CITY OF CHULA VISTA

BAY BOULEVARD REDEVELOPMENT PROJECT

FINAL

ENVIRONMENTAL IMPACT REPORT

EIR-79-6

PREPARED FOR:

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TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

LIST OF FIGURES

LIST OF FIGURES (Continued)

LIST OF TABLES

LIST OF APPENDICES

The Appendices are on file with the City of Chula Vista Planning Department and are available for public review.

1.0 INTRODUCTION

1.1 Purpose

This document addresses the environmental impacts of three separate redevelopment actions within the Bay Boulevard Redevelopment Project that have been proposed by private developers and the Chula Vista Redevelopment Agency. Two of these actions will be privately funded, while the third will involve funding by the Redevelopment Agency. Since it has been determined that construction of the proposed improvements may potentially affect the environment in an adverse manner, the California Environmental Quality Act (CEQA) requires the preparation of an Environmental Impact Report (EIR).

This report is being submitted to the City of Chula Vista Redevelopment Agency in accordance with the Environmental Review Policy of the City of Chula Vista, in general accordance with the State of California's *GUIDELINES FOR THE PREPARATION AND EVALUATION OF ENVIRONMENTAL IMPACT REPORTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970*, with amendments effective March 4, 1978 (State of California, 1970).

Persons reviewing this document should keep in mind the fact that the material provided herein is informational in nature. It is intended to enable appropriate public agencies to evaluate environmental impacts associated with the projects as proposed. The responsible public agencies remain obligated to balance possible adverse effects against other public objectives, including economic and social factors, in determining whether or not these projects should be approved.

This environmental impact report is not meant to be used as an engineering document. Likewise, it does not relieve the Redevelopment Agency of its responsibilities to insure that engineering documents otherwise required for this project are prepared and submitted.

1.2 Executive Summary

The Bay Boulevard Redevelopment Project is a part of the phased *Chula Vista Bayfront Redevelopment Project Plan* (1974), involving Subarea D and a portion of Subarea E of this *Plan*. Three separate redevelopment actions are covered by this EIR. Included are the redevelopment of an 8.47 acre site located north of "E" Street (northern project site), a portion of which will be permitted to encroach upon Bay Boulevard (subject to certain restrictions); redevelopment of a 5.13 acre site located between "E" Street and "F" Street (south of Anthony's Fish Grotto); and the construction of selected sidewalk, curb, gutter, street lighting and roadway landscaping improvements to existing Bay Boulevard between "E" Street and "G" Street. The northern project site will consist of a 200-room motel, 13,000 sq ft restaurant and 77-space recreational vehicle park, while the southern project site will include an 83-unit motel (13 of which will be suites that can be divided into separate units, for a total of 100 rooms), 6400 sq ft specialty restaurant, 4500 sq ft coffee shop, and a 3000 sq ft fast-food facility. In reviewing these three separate actions, it was determined that construction of these proposed projects could result in the creation of several environmental impacts. The following is a summary of the findings of the environmental

analysis. Unless specifically noted, these findings refer to all three proposed projects.

1.2.1 Geology

The potential for seismic ground shaking is present throughout southern California. All structures built on the proposed northern and southern sites should be designed and constructed to minimize the potential for damage resulting from seismic shaking. It is recommended that test borings be performed to determine the lateral extent and relative density of loose cohesionless silt or sand layers which may occur in the upper 30 feet and could be prone to liquifaction.

1.2.2 Soils

A detailed foundation soils investigation should be conducted prior to construction on the southern project site. An engineering soils investigation conducted on the northern site in 1978 did not disclose any significantly adverse conditions. These soils conditions are probably representative of formational soils on the southern site. Given a conservative approach to analysis, design and construction, no unavoidable adverse impacts should be realized.

1.2.3 Drainage

Although the existing drainage pattern will be slightly altered, no signficant impacts are foreseen in terms of flooding or impoundment. The northernmost portion of the northern project site (below 16 ft MSL) is located on the fringes of a floodplain and should be limited to such project elements as parking areas or landscaping.

1.2.4 Air Quality

Additional air pollutants will be generated through increased vehicular activity and more intensive land use in the area. The northern and southern project sites will not necessarily generate many new emissions, but only cause minor redistribution of those emissions in the immediate project environs, since if the projects were not built, the motel, restaurant, and RV park traffic would travel elsewhere for these services.

1.2.5 Water Quality

Due to the nature of the upper 4-inch layer of soil resulting from previous junkyard uses, the potential exists for some of these pollutants to be transported to San Diego Bay should a significant storm event occur prior to completion of construction activity. Upon completion, when soils are re-stablilzed or covered with impervious surfaces, both the northern and southern project sites will be changed from a point source to a non-point source of contaminants, and thus contribute urban pollutants at a level substantially below the level resulting from former land uses.

1.2.6 Mobile Noise Source

The proposed projects will have only a minor noise impact upon the area. The close proximity of northern and southern sites to the freeway serves to lessen the impact of traffic noise created by these projects. Potential significant adverse

traffic noise impacts from I-5 will be mitigated on the southern site by having no windows in the eastern exposure of the proposed motel. If windows are to be utilized in the eastern exposure of the motel on the northern site, the requirements of California Administrative Code Title 25, Building Noise Insulation Standards, must be addressed. Construction activity could create minor noise impacts at Anthony's Fish Grotto.

1.2.7 Stationary Noise Source

No significant adverse noise impacts from stationary sources are anticipated.

1.2.8 Biology

The proposed projects will not eliminate any stands of native vegetation or directly affect any known rare or endangered species. Development of the northern project will bring additional human pressures to the Sweetwater Marsh complex, however the project will eliminate Bay Boulevard as an access point into this sensitive habitat.

1.2.9 Archaeology

The results of the archeological survey indicated the presence of one badly disturbed prehistoric site located on the proposed northern project site. Since implementation of the proposed northern project may adversely affect the archaeological site, an archaeological testing/salvage program will be required.

Such mitigation will eliminate any significant impacts resulting from the proposed northern project.

1.2.10 Land Uses

The proposed projects are consistent with the *Chula Vista Bayfront Redevelopment Project Plan* and the proposed *Local Coastal Program*. The redevelopment of the northern and southern sites will result in the removal of undesirable and unsightly land uses.

1.2.11 Aesthetics

The "below grade" location of the I-5 freeway screens most of the northern and southern project sites from the freeway. The RV park area of the northern project site will be landscaped and thus visually screened from both I-5 and the Sweetwater Marsh area. Development of the remainder of the northern and southern project sites should improve their aesthetic qualities by removing the debris, old structures and wrecked autos that have covered the sites. The visual enhancement provided by all three of the proposed projects appear to conform with *California Coastal Act of 1976* intentions. It is recommended that an overall landscape plan be implemented to visually separate the natural Sweetwater area and visible portion of the northern site from the I-5 freeway.

1.2.12 Fire and Police

Construction of the proposed projects will not result in any significant impacts in police and fire protection services.

1.2.13 Utilities/Energy

The proposed projects will result in incremental increases in water and energy consumption, as well as sewage and solid waste generation. A number of water and energy conservation measures will be incorporated into the project design such as automated timing controls on lighting and heating, and the use of low flush toilets and native or drought-resistant vegetation for landscaping. The northern project site swimming pool will be solar heated.

1.2.14 Transportation/Access

Development of the proposed northern and southern site projects could result in the addition of 8613 trips to the immediate circulation system. These added trips will have a significant adverse impact on "E" Street and Bay Boulevard traffic flow during the morning and evening peak periods created by Rohr Industries employee traffic Monday through Friday. During other times of the day and weekends, the existing street system should adequately handle project site traffic. Some of the traffic entering and departing both the northern and southern project sites during the periods of Rohr Industries traffic flow may encounter difficulty.

It is recommended that a clearly-designated pedestrian intersection crossing be provided between the proposed northern project site and the Anthony's Fish Grotto (corner of "E" Street and Bay Boulevard). Left turn lanes should be provided along Bay Boulevard between "E" and "F" Streets to provide for southbound traffic to turn into the proposed southern project site. Improved street lighting between "E" and "F" Streets and a better definition of the path of vehicular travel in the curve area north of "F" Street will result from the proposed Bay Boulevard improvements. If warranted by actual experience, special patrolmen will assist in the movement of traffic at the "E" Street/Bay Boulevard intersection, and at least one of the entrance/exits to the proposed southern project site.

2.0 PROJECT DESCRIPTION

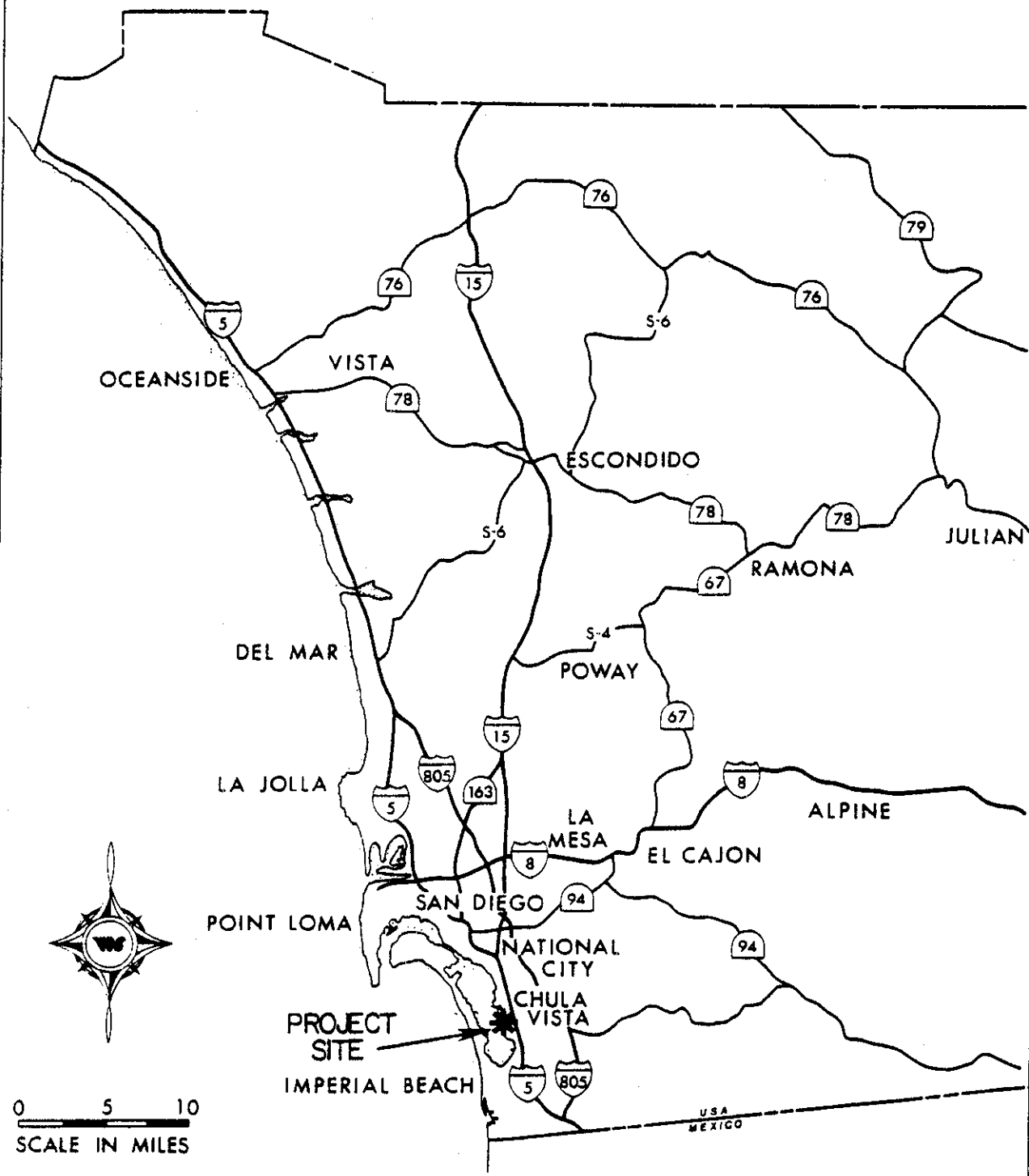
2.1 Background

The Bay Boulevard Redevelopment Project consists of three separate sites, all within close proximity to one another. Two of the projects are on redevelopment sites, proposed by two separate private developers; the third, proposed by the City of Chula Vista Redevelopment Agency, consists of selected street and landscaping improvements, which will be made at the Agency's expense.

All of the proposed projects are within the area covered by the *Chula Vista Bayfront Redevelopment Project Plan* (1974), which includes plans for the development and redevelopment of much of the existing developed and vacant land that generally extends from the Sweetwater Marsh to south of the Rohr Industries complex. The proposed northern and southern project sites are located within Subarea D of the *Chula Vista Bayfront Redevelopment Project Plan*. The portion of the proposed Bay Boulevard street improvements between "E" and "G" Streets are located within Subareas D and E of the *Plan*.

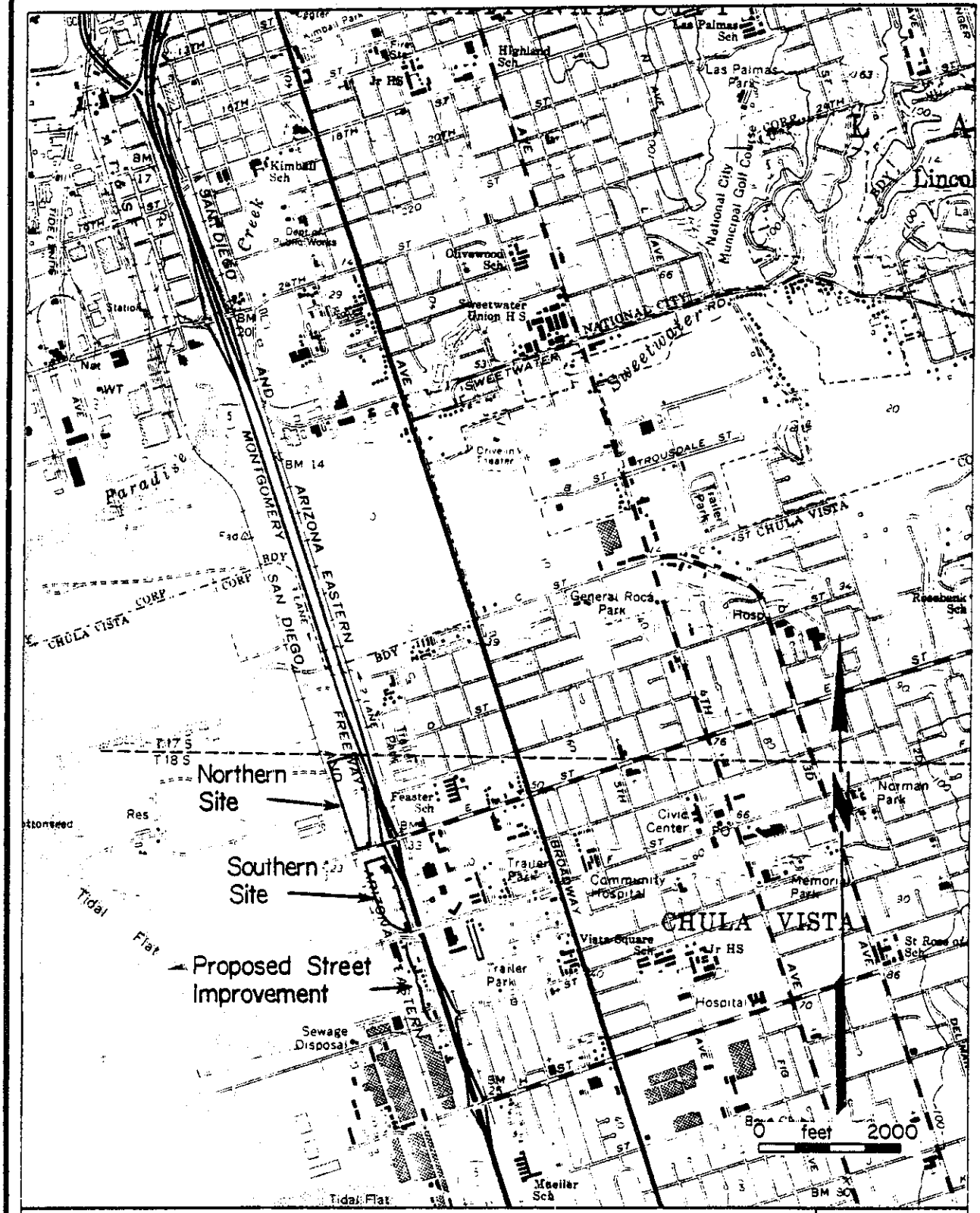
2.2 Project Locations

The proposed projects are located within the northwestern portion of the City of Chula Vista, just west of the Interstate 5 freeway (Figure 2-1). The northern project (Ramada) is located between "E" Street and the Sweetwater Marsh (Figure 2-2). It is bounded on the west by the SD&AE Railroad tracks and by the I-5 freeway right-of-way fence on the east.



Regional Location

FIGURE 2-1



Bay Boulevard Project Location and Vicinity (portion of National City 7.5' USGS topographical quadrangle)

FIGURE 2-2

The southern project (Orange Development and Investment Company) is located immediately south of the Anthony's Fish Grotto restaurant located on the south side of "E" Street, and is bounded on the south by "F" Street. The freeway right-of-way fence forms its eastern boundary, while Bay Boulevard delimits its western side.

The third project consists of selected street improvements to Bay Boulevard, between "E" Street and "G" Street. Proposed are curb and gutter improvements to both sides of the street, where they do not exist; and extension of sidewalk facilities on the west side of Bay Boulevard from the Detroit Diesel facility to "F" Street. The west side of Bay Boulevard between "E" Street and "F" Street will be landscaped in order to visually "screen" the roadbed of the SD&AE railroad. Street lighting improvements are also proposed from "E" Street to "H" Street.

2.3 Project Objectives

The proposed projects would seek to achieve some of the objectives stated in the *Chula Vista Bayfront Redevelopment Project Plan* of 1974. Among the objectives relevant to this action would be to:

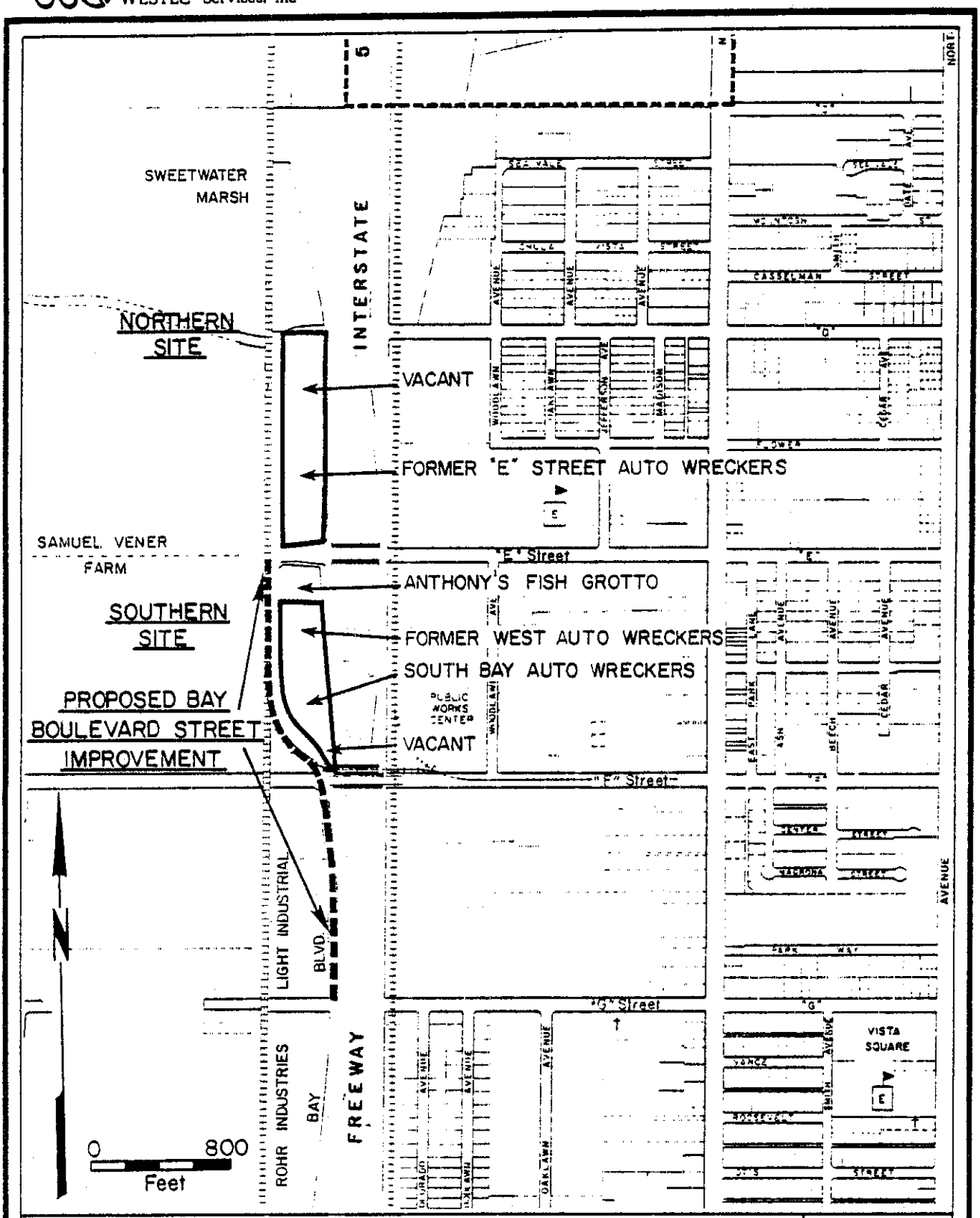
- Redevelop existing land use conditions, such as auto wrecking yards and vacant lands, that seriously detract from the desired image of the Chula Vista Bayfront.
- Select new land uses that do not dilute the market for proposed motel/hotel/conference redevelopment uses on the Bayfront.

- Encourage new land uses such as restaurants, motels and other travel-related commercial uses.
- Encourage development surrounding "E" and "G" Streets that would help promote attractive entranceways to the Bayfront area.
- Site and design buildings that are not visually obtrusive when viewed from the freeway approaches to the Bayfront.
- Preserve marshland areas of high ecological value in their natural state, designing all roadways, buildings or other structures to promote this end.
- Provide public pedestrian access along the edges of the Sweetwater River Marsh.

2.4 Site Characteristics

2.4.1 Northern Site

The northern site (Ramada) consists of two privately-owned parcels of land totaling 7.08 acres (Figure 2-3). The northernmost parcel was formerly occupied by Bannister Steel Company, while the parcel immediately north of "E" Street was occupied by "E" Street Auto Wrecking. Under the terms of the proposed development, the developer will be permitted to encroach on Bay Boulevard from "E" Street northward to the terminus of Bay Boulevard. The public utility easements will remain on the street. No permanent structures will be permitted on the right-of-way. The developer must maintain the street as the remainder



Present Project Site Land Uses

FIGURE 2-3

of his property and allow access for maintenance vehicles relative to the public utilities on the site.

The northern portion of this site (the former Bannister Steel site) has been totally cleared of its former land usage. It is visually screened by a row of trees on its northern perimeter and is traversed by several unpaved dirt roads. Its topography is generally flat, sloping westward. The site is located approximately 10 feet above the tidal-influenced Sweetwater Marsh, located a short distance to the north. No flooding problems are evident.

The former "E" Street Auto Wrecking yard has been vacated of junked automobiles; however, the periphery of the site is still fenced and one steel building and the concrete slab of another still remain. Its terrain is also almost level. Existing Bay Boulevard north of "E" Street consists of a 52-ft average right-of-way. Bay Boulevard is presently permanently barricaded at the northern limits of the proposed redevelopment project. The pavement, however, continues approximately 300 yards into the Sweetwater Marsh where it is abruptly terminated by the I-5 freeway.

2.4.2 Southern Site

The proposed southern redevelopment site (Orange Development and Investment Company) consists of five parcels totaling 5.13 acres (Figure 2-3), four of which are owned by the Redevelopment Agency and the fifth by a private party, which will be purchased by the Agency. A portion of this site was formerly occupied by West Auto Wreckers, located immediately south of the Anthony's Fish Grotto. This former auto recycling yard is still

surrounded by a chain link fence. Immediately to the south is the South Bay Auto Wrecking yard, which is still in operation; however, it is expected to be vacated by the end of 1978 (Boyd, 1978). Between the South Bay Auto Wrecking yard and "F" Street is located a vacant, somewhat triangular-shaped parcel of land which is also included in the southern redevelopment site. As with the northern redevelopment site, the southern site is of generally level terrain.

2.4.3 Bay Boulevard Street Improvements

Bay Boulevard is a two-lane collector street that generally parallels the I-5 freeway (Figure 2-3). It terminates about 2000 ft north of "E" Street on its northern end and continues southward to the Palomar Avenue freeway interchange in southwestern Chula Vista. It also serves as a parallel access road to the freeway, providing access to the Rohr industrial complex and a number of light industrial facilities to the north of Rohr. Full diamond interchanges are located at "E" Street, "H" Street, "J" Street, and "L" Street, which are just a short distance to the east of Bay Boulevard. "E" Street serves as the major freeway access route to both the northern Bayfront area and the proposed project area. The portion of Bay Boulevard between "E" Street and "G" Street is presently, for the most part, poorly lighted during the evening and nighttime hours, and poorly defined in terms of the lanes of travel, especially at the "E" Street intersection and the curve just north of "F" Street, due to its lack of curbs and gutters.

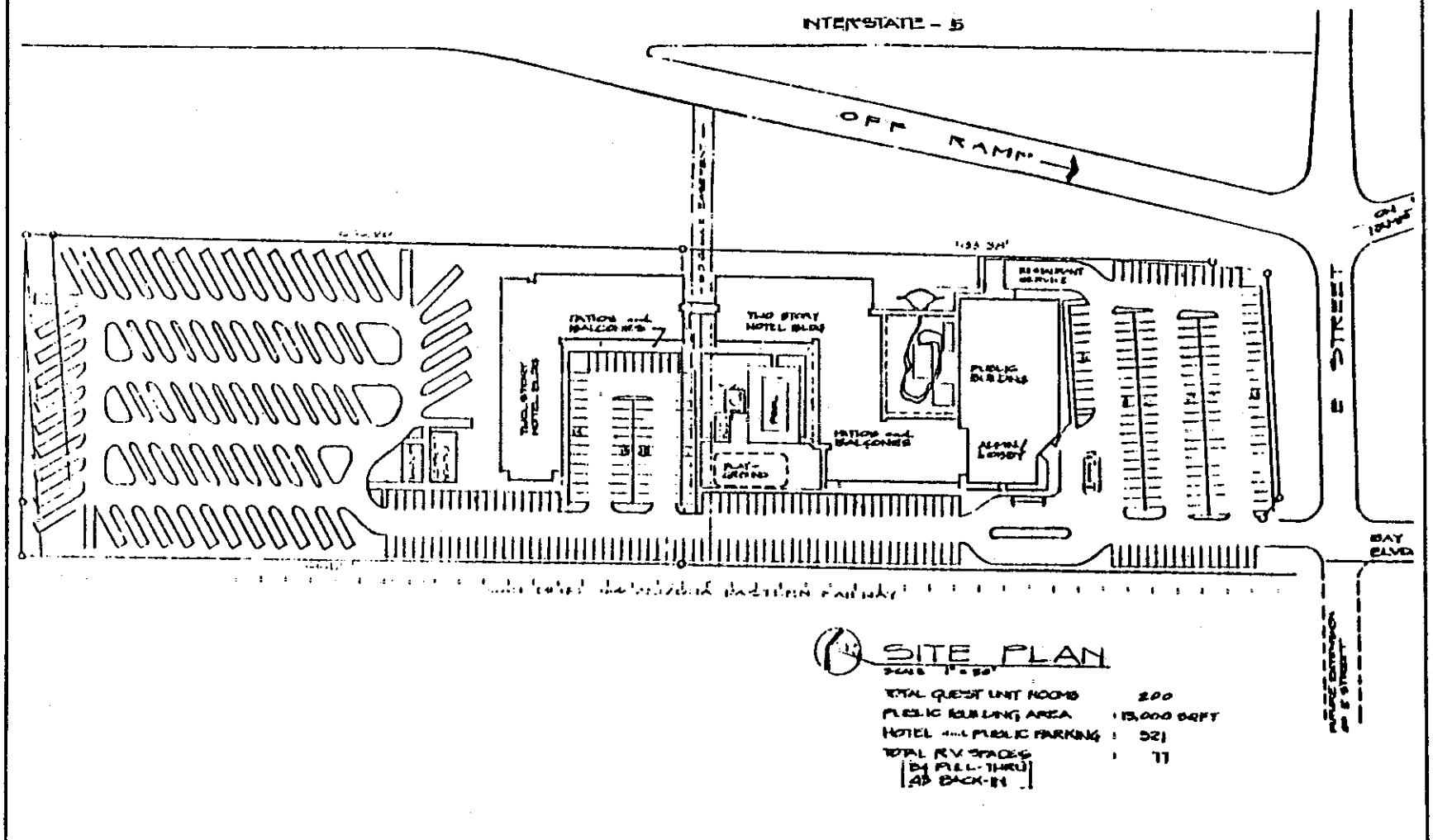
2.5 Project Characteristics

2.5.1 Northern Site

The proposed project to be constructed on the northern site consists of a two-story motel containing 200 rooms, a 13,000 sq ft restaurant, and an overnight Recreational Vehicle (RV) park of approximately 77 spaces (Figure 2-4). Existing Bay Boulevard, which will be encroached upon, will provide for internal site circulation. Access to the project site will be by means of the present "E" Street/Bay Boulevard intersection. A total of 321 parking spaces will be provided for both the motel and restaurant facilities. The 77 RV spaces will include 34 "pull through" spaces and 43 "back in" spaces. Related facilities will include a laundry and "comfort station," while the motel will include a swimming pool, jacuzzi and playground. A breakdown of the proposed land use can be seen in Table 2-1. The total project is expected to employ an estimated 75 to 80 people operating three shifts. Construction of the proposed Ramada project is expected to begin in January 1979, with completion in June 1979.

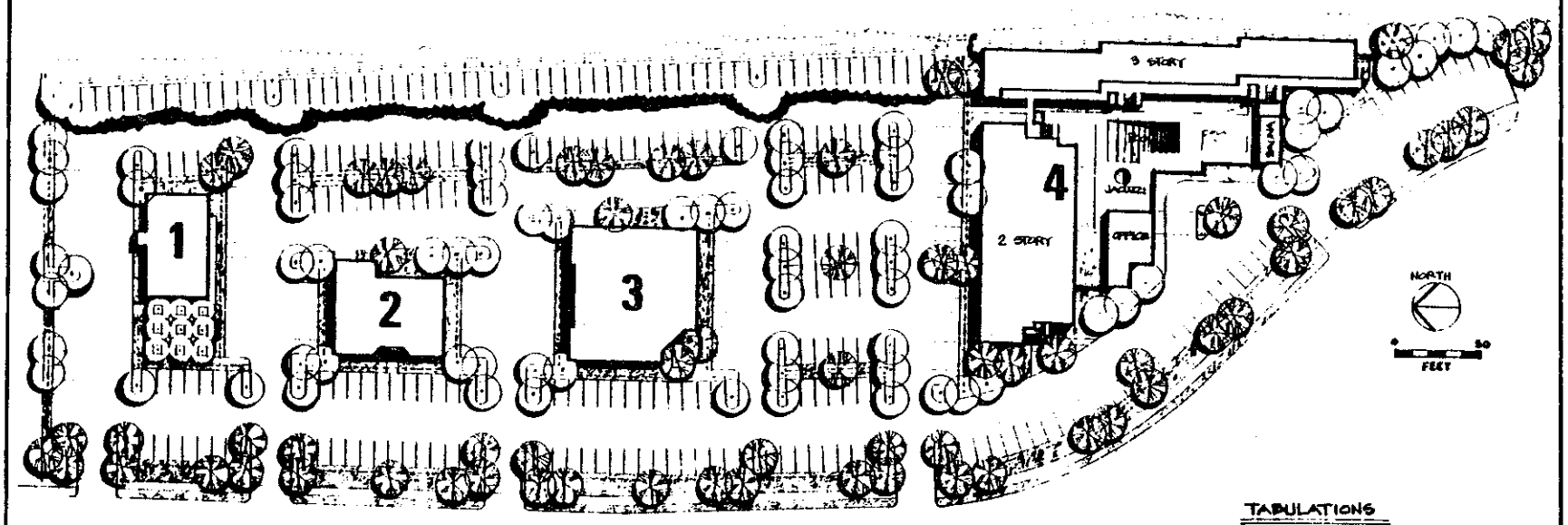
2.5.2 Southern Site

The proposed project to be constructed on the southern site consists of an 83-100 rooms, depending on configuration, to be located on the southern 2 acres of the redevelopment site, while a 6400 sq ft specialty restaurant, 4500 sq ft coffee shop and 3000 sq ft fast-food restaurant with drive-through will be constructed on the northern portion of the site (Figure 2-5). A 112-space parking lot will be provided between the proposed



Proposed Northern Development Project Site Plan

FIGURE 2-4



TABULATIONS

BLDG. #1	5000 ♯	
PARKING	69 SPACES	
BLDG. #2	4500 ♯	
PARKING	78 SPACES	
BLDG. #3	6470 ♯	
PARKING	115 SPACES	
BLDG. #4 (MOTEL - 87 UNITS)	31830 ♯	
PARKING	90 SPACES	
RECAP BLDG. AREA	46 250 ♯	
TOTAL PARKING	352 SPACES	

Proposed Southern Development Project Site Plan

FIGURE 2-5

Table 2-1

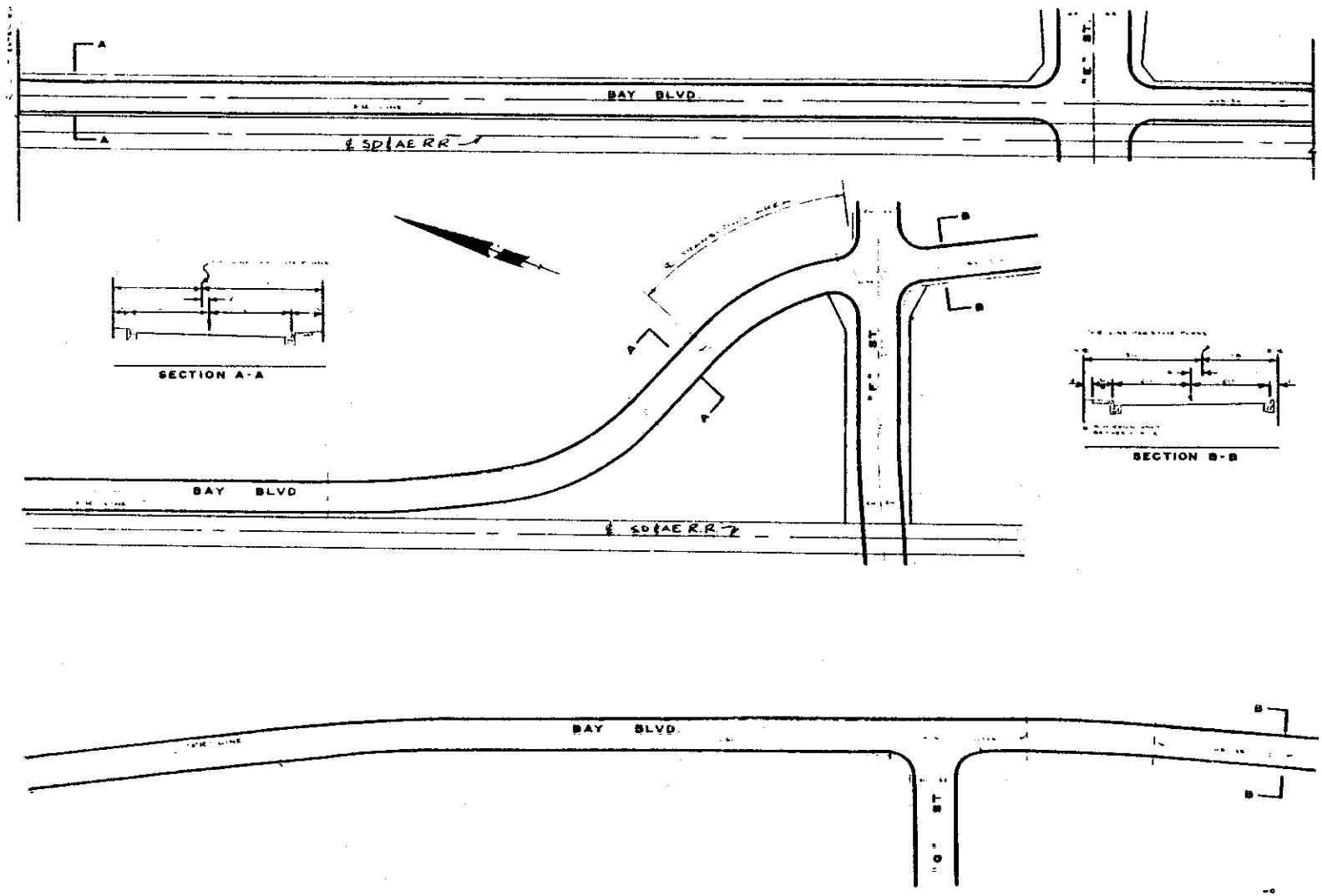
BAY BOULEVARD REDEVELOPMENT PROPOSED LAND USE

	Land Use	No. of Acres	Percent of Site
NORTHERN SITE			
	Structures	1.24	17.5
	Parking and Private Roads	3.19	45.0
	Other Paved Surfaces (RV Park)	0.96	13.5
	Landscaped Areas	1.69	24.0
	TOTAL	7.08	100.0
SOUTHERN SITE			
	Structures	1.05	20.5
	Parking and Private Roads	2.72	53.0
	Other Paved Surfaces	0.33	6.4
	Landscaped Areas	1.03	20.1
	TOTAL	5.13	100.0

restaurant and the existing Anthony's Fish Grotto located immediately to the north. Access to the site will be provided directly off Bay Boulevard. A total of 273 parking spaces will be provided. Among the related facilities to be provided will be a landscaped swimming pool area and a landscaped outdoor dining area. The overall project, as proposed, is expected to employ approximately 120 to 150 people, operating 2 to 3 shifts. A firm timetable of the southern redevelopment site's construction and completion is not presently available, but it is assumed that the proposed development will occur sometime over the next two years.

2.5.3 Bay Boulevard Street Improvements

Proposed street improvements are expected to include extension of the existing sidewalk on the west side of Bay Boulevard from approximately the location of the Detroit Diesel facility north of "G" Street to "F" Street (Figure 2-3). Curbs and gutters will be constructed on both sides of the street between "E" and "G" Streets. Sidewalks will be provided on the east side of Bay Boulevard in this area, but will be constructed as part of the southern redevelopment site project. Street lighting facilities will be provided for the full length of Bay Boulevard between "E" and "G" Streets. Also proposed as part of this project will be landscaping along the west side of Bay Boulevard between "E" and "F" Streets in an effort to visually screen the SD&AE Railroad roadbed from view. Such landscaping will not extend any higher than 4 ft above the track level in order to comply with SD&AE requirements.



Proposed Bay Boulevard Street Improvements
(Detailed Improvement Plan on File in Chula Vista Planning Department)

FIGURE 2-6

2.6 Costs/Funding

2.6.1 Costs

The estimated cost of the proposed northern site, which will include a motel, restaurant and RV park, is approximately $6,000,000. The cost of the proposed southern project site, consisting of a motel, fast food facility, coffee shop and restaurant, is estimated to be $4,500,000. Construction cost of the proposed Bay Boulevard improvements is expected to be approximately $100,000.

2.6.2 Funding

Construction of both the northern and southern project sites will be made through private funding. Construction of the proposed Bay Boulevard street improvements will be made through the use of public funding and proceeds from the sale of Bayfront Redevelopment bonds.

2.7 Relationship to Other Projects

The proposed projects are an integral part of the *Chula Vista Bayfront Redevelopment Project Plan* (1974). The proposed northern and southern project sites, as well as the proposed Bay Boulevard improvements, will serve as the major entrance to the Bayfront.

Other related projects include the proposed extension of Tidelands Avenue across the Sweetwater Marsh and River; the proposed SR 54 freeway, which is planned to intersect the I-5 freeway north of the Sweetwater River; and the proposed Sweetwater

Flood Control Channel that is proposed to be built in conjunction with the SR 54 freeway. While geographically related, these proposed projects are not related in a functional sense.

3.0 IMPACT ANALYSIS

3.1 Geology

3.1.1 Project Setting

The Bay Boulevard redevelopment project site is situated on Quaternary sandstones of the undifferentiated Bay Point Formation and an unnamed, nearshore marine formation (Kennedy and Tan, 1977). These formations are overlain around their outcrop fringes by Holocene alluvium and artificial fill. The northernmost portion of the site is within the alluvial area of the Sweetwater River tidal marsh.

The Quaternary formations in the south San Diego Bay area were deposited on an irregular erosion surface developed on Eocene formations. The Eocene formations were deposited on Cretaceous sedimentary formations which were deposited on earlier Cretaceous crystalline basement rocks (Elliott, 1970). Each of these lithologic units has been affected by faulting.

Potentially active faults in the vicinity of the project site include the Rose Canyon fault zone which has been shown to offset material as young as 28,700 years (Liem, 1977). This fault zone possibly extends beneath San Diego Bay and immediately offshore (Kennedy, *et al.*, 1975; Moore, 1972; Wiegand, 1970). The La Nacion fault zone is located six miles east of the project site but has not been shown to have affected Holocene material (Elliott and Hart, 1977). Active faults which could influence the proposed project are located at distances greater than

40 miles, and include the San Clemente, 40 miles to the west; the Elsinore, 45 miles to the northeast; the San Jacinto, 65 miles to the northeast; and the San Andreas, 95 miles to the northeast.

3.1.2 Impacts

The proposed project will not result in the loss of significant mineral resources, such as sand and gravel, and will not disturb any interesting or unique geologic features. The project site is not subject to such geologic hazards as areal land subsidence or volcanic eruption (Alfors, *et al.*, 1973). Due to the flatness of the site, landslides are improbable. The project site could possibly be subject to earthquake-related (seismic) hazards: ground shaking; ground rupture; ground failure; and seismically triggered flooding.

Ground shaking results from the vibrations accompanying earthquakes. The intensity of ground shaking is related to the magnitude of an earthquake and the distance that the place of interest is from the epicenter of the earthquake. The maximum expected magnitude of earthquakes from faults that affect the San Diego region has been estimated by several workers and has been reported by Greensfelder (1974). These are Rose Canyon fault, 7; La Nacion fault, 6.75; San Clemente fault, 6.9; Elsinore fault, 7; San Jacinto fault, 7.5; and San Andreas fault, 7.5. Earthquakes of these magnitudes would result in ground shaking at the project site, expressed in terms of gravitational acceleration, g, as follows: Rose Canyon fault, greater than 0.7g; La Nacion fault,

0.45g; San Clemente fault, 0.09g; Elsinore fault, 0.07g; San Jacinto fault, 0.07g; and San Andreas fault, less than 0.05g.

The effects of ground acceleration are best understood when expressed as the intensity of the earthquake, which is a measure of the effects in terms of human and structural response. This system, known as the Modified Mercalli Intensity scale, is shown in Table 3-1. The intensity of the maximum expected earthquake at the project site would be: Rose Canyon fault, IX to XI; La Nacion fault, IX; San Clemente fault, VII; Elsinore fault, VI; San Jacinto fault, VI; and San Andreas fault, VI. The estimated recurrence interval for such earthquakes is one in 300 years for the Rose Canyon and La Nacion faults (Moore and Kennedy, 1975); one in 100 years for the Elsinore and San Jacinto faults; one in 40 to 100 years for the San Andreas fault (Woodward-Gizienski and Associates, 1974); and is unknown for the San Clemente fault.

Impacts resulting from ground rupture are dependent on a site being located astride an active fault. Field investigations and recent mapping have not shown any faults to occur at the project site (Kennedy and Tan, 1977; Kennedy, *et al.*, 1975). Ground failure conditions, particularly the potential for liquefaction, may exist at the project site. This potential should be investigated during soils investigations for foundation design.

Seismically triggered flooding is manifested as either tsunamis or seiches. Tsunamis are large, destructive waves which result from submarine earthquakes, landslides, or volcanic eruption. In the event that a tsunami threatened the coastal San

Table 3-1

THE MERCALLI INTENSITY SCALE

(As modified by Charles F. Richter in 1956 and rearranged)

If most of these effects are observed	*then the intensity is:*
Earthquake shaking not felt. But people may observe marginal effects of large distance earthquakes without identifying these effects as earthquake-caused. Among them: trees, structures, liquids, bodies of water sway slowly, or doors swing slowly	*I*
Effect on people: Shaking felt by those at rest, especially if they are indoors, and by those on upper floors.	*II*
Effect on people: Felt by most people indoors. Some can estimate duration of shaking. But many may not recognize shaking of building as caused by an earthquake: the shaking is like that caused by the passing of light trucks.	*III*
Other effects: Hanging objects swing. *Structural effects:* Windows or doors rattle. Wooden walls and frames creak.	*IV*
Effect on people: Felt by everyone indoors. Many estimate duration of shaking. But they still may not recognize it as caused by an earthquake. The shaking is like that caused by the passing of heavy trucks, though sometimes, instead, people may feel the sensation of a jolt, as if a heavy ball had struck the walls. *Other effects:* Hanging objects swing. Standing autos rock. Crockery clashes, dishes rattle or glasses clink. *Structural effects:* Doors close, open or swing. Windows rattle.	*V*
Effect on people: Felt by everyone indoors and by most people outdoors. Many now estimate not only the duration of shaking but also its direction and have no doubt as to its cause. Sleepers wakened. *Other effects:* Hanging objects swing. Shutters or pictures move. Pendulum clocks stop, start or change rate. Standing autos rock. Crockery clashes, dishes rattle or glasses clink. Liquids disturbed, some spilled. Small unstable objects displaced or upset. *Structural effects:* Weak plaster and Masonry D* crack. Windows break. Doors close, open or swing.	*VI*
Effect on people: Felt by everyone. Many are frightened and run outdoors. People walk unsteadily. *Other effects:* Small church or school bells ring. Pictures thrown off walls, knicknacks and books off shelves. Dishes or glasses broken. Furniture moved or overturned. Trees, bushes shaken visibly, or heard to rustle. *Structural effects:* Masonry D* damaged; some cracks in Masonry C*. Weak chimneys break at roof line. Plaster, loose bricks, stones, tiles, cornices, unbraced parapets and architectural ornaments fall. Concrete irrigation ditches damaged.	*VII*
Effect on people: Difficult to stand. Shaking noticed by auto drivers. *Other effects:* Waves on ponds; water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Furniture broken. Hanging objects quiver. *Structural effects:* Masonry D* heavily damaged; Masonry C* damaged, partially collapses in some cases; some damage to Masonry B*; none to Masonry A*. Stucco and some masonry walls fall. Chimneys, factory stacks, monuments, towers, elevated tanks twist or fall. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off.	*VIII*
Effect on people: General fright. People thrown to ground. *Other effects:* Changes in flow or temperature of springs and wells. Cracks in wet ground and, on steep slopes. Steering of autos affected. Branches broken from trees. *Structural effects:* Masonry D* destroyed; Masonry C* heavily damaged, sometimes with complete collapse; Masonry B* is seriously damaged. General damage to foundations. Frame structures, if not bolted, shifted off foundations. Frames racked. Reservoirs seriously damaged. Underground pipes broken.	*IX*
Effect on people: General Panic. *Other effects:* Conspicuous cracks in ground. In areas of soft ground, sand is ejected through holes and piles up into a small crater, and, in muddy areas, water fountains are formed. *Structural effects:* Most masonry and frame structures destroyed along with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes and embankments. Railroads bent slightly.	*X*
Effect on people: General panic. *Other effects:* Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. *Structural effects:* General destruction of buildings. Underground pipelines completely out of service. Railroads bent greatly.	*XI*
Effect on people: General panic. *Other effects:* Same as for Intensity X. *Structural effects:* Damage nearly total. the ultimate catastrophe. *Other effects:* Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.	*XII*

* Masonry A: Good workmanship and mortar, reinforced, designed to resist lateral forces.
* Masonry B: Good workmanship and mortar, reinforced.
* Masonry C: Good workmanship and mortar, unreinforced.
* Masonry D: Poor workmanship and mortar and weak materials, like adobe.

Diego area, the Silver Strand could provide a buffer zone for the project site, thereby reducing the potential for property damage.

Seiches are periodic oscillations (usually earthquake-induced) of water in inland bodies of water, harbors, bays, etc. In the event that a major earthquake hit the San Diego region, it is conceivable that a wave could progress across the San Diego Bay and cause damage to shoreline structures and property. In the absence of a historic experience or of hypothetical data, it is nearly impossible to predict an event of this nature or the magnitude of the induced waves.

3.1.3 Mitigation

All structures built on the project site should be designed and constructed with a consideration of the seismic ground shaking parameters presented in Section 3.1.2. Historically, the performance of well-designed and constructed one or two-story light commercial or industrial structures on good foundation material has proven to be generally satisfactory.

The evaluation of liquefaction potential is complicated by the fact that sand lenses as thin as one inch have been known to liquefy. This makes the detection, sampling, testing, and determination of the lateral extent of such thin lenses extremely difficult. It is therefore advisable that test borings be performed with an emphasis on correlating the lateral extent and relative density of loose cohesionless silt or sand layers occurring in the upper 30 feet. Those structures founded on Bay

Point Formation soils will likely encounter dense sands. These studies should be conducted by a registered engineering/soils geologist.

3.1.4 Analysis of Significance

The potential for ground shaking is present throughout California due to the active tectonic province in which it is situated. Estimated predictions for both the magnitude of ground shaking and the potential for ground failure are rough, at best, however, damage can be minimized through proper analysis, engineering design and construction.

3.2 Soils

3.2.1 Project Setting

Soils in the vicinity of the project site (Bay Point Formation and similar unnamed sandstones are the Huerhuero-Urban land complex, and the Huerhuero loam, both with 2-9 percent slopes as designated by the Soil Conservation Service (Soil Survey Staff, 1973). Alluvial areas within the Sweetwater River tidal marsh are mapped as tidal flat soils. The Huerhuero soils are considered to possess severe limitations due to drainage and shrink-swell characteristics. The erosion hazard is moderate. Tidal flat soils are considered to be severely limited because of drainage and erosion hazard, and moderately limited due to shrink-swell characteristics.

The tidal flat soils are organic silty clays and clayey silts, with a consistency that is frequently almost liquid. The

usual thickness of the deposits is from 5 to 10 feet. The formational soils consist predominantly of alternating layers of natural, loose-to-medium dense, silty and clayey sand. These soils possibly exist beneath the tidal flat sediments.

3.2.2 Impacts

The most significant potential soils impacts at the project site are at the northernmost end (in tidal flat areas) and relate to the possible presence of organic mud. The weak compressible nature of these soils makes them very poor foundation materials. In addition, the erratic and variable thickness of the mud can lead to possible differential settlement problems. Mud deposits would tend to squeeze out from beneath heavy loads; when lateral squeezing is deliberately prevented by confinement over a period of years the muds will gradually compress or subside under the weight of fill or structures.

3.2.3 Mitigation

Where static loads resulting from fill or proposed structures are anticipated for the marshland area, the potential for differential settlement or subsidence will be very high; mitigating measures such as the use of surcharge fills or special foundation systems might be considered. It is anticipated that most light buildings can be supported on shallow foundations in the areas of the denser formational soils. An engineering soils investigation was conducted on the northern site in October 1978.

No significantly adverse conditions were disclosed during that study, which is included as Appendix A to this report. These soils conditions are probably representative of formational soils on the southern site as well. A foundation soils investigation should be conducted on the southern project site.

3.2.4 Analysis of Significance

Potential soil problems at the project site may cause both technical and economical problems in land development. However, given a conservative approach to analysis, design and construction, no unavoidable adverse impacts should result.

3.3 Drainage Pattern

3.3.1 Project Setting

Both the northern and southern project sites are low-lying, nearly featureless areas, varying in elevation from approximately 14 ft above mean sea level (MSL) to a high of about 29 ft MSL. The northern border of the northern project site, elevation 16 ft MSL, is within the Sweetwater River tidal marsh area.

Surface waters exist at the project site mainly following periods of heavy rainfall. This water flows down gradient through sheet flow to the south and southwest to eventually enter the tidal channel which enters the San Diego Bay between "F" and "G" Streets.

3.3.2 Impacts

The northern border of the northern parcel is subject to partial inundation during a 100-year flood of the Sweetwater River

(San Diego County Mapping Section, Map No. 202-01). No significant amounts of flooding or pondment are probable elsewhere on the northern or southern project sites. Proposed area drainage alterations are shown in Figure 3-1. Project development will result in a slight increase in the amounts of runoff because of the increase in total impervious area.

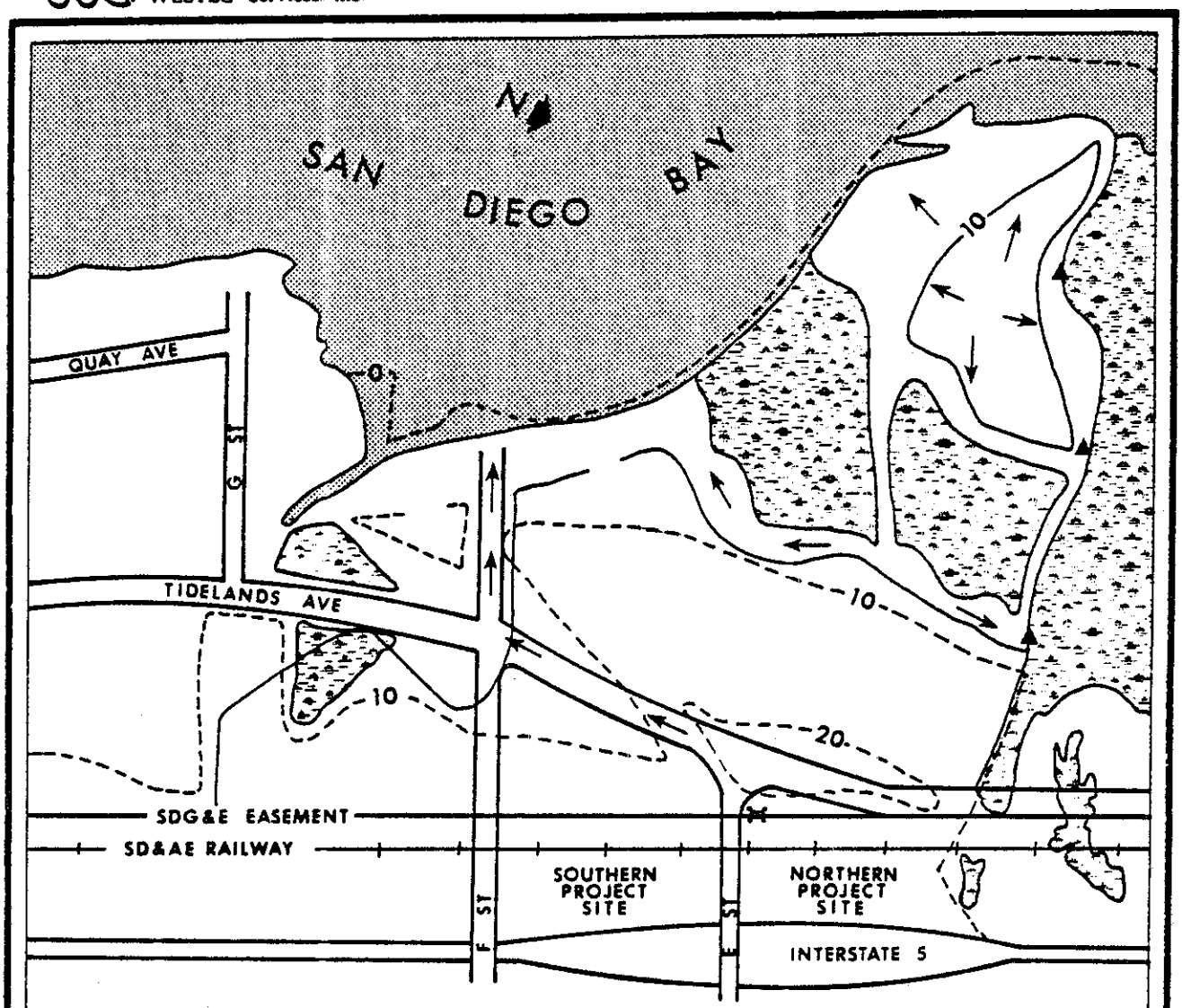
The proposed Bay Boulevard street improvements would channelize local runoff onto Bay Boulevard. This runoff would then flow down-gradient to eventually enter the natural channels.

3.3.3 Mitigation

The northernmost portion of the northern parcel (below 16 ft MSL) is located on the fringes of the floodplain and should be limited to project elements such as parking areas or landscaping. The erosional potential of rainwaters draining the project site are minimal due to the low ground gradients. The potential of sedimentation resulting from site erosion could be further reduced by the installation of sedimentation basins and de-energiers.

3.3.4 Analysis of Significance

Although the existing drainage pattern will be slightly altered, no significant consequences are foreseen in terms of flooding or impoundment. Surface runoff from the site will increase slightly, though not significantly, following urbanization.



Proposed Drainage Changes for the Chula Vista Bayfront Redevelopment Project

FIGURE 3-1

3.4 Air Quality

3.4.1 Project Setting

The Mediterranean-type climate of southern California is principally the result of the semi-permanent high pressure center usually found over the Pacific Ocean. The subsiding, warm air in the high creates clear skies except during brief periods in winter when the high weakens or migrates too far south to block out mid-latitude storm systems.

Temperatures along the coastal areas are strongly moderated by the proximity to the ocean. A shallow layer of marine air undercuts the warm air aloft to create a pleasant climate with an average annual temperature of 60F in Chula Vista. Were it not for this shallow layer of marine air, the area would be a desert. The annual precipitation is a desert-like 10 inches per year along the coast which falls during short rainy spells from November through April.

Fresh marine air enters the San Diego area every day on a sea breeze that flows from the high off-shore to the desert in the interior. If the high develops over the intermountain area, hot, dry, gusty winds warmed by compression flow off-shore (Santa Ana winds) occur, but usually there is an on-shore wind by day that ventilates the coastal strip and carries local pollutant emissions inland. As the land cools at night, a reverse flow is established that blows back toward the ocean (a land breeze), but such winds are usually only prevalent in winter. As an example, the wind direction frequency at Imperial Beach, a few miles south

of Chula Vista, has a westerly component (SSW - NNW) or is calm on 66.8 percent of all observations.

The same marine air that makes the local climate comfortable unfortunantely also contributes to the area's notoriously degraded air quality. When the sea breeze cuts off the layer of warm air aloft, it creates a temperature inversion that severely inhibits the vertical dispersion of pollutants. This inversion, usually found between 1000-2000 feet above the ground, traps pollutants within a shallow layer and places a "lid" on dispersion until the sea breeze carries the pollutants over the heated interior where the inversion is broken. The elevated inversion is strongest and most prevalent in the summer.

These subsidence/marine inversions are weakest in winter when a second inversion type becomes important for localized dispersion processes near major low-level source areas. As the ground cools on winter nights, the first few hundred feet of air also become colder than the air aloft and a radiation or heat-loss inversion forms. This inversion, when coupled with near-calm winds, traps pollutants such as carbon monoxide or nitrogen dioxide near freeways or in congested traffic areas and allows for localized exceedances of air quality standards.

Chula Vista, because of its location downwind of San Diego and the rapidly developing North County under northwest winds, experiences significant exceedances of photochemical oxidant

standards during the summer and also approaches the nitrogen dioxide standard in winter. Table 3-2 summarizes a three-year history of air quality measurements at the Chula Vista Air Quality Monitoring station at 100 East "J" Street. Although recirculation of South Coast Air Basin pollutants may aggravate the San Diego County air pollution problem, the Chula Vista data show that a significant fraction of the pollutants are "home-grown." Table 3-2 points out a distressing trend in Chula Vista ozone levels, i.e. each of the last three years was successively worse. This is in part due to meteorological trends, but also to some extent due to the rapid County growth that does not keep pace with whatever strides are being made to clean up the air.

3.4.2 Impacts

Emissions from the proposed redevelopment project will come from two principal sources. Automobiles from motel guests and restaurant patrons will, by far, emit most of the project-related pollutants. Emissions from fuel combustion for electrical generation (through fuel oil) and from space heating, cooking, water heaters, etc. (through natural gas) are far less. Temporary emissions during construction activity from dust generated during clearing, grading, demolition, etc. and from diesel equipment and construction workers' automobiles will also intermittently impact air quality.

Table 3-2

THREE-YEAR SUMMARY OF CHULA VISTA AIR QUALITY

POLLUTANT	DAYS OVER STANDARD			HOURS OVER STANDARD			MAXIMUM HOURLY LEVEL (ppm)		
	1975	1976	1977	1975	1976	1977	1975	1976	1977
Ozone (1 Hr. > .08 ppm)	42	48	52	136	129	179	.19	.17	.21
Nitrogen Dioxide (1 Hr. ≥ .25 ppm)	0	0	2	0	0	4	.24	.23	.26
Hydrocarbons (6-9 A.M. > .24 ppm)	138	294	311	---	---	---	2.7	3.7	3.4
Carbon Monoxide (1 Hr. > 35 ppm)	9	9	9	9	9	9	9	11	9
Carbon Monoxide (8 Hrs. > 9 ppm)	0	0	0	0	0	0	---	---	---
Sulfur Dioxide (1 Hr. ≥ .50 ppm)	0	0	0	0	0	0	.07	.07	.09
Particulates (% Sample ≥ 100 $\mu g/m^3$	10%	10%	2%	---	---	---	123*	118*	106*

*$\mu g/m^3$

Construction activity emission factors are typically not well prescribed. Using the AP-42 fugitive dust emission factor of 1.2 tons/acre/month of activity, and additional estimates of emission control from watering, duration of construction activity and the size of the parcels involved, the total dust burden is estimated to be about 90 tons. An additional approximate 15 tons of gaseous emissions may also be attributed to the project from construction equipment operation.

Automobile traffic from 8613 trips connected with the Bay Boulevard Redevelopment Project, each traveling 9.7 miles per average trip, will generate 83,546 additional vehicle miles in the Basin each day. Table 3-3 shows that about 3.5 tons of additional pollutants (mostly carbon monoxide) will enter the local airstream as a result of traffic related to the project. By 1990, future automobile emission limitations will reduce the cumulative mobile source impact to about one-half of the value if it were completed within the next year. Thus, although the project impact is by no means insignificant, its impact will lessen in the future as cars become "cleaner."

By applying a model of local and regional dispersion to the vehicular emissions, one may then relate project emissions to ambient air quality. By combining worst-case meteorological and traffic conditions with a line-source traffic dispersion model, the maximum microscale hourly carbon monoxide impact is less than 10 ppm, or much less than the 35 ppm hourly standard. Similarly, on a regional scale, the photochemical secondary pollutant impact

Table 3-3

CHULA VISTA BAY BOULEVARD REDEVELOPMENT
VEHICULAR EMISSIONS AT CURRENT AND FUTURE
VEHICLE EMISSION LEVELS

	----- 1978 FACTORS[1] -----			------ 1990 FACTORS[2] -----		
POLLUTANT	EMISSION FACTOR (gm/mile)	TOTAL (tons/ day)	ANNUAL TOTAL (tons/yr)	EMISSION FACTOR (gm/mile)	TOTAL (tons/ day)	ANNUAL TOTAL (tons/yr)
Carbon Monoxide	31	2.85	1042.74	16.01	1.47	538.52
Total Hydrocarbons	4.03	0.37	135.56	1.31	0.12	44.06
Oxides of Nitrogen	3.8	0.35	127.82	1.90	0.17	63.91
Particulate Matter	0.58	0.05	19.51	0.27	0.02	9.08
Oxides of Sulfur	0.20	0.02	6.73	0.15	0.01	5.05

[1]Source: City of Chula Vista Environmental Review Policy - adopted August 1, 1978.

[2]Source: EMGAC5 emission factor computer program for 1990 traffic moving at 35 mph on major arterials - computer run dated September 21, 1978.

is roughly about 0.001 ppm downwind of Chula Vista, again much less than the 0.08 ppm standard (see Air Quality Appendix for details of assessment methodology).

Electrical generation and natural gas combustion comprise a far less significant impact. Whereas automotive emissions well exceed 1000 tons/year, stationary source emissions are estimated to be less than 20 tons annually. The combined emission summary in Table 3-4 shows that the basinwide impact of the project is incrementally small, but it represents a significant increase over emissions presently attributable to Chula Vista. As discussed elsewhere, the project emissions are neither necessarily new County emissions, nor will they be emitted exclusively within Chula Vista, but Iable 3-4 does point out that tourism as an important County industry does and will continue to contribute to County air quality problems.

3.4.3 Mitigation

Since the major source of project emissions is from the automobile, beyond the control of any local jurisdiction, the potential for emissions mitigation is very small. The transportation-related tactics of the Regional Air Quality Strategies (RAQS) generally do not apply to facilities such as the motel/restaurant/RV complex because these facilities owe their existence to a mobile public. Minor reductions in emissions may be achieved by some sort of shuttle service to popular tourist destinations such as the Mexican border, Sea World, the Zoo, etc., but there is little probability of any noticeable emissions reductions from the project as presently constituted.

Table 3-4

TOTAL ESTIMATED INCREMENTAL INCREASE IN EMISSIONS (ALL SOURCES)
(tons/year)

POLLUTANT	SAN DIEGO AIR BASIN (tons/yr)	CHULA VISTA CONTRIBUTION (tons/yr)	PROPOSED DEVELOPMENT			BASINWIDE INCREASE (%)	CHULA VISTA CONTRIBUTION INCREASE (%)
			MOBILE SOURCES	STATIONARY SOURCES	ALL SOURCES		
Carbon Monoxide	383,195	18,969	1042.74	1.10	1043.84	0.27	5.50
Reactive Hydro-carbons	106,708	5,285	135.56	0.49	136.05	0.13	2.57
Oxides of Nitrogen	69,481	3,413	127.82	10.97	138.79	0.20	4.07
Particulates	178,890	8,855	19.51	0.95	20.46	0.01	0.23
Oxides of Sulfur	14,954	741	6.73	4.87	11.60	0.08	1.57

3.4.4 Analysis of Significance

The proposed Bay Boulevard Redevelopment Project, as part of the *Chula Vista Bayfront Redevelopment Project Plan*, will create additional air pollutants through increased vehicular activity and more intensive land use in the area. The air quality consequences of the specific northern, southern and street improvement projects have been analyzed in this study. It should be noted at the outset that this project will not necessarily generate many new emissions, but only cause minor redistribution of those emissions in the immediate project environs. Project-related emissions, principally from automobiles, already exist in the Basin. If the project were not built, the motel/restaurant/RV traffic would travel elsewhere for these services. If there is an existing market for these services, then construction of the project may actually reduce driving distances and thus reduce air pollutants emitted. For the sake of conservatism, all project-related pollutants have been treated as new, additional emissions to the basin burden, but actually most of them are already present somewhere in the San Diego area.

3.5 Water Quality

3.5.1 Project Setting

Both the rorthern and southern project sites are located 1500 ft east of San Diego Bay, adjacent to the Sweetwater River Marsh complex. The project sites contribute runoff to both the bay and marsh environments, but are themselves little influenced

by either. Groundwater beneath the project site is brakish in nature, the dominant dissolved constituent being sodium chloride, and is controlled in response to the nearby marine environment.

The quality of the waters of San Diego Bay has recently been reviewed by the San Diego Region Comprehensive Planning Organization (CPO, 1978):

> Until the last decade, San Diego Bay waters were heavily polluted by sewage and industrial effluent; however, since the diversion of most waste discharges into the San Diego Metropolitan Sewerage System in 1963, the water quality of the bay has improved dramatically and sludge deposits have disappeared gradually, so that today, water quality problems from point sources are almost absent.
>
> In recent years, the Regional Water Quality Control Board has worked to eliminate remaining sources of pollutants to the bay, including sanitary wastes from ships and small craft, oily discharges, and liquid and solid wastes containing heavy metals from shipyards and unauthorized industrial waste discharges from vessels. Once those programs are complete, virtually every point source of wastes except thermal discharges will be eliminated from the bay. San Diego Bay is widely regarded as one of the cleanest metropolitan bays in the world.

Former land uses at both the northern and southern project sites constitute a water pollution point source. These uses have included a steel yard and auto recycling yards which have left behind a 3-4-inch layer of soil that is rich in typical automotive pollutants such as petroleum products and heavy metals from paints and soil mobilization of solid metals.

3.5.2 Impacts

During the period in which the site is being prepared, development of the project will release many of the pollutants that

are contained in the upper 4-inch layer of soil. These pollutants will be available to be transported to San Diego Bay if a significant storm event occurs prior to restabilization of these soils. Proposed street improvements will produce no significant impacts.

Upon project completion, when soils are restabilized or covered with impervious surfaces, the site will change from a point source to a nonpoint source of contaminants. As a nonpoint source, the site will contribute urban pollutants at a level that will be substantially below the level resulting from former land uses.

3.5.3 Mitigation

Project completion will result in a net increase in the quality of the water draining from the site. If project development is to be conducted during a rainy period, or if soil disturbance is to extend through a rainy season, then it is suggested that the contaminated surface soils be removed to a solid waste disposal site approved for petroleum products and heavy metal wastes.

3.5.4 Analysis of Significance

The overall water quality impact of the project is a significant decrease in pollutants which will drain from the site to the San Diego Bay. The project represents a contribution to the planned program to eliminate point sources of water pollution from the San Diego Bay area (CPO, 1978).

3.6 Mobile Noise Source

A complete noise survey report, briefly summarized below, is included as Appendix C to this report.

3.6.1 Project Setting

The existing project site is mostly vacant and of level topography. The northern project site is slightly elevated above the adjacent I-5 at its northernmost end. The "E" Street off-ramp from I-5 gradually rises to the south until it is elevated above the property. The "E" Street off-ramp tends to shield the southern half of the northern project site from the freeway. Interstate 5 also has a generally downward grade as one travels south. Thus, the existing traffic noise to the northern project area is a combination of the following sources: (1) I-5 north and south traffic; (2) southbound "E" Street off-ramp traffic; and (3) "E" Street traffic between the southbound off-ramp and Bay Boulevard. Occasional military aircraft overflights into North Island Naval Air Station (NINAS) also occur.

The southern project site is totally elevated above the adjacent I-5 right-of-way and approximately at the grade of Bay Boulevard and "F" Street. The existing noise on this portion of the project is a combination of: (1) I-5 traffic noise along the very eastern side, with some reduced level when line-of-sight is no longer maintained; (2) Bay Boulevard traffic; (3) "F" Street traffic; and (4) occasional military overflights into NINAS.

3.6.1.1 Traffic Noise

A series of on-site noise measurements were made on October 6, 1978. Data were acquired from ten stations (see Appendix C for sampling methodology). Traffic noise levels at the ten sampling stations are shown on Figures 3-2 and 3-3 and enumerated in Table 3-5. The resultant present-day noise contours are shown on Figures 3-4 and 3-5.

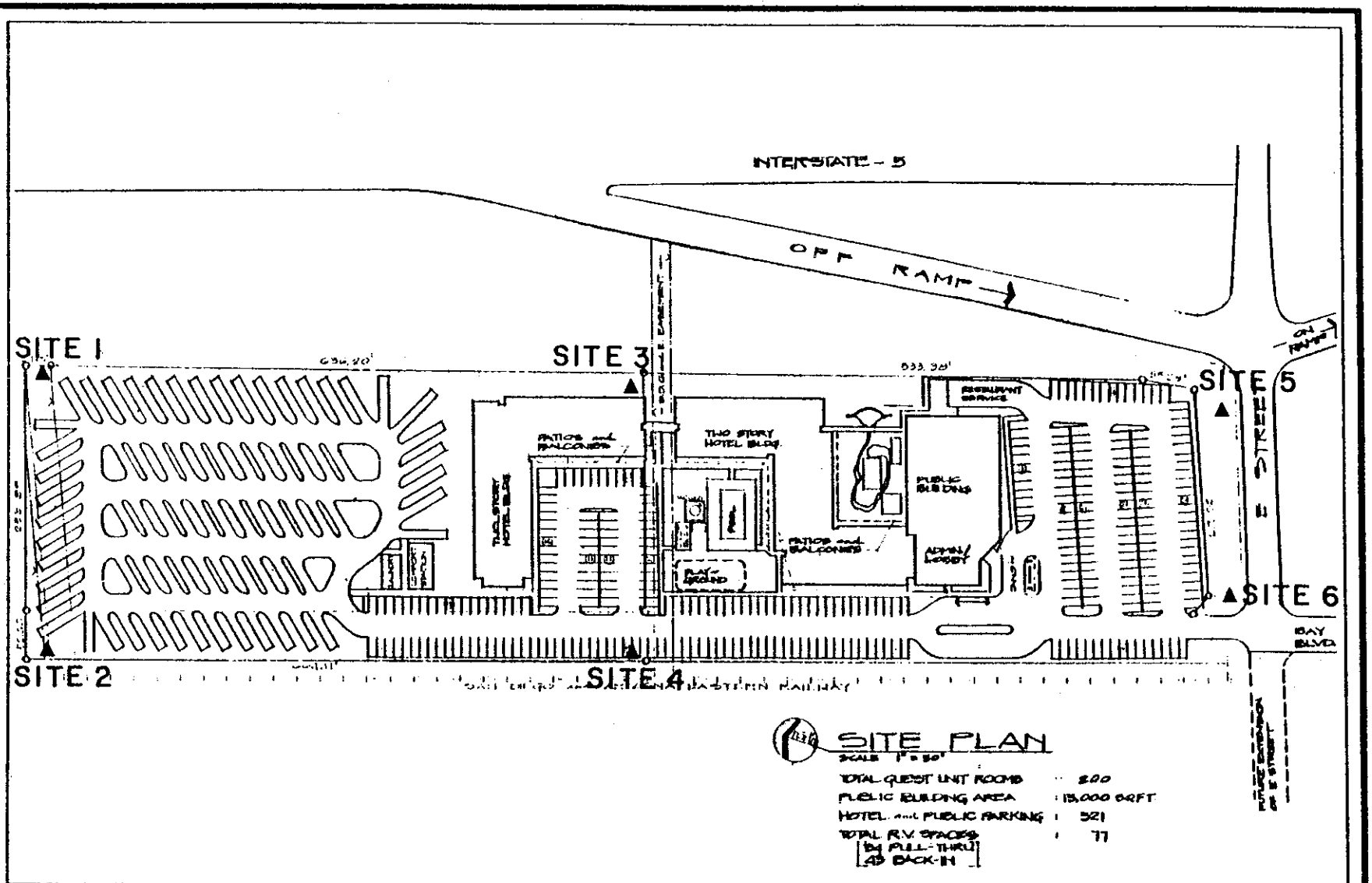
3.6.1.2 Aircraft Overflights

The project site is close to the extended runway centerline for runway 29 at NINAS. This straight-in approach is used primarily for Ground Controlled Approach (GCA) flights. Current daily operations on this flight path are given in Table 3-6 (NINAS, 1978).

3.6.2 Impacts

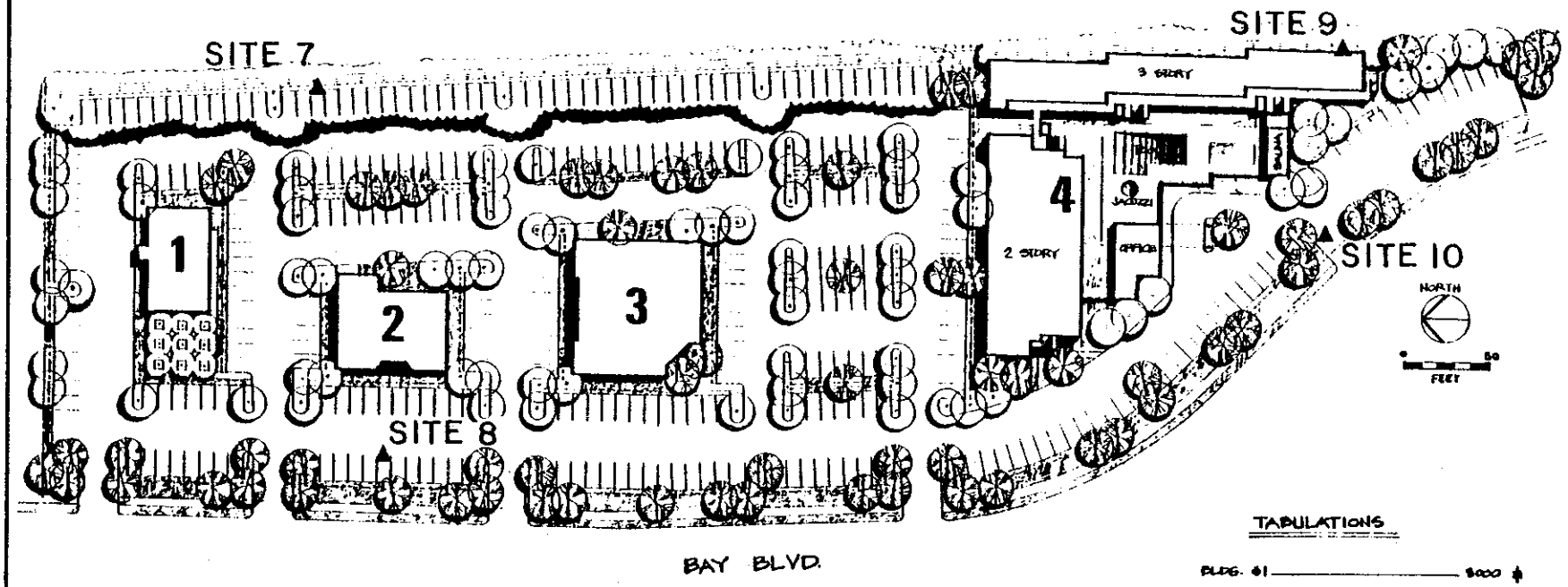
3.6.2.1 Traffic Noise

Future traffic noise levels (1995 time frame) are given in Table 3-7 and the resultant noise contours are shown on Figures 3-6 and 3-7. The proposed projects will result in some added noise impact due to additional traffic on the surrounding surface streets, especially "E" Street west of I-5 and Bay Boulevard. This impact is on the order of two to three decibels. Traffic growth on I-5 which is not a direct function of this project will also increase noise levels at selected locations by two and three decibels (see Table 3-7). This impact will be unnoticeable at



Northern Project Site Noise Measurement Locations

FIGURE 3-2



TABULATIONS

BLDG. #1	5000 ♯	
PARKING	69 SPACES	
BLDG. #2	4500 ♯	
PARKING	78 SPACES	
BLDG. #3	6970 ♯	
PARKING	115 SPACES	
BLDG. #4 (MOTEL - 87 UNITS)	81820 ♯	
PARKING	90 SPACES	
RECAP BLDG. AREA	16 290 ♯	
TOTAL PARKING	352 SPACES	

Southern Project Site Noise Measurement Locations

FIGURE 3-3

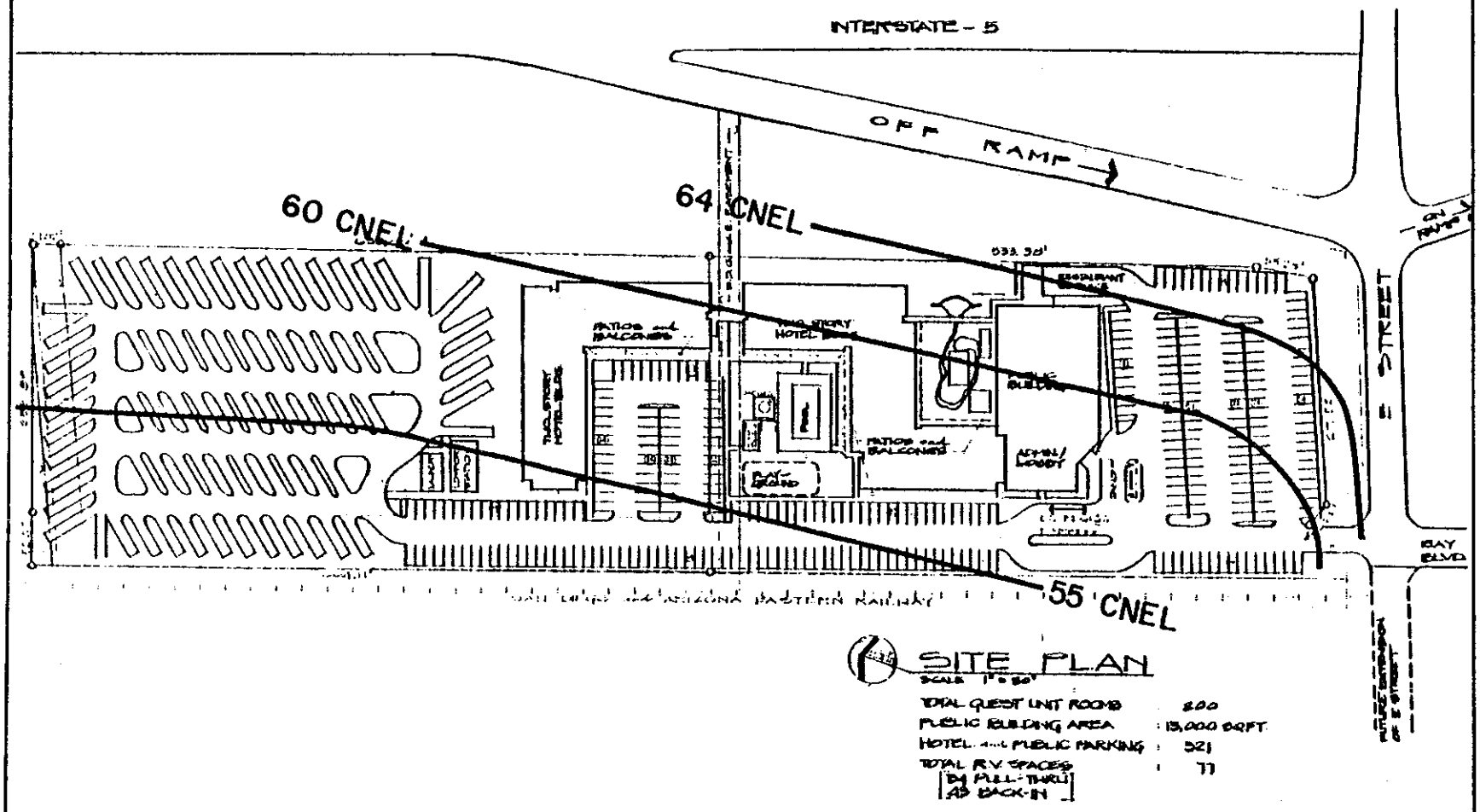
Table 3-5

1978 TRAFFIC NOISE LEVELS (dBA)

Site	Noise Source	Hourly L_{eq}	CNEL[1]
1	Interstate 5 North of E St.	56	59
2	Interstate 5 North of E St.	60[2]	--[2]
3	Interstate 5 North of E St.	59	62
4	Interstate 5 North of E St.	51	54
5	E St. Off-ramp Southbound	64	67
6	E St. West of Interstate 5	61	62
7	Interstate 5 South of E St.	70	71
8	Bay Blvd. Between E & F Sts.	66	66
9	Interstate 5 South of E St.	71	72
10	Bay Blvd. Between E & F Sts.	67	65

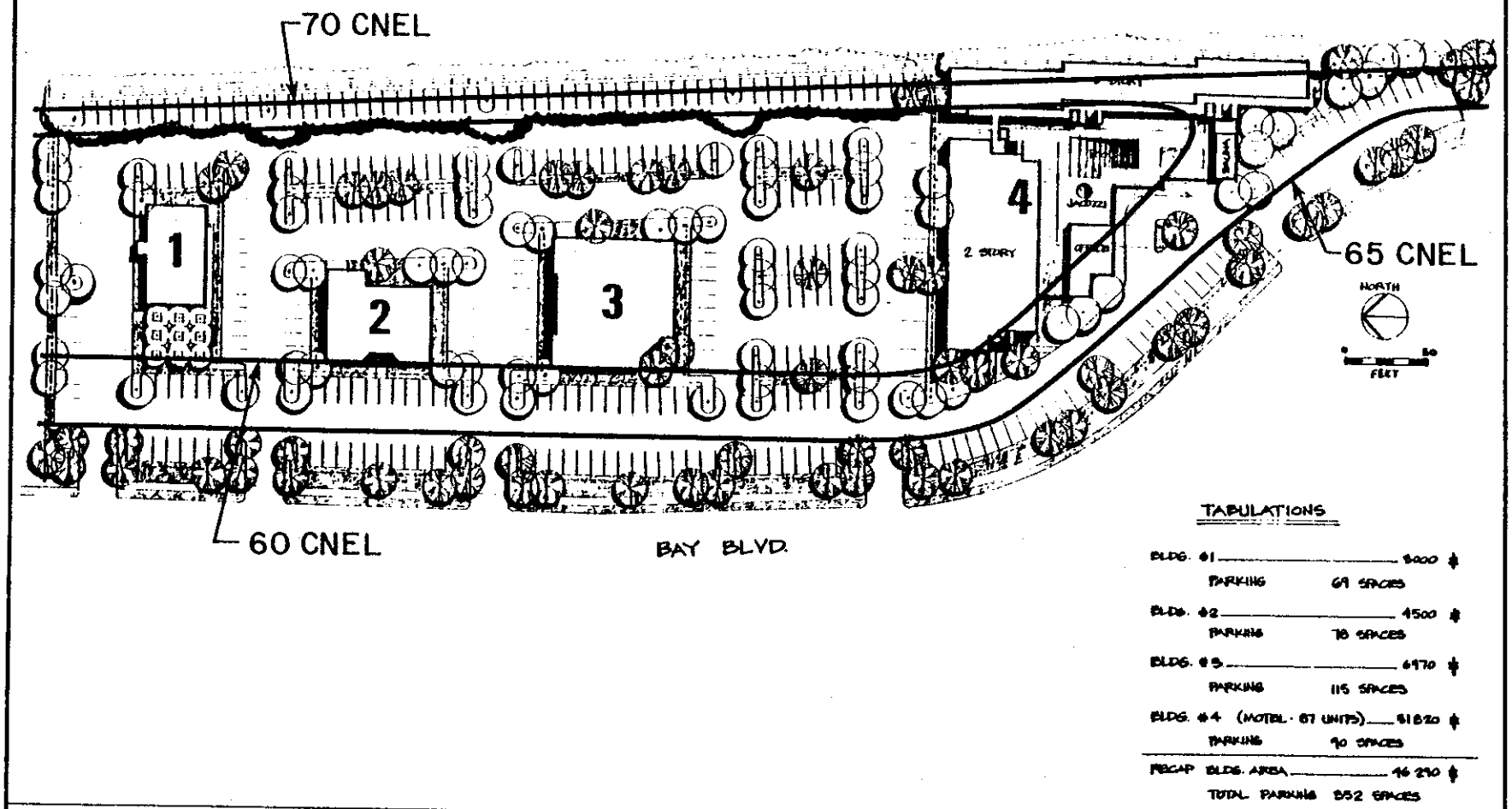
[1]Community Noise Equivalent Level

[2]Measurement influenced by aircraft overflights



Northern Project Site 1978 Noise Contours (CNEL)

FIGURE 3-4



Southern Project Site 1978 Noise Contours (CNEL)

FIGURE 3-5

Table 3-6

OPERATIONS ON STRAIGHT-IN APPROACH
NORTH ISLAND NAVAL AIR STATION RUNWAY 29

	Operations Per Day		
Aircraft Type	0700-1900	1900-2200	2200-0700
S-3	1.9	0	0
F-4	0.3	0	0
Turboprops	0.7	0	0
Propeller	1.4	0.4	0
TOTAL	5.0	0.4	0

The resulting on-site noise level is on the order of a CNEL 52 dB(A), which is slightly less than the existing ambient. It must be emphasized that the straight-in approach path is used less than 10 percent of the time at NINAS. Five operations per day is the average for this approach pattern.

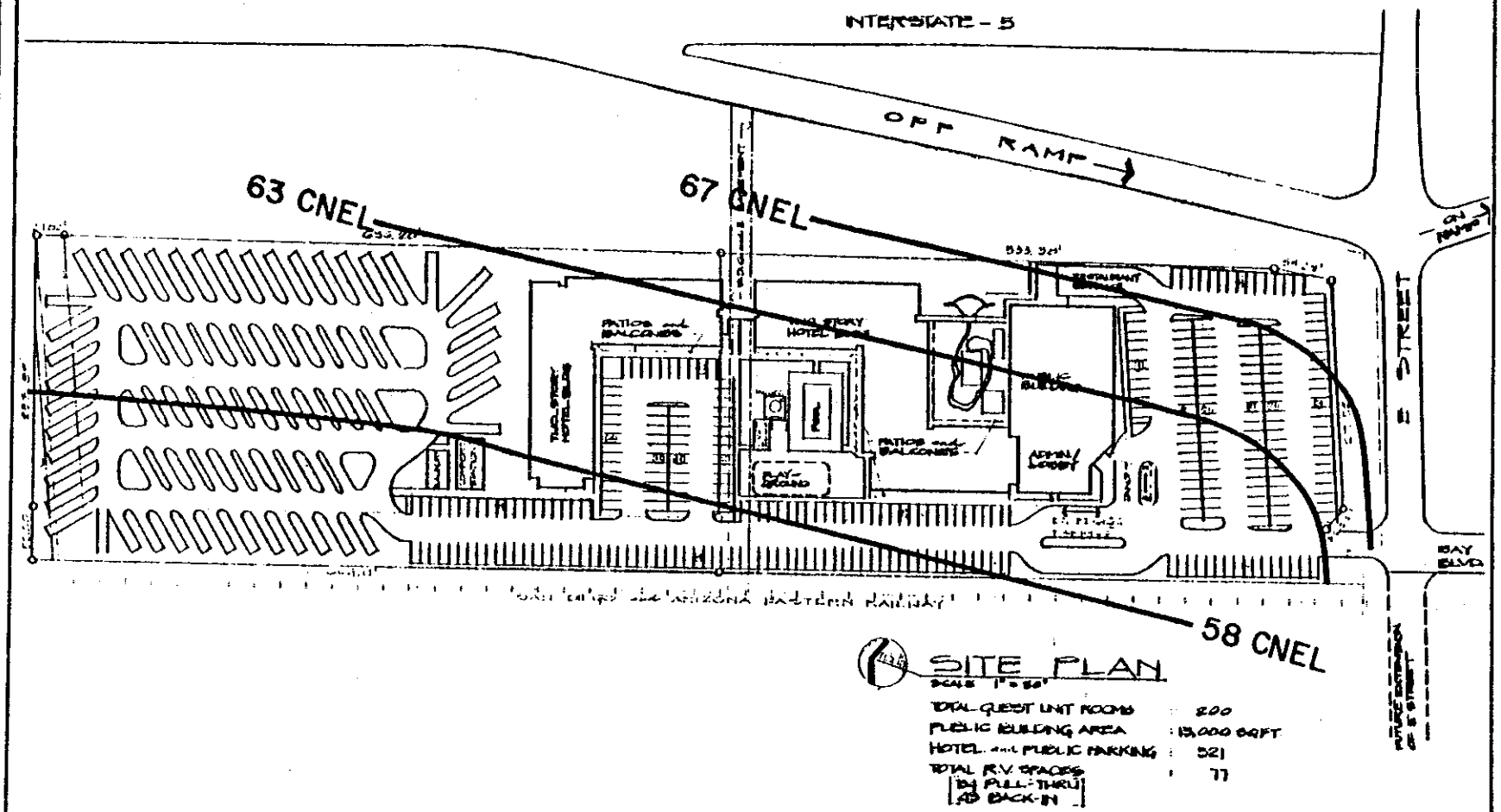
Table 3-7

1995 TRAFFIC NOISE LEVELS (dBA)

Site	Noise Source	Effect of Project	I-5 Growth
1	Interstate 5 North of E St.	60	62
2	Interstate 5 North of E St.	54*	56*
3	Interstate 5 North of E St.	63	65
4	Interstate 5 North of E St.	55	57
5	E St. Off-ramp Southbound	68	70
6	E St. West of Interstate 5	66	NA
7	Interstate 5 South of E St.	72	75
8	Bay Blvd. Between E & F Sts.	69	NA
9	Interstate 5 South of E St.	73	76
10	Bay Blvd. Between E & F Sts.	68	NA

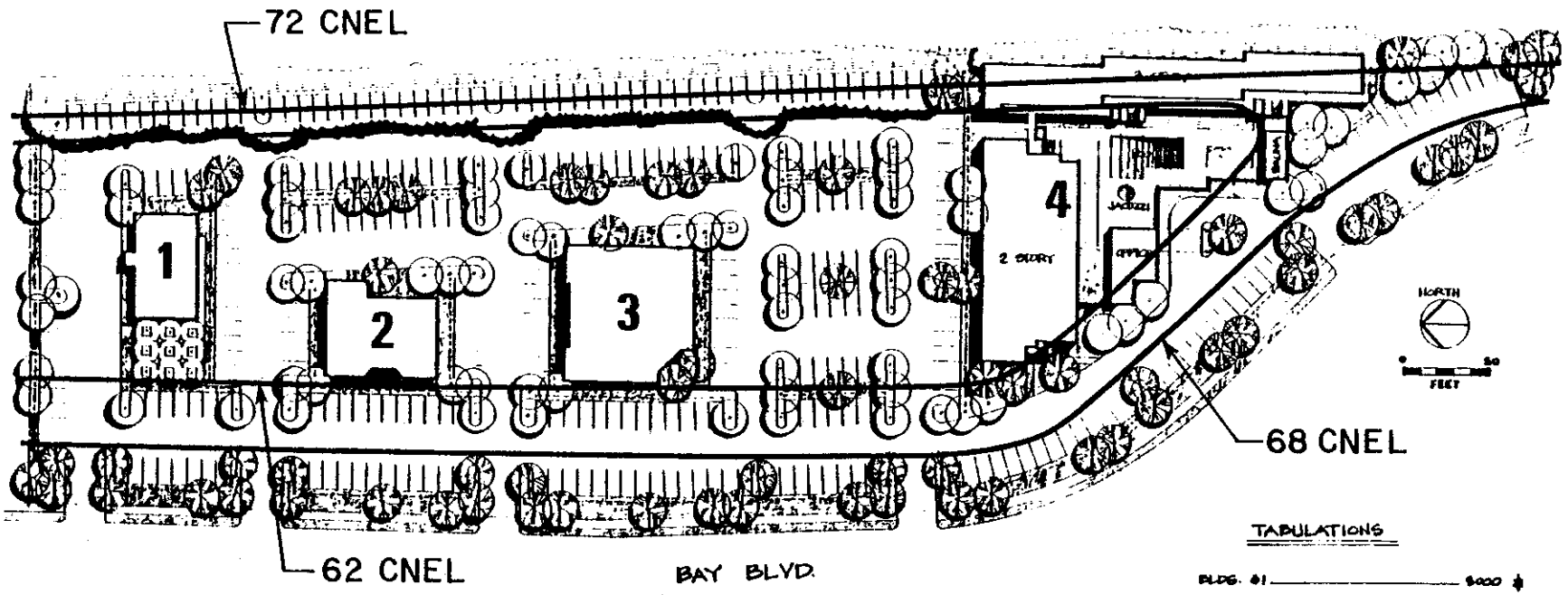
*Number based on measured data which have been corrected for traffic only

NA = not applicable



Northern Project Site 1995 Noise Contours (CNEL)

FIGURE 3-6



TABULATIONS

BLDG. #1	9000 ft²	
PARKING	69 SPACES	
BLDG. #2	4500 ft²	
PARKING	38 SPACES	
BLDG. #3	6470 ft²	
PARKING	115 SPACES	
BLDG. #4 (MOTEL - 87 UNITS)	51820 ft²	
PARKING	90 SPACES	
RECAP BLDG. AREA	16 290 ft²	
TOTAL PARKING	352 SPACES	

Southern Project Site 1995 Noise Contours (CNEL)

FIGURE 3-7

residential dwellings located on the east side of I-5. In all likelihood, except for noise due to construction, the added noise will be undetected by nearby residences due to the shielding afforded by the presence of I-5.

Noise from I-5 may impact motel units overlooking the freeway. The extent of this impact will depend upon motel design, especially the presence or absence of windows on the freeway side. Current plans indicate that on the southern site, no windows will be placed on the eastern side of the motel building overlooking the freeway. It is not known whether the motel on the northern site will have windows overlooking the freeway and the southbound "E" Street off-ramp. In the event windows are used in the design, the requirements of California Administrative Code Title 25, Building Noise Insulation Standards, must be addressed.

3.6.2.2 Construction Noise

During the construction phase of the proposed projects, noise will be generated by equipment used to clear the property and erect the buildings. Due the varied nature of the construction processes, it is difficult to describe construction noise in terms of CNEL. Table 3-8 gives U.S. Environmental Protection Agency calculated data (USEPA, 1971) for construction activity in a typical situation.

Construction noise will represent a short-term impact of indeterminate level. However, the relative remoteness of the site from existing dwellings will minimize this impact. Construction activity on the southern project site could create minor impacts

Table 3-8

TYPICAL RANGES OF CONSTRUCTION NOISE LEVELS
FOR OFFICES, HOTELS, AND PUBLIC WORKS
AT A DISTANCE OF 200 FEET

	Equivalent Noise Level-dB(A) CNEL	
Activity	All Equipment On-Site	Minimum Equipment On-Site
Ground Clearing	84	84
Excavation	89	79
Foundations	78	78
Erection	87	75
Finishing	89	75

Table 3-9

AIR HANDLING NOISE

Building	Site-ft^2	Tonnage	Noise-50 ft dB(A)	CNEL
Northern Site Restaurant	1300	26	63	66
Southern Site Restaurant	9000	18	60	63
Southern Site Coffee Shop	5000	10	55	58
Southern Site Fast Food	3000	6	51	54

at Anthony's Fish Grotto on the corner of "E" Street and Bay Boulevard. It is noted that the effect of northern project site construction noise on Anthony's Fish Grotto will be attenuated somewhat by the separation provided by "E" Street.

3.6.2.3 Aircraft Overflights

Aircraft overflight noise impact is relatively minor, based upon present-day operations. It is difficult to predict the 1995 aircraft operations into NINAS since the mission of that airfield could change drastically in the intervening years. Even if the number of operations on this flight path were doubled, only a three decibel increase in the noise would be experienced. It is likely that the aircraft mix would be significantly altered, i.e. F-4s which are noisy aircraft will be phased out and replaced by quieter aircraft.

3.6.3 Mitigation

Proposed development plans indicate that the motel in the southern half of the project site will have no windows on its eastern exposure. Conventional construction of a wall without penetrations will be sufficient to mitigate traffic noise from I-5. It is not known whether the motel on the northern site will have windows overlooking the freeway and the "E" Street southbound off-ramp. In the event windows are used in the design, the requirements of California Administrative Code Title 25, Building Noise Insulation Standards, must be addressed.

Construction noise may be mitigated by limiting hours of operation to daytime hours and avoiding working in the immediate

vicinity of Anthony's Fish Grotto during the restaurant's high-use hours. Aircraft overflights cannot be mitigated. However, it is felt that their effect will be greatly reduced by the noise insulation afforded by conventional construction techniques. This is especially true since the levels are rather low. The fact that there are usually no night flights using this approach path also aids in minimizing this impact.

3.6.4 Analysis of Significance

The proposed development will have a minor noise impact upon the area. The close proximity of the development to I-5 serves to lessen the traffic noise impact created by the proposed project. Potential significant adverse traffic noise impacts from I-5 will be mitigated on the southern site by having no windows on the eastern exposure of the proposed motel. If windows are to be utilized in the eastern exposure of the motel on the northern site, the requirements of California Administrative Code Title 25, Building Noise Insulation Standards, must be addressed.

3.7 Stationary Noise Source

3.7.1 Project Setting

Stationary noise sources associated with the proposed project include air handling equipment for the motels and restaurants. Noise levels of such equipment are a function of the air handling tonnage, which in turn is a function of the square footage of the space. Table 3-9 contains a listing of the estimated noise levels from the restaurant air-handling systems only since

the motels will have individual unit air conditioners. An 18-hour operational cycle is assumed.

3.7.2 Impacts

Noise from air handling equipment will be less than that due to traffic noise. Thus, this impact will be virtually unnoticeable except during late nighttime hours.

3.7.3 Mitigation

Noise due to stationary sources such as air handling systems can be mitigated by one of two means. The units may be roof mounted with a parapet surrounding the roof or the unit may be installed elsewhere and utilize suitable sound screening mufflers.

3.7.4 Analysis of Significance

No significant adverse noise impacts from stationary sources is anticipated.

3.8 Biology

3.8.1 Project Setting

The project site is totally disturbed from a biological point of view. No native vegetation remains on the property. The existing vegetation is ruderal in character, consisting of weedy adventitious species. Predominant species at the time of the site survey (October 1978) included Russian thistle (*Salsola iberica*), telegraph weed (*Heterotheca grandiflora*), stephanomeria (*Stephanomeria virgata*), tree tobacco (*Nicotiana glauca*), horseweed (*Conya*

canadensis), and wild mustard (*Brassica* sp.). A row of introduced tamarisk trees marks the northern boundary of the property. A total of only 11 plant species were observed on the highly disturbed parcels. Of these, eight (73 percent) are non-native introduced species, attesting to the disturbed quality of the area.

The project site is not supportive of wildlife representative of natural areas in the region. The site is expected to attract primarily those species which have adapted to the urban environment, such as house mouse (*Mus musculus*), Norway rat (*Rattus norwegicus*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), and mockingbird (*Mimus polyglottos*). No rare or endangered plant or animal species as listed by the California Native Plant Society (CNPS, 1974), the U.S. Fish and Wildlife Service (Greenwalt, 1976), or the California Department of Fish and Game (CDF&G, 1974) were observed on the property. The Sweetwater Marsh north of the hedgerow of tamarisk trees is being recommended for critical habitat under the Endangered Species Act of 1973 for the light-footed clapper rail (*Rallus longirostris levipes*) and the California least tern (*Sterna albifrons browni*). Both of these species are designated as rare by CDF&G (1974). These species would not be expected to utilize the marsh immediately adjacent to the project. The clapper rail prefers low marsh cordgrass (*Spartina* sp.) dominated zones for nesting and forage (Jorgensen, 1975). The least tern nests on the "D" Street landfill and forages for fish along the bay edges of

the marsh at high tide and in the tidal channels within the marsh during all tidal stages. They may use the tidal flats for nesting. Another rare designated bird (CDF&G, 1974), the Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), is relatively abundant in the Sweetwater Marsh complex (Massey, 1977). It is adapted to the pickleweed (*Salicornia*) marsh and is sedentary. It nests in pickleweed and sometimes in patches of alkali heath (*Frankenia grandiflora*) or in saltgrass (*Distichlis spicata*) (Massey, 1977). This species may be found on occasion in the small brackish marsh just north of the property, but it is not expected to nest there due to frequent human intrusion.

The project site is surrounded by either agriculture or urbanization except on the north. A brackish marsh is present a short distance beyond the aforementioned row of tamarisk trees. A small amount of open water (October 1978) is present, surrounded by cat-tail (*Typha* sp.), bulrush (*Scirpus robustus*), and glasswort (*Salicornia subterminalis*). This small marsh is surrounded by a variety of introduced plant species (*Arundo donax, Carpobrotus* sp., *Tamarix* sp., *Atriplex semibaicata*) and is cut off from the larger expanse of the Sweetwater Marsh complex by a fill road. This small disjunct marsh is situated approximately 180 feet north of the project site. Saltflat is situated roughly 100 feet northwest of the property.

3.8.2 Impacts

No significant adverse biological impacts are anticipated from the development of the subject property. The proposed project will not eliminate any stands of native vegetation or directly affect any known rare or endangered species.

Runoff from the project area currently drains southward into the "F" Street Marsh, thence into San Diego Bay. Development of the proposed project will markedly improve the quality of runoff from the site (see Section 3.5).

Development of the project will bring additional human pressures to the marsh complex in the form of sightseers, etc. The project will, however, eliminate Bay Boulevard as an access point to the marsh, thus reducing human and vehicle intrusion into this sensitive habitat. The overall impact of the project in this regard is positive. According to proposed plans, the most northern aspect of the property is to become a recreational vehicle overnight lot. Activity centers of the project will be situated 500 feet to the south of the northern property boundary. Dense landscaping along the northern property line will buffer the RV lot from the marsh.

3.8.3 Mitigation

Since no significant adverse biological effects are foreseen from the proposed project, no specific mitigation measures are identified. It should be noted, however, that two positive biological related effects will occur from project realization --

improved water quality runoff and elimination of access to the Sweetwater Marsh via Bay Boulevard.

3.8.4 Analysis of Significance

Due to the highly disturbed character of the project site, no significant adverse biological effects are anticipated from the proposed development. The overall effect of the project on the adjacent Sweetwater Marsh complex will be positive with the water quality improvements and cutting off of access to the marsh, overriding the increased human activity in the area.

3.9 Archaeology

3.9.1 Project Setting

Construction of the adjacent railroad bed, Interstate 5, auto wrecking yards, and various commercial lots have disrupted the natural landscape and vegetation in and around the project sites. Similarly, although the area is known to contain several archaeological sites, most of these sites have been severely disturbed by urbanization.

An archaeological survey was conducted on the proposed Bay Boulevard Redevelopment project on September 20, 1978. Results of the survey were positive; one badly disturbed prehistoric archaeological site was discovered on the northern project site. This site, SDi-5512a, consists of scattered shellfish, pottery sherds, and stone tool manufacturing debris. Although badly disturbed, SDi-5512a possesses, at best, limited data about prehistoric life

in the Chula Vista area. A more detailed discussion of archaeological site SDi-5512a is presented in Appendix D .

3.9.2 Impacts

Implementation of the proposed northern project may adversely impact archaeological site SDi-5512a through landform alteration, destruction of artifacts, and loss of already impaired data. Steps to mitigate these impacts are provided in the following section.

3.9.3 Mitigation

To ensure that potentially significant archaeological data are not lost or impaired as a result of this project, an archaeological testing/salvage program is recommended. The archaeological mitigation program should be two-phased. Phase I should be limited subsurface testing and surface collection. This phase is necessary to determine the areal (surface) extent of the site, the subsurface depth (if any), and the amount of disruption.

Based on the Phase I test results, a Phase II salvage may be required if significant subsurface or surface artifacts are encountered. Phase II should include a percentage sample (e.g., 5-15 percent) of the site, thorough analysis, and radiometric dating, if applicable.

Implementation of the Phase I and, if required, Phase II testing/salvage should successfully mitigate potential adverse impacts to archaeological resources within the project.

3.9.4 Analysis of Significance

Although the archaeological resources within the project are potentially significant and warrant further study, mitigation of potential adverse impacts can be conducted. Such mitigation will eliminate any constraints or significant impacts resulting from the proposed project.

3.10 Land Uses

3.10.1 Project Setting

Section 2.4 (Site Characteristics) describes the existing conditions on each site in terms of existing land uses and physical conditions. This section will therefore concentrate on the various land use regulations which affect the site. The *Chula Vista Bayfront Redevelopment Project Plan* (Chula Vista, City of, 1974) designates both the northern and southern sites for highway-related commercial uses. The sites are zoned C-V-P, and the proposed *Local Coastal Program* (Chula Vista, City of, unadopted) designates the sites for highway commercial.

The *Chula Vista Bayfront Redevelopment Project Plan* was adopted in June 1974. The *Plan* establishes policies relating to the circulation system and other public support facilities. The two proposed private projects are located within Subarea D of the *Plan*, referred to as the Bay Boulevard area. The two primary concerns within this subarea are to establish uses consistent with the highway recreational commercial designation and to improve the aesthetics of the area so as to create an attractive entryway to the Bayfront.

The two sites are zoned visitor commercial (C-V) with a precise plan (P) overlay. The C-V zone establishes a specific list of permitted visitor-related uses, including hotels, motels and restaurants. The P overlay indicates that an adopted precise plan "shall take precedence over the otherwise applicable regulations of the underlying zone." In this case, the City of Chula Vista adopted the *Plan* as a precise plan in order to ensure consistency; therefore the *Plan* takes precedence over the development standards contained in the C-V zone.

The proposed *Local Coastal Program* is consistent with the *Plan* and designates these sites for highway commercial. While the *Local Coastal Program* has not been formally submitted or approved, no adverse reaction to this particular area is anticipated.

3.10.2 Impacts

The proposed projects are described in Section 2.5 (Project Characteristics). Each of the projects is consistent with the land use regulations for the sites. Furthermore, the redevelopment of each of the sites will result in the removal of undesirable and unsightly uses. From a land use point of view, the proposed projects are consistent with existing and proposed uses in adjacent sites, and will serve to enhance the area. No adverse impacts are anticipated.

3.10.3 Mitigation

From a land use point of view, no mitigation measures are required. Final site plans and landscaping should be carefully reviewed to ensure that a strong and attractive entryway is created.

3.10.4 Analysis of Significance

The proposed projects are consistent with the *Chula Vista Bayfront Redevelopment Project Plan* and the proposed *Local Coastal Program*.

3.11 Aesthetics

3.11.1 Project Setting

The northern site of the Bay Boulevard Redevelopment Project is flat and largely vacant, though its southern portion is presently occupied by an inactive auto wrecking yard. The northern site is mostly disturbed and covered by introduced weeds, with a row of trees along its northern boundary; the remnants of the auto wrecking business (old cars, a fence, and a structure) are evident in the southern area, amongst the weeds.

The southern site is partially vacant, with its northern area previously used for auto wrecking; several old, skeletal structures and a fence remain from this previous use. The mid-site area contains an active auto wrecking operation, with the southernmost portion vacant. Vacant areas are covered with weeds; the topography is generally flat.

Visible from both sites are the extensive, flat tomato fields to the west, southwest and northwest, terminating at the shoreline of San Diego Bay. On a clear day, the shores of Coronado and the Silver Strand farther to the west are also visible from both sites. This western view is somewhat impaired by high tension electrical wires running along the eastern edge of the

tomato fields. The Sweetwater River Marsh can be seen to the north from the northern site. Both sites are elevated above the I-5 freeway so that their predominant eastern view is of the primarily commercial uses across the freeway.

The sites themselves are, conversely, not highly visible to passersby on I-5 due to their elevation above freeway level. Even if they were, only the open vegetated northern portion of the northern site could be considered visually pleasing; the remaining auto wrecking yards are not particularly attractive. Few residences look into the project vicinity, comprising only a mobile home park along the eastern side of I-5, across from the northern site, and a small apartment building across from the southern site.

Bay Boulevard is a two-lane street, extending from the Sweetwater Marsh, southward past Rohr Industries. From its northern terminus to "F" Street, it is generally a level roadway, without curbs, gutters, sidewalks, or other improvements. It is bordered by the single-tracked SD&AE railroad bed immediately to its west, a spur of which crosses Bay Boulevard in the vicinity of the southern end of the southern project site. This is a somewhat non-aesthetically pleasing attribute of the northern and southern project site vicinities.

From "F" Street to "H" Street, Bay Boulevard is bordered on the east by the freeway right-of-way fence, with industrial land use immediately to the west. Ihe discontinous sidewalks located on the west side of the roadway tend to present an outward haphazard appearance, particularly between "F" and "G" Streets.

3.11.2 Impacts

Neither the northern nor the southern site proposed projects will adversely impact the visual qualities of their respective sites. Some loss of visual open space will result from development of the northern portion of the northern site, as it is visible to vehicles on I-5 southbound. The RV lot proposed for that portion will, however, be landscaped and screened from both I-5 and Sweetwater Marsh. Development of the remainder of the northern and southern site areas may actually improve aesthetic qualities by removing the debris, old structures, and wrecked autos currently covering the sites.

As there is currently no view of the San Diego Bay from I-5 in the project vicinity -- due to the fact that the freeway is "below grade" at that point -- the Bayfront view-shed will not be adversely impacted. Residents of the mobile home park east of I-5 will still have views of the marsh and bay, but will simultaneously view the proposed motel, restaurant and RV lot. It should be noted that previous land use on the northern site area included a steel fabricating plant. Residents of the apartment building located along Woodlawn will look at another motel/restaurant complex on the southern site in place of the existing and abandoned auto wrecking yards. They should still retain views of the Bay between and over buildings and parking lots.

The projects are within the Coastal Zone and appear to be in conformance with the *California Coastal Act of 1976*, Article G, Section 30251, relating to visual quality. This

section indicates that:

> ...Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.

The proposed projects contain no buildings higher than three stories, and a large amount of flat parking area, one-story buildings and landscaping. They are not in the view-shed of I-5 or residential areas other than (partially) the mobile home park and a small apartment building; most uses to the east are commercial. The proposed development would seem to enhance the visual quality of the area, bringing it more in line with the character of the new Anthony's Fish Grotto located between the two sites. Additionally, an impressive view of the Bay and tidelands area is available just north of the northern site from across Sweetwater Marsh. Very little alteration of the landform will occur, as both sites are flat and have been previously graded.

The proposed landscaping improvements to be made on the west side of Bay Boulevard between "E" and "F" Streets, which will be no higher than four feet above the top of the railroad bed, will greatly improve the visual quality of Bay Boulevard by effectively screening one of the unattractive aspects of the roadway vicinity. The proposed lighting, curb and sidewalk improvements to be made between "E" and "H" Streets will visually enhance the appearance of the roadway both during the daytime and at night. Thus, no significant adverse visual effects are anticipated by construction of the proposed Bay Boulevard street improvements.

3.11.3 Mitigation

The only mitigation measure considered necessary is the implementation of an overall landscape plan, to both visually separate the northern site development from the natural Sweetwater Marsh area and to provide a more pleasing appearance along the eastern sites' boundaries visible from I-5.

3.11.4 Analysis of Significance

The appearance and design of all three of the proposed projects are of vital concern within the Coastal Zone. The visual enhancement provided by these projects would appear to conform with *Coastal Act* intentions.

3.12 Fire and Police

3.12.1 Project Setting

3.12.1.1 Fire

Fire protection for the proposed project is provided by the Chula Vista Fire Department. The nearest facility to the project site is Station No. 1, located at the Civic Center, 447 "F" Street, approximately one mile from the proposed project. The first response to an alarm would be one engine and one ladder company from Station No. 1 and one engine company from Station No. 2, at 80 East "J" Street (four miles from the project site). Response time to the project site is approximately 1.5 minutes (Monsell, 1978).

3.12.1.2 Police

Police service to the proposed project is provided by the Chula Vista Police Department and emanates from the Main Station at the Civic Center, approximately one mile from the project site. The City currently has an operating force of 93 officers and 40 vehicles for patrol and investigative purposes (George, 1978).

3.12.2 Impacts

3.12.2.1 Fire

An incremental demand for fire protection services may result from development of the proposed project, however, no increase in personnel or equipment will be necessary (Monsell, 1978).

3.12.2.2 Police

The proposed project may result in an insignificant increase in demand for law enforcement services. The City of Chula Vista Police Department anticipates no problem in providing such services (George, 1978).

3.12.3 Mitigation

No significant impacts should result from the proposed project, thus no mitigation is required.

3.12.4 Analysis of Significance

The proposed project may result in a slight increase in demand for police and fire protection services which is considered insignificant.

3.13 Utilities/Energy

3.13.1 Project Setting

3.13.1.1 Energy Supply and Conservation

Natural gas and electrical services to the project area area provided by the San Diego Gas & Electric Company (SDG&E). Existing gas distribution facilities in the area include a 4-inch main in "E" Street. Electrical service emanates from the Montgomery Substation, approximately 0.66 mile southwest of the project site. Distribution facilities include 12 kilovolt lines adjacent to "E" Street (Williams, 1978).

Currently, no energy is being used at the northern site, which has been cleared of its previous land usage by Bannister Steel and the former "E" Street Auto Wrecking Yard. Some electricity

is being used by the South Bay Auto Wrecking Yard on the southern site, but the remainder of the area has been vacated. The only other electrical usage is from two street lights on Bay Boulevard between "E" and "F" Streets. They are estimated to consume approximately 25 kilowatt-hours (kwh) per month.

3.13.1.2 Water Supply and Conservation

Water service to the project area is provided by the California American Water Company, which receives water from the Colorado River and from the Sweetwater River Valley watershed. The water is stored at the Sweetwater Reservoir, which has a capacity of 10 billion gallons. It moves through a filtration system at the reservoir and then into a clear well prior to distribution.

Distribution facilities in the project area include a 12-inch water main in Bay Boulevard, approximately 15 feet from the western edge of the property line (Pugh, 1978).

3.13.1.3 Sewers

The project area is served by the sewage lines maintained by the City of Chula Vista. Resultant flows are pumped north through San Diego, combined with flows from the jurisdictions, and carried to the Central Waste Water Treatment Plant at Point Loma, which provides primary treatment for average daily flows of 120 million gallons per day (MGD). The sewage is then discharged by deep ocean outfall into the Pacific Ocean. The City of Chula Vista's capacity rights in this system are 22.1 MGD (Harshman, 1978).

Existing facilities in the project area include an 8-inch line in Bay Boulevard which extends 380 feet south of "E" Street and 420 feet north of "E" Street (Varshock, 1978).

3.13.1.4 Solid Waste

Solid waste service to Chula Vista is provided by the Chula Vista Sanitary Service Company, the City's franchised contractor. This company provides service for all areas through individual contract agreements.

Solid waste is transported to the Otay Landfill operated by the County of San Diego on Otay Valley Road, one mile east of its intersection with Interstate Highway 805. This site is located approximately 6.5 miles from the project site and has a projected lifespan of 20 years (Thimm, 1978).

3.13.2 Impacts

3.13.2.1 Energy Supply and Conservation

Provision of natural gas and electrical services will depend on connection with existing gas and electrical lines adjacent to the project at Bay Boulevard. SDG&E anticipates that existing facilities for gas and electricity are adequate to serve the proposed projects.

Based on an average monthly consumption rate of 2.5 kwh of electricity per square foot of floor space for restaurants and 7.5 kwh of electricity for motels (City of Chula Vista, 1978), the total electrical consumption for the projects is estimated to be 11.9 million kwh annually. Of this total, the northern site would consume 8.2 million kwh annually, and the southern site 3.7 million kwh annually.

Currently, there are no estimates available for average consumption rates of natural gas by restaurants and motels (Williams, 1978; Reid, 1978). However, SDG&E does not anticipate that there will be any significant impact on natural gas supply or existing facilities (Williams, 1978).

The development of travel-related facilities at the project sites will result in energy consumption by vehicular traffic. The average daily traffic (ADT) generated at the northern site is estimated at 4217 ADT, and at the southern site, 4396 ADT. Based on an average consumption rate of 15 miles per gallon, and an average trip length of 9.7 miles, people using the facilities would require approximately 2726 gallons of fuel per day at the northern site, and 2843 gallons of fuel per day at the southern site. No additional traffic would be generated by the street improvements. Some additional energy will be consumed during project contruction-related activities.

3.13.2.2 Water Supply and Conservation

The Sweetwater Water Authority anticipates an adequate supply of water to the site for all purposes. Water service will depend on connection to existing water lines adjacent to the project in Bay Boulevard.

Using average consumption rates of 2 gallons per square foot of floor space per month (City of Chula Vista, 1978), the proposed project would utilize approximately 3.6 million gallons of water annually. This figure includes estimated annual water consumption of 2.4 million gallons for the northern site and 1.2

million gallons annually for the southern site. Estimates of the amount of land to be landscaped and irrigated were unavailable at the time of this analysis.

3.13.2.3 Sewers

Based on an average monthly generation rate of 1 gallon per square foot of floor space (City of Chula Vista, 1978), the proposed projects would approximately generate 1.8 million gallons of sewage annually, including 1.2 million gallons from the northern site and 0.6 million gallons from the southern site. This represents approximately 0.08 percent of the existing Chula Vista contribution to the Metropolitan Sewer System flow (6 MGD). Such an addition to current levels would not approach the City's capacity allocation in this system (22.1 MGD) (Varshock, 1978; Harshman, 1978). It is anticipated that a 6-inch line would be required to serve the proposed projects. No significant impact on the existing collection lines is expected.

3.13.2.4 Solid Waste

Property owners in the project site will be responsible for establishment of a contractual agreement with the City's franchised contractor to obtain solid waste disposal service.

Based on a generation rate of 2 pounds per 100 square feet of floor space per day (City of Chula Vista, 1978), the northern site would generate approximately 365 tons of solid waste per year, and the southern site approximately 183 tons of solid waste per year. This will incrementally decrease the lifespan of

the Otay landfill, which is currently estimated at 20 years. The City's franchised contractor for solid waste removal does not foresee any difficulties in collecting and handling the increased amount of waste (Thimm, 1978).

3.13.3 Mitigation

3.13.3.1 Energy Supply and Conservation

The increasing scarcity and rising cost of energy emphasizes the importance of incorporating energy conservation measures into the project design. The following specific measures will be used by the restaurant and motel on the northern site to help reduce energy consumption over the life of the project:

- An automated timing (MICOR) system to control heat, air, and lights which is overriden by temperature, humidity, and outside light.
- A central electrical pulsing system for room energy units to prevent all power from going on at the same time and creating a heavy draw.
- Heat and air conditioning will not be turned on in unoccupied rooms.
- Solar heating for the swimming pool.
- Heat retardant drapes on all windows.
- Tinted glass for all common areas.
- Natural gas for cooking and for heat in restaurant and hallways of motel.

- Class 1 block construction with block cells filled with styrofoam.

Due to the present stage of development, no specific conservation measures for the southern site have been determined. The following specific measures could help to reduce existing consumption over the life of the project:

- Use of fluorescent lights where possible; these provide four times the light for the same amount of electricity as incandescent lighting, last ten times as long and produce less waste heat (Steinhart, 1974; San Diego Gas & Electric Company, 1976).

- Use of natural gas for heating and cooking facilities, because of its higher efficiency of conversion than electricity.

- Weatherstrip and caulk all doors and windows, which reduces energy costs by ten percent or more (Federal Energy Administration, 1975).

- Use of light interior decorating colors to increase the efficiency of lighting systems.

- Use of window coverings such as shades, blinds, louvres, heat-retardant drapes to reduce solar heat gain.

- Use of time-controlled thermostats for heating and air conditioning.

- Utilize optimum insulating, as per State standards (R11 for outer walls and R19 for ceilings); insulate heat ducts, hot water pipes and hot water tanks.

- Site buildings to maximize utilization of natural ventilation and heating, and for potential use of solar heating for swimming pools.
- Selection, within reason, of energy-efficient appliances by developer.
- Reduce energy consumption through water conservation measures.

No additional mitigation measures are considered necessary.

3.13.3.2 Water Supply and Conservation

The San Diego region is highly dependent on imported water, which may be in short supply if drought conditions recur. The following water conservation measures could be incorporated into the projects to reduce total water demand:

- Low-flush toilets, mandatory as of January 1978 (Nepreis, 1977).
- Low-flow shower heads, which can reduce water consumption by 9-12 percent (State of California, 1976).
- Pressure-reducing valves where necessary, which can result in unit water savings from 0-10 percent, and which operate most effectively when flow controls have been installed (State of California, 1976).
- Automatic sprinklers with soil moisture override.
- The use of native or drought-resistant vegetation for landscaping.

No additional mitigation measures are considered necessary.

3.13.3.3 Sewers

The use of low-flush toilets, as well as other water conservation measures (see Section 3.13.3.2), would reduce sewage effluent generation. Low-flush toilets may, however, increase the total dissolved solids (TDS) level of treated wastewater.

No additional mitigation measures are considered necessary.

3.13.3.4 Solid Waste

Any efforts to establish a solid waste recycling program, particularly for paper goods, aluminum and glass, would help to reduce the resultant solid waste totals associated with ultimate project development and also slow the depletion rate of these non-renewable resources. No additional mitigation measures are considered necessary.

3.13.4 Analysis of Significance

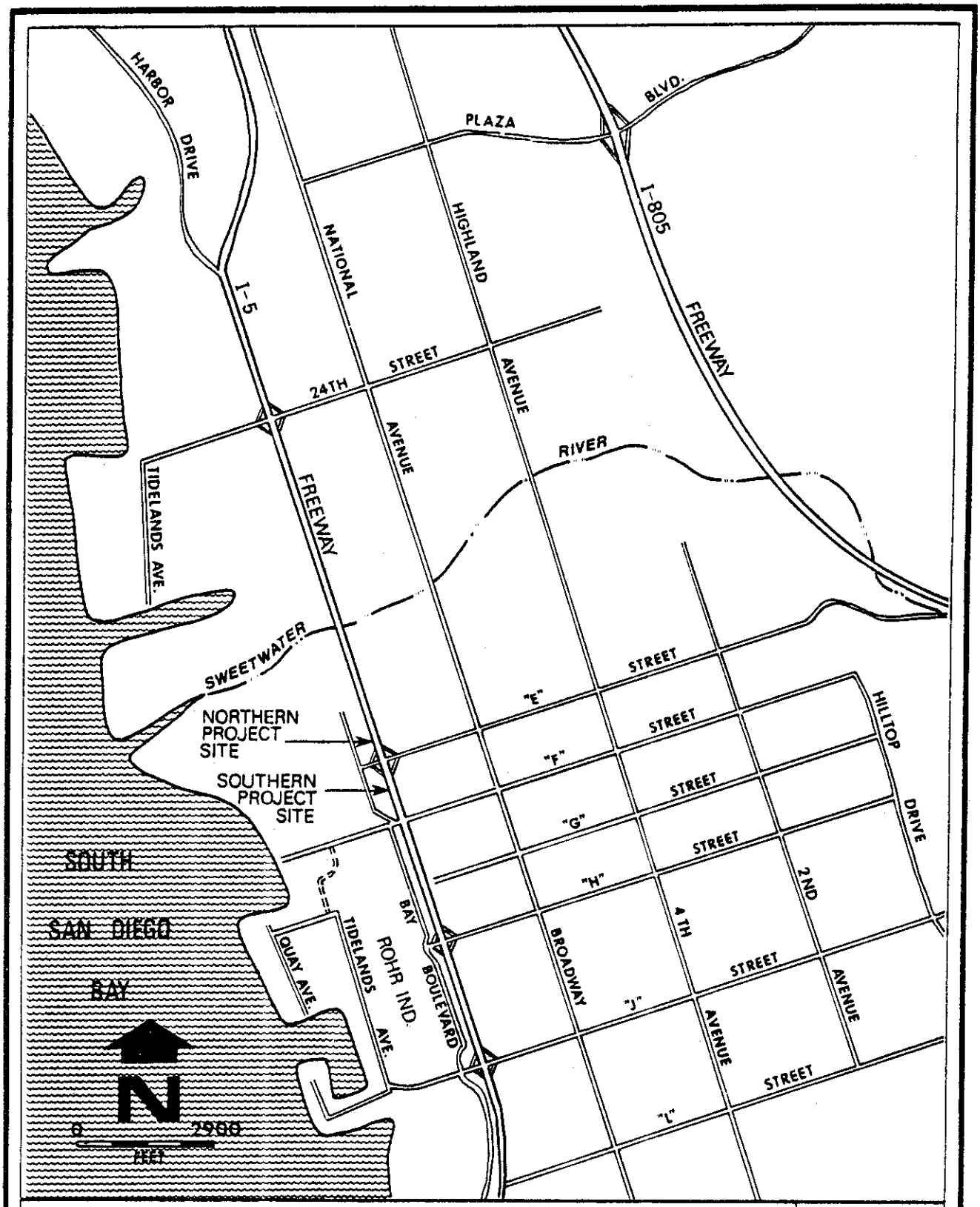
The proposed redevelopment projects should result in incremental increases in water and energy consumption, as well as in sewage and solid waste generation. These impacts are considered to be of minimal significance for the project.

3.14 Transportation Access

3.14.1 Project Setting

Access to the Bay Boulevard Redevelopment area is provided primarily by means of "E" Street and the "E" Street/I-5 freeway interchange (Figure 3-8). Freeway access to the Bay Boulevard Redevelopment area is also provided by the "H" Street freeway interchange located approximately three-fourths of a mile to the south. In addition, Bay Boulevard is connected by "F" Street, which provides access to the central portion of the City of Chula Vista, as do "E" and "H" Streets.

Bay Boulevard serves as a two-lane collector north-south route of travel. "F" Street is a two-lane roadway west of the I-5 freeway. "E" Street and "H" Street, on the other hand, are wide four-lane roadways with limited parking on "E" Street and no parking on "H" Street in the vicinity of the proposed projects. Tidelands Avenue, between "F" Street and "G" Street, was recently closed to through traffic. For this reason, some of the traffic that had formerly been using the "E" Street I-5 freeway interchange is now using the interchanges at "H" and "J" Streets. This has somewhat relieved peak hour traffic flow on Bay Boulevard and "E" Street in the project site vicinity; however, additional delays are now occuring in the vicinity of the "H" and "J" Street freeway ramps. The I-5 freeway provides for both regional and subregional north-south traffic movement between San Diego and points to the north, and the San Ysidro, U.S./Mexico border crossing to the south. It is a major route of travel between the San Diego area and the major tourist attraction of Tijuana.



Traffic Circulation System in the Vicinity of the Proposed Projects

FIGURE 3-8

In addition to providing access to existing land uses adjacent to the west side of the freeway in the project site vicinity, Bay Boulevard serves as one of the major routes of access to the Rohr Industries complex and nearby light industrial activity. The traffic flow periods associated with this movement during the mornings tend to occur between 6:30 and 7:45 (Thuesen, 1978), while the afternoon peak periods occur from between 3:30 and 5:30 (Sully, 1978), although both the morning and afternoon peaks vary considerably in degree. Within both the morning and afternoon peak periods, traffic tends to fluctuate between light to heavy rates of flow. During the morning, City of Chula Vista Special Policemen (not sworn officers) provide manual traffic control at the intersections of "F" Street and Bay Boulevard and at "J" Street and Bay Boulevard. In the afternoon, these patrolmen direct traffic at "E" Street at both the northbound and southbound ramp locations and along Bay Boulevard at the "F," "H" and "J" Street intersections. The special policemen work for Rohr Industries. During their traffic control duties, they wear City of Chula Vista uniforms, but they are paid by Rohr (Doyle, 1978).

Because of the work-shift arrangement at Rohr, the primary peak of employee traffic tends to occur between 6:30 and 7:10 am, although it is greatly spread out because some employees arrive earlier than others (Thuesen, 1978). A secondary peak occurs between 7:30 and 7:45 am. "E" Street/Bay Boulevard traffic tends to occur in "surges" of heavy volumes, with intervals of very light traffic over these periods. In contrast, the afternoon

period, which has its primary peak between 3:30 and 4:00 pm, a secondary peak between 4:30 and 4:50, and much smaller peaks associated with upper level staff at 5:00 and 5:30, has much more concentrated volumes of traffic over shorter periods of time. The 5:00 and 5:30 pm traffic peaks do not occur on Fridays because Rohr personnel leave at 4:30 pm, increasing the volume of traffic during that peak (Scull, 1978).

Most of the traffic volumes associated with "E" Street west of the freeway and Bay Boulevard between "E" Street and "F" Street are related to Rohr Industries employment. During the rest of the day (off-peak periods) there are no traffic problems (Doyle, 1978). As can be seen in Table 3-10, about 4100 vehicles per day use Bay Boulevard between "E" and "F" Streets, while 5800 vehicles per day (slightly in excess of design capacity) use "F" Street just east of the freeway. It should be noted, however, that the majority of this volume is associate with the Rohr Industries peak periods, with only light traffic at other times (Doyle, 1978). Due to the efficient traffic control of the Special Policemen during peak periods, very few traffic accidents occur in the proposed project areas (Doyle, 1978).

3.14.2 Impacts

3.14.2.1 Northern Site

Access to the proposed northern project site will be primarily by means of "E" Street and the "E" Street/I-5 freeway interchange. By means of encroachment permits granted by the City

Table 3-10

PRESENT AND PROJECTED TRAFFIC IN THE PROJECT SITE VICINITY

Segment	Design Capacity[1]	1978 ADT[2]	Projected 1995 ADT
BAY BOULEVARD			
E to F Street	5000	4100	NA[3]
G to H Street	5000	2850	NA
E STREET			
East of I-5	25,000	25,100	NA
West of I-5	25,000	6000[4]	NA
F STREET			
East of I-5	20,000	5800	NA
West of I-5	5000	NA	NA
I-5 FREEWAY			
24th to E St	NA	81,000	145,000[5]
E St to H St	NA	75,000	160,000

[1]City of Chula Vista Street Standards

[2]Average Daily Traffic -- City of Chula Vista (1978) and CALTRANS (1978)

[3]Not available

[4]Estimate by City of Chula Vista Traffic Engineer

[5]CALTRANS (1978) -- assumes construction of proposed SR 54

of Chula Vista, the proposed northern development will utilize portions of Bay Boulevard north of "E" Street (Figure 2-4). Entrance to the project site will be at the same location as the present intersection of "E" Street and Bay Boulevard.

As can be seen in Table 3-11, the northern project site is expected to generate 4217 trips per day. Since the proposed development is highly freeway-oriented, the majority of trips made by means of "E" Street. It is felt that the close proximity to Anthony's Fish Grotto and the proposed southern project site, which would contain three restaurants, including a fast food facility and a coffee shop, will atract a significant number of northern site trips. As can be seen in Figure 3-9, approximately 25 percent of the trips would be expected to be made to this complementary highway commercial area. Due to their close proximity, a significant number of these trips would be expected to be made on foot rather than through use of automobiles. The analysis also assumes full occupancy of the motel and campground, which even in the San Diego area is somewhat seasonal and varies between weekdays and weekends. For these reasons, the trip generation rates shown in Table 3-11 should be considered as a "worst case" analysis.

Since the majority of this traffic would be expected to use "E" Street and the "E" Street/I-5 freeway interchange (Figure 3-9), access in and out of the proposed northern project site would be very difficult during periods of heavy traffic flow associated with the 6:30 to 7:10 and 7:30 to 7:45 am Rohr

Table 3-11

ESTIMATED TRAFFIC GENERATION OF THE PROPOSED PROJECTS

Land Use	Size	ADT Rate	Trips Generated Daily
NORTHERN SITE			
RV Park	77-space	9.7/space	747
Motel	200-room	7.6/room	1,520
Restaurant	13,000 SF	150/1000 SF	1,950
			4,217 TOTAL
SOUTHERN SITE			
Motel	83-room	7.6/room	631
Specialty Restaurant	6400 SF	150/1000 SF	960
Coffee Shop	4500 SF	150/1000 SF	675
~~Fast Food~~ Restaurant	~~3000~~ 9,632 SF	~~710/1000 SF~~ 150/1000 SF	~~2,130~~ 1,445
			~~4,396~~ 3,711 TOTAL

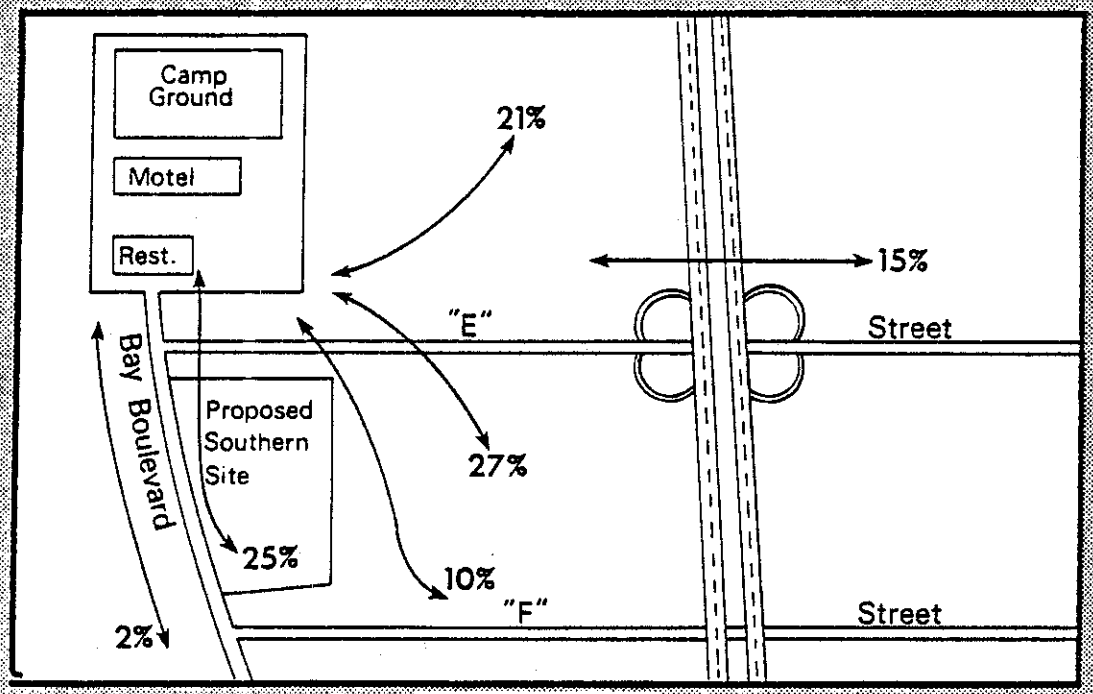
Industries traffic movement and the related 3:30 to 4:00 and 4:30 to 4:50 pm afternoon congestion. Traffic departing the site during the morning peak periods of Rohr Industries traffic flow would, at times, have a very difficult time entering either the "E" Street or Bay Boulevard traffic flow. Even though the Rohr traffic is heavy at times, it does vary greatly between light, moderate and heavy during these morning peak period flows.

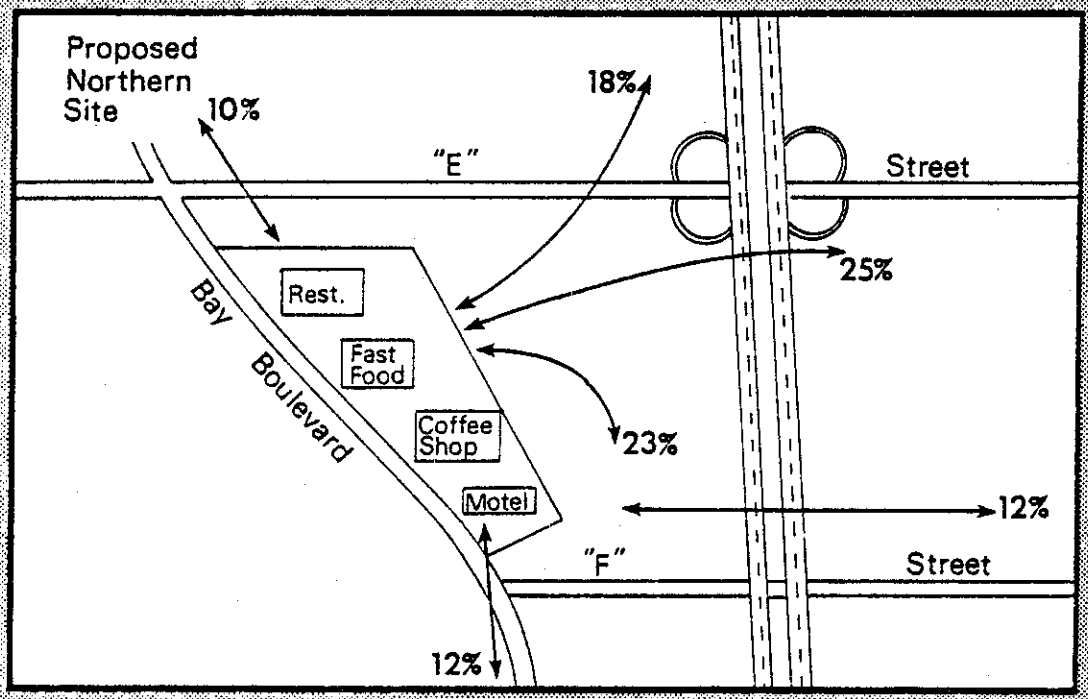
Afternoon peak period traffic from Rohr would similarly be impacted. The afternoon traffic flow along Bay Boulevard and "E" Street is much more concentrated than in the mornings, and traffic departing the proposed northern project site would have a more difficult time getting to the freeway interchange. This, however, is compensated by the fact that during the afternoon Rohr peaks, most of the project site traffic would be expected to be inbound from the freeway, which is in the opposite direction of heavy traffic flow.

3.14.2.2 Southern Site

The proposed southern project site, which will include a fast food restaurant, coffee shop, specialty restaurant and 83-100-room motel, would be expected to generate approximately 4396 trips per day (Table 3-11). As can be seen in Figure 3-9, a greater percentage of trips would be made between the proposed site and central Chula Vista due to the stronger restaurant-type of land use orientation than the northern site.

In looking closer at the nature of the proposed highway commercial-type of traffic generated by this site, the trips





Traffic Distribution Patterns

FIGURE 3-9

attributable to the motel and restaurant establishments would be expected to have peaks at varying times throughout the day, such as around lunch time and dinner time, after the bulk of the Rohr traffic has passed. Traffic to the motel would also be expected to be minimal during the afternoon peaks. During these afternoon times, inbound traffic turning into the project site from southbound Bay Boulevard would significantly impact northbound through traffic flow. Similarly, peak period Rohr Industries traffic flow during the morning rush would also be significantly impacted by southbound traffic turning into the project site.

3.14.2.3 Proposed Bay Boulevard Improvements

Construction of curb, gutter, sidewalk, and lighting improvements along Bay Boulevard from "E" Street to "G" Street that are included as part of this proposed project would provide beneficial, rather than adverse, impacts to the existing and proposed additional traffic flow on Bay Boulevard. These positive benefits would result in improved nighttime visibility and a better defined route of travel due to the installation of sidewalks and curbs, and improved lighting. Therefore, no significant adverse impacts would be expected to result.

3.14.3 Mitigation

The exact extent of the impacts of both the northern and southern sites is somewhat difficult to assess. Whether or not all of the mitigation measures proposed will be required will depend in large part upon the actual experience encountered.

Since the northern site will probably be built first, the total impact of both projects won't be felt immediately. Based upon the actual experience with this site, the necessary mitigation measures for the southern site could be more clearly determined.

3.14.3.1 Northern Site

In order to mitigate significant impacts during periods of peak travel flow, the following steps will be taken:

- A clearly marked striped pedestrian intersection will be provided between the proposed northern project site and the Anthony's Fish Grotto corner of "E" Street and Bay Boulevard.
- If warranted by actual experience, special policemen will assist in traffic moving in and out of the proposed development during peak periods of Rohr traffic flow.

3.14.3.2 Southern Site

The following steps will be taken in order to mitigate significant impacts during periods of peak travel flow:

- Left turn lanes along Bay Boulevard between "E" Street and "F" Street will be provided for southbound traffic to turn into the proposed project site.
- Clear sight distance (the driver's line of vision on the road ahead) will be maintained for northbound Bay Boulevard traffic entering the curve

just north of "F" Street. Parking on the east side of Bay Boulevard will be prohibited, at least between the railroad crossing north of "F" Street and the first project site entrance north of the curve in order to achieve this objective.

- Improved street lighting between "E" and "F" Streets and a better definition of the path of vehicular travel in the curve area north of "F" Street will result from the proposed Bay Boulevard improvements.
- If warranted by actual experience, special policemen will assist in the movement of traffic at at least one of the proposed project entrance/exits during peak periods of Rohr traffic flow.

3.14.3.3 Bay Boulevard Improvements

No mitigating measures are proposed.

3.14.4 Analysis of Significance

Rohr Industries traffic flow peak periods account for a large percentage of the total daily traffic along Bay Boulevard and "E" Street west of the freeway. At other times, traffic flow is light. The additional traffic generated by the proposed northern and southern project sites will significantly impact this congestion only during these periods of heavy traffic flow associated with the Rohr Industries morning shift starting times, and the

corresponding afternoon peaks. At other times of the day, and all of Saturday and Sunday, the present street system would be expected to adequately handle traffic flow.

4.0 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

The proposed northern and southern project sites will result in the following adverse environmental effect that cannot be mitigated to an insignificant level.

4.1 Transportation/Access

Development of the proposed northern and southern projects could result in the addition of 8613 trips to the immediate circulation system. These added trips will have a significant adverse impact on "E" Street and Bay Boulevard traffic flow during the morning and evening peaks created by Rohr Industries employee traffic Monday through Friday. Traffic entering and departing both the northern and southern project sites will undoubtedly encounter difficulty. At other times throughout the day and on weekends, no significant traffic problems should be encountered.

The effects of the significant traffic impact coinciding with Rohr peak periods will be partially mitigated by clearly designated pedestrian intersection crossing, left turn lanes for southbound Bay Boulevard traffic entering the southern project site, certain proposed Bay Boulevard street improvements, and the possible presence of special police officer manual traffic control. The portion of the traffic impact during peak periods that will not be totally mitigated could be considered as an inconvenience that can be lived with. In part, compensation will be the loss of the former automobile junkyards and the increased tax revenue that will be generated by the proposed private development.

5.0 ALTERNATIVES TO THE PROPOSED ACTION

Described below are several possible alternatives to the proposed northern and southern site projects. For the most part, emphasis was placed on the evaluation of alternatives potentially capable of reducing or eliminating adverse environmental effects identified in Section 3.0. Alternative actions to the proposed Bay Boulevard street improvements are discussed only in terms of the "no project" alternative.

5.1 No Project

The "no project" alternative would effectively eliminate the impacts described in Section 3.0. Any benefits would, however, probably be short-lived, since given the freeway interchange location, and "E" Street as the "gateway" to the overall Chula Vista Bayfront Redevelopment Project area place continuing developmental pressures on the proposed project sites. In addition, previous actions on the part of the City of Chula Vista Redevelopment Agency in clearing both the northern and southern project sites of the previous automobile junkyard uses has indicated a desire by the City to develop the northern and southern project sites as proposed. Thus, the "no project" alternative appears to be inconsistent with this prior action on the part of the City. Failure to improve Bay Boulevard, as proposed, would result in continued usage of a poorly lighted and poorly defined route of travel on certain portions of this roadway.

5.2 Alternative Land Use

5.2.1 Open Space/Agricultural

Retention of either the northern or southern project sites, or both, as open space or agricultural uses could potentially eliminate most of the traffic impacts and noise constraints of the proposed developments. Open space utilization of the northern site could eliminate potential impacts to the previously disturbed archaeological site. On the other hand, neither of the two project sites has any unusual or interesting natural features that could be considered worthy of open space preservation. Although the northern project site lies immediately south of the environmentally sensitive Sweetwater Marsh, it is not physically a part of this area. Retention of either or both of these areas as open space would probably require the City or some other governmental body to purchase the land as an open space reserve, a use for which required funding would probably not be available.

Agricultural usage of either or both of these sites could similarly potentially eliminate most of the potential environmental impacts. However, such benefits would probably be short-lived, since continued agricultural usage of land in this area is becoming economically unfeasible.

5.2.2 Office Park or Light Industrial Development

Development of either of the proposed project sites for office park or light industrial land uses could forseeably reduce

traffic impacts to "E" Street and Bay Boulevard, depending on the exact nature of the businesses that would occupy the project sites. Industrial development would probably generate additional truck traffic to this area, and the relatively small lot depths could constrain the attraction of this type of land use to the project sites. Office park development would probably be subject to the same noise constraints as the proposed development, and both office or industrial development employee traffic would probably coincide with the Rohr Industries traffic peak periods, possibly creating even a worse peak period traffic conflict than would the proposed uses. Neither of these alternative land uses would be consistent with the existing highway commercial land use designation.

5.3 Alternative Site Design

5.3.1 Lower Density Development

Lower density restaurant, motel and RV park development could forseeably reduce peak period traffic impacts on Rohr Industries traffic somewhat, although with even a substantial reduction in project site traffic, the potential for a significant impact on "E" Street and Bay Boulevard traffic flow would continue to exist. The noise constraints on both project sites would still be present, and even a lesser development on the northern project site would still impact the archaeological site.

5.3.2 Revised Site Plan

The proposed site plans for both the northern and southern project sites probably represent the best arrangement of the proposed land uses, given the physical constraints of the sites' shape, width and proximity to the freeway. Given the same density, they can probably not be improved upon without increasing impacts elsewhere.

5.4 Alternative Site Location

Development of either the northern or southern site proposed projects at an alternative site would eliminate the environmental effects in the proposed project area, but may not be economically feasible. There may not be other freeway interchange locations in the Chula Vista area that would be available for highway commercial projects such as those proposed. Development at an alternative site could potentially avoid traffic, noise and archaeological impacts, but may produce other adverse impacts.

6.0 GROWTH-INDUCING IMPACT OF THE PROPOSED ACTION

The proposed projects consist of visitor-serving facilities which will provide services and accommodations to people visiting the area. No permanent residential uses are proposed, and the project will not accommodate any new residents.

The only possible growth-inducing impact would be related to new employment. The proposed projects will employ approximately 220 persons. It is anticipated that most of these will be from the local labor base, but a limited number of people may be attracted from outside the area. This growth will be minor, and the project will not have a significant growth-inducing impact.

7.0 EFFECTS FOUND TO BE INSIGNIFICANT

Due to the nature of the proposed projects and the focused nature of this EIR, the effects of the following environmental concerns were determined to be insignificant and not addressed in this report. Included in this category were: schools; libraries; hospital services; parks; and socioeconomic considerations.

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9.0 CERTIFICATION OF ACCURACY AND QUALIFICATIONS

This report was prepared by WESTEC Services, Inc. of San Diego, California. Members of the WESTEC Services, Inc. professional staff and consultants contributing to the report are listed alphabetically below:

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Carole S. Tanner; B.S. Mechanical Engineering

Constance A. Willens; M.A. Geography (in process)

Linda G. Winkler; B.S. Journalism

We hereby affirm that to the best of our knowledge and belief, the statements and information herein contained are in all respects true and correct and that all known information concerning the potentially significant environmental effects of the project have been included and fully evaluated in this draft EIR.

Edward W. Dilginis
Project Manager

Frank A. Kingery, R.G.
Project Principal

10.0 PUBLIC REVIEW COMMENTS RECEIVED ON DRAFT EIR

The following letters were received during the public review period of the Bay Boulevard EIR. Responses to these comments are provided in Section 11.0.

STATE OF CALIFORNIA—RESOURCES AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF FISH AND GAME
350 Golden Shore
Long Beach, CA 90802
(213) 590-5113

December 14, 1978

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

Dear Mr. Reid:

The Draft EIR for the Bay Boulevard Redevelopment Project has been circulated among our staff for review, and we believe that the proposed development could significantly impact Sweetwater Marsh.

The most obviously disruptive influence would arise from the placement of the sedimentation basins within the marsh. Construction and maintenance of these three basins constitutes a direct threat to portions of marsh habitat. Specific plans for the sedimentation basins should therefore be included in the EIR.

Figure 3-2 shows a total of 77 RV spaces on the northern end of the Northern Project Site. The boundary of this site, however, is not shown relative to the Sweetwater Marsh margin. This lack of information leaves us unable to comment on the direct physical impacts to the marsh, but we can raise the question of access to the marsh by "campers", pets, and off-road vehicles. The EIR must discuss the issue of human, pet, and vehicular intrusion into the marsh as a result of the RV park, and it must include positive measures to control such intrusion.

Sweetwater Marsh is a biologically sensitive habitat within a highly developed area of great interest to the Department of Fish and Game. The Draft EIR for this proposed development treats the marsh rather lightly and raises more questions than it answers. We would very much like to meet with you or your representative to resolve our particular concerns.

Thank you for the opportunity to comment on this project. If you have any questions or wish to arrange a meeting to discuss the possible impacts to the marsh, please contact Bruce E. Eliason, Environmental Services Supervisor at 350 Golden Shore, Long Beach, CA 90802. The telephone number is 213-590-5137.

Sincerely,

William M Rutherdale for
Robert D. Montgomery
Regional Manager
Region 5

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PLANNING DEPARTMENT
CHULA VISTA, CALIFORNIA

United States Department of the Interior

FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
24000 Avila Road
Laguna Niguel, California 92677

December 18, 1978

Mr. Douglas D. Reid
Environmental Review Coordinator
Department of Planning
City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 92010

Dear Mr. Reid:

The U.S. Fish and Wildlife Service (FWS) has reviewed the City of Chula Vista's Draft Environmental Impact Report (EIR) on the proposed development of the Bay Boulevard subsection of the Bayfront Redevelopment Plan and offers the following comments.

The EIR indicates the project proposed for the northern site (Ramada-north of E Street adjacent to Sweetwater Marsh) would consist of a motel, restuarant and overnight Recreational Vehicle (RV) park containing about 77 spaces. The FWS does not believe the development, especially the RV park, is compatible with protection of the adjacent Sweetwater Marsh complex. As indicated in the EIR, Sweetwater Marsh provides habitat for the least tern and light-footed clapper rail, listed by the State of California and Federal government as endangered. While the northern project does not appear to directly impact either endangered species, the FWS believes the RV park may indirectly result in an adverse impact on proposed critical habitat for both the least tern and clapper rail.

We disagree with the EIR statement that no significant adverse biological impact would occur from development of the RV park. The FWS believes the RV park will result in significant additional human encroachment into the marsh complex with the potential for adverse impact on critical habitat for either or both of the fore-mentioned species. The EIR indicates that elimination of Bay Boulevard would reduce human and vehicular intrusion into Sweetwater Marsh. However, we fail to see how elimination of Bay Boulevard is a positive contribution for protection of the marsh. It is inconceivable to think that users of the RV park located immediately adjacent to Sweetwater Marsh would not use this prime open space. Also, the EIR does not indicate if the northern project site would be fenced to prevent easy access to the marsh.

Because of the potentially adverse impact of encroachment by RV park users on the sensitive salt marsh ecosystem which is habitat for two endangered species, the FWS opposes development of the northern portion of the Bay Boulevard project.

The FWS favors an alternative specifying open space uses of the area. An open space alternative would provide a buffer adjacent to Sweetwater Marsh and minimize human and developmental encroachment into the marsh.

Thank you for the opportunity to comment on this portion of the Bayfront Redevelopment Plan.

Sincerely yours,

Ralph C. Pisapia
Field Supervisor

DAP:gr

cc: CDFG, Reg. 5, Long Beach, CA (Attn: B. Eliason)

mtdb Metropolitan Transit Development Board
620 "C" Street, Suite 400, San Diego, California 92101 (714) 231-1466

December 1, 1978

Mr. D. J. Peterson
Planning Director
City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 92010

DEC 20 1978

Attn: Douglas D. Reid, Environmental Review Coordinator

Dear Mr. Peterson:

Subject: DRAFT EIR ON THE BAY BOULEVARD REDEVELOPMENT PROJECT

We appreciate this opportunity to comment on the Bay Boulevard Redevelopment Project draft EIR and wish to suggest that the proposed light-rail system (LRT) from Centre City San Diego to San Ysidro be mentioned in your environmental documents.

The light-rail system as proposed by the San Diego Metropolitan Transit Development Board offers an alternative and convenient transportation mode to patrons of the planned motels and recreational vehicle park. The Sections in the draft EIR which deal with Transportation Access (i.e., 1.214, 3.14 and 4.1) indicate that adverse impacts are expected from the potential generation by the redevelopment project of 8,613 additional motor vehicle trips. However, the close proximity of the visitor-oriented facilities to the planned light-rail passenger service (LRT) offers an alternative choice of transportation mode which could lessen the adverse effects of the potential increase in vehicular traffic.

It seems reasonable to assume that visitors generated by the project might choose to travel by LRT to both Centre City San Diego and the U.S./Mexico Border. Pedestrian access to the LRT would be provided these visitors at the freeway crossover to the "H" Street station. The proposed pedestrian-oriented improvements along Bay Boulevard (e.g., sidewalk construction and lighting improvements) would appear to provide a safe and convenient pedestrian link to the light-rail passenger facilities at "H" Street.

Again, we are pleased to submit our comments to you. If you have any questions concerning our remarks or the LRT system, please do not hesitate to contact our office.

Sincerely,

Robert W. Nelson
General Manager

RWN:JB:dg

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STATE OF CALIFORNIA

EDMUND G. BROWN JR., Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
.54 MISSION GORGE ROAD, SUITE 205
SAN DIEGO, CALIFORNIA 92120
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December 14, 1978

CITY OF CHULA VISTA
276 FOURTH AVENUE
CHULA VISTA, CALIFORNIA 92010

ATTENTION: PLANNING DEPARTMENT

GENTLEMEN:

SUBJECT: Bay Boulevard Redevelopment Project, Draft EIR

WE HAVE REVIEWED THE SUBJECT MATERIAL AND OFFER THE FOLLOWING COMMENTS:

THIS PROJECT WILL DISCHARGE ITS SEWAGE TO THE METROPOLITAN SEWERAGE SYSTEM. THE POINT LOMA TREATMENT PLANT OF THE METROPOLITAN SEWERAGE SYSTEM IS APPROACHING ITS DESIGN CAPACITY. THE CITY OF SAN DIEGO HAS PLANS TO UPGRADE THE TREATMENT CAPACITY; HOWEVER, THIS ADDITIONAL CAPACITY WON'T BE AVAILABLE FOR SEVERAL YEARS. THE POTENTIAL IMPACT OF INCREASED FLOWS SHOULD BE CAREFULLY CONSIDERED BEFORE APPROVAL.

THANK YOU FOR THE OPPORTUNITY TO COMMENT ON THIS REPORT.

VERY TRULY YOURS,

FOR: ARTHUR L. COE
SENIOR WRC ENGINEER

December 20, 1978

TO: Planning Commission

FROM: Stephen Taylor, Environmental Control Commission

SUBJECT: EIR-79-6 (Bay Boulevard)

EIR-79-6 meets CEQA guidelines and I recommend certification but with the following reservations and concerns expressed by the ECC:

(1) Possible over building, for the system of roads, causing congestion when the full development of this area is completed.

(2) Support Redevelopment Agency's desire to eliminate a drive-through portion of a fast-food restaurant.

(3) Motels suggested in Bay Boulevard development may over compete and saturate area if Gun Powder Point develops as expected.

(4) Aesthetics of motels and restaurants exteriors fronting I-5; i.e., adequate landscaping facing I-5.

(5) Multi-food services provide a variety without unnecessary duplication.

ST:av

COMMENTS APPROVED AT ENVIRONMENTAL CONTROL COMMISSION MEETING OF DECEMBER 18, 1978 BY THE FOLLOWING VOTE, TO-WIT:

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

ATTEST: Angela Villagomez, Secretary
City Boards and Commissions

December 20, 1978

RECEIVED

BY.....

DEC [illegible]

PLANNING DEPARTMENT
CHULA VISTA, CALIFORNIA

STATE OF CALIFORNIA--CALIFORNIA COASTAL COMMISSION

EDMUND G. BROWN, JR., Governor

SAN DIEGO COAST REGIONAL COMMISSION
5154 MISSION GORGE ROAD, SUITE 220
SAN DIEGO, CALIFORNIA 92120--TEL. (714) 280-6992

TIM COHELAN
Chairman

ROGER HEDGECOCK
Vice Chairman

Harriet Allen
Representative to the
California Coastal Commission

[illegible] Grandall
Executive Director

December 15, 1978

DEC 20 1978

Mr. Douglas D. Reid
Environmental Review Coordinator
City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 92010

RE: Bay Boulevard Redevelopment Project

Dear Mr. Reid:

We appreciate the opportunity of commenting on the Bay Boulevard Redevelopment Project draft Environmental Impact Report.

Our overriding concerns with the projects are their relationship with the Bayfront Plan and Local Coastal Program. The draft EIR correctly points out on page 67 that the two primary concerns with development in the area are that it establishes uses consistent with the recreational commercial designation and to improve the aesthetics of the area so as to create an attractive entryway to the Bayfront. Similar statements can be found in both the Bayfront Plan and the draft LCP. The main emphasis of our comments will relate primarily to this theme of creating an attractive and appropriate entryway to the Bayfront.

With respect to land use, the proposed motels and restaurants would be consistent with Section 30222 of the Coastal Act which identifies visitor-serving commercial as a priority land use. Although it would probably be considered a vistitor-serving use, some concern must be expressed regarding the proposed drive-thru, fast-food restaurant. As stated previously, development of the subject site is critical in establishing a positive overall theme for Chula Vista's Bayfront. It is not clear how a fast-food restaurant would contribute to this end. In fact, the June, 1974 draft of the Bayfront Plan states that drive-in restaurants should be excluded. If a fast-food restaurant is to be considered for this critical section of the Bayfront, specific design, landscaping, and traffic mitigations should be proposed to ensure that no adverse impacts occur.

RECEIVED
BY [signature]

DEC 18 1978

PLANNING DEPARTMENT
CHULA VISTA, CALIFORNIA

In the discussions on land uses in the EIR, it is stated under the heading of mitigations that "Final site plans and landscaping should be carefully reviewed to ensure that a strong and attractive entryway is created." However, little specific guidance or criteria is offered by which to review the projects. In order to ensure consistency with Section 30251 of the Coastal Act, which peaks to the scenic and visual qualities of the coast, and calls for the enhancement of visual quality in visually degraded areas, it is recommended that more specific design criteria be developed. Such criteria can be found on page 31 of the 1974 draft of the Bayfront Plan which establishes development criteria along this section of Bay Blvd. for landscaping, building height and siting, and signing.

Two points warrant mention with respect to the proposed northern development. The first is really a question. Is the "public building"shown on the site plan the same as the restaurant mentioned in the project description? If not, have parking requirements been adequately considered? The second point has to do with the encroachment on Bay Blvd. The way the site has been planned, a long traffic corridor with 90° spaces on both sides, it is questioned whether traffic safety has been adequately considered. Although no exception is taken with the concept of reducing human intrusion into the adjacent marsh, it seems probable that public access to the edges of the marsh for such passive activities as bird watching may be discouraged. Finally,it is not clear what public benefit will result from the encroachment.

A last point focuses on the issue of drainage into the marsh and water quality. Under the discussion of soils, mitigations mentioned to reduce the potential of sedimentation and runoff problems are sedimentation basis and de-energizers. To ensure that the water and habitat qualities of Sweetwater Marsh are protected in a manner consistent with the Coastal Act, it is recommended that the mitigations cited in the EIR be incorporated as conditions of approval for development in the Bayfront.

Should you have any questions regarding our comments, or wish to discuss any point in greater detail, please contact Mike Kennedy of our staff.

Sincerely,

by Michael D. Kennedy

Tom Crandall
Executive Director

TC:MIK:rk

11.0 RESPONSE TO PUBLIC REVIEW COMMENTS

Section 15146(b) of the State EIR *Guidelines* requires that the lead agency respond to letters of comment received as a result of public review of the Draft EIR. Described below is the disposition of the significant environmental issues raised in the six letters received by the Environmental Review Coordinator:

1. Metropolitan Transit Development Board (MTDB)

   a. Comment

   The MTDB advised that the close proximity of the proposed "H" Street Station of the Light Rail Iransit (LRT) System planned to be constructed between downtown San Diego and the U.S./Mexico Border will offer patrons of the motels and RV park an alternative transportation mode which could lessen the adverse effects of the potential increase in vehicular traffic to both Centre City San Diego and the Border.

   Response

   We agree with the statement by the MTDB in that the draft EIR is hereby amended to include the fact that proximity to the proposed LRT System is an additional measure that will mitigate potential traffic impacts identified.

2. State of California Regional Water Quality Control Board, San Diego Region

   a. Comment

   The Regional Water Quality Control Board has advised that the proposed project will discharge its sewage into the Metropolitan Sewerage System which is approaching its design capacity.

   Response

   This impact is of an incremental nature and is associated with any development in the Region which uses the Metropolitan Sewerage System. Ihe importance of this impact lies with its incremental nature on the sewerage system. Since

sewage from the proposed project does not constitute a significant impact on the Metropolitan Sewerage System, it is not necessary to address it in this EIR.

3. State of California Department of Fish and Game

a. Comment

Placement of sedimentation basins within the Marsh constitutes a direct threat to portions of marsh habitat.

Response

No changes are required in the EIR because, contrary to the impression that may have been gained from Figure 3-1, sedimentation basins may at some future date be proposed for placement in the marsh as part of the larger *Chula Vista Bayfront Redevelopment Project Plan*, but none will result from construction of the proposed projects.

b. Comment

Concern was expressed over off-site impacts that might potentially be caused by campers, pets and off-road vehicles at the northern end of the northern project site, in the vicinity of the proposed 77-space RV park.

Response

We agree that there is potential for such off-site impacts on the marsh; however, these potentially significant impacts will be mitigated by retention of the dense row of tamarisk trees located along the northern project site, as well as by the fence planned to be placed along that boundary. The draft EIR is therefore amended to include these comments.

4. San Diego Coastal Regional Commission

a. Comment

Concern was expressed over the drive-through fast food restaurant and how it would contribute to an "attractive" Bayfront entrance,

as well as for traffic impacts associated with a fast food restaurant. In addition, the Coastal Commission requested that specific design criteria be developed by which to review the proposed projects.

Response

The drive-through aspect of this restaurant has since been eliminated. This change is expected to eliminate adverse traffic impacts associated with this type of restaurant. The 1974 *Chula Vista Bayfront Redevelopment Project Plan* land use policy does permit restaurant and travel-related commercial uses for Sub-area D, of which this project is a part. Thus, no revisions to the EIR are required since potential drive-through impacts have been eliminated by modification of plans to the proposed southern project site.

The depressed nature of the I-5 freeway, which borders the project sites on the east, as well as the character of the land use to the east, remove most of the view of the proposed developments from the east. Landscape plantings on the north are expected to effectively screen views from the north. In order to provide for design criteria, Section 3.11.3 of the EIR is hereby amended to include the following development and conservation criteria, as contained in the 1974 *Chula Vista Bayfront Redevelopment Project Plan*:

- A landscaped earthern berm approximately 4 ft high should be placed along the "E" Street frontage.

- In order to provide a visually unobstructive approach from the freeway to the Bayfront, building heights in this area should be limited to 25 ft; buildings should be sited close to the Bay Boulevard frontage and most of the parking provided to the rear, adjoining the freeway right-of-way; and a landscaped berm sufficient to screen parked vehicles from view should be provided adjoining the "E" Street off-ramp, and uniform plant materials should be used throughout.

- Individual business identification signs intended to be viewed by motorists on I-5 should be prohibited.

- Free-standing identification and direction signs may be provided along Bay Boulevard frontage, providing they are not more than 8 ft in height.

- Tall, dominant tree plantings should be provided at the northern end of the northern project site, and similar landscaping should be provided on each side of "E" and "F" Streets to emphasize their role as gateways.

b. Comment

Concern was expressed over the exact type of activities to be contained in the "public building" on the northern project site and whether parking requirements have been considered.

Response

Both the proposed restaurant and meeting rooms will be contained in the proposed "public building." No changes are required in the EIR since parking was analyzed and is adequate for the uses proposed.

c. Comment

Has the proposed 90° parking along the Bay Boulevard encroachment considered traffic safety potential?

Response

Ihe City traffic engineer has approved the northern project site plan as to layout. No changes in the EIR are considered necessary since the traffic issue was analyzed and not found to be problematic, and since the street will not serve through traffic, but is for parking and internal circulation only.

d. Comment

The proposed northern project will discourage passive activities, such as birdwatching, along the edges of the marsh.

Response

Provision of public access from the proposed northern site is not considered necessary, since the State Department of Fish and Game does not think that access from this location is desirable, and because of the special sensitivity of the biological resources found farther to the north and the damage to this habitat that could result. Thus, no changes are required in the EIR.

e. Comment

The Coastal Commission is not clear as to what public benefit will result from the proposed encroachment on Bay Boulevard.

Response

There is no need to have Bay Boulevard extend any farther northward than "E" Street, except to serve the northern project site. No changes are considered to be necessary in the EIR to reflect this fact.

f. Comment

In order to reduce sedimentation and run-off problems from the northern project site into the marsh, it is recommended that sedimentation basins and de-energizers be incorporated into the project as a condition of development approval.

Response

Section 3.5.3 of the EIR is hereby amended to include the mitigation of sedimentation and run-off problems during construction by the inclusion of temporary sedimentation basins and de-energizers. Sedimentation and run-off problems into the marsh upon completion of the proposed project are not expected to be a problem, since only a small portion of the site will drain northward.

5. City of Chula Vista
Environmental Control Commission (ECC)

a. Comment

The ECC expressed five items of concern over the characteristics of the proposed project developments.

Response

The five items listed in the ECC memo are items of concern by the ECC which they believe should be considered as important planning considerations in the EIR process. Since these items do not challenge the sufficiency or accuracy of the EIR, they do not require response.

6. U.S. Department of the Interior
Fish and Wildlife Service (FWS)

a. Comment

The FWS does not think that the proposed northern project site development is consistent with protection of the adjacent Sweetwater Marsh habitat of two endangered species.

Response

The EIR Biological analysis concluded that the proposed northern project would not have a direct impact on the habitats of the endangered Least Tern and Light-Footed Clapper Rails. Thus, no change in the EIR is required.

b. Comment

The FWS feels that the proposed northern project will result in significant human encroachment into the Marsh complex and fails to see how the elimination of Bay Boulevard would reduce human and vehicle intrusion into the Marsh, and thus be a positive contribution.

Response

The FWS concerns regarding off-site impacts are considered to be appropriate. Revision

of the EIR occurred by means of an earlier response to the Department of Fish and Game letter.

c. Comment

The FWS favors open space uses of the northern project site in order to buffer the adjacent Sweetwater Marsh from development encroachment.

Response

Since this is a planning consideration that does not challenge the sufficiency of the EIR, no response is considered necessary.

Appendix A

SOILS SURVEY

SOILS INVESTIGATION

PROPOSED CHULA VISTA BAY FRONT PROJECT
NORTHWESTERLY OF INTERSTATE 5
AND "E" STREET INTERSECTION
CHULA VISTA, CALIFORNIA

Prepared for

STREET PROPERTY, INCORPORATED
JOSEPH M. PISCIOTTA
A. I. A.

by

BENTON ENGINEERING, INC.

PROJECT NO. 78-9-24A

OCTOBER 13, 1978

TABLE OF CONTENTS

Project No. 78-9-24A

BENTON ENGINEERING, INC.
APPLIED SOIL MECHANICS — FOUNDATIONS
5340 RUFFIN ROAD
SAN DIEGO, CALIFORNIA 92123

PHILIP HENKING BENTON
PRESIDENT · CIVIL ENGINEER

TELEPHONE (714) 565-1955

SOILS INVESTIGATION

Introduction

This is to present the results of a soils investigation conducted at the site of the proposed Chula Vista Bay Front Project which is located northwesterly of Interstate Freeway 5 and "E" Street in Chula Vista, California.

It is our understanding that the proposed finished floor elevation of the building will be at Elevation 22.0 feet. In the northern portion of the site, a parking lot will be constructed. The proposed finished grades of the parking lot will vary from Elevation 13.3 feet to Elevation 19.8 feet.

In order to bring the existing ground surface to these elevations, compacted filled ground up to approximately 4.0 feet in depth will be required in the proposed building area and excavation down to approximately 5.7 feet in depth will be required in the proposed parking lot area.

The objectives of this investigation were to determine the general subsurface conditions of the site and certain physical properties of the soils, so that pertinent soil parameters and recommendations could be presented for the design and construction of the building foundations, concrete floor slab and parking pavement.

In order to accomplish these objectives, one additional boring, Boring 3, was drilled at a selected location, and both undisturbed and loose soil samples were obtained for laboratory testing.

Project No. 78-9-24A

Laboratory Tests

Laboratory tests were performed on all undisturbed samples of the soils in order to determine the dry density, moisture content, and shearing strength. The results of these tests are presented on Drawing No. 2. Consolidation tests were performed on a representative sample in order to determine the load-settlement characteristics of the soils and the results of this test are presented graphically on Drawing No. 3, entitled "Consolidation Curve."

The general procedures used for the laboratory tests are described briefly in Appendix B.

In addition to the above laboratory tests, expansion tests were performed on some of the clayey soils encountered to determine their volumetric change characteristics with change in moisture content. The recorded expansions of the samples obtained under our Project No. 73-4-23A are presented as follows:

Boring No.	Sample No.	Depth of Sample, in Feet	Soil Description	Percent Expansion Under Unit Load of 150 Pounds per Square Foot from Field Moisture to Saturation	Percent Expansion Under Unit Load of 500 Pounds per Square Foot from Air Dry to Saturation
1	1	1.0	Fine sandy clay	0	-
2	1	1.0	Fine sandy clay	0.06	-
2	2	3.0	Fine sandy clay	-	0.62

A California Bearing Ratio test was performed on a representative sample of the possible subgrade soils. The test was performed in accordance with A.S.T.M. D1883 and D1557 Method D modified per City of San Diego Standards. The test results are presented below:

Boring No.	Bag No.	Depth in Feet	Molded Dry Density lb/cu ft	Initial Moisture Content % dry wt	Penetration Inch	Load in Pounds on 3 sq. in Plunger	CBR % of Std.	Percent Expansion During Soaking	Percent Moisture After Penetration
2	1	0.5-1.0	131.3	10.7	0.1	826	27.5	1.17	14.7
(Project No. 73-4-23A)					0.2	1470	32.7		
					0.3	1878	32.9		
					0.4	2360	34.2		
					0.5	2600	33.4		

Project No. 78-9-24A

1. The soils encountered in Boring 3 have favorable load-settlement and strength characteristics to provide adequate support for the proposed building foundation, compacted filled ground, and concrete floor slab.

2. The sandy clay soils, such as encountered in the upper 2.5 feet and 5.7 feet, respectively, at Borings 1 and 2 drilled under our Project No. 73-4-23A, were found to have relatively low expansion potential. Therefore, the upper sandy clay soils in the vicinity of Borings 1 and 2 may also be used to support the proposed building foundations and proposed compacted fill ground.

3. Based on the visual classification of the soils obtained from Boring 3 in conjunction with the use of the Agricultural Soil Map prepared by the U. S. Department of Agriculture as reference, it is our opinion the percolation characteristics of the on site soils would be rated as poor to moderate.

Recommendations

1. Site Grading

Before placing fill soil for compaction, the areas to receive the fill should be cleared of all brush, vegetation and any rubbish existing at the site. The natural ground, which is determined to be satisfactory for the support of the filled ground, should then be scarified to a depth of at least 6 inches, and until the surface is free from ruts, hummocks, or other uneven features which would tend to prevent a uniform compaction by the equipment to be used. The scarification should be extended to at least 5 feet plus the thickness of fill soils beyond the perimeter walls of the buildings. Thereafter, the scarified soils should be moistened or dried as necessary to optimum moisture and should be uniformly compacted to at least 90 percent of the maximum dry density. The clean excavated on site soils,

In the compacted filled ground area, an allowable bearing value of 2,000 pounds per square foot may be used to design both square and continuous footings that are at least 1.0 foot in width and that are located at least 1.0 foot below the final compacted fill ground surface.

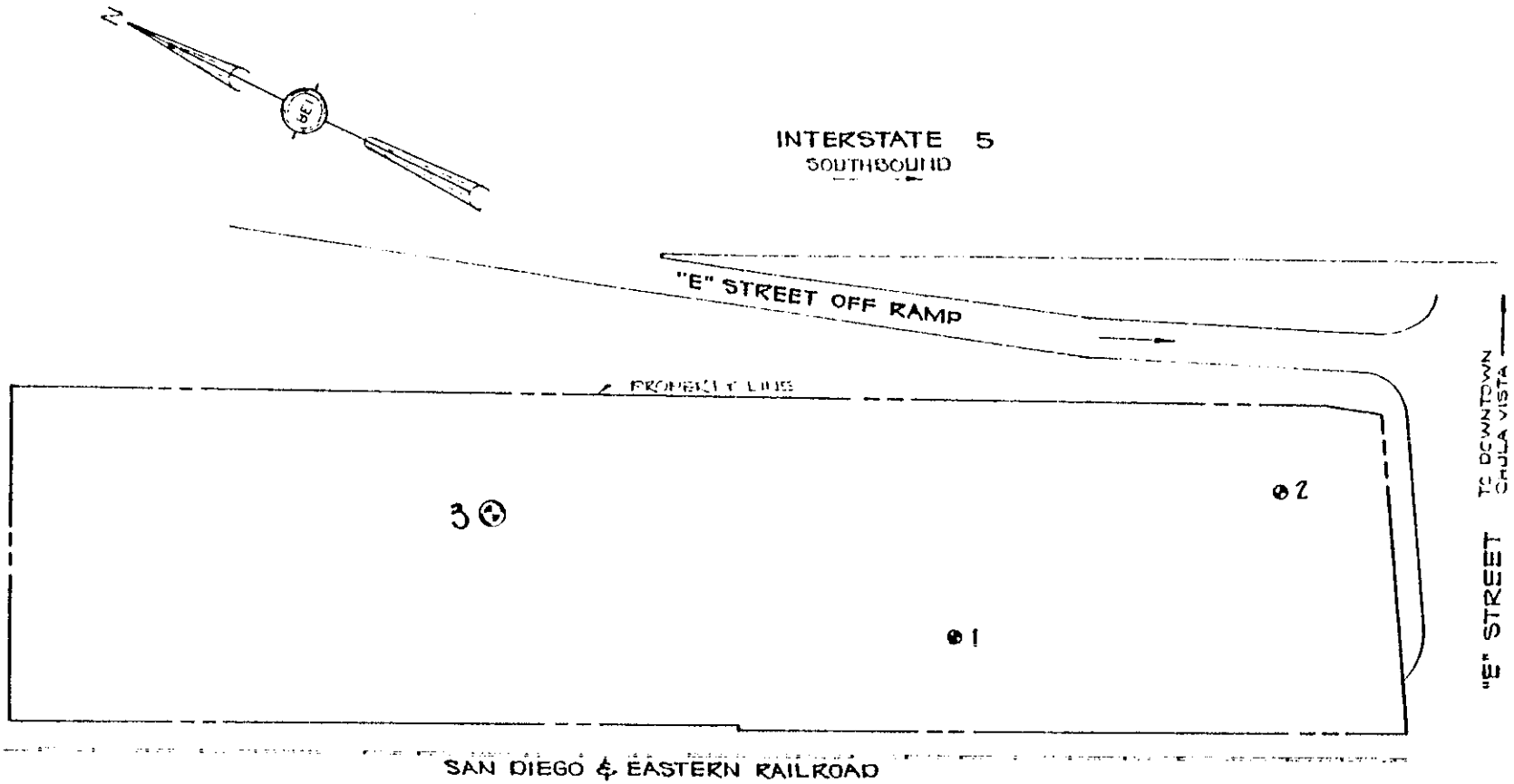
For lateral resistance design, an allowable passive soil pressure equivalent to a fluid density of 250 pounds per cubic foot may be used for that portion of footings in direct contact with compacted filled ground or natural bearing soils. A friction factor of 0.4 may be used to estimate the sliding friction between the footings and the supporting soils. Both passive resistance of the soils and the sliding resistance may be combined to compute the total lateral resistance.

3. Concrete Slab on Grade

In cut areas, the soils beneath the proposed concrete slab area should be uniformly scarified to a depth of 6 inches below proposed finished grade and be properly compacted at a moisure content slightly above optimum moisture content to at least 90 percent of the maximum density. Concrete slabs that are reinforced with 6 X 6 - 10/10 welded wire fabric may then be placed directly on the compacted subgrade soils in cut areas and also on the compacted fill ground in the fill area. If concrete slabs are not reinforced, it is recommended that the slab be underlain by 4 inches of sand. Moisture vapor barriers should also be included in the design in those areas where relatively dry conditions are desirable inside the buildings.

4. Parking Lot Paving Design

Using a CBR of 25.0 for existing subgrade soils and assuming CBR 80 for the designated base course materials, the required combined thicknesses of a design pavement section to support conventional automobiles and light delivery and trash trucks are as presented on the following page.



LEGEND

- Indicates Approximate Location of Test Boring This Project.
- Indicates Approximate Location of Test Boring Per Project No. 73-4-23A

BENTON ENGINEERING, INC.
SAN DIEGO, CALIFORNIA

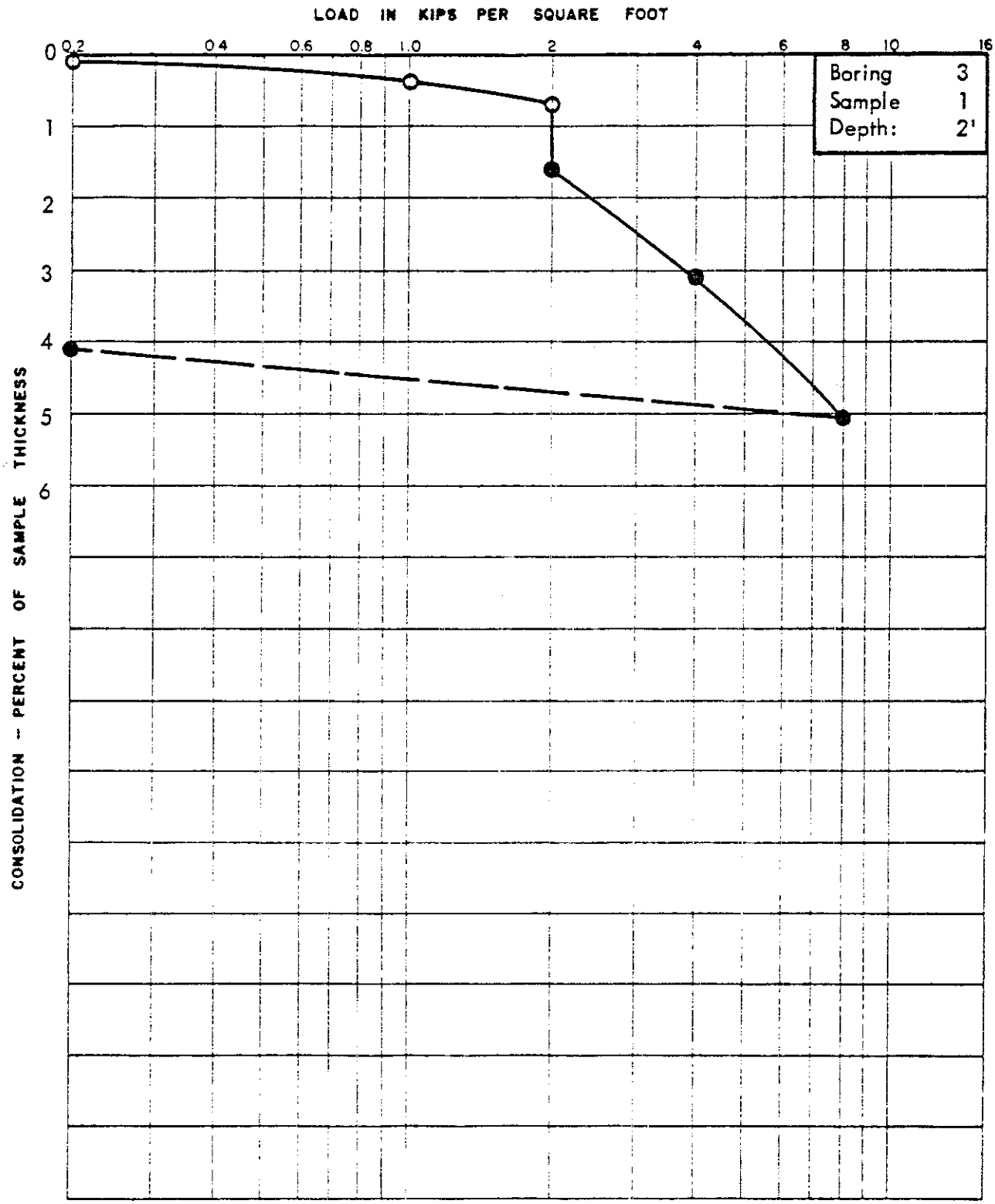
LOCATION OF TEST BORINGS

PROPOSED CHULA VISTA BAY FRONT PROJECT
N'WLY. OF INTERSTATE 5 AND "E" ST. INTERSECTION
CHULA VISTA, CALIFORNIA

SCALE : 1" = 100'	PROJECT NO. 78-9-24A	DRAWING NO 1
DRAWN : K.L. Green		
DATE : 10-12-1978		

JOB NAME Proposed Chula Vista Bay Front Project Northwesterly of I-5 and "E" Street

CONSOLIDATION CURVE



o Indicates percent consolidation at field moisture

● Indicates percent consolidation after saturation

PROJECT NO.		DRAWING NO.
78-9-24A	BENTON ENGINEERING, INC.	3

BENTON ENGINEERING, INC.
APPLIED SOIL MECHANICS — FOUNDATIONS

5540 Ruffin Road
San Diego, California 92123

PHILIP HENKING BENTON
PRESIDENT - CIVIL ENGINEER

TELEPHONE (714) 565-1955

APPENDIX AA

STANDARD SPECIFICATIONS FOR PLACEMENT OF COMPACTED FILLED GROUND

1. General Description. The objective is to obtain uniformity and adequate internal strength in filled ground by proven engineering procedures and tests so that the proposed structures may be safely supported. The procedures include the clearing and grubbing, removal of existing structures, preparation of land to be filled, filling of the land, the spreading, and compaction of the filled areas to conform with the lines, grades, and slopes as shown on the accepted plans.

   The owner shall employ a qualified soils engineer to inspect and test the filled ground as placed to verify the uniformity of compaction of filled ground to the specified 90 percent of maximum dry density. The soils engineer shall advise the owner and grading contractor immediately if any unsatisfactory conditions are observed to exist and shall have the authority to reject the compacted filled ground until such time that corrective measures are taken necessary to comply with the specifications. It shall be the sole responsibility of the grading contractor to achieve the specified degree of compaction.

2. Clearing, Grubbing, and Preparing Areas to be Filled.

   (a) All brush, vegetation and any rubbish shall be removed, piled, and burned or otherwise disposed of so as to leave the areas to be filled free of vegetation and debris. Any soft, swampy or otherwise unsuitable areas shall be corrected by draining or removal, or both.

   (b) The natural ground which is determined to be satisfactory for the support of the filled ground shall then be plowed or scarified to a depth of at least six inches (6"), and until the surface is free from ruts, hummocks, or other uneven features which would tend to prevent uniform compaction by the equipment to be used.

   (c) Where fills are made on hillsides or exposed slope areas, greater than 10 percent, horizontal benches shall be cut into firm undisturbed natural ground in order to provide both lateral and vertical stability. This is to provide a horizontal base so that each layer is placed and compacted on a horizontal plane. The initial bench at the toe of the fill shall be at least 10 feet in width on firm undisturbed natural ground at the elevation of the toe stake placed at the natural angle of repose or design slope. The soils engineer shall determine the width and frequency of all succeeding benches which will vary with the soil conditions and the steepness of slope.

to compact the fill material to the specified density. Rolling shall be accomplished while the fill material is at the specified moisture content. Rolling of each layer shall be continuous over its entire area and the roller shall make sufficient trips to insure that the desired density has been obtained. The entire areas to be filled shall be compacted.

(e) Fill slopes shall be compacted by means of sheepsfoot rollers or other suitable equipment. Compacting operations shall be continued until the slopes are stable but not too dense for planting and until there is no appreciable amount of loose soil on the slopes. Compacting of the slopes shall be accomplished by backrolling the slopes in increments of 3 to 5 feet in elevation gain or by other methods producing satisfactory results.

(f) Field density tests shall be taken by the soils engineer for approximately each foot in elevation gain after compaction, but not to exceed two feet in vertical height between tests. Field density tests may be taken at intervals of 6 inches in elevation gain if required by the soils engineer. The location of the tests in plan shall be so spaced to give the best possible coverage and shall be taken no farther apart than 100 feet. Tests shall be taken on corner and terrace lots for each two feet in elevation gain. The soils engineer may take additional tests as considered necessary to check on the uniformity of compaction. Where sheepsfoot rollers are used, the tests shall be taken in the compacted material below the disturbed surface. No additional layers of fill shall be spread until the field density tests indicate that the specified density has been obtained.

(g) The fill operation shall be continued in six inch (6") compacted layers, as specified above, until the fill has been brought to the finished slopes and grades as shown on the accepted plans.

5. Inspection. Sufficient inspection by the soils engineer shall be maintained during the filling and compacting operations so that he can certify that the fill was constructed in accordance with the accepted specifications.

6. Seasonal Limits. No fill material shall be placed, spread, or rolled if weather conditions increase the moisture content above permissible limits. When the work is interrrupted by rain, fill operations shall not be resumed until field tests by the soils engineer indicate that the moisture content and density of the fill are as previously specified.

7. All recommendations presented in the "Conclusions" section of the attached report are a part of these specifications.

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APPENDIX A
Unified Soil Classification Chart*

SOIL DESCRIPTION		GROUP SYMBOL	TYPICAL NAMES
I. COARSE GRAINED, More than half of material is larger than No. 200 sieve size.**			
GRAVELS More than half of coarse fraction is larger than No. 4 sieve size but smaller than 3 inches	CLEAN GRAVELS	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines.
	GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, poorly graded gravel-sand-silt mixtures.
		GC	Clayey gravels, poorly graded gravel-sand-clay mixtures.
SANDS More than half of coarse fraction is smaller than No. 4 sieve size	CLEAN SANDS	SW	Well graded sand, gravelly sands, little or no fines.
		SP	Poorly graded sands, gravelly sands, little or no fines.
	SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, poorly graded sand-silt mixtures.
		SC	Clayey sands, poorly graded sand-clay mixtures.
II. FINE GRAINED, More than half of material is smaller than No. 200 sieve size.**			
	SILTS AND CLAYS	ML	Inorganic silts and very fine sands, rock flour, sandy silt or clayey-silt-sand mixtures with slight plasticity.
	Liquid Limit Less than 50	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		OL	Organic silts and organic silty-clays of low plasticity.
	SILTS AND CLAYS	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
	Liquid Limit Greater than 50	CH	Inorganic clays of high plasticity, fat clays.
		OH	Organic clays of medium to high plasticity
III. HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils.

* Adopted by the Corps of Engineers and Bureau of Reclamation in January, 1952.
** All sieve sizes on this chart are U. S. Standard.

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APPENDIX B

Sampling

The undisturbed soil samples are obtained by forcing a special sampling tube into the undisturbed soils at the bottom of the boring, at frequent intervals below the ground surface. The sampling tube consists of a steel barrel 3.0 inches outside diameter, with a special cutting tip on one end and a double ball valve on the other, and with a lining of twelve thin brass rings, each one inch long by 2.42 inches inside diameter. The sampler, connected to a twelve inch long waste barrel, is either pushed or driven approximately 18 inches into the soil and a six inch section of the center portion of the sample is taken for laboratory tests, the soil being still confined in the brass rings, after extraction from the sampler tube. The samples are taken to the laboratory in close fitting waterproof containers in order to retain the field moisture until completion of the tests. The driving energy is calculated as the average energy in foot-kips required to force the sampling tube through one foot of soil at the depth at which the sample is obtained.

Shear Tests

The shear tests are run using a direct shear machine of the strain control type in which the rate of deformation is approximately 0.05 inch per minute. The machine is so designed that the tests are made without removing the samples from the brass liner rings in which they are secured. Each sample is sheared under a normal load equivalent to the weight of the soil above the point of sampling. In some instances, samples are sheared under various normal loads in order to obtain the internal angle of friction and cohesion. Where considered necessary, samples are saturated and drained before shearing in order to simulate extreme field moisture conditions.

Consolidation Tests

The apparatus used for the consolidation tests is designed to receive one of the one inch high rings of soil as it comes from the field. Loads are applied in several increments to the upper surface of the test specimen and the resulting deformations are recorded at selected time intervals for each increment. Generally, each increment of load is maintained on the sample until the rate of deformation is equal to or less than 1/10000 inch per hour. Porous stones are placed in contact with the top and bottom of each specimen to permit the ready addition or release of water.

Expansion Tests

One inch high samples confined in the brass rings are permitted to air dry at 105° F for at least 48 hours prior to placing into the expansion apparatus. A unit load of 500 pounds per square foot is then applied to the upper porous stone in contact with the top of each sample. Water is permitted to contact both the top and bottom of each sample through porous stones. Continuous observations are made until downward movement stops. The dial reading is recorded and expansion is recorded until the rate of upward movement is less than 1/10000 inch per hour.

APPENDIX C

BENTON ENGINEERING, INC.
PROJECT NO. 73-4-23A
DRAWING NOS. 2, 3 AND 4

JOB NAME Street Properties, Inc.

SUMMARY SHEET

BORING NO. 1

ELEVATION 21.0' *

DEPTH/FEET	SAMPLE NUMBER	SOIL CLASSIFICATION SYMBOL			DRIVE ENERGY FT. KIPS/FT.	FIELD MOISTURE % DRY WT.	DRY DENSITY LBS./CU. FT.	SHEAR RESISTANCE KIPS/SQ. FT.
0								
1	(1)		Brown-gray, Dry, Firm, Decomposed Granite	SLIGHTLY SILTY FINE TO COARSE SAND	14.6	5.7	111.6	0.93
1	[1]							
2	(2)		Dark Red-brown Slightly Moist, Very Firm, Slightly Porous, Occasional Rootlets	FINE SANDY CLAY	13.0	14.5	109.5	1.47
3			Gray-brown, Slightly Moist, Very Firm	FINE TO MEDIUM SANDY CLAY				
4	(3)		Dark Brown, Slightly Moist, Very Compact, Slightly Cemented	SLIGHTLY CLAYEY FINE TO MEDIUM SAND	39.0	11.1	115.5	2.92
5								
6			Brown, Slightly Moist, Medium Compact, Slightly Micaceous	SLIGHTLY SILTY FINE SAND				
7								
8	(4)		Brown, Slightly Moist to Dry, Loose, Micaceous		0.8	3.5	98.0	0.76
9			Slightly Moist, Medium Compact	FINE TO MEDIUM SAND				
10								
11								
12	(5)				3.2	5.4	99.4	1.74

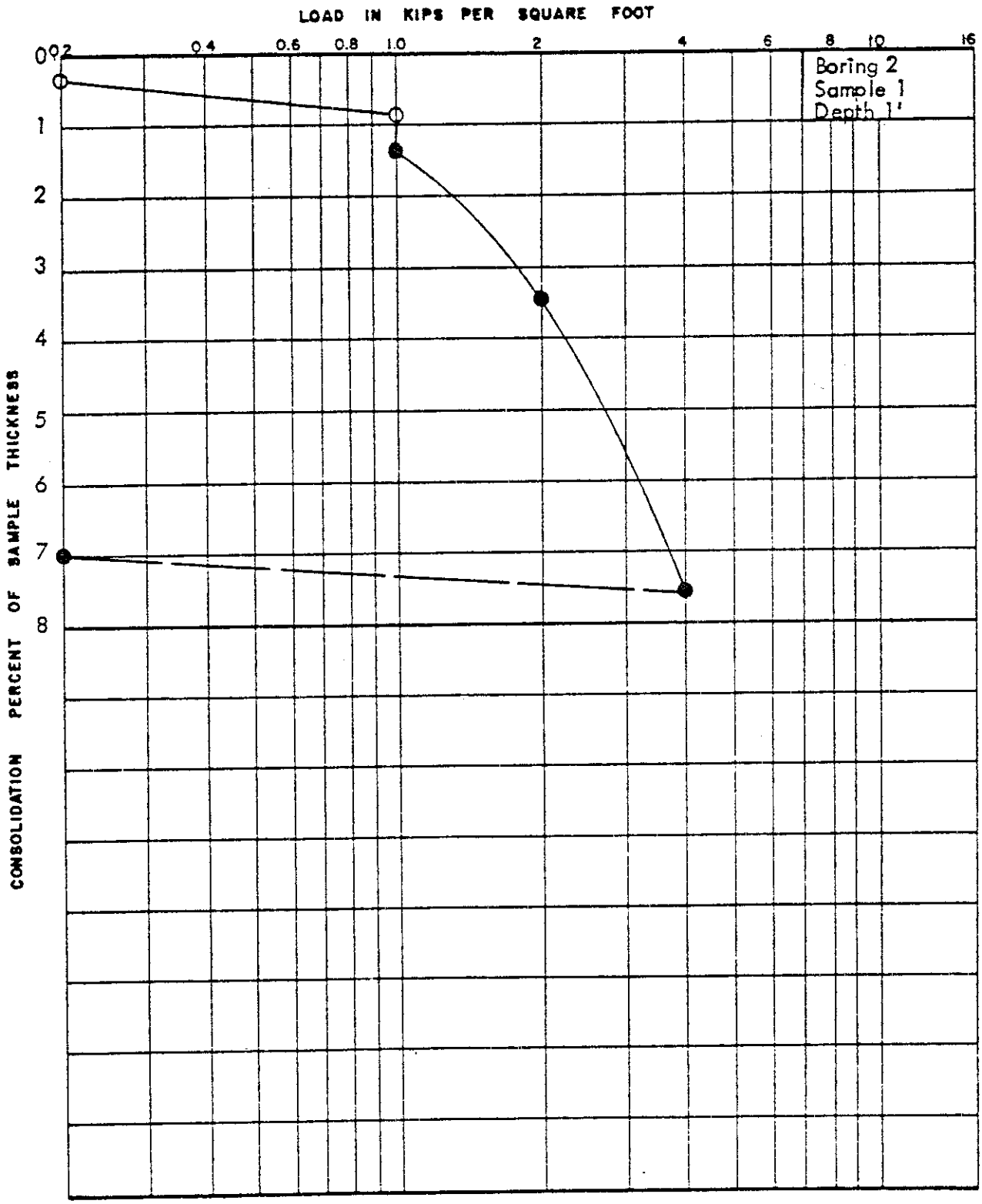
○ - Indicates Undisturbed Drive Sample

□ - Indicates Loose Bag Sample

* - Elevations shown were obtained by interpolation between contour lines on Municipal Engineers Inc. Drawing No. 6588, Dated Jan. 8, 1973.

PROJECT NO		DRAWING NO
73-4-23A	BENTON ENGINEERING, INC.	2

CONSOLIDATION CURVE



○ INDICATES PERCENT CONSOLIDATION AT FIELD MOISTURE

● INDICATES PERCENT CONSOLIDATION AFTER SATURATION

JOB NAME STREET PROPERTIES

PROJECT NO		DRAWING NO.
73-4-23A	BENTON ENGINEERING, INC.	4

Appendix B

AIR QUALITY ANALYSIS

Appendix B

AIR QUALITY ANALYSIS
BAY BOULEVARD REDEVELOPMENT EIR
CHULA VISTA, CALIFORNIA

October 1978

1.0 INTRODUCTION AND SUMMARY

The proposed Bay Boulevard Redevelopment Project, as part of the *Chula Vista Bayfront Redevelopment Project Plan*, will create additional air pollutants through increased vehicular activity and more intensive land use in the area. The air quality consequences of the specific northern, southern and street improvement projects have been analyzed in this study. It should be noted at the outset that this project will not necessarily generate many new emissions, but only cause minor redistribution of those emissions in the immediate project environs. Project-related emissions, principally from automobiles, already exist in the basin. If the project were not built, the motel/restaurant/RV traffic would travel elsewhere for these services. If there is an existing market for these services, then construction of the project may actually reduce driving distances and thus reduce air pollutants emitted. For the sake of conservation, all project-related pollutants have been treated as new, additional emissions to the basin burden, but actually most of them are already present somewhere in the San Diego area.

The principal findings of the air quality analysis are summarized as follows:

Meteorology/Air Quality

The Mediterranean-type climate of southern California is principally the result of the semi-permanent high pressure center usually found over the Pacific Ocean. The subsiding, warm air in the high creates clear skies except during brief periods in

the vertical dispersion of pollutants. This inversion, usually found between 1000-2000 feet above the ground, traps pollutants within a shallow layer and places a "lid" on dispersion until the sea breeze carries the pollutants over the heated interior where the inversion is broken. The elevated inversion is strongest and most prevalent in summer with some inversion structure noted on 99 percent of all observations within the first 5000 feet of the atmosphere over San Diego in summer.

These subsidence/marine inversions are weakest in winter when a second inversion type becomes important for localized dispersion processes near major low-level source areas. As the ground cools on winter nights, the first few hundred feet of air also become colder than the air aloft and a radiator or heat-loss inversion forms. This inversion, when coupled with near-calm winds, traps pollutants such as carbon monoxide or nitrogen dioxide near freeways or in congested traffic areas and allows for localized exceedances of air quality standards.

Chula Vista, because of its location downwind of San Diego and the rapidly developing North County under northwest winds, experiences significant exceedances of photochemical oxidant standards during the summer and also approaches the nitrogen dioxide standard in winter. Table B-1 summarizes a three-year history of air quality measurements at the Chula Vista air quality monitoring station at 100 East "J" Street. Although recirculation of South Coast Air Basin pollutants may aggravate the San Diego County air pollution problem, the Chula Vista data show that a

significant fraction of the pollutants are "home-grown." Table B-1 points out a distressing trend in Chula Vista ozone levels, i.e. each of the last three years was successively worse. This is in part due to meteorological trends, but also to some extent due to the rapid County growth that keeps pace with whatever strides are being made to clean up the air. Since people mean pollution, the San Diego area in general and Chula Vista in particular may have a fair amount of each for some time to come.

1.1 Air Quality Impact

Emissions from the proposed redevelopment project will come from two principal sources. Automobiles from motel guests and restaurant patrons will, by far, emit most of the project-related pollutants. Emissions from fuel combustion for electrical generation (through fuel oil) and from space heating, cooking, water heaters, etc. (through natural gas) are far less. Temporary emissions during construction activity from dust generated during clearing, grading, demolition, etc. and from diesel equipment and construction worker automobiles will also intermittently impact air quality.

Construction activity emission factors are typically not well prescribed. Using the AP-42 fugitive dust emission factor of 1.2 tons/acre/month of activity, and additional estimates of emission control from watering, duration of construction activity and the size of the parcels involved, the total dust burden is estimated to be about 90 tons. An additional 15 tons of gaseous emissions may also approximately be attributed to the project from construction equipment operation.

TABLE B-2

AMBIENT AIR QUALITY STANDARDS APPLICABLE IN CALIFORNIA

Pollutant	Averaging Time	California Standards	Federal Standards	
		Concentration	Primary	Secondary
Photochemical Oxidants (Measured as Ozone)	1 Hour	0.10 ppm (200 ug/m³)	160 ug/m³ (0.08 ppm)	Same as Primary Standard
Carbon Monoxide	12 Hours	10 ppm (11 mg/m³)	---	Same as
	8 Hours	---	10 mg/m³ (9 ppm)	Primary
	1 Hour	40 ppm (46 mg/m³)	40 mg/m³ (35 ppm)	Standard
Nitrogen Dioxide	Annual Average	---	100 ug/m³ (0 05 ppm)	Same as Primary Standard
	1 Hour	0.25 ppm (470 ug/m³)	---	---
Sulfur Dioxide	Annual Average	---	80 ug/m³ (0.03 ppm)	---
	24 Hours	0 05 ppm in comb w/ 0.10 ppm Ox or 100 ug/m³ TSP	365 ug/m³ (0.14 ppm)	---
	3 Hours	---	---	1300 ug/m³ (0.5 ppm)
	1 Hour	0.5 ppm (1310 ug/m³)	---	---
Suspended Particulate Matter	Annual Geo-metric Mean	60 ug/m³	75 ug/m³	60 ug/m³
	24 Hours	100 ug/m³	260 ug/m³	150 ug/m³
Lead (Particulate)	30-Day Average	1.5 ug/m³	---	---
Hydrogen Sulfide	1 Hour	0.03 ppm (42 ug/m³)	---	---
Hydrocarbons (Corrected for Methane)	3 Hours (6-9 a.m.)	---	160 ug/m³ (0.24 ppm)	Same as Primary Standard
Ethylene	8 Hours	0.1 ppm	---	---
	1 Hour	0.5 ppm	---	---
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
pptm - parts per ten million
pphm - parts per hundred million
ug/m³ - micrograms per cubic meter

Table B-3

PRINCIPAL CAUSES AND EFFECTS OF POTENTIAL PROBLEM POLLUTANTS

Photochemical Oxidants (Ozone):	Oxidants form through complex photochemical reactions between reactive hydrocarbons and oxides of nitrogen. Oxidants impair pulmonary function and destroy organic material, especially sensitive vegetation.
Carbon Monoxide:	Carbon monoxide is a byproduct of incomplete combustion. Carbon monoxide interferes with the oxygen transport capability of hemoglobin in the blood.
Nitrogen Dioxide:	Nitrogen dioxide forms during combustion at high temperatures and subsequent atmospheric chemical reaction. Nitrogen dioxide, as with most oxidizers, causes respiratory problems and vegetative damage.
Non-methane Hydrocarbons:	Hydrocarbons are produced from evaporation or incomplete combustion of organic material as well as by natural sources during growth and decay. Although hydrocarbon standards are designed to mainly control subsequent ozone formation, many complex hydrocarbons are known irritants or carcinogens.
Total Suspended Particulates:	Particulates are produced during combustion, material handling and from soil disturbance. Particulates cause health effects by clogging breathing passages or by transporting hazardous substances deep into the lungs where they are absorbed into the body.

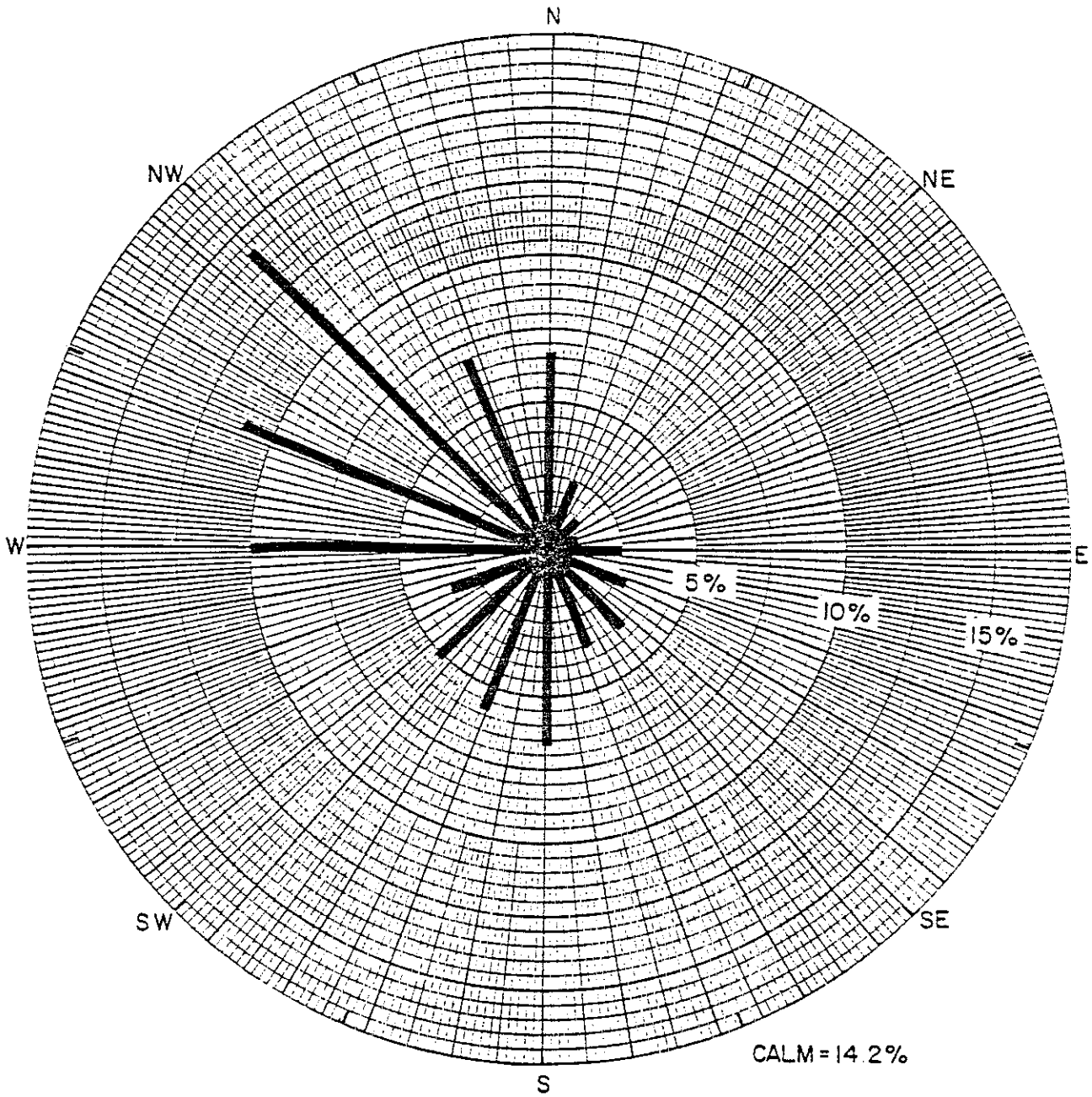
but many years pass without temperatures of less than 32°F or more than 100°F.

Most, marine air similarly regulates the humidity distribution. The annual average relative humidity is around 75 percent with humidities in the 90s in the early morning and the 50s or 60s in the afternoon. The few annual Santa Ana conditions may drop humidity levels down to 10-20 percent, but usually humidity levels are quite comfortable, especially during the daytime.

The subtropical high pressure center prevents most storms from entering the southern California area except in winter when the high weakens and migrates farthest south. Remnants of mid-latitude storm systems then drop most of Chula Vista's 9.98 inches of precipitation each year. Seventy-five percent of the rainfall falls in the December-March "rainy season," with February, at 2.04 inches, being the wettest month. Extremes of precipitation are rare, with 6.93 inches in one month and 24.85 inches in one year in 30 years of rainfall records as the monthly and annual absolute maxima.

2.1.3 Winds

In terms of dispersion of pollutants and ventilation of the local area, the windfield is the critical parameter in defining the source/receptor relationship. Although no long-period wind summaries are available from the project site, wind data from coastal locations to the north and south show identical patterns of strong onshore winds in summer and the development of a return



Percent Frequency of Mean Annual Wind Direction at North Island (1943-1972)

FIGURE
B-1

air, gives rise to a temperature increase with height (an inversion). Since polluted parcels of air cool as they rise and expand, the warm air aloft forces the cool parcels back down toward their source. This *marine/subsidence inversion* thus acts as a lid to suppress vertical redistribution of pollutants. It allows for local mixing up to the base of the inversion aloft, but then traps the entire basin pollutant burden in a shallow layer near the ground. As each source adds to the pollution level and the entire layer undergoes chemical transformations, the entire layer becomes unhealthy until strong heating over the desert and rough terrain of the Coast Range finally overcome the effects of the inversion well east of San Diego.

The clear skies and light winds at night lead to a second type of inversion that forms when the ground cools at night. *Radiation inversions* are shallow layers of cold air that trap low-level source pollutants near their emissions source. These inversions trap traffic-related pollutants near major sources such as freeway or downtown "street canyons." Radiation inversions thus lead to a very localized or microscale air quality standard exceedances, whereas marine/subsidence inversions lead to regional or mesoscale air quality problems.

An inversion summary of North Island vertical structure measurements (Table B-4) indicates the diurnal and seasonal nature of the inversion behavior near Chula Vista. Low-level inversions aloft are least prevalent in winter and become most significant on summer afternoons during the "smog season" (June-

September). Eighty-two percent of all summer afternoons have a trapping inversion that could create high regional pollutant levels. Radiation inversions, which begin to form at sunset and become strongest near sunrise, are most prevalent in winter, with surface inversions on 58 percent of all winter mornings. Maximum regional project impact is therefore in summer, while maximum local impact would occur in winter. To the extent that these impacts are indeed significant, that impact is assessed in subsequent discussions.

2.2 Air Quality

In assessing project impact, the emissions need to be translated into an attendant air quality impact. That impact can thus be related to the applicable air quality standard and its related health or other adverse effects on man's welfare. The regional impact of Chula Vista area emissions can be determined explicitly through complex, computerized dispersion and chemistry models (very costly and often not very accurate) or through simpler, implicit procedures, such as assuming that downwind air quality is directly proportional to the upwind source strength of precursor emissions. Finally, that impact needs to be superimposed on the existing baseline air quality levels and the consistency of the project with the clean air quality management plan and process must also be considered.

2.2.2 Air Pollution Effects

If standards are currently being threatened or a condition is exacerbated by the proposed project, it is instructive to assess what effects this may have on receptors in the air basin. Table B-3 is a summary of major sources and concomitant effects of the six EPA criteria pollutants.

2.2.3 San Diego County Emissions Inventory

As a perspective for analyzing the impact of traffic-related emissions from the proposed redevelopment project, one may relate them to the present regional or subregional emission levels. The San Diego County Air Pollution Control District (SDAPCD) has recently updated the county emissions inventory for 1974 (it takes several years to compile the necessary data) as shown in Table B-4. Assuming that the total emissions are approximately proportional to population, Chula Vista's prorated share of those emissions is also shown. The inventory points out the overwhelming role of the automobile as the major pollution source in the county, especially for carbon monoxide, oxides of nitgrogen, and hydrocarbons. Since carbon monoxide (CO) and oxides of nitrogen (NO_x) are generally microscale problem pollutants, and since NO_x and hydrocarbons are critical in the mesoscale ozone formation process, the automobile is thus implicated as the single most important source of all county pollution problems.

2.2.4 Baseline Air Quality

Baseline air quality near the project area is fortunately well documented from regular measurements by SDAPCD and brief additional measurements the the State of California Department of Transportation (CALTRANS). SDAPCD has operated a complete air quality station in Chula Vista at 100 East "J" Street since 1974; CALTRANS performed a series of CO measurements along the bayfront for the proposed SR 54 freeway. Although air quality is quite inhomogeneous in space and time such that extrapolation of measurements to other locations is not completely justified, the SDAPCD station is sufficiently well sited as to be quite representative of the project environs.

Table B-1 is a summary of Chula Vista historical air quality. The distressing trend in the data is that Chula Vista air quality has been getting slightly worse in each of the last three years. This trend is partly due to meteorological factors (1977 was the second year of the drought, with ample sunshine, strong inversions and lighter winds), but also because rapid county growth has almost balanced the improvements in vehicular emissions controls. Fortunately, levels of CO, the pollutant of concern near traffic-intensive projects such as the bayfront redevelopment, have been low in both CALTRANS and SDAPCD measurements, with hourly maxima around 10 ppm and 8-hour levels well below the 9 ppm standard. In general, although Chula Vista's air quality is considerably better than other regions of the county, the failure of the ozone levels to trend downward is discouraging.

3.1 Construction Emissions

Construction of the two projects and associated street improvements will generate fugitive dust from earth disturbance and travel over unpaved surfaces and gaseous emissions from the heavy duty diesel construction equipment. Emission factors for construction activities and construction vehicle mixes are very poorly known, such that construction activity estimates are only general approximations instead of definitive calculations.

Using the EPA fugitive dust emission factor of 1.2 tons/acre/month of extensive activity, controlled to 50 percent of that level by frequent watering and good construction practice, 11 months of activity, and 13.60 acres involved in the redevelopment project, the total dust burden from the two projects is about 90 tons, or about 0.3 tons per day. Heavy duty equipment emissions can similarly only be approximately prescribed. A typical diesel rig emits about 5 lbs of pollution per hour (mostly as NO_x); with four to six pieces of equipment averaging 1000 hours during the construction phase, gaseous pollutants may account for an additional 15 tons of construction-related pollutants. These emissions are temporary and non-recurring after construction is completed.

3.2 Vehicular Impacts

Once the project is completed, the facility will generate about 8600 average daily trips (ADT), broken down as follows:

Northern Site:	200-unit motel	1520 ADT
	13,000 sq ft restaurant	1950 ADI
	RV 77-space campground	747 ADT

Table B-6

CHULA VISTA BAY BOULEVARD REDEVELOPMENT
VEHICULAR EMISSIONS AT CURRENT AND FUTURE
VEHICLE EMISSION LEVELS

	----- 1978 FACTORS[1] -----			----- 1990 FACTORS[2] -----		
POLLUTANT	EMISSION FACTOR (gm/mile)	TOTAL (tons/ day)	ANNUAL TOTAL (tons/yr)	EMISSION FACTOR (gm/mile)	TOTAL (tons/ day)	ANNUAL TOTAL (tons/yr)
Carbon Monoxide	31	2.85	1042.74	16.01	1.47	538.52
Total Hydrocarbons	4.03	0.37	135.56	1.31	0.12	44.06
Oxides of Nitrogen	3.8	0.35	127.82	1.90	0.17	63.91
Particulate Matter	0.58	0.05	19.51	0.27	0.02	9.08
Oxides of Sulfur	0.20	0.02	6.73	0.15	0.01	5.05

[1]Source: City of Chula Vista Environmental Review Policy - adopted August 1, 1978.

[2]Source: EMGAC5 emission factor computer program for 1990 traffic moving at 35 mph on major arterials - computer run dated September 21, 1978.

roadway (indicated as mixing cell concentration - 9.9 ppm), and levels drop off very quickly toward both the northern and southern site projects.

On a regional scale, it is difficult to determine both the trajectory and chemistry of the reactive pollutants associated with the project. If one may assume that the Chula Vista emissions ultimately mix with some fraction of the basinwide reaction hydrocarbon levels to create a downwind oxidant impact, then one can roughly assess the reactive pollutant impact potential. This "rollback" relationship is expressed by:

$$X = \mu E + B$$

where X is the maximum downwind ozone level ($\simeq$.20 ppm)

E is the upwind fractional hydrocarbon level reaching the downwind receptor ($\simeq$ 50 tons/day)

B is the background level of ozone ($\simeq$ .04 ppm)

μ is the proportionality factor (= .16 ppm/50 tons/day)

Appying μ to the 0.37 tons/day of total project hydrocarbons assumed to be 90 percent reactive, the downwind ozone impact of the redevelopment project is about 0.001 ppm (1 part per billion), or 1.3 percent of the .08 ppm hourly standard. This estimate is exceptionally crude, but it does represent some realistic order of magnitude estimate of project effects on regional air quality.

3.3 Stationary Source Impacts

A final source of project-related pollutants may result from the combustion of fossil fuels to supply electricity for the various facilities and natural gas for heating, cooking, hot water, etc.

Table B-8

BAY BOULEVARD REDEVELOPMENT PROJECT STATIONARY SOURCE EMISSIONS

POLLUTANTS	ELECTRICAL GENERATION EMISSIONS: EMISSION FACTOR ($lb/10^3 gal$)	TOTAL (tons/day)	ANNUAL TOTAL (tons/yr)	NATURAL GAS COMBUSTION EMISSIONS: EMISSION FACTOR ($lb/10^3 ft^3$)	TOTAL (tons/day)	ANNUAL TOTAL (tons/yr)	COMBINED ANNUAL TOTAL (tons/yr)
Particulate Matter	8	-----	0.49	10	-----	0.46	0.95
Oxides of Sulfur	79.5	0.01	4.84	0.6	-----	0.03	4.87
Carbon Monoxide	3	-----	0.18	20	-----	0.92	1.10
Total Hydrocarbons	2	-----	0.12	8	-----	0.37	0.49
Oxides of	105	0.02	6.39	100	0.01	4.58	10.97

----- = negligible daily total

Source: AP-42, Compilation of Emission Factors and City of Chula Vista Environmental Review Policy.

4.0 MITIGATION

Mitigation of transportation-related emissions is generally minimal because vehicular emission control is beyond the scope of a project developer, and insufficient incentive exists to abandon the private automobile. The standard "cosmetic" mitigation measures such as bike paths and pedestrian walkways do not apply for the development because there is little probability of Los Angeles tourists arriving by bicycle. Thought should be given to assuring a safe pedestrian access across "E" Street, to connect the two projects, so guests at one motel do not drive their car one block to the restaurant on the other project site, but, again, any pollution savings are minimal.

One area of potential trip reduction that should be considered is a minibus service for motel/RV facility guests to popular tourist attractions that would eliminate private auto travel. Rides to the border at San Ysidro and attractions such as Sea World or the San Diego Zoo should be able to support such a service if it were sufficiently convenient and reasonably priced. Other than a small emission reduction from transit utilization, however, there is little likelihood of significant project emission mitigation.

Appendix C

NOISE ANALYSIS

SAN DIEGO ACOUSTICS

October 20, 1978
Job No 2291

ENVIRONMENTAL NOISE ANALYSIS

BAY BOULEVARD REDEVELOPMENT
CHULA VISTA, CA.

1.0 INTRODUCTION

The proposed project as described in Section (to be supplied by Westec)* is subjected to a number of noise impacts in addition to being the cause of noise impacts of a short term nature during the construction phase. These impacts are associated with traffic, occasional overflights, stationary sources, and construction noise.

2.0 PRESENT SETTING

2.1 Northern Site

As given in the project description, the existing sites are for the most part vacant and essentially of level topography. The entire eastern edge of the project borders upon Interstate 5 right-of-way. The northern or Ramada project is slightly elevated above the freeway at its northern most end. However, as one moves southward over the property, the E Street off ramp gradually rises until it is elevated above the property. The E Street off ramp tends to shield the southern half of the Ramada project from the freeway. Interstate 5 also has a generally downward grade as one travels south. Thus the existing noise over the Ramada project is a combination of several sources, mainly 1) I-5 north and south traffic, 2) southbound E Street off ramp traffic, 3) E Street traffic between the southbound off ramp and Bay Boulevard, and 4) occasional military aircraft overflights into North Island Naval Air Station.

2.2 Southern Site

The southern site is totally elevated above the I-5 right-of-way and approximately at the grade of Bay Boulevard and F Street. The existing noise over this site is a combination of 1) I-5 traffic noise along the very eastern side with some reduced level when line-of-sight is no longer maintained, 2) Bay Boulevard traffic, 3) F Street traffic and 4) occasional military aircraft overflights into North Island Naval Air Station.

* Section 2.0 of EIR

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The resulting present day traffic noise levels are given in Table II.

Table II - 1978 Traffic Noise Levels

Site	Noise Source	Hourly Leq	CNEL
1	Interstate 5 North of E St.	56	59
2	Interstate 5 North of E St.	60*	*
3	Interstate 5 North of E St.	59	62
4	Interstate 5 North of E St.	51	54
5	E St. Off-ramp Southbound	64	67
6	E St. West of I-5	61	62
7	Insterstate 5 South of E St.	70	71
8	Bay Boulevard between E & F St.	66	66
9	Interstate 5 South of E St.	71	72
10	Bay Boulevard between E & F St.	67	65

* Measurement influenced by aircraft overflights

The resulting present day contours are given in Figure 2. Note that the freeway noise on the southern site falls off rapidly. This is due to the rather deep depression of the freeway at this point.

3.0 PROJECTED NOISE LEVELS

3.1 Traffic Noise

Development of the two sites will result in added traffic hence, added noise. Traffic generated from the proposed projects is given in Table III.

Table III - Traffic Generated By Development (5)

Land Use	Size	ADT Rate	Trips Generated Daily
Northern Site			
R.V. Park	77 Spaces	9.7/space	747
Motel	200 rooms	7.6/room	1520
Restaurant	1300 S.F.	150/1000 S.F.	1950
			4217 Total
Southern Site			
Motel	83 rooms	7.6/room	631
Restaurant	6400 S.F.	150/1000 S.F.	960
Coffee Shop	4500 S.F.	150/1000 S.F.	675
Fast Food Restaurant	3000 S.F.	710/1000 S.F.	2130
			4396 Total

(5) WESTEC 1978

Table V - Typical Ranges of Construction Noise Levels - 200 foot Distance - Offices, Hotels, Public Works

Activity	Equivalent Noise Level-dB(A) CNEL: All Equipment On Site	Minimum Equipment On Site
Ground Clearing	84	84
Excavation	89	79
Foundations	78	78
Erection	87	75
Finishing	89	75

3.3 Stationary Noise

Stationary noise sources associated with the proposed project include air handling equipment for the motels and restaurants. Noise levels of such equipment are a function of the air handling tonnage which in turn is a function of the square footage of the space. Table VI contains a listing of the estimated noise levels from the restaurant air handling systems only since the motels will have individual unit air conditioners. An 18-hour operational cycle is assumed.

Table VI - Air Handling Noise

Building	Site-ft^2	Tonnage	Noise at 50 ft. dB(A)	CNEL
Northern Site Restaurant	1300	26	63	66
Southern Site Restaurant	9000	18	60	63
Southern Site Coffee Shop	5000	10	55	58
Southern Site Fast Food	3000	6	51	54

3.4 Aircraft Overflights

The project site is close to the extended runway centerline runway 29 at North Island Naval Air Station. This straight-in approach is used primarily for Ground Controlled Approach (GCA) flights. Current daily operations [7] on this flight path are given in Table VII.

(6) Environmental Protection Agency Report NTID 300.1
(7) Aircraft Environmental Support Office, Naval Air Rework Facility, North Island Naval Air Station (1978)

upon motel design, especially the presence of or absence of windows on the freeway side.

Current plans indicate that on the southern site, no windows will be placed on the eastern side of the motel building overlooking the freeway. Conventional construction of a wall without penetrations will be sufficient to mitigate the freeway noise.

It is not known whether or not the motel on the northern site will have windows overlooking the freeway and the E Street off ramp, southbound. In the event windows are used in the design, the requirements of California Administrative Code Title 25, Building Noise Isolation Standards must be addressed.

5.0 MITIGATING MEASURES

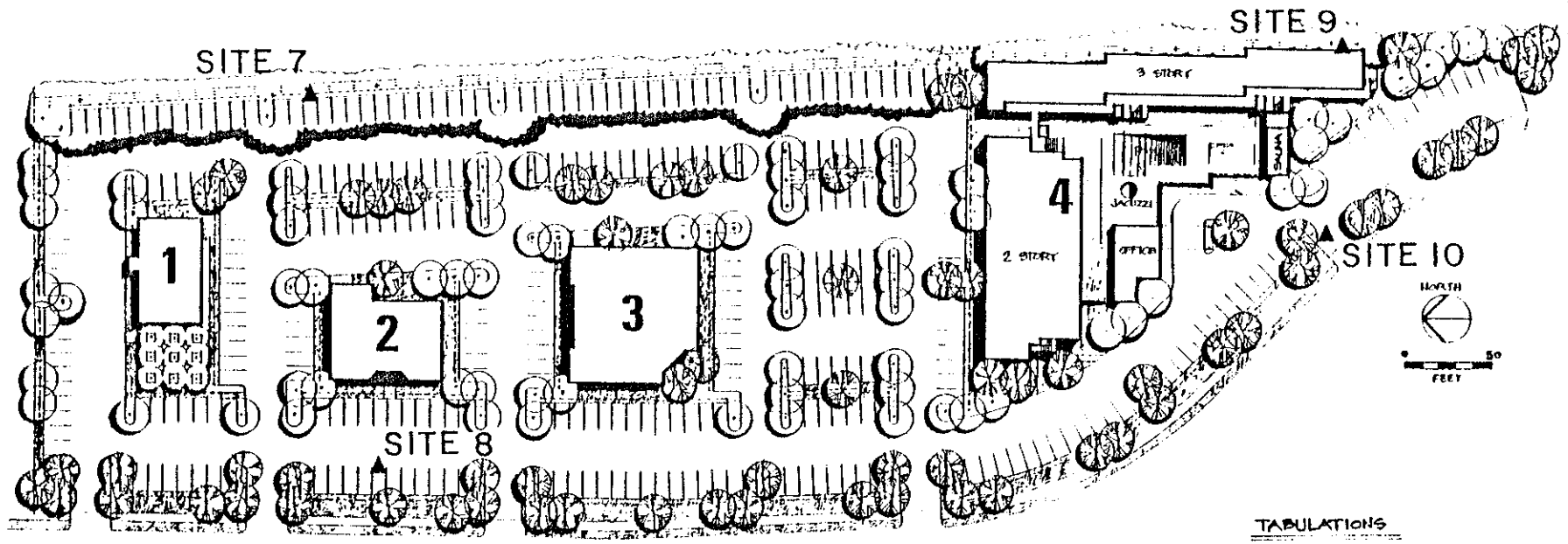
The impact of the project is to raise the local traffic noise by two to three decibels. This impact will be unnoticeable at residential dwellings located on the east side of I-5. In all likelihood, except for noise due to construction, the added noise will be undetected by nearby residences due to the shielding afforded by the presence of Interstate 5. Construction noise may be mitigated by limiting hours of operation to daytime hours.

Noise due to stationary sources such as air handling systems can be mitigated by one of two means. The units may be roof mounted with a parapet surrounding the roof or the unit may be installed elsewhere and suitable sound screening using mufflers utilized.

Aircraft overflights cannot be mitigated. However, it is felt that their effect will be greatly reduced by the noise insulation afforded by conventional construction techniques. This is especially true since the levels are rather low. The fact that there are usually no night flights using this approach path also helps to minimize this impact.

In summary, the proposed project will have a noise impact upon the area, however, with the possible exception of traffic noise, the impact can be mitigated. The close proximity of the development to Interstate 5 which has its own independent noise impact serves to lessen the overall effect.

Carole Sue Tanner
Registered Professional Engineer

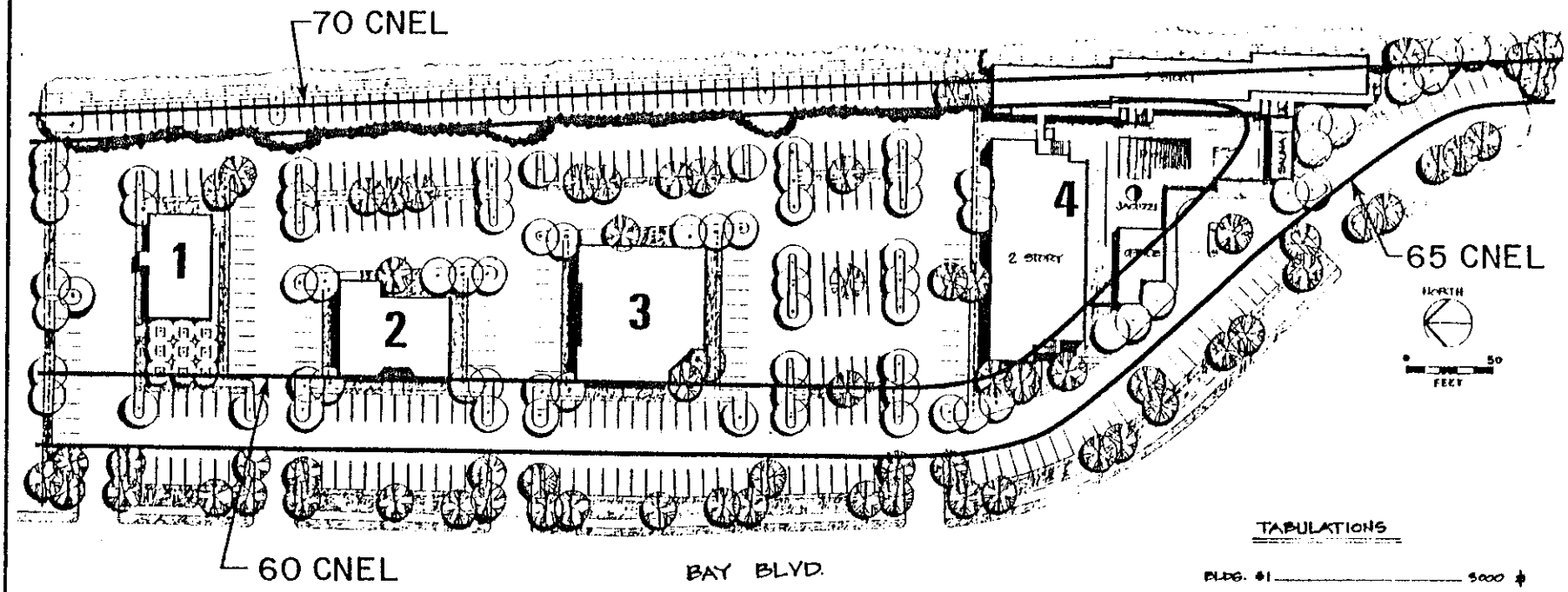


TABULATIONS

BLDG. #1	9000 ♯	
PARKING	61 SPACES	
BLDG. #2	4500 ♯	
PARKING	78 SPACES	
BLDG. #3	6970 ♯	
PARKING	115 SPACES	
BLDG. #4 (MOTEL - 87 UNITS)	31820 ♯	
PARKING	90 SPACES	
RECAP BLDG. AREA	46 290 ♯	
TOTAL PARKING	352 SPACES	

Southern Project Site Noise Measurement Locations

FIGURE 1-B

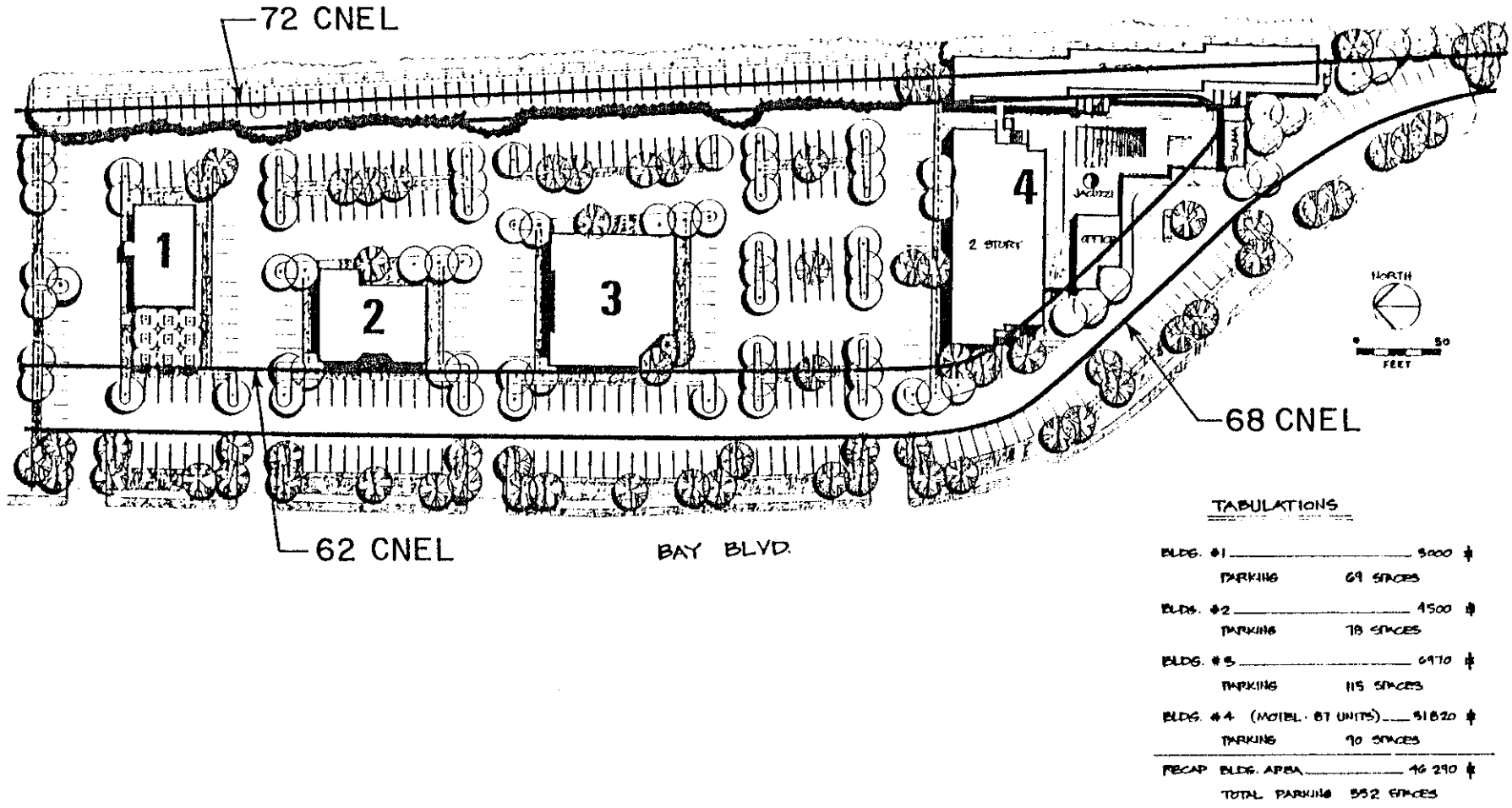


TABULATIONS

BLDG. #1	5000 ♯	
PARKING	69 SPACES	
BLDG. #2	4500 ♯	
PARKING	78 SPACES	
BLDG. #3	6970 ♯	
PARKING	115 SPACES	
BLDG. #4 (MOTEL · 67 UNITS)	51840 ♯	
PARKING	90 SPACES	
RECAP BLDG. AREA	16 210 ♯	
TOTAL PARKING	352 SPACES	

Southern Project Site 1978 Noise Contours (CNEL)

FIGURE 2-B



TABULATIONS

BLDG. #1 ____ 5000 ♯
PARKING 69 SPACES

BLDG. #2 ____ 4500 ♯
PARKING 78 SPACES

BLDG. #3 ____ 6970 ♯
PARKING 115 SPACES

BLDG. #4 (MOTEL - 87 UNITS) ____ 51820 ♯
PARKING 90 SPACES

RECAP BLDG. AREA ____ 46 290 ♯
TOTAL PARKING 352 SPACES

Southern Project Site 1995 Noise Contours (CNEL)

FIGURE 3-B

Appendix D

ARCHAEOLOGICAL SURVEY

ARCHAEOLOGICAL SURVEY

OF THE

PROPOSED BAY BOULEVARD

REDEVELOPMENT PROJECT

PREPARED FOR

CHULA VISTA REDEVELOPMENT AGENCY
276 FOURTH AVENUE
CHULA VISTA, CALIFORNIA 92010

PREPARED BY

WESTEC SERVICES, INC.
3211 FIFTH AVENUE
SAN DIEGO, CALIFORNIA 92103

RANDY FRANKLIN
PROJECT ARCHAEOLOGIST

RICHARD L. CARRICO
CULTURAL RESOURCE MANAGER

NOVEMBER 1978

BAY BOULEVARD REDEVELOPMENT ARCHAEOLOGICAL SURVEY

1.0 INTRODUCTION

1.1 Project Size and Field Crew

A systematic archaeological survey was conducted by R. L. Franklin of WESTEC Services, Inc., for the proposed Bay Boulevard Redevelopment Project in the city of Chula Vista, California (Figure 1). The 12± acres, multi-phase project will include the redevelopment of three areas along Bay Boulevard between "D" and "F" Streets. For survey purposes, the area was divided into three sections: A, B and C. Section A is located on Bay Boulevard, north of "E" Street and will consist of a motel containing 200 rooms, a 13,000 square foot restaurant, and an overnight recreation vehicle park consisting of approximately 77 spaces. The project will encroach upon Bay Boulevard north of "E" Street. Section B is just south from "E" Street and Anthony's Fish Grotto and will include an 83-room motel and three restaurants. The third area of redevelopment (Section C) will involve the installation of sidewalks, lighting improvements, and landscaping.

1.2 Scope of Work and Hours Expended

The survey was conducted on September 20, 1978; a total of eight hours were expended to complete the field investigation. According to standard archaeological procedures, when cultural resources are encountered they are assigned temporary field numbers, given appropriate USGS quadrangle locations, photographed,

and the appropriate site record form with attached field sketch is completed.

1.3 Project Location

The Bay Boulevard redevelopment area lies within the northwestern Chula Vista city limits in San Diego County, California (Figure 2). Specifically, the subject property encompasses the area south of "D" Street to just north of "H" Street. The western project borders are the San Diego and Arizona Eastern Railroad tracks and Interstate 5 on the east. A topographical overview can be made by consulting the USGS 7.5' quadrangle for National City, on Township 18 south, Range 2 west, within an unsectioned portion of the La Nacion landgrant.

1.4 Project Setting

The subject property lies on a marine terrace composed of sandstone deposited during the Pliocene; this deposit is generally referred to as the San Diego formation. Some of the terraces are capped by a sand and gravel layer which is thought to have been formed during the early Pleistocene. The Sweetwater River drainage is to the north/northeast of the project area, and empties into a marine tideland. The nearby river soils are alluvial, composed of unconsolidated quaternary sands and gravels (Weber 1963:11-32).

Native vegetation has been largely replaced by ruderal grasses and introduced trees and shrubs. Section A is the only

survey location where substantial floral species persist. Observed plant communities include: stands of tobacco (*Nicotiana glauca*); horseweed (*Conyza canadensis*); mustard; and Tamarisk (*Tamarix gallica*). Directly to the north from Section A is the tideland region; ongoing agricultural activity can be seen to the west. Urbanization has taken place on and around the survey parcels.

Construction of the railroad line, Interstate 5, auto wrecking yards, and assorted industrial businesses have all contributed to the serious disruption of the precontact environmental setting that undoubtedly existed. This aspect of the project setting must be stressed when evaluation of cultural resources are undertaken.

1.5 Cultural History

A complete cultural history is provided in Attachment 1.

2.0 REGIONAL POTENTIAL

2.1 Archaeological/Ethnographic

Archaeological and ethnographic data generated throughout San Diego County regarding land-use patterns of native Americans (Crabtree *et al.* 1963; Rogers 1966; Warren 1964; True 1970), indicate that the subject property may be considered in close proximity to an area of archaeologically high potential. The presence of Sweetwater River, as a viable water source, may have also served as a major corridor for seasonal movement of native American groups. The river drains 219 square miles of the coast range.

exploitation pattern such as this could leave behind archaeological sites indicative of temporary camping, food processing and seasonal occupation.

2.2 Historical

The historical potential of the lower Sweetwater River Valley is closely linked with the colonization of Alta California by Spanish settlers in 1769, the Mexican-American settlement beginning approximately 1840, and subsequent recent history from that period following World War I until the present.

The journey of Fray Junipero Serra to what is now Presidio Park in San Diego resulted in the first mission within Alta California. A large area in what is now National City and Chula Vista was designated as Rancho Del Rey (Rush 1965).

The rancho was controlled by the presidio de San Diego and used as grazing land for livestock. A change in land ownership took place in 1845 when the rancho was granted to John Forster by Governor Pio Pico and was renamed Rancho de la Nacion. The land was sold by Forster in 1856 to Jules Bayerque and he sold it a year later to his brother, who in turn, sold it to Francois Pioche in 1868. Frank and Warren Kimball obtained the Rancho that same year (1818) and began intensive land-use. John Forster apparently erected some adobe structures on the present location of the Rohr Aircraft Company, northwest of the project property. In many instances, during the rancho period surviving native Americans were employed by owners of these ranches living nearby on small *rancherias*.

3.0 PREVIOUS AREA FIELDWORK

3.1 Introduction

While fieldwork in this portion of San Diego County has by no means been exhaustive, enough data has been obtained to aid investigators in an overview of native American lifeways observed in the archaeological record.

3.2 Surveys

- WESTEC Services, Inc. An environmental constraint analysis for the Chula Vista Bayfront Redevelopment Project (Carrico 1976) resulted in the discovery of one site designated as WS-76-6, later renumbered SDM-W-1323. This minor site consisted of a widely scattered, thin veneer of shellfish, manos and scrapers. A WESTEC-sponsored archaeological survey of the CONROCK Sweetwater project was positive in that eight sites were located, representing the San Dieguito complex, as well as late-prehistoric settlement (Carrico 1974). In 1976, archaeological investigations for Rancho Robinhood Unit III resulted in the discovery of two sites: W-1003 and W-1004. These sites were representative of the Late Milling Kumeyaay and contained sparse quantities of artifacts.

- San Diego State University. In 1973, a survey sponsored by the University and conducted by Charles Bull for a proposed Army Corps of Engineers flood control channel indicated the remains of two archaeological sites: Cal E:8:15, known as the Handyman site, and Cal E:8:17, known as the Edgemere site. The

Shellfish was prevelant with Pismo Clams (*Tivela stultorum*), accounting for 95 percent of the identified species. Dates from the shell at the Handyman site were given at 1450 B.P. ±50 years. The site is regarded as not being a permanent campsite but a manifestation of a specialized activity, in association with the La Jolla culture.

The Edgemere site, Cal E:8:17, was given a radiometric date of 1660 years B.P.

The collected shell was comprised of 95 percent *Chione* sp. It was concluded that severe disruption by agricultural activity, street construction, buildings, and natural agents such as flooding and rodent burrowing contributed to intermixing of historic debris with that of prehistoric manufacture at all levels (Leach 1975).

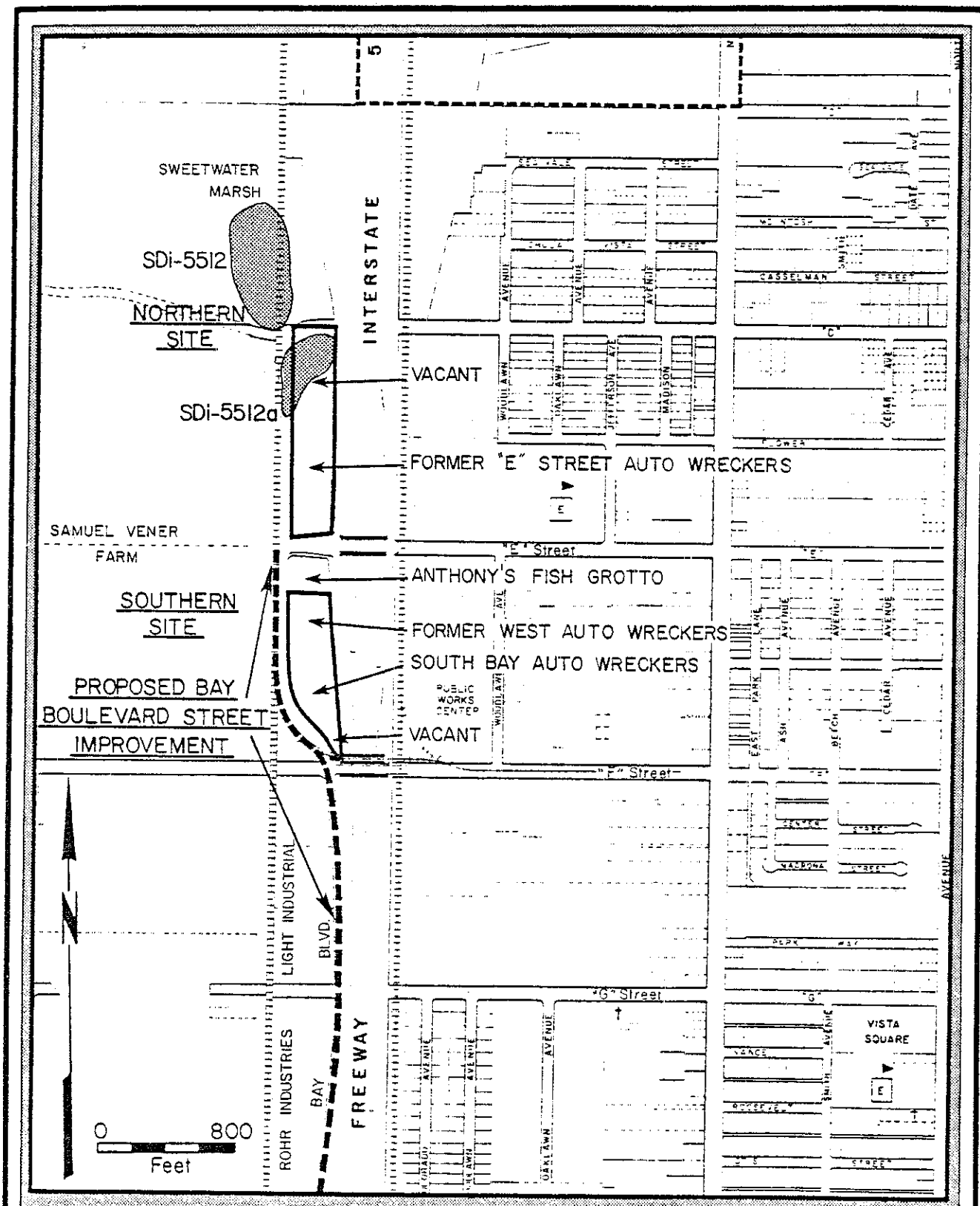
3.4 Record Search Data

Record search data are contained in Attachment 2.

4.0 SURVEY MEIHODS

4.1 Introduction

The survey techniques employed in this study conform with the guidelines and requirements of the Society for California Archaeology (King *et al.* 1973) and with those set forth by the National Park Service in their *Guidelines for the Preparation of Statements on Environmental Impact on Archaeological Resources.*



Present Project Site and Archaeological Site SDi-5512a

FIGURE 3

one felsite flake and some shell were observed. Ruderal grasses are present on the site as are stands of tobacco (*Nicotiana glauca*).

- Isolates. Three areas of isolated shellfish scatter were encountered in and around Section B. This area has been so severely impacted by urban growth that these fragmentary shell remains are of little or no significance.

6.0 POTENTIAL ADVERSE IMPACTS

Landform alterations and development associated with the proposed project could cause potential adverse impacts to archaeological site SDi-5512a. Further disruption or impairment of the already disturbed archaeological resources would result in the loss of unique and significant archaeological data.

7.0 RECOMMENDED MITIGATION

To ensure that potentially significant archaeological data are not lost or impaired as a result of this project, an archaeological testing/salvage program is recommended. The archaeological mitigation program should be two-phased. Phase I should be limited to subsurface testing and surface collection. This phase is necessary to determine the areal (surface) extent of the site, the subsurface depth (if any), and the amount of disruption.

Based on the Phase I test results, a Phase II salvage may be required if significant subsurface or surface artifacts are encountered. Phase II should include a percentage sample (e.g., 5-15 percent) of the site, thorough analysis, and radiometric dating, if applicable.

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Attachment 1

CULTURAL HISTORY

Attachment 1

CULTURAL HISTORY

In the prehistoric past, the area now comprising San Diego County was densely occupied by native American peoples including at least three major cultures. From roughly 12,000 to 8,000 years ago, the San Dieguito people were the sole inhabitors of this region. Beginning about 8,000 years ago and extending to about 3,000 years ago, the La Jolla-Pauma culture was in existence, with the Pauma aspect being present in the inland regions. Commencing about 2,500 years ago and 1,000 years ago respectively, the Kumeyaay (Diegueño) and Luiseño lived and hunted in the area. A broad overview of the three major cultural patterns is provided below.

The following cultural history is a means of outlining and briefly describing the known prehistoric cultural traditions. A primary goal of a cultural history is to provide a diachronic or developmental approach to past lifeways, settlement patterns and cultural processes.

Lacking a synthesis of valid, regionally specific data, we are forced to fall back on a geographically generalized accepted cultural history which is, at best, ill-defined. As perceived by recent scholars, at least three major cultural patterns have operated in San Diego County (Table CH-1). There is also the possibility that a much older "Early Man" period may have existed in North America, if not San Diego County.

Recent research and experimentation with amino-acid dating (Bada 1974) has given new life to a decades-old assertion (Carter 1957) that humans were in the New World, and specifically along Mission Valley and the San Diego River, over 40,000 years ago. Although such a possibility exists, and continuing research seems to point in that direction, many scholars are unwilling to categorically state that humans occupied the New World before approximately 30,000 years ago. Continued research in the Arctic region and within our own area should help in resolving the date of initial New World occupation.

A. San Dieguito

The oldest well-documented inhabitants of the region were apparently the Paleo-Indian San Dieguito people. Typified as nomadic large-game hunters, these people occupied the mesas, mountains and deserts of San Diego County roughly between 21,000 and 8,000 years ago (Warren 1961:252-253; Rogers 1966:140-148; Ezell 1974:personal communication). The culture of the San Dieguito people has been divided into three relatively distinct phases representing assumed variations in time and space. Within these three phases exist various "industries" that are geographically and ecologically based; these are not of specific concern in this analysis. San Dieguito I, the oldest of the known Paleo-Indians in San Diego County, inhabited the desert regions east of the Cuyamaca/Laguna mountain ranges as long ago as 21,000 years (Childers 1974; Ezell 1974:personal communication).

As a result of such technological changes, the tools of the San Dieguito III phase exhibit not only a wider variety of tool types, but also a fundamental refinement in tool manufacture. A primary difference in tool technology is represented by the introduction of pressure-flaked blades and points. Unlike simple percussion flaking, pressure flaking requires a more delicate touch and more finely conceived mental template. The resulting tools exhibit form, complexity and balance not found in the early phases of the San Dieguito people.

Other diagnostic traits associated with San Dieguito III include planes, choppers, plano-convex scrapers, crescentic stones, elongated bifacial knives, and intricate leaf-shaped projectile points (Rogers 1939:28-31). Beyond specific tool types and the introduction of pressure flaking, there exists no absolute method of discerning between San Dieguito II and III. Patination, a weathering process involving chemical change on the surface of stones, is a relative guide to antiquity and provides gross distinctions between the San Dieguito phases; however, its use is limited by the many variables which are involved in its application.

B. La Jolla-Pauma

By about 7,000 years ago, a new group of peoples had begun to inhabit and exploit the coastal and inland regions of San Diego County (Moriarty 1969:12-13). These people, the La Jolla, were nomadic exploiters of maritime resources (Harding 1951; Moriarty

and metates), lack of shell, greater tool variety, more sedentary life patterns than expressed by San Dieguito sites, and an increased dependence upon gathering. However, it is more probable that these inland sites represent a non-coastal manifestation of Early Milling peoples who adopted or developed a hunting mode more so than their coastal brethren. Wallace (1955:214-230) denotes this late transitional phase as Intermediate, and establishes its position between Early Milling Horizon and Late Milling Horizon.

C. Kumeyaay/Northern Diegueño - Luiseño

By 2,000 years ago, Yuman-speaking peoples sharing cultural elements had occupied the Gila/Colorado River drainage (Moriarty 1966). Through gradual westward migration the Yumans drifted into Imperial and San Diego Counties, where they came into contact and apparently acculturated with the remnants of the Early Milling La Jolla cultural tradition (Moriarty 1966, 1965). Because of basic similarities in the late La Jolla/early Yuman patterns, it is difficult to clearly define the contact period or point between La Jolla/Yuman.

Dr. James R. Moriarty (1965, 1966) has suggested that there existed a pre-ceramic Yuman phase, as evidenced from his work at the Spindrift Site in La Jolla. Based on a limited number of radiometric samples, Moriarty has concluded that a pre-pottery Yuman phase occupied the San Diego coast 2,000 years ago and that by 1,200 years ago ceramics had diffused from the eastern deserts.

art, and carried on extensive trade with the surrounding cultural areas (Rogers 1945:167-198; Kroeber 1970:709-725; Strong 1929). It has also been postulated that the Kumeyaay and their neighbors to the north, the Luiseño, may have been practicing a basic type of protoagriculture prior to Hispanic contact (Lewis 1973; Shipek 1974:personal communication; Treganza 1947).

About 1,000 to 1,500 years ago, a group of Shoshonean-speaking people migrated out of the Great Basin region and intruded like a wedge into southern California. This wedge separated the Yuman groups and was eventually to cause great cultural variations (Kroeber 1970:278; True 1966). In coastal San Diego County, this group of Shoshonean intruders has been labeled the San Luis Rey I and II Complex (Meighan 1954:215-227). When the early Hispanic explorers contacted these people, they called them Luiseños, after the Mission San Luis Rey de Francía founded in the heart of Luiseño (San Luis Rey II) territory. Agua Hedionda Lagoon is traditionally considered as the point of separation between Northern Diegueño and Luiseño territory.

Although of a different linguistic stock, the Luiseño and the Diegueño (after San Diego) shared many cultural traits. D.L. True (1966) has suggested that basic similarities in ecological exploitation, environmental setting and temporal placement forced the late-coming and highly nomadic Shoshoneans to adapt to a life style and cultural pattern that was established and functioning upon their arrival. D.L. True outlines certain attributes or

D. Protohistoric Period

The Hispanic intrusion (1769-1822) into native-American southern California affected the coastal tribes and peoples living in well-traveled river valleys. The Mexican Period (1822-1848) saw continued displacement of the native population by expansion of the land grant program and development of extensive ranchos. The Gold Rush and the concomitant granting of statehood, combined with an influx of aggressive, land-hungry Anglos, caused a rapid displacement of the natives, as well as deterioration of their culture and lifeways (Shipek 1974; Bancroft 1886; Kroeber 1970).

The literature on these later peoples, the Kumeyaay, Luiseño, Cahuilla, Cupeño and others, is rather extensive and includes Barrows (1900), Bean and Saubel (1972), Caughey (1952), Gifford (1918), Hayes (1929), True (1970), Heizer and Whipple (1957), Hooper (1920), Kroeber (1970), Cuero (1968), Sparkman (1908:87-234), and Strong (1929).

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Attachment 2

RECORD SEARCH DATA

DEPARTMENT OF ANTHROPOLOGY

San Diego State University
San Diego, CA 92182
(714) 286-6300

REPORT ON ARCHAEOLOGICAL SITE FILES RECORD SEARCH

Source of Request [illegible]

Date of Request Sept. 25, 1978 (x) Letter ( ) Telephone ( ) In Person

Date Request Received Sept. 27, 1978 (x) Map Received (x) Map Returned

Name of Project Bay Blvd. Redevelopment Proj.

( ) The San Diego State University files show no recorded site for the project area.

(x) The San Diego State University files show the following sites ( ) within (x) in the vicinity of the project area.

Site No. SDI-3 Culture(s): "Carter's Sweetwater Site". No site description. Recorded Description: by Baumhoff from a publication. ref: Carter, G.F. Interglacial Artifacts from the San Diego Area. SW Jorn of Anthro. 8 (4) 1952.

Site No. SDI-767 Culture(s): Unknown. Most of the site is destroyed. A shell Description: midden, a small area appears to have a midden of 2 feet in depth, not rich in artifacts. ref: see above. (Jordan,nd)

Site No. SDI-4642 Culture(s): Unknown Description: Lithic small flake and core scatter, some shell. 300 x 150 yards, surface only. ref: An Arch. Survey of the Sweetwater River Flood Control Channel, C. Bull, 1973.

Site No. SDI-4643 Culture(s): "Handyman Site", Unknown. Description: Flakes, ground stone and shell tools. ref: same as above. also Excavation report by Larry L. Leach on file SDSU Lab. (Gross, Bull, 1973)

Site No. SDI-4958 Culture(s): Unknown Description: A temporary campsite containing stone tools, manos and shell fish, (Carrico, 1977) Ca. 3,660 sq. meters.

Site No. SDI-5512 Culture(s): Unknown. Highly disturbed. Flakes and flake tools occur Description: in the fill utilized by SDG&E to form a transmission tower pad, flakes, tools, core tools and some shell occurs in plowed feild. (Corum, 1978)

Note: This report includes only that information available from the San Diego State University files and may not include data on file at other institutions. A lack of sites recorded in our files cannot be taken as assurance of the absence of archaeological materials. If it should occur that any cultural remains are encountered during the course of construction, a qualified archaeologist should be notified.

Record check by [signature]

Date Sept 28, 1978 Signed

SAN DIEGO MUSEUM OF MAN

1350 El Prado, Balboa Park, San Diego California 92101, Telephone (714) 239-2001

REPORT ON ARCHAEOLOGICAL SITE FILES RECORD SEARCH

Source of Request: WESTEC Services, Inc. - Richard L. Carrico

Date of Request: 25 September 1978 (X)Letter ( )Telephone ( ) In Person

Date Request Received: 27 September 1978 (x)Map Received (x)Map Returned

Name of Project: Bay Blvd. Redevelopment Project

( ) The Museum of Man files show no recorded sites for the project area.

(x) The Museum of Man files show the following sites ( )within (x)in the vicinity of the project area.

Site No. W-1323 Culture(s): Prehistoric (Milling Stone or Late Prehistoric)

Description: Camp site; disturbed area; site apparently once substantial with midden; hammerstones, scrapers, manos, cores, flakes, fire-cracked rock, shell. Recorded by: R.Carrico 1977, C.Bull 1977

Site No. W-1450 Culture(s): Not stated

Description: Disturbed deposit (apparently used for fill) containing flakes, flake tools, core tools, shell. Recorded by: J.Corum 1978

Site No. _____ Culture(s): _____

Description:

_____ Recorded by: _____

Site No. _____ Culture(s): _____

Description:

_____ Recorded by: _____

Site No. _____ Culture(s): _____

Description:

_____ Recorded by: _____

Site No. _____ Culture(s): _____

Description:

_____ Recorded by: _____

Please note: The project area may contain archaeological resources in addition to those noted above. This report is made from San Diego Museum of Man files only and may not include data pertaining to localities other than those covered in previous Museum of Man surveys or gathered by other institutions or by individuals.

Record check by: Van Nedres

Date: 27 Sept 1978

Signed: Lowell E. English

Appendix D

ARCHAEOLOGICAL SURVEY

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OF THE

PROPOSED BAY BOULEVARD

REDEVELOPMENT PROJECT

PREPARED FOR

CHULA VISTA REDEVELOPMENT AGENCY
276 FOURTH AVENUE
CHULA VISTA, CALIFORNIA 92010

PREPARED BY

WESTEC SERVICES, INC.
3211 FIFTH AVENUE
SAN DIEGO, CALIFORNIA 92103

RANDY FRANKLIN
PROJECT ARCHAEOLOGIST

RICHARD L. CARRICO
CULTURAL RESOURCE MANAGER

NOVEMBER 1978

BAY BOULEVARD REDEVELOPMENT ARCHAEOLOGICAL SURVEY

1.0 INTRODUCTION

1.1 Project Size and Field Crew

A systematic archaeological survey was conducted by R. L. Franklin of WESTEC Services, Inc., for the proposed Bay Boulevard Redevelopment Project in the city of Chula Vista, California (Figure 1). The 12± acres, multi-phase project will include the redevelopment of three areas along Bay Boulevard between "D" and "F" Streets. For survey purposes, the area was divided into three sections: A, B and C. Section A is located on Bay Boulevard, north of "E" Street and will consist of a motel containing 200 rooms, a 13,000 square foot restaurant, and an overnight recreation vehicle park consisting of approximately 77 spaces. The project will encroach upon Bay Boulevard north of "E" Street. Section B is just south from "E" Street and Anthony's Fish Grotto and will include an 83-room motel and three restaurants. The third area of redevelopment (Section C) will involve the installation of sidewalks, lighting improvements, and landscaping.

1.2 Scope of Work and Hours Expended

The survey was conducted on September 20, 1978; a total of eight hours were expended to complete the field investigation. According to standard archaeological procedures, when cultural resources are encountered they are assigned temporary field numbers, given appropriate USGS quadrangle locations, photographed,

and the appropriate site record form with attached field sketch is completed.

1.3 Project Location

The Bay Boulevard redevelopment area lies within the northwestern Chula Vista city limits in San Diego County, California (Figure 2). Specifically, the subject property encompasses the area south of "D" Street to just north of "H" Street. The western project borders are the San Diego and Arizona Eastern Railroad tracks and Interstate 5 on the east. A topographical overview can be made by consulting the USGS 7.5' quadrangle for National City, on Township 18 south, Range 2 west, within an unsectioned portion of the La Nacion landgrant.

1.4 Project Setting

The subject property lies on a marine terrace composed of sandstone deposited during the Pliocene; this deposit is generally referred to as the San Diego formation. Some of the terraces are capped by a sand and gravel layer which is thought to have been formed during the early Pleistocene. The Sweetwater River drainage is to the north/northeast of the project area, and empties into a marine tideland. The nearby river soils are alluvial, composed of unconsolidated quaternary sands and gravels (Weber 1963:11-32).

Native vegetation has been largely replaced by ruderal grasses and introduced trees and shrubs. Section A is the only

survey location where substantial floral species persist. Observed plant communities include: stands of tobacco (*Nicotiana glauca*); horseweed (*Conyza canadensis*); mustard; and Tamarisk (*Tamarix gallica*). Directly to the north from Section A is the tideland region; ongoing agricultural activity can be seen to the west. Urbanization has taken place on and around the survey parcels.

Construction of the railroad line, Interstate 5, auto wrecking yards, and assorted industrial businesses have all contributed to the serious disruption of the precontact environmental setting that undoubtedly existed. This aspect of the project setting must be stressed when evaluation of cultural resources are undertaken.

1.5 Cultural History

A complete cultural history is provided in Attachment 1.

2.0 REGIONAL POTENTIAL

2.1 Archaeological/Ethnographic

Archaeological and ethnographic data generated throughout San Diego County regarding land-use patterns of native Americans (Crabtree *et al.* 1963; Rogers 1966; Warren 1964; True 1970), indicate that the subject property may be considered in close proximity to an area of archaeologically high potential. The presence of Sweetwater River, as a viable water source, may have also served as a major corridor for seasonal movement of native American groups. The river drains 219 square miles of the coast range.

exploitation pattern such as this could leave behind archaeological sites indicative of temporary camping, food processing and seasonal occupation.

2.2 Historical

The historical potential of the lower Sweetwater River Valley is closely linked with the colonization of Alta California by Spanish settlers in 1769, the Mexican-American settlement beginning approximately 1840, and subsequent recent history from that period following World War I until the present.

The journey of Fray Junipero Serra to what is now Presidio Park in San Diego resulted in the first mission within Alta California. A large area in what is now National City and Chula Vista was designated as Rancho Del Rey (Rush 1965).

The rancho was controlled by the presidio de San Diego and used as grazing land for livestock. A change in land ownership took place in 1845 when the rancho was granted to John Forster by Governor Pio Pico and was renamed Rancho de la Nacion. The land was sold by Forster in 1856 to Jules Bayerque and he sold it a year later to his brother, who in turn, sold it to Francois Pioche in 1868. Frank and Warren Kimball obtained the Rancho that same year (1818) and began intensive land-use. John Forster apparently erected some adobe structures on the present location of the Rohr Aircraft Company, northwest of the project property. In many instances, during the rancho period surviving native Americans were employed by owners of these ranches living nearby on small *rancherias*.

3.0 PREVIOUS AREA FIELDWORK

3.1 Introduction

While fieldwork in this portion of San Diego County has by no means been exhaustive, enough data has been obtained to aid investigators in an overview of native American lifeways observed in the archaeological record.

3.2 Surveys

- WESTEC Services, Inc. An environmental constraint analysis for the Chula Vista Bayfront Redevelopment Project (Carrico 1976) resulted in the discovery of one site designated as WS-76-6, later renumbered SDM-W-1323. This minor site consisted of a widely scattered, thin veneer of shellfish, manos and scrapers. A WESTEC-sponsored archaeological survey of the CONROCK Sweetwater project was positive in that eight sites were located, representing the San Dieguito complex, as well as late-prehistoric settlement (Carrico 1974). In 1976, archaeological investigations for Rancho Robinhood Unit III resulted in the discovery of two sites: W-1003 and W-1004. These sites were representative of the Late Milling Kumeyaay and contained sparse quantities of artifacts.

- San Diego State University. In 1973, a survey sponsored by the University and conducted by Charles Bull for a proposed Army Corps of Engineers flood control channel indicated the remains of two archaeological sites: Cal E:8:15, known as the Handyman site, and Cal E:8:17, known as the Edgemere site. The

Shellfish was prevelant with Pismo Clams (*Tivela stultorum*), accounting for 95 percent of the identified species. Dates from the shell at the Handyman site were given at 1450 B.P. ±50 years. The site is regarded as not being a permanent campsite but a manifestation of a specialized activity, in association with the La Jolla culture.

The Edgemere site, Cal E:8:17, was given a radiometric date of 1660 years B.P.

The collected shell was comprised of 95 percent *Chione* sp. It was concluded that severe disruption by agricultural activity, street construction, buildings, and natural agents such as flooding and rodent burrowing contributed to intermixing of historic debris with that of prehistoric manufacture at all levels (Leach 1975).

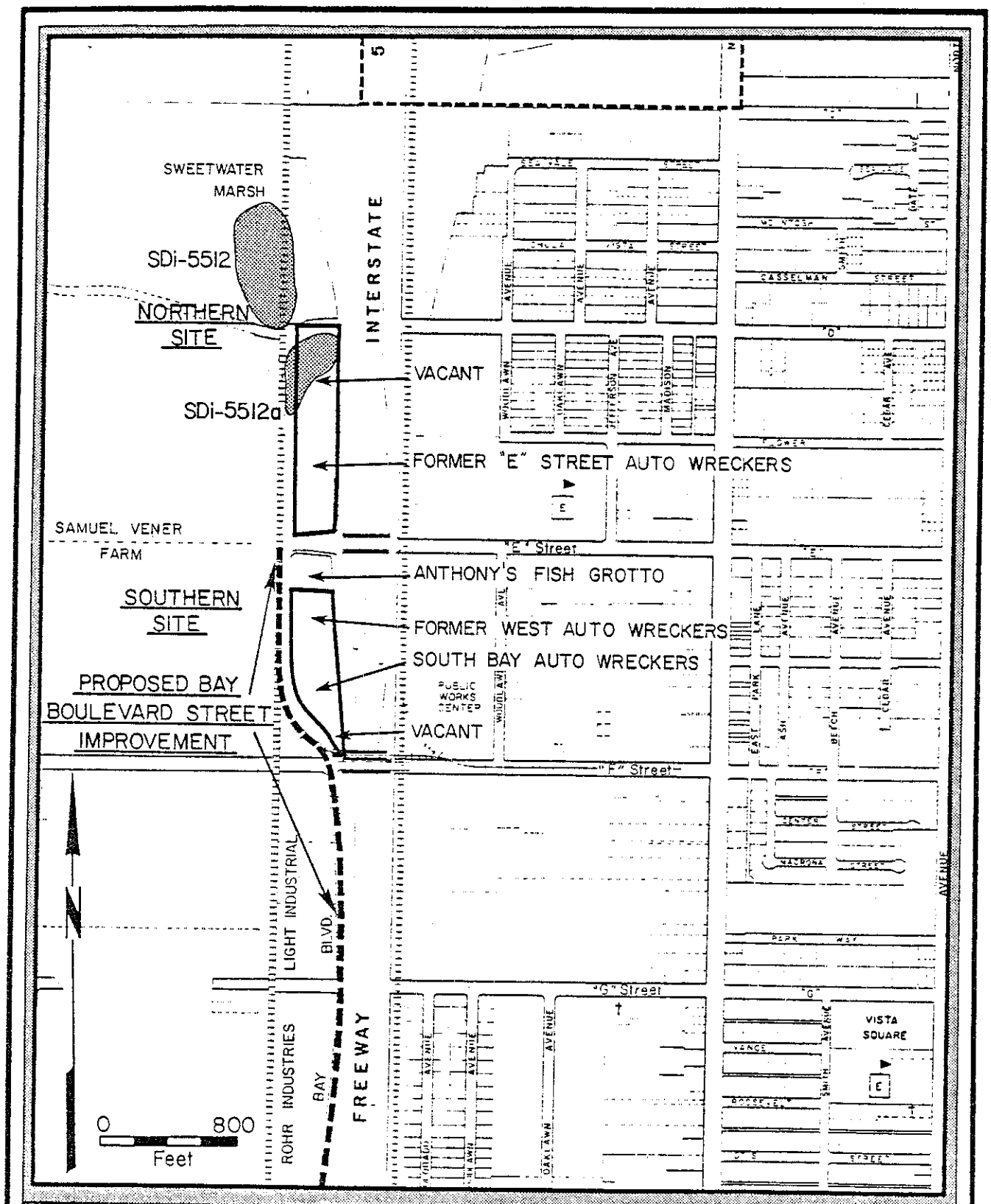
3.4 Record Search Data

Record search data are contained in Attachment 2.

4.0 SURVEY METHODS

4.1 Introduction

The survey techniques employed in this study conform with the guidelines and requirements of the Society for California Archaeology (King *et al.* 1973) and with those set forth by the National Park Service in their *Guidelines for the Preparation of Statements on Environmental Impact on Archaeological Resources.*



Present Project Site and Archaeological Site SDi-5512a

FIGURE 3

one felsite flake and some shell were observed. Ruderal grasses are present on the site as are stands of tobacco (*Nicotiana glauca*).

- Isolates. Ihree areas of isolated shellfish scatter were encountered in and around Section B. This area has been so severely impacted by urban growth that these fragmentary shell remains are of little or no significance.

6.0 POTENTIAL ADVERSE IMPACTS

Landform alterations and development associated with the proposed project could cause potential adverse impacts to archaeological site SDi-5512a. Further disruption or impairment of the already disturbed archaeological resources would result in the loss of unique and significant archaeological data.

7.0 RECOMMENDED MITIGATION

To ensure that potentially significant archaeological data are not lost or impaired as a result of this project, an archaeological testing/salvage program is recommended. The archaeological mitigation program should be two-phased. Phase I should be limited to subsurface testing and surface collection. This phase is necessary to determine the areal (surface) extent of the site, the subsurface depth (if any), and the amount of disruption.

Based on the Phase I test results, a Phase II salvage may be required if significant subsurface or surface artifacts are encountered. Phase II should include a percentage sample (e.g., 5-15 percent) of the site, thorough analysis, and radiometric dating, if applicable.