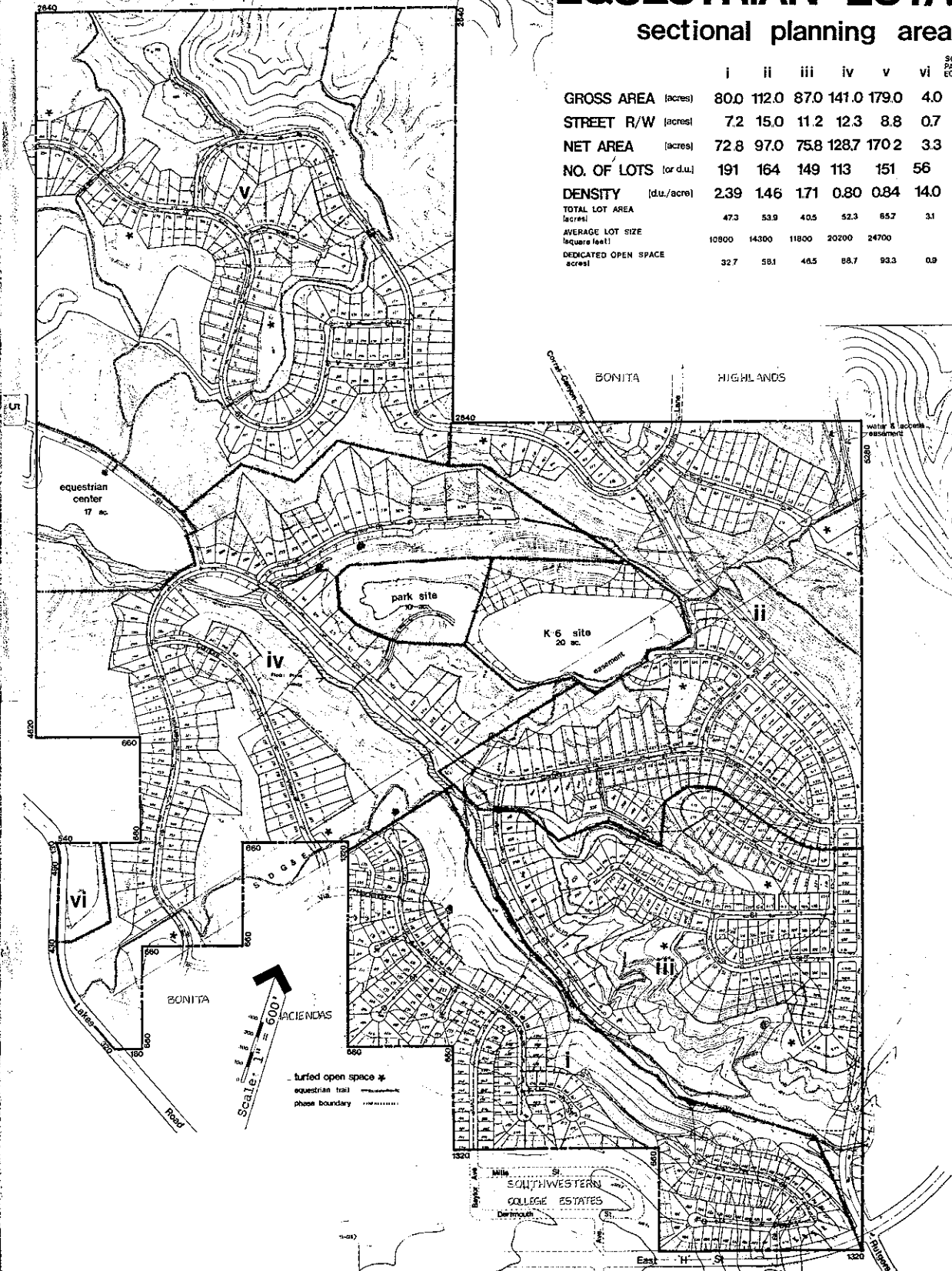


Figure 3. Project Map (a full scale map is available for review at the City Planning Department)

Table 1. Project Phasing

	Phases						School Park Eq. Ctr.	Total
	i	ii	iii	iv	v	vi		
Gross Area (acres)	80.0	112.0	87.0	141.0	179.0	4.0	47.0	650
No. of Lots (or d.u.)	191	164	149	113	151	56		824
Density (d.u./acre)	2.39	1.46	1.71	0.80	0.84	14.0		1.27
Average Lot Size (Square Feet)	10800	14300	11800	20200	24700			
Dedicated Open Space (Acres)	32.7	58.1	46.5	88.7	93.3	0.9		320 *
Ungraded Natural Slopes within lots	0	12.7	11.5	27.6	50.6	1.0	14.0	117.40

\* Approximately 19 acres of the 320 acre total will consist of fill banks and thus, will not contain native vegetation.

Development of the project will begin on the southern boundary of the project and will involve connections to Otay Lakes Road by way of Baylor Avenue, East "H" Street and the planned Bonita Hacienda development. Phase ii will connect the northeastern portion of the site to Central Avenue by way of Corral Canyon Road and Country Trails Lane. Phase iii will be located between Phase i and Phase ii and will involve the extension of Corral Canyon Road to connect with Rutgers Avenue and East "H" Street. Phase iv will consist of the development of the central and western portion of the site and includes the park and school sites, extension of Acacia Street and Tim Street and development of the equestrian centers. Phase v will develop the northwestern panhandle and will connect the site to an unnamed street to the west. The final phase will consist of the construction of 56 apartments on four acres on the portion of the site which adjoins Otay Lakes Road. Phase i will begin when all of the permits have been granted and all maps approved. It is anticipated that the project will be complete five years from the beginning date.

### 3.0 IMPACT ANALYSIS

#### 3.1 GEOLOGY<sup>1</sup>

##### 3.1.1 Present Setting

###### a. General Geology

The site was investigated by two consultants; Woodward-Clyde<sup>2</sup> performed a detailed study of the Phase i area and Geocon, Inc.<sup>3</sup> performed a reconnaissance study of the remainder. Both are summarized below.

The site is underlain by two Tertiary age sedimentary formations and one Quaternary sedimentary formation and three types of Quaternary surficial deposits, as shown in Figures 4 and 5. The oldest rock is the Miocene Age Rosarito Formation which is subdivided into two members. The Sweetwater Member consists of claystones, sandstone and clayey to sandy gritstones. This Member forms the lower slopes of the valleys. Overlying this Member is the Otay Member which occurs on some of the upper slopes and tops of the hills. This Member consists of fine grained, loosely cemented sandstones with thin interbeds of cobble conglomerate. Occasional beds of bentonite clay were observed.

The Pliocene Age San Diego Formation overlies the Otay Member and is located on the upper slopes of the western portion of the site. This Formation consists of yellow to red-brown weakly cemented silty sands and cobbles. Quaternary Age Terrace deposits cap the hills on the western portion of the site. They consist of reddish-brown moderately well cemented



- Qal = Alluvium
- Qt = Terrace Deposits
- Tsd = San Diego Formation
- Trb = Rosarito Beach Formation
- ⊕ = Test Boring
- ⊞ = Test Pit

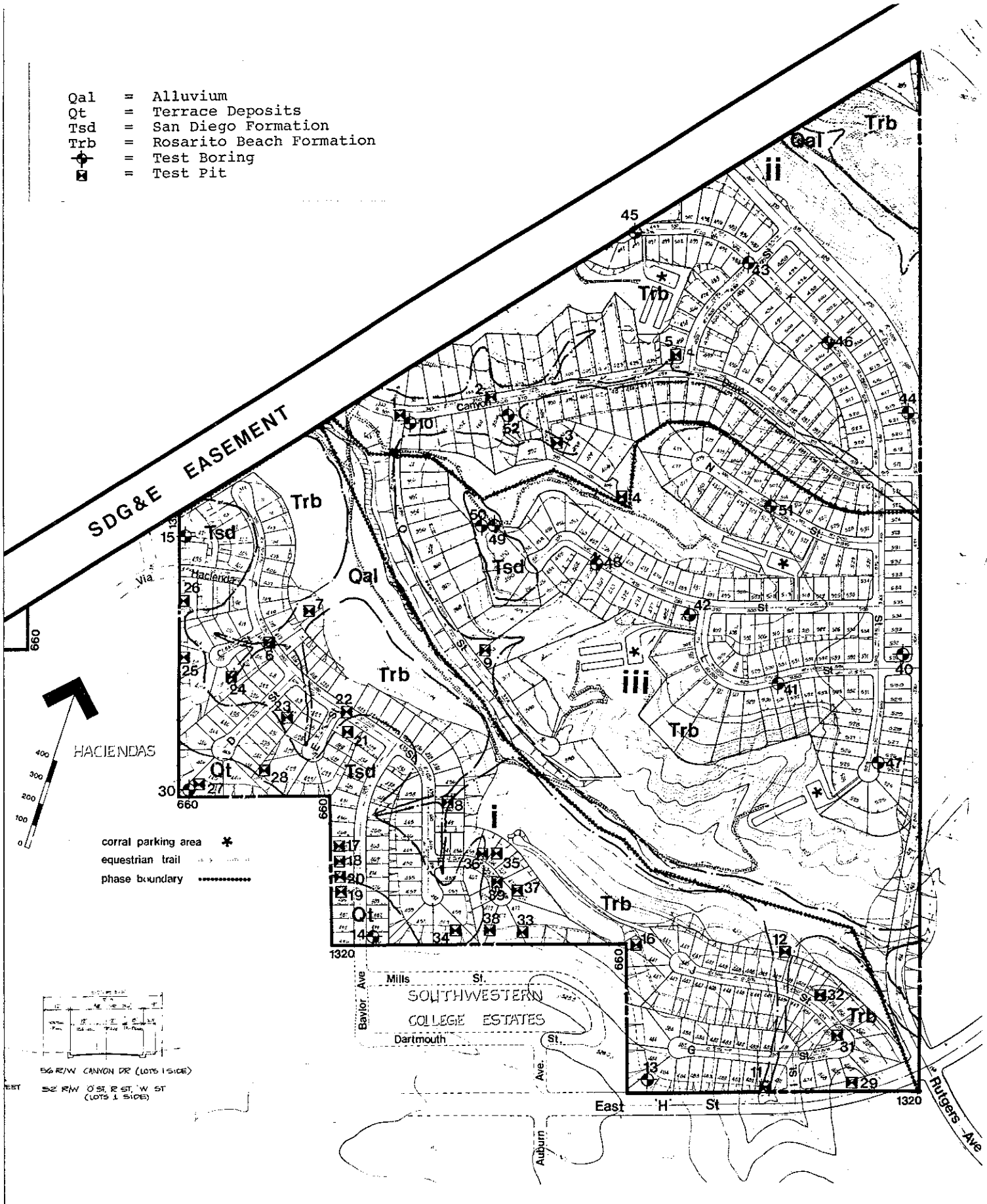


Figure 4. Geology map, phase I; Woodward-Clyde

# BONITA LONG CANYON EQUESTRIAN ESTATES

## sectional planning area

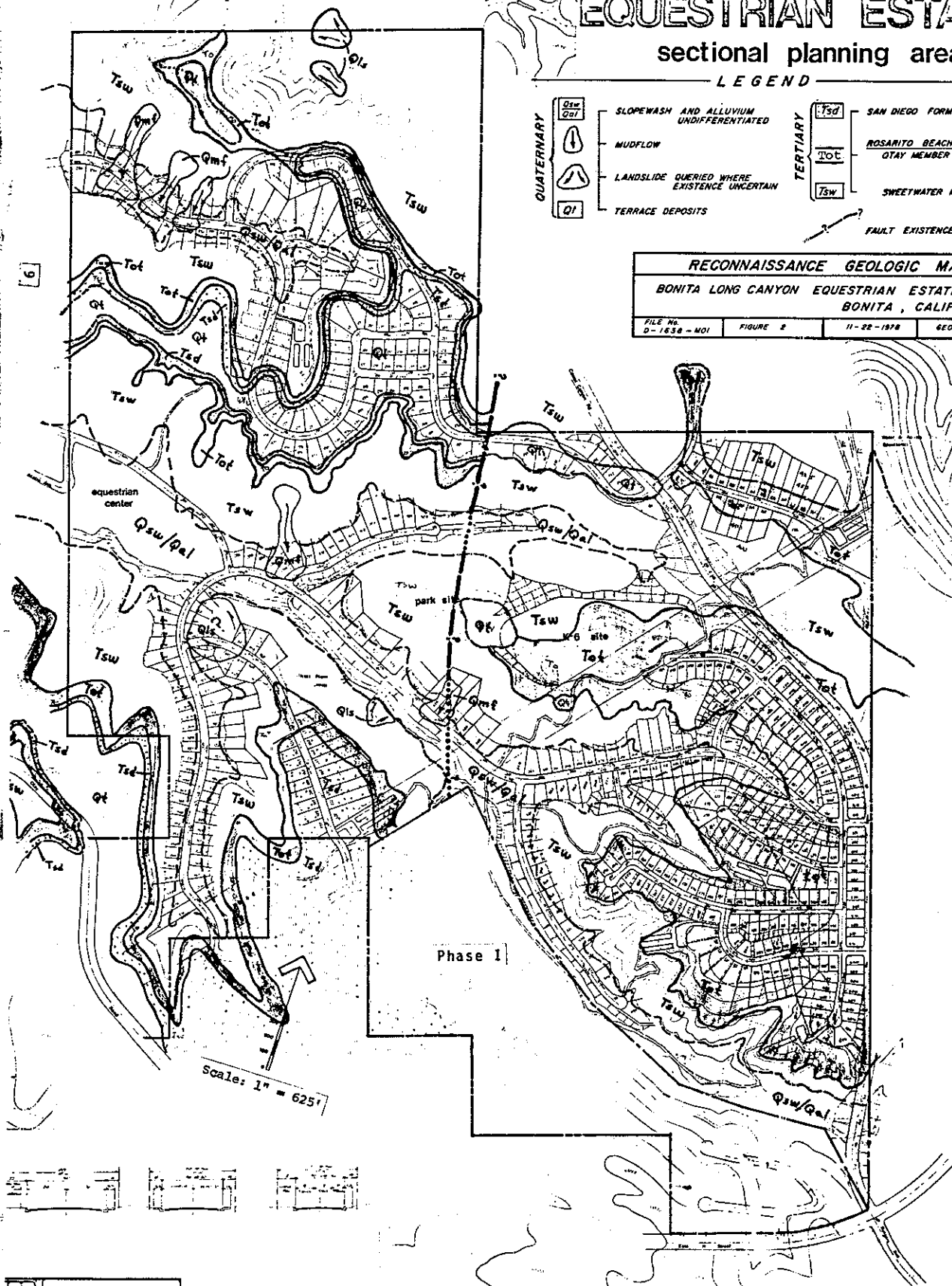
### LEGEND

QUATERNARY		SLOPEWASH AND ALLUVIUM UNDIFFERENTIATED	TERTIARY		SAN DIEGO FORMATION
		MUDFLOW			ROSARITO BEACH FORMATION Q14 MEMBER
		LANDSLIDE QUERIED WHERE EXISTENCE UNCERTAIN			SWEETWATER MEMBER
		TERRACE DEPOSITS			FAULT EXISTENCE UNCERTAIN

### RECONNAISSANCE GEOLOGIC MAP

BONITA LONG CANYON EQUESTRIAN ESTATES  
BONITA, CALIFORNIA

FILE NO. D-1638-M01	FIGURE #	11-22-1978	GEOCON, INC.
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**CEP ASSOCIATED**  
10000 E. 1st Avenue, Suite 100, Denver, CO 80231  
PHOTOGRAPHY BY: [unreadable]

Figure 5. Geology Map, Phases ii-vi, Geocon, Inc.

sand and cobble conglomerate. All of the above rocks are nearly horizontal.

The most recent deposits consist of alluvium and slope wash, which are found in the valley bottoms, and ancient mudflows and landslides. The mudflows and landslides present have occurred entirely within the Sweetwater Member. The mudflows consist of 20-30 feet of organic clayey sands which are typically unconsolidated. These and the landslides are found near the base of steep slopes in small tributary gullies. See Figure 5 for the extent and location of mudflows and landslides.

b. Geologic Hazards

1. Slope Stability/Landslides

Natural slopes in granular materials of the Rosarito Beach, San Diego Formation and Terrace deposits are generally stable. However, clays and clayey sandstones within these formations are often subject to slope failure.

2. Expansive and compressible soils

Some of the onsite soils are expansive and are highly impermeable.

3. Seismic

A review of the literature indicates that an existing north-south trending fault lies approximately one mile southwest of the site.<sup>4</sup> This fault is not considered to be active. A fault shown by Kuper and Gastil<sup>5</sup> (Figure 6) is mapped traversing the site in a north-south direction. Woodward-Clyde found no evidence of this fault during their investigation. Hart suggested that in the northern portion of the site, the presence of this fault could not be established with certainty.

The nearest known active fault is the Elsinore Fault which lies approximately 40 miles to the northeast. The recurrence interval for Magnitude 7.3 earthquakes on this fault is estimated to be 60 years. The southern extension of the potentially active Rose Canyon Fault zone lies 7-10 miles west of the site. No Magnitude 4.0 or larger earthquakes have been recorded on this fault.

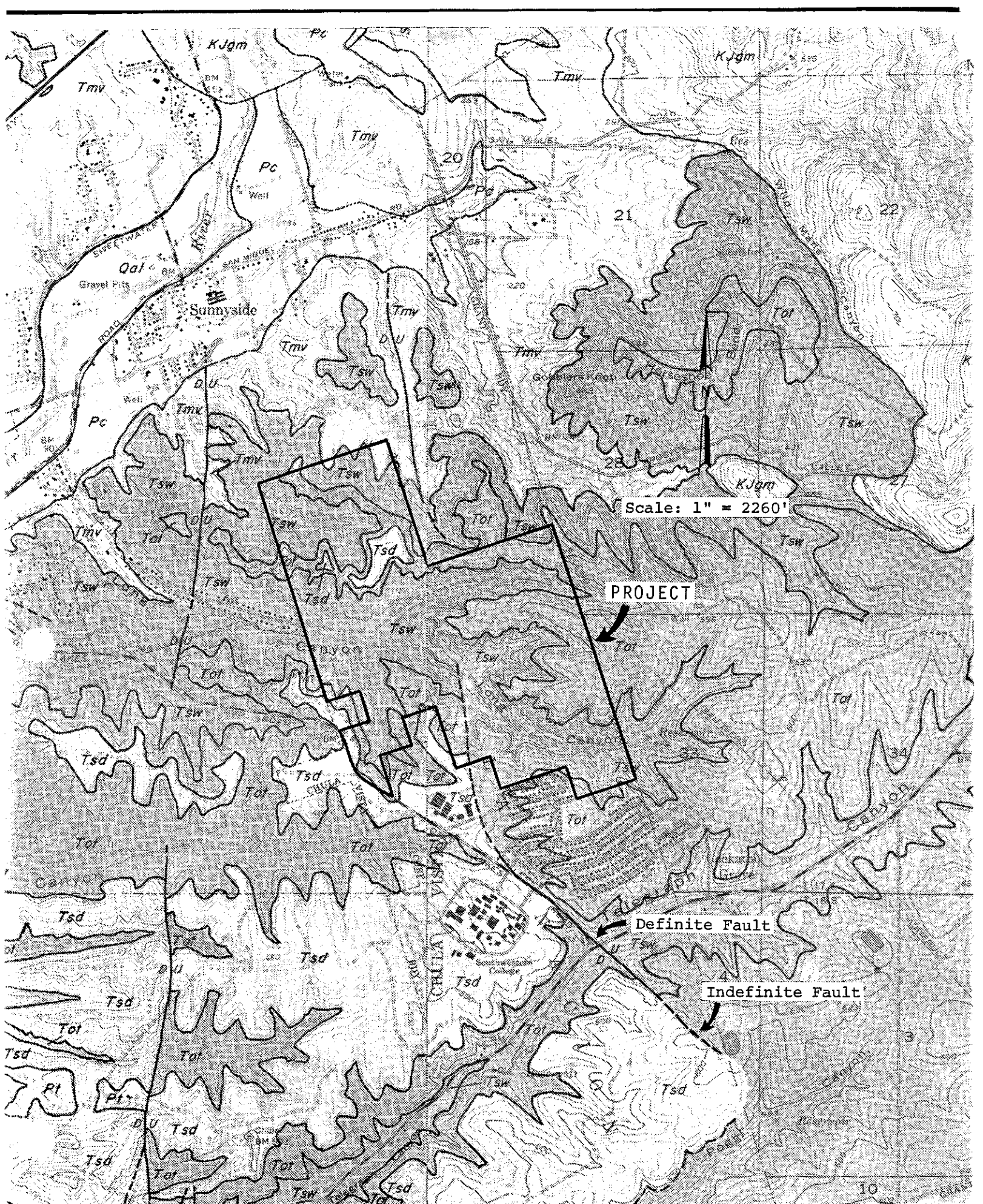


Figure 6. Fault Map of the site and vicinity taken from Kuper and Gastil, 1977.

### 3.1.2 Impact

In general, Woodward-Clyde indicate that there are no major adverse soil or geologic conditions on the site which would preclude development. According to their report, the onsite formations will be stable if cut or filled at an inclination of 2 to 1., however, they suggest that portions of the site underlain by the Sweetwater or Otay formations may require buttressing to increase slope stability. During grading, expansive or compressible soils will require special engineering techniques which may include scarifying, watering and compacting prior to placement of fill or structures. It is also anticipated that the onsite materials can be excavated with the use of normal heavy duty grading equipment. Geocon, Inc. suggests that detailed geotechnical investigations be performed to establish the existence of the possible fault. In any case, it is suggested that should the fault exist, the impact on development would be minimal. Such an investigation would also indicate what the impact of construction on mudflows and landslides would be.

### 3.1.3 Mitigation

Woodward-Clyde's geotechnical report suggests mitigating measures to reduce the impacts of construction on compressible and expansive soils. Until other detailed geotechnical investigations are completed on the remaining acreage, no specific mitigating measures can be suggested. It is inferred from these two reports, however, that all of the geotechnical hazards which exist or may be found to exist on the site can be mitigated to acceptable levels.

### 3.1.4 Analysis of Significance

Because both consultants indicate that the geologic hazards can be mitigated, the impacts can be rendered insignificant by proper engineering techniques.

## 3.2 SOILS

### 3.2.1 Project Setting

The U.S.D.A.<sup>6</sup> indicates that the Diablo, Linne, Salinas and Olivenhain soils series exist on the site. The Diablo series is located generally on the north-facing slopes whereas the Linne series is located on the south or southwest-facing slopes. The Salinas series is found in the valley and tributaries of Long Canyon. The Olivenhain series is located on the northern drainage divide area and the north-facing slopes of Long Canyon. The soil characteristics are listed in Table 2 and their location is shown in Figure 7.

Table 2. Soils Characteristics

Soil	Parent Rock	Shrink-Swell	Hydrologic* Group	Unified** Classification	Permeability	Erodibility***	Runoff Potential
Diablo							
DaC	Calcareous sandstone & shale	All high	All D	All CH	All slow	Slight Slight Moderate Severe-1	All very high
DaD							
DaE							
DaF							
Linne	Calcareous sandstone & shale	Moderate	C	CL	Moderate Slow	Severe <sup>1</sup>	High
LsF							
Salinas	Sediments from Diablo & Linne sites	Moderate	C	CL	Moderate Slow	Moderate <sup>2</sup>	High
SbC							
Oliven-	Old grav-						
hain	elly	Moderate	D	ML or CL	Moderate	Severe <sup>16</sup>	Medium
OhC	& cobbly						
OhE	alluvium	Moderate	D	ML or CL	Moderate	Severe <sup>16</sup>	Medium-High

\* Hydrologic Group: C is slow infiltration rate; D is very slow infiltration rate.

\*\* Unified Classification: CH = Inorganic clays, clays of medium to high plasticity  
 CL = Inorganic clays, clays of low to medium plasticity  
 ML = Inorganic silt

\*\*\* Erodibility numbers: 1 = slope; 2 = surface layer texture; 16 = grade of structure in surface layer.



Figure 7. Soil Map of the site, taken from U.S.D.A. maps. See Table 2 for description of soil symbols.



Note from Table 2 that some of the soil series have high expansiveness, and the runoff potential for all series is high. Overall the soils absorb little water resulting in high runoff and have average erodibility.

The soil characteristics and agricultural potential of each of the onsite series are summarized in Table 3.

With the exception of possible occasional grazing and dry land farming, the site has not apparently been used for any other agricultural pursuit. From Table 3 it can be seen that only the Salinas soil has any potential as a prime agricultural soil. Some of the Salinas soil is within the 100-year flood line which indicates that it may be subject to periodic flooding. In addition, its presence in bottomlands means that it may be also subject to periodic winter freezing which may limit the use of this area for citrus and avocados. The Diablo series is located in the upper reaches of Long Valley and its limitations are similar to that of the Salinas series.

### 3.2.2 Impact

Grading of the site may result in some short-term increase in erosion and siltation, especially if grading takes place during inclement weather. As indicated in the Geology section (3.1), the impact of construction on expansive soils can be adverse.

Implementation of the project will mean the loss of approximately 40 acres of Class II soils. (Table 3).

### 3.2.3 Mitigation

Soil erosion problems will be controlled by planting and irrigating newly graded slopes. Expansive soils will be mitigated by proper engineering methods. No mitigation for the loss of agricultural land has been incorporated into the project. The loss of a minimum amount of land which is potentially suitable agricultural land is considered minor.

### 3.2.4 Analysis of Significance

Soil impacts are considered to be insignificant, as long as the appropriate mitigating measures are incorporated into the project.

## 3.3 GROUND WATER

### 3.3.1 Present Setting

The only circumstance under which ground water surfaces on the site is when there is heavy precipitation and the water table



Table 3. Soils Agricultural Potential

<u>Soil Type</u>	<u>Fertility</u>	<u>Storie Index*</u>	<u>Capability Unit**</u>	<u>Agricultural Use</u>
DaC	Med-High	42	IIE-5(19)	Tomatoes, dryfarm barley, housing
DaD	Med-High	37	IIIE-5(19)	Tomatoes, dryfarm grain, grain and housing.
DaE	Med-High	30	IVE-5(19)	Tomatoes, housing, pasture, range
DaF	Med-High	13	VIe-5(19)	Range
LsF	Medium	6	VIe-1(19)	Range
SbC	High	73	IIE-1(19)	Citrus, truck, tomatoes, flowers, pasture
OhC	Low	29	VIe-7	Range, watershed, citrus
OhE	Low	30	VIe-7	Range, watershed, housing, citrus

\* Storie Index: Soils with Storie Indices from 60-80 are suitable for most crops and have few special management needs.  
 Storie Indices from 20-40 are severely limited for crops.  
 Storie Indices from 0-19 consist of soils and land types generally unsuited to farming.

\*\* Capability Unit:  
 Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.  
 Class III soils have severe limitations that reduce the choice of plants.  
 Class IV soils have very severe limitations that reduce the choice of plants.  
 Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use to pasture or range.

rises sufficiently to be seen in the stream bottoms. These circumstances are rare, and as ground water is not used for any purpose, no study was made during this investigation. Throughout the general area, excessive landscape watering results in minor seeps in some of the canyons.

### 3.3.2 Impact

It is not expected that ground water will be affected by implementation of the project.

### 3.3.3 Mitigation

None required.

### 3.3.4 Analysis of Significance

Impact on ground water is considered insignificant.

## 3.4 DRAINAGE PATTERNS

### 3.4.1 Project Setting

#### Drainage Basins

The site is located astride the drainage divide between the Long Canyon hydrographic basin and the Sunnyside hydrographic basin (Figure 8). Both of these basins are tributary to the Sweetwater River and are part of the Lower Sweetwater hydrographic sub-unit. Approximately 76% of the site is within the 1155-acre Long Canyon basin which flows northwest and joins the Sweetwater River just north of Acacia Street (Figure 9a, b, c).

The site is located in four sub-areas of the Sunnyside basin as defined by the Fogg report<sup>7</sup> and these include C-1.6, D-3.0, D-3.1 and D-5.0. The location of these basins in relation to the site are shown in Figure 8 and a brief description of each basin follows and is summarized in Table 4.

Basin C-1.6 drains 13.3 acres of the northeast portion of the site and this drainage is directed north toward an ephemeral creek in Proctor Valley. Basin D-3.0 is in the upper reaches and D-3.1 is in the middle reaches of a tributary canyon which drains northwest to join the creek draining from Proctor Valley just south of the community of Sunnyside. D-5.0 drains into another northwest trending tributary which flows into the Sweetwater River west of Sunnyside.

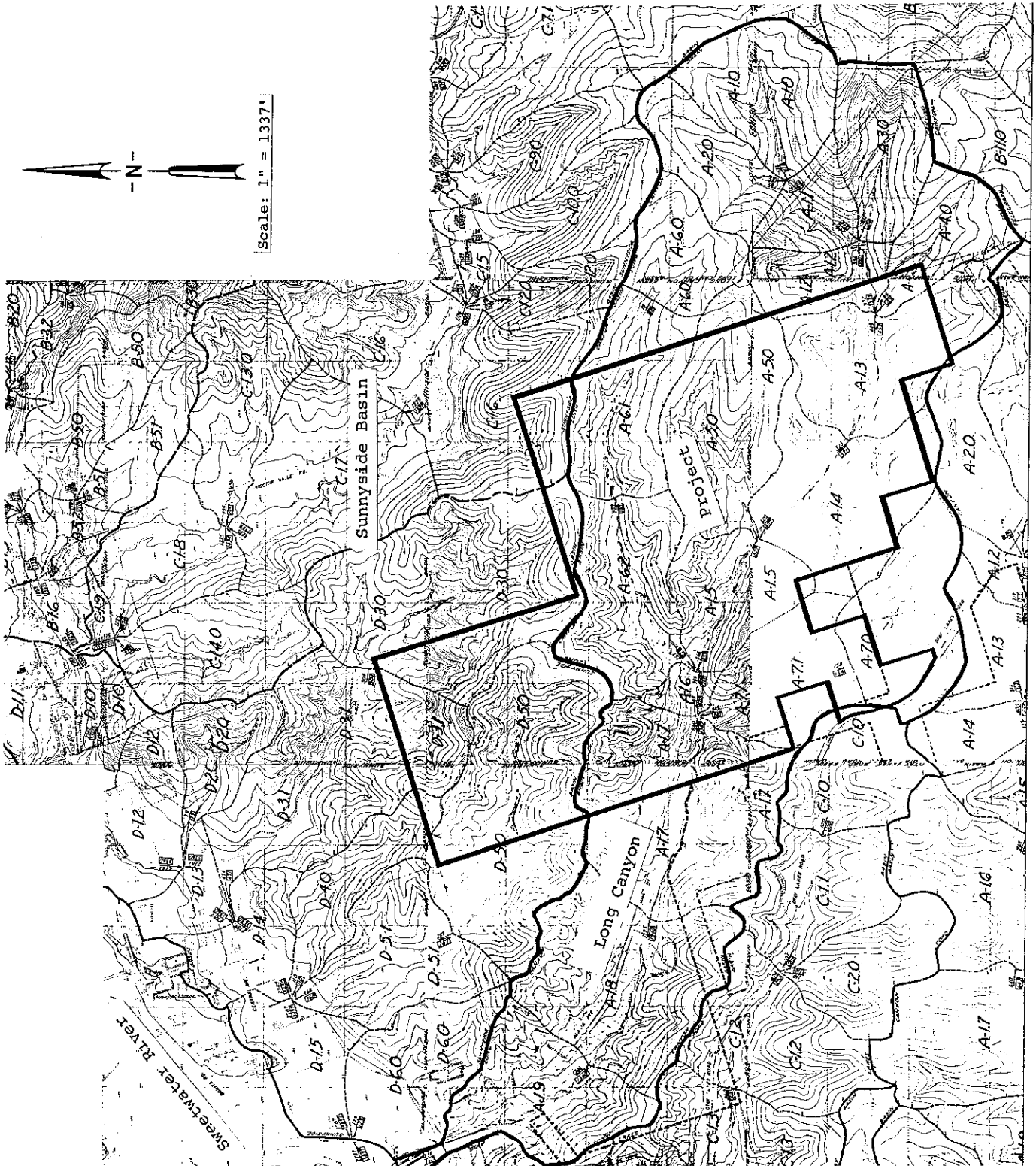


Figure 8. Drainage Basin Map taken from the Fogg Report.

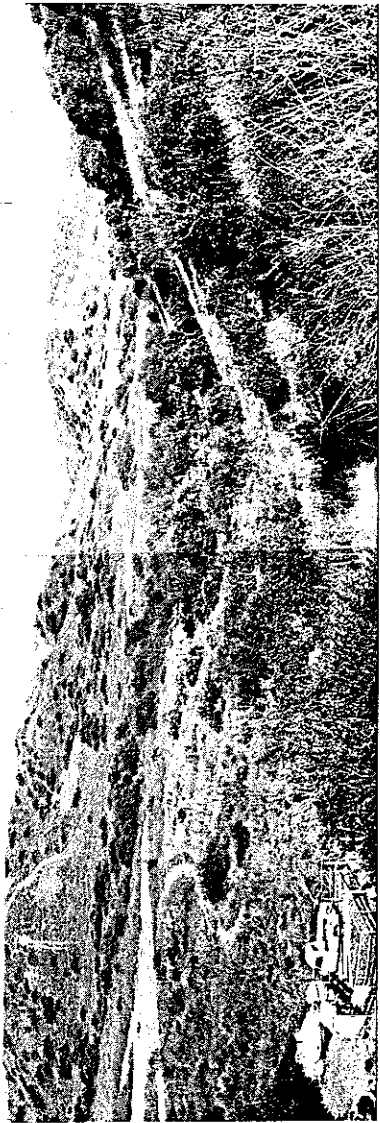


Figure 9a. Panoramic photograph taken November 15, 1978. View from the end of Acacia Street looking northeast.

Bonita Vista High School      Condominiums      Acacia Avenue Terminus



Figure 9b. Panoramic photograph taken November 15, 1978. View from end of Acacia Street looking southeast.



Figure 9c. Photograph taken at the end of Acacia Street showing bottom of Long Canyon.

Table 4. Drainage Basin Data

See Figure 8

<u>Total Acreage in Each Basin</u>	<u>Acres of Project in Each Basin</u>	<u>% of Basin in Project</u>	<u>1964 Q50 of Whole Basin (cfs)</u>	<u>Ultimate Q50 of Whole Basin (cfs)</u>	<u>Difference Between 1964 &amp; ultimate cfs</u>	<u>Project Q50 cfs</u>	<u>% of Ultimate Q50 Basin</u>
Lng Cryn 1155	493.1	42.7	1231	1360	129	55	4
C 1.6 149	13.3	8.9	1225	1389	164	15	1
D 3.0 147	37.4	25.0	304	304	0	0	
D 3.1 126	25.4	20.0	454	471	17	17	6
D 5.0 132	80.8	61.0	287	287	0	0	
<u>Total 1709</u>	<u>650</u>		<u>3501</u>	<u>3817</u>	<u>310</u>	<u>87</u>	

There is no offsite drainage onto the property from any of the Sunnyside sub-basins. In Long Canyon there is approximately 249 acres of offsite drainage flowing onto the site from the southeast and, according to the Fogg Report, the  $Q_{50}^*$  at the eastern site boundary is approximately 552 cubic feet per second (cfs). According to the Barbour Report, the  $Q_{100}^{**}$  in Long Canyon, 2800 feet downstream from the eastern boundary of the site, is 834 cfs. This point is the easternmost extent of the 100 year storm limit line as designated on Sheet 2 of the Barbour Report. Drainage basin A6.0, encompassing approximately 39 acres, discharges into the property at the eastern boundary and the  $Q_{50}$  according to the Fogg Report is 79 cfs. Long Canyon drainage south of the project is minor, is already controlled by drainage structures and, according to the Barbour report, "only a small portion is contributing flow into Long Canyon".

### Soils and Runoff

As stated in the Soils section (3.2), the onsite soils consist of the Diablo-Linne association. Approximately 80% of the soils are in the D hydrologic group which indicates that they have very slow infiltration rates when thoroughly wetted. The remaining 20% is in group C which have slow infiltration rates when thoroughly wetted. The topography is discussed in section 3.6 and it is noted that the site has many canyon sides which have a gradient greater than 30%. The natural ground cover is described in the Biology section and consists of a sparse cover of coastal sage scrub and disturbed weedy vegetation which is shallow rooted. Thus, because of slow to very slow infiltration rates, sparse ground cover, and the presence of steep slopes, the runoff during a severe storm is rapid.

### Prior Studies

Two previous studies have been performed in the area. In 1964 Lawrence, Fogg, Florer and Smith prepared "A Special Study of Storm Drainage Facilities, a Supplement to the Chula Vista General Plan." This study encompassed 50 square miles which was bounded by the San Diego Bay on the west, Sweetwater River on the north, Proctor Valley Road and Lower Otay Reservoir on the east and Otay River and Main Street on the south. The report calculated the existing 50 year storm runoff (as of 1964) as an ultimate 50 year storm based upon an assumed land use for 1990.

In 1975, Barbour Engineering Company Inc. prepared a "General Plan for Flood Control and Storm Drainage Improvements for Long Canyon Basin (Bonita Area), Zone 3 for the San Diego County Department of Sanitation and Flood Control." This

\*  $Q_{50}$  = runoff from 50 year storm

\*\*  $Q_{100}$  = runoff from 100 year storm

report calculated the  $Q_{100}$  for existing conditions. Figure 8 has been assembled from the Fogg Report and both reports have been reviewed and have been incorporated where appropriate into this report. The acreages and runoff from the onsite basins is shown in Table 4.

### Drainage Facilities

The location of the existing drainage facilities for the drainage basins is indicated in Figure 10 and Table 5 describes these facilities. These data were compiled from "Recommended Flood Control and Drainage Plan, Zone 3, San Diego County Flood Control District" prepared by Boyle Engineering Corporation in August, 1975.

The description which follows has been abstracted from the Barbour Report and the Boyle report:

According to the Barbour Report, "Existing drainage improvements within the Long Canyon Basin are limited to an 8' wide and 6' deep concrete channel along the southwesterly side of Acacia Avenue outletting on the north side of Bonita Road, and isolated small bridges and culverts on the main natural channel." Beginning at the lowest reach of the stream, they state that the box culvert underneath Bonita Road is inadequate and that the invert contains sediments due to a sump designed into its invert. The concrete channel is roughly 8 inches above the pavement of Acacia Avenue and up to four feet above the adjacent property on the southwest and thus, overflow of this channel would contribute to flooding of the adjacent property. Upstream of the concrete channel, drainage flows in the natural channel which is not considered adequate to contain flows equivalent to those of the concrete channel and thus, overflows flow down Palm Drive and flood the Rancho Bonita Unit #1 area. Further upstream there is a double pipe corrugated metal culvert under an access road which is covered with silt much of the time and thus, even if cleaned out, would be inadequate for design flows. The report indicates that in 1972, flooding occurred in Long Canyon lower drainage area because of 1) restriction of the box culvert under Bonita Road, 2) obstructions in the Acacia Avenue concrete channel causing overflows onto property fronting Palm Avenue 3) the fact that stables, fences and other structures in the natural channel collect debris and restrict flow, and 4) that the metal culvert eventually closed due to siltation.

Proctor Valley drainage presently consists of a natural channel which is considered inadequate to control either the 50 year or the 100 year flood. In sub-area D1.0 (area 123 according to Boyle), the existing facilities include several underground pipes which were constructed as part of McMillan's

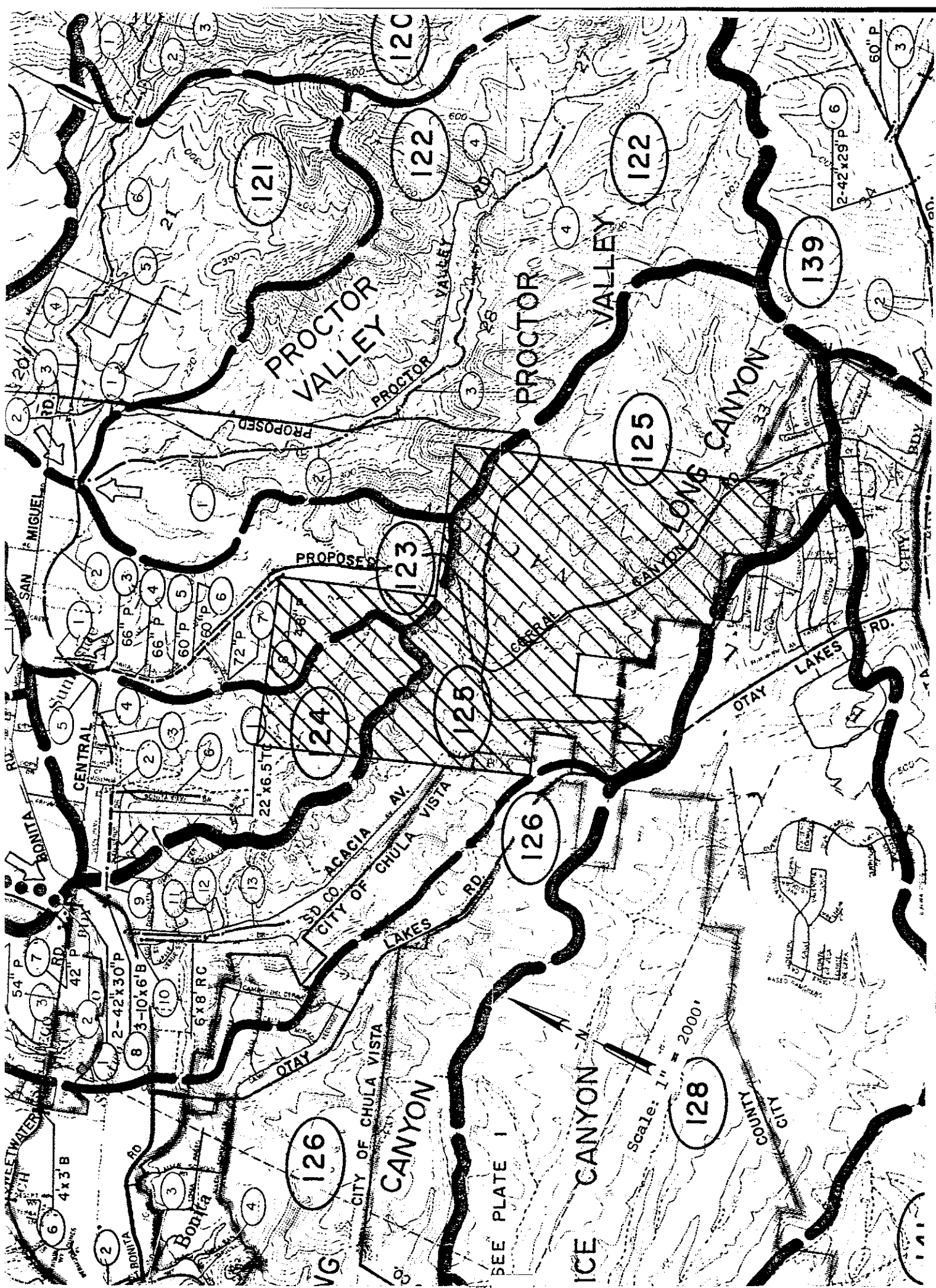


Figure 10. Drainage Facility Map. See Table 5 for explanation.



TABLE 5

SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS  
ZONE 3

FACILITY NO.	PLATE NO.	LOCATION	DRAINAGE AREA (SQ. MI.)	LENGTH (FT)	EXISTING CONDITIONS	CAPACITY CFS		ASSOCIATED PROBLEMS	RECOMMENDED IMPROVEMENTS	INSTALLATION COST (THOUSANDS OF DOLLARS)	PRIORITY
						EXIST	REQUIRED 1990 50 YR 100 YR				
PROCTOR VALLEY (continued)											
SUBDRAINAGE AREA 122 (C 1.6)											
1	1	Concentration point 122	5.00	3,400	Natural channel	Inadequate	2,900	Restricts development, erosion	Veg Earth Sect. b = 180' d = 1.5' z = 4	607.2	
2	1	On channel 3,400' above concentration point 122	1.84	1,400	Natural channel	Adequate	1,050	Restricts development	Veg Earth Sect. b = 85' d = 2.5' z = 4	160.1	
3	1 & 2	On channel 4,800' above concentration point 122	1.73	4,200	Natural channel	Inadequate	990	Restricts development, erosion	Veg Earth Sect. w/Grade Stab. Struct. b = 100' d = 2' z = 4	556.6	
4	2	On channel 7,300' above concentration point 122	0.78	2,500	Natural channel	Adequate	440	Restricts development	Veg Earth Sect. b = 70' d = 1.5' z = 4	169.9	
SUBDRAINAGE AREA 123 (D 3.1)											
1	1	Concentration point 123	5.69	1,500	Natural channel	Adequate	3,300	Restricts development, erosion	Rect CL b = 20' d = 9.5'	804.1	

From Boyle Engineering Report

TABLE 5 (continued)

SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS

ZONE 3

FACILITY NO.	PLATE NO.	LOCATION	DRAINAGE AREA (SQ. MI.)	LENGTH (FT)	EXISTING CONDITIONS	CAPACITY CFS		ASSOCIATED PROBLEMS	RECOMMENDED IMPROVEMENTS	INSTALLATION COST (THOUSANDS OF DOLLARS)	PRIORITY
						EXIST	REQUIRED 1990 50 YR 100 YR				
PROCTOR VALLEY (continued)											
SUBDRAINAGE AREA 123 (continued)											
2	1	1,500' above concentration point 123	5.14	2,100	Natural channel	Adequate	2,960	Restricts development, erosion	Rect CL b = 18' d = 8'	861.0	
3	1	Concentration point 123 @ Central Avenue	0.42	60	66" RCP	260	250	None	None		
4	1	Concentration point 123 @ Central Avenue	0.42	720	66" RCP	580	250	None	None		
5	1	Tributary 780' above concentration point 123	0.39	590	60" RCP	650	240	None	None		
6	1	Tributary 1,370' above concentration point 123	0.37	540	60" RCP	560	220	None	None		
7	1	Tributary 1,910' above concentration point 123	0.34	1,380	72" RCP	460	210	None	None		
8	1	Tributary 3,290' above concentration point 123	0.23	320	48" RCP	210	140	None	None		
SUBDRAINAGE AREA 124 (D 5.0)											
1	1	Bonita Glen Terrace 150' West of Glen Verde Drive	6.24	1,650	Trap CL b = 22' d = 6.5' z = 1.5	2,800	3,500	Property flooding	None		
2	1	Dawsonia Street 150' South of Glen View Place	5.86	40	Bridge Width = 15' quate Span = 20'	Inade-	3,340	Inadequate bridge, restricts flow	Double RCB b = 10' d = 9'	37.2	

TABLE 5 (continued)  
 SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS  
 ZONE 3

FACILITY NO.	PLATE NO.	LOCATION	DRAINAGE AREA (SQ. MI.)	LENGTH (FT)	EXISTING CONDITIONS	CAPACITY CFS		ASSOCIATED PROBLEMS	RECOMMENDED IMPROVEMENTS	INSTALLATION COST (THOUSANDS OF DOLLARS)	PRIORITY
						EXIST	REQUIRED 1990 50 YR 100 YR				
PROCTOR VALLEY (continued)											
SUBDRAINAGE AREA 124 (continued)											
3	1	Dawsonia Street 150' South of Glen View Place	5.86	1,200	Unimproved	Inadequate	3,300	Property flooding, erosion	Rect CL b = 20' d = 8.5'	614.8	
4	1	Central Avenue 1,500' East of Frisbie Street	5.74	40	5-48" RCP	600	3,320	Street and adjacent property flooding	Double RCB b = 12' d = 9'	47.9	
5	1	Central Avenue 1,500' East of Frisbie Street	5.74	960	Earth sect.	Inadequate	3,320	Street and adjacent property flooding	Rect CL b = 24' d = 8.5'	543.9	
6	1	Dawsonia Street 150' South of Glen View Road	0.37	1,500	Unimproved	Inadequate	210	Restricts development, erosion, street and adjacent property flooding	45" RCP	103.2	
TOTAL - PROCTOR VALLEY										7,291.4	
LONG CANYON											
SUBDRAINAGE AREA 125											
1	1	Central Avenue 400' West of Bonita Road	204.0	204.0	Double 42" x 30" CMPA	60	50,800 <sup>1</sup>	Flooding of existing development within floodplain overlay zone	None		
2	1	Central Avenue 400' West of Bonita Road	204.0	300	S.W. River floodplain overlay zone		50,800 <sup>1</sup>	Flooding of existing development within floodplain overlay zone	None		

<sup>1</sup>San Diego County Flood Hazard Investigation, Bulletin No. 112 (1964)

TABLE 5 (continued)

SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS

ZONE 3

FACILITY NO.	PLATE NO.	LOCATION	DRAINAGE AREA (SQ. MI.)	LENGTH (FT)	EXISTING CONDITIONS	CAPACITY CFS		ASSOCIATED PROBLEMS	RECOMMENDED IMPROVEMENTS	INSTALLATION COST (THOUSANDS OF DOLLARS)	PRIORITY
						EXIST	REQUIRED 1990 50 YR 100 YR				
LONG CANYON (continued)											
SUBDRAINAGE AREA 125 (continued)											
3	1	Sweetwater Road @ Orchard Hill Road	0.30	1,000	Natural channel	Adequate	170	Restricts development, stagnant water	48" RCP	72.8	
4	1	Orchard Hill Road 1,400' North of Sweetwater Road	0.23	520	54" CMP	290	130	None	None		
5	1	Orchard Hill Road 1,900' North of Sweetwater Road	0.17	1,400	48" CMP	200	100	None	None		
6	1	Orchard Hill Road 3,300' North of Sweetwater Road	0.09	250	42" CMP	150	50	None	None		
7	1	Sweetwater Road @ Central Avenue	0.07	240	42" RCP	90	40	None	None		
8	1	Bonita Road 600' South of Central Avenue	6.31	70	Triple RCB b = 10', d = 6'	Adequate with up-stream improvements	3,530	None	None		
9	1	Bonita Road 600' South of Central Avenue	6.31	240	Natural channel	Inadequate	3,530	Restricts development, erosion, property flooding	Rect CL b = 26', d = 9'	130.4	
10	1	Bonita Road @ Acacia Avenue		70	RCB b = 14', d = 5'		2,096		Modification <sup>1</sup>		

<sup>1</sup>General Plan for Flood Control and Storm Drainage Improvements for Long Canyon Basin (Bonita Area) Zone 3 (1974)

TABLE 5 (continued)

SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS  
 ZONE 3

FACILITY NO.	PLATE NO.	LOCATION	DRAINAGE AREA (SQ. MI.)	LENGTH (FT)	EXISTING CONDITIONS	EXIST	CAPACITY CFS		ASSOCIATED PROBLEMS	RECOMMENDED IMPROVEMENTS	INSTALLATION COST (THOUSANDS OF DOLLARS)	PRIORITY
							50 YR	100 YR				
LONG CANYON (continued)												
SUBDRAINAGE AREA 125 (continued)												
11	1	Bonita Road @ Acacia Avenue		1,200	Rect CL b = 8' d = 6'			2,096		Additional <sup>1</sup> 96" RCP		
12	1	Acacia Avenue 1,200' South of Bonita Road		350				2,046		84"-96" RCP <sup>1</sup>		
13	1	Palm Drive 1,550' South of Bonita Road		1,000				2,004		Trap CL <sup>1</sup> b = 8' d = 7.25' z = 2	438.7 (10 through 13)	

<sup>1</sup>General Plan for Flood Control and Storm Drainage Improvements for Long Canyon Basin (Bonita Area) Zone 3 (1974)

<sup>2</sup>San Diego County Flood Hazard Investigation, Bulletin No. 112 (1964)

Bonita Highland development. Drainage in the flatter portions is contained in natural drainage channels which are considered adequate for flood control. The only existing drainage structure in subarea D-5.0 (Boyle-124) is a trapezoidal concrete channel paralleling the back lot line which was constructed as part of McMillan's Bonita Glen residential development. It was noted by the Boyle Engineering Report that drainage in the Central Avenue-Dawsonia area is inadequately controlled, and there is flooding of both streets and property during periods of high precipitation.

In summary, all of the drainage basins in which the project is located have existing drainage facilities which are inadequate to one degree or another. The most severe problems occur in Long Canyon because this is a basin which drains a very large area compared to the others and because flooding brings problems to a larger number of residents plus the fact the drainage facilities were not properly sized. Long Canyon improvements have not been included in any Zone 3 list of priorities.

#### 3.4.2 Impact

Development of the project will be in accordance with the ultimate land use postulated by the Fogg Report. Thus, it can be assumed that the 73 cfs difference between ultimate  $Q_{50}$  runoff and existing  $Q_{50}$  runoff, as noted in Table 4, is the approximate amount of additional runoff that can be expected after development of the project. This represents a 4% increase for Long Canyon, 1% increase in basin C-1.6, and a 6% increase in basin D-3.1.

The Barbour report indicates that the existing facilities are inadequate for storm runoff. The project will cause a small increase in runoff, which will be added to the existing periodic flooding conditions.

It should be noted from the Soils section that the soils are in hydrologic group D and C, both of which have slow to very slow percolation rates when thoroughly wetted. During a 10, 50, or 100 year storm the intensity of rainfall dictates that the soils will be thoroughly wetted. Therefore, if the soil is nearly impermeable after being thoroughly wetted, the surface resembles (hydrologically) a surface composed of concrete or asphalt or roofing material. In other words, during a high intensity storm whether the surface is a natural surface underlain by D type soil, or whether the surface is covered by streets, driveways, or houses, the permeability will be much the same; however, the percent of runoff would vary depending on the intensity of the storm.

It is only during the initial stages of a 10, 50 or 100 year storm that the natural surfaces and the artificial surfaces will have a difference in runoff potential. This is because during the early stages of the storm when the soil is still capable of absorbing water, runoff from these natural areas is less than that to be expected from impermeable surfaces. As the soil approaches saturation, the difference in runoff between natural surfaces and artificial surfaces becomes less pronounced. In addition, it is assumed that as the lots are landscaped, the new owners may import soil more suited to the growth of plant material that will be more permeable. This will result in the substitution of soil with greater water-absorbing properties than D and C type soil over much of the site, and will ultimately reduce the runoff from these areas. Runoff from property in a natural state provides for water discharge all along the entire length of the canyon. The storm drainage facilities will similarly discharge runoff all along the length of the canyon rather than being concentrated in any one place. For this reason, the engineer\* states that it is not expected that there will be a significant change in time of concentration or peak discharge after completion of the project. Drainage structures will be designed to carry water from higher elevations to the canyon bottoms by way of pipes which will discharge through energy dissipators so that the velocity of the discharged water will be no greater than natural flow (Figure 3).

### 3.4.3 Mitigation

Properly designed drainage structures and energy dissipators combined with extensively landscaped lots will contribute to the mitigation of runoff problems associated with the project. Mitigation of existing drainage problems within Long Canyon has been suggested by the Barbour report. The Barbour report indicates that the assessed value of the property within the Long Canyon basin is not great enough to generate sufficient tax funds to construct the improvements and that possibly a "Special Drainage Area" be established by ordinance to provide funds for construction of improvements. San Diego County Department of Sanitation and Flood Control suggests \$512/acre be assessed to pay for improvements. If implemented, \$252,416 from the project could be made available for this purpose. Other methods of financing the Long Canyon improvements which the Barbour report estimates would have cost \$400,250 in 1974 and which Mr. Barbour estimates will presumably cost \$600,000, include an assessment district to be set up under the jurisdiction of San Diego County or the City of Chula Vista. Under this type of financing all of the property owners within the drainage basin would be assessed to pay for the improvements which could be undertaken as soon as the district was approved by the property owners and

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\* CEPA

the money collected. According to the City of Chula Vista, monies in the amount of approximately \$250,000 has already been collected by the City of Chula Vista and County of San Diego for improvement of Long Canyon drainage facilities. The developer has agreed to pay fees for the improvement of these drainage facilities. An additional mitigation involves the construction of siltation basins in appropriate locations downstream from the last discharge point taking topography into consideration.

The drainage problems which exist within the Sunnyside hydrographic basin have been noted, and as they exist over a large area, and as the completed project will contribute only 32 cfs to the existing runoff during a 50-year storm, mitigation of these problems must be done on a subregional basis, rather than by the project proponent.

#### 3.4.4 Analysis of Significance

Any increase in runoff, however small, will aggravate an existing drainage system whose inadequacy is well documented.

### 3.5 MINERAL RESOURCES

Geologic reconnaissance on the site did not reveal the presence of any mineral resources. A review of the geologic literature indicates that there are no known mineral resources on the site.

### 3.6 LAND FORM

#### 3.6.1 Present Setting

The site is located on the northwest trending ridges and valleys which are mostly within the Long Canyon drainage area. The rounded ridges give way to steep sided slopes leading to rounded valley bottoms (Figure 11). The altitude varies from 520 at the southeastern corner to 220 feet on the northwestern side of the project. Figure 11 indicates the slope categories on the site and both Figures 1 and 3 provide an indication of the general topography. Figure 12 shows photographs of the site providing views of the varied topography.

#### 3.6.2 Impact

Approximately 2,659,600 cubic yards of cut and 3,328,300 of fill will be moved in order to build the roads, provide driveways and future house pads. The maximum cut and fill banks



# Bonita Long Canyon Equestrian Estates

## SLOPE ANALYSIS

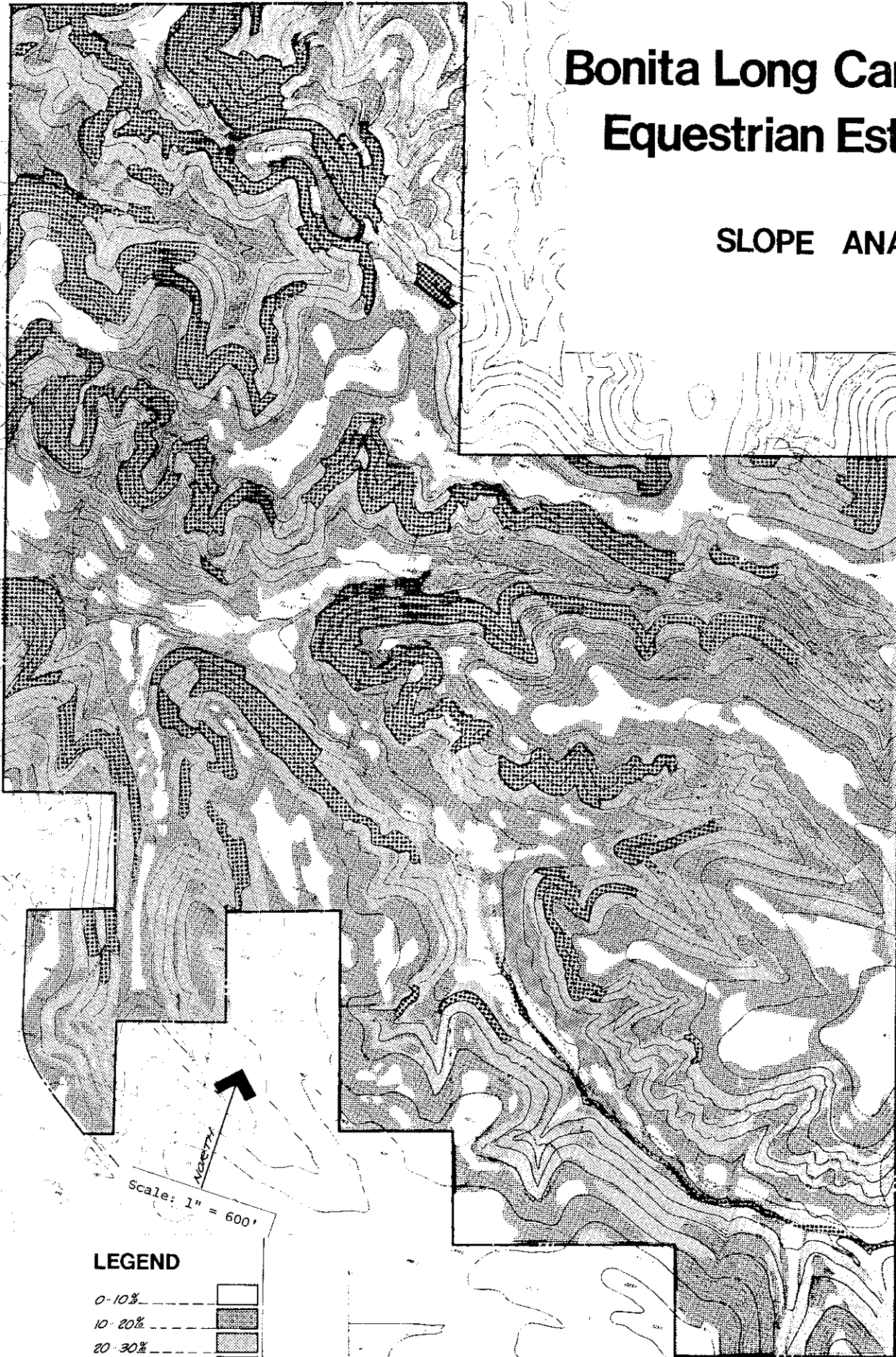


Figure 11. Slope Analysis Map



Figure 12a. Panoramic photograph taken November 15, 1978. View from the northwestern boundary looking northwest.

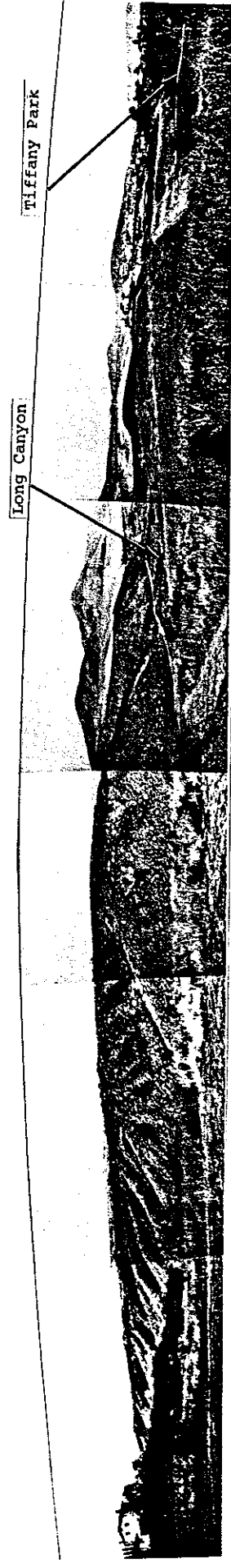


Figure 12b. Panoramic photograph taken November 15, 1978. View from southeastern portion looking north.

Bonita Vista Junior High School

Condominiums

Bonita Vista High School

Otay Lakes Road



Figure 12c. Panoramic photograph taken November 15, 1978. View from southwest corner looking north.

will be 28' and 75' respectively. Nearly all manufactured slopes will be gradients of 2 to 1. The highest fill banks will be in the vicinity of the extension of Corral Canyon Road to the south where a tributary of Long Canyon must be filled. The highest cut banks will be on the southern boundary near Bonita Vista High School. Preliminary estimates of grading by phases are shown in Table 6.

Prior to ultimate development, the difference between cut and fill amounts will be adjusted in order to have balanced grading.

### 3.6.3 Mitigation

The project has been designed to minimize the amount of grading which will be required. This is accomplished by contouring the roads as much as possible and leaving the steeper slopes and the canyon bottoms essentially undisturbed. Of the 320 acres to be in dedicated open space, only 19 acres will be graded.

The only major canyon fill is that which is required for the construction of the extension of Corral Canyon Road. The alignment of this road was selected by the engineer because it involved less grading than that which would have been required by the County's circulation element. By the preservation of 320 acres of open space, grading on the steeper portions has been minimized. Where possible, natural channels have been selected for roads descending from the ridge tops to the canyons. Other further mitigating measures are not necessary.

### 3.6.4 Analysis of Significance

Basic land form of canyons and ridges will remain after grading because most slopes over 30% will not be disturbed. Average grading of 4,300 cubic yards per single family lot is relatively high. The significance of the impact of this amount of grading is subjective.

## 3.7 AIR QUALITY

### 3.7.1 Present Setting

The site is located within the San Diego Regional Air Basin and the air quality is monitored by the San Diego County Air Pollution Control District. The region's air basin presently does not meet federal and state standards for oxidants, nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), particulates, and hydrocarbons (HC) and the project, as part of the air basin, is affected by the quality of the air basin. Local sources contribute to the air pollution in the form of vehicular emissions.

Table 6. Grading Volumes  
 -cubic yards-

Phases	i	ii	iii	iv	v	vi	School	Park	Total
Cut	535,900	602,700	732,700	114,500	524,500	25,800	32,900	90,600	2,659,600
Fill	338,000	829,800	349,000	921,600	546,300	--	393,600	--	3,328,300

Neither onsite nor in the immediate vicinity are there any other sources of air pollution.

The site is located 3-4 miles northeast of the Chula Vista monitoring station, and nine air miles southwest of the El Cajon monitoring station. Neither of these stations is similar to the site in topography, altitude or weather conditions. Air pollution conditions for the two monitoring stations are listed in Table 7.

Table 7. Days in which Federal Standards Were Exceeded in 1977 <sup>10</sup>

	<u>Oxidant</u>	<u>NO<sub>x</sub></u>	<u>HC</u>	<u>Particulates</u>
El Cajon	42	4	280	25
Chula Vista	52	2	311	2

### 3.7.2 Impact

Three aspects of the air pollution impact of the Bonita Long Canyon Estates development were investigated. They were the air emission within or in the immediate vicinity of the development, the air emissions impact throughout San Diego County, and the ambient air quality impact as a result of the project. Standard Environmental Protection Agency (EPA) procedures<sup>11,12</sup> were used in determining the impacts. This study calculates the estimated air pollution impact of the project in 1985. This year was chosen as a reasonable compromise between full project completion and existence of published emission rates.

#### Atmospheric Emissions Within and Near the Site

Within the site, emissions result principally from vehicles, natural gas usage (space heating, domestic hot water heating, and cooking) and fireplaces. In addition, emissions from site-generated vehicular traffic between the project and the major highways (Otay Lakes Road on the west and south and Central Avenue on the north) were included. Table 8 summarizes the vehicular trips and mileage. The traffic data are discussed elsewhere in the EIR. The mileage within the site is estimated as the square root of the area using the access.

It is assumed that the occupants of the 824 dwelling units will consume 776 KWH and 81 therms a month, which is the

Table 8. Vehicular Traffic Summary

	<u>Vehicular Trips/Day</u>	<u>Mileage Within Site (Miles)</u>	<u>Mileage Outside Site (Miles)</u>	<u>Total Vehicle Miles (35 MPH)</u>	<u>Total Vehicle Miles (45 MPH)</u>
Corral Canyon (N)	2279	0.31	1.7**	706	3974
Acacia	1740	0.12	1.0**	209	1740
Unit IV Access	448	0.11	0	49	0
Haciendas	1665	0.21	0.2	683	0
"H" Street (W. access)	847	0.15	0.4	466	0
(E. access)	1116*	0.24	0.5	826	0
Rutgers	<u>801</u>	0.24	0.4	<u>513</u>	<u>0</u>
Totals	8896			3452	5614

\* 638 + 1279 - 801 = 1116, See Figure 22, East "H" Street

\*\* 45 MPH. The rest are assumed to be 35 MPH.

average residential energy consumption in the Sweetwater area.<sup>13</sup> The electricity will only result in emissions at the power plant, not at the project site, and therefore will be included in the next section.

The other source of pollution is fireplaces. A worst case assumption was made that all the 768 single family dwellings have fireplaces and the occupants consume 0.5 cord a year.

Table 9 lists the air emission factors used to derive the total emission figures. The rates are based on EPA figures.

The calculated air emissions within and in the vicinity of the project are summarized in Table 10.

#### Total Increase in Emissions in San Diego County

The impact of the project on the overall San Diego County atmospheric emissions can be computed from the December 1975 Emissions Inventory for San Diego County as compiled by the Air Pollution Control District and Air Quality Planning Team. An assumption is made that the population will increase in San Diego County as a direct result of this project. The inventory for motor vehicles was projected to 1985 based on EPA estimates of reduced emissions rates. The emissions were then divided by the number of housing units at the time of the inventory to obtain an emissions-per-dwelling-unit figure. These figures multiplied by the 824 dwelling units in the project provide the increase in emissions that can be expected.

Power plant emissions are based on the 776 KWH/month usage, 0.0977 MWH/MBTU average San Diego Gas and Electric power plant efficiency, and fuel oil containing 0.34% sulfur by weight. Those emissions that are not identified with emissions from the site itself or the power plant have been combined into a miscellaneous category which principally represents increased emissions from groups providing services, goods, and employment to the project's occupants and other generative sources. The estimates for sulfur oxides are rough estimates because the extent of natural gas curtailments in 1985 is unknown. The data are summarized in Table 11.

Assuming 737,400 occupied dwelling units in San Diego County and 7.3% vacancy rate,<sup>14</sup> this project will represent approximately a 0.10% total impact on San Diego County air emissions.

#### Ambient Air Quality Impact

Ambient air quality in the vicinity of the project was computed using the Gaussian plume model and variations thereof to account for the extent of the source. In the vicinity of the

Table 9. Air Emission Factors

- grams (g)/unit -

	<u>Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Total Suspended Particulates</u>	<u>Sulfur Oxides</u>
Motor Vehicles (35 MPH)	1.25 g/mi	12.5 g/mi	2.39 g/mi	0.25 g/mi	0.13 g/mi
Motor Vehicles (45 MPH)	1.09 g/mi	9.6 g/mi	2.56 g/mi	0.25 g/mi	0.13 g/mi
Motor Vehicles (Starts)	8.68 g/trip	80.68 g/trip	N/A	N/A	N/A
Natural Gas Usage	N/A	953,000 g/therm	4,767,000 g/therm	477,000 g/therm	28,600 g/therm
Fireplaces	4490 g/cord	108,000 g/cord	908 g/cord	18,200 g/cord	N/A



Table 10. Air Emissions in and Near the Site  
in Tons Per Year

	<u>Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Total Suspended Particulates</u>	<u>Sulfur Dioxides</u>
Vehicles	20.2	188	10.2	1.02	0.533
Natural Gas Usage	--	0.8	3.8	0.38	0.023
Fireplaces	<u>1.9</u>	<u>45.6</u>	<u>0.4</u>	<u>7.60</u>	<u>--</u>
Totals	22.1	234	14.4	9.00	0.556

Table 11. Emissions Increase in San Diego County in Tons Per Year

	<u>Hydrocarbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Total Suspended Particulates</u>	<u>Sulfur Oxides</u>
Site Emissions*	22.1	234	14.4	9.00	0.556
Power Plant	--	1.3	9.3	2.62	0.140
Miscellaneous	<u>90.0</u>	<u>65</u>	<u>63.3</u>	<u>39.2</u>	<u>18.3</u>
Totals**	113.0	300	87.0	50.8	19.0

\* Calculated in Table 10

\*\* Calculated from the adjusted emissions inventory for the San Diego Air Basin

project, only vertical dispersion of pollutants can occur. At further distances, the project resembles a point source. Assuming an average "D" class stability and a wind speed of 6.7 knots,<sup>15</sup> the average concentration outside the boundaries of the development can be approximated using the EPA techniques by the following equations:

$$\bar{X} = 0.0525 \frac{Q}{x^{1.75}} \quad (x > 6 \text{ miles})$$

$$\bar{X} = 0.0365 Q [(x + 0.503)^{0.25} - (x - 0.503)^{0.25}] \quad (x < 6 \text{ miles})$$

where  $\bar{X}$  is the average concentration in micrograms per cubic meter, Q is the emissions in tons per year, and x is the distance from the center of the project in miles. For the pollutants considered in the above sections, these concentrations are shown in Table 12. The reported values are long term averages. Short term averages may be as much as 36 times as great. The data in Table 12 should be compared to the standards in Table 13.

Table 12. Ambient Air Quality at Various Distances in Micrograms per Cubic Meter

<u>Distance From Center (Miles)</u>	<u>Hydro-carbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Total Suspended Particulates</u>	<u>Sulfur Oxides</u>
0.5	0.663	7.02	0.432	0.270	0.0167
1.0	0.210	2.22	0.137	0.0855	0.0053
2.0	0.122	1.29	0.079	0.0495	0.0031
4.0	0.071	0.75	0.046	0.0288	0.0018
7.0	0.038	0.40	0.024	0.0153	0.0009
10.0	0.021	0.22	0.013	0.0084	0.0005

Table 13. Ambient Air Quality Standards  
in Micrograms Per Cubic Meter

<u>Average Time</u>	<u>Hydro-carbons</u>	<u>Carbon Monoxide</u>	<u>Nitrogen Oxides</u>	<u>Total Suspended Particulates</u>	<u>Sulfur Dioxides</u>
Year	--	--	100*	60 <sup>++</sup>	80*
24 hours	--	--	--	100 <sup>+</sup>	105 <sup>+</sup>
12 hours	--	11000 <sup>+</sup>	--	--	--
8 hours	--	10000*	--	--	--
3 hours	160*	--	--	--	1305*
1 hour	--	40000*	470 <sup>+</sup>	--	1305 <sup>+</sup>

\* Federal standard

+ California standard

++ Geometric Mean

It is clear that the estimated concentrations are well below the standards. At the boundary of the project the largest impact will occur. Nitrogen oxides and total suspended particulates each approach 0.5% of the annual standards. Under very persistent wind conditions, where the calculated values should be multiplied by 36, the nitrogen oxide levels can be 3.3% of the standard, although even then Table 5-1 of Reference 12 suggests 2.0% of the standard is more realistic.

### Construction

Air quality impact during construction would occur during land clearing, excavation, and building construction. Fugitive dust would be the main pollutant.

Based on field measurements of suspended dust emissions, an approximate emissions factor of 1.2 tons per acre of construction per month results. This extrapolates to 9360 tons per year if the entire project were being developed at once.

A more realistic figure would be 1% to 10% of this, because the project is to be built in stages and will occur over several years. Watering will be performed to reduce the levels of dust by a further 50%.

### 3.7.3 Mitigation

The Regional Air Quality Strategy Report of September, 1978, suggests several tactics which might be employed by citizens and governments to reduce air pollution in the San Diego area. Those which are most applicable to the project are T-2, Expanded Ridesharing and T-7 Encourage Bicycle Travel.

Mitigation of air pollution resulting from vehicle trips can be reduced by implementation of these two plans. Although the site is at some distance from urban centers, through the Commuter Computer, residents of the project may find others in the vicinity with whom to share rides. This mitigation depends on the willingness of the new residents to adopt this tactic and incentives which may promote this willingness such as increases in the price of gasoline, preferential parking for ridesharers, carpool reductions on the Coronado Bridge, etc.

The terrain, although hilly, is suitable for bicycle travel, especially for students' trips to and from school. Shopping facilities are not at distances which encourage bicycling. Bicycling, as an alternative to commuter travel, has little possibility of success. Pedestrian paths to the High School from Baylor Avenue in Phase I would somewhat reduce car trips.

Implementation of T-1 (Regional Land Use Patterns) as suggested by the Regional Air Quality Strategy Report cannot be proposed as a mitigating measure because to do so would require that the project not be implemented in this location. This tactic is dependent on an express bus transit system which in this area would probably prove not to be economically viable.

The low levels of air pollution generated do not warrant other specific mitigation measures. The above suggested measures must be implemented by the new residents and unless governmental support in the way of transit subsidies is implemented, these measures may not be completely successful in reducing air pollution. It is noted that if only a few of the dwelling units had fireplaces, a major contributor to carbon monoxide and total suspended particulates would be significantly reduced.

### 3.7.4 Analysis of Significance

Because the estimated concentrations of pollutants is low, the impact is considered insignificant or minimal.

### 3.8 WATER QUALITY

#### 3.8.1 Present Setting

##### Sewage

The project will be served by the Metropolitan Interceptor Sewerage System and the Spring Valley Truck and Interceptor lines. The sewage will be treated at the San Diego Metropolitan Waste Water Treatment Facility on Point Loma. Only primary treatment is performed before it is dumped without being disinfected into the ocean outfall and thence into the Pacific Ocean approximately 11,500 feet offshore at an ocean depth of about 200 feet.

The current average daily flow through the treatment plant is about 110-115 million gallons per day (MGD). CPO projected sewage flows are 145 MGD in 1985; 162 MGD in 1990 and 194 MGD in 2000.<sup>16</sup> The San Diego Metropolitan Sewerage System is approaching its design capacity. Although the City of San Diego has plans to upgrade its treatment plant and increase capacity to meet the projected flows reported above, it will take several years before these improvements are implemented. However, this project will be built in stages and is not realistically expected to be completed until about 1985 which will help alleviate some of the project's impact.

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##### Potable Water

Drinking water will be obtained from the Otay Municipal Water District which provides standard water treatment, as necessary, to achieve the Federal drinking water standards.

##### Storm Runoff

Precipitation occurs mostly in the winter months from November through February or March. The annual mean is 10.40 inches while the greatest monthly and annual precipitation has been 6.26 and 24.93 inches respectively.

The soils in the area, as discussed in the Hydrology section of this report, are highly impervious. As a consequence, silt in runoff waters is relatively low. However, the organic content is high because animals such as horses are kept by nearby residents. Animal droppings, as well as feed, are a prime cause of the poor storm water quality.

#### 3.8.2 Impact

##### Sewage

Quantities of sewage were estimated based on average values

of waste flow generation for residences and apartments. The calculation is summarized in Table 14.

Table 14. Calculation of Sewage Flow from the Project

<u>Type</u>	<u>Sewage<sup>17</sup> Gal/Person/Day</u>	<u>No. People Per Dwelling<sup>18</sup> Unit</u>	<u>No. Dwelling Units</u>	<u>Sewage Thousand Gal/Day</u>
Single family dwellings	80	4	768	246
Multiple family dwellings (apartments)	60	3	56	<u>10</u>
			Total	256

Since the 1985 projected sewage flow for the metropolitan area is 145 MGD, the impact of the project on the system will be less than 0.2%.

The quality of the sewage is entirely suitable for direct discharge into the sewerage system. No adverse impact on the primary (or secondary if implemented in the future) treatment plant at Point Loma will occur as long as plant capacity is not exceeded.

#### Potable Water

Water use was estimated as the quantity of sewage generated plus 50% which is used for private watering and consumption. In addition, another 45% is assumed to be consumed for public open space watering of parks and recreation areas within the development. Thus, the total water consumption in 1985 is estimated at about 500 thousand gallons per day.

Although ground water is pumped from wells for human consumption in the area of the golf course, distance of the project from these wells probably precludes contamination of the groundwater by sewage or runoff.

#### Storm Runoff

Pavement, other impervious surfaces, and extensive landscaping on new slopes should result in less silt (suspended solids) in the runoff waters than presently exists. However, extensive equestrian activities may contribute to both high organic and bacterial (coliform) content of runoff as is already the case downstream of the project.

### 3.8.3 Mitigation

#### Sewage and Potable Water

There is no adverse impact upon the systems, however, any reduction in water use would be beneficial. With standard water conservation procedures, significant water and wastewater

reductions are possible. Low volume toilets are now mandatory in new residential construction. Other devices include plastic orifice inserts for showers, use of front-loading washing machines versus top-loading machines, and aerator faucets. City code presently requires pressure regulators in residential units which reduces water use. Based on these considerations, reductions in water and sewage generation are shown in Table 15.

Table 15. Possible Reduction in Water and Sewage Generation

<u>Device</u>	<u>Reduction</u>	<u>Reduced Gal/Person/Day</u>
Bathing	60%	10
Laundry and dishes	14 gal/load	9
Drinking and cooking	--	<u>4</u>
		23

Instituting these conservation measures throughout the project would result in a 29% overall reduction in sewage generated and a 22% reduction in water use.

#### Storm Runoff

If extensive landscaping is placed on bare slopes and if streets are regularly swept, suspended solids will be minimized. Organic matter can be minimized by frequent and thorough maintenance of all equestrian activity areas. (This should also be done to control insect pests such as flies.)

Runoff during construction would have to be controlled in order to prevent potential severe siltation problems. This could be accomplished by a variety of standard engineering techniques or by restricting grading to the dry season.

#### 3.8.4 Evaluation of Significance

Overall, the project will have little impact on water quality from either a sewage or storm runoff perspective. This is due primarily to its relatively small size when compared to the Metro Sewage System and to the runoff in the Sweetwater River system (see Section 3.4 regarding runoff volumes).



## 3.9 MOBILE NOISE SOURCES 19

### 3.9.1 Project Setting

The proposed project is located in a relatively quiet area where noise levels are 50 dB(A) Leq. The primary noise source is traffic noise on Otay Lakes Road which carries 19,000 average daily trips. At a distance of 50 feet from the centerline of the nearest traffic lane of Otay Lakes Road, the present Community Noise Equivalent Level (CNEL) is 68 dB(A). Aircraft noise at the site is considered insignificant. Noise levels at the adjoining Bonita Vista High School are difficult to assess because of variations in activities taking place on the playing fields. A full noise report is in the Appendix.

### 3.9.2 Impact

Noise contours shown on Figure 13 indicate that the apartments next to Otay Lakes Road will be affected by noise levels in excess of 60 dB(A) through most of the parcel. Figure 14 indicates that 21 house pads in Phase i will be impacted by noise levels from "H" Street in excess of 60 dB(A) CNEL.

Aircraft noise is not expected to affect the completed project as the existent levels are low. Noise impact of children playing is a subjective judgment.

Although future impacts are difficult to assess because plans for the major roads in the area are uncertain, some generalizations can be made. It is anticipated that the traffic on Otay Lakes Road will remain roughly the same as there are no plans to expand Southwestern College which is already operating at capacity and generates the majority of the rush hour traffic. As the area grows in population, the number of connector roads will also increase, thus, sharing the load with Otay Lakes Road. Thus, noise levels at Phase vi will remain at the 1978 levels through 1995. The extension of "H" Street to connect Interstate 805 and a prime arterial road in Proctor Valley has the potential of creating a noise impact which will be significant as shown on Figure 14. Increased traffic from the project will increase noise levels approximately 1 dB(A) on Baylor, Dartmouth, and Auburn Streets and 3 dB(A) on "H" Street

### 3.9.3 Mitigation

To quote the noise report in the Appendix:

- a) "Lots 134 through 143 and lots 186 to 191 in the proposed phase i of the development which lie along H Street should be protected against noise generated

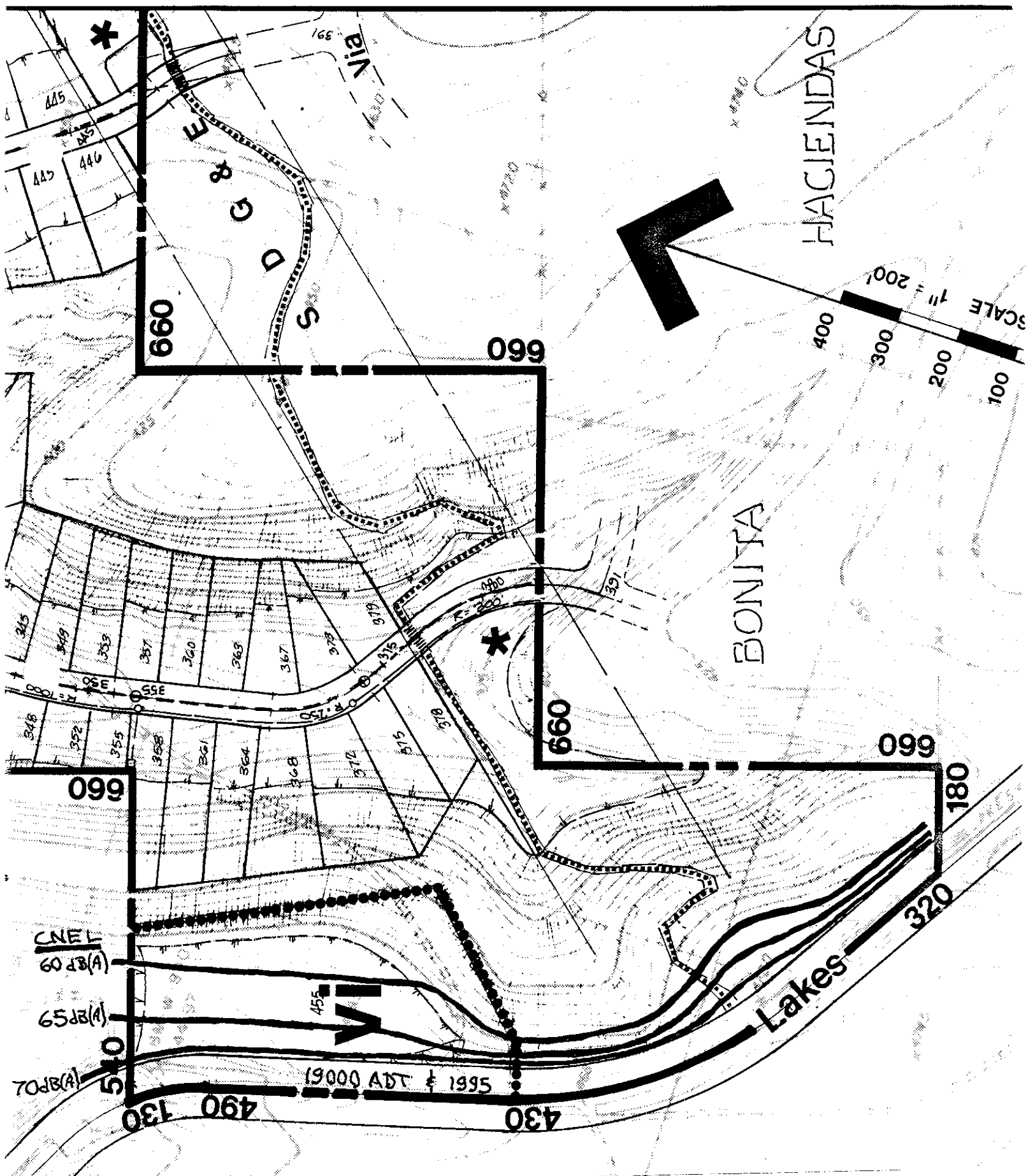


Figure 13. 1978 and 1995 Noise Contours along Otay Lakes Road.

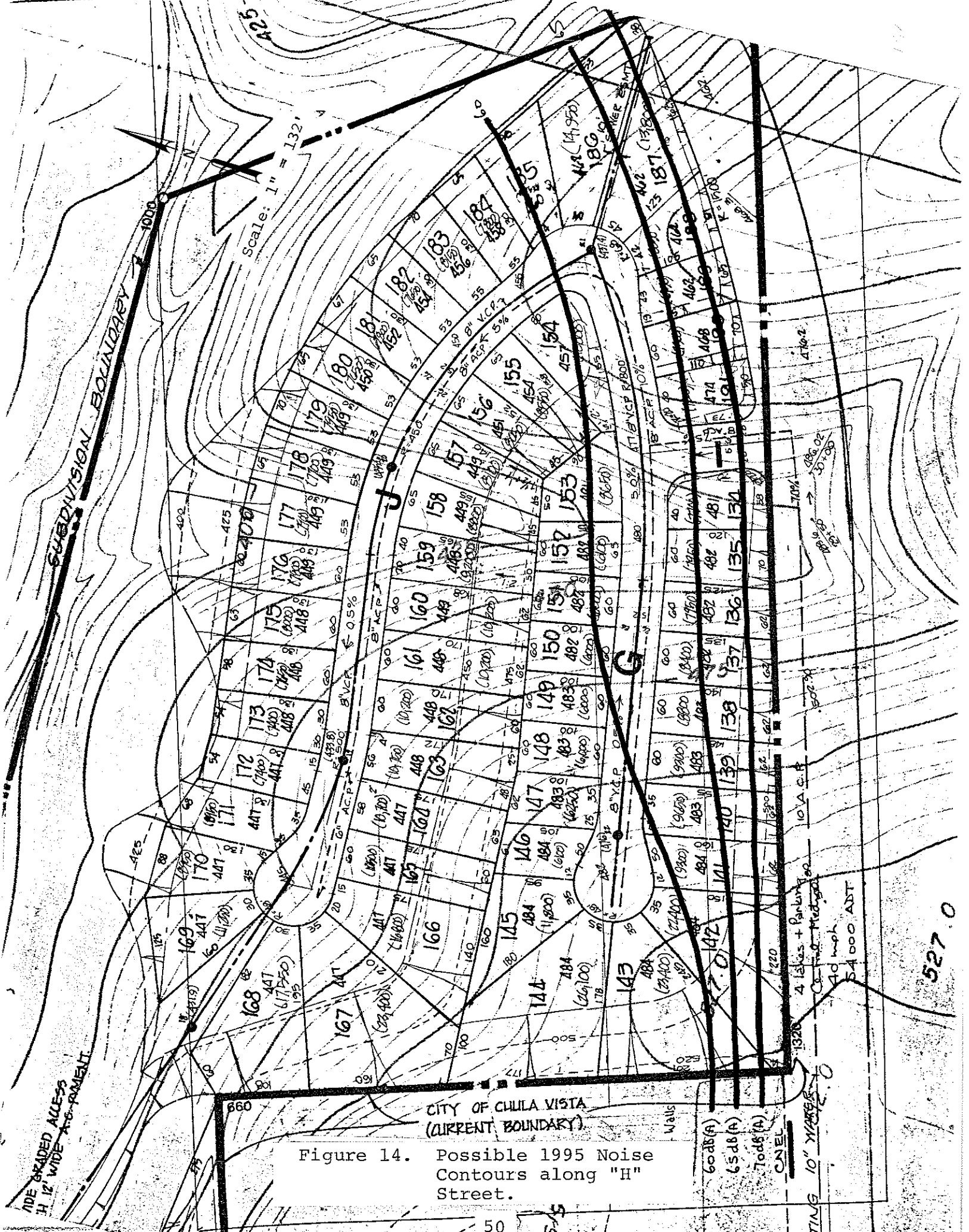


Figure 14. Possible 1995 Noise Contours along "H" Street.

CITY OF CHULA VISTA  
(CURRENT BOUNDARY)

60dB(A)  
65dB(A)  
70dB(A)  
CNEL

4 lanes + parking  
City of Medford  
40 mph  
54,000 ADT

527.0

by the possible expansion of the street to major connector status. The houses do not face on to H Street and, thus, a continuous block wall, 6 feet high, will provide the necessary shielding. The wall should be extended around the corners into the street labeled "I" on the Tentative Map". The City will require a noise barrier along the rear property line of all of the above lots.

- b) "Lots 1 through 11 along the extension of Baylor Avenue should be protected from playing field noise by a 6-foot high block wall".
- c) "Some units in the proposed phase vi will require protection from traffic noise along Otay Lakes Road. It is uncertain at this time what form these mitigating measures will take but they will be detailed in the specific plan". City of Chula Vista Development Regulations require that noise levels in the interior of the apartments be less than 45 dB(A).
- d) The City requires noise barriers along any 80-foot right-of-way road and, thus, a barrier will be constructed along the west side of Corral Canyon Road.
- e) No mitigation is suggested off-site because the project-caused noise impact is considered minimal.

#### 3.9.4 Analysis of Significance

If the mitigating measures are adopted as part of the project, noise impacts which may be significant will be reduced to insignificance.

#### 3.10 STATIONARY NOISE SOURCES

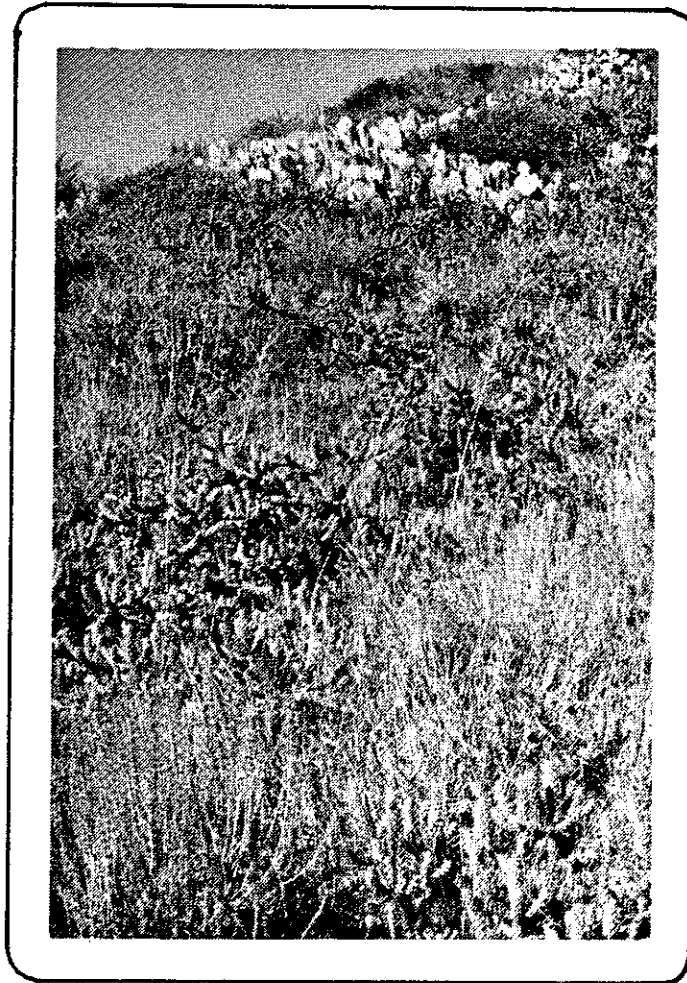
With the exception of the Bonita Vista High School playing fields, there are no stationary noise sources in the area. These have been discussed in Section 3.9.

#### 3.11 BIOLOGICAL RESOURCES

20

##### 3.11.1 Present Setting

The 650-acre project site supports a number of biological resources. Natural habitat present on the site is dominated by Coastal Sage Scrub vegetation which varies with slopes, soil type and land-use history. Specific habitat types include sage scrub, cholla thickets (Figure 15), annual grassland,



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Figure 15.

PHOTOGRAPH SHOWING MARITIME DESERT SCRUB  
CHOLLA THICKET ON SOUTH-ASPECT SLOPE

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dense stands of sumac and toyon, dry-sand stream beds, and ruderal weed vegetation on abandoned cultivated fields (Figure 16). These resources are fully described in the appended Biology Report.

### 3.11.2 Impacts

Botanical observations confirmed the presence of ten sensitive plant species, and indicated a possibility of the on-site occurrence of at least five other rare and/or endangered species which were not observed due to seasonal factors. The most significant rare and endangered plant species observed include Snake Cholla (Opuntia parryi serpentina) and Otay Tarweed (Hemizonia conjugans). A large and unusual stand of Cleveland Sage (Salvia clevelandii) exists near the site's northeast corner. In general, project plans as they are currently drawn provide for the protection of a significant proportion of the on-site rare plant populations in protective easements. All on-site rare plant populations are partially represented within the proposed easements. However, unavoidable impacts will result from the direct removal of 330 acres of habitat.

Zoological observations indicate that project implementation will adversely impact several animal species. Impacts would be adverse both regionally and locally for White-Tailed Kite and Cooper's Hawk species. The project would further deplete the already locally rare Cactus Wren. Local and regional impacts on American Kestrel, Bewick's Wren, Loggerhead Shrike and Marsh Hawk would not be significant. Species expected to use the site and which could be adversely impacted regionally and locally include California Legless Lizard, Orange-throated Whiptail Lizard, Coast Horned Lizard, Golden Eagle, and Grasshopper Sparrow. Zoological impact will result primarily from loss of habitat, disturbance by increased human and domestic pet population densities, and loss of habitat access to natural areas to the east and west.

### 3.11.3 Mitigation\*

1. The five-acre Cleveland Sage area should be preserved by realignment of the proposed road northward, and the elimination of the lots along the south side of the road.
2. The relative non-severity of impacts discussed in Section VI of the Biology report in the Appendix depend upon the long-term success of maintaining minimum disturbance in the management of the open space areas. To this end, brushing and clearing restrictions should be written into the easement agreement, with maximum fire-break width specified in terms of distance from residential structures.

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\* Quoted from the appended Biology Report

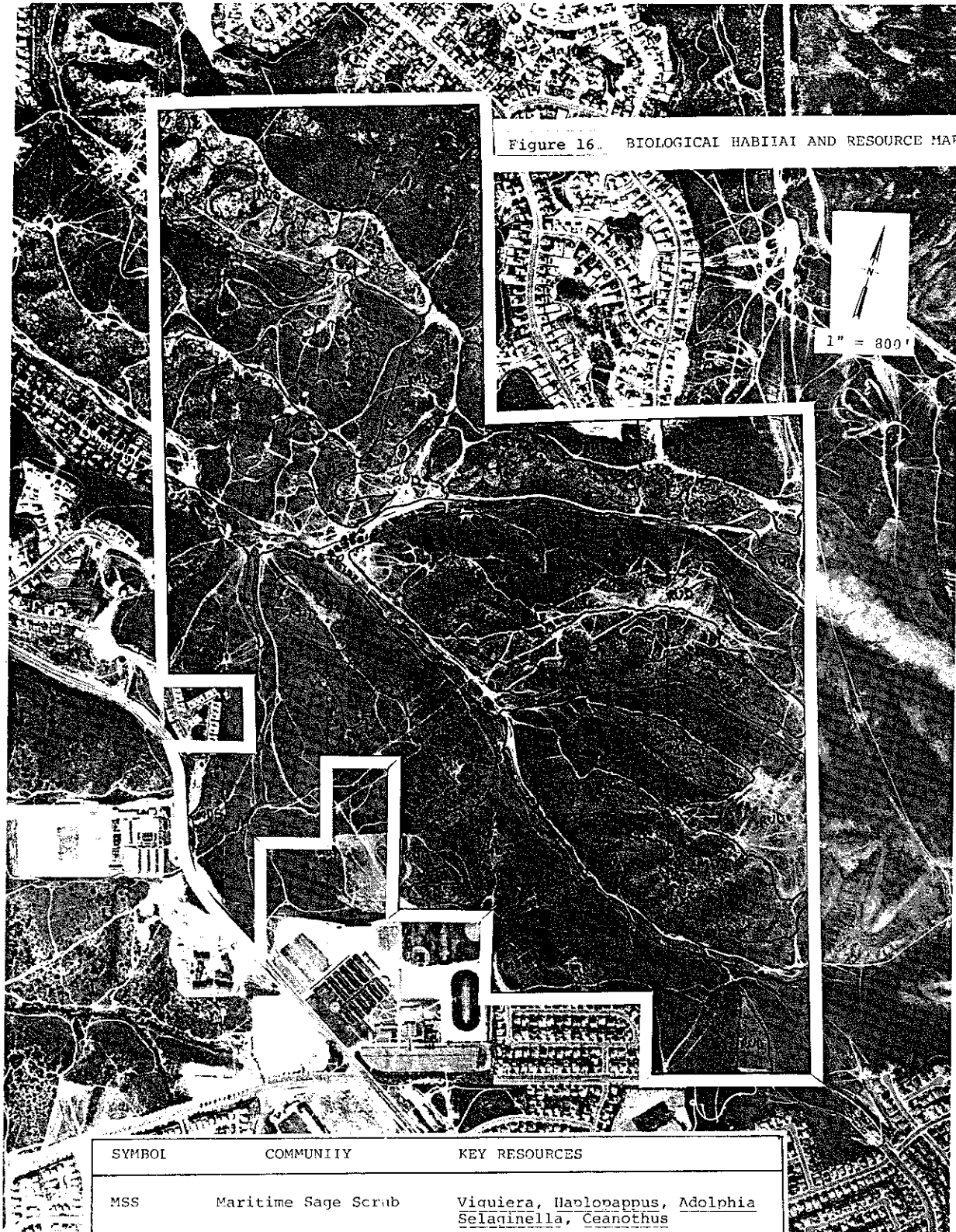


Figure 16. BIOLOGICAL HABITAT AND RESOURCE MAP

SYMBOL	COMMUNITY	KEY RESOURCES
MSS	Maritime Sage Scrub	<u>Viguiera</u> , <u>Haemolappus</u> , <u>Adolphia</u> <u>Selaginella</u> , <u>Ceanothus</u>
MDS	Maritime Desert Scrub	<u>Opuntia</u> , <u>Ferocactus</u> , Cactus Wren
AG	Annual Grassland	<u>Hemizonia</u> , Raptorial hunting area
RUD	Ruderal/Disturbed	<u>Hemizonia</u> , Raptorial hunting area
SIR	Temporal Streambed	<u>Artemesia palmeri</u> , seasonal faunal water source.
CLS	Cleveland Sage Scrub	<u>Salvia clevelandi</u>



3. All manufactured slopes should be revegetated with native plant species such as Artemesia californica, Eriogonum fasciculatum, Simmondsia chinensis, Rhus ovata, Heteromeles arbutifolia, and Opuntia proliferata. The most effective means of implementing this measure would probably consist of hydromulch spraying of native seed available through several sources with a cover crop of annual grasses to retard early erosion. Economic transplantation and seedling culture methods are available for Opuntia and Simmondsia respectfully.
4. Equestrian and hiking trails should be clearly marked to avoid a proliferation of incidental trails through sensitive habitat areas.
5. Grading procedures should be planned to avoid unnecessary disturbance of open-space areas.

#### 3.11.4 Analysis of Significance

In general terms relative to other undeveloped areas in the San Diego County coastal scrub vegetation unit, biological resources on the site are rated as follows:

1. Ecological value, in ecosystem function: Moderate
2. Rarity and endangerment of community components: Moderate-High
3. Scientific value and research potential: Moderate-High
4. Human aesthetic, educational and recreational value: Moderate.

Biological resources present on the site represent habitat and species communities which are rare in the United States. Project implementation would have a potentially significant adverse impact on those resources. Mitigation measures offered by the plan as proposed would be adequate to protect the most significant of the on-site resources, subject to additional requirements of (1) permanent protection of open-space habitats; (2) project alteration to protect the Cleveland Sage community; and (3) grading operation planning to avoid unnecessary impacts. Special significance must be assigned to the Snake Cholla, Otay Tarweed, and Cleveland Sage populations.

The appended Biology Survey report addresses all issues raised in the California Department of Fish and Game letter (in the Appendix) and is summarized in this section (3.11). Sections IVA, B, C, specifically address item 1, sections IVD, V, VI address item 2, and section VII addresses item 3.



Although a 100-year flood level for the Long Canyon drainage system has been defined, vegetation and communities within that area should not be defined as wetland or riparian habitat. Indicator species for riparian habitat for the project site locale include Salix sp., Typha sp., Baccharis glutinosa and others which are not found on the subject site. It is felt that no part of the subject site falls within California Fish and Game Code Section 1603 jurisdiction.

### 3.12 ARCHAEOLOGY 21

#### 3.12.1 Present Setting

A complete and intensive field survey for prehistoric and historic sites and features was conducted within the project site. Three prehistoric sites were located: SDi 4891, a previously impacted, light density, surface scatter of flake tool waste situated along the SDG&E transmission corridor; and SDi 5829 and 5830, two medium density tool and flake scatters with apparent (shallow) depth, situated on mesa tops along the northern boundary, that may represent San Dieguito (ca. 10,000-7,500 B.P.) lithic workshops. SDi 4891 is considered to be of low potential informational value, but SDi 5829 and 5830 are considered to be of major potential informational significance. Test excavations were conducted on SDi-5829 and SDi-5830. The results of these excavations indicate that there is cultural material below the surface. Test trenches on the valley floor yielded no artifactual materials.

#### 3.12.2 Impacts

SDi 4891 may be impacted indirectly, due to growth-inducing development that may cause informal undocumented collection of the remaining materials.

SDi 5829 and 5830 will be totally destroyed by construction unless a project redesign is implemented. Also, project redesign that eliminates direct impacts would not eliminate indirect impacts from growth inducement.

#### 3.12.3 Mitigation

Impacts to all three sites may be mitigated through a program of surface collection and subsurface excavation to retrieve buried materials.

Technical documentation, discussion and recommendations are presented as an Appendix, and as an Addendum to the Appendix.

#### 3.12.4 Evaluation of Significance

All archaeological resources are considered significant. If they cannot be preserved, then a data collection program should be instituted which would maximize the scientific and cultural value of the resources. Sites SDi 5929 and SDi 5930 are significant and should be mitigated as described in the detailed report in the Appendix to this EIR.

#### 3.13 PALEONTOLOGICAL RESOURCES

During the geological reconnaissance and geologic investigation no fossils were observed. A review of the geological literature indicates the lack of fossils in the project area.

#### 3.14 HISTORICAL RESOURCES

There are no historical resources on the site and none nearby.

#### 3.15 LAND USES

##### 3.15.1 Present Setting

The site is located north of College Estates and south of Sunnyside and southeast of Bonita. As an area on the urban fringes, the site, along with the eastern hills, is becoming a bedroom community where large lots permit the maintenance of home vegetable gardens and horses. Dry farming is the only past use of the site, and this use has not been actively pursued for several years.

The site is surrounded on three sides by developments or by vacant land which is slated for development. This is shown in Figures 2 and 12. The site adjoins McMillin's Bonita Highlands on the northeast and north. McMillin's Bonita Glen adjoins the northwest corner. Bonita Hills Ranch Unit 1 located west of the site has been recently completed and Units 2 and 3 are under construction. Older single family dwellings are located on Acacia Street. Single family dwellings are also located on the hills south of Acacia Street. Condominiums are located on Otay Lakes Road adjoining the site on the southwest. Bonita Vista High School is adjacent to the site on the south and, between it and the condominiums, a single family dwelling subdivision (Bonita Haciendas) has been recently approved by the City of Chula Vista. Southwestern College Estates adjoins the site on the southeast. To the east is vacant land; however, a tentative map has been submitted to the County for a single family subdivision (Rancho Bonita) which is planned for construction at the northeast corner of the site in Proctor Valley.

## County

The Sweetwater Community Plan designates the site as rural residential which permits 1, 2 or 4-acre lots depending on slope (Figure 17). Current County zoning is T(2) (Figures 18a). The Growth Management Plan considers the site to be in the 1995 future urban development area. The site is adjacent on the east to an area designated by the Growth Management Plan for Estate Development and adjoins an area on the west scheduled for current urban development. (See Alternatives, Section 5.0, for comparison).

## City

The Chula Vista General Plan (Figure 19) designates the majority of the site for low-density residential development (1-3 dwelling units per acre). That portion of the site which will be in Phase i and Phase vi is designated medium density residential which permits 4-12 dwelling units per acre.

The General Development Plan for the site indicates that 593 acres are designated for .62 dwelling units per acre, and all of the remaining acreage, with the exception of Phase vi, are designated for four dwelling units per acre (Figure 20). Phase vi may be developed at a density of ten dwelling units per acre. City of Chula Vista zoning is indicated in Figure 18b. Pre-annexation zoning of the project by the City of Chula Vista is PC, Planned Community. The purpose of PC zoning is to "...provide for the orderly preplanning and long term development of large tracts of land which may contain a variety of land uses."

### 3.15.2 Impact

Development will result in an overall density of 1.27 d.u./acre. The density by phases is shown in Table 16.

Table 16. Phase Densities

<u>Phase</u>	<u>DU/Acre</u>
i	2.39
ii	1.46
iii	1.71
iv	.80
v	.84
vi	14.0

## County

The overall density is higher than that designated by the Sweetwater Community Plan. Excluding Phases i and vi, the overall density is 1.11 dwelling units per acre. However,

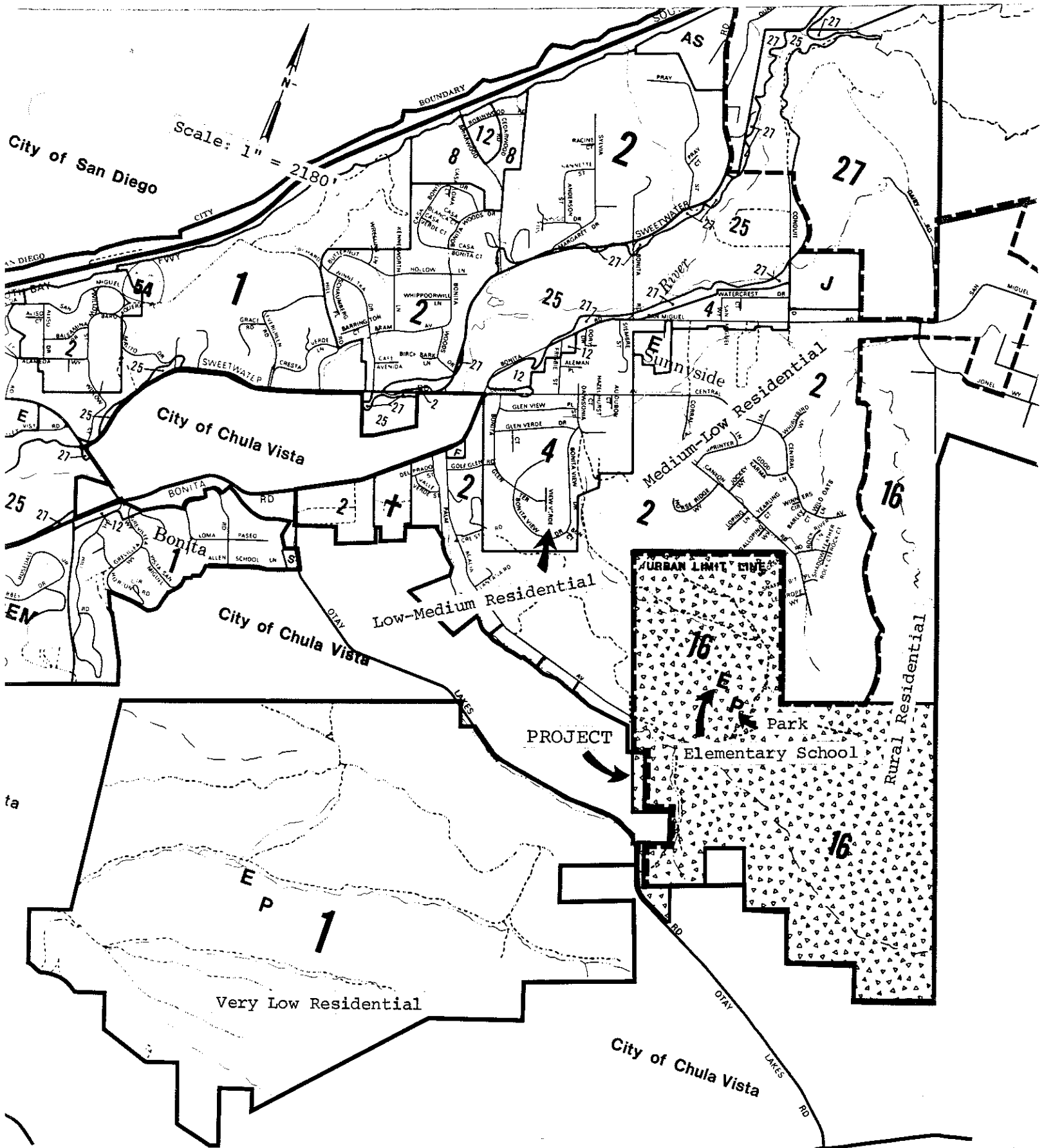


Figure 17. Sweetwater Community Plan Map showing land use

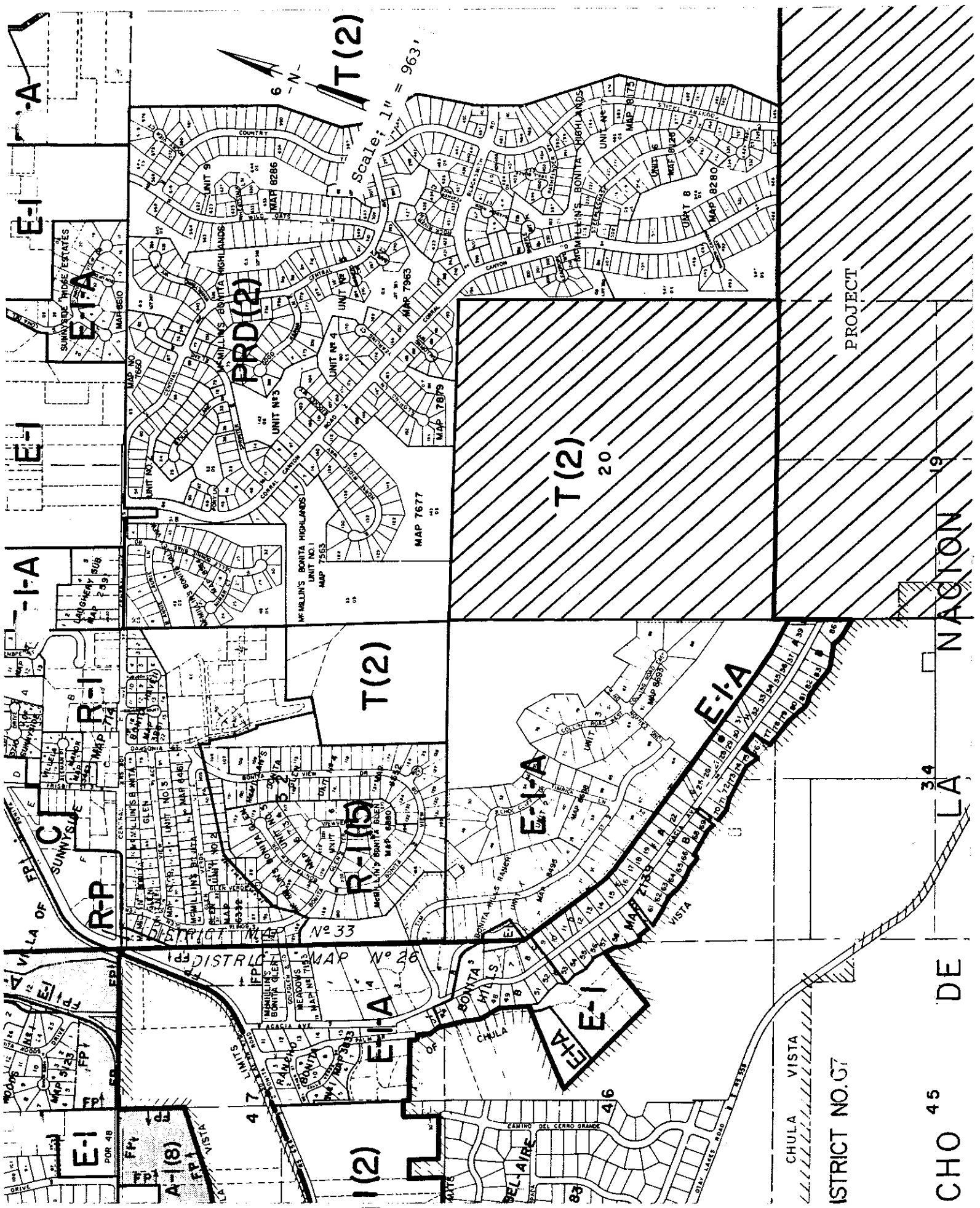


Figure 18a. Zoning Map for San Diego County.

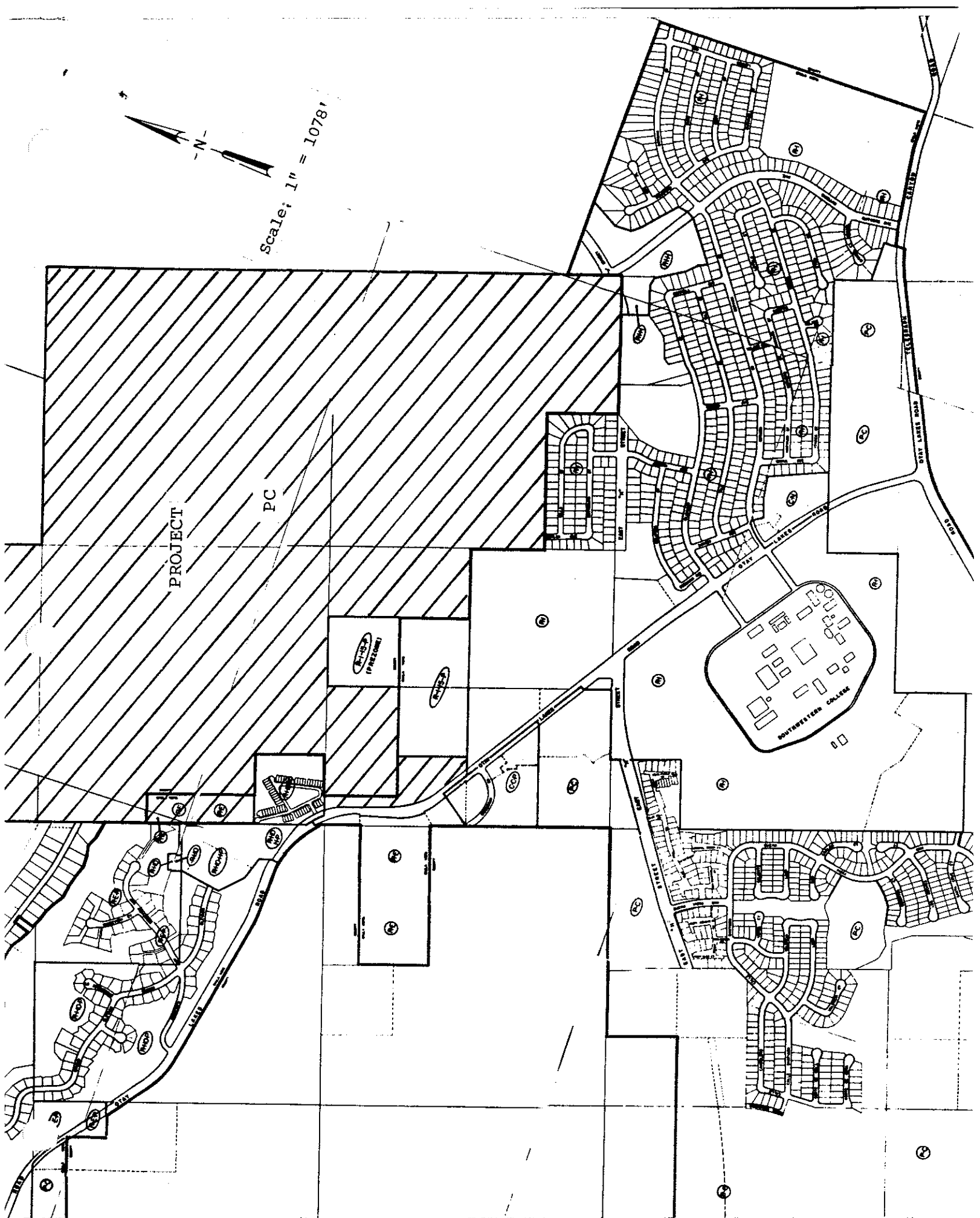


Figure 18b. Zoning Map for the City of Chula Vista.

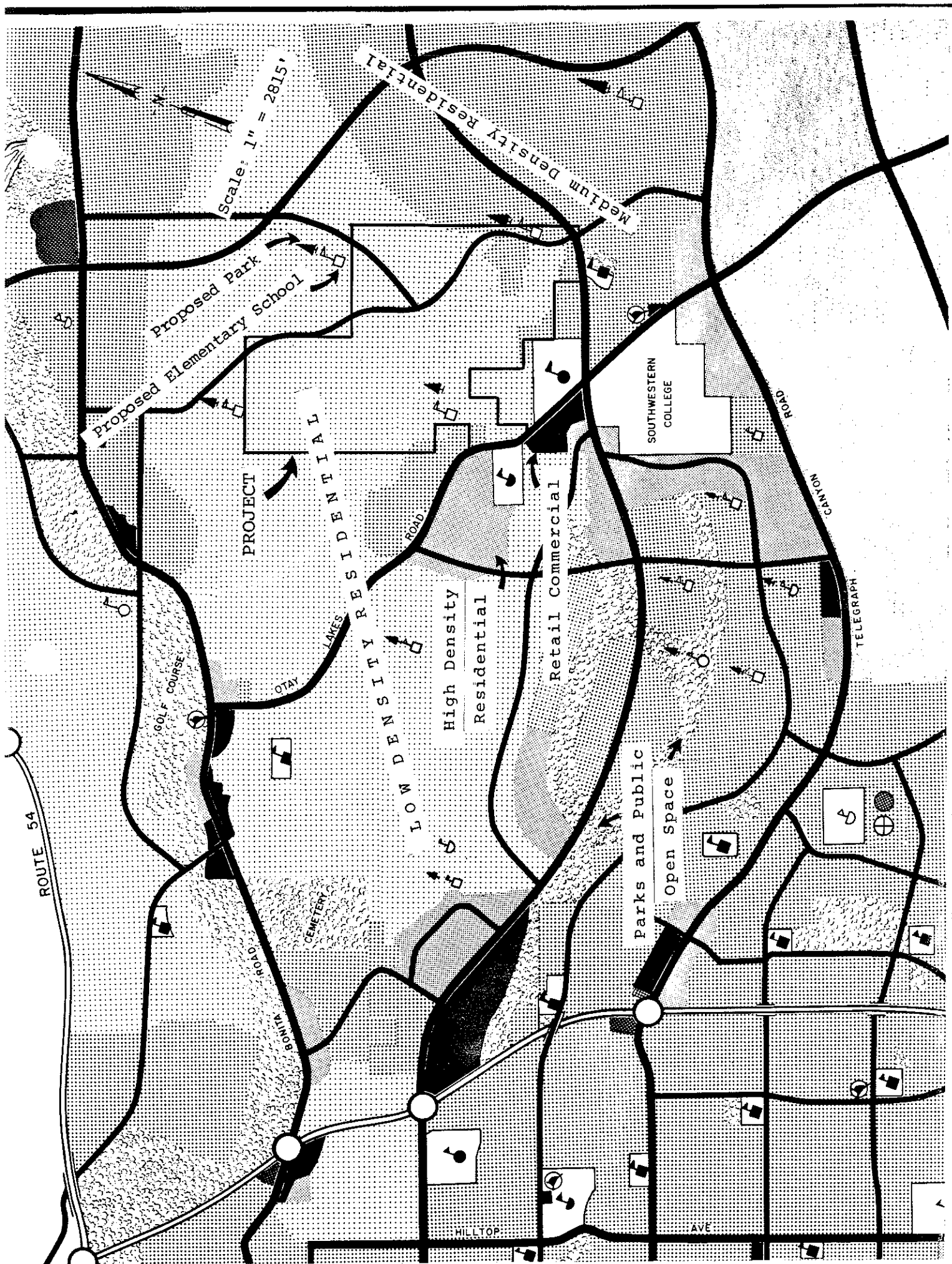


Figure 19. Chula Vista General Plan.

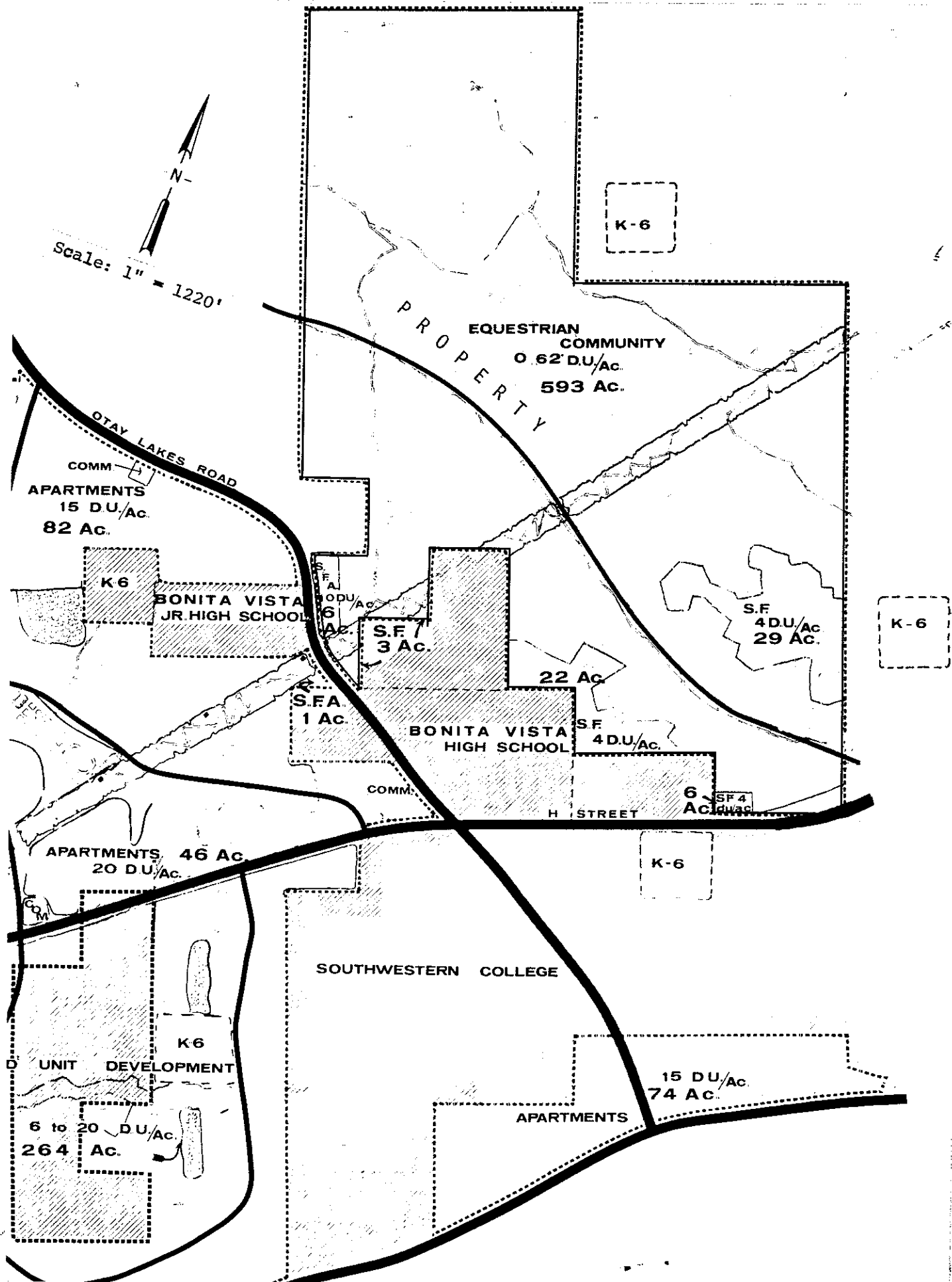


Figure 20. Existing General Development Plan Map.



nearly 50% of the site encompassing most of the steep slopes is to be in dedicated open space, which is one of the objectives of the Sweetwater Community Plan. The presence of horse trails and equestrian centers also fulfills the objectives of the Recreation Element of the plan as does the park site. Phase i is not planned as an equestrian-oriented development, but rather to more closely resemble the houses adjacent to it on the south. Thus, this area will be a buffer between the smaller lots on the south and the larger lots in the northern portion of the site. Phase vi is planned to be compatible with the land uses which adjoin it and, as it is located on Otay Lakes Road, this use as apartments appears appropriate.

According to the Growth Management Plan, the site is located in a pocket of land between designated current urban development on the north and west and future urban development on the east. The project itself does not conform to the Growth Management Plan. It is being planned for development at a density which is less than that of the current urban development designations and approximately equal to that of the estate development.

#### City

The project is in conformance with the Chula Vista General Plan. According to the existing General Development Plan, development of this area would result in 656 dwelling units. Phase iv is in conformance with this Plan. As noted above, that portion of the site designated as equestrian community will result in an overall density of 1.11 du/acre. Therefore, this portion of the site will require a Sectional Area Plan in order to implement the project.

#### 3.15.3 Mitigation

Because Phase vi is in conformance with the General Development Plan of Chula Vista, no mitigation is suggested for this area. Also because the site incorporates a school site, a park site, and much open space, these aspects apparently do not require mitigation. Mitigation of the non-conformance of Phases i through v could include development at a density to conform with the General Development Plan or an amendment to the Plan. The economic viability of development at lower density, considering the amount of land which will be dedicated or open space, parks and school, has not been evaluated, because this is not the function of an EIR. It should be noted that the site was placed in the future urban development category by the Growth Management Plan "in order to encourage annexation" to adjacent cities.

The project, although not in conformance with the Sweetwater Community Plan, incorporates many of this Plan's objectives. This includes equestrian trails, preservation of

open space, and provisions for a public park and school site. Again, mitigation of this impact would involve development at lower density.

The project is compatible with adjacent land use and thus no mitigation is suggested.

#### 3.15.4. Analysis of Significance

The project is compatible with adjacent land uses. The density does not conform to that of the Sweetwater Community Plan but does conform to the Chula Vista General Plan. Therefore, the project's proposed density and use may be considered to have a moderate impact.

### 3.16 AESTHETICS

#### 3.16.1 Setting

The entire project area is essentially undisturbed and contains considerable stands of native vegetation. The ridge tops offer broad vistas of the Bonita area, San Diego Bay, and the ocean to the west and northwest. The nearby mountains can be readily seen to the east. It remains as a large open space of the northeastern edge of Chula Vista. These features are shown in Figure 12.

#### 3.16.2 Impact

General vistas will be retained as will much of the native vegetation. However, the ridges will be reduced in height by as much as 30' and be covered with houses, streets and a school. Nearly half of the site will remain as dedicated open space.

Maturation of landscaping may create a major visual impact. This eventually could be similar to many of the large stands of eucalyptus trees that occur throughout Bonita.

#### 3.16.3 Mitigation

Other than redesigning the project to greatly lessen ridge-top grading, there is little that could be done which would offer a major aesthetic improvement. However, a number of cosmetic measures could be taken which may lessen the visual impact. These might include architectural designs which blend with the terrain, use of native vegetation which may eventually match that in the adjacent undisturbed areas, use of landscaping to screen man-made features, the grading of slopes in an irregular fashion to mimic natural slopes, and minimizing intrusive structures such as chimneys, TV antennas, power poles, and street lights.

### 3.16.4 Evaluation of Significance

Development of the project will undoubtedly be a major aesthetic impact, the degree of which will be determined by the landscape and structural architecture and the subjective judgment of the viewer.

## 3.17 COMMUNITY SOCIAL FACTORS

### 3.17.1 Present Setting

The site lies in the foothills of Southern San Diego County which has experienced rapid population growth in the last few years due to eastward urban expansion. The site is located in the southern portion of Census Tract #134.04 which encompasses Sunnyside and the area south and east of Sweetwater Reservoir and for which the 1975 population was given as 6266.<sup>18</sup> This represents a 47% increase over the 1970 census population.<sup>22</sup> Although some trailer parks exist in the census tract, the majority of the housing is single-family dwellings. Data from the census tract indicate that the median income is \$18,411 and the educational level of the residents is higher than that for the average of San Diego County. Of the working heads of households, 33% commute to central San Diego, 17% work in the southern suburban areas of the County and 10% commute to North County. Population per household for single family dwellings is 3.67.

Population distribution occurring in Census Tract #134.04 as well as the estimated population increase by phases is indicated in Table 17.

### 3.17.2 Impact

As can be seen from Table 17, approximately 2965 new residents can be expected in the area as a result of the completed project. Note that the age distribution for the apartments was not done because it is estimated that this distribution will be different from that for single family dwellings. It is anticipated that the new residents will demographically resemble the current residents of the surrounding land.

Table 17. Age Characteristics of Census Tract #134.04

	<u>Phases</u>						<u>Total</u>
	<u>i</u>	<u>ii</u>	<u>iii</u>	<u>iv</u>	<u>v</u>	<u>vi*</u>	
No. DU's	191	164	149	113	151	56	824
<u>AGE</u>							
0-4	50	43	39	30	40	--	202
5-9	63	54	49	37	50	--	253
10-14	100	86	78	59	79	--	323
15-19	84	72	65	50	66	--	271
20-34	133	114	104	79	105	--	430
35-49	174	149	136	103	137	--	562
50-64	80	69	63	47	64	--	259
65+	17	15	13	10	13	--	55
Total	701	602	547	415	554	146	2965

\* Using 2.6 persons per dwelling unit

### 3.17.3 Mitigation

No mitigation is suggested.

### 3.17.4 Analysis of Significance

As development of San Diego County continues at a rapid rate, it is to be expected that population increases in areas close to urban centers will continue. The population increase on the site will take place over a number of years and therefore the impact will probably be insignificant, representing a 3.6% increase in the City's present population.

## 3.18 COMMUNITY TAX STRUCTURE

### 3.18.1 Present Setting

Proposition 13 has brought profound modifications in

property tax revenues which accrue to the incorporated cities such as Chula Vista. The City estimates that property tax revenue will be 54.4% lower than last year, resulting in property taxes which are 9% of the city's income versus 20% in fiscal year 1977-78. The City anticipates, however, that revenues received from Federal Revenue Sharing will continue to increase at a moderate rate. They acknowledge that substantial increases in revenue will be required in order to keep up with inflation; without these increases, services will have to be drastically cut.

Table 18 has been abstracted from the City of Chula Vista's Annual Budget, 1978-1979.

The methodology of calculations is as follows: those revenues and expenditures which could be determined to be related to the project were included and the figures were obtained by taking each item in the budget and dividing it by the 81,000 estimated current population of Chula Vista in order to estimate the per capita income. The following revenues were not included: in the General Fund -- Revenue from use of money and property and other revenue, Golf Course revenue, Transit Service Fund, Redevelopment of Town Centre I, and Bayfront, Bond Interest and Redemption, Open Space Districts, Anti-Recession Fund, Workers Compensation Trust Fund, Public Liability Trust Fund, Traffic Safety Fund, Community Development Block Grant, Sewer Income Fund, Park Land Acquisition and In Lieu Fund, Federal Revenue Sharing, Capital Improvement Fund, Residential Construction Tax Fund.

The following expenditures were not included: Building and Housing (see below), Golf Course Fund, Parking Meter Fund, Transit Service Fund, Redevelopment Funds, Gas Tax Funds, Debt Service Funds, Open Space District Funds, Capital Improvement Funds, Community Development Funds.

### 3.18.2 Impact

The distribution of property taxes from new developments in post-Proposition 13 annexations is unclear. At this time, it appears that cities will receive far less than anticipated with most of the revenues going into the County General Fund. It is expected that the State legislature will clarify the situation so that property taxes from newly annexed areas will be distributed to the annexing agencies in the same proportion and/or rate as that presently within the agencies' boundaries. Assuming favorable legislative action, it is anticipated that the City will receive approximately \$128,000 from the project's property taxes which will total approximately \$1,000,000.

Table 18. City Budget Data

<u>Revenues</u>		
Total - \$16,467,453		\$203. per person
<u>Source</u>	<u>Total (\$)</u>	<u>\$/Capita</u>
Property taxes	1,460,725*	18
Local Taxes	5,198,330	64
Licenses Permits	555,160	7
Fines	60,500	0.75
Revenue from other agencies	1,639,555	20
Charges for current service	468,065	6
Other revenue	363,950	4
Sewer service charges	938,000	12
Parking meter fund	58,700	0.75
Special gas tax fund	1,039,990	13
		<hr/>
	Total	145.50

<u>Expenditures</u>		
Total - \$17,317,480		\$214 per person
General government	1,791,730	22
Police	3,060,580	38
Fire	1,702,320	21
Parks	1,150,210	14
Library	735,520	9
Animal Reg.	62,410	0.77
Public Works	2,118,290	26
Sewer Service Fund	669,840	8
		<hr/>
	Total	138.77

\* According to the County tax office  
the City will receive \$1,647,727.

The following figures were generated by assuming that the 768 single family dwellings had an average value of \$125,000 and the 56 apartments were valued at \$70,000 each. At 1% of the sale price, approximately one million dollars or \$337/person would go to all property taxing agencies. The percentage split by agency is shown in Table 19 and is based upon the current split within the City.

Table 19. Property Tax Revenues \*

<u>Agency</u>	<u>%</u>	<u>\$</u>
City	12.8	128,000
County	18.6	186,000
Schools		
Chula Vista Elementary	33.6	336,000
Sweetwater High	22.3	223,000
Southwestern College	5.5	55,000
Others	<u>7.2</u>	<u>72,000</u>
Total	100.0	1,000,000

\* Based on R. Glenn's pre-Proposition 13 Tax Bill

If it is assumed that the new residents will generate additional revenues as shown in Table 18, \$377,000 or \$127 per capita would accrue to the City from such sources as the gas tax fund, sales taxes, etc. Thus, the City would receive approximately \$505,000 or \$170/capita as a result of the project. This compares to \$203/capita for the City's total income.

City expenditures for services shown in Table 18 are \$139/capita. With an anticipated income from the project of \$170/capita, the project will be a fiscal asset to the City.

In addition it is expected that approximately \$375,000 will be paid to the City of Chula Vista by the developer for processing and construction of the project. This will include fees for the Tentative Map, permits, grading, sewer and the General Development Plan modification.

### 3.18.3 Mitigation

Mitigation of the revenue problems which the City faces as a result of Proposition 13 cannot be suggested by the project proponent. Until such time as the California legislature makes suitable changes in the law, the City will be required to find other means of revenue. Should the revenues to the City occur as suggested in the Impact section, no mitigation is required.

#### 3.18.4 Analysis of Significance

According to the above analysis it is possible that the cost to the City for the new residents will be less than the revenue which the City will derive from these residents. Assuming a change in the State law, if these calculations are valid the impact is insignificant, however, the City's overall budget indicates that expenditures per person are greater than revenue per person. In this case the impact may be significant.

#### 3.19 SCHOOLS 23,24

##### 3.19.1 Present Setting

The Chula Vista City School District, Sweetwater Union High School District and Southwestern College serve the educational needs in the area.

Information on current school enrollments, capacities and costs are summarized for the elementary and high school districts in Table 20. The schools listed are those closest to the project.

##### 3.19.2 Impact

Currently, it is the policy of both the Chula Vista School District and Sweetwater Union High School District to separately assess developers for single family dwellings as follows: \$300 for a four or more bedroom house and \$250 for a three-bedroom house. Both districts also assess apartment developers on the basis of \$200 for each three or more bedroom apartment and \$100 for a two-bedroom unit. On the assumption that all of the single family dwellings will have four bedrooms and the apartments will be half two-bedroom and half three-bedroom units, the amount which will accrue to each district after construction of the development is \$238,800. These sums are not adequate to build classrooms which may cost \$4,000-\$6,000/student. According to the Sweetwater School District, local taxes account for 25% of their budget; the State pays 68% and the Federal Government contributes 7%. Local taxes this year which will accrue to this district are \$8,149,617. Chula Vista City School District states that local taxes account for 27.5% of their budget; the State pays 68.2% and the Federal Government contributes 4.3%. Local taxes which will accrue to this district are \$7,008,991. Prior to Proposition 13 education received approximately 55.3% of the property tax revenues. On the basis that the average selling price for the homes will be \$125,000, the tax revenue per house would be \$1,250 and, using the 55.3% figure, the districts would receive \$692. The annual cost for educating students per dwelling unit is \$1921 ( $\$1536 \times .6 + 2000 \times .5$ ). On the basis of the above estimated figure, it is



Table 20. School Data

<u>District</u>	<u>District Capacity</u>	<u>District Enrollment</u>	<u>Annual Cost Per/Student</u>	<u>Nearest Schools</u>	<u>School Capacity</u>	<u>School Enrollment</u>	<u>Project Students*</u>
Chula Vista City School District	14,420	14,443	\$1,536	Tiffany (adjacent) Sunnyside (.5 mi) Allen (.7 mi)	700 616 420	709 741 353	494
Sweetwater U.H.S.D.	23,500	23,200	\$2,000	Bonita Vista Jr. High (.1 mi) Bonita Vista Sr. High (adjacent)	1410 1512	1506 1677	206 206

\* Using student generation factors given by the school districts which are elementary - .6 and high school - .5.

obvious that the local tax revenues will not pay for the cost of educating the students of this district.

The Elementary District indicates that the minimum distances children in different grades must live from the school in order to be bussed are:

Kindergarten	3/4 mile
Grade 1	1 mile
Grades 2-3	1-1/4 mile
Grades 4-6	1-1/2 miles

However, a letter from the school district indicates that "as population trends increase or decrease in the various areas of the district, it becomes necessary to bus children to other schools to meet enrollment and capacity utilization." Bussing distances for Sweetwater Union High School District were not given in their letter. Because of the proximity of both schools to the project, it would not normally be necessary for students to be bussed, however, in their letter they do state that the "board of trustees has declared that for new subdivisions, there is to be no assignment to a particular school." Therefore it is possible that the new students may be bussed to other schools further from the project. Although an elementary school site is included in the project, both Districts indicate that they have no plans for new school construction.

### 3.19.3 Mitigation

Mitigation of the financial problems of the schools is not within the province of this EIR, however, partial mitigation will be achieved by developer contributions made to the school districts as well as the donation of land to the Elementary school district. If and when classrooms, either portable or permanent, can be established on the school site, this will partially mitigate the impacts that the new students will have on existing schools.

It is suggested that the Districts greatly increase the required fees to more clearly reflect the Districts' costs for capital improvements. Increases to \$1,000-\$2,000 per dwelling unit for each District would be similar to recent actions taken elsewhere in the County.

### 3.19.4 Analysis of Significance

The fiscal impact of the addition of these students to the school systems is significant. Partial mitigation of these impacts is possible through developer fees and dedication of school sites.

## 3.20 PARKS, RECREATION AND OPEN SPACE

### 3.20.1 Present Setting

Tiffany Park is located near the southeastern boundary of the site. Rohr Park is located adjacent to Chula Vista Municipal Golf Course approximately .6 mile north of the northern boundary. Regionally, two major San Diego County regional parks are in the planning stage; Sweetwater Regional Park and Sweetwater Lake. It is the policy of the City of Chula Vista to concentrate on acquiring and building neighborhood parks. The existing standards for neighborhood parks is two acres for every 1000 persons served.

Golf courses are near the site and include Chula Vista Municipal Golf course, the under construction Bonita Golf Course and the National City course. Many of the athletic facilities of Southwestern College are open to the public.

The site is part of a large belt of open space which extends to the east and provides opportunities for hiking and equestrian activities. Horse trails, both regional and local adjoin the site.

### 3.20.2 Impact

The project includes a 9.6 acre park site, of which 6 acres will be usable, and 320 acres of open space as part of the design. Using the City's standard, the approximately 3000 persons which may be generated by the project would require six acres of usable parkland, therefore, the project provides an adequate amount. The project provides a central equestrian center and equestrian trails. These trails are intended to connect to local trails. The impact on local parks and golf courses cannot be estimated.

### 3.20.3 Mitigation

Because the project provides a park site, as well as open space and equestrian trails, no mitigation is apparently required.

### 3.20.4 Analysis of Significance

The project's impact on parks and recreation is primarily positive as these facilities will be provided.

### 3.21 FIRE AND POLICE 25,26

#### 3.21.1 Present Setting

The site is presently under the jurisdiction of the San Diego County Sheriff's Office for police protection and is adjacent but not within the Bonita-Sunnyside Fire Protection District. If annexed to the City of Chula Vista, these two responsibilities would be taken over by the City of Chula Vista Fire and Police Departments.

#### 3.21.2 Impact

The Fire Department of Chula Vista has indicated that they will be able to provide fire protection for the project without an increase in manpower or equipment. The response time for emergencies was not given by the Fire Department. However, it should be noted that there is a fire station on the corner of Elmhurst and Otay Lakes Road which should place most of the project within a two minute response time. The Police Department states that they should be able to provide the same level of service as they provide for the other portions of Chula Vista. The Police Department did not give a response time for either emergency or non-emergency calls.

#### 3.21.3 Mitigation

None required.

#### 3.21.4 Analysis of Significance

According to the letters from the two departments the impact is insignificant.

### 3.22 WASTE DISPOSAL

#### 3.22.1 Present Setting

In unincorporated areas of San Diego County, solid waste collection and disposal are the responsibilities of the individual homeowner. If the project should be annexed to the City of Chula Vista, solid waste collection and disposal is the responsibility of the Chula Vista Sanitary Service. Collection for private residences is once a week with solid waste taken to the San Diego County Sanitary Fill in Otay Valley. The Otay landfill site is expected to reach capacity in 1995.<sup>30</sup>

### 3.22.2 Impact

Using the solid waste generation factor of 7.5 pounds/person/day the project has the potential of generating 22,238 pounds of solid waste per day, upon full occupancy.

### 3.22.3 Mitigation

Mitigation of the problems of solid waste in San Diego County is not within the province of this report. It is expected that when the Otay landfill site reaches capacity, the County of San Diego will arrange for additional landfill capacity either by designating a new site or by expanding existing facilities. Other alternatives are being considered by the County. Garden refuse can be recycled through the use of a shredder and the spreading of the resultant product as mulch throughout the garden. Household refuse in the form of glass, aluminum and newspapers can be recycled. Other mitigating measures are not suggested.

### 3.22.4 Analysis of Significance

Waste disposal impacts are not considered significant.

## 3.23 UTILITIES/ENERGY 28

### 3.23.1 Energy

#### a. Present Setting

The San Diego Gas and Electric Co. (SDG&E) presently supplies electricity and natural gas to the site. Electrical service is available from 12 kv distribution facilities adjacent to the proposed site, emanating from the Sunnyside Substation. Gas service is available from a four inch gas main within the Corral Canyon Road and a three inch main within East H Street. SDG&E also indicates that they occupy a 250 foot wide electric transmission right of way through the project and that additional transmission facilities are scheduled to be installed within this right of way in the 1980's.

#### b. Impact

SDG&E indicates that the existing gas and electric facilities should be adequate to serve the project. Implementation of the project will require extension of the existing gas lines and electric service throughout the project. It is anticipated that all electric facilities will be underground. Although plans are not yet finalized for the development,

and as the size and requirements for each dwelling unit have not been established, energy uses can be grossly estimated. It is estimated that upon completion and full occupancy of the homes, each dwelling unit will use approximately 800 kwh of electricity a month for a total of 659,200 kwh/month. If the average dwelling unit uses 70 therms of natural gas per month, the overall monthly use would be 57,680 therms.

### c. Mitigation

Regulations governing housing construction stipulate the amount of insulation which is required. Full insulation can reduce heating and cooling requirements by approximately 50%. The amount of energy which can be saved will depend on the construction of the homes, the amount and type of landscaping and the energy-saving practices of the new residents. Because of the climate in the area, it is ideally suited to the use of solar heating methods. Other mitigating measures cannot be specified at this time.

Transportation energy can be conserved by using better mileage vehicles or instituting a number of measures, such as bicycling, which are discussed in the air quality section of this report.

### 3.23.2 Telephone Service 29

A letter from Pacific Telephone and Telegraph Company indicates that no facilities exist within the project area and that new facilities must be extended. It is anticipated that these facilities can be readily extended.

### 3.23.3 Water

#### a. Present Setting

The site is within the boundary of the Otay Municipal Water District which serves much of southeastern San Diego. Sweetwater Authority serves the areas directly north and east of the site. Existing facilities include a 10" main in Baylor Avenue, a 10" main in "H" Street and a 12" main in Rutgers Avenue. There is a water easement crossing the northeastern corner of the site which provides access to the aquaduct.

#### b. Impact

Otay Municipal Water District indicates that to serve Phase i will require extension of the above mentioned existing facilities. However, service to the remaining phases will necessitate extension of a 20" transmission main from the new reservoir to be constructed near the east end of Gotham Street to the project. This extension will be approximately  $\frac{1}{2}$  mile long.

\* Otay Municipal Water District's new facilities, which include an extension from the aquaduct to the reservoir and the construction of the reservoir, are being paid for by Improvement District 22 bond funds and all lots will be assessed a tax rate to share in paying the indebtedness incurred by the construction of the facilities. This tax rate is above and beyond that which is subject to Proposition 13 taxation. This past fiscal year (1978) the rate was 1.81 per \$100 of assessed valuation. It is estimated that upon completion and full occupancy of the project will require approximately 500,000 gallons/day.

c. Mitigation

The developer will pay an \$800 (subject to change) per lot connection fee and the new residents will contribute to the construction of the new facilities. No other mitigation is required.

d. Analysis of Significance

The new storage and transmission system will be paid for by the improvement district bonds. The distribution system internally will be paid for by the developer, therefore, there will be no impact on the tax payers residing outside of this improvement district. The impact is not considered significant

3.23.4 Sewer 27

a. Present Setting

Sewage in the area is collected by sewers owned by the City of Chula Vista and the effluent is subsequently discharged into the Spring Valley Sanitation District outfall. Chula Vista has a 22.1 million gallon per day (mgd) allotment from the Metropolitan system, of which it is presently using 7 mgd. Existing facilities include an 8" gravity sewer located at the intersection of Fallbrook Court and Acacia Avenue. Additional aspects of sewage are discussed under Water Quality (Section 3.8).

b. Impact

Sewage will flow from the project via three gravity sewer lines. A small area in Unit i, 41 lots, will discharge into a line in Canyon Road, which is being planned by the Bonita Highlands Development. Sewage from Unit v, consisting of 151 lots, will flow to the west in "S" Street to connect to a future development being proposed for that area. The remaining 576 lots, with the exception of Unit vi, will be connected to the existing line at Fallbrook Court and Acacia Avenue.

This existing line at the point of project connection serves the Bonita Ridge Estates Unit II project, which consists of 39 lots. The peak flow at this point of connection from the total of 615 lots will be 0.60 cubic feet per second. Downstream from this point there is a section of line that is at a 0.4% grade. During peak periods the depth of flow in the 8" line will be 5.4". The rest of the line in Acacia to its point of connection with the trunk sewer in Bonita is a grade exceeding .575%. According to the engineer\* the depth of flow at peak periods in this area will be less than half full. According to the City of Chula Vista Engineer, this pipe will be at capacity during peak periods and in addition would not permit the use of this line by any other development in Long Canyon. Based on 80 gallons of sewage per person per day, the project at full occupancy may be expected to generate approximately 256,000 gallons of sewage per day. This represents 3.6% of the City's usage and 1.1% of the total allotment.

c. Mitigation

Any water saving measures adopted by the new residents will have the consequence of reducing the sewage impacts. These are discussed in Section 3.8. It may be necessary to either add a parallel line to the existing line or enlarge the existing line in order to accomodate the sewage from this project.

d. Analysis of Significance

Locally, the project, when fully built out, may significantly impact the existing sewer line to which the project will connect. Regionally, the Metropolitan system is considered over capacity, and any incremental increases in sewage may be considered significant. It will not significantly affect Chula Vista's remaining allotment of 21 mgd.

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\* CEPA



### 3.24 GENERAL GOVERNMENTAL SUPPORT

#### 3.24.1 Present Setting

The site is presently in the unincorporated area of San Diego County. This agency supplies all of the governmental services necessary to the residents.

#### 3.24.2 Impact

Should the project be annexed to Chula Vista, this agency would be responsible for supplying all governmental services. Besides those mentioned in other sections, this would include street maintenance and cleaning, maintenance of street lighting and central governmental services. It is not expected that the project when completed will make demands on these services that are beyond the capacity of the agency to deliver.

#### 3.24.3 Mitigation

The impact is estimated to be minimal and thus, no mitigation is suggested.

#### 3.24.4 Analysis of Significance

The impact of the project on general governmental support is minimal.

### 3.25 TRAFFIC AND ACCESS 31

#### 3.25.1 Present Setting

The project site is located near the eastern boundary of the City of Chula Vista. It lies east of Otay Lakes Road between the extension of "H" Street and Bonita Road (Figure 21).

As Table 21 shows, many links of the network of major routes in the vicinity of the project site are currently overloaded. Residential development and student traffic generated by Southwestern College have critically impacted Telegraph Canyon Road and portions of Otay Lakes Road. Bonita Road, east of its junction with Otay Lakes Road, is also operating in excess of design capacity.

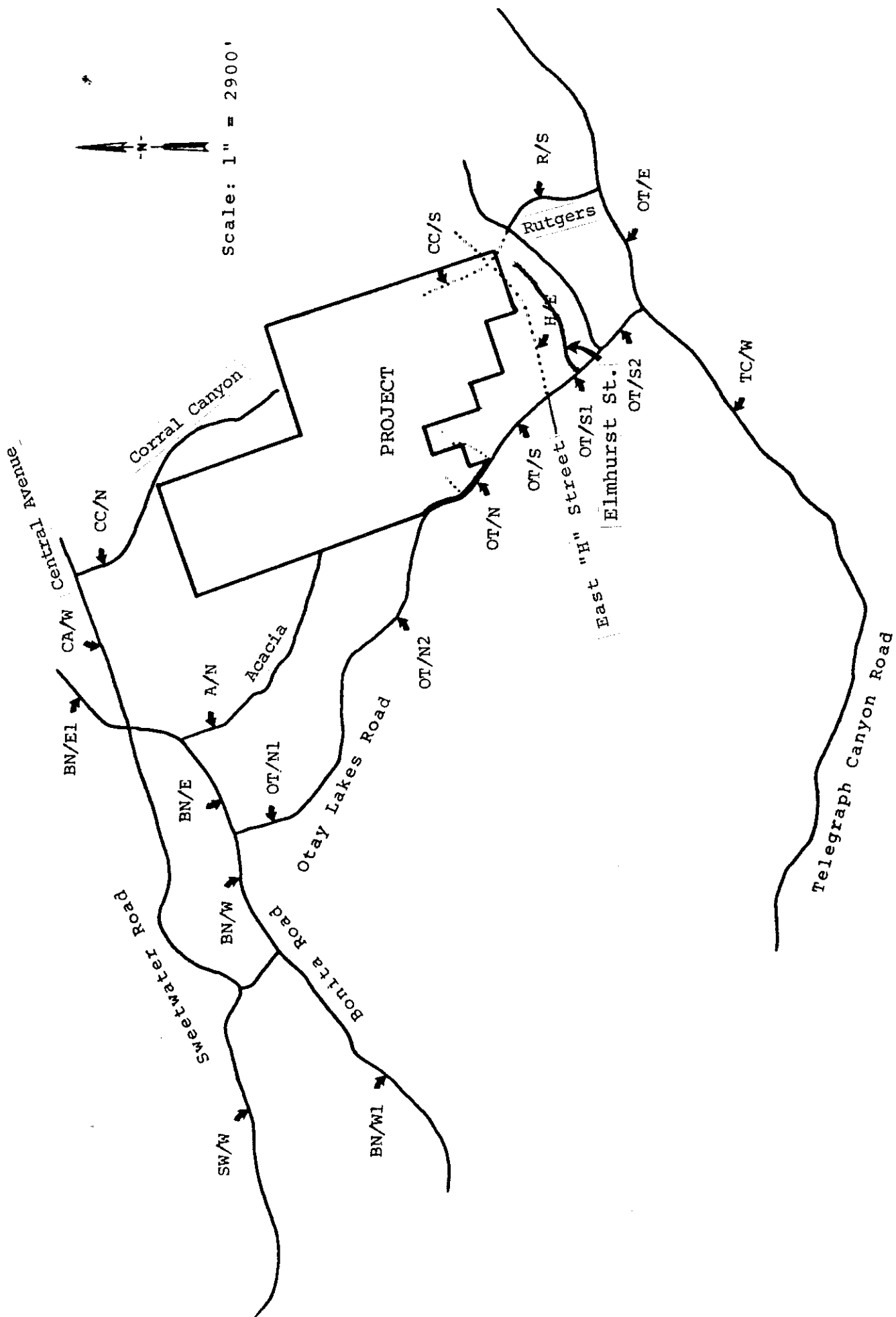


Figure 21. Bonita/Sweetwater community street system.  
 (Count and projection locations indicated)

Table 21. Existing Network Conditions  
Average Daily Traffic

<u>Link</u> <u>Abrv.</u> <sup>1</sup>	<u>Link</u>	<u>No.</u> <u>Lanes</u>	<u>Current</u> <u>Classif-</u> <u>ication</u> <sup>2</sup>	<u>Design</u> <u>Capacity</u> <u>ADT</u> <sup>2</sup>	<u>Current</u> <u>ADT</u> <sup>3</sup>	<u>"Base</u> <u>ADT</u> " <sup>4</sup>
BONITA						
BN/W1	(W/O-Willow)	4	Major	25,000	20,100	20,400
BN/W	(Willow-Otay Lks)	4	Major	25,000	20,300	21,500
BN/E	(Otay Lks-Central)	2	Collector	10,000	13,900	13,900
BN/E1	(Central-E/O)	2	Collector	10,000	13,900	13,900
OTAY LAKES						
OT/N1	(N/O-Allen Sch.)	4	Major	25,000	21,800	23,200
OT/N2	(Allen Sch.-Unit IV)	2	Collector	10,000	19,500	20,900
OT/N	(Unit IV-Haciendas)	2	Collector	10,000	17,800	19,200
OT/S	(Haciendas-"H" St)	2	Collector	10,000	17,800	18,600
OT/S1	("H" St.-Gotham)	4	Major	25,000	17,800	18,800
OT/S2	(Gotham-Tele.Cyn.)	4	Major	25,000	10,400	11,500
OT/E	(Tele.Cyn.-E/O)	2	Collector	10,000	3,600	3,600
TELEGRAPH CANYON						
TC/W	(Otay Lks-W/O)	2	Collector	10,000	17,200	17,800
CORRAL CANYON						
CC/N	("H" St.-N/O)	2	Collector	10,000	2,700	2,700
CC/S	("H" St.-S/O)		--	--	0	0
CENTRAL AVENUE						
CA/W	(Corral Cyn-Bonita)	2	Res. Coll.	5,000	6,600	6,600
EAST "H" STREET						
H/E	(Otay Lks-Auburn)	2	Collector	10,000	--	1,200 <sup>5</sup>
RUTGERS						
R/S	("H" St.-Otay Lks)	2	Collector	10,000	900	900
ACACIA						
A/N	(S/O-Bonita)	2	Residential	1,400	1,700	2,700
SWEETWATER						
SW/W	(W/O-Willow)	2	Collector	10,000	7,500	7,600

1. See key map, Figure 21, for locations of counts/projections.
2. Generalized Classification and Design ADTs adapted from City of Chula Vista "Environmental Review Policy" (street standards).
3. City of Chula Vista Traffic Flow Map, CPO Metro Flow Map, County of San Diego counts.
4. Computed by adding projected traffic from approved projects to current ADTs. (See Appendix for generation and allocation of new projects considered).
5. Assumes capture of trips upon connection to Otay Lakes Road.

Some of the routes which connect the project site to the major road network are also operating in excess of design capacity. Elmhurst Drive is currently carrying volumes above its design capacity, and is expected to reach higher volumes when the new Latter Day Saints Church is completed. Acacia Road is experiencing rapid residential development which will soon increase its Average Daily Traffic (ADT) to a level far above its design capacity. Central Avenue has a "bottleneck" between the end of the present "collector" status improvements and its junction with Corral Canyon Road.

### 3.25.2 Impacts

The Bonita Long Canyon Estates project proposes to build 768 low density dwelling units and 56 high density units. A total of twenty five streets, fifteen cul-de-sacs and eleven access points are planned. The project will be constructed in six phases over an undetermined time span.

Phase i of the project, consisting of 191 low density dwelling units, will generate approximately 2100 new vehicular trips per day. The AM peak traffic will total 200 movements while the PM peak will contribute about 221. These trips have been allocated to the road network to produce the projections shown in Table 22. For methods of allocation and a more detailed analysis, see the full traffic report in the Appendix.

In a regional context, the residential development of the first phase of Bonita Long Canyon is significant in that it aggravates the overloading situation which is currently being regionally experienced in the entire Bonita/Sweetwater community.

Without the extension of East "H" Street the most critical localized impact of the Phase i project will be experienced at Elmhurst Drive and Via Haciendas. Elmhurst Drive is currently operating in excess of its design ADT, and was not designed for use as a through route. Traffic currently using this route, in addition to that which will be generated by the LDS Church and the Phase i project, could account for an ADT which is nearly double the volume for which the street was intended. Due to the connection of the project at Via Haciendas, most of the traffic from the northwestern and central portions of the Phase i project will not make use of the Baylor-Dartmouth-Elmhurst linkage. Virtually all of the trips using Elmhurst Street for connection to Otay Lakes Road will come from the southeastern portion of the project via the eastward extension of "H" Street. Thus, while Elmhurst will be impacted by the Phase i project, Baylor, Dartmouth and Auburn will not. The connection of the western end of "H" Street to Otay Lakes Road would, however, provide an access alternative of sufficient ease that approximately 847 Daily Vehicle Trips will be re-rooted from Via Haciendas to "H" Street via Baylor-Dartmouth and Auburn Street.

Table 22. Traffic Allocation and Post-Project ADT  
Long Canyon Estates -- Phase I

<u>Link</u> <u>Abrv.</u>	<u>Link</u>	<u>Allocation from Project</u>			<u>Future</u> <u>ADT</u>
		<u>ADT</u>	<u>AM Pk</u>	<u>PM Pk</u>	
BONITA					
BN/W1	(W/O-Willow)	492	45	50	20,900
BN/W	(Willow-Otay Lks)	1302	124	137	22,800
BN/E	(Otay Lks-Central)	26	2	3	13,900
BN/E1	(Central-E/O)	26	2	3	13,900
OTAY LAKES					
OT/N1	(N/O-Allen Sch.)	1538	146	161	24,700
OT/N2	(Allen Sch.-Unit IV)	1538	146	161	22,400
OT/N	(Unit IV-Haciendas)	1538	146	161	20,700
OT/S	(Haciendas-"H" St.)	859	82	90	19,500
OT/S1	("H" St.-Gotham)	563	53	60	19,400
OT/S2	(Gotham-Tele.Cyn.)	563	53	60	12,100
OT/E	(Tele.Cyn.-E/O)	0	0	0	3,600
TELEGRAPH CANYON					
TC/W	(Otay Lks-W/O)	353	34	37	18,200
CORRAL CANYON					
CC/N	("H" St.-N/O)	0	0	0	2,700
CC/S	("H" St.-S/O)	0	0	0	0
CENTRAL AVENUE					
CA/W	(Corral Cyn-Bonita)	0	0	0	6,600
EAST "H" STREET					
H/E	(Otay Lks-Auburn)	0	0	0	1,200
RUTGERS					
R/S	("H" St.-Otay Lks)	0	0	0	900
ACACIA					
A/N	(S/O-Bonita)	0	0	0	2,700
SWEETWATER					
SW/W	(W/O-Willow)	158	15	17	7,700

The fully developed project will generate approximately 8900 total daily trips, with 845 at the AM peak hour and 934 during the PM peak hour. Allocations of the traffic to the network are listed in Table 23, and shown diagrammatically for the project accesses in Figure 22. These allocations result in overloading on the "critical" links listed in Table 24.

As noted in the Phase i impact analysis, most of the increases represent a further aggravation of the regional traffic problem currently being experienced throughout the Bonita-Otay Lakes-Telegraph Canyon loop network. It is quite possible for streets to operate far in excess of their design capacity. However, this is obviously not a desirable situation.

Two links which deserve special attention are Telegraph Canyon and Otay Lakes Road. Obviously, with reference to design capacity, these links are overloaded. The project will aggravate this situation. Together with the overloading on Acacia and Central, the peak hour congestion surrounding the project will be unavoidable to its inhabitants.

The most dramatic rise in traffic among the routes exceeding design capacity is that experienced by Acacia Road, where the total number of vehicles will increase from a current ADT of 1700 to a post-project total of over 4500 with the implementation of current and planned new development.

Because of the heavy impact of current and proposed development on Acacia Road and the volumes in excess of design ADT being carried by both Acacia and Bonita Road, a significant peak hour conflict situation could arise at the junction of these two routes which would be aggravated by the implementation of the project. This conflict could reach its height during the morning peak hour when a substantial left turn flow from Acacia Road would seek to enter the westbound lanes of Bonita Road at a rate of more than two vehicles per minute. The platooning of vehicles caused by the signalized intersections east and west of this crossing should help to facilitate this movement, but delays and traffic queuing could become a common occurrence along Acacia Road. Road conditions and peak hour delays could serve to discourage the use of Acacia by project generated traffic. This would somewhat lessen the impact of the project on Acacia and increase its impact on the Corral Canyon Road-Central Avenue linkage. If project generated traffic is combined with base traffic, and Bonita Road is not improved to four lanes, signalization of the Acacia Drive/Bonita Road intersection would be warranted due to the interruption of the continuous flow of Bonita (see Appendix for warrant calculations).

Table 23. Traffic Allocation and Post-Project ADT  
Long Canyon Estates -- Build Out

<u>Link</u> <u>Abrv.</u>	<u>Link</u>	<u>Allocation from Project</u>			<u>Future</u> <u>ADT</u>
		<u>ADT</u>	<u>AM Pk</u>	<u>PM Pk</u>	
BONITA					
BN/W1	(W/O-Willow)	2000	190	210	22,400
BN/W	(Willow-Otay Lks)	3984	378	418	25,400
BN/E	(Otay Lks-Central)	1469	140	154	15,400
BN/E1	(Central-E/O)	107	10	11	14,000
OTAY LAKES					
OT/N1	(N/O-Allen Sch.)	2492	237	262	25,700
OT/N2	(Allen Sch.-Unit IV)	2492	237	262	23,400
OT/N	(Unit IV-Haciendas)	2284	216	240	21,500
OT/S	(Haciendas-"H" St.)	1793	170	188	20,400
OT/S1	("H" St.-Gotham)	1584	150	166	20,400
OT/S2	(Gotham-Tele.Cyn.)	1584	150	166	20,400
OT/E	(Tel.Cyn.-E/O)	801	76	84	4,400
TELEGRAPH CANYON					
TC/W	(Otay Lks-W/O)	1494	142	157	19,300
CORRAL CANYON <sup>1</sup>					
CC/N	("H" St.-N/O)	2279	217	239	5,000
CC/S	("H" St.-S/O)	1279	122	134	1,279
CENTRAL AVENUE <sup>1</sup>					
CA/W	(Corral Cyn.-Bonita)	2279	217	239	8,900
EAST "H" STREET					
H/E	(Otay Lks-Auburn)	1963	186	206	3,155
RUTGERS					
R/S	("H" St.-Otay Lks)	801	76	84	1,700
ACACIA <sup>1</sup>					
A/N	(S/O-Bonita)	1740	165	185	4,500
SWEETWATER					
SW/W	(W/O-Willow)	666	63	70	8,300

<sup>1</sup>Because this allocation assumes distance as the sole determinate of route selection, all of the northbound Unit v trips were assigned to the Acacia Avenue access. Unit v will generate a total of 770 daily vehicle trips. A range of access ADT to be divided between the Acacia and Corral Canyon accesses would include those listed in this table (where distance of travel tends to maximize the use of Acacia) and a post-project ADT of 3200 for Acacia and 10,100 for Central Avenue (under the alternate assumption that all Phase v traffic will use the Corral Canyon access).

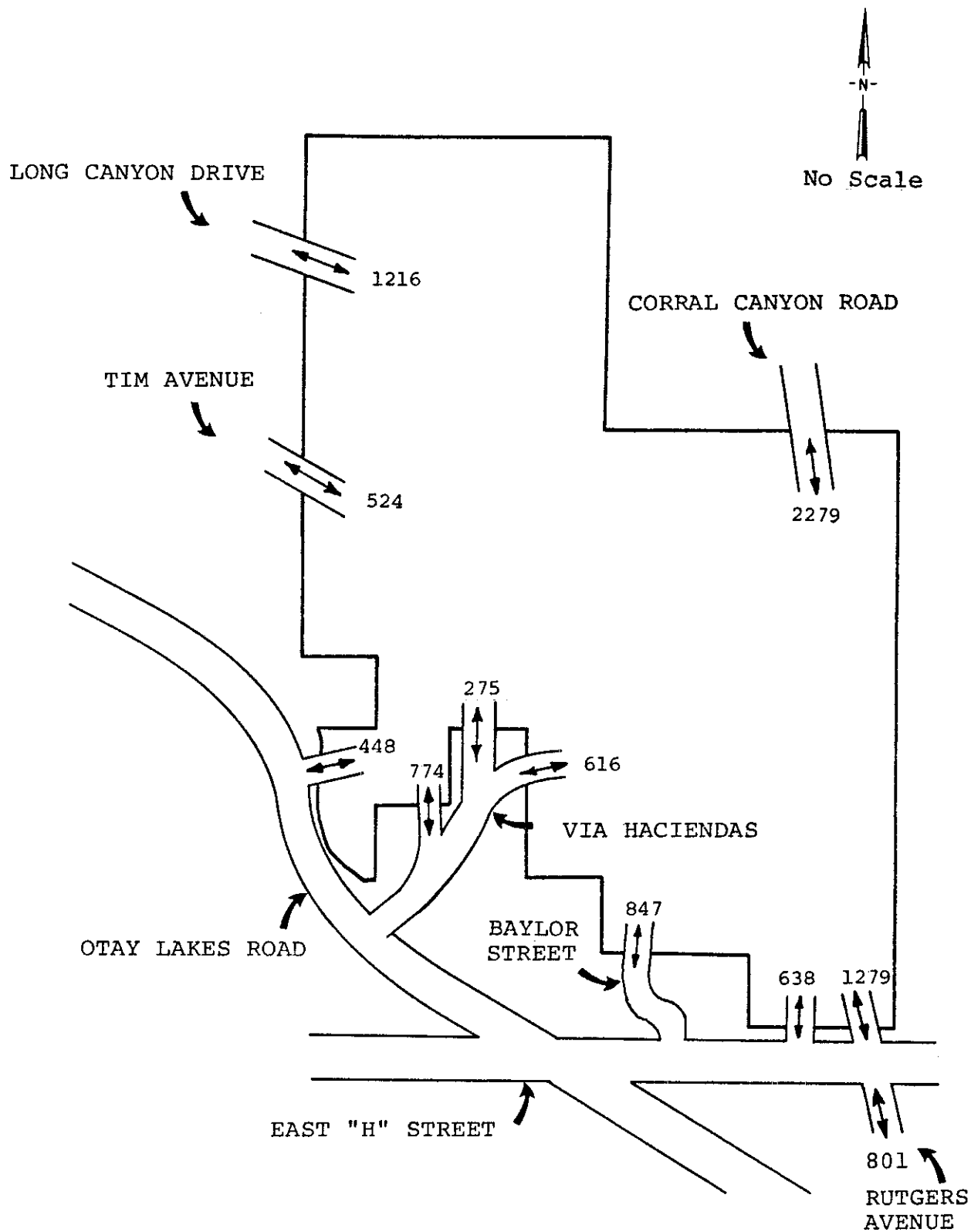


Figure 22. Access ADT of fully-developed project.



TABLE 24. VOLUME/DESIGN CAPACITY PERCENTAGES  
(Selected Links)

<u>LINK</u>	<u>BASE PERCENT OF DESIGN CAPACITY</u>	<u>POST-PROJECT PERCENT OF DESIGN CAPACITY</u>
Bonita Road (East of Otay Lakes Rd.)	139%	154%
Otay Lakes Rd. (Collector-width segments)	209	234
Telegraph Canyon Rd. (West of Otay Lakes Rd.)	178	193
Central Ave. (East of Bonita Rd.)	132	178
Acacia Ave. (South of Bonita Rd.)	192	321
Otay Lakes Rd. (South of Bonita Rd.)	92	103

### 3.25.3 Mitigation

The most helpful mitigation would be construction and improvement to increase the capacity of the major road network. These improvements are contained in the City of Chula Vista General Plan and the County's Sweetwater Community Plan. The most significant of the proposed construction projects would be the connection of "H" Street from Interstate 805 to Otay Lakes Road. This project would provide an alternate east-west route to absorb the excess traffic of Telegraph Canyon Road, Otay Lakes Road, and Bonita Road.

The project would account for some mitigation by providing an alternative north-south access route through the connection of East "H" Street and Corral Canyon Road. This access would eliminate the use of Otay Lakes Road for about forty percent of the project traffic. The project would also contribute funds for the signalization of intersections in its vicinity.

Additional suggested mitigation would include the connection of East "H" Street to Otay Lakes Road, the improvement of the project frontage on Otay Lakes Road, and participation with other impacting developments in improving Acacia Road at its intersection with Bonita Road. Phasing of these mitigations should be consistent with the following schedule:

Phase i. Improvement of Otay Lakes Road to full City standards with four travel lanes and two bicycle lanes should be in place. The LDS church will be required to extend curb, gutter, sidewalk and median improvements for 30.5 feet on the south side of "H" Street and 24 feet on the north side. The developer of the Bonita Long Canyon project should then be required to provide a two travel lane extension of "H" Street to Otay Lakes Road.

Phase ii. To complete the necessary improvement of Central Avenue, it is possible that fees from the project could be combined with similar assessments received earlier for such improvements.

Phase v. The Phase v portion of the project should only be connected to Tim Street and Long Canyon Drive, eliminating direct connection to Acacia Avenue at the project boundary. A further mitigation would involve the creation of cul-de-sacs and a loop connector road between the Acacia/Tim and Long Canyon Drive access points, all within the project boundary. This alternative would eliminate all northwestern accesses onto County roads. Should the connection of the project to Tim Street be made, signalization will be required at the Acacia Avenue/Bonita Road intersection. Other developers whose projects impact this intersection have contributed to this signalization, so the Bonita Long Canyon project would not be solely responsible for this improvement. The connection of East "H" Street to Rutgers Avenue would also be desirable but not necessary at this point in time.

#### 3.25.4 Analysis of Significance

The implementation of the Bonita Long Canyon project produces three significant impacts that are not mitigable within the current project design. These include its impact on the regional road network, the impact of Phases iv and v on Acacia Road, and the impact of Phase i on Elmhurst Drive.

The regional impact is one of aggravation to the already overburdened network components of Otay Lakes Road and Telegraph Canyon Road. While the suggested mitigations of widening Otay Lakes Road and improving some portions of "H" Street in the preceding section would improve this system as it fronts the project, the regional problem remains outside the scope of the project to mitigate.

In its worst case, the impact of the project on Acacia Road is substantial. The project contribution to the rapid development accessing this route would raise the volume far above its design capacity. Special consideration may be required to channel this volume efficiently. The developing nature of this area makes it difficult to predict what improvements will be necessary at the time when Phases iv and v begin construction. However, a solution which includes road and junction improvements and addresses all development in the Acacia Road area could mitigate this impact to a level of insignificance. Alternately, if the project design eliminates connection to Long Canyon Drive at Unit v, project impacts on Acacia will be light and the capacity problem will shift to Central Avenue. Upon project completion, Via Haciendas will carry a substantial traffic flow which, when combined with through traffic on Otay Lakes Road and new traffic generated by new projects on Ridgeback Road, and will likely require signalization.

As proposed by the project design, the completion of Phase i would result in traffic volumes far in excess of design capacity for Elmhurst Drive. The completion of "H" Street through to Otay Lakes Road would not only eliminate this problem, but it would also induce much of the present traffic onto "H" Street. Because such a road improvement project would benefit more than the Bonita Long Canyon project alone, it should be considered as a candidate for a reimbursement district.

#### 4.0 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

- a. 330 acres of open space will no longer exist.
- b. There will be noise impacts in the vicinity of Otay Lakes Road and the extension of "H" Street.
- c. There will be a loss of biological resources.
- d. There will be a loss of archaeological resources.
- e. There will be grading of previously undisturbed slopes.
- f. There will be an increase of students into school districts which are already overcrowded.
- g. There will be increases in traffic in the general area.

All of the above adverse environmental impacts can be mitigated to varying degrees.

- a. Nearly 50% of the site will remain in open space as part of the project plan.
- b. Noise impacts will be mitigated by a noise barrier to be constructed on Otay Lakes Road and the extension of "H" Street, as well as Corral Canyon Road extension.
- c. Much of the biological resources are in the open space areas. The area which contains the Cleveland Sage will be the only severe loss.
- d. Archaeological resources will be partially salvaged as part of the implementation of the project.
- e. The grading of slopes will be minimized by the project design. In addition, the new slopes will be landscaped as will the new lots upon completion and occupancy.
- f. Developer fees and dedication of school site land will partially mitigate the overcrowding of the two school districts.
- g. Traffic mitigation is a regional problem and includes the extension of "H" Street to Otay Lakes Road and the eventual continuation of "H" Street southwest to connect with Interstate 805 and eastward to connect with Proctor Valley Road.

## 5.0 ALTERNATIVES TO THE PROPOSED ACTION

- a. The project could be left as open space and eventually acquired by a public agency as a park. Since approximately 50% of the site is designated to remain as open space and as it is unlikely that public agencies would be financially able to acquire the land for development, this alternative is probably not economically viable.
- b. The property could be used for range land or, with a large investment of money, could be used for the growing of crops. However, most of the site is not underlain by soil considered to be prime and the viability of this alternative, especially in the view of the cost of imported water, is uncertain.
- c. The property could be developed with smaller lots or as a cluster housing development. This would not be in conformance with the Sweetwater Community Plan, the Growth Management Plan or the Chula Vista General Plan.
- d. The property could be developed into larger lots, for example, one, two and four acres depending on slope. This would result in lower densities as designated by the Sweetwater Community Plan. Although some impacts may be reduced by lower density, it cannot be automatically assumed that lower density will result in lessening all impacts. Although this would be permitted under the existing zoning and land use designations, the economic viability of such an undertaking is questionable, especially in view of the large amount of acreage which is being dedicated to open space, school and park sites.
- e. The project could be built elsewhere. Much of the remaining vacant land in San Diego County, when developed, would have environmental impacts of one variety or another. Thus, to move the project may or may not decrease the environmental impacts.

## 6.0 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY.

Agricultural uses of the land, although they may be considered long-term, are not considered viable uses of the land considering the existing costs of agricultural production.

Housing, previously considered to be short term uses, are in the long run the most viable use of the land considering its proximity to urban areas which are already developed.

7.0 IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WILL RESULT FROM THE PROPOSED PROJECT

- a. Topographic changes are essentially irreversible.
- b. Loss of biological resources is considered minor compared to the amount which will be left in open space. However, those areas which will be lost are somewhat unique.
- c. Materials and energy used for the construction of the project will be irrevocably committed. When the site is completed and occupied there will be a continuing demand for energy and services which will mean the committment of water, gas, electricity, as well as the energy which must be committed for transportation needs.
- d. Traffic impacts are irreversible until such time as people travel less or use some other means of transportation.
- e. Archaeological resources, although they may be salvaged, represent loss for the study by future generations.

8.0 GROWTH INDUCING IMPACT OF THE PROPOSED ACTION

The project is essentially a pocket of vacant land surrounded on three sides by urban development. All of the utility and service extensions which will be required by this project are readily available adjacent on three sides of the project. There are no plans for road or utility extensions to the east and thus, are not growth inducing. There are no plans for major utility expansions beyond that which is required to serve the project. Development of Proctor Valley Road is an entity which is not related to the project by roads or utility connections and thus, development to the east along Proctor Valley Road will not use any of the roads or utility connections which will accomodate the Bonita Long Canyon Estates project.

EIR PARTICIPANTS

Project Director/Geologist	Ann Terry M.S. Geology
Supervisor/Editor	Richard Glenn Ph.D. Biology
Botany	Cameron Patterson B.S. Botany
Zoology	Marina Brand M.S. Biology
Archaeology	Michael Perez M.A. Anthropology
	Scott Fulmer B.A. Anthropology
Noise Analyst	San Diego Acoustics
Traffic Analyst	James B. Hare B.A. Geography
Geology	GeoCon, Inc.  Woodward Clyde Consultants
Air Quality/ Water Quality	Barbara Longley-Cook Ph.D. Civil Engineering Registered Engineer
City of Chula Vista Personnel Reviewing and Editing	Douglas D. Reid Environmental Review Coordinator
	John Lippitt City Engineer

## REFERENCES AND NOTES

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City of Chula Vista, 1978, Environmental Review Policy of the City of Chula Vista., p. 47.
18. \_\_\_\_\_, " 1975 Special Census Bulletin," San Diego Integrated Planning Office, January, 1976
19. Noise Report is in the Appendix.
20. Biology by Cam Patterson and Marina Brand. The full report is in the Appendix
21. Archaeology by Scott Fulmer and Mike Perez. The full report is in the Appendix
22. County of San Diego, 1970 Census
23. Letter from Chula Vista City School District is in the Appendix
24. Letter from Sweetwater Union High School District is in the Appendix
25. Letter from City of Chula Vista office of the Police Chief is in the Appendix
26. Letter from City of Chula Vista office of Fire Prevention is in the Appendix
27. Letter from City of Chula Vista public works department is in the Appendix
28. Letter from San Diego Gas and Electric Co. is in the Appendix
29. Letter from Pacific Telephone is in the Appendix
30. County of San Diego, Integrated Planning Office, 1976, The Santee, Lakeside, Alpine Growth Program Report, p V-68
31. Traffic by Jim Hare. The full report is in the Appendix.

APPENDIX

Soil and Geological Investigation by Woodward-Clyde Consultants

Geologic Reconnaissance by Geocon, Inc.

Environmental Noise Analysis

Biological Survey Report

Archaeological Survey and Report

Traffic Access and Circulation Report

Letters:

Chula Vista City School District  
Sweetwater Union High School District  
Chula Vista Bureau of Fire Prevention  
Chula Vista Office of the Chief of Police  
San Diego Gas and Electric Company  
Pacific Telephone Company  
City of Chula Vista, Public Works Department  
California Department of Fish and Game  
Otay Municipal Water District

APPENDICES ARE AVAILABLE FOR PUBLIC REVIEW AT THE PLANNING  
DEPARTMENT OF THE CITY OF CHULA VISTA.

9.0 PUBLIC REVIEW COMMENTS AND RESPONSES

During the public review period (January 11, 1979 to February 14, 1979) for Bonita Long Canyon Estates, five letters were received from public agencies, two letters from citizen groups and four letters from private individuals. In addition, public testimony was heard at the Planning Commission meeting on February 14, 1979. None of the letters or oral comments raised new issues. However, some portions of the EIR require elaboration which has either been incorporated into the EIR or has been responded to following the appropriate letter or comment.

Letters were received from:

Public Agencies -

Otay Municipal Water District  
San Diego County Department of Sanitation and  
Flood Control  
San Diego County, Environmental Analysis Division  
Local Agency Formation Commission (LAFCO)  
City of Chula Vista Environmental Control  
Commission

Citizen's Groups -

Sweetwater Community Planning Group  
Long Canyon Home Owners Association

Private Citizens -

Sandy Riess  
Mr. and Mrs. Wunderli  
Mr. and Mrs. Bornhorst  
CEPA-J. Ashbaugh

Public testimony was received during the Planning Commission meeting from:

Stanley Wade  
Gail Burkey  
Martha McDonald  
June Bessell  
George Emerson  
James Ashbaugh  
Mrs. Challis  
Jack Swift



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10595 JAMACHA BOULEVARD SPRING VALLEY CALIFORNIA 92078  
TELEPHONE: 462-2222 AREA CODE 714

February 9, 1979

City of Chula Vista  
Post Office Box 1087  
Chula Vista, CA 92012

Attn: Mr. Douglas Reid  
Environmental Review Coordinator

Subj: EIR for Long Canyon Development

Dear Mr. Reid:

We have reviewed the EIR for the Long Canyon Development and are recommending several revisions to the text pertaining to the section on water quality.

Section 3.8.1 Potable Water

Our District average equivalent dwelling unit usage is approximately 650 gallons per day. Based on this figure, we would project a daily water use of approximately 500,000 gallons per day in 1985. The second paragraph stating that there will be no contamination of groundwater downstream of the project is misleading. The drainage from this project runs through the Lower Sweetwater Basin and the Sweetwater Authority has five potable wells located on the north side of the Chula Vista Golf Course within the basin. The San Diego Regional Water Quality Control Board has approved these wells for potable use and are very concerned about contamination of the groundwater basin above these wells. We would suggest that further thought be given this statement.

In addition, it is our opinion that there should be a statement that the minimum fire flow for this project should be 1000 gpm.

Section 3.23.3 Water

Paragraph b. We would suggest that in the second sentence, the phrase "...from the new reservoir being constructed..." be revised to say "...from the new reservoir to be constructed..." The fourth sentence of the paragraph which says "...those lots in the development which could use the water from these new facilities will be assessed a tax rate to share in paying..." should read "...all lots within the development will be assessed a tax rate to share in paying..."

RECEIVED

BY Reid

FEB 12 1979

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA

Paragraph c. We suggest that this sentence be revised to read "...the developer will pay an \$800 (subject to change) per lot connection..."

Paragraph d. We believe the wording for this sentence should read "...the new storage and transmission system will be paid for by the improvement district bonds. The distribution system internally will be paid for by the developer, therefore, there will be no impact on the tax payers residing outside of this improvement district. The impact is not considered significant."

These are the only comments we have pertinent to the water section of the report. Thank you for allowing us to review the draft.

Very truly yours,



R. E. Barber, Jr.  
Chief Engineer

dm

\*  
Response to letter by Otay Water District

Section 3.8.1. Potable Water.

The estimated amount of water usage per day (500,000 gallons) will be added to the report. At the time of the EIR writing it was not known that there were potable water wells downstream. Throughout the Sweetwater area where horses are kept, the organic content of runoff will be higher than in those areas where animal droppings are not present. This was noted on page 46 under Storm Runoff. Whether the extensive equestrian activities will contaminate the ground water is not presently known.

All suggestions for word changes in the section 3.23.3. Water will be incorporated into the report.

# COUNTY OF SAN DIEGO

COMMUNITY SERVICES AGENCY



C. J. HOUSON  
Director

## Department of Sanitation & Flood Control (0380)

County Operations Center, 5555 Overland Avenue, San Diego, California 92123 . . . . . Telephone: 565-5325

REF:3856

7 February 1979

Planning Department  
City of Chula Vista  
276 Fourth Avenue  
Chula Vista, CA 92010

Attention: Mr. Douglas Reid

SUBJECT: El Rancho Del Rey, Long Canyon Sectional Area Plan, Draft EIR

Mr. Bob Rodgers of the County's Environmental Analysis Division has asked us to review the subject draft EIR. We have found problems with the report and the project.

It is our understanding that the final EIR will be used by Chula Vista for the annexation and subdivision, and by the Board of Directors of the San Diego County Flood Control District for detachment from the District.

The report (page 29) deals with 50-year frequency storm flows and asserts: "The project will cause a small, nearly insignificant increase in runoff"...on the order of 4% in Long Canyon. County planning is based on the 100-year frequency flood and we feel that this development of 493 acres of the 1155 acre drainage basin will definitely have a significant increase in runoff.

Under "Mitigation" (page 30 & 31): The report rejects the Special Drainage Area contribution of \$252,416 for assistance in constructing the lower Long Canyon facilities. The County recently denied a tentative map in Long Canyon which proposed a fee in lieu of constructing the needed downstream improvements. It is our recommendation that no development take place in Long Canyon until adequate improvements are provided in the lower end of Long Canyon.

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BY: Reid

FEB 8 1979

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA

Planning Department/Chula Vista  
El Rancho DeI Rey, Long Canyon  
Page 2

Ref: 3856

7 February 1979

In summary, we recommend that you:

- 1) Find that drainage is a significant adverse unmitigated environmental impact.
- 2) Not approve this project until adequate drainage facilities exist in Long Canyon.

*B.H. Hoffmaster*  
for C. J. HOUSON

RLB:tly

cc: Board of Supervisors/Board of Directors, SDCFCD, (A500)  
CAO (A6)  
DOT (336)  
LUER (0173)  
EAD (0175) Attn: Bob Rodgers  
CEPA, 5555 Magnatron Blvd., Suite D, San Diego, CA 92111  
MSA, Inc., 4007 Camino del Rio South, Suite 208, San Diego, CA 92108



# COUNTY OF SAN DIEGO



## Environmental Analysis Division

### Community Services Agency

9150 Chesapeake Road (MS 0175) San Diego, California 92123 Telephone 565-5757

February 7, 1979

City of Chula Vista

Planning Department  
276 Fourth Avenue  
Chula Vista, CA 92010

Attention: Mr. Doug Reid

Subject: Bonita Long Canyon Estates

The County of San Diego has completed its review of the draft Environmental Impact Report (EIR) and Technical Appendices for the subject development proposal. That review was conducted as a Responsible Agency in accordance with Section 21104 of the Public Resources Code because it is possible that the County will have the responsibility for approval of a detachment from the Flood Control District.

As a result of our review it has been determined that the draft EIR in its present form is adequate to our needs should the above noted subsequent approval become a necessity. Therefore, we have no comments at this time.

If any questions arise regarding this matter, please call Mr. R.L. Rodgers at (714) 565-5749.

Respectfully,

A handwritten signature in cursive script that reads "Kathleen A. Lehtola".

KATHLEEN A. LEHTOLA, Director (Acting)  
Environmental Analysis Division

KAL:RLR:cig

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BY Reid

FEB 9 1979

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA

Response to letter from County Department of Sanitation and  
Flood Control

It was noted on page 31 that "Any increase in runoff, however small, will aggravate an existing drainage system whose inadequacy is well documented." Whether a 4% or 55-cubic-feet-per-second increase in runoff for a "50-year storm" is significant is subjective.

On page 31 it is suggested that possible mitigation could include a \$252,416 contribution towards a "Special Drainage Area" to be established by ordinance. This is only one of a variety of means of financing improvements to the lower end of Long Canyon. Which method will be chosen and the timing of the improvements will be determined at a later date. The report does not reject any financial contribution by the project proponent.



February 5, 1979

chairman

executive officer  
Michael J. Gotch

secretary  
Porter D. Cremans

counsel  
Donald L. Clark

members:  
Ralph W. Chapman  
Otay Municipal  
Water District

Tom Hamilton  
County Board of  
Supervisors

William J. Karn  
Fallbrook Public  
Utility District

Gloria McClellan  
Councilwoman,  
City of Vista

Ile V. Moore  
County Board of  
Supervisors

Kite Morgan  
Mayor, City of  
National City

alternate  
members:  
Alex L. Adams  
Padre Dam Municipal  
Water District

Dell Lake  
Councilman, City  
of Lemon Grove

Stanley A. Mahr  
San Marcos  
County Water District

Lee R. Taylor  
County Board of  
Supervisors

Mr. Douglas Reid  
Environmental Review Coordinator  
City of Chula Vista  
P.O. Box 1087  
Chula Vista, CA 92012

Re: Draft EIR - Long Canyon Sectional Area Plan,  
El Rancho del Rey

Dear Doug:

Thank you for the opportunity to review the Draft EIR for the referenced project, which will require annexation to the City of Chula Vista for implementation. The Draft EIR appears to be generally adequate for LAFCO's purposes in assessing the impacts of the proposal.

At such time as annexation is proposed for part or all of the proposed Sectional Area Plan, LAFCO analysis will focus on the timing of the proposal(s) with respect to the following issues:

1. Circulation - As indicated in the Draft EIR, existing circulation problems in the Bonita Road-Otay Lakes Road-Telegraph Canyon Road area would be increased by implementation of this project.
2. Drainage - The project will incrementally add to existing drainage and flood control problems in Long Canyon and the Bonita Valley.
3. Land Use - The project is not in conformance with the residential densities or "urban limit line" (basically, boundary beyond which development requiring sewer service would not be extended) established in the County's Sweetwater Community Plan. The project is within an area designated for future urban development in both the City's General Plan and the County's Growth Management Plan.

Concerning the Draft EIR, we appreciate the attempt to determine whether the project will prove to be a fiscal benefit or detriment to the City of Chula Vista. Hopefully, a more accurate determination can be made at the time annexation is proposed, when legislative policies concerning treatment of annexed territory may be more definite.

Again, thank you for providing the opportunity to review the Draft EIR. Please call Bill Davis of my Staff if there are questions concerning our review.

Very truly yours,



MICHAEL J. GOTCH  
Executive Officer

MJG:WDD:dg

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BY Reid

FEB 8 1979

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA

February 7, 1979

TO: Chairman, Planning Commission  
FROM: Gayle McCandliss, Chairman/Environmental Control Commission  
SUBJECT: EIR-79-2 - Long Canyon Sectional Area Plan, El Rancho Del Rey

The EIR meets CEQA guidelines.

The EIR explains the impacts in a complete manner and lists possible mitigating measures. There are a few concerns that should be considered:

- (1) The result of the geological technical investigations should be carefully evaluated for expansive soils so that proper mitigating measures can be implemented.
- (2) Special consideration should be given to supply adequate drainage for the project. Review the impacts on homes downstream from the project to insure that they will be protected.
- (3) If there is no way to redesign the development, provide time to adequately excavate the archaeologically significant sites.
- (4) Take whatever measures necessary to replant or realign the project to save the Cleveland sage.
- (5) Stipulate that "H" Street be extended to Otay Lakes Road prior to occupancy of Phase I.
- (6) The overcrowding of schools in the area should be carefully considered.
- (7) The ECC recommends careful evaluation of the capacity of existing sewer lines which serve the project.

GMCC:av

WRITTEN COMMENTS PREPARED BY GAYLE McCANDLISS, AND APPROVED AT THE ENVIRONMENTAL CONTROL COMMISSION MEETING HELD MONDAY, JANUARY 5, 1979, BY THE FOLLOWING VOTE, TO-WIT:

AYES: Commissioners McCandliss, Donovan, Taylor, Hodson and Hernandez.  
Noes: None.  
Abstain: None.  
Absent: Commissioners Iversen and Macevicz.

ATTEST:

  
Secretary  
City Boards and Commissions

\*  
As no fault was found with the EIR, no response or amplification is required for the letters from the San Diego County Environmental Analysis Division, LAFCO or the City of Chula Vista's Environmental Control Commission.

# COUNTY OF SAN DIEGO



## Integrated Planning Office ■ Sweetwater Community Planning Group

County Administration Center, 1600 Pacific Highway, San Diego, California 92101 ... Telephone: 236-4597

PAUL C. ZUCKER  
Assistant Chief  
Administrative Officer  
Integrated Planning

13 February 1979

Douglas D. Reid  
Environmental Review Coordinator  
Chula Vista Planning Department  
P. O. 1087  
Chula Vista, California 92012

Dear Mr. Reid:

The Draft Environmental Impact Report, EIR-79-2, (El Rancho Del Rey, Long Canyon Sectional Area Plan), has been reviewed and attached are the comments and statements from the Sweetwater Community Planning Group.

Sincerely,

A handwritten signature in cursive script, appearing to read "Ed Cramer".

Ed Cramer, Chairman  
Sweetwater Community Planning  
Group

EC:mgb

RECEIVED

BY Reid

FEB 14 1979

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA

1. Cover letter could lead to an improper act. An EIR cannot have comments foreclosed by artificial date. Comments should be considered by each decision making body at time of certification.
2. Page 12, Section 3.1.3 If the purpose of this document is to assure the public and the decision makers of the consequences of the project (a requirement of CEQA), this section and 3.1.4 fail to do so. A more accurate summary would be "We know what's good for you so you don't need to know what it is".
3. Page 15 It is difficult to give much credibility to your comments regarding erosion controls in light of the significant problems encountered adjacent to this site. Their EIR said the same thing as this. (Degen/Hall) Siltation (with no funds for clean out) can also lead to significant reductions in downstream capacity making the 1% increase in runoff mentioned in 3.4.2 a true hazard for your potential neighbors. The potential cumulative impact of these two should not be overlooked. The City of Chula Vista has also refused to clean out the Long Canyon Drain after the Bonita Ridge development's silt was deposited. The flood channel has siltation problems now and the homes are below it. (P.22)
4. Page 17, Section 3.4.1 "Sunnyside" on second line is misspelled.
5. Page 30, Section 3.4.3 It is difficult to imagine a no mitigation conclusion in light of the Barbour Report, the current problems in this channel and the state of Municipal liability for drainage problems.
6. Your conclusion requires the consideration of soils being thoroughly wetted (Page 21). Your statement to the effect that once soil is wet it won't absorb more water isn't unique.
7. What is the capacity in CFS of the culvert on Page 22?
8. Page 30 Since it is only the water in the top of the channel that overflows, the 1% capacity is all yours. My analysis of your statements would support a conclusion that this subdivision will result in substantial environmental damage to downstream property due to flooding. Because of impervious surfaces, the frequency of flooding will increase. Because of more rapid runoff from streets, the rate will change adversely the speed



at which the level of saturation equivalent runoff rate is achieved.

The no mitigation required statement is not supported by your report.

9. Page 34, 3.6.3 Wouldn't a lesser scale project also reduce the significance?
10. Page 34, 3.6.4 The significance of every impact is subjective. The statute asks, is it significant? In Section 3.6.2 you indicate that 700,000 cubic yards of imported fill would be required. Where is it coming from? Why isn't this impact analyzed? Three million yards of dirt is significant in the estimation of most people.
11. The errata with respect to 3.23.3 d is not reflected in Section 3.8.1.
12. Page 45 Storm Runoff There is no mention of the extensive landscaping required to control erosion on the steep slopes as a requirement of the map. If it is required, it is also an excessive consumer of energy and water.
13. Page 56, 3.12.3 It should be a condition of approval that the sites be excavated by a qualified archaeological team before grading. If that is not feasible, they should be capped with one foot of soil and placed in open space. If this measure is also infeasible, it should be so indicated.
14. Page 64, 3.15.3 If you do not analyze the economic viability of the development at a lower density, how can the public be assured that this is infeasible? How can you make findings under 15088?  
  
In light of the excessive grading, sewage treatment incapacity, archaeological impact, drainage problems and aesthetic impact, it is easy to see why this large scale project is inconsistent with the Sweetwater Community Plan. Because Chula Vista is able to place its adverse traffic impacts on the Sweetwater residents, it remains consistent with their plan.  
  
It would appear that development at the density proposed is highly adverse and a significant impact. 3.15.4
15. Page 65, 3.16.3 This should be a feasible measure. The impact is not subjective, it is significant.
16. Page 71, 3.18.4 If the fiscal impact on the city is adverse at this den-

sity, why not a lower density?

17. Page 75, 3.19.3 This action should be updated to reflect SB 201 impact. It should also discuss if Chula Vista has an ordinance implementing this legislation.
18. Page 83, 3.25.2 The most critical impact is upon Elmhurst Drive. I could not find it on your diagram.
19. Pages 85 and 89 The impact on Acacia is described, but the mitigation of the impact discussion is swept under the rug. The discussion should be expanded on each impact. To make clear each impact and the associated mitigating measures, each should be discussed individually instead of lumping them into one action.
20. Page 92, 5.0 The cavalier dismissal of Alternative d is not a valid treatment of the affected Community Plan. The low density is a means of avoiding most of the adverse impacts identified in the EIR. The economic viability of the investor is a specious argument since the zoning of the parcel should have been reflected in the purchase price. If it was not, it is not the province of the city to bail out the person who paid too much for the land.
21. GENERAL COMMENT It appears that this document was prepared by MSA, Inc., not by the City of Chula Vista. It appears from the lack of objectivity that the preparer is employed by the developer. If this fact is true and there is no contract with the city, this EIR was not prepared in accordance with Public Resources Code 21082.1

## Response to Sweetwater Community Plan Group

1. The cover letter indicated that at the end of the Planning Commission meeting public comments would be closed concerning the Draft EIR. This does not preclude public comment on the Final EIR.
2. Prior to construction of the project, more detailed geotechnical reports will be completed as required by the grading ordinances. These geotechnical studies cannot be done until more detailed engineering work is completed. All of the detailed reports will be available to the public for review, and all of the recommendations of the geotechnical reports will be incorporated into the project as conditions of approval.
3. If erosion problems are occurring on land adjacent to the site, this is a subject which should be addressed to the governmental agency responsible for the supervision of this grading. Siltation problems already exist downstream from the site. Mitigating measures will be implemented to improve the drainage in Long Canyon and therefore siltation problems will be reduced. It is not within the province of the City of Chula Vista to clean out silt in drainage structures within the jurisdiction of the County of San Diego.
4. The misspelled word has been corrected.
5. Note revised p. 30 in draft EIR. Note also response to the Long Canyon Homeowners Association on this subject.
6. The term "thoroughly wetted" is part of the definition as given by the U.S.D.A. The commentator is confused as to the meaning of permeability. Permeable soils, when thoroughly wetted, will still permit the downward flow of water, rather than having it run off. Most of the onsite soils are nearly impermeable when thoroughly wetted.
7. The c.f.s. of the box culvert beneath Bonita Road cannot be estimated because, according to the Barbour report, "it varies in cross-section throughout its entire length." Neither can the c.f.s. for the metal culvert be calculated because this figure will vary depending on how much siltation has taken place and because the diameter was only estimated by the Barbour report. They state, however, that "the size is not adequate for design flows."
8. The answer to this question was addressed in the responses to the Long Canyon Homeowners Association letter. Downstream damage due to flooding already exists, the runoff is estimated to increase by 4%, and mitigating measures will be instituted as part of the project to reduce impacts.

9. If roads are to be built to provide access to homes within the project area, it is not necessarily true that fewer residences would mean fewer roads or lessened impacts. The major grading will be to construct the roads rather than house pads.
10. The significance of every impact may be subjective. Can the commentator give the exact figure (threshold) in cubic yards of when a project can be considered significant? The fill dirt will be obtained by the developer from a commercial supply source of this material. The exact source cannot be specified at this time. This subject may require future environmental analysis.
11. The San Diego Metropolitan Sewerage System is occasionally over-capacity.
12. The landscaping is mentioned in section 3.8.2., Storm Runoff. It may be assumed that erosion control measures will be made a condition of approval of the map. Note that the City of Chula Vista requires that Type II plants be planted on the slopes. These are plants which, once established, survive and grow with natural rainfall. Therefore they do not require continuous irrigation or any other maintenance and are not consumers of man-supplied energy or water.
13. The archaeology section (3.12.) clearly states that the sites will be mitigated prior to construction. This will include all of the measures incorporated into the report from the Archaeology Report in the Appendix.
14. The analysis of economic feasibility of a project is not the function of an EIR. The City of Chula Vista is not, at this time, making findings under 15088. When the Sectional Plan is under consideration this will be the opportune time to make findings under 15088. There will be traffic impacts on both the City of Chula Vista as well as San Diego County.

The proposed density is consistent with the Chula Vista General Plan.

15. Aesthetic impact assessments are the most subjective of the various topics in any EIR. The degree of significance is also subjective. What to one person is attractive is repulsive to others, e.g., modern art.
16. The project's fiscal impact on the City is unknown as a result of Proposition 13. However, it is likely not to be adverse, if pre-Proposition 13 concepts prevail.
17. Chula Vista does have an ordinance, #1848, which addresses this subject. The ordinance states that if a school district considers that a school is overcrowded then the City may

require dedication of land, payment of fees or any combination to assure that adequate facilities are available for the children of the project.

18. Elmhurst Street has been labeled on Figure 21 of the EIR.
19. The mitigation of impacts on Acacia Avenue is specifically examined in the appended traffic report (page 20). Specific measures from among those suggested for the project included:
  - "4. In response to the situation that exists immediately prior to the development of Phases iv and v, an assessment of appropriate contributions to the improvement of Acacia and its junction with Bonita Road should be made. These contributions should be a condition of approval of the phases in question. The responsibility for the improvements, including signalization, should be borne among the developments contributing to the problem."
  - "8. The project impacts on Acacia Road would be greatly reduced if Phase v were not connected to Long Canyon Drive. If Central Avenue is improved and Phase v is not connected to Long Canyon Drive, the result would be as noted in Table 3, reducing post-project ADT on Acacia by almost 30%."
20. Lesser density does not necessarily reduce all impacts. Reduction in the number of units may reduce some grading impacts, however most of the grading is taking place for road construction. Lesser density, however, would reduce the demand for school and other governmental service, demands for water energy and sewage capacity.
21. This document was prepared by MSA under contract with the City of Chula Vista, which closely supervised the preparation of the document. As is evidenced by the comments from both the general public and the project proponent, the EIR preparer is once again caught in the middle. Keep in mind that an EIR is basically an informational document which is intended to expose all of the impacts. Objectively achieving this exposure is very difficult.

LONG CANYON  
HOME OWNERS ASSOCIATION

Please address reply to:  
4425 Acacia  
Bonita, Ca. 92002

ENVIRONMENTAL REVIEW HEARING, CHULA VISTA, (EIR-79-2)

The Long Canyon Homeowner's Association believes that the Environmental Impact Report (EIR-79-2) for the proposed Bonita Long Canyon Estates Subdivision is inadequate and superficial in that the adverse impacts presented by the EIR are often minimized or insufficiently presented and in addition, the mitigation measures for these adverse impacts are not specifically and thoroughly discussed nor do they sufficiently address the problems presented. Although these are general characteristics of the entire EIR, this report will for the sake of time deal only with those portions of the EIR which relate specifically to one community.

DRAINAGE

The EIR states that the 100-year flood area of Long Canyon which extends through the property will be crossed in 2 locations and that approximately 76% of the project site is within the 1155 acre Long Canyon Basin which flows northwest and joins the Sweetwater River just north of Acacia Avenue.

The adverse impacts presented by the EIR include:

1. High runoff due to low soil permeability
2. Major unresolved issues related to off-site flooding in Long Canyon
3. The most severe problems with existing drainage facilities occur in Long Canyon because this is the basin which drains a very huge area compared to the others and because flooding brings problems to a larger number of residents, plus the fact the drainage facilities were not properly sized. (p. 29)
4. The analysis of Significance (p. 31) states that any increase in runoff, however small, will aggravate an existing drainage system whose inadequacy is well documented.

The mitigation measures offered include:

1. The project proponent may be required to contribute towards solving the problem (through Zone 3). This is too indefinite a solution and inadequate. The Barbour report of 1975 (quoted frequently in the EIR) suggests around \$400,000 (Table 5) for the necessary improvements to Long Canyon Basin. Mr. Barbour testified on Jan. 10 at the Board of Supervisor's hearing that the cost would now be over \$600,000. The developer's proposed contribution of \$252,000 would not make this possible. In addition, the Long Canyon improvements have not been included in any Zone 3 list of priorities. This is not mentioned *in the EIR*
2. Properly designed drainage structures and energy dissipators combined with extensively landscaped lots will contribute to the mitigation of runoff problems associated with the project. We have had personal experience with this type of proposed mitigation in our community and we know that it is not the answer to flooding problems

in the Long Canyon Basin. The runoff does have a more concentrated flow and a greater velocity because natural drainage channels are filled and the natural percolation of the soil is replaced with rooftops and asphalt. Regardless, the crux of the matter is that when the water leaves the subdivision by any method, it still must enter the natural, partly unimproved channel adjacent to Acacia Avenue residences.

- 3. "The mitigation of existing drainage problems within Long Canyon has been suggested by the Barbour report as these measures are off-site and as the project is not expected to contribute significant additional runoff in Long Canyon, the project proponent has not suggested mitigating measures." (p. 30)

This is an incredible statement in view of the analysis of significance of the problem. No significant runoff and yet 76% of the project site is in the Long Canyon Basin. The Barbour Report (adopted by the Board of Supervisors in 1975) states on page 5 that future development within the basin can be planned such that it does not encroach upon the major existing natural watercourses. Where development encroaches upon the necessary flow area, it should be the responsibility of the developer of the property to provide adequate improvements to contain the design flows through the development and downstream.

Additionally, the Board of Supervisors recently disapproved a Tentative Map of only 20 acres because of its impact upon the Long Canyon Basin.

How can the EIR justify such a mitigation proposal? If this adverse impact is not properly mitigated, have compliance with CEQA and the State Subdivision Map Act been achieved?

TRAFFIC

*project will increase the area traffic by 8900 ADT & will add over 2000 Residents To The Area*  
Access to the site will be by way of Acacia Avenue on the West. Phase IV includes the extension of Acacia Avenue. This will add 1740 trips per day (Table 6) to Acacia. The adverse impacts pointed out by the EIR are:

- 1. Acacia is experiencing rapid residential development which will soon the ADT to a level far above its design capacity (p.83). Acacia is currently carrying volumes in excess of its design capacity. (p.2)
- 2. The most dramatic rise in traffic among the routes exceeding design capacity is that experienced by Acacia, where the total number of vehicles will increase from a current ADT of 1700 to a post-project total of over 4500 with the current implementation of current and planned new development. (p. 88)
- 3. A conflict will arise at Acacia and Bonita Road during peak times when a substantial left-turn flow from Acacia would seek to enter westbound lanes of Bonita Road at a rate of more than 2 vehicles

perminute (p. 85).

The analysis of significance states (p. 85), the implementation of the Bonita Long Canyon Project produces 3 significant impacts that are not mitigable within the current project design - one of which is the impact of Phases IV and V on Acacia. Yet these mitigating measures are proposed:

1. Developer's contribution to off-site road improvements. This is not a feasible mitigation. To improve Acacia would call for condemnation of private property and the destruction of over 300 mature trees. In any event, would the contributions be adequate?
2. Long Canyon Drive and Tim Street are suggested. This cannot mitigate because this proposed development was denied by the Board of Supervisors in January. One reason was the impact of traffic on Acacia Avenue. Tim Street will not go through to this proposed development. Acacia will have to take all this traffic.
3. Participation with other developments in improving Acacia at its intersection with Bonita Road. Yet this doesn't address the problem of Bonita Road which is also over design capacity. There is nothing in the county's 6-year plan for the improvement of Bonita Road.

The mitigation measures are inadequate for this adverse impact.

#### SCHOOLS

The adverse impacts on near-capacity schools is a major area of concern. The Analysis of Significance states that "the fiscal impact of the addition of these students to the school system significant. (p. 73) Yet, what mitigation is offered? On page 73, the EIR states "The mitigation of the financial problems of the schools is not within the province of this EIR." What kind of mitigation is this? Another mitigation measure is the contribution of fees to the school district. Yet the EIR points out that these sums are not adequate to build classrooms. The EIR should address itself more thoroughly to a problem which truly perplexes our community.

#### EROSION

The EIR points out that these soils are erodable and expansive. That clays and clayey sandstone within these formations are often subject to slope failure. Soil chart (p. 13) shows erodibility from moderate to severe in almost all types of soil. The mitigation measures offered are:

1. Problems will be controlled by planting and irrigating newly graded slopes. (p. 15)
2. Expansive soils will be mitigated by proper engineering methods. (p. 15)
3. Soil impacts are considered to be insignificant as long as the appropriate mitigating measures are incorporated into the project. (p. 15)



These measures proposed are vague and do not offer enough security against erosion. Anyone who drives on Acacia and looks at the development adjacent to our residences can easily see examples of the erosion capability of the soil. The same mitigation as stated above was offered by the developer and the county. It is not enough.

#### GRADING

The EIR points out that the site is irregular terrain with steep sided canyons and considerable native vegetation and that topographic changes in the site is a major area of concern. Grading will consist of over 3 million cubic yards of fill and over 2 million cubic yards of cut. The highest fill bank will be 75 feet. (p. 30)

Adjacent to our community will be 921,000 cubic yards of fill and the cut is 114,500 cubic yards. (Table 6)

Grading for each single housing pad will be 4,300 cubic yards.

What is the mitigation offered?

1. Until other detailed geotechnical investigations are completed on the remaining acreage, no specific mitigating measures can be suggested. Page 12
2. It is inferred from these 2 reports that all the geotechnical hazards which ~~exist~~ or may be found to exist on the site can be mitigated to acceptable levels.
3. Because both the consultants indicate that the geologic hazards can be mitigated, the impacts can be rendered insignificant by proper engineering techniques. (p. 12)
4. Other further mitigating measures are not necessary.

Did you hear any specific proposal here for the grading impact? This is vague and meaningless.

5. Finally the EIR states the project has been designed to minimize the amount of grading which will be required. Other further mitigating measures are not necessary. This mitigation leaves one with the feeling that the topography will remain undisturbed. How can the EIR state that grading has been minimized? We're talking about over 3 million cubic yards of fill alone and over 2 million cubic yards of cut and topping off 30 feet from the top of hills and no further mitigation is required? Incredible?

RECEIVED

BY       *Reid*      

FEB 14 1979

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA

*Please address reply to:*

**LONG CANYON**  
HOME OWNERS ASSOCIATION

The Long Canyon Homeowners Association suggests the following feasible alternatives:

- (1) Delete Acacia Avenue from this proposed project. Recognize that its designation is residential and do not permit it to become a collector road for this development. We ask for a wall to be built at the end of Acacia to serve as a buffer between our neighborhood and the development.
- (2) If the equestrian center at the end of Acacia is to be a commercial enterprise, we request that it be moved from our area. A commercial center is not a compatible use adjacent to a semi-rural neighborhood.
- (3) Most importantly, we ask you to join with the Board of Supervisors who have publicly stated that no more development must be allowed in the Long Canyon Basin until the drainage problems are adequately and permanently solved.

In conclusion, the EIR is inadequate in that the adverse impacts are generally swept under the rug and a cavalier attitude is expressed toward the adverse impacts and the mitigating measures. The mitigation proposed is generally insufficient, lacking in specific detail, and vaguely worded with such phrases as "may be, possibly, could be, if, it is anticipated, it is expected and assuming. Too much in this EIR is left to chance, to possibility, and to the good-will of the developer. If the adverse impacts of this development are not properly mitigated or if findings are not made under 15088 is this EIR in compliance with the California Environmental Quality Act?

## Response to Long Canyon Home Owners Association

### Drainage

In the mitigation section, suggestions are made to reduce the drainage impacts. These are only suggestions. The final mitigating measures will be determined by the City of Chula Vista and they will determine from the above suggestions which one or ones will be adequate. On page 30 of the revised EIR the total estimated improvement cost has been noted, and the fact that the Long Canyon improvements have not been included in any Zone 3 list of priorities is mentioned on page 29.

If properly sized drainage structures within the community are not the answer to flooding problems, then there are no engineering solutions. Landscaping within the project will be that which the City of Chula Vista designates as Type II, i.e., those plants which can survive without irrigation, and thus they will act as erosion retardants much as the native vegetation does now. The tentative map does not indicate that all natural drainage channels will be filled, and the natural percolation of the soil was noted on page 21 as being very slow.

The mitigation section has been rewritten to indicate that several measures may be employed to reduce the impacts of construction in Long Canyon and that the developer has agreed to pay fees for Long Canyon drainage improvements. The development will not encroach on the major existing natural watercourses. Where roads are to be constructed, they will be built so as not to impede the natural flow of water.

In summary, prior to construction of the project, the City will indicate which mitigating measures are necessary in order to reduce the impacts of construction in Long Canyon.

### Traffic

#### General Comment

It appears that the Long Canyon Home Owners Association has slightly misinterpreted the impact of the project-generated traffic on Acacia Avenue. As Figure 22 of the EIR (Figure 2 of the appended Traffic Report) shows, most of the trips allocated to Acacia are added at Tim Street via the proposed Long Canyon Drive connection. Thus, the impacts referred to are localized to the northern segment of Acacia, while the southern portions (south of Tim Street) receive only about 524 new daily trips from the Bonita Long Canyon project.

#### Mitigation Notes

1. Agreements for the upgrading of Acacia can be formulated so that contributions will match

anticipated expenditures. In the northern segment of the street, which would bear most of the project-generated impacts, road easements are held which would allow its expansion.

2. Long Canyon Drive and Tim Street are not suggested as alternative routes. The alternatives referred to anticipate the lack of connection of the project to Long Canyon Drive and the diversion of project-generated traffic to Corral Canyon Drive and Central Avenue. In the event that Tim Street and Long Canyon Drive are not available as western access routes, the project impact on Acacia would amount to approximately 524 daily vehicle trips (EIR, Figure 22). In spite of the denial of the project which would have extended Long Canyon Drive to the Bonita Long Canyon Project, the potential for a connection to the project site at this location still remains. A future project may be approved which may include the completion of this linkage.
3. Bonita Road east of Otay Lakes Road will assume one of the lowest ADT rises among the major streets in the vicinity of the project. While it is anticipated that it will be operating at 159% of design capacity at the completion of the Bonita Long Canyon project, current street volumes in the vicinity of the project testify to the ability of Bonita Road to sustain such volumes until road improvements are made.

#### Alternate Mitigation Suggestions

The deletion of Acacia Avenue from the project by the construction of a wall would not eliminate the impact of the project on Acacia. As the project is proposed, seventy percent of the project-generated traffic impact on Acacia arrives there through the proposed connection of the project to Long Canyon Drive and Tim Street.

#### Schools

Surely the project proponent cannot be expected to assume all of the school's fiscal problems which have been brought on by Proposition 13. The school systems involved have not yet responded to the EIR, therefore their position is unknown. The developer fees are set by the school districts and, if they are inadequate, then these fees should be raised. The developer is willing to contribute a school site and is prepared to grade this site for placement of facilities, temporary or permanent. Concerning the impacts on the High School District, the district has not indicated what contributions beyond fees it would require in order to adequately house the new students.

#### Erosion

The soils investigation reports which were prepared for this project are preliminary. Before any project can begin construction, more detailed geologic reports are done and grading specifications are clearly delineated. No project at this stage can be more specific as to erosion measures. In addition there

are laws regarding grading and if there are developments in the vicinity which are creating problems it is possible that grading was insufficiently supervised by the County.

### Grading

In general, the roads are contoured along ridge tops or valleys. Much of the grading volume is involved in the construction of the roads. Should the roads be designed for lower traffic volumes, there would be less grading. However, these roads have been specified as part of the regional circulation network and, as such, have been designed accordingly. Not all hills are being topped by 30 feet. Specifically, those areas which will be cut include cuts varying from 20-40 feet in the region of G Street, cuts of 20 feet on Baylor Avenue, 10-foot cuts on Cumbre View Street, 10-12-foot cuts on Q Street, cuts of 12 feet on R Street in Phase ii, and cuts up to 20 feet on R Street in Phase v. It appears that the park and school sites may be cut from 20-30 feet.

Deletion of Acacia Avenue from the project would prevent a very necessary access for emergency vehicles. The additional ADT's which the traffic section indicates will be added to Acacia are not high enough to warrant closure. The equestrian center is not to be commercial, except that horses will be boarded there by residents of the project.

3579 Lomacitas Lane  
Bonita, California 92002  
January 25, 1979

Douglas Reid  
Environmental Review Coordinator  
Chula Vista Civic Center  
P.O. Box 1087  
Chula Vista, California 92012

Dear Mr. Reid:

re: EIR 79-2

I am writing this letter in reference to the El Rancho del Rey Long Canyon Sectional Area Plan. It is apparent that three archaeological sites, SDi 4891, 5929 and 5930, will be totally destroyed in the process of building this subdivision. I think this is terrible.

El Rancho del Rey's area is extremely large (650 acres) and the sites occupy a very small area in proportion. As representative of the public who would gain knowledge from such prehistoric sites, I feel the government should be granted easements to those three areas. Students of the adjacent high school could implement an excavation project, therefore serving an educational purpose as well as an archaeological one.

Another solution might be to postpone that phase of building until a complete excavation has been made.

It appears that the report has been structured so as to foreclose all alternatives except for site destruction. I am sure that there are others that should be considered. I am only a high school student, and I can see them.

Sincerely,

*Sandy Riess*

(Miss) Sandy Riess

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BY *Reid*

FEB 9 1979

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA

Response to letter from Sandy Riess

It was noted on page 56 that "Impacts to all three sites may be mitigated through a program of surface collection and subsurface excavation to retrieve buried materials." Such a program, as discussed in more detail in the Appendix, would effectively preserve the knowledge from these sites. Such knowledge then becomes available to those who are studying the prehistory of San Diego County. Excavation of sites by students is discouraged by archaeologists unless this procedure is carefully supervised.

1638 Mills Street  
Chula Vista, Ca. 92010  
January 16, 1979

Environmental Review Coordinator  
Chula Vista Civic Center  
P. O. Box 1087  
Chula Vista, Ca. 92012

Dear Sir:

We would like to hereby register one major concern regarding a proposed project located north of Bonita Vista High School and east of Otay Lakes Road and Acacia Avenue consisting of 768 single family dwellings and 56 multiple family units.

We were pleased to see that the proposed project included an elementary school site; but our concern is that in light of Proposition 13 and other financial difficulties, the local school districts do not currently have money with which to build additional schools. Tiffany Elementary in the College Estates Area and Sunnyside Elementary in Bonita are the two elementary schools located closest to the proposed development, and they are both full to capacity NOW.

Bonita Vista Junior and Senior Highs, which would also serve the proposed development, are currently OVERcrowded, with no money available to build an additional junior or senior high to alleviate this problem. Therefore, the way we see it, the building of this development will just more seriously crowd present schools, thus hampering the quality of education, and/or force bussing to other schools, which we object to fervently.

We would like to go on record as being against this proposed development for the above-stated reasons. Should there be some kind of a guarantee that the needed elementary school will be built at the time of the development then--and only then--could we withdraw our opposition and thereafter support the project.

Thank you for your consideration of our concerns.

Sincerely,

*Mr. & Mrs. John R. Wunderli*  
Mr. & Mrs. John R. Wunderli

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*or Quid*

JAN 17 1979

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA



Response to letter from Mr. and Mrs. Wunderli

This subject was covered in the responses to the Sweetwater Community Plan Group and the Long Canyon Home Owners Association.

February 10, 1979

Environmental Review Coordinator  
Chula Vista Civic Center  
P.O. Box 1087  
Cula Vista, CA 92012

Dear Sirs:

We are writing to you to express our interest and concern about Bonita Long Canyon Equestrian Estates development. We have nothing against the development of the land, but we have a great deal of concern over the proposed roads and traffic patterns created by the development. And our concern multiplies when we realize that more than one developer is involved in the road construction.

Page 83 of the Environmental Impact Report states that Phase I (191 homes) will create 2100 additional daily vehicular movements. In Phase I 131 homes will exit via Baylor-Dartmouth-Auburn-Elmhurst and/or the non-existent Via Haciendas (which is to be built by another developer), creating 1440 vehicular movements of the estimated 2100. Will the construction of Phase I be delayed until Via Haciendas is Built and open to traffic?

Even if Via Haciendas exists, one can safely assume that one half the cars of the 131 homes (720 daily vehicular movements) will continue to use Baylor-Dartmouth-Auburn-Elmhurst because they are at the mid-point between Via Haciendas and Baylor. Is this sound and responsible planning for a non-through residential street? We think it is NOT!

The following is from page 83 of the Environmental Impact Report: "The most critical localized impact of the Phase I project will be experienced at Elmhurst Drive and Via Haciendas. Elmhurst Drive is currently operating in excess of its design ADT, and was not designed for use as a through route. Traffic currently using this route, in addition to that which will be generated by the LDS Church and the Phase I project, could account for an ADT which is nearly double the volume for which the street was intended. Due to the connection of the Project at Via Haciendas, most of the traffic from the northwest and central portions of the Phase I project will not make use of the Baylor-Dartmouth-Elmhurst linkage. Virtually all of the trips using Elmhurst Street for connection to Otay Lakes Road will come from the southeast portion of the project via the eastern extension of H Street. Thus, while Elmhurst will be impacted by Phase I project, Baylor, Dartmouth and Auburn will not."

The developer is not being realistic. There is no way for any of the 131 homes behind Baylor to get to H street without using Baylor-Dartmouth and Auburn. The map showed no road connecting the 60 homes near the proposed H Street and Rutgers intersection and the 131 homes off Baylor. Will such a road be built prior to the construction of said homes? And will H Street be put through to Rutgers?

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BY Reid

FEB 12 1979

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA

-page two-

In essence, what guarantee do we, as homeowners, have that a developer will build new access roads BEFORE he begins realizing a profit on his investment? We would like to see the roads built first so that existing roads and associated homeowners are not placed in any physical or mental jeopardy.

Sincerely,

Dale R. Bornhorst  
Carol Ann Bornhorst

\*Draft Environmental  
Impact Report EIR-79-2  
El Rancho Del Rey  
Long Canyon Sectional  
Area Plan  
A 650-Acre annexation  
to the city of Chula Vista

Dale R. Bornhorst  
Carol Ann Bornhorst  
1640 Dartmouth Street  
Chula Vista, CA 92010  
421-0769

Response to letter from Bornhorsts

Paragraph 2. The traffic element of the EIR assumes the completion of Via Haciendas prior to the completion of the Phase i project, however, that assumption may not have been clearly stated in the EIR. All traffic analyses used this assumption. Obviously, far heavier traffic impacts would result on the Baylor-Dartmouth-Auburn-Elmhurst linkage if Via Haciendas is not in place prior to the completion of Phase i.

Paragraph 3. The allocation of traffic to the network assumes that trips will follow a least-distance path. If travel patterns vary from this assumption, the variation should be equally applied to traffic from existing homes in the Baylor Street area (also near the "mid-point") which will no longer travel to "H" Street via the Baylor-Dartmouth-Auburn linkage. Though (assuming once again that Via Haciendas is in place) a few trips may indeed make use of the Baylor-Dartmouth-Auburn linkage, a roughly equal number of trips will likely be "captured" by the alternative route provided by the project streets and Via Haciendas. Thus, the net change in traffic should be insignificant.

Paragraph 5. The report on traffic was not prepared by the developer but by a private consultant retained by the City of Chula Vista. As was discussed in the paragraph quoted by the letter, the 131 homes north of the Baylor connection will access the network of major roads through Via Haciendas and the 60 homes to the east of the existing subdivision will connect through an eastward extension of "H" Street to Elmhurst Drive or, more efficiently, via a complementary westward extension of "H" Street to Otay Lakes Road.

Paragraph 6. The statement of essence is well founded. Proposed connections should indeed be in place prior to the completion of those phases of the project that require their presence. These connections could be made conditions for tentative map approval.



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BY Quid

FEB 14 1979

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA

February 13, 1979

D. J. Peterson  
Director of Planning  
City of Chula Vista  
276 4th Ave.  
P.O. Box 1087  
Chula Vista, California 92012

Re: Environmental Impact Report EIR-79-2 on Bonita  
Long Canyon

Dear Mr. Peterson:

In reviewing the traffic analysis of this report, it appeared that some of the impacts identified were overstated and traffic volumes used in the analysis were high. Consequently, Otay Land Company retained Jim Federhart, P. E. of Federhart and Associates to review the E.I.R. and comment on the traffic analysis contained therein.

Following is a summary of Mr. Federhart's comments:

The use of design capacity for streets in terms of total ADT is misleading in determining the traffic volumes that streets can carry. For example, there are many situations that can be cited where two lane streets carry 15-20,000 ADT and four lane streets with no median carry up to 25,000 ADT. The critical volumes in street carrying capacity are those occurring at peak hours. Further, the carry capacity is most likely to be controlled by the capacity at intersections rather than the number of travel lanes in areas where free flow of traffic is not restricted. Thus, two lanes free flowing can accommodate as much traffic as four or six lanes at some intersections. In general, the conclusions that various roadways affected by the project will be over capacity is not substantiated by an analysis of intersection capacities.

The peak hour figures on pages 83 thru 86 should be reduced 71 to 80% of the number stated. Studies of two existing developments in the area in October 77 showed that the A.M. peak = 0.74 trips per dwelling unit (0.61 trips out and

0.13 trips in) and the P.M. peak = 0.71 trips per dwelling unit (0.50 trips in and 0.21 trips out). These figures might vary slightly from one development to another, but in general, the traffic generation figures used in the report are significantly higher than surveys of existing traffic conditions would warrant.

Distribution of trips in and out of the project have apparently been made entirely on a factor of distance. Experience has shown that many drivers will travel greater distances, if they can save time by doing so. Thus, congestion at an intersection such as Acacia Avenue and Bonita Road will cause many to seek alternate routes from the most westerly portions of the project, and the impacts anticipated in the report will be reduced for this intersection.

Connection of the streets at the western property line of the project would be advantageous to provide secondary access to unincorporated areas to the west, particularly for emergency vehicles which must now rely entirely on a single access on Acacia Avenue. These connections are not critical to traffic circulation within the project and could be modified to restrict resident traffic from using residential streets to the west.

The full improvement of major streets is not necessary to increase carrying capacity. For example, minimum widening along Otay Lakes Road and Telegraph Canyon Road in segments between existing developments striped for two travel lanes in each direction, with parking prohibited in these areas, would provide a carrying capacity of 1800 trips per lane per hour, each way. Widening an additional 10' at intersections to provide for turn movements would further accommodate traffic capacities.

In the traffic appendix of the E.I.R., future conditions - approved projects on pages 6 and 7, identification of traffic generation is provided. It appears that trips for the church and office projects are considered additive to the traffic on Otay Lakes Road, without consideration of the probability that most of the trips occurring during peak traffic periods would be travelling in the opposite direction to peak flows.

The development of this project over a four to six year period will allow time for off-site improvements to the circulation network to occur which could minimize the potential traffic impacts envisioned from this development. This combined with appropriate reductions in the anticipated traffic generation (based on survey data) from the development, will result in a lessor impact on the major street system in the area than has been indicated in the E.I.R.

From the above comments by Mr. Federhart, it would appear that the traffic impacts identified in the E.I.R. are more severe than is likely to occur from development of this project. We would appreciate the opportunity to present additional information to confirm these conclusions as review of the project proceeds.

Respectfully,

  
James F. Ashbaugh

JFA:km

cc: The Gersten Company

Response to CEPA - J. Ashbaugh - J. Federhart letter

Paragraph 2. The use of design capacity as an indicator of system capacity is a valid measure, as are those suggested by Mr. Federhart. The traffic report and the EIR included a statement which read:

"In this report, the term 'design capacity' is frequently used. It should be noted that this term indicates the optimal traffic volume for which a roadway is designed. This term should not be confused with the concept of absolute capacity which, depending on factors of speed, roadway design and impediments to traffic flow, can range up to twice design capacity during peak hour." (Traffic Report, page 11.)

While a roadway may indeed have the capacity to maintain higher rates of flow, it is generally understood that the intent of daily design capacity guidelines contained in City policies exists not only to provide adequate capacity for traffic in terms of roadway geometrics, but also to provide that capacity at a level of service which is appropriate for the location of the roadway in the urban area and the land uses it is intended to serve. For Acacia Avenue, as an example, this means that even though the design and geometrics of the roadway itself might allow for a daily capacity of two to three times its intended design capacity, as a residential street in a semi-rural location this would obviously be far from desirable.

As for the use of hourly and/or intersection analysis to achieve a better comprehension of system impacts, it should be noted that these indicators were used to specify impacts at critical locations. Existing and future signal warrant calculations were provided as an indication of the impact of the project on the Acacia Avenue/Bonita Road intersection (Traffic Report, page 17). As a measure of the heavy volumes being carried by the network of major streets in the vicinity of the project, the hourly volumes on Telegraph Canyon Road were shown to be very near absolute hourly capacity (Traffic Report, page 6). While these two spot applications would be inadequate to judge system impacts from alone, when coupled with the more generalized analysis of the traffic situation in the eastern Chula Vista area, which is generally acknowledged by residents and professional observers alike, they contribute to the evaluation of impacts on the road system as described in the report and the EIR.

Paragraph 3. The computation process which arrived at the peak hour generation of traffic is described in the Traffic Report (page 8). Beginning with the City guideline generation rates (City of Chula Vista Environmental Review Policy, page 43), daily rates were chosen and allocations made. Streets in the vicinity of the project which currently receive only residential loadings (i.e., Corral Canyon, Elmhurst, Acacia) were averaged to



obtain a daily percentage of trips occurring at peak hour. This average figure was found to be very near the regional average for peak hour percentages as described by CALTRANS in its "Traffic Generators Study" (November 1974). Because the generation rate listed for low density residential in the Environmental Review Policy document (11 trips per dwelling unit per day) is somewhat higher than that seen in regional residential averages (often less than 10 daily trips per dwelling unit) it may be assumed that the variation in peak hour generation to which Mr. Federhart refers comes from the variation in the daily rate as cited above. The City of Chula Vista standardized rate has validity as a realistic rate which provides internal consistency for EIRs prepared within the City. Mr. Federhart's study results would seem to indicate a point in the range of potential impacts which the project may produce, but that using either generation rate the locations and magnitude of traffic impacts on the system are still substantially the same.

Paragraph 3. As was indicated on page 11 of the Traffic Report, allocation was conducted on a least distance basis. Should drivers re-route themselves to avoid Acacia Avenue, the problem of congestion is merely shifted (as expressed in Table 3 of the Traffic Report) to Corral Canyon Road and Central Avenue. It seems that a traffic situation so bad as to force trips onto an alternate route ought to be accommodated through some form of mitigation.

Paragraph 4. A modification of this type which would have the desirable effect of creating emergency access to the upper portions of Acacia Avenue, as Mr. Federhart suggests, would again aggravate the traffic situation on Corral Canyon Road and Central Avenue as the price of mitigating the impacts of traffic on Acacia Drive and Long Canyon Drive.

Paragraph 5. Widening the roadways in the manner suggested would indeed increase the capacity of the major roadways. However, it is unlikely that improvements in this manner would meet the long-term needs of the City of Chula Vista. Ultimate plans for the alignment and design of major roads were adopted by the City to meet anticipated needs. Mid-term alternatives, while presenting a possible mitigation for this project, do not speak to the future highway system needs.

Paragraph 6. The City of Chula Vista Environmental Review Policy specifies that in environmental reports all generated trips are to be allocated as "new" trips onto the street system (page 44). It is quite possible that work-to-home trips leaving the office building would be directed towards the residential areas in and around the project, adding to commute traffic; church traffic, in that the LDS ward includes Otay and Chula Vista, may well be additive to incoming residential and college traffic at PM peak hour.

Concluding Paragraph. CEQA Guidelines specify that impacts are to be judged in relation to "existing traffic load and the capacity of the street system" (CEQA Guidelines, Appendix G). It is noted in the traffic report that system-wide major road improvements would benefit the project, but that because neither the timing of road improvements nor project construction phases could be accurately determined, the impacts were related to the existing system. The major road improvement programs were discussed as a potential mitigation on pages 18 and 19 of the Traffic Report. This, coupled with the generation rates and allocation methods used, indicates impacts of the kind and magnitude described in the EIR and the traffic report.

Transcript of testimony in public hearing on

EIR-79-2 on Bonita Long Canyon

My name is Stanley Wade, I live at 5617 Galloping Way in Bonita Highlands. I'd like to ask you, sir, have you considered the traffic, right about where you have the word "traffic" written on the map. Central Avenue runs through there. It leaves Bonita Road as a four lane, basically, a four lane road--that's right, up through there, off the map right where your pointer is--it starts out as four lanes where Corky McMillan put in Bonita Glen, the new post office is there, and it rapidly becomes two lanes. Right about there there is a two lane bridge. Right now traffic is absolutely dangerous, particularly, with all the children in the area. I can't see 2279 more vehicles travelling over that road without major, and I mean, major, revamp of the County road system there, including a good sized bridge. There is also a water problem down there where the water is now coming down and I think there's some other people here from the Glen that want to be represented also, that recently almost got flooded out. So, in addition to the traffic, that road system on Central Avenue just won't handle it, and Corral Canyon is a four lane speedway right now, with the people living in Bonita Highland. So I would recommend and ask the Commission to consider some more inlets to this development if you approve it, other than the one on Rutgers and Corral Canyon.

Chairman Smith: Thank you, Mr. Wade. I might explain a little bit, at this point this is an environmental impact report and it's purpose is to develop all the information on which to determine a later approval. I believe your comments should be included as a further explanation of the circumstances.

Mr. Wade: Yes sir, can I ask you a question? How do you tie in with the County? I live in the County, you are talking about annexing into Chula Vista. Are you talking to the County, or--the area I'm talking about is in the County.

Chairman Smith: The area almost surrounding this is in the County and there is no tie-in. They don't come to our meetings or anything like that but it is a cooperative situation and this is handled through the Department and Jim Peterson has contact with the County from time to time. Would you explain a little bit on that, Jim, please?

Director of Planning Peterson: Yes, there is very close coordination at the staff level between the County and the City, and if, indeed, for instance, the Chula Vista City Council should require some offsite improvements on Bonita Road or Central Avenue that would be fully coordinated with the County Public Works Department. We have a very close relationship in terms of staff dealings.

Environmental Review Coordinator Reid: Mr. Chairman, I might point out that the report does analyze the impact on Central Avenue and that effect is summarized on page 88, table 24 of the report.

Mr. Chairman, members of the Commission, I 'm Mrs. Gail Burkey, 4807 Del Prado. I wish to submit to you tonight a letter from the Sweetwater Community Planning Group, which is signed by the chairman, Ed Cramer. With this letter we have the input from the Planning Group with regard to our comments. Who shall I give this to? (Letter handed to Chairman Smith)

Mr. Chairman, members of the Commission, my name is Martha McDonald. I reside at 4425 Acacia Avenue in Bonita. I am the president of the Long Canyon Home Owners Association. This is composed of approximately 120 families on Acacia, Palm Drive area of Bonita, plus residents of the Bonita Hills Ranch subdivision and some members in the Bonita Glen residential area. Also, I've been asked tonight to represent the 667 members of the Bonita Highlands Home Owners Association. I have written my remarks and wish to present them to you at the end so they might become a part of the public record in this hearing. (Read report which was then submitted in writing.)

My name is June Bessell and I live right on Central Avenue and I'm here with several of my other neighbors and we are concerned about the flooding which exists at the present time and which will increase in the amount of water we have by the runoff from there new homes. Also, in January we had to evacuate our particular home. I have four youngsters and we had a terrible, terrible thing happen at our house. The water almost came into our front door and my husband was swept underneath the house by the water when he was attempting to turn off a water valve, that the water line broke and it was squirting up in the air, and my husband had to go under and when he did he was swept underneath, and there is a real danger of life, that has to be considered. My children, I went up to the school to get my children and I noticed that all the school busses had to return to the elementary school because they were unable to even get through the streets, it was so covered with water. There were cars that were stalled and trucks that just couldn't get out, they had to be pushed out. The water on our particular car went completely over--we have a Toyota--it covered the car. My husband had to bring sandbags in to try to stop the water from going underneath the house. Unfortunately, we had to have the water pumped out from underneath our home and it's a brand new house. We hate to move, we like it where we are. I just hope that you will consider these personal tragedies that do occur to people that are the result of big developers. In 1982 I heard that there was going to be something done, a flood control channel built, but until that time there is nothing for us to protect us except I was told to build a concrete wall around my home, which would be a extreme expense to us, and I don't know how it would affect other neighbors. It could cause them to be more flooded by my having a big wall like that. Last year--we did take photographs this year, but they haven't been developed--but I have some from last year and I want to tell you that the flood water was more this year, it was higher. But this is my front yard, I've taken some pictures here and also I have a picture of the channel that comes straight directly down towards all the homes below this development and the water has to flow across the street and then down, and this year it covered the whole street. There was no street, there was nothing except a big river and it's awful. I hope that somehow we'll be protected. Should I just pass these around.

Chairman Smith: You may pass them. Essentially your comment is to challenge the adequacy of the treatment of the drainage problem in this environmental impact report. I think we've had quite a lot of comment about that already, including the previous speaker, and the one which was presented to me but which was not read aloud also challenges this run-off problem. I think we are adequately warned.

George Emerson, 4335 Corral Canyon. I read in table 8 in the environmental impact report that Corral Canyon will be extended to Rutgers. The houses in the development will not face on Corral Canyon, they face inward, and the speed limit as listed is 45 miles per hour coming down through Bonita Highlands. Is that correct? That brings up two points. It's going to bring up the speed through the County down on to Central, it's 45 and maybe 35 is possible in there. The noise consideration was not pointed out for Corral Canyon which is probably going to turn into a drag strip.

Chairman Smith: Doug, is it possible to establish the speed limit in an environmental impact report. I thought it was State Law, and within the confines of the State Law the City Council or the Board of Supervisors.

Mr. Reid: No, that's not an issue for an environmental impact report and offhand I don't know what the speed limits are on this particular road.

George Emerson: Corral Canyon is indicated at 25 within the development. What is proposed by table 8 is listed as 45 miles an hour. It's listed as 1.7 miles. That's table 8, and there will be an impact on the noise going down through the development, is the other point, and that really is the environmental impact report.

Mr. Reid: That's the assumed noise for a noise analysis. If the speed was stated in the report, that's an assumption going into some further analysis, not a proposed speed limit.

Chairman Smith: It's an analysis of the impact of noise, is it not? Rather than to set the speed limit. This is just an assumption of how much noise would be made.

George Emerson: There's two points and one point's out of order if the 45 mile an hour speed limit is not to be considered here, but if it is the proposal then the noise is a consideration and it's not being considered in the report. Is that true?

Richard Glenn: Table 8 is being used in this section of the report to determine air pollution from vehicular emissions and all it is attempting to do is try to proportion the traffic wherever it might be in the County by speed so you can figure the quantity of emissions.

George Emerson: The other point would be that, although it's not stated, all the homes in the new development do not face Corral Canyon, they face inland, inward, away and other side streets; consequently, there is no houses along there and no reason to go slow, as indicated now on the extension of "H" Street going into Bonita Encore, that's a racetrack going up into Bonita Encore, 45-50 miles an hour, whatever, they can get up to before they turn left.

My name is James Ashbaugh, I'm a planner with CEP Associated, representing the Gersten Company. I only have a couple of brief comments, one is related to biology and the other to traffic. In the biology section it refers to Cleveland Sage as being a unique stand of biology. It's my understanding that this is not in the rare and endangered species list, although it is an unusually dense stand, I guess, of this particular plant. It seems like an overstatement to require its retention in order to mitigate the biological impact of the project, particularly, since a large percentage of the total property is being retained in a natural form for the purpose of trying to satisfy biological concerns.

The other statement, in relation to traffic, we reviewed the environmental impact report and the figures that I guess were supplied to the consultant by the City Traffic people and have some concern about the peak hour trips that were projected from this development, and the applicant for the development retained a traffic engineering firm from San Diego, Jim Fedderhart and Associates, to do a parallel analysis of this. We prepared a letter that goes into the details of this. The main thing I wanted to point out was that based on some surveys of existing developments in the area that Mr. Fedderhart had conducted through the past couple of years, it appeared that the 80 T-peaks that were used in the report were somewhat higher than what he found in actually surveying trips in and out of existing development, which is similar to the type of project that is proposed. Generally those figures worked out to be something like 70, anywhere from 70 to 80 per cent of the peak trips that this report shows, and there are some other details that he references and comments on and I'll just present a letter that outlines those.

My name is Mrs. Challis and I live at 1627 Mill Street in College Estates. I would just like to say that there is one elementary school up there right now and that will be where the first project will be, number 1. We have one elementary school and there are already, it's serving College Estates, Sundance, Encore and Deerpark. Where will these children go to school, if there's no money to build any more schools?

My name is Jack Swift; I live at 1639 Mill Street. I'd like to simply address myself to two factors. One, in connection with the traffic. They indicated an increased traffic flow on two rather innocuous sounding locations, into College Estates. I believe where this traffic input would have to develop relative to the first stage of development has to be down at the west end of Mill Street, which is right along side of Bonita Vista High School. The other one was, I believe, on H Street, and it was referred to as being adjacent to Tiffany Park. It's not just Tiffany Park that's there, it's also Tiffany School. To see what the environmental impact of the traffic, the increased traffic on those streets, would be, somebody ought to sit up there during the traffic hours when the kids are going to and from school. I suggest that it's a hazard that ought to be taken into consideration.

The second half, the environmental impact study relative to biology, I get the impression that there's some sage and some cactus and a rather weird cactus wren that lives out in that canyon. I think it's a question of the impact looking and examining each tree in the forest without taking a look at the forest. The canyon up there represents, in my mind, a rather complete ecological system. There are quail, there are dove, there are coyotes, there are rabbits, there are even rattlesnakes that some people don't like. But there is an entire system of wild life that is presently resident in that canyon, in those hills. In flat, all of that would be wiped out, and I think that is definitely an environmental impact. It may not be of consideration. With sufficient mitigation enough

concrete and enough asphalt surely we can control the flood problems. With enough concrete still we can control and hold the hills back in. We'll end up looking like downtown San Diego. That's my comment.

Responses to Testimony Given at the Planning Commission meeting  
February 14, 1979

MR. WADE (Re: Addition of 2279 vehicle trips to the current flow on Central Avenue)

RESPONSE:

The impact of the project on Central Avenue is cited as part of Table 24 of the EIR and page 16 of the appended Traffic Report, and suggested mitigations given for the impact included the widening of Central Avenue from the present end of the improved segment to the intersection of Corral Canyon Road (Traffic Report, pages 19 and 20). It was further added that these improvements should precede the development of the full project. Additional clarification is suggested by Mr. Reid's response to Mr. Wade, as indicated in the transcript.

GAIL BURKEY (Re: Sweetwater Community Planning Group Letter)

RESPONSE:

The letter mentioned is specifically responded to elsewhere in these response notes.

MARTHA MCDONALD (Re: Long Canyon Home Owners Association Letter)

RESPONSE:

Letter mentioned is specifically responded to elsewhere in these response notes.

JUNE BESSELL

RESPONSE:

The flooding problems which exist on Central Avenue are well documented in the EIR. Mitigating measures will be required before final map approval.

GEORGE EMERSON

RESPONSE:

Doug Reid adequately answered the question of speed limits by stating that these were not the province of an EIR but rather



were established by other governmental bodies. The existence of drag strips in residential areas is a law enforcement problem. Dr. Glenn clarified that in Table 8 the speed limits were used only to determine air pollution and were not intended as specific speed limits on any streets.

JAMES ASHBAUGH

RESPONSE:

The attachment of an evaluation of significance to any biological impact is not simply a process of determining the presence of a species on a list. Significant biological resources also may consist of unique biotic patterns, communities, and associations which occur in response to an unusual set of ecological parameters. Any botanist or plant ecologist familiar with the vegetative patterns of southwestern San Diego County would concur with the assessment given in the Biology Survey Report, that the elimination of the on-site Cleveland Sage association would constitute a significant adverse impact. Salvia clevelandii is not protected under State or Federal law. However, the only currently available comprehensive assessment of the endangerment status of California plant species is published by the California Native Plant Society (Thorne, 1976): State and Federal listings are not yet complete, although some species have been listed. The California Native Plant Society lists Salvia clevelandii in the publication, Rare and Endangered Vascular Plants of California (Thorne, 1976). The CNPS document is widely used by most California agencies in evaluating impacts to botanical resources. The specific on-site plant community which supports this species has characteristics which make it unique (a full description is given in the Survey Report).

Re: Traffic Report Review by James Federhart and Associates

RESPONSE:

Letter mentioned is specifically responded to elsewhere in these response notes.

MRS. CHALLIS

RESPONSE:

The question on school has been answered in response to the concern raised by the Sweetwater Community Plan representatives. In summary the City of Chula Vista has an ordinance, #1848, which provides mitigation of school overcrowding problems.

JACK SWIFT (Re: Traffic Impact on Mill Street and Tiffany School)

RESPONSE:

The "west end of Mill(s) Street" is Baylor Avenue, which is specifically indicated in the impact analysis of Phase i on page 83 of the EIR. The connection of Via Haciendas significantly reduces this impact by providing an alternate route for project-generated and existing traffic.

Tiffany School is located fronting the right-of-way for "H" Street. As this street has been designated as a major connecting link in both City of Chula Vista and County plans for a number of years, it is assumed that the potential for heavy traffic (far heavier than that generated by the Bonita Long Canyon project alone) was taken into account at the time that the school site was acquired and the grounds designed.

(Re: Biology)

The Biological Survey Report prepared in conjunction with the EIR fully addresses the ecosystematic value of the subject property. The aesthetic value of the site's biologic amenities are discussed under section 3.16. of the EIR.

ADDENDUM TO EIR-79-2  
BONITA LONG CANYON ESTATES  
November 1985

A. Background

Section 13164 of the State CEQA Guidelines provides that an addendum to a previously prepared Environmental Impact Report may be prepared if there is no need for a supplemental EIR as required under Section 15162 of the Guidelines. If an addendum is prepared it need not be circulated for public review but must be considered by decision-making authorities for the project.

B. Project Description

1. Approved Project

An amendment to the Sectional Planning Area plan for the development of the 650-acre Bonita Long Canyon Area located on the east side of Otay Lakes Road and south of the County area identified as Bonita Highlands Subdivision in Bonita has been submitted for consideration. The General Development Plan which accompanied the original SPA approval in 1981 called for the development of approximately 865 dwelling units on the 650-acre parcel. The final SPA approval was for 829 units.

The Sectional Planning Area plan which was adopted in 1981 had the following elements:

- a. A 15-acre K-6 elementary school site approximately 7-1/2 acres usable excluding the SDG&E easement.
- b. An 11-acre neighborhood park site approximately 5 acres to be usable.
- c. A 4-acre multiple-family site located adjacent to Otay Lakes Road with approximately 2 acres usable. Final density approval was for 20 units on this parcel.
- d. Approximately 266 acres of dedicated open space, most of which was to remain in a natural state.

2. Proposed Project

The proposed project will include:

- a. 862 single-family lots with an average lot size of just over 15,000 sq. ft. each.

- b. An 11-acre neighborhood park site nearly 6 acres usable.
- c. Two church sites approximately 9 acres total.
- d. One community recreation center approximately 1.3 acres.
- e. Approximately 280 acres of dedicated open space most of which would remain in a natural state.

See the attached Sectional Planning Area plan for additional details.

C. Impact Analysis

- 1. The following issues have been identified as being clearly adequately addressed by the Certified EIR and no further analysis is required:
  - a. Geology (Sec. 3.1)
  - b. Soils (Sec. 3.2)
  - c. Ground Water (Sec. 3.3)
  - d. Mineral Resources (Sec. 3.5)
  - e. Air Quality (Sec. 3.7)
  - f. Water Quality (Sec. 3.8)
  - g. Stationary Noise (Sec. 3.10)
  - h. Paleontological Resources (Sec. 3.13)
  - i. Historical Resources (Sec. 3.14)
  - j. Land Uses (Sec. 3.15)
  - k. Social Factors (Sec. 3.17)
  - l. Taxes (Sec. 3.18)
  - m. Parks/Recreation (Sec. 3.20)
  - n. Fire/Police (Sec. 3.21)
  - o. Solid Waste (Sec. 3.22)
  - p. Utilities/Energy (Sec. 3.23)
  - q. General Government Support (Sec. 3.24)

2. In addition to the issues noted above, there are eight issues which require a more detailed discussion of why resultant impacts will not be any more significant than those identified in the certified final EIR. They are as follows:

a. Drainage (Sec. 3.4) - See Exhibit F.

Subsequent to the preparation of the final EIR a retention basin was proposed, approved and is currently under construction in Long Canyon. The estimated effects of this floodwater retarding reservoir are summarized as follows:

- (1) Peak flood flows for the 100-year return period storm under conditions of ultimate development of 1770 cfs could be reduced to 890 cfs, or by about 50 percent.
- (2) This reduced peak outflow of 890 cfs is about 70 percent of the estimated peak flood flow for the 100-year return period storm that would occur under conditions of existing development (1270 cfs).
- (3) The peak outflow from the Bonita Long Canyon Estates would be reduced to about 540 cfs which is about 55 percent of the peak outflow estimated for conditions of existing development (960 cfs).
- (4) The reservoir will trap sediment and prevent its deposition in the downstream reach of channel.

About 3+ additional acres of land downstream from the retention basin would be added to the development. The development of this area would not result in any substantial increase in runoff. The existing runoff in this area is a sheet flow across residential properties to the existing natural channel. The proposal would collect this sheet runoff, carry it around the residential properties and discharge it into the channel.

Therefore, although there is a change in circumstances, there will not be a more substantial and adverse impact than that which was identified in the EIR.

b. Land Form (Sec. 3.6) - See Exhibit A.

A change in grading of the project site is proposed. The changes in the earthwork are as follows:

	<u>Cut</u>	<u>Fill</u>
Original Plan	3,713,295 cu. yds.	4,167,487 cu. yds.
Proposed Plan	4,487,300 cu. yds.	4,571,900 cu. yds.

Thus there would be an increase in cut by 773,405 cubic yards of earthwork and a 404,413 cubic yard increase in fill. However, the proposed plan can be adjusted to result in a balanced cut and fill operation while the original plan would have required import of 453,592 cubic yards of fill from some unknown location.

In terms of the grading pattern for the property, the proposed plan would remove development from the main leg of Long Canyon downstream from the retention basin and increase grading at the higher ridge lines.

The conclusions of the EIR that the steep slopes of over 30% would not be disturbed and that the basic land form of the property would remain are the same with the proposed plan. So although the amount of grading has increased (not including imported material), the result of moving development out the canyon bottom and increasing grading on the northern ridge lines should not significantly detract from the existing land form and will result in a more overall aesthetically pleasing project. The conclusions of the Certified EIR are valid.

c. Mobile Noise

There are two areas of potentially significant acoustical impact from mobile noise sources (automobiles). One is along East "H" Street in Phase I which is not included in the SPA amendment. The other is along Otay Lakes Road which is designated as multiple family on the approved plan. The proposed plan would change the land use to a church which is more compatible with the traffic noise from Otay Lakes Road. Thus this is an improvement over the existing plan.

d. Biology (Sec. 3.11) - See Exhibit B.

An analysis of the proposed revisions indicates that approximately 64 acres designated as open space or ungraded portions of private lots on the existing SPA would be graded by the revised plan, while approximately 34 acres shown for grading on the existing map would be dedicated open space on the revised plan. While these figures indicate a net loss of ungraded terrain amounting to about 30 acres, much of this area is in private lots which would be subject to disturbance and natural vegetation loss associated with landscaping or horse corrals (i.e., the large lots in the northern and northwestern portions of the property). The proposed revision would actually result in an increase in dedicated open space from 268 acres to 281 acres and would result in the removal of a road in Long Canyon, creating a contiguous open space area greater than 70 acres in size along the length of Long Canyon from the southeast corner of the property to the desilting basin near the western boundary.

I made field observations in the principal areas previously shown as ungraded which would be graded by the revised SPA.

The northern ridge areas supported populations of San Diego barrel cactus, San Diego sunflower, mesa clubmoss, and variegated dudleya. The other two areas supported populations of all these except the dudleya. All three areas supported excellent habitat for black-tailed gnatcatcher and cactus wren. These sensitive species and their habitats are also well represented in the 24-plus acres of added natural open space in Long Canyon.

The previous biological survey report (prepared by M. R. Brand and C. C. Patterson in 1978) contained at least one serious error which should be corrected; the identification of the rare plant Hemizonia conjugans on the property was incorrect. The populations identified as H. conjugans should have been assigned to H. paniculata. Because the previous report was also in error in not assigning much higher significance to the presence of H. conjugans, no real change in the assessment of overall impacts results from this correction.

The proposed revision represents an improvement over the existing SPA in regard to overall biological value and habitat viability. The increase in dedicated open space by about 14 acres, the redistribution of open space to create a large contiguous natural area in Long Canyon, the presence of extensive cactus wren habitat in the new Long Canyon open space, the likelihood of disturbance to the northern ridge areas previously ungraded under the existing plan, and the overall preservation of 43 percent (281 acres) of the SPA in dedicated open space are the factors which support this opinion.

Therefore the evaluation in the Certified EIR is adequate and no further analysis is required.

e. Archaeology (Sec. 3.12) - See Exhibit C.

In October 1985 an extended archaeological testing program was conducted at two small prehistoric sites located within the proposed Bonita Long Canyon Estates property. These sites were first identified during a survey in 1978 and subsequently tested in 1980 by Harris and Perez for MSA, Inc. Their findings indicated the presence of a low density deposit of lithic artifacts occurring to a depth of 50 centimeters, and based on these results, they recommended that further work be conducted as mitigation. Given the nature of their findings, however, an extensive data recovery effort did not seem warranted; in fact, additional testing was deemed necessary to more fully evaluate the significance and uniqueness of the sites in accordance with the recent amendment of CEQA. An extended archaeological testing program was therefore conducted.

Between the 1979 and current tests, over 17 square meters were sampled at the two sites. Four single 1-meter square units were excavated at SDi-5830 and some 13.5 meters were dug at SDi-5829 as either 1-meter square units or in blocks of 2 square meters or more. Of the two sites, SDi-5830 yielded far less archaeological material and therefore did not receive as much testing. SDi-5829 was very similar except for one small deposit in the north-central area where an apparent hearth was located. Five units were placed around this feature which yielded a greater density of lithic artifacts.

Analysis of the recovered cultural materials indicates that SDi-5829 and SDi-5830 are related sites, probably associated with San Dieguito occupation and use of the area. This occupation was evidently sporadic and of minimal intensity to have resulted in the low-density type of deposit left at the sites. Given the size of the test sample taken to date and the projected redundant, minimal yields of the remaining unexcavated portions, no further data recovery seems warranted, and analysis of the existing materials herein provided is considered sufficient for mitigation.

f. Aesthetics (Sec. 3.16)

As was noted in Section b. of this Addendum, the landform alteration which would occur with the proposed plan is substantially the same as the approved plan. Therefore the conclusion that the project would have a major aesthetic impact is still valid and no new EIR need be prepared.

g. Schools (Sec. 3.19) - See Exhibit D.

The approved plan includes an elementary school site while the proposed plan does not. Exhibit D includes a letter from the Elementary School District outlining the reasons for the deletion of the site from the plan. This Exhibit also includes letters from the school districts noting the agreements for the provisions of educational facilities. Today's enrollment levels are lower than those listed in the EIR and the school districts have increased their fees as suggested in the EIR. Impacts from the proposed plan would not be as significant as those outlined in the Certified EIR.

h. Traffic (Sec. 3.25) - See Exhibit E.

Planned improvements for arterial streets in the project area will be adequate because the decrease in average daily traffic from the revised project does not create significant impacts except within the project where impacts are mitigated as the result of the construction of new streets. Corral Canyon Road



is proposed to be improved as a four-lane collector road. Curb-to-curb widths on these types of roads will be at least 64 feet and right-of-way widths on these roads will be at least 80 feet.

The intersection of Corral Canyon Road and "H" Street will require signalization in the future. However, the contribution of project traffic at this location is relatively minor (2000 ADT). At the intersection of Otay Lakes Road and East "H" Street, the existing traffic signal will have to be modified to accommodate the addition of a fourth (east) leg to the intersection.

"H" Street transitions from a four-lane major east of Otay Lakes Road to a six-lane major west of Otay Lakes Road. The contribution of project traffic to "H" Street west of Otay Lakes Road is relatively minor, about 340 p.m. peak hour trips would be added to "H" Street midway between I-805 and Otay Lakes Road. This estimate is based on a projected cumulative average daily traffic flow of 27,500 and a 10% peak hour factor. Since the project proposes significantly fewer units (862) than that assumed for the regional traffic study (1387) for the same area, the cumulative impacts on "H" Street will be lower than those projected.

Local streets in the proposed project should be two lanes with a curb-to-curb width of at least 36 feet within a right-of-way of 56 feet. With these recommended improvements, the proposed project will accommodate projected traffic flows at a reasonable level of service.

WPC 2307P

EXHIBIT A

ORIGINAL SPA PLAN

EXCAVATION -- BONITA LONG CANYON

AREA	CUT	SHRINKAGE	7%	TOTAL	FILL	IMPORT	EXPORT
I	941,325 cu.	65,892 cu.		875,433 cu.	887,797 cu.	18,500 cu.	-0-
II	196,852 cu.	13,779 cu.		183,073 cu.	676,918 cu.	493,845 cu.	-0-
III	1,192,439 cu.	83,470 cu.		1,108,969 cu.	1,704,645 cu.	595,676 cu.	-0-
IV	736,468 cu.	51,552 cu.		684,916 cu.	341,464 cu.	-0-	343,452 cu.
V	621,011 cu.	43,470 cu.		577,541 cu.	556,663 cu.	-0-	20,878 cu.
VI	25,800 cu.	1,806 cu.		23,994 cu.	--	-0-	23,994 cu.
<b>TOTAL</b>	<b>3,713,895 cu.</b>	<b>259,969 cu.</b>		<b>3,453,926</b>	<b>4,167,487 cu.</b>		

Shortage  
453,592 cu.  
w/ shrinkage  
713,561 cu.

REVISED SPA PLAN



VTN SAN DIEGO

4845 Ronson Court  
San Diego, California 92111

Telephone: (619) 292-1040

22 July 1985  
Job No. 3177-19

BONITA LONG CANYON ESTATES  
EARTHWORK SUMMARY  
(CUBIC YARDS)

<u>PHASE</u>	<u>CUT</u>	<u>FILL</u>	<u>EXPORT</u>	<u>IMPORT</u>	<u>REMARKS</u>
2	974,000	350,300	623,700	---	Export to Phase 3
3	550,900	1,434,900	---	884,000	Import 623,700 from Phase 2, 260,300 from Phase 6
4	256,200	819,700	---	563,500	Import 23,100 from Phase 8, 540,400 from Phase 6
5	704,900	935,400	---	230,500	Import 145,900 from Phase 6, *84,600 short
6	1,006,800	60,200	946,600	---	Export to Phase 3, 4 and 5
7	968,000	968,000	---	---	Balanced
8	<u>26,500</u>	<u>3,400</u>	<u>23,100</u>	<u>---</u>	Export to Phase 4
TOTALS	4,487,300	4,571,900	1,593,400	1,678,000	*84,600 SHORT

\*Adjust grades to make up shortage of 85,000.†

All quantities are raw figures with no shrinkage/bulking factors considered. Quantities were calculated from the 100-scale grading study.

EXHIBIT B

JUN 17 1985

**RECON** Regional Environmental Consultants  
1094 Cudahy Place, Suite 204, San Diego, CA 92110 (619) 275-3732

June 13, 1985

Mr. Ken Baumgartner  
McMillin Development, Inc.  
2727 Hoover Avenue  
National City, CA 92050

Reference: Biological Assessment of the Revised Bonita Long Canyon SPA  
(RECON Number R-1522)

Dear Mr. Baumgartner:

At your request, I conducted a biological reconnaissance at the 650-acre Bonita Long Canyon Sectional Planning Area on June 7 and 10, 1985, for the purpose of determining whether proposed revisions to the existing SPA would result in significant adverse biological effects.

An analysis of the proposed revisions indicates that approximately 64 acres designated as open space or ungraded portions of private lots on the existing SPA would be graded by the revised plan, while approximately 34 acres shown for grading on the existing map would be dedicated open space on the revised plan. While these figures indicate a net loss of ungraded terrain amounting to about 30 acres, much of this area is in private lots which would be subject to disturbance and natural vegetation loss associated with landscaping or horse corrals (i.e., the large lots in the northern and northwestern portions of the property). The proposed revision would actually result in an increase in dedicated open space from 268 acres to 281 acres and would result in the removal of a road in Long Canyon, creating a contiguous open space area greater than 70 acres in size along the length of Long Canyon from the southeast corner of the property to the desilting basin near the western boundary.

I made field observations in the principal areas previously shown as ungraded which would be graded by the revised SPA. These areas include the ridges in the northwestern area of the SPA, the middle section of the canyon traversed by the proposed "C" street, and slopes in the area of "FF", "GG", and "HH" streets.

The northern ridge areas supported populations of San Diego barrel cactus, San Diego sunflower, mesa clubmoss, and variegated dudleya. The other two areas supported populations of all these except the dudleya. All three areas supported excellent habitat for black-tailed gnatcatcher and cactus wren. These sensitive species and their habitats are also well represented in the 24-plus acres of added natural open space in Long Canyon.

The previous biological survey report (prepared by M. R. Brand and C. C. Patterson in 1978) contained at least one serious error which should be corrected; the identification of the rare plant Hemizonia conjugans on the property was incorrect. The populations identified as H. conjugans should have

Mr. Ken Baumgartner

-2-

June 13, 1985

been assigned to H. paniculata. Because the previous report was also in error in not assigning much higher significance to the presence of H. conjugans, no real change in the assessment of overall impacts results from this correction.

It is my opinion that the proposed revision represents an improvement over the existing SPA in regard to overall biological value and habitat viability. The increase in dedicated open space by about 14 acres, the redistribution of open space to create a large contiguous natural area in Long Canyon, the presence of extensive cactus wren habitat in the new Long Canyon open space, the likelihood of disturbance to the northern ridge areas previously ungraded under the existing plan, and the overall preservation of 43 percent (281 acres) of the SPA in dedicated open space are the factors which support this opinion.

As grading plans are prepared for implementation of the SPA, safeguards should be incorporated that prevent the destruction of natural vegetation on open space slopes. The extensive use of natural canyon slopes in the proposed development will enhance the character and aesthetic value of the development and provide a level of drought-tolerant slope protection and erosion control which is difficult or impossible to achieve with landscaping and revegetation. Manufactured slopes within the development should be landscaped with native vegetation appropriate to the area.

Please call if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Patterson', with a long horizontal stroke extending to the right.

Cameron Patterson  
Ecologist, ESA

CCP:mac

EXHIBIT C



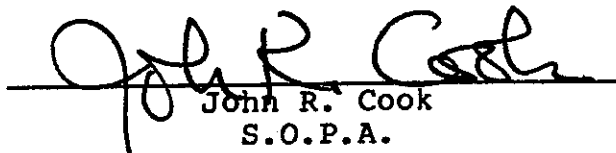
**ARCHAEOLOGICAL TESTING AND EVALUATION  
of  
SDi-5829 and SDi-5830  
Within  
BONITA LONG CANYON ESTATES**

Prepared for:

McMillin Development  
2727 Hoover Avenue  
National City, CA 92050

Prepared by:

Mooney-Lettieri and Associates  
9903-B Businesspark Avenue  
San Diego, CA 92131

  
John R. Cook  
S.O.P.A.

November, 1985

## I. Introduction

In October 1985 an extended archaeological testing program was conducted at two small prehistoric sites located within the proposed Bonita Long Canyon Estates property. These sites were first identified during a survey in 1978 and subsequently tested in 1980 by Harris and Perez (1979) for MSA, Inc. Their findings indicated the presence of a low density deposit of lithic artifacts occurring to a depth of 50 centimeters, and based on these results, they recommended that further work be conducted as mitigation. Given the nature of their findings however, an extensive data recovery effort did not seem warranted; in fact, additional testing was deemed necessary to more fully evaluate the significance and uniqueness of the sites in accordance with the recent amendment of CEQA. An extended archaeological testing program was therefore conducted and is the subject of this report.

Between the 1979 and current tests, over seventeen square meters were sampled at the two sites. Four single one-meter square units were excavated at SDi-5830 and some 13.5 meters were dug at SDi-5829 as either one-meter square units or in blocks of two square meters or more. Of the two sites, SDi-5830 yielded far less archaeological material and therefore did not receive as much testing. SDi-5829 was very similar except for one small deposit in the north-central area where an apparent hearth was located. Five units were placed around this feature which yielded a greater density of lithic artifacts.

Analysis of the recovered cultural materials indicates that SDi-5829 and SDi-5830 are related sites, probably associated with San Dieguito occupation and use of the area. This occupation was evidently sporadic and of minimal intensity to have resulted in the low-density type of deposit left at the sites. Given the size of the test sample taken to date and the projected redundant, minimal yields of the remaining unexcavated portions, no further data recovery seems warranted, and analysis of the existing materials herein provided is considered sufficient for mitigation.

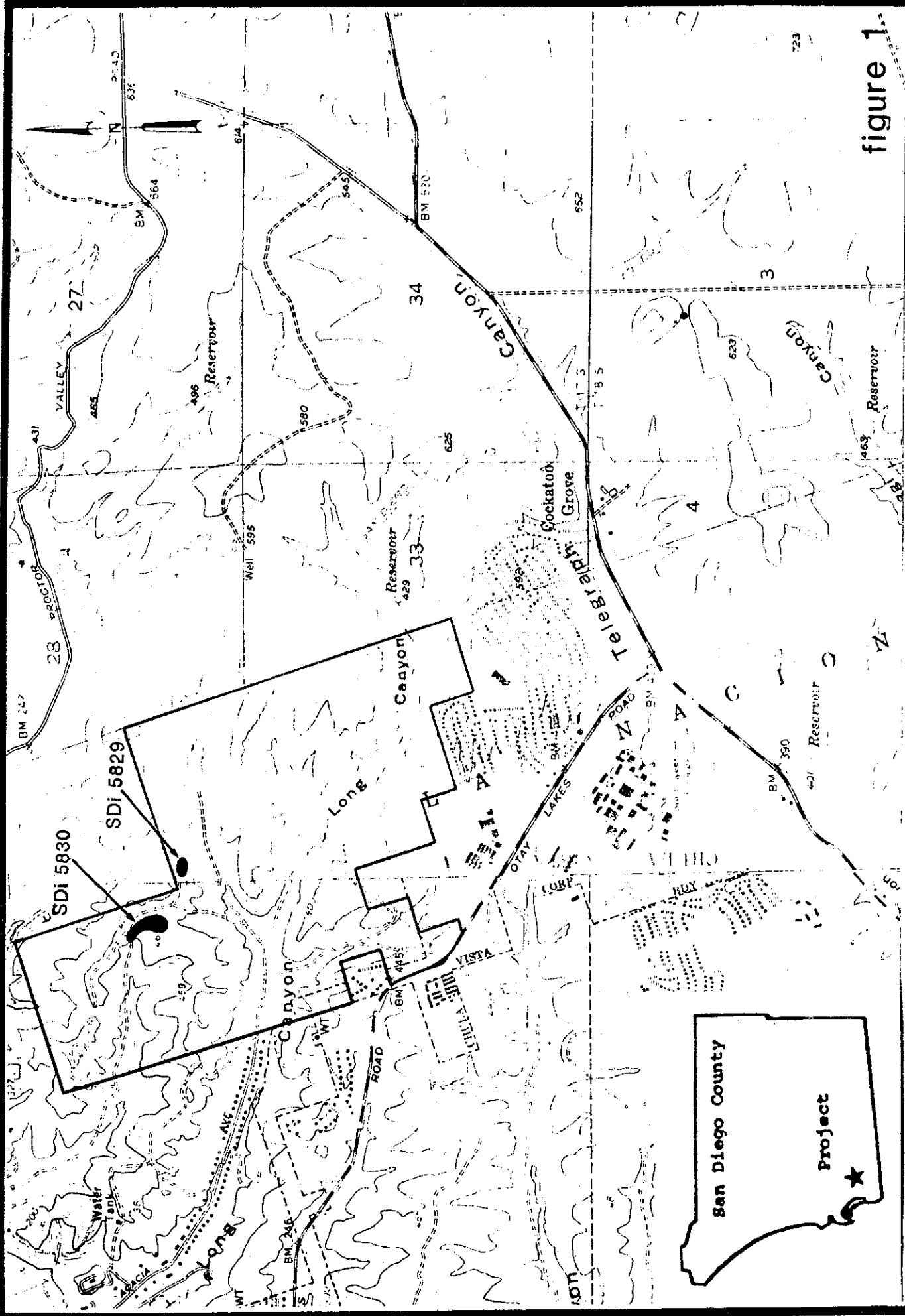
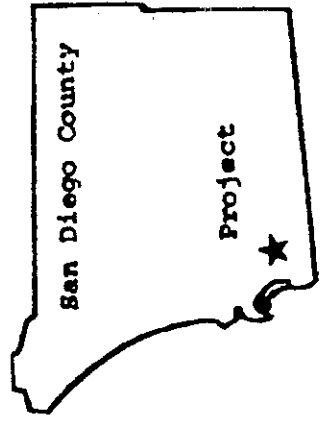


figure 1.

Project location shown on portions of 7½' USGS National City and Jamul Mt. Quadrangles.



Scale: 1" = 2000'

**METTERNEY**  
AND ASSOCIATES

## II. Testing Methods

The initial step consisted of selection of test unit placement. The Harris and Perez (1979) report was reviewed and field conditions checked in an attempt to delineate areas within each of the sites which might be of the greatest potential. Based on the report, two one-meter square units were selected for excavation (see Figures 2 and 3). Preliminary analysis of the results of these tests were then used to guide the placement of the remaining units. In the case of SDi-5830 the results corroborated the earlier findings, and given the marginal amount and variability of the data recovered it was decided that no further excavation would be conducted. Similar findings also resulted from testing SDi-5829. Upon examination, the only area of relatively high yield was that in the vicinity of the 1979 test pit 1 and unit 2 of the current investigation. The decision was therefore made to continue excavation in this area, and specifically in and around a scatter of thermally altered rock and cobble which had been exposed during a recent regrading of the dirt road. As will be explained below in the Results section, all of the remaining test units were ultimately placed in this area.

All test units were one-meter square and aligned to true north. Excavation proceeded in arbitrary ten centimeter levels with all soil passed through 1/8th inch mesh hardware screen. In general, sterile was reached between 45 and 55 centimeters at which point a compacted clayey substratum occurred.

The recovered materials were returned to the laboratory for washing and cataloguing. Each artifact was assigned a catalogue number for future reference which was written on the artifact with indelible ink. Catalogue data recorded include: site, unit, level, number, type, material, length, width and thickness. The artifacts will be curated at the Mooney-Lettieri lab facilities until placement with a permanent repository.

### III. Results and Interpretation

#### A. SDi-5830

This site is situated on a high knoll (461 feet AMSL) overlooking Long Canyon to the south in the northwestern portion of the project. Harris and Perez describe it as crescent-shaped and measuring 160 meters north-south by 75 meters east-west. The lithic scatter observed by them was sparse, consisting mostly of flakes with one chopper/knife and two utilized flakes. Two test pits were excavated confirming the existence of subsurface material to approximately 40 centimeters. Twenty-eight artifacts were recovered from unit 1, of which 25 were waste flakes, two were groundstone fragments and one was a utilized flake. Unit 2 resulted in 13 artifacts of which all but a mano fragment were flakes. (Reexamination of these collections has shown the mano and groundstone to be mere cobble fragments, i.e., unutilized pieces of stone.)

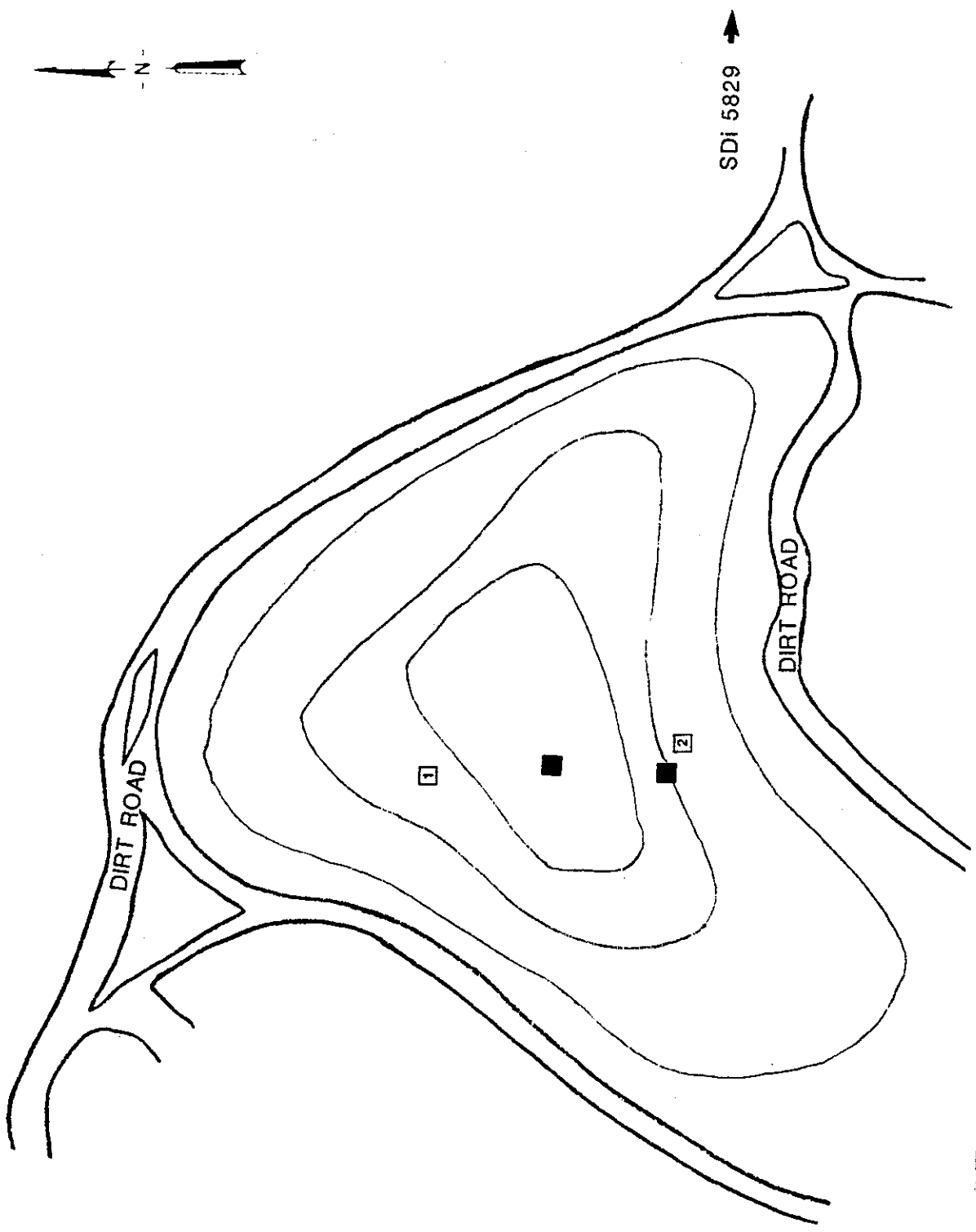
During the current investigation the entire site surface was scrutinized in an attempt to delineate areas of subsurface potential. This resulted in the identification of but three artifacts, and thus was of little use in determining unit placement. Nevertheless, both units were positioned near surface finds, adjacent to and outside of the units dug during the 1979 test.

Unit 1, the northernmost of all the tests, resulted in the recovery of three artifacts: two metavolcanic waste flakes and a core. Excavation ended at 50 centimeters; soil throughout was a compacted sandy loam without visible strata.


Unit 2, on the southern side of the site, resulted in the recovery of 15 artifacts: level 0-10 cm. had three metavolcanic flakes, level 10-20 cm. had five flakes, a piece of shatter and a core, level 20-30 cm. had two quartzite flakes and level 30-40cm. had a core, a flake and a piece of shatter. Soil conditions were essentially those of the previous unit, and excavation ceased at 50 centimeters.


#### B. SDi-5829

Situated some 150 meters southeast of SDi-5830, this site was described by Harris and Perez (1979) as a flake and tool scatter measuring 60 meters east-west by 40 meters north-south. They observed that the site was located on the leeward side of knoll as evidenced by flakes and tools including a domed scraper, convex sidescraper, knife fragment and several choppers. Based on surface indications and exposed material eroding from a road cut along the northern boundary of the site, two test pits were selected for excavation: test pit 1 was a 2 by 2 meter block (4 square meters) and test pit 2 was a 1 by 2 meter unit.



KEY:

Excavated test unit 

Previously excavated test unit 

SDi 5830

LOCATION OF EXCAVATION TEST UNITS

figure 2

Approximate Scale-1 cm: 10 m

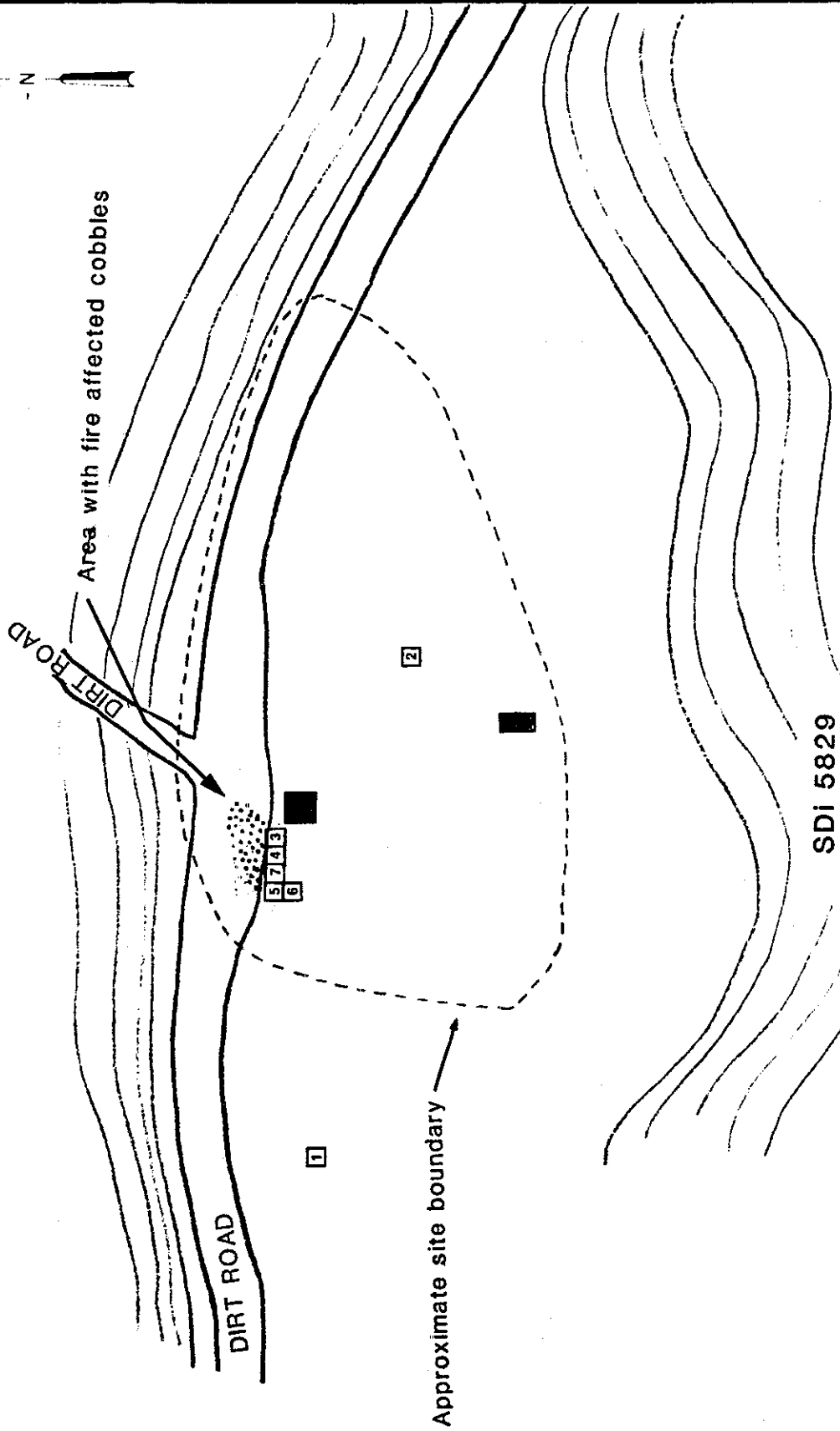
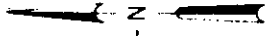
Summarizing their results, test pit 1 was positioned just south of the dirt road and produced the highest yield of the areas sampled with 92 artifacts being recovered. (Average density for pit 1 was nearly three times that of unit 2.) In total, 86 flakes of basalt, felsite, quartzite and metavolcanic stone were found along with one utilized flake, a core, a possible mano fragment and two scraper fragments. Test pit 2 was placed in the south-central area of SDi-5829 and yielded a total of 13 artifacts including 11 flakes of basalt and felsite, one core and one scraper.

During the current test, a total of seven units were excavated. The first of these was placed on the far western boundary of site and yielded but two metavolcanic flakes in the upper ten centimeters. Unit 2 was then placed in the east-central region near the high point of the knoll. This test unit produced 15 artifacts, all waste debitage consisting of 14 metavolcanic flakes and a piece of metavolcanic debitage. Both of these initial units were selected based on surface indications, i.e., the presence of artifacts suggesting subsurface potential. However, given the relative paucity of recovered material it was readily apparent that either the areas tested were peripheral or the entire deposit was of low density similar to that at SDi-5830.

Given the results of test pit 1 from the 1979 investigation, the latter does not seem indicated however. To determine if the findings were anomalous or in fact a more dense deposit, a third unit was placed adjacent to the earlier test pit in the northern region of the site. Examination of this area revealed that the grading of the dirt road had exposed a concentration of thermally altered cobbles which now lay scattered along the road bed. Inspection of vertical profiles indicated the cobbles originated from a small (approximately five meter long) area immediately west. This area was then selected for excavation of test unit 3 and, ultimately, units 4, 5, 6 and 7.

On average these units yielded cultural debris throughout the 40 to 50 centimeters of the deposit; sterile was indicated by the occurrence of a reddish clayey substrate. Soils were similar to those at SDi-5830, being a compacted sandy loam without stratigraphic distinctions. Rodent disturbance appeared minimal to moderate, and may have been partially responsible for the vertical distribution of the artifacts. Based on available evidence the deposit seems to be a single component without definable temporal divisions and therefore should be analyzed from a synchronic perspective.

Thermally altered rock was recovered from the northern portions of units 3, 4, 5 and 7, demarcating the southern edge of the probable hearth feature. Road grading appears to have destroyed what may have been another three-quarters of the feature



SDI 5829

LOCATION OF EXCAVATION TEST UNITS

KEY:

Excavated test unit [ ]

Previously excavated test unit [■]

Approximate Scale-1 cm: 5 m

figure 3



judging from the quantity of thermally fractured stone scattered throughout the road bed. No charcoal or ash was found during the excavation of the test units, although numerous cobbles had embedded black stains indicative of use in fire. The estimated size of the feature would seem to suggest an earth-oven or large hearth type feature, similar to that found at the Great Western Site and other early sites.

Artifacts recovered from the five unit block excavation on the southern edge of the feature are summarized below (all flaked lithics are metavolcanic unless otherwise noted):

UNIT 3	
0 - 10 cm. level	0
10 - 20 cm. level	
Flakes	5
20 - 30 cm. level	
Flakes - one basalt and one chalcedony	11
Shatter - one basalt	5
30 - 40 cm. level	
Flakes - one porphyry and one chalcedony	12
40 - 50 cm. level	
Flakes - one porphyry and one chert	6
Total	39

UNIT 4	
0 - 10 cm. level	
Flakes - two porphyry and one quartzite	8
10 - 20 cm. level	
Flakes	14
Shatter	3
Core - porphyry	1
20 - 30 cm. level	
Flakes - one porphyry, one basalt, two chert and six chalcedony	16
Shatter - two chalcedony and one chert	3
30 - 40 cm. level	
Flakes - one chalcedony	12
Tools - two unifacial sidescrapers	2
40 - 50 cm. level	
Flakes - one porphyry	1
Tools - one sidescraper and one endscraper	2
Total	62

UNIT 5	
0 - 10 cm. level	
Flakes - one porphyry	9
10 - 20 cm. level	
Flakes	15
Tools - one sidescraper	1
Groundstone - one possible mano fragment	1
20 - 30 cm. level	

Flakes - one porphyry, one chert, one chalcedony	20
Tools - one scraper	1
30 - 40 cm. level	
Flakes - one basalt	2
Tools - one sidescraper	1
Total	50
UNIT 6	
0 - 15 cm. (stratum A)	
Flakes	8
Shatter	1
15 - 40 cm. (stratum B)	
Flakes - one basalt and one chalcedony	18
Shatter - one basalt	5
40 - 50 cm. (stratum C)	
Flakes - one porphyry	4
Total	36
UNIT 7 (this unit 1.0 x 1.5 meters)	
0 - 15 cm. (stratum A)	
Flakes - two porphyry and one quartzite	16
15 - 40 cm. (stratum B)	
Flakes - one quartzite, one chalcedony and nine porphyry	46
Shatter - one porphyry	4
Tools - one porphyry sidescraper	1
40 - 50 cm. (stratum C)	
Flakes	3
Total	70

Generalizing from the results of the combined testing programs, it would appear that there is significant horizontal spatial differentiation. Artifact density is greatest in the immediate vicinity of the feature, decreasing as distance from the feature increases. For example, note that the density for unit 6 is less than that for those units adjacent to or dissecting the hearth. It can thus be inferred that this area was the center of activity, with other activities being performed with less intensity away from the feature. Unfortunately, all that remained of this feature was excavated during the current investigation, the remainder having been destroyed by road grading.

What the nature of these activities was is somewhat difficult to ascertain. The presence of a hearth and a variety of scraping tools would seem to indicate food processing, and possibly even on-site consumption. As mentioned, it has been suggested by other investigators that features such as that at SDi-5829 may have been earth-ovens related to the processing of floral resources - from agave or other cacti to pine seeds - though evidence is still mostly inferential.

Analysis of the waste debitage provides some additional information. Tool resharpening and edge rejuvenation flakes were recovered in comparatively high quantities indicating that whatever was being processed required substantial tool maintenance. The presence of biface thinning flakes also suggests the reworking of broken or dulled knife blades. While thinning flakes are likewise indicative of the final stages of biface manufacture such as would be occurring at a workshop site, the absence of other diagnostic debitage argues more strongly for tool reworking, an inference clearly corroborated by the presence of uniface (end and side scraper) resharpening and rejuvenation flakes.

Given the kinds of activities occurring, SDi-5829 probably functioned as a field camp where a small group (nuclear or extended family) resided on a temporary basis while exploiting the food resources within the vicinity of the site. Tool types are typical of those associated with the San Diequito, and the paucity of groundstone would seem to confirm this temporal designation.

#### IV. Recommendations

With completion of this extended testing program the two sites within the Bonita Long Canyon Estates project have been subjected to subsurface investigations of sufficient degree so as to allow evaluation of their research potential and 'uniqueness'. A total of 17.5 square meters have been excavated resulting in the recovery of representative samples from the low density deposits of SDi-5830 and SDi-5829, and the remaining portion of a probable hearth feature area was excavated in toto. Except for the hearth area, given the nature of the deposits little additional information can be expected with any further data recovery, and therefore mitigation measures are considered unnecessary. Monitoring during grading is however recommended given the possibility for other as yet undetected features which have the potential to yield important information on San Dieguito settlement-subsistence behavior.

EXHIBIT D

# Sweetwater Union High School District

ADMINISTRATION CENTER  
1130 FIFTH AVENUE  
CHULA VISTA, CALIFORNIA 92011-2896  
(619) 691-5500

DIVISION OF BUSINESS SERVICES

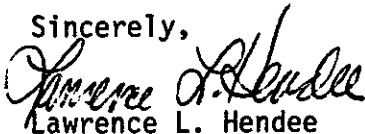
October 31, 1985

Chula Vista Planning Department  
276 Fourth Avenue  
Chula Vista, CA 92010

Gentlemen:

The Sweetwater Union High School District has been contacted by Ken Baumgartner of McMillan Development relative to Bonita Long Canyon. We have agreed, based upon McMillan's long-standing relationship with the Sweetwater Union High School District, to enter into separate secured agreements for each unit being developed prior to the issuance of building permits. Because of this agreement, it is the district's position that it can assure that facilities will be available to Bonita Long Canyon.

Sincerely,



Lawrence L. Hendee  
Administrator/Business Services

LLH:bc  
c: McMillan Development

RECEIVED

NOV 1985

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA



# CHULA VISTA CITY SCHOOL DISTRICT

*Each child is an individual of great worth*

84 EAST "J" STREET • CHULA VISTA, CALIFORNIA 92010-6199 • 619 425-9600

October 29, 1985

Mr. George Krempf  
Director of Planning  
City of Chula Vista  
P.O. Box 1087  
Chula Vista, CA 92010

Dear Mr. Krempf:

RE: SCHOOL SITE - BONITA LONG CANYON

The SPA plan of Bonita Long Canyon indicates a 15 acre elementary school site on the east side of Corral Canyon Road north of the SDG&E transmission line.

Please be advised that this site is inappropriate because of its location creating an isolated school in which most students would have to be bussed. This in turn diverts education funds into transportation funds. The District will be working with the developer to mitigate the impacts of new students from this development.

If you have any questions, please feel free to contact me.

Sincerely,

  
John E. Linn  
Assistant Superintendent for  
Business Management

JEL:dt

cc: Ken Baumgartner, McMillan Development

RECEIVED

BY \_\_\_\_\_

OCT 30 1985

PLANNING DEPARTMENT  
CHULA VISTA, CALIFORNIA

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EXHIBIT E



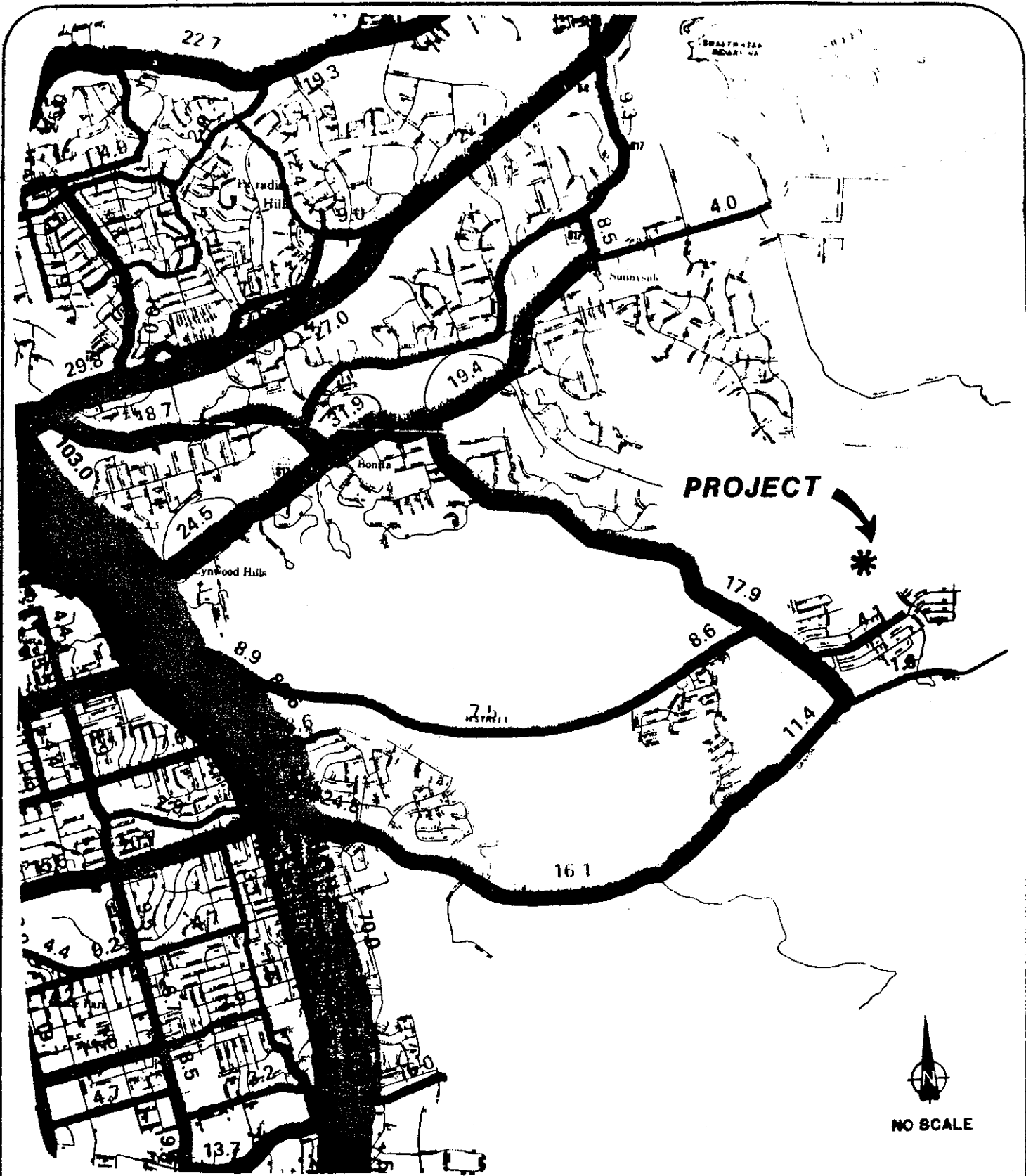
BONITA LONG CANYON ESTATES  
TRANSPORTATION ANALYSIS  
PREPARED FOR  
**McMILLIN DEVELOPMENT**

SEPTEMBER 9, 1985

URBAN SYSTEMS ASSOCIATES, INC.  
TRANSPORTATION ENGINEERING & PLANNING  
CONSULTANTS TO BUSINESS AND GOVERNMENT  
4540 KEARNY VILLA ROAD, SUITE 106  
SAN DIEGO, CALIFORNIA 92123  
(619) 560-4911

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NO SCALE

1985  
 AVERAGE WEEKDAY  
 TRAFFIC VOLUMES  
**SAN DIEGO  
 METROPOLITAN AREA**  
 PREPARED BY  
 SAN DIEGO ASSOCIATION  
 OF GOVERNMENTS  
 APRIL 1985

**FIGURE 4**  
**TRAFFIC FLOW MAP**  
**BONITA LONG CANYON ESTATES**

VOLUMES SHOWN ON MAP IN THOUSANDS (000)

**USA**

(3-D)

L I S T O F F I G U R E S

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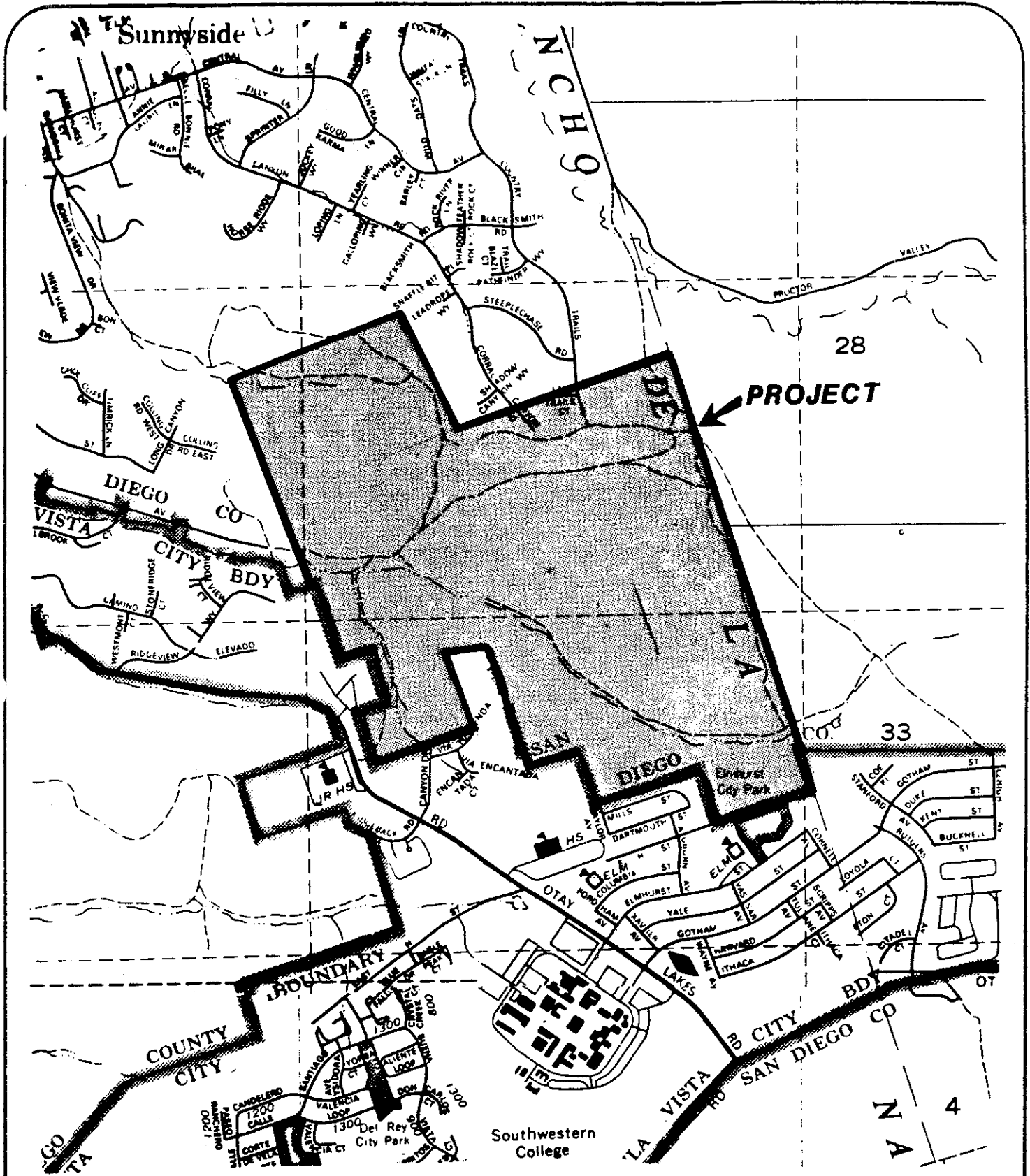
BONITA LONG CANYON ESTATES  
TRANSPORTATION ANALYSIS

INTRODUCTION

McMILLIN DEVELOPMENT, INC., RETAINED URBAN ASSOCIATES, INC., (USA, INC.) TO REASSESS POTENTIAL TRANSPORTATION IMPACTS FOR THE 650 ACRE BONITA LONG CANYON PROJECT. TO ACCOMPLISH THIS OBJECTIVE, THE PREVIOUSLY APPROVED SPA PLAN AND THE MODIFIED PLAN WERE COMPARED. THEN A NEW TRAFFIC GENERATION DISTRIBUTION AND ASSIGNMENT FOR THE MODIFIED PLAN WAS COMPLETED. NEXT PROJECT IMPACTS AND MITIGATION WERE IDENTIFIED AND EVALUATED. BOTH CUMULATIVE AND PROJECT PHASING TRAFFIC IMPACTS WERE EVALUATED. THIS REPORT SUMMARIZES THE RESULTS OF THE PROJECT IMPACT AND MITIGATION ANALYSIS.

**FIGURE 1** SHOWS THE APPROXIMATE PROJECT BOUNDARY AND LOCATION. AS CAN BE OBSERVED FROM THE FIGURE, THE PROJECT IS GENERALLY LOCATED EAST OF OTAY LAKES ROAD AND NORTH OF H STREET. IN ORDER TO ADDRESS PROJECT CHANGES, IMPACTS AND MITIGATION, THIS REPORT IS DIVIDED INTO THE FOLLOWING SECTIONS:

- . THE PROPOSED PROJECT
- . TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT
- . IMPACT AND MITIGATION ANALYSIS
- . CONCLUSIONS



**FIGURE 1**  
**PROJECT LOCATION**  
**BONITA LONG CANYON ESTATES**

**SOURCE:**  
 BASE MAP FROM  
 AERIAL PHOTO-MAP BOOK,  
 JANUARY 1, 1984  
 USED WITH PERMISSION FROM  
 AERIAL PHOTOBANK, INC.





THE PROPOSED PROJECT

THE BONITA LONG CANYON ESTATES PROPOSED SPA REVISION IS VERY SIMILAR TO THE ADOPTED PLAN. BOTH PLANS HAVE 650 ACRES OF GROSS AREA. THE SPA PLAN REVISION PROPOSES 862 RESIDENTIAL UNITS AT BUILD OUT. THE REVISED SPA PLAN, HOWEVER, AT THE REQUEST OF THE CHULA VISTA SCHOOL DISTRICT, DELETES A 15 ACRE SCHOOL SITE. SINGLE FAMILY RESIDENTIAL USES ARE PROPOSED FOR THE SITE. EACH PLAN HAS APPROXIMATELY THE SAME ACREAGES FOR PARKS, 11 ACRES, AND THE REVISED PLAN HAS 9 ACRES ALLOCATED FOR SEMI-PUBLIC FACILITIES (CHURCH). THE ADOPTED PLAN HAS NONE.

**TABLE 1** SUMMARIZES PROPOSED LAND USES FOR THE PROJECT. AS AN ALTERNATIVE USE FOR THE SCHOOL SITE, THE PROJECT PROPOSES RESIDENTIAL DWELLING UNITS GIVEN A DENSITY SIMILAR TO THE SURROUNDING AREA. THIS EVALUATION ASSUMES THAT DWELLING UNITS ARE CONSTRUCTED ON THE SCHOOL SITE.

APPENDIX A SHOWS THE SECTIONAL AREAS AND PROPOSED STREET SYSTEM FOR THE PROJECT. DETAILS FOR LAND USES, HOUSING TYPE AND MIX, COMMUNITY FACILITIES, UTILITIES, OPEN SPACE, DESIGN IMPLEMENTATION AND CONFORMANCE WITH THE COMMUNITY PLAN MAY BE FOUND IN THE PRECISE PLAN AND ARE NOT REPEATED HEREIN EXCEPT FOR THOSE FACTORS AFFECTING THE TRANSPORTATION SYSTEM AND ITS IMPACT OR MITIGATION.

TABLE 1  
**PROPOSED LAND USE AND SECTIONAL AREAS**  
**BONITA LONG CANYON ESTATES**

	1*	2	3	4	5	6	7	TOTAL
<b>GROSS AREA (acres)</b>	81.5	82.7	122.5	89.8	98.4	50.9	124.2	650.0
<b>STREET R/W (acres)</b>	9.5	9.5	13.7	6.5	9.2	5.5	9.3	63.2
<b>NET AREA (acres)</b>	72.0	73.2	108.8	83.3	89.2	45.4	114.9	586.8
<b>NO. OF LOTS (d. u.)</b>	199	130	110	96	133	73	121	862
<b>DENSITY (du/ac)</b>	2.4	1.6	0.9	1.1	1.4	1.4	1.0	1.33
<b>TOTAL LOT AREA (acres)</b>	46.7	31.9	62.4	36.1	45.8	29.5	56.9	309.3
<b>AVERAGE LOT SIZE (sq ft)</b>	10222	10689	24710	16380	15000	17603	20484	
<b>DEDICATED OPEN SPACE (acres)</b>	25.3	41.3	46.4	47.2	43.4	15.9	58.0	277.5
<b>RELIGIOUS INSTITUTION</b>		3.9	5.1					9.0
<b>COMMUNITY RECREATION</b>			1.3					1.3
<b>WATER TANK SITE</b>					1.5			1.5
<b>PARK SITE</b>								11.0

\*FOR SECTIONAL AREAS SEE APPENDIX A

SOURCE: Precise Plan Bonita Long Canyon Estates

**U.S.A., INC.**

9/85 C.C.

## TRIP GENERATION, DISTRIBUTION, AND ASSIGNMENT

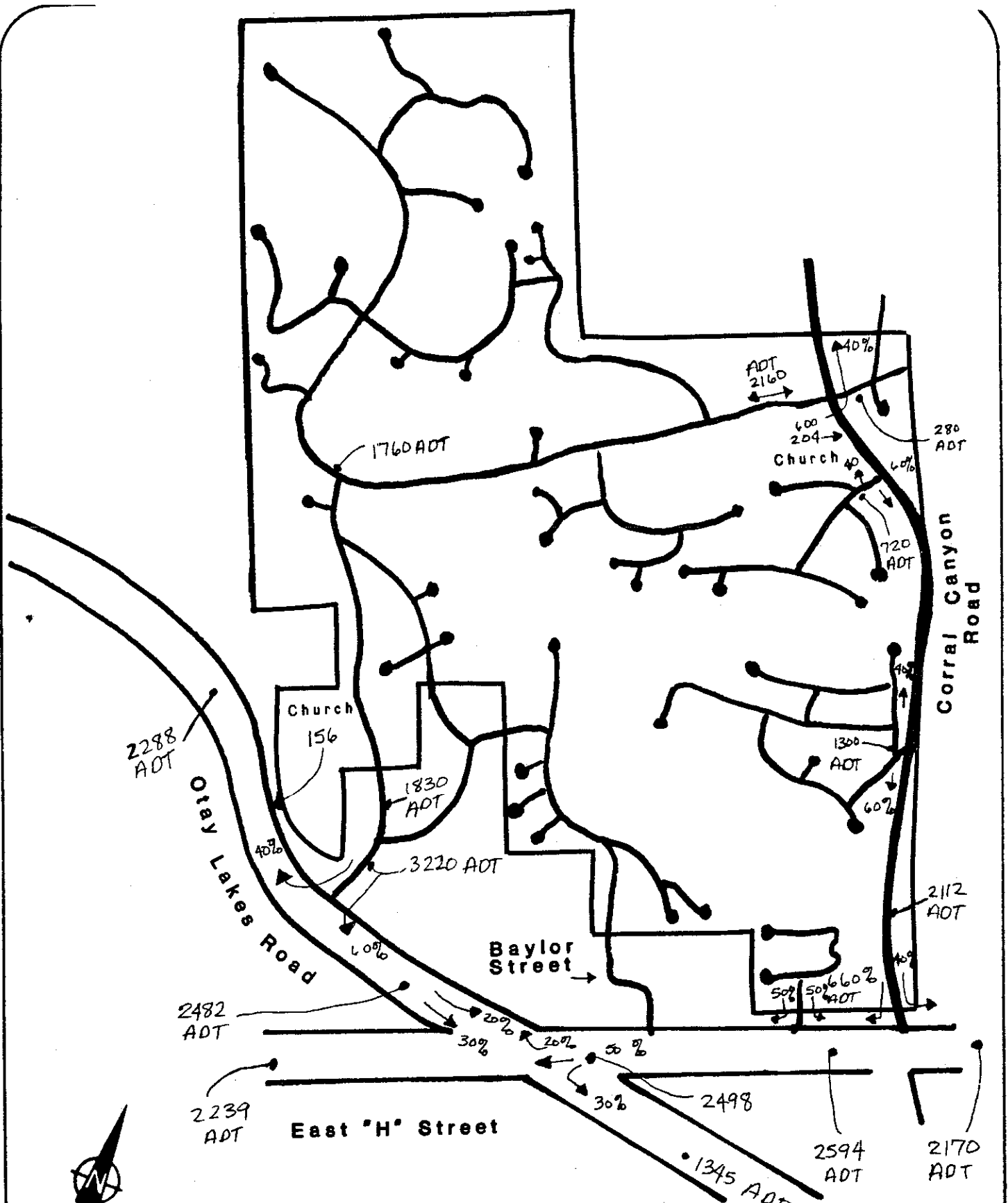
TRIP GENERATION RATES USED FOR THIS PROJECT ARE BASED UPON THE MARCH, 1985, "RECOMMENDED WEEKDAY TRIP GENERATION RATE SUMMARY" SUGGESTED BY THE SAN DIEGO ASSOCIATION OF GOVERNMENTS. SEE **APPENDIX B**. BASED UPON THESE RATES AND THE PROPOSED USES, THE PROPOSED PROJECT WILL GENERATE APPROXIMATELY 9035 TRIPS PER DAY. SEE **TABLE 2**. OF THESE 9035 TRIPS, 8620 TRIPS ARE FROM RESIDENTIAL AREAS AND 415 TRIPS ARE FROM PUBLIC FACILITIES. THE GENERATED TRAFFIC WAS THEN DISTRIBUTED AND ASSIGNED TO THE LOCAL STREET SYSTEM. **FIGURE 2** SHOWS THE RESULTS OF THIS EFFORT.

THE ADOPTED PLAN GENERATES 9064 TRIPS PER DAY WHICH IS 29 TRIPS MORE THAN THAT GENERATED BY THE MODIFIED PLAN. THE PRIMARY CAUSE OF THE REDUCTION IN TRIPS GENERATED FOR THE PROPOSED PROJECT, WHEN COMPARED TO THE ADOPTED PLAN, IS THE CHANGE OF A PROPOSED SCHOOL TO VERY LOW DENSITY RESIDENTIAL USES. **TABLE 2** ALSO SHOWS A TRIP GENERATION COMPARISON OF THE ADOPTED AND PROPOSED PLANS FOR EACH LAND USE TYPE. THE PROPOSED PLAN IS NOT SIGNIFICANTLY DIFFERENT FROM THE ADOPTED PLAN. **FIGURE 3** SHOWS THE PM PEAK HOUR TRAFFIC ON CORRAL CANYON ROAD, "H" STREET AND OTAY LAKES ROAD. THE "H" STREET EVALUATIONS AND CUMULATIVE ANALYSIS IN THIS REPORT ARE BASED ON THESE PM PEAK HOUR FIGURES.

**FIGURE 4** SHOWS THE EXISTING ADT ON "H" STREET AND OTHER STREETS IN THE VICINITY OF THE PROJECT. ON "H" STREET WEST OF OTAY LAKES ROAD, THE ADT IS 8600 TRIPS; 7500 ADT ON "H" STREET MIDWAY

**TABLE 2**  
**COMPARISON OF TOTAL TRAFFIC GENERATION**  
**REVISED PLAN - ADOPTED PLAN**  
**BONITA LONG CANYON ESTATES**

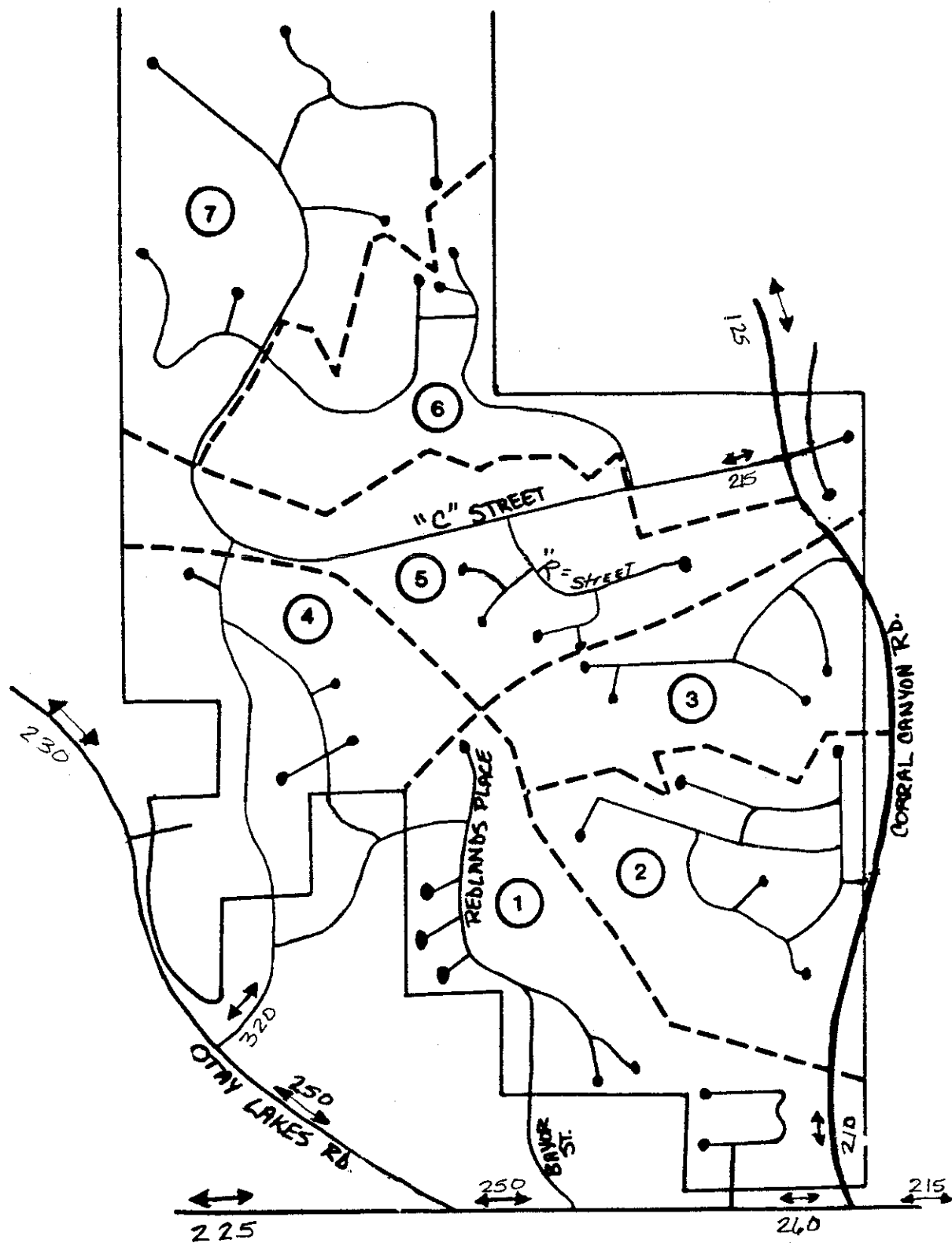
<u>REVISED PLAN</u>	<u>UNITS</u>	<u>RATE</u>	<u>ADT</u>
RESIDENTIAL LOT 1 TO 7	862 DU	10/DU	8620
PARK SITE	11AC	5/AC	55
PUBLIC FACILITY (CHURCHES)	9.0 AC	40/AC	360
TOTAL			<u>9035</u>
<u>ADOPTED PLAN</u>	<u>UNITS</u>	<u>RATE</u>	<u>ADT</u>
RESIDENTIAL LOT 1 TO 6	826AC	10/DU	8260
SCHOOL	15AC	50/AC	750
PARK SITE	10.8AC	5/AC	54
TOTAL			<u>9064</u>



NO SCALE

**FIGURE 2**  
**TRAFFIC DISTRIBUTION AND ASSIGNMENT**  
**BONITA LONG CANYON ESTATES**





**FIGURE 3**  
**TWO WAY PM PEAK HOUR TRAFFIC**  
**BONITA LONG CANYON ESTATES**



NO SCALE

**USA**

(3-0)

BETWEEN I-805 AND OTAY LAKES ROAD; AND 8900 TRIPS EAST OF I-805. AS PREVIOUSLY DISCUSSED, **FIGURE 3** SHOWS THE EXPECTED PM PEAK HOUR TRAFFIC FLOW ON "H" STREET WHICH IS GENERATED BY THE PROJECT.

TO ESTIMATE PEAK HOUR TRAFFIC FLOW ON "H" STREET FOR EXISTING TRAFFIC, A 10% PEAK HOUR FACTOR WAS USED. BASED ON "H" STREET PEAK HOUR TRIPS GENERATED BY THE PROJECT, (225), AND EXISTING TRAFFIC, ONE CAN CALCULATE THE PM PEAK HOUR LOAD AT "H" STREET TO BE 1085, 975, AND 1115 AT OTAY LAKES ROAD, THE MIDWAY POINT, AND I-805, RESPECTIVELY. IN THE FOLLOWING SECTION OF THIS REPORT, THE SIGNIFICANCE OF THIS LEVEL OF TRAFFIC FLOW ON "H" STREET IS DISCUSSED.

ACCORDING TO THE CHULA VISTA TRANSPORTATION STUDY, IN 1995 THE PROJECT AREA TRAFFIC ANALYSIS (ZONE 216) WAS ASSUMED TO HAVE APPROXIMATELY 1422 DWELLING UNITS, (SEE **APPENDICES C & D**). THIS NUMBER INCLUDES AREAS (A) AND (B) AS SHOWN ON **APPENDIX D**, WITH A TOTAL OF 101 DWELLING UNITS AND EXCLUDES SECTION (C) WITH 66 DWELLING UNITS. THEREFORE, FOR THE PROPOSED PLAN AREA THERE WILL BE 1387 TOTAL DWELLING UNITS (1422-101+66) IN 1995 WHICH IS 35 DWELLING UNITS LESS THAN FOR THE ADOPTED SPA PLAN.

CORRAL CANYON ROAD, OTAY LAKES ROAD, AND "H" STREET WILL ALL BE ABLE TO ACCOMMODATE THE PROJECTED CUMULATIVE AVERAGE DAILY TRAFFIC IN 1995. THIS IS DUE TO THE FACT THAT 1422 DWELLING UNITS WERE ASSUMED IN THE CHULA VISTA CUMULATIVE TRANSPORTATION STUDY (CVCTS) AND THE PROJECT PROPOSES FEWER UNITS (862). ALSO, AS

SHOWN IN **APPENDIX D**, FOR THE AREA WITHIN THE TRAFFIC ANALYSIS ZONE (TAZ) 216, AREAS A, B, WHICH ARE NOT A PART OF THE PROJECT WERE INCLUDED IN TAZ 216, BUT AREA C, WHICH IS A PART OF THE PROJECT, WAS NOT. THEREFORE, TO COMPARE THE CUMULATIVE STUDIES AND THE PROPOSED PLAN, THESE DIFFERENCES MUST BE TAKEN INTO ACCOUNT.

THE TOTAL NUMBER OF UNITS FOR THE CVCTS ASSUMED IN TAZ 216 EQUALS 1422. AREAS A AND B (42 DU PLUS 59 DU EQUALS 101 DU) SHOULD BE SUBTRACTED, AND AREA C (66 DU) ADDED TO THE CVCTS TOTAL BEFORE COMPARING WITH THE PROPOSED PLAN. THE DIFFERENCE IN THE NUMBER OF UNITS ASSUMED FOR THE CVCTS VERSUS THE PROPOSED PLAN IS THEREFORE  $1422 - 101 + 66 = 1387$ . THIS REPRESENTS A SIGNIFICANTLY HIGHER ESTIMATE OF DEVELOPMENT FOR THE AREA WHEN COMPARED TO WHAT IS ACTUALLY BEING PROPOSED, I.E.  $1387 - 862 = 525$  FEWER UNITS.

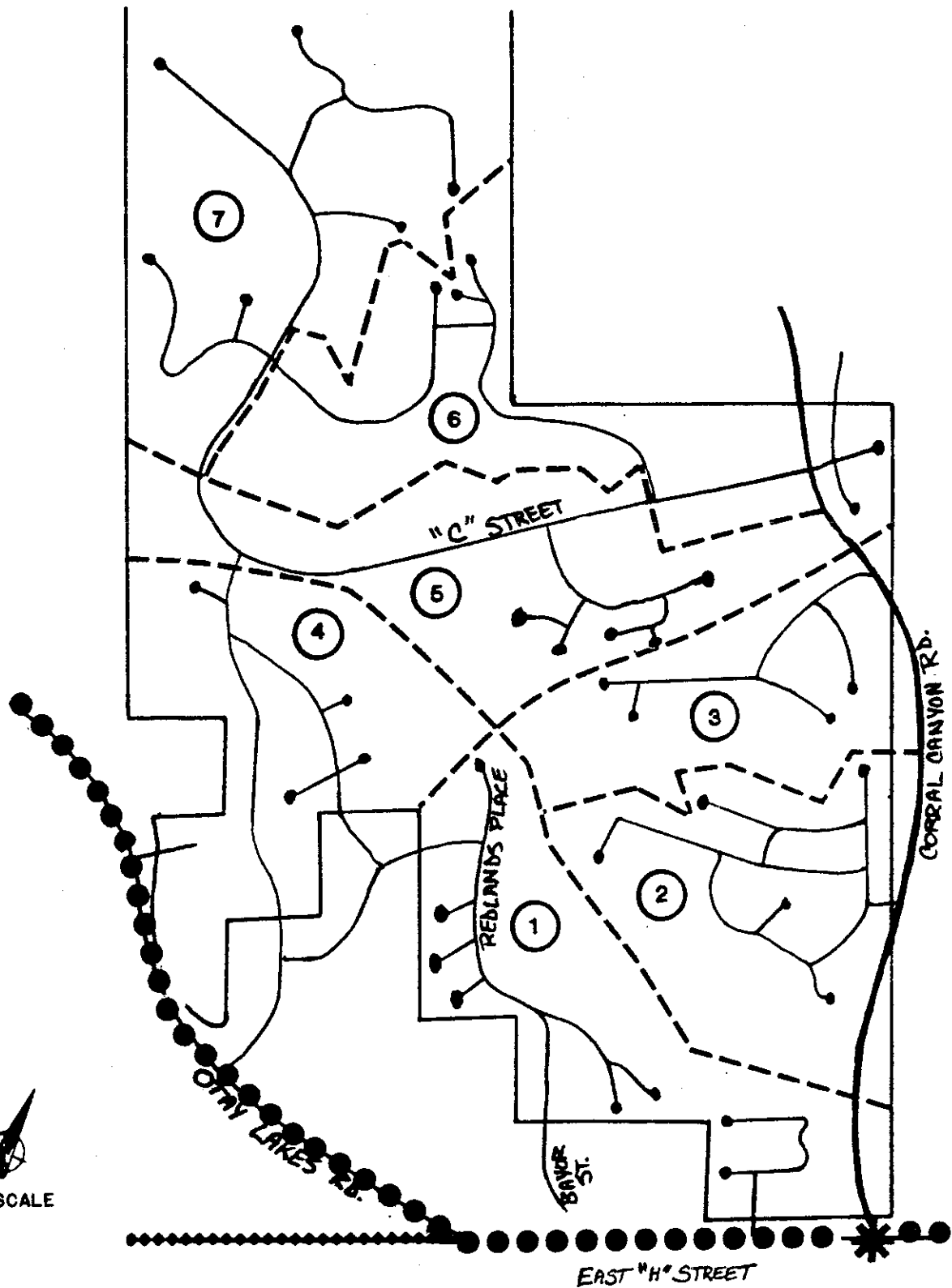


## IMPACT ANALYSIS

PLANNED IMPROVEMENTS FOR ARTERIAL STREETS IN THE PROJECT AREA WILL BE ADEQUATE BECAUSE THE DECREASE IN AVERAGE DAILY TRAFFIC FROM THE REVISED PROJECT DOES NOT CREATE SIGNIFICANT IMPACTS EXCEPT WITHIN THE PROJECT WHERE IMPACTS ARE MITIGATED AS THE RESULT OF THE CONSTRUCTION OF NEW STREETS SEE **FIGURE 5**. CORRAL CANYON ROAD IS PROPOSED TO BE IMPROVED AS A FOUR LANE COLLECTOR ROAD. CURB TO CURB WIDTHS ON THESE TYPES OF ROADS WILL BE AT LEAST 64 FEET AND RIGHT-OF-WAY WIDTHS ON THESE ROADS WILL BE AT LEAST 80 FEET.

THE INTERSECTION OF CORRAL CANYON ROAD AND "H" STREET WILL REQUIRE SIGNALIZATION IN THE FUTURE. HOWEVER, THE CONTRIBUTION OF PROJECT TRAFFIC AT THIS LOCATION IS RELATIVELY MINOR (2000 ADT). AT THE INTERSECTION OF OTAY LAKES ROAD AND EAST "H" STREET, THE EXISTING TRAFFIC SIGNAL WILL HAVE TO BE MODIFIED TO ACCOMMODATE THE ADDITION OF A FOURTH (EAST) LEG TO THE INTERSECTION.






"H" STREET TRANSITIONS FROM A FOUR LANE MAJOR EAST OF OTAY LAKES ROAD TO A SIX LANE MAJOR WEST OF OTAY LAKES ROAD. THE CONTRIBUTION OF PROJECT TRAFFIC TO "H" STREET WEST OF OTAY LAKES ROAD IS RELATIVELY MINOR. AS DISCUSSED EARLIER IN THIS REPORT, ABOUT 340 PM PEAK HOUR TRIPS WOULD BE ADDED TO "H" STREET MIDWAY BETWEEN I-805 AND OTAY LAKES ROAD. THIS ESTIMATE IS BASED ON A PROJECTED CUMULATIVE AVERAGE DAILY TRAFFIC FLOW OF 27,500 (SEE



NO SCALE

FIGURE 5

**PROPOSED STREET IMPROVEMENTS  
BONITA LONG CANYON ESTATES**

-  Traffic Signal
-  2 Lane Local
-  4 Lane Collector
-  2 Lane Major
-  6 Lane Major

**USA**

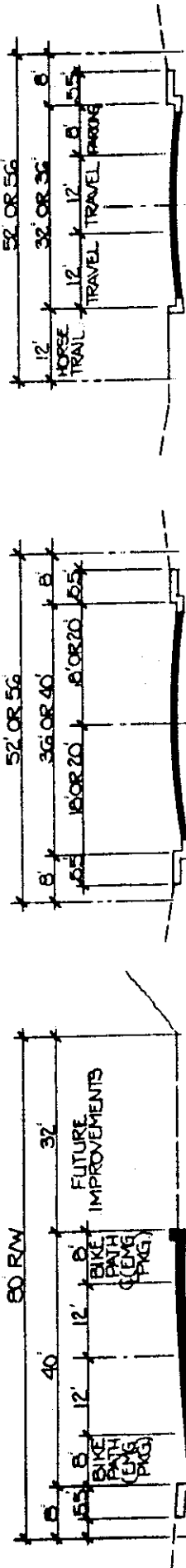
(6-A)

**APPENDIX E)** AND A 10% PEAK HOUR FACTOR. SINCE THE PROJECT PROPOSES SIGNIFICANTLY FEWER UNITS (862) THAN THAT ASSUMED FOR THE CVCTS (1387) FOR THE SAME AREA, THE CUMULATIVE IMPACTS ON "H" STREET WILL BE LOWER THAN THOSE PROJECTED.

LOCAL STREETS IN THE PROPOSED PROJECT SHOULD BE TWO LANES WITH A CURB TO CURB WIDTH OF AT LEAST 36 FEET WITHIN A RIGHT-OF-WAY OF 56 FEET. WITH THESE RECOMMENDED IMPROVEMENTS, THE PROPOSED PROJECT WILL ACCOMMODATE PROJECTED TRAFFIC FLOWS AT A REASONABLE LEVEL OF SERVICE. **FIGURE 6** SHOWS RECOMMENDED GEOMETRIC CROSS SECTIONS FOR MAJOR, COLLECTOR AND LOCAL STREETS.

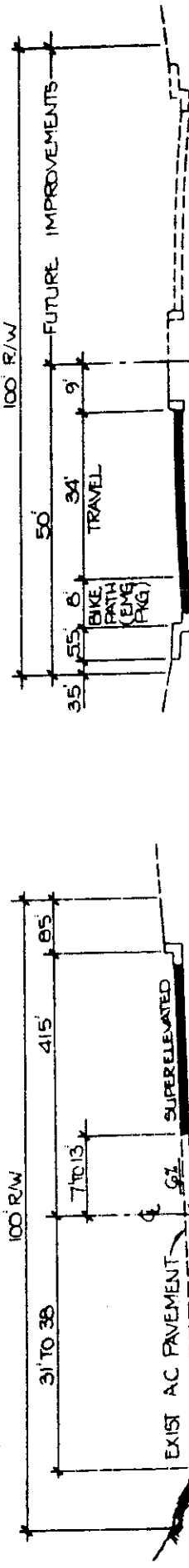
# FIGURE 6 GEOMETRIC CROSSSECTIONS

## BONITA LONG CANYON ESTATES



B, O STREETS

A, C THRU N, P THRU Z,  
AA THRU 11 STREETS  
CANYON DRIVE & CUMBRE VIEW



EAST H STREET

OTAY LAKES ROAD

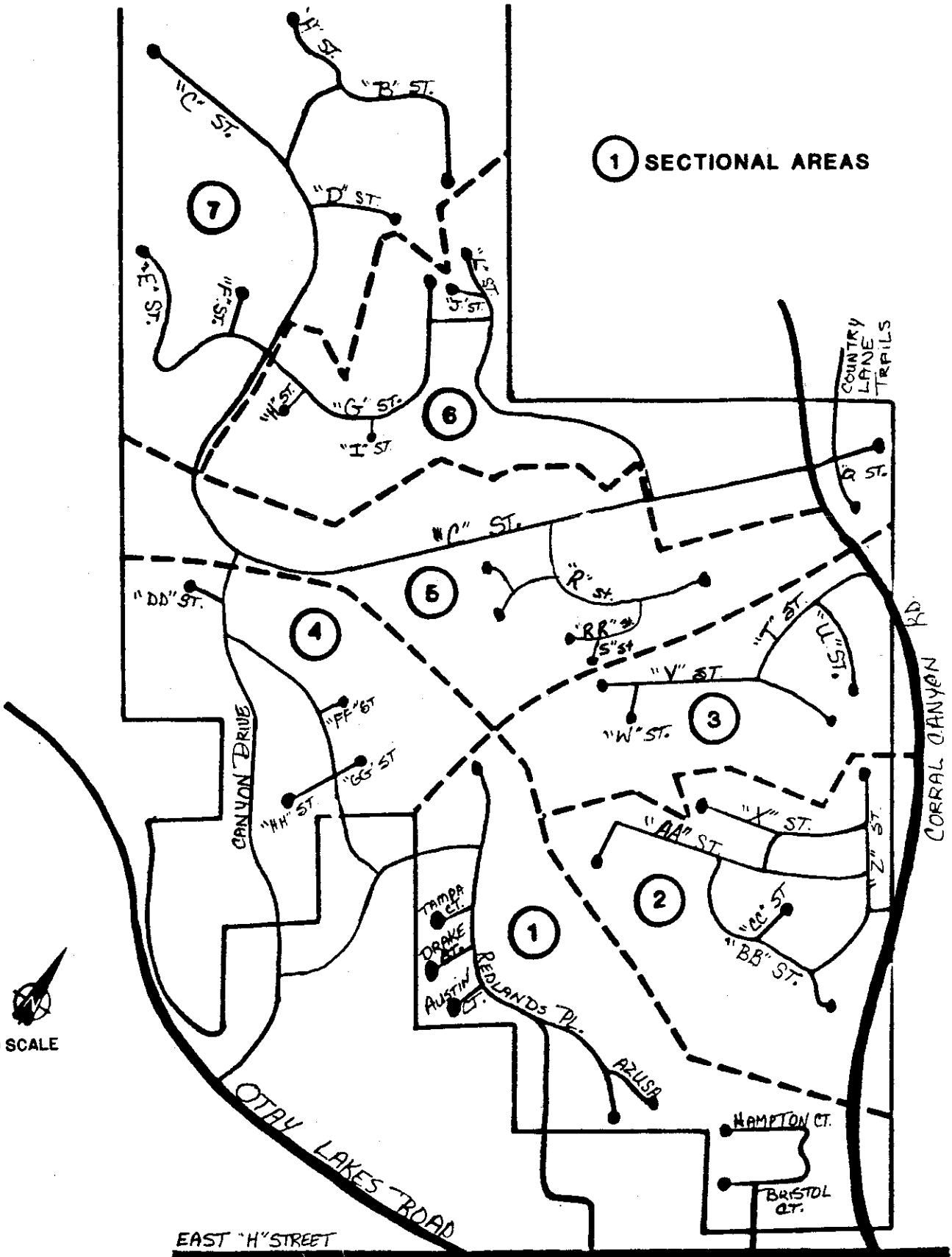
U.S.A., INC.

7/85 *Quinn*

CONCLUSIONS

BY COMPARING TRIP GENERATION FOR THE REVISED PLAN AND ADOPTED PLAN, THE REVISED PLAN GENERATES 29 FEWER DAILY TRIPS. THEREFORE, THE AVERAGE DAILY TRAFFIC FLOW FROM THE REVISED PLAN WILL NOT VARY SIGNIFICANTLY FROM THAT GENERATED FROM THE ADOPTED PLAN. CONSEQUENTLY, IMPACTS AND MITIGATION FOR THE PROJECT REMAIN UNCHANGED. OVER THE LONG TERM, BASED ON THE CVCTS, IMPACTS OF THE PROJECT ON MAJOR STREETS WILL BE MUCH LOWER THAN THOSE PROJECTED.

1 SECTIONAL AREAS



APPENDIX A  
BONITA LONG CANYON ESTATES



**San Diego  
ASSOCIATION OF  
TRAFFIC ENGINEERS**

4, Security Pacific Plaza  
Broad Avenue  
San Diego, California 92101  
16 5300

This list only represents a guide of average, or estimated, traffic generation rates for land uses (synthesis on acreage and building footprint) in the San Diego region. These rates are subject to change as future documentation becomes available or as local sources are identified. For more specific information regarding traffic data and trip rates, please refer to the San Diego Traffic Generators manual, a check with local jurisdictions for their preferred or applicable rates.

USE	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE	HIGHEST PEAK HOUR % (plus IN-OUT ratio) Between 7-9 A.M. Between 4-6 P.M.	TRAFFIC GENERATION RATES FOR THE SAN DIEGO REGION	
			ESTIMATED	TRIP GENERATION RATE
Open Space	2/acre**			
Commercial General Aviation	12/acre, 100/flight, 70/1000 sq. ft., 4/acre, 2/night, 5/boxed aircraft, 100/acre**	6% (6:4)	7% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Mobile Car Wash	800/acre, 800/acre**	4% (5:5)	6% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Gas Station	750/acre, 130/pump**	6% (5:5)	12% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Repair & Sales (Dealer)	60/1000 sq. ft., 400/acre, 80/service call**	8% (6:4)	10% (4:6)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Bank	200/1000 sq. ft., 1000/acre**	3% (7:3)	10% (4:6)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
W/Drive-through	300/150 one-way/lane**	3%	13%	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Savings & Loan	60/1000 sq. ft., 600/acre**	2%	6%	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
W/Drive-through	100 (50 one-way/lane**			12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Church (or Synagogue)	5/acre*	4% (6:2)	8% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Church (or Synagogue)	15/1000 sq. ft., 40/acre** (triple rates for Sunday, or days of assembly)			12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Commercial/Retail Centers (More than 30 acres, more than 300,000 sq. ft., w/usually 2+ major stores)	80/1000 sq. ft., 600/acre*	2% (7:3)	9% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Community Shopping Center (10-30 acres, 100,000-300,000 sq. ft., w/usually 1 major store and attached restaurant)	70/1000 sq. ft., 700/acre**	3% (6:4)	10% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Neighborhood Shopping Center (Less than 10 acres, less than 100,000 sq. ft., w/usually grocery store & drug store)	40/1000 sq. ft., 400/acre*	4% (6:4)	11% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Commercial Shops (Also strip commercial)	150/1000 sq. ft., 1500/acre**	3% (6:4)	9% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Grocery Store	600/1000 sq. ft., 600/acre**	3% (7:3)	11% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Convenience Market	80/1000 sq. ft., 800/acre**	3% (6:4)	10% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Furniture Store	6/1000 sq. ft., 700/acre**	4% (6:4)	9% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Lumber Store	20/1000 sq. ft., 100/acre**	7% (6:4)	9% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Hardware/Paint Store	30/1000 sq. ft., 200/acre**	3% (6:4)	9% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Garden Nursery	60/1000 sq. ft., 120/acre**	3% (6:4)	10% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
University (4 years)	2.5/student, 100/acre*	10% (9:1)	9% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Junior College (2 years)	1.5/student, 80/acre*	12% (9:1)	9% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
High School	1.0/student, 60/acre*	20% (9:1)	14% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Middle/Junior High	1.0/student, 40/acre**	24% (9:1)	7% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
Elementary	1.4/student, 80/acre**	28% (9:1)	6% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
General Convalescent/Nursing	20/bed, 20/1000 sq. ft., 300/acre*	9% (8:2)	11% (5:5)	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)
General Convalescent/Nursing	5/bed**	6%	6%	12% (2:8) 18% (2:8) 20% (1:8) 20% (1:8) 20% (1:8) 18% (1:8) 18% (1:8) 10% (1:8)

\* Primary source: San Diego Traffic Generators.  
\*\* Other sources: ITS Trip Generation Report, CALTRANS studies, reports, and estimates.

**APPENDIX B**

**BRIEF GUIDE OF VEHICULAR TRAFFIC GENERATION RATES FOR THE SAN DIEGO REGION**

MARCH 1985

Industrial	18/1000 sq. ft., 200/acre*	12% (2:8)		
Commercial included/Business Park	10/1000 sq. ft., 120/acre*	14% (2:8)		
Manufacturing/Assembly	4/1000 sq. ft., 50/acre**	20% (1:8)		
Warehousing	3/1000 sq. ft., 30/acre**	18% (1:8)		
Storage	3/1000 sq. ft., 0.3/acre**	18% (1:8)		
Science Research & Development	8/1000 sq. ft., 80/acre**	18% (1:8)		
Administration/Corporate Headquarters	7/1000 sq. ft., 100/acre**	18% (1:8)		
Library	40/1000 sq. ft., 400/acre**	2%		
Leading Hotel	10/room, 300/acre**	6% (5:5)		
Hotel	10/room, 200/acre**	6% (5:5)		
Motel	10/room, 100/acre**	7% (4:8)		
Military	2.5/military & civilian personnel*	10% (2:8)		
Offices	20/1000 sq. ft., 300/acre*	13% (2:8)		
Standard Commercial Offices (less than 100,000 sq. ft.)	17/1000 sq. ft., 800/acre*	14% (2:8)		
Large (high-rise) Commercial Office (more than 100,000 sq. ft., 8 stories)	30/1000 sq. ft., 80/acre**	12% (3:7)		
Government ( Civic Center)	180/1000 sq. ft., 900/acre**	8% (5:5)		
Department of Motor Vehicles	180/1000 sq. ft., 900/acre**	11% (4:6)		
Medical	80/1000 sq. ft., 800/acre**	10% (3:7)		
City (developed)	50/acre*	6%		
Regional (undeveloped)	5/acre**			
Neighborhood	60/acre, 130/acre (summer only)**			
Amusement (Theme)	115/acre*			
San Diego Zoo	80/acre*			
San World				
Recreation	600/1000 sq. ft., shoreline, 60/acre*	11% (4:6)		
Beach, Ocean or Bay	50/1000 sq. ft., shoreline, 5/acre*	10% (4:8)		
Residential	30/lane, 300/acre**	7% (7:3)		
Residential	5/acre**	4%		
Residential	8/acre, 600/course**	4%		
Residential	4/berth	3%		
Residential	40/1000 sq. ft., 300/acre, 40/acre*	4%		
Residential	30/acre**	4%		
Residential	50/acre, 0.2/acre*	0.3%		
Residential	30/acre, 0.1/acre*	6% (2:8)		
Residential	40/acre, 0.6/acre*	6% (2:8)		
Residential	80/1000 sq. ft., 1.2/acre*	6% (2:8)		
Residential	10/dwelling unit*	10% (7:3)		
Residential	8/dwelling unit*	10% (7:3)		
Residential	6/dwelling unit*	11% (7:3)		
Residential	5/dwelling unit, 40/acre*	11% (6:4)		
Residential	4/dwelling unit*	9% (3:7)		
Residential	12/dwelling unit**	9% (3:7)		
Residential	100/1000 sq. ft., 600/acre**	1%		
Residential	300/1000 sq. ft., 1200/acre**	6% (5:5)		
Residential	700/1000 sq. ft., 3000/acre**	4% (5:5)		
Restaurants	25/1000 sq. ft.**	6% (4:5)		
Restaurants	10/1000 sq. ft., 80/acre**	14% (5:5)		
Restaurants	200/acre**	14% (5:5)		
Restaurants	25/1000 sq. ft., 80/acre**	6% (4:5)		
Restaurants	170/berth, 12/acre**	14% (5:5)		
Restaurants	200/acre**	14% (5:5)		
Restaurants	25/1000 sq. ft., 80/acre**	6% (4:5)		
Restaurants	10/1000 sq. ft., 80/acre**	14% (5:5)		
Restaurants	200/acre**	14% (5:5)		
Restaurants	25/1000 sq. ft., 80/acre**	6% (4:5)		
Restaurants	170/berth, 12/acre**	14% (5:5)		
Restaurants	200/acre**	14% (5:5)		

\* Primary source: San Diego Traffic Generators.  
\*\* Other sources: ITS Trip Generation Report, CALTRANS studies, reports, and estimates.

**APPENDIX C  
CHULA VISTA TRANSPORTATION STUDY  
LAND USE DATA**

ZONE NUMBER (a)	LAND USE CODE	LAND USE	1995 UNITS(b)	2005 UNITS(b)
	130	MULTIFAMILY UNITS	227.0	227.0
	530	OTHER RETAIL	3.7	3.7
212	23	ELEMENTARY-JH SCHOOL	10.0	10.0
	110	SINGLE FAMILY UNITS	864.0	864.0
	765	PARKS	10.0	10.0
213	23	ELEMENTARY-JH SCHOOL	10.0	10.0
	110	SINGLE FAMILY UNITS	648.0	648.0
	765	PARKS	10.0	10.0
215	110	SINGLE FAMILY UNITS	515.0	515.0
216	23	ELEMENTARY-JH SCHOOL	10.0	10.0
	110	SINGLE FAMILY UNITS	1422.0	1422.0
	765	PARKS	10.0	10.0
218	110	SINGLE FAMILY UNITS	470.0	470.0
219	110	SINGLE FAMILY UNITS	646.0	646.0
220	110	SINGLE FAMILY UNITS	568.0	568.0
221	110	SINGLE FAMILY UNITS	72.0	72.0
	130	MULTIFAMILY UNITS	262.0	262.0
	530	OTHER RETAIL	11.0	11.0
	765	PARKS	196.5	196.5
223	110	SINGLE FAMILY UNITS	740.0	740.0
224	110	SINGLE FAMILY UNITS	389.0	389.0
	520	SHOPPING CENTER	67.2	67.2
	765	PARKS	159.8	159.8
225	110	SINGLE FAMILY UNITS	228.0	228.0
226	110	SINGLE FAMILY UNITS	533.0	533.0
	720	COMMERCIAL REC.	73.5	73.5
	765	PARKS	110.2	110.2
227	23	ELEMENTARY-JH SCHOOL	10.0	10.0
	110	SINGLE FAMILY UNITS	100.0	100.0
	530	OTHER RETAIL	11.9	11.9
	765	PARKS	90.0	90.0
228	110	SINGLE FAMILY UNITS	422.0	422.0

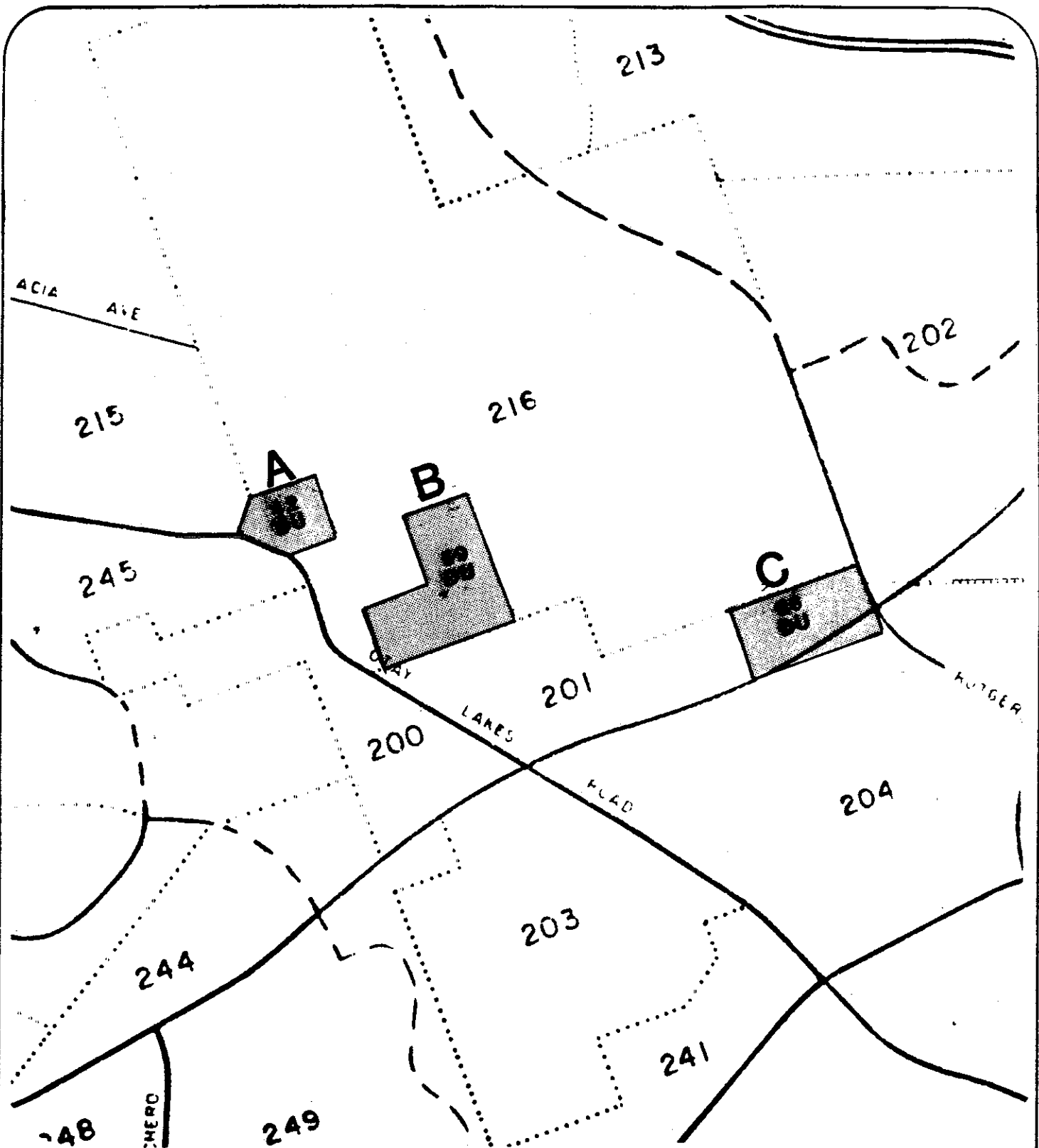
(a) Chula Vista study zones not containing trip generating type land use will not be shown in this table.

(b) For residential land use the units are dwellings, for non-residential land use the units refer to acres. Vacant land, freeway and street acreage, open space and other non trip generating land uses are not shown in this table.

SOURCE: SANDAG, Chula Vista Transportation Study,  
9/84

**USA**





**APPENDIX D**  
**CHULA VISTA TRANSPORTATION STUDY**  
**TRAFFIC ANALYSIS ZONES**  
**BONITA LONG CANYON ESTATES**



NO SCALE



EXHIBIT F

**HYDROLOGIC AND HYDRAULIC ANALYSIS  
LONG CANYON WATERSHED**

**BONITA LONG CANYON ESTATES**

**PREPARED FOR**

**THE GERSTEN COMPANIES**

**AUGUST 1981**

**(REVISED MARCH 1982)**



***Boyle***  
***Engineering***  
***Corporation***

consulting engineers / architects

Water Resources Division  
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San Diego, California 92111

714/268-4411

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PLATES

No.

1	Bonita Long Canyon Estates Development Plan
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# HYDROLOGIC AND HYDRAULIC ANALYSES OF LONG CANYON BASIN FOR BONITA LONG CANYON ESTATES

## Authorization

The hydrologic analysis was authorized by an agreement between Boyle Engineering Corporation and the Gersten Companies, the developers of Bonita Long Canyon Estates, dated March 20, 1981. Additional studies were authorized by supplemental agreements.

## Purpose and Scope

The purpose of the hydrologic analysis is to estimate the peak flood flows that will occur in Long Canyon Basin under three stages of development.

This will provide a basis for estimating the increases in runoff that will be caused by development. The three stages of development considered are:

- a. Existing development
- b. Existing development plus the development of Bonita Long Canyon Estates
- c. Full development

Peak flood flows and design hydrographs for the 100-year return period flood were developed at critical points in the basin for each of the three stages of development. Volume estimates were made on the bases of these hydrographs.

Hydraulic analyses were made to evaluate the effects of floodwater retarding reservoirs in reducing peak flood flows at various concentration points in the watershed.

### Characteristics of the Study Area

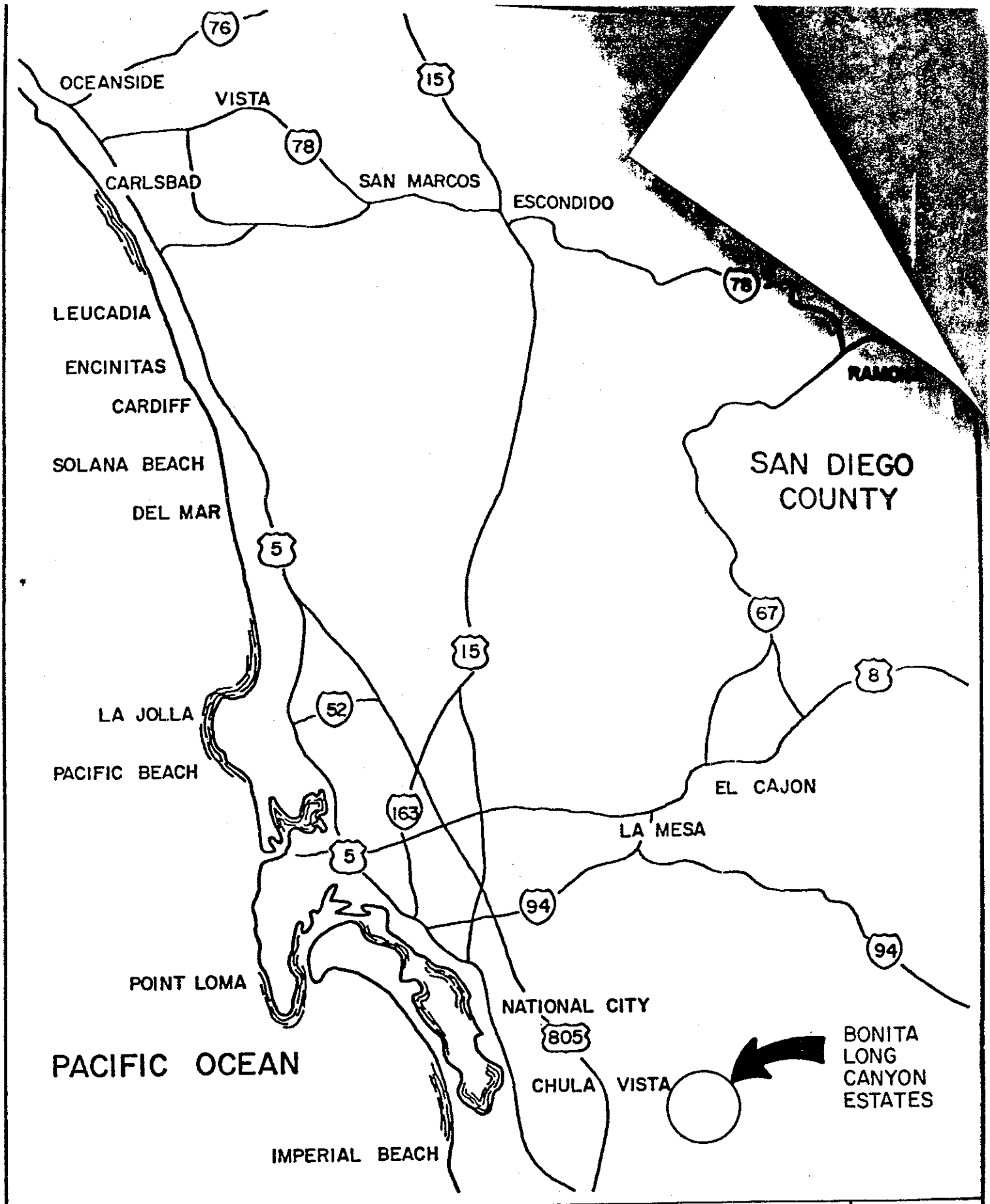
The Long Canyon basin is located in the South Bay area of San Diego, approximately two miles south of the Sweetwater Reservoir dam. The basin is partly within the city limits of Chula Vista and the parts not in the city are within Zone 3 of the County of San Diego Flood Control District. The location of the basin is shown on the Vicinity Map (Figure 1).

The basin encompasses a drainage area of 1.72 square miles. It is known as Long Canyon because the major stream extends the full length of the basin's relatively narrow valley for a distance of 3.3 miles.

- \* The oldest existing development in the basin is in the canyon bottom along Acacia Avenue which extends 1.1 miles upstream from the basin mouth. In recent years, development has occurred on the valley slopes in the lower portion of the basin adjacent to the older development. Presently, the areas adjacent to Acacia Avenue are fully developed on both sides of the valley. The remainder of the basin is undeveloped except for small areas along the southwest slope on the ridge line.

The Gersten Company's development plan, Bonita Long Canyon Estates, is a proposed residential community that will occupy 520 acres of the Long Canyon Basin immediately upstream of Acacia Avenue. The development plan is shown on Plate 1. It occupies a gross area of 650 acres. The 130 acres of the development not in Long Canyon Basin are located in small unnamed basins northeast of Long Canyon. The development includes 865 dwelling units with average lot sizes varying from 10,000 to 25,000 square feet. With large





VICINITY MAP

FIGURE

1

open spaces left natural, flood plain reserves, park, and school areas included in the development, the overall density is 1.33 dwelling units per acre.

### Drainage Basin Boundaries

The drainage basin boundaries used in this analysis are shown on Figure 2, including the boundaries of subdrainage areas contributing to runoff at each concentration point. Basin boundaries within Bonita Long Canyon Estates are also shown on Plate 1.

The boundaries of the total basin follow the natural geographic divide around the perimeter of the basin except along the northeast ridge of subbasin 4. It was assumed that runoff from this area would not enter Long Canyon but would be conveyed to a separate discharge point into the Sweetwater River. The only runoff from this area included in this analysis is that which falls directly on the slope banks immediately adjacent to Long Canyon.

The subbasin boundaries also follow natural geographic features generally. They are modified somewhat by development patterns such as street alignments and drainage paths. Areas of the subbasins are shown in Table 1.

TABLE 1  
AREAS OF SUBBASINS

Subbasin No.	Area (Square Miles)
1	0.60
2	0.65
3	0.13
4A	0.25
4B	0.09
Total	<u>1.72</u>

### Hydrologic Procedures

The hydrologic procedures used in this analysis are in accordance with the standards of the County of San Diego, Department of Sanitation and Flood Control as described in their Hydrology Manual (November, 1975).

The hydrologic computations for this analysis were performed on a digital computer with the use of a program developed by the U.S. Department of Agriculture, Soil Conservation Service (SCS). The computer program is entitled "Project Formulation - Hydrology." It is described in publication TR-20 and is based on hydrologic procedures described in the SCS National Engineering Handbook, Section 4.

### Hydrologic Parameters

#### Soil Characteristics

Soil characteristics were determined from "San Diego County Soils Interpretation Study" maps published by CPO (1969) which are based on SCS data. The maps used are from the series entitled, "Hydrologic Soil Groups - Runoff Potential." Based on these maps, soils within the basin are generally in hydrologic soil groups C and D which have high to very high runoff potential.

#### Land Use

Land use in the basin was also determined from the "San Diego County Soils Interpretation Study" maps. The maps used for this purpose are entitled "Ground Cover-Vegetative and Man Made." It was necessary to update these 1969 maps to reflect current development in the basin. Otherwise, the maps were considered representative of existing conditions.

## Curve Numbers

The amount of direct runoff to be expected from a specific storm is dependent upon soil characteristics and the surface use of the land. An evaluation of these two characteristics is the basis for assigning curve numbers to watershed areas. The numbers are an index to the runoff potential from each area. The higher the number, the greater the amount of direct runoff to be expected from a storm.

In addition to soil and cover combinations, curve numbers are affected by antecedent moisture conditions. The greater the amount of rainfall occurring within about three days prior to a storm, the higher the antecedent moisture condition will be. Three levels of antecedent moisture condition are identified as:

- AMC 1 - lowest level of preceding rainfall
- AMC 2 - average level of preceding rainfall
- AMC 3 - highest level of preceding rainfall

Curve numbers for the Long Canyon basin were selected from the charts in the San Diego County Hydrology Manual on the basis of soil and cover combinations and antecedent moisture condition 2 (AMC 2). The curve numbers selected for each of the stages of development are shown in Table 2.

TABLE 2  
CURVE NUMBERS (AMC 2)

Subbasin	Area (SQ. MI.)	Stage of Development		
		Stage 1	Stage 2	Stage 3
1	0.60	83	85	86
2	0.65	82	86	86
3	0.13	82	86	86
4A	0.25	87	87	87
4B	0.09	87	87	87

Notes:

1. Stage 1 indicates existing development.
2. Stage 2 indicates existing development plus Bonita Long Canyon Estates.
3. Stage 3 indicates ultimate development.

Precipitation Zone

Precipitation zone values are used by the county to represent the antecedent moisture condition expected in a given area. A chart in the county manual shows that Long Canyon basin lies in Precipitation Zone 1.5, indicating an antecedent moisture condition half way between levels AMC 2 and AMC 3. To convert the AMC 2 curve numbers given in Table 2 to represent AMC 2.5, another chart in the county manual was used that shows conversions of AMC 2 values to AMC 1 and AMC 3. Values in this chart were averaged between the AMC 2 and AMC 3 conditions to obtain values representative of AMC 2.5. The conversions are shown in Table 3.

TABLE 3  
CONVERSION OF AMC 2 CURVE NUMBERS TO AMC 2.5

AMC 2	AMC 2.5
82	87
83	88
84	89
85	90
86	90
87	91

### Rainfall Intensities

Rainfall intensities were determined from charts in the County Hydrology Manual. Values for storms with both 6-hour and 24-hour durations and a return period of 100 years were obtained.

### Storm Patterns

Storm patterns were determined from charts in the County Hydrology Manual. The 6-hour pattern "B" and 24-hour pattern "B" were used in accordance with the instructions in the manual.

### Time of Concentration

The time of concentration was estimated for each subbasin using the Corps of Engineers empirical equations described in the county manual. This value represents the time it takes for water to travel from the hydraulically most remote point in the watershed to the watershed outlet.

### Peak Flood Flow Computations

The various hydrologic parameters were determined in accordance with the above-described criteria for use by the SCS Computer program. Drainage areas, times of concentration, storm pattern, rainfall amounts, and curve numbers were entered into the program. Peak flow rates and runoff volumes computed are shown in Tables 4, 4A, 5, and 5A. Stage 1 indicates existing development, Stage 2 indicates existing development plus Bonita Long Canyon Estates, and Stage 3 indicates ultimate development.

TABLE 4  
ESTIMATED PEAK FLOOD FLOWS-100-YEAR RETURN PERIOD  
(6-Hour Duration Storm)

Subbasin	Accumulative Area (sq. mi.)	Stages of Development		
		Stage 1 (cfs)	Stage 2 (cfs)	Stage 3 (cfs)
1	0.60	440	570	640
2	1.25	910	1180	1300
3	1.38	960	1270	1430
4A	1.63	----	----	1680
4B	1.72	1270	1590	1770

TABLE 4A  
ESTIMATED 100-YEAR PEAK FLOOD FLOWS  
(24-Hour Duration Storm)

Subbasin No.	Accumulated Area (sq. mi.)	Stages of Development		
		Stage 1 (cfs)	Stage 2 (cfs)	Stage 3 (cfs)
1	0.6	340	360	370
2	1.25	700	760	770
3	1.38	770	830	850
4A	1.63	---	----	1000
4B	1.72	980	1040	1060

TABLE 5  
ESTIMATED RUNOFF VOLUMES - 100-YEAR RETURN PERIOD  
(6-Hour Duration Storm)

Subbasin No.	Accumulated Area (sq. mi.)	Stages of Development					
		Stage 1		Stage 2		Stage 3	
		(In.)	(Ac. Ft.)	(In.)	(Ac. Ft.)	(In.)	(Ac. Ft.)
1	0.60	1.73	55	1.89	60	1.89	60
2	1.25	1.69	113	1.89	126	1.89	126
3	1.38	1.68	124	1.89	139	1.89	140
4A	1.63	----	---	----	---	1.90	166
4B	1.72	1.72	160	1.91	178	1.91	175

TABLE 5A  
ESTIMATED RUNOFF VOLUMES - 100-YEAR RETURN PERIOD  
(24-Hour Duration Storm)

Subbasin No.	Accumulated Area (sq. mi.)	Stages of Development					
		Stage 1		Stage 2		Stage 3	
		(In.)	(Ac. Ft.)	(In.)	(Ac. Ft.)	(In.)	(Ac. Ft.)
1	0.6	3.04	97	3.26	104	3.27	105
2	1.25	3.00	200	3.26	217	3.27	218
3	1.38	3.00	221	3.26	241	3.26	242
4A	1.63	----	---	----	---	3.28	286
4B	1.72	3.06	282	3.28	301	3.29	302



## Discussion

The Long Canyon Basin has been a recognized flood problem area for many years. It has been studied separately, or included in the study areas of larger analyses, several times in the last decade. There are no stream gages in the basin or other measured flow data.

Two previous studies performed by Boyle Engineering Corporation included the Long Canyon Basin. One study was prepared in 1975 for Zone 3 of the San Diego County Flood Control District. It was entitled "Comprehensive Plan for Flood Control and Drainage." The other study was prepared in August 1980 for the city of Chula Vista and was entitled "Chula Vista Golf Course Drainage Study." The results of both of these previous studies can only be compared indirectly to this study.

The "Comprehensive Plan for Flood Control and Drainage" did not consider Long Canyon as an individual hydrologic unit but rather as a part of a larger unit. Peak flow rates were not computed for Long Canyon by itself so consequently, there isn't any flow data in the report to use for comparisons. There are, however, other hydrologic relationships that can be compared as the analyses were made similar to this study. The curve number value used was 94 under an AMC 3 condition which corresponds to a curve number value of 86 under an AMC 2 condition. This value was selected to represent 1990 development as described in the report. Table 2 shows that curve numbers selected for "stage 3" development level in this report are 86 for subbasins 1, 2, and 3, and 87 for subbasin 4. As 1990 development levels roughly correspond to "stage 3" development levels considered in this report, there is very close agreement between this report and the "Comprehensive Plan for Flood Control and Drainage" report on the curve number value.

In the "Chula Vista Golf Course Drainage Study" peak flood flows estimated to occur on an average of once in 2, 5, and 10 years were computed for tributaries of Sweetwater River below Sweetwater Dam, including the Long Canyon basin. The peak flood flows computed are not directly comparable to the results obtained with this study because this study estimates the flood flow expected to occur on an average of once in 100 years. The curve number value used was 86 under AMC 2 condition which corresponds to the values used in this study as shown in Table 2. The curve number used was intended to also represent 1990 level development, corresponding to "stage 3" level development considered in this report.

Another study was prepared in 1975 for the San Diego County, Department of Sanitation and Flood Control by The Barbour Engineering Company, Inc. The study was entitled "General Plan for Flood Control and Storm Drainage Improvements for Long Canyon Basin (Bonita Area) Zone 3." It included estimated peak flows expected to occur on an average of once in 100 years along with recommendations for flood control improvements. The method of analysis for the hydrology is known as the Modified Rational Method. That method is basically different from the SCS method used in this analysis and involves entirely different hydrologic parameters. However, the peak flow rates computed can be compared to the peak flows computed in this study as they are both 100-year return interval values. Table 6 shows the 100-year peak flood flows estimated in the Barbour report compared to those estimated in this study. It was assumed that these estimates were based on conditions with ultimate development. The "stage 3" level of development in this report is for conditions with ultimate development.

TABLE 6  
COMPARISON OF ESTIMATED 100-YEAR PEAK FLOOD FLOWS

Subbasin	Stage 3 (Table 4) (cfs)	"1975 Barbour Study" (cfs)
1	640	834
2	1300	1389
3	1430	1747
4A	1680	2004
4B	1770	2096

Conclusions and Recommendations - Hydrology

1. The analyses performed in this study are in close agreement with similar analyses performed in previous studies. The hydrologic parameters correlated very closely and if the earlier studies had required the development of 100-year peak flood flows in Long Canyon, values very close to those presented in this report would have been generated.
  
2. The modified rational calculations in the 1975 Barbour Report do not correlated closely with the results obtained in this study but are consistently higher. The modified rational method represents a simplified analysis from which conservatively high values of runoff are obtained.
  
3. The 100-year return period peak flow rates estimated in this current analysis and summarized in this report are recommended for use in planning flood control improvements for this area.

## Evaluation of Proposed Floodwater Retarding Reservoir

The opportunities for reducing peak flood flows in the watershed downstream from concentration point 2 by floodwater retarding reservoirs were evaluated.

A floodwater retarding reservoir located at concentration point 2, as shown on Figure 2, appears to be feasible and desirable as a component of a flood control system for the lower part of the watershed.

The total drainage area above this concentration point is 1.25 square miles. The estimated peak flood flows and volumes for the 100-year return period flood (24-hour and 6-hour duration storms) are shown on Tables 4, 4A, 5, and 5a).

The elevation-capacity-surface area curves for a floodwater retarding reservoir at concentration point 2 are shown on Figure 3 and these relationships are tabulated on Table 7.

With a 57-inch diameter principal spillway outlet from the floodwater retarding reservoir, the 1300 cfs peak flow for the 100-year return period 6-hour duration storm could be reduced to 420 cfs at concentration point 2. The peak flows would be reduced at all concentration points downstream. This would require 49.1 acre-feet of storage capacity in the reservoir to provide a reduction to 710 cfs from the 24-hour duration storm. A lesser capacity of 39.2 acre-feet would reduce the peak flow at concentration point 4B from 1770 cfs to 890 cfs for the 6-hour duration storm.

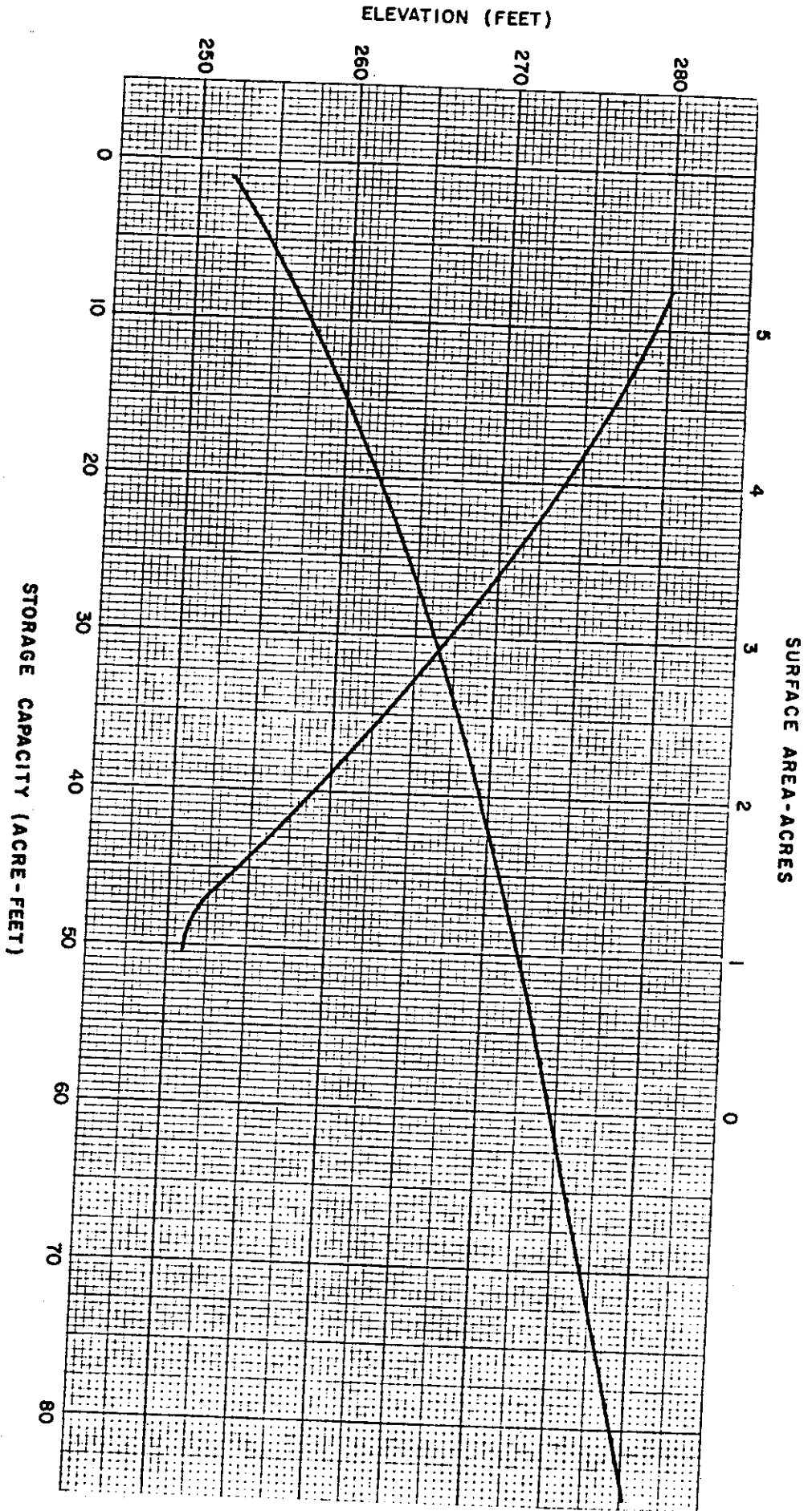


FIGURE 3

ELEVATION-CAPACITY-SURFACE AREA  
FLOODWATER RETARDING RESERVOIR  
BONITA LONG CANYON ESTAI

TABLE 7  
 FLOODWATER RETARDING RESERVOIR  
 ELEVATION-CAPACITY-SURFACE AREA

Elevation (feet)	Storage Capacity (Ac-Ft)	Surface Area (Acres)
280	84.5	5.23
78	74.4	4.85
76	65.2	4.42
74	56.8	3.99
72	49.1	3.65
270	42.1	3.38
68	35.6	3.10
66	29.7	2.85
64	24.2	2.59
62	19.3	2.36
260	14.8	2.14
58	10.7	1.93
56	7.1	1.72
54	3.9	1.50
252	1.1	1.27
251	---	.96

(Revised Feb. 1982)

A roadway will pass over the top of the dam. This roadway will be graded to the cross section of the emergency spillway which will have the shape of a highway vertical curve. The low point in the spillway section (crest) is at elevation 272.0 feet.

Since the dam is located in an urban area it must be designed to Class C structure standards. The emergency spillway and freeboard hydrographs were estimated for a Class C structure in accordance with procedures specified in San Diego County Flood Control Districts "Design and Procedure Manual." Table 8 tabulates the estimated peak flows and volumes for these hydrographs along with the 100-year 6-hour duration storm precipitation amounts and the water surface elevations that would occur in the emergency spillway section.

TABLE 8  
EMERGENCY SPILLWAY PEAK FLOWS  
(STAGE 3 DEVELOPMENT, C.P. 2)

Hydrograph	Precip. 6-Hour (In.)	Runoff Volume (Ac. Ft.)	Water Surface Elevation (ft.)	Emergency Spillway Peak Flow (cfs)
Spillway	5.55	297	275.7	2,400
Freeboard	13.10	789	278.4	7,100

Table 9 summarizes the Stage 3 peak flood flow reductions with a floodwater retarding reservoir. The table also shows the estimated peak flows under conditions of existing development (stage 1) for the 24-hour and 6-hour duration storms.

TABLE 9  
PEAK FLOOD FLOW REDUCTIONS WITH FLOODWATER RETARDING RESERVOIR

Basin No. C.P.	Peak Flows Unretarded				57" Diameter Principal Spillway Basin No. 2	
	Stage 1		Stage 3		24-hr. Storm (cfs)	6-hr. Storm (cfs)
	24-hr. Storm (cfs)	6-hr. Storm (cfs)	24-hr. Storm (cfs)	6-hr. Storm (cfs)		
1	340	440	370	640	370	640
2	700	910	770	1300	455	420
3	770	960	850	1430	510	540
4A			1000	1680	650	800
4B	980	1270	1060	1770	710	890
Water surface elev. in reservoir (feet)					272.0	269.1
Storage capacity required (ac. ft.)					49.1	39.2
Emergency spillway crest elev. (feet)					272.0	272.0
Reservoir capacity at emerg. s.w. crest (ac. ft.)					49.1	49.1
Excess capacity (ac. ft.)					None	9.9



Figure 4 shows the hydraulic design dimensions required for the principal spillway. At the time of structural design of the principal spillway, trash rack requirements should be considered. To drain the bottom two feet of the reservoir below the low-stage inlets a subsurface drainage system in the reservoir with an outlet into the principal spillway riser below elevation 251 may be a practical solution. An alternative solution could be to construct small weep holes in the riser at elevation 251. The weep holes must be protected from allowing sediment to pass through or plug them.

The estimated effects of this floodwater retarding reservoir are summarized as follows:

1. Peak flood flows for the 100-year return period storm under conditions of ultimate development of 1770 cfs could be reduced to 890 cfs, or by about 50 percent.
2. This reduced peak outflow of 890 cfs is about 70 percent of the estimated peak flood flow for the 100-year return period storm that would occur under conditions of existing development (1270 cfs).
3. The peak outflow from the Bonita Long Canyon Estates (concentration point 3) would be reduced to about 540 cfs which is about 55 percent of the peak outflow estimated for conditions of existing development at this concentration point (960 cfs).
4. The reservoir will trap sediment and prevent its deposition in the downstream reach of channel.

<u>ULT</u> <u>RETURN</u>	<u>AT PRESENT</u>	
890	1270	
1770		350 540