UNIT 278

MONTARA STATE BEACH

GENERAL PLAN (*)

June 1979

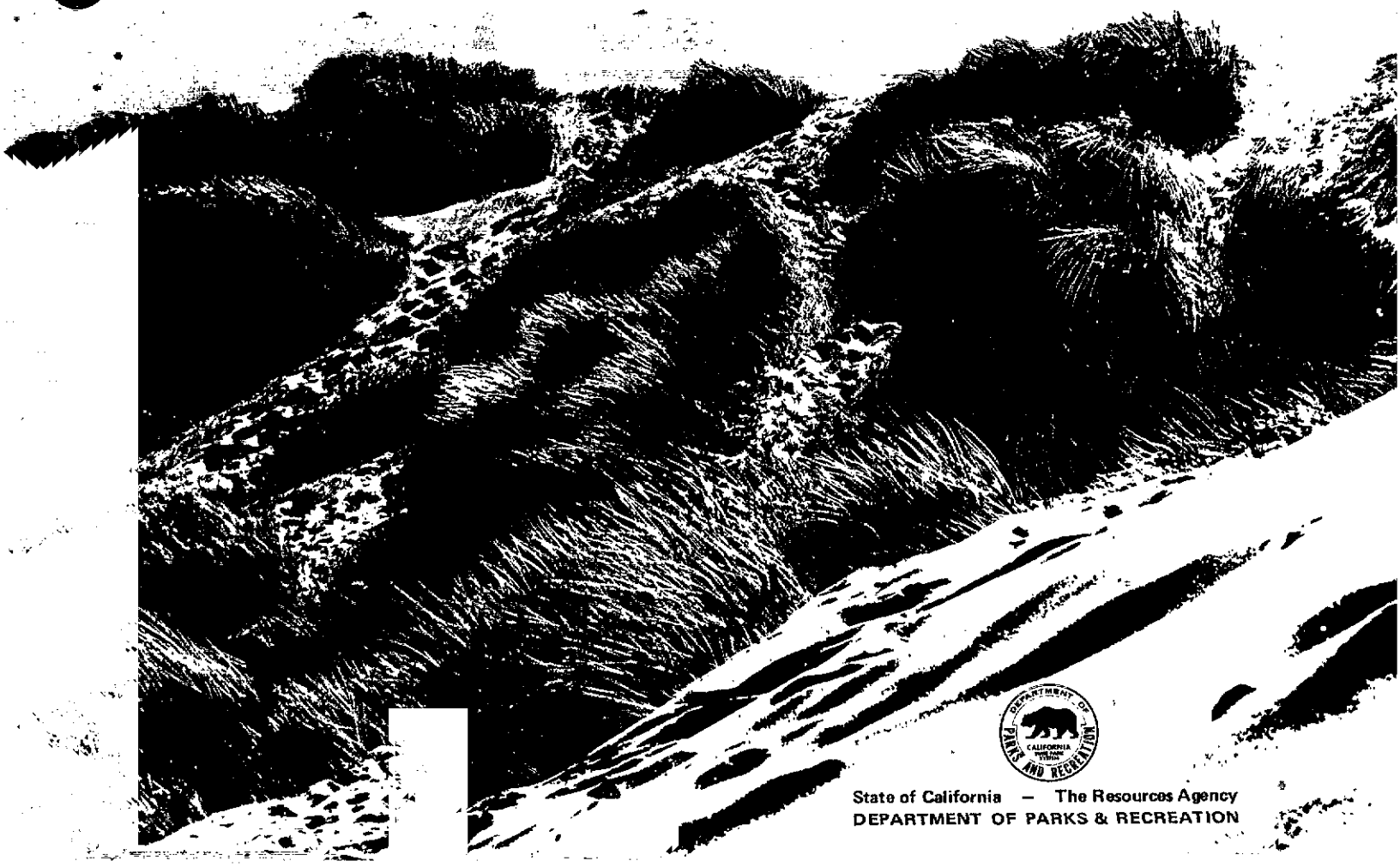
(*) Note: This unit's General Plan is contained within the 9-unit San Mateo Coast area General Plan

SAN MATEO COAST AREA GENERAL PLAN

April 1979

~~PRELIMINARY~~

FINAL



State of California — The Resources Agency
DEPARTMENT OF PARKS & RECREATION

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SAN MATEO COAST AREA GENERAL PLAN

April 1979

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RARE OR ENDANGERED SPECIES

Other rare or endangered plants/animals are known to exist at the Montara unit's proposed acquisition. They include — Montara Manzanita (*Arctostaphylos montaraensis*) — Davy's Lupine (*Lupinus arboreus* var. *eximius*) — San Bruno Mountain Elfin Butterfly (*Callophrys mossii bayensis*)

Ano Nuevo State Reserve — Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*)

Brown pelican and other birds are not mentioned here because they do not nest in the area.

		THORNTON	MONTARA	HALF MOON BAY	SAN GREGORIO AND POMPONIO	PESCADERO	BEAN HOLLOW	ANO NUEVO	TOTALS
RARE OR ENDANGERED SPECIES	SAN FRANCISCO GARTER SNAKE SIGHTINGS					■		■	
	SAN FRANCISCO GARTER SNAKE HABITAT		■	■	■	■		■	
PLANT COMMUNITIES	COASTAL CHAPARRAL		■						
	NORTHERN COASTAL SCRUB	■	■		■	■	■	■	
	INTRODUCED ANNUAL GRASSLAND		■	■	■	■		■	
	FRESHWATER MARSH				■	■		■	
	RIPARIAN		■	■	■	■	■	■	
	COASTAL STRAND	■	■	■	■	■	■	■	
COASTLINE CHARACTERISTICS	SAND DUNES			■		■		■	
	CLIFFS/BLUFFS	■	■	■	■	■	■	■	
	ROCKY SHORELINE		■			■	■	■	
	SANDY BEACH	■	■	■	■	■	■	■	
EXISTING & PROPOSED FACILITIES	PROPOSED PICNIC UNITS	6	0	200	33	30	10	30	309
	EXISTING PICNIC UNITS	24	0	62	23	2	8	0	119
	PROPOSED CAMPSITES	30	55	170	40	0	0	30*	325
	EXISTING CAMPSITES	0	0	51	0	0	0	0	51
	PROPOSED PARKING SPACES	175	330	1000	450	445	80	305	2,785
	EXISTING PARKING SPACES	150	255	440	310	288	49	100	1,592

SUMMARY CHART A

*Requires classification change of a portion of the reserve

SUMMARY

The San Mateo Coast stretches from San Francisco to Santa Cruz County, and includes some of California's most scenic and valuable resources. Although relatively remote and isolated, the nine State Park System units along the coast are within reach of millions of urban residences.

This General Plan encompasses the Department of Parks and Recreation's proposals for resource protection, management, and development at the units.

The nine State Park System units are dealt with in seven land areas:

Thornton State Beach
Gray Whale Cove and Montara State Beaches
Half Moon Bay State Beach
San Gregorio and Pomponio State Beaches
Pescadero State Beach (including a natural preserve)
Bean Hollow State Beach
Ano Nuevo State Reserve

The plan emphasizes quality recreation experiences, coupled with preservation of the San Mateo Coast's fragile environment.

The department's planning effort is based on public participation. Existing conditions were studies, and the planners communicated with many interested groups and individuals. This approach allowed identification of the problems and recreation issues, and provided valuable locally-oriented information. The public involvement process included public workshops, newsletters, and individual/group meetings. The resulting information allowed development of recreation alternatives for the State Park System units and is the essence of this General Plan.

The summary chart, chart A, provides a broad overview of the San Mateo Coast's natural environment, geologic characteristics, recreation facilities, and development proposals.

Traffic congestion is a major problem along the coast, and the plan proposes that visitor access be oriented away from motor vehicles, and toward mass transit and bicycle/trail use.

Development of the state-owned units is severely limited by lack of potable water and inadequate sewage disposal facilities. The plan proposes development designed with these constraints in mind.

Numerous archeological sites are found in the nine units. The plan calls for protection of these cultural resources, as well as the historic resources present.

Natural resources along the coast include several rare or endangered plant and animal species. The plan prohibits development and visitor use that may damage these species.

In an overall sense, the plan calls for a realistic balance between resource preservation and visitor access and use.

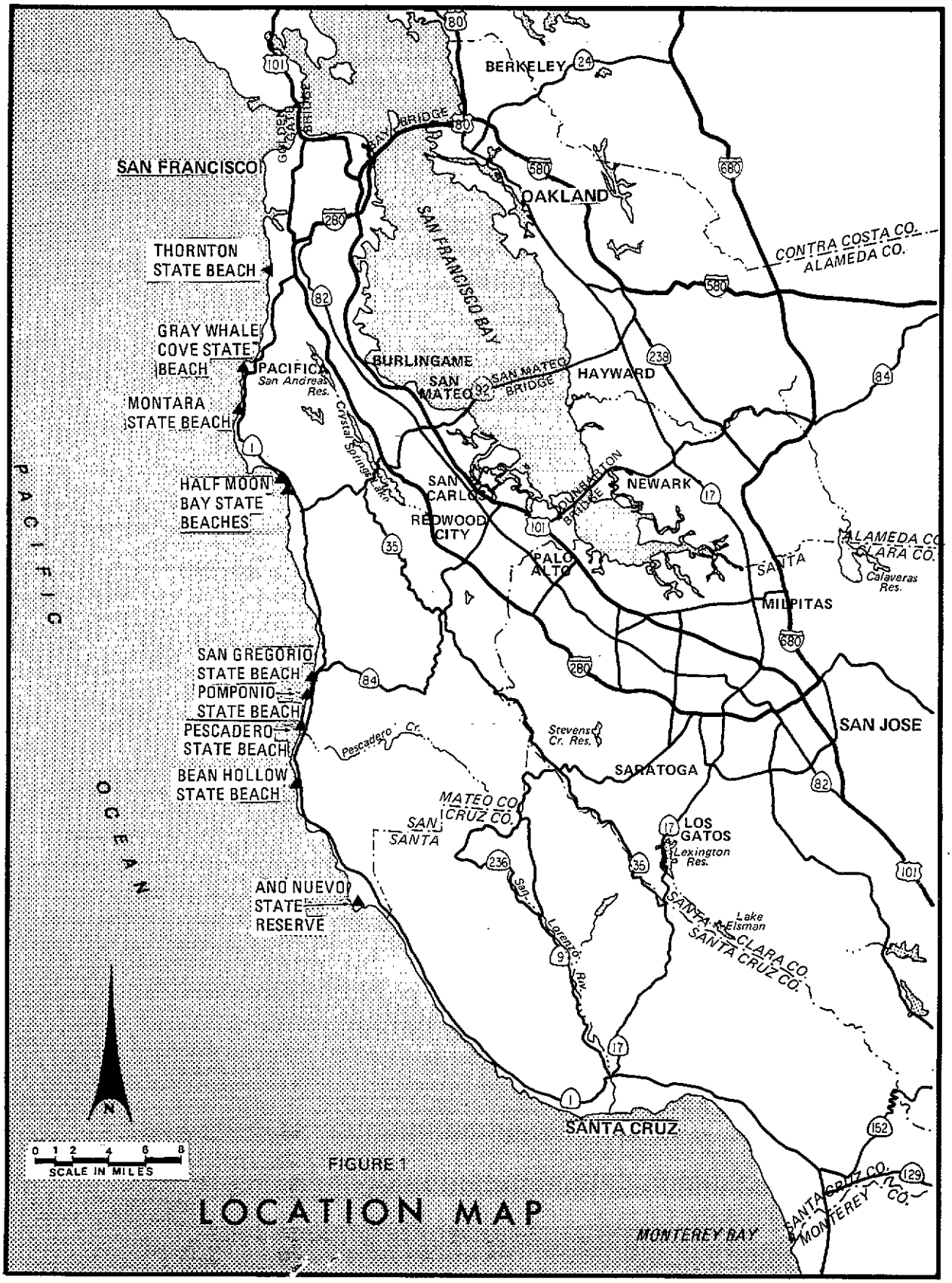

FIGURE 1

LOCATION MAP

PURPOSE OF PLAN

Looking at long-range improvement of the San Mateo Coast Area units is like eating a big apple. You have to deal with it one bite at a time--you cannot put the whole apple in your mouth at once.

This General Plan is the first bite into improvement of public facilities at the San Mateo Coast beaches; it provides general direction. The specific improvement designs will be refined in the future, when they are funded for construction. At that time, further details will be analyzed, and more specific decisions will be made about specific environmental aspects.

The Resource Element summarizes the natural and cultural resources of each unit, and sets management policies for their protection. Detailed resource information is found in the Inventory of Features for each unit, on file with the Resource Preservation and Interpretation Division of the Department of Parks and Recreation in Sacramento.

The Land Use and Facilities Element describes current issues and problems concerning public facilities, and prescribes proposed improvements.

The Draft Environmental Impact Element is the environmental impact report for this plan. Each individual development will have a specific EIR prepared when construction funding is proposed.

This plan for public use of portions of California's coastline assumes that people desire to coexist with nature. People do not have to be fenced out, and the flora and fauna do not have to be sacrificed.

To ensure the best possible compromise between protection and use of the resources, it is assumed that a thorough study of the sensitive natural environments will be made before any public use of these areas is allowed.

Since the plan is intended to give general direction, the specific locations of proposed facilities are assumed to have a flexibility of ±100 yards from where they are shown in the plan. The intensity of use is also assumed to be flexible.

The plan assumes that the behavior of people using State Park System facilities can be controlled by visitor education and enforcement of state regulations. The number of people using the San Mateo Coast beaches is controlled, to some degree, by highway access and parking constraints.

Another assumption of the plan is that State Park System managers observe environmental changes and public behavior. These observations are documented by photographs, maps, and written reports. This monitoring activity serves to guide future improvements and interpretive/education programs.

Acquisition, development, and management proposals in this plan that are located outside existing state-owned property are tentative, hypothetical, optional, and not essential to development, management, and operation of state-owned property.

PROJECT DESCRIPTION

The San Mateo Coast state-owned units are located in seven areas, along a 50-mile stretch of State Highway 1 on the California coast. The units stretch from San Francisco on the north, to Santa Cruz County on the south.

The coastal area provides dramatic and panoramic views of the Pacific Ocean and the rugged coastal landscape bordering it. The area is unique for its natural and wildness areas close to a major metropolitan area.

The state-owned coastal units are:

- Thornton State Beach
- Gray Whale Cove State Beach
- Montara State Beach
- Half Moon Bay State Beach
- San Gregorio State Beach
- Pomponio State Beach
- Pescadero State Beach
- Bean Hollow State Beach
- Ano Nuevo State Reserve

There are five major problems affecting the San Mateo Coast units: (1) traffic congestion; (2) water availability and sewage disposal; (3) loss of open space; (4) lack of control of use; and (5) maintenance and cleanup.

Primary access to the units is from Highway 1; Highway 92 also brings much Bay Area traffic into the area.

The resources of the San Mateo state-owned coastal units are numerous, varied, and significant. They include the scenic cliffs, the sandy beaches, and the rocky shoreline, with an abundance of marine life.

The area has a moderate climate, with some fog present during most of the year. Sunny days abound, bringing many visitors to the beaches. Annual rainfall is from 15 to 50 inches, depending on elevation.

Two major earthquake faults are located in the area: the San Andreas Fault and the San Gregorio Fault.

Planned development of the state beaches has been minimal to date, with the only real efforts at Thornton and Half Moon Bay state beaches. Much unplanned alteration has taken place, detracting significantly from the resources.

The San Francisco garter snake, a rare and endangered species, is located in the area, and Ano Nuevo State Reserve features a significant living area for the harbor seal, the California sea lion, the Steller sea lion, and the elephant seal.

Plant life includes a dynamic progression from seaweed forests to pine forests, with many species present. No rare or endangered plant species are known to exist on state-owned lands, although records indicate one may be present at Ano Nuevo State Reserve. Others may be present on proposed acquisitions.

Recreation activities at the San Mateo Coast state-owned units are numerous and varied, ranging from sunbathing, photography, and painting to picnicking, fishing, and surfing. This wide range of recreation attracts millions of people every year.

HISTORICAL BACKGROUND

The San Mateo Coast lies in the territory of the Costanoan Indians. The Costanoans were linguistically and culturally related to the Coast Miwok. The Costanoans were a hunting, gathering, and fishing people. In 1769, at the time of the Spanish contact, the Costanoan population was estimated at 7,000 to 10,000 persons. Changes in lifestyle, European diseases, starvation, and lower birthrates caused a dramatic decrease in the population. Today, few individuals can claim Costanoan ancestry.

The San Mateo Coast is an area Captain Gaspar de Portola traversed in 1769. Permanent Spanish settlement occurred a few years later, when the missions were established. Livestock grazing and farming became a way of life in the San Mateo area. Eventually, eight Mexican ranchos were granted along the San Mateo Coast, and trade routes were established.

Beans, strawberries, potatoes, brussels sprouts, barley, oats, and dairy products were traded to the rapidly developing city of San Francisco during the American period. Shipping by sea and rail increased the profitability of this trade.

RESOURCE ELEMENT

RESOURCE ELEMENT

The Resource Element defines the prime resources in the nine park system units under consideration. It establishes guidelines for public use of the resources, and sets resource management policies for their perpetuation.

Some sections in this element are divided into two parts: the general subsections deal with items common to the entire project; the specific subsections deal with items related to the individual State Park System units.

Detailed resource information is found in the Inventory of Features for each unit, on file with the department.

STATUTORY PURPOSE OF UNIT IN RELATION TO CLASSIFICATION

General

Section 5019.56 of the Public Resources Code lists a state beach as a type of state recreation unit. The definition of a state recreation unit and state beach are given in the code as follows:

> State recreation units consist of areas selected, developed, and operated to provide outdoor recreational opportunities.
>
> In the planning of improvements to be undertaken within state recreation units, consideration shall be given to compatibility of design with the surrounding scenic and environmental characteristics.
>
> State beaches consist of areas with frontage on the ocean or bays designed to provide swimming, boating, fishing, and other beach-oriented recreational activities. Coastal areas containing ecological, geological, scenic, or cultural resources of significant value shall be preserved within state wildernesses, state reserves, state parks, or natural or cultural preserves.

Section 5019.65 of the Public Resources Code defines a state reserve as follows:

> State reserves consist of areas embracing outstanding natural or scenic characteristics of statewide significance. The purpose of a state reserve is to preserve its native ecological associations, unique faunal or floral characteristics, geological features, and scenic qualities in a condition of undisturbed integrity. Resource manipulation shall be restricted to the minimum required to negate the deleterious influence of man.
>
> Improvements undertaken shall be for the purpose of making the areas available, on a day-use basis, for public enjoyment and education in a manner consistent with the preservation of their natural features. Living and nonliving resources contained within state reserves shall not be disturbed or removed for other than scientific or management purposes.
>
> State reserves may be established in the terrestrial or underwater environments of the state.

Section 5019.71 of the Public Resources Code defines a natural preserve as follows:

> Natural preserves consist of distinct areas of outstanding natural or scientific significance established within the boundaries of other state park system units. The purpose of natural preserves shall be to preserve such features as rare or endangered plant and animal species and their supporting ecosystems, representative examples of plant or animal communities existing in California prior to the impact of civilization, geological features illustrative of geological processes, significant fossil occurrences or geological features of cultural or economic interest, or topographic features illustrative of representative or unique biogeographical patterns. Areas set aside as natural preserves shall be of sufficient size to allow, where possible, the natural dynamics of ecological interaction to continue without interference, and to provide, in all cases, a practicable management unit. Habitat manipulation shall be permitted only in those areas found by scientific analysis to require manipulation to preserve the species or associations which constitute the basis for the establishment of the natural preserve.

Specifics

	Original Acquisition	Original Acquisition From	Original Classification	Present Classification/Date
Thornton SB	1955	San Mateo County	Thornton Beach State Park	State Beach/1962
Gray Whale Cove SB[1]	1966	Private owner		State Beach/1969
Montara SB	1957	San Mateo County	Montara Beach State Park	State Beach/1962
Half Moon Bay SB[2]	1955	San Mateo County	Half Moon Bay Beach State Park	State Beach/1962
San Gregorio SB[3]	1958	San Mateo County	San Gregorio Beach State Park	State Beach/1962
Pomponio SB	1960	Private owners		State Beach/1969
Pescadero SB[4]	1958	San Mateo County	Pescadero Beach State Park	State Beach/1962
Bean Hollow SB	1958	San Mateo County		State Beach/1969
Ano Nuevo SR[5]	1958	U.S. Government & private owners		State Reserve/1962

[1]Only 116 meters ocean frontage. When acquired, it was separated from Montara. New acquisitions make it one continuous beach with Montara.
[2]Many additional private acquisitions.
[3]San Gregorio and Pomponio beaches are now continuous. Uplands are separated by private property.
[4]Pescadero Natural Preserve established in 1974.
[5]Recent additions have greatly enlarged reserve.

RESOURCE SUMMARY AND EVALUATION

General

Natural Values

Geology:

The geologic history of the coast involves a series of geologic movements and considerable erosion. The result is a complex system of mountains, canyons, and coastal terraces, with varying degrees of marine sedimentation, depending on a given area's position in relation to the sea during different geologic time periods.

During and since the middle Pliocene epoch, there has been major uplifting, faulting, and folding, due to compressive forces. This was when the Santa Cruz Mountains were formed.

The San Mateo Coast is considered seismically active. It lies within the San Andreas Fault Zone and the Seal Cove-San Gregorio-Palo Colorado Fault Zone, which runs along the coast from Stinson Beach to the south end of Monterey Bay, a distance of about 160 km (100 mi.). The San Gregorio Fault parallels the San Andreas Fault, which lies about 9 km (6 mi.) to the east; it may join the San Andreas Fault north of Bolinas.

The California Division of Mines and Geology considers the San Gregorio Fault to be active. Recent work indicates that some faulting has occurred within the last 11,000 years (Weber and Lajoie, 1974), although this is not certain.

The San Andreas Fault and its secondary faulting, including the Seal Cove-San Gregorio-Palo Colorado Fault, have had profound effects on the geology of the area. The effects are manifested in folds and faults, some still active. The San Mateo Coast has its own active fault, the San Gregorio, which is approximately parallel to the San Andreas, and may be closely related.

The San Andreas Fault is accepted by geologists as an actual separation between continental land masses. Land west of the fault is moving north, relative to land east of the fault. The fault has had a displacement of 560 km (350 mi.) since the Cretaceous period; this has brought to the area geologic features formerly located in southern California.

Beach and windblown sands deposited in the last 6,000 years are a major factor of the San Mateo Coast beaches. Inland sand dunes may reach a depth of 60 m (200 ft.), while beach sands generally do not exceed a depth of 6 m (20 ft.). The amount of sand changes seasonally, with less sand present in the winter, when storms tend to carry it out to sea. In the summer, the sand is brought back by the milder wave action. The area is a sand-deficient zone.

The primary source of new beach sands along the northern San Mateo Coast is sediment carried by the Sacramento and San Joaquin river systems to the north, and brought to the coast by littoral drift. From Montara State Beach south, the primary sand source is local bluff erosion and sediment from local streams. Dune formations result from wind blowing the sand after it is deposited on the beaches.

The Purisima Formation can be found in many areas along the coast. It is composed of fine-grained sandstone, siltstone, and mudstone, and was deposited as the sea encroached on the land, five to ten million years ago. In places, these deposits are capped by younger marine terrace deposits. The Purisma Formation can be observed on the steep, wave-cut bluffs. It is a major source of Tertiary fossils, including a variety of marine clams, snails, and foraminifera.

Semiprecious gems have been found in the area. The Purisima Formation is a relatively good source of chert. Chalcedony, the cryptocrystalline form of quartz, is the major siliceous material present. Varieties of chalcedony include agate, chert, jasper, hydrolite, and onyx. These local rocks are the primary sources of the beach pebbles.

Holocene alluvium has been created by the erosive forces of water. It includes sand, silt, and gravel. This alluvium is found along streams and their outlets.

Marine terrace sediments are also common along the coast. These were deposited by the encroaching sea, about 500,000 to 1,000,000 years ago. These sediments are primarily composed of sand and gravel, up to 14 m (45 ft.) thick. The bluffs along the coast reveal the relationship between these slightly tilted Pleistocene deposits and the underlying material. Marine clams and snails have been found in the lowest parts of these formations.

As on all beaches along the California coast, winter storms tend to erode the sands, and the beaches become narrow. As the storms subside, much of the sand is replaced, and the beaches become wider during the summer. At times, great quantities of sand may be removed by the waves, exposing the sea cliffs to storm waves and rapid erosion.

Soils throughout the area are subject to erosion especially if they are not covered with proper vegetation. In places where erosion has taken place, the topsoils have completely eroded away, and little if any vegetation can get started on the subsoils. Water directed over nonvegetated areas results in gully erosion that quickly becomes a severe problem.

Runoff from State Highway 1 has caused some definite soil erosion problems where precipitation has been concentrated.

Along much of the San Mateo Coast, roads and trails (mostly volunteer) have been located so as to intensify the erosion problems. The sea cliffs are being slowly undermined, and in places, sea caves are forming. These are the forerunners of cliff failure. The sea cliffs can collapse, primarily during heavy storms or earthquakes. Landslides along the cliffs can also be expected. Landslide failure is a function of the height and steepness of the sea cliffs, moisture, and the lithology and structure of the underlying material.

The soil limitations for various uses are indicated on various maps accompanying the Inventory of Features (on file with the department).

Due to the very limited time allotted for geologic and soils studies at the San Mateo Coast units, detailed geologic and edaphic investigations could not be made. It is highly recommended that these investigations be completed before actual siting of roads, structures, trails, campgrounds, picnic areas, restrooms, etc.

The geotechnical problems indicated do not necessarily preclude development, but they indicate that it is important to include these factors in development design. Mitigation of these factors may be expensive; in some cases, the expense may preclude development. In a few instances, such as active or stable sand dunes, use may have to be limited or precluded.

Drainage:

There are numerous drainages located throughout the project area; specific data for each unit are provided under "Specifics," page 15.

Climate:

The year-round climate along the coast is mild. The summer is characterized by frequent morning fogs and cool weather. The best conditions occur in the fall and spring, and in the winter, between storms. During these times, the weather tends to be quite sunny and warm, with many clear days. When the weather is good, visitation tends to increase dramatically.

Flora:

Flora of the project area are generally characterized by having little diversity and a relatively large number of exotic species. Two exotics, hottentot fig (Carpobrotus edulis) and sea fig (Carpobrotus aequilaterus), occur rather extensively. Other nonnatives, including New Zealand spinach (Tetragonia tetragonioides), sea rocket (Cakile maritima), sweet alyssum (Lobularia maritima), and cape oxalis (Oxalis pes-caprae), are also common. Nonnative trees and shrubs have been planted in various locations, but are not extensive; they include Monterey cypress (Cupressus macrocarpa), shore pine (Pinus contorta), blackwood acacia (Acacia melanoxylon), and myoporum (Myoporum laetum).

In pristine times, the natural ecosystems and species compositions occurring in the San Mateo Coast units differed considerably from what exists today. This variation is not as great in the natural areas, where no cultivation has taken place; in the natural areas, the greatest changes have come from the introduction of exotics. These changes have been primarily associated with attempts to stabilize the sand dunes.

Two plant communities are common in the project area; they are coastal strand and northern coastal scrub. Coastal scrub dominates the terraces and bluffs; beach vegetation occurs above the supralittoral zone. Growing on the beaches and dunes are several very abundant exotics. The fallow agricultural areas contain a preponderance of exotic weeds and annual grasses; these areas are gradually being invaded by coyote bush (Baccharis pilularis var. consanguinea) and bush lupine (Lupinus arboreus and L. polyphyllus), and will return, if left undisturbed, to coastal scrub.

Except for Gairdner's yampah (Perideridia gairdneri ssp. gairdneri), an endangered plant that may be at Ano Nuevo State Reserve, no rare or endangered plant species have been identified in the San Mateo Coast State Park System units. However, the beach strawberry (Fragaria chiloensis), a unique species from a scientific and interpretive standpoint, occurs in limited amounts at all the units. In addition, a native grass (Stipa pulchra) colony associated with the beach strawberry occurs at Bean Hollow State Beach.

Vegetational entities present in the San Mateo Coast State Park System units are shown on the vegetation maps, figures 2 through 24.

Fauna:

Bird life on the beaches is characteristic of the types found here in pristine times, with migratory water-associated birds the most abundant, followed by resident water-associated birds.

Small land mammals and several ocean mammals, including the gray whale (Eschrichtius gibbosus), California sea lion (Zalophus californianus), and harbor seal (Phoca vitulina), are evident in the project area.

A population of intertidal invertebrates exists in places where a rocky shoreline extends into the ocean. Due to the exposure to the open ocean and the lack of protected rocky intertidal areas (except at Pescadero and Bean Hollow state beaches and Ano Nuevo State Reserve), the numbers of both species and individuals are somewhat limited.

The endangered San Francisco garter snake occurs along the coast, and has been sighted at Pescadero State Beach and Ano Nuevo State Reserve.

Cultural Values

No major archeological excavations have been conducted on the San Mateo Coast. However, numerous prehistoric and historic archeological sites, including the remains of Costanoan habitation sites, have been identified. These occur in Gray Whale Cove, Montara, Half Moon Bay, San Gregorio, Pomponio, and Bean Hollow state beaches, and in Ano Nuevo State Reserve.

Resource Use and Recreation Potential

There is a great demand for use of the beaches in the area, but suitable nearby parking facilities are lacking. There is a great deal of parking along both sides of Highway 1; it is quite dangerous due to the heavy traffic.

The San Mateo Coast State Park System units are used for a wide variety of activities, including (but not limited to) sunbathing, picnicking, walking, jogging, beachcombing, nature study, photography, wading, and fishing.

Numerous nude sunbathers have been noted on state-owned beaches along the coast. This type of use on State Park System lands is prohibited by the California Administrative Code, Section 4322, except where specifically authorized. Some locations are being considered as clothing-optional beaches.

The scenically beautiful sandy beaches, backed with the stabilized dunes and eroded bluffs, are principal attractions of the units. The ocean is not safe for swimming due to the low water temperatures, undertow, and rip currents. These are not swimming beaches, and no lifeguards are provided. Some surfing takes place in the area, but the waves are not outstanding, since there is no offshore reef to create the best wave conditions. Boating is done offshore, with boats coming primarily from the San Francisco Bay and Pillar Point Harbor areas.

Specifics

Thornton State Beach

Geology:

Thornton State Beach is within one mile of the San Andreas Fault, which has caused a great deal of instability in the coastal bluffs. There has been major slumping in the recent past; the bluffs have moved toward the ocean, resulting in formation of a valley.

The southern part of the unit is still slipping. The ocean is encroaching on, and is undermining, the land mass. It is expected that additional slumping will occur in the future, and that the ocean will continue to erode the shoreline.

The Merced Formation is the most abundant consolidated surface material found in the bluffs and landslide deposits at Thornton State Beach. The major constituents include sandstone, siltstone, and claystone, with some conglomerate and scattered beds of volcanic ash.

The formation has been divided into lower and upper members. Marine invertebrates and vertebrate fossils are commonly associated with the lower member, and brackish marine and continental fossils are found in the upper. This would indicate that the area was uplifted during the early Pleistocene. The cliffs south of the beach access path are largely composed of the lower member, while to the north, the upper member predominates.

The Colma Formation consists of a friable sand, gravel, silt, and clay. At Thornton State Beach, this formation is mostly confined to the bluffs and cliffs east of the parking lot. The Colma Formation is highly erodible once the vegetation on its surface has been disturbed. This is very evident where the drainage system was developed on the slope east of the parking lot; erosion is evident here, and corrective action is being taken.

In pristine times, it is believed that there were sand dunes above the high tide line on the beach, backed by a coastal sage scrub vegetative type occupying the bluffs and terraces. Almost all suitable land on the terraces has now been developed into residential property and streets.

Flora:

The coastal strand occurs as a very small, narrow community, near the base of the bluffs, in several locations. Plant species composition is entirely of low-growing annuals and perennials. Most plants are either sea rocket, beach bur (*Ambrosia chamissonis*), or New Zealand spinach.

The northern coastal scrub is the predominant plant community in the unit. It includes sea fig, hottentot fig, and several low-growing shrubs and subshrubs. Community height ranges from 1 to 12 dm (4 in. to 4 ft.) in height, but more commonly, it is less than 6 dm (2 ft.) in height.

Common species in addition to the two figs include coyote brush, lizardtail (*Eriophyllum staechadifolium*), seaside daisy (*Erigeron glaucus*), and New Zealand spinach.

The slumped bluff below the main bluff is well stabilized, primarily with exotic sea fig and hottentot fig. These plants will do a satisfactory job on dune stabilization, as long as there is not too much foot traffic across the plants and the vegetation is maintained.

The beach strawberry, a unique species from a scientific and interpretive standpoint, occurs occasionally along the ridge portion of the George R. Stewart nature trail.

Fauna:

The numerous exotic plantings along the bluffs have created some habitat niches that probably did not originally exist here. Native animal species that can use these habitat types have become well established, and will remain here as long as the existing habitat is present.

Cultural Resources:

There are no known cultural resources at Thornton State Beach.

Gray Whale Cove and Montara State Beaches

Geology:

The granitic rocks of Montara Mountain are largely quartz-diorite, with some granite. These rocks are not layered, but are weakly foliated by the orientation of the mica crystals. Where this rock is exposed to the open ocean, it does not provide a diversity of habitats for marine invertebrates, since it tends to lack the macro and micro-habitats that layered and tilted rock formations contain.

This granitic material is the main source of sand for the beaches. Since the sand travels such a short distance, the grains tend to be quite coarse, because they have not had a chance to weather or abrade into finer particles.

From the state beach access opposite Fourth Street southward to Montara Point, the shoreline is rocky. Due to the encroaching sea, there is little space for visitors to investigate the tidepools. Access is also difficult, due to the steep cliffs and the private homes there. These intertidal areas do not get as much visitor use as some of the beaches to the south; as a result, more invertebrates are present.

On the proposed inland acquisition (the McNee Ranch property, which includes most of the western half of Montara Mountain), there is a great deal of soil erosion. Some of it has resulted from poor drainage practices along roads, off-highway vehicle use, and natural landslide processes (an indication of the natural instability of the soils).

There are several drainages on the proposed acquisition that cross the state beach. They are small, and tend to support intermittent streams. Green Valley and Martini creeks are the main drainages. Due to the rather high mountains next to the coast, considerable rainfall occurs, increasing rapidly with elevation. The present ownership includes lands west of State Highway 1 that are primarily beach sands, bluffs and cliffs, and uplands. The McNee property in the acquisition program includes the higher coastal mountains.

Flora:

Exotic species occur primarily in two locations. One is around the old parking area to the west of Highway 1 near Gray Whale Cove State Beach; Monterey cypress and a number of weedy annuals can be found in this area. The second is the fallow agricultural fields, that have been invaded by numerous weedy grasses and forbs.

The beach strawberry occurs along the terraces and rims of bluffs between Gray Whale Cove and Montara state beaches. Occurrences in the Montara Beach area are extensive.

The McNee Ranch property is an important area for flora. It is the site of one rare plant, Montara manzanita (Arctostaphylos montaraensis). Another, Davy's lupine (Lupinus arboreus var. eximius), which is being considered for rare status by the California Native Plant Society (1974; 1978), is also found here. Still other manzanitas are found on the mountain, making this an important area for preservation and study of the genus Arctostaphylos.

Coastal scrub and chaparral dominate most of the McNee Ranch property. Coastal scrub occurs primarily below 335 m (1,100 ft.), with chaparral above. In the low elevations near the town of Montara, there are cultivated lands and annual grasslands. The grasslands are reverting to coastal scrub, and will continue to do so with the removal of grazing. Riparian vegetation occurs in many of the gulches and ravines that drain water from the mountain. The lower, flatter gradient reaches of these drainage courses are dominated by willows up to 5 m (16 ft.) in height.

A grove of mature trees is growing around and near the farm structures on Martini Creek, and along the private road from there to the town of Montara. More mature trees are growing along a private road on the north side of Martini Creek, and next to the access road on Montara Mountain. Many of these trees are eucalyptus (Eucalyptus sp.), along with a number of exotic Monterey cypress (Cupressus macrocarpa) and Monterey pine (Pinus radiata).

Due to the general inaccessibility of the intertidal area, observations of marine life are definitely limited to distance viewing, except during very low minus tides with calm sea conditions.

Cultural Values:

A number of archeological sites exist at Gray Whale Cove and Montara state beaches, as well as on the proposed acquisition (McNee property). These include SMa:115, 129-132, and 148. They appear to be closer to San Francisco than any other known Costanoan village sites.

Scenic Values:

The scenery at the unit is quite spectacular, due to the closeness of the mountains to the ocean. At the north end of the beach, the cliffs are the highest, with sheer drops to the sea below. Expansive views of the San Francisco Bay and the coast can be had from the upper parts of the proposed acquisition, where one can get a full 360-degree panorama.

The town of Montara encroaches on the southern part of the area. Although some residences overlook the rocky intertidal portions, most of the scenic views are not available to the general public. The cliffs are not as high here, but some very fine views are still available.

Recreation:

Hang gliding takes place here. People often start from the top of the adjacent mountains, and glide down to the agriculture fields or beaches. An alternate take-off area is the marine terrace, now leased as a pumpkin field, between State Highway 1 and the strand. Landing of aircraft on State Park System lands is prohibited by the California Administrative Code 4304, unless the lands are specifically designated as landing sites. The code definition of aircraft includes hang gliders.

In the proposed acquisition, there has been a great deal of off-highway vehicle use that has resulted in severe erosion problems. The soils will not be able to support this type of use on a sustained basis. There are also some botanically unique plant species in the area, including one rare manzanita species; these can be damaged by improper use.

The northern portion of Gray Whale Cove is privately owned, and is used by nude sunbathers. The adjacent state-owned beach gets the same type of use. A private parking lot is available for people using Gray Whale Cove. During peak use, there is a considerable overflow from this parking area and private beach.

Half Moon Bay State Beach

Geology:

The only geologic units exposed at Half Moon Bay State Beach are alluvial deposits of various ages and the beach sands.

The sands of the unit are largely derived from local bluffs and sediment from Pilarcitos and Frenchmans creeks and other nearby streams. The development of Pillar Point Harbor and breakwater has had some effect on sand transport and the ocean attack on the coastal bluffs. This is most noticeable at the northern end of Half Moon Bay State Beach, and the beaches between the state beach and the breakwater. The sand removed by storm waves is not replaced naturally, since the breakwater has changed the movement of sand. The ocean waves are making a direct attack on the bluffs, which are eroding rapidly (at an average rate of 0.6 m (2 ft.) per year). The Department of Parks and Recreation would be very much concerned with any future breakwater modifications, except those that would protect the coastal bluffs and beaches.

Half Moon Bay State Beach slopes gently seaward. The dominant topographic features are the alluvial terrace and the beach itself. These are separated by a low escarpment. On the county-owned beach, south of the present state ownership, the bluffs become higher.

Fossils found at Half Moon Bay State Beach are few, and are likely to be broken because of the nature of the depositional environment.

Drainage:

There are several drainages that cross Half Moon Bay State Beach. The largest is Pilarcitos Creek. This creek is large enough to have a riparian and wetland area at its mouth that quite often is in the form of a freshwater pond. A sandbar builds up at the mouth, and the creek flows into the ocean during the winter, when the sandbar is breached. Frenchmans Creek to the north has a smaller drainage, and supports a dense riparian growth. At the northern boundary of state property, Arroyo Media reaches the ocean. It has the smallest drainage, and has water only in the wet times of the year.

Flora:

Several characteristics of the vegetation distinguish the unit from other state beaches along the San Mateo Coast.

The coastal strand community is better represented here than in any other unit between Pescadero State Beach and San Francisco.

The coastal scrub community is not well represented, due to past agricultural clearing of terraces, a lack of substantial bluffs, and the narrowness of the unit (with no substantial inland or upland portions).

It is believed that a coastal sage scrub vegetative type occupied most of the coastal shelf in pristine times. This was converted to agriculture on all the soils that were suitable. More recently, with population pressures, much of the agricultural lands have been or are being developed for residential uses. Some residential buildings have been removed from the state property; this property and the vacant agricultural lands are slowly reverting to a coastal sage scrub type.

Riparian plants consisting mainly of willow shrubs (Salix sp.) occur along Frenchmans Creek, and to a lesser extent along Pilarcitos creek. Some coastal scrub shrubs grow along the edge of the riparian area.

Creeks crossing through the unit, such as Pilarcitos and Frenchmans, are bordered by native plant species, as well as many introduced and invader species. These areas provide a diversified habitat, and are attractive to many birds and other animals. The creeks provide an interesting environment that has great interpretive values, and greatly increases the enjoyment of many visitors using the area.

Fauna:

The creeks of Half Moon Bay State Beach may harbor the endangered San Francisco garter snake. Although the species has not been recorded in the unit to date, it is found in the upper watershed of Pilarcitos Creek.

Surf smelt (Hypomesus pretiosus) and night smelt (Spirinchus starksi) are both caught at Half Moon Bay, with the use of A-frame nets. Striped bass (Morone saxatillis), white croakers (Genyonemus lineatus), and several species of surf perch are taken by surf casters.

Scenic Values:

The open ocean and its sandy beaches, backed by the low bluffs and divided by the two creeks, are the main scenic features of the area. Sailboats and other craft from Pillar Point Harbor add interest and color to the background. Water-associated birds attracted to the pond at the mouth of Pilarcitos Creek add to the interest of that area, and are also watched along the shoreline. Gray whales and pinnipeds can be seen in the ocean.

Overhead wiring is not present along much of the state property; this allows scenic vistas.

Because Pillar Point juts out in the ocean to the north of the unit, the northern migration of whales is sometimes more frequently seen here than in most areas on the coast, since the migration tends to be farther out to sea.

Cultural Values:

Dietz and Jackson recorded two prehistoric sites--CA-SMa:138 and CA-SMa:139--at Half Moon Bay State Beach. Site CA-SMa:138 is a cultural deposit 50 by 150 m (165 by 500 ft.) located on the north side of Frenchmans Creek. CA-SMa:139 site is approximately 90 by 30 m (295 by 98 ft.) on the south side of the creek directly opposite. Both sites have been plowed in the past.

The Native American inhabitants used the beaches for clam digging and fishing in pristine times. The streams furnished fresh water, and also added to the habitat where additional food items could be gathered. This seaside environment was a good source of food material. The zone near the mouth of Frenchmans Creek containing SMa:138 and 139 has extreme cultural sensitivity.

San Gregorio State Beach

Geology:

San Gregorio State Beach has some rather steep and very high (60 m; 190 ft.) coastal bluffs and cliffs bordering the ocean. Except for the wide area at the mouth of San Gregorio Creek, the beach tends to be quite narrow; in some places during the winter, it is entirely inundated at high tide. In the summer, a sandybeach is present from San Gregorio to Pomponio. The uplands are moderately steep; in places, severe erosion is occurring. This is especially noticeable just north of the beach parking lot at San Gregorio Creek. Gullies here are up to several meters deep.

Drainage:

The only significant drainage in the area is San Gregorio Creek. A sandbar builds up at the mouth of this creek, and remains until fall and winter rains are sufficient to break through. A small freshwater marsh is located at the creek's mouth.

Flora:

Flora diversity is slightly greater than in many of the other San Mateo Coast units, due to the diverse topography and the riparian corridor along San Gregorio Creek. Five native plant communities are represented; they include riparian, coastal strand, northern coastal scrub, annual grassland, and freshwater marsh (see figure 13).

A riparian forest community occurs along San Gregorio Creek inland, at the easternmost portion of the unit. It consists of a dense growth of willow trees (Salix spp.) and red alder (Alnus oregona), with underlying stories of hydrophytic shrubs and herbs. The riparian shrub formation downstream is an open formation of willow shrubs (Salix sp.), blackberry brambles (Rubus sp.), and hydrophytic herbs, including horsetail (Equisetum sp.), hemlock (Conium maculatum), and sedges (Carex spp.)

The coastal strand community, consisting of beach and dune vegetation, is limited to a few small areas near the mouth of San Gregorio Creek, the upper portions of the beach, where spring high tides wash up against coastal bluffs. Vegetation consists almost entirely of annual and perennial herbaceous plants. Sea rocket, beach bur, mustard (Brassica sp.), and several annual grasses are common.

Coastal scrub is the predominant vegetation in the unit. It occupies the terrace between Highway 1 and the bluffs, and is also found on all upland ridges of the inland portion east of the highway. Common shrubs include coyote brush, bush lupine, coastal sagebrush (Artemisia californica), and lizardtail.

Annual grasslands occur on slopes to the north of the parking area, inland along the agriculturally-used river terraces, and on the flatter ridgetop portions, where clearing of shrub vegetation has taken place. These areas consist mainly of annual grasses and numerous weedy forbs. In several areas, scrub species are invading.

A small freshwater marsh, less than 1/4 ha (.6 a.) in size, is located just east of State Highway 1, near San Gregorio Creek. Marsh species including rush (Scirpus spp.) and cattail (Typha spp.) are present.

Fauna:

Where the bluffs extend to the high tide line, there is a population of intertidal invertebrates. Due to ocean exposure and the lack of a rocky intertidal area extending into the ocean, the numbers of both species and individuals are limited.

Since the area has high bluffs that provide good vantage points, numerous marine mammal species can be seen. The gray whale is one of the more common mammals seen offshore from this beach, during its migration from its arctic feeding areas to its breeding and calving lagoons in Baja California.

The endangered San Francisco garter snake is found in the upper watershed of San Gregorio Creek, and in the adjacent Pomponio Creek drainage. This species could very possibly be found at or near the mouth of San Gregorio Creek.

Cultural Values:

When Native Americans lived in this area, they used the shellfish found at the beaches, along with other edible ocean life. An encampment existed near the mouth of San Gregorio Creek.

One site, CA-SMa:116, is recorded at San Gregorio State Beach. The site is east of State Highway 1, and south of San Gregorio Road. The site area consists entirely of

agricultural land; as a result, it has been intensively cultivated. Due to cultivation, the site area is undefined. In January 1974, a six-member crew from the Cultural Heritage Section made a surface survey of the site, recovering artifacts consisting mostly of scraping and cutting tools.

Scenic Values:

San Gregorio State Beach is very scenic, with a wide beach at the mouth of the creek; the small but interesting inland freshwater marsh and riparian area; the high bluffs and cliffs that front the ocean; and the interior uplands that rise to the eastern edge of the property. State Highway 1 drops down to cross San Gregorio Creek from the north and goes up equally steeply on the downcoast side. The view from the highway, other than when one is close to the creek, is not too spectacular, since the road is well up the bluff. The immediate beaches cannot be seen, and only a distant view of the ocean is evident.

Recreational Values:

The upland portion of the unit includes the marsh and riparian areas, of interest to nature students. Away from the creek, the hills are steep and covered with dense brush, and have limitations for recreational uses other than trails.

Pomponio State Beach

Geology:

Pomponio State Beach has some rather steep coastal bluffs, and cliffs up to 60 m (190 ft.) high, bordering the ocean. The sand beaches tend to be wider than those at San Gregorio, but are for the most part quite narrow, and in some places, are inundated at high tide. The largest beaches occur at the mouth of Pomponio Creek, Long Gulch, and Dairy Gulch. The uplands are moderately steep; in places, severe erosion is occurring. This is especially noticeable along the highway, where runoff is allowed to flow over unprotected soils. It is also noticeable on the property east of the highway, where over-grazing and cultivation have made the soils very vulnerable.

Drainage:

The only significant drainage in the area is Pomponio Creek. Long Gulch and Dairy Gulch are both small drainages, and normally carry water only in the winter.

Flora:

The coastal strand community is limited to a small dune area (0.1 ha; 1/4 a.) west of the parking area, near the mouth of Pomponio Creek. Strand vegetation is noticeably absent elsewhere on the beach.

The major riparian community at Pomponio State Beach occurs along Pomponio Creek, east of Highway 1. The most inland portion features a riparian forest of willows (Salix lasiolepis and S. saliandra). Shrubs border the forest, and herbaceous growth is found in the understory. Other occurrences of riparian growth, in the form of low willow shrubs, are found in a small swale north of the parking area and near the mouth of the creek, and occasionally along two small drainages near the south end of the unit.

A small marsh community of less than 0.1 ha (1/4 a.) occurs near the mouth of Pomponio Creek, west of State Highway 1.

Most of the inland portion of Pomponio State Beach east of State Highway 1 is grassland, currently under grazing use. It is comprised mostly of annual grasses, plantain (Plantago sp.), filaree (Erodium spp.), and several other weedy forbs. Most of this area was coastal scrub at one time, but was cleared to provide for grazing. If left undisturbed, it will revert to this original community. In several areas, coastal scrub species such as coyote brush and bush lupine.

Exotic species do not comprise a major percentage of the flora, except for the annual grassland. Several small groves of eucalyptus (Eucalyptus sp.) are located near the farm structures, about 0.8 km (1/2 mi.) east of State Highway 1, near Pomponio Creek.

Cultural Values:

One prehistoric site, CA-SMC:3 (temporary designation), was recorded by the Department of Parks and Recreation during its 1978 survey. CA-SMC:3 is a small shell deposit, 5 by 9 m (16 by 30 ft.) in area, with a depth of 6 to 10 cm (3 to 6 in.). The site is located on the north side of Pomponio Creek, east of the highway. The deposit has been moderately damaged by runoff and grazing cattle.

In the upland property of Pomponio State Beach, there is an old barn that dates from the 1870s, a carriage house built in the 1880s, and several other late nineteenth and early twentieth century ranch structures. These buildings are the remains of an old dairy complex of that period, south of San Francisco.

Pescadero State Beach

Geology:

The oldest rocks at Pescadero State Beach are found in the Pigeon Point Formation. The rocks are approximately 65 to 80 million years old and consist of interbedded sandstone, siltstone, and conglomerate. Fossils are few in this formation, but a few clams, snails, and an ammonite have been reported. Only a very small section of the Pigeon Point Formation is exposed in this state beach.

There is a volcanic unit tentatively identified as Mindego Basalt located along the coast immediately south of Pescadero Creek. These volcanic rocks are probably submarine in origin, and may contain some intrusive rocks.

South of Pescadero Creek, the sea cliffs are being slowly undermined by the surf, and are subject to landslides. The susceptibility for landsliding varies, depending partly on the lithology and structure of the bedrock.

The soils at the unit are subject to erosion forces. Evidence of soil abuse is present in many areas. When vegetation is removed through overgrazing or excessive trampling and

use, the soils tend to erode down to subsoils and bedrock. Evidence of soil erosion brought on by heavy grazing and cultivation is readily apparent in the area above the north pond east of State Highway 1. Erosion accelerated by human traffic from terrace parking to the beach areas is quite common throughout the unit.

Flora:

Flora of Pescadero State Beach and Pescadero Marsh Natural Preserve is diverse and significant. The unit contains the most extensive freshwater marsh on the San Francisco peninsula. It also has the most extensive dune system and coastal strand plant community north of Ano Nuevo Point, and below the Golden Gate. In addition, this unit contains coastal scrub and riparian communities. The proposed additions include several significant riparian corridors and additional marshland. Together, these varied and well-developed communities provide great species diversity.

Pescadero State Beach and Natural Preserve contains plants commonly associated with four plant communities of the California floristic province: coastal strand; northern coastal scrub; riparian; and freshwater marsh.

The coastal strand plant community at Pescadero State Beach is extensive. Both beach and dune vegetation are well represented.

From the mouth of Pescadero Creek to the north boundary is an area of well developed dunes and dune vegetation, about 8.9 ha (22 a.) in size. All but a small portion near the southern end lies to the west of State Highway 1. Dunes reach 10 m (33 ft.) in height, and are covered by vegetation over about one-third of their area. Common species on the dunes include low-growing annuals and perennials such as yellow sand verbena (Abroma latifolia), beach bur, sea rocket, and beachgrass (Ammophila arenaria).

Dunes east of State Highway 1 are more stable, and have a greater plant cover. Mats of sea fig (Carpobrotus aequilaterus) are more extensive there.

Beach vegetation is scattered in a number of locations near the base of bluffs. Most occurrences are not extensive, and extend only a few meters (6-10 ft.) out from the base of bluffs onto the beach. One exception is on the beach, about 800 m south of the mouth of Butano Creek, where a 0.4 to 0.8 ha (1-2 a.) area of beach vegetation exists. Healthy stands of native dunegrass (Elymus mollis) occur there. Other species include many of the same found on the dunes, including sea rocket, beach bur, and New Zealand spinach.

Coastal scrub is located along the small ridges surrounding the north pond, and to a limited extent along the north and east sides of the south pond, between the marsh and eucalyptus grove. Dominant vegetation is coyote brush, which is commonly associated with coastal sage brush, bush monkeyflower (Mimulus aurantiacus), and coast eriogonum (Eriogonum latifolium), to name a few. On steeper slopes, the vegetation often appears wind pruned and is only 4 dm (16 in.) in height. On flatter areas closer to the marsh, vegetation reaches 2 m (7 ft.) in height.

The Pescadero Marsh, surrounding the confluence of Butano and Pescadero creeks, is the only extensive wetland along the coast of the San Francisco peninsula (Elliot, 1975). It includes about 190 ha (465 a.), of which about 75 ha (186 a.) are in the natural preserve. Agricultural lands border the marsh to the east and south. The north side is defined by a low ridge. A series of small levees has been built to confine the marsh along its sides, and to extend its area in the upper portions. These latter areas are within the proposed acquisitions.

Marsh vegetation consists almost entirely of herbaceous species, to 2 m (7 ft.) in height, although many areas along the margins of deeper ponds such as the north pond are surrounded by vegetation that is much shorter, only about 5 dm (20 in.) in height. North Pond, which is separated from the direct flushing waters of Pescadero and Butano creeks, is more saline. Halophytes such as pickleweed (Salicornia virginica) are more common there. Species common to the marsh include sedges (Carex sp.), cyperus (Cyperus sp.), rushes, cattails, and pondweeds (Potamogeton sp.).

Riparian vegetation is located around the edges of the marsh in many areas. Willow, coyote brush, and blackberry (Rubus ursinus) are common. Along many of the dry levees are abundant growths of poison hemlock.

Creeks such as Pescadero and Butano are transporters of exotic species and many nonnative species are found near Pescadero Marsh. Some plants, such as European beachgrass and sea fig, are helpful in stabilizing the dunes near the mouth of the creek. It would be more desirable if native species could accomplish the same purpose. In and next to the agricultural lands, there are many exotics--primarily weeds.

In pristine times, the natural ecosystems and species composition occurring in and surrounding Pescadero Marsh were considerably different from what occurs here today. The reclamation of land for agriculture has changed this portion of the marsh. Levees and dikes constructed to prevent fresh and salt water encroachments on the agricultural land have caused dramatic changes in the vegetation. Before these developments, the vegetation changed gradually from wetland species to drier upland species, with many more and diverse species being present. Quite frequently now, there are wetland species on one side of a levee and agriculture on the other side, with little or no gradation between the two. Many upland species are not present. Where they are, they are mostly exotic weeds that have replaced the natives.

Logging, land clearing, and developments on both the Pescadero and Butano watersheds have resulted in a great deal of siltation of the Pescadero Marsh area, greatly reducing the wetland area at the mouth of Pescadero Creek. On the other hand, the levees and dikes in the upper marsh area, especially those created for waterfowl hunting, have had the effect of keeping these areas wetter for a longer period of time than would naturally occur. This results in a greater wetland areas in the upper portions of the marsh which would probably have been only ephemeral wetland areas in pristine times.

The appropriation of water for agriculture and domestic purposes has reduced the amount coming down the streams year-long, which in turn, has affected the vegetation in the marsh area. It has also had a detrimental effect on anadromous fish that use the creeks for spawning purposes. Their populations have been greatly diminished.

Fauna:

With all the changes brought on by human use, there is probably more land maintained as a wetland for a longer period of the year now than existed before agriculture. This favors many more wildlife species than existed in the pristine wetland area, which was much more seasonal in nature. The ponding of parts of the marsh area has increased the year-long habitat of the San Francisco garter snake. It has also improved conditions for many water birds. Part of this improvement has been cancelled by greater human use, which tends to frighten the birds away.

Visitors with dogs are quite disturbing to wildlife of the marsh; although dogs are prohibited, enforcement is difficult.

Just south of the mouth of Pescadero Creek, there are some offshore rocky outcrops. These are used by harbor seals, which are of great interest to visitors. These animals are quite timid and cannot be approached too closely without being frightened into the sea.

The rocky intertidal area at Pescadero has the potential for a great diversity of invertebrates. The geology and rock formations offer many micro and macro habitats. However, due to the great number of people that visit the area, many of the more interesting invertebrates are either stepped on, removed, or disturbed in some manner that eliminates them from the population. Many species removed or destroyed are actually illegal to take, according to fish and game regulations.

A sandbar forms at the mouth of Pescadero Creek. Water sometimes backs upstream from the sandbar, when the streams begin to increase in flow in the fall and winter. In the past, farmers have breached the bar to keep their agricultural fields from flooding. Agriculture and wetlands management are not really compatible, since farmers require good drainage and a lowered water table, while a wetland requires as much moisture as possible, as frequently as possible.

Bean Hollow State Beach

Geology:

Exposed geologic material at Bean Hollow ranges in age from the upper Cretaceous period, 80 million years ago, to recent times. Quaternary marine deposits along the bluff are the most abundant surface formation in the unit. While the cliffs present along the coast are mostly sandstone, the beach deposits differ from place to place, ranging from fine sands at Arroyo de Los Frijoles Beach (Bean Hollow) to a much more pebbly character at Pebble Beach.

The Pigeon Point Formation, composed primarily of sandstone, siltstone, and conglomerate, is the oldest geologic formation at Bean Hollow. It is exposed along the seacliffs and intertidal zone, and underlies the marine terrace deposits that exist directly inland.

The relatively resistant Pigeon Point deposits within the intertidal zone have numerous cracks and crannies, and a general broken and rugged appearance. This explains why Bean Hollow is potentially an excellent area to find intertidal invertebrates.

The marine terrace deposits, about 9 m (30 ft.) thick, cover much of the bluffs at Bean Hollow, and date from about 500,000 years ago. The major constituents include weakly consolidated sand and gravel, with some clay. These deposits originated on the bottom of a shallow sea. Subsequent uplifting and changes in sea level have formed various terrace levels. The younger terraces, such as those at Bean Hollow, contain some invertebrate fossils. These terraces are highly erodible.

The beach deposits are of the most recent times (Holocene), dating back to 6,000 years. The fine sand is derived mostly from upcoast sources, and has reached its present

location through littoral drift. The pebbles found at Pebble Beach include such materials as agate, chert, hydrolyte, jasper, and onyx.

Most of the soils in the area belong to the Watsonville series. These soils were formed on low, relatively flat marine terraces containing material eroded from surrounding sedimentary bedrock areas. There is only one phase of the Watsonville soil at Bean Hollow, namely Watsonville sandy loam. It is very erodible, and appears on the terraces.

The soils at Bean Hollow State Beach area are severely eroded in many localities, particularly near the parking lots and along volunteer trails leading down to the beaches and intertidal areas.

Drainage:

The only significant drainage of the area is from the Arroyo de Los Frijoles, which culminates at Lake Lucerne: water from the lake then drains to the ocean at Bean Hollow State Beach. There is no riparian community on the creek at Bean Hollow, since the runoff from Lake Lucerne goes into a culvert at State Highway 1, then directly onto the sandy beach.

Flora:

Plant species diversity is not great due to the unit's limited size and limited topographic variety. Those plants represented are mostly common to the coastal scrub community, including the dominants, coyote brush, and lizardtail. Terrace vegetation is dense and low-growing, to about 6 dm (2 ft.). Bluff vegetation is more sparse, although it includes of many of the same species found on the terrace. The coastal strand community, which includes beach and bluff vegetation, is poorly represented, due to the unit's extremely rocky shoreline. Some typical strand plants occur at the upper portions of Bean Hollow Beach, but not at Pebble Beach. These are primarily the naturalized annual, sea rocket.

No rare plants are believed to be in the unit, and none were located during short winter and summer field checks. One small native grass colony (Stipa pulchra) associating with California beach strawberry is growing on the terrace near State Highway 1, about 400 m (1,300 ft.) south of the parking area at Pebble Beach.

Fauna:

As at Pescadero State Beach, the rocky intertidal area here provides an excellent habitat for many ocean plants and intertidal invertebrates. However, due to the lack of personnel to adequately protect the area, there is a decided lack of some of the more interesting animals. There is very heavy use by school groups that arrive by bus throughout the year. There are also large numbers of unsupervised visitors who, through lack of knowledge of existing rules, regulations, and laws, and lack of environmental awareness, tend to strip the area of its invertebrate fauna.

There is a large harbor seal rookery that hauls out on the rocks just south of Pebble Beach. Numerous other sea mammals can be seen on occasion from the bluffs along the shoreline. The gray whale is one of the more common mammals seen offshore from this beach during the migrating period of December through April.

Scenic Values:

Bean Hollow State Beach is one of the most scenic of the San Mateo beaches as seen from State Highway 1, since the highway is so close to the ocean at the unit. Good views of the sandy beaches and extremely interesting rocky shoreline are available along the entire length of the unit. The valuable scenic integrity of this resource should be maintained for future generations to enjoy.

Cultural Values:

Three archeological sites, CA-SMC:2 (temporary designation), CA-SMa:118, and CA-SMa:117, are located at Bean Hollow State Beach. CA-SMC:2 is a cultural deposit, approximately 76 by 10 m (250 by 33 ft.) in area, with a depth of 20 cm (9 in.). The site is located on the coastal bluff north of Bean Hollow Beach area, and west of State Highway 1. The midden has been eroded by weather and foot traffic from a trail that crosses the site. CA-SMa:118 is a small cultural deposit, located on the bluff above the beach area. The site area is approximately 12 by 8 m (40 by 26 ft.) by 20 cm (9 in.) in depth. A heavily traveled footpath crosses the site, and has resulted in some destruction. CA-SMa:117 is located on a bluff at the southern corner of Bean Hollow Beach. The actual area of the site is undetermined, due to overgrowth of iceplant and destruction caused by foot traffic.

Recreation Values:

The scenic rocky shoreline, interspersed with the two small but inviting sandy beaches, make this unit a very attractive place for visitors to stop. Prime activities include sightseeing, nature study, photography, beachcombing, picnicking, sunbathing, underwater diving, and fishing. Some wading and limited swimming take place here, but with the cold water, undertow, and rocky shoreline, these activities are generally unsafe, and are not recommended.

The greatest potential for this area would be for nature study of the intertidal invertebrate life. At present, the numbers and varieties of species found at the area are somewhat limited, primarily due to past illegal removal and lack of personnel to patrol the area and enforce fish and game laws. If greater protection could be achieved, many of the more interesting species of invertebrates would eventually return.

Ano Nuevo State Reserve

Geology:

There are four main geologic categories at Ano Nuevo State Reserve. These are: the rock outcrops along the coastline and at Ano Nuevo Island; sand beaches and sand dunes that extend inland from Ano Nuevo and Franklin points; marine terraces inland from the shoreline, near the points, and underlying the sand dunes; and the Santa Cruz Mountains, rising abruptly to the east of the marine terraces. The Inventory of Features (on file with the department) deals specifically with each of these main geologic categories.

The oldest rocks in the area are the Pigeon Point Formation, exposed along the coast from Cascade Creek to near Pescadero. These are between 65 and 80 million years old, and are interbedded sandstone, siltstone, and conglomerate. Fossils are few in this

formation, but a few clams, snails, and an ammonite have been reported. Only a small section of the Pigeon Point Formation is exposed in the area north of Cascade Creek.

The second oldest rocks appear in the Monterey Formation. This is 13 to 20 million years old, and consists of consolidated siliceous and porcelaneous sandstone, mudstone, shale, and impure diadomite. The Monterey Formation is exposed on Ano Nuevo Island, and along a short distance on either side of Ano Nuevo Point. Large fossils are rare, but foraminifera, fish scales, and diatoms are common.

The third oldest formation is the Purisima, which was deposited as the sea encroached on the land, 5 to 10 million years ago. This Formation is found along the sea cliff south of Cascade Creek, and on the cliffs near South Beach, just west of the San Gregorio fault. The Purisima is a major source of Tertiary fossils, including a variety of marine clams, snails, and foraminifera. Most fossils found at the reserve are from this formation.

Marine terrace deposits are the next to youngest geologic feature in the reserve. This is the most predominant outcropping in the vicinity of Ano Nuevo Point. A few marine fossils are found in the lowest part of these deposits.

Younger deposits present in the reserve, all Holocene in age, include the alluvium that has been deposited along the streams, the marine beaches, and the aeolian (wind-blown) sands.

Ano Nuevo State Reserve lies in an area that is seismically active. One small branch of an active fault can be seen in the cliffs south of the present staging point for the seal tours, and other branches pass through the reserve.

The soils at Ano Nuevo Reserve are in a much better condition than those of many other units in San Mateo County. This is due to the relatively flat terrain of most of the unit. The only place where the soils are subject to excessive erosion is where they occur close to the bluffs overlooking the ocean. In many places, where people have climbed down the bluffs, severe erosion is taking place.

At both Ano Nuevo Point and Franklin Point, sand dunes cover most of the area. In some of the older areas where the dunes are well stabilized, soils are beginning to develop as the vegetative matter is deposited and mixes with the sand.

Inland from the sand dunes are soils suitable for agriculture.

Four creeks cross the lands now owned by the department. These are Ano Nuevo Creek on the south boundary, Green Oaks Creek to the north, Cascade Creek, and Whitehouse Creek.

Flora:

European beach grass is a dominant plant in much of the dune area, especially in the newer acquisitions. Other exotics include sea fig, pampus grass, and many grasses and weeds. On the lands previously cultivated, the original vegetation was completely removed. After agricultural use was discontinued, a profusion of exotic grasses and weeds (primary annuals) took over. A few native species are getting started, but the process is very slow, due to the competition of aggressive exotics.

Gairdner's yampah, an endangered plant, may exist in the wet heavy soils.

Fauna:

The rocky intertidal areas around Ano Nuevo Point and Ano Nuevo Island are particularly rich in invertebrates of many species. The many exposed and protected sites make for a variety of habitats. Due to the turbidity of the water during much of the year, the dangerous water conditions, the presence of white sharks, and the conflict with the pinnipeds, this area is not suitable for an underwater park for skin and scuba divers. However, it should have underwater preserve status.

In the recent past, there was an extension of the land out to the point which is now Ano Nuevo Island. At very low tide, it is still possible to wade to the island. The occurrence of large numbers of pinnipeds on the island is probably recent. When Native Americans were first present in the area, there were probably just a few animals occasionally present on the outermost rocks. Elephant seals would not have been present since they would have been too vulnerable and therefore killed. When the lighthouse was first established, pinniped numbers probably decreased, because of increased human activity. As the animals adjusted to the presence of humans, their numbers probably increased. With abandonment of the lighthouse, the area became more isolated, and the pinniped populations increased and spread to areas that were formerly occupied by people. When the land bridge to the island eroded away, the newly formed Ano Nuevo Island became even more isolated, which made it even more favorable for the pinnipeds. The administrative restriction preventing visitors on the island and limiting human use to authorized research projects has also made the island more attractive to the mammals.

The first known use of the island by elephant seals occurred in 1955, and the first use of the mainland was noted in 1967. The population increase of elephant seals has been spectacular, and they have largely filled up the island's capacity, the main reason the rookery has extended to the mainland.

In 1977, when only 16 elephant seal births were recorded on the mainland, it was estimated by LeBoeuf and Panken, in their article, "Elephant Seals Breeding on the Mainland in California," that in the next ten years more than 1,000 seals would be born on the mainland (see table 1 below). In 1978, 86 pups were born on the mainland, which would indicate that the 1,000 number will probably be reached in less than ten years. If this rate of increase continues, the mainland population will exceed the island population in a very short time. The number of bulls on the mainland first exceeded the number of bulls on the island in 1977. There are nine or ten times the number of female elephant seals on the island as on the mainland, but it is expected that this ratio will change considerably in the next few years. The island's capacity for elephant seals has nearly been reached, and most of the additional females coming to the area to have their young will be restricted to the mainland, where competition for available space is not critical, as it is on the island. It is expected that the female population on the mainland will exceed the female population on the island in about five or six years, if the present rate of increase continues. Moulting is expected on the mainland in the near future. This indicates that the mainland will become the major portion of the rookery area, and the animals will be easily observed, a major feature of the reserve.

Number of Elephant Seals on Ano Nuevo Mainland (ML) and Ano Nuevo Island (ANI) During a Ten-Year Period

Breeding Season	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Highest daily census of males on ML	7	6	3	10	6	18	26	45	64	151
Number of different males on ML per season	7	11	7	15	16	38	44	94	148	320
Number of different males on ANI per season	103	120	125	136	146	180	146	143	227	266
Number of females on ML at peak season	0	0	0	0	0	0	0	1	7	16
Number of females on ANI at peak season	178	219	291	296	341	360	426	556	687	740

The increase in elephant seals on the mainland will undoubtedly have an effect on the vegetative cover. These large mammals hauling out on the sands will have the effect of opening up the vegetative cover, which will keep portions of the sand dunes active and moving. In most cases, this will be limited to the peripheral areas, where the seals are able to come ashore and haul up on the beaches beyond the high tide line. Some vegetation composition changes may occur due to increased growth from fertilizer deposits. Bluffs and rocky areas will restrict the animals' access to the dunes.

Up to the 1977-78 season, the mainland beaches near Ano Nuevo Point were the ones most used by the elephant seals. Low sand dunes in back of the beaches permit the female seals to haul out and have their young. The male seals are not concerned with beaches that do not allow them to get beyond the high tide line. If the tide traps them, they simply go back out to sea. The main breeding area on the mainland has been centered around Ano Nuevo Point. When this area fills to capacity, there is a greater possibility of the breeding area being extended to the north than to the south, since there are more suitable areas closer to the north than to the south, especially on the reserve or in the latest additions.

The trend in sand dune formation in the past has been movement of the dunes from the north to the south and off the point, moving with prevailing winds. Stabilization has been occurring in the northern portion, as the dunes move to the south. This trend will continue, until the elephant seal population builds up to where the animals will open or keep open some of the dune areas. The amount of this vegetation destruction will be

dependent on the population buildup, the ease of access, and the amount of time the seals are present on the mainland each year.

Although the elephant seals are a major attraction at Ano Nuevo State Reserve, it must not be overlooked that the Steller sea lion rookery is one of the largest south of Alaska. These animals are less tolerant of human activities than the elephant seals, and have done well only on the remote portions and outlying rocks of Ano Nuevo Island. As early as 1927, when the Department of Fish and Game first initiated pinniped counts, the Steller sea lion count at Ano Nuevo was 1,500 animals. Although many small colonies are found to the north of San Mateo County, and a large colony occurs on the Farallon Islands on outlying rocks, Ano Nuevo Island provides the Steller sea lions with the type of habitat they desire for a breeding area.

California sea lions are the most abundant species among animals visiting the island, although they do not breed here. The animals are nearly all males; about 80 percent are adults. The first California sea lions were recorded on Ano Nuevo Island in 1936, when 200 were seen (Orr and Poulter); the largest total count of 13,367 was reported on the island in August 1963 (Orr and Poulter). Since that time, the peak population has seemed to be closer to eight or nine thousand animals.

Harbor seals are the other principal pinniped species using the island for breeding purposes, although their numbers are the lowest of the breeding populations. They are relatively intolerant of humans, and leave their resting places, which are close to the water, if approached too closely.

Ano Nuevo State Reserve is particularly rich in natural resources. The reserve has been recognized as an Area of Special Biological Significance by the California State Water Resources Control Board. The area extends from the junction of Cascade Creek and the ocean south to the junction of the Santa Cruz-San Mateo County line and the ocean.

The California Natural Areas Coordinating Council has also designated this area as one of California's natural areas needing additional protection.

The southern shoreline of Ano Nuevo Point has both beaches and rocky shoreline, backed by dunes, cliffs, and terraces. A number of bird species use the cliffs for nesting and roosting. This shoreline also forms the edge of a bay that is protected from northwest winds prevailing through much of the year. Except for the beach near the point, the highest tides reach to the base of the cliffs and bluffs, which leaves virtually no usable space for pinnipeds or visitors when these tides occur. For this reason, the most eastern beaches on the south shore are not used by the elephant seals for parturition. There are some good surfing waves along the south beach, and surfers use this area, in spite of the danger of white sharks. Offshore, a large kelp bed is attached to a rocky bottom that contains many marine fossils. Rocks and cobbles containing fossil invertebrates are frequently found on this beach.

Scenic Values:

The sand dune area of the reserve is very scenic. The northern portion of the dune area is quite stable, while the southern portion is largely active and moving. Winds blowing across the open dunes leave a never-ending progression of sand sculpturing. Sand was

mined from this area in the late 1950s. At one time, there was a pole line extending all the way to the island; only remnants still exist in the channel, and those poles that were on the land have disappeared. The lack of development makes the dune area very much like a wilderness.

At Ano Nuevo State Reserve and including the recent acquisitions, there are a number of creeks with wetland areas. From south to north, these include Finney, Ano Nuevo, Green Oaks, Cascade, and Whitehouse creeks. The San Francisco garter snake has been found in the wetland habitat, and needs protection for its survival. Ano Nuevo State Reserve is one of only two known localities where the habitat of this species is not endangered by human encroachment at the present time.

The interest that attracts most visitors to the reserve has been the pinniped populations. This will increase, as the animal populations increase, and the knowledge of their presence becomes more widespread. The ability to take care of more people on the tours is limited, due to time, space, and personnel required to conduct such a program.

Cultural Values:

The dune systems at Ano Nuevo Point and Franklin Point must each be considered a single prehistoric site, with numerous areas used by the Costanoans. Ano Nuevo Point was surveyed for archeological sites in December 1925, by two engineering students from Stanford University, under the direction of Theodore Hoover. They recorded 33 sites, ranging in size from 6 by 6 m (20 by 20 ft.) to 70 by 120 m (230 by 400 ft.). A survey carried out by Stanford archeology students in 1976 recorded 39 sites at the Ano Nuevo dunes. Site location sizes differ considerably from those recorded by the Hoover party in 1925. Specific sites at Franklin Point are not known; although the area is rich in archeological resources; a study has not been completed.

Use areas established for the two dune systems included chert processing stations, shellfish processing stations, and combination areas. Both the Ano Nuevo and Franklin areas have silicate deposits in the intertidal zone. Local natives traded these cherts, which are highly suited to the manufacture of knives, scrapers, projectile points, and numerous other chipped-stone tools.

The principal reason for considering the entire dune area as a site is based on the continuous movement of the dunes that cover some sites and expose others. Remnants of prehistoric cultures can be expected throughout the dunes.

The importance and significance of Native American resources at Ano Nuevo State Reserve cannot be overstressed. No excavations have been carried out on this part of the California Coast. In fact, there is no record of any coastal excavation between San Francisco and Santa Cruz. These chert processing areas in the dune systems are of a larger magnitude than any others now known on the California coast. These are delicate non-renewable resources, about which very little is known. Further research could reveal a hitherto unknown Costanoan economic resource, based on chert trading.

Historic remains at Ano Nuevo include the Steele Ranch complex, the Ano Nuevo Island lighthouse complex, the remains of Waddell's wharf, and the public works bridge on old State Highway 1.

The Steele Ranch consists of the creamery, which is thought to have been the earliest residence on the property; it was constructed elsewhere in 1869 or 1870, and moved to its present site in about 1880. Also included are the main ranch house and two barns, which date from about the year 1880; the bunkhouse, dating from the 1920s or 1930s; the garage attached to the main house, at least part of which dates from 1951, although some of its timbers are much older; a water tower (of unknown date) overgrown with vegetation, probably contemporary with the main house and barns; a small, poorly preserved wood-frame generator house; and a new ground-level wood water tank.

The lighthouse complex on Ano Nuevo Island contains structures dating from 1872 to 1916. These structures are in rough condition, and the weather is rapidly destroying these buildings.

The remains of Waddell's wharf consist of a single piling on the beach to the northwest of the Steele Ranch, and the salvaged timbers used in construction of the two barns, garage, and water tower. The old Highway 1 bridge is a low-railed, concrete public works bridge, dating from the mid-1930s.

The founding of Mission Santa Cruz in 1791 brought the area under the influence of a permanent Spanish settlement, as the mission's cattle grazed on the verdant coastal pastures. After secularization, the Mexican government granted 17,753 acres of "Rancho Punta de Ano Nuevo" to Don Simeon Castro. Castro's heirs sold the rancho to an American, and the land's ownership changed several times before it was sold to the Steele Brothers, who owned a chain of dairies that produced butter and cheese for the San Francisco market.

It was primarily the Steele family's activities that left visible remains. The existing buildings on the property are part of a dairy ranch complex, in operation until the 1930s. The agricultural effort then switched to field crops, with use of a sprinkler irrigation system that was one of the earliest on the coast.

Point Ano Nuevo was a shipping station for locally produced lumber products in the 1860s and 1870s. There are few material relics of Waddell's 700-foot wharf, wooden railway, and accompanying structures.

The low, rocky projections of coastline, combined with occasionally heavy fogs, have been particularly hazardous to coastal shipping in this area. Several costly and tragic shipwrecks in the vicinity prompted the federal government to install a fog signal (1872) and a light (1890) on Ano Nuevo Island, one-half mile off the point. Electronic navigational aids made the old sound and light signals obsolete, and the island facilities were abandoned to the seals and sea lions in 1948.

Dramas less tragic than shipwrecks were staged in the hidden coves of San Mateo County during the prohibition era; Point Ano Nuevo was just one of the many San Mateo beaches used to unload seaborne illegal liquor.

Recreation Values:

Ano Nuevo State Reserve has many features that make it extremely valuable for visitor enjoyment.

In the past, it has been used for many activities, which include sightseeing, observation of pinnipeds, scientific research, nature study, photography, beachcombing, picnicking, sunbathing, underwater diving for abalone, clamming, fishing, walking, jogging, artistic pursuits, surfing, wading, swimming, and cultural interests.

The use of the mainland shore by the elephant seals allows visitors to see these large mammals firsthand. This is the only known location in the world, at the present time, where the northern elephant seal can be consistently seen on the mainland during the breeding season.

With elephant seals breeding and having their young on the mainland, some of the former recreational uses that took place here are being regulated or phased out, to favor the pinnipeds.

The greatest potential for this reserve is to manage and preserve the natural ecological associations, and to regulate uses so they do not conflict with the basic purposes of the reserve.

DECLARATIONS OF PURPOSE

Thornton State Beach

Thornton State Beach is established to provide opportunities for the public to see, use, and enjoy for recreation purposes the ocean beach and related uplands near Daly City in San Mateo County. Public outdoor recreation facilities may be developed on the state beach, providing there is no impairment of the primary scenic and recreational resources.

Gray Whale Cove and Montara State Beaches

The purpose of Gray Whale Cove State Beach and Montara State Beach is to make available to the public as a recreational resource the sandy beaches, intertidal rocky shorelines, and associated uplands near the town of Montara on the San Mateo County coastline. All beach recreational activities consistent with perpetuation of the beaches and related natural and cultural values are appropriate for these state beaches. Developments shall not impair the scenic quality of these state beaches.

Half Moon Bay State Beach

The purpose of Half Moon Bay State Beach is to make available for public outdoor recreational use the sandy beach along the ocean shore, in the vicinity of the town of Half Moon Bay in San Mateo County. A further purpose of this state beach is to make preservation of the riparian wetlands of Pilarcitos and Frenchmans creeks possible, for public observation and passive enjoyment. Beach-oriented recreational activities may be provided at Half Moon Bay State Beach, but facilities constructed to support such activities may not impair the scenic and natural integrity of the beach, or interfere with preservation of the riparian wetlands.

San Gregorio State Beach

San Gregorio State Beach is established to make available for public recreational use and enjoyment the sandy ocean beach and adjoining upland at and near the mouth of San

Gregorio Creek, together with the cultural and natural values of the lagoon and surrounding hills, which contribute to enhancement of the ocean environment.

Pomponio State Beach

The purpose of Pomponio State Beach is to make available for public outdoor recreational use the sandy ocean beach and related recreational, natural, and scenic values on the San Mateo County coastline, at and near the mouth of Pomponio Creek. Public outdoor recreational activities that relate well to the ocean beach, and that can be accommodated without affecting the scenic or natural integrity of the site, may be provided.

Pescadero State Beach

The purpose of Pescadero State Beach is to make available for public outdoor recreational use the sandy beach along the ocean shore near the mouth of Pescadero Creek in San Mateo County, and to preserve for public observation and passive enjoyment the coastal scenery, the rocky intertidal area south of Pescadero Creek, the sand dunes, and the marshlands at and near the mouth of Pescadero Creek. These marshlands shall be preserved in an essentially natural condition. Beach-oriented recreational activities may be provided at Pescadero State Beach, but facilities constructed to support such activities may not impair the scenic and natural integrity of the beach, or interfere with preservation of the Pescadero Creek marshlands or the invertebrates in the rocky intertidal areas. The endangered San Francisco garter snake and the rare black rail shall receive full protection. Native American values in the unit shall be protected, preserved, and interpreted.

Bean Hollow State Beach

The purpose of Bean Hollow State Beach is to make available for public outdoor recreational use the sandy ocean beaches interspersed among the intertidal areas, in the vicinity of Arroyo de Los Frijoles in San Mateo County. A further purpose of this state beach is to preserve for public observation and passive enjoyment the coastal scenery, the rocky intertidal areas, and the plant and animal species the area supports. Beach-oriented recreational activities may be provided in the unit, but facilities to support such activities shall be constructed so the scenic and natural integrity of the area is not impaired. Native American values that exist in the unit shall be protected, preserved, and interpreted.

Ano Nuevo State Reserve

The purpose of Ano Nuevo State Reserve is to make available for public enjoyment, in an essentially natural condition, the scenic, biological, ecological, and cultural values of the California coastline, in the vicinity of Ano Nuevo Point, including Ano Nuevo Island. The pinniped rookery on Ano Nuevo Island and the mainland is a prime resource, and shall receive full protection. The endangered San Francisco garter snake shall also receive full protection. Day-use recreational activities necessary to permit people to enjoy the natural values of this location, and that will not conflict with these values, are appropriate. Every effort shall be made to provide full protection for unrestricted use of the rookery by the pinniped population. Archeological and historical values that exist in the unit shall be protected and interpreted.

DECLARATION OF RESOURCE MANAGEMENT POLICY

General

It will be the resource management policy of the department to:

* Preserve the scenic integrity of the narrow strip of land between Highway 1 and the ocean by restricting new development to areas where views of the ocean and shoreline will be least affected;

* Protect the scenic values of the area by placing developments only where they can be readily screened, are mostly out of sight of nearby residential areas, or are not readily visible from Highway 1;

* Protect the fragile ocean bluffs from excessive erosion. Any new development will be designed so collected runoff will not cause erosion on unprotected soil or vegetated areas. Access down and across bluffs to the beach will be located away from, or will be designed to protect, ecologically fragile areas;

* Protect all areas that have been disturbed by past development or human use, so erosion will not deteriorate the resources;

* Refrain from developing eroded areas, or areas upslope from eroded areas, until detailed studies by competent geotechnical personnel have been completed and recommendations have been formulated;

* Design and manage any trails, roads, or other development so human-caused erosion will be minimized;

* Correct erosion damage caused or accelerated by past human use, including damage from past grazing;

* Protect the public from hazardous geologic features, such as landslides and active faults;

* Exclude from major development an area on the top of the bluffs extending back for a distance equal to twice the height of the seacliff. In other words, if a cliff is 50 feet high, an area 100 feet back from the forward base of the cliff would remain undeveloped. Such areas should not be used as turnouts for heavy vehicles. If it becomes necessary or desirable to use these setback areas, competent geological and engineering expertise shall be obtained;

* Maintain native and exotic plant species for landscaping and erosion control, compatible with existing vegetation;

* Restrict new upland development of trails, roads, and public use areas to the flattest grades possible, to mitigate erosion and landslide problems;

* Keep horses off the state park units when they conflict with other uses;

* Protect Native American and other prehistoric and historic resources. All archeological sites in the project area are sensitive, and must be preserved from any

immediate development. Secondary impacts should be avoided. Until funds are allocated for consultation with local Native Americans, the department must maintain a preservation ethic, pursuant to the Public Resources Code, Division 5, Chapter 1.75, Section 5097.94, part f;

* Protect the scenic values of the project area by locating overnight developments where they will not be readily visible from Highway 1, or where they can be adequately screened by vegetation;

* Plant native species for landscaping and screening, if needed around development areas. In already developed areas that have nonnative species, additional plantings or replacements will be with native plants;

* Protect any rare, endangered, or unique plant or animal species or their habitat found in the project area;

* Eliminate agressive exotic plant species in the project area;

* Control leasebacks of agricultural lands so they will not be detrimental to the soils, vegetation, or cultural values, and so they will not be incompatible with other department purposes;

* Exclude wildfires from the state park units. Prescribed burning may be used as a management tool, to perpetuate the natural terrestrial ecosystems;

* Keep livestock off the state park units, to let the areas come back to the type of vegetation they will support naturally;

* Manage unstable land, such as sea cliffs and land subject to landslides, so the stability of the land is not reduced by human actions;

* If possible, spread all collected water in ditches, culverts, or other collecting devices, before it is allowed to reach a volume that will erode the soils;

* Allow no development in wetland areas, except for wetland enhancement and interpretive trails;

* Provide interpretive services for enrichment of visitor experiences;

* Carry out all planning, operational, and resource management activities at the state park units in acordance with the department's Resource Management Directives.

Specifics

Half Moon Bay State Beach

It will be the resource management policy of the department to:

* Maintain the stabilized dune area with plant cover. If it is not feasible or practical to replace the existing exotic beach grass and sea fig with suitable native replacements, continue use of these species;

* Restore and reestablish a natural ecosystem in the formerly cultivated lands immediately adjacent to the natural lands of the state beach. This will provide some screening from the nearby residential areas;

* Preserve and protect Native American sites CA-SMA:138 and 139.

San Gregorio State Beach

It will be the resource management policy of the department to:

* Protect the riparian and wetland areas adjacent to San Gregorio Creek, in conformance with the policy of the State Resources Agency to protect the wetlands of the state. A minimum buffer strip of 30.5 m (100 ft.) must separate any development from a wetland area. A study of the San Francisco garter snake will be needed to determine if the snake is present, and the requirements necessary for its survival, before any development in or near the marsh or riparian area. If the snake is present, the minimum buffer strip may not be sufficient to adequately protect it;

* Preserve what remains of Native American site CA-SMa:116. Agricultural activities on and near the site should be discontinued immediately, until funds are allocated for consultation with local Native Americans.

Pomponio State Beach

It will be the resource management policy of the department to:

* Protect the riparian and wetland areas at and next to Pomponio Creek, in conformance with the policy of the State Resources Agency to protect the wetlands of the state. A minimum buffer strip of 30.5 m (100 ft.) must separate any development from a wetland area. Before any development in or near the riparian area, a study of the San Francisco garter snake will be needed, to determine if the snake is present, and the requirements necessary for its survival. If the snake is present, the minimum buffer strip may not be sufficient to adequately protect it;

* Preserve the ranch structures on Pomponio Creek;

* Preserve what remains of Native American site CA-SMa:3, or others that may be discovered.

Pescadero State Beach

It will be the resource management policy of the department to:

* Protect the wetland and riparian areas at and next to Pescadero and Butano creeks, in conformance with the policy of the State Resources Agency to protect the wetlands of the state. Developments in and near these wetlands will not be permitted until a detailed study of the endangered San Francisco garter snake is made, and it has been determined that such developments and the people they attract will not affect the welfare of this endangered snake, or of the rare black rail, known to exist in the marsh area. Use of the marsh by visitors will be limited

to specific areas for instructional and interpretive purposes that will not conflict with the basic purposes of the wetland area;

* Protect the marsh from sedimentation by other than natural processes;

* Restore and establish the natural ecosystems in the formerly cultivated lands immediately adjacent to the wetlands of the marsh. This will allow for a natural gradation of marsh to upland vegetation communities;

* Stabilize the dune areas using only native vegetation, and restrict visitor use so that this can be accomplished.

Bean Hollow State Beach

It will be the resource management policy of the department to:

* Protect and preserve the intertidal area;

* Preserve Native American archeological sites CA-SMC:2 (temporary designation), CA-SMa:118, CA-SMa:117, and others that may be located in the future. These cultural resources must not be disturbed by development.

Ano Nuevo State Reserve

It will be the resource management policy of the department to:

* Develop a management program for Ano Nuevo Island, in cooperation with the University of California at Santa Cruz, the district resource ecologist, and the Resource Preservation and Interpretation Division. This management program will include such things as: rabbit control, island cleanup, blinds, other development, study needs, and scientific research;

* Protect the riparian and wetland areas at and next to the creeks at Ano Nuevo State Reserve, in conformance with the policy of the State Resources Agency to protect the wetlands of the state. Protection may include seasonal or yearly closure of prime habitat. No development will be allowed on or within 100 feet of these riparian areas until it is determined that such developments, and the people they attract, will not affect the welfare of the endangered San Francisco garter snake. Developments in these areas will be limited to wetland enhancement or interpretive trails;

* Restore and establish a natural ecosystem in the formerly cultivated lands immediately adjacent to the natural lands of the reserve;

* Keep all natural areas on the reserve not presently under cultivation or development in an undeveloped condition, except that trails may be developed for interpretive purposes, and seasonal temporary developments that protect the resource or enhance interpretation of the resource may be used. No permanent developments other than trails are to be made in the natural areas;

* Maintain and enhance the native beach strawberry plant and its habitat in a pure genetic state at the unit;

* Preserve and protect the natural stands of Monterey pine in San Mateo County; no facilities other than trails will be developed in the naturally occurring Monterey pine groves, found near Ano Nuevo Creek;

* Avoid the appropriation of water from the reservoir or creeks for other uses or purposes if it will diminish these water supplies or dry up the associated riparian habitat, since water supplies and the adjacent vegetative habitat are important elements of the San Francisco garter snake's environment;

* Assign priority to the elephant seal (except for rare or endangered species) over other natural resources if there is a conflict between the seals and these other resources;

* Restrict any type of human use by law, regulation, or access, if such use is directly or indirectly detrimental to the pinnipeds or the San Francisco garter snake;

* Preserve and maintain the nineteenth-century structures associated with the Steele Ranch, that have both local and statewide significance;

* Remove human developments and debris from Ano Nuevo Island that may be a hazard or interfere with pinniped ecology;

* Permit, in the natural portions of the reserve, only trails that will not be harmful to animals, plants, or other natural or cultural features present. If they do present a threat, they will be modified or abandoned. If abandoned, and there is need for resource rehabilitation, it will be accomplished;

* Maintain the public works bridge as a historic resource;

* Preserve and protect the prehistoric areas at Ano Nuevo and Franklin points.

On October 8, 1971, the California Park and Recreation Commission adopted Policy Number 37:

> It is the policy of the Commission that no pinnipeds shall be collected within Ano Nuevo State Reserve and that the lands of the Reserve, both mainland and insular, shall be protected and managed for the primary purpose of providing a natural environment for pinniped life and related natural systems, with no direct disturbance of the pinniped population by man.

All additional land acquisitions contiguous to Ano Nuevo State Reserve will become a part of the reserve. If reclassification of the reserve at some future date is considered, a detailed study of the endangered San Francisco garter snake must be made before any proposed change. The growth of the mainland elephant seal rookery will be another very important consideration, and it will be a number of years before the extent of the expansion can adequately be appraised.

RECOMMENDATIONS FOR CARRYING OUT THE RESOURCE MANAGEMENT POLICIES

General

New turnouts, parking, and general access at the unit should be located only where they will not significantly impair the quality of scenic vistas. Suitable locations would include areas not generally visible from present residential developments; areas that are well screened; areas that are generally blocked from upcoast or downcoast viewing; and areas of such poor viewing that only distant ocean skylines can be seen.

Drainage from roads and parking lots shall be collected and run on or in a structure to safe locations, so erosion will not occur on the fragile bluffs, or the soils become so saturated that slipping and slumping will be activated. Both trails and roads should be constructed on minimum grades. Trails on and down the bluff areas should be planned and appropriately marked to get people from the parking area to vista points, or to the ocean, without causing further land instability. The trails shall be graded so they do not collect large amounts of runoff. If this is not possible, they shall have drainage systems similar to those of the roads and parking lots. In some locations, use of a suitable, hard surface material on trails, such as soil cement, should be encouraged to firm the fragile soil that is subject to erosion. Volunteer trails shall be blocked off or their use discouraged by some other method.

Even slight changes in water amounts can severely affect the rate of erosion, so several specific recommendations are made. First, introduction of effluent onto areas rated as having a high or very high erosion hazard, or rated as being an eroded soil, shall be avoided. Second, areas rated as having a high to very high erosion potential, or rated as being eroded soils, require a high degree of engineering to prevent the concentration of runoff or added water to the eroded slopes. This second recommendation can be achieved in many cases either by avoiding the placement of trails and roads on or above such areas, or by engineering the trails and roads so they are not in themselves collectors. Parking lots act as collectors of water. The water is then drained into lower areas down the trails. This shall not be done. Efforts shall be made to drain parking lots properly, so the water does not drain down the trails to the beach, thus causing erosion problems and shortening the lives of the trails themselves.

Due to the extremely unsightly effects of erosion along the San Mateo Coast, the areas noted as having eroded soils (this is noted on the soil maps in the Inventories of Features, on file with the department, by symbols ending in 2 or 3) shall be further investigated, and mitigating measures shall be instituted. It is realized that these measures will be extremely expensive. For example, $40,000 to $80,000 per hectare may be required to restore the land to the point where erosion is no longer a serious problem. Development shall not be allowed to proceed in areas of eroded soils until a more detailed inventory of the rilling and other effects of erosion can be conducted, and mitigating measures are implemented. The department's existing expertise in the field of geology should be supplemented by the expertise of a soil scientist and range reclamationist, to adequately address the soil erosion problems in the San Mateo Coast state beaches.

If fossils are exposed during construction or other activities, the district resource ecologist shall be notified, so he may arrange a proper evaluation of the fossils.

Significant paleontological sites shall be preserved. In cases where a single fossil is found, it may be more appropriate to collect the fossil, identify it, and either store it or place it on display, rather than presere a large area. Where it is determined that construction can proceed, the geologist or other department representative shall supervise the removal of all fossils at the site.

All cultural resources must be protected during any development.

Specifics

Thornton State Beach

Because of the inherent instability of the landslide mass that underlies most of Thornton State Beach, any grading operations shall be inspected by geotechnical personnel, including a geologist, before and after such operations.

The original land at Thornton State Beach was heavily planted with nonnatives. It is not considered feasible to replace most of these plants with natives. When additional plantings are necessary, the most suitable native vegetation shall be used.

Thornton State Beach is described in the Inventory of Features as almost entirely landslide or steep cliffs, or both. This landslide may, indeed, have been created during the 1906 earthquake. It is probable that parts of the landslide will be reactivated during another major earthquake. In addition, parts of the landslide are already being reactivated, as indicated by the incipient cracking in the roadway and the approximate 4-foot-high drop of the entrance road surface in one location. If there is any acceleration of slipping or cracking that requires major road repair, the expertise of a geologist must be obtained. It is recommended that all landslide movements be monitored closely. It is further recommended that no major structures be placed on the landslide mass, or immediately above the steep cliffs. This recommendation is made because of the potential for total loss or destruction of such facilities. It may be necessary in the very near future to realign the access road to Thornton State Beach.

Should a major earthquake occur, Thornton State Beach should be closed until the unit can be inspected by a competent geologist, and declared safe. Aftershocks may trigger further collapse of the cliffs.

Because of the impact that the water has on landslides, it is imperative that all landslides at Thornton State Beach be adequately drained. During the early spring of 1978, the subdrains west of the contact station were severely damaged. The drains themselves rusted out, allowing the water to wash out the entire system. Drains must be reinstalled as soon as they are found to be worn out and before they become nonfunctional.

Gray Whale Cove and Montara State Beaches

Based on the legal requirements of the Alquist-Priolo Special Study Zones Act of 1972, a special geologic study is required before construction of any structures for human occupancy in a zone known to contain an active fault (such as the San Gregorio Fault, that is known to pass through Montara State Beach).

The drainage from State Highway 1 south of the Chart House that occurs across the existing parking lot, over the cliff, and down the access road to the beach, needs immediate attention to correct the erosion problems.

It is recommended that upon the state's acquiring the McNee property, it be immediately posted as state park system property, and off-highway vehicle use be prohibited. Several off-highway vehicle trails may need immediate attention to prevent further erosion. In addition, these trails and the existing old road should be examined closely by geotechnical personnel. A comprehensive rehabilitation plan should be completed and implemented as soon as possible, and before development of this property.

The cut area a few hundred feet east of the highway immediately north of Martini Creek shall also be rehabilitated as soon as possible.

Montara Mountain has been the site of numerous debris avalanches. These high-speed mud flows are particularly hazardous to most life-forms. The road design and trail design shall not, under any circumstances, act as collectors for water, which then would drain into areas prone to debris avalanching. The soils that form on the granite on Montara Mountain are particularly susceptible to debris avalanching. The northern slopes, a few hundred feet outside the project boundaries, have been the site of major debris avalanches. It is important not to site campgrounds and other intensive-use facilities in the path of a potential debris avalanche; where one has occurred, others can be expected to develop during periods of intensive rainfall. It is essential in the design and location of fire roads and other access roads, and on the mountain itself, to consider the effects of erosion on the roads, and the effects of the roads on erosion. Competent geotechnical advice should be obtained during the design phase of the roads. The recommendations of the Erosion and Sediment Control Handbook (Amimoto, 1978) shall be strictly adhered to.

If electricity or other utilities are needed, they shall be placed underground so they do not blight the skyline and spoil the present uncluttered view which shall be preserved.

Half Moon Bay State Beach

The eucalyptus trees near Frenchmans Creek should be thinned out and eventually eliminated, to favor the pines in the stand.

San Gregorio State Beach

The parking lot at San Gregorio State Beach is in need of repair. Efforts shall be made to properly drain the parking lot, so the water does not drain down the trails to the beach, thus causing an erosion problem and shortening the life of the trail itself.

On the hillside immediately upcoast from the parking lot, erosion control efforts in the past have been unsatisfactory, and accelerated erosion is occurring. Erosion control must start at the very top of the hill so runoff can be controlled before it accumulates and further enlarges the gullies already present. This project needs immediate attention.

The upland area to the east of State Highway 1 and south of San Gregorio Creek is covered with scrub and some grassland. Some rilling is apparent on the grassy slopes, and

a major rill is forming beneath the scrub canopy. Due to the extremely steep nature of the slopes and the erodibility of the soils, it is recommended that use of these slopes for foot traffic and/or roads be carefully planned and regulated. Any trails or roads built on such slopes shall be built at the lowest grade possible, to reduce surface erosion.

Next to State Highway 1 on the ocean side just south of San Gregorio Creek, a rill is evident where the water drains off the highway and onto the side slopes. This rill, although somewhat vegetated, is still apparent from a distance of 200 m (660 ft.). The sea cliffs themselves are fairly steep south of the parking lot. Some of the material has recently collapsed onto the sandy beach.

The area between San Gregorio State Beach and Pomponio State Beach on the ocean side of the highway consists of high coastal bluffs overlooking the ocean. Because of the problems of erosion of coastal bluffs it is recommended that no trails be constructed in this area. To do so would be to invite further erosion problems, since it would invite visitors into this hazardous area, and some might attempt to climb down the cliff to the beach below, exposing themselves to danger and damaging to the environment.

At the top of the grade immediately south of San Gregorio State Beach parking area, there is a turnout to the right. Immediately south of the turnout there is a highly eroded area. The drainage of the turnout is such that the water from the turnout drains into this eroded area, thus increasing erosion; it may, in fact, have created the highly eroded area. This area shall be rehabilitated. The public shall not be allowed to climb over these highly eroded slopes because of the precipitous drop (on the order of 61 m (200 ft.) over the sea cliff). Coordination with CALTRANS will be needed. Across the road from this turnout is a road cut that is beginning to show the effects of erosion above the road cut surface itself. Eventually, the soil will erode back, undermining the fence east of the highway.

At road marker 17.40, the fields to the east are eroded in a few places, and deep gullies, perhaps as deep as 6 m (20 ft.), are obvious. In some places, these gullies have begun to erode back into the fields. Immediately south of this area is another turnout to the right, very similar to the one previously described.

In the area east of the highway, some eroded areas are apparent. Although these areas may seem relatively minor, the soils are very thin and fragile. Trails and roads shall be kept to a minimum; where they are necessary they shall be designed so water does not concentrate and cause further erosion. Areas along streams shall not be disturbed, for a distance of about 30.5 m (100 ft.) from the streambank.

Pomponio State Beach

No development other than wetland enhancement or interpretive trails shall be allowed in the riparian area along Pomponio Creek.

The area between the Pomponio State Beach parking lot and San Gregorio State Beach is primarily high coastal bluffs overlooking the ocean. If electricity or other utilities are needed, they should be placed underground so they do not blight the skyline and spoil the present uncluttered view.

There are no known major paleontological sites at Pomponio State Beach.

Pescadero State Beach

Sand dunes on the beach at Pescadero should be allowed to revegetate, and should be marked with signs to keep people off. Trails should be constructed around them, not through them.

Ano Nuevo State Reserve

If a development is desired in a Monterey pine setting, the pine forest should be planted with native stock. This would be appropriate for this area, since Monterey pine is native to the area.

As a tool required for judicious resource management, a resource monitoring program shall be initiated before facility development. This program will include (but not be limited to):

a. Establishment of permanent plots to monitor the impact of various use intensities on significant ecosystem in the unit. Permanent plots will consist of 10 x 10 meter quadrants and transects, in sufficient numbers to provide statistically significant monitoring results. Plots will be monitored for abiotic and biotic environmental parameters.

b. Air and water quality monitoring stations.

c. Macro-climatic and micro-climatic weather stations.

d. Other monitoring needs, if found necessary after approval of the General Plan of the unit. Resource monitoring equipment and permanent plot establishment shall be established before development begins.

The Cascade Ranch addition to Ano Nuevo State Reserve has some problems of its own. It is actively eroding away near the coastal bluffs. At present, natural drainage is causing the erosion. The dam on the ranch is partly eroded by the sea.

Trails constructed in the sand dune area will be located so their direction will be crosswise to the prevailing winds; where this is not possible the trail lengths shall be as short as practicable, to prevent sand dune blow-outs. Trails must be routed around cultural deposits. Where existing trails are causing continuing blow-outs, they shall be relocated. Revegetation of the abandoned trails should be done with native species, to stabilize the sand.

Trails in the natural area that are used for vehicles (management purposes) should be maintained as naturally as possible, and should be located so they will not cause detrimental effects to the environment or the Native American cultural sites.

The garage next to the Steele ranch house, though not historically important, shall be maintained without exterior alterations. The use of the main house (without structural alteration) as a ranger residence is appropriate. The barns shall be repaired and used for some interpretive purpose, in addition to their storage capability. The generator house

can be removed or replaced. The creamery is the original residence on the property, and its decay shall be arrested and the building stabilized. The old water tower shall be cleared of the vines which now cover it, and the structure stabilized. The bunkhouse can be removed.

There is a landsliding mass very near the reservoir, immediately east of Ano Nuevo Island. The reservoir shall be inspected (perhaps by the Division of Dam Safety) for a determination of its safety. Since the San Francisco garter snake has been reported at this reservoir, the dam shall be maintained.

Some salvage of building materials from unneeded structures on Ano Nuevo Island may be feasible. Structures not needed and unsalvageable shall be allowed to deteriorate, but shall be removed before they become a safety hazard or conflict with pinniped use.

Waddell's wharf and shipping operation should probably be interpreted in one of the barns. The piling on the beach shall be saved as a historical relic. Although an interesting possibility, the wharf probably cannot be interpreted on the bluff top, because the bluff is extremely fragile and quite dangerous.

ALLOWABLE USE INTENSITY

Thornton State Beach

Use intensity on the beaches can be high.

Use intensity in the parking lot area and in the valley can be moderate to high.

In areas where the slumped bluff has been stabilized with vegetation, in the natural areas along the bluffs, and in other locations subject to human-caused or increased erosion, use intensity shall be light. Where damage will occur, use shall not be allowed. See figure 3 for map of use intensities.

Gray Whale Cove and Montara State Beaches

Use intensity on the sandy beaches can be high. There is a definite need to increase present personnel serving these beaches at Montara and Gray Whale Cove.

Use intensity at parking facilities will be moderate to high. These facilities should be placed only where they will be acceptable scenically, and will not conflict with Native American cultural sites or prime agriculture. Trails and paths from parking areas to the beach or other points of interest must be carefully planned so damage to the resources does not occur. Fragile areas should be avoided.

When uplands are acquired, use intensity of this area may be moderate to heavy on the very flattest areas that are not subject to land slippage or landslides.

On the steeper uplands, terraces, bluffs, cliffs, intertidal areas, natural areas, and cultural sites, use shall be light or restricted if it appears that human-caused erosion or damage will occur. See figure 8 for map of use intensities.

Half Moon Bay State Beach

Use intensity on the sandy beaches can be high, as long as there are adequate provisions for cleanup after heavy use.

Use intensity on the adjacent parking lots can be moderate to high. Use intensity from the parking lots to the beach areas must be carefully planned to avoid establishment of volunteer trails and use corridors down bluffs and other sensitive areas, where use intensity should be light to none.

Use intensity of camping facilities will be moderate to heavy in areas that are located away from residences.

Use in and next to riparian areas shall be light; if the San Francisco garter snake is found in the area, use shall be prohibited, for protection of this endangered reptile. See figure 11 for map of use intensities.

San Gregorio State Beach

Use intensity on the sandy beaches can be high, as long as there are adequate provisions for cleanup after heavy use. The present staffing of the San Mateo Coast Area has been insufficient to meet the needs of the heavy use that beaches such as San Gregorio are receiving.

Use intensity at parking facilities is expected to be moderate to high, and new facilities should be placed only where they will be scenically and environmentally acceptable. Use intensity from parking areas to the beach or other points of interest must be carefully planned so damage to the resources does not occur. Fragile areas should be avoided.

When or if additional uplands are acquired, use intensity of this area should be only moderate to heavy on the very flattest areas not subject to land slippage.

On the steeper uplands, terraces, bluffs, cliffs, intertidal areas, natural areas, or cultural sites, use should be light or restricted, if it appears that human-caused erosion or damage will occur.

Use intensity around the small marsh at the mouth of San Gregorio Creek should be kept to a minimum, to preserve this small ecosystem for the plants and animals that live here. See figure 15 for map of use intensities.

Pomponio State Beach

Use intensity on the beaches can be high, as long as they are well maintained after heavy use. Beaches that are inundated by high tides need special provisions for keeping litter from washing out to sea and littering other areas.

Use intensity between the parking lots and the beach should be very carefully planned, and fragile areas should be avoided. Access to the beaches will probably have light to heavy use, depending on the location and ease in getting down to the beach.

In the upland area, a buffer strip of 30.5 m (100 ft.) should be provided next to riparian areas along Pomponio Creek, so use will remain light. Moderate to heavy use may be allowable in areas that have little slope. On steeper terrain, the use should be light.

Native American cultural sites should be protected. The historic buildings will need protection, but may warrant light use intensity if brought up to public use standards (see figure 17).

Pescadero State Beach

Use intensity in the marsh area shall be zero. Light use in selected peripheral areas can be accommodated for instructional and educational purposes, but these areas shall be well delineated, so encroachment does not occur in the marsh.

A natural preserve was established in the marsh area in November 1974. Parts of the natural preserve must be closed seasonally, to protect some of the wildlife species that breed in this area.

Use intensity in the dune areas on the beach and in the marsh area must be very light, or the dunes will move into areas where they are not desired, and will require removing at great expense.

In areas that have been cultivated and developed in the past, use intensity can be light to moderate, depending upon the location and proposed developments. On the edges of cultivated lands where natural vegetation will be encouraged to return, the use intensity shall be zero to light. In places where agriculture will not be practiced, more moderate use intensity might be feasible. Where developments such as parking are planned, the use intensity may be moderate to heavy, provided they do not conflict with other objectives of the unit.

Allowable use intensity on the sandy beach may be heavy, but it should be very light on the dunes north of Pescadero Creek. A map of the allowable use intensities is shown in figure 20.

Bean Hollow State Beach

Use intensity on the few sandy beaches found at this unit can be moderate. However, archeological sites on both sides of the Arroyo de Los Frijoles make these areas highly sensitive, and parking and access to the beach need very careful consideration. Use intensity on the existing parking lots will be moderate to heavy. Public access improvements from the parking lots to the beach and intertidal areas must be carefully planned, to avoid establishment of volunteer trails down bluffs and other sensitive areas, where use intensity should be light to zero.

Use along the terraces and at other locations where no development has occurred, such as in the rocky intertidal area, should be limited to light intensity to protect the flora and fauna. Trails for observation and interpretation should be the limit of develoment in these areas. See Figure 22 for use intensities.

Ano Nuevo State Reserve

Use intensity in all natural areas of the reserve should be light, with certain areas completely restricted from visitor use. Natural areas are those areas that have never

been cultivated and modified by human use, and those with soils that support natural vegetation. This includes the sand dune area, even though portions of it have been mined in the past.

In areas that have been cultivated and developed in the past, use intensity can be light to heavy, depending on the location and proposed developments. If the area is to revert back to the natural ecosystem, the use should be light, and these areas should be next to the natural areas. Where developments such as parking and interpretive facilities are planned, the use intensity may be moderate to heavy.

A map of the allowable use intensities is shown in Figure 25.

Maps
Figures 2-29

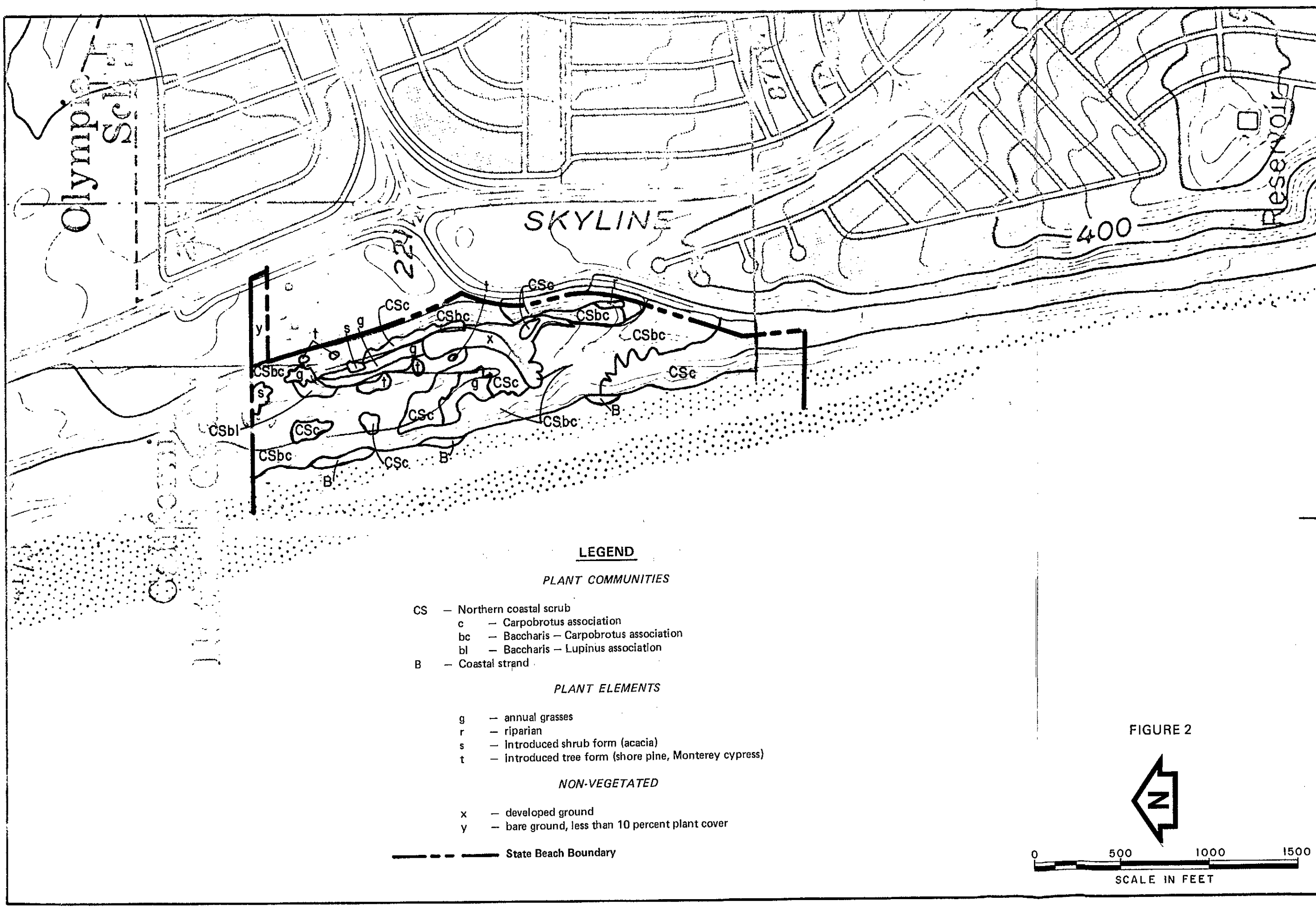

FIGURE 2

DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

THORNTON STATE BEACH
RESOURCE ELEMENT
PLANT LIFE

DRAWING NO.
16844

SHEET NO.
1 OF 1

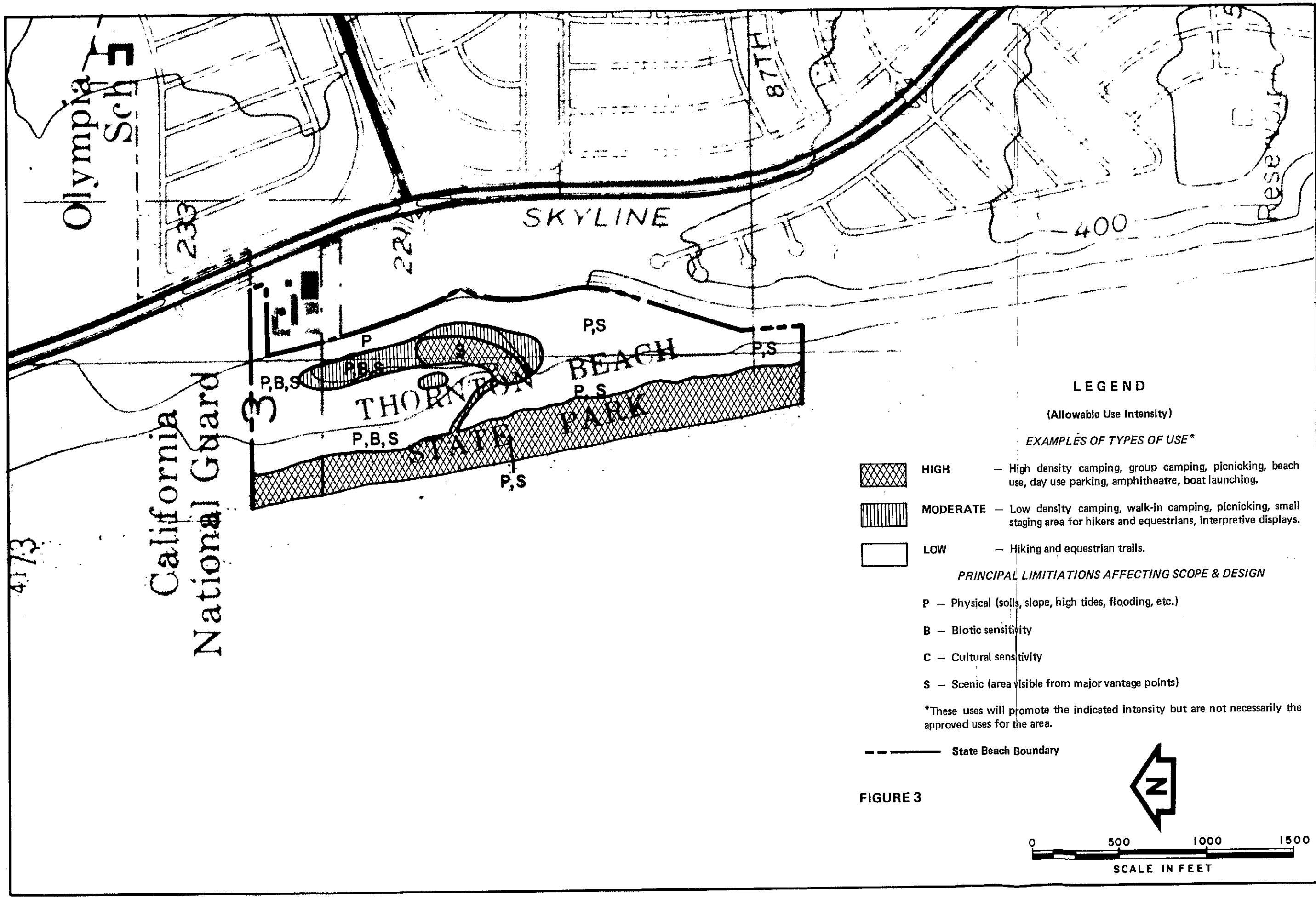

FIGURE 3

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DATE
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RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

APPROVED
DATE

THORNTON STATE BEACH
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE

DRAWING NO.
16844

— 8 —

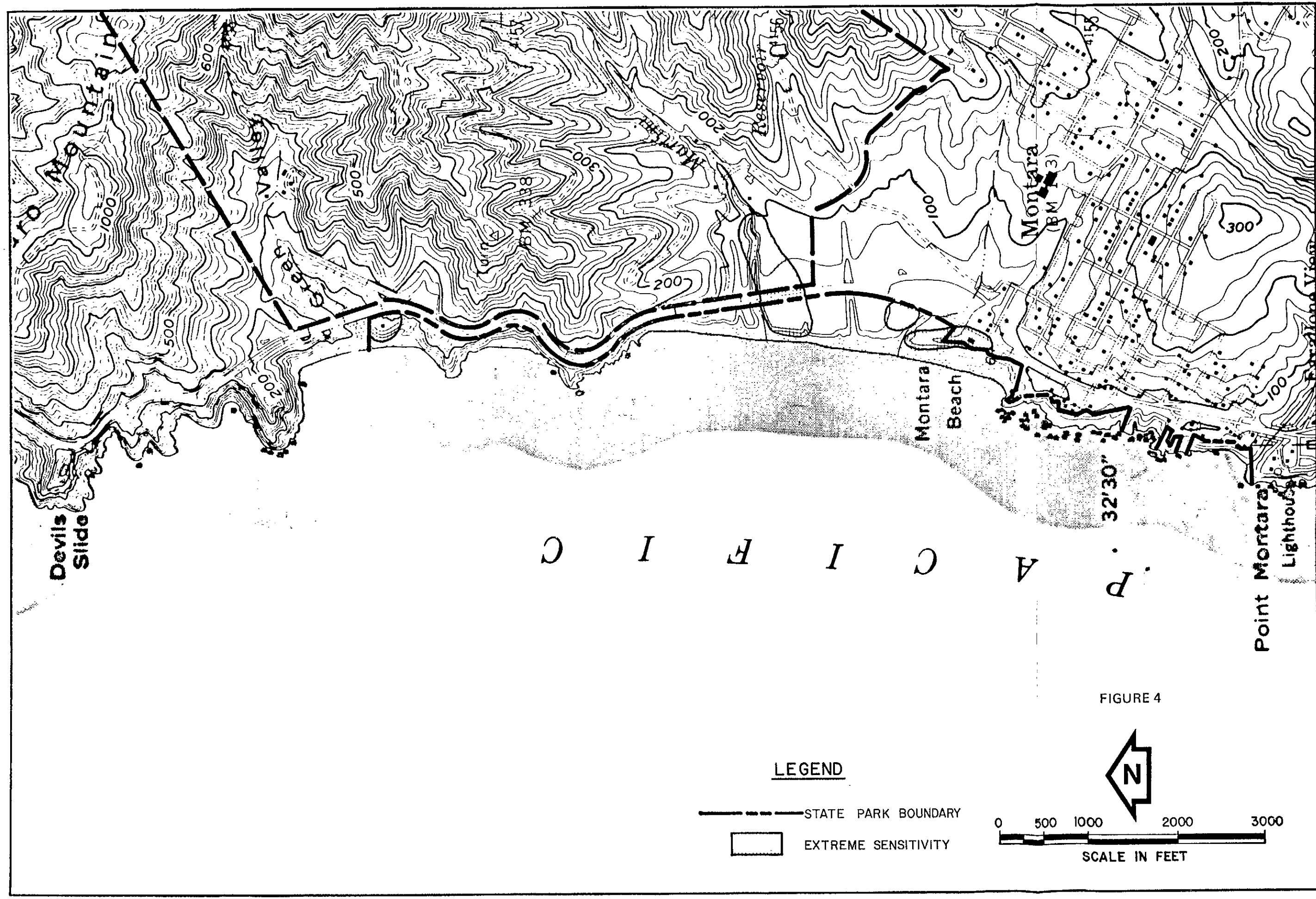

FIGURE 4

DESIGNED
DRAWN
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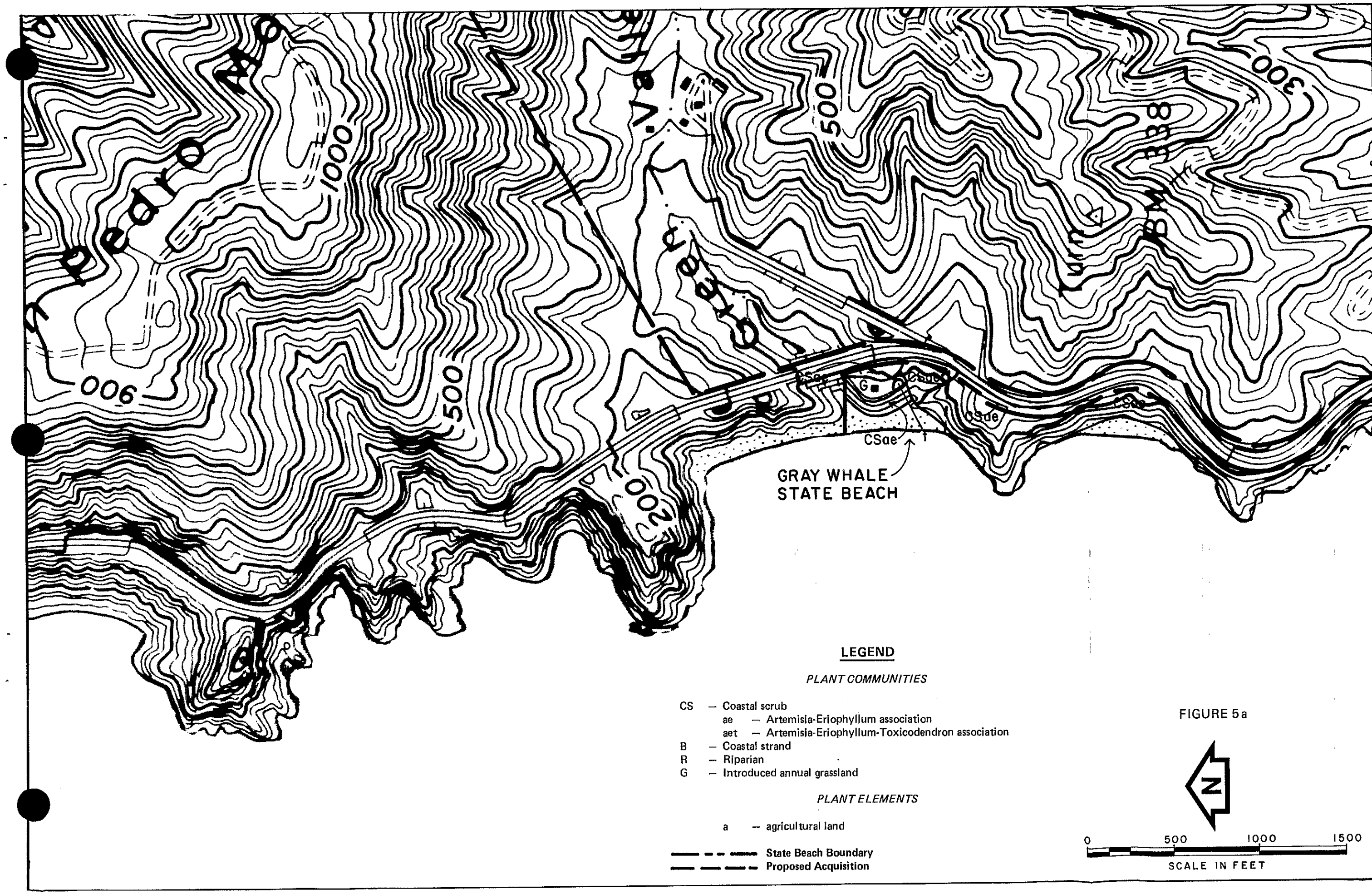
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED _____ DATE _____

MONTARA STATE BEACH
RESOURCE ELEMENT
CULTURAL RESOURCE SENSITIVITY

DRAWING NO. 16844

SHEET NO
OF



LEGEND

PLANT COMMUNITIES

CS — Coastal scrub
- ae — Artemisia-Eriophyllum association
- aet — Artemisia-Eriophyllum-Toxicodendron association

B — Coastal strand
R — Riparian
G — Introduced annual grassland

PLANT ELEMENTS

a — agricultural land

State Beach Boundary
Proposed Acquisition

FIGURE 5a

N

0 500 1000 1500
SCALE IN FEET

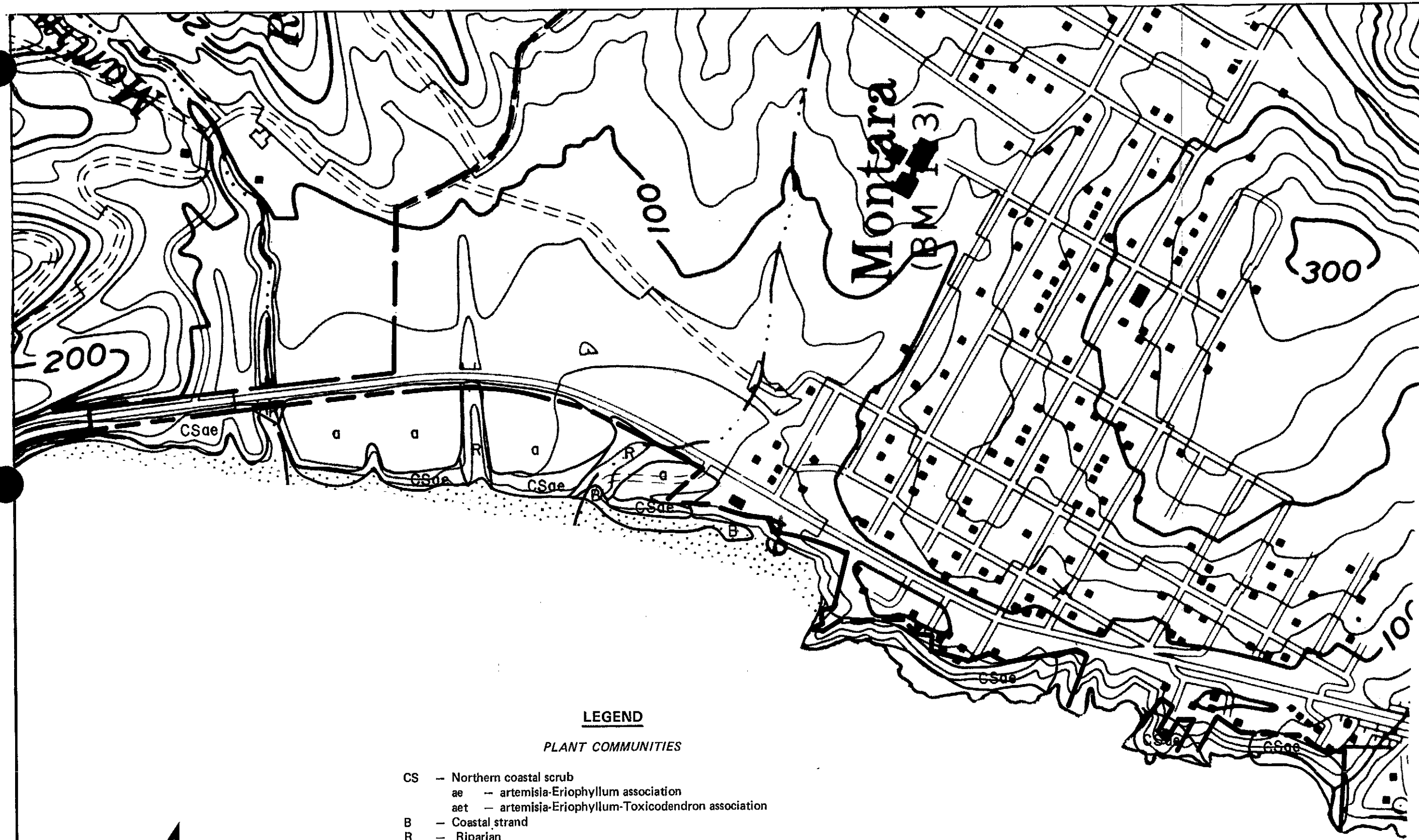
DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED_____ DATE_____

MONTARA AND GRAY WHALE COVE
STATE BEACHES
RESOURCE ELEMENT
PLANT LIFE

DRAWING No.
16844

SHEET No.
1
OF
2



LEGEND

PLANT COMMUNITIES

CS — Northern coastal scrub
- ae — artemisia-Eriophyllum association
- aet — artemisia-Eriophyllum-Toxicodendron association

B — Coastal strand
R — Riparian
G — Introduced annual grassland

PLANT ELEMENTS

a — agricultural land

State Beach Boundary

N

0 500 1000 1500
SCALE IN FEET

FIGURE 5b

DESIGNED
DRAWN
CHECKED

REVISIONS | DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED ____ DATE ____

MONTARA AND GRAY WHALE COVE STATE BEACHES
RESOURCE ELEMENT
PLANT LIFE

DRAWING No. 16844

SHEET No. 2 OF 2

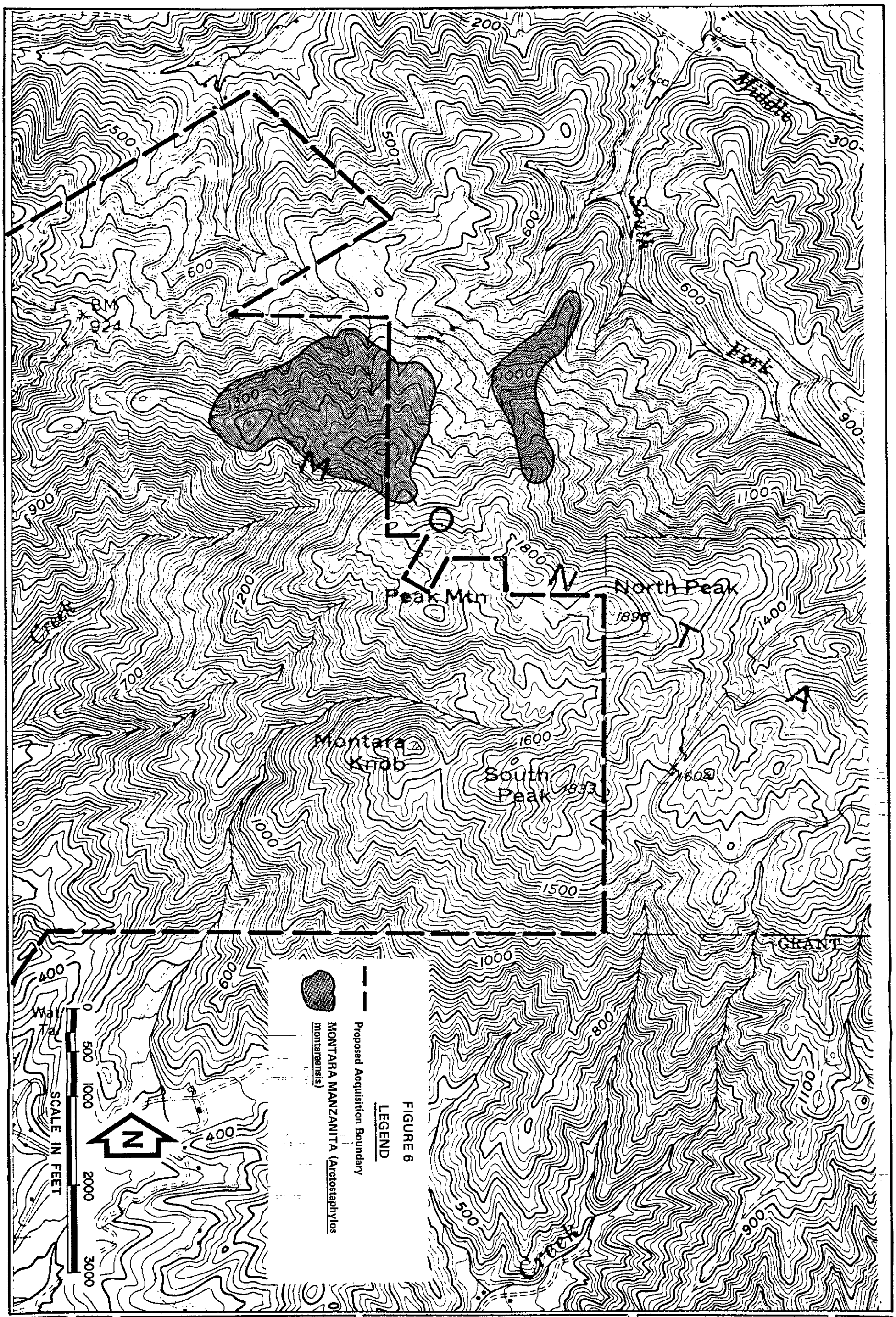
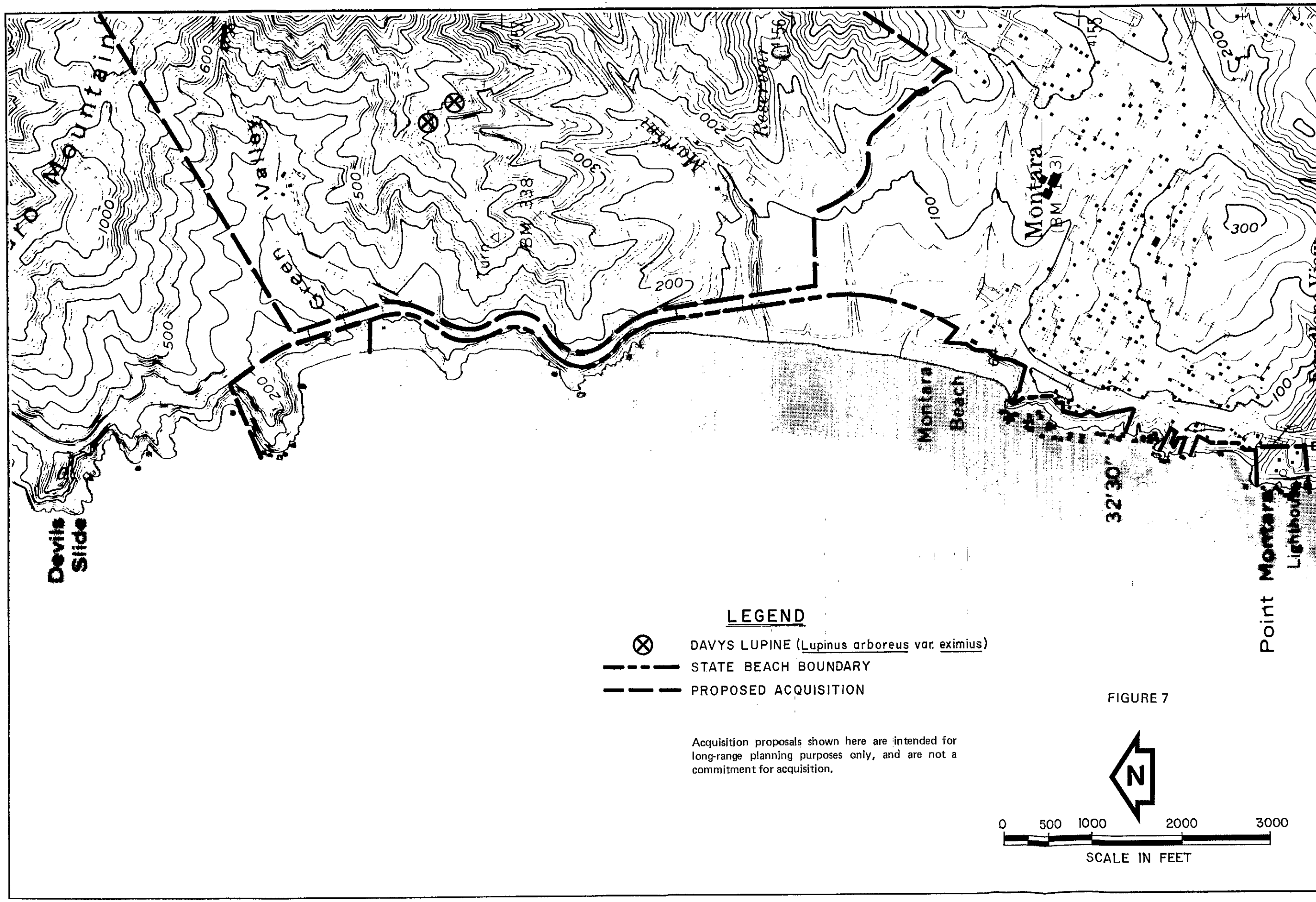


FIGURE 6
LEGEND

SHEET No	DRAWING No	MONTARA (McNee Ranch) RESOURCE ELEMENT PROPOSED ACQUISITION RARE PLANTS	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION	REVISIONS	DATE	DESIGNED
1 of 1	16844		APPROVED _____ DATE _____			DRAWN
						CHECKED



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DRAWN
CHECKED

DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED DATE

MONTARA & GRAY WHALE COVE S.B.
PROP. ACQUISITION (McNee Ranch)
RESOURCE ELEMENT
RARE PLANTS

DRAWING No
16844

SHEET No
OF

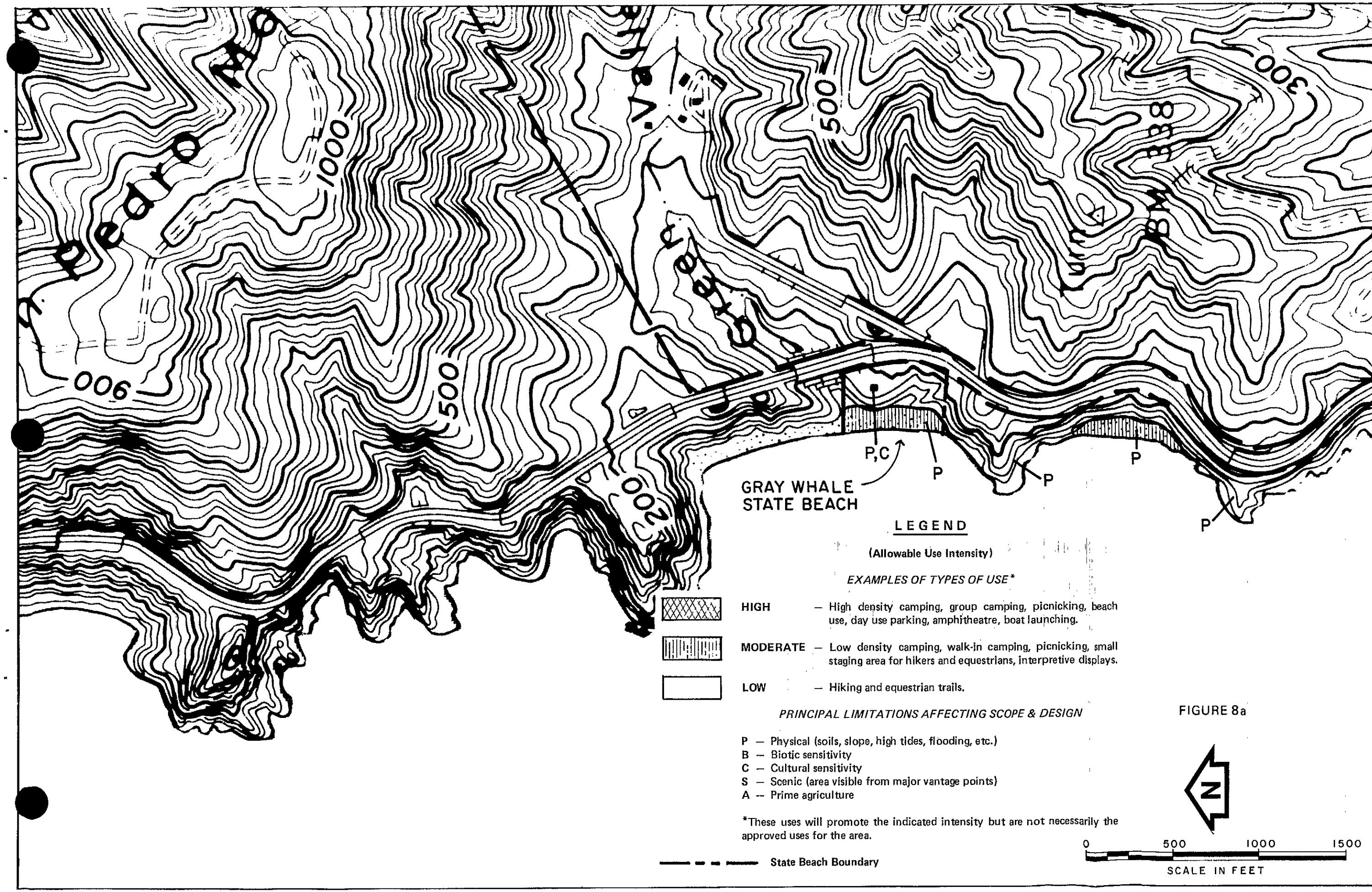


FIGURE 8a

DESIGNED	DATE	REVISIONS
DRAWN		
CHECKED		

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED_____ DATE_____

MONTARA - GRAY WHALE COVE S.B.
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE

DRAWING No. 16844

SHEET No. 1 OF 2

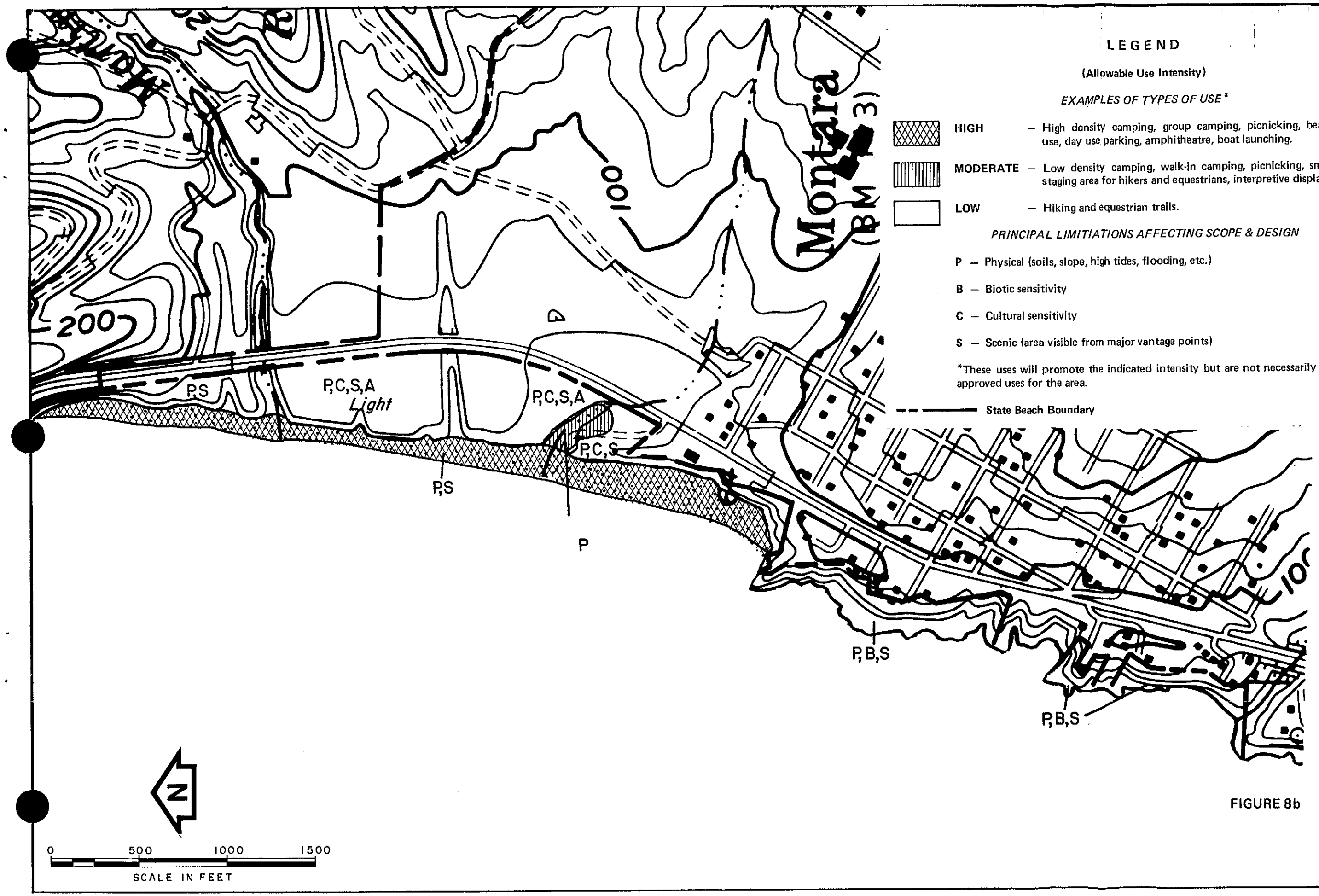


FIGURE 8b

DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

MONTARA – GRAY WHALE COVE S.B.
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE

DRAWING No.
16844

SHEET No.
2 of 2

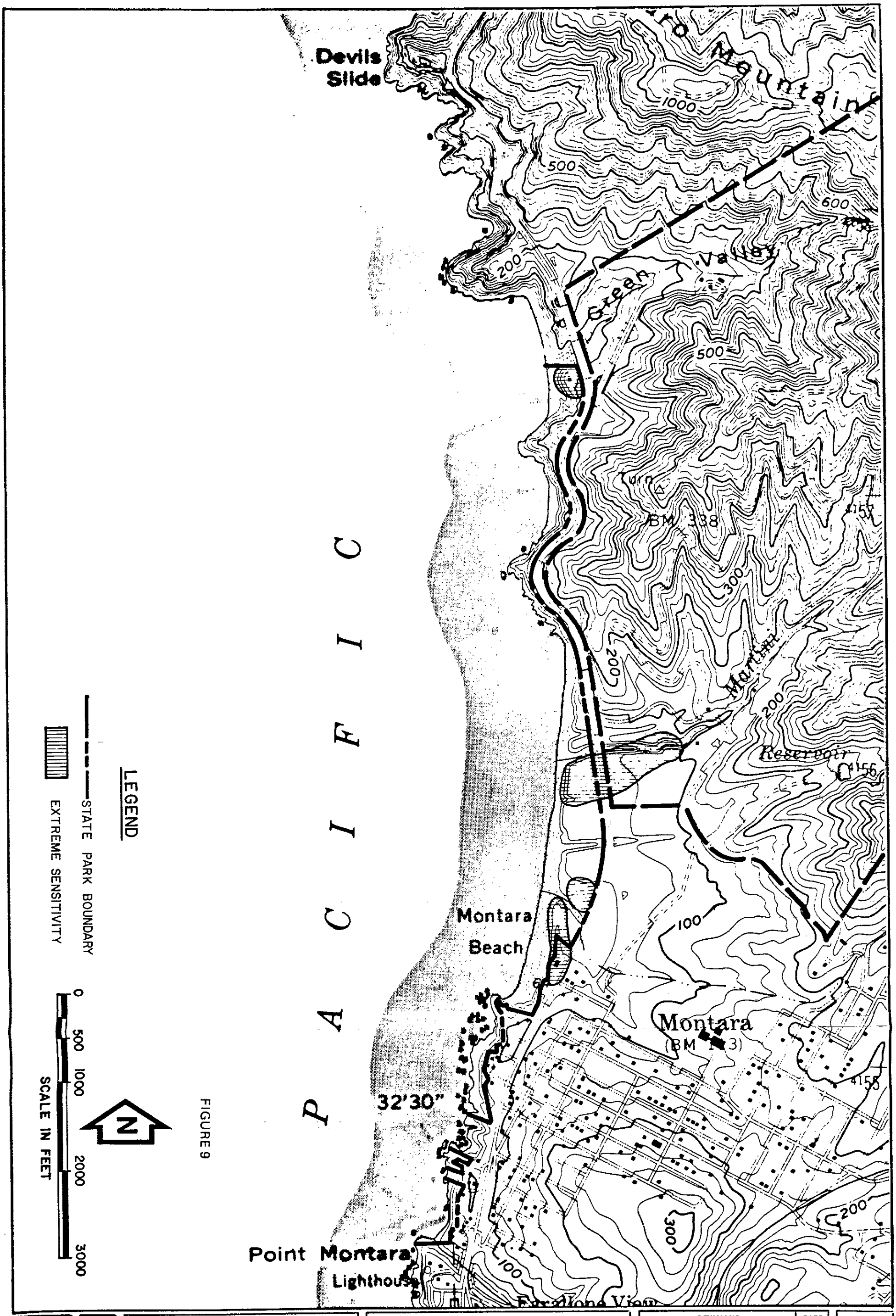


FIGURE 9

MONTARA & GRAY WHALE COVE S.B.
RESOURCE ELEMENT
CULTURAL RESOURCE SENSITIVITY

DRAWING No. 16844

SHEET No. 8

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

APPROVED _____ DATE _____

REVISIONS	DATE

DESIGNED
DRAWN
CHECKED

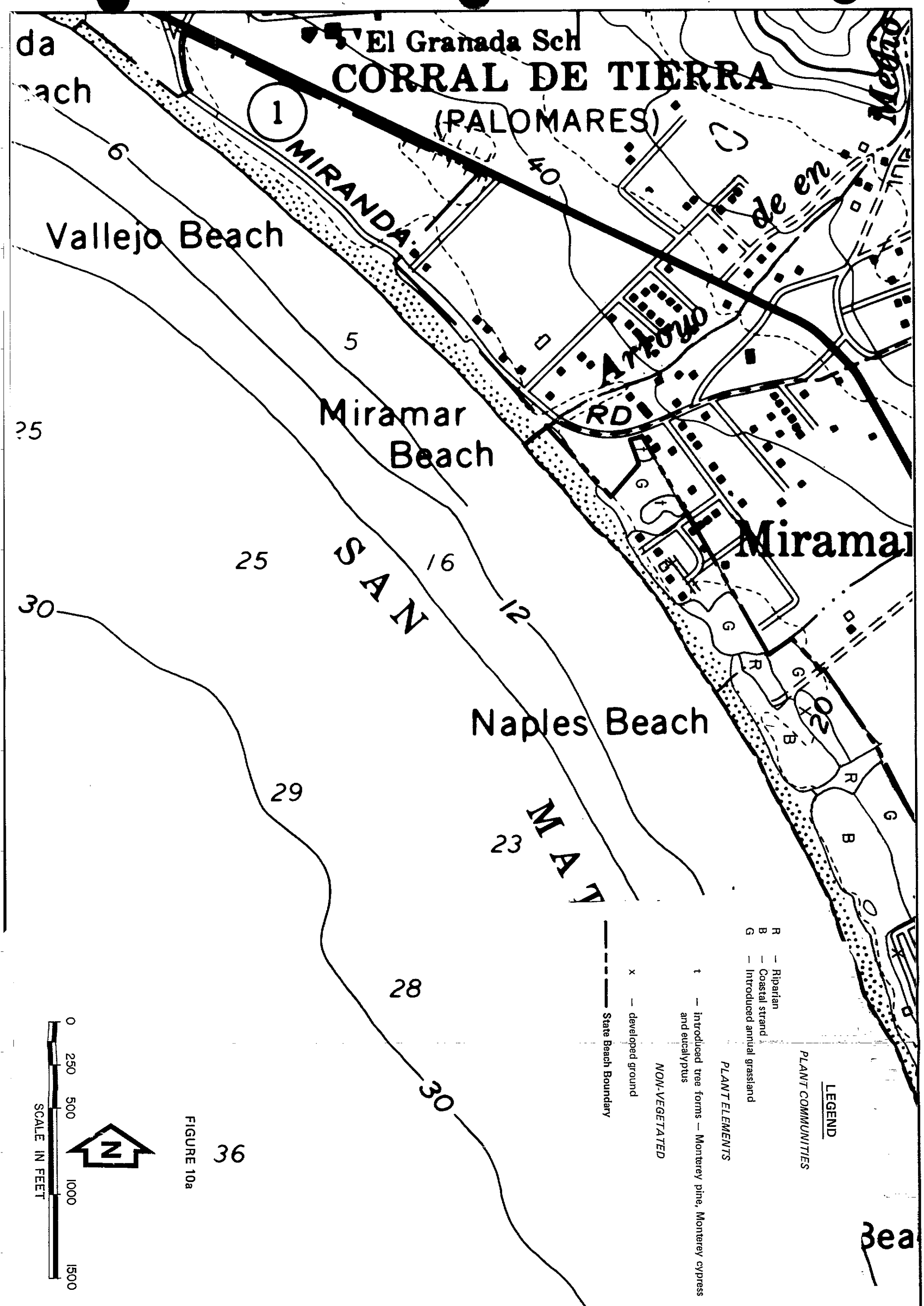


FIGURE 10a

SHEET NO. 1 OF 3	DRAWING NO. 16844	HALFMOON BAY STATE BEACH RESOURCE ELEMENT PLANT LIFE	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION APPROVED ____ DATE ____	REVISIONS / DATE DESIGNED DRAWN CHECKED

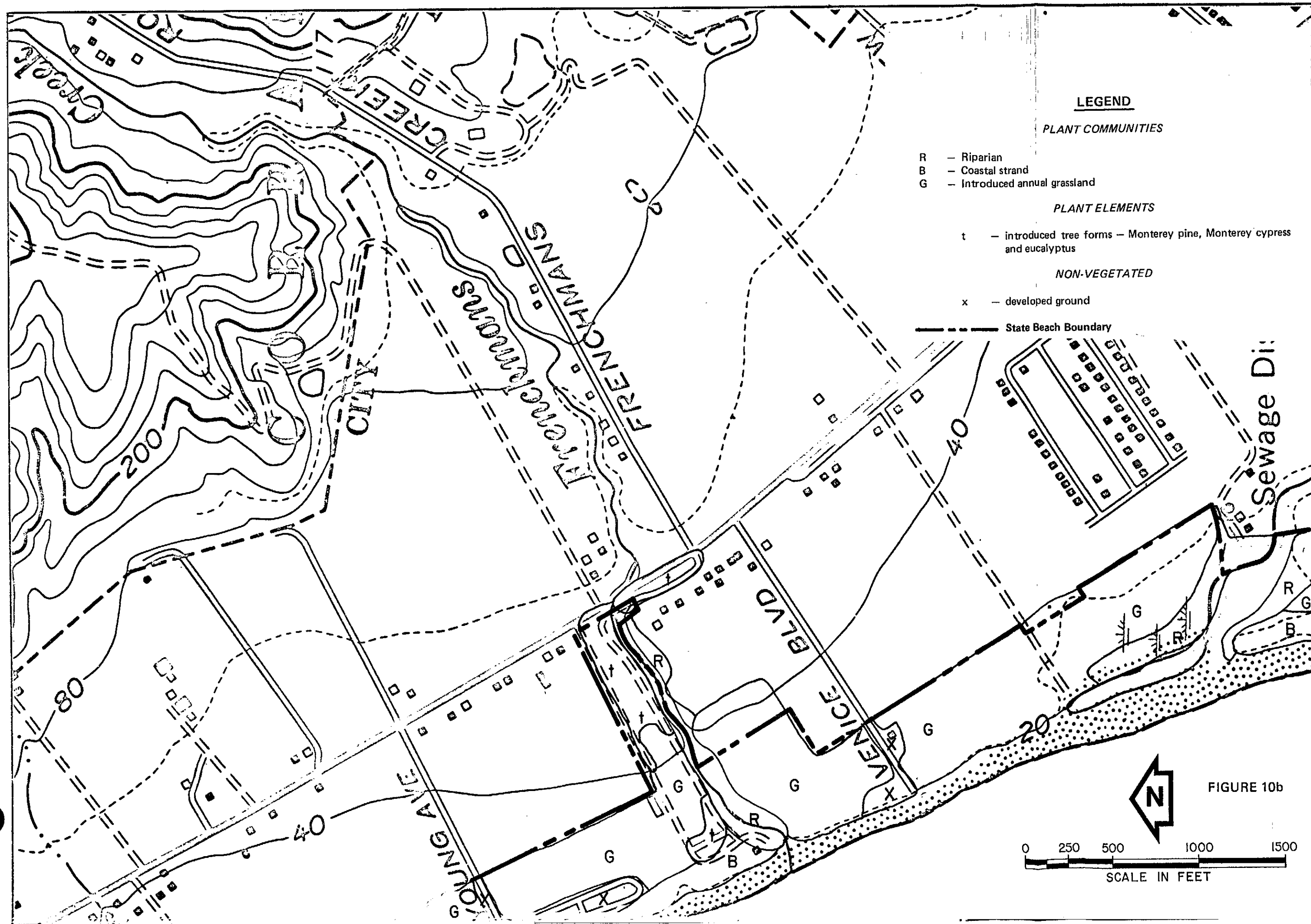


FIGURE 10b

DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

HALFMOON BAY STATE BEACH
RESOURCE ELEMENT
PLANT LIFE

DRAWING No.
16844

SHEET No.
2 & 3

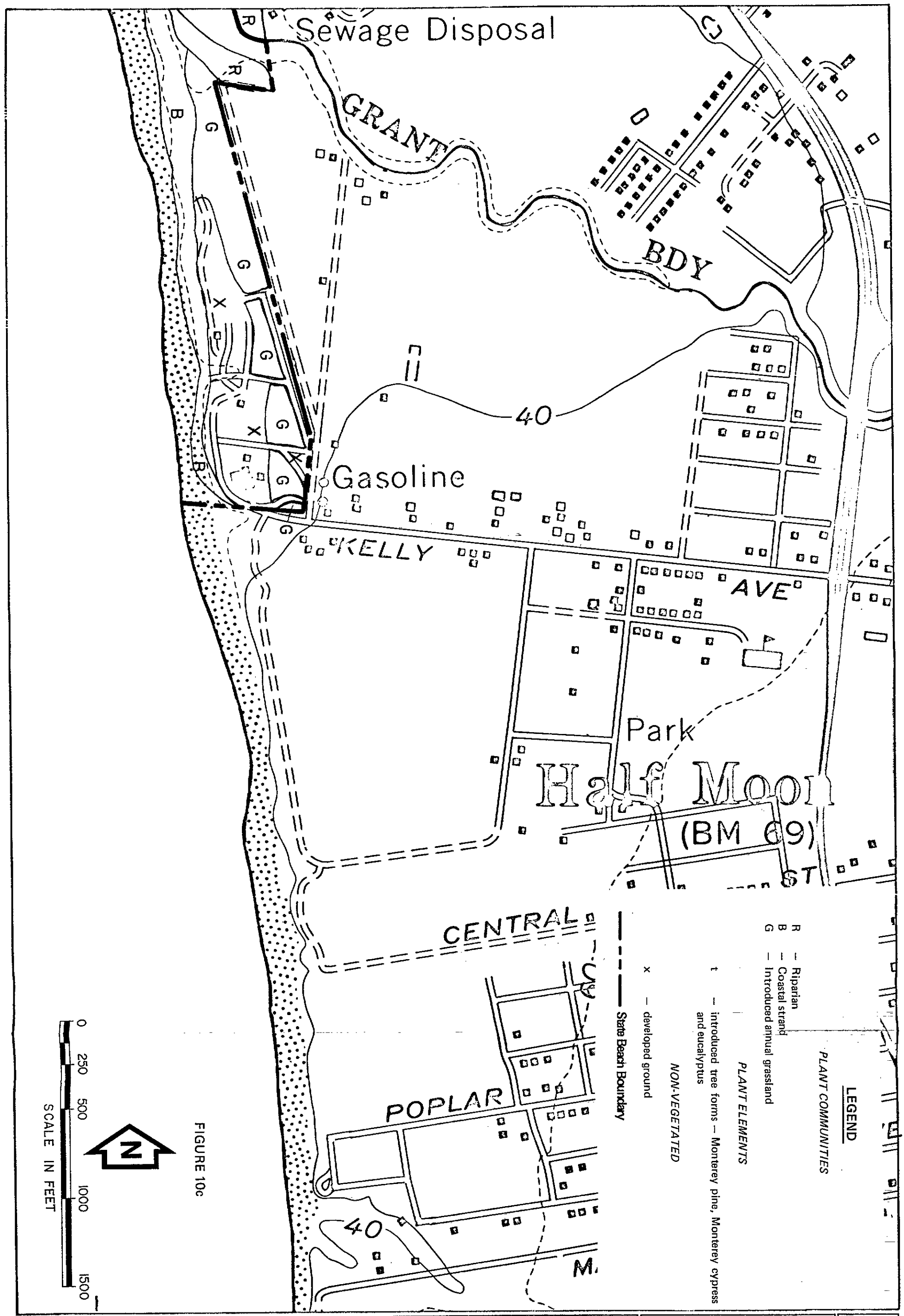
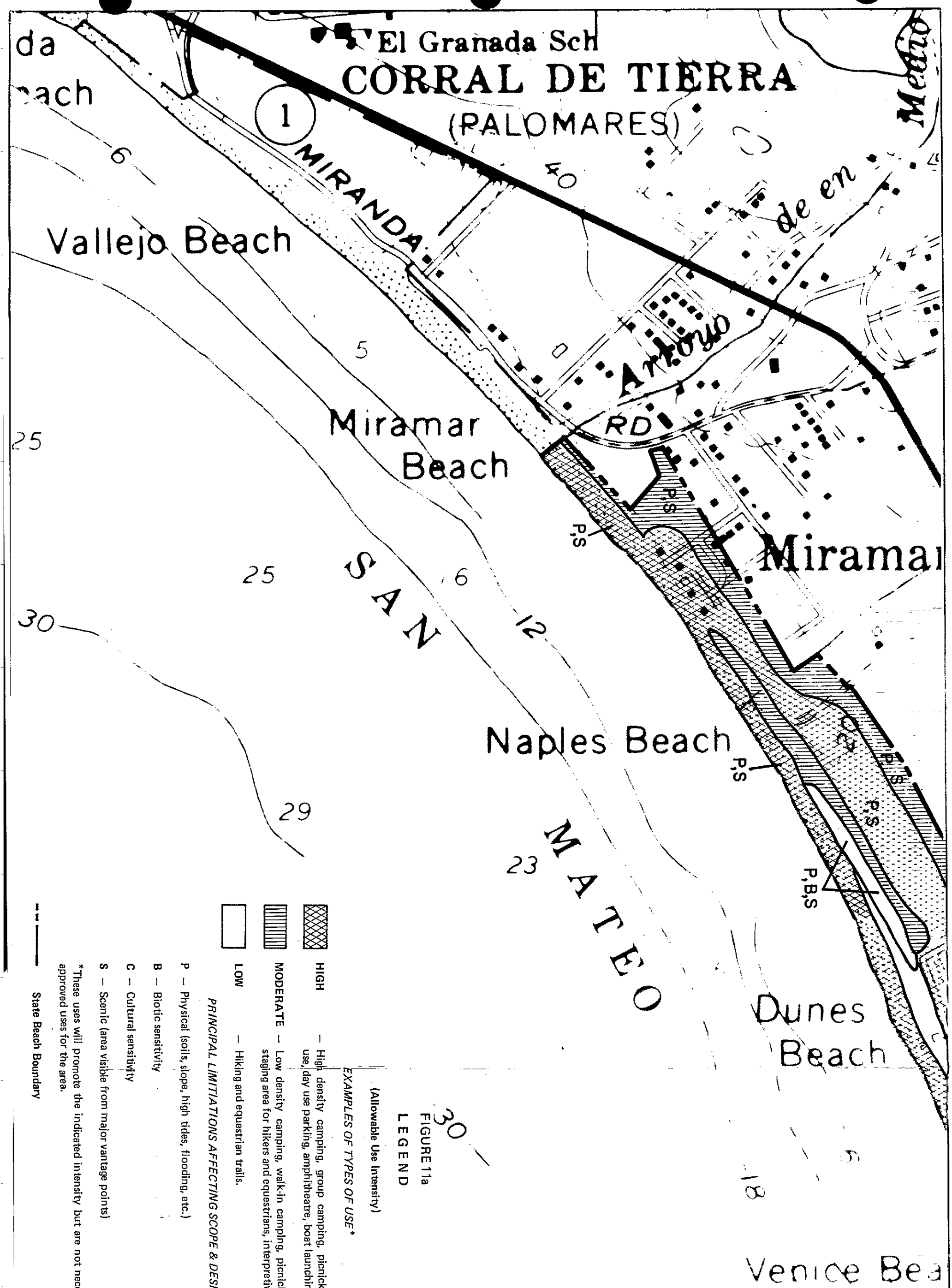


FIGURE 10c

SHEET NO. 3 of 3	DRAWING NO. 16844	HALFMOON BAY STATE BEACH RESOURCE ELEMENT PLANT LIFE	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION APPROVED_____ DATE_____	REVISIONS / DATE	DESIGNED DRAWN CHECKED



30

FIGURE 11a

LEGEND

(Allowable Use Intensity)

*EXAMPLES OF TYPES OF USE**

HIGH — High density camping, group camping, picnicking, beach use, day use parking, amphitheatre, boat launching.

MODERATE — Low density camping, walk-in camping, picnicking, small staging area for hikers and equestrians, interpretive displays.

LOW — Hiking and equestrian trails.

PRINCIPAL LIMITATIONS AFFECTING SCOPE & DESIGN

P — Physical (soils, slope, high tides, flooding, etc.)

B — Biotic sensitivity

C — Cultural sensitivity

S — Scenic (area visible from major vantage points)

*These uses will promote the indicated intensity but are not necessarily the approved uses for the area.

State Beach Boundary

DRAWING NO 16844	HALF MOON BAY STATE BEACH RESOURCE ELEMENT ALLOWABLE USE INTENSITY FIGURE	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION APPROVED DATE	REVISIONS DATE	DESIGNED DRAWN CHECKED
SHEET NO 1 OF 3				

LEGEND

(Allowable Use Intensity)

*EXAMPLES OF TYPES OF USE**

HIGH – High density camping, group camping, picnicking, beach use, day use parking, amphitheatre, boat launching.

MODERATE – Low density camping, walk-in camping, picnicking, small staging area for hikers and equestrians, interpretive displays.

LOW – Hiking and equestrian trails.

PRINCIPAL LIMITIATIONS AFFECTING SCOPE & DESIGN

P – Physical (soils, slope, high tides, flooding, etc.)

B – Biotic sensitivity

C – Cultural sensitivity

S – Scenic (area visible from major vantage points)

*These uses will promote the indicated intensity but are not necessarily the approved uses for the area.

State Beach Boundary

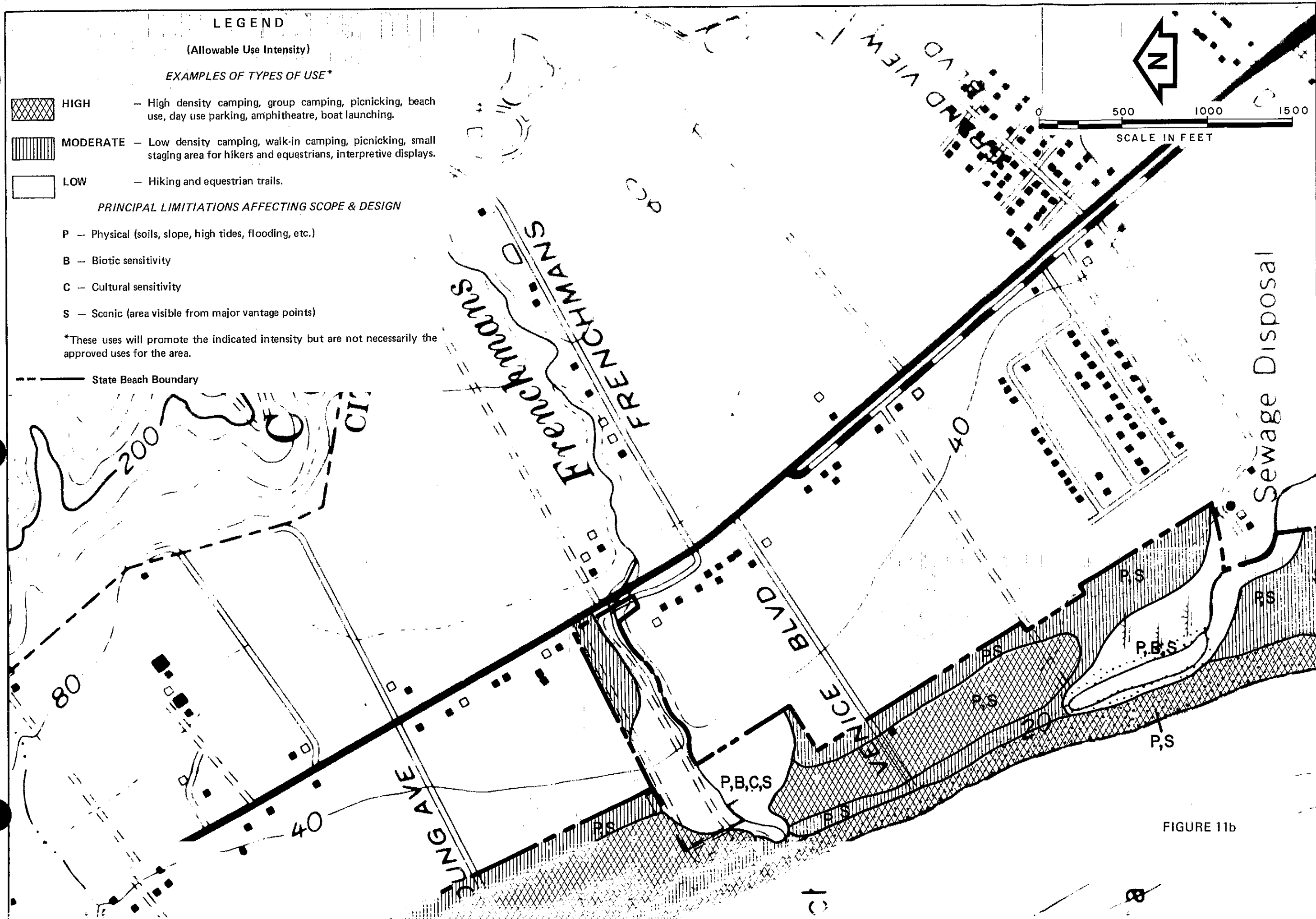


FIGURE 11b

DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

HALF MOON BAY STATE BEACH
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE

DRAWING NO.
16844

SHEET NO.
2 of 3

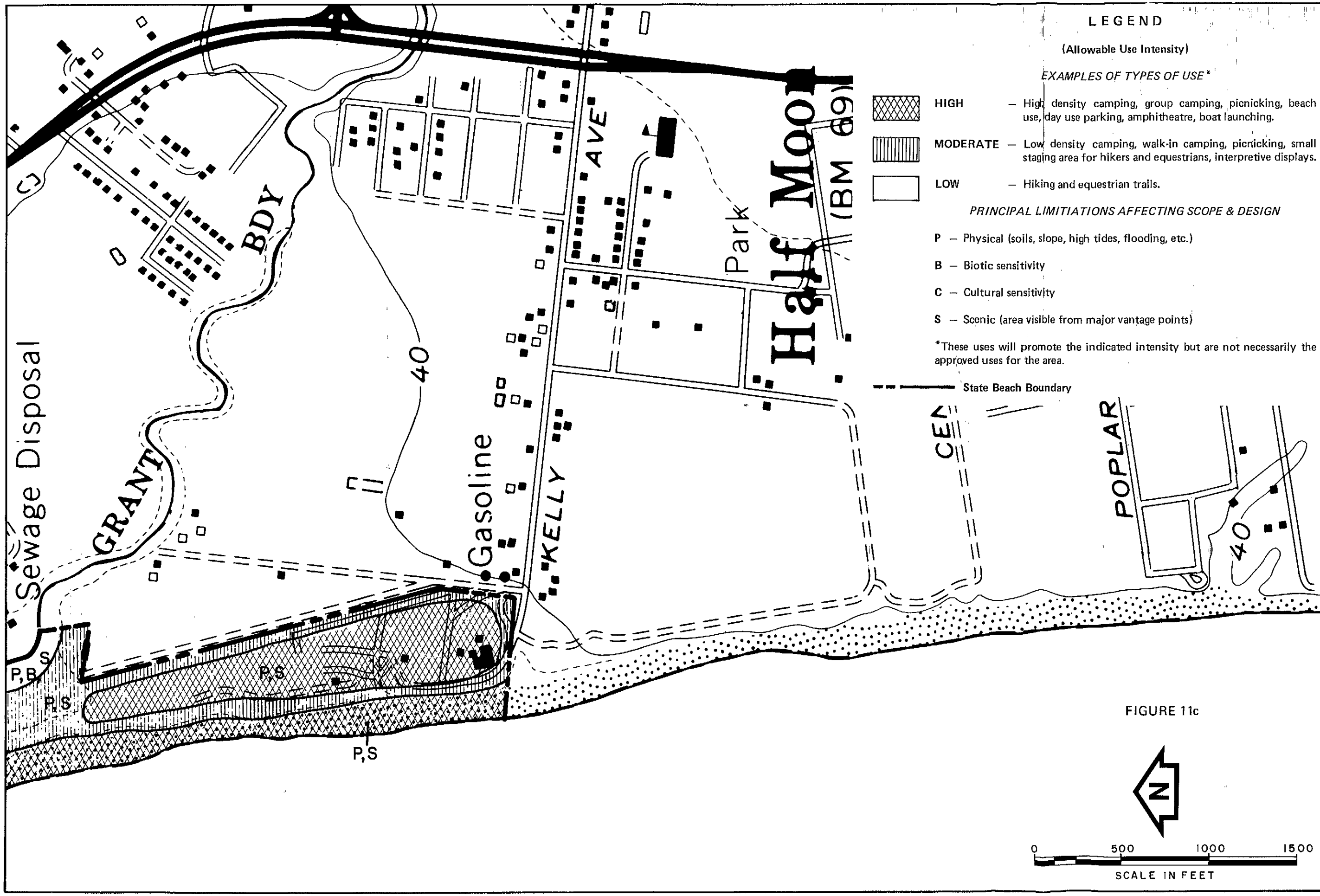

LEGEND
(Allowable Use Intensity)
EXAMPLES OF TYPES OF USE*
HIGH — High density camping, group camping, picnicking, beach use, day use parking, amphitheatre, boat launching.
MODERATE — Low density camping, walk-in camping, picnicking, small staging area for hikers and equestrians, interpretive displays.
LOW — Hiking and equestrian trails.
PRINCIPAL LIMITIATIONS AFFECTING SCOPE & DESIGN
P — Physical (soils, slope, high tides, flooding, etc.)
B — Biotic sensitivity
C — Cultural sensitivity
S — Scenic (area visible from major vantage points)
*These uses will promote the indicated intensity but are not necessarily the approved uses for the area.
State Beach Boundary
Sewage Disposal
GRANT
BDY
AVE
Half Moon
(BM 69)
Park
Gasoline
KELLY
CEN
POPLAR
40
P,B
S
P,S
P,S
P,S
0
500
1000
1500
SCALE IN FEET
N
DESIGNED
DRAWN
CHECKED
DATE
REVISIONS
RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE
HALF MOON BAY STATE BEACH
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE
DRAWING No.
16844
SHEET No.
3
OF
3

FIGURE 11c

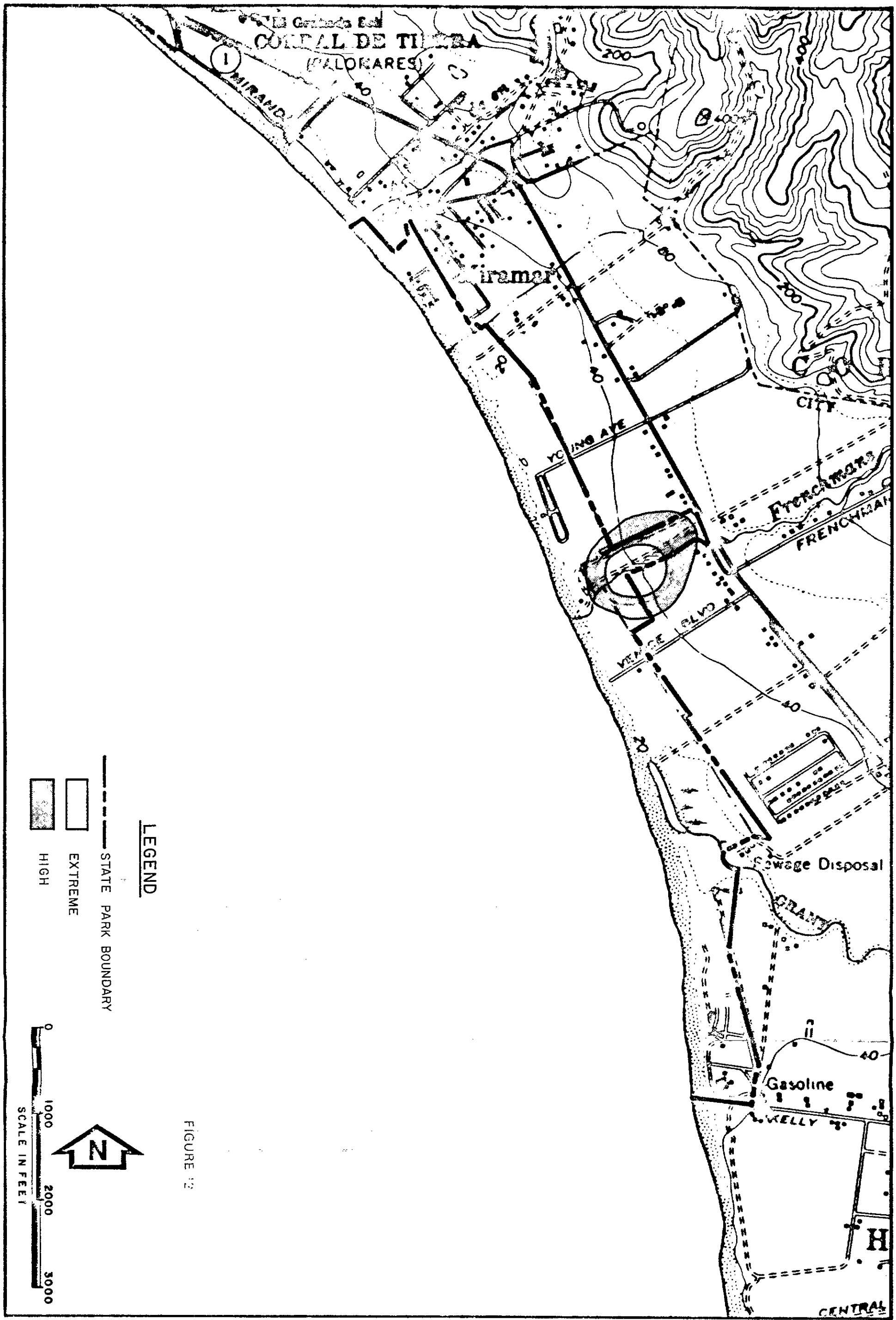
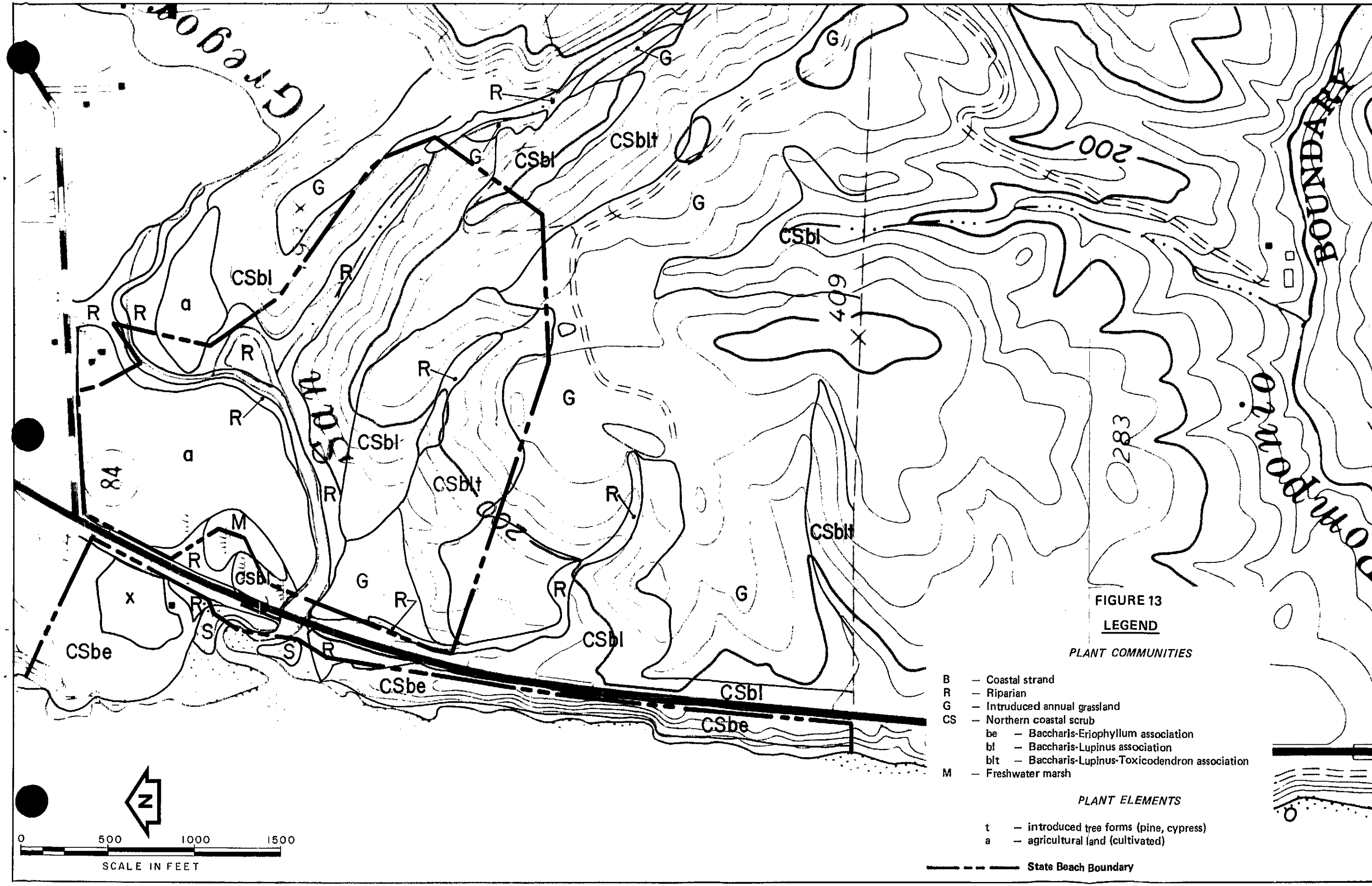


FIGURE 12

SHEET NO OF	DRAWING NO 16844	HALF MOON BAY STATE BEACH RESOURCE ELEMENT CULTURAL RESOURCE SENSITIVITY	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION APPROVED_____ DATE_____	REVISIONS / DATE	DESIGNED DRAWN CHECKED



DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

SAN GREGORIO STATE BEACH
RESOURCE ELEMENT
PLANT LIFE

DRAWING No.
16844

SHEET No.
1
OF
1

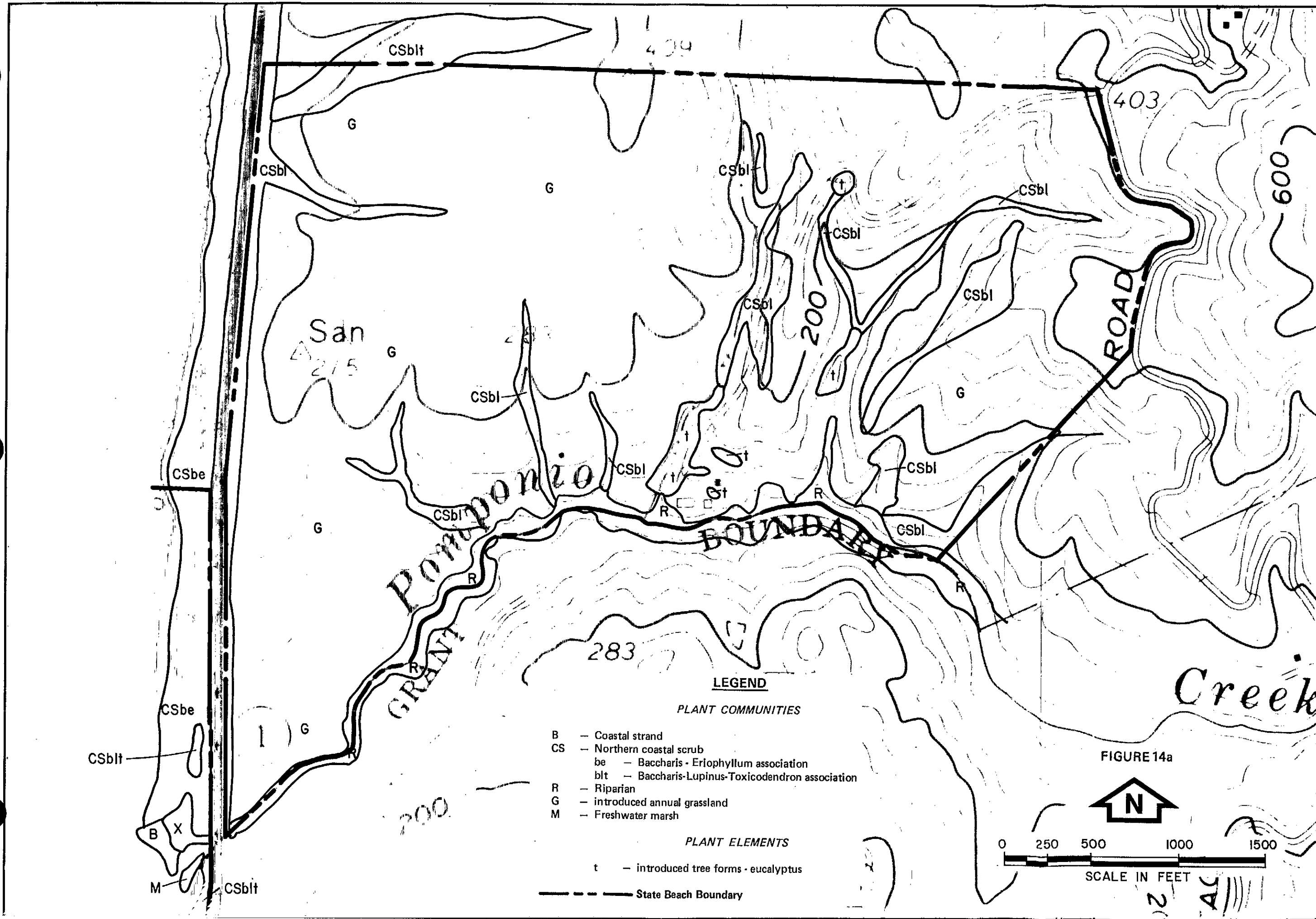


FIGURE 14a

DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED _____ DATE _____

POMPONIO STATE BEACH
RESOURCE ELEMENT
PLANT LIFE

DRAWING No. 16844

SHEET No. 1 OF 2

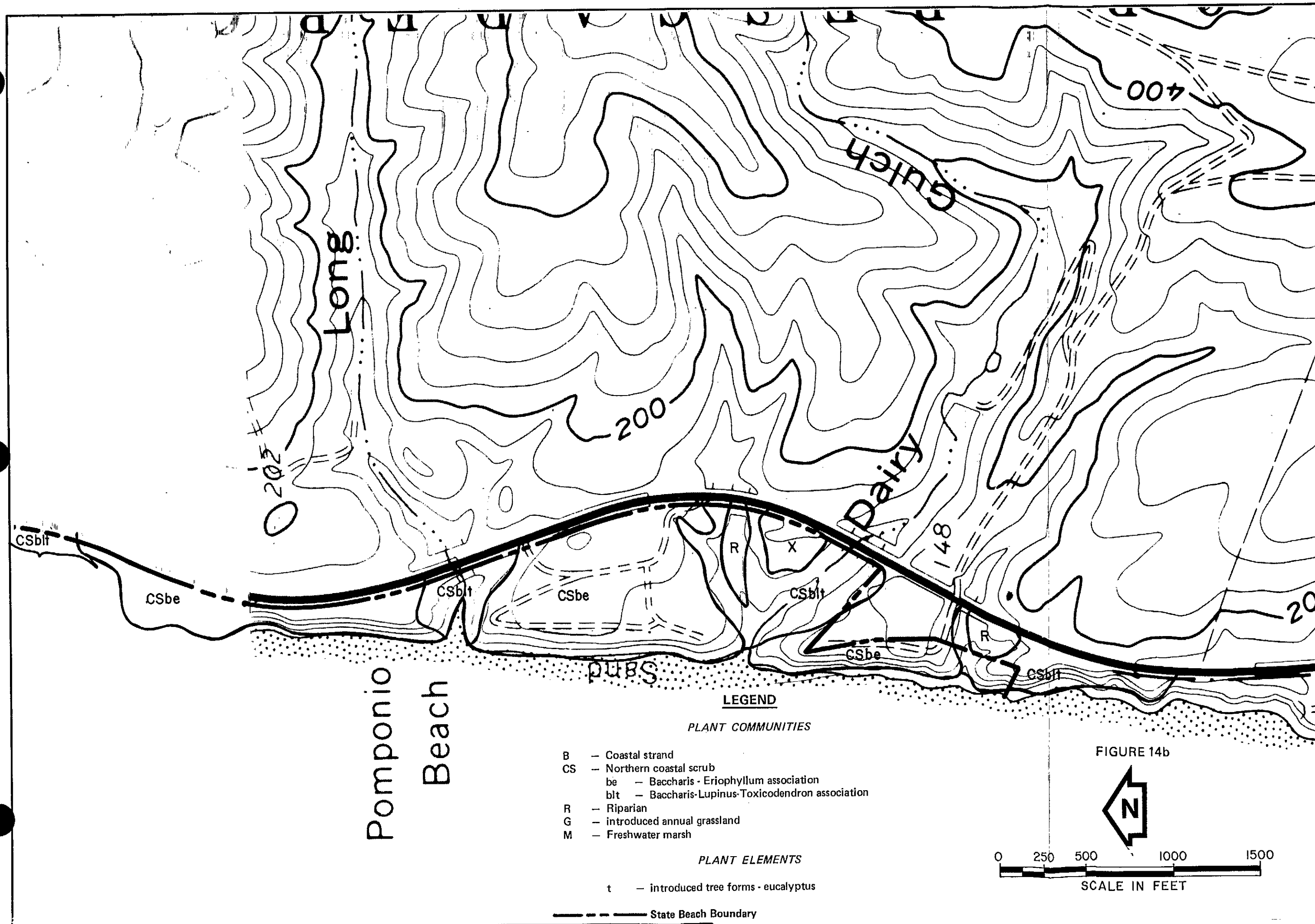


FIGURE 14b

DESIGNED
DRAWN
CHECKED

REVISIONS | DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED_____ DATE_____

POMPONIO STATE BEACH
RESOURCE ELEMENT
PLANT LIFE

DRAWING No. 16844

SHEET No. 2 OF 2

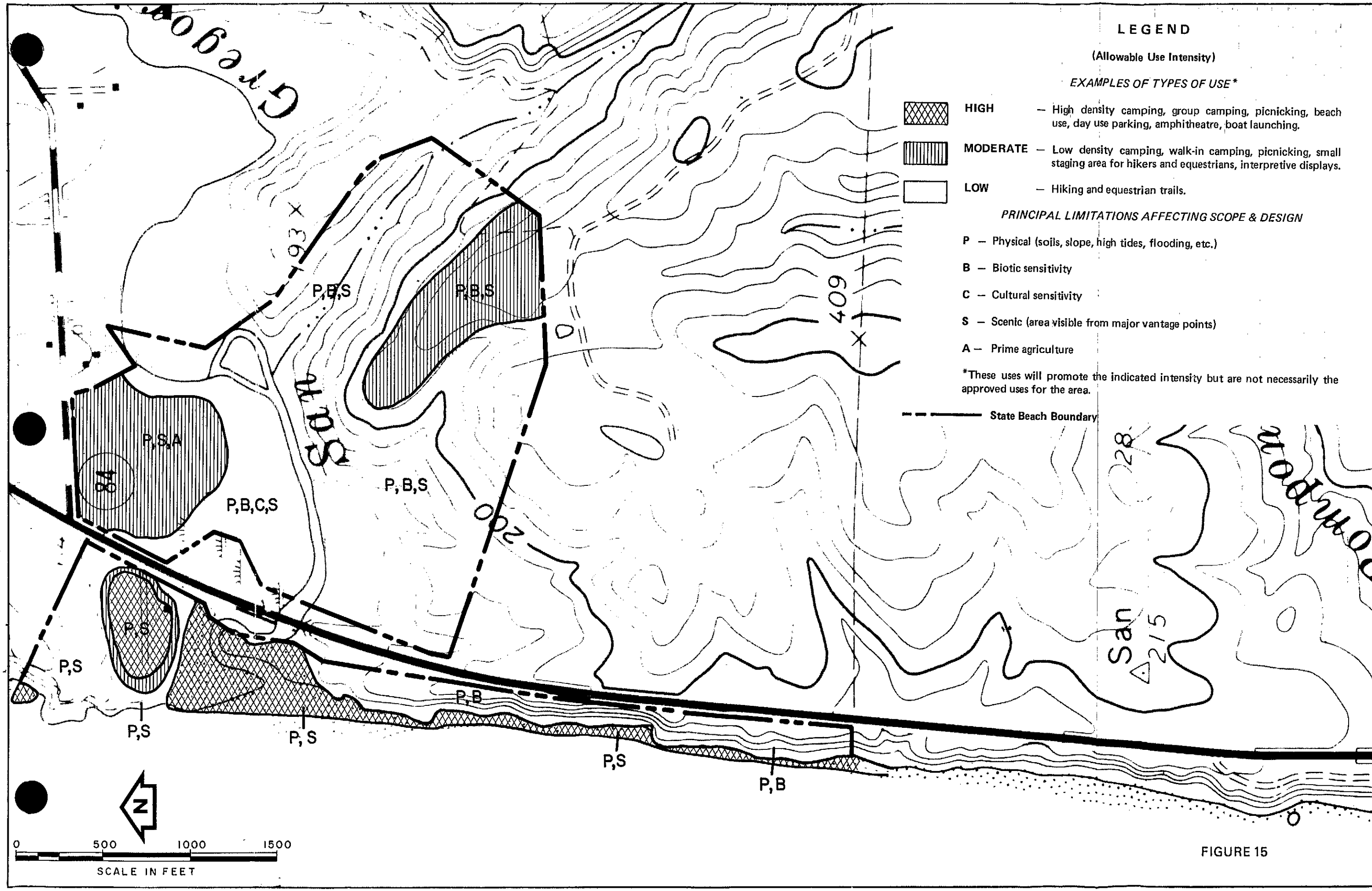


FIGURE 15

DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

SAN GREGORIO STATE BEACH
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE

DRAWING NO.
16844

SHEET NO.
1 OF 1

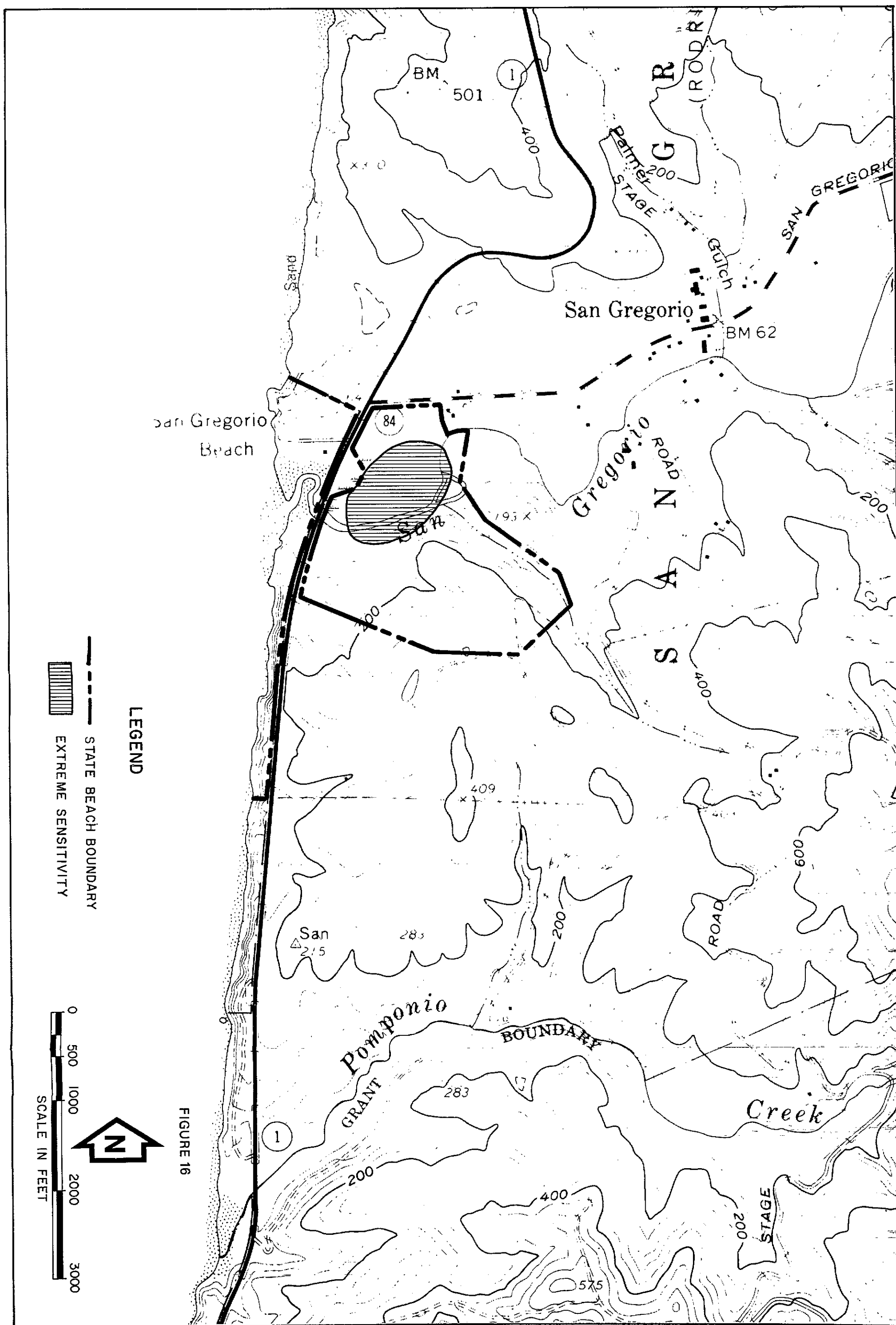


FIGURE 16

SHEET No. OF	DRAWING No. 16844	SAN GREGORIO STATE BEACH RESOURCE ELEMENT CULTURAL RESOURCE SENSITIVITY	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION APPROVED_____ DATE_____	REVISIONS / DATE	DESIGNED DRAWN CHECKED

59076-766 2-78 500 ⓘ OSP

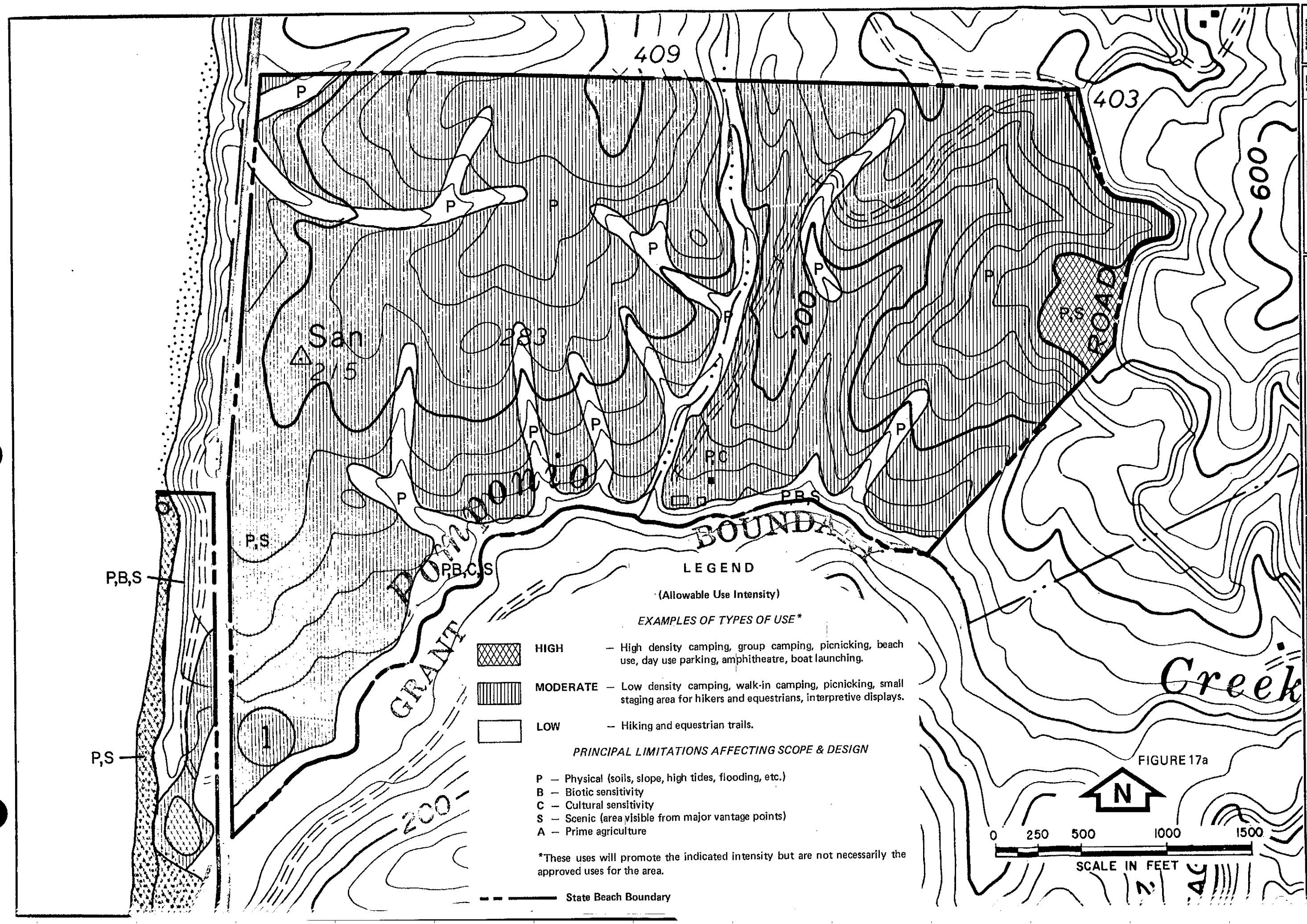


FIGURE 17a

DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED _____ DATE _____

POMPONIO STATE BEACH
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE

DRAWING No. 16844

SHEET No. 1 of 2

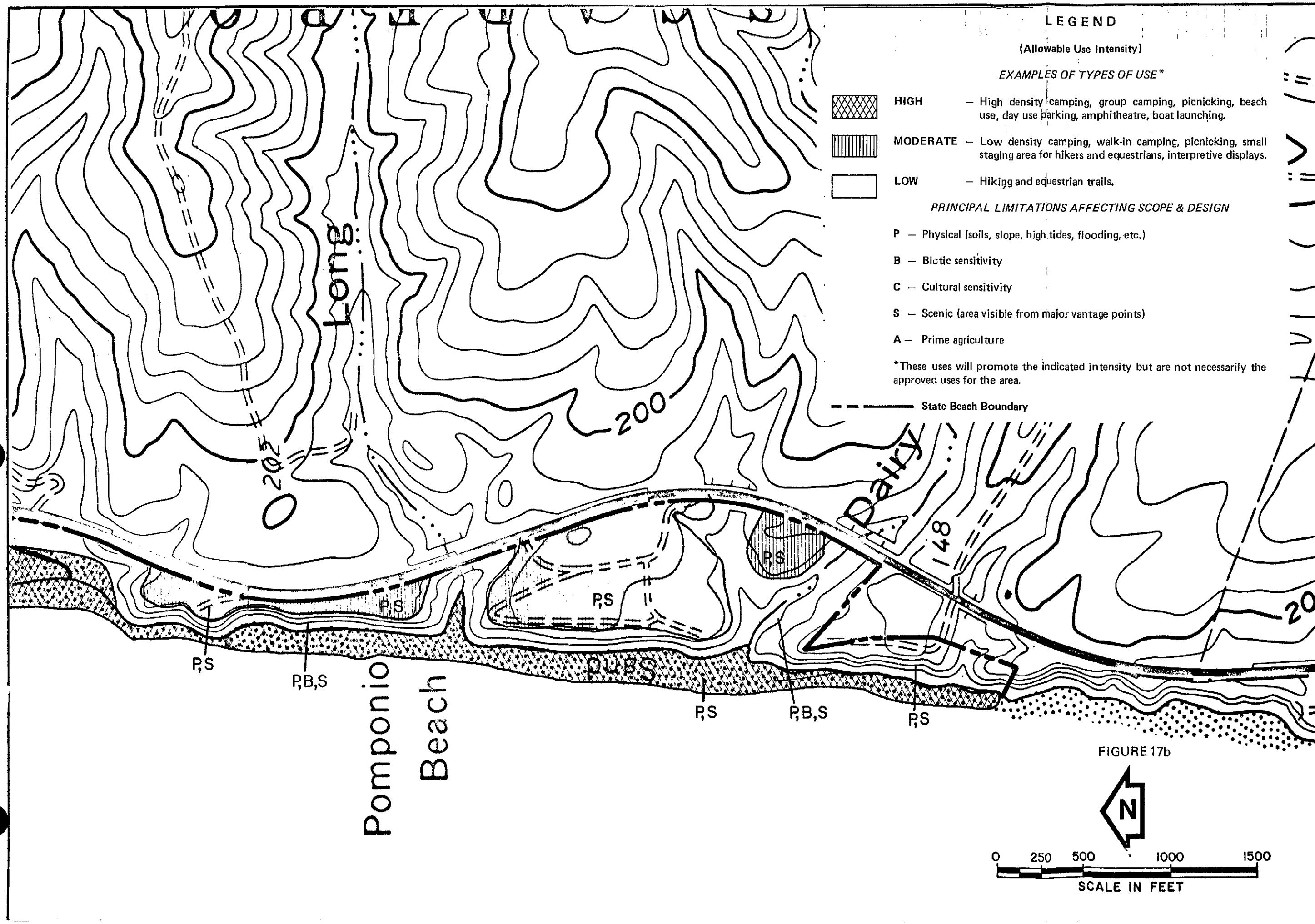


FIGURE 17b

DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

POMPONIO STATE BEACH
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE

DRAWING NO.
16844

SHEET NO.
2 OF 2

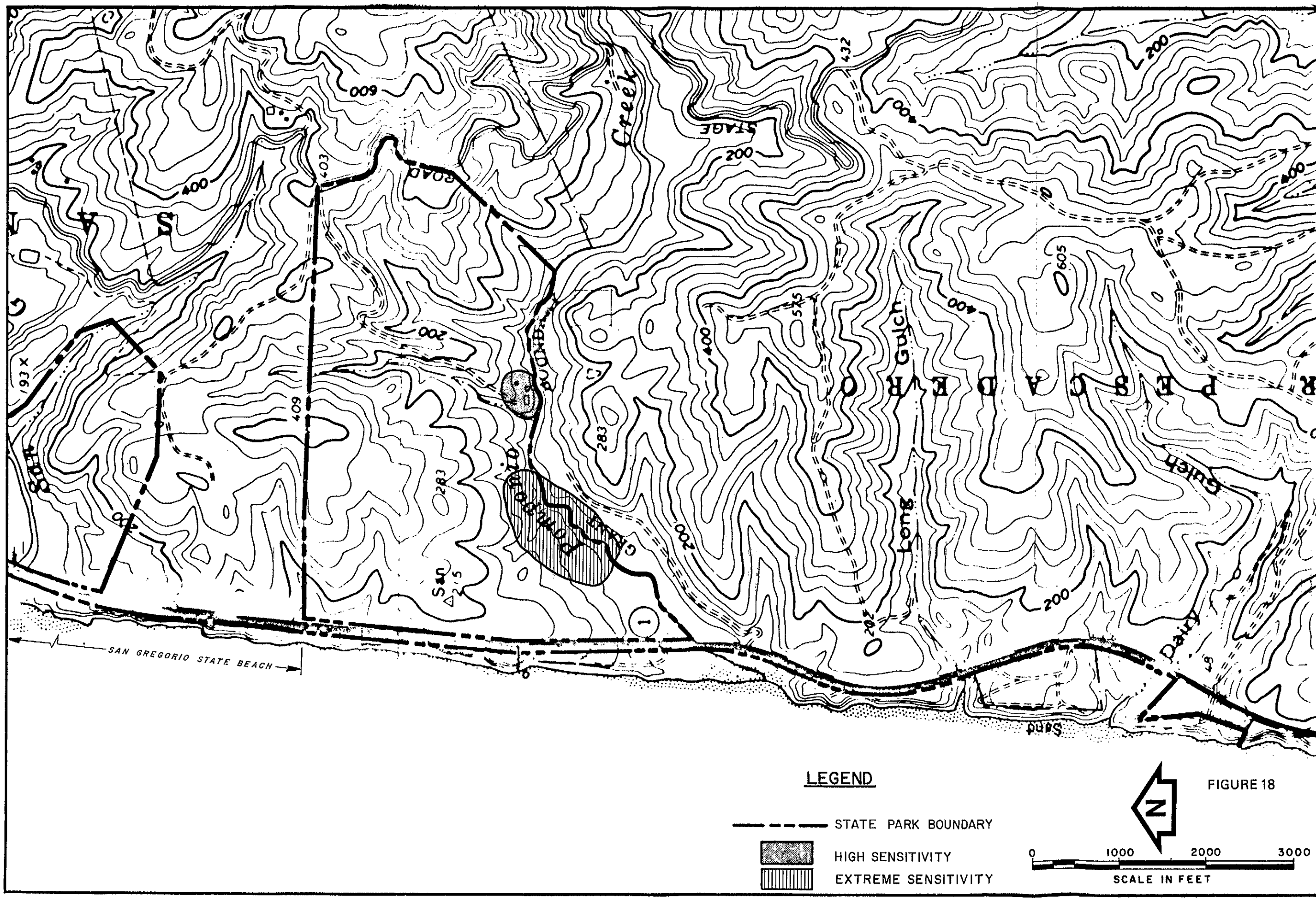


FIGURE 18

DESIGNED	
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DATE	
REVISIONS	

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED _____ DATE _____

POMPONIO STATE BEACH
RESOURCE ELEMENT
CULTURAL RESOURCE SENSITIVITY

DRAWING NO. 16844

SHEET NO. OF

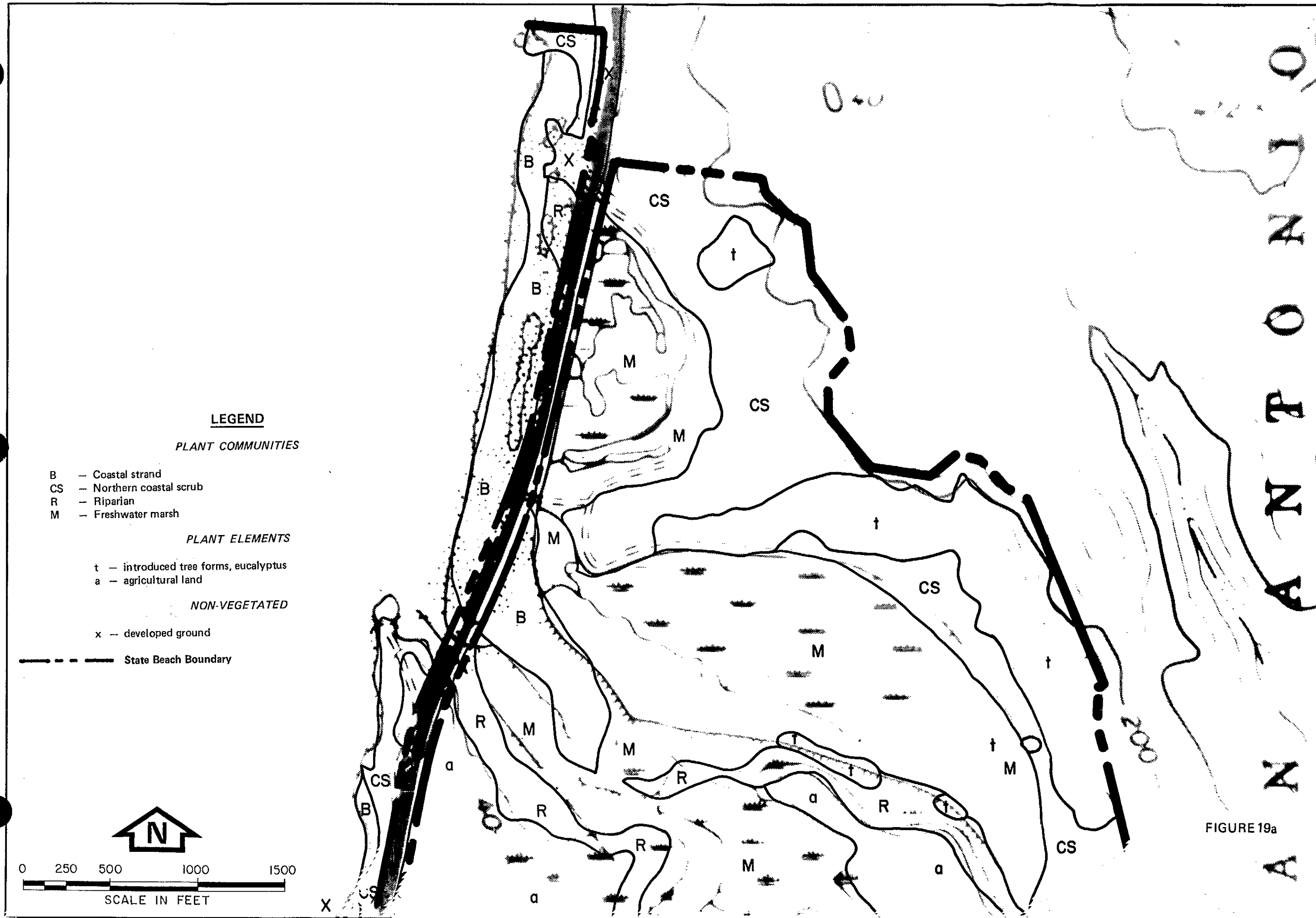

FIGURE 19a

DESIGNED	DRAWN	CHECKED

REVISIONS	DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

APPROVED _____ DATE _____

PESCADERO STATE BEACH
RESOURCE ELEMENT
PLANT LIFE

DRAWING NO. 16844

SHEET NO. 1 OF 2

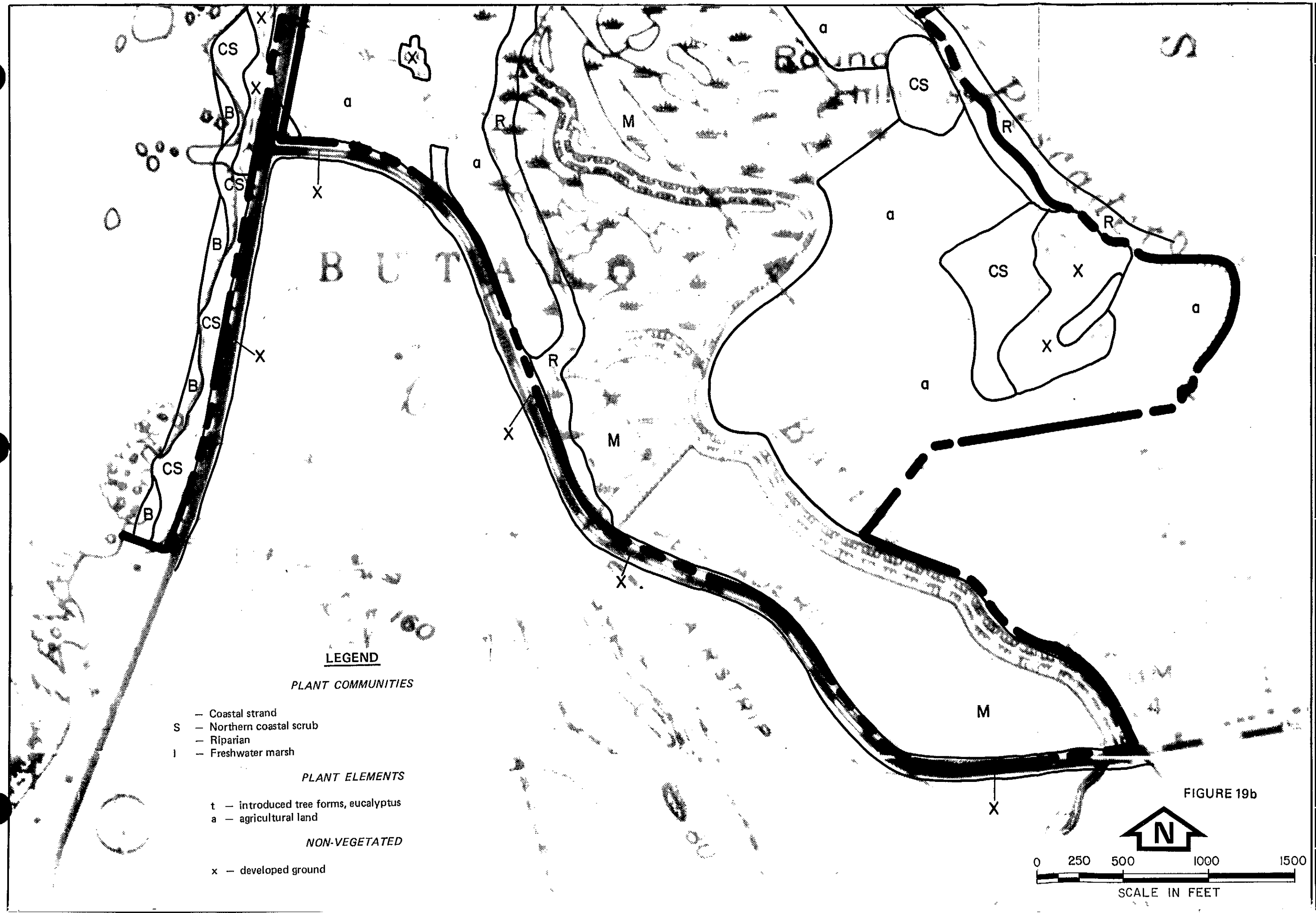

FIGURE 19b

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DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED_____ DATE_____

PESCADERO STATE BEACH
RESOURCE ELEMENT
PLANT LIFE

DRAWING No.
16844

SHEET No.
2 OF 2

LEGEND

(Allowable Use Intensity)

*EXAMPLES OF TYPES OF USE**

HIGH — High density camping, group camping, picnicking, beach use, day use parking, amphitheatre, boat launching.

MODERATE — Low density camping, walk-in camping, picnicking, small staging area for hikers and equestrians, interpretive displays.

LOW — Hiking and equestrian trails.

PRINCIPAL LIMITATIONS AFFECTING SCOPE & DESIGN

P — Physical (soils, slope, high tides, flooding, etc.)
B — Biotic sensitivity
C — Cultural sensitivity
S — Scenic (area visible from major vantage points)
A — Prime agriculture

*These uses will promote the indicated intensity but are not necessarily the approved uses for the area.

State Beach Boundary

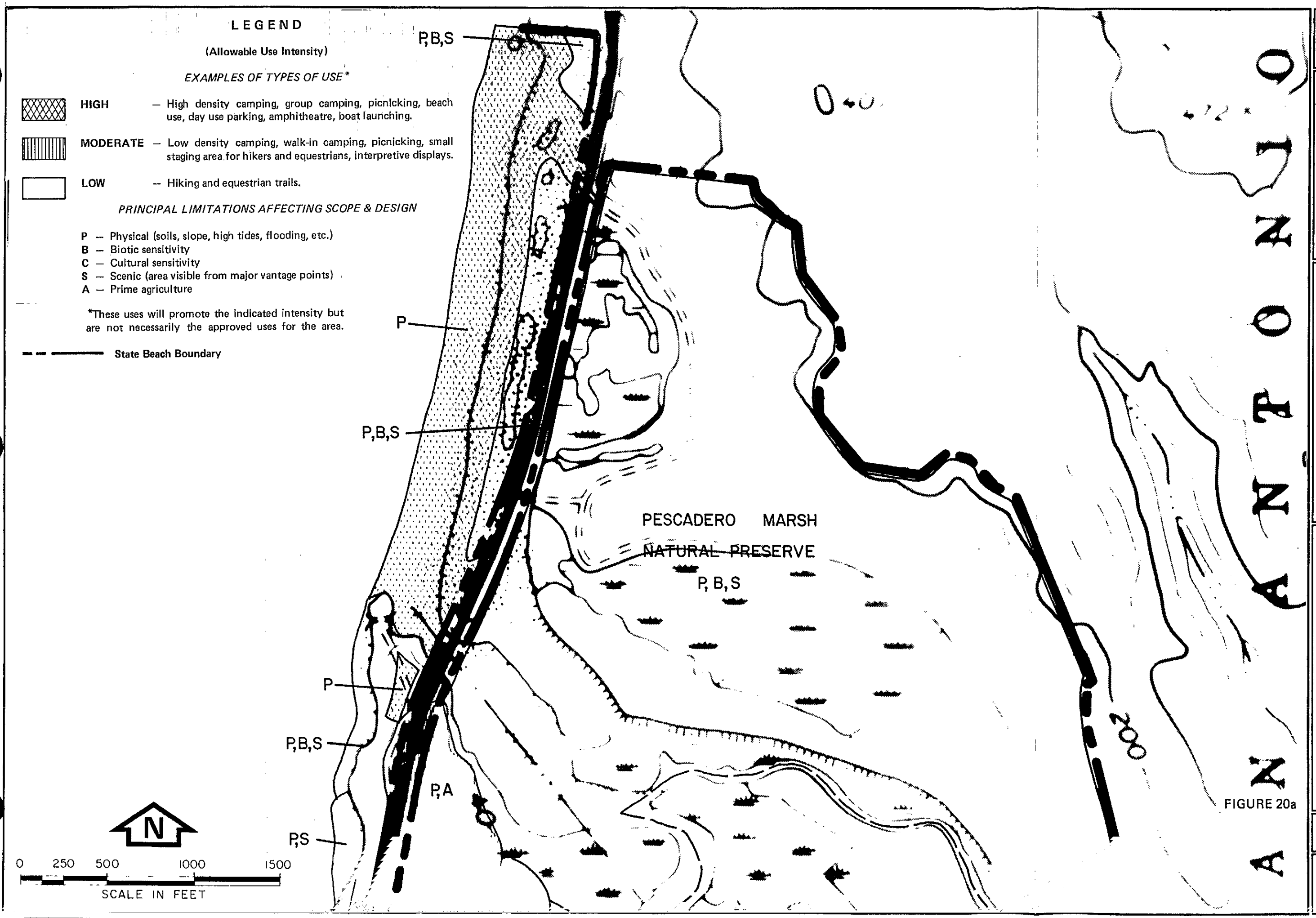

FIGURE 20a

DESIGNED
DRAWN
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DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

PESCADERO STATE BEACH
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE

DRAWING NO.
16844

SHEET NO.
2 of 2

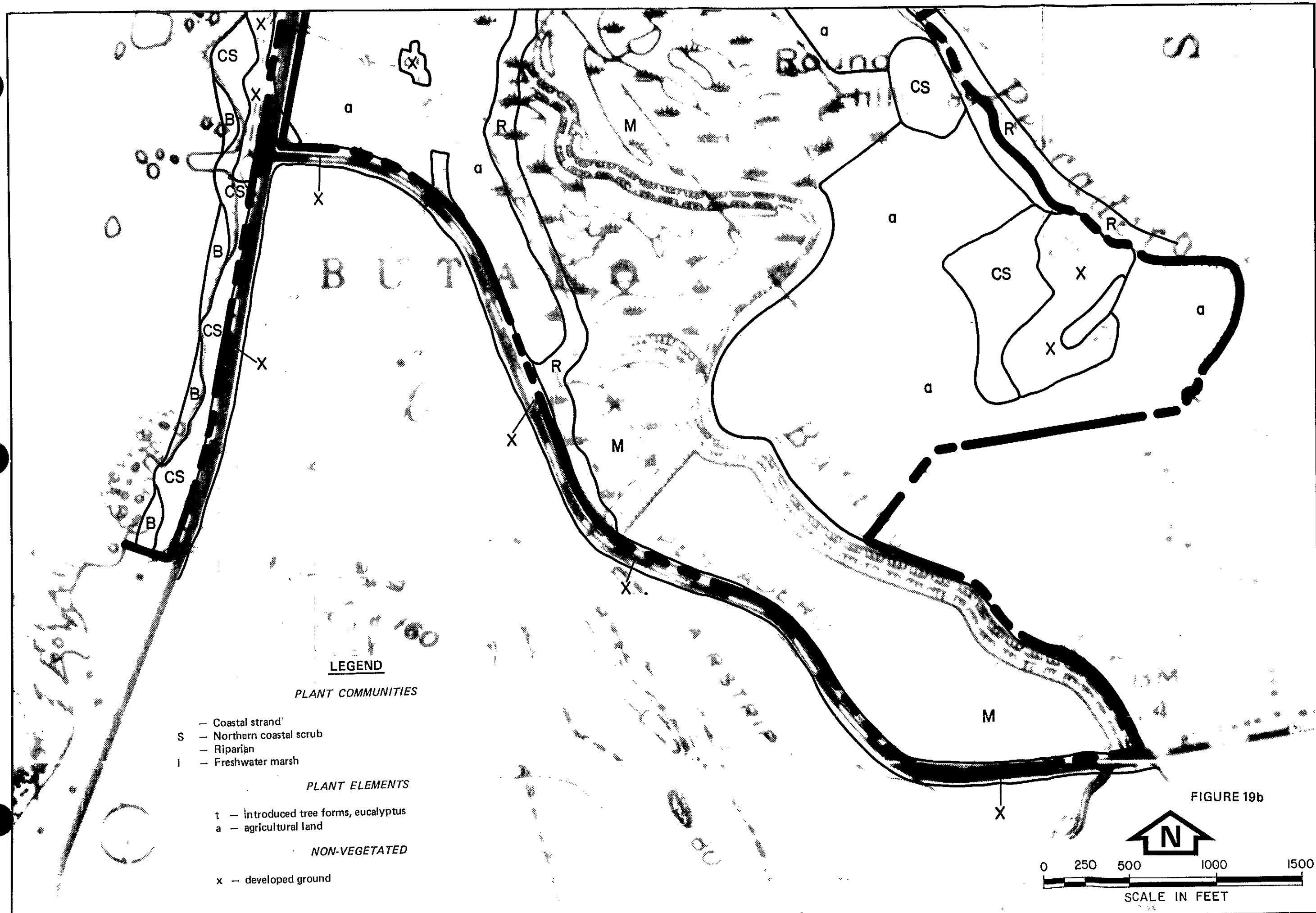


FIGURE 19b

DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED ____ DATE ____

PESCADERO STATE BEACH
RESOURCE ELEMENT
PLANT LIFE

DRAWING No. 16844

SHEET No. 2 OF 2

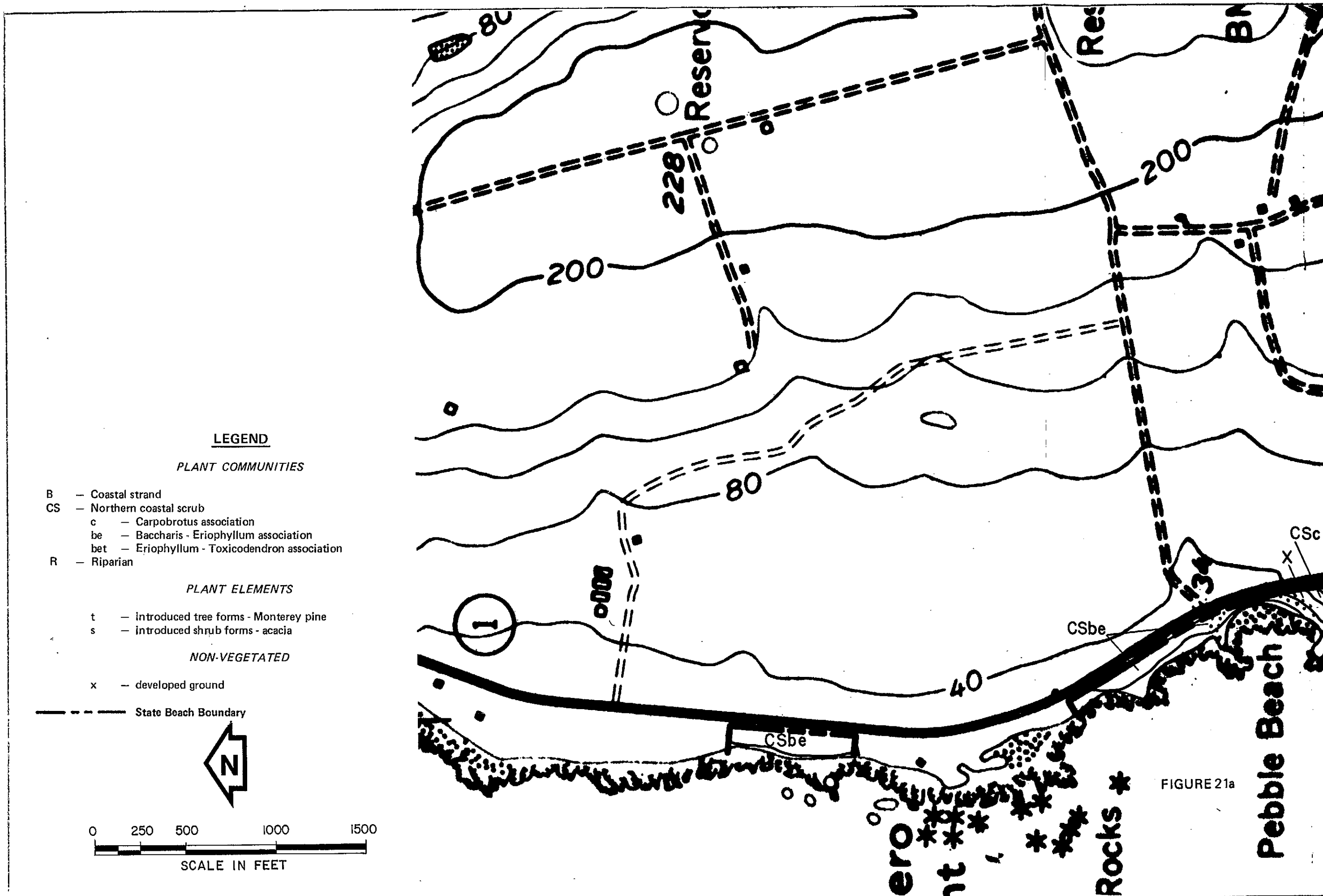


FIGURE 21a

LEGEND

PLANT COMMUNITIES

B — Coastal strand
CS — Northern coastal scrub
- c — Carpobrotus association
- be — Baccharis - Eriophyllum association
- bet — Eriophyllum - Toxicodendron association

R — Riparian

PLANT ELEMENTS

- t — introduced tree forms - Monterey pine
- s — introduced shrub forms - acacia

NON-VEGETATED

- x — developed ground

State Beach Boundary

N

0 250 500 1000 1500
SCALE IN FEET

DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED _____ DATE _____

BEAN HOLLOW STATE BEACH
RESOURCE ELEMENT
PLANT LIFE

DRAWING No
16844

SHEET No
1
OF
2

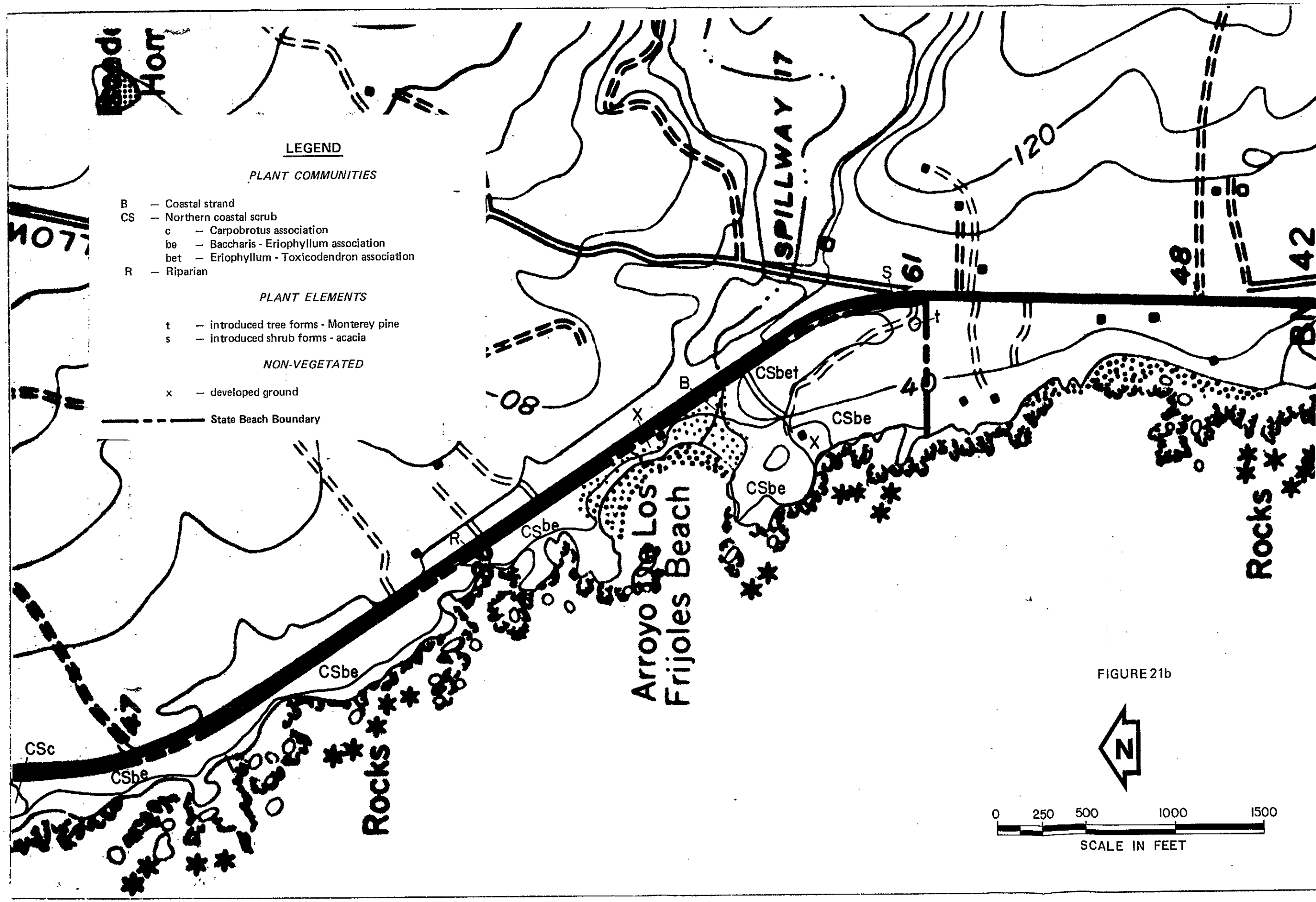


FIGURE 21b

DESIGNED
DRAWN
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED _____ DATE _____

BEAN HOLLOW STATE BEACH
RESOURCE ELEMENT
PLANT LIFE

DRAWING No
16844

SHEET No
2 of 2

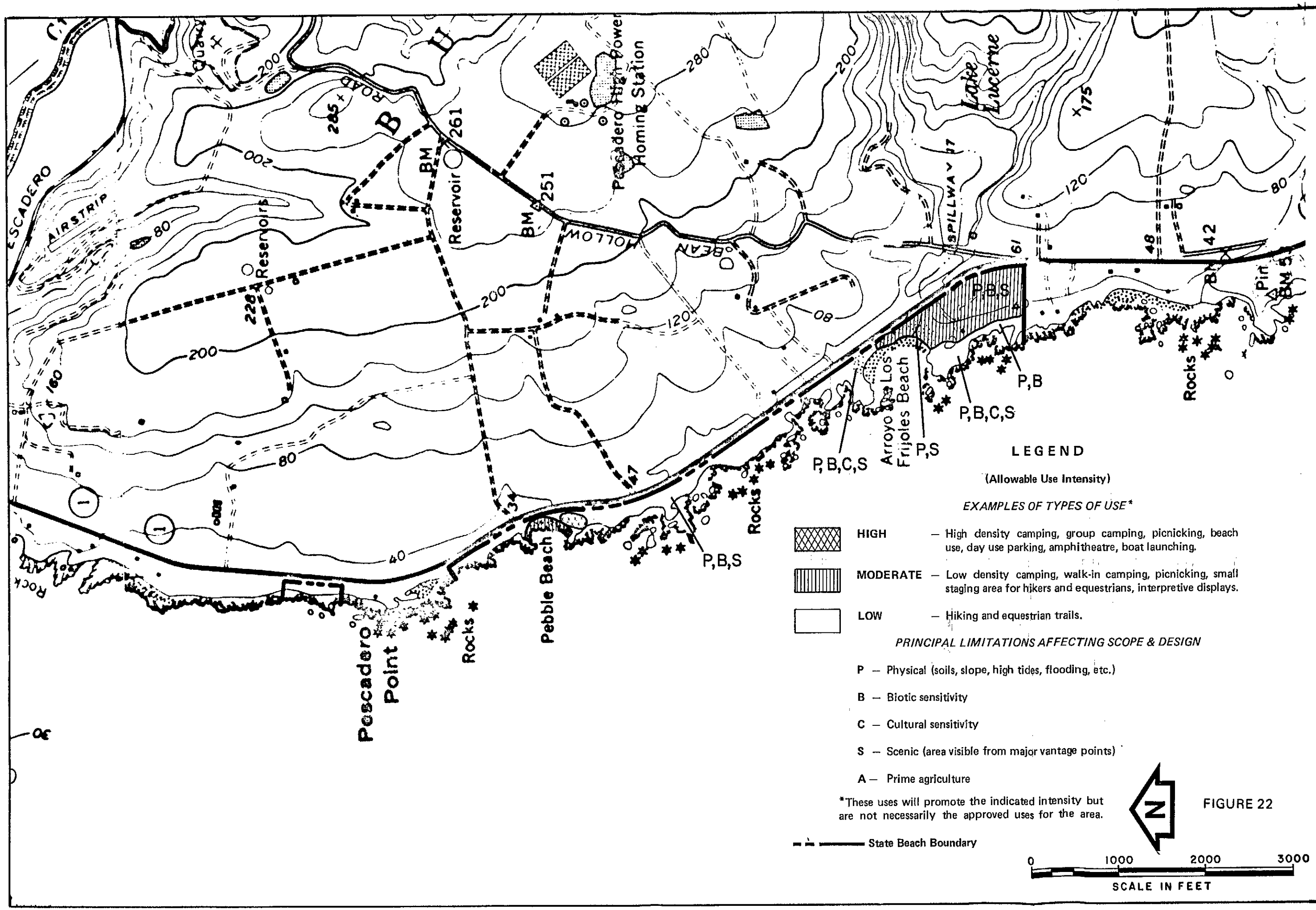


FIGURE 22

DESIGNED
DRAWN
CHECKED
REVISIONS
DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED DATE

BEAN HOLLOW STATE BEACH
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE

DRAWING No. 16844

SHEET No. 1 OF 1

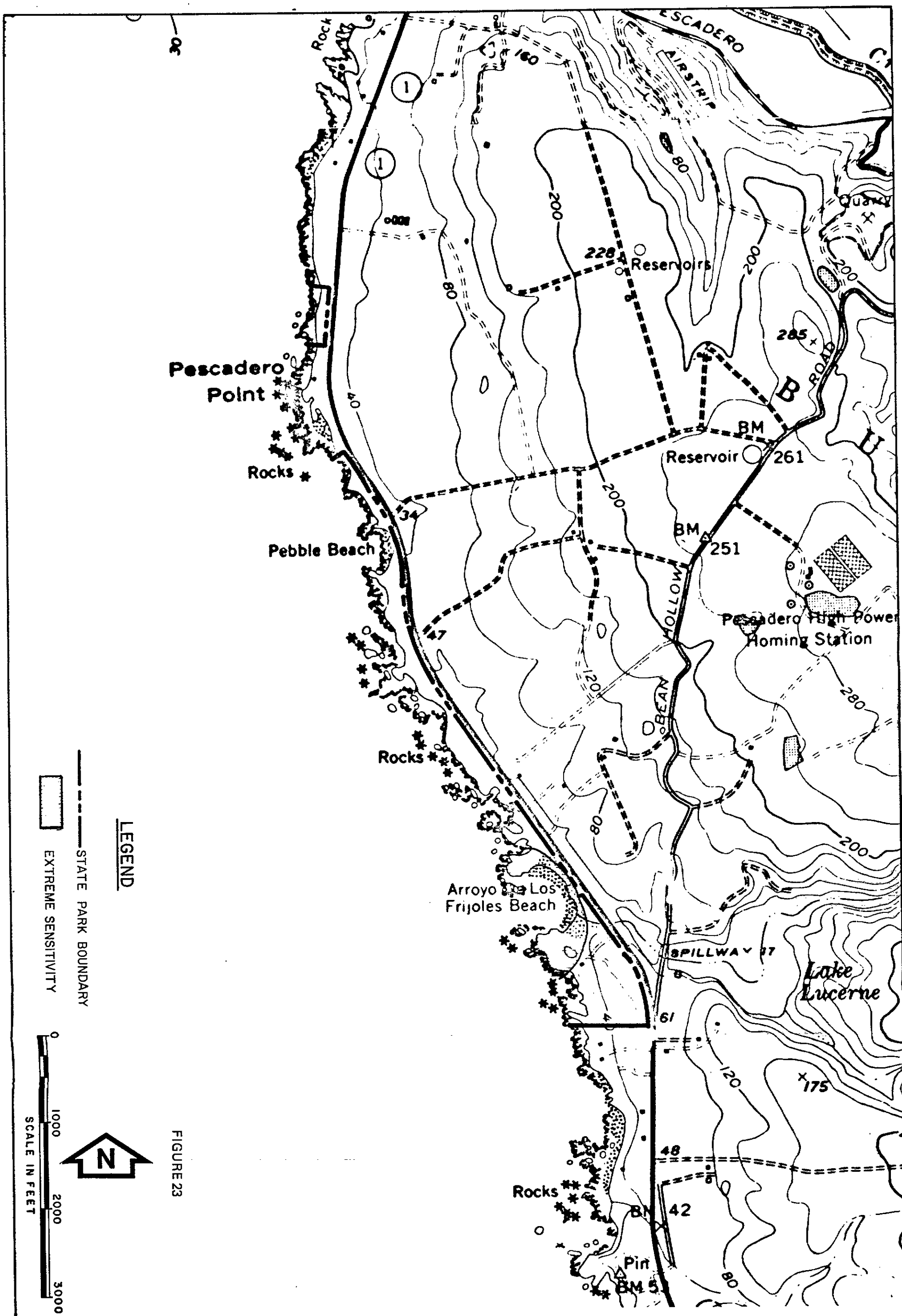


FIGURE 23

SHEET NO.	DRAWING NO. 16844	BEAN HOLLOW STATE BEACH RESOURCE ELEMENT CULTURAL RESOURCE SENSITIVITY	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION APPROVED ____ DATE ____	REVISIONS / DATE DESIGNED DRAWN CHECKED

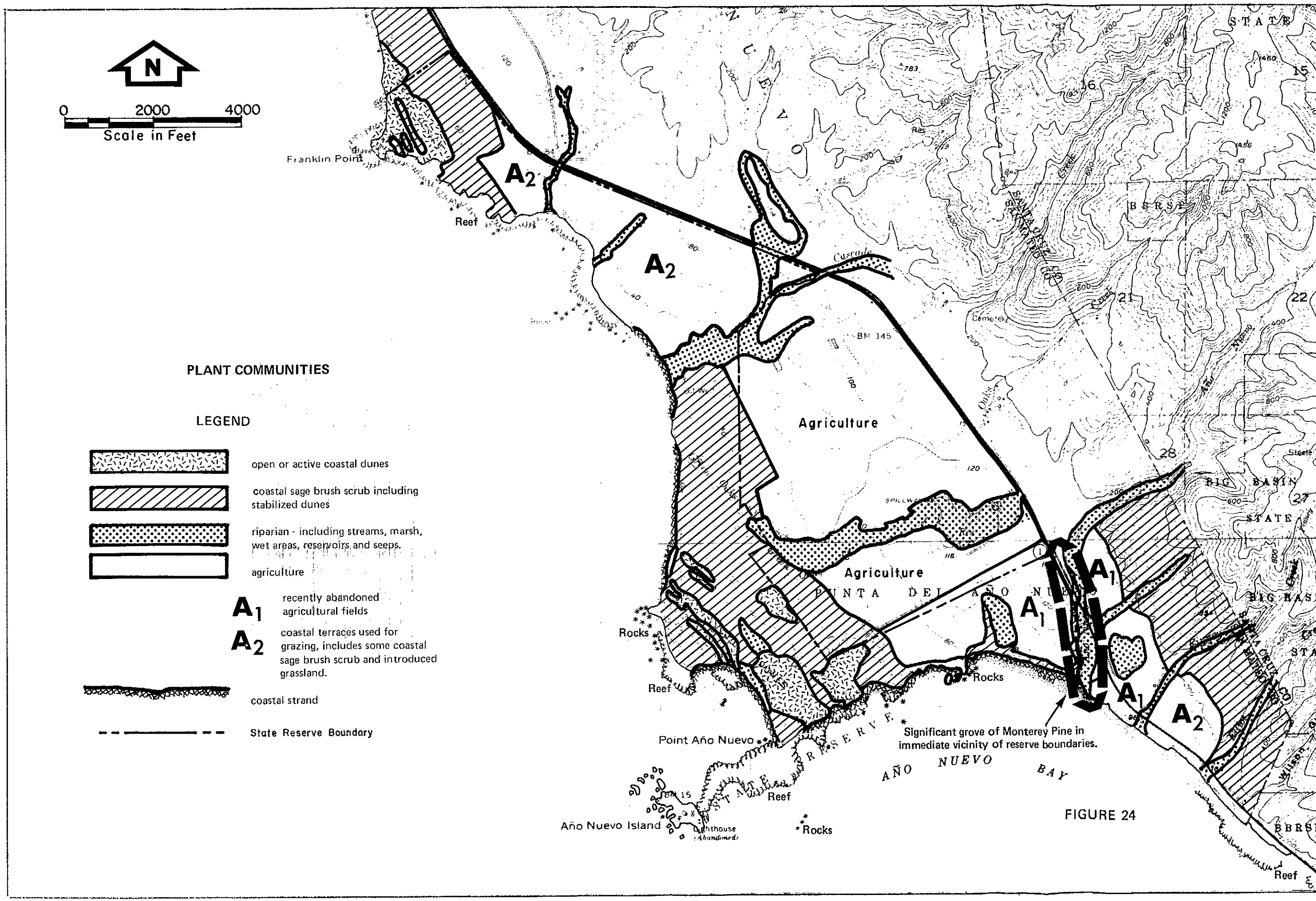


FIGURE 24

DESIGNED	
DRAWN	
CHECKED	
DATE	
REVISIONS	

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

APPROVED _____ DATE _____

AÑO NUEVO STATE RESERVE
PLANT COMMUNITIES
FIGURE

DRAWING NO. 16844

SHEET NO. OF

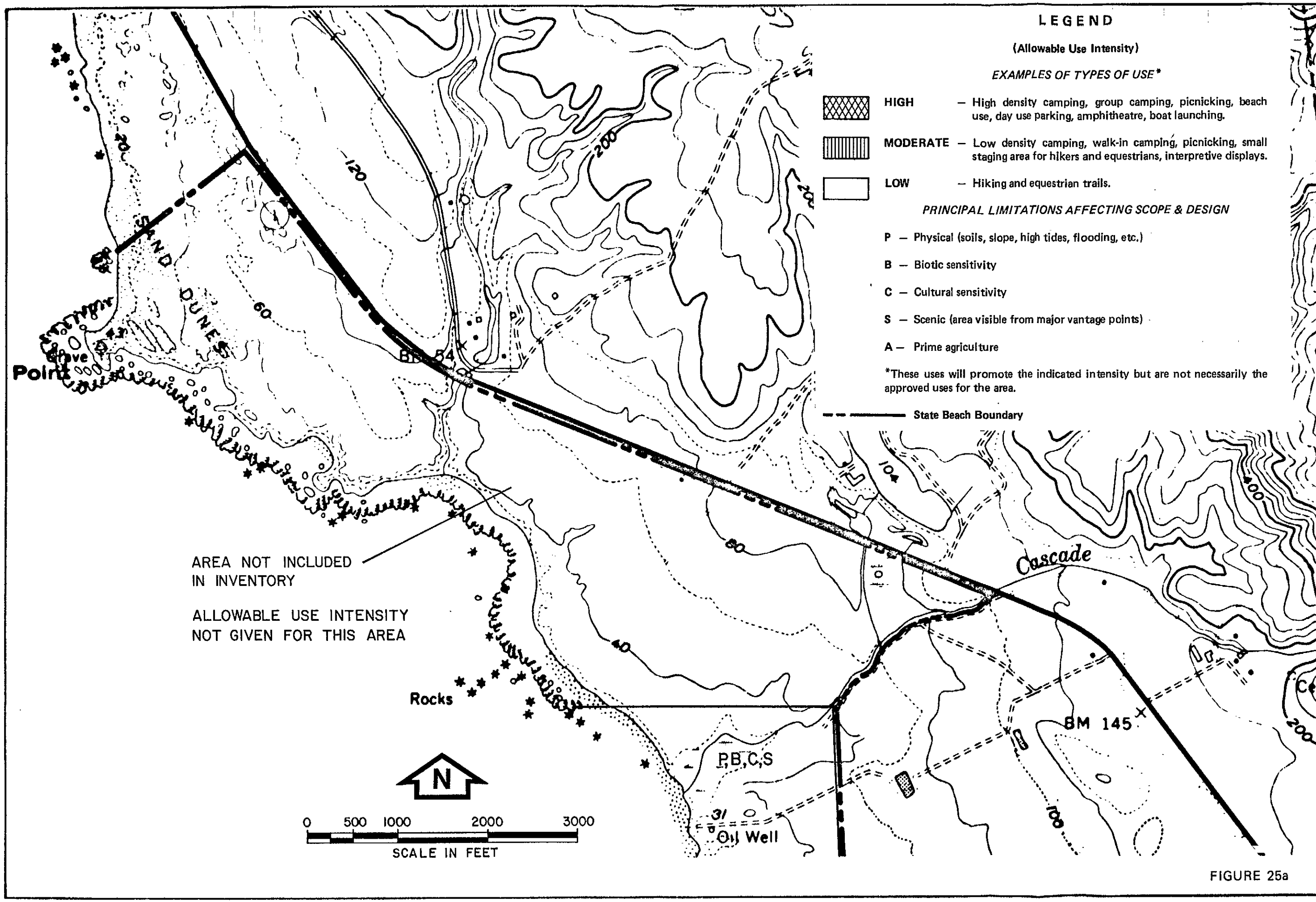

LEGEND
(Allowable Use Intensity)
EXAMPLES OF TYPES OF USE*
HIGH — High density camping, group camping, picnicking, beach use, day use parking, amphitheatre, boat launching.
MODERATE — Low density camping, walk-in camping, picnicking, small staging area for hikers and equestrians, interpretive displays.
LOW — Hiking and equestrian trails.
PRINCIPAL LIMITATIONS AFFECTING SCOPE & DESIGN
P — Physical (soils, slope, high tides, flooding, etc.)
B — Biotic sensitivity
C — Cultural sensitivity
S — Scenic (area visible from major vantage points)
A — Prime agriculture
*These uses will promote the indicated intensity but are not necessarily the approved uses for the area.
State Beach Boundary
SAND DUNES
Grove Point
BM 54
Cascade
BM 145
Rocks
P,B,C,S
Oil Well
AREA NOT INCLUDED IN INVENTORY
ALLOWABLE USE INTENSITY NOT GIVEN FOR THIS AREA
N
0 500 1000 2000 3000
SCALE IN FEET
DESIGNED
DRAWN
CHECKED
DATE
REVISIONS
RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE
ANO NUEVO STATE RESERVE
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE
DRAWING No.
16844
SHEET No
1
of
2

FIGURE 25a

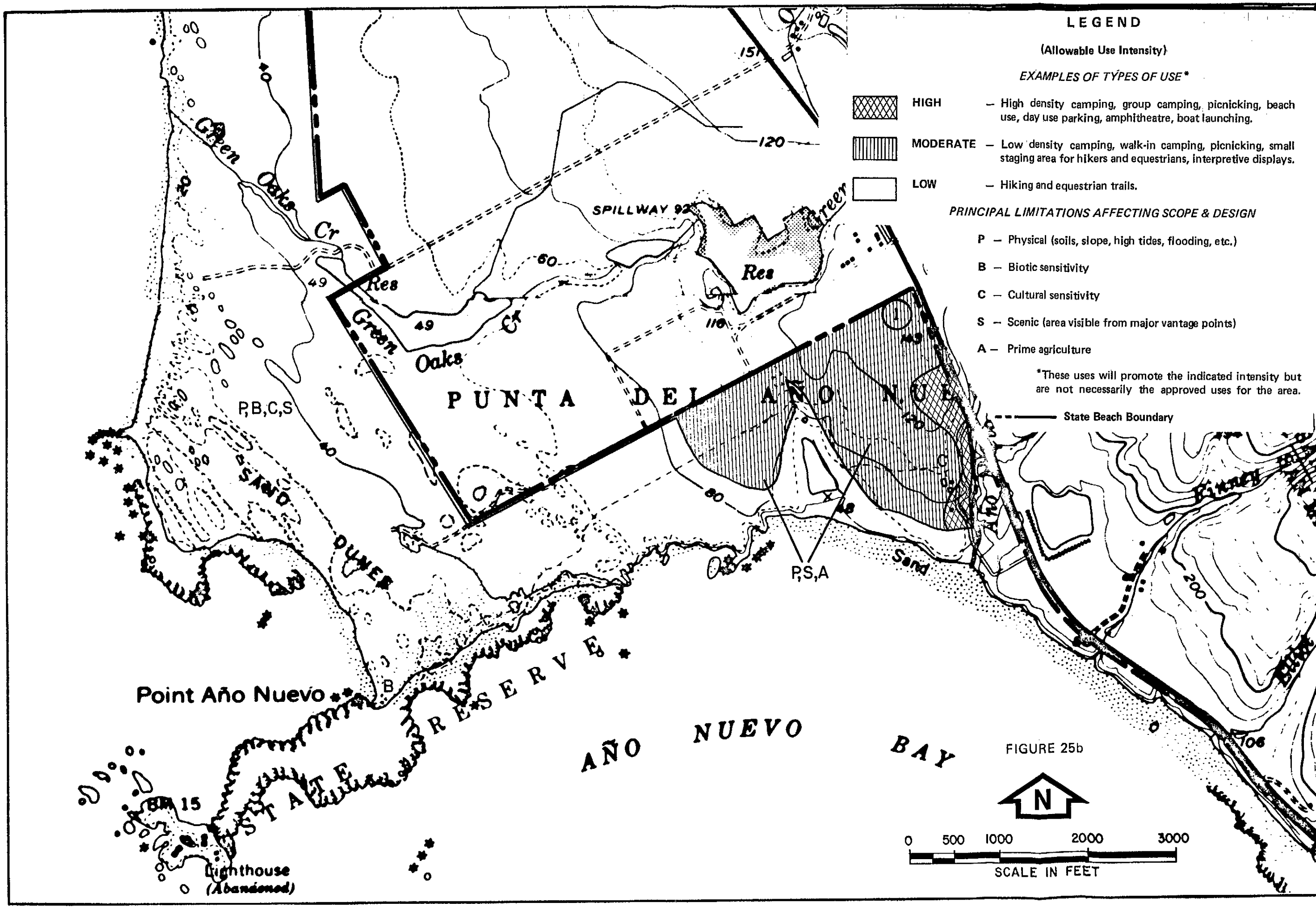


FIGURE 25b

DESIGNED | DRAWN | CHECKED

DATE | REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

APPROVED | DATE

ANO NUEVO STATE RESERVE
RESOURCE ELEMENT
ALLOWABLE USE INTENSITY
FIGURE

DRAWING No. 16844

SHEET No. 2 of 2

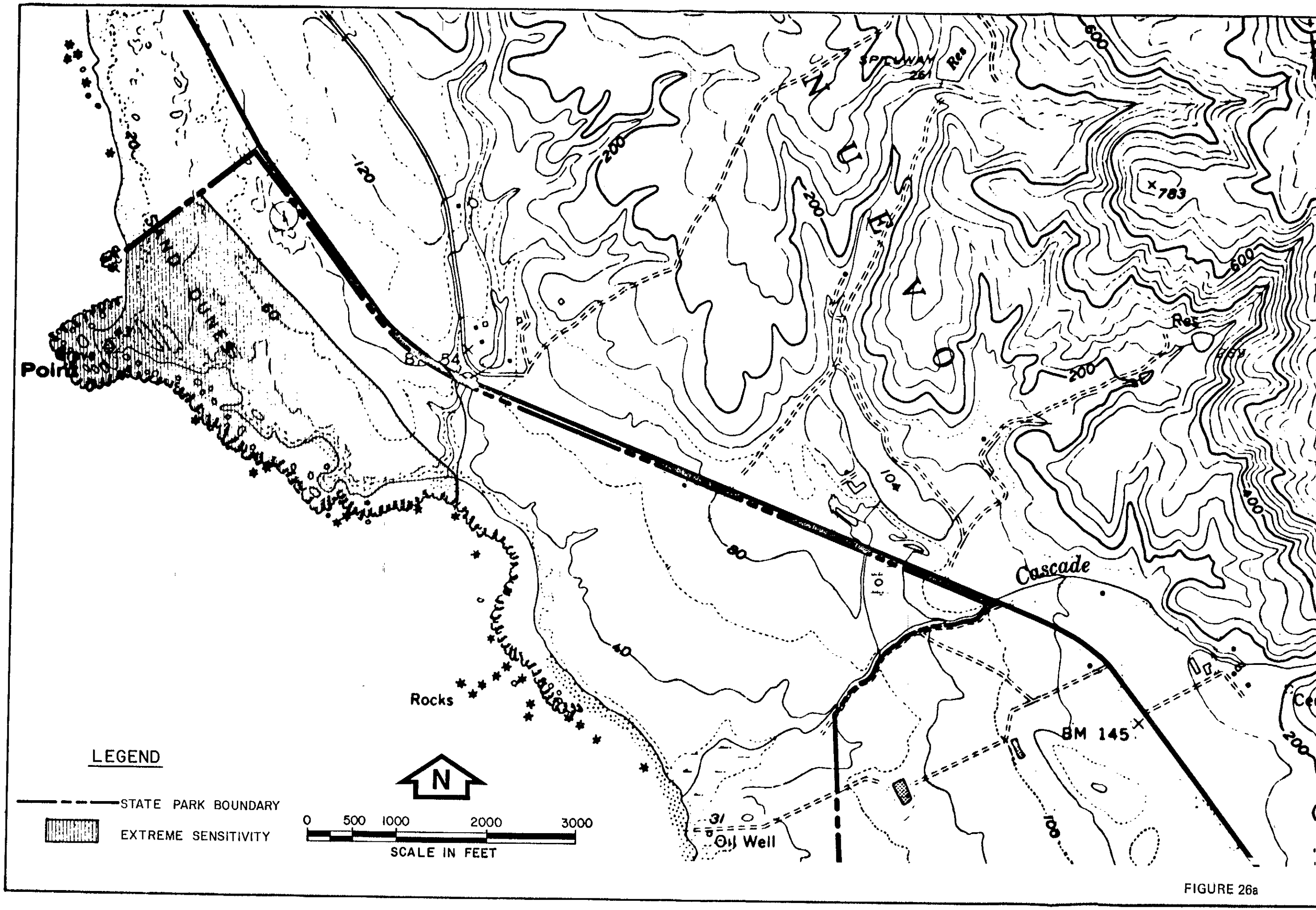


FIGURE 26a

DESIGNED
DRAWN
CHECKED

REVISIONS | DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED ____ DATE ____

ANO NUEVO STATE RESERVE
RESOURCE ELEMENT
CULTURAL RESOURCE SENSITIVITY

DRAWING No. 16844

SHEET No. 6F

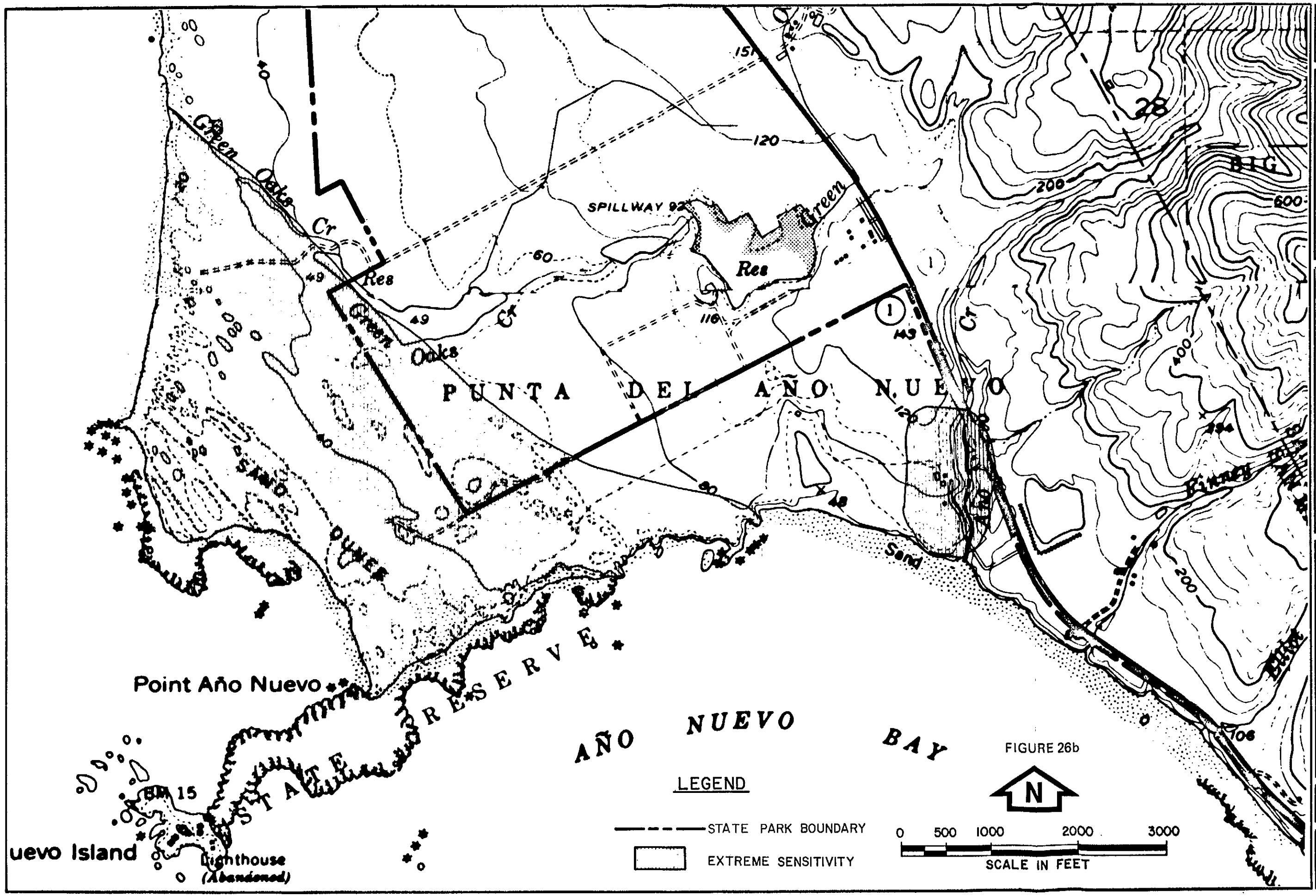


FIGURE 26b

DESIGNED | DRAWN | CHECKED

DATE | REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

APPROVED _____ DATE _____

ANO NUEVO STATE RESERVE
RESOURCE ELEMENT
CULTURAL RESOURCE SENSITIVITY

DRAWING No. 16844

SHEET No. of

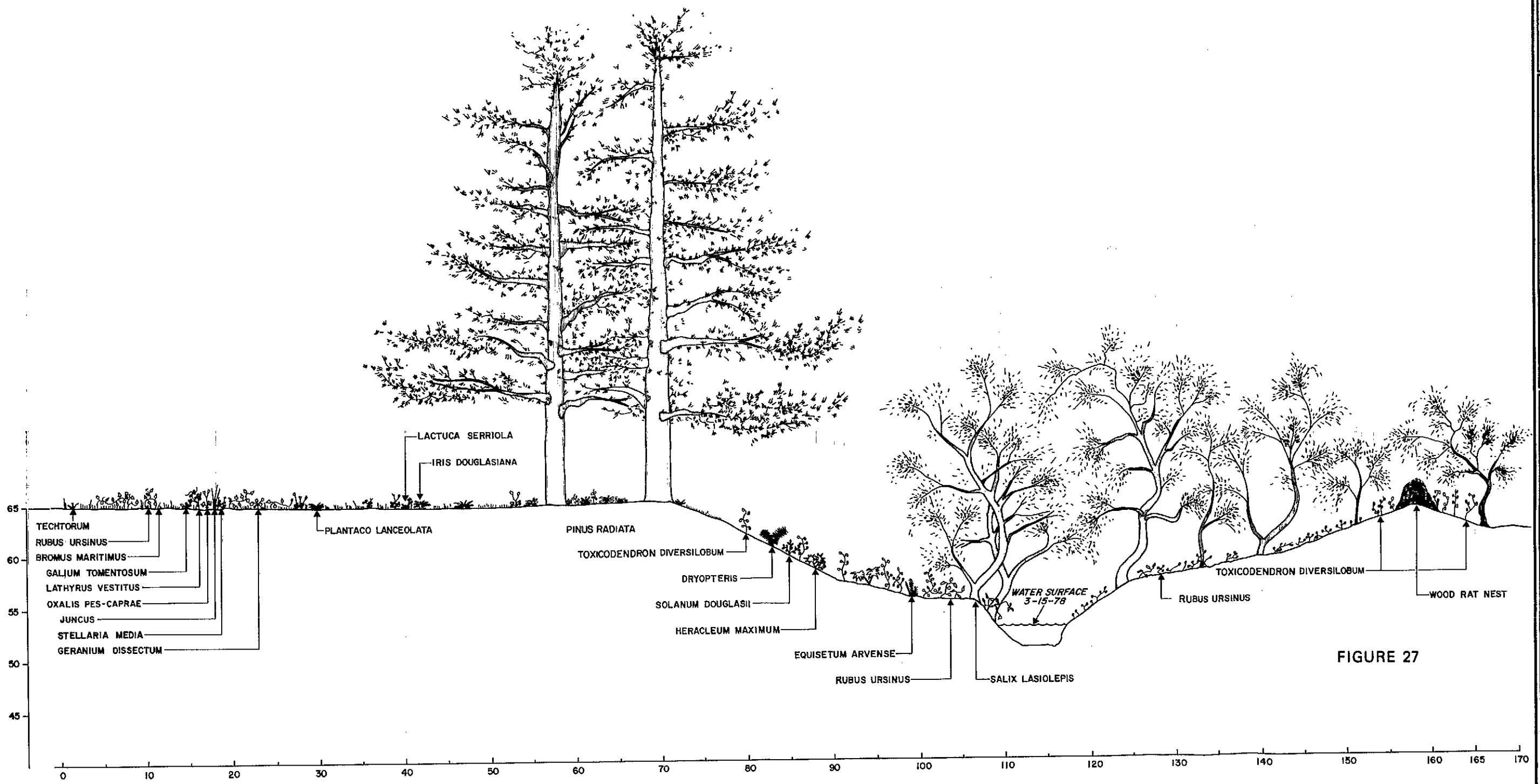


FIGURE 27

SCALE
VERT. 1"=5'
HORIZ. 1"=6'

SECTION THROUGH CASCADE CREEK

DESIGNED A.T.JADEN
DRAWN A.T.JADEN
CHECKED

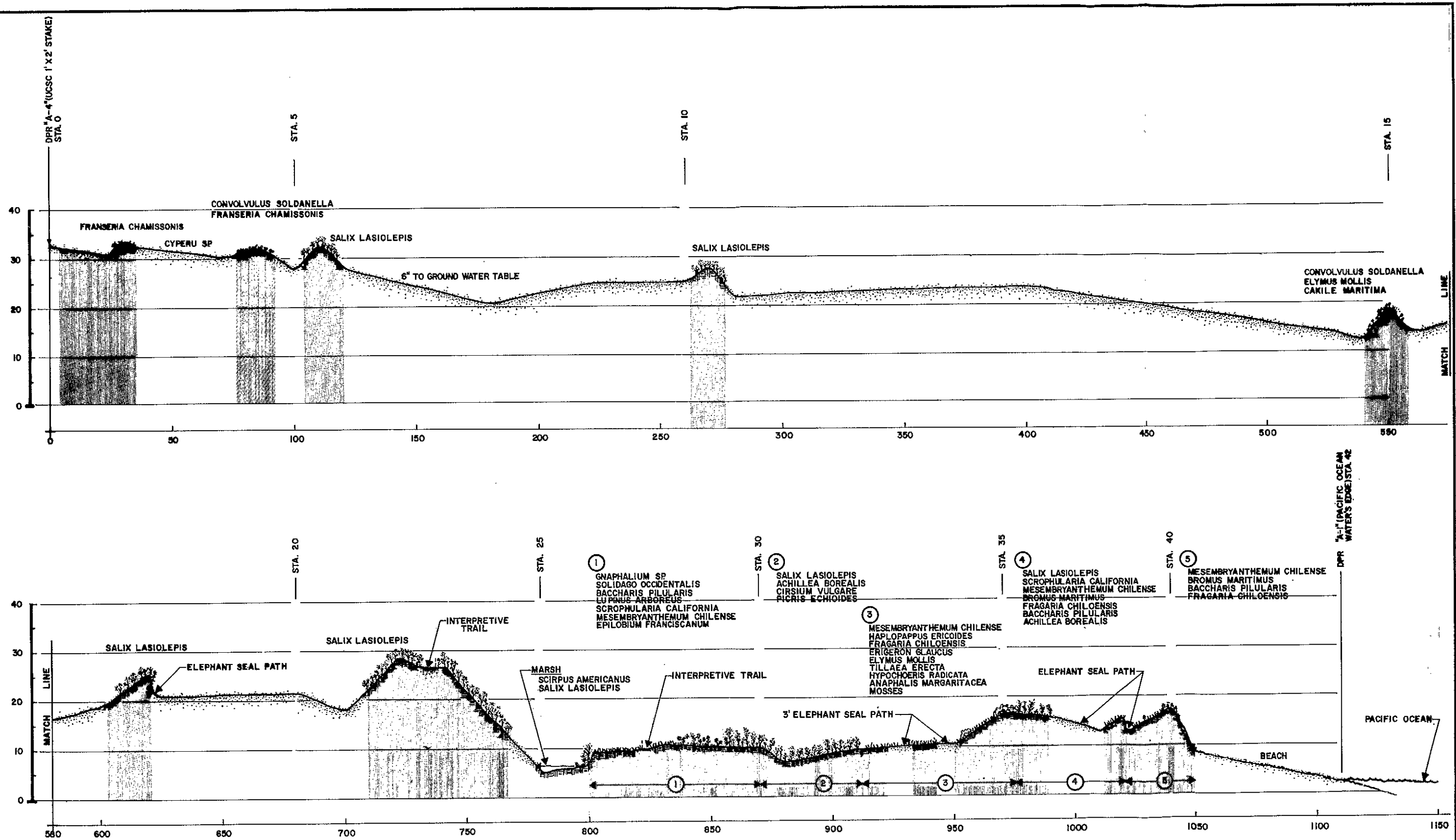
REVISIONS	DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED _____ DATE _____

ANO NUEVO STATE RESERVE
RESOURCE ELEMENT
SECTION THROUGH CASCADE CREEK

DRAWING No. 16844

SHEET No. 3 of 3



SECTION THROUGH DUNE AREA

SCALE = HORIZ: 1" = 20' VERT: 1" = 10'

FIGURE 28

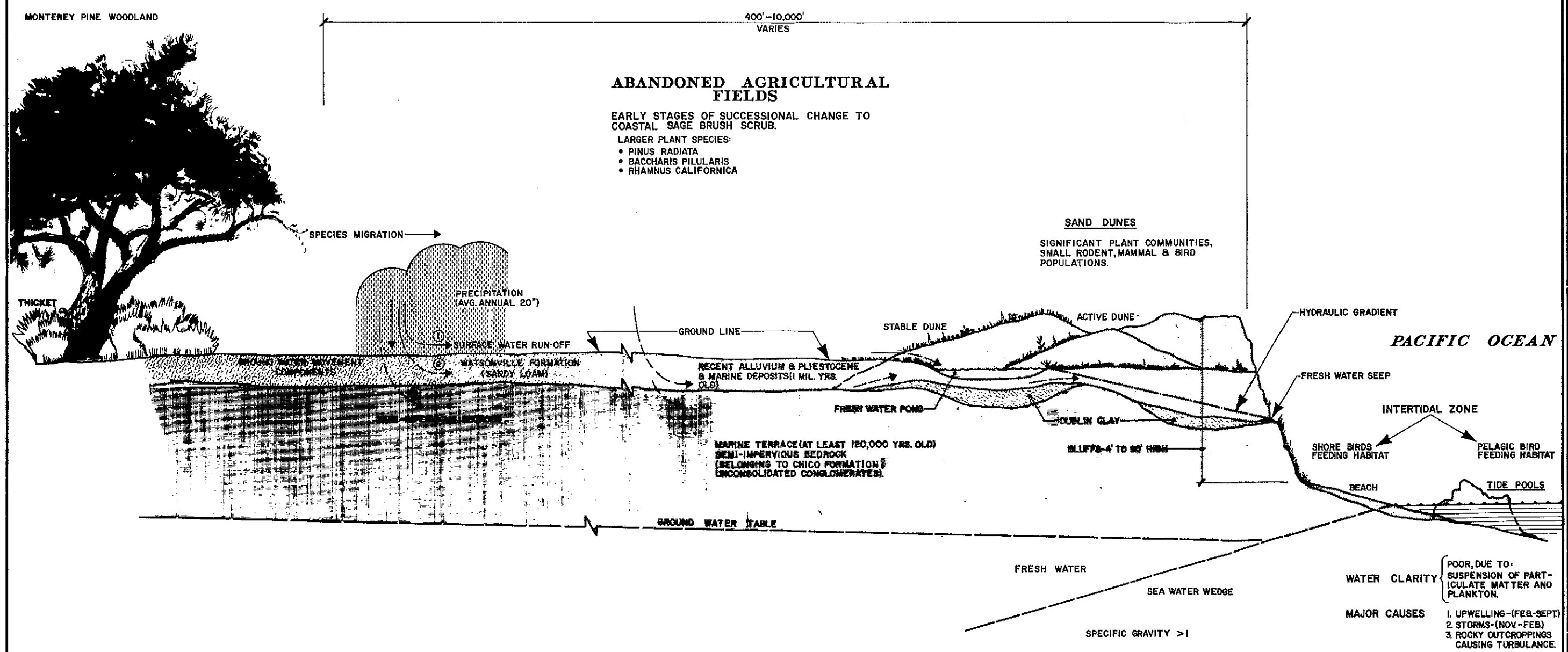
DESIGNED
DRAWN 4-78
CHECKED
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED DATE

ANO NUEVO STATE RESERVE
RESOURCE ELEMENT
SECTION THROUGH DUNE AREA

DRAWING No. 16844

SHEET No. 2 OF 3



TYPICAL SECTION

NOT TO SCALE

FIGURE 29

DESIGNED | DRAWN | CHECKED

REVISIONS | DATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

APPROVED _____ DATE _____

ANO NUEVO STATE RESERVE
RESOURCE ELEMENT
SECTION THROUGH RESERVE

DRAWING No. 16844

SHEET No. 1 of 3

LAND USE AND FACILITIES ELEMENT

LAND USE AND FACILITIES ELEMENT
FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Public Concerns

Findings: The public workshops held during the planning process indicated that there were four predominant public concerns along the San Mateo coast. They were: (1) traffic congestion; (2) water availability and sewer disposal; (3) loss of open space and natural or wildness values; and (4) lack of control of use, maintenance and cleanup. (This last item is discussed fully in the Operations Element, page 185.)

Conclusions: These public concerns are valid issues that can be established with factual data.

Recommendations: Future improvements should accommodate and redistribute the existing public use without increasing it. Such redistribution should encourage expansion of beach accommodations on the northern 20 miles of the San Mateo County coastline, and should discourage most expansion of beach accommodations on the south coast area.

In accordance with encouraging the use of beaches along the northern 20 miles of San Mateo County coastline to an appropriate maximum, it is recommended that active support be given to provision of all public accesses to beaches, as described in the Daly City, Pacifica, Half Moon Bay, and San Mateo County local coastal plans.

Traffic Congestion

Findings: The state planning team began a study of the traffic and parking situation and presented its findings in the July public workshops. Figure 30, "Traffic and Parking Investigation", summarizes the data gathered.

The investigation focused on a study area of mid-coast and south coast San Mateo County, and identified five major points of access for the area. These are: (1) State Highway 1, at the north of the study area at Devil's Slide; (2) State Highway 92, east of Half Moon Bay and west of Skyline Boulevard; (3) State Highway 84, east of San Gregorio and west of La Honda; (4) Pescadero Road, east of Pescadero and west of San Mateo County Memorial Park; and, (5) State Highway 1 at the south of the study area, at the San Mateo/Santa Cruz County line.

A proportional analysis of estimated 1977 CALTRANS traffic volumes places a percentage of traffic flow on each access point in relation to the total traffic entering or exiting the zone. Thus, as shown in the traffic summary table, figure 30, State Highway 1 north carries about 34 percent of the traffic entering or exiting the zone, State Highway 92 carries about 40 percent; State Highway 84, 8 percent; Pescadero Road, 4 percent; and State Highway 1 south, 14 percent.

Two other points of interest on State Highway 1, north of Highway 92 in Half Moon Bay, and just south of State Highway 92 and Half Moon Bay, account for 44 percent and 26 percent, respectively, of the traffic volume entering Highway 1 from Highway 92.

It should be noted that all major access roads and some roads in the study area experience near-maximum traffic volumes on busy weekends and holidays.

These large traffic volumes have contributed to much frustration for both local residents and visitors to the area. For the past three years, accident rates on State Highway 1 north of Half Moon Bay and State Highways 84 and 92 west of Interstate 280 have exceeded expected rates (as estimated by CALTRANS), for similar roads elsewhere in the state.

Park and Recreation Information System (PARIS) data developed by the State Department of Parks and Recreation indicates recreation deficiencies in camping and picnicking facilities on the San Mateo coast. The PARIS figures are intended to provide only a relative indication of recreation needs, and are not to be used as absolute numbers of facilities needed in San Mateo County.

The visitor attendance chart, figure 31, shows the popularity of the San Mateo Coast.

Recreation Facilities Needed
to Meet the Demands of Planning District 4*

Total Facilities Needed:				
Year 1970	1,217	1,760	1,808	321
Year 1970	1,598	2,309	2,370	421
Year 1990	2,094	3,022	3,105	552
Existing Facilities:				
Year 1970	207	1,647	1,953	267
Year 1980	207	1,647	1,953	267
Year 1990	207	1,647	1,953	267
Additional Facilities Needed:				
Year 1970	1,010	113	-145	54
Year 1980	1,391	662	417	154
Year 1990	1,887	1,375	1,152	285

*Planning District 4 includes Sonoma, Napa, Solano, Marin, Contra Costa, San Francisco, Alameda, Santa Clara, and San Mateo counties.

Recreation needs, and visitor attendance are reasons for the traffic congestion problems.

The following information is supplied from the CALTRANS District IV office in San Francisco, summarizing planned highway improvements in the next five year plan. It should be noted all planned improvements are reviewed by the Metropolitan Transportation Commission, and priorities are based on needs of the entire Bay Area.

Highway 1: Improvements on Highway 1 include minor safety and operation minor improvements from Sharp Road to San Pedro Road, including widening existing 4-lane undivided roadway to a 4-lane divided highway within the next five years.

FIGURE 31a
SAN MATEO COAST AREA
DAY USE FACILITIES USED DURING 1978

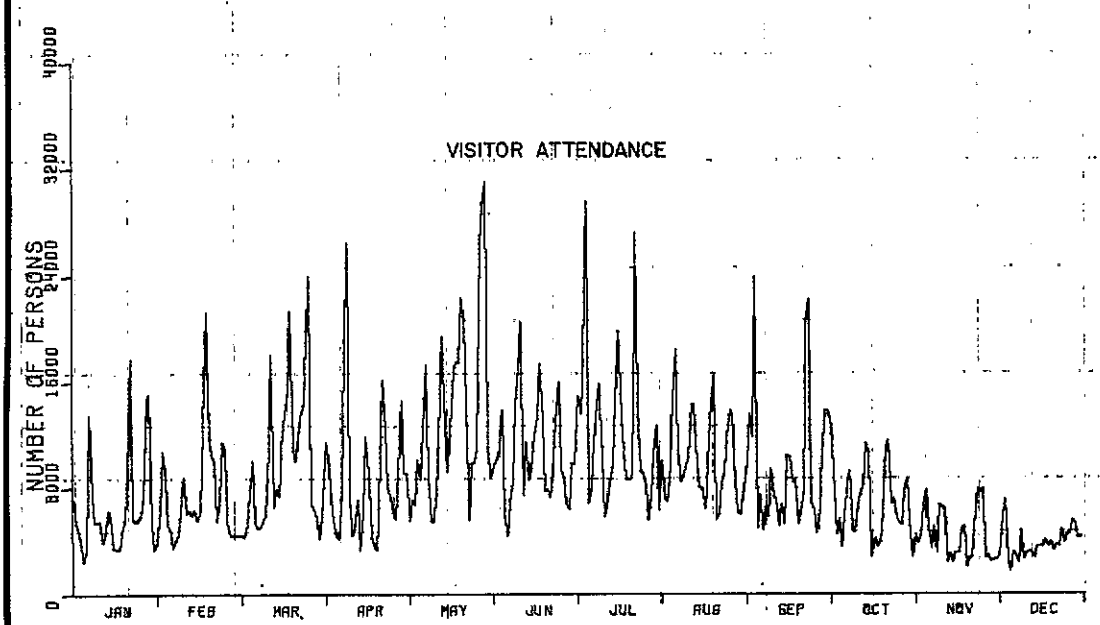
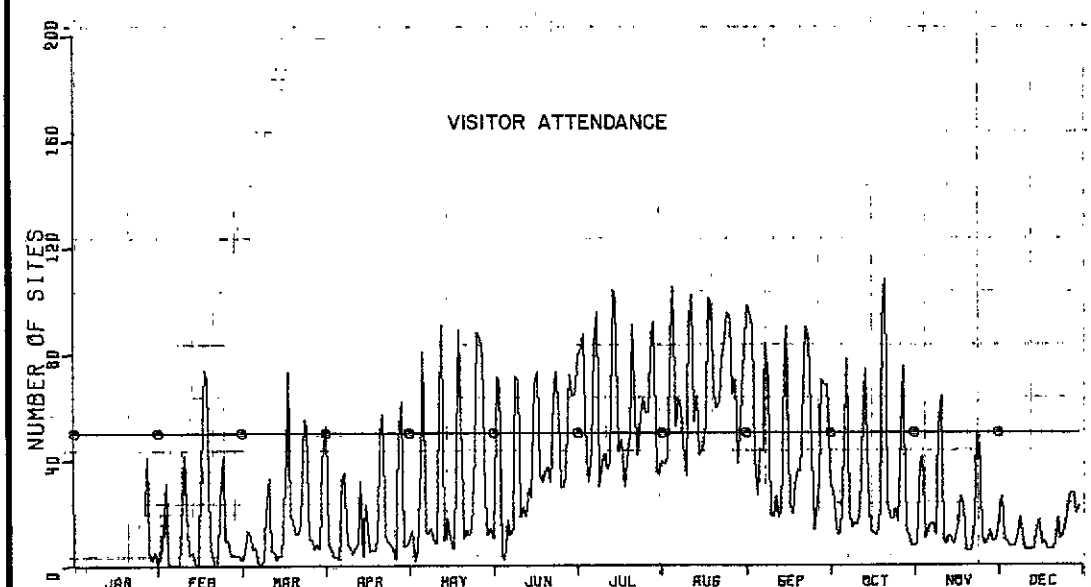


FIGURE 31b
SAN MATEO COAST AREA
FAMILY CAMP UNITS USED DURING 1978
CAMPING CAPACITY - 60 SITES



Highway 1 in the Devil's Slide area has an EIR process started. It will be two years before a decision is made regarding an alignment for improvements in the area. There are no dollars appropriated for improvements within the next five years. Funding is required. The remainder of Highway 1 to the south has minor resurfacing and/or erosion control developments planned; no other improvements are anticipated.

Highway 380 from 280 to Highway 1: A planning route has been tentatively adopted. There is controversy over the EIR. The route has been adopted on paper only; within one year a decision will be made as to whether to drop the planned alignment or to accept its proposal. There is no planned development within the next five years for Highway 380.

Highway 92: There are planned truck-climbing lane improvements to be made within the next three years and resurfacing between Highway 1 and Highway 280.

Highway 84 from La Honda to 280: There will be widening from the existing width to approximately a 28-foot wide section, including shoulder improvements, all to be done within the next five years. From La Honda to Highway 1 there are no planned improvements within the next five years.

Parking: The parking situation for state units on the San Mateo County coast, including vehicle spaces for camping, is summarized in the following table:

Beach Unit	Existing Parking on State Land	(Vehicles Overnight)	Total Parking Daytime/ Overnight	Proposed Total Parking on State Land	(Vehicles Overnight)
Thornton	150	(0)	200	175	(30)
Montara	*15	(0)	500	**330	(75)
Half Moon Bay	440	(51)	1,200	1,000	(170)
San Gregorio and Pomponio	310	(0)	1,100	450	(40)
Pescadero	288	(0)	400	445	(0)
Bean Hollow	49	(0)	350	80	(0)
Ano Nuevo	100	(0)	350	305	(0)
	1,300	(51)	4,050	2,785	(310)

* Does not include 240-vehicle parking on private land at Gray Whale Cove
** Includes 20 vehicles for hostel at Montara Lighthouse

There are 1,410 day-use vehicle and 51 camping-vehicle parking spaces now provided by all state units, from Thornton State Beach on the north to Ano Nuevo on the south. On peak use days, it is estimated that more than 4,000 vehicles are parking, either legally or illegally, on public or privately owned land.

Parking deficiency for the San Mateo Coast area relative to nationwide standards for recreation capacity of beaches helps to explain this context of beach use intensity. Beach capacity standards (100 square feet per person) would require 38,210 parking spaces, or 12 times the number proposed by this plan. This plan does not base the parking needs on recreation carrying capacity for beaches, but rather, on the existing physical and psychological constraints pointed out by concerned citizens.

It is a mistake to perceive the proposals and recommendations of this plan in the context of standard beach recreation carrying capacity, because these plans propose all facilities in a context of far less intensive use.

The public concerns about more parking are valid; the recreation capacity for the San Mateo Coast area is low density compared with other recreation beaches in California, but parking is still deficient.

Conclusions: Nearly three-quarters of the traffic on the 50-mile length of the San Mateo coast enters the coastal area within the northern 20 miles of the county, via State Highway 1 through Devil's Slide, and State Highway 92 through Half Moon Bay.

The existing number of parking spaces on state beach property does not accommodate the number of vehicles now entering the San Mateo Coastal Zone.

Recommendations: It is recommended that parking and support facilities be increased to an appropriate maximum throughout the northern 20 miles of the San Mateo coast. An appropriate maximum implies minimal environmental impact, no change of land form, and enhancement of vegetation in and around the facilities constructed to accommodate cars and people. Additional parking in this region should reduce unnecessary motoring through midcoast communities for visitors seeking beach access.

Conclusion: Traffic congestion can be reduced, and more people can get to the beaches, if fewer people come in cars.

Recommendation: Encourage people to take buses to the beach. Allow free admittance to beaches by bus users. Make beach bus stops adjacent and handy to beach access. Provide convenient service to all state beaches. Provide free and safe parking at Thornton State Beach or Daly City area for bus users.

Recommendation: Encourage bicycling and hiking to the beach. Allow free admittance to beaches by bikers and hikers. Implement the proposed hostel plan, which recommends hostels at Pigeon Point and Montara lighthouses. Implement the bicycle trails plan, which recommends bicycle trails on the CALTRANS right of way and in State Park System units along the San Mateo Coast.

Conclusion: A level of frustration occurs with weekend peaks of traffic congestion. Rather than fight traffic to the San Mateo coast beaches, people may pursue alternative kinds of recreation.

Recommendation: Increase public information about traffic congestion, to enable people to make a choice of what they do and where they go, based on accurate traffic information and beach accessibility. Radio broadcasts, computer signs, and telephone information centers should be provided on the San Mateo Coast.

Conclusion: Entrances to state-owned beaches cause varying degrees of traffic congestion, because of poor entrances and exits off Coast Highway 1. These entrance and exit areas are hazardous. It is currently difficult to tell the difference between a public beach access point and a privately-owned driveway.

Recommendation: Improve all proposed entrances and exits, to include highway markings, signs, traffic signal lights, left turn lanes, acceleration and deceleration lanes, sight distances, and speed limits, to meet high-quality safety standards. Restrict vehicle access in unauthorized areas through the use of signing, vehicle barriers, gates, fences, and enforcement of rules and regulations.

Future public information should better define:

(1) Legal public beach access points
(2) Public and private property boundaries
(3) Rules and regulations
(4) Availability of public parking spaces at each unit
(5) Road and traffic conditions

Water Availability and Sewage Disposal

Findings: Figure 32, "Domestic Water Availability Investigation", shows the existing San Mateo County Coastside Water District boundaries and groundwater basins.

The Daly City Municipal Water District now serves Thornton State Beach facilities. About 50 percent of the district's water comes from the San Francisco Water Department, and 50 percent from groundwater from wells.

The North Coast County Water District adjoins the proposed McNee Ranch addition to Montara State Beach. The district provides water to the City of Pacifica, and is dependent on the San Francisco Water Department for about 99 percent of its water. A small supply comes from creek diversion. Existing wells provide water to the inland properties of the McNee Ranch, while no water is available from Gray Whale Cove to about the center of Montara State Beach. Groundwater basins in the area have an unknown amount of sea water intrusion.

The Citizens Utility Company, which serves the community of Montara, relies solely on groundwater for its supplies. The district boundaries adjoin the McNee Ranch property on the south, and a portion of Montara State Beach.

The Coastside County Water District supplies the City of Half Moon Bay, El Granada, and Half Moon Bay State Beach facilities. About 65 percent of the water is obtained from the San Francisco Water Department, 25 percent from creek diversion, and 10 percent from wells. There are existing wells on Half Moon Bay State Beach property that have poor water quality.

Proposed expansion of the water district facilities has been denied by the Regional Coastal Commission, pending completion of the local coastal plan. The current system is considered to be at capacity use, and no new hookups are allowed.

There are no domestic water districts on the coast side from below Half Moon Bay to the south county line.

There are wells at each state unit from San Gregorio to Ano Nuevo of varying quantity and quality. Generally, flows are minimal.

Water had to be hauled by truck to the ranger residence at Bean Hollow State Beach for a year during the past drought, but flows have since resumed.

Saline water is used for washing and flushing of toilets at the Bean Hollow comfort station. No drinking water is available to the public at this unit.

San Gregorio, Pomponio and Pescadero state beaches have no public water facilities. Residents in the area are dependent on groundwater and stream diversions.

The groundwater quality in and around the community of Pescadero is so poor that the county requires all schools, restaurants, and other public facilties to import their water.

At Ano Nuevo State Reserve, existing wells support two ranger residences.

Numerous intermittent springs appear over the entire coastside hills and bluffs. Many of these are identified by mapping in "Soil Survey, San Mateo Area" (USDA and San Mateo County Soil Conservation District, January 1969).

The San Mateo County coastside sanitation districts are plotted in figure 33, following.

The North San Mateo County Sanitation District serves Daly City and Thornton State Beach.

The City of Pacifica Sanitation District adjoins the McNee Ranch on the north, but does not now provide service to the ranch.

The Montara Sanitation District includes all of Montara State Beach and Gray Whale Cove, and most of the McNee Ranch property. Currently, no state public beach facilities are connected to the district lines.

The Granada Sanitation District serves ranger residences on the north end of Half Moon Bay State Beach, and the community of El Granada.

The City of Half Moon Bay Sewer District processes the remainder of the Half Moon Bay State Beach sewerage.

There is an attempt underway to consolidate the Montara, Granada, and Half Moon Bay sewer districts. Problems related to the ocean discharge sites, plant capacities, and district boundaries have prolonged the consolidation effort. As with proposed water expansion, the Regional Coastal Commission has been reluctant to approve expansion of sewage facilties without an approved local coastal plan.

South of Half Moon Bay, there are no sewer districts on the coast side. Community and individual wastewater disposal has been accomplished most often with septic tanks and leachfields.

Wastewater pumped from chemical vault toilet facilities at Montara State Beach, San Gregorio State Beach, Pomponio State Beach, Pescadero State Beach, Bean Hollow State Beach, and Ano Nuevo State Reserve is hauled to Half Moon Bay for disposal.

Residences for state park personnel at Bean Hollow and Ano Nuevo have septic tanks and leachfields.

Figure 34, "Soil Type Table and Plot Plan", illustrates types of soils suitable for on-site wastewater disposal.

Soil types not listed or shown on the plot plans are deemed undesirable for on-site wastewater disposal. The final selection of disposal areas must be substantiated by field investigations and detailed soil analysis, including soil borings and percolation testing.

San Gregorio State Beach, Pomponio State Beach, Pescadero State Beach, and Ano Nuevo State Reserve all have soil types with slight to moderate restriction ratings for on-site wastewater disposal. Bean Hollow State Beach is the only unit south of Half Moon Bay with soil deemed unsuitable for wastewater disposal.

The following list of potential on-site wastewater disposal techniques is presented to illustrate the possibilities for units not served by a sewer district.

List of Potential On-site Wastewater Disposal Techniques

* Septic tank with leachfield
* Cluster leachfields (central leachfield area for more than one septic tank)
* Septic tank with mound system (mound leachfield of sand fill over otherwise unsuitable soil)
* Septic tank with sprayfields
* Overland flow (sheet flow of wastewater over sloping terraces, planted with water-tolerant grass)
* Ponds or lagoons (uses evaporation and/or percolation)
* Composting privies
* Septic tank with seepage pits
* Aquaculture (uses plant and animal life to treat water)
* Aqueonics (agitated septic tank, followed by chlorination and ozonation)
* Conventional sewage treatment plant (primary, secondary, or tertiary treatment)
* Incineration

One additional wastewater disposal alternative not listed as on-site is the vault and haul method, mentioned previously as the existing primary means for disposal in the South Coast Region.

The final selection of the wastewater disposal technique for each unit is beyond the scope of this report, and will be based on further investigation and information gathered in the working drawing stage of each proposed development.

Conclusion: There are water and sewer districts in the northern 20 miles of the San Mateo County coastline (specifically, these water and sewer districts serve Half Moon Bay, Montara, and Thornton state beaches). There are no water or sewer districts south of Half Moon Bay on the San Mateo coast. Water in this area is available in small and inconsistent quantity and quality through wells and surface collection. On-site sewage disposal south of Half Moon Bay on the San Mateo coast is also restricted; increases in disposal are dependent on investigation and gathering of additional information.

Recommendation: Increase parking and support facilities to an appropriate maximum throughout the northern 20 miles of the San Mateo coast. An appropriate maximum implies minimum environmental impact, no change of land form, and enhancement of vegetation in and around the facilities constructed to accommodate vehicles and people.

Conclusion: There are economic and environmental advantages to on-site water collection and sewage disposal systems.

Recommendation: Hauling of water or sewage will not be done unless every feasible method of on-site water collection and sewage disposal has been explored and proposed by the department, and rejected by local control agencies. All development proposals shall conform to State Park System standards for providing public sanitation facilities.

Loss of Open Space and the Feeling of Wildness

Findings: A comparison of the San Mateo Coast State Park System units was made, to evaluate open space, naturalness, and the feeling of wildness that the units possess in relation to each other. The following criteria were used:

* The amount of open space within each unit.
* The amount of open space surrounding each unit.
* The quality of naturalness/the feeling of wildness within each unit.
* The quality of naturalness/the feeling of wildness surrounding each unit.
* The remoteness of each unit from major population centers.

A total of 5,085 acres are included in State Park System lands on the San Mateo Coast. Of these, 1,230 acres are at Ano Nuevo Reserve, and 635 acres are at Pescadero State Beach and Natural Preserve. Pescadero and Ano Nuevo are also the most remote of all San Mateo Coast units, in that they require the longest driving times from major population centers in the Bay Area.

Another major undeveloped land mass is Montara Mountain, which includes 1,640 acres of steep, chaparral-covered slopes. While this is a natural and wild area, it is within one hour's driving time from downtown San Francisco. Many views from Montara Mountain include Bay Area cities and the coastal towns of Montara, Moss Beach, and Half Moon Bay.

CHART B	1. OPEN SPACE WITHIN THE UNIT	2. OPEN SPACE SURROUNDING THE UNIT	3. QUALITY OF NATURALNESS/THE FEELING OF WILDNESS WITHIN THE UNIT	4. QUALITY OF NATURALNESS/THE FEELING OF WILDNESS SURROUNDING THE UNIT	5. REMOTENESS
THORNTON	○	○	○	○	○
MONTARA	○	○	○	○	○
HALF MOON BAY	○	○	○	○	○
SAN GREGORIO & POMPONIO	○	○	○	○	○
PESCADERO	○	○	○	○	○
BEAN HOLLOW	○	○	○	○	○
ANO NUEVO	○	○	○	○	○

○ LARGEST SIZE / HIGHEST QUALITY NATURALNESS FEELING OF WILDNESS / MOST REMOTE

○ MEDIUM SIZE / MEDIUM QUALITY NATURALNESS FEELING OF WILDNESS / MEDIUM REMOTENESS

○ SMALLEST SIZE / LEAST QUALITY NATURALNESS FEELING OF WILDNESS / LEAST REMOTE

San Gregorio and Pomponio (850 acres) constitute the only other sizeable land mass of major open space and naturalness or wildness value. They require nearly as much driving time to reach as Pescadero and Ano Nuevo.

Conclusion: The units within State Park System lands along the San Mateo County coast that are most remote, wild, and unimpacted by civilization are San Gregorio, Pomponio, Pescadero, Bean Hollow, and Ano Nuevo.

Recommendation: Increase parking and support facilities to an appropriate maximum at coastal areas that are least remote and most impacted by civilization (this applies specifically in this plan to Thornton, Montara, and Half Moon Bay state beaches). An appropriate maximum implies minimal environmental impact, no change of land form, and enhancement of vegetation in and around the facilities constructed to accommodate vehicles and people.

Conclusion: Much of the natural and wildness qualities of the San Mateo coast coastline units can be retained or improved by getting vehicle parking areas and recreation support facilities out of sight.

Recommendation: Parking facilities should maintain a low visual profile. Discourage overnight parking of recreation vehicles and mobile homes at state beach units, and encourage private landowners to develop adequate facilities for RV use. The KOA campground currently proposed in the Pacifica Local Coastal Plan is a good example of private-sector recreation use.

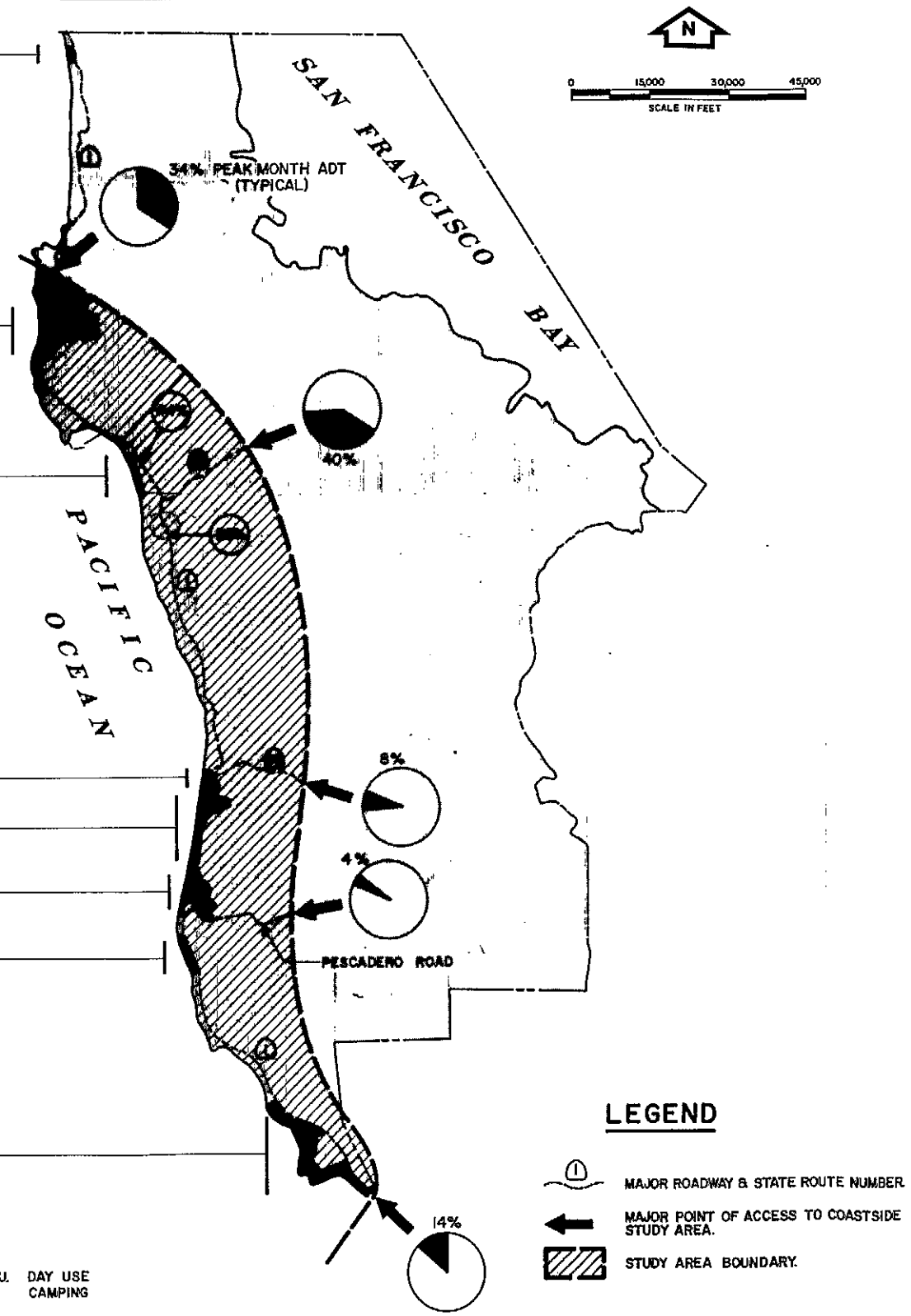
Maps
Figures 30-34

PARKING SUMMARY

STATE UNIT	EXIST. NO. OF PARKING SPACES ON STATE LAND	ESTIMATE OF MAX. NO. VEHICLES PARKING TO USE STATE LANDS
THORNTON S.B. (NOT IN CRITICAL STUDY ZONE)	150 D.U.	200
MONTARA S.B. INCLUDING GREY WHALE COVE	255 D.U.	500
HALF MOON BAY S.B.	440 D.U. 51 C.	1200
SAN GREGORO S.B.	230 D.U.	600
POMPONIO S.B.	80 D.U.	500
PESCADERO S.B. (INCLUDING MARSH N.P.)	288 D.U.	400
BEAN HOLLOW S.B. (INCLUDING PEBBLE BEACH)	49 D.U.	350
ANO NUEVO S.R.	100 D.U.	350
SUBTOTALS	1592 D.U. 51 C.	4100

D.U. DAY USE
C. CAMPING

PLOT PLAN OF SAN MATEO COUNTY



LEGEND

- (1) MAJOR ROADWAY & STATE ROUTE NUMBER.
- MAJOR POINT OF ACCESS TO COASTSIDE STUDY AREA.
- STUDY AREA BOUNDARY.

TRAFFIC SUMMARY

	A[1] PEAK HOUR (VEHICLES)	B[1] PEAK MONTH ADT (VEHICLES)	C[1] ANNUAL ADT (VEHICLES)	D B/A (HRS/DAY)	E 70% OF A (VEHICLES)	F 4 X E (VEHICLES)
HIGHWAY (1) (NORTH)	1,700	13,400 (34%)	9,500	7.9	1,190	4,760
HIGHWAY (92)	2,250	15,600 (40%)	11,400	6.9	1,575	6,300
HIGHWAY (84)	700	3,000 (8%)	2,100	4.3	490	1,960
PESCADERO ROAD	140[2]	1,400[2] (4%)	1,300[3]	1.0	98	392
HIGHWAY (1) (SOUTH)	950	5,400 (14%)	3,800	5.7	665	2,660
SUBTOTALS	5,740	38,800 (100%)	28,100	—	4,018	16,072
HWY. (1) NORTH OF HWY. (92)	2,200	17,000 (44%)	12,000	7.7	1,540	6,160
HWY. (1) SOUTH OF HWY. (92)	2,100	10,000 (26%)	7,100	4.8	1,470	5,880

A ESTIMATE OF TRAFFIC VOLUME IN BOTH DIRECTIONS FOR HOUR NEAREST THE MAXIMUM FOR THE YEAR.

B ESTIMATE OF THE AVERAGE DAILY TRAFFIC (ADT) FOR THE MONTH OF HEAVIEST TRAFFIC FLOW.

C ESTIMATE OF THE TOTAL TRAFFIC VOLUME FOR THE YEAR DIVIDED BY 365 DAYS.

D B/A=ESTIMATE OF THE NO. OF HOURS PER DAY TRAFFIC IS AT PEAK FLOW (1977 COUNTS).

E 70% OF PEAK HOUR IS ESTIMATED MAXIMUM NO. OF VEHICLES TRAVELING IN ONE DIRECTION.

F ESTIMATED MAXIMUM NO. VEHICLES ENTERING (OR EXITING) ZONE DURING PEAK TIMES (FOR 4 HOUR DURATION).

1 CALTRANS, "1977 TRAFFIC VOLUMES ON CALIF. STATE HIGHWAYS."

2 SAN MATEO CO., ENGR. & ROAD DEPT. 9-75

3 ESTIMATED.

FIGURE 30

DESIGNED C.A.H.
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CHECKED

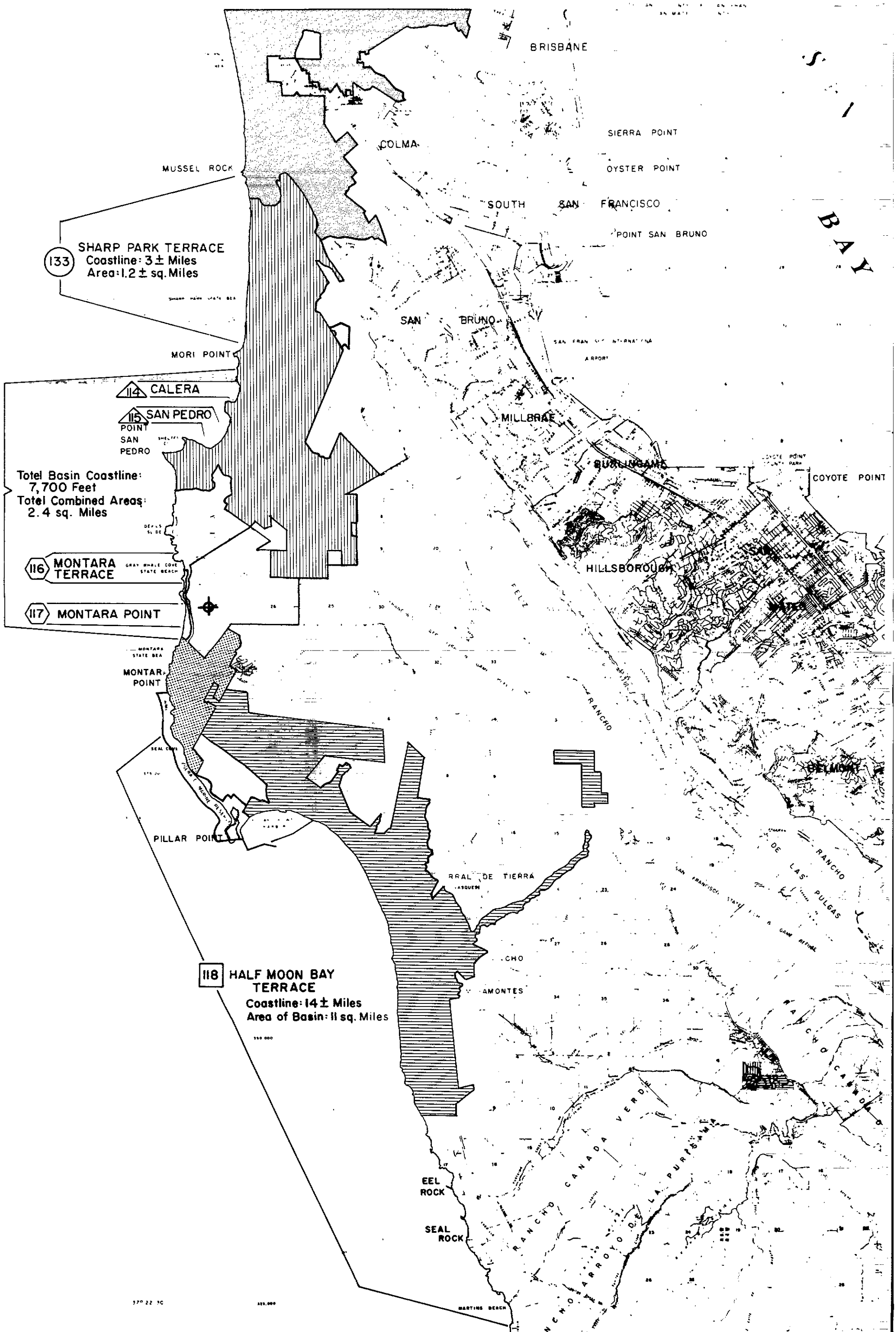
DATE
REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED DATE

SAN MATEO COUNTY COASTSIDE
TRAFFIC AND PARKING INVESTIGATION

DRAWING NO. 16843

SHEET NO. — OF —


BRISBANE
COLMA
SIERRA POINT
OYSTER POINT
SOUTH SAN FRANCISCO
POINT SAN BRUNO
MUSSEL ROCK
133 SHARP PARK TERRACE
Coastline: 3± Miles
Area: 1.2± sq. Miles
SAN BRUNO
MORI POINT
114 CALERA
115 SAN PEDRO POINT SAN PEDRO
MILLBRAE
BURLINGAME
COYOTE POINT
Total Basin Coastline: 7,700 Feet
Total Combined Areas: 2.4 sq. Miles
116 MONTARA TERRACE
HILLSBOROUGH
117 MONTARA POINT
MONTARA POINT
PILLAR POINT
BELMONT
RANCHO DE LAS PULGAS
118 HALF MOON BAY TERRACE
Coastline: 14± Miles
Area of Basin: 11 sq. Miles
EEL ROCK
SEAL ROCK
RANCHO CANADA VERDE
RANCHO ARROYO DE LA PURISIMA
MARTINS BEACH

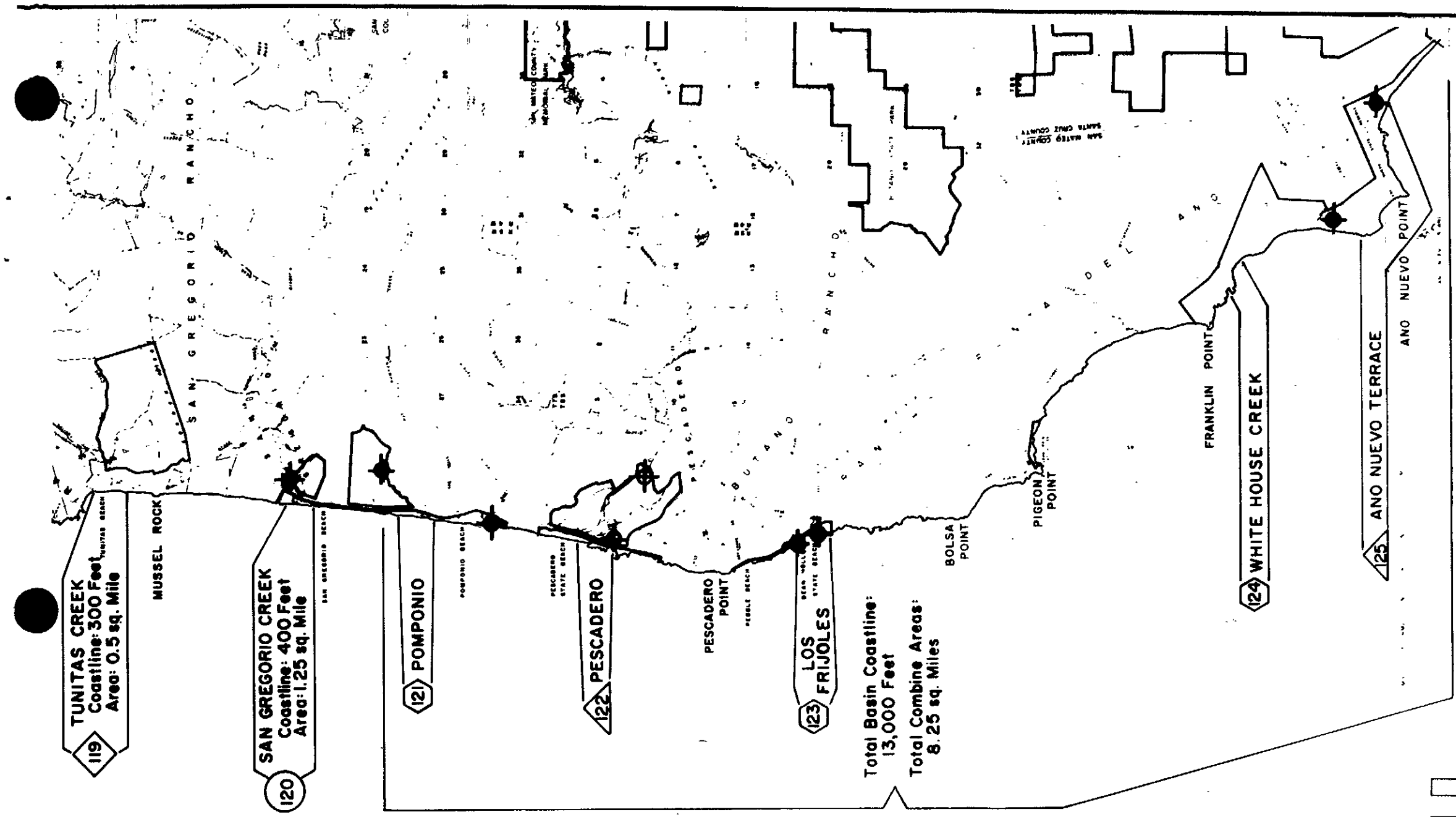


FIGURE 32

SAN MATEO COUNTY COASTSIDE
DOMESTIC WATER
AVAILABILITY INVESTIGATION

N

0 6000 12000 18000 24000

SCALE IN FEET

LEGEND

SAN MATEO COUNTY COASTSIDE
WATER DISTRICT BOUNDARIES

DISTRICT	WATER SOURCE
DALY CITY MUNICIPAL WATER DIST.	50% SAN FRANCISCO WATER DEPT. 50% WELLS
CITIZENS UTILITY COMPANY	100% WELLS
NORTH COAST COUNTY WATER DIST.	99% SAN FRANCISCO WATER DEPT. 1% CREEK DIVERSION
COASTSIDE COUNTY WATER DISTRICT	65% S.F. WATER DEPT. 25% CREEK DIVERSION 10% WELLS

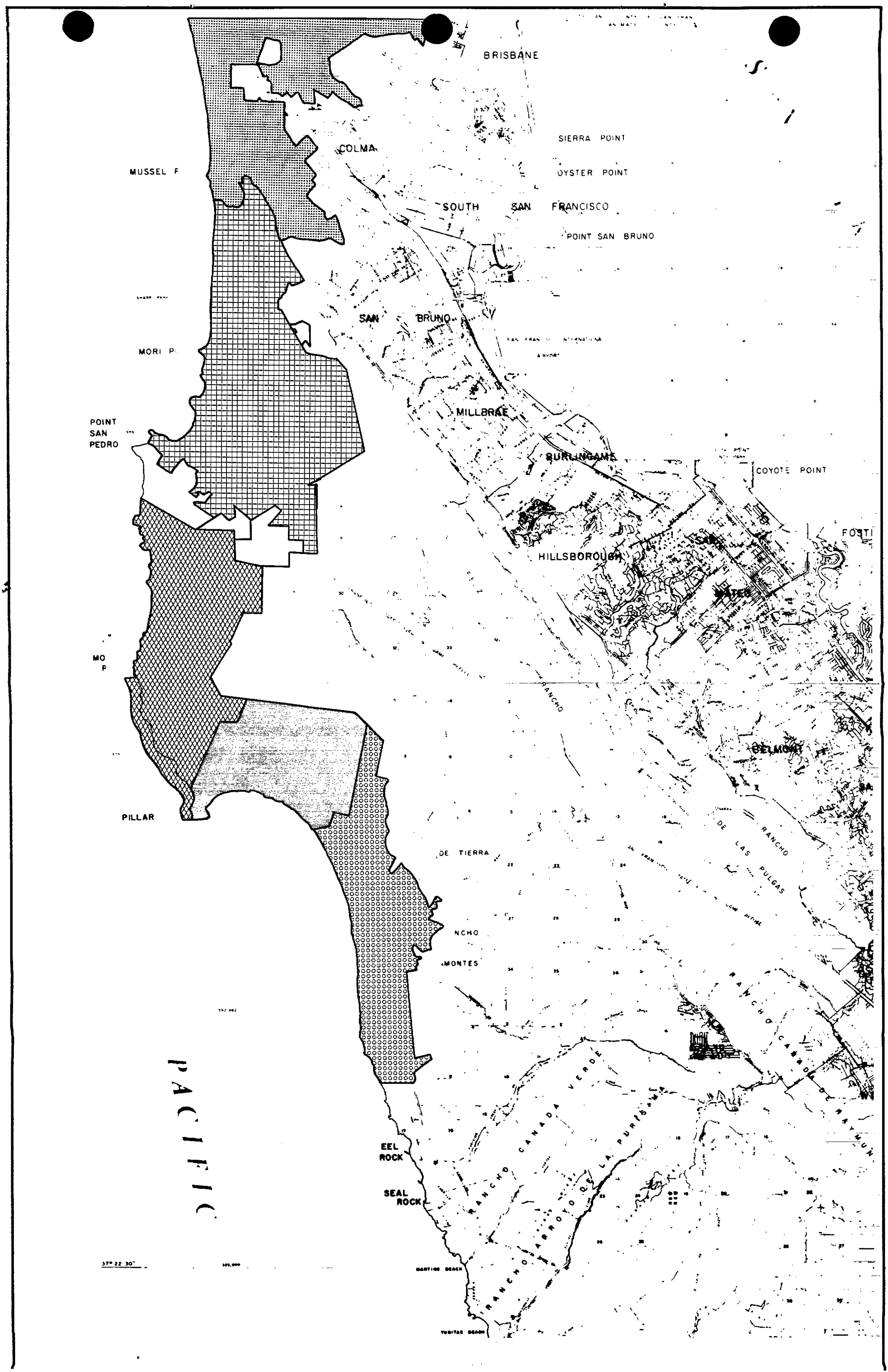
SAN MATEO CO. COASTSIDE GROUND WATER
BASINS STATUS OF SEA-WATER INTRUSION

- 119 SUSPECTED SEA-WATER INTRUSION
- 118 CHLORIDES EXCEED 100 PPM
- 114 NO APPARENT SEA-WATER INTRUSION
- 116 STATUS UNKNOWN
- 120 NO INFORMATION
- EXISTING WATER WELL

SOURCE:
SAN MATEO COUNTY "COMPREHENSIVE WATER RESOURCES MANAGEMENT PLAN," DRAFT REPORT APRIO 1977, BY LEEDS, HILL AND JEWETT, INC. DWR BULLETIN No. 63-5, OCT. 1975, SEA-WATER INTRUSION IN CALIFORNIA"

COUNTY OF SAN MATEO

STATE OF CALIFORNIA


BRISBANE
COLMA
SIERRA POINT
MUSSEL F
OYSTER POINT
SOUTH SAN FRANCISCO
POINT SAN BRUNO
SAN BRUNO
MORI P
MILLBRAE
POINT
SAN
PEDRO
BURLINGAME
COYOTE POINT
HILLSBOROUGH
MO
P
RANCHO
BELMONT
PILLAR
DE TIERRA
DE LAS PULGAS
RANCHO
NCHO
MONTES
RANCHO CANADA DE RAYMUN
RANCHO CANADA VERDE
EEL
ROCK
SEAL
ROCK
RANCHO ARROYO DE LA PURISIMA
PACIFIC

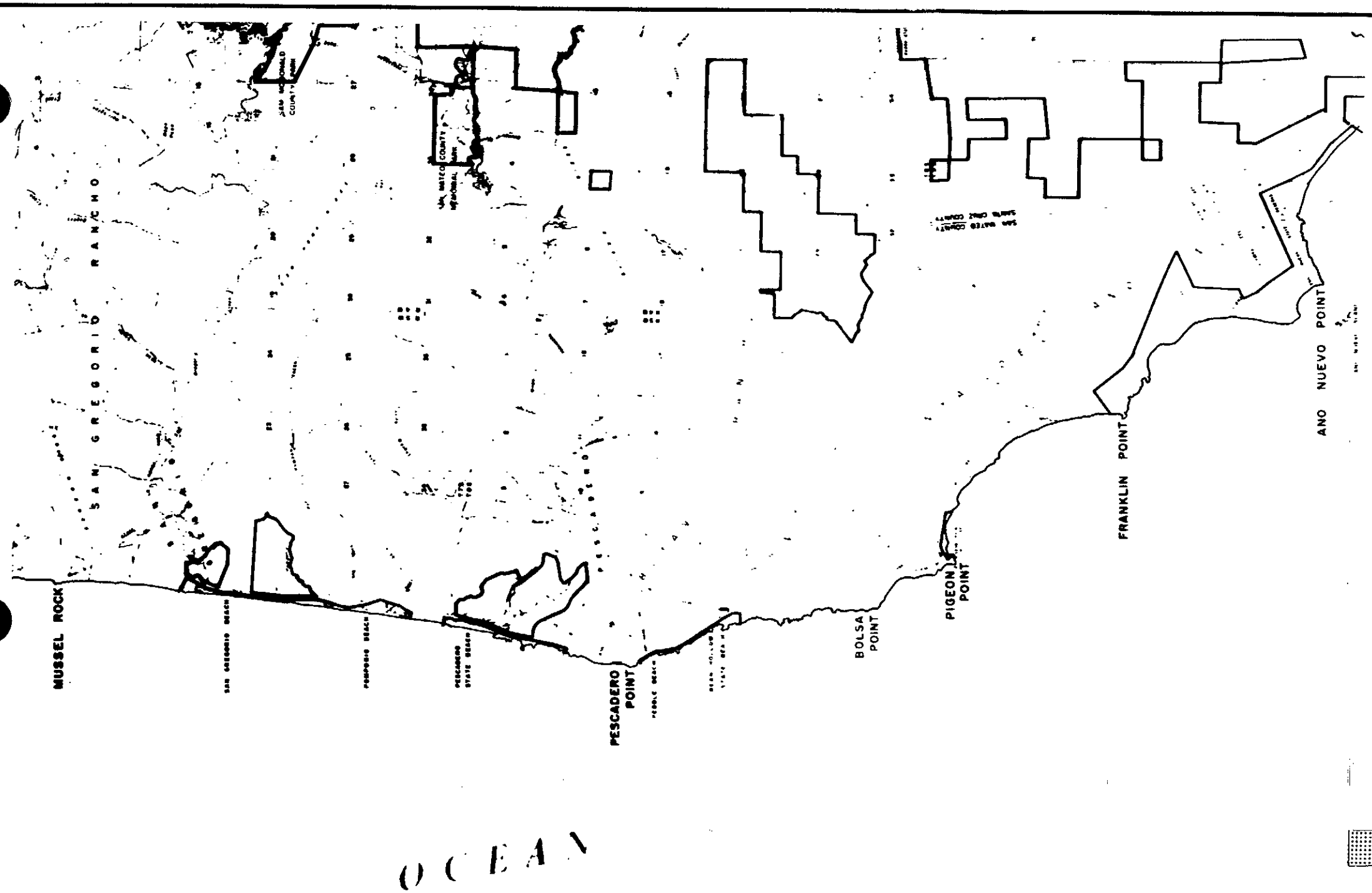


FIGURE 33

SAN MATEO COUNTY COASTSIDE
WASTEWATER DISPOSAL INVESTIGATION
EXISTING SANITATION DISTRICTS

N

0 6000 12000 18000 24000

SCALE IN FEET

SAN MATEO CO. COASTSIDE SANITATION DISTRICTS
LEGEND

- NORTH SAN MATEO CO. SANITATION DISTRICT
- CITY OF PACIFICA SANITATION DISTRICT
- MONTARA SANITATION DISTRICT
- GRANADA SANITATION DISTRICT
- CITY OF HALF MOON BAY SEWER DISTRICT

COUNTY OF SAN MATEO
STATE OF CALIFORNIA

TABLE OF SUITABLE SOIL TYPES FOR ON-SITE WASTEWATER DISPOSAL

MAP SYMBOL AND SOIL DESCRIPTION	ON-SITE WASTEWATER DISPOSAL RESTRICTION RATING: SLIGHT[1] (BEST SUITED)	MODERATE[1] (LESS SUITED)	MODERATE[2] (LESS SUITED)	DEPTH TO: BEDROCK (FEET)	DEPTH TO: SEASONAL HIGH WATER TABLE (FEET)	DEPTH FROM SURFACE OF TYPICAL PROFILE (INCHES)	CLASSIFICATION (USDA TEXTURE)	PERMEABILITY (INCHES/HOUR)	PERMEABILITY (MINUTE/INCH)	AVAILABLE WATER CAPACITY (INCHES PER INCH OF SOIL)
Ad ACTIVE DUNE LAND		X		5+	5+	60	SAND	>20	<3	.04 to .05
BaB2 BAYWOOD SANDY LOAM, GENTLY SLOPING ERODED	X			5+	5+	0 to 25	COARSE SANDY LOAM	6.3 to 20	9.5 to 3	.09 to .11
BaC2 BAYWOOD SANDY LOAM SLOPING ERODED	X					25 to 60	LOAMY SAND	>20	<3	.07 to .09
ClC2 COLMA LOAM, SLOPING, ERODED		X		5+	5+	0 to 39	LOAM	2.0 to 6.3	30 to 9.5	.12 to .14
ClD2 COLMA LOAM MODERATELY STEEP, ERODED			X			39	FINE SANDY LOAM			
FcA FARALLONE COARSE SANDY LOAM, NEARLY LEVEL	X			5+	5+	0 to 48	COARSE SANDY LOAM, OR LOAMY COARSE SAND (LOAM SURFACE IN PLACES)	6.3 to 20	9.5 to 3	.09 to .11
FaA FARALLONE LOAM, NEARLY LEVEL		X								
CsA CORRALITOS SANDY LOAM, NEARLY LEVEL	X			5+	3 to 5	0 to 18	SANDY LOAM	6.3 to 20	9.5 to 3	.14 to .16
						18 to 72	STRATIFIED SAND AND LOAMY SAND	>20	<3	.08 to .10
Sd STABILIZED DUNE LAND			X	5	5+	0 to 60	SAND	>20	<3	.04 to .05
SkA SOQUEL LOAM, NEARLY LEVEL	X			5	5	0 to 60	LOAM	.63 to 2.0	95 to 30	.14 to .16

SOURCE: TABLE DATA TAKEN FROM "SOIL SURVEY, SAN MATEO AREA", USDA AND SAN MATEO CO. SOIL CONSERVATION DISTRICT, JAN. 1969

1 - RATING FROM SOURCE
2 - RATING FROM DPR EVALUATION

NOTE: ALL OTHER SOIL TYPES NOT LISTED OR SHOWN ON PLOT PLANS ARE DEEMED UNDESIREABLE FOR ON-SITE WASTEWATER DISPOSAL IN STUDY AREA. FINAL SELECTION OF DISPOSAL AREAS MUST BE SUBSTANTIATED BY FIELD INVESTIGATIONS AND SOIL ANALYSIS INCLUDING SOIL BORINGS, AND PERCOLATION TESTING.

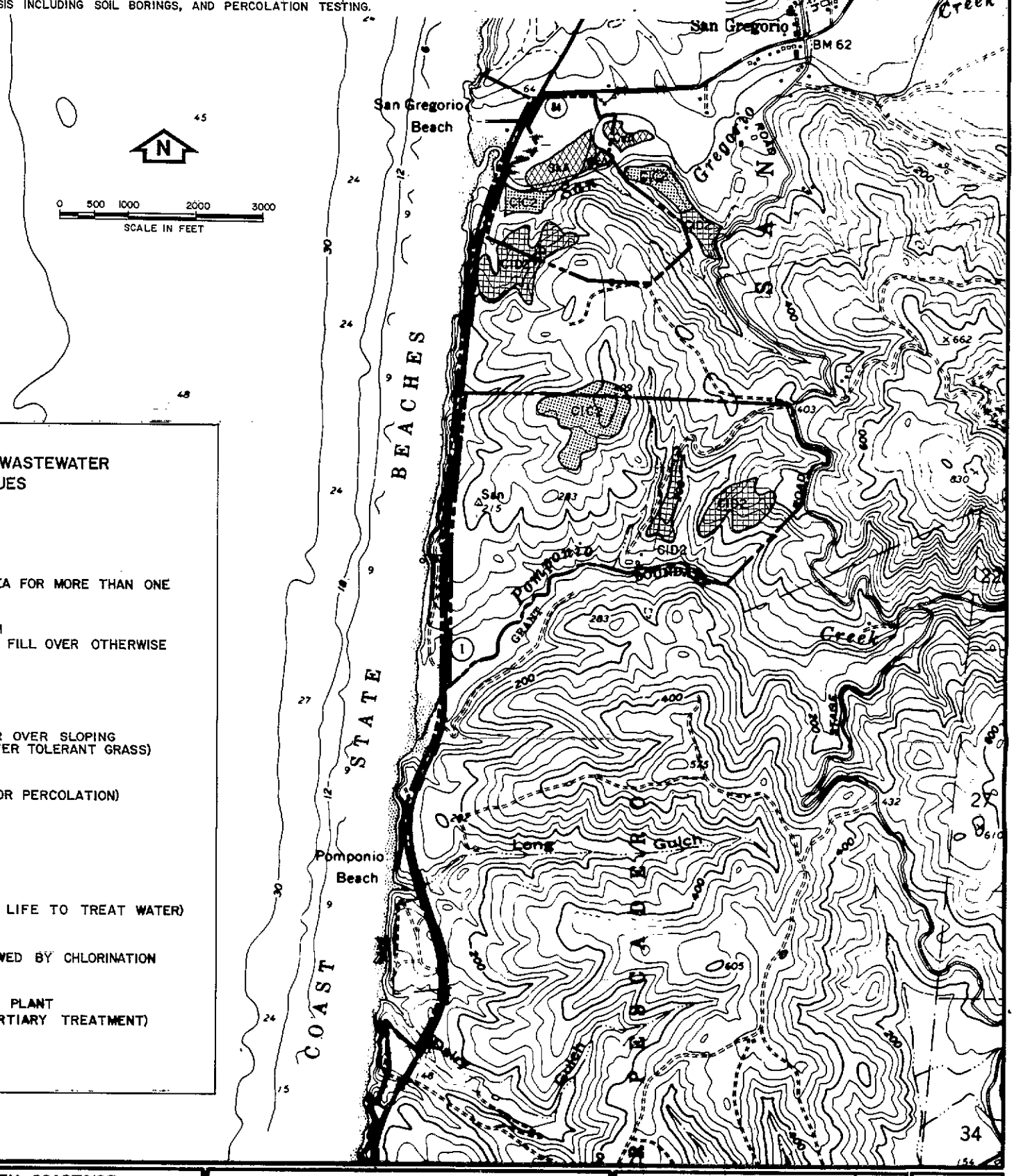


FIGURE 34a

LIST OF POTENTIAL ON-SITE WASTEWATER DISPOSAL TECHNIQUES

1 SEPTIC TANK WITH LEACH FIELD

2 CLUSTER LEACH FIELDS
(CENTRALIZED LEACH FIELD AREA FOR MORE THAN ONE SEPTIC TANK)

3 SEPTIC TANK WITH MOUND SYSTEM
(MOUND LEACH FIELD OF SAND FILL OVER OTHERWISE UNSUITABLE SOIL)

4 SEPTIC TANK WITH SPRAY FIELDS

5 OVERLAND FLOW
(SHEET FLOW OF WASTEWATER OVER SLOPING TERRACES PLANTED WITH WATER TOLERANT GRASS)

6 PONDS OR LAGOONS
(UTILIZES EVAPORATION AND/OR PERCOLATION)

7 COMPOSTING PRIVIES

8 SEPTIC TANK WITH SEEPAGE PITS

9 AQUACULTURE
(UTILIZES PLANT AND ANIMAL LIFE TO TREAT WATER)

10 AQUEONICS
(AGITATED SEPTIC TANK FOLLOWED BY CHLORINATION AND OZONATION)

11 CONVENTIONAL SEWAGE TREATMENT PLANT
(PRIMARY, SECONDARY, OR TERTIARY TREATMENT)

12 INCINERATION

SHEET NO. 3 — 8

DRAWING NO. 16843

SAN MATEO COUNTY COASTSIDE WASTEWATER DISPOSAL INVESTIGATION

SOIL TYPE TABLE AND PLOT PLAN

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

APPROVED _____ DATE _____

REVISIONS | DATE

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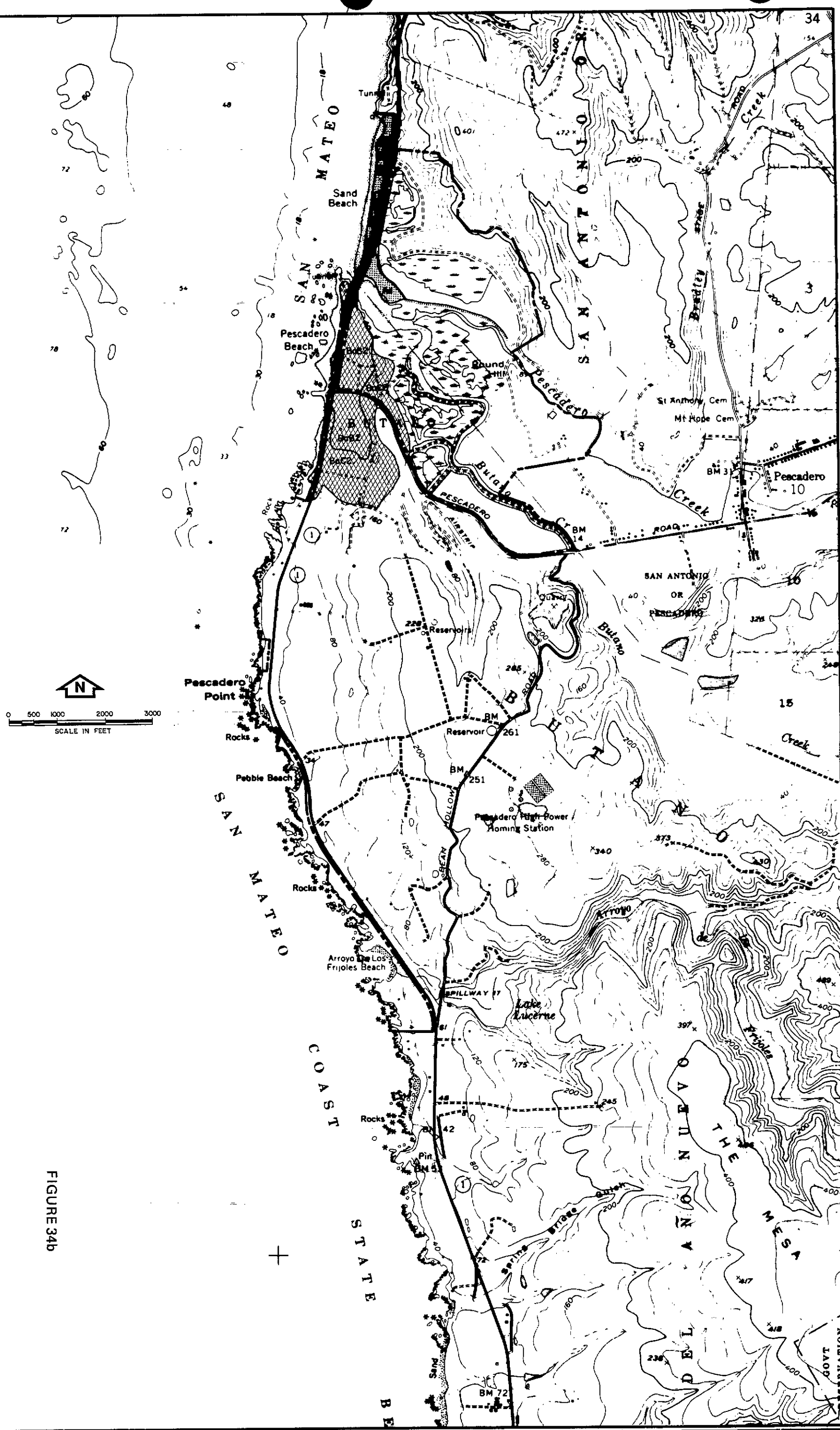

FIGURE 34b

SHEET No. 2 of 3	DRAWING No. 16843	SAN MATEO COUNTY COASTSIDE WASTEWATER DISPOSAL INVESTIGATION SOIL TYPE PLOT PLAN	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION APPROVED ____ DATE ____	REVISIONS / DATE	DESIGNED CAH DRAWN 6/78 v/s CHECKED

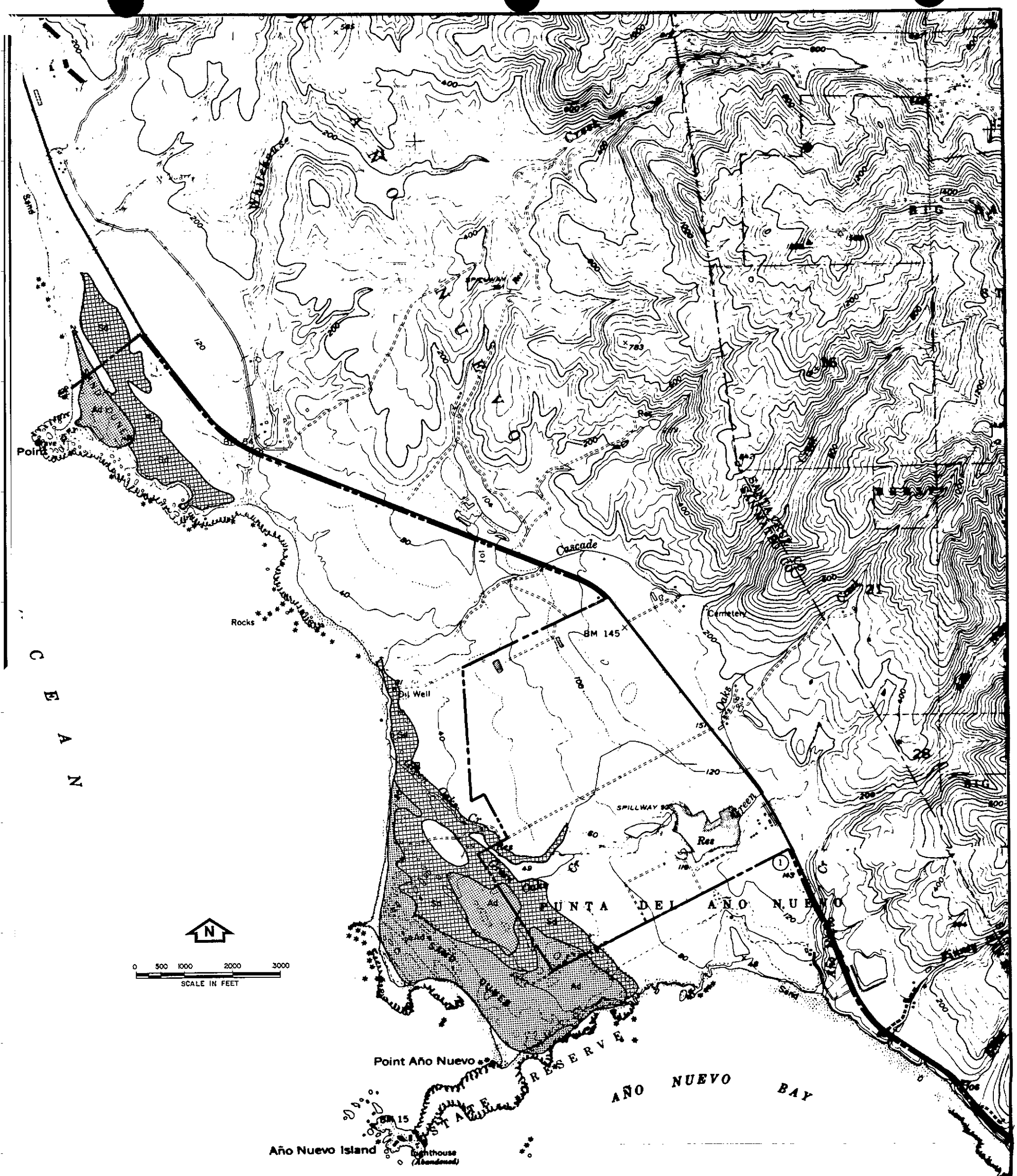

FIGURE 34c

SHEET NO. 3 of 3	DRAWING NO. 16843	SAN MATEO COUNTY COASTSIDE WASTEWATER DISPOSAL INVESTIGATION SOIL TYPE PLOT PLAN	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION APPROVED _____ DATE _____	REVISIONS	DATE	DESIGNED CAH DRAWN 6/78 CHECKED

LAND USES AND PROPOSED DEVELOPMENTS

The existing land uses, proposed land uses, chief recreation needs, proposed additions, and specific development proposals for each unit are outlined on the page opposite the general plan map for each unit (see following pages). These proposals are in line with the objective of redistributing, rather than increasing, public use of the units and providing better accommodations for the safety and general enjoyment of the visitors.

Any landscaping done in conjunction with proposed development will use native species, if at all possible.

THORNTON STATE BEACH

Existing Land Use	Proposed Land Use
Sandy beach - 8 ha (20 a.); 970 m (3,200 l. ft.) sunbathing, beach play	Same
Bluffs; steep slopes - 72 ha (180 a.) hiking, scenic open space	Same
Thornton Valley - 2 ha (5 a.) picnicking, parking, hiking, open space	Addition of group camping in existing picnic area
Upper coastal terrace - 8 ha (20 a.) open space	12 a. - same; 8 a. - camping, parking, park office

Chief Recreation Needs

Hike-in and group camping facilities; additional parking

Proposed Additions

Two parcels (__ha; __a.) on upper coastal terrace and abandoned highway corridor between park entrance road and Mussel Rock (both areas are currently owned by CALTRANS)

Proposed Development

Thornton Valley

1) Parking: renovate existing 150-car parking lot to include bus loading zone.
2) Group camping: permit groups of up to 20 persons to camp in existing picnic area (by reservation only).
3) Administration: add small shop for park maintenance at existing restroom, north end of parking lot.
4) Interpretive facility: convert existing park office to interpretive facility.

Upper Coastal Terrace

1) Administration: construct new park office and entrance station on northern parcel.
2) Parking: develop 25-car parking area on northern parcel.
3) Camping: develop 30-site campground (for vehicles 18 ft. or less) and restroom.

Off-Site

1) Signing: install signing to direct traffic to the SB from Highway 280, Highway 1, Skyline Boulevard #35, and Daly City Boulevard.

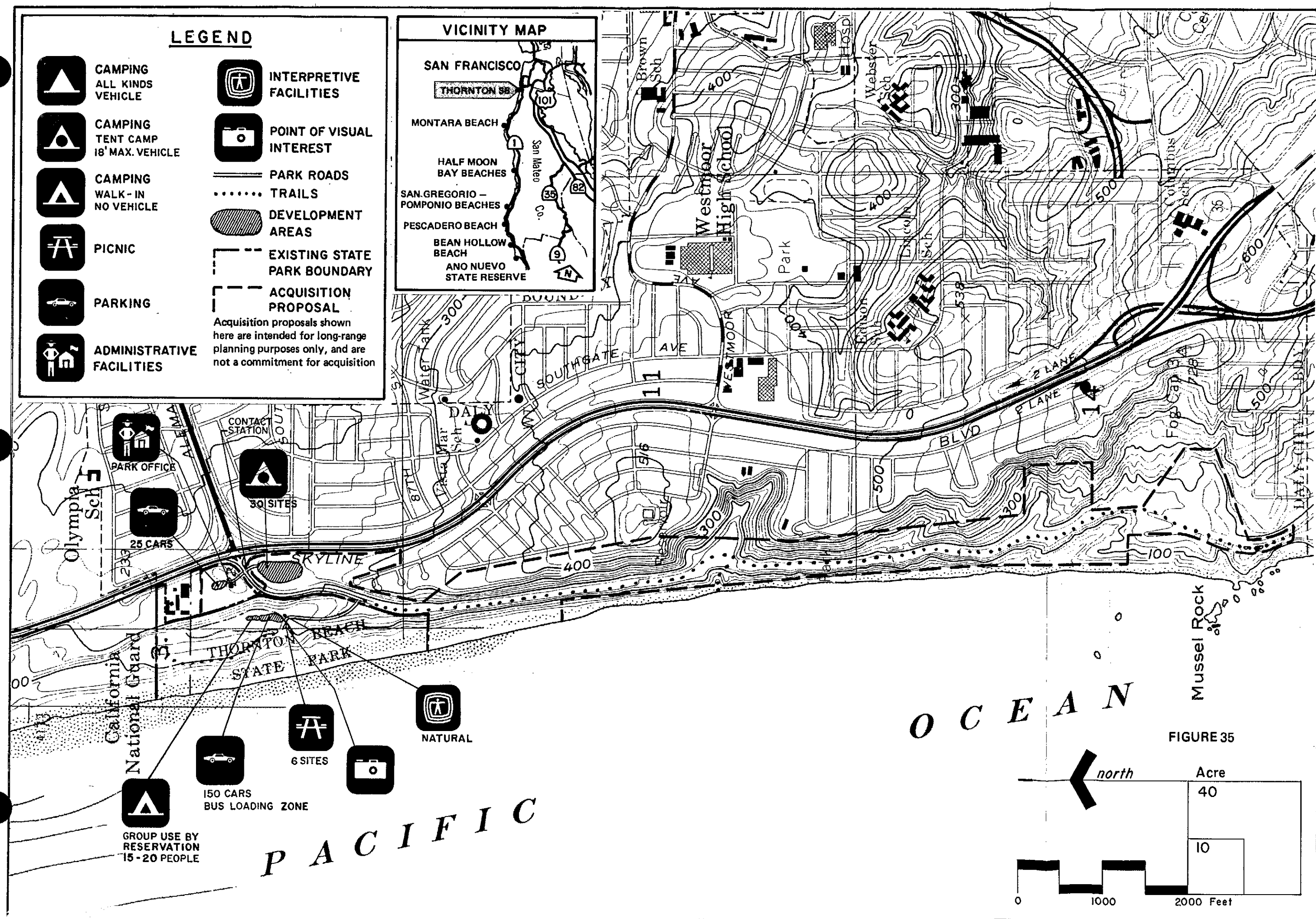

FIGURE 35

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

SAN MATEO COAST AREA
GENERAL PLAN
THORNTON STATE BEACH

DRAWING NO. 16843

SHEET NO. 1 OF 1

GRAY WHALE COVE AND MONTARA STATE BEACHES

Existing Land Use	Proposed Land Use
Sandy beach - 10 ha (25 a.); 1,700 m (5,500 ft.) sunbathing, beach play	Same
Steep cliffs; rocky shoreline - 1.6 ha (4 a.); 2,600 m (8,500 ft.) scenic open space	Same
Coastal terrace - 24 ha (60 a.) lighthouse (3 a.), prime agriculture (45 a.), scenic open space and riparian habitat (12 a.)	Conversion of lighthouse to hostel Development of 2 a. open space for parking and walk-in campground
Steep, chaparral-covered slopes - 656 ha (1,640 a.) mostly open space (Montara Mt.); few structures in Green Valley and Martini Creek areas, 240-car parking lot in Gray Whale Cove drainage	Adaptation of Martini Creek structures to park administration uses, and developed area at Green Valley to walk-in campground

Chief Recreation Need
Additional parking (currently as many as 500 cars park illegally along Highway 1)

Proposed Additions
Two areas--McNee Ranch (600 ha, or 1,500 a.) east of Highway 1 and a parcel (2.4 ha or 6 a.) just north of Gray Whale Cove

Proposed Development

Gray Whale Cove Area
1) Parking: improve existing lot (entrance signs, pavement markings); decrease spaces from 240 to 150; construct new restrooms and contact station (lot would serve both beach and campground).
2) Beach access: construct under or overcrossing across highway; develop trails for safe access to secluded beach areas.
3) Highway: provide left-turn lane, acceleration and deceleration lanes; eliminate dangerous highway-shoulder parking.
4) Camping: develop 25 walk-in campsites and restrooms.
5) Administration: convert existing structure to ranger residence.

Montara Mountain
1) Trails: develop trail system to San Pedro County Park and Crystal Springs trails.

Martini Creek Area
1) Parking: develop 100-car parking lot with park office and restroom.
2) Camping: develop 30 walk-in campsites;
3) Beach access: construct under or overcrossing across highway and trail to beach from parking lot.
4) Administration: Convert existing structures to ranger residence and areawide maintenance facility.

Chart House Restaurant Area
1) Parking: develop 60-car parking lot, bus loading zone, restroom, and contact station on 0.9-acre site just north of Chart House Restaurant (eventually about 50 parking spaces will be provided for beach users at the restaurant).

Lighthouse Area
1) Parking: adapt existing paved areas to 20-car parking lot (at no cost) for trail embarkation and operating staff use.

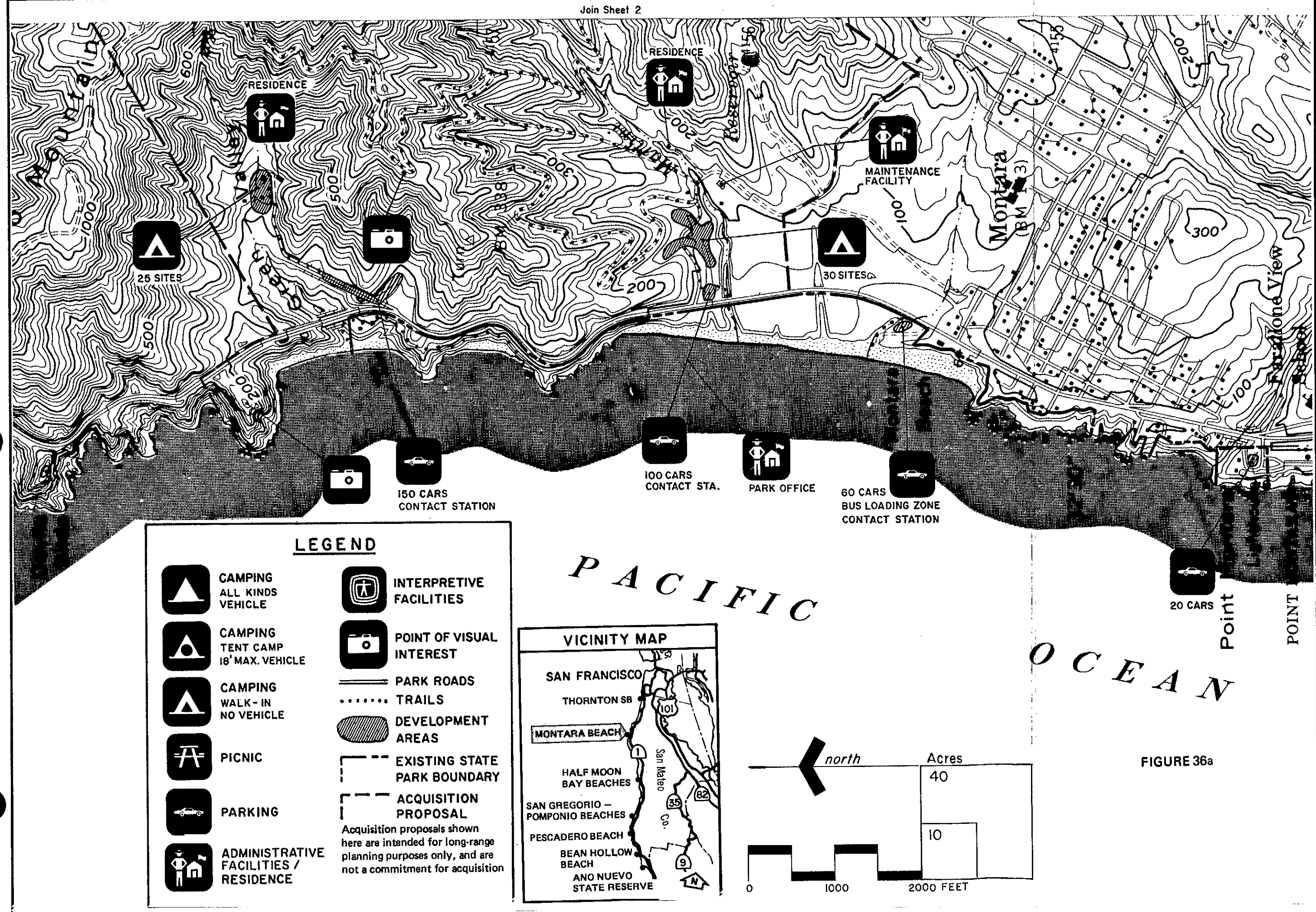

FIGURE 36a

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RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

SAN MATEO COAST AREA
GENERAL PLAN
MONTARA STATE BEACH

DRAWING No. 16843

SHEET No. 1 OF 2

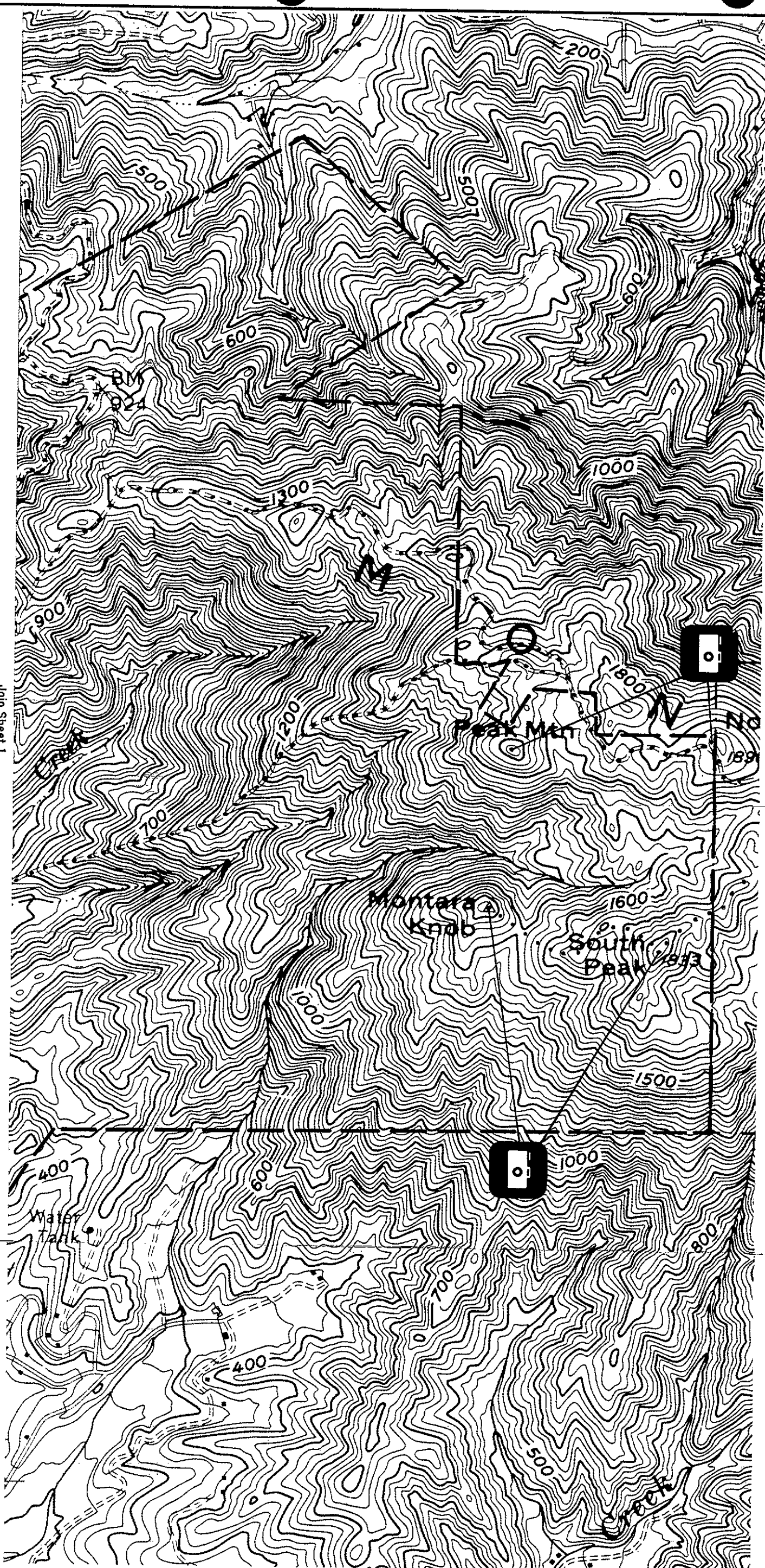


FIGURE 36b

SHEET No. 2 OF 2	DRAWING No. 16843	SAN MATEO COAST AREA GENERAL PLAN MONTARA STATE BEACH	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION APPROVED_____ DATE_____	REVISIONS / DATE DESIGNED DRAWN CHECKED

HALF MOON BAY STATE BEACH

Existing Land Use	Proposed Land Use
Sandy beach - __ha (70 a.); ___m (21,500 l.ft.) sunbathing, beach play	Same
Coastal terrace - ___ha (265 a.) parking and picnicking (8 a.); camping (10 a.); park administration (2 a.); open space (245 a.)	Increase total parking and picnic areas to 22 a. Increase total camping area to 42 a. Decrease total administration to 1 a. Decrease total open space to 200 a. Continue small group camping and picnicking in Sweetwood area (by reservation only)

Chief Recreation Needs

Additional parking spaces (only 440 spaces are available; need 1,200); additional tent campsites (51 available spaces receive maximum use); access to this area is from residential streets, causing major circulation problems for local residents.

Proposed Additions

Contiguous county property along shoreline, south of this state beach--(60.7 ha, 150 a.) and 3,100 m (10,300 l.ft.)--to provide a single government operations unit.

Proposed Development

Miramar Beach Area

No changes

Frenchmans Creek Area

1) Parking: develop 100-car lot at Naples Beach; 180-car lot and a 200-car lot at Dunes Beach; a 200-car lot at Venice Beach; and a 200-car lot at Elmar Beach. Total parking = 880 cars.
2) Picnic units: develop 40 units at Naples Beach; two 40-unit areas at Dunes Beach; 40 units at Venice Beach; and 40 units at Elmar Beach. Each picnic area will have a restroom. Total picnic units = 160.
3) Administration: Construct park office on the ocean side of Sweetwood area.

Francis Beach Area

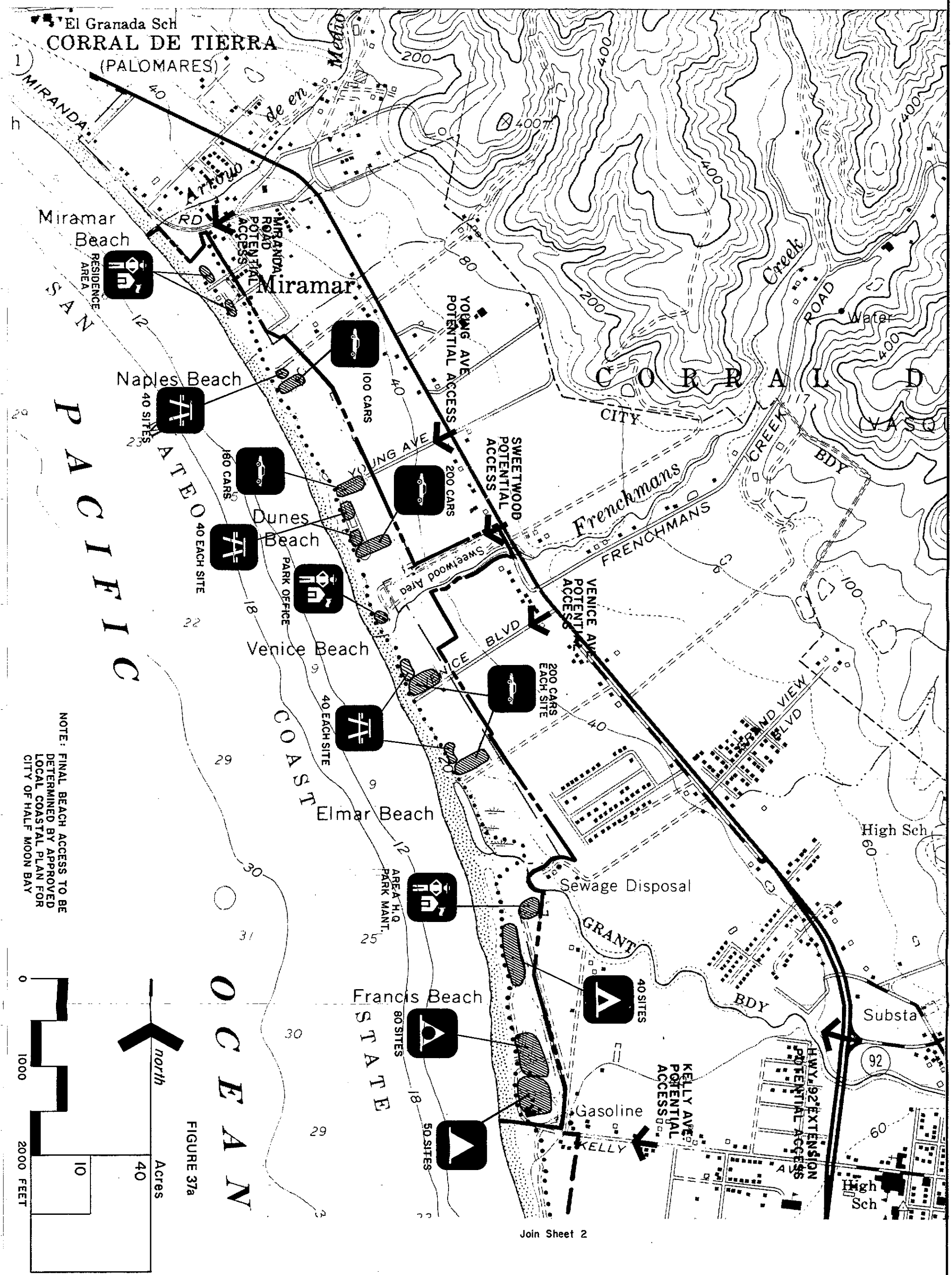
1) Camping: retain existing 51 campsites (accommodating all types of vehicles); develop 80 campsites (accommodating 18-ft. maximum length vehicles), and 40 walk-in campsites. Three new restrooms will be constructed to serve additional camping.
2) Administration: Relocate existing areawide service facility to two separate locations--one at Montara to serve north portion of San Mateo Coast area, and other at Pescadero to serve south portion. Construct area headquarters and maintenance facility for Half Moon Bay area north of camping areas, at the inland boundary, about 500 feet south of Pilarcitos Creek.

Southernmost Beach Area

1) Parking: develop two 30-car lots and one 60-car lot (with restroom at each). Parking lots will be located at natural drainages that provide beach access (access points are few because the cliffs are 70-80 feet high in this area).

General

1) Trails: trails with interpretive signs, panels, etc. will interconnect all facilities along the 4+ miles of Half Moon Bay beaches.
2) Pedestrian traffic: All parking lots will be oriented perpendicular, rather than parallel, to the beach to help channel pedestrian traffic from parking areas directly to beach. This will help prevent erosion and scarring of the cliffs and uplands between parking areas on coastal terrace and the sandy beach.



NOTE: FINAL BEACH ACCESS TO BE DETERMINED BY APPROVED LOCAL COASTAL PLAN FOR CITY OF HALF MOON BAY

FIGURE 37a

SHEET NO. 1 OF 2	DRAWING NO. 16843	SAN MATEO COAST AREA GENERAL PLAN HALF MOON BAY STATE BEACH	RESOURCES AGENCY OF CALIFORNIA DEPARTMENT OF PARKS AND RECREATION APPROVED_____ DATE_____	REVISIONS / DATE	DESIGNED DRAWN CHECKED

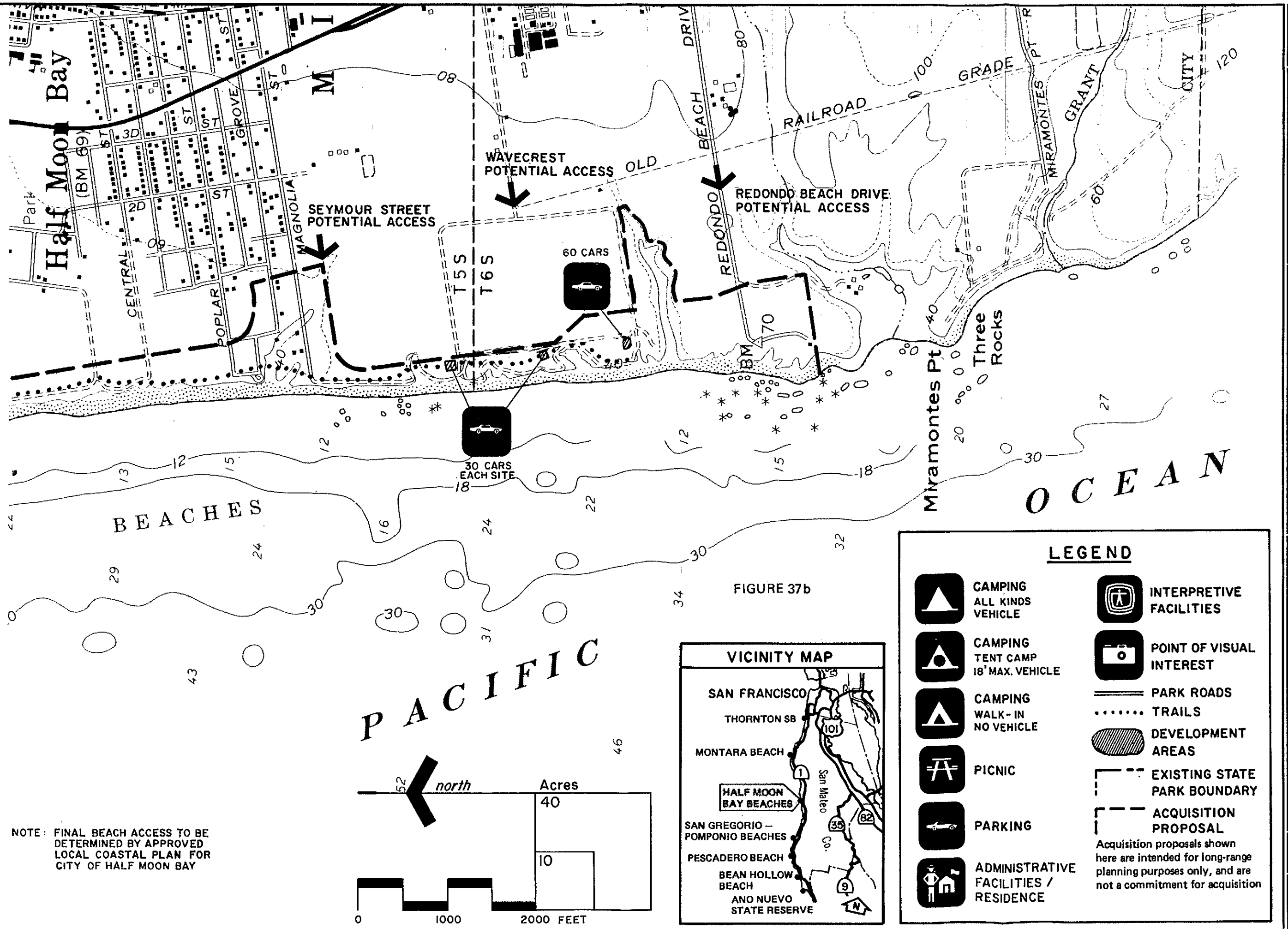


FIGURE 37b

NOTE: FINAL BEACH ACCESS TO BE DETERMINED BY APPROVED LOCAL COASTAL PLAN FOR CITY OF HALF MOON BAY

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REVISIONS
RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

SAN MATEO COAST AREA
GENERAL PLAN
HALF MOON BAY STATE BEACH

DRAWING No. 16843

SHEET No. 2 OF 2

SAN GREGORIO AND POMPONIO STATE BEACHES

Existing Land Use	Proposed Land Use
San Gregorio Beach Area West of Highway 1	
Sandy beach - 8.1 ha (20 a.); 1,200 m (4,000 l.ft.) sunbathing, beach play	Same
Bluffs; steep slopes - 4.1 ha (10 a.) scenic open space	Same
Coastal terrace - 4.9 ha (12 a.) parking, picnicking, open space (and illegal camping)	Eliminate illegal camping, otherwise the same
San Gregorio Floodplain Area East of Highway 1 and North of San Gregorio Creek	
Marsh/natural area - 10.1 ha (25 a.) marsh and riparian habitat preservation, scenic open space	Same
Agricultural area - 8.1 ha (20 a.) prime agricultural land	Same
Uplands between San Gregorio and Pomponio Creeks	
Agricultural area - 257 ha (635 a.) steep to moderately sloping Class 3 & 4 agricultural land used chiefly for grazing, open space	249 ha (615 a.) eliminate grazing, agriculture; increase scenic open space 8 ha (20 a.) agricultural land converted to recreation facility development
Residential - 0.8 ha (2 a.) - residences	Convert residential use to interpretive and/or educational and picnic use
Pomponio Beach Area West of Highway 1	
Sandy beach - 12.1 ha (30 a.) 3,600 m (12,000 l.ft.) sunbathing, beach play	Same
Bluffs; steep slopes - 28.3 ha (70 a.) scenic open space	Same
Coastal terrace - 3.2 ha (8 a.) parking, picnicking, open space (and illegal camping)	Eliminate illegal camping, otherwise the same

Chief Recreation Needs

Improved accommodations for day-use parking and beach use; overnight camping facilities; and improved interpretive program.

Proposed Addition

Upland area - 81 ha (200 a.) between San Gregorio and Pomponio creeks and bounded by Highway 1 and Stage Road

Proposed Development

San Gregorio Beach Area West of Highway 1

1) Parking: develop 300-car lot at existing parking facility.
2) Picnic units: develop 15 units near parking lot (with permanent restroom).
3) Administration: construct entrance station and single entrance with signs, pavement markings (left-turn, acceleration, and deceleration lanes). Increased operations staff required to prevent the current illegal camping.
4) Trails: develop trails with interpretive panels, signs, etc. along the beach. Develop pedestrian access to beach from parking lot that permits protection of existing cypress trees.
5) Erosion control: stabilize eroded hillside at north end with appropriate plantings.

San Gregorio Floodplain Area East of Highway 1

1) Trails: develop trail system through agricultural/natural area with appropriate protective measures to preserve riparian and marsh natural areas.

Uplands Between San Gregorio and Pomponio Creeks

1) Administration: construct new entrance, contact station, and road leading to major campground area (road to be located between two ridges to hide it from distant views). Appropriate signs and highway markings (left-turn, acceleration, and deceleration lanes) would be included.
2) Camping: develop a campground complex in a natural bowl off the ridgetop that is not visible from Highway 1. The complex would include a 40-vehicle parking lot serving hikers and walk-in campers, a 20-unit walk-in campground, a 20-unit RV campground (accommodating vehicles of 18 ft. or less), restrooms, and a small park office.
3) Interpretive facilities: use existing ranch house and barn along north side of Pomponio Creek for interpretive displays.
4) Picnic units: develop 10 picnic units (with restroom) near ranch house and barn.
5) Trails: develop trail system providing access to beach from all recreation areas.

Pomponio Beach Area West of Highway 1

1) Parking: develop 80-car lot at north end and 30-car lot at south end. Minor grading at the south location would take advantage of existing land contours to screen lot from Highway 1. Both lots would have restroom facilities.
2) Administration: construct new entrances and contact stations at both north and south locations, with signs and pavement markings (left-turn, acceleration, deceleration lanes). Increased staff will be required to prevent current illegal camping in this area.
3) Picnic units: develop 8 picnic units near parking lot at north end.
4) Trails: develop trails with appropriate interpretive signs, panels, etc. along the beach.

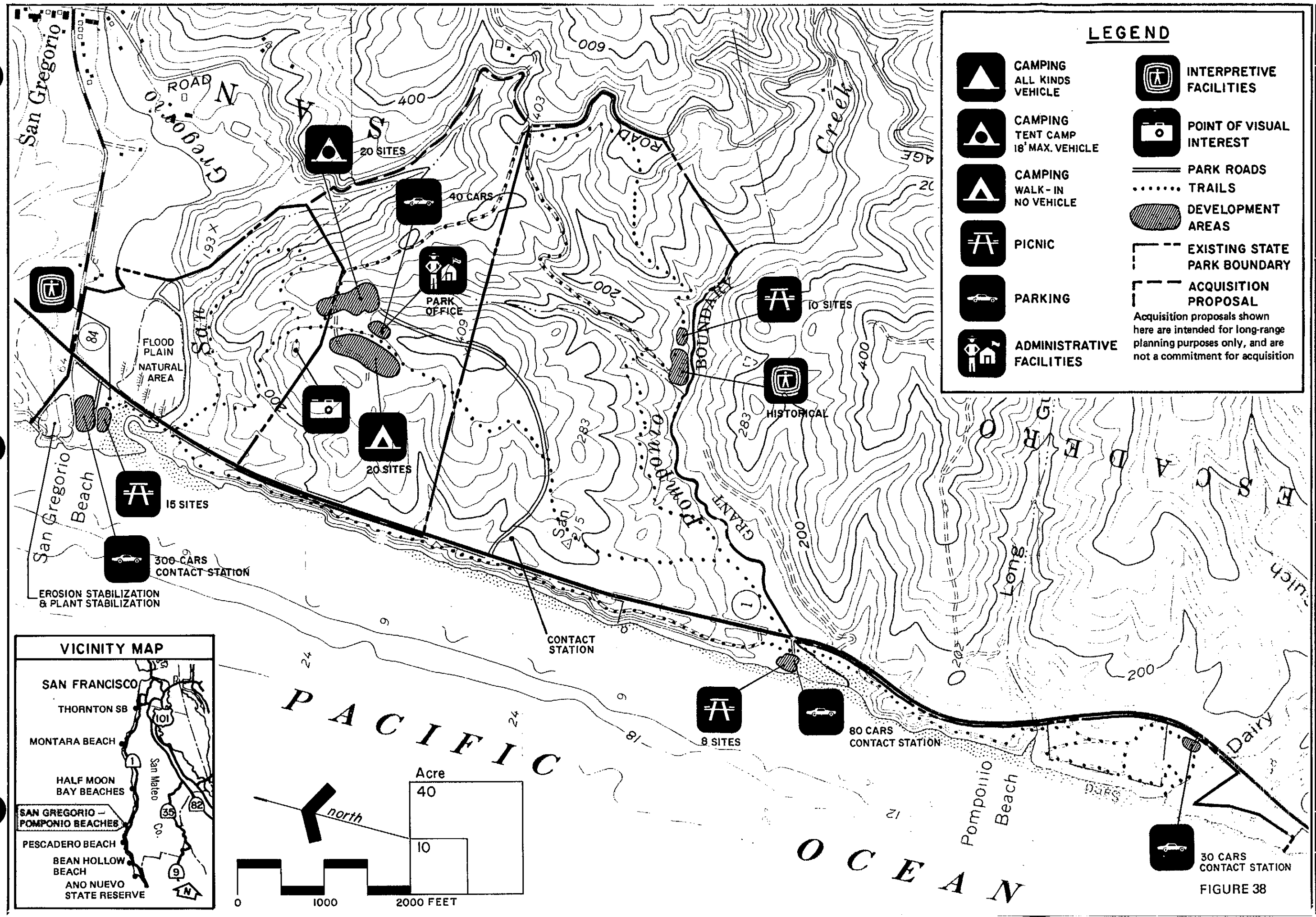

FIGURE 38

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DATE
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RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE

SAN MATEO COAST AREA
GENERAL PLAN
SAN GREGORIO - POMPONIO STATE BEACHES

DRAWING No.
16843

SHEET No.
1 OF 1

PESCADERO STATE BEACH

Existing Land Use	Proposed Land Use
Marsh Area Inland from Highway 1	
Wetlands - 168 ha (65 a.) wetlands preservation	Same
Area Bounded by Butano Creek, Pescadero Road, and Highway 1	
Flat land - 20.2 ha (40 a.) agricultural use	Convert 1.2 ha (3 a.) to parking area, remaining area to continue in agricultural use
Area Inland from Marsh between Pescadero and Butano Creeks	
Flat land - 44.5 ha (110 a.) residential and agricultural uses	Convert agricultural land to scenic open space (natural state); use existing structures for interpretation and administration
Coastal Area West of Highway 1 and North of Pescadero Creek	
Sandy beach - 8.1 ha (22 a.) 1,060 m (3,500 l.ft.) sunbathing and beach play	Same
Dunes - 2 ha (5 a.) separating parking from beach	Same
Coastal terrace - 2 ha (2 a.) parking (and illegal camping)	Eliminate illegal camping, otherwise the same
Coastal Area West of Highway 1 and South of Pescadero Creek	
Rocky shoreline - 10.1 ha (25 a.) 1,970 m (6,500 l.ft.) tidepool exploration and scenic viewing	Same
Coastal terrace - 2 ha (5 a.) parking (and illegal camping)	Decrease parking area to 0.8 ha (2 a.) and eliminate illegal camping

Chief Recreation Needs

Improved interpretive programs and accommodations for visitors (school groups, nature groups, and individuals) to the marsh; improved parking facilities for beach users.

Proposed Additions

None

Proposed Development

Marsh Area Inland from Highway 1

1) Trails: develop trails with interpretive signs, panels, etc.

Area Bounded by Butano Creek, Pescadero Road, and Highway 1

1) Parking: develop 30-vehicle and 5-bus parking lot (with restrooms) on inland-facing slope, not visible from Highway 1. This will be the main access point to the marsh.
   Develop 100-vehicle lot (with restrooms) near juncture of south side of marsh and Highway 1 and not visible from either the highway or Pescadero Creek. This lot would be for beach users.
2) Access: construct undercrossing for safe pedestrian access between beach and marsh (and parking areas west of highway).
3) Trails: develop trail system with appropriate interpretive signs, panels, etc.
4) Administration: construct entrance with signs and pavement markings (left-turn, acceleration, deceleration) off Pescadero Raod, contact station, and roads skirting agricultural areas leading to both parking areas.

Area Inland from Marsh between Pescadero and Butano Creeks

1) Parking: develop 15-vehicle and 5-bus parking lot (with restrooms).
2) Administration: convert existing structures for use as park headquarters, area maintenance facility, ranger residence, and an interpretive facility.

Coastal Area West of Highway 1 and North of Pescadero Creek

1) Parking: develop 150-vehicle and 2-bus parking lot immediately adjacent to the toe of the highway fill slope and north of existing parking (this location will not be visible from highway). Convert south portion of existing parking area to bus stop area and contact station.
2) Picnic units: develop 30 picnic units (with restrooms) next to parking lot on lee side of dunes.
3) Administration: construct contact station and entrance improvements including signs and pavement markings (left-turn, acceleration, and deceleration lanes).

Coastal Area West of Highway 1 and South of Pescadero Creek

1) Parking: develop 150-vehicle parking lot (with restrooms) on existing paved area, out of view from highway.
2) Administration: improve entrance station by signs and pavement markings (left-turn, acceleration, deceleration lanes). Increased staff will be required to prevent illegal camping.

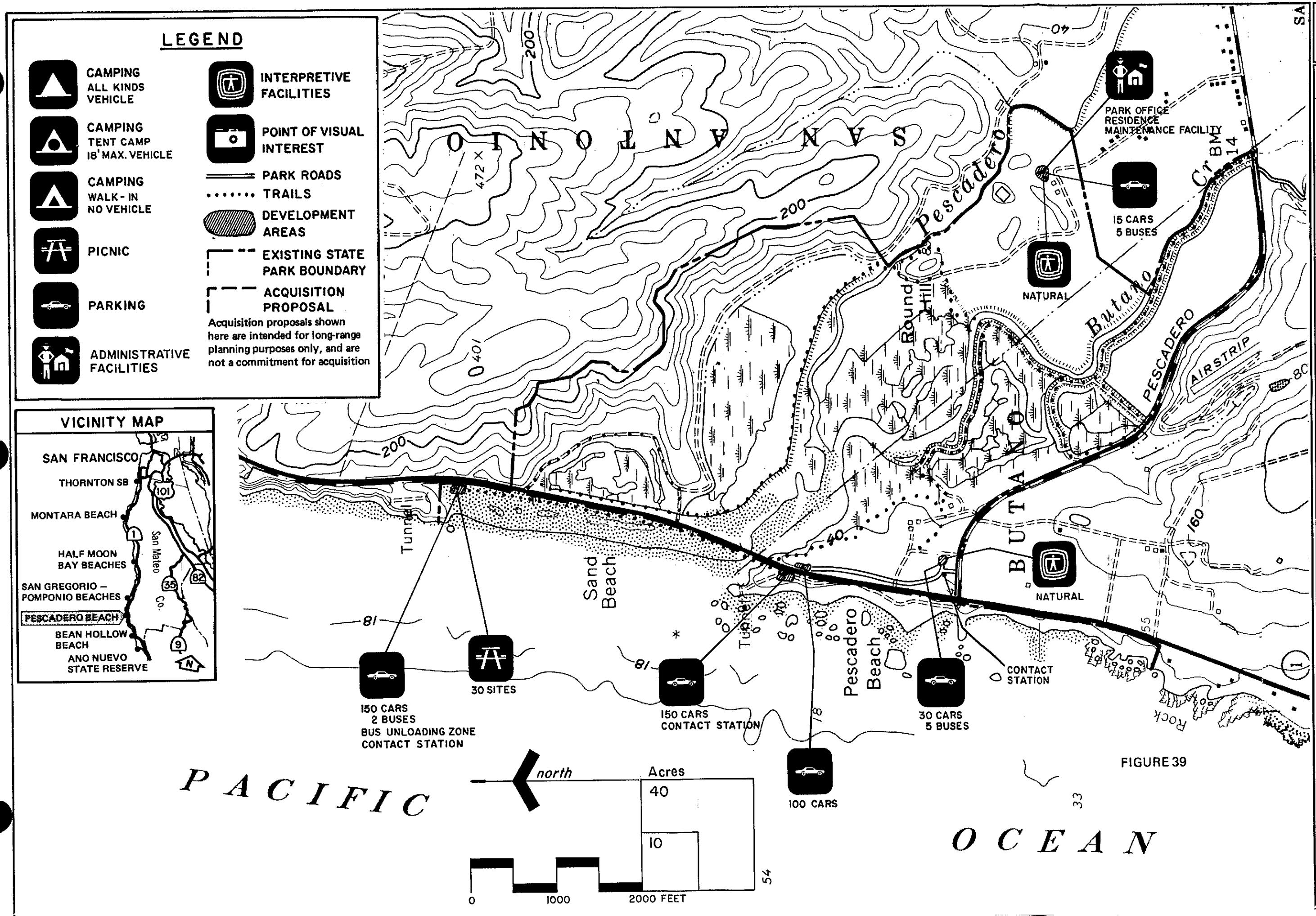
LEGEND
CAMPING ALL KINDS VEHICLE
CAMPING TENT CAMP 18' MAX. VEHICLE
CAMPING WALK-IN NO VEHICLE
PICNIC
PARKING
ADMINISTRATIVE FACILITIES
INTERPRETIVE FACILITIES
POINT OF VISUAL INTEREST
PARK ROADS
TRAILS
DEVELOPMENT AREAS
EXISTING STATE PARK BOUNDARY
ACQUISITION PROPOSAL
Acquisition proposals shown here are intended for long-range planning purposes only, and are not a commitment for acquisition
VICINITY MAP
SAN FRANCISCO
THORNTON SB
MONTARA BEACH
HALF MOON BAY BEACHES
SAN GREGORIO – POMPONIO BEACHES
PESCADERO BEACH
BEAN HOLLOW BEACH
ANO NUEVO STATE RESERVE
San Mateo Co.
PARK OFFICE RESIDENCE MAINTENANCE FACILITY
15 CARS 5 BUSES
NATURAL
Pescadero Cr
Butano Cr
Round Hill
PESCADERO AIRSTRIP
BUTANO
Tunnel
Sand Beach
Pescadero Beach
CONTACT STATION
30 CARS 5 BUSES
150 CARS 2 BUSES BUS UNLOADING ZONE CONTACT STATION
30 SITES
150 CARS CONTACT STATION
100 CARS
PACIFIC OCEAN
north
Acres
40
10
0
1000
2000 FEET
DESIGNED
DRAWN
CHECKED
DATE
REVISIONS
RESOURCES
DEPARTMENT OF PARKS AND RECREATION
APPROVED
DATE
SAN MATEO COAST AREA
GENERAL PLAN
PESCADERO STATE BEACH
DRAWING No.
16843
SHEET No.
1 OF 1

FIGURE 39

BEAN HOLLOW STATE BEACH

Existing Land Use	Proposed Land Use
Rocky shoreline - 12.1 ha (30 a.) 2,730 m (9,000 l.ft.) observation of marine life and ocean waves (and illegal collecting of marine life and rocks)	Eliminate illegal activities, otherwise the same
Sandy and/or pebbly beaches - 4.9 ha (12 a.) 455 m (1,500 l.ft.) sunbathing and beach play	Same
Coastal terrace - 18.2 (45 a.) 0.4 ha (1 a. used for parking, picnicking, and residences; remainder is open space	Use additional 2.8 ha (7 a.) for picnicking, parking, residences, and camping; remaining 15.4 ha (38 a.) left in open space

Chief Recreation Needs

Improved interpretive programs and accommodations for beach users' parking, and development of overnight camping facilities.

Proposed Additions

None

Proposed Development

Pebble Beach Area

1) Parking: improve existing parking for 25 vehicles and a bus loading zone.
2) Administration: develop signs and pavement markings (left-turn lane, acceleration, deceleration lanes), and an entrance station.

Arroyo los Frijoles Beach Area

1) Parking: improve immediately the existing parking (safety measures) by including a one-way road system into and out of the area and a bus loading zone, parking for 25 vehicles, an entrance station, and appropriate signs and pavement markings.
2) Picnic units: retain existing 10 picnic units (with restroom).
3) Long-term proposals: to preserve the scenic beauty of the coast, all of these facilities (#1 and 2 above) will be removed and the site will be restored to its natural appearance after 20 years of use or when the southernmost area of the unit is developed.

Southernmost Area

1) Parking: develop a 55-vehicle, 4-bus parking lot.
2) Camping: develop 20 walk-in campsites (with restroom).
3) Administration: construct a contact station; retain existing residence for use by operational staff and for on-site protection. Increased staff will be required to eliminate illegal activities. To achieve the safest sight distance for entry off Highway 1, the entrance road should be as far south as possible. There is a potential, due to the extra width of the highway right of way in this area, to locate an entry road intersection with Highway 1 south of the unit boundary. The entry road would turn within the highway right of way and enter the unit through the south boundary. Entrance improvements also include signs and pavement markings (left-turn, acceleration, and deceleration lanes).

Natural preserve

It is proposed that the shoreline area north of Bean Hollow Beach be classified as a natural preserve to protect the sensitive flora and fauna in this area.

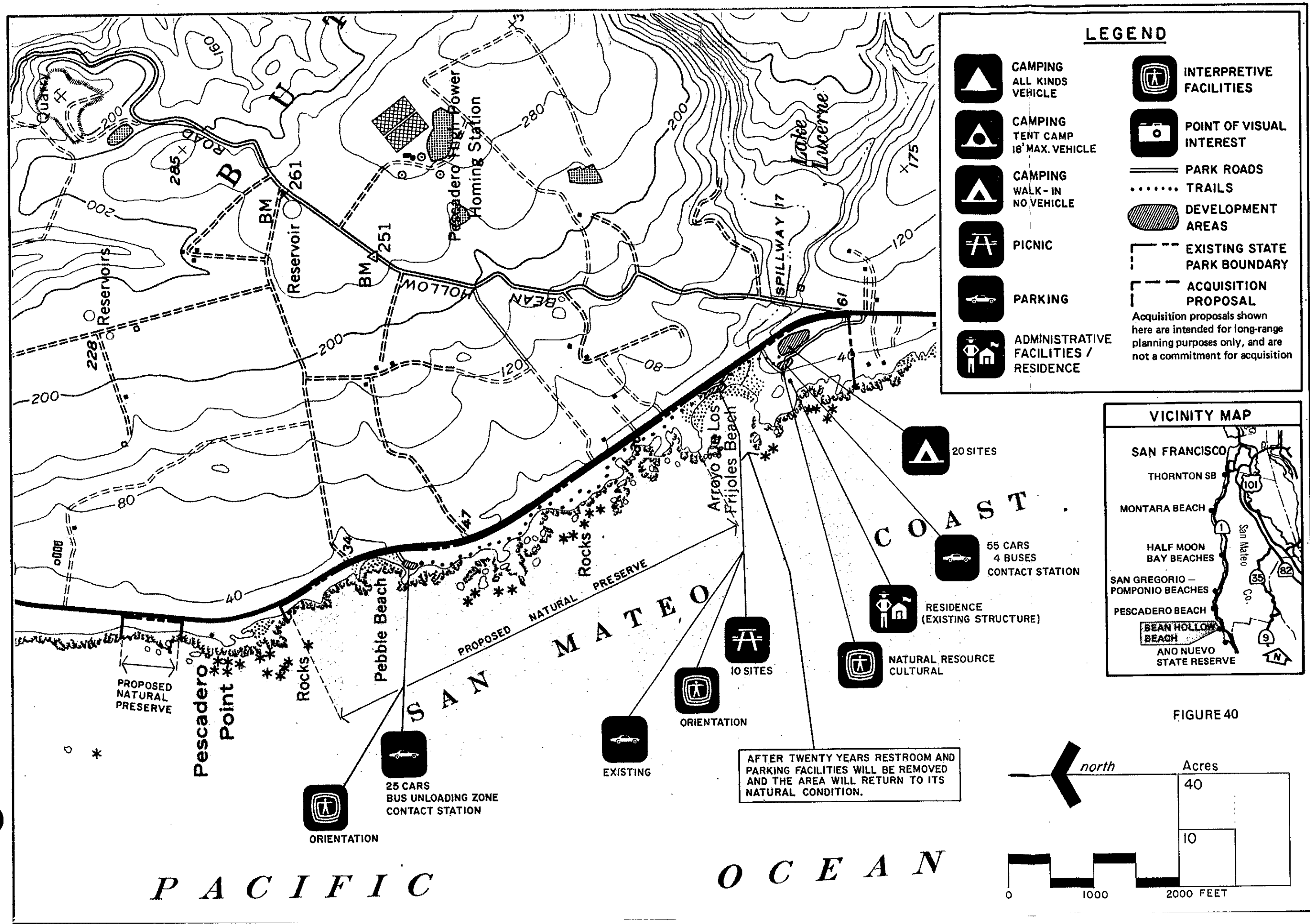

FIGURE 40

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DATE | REVISIONS

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

APPROVED | DATE

SAN MATEO COAST AREA
GENERAL PLAN
BEAN HOLLOW STATE BEACH

DRAWING No. 16843

SHEET No. 1 OF 1

ANO NUEVO STATE RESERVE

Existing Land Use

Shoreline - 498 ha (1,230 a.) 11,200 m (37,000 l.ft.) reserve for pinniped protection

Coastal Terrace - 1.2 ha (3 a.) public access, administration, and interpretive facilities

Proposed Land Use

Increase to 2.4 ha (6 a.) the land used for public access, administration, and interpretive facilities

Major Recreation Needs

Improved accommodations for interpretive guided tours and improved access to coastline.

Proposed Addition

The land between Highway 1 and the shoreline from Ano Nuevo Creek south to the San Mateo County line.

Proposed Development

Old Steele Ranch Area

1) Parking: expand existing 100-car lot to accommodate 200 vehicles, 15 buses, and bus loading zone.
2) Administration: construct a contact station, improve entrance road (including repair to existing bridge to improve safety), add signs, pavement markings (left-turn, acceleration, deceleration lanes). Adapt existing Steele Ranch headquarters for administration an interpretive uses.
3) Trails: develop trail system and restrooms as necessary to support interpretive program.

Green Oaks Creek Area

Use of this area would be by reservation only. It would serve organized groups (school and others) during the peak season for elephant seal observation.

1) Parking: expand facilities to include parking for 30 vehicles and 5 buses.
2) Administration: retain existing residence for use by operational staff and for on-site protection.
3) Trails: develop trail system and restrooms as necessary to support interpretive program.
4) Roads: special care will be given the creek crossing if road improvement is required there.

Cascade/Whitehouse Creeks Area

1) Parking: develop 75-vehicle parking lot in gentle swale area that is not visible from highway.
2) Picnic units: develop 30 picnic units (with restrooms) near parking area.
3) Administration: construct contact station and improve entrance road with signs and pavement markings (left-turn, acceleration, deceleration lanes).
4) Trails: develop trail system connecting this area to the shoreline.
5) Camping: this part of the reserve is physically well separated from the fragile sand dune areas at Franklin and Ano Nuevo points, and is nearly two miles distant from the breeding areas of the elephant seals. As part of the reserve, no camping can now be permitted; however, if this separated part of Ano Nuevo State Reserve is reclassified in the future to permit camping use, conversion of a part of the proposed day-use parking facilities could accommodate parking for 30 walk-in campsites to be located near the existing grove of trees. This conversion is the long-range proposal of this plan.

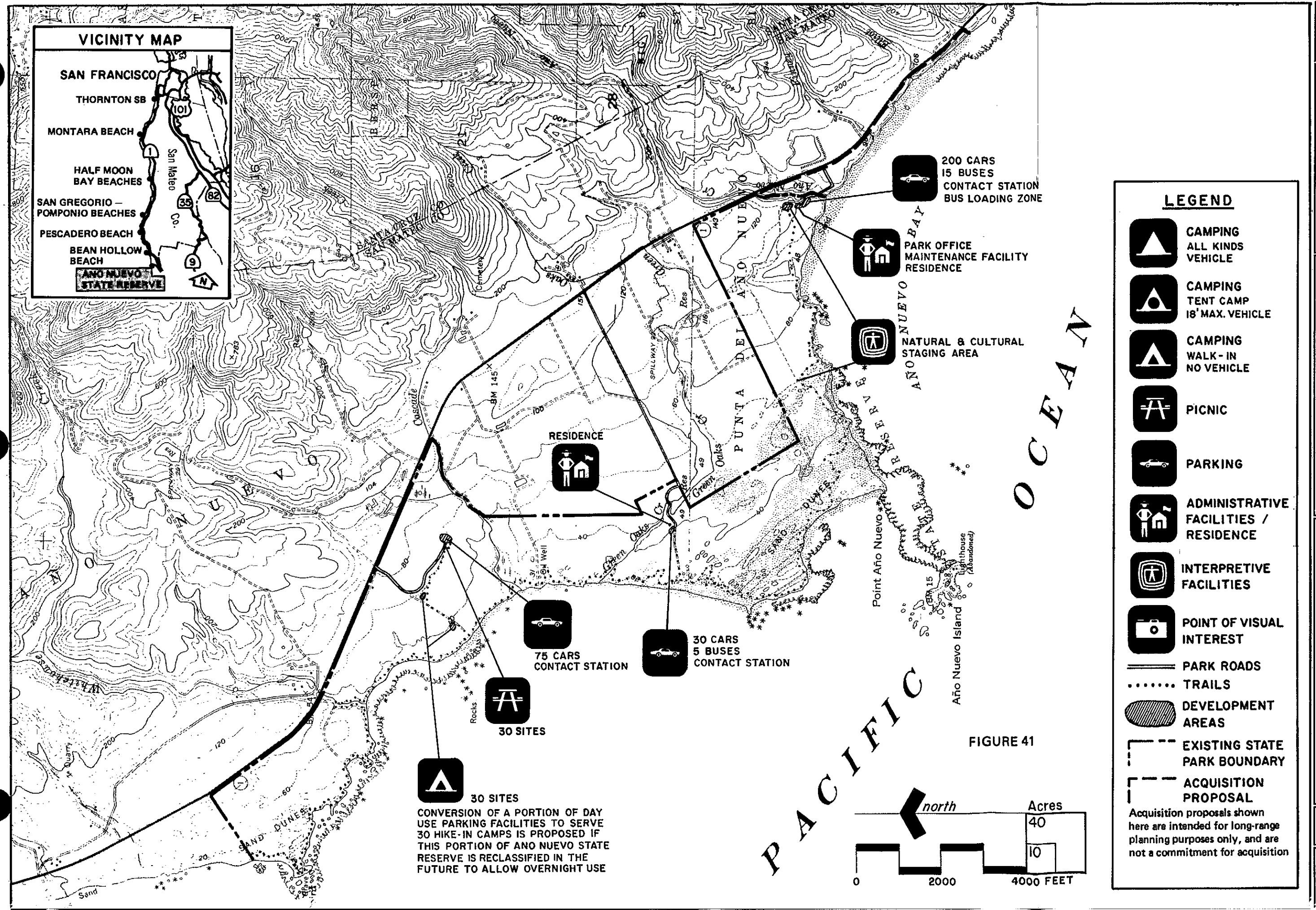

FIGURE 41

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APPROVED _____ DATE _____

SAN MATEO COAST AREA
GENERAL PLAN
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Interpretation

In general, interpretation at these beaches will emphasize the ecology of special areas, the continuing evolution of the landscape, and beach and ocean dynamics. Wherever possible, self-guided trails and low-profile outdoor exhibits will be employed as the most practical means of providing interpretive information for such an extensive area.

Specific themes and suitable projects for individual units are outlined in the following pages.

Thornton SB

Primary Theme: Beach recreation and safety
Secondary Theme: Continuing evolution of the landscape

Interpretive Facilities

1. Visitor Orientation Area: A small visitor orientation area can be located in the existing contact station. Graphics, artifacts, models, and audio-visual programs will introduce visitors to the various natural resources at Thornton State Beach, including the formation of Thornton Valley, local terrestrial and marine food chains, and the San Andreas fault zone. A variety of free and sales publications should be available here to provide additional information to interested visitors.

2. Outdoor Exhibits: Low-profile outdoor exhibits should be located at appropriate observation points on the bluff, and at the contact station. (These exhibits can explain the various earth movements visible at Thornton, compare the seagulls' and radio controlled gliders' use of updraft winds along the bluff, and provide a series of rotating panels on the gray whale, fishing and wildflowers.

3. Self-guided Trail: A self-guided trail exploring the valley and bluff area can be used to identify various native and introduced species present, and to tell how they have adapted to the salt and wind of the coastal environment.

Interpretive Programs

Scheduled and impromptu guided walks can focus on seasonal variations along the coast, wildlife identification, and geologic hazards. Special programs for children, such as Junior Ranger and Litter-Getter, should be implemented. Interpretive programs for groups can be designed to meet their particular needs and interests, when arrangements are made in advance.

A teacher's guide should be prepared, with pre-trip information for group leaders.

Gray Whale Cove and Montara SB

Primary Theme: Beach recreation and safety
Secondary Theme: Beach and ocean dynamics

Interpretive Facilities

1. Outdoor Exhibits: Low-profile outdoor exhibits should be located at each beach access area to orient visitors to the unit and to identify ocean hazards.

2. Self-guided Trail: A self-guided trail along the beach can acquaint visitors with ocean and beach dynamics and the physical processes constantly modifying the coastline.

Interpretive Programs

Guided walks on natural and cultural history should be offered occasionally, as visitor demand and interpretive staff increases. If camping is developed at Montara, campfire programs and other types of evening activities can be presented.

Half Moon Bay SB

Primary Themes: Beach and ocean dynamics; coastline evolution
Secondary Themes: Beach recreation and safety; cultural history

Interpretive Facilities

1. Outdoor Exhibits: Low-profile outdoor exhibits should be located at each beach access area to briefly orient visitors to the unit and to identify ocean hazards. Exhibits at the main entrance to Half Moon Bay should provide a general introduction to the natural and cultural history of the area, a schedule of activities, and seasonal highlights.

2. Self-guided Trail: A self-guided trail along the beach and sand dunes can acquaint visitors with ocean and beach dynamics and the physical processes constantly modifying the coastline.

Interpretive Programs

Scheduled and impromptu guided walks can focus on seasonal variations along the coast, wildlife identification, ocean hazards, beach recreation, and safety. Evening programs should be offered in the campground or informally on the beach, whenever the weather permits. Special programs for children, such as Junior Ranger and Litter-Getter, should be implemented.

San Gregorio SB and Pomponio SB

Primary Theme: Ecology of biotic communities
Secondary Theme: Cultural history of the area

Interpretive Facilities

1. Outdoor Exhibits: At Pomponio, a low-profile outdoor exhibit should be located at the main beach access area to orient visitors to the unit, the trail system, and scheduled activities. At San Gregorio, a low-profile outdoor exhibit should be located near the registered landmark, to discuss the exploration of California's coast and the many different groups of people who have passed through this area. Information on the trail system and scheduled activities should also be available here.

2. Self-guided Trails: Self-guided trails can encourage visitors to explore different areas. Trails through the inland areas can allow the visitor to compare the various biotic communities and wildlife, and development of coastal ranching. A trail on the bluffs can explain the constant changes along the coast and plants and animals that have adapted to this environment, and from a hilltop vista, the evolution of the coastal landscape can be presented.

3. Caughey Ranch: The Caughey Ranch can be used to interpret a typical coastal ranch. The exteriors, and possibly the interiors, of the buildings would be included in self-guided and guided tours. Environmental living programs may also be appropriate here.

Interpretive Programs
Guided walks on natural and cultural history should be offered on a planned basis, as visitor demand and interpretive staff increases. As camping is developed, campfire programs and other types of evening activities can be presented.

Pescadero SB

Primary Theme: Ecology of a marsh
Secondary Theme: Beach and ocean dynamics

Interpretive Facilities

1. Visitor Orientation Area: An orientation area at the marsh's main access point, with an observation platform and low-profile panels, should provide an introduction to the marsh and explain the purpose of the preserve. A schedule of activities and seasonal highlights, and publications such as park brochures, self-guided trail brochures, and plant and animal checklists, would be available here.

2. Outdoor Exhibits: Low-profile outdoor exhibits should be located at key observation points along the main trails and on the ocean bluff. These exhibits can be rotated to reflect seasonal changes at the marsh and beach.

3. Self-guided Trails: A self-guided trail should be developed that provides visitor access to the bluffs with appropriate panels at key observation points. A trail to the marsh should be carefully designed to permit visitor access with minimum disturbance to this fragile resource. A teacher's guide should be prepared, with pre-trip information for group leaders.

Bean Hollow SB

Primary Theme: Evolution of the landscape
Secondary Theme: Cultural history

Interpretive Facilities

1. Outdoor Exhibits: Low-profile exhibits should be located on the bluffs above Pebble Beach and Arroyo de Los Frijoles. The exhibits at Pebble Beach should focus on the formation of the pebbly beach and the history of recreational day-use here, including "Coburn's Folly." At Arroyo de Los Frijoles, the story of a sandy beach and tips for surf fishing can be presented.

2. Self-guided Trail: A self-guided trail along the bluff between Pebble Beach and Arroyo de Los Frijoles can explain the continuing processes of coastal evolution, and the plants and animals that have adapted to this environment.

Interpretive Programs

Scheduled and impromptu guided walks can introduce visitors to some of the resources at Bean Hollow. Visitor exploration of the intertidal areas should be by guided tour, to protect the invertebrate populations. Interpretive programs for groups can be designed to meet their particular needs and interests, when arrangements are made in advance. A teacher's guide should be prepared for group leaders, with pre-trip information on Bean Hollow and other units along the San Mateo coast.

Ano Nuevo SR

Primary Theme: Life history of seals and sea lions
Secondary Theme: Cultural history; biotic communities; geomorphology

Interpretive Facilities

1. Visitor Orientation Area: The visitor center will orient visitors to Ano Nuevo and the purpose of a state reserve. Graphic artifacts and models will be used to introduce the various cultures that have used Ano Nuevo, the biotic communities present, and local geomorphology. In addition, an exhibit will focus on the problems of rare and endangered species, using the northern elephant seal as an example. A comprehensive look at the life habitats of seals and sea lions will also be provided. Aspects of their lives, and those of species not seen by visitors, would be presented in audio-visual programs. A videotape system should be considered for this program; it would also be a valuable tool for continuing elephant seal research. A meeting area for the elephant seal tours will be located in or near the visitor center. A variety of free and sales publications will be available in the visitor center, including park and trail guides, plant and animal checklists, a teacher's guide, and appropriate books.

2. Outdoor Exhibits: Low-profile outdoor exhibits should be located at the parking area and at the eastern edge of the dunes area, to provide a brief orientation summary of rules and regulations, and a schedule of activities. Interpretive panels can be changed to reflect seasonal changes at the reserve.

3. Steele Dairy Ranch: The Steele Dairy ranch buildings will be used to interpret the development of agriculture along the coast. The exteriors, and possibly the interiors, of the barns and houses would be included in self-guided and guided tours.

4. Self-guided Trails: Self-guided interpretive activities should be available at the reserve, except in the dunes area during elephant seal breeding season. Self-guided trails exploring different areas of the reserve, such as Ano Nuevo Creek, marine terraces, sand dunes, and the beach, should be keyed to features or concepts, and should encourage visitor observation and discovery.

Interpretive Programs

Personal services will be a major part of the interpretive program at Ano Nuevo. Regularly scheduled guided walks will acquaint visitors with various natural and cultural features, and will help reduce visitor impact on vulnerable resources.

During the northern elephant seal breeding season (December through March), visitor observation of the marine mammals, and access to the dunes area, will be by guided tour only. Because of the constantly changing conditions, no permanent trails will be established in the dunes area. Tour schedules and routes should be flexible, to accommodate the seals' activities. The seals' security and safety will have first priority.

Since 1974, University of California at Santa Cruz students have been volunteer guides, providing 27 tours per day, with 20 people per tour. Visitor demand for tours is high, with all tours filled by advance reservations. A docent program should be organized to help conduct the tours, recruiting from U.C. Santa Cruz and other interested segments of the community. Coordination of training and tour schedules would be provided jointly by park personnel and a docent liaison.

Utilities

Solar power and wind power will be used whenever feasible, where a source of energy is required. Pacific Gas and Electric Company electrical service is available in the area to supplement or replace solar and wind power, if necessary. All electric lines will be placed underground or hidden from view. Telephones will be provided at appropriate permanent structures, with underground lines.

Propane gas containers are available in the area.

Development of on-site water collection and sewage disposal, designed for minimum water use, will be considered as an alternative to hooking up with existing water and sewage districts or hauling wastewater and sewage out (see Water Availability and Sewage Disposal, page 140).

Recommended Priority for Future Improvements

1. Assure adequate operations staff before any improvements (see Operations Element, page 185).

2. Improvements to protect and aid in interpretation of the seals and sea lions at Ano Nuevo State Reserve.

3. Improvements that would curtail a verified, serious loss of natural resources anywhere in the area.

4. Entrance improvements, including signs, etc., at all access points to all beach units.

5. Parking and day-use improvements to units in the northern 20 miles of San Mateo County.

6. Camping improvements to units in the northern 20 miles of San Mateo County.

7. Parking and day-use improvements to units on the south coast of San Mateo County.

8. Camping improvements to units on the south coast area of the San Mateo coast.

OPERATIONS ELEMENT

OPERATIONS ELEMENT

Loss of Control and Lack of Maintenance and Clean-up

Findings: Out of 265 returned questionnaires, the response to the question "What can be done to make these parks more enjoyable to you?" was:

67 comments asking for cleaner units.
43 comments asking for safer units.
21 comments asking for some sort of program activity.
100 comments asking for some sort of facility development.
34 "no comment".

Comments about operation and maintenance make up more than half (131 of 231) of the comments made. They clearly define a key issue: "How can cleaner and safer beaches be provided?"

The walls of the halls of the Sacramento Resources Building could be covered with the policies and rules which have been written to prevent the littering and abuse of beaches and coastal lands.

All the policies, rules, and coastal acts have not changed the real-life situation of cars, bumper-to-bumper, streaming over Devil's Slide, heading for coastal beaches. And the written acts and policies do not change the fact that some of these cars headed for the beach are filled with people who just want to raise hell.

The park rangers, local police, fire and rescue forces, and residents, are left to handle the real-life situation, and they do an incredibly good job. Drunk and disorderly behavior is just as much a social problem on our beaches as in our downtown city streets. It is not just a problem for the rangers or police force. It is a problem of the society at large, and belongs to all of us.

The relationship that future physical improvements may have to the litter and abuse of public beaches is simply that uncontrolled and disorderly public places tend to attract uncontrolled and disorderly crowds. Conversely, controlled and orderly places tend to attract more controlled and orderly crowds.

The San Mateo Coast State Beaches have very few developed facilities. Justification of personnel has in the past been based on taking care of developed facilities. This kind of justification overlooks the need for personnel relative to taking care of land, and management of environments and ecosystems. It also overlooks the need for personnel based on use, and on the numbers of people who use the land.

In many instances, public use does not occur in significant quantity until parking and camping/picnic facilities are provided. This is not the case at the San Mateo Coast State Beaches. Millions of people use these beaches, with virtually no developed facilities. The result is that the maintenance housekeeping and protective Operations staff is not in accordance with the numbers of people who visit the San Mateo Coast State Beaches, nor with the amount of land and ecosystem to be maintained.

The terms "maintenance" and "housekeeping" help to define the problem. The term "housekeeping" includes clean-up chores such as beach litter pickup. The term "maintenance" includes housekeeping and all kinds of maintenance work, but is sometimes interpreted within the confines of painting and repair of buildings and grounds. Such a misinterpretation of the term "maintenance" may lead to the mistaken assumption that if there are no buildings and grounds developments, there is no need for maintenance. If such a false assumption is made, the "housekeeping" or clean-up chores are left undone.

In units with high visitation, it takes more staff time for housekeeping without developed facilities than with developed facilities. To establish some semblance of control, maintenance workers in undeveloped high visitation units put up makeshift physical controls. The end result is vehicle barriers of all shapes and sizes, and a patchwork of soil, gravel, asphalt, sand, etc. None of this is respected by visitors, and thus encourages mistreatment. Such mistreatment includes burning and breaking of barriers, and littering because the place looks messy anyway, both of which increase the housekeeping work needed. But most importantly, the mistreatment spills over to tidepools, coastal plains, wildlife habitat, and all natural resource values.

To maintain the makeshift facilities and control the use of existing visitation in the San Mateo Coast area would require 27 permanent people and 39,000 seasonal person-hours. The existing staff consists of 17 permanent people and 29,000 seasonal person-hours. Any increase in land or newly developed facilities over and above existing ownership and facilities must be evaluated in terms of maintenance and operations staff currently required (27 permanent positions and 39,000 seasonal person-hours).

Conclusion: Maintenance, housekeeping, and protective operations staff is not in accordance with the numbers of people who visit the state-owned beaches, nor with the amount of coastline ecosystems to be protected.

Recommendation: Provide, as soon as possible, some well-defined and well-designed facilities and necessary support staff, to better serve the public, and to protect the natural and cultural resources.

Recommendation: Revise the existing justification of the personnel system to require maintenance and operation personnel for the purpose of maintaining environmental values relative to the amount of visitation, and the threat to natural resources.

Recommendation: Instigate interpretive programs that will increase operations efficiency, i.e., provide free parking, possibly in exchange for voluntary clean-up by users, or provide pay parking with awareness of litter program and "help keep it clean" messages.

Recommendation: A comparison study should be made between state-owned and operated and privately owned and operated coastline recreation areas. This comparison should evaluate natural resource protection, beach facility sanitation and cleanliness, and availability for public use. The goal of the evaluation would be to determine what methods work best in practice for protecting natural resources, maintaining clean and sanitary beaches, and providing access for use by all people.

ENVIRONMENTAL IMPACT ELEMENT

SAN MATEO COAST
DRAFT ENVIRONMENTAL IMPACT ELEMENT

INTRODUCTION

Pursuant to SB 1892, Chapter 615, this General Plan (including the Environmental Impact Element) constitutes a report on a project, for the purposes of the California Environmental Quality Act. The plan lists the management policies and development plans proposed for the San Mateo Coast units of the State Park System. The draft Environmental Impact Element (Environmental Impact Report) analyzes the potential environmental impact of these policies, objectives, and plans.

These units of the State Park System are located along the Pacific Ocean and State Highway 1 in San Mateo County. San Mateo County is in the Central Coast area of California (see location mapping, figure 1).

The purpose of the Environmental Impact Elment of the San Mateo Coast General Plan is to assess and report the impacts of the proposed development and management plans on the environment. Because the Resource Element, Land Use and Facilities Element, and Operations Element are broad master plans, the Draft EIE is a broad, general assessment.

The Environmental Impact Element is a general analysis of environmental impacts. Should specific plans become budgeted and proposed for implementation, more detailed environmental assessments will be prepared, and documentation pursuant to the California Environmental Quality Act will be formulated. The degree of specificity of this Environmental Impact Element corresponds to the degree of specificity of the General Plan (California Administrative Code, Section 15147).

This Draft Environmental Impact Element has been prepared according to the amended mandates of the California Environmental Quality Act, which call for an objective assessment of the proposed project's environmental consequences. Those aspects of the proposed project with the greatest potential to cause an adverse change in the environment have been emphasized. Additional descriptions of existing environmental conditions, and effects not expected to cause a substantial adverse change in the environment are briefly discussed. Also, published documents such as county general plan elements and local coastal plan elements are incorporated into this report by reference, to avoid unnecessary repetition.

Pursuant to the Public Resources Code, Section 5002.2a, and the California Administrative Code, Section 15147, and also to avoid needless repetition, the Environmental Impact Element incorporates by reference all information contained in the preceding elements of this document.

The Inventory of Features is an inventory of the natural, cultural and recreational resources in the State Park System unit. This inventory is critically analyzed in terms of the purpose, philosophy, and objectives of the unit; specific policies for management of the unit's resources are formulated. The inventories of features are on file at the department's Resource Preservation and Interpretation Division, in Sacramento. Park System planners now work within the framework of this Resource Element developing

appropriate park system unit plans. Therefore, the character of the development proposed for these units reflects the policies set forth in the Resource Element of the General Plan. User facilities are selected that will promote public use and encourage enjoyment of the unit without impairing and devastating the natural and cultural values. Throughout this planning process, a continuing analysis of possible impacts is made which promulgate mitigating measures such as decreasing use intensity. The mitigating measures are designed into the original plan. consequently, this plan is inceptually designed to provide recreational opportunities that will complement and preserve the valuable resources of the area.

DESCRIPTION OF THE ENVIRONMENTAL SETTING

General

Coastal Zone - Project Area

The San Mateo coast is located in the Coast Range geomorphic province. Geologic factors for each of the State Park System units are specified in the Inventory of Features, and include detailed information concerning geologic formations, bedrock, fossil content of the bedrock, seismicity, and surface stability (specifically explaining the present and potential landsliding propensity).

The principal geologic feature in the area is the San Andreas Fault. Regional strain deformation is known to occur across the San Andreas Fault at an average rate of 2 inches per year. The exact locations of the strain deformation is unknown, but is believed to be occurring in the Stanford Foothill and San Bruno areas. In any seismically active area, earthquakes must be anticipated and planned for. Future earthquake magnitude cannot be predicted, but estimations based on previous intensities can be made. The magnitude of the largest anticipated earthquake for the San Andreas Fault within the subject area is 8+ Richter Scale. The magnitudes of the largest anticipated earthquakes for the Seal Cove and San Gregorio Faults are 6.8 and 7.1 Richter Scale, respectively. Seismic structural designs have been developed which provide nominal damage risk.

Soil factors for each unit are specified in the Inventory of Features. Since blowing sand covers much of the coastal area, soil development is often limited and soil fertility is often low. Quite commonly, the soil cover is very thin, and typically sandy or silt clay. On Coast Range mountain slopes, rock fragments of the Franciscan group are common. Respective soils are relatively more fertile.

Climate and weather factors are mentioned in each Inventory of Features, and include detailed information regarding climate, weather, temperature, and precipitation. The climate is generally mild throughout the year, with moist, cool winters and foggy summers. The average annual temperature is 14°C. (57°F.) with a low average monthly temperature of 10°C. (50°F.) and a high average monthly temperature of 17°C. (62°F.). The average annual precipitation for the San Mateo Coast is 55 cm (22 inches). The directions and extent of wind patterns vary seasonally. Cold ocean upwelling and marine air cause the commonly occurring spring and summer fog.

Hydrologic factors are mentioned in each Inventory of Features. Although there is no permanent source of surface water in the San Mateo coast units, water runoff occurs following periods of rainy weather. Severe erosion is associated with this runoff. Common sources of water for the San Mateo coast are importation, well water, and stream reservoirs.

A 1945-1970 analysis by D.A. Webster, USGS, Department of the Interior, indicates marginal to adequate well water yields for stock or single family domestic use; 0.5 to 5 gpm. No data were available on regional groundwater quality. The San Francisco Bay Basin No. 2 Water Quality Control Plan shows no general data for groundwater quality.

Flora in each unit are specified in each Inventory of Features, and include the following plant communities: coastal strand, riparian woodland, freshwater marsh, coastal scrub, introduced annual grassland, and chaparral. All the communities are significantly modified by a great percentage of introduced exotic species.

Coastal strand consists of the vegetation of sandy beaches and coastal sand dunes. The beach is the sandy area between the mean tide and the foredune. The beach is characterized by a maritime climate, high exposure to salt spray, and sand blast and shifting sand, with low water-holding capacity and low organic matter content. Dunes are sandy, open habitat, extending from the foredune to vegetation on stabilized soil. Introduced European beach grass has been widely planted, and has become naturalized all along the Pacific coast. The coastal strand is relatively continuous from the Golden Gate Bridge to the Pajaro River, except in areas where sheer cliffs cascade into the ocean. Areas of dunes are found all along the San Mateo coast, particularly from Pillar Point to Tunitas Creek and San Gregorio Creek to Pescadero Creek and Ano Nuevo Point.

Riparian communities consist of hydrophytic plants growing along coastal drainages. The coastal drainages usually contain willow shrubs (Salix lasiolepis and S. Lasiandra), blackberries (Rubus ursinus), hemlock (Conium maculatum), horsetail (Equisetum spp.), Pacific silverwood (Potentilla egudu var. grandis), sedges (Carex spp.), and rushes (Juncus spp). Pampas grass (Cortaderia spp.) and cattails (Typha spp.) grow around creeks and in creek bottoms.

The freshwater marshes and riparian areas occur along the lake edges, ponds, and streams, particularly San Gregorio, Pomponio, Pescadero, Whitehouse, and Cascade creeks. The lower portions of some marshes are brackish, and support both fresh and salt water marsh flora.

The coastal scrub is low vegetative cover occurring on coastal bluffs, hills, and summits. Coastal scrub is usually less than six feet tall, and is subject to fog and strong winds.

A grassland consisting of annual grasses and weedy forbs occurs along many of the terraces behind the beach areas. Many of these grassland areas are best described as fallow agricultural fields, once cleared of the coastal scrub and vegetation. Common weeds include bristly ox-tongue (Picris echioides), wild mustard (Brassica spp.), willow dock (Rumex salicifolius) and thistle (Carduus spp.), and California poppy (Eschscholzia californica).

The areas of chaparral occur on the slopes of high ridges, particularly on the properties east of Highway 1.

The beach strawberry (Frageria chiloensis) is recognized as a unique plant species, having special significance in San Mateo County. The beach strawberry occurs in numerous locations along the San Mateo coast. The habitat of this strawberry extends along the coast from Oregon to Santa Barbara. The beach strawberry is unique, because of its importance as one of the parents of the domestic strawberry varieties. It occurs in sporadic colonies on coastal terraces, bluffs, and stabilized dunes.

Because of the rocky bottom, red, brown, and green algaes abound in the intertidal zone. Common algae include rock week (Fucus furcatus), sea lettuce (Ulra latuca), and red seaweek (Botryoglossum). Giant kelp (Macrocystis pyrifera) and Bull kelp (Nereocystis leutkeana) grow in the sub-littoral zone.

Descriptions of fauna in each unit are specified in each Inventory of Features. The abundance, variety, and distribution of animal life in an area is usually dependent on the types of available habitat. Floristic communities have associated animal species. Animal groups include marine fish (intertidal, littoral, and pelagic invertebrates), mammals, birds, amphibians, and reptiles.

Marine life, including the intertidal zone, is diverse with respect to availability of habitat and numbers of species. A major factor contributing to the relatively low habitat availability and species numbers along most portions of the coast is illegal over-collection. For example, the lack of diversity of invertebrate life in the intertidal rocks is a consequence of illegal removal and over-collection of these species.

Well over 200 species of invertebrates have been identified in the intertidal and littoral waters off certain portions of the coast. Common invertebrates include: limpets, shore crabs (Hemigrapsus spp.), sea anemones (Anthopleura spp.), snails, beach hoppers, isopods, chitons, barnacles, and mussels (Mytilus californius). Associated with the rocky intertidal zone are ruddy turnstones (Arenaria interepres), black turnstones (Arenaria melanocephala), black oyster-catchers (Haematopus bachmani), spotted sandpipers (Actitis macularia), and wandering tattlers (Heteroscelus incanus). Birds such as the whimbrel (Numenius phaeopus), willet (Catoptrophorus semipalmatus), marbled godwit (Limosa fedoa) and sanderlings (Calidris alba) pursue the invertebrates in the sandy areas of the surf zone.

The pinniped rookery on Ano Nuevo State Reserve is an outstanding feature of animal life along the San Mateo Coast. The main rookery area is reported to be one of the most concentrated breeding grounds in the world for seals and sea lions. At present, Ano Nuevo SR is the only place in the world with a northern elephant seal rookery on the mainland.

The three pinniped species that use Ano Nuevo SR as a rookery are the northern elephant seal (Mirounga angustirostis), the harbor seal (Phoca vitulina), and the stellar sea lion (Eumetopias jubata). The California sea lions (Zalophus californianus) observed at the reserve have been mostly young adult males.

Other pelagic mammals common to this coastal area include the California gray whale (Eschrichtui gibbosus), fin-back whale (Balaenoptera physalus), Baird dolphin (Delphinus delphis bairdi), Pacific pilot whale (Globicephala scammoni), Pacific white-sided dolphin

(Lagenochynchus obliquidens), killer whale (Orcinus orca), harbor porpoise (Phocoena phocoena), dall porpoise (Phocoenoides dalli), Bairds beaked whale (Berardius bairdii), and sea otter (Enhydra eutris).

Some of the more common fish of this coastal area include skates (Raja spp.), striped bass (Roccus saxatilis), white croakers (Genyonemus lineatus), flat fish, flounder, sole, barred surfperch (Amphistichus argenteus), rock pool blenny (Hypsoblennius gilberti), blue rockfish (Sebastes mystinus), lingcod (Ophiodon elongatus), black rockfish (Sebastes melanops), canary rockfish (Sebastes pinniger), copper rockfish (Sebastes caurinus), and brown rockfish (Sebastes auriculatus).

The bird population throughout the San Mateo Coast units of the State Park System is varied and extensive. Common species include Anna's hummingbird (Calypte anna), Say's phoebe (Sayornis sava), common bushtit (Psaltriparus minimus), bewick wren (Thyromanes bewicki), house finch (Carpodacus mexicanus), lesser goldfinch (Spinus psaltria), son sparrow (Melospiza melodia), white crown sparrow (Zonotrichia leucophrys), red-shafted flicker (Colaptes auratus cafer), vireos (Vireo spp.), warblers (Dendroica spp.), gulls (Larus spp.), loon (Garva immer), Western grebe (Aechmophorus occidentalis), Brant's cormorant (Phalacrocorax penicillatus), red-breasted merganzer (Mergus serrator), common murre (Uria aalge) and forster's tern (Sterna forsteri). Also, several raptors such as the American kestral (Falco sparverius) and red-tailed hawk (Buteo jamaicensis) soar in the area. The brown pelican (Pelecanus occidentalis californicus) and the California least tern (Sterna albifrons browni) are two birds on the endangered species list that have been observed in the area.

Terrestrial animals common to the California coastline include the deer mouse (Peromyscus maniculatus), California meadow mouse (Microtus californicus), mule deer (Odocoileus hemionus), pocket gopher (Thomomys bottae), raccoon (Procyon lotor), gray fox (Urocyon cinereoagenteus), long-tailed weasel (Mustela frenata), spotted skunk (Spilogale gracilis), coyote (Canis latrans), bobcat (Lynx rufus), brush rabbit (Sylvilagus bachmani), and California ground squirrel (Citellus beecheyi).

Common reptiles and amphibians include the northern alligator lizard (Gerrhonotus coeruleus principis), western garter snake (Thammophis elegans), San Francisco garter snake (Thamnophis sirtalis tetrataenia), northwestern fence lizard (Sceloporus occidentalis), California horned lizard (Phrynosoma coronatum frontale), gopher snake (Pituophis spp.), California toad (Bufo boras halophilus), and Pacific tree frog (Hyla regilla).

Because the San Mateo Coast units are close to urban areas, and are limited by the types of available habitat, the number of animals found on-site is variable, but relatively low.

The ambient air quality of any area is a function of meteorology and pollution sources. The primary pollutants in the San Mateo coast state beaches area are those emitted from motor vehicles: carbon monoxide, hydrocarbons, nitrogen oxides, and particulants (mainly lead). Hydrocarbons and nitrogen oxides combine in a photochemical process, forming smog. Oxidant and carbon monoxide levels are considered adequate indicators of ambient air quality.

Air quality statistics from the Bay Area Air Pollution Control District, stationed in Burlingame will not be cited in this report, because the ambient pollutant levels

measured there are not representative of the coast area. Differences of topography, meteorology, and urbanization account for the unrepresentative statistics. Burlingame statistics are influenced by South San Francisco industry, the San Franciso International Airport, and many roadways serving the residential communities along Highway 101. The San Mateo coast enjoys less industrial/commercial activity, and a more moderating marine influence.

In 1974, the U.S. Department of Transportation, Federal Highway Administration and the State of California, Department of Transportation, prepared a Draft Environmental Impact Statement concerning a proposed road linkage between State Highway 1 and State Highway 280. For the purposes of that highway project, air quality was monitored at a residential community in Sharp Park very close to Highway 1. Since this area more closely congrues with the State Park System units of the San Mateo Coast, air quality measurements should more closely represent the ambience levels.

The station at Sharp Park, in October 1973, recorded a high hour carbon monoxide measurement of 3 ppm. All the carbon monoxide measurements are well below federal and state standards. Oxidant levels monitored by the County of San Mateo have not exceeded federal and state standards along State Highway 1. In the area between Burlingame and the San Francisco International Airport, federal and state standards were exceeded for 18 days, between the months of July and December 1973.

The noise element of the San Mateo County General Plan has not yet been officially adopted. However, predicted noise levels and existing ambient contours are available from the County of San Mateo and the California Department of Transportation (see attachment 2). Noise levels are well within all safety limit standards, and aesthetically pleasing.

Despite overcrowding and maintenance problems, the San Mateo Coast remains a scenic and aesthetically pleasing area. The major forms of recreation include sunbathing, walking, jogging, dog-walking, picnicking, fishing, and wading. Swimming is hazardous because of the strong ocean current, undertow, riptides, and cold water.

The San Mateo Coast area is zoned RM (Resource Management District), promulgating the policies and objectives of the Open Space and Conservation Elements of the San Mateo County General Plan. Maximum development and type of use are listed in attachment 1 (page 225).

The 1950, 1960, and 1970 U.S. Census indicate a slower growth rate for San Mateo County from 1960 to 1970 than from 1950 to 1960. The 1950 county population was 235,700. The 1960 population was 444,000. This represents an 88 percent change between 1950 and 1960. The 1970 county population was 556,234. This represents a 26 percent change between 1960 and 1970. Population growth between 1956 and 1969 was 54 percent; an increase from 357,600 persons to 550,400 persons.

In 1970, San Mateo County's population was 556,234--4.7 percent black; 11.3 percent Spanish; 84.0 percent other. The median age of the population was 30.0 years. In 1969, the median family income was $13,222; only 4.2 percent of all families had an income below the poverty level, and 71.2 percent of persons 25 years or older were high school graduates.

Growth figures for motor vehicles between 1956 and 1969 represented a 107 percent increase, from 167,457 vehicles to 348,270 vehicles, at a time when population growth increased by 54 percent. Current fuel supply and demand, changes in federal and state funding allocations to state highways, changing public attitudes toward highway growth, travel and automobile ownership, and development of alternative means of transportation can be expected to reduce the projected motor vehicle growth rate.

However, the decentralized nature of coastal development and the natural topography of the San Mateo coast area has resulted in community development dependent on use of private vehicles. Additionally, limited local public transportation and limited local shopping centers have created a situation in which comparatively few houses are without private vehicles.

In the 1970 census, the county contained 190,147 year-round dwelling units, of which 71.3 percent were one unit structures. The average persons per unit of all occupied dwellings was 3.0. Thirty-five percent of the dwelling units were built before 1950.

In 1970, San Mateo County housed 12 percent of the Bay Area residents, and provided 11.3 percent of the jobs. San Francisco County housed 15.4 percent of the Bay Area residents, and provided 25.5 percent of the jobs. The ratio of employed residents to persons employed in the Bay Area is 1.00; in the County of San Mateo, the ratio is 1.17; in the County of San Francisco, it is 0.64.

Employment in the Bay Area is expected to increase by 1,300,000 from 1970 to 2000, according to county employment projections. This represents an employment growth of 64 percent. San Mateo County is estimated to have an employment growth of 56 percent between 1970 and 2000.

The California Department of Parks and Recreation has studied the issues of traffic patterning and congestion. The findings are discussed in the General Plan on page 138. Figure 30, "Traffic and Parking Investigation", summarizes the pertinent data.

Visitor use of the San Mateo Coast State Park System units fluctuates from an average attendance of 1,400,000 during the summer (June 16 to September 15) to an average attendance of 800,000 during the winter (December 1 to March 31). Weekend use is often heavy throughout the whole year.

All major access roads in the study area experience traffic volumes near road capacity approximately 4 to 10 hours per day, on busy weekends and holidays. On peak days, an estimated 4,000+ vehicles are parked legally or illegally on publicly and privately owned lands, to gain access to these units of the State Park System.

The California Department of Parks and Recreation has studied the issues of water availability and sewage disposal. The findings are discussed in the General Plan on page 140. Figure 32, "Domestic Water Availability Investigation", depicts the existing San Mateo County coastside water districts' boundaries, and the groundwater basin status of sea water intrusion.

For a description of the area's history, see "Historical Background," page 5.

Cultural resources are specified in each Inventory of Features. Three archeological surveys have been completed for the San Mateo coast. Of the estimated 200 Native American sites in San Mateo County, about one-half that number have been destroyed by vandalism, agriculture, and/or urban development. None of the cultural deposits existing on the coast have been systematically examined through archeological excavation. Typical cultural deposits are an accumulation of ash, mortars, pestles, projectile points, shell beads, and ornaments. Organic debris of the Bay Area cultural deposits are approximately 3,000 to 4,000 years old.

The natural beauty and recreational potential of the San Mateo coast has caused this area to develop into a vacation and resort area. This interest continues today.

As a result of World War II, military installations such as Army posts, mobile units, and training facilities were established on the San Mateo coast. Post-war demands for housing caused escalating urbanization.

Specifics

Thornton State Beach

A general description is contained in each Inventory of Features. It specifies the geomorphic, edaphic, hydrologic, and biotic resources at Thornton State Beach. Only those resources and/or factors that may cause a potentially adverse change in the environment will be addressed in this assessment.

Thornton State Beach is underlain by the Merced formation, dating to the Plio-Pleistocene age. A small exposure of the Colma formation exists at this state beach.

The bluffs are gullied from storm water runoff. Often, severe erosion is associated with this runoff. Ground moisture and water runoff are correlated with landsliding. During times of prolonged and/or heavy rains, this area's unstable geologic features become saturated, and are more likely to move.

On-site water is supplied by the Daly City Municipal Water District. The Daly City Municipal Water District has a reservoir capacity of 20 million gallons, of which about 7± gallons are pumped per day. The source of this water is the San Francisco Water District and seven local wells.

The Northern San Mateo County Sanitation District serves Thornton State Beach via a lift system from the beach area restrooms. The district's treatment plant has an 8 million gallon per day capacity, and operates at a 3 to 5-million gallon per day average.

No rare and/or endangered species are known to occur at Thornton State Beach. One rare plant is reported to occur north of this unit--the San Francisco wallflower (*Erysimum franciscanum* var. *franciscanum*).

The flora of Thornton State Beach are predominantly non-diverse, and characteristic of the coastal strand and coastal scrub California Floristic Province communities. The specific floristic features of this unit are listed in figure 2.

At Thornton State Beach, the beach strawberry occurs along the ridge portion of the George R. Stewart Nature Trail.

The predominant animal habitats are the coastal scrub and sandy beach/stabilized dunes community. Because Thornton State Beach is surrounded by a highly urbanized area, and because the type and availability of habitat is very limited, the relative number of animals found and/or observed at this unit is low. Perhaps 150 species of birds, 27 species of terrestrial mammals, and 6 species of reptiles and amphibians have been observed.

The primary air pollutants in the Thornton State Beach area are those emitted by motor vehicles. Carbon monoxide measurements at a station in Sharp Park were well below federal and state ambient air standards. For the purposes of this General Plan project (CAC Section 15147), the Sharp Park area and recorded statistics are indicative of the quality of the Thornton State Beach ambience.

Noise level statistics are included in attachment 2. Statistics from Daly City's Eastmont area measure 60.0 CNEL. This level decreases westerly to the coast; consequently, Thornton State Beach experiences a CNEL less than 60.0; a level of decreasing traffic noise and increasing wave/surf noise.

No Native American sites have been recorded at Thornton State Beach.

Thornton State Beach differs from the other San Mateo coast state beaches with respect to location, types of visitors, and amount of visitor use. Thornton State Beach receives the least amount of visitation because of the foggier climate, day use fees, location, and lack of signs.

Existing facilities at Thornton State Beach include: a 150-car paved parking area; a paved entrance road; a paved beach ramp; an entrance kiosk; two restroom facilities; picnic tables with stoves; a self-guided nature trail; and sewage, water and electrical systems.

Gray Whale Cove and Montara State Beaches

A general description of the area is contained in the Inventory of Features. This document specifies the geomorphic, edaphic, hydrologic, and biotic resources at Montana State Beach. Only those resources and/or factors that may cause a potentially adverse change in the environment will be addressed here.

Montara Mountain consists of granitic rocks. In the state beach there are also marine sediment deposits from the Pleistocene Epoch, and Holocene alluvium, which originated from the erosive forces of water, wave, and wind action. This deposit includes sand, silt, and gravel.

An active fault passes directly through Montara State Beach. Montara Mountain has been the site of numerous debris avalanches (Smith, 1976, an unpublished manuscript), caused by minor faulting and earthquaking.

Due to the drainage runoff from Highway 1, the cliff and access road to the beach and parking lot are eroding. Also, erosion has occurred down the bluffs and terraces, where

visitors have made trails to the beach. Off-highway vehicle use is another problem at Montara Mountain.

Green Valley and Martini Creeks are the main drainages. These intermittent streams drain from Montara Mountain, and flow across the state beach.

Water is supplied by the Citizen Utilities Company of California. The present reservoir capacity for the Montara area is 710,000 gallons, of which approximately 326,000 gallons per day are pumped. The source of this water is five wells and a spring in the Montara area. Since the addition of a reservoir, with an approximate 425,000 gallon capacity, there have been no water outages due to lack of available water.

The restroom facilties at Montara State Beach have a 1,000-gallon holding tank. The effluent from these facilities is hauled to the Half Moon Bay City Sanitation Department facilities for treatment. (Please refer to the existing conditions at Half Moon Bay State Beach for information on sewage treatment at Half Moon Bay.)

Because of the unit's limited size and topographic variety, the abundance and diversity of species is relatively small.

There are no rare or endangered plant species at Montara State Beach. Coastal strand, northern coastal scrub, introduced annual grassland, and riparian communities exist at Montara State Beach. Upper Mountain, in the area known as McNee Ranch, contains extensive strands of the significant Montara manzanita (Arctosphylos montaraensis) and beach strawberry (Frageria chiloensis). Montara State Beach also contains the Pacific stone crop (Sedum spathulifolium), the only host plant for the rare San Bruno Mountain elfin butterfly (Callophrys mossii bayensis).

The predominant animal habitats are the introduced annual grassland, riparian, near-shore waters/coastal beach, coastal scrub, and chaparral environs. No rare animal species are known to exist. The endangered California brown pelican (Pelecanus occidentalis californicus) and the California least tern (Sterna albifrons browni) may migrate through the area.

The primary air pollutants at Montara State Beach are those emitted by motor vehicles. ADT levels at Montara are less than levels at Sharp Park. Since the carbon monoxide measurements at Sharp Park, with higher ADT levels, are well below federal and state ambient air standards, it is reasonable to assume that the ambient air standards at Montara State Beach are less than those statistics cited for Sharp Park. Carbon monoxide measurements at Montara State Beach, therefore, must be well below federal and state ambient air standards.

Noise level statistics are included in attachment 2. Statistics from Montara State Beach and Highway 1 measure 70.0 CNEL. The beach itself measures a CNEL of 60.0. The transportation noise from Highway 1, which runs along Montara State Beach, creates CNEL readings along the eastern border of the state beach above 60.0.

Three Native American sites are located at Montara. There is a zone of extreme cultural resource sensitivity on the bluffs of Montara State Beach.

There is now a sewer hook-up moratorium and a water hook-up moratorium at Montara.

Existing facilties at Montara State Beach consist of two low-flow flush toilets and a graded ramp to the beach.

Half Moon Bay State Beach

A general description of the area is contained in the Inventory of Features. This report specifies the geomorphic, edaphic, hydrologic, and biotic resources at Half Moon Bay State Beach. Only those resources and/or factors that may cause a potentially adverse change in the environment will be addressed here.

At Half Moon Bay State Beach, erosive forces of water, wave, and wind have created Holocene alluvium. Alluvial deposits of various ages and beach sands are the only geologic units exposed at Half Moon Bay State Beach.

At various times, wave action at the beach removes great quantities of sand, which exposes sea cliffs. Consequently, these sands are subject to severe settling.

The Seal Cove-San Gregorio fault zone parallels the coast 1.6 to 3.2 km (1 to 2 mi.) off-shore from Half Moon Bay State Beach. The San Andreas Fault lies about 6 miles east of the beach.

Tsunamis can be expected about once every 200 years (Ritter and Dupre 1972). These waves displace the water from about 1.8 m (6 ft.) to 6 m (20 ft.) higher.

Sea cliff erosion is another geologic hazard. The cliffs can collapse during heavy storms or major earthquakes. As mentioned previously, the area has several active faults, so earthquakes are to be expected. Landslides along the cliffs now occur, and are also expected. Rock falls may be expected.

Although all of the San Mateo state park units are zoned RM by the County, much of Half Moon Bay State Beach is also zoned "green belt" by the City of Half Moon Bay. The purpose of this GB-2 designation is to provide for future public use and beach development, such as parking, parkways, and related beach activities and facilities (see appendix A, page 225).

Water is supplied by the Coastside County Water District. The district has a reservoir capacity of 8-1/2 million gallons, of which approximately 1-1/2 to 2-1/2 million gallons are pumped per day. The source of this water is 15 wells, several creek reservoirs, and importation. Without the purchase of water from the San Francisco Water District, water resources for the Half Moon Bay area may not be adequate.

Effluent is stored at the restroom facilities at Half Moon Bay State Beach, then hauled to the Half Moon Bay City Sanitation Department facilities at Half Moon Bay. The treatment plant now operating for Half Moon Bay has a one million gallon per day capacity, and operates at a 0.45-million gallon per day average.

A sub-regional sewage plant has been proposed for Half Moon Bay, El Granada, and Montara State Beaches. The proposed sub-regional treatment plant would have a

2 million gallon per day capacity, with a 1 million gallon per day allotment to the Half Moon Bay area.

The present treatment plant is actually an interim facility. The proposed sub-regional plant would be built on the land that the present interim plant is on, and would incorporate the present interim plant in its operation.

The present 1 million gallon per day capacity adequately handles the Half Moon Bay sewage.

As yet, no known rare or endangered plant or animal species have been recorded at Half Moon Bay State Beach. However, the endangered California brown pelican (Pelecanis occidentalis californicus) and the California least tern (Sterna albifrons browni) may migrate through the area. The endangered San Franciso garter snake may inhabit freshwater pools on Frenchmans Creek and Pilarcitos Creek.

The flora of Half Moon Bay State Beach are not diverse, and are characteristic of the riparian, Coastal Strand, and Introduced Annual Grassland California Floristic Province communities.

At Half Moon Bay State Beach, no vegetation has been recognized as unique, rare, or endangered.

Major animal habitats are coastal scrub, riparian/marsh, near-shore water/coastal beach, and marine communities. The coastal scrub community is the largest terrestrial habitat at Half Moon Bay State Beach. The state beach is within the Pacific Coast Wildlife Region, which is restricted to the coastal slope of the Coast Range mountains in California.

The primary air pollutants in Half Moon Bay are those emitted by motor vehicles. ADT levels at Half Moon Bay are less than the levels at Sharp Park. Since the carbon monoxide measurements at Sharp Park, with higher ADT levels, are well below federal and state ambient air standards, it is reasonable to assume that the ambient air standards at Half Moon Bay are less than those statistics cited for Sharp Park. The carbon monoxide measurements at Half Moon Bay State Beach, therefore, must be well below federal and state ambient air standards.

Noise level statistics are included in attachment 2. Statistics from Pillar Point, located approximately 2 miles northwest of Half Moon Bay, measure 59.0 CNEL. Statistics from Eel Rock, located approximately 2 miles south of Half Moon Bay, measure 55.0 CNEL. Highway 1 north and south of Half Moon Bay experiences a CNEL greater than 60.0. However, Half Moon Bay State Beach experiences a CNEL less than 60.0.

Two prehistoric Native American sites have been recorded at Half Moon Bay State Beach. The two sites, labeled CA-SMa:138 and CA-SMa:139, are located near Frenchmans Creek. CA-SMa:138, a cultural desposit 60 by 20 meters in area, is located on the north bank of Frenchmans Creek, about 215 meters from the ocean; CA-SMa:139, a cultural area about 90 by 30 meters, is located on the south side of Frenchmans Creek, directly opposite CA-SMa:138. Both sites have been plowed.

Half Moon Bay State Beach differs from the other San Mateo coast state beaches in that it is the only state beach along the San Mateo coast which now provides overnight camping. The campground is heavily used.

Half Moon Bay State Beach is divided into several sub-units--Miramar; Naples (Roosevelt); Dunes; Venice; Francis; and the Sweetwood and El Mar areas. Naples and Dunes beaches have access from Highway 1 via Young Avenue. Venice Beach has access from Highway 1 via Venice Avenue. The Sweetwood area has access directly, via Highway 1. Francis beach has access via Kelley Avenue. Miramar beach has no vehicular access.

The parking facilities for each sub-unit include: Naples, 70-vehicle dirt parking lot; Dunes, 150-vehicle gravel parking lot; Sweetwood, 8-vehicle parking lot; Venice, 50-vehicle gravel parking lot; Francis, 220-vehicle paved parking lot. Miramar beach has no parking facilities.

Three of the Half Moon Bay State Beach sub-units have low-flush toilets with vaults--Naples and Venice beaches, and the Sweetwood area. Dunes and Francis beaches have regular flush toilets. Miramar has no public facilities.

The Sweetwood area has a group camp accommodating 50 persons; Francis has an improved 50-unit campground, as well as a sanitation dump station, three restrooms, three beach ramps, a beach access stairway, a picnic area, an entrance kiosk, an area office, and a service yard. Miramar is a beach area without improvements.

San Gregorio-Pomponio State Beaches

A general description of the area is contained in the Inventory of Features. This document specifies the geomorphic, pedalogic, hydrologic, and biotic resources at San Gregorio/Pomponio State Beach. Only those resources and/or factors that may cause a potentially adverse change in the environment will be addressed here.

The geologic features common to San Gregorio and Pomponio State Beaches are the Purisima formations, marine terrace deposits, holocene alluvium (originating from the erosive forces of water, wave, and wind action), landslide deposits, beach sand, and aeolian and marine sand deposits.

The coastal bluff and upland terrace soils are highly prone to slippage and erosion caused by runoff from Highway 1. Seacliffs are eroding and sea caves are forming as a result of wave inundation.

Because no planned or officially maintained trails exist to control access to and use of these units, many sporadic and unplanned trails have been created. These trails accelerate erosion, and cause indiscriminate use of the areas.

Since the San Gregorio-Seal Cove fault underlies both these parks, earthquakes are likely to occur. Flooding of low-lying areas can be expected. Also, a 20-foot tsunami can be expected approximately every 200 years.

The San Gregorio Creek and the Pomponio Creek are the significant drainages. There are no facilities for water storage at either state beach. There are no facilities for water at San Gregorio/Pomponio State Beaches.

The effluent at San Gregorio/Pomponio State Beaches, from six chemical toilets and one vault toilet, is hauled to the Half Moon Bay City Sanitation Department facilities for treatment. (Please refer to the existing conditions at Half Moon Bay State Beach for information on sewage treatment at Half Moon Bay.)

San Gregorio has a greater species diversity, because of a varying topography and riparian corridor along San Gregorio Creek. The five native plant communities represented are riparian, coastal strand, northern coastal scrub, annual grassland, and freshwater marsh. Although no rare or endangered species exist, according to records of the Califoria Native Plant Society (1974; 1978), exotic species, as well as the native beach strawberry (Fragaria chiloensis), occur.

The predominant habitats are marine, coastal beach/nearshore waters, riparian marsh, coastal scrub, and introduced annual grassland. Although the endangered San Francisco garter snake (Thamnophis Sirtalis tetriataenia) has been sighted east of San Gregorio State Beach and four miles upstream on Pomponio Creek, the existence of the snake within the state beach is uncertain.

The endangered California brown pelican (Pelecanus occidentalis) and the least tern (Sterna albifrons browni) migrate through the area. The marine invertebrate life at both beaches is minimal.

The primary air pollutants at San Gregorio State Beach are those emitted by motor vehicles. ADT levels at San Gregorio-Pomponio are less than levels at Sharp Park. Since the carbon monoxide measurements at Sharp Park, with higher ADT levels, are well below federal and state ambient air standards, it is reasonable to assume that the ambient air standards at San Gregorio-Pomponio are less than those cited for Sharp Park. Carbon monoxide measurements at San Gregorio/Pomponio State Beaches, therefore, must be, well below federal and state ambient air standards.

Noise level statistics are included in attachment 2. Statistics from San Gregorio/Pomponio State Beaches show a CNEL level above 60.4. Transportation noise from Highway 1, which runs through San Gregorio-Pomponio State Beaches, combined with increasing wave/surf noise, is probably responsible for the 60.4+ CNEL level. Transportion noise from Highway 1 is the probable cause of the 60.4 CNEL level, because CNEL levels in San Gregorio City (inland from Highway 1) are less than 60.0, and CNEL levels along Highway 1 are greater than 60.0.

San Gregorio/Pomponio State Beaches have zones of extreme cultural sensitivity. A Native American site exists at San Gregorio, and a Native American site and historic buildings exist at Caughey Ranch.

Both beaches receive heavy use during the late summer and early fall.

Existing facilities at San Gregorio include: a large paved parking lot for 230 vehicles, chemical toilets, and a concessionaire-operated catering truck. At Pomponio, there is a paved lot for 80 vehicles.

Pescadero State Beach

A general description of the area is contained in the Inventory of Features. This document specifies the geomorphic, pedologic, hydrologic, and biotic resources at Pescadero State Beach. Only those resources and/or factors that may cause a potentially adverse change in the environment will be addressed here.

A small section of the Pigeon Point formation, which consists of interbedded sandstone, siltstone, and conglomerate, exists at Pesadero State Beach. There are also a volcanic unit of Mindego basalt, marine terrace deposits, the Purisima formation, and Holocene alluvium. Where there are rocky bluffs, rockfalls can be expected.

Earthquakes along the seacliff and landslide failures can be expected in this area. Erosion is a problem, especially when soils are wet. These fragile soils experience accelerated erosion caused by human activity, overgrazing, and cultivation.

A tsunami with a 6 meter runup can be expected about once every 200 years.

No water service or facilities exist for Pescadero State Beach.

The chemical vault toilets at Pescadero State Beach have a 1,000-gallon holding capacity. The effluent from Pescadero State Beach is hauled to the Half Moon Bay City Sanitation Department facilities for treatment. (Please refer to the existing conditions at Half Moon Bay State Beach for information on sewage treatment at Half Moon Bay.)

The Butano and Pescadero Creeks are the two major drainages. Although a dam exists on Pescadero Creek near Loma Mar, no water storage facilities exist.

There is great species diversity at Pescadero State Beach, because of the extensive dune system, the coastal strand plant community, and the freshwater marsh--the most extensive freshwater marsh on the San Francisco Peninsula.

Four plant communities lie within this region. They are coastal strand, northern coastal scrub, riparian, and freshwater marsh.

According to the California Native Plant Society (1974; 1978), no rare or endangered plant species exist in this region.

The six animal habitats in this region are the coastal beach/dune, marsh/lagoon, coastal scrub, marine, agricultural land, and eucalyptus grove. Three endangered species are present in this area: the San Francisco garter snake (Thmnophis Sirtalis tetrataenia); the brown pelican (Pelecanus occidentalis Californicus); and the least tern (Sterna albifrons browni). The rare black rail (Laterallus jamaicensis) has been seen in the marsh area.

The primary air pollutants at Pescadero State Beach are those emitted by motor vehicles. ADT levels at Pescadero are less than levels at Sharp Park. Since the carbon monoxide measurements at Sharp Park, with higher ADT levels, are well below federal and state ambient air standards, it is reasonable to assume that the ambient air standards at Pescadero are less than those statistics cited for Sharp Park. The carbon monoxide measurements at the Pescadero State Beach, therefore, must be, well below federal and state ambient air standards.

Noise level statistics are included in attachment 2. Statistics for Pescadero State Beach show CNEL levels greater than 60.0. Transportation noise from Highway 1, which runs through Pescadero State Beach, compounded with wave/surf noise, is probably responsible for the 60.0+ level. Transportation noise from Highway 1 is the probable cause of the 60.0+ level. CNEL levels in Pescadero City (inland of Highway 1) are below 60.0, while CNEL levels all along Highway 1 are above 60.0.

There are no known Native American sites at Pescadero State Beach.

Pescadero Marsh Natural Preserve is an area of high natural value, because it is one of the few relatively undisturbed wetlands along the central California coast. Only passive activities such as photography and nature walks are allowed in the marsh.

Existing facilities at Pescadero State Beach consist of one dirt, one gravel, and one paved parking lot, with a combined capacity for 288 vehicles, and chemical vault toilets.

Bean Hollow State Beach

A general description of the area is contained in the Inventory of Features. This document specifies the geomorphic, pedalogic, hydrologic, and biotic resources at Bean Hollow State Beach. Only those resources and/or factors that may cause a potentially adverse change in the environment will be addressed here.

Bean Hollow State Beach contains the Pigeon Point formation, marine sediments deposited during the Cretaceous period. A small exposure of the Pigeon Point formation exists in Bean Hollow State Beach today. In addition, marine sediments, primarily composed of sand and gravel, were deposited by the sea about 500,000 to 1 million years ago.

Wave action has eroded great quantities of sand from the seacliffs at Bean Hollow State Beach. Consequently, remaining sands are subject to severe settling problems and a high water table.

Tsunamis with approximately 1.8 meter to 6.0 meter water displacement are expected about once every two hundred years (Ritter and Dupree 1972).

The seacliffs that are slowly being eroded by the surf present a severe geologic hazard, because the cliffs are subject to increasing landslides.

Additional geologic hazards include the Seal Cove-San Gregorio fault, which lies about 4 km (2.4 mi.) east, and the San Andreas fault, which lies about 10 km (6 mi.) east of Bean Hollow State Beach.

Monterey and Purisima formations, which underlie Bean Hollow State Beach, have been found to be prime bearers of petroleum. There have been previous extraction activities conducted in the area for commercial use.

No potable water is available at Bean Hollow State Beach. A brackish well supplies water for visitors to wash sand off their feet, etc.

One restroom (with salt water flush toilets and chemical toilets), has a 1,500 gallon holding capacity. The effluent from these facilties is taken to the Half Moon Bay City Sanitation Department facilities for treatment. (Please refer to the existing conditions at Half Moon Bay State Beach for information on sewage treatment and capacities at Half Moon Bay.)

No rare and/or endangered plant species are known to occur at Bean Hollow State Beach. The beach strawberry occurs in a notable colony, approximately 400 m (1,300 ft.) south of the parking area at Pebble Beach (field observation, Inventory of Features).

Plant species at Bean Hollow State Beach are not abundant or diverse. The beach flora are characteristic of the coastal strand, northern coastal scrub, and riparian California Floristic Province communities.

The endangered California brown pelican (Pelicanus occidentalis californicus), and the California least tern (Sterna albifrons browni), which migrate through the area, may be found in the Bean Hollow State Beach area. No rare animals have been identified in this unit.

The fauna of Bean Hollow State Beach are specified in Figure 21. Animal species associated with the north coastal scrub, nearshore waters and coastal beach, marine, riparian, and grassland communities inhabit the area. Many of the observed 150 bird, 10 amphibian and reptile, and 34 mammal species are transient.

The primary air pollutants at Bean Hollow are those emitted by motor vehicles. ADT levels at Pebble Beach Road are less than the levels at Sharp Park. Since the carbon monoxide measurements at Sharp Park with higher ADT levels are well below federal and state ambient air standards, it is reasonable to assume that the ambient air standards at Pebble Beach Road are less than those statistics cited for Sharp Park. The carbon monoxide measurement at Pebble Beach Road, therefore, must be well below federal and state ambient air standards. Pebble Beach Road is very near Bean Hollow State Beach.

Noise level statistics are shown in Attachment 2. Statistics from Pescadero Point along the coastline of Bean Hollow State Beach measure a CNEL greater than 60.0. Highway 1, which runs along Bean Hollow State Beach, and by increasing wave-surf noise, are probable causes of the 60.0+ CNEL level for Bean Hollow State Beach.

Three Native American sites, labeled CA-SMC:2, CA-SMa:118, and CA-SMa:117, have been located at Bean Hollow State Beach. CA-SMC:2 is a cultural deposit located on the coastal bluff north of the Bean Hollow beach area. The site is about 76 by 10 meters. CA-SMa:118 is located on the bluff areas above the beach. This site is about 12 by 8 meters. The site has been disturbed by a heavily traveled footpath that crosses the site. CA-SMa:117 is located on a bluff at the southern corner of Bean Hollow State Beach. Overgrowth of ice plant (Carpobrotus spp.) and foot traffic compaction create a problem of defining the actual site area. The actual area of the site has not been determined.

A unique feature at Bean Hollow State Beach is Pebble Beach. The polished stones of Pebble Beach have attracted rock collectors for many years.

Currently, the stones are being over-collected, and the beach resources are being vandalized as a result of lack of staffing to protect these resources, the lack of public awareness of the resources' value, and the lack of designated uses for the area.

Facilities at Bean Hollow State Beach consist of two parking areas with a combined capacity for 50 vehicles, one saltwater flush toilet facility, and chemical toilets.

Ano Nuevo State Reserve

A general description of the area is contained in the Inventory of Features. This report specifies the geomorphic, pedalogic, hydrologic, and biotic resources at Ano Nuevo State Reserve. Only those resources and/or factors that may cause a potentially adverse change in the environment will be addressed here.

Ano Nuevo State Reserve was established as a unit of the State Park System to provide protection for the natural resources. State reserves consist of areas with outstanding natural and/or scenic characteristics of statewide significance, and areas primarily protected for their scientific and natural values. The purpose of a state reserve is to preserve the native ecological association(s), unique faunal or floral characteristic(s), geological features, and scenic qualities, in an undisturbed condition. Allowable activities, public uses, and visitor facilities are restricted in state reserves, although the public is usually permitted access.

This unit, or a portion, must be reclassified to allow for overnight use.

Formations occurring at Ano Nuevo State Reserve are the Pigeon Point, Vaquero, Purisima, Monterey, Santa Cruz mudstone, marine terrace deposits, and Holocene alluvium.

The area in and around Ano Nuevo State Reserve is considered to be seismically active, with the San Gregorio fault and other smaller faults passing through the reserve. This area has the potential for severe earthquakes. Earthquakes and human activity have increased landslides and erosion of the seacliffs and bluffs.

Native American chert processing zones in the dune area are of a larger magnitude than any others now known on the California coast. Chert processing areas are delicate, non-renewable resources, of which little is known. Further research could reveal an unknown Costanoan economic resource based on chert trading.

Four major reservoirs exist in Ano Nuevo State Reserve--two on Green Oaks Creek, one north of Ano Nuevo Creek, and one on Cascade Creek.

Although two wells exist in Ano Nuevo State Reserve, there are no public potable water facilities available.

The effluent from the low-flow flush and chemical toilets is hauled to the Half Moon Bay City Sanitation Department facilities for treatment. (Please refer to the existing conditions at Half Moon Bay State Beach for information on sewage treatment at Half Moon Bay.)

Plant habitats include pelagic, intertidal, and littoral areas; sand dune, coastal sage scrub, and riparian communities; and agricultural lands. Some of the agricultural/pasture lands have reverted to coastal sage scrub.

One endangered plant, Gairdner's yampah (Perideridia gairdneri ssp. taircheri), reportedly grows on the wet, heavy soil of the area. The dunes also support the beach strawberry (Fragaria chiloensis), which is of local importance.

Some exotic species have been introduced to stabilize the dunes.

Wildlife populations of statewide, national, and international significance intermittently inhabit Ano Nuevo State Reserve, specifically pinnipeds. They are: the northern elephant seal, harbor seal (Phoca bitulina), Steller sea lion (Eumetoplas jubata), and California sea lion (Zalophus californicus). The Steller rookery is the largest breeding area south of Alaska.

Ano Nuevo State Reserve is the only place in the world where the Northern elephant seal (Mirouga angustirostris) can be regularly seen on the mainland. Because the population of seals has increased over the past few years, Ano Nuevo island and portions of the mainland have become crowded. The mainland has now become a major part of the rookery area. Land acquisition and controlled human activity are necessary to protect pinniped populations and habitat areas.

The California Department of Fish and Game has voiced some concern about controlling the numbers of visitors to the area, so the pinnipeds do not lose their inherent fear of humans. Losing their fear of humans makes them vulnerable when venturing into areas not protected by a state reserve or other designation.

In addition to the pinniped populations, the bird populations at Ano Nuevo State Reserve are abundant and diverse. Two endangered species of birds, the California brown pelican (Pelecanus occidentalis californicus) and the California least tern (Sterna albifrons browni), may migrate through the reserve. One endangered species of reptile, the San Francisco garter snake, inhabits the reserve.

The primary air pollutants at Ano Nuevo State Reserve are those emitted by motor vehicles. ADT levels at the reserve are considerably less than levels at Sharp Park. Since the carbon monoxide measurements at Sharp Park, with higher ADT levels, are well below federal and state ambient air standards, it is reasonable to assume that the ambient air standards at the reserve are considerably less than those statistics cited for Sharp Park. The carbon monoxide measurements at the reserve, therefore, must be well below federal and state ambient air standards.

Noise level statistics are included in attachment 2. Statistics for Ano Nuevo State Reserve show CNEL levels of less than 60.0. Transportation noise from Highway 1, which runs along the eastern border of the reserve, combined with wave and surf noise, is responsible for the CNEL level.

Ano Nuevo State Reserve is an area of prehistoric importance. Dune systems at both Ano Nuevo and Franklin Points are each considered a single Native American site, with

numerous use areas. No excavations have been carried out on this portion of the California coast.

In 1976, 39 Native American sites in the Ano Nuevo Dunes were recorded. However, due to the covering and exposure of sites by wind action, the entire dune area may be considered a whole site.

Historically important structures at Ano Nuevo State Reserve include the Lighthouse complex, the Waddell Wharf and Landing, the Public Works bridge on Old Highway 1, and the Steele Ranch, once the second largest dairy ranch in California.

Ano Nuevo State Reserve has great scenic values and esthetic quality. The California Water Resources Control Board recognizes the reserve as an area of special biological significance. The California Natural Areas Coordinating Council believes the reserve is an area worthy of great resource protection.

Existing facilities at Ano Nuevo State Reserve consist of gravel parking for 100 vehicles, low-flow flush toilets, and chemical toilets.

ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT

Significant Environmental Effects

There are two major adverse environmental impacts possible as a result of project implementation. An increase of vehicular traffic on Coast Highway 1 is possible, and proposed development may be curtailed as a result of lack of water.

Serious transportation problems already exist in and around the San Mateo Coast area. Highway 1, especially over Devil's Slide, is currently unable to meet peak hour, peak season demands. If there are increases in traffic, a significant adverse environmental effect will result. Although development is based on redistributing, rather than increasing allowable visitor use (which should not significantly increase traffic flow), it has been locally assumed that any state park development will increase traffic flow and congestion.

It is impossible to estimate the possible increase in recreation use resulting from the added inducement of new state park development. However, it is probable that recreational demand will increase at least proportionally to population increases. If so, the San Mateo Coast state park units can expect an eight to ten percent increase in annual attendance; this represents an increase of 19,000 vehicles per year.

Through the millenia, quantities of water have slowly accumulated underground. The level at which water below the ground stands in a well is called the water table, and represents the amount of available groundwater. The San Mateo Coast area's water needs are supplied by importation, wells, and stream reservoirs.

Throughout the area, water is not abundant, and is considered a limiting factor for every type of development.

The lack of available water has a major environmental impact on the proposed development, which is predicated on the eventual availability of water. This issue will be discussed in the Local Coastal Plan, now being prepared by San Mateo County.

If water availability does not increase, alternative development proposals will be necessary.

Environmental impacts caused by construction and removal activities, and increased concentration of people in certain areas of the units, will be minimal.

Project implementation will cause environmental impacts attributable to proposed buildings, parking areas, roadways, campgrounds, picnic areas, trails, sanitary facilities, construction and removal activities, concentrations of people, and vehicles.

Effects on Geology

Since the area is so close to the San Andreas fault, development will be affected by any fault movement and earthquakes. Since the area is subject to the various erosional forces previously described, development will be affected by moderate landslides and rockfalls.

Effects on Soils

The impact on soils will be minimal. Placement of buildings, roadways, and parking areas will require covering of the soil with asphalt, concrete, or near permeable material. This covering will decrease the amount of oxygen available to soil organisms, which may alter their population density and composition. Asphalt work will cause the addition of some chemicals to the soil, which may alter or eliminate populations of soil organisms. During construction, gasoline and diesel byproducts will also enter the soil.

The impermeable covering of soils will alter the normal nutrient recycling process, and will increase soil moisture. Although evapotranspiration rates may not change, the amount of moisture lost through evaporation will decrease. Edge areas of roadways and parking areas will become more moist, from absorbing precipitation runoff from the impermeable surface. The degree of increased moisture is dependent on the size, the slope, and the drainage system of the impermeable surface.

Soil profiles will be altered by placement of buildings and roadways. The relationships between other soil properties, such as horizons and textures, will also be altered by displacement of soil.

Construction activities will compact soils during the development phase. Vehicular traffic on unpaved areas will compact soils. Compacted soils are less permeable, permit less percolation and surface moisture, reduce groundwater recharge, and inhibit the penetration of plant root systems.

Trampled vegetation and compacted soil increase surface water runoff, which accelerates the erosion potential. The typically sandy soils further increase this potential.

Construction activities will increase erosion on exposed soils, until revegetation occurs. Reestablishment of weedy plants and coastal scrub is likely.

Effects on Vegetation

The direct effects on vegetation are minimal. Construction of buildings, roadways, accessways, and/or parking areas will cause removal of all vegetation from the areas to be occupied by the facilities and will cause trampling or cutting of vegetation in surrounding areas. Foot traffic to and around facilities will trample vegetation, and compact soil. Vegetation may be thinned for campsite construction.

The indirect effects on vegetation are minimal. Facilities will alter light and surface moisture, affecting growth and species composition. Trampling and soil compaction will affect vegetation reproduction and species composition.

No rare or endangered floristic species will be affected by project implementation. The beach strawberry, which is considered significant in the County of San Mateo, may be affected by trails and visitor use on inland and upper slopes of the property.

Effects on Wildlife

The impact on wildlife is directly associated with habitat disturbance. Removal and restoration of vegetation affects both primary and predatory species that inhabit the altered area. Additionally, species tolerant of human developments and activity will be less affected.

Except for facilities at Half Moon Bay State Beach and Ano Nuevo State Reserve, project implementation will minimally alter these habitats, and will affect tolerant species only.

The endangered San Francisco garter snake inhabits freshwater pools on Cascade Creek and Whitehorse Creek (Ano Nuevo State Reserve), and Pescadero Marsh (Pescadero State Beach). In addition, the San Francisco garter snake may inhabit the riparian areas at Montara, Half Moon Bay, San Gregorio, and Pomponio State Beaches; this snake has been located in adjacent areas.

Since the San Francisco garter snake is an animal not tolerant of human development and activity, even minimal disturbance of suspected habitat areas will significantly affect this species. The camping and parking (between Cascade and White House Creeks) proposed for Ano Nuevo State Reserve, and the unit office proposed for Half Moon Bay State Beach, may be located in areas close enough to affect the snake's habitat.

Effects on Air Quality

Air quality in the San Mateo Coast area is almost exclusively affected by vehicular exhaust emissions. If an increase of traffic is generated by project implementation, then the amount of vehicular exhaust emissions will increase proportionately. The possible vehicular exhaust emissions increases will minimally affect air quality in this coastal area.

Effects on Land Use

Since the San Mateo Coast state units are zoned by the County for resource management, project implementation is not contrary to county land use designation. Since Half Moon Bay State Beach is zoned by the City of Half Moon Bay as a "green belt," project implementation is not contrary to that city's land use designation. This General Plan, and the City of Half Moon Bay's General Plan, are consistent with the San Mateo County General Plan, but conflicts with the California Department of Transportation's Highway Bypass project proposed for the Devil's Slide/McNee Ranch area. At this time, it is unknown whether this plan will conflict with the Local Coastal Plan now being prepared.

Effects on Human Community Factors and Public Services

Since most changes in the proposed recreational facilities in the San Mateo coast units are not designed to cause major changes in recreational demand, the impact on the socio-economy of the area is minimal.

Minimal public service demands and benefits may result from project implementation. Proposed development will necessitate appropriate placement of signs along Coast Highway 1. Safe access and deceleration lanes will be planned. On-site construction may require local labor and employment. The sale of incidentals and beverages at local grocery stores may increase.

This document does not propose acquisition of additional land for the State Park System. Should any land not currently owned by the Department of Parks and Recreation, but depicted in the General Plan for long-range planning purposes, be proposed for acquisition, those lands will be removed from the county tax base, and will be restricted from commercial, industrial, and residential development.

Effects on Cultural Resources

There are no direct impacts on cultural resources.

Possible indirect impacts on Native American resources involve alteration of the distribution and stratification of artifacts. Paving of roadways and parking areas will temporarily seal such resources, and will protect them from further damage; however, construction activities before paving, and the weight of the bedding and paving materials, will alter the original site conditions, possibly to a maximum depth of three meters.

Effects on Aesthetics

Any alteration of the environment that improves or detracts from the enjoyment of the coastal scenery is considered to be an impact on aesthetic quality. Examples of aesthetic detractors are human structures and vehicles in the foreground or background of a vista, unnatural noises, congested or chaotic developed areas, and unnatural vegetational patterns.

This General Plan proposes to increase aesthetic quality by reducing existing aesthetic detractors (such as the area headquarters and maintenance facilities on Kelly Drive at Half Moon Bay State Beach), and developing enjoyable yet unobtrusive facilities.

The impacts of revegetation and facilities removal have similar and comparable short-term impacts as construction activities. The long-term impact can be considered beneficial.

Detracting sights and sounds will occur throughout the state park units during construction and restoration phases. Removal of many existing facilities will enhance opportunities for enjoyment of the natural setting.

Specific Impacts as a Result of Project Implementation

Thornton State Beach

The proposed development on the bluff will be screened from the highway, but will remain visible to the neighboring residential community. Since the bluff has a very unstable edge, development, specifically the increase of impervious surface, will increase water runoff, which accentuates erosion. Increased water runoff and associated erosion accelerates landslides and slippage.

Montara State Beach

The beach strawberry may be affected by the proposed equestrian and hiking trails. The proposed camping facilities may be affected by the Martini Creek drainage system, which causes damp and high surface water conditions. The walk-in camps are located in areas of relatively little topsoil, so development and trampling will accelerate erosion, which increases slippage and landslides.

The 60 vehicle/bus loading zone development at Montara State Beach will disturb the artifacts of a recorded Native American site. This is considered a secondary impact, because the site is next to the proposed parking area and is already disturbed, and proposed mitigation should ameliorate the adverse effects. (See mitigation no. 3, page 216.) Project implementation does not affect any prime agricultural land.

Half Moon Bay State Beach

Similar to the cultural resource problem discussed at Montara State Beach, the proposed entrance road paving along Frenchmans Creek may impact a recorded Native American site. The impact on this site is considered minimal, because the site is disturbed, and is next to, not on, the road. The proposed area headquarters development may be an intrusion of the viewshed, visible from the dunes, beach, and ocean.

Frenchmans Creek may be a habitat of the San Francisco garter snake. Any disturbance of freshwater pool environs of the creek may affect this endangered species.

Development on coastal or dune sands, or which would cause increased use of the dunes by visitors, will cause some accelerated erosion, intensifying problems of dune stabilization.

If this state beach is fenced off (although this is not proposed), local residents will lose their convenient and unrestricted access to the beach area.

Kelley Drive will remain the access to Francis Beach. No change will occur in the existing impacts of this access. The road through the Sweetwood area will become the access to the proposed park headquarters and group camp. This development is located in the eucalyptus grove; the City of Half Moon Bay prefers that this area remain undeveloped.

Removal of the existing headquarters and maintenance facilities will cause temporary construction impacts discussed earlier. Portions of the proposed interior road cross prime agricultural lands.

San Gregorio-Pomponio State Beaches

The hiking and equestrian trails, the contact station, and the campground facilities are located on agricultural and pasture lands. Major cut/fill and grading will be required for the access road to the proposed interior development. The interior developments are in an area of moderate fire hazard. The coastal trail will accelerate the cliff area erosion potential, and may cause liability problems.

Pescadero State Beach

The proposed 100-vehicle parking area, the natural interpretive facility, and the 30-vehicle/5-bus contact station developments will be located on prime agricultural land. At present, 40 acres of sweet peas are being grown. Of that 40 acres, approximately 3 acres will be used for these developments.

The access road to the proposed unit office, residence, maintenance facility, orientation center, and 15-vehicle/5-bus developments is currently a public road, located between two artichoke fields. Intrusion into these fields may result with increased use of this road.

A beneficial impact of decreasing erosion will result from eliminating the parking along Highway 1 south of the Pescadero Road intersection.

Bean Hollow State Beach

Road alteration to allow one-way access to existing facilities will have a beneficial safety effect.

Project implementation that provides for increased staffing to (1) protect the resources; (2) increase public awareness of the resources; and (3) specifically designate and enforce use of the beach area, may minimize the existing problems of over-collection, unplanned trails, and vandalism.

Ano Nuevo State Reserve

The development proposed for the area located between Whitehouse and Cascade Creeks may introduce human activity and habitat disturbance, affecting a San Francisco garter snake habitat and a pinniped rookery. The San Francisco garter snake may inhabit freshwater pools on Whitehouse and Cascade Creeks. The pinnipeds are currently expanding their rookery area upcoast.

MITIGATION MEASURES PROPOSED TO ELIMINATE OR MINIMIZE EFFECTS

1. Once parking facilities are available, rangers will emphasize their authority to ticket illegally parked vehicles. With help from the California Highway Patrol, the Half Moon Bay Police Department, and the local sheriff's department, much of the uncontrolled use and resulting traffic congestion of areas along Highway 1 can be eliminated.

2. Adequate fencing, signing, and surveillance by staff will discourage visitors from disturbing natural/cultural resources in the reserve, and on private lands.

3. When development is proposed, a cultural survey will be done before or during any land alteration. Should this survey expose potential Native American artifacts or sites, additional research and action will be taken to protect and preserve the resources.

4. Facilities will be designed to maximize public enjoyment without greatly intruding on the natural environment.

5. Public facilities and access roads will be constructed and upgraded with a minimum of paving. Turf stone will be used whenever feasible, to minimize erosion.

6. All facilities such as campgrounds, parking areas, and buildings will be constructed to minimize visual intrusion. These facilities will also be screened and landscaped.

7. Strict enforcement of rules by a staff committed to protecting the unit's natural and cultural resources will greatly decrease the misuse and vandalism of these resources by visitors to units of the San Mateo Coast.

8. Trails will be designed and constructed to minimize the effects of visitation and erosion.

9. Detailed energy conservation measures concerning building design and construction will be an integral part of every budgeted phase of the overall plan.

10. Development will be restricted from prime agricultural land, unless other alternatives prove infeasible.

11. The staff will monitor dune movements, and when necessary, will initiate dune stabilization practices.

12. Access to beach areas will be organized to minimize impaction to dunes and bluffs.

13. Fire presupression work will be done as appropriate.

14. This document does not propose acquisition of land as an addition to the State Park System. Should any land not currently owned by the Department of Parks and Recreation, but depicted in the General Plan for long-range planning purposes, be proposed for acquisition, conservation easements and leaseback agreements will be considered whenever feasible, and documentation pursuant to the California Environmental Quality Act will be prepared.

15. Necessary staffing to manage and protect the natural resources of the units, as well as necessary staffing to manage and protect the developed facilities, will be budgeted for.

Specific Mitigation Measures As A Result Of Project Implementation

1. Development on the bluffs at Thornton State Beach will be recessed from the edge, to alleviate some of the erosion potential.

2. The parking facility at Montara State Beach will be designed to protect cultural resources by surface collecting the site, fencing the parking lot, and providing controlled, single access to the beach.

3. Walk-in camps at Montara State Beach will be located to minimize drainage problems, soil compaction, and erosion.

4. Only low intensity use of Pescadero Marsh will be planned for and allowed.

Unavoidable Environmental Effects

The significant environmental effects outlined in this element represent environmental effects which cannot be avoided if the General Plan is implemented as proposed. Whenever possible, mitigation measures have been designed into the planning phase of the General Plan, to ameliorate significant adverse impacts.

Having inventoried and analyzed the existing resources, determined present and future recreational needs, and studied various alternatives, the department feels that the benefits to be gained from the proposed project outweigh the environmental impacts resulting from implementation of this plan.

Alternatives To The Proposed Project

No Development

This alternative will allow continuation of the current uses and existing facilities.

Increasing/Decreasing Intensity of Development

Increasing development will provide for greater public access and intensity of use, but will cause greater resource damage and impact. Decreasing development will provide for greater resource protection, but less public access and intensity of use. Increasing or decreasing the development proposed in this General Plan will not allow for maximum public access and enjoyment of the area, and will not provide for moderate protection of the natural resources.

Location of Facilities

The arrangement of specific day use facilities could vary from the proposed plan. All potential sites, however, have been considered for each proposed land use. Site selection

was based on maximizing benefits for visitors, and minimizing impacts on the environment.

The Relationship Between Local Short-Term Use of Man's Environment and the Maintenance of Long-Term Productivity

The current short-term use of the San Mateo coast units is for enjoyment of the open space/coastal scenery, and beach-oriented recreation. Additional short-term use of the area, if it were not within the State Park System, might include agricultural cultivation, grazing, and commercial and residential development.

The General Plan continues the current short-term use of the San Mateo coast units. Proposed development should not alter the existing use, but should organize, control, and thereby enhance the quality of the use.

The General Plan will not alter this area's potential for long-term productivity. The relationship between the short-term use and the long-term productivity of the San Mateo coast units area is complementary; one in which the proposed short-term use retains and expands the environment's long-term productivity.

Irreversible Environmental Changes and Irretrievable Commitments of Resources Should the Proposed Project be Implemented

Some renewable natural resources, such as wildlife and vegetation, will be lost or displaced as a result of development and human activity. Some non-renewable resources, such as oil, gasoline, and construction materials, will be used to complete the proposed General Plan.

If future demands or environmental priorities change, and this area is deemed more suitable for some other use, the area and its resources will not have been significantly altered by project implementation.

Growth-Inducing Impacts of the Proposed Project

There may be some indirect growth-inducing impacts associated with the proposed development. Project implementation may generate some flow of money into the local economy through salaries to local laborers, purchase of construction materials, and commercial services such as gasoline, food, and incidentals.

If future acquisition of land as an addition to the State Park System occurs, it will curtail residential and commercial developent. In this respect, the project has a growth-restricting impact.

Effects Found Not to be Significant

This project will have no significant effects on climate and weather, noise quality, population density, community development, or sewage.

ORGANIZATIONS AND REFERENCES CONSULTED IN PREPARING THIS REPORT

California Department of Parks and Recreation
- Resource Preservation and Interpretation Division
- Development Division
- Operations Division
- Administrative Services Office

California Department of Water Resources
California Department of Transportation
- Project Development Division

California Department of Conservation
- Division of Mines and Geology

County of San Mateo
- Department of Environmental Management
- Assessor's Office

City of Half Moon Bay
- Sanitation Department
- Planning Department

Coastside County Water District
Citizens Utilities Company of California
Daly City Municipal Water District
Northern San Mateo County Sanitation District

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Appendixes

APPENDIX A

Attachment One

County of San Mateo: Excerpt from
Open Space and Conservation Element,
General Plan

Section 6315. PERMITTED USES. The following uses only shall be permitted in the RM District, except those subject to the provisions of Section 6500 which require a Use Permit.

a) Agricultural uses and accessory structures; on-site sales of agricultural products

b) Nurseries and greenhouses

*c) Temporary trailer parks and other housing for farm laborers

d) Livestock raising and grazing

e) Dairies

[1]f) Dog kennels and breeding facilities

[2]g) Timber harvesting and commercial wood lots

[3]h) Quarries and waste disposal sites

i) Single-family residences

j) Multi-family residences

*k) Hotels, motels and restaurants

*l) Churches

*m) Schools

*n) Fire stations

*o) Public and private clubs

*p) Public recreation

*q) Commercial recreation, including but not limited to stables and riding academies, golf courses, campgrounds, dude ranches; and motorcycle parks in accordance with adopted policies on motorcycle parks and related facilities

[4]r) Oil and gas exploration, production and storage

s) Home occupations

t) Wineries; provided that the annual storage capacity shall not exceed 10,000 gallons, the annual fermentation capacity shall not exceed 5,000 gallons, and the annual bottling shall not exceed 2,500 cases of wine; the only retail sales permitted will be those of wines produced on the premises.

Section 6317. MAXIMUM DENSITY OF DEVELOPMENT. In the RM District, for purposes of determining the maximum total number of swelling units permissable on any parcel, the following system shall be used:

The total parcel shall be compared against the criteria of this Section in the order listed. Any segment of a parcel to which a criterion first applies shall be allowed a maximum accumulation of that density. Once considered under a criterion, a segment of the parcel shall not be considered under subsequent criteria. When the applicable criteria have been determined for each of the areas, any portion of the parcel which has not yet been assigned a maximum density accumulation shall be assigned a density of 1 dwelling unit per 5 acres.

The sum of densities accrued under all applicable categories shall constitute the maximum density of development permissable under this section. If the fractional portion of the number of dwelling units allowed is equal to or greater than .5, the total number of dwelling units allowed shall be rounded up to the next whole dwelling unit. If the fraction is less than .5, the fractional unit shall be deleted.

The provisions of this Section will not apply to farm labor housing or other structures considered to be accessory to agriculture under the same ownership.

(a) On lands falling within a 100 year Flood Plain as defined by USGS, dwelling units may be accumulated at a maximum of one unit per 40 acres. Where previous actions have eliminated such flood areas, the provisions of this subsection shall not apply.

(b) For remote lands, defined as those lands over one mile from an existing all-weather through public road, density accumulation shall be limited to one dwelling unit per 40 acres.

*Uses allowed subject to a use permit
[1]Allowed subject to kennel permit
[2]Allowed subject to timber harvesting permit
[3]Allowed subject to quarry permit
[4]Allowed subject to oil well permit

Attachment Two

NOISE MEASUREMENT LOCATION STREET ADDRESSES

24 Hour Site	Location	CNEL
A	End of Larchmont Drive, Daly City	60
B	252 Alta Vista Drive, South San Francisco	67
C	102 Fey Drive, Burlingame	60
D	625 Vue DeMar, Moss Beach	54
E	End of Hillsdale Way, Redwood City	52
F	Runnymede and Cooley, East palo Alto	62
G	End of Durazno Way, Ladera	51
H	Recreation Drive, La Honda	52
I	9th Avenue and Lorne Lane, Redwood City	59
J	End of Stage Road South of Pescadero Road	54

15 Minute Site	Location	CNEL
1	Portola & Francisco St., El Granada	55
2	6th & Farrallone Avenues, Montara	56
3	Vermont Avenue & Etheldore St., Moss Beach	56
4	140 Tiptoe Lane, Burlingame	59
5	2918 Adeline Dr., Burlingame	60
6	Coyote Point, Near Castaway Restaurant, San Mateo	61
7	863 Larchmont Drive, Daly City	60
8	1535 Sweetwood Drive, Daly City	59
9	Radio Road, 4 mi. from Guadalupe Parkway	59
10	AMFAC Parking Lot; Crocker Industrial Park	55
11	Grove & Randolph Avenues, S.S.F.	60
12	248 Alta Vista Drive, S.S.F.	72
13	East End of Avalon Drive, S.S.F.	68
14	End of Terrace Drive, next to Serra Park, Millbrae	55
15	End of Albright Way, San Bruno	56
16	End of Park Avenue, Moss Beach	50
17	California & Ellendale, Moss Beach	59
18	End of Bridgeport Drive, El Granada	52
19	Yale between Columbia & Vassar, Princeton	59
20	End of Baranca Rd, El Granada Mobile Home Park	54
21	Allegheny Way & Lexington Avenue, San Mateo	51
22	End of Lundy's Lane, San Mateo	42
23	End of Rainbow Drive, San Mateo	46
24	351 Chesham Avenue, San Carlos	49
25	End of Hubbard Avenue, San Carlos	52
26	End of Summit Way, Woodside	51
27	2670 Marlborough Avenue, Redwood City	58
28	Sequoia Trailer Park, Redwood City	54
29	Entrada Way near Berkeley, Menlo Park	53
30	West end O'Connor Street, East Palo Alto	57

31	End of Temple Court, East Palo Alto	54
32	324 Lilac Lane, East Palo Alto	52
33	End of Marion Drive, Atherton	52
34	End of Trudy Lane, Menlo Park	50
35	End of Andeta Way, Laders	54
36	Swett Road, School Parking Lot, off Skyline Blvd.	45
37	County & Ridge Roads, off Skyline Blvd.	47
38	1044 Los Trancos Road, Portola Valley	48
39	Sears Ranch Road, Church Parking Lot, La Honda	44
40	230 Portola State Park Road	43
41	Tunitas Creek Road, 2 mi. East of Highway 1	44
42	La Honda & Stage Roads, San Gregorio	56
43	North St., next to high school, Pescadero	46
44	Butano Road, near Pescadero	46
45	Canyon Road, near Butano State Park	42

STATE OF CALIFORNIA—THE RESOURCES AGENCY

EDMUND G. BROWN JR., Governor

DEPARTMENT OF PARKS AND RECREATION

P.O. BOX 2390

SACRAMENTO 95811

(916) 322-6160

September 20, 1979

On June 8, 1979, the State Park and Recreation Commission approved the Preliminary General Plan for the San Mateo Coast Area. In the interest of economy, we are not reprinting the document; therefore, the preliminary plan can now be considered the final plan.

Enclosed are addenda containing Park and Recreation Commission Resolution 32-79 approving the plan, comments and responses on the plan's Environmental Impact Element, and a list of minor changes made by the Commission. If you have a copy of the plan, please attach these addenda, and replace the word "preliminary" on the cover with the word "final".

Sincerely yours,

George O. Rackelmann, A.S.L.A.
Senior Landscape Architect

Enclosure

N-8118C

STATE OF CALIFORNIA—RESOURCES AGENCY

Edmund G. Brown Jr., Governor

DEPARTMENT OF PARKS AND RECREATION
STATE PARK AND RECREATION COMMISSION
P. O. BOX 2390, SACRAMENTO 95811

Resolution 32 - 79
Resolution adopted by the
CALIFORNIA STATE PARK AND RECREATION COMMISSION
at its regular meeting in Menlo Park
June 8, 1979

WHEREAS, the Director of the Department of Parks and Recreation has presented to this Commission for approval the proposed General Plan for the San Mateo Coast Area; and

WHEREAS, this reflects the long-range development plan as to provide for the optimum use and enjoyment of the unit as well as the protection of its quality;

NOW, THEREFORE, BE IT RESOLVED that the State Park and Recreation Commission approves the Department of Parks and Recreation's General Plan for the San Mateo Coast Area, preliminary dated April 1979, subject to the following nine amendments and such environmental changes as the Director of Parks and Recreation shall determine advisable and necessary to implement carrying out the provisions and objectives of said plan.

1. Thornton - Group and individual overnight camping facilities and picnic facilities to be on lower bluffs with upper bluffs for day use only.

2. Pomponio - Leave parking on the west side of the highway.

3. San Gregorio - Some adequate and attractive substitute for macadam shall be found as a substitute for use of macadam on roads and parking areas, if financially possible.

4. Pescadero - Management of the marsh and the opening of the dikes to be reviewed and authorized by the Director.

5. On Page 37 add "Improve access out to the beach particularly in steep bluff areas."

6. Recognize role and responsibility in providing limited access and parking facilities for self-contained recreation vehicles of all sizes.

7. Do not phase out parking lots on west side of highways until east side lots prove feasible and safe.

8. This Commission shall review and, where possible, eliminate specific conflicts between this General Plan and Local Coastal Plans, when the latter are finally adopted.

9. No eucalyptus trees of historic, scenic, esthetic, or biological importance shall be removed with the understanding that eucalyptus trees shall be managed to achieve the purposes of the individual units of the State Park System.

RESPONSE TO COMMENTS
TO THE SAN MATEO COASTAL AREA GENERAL PLAN

THE SAN MATEO COASTAL AREA GENERAL PLAN WAS SENT TO THE FOLLOWING AGENCIES, ORGANIZATIONS, AND PERSONS:

The State Clearinghouse
Honorable Marz Garcia
Honorable John Foran
Honorable Louis J. Papan
Honorable Robert Naylor
The City of Daly City
The City of Half Moon Bay
The San Mateo County Planning Commission
Sierra Club Representative
Association of Bay Area Governments
Northern San Mateo County Sanitation District
San Mateo County Department of Parks and Recreation
City of Daly City Municipal Water Utilities Division
Citizens Utility Company of California
Half Moon Bay City Sanitation District
Coastside County Water District
San Francisco City and County Water Department
Central California Council of Diving Clubs, Incorporated
South Coast United Councils
Half Moon Bay Chamber of Commerce
Pescadero Community Council
Arthur Little Planning Consultants
Pescadero Marsh Committee
California Sea Grant
University of California, Santa Cruz
Keep Pacifica Beautiful
City of Pacifica Planning Department
Mr. Bill Tatomer
Mr. Jim Wheeler
Mr. and Mrs. Bob Payne
Mr. Dick Cochran
Mr. Craig Porter
Mr. Fran Pollard
Mr. Edward A. Flynn
The San Mateo Country Library, Central Library Branch

COMMENTS WERE RECEIVED FROM THE FOLLOWING AGENCIES, ORGANIZATIONS, AND PERSONS:

The Pescadero Community Council
The City of Daly City
The California Department of Transportation
The California Air Resources Board
The California Department of Fish and Game

Pescadero Community Coun
P.O. Box 249
Pescadero, CA 94060

James M. Doyle, Supervisor
Environmental Review Section
Department of Parks and Recreation
P.O. Box 2390
Sacramento, CA 95811

Dear Mr. Doyle:

The Chairman of the Pescadero Community Council asked me, as Chairman of the Local Coastal Program Committee, to respond to the Draft of the Preliminary General Plan for the San Mateo Coast Area. My review is attached. It addresses mainly local concerns.

The Plan is now available for additional review in Pescadero, and further comments may be forthcoming.

Very truly yours,

Mary A. Clayton

Mary A. Clayton, Secretary

Comments: San Mateo Coast Area General Plan, Department of Parks and Recreation

Page 30, 2nd Par. (1) The historical sequence isn't right. The land bridge was gone long before the lighthouse was abandoned. 50 years ago, when I was a child, it was said that you could walk across, but we went by boat, and so did the Coast Guard. A U.S.G.S. map dated 1853 shows no land bridge.

Page 33, 2nd Par. (2) The State has not acquired Finney Creek, nor any land south of the centerline of Ano Nuevo Creek.

Page 33, last Par. (3) Historic remains at Ano Nuevo contain a small portion of the Steele Ranch.

Page 34, 1st Par. 3rd Par. (4) The Steele Ranch is generally thought of as the Steele brothers' Ranch. The portion acquired by the State contained lands belongir to the second generation, Jay Steele and then to his wife Flora. The Steele Ranch contained thousands of acres, I believe. Check with Catherine Steele, Palomar Hotel, Santa Cruz.

Page 40 Ano Nuevo SR (5) Ano Nuevo Island. Also prevent vandalism and theft, which continues.

Page 41, 1st Par. (6) Beach strawberries can't be protected in the elephant seal area.

7th Par. Add: Protect research facilities.

Add new Par. (7) Reconstruct the historic lighthouse tower and restore coast guard buildings for use by UCSC scientists. This is a historic and visual grouping which should be preserved. It could be done throug public subscription. The neat, white buildings and tower created a focal point for the whole sweep of the peninsula.

Page 47, Par. 3 (8) Again, the coast guard facilities are just as historic as the Steele buildings, and should be preserved and/or reconstructed.

Page 49, Pesc. SB (9) Sand from disturbed dunes which blows across the highway obstruc traffic should be returned to the beach so as not to deplete the littoral drift. At present it is removed by CalTrans and disposed of elsewhere.

Dwg. No. 16844, Pescadero State Beach, Resource Element, Allowable Use Intensity:

(10) It hurts every farmer in the area if prime land is used for other purposes - each distributor depends on a certain acreage to keep going, and any acreage lost threatens his business, and thereby the rest of us. You show camping, picnicking, etc., contrary to county zoning, the Coastal Act, and the needs of the community.

Dwg. No 16844, Ano Nuevo State Reserve - Plant Communities.

(11) Lands outside the Reserve perimeter should have a 40 percent screen applied. Failing to distinguish visually from park land creates added problems for private owners who already have constant difficulties with trespass, theft, and vandalism. No part of the area south of Ano Nuevo Creek has been acquired, an the State has told the owners that a letter disclaiming interest ir acquisition is forthcoming. The Reserve boundary is not clearly delineated on all the Ano Nuevo maps; screening would do it.

(12) The State has completed purchase of the Char lands north of the Reserve. The property line should be revised and plant commun identified.

(13) No agricultural land south of Ano Nuevo Creek has been abandone in fact, more is being brought under irrigation.

Dwg. No 16844, Ano Nuevo SR - Allowable Use Intensity, 2 of 2

(14) Delete hatching and heavy line W and S of highway which could be interpreted as a property line. Clearly show the property line down Ano Nuevo Creek. Apply 40 percent screen to lands outsid Reserve.

Dwg. No. 16844, Ano Nuevo State Reserve, Cultural

(15) Same comment.

Pg. 136, 1st Par. (16) There were 15 fatalities in a 5-mile stretch of Cabrillo Highway (Highway 1) just north of Pescadero in 1978.

3rd Par. from bottom (17) "Recreation needs and uncontrolled visitor attendance . . ." We have seen the traffic congestion vanish at Ano Nuevo SR when the reservation system began. The bus service has eased it further. A reservation system system should be instituted at all parks and beaches in San Mateo County.

Pg. 140, 1st Par. (18) Add: "Discourage highway parking by cooperating with other agencies and posting "emergency parking only" signs, particularl adjacent to agricultural lands."

Pg. 143, 2nd Par. from bottom (19) Ano Nuevo acreage should include Char lands recently acquired, and not include any lands south of Ano Nuevo Creek.

Dwg. No 16843 - Traffic and Parking Investigation

(20) The Map shows beach south of Ano Nuevo Creek as part of the Reserve. Correct this or buy the beach.

Figure 32

(21) Correct the Ano Nuevo State Reserve boundary line to Ano Nuevo Creek.

Figure 33

(22) Same correction.

Dwg. No. 16843, Soil Type Plot Plan, 3 of 3

(23) Same correction. Delete heavy property line south of Ano Nuevo Creek.

Dwg. No 16843, General Plan, Pescadero State Beach.

(24) It is essential that the agricultural land be utilized to its best advantage. All means of preventing crop theft and vandalism should be employed. With the energy shortage, consideration should be given to decreasing auto parking and increasing bus parking.

Dwg. No. 16843, General Plan, Ano Nuevo State Reserve, 1 of 1

(25) Delete acquisition line south of Ano Nuevo Creek. The State has told the owners that they are dropping the acquisition proposal.

Pg. 183, 4.

(26) Including "Ano Nuevo Creek" as part of the Reserve is damaging to private owners, who own to the centerline west of Highway 1 and all of it east of the highway. This statement encourages trespass on private lands. Delete this reference.

Dwg 16843, All General Plan Maps.

(27) Add symbol denoting agricultural use, and apply it wherever there is prime land.

Dwg. 16843, General Plan, Pescadero State Beach, 1 of 1

(28) The Pescadero Community Council is on record as opposing park use of any agricultural land. This area has some of the best soils. The text proposes conversion of agricultural lands to scenic open space, contrary to Resource Management Zoning and the Coastal Act.

(29) Provide public telephones and restrooms at all access points, including those west of the highway.

Pg. 176, Proposed Addition

(30) The state is dropping plans for acquisition south of Ano Nuevo Creek. Delete.

Dwg. 16843, General Plan, Ano Nuevo State Reserve

(31) Include Char property, which was purchased, and exclude Coastways Beach, which is being dropped. At least screen it

(32) Noting the drop-off in highway congestion since the gas shortage, the ratio of car parking to bus parking should be re-examined. Perhaps regular bus service along the coast would eliminate much of the bus parking.

Pg. 181, Pescadero State Beach.

(33) A second secondary theme should be added, relating to the importance of reserving the best prime land for agriculture.

(34) Visitor orientation should include information about local crops, and the contribution this area makes in providing specialty items for the nation's table.

Pg. 183, Interpretive Programs, 3rd Par.

(35) The success of the Sam Trans bus service should be noted.

Pg. 198, 2nd Par. (36) We don't consider this a resort area. It is a farming/recreation area here on the south coast.

Pg. 205, 2nd & 3rd Paras. (37) Irrigation decreases erosion by rockfalls, as the sandstone is no longer is exposed to seasonal wet and dry periods and consequent expansion and shrinking which lead to cracks and rockfalls.

Pg. 206, 1st Par. (38) Please. "the town of Pescadero", not Pescadero City.

Pg. 208, 7th Par (39) Wave action and subsidence have also increased erosion of sea-cliffs and bluffs.

Pg. 210, 2nd Par. (40) Significant Environmental Effects: Highway 92 has a greater problem than Devils Slide.

Pg. 210, 3rd Par. Sig. Env. Effects (41) "Demand" needs to be geared to availability of beach space, and can be controlled by reservations.

2nd Par. (42) ". . . particularly over Devil's Slide and Highway 92, is . . ."

4th Par. (43) "stream and off-stream reservoirs"

Pg. 211, Effects on Soils (44) In fragile areas, consideration of using permeable road and parking lot surfaces should be considered to mitigate erosion.

Pg. 212, Add Par. Effects on Agriculture

(45) If land is left in production, as this community feels it should be, there will be beneficial impacts for the farmers who make their living here. If the State plan takes land out of production, the impact on this community is substantial.

Pg. 213, 1st Par.

(46) The socio-economic impact of removing some of the best prime land from production includes displacement of families who work the land, loss of ADA to our poverty-stricken School District, crop loss, income loss to the community, income tax loss to the State, and more important, a threat to the viability of agriculture in this area, and its consequent affect on the packer.

Pg. 213, 3rd Par.

(47) Removal or occupancy by Park personnel of existing farm labor housing is detrimental to the continuance of agriculture in this area. Farm Labor housing is in very short supply. It should not be removed until local replacement housing is available.

Pg. 213, Effects on Aesthetics

(48) Human structures can enhance a vista, i.e., a cluster of farm buildings, the coastguard complexes at Pigeon Point and Ano Nuev These are the vistas which are most photographed.

Pg. 215, Pescadero SB, 1st Par

(49) Peas, not sweet peas, please.

ge 216, 11

(50) Stabilized dunes grow on the windward side, catching sand. Dune stabilization will need to be mitigated by providing e quivalent sanc to the littoral drift.

Pg. 217, No Development Add: ". . . and will permit agriculture to expand, rather

(51) than contract."

Pg. 218, The Relationship Between Local Short-Term Use, etc.

(52) This speaks of possible short-term use of park lands for agricultu. "were it not within the State Park System". The State was fully aware, when it purchased this land of Coastal Act policies affectin. agricultural land. The State should avoid buying such lands, but having bought them, should lease them indefinately for agricultural purposes. This farming community cannot afford to have some of its best lands taken out of production.

Growth Inducing Impacts, 2nd Par.

(53) ". . . residential, agricultural and commercial development."

. 221, 2nd from bottom

(54) The Resource Management District was adopted in 1973.

Respectfully submitted,

Mary A. Clayton

DEPARTMENT OF COMMUNITY DEVELOPMENT

CITY OF DALY CITY

Sullivan Avenue and 90th Street
Daly City, California 94015
(415) 992-4500, EXT. 277

April 19, 1979

James M. Doyle, Supervisor
Environmental Review Section
Department of Parks and Recreation
P.O. Box 2390
Sacramento, CA 95811

Dear Mr. Doyle:

The following are our comments on your San Mateo Coast Area General Plan and Draft EIR - Preliminary Draft, March, 1979, specifically relating to Thornton State Beach:

1. There is no information on existing conditions or the impact of proposed development for any of the areas proposed for acquisition and park expansion. Brief mention of the geology, only general (55) discussion of drainage and erosion problems, and no discussion of existing biota, especially for the blufftop properties on either side of the access road, seem to limit any decisions on possible impacts and necessary mitigation measures. (pages 15 - 16, figures 2 - 3, and pages 198 - 199)

2. Recommendation of encouraging bus use (middle of page 139), we recommend that negotiations with Westlake Shopping Center be conducted to provide (56) an area for beach user parking. (We have initiated this idea and would appreciate your support).

3. Recommendation and planned use of abandoned highway 1 right-of-way for public trail use (page 139 and figure 35) should be deleted. We have made the comment in the past in review of Thornton Beach development plans. It is a policy in our draft Coastal Plan to disallow any access (57) on this terrace and to restrict lateral access to the beach. Our criteria and reasoning follow your policies on page 37 (the 3rd, 4th, 8th, and 21st). Basically, we feel the terrace is too unstable and unsafe for hikers and beach users below as well as to the bluff face itself.

4. The information on the property north of the access road on the blufftop is incorrect. The 5.3 acre is privately owned, one set of 3 parcels (58) totaling 4.3 acres and the southern-most triangle of 1.5 acres. The ownerships are listed for San Mateo County Assessor's book 2, block 011, parcels 2, 11, 12, and 13.

5. The Caltrans and Daly City owned properties designated for acquisition beginning about 2500 ft. south of the existing boundary at the northern edge of Daisaku Ikeda Canyon (otherwise known as Wood's Gulch) should be modified to one of the following:

(59)

a) include all publicly owned property west of the residential developments and develop them for safe public access and use to their full environmentally safe potential, or

b) delete these areas and allow Daly City to continue with its development plans for these areas.

6. Add separate pedestrian and bicycle access trails from Skyline Boulevard (highway 35) to the parking lot on the lower terrace. This would help implement your recommendation to "encourage bicycling and hiking to the beach" (page 139).

(60)

Sincerely yours,

Don Fleming
Director of Community Development

DF/vjm

April 23, 1979

04-SM-1, 84, 92

Comments from Caltrans, District 4 concerning the Draft of Preliminary San Mateo Coast Area General Plan in San Mateo County, State Clearinghouse No. 79032610.

Page 135 - Recommendations: Concentrating the improvements in the northern 20 miles where the traffic congestion problems now exist does not seem to be a redistribution. This would appear to aggravate a problem which now exists. The document does not adequately address the impacts and specific mitigation measures for the generated increased traffic. (61)

Page 136-138 - Route 1. There is no current commitment of funds by Caltrans for the planned improvement from Sharp Park Road to San Pedro Road. It is not in our current State Transportation Improvement Program but is listed as a candidate for future inclusion. (62)

The Devil's Slide Bypass - EIS process is underway. Completion of the environmental document may take two years; however, locations of the alternative alignments are essentially known. (63)

The adopted Route 380 between Route 280 and Route 1 was rescinded by the California Transportation Commission on March 23, 1979. (64)

Page 139 - It is not clear how bicycle trails will alleviate the traffic congestion. (65)

Recommendations for special priority for bus transportation is not a true mitigation measure if there are no plans for implementation. There are no current bus routes serving the beach areas. (66)

Page 147, figure 30. Much of the data presented in the Traffic Summary is not correct. The purpose of this summary is not clear to us. (67)

Page 213 (Land Use), 216(#14), 162, General Plans (Specifically Drawings 16843, Sheets 1 & 2). (68)

There appears to be an inconsistency in the San Mateo Coast Area General Plan and in particular the Environmental Impact Element. The statement is made several times (see page 216, #14) that this document does not propose acquisitions of any lands yet the General Plan maps show delineated areas as "Acquisition Proposal." It seems inconsistent to prepare a document of "Proposed Developments" and their impacts in an area shown for future acquisition and refrain from addressing the impacts of acquisition needed for the proposed developments.

Also, page 213, 1st paragraph states that this General Plan is in conflict with Caltrans' proposed Devil's Slide project. This (69) would appear to be true only if "acquisition is proposed" from the right of way presently owned by Caltrans in the proposed Route 1 alignment. In addition, the General Plan map does not show the property owned by Caltrans in this acquisition area.

Page 216, #1 - Existing vehicle codes already permit citations (70) for illegally parked vehicles in State highway right of way. It is not clear how the presence of additional parking will generate increased enforcement or make enforcement any more effective.

Caltrans cannot be committed to financing improvements noted as (71) mitigation measures, however, we will cooperate with the Department of Parks and Recreation on matters of mutual concern.

We request a copy of the Final EIR - General Plan and any other (72) subsequent actions or documents before the Notice of Determination is filed. The addressee should be -

Caltrans District CEQA Coordinator
Engineering Services Branch
P. O. Box 3366, Rincon Annex
San Francisco, CA 94119

JERRY F. O'SHEA, Chief
Engineering Services Branch

STATE OF CALIFORNIA
AIR RESOURCES BOARD
1102 Q STREET
P.O. BOX 2815
SACRAMENTO, CA 95812
(916) 322-5350

To: 1) L. Frank Goodson
Projects Coordinator
Resources Agency

2) Mr. James M. Doyle
P.O. Box 2390
Sacramento, CA

Subject: Preliminary Draft - San Mateo Coast General Plan, SCH No. 79032610

ADEQUACY OF AIR QUALITY ANALYSES

Analysis of:	Adequate	Inadequate	Comment Number
Existing Air Quality in Area	X		
Existing Emissions in Area	X		
Project Emissions	X		
Project Impact on Air Quality	X		
Mitigation Measures to Minimize Impact of Project		X	(1)
Alternatives to Project	X		
Growth Inducing & Cumulative Impacts of Project		X	(1)

POTENTIAL EFFECT ON AIR QUALITY		Comment Number
	Beneficial: will probably tend to improve air quality.	
	No substantial adverse effect.	
	Adverse: will likely degrade air quality.	
X	Unknown.	(1)
	No comment.	

COMMENTS

(1) It is difficult to estimate the adverse impact on air quality and traffic congestion for forty miles of coastline because of the addition of 2,785 parking spaces (1,5[illegible] existing). Yet, it appears that such an addition will degrade existing air quality and traffic-flow. "... the plan proposes that visitor access be oriented away from motor vehicles and toward mass transit...", but this aspect needs to be strengthened. The Metropolitan Transportation Commission and San Mateo County Transportation District were not among the list of organizations consulted in preparation of the plan. These organizations are the regional and local agencies responsible for planning transportation systems. It would be helpful in the planning process to ascertain the feasibility, and/or extent of the transportation service planned for this area. Direct transit needs for urban dwellers as well as coastal accessability, stressed in the California Coastal Act, are goals that can be met to benefit air quality and reduce traffic congestion. Inclusion of background information on the existing transportation system and description of real alternatives which provide access by non-automobile modes would help meet the goals of Coastal Planning and help mitigate growth induced impacts on air quality.

RECEIVED MAY 5 1979

RESOURCES BOARD REVIEW OF FINAL EIR

____ Yes ____ No _X_ Not Applicable

Gary Auld, Chief
Statewide Planning Branch

cc: Metropolitan Transportation Commission
San Mateo County Transit District

Memorandum

To : 1. L. Frank Goodson
Projects Coordinator

2. Department of Parks and Recreation
Post Office Box 2390
Sacramento, California 95811

Date: April 19, 1979

Telephone: ATSS (485) 3531
916 (445) 3531

From : Department of Fish and Game

Subject: San Mateo Coast Area General Plan, Draft of Preliminary, Department of Parks and Recreation SCH 79032610

Department of Fish and Game personnel have reviewed the draft report and believe adequate coverage has been given most areas, although several omissions have been noted.

As identified in the report, the endangered San Francisco garter snake exists in various locales along the San Mateo coast. Several potential habitat areas have been identified in the report as well as two known areas of sightings. It should
(74) be noted that Department personnel have made a sighting of the garter snake in the coastal marshland of Cascade Creek, an area to be included in Ano Nuevo State Reserve. Also, Whitehouse Creek is a known locale for the garter snake. The impoundments of Lower Green Oaks Creek are potential habitat areas for the San Francisco garter snake.

The report is deficient in that no mention is made of silver salmon and steelhead trout which migrate into several of the streams flowing through park areas and into the ocean. These streams include the Pescadero/Butano system, San Gregorio Creek,
(75) Pilarcitos Creek, and Frenchman's Creek. Passage into and out of the stream by adult and juvenile salmonids is directly dependent on the confluence of the stream to the ocean. Therefore, the annual breaching of the sand bar by the stream is very important to spawning success of anadromous salmonids. The Pescadero and San Gregorio Creek lagoons also provide nursery habitat for juvenile silver salmon and steelhead trout.

(76) The California brackish water snail, proposed for inclusion on the "Endangered Species" listing, is found in the Pescadero Marsh area. The report should identify the presence of this snail and need for its protection.

(77) The Department of Fish and Game is in the process of updating the "California Fish and Wildlife Plan." The wetlands and riparian areas will be designated as "Areas o Significant Biological Importance."

The plan mentions some of the designated areas and their importance to wildlife. Our area of concern is the breeding area of the yellowthroat in the wetlands area
(78) of Franklin Point. Trails in this area should be coordinated with the Departmer Trails in the coastal dune areas must be carefully planned in order to protect fragile plants.

1. L. Frank Goodson
   Projects Coordinator

2. Department of Parks &
   Recreation

Department of Fish and Game personnel are available to discuss the above comments and recommendations. To arrange a meeting, please contact Mr. L. V. Toffoli, Regional Manager, Region 3, Department of Fish and Game, Post Office Box 47, Yountville, California 94599, telephone (707) 944-2443.

(79)

E C Fullerton

Director

COMMENTS WERE RECEIVED FROM THE FOLLOWING AGENCIES, ORGANIZATIONS, AND PERSONS:

The Pescadero Community Council
The City of Daly City
The California Department of Transportation
The California Air Resources Board
The California Department of Fish and Game

RESPONSE TO COMMENTS FROM THE PESCADERO COMMUNITY COUNCIL:

1. Historical references state that some of the materials for the lighthouse were brought to the island by wagon. If this statement is true, then the wagons were probably pulled across at low tide. The wagons may have gone through low tide waters as they were pulled across land. This concept is what was meant by the words "land bridge". Perhaps the use of those words was misleading.

2. Last year when this report was being drafted, the State of California was negotiating the purchase of land which included Finney Creek. At present, that acquisition has been dropped.

3. The Steele Ranch complex refers to the cluster of buildings at Ano Nuevo, and does not refer to all Steele Ranch property.

4. IBID; the final General Plan (page 34, paragraph one) will be altered to read: "The Steele Ranch, located at Ano Nuevo, consists....."

5. Prevention of all crime in any unit of the State Park System is standard operating procedure.

6. Beach strawberries are not considered rare or endangered and, therefore, will not be protected from the elephant seals.

7. This Department decided not to spend hundreds of thousands of taxpayers' dollars to refurbish the island structures because the island is closed to the public, because the Coast Guard facilities are altogether delapidated, and because the facilities can only be seen from one-half mile away. This Department, with the concurrence of the University of California, Santa Cruz, decided to allow the structures to weather away and then be removed before they become a hazard to man or animal.

8. IBID.

9. It is the understanding of this Department that the California Department of Transportation is depositing the sand on the beach.

10. It is the general policy of this Department not to acquire prime agricultural lands without granting a conservation easement which allows continued agricultural use of the property and prohibits any future residential, commercial, or industrial use of the land. Camping and picnicking facilities depicted on Drawing No. 16844 are not contrary to either county zoning ordinances or the Coastal Act. Section 6315, Items p and q of the County of San Mateo Open Space and Conservation Element, specifically stipulates that public recreation and campgrounds are permitted uses of the area. Please see page 196, paragraph five, and Appendix A, page 225 of the text.

11. A heavier State Reserve boundary line may be an easier and economically more feasible way of delineating areas within each unit than screening adjacent lands. Property lines are shown correctly, and plant communities are identified correctly on the subject map.

12. IBID.

13. The word "abandoned" was a misleading term. Drawing No. 16844, entitled Plant Communities, will be altered in the final General Plan to: "Land not presently in agricultural use at the time of mapping".

14. The property line symbol is correctly shown. The heavy dashed line correctly delineates the area of proposed acquisition. While a 40 percent screen applied to the lines outside the State Reserve might help depict the property ownership information, screening would not improve the delineation of the allowable use intensity, which is the purpose of that map.

15. IBID.

16. Your comment substantiates the traffic hazards on Coast Highway 1 mentioned in the General Plan.

17. The current reservation system for groups and individual campsites organize visitor use. This computerized system is a convenience for the State Park System visitor by assuring him/her a campsite upon arrival at the State Park System unit. The reservation system at Ano Nuevo State Park limits visitor use of an ecologically sensitive area. A reservation system which organizes and limits use may not be appropriate for a unit classified as a State Beach, is not necessary or economically feasible for the 10-15 days per year of overcrowding and enhanced traffic congestion. There is considerable public value in casual and spontaneous use of public beaches which would be lost without a reservation system.

18. This Department cooperates with other agencies to discourage parking on highway shoulders. More effective methods for parking control, with less visual impact than signs, will be designed and will be implemented.

19. The Ano Nuevo acreage includes all the lands shown within the "existing State Park boundary" symbol on Figure 41 of the text. The depicted boundary is correct.

20. As of May 4, 1979, the Real Estate Services Division of the Department of General Services was directed by this Department to prepare a second appraisal for the subject property. A decision as to whether or not to drop this acquisition project will be made after the second appraisal is complete.

21. IBID.

22. IBID.

23. IBID.

24. The prime agricultural land is retained for agricultural use. Control of vandalism is discussed on pages 187 and 188. The plan proposes to increase bus service and establish organized parking facilities, resulting in a decrease of automobile parking.

25. See response to comment No. 20.

26. The inclusion of Ano Nuevo Creek as part of the State Reserve for educational and interpretation purposes does not encourage trespass and is no more damaging to contiguous private owners in this location than in any other location.

27. All of Drawing No. 16843, entitled General Plan, depicts public use and access facilities, not land management practices. The management of the lands within State Park System jurisdiction is discussed in the Resource Element of the plan. Please see pages 7 through 47. Symbols designating land management, such as agriculture, wetland preserve, tidepool area, etc., will confuse the public use and access facilities portion of the report.

28. The Pescadero Community Council's opposition to this Department's use of any agricultural land is noted and will be included as a portion of this General Plan's formal record. The text proposes conversion of approximately three acres of prime agricultural land for parking, orientation and interpretive facilities. This proposal is not contrary to either county zoning or the Coastal Act. Please refer to response to comment No. 10 and page 215, paragraph five, of the text.

29. The provision for restrooms for each State Park System unit is specifically discussed under "Proposed Development". Access to telephones is discussed on page 183 under "Utilities". If and when specific development is budgeted and proposed for implementation, detailed restroom and telephone facilities will be planned.

30. Please refer to response to comment No. 20.

31. The boundary is correctly depicted.

32. A depleting gasoline supply and regular bus service were anticipated and calculated into the planning of parking facilities. The provisions for parking facilities will be reevaluated if and when specific development is budgeted.

33. State Park System Interpretive Specialists consider the interpretation of agriculture more appropriate at the Steele Ranch (Ano Nuevo State Reserve) and at the Caughey Ranch (Pomponio State Beach). The specialists consider the subject area more suitable for interpretation of a marsh area/wetland habitat, especially with respect to the State Park System classification of a Natural Preserve.

34. IBID; the Pescadero Community Council's suggestion to include information about local crops will be included as a portion of this General Plan's formal record and available to the State Park and Recreation Commission.

35. The final General Plan, on page 183, paragraph three, will be amended to include: ".....and a decent liaison with consideration of public transportation schedules."

36. The word "resort" on page 198, paragraph two, will be changed in the final General Plan to the word "recreation".

37. Irrigation may decrease erosion which causes rock falling, but earthquaking is the major cause of rock falls in this area. Cultivation, overgrazing and other human activity are the major cause of soil erosion, which causes rilling, gullies, and topsoil depletion.

38. The final General Plan will be amended on page 206, paragraph one, to read: "The town of Pescadero".

39. Wave action and subsidence constantly erode the sea cliffs and bluffs.

40. The final General Plan will be amended on page 210, paragraph six, to include Highway 92, as well as Highway 1. Traffic on Highway 92 will be considered a Significant Environmental Effect.

41. Accessibility of the beach area is the limiting factor, not availability of beach space. Theoretically, over 120,000 people can be accommodated on the 282 acres of beaches along this San Mateo Coastal Area. The roadway system cannot accommodate the traffic generated by the available beach space. Please see response to comment 17.

42. Please refer to response to comment No. 40.

43. The final General Plan will be amended on page 210, paragraph eight, to include "off-stream reservoirs".

44. Please refer to mitigation measure No. 5 on page 216 of the text.

45. Please refer to response to comment No. 28.

46. IBID.

47. IBID.

48. The final General Plan will be amended on page 213, paragraph seven, to describe, ".....inappropriate or infeasible human structures.....". Please refer to response to comment No. 7.

49. The final General Plan will be amended to delete the word "sweet".

50. Your suggestion of providing equivalent sand to the littoral drift for the purposes of mitigating dune stabilization on the windward side will be forwarded to the staff of this Department's Natural Heritage Section. This staff is responsible for the actual planning and maintenance of specific dune stabilization practices.

51. Allowing for the continuation of the current uses and existing facilities will not permit agricultural to expand or contract, but to continue as present.

52. It is the general policy of this Department to not acquire prime agricultural land without granting a conservation easement which allows continued agricultural use of the land and prohibits any further residential, commercial, or industrial use of the land. Please refer to response to comment No. 10.

53. IBID.

54. Resource management districts were probably adopted in 1973. However, the county resource management zoning ordinance was passed in 1964.

RESPONSE TO COMMENTS FROM THE CITY OF DALY CITY:

55. This plan does not propose acquisition of any land as an addition to the State Park System. Land not currently owned by this Department and depicted on any drawing is for long-range planning purposes only, and does not indicate the probability or commitment by this Department to purchase any land. Since this Department does not own the subject property, resource inventories, resource management plans and impact analyses were not done. Decisions on possible similar impacts are not proposed for land not currently owned by the California Department of Parks and Recreation. Mitigation measures are also not included. Please refer to page 213, paragraph four, and page 216, No. 14, of the text.

56. This Department will likely coordinate with the City of Daly City concerning their negotiations with Westlake Shopping Center, to provide beach user parking, should specific development be proposed. This Department completely supports Daly City's efforts to encourage bus use.

57. The reference to CALTRANS right of way on page 139, paragraph eight, does not include nor hopefully imply a specific bike trail following the abandoned right of way south of Thornton State Beach. As in portions of Santa Barbara County, bike, hiking, and equestrian trails follow the highway alignment with recreational trails spurs through units of the State Park System. No specific trails facilities have been planned. If and when specific trail alignments are proposed, the resource management policy stated on pages 37 and 38 will be adhered to during the planning/drafting phases.

58. The final General Plan will be amended on page 160 to read: ".....one parcel on the upper terrace north of the entrance road is privately owned and one parcel south of the entrance road to Mussel Rock is an abandoned highway corridor currently owned by CALTRANS".

59. The intent of this portion of the General Plan is to encourage Daly City to continue its development plans within the subject area. The hypothesis of this proposal is to possibly provide a pedestrian-only linkage between the State Beach and the proposed City-owned park at Mussel Rock.

60. Separate pedestrian and bicycle access trails from Skyline Boulevard to the parking lot on the lower terrace is appropriate and will be included in the specific unit development plans, if and when specific development is budgeted or proposed for implementation.

RESPONSE TO COMMENTS FROM THE CALIFORNIA DEPARTMENT OF TRANSPORTATION:

61. The emphasis of beach access areas within the northern 20 miles may help to contain the congestion in the area in which it originates and currently exists. Reorganizing and limiting facilities within this area and emphasizing and planning for public transit within this area may alleviate some of the existing congestion. The word "redistributing" may be a misleading term.

    This document adequately discusses the general impacts and general mitigation measures for the possible traffic increase. Please refer to page 210, paragraph seven, and page 191, paragraphs three and four, of the text.

62. The final General Plan will be amended on page 136 to state that improvements on Highway 1 may become part of the State Transportation Improvement Program.

63. The final General Plan will be amended on page 138, paragraph one, to incorporate this information.

64. The final General Plan will be altered on page 138, paragraph two, to include the decision by CALTRANS to rescind this route.

65. Bicycle trails will encourage people to use bicycles. Increased bike use decreases car use and, consequently, decreases congestion.

66. As stated repeatedly in the report, this General Plan is a long-range policy plan; i.e., a guide to the specific development of units of the State Park System during the next 20 years. If and when specific development is budgeted or proposed for implementation, then specific provisions will be planned. Example: actual coordination with the City of Daly City concerning negotiations with Westlake Shopping Center for beach user parking and shuttle service to Thornton State Beach may be initiation. Recommendations for special priority for bus transportation

is a true mitigation measure with respect to the degree of specificity of this General Plan and which directs this Department's specific facilities planning throughout the next 20 years.

67. The data presented in the Traffic Summary was obtained from CALTRANS in Sacramento; "1977 Traffic Volumes on California State Highways" (please note footnote 1). The purpose of the summary is to document the roadway accessibility and use from the major, proximate metropolitan areas.

68. This plan does not propose acquisition of any land as an addition to the State Park System. Land not currently owned by this Department and depicted in any drawing is for long-range planning purposes only and does not indicate the probability of or commitment by this Department to purchase any land. Since this Department does not own the subject property, resource inventories, resource management plans, and impact analyses were not done.

69. Last year when this report was being drafted, the California Department of Parks and Recreation identified the subject property as an area of interest, a possible proposed acquisition project. To date, no decision has been made by this Department to initiate negotiations for purchase. The final General Plan will be amended on page 213, paragraph one, to read, "but may conflict with.....".

70. Page 216, paragraph one, does not state that existing Vehicle Code prohibits the issuance of citations for illegally parked vehicles in State Highway right of way or that rangers do not currently cite illegally parked vehicles.

    If and when specific development is proposed for implementation, then provisions for increased operational staff are also placed into the budget. An increased operations staff, rangers "emphasizing their authority to ticket illegally parked vehicles", and the presence of well designed, marked, and legal parking areas will generate increased enforcement and make enforcement more effective.

71. This Department does not consider, and never has considered, CALTRANS' committed to financing improvements noted as mitigation measures. This Department appreciates CALTRANS' offer to "cooperate with the Department of Parks and Recreation on matters of mutual concern".

72. The California Department of Transportation routinely receives copies of this Department's Environmental Impact Reports through the State Clearinghouse process. This General Plan, including final EIR, will be no different. CALTRANS will be informed of "any other subsequent actions or documents before a Notice of Determination is filed". The San Francisco address has been noted and included in this project's mailing list file.

RESPONSE TO COMMENTS FROM THE CALIFORNIA AIR RESOURCES BOARD:

73. As stated in response to comment No. 66, this General Plan is a long-range policy plan which guides the possible, specific development of units of the State Park System during the next 20-year period. If this plan is approved, this Department will formally adopted the policy of orienting the visitor away from motor vehicles and toward mass transit. Should specific development be proposed, then this policy will guide all developmental planning. During the planning stages of any specific development, the metropolitan transportation community, the San Mateo County Transportation District, the Westlake Shopping Center, etc., will likely be contacted to ascertain the feasibility and/or extent of the transportation service plans for this area. Background information on the existing transportation system may be included and descriptions of specific alternatives which provide access by non-automobile modes will be included in the text of any specific development proposal.

Since this coastal area is almost exclusively affected by vehicular exhaust emissions, any increase of traffic will further degrade existing air quality and further congest traffic flow. Please refer to page 210, paragraph seven, and page 212, paragraph nine, of the text.

Mitigation measures to minimize impact of the proposed project and growth-inducing and cumulative impacts of the proposed project are adequately discussed in the General Plan, relative to the degree of specificity of the plan.

RESPONSE TO COMMENTS FROM THE CALIFORNIA DEPARTMENT OF FISH AND GAME:

74. As identified in the General Plan, the San Francisco garter snake has been sighted in the coastal marshland of Cascade Creek and Whitehouse Creek and has every probability of occurring in the impoundments of Lower Green Oaks Creek.

75. The General Plan contains a resource element which is based upon a resource inventory. This resource inventory lists the floristic and faunistic species for habitat areas within each unit of the State Park System. These resource inventories mention both silver salmon and steelhead trout species with reference to the Pescadero/Butano stream system, San Gregorio Creek, Pilarcitos Creek, and Frenchmens Creek. Please refer to page 191, paragraph seven, of the text.

The staff of this Department is aware that mouths of streams are nursery areas for fish, and anadromous salmonids enter the streams to spawn when the streams are open to the ocean. Since it is not a function of this Department to breach sand bars, this Department does not have the staff or equipment to regularly breach sand bars to allow for passage of fish. Consequently, breaching the sand bars is not a policy of the resource management element.

This Department supports the California Department of Fish and Game's efforts and policies concerning the breaching of these sand bars. This Department has previously assisted the California Department of Fish and Game in efforts of mutual concern.

76. The California brackish water snail was not included with the San Francisco garter snake or black rail as animals needing special protection at Pescadero Marsh because the snail was not known to exist there at the time this report was written. The final General Plan will be altered on page 39, paragraph 8, to include the California brackish water snail.

77. This Department appreciates receiving the information that the "California Fish and Wildlife Plan" is being updated. We request a copy when the document is completed.

78. The breeding area of the yellowthroat in the wetlands area of Franklin Point is just north of State Park System property, and no trails alignments have been proposed for this area.

    The yellowthroat is listed in the Ano Nuevo State Reserve Resource Inventory. The alignment of any trails within this State Reserve will be done so as to have no impact or the least possible impact upon any species.

79. This Department appreciates the California Department of Fish and Game's offer to meet and discuss issues of mutual concern.

G-5800C

ADDENDA: San Mateo Coast Area General Plan

Page vi: replace "Summary Chart" with attached chart.

Page 3: add last paragraph--"The State Park and Recreation Commission shall review and, where possible, eliminate specific conflicts between this General Plan and local coastal plans, when the latter are finally adopted."

Page 37: add, after eighth policy--"Improve access out to the beach, particularly in steep bluff areas."

Page 38: add, after fourth policy--"Not remove eucalyptus trees of historic, scenic, esthetic, or biological importance, with the understanding that eucalyptus trees shall be managed to achieve the purposes of the individual units of the State Park System."

Page 46: under Pescadero State Beach, add to first paragraph--"The Director will determine and authorize the best way to manage the marsh so as to enhance and preserve the plant and animal populations and, at the same time, to allow for compatible visitor use that will not be detrimental to the marsh ecosystem."

Page 136: replace chart with attached chart.

Page 139: add after fifth paragraph--"Recommendation: It is recommended that the Department recognize its role and responsibility in providing limited access and parking facilities for self-contained recreational vehicles of all sizes."

Page 140: add to first paragraph--"Do not phase out parking lots on the west side of the highway until the east side lots prove feasible and safe."

Page 160: replace page with attached page.

Page 161: replace with attached General Plan for Thornton State Beach.

Page 170: under San Gregorio Beach Area West of Highway 1, add second sentence to 1) Parking--"An adequate and attractive alternative to macadam shall be found for use on roads and parking areas, if financially possible."

Page 177: eliminate "CONTACT STATION" from Green Oaks Creek parking area.

RARE OR ENDANGERED SPECIES

Other rare or endangered plants/animals are known to exist at the Montara unit's proposed acquisition. They include — Montara Manzanita (*Arctostaphylos montarensis*) — Davy's Lupine (*Lupinus arboreus var. eximius*) — San Bruno Mountain Elfin Butterfly (*Callophrys mossii bayensis*)

Ano Nuevo State Reserve — Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*)

Brown pelican and other birds are not mentioned here because they do not nest in the area.

	THORNTON	MONTARA	HALF MOON BAY	SAN GREGORIO AND POMPONIO	PESCADERO	BEAN HOLLOW	ANO NUEVO	TOTALS
SAN FRANCISCO GARTER SNAKE SIGHTINGS					■		■	
SAN FRANCISCO GARTER SNAKE HABITAT		■	■	■	■		■	
PLANT COMMUNITIES								
COASTAL CHAPARRAL		■						
NORTHERN COASTAL SCRUB	■	■		■	■	■	■	
INTRODUCED ANNUAL GRASSLAND		■	■	■	■		■	
FRESHWATER MARSH				■	■		■	
RIPARIAN		■	■	■	■	■	■	
COASTAL STRAND	■	■	■	■	■	■	■	
COASTLINE CHARACTERISTICS								
SAND DUNES			■		■		■	
CLIFFS/BLUFFS	■	■	■	■	■	■	■	
ROCKY SHORELINE		■			■	■	■	
SANDY BEACH	■	■	■	■	■	■	■	
EXISTING & PROPOSED FACILITIES								
PROPOSED PICNIC UNITS	6	0	200	33	30	10	30	309
EXISTING PICNIC UNITS	24	0	62	23	2	8	0	119
PROPOSED CAMPSITES	5[3]	55	170	40	0	20	30[1]	320
EXISTING CAMPSITES	0	0	51	0	0	0	0	51
PROPOSED PARKING SPACES	175	330	1000	450	445	80	305	2,785
EXISTING PARKING SPACES	150	255	440	310	288	49	100	1,592
MILES OF EXISTING HIKING TRAILS	.25	.25	1.5	.25	1.75	1.0	2.0	7.0
MILES OF PROPOSED HIKING TRAILS[2]	2.0	8.0	3.5	7.5	5.0	0	6.0	32.0

SUMMARY
CHART A

[1] Requires classification change of a portion of the reserve
[2] All campsites are open for bicyclists and hikers
[3] The equivalent of 20 people

These large traffic volumes have contributed to much frustration for both local residents and visitors to the area. For the past three years, accident rates on State Highway 1 north of Half Moon Bay and State Highways 84 and 92 west of Interstate 280 have exceeded expected rates (as estimated by CALTRANS), for similar roads elsewhere in the state.

Park and Recreation Information System (PARIS) data developed by the State Department of Parks and Recreation indicates recreation deficiencies in camping and picnicking facilities on the San Mateo coast. The PARIS figures are intended to provide only a relative indication of recreation needs, and are not to be used as absolute numbers of facilities needed in San Mateo County.

The visitor attendance chart, figure 31, shows the popularity of the San Mateo Coast.

Recreation Facilities Needed
to Meet the Demands of Planning District 4*

	Camping Units	Picnic Units	Boat Access Sites	Miles of Trail
Total Facilities Needed:				
Year 1970	1,217	1,760	1,808	321
Year 1970	1,598	2,309	2,370	421
Year 1990	2,094	3,022	3,105	552
Existing Facilities:				
Year 1970	207	1,647	1,953	267
Year 1980	207	1,647	1,953	267
Year 1990	207	1,647	1,953	267
Additional Facilities Needed:				
Year 1970	1,010	113	-145	54
Year 1980	1,391	662	417	154
Year 1990	1,887	1,375	1,152	285

*Planning District 4 includes Sonoma, Napa, Solano, Marin, Contra Costa, San Francisco, Alameda, Santa Clara, and San Mateo counties.

Recreation needs, and visitor attendance are reasons for the traffic congestion problems.

The following information is supplied from the CALTRANS District IV office in San Francisco, summarizing planned highway improvements in the next five year plan. It should be noted all planned improvements are reviewed by the Metropolitan Transportation Commission, and priorities are based on needs of the entire Bay Area.

Highway 1: Improvements on Highway 1 include minor safety and operation minor improvements from Sharp Road to San Pedro Road, including widening existing 4-lane undivided roadway to a 4-lane divided highway within the next five years.

THORNTON STATE BEACH

Existing Land Use	Proposed Land Use
Sandy beach - 8 ha (20 a.); (3,200 l. ft.) sunbathing, beach play	Same
Bluffs; steep slopes - 72 ha (180 a.) hiking, scenic open space	Same
Thornton Valley - 2 ha (5 a.) picnicking, parking, hiking, open space	Addition of group camping in existing picnic area
Upper coastal terrace - 8 ha (20 a.) open space	12 a. - same; 8 a. - day use only

Chief Recreation Needs

Hike-in and group camping facilities; additional parking

Proposed Additions

Two parcels (__ha; __a.) on upper coastal terrace and abandoned highway corridor between park entrance road and Mussel Rock (both areas are currently owned by CALTRANS)

Proposed Development

Thornton Valley

1) Parking: renovate existing 150-car parking lot to include bus loading zone.
2) Camping: permit up to 20 persons to camp in existing picnic area (by reservation only).
3) Administration: add small shop for park maintenance at existing restroom, north end of parking lot.
4) Interpretive facility: convert existing park office to interpretive facility.

Upper Coastal Terrace

1) Administration: construct new park office and entrance station on northern parcel.
2) Recreation development: day use only.

Bluff Area South of Thornton State Beach

1) Trail: 2 miles for hiking trail only.

Off-Site

1) Signing: install signing to direct traffic to the SB from Highway 280, Highway 1, Skyline Boulevard #35, and Daly City Boulevard.

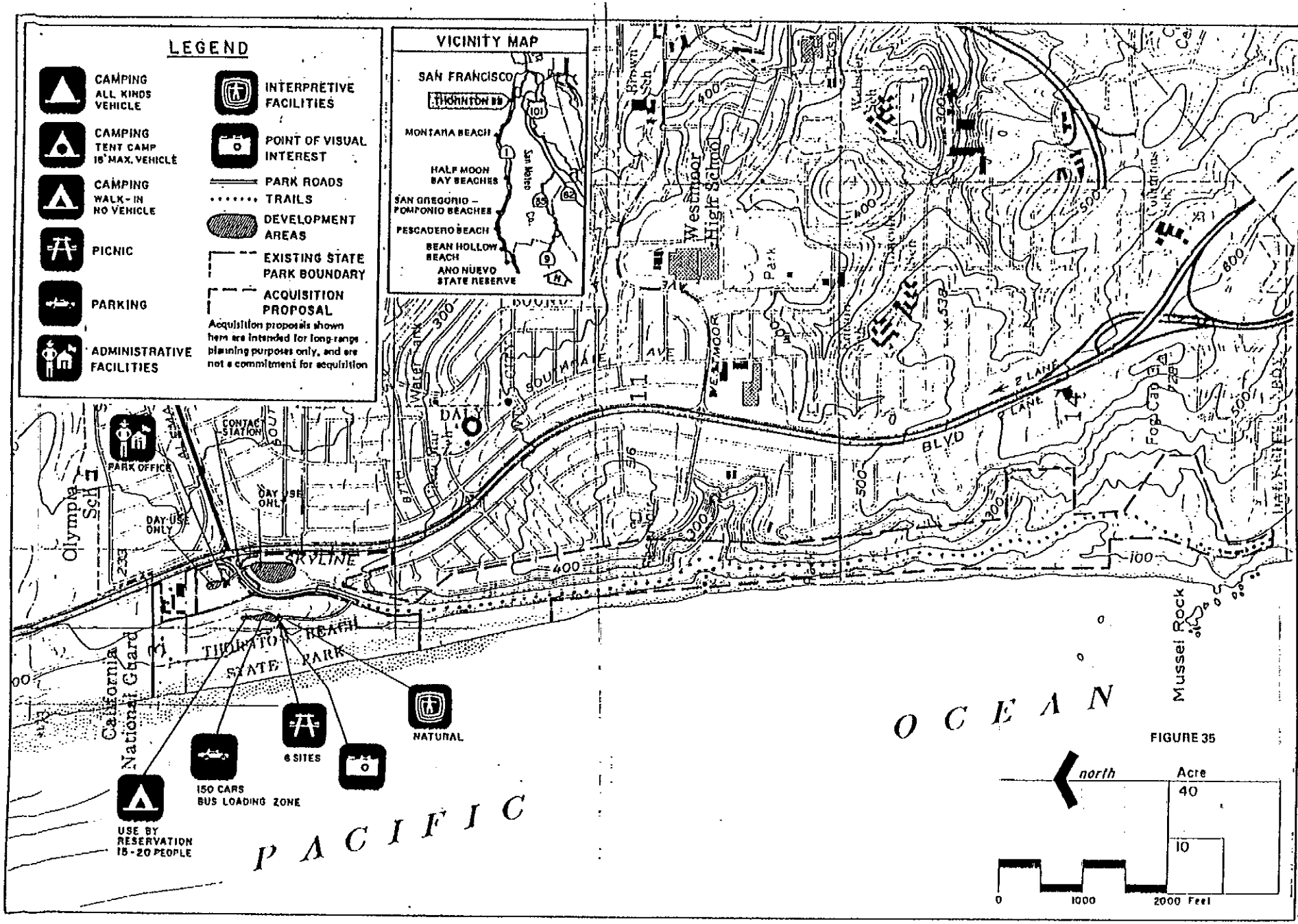

FIGURE 35

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF PARKS AND RECREATION

SAN MATEO COAST AREA
GENERAL PLAN
THORNTON STATE BEACH

DRAWING NO. 16843

SHEET NO. 1 OF 1