F I N A L

ENVIRONMENTAL IMPACT REPORT
FOR
TELEGRAPH CANYON ROAD/CHANNEL ALIGNMENT
EAST OF I-805 TO CITY LIMITS

Gas Tax Project No. 223

EIR-76-12

Issued by the

Environmental Review Committee

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Director of Public Works

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1. INTRODUCTION

1.1 Purpose

The purpose of this Environmental Impact Report is to present a review and analysis of the environmental impacts which will result from the realignment and widening of Telegraph Canyon Road and the construction of an adjacent drainage channel. This document will, in addition, review and analyze proposed and potential mitigation of these impacts and possible alternatives to the proposed project. The report also discusses the growth-inducing impact that may be associated with the implementation of this project. Precise environmental factors should be reviewed in the context of specific developments and their environmental documents. Hence, this document is designed to identify, analyze and permit the evaluation of the cumulative effects associated with this project.

This Environmental Impact Report has been prepared by the Engineering Division staff of the City of Chula Vista and in cooperation with the Environmental Review staff of the City's Planning Department. This document is in compliance with the requirements of the National Environmental Policy Act of 1969, the California Environmental Quality Act of 1970, and the requirements of the City of Chula Vista.

1.2 Executive Summary

This project involves the widening of Telegraph Canyon Rd. from Crest Dr./Oleander Ave. on the west to just easterly of Rutgers Ave. at the easterly end. Also proposed are various drainage improvements to carry the 1600-2850 cfs which flows parallel to Telegraph Canyon Rd.

For the purposes of detailed analysis in this EIR, improvement of Telegraph Canyon Rd. as a prime arterial (6 lanes) and a heavily landscaped grass lined channel are assumed.

Drainage facilities in the downstream portions of the Telegraph Canyon drainage basin are generally non-existent or inadequate. As development in eastern Chula Vista takes place, runoff will increase and more frequent flooding will take place. The use of heavy landscaping in the channel will reduce the velocity of flow and increase the time of concentration which will reduce the downstream flood hazard.

Grading necessary to accommodate the proposed improvements will result in a substantial land form change in Telegraph Canyon. Landscaping materials can be selected which would blend into the natural appearance of the canyon.

The project will result in adverse noise impacts both insofar as temporary construction noise and long term traffic noise. The design of adjacent developments can mitigate this impact.

The impact of the project on the native flora and fauna of Telegraph Canyon Rd. is anticipated to be significant both in terms of direct impact and secondary impact due to growth inducement.

Telegraph Canyon contains several archaeological sites, two of these involve this project area and are of minor/moderate to moderate importance. Significant impact on these non-renewable resources can be avoided through more detailed field work and the preparation of reports as specified in this EIR.

The implementation of the proposed project will play a major role in the erosion of the current aesthetic value of Telegraph Canyon. Because of this aesthetic value of the Canyon, Telegraph Canyon Rd. is designated as a Scenic Route in the Scenic Highways Element of the General Plan. The construction of this project will replace most of the natural vegetation now covering the canyon's bottom with a paved road and an adjoining drainage channel. The proposed landscaping of medians and parkways in this case could be counter productive to a certain extent, since the difference between the vegetation types will be readily discerned by viewers. Conversely, landscaping of the channel and slopes will be done with plant materials tolerant of the soil, weather and topographic conditions found in Telegraph Canyon. Over a long period of time

natural vegetation should mix into the man-made channel landscaping. Planting within the channel and slope areas and grading techniques to be used are intended to preserve as much of the natural flavor of the canyon's appearance as possible.

The implementation of this project will remove what is perhaps the last obstacle (inadequate access) to the urbanization of much of the eastern Chula Vista area. Thus indirectly , the project will be increasing urban runoff, destroying natural habitat, reducing open space, and increasing the demand for urban services.

2. PROJECT DESCRIPTION

2.1 Scope of Project

Four alternative roadway projects and three major alternative drainage projects are being considered for implementation (Section 4). The three major drainage alternatives are further broken down into nine sub-alternatives. Some combination of roadway and drainage projects will eventually be chosen as the recommended overall project.

2.2. Road

The proposed Telegraph Canyon Road/Otay Lakes Road alignment will traverse a distance of approximately 3.8 miles extending from Crest Drive/Oleander Avenue on the west to just easterly of Rutgers Avenue at its easterly end. At present the southerly right-of-way line of Telegraph Canyon Road/Otay Lakes Road is the County/City Boundary. However, the proposed alignment will place approximately 1/2 of the road in unincorporated territory and the remaining 1/2 within the City's jurisdiction. The portions within unincorporated territory will be annexed to the City prior to construction of improvements. Figure No. 1 shows the general location of the proposed project.

There are four road alternatives (in addition to the No Project Alternative) which have been studied. These alternatives basically consist of either realigning the existing road or maintaining the existing alignment. Each of these alternatives is further divided into two standard road configurations (prime arterial or major road). A more detailed presentation of each of the above alternatives is presented in Section 4 of this document.

The project has not been authorized in the City budget. It is expected that Federal funding may subsidize a portion of its cost. It is expected that the project will be constructed on a picemeal basis, with developers contributing to its cost as development along the road takes effect. Through development of a master conceptual plan the City is providing for an orderly development of the road and insuring that all necessary environmental considerations are weighed.

2.3 The Drainage Channel

The proposed drainage channel will extend for approximately 3.8 miles and will generally parallel the selected road alignment.

There are several different channel configurations which can be constructed throughout the project's limit. These configurations have been grouped into three major categories; closed underground conduits, "natural" open channels, and "lined" open channels. Each of these major categories includes three alternative configurations with the result that a total of nine alternatives have been studied. A more detailed discussion of each alternative is presented in Section 4.4 of this document.

The dimensions of the channel(s) selected will vary to conform with the volume of water tributary to each reach. The following design

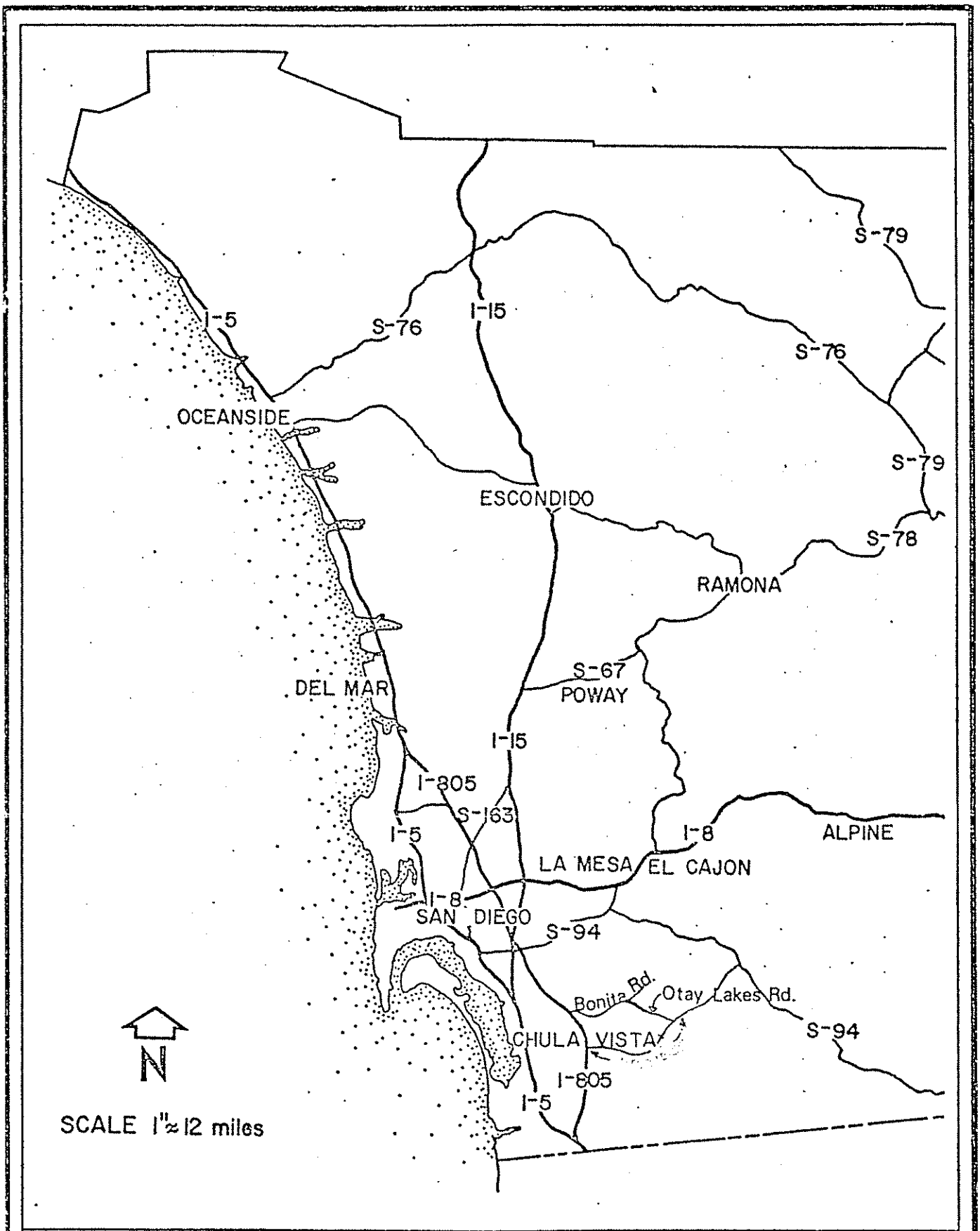


FIGURE 1	Regional Map

flows have been determined upstream of the noted streets:

Crest Drive	2850 cfs
Brandywine Avenue	2600 cfs
Buena Vista Way	2100 cfs
Rutgers Avenue	1600 cfs

Figure No. 2 shows the locations of these streets and the expected flows listed above.

All material obtained from channel excavation will be incorporated into road embankments. Unsuitable material, if any, will be disposed of off the project right of way.

3. DESCRIPTION OF ENVIRONMENTAL SETTING WITHOUT THE PROJECT

3.1 Location

The proposed Telegraph Canyon Road/Otay Lakes Road realignment and drainage channel extends easterly from Crest Drive (near I-805 freeway) approximately 3.8 miles to an existing County box culvert crossing Otay Lakes Road just east of Rutgers Avenue. The limits of the project are shown on Figure No. 3.

Except for a relatively short length, the southerly right of way line of Telegraph Canyon Road/Otay Lakes Road is the southerly boundary line of the City of Chula Vista. The existing roadway and the channel lying northerly of the road are within the City of Chula Vista. However, approximately half of the proposed widening of the road, and the construction of the channel on the south would be in presently unincorporated territory. Figures 4-8 show the relationship of the proposed project to the political boundaries.

3.2 Topography

The existing road alignment follows the Telegraph Canyon Creek bed in order to minimize the terrain problems of the east Chula Vista area. Telegraph Canyon is a westerly draining intermittent stream canyon which transects the ancient mesa surface between the Sweetwater and Otay Valleys in southern San Diego County. Numerous tributary canyons and draws are incised into both sides of Telegraph Canyon, the ridges of which rise from about 100 to 200 feet high and exhibit overall natural slope inclinations of approximately 5 to 1 (5 units horizontal measurement to 1 unit vertical measurement). Through the project length the basin slopes southwesterly and westerly at a grade of approximately one percent (one foot vertical drop in 100 foot horizontal). Elevations in the stream bottom range from approximately 228 feet at the western end of the project to approximately 460 feet (MSLD) at the eastern end. The drainage basin of Telegraph Canyon extends for another 2 miles northeasterly of the project terminus.

3.3 Regional Geology

The Telegraph Canyon Basin, which comprises 7.5 square miles, is an elongated area with a length of about 9 miles and width of about 0.8 mile. The drainage basin originates at an elevation of about 800 feet, flows generally in a westerly direction through the southern sector of Chula Vista, and empties into San Diego Bay. Figure 9 shows the approximate Telegraph Canyon drainage boundary and its relationship to the location of the proposed drainage and road project.

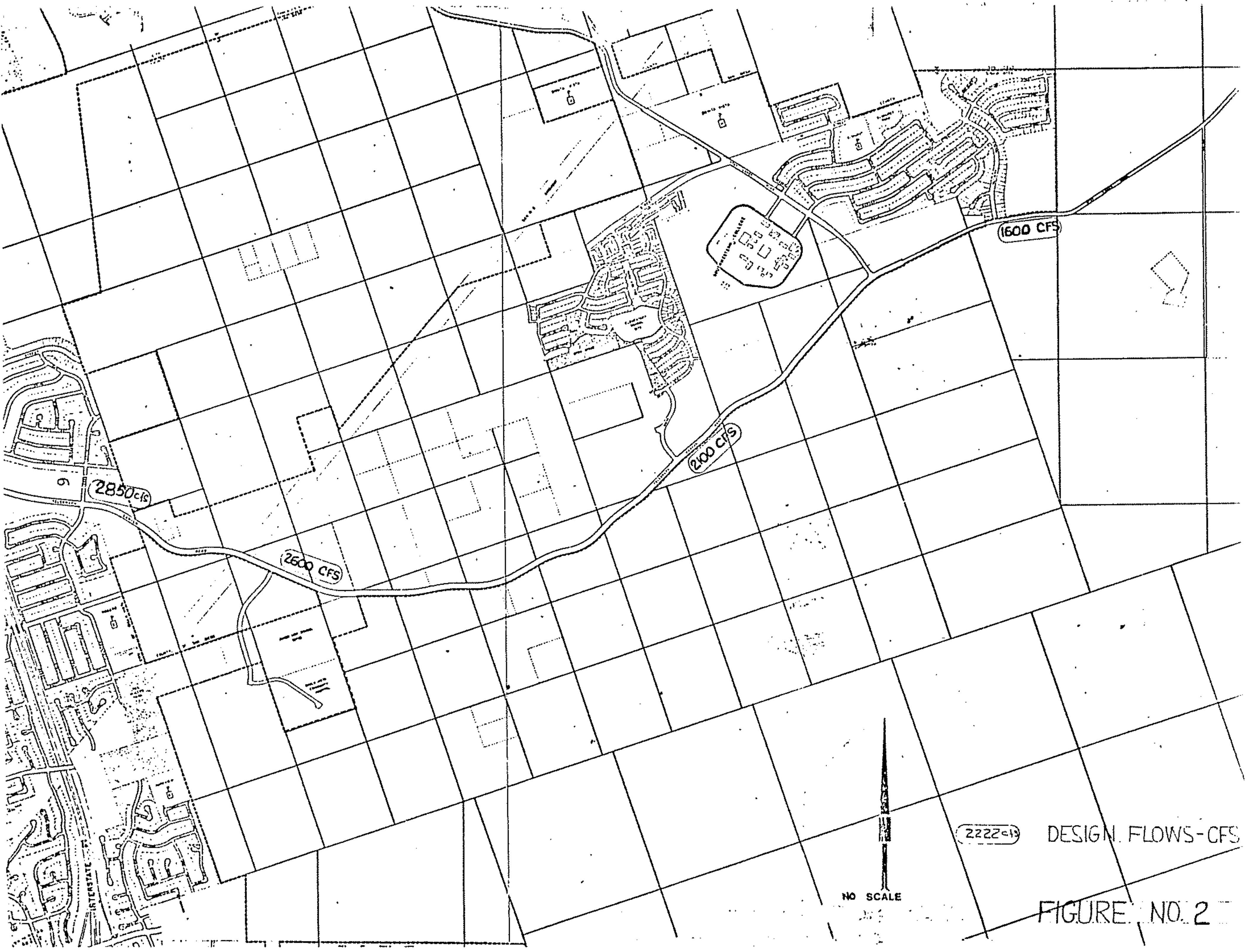
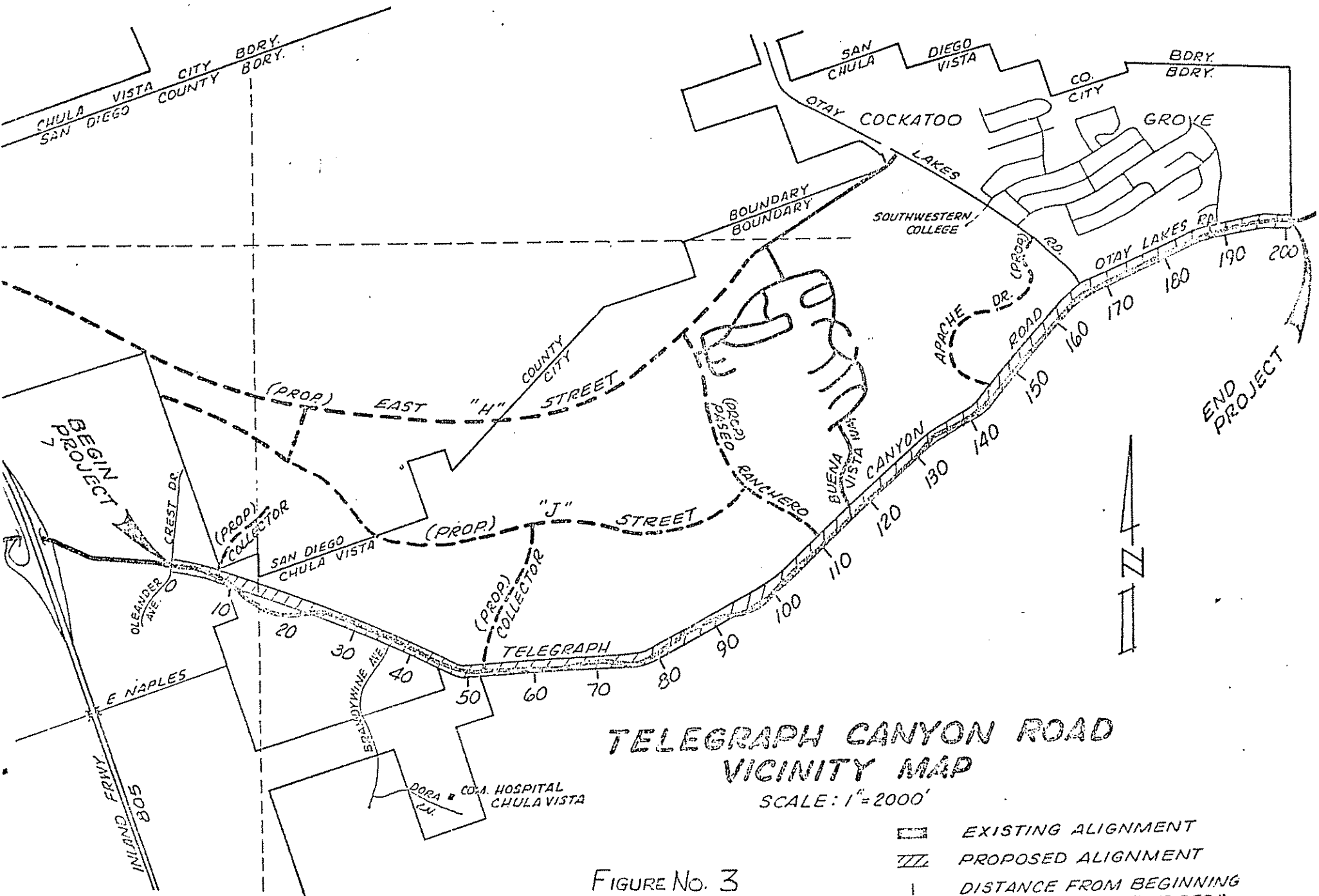

1600 CFS
2100 CFS
2600 CFS
2850cfs
6
INTERSTATE
NO SCALE
2222cfs
DESIGN FLOWS-CFS

FIGURE NO. 2



TELEGRAPH CANYON ROAD
VICINITY MAP

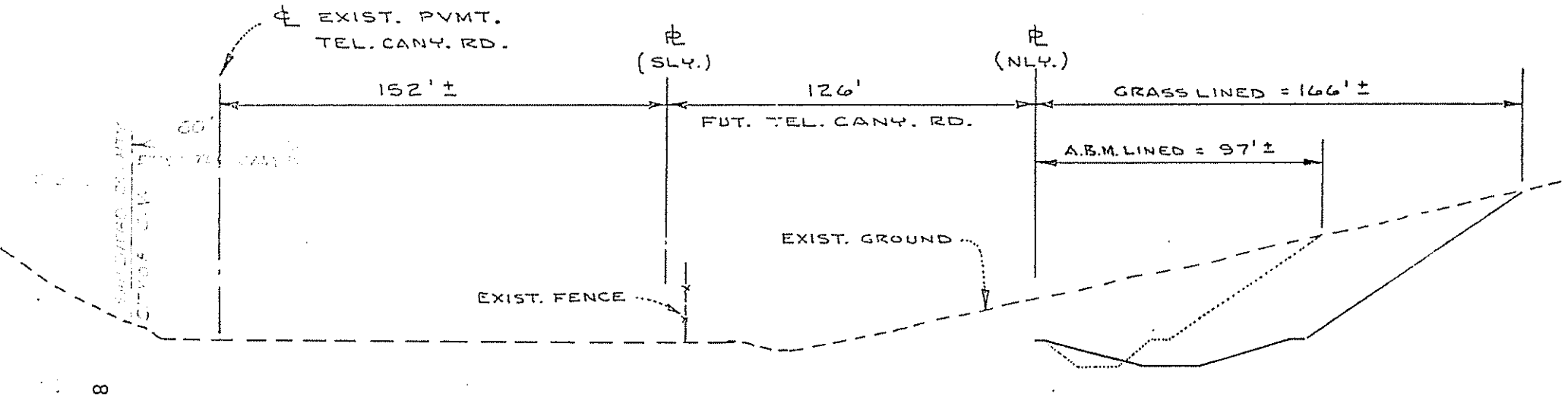
SCALE: 1" = 2000'

EXISTING ALIGNMENT

PROPOSED ALIGNMENT

1 / 50 DISTANCE FROM BEGINNING OF PROJECT IN HUNDREDS OF FEET

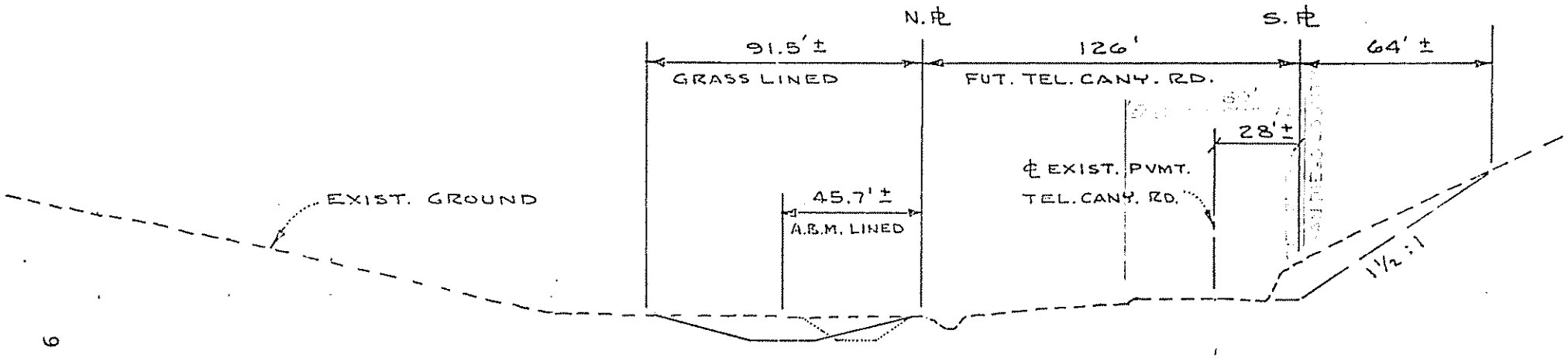
FIGURE NO. 3



CROSS-SECTION NO. 1, AT ARCHWAY INN (LOOKING WLY.)

FIGURE 4

SCALE: 1"=50'

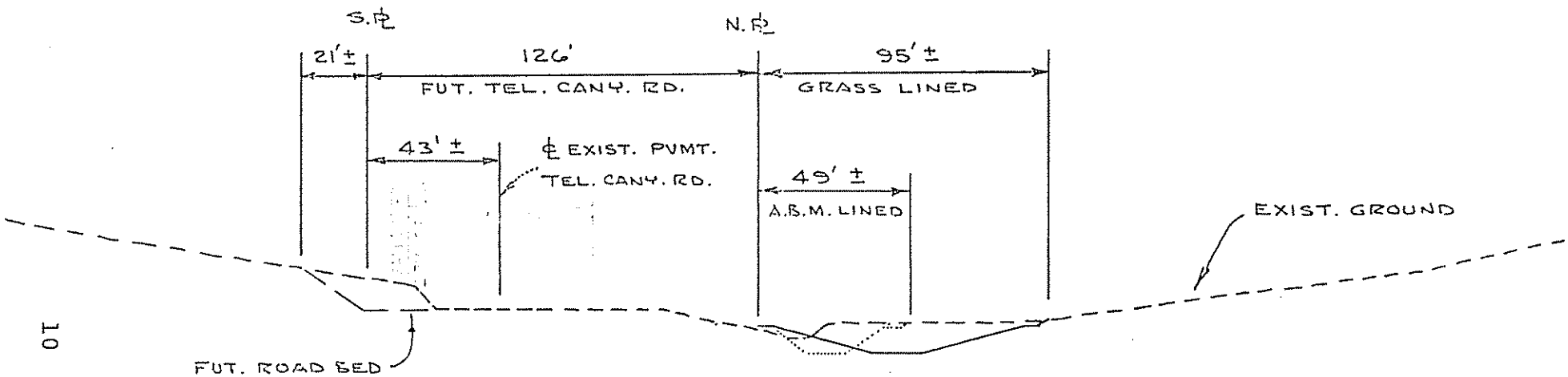


CROSS-SECTION NO. 2 , 400' W. OF BRANDYWINE AVE.

(LOOKING ELY.)

FIGURE NO. 5

SCALE : 1" = 50'

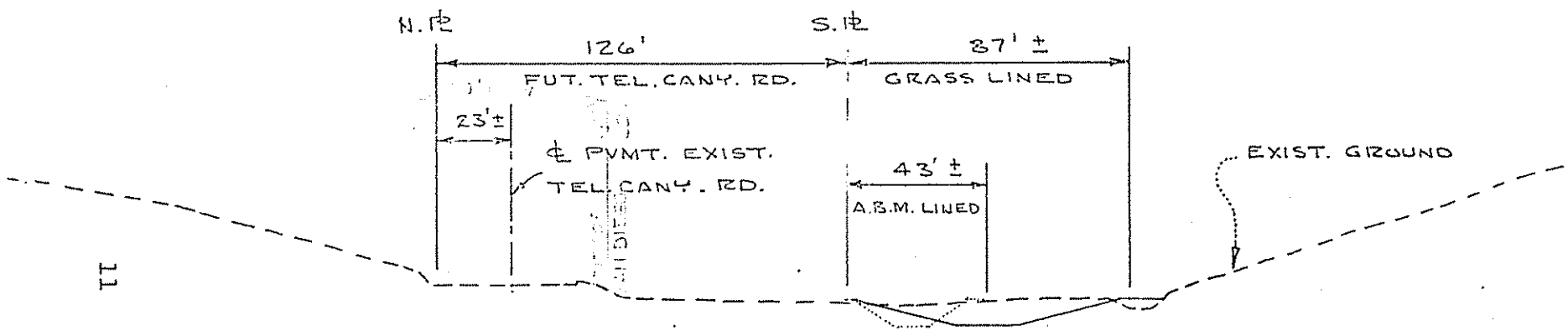


CROSS SECTION NO. 3 , 3150' ELY. OF BRANDYWINE AVE.

(LOOKING WLY.)

EXHIBIT NO. 6

SCALE : 1" = 50'

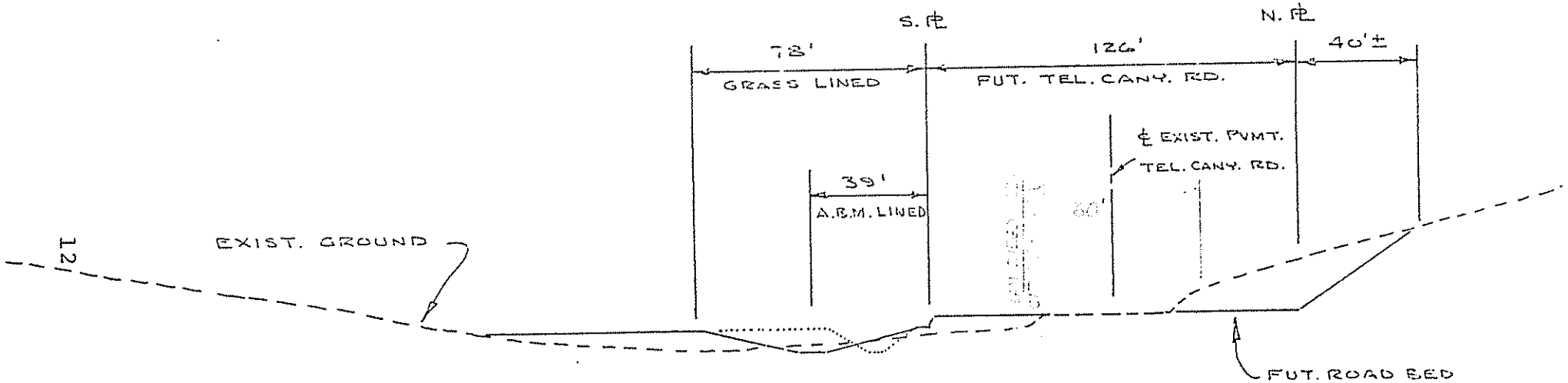


CROSS-SECTION NO. 4 , 1100' WLY. OF BUENA VISTA DR.

(LOOKING ELY.)

FIGURE 7

SCALE : 1"=50'



CROSS-SECTION NO. 5 , 1/4 MI. E. OF OTAY LAKES RD.

(LOOKING WL4.)

Exhibit No. 8

SCALE: 1"=50'

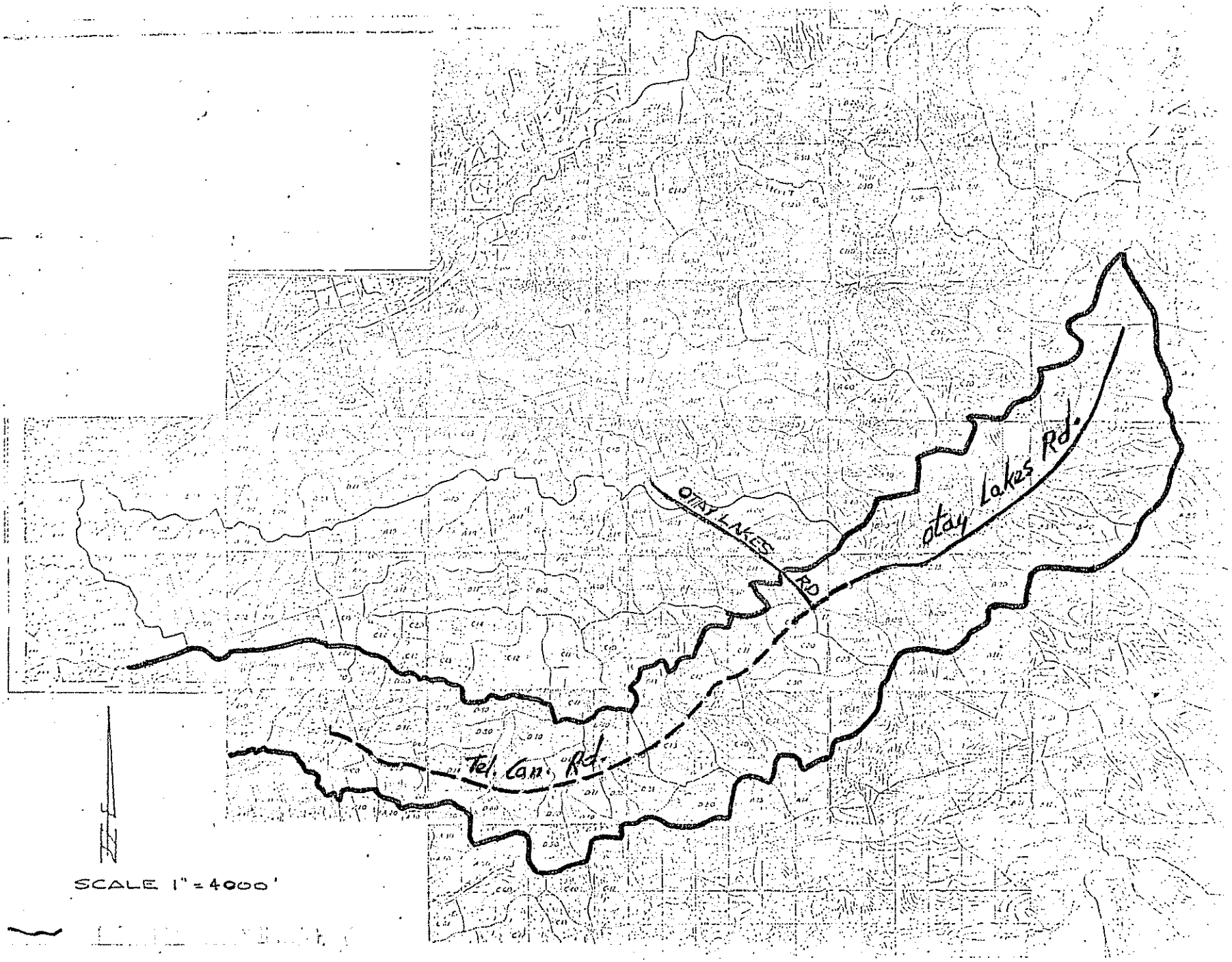


FIGURE NO 9

The Telegraph Canyon Basin contains the following four main geological units: (1) Quaternary age to recently deposited alluvail sediments; (2) Pleistocene age terrace deposits; (3) Pliocene San Diego formation; and (4) the Miocene Otay formation.

3.4 Site Geology/Soils

The complete length of the channel and road excavation will be primarily in alluvial soils of recent age. However, in a few limited areas excavation will be into soils of the Otay formation. The alluvial materials consist primarily of unconsolidated to poorly consolidated sandy clays and clayey sand. The average width of alluvial soils is estimated to be 250 feet with an average maximum depth of 25 feet. The Otay formation consists primarily of silty medium to coarse sands.

The geologic study of the project site indicates that the change in alluvial soil characteristics (from primarily sandy clays to primarily clayey sands) generally coincide with a change in the soil characteristics of the formational soils from which the alluvium is derived.

The geological reconnaissance and aerial photograph studies indicate that two branches of La Nacion fault system intersect the proposed drainage channel/road alignment. The maximum depth of alluvium over this"potentially active" fault is estimated to be 25 feet. For a detailed soils/geological report, see Appendix A.

3.5 Faults/Seismicity

There are four significant faults in the San Diego area. The Rose Canyon fault is about 12 miles northwest of the project, the Sweetwater and San Diego Bay faults respectively, located about 1-1/2 and 7 miles from the project's westerly terminus, and the La Nacion fault, which intersects the project at two locations. Figure 10 shows the approximate locations of the La Nacion fault. In addition to these faults, the following major faults have been located within a 100 mile radius of the project: the Elsinore, Agua Caliente, San Jacinto and the San Andreas. These faults have a greater potential for the occurrence of a large earthquake than do the San Diego area faults previously listed.

The two branches of the La Nacion fault which are known to cross the proposed channel/road alignment are both normal faults (that is, downthrown on the west side) and having vertical displacements of at least several tens of feet. The easterly fault trace places San Diego formation soils against those of the Otay formation, while San Diego formation material is exposed on both sides of the westerly fault. Radio-carbon age dating of undisturbed alluvium overlaying the La Nacion fault in the San Diego area indicate that the fault has not been active for 13,375 plus or minus 275 years in one area and 10,980 plus or minus 190 years on another.

Although the La Nacion fault is considered to be "potentially active" it is not considered capable of producing sufficient force to be able to generate a major earthquake. A "potentially active" fault can be defined as one that offsets Pleistocene age materials, but for which evidence of offset of Holocene materials is lacking. Radio-carbon

FAULT LOCATION MAP

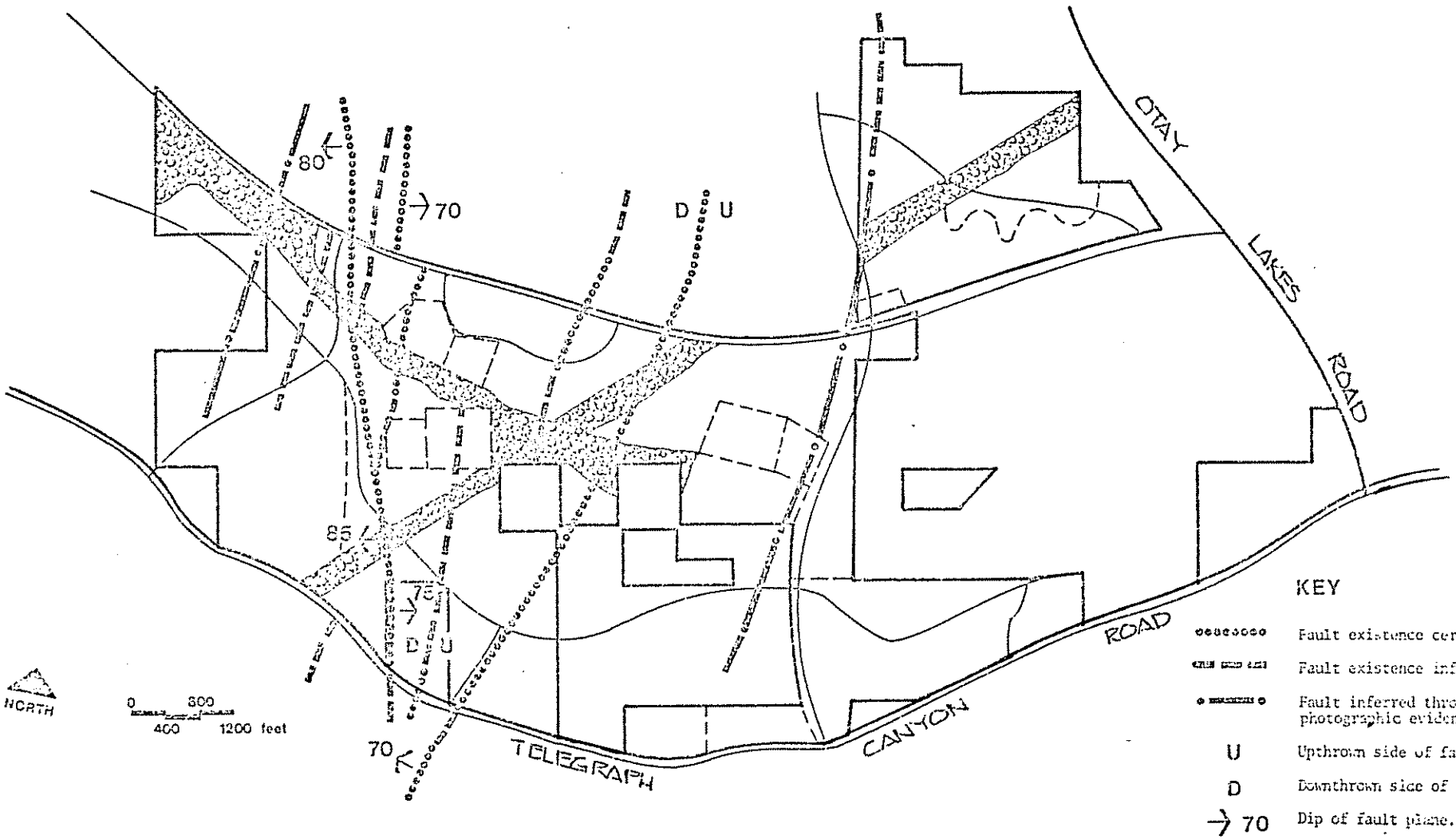


FIGURE 10

age dating of materials along the La Nacion fault indicate that the fault has not been active for a least approximately 10,000 years, as mentioned before.

There is a relatively high degree of probability that the entire San Diego Bay area is subject to about the same probability of earthquake occurrences as is the project area under consideration. For this reason, the site is not considered to be a comparatively more hazardous location from the standpoint of earthquake shaking than that of other populous areas of California

The most likely source for a major earthquake would be on one of the larger faults that have considerage length, such as the San Jacinto, which is at least 60 miles from the project site. It is considered that an earthquake on the San Jacinto fault system with a Richter magniture of 7+ would not produce strong enough ground motion at the site to cause more than slight damage.

The proposed channel and road are considered "non-critical" structures and no special design criteria are recommended for those areas crossed by the faults.

3.6 Climate

The project area enjoys the typical climate of the San Diego region. The climatic type is characterized by warm summers and mild winters, with an average annual rainfall of about ten inches. Temperature and rainfall records have been maintained at Bonita, Chula Vista and Lower Otay Reservoir since 1940. The nearest available wind data is from Ream Field, on the coast in Imperial Beach, where an average velocity of 6.5 miles per hour is observed with the predominant direction from the West. The project area is subject to "Santa Ana" conditions primarily in late summer and early fall, with warm to hot easterly winds of moderate to high velocities. Temperatures range from 30°-40° F. (winter lows) to 85°-100°F. (summer highs) with a mean range of 40°-70° F.

3.7 Air Quality

The project area is located within the San Diego Air Basin, an air pollution subdivision of the State, comprising the western 2/3 of San Diego County. Table 1 shows the national air quality standards that the Air Basin will have to meet under the Federal Clean Air Amendments of 1970. Of five major pollutants for which the Environmental Protection Agency (EPA) has set national standards, two are mainly from stationary sources. These are particulates and sulfur dioxide. Photochemical oxidant, nitrogen dioxide, and carbon monoxide have been identified as being heavily transportation-related in California. The last two are emitted directly by motor vehicles along with hydrocarbons. In contrast, photochemical oxidant is a secondary pollutant: It is a product formed by complex interactions of reactive hydrocarbons, oxides of nitrogen, and sunlight. While the highest concentrations of directly-emitted pollutants are likely to occur in fall or winter months, these do not necessarily produce high levels of oxidant. The amount of sunlight, the determining factor, is reduced in the winter because of the low angle of the sun. According to the State Implementation Plan (SIP),

AMBIENT AIR QUALITY STANDARDS
APPLICABLE IN CALIFORNIA

TABLE 1

Pollutant	Averaging Time	California Standards Concentration	Federal Standards Primary	Federal Standards Secondary
Photochemical Oxidants (Corrected for NO_2)	1 hour	0.10 ppm (200 $\mu g/m^3$)	160 $\mu g/m^3$ (0.08 ppm)	Same as Primary Standard
Carbon Monoxide	12 hours	10 ppm (11 mg/m^3)	---	Same as Primary Standard
	8 hours	---	10 mg/m^3 (9 ppm)	
	1 hour	40 ppm (46 mg/m^3)	40 mg/m^3 (35 ppm)	
Nitrogen Dioxide	Annual Average	---	100 $\mu g/m^3$ (0.05 ppm)	Same as Primary Standard
	1 hour	0.25 ppm (470 $\mu g/m^3$)	---	---
Sulfur Dioxide	Annual Average	---	80 $\mu g/m^3$ (0.03 ppm)	---
	24 hours	0.04 ppm (105 $\mu g/m^3$)	365 $\mu g/m^3$ (0.14 ppm)	---
	3 hours	---	---	1300 $\mu g/m^3$ (0.5 ppm)
	1 hour	0.5 ppm (1310 $\mu g/m^3$)	---	---
Suspended Particulate Matter	Annual Geometric Mean	60 $\mu g/m^3$	75 $\mu g/m^3$	60 $\mu g/m^3$
	24 hours	100 $\mu g/m^3$	260 $\mu g/m^3$	150 $\mu g/m^3$
Lead (Particulate)	30-Day Average	1.5 $\mu g/m^3$	---	---
Hydrogen Sulfide	1 hour	0.03 ppm (42 $\mu g/m^3$)	---	---
Hydrocarbons (Corrected for Methane)	3 hours (6-9 a.m.)	---	160 $\mu g/m^3$ (0.24 ppm)	Same as Primary Standard
Visibility-Reducing Particles	1 observation	In sufficient amount to reduce the prevailing visibility to 10 miles when the relative humidity is less than 70%	---	---

ppm - Parts per million. This is an engineering unit used to report gaseous pollution levels.
$\mu g/m^3$ - Micrograms per cubic meter. This is the unit used to report particulate pollution levels.
pphm - Parts per hundred million. mg/m^3 - Milligrams per cubic meter.

national standards for nitrogen dioxide and sulfur dioxide were not being exceeded in the San Diego Air Basin in 1970. These pollutants were expected to remain below national standards in the foreseeable future. The standard for carbon monoxide is expected to be met on schedule. The main problem in the air basin is photochemical oxidant. A fundamental difficulty with the Clean Air Amendments of 1970 is that air basins are required to meet national standards simultaneously with the introduction of strict Federal emission controls for new cars. However, controls on new cars do not approach their maximum effectiveness until about 10 years after their implementation when most of the older, less controlled vehicles have been phased out of service. The SIP concluded that the standard for oxidant would not be met by 1975 in the basin. EPA has extended the attainment date to May 31, 1977 for the San Diego Air Basin. The primary standard for particulates is presently exceeded in the region. It is projected that this situation will worsen slightly through 1985.

The County of San Diego Air Pollution Control District (SDAPCD) monitors the Basin air quality at various stations. At these stations data is gathered and published on a quarterly basis by the District. One of these stations was established in 1972 in Chula Vista, at the fire station located on East "J" Street near Hilltop Drive. The average oxidant level recorded for the four quarters of 1972 at this station was 0.07 parts per million (ppm). The national standard for oxidant is a 1 hour average of 0.08 ppm. In 1972 the annual percentage of days equal to or exceeding Federal standards was 22% and the highest one-hour average during the year was 0.29 ppm.

Data published by SDAPCD for the Chula Vista station covering the first two quarters of 1975 indicate that the percentage of days equal to or exceeding the national standard for oxidant were 12 and 16% respectively; the highest one-hour average during this two quarter period was 0.12 ppm; and that the average oxidant level recorded for this period was equal to 0.055 ppm, which is below the national standard.

As mentioned above, highest oxidant levels occur during spring and fall transition periods when certain meteorological conditions ("Santa Ana conditions") occur, with strong surface inversions which cause trapping and concentration of pollutants. If the "Santa Ana condition" is weak, it is possible for the pollutants generated in the Los Angeles area to be transported into the San Diego region in the afternoon by the sea breeze.

Before 1975, the Chula Vista station was not equipped to measure other air pollutants such as nitrogen oxides, hydrocarbons, and carbon monoxide. However, the measurement of photochemical oxidants provides a good indicator of overall air quality conditions which, as indicated in Table No. 2, have improved in Chula Vista since 1972.

3.8 Hydrology

The Telegraph Canyon Drainage Basin comprises 7.5 square miles of an elongated area having a length of about 9 miles and a width of about 0.8 miles. This watershed area extends (approximately) as far east as the Upper Otay Reservoir and as far north as the Sweetwater Reservoir. Figure No. 11 shows the drainage basin boundaries.

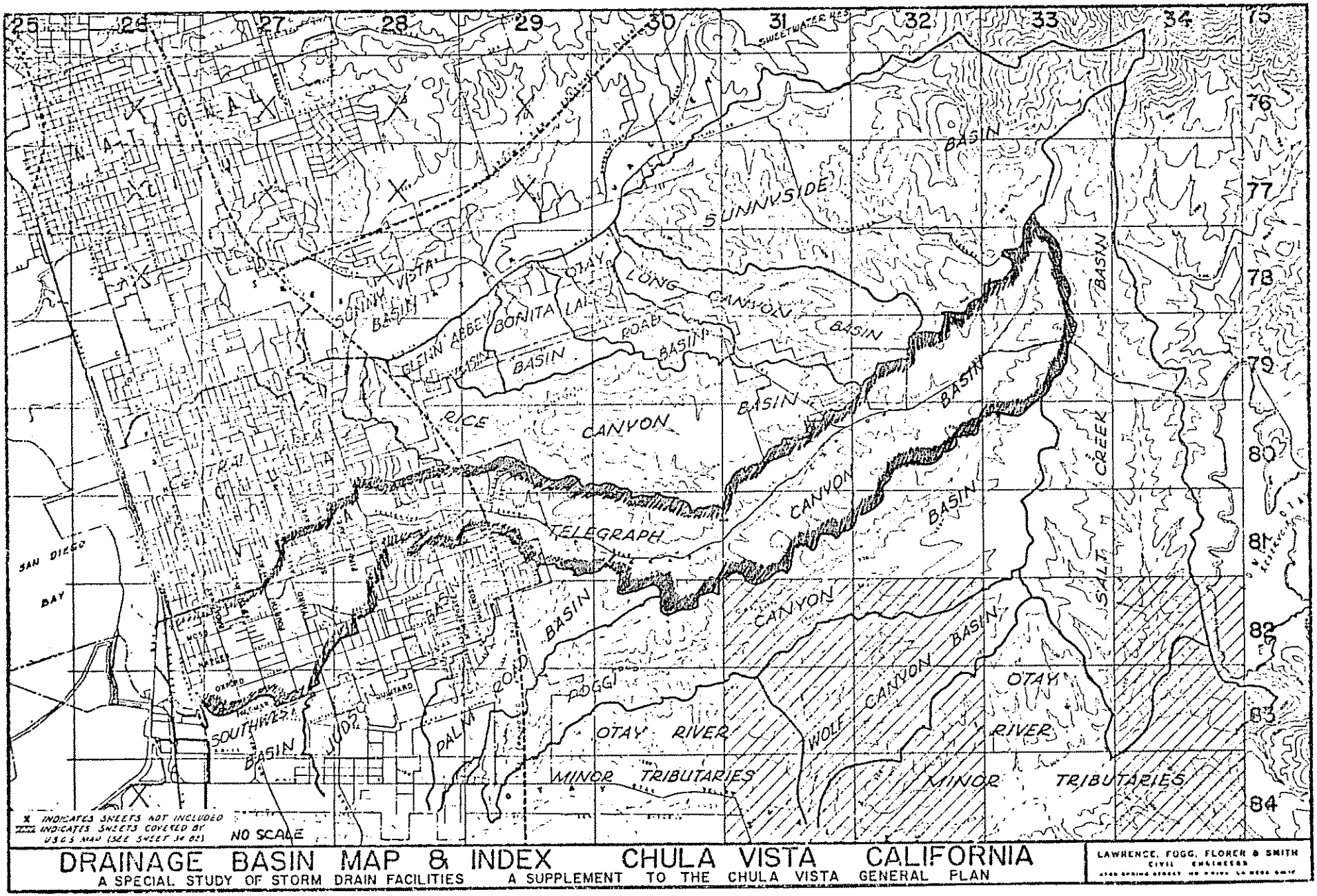
There is no historical information on floods for the Telegraph Canyon Drainage Basin.

TABLE 2

AIR QUALITY DATA SUMMARY, OXIDANT

San Diego County Air Pollution Control District
Annual - 1974

Contaminants and Stations	Average of Daily Maximum Hourly Averages (Oxidant, ppm)							
	S.D. Downtown	Chollas	El Cajon	Chula Vista	Escondido	Oceanside	San Ysidro	Kearny Mesa
Month								
January	.04	.06	.05	.04	.05	.03	.06	---
February	.05	.04	.06	.04	.04	.04	.06	---
March	.05	.05	.08	.06	.07	.05	.07	---
April	.07	.06	.08	.07	.08	.07	.08	.09
May	.06	.06	.07	.07	.08	.06	.07	.07
June	.08	.06	.09	.07	.10	.05	.06	.08
July	.05	.04	.06	.04	.07	.07	.04	.06	.07
August	.06	.06	.08	.07	.09	.08	.05	.07
September	.06	.06	.09	.07	.10	.06	.05	.07
October	.06	.06	.06	.07	.08	.07	.06	.08
November	.05	.05	.05	.07	.06	---	.06	.06
December	.04	.03	.04	.05	.05	.06	.04	.05
Highest one-hour average in 1974:	.18	.19	.20	.19	.27	.33	.27	.27
Month Occurring	April	Sept.	May	Sept.	May	Oct.	May	Sept.
Annual Average 1974	.06	.05	.07	.06	.07	.06	.06	.07
1973	.06	.07	.07	.07	.06	.07	---	---
1972	.05	.07	.07	.07	.08	.08	---	---
Days of Operation 1974	348	325	337	351	352	269	331	268


25
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81
82
83
84
SWEETWATER RES.
SUNNYSIDE BASIN
SUNNY VISTA BASIN
GLENN ABBEY BASIN
BONITA LANE
OTAY LONG CANYON BASIN
ROAD BASIN
RICE CANYON
CANYON BASIN
TELEGRAPH CANYON BASIN
SALT CREEK BASIN
SOUTHWEST BASIN
JUDSON
PALM
OTAY RIVER
FOGG
WOLF CANYON BASIN
OTAY RIVER
MINOR TRIBUTARIES
MINOR TRIBUTARIES
SAN DIEGO BAY
CENTRAL CHULA VISTA
X INDICATES SHEETS NOT INCLUDED
INDICATES SHEETS COVERED BY USGS MAP (SEE SHEET 34 OF 85)
NO SCALE
DRAINAGE BASIN MAP & INDEX CHULA VISTA CALIFORNIA
A SPECIAL STUDY OF STORM DRAIN FACILITIES A SUPPLEMENT TO THE CHULA VISTA GENERAL PLAN
LAWRENCE, FOGG, FLORER & SMITH
CIVIL ENGINEERS

FIGURE NO 11

Presently, flow is conveyed by a more or less natural earthen drainage channel constructed by the County of San Diego between 1958 and 1962. This channel extends throughout the project limit and will be replaced by the proposed drainage channel. The ultimate and present 50-year frequency storm flows in the drainage basin are shown on Figure 12. These flows are also shown in the Lawrence, Fogg, Florer and Smith Report (Fogg Report) prepared for the City in 1964. The Fogg Report calculations were done using the rational method and are filed in the City of Chula Vista Engineering Department.

3.9 Ground Water

Ground water was encountered at approximately elevation 315 feet in one test trench excavated by Woodward-Gizienski and Associates. This elevation is about 18 feet below the elevation of the existing road centerline and consequently approximately 8 feet below the bottom of the proposed channel. However, no free ground water was observed in any of the other test trenches.

It is expected that the presence and depth of ground water along the proposed channel alignment will vary considerably depending upon the permeability of the alluvium, the adjacent formational soils and the amount of infiltration of water due to rainfall, irrigation and other sources. Although there is no historical data of floods in the Telegraph Canyon Drainage Basin, it is also expected that a period of heavy rainfall may result in the ground water level being above that of the proposed channel bottom.

According to the State Water Resources Control Board's Interim Water Quality Control Plan for the San Diego Basin, the project is situated within the Otay Hydro Subunit. The Interim Plan describes the subunit as extending from San Diego Bay to the toe of Otay Dam. The poor water quality of this subunit has limited the use of ground waters to salt-tolerant crops.

3.10 Drainage

Between 1958 and 1972, the County of San Diego constructed an earthen trapezoidal channel adjacent to Telegraph Canyon Road. This trapezoidal channel was constructed with a minimum of 5 foot bottom width and maximum side slopes of 1 1/2 unit horizontal to 1 unit vertical. The Channel depth varies from 8.6 feet below centerline grade where the Channel is north of the road to 6.6 feet where the channel exists south of the road.

There are presently two street crossings over the watercourse within the project limits. Two additional crossings are planned in conjunction with current development projects. These projects are the El Rancho Del Rey Unit No. 5 and the Windsor Views development which are located east of Crest Drive and east of Brandywine Avenue respectively on the north side of Telegraph Canyon Road. These two additional crossings are designed to carry the proposed channel design flows and will be consonant with the proposed road alignment.

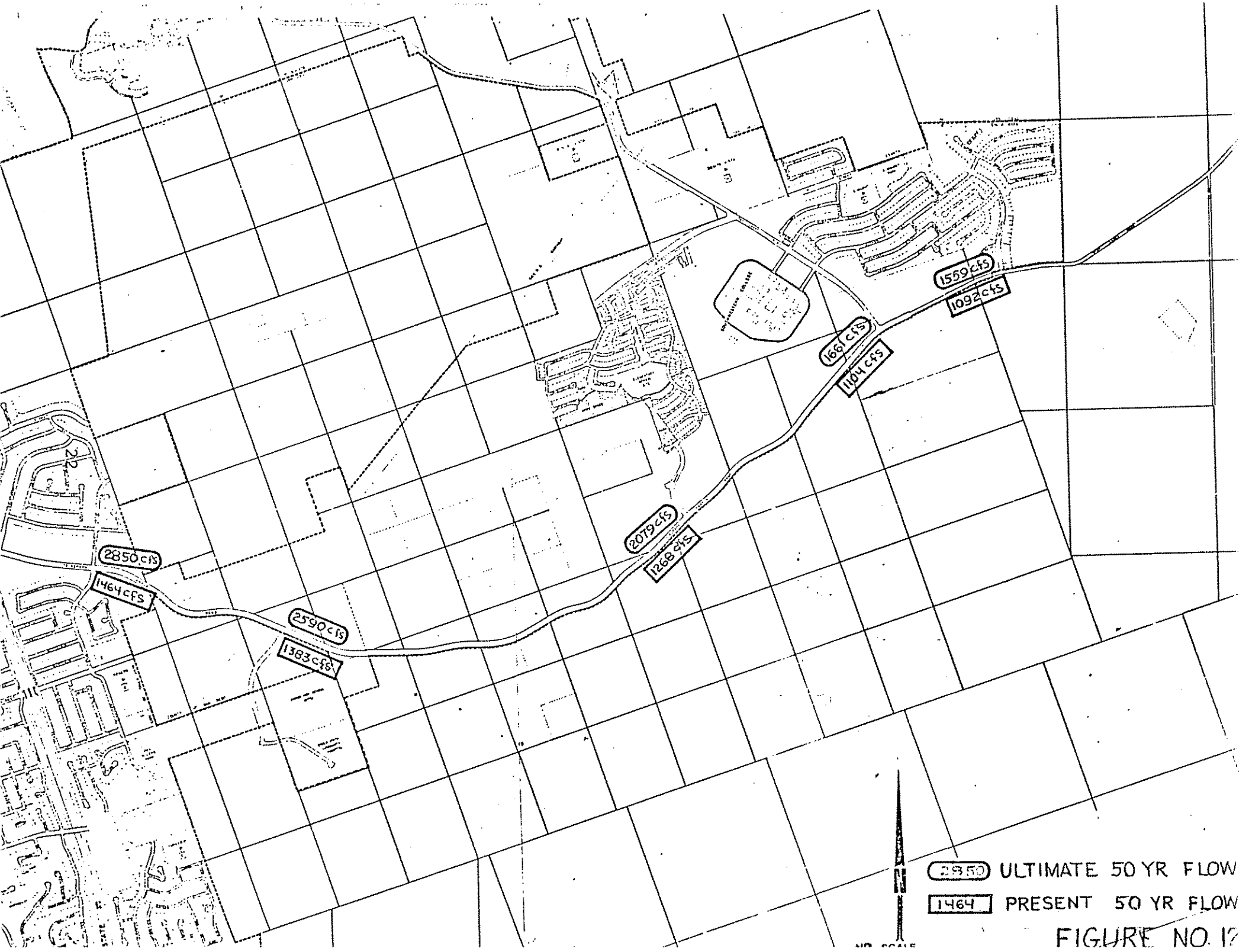

2850 cfs
1464 cfs
2590 cfs
1383 cfs
2079 cfs
1268 cfs
1664 cfs
1104 cfs
1559 cfs
1092 cfs
2850 ULTIMATE 50 YR FLOW
1464 PRESENT 50 YR FLOW

FIGURE NO. 17

3.11 Regional Transportation

The City of Chula Vista is located approximately 8 miles south of downtown San Diego and 7 miles north of the U.S./Mexico border. The City is connected to these locations by two freeways; I-5, the coast route, and I-805, the in-land route. Current ADT for these freeways is 73,000 for I-5 (at "L" Street) and 34,000 for I-805 (at Telegraph Canyon Road). The ADT in 1995 for these freeways is estimated by the State to be 132,000 for I-5 and 98,000 for I-805 at these locations.

Transportation within flatlands portion of the City is provided with a gridiron system of roads which are spaced at a distance of 1/4 mile. The eastern and predominantly undeveloped portion of the City is currently served by two east/west roads: Bonita Road and Telegraph Canyon Road. These roads are the easterly extensions of "E" and "L" Streets respectively. Another future road that may serve the eastern portion of the City is East "H" Street. However, its extension from I-805 to the already-existing improvements west of Otay Lakes Raod is unscheduled at this time. Otay Lakes Road connects Bonita Road with Telegraph Canyon Road and serves as the primary north/south road in the sparsely settled eastern portion of the City.

Both Telegraph Canyon Road and Bonita Road are classified as "scenic routes" in the Scenic Highways Element of the City's General Plan. Of the two, however, Telegraph Canyon Road is believed to be "the most scenic route within Chula Vista." The portion of this road within the City limits extends for an approximate distance of 4.2 miles from its intersection with I-805 to the City/County boundary. East of this boundary the road continues for an additional 12 miles until it intersects Route 94. However, over this approximate 12 mile distance the road is known as Otay Lakes Road.

The existing alignment of Telegraph Canyon Road was established by the County of San Diego on Road Survey Number 1086-65. The construction was in accordance with the County plans and was completed in February 1967. Generally, pavement width between asphalt dikes is 40 feet and is centered within the right of way/road easement. This pavement provides for 1 travel lane and a bike path in each direction.

Before this work, however, the County constructed road improvements along this road in accordance with plans and alignment shown on Road Survey 1086. Generally, these improvements consisted of a 36 foot wide paved travelway. The trapezoidal channel adjacent to the road was constructed with a minimum of 5 foot bottom width in conjunction with the road improvements between 1958 and 1962.

Several collector and residential collector roads intersect with Telegraph Canyon Road at present. These include Crest Drive, Oleander Avenue, Brandywine Avenue, Buena Vista Way, Otay Lakes Road and Rutgers Avenue. Plans are presently being processed by the City for two residential developments fronting on Telegraph Canyon Road and served by separate collector roads intersecting it. In addition to these roads, the City Engineering staff is planning three other collectors intersecting Telegraph Canyon Road.

Telegraph Canyon Road now has unstable traffic flow conditions one hour per day between Brandywine Avenue and Otay Lakes Road (level of service "E"). This hour occurs from 7:00 a.m. to 8:00 a.m. Unstable flow means that there is some congestion with restriction of speed and maneuverability. There is stable flow the rest of the time from 8:00 a.m. to 10:00 p.m. and free flow at night. Table No. 3 shows accident records on Telegraph Canyon Road between East "L" Street (immediately west of I-805) and Otay Lakes Road. The table covers a five-year period from 1972 to 1976 inclusive and shows the number of accidents and the volume of traffic on the road. In summary, the table shows that as the volume of traffic traveling along Telegraph Canyon Road has increased, the number of accidents has significantly increased and that continued growth in the traffic volume can be expected to result in an even further increase in traffic accidents.

3.12 Mineral Resources

The Conservation Element of the Chula Vista General Plan indicates that extensive sand and gravel deposits represent the City's most important mineral resources, both in terms of quantity and economic value. Chula Vista has two types of sand and gravel deposits: river and marine terrace. The former is primarily located in the Otay and Sweetwater River bottoms and are water transported alluvial materials washed down from upstream foothills and canyons. The latter represent remnants of ancient beach sand located in the uplands east of the urbanized area.

The Element also indicates that gravel and sand deposits exist within the Telegraph Canyon Basin. However, the alluvial sands occur in narrow, ribbon-like deposits at the bottom of the Canyon and the gravel deposits occur in thin (less than 10 feet) isolated caps on the higher knobs of the Canyon ridges. These conditions make the recovery of the materials economically unrecoverable. There are no known sand or gravel mines located within the Telegraph Canyon Basin, and none are contemplated in the existing General Plan. The nearest sand and gravel quarries are located approximately three miles to the southwest in the Otay River Basin.

The Seismic Safety Element of the Chula Vista General Plan indicates that bentonite deposits exist within the Telegraph Canyon Basin. However, the quantity of these deposits is considered to be limited and thus not economically exploitable.

3.13 Land Form

The natural topography of the Telegraph Canyon Basin is best described as rugged, unwooded terrain. Except for scattered developed sites, the Canyon is in a natural state within the project boundaries. However, there are several approved residential developments which, when constructed, will aid in changing the Canyon's natural appearance.

Figure No. 13 shows the location of earlier grading sites (other than existing Telegraph Canyon Road grading) and planned grading within the Basin. The more notable of these grading sites occurs at the following locations: Rutgers Avenue (Southwestern College Estates #2); west of Otay Lakes Road at the entrance to the

TABLE 3

ACCIDENTS ON TELEGRAPH CANYON ROAD BETWEEN EAST "L" ST. AND OTAY LAKES RD

LOCATION	1976*	1972	1973	1974	1975
Between East "L" & Halecrest	9	4	2	8	9
Between Halecrest & Crest	3	0	2	2	6
Between Crest & Brandywine	4	4	5	6	2
Between Brandywine & Buena Vista	5	0	4	3	7
Between Buena Vista & Otay lakes Rd.	13	1	3	4	7
TOTAL	34	9	16	23	31

* Through October Only

AVERAGE DAILY TRAFFIC ON TELEGRAPH CANYON RD

LOCATION	1976	1972	1973	1974	1975
East of "L"					
West of Halecrest					13,100
East of Halecrest	16,373		12,940		12,160
West of Crest					17,380
East of Crest		12,620		10,320	16,220
West of Brandywine					13,200
East of Brandywine					13,760
West of Buena Vista				12,500	
East of Buena Vista				11,140	
West of Otay Lakes Rd	11,400		11,830	9,580	13,320

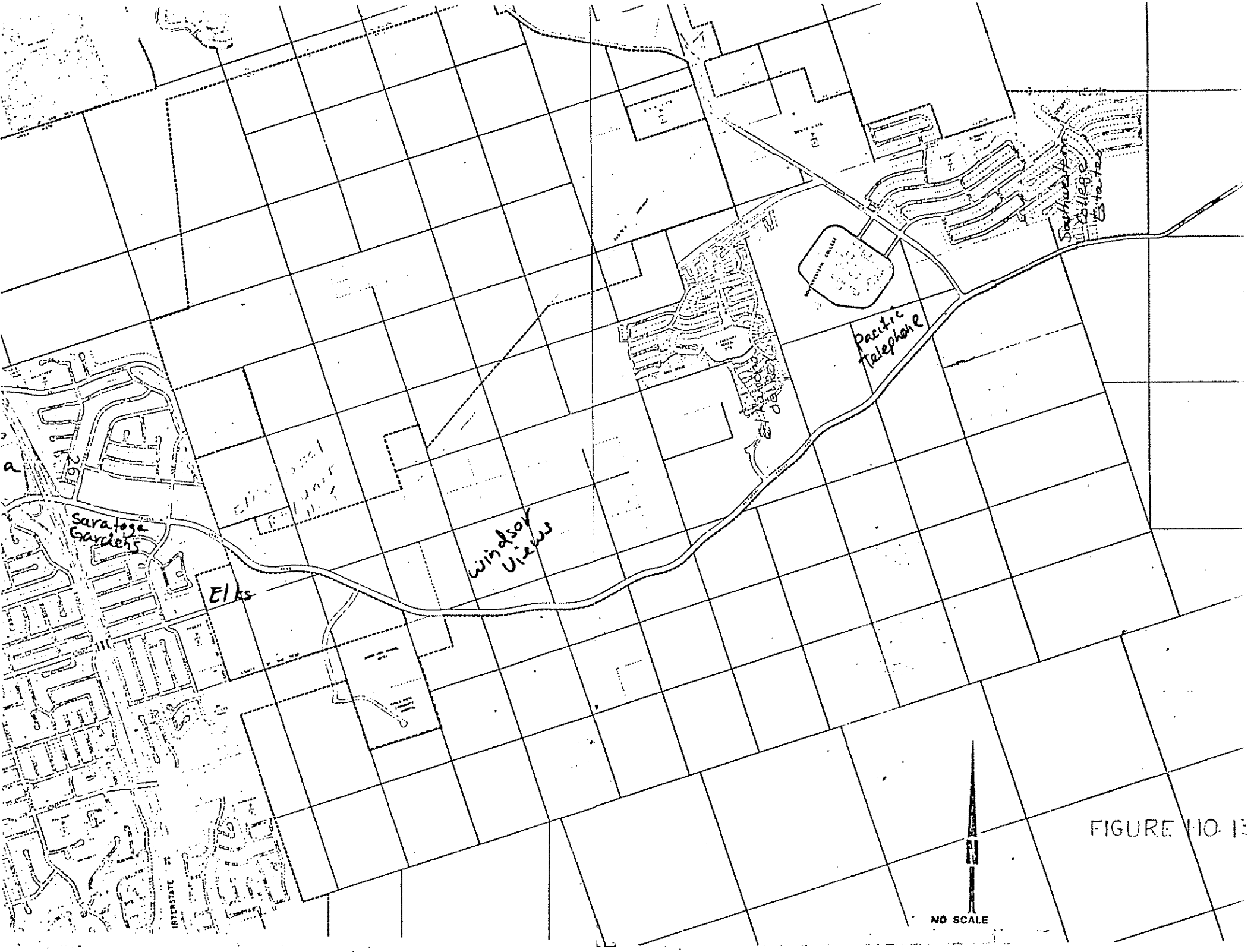

Saratoga Gardens
Elks
Windsor Views
Pacific Telephone
Southwestern College
NO SCALE

FIGURE 10-13

Pacific Telephone facility; at Buena Vista Way (El Rancho del Rey Units #2 and #3); at Brandywine Avenue (entrance to the Community Hospital) and at the entrance to the Elks Club.

At these locations, severe cutslopes have been created in conjunction with the mentioned projects. The majority of these slopes have been landscaped in accordance with the City's grading ordinance. However, the fact that they are not natural has not been altogether countered and they are, therefore, noticeable to the viewer.

3.14 Vegetation and Wildlife

The dominant plant communities associated with the Telegraph Canyon Basin are coastal sage scrub and grassland vegetation. This cover has been characterized as the dominant vegetal feature of the coastal lowlands and extends eastward to elevations generally below 3000 feet. This community has been described as an impoverished chaparral, containing some of the same species commonly found in the chaparral, but lacking the density and height characteristics of that community, which is usually of medium density and does not greatly impede walking.

Plants generally associated with the coastal scrub and chaparral environs are listed below:

California Wormwood or Sagebrush (Artemisia californica)
White Sage (Salvia Apiana)
Black Sage (Salvia mellifera)
Encelia (Encelia farinosa)
Yerba Santa (Eriodictyon californica)
Eriophyllum (Eriophyllum confertiflorum)
California Buckwheat (Eriogonum fasciculatum)
Lemonade-berry (Rhus integrifolia)
Prickly pears (Opuntiaspp.)
Our Lord's Candle (Yucca whipplei)
Chamise (Adenostoma fasciculatum)
Scrub Oak (Quercus dumosa)
Foothill Ash (Fraximum dipetala)
Hard Tack (Cercocarpus betuloides)
Wild Lilacs (Ceanothus cordulatus, C. Greggi, C. Leucodermis, C. Megacarpus, C. Crassifolius, etc.)
Holly Leaf Cherry (Prunus ilicifolia)
Bear Bush (Garrya fremontii)
Quinine Bush (Garrya flavescens)
Manzanitas (Arctostaphylos pungens, A. priglei, A. glauca, A. glandulosa, etc.)
Toyon (Heteromeles arbutifolia)
Sugarbush (Rhus ovata).

The arid climate of Southwestern San Diego County has somewhat altered the Community from its normal aspect in that several plant species of southern affinity are found. These taxa are Snake Cholla (Opuntia parryi var. serpentina); Coast Barrel Cactus (Ferocactua viridescens); Fishhook Cactus (Mammillari dioica); Bladderpod (Isomeris arberea); California Sagebush (Artemisia palmeri); and San Diego Daisy (Vigueria laciniata). Because of their association with a drier climatic regime (Baja California) these entities are found on the arid, south-facing slopes. North-facing slopes are generally clothed with the

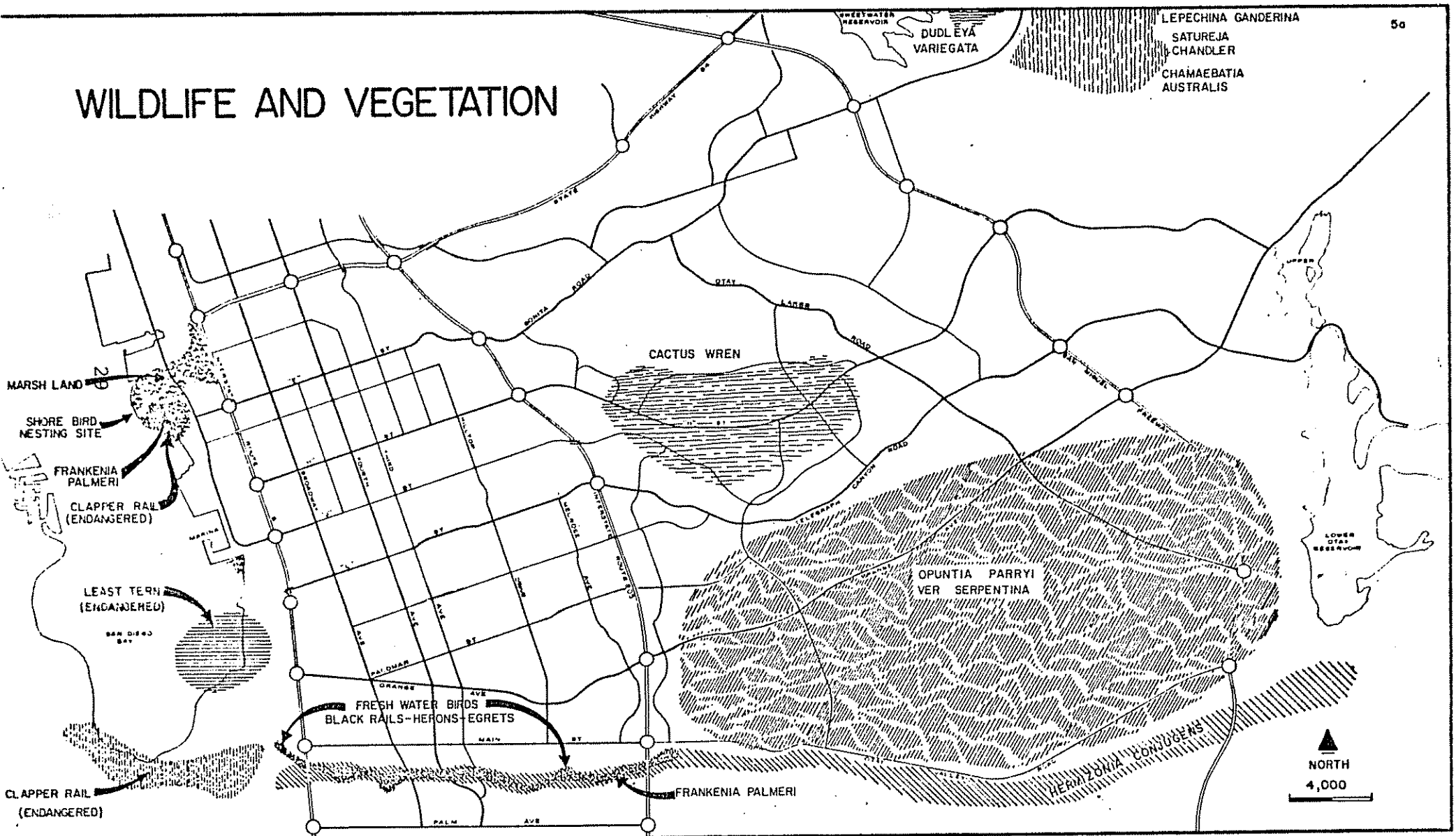

WILDLIFE AND VEGETATION
5a
DUDLEYA VARIEGATA
LEPECHINA GANDERINA
SATUREJA CHANDLER
CHAMAEBATIA AUSTRALIS
CACTUS WREN
MARSH LAND
SHORE BIRD NESTING SITE
FRANKENIA PALMERI
CLAPPER RAIL (ENDANGERED)
LEAST TERN (ENDANGERED)
FRESH WATER BIRDS BLACK RAILS-HERONS-EGRETS
OPUNTIA PARRYI VER SERPENTINA
HERMIZONIA CONJUGENS
FRANKENIA PALMERI
CLAPPER RAIL (ENDANGERED)
NORTH
4,000

FIGURE NO. 14

3.16 Noise

Ambient noise levels within Telegraph Canyon are considered to be mainly attributable to traffic traveling along Telegraph Canyon Road. Ambient noise levels are also believed to be influenced by occasional, unauthorized recreational vehicle activities on the Canyon slopes. These activities (trail bikes, buggies) contribute to the ambient noise levels particularly on weekends and holidays when most of these activities occur.

An ambient noise survey along Telegraph Canyon and within the project's limits was made on March 15, 1976. The weather was cool and clear throughout the survey period (5 to 6 p.m.). The measuring equipment used consisted of an ANSI Type II sound level meter with an "A" weighted scale. Readings were made on the "slow response" meter setting and the meter was checked for proper calibration before and after each particular site was measured. Other equipment used was a tripod, wind screen and a sweep second wristwatch. The "slow response" setting was utilized rather than the fast response to obtain a smooth average over the measurement periods. Readings were observed every 10 seconds for 8 1/3 minutes at two locations (Receptor sites 1 and 3) and for 16 2/3 minutes at the other (Receptor site 2). These readings were recorded on a log sheet. Figure No. 15 shows the approximate locations of the three receptor sites. These receptor sites were chosen on the basis of being representative of existing and future development sites within Telegraph Canyon.

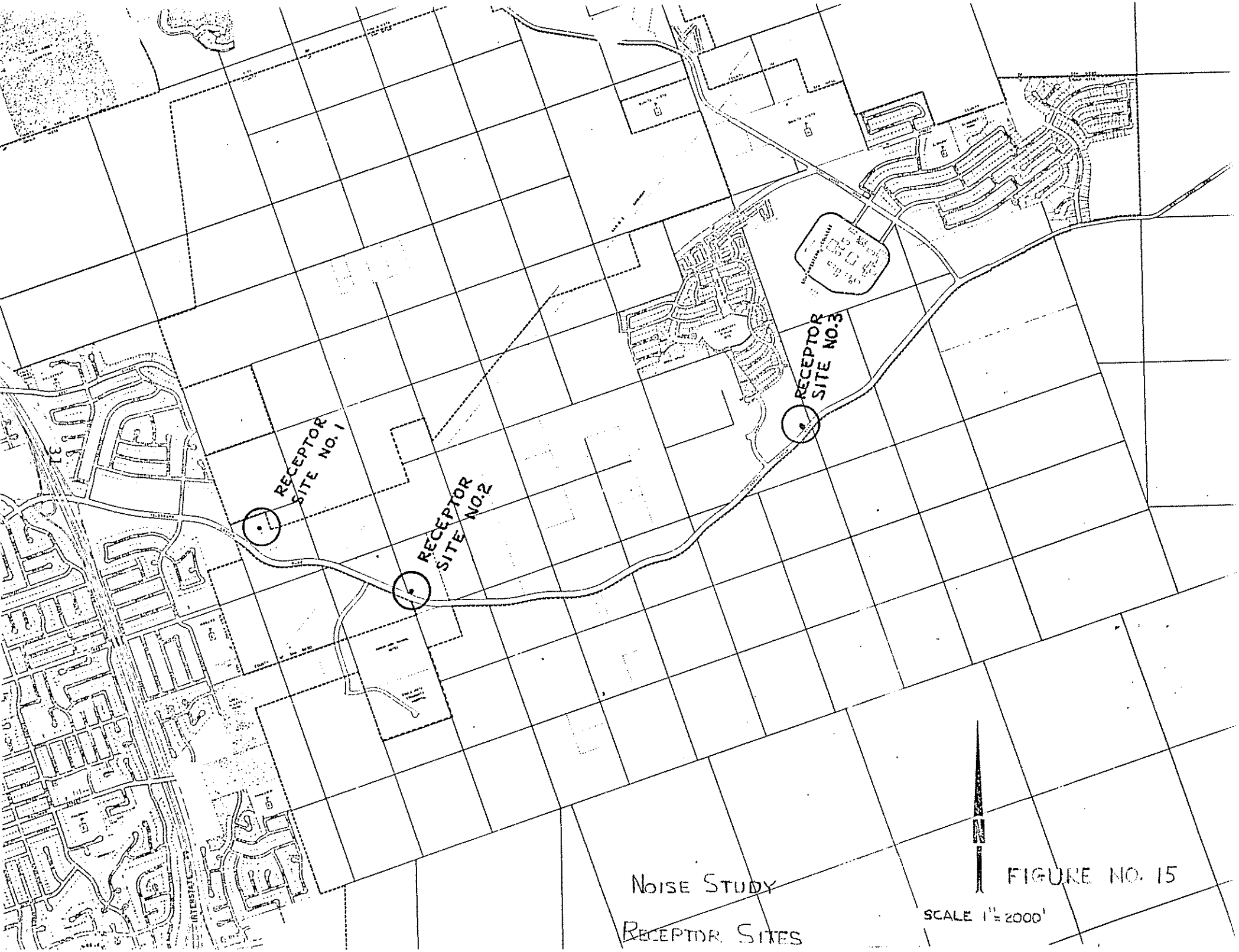
Table No. 4 provides the results of the ambient noise survey. As noted, the range of noise levels fluctuated on this day between 61 and 77 dBA. Measurements in dBA (decibels, A-scale) are used to describe sound that affects people. The above noise levels are stated in terms of L_{10}, a descriptor that takes in 90 percent of the noise range and is exceeded 10 percent of the time. Design standards for L_{10} sound levels compatible with different land uses have been developed by FHWA. The exterior standard for residential and quiet recreational uses is 70 dBA.

The results of the noise study show that noise levels at locations immediately adjacent to the road currently exceed the FHWA standards while at a distance of about 90 ft. from the road the noise levels would be acceptable for most uses. Because of typical narrow character of canyon and width of proposed highway and channel, it is likely that future developments will be on ridges and not within 90 feet.

3.17 Archaeology

Until recent years the area in and around Telegraph Canyon Road had received little professional archaeological attention. However, field studies conducted since 1973 have indicated the presence of a wide range of prehistoric sites and archaeological resources in the area. Sites located by these studies are reported to and recorded by the San Diego State University and the San Diego Museum of Man.

Very recent field studies conducted immediately north of Telegraph Canyon Road revealed five archaeological sites of varying significance. These sites ranged from isolated tool scatters to campsites which may contain depth. Tables No. 5 and 6 and Figure 16 summarize the type, importance and location of these sites.



NOISE STUDY

RECEPTOR SITES

FIGURE NO. 15

TABLE 4

NOISE ANALYSIS FOR TELEGRAPH CANYON ROAD
(ALL VALUES L_D dBA)

SITE		EXISTING MEASURED	EXISTING CALCULATED	CORRECTION FACTOR	1990 CALCULATED "BUILD"	1990 CALCULATED "NO BUILD"	1990 CORRECTED CALCULATED "BUILD"	1990 CORRECTED CALCULATED "NO BUILD"
1	EXTERIOR	61	54	+7	65	58	72	65
	INTERIOR		34		45	38		
2	EXTERIOR	77	79	-2	76	81	74	79
	INTERIOR	-	59		56	61		
3	EXTERIOR	71	78	-7	75	80	68	73
	INTERIOR	-	58		55	60		

Table 5

Archaeological Site Comparisons

Site	Site Type*	Elevation	Artifacts*	Vegetation**	Elevation Above Water
WS-76-1	Food Processing (Kumeyaay?)	500'	Manos-Scrapers	Sage, Sumac	100'
WS-76-2	Food Processing (San Dieguito-Kumeyaay?)	400'	Scrapers-Flakes Shellfish	Opuntia, Cholla, Sumac, Sages	100'
WS-76-3	Food Processing (Inland La Jollan?)	350'	Manos-Scrapers Metates-Shell	Opuntia, Cholla, Sumac, Sages	50'
WS-76-4	Food Processing (Kumeyaay?)	420'	Scrapers-Core	Sumac, Yucca Sages	60'
WS-76-5	Flaking Station (Kumeyaay?)	480'	Flakes-Core	Sumac, Yucca Sages	120'
WV-1***	Tool Manufacturing (San Dieguito)	360'	Flakes-Scrapers	Yucca, Sage, Cholla, Opuntia	80'
CE-4****	Tool Manufacturing (San Dieguito)	450'	Flakes-Cores Tools	Cholla, Opuntia Grasses	250'
CE-5	Tool Manufacturing (San Dieguito)	400'	Flakes-Cores Tools	Cholla, Opuntia	200'

* The reader is urged to refer to the Glossary provided in Appendix .

** The reader should refer to Appendix for an explanation of the native use of these various vegetative types.

*** WV-1 is a site recorded by WESTEC Services on the Windsor Views Project.

**** CE-4 and CE-5 are sites recorded by Gary Fink for the County Engineer Department.

Table 6

Evaluation of Archaeological Resources

Classification	Site Characteristics	Impacts of Destruction or Loss	Measures to Mitigate Loss
CRITICAL	• Possesses large quantities of irreplaceable and valuable resources. • Considered rare or regionally unique.	• Creation of potential gaps of areal prehistory. • Particular phase of prehistoric culture would be observed.	• Total or partial preservation. • Salvage. • Intensive testing. • Combination of above.
MAJOR	• High potential for research or analysis. • May be regionally or contextually unique.	• May create prehistory gaps. • Partially obscure a particular phase of prehistoric culture.	• Total or partial preservation. • Collection and micromappi • Intensive testing. • Combination of above.
MODERATE	• Limited potential for research or analysis. • May contain valuable material, not necessarily unique or rare.	• Segments of archaeological picture or certain valuable data may be adversely affected.	• Micromapping. • Surface collection and analysis. • Trenching. • Combination of above.
MINOR	• Limited scientific potential. • May be previously impacted by natural forces or man. • May lack any quantity of significant resources.	• Minor loss of data.	• Surface collection and analysis.
TRIVIAL	• Little or no scientific value. • Surface collection and analysis can exhaust any site potential.	• Would not, in most cases, constitute a serious loss of data or resources.	• Surface collection and analysis may be necessary.

ARCHAEOLOGICAL SITE MAP

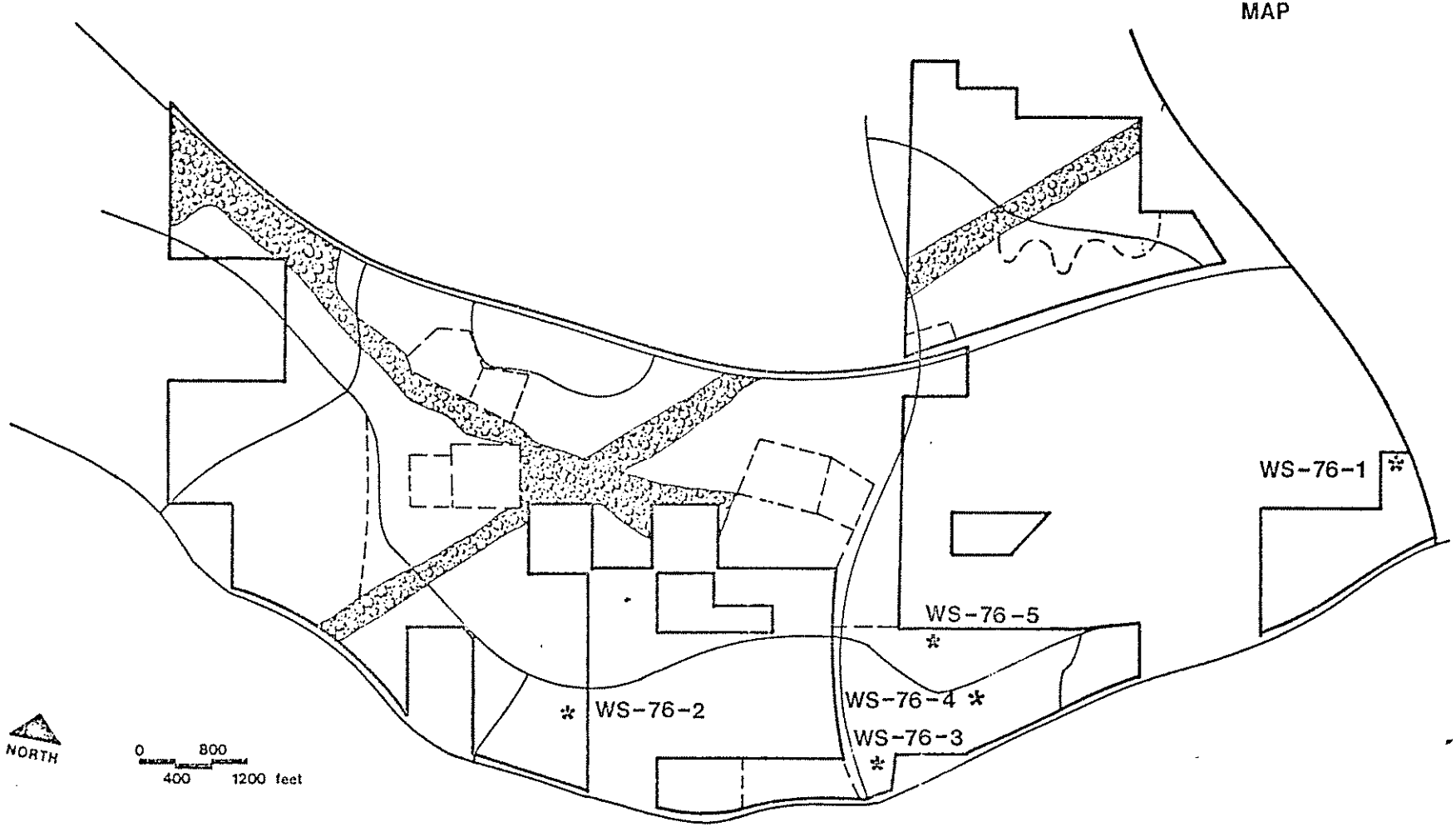


FIGURE NO. 16

ARCHAEOLOGICAL SITE MAP

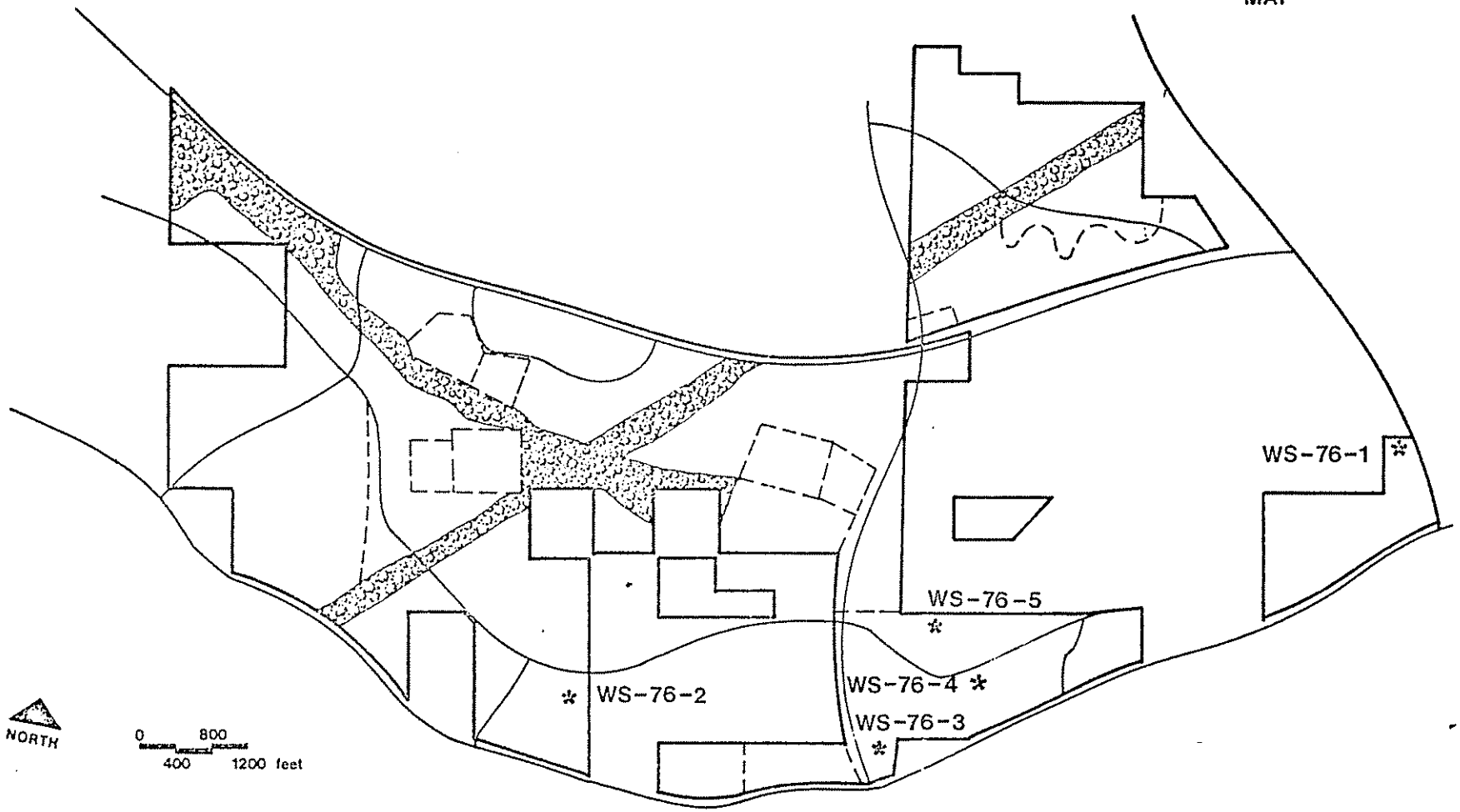


FIGURE NO. 16

In general, the five sites are indicative of sites which were used by hunting and foraging peoples during their seasonal rounds. In broad terms, the area in and around the project site served as transitory special use area for native peoples.

3.18 Historical and Cultural Sites

The Natural Resource Inventory for the County of San Diego prepared by the Integrated Regional Environment Management project (IREM) of the County of San Diego Environmental Development Agency indicates no places of historical interest within the project site. This fact has been confirmed by the Chula Vista Historical Review Commission and on-site analysis. Appendix B of this document gives a summary of historical information for the project site.

3.19 Land Uses

Except for some residential developments near Crest Drive, Buena Vista Way and Rutgers Avenue, a commercial site, church facilities and a hospital near Brandywine Avenue, Telegraph Canyon is relatively undeveloped in the project area. Southwestern Community College is located atop the northerly mesa of Telegraph Canyon west of Otay Lakes Road and is not visible to travelers in the Canyon bottom.

Many of the flatter slopes and mesa areas southerly of Telegraph Canyon Road are being farmed. The topsoil, however, is fairly thin and limits the type of crops grown. The majority of the northerly slopes of Telegraph Canyon exhibit numerous tracks and trails now being used by hikers, equestrians, motorcyclists and offroad vehicle enthusiasts. Certain of these tracks are used by inspection and maintenance vehicles of utility companies for servicing utility lines traversing the Canyon.

Recently, four significant projects fronting along Telegraph Canyon Road have been approved by the City of Chula Vista. A Pacific Telephone & Telegraph Co. switching station located west of Otay Lakes Road is now under construction. Its completion date is expected to be in early 1977. The Windsor Views residential development located east of Brandywine Avenue is now under construction. Although the tentative map for the El Rancho Del Rey Units 4 & 5 have been approved, no construction work has started yet.

Figure No. 17 shows all the existing and/or approved land uses within the project's limits. This figure is a composite of the Open Space, Conservation and Scenic Highways Elements of the City's General Plan. However, a revised land use plan for the area northerly of Telegraph Canyon Road is being prepared by the Chula Vista Planning Department at this time. Present indications are that relatively low density residential development will be allowed on the higher areas overlooking the Canyon with access to Telegraph Canyon Road via several collector streets.

3.20 Aesthetics

Telegraph Canyon (as discussed in section 3.13) is mostly still natural. This natural appearance is pleasing to a person traveling along the Canyon and was the reason the Scenic Highways Element of the City's General Plan described Telegraph Canyon Road as "the most scenic route within Chula Vista." This road, which is located along the Canyon's bottom, offers clear views of distant hills and nearby agricultural acres.

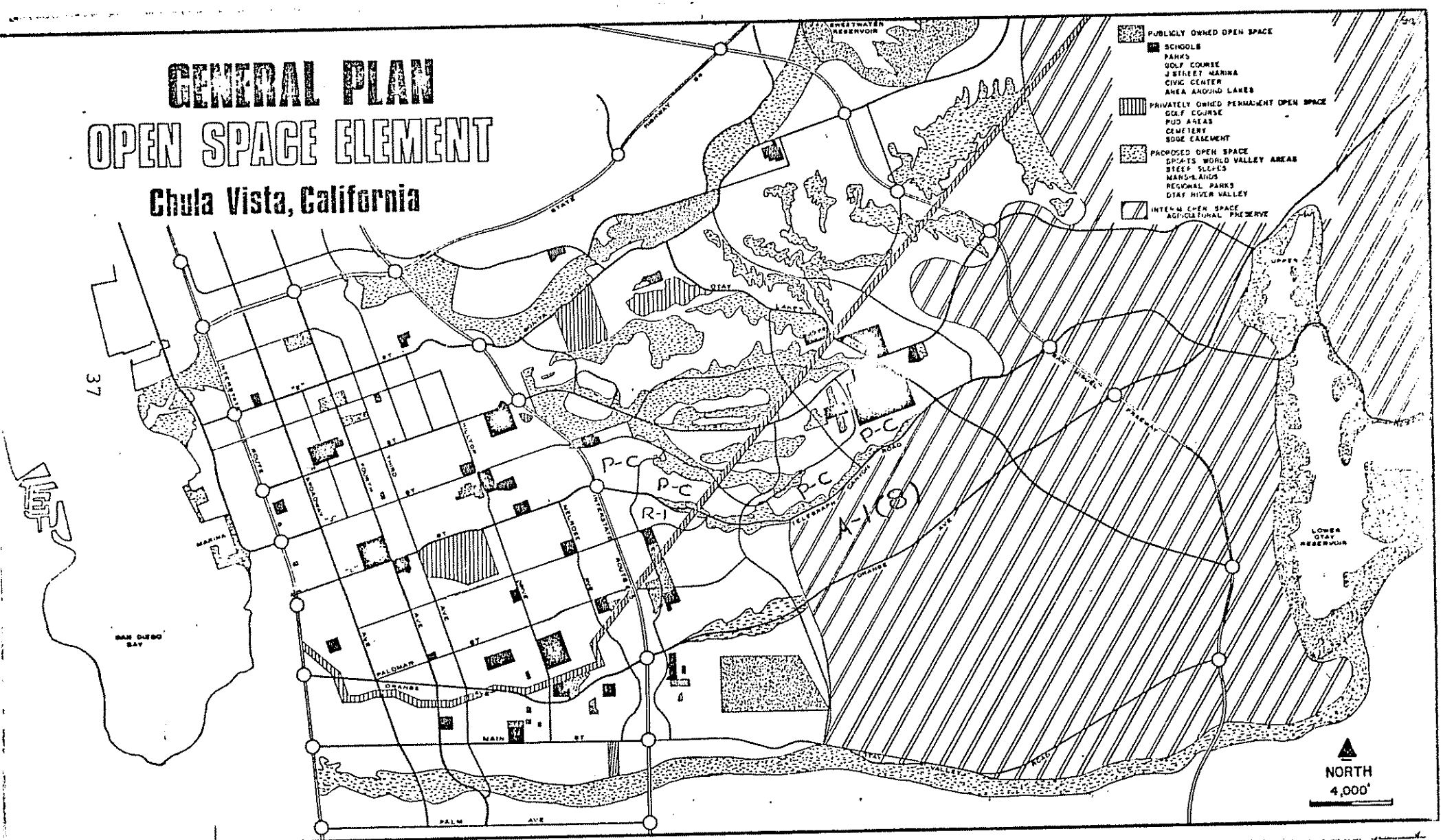

GENERAL PLAN
OPEN SPACE ELEMENT
Chula Vista, California
PUBLICLY OWNED OPEN SPACE
SCHOOLS
PARKS
GOLF COURSE
J STREET MARINA
CIVIC CENTER
AREA AROUND LAKES
PRIVATELY OWNED PERMANENT OPEN SPACE
GOLF COURSE
PUD AREAS
CEMETERY
EDGE EASEMENT
PROPOSED OPEN SPACE
SPORTS WORLD VALLEY AREAS
STEEP SLOPES
MARSHLANDS
REGIONAL PARKS
OTAY RIVER VALLEY
INTERIM OPEN SPACE
AGRICULTURAL PRESERVE
SWEETWATER RESERVOIR
OTAY LAKES
UPPER OTAY RESERVOIR
LOWER OTAY RESERVOIR
P-C
R-1
A-1(8)
NORTH
4,000'

FIGURE NO. 17

The Open Space Element of the City's General Plan proposes that the slopes at either side of the canyon will be maintained as open space or utilized for agricultural preserve.

3.21 Population Trends

According to current estimates and forecasts of population and other planning data published by the Comprehensive Planning Organization (CPO), California has been growing faster in population than the U.S., while San Diego has been growing faster than California. For California, the annual rate of population growth is 1.4 percent and for the County of San Diego the projected rate is 2.4 percent. The City of San Diego is projected to grow faster, at 2.6 percent per year. The projected rate of population growth for Chula Vista is 1.4 percent per year.

However, the April 1975 Special Census shows that the average rate of population growth for the City of San Diego was 2.1 percent per year for the period covering April 1, 1970 to April 1, 1975. For this same period, the rate of growth for the County of San Diego was 2.9 percent and for the City of Chula Vista, 2.1 percent per year. Table No. 7 shows the results of the 1975 Special Census for the total County region. Table No. 8 shows selected census comparisons for the City of Chula Vista which summarized the City's population and housing trends between 1950 and 1975.

3.22 Socio-Cultural Data

Racial, employment and income figures for the City of Chula Vista were derived from the 1975 Special Census data. The predominant race is white, representing 85.01 percent of the total population. The remaining 14.99 percent is divided among other racial groups. Table No. 9 shows the ethnic breakdown of the City's inhabitants.

The employment breakdown of the City's employed head of households is shown in Table No. 10. According to the 1975 Special Census, 26,839 or 35.7% of Chula Vista residents are employed. The 1975 per capita income figures show San Diego County below the average for California ($7,378 vs. $8,057). Chula Vista is slightly below the County with an average of $7,233. Table No. 11 shows the gross household income in the City of Chula Vista.

3.23 Community Resources

3.23.1 Schools

There are currently three school districts serving the Community's educational needs. These districts are: The Chula Vista City School District, the Sweetwater Union High School District and the Sweetwater Community College District.

The City's General Plan for the year 1990, adopted in

TABLE 7

POPULATION FOR CITIES AND COUNTY

Special Census
April 1, 1975

Cities	April 1, 1975	April 1, 1970	Percent of Change
Carlsbad	19,391	14,944	29.8
Chula Vista	75,137	67,901	10.7
Coronado	18,091	20,910	-13.5
Del Mar	4,734	3,956	19.7
El Cajon	60,018	52,273	14.8
Escondido	49,197	36,792	33.7
Imperial Beach	20,743	20,244	2.5
La Mesa	42,425	39,178	8.3
National City	44,237	43,184	2.4
Oceanside	55,267	40,494	36.5
San Diego	770,344	696,769	10.6
San Marcos	9,863	3,896	153.2
Vista	28,302	24,688	14.6
Unincorporated Area	361,756	292,625	23.6
Total County	1,559,505	1,357,854	14.9

TABLE 8

SELECTED CENSUS COMPARISONS

City of Chula Vista
Special Census
April 1, 1975

	1950	1960 (% change)	1970 (% change)	1975 (% change)
Total Population	15,927	42,034 (+164%)	67,901 (+62%)	75,137 (+11%)
Total Dwelling Units	5,374	14,065 (+162%)	22,951 (+63%)	27,320 (+19%)

Dwelling Unit Composition:	1970 (% comp.)	1975 (% comp.)	% Change
Single Family	13,965 (61%	15,286 (56%)	+9.5
2-4 *	1,612 (7%)	3,733 (14%)	+131.6
5+	4,323 (19%	6,160 (23%)	+42.5
Mobile Home	2,120 (9%)	2,115 (8%)	-.2
Miscellaneous	-	26 (9%)	-
Not Reported	931 (4%)	-	-
Total	22,951 (100%)	27,320 (100%)	+19

Average Household Size	1968 **	1975
Single Family	3.69	3.38
2-4 *	2.51	2.66
5+	1.95	1.94
Mobile Home	1.84	1.72
Overall Average	3.07	2.83

Median Age	1968 **	1975
Male	25	27
Female	26	29
Overall Median	26	28

* 2-4 category includes attached single family dwellings. (758 attached single family dwellings were constructed between 1970 and 1975.)

** 1968 Special Census: comparable information is unavailable from the Decennial Census.

TABLE 9.
RACIAL/ETHNIC BREAKDOWN
CITY OF CHULA VISTA
1990 CENSUS - APRIL 1, 1990

Racial or Ethnic Origin	Number	Percent of Total
No response	696	2.64
White	22,405	85.01
Black	300	1.14
Latino	2,126	8.07
American Indian	74	0.28
Filipino	292	1.11
Japanese	170	0.64
Chinese	39	0.15
Other Pacific Asian	62	0.24
Other	193	0.73
Totals	26,357	100.00*

*Individual figures may not add to 100.00% due to rounding

TABLE 10

LABOR FORCE STATUS

City of Chula Vista
Special Census
April 1, 1975

Status	Male	Female	Total	Percent of Total
Military	3,763	81	3,844	5.12
Employed	14,317	8,678	22,995	30.60
Unemployed	1,165	974	2,139	2.85 *
Student over 16	2,772	2,250	5,022	6.68
Not in Labor Force	14,613	25,973	40,586	54.02
Unknown **			551	0.73
Totals			75,137	100.00 ***

* Unemployed figure represents the percentage of the total population which is unemployed as opposed to the more familiar figures published by the Department of Labor, which bases the unemployment rate on the total labor force.

** Unknown figure represents unallocated responses due to census field-errors.

*** Individual figures may not add to 100.00% due to rounding.

TABLE 11
HOUSEHOLD INCOME
CITY OF CHULA VISTA
SPECIAL CENSUS - APRIL 1, 1975

Household Income	Number	Percent of Total
No response	8,070	30.62
Less than $3,000	1,449	5.50
$3,000 - $4,999	1,528	5.80
$5,000 - $6,999	1,726	6.55
$7,000 - $9,999	2,749	10.43
$10,000 - $14,999	4,674	17.73
$15,000 - $19,999	3,256	12.35
$20,000 - $24,999	1,710	6.49
$25,000 - $39,999	1,001	3.80
$40,000 and over	194	0.74
Totals	26,357	100.00*

*Individual figures may not add to 100.00% due to rounding

February 1973, shows that within the proximity of Telegraph Canyon Basin and east of I-805, the following school facilities exist and/or are planned:

Elementary schools	3 existing	5 planned
Junior High Schools	1 existing	2 planned
Senior High Schools	1 existing	1 planned
Junior College	1 existing	

With the exception of Southwestern Community College, the available school facilities are operating at or near capacity.

3.23.2 Parks and Recreation

There are presently no parks or organized recreation facilities located in Telegraph Canyon within the project's limits. However, there is ample evidence that the Canyon is used by motorcycles and other offroad vehicle enthusiasts.

The Parks and Recreation and Open Space elements of the City's General Plan indicate that a substantial portion of the Canyon basin should be conserved as open space or park land.

Telegraph Canyon Road is also popularly used as a recreational bike route although no formal bike lanes/paths are provided.

3.23.3 Fire Protection

Telegraph Canyon in its present state is a potential locale of significant fire hazard, especially in the mid and late summer months. Fire protection service for those portions of the Canyon within the corporate limits of the City of Chula Vista is available from the City Fire Department. Fire protection service for the unincorporated areas is the responsibility of the State Division of Forestry. Figure 18 shows the location of the City's existing and proposed fire stations.

3.23.4 Public Utilities

3.23.4(a) Electricity & Gas

Only short sections of electrical facilities have been installed and these are primarily overhead on San Diego Gas & Electric Company poles between Buena Vista Way and Otay Lakes Road. A 250-foot wide easement of San Diego Gas & Electric Company crosses Telegraph Canyon Road just east of Brandywine Avenue. This contains 138-KV transmission lines on a series of steel towers. Two additional tower systems and a gas main are envisioned in the future by the company. An 8-inch high pressure gas main has been installed in Telegraph Canyon Road by the San Diego Gas & Electric Company and is adequate for expected future requirements in the area.

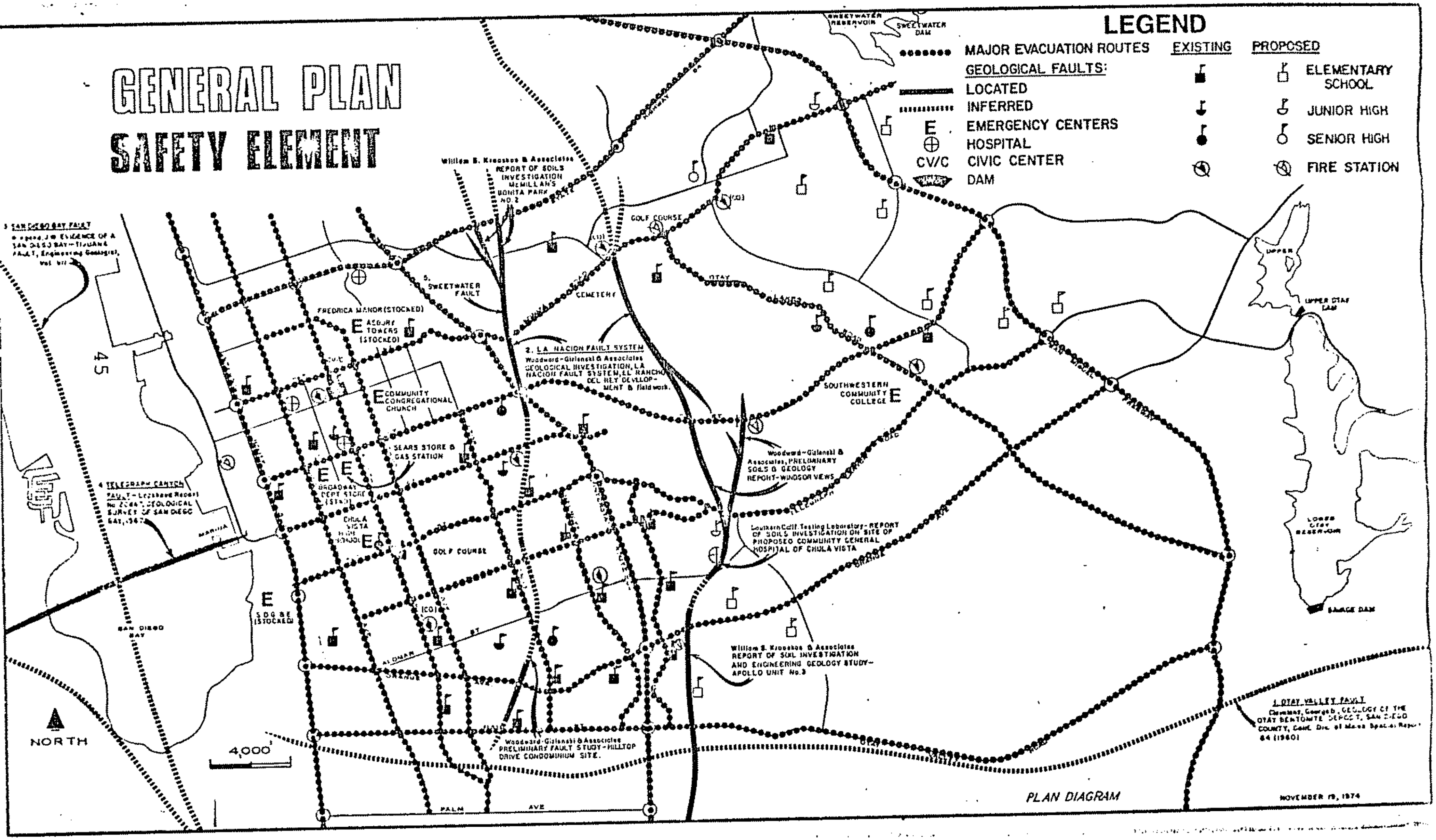

GENERAL PLAN
SAFETY ELEMENT
LEGEND
MAJOR EVACUATION ROUTES
GEOLOGICAL FAULTS:
LOCATED
INFERRED
EMERGENCY CENTERS
HOSPITAL
CIVIC CENTER
DAM
EXISTING
PROPOSED
ELEMENTARY SCHOOL
JUNIOR HIGH
SENIOR HIGH
FIRE STATION
SWEETWATER RESERVOIR
SWEETWATER DAM
UPPER OTAY DAM
LOWER OTAY RESERVOIR
SAVAGE DAM
GOLF COURSE
CEMETERY
SOUTHWESTERN COMMUNITY COLLEGE
FREDRICA MANOR (STOCKED)
COMMUNITY CONGREGATIONAL CHURCH
SEARS STORE & GAS STATION
CHULA VISTA HIGH SCHOOL
SAN DIEGO BAY
NORTH
4,000'
PLAN DIAGRAM
NOVEMBER 19, 1974

FIGURE NO. 18

3.23.4(b) Sewers

A 15-inch City of Chula Vista sanitary sewer was constructed in 1961 near the existing centerline of Telegraph Canyon Road. It varies in depth from 8 to 12 feet. A recent sewer capacity study for this trunk line shows that the capacity of the main is 5.78 cfs when flowing full. The present flow is approximately 2.04 cfs, or approximately 35% of the available capacity.

3.23.4(c) Water

The Telegraph Canyon Basin (east of I-805) is served by the Otay Municipal Water District. The District serves the area via an 18 inch main located on the north side of the existing Telegraph Canyon Road. The District has recently constructed an additional 20 inch pipeline with a capacity of 6.5 mgd. The District expects that the combined capacity of these water mains will provide adequate capacity to meet the domestic water supply and fire protection needs of existing, and proposed developments within the Telegraph Canyon Basin.

A 40 inch water main, owned by the City of San Diego, crosses Telegraph Canyon Road east of Brandywine Avenue. This facility is a main feeder from the central portion of San Diego to the San Ysidro area.

3.23.4(d) Telephone

The Pacific Telephone and Telegraph Company is now completing an electronic switching station west of Otay Lakes Road and adjacent to Telegraph Canyon Road. The construction of this facility necessitates the installation of significant numbers of underground conduits and cables which will assure that the Telegraph Canyon Basin will have adequate telephone facilities.

4. ALTERNATIVE DEVELOPMENT/NON-DEVELOPMENT ANALYSIS

4.1 Alternatives Considered

In addition to the "no action" alternative, this report will consider the following alternatives:

Road Alternatives

1. Maintain existing alignment and widen Telegraph Canyon Road to accommodate four travel lanes, median and sidewalks (i.e. major street improvements).

2. Maintain existing alignment and widen Telegraph Canyon Road to accommodate six travel lanes, sidewalk, landscaped median ~~and~~ parkways, and bike path facilitiy (i.e. prime arterial improvements).

3. Realign and widen Telegraph Canyon Road to accommodate four travel lanes, median and sidewalks (major street improvements).

4. Realign and widen Telegraph Canyon Road to accommodate six travel lanes, median and parkways and bike path facility (prime arterial improvements).

Channel Alternatives

1. Construct adequate channel crossings under the road and necessary slope protection.

2. Construct a channel throughout the project limits (nine channel cross-sections alternatives).

Channel and Road Alternatives

1. Construct road only per one of the four alternatives listed above under "Road Alternatives." No drainage improvements.

2. Construct one of the four alternatives listed under "Road Alternatives" and only provide adequate channel crossings and road slope protection.

3. Construct drainage channel per one or combination of the nine channel cross sections alternatives studied under Alternative 2 of "Channel Alternatives" in conjunction with construction of one of the road alternatives.

4.2 No Action Alternative

A recent study by City staff showed that Telegraph Canyon Road now experiences unstable traffic flow (level of service "E") one hour per day. This period of unstable traffic flow will double within two or three years because of additional traffic from already approved developments and anticipated growth of Southwestern College. The no-action alternative therefore will assure that the level of service on Telegraph Canyon Road will deteriorate.

In the absence of the channel project no flood protection will be provided to property within Telegraph Canyon which is now subject to inundation. This protection is presently unnecessary since for the most part Telegraph Canyon is undeveloped and a major flood could not create extensive damage. The City's flood plain regulations can greatly restrict future development in the Canyon's flood plain. However, flooding of Telegraph Canyon Road would prevent it from being used as a major evacuation route in the event of a disaster.

The no-action alternative will not preclude the City from assuring that developments in the Canyon are provided with drainage and roadway facilities. However, these facilities may not be constructed along coordinated alignments or profiles because of the desire of developers to confine construction activities to their own property. The lack of a coordinated road design which provides adequate radii on curves would lower the capacity of the road. This would allow congestion to increase even though structural improvements for the traffic are adequate.

4.3 Road Alternatives

4.3.1 Maintain existing alignment and widen Telegraph Canyon Road to accommodate major street improvements

The implementation of this alternative will commit 44.3 acres of the Canyon floor to road purposes. The existing right of way/road easement now varies from about 100 to 60 feet in width throughout the length of the proposed improvement. Most of this existing right of way would be used under this alternative. The road right of way and easement now includes about 31.8 acres. This right of way and easements were originally acquired by the County of San Diego prior to the annexation of the facility to the City of Chula Vista. The implementation of this alternative will also require the grading of approximately 270,000 cubic yards of soil. The maximum depth of cut will be 53 feet and that of fill will be 12 feet. The slopes required for the construction of the road improvements will all be landscaped in accordance with the City's grading ordinance to enhance the scenic quality of the road.

The construction of major road improvements on Telegraph Canyon Road will, at various locations, encroach into the existing drainage channel. This alternative may result in the flooding of the road unless adequate drainage crossings or protection are constructed in conjunction with the road improvements.

The construction of major road improvements only would have an approximate cost of $162 per linear foot if the entire job were constructed in one contract. This possibility, however, is very remote since the City does not have the required funding for the financing of such a task. The formation of a 1911 Act Assessment District is highly improbable and could increase the construction cost were it to be established. The most probable method of building these improvements would be on a piecemeal basis by prospective developers interested in urbanizing property fronting on or dependent upon Telegraph Canyon Road.

This method of providing improvements is now common in this Canyon. There are four existing developments having frontage on the road and all have constructed necessary road improvements. These improvements and their necessary right of way were constructed and dedicated to meet prime arterial standards (126 feet right of way and six travel lanes). The construction of major street improvements on the existing alignment would in some instances waste these improvements and the investments of the respective builders. At this time, the City has approved two more developments which will also be constructing portion of the road improvements.

If major road improvements (four travel lanes) on the existing alignment are constructed for Telegraph Canyon Road, the one way road capacity is estimated to be 1,094 vehicles per hour with a "c" level of service. This capacity is limited by

relatively short radii and sight distances. The existing peak traffic flow is 1,150 vehicles per hour. Clearly, this alternative would not correct the traffic problem in Telegraph Canyon Road and the cost of implementing this alternative would, therefore, be of questionable effectiveness.

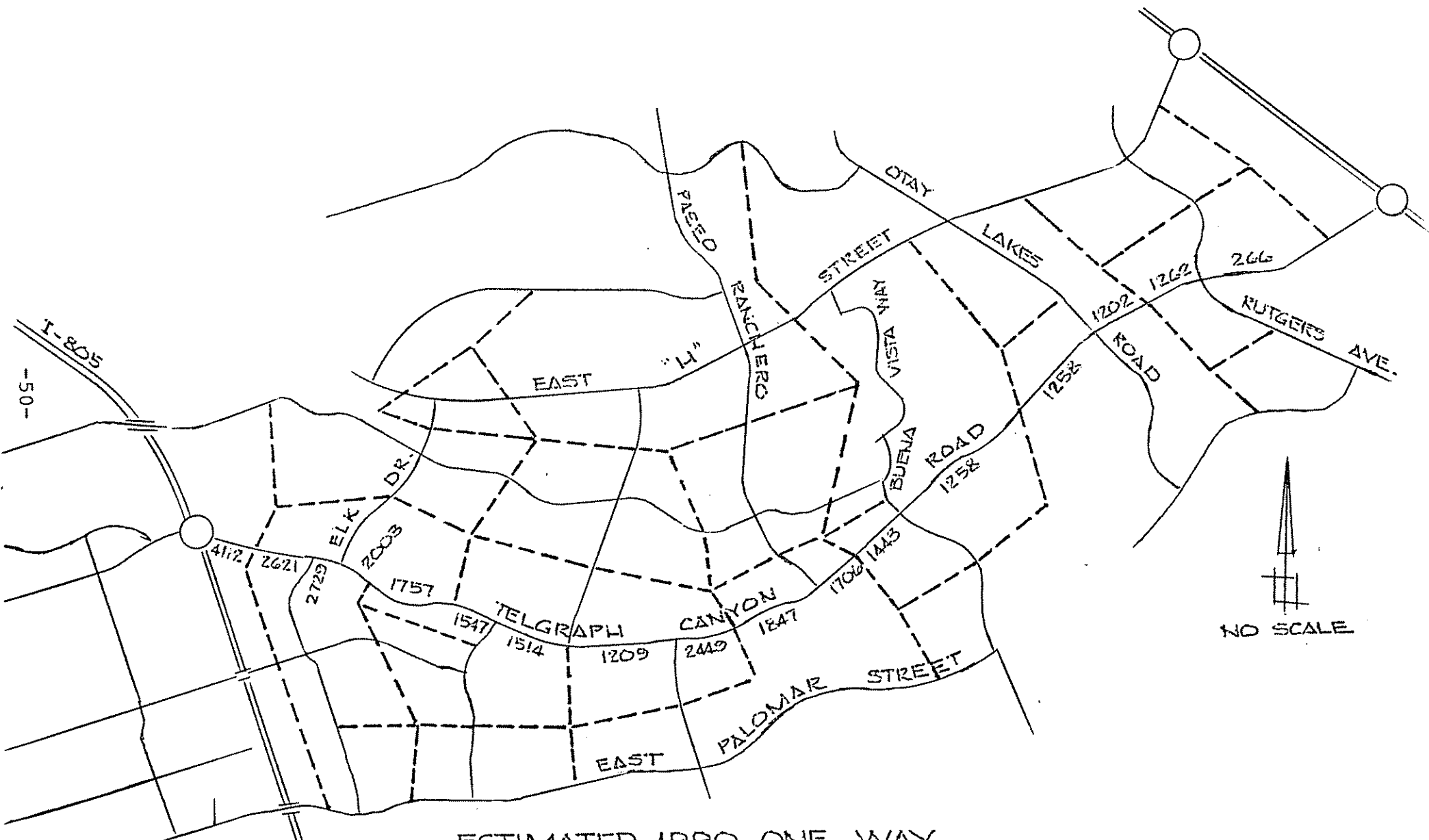
4.3.2 Maintain Existing Alignment and Widen Telegraph Canyon Road to Accommodate Prime Arterial Improvements

The implementation of this alternative will result in the utilization of 58.1 acres for road improvements (approximately 26.3 more acres than area now used). Prime arterial improvements require a 126 foot wide right of way to accommodate six travel lanes (two 12 foot, two 13 foot and two 16 foot lanes), a 16 foot landscaped median, two 3 foot landscaped parkways, two 4 1/2 foot utility and landscaping areas, a five foot sidewalk and an 8 foot wide bicycle path facility. The construction of these improvements generally centered on the existing centerline alignment will necessitate the grading of approximately 332,500 cubic yards of soil. The maximum depth of cut will be 60 feet and that of fill will be 12 feet. The creation of man-made slopes will necessitate the use of landscaping in order to maintain the scenic quality of Telegraph Canyon Road and of the Canyon.

If this alternative was to be implemented, the resulting one way peak hour Maximum Service Volume is calculated to be 1,724 at a level of service "c" (see Appendix C for calculations). The 1990 one way peak hour traffic flows have been estimated by City staff. These flows are shown in Figure 19. As can be seen from this figure, 6 of the 17 stretches within the project limits will have peak hour flows greater than the flow which this alternative can accommodate at a "c" level of service.

The construction of these road improvements will have an approximate cost of $193.40 per linear foot if constructed under one job. However, as discussed in Section 4.3.1, the most probable method of financing the improvement cost is expected to be in a picemeal basis by developers desirous of urbanizing property fronting upon or dependent on Telegraph Canyon Road.

The existing centerline alignment, however, was not originally designed to accommodate prime arterial improvements. In some places massive grading would be necessary to accommodate construction of prime arterial improvements on the existing alignment. In view of City Council's mandate to minimize the impact of the project upon the appearance of the canyon, this alternative must be considered as impractical.



ESTIMATED 1990 ONE WAY
PEAK HOUR TRAFFIC FLOWS

FIGURE NO. 19

4.3.3 Realign and Widen Telegraph Canyon Road to Accommodate Major Street Improvements

The implementation of this alternative will result in the commitment of 44.2 acres of land for road purposes. This alternative could, however, utilize most of the existing right of way/easements. The total area of existing right of way/ easements is 31.8 acres. Portions of the used existing area could be used as exchange property, thereby lowering the cost of right of way acquisition.

The realignment and widening of Telegraph Canyon Road under this alternative will necessitate the grading of approximately 220,000 cubic yards of soil. The maximum depth of cut will be about 26 feet and that of fill about 27 feet. The resulting slopes will be landscaped per City ordinance and will be designed to enhance the scenic quality of the Canyon.

The locations at which the existing centerline is to be relocated will result in a safer road route. The safe speed of Telegraph Canyon Road as realigned is calculated to be 55 m.p.h. The resulting one way peak hour Maximum Service Volume is calculated to be 2,091 at a level of Service "C". As can be seen in Figure 19, 4 of the 17 stretches within the project limits will have peak hour flows greater than the flow which this alternative can accommodate at a "C" level of service.

The construction of the improvements will, at some locations infringe upon and/or cross the existing drainage channel, making the construction of drainage improvements necessay. These improvements should include adequate capacity and slope protection in order to guard the road improvements against flood damage. Telegraph Canyon Road is designated as a "major evacuation route" in the Safety Element of the General Plan. In case of a flood catastrophe, Telegraph Canyon Road could not be used as such unless adequate drainage improvements were constructed in conjunction with the road improvements.

The alignment of the road will, at some points, vary significantly from its existing location. However, through the majority of the project's length, the same alignment will be followed except for a minor shift to the north or south. The relationship between the existing and proposed centerlines is shown on Figures No. 4 through 8. The combination of existing and realigned sections will diminish the length of road by about 100 feet. At locations where the road is relocated, existing utilities now underground will remain unaltered. Special arrangements must, therefore, be made in order to assure that these utilities are not damaged and or made inaccessible. In the vicinity of Buena Vista Way, there are several transient farm houses and related structures which will be removed to accommodate the road widening. This alternative will also require the removal of an existing residence located between Crest/ Oleander Avenue and Brandywine Avenue.

The construction of major road improvements will allow the urbanization of 950 acres without creating traffic congestion on the road (El Rancho del Rey property). The urbanization of this area would generate approximately 11,200 trips per day

along Telegraph Canyon Road if it is developed in accordance with the City's 1990 General Plan. Southwestern College is expected to generate about 5,000 trips per day. This generation is expected to increase at an average annual rate of 15 to 20 percent.

Recent traffic projection studies by City staff show that if the City's 1990 General Plan is implemented, the average ADT through the project's length will be about 30,000. As can be seen on Figure 19, the projected ADT's on Telegraph Canyon Road exceed this alternative's capacity at various locations (7 out of 17). These ADT's, however, are calculated on the assumption that a number of collector roads intersecting Telegraph Canyon Road are also constructed. The construction of major road improvements will be consistent with the General Plan designation of Telegraph Canyon Road as a major street. If constructed, the major road improvements would require widening at a later time to accommodate the projected 1990 traffic.

4.3.4 Realign and Widen Telegraph Canyon Road to Accommodate Prime Arterial Improvements

The implementation of this alternative will commit approximately 58.0 acres of Canyon floor for road purposes. This alternative will utilize approximately 28.7 acres of the existing road right of way/easement. As discussed in Section 4.3.3, the total existing right of way/easements amount to about 31.8 acres. Portions of the any surplus area may be used as exchange property to lower the cost of right of way acquisition.

The realignment and widening of Telegraph Canyon Road will necessitate the grading of approximately 265,000 cubic yards of soil. The maximum height of cut slopes will be about 50 feet and that of fill about 40 feet. Maximum inclination will be 2 units horizontal to 1 unit vertical. All man-made slopes will be landscaped in accordance with the City's Grading Ordinance. This alternative will also require the landscaping of a 16 foot median and two 3 1/2 foot parkways. Telegraph Canyon Road is designated as a Scenic Route in the Scenic Highway Element of the City's General Plan.

The alignment proposed for this alternative is the same as that for alternate 4.3.3. The only difference will be the width of the right of way. Prime arterial improvements require 126 feet of right of way as contrasted to 96 feet required for major road improvements. If this alternative is implemented, the resulting one way peak hour Maximum Service Volume is calculated to be 3,364 at a level of Service "C". As can be seen in Figure 19, only 1 of the 17 stretches within the project limits will have a peak hour flow greater than the flow which this alternative can accommodate at a "C" level of service. The design speed is 55 m.p.h. The estimated cost of implementing this alternative will be approximately $186.32 per linear foot.

The construction of these improvements will at various points infringe upon and/or cross the existing drainage channel, making it necessary to construct drainage facilities. These improvements should include adequate capacity and slope protection

in order to guard the road improvements against flood damage. Unless these drainage improvements are constructed, Telegraph Canyon Road will be subject to flooding and its use as a major evacuation route impaired.

All the existing improvements constructed with recent developments along Telegraph Canyon will be utilized and their alignment unchanged. The existence of these improvements and topographic constraints virtually predetermines the location of Telegraph Canyon Road. The alignment, therefore, cannot be drastically changed if extensive redesign of these developments is to be avoided. The City has now approved several new developments fronting along Telegraph Canyon Road and has imposed conditions to be followed for the construction of street improvements which are in consonance with this alternative. The significant advantages of this proposed alignment are that it facilitates stage construction, reduces the height of cut slopes on the sides of the road opposite the drainage flow, and that it generally equalizes the amount of right-of-way required from property owners on either side of the road.

The implementation of this alternative will provide adequate ingress/egress facilities to accommodate General Plan type growth in Telegraph Canyon and nearby territories. As discussed in previous sections, the area now has adequate sewer, water and all other public utilities necessary for urbanization.

4.4 Channel Alternatives

4.4.1 Construct Adequate Channel Crossings Under the Road and Necessary Slope Protection

The implementation of this alternative will assure that Telegraph Canyon Road is not flooded in case of a major storm. It will be designed so that road improvements are not subject to erosion. The construction cost of upgrading the road crossings is estimated to be about $266,000. That of providing slope protection is estimated to be $13.00 per linear foot. Total cost can be estimated to be about $520,000.

If this alternative is not implemented, the road improvements will be flooded unless the road is constructed upon an embankment. Construction of this embankment would require importation of all fill soil, or excavation within the Canyon floor. The result in either case will be contrary to the General Plan and its Elements which intend to create a scenic route and to enhance the scenic quality of the Canyon. The construction of the road upon an embankment will make all the existing improvements obsolete and their reconstruction mandatory.

The implementation of this alternative as minimal flood protection will be necessary if Telegraph Canyon Road is improved and widened as proposed in any one of the 4 alternatives discussed in Section 4.3. The widening and/or realignment of the road will require that portions of the existing drainage creek/channel be relocated. However, due to the amount of flow

expected from a 50-year frequency storm, special consideration must be given to transitioning between areas of slope protection and areas of natural or relocated drainage courses.

The proposed drainage improvements will consist of enlarging the capacity of the existing channel crossings within the project limits. The first crossing (located about 1800' westerly of Buena Vista Way) will require the extension of the existing pipes (required due to increased road width) and adding 2 more 60-inch barrels. The second crossing (located about 200 feet westerly of the project's easterly terminus) is a 10 foot wide by 10 foot high reinforced concrete box. The road widening will necessitate only its extension, since it already has adequate capacity. Specially designed entrances and outlets may also be required for both crossings. The extent and design of slope protection will vary from location to location, depending upon the degree of encroachment of the road into the drainage path. At some locations only rip-rapping of the slopes may be necessary, while at many locations the construction of a drainage channel may be warranted.

The implementation of this alternative by itself would not be growth inducing. However, its construction will be necessary to provide protection to a roadway which will be growth inducing. Its construction, in conjunction with provision of road improvements and the formal designation of open space areas depicted on the Open Space Element will drastically reduce the amount of property within Telegraph Canyon which is available for development.

4.4.2 Construct a Channel and/or Conduit Throughout the Project's Limit

The implementation of this alternative will commit a maximum of 50.4 acres of land to drainage purposes. The necessity of this project is created by the construction of road improvements upon Telegraph Canyon Road. The road improvements will abut or cross the natural drainage throughout the majority of the project's limits making the construction of a channel necessary. If a channel is not constructed, the road improvements will be subject to flooding in case of a major storm. In this circumstance, Telegraph Canyon Road would not serve as a major evacuation route as designated in the City's Safety Element of the General Plan.

The construction of a drainage channel as a complement to one of the 4 alternatives discussed in Section 4.3 for the widening of Telegraph Canyon Road would effectively eliminate the use of the Canyon's bottom for existing residential, commercial and farming purposes. Currently, there are 10 houses or sheds located within the Canyon's flood plain which would be removed in order to construct a drainage channel. The majority of these structures (8) are located in the vicinity of Buena Vista Way and are used as transient farm houses by the Otay Ranch. The removal of these structures cannot be avoided without extensive intrusion of the channel into the Canyon slopes.

The alignment for a drainage channel is essentially predetermined and generally follows the course of the natural water flow. The channel alignment is proposed to parallel the chosen road alignment alternative. Among the factors studied by City staff and consultants to determine the type or types of channel to be used in Telegraph Canyon are: project cost, the quantity of storm flow, erosion characteristics, variation of type and extent of existing and proposed land development adjacent to the selected route alignment, exposure to public view, maintenance costs, extent of man-made slopes created, land area required, a variety of environmental concerns, etc.

These factors make the selection of one particular channel configuration for the entire route difficult. If the City does not participate in the funding or construction, it may not be reasonable to totally restrict the options of the builder/developer provided that other public facilities are protected and the goals of the City are implemented. Several alternatives for channel configuration(s) are possible. These alternatives can be grouped into three major categories: closed underground conduits, "natural" open channels, and lined open channels. Each of these major categories includes three alternative configurations with the result that a total of nine alternatives have been studied. These alternatives are discussed in some detail in the following subsections. A typical cross-section of each is shown in Figures 20 through 22. Table No. 12 shows a cost comparison for each of the alternatives. Table No. 13 shows the area required for each channel alternative.

4.4.2(a) Closed Underground Conduits (C-1, C-2, C-3)

This category includes three types of structures: multi-plate super span, multi-pipe, and reinforced concrete box. (See Figure No. 20, alternatives C-1, C-2 and C-3.) The principal advantages offered by these structures are that they require a limited area for their construction, they are not noticeable to a passerby and they do not prevent use of the land for other purposes (such as landscaping and parking). The principal disadvantage is their cost which is estimated to range between $300 and $781 per linear foot. The construction of underground conduits will allow a limited use of the ground surface. This use would be restricted and building structures would not normally be permitted thereon. In general, right of way acquisitions would be in the fee title so as to minimize acquisition costs.

Use of an underground conduit impacts the flow characteristics of a drainage system both upstream and downstream of the conduit. The design of the conduit must reflect this impact. Special inlet and outlet structures beyond the limits of the conduit are frequently required in order to preserve the capacity potential of the system. Topographic constraints can also be a significant factor in determining the geometrics and number of conduits. Maintenance costs for these structures

TABLE 12

CHANNEL ALTERNATIVES COST SUMMARY

	ALTERNATE	COSTS* CONST.	MAINT.	SUB-TOTAL	R/W	TOTAL
Natural Open Channels	Grassy Lining (N-1)	$ 47.91	63.25	111.16	45.50	156.66
	Heavy Landscaping (N-2)	$ 36.27	15.07	51.34	50.00	101.34
	Rip-Rap-One side (N-3)	$ 62.93	15.71	78.64	48.00	126.64
Lined Open Channels	With Low Flow Channel (L-1)	$ 56.53	24.09	80.62	47.50	128.12
	Gunite Lined (L-2)	$ 71.86	7.85	79.71	28.50	108.21
	Rectangular Channel (L-3)	$243.46	9.82	253.28	15.00	268.28
Underground Conduits	Multi-Plat Super Span (C-1)	$284.22	2.95	287.17	13.00	300.17
	Multi-Pipe (C-2)	$480.00	8.82	488.82	26.50	515.32
	Reinforced Concrete Box (C-3)	$759.38	2.94	762.32	19.00	781.32

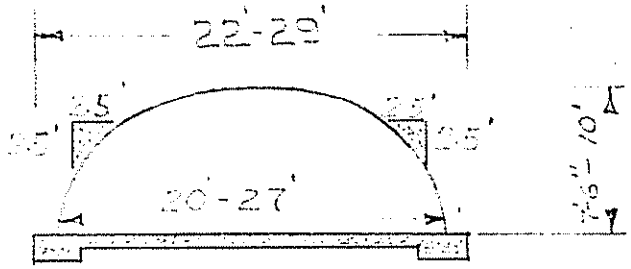
*Alternates are equivalent size; costs are per linear foot
R/W estimated at $0.50 per square foot.

TABLE 13

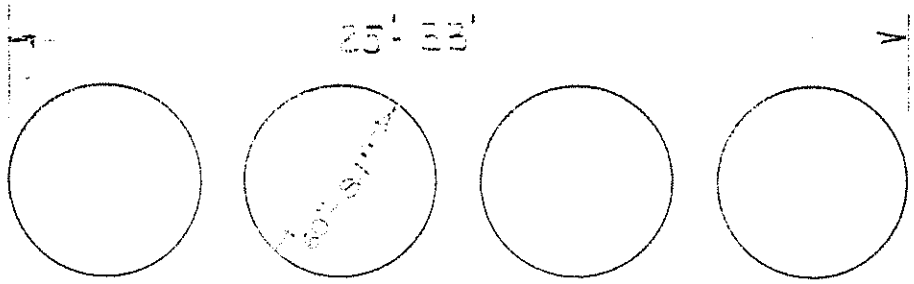
AREA REQUIRED FOR THE PROPOSED CHANNEL ALTERNATIVES

CHANNEL CATEGORY	ALTERNATE	AREA REQUIRED (ACRES) MIN	MAX
Natural Open	Grassy Lining (N-1)	10.1	13.3
	Heavy Landscaping (N-2)	11.5	15.1
	Rip-Rap-One Side (N-3)	8.7	10.5
Lined Open	With Low Flow Channel (L-1)	38.9	43.5
	Gunite Lined (L-2)	41.2	50.4
	Rectangular (L-3)	36.2	48.6
Underground Conduits	Multi-Plat Super Span (C-1)	38.9	45.8
	Multi-Pipe (C-2)	23.8	28.9
	Reinforced Concrete Box (C-3)	11.5	16.0

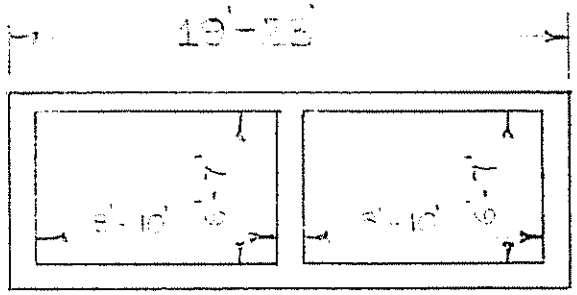
CLOSED UNDERGROUND CONDUITS



MULTI-PLATE SUPER SPAN
ALTERNATE C-1



MULTI-PIPE
ALTERNATE C-2



(8'-12" THICK WALLS)

REINFORCED CONCRETE BOX
ALTERNATE C-3

FIGURE NO. 20

may be lower than for open channels because of the absence of need for cosmetic maintenance operations, and because weed growth does not occur in the absence of sunlight.

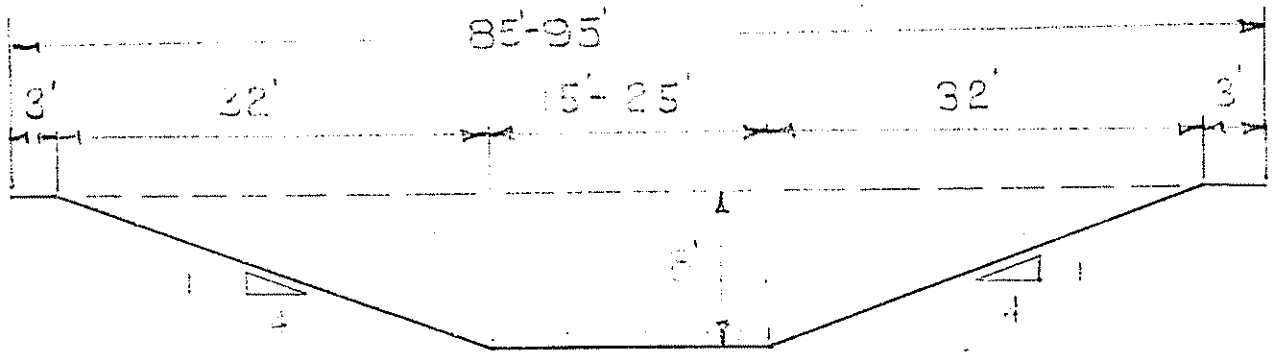
4.4.2(b) Natural Open Channels

Some favorable characteristics of the natural open channel are its potential to harmonize with the natural features of a site, hydraulic characteristics and construction and maintenance costs. Within the limits of the project, Telegraph Canyon is mostly natural and any construction undertaken should be designed to maintain and/or enhance that natural appearance. The City's Open Space, Conservation and Scenic Highways Elements of the General Plan in effect mandates that aesthetic impact be a primary consideration in design of the drainage system. Of the possible natural open channel configurations available the trapezoidal section is the most advantageous for use in Telegraph Canyon. This section will meet the goals of carrying the design flow, aesthetics, and low construction and maintenance costs while still not precluding the development of major adjacent land holdings. Three types of linings which would preserve the natural character of the canyon have been studied: grassy, heavily landscaped, and landscaped on one side only with rip-rap on the other. (See Figure No. 21, Alternatives N1, N2 & N3.) Although the width of any given channel section will vary due to hydraulic requirements, its depth will remain constant throughout the project's limits. The channel's top width could vary from 73 to 114 feet, while its bottom width could range from 15 to 52 feet depending on the alternate used. The depth of all the natural channel configurations is 8 feet. The side slopes are proposed to be 4 horizontal units to 1 vertical unit. The rip-rap slope, however, is proposed to be a 2 horizontal units to 1 vertical unit.

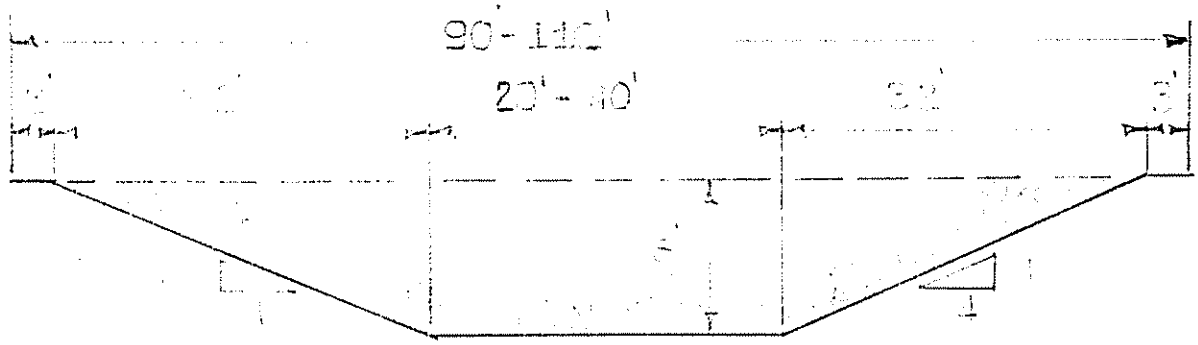
The grass lined channel would have a fairly wide (15 to 25 feet) bottom and a gradient of 0.6 percent. However, in order to carry the flows at an acceptable non-scouring velocity, this channel would include the construction of drop structures. These structures would average eight inches of height per hundred feet of channel.

The soils report (See Appendix "A") indicates that a grass lining would require irrigation both initially and on a continuing basis to develop a growth that would hold the banks and reduce scour of the bottom. Mowing could be on a regular basis, as in a park, or the grass left to grow high, prairie style, with only occasional cutting. The drop structures, however, would interfere with the mowing operations. This channel section has a low construction cost, but requires a relatively wide right of way. Its appearance would preserve the scenic quality of Telegraph Canyon and could be used as part of a trail system.

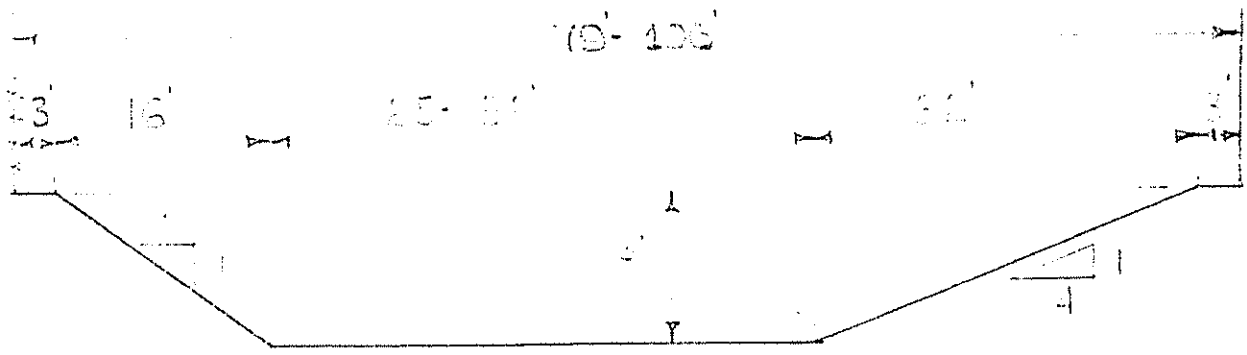
NATURAL OPEN CHANNELS



TRAPEZOIDAL CHANNEL WITH GRASSY LINING



TRAPEZOIDAL CHANNEL WITH HEAVY LANDSCAPING



TRAPEZOIDAL CHANNEL ON ONE SIDE

FIGURE NO. 21

The heavily landscaped channel would be similar in shape to the grass lined channel but with a wider bottom (20 to 40 feet). The extra width is required due to hydraulic factors since the higher and more lush growth creates more resistance to flows. This section would have low construction cost, but would require a wider right of way than the other natural channel options. The maintenance costs would not be as high as for a grassy channel ($15.07 versus $63.25) per linear foot). The planted material would have a somewhat different appearance than the natural vegetation in the area. When mature it should soften the visual impact of the graded channel. This alternative would result in the most natural appearance of all the options.

The trapezoidal channel with landscaping on one side slope and rip-rap on the other would have the effect of providing better protection to the slope, a reduced right of way requirement, and lower maintenance costs. However, initial construction cost would be increased. This section would have the greatest bottom width (25 to 52 feet) of the three natural channel alternatives, but would require the least right of way width. The channel is proposed to generally follow the existing canyon Floor as do the existing creek and adjacent road. The 2 unit horizontal to 1 unit vertical rip-rapped slope is proposed to be provided along the "road" side of the channel, thus providing greater protection to the road and yet remaining hidden from view to travelers on Telegraph Canyon Road.

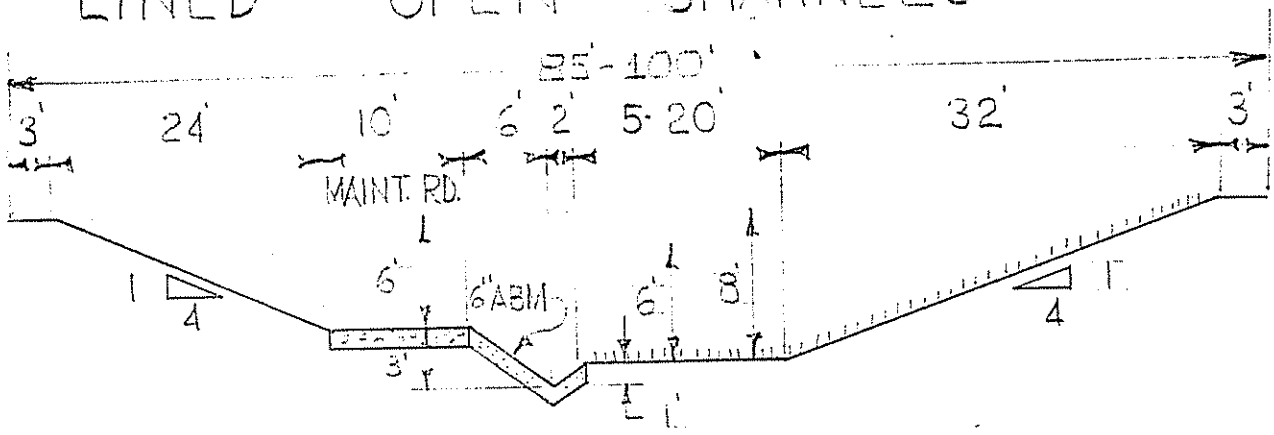
4.4.2(c) Lined Open Channels

This type of channel offers the advantage of reducing right of way acquisition and maintenance costs. However, its initial construction cost is considerably higher than those discussed for natural open channels. Two trapezoidal and one rectangular configurations are alternatively suggested for use in Telegraph Canyon. One of the trapezoidal alternatives is proposed to be fully gunite lined while the other would have only a gunited low flow channel and grassy lining on the remainder. The rectangular alternative would be fully lined in concrete. See Figure No. 22, Alternatives L1, L2 and L3.

The gunite trapezoidal channel (L2) would have a bottom width ranging from 5 to 16 feet while its top width would range from 37 to 48 feet. It would be 8 feet in depth with side slopes at 2 horizontal units to 1 vertical unit. Additional right of way would be required to accommodate a 10 foot unpaved maintenance road. Both sides of the channel would have a 6 foot chain link fence. To minimize visual impact, the gunite channel could be screened with landscaping.

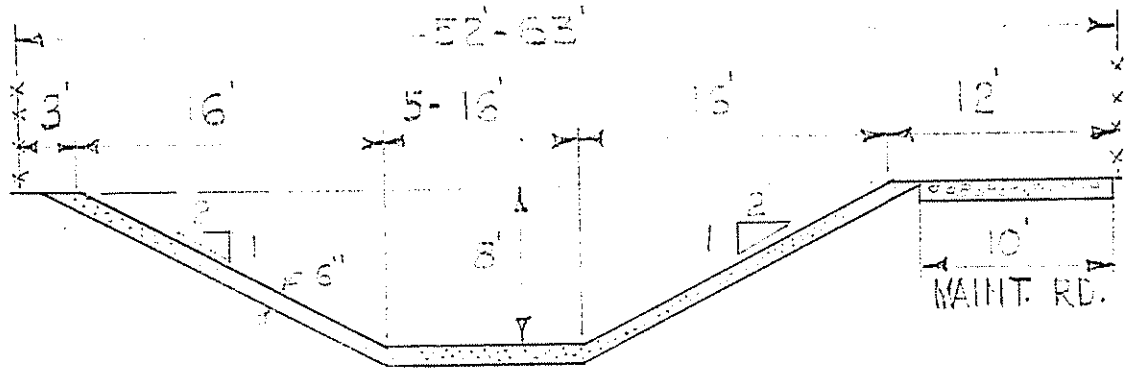
The trapezoidal channel (L1) with a low flow gunite bottom and grassy lining is similar to the grassy lined alternative

LINED OPEN CHANNELS



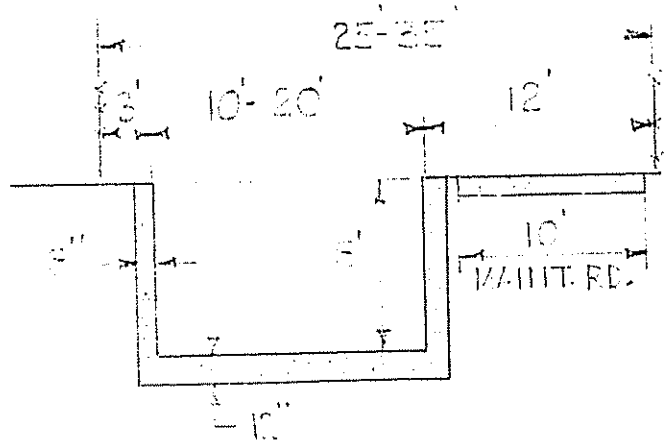
TRAPEZOIDAL CHANNEL- WITH MAINTENANCE ROAD, LOW FLOW CHANNEL AND GRASSY LINING

ALTERNATE L-1



TRAPEZOIDAL CHANNEL WITH [illegible] LINING

ALTERNATE - L-2



RECTANGULAR CONCRETE CHANNEL

ALTERNATE L-3

FIGURE NO. 22

discussed in the previous section. However, it would differ in the addition of a maintenance road and the low flow channel. The width of the channel would allow construction of a maintenance road adjacent to the low flow channel. This road would make it unnecessary for maintenance vehicles to park in or work from the road right of way. The low flow channel would reduce scour during the time of a low flow (especially from lawn sprinkling and other residential sources).

The low flow channel would not be readily apparent from Telegraph Canyon Road and the overall appearance of this alternative to passing drivers would be similar to the grassy lined channel, thus presenting a fairly natural appearance. Construction cost would be lower than the gunite (L2) alternative ($56.53 versus $71.86 per linear foot). However, maintenance costs would be higher ($24.09 versus $7.85 per linear foot).

The bottom width of this alternative (L1) would range from 23 to 38 feet (including a 10 foot concrete maintenance road). Its top width would range from 79 to 94 feet and it would be 9 feet in depth with side slopes of 4 horizontal units to 1 vertical unit.

The rectangular concrete channel (L3) requires considerably less right of way than do the previous 2 alternatives (25 to 35 feet). The channel would have a width ranging from 10 to 20 feet and an 8 foot depth. It would also require the construction of a 10 foot wide maintenance road and chain link fences. Construction and maintenance costs for this alternative are estimated to be $243.46 and $9.82 per linear foot respectively.

4.5 Channel and Road Alternatives

4.5.1 Construct Road Only, No Drainage Improvements

The construction of road improvements under one of the feasible alternatives discussed in Section 4.3 without flood control improvements would result in the flooding of portions of the road in case of a major flood. This would prohibit the use of Telegraph Canyon Road as an evacuation route and could result in loss of property or life. Such an alternative must be considered impractical and unacceptable. The cost of constructing the road improvements would be in part wasted if the road were to be washed out and additional funds were to be required to reconstruct it after each flood.

4.5.2 Construct Road Improvements and Adequate Channel Crossings and Slope Protection

The implementation of this alternative would commit approximately 25 acres of land for drainage purposes. It would result in the grading of 269,000 cubic yards of Telegraph

Canyon's creek bottom. The construction of rock slope protection would have a cost of approximately $13.00 per linear foot. It would safeguard the road improvements (if constructed) from flooding only if the road were placed upon an embankment along the Canyon's bottom.

Under this concept flood waters would be confined in a channel only where roadway construction blocked the natural waterway sufficient to severely impede the flow.

The construction of the roadway would, at many locations, require the construction of drainage channel segments with appropriate upstream and downstream transitions. The construction of spot improvements would speed the flow at some locations so as to require construction of energy dissipators. The appearance of these drainage improvements and road embankment would require special considerations so that the scenic quality of Telegraph Canyon could be maintained.

The implementation of this alternative would permit the use of Telegraph Canyon Road as a major evacuation route if the road were to be placed upon an embankment. However, property adjacent to the road and within the Canyon's flood plain would be inundated in case of a major flood. Development of the flood plain area could be controlled through flood plain regulations previously enacted by the City.

4.5.3 Construct Full Drainage Improvements in Conjunction with Road Improvements.

The implementation of this alternative would require that one of the alternatives discussed in Section 4.3 and that one or more of the alternatives discussed in Section 4.4 are chosen for construction.

The construction of a drainage channel would safeguard Telegraph Canyon Road and property within the Canyon's flood plain from flooding in case of a major storm. This construction would result in the utilization of a maximum of 50.4 acres of the Canyon bottom for drainage and a maximum of 58.0 acres for street improvements. The remaining canyon bottom areas would be reduced to the point that little more development could be accommodated. The removal of 10 houses or sheds would be required to accommodate these street and channel improvements. These houses or sheds are now in the Canyon's flood plain and therefore are currently subject to flooding.

The construction of these improvements under one contract is highly improbable since the City does not have the necessary funds (See Section 4.7). It is far more probable that the improvement will occur on a piecemeal basis and will be varied within reasonable limits to meet the needs and desires of the various developers of property along the length of the project.

Retention of the scenic quality of Telegraph Canyon would be made somewhat more difficult under piecemeal development.

Realization of the concepts set forth in the Scenic Highway and Open Space Elements of the General Plan under such circumstances will require a noteworthy cooperative spirit between the City and the developers.

4.6 Selection and Description of Project for Detailed Impact Analysis.

Of the possible road alternatives discussed in Section 4.3, the only alternative which would accommodate the anticipated 1990 traffic on Telegraph Canyon Road is that of prime arterial improvements on a revised alignment. To guard these improvements from flooding and to assure the road's use as a major evacuation route, a drainage channel must be constructed along the road. The drainage channel configuration, however, will have to be designed to meet site requirements. That is, in some places topographic constraints, reduced right of way availability or intensity of development may require the construction of a specific configuration. The selection of the channel configuration(s) should also be based on an economic consideration. Of those channel configurations described in Section 4.4.2 of this report, the gunite lined (L2) heavily landscaped (N2) alternatives appear to offer the greatest applicability.

The construction of a heavily landscaped channel has two other benefits that should be noted. First, a heavily landscaped channel should enhance the scenic value of the Canyon. Second (and most importantly) the heavily landscaped channel will, because of its hydraulic characteristics, allow less runoff to reach downstream areas than the natural channel will.

The use of these alternatives in combination as the proposed project is assumed hereafter in discussion of possible environmental impacts and possible mitigation measures.

4.7 Economics of Project Implementation

The funding of this project could be accomplished in the following way:

1) City funded - Gas tax and general funds

2) Use of Federal Aid Urban Funds (Partial funding)

3) Formation of a 1911 Act Assessment District

4) Subdivision Requirement (piecemeal)

5) Public or private funding subject to reimbursement.

The project could be constructed either on a piecemeal basis, in phases, or as one massive project. Overall cost would be highest under the piecemeal basis and lowest under the one project basis. Availability of the various types of funding is dependent upon

sponsorship, timing, size and other factors as related to the project. Because these factors are not now known, it is not possible to predict what form of financing will be used.

The construction cost of road and channel improvements through the project limits is estimated to be approximately $5,100,000 using November 1975 price levels ($1,392,000 for the channel and $3,708,000 for the road improvements). If the City of Chula Vista was to directly undertake and fund this project two sources of funds could be utilized: gas tax and general funds. These funds are distributed and allocated through the City's six-year Capital Improvement Program.

Inasmuch as the construction of other projects would probably be necessary during any given year, the Telegraph Canyon project would necessarily be phased over several years or postponed until sufficient funds were available for the total project. No attempt has been made to separate this improvement into individual phases.

FAU Funds could be utilized if allocated to fund up to 82% of the cost of the roadway portion of this project. The remaining portion would be paid by the City. Application forms requesting this funding have been submitted to the City/County Thoroughfare Committee. Approval is unlikely unless total available funds for the program are significatly increased.

The formation of a 1911 Act Improvement District could be initiated either by the City Council or by a petition from the involved property owners. Determination of the benefit derived and the equitable spread of costs are the more difficult aspects of the assessment district method of financing. Those difficulties are compounded when assessing a mixture of undeveloped and developed land. The cooperation and support of a majority of landowners in the benefitted area is important to the success of an assessment district. Lacking such support the City Council could be forced into a politically unpopular override of a majority protest. At this point in time insufficient information is available to accurately project the likelihood of public support for an assessment district in the subject area.

The construction of this project is believed to most likely occur on a piece-meal basis with developers of property adjacent to the road installing the drainage and road improvements concurrent with subdivision development. This method has been pursued by the City with previous developers of areas within Telegraph Canyon. The City contribution has been limited to funding the median, street lights and some pavement.

Reimbursement of public or private funds advanced for construction of the whole or parts of the project appears possible under the provisions of the Subdivision Map Act providing that the City has enacted appropriate ordinances permitting such action.

5. THE PROBABLE IMPACT OF THE PROPOSED ACTION ON THE ENVIRONMENT

5.1 Geology/Soils

5.1.1 Impact

Although two branches of the La Nacion Fault are known to cross the proposed channel/road alignment, no impact from geological aspects of the site is expected. The La Nacion Fault is considered to be "potentially active," but it is not considered to be capable of producing sufficient force to be able to generate a major earthquake. Rupture or vertical displacement of the proposed facilities would be subject to repair regardless of the type of facilities provided or their alignment.

The soils report prepared for this project (see Appendix A) indicates that portions of the proposed channel alignment will be located within areas easily erodible. These portions generally lie west of Buena Vista Way. The bearing characteristics of the soils located within the proposed road alignment have not been determined yet. However, a road structural section can be designed for any type of soils that is expected to be found within the road right of way.

5.1.2 Mitigation

The drainage and road improvements are considered non-critical structures and no special design criteria are recommended. However, should other faults be discovered during the grading operations, the extent of their impact must be assessed at that time.

The selection of a channel with either a concrete or heavily landscaped lining is in itself a mitigation measure, which will assure that soil erosion is kept to a minimum. The possibility of reducing soil erosion within the heavily landscaped channel can further be achieved by implementing the landscape beautification and erosion control specifications proposed for this project and included in Appendix B of this report. These specifications have been specially formulated for Telegraph Canyon, and will be made a part of the project construction specifications.

5.1.3 Analysis of Significance

It appears that there will be no significant impacts related to geology/soils which result from the implementation of this project.

5.2 Ground Water

5.2.1 Impact

The implementation of the project is not expected to significantly change the recharge available to the aquifers beneath

the Canyon floor. At present, these aquifers are partially recharged by runoff that flows into the Canyon. The volume of such runoff, of course, is limited due to the small amount of precipitation in this region. Trickle flow runoff will increase with development of the area. The construction of the Channel and road will reduce the recharge area on the Canyon floor, though velocities in the Channel would be reduced by stabilizers and vegetation growth, perhaps offsetting the reduced area. Irrigation water necessary for growth of the landscaped channel lining could increase the amount of recharge.

Short range impacts upon ground water supply are insignificant because (a) the ground water is already of very low quality, (b) little or no use is being made of the existing ground water at present, and (c) the development of the Canyon following project implementation is expected to curtail demand for ground water even further.

Long range impacts are more severe because pollution of ground waters effectively precludes its use. Ground water quality will ultimately be upgraded through regional efforts now being developed by the Water Quality Control Board.

5.2.2 Mitigation

No special mitigation measures are proposed as part of this project.

5.2.3 Analysis of Significance

An initial minor loss of ground water percolation is considered to be of little impact. However, as development of the Canyon takes place, it is expected that the percolation rate will stabilize at a moderately higher rate. The long range impact should be of little significance. Impacts and possible mitigation measures should be addressed in EIR's for the spcific developments as they occur. At the present time, it is anticipated that this project by itself will have no significant effect on ground water quality or quantity.

5.3 Drainage

5.3.1 Impact

The implementation of this project will have a significant effect on drainage characteristics within the Canyon's boundaries. The construction of the drainage channel will moderately reduce the time required for runoff in the upstream portions to reach the downstream portions. In places, the downstream portions (west of I-805 to the bay) are not adequately improved to convey the anticipated runoff. Thus, the construction of the drainage channel could result in the more frequent flooding of these areas which are already heavily urbanized. However, if the project is not implemented, these areas will still be

subject to flooding since the existing waterway provides insufficient capacity for the existing upstream circumstances.

5.3.2 Mitigation

The utilization of heavy landscaping in the channel will reduce the velocity of flow in the channel and thereby increase time of concentration to nearly that which now exists. The City has enacted flood plain regulations which can be applied to these low areas to control development within the Canyon's flood hazard areas. In addition, at present the U.S. Corps of Engineers is studying alternative flood control measures that are appropriate for Telegraph Canyon basin west of I-805.

5.3.3 Analysis of Significance

The implementation of this project will protect all the land and public improvements located within the project area from flooding. At present, the majority of this area is unurbanized and requires little flood protection. However, the construction of the road improvements proposed by this project require the construction of an adjacent drainage channel.

The construction of the drainage channel would influence runoff conditions downstream from the project terminus to an extent that highly urbanized areas could be flooded. These areas, however, are located within the Canyon's flood plain and would be subject to flooding even if the Channel was not constructed.

Currently available studies present possible alternatives which could be implemented to remove the threat of flooding to these areas. With the construciton of this project and the implementation of one of the alternatives now proposed for the lower portion of the watercourse by the Corps of Engineers, Telegraph Canyon would be protected from flooding through most of its length.

5.4 Mineral Resources

5.4.1 Impact

The implementation of this project will result in the loss of bentonite, sand and gravel deposits located within Telegraph Canyon's flood plain. These deposits, however, are believed to be limited in quantity and quality, and therefore uneconomical for exploitation.

5.4.2 Mitigation

None

5.4.3 Analysis of Significance

There should be no significant impacts on mineral resources resulting from this project.

5.5 Land Form

5.5.1 Impact

The implementation of this alternative will result in the creation of several slopes throughout the extent of the project. These slopes will vary in height to a maximum of 50 feet. The Canyon's floor will be graded to accommodate the road and channel improvements. An estimated 385,000 cubic yards of soil will be moved in the grading operations, and will yield average depths of cut and fill in the order of 15 feet. The maximum depth of cut will be about 50 feet and for fill about 40 feet.

5.5.2 Mitigation

New slopes will be landscaped in accordance with the City's Grading Ordinance. Landscaping of the channel and the new slopes will render the land form changes less visible. Slopes are to be rounded in accordance with the grading ordinance.

5.5.3 Analysis of Significance

The grading required to construct the proposed project will have a significant impact on the Canyon's natural appearance. Almost the entire canyon floor will be graded to accommodate the proposed improvements. However, the proposed grading with landscaping will, for the most part, blend into the natural topography of the Canyon. The proposed landscaped lining of the channel and slopes, and the landscaped median and parkways along the road will generally enhance the Canyon's appearance. However, these measures will not altogether counter the land form changes of the Canyon.

5.6 Air Quality

5.6.1 Impact

The project itself will generate no air pollutants. Additional pollutants will, however result from vehicular traffic expected to utilize the project. Because of Federal Air Pollution standards being applied to automobiles, automotive air pollution should not be a long-term significant problem. Automotive exhause pollutants are normally quickly dispersed by a variety of atmospheric processes including wind. Concentration of pollutants is therefore highly variable.

If the anticipated motor vehicle activity for the year 1990 were to occur now (1976) with the project implemented, motor vehicle emissions would have an insignificant impact on the existing air quality conditions of the San Diego Air Basin. However, this incremental increase would be significant with regard to the Chula Vista contribution. Tables 14 and 15 show the results of this hypothetical situation. This calculation utilizes an average trip length of 4 miles (approximate length of project), and the average of the projected 1990 ADT's for the project length. Air quality impact assessments on quantitative estimates beyond 1980 have limited validity

TABLE NO. 14

ESTIMATED EMISSION FROM MOBILE SOURCES

(1990 TRAFFIC & 1976 EMISSION FACTORS)

Pollutant	Emission[1] Factor gm/mi	Usage Rate per vehicle miles/day	Trips	Total Metric Tons Day	Total Metric Tons Year
Carbon monoxide	44	4	30,650	5.3944	1968.96
Hydrocarbons	5.6	4	30,650	0.6866	250.61
Nitrogen Oxides (NO_x as NO_2)	4.8	4	30,650	0.5885	214.80
Particulates	0.58	4	30,650	0.0711	29.95
Oxides of Sulfur	0.20	4	30,650	0.0245	8.94

[1]ENVIRONMENTAL PROTECTION AGENCY, "Compilation of Air Pollutant Emission Factors", AP-42 (Revised April, 1973), p. 3.1.1-6.

TABLE NO. 15

TOTAL ESTIMATED INCREMENTAL INCREASE IN EMISSIONS DUE TO MOBILE SOURCES

(1990 TRAFFIC WITH 1976 EMISSION FACTORS)

Pollutant	San Diego Air Basin (Metric Tons) Day	Chula Vista Contribution to S.D. Air Basin	Proposed Project Mobile Sources only (Metric Tons) Day	Incremental Increase Relative to S.D.A.B. (%)	Incremental Increase in Chula Vista's Contribution to S.D.A.B. (%)
Carbon Monoxide	1155.95	57.24	5.3944	0.467	9.424
Organics (including Aldehydes & hydrocarbons)	314.80	15.58	0.6866	0.218	4.407
Nitrogen Oxides	227.89	11.30	0.5885	0.258	5.208
Particulates	97.61	4.79	0.0711	0.073	1.484
Oxides of Sulfur	33.20	1.62	0.0245	0.074	1.512
Totals	1829.45	90.53	6.7651	0.370	7.473

due to constantly changing air pollution control standards and enforcement plans, energy considerations and regional transit plans.

During construction periods, dust and other particulate matter will be introduced into the local atmosphere. The major contributor will be earthmoving and grading operations. A significant potential for localized dust exists because these operations may occur during portions of the year when meteorological conditions produce high winds.

Due to the nature of the project, it is believed that no effect on the air quality attributable to stationary sources will occur. However, if now vacant areas in the vicinity of Telegraph Canyon Road are urbanized, the air quality will be affected by the type of energy source used in residential and commercial buildings (i.e., natural gas or electric). These emission increases should be determined and described in Environmental documents prepared for each of such future development projects.

The pollutant contribution of motor vehicles is highly variable and is dependent upon a variety of factors. However, a prediction has been made of project-related concentrations of carbon monoxide for the prevailing meteorological conditions at the site (discussed in Section 3.6). The prediction follows a method described in "Air Pollution Considerations in Residential Planning Volume I: Manual" published by the U.S. Environmental Protection Agency, July 1974.

The results of this analysis show that the approximate incremental concentration of carbon monoxide in the vicinity of Telegraph Canyon Road (1990 traffic/1976 pollution factors) would be 2.92 mg/m^3. According to the manual, a concentration of 10 mg/m^3 or less is considered insignificant.

5.6.2 Mitigation

Measures that can be used to control mobile sources can be categorized into three general types:

1) Performance standards such as emission control on vehicles;

2) Optimization of operating conditions; and

3) Reduction in usage.

The last type includes reduction of vehicle miles traveled (VMT) and has some application to individual transportation projects. However, it applies mainly to shifting commuters to carpools and transit, or changing land-use patterns to reduce the need for transportation. These, of course, are measures that have to be implemented on a broad regional

and systems basis; they are beyond the scope of the decisions related to this project.

The measures which are associated with this project involve improving operating conditions. Motor vehicles emit more reactive hydrocarbons and carbon monoxide in congested traffic than in higher speed, smooth flowing conditions. Construction of prime arterial improvements along Telegraph Canyon Road could offer important emission reductions. However, construction of all road improvements probably will not be completed under one contract and this benefit may not, therefore, be fully obtained for an extended period of time.

During construction, the short-term impacts of dust from the grading activities could be alleviated by commonly available measures. These measures could include the effective watering of the grading site, sprinkling during loading operations and sprinkling of loaded materials.

5.6.3 Analysis of Significance

The estimated incremental increase in pollution due to mobile sources will have a significant impact on the Chula Vista Air Cell. It would be insignificant as it relates to the San Diego Air Basin. The calculations on which the incremental increase was determined assumed current (1976) emission factors and projected (1990) traffic. Since the project (if implemented) is anticipated to be constructed on a piecemeal basis, the incremental increase will also occur on a piecemeal basis. Furthermore, if automobile emissions are reduced as is intended by the State and Federal regulations now enacted, air pollution from automobiles will most probably drastically decrease by the year 1990. Such emission controls offer the potential of an actual decrease in pollution due to mobile sources.

5.7 Water Quality

5.7.1 Impact

The implementation of this project will have no meaningful impact on the quality of water in the underground basin.

5.7.2 Mitigation

The proposed project does not include mitigation alternatives for the quality of water.

5.7.3 Analysis of Significance

Water quality impacts that may be associated with the implementation of this project are considered to be of no significance.

5.8 Noise - Mobile Sources

5.8.1 Impact

An estimate of noise generated by the traffic associated with

the project was made using the Federal Highway Administration's "Noise Standards and Procedures for Implementing Section 109(i) Title 23 U.S.C.," Policy and Procedure Memorandum 90-2, February 9, 1973 (Program Report 117).

In developing the noise estimates, the following assumptions were used:

1. Truck traffic on Telegraph Canyon Road was 1 1/2 percent of the total traffic volume.

2. The road gradient is less than 2 percent.

3. The mean traffic speed on Telegraph Canyon Road was 50 mph for both automobiles and trucks.

4. The 1990 ADT for Telegraph Canyon Road at receptor site locations will be 34,450, 26,110 and 21,693 respectively.

5. Peak hourly traffic volume will be 10 percent of ADT.

6. The project will be completed by the year 1990.

Based on the above assumptions, noise levels generated by mobile sources were computed for sites similar to those where 1976 ambient levels were measured (Sec. 3.16, Figure 15).

The calculations were performed using the same normal distance (distance from the observer to the centerline of the nearest travel lane) used for the 1976 study.

Table No. 16 provides the results of these calculations. As noted, the noise levels are anticipated to lie between 71 and 73 dBA. The results can be interpreted to mean that the project will impact areas which were previously unaffected. This, of course, is true, since the road alignment will be shifted slightly in order to accommodate the prime arterial improvements. Although traffic flow will more than double by 1990, noise along the new transportation corridor will not be significantly increased from the existing levels. The existing levels are already above standard immediately adjacent to the road.

Calculated sound levels and measured levels are not quite equal; the procedure used in the calculations does not consider noise emitted from heavy construction activities in the vicinity of the receptor site. The calculations are based on peak hour traffic and average operating speeds assuming that this traffic will be predominant source of noise. Current vehicle noise regulations allow for large vehicles (over 6,000 pounds), such as the ones utilized for construction, to have an operational noise limit of 90 dBA measured at a distance of 50 feet. It can, therefore, be anticipated that noise levels during construction activities will be greater than the present ambient levels.

TABLE 16

IMPACT ASSESSMENT FOR THE TELEGRAPH CANYON ROAD WIDENING PROJECT

ALL LEVELS L_{10} dBA

SITE	LAND USE CATEGORY	AMBIENT MEASURED	1990 CORRECTED "BUILD"	1990 "BUILD" INCREASE	1990 "BUILD" COMPARISON WITH CRITERIA	1990 "NO BUILD" CORRECTED	1990 "NO BUILD" INCREASE	1990 "NO BUILD" COMPARISON WITH CRITERIA
1	B	61	72	+ 11	+ 2	65	+ 4	- 5
	E	-	52	-	- 3	45	-	- 10
2	B	77	74	- 3	+ 4	79	+ 2	+ 9
	E	-	51	-	- 1	59	-	+ 4
3	C	71	68	+ 3	- 7	73	+ 2	+ 3
	E	-	48	-	- 7	53	-	- 2

CRITERIA
LAND USE CATEGORY "B" = 70 dBA, L_{10} EXTERIOR
LAND USE CATEGORY "C" = 75 dBA, L_{10} EXTERIOR
LAND USE CATEGORY "E" = 55 dBA, L_{10} INTERIOR

5.8.2 Mitigation

Mitigation of the possible adverse effects of traffic noise will be accomplished in future developments through separation by distance, the use of shielding, landscaping, walls and building orientation.

Another factor that could work toward mitigation of noise impacts are California Vehicle Code provisions to reduce vehicle noise levels over a period of years. The degree of benefit derived from these provisions, however, will depend on the effectiveness of code enforcement. This benefit, of course, would occur regardless of project implementation.

Construction noise can be mitigated in a number of different ways:

1. Properly muffled equipment.

2. Restriction of construction activity to the hours between 8:00 a.m. and 4:30 p.m.

3. Selecting the quietest of alternate items of equipment (e.g., hydraulic instead of pneumatic).

4. Scheduling of equipment operations to maintain a low average noise level by coinciding noisiest operations with times of highest ambient levels and turning off idling equipment.

5.8.3 Analysis of Significance

Adverse noise impacts will accompany the proposed project both in terms of temporary construction noise and traffic noise.

The implementation of the proposed mitigation measures will not altogether eliminate the adverse effects. The construction of sound walls would not only obstruct views of Telegraph Canyon but would diminish its beauty. The planting of landscaping in the road's median and parkways is not anticipated to have a noticeable mitigation effect. Many studies have concluded that several hundred feet of vegetation are necessary to reduce sound by only a few decibels.

5.9 Noise - Stationary Sources

5.9.1 Impact

The existing and planned land uses for Telegraph Canyon do not allow for development which is generally associated with stationary noise generation (industrial, heavy commercial). Therefore, if the 1990 General Plan is implemented, stationary noise generation will not be significant within Telegraph Canyon.

5.9.2 Mitigation Measures

Implementation of the 1990 General Plan.

5.9.3 Analysis of Significance

None

5.10 Biology

5.10.1 Impact

The direct and indirect impacts of this project on the native flora and fauna can be expected to be substantial.

The project will remove approximately 94.1 acres of natural vegetation. This will reduce the natural habitat area for those species which require a coastal scrub type of ground cover, essentially the reptilian and mammalian species present. The proposed landscaping of the channel and road median and parkways will also contribute to the manmade characteristics of the project area. Species of plants which could be affected by this project and their approximate numbers are shown on Table No. 17.

The grading and construction taking place on the Canyon's floor will drive the species inhabiting the area to adjoining undisturbed areas. Those species capable of cohabitating with man may return following the establishment of the landscaping. Due to the reduction in range, predatory species will experience greater competition and thus a reduction in species count. Some resident songbirds (mockingbirds, California Thresher and sparrows) can exist and even flourish around human habitations, provided they have sufficient suitable habitat for feeding and nesting. Some other birds (such as Bushtits, Wrentits and Nighthawks) probably need certain minimal, requisite habitats in order to survive. Mammals, lacking the aerial mobility of birds, are generally less successful at adapting to radical changes in their habitat. However, many rodents (Brush rabbits, ground squirrels, woodrats and deer mice) are able to maintain themselves in the vicinity of human habitations. Larger mammals probably need corridors of contiguous habitat to migrate to other suitable habitats.

5.10.2 Mitigation

The proposed landscaping throughout the length of the project is expected to be of significant mitigational value. It will provide compensatory nesting sites and serve to some extent to reduce fire hazards. Those species capable of cohabitating with man may return following the establishment of the landscaping.

TABLE NO. 17

SUMMARY OF AFFECTED FLORA

Species	Approximate Number
Ash Tree	1
Beaver Tail Cactus	2
Bottle Brush	1
Brazilian Pepper	2
California Fan Palm	1
California Pepper	130
Canary Island Palm	3
Caper	+++
Cholla Cactus	25
Elderberry	12+
Elm	3
Eucalyptus	80
Goat Nut	30
Indian Tree Tabacco	100+
Italian Stone Pine	2
Italian Cypress	10+
Yucca	8+
Allepo Pine	1
Lemonade Berry	225+
Lemon Tree	2
Locoweed	15+
Loquat	4
Mexican Fan Palm	7
Monterrey Pine	2
Myraporum	1
Oleander	12
Olive	25
Orange	2
Peach	3
Plum	1
Rose Bushes	5+
Sage	+++
Silk Oak	1
Torrey Pine	1
Tree of Heaven	3

+++=Amount undetermined, but large quantities encountered.

5.10.3 Analysis of Significance

The impact of this project on the native flora and fauna of Telegraph Canyon is anticipated to be of significance both during and after construction. The amount of landscaping proposed with this project can be expected to have some mitigating effects. However, since a strong potential for growth inducement is associated with project implementation, the greater impact to the Canyon's biology may be expected to occur after its construction. The impact of development on food chains bears a close relationship to the number and species of flora and fauna disturbed. Thus the more development there is within Telegraph Canyon, the more the food chains will be disturbed.

5.11 Archaeology

5.11.1 Impact

An archaeological survey of a 200 foot wide corridor centered on the proposed roadway centerline was conducted to ascertain direct and indirect impacts which may result from the implementation of this project. Results of the field survey were positive: two archaeological sites may be directly or indirectly impacted by the project. Both of these sites were included among five previously discovered sites discussed in the El Rancho del Rey EIR as WS 76-3 and WS 76-2. These sites have since been recorded by the San Diego Museum of Man as W-959 and W-958 respectively (See Figure No. 23).

Site W-959 is located within the proposed right of way and is considered to be a Minor/Moderate Site as defined in Table 6, Section 3.17. It contains a relatively high number of artifacts consisting mainly of food-processing implements. (A small plano-convex scraper was removed from the site for further analysis, Figure 24.) These implements appear to have been seriously disturbed by land form alteration and other human activity. There exists the possibility that this site may posses depth although no field tests were conducted to verify this. If the site does possess depth, the importance of the site would be increased. However, as a result of disruption, it is possible that only previous cultural build-up was removed by recent blading.

Site W-958 is considered to be a site of Moderate importance as defined in Table 6, Section 3.17. It is located approximately 250 feet north of the proposed road alignment and should not be directly affected by construction activities unless construction equipment or materials are stored or moved through this area.

The complete Archaeological Survey Report prepared for this project is included as Appendix B of this document.

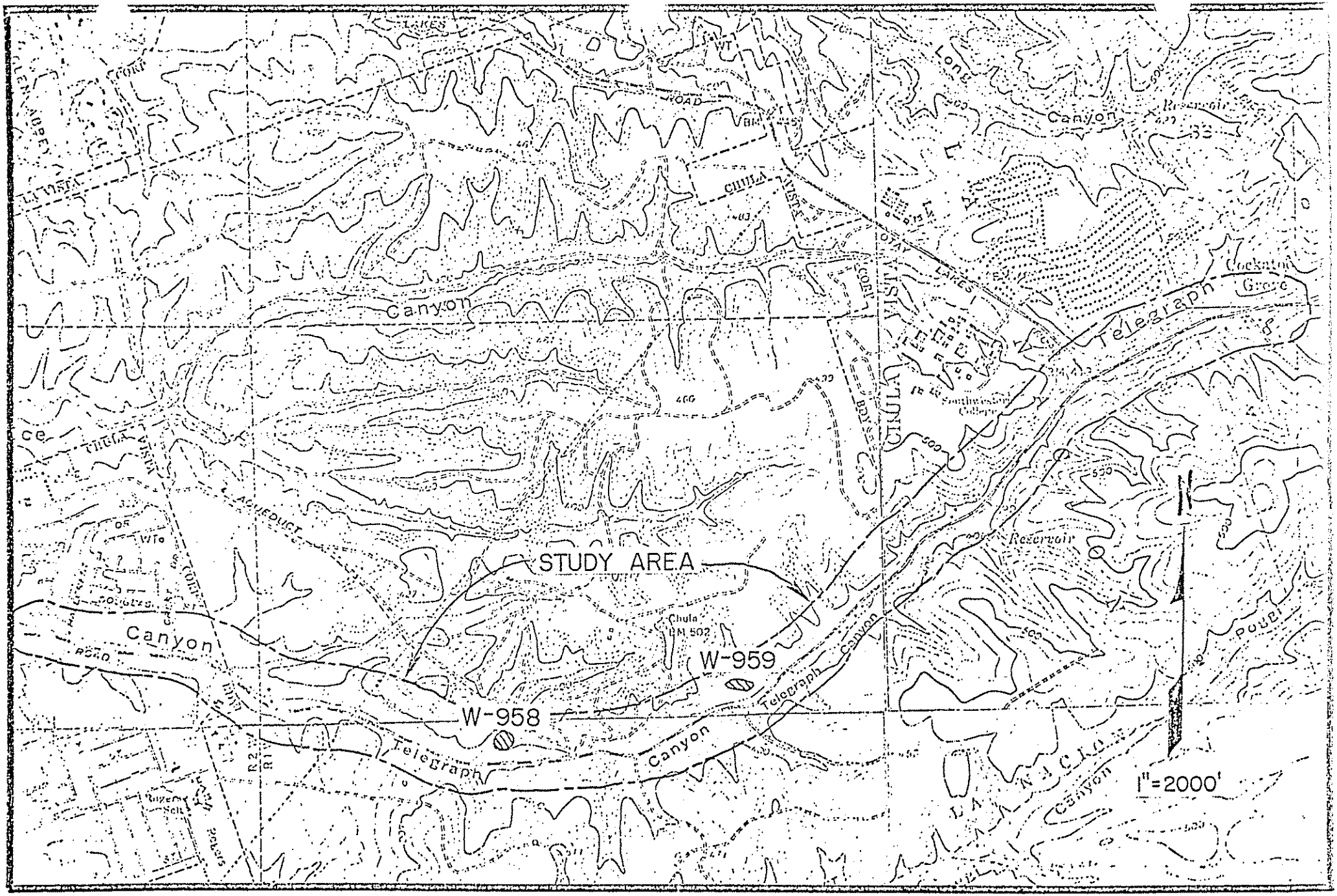
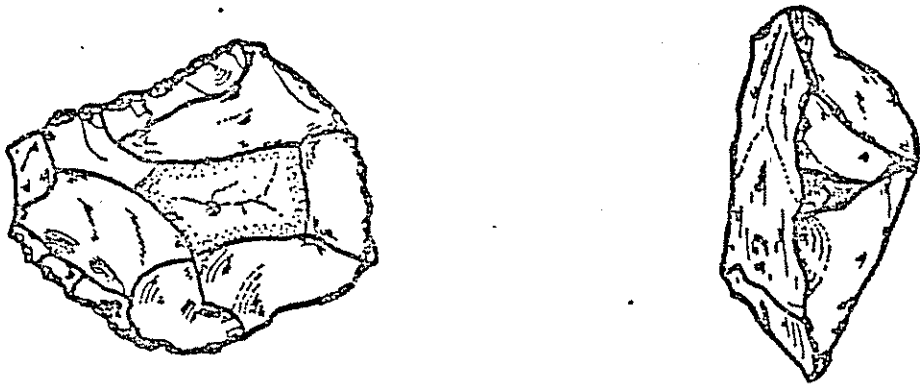
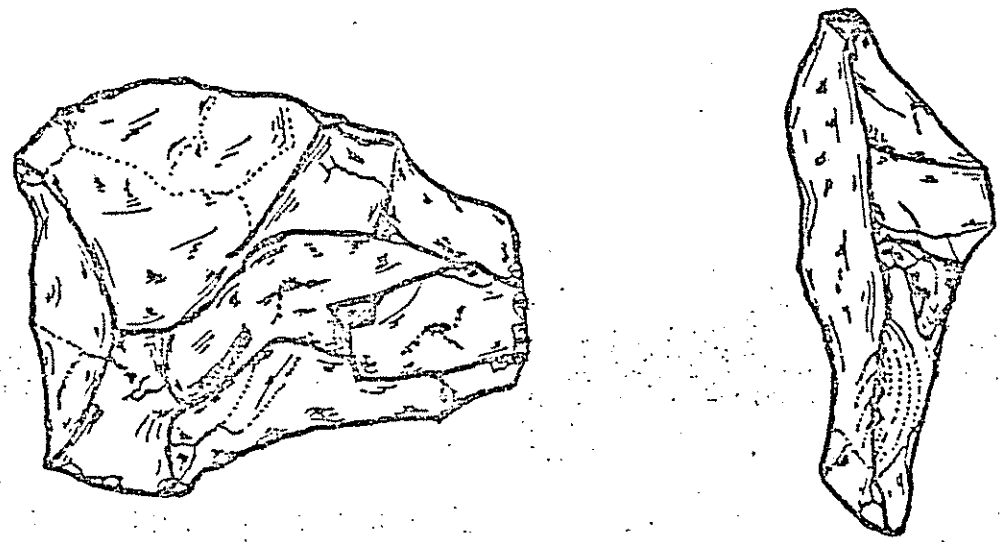


Figure 23 Archaeological Study Area and Previously Recorded Sites

A. Plano-Convex Scraper (WS-76-3)



B. Irregular Flake Scraper (WS-76-4)



Note: All sketches are to scale.

Figure 24 Archaeological Artifacts

5.11.2 Mitigation

Site W-958 - It is suggested that this site be subjected to a minor field investigation consisting of a micromapping and surface collection of all cultural debris, an analysis of the recovered materials, at least one radiometric dating (C^{14}) for the shellfish remains and the preparation of a complete site report. A thorough study of this site in combination with others in the area could provide a great deal of information about the settlement patterns of native peoples of the area. During construction periods, specific instruction should be provided to work crews to ensure that heavy equipment or storage materials are not moved through or upon the site. Avoidance of the general area of the archaeological site will ensure that valuable archaeological resources are not damaged nor impaired by the proposed project.

Site W-959 - The research potential for this site is dependent upon the degree of previous disruption and the presence of any depth. Therefore, it is suggested that a series of holes be excavated to investigate the possibility of midden depth. If the posthole testing indicates significant depth, further field investigation including a test excavation may be deemed necessary.

If no depth is indicated, all surface artifacts should be collected, analyzed and catalogued. A thorough archaeological report should be completed to include: (1) A detailed site description, (2) Placement of recovered data into a usable format, and (3) A synthesis of this site into a broad regional context.

5.11.3 Analysis of Significance

Failure to act upon the suggestions and recommendations for mitigating the loss or destruction of the archaeological sites would lead to the destruction or impairment of potentially valuable archaeoligical resources and data. Since, by its very nature, archaeological data is non-renewable, such a loss or impairment could cause serious gaps in the prehistoric record of the Chula Vista/South San Diego County area.

5.12 Historical and Cultural Sites

5.12.1 Impact

Given the lack of historial resources within the project limits, the impact of the proposed project from a historical perspective is non-existent.

The project will, however, enhance the accessibility by City residents to Southwestern College and to its cultural activities.

5.12.2 Mitigation

The lack of historical resources precludes the necessity for discussion of mitigation measures.

5.12.3 Analysis of Significance

Historical Significance - None

The project will have a significant and positive impact on the cultural activities of both City and non-City residents by making Southwestern College more readily accessible.

5.13 Land Uses

5.13.1 Impact

The implementation of the proposed project will result in the utilization of 58.0 acres for road purposes and 36.1 acres for drainage purposes. The total, 94.1 acres will all be located within the Telegraph Canyon bottom. The utilization of this land and the allowable land uses in the remaining Canyon floor will virtually eliminate the possibility of residential activities.

The City and County's 1990 General Plans indicate that low density development will occur to the north of Telegraph Canyon Road and that low density and agricultural uses will occur to the south. Current developments are in conformity with the allowable densities. However, the land use plan for the area northerly of Telegraph Canyon Road is currently being revised by the City. Present indications are that relatively low density residential development will be allowed on the higher areas overlooking the Canyon.

The construction of the proposed project will necessitate the removal of 10 houses/sheds located within the Canyon's floor. The majority of these structures (8) are located in the vicinity of Buena Vista Way and are used by transient farm workers employed by the Otay Ranch. These structures may be relocated or purchased. If the project is not implemented, these structures will be subject to flooding since they are located within the Canyon's flood plain.

5.13.2 Mitigation

To implement the project, it is proposed that the existing houses/sheds be relocated and/or purchased.

The construction of the project will generally restrict the land uses within the Canyon's floor to recreation associated activities. The Open Space Element of the General Plan will be incrementally implemented through the installation of landscaped channel,

slopes, medians and parkways. The construction of the drainage channel will protect the bulk of Telegraph Canyon east of I-805 from flooding hazards.

5.13.3 Analysis of Significance

The construction of the drainage and road improvements together with the land uses depicted in the General Plan and its elements will virtually preclude urbanization of the Canyon bottom. The lowered densities proposed on the Canyon's north slope and ridge could yield more open space which, combined with the project's proposed landscaping, will enhance the scenic quality of Telegraph Canyon.

5.14 Aesthetics

5.14.1 Impact

The construction of this project will alter the natural appearance of the Telegraph Canyon creek bottom. It will create slopes and replace most of the Canyon's natural floor with a paved road and trapezoidal drainage channel. The remaining natural vegetation will be in contrast with the manmade landscaping proposed with this project.

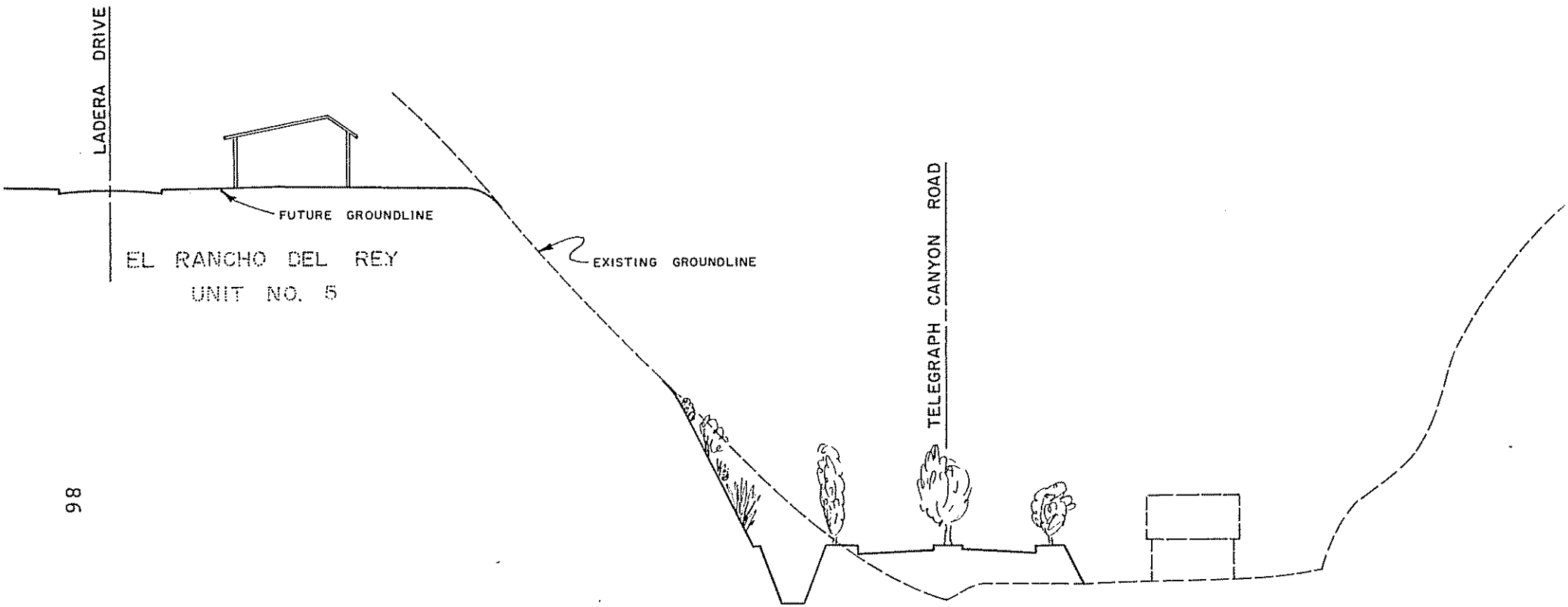
Figure 25 shows the project viewshed. Users of the road and any future adjoining recreational facilities will view the surrounding landscaping. Residents, pedestrians and motorists within the viewshed will view the project's features. The number of viewers from the project will be great compared to the number of viewers beyond the project. The former will have a constantly changing view experience of relatively short duration. By contract, remote viewers of the project can have an unchanging view of rather long duration. Views of and from the project will be in a constant state of change for several years. The project construction time is not yet known but it is anticipated to take several years. It is expected that construction of the project will be in conjunction with development of adjacent vacant land in the viewshed.

5.14.2 Mitigation

The only mitigation measure proposed with this project is that of installing landscaping throughout the project's limits (road median and parkway landscaping and channel lining).

5.14.3 Analysis of Significance

The implementation of the proposed project will play a major role in the erosion of the current aesthetic value of Telegraph Canyon. Because of this aesthetic value of the Canyon, Telegraph Canyon Road is designated as a Scenic Route in the Scenic



98

TYPICAL SIGHT LINE (AT ARCHWAY INN)

NO SCALE

FIGURE NO. 25

Highways Element of the General Plan. The construction of this project will replace most of the natural vegetation now covering the Canyon's bottom with a paved road and an adjoining drainage channel. The proposed landscaping of medians and parkways in this case could be counter productive to a certain extent, since the difference between the vegetation types will be readily discerned by viewers. Conversely, landscaping of the channel and slopes will be done with plant materials tolerant of the soil, weather and topographic conditions found in Telegraph Canyon. Over a long period of time natural vegetation should mix into the man-made channel landscaping. Planting within the channel and slope areas and grading techniques to be used are intended to preserve as much of the natural flavor of the Canyon's appearance as possible.

5.15 Population Trends

5.15.1 Impact

The implementation of this project could, in combination with other factors, significantly affect Chula Vista's population trends. In the past, the City has been growing at an average annual rate of 2.1% per year. Short-range continuation of this rate appears to be improbable due to the current national economic condition. In the long-range the project will facilitate major growth in the eastern portions of the City. The implementation of this project will require that several people now living within the proposed road/channel alignment be relocated.

5.15.2 Mitigation

Relocation assistance will be available for all families and individuals affected by the project. It can be anticipated that this relocation assistance will be in accordance with State and Federal relocation guidelines.

5.15.3 Analysis of Significance

The implementation of the proposed project could promulgate the previous population growth trends experienced in the City of Chula Vista. The current economic conditions are expected to have only a short-range impact upon the population growth rate. The construction of prime arterial improvements on the revised alignment will remove the only major physical obstacle left to the urbanization of Telegraph Canyon and adjacent areas. A more detailed analysis of possible population variations resulting from this project is presented in Section 9 of this report.

5.16 Community Resources

5.16.1 Impact

5.16.1(a) Schools

This project could have an impact on educational services in that development could be encouraged in the easterly part of the school districts. The schools serving this area are already overburdened and other new development will create additional demand for school services.

5.16.1(b) Parks and Recreation

The possible development of areas served by the proposed road improvement could place an additional burden on the City. The construction of the open drainage channel and the landscaping proposed would provide open space for visual relief and limited opportunities for active and passive recreation activities.

5.16.1(c) Fire Protection

The construction of the road improvements could facilitate the accessibility of fire protection equipment to Telegraph Canyon and adjacent areas. It will also reduce response time. However, the probabilities of a fire are increased when development occurs. This fact also applies for brush fires since the open areas are made accessible to an increased number of users.

5.16.1(d) Public Utilities

Due to the realignment of the road, the relocation of some of the existing underground utilities may be necessary. In general, the construction of the road could increase the demand on these utilities if development occurs, but the existing capacity of the utilities is anticipated to be sufficient to meet the increase of demand.

5.16.2 Mitigation

5.16.2 (a) Schools

None

5.16.2(b) Parks and Recreation

The construction of the landscaped open channel and the land uses allowed by the City's General Plan for the Canyon's slopes and ridges will increase the amount of open space reserves in Telegraph Canyon under conditions of ultimate development.

5.16.2(c) Fire Protection

The improvement of the road will facilitate access to fire fighting equipment to areas served by Telegraph Canyon Road.

5.16.2(d) Public Utilities

None

5.16.3 Analysis of Significance

5.16.3(a), (b), (c), and (d) - the implementation of this project, in itself, will have no significance on the Community Resources. As discussed in Section 4.7 of this report, City funds will probably not be utilized to construct the total of the proposed improvement. The availability of the road could be a determining factor in a developer's decision to urbanize the areas that it serves. The specific impact of

development on each of the Community Resources should be analyzed in the EIR's prepared for the respective developments.

6. PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

6.1 Unavoidable Effects

The changes resulting from the construction of the road and channel improvements will be significant. In most areas, this construction will modify the Canyon bottom and its habitats. The wildlife that lives in or visits these habitats will be largely displaced or destroyed.

The channelization could result in a minor reduction in ground water recharge.

The aesthetic appearance of the Canyon will change as a result of the project. Whether or not the change is adverse of beneficial will depend partly on the observer's taste and partly on the type of future development on the adjacent lands.

The existence of these improvements could be a decisive factor in the urbanization of vacant land served by Telegraph Canyon Road.

Any mineral resources existing in or adjacent to the Canyon bottom will be effectively lost.

The loss of about 94.1 acres of land to channel and road purposes cannot be avoided if the project is implemented.

The increase of ambient noise levels will accompany the project both in terms of temporary construction noise and traffic noise.

The increase of air pollution caused by increased traffic cannot be avoided.

The loss of some land that is presently open space will occur.

Some modifications of existing land forms will occur.

Despite the permanent adverse environmental effects which will be caused by this project, the benefits of improved traffic flow and flood protection favor the construction of the project. The existing traffic flow conditions (level of service "D" for one hour of the day) will continue to deteriorate if no action is taken.

6.2 Mitigation Measures Proposed to Minimize the Impacts

The construction of these improvements is not expected to occur under a continuous project and therefore the wildlife that visits or lives in this habitat can temporarily utilize the undisturbed portion of Telegraph Canyon. As new portions are constructed, the landscaping to be provided with the previous sections would have a chance to mature and thus replace the native habitat. Some forms

of wildlife will reestablish in the channel/slope landscaping.

No mitigation measures are proposed to either conserve or exploit the minor sand, gravel and bentonite deposits located in Telegraph Canyon.

The amount of land required to construct the drainage improvements could be reduced if underground conduits were utilized.

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

7.1 Flood Protection

Implementation of the project could provide a high degree of flood protection to the area for the life of the project. Because of this protection, the safety of all those who reside within, utilize or pass through the area at any time would be enhanced. Protection from floods would permit some urban use of Telegraph Canyon's flood plain.

7.2 Ground Water, Soil and Agriculture

The project and the possible development of adjacent areas would restrict future non-urban uses of the flood plain lands. Ground water supply and quality could diminish to a point where the water would be useless to man. High quality soil areas will be paved or covered with the drainage channel. If urbanization of adjacent lands occurs, existing agricultural uses will be displaced.

7.3 Open Space

The construction of road and drainage improvements will utilize most of the Canyon's flood plain. It is anticipated in the General Plan that the unused portions of the Canyon's bed will remain as open space preserve.

7.4 Pollution, Health and Safety

The recommended plan will not pose any long term threat to man's health and safety. If development of vacant land occurs, it will not be of the industrial type which is likely to significantly increase air pollution. However, the discharge of exhaust gases from automobiles and other vehicles brought into the area as a result of development may cause some short-term degradation in air quality until implementation of control measures is achieved. Short-term degradation of the air quality will also occur during construction periods. Noise levels will temporarily increase during construction periods and will be permanently increasing consistent with the amount of development in the area.

The short-term effects of noise and air pollution should be less important than the long-term effect of these factors. Traffic on the road will increase with time, thus causing the factors of noise

and air pollution to become more severe with the passage of time. Implementation of vehicle noise limitations now proposed by the State may significantly impede the growth of noise levels resulting from traffic flow.

The construction of the road will allow better access by safety equipment and personnel to the areas it now serves. The road could be used by City residents as a major evacuation route in case of an emergency. The drainage channel will safeguard the road improvements and adjacent areas from flooding throughout the project limits. Currently, the U.S. Corps of Engineers is investigating possible alternatives to improve the downstream portions of Telegraph Canyon to the Bay. Thus, eventually the majority of the drainage basin could be protected from flood hazards. However, no schedule exists for the improvement of the downstream reaches of Telegraph Canyon.

Non-renewable resources will be used in the construction of the project.

8. IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WILL RESULT SHOULD THE RECOMMENDED ACTION BE IMPLEMENTED

The project will have the following effects:

a. About 94.1 acres of vacant land will be committed to the flood control and road project;

b. Major portions of the existing vegetative cover and concomitant wildlife elements will be lost;

c. Physical alteration of the land required to accommodate the channel and road improvements;

d. Possible distruption of archaeological resources;

e. Utilization of various raw materials for construction (such as sand and gravel). These materials will represent resources that are currently being depleted.

9. GROWTH INDUCING IMPACT OF THE PROPOSED PROJECT

It can be argued that upgrading Telegraph Canyon Road will induce growth in the territories adjacent to the Canyon and east of the project limits. Access to these areas would certainly be improved as a result of the project.

It should be recognized, however, that the exercise of land use controls will play a major part in the growth of the area served by the project.

Territories north of Telegraph Canyon and west of Rutgers Avenue are presently shown on the Chula Vista General Plan to be developed in a largely residential attitude, while those undeveloped areas south of Telegraph Canyon and east of Rutgers Avenue are zoned for

agricultural uses by the County of San Diego. Should the agricultural areas be rezoned for residential uses or intensification of development be allowed in areas pre-planned for residential uses, growth would occur without implementation of this project.

The principal effect of this project would be to improve the opportunity for development of areas within and adjacent to Telegraph Canyon by providing easier access to these properties. However, if this project was not undertaken, the development of these properties would not be precluded. Sewer, water, telephone, gas and electric facilities of adequate capacity to serve most of these areas are presently available.

A recent staff study of building activity within the area shown on Figure 26 shows that 676 new residential lots have been approved (by tentative maps and/or final maps) since 1971. Of these approved lots, 130 had building permits issued in 1975 and 546 are available for future development. Table 18 shows the number of building permits issued within this study area (figure 26) over the past five years. Table 19 shows similar data for the subarea southerly of "H" Street. Primary access to this latter area is provided by Telegraph Canyon Road.

In addition to the continued growth in and around Telegraph Canyon, Southwestern College (located west of Otay Lakes Road and north of Telegraph Canyon Road) has experienced a continuous growth over the past several years. Table 20 shows the record of total enrollment at this learning institution over the past five years. The college staff anticipates a growth rate of 15 to 20% per year over the next three years. Most of this growth is expected to occur in the day classes.

The relocation of the Chula Vista Community Hospital to its new site south of Telegraph Canyon and east of Brandywine Avenue has also increased the pressure to urbanize areas adjacent to this facility. A preliminary plan for doctor's offices across from the hospital has recently been reviewed by City staff. This project includes construction of a 65,000 square foot building which could generate as much as 6,000 new trips per day along Telegraph Canyon Raod.

In the final analysis, the implementation of this project will remove what is perhaps the last obstacle (inadequate access) to the urbanization of Telegraph Canyon and adjacent areas. The degree of urbanization of these vacant lands that can be linked to the implementation of this project cannot be precisely determined at this time due to the many factors involved.

Figure No. 26

TABLE NO. 18

BUILDING PERMITS ISSUED ENTIRE STUDY AREA (Figure 26)

Fiscal Year	1971	1972	1973	1974	1975
Building Permits	65	64	219	372	130

TABLE NO. 19

BUILDING PERMITS ISSUED IN SUBAREA SOUTHERLY OF "H" STREET

Fiscal Year	1971	1972	1973	1974	1975
Building Permits	52	55	210	192	114

TABLE NO. 20

TOTAL ENROLLMENT AT SOUTHWESTERN COLLEGE

Fiscal Year	70-71	71-72	72-73	73-74	74-75	75-76
Fall Semester	7023	8008	8188	9482	10,025	12,572
Spring Semester	7082	7914	9128	9532	11,606	

10. REFERENCES

1. Sweetwater River Flood Control Channel - Environmental statement - draft. U. S. Army Corps of Engineers, Los Angeles District September 1975.

2. Interim Water Quality Control Plan for the San Diego Basin, June, 1971 - California Regional Water Quality Control Board, San Diego Region.

3. San Diego County Air Pollution Control District - "Air Pollution Quarterly".

4. Flood Control Analysis for El Rancho del Rey, 9/72.

5. Ground Water Analysis for El Rancho del Rey, 9/72.

6. Soils Analysis for El Rancho del Rey, 9/72.

7. H Street EIR.

8. Special Census, April 1, 1975.

9. Preliminary Draft Master EIR Third Avenue Redevelopment project and plan, EIR 75-7.

10. Hillside Modifying District, EIR-74-2.

11. Windsor Views Planned Unit Development, EIR-73-16.

12. Draft Environmental Impact Report for Revised General Development Plan; Previously Unreported areas of El Rancho del Rey - September 24, 1973.

13. Supplemental Draft Environmental Impact Report "Sports World" (Plaza del Rey); Westec Services, Inc., May 17, 1974.

14. "Geology - Coastal Geology and Geological Hazards" prepared for the San Diego Coast Regional Commission, February 19, 1974.

15. Soil Investigation for the proposed El Rancho del Rey Unit No. 1; Woodward-Gizienski & Associates; May 27, 1971.

16. Air Pollution Considerations in Residential Planning Volume 1: Manual; EPA - 450/3-74-046-a; July 1974.

17. Draft EIR Canyon Apartments; Rick Engineering Company; 2-22-74, EIR 73-18.

18. Draft EIR for Telegraph Canyon Commercial Center; Rick Engineering Co., April 19, 1974.

19. Information Brochure; Alternative Proposals for flood control and allied purposes; Telegraph Canyon Creek; Los Angeles District, U. S. Army Corps of Engineers; May 1975.

20. Geological Investigation - La Nacion Fault System; El Rancho del Rey Development; Woodward-Gizienski & Associates, March 31, 1972.

21. Natural Resource Inventory of San Diego County Sections 1 through 7; Integrated Regional Environmental Management Project.

22. Geologic Hazards Analysis - El Rancho del Rey, 9/7/72.

23. "The Coastal Land Environment" adopted by the California Coastal Zone Conservation Commission, 10/16/74.

24. Census Tracts - San Diego, California Standard Metropolitan Statistical Area; 1970 Census of Population and Housing, U. S. Department of Commerce, Bureau of the Census.

25. Comprehensive Plan for Flood Control and Drainage Zone 3, San Diego County Flood Control District, August 1975.

26. Preliminary EIR for Otay Municipal Water District Multi-purpose project - pipeline and storage construction and pump plant modification; Hirsch & Koptionak Consulting Engineers, March 1973.

27. Otay Municipal Water District Preliminary EIR for Telegraph Canyon Pipeline Construction Project; Otay Municipal Water District, April, 1975.

28. Final Environmental Impact Report, EIR-74-5, Plaza del Rey (Sports World EIR); July 24, 1974.

29. Gordon, Colon. G., Galloway, William J., Kugler, B. Andrew and Nelson, Daniel L., Beranek, Bolt, and Newman, "Highway Noise - A Design Guide for Highway Engineers," Highway Research Board, National Cooperative Highway Research Program Report No. 117, 1971.

30. Turner, F. C., Federal Highway Administrative, "Noise Standards and Procedures for Implementing Section 109(i), Title 23 U.S.C.", U. S. Department of Transportation, Policy and Procedure Memorandum 90-2, February 9, 1973.

31. Fundamentals and Abatement of Highway Traffic Noise, Bolt, Beraneck and Newman, Inc.

32. Environmental Protection Agency, "Compilation of Air Pollutant Emission Factors," AP-42 (Revised April, 1973).

33. A California Flora, Philip A. Munz and David D. Keck

34. City of Chula Vista, General Plan, 1990; Revised March 1970.

35. City of Chula Vista, Planning Department, Environmental Review Policy; adopted March 18, 1975 (Resolution 7675).

36. State of California, Resources Agency, Guidelines for the Preparation and Evaluation of Environmental Impact Reports under the California Environmental Quality Act of 1970; December 17, 1973.

37. Preliminary Draft Environmental Report for development of El Rancho del Rey Property, March, 1976.

February 22, 1977

TO: Planning Commission

FROM: Gayle McCandliss, Vice Chairman/Environmental Control Commission

SUBJECT: EIR-76-12

After reading the impact report, I feel that it was prepared in accordance with guidelines set by CEQA. However, in considering the project itself, I have a number of reservations.

Telegraph Canyon has been described as the most scenic route within Chula Vista yet the city seems prepared to completely destroy it. It is scenic in that it is one of the few truly open and naturally wild areas for citizens to enjoy. Rather than paving the entire canyon floor and landscaping with a "different vegetation type" (ref. page 87), every means possible should be used to find an alternative to this and retain the wild appearance.

Alternative 3 (ref. 4.3.3) calls for major street improvements and realignment. This plan, in addition to improved traffic control at I-805 and Halecrest and ther arterial streets such as Bonita Road, "H" and "J" Streets (when completed) will drain enough traffic from new developments to make Telegraph Canyon passable at all times. It's true that the road is congested between 7:00 and 8:00 a.m. and 5-6:30 p.m. but there is no problem the rest of the time. Should we sacrifice the entire canyon floor for two hours of added convenience? There is really nothing to justify widening Telegraph Canyon Road to six lanes at this time.

A need already exists for improved drainage along Telegraph Canyon. With the new developments planned, runoff water could become a major problem. If possible, the natural and scenic quality of the area should be maintained with a more natural channel and less artifical landscaping.

COMMENTS TO BE RATIFIED AT THE ENVIRONMENTAL CONTROL COMMISSION MEETING OF FEBRUARY 24, 1977

GM:av

February 22, 1977
File No. AY 011

TO: Douglas D. Reid, Environmental Review Coordinator

FROM: John P. Lippitt, Assistant Director of Public Works

SUBJECT: E.I.R. 76-12 - Telegraph Canyon Road and Channel

In reference to comments contained in a memorandum dated February 22, 1977 to the Planning Commission from Gayle McCandliss, Vice Chairman of the Environmental Control Commission, the following responses are submitted.

Vice Chairman McCandliss indicates concurrence with the adequacy of the subject report to the extent that CEQA is involved. We therefore believe it may be more appropriate to consider these comments in conjunction with the project consideration than at this public hearing on the environmental impact report.

There are, however, several points in this memorandum that bear on the environmental aspects of the proposed project and which should be clarified. These points are as follows.

1. Paving the entire canyon floor.

   On page 87 of the E.I.R. it is stated that "The construction of this project will replace most of the natural vegetation now covering the canyon's bottom with a paved road and an adjoining drainage channel."

   The maximum alternative width for Telegraph Canyon Road is 126 feet. Within this 126 feet there would be 85 feet of roadway width and 5 feet of sidewalk. Through a large part of the project the street improvement will replace the existing roadway which is generally about 40 feet wide. Consequently, the prime arterial project alternative will increase the width of paved roadway by approximately 45 feet. It should be noted that where existing and proposed roadways are not coincidental, the existing improvements would be removed upon completion of the proposed roadway.

2. Use of other streets to relieve traffic volumes on Telegraph Canyon Road.

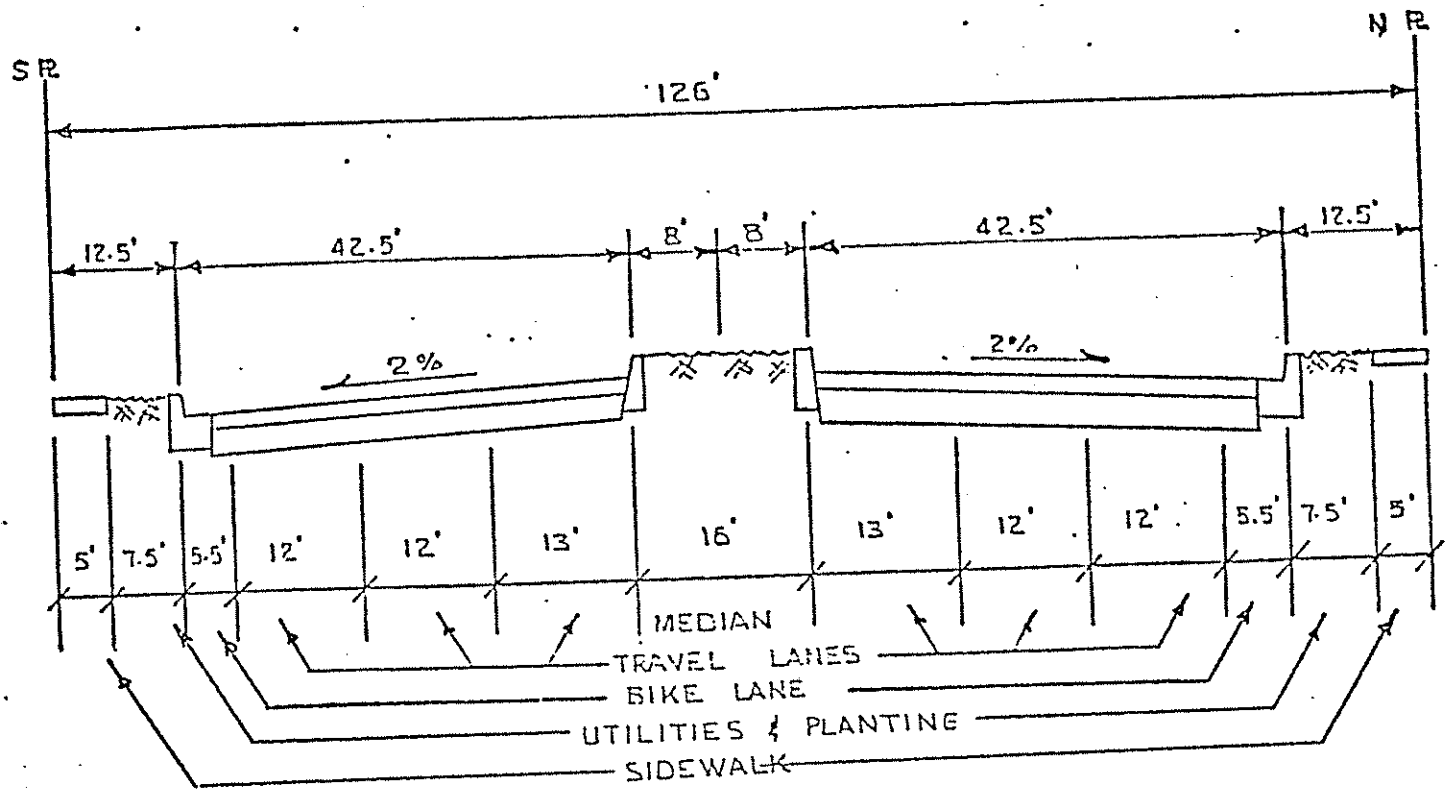
   The City has made continuing efforts to estimate traffic volumes which will be present on the noted streets when development has occurred in accordance with the General Plan. These estimates consider the location of traffic generators, route desires, travel time and convenience. We do not feel confident in the reliability of the distribution of traffic volumes between different streets at this time. However, the sheer number of people expected to live in this area indicates strongly that other nearby major streets will also be heavily loaded.

3. Sacrificing the canyon floor as a matter of convenience.

Building a prime arterial roadway in this area would unquestionably serve the convenience of those persons who travel Telegraph Canyon.

However, this convenience is only one aspect of the argument for road improvement. A major additional consideration is that of safety. It is difficult to realistically compare the monetary loss and physical pain of people involved in accidents occasioned by an inadequate roadway to the pleasure experienced by others when viewing the canyon.

RLD:et



TYPICAL SECTION

TELEGRAPH CANYON ROAD