

CALIFORNIA COASTAL COMMISSION

NORTH CENTRAL COAST DISTRICT
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W-17b**RECORD PACKET COPY**

Date Filed: December 14, 2000
 49th Day: February 1, 2001
 180th Day: June 12, 2001
 Staff: CLK/SF
 Staff Report: February 22, 2001
 Hearing Date: March 14, 2001

STAFF REPORT: REGULAR CALENDAR

Application No.: 2-00-040

Project Applicant: City and County of San Francisco

Location: Seaward of the Great Highway, south of Sloat Boulevard, at Ocean Beach in the City and County of San Francisco (Exhibits 1-2).

Project Description: Installation of 11 steel posts on the beach and 11 four-foot high signs on the bluff between Sloat Boulevard and Fort Funston to facilitate monitoring of beach erosion/accretion.

Related Approvals : National Park Service Special Use Permit EVNT 8140 5700 01 0239, Coastal Commission Permit 2-00-021.

Substantive File Documents: Appendix A

1.0 EXECUTIVE SUMMARY

The City of San Francisco Department of Public Works (DPW) is requesting a coastal development permit to install eleven eight-foot-high steel posts on Ocean Beach to facilitate monitoring of the sand levels on the beach. The City will install the posts on the beach at 300-foot intervals between Sloat Boulevard and Fort Funston. In addition, the City proposes to install signs mounted on four-foot-high posts on the top of the bluff directly inland of each of the beach posts.

The project site is part of the Golden Gate National Recreation Area and is owned by the National Parks Service. The NPS has granted approval for the project with conditions, including requirements that the posts and signs are removed after three years.

The staff recommends approval of the proposed development with special conditions limiting the approval to three years (matching the length of time authorized by the National Park Service approval of the project).

2.0 STAFF RECOMMENDATION

The staff recommends conditional approval of Coastal Development Permit Application No. 2-00-040.

Motion: *I move that the Commission approve Coastal Development Permit Application No. 2-00-040, subject to the conditions specified below.*

Staff Recommendation of Approval

The staff recommends a YES vote. To pass the motion, a majority of the Commissioners present is required. Approval of the motion will result in the adoption of the following resolution and findings.

Resolution

The Coastal Commission hereby **grants** permit No. 2-00-040, subject to the conditions below, for the proposed development on the grounds that (1) the development is in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976 and (2) there are no feasible alternatives or feasible mitigation measures other than those specified in this permit that would substantially lessen any significant adverse impact which the activity may have on the environment.

3.0 CONDITIONS

3.1 Standard Conditions

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. **Interpretation.** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.
4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

3.1 Special Conditions

1. **Period of Time Development is Authorized.** Development is authorized by this permit only until December 31, 2004, except that the executive director may extend this authorization for any additional period authorized by the National Park Service.

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2. **Public Access.** The applicant shall place temporary fencing around the work site and staging area when heavy machinery is being operated and during after hours when construction is idle.

Assumption of Risk, Waiver of Liability and Indemnity.

A. By acceptance of this permit, the applicant on behalf of (1) themselves' (2) their assigns and (3) any other holder of the possessory interest in the development authorized by this permit, acknowledges and agrees:

1. that the site may be hazardous due to heavy surf conditions;
2. that the beach posts may pose a hazard to the public;
3. to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and
4. to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amount paid in settlement arising from any injury or damage due to such hazards.

B. PRIOR TO ANY CONVEYANCE OF THE PROPERTY THAT IS THE SUBJECT OF THIS COASTAL DEVELOPMENT PERMIT, the applicant and the land owner shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the applicant's entire parcel. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.

4.0 FINDINGS AND DECLARATIONS

4.1 Project Background and History

4.1.1 Project Area

Ocean Beach, on the western shoreline of San Francisco, is managed by the National Parks Service (NPS) as a part of the Golden Gate National Recreation Area (GGNRA). The beach is heavily used throughout the year by tourists, local beach goers, recreational fishers, and surfers. Immediately inland of the beach is the Great Highway, a City-owned and maintained four-lane boulevard with bicycle and pedestrian pathways. The City's Western Shoreline Plan, which has been certified by the Commission as the Land Use Plan (LUP) portion of the San Francisco Local Coastal Program encourages the development of the Great Highway to enhance its scenic qualities and recreational uses. Objective 6 of the LUP is to maintain and enhance the recreational use of the Ocean Beach shoreline.

4.1.2 Shoreline Erosion at Ocean Beach

Beach profile data has been collected for Ocean Beach since 1953. These data show that the beach profile oscillates from a very wide beach to a very narrow one over approximately a 20 to 40-year period. Between 1970 and 1985, the beach widened by 105 feet while between 1985 and

1992, the beach narrowed by 72 feet (Moffett and Nichol, 1995). Ocean Beach, though contiguous, cannot be treated as a uniform system; certain areas of the shoreline experience erosion while adjacent areas accrete. The differences in erosion are partially due to the offshore San Francisco Bar which acts to refract wave energy towards certain erosive areas while causing others to accrete (Berrigan and Johnson, 1985). The area to the south of Sloat Blvd is eroding at a rate of .5ft/yr while the north end of Ocean Beach is accreting (Wright, 2000). There is also a strong seasonal cycle of beach erosion and accretion. In the summer when wave energy is less, sand is transported onto the beach. In winter with the influx of high-energy waves, the sand is removed from the beach resulting in a narrower beach.

Since the winter of 1994, the shoreline and bluffs along the reach of Ocean Beach south of Sloat Boulevard have eroded significantly:

- During the 1994/95-storm season, the bluff edge retreated 30 to 40 feet between the two parking lots south of Sloat Boulevard. The northern Sloat Lot lost all 5-access stairways to the beach and the southern lot lost an additional 5 beach accessways.
- In 1996/97, surface runoff and wave action formed numerous erosion gullies in the bluff face. In March 1997, one storm formed a gully extending to the beach that eroded the bluff to within 15 feet of the highway in the area between the parking lots. At that time the bluff edge was approximately 40 feet from the Great Highway.
- In 1997/98, lowering of the beach levels south of Sloat Blvd. resulted in extensive bluff erosion. Beach elevations were 10-15 feet lower than summer allowing waves to reach further into the backshore. The bluff edge retreated 30 feet at the south end of the Sloat Lot, which was unprotected by any shoreline structures. The erosion closed both parking lots to public use.
- In 1998/99, the bluff edge retreated 50 feet along the unprotected sections between the Funston Cliffs and the South Lot. A number of steel H-piles and steel sheet piles and a rock protective layer covering a portion of the City's Southwest Ocean Outfall were exposed south of the South Lot. This erosion also raised concerns about damaging the Lake Merced Transport and Storage Facility underneath the Great Highway. The Lake Merced Transport Box is under the southbound lane of the Great Highway approximately twenty feet below the roadbed.
- In 1999/2000, bluff slopes are 25 feet high, oversteepened, and 30 feet from the edge of the Great Highway. The beach continues in an eroding state with beach elevations consistently low.

4.1.3 Previous Shoreline Protection Projects at Ocean Beach

The area discussed in this permit is south of the O'Shaughnessy seawall built in the 1920's. The unprotected area south of the seawall has received varying erosion mitigating treatments since the 1930's. These methods included dumping of sand fill from inland construction, sand fences to trap sand and finally the placement of quarry rock. The chronology of the most recent events are listed below:

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- Fall 1997, in response to severe erosion of 1994/95 the San Francisco Department of Public Works (DPW) placed two rows of armor stones at the toe of the bluff between the two parking lots.
- El Nino 1997/1998 brought unusually high waves leading to the placement of a temporary emergency quarystone revetment (EQR). The NPS authorized the temporary placement of rock on the beach with the requirement that the revetment be reauthorized every year. This riprap revetment is 600 feet long and was placed directly on top of the previously placed armor stones. Due to the extreme wave conditions precluding beach access to construction vehicles, the existing revetment does not meet coastal engineering design standards. The rock was dumped from above and was not individually placed.
- The EQR placed during the 1997/1998 season did not receive an emergency permit from the Coastal Commission. At the time, Commission staff advised DPW that the EQR was a federal project and would not require Commission approval. The Commission staff belatedly realized that the EQR was a DPW project not a federal project even though the revetment is on federal land. To remedy the situation, DPW is now submitting this coastal development permit application after the fact.
- October 1999, south of the South Lot continued to erode and a 400-foot long sand barrier was placed to provided temporary relief to the exposed metal and infrastructure related to the City's Southwest Ocean Outfall. The sand was authorized by the Coastal Commission under an emergency permit and the City also received a special use permit from the NPS. Maintenance of this sand berm has been permitted under permit 2-00-21 from the Coastal Commission.

4.2 Project Description

As a condition of NPS Permit NPS-PWR-GOGA99-91604 for the construction of the EQR, the DPW is required to monitor erosion at this area of ocean beach. The DPW proposes to install eleven eight-foot-high steel posts on Ocean Beach to facilitate the required monitoring. DPW will install the posts on the beach at 300-foot intervals between Sloat Boulevard and Fort Funston (exhibits 2-4). In addition, DPW proposes to install signs mounted on four-foot-high posts on the top of the bluff directly inland of each of the beach posts to mark the locations of the posts (Exhibits 5-6). The signs will allow DPW staff to locate the beach posts from the Great Highway since the posts will not be visible from the roadway. The NPS has granted approval for the beach monitoring posts and bluff-top signs with conditions, including requirements that the posts and signs are removed by December 31, 2004.

The posts will be approximately 10 feet from the toe of the bluff and about 8 feet high when beach elevations are low. The beach posts would be installed with a backhoe that would excavate sand, place the beach post and then refill around the post. The posts will be 4.5-inch outside diameter double-extra strong galvanized steel pipe. The posts will be painted light tan with black 6-inch-high numbers painted on near the top of the post and will be marked with reflective tape. The posts will have black one-inch-wide stripes painted around the circumference of each post starting 2 feet from the top and every 2 feet thereafter for the top 12-foot length of pipe. The posts will allow quick measurements to judge lowered or accreted sand conditions. The posts

will be inspected monthly during the storm season and immediately after major storms or extreme high tides or when damage to structures is reported.

Although surveys can provide more precise data than the proposed beach posts, the posts will provide quick snap shots of beach elevation and more frequent monitoring. Changes in beach elevation will be recorded both in report form and also in a visual format. Photographs will be taken from established locations to build a history of changes in coastline, revetment and sand barrier that allows comparison over time. Technicians performing the monitoring will document erosion of bluff, displacement of quarry stones from the revetment, end erosion, slumping of the revetment, wave scour in front of the revetment, and formation of embayments in the beach.

4.3 Other Approvals

4.3.1 National Parks Service

NPS Special Use Permit EVNT 8140 5700 01 0239 authorizes the proposed development with conditions, including the requirement that the posts and signs are removed by December 31, 2004. The Commission can only grant a permit for the period during which the NPS, as the underlying property owner, has authorized the subject development. Accordingly, **Special Condition 1** specifies that this coastal development permit authorizes development only until December 31, 2004. The executive director may extend this period to correspond with any extension(s) granted by the NPS.

4.3.2 Federal Consistency Review

Pursuant to section 307(c)(3)(A) of the Coastal Zone Management Act, any applicant for a federal permit to conduct an activity affecting any land or water use or natural resource in the coastal zone must obtain the Coastal Commission's concurrence in a certification to the federal permitting agency that the project will be conducted in a manner consistent with the California Coastal Zone Management Program (CCMP). The Commission's action on this permit application shall comprise its federal consistency review for the proposed development for purposes of the NPS and Corps permits described above.

4.4 Coastal Act Issues

The Commission must evaluate the conformity of the proposed development with the Chapter 3 policies of the Coastal Act concerning public access and recreation and visual resources.

4.4.1 Hazards

Coastal Act Section 30253 states in relevant part:

New development shall:

- (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
- (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

Installation of the beach posts will involve the use of heavy equipment on the beach and could pose a safety risk to beach users. To minimize this hazard, **Special Condition 2** requires the applicant to place temporary fencing around the work site and staging area at any time that heavy equipment is in operation on the beach. DPW expects to complete installation in a 15-day period. During such times, access in the immediate project area will be restricted. The construction crew will direct and/or escort any member of the public needing to traverse the beach during project construction safely around the project site.

In addition, in heavy surf conditions during winter beach profiles, the posts will be in the surf zone posing a potential hazard to surfers. The posts will not pose a similar hazard to swimmers because few swimmers use ocean beach at any time of year, particularly in winter due to cold water and hazardous surf conditions. The posts also pose a potential risk to NPS patrol vehicles, which could collide with the posts if unseen in poor light conditions.

To minimize these potential hazards, DPW proposes to mark the posts with reflective tape to ensure that the posts are at least eight and four feet above the sand level during winter and summer beach profiles respectively. In addition, the signs that correspond with each post will be visible to surfers as they head towards the beach. Thus, at most times, the beach posts will be highly visible, and surfers, beach goers and NPS personnel should be able to avoid them. Nevertheless, despite these measures, some risk remains that the proposed development may be hazardous to surfers unfamiliar to the area under certain heavy surf conditions.

Because the applicants propose potentially hazardous development, **Special Condition 3**, requires DPW to assume the risks of any losses associated with the proposed development, waive any claim of liability on the part of the Commission for such losses, and indemnify the Commission in the event that third parties bring an action against the Commission as a result of such losses. The Commission finds that **Special Condition 3** is required because the applicants have voluntarily chosen to implement the project despite the risk of hazards.

4.4.2 Public Access and Recreation

Coastal Act Section 30210 states:

In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Coastal Act Section 30211 states:

Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Coastal Act Section 30212 states in relevant part:

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:

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(1) It is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,

(2) Adequate access exists nearby...

(b) For purposes of this section, "new development" does not include...

(5) Any repair or maintenance activity for which the Commission has determined, pursuant to Section 30610, that a coastal development permit will be required unless the Commission determines that the activity will have an adverse impact on lateral public access along the beach.

Coastal Act Section 30214 states in relevant part:

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

(1) Topographic and geologic site characteristics.

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.

(4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.

The project site is located in the Golden Gate National Recreation Area, a heavily used 3-mile stretch along Ocean Beach from the Cliff House south to Fort Funston. Access is served by several large parking lots at both the north and south ends of the beach as well as parking at the Beach Chalet restaurant. The beach also has numerous vertical access points along the Great Highway on either side of the project site.

Once installed, the proposed beach posts and signs will not impede access to or along Ocean Beach. However, as discussed below, installation of the beach posts will involve the use of heavy equipment on the beach and could pose a safety risk to beach users. Coastal Act Section 30214 requires the Commission to implement the public access policies of the Coastal Act taking into account the geologic site characteristics, the capacity of the site to sustain use and the fragility of the natural resources in the area. Therefore, **Special Condition 2** requires the applicant to place temporary fencing around the work site and staging area at any time that heavy equipment is in operation on the beach. DPW expects to complete installation in a 15-day period. During such times, access in the immediate project area will be restricted. However, public access will continue to be available immediately up- and down-coast of the project area. DPW has indicated that the construction crew will direct and/or escort any member of the public needing to traverse the beach during project construction safely around the project site. Therefore, the temporary access restrictions in the immediate project area that are necessary to protect the public's safety will not significantly interfere with public access or recreation along the ocean beach shoreline.

The Commission finds that the proposed project, as conditioned, will not significantly interfere with public access and public recreation and will protect public access in conformance with the requirements of Section 30214 of the Coastal Act.

4.4.3 Visual and Scenic Qualities

Coastal Act Section 30251 states in relevant part:

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.

The beach posts will be visible from the beach and the bluff posts will be visible from the Great Highway. Although neither the signs along the Great Highway nor the beach posts will severely impact the visual qualities of the beach or shoreline, they will modify the view in this scenic area. Therefore, the NPS special use permit includes conditions designed to minimize the visual impacts of the signs and posts. These conditions specify that:

- The beach and signs posts shall be light brown to blend in with the surrounding beach;
- The beach posts shall be no higher than 8 feet above the sand level at summer beach profiles;
- The bluff-top sign posts shall be no more than four feet high; and
- The sign design shall be reviewed and approved by NPS staff.

These conditions are sufficient to minimize the visual impacts of the proposed development. DPW specifies in its coastal development permit application that the project is proposed to be carried out in compliance with all conditions of the NPS permit. Therefore, the Commission finds that the proposed development is consistent with the visual resource protection requirements of Coastal Act Section 30251.

4.4.4 Environmentally Sensitive Habitat Areas (ESHA)

Coastal Act Section 30240(b) states:

Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

In March of 1993, the U.S. Fish and Wildlife Service listed the Pacific Coast population of the Western snowy plover as "threatened" under the Endangered Species Act (ESA) of 1973, as amended. The ESA directs Federal agencies to use their authorities to further the purposes of the Act, which include conservation and recovery of listed species. The National Park Service in the Draft Snowy Plover Management Plan of 1998 designated the area between Stairwell 21 (just north of Lincoln Ave) and Sloat Blvd as snowy plover management area. In addition, the area south of the worksite is designated bank swallow habitat. The bank swallow is a California listed threatened species. The subject area is just south of the snowy plover habitat and just north of the bank swallow habitat and is therefore outside of the environmentally sensitive areas.

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The proposed development requires the use of heavy equipment on the beach. All construction work, including site access and staging, will occur several hundred feet from the snowy plover and bank swallow habitat areas. Therefore, the proposed project will not adversely affect the habitat values of the beach in conformance with the requirements of Section 30240(b) of the Coastal Act.

In addition to protecting environmentally sensitive habitat areas from potential impacts of adjacent development, Coastal Act Section 30240(b) also requires that development adjacent to park and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those recreation areas. The proposed development will occur on Ocean Beach, which is a component of the Golden Gate National Recreation Area. Public access and recreation in the immediate project area will be interrupted during installation of the beach posts and signs.

As discussed in Section 4.4.2 above, extensive public access and recreation opportunities will continue to be provided along the Ocean Beach shoreline immediately up- and down-coast of the project area, and provisions will be made to allow the public to traverse the project site throughout the construction period. Therefore, the Commission finds that the proposed development is sited and designed to prevent impacts which would significantly degrade park and recreation areas, and is compatible with the continuance of those recreation areas in conformance with the requirements of Coastal Act Section 30240(b).

4.4.5 California Environmental Quality Act

Section 13096 of the California Code of Regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect that the activity may have on the environment.

The proposed project has been conditioned to be found consistent with the policies of the Coastal Act and to minimize all adverse environmental effects. The Commission incorporates its findings on Coastal Act policies at this point as if set forth in full. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact, which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, and can be found consistent with Coastal Act requirements to conform to CEQA.

APPENDIX A SUBSTANTIVE FILE DOCUMENTS

- Berrigan, Paul, D., Johnson, J.W. 1985. Variations of Wave Attack Along Ocean Beach, San Francisco, California. *Shore & Beach* V. 53(4), pg. 3-9.
- CH2M Hill, Inc. 1996. Ocean Beach Coastal Erosion Protection – Initial Assessment. Prepared for the City and County of San Francisco.
- CH2M Hill, Inc. 2000. Ocean Beach and Great Highway San Francisco, California Monitoring and Maintenance Plan for Bluff and Shoreline Area South of Sloat Boulevard to Fort Funston Cliffs, Draft. Prepared for the City of San Francisco.
- CH2M Hill, Inc. 2000, Ocean Beach 2000: Status and Erosion Report No. 1. (June, 2000).
- Dean, R. G.. 1987. Coastal Sediment Processes: Toward Engineering Solutions. *Coastal Sediments*.
- McDougal, W. G., Sturtevant, M.A., Komar, P. D., 1987. Laboratory and Field Investigations of the Impact of Shoreline Stabilization Structures on Adjacent Properties. *Coastal Sediments*.
- Moffett & Nichols. 1995. Sediment Transport Processes Study Ocean Beach, San Francisco, California. Final Report. Prepared for US Army Corps of Engineers.
- Wright, Sarah. 2000. Erosion at Ocean Beach in San Francisco, An Analysis for Development of a Policy and Management Strategy. Masters Project, USF.



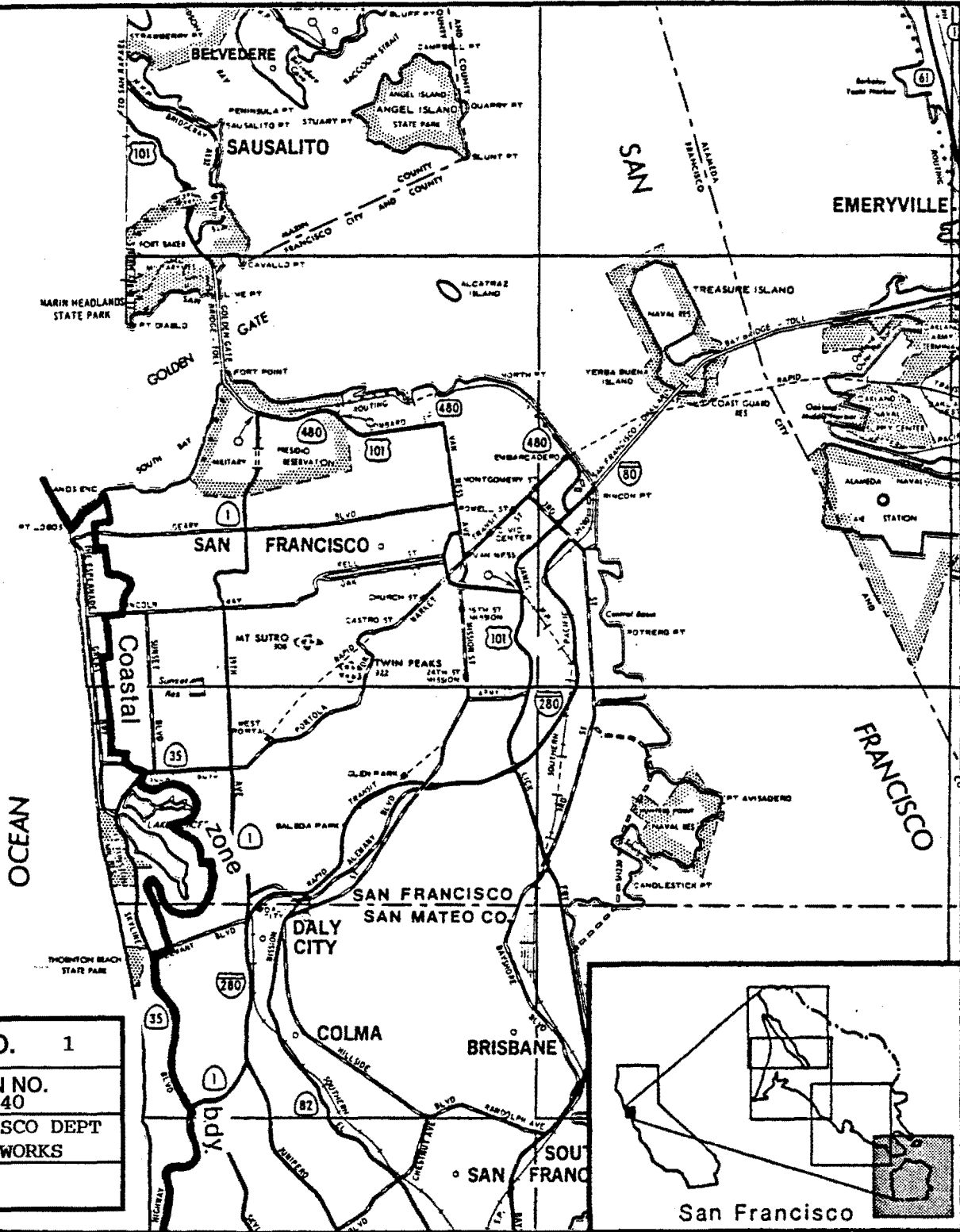


EXHIBIT NO.	1
APPLICATION NO.	2-00-040
SAN FRANCISCO DEPT OF PUBLIC WORKS	



LOCATION MAP

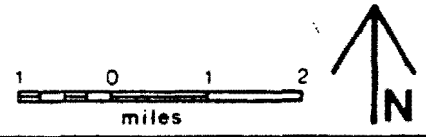
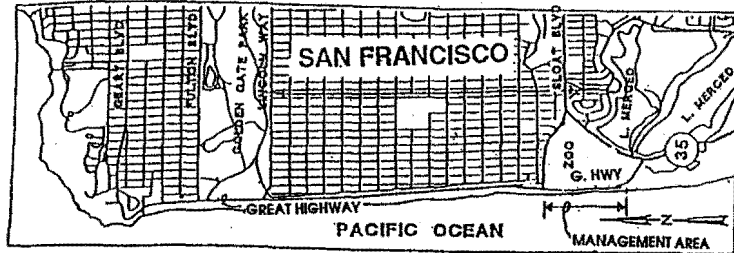
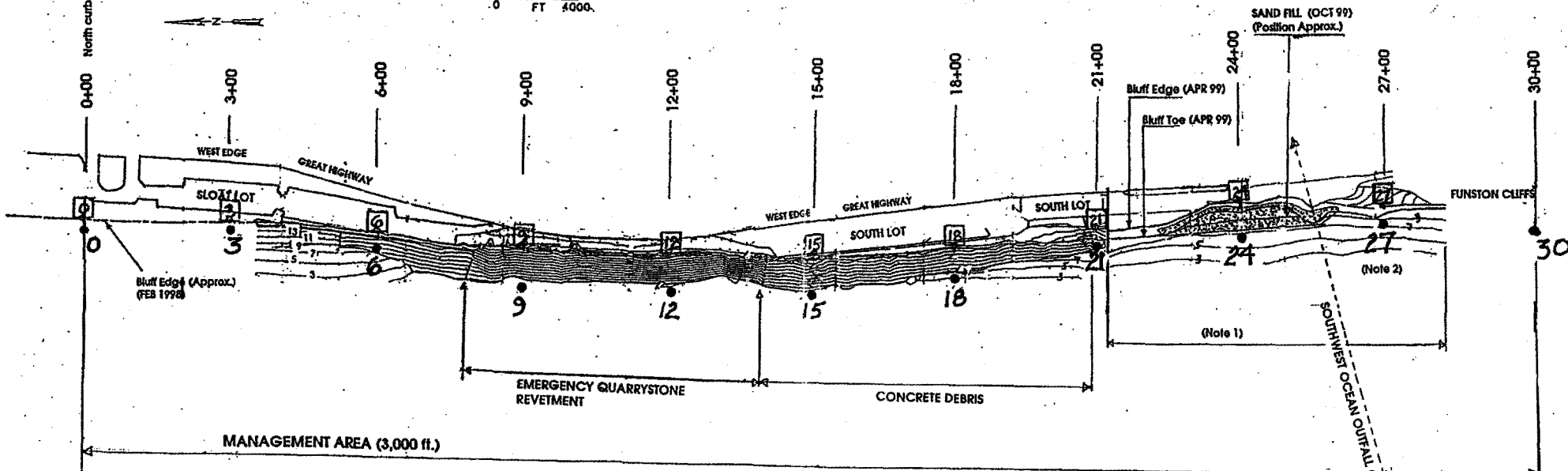


EXHIBIT NO.	2
APPLICATION NO.	2-00-040
SAN FRANCISCO DEPT OF PUBLIC WORKS	



LOCATION MAP
APPROX SCALE

0 FT 4000.



MANAGEMENT AREA (3,000 ft.)

0 FEET 250
Elevations in Ft-Mean
Lower Low Water Datum

NOTES

1. Survey by CH2M HILL in April 1999. Contours do not align with contours from City and County of SFO survey in Feb. 1998 because of erosion after Feb. 1998.
2. Beach Post 24 is to be placed 10 feet west of the design location of the Sand Barrier toe so as not to be buried during subsequent restorations of the Sand Barrier with new sand.

LEGEND

- 3 Station Markers near bluff edge facing beach. 0, 3, 6, ... 27 are distances in 100s of feet from north curb of Sloat Blvd, traffic turnaround.
- Beach Post

FIG. 1
Station Markers and
Beach Posts

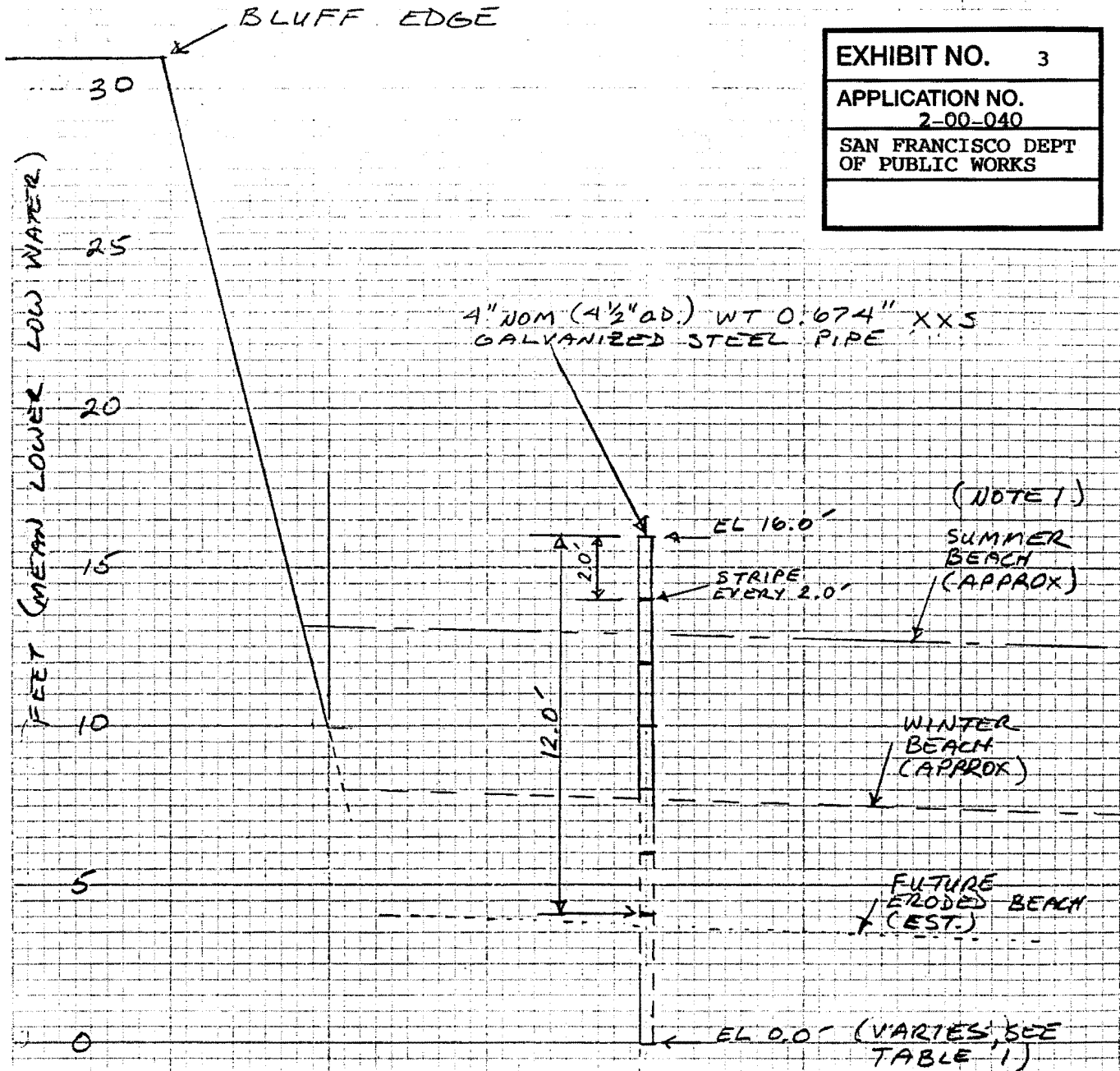


EXHIBIT NO.	3
APPLICATION NO.	2-00-040
SAN FRANCISCO DEPT OF PUBLIC WORKS	

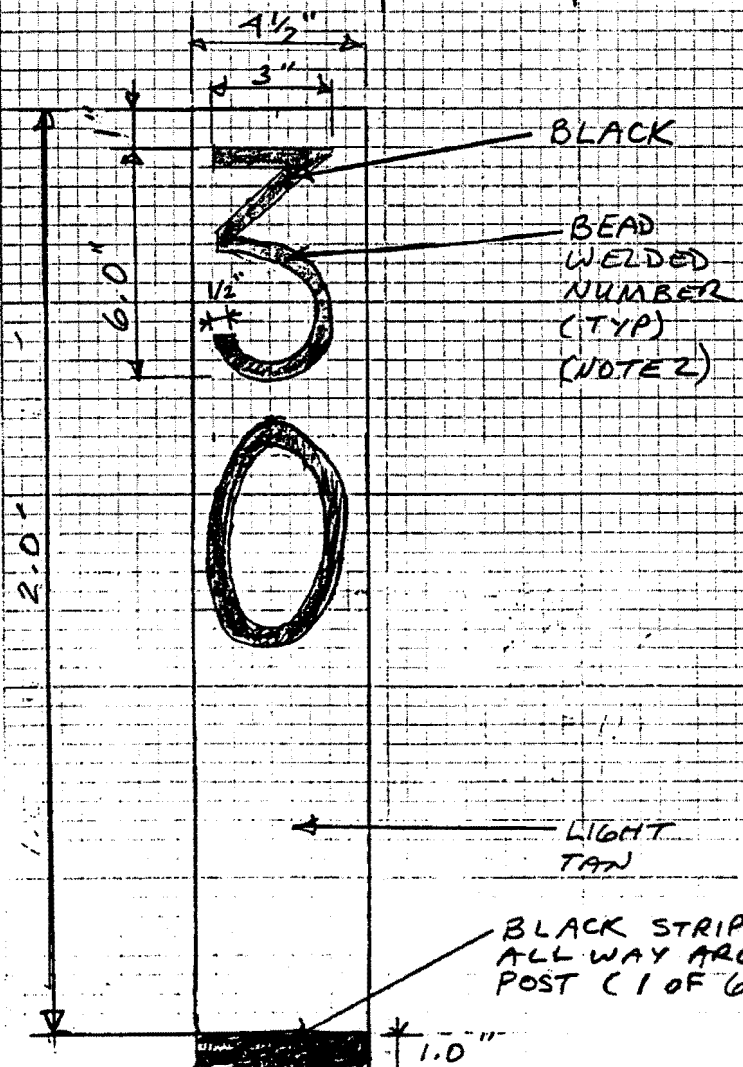
NOTES

1. BEACH LEVELS ARE APPROXIMATE AND VARY OVER TIME.

ELEVATION

TABLE 1 BEACH POST ELEVATIONS
(FT MLLW)

POST NO.	TOP	TIP	LOCATION
0	16.0	0.0	10 FT FROM BLUFF TOE
3	16.0	0.0	" " " " "
6	16.0	0.0	" " " " "
9	16.0	-5.0	10 FT FROM TOE OF REVETMENT
12	16.0	-5.0	" " " " "
15	16.0	0.0	10 FT FROM BLUFF TOE
18	16.0	0.0	" " " " "
21	16.0	0.0	" " " " "
24	16.0	0.0	" " " " "
27	16.0	0.0	" " " " "
30	16.0	0.0	" " " " "



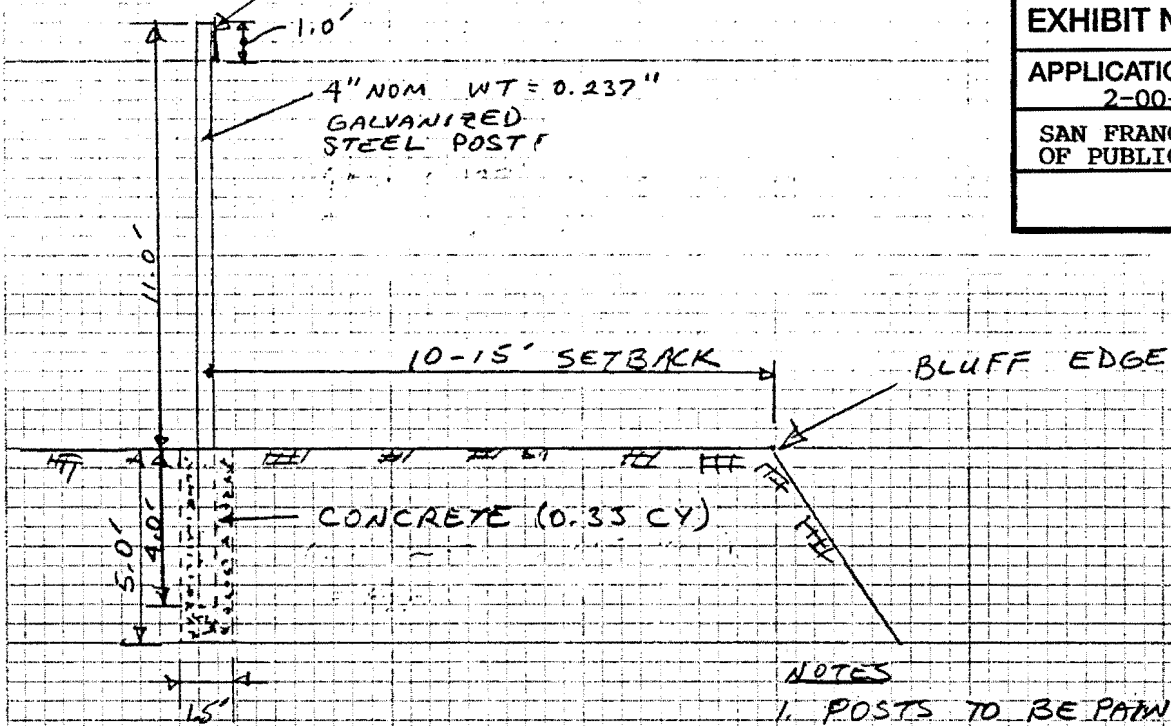
- NOTES
1. BLACK STRIPES TO BE PAINTED AROUND POST, WITH TOP OF STRIPE 2.0, 4.0, 6.0, 8.0, 10.0 AND 12.0 FEET FROM TOP OF POST
 2. NUMBERS TO FACE WEST

DETAILS

EXHIBIT NO. 4
APPLICATION NO. 2-00-040
SAN FRANCISCO DEPT OF PUBLIC WORKS

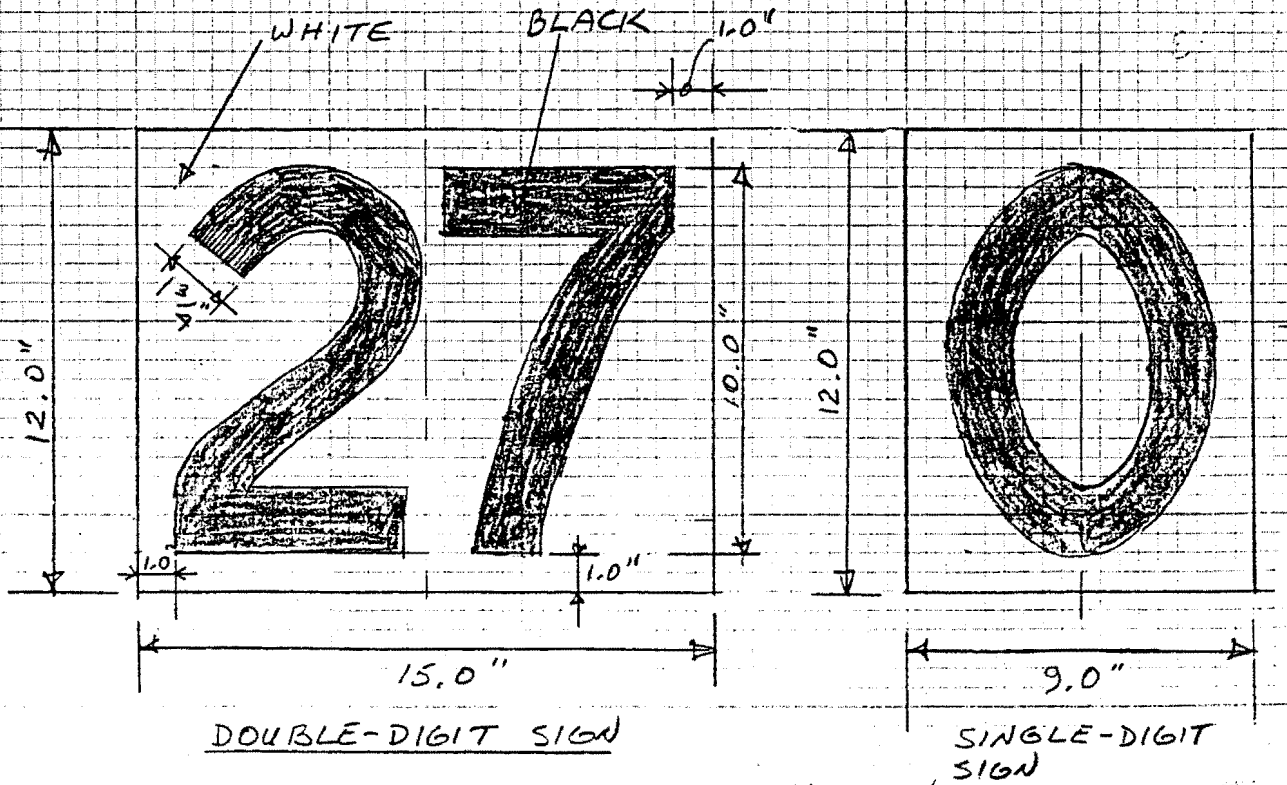
SIGN (12" HIGH x 15" WIDE)
SHEET ALUMINUM 0.063" THICK

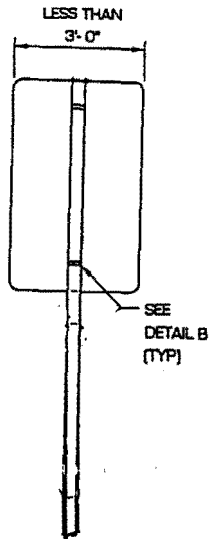
EXHIBIT NO. 5
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ELEVATION VIEW

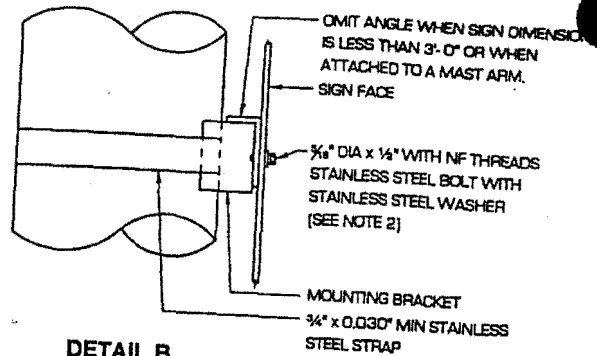
1" = 5.0'



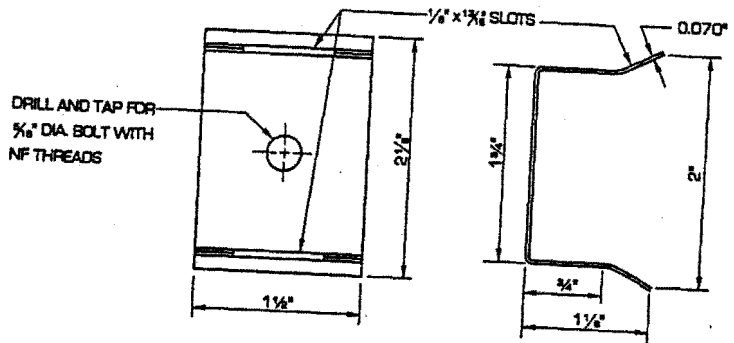


TYPE 1

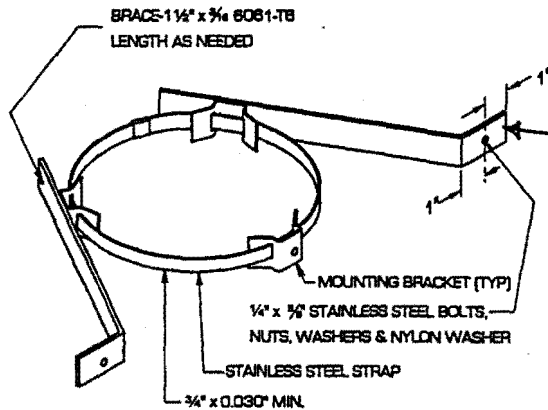
ATTACHMENT TO ROUND POST



**DETAIL B
FOR ALTERNATE 2
(SHOWN FOR VERTICAL POST)**



**MOUNTING BRACKET DETAIL
FOR ALTERNATE 2**



ALTERNATE 2 - ATTACHMENT TO ROUNDPOST

2 MOUNTING STRAPS MINIMUM PER SIGN.
42" MAX. SPACING BETWEEN MOUNTING STRAPS.

NO BRACE FOR SINGLE-DIGIT SIGNS

OCEAN BEACH (SFO), CA
STATION MARKERS

**SIGN MOUNTING DETAILS
STANDARD PLAN G-9b**

SHEET 2 OF 3 SHEETS

EXHIBIT NO.	6
APPLICATION NO.	2-00-040
SAN FRANCISCO DEPT OF PUBLIC WORKS	

APPROVED FOR PUBLICATION	
Clifford E. Mansfield	04/02/99
DEPUTY STATE DESIGN ENGINEER	DATE
WASHINGTON STATE DEPARTMENT OF TRANSPORTATION OLYMPIA, WASHINGTON	