County of Los Angeles
CHIEF EXECUTIVE OFFICE
Kenneth Hahn Hall of Administration
500 West Temple Street, Room 713, Los Angeles, California 90012
(213) 974-1101
http://ceo.lacounty.gov

WILLIAM T FUJIOKA
Chief Executive Officer

October 30, 2012

ADOPTED
BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

#34 October 30, 2012

Sachi A. Hamai
SACHI A. HAMAI
EXECUTIVE OFFICER

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

SET: November 27, 2012 @ 9:30 a.m.

Dear Supervisors:

**DEPARTMENT OF PUBLIC WORKS:
DAN BLOCKER BEACH - PARCEL 1-4PP
GENERAL IMPROVEMENTS PROJECT
LOCATED IN THE CITY OF MALIBU
ADOPT MITIGATED NEGATIVE DECLARATION AND
MITIGATION MONITORING AND REPORTING PROGRAM; APPROVE PROJECT;
APPROVE AND ORDER PUBLICATION OF NOTICE OF INTENTION TO
PURCHASE REAL PROPERTY; AND APPROVE RELATED ACTIONS
SPECS. 6622; CAPITAL PROJECT NO. 77367
(THIRD DISTRICT) (3 VOTES)**

SUBJECT

Approval of the recommended actions will adopt the Mitigated Negative Declaration, approve the proposed Project, and authorize purchase of land for development of the Dan Blocker Beach General Improvements Project.

IT IS RECOMMENDED THAT THE BOARD:

1. Consider the Mitigated Negative Declaration for the Dan Blocker Beach General Improvements Project together with any comments received during the public review period; find that the Mitigated Negative Declaration reflects the independent judgment and analysis of the Board of Supervisors; adopt the Mitigation Monitoring and Reporting Program, finding that the Mitigation Monitoring and Reporting Program is adequately designed to ensure compliance with the mitigation measures during project implementation; and find on the basis of the whole record before the Board of Supervisors that there is no substantial

evidence the Project will have a significant effect on the environment and adopt the Mitigated Negative Declaration.

2. Approve the Dan Blocker Beach General Improvements Project and approve the Notice of Intention to purchase real property at 26200 Pacific Coast Highway, Malibu, from Mansard Holdings, Inc., consisting of a total undeveloped land area of 32,560 square-feet for a purchase price of $400,000.

3. Instruct the Executive Officer of the Board of Supervisors to publish the Notice of Intention in accordance with Government Code Section 6063.

4. Find that the property described in the Notice of Intention is needed for a public purpose.

IT IS FURTHER RECOMMENDED THAT, AT THE TIME OF CONSUMMATION, THE BOARD:

5. Set November 27, 2012, as the date of the public hearing to receive comments and consummate the acquisition.

6. Authorize the purchase consummated in accordance with Government Code Section 25350.

7. Authorize the Director of Public Works, or her designee, to open and manage escrow, execute any required documentation necessary to complete the transfer of title to the County, and accept the deed conveying title to the County.

8. Authorize the Auditor-Controller to issue a warrant to cover the purchase price of $400,000 for the real property and any other required transactional costs or escrow fees, which are estimated not-to-exceed $7,000.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

Approval of the recommended actions will adopt the Mitigated Negative Declaration (MND), approve the proposed Dan Blocker Beach General Improvements Project (Project), and authorize purchase of land from Mansard Holdings, Inc. (Mansard), for development of the proposed Project.

Proposed Project

The proposed Project will consist of improvements to an undeveloped bluff area on one of the four noncontiguous parcels of Dan Blocker Beach located at 26200 Pacific Coast Highway in Malibu to provide improved public beach access. The improvements will include construction of a new 15-space parking lot, a 242 square-foot public restroom building with an underground on-site wastewater treatment system, and a pedestrian beach access ramp complying with the Americans with Disabilities Act from the bluff top down to the beach consisting of a concrete ramp supported on piles. In addition, the bluff top will include site amenities, such as a small picnic area, public view areas, a bike rack, walkways, and landscaping improvements.

The construction documents for the proposed Project have been completed and submitted to the jurisdictional agencies for approval. Since the proposed Project is located in the coastal zone and within the City of Malibu (City), the County will be required to obtain a Coastal Development Permit pursuant to the City's Local Coastal Program. The recommendation to adopt the MND is required for the land acquisition and for the City to process the Coastal Development Permit to allow the implementation of the proposed Project.

Following completion of the jurisdictional approvals tentatively scheduled for January 2013, we will return to the Board for approval of the proposed Project budget, adoption of the plans and specifications, and authorization to advertise for construction bids. Construction of the proposed Project will be completed using a qualified construction contractor through the County's competitive low bid process.

Land Acquisition

The property located at 26200 Pacific Coast Highway, between Corral Canyon Road and Latigo Canyon Road, in the City of Malibu, is privately owned by Mansard and is proposed to be acquired for development of the proposed Project. The property consists of a total land area of 32,560 square-feet of undeveloped land located within the dedicated right-of-way of Pacific Coast Highway. The property is encumbered with a Caltrans easement limiting its use to public road and highway purposes. However, Caltrans has no objections to the County's planned use of the property for development of the proposed Project to provide improved public beach access to Dan Blocker Beach.

The Department of Public Works (Public Works), Property Management Division received an appraised unit value, which was agreed to by all parties. The negotiated purchase price of $400,000 is equal to 10 percent of the appraised value and reflects easement considerations. Public Works Property Management Division has agreed that 10 percent of the appraised value is reasonable and County Counsel has concurred.

Implementation of Strategic Plan Goals

The Countywide Strategic Plan directs the provision of Operational Effectiveness (Goal 1) and Integrated Services Delivery (Goal 3) by investing in public infrastructure that will enhance recreational opportunities for County residents and visitors by providing improved public beach access at Dan Blocker Beach.

FISCAL IMPACT/FINANCING

The total purchase price for the undeveloped land is $400,000, and approximately $7,000 for the related title and escrow costs to consummate the transaction.

The total proposed Project cost, including land acquisition, plans and specifications, plan check, construction, consultant services, miscellaneous expenditures, and County services, is currently estimated at $5,500,000. We plan to return to the Board in February 2013 to request approval of a total proposed Project budget and authorization to advertise for construction bids. The proposed Project Schedule and Budget Summary are detailed in Attachment A.

Sufficient appropriation is available in the Fiscal Year 2012-13 Capital Project/Refurbishment Budget for the Project (Capital Project No. 77367) to fund the land acquisition. The Project will be funded $1,243,000 with prior year net County cost, $700,000 with the Safe Neighborhood Parks Proposition of 1996, and $3,557,000 with the Vehicle License Fee Gap Loan Special Fund.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

Pursuant to Government Code Section 25350, the attached Notice of Intention (Attachment C) will be published in accordance with Government Code Section 6063 for the intended action to purchase real property, and a public hearing will be held on November 27, 2012, for the Board to receive comments prior to consummating the acquisition.

Mansard has executed an Agreement to Convey and Claim for Payment Form with the Public Works acknowledging the terms and conditions of the tentative agreement for sale of the property. As part of the escrow process, Mansard will deposit into escrow an executed deed conveying the land to the County. The original deed will be approved and accepted by the Director of Public Works, or her designee, which will complete the transfer of title to the County.

Public Works, in accordance with Title 7, Division 1, Chapter 3, Article 7, Section 65402(b) of the Government Code; and notice under Title 22, Section 22.36.10 of the Los Angeles County Code as required for public agencies when acquiring real property interests for public purposes, has provided notification to the City's Planning Division of the County's intent to acquire the real property. The City acknowledged that the subject parcel would be considered within public open space designation, thus within the City's General Plan.

County Counsel has approved all documents in this transaction as to form.

ENVIRONMENTAL DOCUMENTATION

An Initial Study was prepared for the proposed Project in compliance with the California Environmental Quality Act (CEQA). The Initial Study identified potentially significant effects of the proposed Project on air quality, biological resources, and geology and soils. Prior to the release of the proposed MND and Initial Study for public review, revisions in the proposed Project were made or agreed to which would avoid these effects or mitigate them to a point where clearly no significant effects would occur, as follows:

- Air Quality: Water and sweep the street for dust control, suspend excavation and grading during high winds, and use, maintain, and operate construction equipment to minimize exhaust emissions.

- Biological Resources: Should construction activities occur during breeding season for certain migratory birds, a preconstruction survey shall be performed by a qualified biologist to protect active bird nests within 300 feet of the construction area and establish buffer areas to be avoided by construction activities.

- Geology and Soils: Design and construct the proposed Project in accordance with the proposed Project specific geotechnical reports and wave-run up and coastal analysis report.

The Initial Study and proposed Project revisions showed that there is no substantial evidence, in light of the whole record before the County, that the proposed Project as revised may have a significant effect on the environment. Based on the Initial Study and proposed Project revisions, an MND was prepared for this proposed Project. The proposed Mitigation Monitoring and Reporting Program (Section 5 of Attachment B) was prepared to ensure compliance with the environmental mitigation measures included as part of the final MND (Attachment B) relative to these areas during Project implementation.

Since public circulation of the Draft Initial Study/MND, the proposed Project scope has been refined based on the completed design. The proposed Project scope now includes the construction of a picnic area and public restroom facility with an on-site wastewater treatment system, which were originally included as an option and evaluated in the circulated Draft Initial Study/MND. In addition, the location and alignment of the beach access ramp has been refined based on additional geotechnical and coastal studies completed for the proposed Project. The refined proposed Project scope and associated environmental impacts have been evaluated and included in the final MND. Revisions to the MND were also made to address adopted changes to the State CEQA Guidelines, which occurred following public circulation of the document. The proposed Project revisions do not result in any new significant impacts or an increase in the severity of the previously identified project impacts. Some of the previously proposed mitigation measures that have already been fulfilled or incorporated as part of the completed final design have been eliminated as they are no longer necessary or applicable. Additionally, minor changes of certain existing mitigation measures were made for clarity; however, the mitigation remains substantially the same.

The proposed Project refinements made and included in the final MND since public circulation would not result in any new avoidable significant effects, and previously proposed and clarified mitigation measures and proposed Project revisions will ensure that all significant environmental effects are reduced to below the level of significance. Therefore, recirculation of the final MND is not required pursuant to Section 15073.5 of the State CEQA Guidelines.

Public Notice was published in the Malibu Times on October 21 and 28, 2010, pursuant to Public Resources Code Section 21092 and posted pursuant to Section 21092.3. During the 30-day comment period, which started on October 18, 2010, and ended on November 16, 2010, comment letters were received from two public agencies (City of Malibu and the Department of Transportation-Caltrans), two additional agencies (Resource Conservation District of the Santa Monica Mountains and Santa Monica Mountains Conservancy), and three members of the public. After the comment period, written responses were received from the County of Los Angeles Sheriff's Department and the California State Lands Commission. All comments received, as well as responses to the comments, are contained in the final MND (Section 6 of Attachment B) and have been sent to the commenting public agencies pursuant to Section 21092.5 of the Public Resources Code.

The location of these documents and other materials constituting the record of the proceedings upon, which the Board's decision is based in this matter, is the County of Los Angeles Department of Public Works, Project Management Division I, 900 South Fremont Avenue, 5th Floor, Alhambra, California 91803. The custodian of such documents and materials is Ed Andrews, Project Manager, Public Works.

The proposed Project is not exempt from payment of a fee to the California Department of Fish and Game pursuant to Section 711.4 of the Fish and Game Code to defray the costs of fish and wildlife protection and management incurred by the California Department of Fish and Game. Upon the Board's adoption of the MND, Public Works will file a Notice of Determination in accordance with Section 21152(a) of the California Public Resources Code and pay the required filing and processing fees with the Registrar-Recorder/County Clerk of approximately $2,177.

CONTRACTING PROCESS

Design of the proposed Project is being completed by Public Works in-house staff and as-needed consultants. Construction of the proposed Project will be completed by a qualified construction contractor through the County's competitive low-bid process.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

Approval of the recommended actions will have no impact on current County services or projects.

CONCLUSION

Please return one adopted copy of this Board letter to the Chief Executive Office, Capital Projects Division; the Department of Beaches and Harbors; and the Department of Public Works, Project Management Division I and Survey/Mapping and Property Management Division.

Respectfully submitted,

WILLIAM T FUJIOKA
Chief Executive Officer

WTF:RLR:DJT
DKM:AC:zu

Attachments

c: Executive Office, Board of Supervisors
County Counsel
Beaches and Harbors
Public Works

ATTACHMENT A
October 30, 2012

DEPARTMENT OF PUBLIC WORKS:
DAN BLOCKER BEACH - PARCEL 1-4PP
LOCATED IN THE CITY OF MALIBU
GENERAL IMPROVEMENTS PROJECT
ADOPT MITIGATED NEGATIVE DECLARATION AND
MITIGATION MONITORING AND REPORTING PROGRAM; AND
APPROVE AND ORDER PUBLICATION OF NOTICE OF INTENTION TO
PURCHASE REAL PROPERTY AND APPROVE RELATED ACTIONS
SPECS. 6622; CAPITAL PROJECT NO. 77367

I. PROJECT SCHEDULE

Project Activity	Scheduled Completion Date
Construction Documents	10/31/12
Jurisdictional Approvals	01/31/13
Award Construction Contract	04/30/13
Construction Start	05/13/13
Substantial Completion	07/31/14
Final Acceptance	09/30/14

	Current Project Budget
Land Acquisition	$ 410,000
Construction	
Low Bid Construction Contract	$3,156,294
Job Order Contract	0
Change Orders	315,629
Departmental Crafts	0
Youth Employment	0
Construction Consultants	0
Misc. Expense: Utility Relocation Fees	0
Telecomm Equip – Affixed to Building	0
Civic Arts	0
Other: Utility Connection Fees	35,000
Subtotal	$3,506,923
Programming/Development	$ 0
Plans and Specifications	$ 174,335
Consultant Services	
Site Planning	$ 0
Hazardous Materials	0
Geotech/Soils Report and Soils Testing	61,345
Material Testing	50,000
Cost Estimating	3,350
Topographic Surveys	0
Construction Management	0
Construction Administration	0
Environmental	113,754
Move Management	0
Equipment Planning	0
Legal	0
Construction/Change Order	0
Other: Property Appraisal	50,100
Other: Wave Run-Up Study	40,380
Subtotal	$ 318,929
Miscellaneous Expenditures	$ 18,000
Jurisdictional Review/Plan Check/Permit	$ 46,671
County Services	
Code Compliance/Quality Control Inspection	$ 113,378
Design Review	850
Design Services	50,231
Contract Administration	35,793
Project Management	563,339
Project Management Support Services	0
ISD Job Order Contract Management	0
DPW Job Order Contract Management	0
ISD ITS Communications	0
Project Security	0
Project Technical Support	0
Office of Affirmative Action	15,000
County Counsel	0
Geotechnical Engineering Services (GMED)	5,881
Other DPW Support Divisions	240,670
Subtotal	$1,025,142
TOTAL	**$5,500,000**

ATTACHMENT B
October 30, 2012

**DEPARTMENT OF PUBLIC WORKS:
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(THIRD DISTRICT) (3 VOTES)**

**MITIGATED NEGATIVE DECLARATION
(See Attachment)**

ATTACHMENT C
October 30, 2012

DEPARTMENT OF PUBLIC WORKS:
DAN BLOCKER BEACH - PARCEL 1-4PP
GENERAL IMPROVEMENTS PROJECT
LOCATED IN THE CITY OF MALIBU
ADOPT MITIGATED NEGATIVE DECLARATION AND
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SPECS. 6622; CAPITAL PROJECT NO. 77367
(THIRD DISTRICT) (3 VOTES)

NOTICE OF INTENTION
TO PURCHASE REAL PROPERTY

(See Attachment)

NOTICE OF INTENTION TO PURCHASE REAL PROPERTY

NOTICE IS HEREBY GIVEN that it is the intention of the Board of Supervisors of the County of Los Angeles, State of California to purchase approximately 32,560 square feet of undeveloped land (the "Real Property") located at 26200 Pacific Coast Highway between Corral Canyon Road and Latigo Canyon Road in the City of Malibu, County of Los Angeles, State of California for the sum of Four Hundred Thousand Dollars ($400,000) from the fee simple owner, Mansard Holdings, Inc. (the "Seller"). It is the intent of the County to develop the Real Property with a new 15-space parking lot, a 242-square-foot restroom building, and a pedestrian beach access ramp from the bluff top down to the beach to provide improved public beach access for Dan Blocker Beach. Due to space limitations in this notice, a complete legal description of the property being acquired by the County is available at the Department of Public Works, Survey/Mapping and Property Management Division at 900 South Fremont Avenue, 10th Floor, Alhambra, California 91803.

NOTICE IS HEREBY GIVEN that the purchase of the Real Property will be consummated by the Board of Supervisors of the County of Los Angeles, State of California, on the 27th day of November, 2012, at 9:30 a.m. in the Hearing Room of the Board of Supervisors, Room 381, Kenneth Hahn Hall of Administration, 500 West Temple Street, Los Angeles, California 90012. No obligation will arise against the County and in favor of the Seller with respect to the purchase of the Real Property described herein until the Board of Supervisors approves the purchase on the named consummation date.

SACHI A. HAMAI, Executive Officer
Board of Supervisors, County of Los Angeles

By ________________________
Deputy

APPROVED AS TO FORM:

JOHN F. KRATTLI
County Counsel

By ________________________
Deputy

Appendix I – 2010 Updated (Draft) MND/IS
and
Complete Technical Appendices (A through H)

MITIGATED NEGATIVE DECLARATION/INITIAL STUDY for the proposed DAN BLOCKER BEACH PROJECT

SCH# 2001041057

Prepared for:

Lead Agency:
Los Angeles County Department of Public Works
Project Management Division 1
900 S. Fremont Ave., 5th Floor
Alhambra, CA 91803-1331

Prepared by:

Consultant of Lead Agency
David Evans and Associates
110 West A Street, Suite 1700
San Diego, California 92101

September 2010

TECHNICAL APPENDIX: SEE ATTACHED CD

LIST OF TABLES

LIST OF FIGURES

1.1 INTRODUCTION

Lead Agency

An Initial Study for the Dan Blocker Beach Project was previously prepared for the County and adopted in March, 2003. The March 2003 Initial Study is provided as Appendix G to this document. Given the amount time that has passed since the existing IS/MND was approved and the fact that changes to the original project scope have been proposed, the Department chose to update the March, 2003, Initial Study and recirculate for public/agency review and comment.

The Los Angeles County Department of Public Works (Department) is serving as the *Lead Agency* for the proposed Dan Blocker Beach Project. Section 21067 of the California Environmental Quality Act (CEQA) defines a Lead Agency as the public agency which has the principal responsibility for carrying out or approving a project which may have a significant affect on the environment. As the Lead Agency, the Los Angeles County Department of Public Works has the authority to oversee and approve the environmental review process, as well as the design and construction of the proposed Dan Blocker Beach Project.

Project Location/Description

This Initial Study evaluates and identifies the potential environmental impacts which may result from the proposed Dan Blocker Beach Project proposed for development on approximately 1.92 acres on a bluff top located at Dan Blocker Beach. Dan Blocker Beach is located within the City of Malibu south of Pacific Coast Highway (PCH); north of the Santa Monica Bay and the Pacific Ocean; west of Corral Canyon Road; and east of Latigo Point. The proposed project would include the construction of an onsite parking area accommodating 15 vehicles, beach access in the form of an Americans with Disability Act (ADA) ramp, open space, and park site amenities (bench seating, potable drinking fountains, trash receptacles, anodized bluff handrailing, a walkway and landscaped areas). Project amenities may include picnic tables and restroom facilities. A portion of the site would remain open space. Open space provides habitat for vegetation, which in turn provides habit for local wildlife. Open space also helps to reduce urban heat island effect, increases stormwater infiltration, and provides the human population with a connection to the outdoors. Access to the parking area would be via PCH and may include a right-hand turn pocket or marked deceleration lane. Both would be accommodated using existing pavement. No changes to the width of PCH would occur.

1.2 PURPOSE OF THE INITIAL STUDY

As part of the environmental review process for the proposed Dan Blocker Beach Project, the Los Angeles County Department of Public Works has authorized the preparation of this Initial Study. The Initial Study provides a basis for understanding whether there are environmental impacts associated with the proposed project and, where environmental impacts are likely to occur, if such impacts could be significant. The purposes of this Initial Study, as stated in Section 15063 of the CEQA Guidelines, are as follows:

Based on the findings of this Initial Study, the County of Los Angeles Department of Public Works has determined the environmental review needed for the Dan Blocker Beach Project, is a Mitigated Negative Declaration (MND). According to Section 21064.5 of CEQA and Section 15070 of the CEQA Guidelines, a MND is a statement that describes the reasons why the proposed project would not have a significant effect on the environment by itself or because revisions to the project have been made to avoid or reduce the potential adverse impacts of the project to levels considered less than significant and that there is no substantial evidence before the Lead Agency that the project, as revised, may have a significant effect on the environment. The recommended mitigation measures presented in this Initial Study would be incorporated into the project. The MND indicates that the project, as proposed, would not require additional environmental analysis in the form of an EIR.

1.3 SUMMARY OF MITIGATION MEASURES

Based on the findings of the preliminary environmental analysis in Section 3.0 of this Initial Study, the proposed Dan Blocker Beach Project will not result in a significant adverse effect on the environment because the identified potentially significant impacts from construction and operation of the proposed project will be reduce to less-than-significant levels through implementation of the following mitigation measures which are identified in the attached Initial Study.

Air Quality

To mitigate air quality impacts associated with construction activities to less than significant, the following mitigation measures should be implemented when feasible. They should be included in grading and construction plan specifications for implementation by contractors.

Measure 3.3.B1: *To reduce fugitive dust resulting from earth-moving activities during grading / construction activities:*

- *Limit grading/soil disturbance to as small as an area as practical at any one time.*
- *Apply soil stabilizers to inactive areas.*
- *Prepare a high wind dust control plan and implement plan elements and terminate soil disturbance when winds exceed 25 mph.*
- *Stabilize previously disturbed areas if subsequent construction is delayed.*
- *Water exposed surfaces and haul roads 3 times per day.*
- *Cover all stock piles with tarps.*
- *Replace ground cover in disturbed areas as soon as feasible.*
- *Reduce speeds on unpaved roads to less than 15 mph.*

Measure 3.3.B2: *To reduce exhaust emissions from construction equipment and activities, the following measures shall be incorporated into all bid documents and implemented by the general contractor:*

- *Require 90-day low-*NO_X *tune-ups for off-road equipment.*
- *Limit allowable idling to 5 minutes for trucks and heavy equipment.*
- *Utilize equipment whose engines are equipped with diesel oxidation catalysts if available.*
- *Utilize diesel particulate filter on heavy equipment where feasible.*

Measure 3.3.B3: *To reduce reactive organic gas emissions from construction activities, the use of low VOC coatings and high pressure-low volume sprayers shall be incorporated into all bid documents and implemented by the general contractor.*

Biological Resources

In order to reduce biological impacts to special status species to less than significant levels, the following mitigation is recommended:

Measure 3.4.A1: *Ground-disturbing and vegetation removal activities associated with construction of the project should be performed outside of the breeding season for birds, or between September 1 and January 31.*

If project construction activities cannot be implemented during this time period, the applicant shall retain a qualified biologist to perform pre-construction nest surveys to identify active nests within and adjacent to the project area up to 500 feet. If the pre-construction survey is conducted early in the nesting season (February 1- March 15) and nests are discovered, a qualified biologist may remove the nests only after it has been determined that the nest is not active, i.e., the nest does not contain eggs, nor is an adult actively brooding on the nest. Any active nests identified within the project area or within 300 feet of the project area should be marked with a buffer, and the buffer area would need to be avoided by construction activities until a qualified biologist determines that the chicks have fledged. The buffer area shall be 300 feet for non-raptor nests, and 500-feet for raptor nests. If the buffer area cannot be avoided during construction of the project, the project applicant should retain a qualified biologist to monitor the nests on a daily basis during construction to ensure that the nests do not fail as a result of noise generated by the construction. The biological monitor should have the authority to halt construction if the construction activities cause negative effects, such as adults abandoning the nest or chicks falling from the nest.

Geology and Soils

To reduce impacts associated with soil erosion from the proposed project to less than significant levels, and to ensure the stability and structural integrity of proposed improvements, the following mitigation measures shall be implemented:

Measure 3.6.E1: *Driveways and parking areas should be setback a minimum of 10 feet from the bluff face.*

Measure 3.6.E2: *Fencing along the bluff face should be constructed to discourage foot traffic down the face of the bluff.*

Measure 3.6.E3: *During grading of the parking area, any gullies identified in the parking area or other areas to be developed should be filled with properly compacted soils and should be modified to drain any flows away from the bluff face.*

Measure 3.6.E4: *Any areas between the new parking area and driveways that is not well vegetated should be planted with drought-tolerant vegetation to minimize interim erosion.*

Measure 3.6.E5: *A sufficiently deep concrete pile or foundation system for a concrete landing for the access ramp should be constructed to prevent wave action and/or beach erosion.*

Measure 3.6.E6: *The access ramp should be designed to accommodate ongoing marine and subaerial erosion process, which would sustain the integrity of the structure from any marine or subaerial erosion process.*

To reduce impacts associated with the structural geotechnical stability of the proposed project to less than significant levels, the following mitigation measures shall be implemented:

Measure 3.6.F1: *The recommendations presented in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 should be followed.*

Measure 3.6.F2: *Drill borings at the project site and soil samples should be taken of subgrade before final design of the ramp and parking area. After these samples are taken the recommendations in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 may be modified depending on the findings. If modified findings result from the samples they should than be implemented.*

In order to reduce impacts associated with any potential wastewater treatment system to less than significant levels, the following mitigation is recommended:

Measure 3.6.H1: *In the event that a restroom with wastewater treatment system is chosen for the final design for the Dan Blocker Beach Project, a suitability analysis of the soils supporting the use of the septic tanks, as well as the accompanying leach fields or seepage pits, shall be conducted prior to or concurrently with the acquisition of subgrade drill borings and soil samples as part of Mitigation Measure 3.6.F2. The suitability analysis shall include percolation tests at the exact location of the absorption field. Recommendations from the suitability analysis shall be incorporated into the wastewater treatment design.*

Hydrology and Water Quality

Improvements from the proposed project would introduce asphalt surfaces from walkways and the parking area. This would result in a slight decrease in the amount of water percolation and increase the amount of runoff, erosion potential and drainage on-site. Implementation of the proposed project would require conformance with a number of regulatory requirements related to hydrology and water quality, including elements of NPDES and County storm water standards. Project compliance with existing storm water regulations enforced during plan review would ensure that impacts from construction and operation of the proposed project would not violate water quality standards. Mitigation to decrease erosion impacts would be implemented to reduce erosion impacts to a level of less than significant. Mitigation measures 3.6.E1 through 3.6.E6 would reduce any impacts associated with the runoff erosion to a level of less than significant.

2.1 PROJECT LOCATION AND ENVIRONMENTAL SETTING

Regional Setting

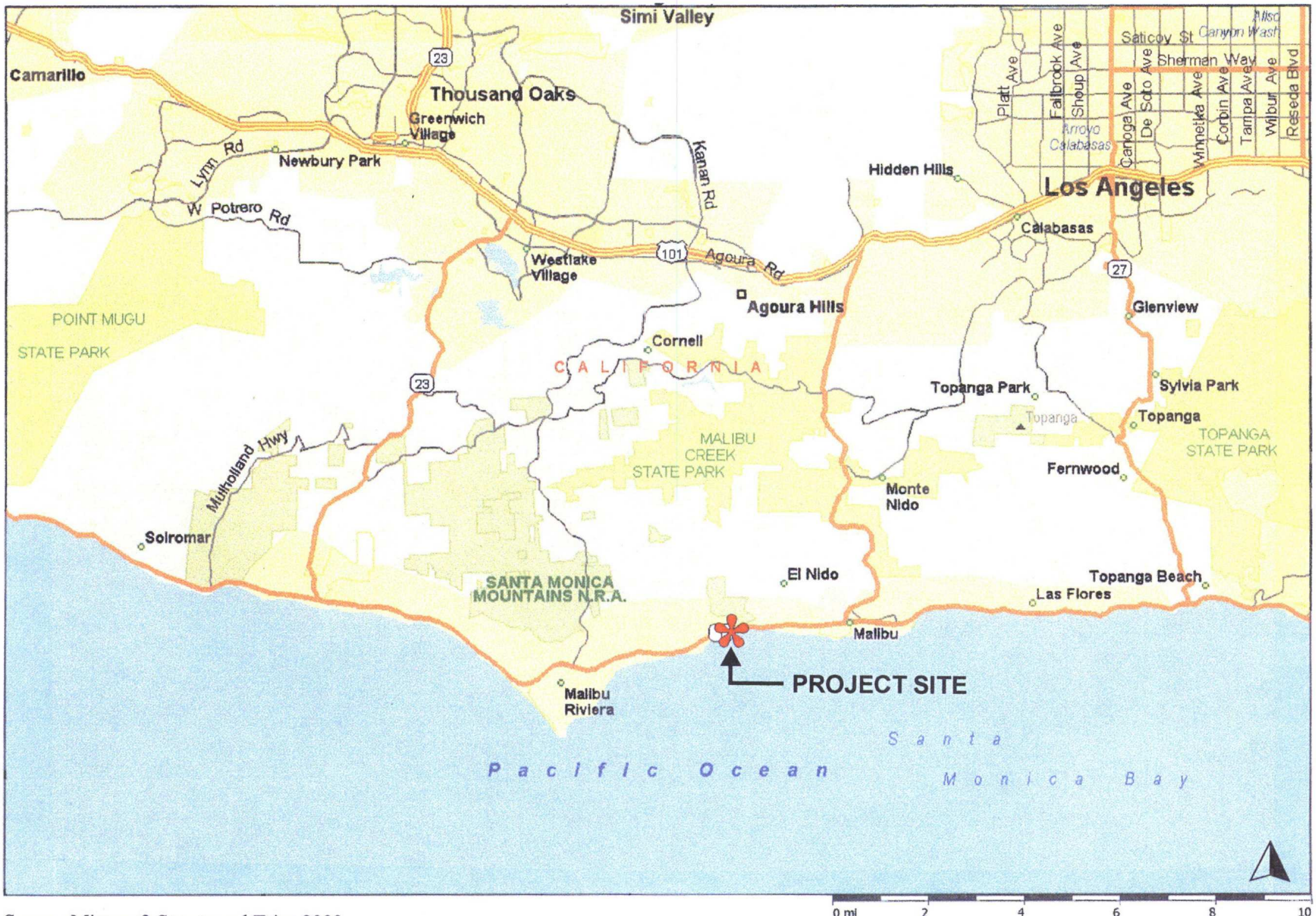
The proposed project site at Dan Blocker Beach is located in the City of Malibu, within Los Angeles County, and is bounded by Pacific Coast Highway (PCH) to the north, Escandido Beach to the west, Santa Monica Mountains National Recreation Area to the north-east, Puerco Beach to the east and the Santa Monica Bay/Pacific Ocean to the immediate south. Dan Blocker Beach is approximately 11.1 acres and consists of four noncontiguous parcels (Figure 2, *Vicinity Map*). PCH is a 4-lane highway and is located north of Dan Blocker Beach. PCH traverses the City of Malibu from east to west along the Pacific Coast. Figure 1, *Regional Map*, shows the project site in a regional context.

Los Angeles County encompasses approximately 2,613,000 acres (4,083square miles) in southern California, north of Orange County, south of Kern County, east of Ventura County and west of San Bernadino County. Development of Los Angeles County started in the 1900's, and over 70 percent of the urban development has occurred since the 1940's. Approximately 1,133 square miles has been devoted to urban use, more than 97 percent of which is located south of the San Gabriel Mountains. Dan Blocker Beach is located in the western portion of Los Angeles County. Dan Blocker Beach is designated as Open Space in the Los Angeles County General Plan and is zoned Public Open Space.

Dan Blocker Beach is located within the City of Malibu, which was incorporated in 1991. Prior to its incorporation, the land use within the City was governed by the Malibu Land Use Plan (LUP) and the County of Los Angeles General Plan and Zoning Ordinance. The extent of development in Malibu today is a reflection of the planning practices of the County of Los Angeles and the California Coastal Commission. In 1990, the City had 11,643 residents, but unlike other newly incorporated cities in Los Angeles County, Malibu's growth rate has not been rapid. The Malibu General Plan (1993) projected 12,063 residents for the year 2000 and a 12.6 percent growth rate over the decade. The entire City of Malibu and the proposed project site is located within the coastal zone. In accordance with the California Coastal Act, a Local Coastal Program (LCP) consisting of two sections, the Land Use Plan (LUP) and Local Implementation Plan (LIP) was adopted by the City of Malibu.

In 1990, there was approximately 12,552 acres of land within the City of Malibu. The City has many environmental constraints, such as steep hillsides, extreme fire hazards and sensitive environmental resources. As a result, the City has a low rate of development, vacant land accounting for 60 percent of current land use and making up approximately 7,296.5 acres. This land is essentially natural, consisting of trees, brush, scrub and grassland. Residential land makes up 22 percent and housing stock consists of an estimated 6,010 dwelling units in the area. The remaining 15 percent of current land use is composed of open space. The City of Malibu contains several unique natural resources including the combination of mountains and ocean.

Development along the Californian coast in the project vicinity began in the 1920's, gradually spreading into the hills and canyons. The community of Malibu was seen as a haven for those preferring a quieter, more tranquil, coastal community. Malibu still combines elements of both rural and beach area communities, attracting many seasonal residents in addition to its permanent residents. Residential development is interspersed with neighborhood service facilities such as restaurants and grocery stores with more intensive land uses clustered on PCH. One of the largest concentrations of residential neighborhoods is located at Point



Source: Microsoft Streets and Trips 2000

Dume, approximately 2.5 miles southwest of the project area. As retaining the rural character of Malibu is important, there is no traditional commercial center in the City. Commercial development is scattered and mainly located along PCH, contributing to just two percent of all land use in the city.

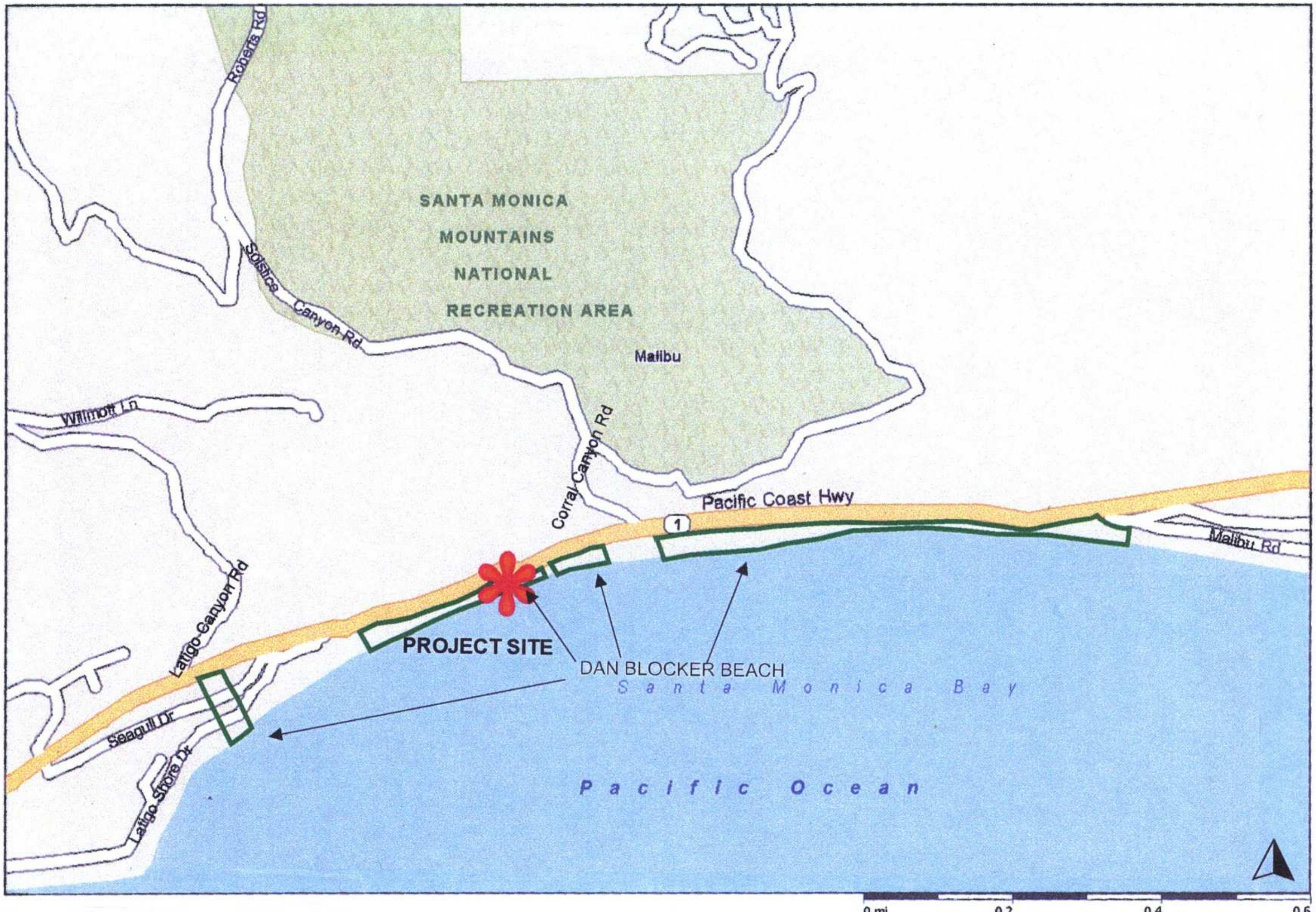
Project Background and Site Information

The Dan Blocker Beach Project site is located at 26000 Pacific Coast Highway, in the City of Malibu on the northern rim of Santa Monica Bay, west of Corral Canyon Road, and east of Seagull Way. Dan Blocker Beach includes the former Corral Beach which totals approximately 11.1 acres. Dan Blocker Beach includes four noncontiguous parcels (Figure 2, *Vicinity Map*). The coastline in the area has been heavily impacted by public use, shoreline erosion and residential development. The location of the proposed Dan Blocker Beach Project is approximately 1.92 acres and located in the central eastern portion of the beach. Figure 2, *Vicinity Map,* and Figure 3, *Aerial Photograph*, illustrate the project site and its surrounding areas.

The Beach was originally donated to the State of California by Lorne Greene and Michael Landon in memory of Dan Blocker. The County of Los Angeles was then given the property by the State of California. The beach has remained largely undeveloped. Dan Blocker Beach is designated as Open Space in the Los Angeles County General Plan and the Malibu General Plan. Surrounding land use to the east is mobile home residential and commercial development; to the west is mobile home residential with some multi-family residential; and directly adjacent to the north of the site is recreation vehicle park and rural residential land.

Dan Blocker Beach is located where the Santa Monica Mountains meet the bay. The topography includes nearly vertical sea cliffs; the coastline in the area is quite irregular and rocky. Some of the coastal canyons intersecting this area from west to east include Latigo Canyon, Solstice Canyon and Corral Canyon. Dan Blocker Beach contains both level areas and steep cliffs. The beach's width fluctuates between 20 feet to150 feet. On the proposed site, there is an approximate 15-foot rocky embankment at the edge of the parcel. At the top of this embankment, the bluff is approximately 50 to 65 feet in width. Various culverts intersect the site within the proposed project area and extend to the edge of the cliff. The majority of the proposed site is relatively flat.

The proposed site of the Dan Blocker Beach Project is immediately accessible from PCH. Pedestrian access to the beach has been provided by informal trails randomly located along the beach embankment. Latigo Shores Drive is located west of the proposed site and is a paved road that has been built to allow fire access to the surrounding residential development. The proposed project site is fenced along its northern perimeter and is partially covered with vegetation and deteriorated pavement. Power utility poles line the northern side of the site.



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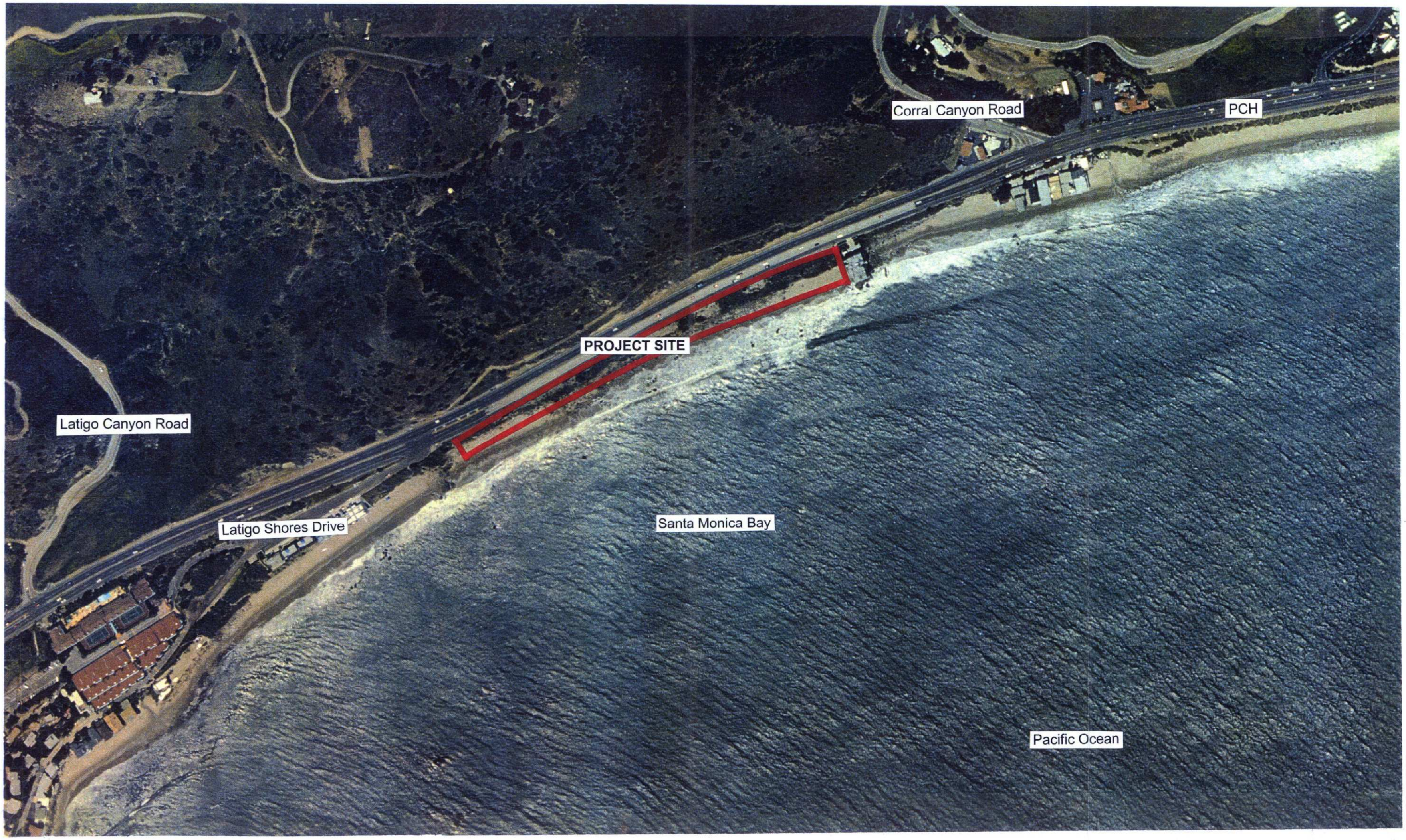


Figure 3 Aerial Photograph

2.2 DESCRIPTION OF THE PROPOSED PROJECT

Physical Characteristics

The County of Los Angeles Department of Beaches and Harbors is proposing improvements to 1 of the 4 non-contiguous parcels of Dan Blocker Beach. The improvements consist of park site amenities, an ADA ramp for beach access, and a parking area. The proposed project site currently consists of approximately 1.92 acres of vacant land, fencing, and deteriorated paving. The existing deteriorated pavement and fencing would be removed as part of the project. Visitors currently park along PCH and access the beach by private stairways located adjacent to existing residential units. The residential units are located adjacent to both ends of the beach.

Park amenities common to all designs include a parking lot, bench seating, trash receptacles, bluff handrailing, landscaped areas, walkways, and ADA beach access. The bluff top walkways would join the parking area with the park site amenities and ADA ramp for beach access. Both the bluff top walkways and beach access ramp will meet accessibility requirements for the Americans with Disabilities Act. The ADA ramp would extend from the bluff top to beach level and would include concrete landings at each end. The beach access ADA ramp entrance would be located just west of the center of the project site and extend east to give beach access. Bench seating, overlooking the ocean, would be provided along the bluff top walkways adjacent to the bluff along the eastern two-thirds of the project site’s length. A handrail would extend the entire length of the project site, parallel the bluff. The chain link fencing would generally surround the perimeter of the park area. Ingress of the parking lot would be on the western end and egress would be located on the eastern end. Additionally, a memorial monument and plaque would be located on the proposed project site. These improvements would be located in an area of approximately 300 linear feet and would have a width of approximately 50 to 65 feet. Approximately 1/3 of the 1.92 acre site would be developed with the proposed project. The proposed project would start at the edge of a gully located at the eastern portion of the site.

Approximately 2/3 of the 1.92 acre site would remain open space (Figure 4, *Open Space*). Open space permits recreational uses including open viewing areas, promenades, beaches, picnic facilities, and associated surface parking and landscaping. Open space provides habitat for vegetation, which in turn provides habit for local wildlife. Open space also helps reduce urban heat island effect; increases storm water infiltration, and provides the human population on the site with a connection to the outdoors. The project site is zoned as open space and by preserving the open space area will continue to provide valuable scenic, recreational, and biological resources for County residents.

In addition to those amenities listed above, improvements may also include either 1) picnic tables accompanied by restroom facilities (Figure 5a, *Conceptual Site Plan with Restrooms*), or 2) a telescope viewing area with more bench seating (Figure 5b, *Conceptual Site Plan without Restrooms*). The area designated for these amenities is located along the western one-third of the project site adjacent to the bluffs.

The first option would feature restroom facilities near the western edge of the site and approximately three picnic tables located between the restrooms and the beach access ramp. The restrooms would be outfitted with sinks, urinals and toilets. Wastewater would be treated by an on-site system. The possible wastewater treatment systems for the park would utilize either leach fields located west of and adjacent to the park facility, or seepage pits located underneath the proposed parking lot. The leach fields or seepage pits would feature 100% redundancy, essentially creating two leach fields (one primary and one backup), or four six foot diameter seepage pits (two primary and two backups) (Figure 5a, *Conceptual Site Plan with Restrooms*).

The second option would feature a viewing area for beach and ocean viewing with approximately three telescopes and accompanied by more beach seating. As with the first option, this area would be located between the western edge of the park area and the beach access ramp entrance. If it is determined that the site will not percolate according to the recommended wastewater treatment system standard, this option eliminates restroom facilities and the accompanying onsite wastewater treatment systems (Figure 5b, *Conceptual Site Plan without Restrooms*)

Figure 4 Open Space

DAN BLOCKER BEACH IMPROVEMENTS

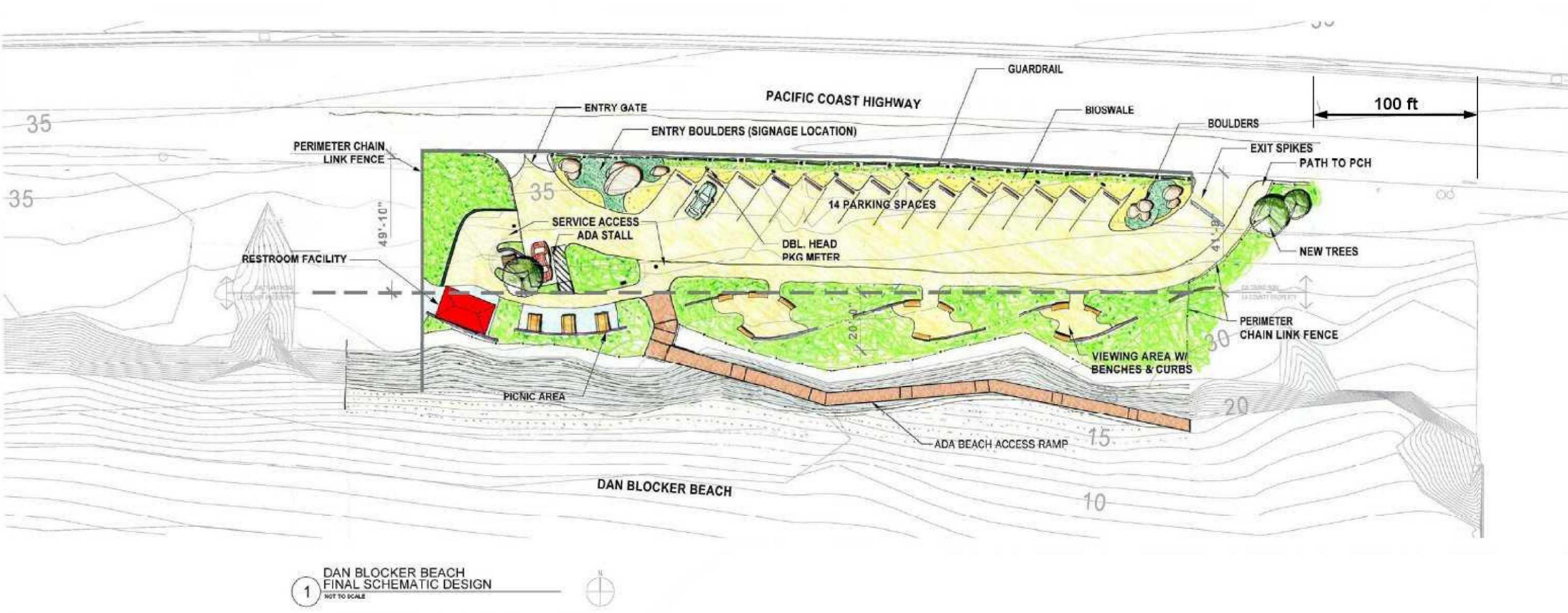


Figure 5a Conceptual Site Plan with Restrooms

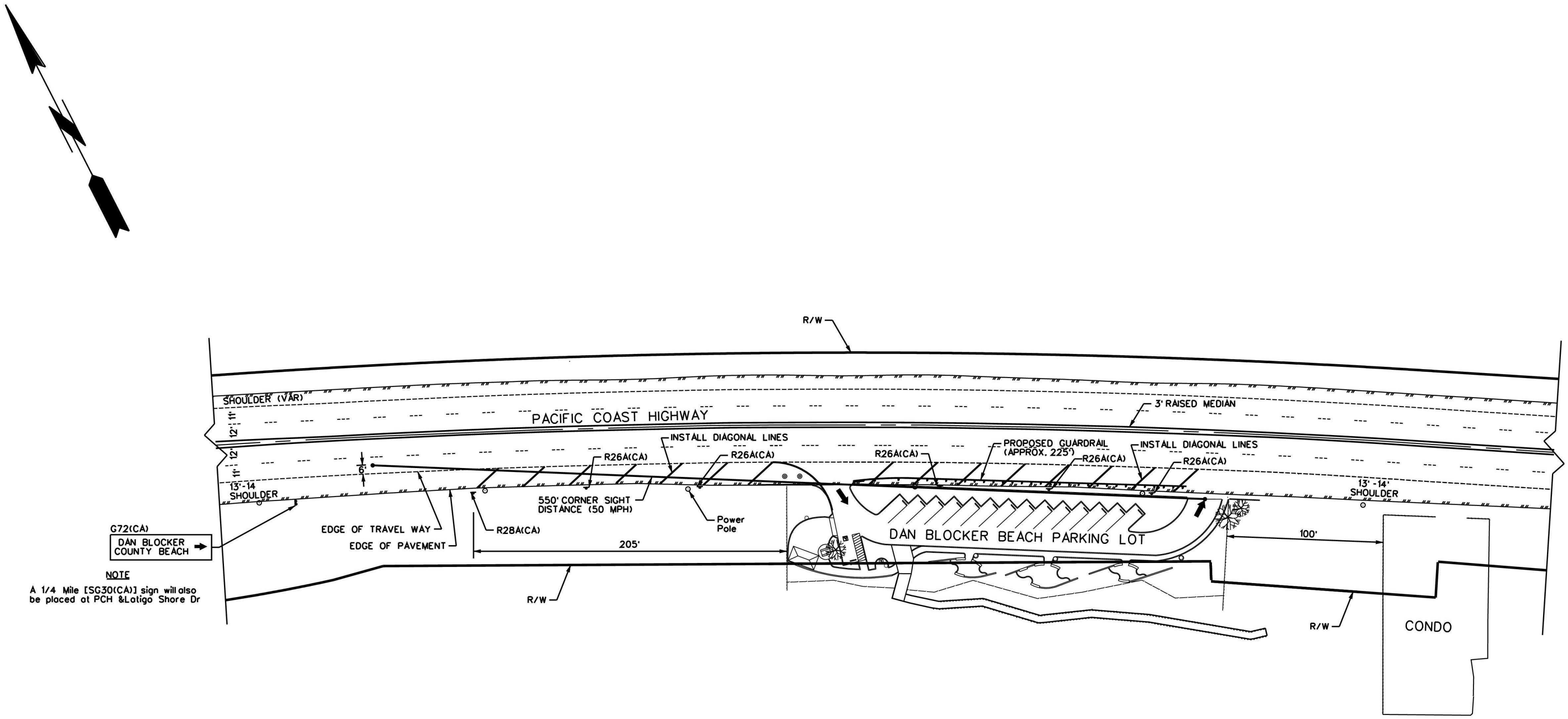
DAN BLOCKER BEACH IMPROVEMENTS

Figure 5b Conceptual Site Plan without Restrooms

The proposed project would include development of a parking area accommodating 15 vehicles and park amenities located at the bluff top. The parking area would consist of 14 onsite diagonal parking stalls facing PCH, and one onsite ADA accessible parking stall facing the bluff. The proposed parking area surface would be asphalt. Parking meters would be placed for payment to use the parking facility. Parking along the shoulder of PCH adjacent to Dan Blocker Beach and west of the project site would not be allowed. Parking would also not be allowed along the shoulder located adjacent to the parking in order to maintain sight distance at the parking lot exit.

Access to the project site would be provided via a one-way driveway from PCH on the western end. The park design would include the use of existing through lanes to decelerate into the entrance. Caltrans has determined from a traffic analysis prepared by the Department of Public Works that a deceleration and/or acceleration lane would not be required for the project (Figure 6, *Parking Lot Ingress and Egress*). The ingress and egress portion of the driveways would be gated with locking steel gates for security. Traffic directional signage would be provided to regulate vehicle movement from PCH and the proposed project site. An optional standard approved guardrail may be constructed between PCH along the proposed project site. However this is not a requirement from Caltrans.

Landscaping would be provided as part of the proposed project. Landscaping would include native species and non-invasive non-native plants, which would provide erosion control. Landscaping between the proposed parking lot and PCH would be limited to low growing plants only (3 feet maximum height) to maintain proper sight distance from the parking lot exit. Temporary irrigation would be installed until the plants are established and then removed. Site drainage would be directed towards PCH rather than drain onto the beach.



CORNER SIGHT DISTANCE

- SIGHT DISTANCE REQUIREMENTS PER APPENDIX J (ROAD CONNECTIONS AND DRIVEWAYS) OF THE CALTRANS ENCROACHMENT PERMITS MANUAL.
- TO MAINTAIN SIGHT DISTANCE:
  1) PARKING WILL BE RESTRICTED ON SHOULDER IN FRONT OF PARKING LOT AND AS SHOWN ON PLAN.
  2) ONLY LOW PLANTS (3' MAX HEIGHT) WILL BE ALLOWED ON PARKING LOT FRONTAGE.

Figure 6 Parking Lot Ingress and Egress

2.3 OBJECTIVES OF THE PROJECT

The Los Angeles County Departments of Beaches and Harbors seeks to accomplish the following objectives with the proposed Dan Blocker Beach Project:

- To meet the public demand for beach access and parking, through the provision of a public permanent parking facility and ADA compliant beach access.

- To provide park site amenities at Dan Blocker Beach including picnic tables, viewing areas, and public restrooms that meet County standards.

2.4 DISCRETIONARY ACTIONS

A discretionary decision is an action taken by a government agency (County of Los Angeles) that calls for the exercise of judgement in deciding whether to approve a project. The proposed Dan Blocker Beach Project would require the following specific discretionary approvals from different departments of the County, including the County Chief Executive Office, the Department of Public Works, as well as the County Department of Beaches and Harbors and County Board of Supervisors.

- **Approval of Environmental Review -** The Los Angeles County Board of Supervisors, the Los Angeles County Department of Public Works and the Los Angeles County Department of Beaches and Harbors would need to complete the environmental review process for the project.

- **Approval of Project –** The Los Angeles County Board of Supervisors, the County Chief Executive Office, the Department of Public Works and the Department of Beaches and Harbors would need to approve the proposed project.

- **Coastal Approval –** As a *responsible agency*, the City of Malibu would need to issue a Conditional Use Permit for the project prior to construction.

- **Onsite Wastewater Treatment System Approval –** As a *responsible agency*, the Department of Health Services would need to approve installation of an Onsite Wastewater Treatment System.

- **General Waste Discharge Requirements Approval –** As a *responsible agency*, the Los Angeles Regional Water Quality Control Board would need to issue a General Waste Discharge Requirements permit (Order No. R4-2004-0146) for an Onsite Wastewater Treatment System.

Other discretionary approvals that may be required include:

- **Section 404 Individual Permit** - The United States Army Corp of Engineers may require permit approval to comply with the Federal Clean Water Act for possible disturbance within jurisdictional waters.

- **Section 401 Water Quality Certification** - The Regional Water Quality Control Board - Los Angeles Region, may require certification under the Clean Water Act for possible disturbance within jurisdictional waters

Ministerial actions required for the proposed project would include the following:

- **Approval of Site Plan –** The County Chief Executive Office, Department of Public Works and the Department of Beaches and Harbors would need to approve the site plan for the proposed project for compliance with County regulations.

- **Approval of Encroachment Permit –** Caltrans would need to approve an Encroachment Permit for proposed ingress and egress into the project site from PCH.

- **Approval of Building Plan –** The Los Angeles County Department of Public Works would need to approve the building plans for the proposed project.

INITIAL STUDY CHECKLIST

1. Project Title:	Dan Blocker Beach Improvements Project
2. Lead Agency Name and Address:	County of Los Angeles Department of Public Works, Project Management Division 1 900 South Fremont Avenue, 5th Floor Alhambra, CA 91803-1331
3. Contact Person and Phone Number:	County of Los Angeles Department of Public Works, Project Management Division 1 900 South Fremont Avenue, 5th Floor Alhambra, CA 91803-1331 Gil Garcia, P.E. (626) 300-2310
4. Project Location:	26000 Pacific Coast Highway Los Angeles, CA 90265
5. Project Sponsor's Name and Address:	County of Los Angeles Department of Beaches and Harbors 13839 Fiji Way Marina Del Rey, CA 90292
6. General Plan Designation:	City of Malibu – Open Space
7. Zoning:	City of Malibu – Public Open Space (OS)
8. Description of Project:	See Project Description in Section 2
9. Surrounding Land Uses and Setting:	See Project Description in Section 2
10. Other public agencies whose approval is required:	City of Malibu Los Angeles Regional Water Quality Control Board Los Angeles County Department of Health Services Caltrans (California Department of Transportation) US Army Corps of Engineers - Los Angeles District

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology /Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

____ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

__X__ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

____ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

____ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

____ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Gil Garcia, P.E.	**Los Angeles County Department of Public Works**
Printed name	For

3.0 ENVIRONMENTAL ANALYSIS

The Los Angeles County Departments of Beaches and Harbors is proposing the development of a parking area, a beach access ramp and park amenities on a 1.92 acre site located on a bluff top at Dan Blocker Beach. This section evaluates the potential environmental impacts of the proposed project and provides explanations of the responses to the Environmental Checklist. The Environmental Checklist is based on Appendix G of the CEQA Guidelines. Appendix G of the CEQA Guidelines provides a list of questions that corresponds directly to the legal standards for preparing Negative Declarations, Mitigated Negative Declarations (MNDs), and Environmental Impact Reports (EIRs). The environmental issues evaluated in this Initial Study include the following:

- Aesthetics
- Agriculture Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/ Traffic
- Utilities and Service Systems

The environmental analysis in this section is patterned after the questions in the Environmental Checklist. Under each issue area, a general discussion of existing conditions is provided. The Environmental Checklist questions are then stated and an answer is provided according to the environmental analysis of the project's impacts. To each question, there are four possible responses:

- **No Impact.** The proposed Dan Blocker Beach Project will not have any measurable environmental impact on the environment.

- **Less Than Significant Impact.** The proposed project will have the potential for impacting the environment, although this impact will be below thresholds that may be considered significant.

- **Less Than Significant Impact with Mitigation.** The proposed project will have potentially significant adverse impacts which may exceed established thresholds, although mitigation measures or changes to the project's physical or operational characteristics will reduce these impacts to levels that are less than significant. Measures, which may reduce this impact, are identified.

- **Potentially Significant Impact.** The proposed project will have impacts which are considered significant and additional analysis is required to identify mitigation measures that could reduce these impacts to insignificant levels. When an impact is determined to be potentially significant in the preliminary analysis, the environmental issue will be subject to detailed analysis in an environmental impact report (EIR).

The references and sources used for the analysis are also identified after each response.

3.1 AESTHETICS

The project site is approximately 1.92 acres and is located on a bluff top at Dan Blocker Beach. Dan Blocker Beach is located in the County of Los Angeles and in the City of Malibu. The beach is approximately 11.1 acres and consists of four noncontiguous parcels, which are separated by privately owned residential developments (see Figure 3, *Aerial Photograph*). Dan Blocker Beach is bounded by the Santa Monica Mountains to the north and the Pacific Ocean to the south. Pacific Coast Highway (PCH), a four- lane scenic highway, is also located north of Dan Blocker Beach and separates the beach from the Santa Monica Mountains. Dan Blocker Beach is a narrow strip of beach with rocks protruding through the sand (north of the Barsocchini property) curving around to the wider, less rocky beach south of Corral Canyon Road. The height of the bluffs at Dan Blocker Beach vary depending on the amount of sand on the beach; slopes range from near vertical in many areas to approximately 1:3 (horizontal: vertical).

Views of the Santa Monica Bay Coastline and the Pacific Ocean, as well as extensive views of the coast to the west and the east, are visible from the bluff tops at Dan Blocker Beach. On clear days the Catalina Island and the headlands at Point Dume and Palos Verdes are visible from the Dan Blocker Beach bluff. The Santa Monica Mountains that parallel the coast provide a rugged and scenic backdrop to the beach and can be seen to the north of the beach. Lifeguard towers and portable restrooms are located at the eastern portion of Dan Blocker Beach and are visible from the surrounding areas. The single family residences that separate the Dan Blocker Beach parcels are visible to the east and west of the beach bluff tops and to the north of the sandy areas of the beach. From the sandy areas of the beach, views generally focus on the bluffs and residential developments to the north, the Pacific Ocean to the south and the Santa Monica Coastline to the east and west.

The proposed project site is located in the central portion of the Dan Blocker Beach non-contiguous parcels. The portion where the project is proposed has a bluff that is approximately 15 to 20 feet in height. The majority of the site is relatively flat and traversed by drainage culverts. The proposed project site is typically 50 to 65 feet in width. There are no structures on the site. A chain-link fence is located at the northern boundary of the site, and utility poles and overhead power lines also run along the northern boundary of the site. The site is covered with vegetation and portions of the site contain deteriorating pavement.

Views from the site include a residential unit and coastline to the east, PCH and the Santa Monica Mountains to the north, open bluff top and residential units located to the west, and the Pacific Ocean to the south. Views of the proposed project site can be seen through the chain- link fence located at the northern boundary from motorists, bicyclists, and/or pedestrians traveling along PCH. In the farther distance, the Pacific Ocean can be seen by motorists, bicyclists, and/or pedestrians traveling along PCH. Views looking west of the project site from the residences and down the coast include the vegetated bluff, coastline and clustered residential units. Views of the project site just east of the residential unit are blocked by a residential building. Views looking east of the project site from the clustered residential units and bluff top include vegetated and vacant bluff top, which partially include the proposed project site, coastline, a residential unit, and additional development located down the coast. Figure 7, *Site Photographs,* illustrates views of and from the proposed project site.

(Sources: Site Survey and Project Location Map)

View of PCH, looking east, directly adjacent to the north of the project site

View of the project site looking east from PCH

View looking northeast from the project site

Figure 7 Site Photographs

View looking west from the project site

View looking east from northern end of the project site

View looking west from the project site

Figure 7 Site Photographs

View looking southeast from the project site

View looking south from the project site

Figure 7 Site Photographs

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	■	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	■	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	■	☐

A. Would the project have a substantial adverse effect on a scenic vista?

Less than Significant Impact. The proposed project site is currently vacant and located along the Malibu coastline. PCH is identified as a scenic road of visual importance in both the City of Malibu and Los Angeles County General Plans. Corral Canyon Road, located to the northeast of the proposed project site, is also identified as a scenic road. The proposed project site is not identified as a scenic vista. The closest scenic element to Dan Blocker Beach is Little Point Dume Cove Bluffs, located at Point Dume approximately 2.5 miles to southwest of the proposed project site.

The tallest amenity being proposed as part of the project is a potential one-story restroom facility, which would be approximately 10-feet in height. As stated in Section 2 of this initial study, the restroom feature is an optional feature, and may not be part of the final design. Other project features include a parking area, landscaping, walkways with hand railings, driveways and a guard rail to divide access from PCH. The development of the project site would not block views of the ocean from PCH and to the east and west of the project site. Views of the project site from the beach located south of the project site would change from a bluff top to a parking area, ADA ramp, and park site amenities. The Santa Monica Mountains would still be visible from the beach. Views of the ocean would still be available from PCH through the open space portion of the project, unused parking spaces, the park site amenity area, and directly to the west and east of the proposed development. The potential restroom facility would be one-story and would not block views. Additionally, the project proposes bench seating and possibly picnic tables, which would provide visitors to Dan Blocker Beach viewing areas of the ocean to the south and the Santa Monica Mountains to the north, as well as the coastline located east and west of the project site. Thus, the project would include minimal improvements that would enhance public opportunity with beach access and to view the ocean without having a substantial adverse effect on a scenic vista.

(Sources: Malibu General Plan, Site Survey, and Project Location Map)

B. Would the project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The proposed site is vacant; no scenic trees, rocks, or historic buildings have been identified on the site. PCH is located to the north of the proposed project site and is considered a scenic highway. The proposed project would be small in scale and is not expected to adversely affect PCH. No impacts are expected.

(Sources: Malibu General Plan, Site Survey, Los Angeles County Plan, Site Visit and Project Location Map)

C. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact. No structures are located on the proposed project site. It currently is vegetated and partially covered with deteriorated pavement. A chain-link fence is located along the northern portion of the site. A residential unit is located adjacent to the east of the project site and a cluster of residential units are located down the coastline to the west of the project site. The proposed project would include development of a 15-space parking area, ADA access ramp to the beach, driveways, and various park site amenities.

Additionally, the proposed development would potentially include a one-story restroom (approximately 10-feet in height). The restroom would include toilet and sink facilities, and would be enclosed in a small scale block structure. This would not significantly block views of the ocean from PCH. Views of the ocean would still be visible from either side of the restroom facility. Cars would be parked in the proposed parking area but would not significantly block views of the ocean from PCH. Breaks in the development of the restroom facility and other proposed park site amenities would provide views of the ocean. Additionally, views of the ocean would be available over the parked cars.

The proposed development would also include landscape which would limit the visual impact of parked cars as seen from PCH or from residences in the area. The project would have a less than significant impact on the existing visual character and quality of the site and its surroundings.

(Sources: Malibu General Plan, Los Angeles County Plan, Site Survey, Site Location Map, and Project Location Map)

D. Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Less than Significant Impact. The proposed project would not include light fixtures or nighttime lighting. The park site amenities would be constructed of non-reflective materials. The proposed parking area would be open from dawn to dusk. Therefore, no light would be created from vehicle headlights exiting or entering the parking area. Additionally, during the daytime, parked cars may create some glare from the sun reflecting off them. The potential glare from cars parked on-site is not expected to create a significant impact and is considered less than significant.

(Sources: Project Location Map, Site Location Map, and Site Survey)

3.2 AGRICULTURE AND FORESTRY RESOURCES

The proposed project site is located on approximately 1.92 acres on a bluff top at Dan Blocker Beach. Dan Blocker Beach is owned by the County of Los Angeles and is within the City of Malibu. The proposed project site is identified in both the City of Malibu General Plan and the Los Angles County General Plan as open space. The proposed project site is not used for agriculture and is not identified for agricultural uses either in the Malibu General Plan or the County of Los Angeles General Plan. Traditional forms of farming and ranching are only practiced on a small area of land within the City of Malibu. Horticulture and horse ranches are more common within the City of Malibu. Horticulture amounts to approximately 0.2 percent, (24.8 acres) of all land use in the City and includes orchards, vineyards and nurseries.

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	■
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	■
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
e) Involve other changes in the existing environment	☐	☐	☐	■

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				

A. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The project site is not located within a designated agricultural or horticultural area. The closest agricultural lands are located approximately four miles southwest of the project at Point Dume. The proposed site has been designated as Open Space and is not identified as farmland under the Farmland Mapping and Monitoring Program of the California Resources Agency, the City of Malibu's General Plan and/or in the Los Angeles County Plan. Thus, no impact to important farmlands is anticipated with the development of the proposed project.

(Sources: Malibu General Plan, Los Angeles County Plan and Site Survey)

B. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The project site is vacant and is zoned Public Open Space. There are no agricultural lands nearby or on the site. The closest agricultural lands are located at Point Dume, approximately four miles southwest of the project and at Puerco Canyon, located approximately 0.5 mile to the east of the project site. No impact is anticipated on agricultural zones or uses as a result of the proposed project.

(Sources: Malibu General Plan, Los Angeles County Plan Program and Site Survey)

C. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The proposed project is currently vacant open space and is not located on existing forest land or timberland. No forest land occurs within or adjacent to the project site. No impacts to forest land would occur.

D. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The proposed project is currently vacant open space and is not located on existing forest land. No forest land occurs within or adjacent to the project site. No loss of forest land or conversion of forest land to non-forest use would occur.

E. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. No Farmland or forest land is present in the project vicinity. Therefore, no project-related changes to the existing environment would result in the conversion of Farmland to non-agricultural uses or forest land to non-forest uses.

(Sources: Malibu General Plan, Los Angeles County Plan and Site Survey)

3.3 AIR QUALITY

The project site is a bluff overlooking the coast, south of the Santa Monica Mountains and north of the Pacific Ocean. The climate in the area is considered a dry summer subtropic or Mediterranean climate, characterized by hot, dry summers and cool, moist winters. Skies are generally clear from midsummer through fall. Heavy cloud cover and fog occur during spring and early summer. The climate at Dan Blocker Beach is mild and pleasant year-round, with maximum temperatures ranging from 55 and 65 degrees Fahrenheit in winter and between 65 and 75 degrees Fahrenheit in summer. Sea breezes come from the south and southwest. Seacoast fog and warm marine air from the open sea keep the climate comfortable through the summer days when temperatures are high. Sea breezes from the Pacific Ocean generally blow smog inland by mid-morning each day.

Air Quality Standards

Air quality is measured by comparing contaminant levels in ambient air samples to National and State standards. These standards are set by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) at levels determined to be protective of public health and welfare with an adequate margin of safety. The federal Clean Air Act of 1970 first authorized National Ambient Air Quality Standards (NAAQS). California Ambient Air Quality Standards (CAAQS) were authorized by the State legislature in 1967. California standards are generally more stringent than the National standards.

Air quality is considered in "attainment" of NAAQS if pollutant levels are below or equal to the standards and continuously exceed them on average of no more than once each year. Whereas, one violation of National standards averaged over three years is still considered as meeting NAAQS, the definition of CAAQS attainment is zero violations.

Both the federal government through the Clean Air Act and the State of California through the California Clean Air Act require the development of comprehensive plans for the attainment of air quality standards. The South Coast Air Basin (SCAB) has been designated, both federally and by the state, as a non-attainment area for ozone (O_3), and particulate matter (PM_{10} and $PM_{2.5}$). Development projects must demonstrate that construction and operational impacts on air quality will not conflict with or obstruct implementation of the applicable air quality control plan, which is the Air Quality Management Plan (AQMP) developed by the South Coast Air Quality Management District (SCAQMD) for the SCAB.

Table 1, *South Coast Air Quality Management District Attainment Status*, lists the attainment status for all of the State and national criteria pollutants within the South Coast Air Basin.

Table 1 **South Coast Air Quality Management District Attainment Status**		
Pollutant	**State**	**Federal**
1-Hour Ozone	Non-attainment	n/a
8-Hour Ozone	Non-attainment	Non-attainment
Particulate Matter PM_{10}	Non-attainment	Non-attainment
Particulate Matter $PM_{2.5}$	Non-attainment	Non-attainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead	Attainment	Attainment
Visibility Reducing Particles	Unclassified	No Federal Standards
Sulfates	Attainment	
Hydrogen Sulfide	Unclassified	
Source: California EPA, Air Resources Board website		

Local Air Quality

Existing levels of ambient air quality and historical trends and projections in the Malibu area are best documented from measurements made by the South Coast Air Quality Management District (SCAQMD). SCAQMD operates an air quality monitoring station located in West Los Angeles at the Veterans Affairs (VA) Hospital which monitors regional air pollutants such as ozone as well as species such as carbon monoxide (CO) and nitrogen oxides (NO_x) which tend to be more related to local source-receptor relationships. Measurements of 10-micron diameter or less particulate matter (PM_{10}) are not made at the West Los Angeles site and are not available from any SCAQMD site that would be representative of Malibu. The geographically closest air monitoring station for PM_{10} or $PM_{2.5}$ data is in downtown Los Angeles.

Because of lower development density in Malibu than in West Los Angeles, project site air quality is likely better than at the nearest SCAQMD station. Data from West Los Angeles is therefore a worst-case representation of the project site air quality baseline. Table 2, *Project Area Air Quality Monitoring Summary*, summarizes the last six years of published data for the West Los Angeles air monitoring station. Table 2 also contains PM_{10} and $PM_{2.5}$ data from the downtown Los Angeles air monitoring station for informational purposes.

Ozone, the primary ingredient in photochemical smog, is obviously an important pollution problem in the Los Angeles basin. However, near western Los Angeles, there has been only one violation in the past six years of the national hourly ozone standard (this standard was rescinded in 2006 and replaced with the federal 8-hour standard). Slightly over five days per year in the last six years exceeded the California one-hour standard. The federal 8-hour standard has been exceeded approximately once per year in the last six years. The state 8-hour ozone standard has, on average, been exceeded five times per year. The hourly ozone maximum was highest in 2003, but there has been some improvement since. The Western Los Angeles ozone air quality problem is much less severe than in inland valleys of the basin.

The downtown Los Angeles area experiences occasional violations of standards for 10-micron diameter respirable particulate matter (PM_{10}). High dust levels occur during Santa Ana wind conditions, as well as from the trapped accumulation of soot, roadway dust and byproducts of atmospheric chemical reactions during warm season days with poor visibility. In downtown Los Angeles, approximately 8 percent of all days in the last six years experienced a violation of the state PM_{10} standard. The three-times less stringent federal PM_{10} standard has not been exceeded in the past six years. Maximum 24-hour PM_{10} concentrations appear to be declining following a spike in 2003.

In downtown Los Angeles, the former federal 24-hour ambient air quality standard for ultra-fine particulate matter ($PM_{2.5}$) has been exceeded an average of two times per year since 2002. When the federal 24-hour standard was lowered from 65 to 35 $\mu g/m^3$ in 2006, the number of violations of the $PM_{2.5}$ standard increased to almost 14 per year.

More localized pollutants such as carbon monoxide, nitrogen oxides, etc. are low near the project site because background levels never exceed allowable levels. There is substantial excess dispersive capacity to accommodate localized vehicular air pollutants such as NO_x or CO without any threat of violating applicable ambient air quality standard.

Table 2
Project Area Air Quality Monitoring Summary
(Number of Days Standards Were Exceeded and Maximum Levels During Such Violations)

Pollutant/Standard	2003	2004	2005	2006	2007	2008
Ozone						
1-Hour > 0.09 ppm (S)	11	5	7	3	2	3
1-Hour > 0.12 ppm (F)[1]	1	0	0	0	0	0
8-Hour > 0.07 ppm (S)	12	4	4	0	2	8
8- Hour > 0.08 ppm (F)	1	1	1	0	1	2
Max. 1-Hour Conc. (ppm)	0.134	0.107	0.114	0.100	0.117	0.110
Max. 8-Hour Conc. (ppm)	0.105	0.090	0.090	0.074	0.088	0.097
Carbon Monoxide						
1-hour > 20. ppm (S)	0	0	0	0	0	0
8- Hour > 9. ppm (S,F)	0	0	0	0	0	0
Max 1-hour Conc. (ppm)	5.0	4.0	3.0	3.0	3.0	3.0
Max 8-hour Conc. (ppm)	2.7	2.3	2.1	2.6	1.9	2.0
Nitrogen Dioxide						
1-hour > 0.25 ppm (S)	0	0	0	0	0	0
Max 1-hour Conc. (ppm)	0.12	0.09	0.09	0.08	0.12	0.09
Inhalable Particulates (PM_{10})[2]						
24-Hour > 50 $\mu g/m^3$ (S)	6/61	5/61	4/61	3/59	5/57	3/42
24-Hour > 150 $\mu g/m^3$ (F)	0/61	0/61	0/61	0/59	0/57	0/42
Max. 24-Hr. Conc. ($\mu g/m^3$)	81	72	70	59	78	66
Ultra-Fine Particulates (PM-2.5)[2]						
24-Hour > 65 $\mu g/m^3$ (F)	5/330	2/318	2/334	0/330	0/324	1/337
24-Hour > 35 $\mu g/m^3$ (F)	---	---	---	11/330	20/324	10/337
Max. 24-Hr. Conc. ($\mu g/m^3$)	83.7	75.0	73.7	56.2	64.2	78.3

Source: SCAQMD West Los Angeles Station (VA Hospital)
(S) = State ambient standard; (F) = Federal ambient standard
1 Standard revoked in 2006
2 Source: SCAQMD Downtown Los Angeles Station

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	■	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	■	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	■	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	■	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	■

A. Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The project site is designated as Open Space, and has been considered as existing and future open space in the development of the Air Quality Management Plan (AQMP). The amenities proposed at the site would not be large enough to alter air movement, moisture, or temperature or change the climate of the area. The proposed project would provide beach improvements and is not inconsistent with the AQMP of the SCAQMD. The emissions associated with the proposed project would not exceed SCAQMD thresholds (with mitigation for fugitive dust emissions) and thus, the project would have no significant adverse impacts on regional air quality. The beach improvements would not conflict or obstruct implementation of the AQMP.

(Sources: SCAQMD AQMP, Malibu General Plan, and Site Location Map)

B. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact with Mitigation. The AQMP for the South Coast Air Basin was designed to meet state and federal regulations to address air pollution within the Basin. The SCAQMD has published significance thresholds for determining whether projects have significant adverse air quality impacts. These significance thresholds are used to evaluate whether a project would conflict with or obstruct implementation of the AQMP. Projects that exceed these thresholds are considered to have a significant impact on air quality. Table 3, *SCAQMD Air Quality Significance Thresholds*, summarizes the significance thresholds.

Table 3
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
NO_X	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_X	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day

Source: SCAQMD Website; http://www.aqmd.gov/ceqa/handbook/signthres.pdf

Short-term / Construction Impacts

The construction of the proposed beach improvements is not expected to result in significant adverse short-term impacts to air quality. The proposed improvements to the project site would involve limited construction or ground disturbance activities during an estimated 9 weeks of construction. Heavy equipment may be expected to operate during excavation, installation, and finishing operations. Operation and application of these machines could temporarily increase air pollutant levels in the vicinity of the site through emissions from exhaust systems. In addition, emissions from delivery trucks, construction crew vehicles, and other off-site vehicle trips would add to short term and localized increases in pollutant levels. Construction activities also generate evaporative emissions of volatile organic compounds (VOC) from solvents and other coatings.

To estimate construction emissions, the Urbemis 2007 Version 9.2.4 model was used (see Appendix A). Equipment exhaust emissions were calculated presuming that initial clearing will gradually shift toward grading and paving and finally for site improvement construction and landscaping, etc. The Urbemis 2007 computer model was used to calculate emissions from the following prototype construction equipment fleet:

Clearing and Grubbing	1 Dozer
	1 Tractor/Loader/Backhoe
	1 Water Truck
Grading	1 Tractor/Loader/Backhoe
	1 Water Truck
	1 Trencher
Paving	4 Cement Mixers
	1 Paver
	1 Paving Equipment
	1 Compactor
	1 Pressure Washer
	1 Pump
	1 Roller
	1 Tractor/Loader/Backhoe
Landscaping, Construction, Site Improvements	1 Air Compressor
	1 Forklift
	1 Generator Set
	1 Tractor/Loader/Backhoe
	1 Welder
Source : Giroux and Associates, Inc.	

Estimates of construction emissions are provided in Table 4, *Construction Activity Emissions*.

Table 4
Construction Activity Emissions (pounds/day)

Activity	ROG	NOx	CO	SO_2	PM-10	PM-2.5	CO_2
Clear and Grub							
No Mitigation	1.2	9.9	4.9	0.0	0.5	0.5	1,034.5
With Mitigation	1.2	8.4	4.9	0.0	0.1	0.1	1,034.5
Grading							
No Mitigation	1.8	12.5	6.7	0.0	10.5	2.8	1,274.9
With Mitigation	1.8	10.6	6.7	0.0	5.1	1.2	1,274.9
Paving							
No Mitigation	3.0	17.2	12.7	0.0	1.5	1.4	1,849.5
With Mitigation	3.0	14.8	12.7	0.0	0.3	0.3	1,849.5
Finish Work, Landscaping and Site Improvements							
No Mitigation	2.9	14.7	14.2	0.0	1.2	1.1	2,193.9
With Mitigation	2.9	13.2	14.2	0.0	0.4	0.4	2,193.9
SCAQMD Threshold	**75**	**100**	**550**	**150**	**150**	**55**	-
Source : Urbemis 2007 Version 9.2.4 (AppendixA)							

As shown above, peak daily construction activity emissions will be below SCAQMD CEQA thresholds. Nevertheless, because of the basin's non-attainment status for $PM_{10}/PM_{2.5}$, SCAQMD recommends use of standard fugitive dust control mitigation measures for any project in the region. Because of the role of NO_x in basin smog formation, use of reasonably available NO_x control measures is also recommended.

Recommended Mitigation

Construction activity air pollution emissions are not anticipated to individually exceed SCAQMD CEQA thresholds. Regardless, the non-attainment status of the air basin requires that Best Available Control Measures (BACMs) be used where feasible. These measures shall be included in grading and construction plan specifications for implementation by contractors:

Measure 3.3.B1: To reduce fugitive dust resulting from earth-moving activities during grading / construction activities:

- Limit grading/soil disturbance to as small as an area as practical at any one time.
- Apply soil stabilizers to inactive areas.
- Prepare a high wind dust control plan and implement plan elements and terminate soil disturbance when winds exceed 25 mph.
- Stabilize previously disturbed areas if subsequent construction is delayed.
- Water exposed surfaces and haul roads 3 times per day.
- Cover all stock piles with tarps.
- Replace ground cover in disturbed areas as soon as feasible.
- Reduce speeds on unpaved roads to less than 15 mph.

Measure 3.3.B2: To reduce exhaust emissions from construction equipment and activities, the following measures shall be incorporated into all bid documents and implemented by the general contractor:

- Require 90-day low-NO_X tune-ups for off-road equipment.
- Limit allowable idling to 5 minutes for trucks and heavy equipment.
- Utilize equipment whose engines are equipped with diesel oxidation catalysts if available.
- Utilize diesel particulate filter on heavy equipment where feasible.

Measure 3.3.B3: To reduce reactive organic gas emissions from construction activities, the use of low VOC coatings and high pressure-low volume sprayers shall be incorporated into all bid documents and implemented by the general contractor.

Long-term / Operation Impacts

Vehicle trips that would be generated by the proposed beach project would create emissions along PCH. These emissions are estimated using Urbemis 2007 computer model for an assumed 240 daily trips to and from the project site. Table 5, *Estimated Operational Emissions*, provides the results of the modeling.

Table 5 Estimated Operational Emissions (lbs/day)							
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Totals (lbs/day, unmitigated)	1.9	2.3	21.7	0.0	3.7	0.7	2,214.2
SCAQMD Construction Thresholds	**55**	**55**	**550**	**150**	**150**	**55**	
Source : Urbemis 2007 Version 9.2.4 (Appendix A)							

As shown, operational vehicle emissions would not exceed SCAQMD thresholds; thus, the project would have no significant adverse impacts on air quality. Also, the development of the Dan Blocker Beach improvements would provide more convenient park facilities nearer to the urban areas of Los Angeles, allowing beachgoers and surfers from the Los Angeles area to travel shorter distances before reaching a convenient beach location. Thus, beneficial air quality impacts may actually occur due to shorter vehicle trips.

No long term stationary emissions are expected from the project, since limited electrical power service to the site would be provided as part of the project. Also, on-site beach-going activities are not expected to involve or generate on-site emissions. No barbecue grills are proposed which may generate particulate emissions.

C. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less than Significant Impact with Mitigation. As stated above, construction pollutant emissions would not exceed SCAQMD thresholds. However, the South Coast Air Basin has a non-attainment status for particulate matter and ozone. Thus, construction activity dust emissions and ozone precursor emissions are considered to have a cumulatively significant impact. Use of best available control measures (BACMs) to reduce dust emissions is required even if SCAQMD individual CEQA thresholds are not exceeded by use of reasonably available control measures. Similarly, ozone precursor emissions of reactive organic gases (ROG)/VOC and NO_X should be minimized as much as reasonably possible. Implementation of mitigation measures 3.3.B1 through 3.3B.3 will reduce cumulative impacts from construction emissions to less than significant levels.

Assuming that future users of Dan Blocker Beach are current beachgoers and users of other area beaches, the diversion trips due to the proposed project may reduce overall emissions for the Los Angeles County area in general. Also, as stated, the development of the Dan Blocker Beach improvements would provide more convenient park facilities nearer to the urban areas of Los Angeles, allowing beachgoers and surfers from the Los Angeles area to travel shorter distances before reaching a convenient beach location. Thus, the project would not lead to any cumulative increase in air pollutants or ozone levels in the project area from operational vehicle emissions.

(Sources: SCAQMD and AQMP)

D. Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. The construction emissions have the potential to affect sensitive receptors located near the site. Impacts on adjacent residences would be limited to fugitive dust during grading and excavation and emissions from on-site construction equipment. Predominant wind patterns come from the south and southwest, and emissions from the site would not be windblown to the residences located east and west of the site. There are no homes located directly north of the site. The nearest homes to the north and northeast (predominant wind direction) are located approximately 600 feet-to the northeast and 1,000 feet to the north. Due to the limited construction activities, the direction of predominant winds, and the distance of sensitive receptors that may be potentially affected, less than significant adverse impacts from construction-related emissions are expected. The proposed project would generate a limited number of daily vehicle trips. Emissions associated with project vehicle trips to and from the site would be dispersed throughout the regional roadway network and would not be concentrated in any one area. Also, since these trips are likely to be diversions of existing trips to beaches located farther from the urban areas of Los Angeles, no additional pollutant concentrations that may affect sensitive receptors are expected from the project.

(Sources: SCAQMD CEQA Handbook, Malibu General Plan, USGS Malibu Beach and Point Dume Quadrangles, and Site Survey)

E. Would the project create objectionable odors affecting a substantial number of people?

No Impact. The proposed project would not handle large quantities of solid waste materials, chemicals, food products, or other odorous materials and has no potential to create objectionable odors. On-site picnicking and beach-going activities are not expected to involve or generate odorous emissions. No barbecue grills, which may generate smoke and odors, are proposed. Any restroom facilities would be cleaned and maintained regularly in accordance with the County Department of Beaches and Harbors' maintenance schedule and are not expected to generate objectionable odors. Thus, no impact with respect to odors is expected from the project.

(Sources: SCAQMD CEQA Handbook and Site Location Map)

3.4 BIOLOGICAL RESOURCES

A biological resource assessment and impact analysis was prepared by Pacific Southwest Biological Services, Inc (January 18, 2001) to analyze the biological impacts of the proposed Dan Blocker Beach Project. An additional biological resources technical memorandum was prepared by SWCA Environmental Consultants, Inc. (April 7, 2009) to verify that on-site conditions and potential impacts had not changed from what was written in the 2001 study. The 2001 study and the updated technical memorandum are provided in Appendix B. The findings are summarized in this section.

The entire City of Malibu and the proposed project site is located within the coastal zone. In accordance with the California Coastal Act, a Local Coastal Program (LCP) has been prepared and adopted by the City of Malibu. According to the City of Malibu LCP Land Use Plan, the project site is designated as Public Open Space.

Under the Los Angeles County General Plan, (Open Space Policy) and the Malibu General Plan, the site is part of a broad special management area known as the Santa Monica Mountains National Recreation Area (SMMNRA). The SMMNRA was established in 1978 by Congress and consists of local, county, state and federally owned park lands. The entire City of Malibu is located within the SMNNRA, which extends to the high tide line along the coast.

Under Special Management Areas, the County identifies the project area as a Significant Ecological Area (SEA) containing ecologically fragile or important land and water areas that are valuable as plant or wildlife habitat. In the Malibu General Plan, areas classified as SEAs by the County have been reclassified according to biological resources as environmentally sensitive habitat areas (ESHA) or as significant watersheds.

According to the City of Malibu LCP ESHA and Marine Resources Map 3, the project site is not identified as an ESHA nor does it meet the ESHA criteria, which would allow it to be accorded the protection provided to a

ESHA designated area in the LCP. Pursuant to the biological resource assessment prepared for the project (Appendix B), the site does not contain sensitive biological resources. The proposed project site contains several non-native weed plants mixed with remnant Venturan Coastal Sage Scrub vegetation. Substantial areas on-site are covered with pavement and devoid of vegetation. In others, pavement rubble is only partially obscured by weedy species.

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	■	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	■	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	■	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	■	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	■
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

A. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant Impact with Mitigation. The project site is characterized as degraded Venturan coastal sage scrub with nonnative plant species dominating certain portions of the hillside and disturbance associated with the pavement along the bluff-top. Dominant native plant species include California sagebrush (*Artemisa californica*), California Encelia (*Encelia californica*), laurel sumac (*Malosma laurina*), and ashyleaf buckwheat (*Eriogonum cinereum*). Prominent nonnative species include African fountain grass (*Pennisetum setaceum*) and hottentot-fig (*Carpobrotus edulis*). African fountain grass is the dominant species in the project area and on adjacent bluffs. Much of the paved area now has substantial vegetation growth between cracks and in eroded portions of the pavement, contrasting with the previous 2001 study which reported little to no vegetation in these areas. The paved area nearest the bluff edge displays a similar species composition to most of the site, while sparse marginal weeds occur in the paved portion of the site closer to PCH. No special status plants were observed to occur within the project area. Complete lists of the plants found at the site are included as Appendix 1 in the 2001 report and Appendix A in the 2009 report, which are included in Appendix B of this Initial Study.

Sixteen species of fauna were observed on the project site during the 2001 biological survey. They included one reptile and fifteen birds. The Western Fence Lizard (*Sceloporus occidentalis*), one of the most common western lizards, was observed. Common and widespread resident bird species observed atop the bluff include the House Finch (*Carpodacus mexicanus*), California Towhee (*Pipilo crissalis*), American Crow (*Corvus brachyrynchos*), Rock Dove (*Columba livia*), Black Phoebe (*Sayornis nigricans*), and Anna's Hummingbird (*Calypte anna*). Also observed was an abundant migrant and frequent winter visitor, the White-crowned Sparrow (*Zonotrichia leucophrys*). Observed on the beach and flying just offshore were the Heerman's Gull (*Larus heermani*), Ring-billed Gull (*Larus delawarensis*), and California Gull (*Larus californicus*). Shorebirds observed on the beach were the Black-bellied Plover (*Pluvialis squatarola*), Marbled Godwit (*Limosa fedoa*) and Sanderling (*Calidris alba*). Observed on the water just offshore was the California Brown Pelican (*Pelecanus occidentalis californicus*), a common to very common non-breeding visitor. Nesting colonies of this species are listed as Endangered by the U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Game (CDFG). However, nesting occurs only on off-shore islands, generally uninhabited, without mammalian predators. A Double-Crested Cormorant (*Phalacrocorax auritus*) was also observed.

Species observed on the project site from the 2009 survey also included the Western Fence Lizard, Sanderling, Double-crested Cormorant, Brown Pelican, California Towhee, House Finch, Marbled Godwit, and American Crow. Additional species observed during the 2009 survey included the California Sea Lion (*Zalophus californianus*). No special status animals were observed to occur within the project areas during the surveys.

Appendix 3 of the 2001 report lists those sensitive plant and animal taxa reported from the Malibu Beach and Point Dume, California quadrangles in the California Department of Fish and Game Natural Diversity Database (CNDDB). A similar list is presented in Appendix B from the 2009 report. According to the CNDDB, only the Southern California Rufous-crowned Sparrow, was observed on the site and characteristics are summarized below. Due to the high degree of disturbance of the site, none of the other organisms are expected to occur on the project site.

<u>Southern California Rufous-crowned Sparrow</u> (*Aimophila ruficeps canescens*)

LISTING: USFWS - Species of Concern
CDFG - Species of Special Concern
DISTRIBUTION: Coastal southern California from Santa Barbara County south into Baja California, Mexico.
HABITAT: Sparse, low scrub, often mixed with grasses on rocky slopes. California Sagebrush (*Artemisia californica*) is often present in scrub inhabited by this sparrow.
STATUS: Uncommon to fairly common but localized resident. Listing is based on concern that this species is among the most sensitive to habitat fragmentation and edge effects.

One individual of this species was observed in the disturbed scrub near the eastern boundary of the site. The degraded coastal sage scrub within the project area may provide suitable nesting habitat for southern California Rufous-crowned Sparrow and other avian species protected by the Migratory Bird Treaty Act of 1981 and the California Fish and Game Code that protect nesting bird species. Construction activities associated with the proposed project that result in ground disturbance and/or the removal of vegetation could have both direct and indirect impacts to these sensitive resources.

Provision of access to the beach area would generate additional disturbance in an otherwise dynamic littoral strand habitat. However, the increase of human presence on the beach strand is anticipated to have minimal impact due to the dynamic nature of the habitat, and would not be significant. As noted, species on site were identified to be primarily non-native and portions of the site have been previously paved over with asphalt concrete. Due to the previously disturbed nature of the site, impacts to the project site are not considered significant.

The 2001 biological report recommended immediate revegetation of the site upon completion of development for erosion control and to prevent the recurrence of undesirable weedy species. As part of the project, landscaping would be provided and include native species and non-invasive non-native plants to provide aesthetic value and erosion control.

Recommended Mitigation

In order to reduce biological impacts to special status species to less than significant levels, the following mitigation is recommended:

Measure 3.4.A1: Ground-disturbing and vegetation removal activities associated with construction of the project should be performed outside of the breeding season for birds, or between September 1 and January 31.

If project construction activities cannot be implemented during this time period, the applicant shall retain a qualified biologist to perform pre-construction nest surveys to identify active nests within and adjacent to the project area up to 500 feet. If the pre-construction survey is conducted early in the nesting season (February 1- March 15) and nests are discovered, a qualified biologist may remove the nests only after it has been determined that the nest is not active, i.e., the nest does not contain eggs, nor is an adult actively brooding on the nest. Any active nests identified within the project area or within 300 feet of the project area should be marked with a buffer, and the buffer area would need to be avoided by construction activities until a qualified biologist determines that the chicks have fledged. The buffer area shall be 300 feet for non-raptor nests, and 500-feet for raptor nests. If the buffer area cannot be avoided during construction of the project, the project applicant should retain a qualified biologist to monitor the nests on a daily basis during construction to ensure that the nests do not fail as a result of noise generated by the construction. The biological monitor should have the authority to halt construction if the construction activities cause negative effects, such as adults abandoning the nest or chicks falling from the nest.

B. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Less than Significant Impact. As discussed above, the project site is characterized by an infestation of several non-native weed plants mixed with remnant Venturan Coastal Sage Scrub vegetation which consists of Beach Buckwheat (*Eriogonum parviflorum),* California Sagebrush (*Artemisia californica*), Goldenbush (*Isocoma menziesii*), California Sunflower (*Encelia californica*), Laurel-leaf Sumac (*Malosma laurina*), and Coyote Brush (*Baccharis pilularis*). The more conspicuous non-native weeds of the site include Hottentot-fig (*Carpobrotus edulis*), Sweet Fennel (*Foeniculum vulgare*), Short-pod Mustard *(Hirschfeldia incana*), Castor-bean (*Ricinus communis*), and African Fountain Grass (*Pennisetum setaceum*), the latter being a dominant species on the slopes through the majority of the site and adjacent ocean-side slopes. Substantial areas are covered with pavement. Much of the paved area has substantial vegetation growth between the cracks and in eroded portions of the pavement. In other areas of the project site, pavement rubble is only partially obscured by the weedy species. The plant taxa observed on-site are typical of disturbed and remnant Scrub habitats of the region. None of the observed taxa are sensitive in any state, federal or conservation listings. No riparian habitat is located on the project site.

Although the flora on site would be removed with the proposed development, no listed sensitive species occur onsite. Thus, a less than significant impact is expected.

C. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. Neither the 2001 biological resource assessment or the updated technical memorandum report identified the project site as containing wetland habitat as defined by Section 404 of the Clean Water Act. Although the project site is located between two wetland habitat areas, namely the Pacific Ocean and the Santa Monica Bay, the site does not contain wetland habitat. The proposed development would increase runoff and erosion on the project site. Impacts associated with the increase in erosion and runoff, are addressed below in Section 3.6 Geology and Soils, and Section 3.9 Hydrology and Water Quality. Implementation of standard conditions and mitigation measures recommended in those sections would decrease impacts to less than significant.

D. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact. The Malibu coastline contains a variety of native resident migratory fish and wildlife. Appendix 3 of the Biological Resources Assessment and Impact Analysis (found in Appendix B of this document) lists those sensitive plant and animal taxa reported from the Malibu Beach and Point Dume, California quadrangles in the CNDDB. Only one of these, the Southern California Rufous-crowned Sparrow, was observed on the project site in the disturbed scrub near the eastern boundary of the site. Mitigation measure 3.4.A1 would reduce potential impacts to this species to a level of less than significant.

The proposed project would be small scale and not include any large structures which would block migratory bird routes. Additionally, the project site is not designated as a wildlife corridor. The proposed project is not expected to significantly interfere with the movement of wildlife.

E. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The Malibu LCP Land Use Plan requires the protection of native trees, including oak, walnut, alder, toyon, and sycamore trees; however, none of these resources occur at the project site and there would be no impact.

As noted, the project site is not identified as an ESHA nor does it meet the ESHA criteria, which would allow it to be accorded the protection provided to an ESHA designated area in the Malibu LCP. ESHA criteria includes: a. any habitat area that is rare or especially valuable from a local, regional, or statewide basis; b. areas that contribute to the viability of plant or animal species designated as rare, threatened, or endangered under State or Federal law; c. areas that contribute to the viability of species designated as Fully Protected or Species of Special Concern under State law or regulations; and d. areas that contribute to the viability of plant species for which there is compelling evidence of rarity, for example, those designated 1b (Rare or endangered in California and elsewhere) or 2 (rare, threatened or endangered in California but more common elsewhere) by the California Native Plant Society. (Resolution No. 07-04 (LCPA No. 05-001))

Pursuant to the biological resource assessment prepared for the project, the project site is not regarded as a site that contains sensitive biological resources. Therefore, the project would not conflict with any local policy or ordinance protecting biological resources; the impact would be less than significant.

(Sources: City of Malibu Local Coastal Program Land Use Plan)

F. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. There is no Habitat Conservation Plan, Natural Community Conservation Plan, or other habitat conservation plan that covers the project area. The project site is not identified as an ESHA in the Malibu LCP nor does the site qualify as an ESHA pursuant to the ESHA criteria listed above. In addition, no sensitive plant, animal species, or habitat has been identified on the project site, and the project site is not designated as a wildlife corridor.

The provision of access to the beach area would generate additional disturbance in an otherwise dynamic littoral strand habitat. Thus, the increase of human presence on the beach strand is anticipated to have minimal impact and is not regarded as significant.

3.5 CULTURAL RESOURCES

An archaeological resources study has been prepared by ASM and Affiliates (February 19, 2001) to analyze the cultural resource impacts of the proposed Dan Blocker Beach Project. The study is provided in Appendix C and the findings summarized below.

Archaeological and ethnographic information indicate that the area in the vicinity of the project has been occupied by Native Americans for nearly 9,000 years. Coastal Archaic period sites have been characterized by somewhat undifferentiated shell middens, few bifaces and dart points; and abundant milling equipment.

They range from large residential bases to small temporary camps and resource exploitation loci. The Middle Period, starting roughly 3,000 years B.P. and lasting until 800 year B.P., is characterized by more types of beads and ornaments than before, and a shift from rectangular to circular beads. This period, within which five phases can be distinguished archaeologically, encompasses the Middle Canalino, early Late Mainland, late Intermediate Horizon, and late Campbell Tradition. The Late Period is defined by the presence of *Olivella* callus beads and clam disk and cylinder beads. This period terminates 1804 A.D., and in the project area subsumes the Chumash Tradition. The latter is the tradition associated with the contemporary Native American population of the region.

A review of site records disclosed that no archaeological sites have been recorded within the project property, nor has it been subjected to previous survey or other archaeological study. Information provided by South Central Coastal Information Center at California State University, Fullerton indicates that 10 separate studies have been conducted within a half-mile of the project. These and other archaeological studies have resulted in the identification of 4 prehistoric resources within a half-mile radius, all of which are shell middens; no historic archaeological sites have been recorded. Similarly, no properties listed on the California State Historic Resources Inventory, National Register of Historic Places, California Historic Landmarks, California Points of Historic Interest, or City of Los Angeles Historic-Cultural Monuments are located within a half-mile of the project property. Additionally, the entire 1.92 acre project site was thoroughly examined at 5 to 10-meter intervals. Except for paved areas, ground visibility was generally good to excellent throughout the parcel and more than sufficient for the detection of any archaeological resources. No problems were encountered accessing and surveying all portions of the project area.

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☐	☐	■
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☐	■
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	■
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	■

A. Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

No Impact. As discussed above, four prehistoric resources have been identified within a half-mile radius of the project site, all of which are shell middens. No historic archaeological sites have been recorded surrounding the project site. Similarly, no properties listed on the California State Historic Resources Inventory, National Register of Historic Places, California Historic Landmarks, California Points of Historic Interest, or City of Los Angeles Historic-Cultural Monuments are within a half-mile of the project property. The records search and an intensive field survey of the site did not result in the identification of any prehistoric or historic cultural resources on-site. The project site does not contain any significant historic resources. Thus, no impact is expected.

(*Dan Blocker Beach Project Cultural Resource Survey*)

B. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No Impact. The record search conducted for the project indicates that no cultural resources have been recorded within the project property, and the intensive field survey did not result in the identification of any prehistoric or historic cultural resources on-site. Historic disturbances of the project site would have probably destroyed any extent cultural resources. Thus, implementation of the project will not result in adverse direct or indirect impacts to significant and California Register of Historic Places eligible cultural resources. Therefore, no impacts are expected.

(*Dan Blocker Beach Project Cultural Resource Survey*)

C. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. The project site contains deteriorated pavement and fencing, which indicates that the site has been previously disturbed. Encountering paleontological resources during site excavation is remote, because of prior site disturbances and the limited excavation that will be required for the project construction. No impacts to paleontological resources are anticipated

(*Dan Blocker Beach Project Cultural Resource Survey*)

D. Would the project disturb any human remains, including those interred outside of formal cemeteries?

No Impact. As discussed above, no prehistoric or historic resources are located on the project site. No formal cemeteries are located on the project site. Therefore, no impacts are expected.

(*Dan Blocker Beach Project Cultural Resource Survey*)

3.6 GEOLOGY AND SOILS

A Geotechnical Reconnaissance Report was prepared by Group Delta (December 26, 2000) to analyze the geologic impacts of the proposed Dan Blocker Beach Project. The studies are provided in Appendix E and the findings summarized below.

The proposed project site is characterized as a highway bench cut into the hillside in the lower slopes of the Santa Monica Mountains. The hillside extends down to the Pacific Ocean forming a coastal bluff over a narrow sandy beach. The proposed project site is located on a bluff that is approximately 10 to 20 feet high. The slopes of the bluffs at Dan Blocker Beach range from being near vertical in many areas to approximately 1:3 (horizontal: vertical).

The project site is situated in the western region of the Santa Monica Mountains near the base of the southerly descending flanks in the City of Malibu. Geologic units located in the vicinity of the project site include Holocene beach sands, Pleistocene-age older alluvial sediment deposits on the top of the hillside north of the roadway, and Miocene-age volcanic rocks exposed in the coastal bluffs and roadway cuts. Within 2,000 feet of the project site is located a middle to late Miocene-age meta-sedimentary formation and landslide debris. Minor isolated fills also exist throughout the site as gully infill, erosion repairs, and minor roadway grading. The proposed project site is located on several soil types including: Conejo Volcanics, Monterey Formation, Older Surficial Sediment, Landslide Debris, Residual Soils, and Artificial Fill.

The project site is located within the seismically active area of Southern California. There are no known active faults located on the proposed project site. The nearest potentially active fault is the Malibu Coast Fault system located about 2,000 feet north of the project area. The nearest inactive fault is the Latigo Fault, located below the project site, along the beach.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, City of Malibu General Plan, Report and General Soil Map of Los Angeles County, California, Site Survey, and Geotechnical Reconnaissance)

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
GEOLOGY AND SOILS. Would the project:				
Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving:				
a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	■	☐
b.) Strong seismic ground shaking?	☐	☐	■	☐
c.) Seismic-related ground failure, including liquefaction?	☐	☐	☐	■
d.) Landslides?	☐	☐	☐	■
e) Result in substantial soil erosion or the loss of topsoil?	☐	■	☐	☐
f) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	■	☐	☐

g) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	■
h) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	■	☐	☐

A. Would the project expose people or structures to potential substantial adverse effect, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Less than Significant Impact. The project site is located in a seismically active region. The Malibu Coast Fault system is located about 2,000 feet north of the project area and is an active fault system. No active segments of the active Malibu Coast Fault system are known to trend on or through the project site. The Latigo Fault is an inactive fault and mapped with an east-west trend, below the project site along the beach. Like other areas, the proposed project site would be subject to strong ground shaking should an earthquake occur. Since no active faults trend toward or traverse the project site, no ground rupture is anticipated to occur on-site. Therefore, the project would not expose people or structures to potentially significant adverse effects.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, Site Location Map, Los Angeles County Safety Element, and Los Angeles General Plan)

B. Would the project be subject to strong seismic groundshaking?

Less than Significant Impact. The proposed project would expose visitors to the project site to hazards associated with groundshaking during an earthquake event from the Malibu Fault System and other nearby faults. Due to the proximity of the Malibu Fault System, groundshaking hazards could lead to severe ground accelerations, causing personal injury and property damage, depending on the magnitude of the earthquake and the distance of the site to the epicenter. However, the proposed project does not include any structures other than a potential one-story restroom facility, and it would be constructed to meet Uniform Building Code standards. Thus, the impact of strong seismic ground shaking would be less than significant.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, Los Angeles County Safety Element, and Los Angeles General Plan)

C. Would the project be subject to seismic-related ground failure, including liquefaction?

No Impact. The potential for liquefaction is generally a function of age, type, and looseness of cohesionless sediments. Additionally, the depth of groundwater also will determine the potential for liquefaction. Relatively young (Quanternary), coarse-grained (sandy), loose sediments associated with shallow ground water would have the highest susceptibility to liquefaction during a significant seismic event. The soils located on the proposed project site are underlain by volcanic bedrock, which is an older soil type. Permanent groundwater on-site can be anticipated to be near sea level. Liquefaction potential on-site is considered very low. Thus, no hazards associated with liquefaction are anticipated with the proposed Dan Blocker Beach Project.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, Los Angeles County Safety Element, Geotechnical Reconnaissance Report)

D. Would the project be subject to landslides?

No Impact. The volcanics at the proposed project site are exposed in the coastal bluffs and in the roadway cut. These volcanics are stable at close to vertical cut inclinations. The minor instability of the bluff slopes along Dan Blocker Beach has been developed by oversteepening and weathering of the bluff face as a result of wave erosion and/or subaerial erosion. Older landslide debris are located to the west and east of the project site. Landslides in the project area are associated with the Monterey Formation, which is a thin-bedded, platysiliceous shale. The Monterey Formation is not found within the project area except it may underlay part of the shore platform.

A minor amount of colluvial material, which is associated with an ancient landslide, debris flow from alluvial deposits, and/or dumped material associated with the grading of PCH is located west of the center of the proposed project site in the coastal bluff. However, the proposed project site is not located on a formation that is subjected to landslides and no landslides are expected to occur on the project site.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, Los Angeles County Safety Element, and Geotechnical Reconnaissance Report)

E. Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact with Mitigation. Dan Blocker Beach has not experienced a considerable amount of erosion in the last 20 to 30 years, but rather fluctuating periods of beach erosion and accretion caused by storm events. Dan Blocker Beach bluff tops currently undergo minor erosion caused by wind, rain, irrigation, and uncontrolled runoff. Where these processes have occurred, riling and minor gullying has resulted. Bluff top retreat occurs from major storm events. Additionally, waves can create erosion of coastal bluffs. Elevations of the shore platform along Dan Blocker Beach range from approximately two to eight feet above Mean Sea Level which allows waves less than one foot high to break along the base of the sea cliff during periods of high tides. Any significant erosion from sand currently on the beach would allow larger waves to break against the sea cliffs. Along the portion of the bluff where the proposed site is located, stone and concrete rubble is located on the natural outcrops at the beach. The stone and concrete protect the bluff against waves striking the base of the bluff and reduces the acceleration of bluff erosion.

The proposed project site is partially covered with deteriorated pavement and with vegetation. The proposed project would include development of a parking area, ADA ramp to provide access to the beach and park site amenities. The proposed development would increase the amount of runoff and bluff erosion on the site. However, as part of the proposed project, runoff and storm water would be directed towards PCH and into an existing drainage system. The Coastal Act Section 30253 states that new development shall assure stability and structural integrity, and shall neither create nor contribute significant erosion, geologic instability, and/or further degradation of a site or surrounding area. Additionally, the Coastal Act states that new developments may not require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Based upon the geologic conditions of the bluffs, historic beach erosion at Dan Blocker Beach, and the increase in erosion caused by the proposed project, the following mitigation is recommended:

Recommended Mitigation

Measure 3.6.E1: Driveways and parking areas should be setback a minimum of 10 feet from the bluff face.

Measure 3.6.E2: Fencing along the bluff face should be constructed to discourage foot traffic down the face of the bluff.

Measure 3.6.E3: During grading of the parking area, any gullies identified in the parking area or other areas to be developed should be filled with properly compacted soils and should be modified to drain any flows away from the bluff face.

Measure 3.6.E4: Any areas between the new parking area and driveways that is not well vegetated should be planted with drought-tolerant vegetation to minimize interim erosion.

Measure 3.6.E5: A sufficiently deep concrete pile or foundation system for a concrete landing for the access ramp should be constructed to prevent wave action and/or beach erosion.

Measure 3.6.E6: The access ramp should be designed to accommodate ongoing marine and subaerial erosion process.

Implementation of these mitigation measures would reduce potential impacts to a level of less than significant.

(Sources: Los Angeles County Safety Element, USGS Point Dume and Malibu Beach Quadrangles, California Coastal Act, and Geotechnical Reconnaissance Report)

F. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact with Mitigation. The proposed project site is located on a volcanic formation, which is considered to be stable. The ramp and parking area development would be built in compliance with applicable County of Los Angeles regulations. Geotechnical recommendations for the parking area and ramp construction are provided in the *Geotechnical Reconnaissance Report for Dan Blocker Beach,* prepared by Group Delta and dated December 26, 2000. These recommendations are presented below and would need to be implemented to reduce impacts associated with the structural geotechnical stability of the proposed project to a level below significance.

Recommended Mitigation

Measure 3.6.F1: The recommendations presented in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 should be followed.

Measure 3.6.F2: Drill borings at the project site and soil samples should be taken of subgrade before final design of the ramp and parking area. After these samples are taken the recommendations in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 may be modified depending on the findings. If modified findings result from the samples they should than be implemented.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, Los Angeles County Safety Element, Report and General Soil Map of Los Angeles County, California, and Point Dume and Malibu Beach General Plan)

G. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No Impact. The project site contains a variety of soil types including: Conejo Volcanics (*Tcvaz*); Monterey Formation (*Tm*); Older Surficial Sediments (*Qoa*); Residual Soils; and Artificial Fill. Additionally, Landslide Debris (*Qls*) has been mapped in the project area. Table 6, *Soil Types and Characteristics*, describes the characteristics and colors of the soils located on site.

Table 6
Soil Types and Characteristics

Type of Soil	Formation	Color	Composition
Conejo Volcanics (*Tcvaz*)	An andesitic breccia formed in the middle of the Miocene age	Pinkish-gray to brown	Unsorted, very large to small, angular fragments of andesitic to tuffaceous matrix.
Monterey Formation (*Tm*)	Formed during middle to late Miocene age.	White to dark brown.	Thin bedded, platy, siliceous shale.
Older Surficial Sediments (*Qoa*)	Pleistocene-age	N/A	Alluvial sediments consisting of unconsolidated to weakly consolidated, pebble-cobble gravel, sand, and silt.
Landslide Debris (*Qls*)	Older landslide debris associated with the Monterey Formation.	N/A	Displaced blocks of alluvial sediments, terrace deposits, and/or volcanics.
Residual Soils	Formed over volcanic bedrock formation are present where volcanics have not been cut as part of PCH.	Dark to medium brown.	Plastic, clayey and silty sand.
Artificial Fill	Associated with the grading of PCH and/or repair of past localized slumps, erosion features, or with existing beach erosion.	N/A	N/A

The project area is considered to have high shrink and swell soil characteristics by the *Los Angeles County General Soils Map*, and the residual soils may be expansive. The proposed project would develop only minor structures and is not expected to create a significant hazard associated with expansive soils. The proposed project would be in compliance with the Uniform Building Code (1994). Thus, no significant impacts are expected to occur with the construction of the proposed project.

(Sources: Los Angeles County General Soils Map and Geotechnical Reconnaissance Report)

H. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Less than Significant Impact with Mitigation. The final design for the proposed project may include picnic tables accompanied by restroom facilities. The restrooms would be outfitted with sinks, urinals and toilets. Toilets would be served by an onsite wastewater treatment system. The County is currently in the process of testing percolation characteristics of the site to determine whether a septic system could function properly. The outcome of the percolation tests will determine whether the restroom component of the project would be constructed. If not, the viewing platform with expanded bench seating will be constructed.

The Los Angeles County Department of Public Works has provided a recommendation for onsite wastewater treatment System for the proposed project. The recommendation was based on conceptual plans from Kimley Horn & Associates, geotechnical studies from Group Delta Consultants, Inc., and the Wave Run-Up Study by CMA. The recommendation concluded that a wastewater treatment system is feasible for the project. The possible wastewater treatment systems for the park would utilize a waste water treatment system approved by the Regional Water Quality Control Board and Health Department, with either leach fields located west of and adjacent to the park facility, or seepage pits located underneath the proposed parking lots. The septic system would consist of either a Microseptec septic system or an Advantex septic system as well as a chlorination/de-chlorination unit and a UV light unit as part of the enhanced system to provide additional treatment. The leach fields or seepage pits would feature 100% redundancy, essentially creating two leach fields (one primary and one backup), or four six foot diameter seepage pits (two primary and two backups).

Recommended Mitigation

In order to reduce impacts associated with any potential septic system to less than significant levels, the following mitigation is recommended:

Measure 3.6.H1: In the event that a restroom with a wastewater treatment system is chosen for the final design for the Dan Blocker Beach Project, a suitability analysis (ongoing) of the soils supporting the use of the septic tanks, as well as the accompanying leach fields or seepage pits, shall be conducted prior to or concurrently with the acquisition of subgrade drill borings and soil samples as part of Mitigation Measure 3.6.F2. The suitability analysis shall include percolation tests at the exact location of the absorption field. Recommendations from the suitability analysis shall be incorporated into the wastewater treatment design.

(Sources: Memo from the Los Angeles County Department of Public Works, Water Resources Division dated December 16, 2008; Project Description and Project Location Map)

3.7 GREENHOUSE GAS EMISSIONS

“Greenhouse gases” (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as “global warming.” These greenhouse gases contribute to an increase in the temperature of the earth’s atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of

GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

Assembly Bill (AB) 32, the California Global Warming Solutions Act, established a state goal of reducing GHG emissions to 1990 levels by the year 2020, which would require a reduction of approximately 30 percent from "business as usual" or forecasted emission levels. Senate Bill (SB) 97, a companion Bill, directed the California Natural Resources Agency to certify and adopt guidelines for the mitigation of GHG or the effects of GHG emissions. SB 97 was the State Legislature's directive to the Resources Agency to specifically establish that GHG emissions and their impacts are appropriate subjects for CEQA analysis.

In addition to state regulations, on January 16, 2007, the County of Los Angeles adopted the Energy and Environment Policy as part of the County's effort to help conserve natural resources and protect the environment. The goal of the policy is to provide guidelines for the development, implementation, and enhancement of energy conservation and environmental programs. In order to meet the goals of the policy and ultimately AB 32, the County has implemented energy efficient projects in County facilities, specifically retrofitting or replacing building lighting systems and air conditioning equipment. The County has also developed/adopted tools and policies to support the reduction of GHG emissions that include but are not limited to: the "green building" ordinance, which will lead to all new private development within the unincorporated areas of the County being certified under the Leadership in Energy and Environmental Design (LEED) or equivalent standards; County sponsored recycling programs; and the incorporation of Low Impact Design Standards and drought tolerant landscaping.

GHG Emissions Impact Assessment

To date, there is no local, regional, state, or federal regulation establishing a threshold of significance to determine project-specific impacts related to GHG emissions. The California Governor's Office of Planning and Research (OPR) has developed revisions to CEQA implementation guidelines to incorporate GHG. These were adopted by the California National Resources Agency in December, 2009, and went into effect in March 2010. They contain requirements to characterize the GHG setting, quantify the impacts resulting from the proposed project, determine impact significance, and mitigate as appropriate. They leave the determination of significance to the Lead Agency.

On December 5, 2008 the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans, etc.) of 10,000 Metric Tons CO_2 equivalent/year (when accounting for GHG, all types of GHG emissions are expressed in terms of CO_2 equivalents (CO_2(e)/year) and are typically quantified in metric tons (MT)).

As part of the Interim GHG Significance Threshold development process for industrial projects, the SCAQMD established a working group of stakeholders that also considered thresholds for commercial or residential projects. As discussed in the "*SCAQMD Interim GHG Significance Threshold Draft Guidance Document*", the focus for commercial projects is on performance standards and a screening level threshold. For discussion purposes, the SCAQMD's working group considered performance standards primarily focused on energy efficiency measures beyond Title 24 and a screening level of 3,000 MT CO_2(e)/year based on the relative GHG emissions contribution between non-industrial sectors versus stationary source (industrial) sectors. The 3,000 MT CO_2(e)/year screening level was intended "to achieve the same policy objective of capturing 90 percent of the GHG emissions from new development projects in the residential/commercial sectors."

The working group and staff ultimately decided that additional analysis was needed to further define the performance standards and to coordinate with CARB staff's interim GHG proposal. Staff, therefore, did not recommend action for adopting an interim threshold for non-industrial projects but rather recommended bringing this item back to the Board for discussion. As of this date, no final action on a quantitative significance threshold has been taken, but 3,000 MT CO_2(e)/year is recommended to be used as a screening threshold for project construction

A discussion of approaches to significance thresholds is included in the California Air Pollution Control Officers Association (CAPCOA) document "*CEQA and Climate Change*" (2008). Included in the discussion are proposed interim GHG thresholds, the most stringent of which is a threshold of 900 MT CO_2(e)/year, which applies to small projects. The CAPCOA 900 MT CO_2(e)/year threshold was determined to be the most applicable threshold for the purpose of analyzing GHG emissions impacts from the proposed project. Additionally, the 900 MT CO_2(e)/year threshold is also the most stringent.

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
b.) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	■	☐

A. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact. Implementation of the proposed project would directly contribute to long-term increases in GHGs as a result of traffic increases (mobile sources). Short-term GHG emissions would also derive from construction activities.

Construction Emissions

GHG emissions would be generated during the construction phase of the project through the use of heavy equipment and vehicle trips. Project construction emissions were based on the list of construction equipment, size of the proposed project, and duration of equipment operation, as discussed in Section 3.3.B above.

Table 7, *Construction GHG Emissions*, presents the calculated GHG emissions generated during project construction activities per year.

Table 7 Construction GHG Emissions	
Activity/Year	**CO_2(e) Emissions (MT per year)**
Clear and Grub	4.70
Grading	5.79
Paving	4.20
Site Improvement, landscaping	19.95
Total	**34.64**
Source : Urbemis 2007 Version 9.2.4 (Appendix A)	

The temporary construction activity GHG emissions were compared to the recommended non-industrial threshold of 900 MT CO_2(e)/year. Even if all construction were to occur in a single calendar year (worst case scenario), annual construction activities would generate a total of 35 MT CO_2(e)/year, which would be well below the screening threshold.

Operational Emissions

Vehicle trips would account for nearly all of GHG emissions during operation of the park facility; other activities such as maintenance and electricity consumption from parking meters would be relatively minor and would not generate measurable contributions to operational air emissions. Transportation-related GHG emissions from project implementation were determined using Urbemis 2007 and based on the proposed project's operational and site characteristics as discussed in Section 3.3.B above. During operation, the project is expected to generate 391 short tons, or 356 MT of CO_2(e)/year, which is well below CAPCOA's 900 MT CO_2(e)/year screening threshold (results are shown on p. 9-11 of Appendix A).

Guidance from the SCAQMD also recommends amortizing construction emissions over a 30-year period to account for their contribution to project lifetime GHG emissions. If emissions are amortized over a 30-year period, construction emissions would be estimated at 1.15 MT CO_2(e)/year. As such, combined annual construction and operation GHG emissions are determined to be 357.15 MT CO_2(e)/year, which is also substantially less than the 900 MT CO_2(e)/year screening threshold. No further GHG analysis is required and GHG impacts resulting from project operations would be less than significant.

B. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact. Consistency with applicable GHG plans or policies is measured in terms of participating positively in the GHG reduction goals of AB 32. By 2020, state and national GHG reduction programs are anticipated to achieve approximately a 24 percent in emissions compared to the business as usual (BAU) alternative. The CARB has implemented programs and is developing regulatory actions such as the low-carbon fuel standard as well as passenger vehicle efficiency measures for on-road passenger/light truck transportation. Because the utilization of the proposed project would be subject to the requirements that would be developed due to AB 32, the proposed project would be consistent with the goals of AB 32.

The AB 32 goal is a 29 percent reduction. As discussed, the County of Los Angeles has adopted the Energy and Environment Policy to provide guidelines for developing environmental programs that ultimately meet the goals of AB 32. The proposed project would not conflict with the plans and policies developed under the County Policy which have been designed to reduce GHG emission levels. Therefore, associated impacts would be less than significant.

(Sources: County of Los Angeles, SCAQMD, CAPCOA, and Giroux & Associates, Inc.)

3.8 HAZARDS AND HAZARDOUS MATERIALS

A hazardous material is defined as any substance that may be hazardous to humans, animals, or plants, and may include pesticides, herbicides, toxic metals and chemicals, volatile chemicals, explosives, and even nuclear fuels or low-level radioactive wastes. Although the City of Malibu does not contain a wide variety of industries and land use, there are still uses which generate or handle hazardous materials. These sites present hazards associated with accidental spills, contamination, fire, explosion, and improper disposal. Major truck routes on PCH also pose hazards associated with accidental spills during transport.

No underground storage tanks, clarifiers, or groundwater wells are located on the project site. Additionally, no surface drains, drums or hazardous wastes are present. The site is not located near industrial land uses. Hazardous wastes handlers in the vicinity include Pepperdine University, located at 24255 PCH, approximately two miles east of the project site and a gas station, located at 23641 PCH, approximately 2.5 miles east of the project site. There is another gas station located to the immediate east of the project site and a photo lab, located at 23852 PCH, just over two miles east of the project site. Toxic waste has not been reported on any of the sites but these land uses utilize hazardous materials and generate hazardous wastes.

(Sources: Malibu General Plan, Site Survey and, EPA Envirofacts Database)

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	■
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	■
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to	☐	☐	☐	■

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	■
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	■
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	■	☐

A. Would the project create a significant hazard to the public, or the environment through the routine transport, use, or disposal of hazardous materials?

No Impact. The proposed development would not use, generate, transport or dispose of hazardous material, nor be involved in the handling of hazardous materials, which might create public health hazards. No significant hazards to the public related to hazardous materials are anticipated as a result of the project.

(Sources: Project Description and Project Location Map)

B. Would the project create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. Construction activities associated with the development of the project amenities may involve some hazardous materials use, such as paints, thinners, cleaning solvents, oil, and grease. Additionally, during operation of the proposed project, some quantities of cleaning solvents may be used. Possible temporary use of pesticides and/or herbicides may also occur. However, due to the small scale of the development, quantities of hazardous materials would be minimal. Hazardous material use during construction and operation would be made in accordance with existing federal, state and local regulations. Thus, no significant impact regarding the release of hazardous materials into the environment is expected from the project.

(Sources: Project Description and Project Location Map)

C. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. The nearest schools to the project site are Pepperdine University and Webster Elementary School located in the Civic Center Area, about 2.5 miles east of the site. The schools are separated from the project site by vacant land, residential areas and open space. The proposed project includes the development of a parking area, beach access in the form of an ADA ramp, park site amenities and a possible restroom facility or viewing platform with bench seating. The proposed project is not expected to emit or handle hazardous materials other than small quantities of cleaning solvents and possible temporary use of pesticides and/or herbicides. Uses of these small amounts of hazardous materials would be in accordance with local, state and federal law. No impacts are anticipated regarding hazardous emissions to the surrounding schools.

(Sources: Malibu General Plan, Thomas Guide for Los Angeles County, and Site Location Map)

D. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The proposed site is currently open space and no hazardous materials are located on-site. There are land uses near the site which may utilize, generate, store, or dispose of hazardous materials. These include Pepperdine University, located at 24255 PCH approximately 2.0 miles east of the project site, and a gas station, located at 23641 PCH, approximately 2.5 miles east of the project site. There is another gas station located to the immediate east of the project site and a photo lab, located at 23852 PCH, just over two miles east of the project site. The gas station located immediately east of the project site is the only hazardous material operator within a one mile radius of the project site. Development on the proposed project site is not expected to create a significant hazard to the public or the environment.

(Sources: Site Survey and Cal-EPA Envirofacts Database)

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The project site is located approximately 15 miles west of the Santa Monica Municipal Airport and approximately 17 miles southwest of Van Nuys Airport. The site is located outside the designated FAA clear zones and safety zones of both airports. Thus, the proposed development at Dan Blocker Beach would not be subject to the hazards associated with the surrounding airports.

(Sources: Cal-EPA Envirofacts Database, Thomas Guide for Los Angeles County, Malibu General Plan, and Los Angeles County General Plan)

F. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. As indicated above, the project site is located approximately 15-17 miles from the nearest airports at Santa Monica and Van Nuys. There are no other airstrips located near the site. Thus, no impacts associated with private airstrips would occur as a result of the project.

(Sources: Cal-EPA Envirofacts Database, Thomas Guide for Los Angeles County, Malibu General Plan, and Los Angeles County General Plan)

G. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The proposed project includes development of a parking area, beach access in the form of an ADA ramp, park site amenities and a possible restroom facility. The project site is located adjacent to PCH, which is the major arterial in the City of Malibu, as well as for coastal communities in the area. PCH may be used for evacuation and emergency response. The proposed project is intended to improve public access to Dan Blocker Beach and is not expected to interfere with evacuation of the site or surrounding area.

(Sources: Malibu General Plan, Project Description, and Site Survey)

H. Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less Than Significant Impact. The proposed site is located in an area with a high proportion of undeveloped land and open space. The foothills of the Santa Monica Mountains are located to the north of the project site and have a high fire hazard potential. Additionally, the City of Malibu has been identified as an extreme fire hazard zone by the California Department of Forestry and the County Fire Department.

Wildland fires inevitably occur as a part of the natural revegetation cycle of the California landscape located near the proposed development. Often the loss of structures by fires is due to inappropriate siting or flammable landscaping. For the area adjacent to the project site there are records of woodland fires occurring frequently throughout the last ten years.

There is flammable brush, tall grass and shrubs adjacent to the site, which may create wildfire hazards. The proposed development would include a parking area, beach access in the form of a ramp, park site amenities and a possible restroom facility. The proposed development is expected to be used on a temporary basis for passive and active recreation. It is not expected to create the potential for or be subject to wildfires. Thus, less than significant impacts are anticipated.

(Sources: Site Survey and Malibu General Plan)

3.9 HYDROLOGY AND WATER QUALITY

The coastal Los Angeles area is located within the Los Angeles Hydrologic Basin, encompassing an area of 500 square miles. The Los Angeles Hydrologic Basin extends from the Santa Barbara – Ventura County line in the north to the Los Angeles – Orange County line in the south. The hydrologic basin can be further subdivided into Hydrologic units (HU), Hydrologic subunits (HSU) and Hydrologic subareas (HAS). The project site at Dan Blocker Beach falls under the Malibu and Point Dume hydrologic area and the hydrologic subareas of Corral Canyon and Solstice Canyon. The Malibu HU is located on the western slope of the Santa Monica Mountains and is characterized by mountainous terrain and small stream valleys. On the south side are sloping marine terraces and long sandy beaches along Santa Monica Bay. In several instances along the coast, the marine terrace is minimal and the mountain slopes descend to the shore.

The surface waters of the Malibu HU have typical coastal stream traits, in that the amount of natural runoff is highly variable. Most of the runoff occurs during and after the rains of late autumn and winter and flows from January through April. As a result, the runoff is intermittent in many streams and more constant in higher mountain streams. The annual flow of runoff varies widely on an annual basis, and the region experiences both wet and dry periods.

Sixty-two watersheds have been identified within the boundaries of the City of Malibu, including small, coastal terrace watersheds located within a few hundred feet of the ocean and large watersheds, which drain the Santa Monica Mountains. The largest watershed is the Malibu Creek Coastal watershed, which drains approximately 74,000 acres (115 square miles).

The Corral Creek Watershed is located within the project area and is associated with a small coastal stream draining Corral Canyon and a small number of tributary streams. The stream reaches the ocean at Dan Blocker Beach, and the highway spans the creek with a low bridge. The watershed totals 2,800 acres. Dan Blocker Beach is just a small portion of the Corral Canyon watershed and is located on its coastal edge. The Solstice Creek Watershed is also a small coastal creek adjacent to the west portion of Dan Blocker Beach and, like Corral Creek, has several small tributary streams. The Solstice Creek Watershed is mountainous and totals about 2,800 acres. . The Solstice Creek traverses the eastern area of Dan Blocker Beach and flows under PCH through a 20-foot culvert.

Due to the very steep and impervious nature of various small watersheds within the Malibu Coastal Zone (MCZ), accompanied by the rapid runoff of low and variable rainfall, there are no local dependable surface water supplies and very limited groundwater supplies within the MCZ. The factors affecting groundwater in project area are seasonal and annual precipitation patterns, topography, soil and rock permeability and faults. Rock formations in the area are not conducive to holding groundwater, and the dominant groundwater recharge in the City is groundwater flow from the upper portions of the watersheds. Other sources of recharge include rainfall, streamflow, irrigation runoff and septic system disposal. There is difficulty in quantifying the Malibu area's subsurface recharge and discharge due to the complexity of the area's subsurface flow. No designated groundwater basins occur in the area.

Dan Blocker Beach is located in the 5-year and 100-year flood plains for Corral Creek and Solstice Creek. Stream flow increases rapidly in response to heavy rains. The coastline edge of the project is also within the 100-year coastal flood zone. Storms can also generate waves that reach heights of 15 feet and cause coastal flooding. When combined with high tides and strong winds, higher than normal elevations along the coastline can be affected. Coastal flooding and shoreline erosion can damage structures and facilities located along low-lying portions of the shoreline.

(Sources: Malibu General Plan and Los Angeles County Plan)

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	■	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	■	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	■	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	■	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	■	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	■
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	■
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	■	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a	☐	☐	☐	■

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
result of the failure of a levee or dam?				
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	■	☐

A. Would the project violate any water quality standards or waste discharge requirements?

Less than Significant Impact. Potential water quality impacts associated with the proposed project include short-term construction related erosion and long-term operational storm water discharge. All individual construction project activities greater than one acre in size are subject to the State's General Permit for Construction Activities as administered by California's Regional Water Quality Control Board (RWQCB). The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would contain a site map which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. BMPs the discharger will use to protect storm water runoff and the placement BMPs will be shown on the SWPPP. Additionally, the SWPPP will contain a visual monitoring program; and a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs. Short-term water quality impacts would be less than significant based on conformance with existing regulatory requirements (i.e., acquisition of a NPDES Construction General Permit and implementation of a SWPPP).

The proposed site would be altered from vacant land with small areas of deteriorated pavement to areas of pavement, asphalt on concrete, and landscaping. The proposed project would generate minor amounts of urban contaminants such as petroleum compounds, metals and other types of contaminants that typically accumulate in parking lots. The transport of urban contaminants from the project site to receiving waters could result in significant water quality impacts. However, the proposed project would be subject to post-construction storm water requirements which includes specific requirements for post-construction storm water quantity controls (e.g., maximum amount of allowable impervious surface, runoff detention/retention basins) and quality controls (e.g., infiltration trenches, grass swales/channels). Furthermore, storm water from the on-site parking lot would be subject to pre-treatment of first flush in accordance with the Standard Urban Storm water Mitigation Plan (SUSMP), in compliance with the Municipal NPDES Permit requirements. As part of SUSMP compliance, the proposed project will be required to submit a drainage concept and storm water quality plan. Details of facilities and measures, which mitigate impacts to water quality, would be shown on improvement plans and reviewed as part of those plans. The SUSMP also outlines the BMPs to be incorporated into the project design. Project compliance with existing storm water regulations enforced during plan review would ensure that impacts from construction and operation of the proposed project would not violate water quality standards.

If an Onsite Wastewater Treatment System were incorporated into the project, the treatment system would require approvals from the Department of Health Services for installation of an Onsite Wastewater Treatment System, and the Regional Water Quality Control Board for General Waste Discharge Requirements. As noted, if it is determined that the site will not percolate according to the recommended wastewater treatment system standards, the proposed project would be developed without restrooms (Figure 5b, *Conceptual Site Plan without Restrooms*). The proposed project would be in compliance with Los

Angeles County's water quality standards and waste discharge requirements and the impact would be less than significant.

(Sources: Site Survey, Malibu General Plan and Regional Water Quality Control Board)

B. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. Typical sources of groundwater that may exist in the coastal bluffs include the upland areas north of the site bluffs and infiltration of rainfall through bedrock material on the platform surface above the bluffs. The volume of groundwater existing in the bluff face throughout the project site boundaries varies from location to location and seasonally.

The proposed project site does not serve as a recharge area for local groundwater. Proposed development on-site would cause some of the rainwater that would otherwise have percolated to the groundwater to become runoff. The impermeable surface areas on the project site would be proportionately small relative to the amount of vacant land in the surrounding area. No substantial impact on the groundwater level of nearby wells is anticipated with the proposed project and therefore would be less than significant.

(*Sources: Malibu General Plan and Geotechnical Reconnaissance Report)*

C. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact with Mitigation. Storm water runoff flows through the project area from Dan Blocker Beach, PCH, and adjacent watersheds such as Corral and Solstice Canyons. Some runoff flows directly from the upland areas to the beach; however, most of it is channeled into drainage control structures to protect the highway. Soil compaction, paving and other constructed improvements in the area have greatly increased surface runoff, necessitating the construction of storm drain structures to accommodate the flows. There are currently eight storm drains on the entire length of Dan Blocker Beach, ranging from two feet to 50 feet in width. These are operated by the Department of Beaches and Harbors in conjunction with Caltrans and Public Works. The drains and existing vegetation help to alleviate bluff erosion. Currently, there are no storm drains on the proposed project site.

The proposed site would be altered from vacant land with small areas of deteriorated pavement to areas of pavement, asphalt on concrete, and landscaping. This would result in a slight decrease in the amount of water percolation and increase the amount of runoff and drainage on-site. Drainage from the project site currently runs over the cliff face and onto the beach located south of the site. As stated in Section 3.6, Geology and Soils, mitigation to decrease erosion impacts will be implemented to reduce erosion impacts to a level of less than significant. Mitigation measures 3.6.E1 through 3.6.E6 would reduce any impacts associated with the runoff erosion to a level of less than significant.

(Sources: Malibu General Plan and Site Location Map)

D. Would the project substantially alter the existing drainage pattern of the site, or area, including through the alteration of the course of a stream or river, or substantially increase

the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant Impact. The site is vacant and drainage consists primarily of on-site ground percolation and runoff over the bluff face. The proposed project would not alter the course of a stream or river, or substantially increase the rate or amount of surface runoff that would result in on-site or off-site flooding. Preliminary design plans call for a bioswale in the northern portion of the project site to collect surface runoff. Additional post-construction BMPs and drainage improvements would be developed to accommodate anticipated runoff generated by the proposed project in accordance with NPDES requirements as discussed above. While ground percolation would be reduced, the change in drainage patterns is not expected to contribute to flooding conditions during storm events. Impacts associated with possible flooding would be less than significant.

(Sources: Site Survey, Malibu General Plan, and Site Visit)

E. Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. The construction of proposed improvements to the site would alter drainage patterns on the site and may increase runoff volume. Preliminary design plans call for a bioswale in the northern portion of the project site to collect stormwater runoff. Additional post-construction BMPs would be developed to accommodate anticipated runoff generated by the proposed project in accordance with NPDES requirements. As discussed, the potential for polluted runoff would be minimized through compliance with the Los Angeles Municipal Storm Water Permit (Order No. 01-182; NPDES No. CAS0041) and relater water quality guidelines. Therefore, water quality impacts related to storm water capacity and/or polluted runoff would be less than significant.

(Sources: Site Survey and Site Location Map, Malibu General Plan)

F. Would the project otherwise substantially degrade water quality?

No Impact. The proposed development would incrementally increase the amount of runoff, which may contain pollutants from the parked cars, such as oil and grease. Such an increase is not expected to be substantial due to the small size of the project. As noted, if it is determined that the site will not percolate according to the recommended wastewater treatment system standards, the proposed project would be developed without restrooms (Figure 5b, *Conceptual Site Plan without Restrooms*). The proposed project would be in compliance with Los Angeles County's water quality regulations for storm water drainage and wastewater treatment systems should such a wastewater treatment system be constructed as part of the project. Thus, the proposed project is not expected to degrade water quality.

(Sources: Site Survey and Site Location Map)

G. Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary of Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. Dan Blocker Beach is located within the 100-year floodplain for Corral and Solstice Creek. No residential development is proposed as part of the project; thus, no housing would be placed within a flood hazard area.

(Sources: Malibu General Plan Safety Element, FEMA Flood Insurance Rate Map, and Site Location Map)

H. Would the project place structures within a 100-year flood hazard area, which would impede or redirect flood flows?

Less than Significant Impact. The proposed development would possibly include one small restroom structure in the western portion of the site. The project site is located within the 100-year flood area. Although the project site is located within the 100-year flood area, the restroom facility would not be expected to impede or redirect flood flows. Post-construction BMPs that would be developed are also expected to alleviate the potential for flood conditions. Therefore, impacts associated with flooding would not be expected and the impact is less than significant.

(Sources: Site Survey, Los Angeles County Safety Element, Malibu General Plan Safety Element, FEMA Flood Insurance Rate Map, and Site Location Map)

I. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The proposed project site is located outside designated dam inundation areas for Lake Malibu, approximately five miles to the northwest of Dan Blocker Beach. Thus, no risk of loss, injury, or property damage involving dam inundation would occur with the proposed project.

(Sources: Thomas Guide, Malibu General Plan Safety Element, and Site Location Map)

J. Would the project expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?

Less than Significant Impact. Tsunamis, or seismic waves, are large oceanic waves that may be generated by earthquakes, submarine volcanic eruptions, or large submarine landslides. The 500-year tsunami wave runup heights may be as high as 30 feet in Southern California. With the project site elevation ranging from about 20 to 25 feet above Mean Sea Level, the project site could potentially be impacted by a large tsunami wave. Mudflows could potentially originate in the Santa Monica Mountains north of the project site. The proposed project would not include any residential or commercial development. There are no dams or water located near the site, which may pose inundation or seiche hazards. Impacts are expected to be less than significant.

(Sources: Los Angeles County Safety Element, Malibu General Plan Safety Element, and Site Location Map)

3.10 LAND USE AND PLANNING

Dan Blocker Beach, including the proposed project site, is located within the County of Los Angeles and in the City of Malibu, in Los Angeles County.

The City of Malibu includes approximately 12,552 acres of land. Approximately 60 percent of land in the City is undeveloped. Approximately 22 percent of the City is residential land uses and 15 percent is open space and the remainder of land uses consists of public facilities and horticulture uses. The City of Malibu has a low rate of development as a result of environmental constraints including steep hillsides, sensitive environmental resources, and the high cost of land.

Dan Blocker Beach is identified as open space in the City of Malibu General Plan. The adjacent land use, to the north of the project site includes vacant land and commercial uses; to the east, land uses include mobile home residential uses, multi-family residential uses and commercial uses; and to the west of the project site are mobile home residential uses and open space. Open space permits recreational uses including open viewing areas, promenades, beaches, picnic facilities, and associated surface parking and landscaping.

The entire City of Malibu and the proposed project site is located within the state designated coastal zone. In accordance with the California Coastal Act, a local coastal program (LCP) has been prepared and adopted by the City of Malibu. According to the City of Malibu LCP Land Use Map 3, and the ESHA and Marine Resources Map, the project site is designated as Public Open Space that does not include areas identified as containing environmentally sensitive habitat areas.

The entire City of Malibu is located within the Santa Monica Mountain National Recreation Area (SMMNRA), which extends to the mean high tide line along the coast.

(*Sources: Malibu General Plan, National Park Service, Plan and Site Survey*)

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	■
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	■	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	■

A. Would the project physically divide an established community?

No Impact. The project site is designated as Open Space in the City of Malibu General Plan. The project site is located approximately 2.5 miles west of the City of Malibu's Civic Center. There is a single-family residence immediately adjacent to and east of the project site. Additional residential development occurs farther down the coast west of the site. Since residential development is scattered in the vicinity of the project area, the proposed project would not physically divide the surrounding residential neighborhood or the surrounding established community.

(Sources: Site Location Map and Site Survey)

B. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less than Significant Impact. The proposed site is designated as Open Space in the City of Malibu General Plan. Open space accounts for 1,869.9 acres of land use in Malibu.

According to the City of Malibu LCP Land Use Plan, the project site is designated as Public Open Space that does not include areas identified as containing environmentally sensitive habitat areas.

Under the Malibu General Plan, the site is part of the SMMNRA, which was established in 1978 by Congress. The National Park Service works toward acquiring lands which offer significant natural, cultural and recreational resources and which are not already under government jurisdiction or private preservation/recreation-oriented use. The entire City of Malibu and the project site is located within the borders of the park. Regulating activities within the park is the responsibility of the local jurisdiction.

According to the Malibu LCP, Public Open Space (OS) provides for "publicly owned land which is dedicated to recreation or preservation of the City's natural resources, including public beaches, park lands and preserves." Allowable uses include passive recreation, research and education, nature observation, and recreational and support facilities like those proposed by the improvements at Dan Blocker Beach.

Several land use policies are contained in the Malibu LCP Land Use Plan and are intended to carry out the goals and objectives reflected in the policies of the Coastal Act.

One policy in particular calls for "Improving existing public access opportunities by supporting proposals to open accessways including efforts by Los Angeles County to open and improve accessibility to El Sol and Dan Blocker Beaches". The proposed improvements at Dan Blocker Beach would be consistent with this policy.

The proposed improvements at Dan Blocker Beach would further comply with the provisions of the Malibu LCP Land Use Plan through design efforts to:

- Avoid impacts to sensitive habitat (Policy 2.16);
- Siting stairways on the bluff face (Policy 2.23);
- Providing adequate parking (Policy 2.26);
- Improving existing vertical accessway, public parking and restroom facilities at Dan Blocker Beach (shoreline owned by Los Angeles County) (Policy 2.86.k);
- Incorporating BMPs that reduce the introduction of pollutants of concern that may result in significant impacts from site runoff (Policy 3.97);
- Not proposing permanent structures on the bluff face, except for engineered stairways or accessways to provide public beach access (Policy 4.29);
- Site uses compatible with the Public Open Space land use designation (Chapter 5);
- Minimize adverse impacts to PCH

Thus, the proposed development is in compliance with the goals and objectives of the Malibu General Plan and the Malibu LCP Land Use Plan. The impact would be considered less than significant.

(Sources: Malibu General Plan and Malibu LCP Land Use Plan)

C. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. There is no Habitat Conservation Plan, Natural Community Conservation Plan, or other habitat conservation plan that covers the project area. The project site is not identified as an ESHA in the Malibu LCP nor does the site qualify as an ESHA pursuant to the ESHA criteria. The project site is surrounded by vacant land, residential development and a small amount of commercial development. The project site is designated for Public Open Space and would be designed in accordance with County design criteria to protect environmental resources and the Malibu LCP Land Use Policies as indicated above. No impact is expected.

(Sources: Malibu LCP Land Use Plan, Malibu General Plan and Site Survey)

3.11 MINERAL RESOURCES

The proposed project is located within the City of Malibu. Mineral Resources, including sand and gravel, have been identified within West Los Angeles County. Although not identified in the Malibu General Plan, sand and gravel resources are thought to occur in the Malibu Coastal Zone.

(Sources: Malibu General Plan and Site Survey)

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	■

A. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. Mineral Resources are not located on the project site. The proposed project site is not located in an area designated to have these significant mineral resources, and development of the site would not affect the availability of mineral resources in the project area. Thus, no impact is expected.

(Sources: Malibu General Plan)

B. Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The project site and surrounding area are not subject to mineral resource recovery operations. Due to the small scale of the proposed development, the construction materials that would be needed for Dan Blocker Beach improvement would be minor when compared to regional resources. Thus, the proposed project would not affect locally important mining operations nor would it result in the loss of available sand and gravel resources.

(Sources: Site Location Map, Site Survey, and Malibu General Plan)

3.12 NOISE

The project site is a vacant bluff area overlooking Dan Blocker Beach. There are currently no noise sources on-site. The noise environment in the project area is relatively quiet with vehicle noise along PCH dominating the ambient noise levels. The project site is located within the projected 70 to 65 decibels (dB) noise contour along PCH. The Noise Element of the Malibu General Plan states that outdoor activity areas, such as playgrounds and neighborhood parks, have a maximum allowable noise exposure level of 70 dB Community Noise Equivalent Level (CNEL) from transportation noise sources. Residential areas have a maximum allowable noise exposure level of 50 dB CNEL. Noise from non-transportation sources in residential areas are set at an ambient noise level of 55 dB from 7 AM to 7 PM, 50 dB from 7 PM to 10 PM, and 45 dB from 10 PM to 7 AM. The noise regulations of the City of Malibu (Municipal Code Chapter 2) prohibits unnecessary noises and the disturbance of the peace, quiet or repose of persons of ordinary and normal sensitiveness. Outdoor activities at public playgrounds are exempt from the regulations. Use of construction equipment is limited to the hours of 7 AM to 7 PM on weekdays and 8 AM to 5 PM on Saturdays.

(Sources: Site Survey, USGS Point Dume and Malibu Beach Quadrangles, and Malibu General Plan)

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	■	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	■	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	■	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project	☐	☐	☐	■

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
expose people residing or working in the project area to excessive noise levels?				
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■

A. Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant Impact. Construction activities associated with the proposed improvements would generate noise. On-site construction activities would create noise from construction equipment and vibration from excavation and grading activities. Temporary construction noise impacts would vary in noise level according to the type of construction equipment and activity level. Short-term construction noise impacts tend to occur in separate phases, with large, earth-moving equipment generating 85 dBA at 50 feet from the source and finish construction activities and equipment generating less noise.

The proposed project would involve limited construction activities associated with the construction of the walkways, parking area, beach access ADA ramp, and possible picnic table areas and restroom facilities. Other facilities (picnic tables, memorial plaque, railing, parking meters, and trash receptacles) would be brought onto the site as finished components and would be installed or placed on-site. Construction would also be confined to a limited construction timeframe. Thus, construction noise impacts would not be significant.

Area residents would be subject to construction noise on a short-term ten month basis. Construction activities would occur during the daytime hours, and would comply with the noise regulations of the City of Malibu (time limits on construction activities). Thus, noise from construction activities on the site are not expected to adversely affect neighboring residences or violate City noise regulations.

PCH is a major noise source near the site. PCH is a four-lane roadway, with shoulder parking on the southbound side. There is a raised three-foot wide median along the segment of PCH near the site. The speed limit near the site is 50 MPH. PCH carries an average of 35,000 vehicles per day with 39,500 trips per day during peak months. Traffic noise along PCH is not expected to adversely affect outdoor activities at Dan Blocker Beach, since playgrounds and parks are normally acceptable within areas with noise levels of up to 70 CNEL and water recreation areas up to 75 CNEL.

Vehicle trips associated with the use of the Dan Blocker Beach would add to vehicle noise levels on PCH. Due to the high traffic volumes on PCH, the vehicle noise impacts of the project would not be perceptible and are expected to be insignificant. Table 8, *Projected Noise Levels*, shows that the increase in noise levels would only be 0.02 dB (be less than 1.0 dB) during the peak season.

TABLE 8 PROJECTED NOISE LEVELS					
Roadway	**Distance of Contour from Roadway Centerline**				**Noise Level at 50 feet of roadway centerline**
	70 CNEL	**65 CNEL**	**60 CNEL**	*55 CNEL*	
PCH Existing – 35,000 ADT* Peak - 39,500 ADT	 136.2 153.0	 422.3 476.3	 1332.4 1503.7	 4212.3 4753.9	 72.61 73.13
With Project – 39,740 ADT	153.9	479.2	1512.8	4782.7	73.16
Source: FHWA Noise Prediction Model *average daily trips					

This estimate assumes that trips to the site are not new trips on PCH. It is anticipated that visitors would be diverting trips on PCH to Dan Blocker Beach rather than driving to other beaches in the area. Thus, no increase in vehicle noise would occur if these vehicle trips are currently part of the daily volumes on PCH.

(Sources: Malibu General Plan, Site Survey, Caltrans Freeway Traffic Volumes, FHWA, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, and Site Location Map)

B. Would the project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact. On-site construction activities would create noise from construction equipment and vibration from excavation and grading activities. Temporary construction noise would vary in level according to the type of construction equipment and activity level. Short-term construction noise impacts tend to occur in separate phases, with large, earth-moving equipment generating greater noise and finish construction activities and equipment generating less noise.

Due to the limited scope of improvements and the use of finished components (tables, drinking fountains, signs, railing, plaque, parking meters, and trash receptacles), construction noise is not expected to be significant. In addition, construction activities would be short term and would comply with the construction noise time limits imposed by the City of Malibu. Thus, noise impacts on adjacent residents would be short term and less than significant.

(Sources: Site Survey, Malibu General Plan, Site Location Map)

C. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. Vehicle trips associated with the proposed project would not lead to any perceptible increase in noise levels along PCH. Also, since the vehicle trips to and from the site are likely existing trips diverted from other beaches, no increase in vehicle noise levels on PCH would be expected.

Noises from on-site activities are expected to be limited to noise from parking vehicles and the use of picnic tables and toilets. These activities generally do not create excessive noise that may disturb adjacent residents. In addition, outdoor activities (such as those that would occur at Dan Blocker Beach) are exempt from existing noise regulations. The beach would also be closed from dusk to dawn, confining any on-site noise generation to the daytime hours.

(Sources: Site Survey, Site Location Map, and FHWA Noise Prediction Model)

D. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. The proposed project would involve construction activities, which may lead to periodic increases in noise levels during the construction period. However, construction noise would be limited due to the type of improvements proposed. Noise from the breaking waves on the beach and traffic noise on PCH would mask some of the construction noise. Compliance with existing noise regulations of the City of Malibu would minimize construction noise impacts.

The increase in noise levels resulting from increased visitors to the site has the potential to affect adjacent residents. However, the availability of parking and direct beach ADA access at the site would eliminate the use of private stairways and on-street parking at the adjacent homes. Thus, while noise impacts may occur at the site, the more direct noise and nuisance impacts at adjacent residences would be eliminated and directed to the site. This impact would generally be confined to warm, sunny days and from dusk to dawn and is considered less than significant.

(Sources: Site Location Map and Site Survey)

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no airports located near the site. The nearest airport is the Santa Monica Airport in the City of Santa Monica. This airport is located approximately 15 miles southeast of the site. The noise contours of this airport do not extend into the project site. The proposed beach improvements would not expose people to excessive noise levels associated with aircraft and airport operations.

(Sources: Site Survey, Malibu General Plan, and Thomas Guide for Los Angeles County)

F. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no private airstrips located near the site which may expose beachgoers to excessive aircraft noise levels. The proposed project would not increase on-site exposure to aircraft noise.

(Sources: Site Survey, Thomas Guide for Los Angeles County, and Malibu General Plan)

3.13 POPULATION AND HOUSING

The project site is located within Los Angeles County, which currently has an estimated population of 10,363,850 according to the California Department of Finance. According to the County General Plan, the County was estimated to have a population of 9,900,000 in the year 2010. This is an increase of 1,691,000 persons from the year 1987 to the year 2010. In 1987 the County had a housing stock of approximately 3,023,500 and is estimated to have a housing stock of 3,702,500 by the year 2010. The housing stock is estimated to have a 22.5 percent change from the year 1987 to the year 2010.

The project site is located within the City of Malibu. The current resident population of Malibu is estimated to be approximately 13,700 residents by the California Department of Finance, and the housing stock approximately totals 6,126 units. Population growth from 1980 to 1990 occurred at a rate of 12.6 percent.

There are no housing units on the project site. Residences are located to the immediate east of the project site and further down the coast to the west of the project site.

(Sources: City of Malibu website, Malibu General Plan, LACounty.gov, and Site Survey)

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of road or other infrastructure)?	☐	☐	☐	■
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■

A. Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The proposed project does not involve the construction of any new homes or businesses. The project has been designed to meet the demand for use of Dan Blocker Beach. Some potential does exist for an increase in the number of visitors to the site and surrounding area due to its increased accessibility. This increase would not be considered significant, and no impacts are expected to occur.

(Sources: Malibu General Plan and Site Survey)

B. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The site is currently vacant open space. No housing units would be demolished; no residential displacement would occur as a result of the project.

(Sources: Malibu General Plan, LACounty.gov, and Site Survey)

C. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The project site is vacant and the proposed project would not displace any households or residents in the area. No households would be displaced and no replacement housing is needed for the proposed project.

(Sources: Malibu General Plan and Site Survey)

3.14 PUBLIC SERVICES

The Los Angeles County Fire Department provides fire protection service to the City of Malibu. There are four stations that serve the City of Malibu including Station No.'s 70, 71, 88 and 99. The nearest station to the project site is Station 88, located at 23720 W. Malibu Road. This station is located approximately 2.5 miles east of the project site. Other fire stations in the area may also respond to the site according to need and type of emergency. There are no plans for new stations in the area. The Ventura County Fire Department and United States Park Service provide fire prevention services to the Santa Monica Mountains. The fire hazards in the area are principally brush fires. There is currently a Brush Inspection Program that requires homeowners and businesses to remove the brush from close to their properties.

The proposed site along with the City of Malibu is served by the Los Angeles County Sheriff's Department. The Sheriff operates a station in the Lost Hills area, north of the City of Malibu. The Lost Hills Sheriff's Station provides law enforcement and police protection services for the project site and the surrounding area. An estimated average response time for the general area is 6.1 minutes; however, this period would be reduced due to the central location of the project site.

The crime rate in the vicinity of the project site is currently low. As Malibu is primarily a residential community, the main crimes are burglary, traffic and tourist-related crimes. The main crimes committed in the project area are thefts related to wallets and purses left on the beach and unlocked vehicles. There are regular beach patrols on Latigo Canyon and Corral Canyon, in proximity to the site.

(Sources: Site Survey, Lost Hills Police Station, Station 88 and Malibu General Plan).

Issues:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
PUBLIC SERVICES. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives regarding fire protection?	☐	☐	■	☐
b) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could	☐	☐	■	☐

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives regarding police protection?				
c) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives regarding schools?	☐	☐	☐	■
d) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives regarding park facilities?	☐	☐	■	☐
e) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives regarding other public facilities?	☐	☐	☐	■

A. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives in terms of fire protection?

Less than Significant Impact. The proposed project would increase the demand for fire protection services in case of a fire emergency. The nearest station to the project site is Station 88, located 2.5 miles east from the project site at 23720 W. Malibu Road. There are five firefighters, one fire engine and one paramedic rescue located at Station 88. An average response time to the site is estimated to be four to six minutes. Compliance with the requirements of the Uniform Fire Code for fire safety and fire emergency response would be implemented as part of the project. Impacts on fire protection services would be less than significant.

(Sources: Station 88 – Malibu Fire Prevention and Site Location Map)

B. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives in terms of police protection?

Less than Significant Impact. The Lost Hills Sheriff's Station in Malibu provides law enforcement and police protection services for the project site and the surrounding area. An estimated average response time for the general area is 6.1 minutes; however, this period would be reduced due to the central location of the project site. The demand for police protection services in the area is not expected to significantly increase with the proposed development at Dan Blocker Beach. A need to alter or expand police service in the area is not anticipated as a result of the project. The project would not have an adverse effect on existing police services or response times.

(Sources: Site Location Map and Lost Hills Police Station, Malibu)

C. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives in terms of school services?

No Impact. The project would not involve housing development and thus, no increase in the student population would occur as a result of the project. The proposed project would not impact school services.

(Sources: Malibu General Plan and Site Location Map)

D. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives in terms of parks?

Less than Significant Impact. Dan Blocker Beach is used by beachgoers for swimming, surfing, and other recreational activities. The project site is fenced off and is not currently used by visitors to Dan Blocker Beach. The nearest park facilities to the project site include Malibu Bluff State Park, Malibu Lagoon Sate Beach, Corral Canyon Park, Point Dume State Beach and Malibu Community Center. The proposed project would increase the number of visitors to Dan Blocker Beach. The increase in visitors to the beach in the project vicinity is not expected to significantly alter Dan Blocker Beach or the nearby park facilities and is considered less than significant.

(Sources: Thomas Guide for Los Angeles County, Malibu General Plan, Los Angeles County General Plan and Site Survey)

E. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives in terms of other public facilities?

No Impact. The project is not expected to create a demand for other public facilities. The Malibu Library, a branch of the Los Angeles County library system, is located at 23519 Civic Center Way. The library is approximately 2.5 miles east of the project site. There is also a community center located at Point Dume, approximately four miles south-west of the project site. The visitors that would use the proposed project development are not expected to significantly impact the library or civic center facilities.

(Sources: Malibu General Plan, Site Survey, and Site Location Map)

3.15 RECREATION

The project site is located in Los Angeles County. The beach environment of Los Angeles County is a very important recreational resource and has millions of visitors every year. The beaches of Los Angeles County are some of the most popular in the State, and a high demand exists for a range of beach-related recreational activities.

There are several park facilities close to the project site including Malibu Bluff State Park, Malibu Lagoon Beach, Corral Canyon Park, Point Dume Beach and Malibu Community Center. Point Dume Beach, located approximately three miles southwest of the project site and encompasses 30 acres, including Point Dume Natural Reserve. The Point Dume Beach is designated as an area of special biological significance and includes 200-foot sandy bluffs, tide pools, offshore reefs and a kelp bed, creating a habitat for seal and marine fowl. Malibu Community Center, also located at Point Dume, is a 6.5-acre park with children's play equipment, volleyball, tennis and basketball courts. Malibu Bluff State Park, located approximately one mile east of the project site is heavily used by local residents and considered a community park. Its facilities include hiking trails, picnicking, soccer and baseball fields and a jogging track. Malibu Lagoon Beach is approximately 3.5 acres in total and is located just east of the Malibu Civic Center, about 2.5 miles east of Dan Blocker Beach. It provides restrooms, hiking and nature trails with disabled access. The lagoon is also an important bird refuge and is supported by diverse marsh vegetation. To the immediate east of Malibu Lagoon Beach is Surfrider Beach, a widely recognized surf beach renowned for the hollow peeling Malibu wave formed by the cobble contours of the ocean's floor. Corral Canyon Park is located on PCH between Puerco Canyon and Corral Canyon, and less than 0.5 of a mile east of the project site. The park, managed by Santa Monica Conservancy provides hiking, equestrian trails and parking.

The City of Malibu makes up the major part of the coastal section of the Santa Monica Mountains National Recreation Area (SMMNRA), which is comprised of State, County and federally owned park lands. It extends from Griffith Park in the City of Los Angeles to Point Mugu in Ventura County. The lands are both privately and publicly owned and accessible to the public.

A trail system located in close proximity is also developed by the Santa Monica Mountains Trail Council (SMMTC). The Corral Canyon Trail, located immediately north of the project site, is the closest part of the trail network to the proposed project.

Dan Blocker Beach provides opportunities for a variety of ocean and beach oriented recreational activities. These activities include swimming, sunbathing, picnicking, surf fishing, scuba diving and jogging. These recreational activities occur all year; however, the majority of beachgoers visit the beach during the summer months. Activities such as wildlife observation and contemplation are most common on the beach during the winter. The rock formations projecting from portions of the beach prevent activities such as boating and surfing.

(Sources: Site Survey, Malibu General Plan, and Vicinity Map)

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
RECREATION. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	■	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which have an adverse physical effect on the environment?	☐	☐	■	☐

A. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than Significant Impact. The proposed project includes the construction of a parking area, beach access in the form of an ADA ramp, park site amenities and a possible restroom facility. Park site amenities may include picnic tables, bench seating and walkways. It is not expected that the development would cause a major increase in the use of existing neighborhood or regional parks. Currently, visitors to the beach located south of the site and west down the coast park along PCH and access the beach through private stairways located at the nearby residential developments west and east of the site. Additionally, visitors to the beach near the project vicinity hike down the steep bluff faces located west of the project site. As a result of the proposed development (safe ADA access, available parking and park site amenities), more people may visit Dan Blocker Beach. The possible increase in beachgoers is not expected to significantly alter or impact Dan Blocker Beach and is considered less than significant.

(Sources: Site Survey, Site Location Map and Malibu General Plan)

B. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less Than Significant Impact. Dan Blocker Beach is a popular recreational destination for beach-goers and surfers. The project has been designed to integrate with the existing environment through the planting of native species in the landscaped areas. As analyzed in this initial study, the proposed project would impact air quality, biology, geological resources and hydrology. However, these impacts can be reduced through mitigation listed in Sections 3.3 Air Quality, 3.4 Biological Resources, 3.6 Geology and Soils, and 3.9 Hydrology and Water Quality of this Initial Study. The purpose of the project is to meet the public demand for beach access and parking and therefore, would not necessitate the construction or expansion of recreational facilities in the future.

(Sources: Site Survey and Malibu General Plan)

3.16 TRANSPORTATION/TRAFFIC

A Traffic Memorandum has been prepared for the project to analyze the potential impacts of the proposed facility on traffic, circulation, and transportation, and determine what if any additional traffic analysis is required. This memorandum is provided in Appendix E and the findings are summarized below. Based on the results of the memorandum, preparation of a Traffic Impact Analysis is not warranted pursuant to the County of Los Angeles Department of Public Works Traffic Impact Analysis Report Guidelines, since less than 500 trips per day is estimated to be generated by the proposed project.

The proposed project site is located within Los Angeles County and the City of Malibu. Roadways in the area include:

Pacific Coast Highway (State Route 1) is a four-lane state highway traveling in an east to west direction along the Pacific Coast. The Pacific Coast Highway (PCH) is approximately 25 miles long through the City of Malibu with a posted speed limit of 45 MPH and 55 MPH. PCH is the major arterial within the City of Malibu and serves mostly commuters during weekday peak hours. In the summer months, it also serves as an access route to the beaches along the coast.

Corral Canyon Road is a two-lane north-south arterial connecting the Santa Monica Mountains National Recreation Area, located north of the City of Malibu with Dan Blocker Beach and Solstice Canyon Park. Farther north, the road provides access to Malibu Creek State Park, where the road terminates.

Latigo Canyon Road is a two-lane roadway oriented in the southeast/northwest direction. It begins at PCH and goes northwest across the Santa Monica Mountains, meeting Kanan Dume Road near the intersection at Mulholland Highway. This road serves mostly residents of Latigo Canyon. The posted speed limit varies from 10 to 20 MPH.

The project site is located approximately 15 miles west of the Santa Monica Municipal Airport and approximately 17 miles southwest of Van Nuys Airport. The site is located outside the designated FAA clear zones and safety zones of the airports.

The City of Malibu is currently served by the Los Angeles County Metropolitan Transit Authority (MTA), which operates an inner city express bus route from Los Angeles to Trancas Canyon Road. Route 534 service runs on mixed headways generally from 6:00 AM – 10:00 PM Monday thru Sunday. The route mainly follows PCH, serving the project site and passing through Malibu Civic Center on the way to downtown Los Angeles.

PCH is designated as a bike route. A series of pedestrian trails are planned throughout the City of Malibu and in the project vicinity by the Santa Monica Mountains Trail Council. The Corral Canyon Trail runs through Corral Canyon and would connect to the Coastal Slope Trail and as well as the Solstice Canyon Trail. The Coastal Slope Trail is designated to be located north of the project site. The Solstice Canyon Trail is also designated to be located north of the project site and would terminate at the coast in close proximity to the project site.

(Sources: Site Survey, Los Angeles County General Plan, LA County Department of Public Works Traffic Impact Analysis Report Guidelines, MTA, and Traffic Memorandum)

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	■	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	■
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	■
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	■	☐
e) Result in inadequate emergency access?	☐	☐	☐	■
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	■

A. Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less than Significant Impact. Implementation of the proposed project would contribute to long-term increases in vehicle trips on the surrounding street network and short-term increases in traffic during construction.

Construction Traffic

The proposed project would lead to additional vehicle and equipment trips during construction activities. This increase in traffic would be temporary and would not significantly impair the performance of the circulation system. Construction activities are not anticipated to interfere with traffic on PCH with implementation of standard conditions that include preparation of a traffic control plan or similar type of construction traffic management plan. In accordance with the Standard Specifications for Public Works Construction (Greenbook), barriers, guards, lights, signs, temporary bridges, flag persons and watch persons would be provided during construction as applicable to promote traffic safety and convenience. Traffic impacts during construction would therefore be less than significant.

Project Traffic

Vehicle trips would be generated by the proposed beach project. The traffic memo prepared for the project estimates that as many as 240 total daily trips would be generated by the proposed project. According to the traffic memo, it is expected that many of the project trips may be trips diverted from adjacent beaches due to the availability of on-site parking. Assuming regular turnover of the parking spaces throughout the day, the project would be expected to generate 240 total daily trips with approximately 20 hourly trips.

The proposed parking improvements would not be expected to generate additional trips during the weekday AM and PM commuter peak periods. In addition, the project would not attract trips during periods of inclement weather. Instead, the project site would be expected to generate the most traffic during summer weekends on sunny days, or on days of good surf. In general, access improvements to the beach, paving of walkways, and the possible addition of picnic tables and restroom facilities would not be expected to increase traffic or impact the performance of the circulation system since similar facilities are available at adjacent beaches. In some capacity, the project may reduce travel times for beachgoers and surfers from the Los Angeles area by providing more convenient park facilities nearer to the urban core, thus slightly reducing traffic congestion.

Because of the raised median island on PCH, left turns into or out of the site would not be feasible. Vehicle movements would be restricted to right turns into the parking area, right turns out of the parking area. Parking along the shoulder of PCH adjacent to Dan Blocker Beach and west of the project site would not be allowed. Parking would also not be allowed along the shoulder located adjacent to the proposed parking lot. While some of the increased trips would be expected to make U-turns at the Latigo Canyon and Corral Canyon intersections, the relative volume would be small, and would not be expected to create adverse operating conditions.

During the peak summer months, PCH is heavily used on weekends; however, an increase of 20 hourly trips during weekend hours would not be expected to have capacity impacts at PCH or cross-mountain roadways like Kanan-Dume Road or Malibu Canyon Road. The proposed project would also not conflict with mass transit or other non-motorized travel along the PCH corridor. Therefore, associated traffic impacts are less than significant and no further analysis is required.

(Sources: Site Survey, City of Malibu General Plan, Los Angeles County General Plan and Traffic Memo).

B. Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

No Impact. Due to the scope of the proposed project, the project is not subject to land use analysis pursuant to the Congestion Management Program (CMP) for Los Angeles County. Nevertheless, the project's impact on the CMP system has been considered and no conflict would occur. The CMP arterial monitoring intersections nearest to the project site are PCH/Kanan Dume Road and PCH/Malibu Canyon Road. According to Level of Service (LOS) data contained in the Draft 2010 Congestion Management Program for Los Angeles County, both of these intersections operate at acceptable LOS levels. PCH/Kanan Dume Road operates at LOS B during AM and PM peak hours. PCH/Malibu Canyon Road operates at LOS C during AM and PM peak hours. As noted, the proposed project would generate the most hourly trips (20) on the weekend and during the summer months. During the peak summer months, PCH is heavily used on weekends and an increase of 20 hourly trips during the sunshine hours would not be expected to result in capacity impacts on CMP monitored intersections. Project traffic would occur mainly outside the peak commute hours when the parking area is expected to be most fully utilized. Moreover, the minimal traffic estimated to be generated by the proposed project is not expected to significantly affect CMP arterial monitoring intersections by adding 50 or more tips during the AM or PM peak weekday hours. Therefore, no associated impacts would occur and no further analysis is required.

(Sources: Malibu General Plan, Traffic Memorandum, 2010 Draft Congestion Management Program for Los Angeles County)

C. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The project site is located approximately 15 miles west of the Santa Monica Municipal Airport and approximately 17 miles southwest of Van Nuys Airport. The site is located outside the designated FAA clear zones and safety zones of the airports. The proposed project would not involve air transportation nor would it affect air traffic at the surrounding airports. Thus, no impact on air traffic patterns would occur with the project. The project site is not located within the approach zones for the nearby airports. Thus, no impact on air traffic patterns is expected.

(Sources: Site Survey and Los Angeles General Plan)

D. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant Impact. Access to the project site would be provided via a one-way driveway from PCH on the western end. The project design would include the use of existing through lanes to decelerate into the entrance. Caltrans has determined through coordination with the Department of Public Works that a deceleration and/or acceleration land would not be required for the project (Figure 6, *Parking Lot Ingress and Egress*). As discussed in the project description, to maintain proper sight distance at the parking lot exit, parking would be restricted with diagonal striping on the shoulder in front of the parking area and landscaping between the proposed parking lot and PCH would be limited to low growing plants only. Moreover, traffic directional signage would be provided to regulate vehicle movement from PCH and the proposed project site and an optional standard approved guardrail may be constructed between PCH along the proposed project site.

Because of the raised median island on PCH, left turns into or out of the site would not be feasible. Vehicle movements would be restricted to right turns into and out of the parking area. The movement of vehicles exiting and/or entering the parking area is not expected to create a significant impact and is considered less than significant.

(Sources: Site Survey and Traffic Memorandum)

E. Would the project result in inadequate emergency access?

No Impact. Adequate emergency vehicle access would be provided to the site via the proposed on-site driveways. The proposed project would not alter emergency access to properties surrounding the site. Thus, emergency access to the site or to adjacent uses would not be affected by the proposed project.

(Sources: Site Location Map and Site Survey)

F. Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

No Impact. The City of Malibu is currently served by the Los Angeles County Metropolitan Transit Authority (MTA), which operates an inner city express bus route from Los Angeles to Trancas Canyon Road. The route mainly follows PCH, serving the project site and passing through Malibu Civic Center on the way to downtown Los Angeles. Additionally, paratransit services, for the disabled are provided locally within the City of Malibu.

PCH is designated as a bike route. The proposed project would not impact traffic on PCH and is not expected to interfere with the bike route on PCH. The proposed project would not impact any bus turnouts, bicycle racks, or otherwise conflict with adopted policies, plans, or programs supporting alternative transportation.

(Sources: Site Survey, Malibu General Plan, Los Angeles County General Plan and MTA)

3.17 UTILITIES AND SERVICE SYSTEMS

The proposed site is located within the County of Los Angeles and the City of Malibu. Water services are supplied to the City of Malibu by County Waterworks District No. 29 from the Metropolitan Water District of Southern California (MWD). Water is obtained from the State Water Project and the Colorado River. The closest water line to the site is a 10-inch water line that changes to an 8-inch water line, which runs along PCH. There are also several private wells that supply water within the City. However, since 1965, when water became available through the MWD, their usage has declined. The wells are still considered a valuable resource of inexpensive water for uses such as agriculture.

Solid waste disposal in the City of Malibu and areas including the project site is managed by four private hauling companies. All solid wastes are taken to the Calabasas Landfill, which is owned and operated by Los Angeles County Sanitation District. The landfill, as of 2006, has a remaining capacity of 16,900,400 cubic yards. It has an estimated closure date of January 1, 2028.

The Malibu area is served by the Southern California Edison Company, (SCE) which provide electricity from three primary stations and three secondary stations. The Southern California Gas Company provides natural gas. Telephone services are provided by General Telephone.

(Source: California Integrated Waste Management Board website, Site Survey and Malibu General Plan)

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	■	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	■	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	■	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	■	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	■
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	■	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	■	☐

A. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less than Significant Impact. The project would involve the development of a parking area, and would provide beach access in the form of a ramp, park site amenities and a possible restroom facility.

The Los Angeles County Department of Public Works has provided a recommendation for onsite wastewater treatment System for the proposed project in the event that restrooms are provided at the site. The recommendation was based on conceptual plans from Kimley Horn & Associates, geotechnical studies from Group Delta Consultants, Inc., and the Wave Run-Up Study by CMA. The recommendation concluded that a wastewater treatment system is feasible for the project. The possible wastewater treatment systems for the park would utilize a wastewater treatment system approved by the Regional Water Quality Control Board and Health Department with either leach fields located west of and adjacent to the park facility, or seepage pits located underneath the proposed parking lots. The wastewater treatment system would consist of either a Microseptec septic system or an Advantex septic system. The leach fields or seepage pits would feature 100% redundancy, essentially creating two leach fields (one primary and one backup), or four six foot diameter seepage pits (two primary and two backups). As the wastewater treatment systems would be approved by the Regional Water Quality Control Board and Health Department, impacts from onsite wastewater generation would be less than significant.

(Sources: Site Location Map and Project Description)

B. Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact. Restrooms at the site would be connected to an onsite wastewater treatment system approved by the Regional Water Quality Control Board and Health Department. The possible construction of restroom facilities along with a corresponding wastewater treatment system would constitute an expansion of wastewater treatment facilities. However, any wastewater treatment system would be limited to use for the project and would not have any effects outside of the site. The proposed project would not require connection to existing sewer lines. Impacts from the possible construction of an onsite wastewater treatment system would be less than significant.

(Sources: Project Site Plan and Malibu General Plan)

C. Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact. Currently, runoff from the proposed site runs over the bluff face and onto the beach below. The project would introduce additional impervious surfaces; therefore, the proposed project would slightly increase the amount of storm water generated on-site As discussed in Section 3.9, Hydrology and Water Quality, the proposed project would be subject to post-construction storm water requirements which includes specific requirements for post-construction storm water quantity controls (e.g., maximum amount of allowable impervious surface, runoff detention/retention basins) and quality controls (e.g., infiltration trenches, grass swales/channels). Considering the small size of the site (approximately 1/3 acre), and implementation of storm water controls, the proposed project would not be expected to result in the need to construct new facilities or require the expansion of existing facilities that could cause significant environmental effects to occur. Therefore, associated impacts are expected to be less than significant.

(Sources: Site Survey and Malibu General Plan)

D. Would the project have sufficient water supplies available from existing entitlements and resources, or are new or expanded entitlements needed?

Less than Significant Impact. The restroom facility, if constructed, would be hooked up to an onsite wastewater treatment system. Potable water would also be needed if a restroom facility with a wastewater treatment system is chosen for the project. Water services are supplied to the City of Malibu by County Waterworks District No. 29 from the MWD. Water is obtained from the State Water Project and the Colorado River. The site would be served by a 10-inch water line that connects to an 8-inch water line, which runs along PCH. The amount of water to serve the project site would be limited and is not expected to create significant impacts and is considered less than significant.

(Sources: Site Survey and Project Description)

E. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The proposed project would involve the development of a parking area, beach access in the form of an ADA ramp, park site amenities and a possible restroom facility. Restrooms at the site would be connected to an onsite wastewater treatment system approved by the Regional Water Quality Control Board and Health Department. Any possible wastewater treatment system would be limited to use for the project site and would not have any effect outside of the site. The proposed project would not require connection to existing sewer lines and would not be served by an outside wastewater treatment provider. Impacts to the capacity of existing wastewater treatment providers would not occur.

(Sources: Site Location Map, City of Malibu and Project Description)

F. Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than Significant Impact. As a result of the development, construction debris would be generated which would need to be disposed at area landfills. The new facilities at Dan Blocker Beach would also generate solid wastes. A substantial increase in the amount of waste being generated by the project is not anticipated due to the small scale of the proposed development. The Calabasas Landfill, located at off of Lost Hills Road) in the City of Calabasas, would serve the project and has the capacity to operate until 2028. The landfill is permitted to accommodate up to 8,668 tons per day. Thus, landfill capacity would not be adversely affected by the proposed project and is considered less than significant.

(Sources: California Integrated Waste Management Board website, Site Survey, Site Location Map, and G.I. Industries)

G. Would the project comply with federal, state, and local statutes and regulations related to solid waste?

Less than Significant Impact. Solid waste disposal in Malibu is managed by four private hauling companies. All solid wastes are taken to the Calabasas Landfill, which is owned and operated by Los Angeles County Sanitation District. This landfill has remaining capacity to operate until 2028. Solid waste from the project is expected to be limited to that generated by trash from the picnic areas and beach. Also, this solid waste generation is not expected to be substantial. Impacts on waste generation are not expected to be significant and no conflict with solid waste regulations is expected and is considered less than significant.

(Sources: California Integrated Waste Management Board website, Site Location Map, Malibu General Plan, and G.I. Industries)

3.18 MANDATORY FINDINGS OF SIGNIFICANCE

Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat or a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	■	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current project, and the effects of probable future projects.)	☐	■	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	■	☐	☐

The environmental analysis in Section 4 of this document indicates that the proposed *Dan Blocker Beach Project* may have the potential for significant adverse environmental impacts on a number of issue areas, including Air Quality, Biology, Geology and Soils, and Hydrology and Water Quality. Mitigation measures would be incorporated into the project, which would mitigate potentially significant adverse impacts to below a level of significance. The following findings can be made regarding the mandatory findings of significance set forth in Section 15065 of the CEQA Guidelines, as based on the results of this environmental assessment:

A. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat or a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less than Significant Impact with Mitigation. There is the potential for migratory birds to utilize the site. However, mitigation measures incorporated into the project would reduce potential adverse impacts to less than significant levels. With mitigation, the project will not reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or reduce the number or restrict the range of a rare or endangered plant or animal. The proposed project does not have the potential to impact buried cultural resources. The proposed project would not impact important examples of the major periods of California history or prehistory.

B. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current project, and the effects of probable future projects.)

Less than Significant Impact with Mitigation. The proposed project could contribute to cumulative effects associated with air quality, greenhouse gases, noise, traffic, and water quality. To evaluate the project's contribution to cumulative impacts, a list of past, approved, and pending projects in the project vicinity was identified. Projects listed in the cumulative analysis include the following:

- *20624 and 20630 Pacific Coast Highway Initial Study (City of Malibu)*: Coastal Development Permit to construct a 2,900 square foot single-family residence

- *Fire Station 71 Modernization (Los Angeles County)*: Fire station expansion from 2,260 to 5,800 square feet located at 28722 West Pacific Coast Highway in the City of Malibu

- *Lot Line Reconfiguration of Four Parcels, Seaboard Road Extension, and Construction of a New Single-Family Residence and Associated Development at 21100 Seaboard Road*: Coastal Development Permit, Variance, Site Plan Review, Lot Line Adjustment, Initial Study and EIR

- *Initial Study No. 06-010 and Mitigated Negative Declaration No. 10-002*: Tentative Parcel Map to subdivide one lot into four buildable lots and one remainder lot and demolition of an existing single-family residence at 6061 Galahad Drive

Air Quality

It is possible that construction of the project could coincide with construction of the cumulative projects in the project area. Even if construction activities were concurrent, the project's contribution to short-term, construction related air emissions would not be cumulatively considerable. As discussed in Section 3.3, Air Quality, air emissions generated during project construction would be relatively minor and substantially below the screening levels thresholds (refer to Table 4). Additionally, the cumulative projects would be subject to the same air quality thresholds and would be required to implement measures during construction, as required, to ensure that short-term air emissions would not be significant. Project construction, therefore, would not result in a significant cumulative air quality impact.

Greenhouse Gases

It is difficult to estimate impacts associated with GHG emissions of cumulative projects to assess the potential for cumulative impacts. Emissions for reasonably foreseeable future projects with related impacts are dependent on the individual project design, and cannot be determined at this time. As discussed in Section 3.7, Greenhouse Gas Emissions, the project would be consistent with the goals of AB 32. Therefore, because the project would be consistent with the goals of AB 32 of reducing GHG emissions to 1990 levels by 2020, the project's effect on GHG emissions would not be cumulatively considerable.

Hydrology and Water Quality

Implementation of the proposed project would require conformance with a number of regulatory requirements related to hydrology and water quality, including elements of NPDES and County storm water standards. Based on such conformance, all identified project-level hydrology and water quality impacts would be effectively avoided or addressed. As stated in section 3.6, Geology and Soils, mitigation to decrease erosion impacts will be implemented to reduce erosion impacts to a level of less than significant. Mitigation measures 3.6.E1 through 3.6.E6 would reduce any impacts associated with the runoff erosion to a level of less than significant.

Long-term operation and maintenance of the project would result in the generation of associated contaminants that could, in concert with other existing and future development projects, incrementally contribute to cumulative water quality issues. The project would include implementation of appropriate post-construction BMPs. These measures would ensure project conformance with applicable federal, state, and local regulatory standards related to water quality. Based on the above conformance and the fact that similar conformance also would be required for all identified cumulative projects, no substantial contribution to cumulative water quality impacts would result from implementation of the proposed project.

Noise

Project-level noise impacts would not be significant and have been evaluated in Section 3.12 above. It is possible that a cumulative increase in traffic noise could occur with project implementation and construction of nearby projects assuming an identical dispersion of vehicle trips on area roadways. However, similar to the proposed project, it is likely that vehicle trips that might be generated by cumulative projects would be minimal and/or would not be new trips. Imperceptible increases in vehicle noise would be generated by minor additions of vehicle trips and no increase in vehicle noise would occur if vehicle trips are currently part of the daily volumes on area roadways. Non-traffic noise generated by the project is negligible and would not substantially increase existing ambient noise levels in the project area when combined with non-traffic noise of the cumulative projects. Moreover, compliance with existing noise regulations of the City of Malibu and County of Los Angeles as applicable for all identified cumulative projects would minimize construction noise impacts. Therefore, the project would not contribute to cumulatively considerable noise impacts.

Traffic

Project-level traffic impacts would not be significant and have been evaluated in Section 3.16 above. It is possible that a minor cumulative increase in traffic could occur with project implementation and construction of nearby projects. However, the City of Malibu and surrounding area is relatively built-out and the cumulative projects identified would not likely lead to significant population or employment growth thereby creating a substantial increase in vehicle travel (commercial and industrial projects tend to be growth-inducing and generate many more vehicle trips than residential or passive-recreation projects). It is also likely that vehicle trips from cumulative projects are currently part of the daily volumes on area roadways. For these reasons, the project would not contribute to cumulatively considerable traffic impacts.

C. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant Impact with Mitigation. As discussed in Section 3.3, Air Quality, mitigation measures would be implemented to reduce air quality impacts associated with construction activities that could be harmful to humans. Implementation of the mitigation measures previously identified would reduce adverse health impacts on humans to below a level of significance.

FISH AND GAME DETERMINATION

Based on the information above, there is no evidence that the project has the potential for a change that would adversely affect wildlife resources or the habitat upon which the wildlife depends.

- ☐ Yes (Certificate of Fee Exemption)
- ■ No (Pay fee)

4.1 PREPARERS OF THE MND/INITIAL STUDY

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4.2 REFERENCES

The following references were used in the preparation of this MND/Initial Study and are available for review by the public at the offices of the Project Management Division of the Los Angeles County Department of Public Works at 900 South Fremont Avenue, in Alhambra, California 91803 or at the offices of David Evans and Associates at 110 West A Street, Suite 1700, San Diego, CA 92101 during normal business hours.

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4.3 PERSONS CONTACTED

City of Malibu, Andrew Ho
City of Malibu, Rick Morgan
City of Malibu, Florencio Signo
Department of Beaches & Harbors, Dean Smith
Department of Beaches & Harbors, Greg Woodell
G.I. Industries, Suzanne Suef
Lost Hills Sheriffs Station, Captain O'Brien
Malibu Fire Prevention, Inspector Monahan
Waterworks District No. 29 Malibu, Ben Oroomchi
U.S. Army Corps of Engineers, Regulatory Division - Los Angeles Office, Ken Wong

SECTION 5: MITIGATION MONITORING AND REPORTING PROGRAM

5.1 MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

In accordance with the California Environmental Quality Act (CEQA), the Los Angeles County Department of Public Works (Department) prepared a Mitigated Negative Declaration (MND) and Initial Study (IS) for the proposed Dan Blocker Beach project located on approximately 1.92 acres on a bluff top at Dan Blocker Beach. Dan Blocker Beach is located within the City of Malibu south of Pacific Coast Highway, north of the Santa Monica Bay and the Pacific Ocean, west of Corral Canyon Road, and east of Latigo Point.

The IS/MND indicated that the proposed project would result in the potential for significant environmental impacts associated with air quality, biological resources, geology and soils, hydrology and water quality, and utility and service systems. Mitigation measures have been incorporated into the project to reduce impacts to below a level of significance. The mitigation measures for the proposed project must be adopted by the County of Los Angeles, in conjunction with adoption of the MND/IS.

Section 21081.6 of the Public Resources Code (PRC) and CEQA Guidelines section 15097 require the Lead Agency for each project that is subject to the CEQA to monitor performance of the mitigation measures included in any environmental document to ensure that implementation does, in fact, take place. The PRC requires the Lead Agency to adopt a monitoring and reporting program for assessing and ensuring the implementation of required mitigation measures. Specific reporting and/or monitoring requirements that will be enforced during project implementation shall be adopted coincidental to final approval of the project by the responsible decision maker(s).

In accordance with PRC Section 21081.6, the Department has developed this Mitigation Monitoring and Reporting Program (MMRP) for the Dan Blocker Beach project. The purpose of the MMRP is to ensure that the proposed parking area, beach access, and park site amenities comply with all applicable environmental mitigation and permit requirements.

Mitigation measures incorporated into the proposed project include measures that would reduce short-term environmental impacts associated with construction activities on the site, as well as minimize impacts by restoring the affected environment. These measures will be implemented during grading and construction activities.

The monitoring table below lists the mitigation measures, which will be implemented as part of the project. Responsible parties, the time frame for implementation, and the monitoring parties are also identified. A column is provided for the monitoring party to sign-off on the implementation of each mitigation measure.

The Los Angeles County Department of Public Works is responsible for review of all monitoring actions, enforcement actions, and document disposition. The Los Angeles County Department of Public Works will rely on information provided by the monitor as accurate and up to date and will field check mitigation measure status as required.

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion Initials	 Date
Air Quality							
Measure 3.3.B1	***To reduce fugitive dust resulting from earth-moving activities during grading / construction activities:*** • ***Limit grading/soil disturbance to as small as an area as practical at any one time.*** • ***Apply soil stabilizers to inactive areas.*** • ***Prepare a high wind dust control plan and implement plan elements and terminate soil disturbance when winds exceed 25 mph.*** • ***Stabilize previously disturbed areas if subsequent construction is delayed.*** • ***Water exposed surfaces and haul roads 3 times per day.*** • ***Cover all stock piles with tarps.*** • ***Replace ground cover in disturbed areas as soon as feasible.*** • ***Reduce speeds on unpaved roads to less than 15 mph.***	Building Contractor	LA County Department of Public Works	Regular field inspections	During clearing, grading, and construction operations		

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion Initials	Date
Air Quality continued							
Measure 3.3.B2	***To reduce exhaust emissions from construction equipment and activities, the following measures shall be incorporated into all bid documents and implemented by the general contractor:*** • ***Require 90-day low-NO_X tune-ups for off-road equipment.*** • ***Limit allowable idling to 5 minutes for trucks and heavy equipment.*** • ***Utilize equipment whose engines are equipped with diesel oxidation catalysts if available.*** • ***Utilize diesel particulate filter on heavy equipment where feasible.***	Building Contractor	LA County Department of Public Works	Regular field inspections	During clearing, grading, and construction operations		
Measure 3.3.B3	***To reduce reactive organic gas emissions from construction activities, the use of low VOC coatings and high pressure-low volume sprayers shall be incorporated into all bid documents and implemented by the general contractor.***	Building Contractor	LA County Department of Public Works	Regular field inspections	During construction operations		

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion Initials	Date
Biological Resources							
Measure 3.4.A1	***Ground-disturbing and vegetation removal activities associated with construction of the project should be performed outside of the breeding season for birds, or between September 1 and January 31.*** ***If project construction activities cannot be implemented during this time period, the applicant shall retain a qualified biologist to perform pre-construction nest surveys to identify active nests within and adjacent to the project area up to 500 feet. If the pre-construction survey is conducted early in the nesting season (February 1- March 15) and nests are discovered, a qualified biologist may remove the nests only after it has been determined that the nest is not active, i.e., the nest does not contain eggs, nor is an adult actively brooding on the nest. Any active nests identified within the project area or within 300 feet of the project area should be marked with a buffer, and the buffer area would need to be avoided by construction activities until a qualified biologist determines that the chicks have fledged. The buffer area shall be 300 feet for non-raptor nests, and 500-feet for raptor nests. If the buffer area cannot be avoided during construction of the project, the project applicant should retain a qualified biologist to monitor the nests on a daily basis during construction to ensure that the nests do not fail as a result of noise generated by the construction. The biological monitor should have the authority to halt construction if the construction activities cause negative effects, such as adults abandoning the nest or chicks falling from the nest***	Building Contractor	LA County Department of Public Works	Regular field inspections	During construction operations		

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion Initials	Date
Geology and Soils							
Measure 3.6.E1	***Driveways and parking areas should be setback a minimum of 10 feet from the bluff face***	Site Designer	LA County Department of Public Works	Plan Check	Plan Check		
Measure 3.6.E2	***Fencing along the bluff face should be constructed to discourage foot traffic down the face of the bluff.***	Site Designer	LA County Department of Public Works	Plan Check	Plan Check		
Measure 3.6.E3	***During grading of the parking area, any gullies identified in the parking area or other areas to be developed should be filled with properly compacted soils and should be modified to drain any flows away from the bluff face.***	Building Contractor	LA County Department of Public Works	Regular field inspections	During clearing, grading, and construction operations		
Measure 3.6.E4	***Any areas between the new parking area and driveways that is not well vegetated should be planted with drought-tolerant vegetation to minimize interim erosion.***	Building Contractor	LA County Department of Public Works	Regular field inspections	During clearing, grading, and construction operations		
Measure 3.6.E5	***A sufficiently deep concrete pile or foundation system for a concrete landing for the access ramp should be constructed to prevent wave action and/or beach erosion.***	Site Designer	LA County Department of Public Works	Plan Check	Plan Check		

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion Initials	Date
Measure 3.6.E6	***The access ramp should be designed to accommodate ongoing marine and subaerial erosion process, which would sustain the integrity of the structure from any marine or subaerial erosion process.***	Site Designer	LA County Department of Public Works	Plan Check	Plan Check		
Geology and Soils continued							
Measure 3.6.F1	***The recommendations presented in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 should be followed.***	Site Designer / Building Contractor	LA County Department of Public Works	Plan Check / Regular field inspections	Plan Check / During clearing, grading, and construction operations		
Measure 3.6.F2	***Drill borings at the project site and soil samples should be taken of subgrade before final design of the ramp and parking area. After these samples are taken the recommendations in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 may be modified depending on the findings. If modified findings result from the samples they should than be implemented.***	Site Designer	LA County Department of Public Works	Plan Check	Plan Check		

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion Initials	Verification of Completion Date
Measure 3.6.H1	***In the event that a restroom with a wastewater treatment system is chosen for the final design for the Dan Blocker Beach Project, a suitability analysis of the soils supporting the use of the septic tanks, as well as the accompanying leach fields or seepage pits, shall be conducted prior to or concurrently with the acquisition of subgrade drill borings and soil samples as part of Mitigation Measure 3.6.F2. The suitability analysis shall include percolation tests at the exact location of the absorption field. Recommendations from the suitability analysis shall be incorporated into the wastewater treatment design.***	Site Designer	LA County Department of Public Works	Plan Check / performed prior to or concurrently with Measure 3.6.F2	Plan Check		
Hydrology and Water Quality							
N/A	***Regarding Hydrology and Water Quality, implementation of NPDES requirements, including but not limited to preparation of a drainage concept/SUSMP plan, and mitigation measures 3.6.E1 through 3.6.E6 to prevent erosion impacts, would reduce any impacts associated with hydrology and water quality to a level below significance.***	Site Designer / Building Contractor	LA County Department of Public Works	Plan Check / Regular field inspections	Plan Check / During clearing, grading, and construction operations		

Appendix I.A –
Air Quality Worksheets (2010)

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name:

Project Name: Dan Blocker Beach Project

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (tons/year unmitigated)	0.01	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17
2010 TOTALS (tons/year mitigated)	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17
Percent Reduction	0.00	14.93	0.00	0.00	0.00	84.58	83.85	0.00	84.61	84.32	0.00
2011 TOTALS (tons/year unmitigated)	0.05	0.25	0.21	0.00	0.05	0.02	0.07	0.01	0.02	0.03	32.94
2011 TOTALS (tons/year mitigated)	0.05	0.22	0.21	0.00	0.03	0.01	0.03	0.01	0.00	0.01	32.94
Percent Reduction	0.00	11.92	0.00	0.00	47.66	72.72	54.72	47.31	72.79	63.40	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.06	0.00	0.28	0.00	0.00	0.00	0.51

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.29	0.45	3.64	0.00	0.68	0.13	390.83

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.35	0.45	3.92	0.00	0.68	0.13	391.34

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

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	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	0.01	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17
Demolition 12/20/2010-12/31/2010	0.01	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.71
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
2011	0.05	0.25	0.21	0.00	0.05	0.02	0.07	0.01	0.02	0.03	32.94
Fine Grading 01/03/2011-01/14/2011	0.01	0.06	0.03	0.00	0.05	0.00	0.05	0.01	0.00	0.01	6.37
Fine Grading Dust	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.01	0.06	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.91
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
Asphalt 01/17/2011-01/21/2011	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.62
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.40
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86
Building 01/24/2011-02/18/2011	0.03	0.15	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	21.94
Building Off Road Diesel	0.02	0.11	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.31
Building Vendor Trips	0.00	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.26
Building Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.37

Phase Assumptions

Phase: Demolition 12/20/2010 - 12/31/2010 - Clear and Grub
Building Volume Total (cubic feet): 0
Building Volume Daily (cubic feet): 0
On Road Truck Travel (VMT): 0
Off-Road Equipment:
1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Fine Grading 1/3/2011 - 1/14/2011 - Default Fine Site Grading/Excavation Description
Total Acres Disturbed: 1.92
Maximum Daily Acreage Disturbed: 0.48
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 0
Off-Road Equipment:
1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/17/2011 - 1/21/2011 - Default Paving Description
Acres to be Paved: 0.48
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day
1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day
1 Pressure Washers (1 hp) operating at a 0.6 load factor for 8 hours per day

1 Pumps (53 hp) operating at a 0.74 load factor for 2 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/24/2011 - 2/18/2011 - Type Your Description Here

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17
Demolition 12/20/2010-12/31/2010	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.17
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.71
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47

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2011	0.05	0.22	0.21	0.00	0.03	0.01	0.03	0.01	0.00	0.01	32.94
Fine Grading 01/03/2011-01/14/2011	0.01	0.05	0.03	0.00	0.02	0.00	0.03	0.01	0.00	0.01	6.37
Fine Grading Dust	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.91
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
Asphalt 01/17/2011-01/21/2011	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.62
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.40
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86
Building 01/24/2011-02/18/2011	0.03	0.13	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.94
Building Off Road Diesel	0.02	0.09	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.31
Building Vendor Trips	0.00	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.26
Building Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.37

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Demolition 12/20/2010 - 12/31/2010 - Clear and Grub

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

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For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Fine Grading 1/3/2011 - 1/14/2011 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Trenchers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Trenchers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 1/17/2011 - 1/21/2011 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pumps, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pumps, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 1/24/2011 - 2/18/2011 - Type Your Description Here

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Air Compressors, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Air Compressors, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

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NOX: 15%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings	0.04						
TOTALS (tons/year, unmitigated)	0.06	0.00	0.28	0.00	0.00	0.00	0.51

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Dan Blocker Beach	0.29	0.45	3.64	0.00	0.68	0.13	390.83
TOTALS (tons/year, unmitigated)	0.29	0.45	3.64	0.00	0.68	0.13	390.83

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Season: Annual

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Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Dan Blocker Beach		125.00	acres	1.92	240.00	2,153.52
					240.00	2,153.52

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.6	0.8	99.0	0.2
Light Truck < 3750 lbs	7.3	2.7	94.6	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.6	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	64.3	35.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Dan Blocker Beach				2.0	1.0	97.0

Operational Changes to Defaults

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name:

Project Name: Dan Blocker Beach Project

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

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Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	1.20	9.85	4.93	0.00	0.00	0.51	0.51	0.00	0.47	0.47	1,034.48
2010 TOTALS (lbs/day mitigated)	1.20	8.38	4.93	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,034.48
2011 TOTALS (lbs/day unmitigated)	3.03	17.21	14.16	0.01	9.60	1.45	10.45	2.01	1.33	2.78	2,193.87
2011 TOTALS (lbs/day mitigated)	3.03	14.81	14.16	0.01	4.98	0.39	5.11	1.04	0.36	1.16	2,193.87

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.36	0.02	1.55	0.00	0.01	0.01	2.81

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.51	2.29	20.16	0.02	3.72	0.72	2,211.43

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.87	2.31	21.71	0.02	3.73	0.73	2,214.24

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 12/20/2010-12/31/2010 Active Days: 10	1.20	9.85	4.93	0.00	0.00	0.51	0.51	0.00	0.47	0.47	1,034.48
Demolition 12/20/2010-12/31/2010	1.20	9.85	4.93	0.00	0.00	0.51	0.51	0.00	0.47	0.47	1,034.48
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	1.18	9.80	4.14	0.00	0.00	0.51	0.51	0.00	0.46	0.46	941.18
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.02	0.05	0.79	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.30
Time Slice 1/3/2011-1/14/2011 Active Days: 10	1.76	12.51	6.67	0.00	**9.60**	0.84	**10.45**	**2.01**	0.78	**2.78**	1,274.89
Fine Grading 01/03/2011-01/14/2011	1.76	12.51	6.67	0.00	9.60	0.84	10.45	2.01	0.78	2.78	1,274.89
Fine Grading Dust	0.00	0.00	0.00	0.00	9.60	0.00	9.60	2.00	0.00	2.00	0.00
Fine Grading Off Road Diesel	1.74	12.47	5.93	0.00	0.00	0.84	0.84	0.00	0.77	0.77	1,181.61
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28
Time Slice 1/17/2011-1/21/2011 Active Days: 5	**3.03**	**17.21**	12.70	0.00	0.02	**1.45**	1.47	0.01	**1.33**	1.34	1,849.46
Asphalt 01/17/2011-01/21/2011	3.03	17.21	12.70	0.00	0.02	1.45	1.47	0.01	1.33	1.34	1,849.46
Paving Off-Gas	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.62	16.09	9.65	0.00	0.00	1.40	1.40	0.00	1.29	1.29	1,361.39
Paving On Road Diesel	0.08	0.97	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	146.06
Paving Worker Trips	0.08	0.16	2.68	0.00	0.02	0.01	0.03	0.01	0.01	0.01	342.01

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Time Slice 1/24/2011-2/18/2011 Active Days: 20	2.87	14.65	**14.16**	**0.01**	0.05	1.12	1.17	0.02	1.03	1.05	**2,193.87**
Building 01/24/2011-02/18/2011	2.87	14.65	14.16	0.01	0.05	1.12	1.17	0.02	1.03	1.05	2,193.87
Building Off Road Diesel	2.44	10.75	8.06	0.00	0.00	0.96	0.96	0.00	0.88	0.88	1,030.62
Building Vendor Trips	0.32	3.70	2.68	0.01	0.03	0.15	0.18	0.01	0.14	0.15	726.38
Building Worker Trips	0.11	0.20	3.43	0.00	0.02	0.01	0.03	0.01	0.01	0.02	436.86

Phase Assumptions

Phase: Demolition 12/20/2010 - 12/31/2010 - Clear and Grub

Building Volume Total (cubic feet): 0

Building Volume Daily (cubic feet): 0

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Fine Grading 1/3/2011 - 1/14/2011 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 1.92

Maximum Daily Acreage Disturbed: 0.48

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/17/2011 - 1/21/2011 - Default Paving Description

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Acres to be Paved: 0.48

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

1 Pressure Washers (1 hp) operating at a 0.6 load factor for 8 hours per day

1 Pumps (53 hp) operating at a 0.74 load factor for 2 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/24/2011 - 2/18/2011 - Type Your Description Here

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

8/27/2010 2:35:23 PM

Time Slice 12/20/2010-12/31/2010 Active Days: 10	1.20	8.38	4.93	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,034.48
Demolition 12/20/2010-12/31/2010	1.20	8.38	4.93	0.00	0.00	0.08	0.08	0.00	0.07	0.07	1,034.48
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	1.18	8.33	4.14	0.00	0.00	0.08	0.08	0.00	0.07	0.07	941.18
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.02	0.05	0.79	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.30
Time Slice 1/3/2011-1/14/2011 Active Days: 10	1.76	10.64	6.67	0.00	4.98	0.13	5.11	1.04	0.12	1.16	1,274.89
Fine Grading 01/03/2011-01/14/2011	1.76	10.64	6.67	0.00	4.98	0.13	5.11	1.04	0.12	1.16	1,274.89
Fine Grading Dust	0.00	0.00	0.00	0.00	4.97	0.00	4.97	1.04	0.00	1.04	0.00
Fine Grading Off Road Diesel	1.74	10.60	5.93	0.00	0.00	0.13	0.13	0.00	0.12	0.12	1,181.61
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28
Time Slice 1/17/2011-1/21/2011 Active Days: 5	3.03	14.81	12.70	0.00	0.02	0.26	0.28	0.01	0.24	0.25	1,849.46
Asphalt 01/17/2011-01/21/2011	3.03	14.81	12.70	0.00	0.02	0.26	0.28	0.01	0.24	0.25	1,849.46
Paving Off-Gas	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.62	13.69	9.65	0.00	0.00	0.21	0.21	0.00	0.20	0.20	1,361.39
Paving On Road Diesel	0.08	0.97	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	146.06
Paving Worker Trips	0.08	0.16	2.68	0.00	0.02	0.01	0.03	0.01	0.01	0.01	342.01

Time Slice 1/24/2011-2/18/2011 Active Days: 20	2.87	13.18	**14.16**	**0.01**	0.05	0.39	0.44	0.02	0.36	0.37	**2,193.87**
Building 01/24/2011-02/18/2011	2.87	13.18	14.16	0.01	0.05	0.39	0.44	0.02	0.36	0.37	2,193.87
Building Off Road Diesel	2.44	9.28	8.06	0.00	0.00	0.23	0.23	0.00	0.21	0.21	1,030.62
Building Vendor Trips	0.32	3.70	2.68	0.01	0.03	0.15	0.18	0.01	0.14	0.15	726.38
Building Worker Trips	0.11	0.20	3.43	0.00	0.02	0.01	0.03	0.01	0.01	0.02	436.86

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Demolition 12/20/2010 - 12/31/2010 - Clear and Grub

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Fine Grading 1/3/2011 - 1/14/2011 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Trenchers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Trenchers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 1/17/2011 - 1/21/2011 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pumps, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pumps, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 1/24/2011 - 2/18/2011 - Type Your Description Here

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Air Compressors, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Air Compressors, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	0.24						
TOTALS (lbs/day, unmitigated)	0.36	0.02	1.55	0.00	0.01	0.01	2.81

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Dan Blocker Beach	1.51	2.29	20.16	0.02	3.72	0.72	2,211.43
TOTALS (lbs/day, unmitigated)	1.51	2.29	20.16	0.02	3.72	0.72	2,211.43

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2011 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

8/27/2010 2:35:23 PM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Dan Blocker Beach		125.00	acres	1.92	240.00	2,153.52
					240.00	2,153.52

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.6	0.8	99.0	0.2
Light Truck < 3750 lbs	7.3	2.7	94.6	2.7
Light Truck 3751-5750 lbs	23.0	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.6	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	64.3	35.7	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Dan Blocker Beach				2.0	1.0	97.0

Operational Changes to Defaults

Appendix I.B –
Biological Resource Reports (2009)

SWCA
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Pasadena Office
625 Fair Oaks Avenue, Suite 190
South Pasadena, CA 91030
Tel 626.240.0587 Fax 626.240.0607
www.swca.com

April 7, 2009

Mr. Ryan Birdseye
David Evans and Associates
Via e-mail to: Rybi@deainc.com

RE: Biological Resources Conditions Update for the Dan Blocker Beach Improvement Project, Malibu, Los Angeles County, California

Dear Mr. Birdseye:

SWCA Environmental Consultants (SWCA) was hired by David Evans and Associates, Inc. (DEA) to perform a biological resources conditions update for the Dan Blocker Beach Improvement Project, Malibu, Los Angeles County, California. A biological study of the project area was performed by Pacific Southwest Biological Services, Inc. in 2001 (PSBS 2001). Because eight years had elapsed since the original study, the project proponent requested a study to update the biological conditions within the project area. The following report provides the results of the study.

PROJECT DESCRIPTION

The project area is located adjacent to and south of Pacific Coast Highway (PCH), in the city of Malibu, west of Corral Canyon Road and east of Seagull Way, and can be located on the U.S. Geological Survey (USGS) 7.5-minute Malibu Beach, California quadrangle at the following Universal Transverse Mercator (UTM) coordinates: 11-S: 338,900mE; 3,766,900mN. The project area lies in unsectioned lands of Rancho Topanga Malibu Sequit. The project area comprises 1.69 acres on a partially paved bluff overlooking Dan Blocker County Beach in a sparsely developed residential area.

The proposed project consists of the development of public beach facilities and access, and includes removal of the existing chain link fence, demolition of existing pavement, construction of a parking lot, and development of park amenities. The proposed amenities include a bluff-top picnic area with picnic tables, portable drinking fountains, and a memorial monument and plaque. Other project features include the construction of a ramp to allow beach access and paved walkways with bench seating, connecting the parking area with park site amenities and beach access. Access from PCH would be provided through two gated driveways. A park directory and highway entrance sign would be provided. K-rail barriers would be installed adjacent to PCH for safety, as well as a railing system at the edge of the bluff. New and existing slopes would be planted with appropriate vegetation for erosion control, and a temporary irrigation system would be installed.

Environmental Setting

Lands within and adjacent to the project area are moderately urbanized, consisting of sparse residential development along the coastline. The project area is located in the Southern California Coast region of the Transverse and Peninsular Ranges geomorphic province, which includes lands close to the Pacific Ocean where marine influences modify the climate greatly. The mean annual precipitation is about 15 to 25 inches; summer fog is common. Mean annual temperature is about 54 to 62 degrees Fahrenheit. Elevations in the area range from approximately sea level to 3,111 feet above mean sea level. Soils within the project area are highly disturbed and include Castaic silty clay loam as well as fill associated with pavement on the site.

Vegetation within the project area currently consists primarily of a degraded coastal sage scrub community containing native and nonnative herbaceous and shrub plant species, located on a steep hillside overlooking a sandy beach. A paved road shoulder is located along the top of the hillside adjacent to PCH. A concrete culvert that drains hillsides north of PCH is located under PCH and empties within the project area.

Common mammals that may occur within the project area include striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and opossum (*Didelphis virginiana*). Mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), and house finches (*Carpodacus mexicanus*) are common avian species that occur in the vicinity. Other species that occur within the project area and adjacent lands include western fence lizard (*Sceloporous occidentalis*) and introduced Argentine ants (*Linepithema humile*).

Literature and Database Search

SWCA reviewed existing sources of information regarding occurrences of special-status species and assessed the potential for occurrence of these species within the project area. Special-status species are plants and animals in one or more of the following categories:

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA) (50 Code of Federal Regulations [CFR] 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [FR] [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under ESA (67 FR 40657, June 13, 2002).
- Species listed or proposed for listing by the State of California as threatened or endangered under the California ESA (CESA) (14 California Code of Regulations [CCR] 670.5).
- Species that meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA) (State CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.).
- Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (Lists 1B and 2 by CNPS [2009]).
- Plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in CNPS 2009), which may be

included as special-status species on the basis of local significance or recent biological information.

- Animal species of special concern as listed by the California Department of Fish and Game (CDFG) (2006).
- Animals fully protected in California (California Fish and Game Code Sections 3511 [birds], 4700 [mammals], 5050 [amphibians and reptiles], and 5515 [fish]).
- Animals included on the California Special Animals List (CDFG 2006) because of inclusion on one or more of several "watch lists," including the International Union for Conservation of Nature (IUCN) Red List, the American Bird Conservancy (ABC) Green List, the Audubon WatchList, the Bureau of Land Management Sensitive Species list, the California Department of Forestry and Fire Protection Sensitive Species list, the U.S. Forest Service Sensitive Species list, the U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern list, the United States Bird Conservation (USBC) Watch List, bat species included on the Western Bat Working Group's (WBWG) Regional Priority Matrix as High or Medium, and the Xerces Society Red list of pollinators.

The following sources of information were consulted:

- The original biological study prepared for the project (PSBS 2001).
- The California Natural Diversity Database (CNDDB) (CNDDB 2009) for the USGS 7.5-minute Malibu Beach and Point Dume, California quadrangles; accessed April 2, 2009.
- CNPS 2009 online Inventory of Rare and Endangered Plants of California for the USGS 7.5-minute Malibu Beach and Point Dume, California quadrangles; accessed April 2, 2009.
- U.S. Fish and Wildlife Service (USFWS 2009a), Ventura Fish & Wildlife Office Endangered and Threatened Species List (Los Angeles County); accessed January 26, 2008.
- USFWS Division of Habitat and Resource Conservation, National Wetlands Inventory (NWI) Wetlands Mapper (http://wetlandsfws.er.usgs.gov/NWI/index.html); accessed January 28, 2009 (USFWS 2009b).

Field Survey

An SWCA biologist walked the project area and visually scanned the project area boundary to determine whether sensitive habitats or special-status species occur there. The survey was conducted along the bluff within the project area, and included the bluff and beach areas. Photographs were taken to document biological resources and field conditions. Specific survey methods are described in detail below.

All plant species observed during the survey, including special-status species, were identified to species using taxonomic nomenclature provided in *The Jepson Manual of Higher Plants of California* (Hickman 1993). Vegetation communities observed during the survey were described in field notes, verified on aerial photographs, and described according to *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995) and *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) whenever appropriate.

Wildlife species were recorded during the survey of the project area and were detected by sight and sound. Wildlife habitats were also assessed within the project area. Special attention was given to the potential for nesting bird and bat species, which could nest in trees and bluffs within and adjacent to the project area. All species were identified to the lowest possible taxonomic level. No nocturnal or protocol surveys were conducted.

Assessment of Special-status Species Occurrence Potential

Following the database searches and field survey, SWCA assessed the potential for occurrence for special-status species within the project area and its immediate vicinity. This consisted of assessing the biological conditions within the project area and its immediate vicinity and the known occurrences of special-status species within the general vicinity of the project area. During the assessment, each species was assigned to one of the categories listed below. This assessment only included a consideration of species that were not assessed in the original study (PSBS 2001).

Present: Species is known to occur within the study area, based on recent (within 20 years) CNDDB or other records, and/or was observed within the study area during the field survey(s).

May occur: Species is known to occur in the vicinity of the study area (based on recent [within 20 years] CNDDB or other records within 5 miles and/or based on professional expertise specific to the study area or species), and there is suitable habitat within the study area. Alternatively, there is suitable habitat within the study area and the study area limits are within the known range of the species. For avian species, a distinction was made between occurrence potential on the study area as a forager, nester, and/or transient.

Not likely to occur: Species is known to occur in the vicinity of the study area (within 5 miles); however, there is poor quality or marginal habitat in the study area. If the species occurs at the study area, it would likely be as a migrant, and the species is not likely to reproduce (breed or nest) within the study area due to a lack of suitable habitat or because the study area is outside of their known breeding range.

Absent: There is no suitable habitat for the species within the study area, or the study area is located outside of the known range of the species. Alternatively, a species was surveyed for during the appropriate season with negative results for species occurrence.

RESULTS

Field Survey

SWCA biologist Shanee Stopnitzky conducted the field visit on April 2, 2009, between 7:00 a.m. and 10:00 a.m. Conditions encountered during the survey included average temperatures of 57 degrees Fahrenheit with scattered clouds and winds of 3 to 10 miles per hour.

Biotic Habitats

Habitats identified within the project area are described in detail below. Full lists of plant and wildlife species observed within biotic habitats within the project area are presented in Appendix A.

Venturan Coastal Sage Scrub

The project area is characterized as degraded Venturan coastal sage scrub vegetation, as nonnative plant species dominated certain portions of the hillside and disturbance associated with the pavement along the bluff-top was observed. Dominant native plant species include California sagebrush (*Artemisia californica*), California Encelia (*Encelia californica*), laurel sumac (*Malosma laurina*), and ashyleaf buckwheat (*Eriogonum cinereum*). Prominent nonnative species include African fountain grass (*Pennisetum setaceum*) and hottentot-fig (*Carpobrotus edulis*). African fountain grass is the dominant species in the project area and on adjacent bluffs. Much of the paved area now has substantial vegetation growth between cracks and in eroded portions of the pavement, in contrast to the previous study that described little to no vegetation in these areas. The paved area nearest the bluff edge displays a similar species composition to most of the site, while sparse marginal weeds occur in the paved portion of the site closer to the highway. Moderate amounts of litter are found throughout the project area. Walking tracks have eroded natural drainage areas at several points along the project area.

Assessment of Special-status Biological Resources

The previous biological study (PSBS 2001) identified one special-status species, southern California rufous-crowned sparrow, on the project area. The study determined that the project area conditions provided a moderate potential for occurrence for two additional special-status species, including monarch butterfly, which the author stated may roost in the single Italian cypress observed on the project area, and coast horned lizard, which could occur within the degraded coastal sage scrub habitat. Based on this updated conditions assessment, we have determined that the occurrence potential for southern California rufous-crowned sparrow should remain at "present," but that monarch butterfly and coast horned lizard should be downgraded to "not likely to occur." Monarch butterflies typically roost in groves of trees rather than a single tree, and the disturbed patch of coastal sage scrub habitat is too degraded—including the occurrence of nonnative Argentine ants—to support coast horned lizard.

An updated list of special-status species known to occur within the vicinity of the study area was generated from the CNDDB and the CNPS 2009 online Inventory of Rare and Endangered Plants of California. A total of 24 special-status species, including nine plants and 15 wildlife species, as well as four sensitive habitats, were identified within the 5-mile area in the vicinity of the project area. Of these, two plants (round-leaved filaree and Parry's spineflower) and seven wildlife species (arroyo chub, golden eagle, western small-footed myotis, Yuma myotis, spotted bat, western mastiff bat, and American badger) were not assessed in the original PSBS (2001) study. The occurrence potential for these additional species, as well as the four sensitive habitats that were also not assessed in the original study, are discussed below.

Sensitive Habitats

A search of the CNDDB records for sensitive habitats identified four sensitive habitats within the 5-mile area, including Southern California steelhead stream, Southern coastal salt marsh, Southern California coastal lagoon, and valley oak woodland. None of these habitats were identified within the project area during the survey.

Special-status Species

Special-status Plants

During the field survey, habitats capable of supporting the two additional special-status plant species were evaluated within the project area. Based on the analysis provided in Appendix B, both of the plants identified in the CNDDB and CNPS Rare Plant Inventory searches were determined to be "absent" or "not likely to occur." Therefore, no special-status plant species are expected to occur within the project area.

Special-status Wildlife

During the field survey, habitats capable of supporting the seven additional special-status wildlife species were evaluated within the project area. Based on the analysis provided in Appendix B, these species were determined to be "absent" or "not likely to occur." Therefore, only one special-status wildlife species – southern California rufous-crowned sparrow – is expected to occur within the project area.

IMPACT ANALYSIS

Sensitive Habitats

No sensitive habitats listed by CNDDB were identified within the project area. Therefore, no impacts to sensitive habitats are expected as the result of implementation of the project.

Special-status Species

No special-status plant or wildlife species were determined to occur within the project area. Therefore, no impacts to special-status species are expected as the result of implementation of the proposed project.

Nesting Avian Species

The degraded coastal sage scrub community present within the project area may provide suitable nesting habitat for southern California rufous-crowned sparrow and other avian species protected by the Migratory Bird Treaty Act of 1981 and California Fish and Game Code that protect native nesting avian species. Construction activities associated with the proposed project that result in ground disturbance and/or the removal of vegetation could have both direct and indirect impacts to these sensitive resources.

The breeding season for birds generally occurs from February 1 through August 31; implementation of the project during this period could result in both direct and indirect impacts to nesting avian species. Direct project impacts would include the destruction of active nests, eggs, or young located within vegetation removed within the proposed project. Indirect impacts would include noise and disturbance associated with the construction activities that cause birds in adjacent habitats to abandon their nests. Any impacts (direct or indirect) that result in the abandonment or destruction of an active nest or the destruction of eggs or young of any protected avian species, including special-status species, would be considered a significant impact under CEQA.

RECOMMENDATIONS

SWCA recommends that ground-disturbing and vegetation removal activities associated with construction of the project be performed outside of the breeding season for birds, or between September 1 and January 31. If these project activities cannot be implemented during this time period, the project applicant should retain a qualified biologist to perform pre-construction nest surveys to identify active nests within and adjacent to (up to 500 feet) the project area. If the pre-construction survey is conducted early in the nesting season (February 1–March 15) and nests are discovered, a qualified biologist may remove the nests only after it has been determined that the nest is not active, i.e., the nest does not contain eggs, nor is an adult actively brooding on the nest. Any active non-raptor nests identified within the project area or within 300 feet of the project area should be marked with a 300-foot buffer, and the buffer area would need to be avoided by construction activities until a qualified biologist determines that the chicks have fledged. Active raptor nests within the project area or within 500 feet of the project area should be marked with a 500-foot buffer and the buffer avoided until a qualified biologist determines that the chicks have fledged. If the 300-foot buffer for non-raptor nests or 500-foot buffer for raptor nests cannot be avoided during construction of the project, the project applicant should retain a qualified biologist to monitor the nests on a daily basis during construction to ensure that the nests do not fail as the result of noise generated by the construction. The biological monitor should have the authority to halt construction if the construction activities cause negative effects, such as the adults abandoning the nest or chicks falling from the nest.

SWCA concurs with the previous biological assessment (PSBS 2001), which recommended revegetation of the project area following its development as a measure to control erosion control and to prevent recurrence and spread of invasive plant species.

SWCA Environmental Consultants is pleased to provide environmental consulting services of the highest quality and efficiency. Please do not hesitate to contact me at 626-240-0587 ext. 101 or at sstopnitzky@swca.com to discuss this project in more detail.

Sincerely,

Shanee Stopnitzky
Biologist

and

Michael W. Tuma

Michael W. Tuma
Natural Resources Program Manager

ATTACHMENTS

Appendix A: Plant and Wildlife Lists
Appendix B: Assessment of Special-status Species and Sensitive Habitats within the Project Area Vicinity

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APPENDIX A. PLANT AND WILDLIFE LISTS

Plant Species Observed within the Project Area

Scientific Name	Common Name	Family
Pluchea odorata	Sweetscent	Asteraceae
Hazardia squarrosa	Sawtooth goldenbush	Asteraceae
Heterotheca grandiflora	Telegraph weed	Asteraceae
Artemisia californica	California sagebrush	Asteraceae
Baccharis pilularis	Coyote brush	Asteraceae
Brickellia californica	California brickellbush	Asteraceae
Encelia californica	California Encelia	Asteraceae
Gnaphalium bicolor	Bicolor cudweed	Asteraceae
Conyza canadensis	Canadian horseweed	Asteraceae
Lotus scoparius	Coastal deerweed	Fabaceae
Melilotus indica	Yellow sweet clover	Fabaceae
Cynodon dactylon	Bermuda grass	Poaceae
Bromus madritensis rubens	Foxtail brome	Poaceae
Pennisetum setaceum	African fountain grass	Poaceae
Eriogonum cinereum	Ashyleaf buckwheat	Polygonaceae
Eriogonum latifolium	Coast buckwheat	Polygonaceae
Eriogonum parvifolium	Cliff buckwheat	Polygonaceae
Eriogonum parvifolium	Smith coast buckwheat	Polygonaceae
Cakile maritima	European searocket	Brassicaceae
Brassica nigra	Black bustard	Brassicaceae
Pseudognaphalium bicolor	Twocolor cudweed	Noctuoideae
Pseudognaphalium californica	Ladies' tobacco	Noctuoideae
Nicotiana glauca	Tree tobacco	Solanaceae
Datura wrightii	Sacred datura	Solanaceae
Acacia pycnantha	Golden wattle	Mimosaceae
Erodium cicutarium	Redstem filaree	Geraniaceae
Tecomaria capensis	Cape honeysuckle	Bignonioceae
Cupressus sempervirens	Italian cypress	Cupressaceae
Carpobrotus edulis	Hottentot-fig	Aizoaceae
Malosma laurina	Laurel-leaf sumac	Anacardiaceae
Dudleya pulverulenta	Chalk dudleya	Crassulaceae
Salvia mellifera	Black sage	Lamiaceae
Mimulus aurantiacus	Curtis monkeyflower	Scrophulariaceae
Yucca whipplei	Our Lord's candle	Liliaceae

Wildlife Species Observed in and Adjacent to the Project Area

Common Name	Scientific Name
Reptiles	
Western fence lizard	*Sceloperus occidentalis*
Birds	
Sanderling	*Calidris alba*
Double-crested cormorant	*Phalacrocorax auritus*
Marbled godwit	*Limosa fedoa*
Brown pelican	*Pelecanus occidentalis californicus*
California towhee	*Pipilo crissalis*
House finch	*Carpodacus mexicanus*
American crow	*Corvus brachyrhynchos*
Mammals	
California sea lion	*Zalophus californianus*

APPENDIX B. ASSESSMENT OF SPECIAL-STATUS SPECIES WITHIN THE PROJECT AREA VICINITY

Special-status Species

Scientific Name	Common Name	Federal Status	State Status	Other	CNPS Status	General Habitat	Micro-Habitat	Potential for Occurrence
Plants								
California macrophylla	Round-leaved filaree	None	None		1B.1	Cismontane woodland, valley and foothill grassland.	Clay soils 15–1,200 mm.	**Absent;** though there is one recent record of this species within 5 miles, habitat within the project area is not appropriate.
Chorizanthe parryi var. *parryi*	Parry's spineflower	None	None		1B.1	Coastal scrub, chaparral	Dry slopes and flats; sometimes at interface of 2 vegetation types, such as chaparral and oak woodland; dry, sandy soils 40–1,705 mm.	**Not likely to occur;** though there is one record of this species within 5 miles, it is historic (1957). Furthermore, habitat within the project area is highly degraded.
Fish								
Gila orcuttii	Arroyo chub	None	SC			Los Angeles Basin south coastal streams.	Slowwater stream sections with mud or sand bottoms. Feed on aquatic vegetation and associated insects.	**Absent;** There is one records of this species within 5 miles, but it is historic (1975). Additionally, there is no suitable habitat within the project area.
Birds								
Aquila chrysaetos	Golden eagle	None	None			Rolling foothills, mountain areas, sage-juniper flats and desert.	Cliff-walled canyons provide nesting habitat in most parts of range; also, large, open areas.	**Absent;** There is one recent record of this species within 5 miles, but there is no suitable nesting habitat within the project area.

Special-status Species

Scientific Name	Common Name	Federal Status	State Status	Other	CNPS Status	General Habitat	Micro-Habitat	Potential for Occurrence
Mammals								
Myotis ciliolabrum	Western small-footed myotis	None	None			Wide range of habitats, mostly arid wooded and brushy uplands near water. Seeks cover in caves, buildings and crevices.	Prefers open stands in forests and woodlands. Requires drinking water and feeds on a wide variety of small flying insects.	**Absent**; There is one recent record of this species within 5 miles, but there is no suitable roosting habitat within the project area.
Myotis yumanensis	Yuma myotis	None	None			Optimal habitats are open forests and woodlands with sources of water over which to feed.	Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.	**Absent**; There is one recent record of this species within 5 miles, but there is no suitable roosting habitat within the project area.
Eumops perotis californicus	California mastiff bat	None	SC			Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.	Roosts in crevices in cliff faces, high buildings, trees and tunnels.	**Absent**; There is one recent record of this species within 5 miles, but there is no suitable roosting habitat within the project area.
Euderma maculatum	Spotted bat	None	SC			Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifers.	Feeds over water and along washes. Feeds almost entirely on moths and needs rock crevices in cliffs or caves for roosting.	**Absent**; There is one recent record of this species within 5 miles, but there is no suitable roosting habitat within the project area.

Special-status Species

Scientific Name	Common Name	Federal Status	State Status	Other	CNPS Status	General Habitat	Micro-Habitat	Potential for Occurrence
Taxidea taxus	American badger	None	SC	BLMS		Grasslands, savannas, and mountain meadows.	Friable soils, and relatively open, uncultivated ground.	**Not likely to occur**; There are two recent records of this species within 5 miles, but habitat within the project area is highly degraded.

FT = Federal Threatened
FE = Federal Endangered
FPT = Federal Proposed Threatened
FPE = Federal Proposed Endangered
FPD = Federal Proposed Delisting
FC = Federal Candidate
FD = Federal Delisted

SE = California listed as Endangered
ST = California listed as Threatened
SR = California Rare Species
SC = California Species of Special Concern
FP = California Fully Protected Species
WL = California Watch List

WBWG = Western Bat Working Group
H = High Priority
MH = Medium-High Priority
M = Medium Priority
LM = Low-Medium Priority
USBC = The United States Bird Conservation Watch List
ABC = The American Bird Conservancy Green List
Audubon = WatchList
BCC = U.S. Fish and Wildlife Service Birds of Conservation Concern

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Dan Blocker County Beach
26000 Pacific Coast Highway
Malibu, California
Biological Resources Assessment and Impacts Analysis

UTM: 11-S: 338,900mE; 3,766,900mN

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PSBS #T669
18 January 2001

Cornelius W Bouscaren
for R. Mitchel Beauchamp, M. Sc., President

Dan Blocker County Beach
Biological Resources Assessment and Impacts Analysis

18 January 2001

MANAGEMENT SUMMARY

A general biological survey of the 1.69-acre bluff area overlooking Dan Blocker County Beach revealed a Disturbed Habitat with remnant Coastal Sage Scrub vegetation. No sensitive plants were encountered. One sensitive animal, the Southern California Rufous-crowned Sparrow, was observed on the site.

INTRODUCTION

At the request of David Evans and Associates, Inc., Pacific Southwest Biological Services, Inc., (Pacific Southwest) conducted a general biological survey of site. The purpose of the survey was to inventory and evaluate the biological resources on the site, to identify areas constrained for development based on biological resources and regulations, and to recognize measures available to minimize impacts to existing natural assets.

LOCATION

The site consists of 1.69 acres on a bluff overlooking Dan Blocker County Beach. The site is located along the south side of Pacific Coast Highway (State Highway 1), within the City of Malibu, west of Corral Canyon Road and east of Seagull Way, and can be located on the USGS 7.5' Malibu Beach, California at UTM: 11-S: 338,900mE; 3,766,900mN (Figures 1 & 2). The site lies in unsectioned lands of Rancho Topanga Malibu Sequit. Access to the site is directly from Pacific Coast Highway.

GENERAL PHYSIOGRAPHY

Elevation ranges from 35 feet along the top of the bluff down to sea level. A chain link fence with gates runs the length of the site along Pacific Coast Highway. At the time of the survey gates for vehicle access were locked; however, one unlocked gate provided easy pedestrian access. Width of the bluff from the curb along Pacific Coast Highway varies from approximately six feet, where a partially eroded drainage occurs approximately 200 feet from the west end of the site, to approximately 90 feet near the east end. A concrete culvert carries flows under Pacific Coast Highway adjacent to the north, and is visible halfway down the ocean-side bluff face. Soils mapped for the site are Castaic silty clay loam, 30% to 40% eroded (USDA 1967). Surficial geology is indicated as igneous Miocene volcanics and sedimentary middle Miocene marine (Jennings and Strand 1969). The site boasts a spectacular overlook of Santa Monica Bay from the southern base of the Santa Monica Mountains.

PROJECT DESCRIPTION

The proposed project consists of development of a public access beach facility involving removal of the existing chain link fence, demolition of existing pavement, construction of a parking lot, and development of park amenities. Proposed amenities include a bluff-top picnic area with picnic tables, portable drinking fountains, and a memorial monument and plaque. The project includes the construction of a ramp to allow beach access, and paved walkways, with bench seating, connecting the parking area with park site amenities and beach access. Access from Pacific Coast Highway would be provided through two gated driveways. Park directory and highway entrance signage would be provided. K-rail barriers would be installed adjacent to Pacific Coast Highway for safety, as would a railing system at the edge of the bluff. Erosion control planting of new and existing slopes with appropriate vegetation, and installation of a temporary irrigation system, are also planned.

METHODS, SURVEY LIMITATIONS, AND DEFINITIONS

Prior to field work, Pacific Southwest conducted a search of the California Department of Fish and Game (CDFG) Natural Diversity Data Base (CNDDB) for the USGS 7.5' Malibu Beach and Point Dume, California Quadrangles. This search revealed several federally- or state-listed species that may occur in the vicinity of the property. Also reviewed were reports of previous surveys conducted by Pacific Southwest in the vicinity. Prior surveys in the area included acreage about Escondido Canyon, just north of the site, as well as a beach bluff stabilization assessment of a private residence to the west (Pacific Southwest 1989,1997).

Pacific Southwest biologist Cornelius W. Bouscaren performed a general zoological and botanical assessment of the site 3 January 2001 during the hours 0650-0915. The temperature range was 57-65°F, skies were clear, and winds were westerly 5-10 mph. Methods consisted of walking slowly throughout the entire site while watching and listening for wildlife, and recording fauna and flora upon observation. The strand below the bluff was surveyed for wildlife only, from the top of the bluff. "Pishing," a technique commonly used to attract the interest of passerines and draw them into view, was occasionally employed. Binoculars (8.5x44 power) were used to assist in the detection and identification of wildlife. Visual and/or auditory detection, tracks, scats, bones, dens, and burrows confirmed species presence.

SURVEY LIMITATIONS AND DEFINITIONS

Complete biological inventories of large sites may require a large number of field hours during different seasons as well as nocturnal sampling for some animal groups, such as small mammals or migratory or nomadic birds. Depending on the season during which the field survey is conducted, amphibians, snakes, many mammals, owls and other nocturnal birds, and annual plants are groups that can be difficult to inventory. The effects of drought may cause temporary shifts in the local distribution of species, which may recolonize the site in question when more normal rainfall patterns resume. Conversely, precipitation above the usual, such as those frequently referred to as El Niño events, may also bring about a temporary change in the normal distribution mosaic. However, through literature review, study of museum records, and knowledge of the habitat requirements and distribution patterns of individual species, the probability of a given species being present on a site can often be fairly accurately predicted by an experienced field biologist.

Due to the seasonal timing of the surveys, not all plant species would be observed on the site. However, sensitive plants with a strong potential to occur on the site are usually identifiable during most of the year by an experienced botanist. The surveys performed for this assessment are considered complete and accurate for the species of concern, unless otherwise noted.

The scientific nomenclature used in this report is from the following standard references: vascular plants (Beauchamp 1986, Hickman 1993, Munz 1974); vegetation communities (Holland 1986, Skinner and Pavlik 1994); wildlife habitats (Mayer et al. 1988); amphibians and reptiles (Jennings 1983 and Stebbins 1985); birds (American Ornithologists' Union 1998); and mammals (Jameson and Peeters 1988, Jones et al. 1992).

Vegetation Communities

Vegetation communities are assemblages of plant species that usually coexist in the same area. The classification of vegetation communities is based upon the life form of the dominant species within that community and the associated flora.

Wildlife Habitats

Wildlife habitats differ from vegetation communities in that a wildlife habitat may contain several vegetation communities that are similar in structure but different in the plant species composition, location and soil substrate. This distinction becomes an important factor when assessing the sensitivity of a particular wildlife habitat. In addition, the interaction of various wildlife species occurs between many different wildlife habitats. This becomes more evident where these habitats overlap in areas known as ecotones. These ecotones support a combination of the species from two or more adjoining habitats, which generally increases the number and diversity of species within these areas.

RESULTS

BOTANICAL RESOURCES

Vegetation

The site is characterized by an infestation of several non-native weed plants mixed with remnant Venturan Coastal Sage Scrub vegetation, which consists of Beach Buckwheat (*Eriogonum parviflorum*), California Sagebrush (*Artemisia californica*), Goldenbush (*Isocoma menziesii*), California Sunflower (*Encelia californica*), Laurel-leaf Sumac (*Malosma laurina*), and Coyote Brush (*Baccharis pilularis*). The more conspicuous non-native weeds of the site include Hottentot-fig (*Carpobrotus edulis*), Sweet Fennel (*Foeniculum vulgare*), Short-pod Mustard (*Hirschfeldia incana*), Castor-bean (*Ricinus communis*), and African Fountain Grass (*Pennisetum setaceum*), the latter being a dominant species on the slopes all about the site and adjacent ocean-side slopes. Substantial areas are covered with pavement and devoid of vegetation of any kind. In others pavement rubble is only partially obscured by the weedy species. Modest amounts of trash occur.

Flora

The 30 plant taxa observed at the site, including 13 non-native species (43%), are typical of disturbed and remnant Scrub habitats of the region (Appendix 1). None of the observed taxa are sensitive in any state, federal or conservation organization listing.

Zoological Resources

Sixteen species of fauna were observed during the survey (Appendix 2). These include one reptile and fifteen birds.

Reptiles

The Western Fence Lizard (*Sceloporus occidentalis*), one of the most common western lizards, was observed.

Birds

Common and widespread resident species observed atop the bluff include the House Finch (*Carpodacus mexicanus*), California Towhee (*Pipilo crissalis*), American Crow (*Corvus brachyrynchos*), Rock Dove (*Columba livia*), Black Phoebe (*Sayornis nigricans*), and Anna's Hummingbird (*Calypte anna*). Also observed was an abundant migrant and frequent winter visitor, the White-crowned Sparrow (*Zonotrichia leucophrys*). Observed on the beach and flying just offshore were the Heerman's Gull (*Larus heermani*), Ring-billed Gull (*Larus delawarensis*), and California Gull (*Larus californicus*). Shorebirds observed on the beach were the Black-bellied Plover (*Pluvialis squatarola*), Marbled Godwit (*Limosa fedoa*) and Sanderling (*Calidris alba*). Observed on the water just offshore was the California Brown Pelican (*Pelecanus occidentalis californicus*), a common to very common non-breeding visitor. Nesting colonies of this species are listed as Endangered by the U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Game (CDFG). However, nesting occurs only on off-shore islands, generally uninhabited, without mammalian predators.

Sensitive Biotic Resources

Appendix 3 lists those sensitive plant and animal taxa reported from the Malibu Beach and Point Dume, California quadrangles in the CNDDB. Only one of these, the Southern California Rufous-crowned Sparrow, was observed on the site. Due to the high degree of disturbance of the site, none of these other organisms are expected to occur on the project site.

Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)

Listing:	USFWS - Species of Concern CDFG - Species of Special Concern
Distribution:	Coastal southern California from Santa Barbara County south into Baja California, Mexico.
Habitat:	Sparse, low scrub, often mixed with grasses on rocky slopes. California Sagebrush (*Artemisia californica*) is often present in scrub inhabited by this sparrow.
Status:	Uncommon to fairly common but localized resident. Listing is based on concern that this species is among the most sensitive to habitat fragmentation and edge effects.

One individual of this species was observed in the disturbed Scrub near the eastern boundary of the site. Because of the highly disturbed nature of the site the species is not expected to breed here.

POTENTIAL IMPACTS AND RECOMMENDATIONS FOR PROJECT IMPLEMENTATION

Provision of access to the beach area will generate additional disturbance in an otherwise dynamic littoral strand habitat. The increase of human presence on the beach strand is anticipated to have minimal impact due to the dynamic nature of the habitat. Impacts to the project site, *per se*, are not significant due to the currently highly disturbed nature of the site. Removal of any vegetation, without proactive revegetation, will allow for invasion or reinvasion by the noxious African Fountain Grass. For this reason revegetation of the site immediately upon completion of development is mandatory, both for erosion control and to prevent recurrence of undesirable weedy species. Also recommended, as an addition to the railing system at the bluff-top edge, is low wire fencing, such as hardware cloth, with the capability of preventing trash from the park area from reaching the beach and ocean.

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Figure 1. Project Vicinity

★ Dan Blocker County Beach

N
1"=2,000

Pacific Southwest Biological Services, Inc.

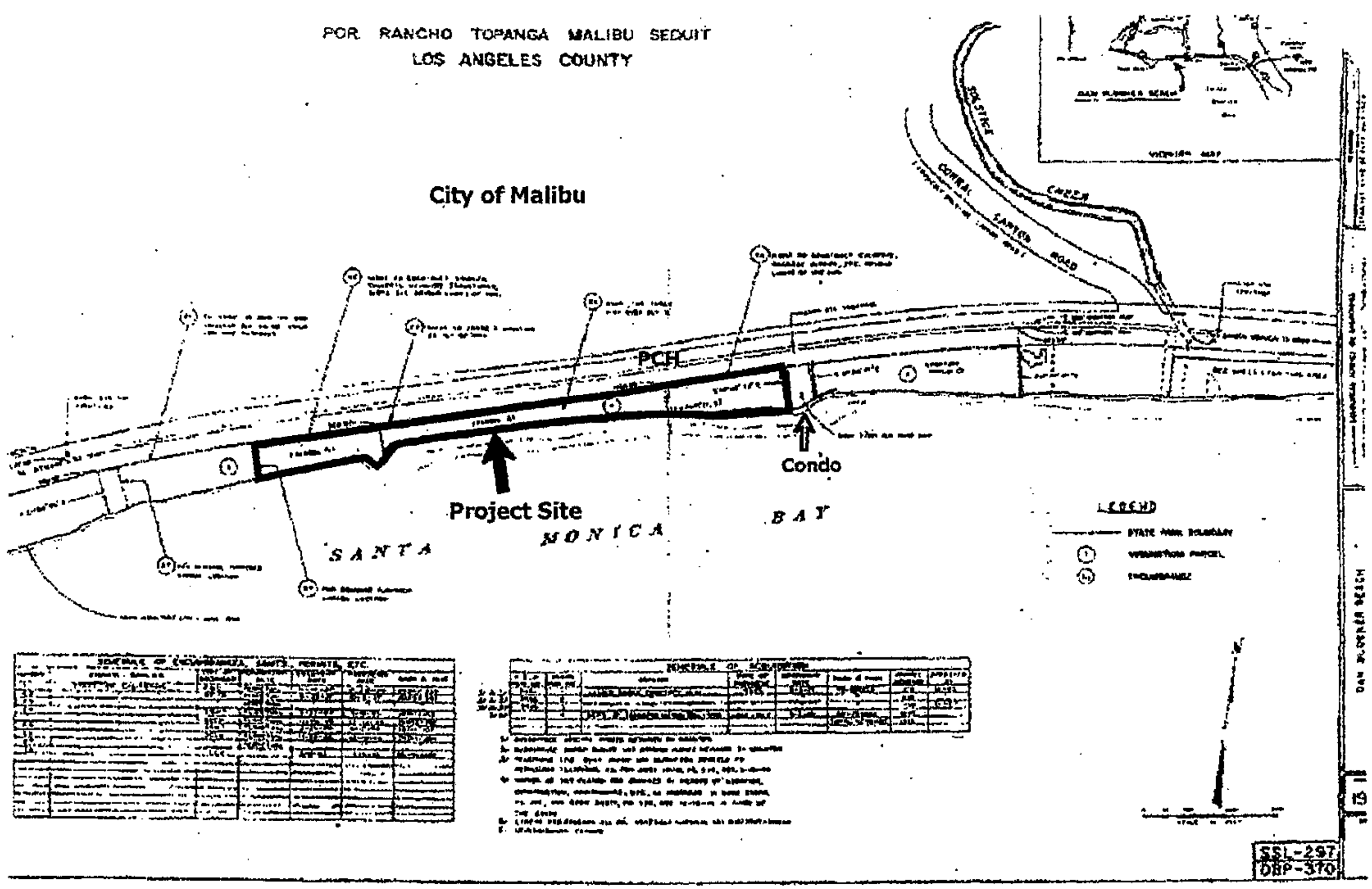

FIGURE 2. PROJECT LOCATION

Source: David Evans & Associates, Inc.

APPENDIX 1. FLORAL CHECKLIST OF SPECIES OBSERVED

GYMNOSPERMS

Cupressaceae - Cypress Family
* *Cupressus sempervirens* L. Italian Cypress

DICOTYLEDONS

Aizoaceae - Carpet-weed Family
* *Carpobrotus edulis* (Molina) N.E. Brit. Hottentot-fig
* *Drosanthemum hispidum* (L.) Schwant. Rosea Iceplant
* *Mesembryanthemum crystallinum* L. Crystalline Iceplant

Anacardiaceae - Sumac Family
Malosma laurina (Torr. & Gray) Abrams Laurel-leaf Sumac

Apiaceae - Carrot Family
* *Foeniculum vulgare* Mill. Sweet Fennel

Asteraceae - Sunflower Family
Artemisia californica Less. California Sagebrush
Baccharis pilularis DC. Coyote Brush
Brickellia californica (Torrey & Gray) Gray California Brickellbush
Encelia californica Nutt. California Encelia
Gnaphalium bicolor Bioletti Bicolor Cudweed
Heterotheca grandiflora Nutt. Telegraph Weed
Isocoma menziesii (Hook. & Arn.) Nesom Goldenbush
Malacothrix saxatilis (Nutt.) Torrey & A.Gray ssp. *tenuifolia* Nutt. & Gray Cliff Malacothrix
* *Sonchus oleraceus* L. Common Sow Thistle

Brassicaceae - Mustard Family
* *Hirschfeldia incana* (L.) Lagr.-Fossat Short-pod Mustard

Chenopodiaceae - Goosefoot Family
Atriplex lentiformis (Torr.) Wats. ssp. *breweri* (Wats.) Hall & Clem. Brewer's Saltbush
* *Atriplex semibaccata* R. Br. Australian Saltbush

Euphorbiaceae - Spurge Family
Chamaesyce polycarpa (Benth.) Millsp. Small-seed Sandmat
* *Ricinus communis* L. Castor-bean

Fabaceae - Legume Family
Lotus scoparius (Nutt.) Ottley var. *scoparius* Coastal Deerweed
* *Medicago polymorpha* L. California Burclover

Lamiaceae - Mint Family
Salvia mellifera Greene Black Sage

Polygonaceae - Buckwheat Family
Eriogonum parvifolium Smith Coast Buckwheat

Scrophulariaceae - Figwort Family
Mimulus aurantiacus Curtis Monkeyflower
Penstemon centranthifolius Benth. Scarlet Bugler

Solanaceae - Nightshade Family
* *Nicotiana glauca* Grah. Tree Tobacco

MONOCOTYLEDONS

Liliaceae - Lily Family
Yucca whipplei Torr. Our Lord's Candle

Poaceae - Grass Family
* *Cynodon dactylon* (L.) Pers. Bermuda Grass
* *Pennisetum setaceum* Forsk. African Fountain Grass

* - Denotes non-native plant taxa

Appendix 2. Animals Observed or Detected

COMMON NAME	SCIENTIFIC NAME
VERTEBRATES	
REPTILES	
Iguanidae (Iguanids)	
Western Fence Lizard	*Sceloporus occidentalis*
BIRDS	
Pelecanidae (Pelicans)	
Brown Pelican	*Pelecanus occidentalis californicus*
Phalacrocoracidae (Cormorants)	
Double-crested Cormorant	*Phalacrocorax auritus*
Charadriidae (Lapwings, Plovers)	
Black-bellied Plover	*Pluvialis squatarola*
Scolopacidae (Sandpipers, Phalaropes)	
Marbled Godwit	*Limosa fedoa*
Sanderling	*Calidris alba*
Laridae (Skuas, Gulls, Terns, Skimmers)	
Heermann's Gull	*Larus heermanni*
Ring-billed Gull	*Larus delawarensis*
Western Gull	*Larus occidentalis*
Columbidae (Pigeons, Doves)	
Rock Dove	*Columba livia*
Trochilidae (Hummingbirds)	
Anna's Hummingbird	*Calypte anna*
Tyrannidae (Tyrant Flycatchers)	
Black Phoebe	*Sayornis nigricans*
Corvidae (Jays, Magpies, and Crows)	
American Crow	*Corvus brachyrhynchos*
Emberizidae (Emberizids)	
California Towhee	*Pipilo crissalis*
White-crowned Sparrow	*Zonotrichia leucophrys*
Fringillidae (Finches)	
House Finch	*Carpodacus mexicanus*

Appendix 3. Sensitive Plants and Animals of the USGS 7.5' Malibu Beach and Point Dume, California quadrangles.

SPECIES NAME	STATUS Federal/State/CNPS	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE
Blochman's Dudleya (*Dudleya blochmaniae* ssp *blochmaniae*)	SOC/None/1B(2-3-2)	Coastal scrub, coastal bluff scrub, valley and foothill grassland, open rocky slopes	L. No habitat
Braunton's Milk-vetch (*Astragalus brauntonii*)	FE/None/1B(3-3-3)	Stiff gravelly clay soils overlying granite or limestone	L. No habitat
Coulter's Saltbush (*Atriplex coulteri*)	None/None/1B(2-2-2)	Ocean bluffs, ridgetops, alkaline low places	L. Single observation from the quads is at elevation 203'.
Lyon's Pentachaeta (*Pentachaeta lyonii*)	FE/CE/1B(3-3-3)	Edges of clearings in Chaparral	L. No habitat
Malibu Baccharis (*Baccharis malibuensis*)	None/None/1B(3-3-3)	Coastal scrub, chaparral, cismontane woodland	L. Too much disturbance
Marescent Dudleya (*Dudleya cymosa* ssp *marcescens*)	FT/Rare/1B(3-2-3)	Chaparral, on sheer rock surfaces and rocky volcanic cliffs	L. No habitat
Plummer's Mariposa Lily (*Calochortus plummerae*)	SOC/None/1B(2-2-3)	Rocky and sandy sites, usually of granitic or alluvial material	L. No habitat
Santa Monica Mountains Dudleya (*Dudleya cymosa* ssp *ovatifolia*)	FT/None/1B(3-2-3)	Chaparral, coastal scrub on volcanic cliff faces and rocky outcrops, primarily on north-facing slopes	L. Minimal habitat, site has level or south-facing aspect. Only one report (1980) from the two quads
Santa Susana Tarplant (*Deinandra minthornii*)	SOC/Rare/1B(2-2-3)	Chaparral, Coastal scrub on sandstone outcrops and crevices	L. No sandstone
Sonoran Maiden Fern (*Thylpteris puberula* var *sonorensis*)	None/None/2(2-2-1)	Meadows, streams, seepage areas	L. No habitat

Status Codes

Federal
FE = Federally listed as Endangered
FT = Federally listed as Threatened
SOC = Federal Species of Concern

State
CE = State-listed as Endangered
CNPS 1B = Plants Rare, Threatened or Endangered in California and elsewhere

Potential for Occurrence (PFO)

L = Low potential for Occurrence. No present or historical records of the species occurrence in or near the survey area and the habitat strongly associated with the species does not occur in or near the vicinity.
M = Moderate Potential for Occurrence. Either a historical record exists of the species in or near the survey area or the habitat associated with the species occurs in or near the survey vicinity.
H = High Potential for Occurrence. A historical record exists of the species in or near the survey area and the habitat strongly associated with the species occurs in or near the survey vicinity.
O = Occurs on site. The species was observed within the site boundaries.

Sources:
California Natural Diversity Database (CNDDB) Malibu Beach and Point Dume CA quadrangles 2000.
Skinner, M. W., and B. M. Pavlik, Eds. 1994. CNPS Inventory of Rare and Endangered Vascular Plants of California 5th ed. California Native Plant Society, Sacramento CA.
Nomenclature *ne* Hickman 1993, CNDDB (revised 2000).

Appendix 3. Sensitive Plants and Animals of the USGS 7.5' Malibu Beach and Point Dume, California quadrangles.

SPECIES NAME	STATUS Federal/State/CNPS	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE
Blochman's Dudleya (*Dudleya blochmaniae* ssp *blochmaniae*)	SOC/None/1B(2-3-2)	Coastal scrub, coastal bluff scrub, valley and foothill grassland, open rocky slopes	L. No habitat
Braunton's Milk-vetch (*Astragalus brauntonii*)	FE/None/1B(3-3-3)	Stiff gravelly clay soils overlying granite or limestone	L. No habitat
Coulter's Saltbush (*Atriplex coulteri*)	None/None/1B(2-2-2)	Ocean bluffs, ridgetops, alkaline low places	L. Single observation from the quads is at elevation 203'.
Lyon's Pentachaeta (*Pentachaeta lyonii*)	FE/CE/1B(3-3-3)	Edges of clearings in Chaparral	L. No habitat
Malibu Baccharis (*Baccharis malibuensis*)	None/None/1B(3-3-3)	Coastal scrub, chaparral, cismontane woodland	L. Too much disturbance
Marescent Dudleya (*Dudleya cymosa* ssp *marcescens*)	FT/Rare/1B(3-2-3)	Chaparral, on sheer rock surfaces and rocky volcanic cliffs	L. No habitat
Plummer's Mariposa Lily (*Calochortus plummerae*)	SOC/None/1B(2-2-3)	Rocky and sandy sites, usually of granitic or alluvial material	L. No habitat
Santa Monica Mountains Dudleya (*Dudleya cymosa* ssp *ovatifolia*)	FT/None/1B(3-2-3)	Chaparral, coastal scrub on volcanic cliff faces and rocky outcrops, primarily on north-facing slopes	L. Minimal habitat, site has level or south-facing aspect. Only one report (1980) from the two quads
Santa Susana Tarplant (*Deinandra minthornii*)	SOC/Rare/1B(2-2-3)	Chaparral, Coastal scrub on sandstone outcrops and crevices	L. No sandstone
Sonoran Maiden Fern (*Thylpteris puberula* var *sonorensis*)	None/None/2(2-2-1)	Meadows, streams, seepage areas	L. No habitat

Status Codes [illegible]

Potential for Occurrence (PFO) [illegible]

Sources: [illegible]

SPECIES NAME	STATUS Federal/State/CDFG	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE
Monarch Butterfly (*Danaus plexippus*)	None/None/None	Winter roost sites extend along coast from N. Mendocino to Baja Calif.; roosts located in wind-protected tree groves (Eucalyptus, Monterey Pine, Cypress), with nectar and water sources nearby	M. May roost in single Italian Cypress on-site
Tidewater Goby (*Eucyclogobius newberryi*)	FE/None/SC	Brackish water along coast from Agua Hedionda Lagoon to mouth of Smith River, esp. in shallow lagoons and lower stream reaches	L. No habitat
Southwestern Pond Turtle (*Clemmys marmorata pallida*)	SOC/None/SC	Permanent or nearly permanent water in many habitat types; below 6000 ft, esp w/basking sites	L. No habitat
San Diego Horned Lizard (*Phrynosoma coronatum blainvillei*)	SOC/None/SC	Coastal Sage Scrub, Chaparral in arid and semi-arid climate, esp. friable, rocky, or shallow sandy soils	M. Adequate habitat
California Horned Lizard (*Phrynosoma coronatum frontale*)	SOC/None/SC	Frequents wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes	L. Minimal habitat
Coastal Western Whiptail (*Cnemidophorus tigris multiscutatus*)	SOC/None/None	Deserts & semiarid areas w. sparse vegetation & open areas, also in woodland & riparian areas, esp. where ground may be firm soil, sandy, or rocky	L. No habitat
San Bernardino Ringneck Snake (*Diadophis punctatus modestus*)	None/None/None	Most common in open relatively rocky areas. Often in somewhat moist microhabitats near intermittent streams	L. No habitat
San Diego Mountain Kingsnake (*Lampropeltis zonata pulchra*)	SOC/None/SC	Variety of habitats, incl. Valley-foothill hardwood, coniferous, chaparral, riparian and wet meadows.	L. No habitat
Bank Swallow (*Riparia riparia*)	None/CT/None	Colonial nester, primarily in riparian or lowland habitats, esp., vertical banks, cliffs w/fine or sandy textured soils, near wetlands	L. Minimal habitat. Most recent report in the two quads: egg collection in 1864
San Diego Desert Woodrat (*Neotoma lepida intermedia*)	SOC/None/SC	Mixed and chamise-redshank chaparral, sagebrush and other habitats. Prefers rocky areas to build stick nest.	L. Minimal habitat. No rocky areas. Nest(s) would have been observed if present

Southern Steelhead—So. Calif ESU (*Oncorhynchus mykiss irideus*)	FE/None/SC	Freshwater Stream	L. No habitat

Status Codes

Federal
FE = Federally Listed as Endangered
FT = Federally Listed as Threatened
SOC = Federal Species of Concern

State
CE = State Listed as Endangered
CT = State Listed as Threatened

Other
SC = Species of Special Concern

Potential for Occurrence (PFO)

L = Low potential for Occurrence. No present or historic records of the species occurrence on or near the survey area, and the habitats strongly associated with the species do not occur on or near the site.
M = Moderate Potential for Occurrence. Either an historic record exists of the species on or near the survey area or the habitats associated with the species occur on or near the survey site.
H = High Potential for Occurrence. An historical record exists of the species on or near the survey area and the habitats strongly associated with the species occur on or near the survey site.
O = Occurs onsite. The species was observed within the site boundaries.

Source:
California Natural Diversity Data Base (CNDDB) for Malibu Beach and Point Dume, California quadrangles 2010.

Appendix I.C –
Records Search and Cultural Resource Report (2000)

South Central Coastal Information Center
California Historical Resources Information System
California State University, Fullerton
Department of Anthropology
800 North State College Boulevard
Fullerton, CA 92834-6846
(714) 278-5395 / FAX (714) 278-5542
anthro.fullerton.edu / sccic.html

Los Angeles
Orange
Ventura

December 6, 2000

Natasha Ali-Khan
David Evans and Associates, Inc.
8989 Rio San Diego Dr., Suite 335
San Diego, CA 92108

RE: Records Search for Dan BlockerBeach

Dear Ms. Ali-Khan,

As per your request received on December 6, we have conducted a records search for the above referenced project. This search included a review of all recorded historic and prehistoric archaeological sites within a half-mile radius of the project area, as well as a review of all known cultural resource reports. In addition, we have checked our file of historic maps, the California State Historic Resources Inventory, the National Register of Historic Places, the listing of California Historical Landmarks, and the California Points of Historical Interest. The following is a discussion of our findings for the project area.

Due to the sensitive nature of cultural resources, archaeological site locations are not released.

MALIBU BEACH QUADRANGLE

PREHISTORIC RESOURCES:

Four prehistoric sites (19-00210, 19-001569, 19-001570, 19-001571) have been identified within a half-mile radius of the project area.

HISTORIC RESOURCES:

No historic archaeological sites have been identified within a half-mile radius of the project area.

Inspection of our historic maps – Calabasas (1903) 15' series – indicated that there were some unimproved roads, and very few structures in place. Dry, Coral, Puerco, and Marie Canyons were in place.

The California State Historic Resources Inventory lists no properties that have been evaluated for historical significance within a half-mile radius of the project area.

The National Register of Historic Places lists no properties within a half-mile radius of the project area.

The California Historical Landmarks (1990) of the Office of Historic Preservation, California Department of Parks and Recreation, lists no landmarks within a half-mile radius of the project area.

The California Points of Historical Interest (1992), of the Office of Historic Preservation California Department of Parks and Recreation, lists no properties within a half-mile radius of the project area.

The listings of the City of Los Angeles Historic-Cultural Monuments indicated that there are no landmarks within a half-mile radius of the project area.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS:

Ten studies have been conducted within a half-mile radius of the project area. Of these, three is located within the project area. There are nineteen additional investigations located on the Malibu Beach 7.5' USGS quadrangle and are potentially within a half-mile radius of the project area. These reports are not mapped due to insufficient locational information.

<u>POINT DUME QUADRANGLE</u>

PREHISTORIC RESOURCES:

No prehistoric sites have been identified within a half-mile radius of the project area.

HISTORIC RESOURCES:

No historic archaeological sites have been identified within a half-mile radius of the project area.

Inspection of our historic maps – Calabasas (1903) 15' series – indicated that there were some unimproved roads, and very few structures in place. Dry, Coral, Puerco, and Marie Canyons were in place.

The California State Historic Resources Inventory lists no properties that have been evaluated for historical significance within a half-mile radius of the project area.

The National Register of Historic Places lists no properties within a half-mile radius of the project area.

The California Historical Landmarks (1990) of the Office of Historic Preservation, California Department of Parks and Recreation, lists no landmarks within a half-mile radius of the project area.

The California Points of Historical Interest (1992), of the Office of Historic Preservation California Department of Parks and Recreation, lists no properties within a half-mile radius of the project area.

The listings of the City of Los Angeles Historic-Cultural Monuments indicated that there are no landmarks within a half-mile radius of the project area.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS:

Four studies have been conducted within a half-mile radius of the project area. Of these, three is located within the project area. There are 23 additional investigations located on the Point Dume 7.5' USGS quadrangle and are potentially within a half-mile radius of the project area. These reports are not mapped due to insufficient locational information.

RECOMMENDATIONS

Our records indicate the proposed project area has not been subject to a Phase I archaeological survey and is located along what is considered the culturally sensitive coastal zone. Several archaeological sites are located within a one-half mile radius, therefore we recommend a Phase I archaeological survey be conducted by a professional archaeologist.

If you have any questions regarding our results or the recommendations presented herein, please feel free to contact our office at (714) 278-5395.

Invoices are mailed approximately two weeks after records searches are completed. This enables your firm to request further information under the same invoice number. **Please reference the invoice number listed below when making inquiries.** Requests made after invoicing will involve the preparation of a separate invoice with a $15.00 handling fee.

Sincerely,

Esther Won
Staff Archaeologist

Enclosures:

( ) Primary Number Explanation
( ) Site list -
(X) SIS list - 8 pages
( ) HRI -
( ) National Register Status Code - 4pages
( ) Invoice #9034

South Central Coastal Information Center
California Historical Resources Information System
California State University, Fullerton
Department of Anthropology
800 North State College Boulevard
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(714) 278-5395 / FAX (714) 278-5542
anthro.fullerton.edu/sccic.html

Los Angeles
Orange
Ventura

REFERRAL LIST FOR HISTORICAL RESOURCES CONSULTANTS

This is a partial, alphabetically ordered, list of individuals, firms and institutions which meet minimum qualifications to perform identification, evaluation, registration, and treatment activities within the profession under which they are listed, in compliance with federal and state environmental laws. It is composed of all individuals who have requested listing by this Information Center and who have satisfactorily documented that they meet the Secretary of the Interior's Standards (SIS) for that profession. Inclusion on this list is determined solely on this evaluation and not on a review of current work.

The first page of this listing is comprised of individuals who were certified by the Society of Professional Archaeologists and who were listed on this Information Center's Referral List as of August 11, 1995. These individuals may or may not meet the Secretary of the Interior's Standards.

The Information Center provides a copy of this list without charge when field inspection is recommended or upon request.

This list has been prepared in accordance with guidelines stipulated by the State. Inclusion on this list does not constitute endorsement or recommendation by the State or this Information Center.

Questions regarding this Referral List may be directed to John Thomas, Staff Archaeologist, or Jan Wooley, Staff Historian, Coordinators of the California Historical Resources Information System, Office of Historic Preservation, at (916) 653-6624.

SOPA

Greenwood and Associates Greenwood, Roberta S., 725 Jacon Way, Pacific Palisades, CA 90272
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February 19, 2001

Ms. Rebecca Smirniotis
David Evans and Associates, Inc
8989 Rio San Diego Drive, Suite 335
San Diego, California 92108

Re: Dan Blocker Beach Project Cultural Resource Survey

Dear Ms. Smirniotis:

This report presents the results of a cultural resource survey conducted by ASM Affiliates of the Dan Blocker Beach Project located within Los Angeles County between Pacific Coast Highway and the ocean, and west of Corral Canyon Road. The study was performed to determine the presence or absence of significant prehistoric and historic resources within the property and assess potential project impacts in accordance with the California Environmental Quality Act. It consisted of a review of all site records and reports on file with the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, followed by an intensive pedestrian survey of the entire property. The study proved negative in that no cultural resources were identified as a result of both the survey and records search. The project description, existing conditions, study methods, results, and potential impacts and recommendations are provided below.

Project Description

The project property consists of 1.92 acres of vacant land situated on a low bluff overlooking Dan Blocker Beach. The proposed project includes the removal of an existing chain-link fence, demolition of existing pavement, and construction of a parking area and park site amenities. These latter include bluff top picnic areas, landscaping, chemical toilet facilities, a memorial monument, drinking fountains and bench seating. Additionally, a ramp will be constructed to provide beach access.

Existing Conditions

As depicted on the Malibu Beach 7.5' U.S.G.S. quadrangle (Figure 1), the project is located within an unsectioned portion of range 18 West and Township 1 South. The property can be characterized as a highway bench cut into the hillside in the lower slopes of the Santa Monica Mountains. The hillside extends down to the Pacific Ocean forming a coastal bluff over a narrow

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sandy beach. The proposed project site is located on a bluff that is approximately 10 to 20 feet high. The slopes of the bluffs at Dan Blocker Beach range from being near vertical in many areas to approximately 1:3 (horizontal: vertical).

The project is situated in the western region of the Santa Monica Mountains near the base of the southerly descending flanks in the City of Malibu. Geologic units located in the vicinity of the project site include Holocene beach sands, Pleistocene-age older alluvial sediment deposits on the top of the hillside north of the roadway, and Miocene-age volcanic rocks exposed in the coastal bluffs and roadway cuts. Within 2,000 feet of the project site is located a middle to late Miocene-age meta-sedimentary formation and landslide debris. Minor isolated fills also exist throughout the site as gully infill, erosion repairs, and minor roadway grading. The proposed project site is located on several soil types including: Conejo Volcanics, Monterey Formation, Older Surficial Sediment, Landslide Debris, Residual Soils, and Artificial Fill. A minor amount of colluvial material, which is associated with an ancient landslide, debris flow from alluvial deposits, and/or dumped material associated with the grading of PCH is located west of the center of the proposed project site in the coastal bluff.

The project site is located within the Malibu Coastal Zone (MCZ), the most extensive natural coastline in Los Angeles County. MCZ marine resources along the Malibu coast include kelp beds, tide pools, marine fisheries, offshore reefs, sandy beaches, rocky headlands, sea lion haul outs, coastal dunes, and isolated wetlands. Additionally, MCZ supports a rich and diverse fauna of mammals, reptiles, amphibians, birds and invertebrates, which includes a number of endangered and threatened plants and animals. The location and type of vegetation in the MCZ depends largely on the type of soil and amount of moisture available during annual periods of drought from approximately April to October.

The project property contains several non-native weed plants mixed with remnant Venturan Coastal Sage Scrub vegetation. Substantial areas are covered with pavement and devoid of vegetation of any kind, while in others pavement rubble is only partially obscured by the weedy species. Characteristic plant species include Beach Buckwheat (*Eriogonum parviflorum*), California Sagebrush (*Artemisia californica*), Goldenbush (*Isocoma menziesii*), California Sunflower (*Encelia californica*), Laurel-leaf Sumac (*Malosma laurina*), and Coyote Brush (*Baccharis pilularis*). The more conspicuous non-native weeds of the site include Hottentot-fig (*Carpobrotus edulis*), Sweet Fennel (*Foeniculum vulgare*), Short-pod Mustard (*Hirschfeldia incana*), Castor-bean (*Ricinus communis*), and African Fountain Grass (*Pennisetum setaceum*), the latter being a dominant species on the slopes, all about the site, and adjacent ocean-side slopes. Thirty plant taxa and 16 species of fauna were observed during the biological survey.

Cultural Setting

Archaeological and ethnographic information indicate that this area of Los Angeles County has been occupied by Native Americans for nearly 9,000 years. The earliest evidence is that King (1981) terms the Early Period which incorporates the archaeological traditions identified as the

Oak Grove and Hunting, Archaic, Early Mainland, Early Island, and Millingstone Horizon. Coastal Archaic period sites have been characterized by somewhat undifferentiated shell middens, few bifaces and dart points, and abundant milling equipment. They range from large residential bases to small temporary camps and resource exploitation loci. According to King, this period entails no fewer than three phases. The Middle Period, starting roughly 3,000 years B.P. and lasting until 800 year B.P., is characterized by more types of beads and ornaments than before, and a shift from rectangular to circular beads. This period, within which five phases can be distinguished archaeologically, encompasses the Middle Canalino, early Late Mainland, late Intermediate Horizon, and late Campbell Tradition. The Late Period is defined by the presence of *Olivella* callus beads and clam disk and cylinder beads. This period terminates 1804 A.D., and in the project area subsumes the Chumash Tradition. The latter is the tradition associated with the contemporary Native American population of the region.

Study Methods

The methods used to assess the presence or absence of cultural resources within the property included a records search and intensive field reconnaissance. The record searches, conducted for a mile radius of the project, were obtained from the South Central Coastal Information Center at California State University, Fullerton (Attachment A). The survey was conducted by John R. Cook, RPA, on February 14, 2001. The entire approximately 2-acre project area was thoroughly examined at 5 to 10-meter intervals. Except for paved areas, ground visibility was generally good to excellent throughout the parcel and more than sufficient for the detection of any archaeological resources. No problems were encountered accessing and surveying all portions of the project area.

Study Results

A review of site records disclosed that no archaeological sites have been recorded within the project property, nor has it been subjected to previous survey or other archaeological study. Information provided by SCCIC indicates that 10 separate studies have been conducted within a half-mile of the project. These and other archaeological studies have resulted in the identification of 4 prehistoric resources within a half-mile radius, all of which are shell middens; no historic archaeological sites have been recorded. Similarly, no properties listed on the California State Historic Resources Inventory, National Register of Historic Places, California Historic Landmarks, California Points of Historic Interest, or City of Los Angeles Historic-Cultural Monuments are within a half-mile of the project property.

Intensive survey of the project area proved negative in that no prehistoric or historic resources were identified. An isolated unifacally retouched scraper of blackish quartzitic material was located in the center of the parcel during the survey, though no associated cultural remains were found, and as such this does not constitute a site. The absence of cultural resources is not particularly surprising, however, given the extent of recent historic disturbance evident and the property's topographic setting at the base of a steep slope, some distance from permanent potable water.

Potential Impacts and Management Recommendations

Implementation of the proposed project will involve construction of a parking lot and park site amenities. Demolition of the existing paving and construction of the new facilities and landscaping will necessitate grading and other landform disturbances that can adversely impact significant cultural resources. Record search results indicate that no cultural resources have been recorded within the project property, and intensive survey did not result in the identification of any prehistoric or historic cultural resources. In that historic disturbances related to construction of the previously paved area would have probably destroyed any extent cultural resources, it is concluded that implementation of the project will not result in adverse direct or indirect impacts to significant and California Register of Historic Places eligible cultural resources and mitigation measures are not deemed necessary.

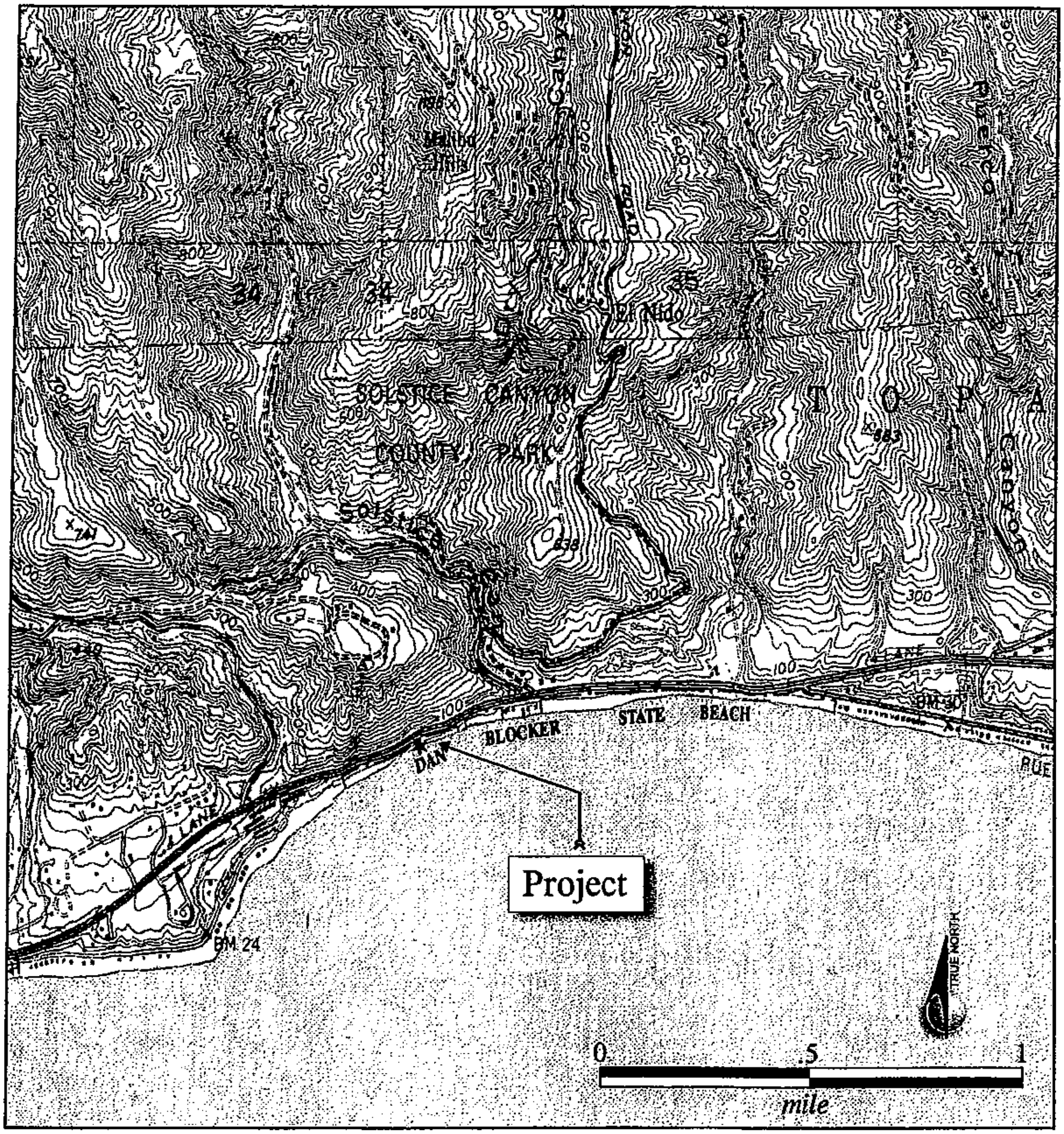
Should you have any questions regarding this study, please do not hesitate to call me.

Sincerely,

John R. Cook, RPA
Principal

Attachments: Figure 1 - U.S.G.S. quadrangle showing project location
Confidential Records Search

Attachment A



Malibu Beach 7.5' USGS Quad.

Figure 1. Dan Blocker Beach project location.

Appendix I.D –
Geotechnical Reconnaissance (2000)

GEOTECHNICAL RECONNAISSANCE
DAN BLOCKER BEACH
26000 PACIFIC COAST HIGHWAY
COUNTY OF LOS ANGELES, CALIFORNIA

Prepared for
DAVID EVANS AND ASSOCIATES
San Diego, California

Prepared by
GROUP DELTA CONSULTANTS, INC.
San Diego, California

Project No. 2020
December 26, 2000

GROUP DELTA CONSULTANTS

Certified DBE/MBE

Geotechnical Engineering
Geology
Hydrogeology
Coastal Engineering
Hydrology
Hydraulics
Environmental Engineering

Project No. 2020
December 26, 2000

Rebecca Smirniotis
DAVID EVANS AND ASSOCIATES
8989 Rio San Diego Drive, Suite 335
San Diego, California 92108

GEOTECHNICAL RECONNAISSANCE
DAN BLOCKER BEACH
26000 PACIFIC COAST HIGHWAY
COUNTY OF LOS ANGELES, CALIFORNIA

Dear Rebecca:

In accordance with your request, we are pleased to provide our Geotechnical Reconnaissance Report for the subject project. Pertinent geotechnical issues identified include geologic hazards, coastal bluff stability, marine erosion, and foundation design.

Geologic hazards and coastal bluff stability present a potential for environmental impacts, if not mitigated. The mitigation measures presented will reduce these impacts to below the level of significance.

We appreciate the opportunity to work with you on this project. If you have any questions or require additional information, please give us a call.

Very truly yours,

GROUP DELTA CONSULTANTS, INC.

Donald A. Cords, Senior Engineer
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Braven R. Smillie, Principal Geologist
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GEOTECHNICAL RECONNAISSANCE
DAN BLOCKER BEACH
26000 PACIFIC COAST HIGHWAY
COUNTY OF LOS ANGELES, CALIFORNIA

1 INTRODUCTION

1.1 Project Description

The Los Angeles County Departments of Beaches and Harbors and Public Works is proposing the construction of a parking lot with approximately thirty (30) diagonal parking spaces, park site amenities, and an aluminum ramp for beach access on a bluff top at Dan Blocker Beach. The proposed site is located west of and adjacent to Pacific Coast Highway (PCH), west of the City of Malibu, west of Puerco Beach, and east of Latigo Point. The location of the site is shown in Figure 1.

The proposed project site consists of approximately 2 acres of vacant bluff-top land, fencing, and deteriorated paving. The existing deteriorated paving and fencing would be removed as part of the Phase 1 project. The proposed project would provide a parking lot, park site amenities, and beach access for visitors. Beach visitors currently park along PCH and access the beach by a stairway located at adjacent residential units. The residential units are located to the east and west of the project site.

The proposed project would be constructed in phases. Phase 1 would include development of a thirty space parking lot and park amenities located at the eastern portion of the bluff top at the project site. Phase 1 would encompass approximately 600 lineal feet of bluff top and would have a width of approximately 50 to 65 feet. Beach access, in the form of an aluminum ramp, would also be constructed during Phase 1. The ramp would extend from the bluff top to the beach level and would include concrete landings at each end. An approximate 100-foot setback would be provided between the residential unit and the parking lot area.

Phase 1 park site amenities would include picnic tables, bench seating, portable drinking fountains, and chemical toilets. The proposed chemical toilets would be located on a concrete pad and would be enclosed in a cinder-block structure. The thirty diagonal parking stalls would face the Pacific Ocean along the eastern portion of the project site. Walkways would also be provided to join the parking area with the park site amenities and beach access. Bench seating, overlooking the ocean, would be provided along the walkways. An anodized aluminum handrail would extend along the entire length of the proposed Phase 1 project site, parallel to the bluff.

Additional phases would include similar amenities as in Phase 1. A schedule has not yet been developed for future phases of development.

Access to the proposed project site would be provided from two driveways located off of PCH. The driveways would be one-way, allowing for vehicles to enter through one of the driveways and exit through the other.

Landscaping would also be provided as part of the proposed project. Landscaping would include native species to provide erosion control. Temporary irrigation would be provided to the landscaped areas of the site and would be removed upon establishment of the native species landscaping. Drainage of the site would be directed toward PCH and would not drain onto the beach.

1.2 Scope of Work

This technical report is based on information available in previously prepared studies, and in the geologic and engineering literature. No new field work has been performed, other than a site visit, and no new data has been collected for preparation of this current technical report. It is anticipated that such work will be undertaken in future geotechnical studies.

We have made a preliminary evaluation and reconnaissance of the geotechnical conditions and coastal processes in the site vicinity that pertain to the proposed project. We have reviewed published geologic maps of the site, reviewed geotechnical reports of projects in the area on file with the City of Malibu, visited the site to review the geologic conditions, observed the existing conditions of the coastal bluffs, reviewed historical beach erosion data, and reviewed aerial photographs of the site. Review of the site geology is presented followed by the various geomorphic factors responsible for forming the coastal bluffs. Mitigation measures are then provided, which are intended to reduce both marine and subaerial erosion currently occurring at the site. Additionally, limited geotechnical input is provided for the design and construction of the various improvements proposed at the site.

This report presents information on:

- Geologic and soil conditions;
- Potential geotechnical hazards that may affect, or be affected by, the proposed project;
- Identified potential environmental impacts; and
- Indicated areas that may require additional detailed investigation.

Pertinent geotechnical topics include:

- Local geology;
- Regional faulting and seismicity;
- Slope stability/landslides; and
- Erodible soils.

2 EXISTING CONDITIONS

The proposed project site can be characterized as a highway bench cut into a hillside in the lower slopes of the Santa Monica Mountains. The hillside extends down to the Pacific Ocean forming a coastal bluff over a narrow sandy beach. The site consists of approximately 2 acres of vacant land, fencing, and deteriorated paving. The beach is located in the northwestern portion of Santa Monica Bay about 5 miles east of Point Dume. The beach was formerly known as Solstice Canyon Beach before being named

Dan Blocker Beach. The narrow sandy beach has offshore rocks backed by a wave cut eroding cliff and a highway bench. Houses and condominiums adjacent to the site are built on piles and subject to damage during high wave conditions.

No topography for the project site was provided, but visual estimates of the height of the bluffs appear to be on the order of 10 to 20 feet high. The bluffs range from being near vertical in many areas to a slope of approximately 1:3 (horizontal:vertical). The bluff face supports little to no vegetation.

The platform above the coastal bluff where the future parking area will be constructed is vegetated with a moderate to thick growth of grasses, native chaparral, and ice plant, except in areas still covered by extremely deteriorated asphalt concrete left in place at former parking areas.

The Site Plan, Figure 2, utilizes an aerial photograph of the proposed project site. Appendix A provides photographs of the beach, bench and highway cut taken on December 8, 2000. The photographs were taken during the daily low tide between 1300 and 1400 hours with the tidal elevation approximately 0.0 feet MLLW.

2.1 **Soils and Geologic Formations**

The project area is situated in the western region of the Santa Monica Mountains near the base of the southerly descending flanks in the City of Malibu.

Geologic units present in the vicinity of the project site include Holocene beach sands, Pleistocene-age older alluvial sediment deposits on the top of the hillside north of the roadway, and Miocene-age volcanic rocks exposed in the coastal bluffs and roadway cuts (Dibblee, 1993). Within 2,000 feet of the project site, other geologic units include a middle to late Miocene-age meta-sedimentary formation and landslide debris. Minor isolated fills also exist throughout the site as gully infills, erosion repairs, and minor roadway grading. Figure 3 provides a geologic map of the site area (Dibblee, 1993). These soil units are described below from oldest to youngest.

Conejo Volcanics (*Tcvaz*): An andesitic breccia formed in the middle Miocene age, pinkish-gray to brown, composed of unsorted, very large to small, angular fragments of andesitic in coherent andesitic to tuffaceous matrix. Originally, this was mapped as Zuma Volcanics by Yerkes and Campbell (1979, 1980).

Monterey Formation (*Tm*): A white weathering, thin-bedded, platy, siliceous shale, dark brown where fresh, moderately hard, formed during middle and late Miocene age.

Older Surficial Sediments (*Qoa*): These alluvial sediments consists of Pleistocene-age, unconsolidated to weakly-consolidated, pebble-cobble gravel, sand, and silt.

Landslide Debris (*Qls*): Old landslide debris, consisting of displaced blocks of alluvial sediments, terrace deposits, and/or volcanics, has been mapped in the area.

Residual Soils: Residual soils, formed over volcanic bedrock formation, are present where the volcanics have not been cut as part of the grading of PCH. The residual soils at the site are dark to medium brown, and appear to be slightly plastic, clayey to silty sand. The residual soils can be anticipated to be 1 to 2 feet thick.

Artificial Fill: Minimal fill may be associated with the grading of PCH based upon the high cuts north of the roadway. Minor fills are typically associated with either the repair of past localized slumps and erosion features or with the existing storm drains that convey water from the bluff top to the beach below.

The geologic map of the Malibu Quadrangle (Dibblee, 1993) contains a structural cross section plotted south to north through the project site. This cross section is included as Figure 4.

2.2 Geologic Hazards

2.2.1 *Faults and Seismicity*

The site is located within the seismically active area of Southern California, but outside a Special Studies Zone defined by the Alquist-Priolo Geologic Hazards Act of 1972. The project area will be subject to strong to very strong ground shaking should an earthquake occur on a nearby fault.

The nearest known active or potentially active fault is the Malibu Coast Fault system located about 2,000 feet north of the project area (Dibblee, 1993). Figure 3 shows the location of this mapped fault relative to the project site. There are no active or potentially active faults currently known to be mapped across the project site. A summary of nearby faults is shown in Table 1.

The Latigo Fault is mapped with an east-west trend through the site along the beach below the bluff. To the west, the fault turns inland, where it juxtaposes Conejo Volcanics against Monterey Formation to the south. Much of the shore platform at the site may be underlain by Monterey Formation. The Latigo Fault is not considered to be active and is not included as an Alquist-Priolo Zone.

We performed deterministic seismic hazard analysis using the computer program EQFAULT (Blake, 1995). We used the fault data file "CDMGSCE.dat" and the attenuation relationship by Idriss (1994) horizontal-rock/stiff soil. The Malibu Coast Fault controls the computed acceleration, with a maximum credible magnitude of 6.7 at a minimum distance of 1 mile. This attenuation relationship gives a maximum credible acceleration of 0.69 g at the closest point to the controlling fault. The results are generally consistent with the Caltrans Seismic Hazard Map (Mualchin, 1996), which gives accelerations of greater than 0.6 g. The output from EQFAULT is included as Appendix B.

Since segments of the active Malibu Coast Faults are not known to trend toward or through the project site, ground rupture is not anticipated.

Tsunamis, or seismic sea waves, are large oceanic waves that may be generated by earthquakes, submarine volcanic eruptions, or large submarine landslides. Earthquakes that generate tsunamis are typically followed by aftershocks, have magnitudes greater than 6, and have a relatively shallow focal depth. Tsunamis causing disastrous destruction have been found to have been caused by earthquakes with magnitudes greater than 7.75 (Weigel, 1964). The forces generated by a tsunami wave can be of such a large magnitude that the only means of protection is to avoid areas subject to tsunamis. The 500-year tsunami wave runup heights may be as high as 30 feet in Southern California (Synolakis et al., 1997). With the project site elevation ranging from about 20 to 25 feet above MSL, this area could potentially be impacted by a large tsunami wave.

2.2.2 *Liquefaction*

The potential for liquefaction is generally a function of the age, type, and looseness of cohesionless sediments, and the depth to groundwater. Relatively young (Quaternary), coarse-grained (sandy), loose sediments associated with a shallow depth to groundwater would have the highest susceptibility to liquefaction during a significant seismic event.

Since the soils at the project site are underlain by volcanic bedrock, liquefaction potential is considered very low.

2.2.3 *Slope Stability/Landslides*

The volcanics at the site exposed in the coastal bluffs and in the roadway cut appear to be stable at close to vertical cut inclinations. The minor instability of the bluff slopes along Dan Blocker Beach has been developed by the oversteepening and weathering of the bluff face due to wave erosion and/or subaerial erosion.

Landslide debris to the west and east of the project area has been mapped in the geologic map of the Malibu and Point Dume Quadrangles (Dibblee, 1993). Typically, landslides in this area are associated with Monterey Formation, a thin-bedded, platy siliceous shale, which is not present within the project area, except, perhaps, underlying part of the shore platform.

A minor amount of colluvial material, which may be associated with an ancient landslide or debris flow from alluvial deposits, or dumped material associated with the grading of PCH, can be observed just west of the center of the site in the coastal bluffs. This material can be seen in Photographs No. 7 and No. 8 of Appendix A as the darker brown material in the bluff face.

2.2.4 *Groundwater*

No groundwater was observed during the field reconnaissance exiting the bedrock material in the face of the coastal bluffs. Typical sources of groundwater that may exit the coastal bluffs would include: 1) natural groundwater migration from the highland areas just north the project site; and 2) infiltration of the bedrock material on the platform surface above the bluffs by rainfall. In the rainy winter months, it can be anticipated that groundwater seepage exiting the bluff may occur, causing spring sapping and solution cavities along faults, joints, and bedding planes, locally accelerating marine erosion in these areas. Typically, the volume of groundwater exiting the bluff face throughout the site boundaries can be anticipated to vary from location to location, and between seasons, even during drought years.

The permanent groundwater in the area can be anticipated to be near sea level within the project site.

2.2.5 *Drainage*

Drainage on the site is achieved by sheet flow over the existing ground surface. This uncontrolled surface runoff results in over-bluff discharge, resulting in minor rilling and gullying of the bluff faces. Drainage of the adjacent four-lane PCH utilizes sheet flow to a storm drain system, which carries the water under the roadway and empties into the ocean.

2.3 Coastal Bluff Geomorphology

2.3.1 *Terminology for the Bluff and Adjacent Shore*

The geomorphology of a typical coastal bluff profile is shown in Figure 5, "Typical Coastal Bluff Profile". Depicted on Figure 5 are the shore platform, the lower near-vertical part of the bluff called the sea cliff, and the upper-bluff slope, which generally ranges in inclination between 35 and 65 degrees (measured from the horizontal). The bluff top is the boundary between the upper bluff and the coastal terrace.

Offshore from the sea cliff is an area of indefinite extent called the nearshore zone (see Figure 5). The bedrock surface in the nearshore zone, which extends out to sea from the base of the sea cliff, is the shore platform. Worldwide, the shore platform may vary in inclination from horizontal to a gradient of 3 horizontal to 1 vertical, or 33 percent (Trenhaile, 1987). Although we have performed no offshore profiles associated with this study, based on the results of nearby profiling, we estimate that the gradient of the shore platform ranges from approximately 4 to 6 percent in the site vicinity (USACE, 1992). The boundary between the sea cliff (the lower, vertical and near-vertical part of the bluff) and the shore platform is called the cliff-platform junction, or alternatively the shoreline angle.

Within the nearshore zone is a subdivision called the inshore zone, extending landward from the point where waves begin to break (Figure 5). The seaward boundary of the inshore zone varies with time because the point at which waves begin to break changes dramatically with changes in wave size and tidal level. During low tides, large waves will break far out to sea. During high tide, smaller waves may not break at all or they may break directly on the lower cliff. Closer to shore is the foreshore zone, that portion of the shore lying between the upper limit of wave wash at high tide and the ordinary low water mark. Both of these boundaries usually lie on a sand or shingle beach

2.3.2 *Geomorphic Analyses*

Geomorphic analyses include all factors that contribute to shaping coastal landforms. Coastal erosion and coastal bluff retreat are caused by both marine and terrestrial processes. Surf action is usually the dominant marine agent producing both hydraulic (wave) impact and abrasion. Geomorphic factors that contribute to coastal erosion are mainly:

- Climate: Long-term climatic and short-term meteorologic conditions produce large waves, the energy source causing coastal erosion. Storm conditions may present a variety of wave directions, heights, and frequencies.

- Wave Energy: The amount of wave energy impacting a sea cliff is locally controlled by the offshore seafloor bathymetry of the shore platform. The shore platform causes large, deep-water waves to break before reaching the shoreline, thereby attenuating the amount of wave energy ultimately impacting the sea cliff. Variations in nearshore bathymetry also refract ocean waves, locally focusing damaging wave energy onto certain coastline segments (Munk and Traylor, 1947; Bradley and Griggs, 1976).

- Lithology and Structure of Coastal Bluffs: Lithology is the physical character of the rock, which determines the degree of erosion resistance. The term structure includes the discontinuities (such as faults and joints) in the rock that cause variations in erosion potential for a given rock type. These two factors may vary greatly along a stretch of coast, and are primary factors in site-specific rates of coastal retreat.

- Groundwater: The presence of groundwater may significantly impact the stability of certain geologic units and consequently accelerate bluff retreat. Groundwater seepage also tends to weaken intact geologic units (Kuhn and Shepard, 1980) by both chemical solution and by mechanical erosion, thus increasing susceptibility of soils in the bluff face to accelerated marine erosion.

- Bluff Geometry: Bluff geometry is the shape of the coastal bluff profile. Bluff geometry is influenced by marine erosion from coastal processes at the sea cliff, and subaerial erosion from terrestrial processes acting on the bluff (Emery and Kuhn, 1982). The rate of marine erosion at the sea cliff limits the decline of the bluff caused by subaerial erosion. Because the coastal bluffs along this portion of the coastline are all subjected to similar terrestrial processes (excluding man's activity), a qualitative assessment of bluff retreat can be made based on variations in bluff geometry along the coastline.

Geomorphic techniques can be used to describe and evaluate the progressive nature of bluff-top retreat. Bluff retreat is episodic and site-specific, characteristically coinciding with major storm events. Continuing long-term retreat of the lower bluff gradually creates an oversteepened slope in the upper bluff, causing it to decline (by erosion and/or slope failure) to a more sustainable angle of repose. The process continues and repeats in a series of episodes. As the upper bluff slope approaches the high end of this range, episodes of massive slope failure are typically caused by the combined effects of groundwater seepage and winter storms.

3 WAVE CLIMATE

In evaluating the wave climate that controls coastal erosion, considerable hindcast data are available, which indicate likely future trends. Accordingly, it is feasible to establish geotechnical design criteria for coastal structures. Waves along the Southern California coast shoreline generally range in height from 2 to 5 feet; however, large waves ranging from 6 to 10 feet in height are not uncommon. These large waves can arrive at almost any time during the year and may continue for 3 to 4 days. These high-wave episodes are frequently unaccompanied by strong winds.

The wave climate in this region is moderate, being protected by Point Conception from waves generated by storms in the North Pacific. In addition, the Channel Islands provide substantial wave protection from Pacific Basin storms. The fetch from the Channel Islands allow the generation of energetic, shorter-period waves and ocean swells from a particular direction that can penetrate the islands and cause an increase in the local wave height.

The Malibu coastline is exposed to wave action, undiminished by island interference, through only two relatively narrow corridors of wave approach (USACE, 1977). Northern portions of Santa Monica Bay are highly sheltered from northwest swell by the

Channel Islands and Point Dume. Open wave windows exist from the west-southwest between the Channel Islands and San Nicholos Island and from the south between San Nicholos Island and Catalina Island. In a study of northern Santa Monica Bay, design waves for 42 ft depth were determined as 11-13 ft with a 9 second period from the south and 6-10 ft from the west-southwest with a period of 11 seconds (USACE, 1977).

Short-period waves, with periods of 8 seconds or shorter, generated from the nearshore waters within the various channel islands and offshore banks, have a fetch of 50 to 100 nautical miles, and approach the project area from the west through the southwest.

Seymour et al. (1984) have produced storm wave hindcast estimates for the period 1900-1984 with a hindcast location near 35°N, north of Point Conception and the Channel Islands. Only waves with deep-water-approach directions between southwest and west-northwest were considered because waves approaching more obliquely would be considerably diminished by refraction as they approached the shoreline. Further, the waves were ranked by their power (energy multiplied by period). This resulted in a list of 59 storms in which the resulting offshore significant wave height exceeded 10 feet, all having periods equal to or exceeding 12 seconds.

It is of interest to note that extreme deep-water wave episodes exceeding 19.5 feet (6 meters) were only reported on eight occasions during the period 1900 to 1979, while the period from February 1980 through February 1984 experienced a total of ten storm events with deep-water waves exceeding 19.5 feet. Further, the storm of January 17-18, 1988, produced the highest measured deep-water waves approaching the Southern California coast. The significant wave height was 32.8 feet (10.0 meters) (Seymour, 1989), higher than any reported in the 1900-1984 database. This storm was likely on the order of a 200-year storm, and was reported by Seymour to be remarkably similar to Richard Henry Dana's observations in "Two Years Before the Mast of the Dangerous Southeasters [significant storm arriving from the south] off this same coast."

4 SHORT-TERM SEA LEVEL CHANGE

The effect of waves on the coast is highly dependent on the sea level during the wave episode. Large waves at low sea level cause limited erosion since they break well offshore. When episodes of large waves combine with short-term high sea level from tides and other factors, rapid retreat may occur along vulnerable coastlines.

4.1 Tides

Tides are caused by the gravitational pull of astronomical bodies, primarily the moon, sun, and planets. Tides along the Malibu coast have a semi-diurnal inequality. Tidal ranges have a mean range of about 3.7 feet and diurnal range of 5.3 feet (USACE 1977). On an annual average basis, the lowest tide is about -1.6 feet Mean Lower Low Water (MLLW) datum or about -4.48 feet Mean Sea Level (MSL) datum, and the highest tide is about +7.1 feet MLLW datum (+4.22 feet MSL datum).

4.2 Storm Surge

Storm surge results from strong storms pushing sea water against the coast. Extreme storm surges are presented as a function of return period at selected California tide stations (NOAA, 1980), with those for Santa Monica shown below:

Return Period, yrs	Storm Surge, ft
5	1.9
10	1.9
25	2.0
50	2.0
100	2.0

4.3 Wave Setup

Wave setup results from superelevation of the water surface over the normal surge elevation due to onshore mass transport of the water by wave action alone. Wave setup is a function of both the stillwater level, and the elevation and slope of the shore platform. For the Malibu area, the typical maximum range in wave setup would likely vary from 1/2 to 1 foot, which would be added to the extreme water elevation resulting from storm surge and astronomical tide.

4.4 Design Stillwater

For design of coastal structures, a conservative high sea level is determined that accounts for all of the factors that may increase sea level during the design life of the structure. Tides, storm surge, and wave setup add up to a 100-year high-water elevation of 5.2 to 5.7 feet (MSL datum). To this, an additional 0. 5 feet is added to account for long-term sea level rise based upon predictions of sea level rise over 100 years. Most designers use 0.5 feet, although estimates of expected long-term sea level rise in the next 100 years vary from 0.4 feet to 0.75 feet (Flick, 1998). For the Malibu coast, the design stillwater elevation can be approximated on the order of 5.7 to 6.2 feet (MSL datum).

5 MECHANISM OF COASTAL BLUFF RETREAT

The coastline at Dan Blocker Beach has not experienced a considerable amount of erosion in the last 20 to 30 years, but rather fluctuating periods of beach erosion and accretion caused by storm events. The coastal bluffs, which often support little or no vegetation, are subject to wave spray and splash, sometimes causing saturation of the outer layer and subsequent sloughing of oversteepened slopes. Wind, rain, irrigation, and uncontrolled surface runoff contribute to minor erosion of the coastal bluff, especially on the more exposed oversteepened portions. Where these processes are active, rilling and minor gullying has resulted along portions of the bluffs.

Geomorphic techniques can be used to describe and evaluate the progressive nature of bluff-top retreat. Bluff retreat is episodic and site-specific, characteristically coinciding with major storm events. Continuing long-term retreat of the lower bluff gradually creates an oversteepened slope in the upper bluff, causing it to decline (by erosion and/or slope failure) to a more sustainable angle of repose. The process continues and repeats in a series of episodes.

5.1 Marine Erosion Processes

The types and rate of erosion affecting the typical bluff profile will change with the tidal level and shore platform elevation. In addition, variations in seafloor bathymetry may result in wave focusing, further exacerbating erosive wave forces.

Mechanical erosion processes at the cliff-platform junction include water abrasion, rock abrasion, cavitation, water hammer, air compression in joints, breaking-wave shock, and alternation of hydrostatic pressure with the waves and tides. All of these processes are active in backwearing. Downwearing processes include all but breaking-wave shock (Trenhaile, 1987). Backwearing and downwearing by the mechanical processes described above are both augmented by bioerosion, the removal of rock by the direct action of organisms (Warme and Marshall, 1969; Trenhaile, 1987). Backwearing at the site can be assisted by algae in the intertidal and splash zones and by rock-boring mollusks in the tidal range.

The key factors affecting the marine erosion component of bluff-top retreat are water depth at the base of the cliff, breaking wave height, and the slope of the shore platform. Along the entire coastline, the sea cliff is subject to periodic attack by breaking and broken waves, which create the dynamic effects of turbulent water and the compression of entrapped air pockets. When acting upon jointed and fractured formation, the "water-hammer" effect tends to cause hydraulic fracturing which exacerbates sea cliff erosion. Erosion associated with breaking waves is most active when water depths at the cliff-platform junction (d_s) coincide with the respective critical incoming wave height (H) such that d_s is approximately equal to 1.3H.

Waves will break when their height reaches approximately 75 percent of the water depth; thus, for a shore platform elevation of 0 feet MSL datum, 3-foot-high waves would break at the base of the sea cliff when tides are approximately 4 feet above mean sea level (4 feet of water). Elevations of the shore platform along Dan Blocker Beach appeared to range from about 2 to 8 feet MSL allowing only waves less than 1 foot high to break along the base of the sea cliff during higher tides. Any significant erosion from the sand currently on the beach would allow larger waves to break against the sea cliffs.

In the central portion of Dan Blocker Beach, it appears some stone and concrete has been placed on the natural rock outcrops at the beach to protect against waves striking the base of the bluff and accelerating the erosion of the bluff. The location of this stone protection can be seen in the aerial photograph (Figure 2) and in the site photographs in Appendix A.

Where the shore platform is protected by a offshore rocks further from the bluff face, breakers would form some distance offshore from the bluff. These waves would shoal, break, reform as smaller waves or proceed shoreward as broken waves, ultimately delivering to the coastal bluff only a small fraction of the original wave energy.

5.2 Subaerial Erosion

Groundwater seepage can be anticipated to exist along faults, joints, and bedding planes, locally accelerating marine erosion in the bedrock of the coastal bluff. The primary erosive effect of groundwater seepage upon the coastal bluff is spring sapping, or the mechanical erosion of sand grains by water exiting the bluff face. However, chemical solution (especially of carbonate matrix material) is also a significant contributor.

6 SLOPE STABILITY

Stability of the coastal bluffs is affected by the soil strengths within and between strata that make up the various geologic units, and by the height and profile of the bluff. Based upon observation of cuts made into the volcanics in the area, the coastal bluffs appear to be relatively stable at slopes of 1:3 (horizontal:vertical), and possible at even steeper slopes.

The more gently-sloping coastal bluffs, more prevalent along the westerly section of the park, are more stable than the steeper, nearer to vertical, coastal bluffs to the east. However, the bluff profile, in addition to affecting slope stability, also provides a good indicator of the relative rate of marine and subaerial erosion. Slope stability calculations analyzing this geometry are appropriate for long-term evaluation of the stability of the coastal bluff. Where marine erosion allows a fairly rapid retreat of the bedrock unit causing a relatively steep to near-vertical bluff, the bluff will be more susceptible to continuous sloughing.

In summary, and from a practical standpoint, proper determination of the appropriate bluff-top setback, if desired, must include an analysis of both the rate of marine erosion of the lower, cliffed portion of the bluff, and of the effect of that rate in creating an "artificially" oversteepened upper bluff. We recommend further studies of the stability of the bluff face after borings are drilled above the bluffs and the borings downhole logged by a Certified Engineering Geologist (CEG).

7 DISCUSSION

Following our initial data review and collection of pertinent maps and area photographs, we performed a geotechnical reconnaissance of the project site on December 8, 2000. This geotechnical reconnaissance served as an aid in the understanding of the following factors as they relate to bluff stability and coastal erosion:

- The bluff geometry;
- An estimate of the elevation and slope of the shore platform;
- The estimated relative erosion resistance of each lithologic unit;
- The presence of sea caves;
- The density and pattern of jointing and faulting in the Zuma Volcanics;
- The presence of groundwater seepage;
- The presence of sand beach at the base of the bluff;
- The presence of a weathering profile in the bluff face soils; and
- The presence of protective vegetation.

We recommend further geotechnical investigation of the site, including soil borings as part of the final design of this project.

7.1 Access Ramp/Stairways

There is currently a stairway just west of Dan Blocker Beach adjacent to an existing condominium complex. For this improvement project, pedestrian access to the beach, in the form of an aluminum ramp/stairways, would also be constructed near the eastern end of the project site. The ramp would extend from the bluff top to the beach level and would include concrete landings at each end.

The foundation elements for the new access ramp may consist of a single, isolated, concrete cast-in-drilled-hole (CIDH) shaft located at each landing.

It is recognized that ongoing marine erosion during the design life of the access ramp may continue to undermine any landings placed on the beach level, reducing both lateral support and subjecting the base of the ramp to a progressively more erosive environment. As we understand, the new ramp will be designed to accommodate ongoing marine and subaerial erosion processes.

The proposed new access ramps may be founded on isolated concrete cast-in-drilled-hole (CIDH) shafts supporting each landing. Isolated concrete shafts will develop both axial and lateral capacity derived from sufficient embedment into the underlying bedrock materials. Geotechnical design criteria for both vertical and lateral load capacity are provided in the following sections.

We recommend that drilled shaft foundations supporting access ramps derive support from shaft friction in the dense Zuma Volcanic bedrock materials. We recommend a preliminary allowable shaft friction of 800 psf in formational materials to resist both dead plus live loads. No increase should be used for transient wind or seismic loads. It should be noted that this design precludes the need for cleaning the bottoms of drilled excavations and thus does not rely on any tip bearing for vertical support. Lateral loads will likely control all design embedment depths and, hence, additional end-bearing capacity is not required.

Resistance to lateral loads applied to the drilled shaft is developed through deflection in the pier, which mobilizes the reaction of the soil into which the drilled pier is embedded. The resisting pressure applied by the soil to a pier depends upon the relative stiffness of the pile and soil, as well as depth of embedment. For drilled piers embedded on sloping ground, an additional reduction in lateral capacity results, associated with the lack of confining pressure for loads applied in the slopeward direction.

Failure of a laterally-loaded pier takes place either when the maximum bending moment in the loaded pier reaches the ultimate or yield resistance of the pier section, or when the lateral earth pressures reach the ultimate lateral resistance of the soil along the total length of the pier. For purposes of definition, failure of piers with relatively "short embedment" takes place when the pier rotates as a unit with respect to a point located close to its toe. Failures of piers with relatively "long embedment" occur when the maximum bending moment applied to the pier exceeds the yield resistance of the pier section, and a plastic hinge forms at the section of maximum bending moment. Investigators have suggested that piers be grouped relative to their dimensionless depth of embedment L/T where:

L = embedment length of the pier in feet, and

$T = (EI/f)^{1/5}$ (divided by 12 to convert inches to feet)

Short piers are generally defined as L/T being less than 2.0, and long piers are generally defined as L/T being larger than 4.0.

The quantity EI is the stiffness of the pier section, and f (coefficient of variation of soil modulus) would be on the order of 60 pounds per cubic inch for the bedrock materials. These soil modulus values are for high strain levels. If the dimensionless ground surface pier deflection /pier diameter, is less than 1 percent, these soil modulus values may be doubled. We further recommend that a reduction coefficient to account for sloping-ground loading conditions be applied to the soil modulus as follows:

$$C = (K_{ps} - K_{as})/(K_{p1} - K_{a1})$$

Where:

C = The reduction coefficient to be applied to the soil modulus to account for sloping ground.

K_{ps}, K_{pl} = Coefficient of passive earth pressure for sloping ground and level ground, respectively.

K_{as}, K_{al} = Coefficient of active earth pressure for sloping ground and level ground, respectively.

In order to determine the structural requirements and load deformation characteristics of the proposed concrete piers, we would suggest using the elastic theory approach developed by Matlock and Reese (1962). A condensed version of this approach is outlined in the NAVFAC Design Manual DM-7.2, Chapter 5, Section 7. We would suggest that earth pressure coefficients also be obtained from DM-7.2. Chapter 3 of the NAVFAC Manual (Analysis of Walls and Retaining Structures) provides a figure for "Active and Passive Coefficients with Wall Friction (sloping backfill)" and a numerical solution for "Coefficients K_a and K_p for Walls with Sloping Wall and Friction, and Sloping Backfill" [pages 7.2-67 and 7.2-69 of the May 1982 Edition]. We recommend that, for preliminary calculation purposes, an angle of internal friction of 40 degrees be used to approximate the actual soil strength parameters representative of the soil conditions at the site.

These recommendations are preliminary in nature. After drilling borings at the site or obtaining the exact location and specific construction method preferred for this access ramp, modifications to these recommendations may be anticipated.

7.2 Parking Lot

The proposed parking lot is to consist of thirty diagonal parking stalls facing the Pacific Ocean along the eastern portion of the project site. Access would be provided from two driveways located off of PCH. The driveways would be one-way, allowing for vehicles to enter through one of the driveways and exit through the other.

The entire area of the parking lot and driveways was cut in the volcanic formational material during the roadway grading of PCH. The parking areas should be stripped of all existing deteriorated pavements, all existing vegetation, debris and any other unsuitable materials. The new pavements should be in compliance with regional standards of the County of Los Angeles. Unless areas of previously placed fill are encountered, we anticipate the subgrade to be fairly good quality soils with preliminary design R-values of greater than 20. We recommend that soil samples be taken of the subgrade before final design of the pavement sections.

Any surface drainage from the parking lot and driveways should drain away from the coastal bluffs and towards PCH.

7.3 Erosion

7.3.1 *Overview*

Shoreline erosion and bluff retreat is an ongoing natural process. The California Coastal Act contains provisions that allow construction of seawalls, revetments, bluff retaining walls, and other similar shoreline protection measures when necessary to protect existing structures and when consequential damage to the shoreline can be minimized. Coastal Act Section 30253 states that new development shall 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. Ongoing marine erosion may eventually impact bluff-top improvements not safely set-back from the bluff face. Recognizing that the Coastal Commission will not allow stopping the marine erosion through implementation of structural measures, consideration should be given to nonstructural solutions suitable for mitigating both marine and subaerial erosion.

The coastline at Dan Blocker Beach has not experienced a considerable amount of erosion in the last 20 to 30 years, but rather fluctuating periods of beach erosion and accretion caused by storm events. The U.S. Army Corps of Engineers, Los Angeles District has collected historic shoreline changes of Santa Monica Bay and plotted the shoreline changes (USACE, 1992). Figures 6 to 8 present the shoreline changes from 1933 to 1988, as presented in their report.

During our field reconnaissance at the site, numerous erosion features such as rills, gullies, and vertical scarps, were noted, especially towards the center of the project site. In the areas where the erosion features were more prominent, stone rip rap has been dumped in the past on the rock outcrops in front of the bluff face to protect the bluff from erosion caused be wave action striking the bluff face. Natural and man-made features have contributed to a wider beach in several areas.

In the western third of the project site, large rocks outcrop within the surf zone creating a small headland, which traps sand moving within the littoral zone towards the east. Aerial photographs show a slightly wider beach area just to the west of this rock (see Photograph No. 1, Appendix A). Similarly, a condominium complex at the very east end of the project site has a vertical concrete wall with large rock outcrops seaward from this wall. This structure acts as a groin, trapping the littoral drift of sand and creating the largest sandy beach area along the entire project site (see Photograph No. 11).

In addition to runoff caused by precipitation directly on the bluff face, some of the other factors contributing to subaerial erosion include:

- Burrowing animals inhabiting the bluff face;
- Humans traversing across and recreating on the bluff face; and
- Surface runoff spilling over the bluff top from relatively flat upper platform.

7.3.2 *Non-Structural Alternatives*

Based upon our limited reconnaissance and information obtained concerning the erosion and geology of the site, the rate of erosion of the bluff face appears to be minimal. This relatively stable condition is due in part to the current level of the beach, and in part to the existence of concrete and stone riprap dumped in the past on the rock outcrops in front of the bluff face. Should the beach profile change due to the loss of appreciable amounts of sand (thus enabling larger waves to directly break against the bluff), the rate of bluff erosion could significantly increase. This erosion of the lower portion of the bluff would oversteepen the lower portion of the bluff and consequently cause instability in the upper bluff. However, it should be noted that no significant evidence of this process was observed during the site reconnaissance.

Based upon the geologic condition of the bluffs and the beach erosion observed in the past 70 years, we recommend that the driveways and parking areas be setback a minimum of 20 feet from the bluff face. If the constraints of the project design allow further setback, consideration of the maximum allowable setback should be given to minimize potential future bluff erosion due to changes in the sand on the beach due to natural or man-made processes or major storm events causing waves directly stiking the coastal bluff face.

In recognition of the significant role that subaerial erosion plays in bluff erosion, any erosion protection policy should include implementation of measures to reduce surface runoff, groundwater effects, and other activities that create bluff stability problems. It should be further recognized that human-induced erosion, at least locally, accelerates the subaerial erosion primarily affecting the coastal bluffs, and fencing or other similar measures are necessary to discourage foot traffic down the face of the bluff.

As indicated previously, the presence on the bluff face of erosion features, such as rills, gullies, and near-vertical scarps was noted during our field reconnaissance at the site. During the grading of the parking areas, any gullies identified in the parking area or areas to be developed for other recreational uses should be filled with properly compacted soils and drainage modified to drain any flow away from the bluffs. We recommend that any area, between the new parking area and driveways and the bluff face, that is not well vegetated, have drought-tolerant vegetation established to minimize any interim erosion.

Wide, protective sand beaches are clearly the most efficient form of shoreline protection. If future changes in the beach profile allow waves to strike directly against the bluff face and detrimentally accelerate bluff erosion, consideration should be given to a program of beach nourishment to produce a sufficiently wide cross section of beach to protect the bluffs.

7.3.3 *Structural Alternatives*

The California Coastal Act contains provisions that allow construction of seawalls, revetments, bluff retaining walls, and other similar shoreline protection measures when necessary to protect existing structures and when consequential damage to the shoreline can be minimized. Any new development shall 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. Any protective measures to minimize bluff erosion would require a structural alternative that may alter the natural landforms.

By utilizing a sufficiently deep concrete pile or foundation system for any concrete landing for an access ramp to the beach, future undermining by wave action and/or beach erosion would be mitigated. Other structures not constructed (founded) into the bedrock beneath the beach sands may require future protection such as riprap.

8 LIMITATIONS

Professional judgments represented herein are based partly on our evaluation of the technical information gathered, partly on our understanding of the proposed construction, and partly on our general experience. Our engineering work and judgments rendered meet the current professional standards; we do not guarantee the performance of the project in any respect. This warranty is in lieu of all other warranties, express or implied.

We have observed only a small portion of the pertinent soil conditions along the project site, and have been provided no elevation control for geologic contacts, variations in shore platform, or beach profiles. Site-specific geotechnical information has been limited to reviewing existing geologic mapping of the area, and observing exposures on the coastal bluffs. The recommendations made herein are based primarily on visual interpretations made during our field reconnaissance work. We recommend further geotechnical investigations as the plans for the site development progress, including borings at the site. If the plans for site development are changed, or if variations or undesirable geotechnical conditions are encountered during construction, Group Delta Consultants, Inc. should be consulted for further recommendations.

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TABLES

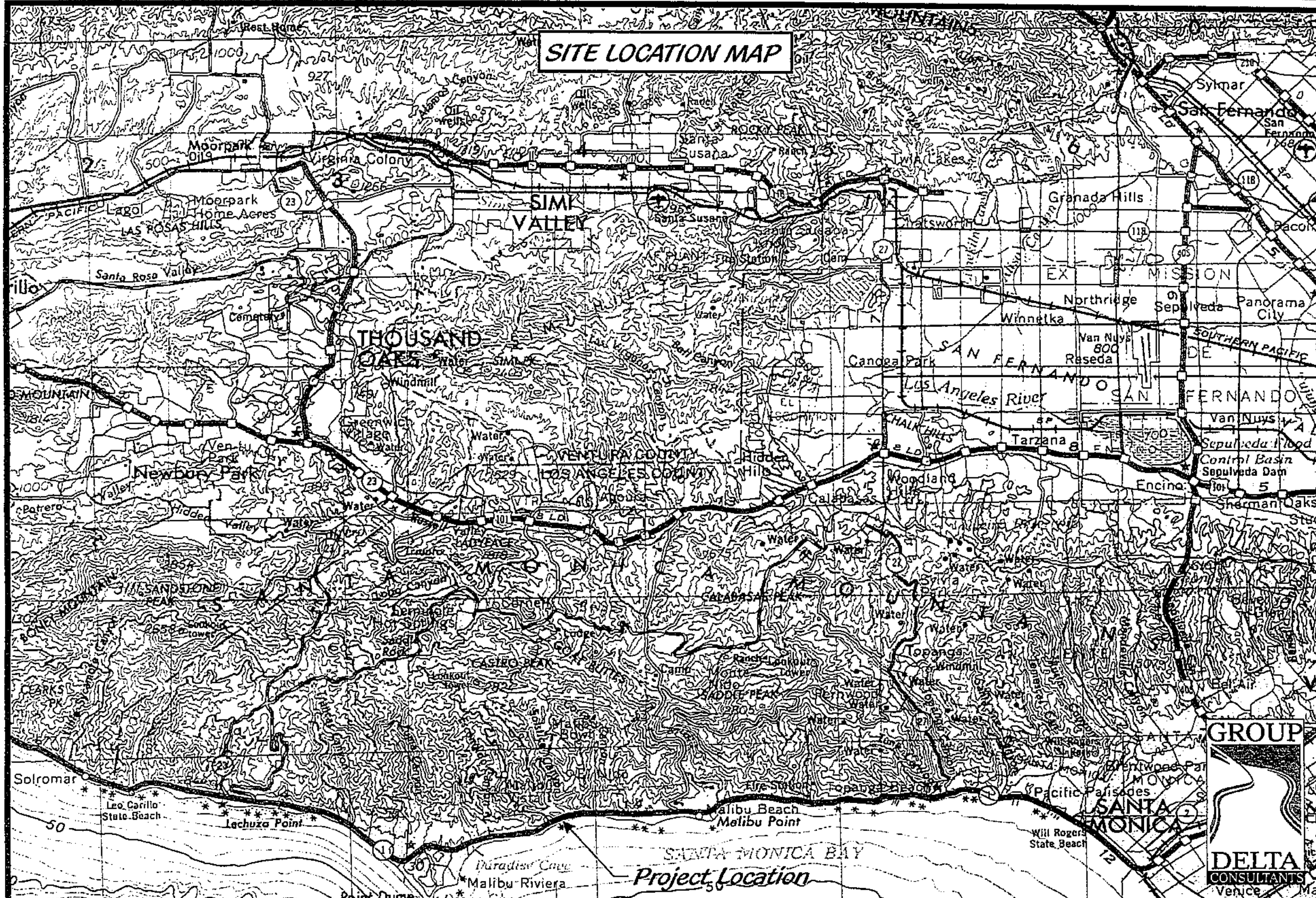
TABLE 1
SUMMARY OF NEARBY FAULTS
DAN BLOCKER BEACH

Abbreviated Fault Name	*Fault Distance (mile)*	*Maximum Credible Earthquake Magnitude*	*Maximum Probable Earthquake Magnitude*
Malibu Coast	1	6.7	4.9
Santa Monica	4	6.6	5.5
Anacapa-Dume	4	7.3	6.3
Palos Verde	11	7.1	6.2
Simi-Santa Rosa	18	6.7	5.5
Hollywood	20	6.4	5.3
Newport-Inglewood (L.A. Basin)	21	6.9	5.6
Santa Susana	21	6.6	6.3
Compton Thrust	22	6.8	5.8
Sierre Madre (San Fernando)	24	6.7	6.6
Northridge (E. Oak Ridge)	24	6.9	5.8
Verdugo	24	6.8	5.5
Oak Ridge (Onshore)	25	6.9	6.2
San Cayeto	26	6.8	6.4
Holser	28	6.5	4.9
San Gabriel	29	7.0	5.6
Raymond	30	6.5	5.0
Elysian Park Thrust	30	6.7	5.8
Channel Island Thrust	30	7.4	6.0
Ventura – Pintas Point	31	6.8	5.5
Oak Ridge (Blind Thrust Offshore)	31	6.9	6.1
Sierra Madre	31	7.0	6.2
Montalvo-Oak Ridge Trend	34	6.6	5.5
Santa Ynez (East)	39	7.0	5.9
Red Mountain	40	6.8	5.9

Note: Fault data (is from CDMGSCE.DAT, Blake (1996).

FIGURES

SITE LOCATION MAP

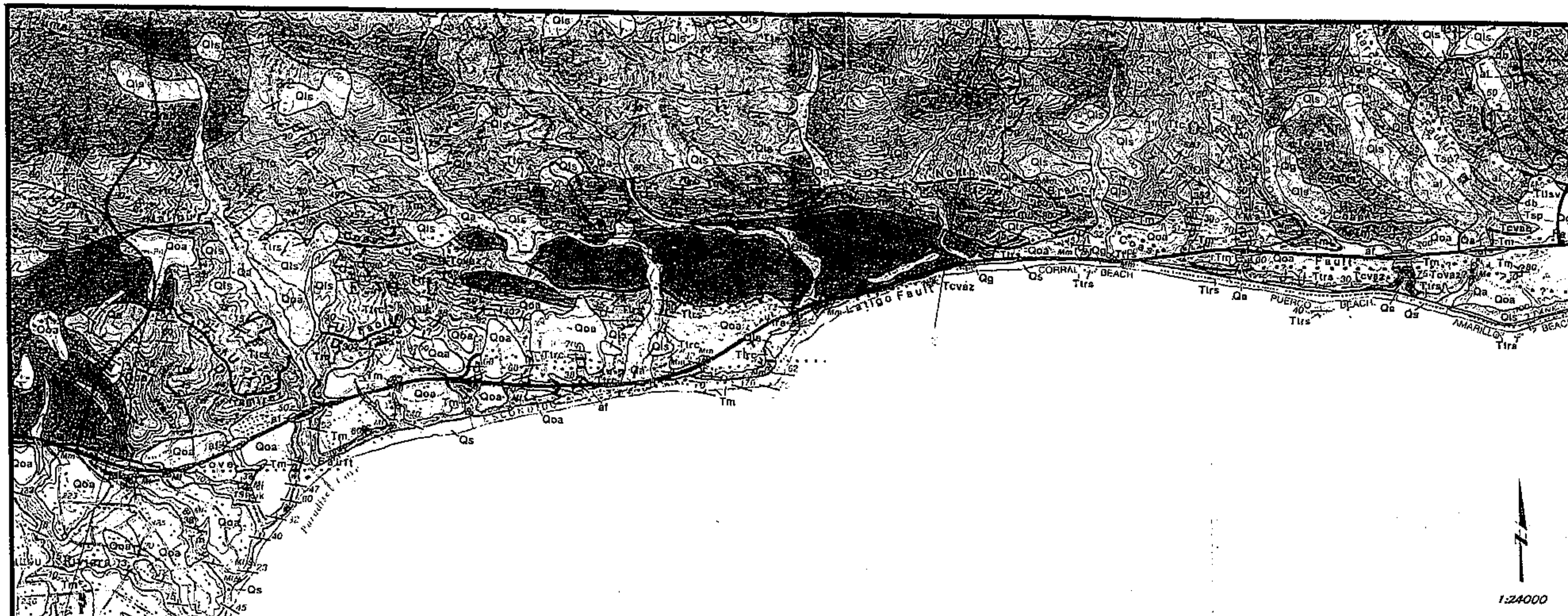


Project Name: Dan Blocker Beach, Malibu, CA

Project No.: 2020

Figure No.: 1

GROUP DELTA CONSULTANTS	GROUP DELTA CONSULTANTS, INC. ENGINEERS AND GEOLOGISTS 4455 MURPHY CANYON ROAD, SUITE 100 SAN DIEGO, CA 92123 (858) 573-1777	FIGURE NUMBER 2
	PROJECT NAME DAN BLOCKER BEACH MALIBU, CALIFORNIA	PROJECT NUMBER 2020
	SITE PLAN AERIAL PHOTOGRAPH, 5-11-00	



GEOLOGIC MAP
(See Figure 3B for Legend)

From Dibblee Geological Foundation Map # DF-47: Dec. 1993

GROUP DELTA CONSULTANTS	GROUP DELTA CONSULTANTS, INC. ENGINEERS AND GEOLOGISTS 4455 MURPHY CANYON ROAD, SUITE 100 SAN DIEGO, CA 92123 (858) 573-1777	FIGURE NUMBER 3A
	PROJECT NAME DAN BLOCKER BEACH MALIBU, CALIFORNIA	PROJECT NUMBER 2020
	GEOLOGIC MAP	

POINT DUME QUADRANGLE
LEGEND

af Qs Qg Qa Qls

SURFICIAL SEDIMENTS

unconsolidated, detrital sediments, undissected to partly dissected

Qs *beach sand*
Qg *gravel and sand of major stream channels*
Qa *alluvial gravel, sand and clay of flood plains*
af *artificial cut and fill*
Qls *landslide debris; some may be of late Pleistocene age*

Qos Qoa

OLDER SURFICIAL SEDIMENTS

unconsolidated to weakly consolidated alluvial sediments, dissected where elevated; late Pleistocene age
Qoa *older dissected alluvial gravel, sand and clay; on coastal area deposited in part on a wave-cut platform; forms several terraces*
Qos *old dune sand of Point Dume*

—UNCONFORMITY—

Tm Tmcl

MONTEREY FORMATION

(near northeast corner and in central area included in upper Topanga Formation by Campbell et al. 1970; in coastal area included in lower Modelo Formation by Durrell 1954, Monterey Formation by Truex and Hall 1969, Truex 1976, Campbell et al. 1970; same lithologic unit as Monterey Shale of Ventura Basin of Dibblee 1989)
marine biogenic; middle and late Miocene age (Luisian and Mohnian Stages)
Tm *white weathering, thin bedded, platy siliceous shale; locally brittle, porcelaneous in northeast area and coastal area south of Malibu Coast fault; includes cream-white dolomite layers on north side of Malibu Coast fault; unconformity at base just north of that fault*
Tmcl *clay shale in northeast area, light gray, soft, thin bedded micaceous, silty to semi-siliceous*

Tlvc

DETRITAL SEDIMENTS OF LINDERO CANYON

(similar to volcanic conglomerate of upper Lindero Canyon and other areas in Thousand Oaks and Newbury Park quadrangles of Dibblee and Ehrenspeck 1993b, 1990a; exposed only in northeast area)
nonmarine, coarse clastic; probably late middle Miocene age
Tlvc *conglomerate of epiclastic (reworked) volcanic detritus; light gray, massive to vaguely bedded, composed of unsorted, angular to subrounded fragments of mostly tan andesite-dacite derived from Conejo Volcanics, in semi-friable detrital matrix*

—UNCONFORMITY—

Ttuc Ttuvc Ttueg

UPPER TOPANGA FORMATION

(exposed only in central area; included in shale of Escondido Canyon of upper and middle Topanga Formation by Campbell et al. 1970)
marine clastic; late middle Miocene age
Ttuc *clay shale similar to underlying unit Ttc of middle Topanga Formation, in part overlies highest tongue of Tcvab of Conejo Volcanics*
Ttuvc *local basal conglomerate of andesitic detritus from Conejo Volcanics*
Ttueg *local basal breccia conglomerate of sandstone and siltstone detritus from underlying formations*

Ttrc Ttrs Ttrb

TRANCAS FORMATION

(of Yerkes and Campbell 1979, 1980; "Unit Tb" of Campbell et al. 1970; San Onofre breccia of Truex and Hall 1969: upper Topanga Formation of Dibblee and Ehrenspeck 1990b south of Malibu Coast fault; probably equivalent to upper and middle Topanga Formation north of fault)
marine clastic; middle Miocene age
Ttrc *clay shale, gray, micaceous, soft, crumbly; includes thin friable sandstone beds*
Ttrs *gray to light brown, locally gray-white, massive to bedded, friable sandstone, in places contains blueschist grains (shown as Ttus in Dibblee and Ehrenspeck 1990b)*
Ttrb *blueschist conglomerate-breccia (San Onofre breccia); blue-gray, crudely bedded, composed of subrounded fragments of blueschist and minor white quartz in matrix of fragmented schist (shown as Ttub in Dibblee and Ehrenspeck 1990b)*

Tts Ttc

MIDDLE TOPANGA FORMATION

(included in shale of Escondido Canyon of upper Topanga Formation by Campbell et al. 1970)
in part intercalated between tongues of Tcvab of Conejo Volcanics; marine clastic; middle Miocene age
Ttc *gray micaceous clay shale, silty, thin bedded, crumbly with shaly to ellipsoidal fracture; locally contains thin hard layers and concretions of yellow-tan dolomite*
Tts *sandstone; light gray to tan, thick bedded, semi friable; upper unit mapped as Latigo Breccia Member of Campbell et al. 1970 but this is sandstone with scattered pebbles and cobbles of granitic and metavolcanic rocks and of sandstone*

CONEJO VOLCANICS

(of Taliaferro 1924; Campbell et al. 1970; Yerkes and Campbell 1979, 1980; included in middle Topanga Formation by Durrell 1954; Topanga Volcanics of Truex and Hall 1969; Truex 1976)
extrusive volcanic rocks and associated intrusive rocks; middle Miocene age

Tcvad Tcvbv Tcvbz Tcva Tcvb Tcvab Tcvbp Tcvaz

EXTRUSIVE ROCKS

extrusive submarine and subaerial volcanic rocks; middle Miocene age, Relizian Stage (16.6±2.4 m. y. to 13.4±0.9 m. y., Turner 1970, in Yerkes and Campbell 1979)
Tcvad *andesite-dacite breccia, exposed only in northeast area: light colored (light pinkish gray to tan), composed of moderately to poorly sorted, mostly cobble to boulder sized angular fragments of light colored, very fine grained felspathic andesite-dacite in semi-coherent detrital matrix of same rock; crudely stratified; somewhat weakly erosion resistant; probably deposited subaerially as laharic debris flow breccia; and as reworked detritus from nearby volcanic source*
Tcvbv *porphyritic basalt-andesite breccia (of Ladyface Ridge), exposed only near northeast corner of quadrangle: gray-black, weathers dark brown, composed of unsorted large to small subangular fragments of vesicular, gray-black, porphyritic basalt-andesite in semi-coherent detrital matrix of same rock; phenocrysts composed of white lathy (elongate) plagioclase feldspar; unstratified; deposited subaerially (?) as laharic (debris flow) breccia*
Tcva *andesite to dacitic flows and breccias: light colored (light gray, light brown to tan), massive to crudely layered, coherent, erosion resistant, fine grained feldspathic andesite-dacite (?), composed of unsorted large to small angular fragments in coherent andesite-dacite (?) matrix; includes some massive flows; intercalated as thick lenses in Tcvb; deposited subaerially (?) as flow breccias (broken and jumbled during movement) from nearby volcanic source*
Tcvab *andesitic breccia: in northwest area medium gray to brown, composed of angular to slightly subrounded, moderately sorted to unsorted, mostly cobble and boulder size fragments of gray, fine grained andesitic to basaltic rocks in moderately to strongly coherent gray detrital matrix; massive to crudely layered, intercalated in unit Tcvb; deposited subaerially as laharic and reworked breccias; in central and southern areas (Ramira and Solstice Canyon Tongues of Campbell et al. 1970, in ascending order) medium gray to pinkish brown, in part weathered light rusty brown; massive to very vaguely bedded, composed of unsorted very large to small angular fragments of andesite in coherent andesitic to tuffaceous (?) matrix; erosion resistant; deposited subaerially (?) as laharic breccias from nearby volcanic sources*
Tcvb *basaltic flows and breccias: black, weathered dark olive brown, fine grained composed primarily of calcic plagioclase feldspar (average An_{50}) and ferromagnesian minerals: hypersthene or augite, rare olivine and magnetite, (Weigand 1982); some flows amygdaloidal with white amygdules of silica, calcite or analcime; incoherent, crumbly where weathered, weakly resistant to erosion, massive to vaguely bedded; some reddish; in some places unit includes thin lenses 1 or 2 meters thick of dark gray basaltic sandstone, tan arkosic sandstone, and shaly siltstone; basaltic rocks erupted as fluid lavas and probably in part deposited subaerially*
Tcvbp *basaltic-andesitic breccia: similar in color and composition to Tcvb, but somewhat more andesitic; unstratified to very vaguely layered; composed of small angular fragments, mostly less than a foot (0.3m), and pillows as large as 2 feet (0.6m) with chilled, somewhat vitreous margins, in incoherent basaltic matrix; in large part hyaloclastic breccia (fractured from rapid chilling under sea), somewhat crumbly where weathered and weakly resistant to erosion; in few places includes thin sedimentary lenses similar to those in unit Tcvb; basaltic rocks erupted as fluid lavas and deposited under sea*
Tcvbz *(Zuma Volcanics of Campbell et al. 1970; Yerkes and Campbell 1979, 1980) basaltic rocks in Trancas Formation; basalt to basaltic-andesite, similar to Tcvb north of Malibu Coast fault, weathers to brown, incoherent*
Tcvaz *(Zuma Volcanics of Campbell et al. 1970; Yerkes and Campbell 1979, 1980) andesitic breccia: similar to unit Tcvab north of Malibu Coast fault, weathers brown, unstratified; included in Conejo Volcanics*

di Adi ai

INTRUSIVE ROCKS

intrusive into the Conejo Volcanics, middle Topanga and older formations; middle Miocene age
di *andesite-dacite intrusives, light gray to tan, massive, very fine grained, composed mostly of feldspar and minute dark grains of altered biotite and/or hornblende?; coherent, erosion resistant; forms large to small plugs pods and dikes*
ai *andesitic intrusives, light-medium gray to light brown, massive, aphanitic to very fine grained, coherent, erosion resistant, may range to latite and dacite; forms small plugs and dikes; one plug 1 mile south of Seminole Hot Springs contains black hornblende needles*
aci *andesitic intrusive; gray to brown, massive, fine, medium to coarse grained, composed of plagioclase feldspar and iron oxides (after biotite and hornblende?); feldspar somewhat lathy; weakly coherent, weakly erosion resistant, forms large irregular-shaped intrusion in lower Topanga Formation*
db *diabase, dark gray, fine to locally coarse grained, massive, ophitic texture composed of lathy feldspar (calcic plagioclase) and mafic minerals, mostly augite and olivine(?); somewhat incoherent where weathered; intrusive as sills in lower Topanga Formation; locally includes thin dikes of fine grained basaltic rock (bi)*

—UNCONFORMITY—

(Buttress unconformity of Dibblee and Ehrenspeck 1993)

Ttlc Ttls Ttlcv Ttlsv Ttlgv

LOWER TOPANGA FORMATION

(of Durrell 1954, Campbell et al. 1970; Temblor-Vaqueros Formations of Truex and Hall 1969, Truex 1976; Topanga Canyon Formation of Yerkes and Campbell 1979, 1980; includes Vaqueros Formation of Durrell 1954, Campbell et al. 1970, Yerkes and Campbell 1979, 1980)
marine clastic turbidites; early and middle Miocene age, Saucesian and Relizian Stages
Ttlc *clay shale, gray, thin bedded, micaceous; contains few thin hard beds of tan dolomite, and of sandstone; includes Shale of Encinal Canyon of Campbell et al. 1970, Yerkes and Campbell 1979*
Ttls *tan, moderately hard sandstone; includes some thin interbeds of gray micaceous shale; near Trancas Canyon includes a lens of white algal limestone*
Ttlcv and Ttlsv *(Vaqueros Formation of Durrell 1954, Campbell et al.1970) lithologically same as Ttlc and Ttls respectively, but contain fossils of early Miocene age (Saucesian-Zemorrian Stage)*
Ttlgv *conglomerate with cobbles of granitic rocks, porphyritic andesite and quartzite in light gray sandstone matrix; basal (?) conglomerate of Lower Topanga Formation*

—UNCONFORMITY (?)—
near Malibu Coast Fault only

Tsp

SESPE FORMATION

nonmarine, fluviatile clastic rocks; mostly of Oligocene age, but may range into early Miocene and late Eocene
Tsp *light gray, tan to pink, medium to coarse grained sandstone; well-bedded, locally with west-dipping cross-beds; moderately hard to semi-friable; includes thin layers of red claystone; also lenses of conglomerate of pebbles and cobbles of granitic, porphyritic, and quartzitic rocks in sandy matrix*

—UNCONFORMITY—
near Malibu Coast Fault only

Tll Tlls Tllg

LLAJAS FORMATION

(of Campbell et al. 1970)
marine clastic; much shattered and fractured in southwestern area; middle (?) Eocene age
Tll *mostly gray micaceous clay shale and siltstone; includes minor sandstone in southwestern area*
Tlls *sandstone; light gray to tan, fine grained, coherent*
Tllg *basal conglomerate; gray to brown, composed of cobbles of granitic and metavolcanic rocks and of quartzite in sandstone matrix*

Tsus Tsu Tsug Tsl

SANTA SUSANA FORMATION

(of Colburn and Novak 1989; "Martinez" Formation of Truex and Hall 1969; Campbell et al. 1970)
marine clastic; Paleocene and Eocene(?) ages, much shattered in southwestern area
Tsu *mostly gray micaceous clay, shale and siltstone; includes some tan, hard, fine grained sandstone in southwestern area*
Tsug *small lens of gray-brown conglomerate with cobbles of granitic, metavolcanic and quartzitic rocks in sandstone matrix*
Tsus *sandstone; light gray to tan, fine grained, coherent*
Tsl *Simi Conglomerate Member (Colburn et al. 1989) gray cobble conglomerate of smooth, gray and maroon-brown quartzite cobbles and some of hard granitic and porphyritic metavolcanic rocks in sandstone matrix that includes thin red and pink layers and small pisolitic concretions; upper part mostly sandstone*

Kss

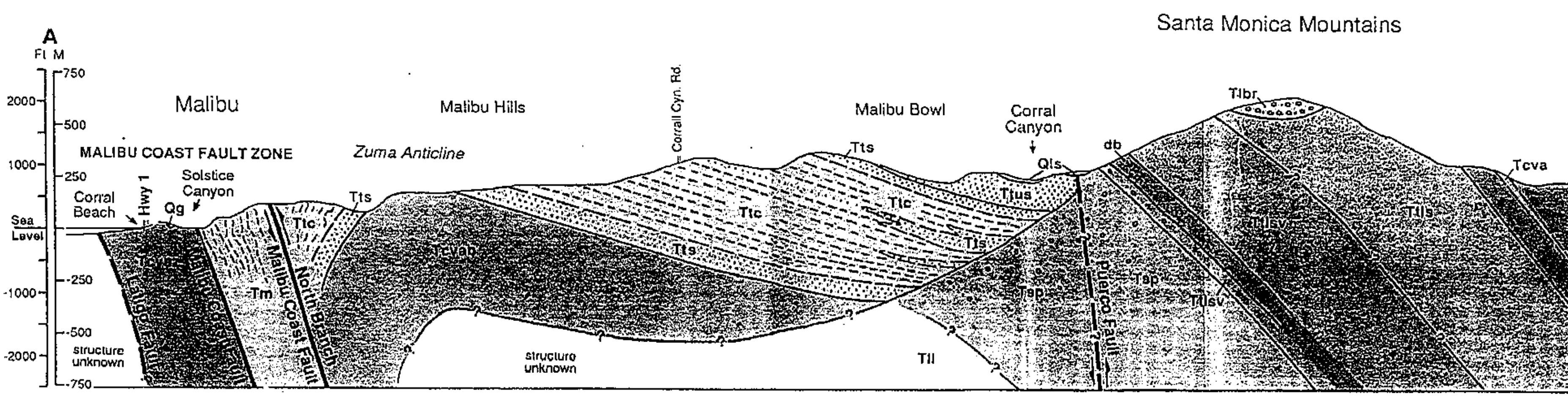
UNNAMED MARINE STRATA

(Truex and Hall 1969, Campbell et al. 1970; probably equivalent to Chatsworth Formation of Colburn et al. 1981, in Simi Hills)
marine clastic turbidites; late Cretaceous age
Kss *mostly tan, massive to bedded sandstone, very hard but fractured; includes interbedded gray micaceous clay shale; base not exposed*

From Dibblee Geological Foundation Map # DF-47: Dec. 1993

GROUP DELTA CONSULTANTS	GROUP DELTA CONSULTANTS, INC. ENGINEERS AND GEOLOGISTS 4455 MURPHY CANYON ROAD, SUITE 100 SAN DIEGO, CA 92123 (858) 573-1777	FIGURE NUMBER 3B
	PROJECT NAME DAN BLOCKER BEACH MALIBU, CALIFORNIA	PROJECT NUMBER 2020
	GEOLOGIC LEGEND	

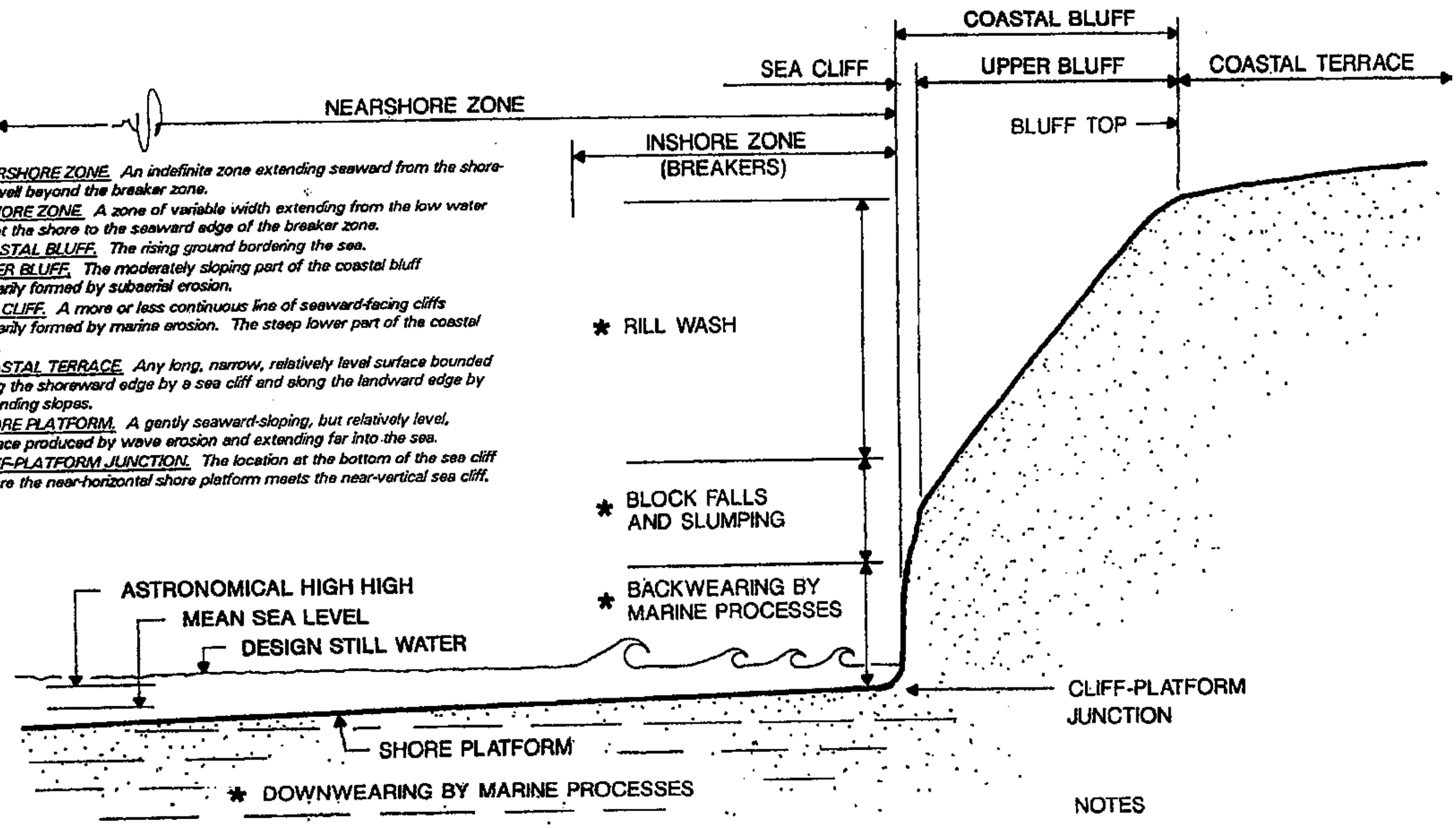
Cross-section line A-B shown on topographic base map



Portion of south to North Structural Cross-section A - B through the Malibu Beach Quadrangle

From Dibblee Geological Foundation Map # DF-47; Dec. 1993

GROUP DELTA CONSULTANTS, INC. ENGINEERS AND GEOLOGISTS 4455 MURPHY CANYON ROAD, SUITE 100 SAN DIEGO, CA 92123 (858) 573-1777	FIGURE NUMBER 4
PROJECT NAME DAN BLOCKER BEACH MALIBU, CALIFORNIA	PROJECT NUMBER 2020
GEOLOGIC CROSS SECTION	



NEARSHORE ZONE. An indefinite zone extending seaward from the shore-line well beyond the breaker zone.
INSHORE ZONE. A zone of variable width extending from the low water line at the shore to the seaward edge of the breaker zone.
COASTAL BLUFF. The rising ground bordering the sea.
UPPER BLUFF. The moderately sloping part of the coastal bluff primarily formed by subaerial erosion.
SEA CLIFF. A more or less continuous line of seaward-facing cliffs primarily formed by marine erosion. The steep lower part of the coastal bluff.
COASTAL TERRACE. Any long, narrow, relatively level surface bounded along the shoreward edge by a sea cliff and along the landward edge by ascending slopes.
SHORE PLATFORM. A gently seaward-sloping, but relatively level, surface produced by wave erosion and extending far into the sea.
CLIFF-PLATFORM JUNCTION. The location at the bottom of the sea cliff where the near-horizontal shore platform meets the near-vertical sea cliff.

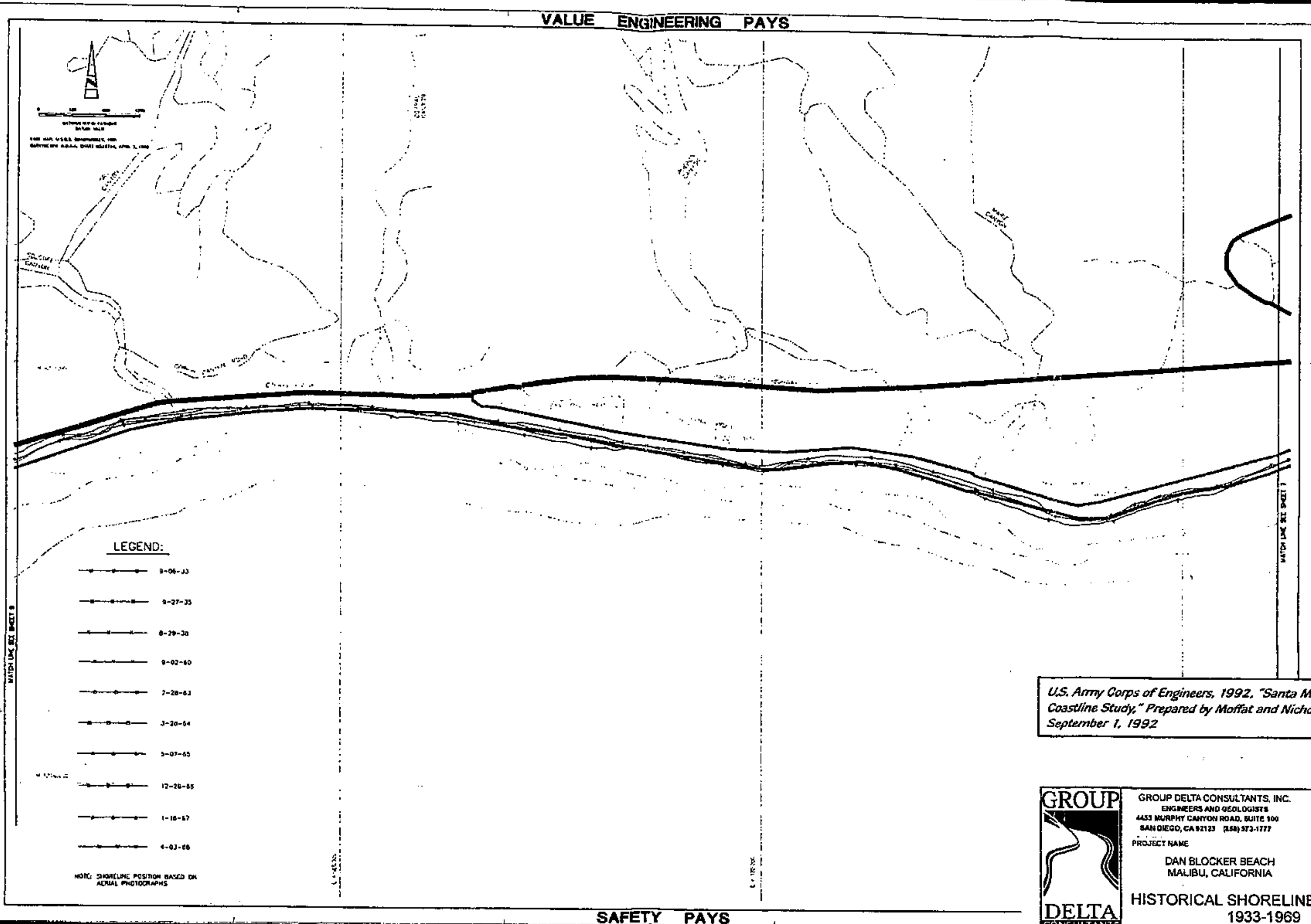
NOTES

- NO SCALE ON DRAWING
- * DOMINANT EROSION PROCESS

GROUP DELTA CONSULTANTS

TYPICAL COASTAL BLUFF PROFILE (Looking West Up the Coast)

Project Name: Dan Blocker Beach, Malibu, CA | *Project No.: 2020* | *Figure No.: 5*



U.S. Army Corps of Engineers, 1992, "Santa Monica Bay Coastline Study," Prepared by Moffat and Nichol, Engineers, September 1, 1992

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ENGINEERS AND GEOLOGISTS
4453 MURPHY CANYON ROAD, SUITE 100
SAN DIEGO, CA 92123 (858) 573-1777

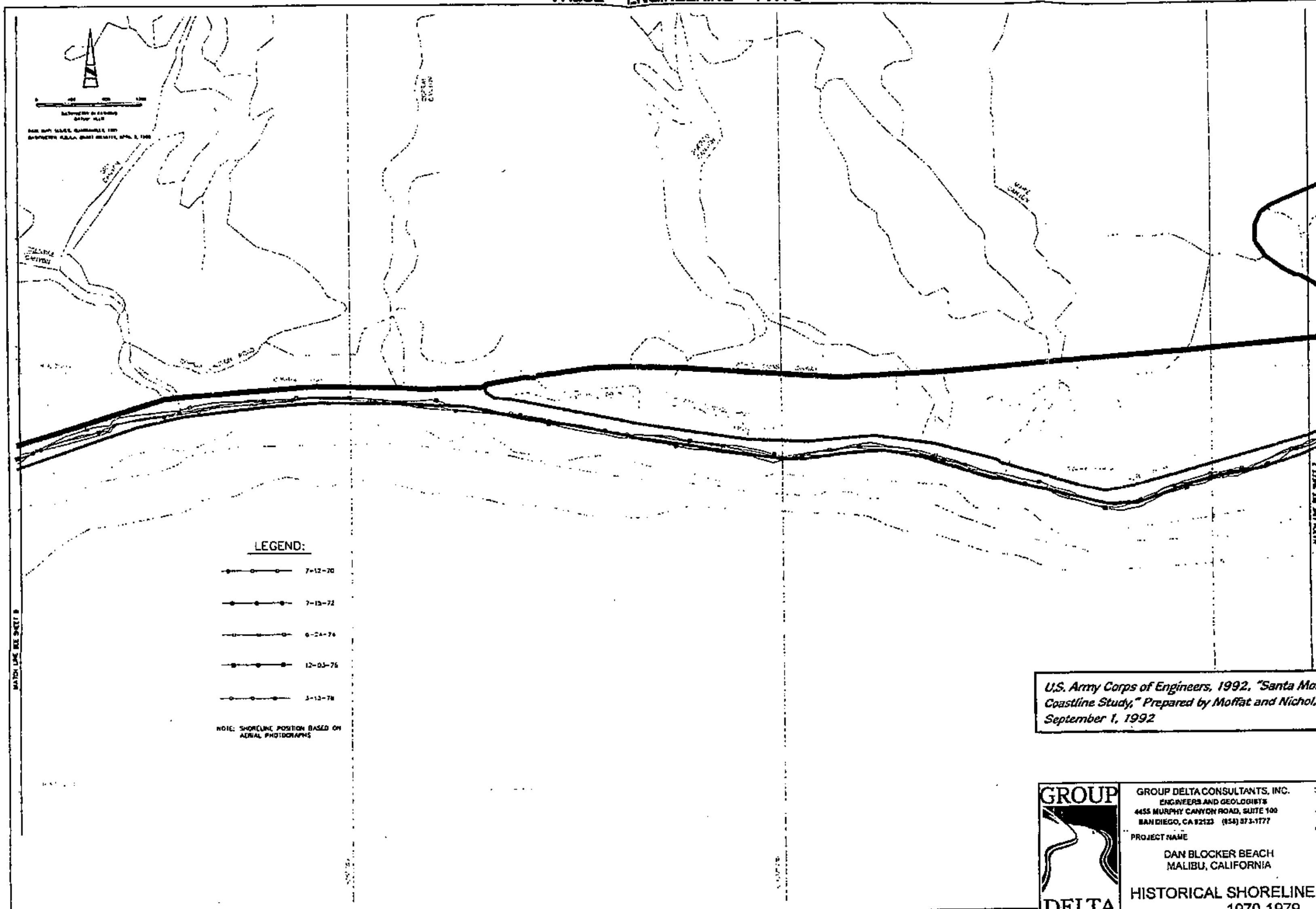
PROJECT NAME
DAN BLOCKER BEACH
MALIBU, CALIFORNIA

FIGURE NUMBER 6

PROJECT NUMBER 2020

HISTORICAL SHORELINE CHANGES
1933-1969

VALUE ENGINEERING PAYS



U.S. Army Corps of Engineers, 1992, "Santa Monica Bay Coastline Study," Prepared by Moffat and Nichol, Engineers, September 1, 1992

GROUP DELTA CONSULTANTS, INC.
ENGINEERS AND GEOLOGISTS
4455 MURPHY CANYON ROAD, SUITE 100
SAN DIEGO, CA 92123 (858) 573-1777

FIGURE NUMBER 7

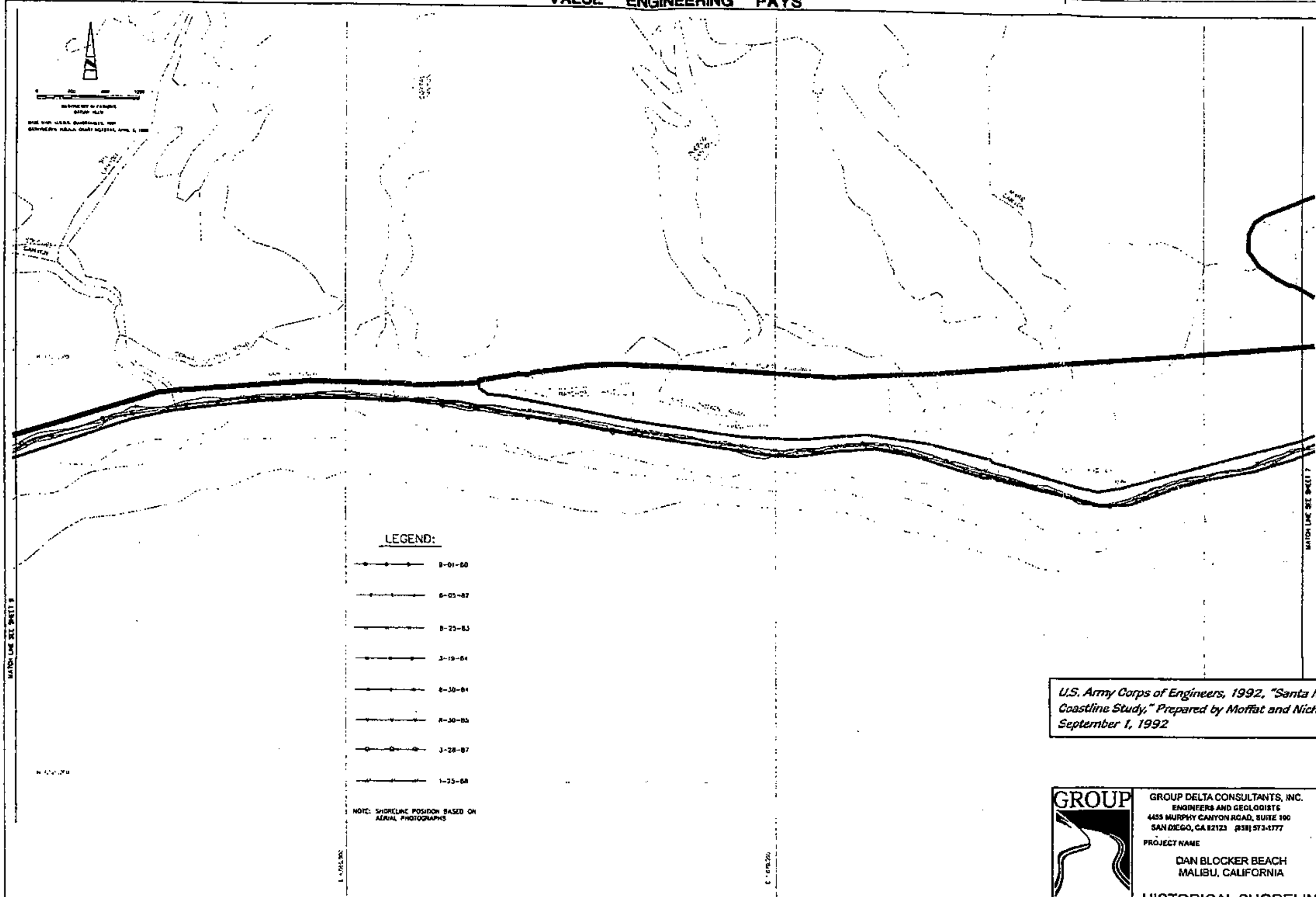
PROJECT NAME
DAN BLOCKER BEACH
MALIBU, CALIFORNIA

PROJECT NUMBER 2020

HISTORICAL SHORELINE CHANGES
1970-1979

SAFETY PAYS

VALUE ENGINEERING PAYS



SAFETY PAYS

U.S. Army Corps of Engineers, 1992, "Santa Monica Bay Coastline Study," Prepared by Moffat and Nichol, Engineers, September 1, 1992

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GROUP DELTA CONSULTANTS, INC.
ENGINEERS AND GEOLOGISTS
4455 MURPHY CANYON ROAD, SUITE 100
SAN DIEGO, CA 92123 (858) 573-1777

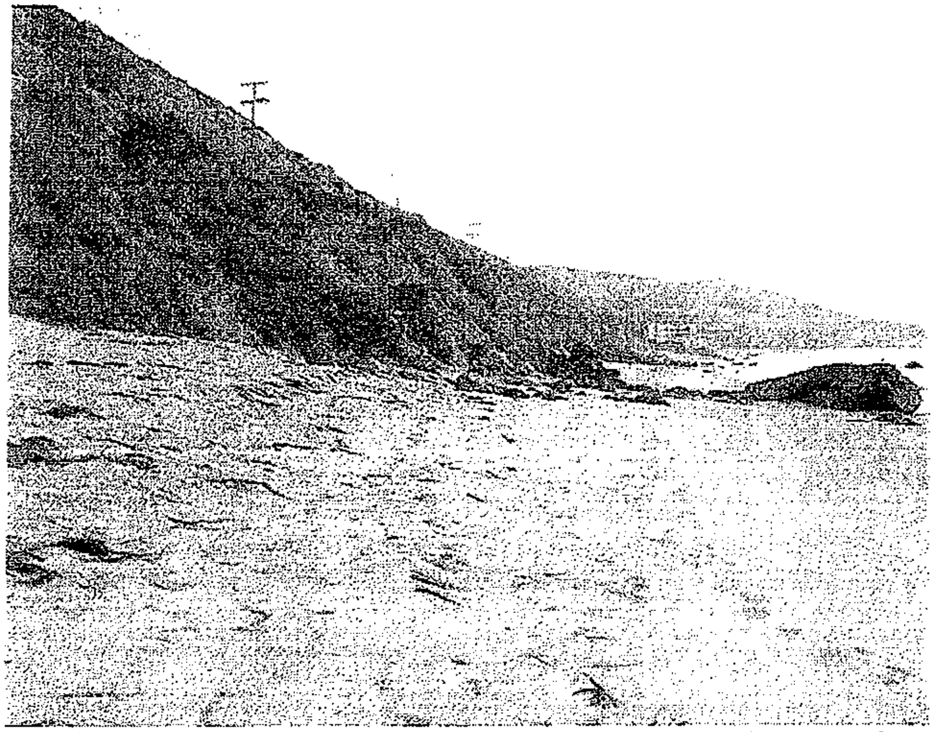
FIGURE NUMBER: 8

PROJECT NAME: DAN BLOCKER BEACH, MALIBU, CALIFORNIA

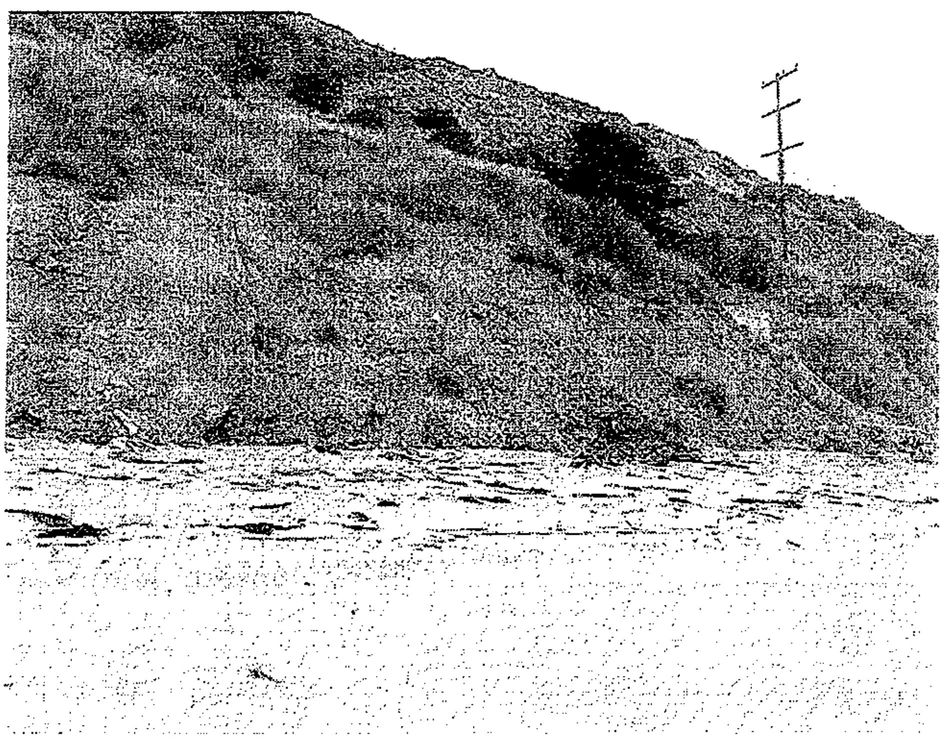
PROJECT NUMBER: 2020

HISTORICAL SHORELINE CHANGES
1980-1989

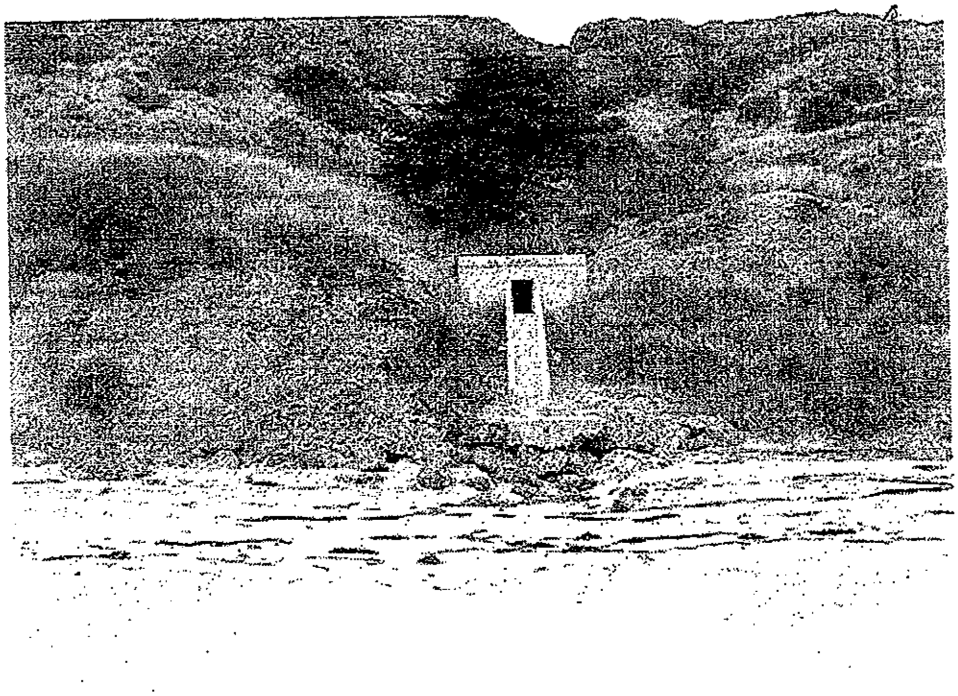
APPENDIX A
SITE PHOTOGRAPHS



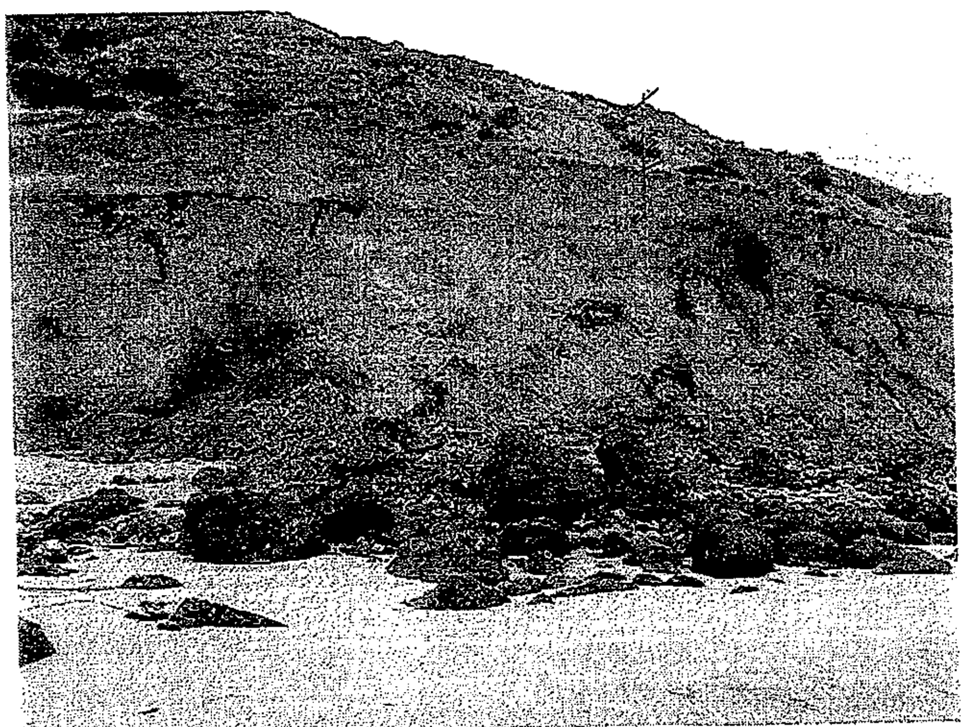
Photograph 1: Looking east at Dan Blocker Beach and rock outcrop from bottom of condominium stairway west of project site.
(Pc080098.jpg)



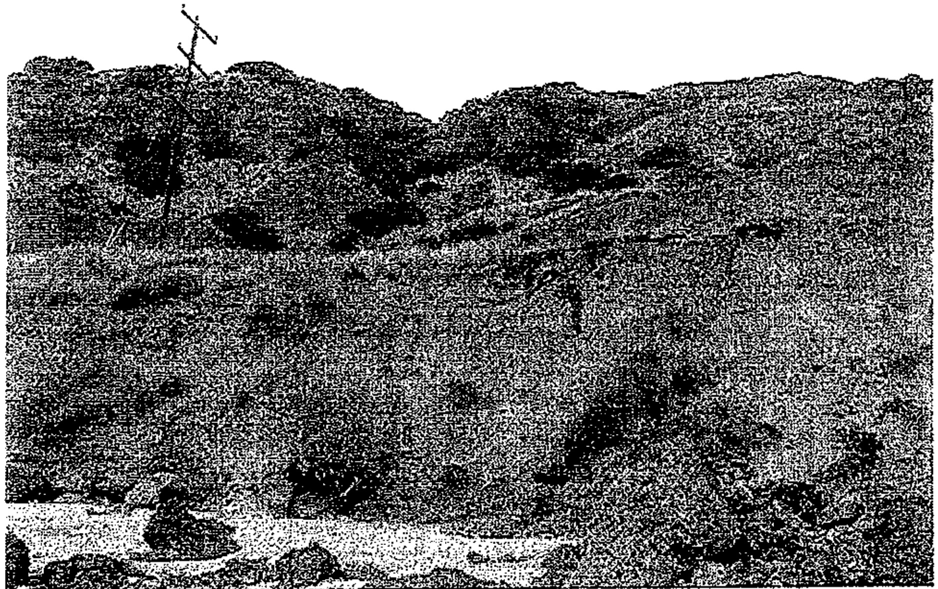
Photograph 2: Looking at coastal bluff and relatively wide sand beach on west side of project area, just west of culvert under Pacific Coast Highway.
(Pc080104.jpg)



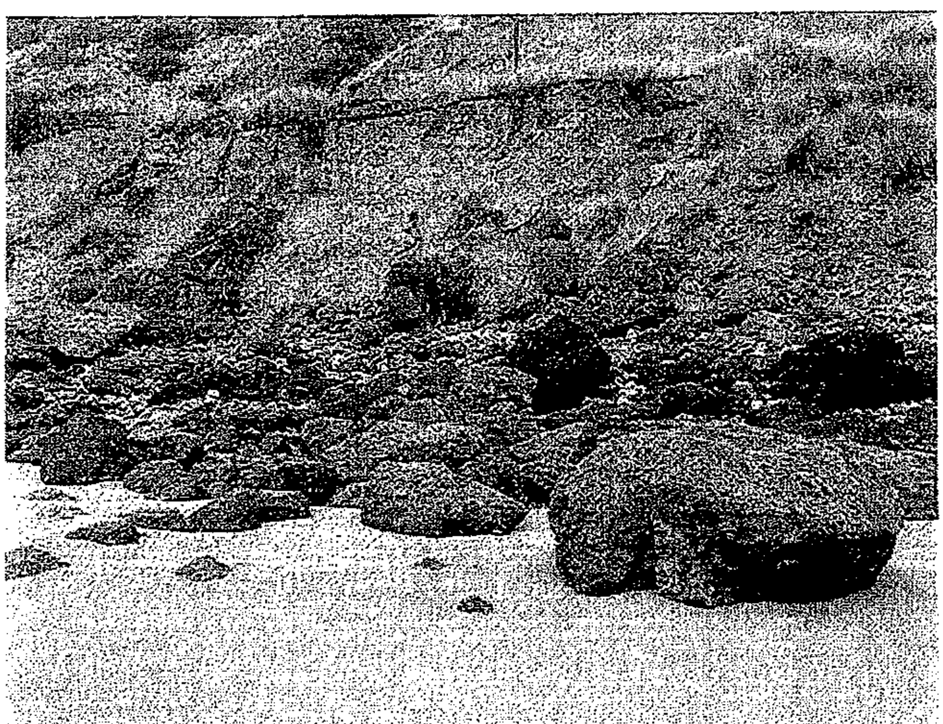
Photograph 3: Looking at culvert and associated fill material above culvert that crosses under PCH. Minor scour can be seen under concrete pad below culvert that has been protected with minor amount of dumped rock.
(Pc080105.jpg)



Photograph 4: Looking at rock outcroppings against bluff face which starts about 1000 feet west of eastern boundary of project (condominium). Cobbles and boulders have collected behind and within these large outcrops.
(Pc080106.jpg)

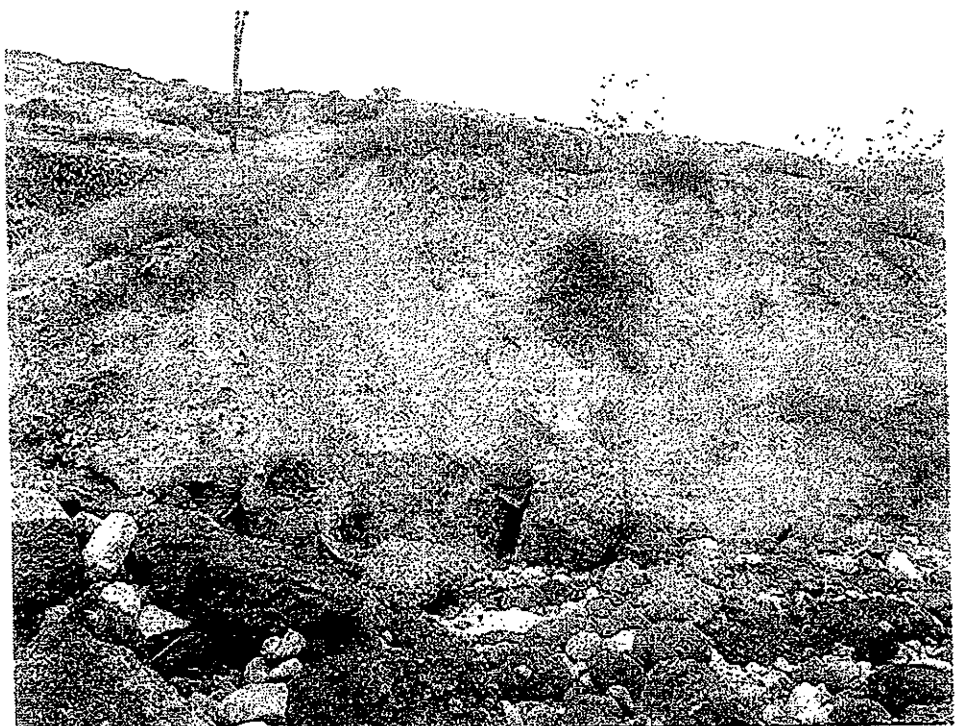


Photograph 5: Near vertical bluff about 20 feet high behind the rock outcroppings against bluff face.
(Pc080107.jpg)

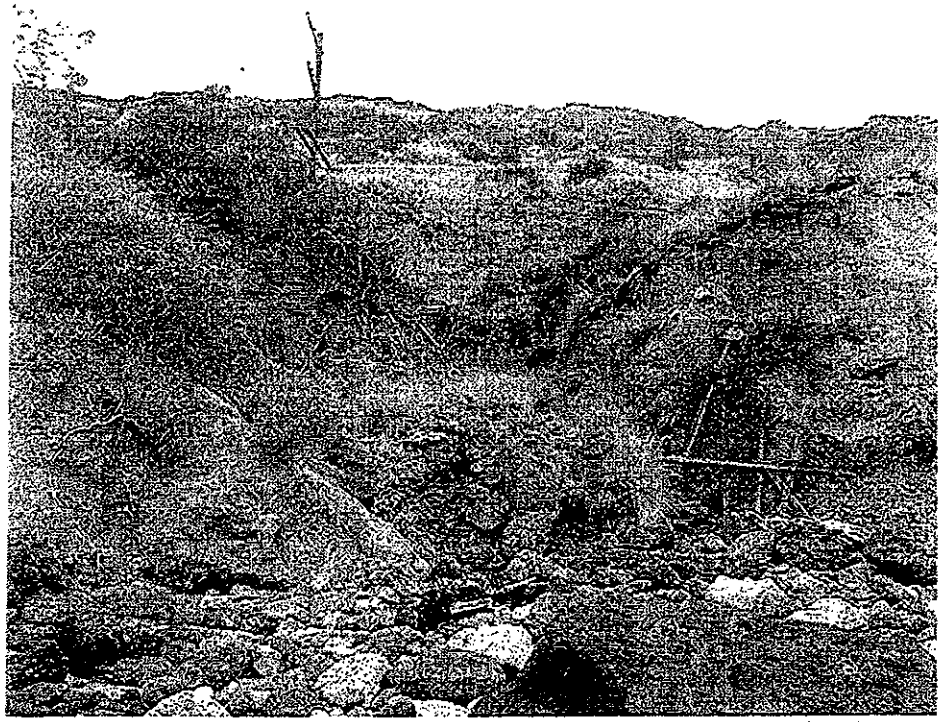


Photograph 6: Large rocks at base of cliff during low tide. Note algae on rocks indicate that the sand beach is completely covered during higher tide levels.
(Pc080112.jpg)

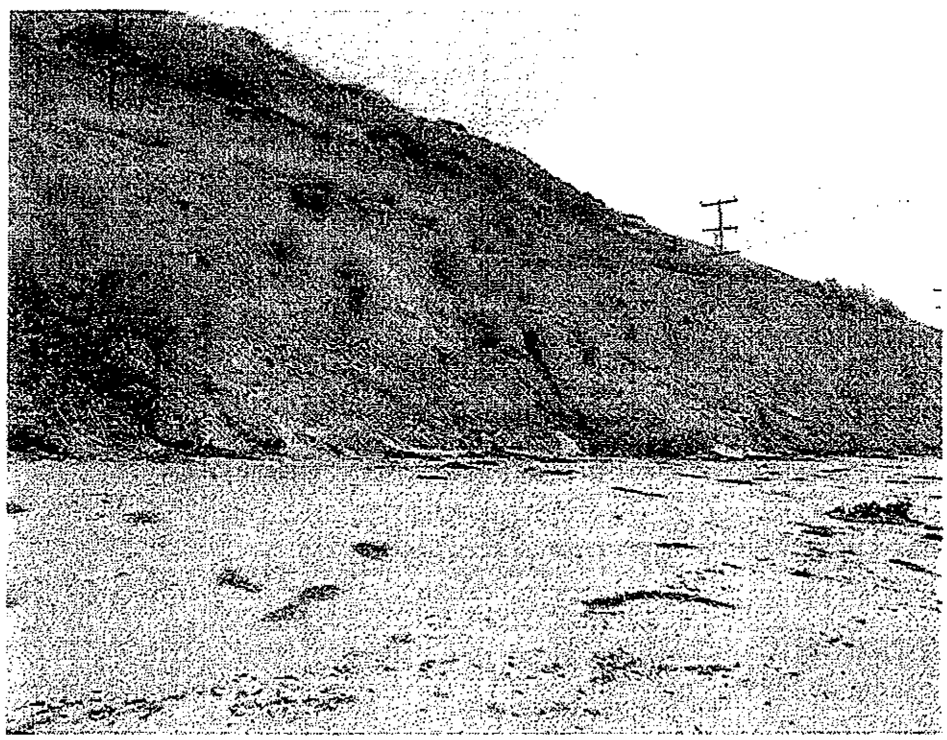
Photograph 7: Large accumulation of rocks at base of cliff with some possibly dumped to protect cliff.
(Pc080120.jpg)



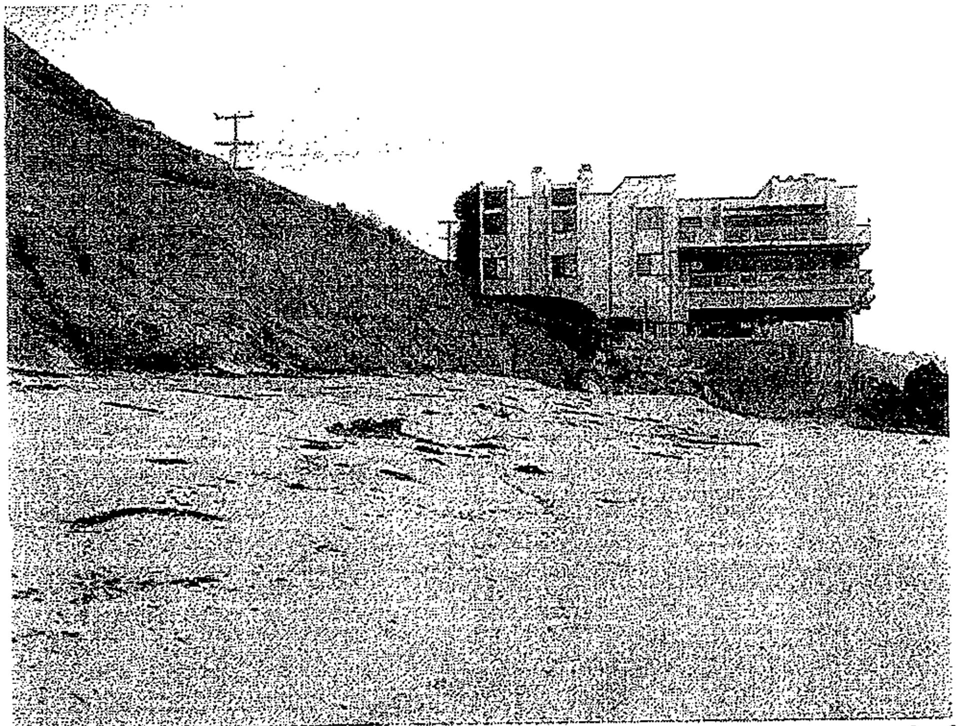
Photograph 8: Limited area of end dumped road material or slope wash (colluvium) in bluffs with a large accumulation of rocks at base of cliff with some possibly dumped to protect cliff.
(Pc080121.jpg)



Photograph 9: Small ravine in coastal bluff carrying water and debris to base of bluff.
(Pc080125.jpg)

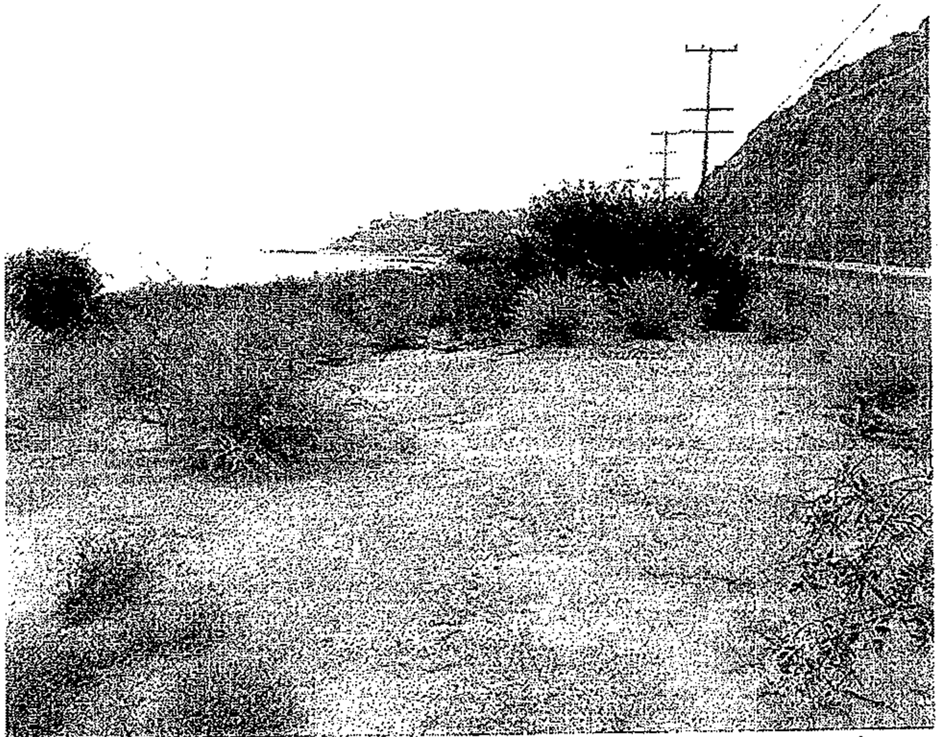


Photograph 10: Larger sand beach towards east end of project area. Beach formed by longshore transport of sand downcoast being trapped by condominium.
(Pc080131.jpg)



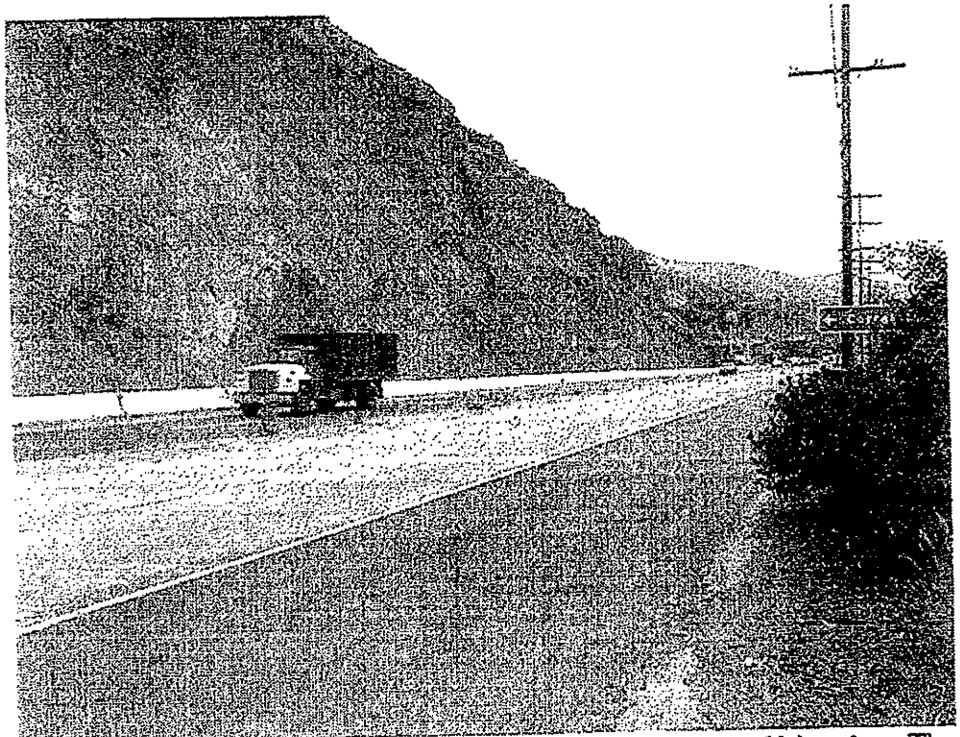
Photograph 11: Another view of large sand beach towards east end of project area. Large outcroppings of rocks exposed on seaward side of structure and dumped rock placed against end of wall on shore side for wave protection.
(Pc080132.jpg)

Photograph 12: Cut terrace over beach at very east end of project site.
(Pc080147.jpg)

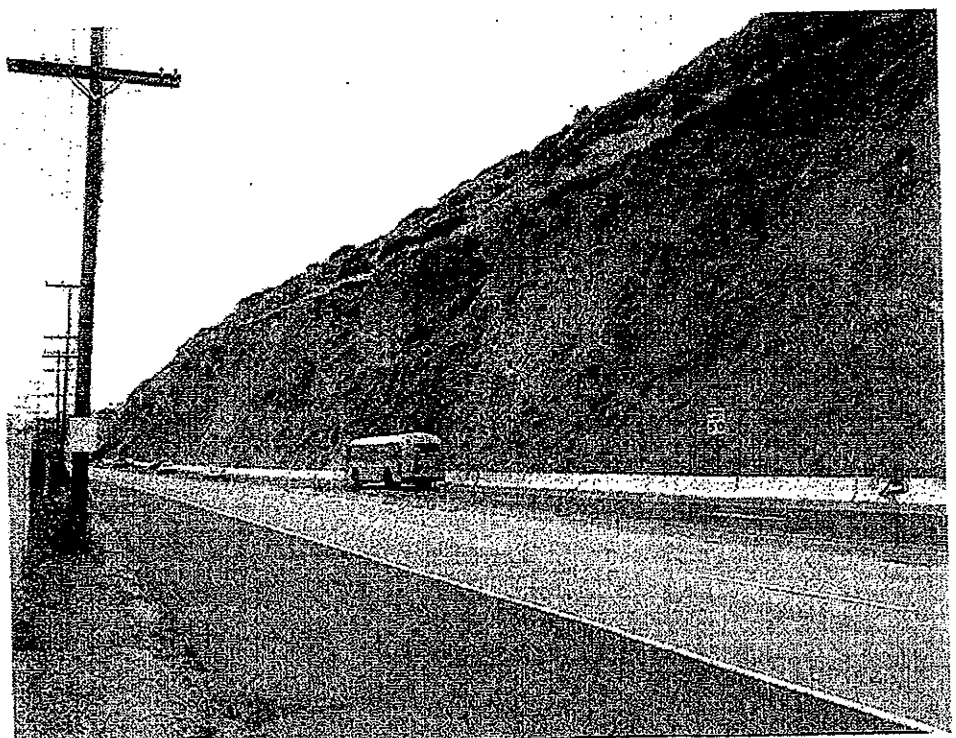


Photograph 13: Remnants of old asphalt concrete parking area on the cut terrace over beach at east end of project site.
(Pc080148.jpg)

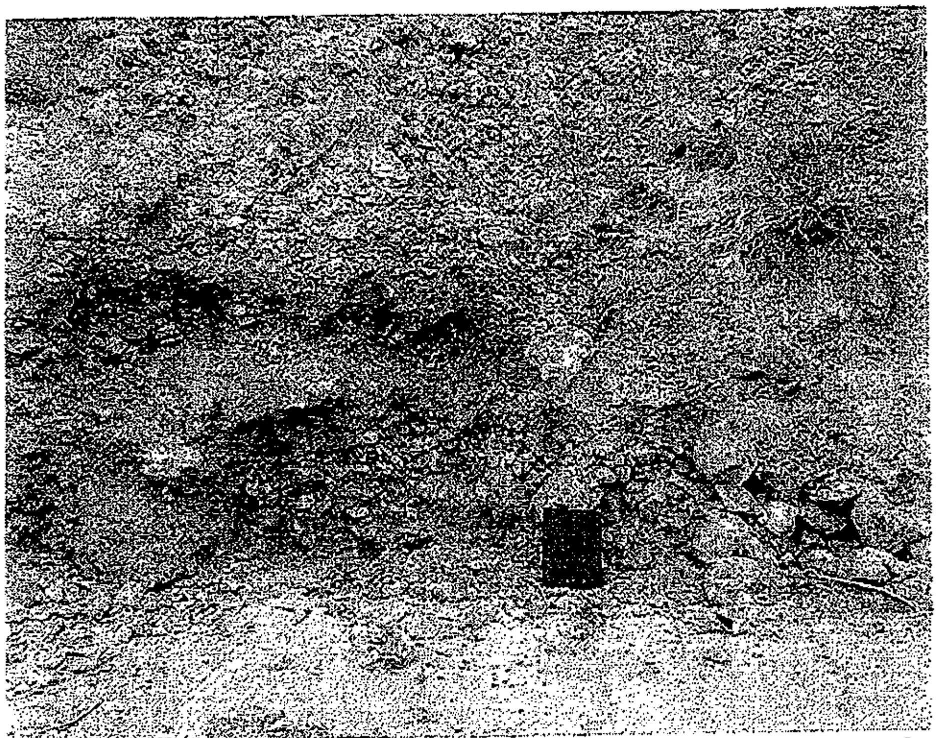
Photograph 14: Looking from the existing gate from PCH towards the east where the proposed parking area is planned.
(Pc080149.jpg)



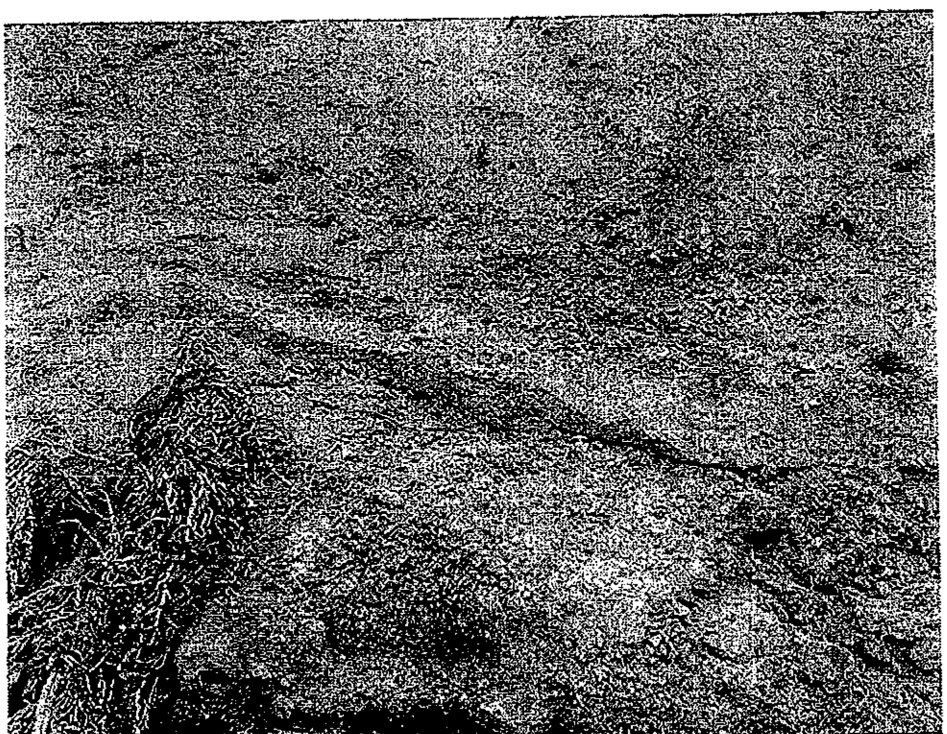
Photograph 15: Looking east at roadway cut in the Zuma Volcanics. The intersection of Corral Canyon Road and PCH can be seen in the distance at near the gas station.
(Pc080150.jpg)



Photograph 16: Looking west at roadway cut in the Zuma Volcanics.
(Pc080152.jpg)



Photograph 17: Weathered formational material in bluff face at the beach/bluff interface.
(Pc080142.jpg)



Photograph 18: Weathered formational material in bluff face.
(Pc080143.jpg)

APPENDIX B
EQFAULT OUTPUT

DATE: Thursday, December 21, 2000

```
***********************************
*                                 *
*          E Q F A U L T          *
*                                 *
*            Ver. 2.20            *
*                                 *
*                                 *
***********************************
```

(Estimation of Peak Horizontal Acceleration
From Digitized California Faults)

SEARCH PERFORMED FOR: GROUP DELTA CONSULTANTS, INC.

JOB NUMBER: 2020

JOB NAME: Den Blocker Beach

SITE COORDINATES:
LATITUDE: 34.0305 N
LONGITUDE: 118.743 W

SEARCH RADIUS: 50 mi

ATTENUATION RELATION: 17) Idriss (1994) Horiz. - Rock/Stiff Soil

UNCERTAINTY (M=Mean, S=Mean+1-Sigma): M

SCOND: 0

COMPUTE PEAK HORIZONTAL ACCELERATION

FAULT-DATA FILE USED: CDMGSCE.DAT

SOURCE OF DEPTH VALUES (A=Attenuation File, F=Fault Data File): A

DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROX. DISTANCE mi (km)	MAX. CREDIBLE EVENT MAX. CRED. MAG.	MAX. CREDIBLE EVENT PEAK SITE ACC. g	MAX. CREDIBLE EVENT SITE INTENS MM	MAX. PROBABLE EVENT MAX. PROB. MAG.	MAX. PROBABLE EVENT PEAK SITE ACC. g	MAX. PROBABLE EVENT SITE INTENS MM
SAN ANDREAS - Mojave	48 (77)	7.10	0.057	VI	7.10	0.057	VI
SAN ANDREAS - Carrizo	48 (77)	7.20	0.061	VI	7.20	0.061	VI
SAN ANDREAS - 1857 Rupture	48 (77)	7.80	0.095	VII	7.50	0.077	VII
WHITTIER	42 (67)	6.80	0.052	VI	5.90	0.021	IV
CLAMSHELL-SAWPIT	44 (70)	6.50	0.046	VI	5.00	0.010	III
HOLLYWOOD	20 (32)	6.40	0.122	VII	5.30	0.047	VI
HOLSER	28 (45)	6.50	0.084	VII	4.90	0.019	IV
MALIBU COAST	1 (1)	6.70	0.689	XI	4.90	0.137	VIII
M.RIDGE-ARROYO PARIDA-SANT	39 (62)	6.70	0.065	VI	5.40	0.018	IV
NEWPORT-INGLEWOOD (L.A.Bas	21 (34)	6.90	0.125	VII	5.60	0.044	VI
OAK RIDGE (Onshore)	25 (40)	6.90	0.130	VIII	6.20	0.079	VII
PALOS VERDES	11 (18)	7.10	0.240	IX	6.20	0.158	VIII
RAYMOND	30 (49)	6.50	0.076	VII	5.00	0.019	IV
RED MOUNTAIN	40 (64)	6.80	0.068	VI	5.90	0.027	V
SAN CAYETANO	26 (42)	6.80	0.113	VII	6.40	0.085	VII
SAN GABRIEL	29 (47)	7.00	0.094	VII	5.60	0.028	V
SAN JOSE	50 (80)	6.50	0.038	V	5.00	0.008	II
SANTA MONICA	4 (7)	6.60	0.444	X	5.50	0.171	VIII
SANTA YNEZ (East)	39 (63)	7.00	0.066	VI	5.90	0.023	IV
SANTA SUSANA	21 (34)	6.60	0.126	VIII	6.30	0.103	VII
SIERRA MADRE (San Fernando	24 (39)	6.70	0.117	VII	5.60	0.045	VI
SIERRA MADRE	31 (49)	7.00	0.109	VII	6.20	0.059	VI
SIMI-SANTA ROSA	18 (29)	6.70	0.162	VIII	5.50	0.062	VI
VENTURA - PITAS POINT	31 (51)	6.80	0.092	VII	5.50	0.028	V
VERDUGO	24 (39)	6.70	0.116	VII	5.20	0.032	V

GROUP DELTA CONSULTANTS

DETERMINISTIC SITE PARAMETERS

Page 2

ABBREVIATED FAULT NAME	APPROX. DISTANCE mi (km)	MAX. CREDIBLE EVENT: MAX. CRED. MAG.	MAX. CREDIBLE EVENT: PEAK SITE ACC. g	MAX. CREDIBLE EVENT: SITE INTENS MM	MAX. PROBABLE EVENT: MAX. PROB. MAG.	MAX. PROBABLE EVENT: PEAK SITE ACC. g	MAX. PROBABLE EVENT: SITE INTENS MM
COMPTON THRUST	22 (35)	6.80	0.139	VIII	5.80	0.060	VI
ELYSIAN PARK THRUST	30 (48)	6.70	0.092	VII	5.80	0.040	V
NORTHRIDGE (E. Oak Ridge)	24 (39)	6.90	0.319	IX	5.80	0.144	VIII
ANACAPA-DUME	4 (6)	7.30	0.550	X	6.30	0.425	X
CHANNEL IS. THRUST (Easter	30 (49)	7.40	0.326	IX	6.00	0.119	VII
MONTALVO-OAK RIDGE TREND	34 (55)	6.60	0.175	VIII	5.50	0.069	VI
OAK RIDGE(Blind Thrust Off	31 (50)	6.90	0.100	VII	6.10	0.052	VI
SANTA CRUZ ISLAND	44 (71)	6.80	0.059	VI	5.60	0.017	IV

-END OF SEARCH- 33 FAULTS FOUND WITHIN THE SPECIFIED SEARCH RADIUS.

THE MALIBU COAST FAULT IS CLOSEST TO THE SITE.
IT IS ABOUT 0.8 MILES AWAY.

LARGEST MAXIMUM-CREDIBLE SITE ACCELERATION: 0.689 g

LARGEST MAXIMUM-PROBABLE SITE ACCELERATION: 0.425 g

GROUP DELTA CONSULTANTS

Appendix I.E –
Traffic Memo (2000)

Katz, Okitsu & Associates
Traffic Engineers and Transportation Planners

MEMORANDUM

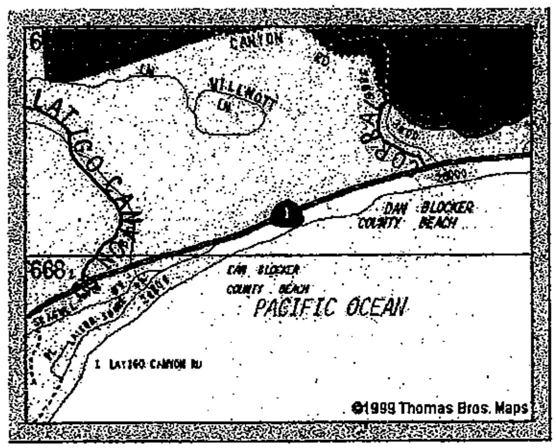
To: Rebecca Harrington-Smirniotis (E-mail: Rsha@deainc.com)
David Evans Associates, Inc.

From: Walter Okitsu, P.E.,
Katz, Okitsu & Associates

Date: December 21, 2000

RE: Dan Blocker County Beach Project JA0122

PROJECT LOCATION



Dan Blocker County Beach is located at 26400 Pacific Coast Highway at Corral Canyon Road, Malibu, California 90265.

BACKGROUND

Parking is permitted along the southbound shoulder of Pacific Coast Highway. Parking is not permitted along the northbound shoulder of Pacific Coast Highway.

EXISTING CONDITIONS

The beach is located along the south side of Pacific Coast Highway (State Route 1). Pacific Coast Highway (PCH) near the project site is a 4-lane roadway, with shoulder parking on the southbound side. There is a raised 3-foot wide median along this segment of PCH. The speed limit near the site is 50 MPH. Based on data provided by Caltrans, Pacific Coast Highway carries, on average, 35,000 vehicles per day with peak hour traffic of 3,200 vehicles. Traffic increases to 39,500 trips per day during peak months.

Even on summer weekend days, people generally do not park along PCH near the proposed project site because, due to a chain link fence, they cannot get to the beach. Those individuals that do use the beach generally walk from other public beaches to the north and south of the site.

PROJECT DESCRIPTION

The proposed project will include the construction of a maximum of 30 paved parking spaces. Access to the parking lot will be via a one-way access and a one-way egress driveway. A ticket vending machine will also be installed for the purchasing and dispensing of parking permits.

The project also includes the removal of an existing chain-link fence, demolition of existing pavement and construction of park site amenities. The project site is approximately 1.69 acres and is located on a bluff overlooking Dan Blocker Beach. Proposed amenities of the project include bluff top picnic areas with tables and seating, landscaping, chemical toilet facilities, a memorial monument, portable drinking fountains and bench seating. The project also includes the construction of a stairway and ramp to allow beach access and paved walkways that connect the parking area to park site amenities. Site directory and highway entrance signage would also be provided. Railing barriers would be installed along the site and Pacific Coast Highway for safety.

TRAFFIC ANALYSIS

The proposed parking improvements would not be expected to generate additional trips during the weekday AM and PM commuter peak periods. In addition, the project would not attract trips during periods of inclement weather. Instead, the project site would be expected to generate the most traffic during summer weekends on sunny days, or on days of good surf.

The general, access improvements to the beach, the addition of picnic tables, paving of walkways and addition of chemical toilets would not be expected to attract a significant number of additional trips, since similar facilities are available at adjacent beaches. The number of increased trips would be expected to be directly proportional to the number of additional parking spaces available to beach goers. The additional parking spaces should include those on the shoulder of Pacific Coast Highway, which would be free of charge and newly accessible from the beach.

To calculate the number of daily additional trips that might be created on a busy weekend, Katz, Okitsu & Associates made the following assumptions:

1. The parking lot will be designed to provide at most 30 parking spaces.
2. Parking spaces on the shoulder of P.C.H. could accommodate about 30 cars.
3. The average vehicle is parked for three hours.
4. Full utilization of parking at this average duration will occur between 11AM and 5PM.

Based on these assumptions, the project might be expected to generate 240 daily trips. Many of these trips may be trips diverted from adjacent beaches due to the availability of on-site parking. Since there are no scheduled events at this location, trips would be expected to arrive and depart during the course of a day. Assuming regular turnover of the parking spaces throughout the day, the project would be expected to generate approximately 20 hourly trips.

During the peak summer months, Pacific Coast Highway is heavily used on weekends; however, an increase of 20 hourly trips during weekend hours would not be expected to have capacity impacts Pacific Coast Highway or cross-mountain roadways like Kanan-Dume Road or Malibu Canyon Road. Because of the raised median island on Pacific Coast Highway, left turns into or out of the site would not be feasible. Vehicle movements would be restricted to right turns into the parking lot, right turns out of the parking lot, and parallel parking maneuvers at the shoulder of Pacific Coast Highway. While some of the increased trips would be expected to make U-turns at the Latigo Canyon and Corral Canyon intersections, the relative volume would be small, and would not create adverse operating conditions.

The movement causing perhaps the greatest potential for traffic impact would be the parallel parking maneuvers at the shoulder. With random turnover of parallel parking spaces, these maneuvers would occur on the average of once every 6 minutes. This impact would be no greater than at other roadside parking areas in Malibu with coastal access.

PARKING ANALYSIS

Based on observations at adjacent facilities, it would be expected that on-site parking capacity at the project facility would be fully utilized during summer weekends and holidays. However, at most times, the project site will have sufficient parking to accommodate demand.

Field observations at other nearby beaches with pay parking show that beach goers typically prefer to park on Pacific Coast Highway at no cost rather than pay parking fees. It is estimated that about 30 parking spaces are available on the southbound side of Pacific Coast Highway adjacent to the project site. Once these spaces and those in the new lot are taken, beach goers will be forced to drive on to other beach areas.

CONCLUSIONS

Significant traffic impacts are not anticipated on peak beach days or on other days of the year. Weekend traffic generation will be greater than weekday traffic generation; however, due to the small size of the proposed facilities, significant traffic capacity issues are not expected as long as the site driveways are designed to acceptable standards.

F:\KOA\ja0122\ja0122.doc

Appendix I.F –
Noise Worksheet (2001)

TABLE 1
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 1/2/01
ROADWAY SEGMENT: PCH
NOTES: EXISTING

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 35000 SPEED (MPH): 50 GRADE: 1

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 28.5 SITE CHARACTERISTICS: HARD

---

* * CALCULATED NOISE LEVELS * *

EL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 72.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
136.2	422.3	1332.4	4212.3

TABLE 2
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 1/2/01
ROADWAY SEGMENT: PCH
NOTES: EXISTING PEAK

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39500 SPEED (MPH): 50 GRADE: 1

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 28.5 SITE CHARACTERISTICS: HARD

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 73.13

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
153.0	476.3	1503.7	4753.9

TABLE 3

FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 1/2/01
ROADWAY SEGMENT: PCH
NOTES: WITH DAN BLOCKER

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39740 SPEED (MPH): 50 GRADE: 1

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 28.5 SITE CHARACTERISTICS: HARD

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 73.16

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
153.9	479.2	1512.8	4782.7

Appendix I.G –
Previous MND/IS (Prepared March 2003 and Adopted November 2003)

MITIGATED NEGATIVE DECLARATION/INITIAL STUDY for the proposed DAN BLOCKER BEACH PROJECT

Prepared for:

Los Angeles County Department of Beaches and Harbors
13837 Fiji Way
Marina del Rey, California 90292

Prepared by:

David Evans and Associates
800 North Haven Avenue, Suite 300
Ontario, California 91764
Karen Ruggels, Project Manager
(909) 481-5750

Draft: **April 12, 2001**
Final: **March 2003**

TECHNICAL APPENDIX:

A - ENVIRONMENTAL CHECKLIST
B - AIR QUALITY WORKSHEET
C – BIOLOGICAL RESOURCE REPORT
D – RECORDS SEARCH AND CULTURAL RESOURCE REPORT
E- GEOTECHNICAL RECONNAISSANCE
F- TRAFFIC REPORT
G - NOISE WORKSHEET
H – LETTERS OF COMMENT AND RESPONSES

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1.1 INTRODUCTION

This Initial Study evaluates and identifies the potential environmental impacts which may result from the proposed Dan Blocker Beach Project proposed for development on approximately 1.92 acres on a bluff top located at Dan Blocker Beach. Dan Blocker Beach is located within the City of Malibu south of Pacific Coast Highway; north of the Santa Monica Bay and the Pacific Ocean; west of Corral Canyon Road; and east of Latigo Point. The proposed project would include the construction of a ~~maximum 30~~an approximate 13-space parking area, beach access in the form of a ~~ramp~~stairway, park site amenities (picnic tables, bench seating, potable drinking fountains, trash receptacles, anodized bluff handrailing, a walkway and landscaped areas) and a restroom facility (chemical toilets).

The Los Angeles County Department of Public Works (Department) is serving as the *Lead Agency* for the proposed Dan Blocker Beach Project. Section 21067 of the California Environmental Quality Act (CEQA) defines a Lead Agency as the public agency which has the principal responsibility for carrying out or approving a project which may have a significant affect on the environment. As the Lead Agency, the Los Angeles County Department of Public Works has the authority to oversee and approve the environmental review process, as well as the design and construction of the proposed Dan Blocker Beach Project.

1.2 PURPOSE OF THE INITIAL STUDY

As part of the environmental review process for the proposed Dan Blocker Beach Project, the Los Angeles County Department of Public Works has authorized the preparation of this Initial Study. The Initial Study provides a basis for understanding whether there are environmental impacts associated with the proposed project and, where environmental impacts are likely to occur, if such impacts could be significant. The purposes of this Initial Study, as stated in Section 15063 of the CEQA Guidelines, are as follows:

- To provide the Los Angeles County Department of Public Works with information to use as the basis for deciding whether to prepare an environmental impact report or negative declaration for the proposed Dan Blocker Beach Project;
- To enable the Los Angeles County Department of Public Works to modify the project, reducing or eliminating any adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a negative declaration or mitigated negative declaration;
- To assist in the preparation of an EIR, if one is required, by focusing the EIR on the effects determined to be significant; identifying effects determine not to be significant; and explaining reasons for determining that potentially significant effects would not be significant;
- To identify whether a program EIR, tiering, or another appropriate process can be used for the analysis of the project's environmental effects;
- To facilitate the environmental review of the project early in its design;
- To provide documentation for findings in a negative declaration that the project would not have a significant effect on the environment;
- To eliminate unnecessary environmental impact reports; and

- To determine whether a previously prepared EIR can be used for the project.

Based on the findings of this Initial Study, the County of Los Angeles Department of Public Works has determined the environmental review needed for the Dan Blocker Beach Project, is a Mitigated Negative Declaration (MND). According to Section 21064.5 of CEQA and Section 15070 of the CEQA Guidelines, a MND is a statement that describes the reasons why the proposed project would not have a significant effect on the environment by itself or because revisions to the project have been made to avoid or reduce the potential adverse impacts of the project to levels considered less than significant and that there is no substantial evidence before the Lead Agency that the project, as revised, may have a significant effect on the environment. The recommended mitigation measures presented in this Initial Study would be incorporated into the project. The MND signifies that the project, as revised, would not require additional environmental analysis in the form of an EIR.

1.3 SUMMARY OF FINDINGS

Based on the findings of the preliminary environmental analysis in Section 3.0 of this Initial Study, the proposed Dan Blocker Beach Project has the potential for creating significant adverse impacts on a number of environmental issues during construction and operation.

Mitigation measures have been developed to ensure that the project's significant adverse impacts are mitigated to levels considered less than significant. These measures would need to be incorporated into the proposed Dan Blocker Beach Project. They include the following:

- ***Air Quality***

To ensure that construction emissions do not affect adjacent residents, the following measures are recommended:

- Use of watering for dust control during clearing, grading and construction.
- Soil disturbance should be terminated when high winds (>25 mph) make dust control extremely difficult.
- Limiting grading/soil disturbance to as small an area as practical at any one time.

- ***Geology and Soils/ Hydrology and Water Quality***

To ensure impacts associated with erosion and structural stability of the development, the following measures are recommended:

- Driveways and parking areas should be setback a minimum of 20 feet from the bluff face.
- Fencing along the bluff face should be constructed to discourage foot traffic down the face of the bluff.
- During grading of the parking area, any gullies identified in the parking area or other areas to be developed should be filled with properly compacted soils and should be modified to drain any flows away from the bluff face.

- Any areas between the new parking area and driveways that are not well vegetated should be planted with drought-tolerant vegetation to minimize interim erosion.
- A sufficiently deep concrete pile or foundation system for a concrete landing for the access ~~ramp~~stairway should be constructed to undermine wave action and/or beach erosion.
- The access ~~ramp~~stairway should be designed to accommodate ongoing marine and subaerial erosion processes.
- The recommendations presented in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 should be followed.
- Drill borings at the project site and soil samples should be taken of subgrade before final design of the ~~ramp~~stairway and parking area. After these samples are taken the recommendations in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 may be modified depending on the findings. If modified findings result from the samples, those findings should be implemented, as modified.

With the incorporation and implementation of these mitigation measures, the potential adverse impacts associated with the proposed Dan Blocker Beach Project would be avoided or reduced to less than significant levels.

2.1 PROJECT LOCATION AND ENVIRONMENTAL SETTING

Regional Setting

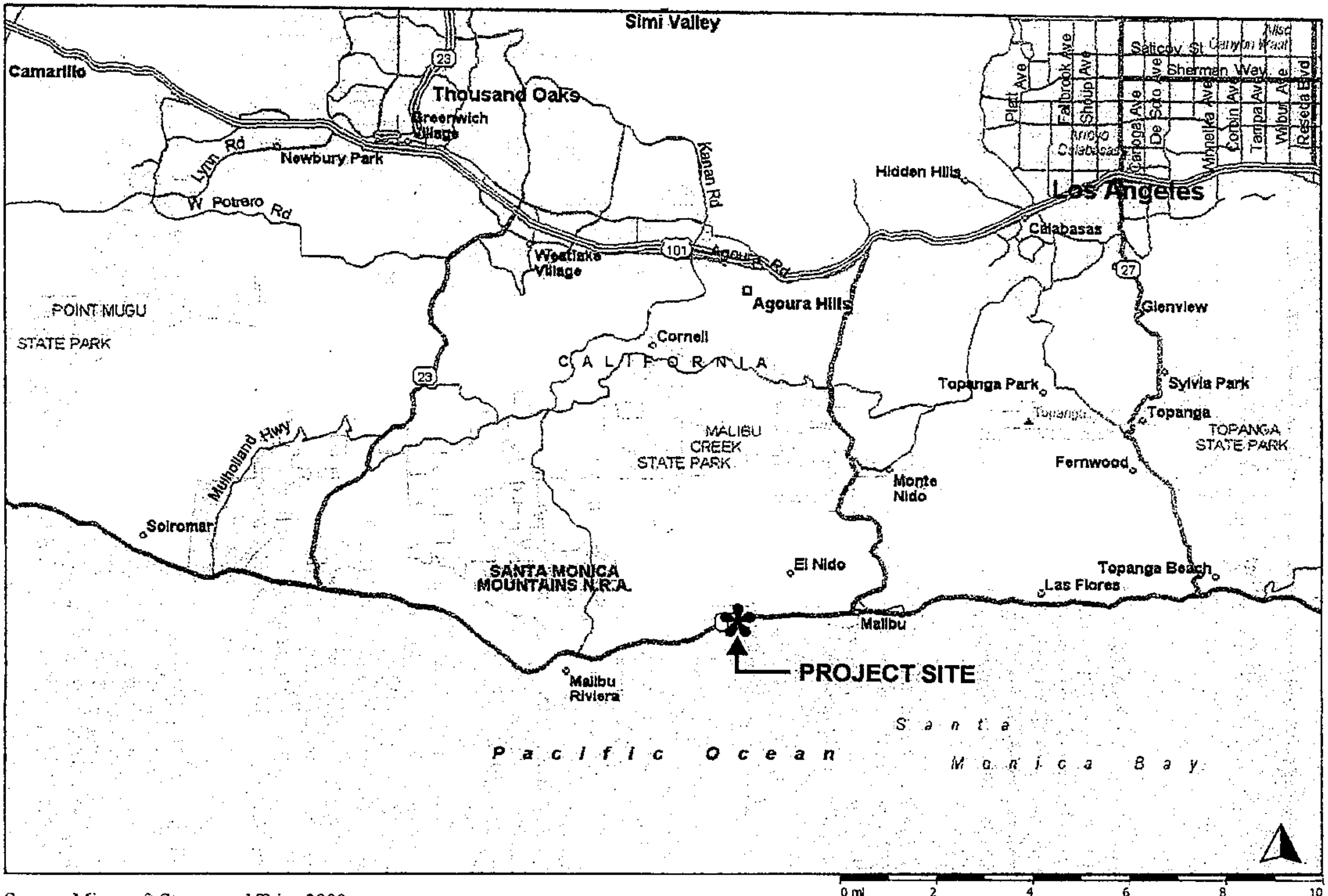
The proposed project site at Dan Blocker Beach is located in the City of Malibu, within Los Angeles County, and is bounded by Pacific Coast Highway (PCH) to the north, Escandido Beach to the west, Santa Monica Mountains National Recreation Area to the north-east, Puerco Beach to the east and the Pacific Ocean to the immediate south. Dan Blocker Beach is approximately 11.1 acres and consists of four noncontiguous parcels. Pacific Coast Highway (PCH) is a 4-lane highway and is located north of Dan Blocker Beach. PCH traverses the City of Malibu from east to west along the Pacific Coast. Figure 1, *Regional Map*, shows the project site in a regional context.

Los Angeles County encompasses approximately 2,613,000 acres (4,083square miles) in southern California, north of Orange County, south of Kern County, east of Ventura County and west of San Bernadino County. Development of Los Angeles County started in the 1900's, and over 70 percent of the urban development has occurred since the 1940's. Approximately 1,133 square miles has been devoted to urban use, more than 97 percent of which is located south of the San Gabriel Mountains. Dan Blocker Beach is located in the western portion of Los Angeles County. Dan Blocker Beach is designated as Open Space in the Los Angeles County General Plan and is zoned Public Open Space.

Dan Blocker Beach is located within the City of Malibu, which was incorporated in 1991. Prior to its incorporation, the land use within the City was governed by the Malibu Land Use Plan (LUP) and the County of Los Angeles General Plan and Zoning Ordinance. The extent of development in Malibu today is a reflection of the planning practices of the County of Los Angeles and the California Coastal Commission. In 1990, the City had 11,643 residents, but unlike other newly incorporated cities in Los Angeles County, Malibu's growth rate has not been rapid. The Malibu General Plan (1993) projected 12,063 residents for the year 2000 and a 12.6 percent growth rate over the decade. The entire City of Malibu and the proposed project site is located within the coastal zone. In accordance with the California Coastal Act, a Local Coastal Program (LCP) is currently being prepared for the Malibu area.

In 1990, there was approximately 12,552 acres of land within the City of Malibu. The City has many environmental constraints, such as steep hillsides, extreme fire hazards and sensitive environmental resources. Additionally, land value within the City is very high as compared to surrounding areas of Los Angeles County. As a result, the City has a low rate of development, vacant land accounting for 60 percent of current land use and making up approximately 7,296.5 acres. This land is essentially natural, consisting of trees, brush, scrub and grassland. Residential land makes up 22 percent and housing stock consists of an estimated 6,010 dwelling units in the area. The remaining 15 percent of current land use is composed of open space. The City of Malibu contains several unique natural resources including the combination of mountains and ocean.

Development along the Californian coast in the project vicinity began in the 1920's, gradually spreading into the hills and canyons. The community of Malibu, was seen as a haven for those preferring a quieter, more tranquil, coastal community. Malibu still combines elements of both rural and beach area communities, attracting many seasonal residents in addition to its permanent residents. Residential development is interspersed with neighborhood service facilities such as restaurants and grocery stores with more intensive land uses clustered on PCH. One of the largest concentrations of residential neighborhoods is located at Point



Source: Microsoft Streets and Trips 2000

Figure 1
REGIONAL MAP

Dume, approximately 2.5 miles southwest of the project area. As retaining the rural character of Malibu is important, there is no traditional commercial center in the City. Commercial development is scattered and mainly located along PCH, contributing to just two percent of all land use in the city.

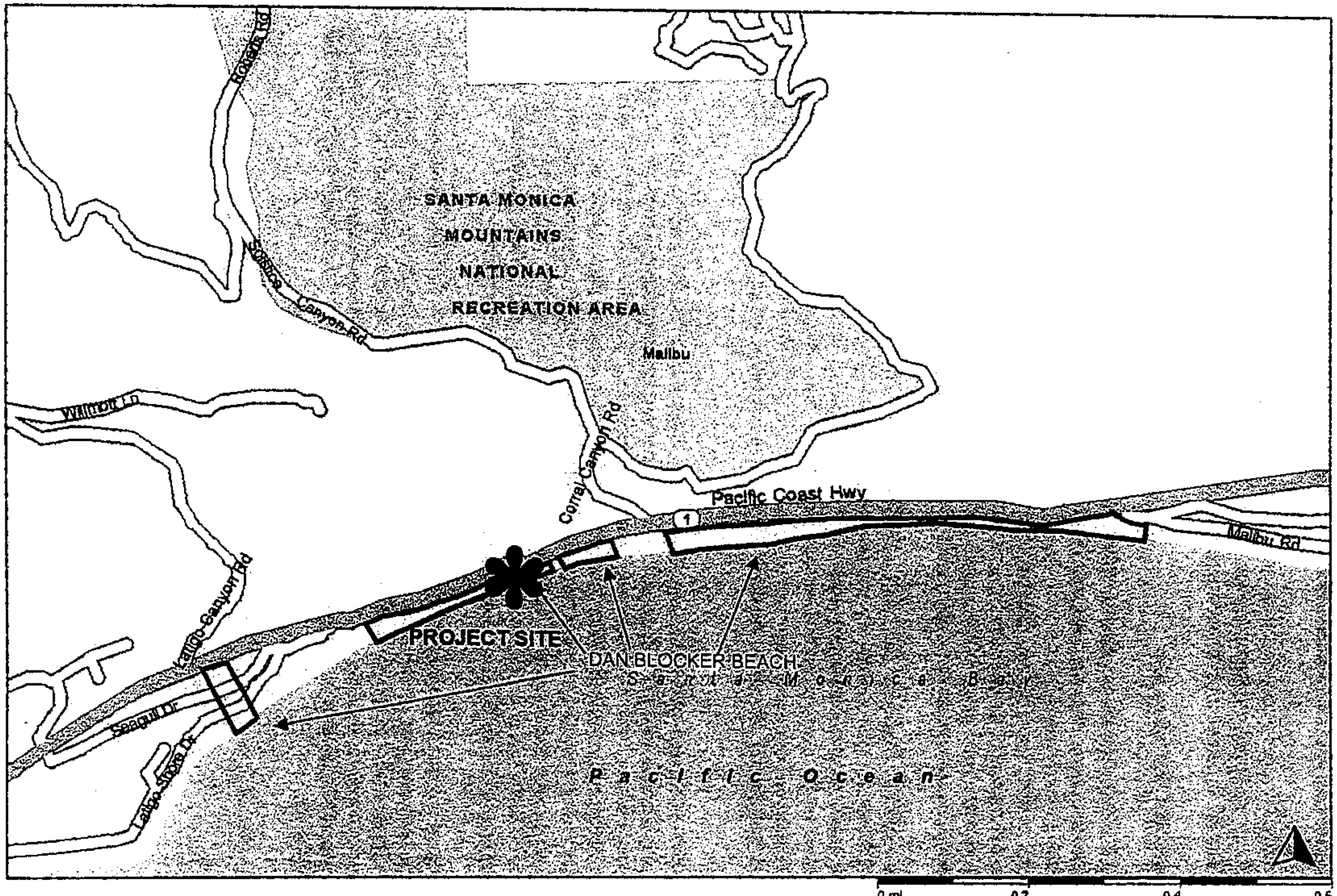
Project Background and Site Information

The Dan Blocker Beach Project site is located at 26000 Pacific Coast Highway, in the City of Malibu on the northern rim of Santa Monica Bay, west of Corral Canyon Road, and east of Seagull Way. Dan Blocker Beach includes the formerly designated Corral Beach, totaling approximately 11.1 acres. Dan Blocker Beach includes four noncontiguous parcels. The coastline in the area has been heavily impacted by public use, shoreline erosion and residential development. The location of the proposed Dan Blocker Beach Project is approximately 1.92 acres and located in the central eastern portion of the beach. Figure 2, *Vicinity Map,* and Figure 3, *Aerial Photograph,* illustrate the project site and its surrounding areas.

The Beach was originally donated to the State of California by Lorne Greene and Michael Landon in memory of Dan Blocker. The County of Los Angeles was then given the property by the State of California. The beach has remained largely undeveloped. Dan Blocker Beach is designated as Open Space in the Los Angeles County General Plan and the Malibu General Plan. Surrounding land use to the east is mobile home residential and commercial development; to the west is mobile home residential with some multi-family residential; and directly adjacent to the north of the site is recreation vehicle park and rural residential land.

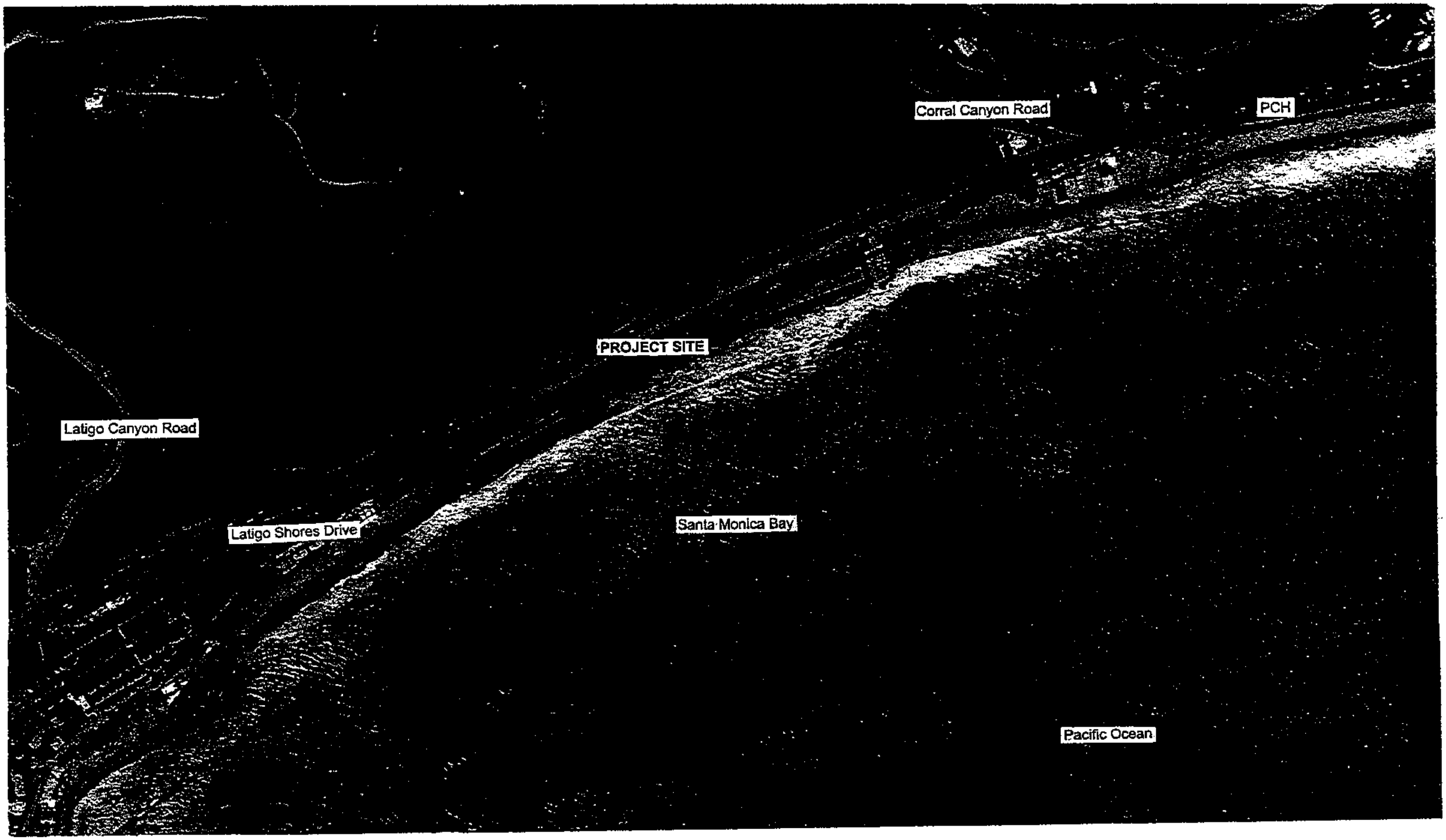
Dan Blocker Beach is located where the Santa Monica Mountains meet the bay, which has caused the formation of nearly vertical sea cliffs. The coastline in the area is quite irregular and rocky due to the cuts made by numerous canyons. Some of the coastal canyons intersecting this area from west to east include Latigo Canyon, Solstice Canyon and Corral Canyon. Dan Blocker Beach contains both level areas and steep cliffs. The beach's width fluctuates between 20 feet to150 feet. On the proposed site, there is an approximate 15-foot rocky embankment at the edge of the parcel. At the top of this embankment, the bluff is approximately 50 to 65 feet in width. Various culverts intersect the site within the proposed project area and extend to the edge of the cliff. The majority of the proposed site is relatively flat.

The proposed site of the Dan Blocker Beach Project is immediately accessible from PCH. Pedestrian access to the beach has been provided by informal trails randomly located along the beach embankment. Latigo Shores Drive is located west of the proposed site and is an unpaved road that has been built to allow fire access to the surrounding residential development. The proposed project site is fenced along its northern perimeter and is partially covered with vegetation and deteriorated pavement. Power utility poles line the northern side of the site.



Source: Microsoft Streets and Trips 2000

Figure 2
VICINITY MAP



AERIAL PHOTOGRAPH

2. 2 DESCRIPTION OF THE PROPOSED PROJECT

Physical Characteristics

The County of Los Angeles Department of Beaches and Harbors is proposing the construction of a parking area with ~~a maximum of 30~~approximately 13 diagonal parking spaces, park site amenities, and ~~an aluminum ramp~~a stairway for beach access on a bluff top at Dan Blocker Beach. The proposed project site consists of approximately 1.92 acres of vacant land, fencing, and deteriorated paving. The existing deteriorated paving and fencing would be demolished as part of the project. Visitors currently park along PCH and access the beach by private stairways located at residential units. The residential units are located adjacent to the east of the project site and down the beach west of the project site.

The proposed project would include development of an approximate 13-space parking area and park amenities located at the eastern portion of the bluff top, as shown in Figure 4, *Project Location Map.* These improvements would be located in an area of approximately 600 linear feet and would have a width of approximately 50 to 65 feet. ~~The maximum 30~~ Approximately 13 diagonal parking stalls would be facing the Pacific Ocean along the southern portion of the project site. The proposed parking area surface would be decomposed granite. The parking area may be paved in the future with asphalt. Beach access in the form of ~~an aluminum ramp~~a stairway would also be constructed. The ~~ramp~~stairway would extend from the bluff top to the beach level and would include concrete landings at each end. The proposed project would start at the edge of a gully located at the eastern portion of the site.

Park site amenities would include picnic tables, bench seating, potable drinking fountains, trash receptacles, anodized bluff handrailing and chemical toilets. The proposed chemical toilets would be located on a concrete pad and enclosed in a cinder block structure. Walkways to join the parking area with the park site amenities and beach access would also be provided. Bench seating, over looking the ocean, would be provided along the walkways. An anodized aluminum handrail would extend the entire length of the project site, parallel to the bluff. Additionally, a memorial monument, plaque and slot box for payment to use the parking facility would also be located on the proposed project site.

Access to the project site would be provided from a one-way driveway off PCH. The ingress and egress portion of the driveways would be gated with locking steel gates for security. Traffic directional signage would be provided to regulate vehicle movement from PCH to the proposed project site. A standard approved guardrail would be constructed between PCH and the proposed project site.

Landscaping would also be provided as part of the proposed project. Landscaping would include native species and naturally non-invasive plants, which would provide erosion control. Temporary irrigation would be installed to the landscaped areas of the site and would be removed upon establishment of the landscaping. Drainage of the site would be directed towards PCH and would not drain onto the beach.

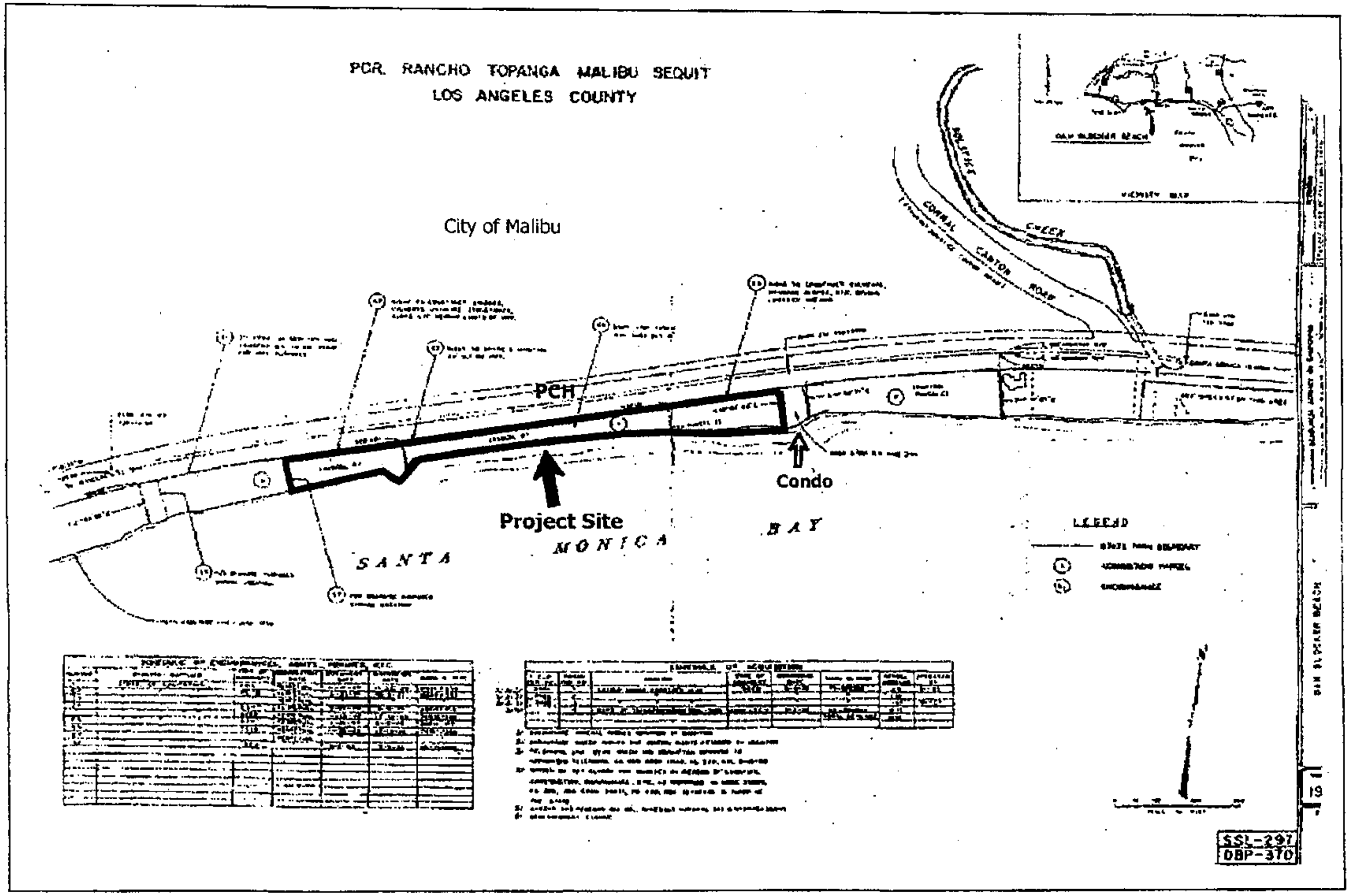


Figure 4
PROJECT LOCATION MAP

2.3 OBJECTIVES OF THE PROJECT

The Los Angeles County Departments of Beaches and Harbors seeks to accomplish the following objectives with the proposed Dan Blocker Beach Project:

- To meet the public demand for beach access and parking, through the provision of a public permanent parking facility and ~~ADA compliant~~ beach access.
- To provide park site amenities at Dan Blocker Beach including picnic tables, viewing areas, and public restrooms that meet County standards.

2. 4 DISCRETIONARY ACTIONS

A discretionary decision is an action taken by a government agency (County of Los Angeles) that calls for the exercise of judgement in deciding whether to approve a project. The proposed Dan Blocker Beach Project would require the following specific discretionary approvals from different departments of the County, including the County Chief Administrative Office, the Department of Public Works, as well as the County Department of Beaches and Harbors and the County Board of Supervisors. The California Coastal Commission would be a *responsible agency* for the project.~~:~~

- **Approval of Environmental Review** - The Los Angeles County Board of Supervisors, the Los Angeles County Department of Public Works and the Los Angeles County Department of Beaches and Harbors would need to complete the environmental review process for the project.
- **Approval of Project** – The Los Angeles County Board of Supervisors, the County Chief Administrative Office, the Department of Public Works and the Department of Beaches and Harbors would need to approve the proposed project, as designed.
- **Coastal Approval** – As a *responsible agency*, ~~The~~ the California Coastal Commission would need to issue a Coastal Development Permit for the project prior to construction.

Other ministerial actions for the proposed project would include the following:

- **Approval of Site Plan** – The County Chief Administrative Office, Department of Public Works and the Department of Beaches and Harbors would need to approve the site plan for the proposed project for compliance with ~~City~~ County regulations.
- **Approval of Building Plan** – The Los Angeles County Chief Administrative Office, Department of Public Works and the Department of Beaches and Harbors would need to approve the building plans for the proposed project.

The Los Angeles County Departments of Beaches and Harbors is proposing the development of a parking area, beach access in the form of a ~~ramp~~stairway, and park site amenities at a 1.92 acre site located on a bluff top at Dan Blocker Beach. This section evaluates the potential environmental impacts of the proposed project and provides explanations of the responses to the Environmental Checklist found in Appendix A of this document.

The Environmental Checklist is based on Appendix G of the CEQA Guidelines. Appendix G of the CEQA Guidelines provides a list of questions that correspons directly to the legal standards for preparing Environmental Impact Reports (EIRs), Negative Declarations, and Mitigated Negative Declarations (MNDs). The environmental issues evaluated in this Initial Study include the following:

- Aesthetics
- Agriculture Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/ Traffic
- Utilities and Service Systems

The environmental analysis in this section is patterned after the questions in the Environmental Checklist. Under each issue area, a general discussion of existing conditions is provided. The Environmental Checklist questions are then stated and an answer is provided according to the environmental analysis of the project's impacts. To each question, there are four possible responses:

- **No Impact.** The proposed Dan Blocker Beach Project will not have any measurable environmental impact on the environment.

- **Less Than Significant Impact.** The proposed project will have the potential for impacting the environment, although this impact will be below thresholds that may be considered significant.

- **Less Than Significant Impact with Mitigation.** The proposed project will have potentially significant adverse impacts which may exceed established thresholds, although mitigation measures or changes to the project's physical or operational characteristics will reduce these impacts to levels that are less than significant. Measures, which may reduce this impact, are identified.

- **Potentially Significant Impact.** The proposed project will have impacts which are considered significant and additional analysis is required to identify mitigation measures that could reduce these impacts to insignificant levels. When an impact is determined to be potentially significant in the preliminary analysis, the environmental issue will be subject to detailed analysis in an environmental impact report (EIR).

The references and sources used for the analysis are also identified after each response.

3.1 AESTHETICS

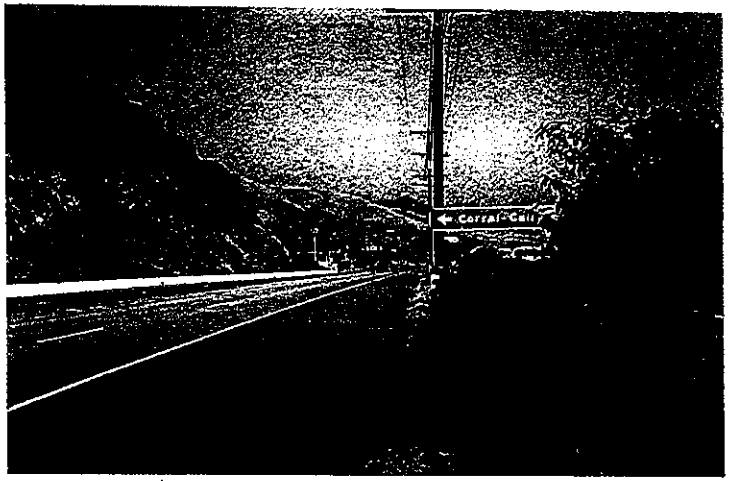
The project site is approximately 1.92 acres and is located on a bluff top at Dan Blocker Beach. Dan Blocker Beach is located in the County of Los Angles and in the City of Malibu. The beach is approximately 11.1 acres and consists of four noncontiguous parcels, which are separated by privately owned residential developments (see Figure 3, *Aerial Photograph*). Dan Blocker Beach is bounded by the Santa Monica Mountains to the north and the Pacific Ocean to the south. PCH, a four- lane scenic highway, is also located north of Dan Blocker Beach and separates the beach from the Santa Monica Mountains. Dan Blocker Beach is a narrow strip of beach with rocks protruding through the sand (north of the Barsocchini property) curving around to the wider, less rocky beach south of Corral Canyon Road. The height of the bluffs at Dan Blocker Beach vary depending on the amount of sand on the beach and range from being near vertical in many areas to a slope of approximately 1:3 (horizontal: vertical).

Views of the Santa Monica Bay Coastline and the Pacific Ocean, as well as extensive views of the coast to the west and the east, can be seen from the bluff tops at Dan Blocker Beach. On clear days, views of Catalina Island and the headlands at Point Dume and Palos Verdes can be seen from the Dan Blocker Beach bluff tops. The Santa Monica Mountains that parallel the coast provide a rugged and scenic backdrop to the beach and can be seen to the north of the beach. Lifeguard towers and portable restrooms are located at the eastern portion of Dan Blocker Beach and are visible from the surrounding areas. The residential developments, which separate the Dan Blocker Beach parcels, can be viewed to the east and west of the beach bluff tops and to the north of the sandy areas of the beach. From the sandy areas of the beach, views generally focus on the bluffs and residential developments to the north, the Pacific Ocean to the south and the Santa Monica Coastline to the east and west.

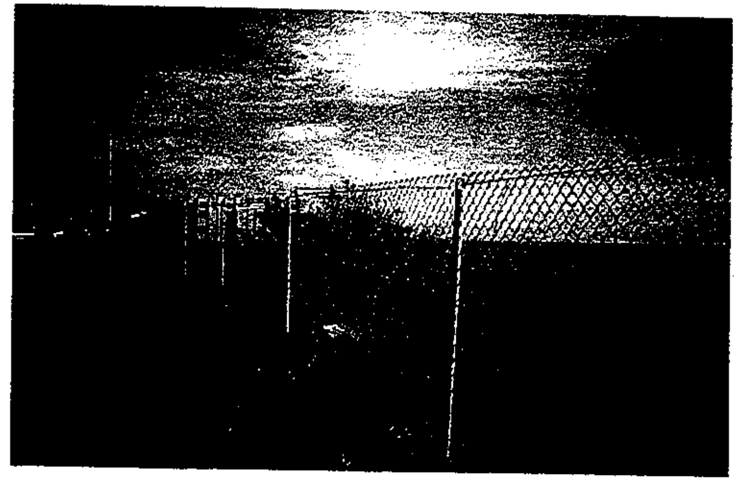
The proposed project site is located in the central portion of Dan Blocker Beach's bluff tops. The portion of the bluff top where the project site is proposed to be located is approximately 15 to 20 feet in height. The majority of the site is relatively flat and is traversed by large drainage culverts. The proposed project site is typically 50 to 65 feet in width, with no structures on-site. A chain-link fence is located at the northern boundary of the site, and utility poles and overhead power lines also run along the northern boundary of the site. The site is covered with vegetation and portions of the site contain deteriorated pavement.

Views from the site include a residential unit and coastline in the distance to the east, PCH and the Santa Monica Mountains to the north, open bluff top and residential units located farther down the coast to the west, and the Pacific Ocean to the south. Views of the proposed project site can be seen through the chain-link fence located at the northern boundary from motorists, bicyclists, and/or pedestrians traveling along PCH. In the farther distance, the Pacific Ocean can be seen by motorists, bicyclists, and/or pedestrians traveling along PCH. Views looking west of the project site from the residential unit and down the coast include the vegetated and vacant bluff top, which partially includes the proposed project site, coastline, and clustered residential units. Views of the project site just east of the residential unit are blocked by a residential building. Views looking east of the project site from the clustered residential units and bluff top include vegetated and vacant bluff top, which partially include the proposed project site, coastline, a residential unit, and additional development located down the coast. Figures 5a, 5b, and 5c, *Site Photographs*, illustrate views of and from the proposed project site.

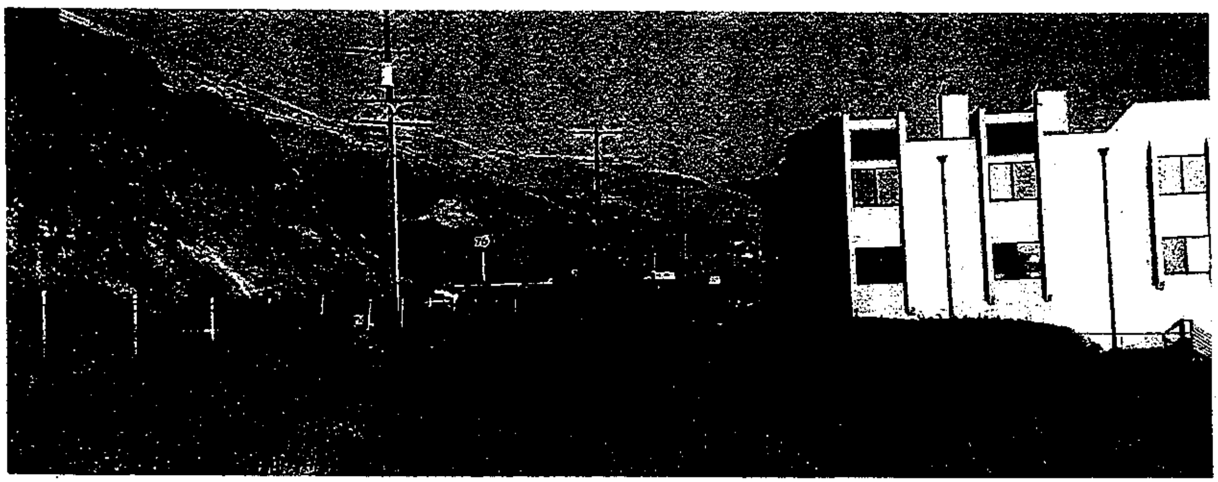
(Sources: Site Survey and Project Location Map)



View of PCH, looking east, directly adjacent to the north of the project site



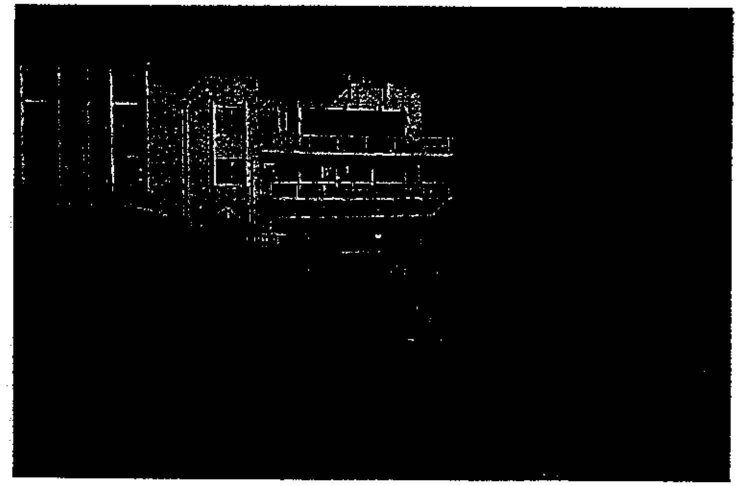
View of the project site, looking east from PCH



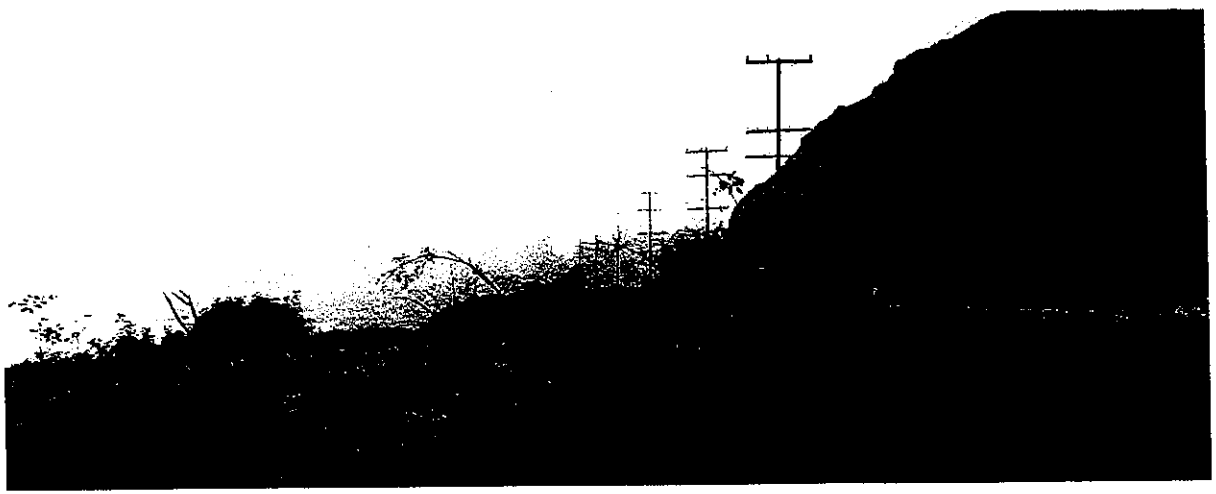
View looking northeast from the project site

Figure 5A
SITE PHOTOGRAPHS

View looking west from the project site

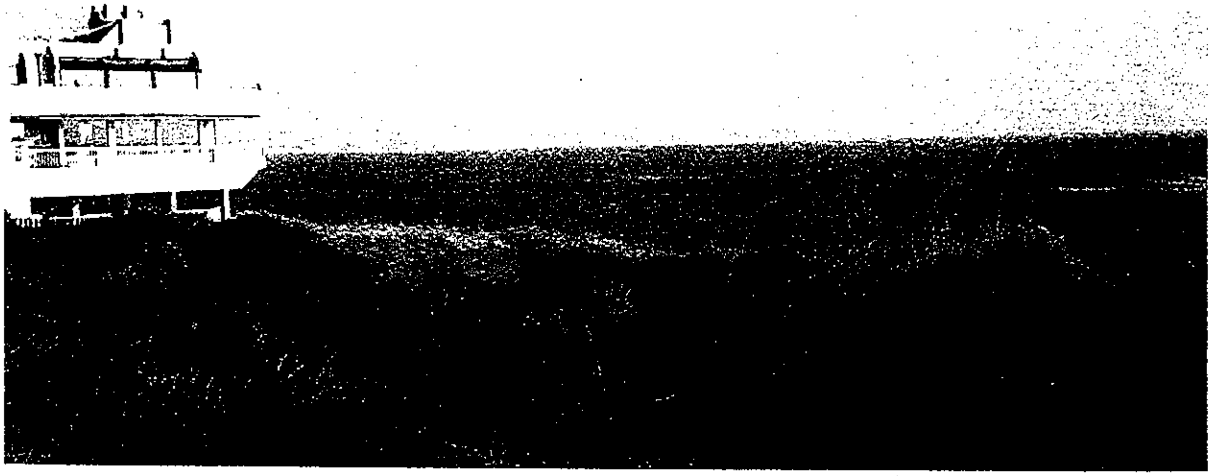


View looking east from the project site



View looking west from the project site

Figure 5B
SITE PHOTOGRAPHS



View looking southeast from the project site

View looking south from the project site

Figure 5C
SITE PHOTOGRAPHS

A. Would the project have a substantial adverse effect on a scenic vista?

Less than Significant Impact. The proposed project site is currently vacant and is located along the Malibu coastline. The proposed project would include development of ~~a maximum 30-space parking area~~an approximate 13-space parking area, a ~~ramp~~stairway to provide beach access from the bluff top to the beach, and park site amenities. Views of the Pacific Ocean and Dan Blocker Beach's vacant bluff tops can be seen from PCH (located north of the project site), from the east and west of project site, as well as from the project site.

PCH is identified as a scenic road of visual importance in both the City of Malibu and Los Angeles County General Plans. Corral Canyon Road, located to the northeast of the proposed project site, is also identified as a scenic road. The proposed project site is not identified as a scenic vista. The closest scenic element to Dan Blocker Beach is Little Point Dume Cove Bluffs, located at Point Dume approximately 2.5 miles to southwest of the proposed project site.

The tallest amenity being proposed as part of the project is a one-story restroom facility, which would be approximately 10-feet in height. Other project features include a parking area, an aluminum handrail, landscaping, walkways, driveways and a K-rail to divide access from PCH. The development of the project site would not significantly block views of the ocean from PCH and to the east and west of the project site. Views of the project site from the beach located south of the project site would change from a bluff top to a parking area, ~~ramp~~stairway, and park site amenities. The Santa Monica Mountains would still be visible from the beach. Views of the ocean would still be available through unused parking spaces, the park site amenity area and directly to the west and east of the proposed development. The proposed restroom would be one-story and views would be available surrounding the restroom facility. Additionally, the project proposes bench seating and picnic tables, which would provide visitors to Dan Blocker Beach viewing areas of the ocean to the south and the Santa Monica Mountains to the north, as well as the coastline located east and west of the project site. Thus, the project would include minimal improvements and would not have a substantial adverse effect on a scenic vista.

(Sources: Malibu General Plan, Site Survey, and Project Location Map)

B. Would the project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?

Less than Significant Impact. The proposed site is vacant; no scenic trees, rocks, or historic buildings have been identified on the site. PCH is located to the north of the proposed project site and is considered a scenic highway. The proposed project would be small in scale and is not expected to adversely effect PCH. No impacts are expected.

(Sources: Malibu General Plan, Site Survey, Los Angeles County Plan, Site Visit and Project Location Map)

C. Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact. No structures are located on the proposed project site, which contains vegetation and is partially covered with deteriorated pavement. A chain-link fence is located along the northern portion of the site. A residential unit is located adjacent to the east of the project site and a cluster of residential units are located down the coastline to the west of the project site. The proposed project would include development of ~~a maximum 30-space parking area~~an approximate 13-space parking area, access ~~ramp~~stairway to the beach, driveways, and various park site amenities.

Additionally, the proposed development would include a one-story restroom (approximately 10-feet in height). The restroom would include two chemical toilets and would be enclosed in a small scale block structure, which would not significantly block views of the ocean from PCH. Views of the ocean would still be available from either side of the restroom facility. Cars would be parked in the proposed parking area but would not significantly block views of the ocean from PCH. Breaks in the development of the restroom facility and other proposed park site amenities would provide views of the ocean. Additionally, views of the ocean would still be available over the parked cars.

The proposed development would also include landscape, which would be in compliance with the County of Los Angeles ~~and the City of Malibu~~ regulations. Landscaping of the proposed site would limit the visual impact of parked cars as seen from PCH or from residential homes in the area. The project would have a less than significant impact on the existing visual character and quality of the site and its surroundings.

(Sources: Malibu General Plan, Los Angeles County Plan, Site Survey, Site Location Map, and Project Location Map)

D. Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Less than Significant Impact. The proposed project would not include light fixtures or nighttime lighting. The proposed restroom facility, as well as other park site amenities, would be constructed of non-reflective materials. ~~The proposed aluminum ramp may create a glare effect on the beach during the daytime. However, the ramp would not be a large structure and is not expected to create a substantial amount of glare.~~ The proposed parking area would be open from dawn to dusk. Therefore, no light would be created from vehicle headlights exiting or entering the parking area. Additionally, during the daytime, parked cars may create some glare from the sun reflecting off them. The potential glare from cars parked on-site is not expected to create a significant impact.

(Sources: Project Location Map, Site Location Map, and Site Survey)

3.2 AGRICULTURE RESOURCES

The proposed project site is located on approximately 1.92 acres on a bluff top at Dan Blocker Beach. Dan Blocker Beach is owned by the County of Los Angeles and is within the City of Malibu. The proposed project site is identified in both the City of Malibu General Plan and the Los Angles County General Plan as open space. The proposed project site is not used for agriculture and is not identified for agricultural uses either in the Malibu General Plan or the County of Los Angeles General Plan. Traditional forms of farming and ranching are only practiced on a small area of land within the City of Malibu. Horticulture and horse ranches are more common within the City of Malibu. Horticulture amounts to approximately 0.2 percent, (24.8 acres) of all land use in the City and includes orchards, vineyards and nurseries.

A. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The project site is not located within a designated agricultural or horticultural area. The closest agricultural lands are located approximately four miles southwest of the project at Point Dume. The proposed site has been designated as Open Space and is not identified as farmland under the Farmland Mapping and Monitoring Program of the California Resources Agency, the City of Malibu's General Plan and/or in the

Los Angeles County Plan. Thus, no impact to important farmlands is anticipated with the development of the proposed project.

(Sources: Malibu General Plan, Los Angeles County Plan and Site Survey)

B. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The project site is vacant and is zoned Public Open Space. There are no agricultural lands nearby or on the site. The closest agricultural lands are located at Point Dume, approximately four miles southwest of the project and at Puerco Canyon, located approximately 0.5 mile to the east of the project site. No impact is anticipated on agricultural zones or uses. as a result of the proposed project.

(Sources: Malibu General Plan, Los Angeles County Plan Program and Site Survey)

C. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

No Impact. The proposed project is currently vacant open space and is not located on existing farmland. Therefore, the proposed project would not convert agricultural land to non-agricultural uses and no impacts are expected.

(Sources: Malibu General Plan, Los Angeles County Plan and Site Survey)

3.3 AIR QUALITY

The project site is a bluff overlooking the coast, south of the Santa Monica Mountains and north of the Pacific Ocean. The climate in the area is considered as a dry summer subtropic or Mediterranean climate, characterized by hot, dry summers and cool, moist winters. Skies are generally clear from midsummer through fall. Heavy cloud cover and fog occur during spring and early summer. The climate at Dan Blocker Beach is mild and pleasant year-round, with maximum temperatures ranging from 55 and 65 degrees Fahrenheit in winter and between 65 and 75 degrees Fahrenheit in summer. Sea breezes come from the south and southwest. Seacoast fog and warm marine air from the open sea keep the climate comfortable through the summer days when temperatures are high. Sea breezes from the Pacific Ocean generally blow smog inland by mid-morning each day.

The project site is located at the western section of the South Coast Air Basin. Existing levels of ambient air quality and historical trends and projections in the project area are best documented from measurements made near the project site. The South Coast Air Quality Management District (SCAQMD) operates an air monitoring station in the Northwest Coast of Los Angeles County (Station No. 2 in West Los Angeles) that monitors carbon monoxide, ozone and nitrogen dioxide levels. Table 1, *Air Quality Monitoring Data*, summarizes the last three years of published monitoring data from the SCAQMD monitoring station near the site.

TABLE 1
AIR QUALITY MONITORING DATA

Pollutant/Standard	*Days Standards Were Exceeded and Maximum Observed Levels*		
	1997	**1998**	**1999**
Carbon Monoxide			
1-Hour > 20 ppm	0	0	0
8-Hour > 9 ppm	0	0	0
Max. 1-Hour Conc. (ppm)	7.0	7.0	6.0
Max. 8-Hour Conc. (ppm)	4.4	4.5	3.8
Ozone	6	7	4
1-Hour > 0.09 ppm	0	1	0
1-Hour > 0.12 ppm	2	0	0
8-Hour ≥ 0.08 ppm	0.11	0.13	0.12
Max. 1-Hour Conc. (ppm)			
Nitrogen Dioxide			
1-Hour > 0.25 ppm	0	0	0
Max. 1-Hour Conc. (ppm)	0.14	0.13	0.13
Inhalable Particulates (PM_{10})			
24-Hour > 50 μg/m^3	--	--	--
24-Hour > 150 μg/m^3	--	--	--
Max. 24-Hour (μg/m^3)	--	--	--
Particulates (TSP)			
Max 24- Hour (μg/m^3)	98*	91*	138
Particulate Lead			
1-Month ≥ 1.5 μg/m^3	--	--	--
Max. 1-Month (μg/m^3)	--	--	--
Particulate Sulfate			
24-Hour ≥ 25 μg/m^3	0	0	0
Max. 24-Hour (μg/m^3)	14.0*	11.2*	13.9
* - less than 12 months of data Source: SCAQMD			

The data shows that air quality in the project area is generally good, although ozone levels occasionally exceed standards. A trend towards better air quality can be seen, since the frequency of smog alerts, especially those considered unhealthy for all people, has dropped considerably in the last decade.

The Federal Clean Air Act (1977 Amendments) required that designated agencies in any area of the nation not meeting national clean air standards must prepare a plan demonstrating the steps that would bring the area into compliance with all national standards by December 31, 1987. The South Coast Air Basin (SCAB) could not meet the deadline for ozone, nitrogen dioxide, carbon monoxide, or PM_{10}. The SCAQMD and the Southern California Association of Governments (SCAG) adopted an Air Quality Management Plan (AQMP) in 1979, but revised it several times subsequently as earlier attainment forecasts were shown to be overly optimistic.

In 1988, the California Legislature enacted the California Clean Air Act (CCAA), which requires that regional emissions be reduced by five percent per year, averaged over 3-year periods, until attainment can be demonstrated. Each area that did not meet a national or state ambient air quality standard was required to prepare a plan which demonstrates how the five percent reductions would be achieved. In July 1991, the SCAQMD adopted a revised AQMP, which was designed to meet the CCAA requirements. The 1991 AQMP deferred the attainment date to 2010, consistent with the 1990 Federal Clean Air Act.

The 1990 Federal Clean Air Act Amendments (CAAA) required that all states that have airsheds with "serious" or worse ozone problems submit a revision to the State Implementation Plan (SIP). The 1991 AQMP was modified/adapted and submitted as the SCAB portion of the SIP. The 1991 SIP submittal estimated that an 85 percent basin-wide reduction in volatile organic compound (VOC) emissions and a 59 percent reduction in oxides of nitrogen (NO_x) between 1990 to 2010 was needed to meet federal clean air standards. About 40 percent of these reductions were to come from existing pollution control programs. The rest would come from new rules, technologies, or other reduction programs.

In 1996, EPA approved the 1994 submittal of the SCAB portion of the SIP. The Federal Clean Air Act required that an updated plan be submitted by February 8, 1997, which included attainment plans for all pollutants exceeding federal standards. The CCAA requires an update of the State-mandated clean air plan every three years. An updated 1997 AQMP was locally adopted. The California Air Resources Board (ARB) forwarded this plan on to EPA for its consideration and recommended approval. The 1997 AQMP was designed to meet both federal (EPA) and state (ARB) air quality planning guidelines. The currently proposed regional attainment planning for ozone (VOC and NO_x) and for carbon monoxide (CO) calls for emissions reductions of around 66 percent for VOC, 56 percent for NO_x, and 66 percent for CO. Within the AQMP, some measures considered "long-term reductions" require additional technological development. There is no clear scientific consensus that the 1997 AQMP update will be able to achieve its mandatory clean air objectives by the end of 2010.

A 1999 Amendment to the proposed SIP Revisions was developed that accelerates the schedule for a number of new SCAQMD rules and regulations. The 1999 SIP Amendment is believed to meet the court-ordered acceleration of the rate of progress. The 1999 Amendments were approved by the California ARB on January 27, 2000. EPA staff has proposed approval of the amendments and formal EPA approval of the 1999 SIP Amendment is expected in the next few months.

(Sources: Malibu General Plan, SCAQMD Air Quality Monitoring Data, SCAQMD CEQA Handbook, and Site Survey)

A. Would the project conflict with or obstruct implementation of the applicable air quality plan?

No Impact. The project site is designated as Open Space, and has been considered as existing and future open space in the development of the Air Quality Management Plan (AQMP). The structures proposed at the site include a parking area, picnic tables and chemical toilets, which would not be large enough to alter air movement, moisture, or temperature or change the climate of the area. The proposed project would provide beach improvements and is not inconsistent with the AQMP of the SCAQMD. The emissions associated with the proposed project would not exceed SCAQMD thresholds (with mitigation for fugitive dust emissions) and thus, the project would have no significant adverse impacts on regional air quality. The beach improvements would not conflict or obstruct implementation of the AQMP.

(Sources: SCAQMD AQMP, SCAQMD CEQA Handbook, Malibu General Plan, and Site Location Map)

B. Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact with Mitigation. The proposed beach improvements would lead to construction emissions that may affect regional air quality. The proposed improvements (picnic tables, chemical toilets, walkways, railing, landscaping, parking area, parking ticket machine, monument, and stairway ~~ramp~~) would involve limited construction or ground disturbance activities during an estimated 90-day construction period. Grading of the 1.92-acre site may generate 110 pounds of fugitive dust per acre per day or approximately 186 pounds per day. This pollutant emission would exceed SCAQMD thresholds. The following measures would reduce short-term fugitive dust by as much as 50 percent and would make impacts less than significant.

- ***Use of watering for dust control during clearing, grading and construction.***
- ***Soil disturbance should be terminated when high winds (>25 MPH) make dust control extremely difficult.***
- ***Limiting grading/soil disturbance to as small an area as practical at any one time.***

Many of the facilities (tables, trash receptacles, chemical toilets, monument, parking ticket machine, railing, and signs) would be pre-fabricated at off-site locations and would only involve installation at the site. Due to the limited construction activities that would occur at the site (as needed for the walkways, toilet pads, table areas, and stairway ~~ramp~~) and their short-term occurrence (90 days), these impacts are not expected to be significant. Estimates of construction emissions are provided in Table 2, *Project-Related Emissions.*

Vehicle trips that would be generated by the proposed beach would lead to vehicle emissions along roadways leading to and from the site and possibly throughout the region. These emissions are estimated using the California Air Resources Board's (CARB) Urbemis7G computer model. Table 2 provides the results of the modeling.

TABLE 2
PROJECT-RELATED EMISSIONS (lbs/day)

Pollutant	Construction Emissions*	Construction Thresholds	Projected Vehicle Emissions	Operation Thresholds
ROC	5.30	75	2.56	55
NO_x	61.59	100	5.68	55
CO	0.26	550	20.46	550
PM_{10}	21.61	150	1.79	150

* Assumes the use of two pieces of equipment during grading and three pieces during construction.
Source: SCAQMD CEQA Air Quality Handbook and CARB Urbemis7G.

As shown, vehicle emissions would not exceed SCAQMD thresholds, and the proposed Dan Blocker Beach Project would have no significant adverse impacts on air quality. While ozone standards are occasionally exceeded in the project area, ozone levels are not expected to be adversely affected by the proposed project. As shown, ROC and NOx emissions (which are the precursors of ozone) from the project would be less than SCAQMD thresholds. Also, the development of the Dan Blocker Beach improvements would provide parking and picnic areas nearer to the urban areas of Los Angeles, allowing beachgoers and surfers from the Los Angeles area to travel shorter distances before reaching a convenient beach location. Thus, beneficial air quality impacts may actually occur due to shorter vehicle trips.

No long term stationary emissions are expected from the project, since no power or gas service to the site would be provided as part of the project. Also, on-site picnicking and beach-going activities are not expected to involve or generate on-site emissions. No barbecue grills are proposed which may generate particulate emissions.

(Sources: SCAQMD CEQA Handbook, CARB Urbemis7G, and Site Location Map)

C. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less than Significant Impact. The proposed beach project would not generate air quality emissions that would exceed SCAQMD thresholds. Impacts associated with fugitive dust would be short-term and would easily be reduced by implementation of standard dust control measures. Assuming that future users of Dan Blocker Beach are current beachgoers and users of other area beaches, the diversion trips due to the proposed project would lead to improvements to local air quality. Thus, the project would not lead to any cumulative increase in air pollutants or ozone levels in the project area.

(Sources: SCAQMD CEQA Handbook and AQMP)

D. Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. The construction emissions have the potential to affect sensitive receptors located near the site. Impacts on adjacent residences would be limited to fugitive dust during grading and excavation and emissions from on-site construction equipment. Predominant wind patterns come from the south and southwest, and emissions from the site would not be windblown to the residences located east and west of the site. There are no homes located directly north of the site. Rather, Pacific Coast Highway and an approximately 360-foot high cliff rising from the site are found to the north of the site. The nearest homes to the north and northeast (predominant wind direction) are located approximately 576 feet-to the northeast and 960 feet to the north. Due to the limited construction activities, the direction of predominant winds, and the distance of sensitive receptors that may be potentially affected, less than significant adverse impacts from construction-related emissions are expected on sensitive receptors.

According to the Dan Blocker County Beach Project Traffic Report prepared by *Katz, Okitsu and Associates* (December 21, 2000), the proposed project would generate approximately ~~240~~104 daily trips. Emissions associated with the estimated ~~240~~104 vehicle trips to and from the site would be dispersed throughout the regional roadway network and would not be concentrated in any one area. Also, since these trips are likely to be diversions of existing trips to beaches located farther from the urban areas of Los Angeles, no additional pollutant concentrations that may affect sensitive receptors are expected from the project.

(Sources: SCAQMD CEQA Handbook, Malibu General Plan, USGS Malibu Beach and Point Dume Quadrangles, and Site Survey)

E. Would the project create objectionable odors affecting a substantial number of people?

No Impact. The proposed project would not handle large quantities of solid waste materials, chemicals, food products, or other odorous materials and has no potential to create objectionable odors. On-site picnicking and beach-going activities are not expected to involve or generate odorous emissions. No barbecue grills, which may generate smoke and odors, are proposed. Chemical toilets would be cleaned and maintained regularly in accordance with the County Department of Beaches and Harbors' maintenance schedule and are not expected to generate objectionable odors. Thus, no impact in terms of objectionable odors is expected from the beach improvement project.

(Sources: SCAQMD CEQA Handbook and Site Location Map)

3.4 BIOLOGICAL RESOURCES

A biological resource assessment and impact analysis has been prepared by Pacific Southwest Biological Services, Inc (January 18,2001) to analyze the biological impacts of the proposed Dan Blocker Beach Project. The study is provided in Appendix C, and the findings are summarized below

The California coastline contains natural habitats for several rare and endangered species. The most extensive natural coastline in Los Angeles County is within the Malibu Coastal Zone (MCZ). The project site is located within the MCZ. The MCZ marine resources along the Malibu coast include kelp beds, tide pools, marine fisheries, offshore reefs, sandy beaches, rocky headlands, sea lion haul outs, coastal dunes, and isolated wetlands. Additionally, MCZ supports a rich and diverse fauna of mammals, reptiles, aMPHibians, birds and invertebrates, which includes a number of endangered and threatened plants and animals. The location and type of vegetation in the MCZ depends largely on the type of soil and amount of moisture available during annual periods of drought from approximately April to October.

The State Water Resource Control Board (SWRCB) has identified the entire coastline from Point Magu to Latigo Point as an Area of Special Biological Significance (ASBS). The SWRCB defines a ASBS as an area "requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable". The proposed site is located less than a half a mile to the east of ASBS.

The California Coastal Act of 1976 defines "environmentally sensitive areas as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in a ecosystem and which could be easily disturbed or degraded by human activities and developments". The Coastal Act requires that these areas be identified and protected from any loss or degradation. According to the City of Malibu General Plan, the Malibu Local Coastal Plan (LCP) Land Use Plan identifies those habitats in the MCZ which meet the Coastal Act definition of "environmentally sensitive areas" as areas which include habitats that are unique, rare, restricted in distribution or extremely fragile; marine areas designated as ASBS by the SWRCB; rare and endangered species habitats as defined by the State Department of Fish and Game or the U.S. Fish and Wildlife Service; and habitats that are recognized for their extremely high biological productivity and importance as specialized wildlife feeding, nesting or breeding grounds. Although the MCZ does not currently have a LCP, the City of Malibu General Plan's Conservation Element lists areas that meet the criteria and legal definitions of an environmentally sensitive area, as well as those areas adjoining sensitive habitat which functionally related to, or act as a buffer to, the sensitive habitat area. The project site is listed as an Significant Ecological Area in the City of Malibu General Plan's Conservation Element.

Los Angeles County has identified areas of Significant Ecological Areas (SEAs), which are ecologically fragile or important land and water areas that are valuable as plant or wildlife habitat. The project site is identified as an SEA. Areas near the project site that are also identified as SEAs include Point Dume, a portion of Zuma Canyon, a portion of Malibu Canyon, upper La Sierra Canyon, Heptic Gulch, Malibu Creek State Park Buffer, Tuna Canyon, and Cold Creek Canyon.

The project site is not regarded as a site for sensitive biological resources. It contains several non-native weed plants mixed with remnant Venturan Coastal Sage Scrub vegetation. Substantial areas on-site are covered with pavement and devoid of vegetation of any kind. In others, pavement rubble is only partially obscured by the weedy species.

A. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less than Significant Impact. The project site is characterized by an infestation of several non-native weed plants mixed with remnant Venturan Coastal Sage Scrub vegetation which consists of Beach Buckwheat (*Eriogonum parviflorum)*, California Sagebrush (*Artemisia californica*), Goldenbush (*Isocoma menziesii*), California Sunflower (*Encelia californica*), Laurel-leaf Sumac (*Malosma laurina*), and Coyote Brush (*Baccharis pilularis*). The more conspicuous non-native weeds of the site include Hottentot-fig (*Carpobrotus edulis*), Sweet Fennel (*Foeniculum vulgare*), Short-pod Mustard *(Hirschfeldia incana*), Castor-bean (*Ricinus communis*), and African Fountain Grass (*Pennisetum setaceum*), the latter being a dominant species on the slopes, and located on the majority of the site, and adjacent ocean-side slopes. Substantial areas are covered with pavement and devoid of vegetation of any kind. In other areas on the project site, pavement rubble is only partially obscured by the weedy species.

Thirty plant taxa were observed at the project site during the biological survey. Theses are listed Appendix 1 of the Biological Resources Assessment and Impact Analysis found in Appendix C to this Initail Study. The plant taxa observed on-site are typical of disturbed and remnant scrub habitats of the region. None of the observed taxa are sensitive in any state, federal or conservation listings.

Sixteen species of fauna were observed on the project site during the biological survey. They included one retile and fifteen birds. The Western Fence Lizard (*Sceloporus occidentalis*), one of the most common western lizards, was observed. Common and widespread resident bird species observed atop the bluff include the House Finch (*Carpodacus mexicanus*), California Towhee (*Pipilo crissalis*), American Crow (*Corvus brachyrynchos*), Rock Dove (*Columba livia*), Black Phoebe (*Sayornis nigricans*), and Anna's Hummingbird (*Calypte anna*). Also observed was an abundant migrant and frequent winter visitor, the White-crowned Sparrow (*Zonotrichia leucophrys*). Observed on the beach and flying just offshore were the Heerman's Gull (*Larus heermani*), Ring-billed Gull (*Larus delawarensis*), and California Gull (*Larus californicus*). Shorebirds observed on the beach were the Black-bellied Plover (*Pluvialis squatarola*), Marbled Godwit (*Limosa fedoa*) and Sanderling (*Calidris alba*). Observed on the water just offshore was the California Brown Pelican (*Pelecanus occidentalis californicus*), a common to very common non-breeding visitor. Nesting colonies of this species are listed as Endangered by the U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Game (CDFG). However, nesting occurs only on off-shore islands, generally uninhabited, without mammalian predators.

Appendix 3 of the Biological Resources Assessment and Impact Analysis lists those sensitive plant and animal taxa reported from the Malibu Beach and Point Dume, California quadrangles in the California Departments Fish and Game Natural Diversity Data. Only one of these, the Southern California Rufous-crowned Sparrow, was observed on the site and characteristics are summarized below. Due to the high degree of disturbance of the site, none of these other organisms are expected to occur on the project site.

Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)

LISTING:	USFWS - Species of Concern CDFG - Species of Special Concern
DISTRIBUTION:	Coastal southern California from Santa Barbara County south into Baja California, Mexico.
HABITAT:	Sparse, low scrub, often mixed with grasses on rocky slopes. California Sagebrush (*Artemisia californica*) is often present in scrub inhabited by this sparrow.
STATUS:	Uncommon to fairly common but localized resident. Listing is based on concern that this species is among the most sensitive to habitat fragmentation and edge effects.

One individual of this species was observed in the disturbed scrub near the eastern boundary of the site. Because of the highly disturbed nature of the site, the species is not expected to breed at the project site.

The proposed development at Dan Blocker Beach would be small in scale. Although the flora on site would be removed with the proposed development, it is not listed as a sensitive habitat. The Southern California Rufous-crowned Sparrow is not expected to breed on the project site. Thus, no significant impacts are expected.

Provision of access to the beach area would generate additional disturbance in an otherwise dynamic littoral strand habitat. Uses on Dan Blocker Beach include surfing and swimming. The proposed project would allow for public access to portions of Dan Blocker Beach could possibly increase the amount of visitors to the area. The increase of human presence on the beach strand is anticipated to have minimal impact. Impacts to the project site are not considered significant due to the highly disturbed nature of the site. Additionally, the proposed development would be in compliance with the California Coastal Act and guidelines for SEAs.

Although the proposed project would not create significant impacts, the following recommendations (listed in the January 21, 2001, *Biological Resources Assessment and Impact Analysis*) should be incorporated into the proposed development to further minimize any impacts.

- Removal of any vegetation, without proactive revegetation, will allow for invasion or reinvasion by the noxious African Fountain Grass. For this reason, revegetation of the site immediately upon completion of development should occur, both for erosion control and to prevent recurrence of undesirable weedy species.

- As an addition to the railing system at the bluff-top edge, a low wire fencing with the capability of preventing trash from the park area from reaching the beach and ocean is recommended.

B. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Less than Significant Impact. As discussed above, the project site is characterized by an infestation of several non-native weed plants mixed with remnant Venturan Coastal Sage Scrub vegetation which consists of Beach Buckwheat (*Eriogonum parviflorum*), California Sagebrush (*Artemisia californica*), Goldenbush (*Isocoma menziesii*), California Sunflower (*Encelia californica*), Laurel-leaf Sumac (*Malosma laurina*), and Coyote Brush (*Baccharis pilularis*). The more conspicuous non-native weeds of the site include Hottentot-fig (*Carpobrotus edulis*), Sweet Fennel (*Foeniculum vulgare*), Short-pod Mustard (*Hirschfeldia* *incana*), Castor-bean (*Ricinus communis*), and African Fountain Grass (*Pennisetum setaceum*), the latter being a dominant species on the slopes through the majority of the site and adjacent ocean-side slopes. Substantial areas are covered with pavement and devoid of vegetation of any kind. In other areas of the project site, pavement rubble is only partially obscured by the weedy species. The plant taxa observed on-site are typical of disturbed and remnant Scrub habitats of the region. None of the observed taxa are sensitive in any state, federal or conservation listings. No riparian habitat is located on the project site.

Although the flora on site would be removed with the proposed development, it is not listed as a sensitive species. Thus, a less than significant impact is expected.

C. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. The project site does not contain wetland habitat as defined by Section 404 of the Clean Water Act. The project site is located to the north of the Pacific Ocean and the Santa Monica Bay, which would be considered wetland habitat. The proposed development would increase runoff and erosion on the project site. Impacts associated with the increase in erosion and runoff are addressed below in *Section 3.6 Geology and Soils* and *Section 3.8 Hydrology and Water Quality*. Implementation of mitigation measures recommended in those sections would decrease impacts to below a level of significance.

D. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact. The Malibu coastline contains a variety of native resident migratory fish and wildlife. Appendix 3 of the Biological Resources Assessment and Impact Analysis (found in Appendix C of this document) lists those sensitive plant and animal taxa reported from the Malibu Beach and Point Dume, California quadrangles in the California Department of Fish and Game's Natural Diversity Data (CNDDB). Only one of these, the Southern California Rufous-crowned Sparrow was observed on the project site in the disturbed scrub near the eastern boundary of the site. Because of the highly disturbed nature of the site, the species is not expected to breed at the project site.

The proposed project would be small scale and would not include any large structures, which would block migratory birds. Additionally, the project site is not designated as a wildlife corridor. The proposed project is not expected to significantly interfere with the movement of wildlife.

E. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. Los Angeles County has identified areas of Significant Ecological Areas (SEAs), which are ecologically fragile or important land and water areas that are valuable as plant or wildlife habitat. The project site is identified as an SEA. As discussed above, the California Coastal Act requires that these areas be identified and protected from any loss or degradation. The proposed project would comply with SEA design compatibility criteria and performance review. The project site is listed as an Significant Ecological Area in the City of Malibu General Plan's Conservation Element. The project is also located within the coastal zone and would comply with the 1976 California Coastal Act. The proposed project would comply with the SEA regulations, City of Malibu regulations for Significant Ecological Areas and the Coastal Act and would not be in conflict with any local policies or ordinances protecting biological resources.

F. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less than Significant Impact. As discussed above the project site is identified as a SEA in the County of Los Angeles General Plan and City of Malibu General Plan. Additionally, the project site is located within the Coastal Zone. No sensitive plant or animal species are identified on the project site. Also, the project site does not contain sensitive habitat and is not designated as a wildlife corridor. The proposed development would be in compliance with the California Coastal Act and guidelines for SEAs.

Provision of access to the beach area would generate additional disturbance in an otherwise dynamic littoral strand habitat. The increase of human presence on the beach strand is anticipated to have minimal impact and is not regarded as significant due to the highly disturbed nature of the site.

3.5 CULTURAL RESOURCES

An archaeological resources study has been prepared by ASM and Affiliates (February 19, 2001) to analyze the cultural resource impacts of the proposed Dan Blocker Beach Project. The study is provided in Appendix D and the findings summarized below.

Archaeological and ethnographic information indicate that area in the vicinity of the project has been occupied by Native Americans for nearly 9,000 years. Coastal Archaic period sites have been characterized by somewhat undifferentiated shell middens, few bifaces and dart points, and abundant milling equipment. They range from large residential bases to small temporary camps and resource exploitation loci. The Middle Period, starting roughly 3,000 years B.P. and lasting until 800 year B.P., is characterized by more types of beads and ornaments than before, and a shift from rectangular to circular beads. This period, within which five phases can be distinguished archaeologically, encompasses the Middle Canalino, early Late Mainland, late Intermediate Horizon, and late Campbell Tradition. The Late Period is defined by the presence of *Olivella* callus beads and clam disk and cylinder beads. This period terminates 1804 A.D., and in the project area subsumes the Chumash Tradition. The latter is the tradition associated with the contemporary Native American population of the region.

A review of site records disclosed that no archaeological sites have been recorded within the project property, nor has it been subjected to previous survey or other archaeological study. Information provided by South Central Coastal Information Center at California State University, Fullerton indicates that 10 separate studies have been conducted within a half-mile of the project. These and other archaeological studies have resulted in the identification of 4 prehistoric resources within a half-mile radius, all of which are shell middens; no historic archaeological sites have been recorded. Similarly, no properties listed on the California State Historic Resources Inventory, National Register of Historic Places, California Historic Landmarks, California Points of Historic Interest, or City of Los Angeles Historic-Cultural Monuments are within a half-mile of the project property. Additionally, the entire 1.92 acre project site was thoroughly examined at 5 to 10-meter intervals. Except for paved areas, ground visibility was generally good to excellent throughout the parcel and more than sufficient for the detection of any archaeological resources. No problems were encountered accessing and surveying all portions of the project area.

A. Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

No Impact. As discussed above, four prehistoric resources have been identified within a half-mile radius of the project site, all of which are shell middens. No historic archaeological sites have been recorded surrounding the project site. Similarly, no properties listed on the California State Historic Resources Inventory, National Register of Historic Places, California Historic Landmarks, California Points of Historic Interest, or City of Los Angeles Historic-Cultural Monuments are within a half-mile of the project property. The records search and an intensive field survey of the site did not result in the identification of any prehistoric or historic cultural resources on-site. The project site does not contain any significant historic resources. Thus, no impact is expected.

(Dan Blocker Beach Project Cultural Resource Survey)

B. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No Impact. The record search conducted for the project indicates that no cultural resources have been recorded within the project property, and the intensive field survey did not result in the identification of any prehistoric or historic cultural resources on-site. Historic disturbances of the project site would have probably destroyed any extent cultural resources. It is concluded that implementation of the project will not result in adverse direct or indirect impacts to significant and California Register of Historic Places eligible cultural resources. \ Therefore, no impacts are expected.

(Dan Blocker Beach Project Cultural Resource Survey)

C. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impacts. The project site contains deteriorated pavement and fencing, which indicates that the site has been previously disturbed. Encountering paleontological resources during site excavation is remote, because of prior site disturbances and the limited excavation that will be required for the project construct. Not impacts to paleontological resources are anticipated

D. Would the project disturb any human remains, including those interred outside of formal cemeteries?

No Impact. As discussed above, no prehistoric or historic resources are located on the project site. No formal cemeteries are located on the project site. Therefore, no impacts are expected.

3.6 GEOLOGY AND SOILS

A Geotechnical Reconnaissance Report has been prepared by Group Delta (December 26, 2000) to analyze the geologic impacts of the proposed Dan Blocker Beach Project. The studies are provided in Appendix E and the findings summarized below.

The proposed project site can be characterized as a highway bench cut into the hillside in the lower slopes of the Santa Monica Mountains. The hillside extends down to the Pacific Ocean forming a coastal bluff over a narrow sandy beach. The proposed project site is located on a bluff that is approximately 10 to 20 feet high. The slopes of the bluffs at Dan Blocker Beach range from being near vertical in many areas to approximately 1:3 (horizontal: vertical).

The project site is situated in the western region of the Santa Monica Mountains near the base of the southerly descending flanks in the City of Malibu. Geologic units located in the vicinity of the project site include Holocene beach sands, Pleistocene-age older alluvial sediment deposits on the top of the hillside north of the roadway, and Miocene-age volcanic rocks exposed in the coastal bluffs and roadway cuts. Within 2,000 feet of the project site is located a middle to late Miocene-age meta-sedimentary formation and landslide debris. Minor isolated fills also exist throughout the site as gully infill, erosion repairs, and minor roadway grading. The proposed project site is located on several soil types including: Conejo Volcanics, Monterey Formation, Older Surficial Sediment, Landslide Debris, Residual Soils, and Artificial Fill.

The project site is located within the seismically active area of Southern California. There are no known active faults located on the proposed project site. The nearest potentially active fault is the Malibu Coast Fault system located about 2,000 feet north of the project area. The nearest inactive fault is the Latigo Fault, located below the project site, along the beach.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, City of Malibu General Plan, Report and General Soil Map of Los Angeles County, California, Site Survey, and Geotechnical Reconnaissance)

A. Would the project expose people or structures to potential substantial adverse effect, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Less than Significant Impact. The project site is located in a seismically active region. The Malibu Coast Fault system is located about 2,000 feet north of the project area and is an active fault system. No active segments of the active Malibu Coast Fault system are known to trend or through the project site. The Latigo Fault is an inactive fault and mapped with an east-west trend, below the project site along the beach. Like other areas, the proposed project site would be subject to strong ground shaking should an earthquake occur. Since no active faults trend toward or traverse the project site, no ground rupture is anticipated to occur on-site. Therefore, the project would not expose people or structures to potentially adverse effects in a significant manner.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, Site Location Map, Los Angeles County Safety Element, and Los Angeles General Plan)

B. Would the project be subject to strong seismic groundshaking?

Less than Significant Impact. The proposed project would expose visitors to the project site to hazards associated with groundshaking during an earthquake event from the Malibu Fault System and other nearby faults. Due to the proximity of the Malibu Fault System, groundshaking hazards could lead to severe ground accelerations, causing personal injury and property damage, depending on the magnitude of the earthquake and the distance of the site to the epicenter. However, the proposed project does not include any structures other than a one-story restroom facility, and it would be constructed to meet the regulations of the Uniform Building Code. Thus, the impact of strong seismic ground shaking would be less than significant.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, Los Angeles County Safety Element, and Los Angeles General Plan)

C. Would the project be subject to seismic-related ground failure, including liquefaction?

No Impact. The potential for liquefaction is generally a function of age, type, and looseness of cohesionless sediments. Additionally, the depth of groundwater also will determine the potential for liquefaction. Relatively young (Quanternary), coarse-grained (sandy), loose sediments associated with shallow ground water would have the highest susceptibility to liquefaction during a significant seismic event. The soils located on the proposed project site are underlain by volcanic bedrock, which is an older soil type. Permanent groundwater on-site can be anticipated to be near sea level. Liquefaction potential on-site is considered very low. Thus, no hazards associated with liquefaction are anticipated with the proposed Dan Blocker Beach Project.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, Los Angeles County Safety Element, Geotechnical Reconnaissance Report)

D. Would the project be subject to landslides?

No Impact. The volcanics at the proposed project site are exposed in the coastal bluffs and in the roadway cut. These volcanics are stable at close to vertical cut inclinations. The minor instability of the bluff slopes along Dan Blocker Beach has been developed by oversteepening and weathering of the bluff face as a result of wave erosion and/or subaerial erosion. Older landslide debris are located to the west and east of the project site. Landslides in the project area are associated with the Monterey Formation, which is a thin-bedded, platysiliceous shale. The Monterey Formation's thin-bedded, platysiliceous shale is not found within the project area, except for possibly underlying part of the shore platform.

A minor amount of colluvial material, which is associated with an ancient landslide, debris flow from alluvial deposits, and/or dumped material associated with the grading of PCH is located west of the center of the proposed project site in the coastal bluff. However, the proposed project site is not located on a formation that is subjected to landslides and no landslides are expected to occur on the project site.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, Los Angeles County Safety Element, and Geotechnical Reconnaissance Report)

E. Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact with Mitigation. Dan Blocker Beach has not experienced a considerable amount of erosion in the last 20 to 30 years, but rather fluctuating periods of beach erosion and accretion caused by storm events. Dan Blocker Beach bluff tops currently undergo minor erosion caused by wind, rain, irrigation, and uncontrolled runoff. Where these processes have occurred, riling and minor gullying have resulted. Bluff top retreat occurs as a result of major storm events. Additionally, waves can create erosion of coastal bluffs. Elevations of the shore platform along Dan Blocker Beach range from approximately two to eight feet Mean Sea Level, allowing waves less than one foot high to break along the base of the sea cliff during periods of high tides. Any significant erosion from the sand currently on the beach would allow larger waves to break against the sea cliffs. Along the portion of the bluff where the proposed site is located, stone and concrete rubble is located on the natural outcrops at the beach. The stone and concrete at the beach protect the bluff against waves striking the base of the bluff and result in less acceleration of bluff erosion.

The proposed project site is partially covered with deteriorated pavement and with vegetation. The proposed project would include development of a parking area, a ~~ramp~~stairway to provide access to the beach and park site amenities. The proposed development would increase the amount of runoff and bluff erosion on the site. As part of the proposed project, runoff and storm water would be directed towards PCH and into an existing drainage system. Additionally, human activities, such as foot traffic down the bluff that may occur as a result of the increased visitors to the site, would also create additional erosion of the bluff. The Coastal Act Section 30253 states that new development shall assure stability and structural integrity, and neither create nor contribute significant erosion, geologic instability, and/or destruction of a site or surrounding area. Additionally, the Coastal Act states that new developments may not require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Based upon the geologic conditions of the bluffs, historic beach erosion at Dan Blocker Beach, and the increase in erosion caused by the proposed project, the following mitigation is recommended:

- ***Driveways and parking areas should be setback a minimum of 20 feet from the bluff face.***
- ***Fencing along the bluff face should be constructed to discourage foot traffic down the face of the bluff.***
- ***During grading of the parking area, any gullies identified in the parking area or other areas to be developed should be filled with properly compacted soils and should be modified to drain any flows away from the bluff face.***
- ***Any areas between the new parking area and driveways that is not well vegetated should be planted with drought-tolerant vegetation to minimize interim erosion.***
- ***A sufficiently deep concrete pile or foundation system for a concrete landing for the access ~~ramp~~stairway should be constructed to undermine wave action and/or beach erosion.***
- ***The access ~~ramp~~stairway should be designed to accommodate ongoing marine and subaerial erosion process.***

Implementation of these mitigation measures would reduce potential impacts to below a level of significance.

(Sources: Los Angeles County Safety Element, USGS Point Dume and Malibu Beach Quadrangles, California Coastal Act, and Geotechnical Reconnaissance Report)

F. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact with Mitigation. The proposed project site is located on a volcanic formation, which is considered to be stable. The ~~ramp~~stairway and parking area development would be built with in compliance with the County of Los Angeles regulations. The proposed project site Geotechnical recommendations for the parking area and ~~ramp~~stairway construction are stated in the *Geotechnical Reconnaissance Report for Dan Blocker Beach,* prepared by Group Delta and dated December 26, 2000. These recommendations are presented below and would need to be implemented in order to reduce impacts associated with the structural geotechnical stability of the proposed project to a level below significance.

- ***The recommendations presented in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 should be followed.***
- ***Drill borings at the project site and soil samples should be taken of subgrade before final design of the ~~ramp~~stairway and parking area. After these samples are taken the recommendations in the***

Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 may be modified depending on the findings. If modified findings result from the samples they should than be implemented.

(Sources: USGS Point Dume and Malibu Beach Quadrangles, Los Angeles County Safety Element, Report and General Soil Map of Los Angeles County, California, and Point Dume and Malibu Beach General Plan)

G. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No Impact. The project site contains a variety of soil types including: Conejo Volcanics (*Tcvaz*); Montery Formation (*Tm*); Older Surficial Sediments (*Qoa*); Residual Soils; and Artificial Fill. Additionally, Landslide Debris (*Qls*) has been mapped in the project area. Table 3, *Soil Types and Characteristics*, describes the characteristics and colors of the soils located on site.

TABLE 3
SOIL TYPES AND CHARACTERISTICS

Type of Soil	Formation	Color	Composition
Conejo Volcanics (*Tcvaz*)	An andesitic breccia formed in the middle of the Miocene age	Pinkish-gray to brown	Unsorted, very large to small, angular fragments of andesitic to tuffaceous matrix.
Montery Formation (*Tm*)	Formed during middle to late Miocene age.	White to dark brown.	Thin bedded, platy, siliceous shale.
Older Surficial Sediments (*Qoa*)	Pleistocene-age	N/A	Alluvial sediments consisting of unconsolidated to weakly consolidated, pebble-cobble gravel, sand, and silt.
Landslide Debris (*Qls*)	Older landslide debris associated with the Monterey Formation.	N/A	Displaced blocks of alluvial sediments, terrace deposits, and/or volcanics.
Residual Soils	Formed over volcanic bedrock formation are present where volcanics have not been cut as part of PCH.	Dark to medium brown.	Plastic, clayey and silty sand.
Artificial Fill	Associated with the grading of PCH and/or repair of past localized slumps, erosion features, or with existing beach erosion.	N/A	N/A

The project area is considered to have high shrink and swell soil characteristics by the *Los Angeles County General Soils Map*, and the residual soils may be expansive. The proposed project would develop only minor structures and is not expected to create a significant hazard associated with expansive soils. The proposed project would be in compliance with the Uniform Building Code (1994). Thus, no significant impacts are expected to occur with the construction of the proposed project.

(Sources: Los Angeles County General Soils Map and Geotechnical Reconnaissance Report)

H. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The proposed project would not include a septic tank. The proposed restroom facility would include chemical toilets. Thus, no impacts associated with soils suitable for septic systems would occur.

(Sources: Project Description and Project Location Map)

3.7 HAZARDS AND HAZARDOUS MATERIALS

A hazardous material is defined as any substance that may be hazardous to humans, animals, or plants, and may include pesticides, herbicides, toxic metals and chemicals, volatile chemicals, explosives, and even nuclear fuels or low-level radioactive wastes. Although the City of Malibu does not contain a wide variety of industries and land use, there are still uses which generate or handle hazardous materials. These sites present hazards associated with accidental spills, contamination, fire, explosion, and improper disposal. Major truck routes on PCH also pose hazards associated with accidental spills during transport.

No underground storage tanks, clarifiers, or groundwater wells are located on the project site. Additionally, surface drains, drums or hazardous wastes are present. The site is not located near industrial land uses. Hazardous wastes handlers in the vicinity include Pepperdine University, located at 24255 PCH, approximately two miles east of the project site and a gas station, located at 23641 PCH, approximately 2.5 miles east of the project site. There is another gas station located to the immediate east of the project site and a photo lab, located at 23852 PCH, just over two miles east of the project site. Toxic waste has not been reported on any of the sites but these land uses utilize hazardous materials and generate hazardous wastes.

(Sources: Malibu General Plan, Site Survey and, EPA Envirofacts Database)

A. Would the project create a significant hazard to the public, or the environment through the routine transport, use, or disposal of hazardous materials?

No Impact. The proposed development would not use, generate, transport or dispose of hazardous material, nor be involved in the handling of hazardous materials, which might create public health hazards. No significant hazards to the public related to hazardous materials are anticipated as a result of the project.

(Sources: Project Description and Project Location Map)

B. Would the project create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. Construction activities associated with the development of the project amenities may involve some hazardous materials use, such as paints, thinners, cleaning solvents, oil, and grease. Additionally, during operation of the proposed project, some quantities of cleaning solvents may be used. Possible temporary use of pesticides and/or herbicides may also occur. However, due to the small scale of the development, quantities of hazardous materials would be minimal. Hazardous material use during construction and operation would be made in accordance with existing federal, state and local regulations. Thus, no significant impact regarding the release of hazardous materials into the environment is expected from the project.

(Sources: Project Description and Project Location Map)

C. **Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

No Impact. The nearest school to the project site is Webster Elementary School located in the Civic Center Area, about 2.5 miles east of the site. The school is separated from the project site by vacant land, residential areas and open space. The proposed project includes the development of a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility. The proposed project is not expected to emit or handle hazardous materials other than small quantities of cleaning solvents and possible temporary use of pesticides and/or herbicides. Uses of these small amounts of hazardous materials would be in accordance with local, state and federal law. No impacts are anticipated regarding hazardous emissions to the surrounding schools.

(Sources: Malibu General Plan, Thomas Guide for Los Angeles County, and Site Location Map)

D. **Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

No Impact. The proposed site is currently open space and no hazardous materials are located on-site. There are land uses near the site which may utilize, generate, store, or dispose of hazardous materials. These include Pepperdine University, located at 24255 PCH approximately 2.0 miles east of the project site, and a gas station, located at 23641 PCH, approximately 2.5 miles east of the project site. There is another gas station located to the immediate east of the project site and a photo lab, located at 23852 PCH, just over two miles east of the project site. The gas station located immediately east of the project site is the only hazardous material operator within a one mile radius of the project site. Development on the proposed project site is not expected to create a significant hazard to the public or the environment.

(Sources: Site Survey and Cal-EPA Envirofacts Database)

E. **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

No Impact. The project site is located approximately 15 miles west of the Santa Monica Municipal Airport and approximately 17 miles southwest of Van Nuys Airport. The site is located outside the designated FAA clear zones and safety zones of the airports. Thus, the proposed development at Dan Blocker Beach would not be subject to the hazards associated with the surrounding airports.

(Sources: Cal-EPA Envirofacts Database, Thomas Guide for Los Angeles County, Malibu General Plan, and Los Angeles County General Plan)

F. **For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

No Impact. As indicated above, the project site is located approximately 15-17 miles from the nearest airports at Santa Monica and Van Nuys. There are no other airstrips located near the site. Thus, no impacts associated with private airstrips would occur as a result of the project.

(Sources: Cal-EPA Envirofacts Database, Thomas Guide for Los Angeles County, Malibu General Plan, and Los Angeles County General Plan)

G. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The proposed project includes development of a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility. The project site is located adjacent to PCH, which is the major arterial in the City of Malibu, as well as for coastal communities in the area. PCH may be used for evacuation and emergency response. The proposed project is not expected to interfere with evacuation of the site or surrounding area.

(Sources: Malibu General Plan, Project Description, and Site Survey)

H. Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less Than Significant Impact. The proposed site is located in an area with a high proportion of undeveloped land and open space. The foothills of the Santa Monica Mountains are located to the north of the project site and have a high fire hazard potential. Additionally, the City of Malibu has been identified as an extreme fire hazard zone by the California Department of Forestry and the County Fire Department.

Wildland fires inevitably occur as a part of the natural revegetation cycle of the California landscape located near the proposed development. Often the loss of structures by fires is due to the inappropriate siting of structures or flammable landscaping. For the area adjacent to the project site there are records of woodland fires occurring frequently throughout the last ten years.

There is flammable brush, tall grass and shrubs adjacent to the site, which may create wildfire hazards. The proposed development would include a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility. The proposed development would not introduce either residential or commercial uses to the site and people would be using the site on a temporary basis. Additionally, PCH separates the site from the Santa Monica Mountains to the north of the project site. Thus, less than significant impacts are anticipated.

(Sources: Site Survey and Malibu General Plan)

3.8 HYDROLOGY AND WATER QUALITY

The coastal Los Angeles area is located within the Los Angeles Hydrologic Basin, encompassing as area of 500 miles. The Los Angeles Hydrologic Basin extends from the Santa Barbara – Ventura County line in the north to the Los Angeles – Orange County line in the south. The hydrologic basin can be further subdivided into Hydrologic units (HU), Hydrologic subunits (HSU) and Hydrologic subareas (HAS). The project site at Dan Blocker Beach falls under the hydrologic unit of Malibu, the hydrologic area of Point Dume and the hydrologic subareas of Corral Canyon and Solstice Canyon. The Malibu HU is located on the western slope of the Santa Monica Mountains and is therefore characterized by mountainous terrain and small stream valleys. On the south side are sloping marine terraces and long sandy beaches along Santa Monica Bay. In several instances along the coast, the marine terrace is minimal and the mountain slopes descend to the shore.

The surface waters of the Malibu HU have typical coastal stream traits, in that the amount of natural runoff is highly variable. Most of the runoff is during and after the rains of late autumn and winter, flowing from January through April. As a result, the runoff is intermittent in many streams and more constant in higher mountain streams. The annual flow of runoff varies widely on an annual basis, and the region experiences both wet and dry periods.

Sixty-two watersheds have been identified within the boundaries of the City of Malibu, including small, coastal terrace watersheds located within a few hundred feet of the ocean and large watersheds, which drain the Santa Monica Mountains. The largest watershed is the Malibu Creek Coastal watershed, which drains approximately 74, 000 acres (115 square miles).

The Corral Creek Watershed is located within the project area. The Corral Creek Watershed is associated with a small coastal stream draining Corral Canyon and a small number of tributary streams also. The stream reaches the ocean at Dan Blocker Beach, and the highway spans the creek with a low bridge. The watershed is small, totaling 2,800 acres. Dan Blocker Beach is just a small portion of the Corral Canyon watershed and is located on its coastal edge. The Solstice Creek Watershed is also a small coastal creek adjacent to the west portion of Dan Blocker Beach and, like Corral Creek, has several small tributary streams. The Solstice Creek Watershed is mountainous. The Solstice Creek traverses the eastern area of Dan Blocker Beach and flows under PCH through a 20-foot culvert, with a watershed area equivalent to 2,800 acres.

Due to the very steep and impervious nature of various small watersheds within the Malibu Coastal Zone (MCZ), accompanied by the rapid runoff of low and variable rainfall, there are no local dependable surface water supplies and very limited groundwater supplies within the MCZ. The factors affecting groundwater in project area are seasonal and annual precipitation patterns, topography, soil and rock permeability and faults. Rock formations in the area are not conducive to holding groundwater, and the dominant groundwater recharge in the City is groundwater flow from the upper portions of the watersheds. Other sources of recharge include rainfall, streamflow, irrigation runoff and septic system disposal. There is difficulty in quantifying the Malibu area's subsurface recharge and discharge due to the complexity of the area's subsurface flow. No designated groundwater basins occur in the area.

Dan Blocker Beach is located in the 5-year and 100-year flood plains for Corral Creek and Solstice Creek. Stream flows increase rapidly in response to heavy rains. The coastline edge of the project is also within the 100-year coastal flood zone. Storms can also generate waves that reach heights of 15 feet and cause coastal flooding. When combined with high tides and strong winds, higher than normal elevations along the coastline can be affected. Coastal flooding and shoreline erosion results, which can damage structures and facilities located along low-lying portions of the shoreline.

(Sources: Malibu General Plan and Los Angeles County Plan)

A. Would the project violate any water quality standards or waste discharge requirements?

Less than Significant Impact. The proposed project includes the construction of a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility. The proposed project would include paving, such as asphalt and/or decomposed granite, in portions of the project site. The increase in pavement on-site would increase the amount of storm water runoff from the proposed site, as well as grease and oil from the parked cars. The proposed project would not involve soil sedimentation or pollutants that are generally associated with heavy industrial uses and activities. The amount of oil, grease, and storm water associated with the parking area development would be small and is not expected to significantly impact water quality. The proposed project would be in compliance with Los Angeles County's water quality regulations. Additionally, storm water would be directed towards PCH and travel into an existing drainage system. No waste discharge is expected with the development of the project.

(Sources: Site Survey, Malibu General Plan and Regional Water Quality Control Board)

B. Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. Typical sources of groundwater that may exist in the Dan Blocker Beach's coastal bluffs include natural groundwater migration from the highland areas just north of the bluffs and infiltration of bedrock material on the platform surface above the bluffs by rainfall. In a rainy month, it can be anticipated that groundwater seepage existing in the bluff would occur. The volume of groundwater existing in the bluff face throughout the project site boundaries would vary from location to location, and between rainy seasons and drought years.

The proposed project site does not serve as a recharge area for local groundwater. The proposed project would include the development of a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and restroom facilities on the currently vacant site. Development on-site would cause some of the rainwater that would otherwise have percolated to the groundwater to become runoff. The surface of impermeable areas on the project site would be proportionately very small to the surrounding area. No substantial impact on the groundwater level of nearby wells is anticipated with the proposed project.

(Sources: Malibu General Plan and Geotechnical Reconnaissance Report)

C. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact with Mitigation. Storm water runoff flowing through the project area from Dan Blocker Beach, PCH, and adjacent watersheds, such as Corral and Solstice Canyons. The runoff flows directly from the mountainsides to the beach, most being channeled into drainage control structures to protect the highway. Soil compaction, paving and other constructed improvements in the area have greatly increased surface runoff, necessitating storm drain structures to accommodate the flows. Large channels have been cut across the beach by periodic releases from storm drains which outlet on to the beach. There are currently eight storm drains on the entire length of Dan Blocker Beach, ranging from two feet to 50 feet in width. These are operated by the Department of Beaches and Harbors in conjunction with Caltrans and Public Works. The drains and existing vegetation help to alleviate bluff erosion. Currently, there are no storm drains on the proposed project site. Drainage from the project site runs over the cliff face and onto the beach located south of the site. Gullies along steeper parts of Dan Blocker Beach are evidence of this process at work, such as those occurring within the project site.

The proposed development would include construction of a parking area, access ~~ramp~~stairway, park amenities and a restroom facility. The proposed site would be altered from vacant land with small areas of deteriorated pavement to areas of pavement, decomposed granite gravel, and landscaping. This would result in a slight decrease in the amount of water percolation and increase the amount of runoff, erosion and drainage on-site. Storm water would be directed towards PCH and travel into an existing drainage system. As stated in Section 3.6, Geology and Soils, mitigation to decrease erosion impacts must be implemented to reduce erosion impacts to below a level of significance. Some of these mitigation measures are stated below and would reduce any impacts associated with the runoff erosion to a level below significance.

- ***Driveways and parking areas should be setback a minimum of 20 feet from the bluff face.***
- ***During grading of the parking area, any gullies identified in the parking area or other areas to be developed should be filled with properly compacted soils and should be modified to drain any flows away from the bluff face.***
- ***Any areas between the new parking area and driveways that is not well vegetated should be planted with drought-tolerant vegetation to minimize interim erosion.***

(Sources: Malibu General Plan and Site Location Map)

D. Would the project substantially alter the existing drainage pattern of the site, or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant Impact. The site is vacant and drainage consists primarily of on-site ground percolation and drainage running over the face of the bluff. The proposed project would include the construction of a parking area, park site amenities and a restroom facility. Storm water would be directed towards PCH and travel into an existing drainage system. While ground percolation would be limited due to the introduction of paved areas on the site, the change in drainage patterns is not expected to lead to flooding. Thus impacts associated with the cause of flooding due to the increase of surface runoff would be less than significant.

(Sources: Site Survey, Los Angeles County Plan, Malibu General Plan, and Site Visit)

E. Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. The construction of proposed improvements to the site would lead to paved areas and changes to the drainage patterns on the site. There would be an increase in runoff volume. Storm water would be directed towards PCH and travel into an existing drainage system. The amount of runoff from the proposed project site is not expected to be substantial enough to create impacts to an existing drainage system along PCH.

(Sources: Site Survey and Site Location Map, Malibu General Plan)

F. Would the project otherwise substantially degrade water quality?

No Impact. The proposed project would lead to a new paved surface area on the site, park site amenities and a restroom facility. The proposed development would incrementally increase the amount of runoff, which may contain pollutants from the parked cars, such as oil and grease. Such an increase is not expected to be substantial due to the small size of the project. The proposed project would be in compliance with Los Angeles County's water quality regulations for storm water drainage. Thus, the proposed project is not expected to substantially degrade water quality.

(Sources: Site Survey and Site Location Map)

G. Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary of Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. Dan Blocker Beach is encompassed with the 100-year floodplain for Corral and Solstice Creek as designated in the FEMA Flood Insurance Rate Map and City of Malibu General Plan. No residential development would be proposed as part of the project; therefore, no housing would be placed within a flood hazard area.

Another possible cause of flooding for the area along the Pacific Coast is tsunamis, a series of tidal waves generated by large submarine earthquakes. Tsunamis may be generated immediately offshore of Malibu by surface ground rupture of the faulting just offshore or by the occurrence of submarine landslides. However as there is no residential development included within the project, this latter cause of flooding is not of significant concern.

(Sources: Malibu General Plan Safety Element, FEMA Flood Insurance Rate Map, and Site Location Map)

H. Would the project place structures within a 100-year flood hazard area, which would impede or redirect flood flows?

Less than Significant Impact. Although the project site is located within the 100-year flood area, the proposed development would include one small structure for the restroom facility. The restroom facility is not expected to impede or redirect flood flows. The proposed project would redirect storm water on-site into existing drains on PCH. However, this is not expected to significantly impact flood flow in the project vicinity.

(Sources: Site Survey, Los Angeles County Safety Element, Malibu General Plan Safety Element, FEMA Flood Insurance Rate Map, and Site Location Map)

I. Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The proposed project site is located outside designated dam inundation areas for Lake Malibu, approximately five miles to the northwest of Dan Blocker Beach. Thus, no risk of loss, injury, or property damage involving dam inundation would occur with the proposed project.

(Sources: Thomas Guide, Malibu General Plan Safety Element, and Site Location Map)

J. Would the project expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?

Less than Significant Impact. Tsunamis, or seismic waves, are large oceanic waves that may be generated by earthquakes, submarine volcanic eruptions, or large submarine landslides. Tsunamis causing disastrous destruction have been found to have been caused by earthquakes with magnitudes greater than 7.75. The 500-year tsunami wave runup heights may be as high as 30 feet in Southern California. With the project site elevation ranging from about 20 to 25 feet above Mean Sea Level, the project site could potentially be impacted by a large tsunami wave. Mudflows could potentially occur from the Santa Monica Mountains located north of the project site, which may also impact the project site. The proposed project would not include any residential or commercial development and would be used for parking. There are no dams or water located near the site, which may pose inundation or seiche hazards. Impacts are expected to be less than significant.

(Sources: Los Angeles County Safety Element, Malibu General Plan Safety Element, and Site Location Map)

3.9 LAND USE AND PLANNING

Dan Blocker Beach and the proposed project site is located within the County of Los Angeles and in the City of Malibu. Los Angeles County encompasses approximately 2,613,000 acres (4,083square miles) in southern California, north of Orange County, south of Kern County, east of Ventura County and west of San Bernadino County. Development of Los Angeles County started in the 1900's and over 70 percent of the urban development has occurred since the 1940's. Approximately 1,133 square miles has been devoted to urban use, more than 97 percent of which is located south of the San Gabriel Mountains. Dan Blocker Beach, including the proposed project site, is designated as Open Space in the Los Angeles County General Plan and zoned Public Open Space.

The project site is located within the City of Malibu. The City of Malibu includes approximately 12,552 acres of land. Approximately 60 percent of land in the City is undeveloped. Approximately 22 percent of the City is residential land uses and 15 percent is open space and the remainder of land uses consists of public facilities and horticulture uses. The City of Malibu has a low rate of development as a result of environmental constraints including steep hillsides and sensitive environmental resources and the high cost of land.

Dan Blocker Beach is identified as open space in the City of Malibu General Plan. The adjacent land use, to the north of the project site includes vacant land and commercial uses; to the east, land uses include mobile home residential uses, multi-family residential uses and commercial uses; and to the west of the project site are mobile home residential uses and open space.

The entire City of Malibu and the proposed project site is located within the coastal zone. In accordance with the California Coastal Act, a Local Coastal Program (LCP) is currently being prepared for the City of Malibu. Under the Los Angeles County General Plan, (Open Space Policy) and the Malibu General Plan, the site is part of a broad special management area and also part of the Santa Monica Mountains National Recreation Area (SMMNRA). The SMMNRA was established in 1978 by Congress and consists of County, State and Federally owned park lands.

(Sources: Malibu General Plan, Los Angeles County General Plan and Site Survey)

A. Would the project physically divide an established community?

No Impact. The proposed project involves the development of a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility. The project site is designated as Open Space in both the County of Los Angeles and City of Malibu General Plans. The project site is located approximately 2.5 miles west of the City of Malibu's civic center. There is a single-family residence immediately adjacent to and east of the project site. and further Residential development also occurs farther down the coast west of the site. Since residential development is scattered in the vicinity of the project area, the proposed project would not physically divide the surrounding residential neighborhood or the surrounding established community.

(Sources: Site Location Map and Site Survey)

B. Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less than Significant Impact. The proposed site is designated as Open Space in the Los Angeles County General Plan and the Malibu General Plan. Open space accounts for 1,869.9 acres of land use in Malibu and 902,700 acres of public and private Open Space in the County of Los Angeles.

The project site is located within the coastal zone, which extends several miles north of the City of Malibu limits. A Local Coastal Program (LCP) is currently being prepared for the Malibu area in accordance with the California Coastal Act. Prior to the adoption of a LCP, specific development proposals will be subject to compliance with applicable policies of adopted countywide and local plans and in accordance with the California Coastal Act.

Under the Los Angeles County General Plan and the Malibu General Plan, the site is part of the SMMNRA, which was established in 1978 by Congress. The National Park Service works toward acquiring lands which offer significant natural, cultural and recreational resources and which are not already under government jurisdiction or private preservation/recreation-oriented use. The entire City of Malibu and the project site is located within the borders of the park. Regulating activities within the park is the responsibility of the local jurisdiction.

Under Special Management Areas, the County identifies the project site as a Significant Ecological Area (SEA). The County General Plan states that in SEA area's, where no other alternative site is possible, public use, as essential to public health and safety is allowable. The General Plan includes SEA Design Compatibility Criteria and Performance Review, which the project would follow. Currently, access to the site is limited to a stairway belonging to existing residential units or by climbing down a cliff. The proposed development would provide safe access to the beach through the construction of ~~an aluminum ramp~~a stairway and safety railing. A guardrail would also be built to separate PCH and to provide a safe parking area for the public. The proposed development is, therefore, in compliance with the goals and objectives of the County of Los Angeles General Plan.

The Los Angeles County General Plan also identifies PCH, which runs directly parallel to the project site, as a scenic highway. The County general plan eMPHasizes the importance of new developments being designed to maintain a harmonious visual relationship with the existing development, vegetation and natural terrain, and structures and landscaping should complement and enhance scenic views. The proposed project would be small scale and would include landscaping of native vegetation, which would blend in with the natural coastal area. The proposed project would not include large buildings or development, which could obstruct views from PCH. The proposed project would also implement the County's General Plan policy of providing transportation planning, services and facilities that offer access to recreational opportunities by providing parking and access to the beach.

(Sources: Malibu General Plan and Los Angeles County General Plan)

C. Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The project site is surrounded by vacant land, residential development and a small portion of commercial development. The site is currently vacant and includes vegetation and deteriorated pavement. The site is located in the coastal zone for which an LCP is currently being prepared. The project site is described as a special management area SEA in the Los Angeles County General Plan. The proposed project would be designed in accordance with SEA standards. Thus, no impact is expected.

(Sources: Malibu General Plan, Los Angeles County General Plan and Site Survey)

3.10 MINERAL RESOURCES

The proposed project is located within the County of Los Angeles and in the City of Malibu. Mineral Resources including sand and gravel, have been identified within West Los Angeles County. Although not identified in the Malibu General Plan, sand and gravel resources are thought to occur in the Malibu Coastal Zone.

(Sources: Malibu General Plan, Los Angeles County General Plan and Site Survey,)

A. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. Mineral Resources within Los Angeles County are not located on the project site. The proposed project site is not located in an area designated to have these significant mineral resources, and development of the site would not affect the availability of mineral resources in the project area. Thus, no impact is expected.

(Sources: Malibu General Plan, Los Angeles County General Plan)

B. Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The project site and surrounding area are not subject to mineral resource recovery operations. Due to the small scale of the proposed development, the construction materials that would be needed for Dan Blocker Beach improvement would be minor when compared to regional resources. Thus, the proposed project would not affect locally and important mining operations nor would it result in the loss of availability of regional sand and gravel resources.

(Sources: Site Location Map, Site Survey, and Malibu General Plan)

3.11 NOISE

The project site is vacant bluff area overlooking Dan Blocker Beach, and does not generate any noise. The noise environment in the project area is relatively quiet, with vehicle noise along PCH dominating the ambient noise levels. Adjacent residential uses to the west and east of the site occasionally generate stationary noises, along with intermittent noise from beachgoers of the nearby beaches. The Santa Monica Mountains rise up from PCH, just north of the site, and the adjacent areas to the north are more than 360 feet above the site. The Malibu General Plan states that noise levels along PCH, major canyon roads, and local arterials are the major sources of noise in the City. The project site is located within the projected 70 to 65 decibels (dB) noise contour along PCH.

The Noise Element of the Malibu General Plan states that outdoor activity areas, such as playgrounds and neighborhood parks, have a maximum allowable noise exposure level of 70 dB Community Noise Equivalent

Level (CNEL) from transportation noise sources. Residential areas have a maximum allowable noise exposure level of 50 dB CNEL. Noise from non-transportation sources in residential areas are set at an ambient noise level of 55 dB from 7 AM to 7 PM, 50 dB from 7 PM to 10 PM, and 45 dB from 10 PM to 7 AM. The noise regulations of the City of Malibu (Municipal Code Chapter 2) prohibits unnecessary noises and the disturbance of the peace, quiet or repose of persons of ordinary and normal sensitiveness. Outdoor activities at public playgrounds are exempt from the regulations. Use of construction equipment is limited to the hours of 7 AM to 7 PM on weekdays and 8 AM to 5 PM on Saturdays.

The noise control regulations of Los Angeles County (Title 12, Chapter 12.08 of the Los Angeles County Code) sets the exterior and interior noise standards for residential areas at 45 dBA from 10 PM to 7 AM. Outdoor activities conducted on public playgrounds are exempt from the regulations. In multi-family residential areas, construction noise standards for mobile equipment are set at 80 dBA from 7 AM to 8 PM on Mondays to Saturdays (except Sundays and holidays), and 64 dBA from 8 PM to 7 AM on Mondays to Saturdays and all day Sunday and holidays. Construction noise standards for stationary equipment are set at 65 dBA from 7 AM to 8 PM on Mondays to Saturdays (except Sundays and holidays), and 55 dBA from 8 PM to 7 AM on Mondays to Saturdays and all day Sunday and holidays.

(Sources: Site Survey, USGS Point Dume and Malibu Beach Quadrangles, Los Angeles County Code, and Malibu General Plan)

A. Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant Impact. Construction activities associated with the proposed beach improvements would result in noise impacts associated with the use of construction equipment and construction vehicle trips. On-site construction activities would create noise from construction equipment and vibration from excavation and grading activities. Temporary construction noise impacts would vary in noise level according to the type of construction equipment and activity level. Short-term construction noise impacts tend to occur in separate phases, with large, earth-moving equipment generating 85 dBA at 50 feet from the source and finish construction activities and equipment generating less noise.

The proposed project would involve limited construction activities associated with the construction of the picnic table areas and toilet pads, walkways, parking area, and stairway~~-ramp~~. Other facilities (tables, chemical toilets, drinking fountains, signs, railing, monument, parking ticket machine, and trash receptacles) would be brought onto the site as finished components and would be installed or placed on-site. Construction would also be confined to an approximately 90-day period. Thus, construction noise impacts would not be significant.

Residents of the adjacent dwelling units to the east and west would be subject to construction noise on a short-term (90 days) and temporary basis only. Construction activities would occur during the daytime hours, and would comply with the noise regulations of the City of Malibu (time limits on construction activities) and the County of Los Angeles (noise standards for mobile and stationary construction equipment). Thus, noise from the limited construction activities on the site are not expected to adversely affect the residences to the east and west and would not violate the City or County noise regulations. There are no land uses to the north (cliff) and south (open sea) that would be affected by on-site construction noise.

PCH is a major noise source near the site. PCH is a four-lane roadway, with shoulder parking on the southbound side. There is a raised three-foot wide median along the segment of PCH near the site. The speed limit near the site is 50 MPH. Pacific Coast Highway carries an average of 35,000 vehicles per day with 39,500 trips per day during peak months. Traffic noise along PCH is not expected to adversely affect outdoor activities at Dan Blocker Beach, since playgrounds and parks are normally acceptable within areas with noise levels of up to 70 CNEL and water recreation areas up to 75 CNEL. In addition, the activities at the bluff would be limited to parking, picnicking, and toilet use, with beach activities conducted at the seaside, approximately 100 feet away from PCH and approximately 16 feet below the bluff area (project site).

Vehicle trips associated with the use of the Dan Blocker Beach would add to vehicle noise levels on PCH. Due to the high traffic volumes on PCH, the vehicle noise impacts of the project would not be perceptible and are expected to be insignificant. Table 4, *Projected Noise Levels*, shows that the increase in noise levels would only be 0.02 dB (be less than 1.0 dB) during the peak season.

TABLE 4
PROJECTED NOISE LEVELS

Roadway	**Distance of Contour from Roadway Centerline**				**Noise Level at 50 feet of roadway centerline**
	70 CNEL	**65 CNEL**	**60 CNEL**	*55 CNEL*	
PCH					
Existing – 35,000 ADT	136.2	422.3	1332.4	4212.3	72.61
Peak - 39,500 ADT	153.0	476.3	1503.7	4753.9	73.13
With Project - 39,740 ADT	153.9	479.2	1512.8	4782.7	73.16
Source: FHWA Noise Prediction Model					

This estimate assumes that trips to the proposed beach are new trips on PCH. However, it is anticipated that existing users of the proposed project are existing beachgoers who would be utilizing Dan Blocker Beach rather than other nearby beaches or beaches located farther away from the urban areas of Los Angeles. Thus, no increase in vehicle noise would occur if these vehicle trips are currently part of the daily volumes on PCH.

While increase in existing noise levels may occur, the proposed project would not violate existing noise regulations or standards.

(Sources: Malibu General Plan, Site Survey, Caltrans Freeway Traffic Volumes, FHWA, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, and Site Location Map)

B. Would the project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact. On-site construction activities would create noise from construction equipment and vibration from excavation and grading activities. Temporary construction noise impacts would vary in noise level according to the type of construction equipment and activity level. Short-term construction noise impacts tend to occur in separate phases, with large, earth-moving equipment generating greater noise and finish construction activities and equipment generating less noise.

Due to the limited improvements that are proposed at the site (parking area, table pads, toilet pads, walkways and stairway~~-ramp~~) and the use of finished components (picnic table and benches, chemical toilets, drinking fountains, parking ticket machine, railings, monument and signs), construction noise impacts are not expected to be significant. In addition, construction activities would be short term (approximately 90 days) and would comply with the construction noise time limits imposed by the City of Malibu and the construction equipment noise limits of the Los Angeles County Code. Thus, noise impacts on adjacent residents to the east and west would be short term and less than significant.

(Sources: Site Survey, Malibu General Plan, Site Location Map, and Noise from Construction Equipment and Operations, Building Equipment and Home Appliances)

C. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. The increase in vehicle trips associated with the proposed project would not lead to any perceptible increase in noise levels along PCH. Also, since the vehicle trips to and from the site may be assumed as existing trips that would be diverted from beaches located farther away, no increase in vehicle noise levels on PCH would be expected.

Noises from on-site activities are expected to be limited to noise from parking vehicles and the use of picnic tables and toilets. These activities generally do not create excessive noise that may disturb adjacent residents. In addition, outdoor activities (such as those that would occur at Dan Blocker Beach) are exempt from existing noise regulations. The beach would also be closed from 10PM to 7AM, confining any on-site noise generation to the daytime hours. The proposed beach improvements would also limit public access through residences located near the site; thus reducing nuisance impacts associated with the public's existing use of access at these residences. On-site activities would not adversely affect adjacent residents in terms of noise.

(Sources: Site Survey, Site Location Map, and FHWA Noise Prediction Model)

D. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. The proposed project would involve construction activities, which may lead to periodic increases in noise levels during the 90-day construction period. However, the construction noise would be limited due to the nature and type of improvements proposed (parking area, tables, chemical toilets and stairway ~~ramp~~). The location of the beach to the south, as well as dominant noise level created by vehicular noise on PCH, would mask some of the noise from construction activities. Compliance with existing noise regulations of the City of Malibu and Los Angeles County would ensure that construction noise impacts do not adverse affect adjacent residents.

The increase in noise levels due to the increase in the number of beachgoers at the site has the potential to affect adjacent residents. However, the availability of parking and direct beach access at the site would eliminate the use of stairway ~~ramps~~ and on-street parking at the adjacent homes. Thus, while noise impacts may occur at the site, the more direct noise and nuisance impacts at the adjacent residences would be eliminated and directed to the site. This impact would generally be confined to warm, sunny days and from the hours of 7 AM to 10 PM and is considered less than significant.

(Sources: Site Location Map and Site Survey)

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no airports located near the site, which generate aircraft noise. The nearest airport is the Santa Monica Airport in the City of Santa Monica. This airport is located approximately 15 miles southeast of the site. The noise contours of this airport do not extend into the project site. The proposed beach improvements would not expose people to excessive noise levels associated with aircraft and airport operations.

Sources: Site Survey, Malibu General Plan, and Thomas Guide for Los Angeles County)

F. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no private airstrips located near the site which may expose beachgoers to excessive aircraft noise levels. The proposed project would not increase on-site exposure to aircraft noise.

(Sources: Site Survey, Thomas Guide for Los Angeles County, and Malibu General Plan)

3.12 POPULATION AND HOUSING

The project site is located within Los Angles County, which currently has a population of 9,884,300. According to the County General Plan, it is estimated that the County will have a population of 9,900,000 in the year 2010. This is an increase of 1,691,000 persons from the year 1987 to the year 2010. In 1987 the County had a housing stock of approximately 3,023,500 and is estimated to have a housing stock of 3,702,500 by the year 2010. The housing stock is estimated to have a 22.5 percent change from the year 1987 to the year 2010.

The project site is located within the City of Malibu. The current resident population of Malibu is estimated to be approximately 12,063 residents and the housing stock approximately totals 6010 units. Population growth over the last decade has occurred at a rate of 12.6 percent.

There are no housing units on the project site. Residential units are found to the immediate east of the project site and further down the coast to the west of the project site. The proposed development would include the construction of a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility.

(Sources: Malibu General Plan and Site Survey)

A. Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The proposed project does not involve the construction of any new homes or businesses. The project has been designed to meet the demand for use of Dan Blocker Beach. Some potential does exist for an increase in the number of visitors to the site and surrounding area due to its increased accessibility. This increase would not be considered significant, and no impacts are expected to occur.

(Sources: Malibu General Plan, Los Angeles General Plan, and Site Survey)

B. Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The site is currently vacant open space, with residential units found to the immediate east of the project site and further down the coast to the west of the project site. The proposed project includes the construction of a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility. Adjacent housing units would not be demolished, and no displacement would occur with the project.

(Sources: Malibu General Plan and Site Survey)

C. Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The project site is vacant and the proposed project would not displace any households or residents in the area. The project would include improvements to a portion of a bluff top located at Dan Blocker Beach. No households would be displaced and no replacement housing is needed for the proposed project.

(Sources: Malibu General Plan and Site Survey)

3.13 PUBLIC SERVICES

The Los Angeles County Fire Department provides fire protection service to the City of Malibu. There are four stations that serve the City of Malibu including Station No.'s 70, 71, 88 and 99. The nearest station to the project site is Station 88, located at 23720 W. Malibu Road. This station is located approximately 2.5 miles east of the project site. Other fire stations in the area may also respond to the site according to need and type of emergency. There are no plans for new stations in the area. The Ventura County Fire Department and United States Park Service provide fire prevention services to the Santa Monica Mountains. The fire hazards in the area are principally brush fires. There is currently a Brush Inspection Program that requires homeowners and businesses to remove the brush from close to their properties.

The proposed site along with the City of Malibu is served by the Los Angeles County Sheriff's Department. The Sheriff operates a station in the Lost Hills area, north of the City of Malibu. The Lost Hills Sheriff's Station provides law enforcement and police protection services for the project site and the surrounding area. An estimated average response time for the general area is 6.1 minutes; however, this period would be reduced due to the central location of the project site. A new police station is scheduled to open by February 2002, where the existing Malibu City Hall is located at 23555 Civic Center Way, approximately two miles east of the project site.

The crime rate in the vicinity of the project site is currently low and in the last nine years has been reduced by 65 percent. As Malibu is primarily a residential community, the main crimes are burglary, traffic and tourist-related crimes. The main crimes committed in the project area are thefts related to wallets and purses left on the beach and unlocked vehicles. There are regular beach patrols on Latigo Canyon and Corral Canyon, in proximity to the site.

(Sources: Site Survey, Lost Hills Police Station, Station 88 and Malibu General Plan).

A. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives in terms of fire protection?

Less than Significant Impact. The proposed project would increase the demand for fire protection services in case of a fire emergency. The nearest station to the project site is Station 88, located 2.5 miles east from the project site at 23720 W. Malibu Road. There are five firefighters, one fire engine and one paramedic rescue located at Station 88. An average response time to the site is estimated to be four to six minutes. Compliance with the requirements of the Uniform Fire Code for fire safety and fire emergency response would be implemented as part of the project. Impacts on fire protection services would be less than significant.

(Sources: Station 88 – Malibu Fire Prevention and Site Location Map)

B. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives in terms of police protection?

Less than Significant Impact. The proposed project involves the construction of a new parking area, park site amenities and restroom facility. The Lost Hills Sheriff's Station in Malibu provides law enforcement and police protection services for the project site and the surrounding area. An estimated average response time for the general area is 6.1 minutes; however, this period would be reduced due to the central location of the project site. The demand for police protection services in the area is not expected to significantly increase with the proposed development at Dan Blocker Beach. A need to alter or expand police service in the area is not anticipated as a result of the project. The project would not have an adverse effect on existing police services or response times.

(Sources: Site Location Map and Lost Hills Police Station, Malibu)

C. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives in terms of school services?

No Impact. The proposed development at Dan Blocker Beach includes the construction of a parking area, park site amenities and a restroom facility. The project would not involve housing development and thus, no direct student generation is anticipated. The proposed project is not expected to have any impact relative to school services.

(Sources: Malibu General Plan and Site Location Map)

D. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives in terms of parks?

Less than Significant Impact. Dan Blocker Beach is used by beachgoers for swimming, surfing, and other recreational activities. The project site is fenced off and is not currently used by visitors to Dan Blocker Beach. The nearest park facilities to the project site include Malibu Bluff State Park, Malibu Lagoon Sate Beach, Corral Canyon Park, Point Dume State Beach and Malibu Community Center. The proposed project would increase the number of visitors to Dan Blocker Beach. The proposed project would include trash bins to discourage beachgoers from littering on the beach. The increase in visitors to the beach in the project vicinity is not expected to significantly alter Dan Blocker Beach or the near by park facilities.

(Sources: Thomas Guide for Los Angeles County, Malibu General Plan, Los Angeles County General Plan and Site Survey)

E. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives in terms of other public facilities?

No Impact. The project would include the construction of a parking area, park site amenities and a restroom facility. The project is not expected to create a demand for other public facilities. The Malibu Library, a branch of the Los Angeles County library system, is located at 23519 Civic Center Way. The library is approximately 2.5 miles east of the project site. There is also a community center located at Point Dume, approximately four miles south-west of the project site. The visitors that would use the proposed project development are not expected to significantly impact the library or civic center facilities.

(Sources: Malibu General Plan, Los Angeles County General Plan Site Survey, and Site Location Map)

3.14 RECREATION

The project site is located in Los Angeles County. The beach environment of Los Angeles County is a very important recreational resource and has millions of visitors every year. The beaches of Los Angeles County are some of the most popular in the State, and a high demand exists for a range of beach-related recreational activities.

The project site is located within the City of Malibu, which provides recreational services through local and regional parks. The City's Land Use Map designates 1,870 acres of open space, which accounts for approximately 15 percent of all land use. This includes regional and local parks, beach parks and public open space. Local and regional parks comprise of 743.7 acres and beach parks and public open space collectively make up 201 acres of land.

There are several park facilities close to the project site including Malibu Bluff State Park, Malibu Lagoon Beach, Corral Canyon Park, Point Dume Beach and Malibu Community Center. Point Dume Beach, located approximately three miles southwest of the project site and encompasses 30 acres, including Point Dume Natural Reserve. The Point Dume Beach is designated as an area of special biological significance and includes 200-foot sandy bluffs, tide pools, offshore reefs and a kelp bed, creating a habitat for seal and marine fowl. Malibu Community Center, also located at Point Dume, is a 6.5-acre park with children's play equipment, volleyball, tennis and basketball courts. Malibu Bluff State Park, located approximately one mile east of the project site is heavily used by local residents and considered a community park. Its facilities include hiking trails, picnicking, soccer and baseball fields and a jogging track. Malibu Lagoon Beach is approximately 3.5 acres in total and is located just east of the Malibu Civic Center, about 2.5 miles east of Dan Blocker Beach. It provides restrooms, hiking and nature trails with disabled access. The lagoon is also an important bird refuge and is supported by diverse marsh vegetation. To the immediate east of Malibu Lagoon Beach is Surfrider Beach, a widely recognized surf beach renown for the hollow peeling Malibu wave formed by the cobble contours of the ocean's floor. Corral Canyon Park is located on PCH between Puerco Canyon and Corral Canyon, and less than 0.5 of a mile east of the project site. The park, managed by Santa Monica Conservancy provides hiking, equestrian trails and parking.

The City of Malibu makes up the major part of the coastal section of the Santa Monica Mountains National Recreation Area (SMMNRA), which is comprised of State, County and Federally owned park lands. It extends from Griffith Park in the City of Los Angeles to Point Mugu in Ventura County. The lands are both privately and publicly owned and accessible to the public.

A trail system located in close proximity is also developed by the Santa Monica Mountains Trail Council (SMMTC). The adoption of the Comprehensive Trail Plan by Los Angeles County proposing 23 trails which connect to other recreational facilities in the County. The Corral Canyon Trail, located immediately north of the project site, is the closest part of the trail network to the proposed project.

Dan Blocker Beach provides opportunities for a variety of ocean and beach oriented recreational activities. These activities include swimming, sunbathing, picnicking, surf fishing, scuba diving and jogging. These recreational activities occur all year; however, the majority of beachgoers visit the beach during the summer months. Activities such as wildlife observation and contemplation are most common on the beach during the winter. The rock formations projecting from portions of the beach prevent activities such as boating and surfing.

(Sources: Site Survey, Los Angeles County Plan and Malibu General Plan, Vicinity Map)

A. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less than Significant Impact. The proposed project includes the construction of a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility. Park site amenities include tables, bench seating and walkways. It is not expected that the development would cause a major increase in the use of existing neighborhood or regional parks. Currently, visitors to the beach located south of the site and west down the coast park along PCH and access the beach through stairways located at the nearby residential developments west and east of the site. Additionally, visitors to the beach near the project vicinity hike down the steep bluff faces located west of the project site. As a result of the proposed development (safe access, available parking and park site amenities), more people may visit Dan Blocker Beach. The possible increase in beachgoers is not expected to significantly alter or impact Dan Blocker Beach.

(Sources: Site Survey, Site Location Map and Malibu General Plan)

B. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less Than Significant Impact. The proposed project includes the construction of a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility. Dan Blocker Beach is a popular recreational destination for beach-goers and surfers. The project has been designed to integrate with the existing environment through the planting of native species in the landscaped areas. As analyzed in this initial study, the proposed project would impact air quality, geological resources and hydrology. However, these impacts can be lowered to a level below significance through mitigation listed in Sections *3.3 Air Quality, 3.3.6 Geology and Soils, and 3.8 Hydrology and Water Quality* of this Initial Study.

(Sources: Site Survey and Malibu General Plan)

3.15 TRANSPORTATION/TRAFFIC

A traffic study has been prepared for the project to analyze the impacts of the proposed facility on traffic, circulation, and transportation. This study is provided in Appendix F and its findings summarized below.

The proposed project site is located within Los Angeles County and the City of Malibu. Roadways in the area include:

Pacific Coast Highway (State Route 1) is a four-lane state highway traveling in an east to west direction along the Pacific Coast. The Pacific Coast Highway (PCH) is approximately 25 miles long through the City of Malibu with a posted speed limit of 45 MPH and 55 MPH. PCH is the major arterial within the City of Malibu and serves mostly commuters during weekday peak hours. In the summer months, it also serves as an access route to the beaches along the coast. PCH carries, an average of 35,000 vehicles per day with peak hour traffic of 3,200 vehicles. Traffic increases to 39,500 trips per day during peak months.

Corral Canyon Road is a two-lane north-south arterial connecting the Santa Monica Mountains National Recreation Area, located north of the City of Malibu with Dan Blocker Beach and Solstice Canyon Park. Farther north, the road provides access to Malibu Creek State Park, where the road terminates. Corral Canyon Road carries approximately 120 vehicles during AM Peak Hours. The intersection of Corral Canyon Road and PCH operates at a Level of Service (LOS) of A in the AM and PM peak hours.

Latigo Canyon Road is a two-lane roadway oriented in the southeast/northwest direction. It begins at PCH and goes northwest across the Santa Monica Mountains, meeting Kanan Dume Road near the intersection at Mulholland Highway. This road serves mostly residents of Latigo Canyon. The posted speed limit varies from 10 to 20 MPH. It is estimated that Latigo Canyon Road carries approximately 1,000 vehicles per a day north of PCH and approximately 300 vehicles per a day near Kanan Dume Road. The intersection of Latigo Canyon Road and PCH operates at a Level of Service (LOS) of A in the AM and PM peak hours.

The project site is located approximately 15 miles west of the Santa Monica Municipal Airport and approximately 17 miles southwest of Van Nuys Airport. The site is located outside the designated FAA clear zones and safety zones of the airports.

The City of Malibu is currently served by the Los Angeles County Metropolitan Transit Authority (MTA), which operates an inner city express bus route from Los Angeles to Trancas Canyon Road. The service runs hourly from 6:12 AM – 9:17 PM. The route mainly follows PCH, serving the project site and passing through Malibu Civic Center on the way to downtown Los Angeles. Additionally, Paratransit service for the disabled are provided locally within the City of Malibu, which is operated by Babaeian Transportation under contract with the City of Malibu.

PCH is designated as a bike route. A series of pedestrian trails are planned throughout the City of Malibu and in the project vicinity by the Santa Monica Mountains Trail Council. The Corral Canyon Trail runs through Corral Canyon and would connect to the Coastal Slope Trail and as well as the Solstice Canyon Trail. The Coastal Slope Trail is designated to be located north of the project site. The Solstice Canyon Trail is also designated to be located north of the project site and would terminate at the coast in close proximity to the project site.

(Sources: Site Survey, Los Angeles County General Plan, Parks, Recreation and Special Events, and Antelope Valley Transit Authority, MTA Metrolink)

A. Would the project cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

Less than Significant Impact. The proposed project would lead to additional vehicle trips from construction equipment and crew during the construction period. This traffic would be limited and temporary and would not be considered significant. The proposed project would include development of up to a 30-space parking area, beach access, park site amenities and a restroom facility.

The proposed parking improvements would not be expected to generate additional trips during the weekday AM and PM commuter peak periods. In addition, the project would not attract trips during periods of inclement weather. Instead, the project site would be expected to generate the most traffic during summer weekends on sunny days, or on days of good surf. In general, access improvements to the beach, the addition of picnic tables, paving of walkways and addition of chemical toilets would not be expected to attract a significant number of additional trips, since similar facilities are available at adjacent beaches.

The number of increased trips would be expected to be directly proportional to the number of additional parking spaces available to beach goers. The project might be expected to generate ~~240~~104 daily trips. Many of these trips may be trips diverted from adjacent beaches due to the availability of on-site parking. Assuming regular turnover of the parking spaces throughout the day, the project would be expected to generate approximately 20 hourly trips.

Because of the raised median island on PCH, left turns into or out of the site would not be feasible. Vehicle movements would be restricted to right turns into the parking area, right turns out of the parking area, and parallel parking maneuvers at the shoulder of PCH. While some of the increased trips would be expected to make U-turns at the Latigo Canyon and Corral Canyon intersections, the relative volume would be small, and would not create adverse operating conditions. The movement causing perhaps the greatest potential for traffic impact would be the parallel parking maneuvers at the shoulder. With random turnover of parallel parking spaces, these maneuvers would occur on the average of once every six minutes. This impact would be no greater than at other roadside parking areas in Malibu with coastal access.

During the peak summer months, PCH is heavily used on weekends; however, an increase of 20 hourly trips during weekend hours would not be expected to have capacity impacts PCH or cross-mountain roadways like Kanan-Dume Road or Malibu Canyon Road.

(Sources: Site Survey, City of Malibu General Plan, Los Angeles County General Plan and Traffic Study).

B. Would the project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Less than Significant Impact. The concept of level of service (LOS) is used to describe the ability of a roadway to accommodate prevailing traffic volumes at critical intersections based on the physical characteristics of the roadway. LOS ranges from "A", which represents uncongested free-flow conditions to "F", which represents total break down with stop-and-go operation. The Malibu General Plan states that Caltrans has established that State Highways intersections have reached capacity when their LOS declines to E and that acceptable operation on PCH is LOS D.

The intersection of Latigo Canyon Road and PCH currently operates at a Level of Service (LOS) of A in the AM peak hour and at a LOS of A at the PM peak hour. Additionally the intersection of Corral Canyon Road and PCH currently operates at a Level of Service (LOS) of A in the AM peak hour and at a LOS of A at the PM peak hour. The proposed project would generate approximately 20-trips per an hour. During the peak summer months, PCH is heavily used on weekends; however, an increase of 20 hourly trips during weekend hours would not be expected to have capacity impacts Pacific Coast Highway or cross-mountain roadways. No impacts to existing intersection and roadway levels of service, which may be considered individually or cumulatively significant impacts, are anticipated from the project.

(Sources: Malibu General Plan and Traffic Study)

C. Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The project site is located approximately 15 miles west of the Santa Monica Municipal Airport and approximately 17 miles southwest of Van Nuys Airport. The site is located outside the designated FAA clear zones and safety zones of the airports. The proposed project would include the construction of a parking area, access to the beach in the form of a ~~ramp~~stairway, park site amenities, and a restroom facility. The proposed project would not involve air transportation nor affect air traffic at the surrounding airports. Thus, no impact on air traffic patterns would occur with the project. The project site is not located within the approach zones for the nearby airports. Thus, no impact on air traffic patterns is expected.

(Sources: Site Survey and Los Angeles General Plan)

D. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less than Significant Impact. Vehicle access to the site would be provided by a driveway on PCH. Because of the raised median island on PCH, left turns into or out of the site would not be feasible. Vehicle movements would be restricted to right turns into the parking area, right turns out of the parking area, and parallel parking maneuvers at the shoulder of PCH. The movement of vehicles existing and/or entering the parking area is not expected to create a significant impact.

(Sources: Site Survey and Traffic Report)

E. Would the project result in inadequate emergency access?

No Impact. Adequate emergency vehicle access would be provided to the site via the proposed on-site driveways. The proposed project would not alter emergency access to properties surrounding the site. Thus, emergency access to the site or to adjacent uses would not be affected by the proposed project.

(Sources: Site Location Map and Site Survey)

F. Would the project result in inadequate parking capacity?

No Impact. The proposed project includes the construction of ~~a maximum 30-space parking area~~an approximate 13-space parking area and beach access for the public. Currently, PCH has exacerbated peak hour traffic congestion as beach visitors look for parking spaces and get in and out of their vehicles. The parking pattern along PCH has resulted in jay walking, creating hazards to for pedestrians and drivers. The Malibu General Plan states that the Local Coastal Program, which is currently being drafted, must include sufficient parking for visitors. The proposed project would provide parking for visitors and thus partially alleviate traffic created from beach visitors looking for parking on PCH in the project area. No impact is expected.

(Sources: Malibu General Plan and Site Survey)

G. Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

No Impact. As discussed above, the City of Malibu is currently served by the Los Angeles County Metropolitan Transit Authority (MTA), which operates an inner city express bus route from Los Angeles to Trancas Canyon Road. The service runs hourly from 6:12 AM – 9:17 PM. The route mainly follows PCH, serving the project site and passing through Malibu Civic Center on the way to downtown Los Angeles. Additionally, Para transit services, for the disabled are provided locally within the City of Malibu, which is operated by Babaeian Transportation under contract with the City of Malibu.

PCH is designated as a bike route. The proposed project would not impact traffic on PCH and is not expected to interfere with the bike route on PCH. The proposed project would not impact any bus turnouts, bicycle racks, or otherwise conflict with adopted policies, plans, or programs supporting alternative transportation.

(Sources: Site Survey, Malibu General Plan, Los Angeles County General Plan and MTA)

3.16 UTILITIES AND SERVICE SYSTEMS

The proposed site is located within the County of Los Angeles and the City of Malibu. Water services are supplied to the City of Malibu by County Waterworks District No. 29 from the Metropolitan Water District of Southern California (MWD). Water is obtained from the State Water Project and the Colorado River. The closest water line to the site is a 10-inch water line that changes to an 8-inch water line, which runs along PCH. There are also several private wells that supply water within the City. However, since 1965, when water became available through the MWD, their usage has declined. The wells are still considered a valuable resource of inexpensive water for uses such as agriculture.

Solid waste disposal in the City of Malibu and areas including the project site is managed by four private hauling companies. All solid wastes are taken to the Calabasas Landfill, which is owned and operated by Los Angeles County Sanitation District. The landfill, as of 1990, has a remaining capacity of 12 million tons of waste. It is estimated that the landfill can accommodate approximately 500,000 tons of waste each year until its scheduled closure date in 2015. Less than 10 percent of this amount has been contributed by Malibu.

The Malibu area is served by the Southern California Edison Company, (SCE) which provide electricity from three primary stations and three secondary stations. The Southern California Gas Company provides natural gas. Telephone services are provided by General Telephone.

(Source: Site Survey and Malibu General Plan)

A. Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less than Significant Impact. The project would involve the development of a parking area, and would provide beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility. Additionally, potable drinking fountains would be provided as part of the project. No wastewater generation is expected from chemical toilets or the drinking fountains.

(Sources: Site Location Map and Project Description)

B. Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The proposed project would involve the development of a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility with chemical toilets. The proposed project would not require connection to an existing sewer lines. No impacts would be expected.

(Sources: Project Site Plan and Malibu General Plan)

C. Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less than Significant Impact with Mitigation. Currently, runoff from the proposed site runs over the bluff face onto the beach below. The project would involve the development of a parking area and provide beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility on approximately 1.92 acres of land. The project would replace vacant land with a building, parking area and landscaping. The proposed project would increase the amount of storm water and runoff on-site. There are no storm water drainage facilities on-site and none proposed with the project. Drainage would be directed towards PCH and into existing drainage system. The project would not require the expansion of existing facilities located along PCH.

(Sources: Site Survey , Malibu General Plan and Los Angeles County General Plan)

D. Would the project have sufficient water supplies available from existing entitlements and resources, or are new or expanded entitlements needed?

Less than Significant Impact. The proposed project involves the construction of a parking area, park site amenities and a restroom facility. The restroom facility would include chemical toilets. Water supplies would be needed for the proposed potable drinking fountains. Water services are supplied to the City of Malibu by County Waterworks District No. 29 from the MWD. Water is obtained from the State Water Project and the Colorado River. The site would be served by a 10-inch water line that changes to an 8-inch water line, which runs along PCH. Possible expansion of the water facilities to serve the potable drinking fountains is not expected to create significant impacts.

(Sources: Site Survey and Project Description)

E. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less than Significant Impact. The proposed project would include potable drinking fountains. The proposed restroom facility would include chemical toilets, which would not generate any wastewater. The proposed project is not expected to create any wastewater. Thus, no impacts are expected.

(Sources: Site Location Map, City of Malibu and Project Description)

F. Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less than Significant Impact. Construction of the proposed project would involve the development of a parking area, beach access in the form of a ~~ramp~~stairway, park site amenities and a restroom facility. As a result of the development, construction debris would be generated which would need to be disposed at area landfills. The new facilities at Dan Blocker Beach would also generate solid wastes. G.I. Industries provides waste collection services to the project area and would serve the proposed project site. A substantial increase in the amount of waste being generated by the project is not anticipated due to the small scale of the proposed development. The Calabasas Landfill, located at off of Lost Hills Road) in the City of Calabasas, would serve the project and has the capacity to operate for the next 15 years. It is estimated that the landfill can accommodate approximately 500,000 tons of waste each year until its scheduled closure date. Thus, landfill capacity would not be adversely affected by the proposed project.

(Sources: Site Survey, Site Location Map, and G.I. Industries)

G. Would the project comply with federal, state, and local statutes and regulations related to solid waste?

Less than Significant Impact. Solid waste disposal in Malibu is managed by four private hauling companies. G.I. Industries would serve the proposed project. All solid wastes are taken to the Calabasas Landfill, which is owned and operated by Los Angeles County Sanitation District. This landfill has remaining capacity to operate for the next 15 years. Solid waste from the project is expected to be limited to that generated by trash from the picnic areas and beach. Also, this solid waste generation is not expected to be substantial. In addition, G.I.Industries operates waste recycling programs, whereby recycling boxes are emptied on a weekly basis. A "single-stream" operation allows recyclable materials to be collected at the project site and later sorted at the plant. Impacts on waste generation are not expected to be significant and no conflict with solid waste regulations is expected.

(Sources: Site Location Map, Malibu General Plan, and G.I. Industries)

4.1 FINDINGS

The environmental analysis in Section 3 of this document indicates that the proposed Dan Blocker Beach project may have the potential for significant adverse environmental impacts on a number of issue areas, including air quality, geology and soils, hydrology and water quality. Mitigation measures will be incorporated into the project, which would mitigate potentially significant adverse impacts to below a level of significance. The following findings can be made regarding the mandatory findings of significance set forth in Section 15065 of the CEQA Guidelines, as based on the results of this environmental assessment:

- The proposed project will not have the potential to substantially degrade the quality of the environment. There are no sensitive plant or animal species on site, and the project will not reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. Also, there are no cultural resources on or near the site which may be affected by the proposed project. The project will not eliminate important examples of the major periods of California history or prehistory.

- The proposed project will not have the potential to achieve short-term goals to the disadvantage of long term environmental goals. The development of the project site would lead to a parking lot, park site amenities, and beach access in the form of an access stairway on the site. Mitigation measures would lessen impacts associated with geology and soils, hydrology and construction impacts associated with air quality to a level below significance. With the implementation of the mitigation measures, the project would not significantly impact the environment and the project would be in concurrence with long term environmental goals.

- The proposed project will not have environmental impacts which are individually limited but cumulatively considerable, when considering planned or proposed developments in the project vicinity. The limited size of development associated with the proposed project will not be large enough to cumulatively lead to significant adverse impacts, when added to proposed, planned or anticipated development in the area. The potential air quality of the project would be confined to the construction period and would be short term. Mitigation measures have been recommended to reduce construction impacts. Cumulative impacts related to construction pollutant emissions are not expected to be significant. The potential impact of increased erosion that would impact the sensitive coastline and the geotechnical impacts have been reduced to below a level of significant through mitigation measures. Other development projects would likewise be required to implement geotechnical and hydrological measures to address site-specific geological constraints and erosion. No cumulative impacts would be expected.

- The proposed project will not have environmental impacts which may have adverse effects on humans, either directly or indirectly, with implementation of the recommended mitigation measures. Adverse impacts are expected to be mitigated to less than significant levels.

The Los Angeles County Department of Public Works and Department of Beaches and Harbors has determined that a Mitigated Negative Declaration shall be adequate for the environmental review of the proposed project. The recommended mitigation measures presented in Section 4.2, below, shall be incorporated as part of the project to prevent the potential for significant adverse impacts.

4.2 MITIGATION MEASURES

A number of mitigation measures have been recommended to avoid and reduce potentially significant adverse impacts to levels considered less than significant. The incorporation of these measures as part of the project and their implementation would allow the proposed Dan Blocker Beach project to qualify for a Mitigated Negative Declaration (MND). To mitigate the project's impacts, the following mitigation measures will be implemented as part of the project:

Air Quality

To ensure that construction emissions do not affect adjacent residents, the following measures are recommended:

- Use of watering for dust control during clearing, grading and construction.
- Soil disturbance should be terminated when high winds (>25 mph) make dust control extremely difficult.
- Limiting grading/soil disturbance to as small an area as practical at any one time.

Geology and Soils/ Hydrology and Water Quality

To ensure impacts associated with erosion and structural stability of the development, the following measures are recommended:

- Driveways and parking areas should be setback a minimum of 20 feet from the bluff face.
- Fencing along the bluff face should be constructed to discourage foot traffic down the face of the bluff.
- During grading of the parking area, any gullies identified in the parking area or other areas to be developed should be filled with properly compacted soils and should be modified to drain any flows away from the bluff face.
- Any areas between the new parking area and driveways that are not well vegetated should be planted with drought-tolerant vegetation to minimize interim erosion.
- A sufficiently deep concrete pile or foundation system for a concrete landing for the access stairway should be constructed to undermine wave action and/or beach erosion.
- The access stairway should be designed to accommodate ongoing marine and subaerial erosion processes.
- The recommendations presented in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 should be followed.
- Drill borings at the project site and soil samples should be taken of subgrade before final design of the stairway and parking lot. After these samples are taken the recommendations in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 may be modified depending on the findings. If modified findings result from the samples, those findings should be implemented, as modified.

5.1 PREPARERS OF THE MND/INITIAL STUDY

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5.2 REFERENCES

The following references were used in the preparation of this MND/Initial Study and are available for review by the public at the offices of the Project Management Division of the Los Angeles County Department of Public Works at 900 South Fremont Avenue, in Alhambra, California 91803 or at the offices of David Evans and Associates at 800 North Haven Avenue, Suite 300, Ontario, California 91764 during normal business hours.

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5.3 PERSONS CONTACTED

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6.1 MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

In accordance with the California Environmental Quality Act (CEQA), the Los Angeles County Department of Public Works (Department) prepared a Mitigated Negative Declaration (MND) and Initial Study (IS) for the proposed Dan Blocker Beach project located on approximately 1.92 acres on a bluff top at Dan Blocker Beach. Dan Blocker Beach is located within the City of Malibu south of Pacific Coast Highway, north of the Santa Monica Bay and the Pacific Ocean, west of Corral Canyon Road, and east of Latigo Point.

The MND/IS indicated that the proposed project would result in the potential for significant environmental impacts associated with air quality, geology and soils, and hydrology and water quality. Mitigation measures have been incorporated into the project to reduce impacts to below a level of significance. The mitigation measures for the proposed project must be adopted by the County of Los Angeles, in conjunction with adoption of the MND/IS.

Section 21081.6 of the Public Resources Code (PRC) and CEQA Guidelines section 15097 require the Lead Agency for each project that is subject to the CEQA to monitor performance of the mitigation measures included in any environmental document to ensure that implementation does, in fact, take place. The PRC requires the Lead Agency to adopt a monitoring and reporting program for assessing and ensuring the implementation of required mitigation measures. Specific reporting and/or monitoring requirements that will be enforced during project implementation shall be adopted coincidental to final approval of the project by the responsible decision maker(s).

In accordance with PRC Section 21081.6, the Department has developed this Mitigation Monitoring and Reporting Program (MMRP) for the Dan Blocker Beach project. The purpose of the MMRP is to ensure that the proposed parking area, beach access, park site amenities, and restroom facility comply with all applicable environmental mitigation and permit requirements.

Mitigation measures incorporated into the proposed project include measures that would reduce short-term environmental impacts associated with construction activities on the site, as well as minimize impacts by restoring the affected environment. These measures will be implemented during grading and construction activities.

The monitoring table below lists the mitigation measures, which will be implemented as part of the project. Responsible parties, the time frame for implementation, and the monitoring parties are also identified. A column is provided for the monitoring party to sign-off on the implementation of each mitigation measure.

The Los Angeles County Department of Public Works is responsible for review of all monitoring actions, enforcement actions, and document disposition. The Los Angeles County Department of Public Works will rely on information provided by the monitor as accurate and up to date and will field check mitigation measure status as required.

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion	
						Initials	Date
Air Quality							
MM-1	• *Use of watering for dust control during clearing, grading and construction.* • *Soil disturbance should be terminated when high winds (> 25 MPH) make dust control extremely difficult.* • *Limiting grading/soil disturbance to as small an area as practical at any one time.*	Building Contractor	LA County Department of Public Works	Regular field inspections	During clearing, grading, and construction operations		
Geology and Soils							
MM-2	• *Driveways and parking areas should be setback a minimum of 20 feet from the bluff face.* • *Fencing along the bluff face should be constructed to discourage foot traffic down the face of the bluff.* • *During grading of the parking area, any gullies identified in the parking area or other areas to be developed should be filled with properly compacted soils and should be modified to drain any flows away from the bluff face.* • *Any areas between the new parking area and driveways that is not well vegetated should be planted with drought-tolerant vegetation to minimize interim erosion.* • *A sufficiently deep concrete pile or foundation system for a concrete landing for the access stairway should be constructed to undermine wave action and/or beach erosion.* • *The access stairway should be designed to accommodate ongoing marine and subaerial erosion process.*	Building Contractor	LA County Department of Public Works	Regular field inspections	During grading, and construction operations		

Measure No.	Mitigation Measure	Responsible Party	Monitoring Party	Method of Verification	Timing of Verification	Verification of Completion: Initials	Verification of Completion: Date
MM-3	• ***The recommendations presented in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 should be followed.*** • ***Drill borings at the project site and soil samples should be taken of subgrade before final design of the stairway and parking area. After these samples are taken the recommendations in the Geotechnical Reconnaissance Report for Dan Blocker Beach prepared by Group Delta dated December 26, 2000 may be modified depending on the findings. If modified findings result from the samples they should than be implemented.***	Building Contractor	LA County Department of Public Works	Regular field inspections	Prior to final design of the stairway and parking area		
Hydrology and Water Quality							
MM-4	• ***Driveways and parking areas should be setback a minimum of 20 feet from the bluff face.*** • ***During grading of the parking area, any gullies identified in the parking area or other areas to be developed should be filled with properly compacted soils and should be modified to drain any flows away from the bluff face.*** • ***Any areas between the new parking area and driveways that is not well vegetated should be planted with drought-tolerant vegetation to minimize interim erosion.***	Building Contracor	LA County Department of Public Works	Regular field inspections	During clearing, grading, and construction operations		

Appendix I.H –
Previous Complete Technical Appendix Dated March 2003 for the Previous Initial Study

TECHNICAL APPENDIX
for the
MITIGATED NEGATIVE DECLARATION/INITIAL STUDY
for the proposed
DAN BLOCKER BEACH PROJECT

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***Draft:* April 12, 2001**
***Final:* March 2003**

Appendix A - Environmental Checklist

BACKGROUND

1. Name of Proponent: Los Angeles County Department of Public Works
   Project Management Division
2. Address: 900 South Fremont Avenue, 5^{th} Floor
   Alhambra, CA 91803
3. Telephone Number: (626) 300-2318
4. Project Title: Dan Blocker Beach Project
5. Project Address 26000 Pacific Coast Highway

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture Resources	■ Air Quality
☐ Biological Resources	☐ Cultural Resources	■ Geology /Soils
☐ Hazards & Hazardous Materials	■ Hydrology / Water Quality	☐ Land Use / Planning
☐ Mineral Resources	☐ Noise	☐ Population / Housing
☐ Public Services	☐ Recreation	☐ Transportation/Traffic
☐ Utilities / Service Systems	■ Mandatory Findings of Significance	

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

____ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

_X_ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

____ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

____ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

___ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Donna Stone
Signature

April 10, 2001
Date

Donna Stone, Project Manager
Printed name

Los Angeles County Department of Public Works
For

EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact". The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses", may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated", describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	■	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	■	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	■	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	■	☐
II. AGRICULTURE RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	■
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	■
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	■
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	■	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	■	☐
d) Expose sensitive receptors to substantial pollutant concentrations? Need more information!	☐	☐	■	☐

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	■
IV. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	■	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	■	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	■	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	■	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	■
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	■	☐
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	■
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☐	■
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	■
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	■
VI. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or	☐	☐	■	☐

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
death involving:				
Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				
b) Strong seismic ground shaking?	☐	☐	■	☐
c) Seismic-related ground failure, including liquefaction?	☐	☐	☐	■
d) Landslides?	☐	☐	☐	■
e) Result in substantial soil erosion or the loss of topsoil?	☐	■	☐	☐
f) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	■	☐	☐
g) Be located on expansive soil, as defined in Table 18- 1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	■
h) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	■

VII. HAZARDS AND HAZARDOUS MATERIALS.
Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	■
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	■
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	■
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in	☐	☐	☐	■

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
the project area?				
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	■
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	■	☐
VIII. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	■	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	■	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	■	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	■	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	■	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	■
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	■
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	■	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a	☐	☐	☐	■

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
result of the failure of a levee or dam?				
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	■	☐
IX. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	■
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	■	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	■
X. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	■
XI. NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	■	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	■	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	■	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	■
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■
XIII. PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	■	☐
Police protection?	☐	☐	■	☐
Schools?	☐	☐	☐	■
Parks?	☐	☐	■	☐
Other public facilities?	☐	☐	☐	■
XIV. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	■	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	■	☐
XV. TRANSPORTATION/TRAFFIC. Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	■	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	■	☐
c) Result in a change in air traffic patterns, including	☐	☐	☐	■

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
either an increase in traffic levels or a change in location that results in substantial safety risks?				
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	■	☐
e) Result in inadequate emergency access?	☐	☐	☐	■
f) Result in inadequate parking capacity?	☐	☐	☐	■
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	■
XVI. UTILITIES & SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	■	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	■
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	■	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	■	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	■	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	■	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	■	☐
XVII. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major period of California history or prehistory?	☐	☐	■	☐

Appendix B – Air Quality Worksheet

URBEMIS 7G: Version 3.1

File Name: blocker.URB
Project Name: Dan Blocker Beach
Project Location: South Coast Air Basin (Los Angeles area)

DETAILED REPORT
(Pounds/Day - Summer)

Total Land Use Area to be Developed (Estimated): 2 acres
Retail/Office/Institutional Square Footage: 36808.2
Single Family Units 0 Multi-family Units 0

CONSTRUCTION EMISSION ESTIMATES

Source	ROG	NOx	CO	PM10
Demolition				0.00
Site Grading	2.15	15.63	-	18.75
Const. Worker Trips	0.10	0.14	0.26	0.03
Stationary Equip.	0.17	0.14	-	0.01
Mobile Equip. - Gas	0.00	0.00	-	0.00
Mobile Equip. - Diesel	2.88	45.68	-	2.82
Architectural Coatings	0.00			
Asphalt Offgasing	0.00			
TOTALS (ppd, unmitigated)	5.30	61.59	0.26	21.61

CONSTRUCTION EMISSION ESTIMATES

Source	ROG	NOx	CO	PM10
Demolition				0.00
Site Grading	2.04	14.85	-	8.35
Const. Worker Trips	0.10	0.14	0.26	0.03
Stationary Equip.	0.17	0.14	-	0.01
Mobile Equip. - Gas	0.00	0.00	-	0.00
Mobile Equip. - Diesel	2.74	43.40	-	2.68
Architectural Coatings	0.00			
Asphalt Offgasing	0.00			
TOTALS (ppd, mitigated)	5.04	58.52	0.26	11.06

Construction-Related Mitigation Measures

Soil Erosion Measures: Replace Ground Cover in Disturbed Areas Quickly:
   Percent Reduction(ROG 0% NOx 0% CO 0% PM10 49%)
Properly Maintain Equipment:
   Percent Reduction(ROG 5% NOx 5% CO 0% PM10 5%)
Implement Water/Paved Road Measures: Water All Haul Roads 2x Per Day:
   Percent Reduction(ROG 0% NOx 0% CO 0% PM10 3%)
Reduce Speeds on Unpaved Roads to 15 mph or less:
   Percent Reduction(ROG 0% NOx 0% CO 0% PM10 70%)
Mobile Equipment: Properly Maintain Equipment:
   Percent Reduction(ROG 5% NOx 5% CO 5% PM10 5%)
Architectural Coatings: Use Low VOC Coatings:
   Percent Reduction(ROG 5% NOx 0% CO 0% PM10 0%)
Asphalt Paving: Use Low VOC Asphalt:
   Percent Reduction(ROG 5% NOx 0% CO 0% PM10 0%)

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2001 Temperature (F): 90 Season: Summer

EMFAC Version: EMFAC7G (10/96)

Summary of Land Uses:

Unit Type	Trip Rate	Size	Total Trips
Beach	142.10 trips / acre	1.69	240.15

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Duty Autos	75.00	1.16	98.58	0.26
Light Duty Trucks	10.00	0.13	99.54	0.33
Medium Duty Trucks	3.00	1.44	98.56	
Lite-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Med.-Heavy Duty Trucks	1.00	19.56	40.00	40.44
Heavy-Heavy Trucks	5.00			100.00
Urban Buses	2.00			100.00
Motorcycles	3.00	100.00 % all fuels		

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.6	4.5	5.6	9.5	5.1	5.1
Rural Trip Length (miles)	11.5	4.9	6.0	10.3	5.5	5.5
Trip Speeds (mph)	35	40	40	40	40	40
% of Trips - Residential	20.0	37.0	43.0			
% of Trips - Commercial (by land use)						
Beach				20.0	10.0	70.0

UNMITIGATED EMISSIONS

	ROG	NOx	CO	PM10
Beach	2.56	5.68	20.46	1.79

	ROG	NOx	CO	PM10
TOTAL EMISSIONS (lbs/day)	2.56	5.68	20.46	1.79

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

MITIGATED EMISSIONS

	ROG	NOx	CO	PM10
Beach	2.56	5.68	20.46	1.79

	ROG	NOx	CO	PM10
TOTAL EMISSIONS (lbs/day)	2.56	5.68	20.46	1.79

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

ENVIRONMENTAL FACTORS APPLICABLE TO THE PROJECT

Pedestrian Environment

0	Side Walks/Paths: No Sidewalks
0	Street Trees Provide Shade: No Coverage
0	Pedestrian Circulation Access: No Destinations
0	Visually Interesting Uses: No Uses Within Walking Distance
0	Street System Enhances Safety: No Streets
0	Pedestrian Safety from Crime: No Degree of Safety
0	Visually Interesting Walking Routes: No Visual Interest

0.0 <- Pedestrian Environmental Credit
0.0 /19 = 0.00 <- Pedestrian Effectiveness Factor

Transit Service

0	Transit Service: Dial-A-Ride or No Transit Service

0.0 <- Transit Effectiveness
0.0 <- Pedestrian Factor
0.0 <-Total
0.0 /110 = 0.00 <-Transit Effectiveness Factor

Bicycle Environment

0	Interconnected Bikeways: No Bikeway Coverage
0	Bike Routes Provide Paved Shoulders: No Routes
0.0	Safe Vehicle Speed Limits: No Routes Provided
0	Safe School Routes: No Schools
	Uses w/in Cycling Distance: No Uses w/in Cycling Distance
0	Bike Parking Ordinance: No Ordinance or Unenforceable

0.0 <- Bike Environmental Credit
0.0 /20 = 0.00 <- Bike Effectiveness Factor

MITIGATION MEASURES SELECTED FOR THIS PROJECT
(All mitigation measures are printed, even if
the selected land uses do not constitute a mixed use.)

Transit Infrastructure Measures

% Trips Reduced	Measure
15	Credit for Existing or Planned Community Transit Service
15	<- Totals

Pedestrian Enhancing Infrastructure Measures (Residential)

% Trips Reduced	Measure
2	Credit for Surrounding Pedestrian Environment
2	<- Totals

Pedestrian Enhancing Infrastructure Measures (Non-Residential)

% Trips Reduced	Measure
2	Credit for Surrounding Pedestrian Environment
2	<- Totals

Bicycle Enhancing Infratructure Measures (Residential)

% Trips Reduced	Measure
7	Credit for Surrounding Bicycle Environment
7	<- Totals

Bike Enhancing Infrastructure Measures (Non-Residential)

% Trips Reduced	Measure
5	Credit for Surrounding Area Bike Environment
5	<- Totals

Operational Measures (Applying to Commute Trips)

% Trips Reduced	Measure
0	<- Totals

Operational Measures (Applying to Employee Non-Commute Trips)

% Trips Reduced	Measure
0	<- Totals

Operational Measures (Applying to Customer Trips)

% Trips Reduced	Measure
0	<- Totals

Measures Reducing VMT (Non-Residential)

VMT Reduced	Measure
0	Park and Ride Lots
0	<- Totals

Measures Reducing VMT (Residential)

VMT Reduced	Measure
0	<- Totals

Total Percentage Trip Reduction
with Environmental Factors and Mitigation Measures

Travel Mode	Home-Work Trips	Home-Shop Trips	Home-Other Trips
Pedestrian	0.00	0.00	0.00
Transit	0.00	0.00	0.00
Bicycle	0.00	0.00	0.00
Totals	0.00	0.00	0.00

Travel Mode	Work Trips	Employee Trips	Customer Trips
Pedestrian	0.00	0.00	0.00
Transit	0.00	0.00	0.00
Bicycle	0.00	0.00	0.00
Other	0.00	0.00	0.00
Totals	0.00	0.00	0.00

Changes made to the default values

The user has turned off the area source emissions default switch.
The demolition emissions option switch has been changed
The asphalt option switch has been changed
The architectural coatings option switch has been changed

Appendix C –Biological Resource Report

Pacific Southwest Biological Services, Inc.
Post Office Box 985, National City, California 91951-0985 • **(619) 477-5333** • FAX (619) 477-5380

Dan Blocker County Beach
26000 Pacific Coast Highway
Malibu, California
Biological Resources Assessment and Impacts Analysis

UTM: 11-S: 338,900mE; 3,766,900mN

Prepared for

County of Los Angeles
Department of Public Works
900 South Fremont Avenue
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PSBS #T669
18 January 2001

Cornelius W Bouscaren
for R. Mitchel Beauchamp, M. Sc., President

Dan Blocker County Beach
Biological Resources Assessment and Impacts Analysis

18 January 2001

MANAGEMENT SUMMARY

A general biological survey of the 1.69-acre bluff area overlooking Dan Blocker County Beach revealed a Disturbed Habitat with remnant Coastal Sage Scrub vegetation. No sensitive plants were encountered. One sensitive animal, the Southern California Rufous-crowned Sparrow, was observed on the site.

INTRODUCTION

At the request of David Evans and Associates, Inc., Pacific Southwest Biological Services, Inc., (Pacific Southwest) conducted a general biological survey of site. The purpose of the survey was to inventory and evaluate the biological resources on the site, to identify areas constrained for development based on biological resources and regulations, and to recognize measures available to minimize impacts to existing natural assets.

LOCATION

The site consists of 1.69 acres on a bluff overlooking Dan Blocker County Beach. The site is located along the south side of Pacific Coast Highway (State Highway 1), within the City of Malibu, west of Corral Canyon Road and east of Seagull Way, and can be located on the USGS 7.5' Malibu Beach, California at UTM: 11-S: 338,900mE; 3,766,900mN (Figures 1 & 2). The site lies in unsectioned lands of Rancho Topanga Malibu Sequit. Access to the site is directly from Pacific Coast Highway.

GENERAL PHYSIOGRAPHY

Elevation ranges from 35 feet along the top of the bluff down to sea level. A chain link fence with gates runs the length of the site along Pacific Coast Highway. At the time of the survey gates for vehicle access were locked; however, one unlocked gate provided easy pedestrian access. Width of the bluff from the curb along Pacific Coast Highway varies from approximately six feet, where a partially eroded drainage occurs approximately 200 feet from the west end of the site, to approximately 90 feet near the east end. A concrete culvert carries flows under Pacific Coast Highway adjacent to the north, and is visible halfway down the ocean-side bluff face. Soils mapped for the site are Castaic silty clay loam, 30% to 40% eroded (USDA 1967). Surficial geology is indicated as igneous Miocene volcanics and sedimentary middle Miocene marine (Jennings and Strand 1969). The site boasts a spectacular overlook of Santa Monica Bay from the southern base of the Santa Monica Mountains.

PROJECT DESCRIPTION

The proposed project consists of development of a public access beach facility involving removal of the existing chain link fence, demolition of existing pavement, construction of a parking lot, and development of park amenities. Proposed amenities include a bluff-top picnic area with picnic tables, portable drinking fountains, and a memorial monument and plaque. The project includes the construction of a ramp to allow beach access, and paved walkways, with bench seating, connecting the parking area with park site amenities and beach access. Access from Pacific Coast Highway would be provided through two gated driveways. Park directory and highway entrance signage would be provided. K-rail barriers would be installed adjacent to Pacific Coast Highway for safety, as would a railing system at the edge of the bluff. Erosion control planting of new and existing slopes with appropriate vegetation, and installation of a temporary irrigation system, are also planned.

METHODS, SURVEY LIMITATIONS, AND DEFINITIONS

Prior to field work, Pacific Southwest conducted a search of the California Department of Fish and Game (CDFG) Natural Diversity Data Base (CNDDB) for the USGS 7.5' Malibu Beach and Point Dume, California Quadrangles. This search revealed several federally- or state-listed species that may occur in the vicinity of the property. Also reviewed were reports of previous surveys conducted by Pacific Southwest in the vicinity. Prior surveys in the area included acreage about Escondido Canyon, just north of the site, as well as a beach bluff stabilization assessment of a private residence to the west (Pacific Southwest 1989,1997).

Pacific Southwest biologist Cornelius W. Bouscaren performed a general zoological and botanical assessment of the site 3 January 2001 during the hours 0650-0915. The temperature range was 57-65°F, skies were clear, and winds were westerly 5-10 mph. Methods consisted of walking slowly throughout the entire site while watching and listening for wildlife, and recording fauna and flora upon observation. The strand below the bluff was surveyed for wildlife only, from the top of the bluff. "Pishing," a technique commonly used to attract the interest of passerines and draw them into view, was occasionally employed. Binoculars (8.5x44 power) were used to assist in the detection and identification of wildlife. Visual and/or auditory detection, tracks, scats, bones, dens, and burrows confirmed species presence.

SURVEY LIMITATIONS AND DEFINITIONS

Complete biological inventories of large sites may require a large number of field hours during different seasons as well as nocturnal sampling for some animal groups, such as small mammals or migratory or nomadic birds. Depending on the season during which the field survey is conducted, amphibians, snakes, many mammals, owls and other nocturnal birds, and annual plants are groups that can be difficult to inventory. The effects of drought may cause temporary shifts in the local distribution of species, which may recolonize the site in question when more normal rainfall patterns resume. Conversely, precipitation above the usual, such as those frequently referred to as El Niño events, may also bring about a temporary change in the normal distribution mosaic. However, through literature review, study of museum records, and knowledge of the habitat requirements and distribution patterns of individual species, the probability of a given species being present on a site can often be fairly accurately predicted by an experienced field biologist.

Due to the seasonal timing of the surveys, not all plant species would be observed on the site. However, sensitive plants with a strong potential to occur on the site are usually identifiable during most of the year by an experienced botanist. The surveys performed for this assessment are considered complete and accurate for the species of concern, unless otherwise noted.

The scientific nomenclature used in this report is from the following standard references: vascular plants (Beauchamp 1986, Hickman 1993, Munz 1974); vegetation communities (Holland 1986, Skinner and Pavlik 1994); wildlife habitats (Mayer et al. 1988); amphibians and reptiles (Jennings 1983 and Stebbins 1985); birds (American Ornithologists' Union 1998); and mammals (Jameson and Peeters 1988, Jones et al. 1992).

Vegetation Communities

Vegetation communities are assemblages of plant species that usually coexist in the same area. The classification of vegetation communities is based upon the life form of the dominant species within that community and the associated flora.

Wildlife Habitats

Wildlife habitats differ from vegetation communities in that a wildlife habitat may contain several vegetation communities that are similar in structure but different in the plant species composition, location and soil substrate. This distinction becomes an important factor when assessing the sensitivity of a particular wildlife habitat. In addition, the interaction of various wildlife species occurs between many different wildlife habitats. This becomes more evident where these habitats overlap in areas known as ecotones. These ecotones support a combination of the species from two or more adjoining habitats, which generally increases the number and diversity of species within these areas.

RESULTS

BOTANICAL RESOURCES

Vegetation

The site is characterized by an infestation of several non-native weed plants mixed with remnant Venturan Coastal Sage Scrub vegetation, which consists of Beach Buckwheat (*Eriogonum parviflorum)*, California Sagebrush (*Artemisia californica*), Goldenbush (*Isocoma menziesii*), California Sunflower (*Encelia californica*), Laurel-leaf Sumac (*Malosma laurina*), and Coyote Brush (*Baccharis pilularis*). The more conspicuous non-native weeds of the site include Hottentot-fig (*Carpobrotus edulis*), Sweet Fennel (*Foeniculum vulgare*), Short-pod Mustard *(Hirschfeldia incana*), Castor-bean (*Ricinus communis*), and African Fountain Grass (*Pennisetum setaceum*), the latter being a dominant species on the slopes all about the site and adjacent ocean-side slopes. Substantial areas are covered with pavement and devoid of vegetation of any kind. In others pavement rubble is only partially obscured by the weedy species. Modest amounts of trash occur.

Flora

The 30 plant taxa observed at the site, including 13 non-native species (43%), are typical of disturbed and remnant Scrub habitats of the region (Appendix 1). None of the observed taxa are sensitive in any state, federal or conservation organization listing.

ZOOLOGICAL RESOURCES

Sixteen species of fauna were observed during the survey (Appendix 2). These include one reptile and fifteen birds.

Reptiles

The Western Fence Lizard (*Sceloporus occidentalis*), one of the most common western lizards, was observed.

Birds

Common and widespread resident species observed atop the bluff include the House Finch (*Carpodacus mexicanus*), California Towhee (*Pipilo crissalis*), American Crow (*Corvus brachyrynchos*), Rock Dove (*Columba livia*), Black Phoebe (*Sayornis nigricans*), and Anna's Hummingbird (*Calypte anna*). Also observed was an abundant migrant and frequent winter visitor, the White-crowned Sparrow (*Zonotrichia leucophrys*). Observed on the beach and flying just offshore were the Heerman's Gull (*Larus heermani*), Ring-billed Gull (*Larus delawarensis*), and California Gull (*Larus californicus*). Shorebirds observed on the beach were the Black-bellied Plover (*Pluvialis squatarola*), Marbled Godwit (*Limosa fedoa*) and Sanderling (*Calidris alba*). Observed on the water just offshore was the California Brown Pelican (*Pelecanus occidentalis californicus*), a common to very common non-breeding visitor. Nesting colonies of this species are listed as Endangered by the U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Game (CDFG). However, nesting occurs only on off-shore islands, generally uninhabited, without mammalian predators.

SENSITIVE BIOTIC RESOURCES

Appendix 3 lists those sensitive plant and animal taxa reported from the Malibu Beach and Point Dume, California quadrangles in the CNDDB. Only one of these, the Southern California Rufous-crowned Sparrow, was observed on the site. Due to the high degree of disturbance of the site, none of these other organisms are expected to occur on the project site.

Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)

LISTING:	USFWS - Species of Concern CDFG - Species of Special Concern
DISTRIBUTION:	Coastal southern California from Santa Barbara County south into Baja California, Mexico.
HABITAT:	Sparse, low scrub, often mixed with grasses on rocky slopes. California Sagebrush (*Artemisia californica*) is often present in scrub inhabited by this sparrow.
STATUS:	Uncommon to fairly common but localized resident. Listing is based on concern that this species is among the most sensitive to habitat fragmentation and edge effects.

One individual of this species was observed in the disturbed Scrub near the eastern boundary of the site. Because of the highly disturbed nature of the site the species is not expected to breed here.

POTENTIAL IMPACTS AND RECOMMENDATIONS FOR PROJECT IMPLEMENTATION

Provision of access to the beach area will generate additional disturbance in an otherwise dynamic littoral strand habitat. The increase of human presence on the beach strand is anticipated to have minimal impact due to the dynamic nature of the habitat. Impacts to the project site, *per se*, are not significant due to the currently highly disturbed nature of the site. Removal of any vegetation, without proactive revegetation, will allow for invasion or reinvasion by the noxious African Fountain Grass. For this reason revegetation of the site immediately upon completion of development is mandatory, both for erosion control and to prevent recurrence of undesirable weedy species. Also recommended, as an addition to the railing system at the bluff-top edge, is low wire fencing, such as hardware cloth, with the capability of preventing trash from the park area from reaching the beach and ocean.

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Figure 1. Project Vicinity

★ Dan Blocker County Beach

N

1"=2,000

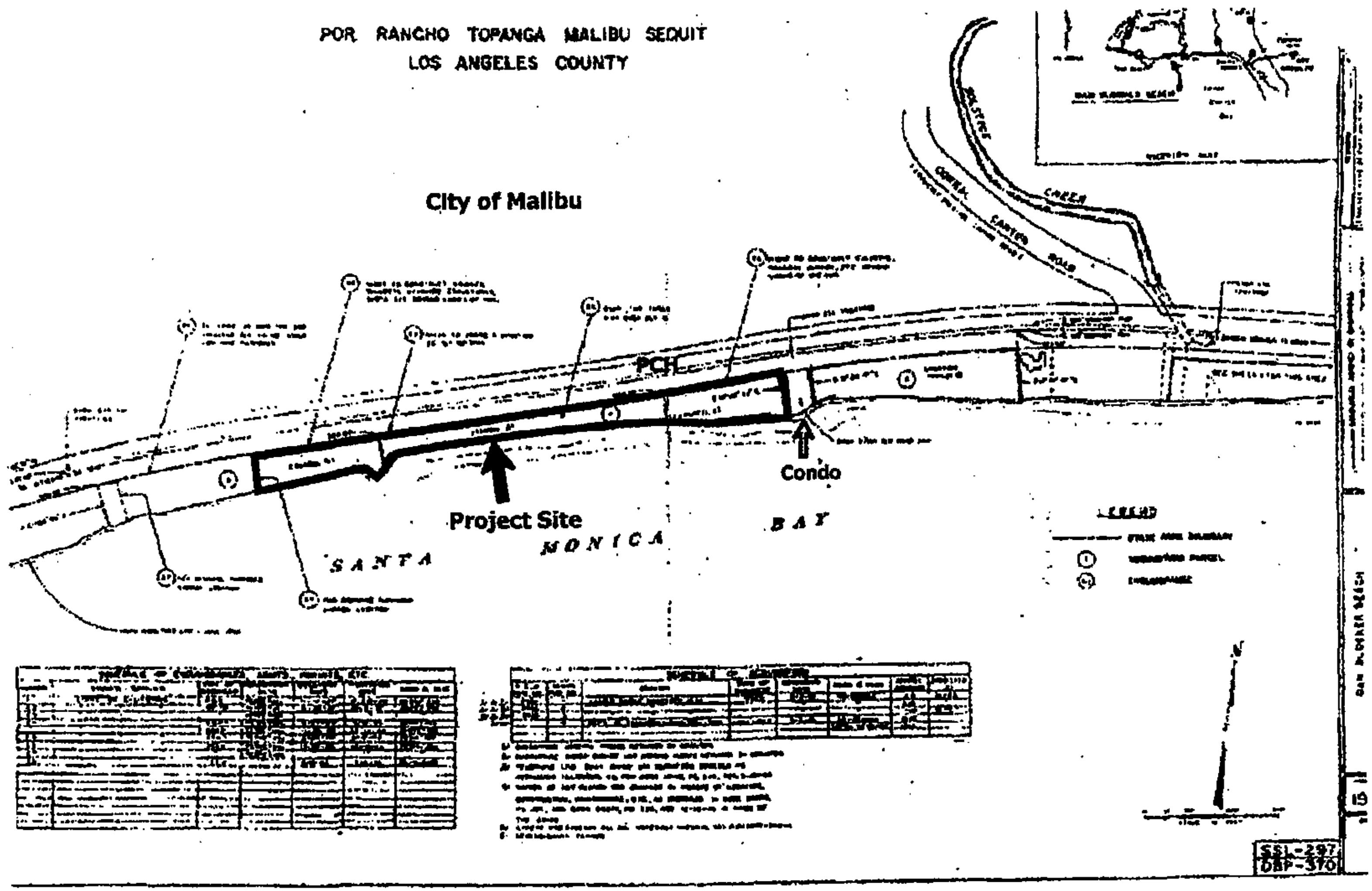

FIGURE 2. PROJECT LOCATION

Source: David Evans & Associates, Inc.

Pacific Southwest Biological Services, Inc

APPENDIX 1. FLORAL CHECKLIST OF SPECIES OBSERVED

GYMNOSPERMS

Cupressaceae - Cypress Family
- * *Cupressus sempervirens* L. Italian Cypress

DICOTYLEDONS

Aizoaceae - Carpet-weed Family
- * *Carpobrotus edulis* (Molina) N.E. Brit. Hottentot-fig
- * *Drosanthemum hispidum* (L.) Schwant. Rosea Iceplant
- * *Mesembryanthemum crystallinum* L. Crystalline Iceplant

Anacardiaceae - Sumac Family
- *Malosma laurina* (Torr. & Gray) Abrams Laurel-leaf Sumac

Apiaceae - Carrot Family
- * *Foeniculum vulgare* Mill. Sweet Fennel

Asteraceae - Sunflower Family
- *Artemisia californica* Less. California Sagebrush
- *Baccharis pilularis* DC. Coyote Brush
- *Brickellia californica* (Torrey & Gray) Gray California Brickellbush
- *Encelia californica* Nutt. California Encelia
- *Gnaphalium bicolor* Bioletti Bicolor Cudweed
- *Heterotheca grandiflora* Nutt. Telegraph Weed
- *Isocoma menziesii* (Hook. & Arn.) Nesom Goldenbush
- *Malacothrix saxatilis* (Nutt.) Torrey & A.Gray ssp. *tenuifolia* Nutt. & Gray Cliff Malacothrix
- * *Sonchus oleraceus* L. Common Sow Thistle

Brassicaceae - Mustard Family
- * *Hirschfeldia incana* (L.) Lagr.-Fossat Short-pod Mustard

Chenopodiaceae - Goosefoot Family
- *Atriplex lentiformis* (Torr.) Wats. ssp. *breweri* (Wats.) Hall & Clem. Brewer's Saltbush
- * *Atriplex semibaccata* R. Br. Australian Saltbush

Euphorbiaceae - Spurge Family
- *Chamaesyce polycarpa* (Benth.) Millsp. Small-seed Sandmat
- * *Ricinus communis* L. Castor-bean

Fabaceae - Legume Family
- *Lotus scoparius* (Nutt.) Ottley var. *scoparius* Coastal Deerweed
- * *Medicago polymorpha* L. California Burclover

Lamiaceae - Mint Family
- *Salvia mellifera* Greene Black Sage

Polygonaceae - Buckwheat Family
- *Eriogonum parvifolium* Smith Coast Buckwheat

Scrophulariaceae - Figwort Family
- *Mimulus aurantiacus* Curtis Monkeyflower
- *Penstemon centranthifolius* Benth. Scarlet Bugler

Solanaceae - Nightshade Family
- * *Nicotiana glauca* Grah. Tree Tobacco

MONOCOTYLEDONS

Liliaceae - Lily Family
Yucca whipplei Torr. Our Lord's Candle

Poaceae - Grass Family
- * *Cynodon dactylon* (L.) Pers. Bermuda Grass
- * *Pennisetum setaceum* Forsk. African Fountain Grass

* - Denotes non-native plant taxa

Appendix 2. Animals Observed or Detected

COMMON NAME	SCIENTIFIC NAME
VERTEBRATES	
REPTILES	
Iguanidae (Iguanids)	
Western Fence Lizard	*Sceloporus occidentalis*
BIRDS	
Pelecanidae (Pelicans)	
Brown Pelican	*Pelecanus occidentalis californicus*
Phalacrocoracidae (Cormorants)	
Double-crested Cormorant	*Phalacrocorax auritus*
Charadriidae (Lapwings, Plovers)	
Black-bellied Plover	*Pluvialis squatarola*
Scolopacidae (Sandpipers, Phalaropes)	
Marbled Godwit	*Limosa fedoa*
Sanderling	*Calidris alba*
Laridae (Skuas, Gulls, Terns, Skimmers)	
Heermann's Gull	*Larus heermanni*
Ring-billed Gull	*Larus delawarensis*
Western Gull	*Larus occidentalis*
Columbidae (Pigeons, Doves)	
Rock Dove	*Columba livia*
Trochilidae (Hummingbirds)	
Anna's Hummingbird	*Calypte anna*
Tyrannidae (Tyrant Flycatchers)	
Black Phoebe	*Sayornis nigricans*
Corvidae (Jays, Magpies, and Crows)	
American Crow	*Corvus brachyrhynchos*
Emberizidae (Emberizids)	
California Towhee	*Pipilo crissalis*
White-crowned Sparrow	*Zonotrichia leucophrys*
Fringillidae (Finches)	
House Finch	*Carpodacus mexicanus*

Appendix 3. Sensitive Plants and Animals of the USGS 7.5' Malibu Beach and Point Dume, California quadrangles.

SPECIES NAME	STATUS Federal/State/CNPS	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE
Blochman's Dudleya (*Dudleya blochmaniae* ssp *blochmaniae*)	SOC/None/1B(2-3-2)	Coastal scrub, coastal bluff scrub, valley and foothill grassland, open rocky slopes	L. No habitat
Braunton's Milk-vetch (*Astragalus brauntonii*)	FE/None/1B(3-3-3)	Stiff gravelly clay soils overlying granite or limestone	L. No habitat
Coulter's Saltbush (*Atriplex coulteri*)	None/None/1B(2-2-2)	Ocean bluffs, ridgetops, alkaline low places	L. Single observation from the quads is at elevation 203'.
Lyon's Pentachaeta (*Pentachaeta lyonii*)	FE/CE/1B(3-3-3)	Edges of clearings in Chaparral	L. No habitat
Malibu Baccharis (*Baccharis malibuensis*)	None/None/1B(3-3-3)	Coastal scrub, chaparral, cismontane woodland	L. Too much disturbance
Marescent Dudleya (*Dudleya cymosa* ssp *marcescens*)	FT/Rare/1B(3-2-3)	Chaparral, on sheer rock surfaces and rocky volcanic cliffs	L. No habitat
Plummer's Mariposa Lily (*Calochortus plummerae*)	SOC/None/1B(2-2-3)	Rocky and sandy sites, usually of granitic or alluvial material	L. No habitat
Santa Monica Mountains Dudleya (*Dudleya cymosa* ssp *ovatifolia*)	FT/None/1B(3-2-3)	Chaparral, coastal scrub on volcanic cliff faces and rocky outcrops, primarily on north-facing slopes	L. Minimal habitat, site has level or south-facing aspect. Only one report (1980) from the two quads
Santa Susana Tarplant (*Deinandra minthornii*)	SOC/Rare/1B(2-2-3)	Chaparral, Coastal scrub on sandstone outcrops and crevices	L. No sandstone
Sonoran Maiden Fern (*Thylpteris puberula* var *sonorensis*)	None/None/2(2-2-1)	Meadows, streams, seepage areas	L. No habitat

[redacted]

SPECIES NAME	STATUS Federal/State/CDFG	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE
Monarch Butterfly (*Danaus plexippus*)	None/None/None	Winter roost sites extend along coast from N. Mendocino to Baja Calif.; roosts located in wind-protected tree groves (Eucalyptus, Monterey Pine, Cypress), with nectar and water sources nearby	M. May roost in single Italian Cypress on-site
Tidewater Goby (*Eucyclogobius newberryi*)	FE/None/SC	Brackish water along coast from Agua Hedionda Lagoon to mouth of Smith River, esp. in shallow lagoons and lower stream reaches	L. No habitat
Southwestern Pond Turtle (*Clemmys marmorata pallida*)	SOC/None/SC	Permanent or nearly permanent water in many habitat types; below 6000 ft, esp w/basking sites	L. No habitat
San Diego Horned Lizard (*Phrynosoma coronatum blainvillei*)	SOC/None/SC	Coastal Sage Scrub, Chaparral in arid and semi-arid climate, esp. friable, rocky, or shallow sandy soils	M. Adequate habitat
California Horned Lizard (*Phrynosoma coronatum frontale*)	SOC/None/SC	Frequents wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes	L. Minimal habitat
Coastal Western Whiptail (*Cnemidophorus tigris multiscutatus*)	SOC/None/None	Deserts & semiarid areas w. sparse vegetation & open areas, also in woodland & riparian areas, esp. where ground may be firm soil, sandy, or rocky	L. No habitat
San Bernardino Ringneck Snake (*Diadophis punctatus modestus*)	None/None/None	Most common in open relatively rocky areas. Often in somewhat moist microhabitats near intermittent streams	L. No habitat
San Diego Mountain Kingsnake (*Lampropeltis zonata pulchra*)	SOC/None/SC	Variety of habitats, incl. Valley-foothill hardwood, coniferous, chaparral, riparian and wet meadows.	L. No habitat
Bank Swallow (*Riparia riparia*)	None/CT/None	Colonial nester, primarily in riparian or lowland habitats, esp., vertical banks, cliffs w/fine or sandy textured soils, near wetlands	L. Minimal habitat. Most recent report in the two quads: egg collection in 1864
San Diego Desert Woodrat (*Neotoma lepida intermedia*)	SOC/None/SC	Mixed and chamise-redshank chaparral, sagebrush and other habitats. Prefers rocky areas to build stick nest.	L. Minimal habitat. No rocky areas. Nest(s) would have been observed if present

Southern Steelhead—So. Calif ESU (*Oncorhynchus mykiss irideus*)	FE/None/SC	Freshwater Stream	L. No habitat

[redacted]

Appendix D –
Records Search and Cultural Resource Report

South Central Coastal Information Center
California Historical Resources Information System
California State University, Fullerton
Department of Anthropology
800 North State College Boulevard
Fullerton, CA 92834-6846
(714) 278-5395 / FAX (714) 278-5542
anthro.fullerton.edu / sccic.html

Los Angeles
Orange
Ventura

December 6, 2000

Natasha Ali-Khan
David Evans and Associates, Inc.
8989 Rio San Diego Dr., Suite 335
San Diego, CA 92108

RE: Records Search for Dan BlockerBeach

Dear Ms. Ali-Khan,

As per your request received on December 6, we have conducted a records search for the above referenced project. This search included a review of all recorded historic and prehistoric archaeological sites within a half-mile radius of the project area, as well as a review of all known cultural resource reports. In addition, we have checked our file of historic maps, the California State Historic Resources Inventory, the National Register of Historic Places, the listing of California Historical Landmarks, and the California Points of Historical Interest. The following is a discussion of our findings for the project area.

Due to the sensitive nature of cultural resources, archaeological site locations are not released.

MALIBU BEACH QUADRANGLE

PREHISTORIC RESOURCES:

Four prehistoric sites (19-00210, 19-001569, 19-001570, 19-001571) have been identified within a half-mile radius of the project area.

HISTORIC RESOURCES:

No historic archaeological sites have been identified within a half-mile radius of the project area.

Inspection of our historic maps – Calabasas (1903) 15' series – indicated that there were some unimproved roads, and very few structures in place. Dry, Coral, Puerco, and Marie Canyons were in place.

The California State Historic Resources Inventory lists no properties that have been evaluated for historical significance within a half-mile radius of the project area.

The National Register of Historic Places lists no properties within a half-mile radius of the project area.

The California Historical Landmarks (1990) of the Office of Historic Preservation, California Department of Parks and Recreation, lists no landmarks within a half-mile radius of the project area.

The California Points of Historical Interest (1992), of the Office of Historic Preservation California Department of Parks and Recreation, lists no properties within a half-mile radius of the project area.

The listings of the City of Los Angeles Historic-Cultural Monuments indicated that there are no landmarks within a half-mile radius of the project area.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS:

Ten studies have been conducted within a half-mile radius of the project area. Of these, three is located within the project area. There are nineteen additional investigations located on the Malibu Beach 7.5' USGS quadrangle and are potentially within a half-mile radius of the project area. These reports are not mapped due to insufficient locational information.

POINT DUME QUADRANGLE

PREHISTORIC RESOURCES:

No prehistoric sites have been identified within a half-mile radius of the project area.

HISTORIC RESOURCES:

No historic archaeological sites have been identified within a half-mile radius of the project area.

Inspection of our historic maps – Calabasas (1903) 15' series – indicated that there were some unimproved roads, and very few structures in place. Dry, Coral, Puerco, and Marie Canyons were in place.

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The listings of the City of Los Angeles Historic-Cultural Monuments indicated that there are no landmarks within a half-mile radius of the project area.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS:

Four studies have been conducted within a half-mile radius of the project area. Of these, three is located within the project area. There are 23 additional investigations located on the Point Dume 7.5' USGS quadrangle and are potentially within a half-mile radius of the project area. These reports are not mapped due to insufficient locational information.

RECOMMENDATIONS

Our records indicate the proposed project area has not been subject to a Phase I archaeological survey and is located along what is considered the culturally sensitive coastal zone. Several archaeological sites are located within a one-half mile radius, therefore we recommend a Phase I archaeological survey be conducted by a professional archaeologist.

If you have any questions regarding our results or the recommendations presented herein, please feel free to contact our office at (714) 278-5395.

Invoices are mailed approximately two weeks after records searches are completed. This enables your firm to request further information under the same invoice number. **Please reference the invoice number listed below when making inquiries.** Requests made after invoicing will involve the preparation of a separate invoice with a $15.00 handling fee.

Sincerely,

Esther Won
Staff Archaeologist

Enclosures:

( ) Primary Number Explanation
( ) Site list -
(X) SIS list - 8 pages
( ) HRI -
( ) National Register Status Code - 4pages
( ) Invoice #9034

South Central Coastal Information Center
California Historical Resources Information System
California State University, Fullerton
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REFERRAL LIST FOR HISTORICAL RESOURCES CONSULTANTS

This is a partial, alphabetically ordered, list of individuals, firms and institutions which meet minimum qualifications to perform identification, evaluation, registration, and treatment activities within the profession under which they are listed, in compliance with federal and state environmental laws. It is composed of all individuals who have requested listing by this Information Center and who have satisfactorily documented that they meet the Secretary of the Interior's Standards (SIS) for that profession. Inclusion on this list is determined solely on this evaluation and not on a review of current work.

The first page of this listing is comprised of individuals who were certified by the Society of Professional Archaeologists and who were listed on this Information Center's Referral List as of August 11, 1995. These individuals may or may not meet the Secretary of the Interior's Standards.

The Information Center provides a copy of this list without charge when field inspection is recommended or upon request.

This list has been prepared in accordance with guidelines stipulated by the State. Inclusion on this list does not constitute endorsement or recommendation by the State or this Information Center.

Questions regarding this Referral List may be directed to John Thomas, Staff Archaeologist, or Jan Wooley, Staff Historian, Coordinators of the California Historical Resources Information System, Office of Historic Preservation, at (916) 653-6624.

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Appendix D –
Records Search and Cultural Resource Report

A · S · M
affiliates

February 19, 2001

Ms. Rebecca Smirniotis
David Evans and Associates, Inc
8989 Rio San Diego Drive, Suite 335
San Diego, California 92108

Re: Dan Blocker Beach Project Cultural Resource Survey

Dear Ms. Smirniotis:

This report presents the results of a cultural resource survey conducted by ASM Affiliates of the Dan Blocker Beach Project located within Los Angeles County between Pacific Coast Highway and the ocean, and west of Corral Canyon Road. The study was performed to determine the presence or absence of significant prehistoric and historic resources within the property and assess potential project impacts in accordance with the California Environmental Quality Act. It consisted of a review of all site records and reports on file with the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, followed by an intensive pedestrian survey of the entire property. The study proved negative in that no cultural resources were identified as a result of both the survey and records search. The project description, existing conditions, study methods, results, and potential impacts and recommendations are provided below.

Project Description

The project property consists of 1.92 acres of vacant land situated on a low bluff overlooking Dan Blocker Beach. The proposed project includes the removal of an existing chain-link fence, demolition of existing pavement, and construction of a parking area and park site amenities. These latter include bluff top picnic areas, landscaping, chemical toilet facilities, a memorial monument, drinking fountains and bench seating. Additionally, a ramp will be constructed to provide beach access.

Existing Conditions

As depicted on the Malibu Beach 7.5' U.S.G.S. quadrangle (Figure 1), the project is located within an unsectioned portion of range 18 West and Township 1 South. The property can be characterized as a highway bench cut into the hillside in the lower slopes of the Santa Monica Mountains. The hillside extends down to the Pacific Ocean forming a coastal bluff over a narrow

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sandy beach. The proposed project site is located on a bluff that is approximately 10 to 20 feet high. The slopes of the bluffs at Dan Blocker Beach range from being near vertical in many areas to approximately 1:3 (horizontal: vertical).

The project is situated in the western region of the Santa Monica Mountains near the base of the southerly descending flanks in the City of Malibu. Geologic units located in the vicinity of the project site include Holocene beach sands, Pleistocene-age older alluvial sediment deposits on the top of the hillside north of the roadway, and Miocene-age volcanic rocks exposed in the coastal bluffs and roadway cuts. Within 2,000 feet of the project site is located a middle to late Miocene-age meta-sedimentary formation and landslide debris. Minor isolated fills also exist throughout the site as gully infill, erosion repairs, and minor roadway grading. The proposed project site is located on several soil types including: Conejo Volcanics, Monterey Formation, Older Surficial Sediment, Landslide Debris, Residual Soils, and Artificial Fill. A minor amount of colluvial material, which is associated with an ancient landslide, debris flow from alluvial deposits, and/or dumped material associated with the grading of PCH is located west of the center of the proposed project site in the coastal bluff.

The project site is located within the Malibu Coastal Zone (MCZ), the most extensive natural coastline in Los Angeles County. MCZ marine resources along the Malibu coast include kelp beds, tide pools, marine fisheries, offshore reefs, sandy beaches, rocky headlands, sea lion haul outs, coastal dunes, and isolated wetlands. Additionally, MCZ supports a rich and diverse fauna of mammals, reptiles, amphibians, birds and invertebrates, which includes a number of endangered and threatened plants and animals. The location and type of vegetation in the MCZ depends largely on the type of soil and amount of moisture available during annual periods of drought from approximately April to October.

The project property contains several non-native weed plants mixed with remnant Venturan Coastal Sage Scrub vegetation. Substantial areas are covered with pavement and devoid of vegetation of any kind, while in others pavement rubble is only partially obscured by the weedy species. Characteristic plant species include Beach Buckwheat (*Eriogonum parviflorum)*, California Sagebrush (*Artemisia californica*), Goldenbush (*Isocoma menziesii*), California Sunflower (*Encelia californica*), Laurel-leaf Sumac (*Malosma laurina*), and Coyote Brush (*Baccharis pilularis*). The more conspicuous non-native weeds of the site include Hottentot-fig (*Carpobrotus edulis*), Sweet Fennel (*Foeniculum vulgare*), Short-pod Mustard (*Hirschfeldia incana*), Castor-bean (*Ricinus communis*), and African Fountain Grass (*Pennisetum setaceum*), the latter being a dominant species on the slopes, all about the site, and adjacent ocean-side slopes. Thirty plant taxa and 16 species of fauna were observed during the biological survey.

Cultural Setting

Archaeological and ethnographic information indicate that this area of Los Angeles County has been occupied by Native Americans for nearly 9,000 years. The earliest evidence is that King (1981) terms the Early Period which incorporates the archaeological traditions identified as the

Oak Grove and Hunting, Archaic, Early Mainland, Early Island, and Millingstone Horizon. Coastal Archaic period sites have been characterized by somewhat undifferentiated shell middens, few bifaces and dart points, and abundant milling equipment. They range from large residential bases to small temporary camps and resource exploitation loci. According to King, this period entails no fewer than three phases. The Middle Period, starting roughly 3,000 years B.P. and lasting until 800 year B.P., is characterized by more types of beads and ornaments than before, and a shift from rectangular to circular beads. This period, within which five phases can be distinguished archaeologically, encompasses the Middle Canalino, early Late Mainland, late Intermediate Horizon, and late Campbell Tradition. The Late Period is defined by the presence of *Olivella* callus beads and clam disk and cylinder beads. This period terminates 1804 A.D., and in the project area subsumes the Chumash Tradition. The latter is the tradition associated with the contemporary Native American population of the region.

Study Methods

The methods used to assess the presence or absence of cultural resources within the property included a records search and intensive field reconnaissance. The record searches, conducted for a mile radius of the project, were obtained from the South Central Coastal Information Center at California State University, Fullerton (Attachment A). The survey was conducted by John R. Cook, RPA, on February 14, 2001. The entire approximately 2-acre project area was thoroughly examined at 5 to 10-meter intervals. Except for paved areas, ground visibility was generally good to excellent throughout the parcel and more than sufficient for the detection of any archaeological resources. No problems were encountered accessing and surveying all portions of the project area.

Study Results

A review of site records disclosed that no archaeological sites have been recorded within the project property, nor has it been subjected to previous survey or other archaeological study. Information provided by SCCIC indicates that 10 separate studies have been conducted within a half-mile of the project. These and other archaeological studies have resulted in the identification of 4 prehistoric resources within a half-mile radius, all of which are shell middens; no historic archaeological sites have been recorded. Similarly, no properties listed on the California State Historic Resources Inventory, National Register of Historic Places, California Historic Landmarks, California Points of Historic Interest, or City of Los Angeles Historic-Cultural Monuments are within a half-mile of the project property.

Intensive survey of the project area proved negative in that no prehistoric or historic resources were identified. An isolated unifacally retouched scraper of blackish quartzitic material was located in the center of the parcel during the survey, though no associated cultural remains were found, and as such this does not constitute a site. The absence of cultural resources is not particularly surprising, however, given the extent of recent historic disturbance evident and the property's topographic setting at the base of a steep slope, some distance from permanent potable water.

Potential Impacts and Management Recommendations

Implementation of the proposed project will involve construction of a parking lot and park site amenities. Demolition of the existing paving and construction of the new facilities and landscaping will necessitate grading and other landform disturbances that can adversely impact significant cultural resources. Record search results indicate that no cultural resources have been recorded within the project property, and intensive survey did not result in the identification of any prehistoric or historic cultural resources. In that historic disturbances related to construction of the previously paved area would have probably destroyed any extent cultural resources, it is concluded that implementation of the project will not result in adverse direct or indirect impacts to significant and California Register of Historic Places eligible cultural resources and mitigation measures are not deemed necessary.

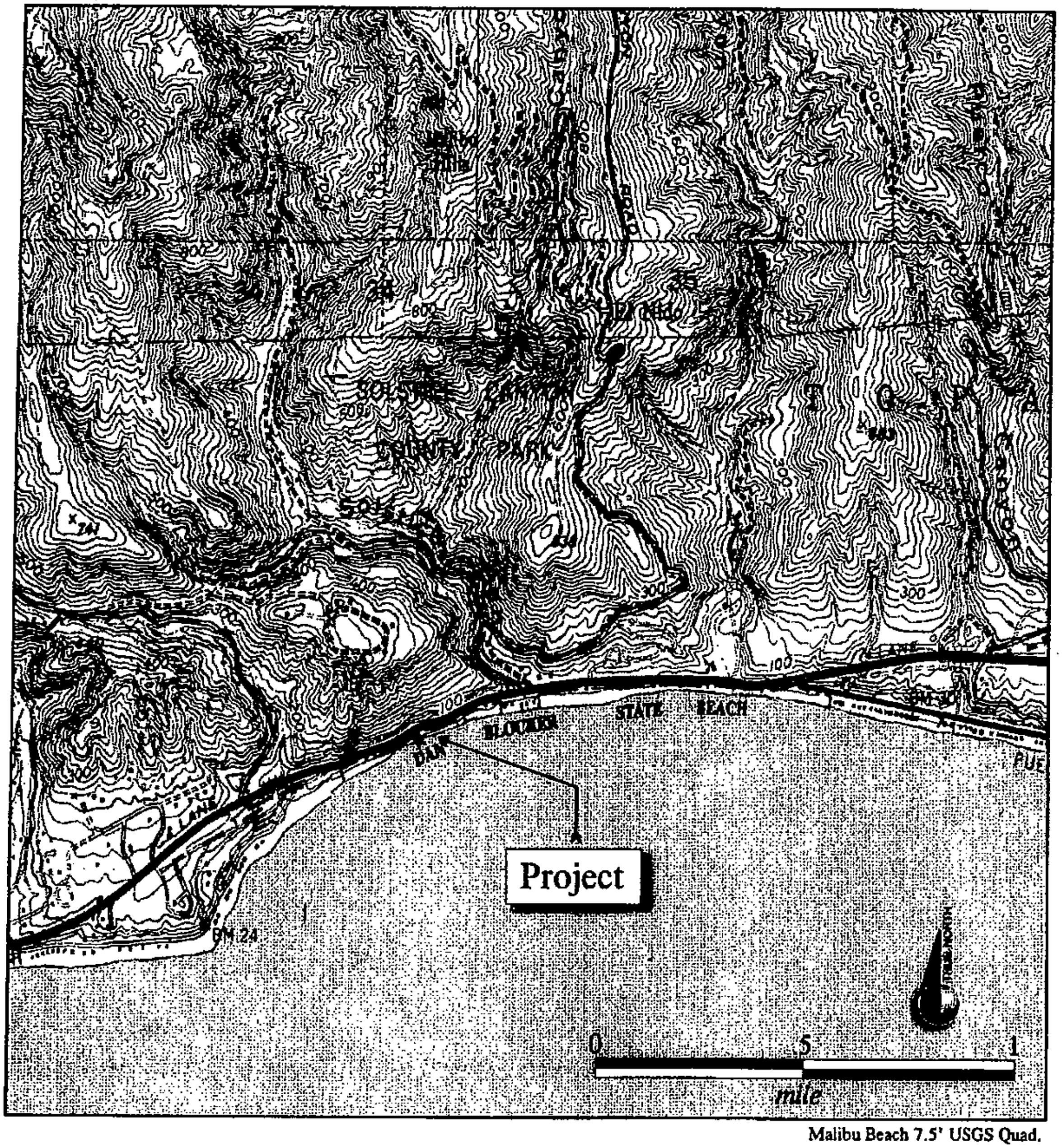
Should you have any questions regarding this study, please do not hesitate to call me.

Sincerely,

John R. Cook, RPA
Principal

Attachments: Figure 1 - U.S.G.S. quadrangle showing project location
Confidential Records Search

Attachment A



Malibu Beach 7.5' USGS Quad.

Figure 1. Dan Blocker Beach project location.

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December 6, 2000

Natasha Ali-Khan
David Evans and Associates, Inc.
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RE: Records Search for Dan BlockerBeach

Dear Ms. Ali-Khan,

As per your request received on December 6, we have conducted a records search for the above referenced project. This search included a review of all recorded historic and prehistoric archaeological sites within a half-mile radius of the project area, as well as a review of all known cultural resource reports. In addition, we have checked our file of historic maps, the California State Historic Resources Inventory, the National Register of Historic Places, the listing of California Historical Landmarks, and the California Points of Historical Interest. The following is a discussion of our findings for the project area.

Due to the sensitive nature of cultural resources, archaeological site locations are not released.

MALIBU BEACH QUADRANGLE

PREHISTORIC RESOURCES:

Four prehistoric sites (19-00210, 19-001569, 19-001570, 19-001571) have been identified within a half-mile radius of the project area.

HISTORIC RESOURCES:

No historic archaeological sites have been identified within a half-mile radius of the project area.

Inspection of our historic maps – Calabasas (1903) 15' series – indicated that there were some unimproved roads, and very few structures in place. Dry, Coral, Puerco, and Marie Canyons were in place.

The California State Historic Resources Inventory lists no properties that have been evaluated for historical significance within a half-mile radius of the project area.

The National Register of Historic Places lists no properties within a half-mile radius of the project area.

The California Historical Landmarks (1990) of the Office of Historic Preservation, California Department of Parks and Recreation, lists no landmarks within a half-mile radius of the project area.

The California Points of Historical Interest (1992), of the Office of Historic Preservation California Department of Parks and Recreation, lists no properties within a half-mile radius of the project area.

The listings of the City of Los Angeles Historic-Cultural Monuments indicated that there are no landmarks within a half-mile radius of the project area.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS:

Ten studies have been conducted within a half-mile radius of the project area. Of these, three is located within the project area. There are nineteen additional investigations located on the Malibu Beach 7.5' USGS quadrangle and are potentially within a half-mile radius of the project area. These reports are not mapped due to insufficient locational information.

<u>POINT DUME QUADRANGLE</u>

PREHISTORIC RESOURCES:

No prehistoric sites have been identified within a half-mile radius of the project area.

HISTORIC RESOURCES:

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Inspection of our historic maps – Calabasas (1903) 15' series – indicated that there were some unimproved roads, and very few structures in place. Dry, Coral, Puerco, and Marie Canyons were in place.

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The listings of the City of Los Angeles Historic-Cultural Monuments indicated that there are no landmarks within a half-mile radius of the project area.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS:

Four studies have been conducted within a half-mile radius of the project area. Of these, three is located within the project area. There are 23 additional investigations located on the Point Dume 7.5' USGS quadrangle and are potentially within a half-mile radius of the project area. These reports are not mapped due to insufficient locational information.

RECOMMENDATIONS

Our records indicate the proposed project area has not been subject to a Phase I archaeological survey and is located along what is considered the culturally sensitive coastal zone. Several archaeological sites are located within a one-half mile radius, therefore we recommend a Phase I archaeological survey be conducted by a professional archaeologist.

If you have any questions regarding our results or the recommendations presented herein, please feel free to contact our office at (714) 278-5395.

Invoices are mailed approximately two weeks after records searches are completed. This enables your firm to request further information under the same invoice number. **Please reference the invoice number listed below when making inquiries.** Requests made after invoicing will involve the preparation of a separate invoice with a $15.00 handling fee.

Sincerely,

Esther Won
Staff Archaeologist

Enclosures:

( ) Primary Number Explanation
( ) Site list -
(X) SIS list - 8 pages
( ) HRI -
( ) National Register Status Code - 4pages
( ) Invoice #9034

Chester King & Associates

ARCHAEOLOGICAL SITE RECORD

Permanent Trinomial: CA-LAn-1571 Supplement ☐

Temporary Number: Site 3- Solstice Park

Agency Designation: ______

Page 1 of 4

1. County: Los Angeles

2. USGS Quad: Malibu Beach (7.5') 1950 (15') ______ Photorevised ______

3. UTM Coordinates: Zone 11 / 338,850 Easting / 3,767,500 Northing

4. Township 18W Range 1S ___1/4 of ___1/4 of ___1/4 of ___1/4 of Section ___ Base (Mer.) SBM

5. Map Coordinates: 404 mmS 16 mmE (from NW corner of map) 6. Elevation 100 ft

7. Location: On the east side of Dry Creek at its confluence with Solstice Canyon. It is within the Solstice Canyon Park administered by the Mountains Conservancy and is immediately south of the paved entrance road.

8. Prehistoric x Historic ______ Protohistoric ______ 9. Site Description: : An open site containing shell. This site was observed on the ground surface and in the eroded bank of Solstice Canyon. The site is buried by 80 and more centemeters of soil.

10. Area: 18 m(length)x 10 m(width) 141 m2. Method of Determination pacing of area of

11. Depth: 20-50 cm cm Method of Determination observation of eroded creekbank

12. Features: none noted

13. Artifacts: ______

14. Non-Artifactual Constituents: Mytilus californiaus and Protothaca staminea shells

15. Date Recorded 4-30-89 16. Recorded By: Chester King

17. Affiliation and Address C. King & Associates, P.O. Box 826, Topanga CA 90290 (213) 455-3131

Panorama Form

Chester King & Associates

ARCHAEOLOGICAL SITE RECORD

Permanent Trinomial: LAn - 1571 mo. ____ yr. ____

Temporary Number: Site 3- Solstice Park

Agency Designation: ____

18. Human Remains: none noted

19. Site Integrity The site appears to be relatively undisturbed except for streambank erosion and slight disturbances caused by planting and road work.

20. Nearest Water (type, distance and direction): Solstice Canyon permanent stream adjacent.

21. Largest Body of Water within 1 km (type, distance and direction): Solstice Canyon permanent stream adjacent.

22. Vegetation Community (site vicinity): Alder and willow in Canyon bottom. Coastal Sage Scrub-Chaparral

23. Vegetation Community (on site): Live Oak, grasses, Purple Sage

References for above: Munz

24. Site Soil: Dark gray sandy loam with shell

25. Surrounding Soil: Brown clayey soil near the road. Stream gravels below.

26. Geology: Boulders and gravels under site, Conejo Volcanic outcrops and shale bedrock.

27 Landform: Stream terrace

28. Slope: slight

29. Exposure: south

30. Landowner(s) (and/or tenants) and Addresses: Mountains Conservancy Foundation, 3800 Solstice Canyon Road, Malibu CA 90265 (213) 456-7154.

31. Remarks: Site appears partly buried, much of site covered with vegetation.

32. References:

33. Name of Project: Survey of park entrance road widening

34. Type of investigation: surface inventory

35. Site Accession Number: none Curated At: ____

36. Photos: none Taken By: ____

37. Photo Accession Number: ____ On File At: ____

Chester King & Associates

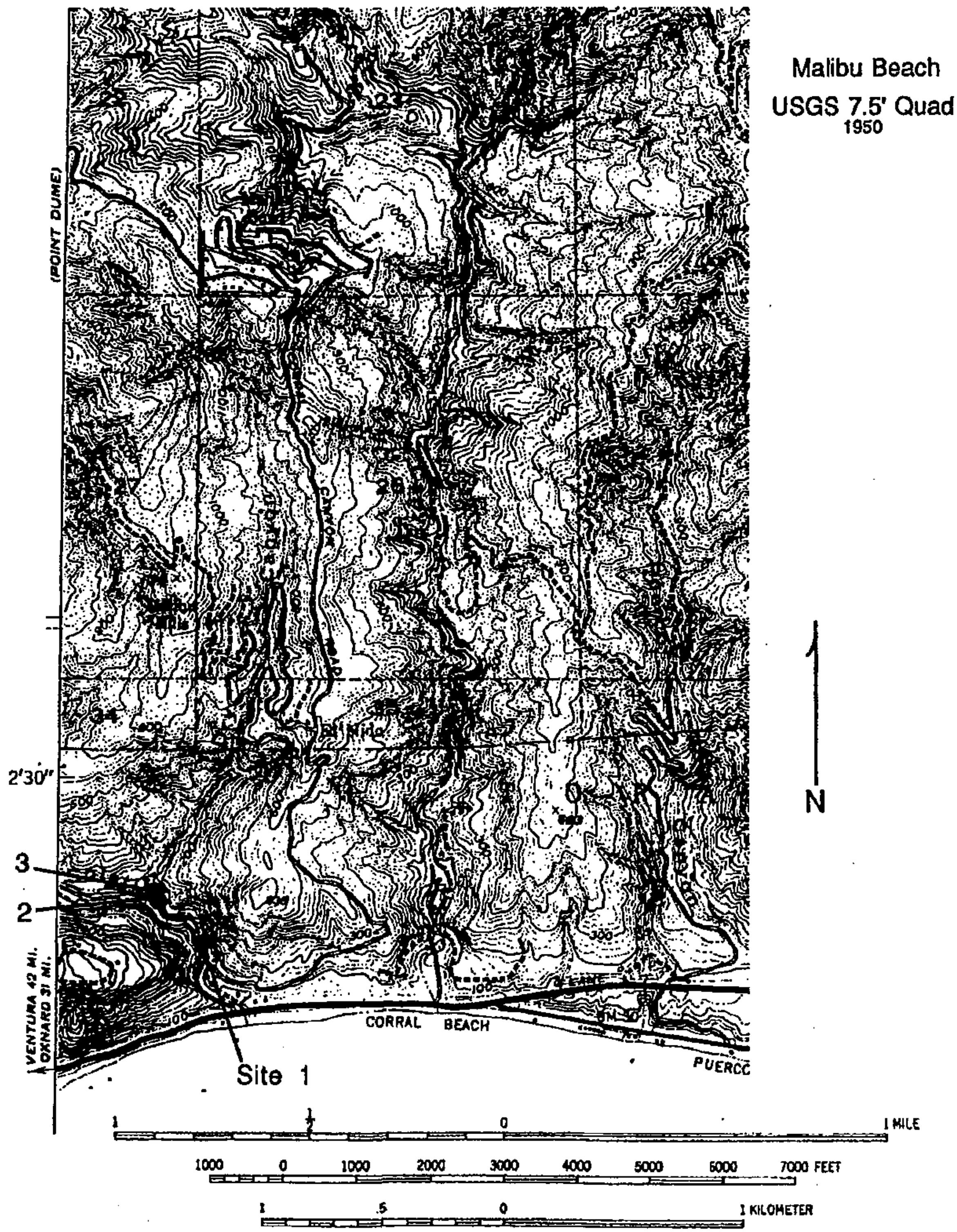
ARCHAEOLOGICAL SITE LOCATION MAP

Page 3 of 4

Permanent Trinomial: LAn-1571 mo. ____ yr. ____

Temporary Number: Site 3- Solstice Park

Agency Designation: ____



Panorama Form

Chester King & Associates

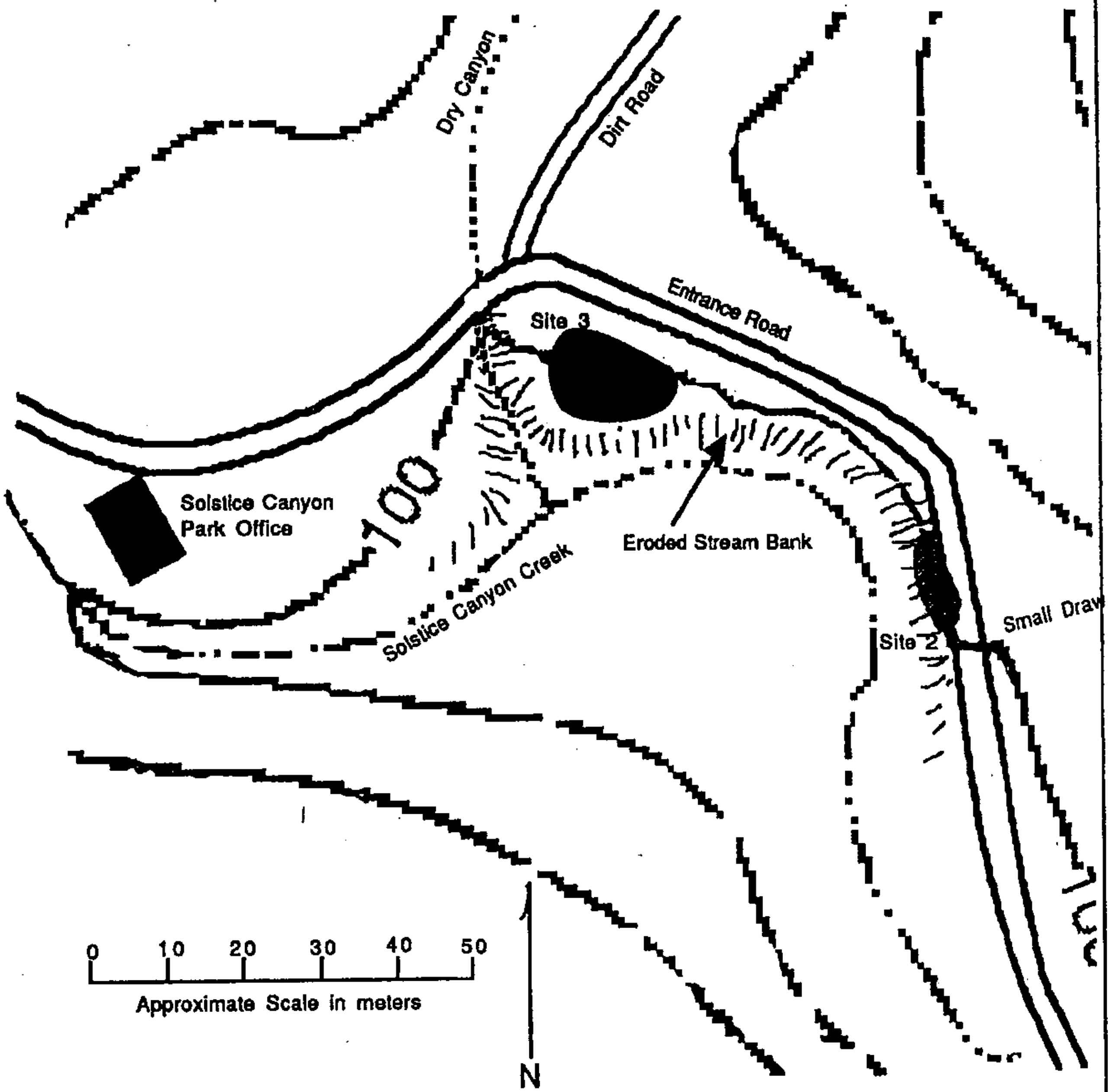
ARCHAEOLOGICAL SITE MAP

Page 4 of 4

Permanent Trinomial: LAn-1571 mo. ____ yr. ____

Temporary Number: Site 3- Solstice Park

Agency Designation: ____



Panorama Form

Chester King & Associates

ARCHAEOLOGICAL SITE RECORD

Page 1 of 4

Permanent Trinomial: CA-LAn-1570 Supplement ☐

Temporary Number: Site 2- Solstice Park

Agency Designation: ______

1. County: Los Angeles

2. USGS Quad: Malibu Beach (7.5') 1950 (15') ______ Photorevised ______

3. UTM Coordinates: Zone 11 / 338,890 Easting / 3,767,475 Northing

4. Township 18W Range 1S ___ 1/4 of ___ 1/4 of ___ 1/4 of ___ 1/4 of Section ___ Base (Mer.) SBM

5. Map Coordinates: 405 mmS 17 mmE (from NW corner of map) 6. Elevation 90 ft

7. Location: On the NE side of Solstice Canyon and the SW side of the road which follows the Canyon bottom to the office of the Mountains Conservancy. The site is approximately 300 meters upstream from Corral Canyon Road and 60 meters downstream from the confluence of Solstice Canyon and Dry Creek. It is apparently on the N side of the confluence of a small gully with Solstice Canyon. It is within Solstice Canyon Park administered by the Mountains Conservancy

8. Prehistoric x Historic ______ Protohistoric ______ 9. Site Description: : A buried shell midden exposed in creek bank. The site was identified in the eroded bank of the stream and most is covered by at least two meters of overburden some of which was possibly deposited during grading for the road.

10. Area: 6+ m(length)x unknow m(width) ______ m2. Method of Determination observation of eroded

11. Depth: 30 cm cm Method of Determination observation of eroded creekbank

12. Features: none noted

13. Artifacts: ______

14. Non-Artifactual Constituents: Mytilus california shells

15. Date Recorded 4-30-89 16. Recorded By: Chester King

17. Affiliation and Address C. King & Associates, P.O. Box 826, Topanga CA 90290 (213) 455-3131

Panorama Form

Chester King & Associates

ARCHAEOLOGICAL SITE RECORD

Page 2 of 4

Permanent Trinomial: LAn-1570 mo.____ yr.____

Temporary Number: Site 2- Solstice Park

Agency Designation: ____

18. Human Remains: none noted

19. Site Integrity An unknown portion of the site has been washed away. The remaining portion of the site is buried and probably well preserved.

20. Nearest Water (type, distance and direction): Solstice Canyon permanent stream adjacent.

21. Largest Body of Water within 1 km (type, distance and direction): Solstice Canyon permanent stream adjacent.

22. Vegetation Community (site vicinity): Alder and willow in Canyon bottom. Coastal Sage Scrub

23. Vegetation Community (on site): -road and fill on site

References for above: Munz

24. Site Soil: Light brown clayey matrix with a relatively high density of mussel shells.

25. Surrounding Soil: Yellowish brown soil above, boulders and stream gravels below.

26. Geology: Boulders and gravels under site, Conejo Volcanic outcrops and shale bedrock.

27 Landform: Stream terrace

28. Slope: slight

29. Exposure: SW

30. Landowner(s) (and/or tenants) and Addresses: Mountains Conservancy Foundation, 3800 Solstice Canyon Road, Malibu CA 90265 (213) 456-7154.

31. Remarks: Burial by overburden greatly limited obsrevation of this site.

32. References:

33. Name of Project: Survey of park entrance road widening

34. Type of investigation: surface inventory

35. Site Accession Number: none Curated At: ____

36. Photos: none Taken By: ____

37. Photo Accession Number: ____ On File At: ____

Panorama Form

Chester King & Associates

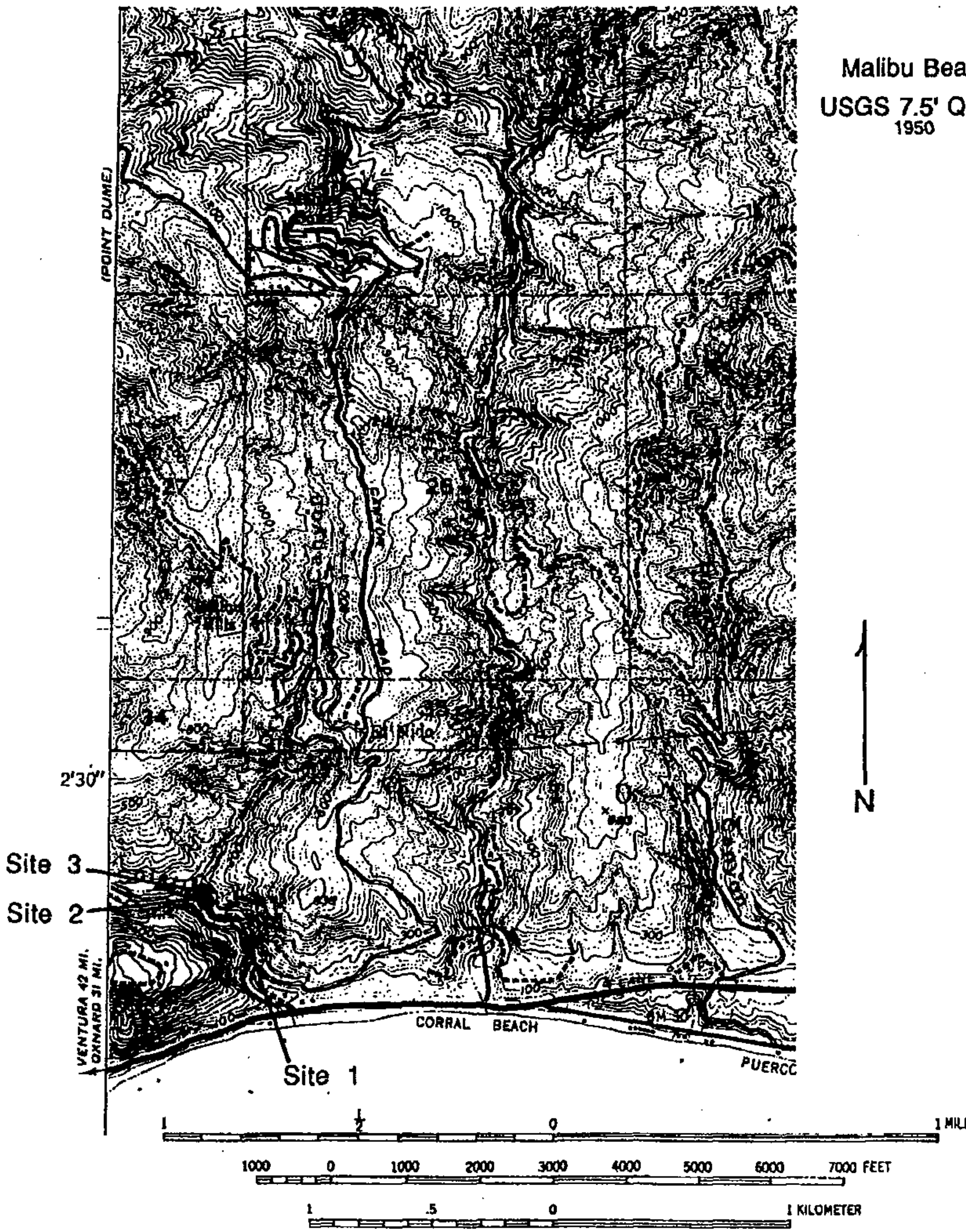
ARCHAEOLOGICAL SITE LOCATION MAP

Page 3 of 4

Permanent Trinomial: LAn-1570 mo. ____ yr. ____

Temporary Number: Site 2- Solstice Park

Agency Designation: ______________________



Malibu Beach
USGS 7.5' Quad
1950

N

Chester King & Associates

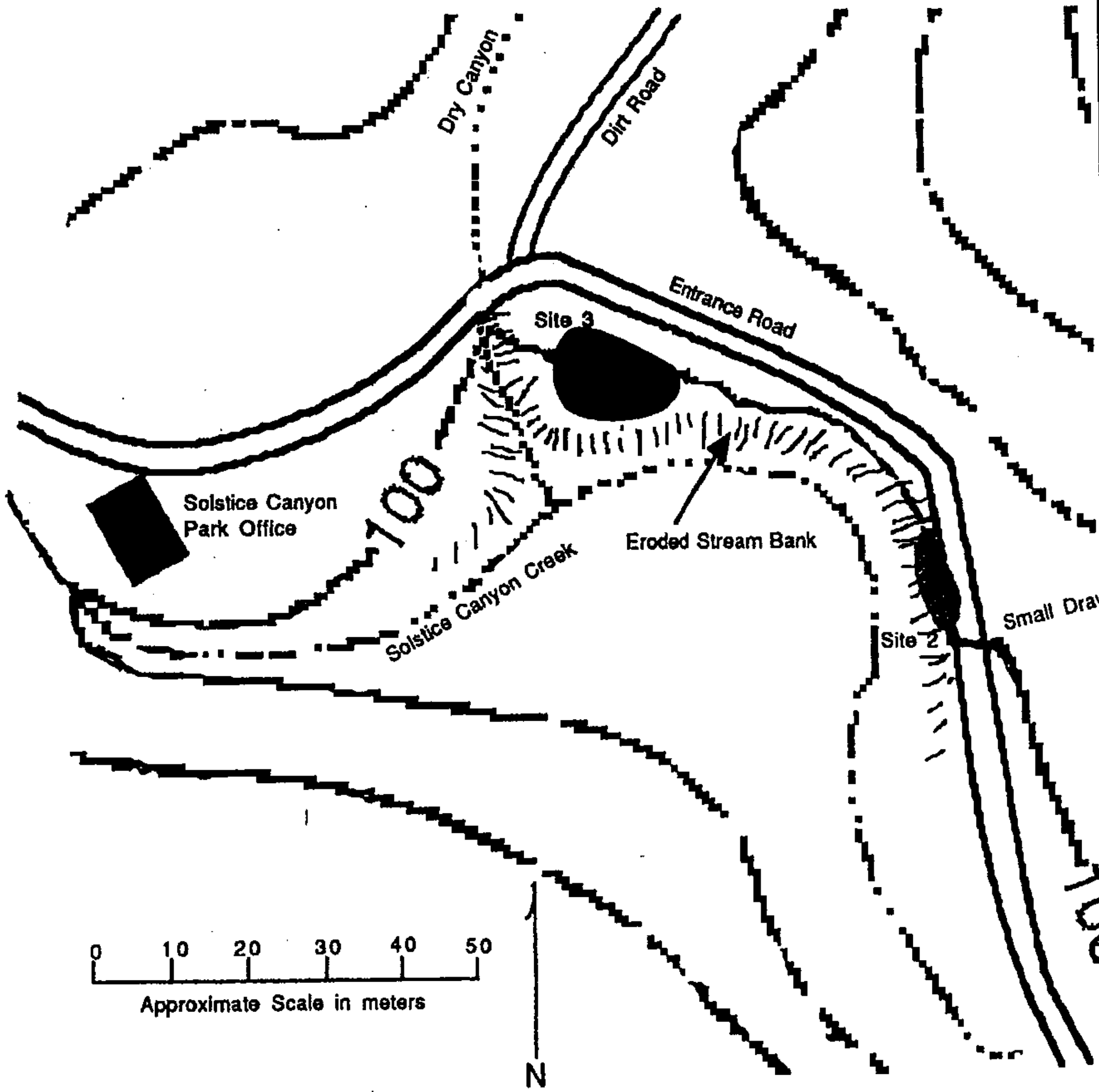
ARCHAEOLOGICAL SITE MAP

Page 4 of 4

Permanent Trinomial: LAn-1570 mo. ____ yr. ____

Temporary Number: Site 2- Solstice Park

Agency Designation: ______



Chester King & Associates

ARCHAEOLOGICAL SITE RECORD

Permanent Trinomial: CA - LAn - 1569 Supplement ☐

Temporary Number: Site 1- Solstice Park

Agency Designation: ____

Page 1 of 4

1. County: Los Angeles
2. USGS Quad: Malibu Beach (7.5') 1950 (15') ____ Photorevised ____
3. UTM Coordinates: Zone 11 / 339,080 Easting / 3,767,225 Northing
4. Township 18W Range 1S ____ 1/4 of ____ 1/4 of ____ 1/4 of ____ 1/4 of Section ____ Base (Mer.) SBM
5. Map Coordinates: 413 mmS 26 mmE (from NW corner of map) 6. Elevation 60 ft
7. Location: This site is evident in the eroded bank of the easternmost channel on the east side of Solstice Canyon. It is approximately 25 meters ENE of the Solstice Canyon Park entrance gate and is within the Solstice Canyon Park administered by the Mountains Conservancy.
8. Prehistoric x Historic ____ Protohistoric ____ 9. Site Description: A buried midden with sparse mussel shell and one piece of fire altered rock exposed in creek bank
10. Area: 2+? m(length)x unknow m(width) ____ m2. Method of Determination observation of eroded
11. Depth: 10-30 cm cm Method of Determination observation of eroded creekbank
12. Features: none noted
13. Artifacts: 1 fire altered rock
14. Non-Artifactual Constituents: Mytilus california shells
15. Date Recorded 4-30-89 16. Recorded By: Chester King
17. Affiliation and Address C. King & Associates, P.O. Box 826, Topanga CA 90290 (213) 455-3131

Chester King & Associates

ARCHAEOLOGICAL SITE RECORD

Permanent Trinomial: LAn - 1569 mo. ____ yr. ____

Temporary Number: Site 1- Solstice Park

Agency Designation: ____

18. Human Remains: none noted

19. Site Integrity An unknown portion of the site has been washed away. The remaining portion of the site is buried and probably well preserved.

20. Nearest Water (type, distance and direction): Solstice Canyon permanent stream adjacent.

21. Largest Body of Water within 1 km (type, distance and direction): Solstice Canyon permanent stream adjacent.

22. Vegetation Community (site vicinity): Alder and willow in Canyon bottom. Coastal sage scrub above site.

23. Vegetation Community (on site): Sage

References for above: Munz

24. Site Soil: Dark gray brown clayey loam.

25. Surrounding Soil: Gray and Yellowish brown soil also boulders and stream gravels.

26. Geology: Boulders and gravels under site. Shale bedrock.

27 Landform: Stream terrace

28. Slope: slight

29. Exposure: SW

30. Landowner(s) (and/or tenants) and Addresses: Mountains Conservancy Foundation, 3800 Solstice Canyon Road, Malibu CA 90265 (213) 456-7154.

31. Remarks: Burial by overburden greatly limited obsrevation of this site.

32. References:

33. Name of Project: Survey of park entrance road widening

34. Type of investigation: surface inventory

35. Site Accession Number: none

Curated At:

36. Photos: none

Taken By:

37. Photo Accession Number:

On File At:

Chester King & Associates

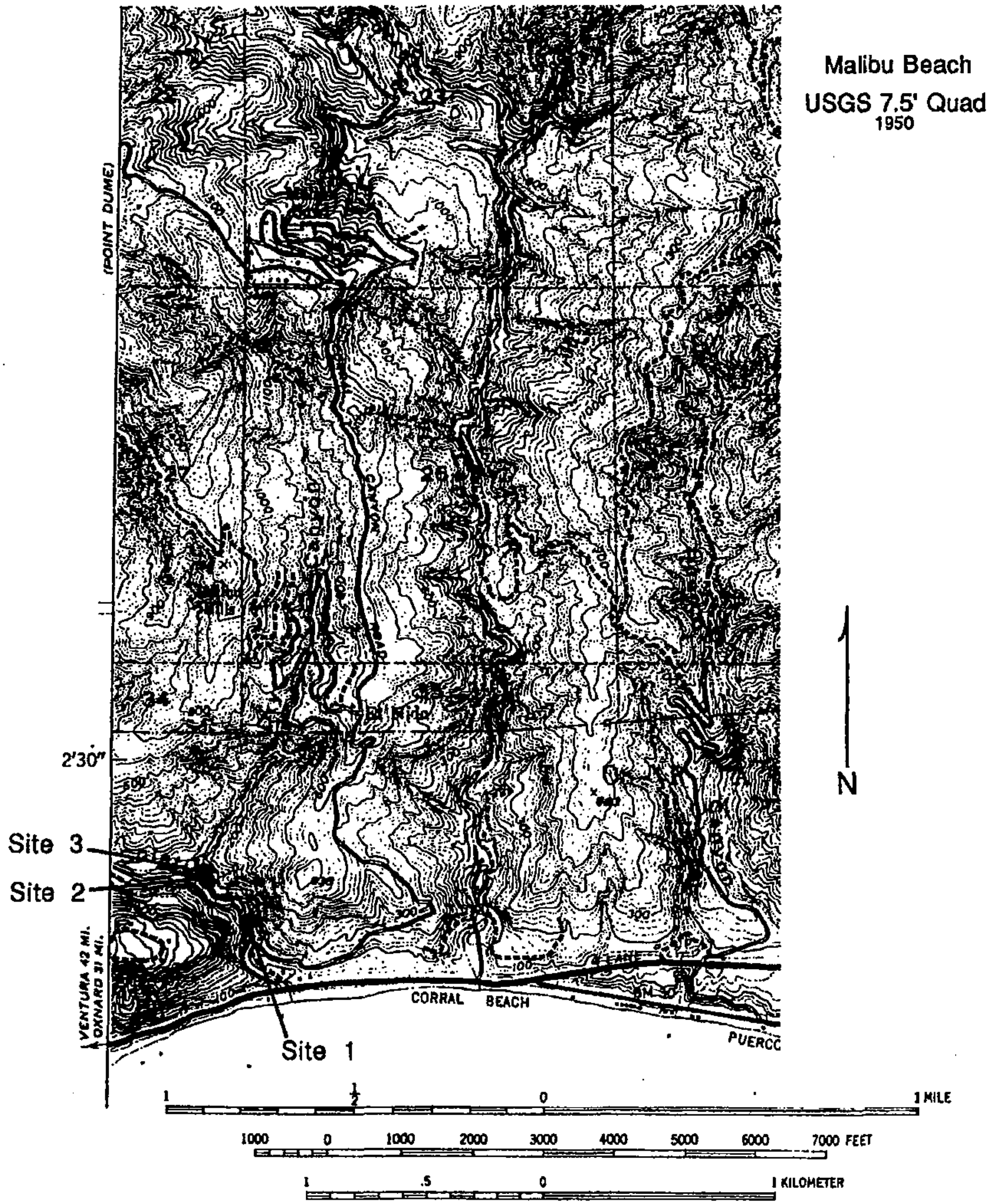
ARCHAEOLOGICAL SITE LOCATION MAP

Page 3 of 4

Permanent Trinomial: LAn-1569 mo. ____ yr. ____

Temporary Number: Site 1 - Solstice Park

Agency Designation: ____



Panorama Form

Chester King & Associates

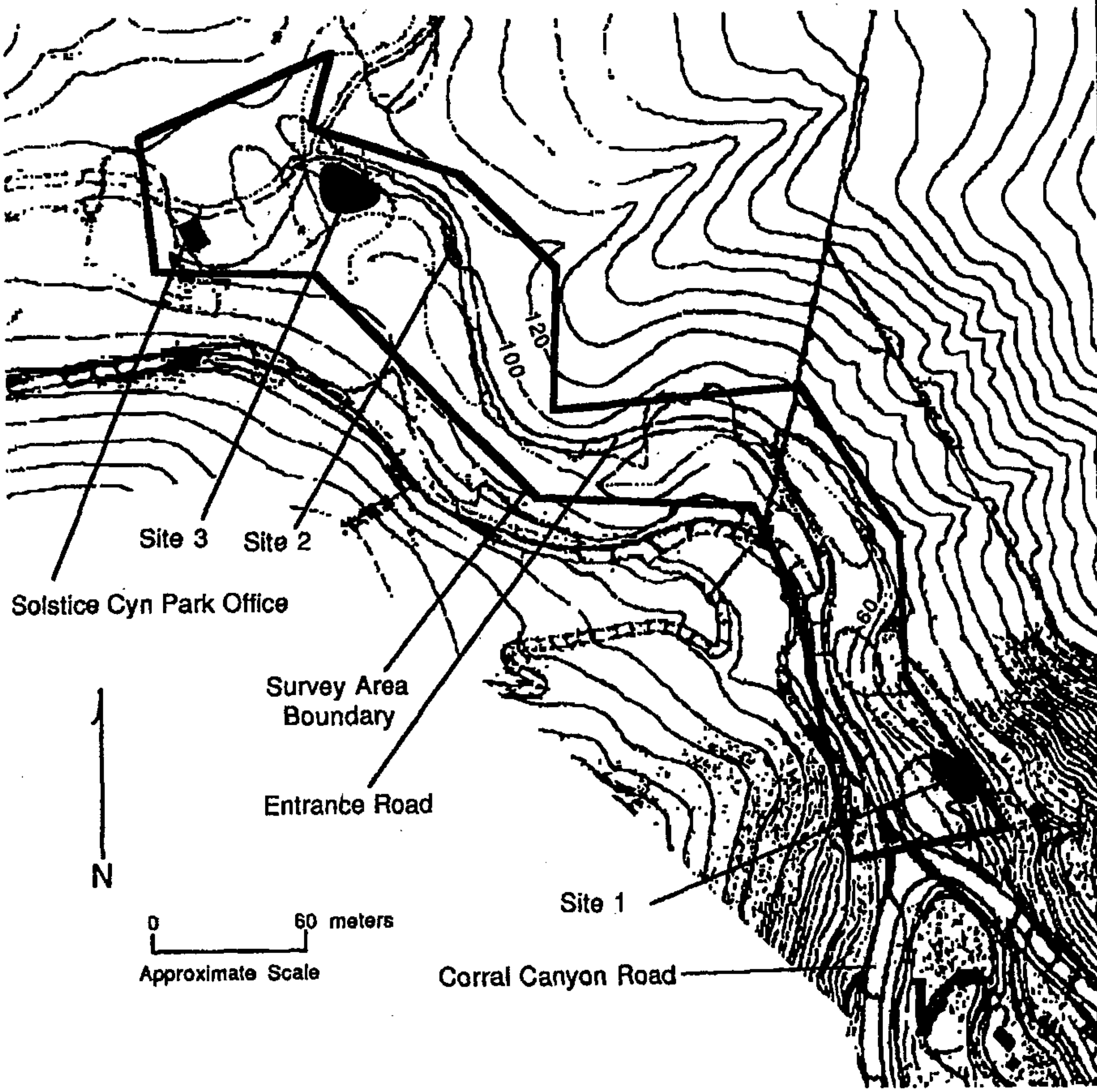
ARCHAEOLOGICAL SITE MAP

Page 4 of 4

Permanent Trinomial: LAn-1569 mo. ____ yr. ____

Temporary Number: Site 1- Solstice Park

Agency Designation: ____



SOLSTICE CANYON ENTRANCE ROAD AND ARCHAEOLOGICAL SITES

Panorama Form

11,339210 E.
3767080 N.
Suppl.

University of California

ARCHAEOLOGICAL SITE SURVEY RECORD

U.S.G.S. 7.5 min (1950)

1. Site LAn-210 2. Map Malibu Beach 3. County Los Angeles

4. Twp. 1 S Range 18 W; ______ 1/4 of ______ 1/4 of Sec. ______

5. Location ______

______ 6. On contour elevation ______

7. Previous designations for site Solstice Cyn Site

8. Owner A.S. DOWNS 9. Address 26039 PCH, MALIBU

10. Previous owners, dates ______ ph. GL6-2476, EX3-79..

11. Present tenant ______

12. Attitude toward excavation ______

13. Description of site ______

14. Area ______ 15. Depth ______ 16. Height ______

17. Vegetation ______ 18. Nearest water ______

19. Soil of site ______ 20. Surrounding soil type ______

21. Previous excavation ______

22. Cultivation ______ 23. Erosion ______

24. Buildings, roads, etc. ______

25. Possibility of destruction ______

26. House pits ______

27. Other features ______

28. Burials ______

29. Artifacts Most of site destroyed in 30's small area 25 X 20 feet around shed may be relatively undisturbed. This area is ca. 100 yrds up the Cyn. from P.C.H on the

30. Remarks east bank. This area may not have been connected with site at mouth (not continuous midden)

31. Published references ______

32. Accession No. ______ 33. Sketch map ______

34. Date April 1973 35. Recorded by ______ 36. Photos ______

Chert and quartzite flakes scattered in
bulldozed area. There is approximately
~~100~~ 25 x 40 feet of site remaining most of
it has been bulldozed almost to sterile.

body frag of metate and 3 chert projectile
were found in [illegible] east part of site

monterey chert proj. point
Surface of road

normal size

LAN 210

incorrectly located - actually at Rt 1985 mouth of Solstice Canyon

State of California – The Resources Agency 11/339210E. 3767080N.
DEPARTMENT OF PARKS AND RECREATION

MAPPED

ARCHEOLOGICAL SITE SURVEY RECORD

University of California, Los Angeles Regional Office

LAn 210

SITE NO. CA- LAn -000~~1111~~

County Los Angeles

1. Previous Site Designation ______ 2. Temporary Field No. ______
3. USGS Quad Malibu 7½' X 15' ____ Year 1967 photo revised
4. UTM Coordinates 11/E340060/N3766970 ✓
5. Twp. 1 S Range 18 W ; ____ ¼ of ____ ¼ of Sec. ____
6. Location Corral Beach, West of the Pacific Coast Hwy, on the beach, approximately 3 miles West of the Malibu Lagoon.
7. Contour ______ 8. Owner & Address ______
9. Prehistoric X Ethnographic ____ Historic ____ 10. Site Description An inland stream, acqueduct drainage, approximately 10 yards across. Two 15-18' bluffs on either side of the drainage, and a beach outcrop. ((see attached report))
11. Area ____ x ____ meters, ______ square meters. 12. Depth of Midden ______
13. Site Vegetation grass Surrounding Vegetation grass, ~~some~~ iceplants
14. Location & Proximity of Water immediately adjacent to the site.
15. Site Soil shell midden Surrounding Soil clay, sand, & building cong.
16. Previous Excavation doubtful- no recorded reports for this site location.
17. Site Disturbance beach and stream erosion, public use, possible PCH const.
18. Destruction Possibility imminent from erosion and public use.
19. Features exposed middens
20. Burials human flange- surface find- identified by G. Kennedy, PH.D, UCLA
21. Artifacts black chert, milling stone with traces of asphaltum present, bone, mano fragments, a clear piece like mica or gypsum, not quartz.
22. Faunal Remains large quanties of shell present. Some animal vertebrae also present.
23. Comments unable to ascertain the definite depth of the midden. a sand terrace obstructs the bottom level of the midden. Also see L-1653 WKAY report
24. Accession No. ______ 25. Sketch Map X by J.S.E where ______
26. Date Recorded 2/22/81 27. Recorded By Fred Ghiradelli
28. Photo Roll No. 89409 Frame No. 3-13 Film Type(s) ______ Taken By Fred Ghiradelli

Kodachrome 64, Color Slides

DPR 422 (Rev. 9/76)

LAn 210

Site No. LAn-111

SITE STATUS:

% Destroyed _____ How __________ Test Excavated ______________________ %, if known.

National Register Status; Listed _____ Potential _____ No Determination _____ Nominated _____ Ineligible _____

State Historical Landmark (No.) __________ Point of Historical Interest ____________________

SPECIAL ATTRIBUTES (Place an X in only those spaces which pertain to the site)

Midden/Habitation Debris X, Lithic and/or Ceramic Scatter X

Bedrock Mortars/Milling Surfaces X, Petroglyphs/Pictographs _____, Stone Features _______

Burials _______, Caches _______, Hearths/Roasting Pits _______, Housepits _______, Structure Remains _______,

Underwater _______, Open Air X, Rockshelter _______, Cave _______, Quarry _______, Trails _______

REMARKS See sketch map and summary included with this report.

Published References None known

SKETCH LOCATION MAP (Include permanent reference markers, North Arrow, and Scale)
(sketch details from U.S.G.S. map or provide copy of topo)

SKETCH SITE MAP (Same criteria as above)

515

702

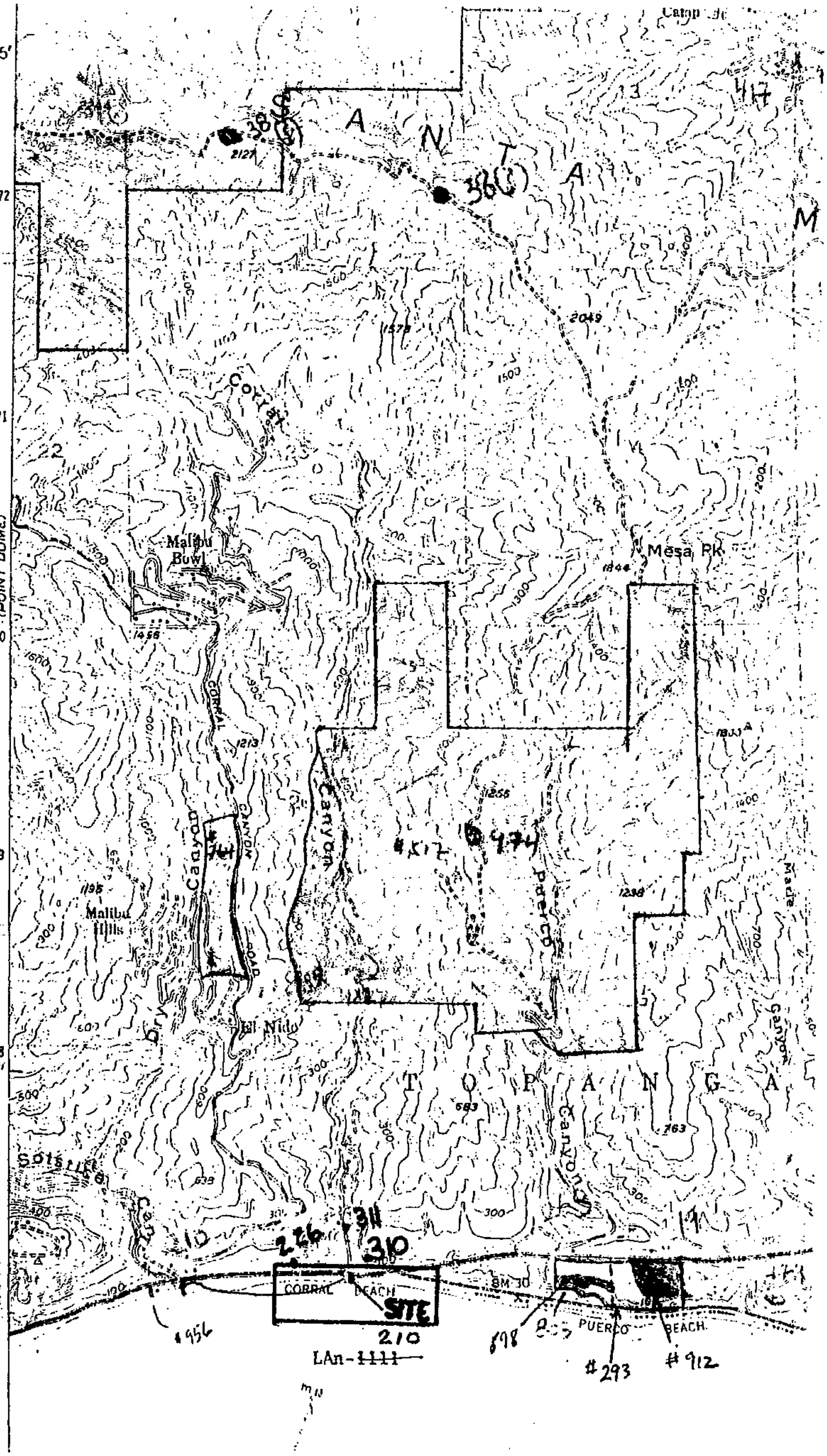
#337

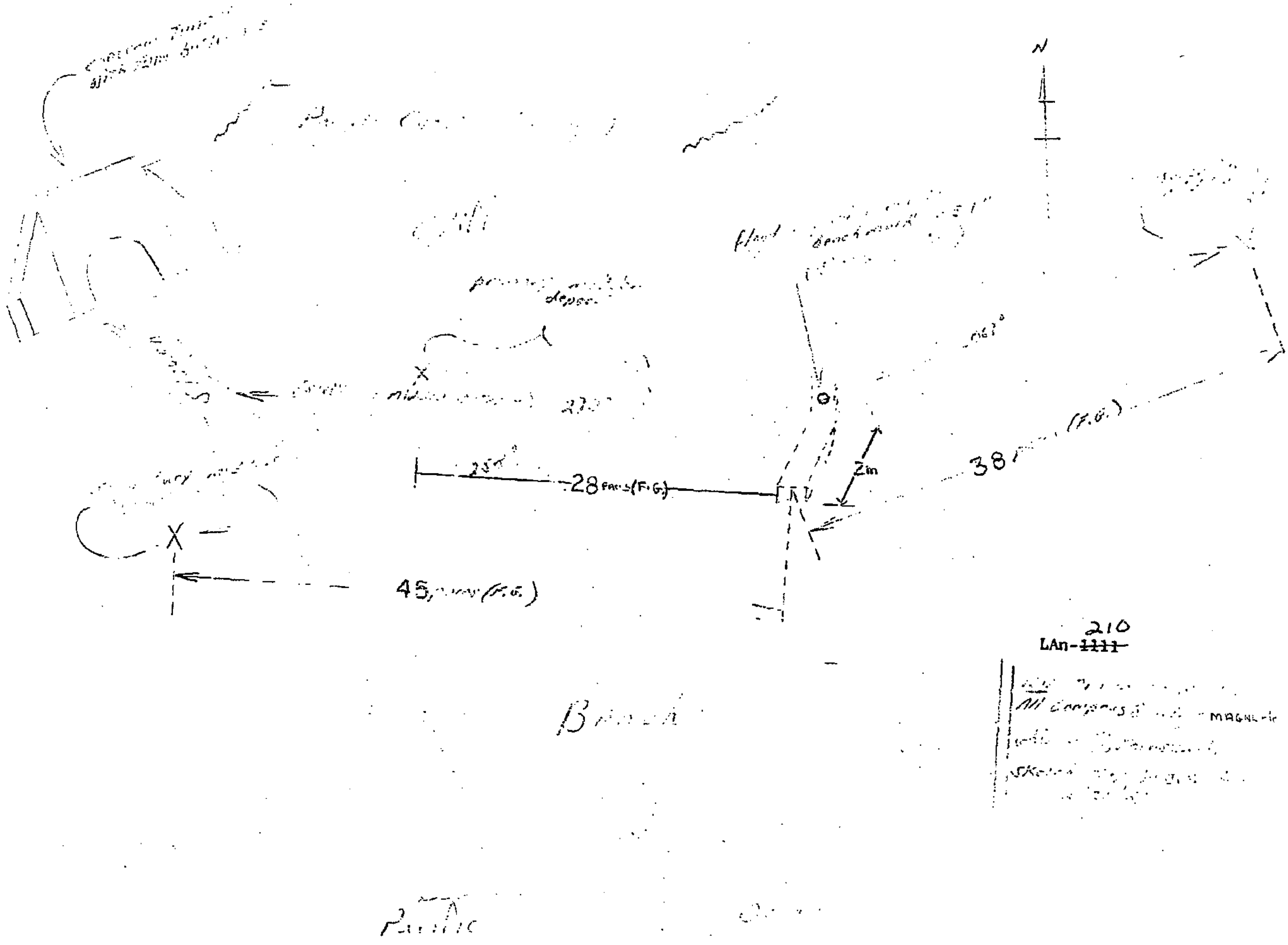
#764
#517
#10B

#743
#740
#10
#715
#701

#738
#735

#293
#723
#790





LAn-~~1111~~ 210

The following is a summary of a site report which was completed on 2/22/81. This summary is a description of the site.

The primary midden deposit (see sketch map) varies in thickness and length. It is difficult to determine its exact depth or boundaries as it is intermittent. The middenaceous earth is very black and rich and stands out considerably from the surrounding soil. The thickest lens measured app. 46cm. in depth. Other lenses of 30cm. and 7cm. were also observed. The 30cm. lens showed the heaviest concentration of shell. This level rested on a small sand terrace at the bottom level of the 18' bluff the site is primarily located on. The midden extends at least another 7cm. below the surface. Two additional secondary deposits were found. The secondary deposit, "B", seems to be the remnant of a beach terrace. It measures 110cm. in height and is all midden. The secondary deposit, "A", is located in the middle of a bank across from the primary deposit. Its depth or size could not be determined. As we were surveying the site, the local life guard approached us and from him we learned that other sites in the area were present. He confessed in passing that he was a, "collector" of indian artifacts and that he had a rather sizeable collection.

He said that he lived in one of the canyons not far from the Corral Beach Site. He seemed to be sympathetic to our endeavors as archaeologists and offered to assist us in the future if he could. He could prove to be an excellent source for determining the location of other sites in the area. His name and phone number will be included at the end of this summary.

Further excavation of this site would prove difficult, not just because of the political situation, but because the site is located directly in the center of a popular beach. In the short span of time we were there, we were approached by several people inquiring as to what we were doing. The amount of attention that we drew was very uncomfortable and we numbered only three. To show up there with a field class would be even worse. It would be reasonable to say that if the site was excavated, it would have to be done in one or two days with people staying on the site to avoid "collectors" from making off with samples. Surface collections were made and the materials are now located in the Archaeological Collections, Haines Hall, of the UCLA Campus.

The following names were obtained:

Scott W. Hubbell
(213) 457-4308
Corral Beach Life Guard

John Patrick Kearney
(213) 545-4502
County Environmentalist
Supr. of Life Guards

210
LAn-~~1111~~

We were also informed by Mr. Hubbell that if we wanted to do any further investigation or excavation of this site, we would have to obtain a permit from Mr. Kearney.

Participating in this survey with me were Mr. J.S.Eisenlauer, and Mr. P. Farnsworth, both graduate students in the Archaeology Dept. at UCLA.

Fred Ghiradelli

210
LAn-~~1111~~

LAn 1111
has been
retired
LAN 210

INSTITUTE OF ARCHAEOLOGY
405 HILGARD AVENUE
LOS ANGELES, CALIFORNIA 90024

DEAR SUSAN   OCT 1 1985

This letter is to inform you that an error has been made in the recordation of site CA-LAN-0001111. This site already has a trinomial (CA-LAN-210).The site record filed by Mr. Ghiradelli has erroneously placed the site at the mouth of Corral Creek, however; the description of the site as well as the sketch of the concrete tunnel with twin buttresses is clearly referring to LAN 210 located at the mouth of Solstice Creek. In short, there is no LAN 000111, it has been mistakenly identified as a new site. This error should be rectified in your records.

Sincerely yours
John F Romani
John Romani
Caltrans Dist 7
Archaeologist

P.S

Leonard (1970) published
a radio carbon date for LAN 210

University of California

MAPPED

ARCHAEOLOGICAL SITE SURVEY RECORD

1. Site LAn 210 2. Map ~~Calabasas~~ Malibu Beach 7.5' 3. County L.A.

4. Twp. 1 S Range 18W ; — 1/4 of — 1/4 of Sec. —

5. Location ~~Highway 101 A st mouth of Solstice Canyon.~~

6. On contour elevation c. 50'

7. Previous designations for site LA-28 (Solstice Canyon)

8. Owner Government 9. Address

10. Previous owners, dates

11. Present tenant

12. Attitude toward excavation

13. Description of site Burial; shell midden.

14. Area 15. Depth 16. Height

17. Vegetation 18. Nearest water

19. Soil of site 20. Surrounding soil type

21. Previous excavation

22. Cultivation 23. Erosion

24. Buildings, roads, etc.

25. Possibility of destruction Probably destroyed.

26. House pits

27. Other features

28. Burials Yes

29. Artifacts Shell; food remains. Points; shell beads and ornaments. Bowls; stone beads.

30. Remarks "This site was visited 12-28-53. For all practical purposes it is destroyed. Som midden remains between the highway and the beach but it has been badly disturbed bb road building operations and mos of it is under overburden up to 10 feet."--Hal Eberhart

31. Published reference Burnett, E.K.: "Inlaid Stone and Bone Artifacts from Southern Calif." Museum of the American Indian, Heye Foundation. Contributions 13. 1944.

32. Accession No Heye Museum 33. ~~Sketch map~~

34. Date 12-11-50 (Eberhart) 35. Recorded by 36. Photos

Appendix E – Geotechnical Reconnaissance

Appendix II. –
Notice of Intent and Proof of Publication (2012)

COUNTY OF LOS ANGELES

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION

DAN BLOCKER BEACH PROJECT
MALIBU, CALIFORNIA

The County of Los Angeles proposes to develop a portion of Dan Blocker Beach, located at 26000 Pacific Coast Highway in Malibu, just west of the Corral Canyon and PCH intersection. The project proposes improvements to 1 of the 4 non-contiguous parcels of Dan Blocker Beach. Improvements consist of a metered parking area accommodating 15 vehicles, ADA beach access ramp, and park site amenities (bench seating, drinking fountains, trash receptacles, handrailing, a walkway and landscaped areas). Improvements may also include either 1) picnic tables accompanied by restroom facilities or 2) a telescope viewing area with more bench seating. Approximately 1/3 of the 1.92 acre site would be developed with the proposed project. The purpose of the project is to meet the public demand for beach access and parking.

An Initial Study and Mitigated Negative Declaration have been prepared pursuant to the requirements of the California Environmental Quality Act to assess the proposed project impacts on the environment. Appropriate mitigation measures have been included in the project in order to minimize the environmental impacts.

Copies of the Initial Study and Mitigated Negative Declaration are available for public review at the following locations:

County of Los Angeles
Malibu Branch Library
23519 West Civic Center Way
Malibu, CA 90265
M-F, 10am to 5pm

County of Los Angeles,
Department of Public Works
Project Management Division I
900 South Fremont Avenue
Alhambra, CA 91803
M-Th, 6:45am to 5:30pm

The 30-day review period will begin on October 18, 2010 and will end on November 16, 2010. Comments on the Initial Study and Mitigated Negative Declaration must be submitted in writing no later than November 16, 2010 at 5:30 p.m. Please address all written comments to:

Mr. Gil Garcia, P.E.
County of Los Angeles
Department of Public Works
Project Management Division I
900 South Fremont Avenue
Alhambra, CA 91803-1331
Fax (626)979-5320
Email: ggarcia@dpw.lacounty.gov

The Final Mitigated Negative Declaration will incorporate responses to written comments received during the public review period, and will be considered by the Board of Supervisors for approval of the project.

LOS ANGELES COUNTY
PUBLIC WORKS DEPARTMENT
DELIVERY ORDER

ORDER NUMBER	AWARD DATE
DORQ-PW-11803565-1	10/12/10

BILL TO:	ALL TERMS AND CONDITIONS IN THE SOLICITATION ARE PART OF THIS ORDER AS IF FULLY REPRODUCED HEREIN.
PUBLIC WORKS DEPARTMENT BILLING ADDRESS P.O. BOX 7508 ATTN. ACCOUNTS PAYABLE ALHAMBRA CA 91802-7508	ADDRESS ALL INQUIRIES AND CORRESPONDENCE TO: Contact: Jeanie Williams Phone: 626-458-7342 Email: jbwilliams@dpw.lacounty.gov
VENDOR NAME,STREET,CITY,STATE,ZIP CODE: METROPOLITAN NEWS COMPANY 210 S. SPRING ST. LOS ANGELES CA 90012-3710	SHIP FOB DESTINATION TO:(UNLESS SPECIFIED ELSEWHERE) PUBLIC WORKS DEPARTMENT 900 S. FREMONT AVE. ALHAMBRA CA 91803 PROCUREMENT FOLDER : 201153
	CONTACT FOR DELIVERY INSTRUCTIONS (NAME, TELEPHONE) Project Management Division I

DELIVERY DATE	FOB POINT	AGENCY REQ. NUMBER	CONTRACT NUMBER	TOTAL AMOUNT OF ORDER
10/14/10	FOB Destination, Freight Prepaid and Allowed	LEGAL A	MA-IS-43795-6	$430.20

DATE PRINTED	VENDOR NO.	PROMPT PAYMENT TERMS	TERM 1	TERM 2	TERM 3	TERM 4
10/12/2010	006662		DISCOUNT: 0.00 DAYS: 30	DISCOUNT: DAYS: 0	DISCOUNT: DAYS: 0	DISCOUNT: DAYS: 0

LINE NO.	COMMODITY/SERVICE DESCRIPTION	QUANTITY	UOM	UNIT PRICE	EXTENDED AMOUNT
	NOTICE TO VENDOR: ALL ITEMS LISTED ON VENDOR PACKING SLIPS AND INVOICES MUST REFLECT THE CORRESPONDING PURCHASE ORDER COMMODITY LINE NUMBER. ALSO, THE ORDER NUMBER MUST BE REFERENCED ON ALL PACKING SLIPS AND INVOICES.				
1	COMMODITY CODE: 915-71-00-046375	2.000	DAY	$ 195.990	$ 391.98
	SUPPLIER PART NO:				
	SALES TAX AMOUNT:				$ 38.22
	DESCRIPTION: Publish initial advertisement for Notice of Intent to adopt Mitigated Negative Declaration for Dan Blocker Beach project in Malibu Times on October 21, 2010, and October 28, 2010. Bill to PCA P77367AC.				
	ADDITIONAL SHIPPING INFORMATION :				

COUNTY OF LOS ANGELES

County of Los Angeles NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION Dan Blocker Beach Project Malibu California NOTICE IS HEREBY GIVEN that the County of Los Angeles is proposing to adopt a Mitigated Negative Declaration in accordance with the California Environmental Quality Act for the Dan Blocker Beach Project. The proposed project would include the construction of an onsite metered parking area accommodating 15 vehicles, beach access in the form of an ADA ramp, and park site amenities (bench seating, drinking fountains, trash receptacles, handrailing, a walkway and landscaped areas). Park site amenities may optionally include picnic tables accompanied by restroom facilities. The project site is located on approximately 1.92 acres of bluff top at the central western portion of the 11.1-acre Dan Blocker Beach, just west of the Corral Canyon and Pacific Coast Highway intersection. The Initial Study/Mitigated Negative Declaration can be reviewed at the Los Angeles County Malibu Branch Library, 23519 West Civic Center Way, Malibu, CA 90265 M-F 10am to 5pm, or at the Los Angeles County Department of Public Works, 900 South Fremont Avenue, 5th Floor, Alhambra, CA 91803, M-Th 6:30am to 5:30pm. Comments on the Initial Study/Mitigated Negative Declaration must be submitted in writing no later than November 16, 2010 at 5:30 pm to Los Angeles County Department of Public Works, ATTN: Gil Garcia, P.E., 900 South Fremont Avenue, Alhambra, CA 91803, FAX (626)979-5320.

Appendix III. –
Onsite Wastewater System
Feasibility Report and Plans (2012)

COUNTY OF LOS ANGELES – DEPARTMENT OF HEALTH SERVICES

FEASIBILITY REPORT

for an

ON-SITE SEWAGE DISPOSAL SYSTEM

at

DAN BLOCKER STATE BEACH
LOS ANGELES COUNTY
CALIFORNIA

ENSITU

prepared by

JOHN N. YAROSLASKI PE #60149
ENSITU ENGINEERING, INC.
685 MAIN ST., SUITE A.
MORRO BAY, CA 93442

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August 14, 2012

Richard Jefferson
County of Los Angeles Department of Health Services
Environmental Health – Mountain & Rural Program
26000 Agoura Road Suite 110
Calabasas CA, 91302

Subject: Dan Blocker State Beach, Los Angeles County, California – Conformance Review

Dear Mr. Jefferson:

INTRODUCTION

This report summarizes the results of the percolation testing and provides engineering design for the onsite wastewater treatment/disposal system serving the above noted site. A proposed Picnic Park with 15 parking spaces and 26 fixture units is to be constructed on a state beach.

PROJECT INFORMATION

Site Description

Access to the property is via Pacific Coast Highway at the northern edge of the property (see Vicinity Map on cover of plans.) According to the report by Geotechnical Professionals Inc. (see “Geotechnical Investigation, Proposed Site Improvements” dated April 16, 2012, the site consists of approximately 2 acres of undeveloped land sitting at the top of a coastal bluff along Pacific Coast Highway. The distance from the edge of Pacific Coast Highway to the top of the bluff face varies from approximately 60 to 75 feet. The bluff drops steeply to the underlying beach. The height of the bluff face to the underlying beach varies from approximately 10 to 15 feet.

As described in the report “Wave Run-Up and Coastal Analysis” by TranSystems and Exeltech dated June 5, 2012, the wave run-up elevations were found to be 14.9 feet and 16.4 feet (NAVD).

Owner Information

County of Los Angeles
Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803

Engineering Inc
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Fax: 805.772.0813

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SCOPE OF WORK

We completed the following work for this study:

1) Prepared this written report summarizing percolation testing.
2) Provided engineering design criteria for the proposed onsite wastewater treatment/disposal system.

DESIGN INTENT

The proposed wastewater treatment system to serve Dan Blocker State Beach is designed to treat and dispose of wastewater from the proposed restroom facility and drinking fountains. The waste flow is a commercial strength waste with the following characteristics:

Wastewater Estimated Flow and Characteristics	
Peak Daily Flow (LACPC/MPC Table K-3)	300 gpd
Influent BOD_5	<400 mg/L
Influent TSS	<400 mg/L

In conformance with the City of Malibu LCP Local Implementation Plan Sections 18.2 and18.4.A the system is consistent with the water quality objectives and waste discharge limitations applicable to this design required by:

- The requirements contained in the City of Malibu LCP Local Implementation Plan, Chapter 18
- Other requirements of the City of Malibu
- Current guidelines of the Regional Water Quality Control Board, including those adopted by the State Water Resources Control Board (SWRCB) in the California Ocean Plan, originally adopted by the SWRCB in 1972 and last amended in 2005.
- SWRCB Water Quality Order No. 97-10

The design intent of the treatment system is to meet the receiving water quality limitations presented in the following table:

Constituent	Units	Maximum Limit
BOD*	mg/L	20
Suspended Solids*	mg/L	20
Fecal Coliform*	MPN/100mL	<200
Enterococcus*	MPN/100mL	<104
Nitrate-Nitrogen**	mg/L	10.0
Ammonia***	mcg/L	2400

*Also City of Malibu Plumbing Code
**Also City of Malibu LCP/LIP, Section 18.7.L(1)
***Also California Ocean Plan, Table B "Water Quality Objectives"

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FINDINGS

Subsurface Conditions

According to the report by Geotechnical Professionals Inc. (see "Geotechnical Investigation, Proposed Site Improvements" dated April 16, 2012, soils analysis was performed on the subject site in the areas shown in the referenced report. Two (2) bucket auger borings and six (6) percolation test pits were excavated on the subject site. Soils analysis was performed in two (2) locations. Percolation testing was performed in six (6) locations. Testing was conducted in general compliance with County of Los Angeles and City of Malibu requirements.

Soils within the percolation testing horizon of the proposed leaching trenches were found to consist of artificial fill classified as sandy loam and loamy sand according to the USDA textural classification triangle. Soils were further described as "no structure" and "massive" according to the boring logs by Geotechnical Professionals dated November 17, 2011.

According to the above referenced report by Geotechnical Professionals groundwater was not encountered to the maximum depth explored of 25 feet below existing grade in boring B-2.

Percolation Testing

Percolation testing results ranged from a minimum of 3 minutes per inch (mpi) in test pit PT-2 to a maximum of 23 mpi in PT-3.

The following table summarizes the percolation test results.

Drop (inch)	Time Interval of Drop (minutes)						
	PT-1	PT-2	PT-2R	PT-3	PT-4	PT-5	PT-6
0-1	5.5	-	0	11	-	3.5	8
1-2	8.5	0.5	0.5	15	9	5	11
2-3	8.5	0.5	0.5	16	13	7	12
3-4	11	1	1	17	11	7.5	14
4-5	12.5	1.5	1.5	22	13	9.5	18
5-6	13.5	3	3	23	20	12.5	22

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Fixture Units

A fixture count was performed in accordance with Table K-3 of the Los Angeles County Plumbing Code and the Plumbing Code of the City of Malibu. The subject property has a total of 26 fixture units in the proposed restroom building: one mop basin; two lavatories; two water closets; three floor drains; two drinking fountains; and one urinal.

Design Flow

A proposed Picnic Park with 15 parking spaces is to be constructed on the subject site. The design flow is estimated using Table K-3 of the Los Angeles County Plumbing Code and the Plumbing Code of the City of Malibu. There are 15 parking spaces at an estimated flow of 20 gallons per day (gpd) per parking space. Therefore the design flow is 300 gpd.

The septic tank (see below) is designed with equalization capacity for 4.70 days hydraulic retention time (hrt) to average the effect of any peak events on the system flow.

PROPOSED DESIGN

Septic Tank

The minimum septic tank size required by code shall be considered for the purpose of calculating the minimum leach trench dispersal area required. According to Table K-3 of the Los Angeles County Plumbing Code and the Plumbing Code of the City of Malibu, the minimum septic tank size for flow under 1500 gallons/day is 3/2 of the design flow. Therefore at a design flow of 300 gpd, the minimum septic tank capacity required is 450 gallons.

However, according to Table K-2 of the Los Angeles County Plumbing Code and the Plumbing Code of the City of Malibu, the minimum septic tank size for 26 fixture units is 1,500 gallons. Therefore for the purpose of calculating the required minimum leach trench dispersal area the code required septic tank size of 1,500 gallons shall be used.

A five (5) compartment 6,000 gallon fiberglass sand trap / equalization / septic / recirculation / dosing tank shall serve the subject site.

The first compartment, with a capacity of 1,276 gallons, shall serve as the sand trap. Wastewater flow from the mop basin, floor drains, lavatories, and drinking fountains of the proposed restroom building shall flow into the sand trap, where sand shall settle before the wastewater proceeds to the equalization compartment.

The second compartment, with a capacity of 1,411 gallons (4.70 days hrt), shall serve as the equalization compartment. Wastewater flow from the urinal and water closets shall flow directly to this compartment in addition to the flow from the sand trap. The equalization capacity shall average the effect of any peak events on the system flow.

The third compartment, with a capacity of 1,128 gallons (3.76 days hrt), shall serve as the septic compartment. The septic compartment sizing shall be based on a minimum of three (3) days of hrt per the treatment manufacturer's requirement (see "Primary Tank Sizing Chart" provided as an appendix to "AdvanTex Design Criteria" by Orenco Systems Incorporated.)

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The fourth compartment, with a capacity of 846 gallons (2.82 days hrt), shall serve as the recirculation compartment to the proposed treatment units (see below.)

The fifth compartment, with a capacity of 1,002 gallons, shall serve as the dosing compartment to the proposed leach trenches.

Treatment

Treatment shall be performed using AdvanTex Treatment Systems by Orenco Systems. AdvanTex Treatment Systems work like recirculating sand/gravel filters, which treat wastewater through a combination of physical, chemical, and biological processes. AdvanTex Treatment Systems use an inert nonwoven textile material to treat wastewater.

The base AdvanTex AX20 hydraulic loading rate is 30 gpd/sq.ft. with a base organic loading rate of 0.04lb/day per sq.ft. Using the organic loading rate as the basis of design for this system, the mass loading rate for the design flow of 300 gpd at an average BOD concentration of 400 mg/L is estimated at 1.0 lb/day. Each AX20 unit has 20 sq.ft. of treatment media and can treat 0.8 lb/day. Therefore, two (2) AdvanTex AX20 Treatment Units shall be used in the treatment system design for the subject site.

Disinfection

Disinfection shall be performed using a Bio-Kinetic Model BK 2000 Wastewater Management System by Norweco. Treated wastewater shall flow from the recirculating splitter valve to the BK 2000 by gravity.

Once inside the BK 2000 the treated water is clarified, disinfected using Blue Crystal Chlorination System by Norweco, and dechlorinated using Bio-Neutralizer Dechlorination System by Norweco. The treated and disinfected wastewater shall flow by gravity from the BK 2000 Treatment System to the dosing compartment.

Leach Trench Area And Loading Rate

As described in the above referenced report by Geotechnical Professionals dated February 1, 2012 the maximum percolation testing result was 23 minutes in test pit PT-3. The septic tank capacity required under code is 1,500 gallons. Therefore under the Ryon formula method of calculating required dispersal area the minimum required leach trench area is 757 ft2.

As described in the above referenced report by Geotechnical Professionals soils within the percolation testing horizon of the proposed leaching trenches were found to consist of artificial fill classified as sandy loam and loamy sand according to the USDA textural classification triangle. Soils were further described as “no structure” and “massive” according to the boring logs by Geotechnical Professionals dated November 17, 2011. Under Table 4-3 of the USEPA Onsite Wastewater Treatment System Manual the suggested hydraulic loading rate for treated effluent dispersed into sandy loam of “massive” shape and “structureless” grade is 0.6 gallons per square foot per day (gpsfd). This suggests a minimum leach trench area required of 500 ft2.

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According to the City of Malibu LCP Local Implementation Plan soil texture of sandy loam with weak structure requires an application rate of 0.4 gpsfd. This suggests a minimum leach trench area required of 750 ft2.

The design approach is to use the most conservative trench area requirement suggested by either percolation testing or soils analysis. Therefore the minimum leach trench area required is 757 ft2.

Dispersal

Dispersal shall be performed using a Leaching Trench type dispersal system with H-20 infiltrator chambers (see Infiltrator Section on attached drawing set). The leaching trenches shall have a required minimum absorption area of 757 ft2. The proposed leaching trenches shall have a footprint area of 450 ft2 and a perimeter length of 316 feet. The trenches shall have 2.0 ft of gravel below the drain lines giving them an additional 1.0 square feet of dispersal area per linear foot of sidewall for a total of 312 ft2 of perimeter absorption area. The total leaching trench area shall be 762 ft2. At a design flow of 300 gpd the loading rate to the proposed leach trenches shall be 0.4 gpsfd. Groundwater was determined to be a minimum of 25 feet below grade. This provides a minimum separation of 19.6 feet to groundwater.

The proposed wastewater system for the subject site shall be designed and constructed to reserve sufficient site area for 100% expansion area. The reserved 100% expansion area is shown on the included site plan.

In accordance with the requirements of the Plumbing Code of the City of Malibu the dosing pumps shall be arranged to function alternately with each pump cycle. Each pump shall discharge through an Orenco Systems model HV discharge assembly with a check valve and through a tee connection combining the outputs upstream of the flowmeter. The leach trenches both shall be dosed simultaneously via a wye connection. The dosing pump calculations, Detail 10 of Sheet C3.07, indicate that the design flow rate and head are within the specified pump's capacity.

Each leach trench is designed with a ball valve at the end of the leach line within a 6 inch observation port and protected by a cast iron H-20 rated valve box. The ball valve is intended for flushing the leach line of any organic matter that may accumulate on the wall of the pipe.

In accordance with published County of Los Angeles Procedures And Standards For Onsite Wastewater Treatment Systems, revised September 1, 2011, the traffic rated infiltrators shall be equipped with air vents of 3 inches in diameter, one on each end, that shall be installed within the landscaped area north of the parking spaces. The vent openings shall be 6 inches above finished grade to prevent moisture intrusion into the infiltrators. The minimum downward slope from the air vents to the infiltrators shall be 2%.

Any persons concerned with this project, who observe conditions, or features of the site, or its surroundings that are different from those described in this report, should notify EEI immediately for evaluation.

Thank you for the opportunity to have been of service. If you have any questions, or require additional assistance please feel free to contact Ensitu Engineering at (805) 772-0150.

Sincerely,

John N. Yaroslaski PE #60149
Ensitu Engineering, Inc.
Project Engineer

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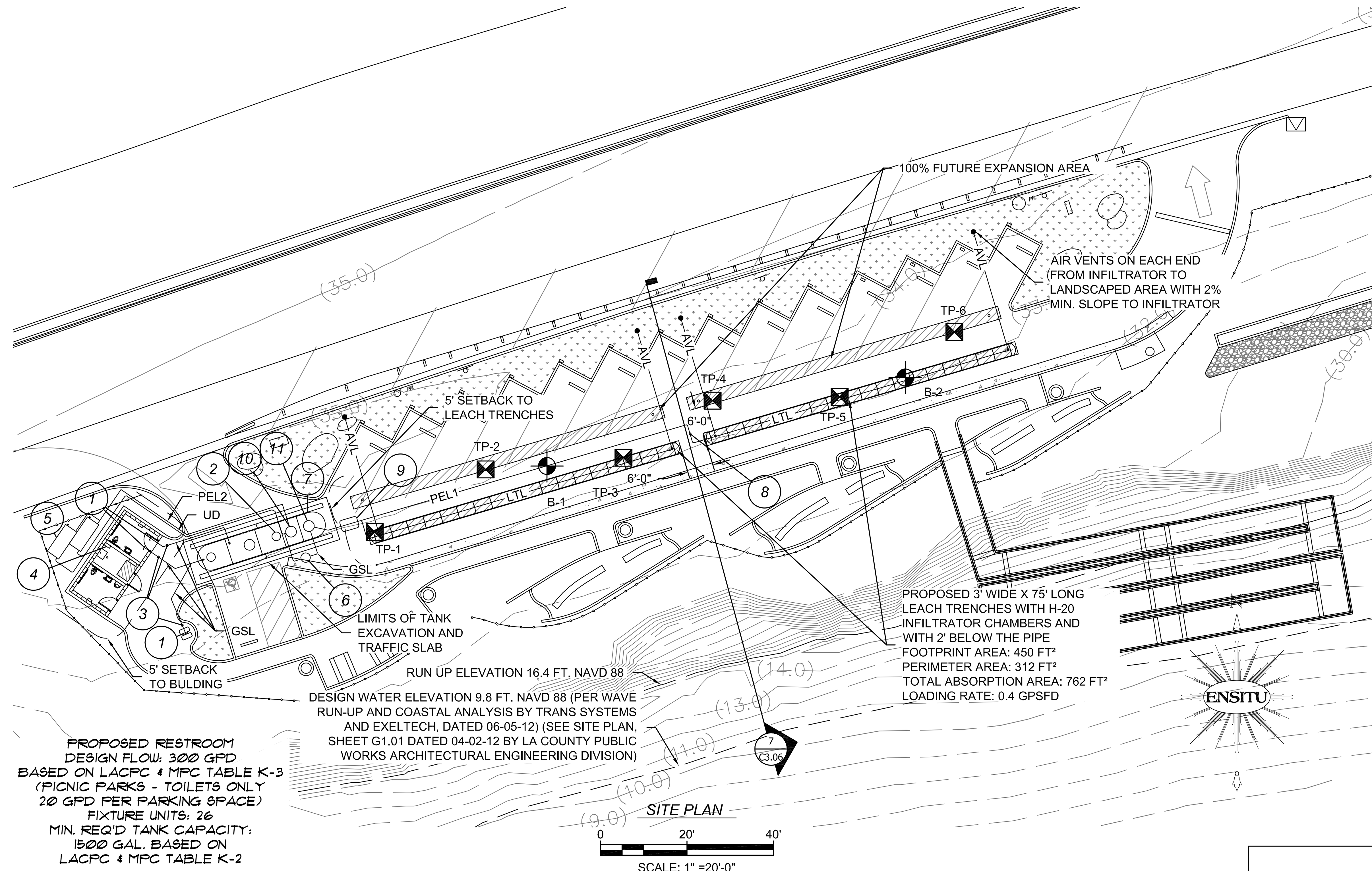


NOTES:

1. SEWER PIPE SHALL BE BEDDED IN ACCORDANCE WITH SPECIFICATIONS AND 2011 COUNTY OF LOS ANGELES PLUMBING CODE.
2. SYSTEM COMPONENTS AND APPURTENANCES (INCLUDING CLEAN-OUTS) SHALL BE INSTALLED IN ACCORDANCE WITH 2011 COUNTY OF LOS ANGELES PLUMBING CODE.
3. ELECTRICAL COMPONENTS AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH 2011 COUNTY OF LOS ANGELES ELECTRICAL CODE.
4. A REGISTERED GEOTECHNICAL ENGINEER, UNDER THE DIRECTION OF THE OWNER, SHALL DETERMINE IF THE WASTEWATER LOADING RATE WILL CAUSE THE EXISTING SLOPE TO BECOME UNSTABLE. ENSITU ENGINEERING INC., IS NOT A GEOTECHNICAL ENGINEERING FIRM, THEREFORE, WE CAN NOT PREDICT AND/OR DETERMINE THE STABILITY OF THE EXISTING SLOPE. REF: GEOTECHNICAL FEASIBILITY REPORT FOR ONSITE WASTEWATER TREATMENT SYSTEM BY GEOTECHNICAL PROFESSIONALS, INC. DATED 04-17-2012.
5. ALL DIMENSIONS AND GRADES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO SYSTEM INSTALLATION, BUILDING SEWER DEPTH OR CONNECTION POINT WAS NOT PROVIDED AND SHALL BE DETERMINED BY CONTRACTOR PRIOR TO CONSTRUCTION
6. ONSITE WASTEWATER TREATMENT SYSTEM SHALL BE VENTED THROUGH THE DRAINAGE PIPING OF THE RESTROOM BUILDING IN ACCORDANCE WITH REQUIREMENTS OF THE 2011 COUNTY OF LOS ANGELES PLUMBING CODE (CHAPTER 9).
7. CONTRACTOR TO VERIFY DEPTH AND LOCATION OF BUILDING SEWER CONNECTION, MINIMUM 2% SLOPE FROM STRUCTURE TO CONNECTION POINT.
8. THERE IS NO EXISTING SEPTIC SYSTEM.

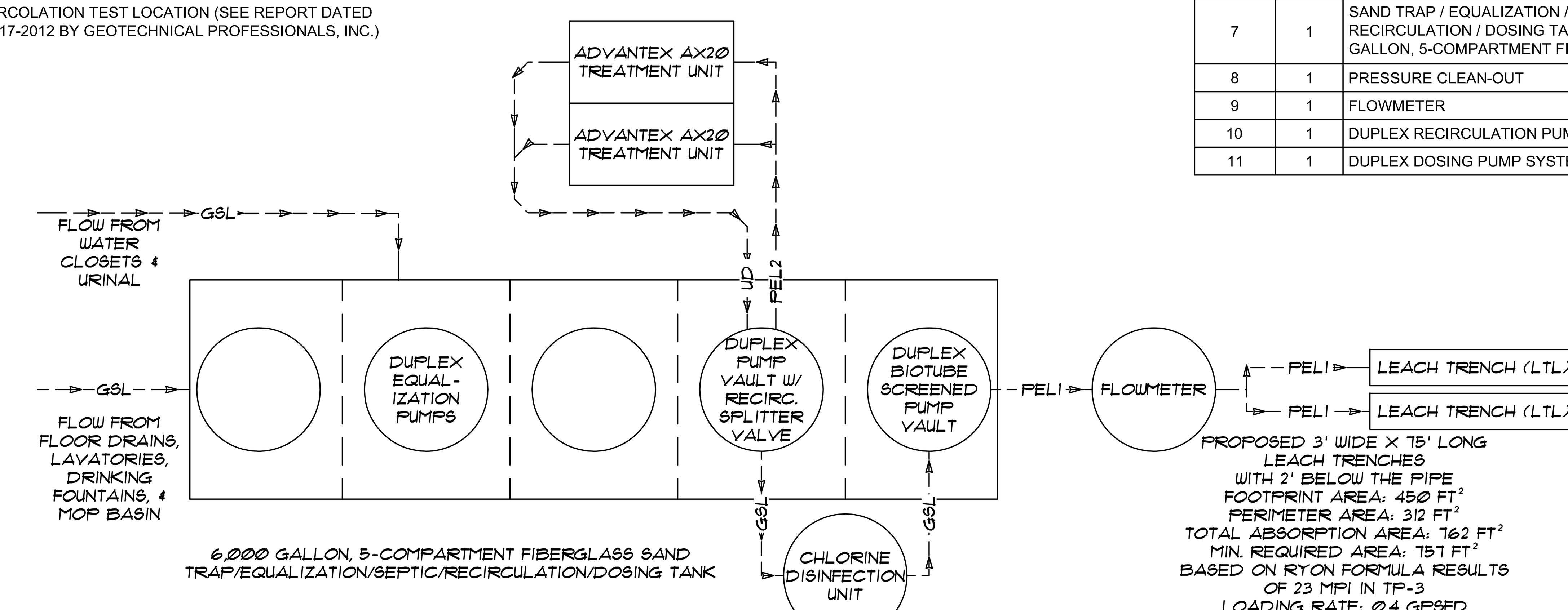
EQUIPMENT SCHEDULE

ITEM	QTY	DESCRIPTION	MFG/PART NUMBER
1	3	CONNECTION TO BUILDING SEWER	
2	1	DUPLEX EQUALIZATION PUMP SYSTEM	TSURUMI 50PUW2.15S
3	3	GRAVITY CLEAN-OUT	DETAIL 1/C3.04
4	1	REMOTE TELEMETRY CONTROL UNIT	ORENCO T-COM DAX1PTROETMCTETMCT
5	2	TREATMENT UNIT	ORENCO ADVANTEX AX20
6	1	DISINFECTION UNIT	NORWECO BIOKINETIC BK2000
7	1	SAND TRAP / EQUALIZATION / SEPTIC / RECIRCULATION / DOSING TANK (6,000 GALLON, 5-COMPARTMENT FIBERGLASS)	XERXES
8	1	PRESSURE CLEAN-OUT	DETAIL 2/C3.04
9	1	FLOWMETER	SIGNET 2551
10	1	DUPLEX RECIRCULATION PUMP SYSTEM	ORENCO PF500511
11	1	DUPLEX DOSING PUMP SYSTEM	ORENCO PF500511

LEGEND

B-X BORING LOCATION (SEE REPORT DATED 04-17-2012 BY GEOTECHNICAL PROFESSIONALS, INC.)

TP-X PERCOLATION TEST LOCATION (SEE REPORT DATED 04-17-2012 BY GEOTECHNICAL PROFESSIONALS, INC.)



PROCESS SCHEMATIC
NO SCALE

PIPING SCHEDULE

TAG	DESCRIPTION	SPECIFICATION
GSL	PROPOSED GRAVITY SEWER LINE	4" SDR35 PVC
PEL2	PROPOSED PUMPED EFFLUENT LINE	2" SCH40 PURPLE PVC
UD	PROPOSED GRAVITY UNDERDRAIN	4" SDR35 PVC
LTL	PROPOSED LEACH TRENCH LATERAL	1½" SCH40 PURPLE PVC
PEL1	PROPOSED PUMPED EFFLUENT LINE	1½" SCH40 PURPLE PVC
AVL	PROPOSED AIR VENT LINE	3" SCH40 PVC

FINAL FOR APPROVAL
ISSUED
14 August 2012

JOHN N. YAROSLASKI
PRINCIPAL ENGINEER

NOTE: CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME.

PUBLIC WORKS
COUNTY OF LOS ANGELES

ARCHITECTURAL ENGINEERING DIVISION
DESIGN & REVIEW SECTION
900 S. FREMONT AVE.
ALHAMBRA, CA 91803

APPROVED: USER DEPARTMENT
BY DATE
REVIEWED:
BY ASSISTANT DEPUTY DIRECTOR (AED) DATE
REVIEWED:
BY PRINCIPAL ENGINEER (AED) DATE
REVIEWED:
BY PROJECT MANAGER DATE

REGISTERED PROFESSIONAL ENGINEER
BARBARA L. HALL
No. 42206
Exp. 03/31/14
CIVIL
STATE OF CALIFORNIA

PROJECT ARCHITECT/ENGINEER DATE

PROJECT TITLE
LA CO. DEPT. OF BEACHES & HARBORS
DAN BLOCKER BEACH PARKING LOT
GENERAL IMPROVEMENTS PROJECT
26200 PACIFIC COAST [illegible] CA 90265

SHEET INDEX
WASTEWATER
SITE PLAN

REVISIONS
1
2
3

DRAWN	DATE
	04-02-12
JOB CAPTAIN	SPEC. NO.

CHECKED	CAPITAL PROJECT

SHEET NUMBER
DRAWINGS ARE DIVIDED INTO SEPARATE SHEETS FOR GENERAL CONVENIENCE ONLY. SHEET DESIGNATIONS OR NUMBERS SHALL NOT BE CONSIDERED TO LIMIT AREAS OF WORK, RESPONSIBILITY, OR TRADES. THE CONTRACTOR MUST COORDINATE THE DRAWINGS WITH EACH OTHER AND THE PROJECT MANUAL IN ORDER TO COMPLETE THE PROJECT AS DESIGNED.

C3.02

ALL INFORMATION WITHIN THESE BORDER LINES ARE CONSIDERED LEGAL AND BINDING.

EQUIPMENT SCHEDULE			
ITEM	QTY	DESCRIPTION	MFG/PART NUMBER
1	3	CONNECTION TO BUILDING SEWER	
2	1	DUPLEX EQUALIZATION PUMP SYSTEM	TSURUMI 50PUW2.15S
3	3	GRAVITY CLEAN-OUT	DETAIL 1/C3.04
4	1	REMOTE TELEMETRY CONTROL UNIT	ORENCO T-COM DAX1PTROETMCTETMCT
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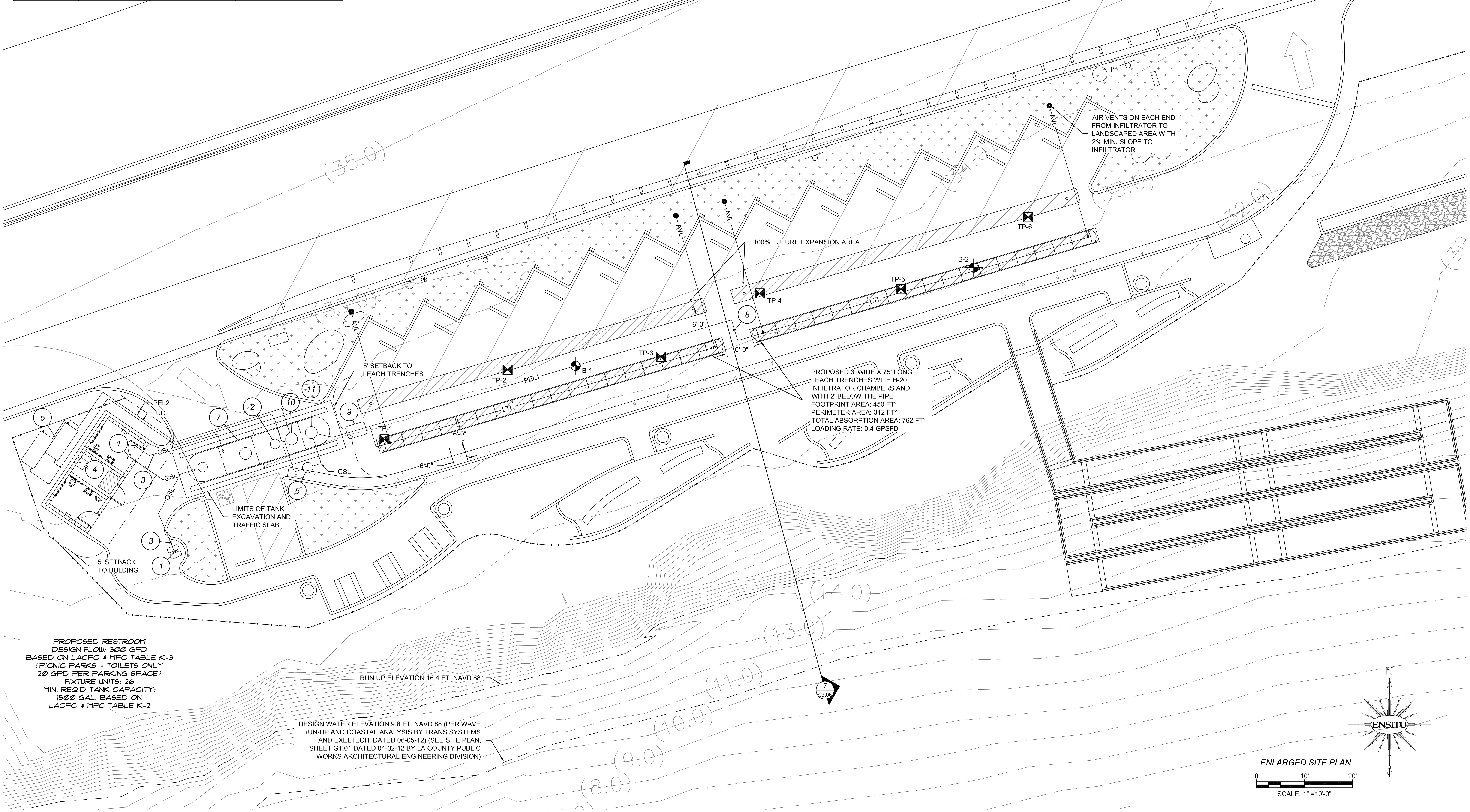


PROPOSED RESTROOM
DESIGN FLOW: 300 GPD
BASED ON LACPC & MPC TABLE K-3
(PICNIC PARKS - TOILETS ONLY
20 GPD PER PARKING SPACE)
FIXTURE UNITS: 26
MIN. REQ'D TANK CAPACITY:
1500 GAL. BASED ON
LACPC & MPC TABLE K-2

ENLARGED SITE PLAN

0 10' 20'

SCALE: 1" =10'-0"

NOTE: CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME.

PUBLIC WORKS

ARCHITECTURAL ENGINEERING DIVISION

DESIGN & REVIEW SECTION

900 S. FREMONT AVE.
ALHAMBRA, CA 91803

APPROVED: USER DEPARTMENT

BY DATE

REVIEWED:

BY ASSISTANT DEPUTY DIRECTOR (AED) DATE

REVIEWED:

BY PRINCIPAL ENGINEER (AED) DATE

REVIEWED:

BY PROJECT MANAGER DATE

REGISTERED PROFESSIONAL ENGINEER
BARBARA L. HALL
No. 42206
Exp. 03/31/14
CIVIL
STATE OF CALIFORNIA

PROJECT ARCHITECT/ENGINEER DATE

PROJECT TITLE

LA CO. DEPT. OF BEACHES & HARBORS
DAN BLOCKER BEACH PARKING LOT
GENERAL IMPROVEMENTS PROJECT
26200 PACIFIC COAST HIGHWAY, CA 90265

SHEET INDEX

WASTEWATER
ENLARGED SITE PLAN

REVISIONS

1
2
3

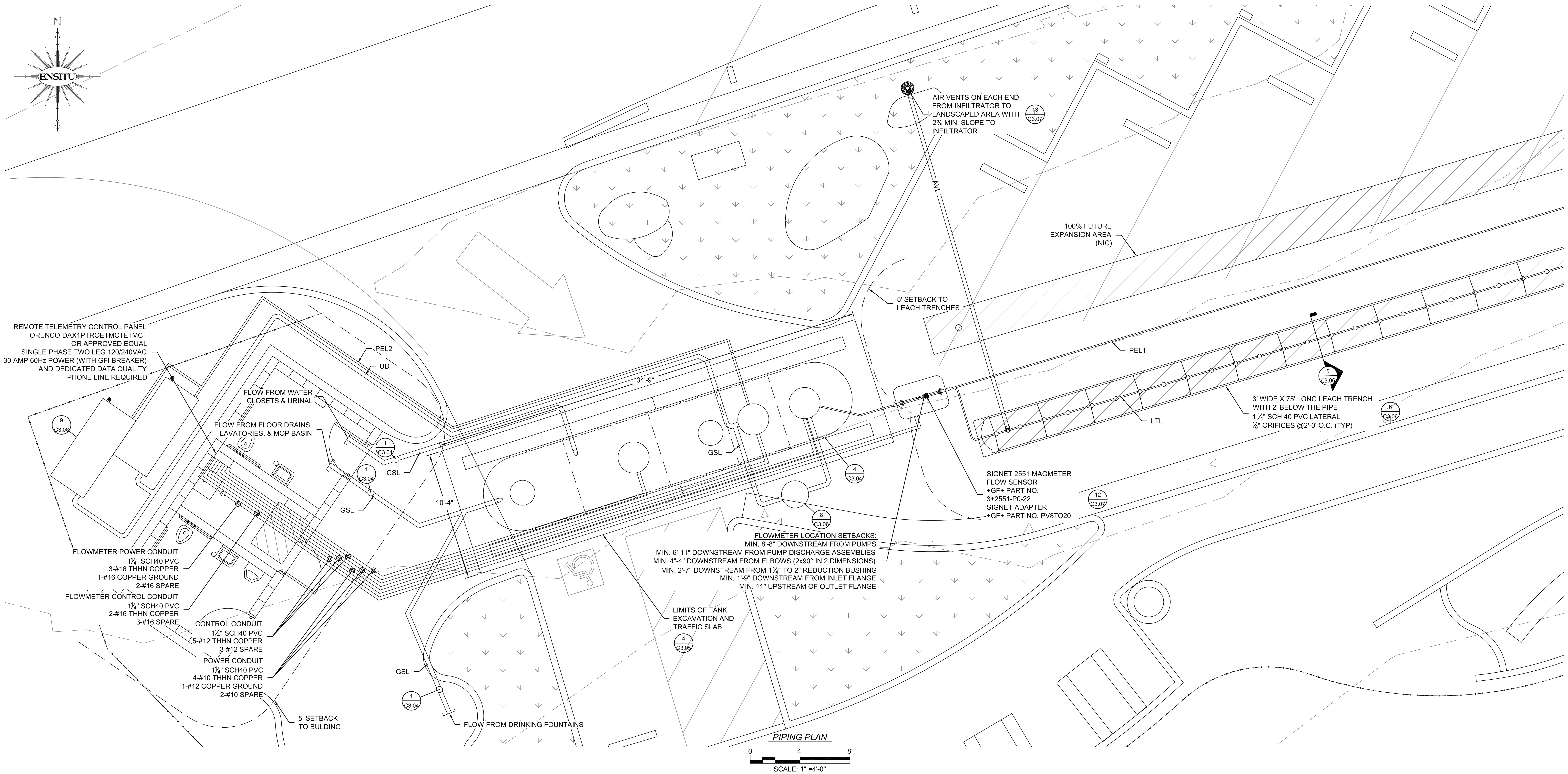
DRAWN	DATE
	04-02-12
JOB CAPTAIN	SPEC. NO.

CHECKED	CAPITAL PROJECT

SHEET NUMBER

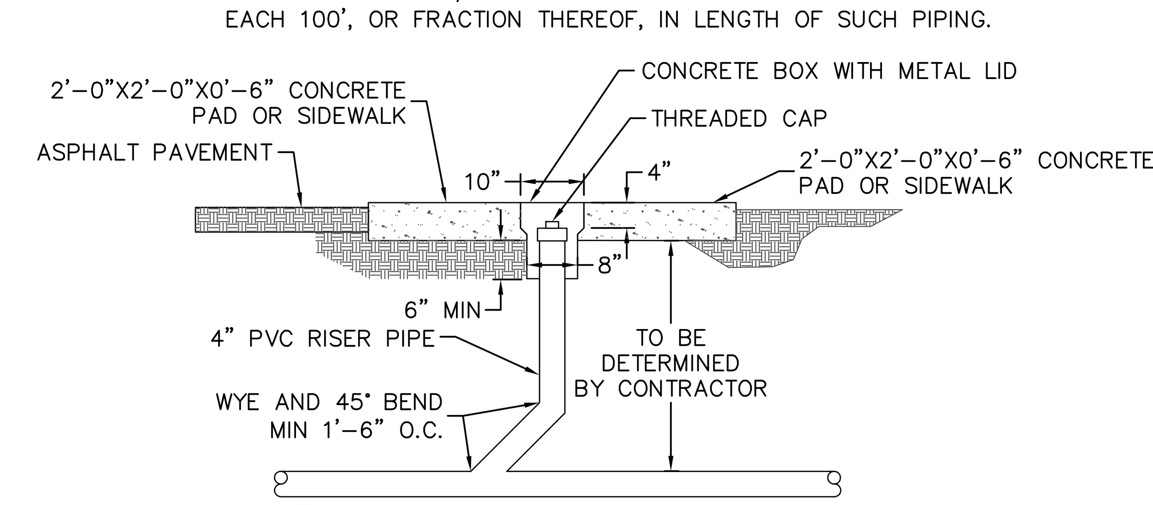
DRAWINGS ARE DIVIDED INTO SEPARATE SHEETS FOR GENERAL CONVENIENCE ONLY. SHEET DESIGNATIONS OR NUMBERING SHALL NOT BE CONSIDERED TO LIMIT AREAS OF WORK, RESPONSIBILITY OR TRADES. THE CONTRACTOR MUST COORDINATE THE DRAWINGS WITH EACH OTHER AND THE PROJECT MANUAL IN ORDER TO COMPLETE THE PROJECT AS DESIGNED.

C3.03



NOTE:

1. CLEAN–OUT SHALL BE CONSTRUCTED SO THAT THE SURFACE LOAD WILL NOT BE TRANSFERRED TO THE DRAIN LINE.
2. CONCRETE PAD SHALL BE INSTALLED SO THAT THE WATER WILL RUN AWAY FROM THE INSTALLATION.
3. EACH RUN OF PIPING, WHICH IS MORE THAN 100' IN TOTAL DEVELOPED LENGTH, SHALL BE PROVIDED WITH A CLEANOUT FOR EACH 100', OR FRACTION THEREOF, IN LENGTH OF SUCH PIPING.

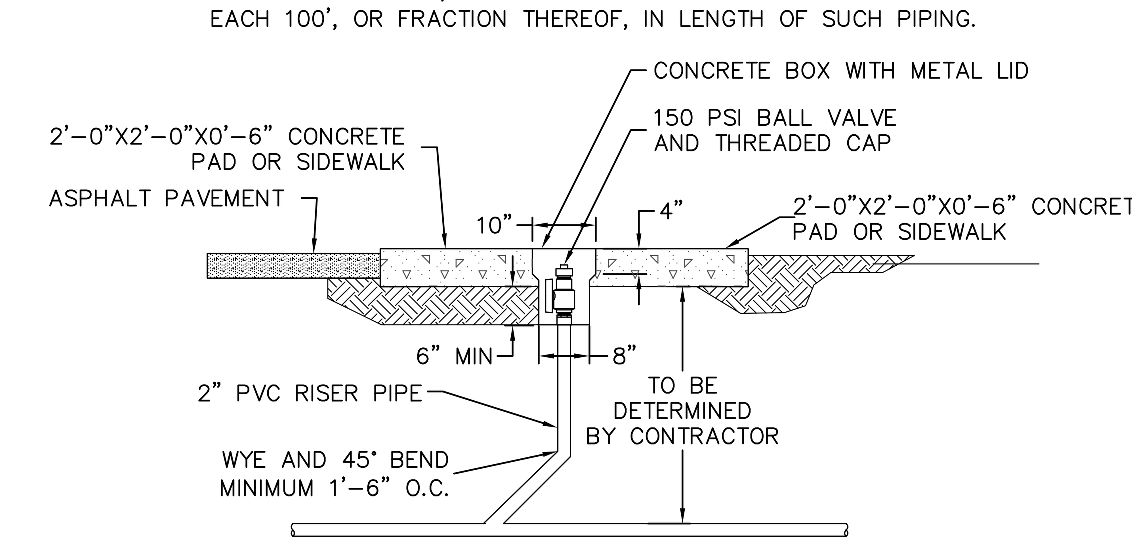


1 C3.04 GRAVITY CLEAN-OUT

NO SCALE

NOTE:

1. CLEAN–OUT SHALL BE CONSTRUCTED SO THAT THE SURFACE LOAD WILL NOT BE TRANSFERRED TO THE DRAIN LINE.
2. CONCRETE PAD SHALL BE INSTALLED SO THAT THE WATER WILL RUN AWAY FROM THE INSTALLATION.
3. EACH RUN OF PIPING, WHICH IS MORE THAN 100' IN TOTAL DEVELOPED LENGTH, SHALL BE PROVIDED WITH A CLEANOUT FOR EACH 100', OR FRACTION THEREOF, IN LENGTH OF SUCH PIPING.



2 C3.04 PRESSURE CLEAN-OUT

NO SCALE

NOTES:

1. LICENSED ELECTRICIAN SHALL VERIFY CONDUCTOR AND CONDUIT SIZES PRIOR TO SYSTEM INSTALLATION USING MANUFACTURER'S PUBLISHED FULL LOAD AMPS (FLA) FOR THE ACTUAL EQUIPMENT DELIVERED. CONDUIT AND CONDUCTOR SHALL BE SIZED PER 2011 COUNTY OF LOS ANGELES ELECTRICAL CODE .

2. ALL ELECTRICAL EQUIPMENT AND APPURTENANCES RELATED TO ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH 2011 COUNTY OF LOS ANGELES ELECTRICAL CODE , LOCAL UTILITY COMPANY REGULATIONS AND ALL STATE AND MUNICIPAL CODES AND ORDINANCES. ALL EQUIPMENT SHALL BE UNDERWRITER LABORATORY (UL) LISTED.

PIPING SCHEDULE

TAG	DESCRIPTION	SPECIFICATION
GSL	PROPOSED GRAVITY SEWER LINE	4" SDR35 PVC
PEL2	PROPOSED PUMPED EFFLUENT LINE	2" SCH40 PURPLE PVC
UD	PROPOSED GRAVITY UNDERDRAIN	4" SDR35 PVC
LTL	PROPOSED LEACH TRENCH LATERAL	1½" SCH40 PURPLE PVC
PEL1	PROPOSED PUMPED EFFLUENT LINE	1½" SCH40 PURPLE PVC
AVL	PROPOSED AIR VENT LINE	3" SCH40 PVC

PUBLIC WORKS

ARCHITECTURAL ENGINEERING DIVISION

DESIGN & REVIEW SECTION

900 S. FREMONT AVE.
ALHAMBRA, CA 91803

APPROVED: USER DEPARTMENT
BY — DATE
REVIEWED:
BY ASSISTANT DEPUTY DIRECTOR (AED) DATE
REVIEWED:
BY PRINCIPAL ENGINEER (AED) DATE
REVIEWED:
BY PROJECT MANAGER DATE

REGISTERED PROFESSIONAL ENGINEER BARBARA L. HALL No. 42206 Exp. 03/31/14 CIVIL STATE OF CALIFORNIA

PROJECT ARCHITECT/ENGINEER DATE

PROJECT TITLE

LA CO. DEPT. OF BEACHES & HARBORS
DAN BLOCKER BEACH PARKING LOT
GENERAL IMPROVEMENTS PROJECT
26200 PACIFIC COAST HIGHWAY, CA 90265

SHEET INDEX

WASTEWATER PIPING PLAN

REVISIONS

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DRAWN	DATE
	04-02-12
JOB CAPTAIN	SPEC. NO.

CHECKED	CAPITAL PROJECT

SHEET NUMBER

DRAWINGS ARE DIVIDED INTO SEPARATE SHEETS FOR GENERAL CONVENIENCE ONLY. SHEET DESIGNATIONS OR NUMBERS SHALL NOT BE CONSIDERED TO LIMIT AREAS OF WORK RESPONSIBILITY. THE PROJECT CONTRACTOR MUST COORDINATE THE DRAWINGS WITH EACH OTHER AND THE PROJECT MANUAL IN ORDER TO COMPLETE THE PROJECT AS DESIGNED.

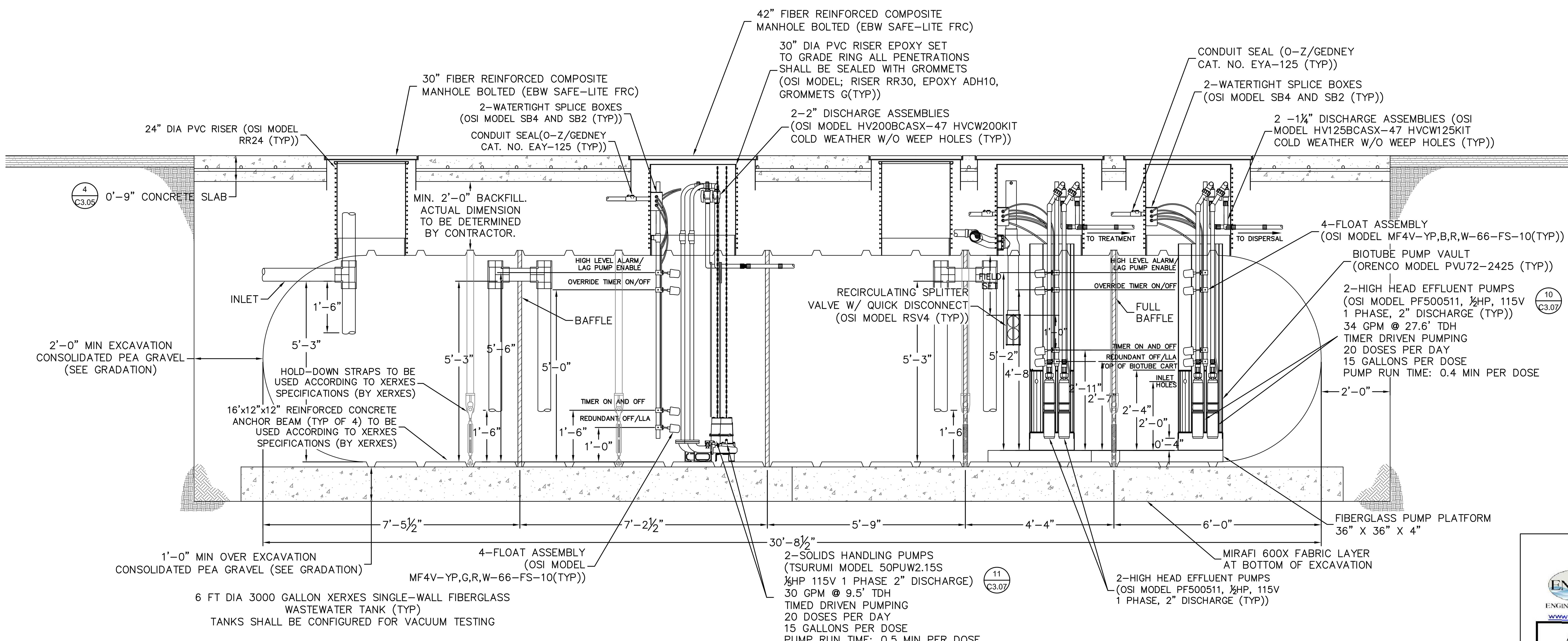
C3.04

ALL INFORMATION WITHIN THESE BORDER LINES ARE CONSIDERED LEGAL AND BINDING.

NOTE: CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME.

Note:

1. Fiberglass tank manufacturer and wastewater treatment system manufacturer shall coordinate to determine tank penetrations, brackets,and other appurtenances prior to final tank construction and in accordance with specifications.
2. Tanks and equipment shall be installed in accordance with manufacturer's recommendations and certified by manufacturer and/or contractor in accordance with specifications Section 01650.
3. Tanks subjected to traffic loads (H-20 loads) must have a cover depth of at least 24 inches of backfill plus 9 inches of reinforced concrete.
4. The maximum burial depth is 7 feet of cover over the top of the tank. Deviation from this may be permissible with prior written authorization from Xerxes.
5. Asphalt and concrete pads must extend a minimum of 24 inches beyond the tank in all directions.
6. If there is an unattached riser over an access opening, it must not transmit load from the asphalt or concrete slab to the tank. A minimum space of 6 inches must exist between the bottom of the riser and the top of the tank.
7. If there is an attached riser on an access opening, it must not transmit load from the asphalt or concrete slab to the tank. A minimum space of 3 inches must exist between the riser or sump and the slab.
8. If the soil has less than 750 lbs./sq. ft. cohesion as calculated from an unconfined compression test; or in soils having an ultimate bearing capacity of less than 3,500 lbs./sq. ft.; or where soil will not maintain a vertical wall, the excavation must allow a minimum space equal to half the diameter of the tank between the side and the endcap of the tank, and the excavation wall to enhance lateral resistance.
9. The tank shall be anchored with four (4) reinforced concrete anchor beams in accordance with Xerxes specifications.

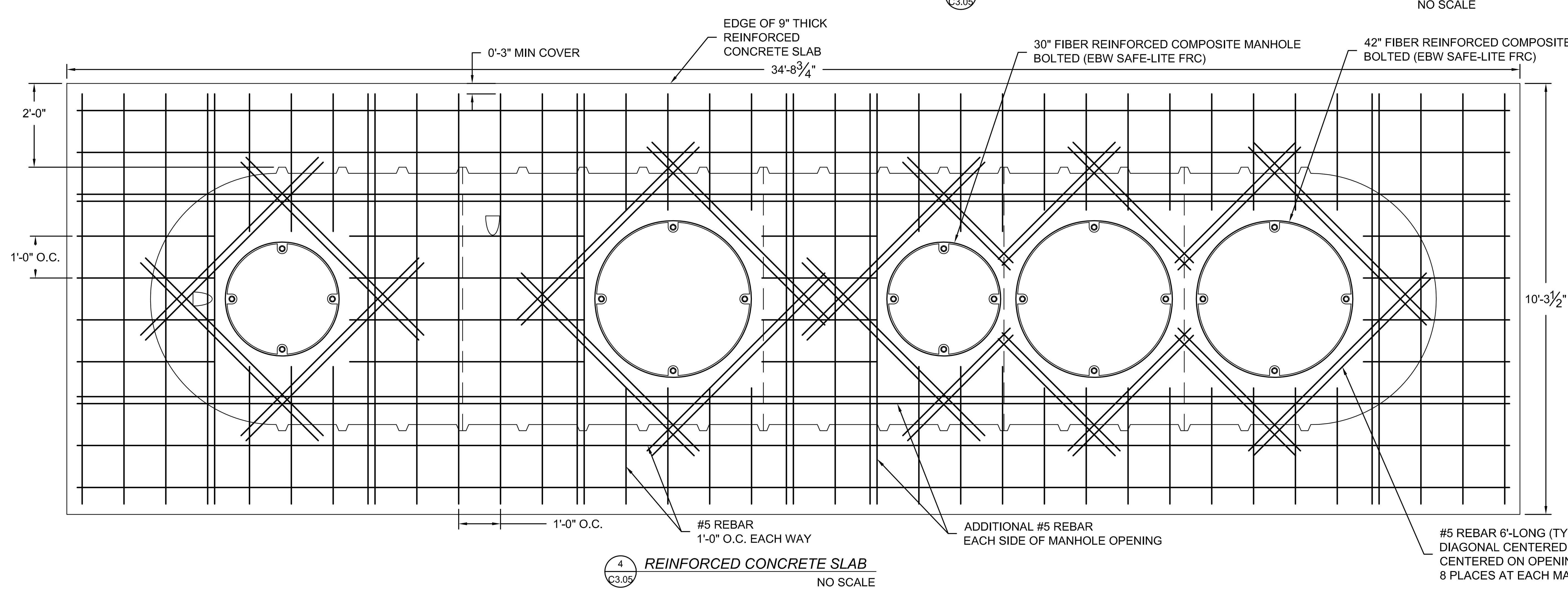


6' DIA. TANK OVERALL LENGTH 30.7292 INLET INVERT 63" TOTAL VOLUME 5663 GAL TOTAL HRT 18.87	COMPARTMENT 1 SAND TRAP LENGTH 7.4375 VOLUME 1276 GAL HRT 4.25	COMPARTMENT 2 EQUALIZATION LENGTH 7.1875 VOLUME 1411 GAL HRT 4.70	COMPARTMENT 3 PRIMARY LENGTH 5.7500 VOLUME 1128 GAL HRT 3.76	COMP. 4 RECIRCULATION LENGTH 4.3125 VOLUME 846 GAL HRT 2.82	COMPARTMENT 5 DOSING LENGTH 6.0417 VOLUME 1002 GAL HRT 3.34

3 / C3.05 *SAND TRAP/EQUALIZATION/SEPTIC/RECIRCULATION/DOSING TANK*
NO SCALE

REQUIRED PEA GRAVEL GRADATION LIMITS

SIEVE SIZE	PERCENT PASSING
½-INCH	100
⅜-INCH	50/100
No. 4	6/84
No. 8	0/5
No. 16	0/1
No. 30	0/1
No. 100	0/1



4 / C3.05 *REINFORCED CONCRETE SLAB*
NO SCALE

1. Traffic loading: AASHTO H20-44 with 14,000 repetitions over 20 years.
2. All concrete work shall be done in accordance with the latest editions of the American Concrete Institute (ACI) Building Code (ACI 318) and the ACI Manual of Practice.
3. Contractor shall submit specifications for backfill, concrete material, and testing for approval.
4. Concrete material shall be Type V (severe) category for sulfate exposure with a minimum compressive strength 5000 psi @ 28 days.
5. Steel reinforcement shall be epoxy coated and have a yield strength of 60 ksi.
6. Concrete slab to extend at least 2'-0" beyond vertical extent of tank in all directions.
7. Cut typical reinforcing 2" clear from all openings and edges.
8. Slope concrete to drain away from openings.
9. All edges rounded with 2" radius

Xerxes With Deadman

ENSITU ENGINEERING INC
www.ensitu.com

Ensitu Engineering Inc.
685 Main Street Suite A
Morro Bay, CA 93442
tel: 805.772.0150
fax: 805.772.0813

Septic Tank Buoyancy Calcs

Project: 530-01
Address: Dan Blocker State Beach

Designed By: ESC
Checked By: JNY

Design Date: 6/28/2012
Check Date: 6/28/2012

Tank Length	30	Feet	9	Inches	30.75	Feet
Tank Diameter	6	Feet	0	Inches	6.00	Feet
Tank Footprint	177	Square Feet (sf)				
Tank Volume	813	Cubic Feet (cf)			6,081	Gallons
Burial Depth	2	Feet	9	Inches	2.75	Feet
Depth to Groundwater from Grade	2	Feet	0	Inches	2.00	Feet
Volume of Groundwater Displaced	945	Cubic Feet (cf)				
Unit Mass of Groundwater	62.4	Pounds per Cubic Foot (pcf)				
Mass of Groundwater Displaced (F_1)	**58,997**	**Pounds**				
Dry Weight of Tank (F_2)	**2,200**	**Pounds**				
Thickness of Concrete Slab Above Tank (0 if No Slab Exist	9	Inches				
Volume of Concrete Slab Above Tank	133	Cubic Feet (cf)				
Unit Mass of Concrete	145	Pounds per Cubic Foot (pcf)				
Mass of Concrete Slab Above Tank (F_3)	**19,224**	**Pounds**				
Thickness of Pea Gravel Backfill Above Tank	2.00	Feet				
Volume of Pea Gravel Backfill Above Tank	354	Cubic Feet (cf)				
Unit Mass of Pea Gravel Backfill	110	Pounds per Cubic Foot (pcf)				
Mass of Pea Gravel Backfill Above Tank (F_4)	**38,890**	**Pounds**				
Deadman Length (Total per Side)	32	Feet	0	Inches	32.00	Feet
Deadman Width (per Side)	1	Feet	0	Inches	1.00	Feet
Deadmen Weight (Total per Side)	4,800	Pounds				
Volume of Concrete Slab Above Both Sides (if Slab Exists)	48	Cubic Feet (cf)				
Mass of Concrete Slab Above Both Sides	6,960	Pounds				
Volume of Pea Gravel Backfill Above Deadmen	448	Cubic Feet (cf)				
Mass of Pea Gravel Backfill Above Deadmen	49,280	Pounds				
Mass of Deadman System (F_5)	**65,840**	**Pounds**				
Mass of Anchoring System ($F_n=F_2+F_3+F_4+F_5$)	**126,155**	**Pounds**				
Safety Factor (S)	**1.5**					
Is Anchoring System Adequate? ($F_n>F_1*S$)	**Yes**					

530-01_DanBlockerSB_Buoyancy-00.xlsx Page 1 of 1 6/28/2012

NOTE: CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME.

PUBLIC WORKS

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REGISTERED PROFESSIONAL ENGINEER BARBARA L. HALL No. 42206 Exp. 03/31/14 CIVIL STATE OF CALIFORNIA

PROJECT ARCHITECT/ENGINEER DATE

PROJECT TITLE
LA CO. DEPT. OF BEACHES & HARBORS
DAN BLOCKER BEACH PARKING LOT
GENERAL IMPROVEMENTS PROJECT
26200 PACIFIC COAST HIGHWAY MALIBU, CA 90265

SHEET INDEX
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DRAWN DATE
04-02-12
JOB CAPTAIN SPEC. NO.

CHECKED CAPITAL PROJECT

SHEET NUMBER
C3.05

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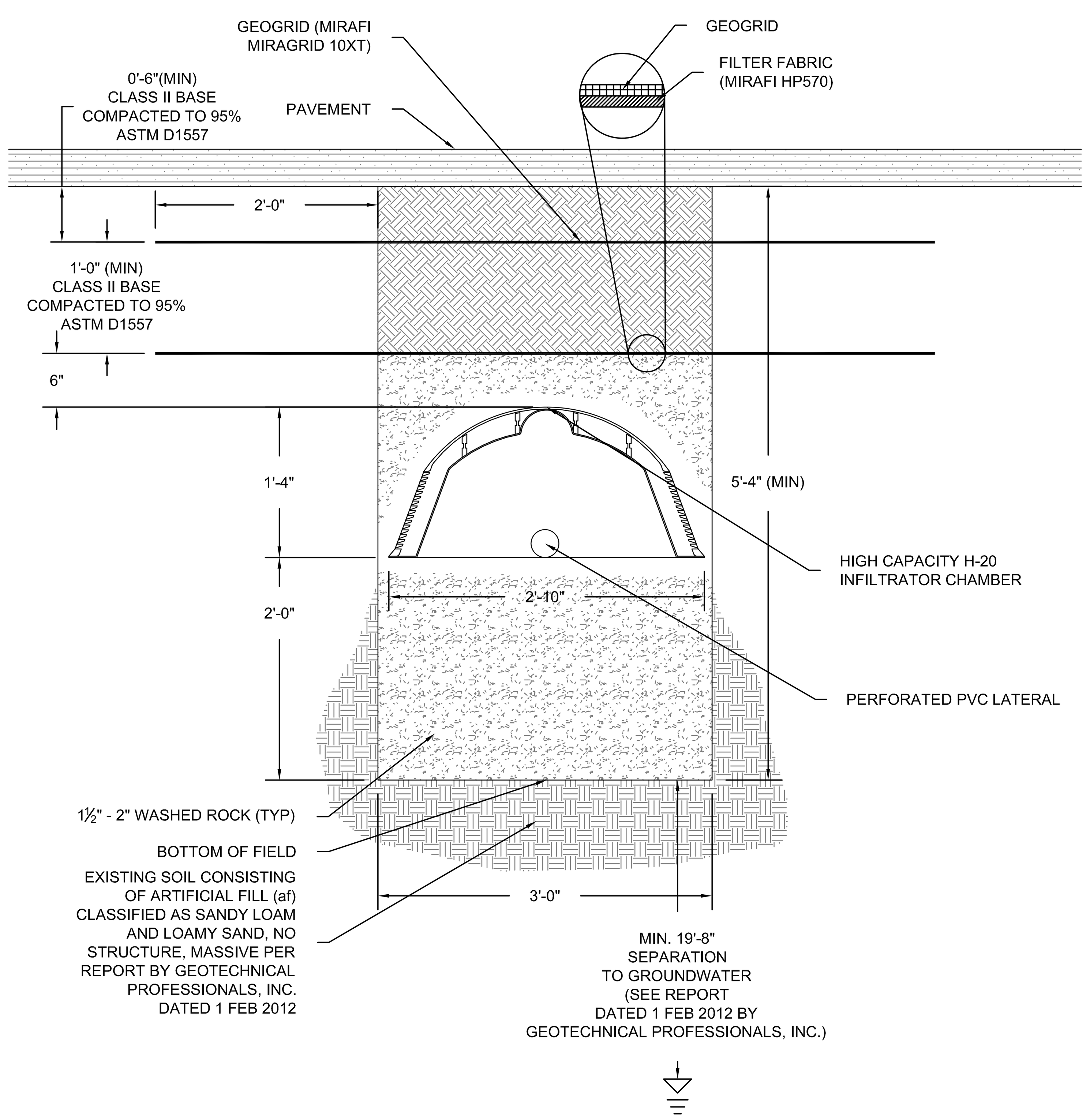
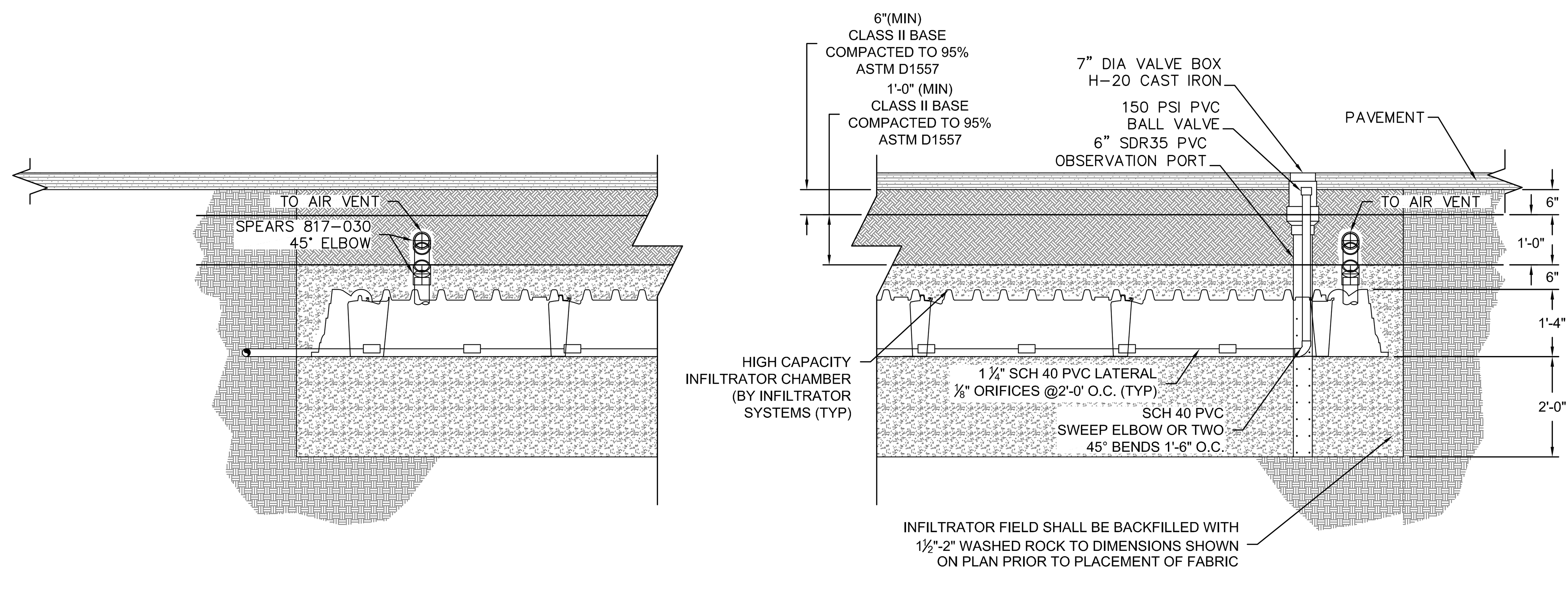


5 C3.06 LEACH TRENCH SECTION
NO SCALE

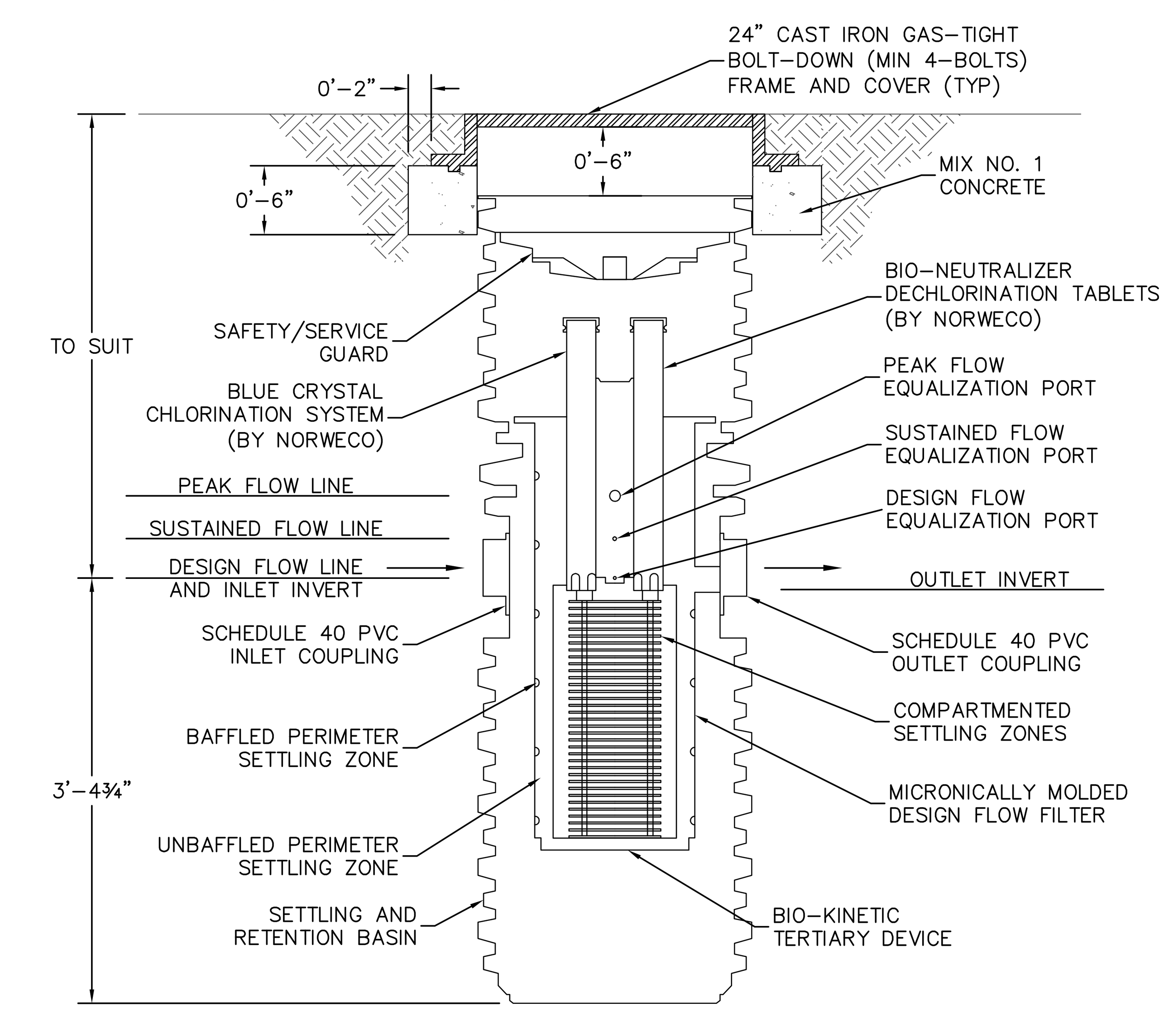


6 C3.06 LEACH TRENCH DETAIL
NO SCALE

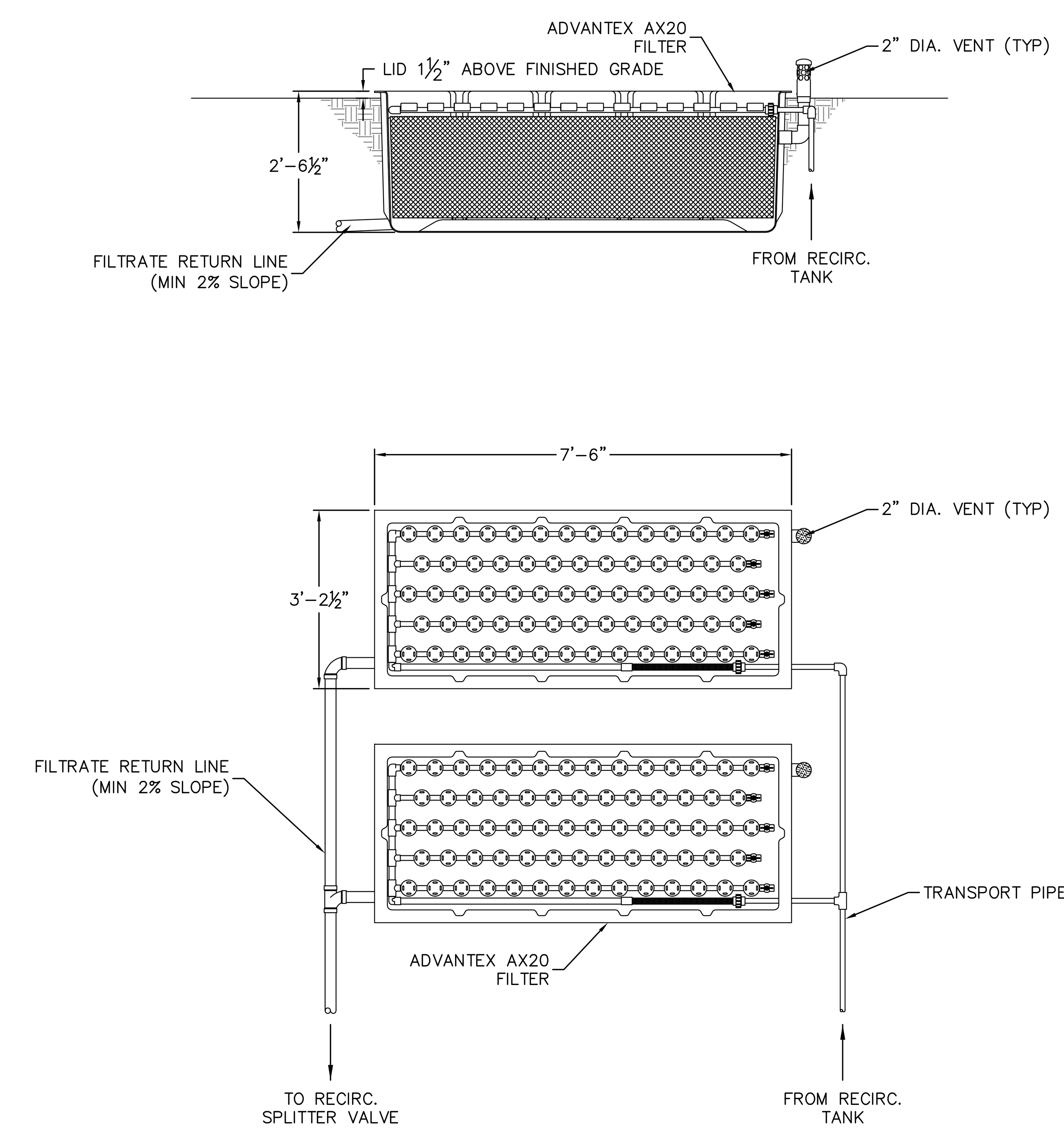
NOTES:

1. FALL THROUGH THE BIO-KINETIC WASTEWATER MANAGEMENT SYSTEM IS ONE INCH FROM INLET INVERT TO OUTLET INVERT.
2. USE SAND OR FINE GRAVELY TO BACKFILL EVENLY AROUND THE BIO-KINETIC WASTEWATER MANAGEMENT SYSTEM.
3. ON DEEPER INSTALLATIONS RISERS MUST BE USED TO EXTEND THE MOUNTING CASTING TO GRADE.
4. DIMENSIONS SHWN ARE BASED ON A STANDARD BK 2000 BASIN. SEGEMENTED BASINS AND BASINS CONTAINING RINGS OR RISERS WILL REQUIRE ADJUSTMENT.

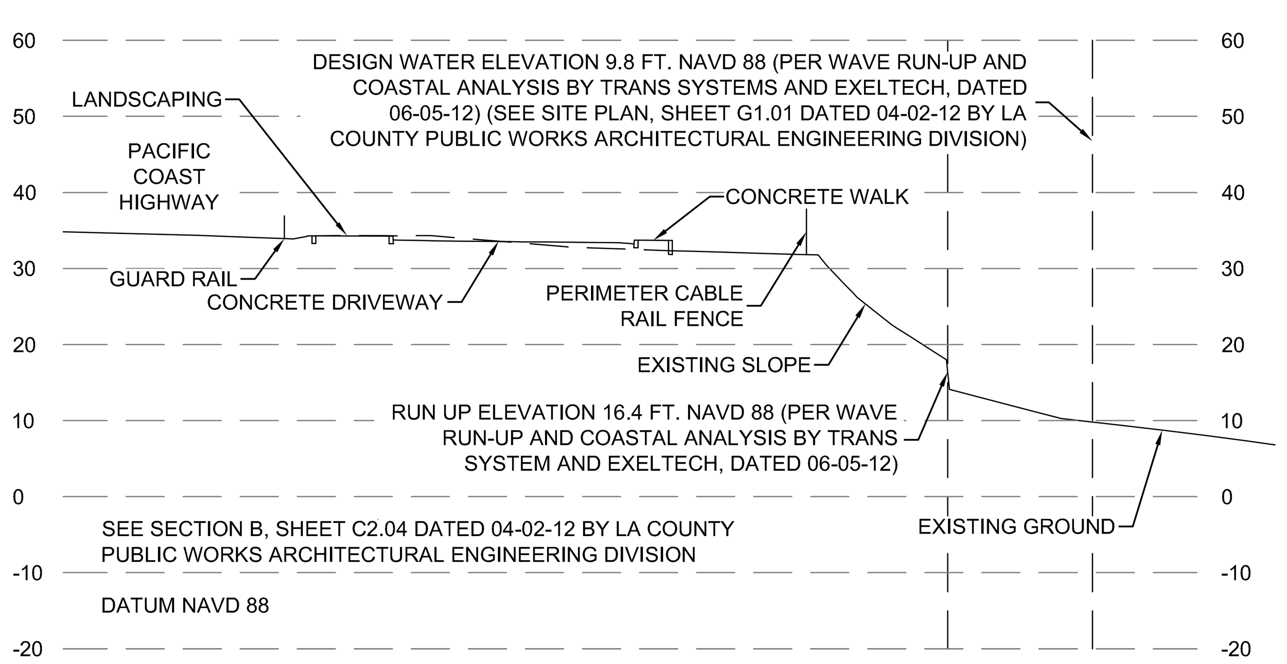
BIO-KINETIC WASTEWATER MANAGEMENT SYSTEM MODEL BK2000CD BY NORWECO. ALL PARTS, MATERIALS AND SPECIFICATIONS SHALL BE PROVIDED BY MANUFACTURER.



8 C3.06 DISINFECTION UNIT
NO SCALE



9 C3.06 TREATMENT UNITS
NO SCALE



7 C3.06 SITE SECTION
SCALE 1" = 20'-0"

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C3.06

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GENERAL NOTES

1. General Notes are not intended to replace the Construction Specifications. Please refer to Construction Specifications for this project for detailed instructions and specifications.

2. IDENTIFICATION SYSTEMS

All valves and equipment shall be identified in accordance with CONSTRUCTION SPECIFICATIONS Section 01080 – Identification Systems.

3. SITE CONDITIONS

In accordance with CONSTRUCTION SPECIFICATIONS Section 01160 – Site Conditions:

The Contractor acknowledges that he has satisfied himself as to the nature and location of the work, the general and local conditions, particularly those bearing upon access to the site; handling, storage, and disposal of materials; availability of water, electricity and roads; uncertainties of weather, river stages, or similar physical conditions at the site; the conformation and conditions of the ground; the equipment and facilities needed preliminary to and during the execution of the work; and all other matters which can in any way affect the work or the cost thereof under this Contract.

The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials to be encountered from his inspection of the site and from reviewing any available records of exploratory work furnished by the Owner or included in these Documents. Failure by the Contractor to acquaint himself with the physical conditions of the site and all the available information will not relieve him from responsibility for properly estimating the difficulty or cost of successfully performing the work.

The Contractor warrants that as a result of his examination and investigation of all the aforesaid data that he can perform the work in a good and workmanlike manner and to the satisfaction of the Owner. The Owner assumes no responsibility for any representations made by any of its officers or agents during or prior to the execution of this Contract, unless (1) such representations are expressly stated in the Contract, and (2) the Contract expressly provides that the responsibility therefore is assumed by the Owner.

Any information obtained by the Engineer regarding site conditions, subsurface information, groundwater elevations, existing construction of site facilities, and similar data will be available for inspection, as applicable, at the office of the Engineer upon request. Such information is offered as supplementary information only. Neither the Engineer nor the Owner assumes any responsibility for the completeness or interpretation of such supplementary information.

In the event that the subsurface or latent physical conditions are found materially different from those indicated in these Documents, and differing materially from those ordinarily encountered and generally recognized as inherent in the character of work covered in these Contract Documents, the Contractor shall promptly, and before such conditions are disturbed, notify the Engineer in writing of such changed conditions.

The Engineer will investigate such conditions promptly and following this investigation, the Contractor shall proceed with the work, unless otherwise instructed by the Engineer. If the Engineer finds that such conditions do so materially differ and cause an increase or decrease in the cost of or in the time required for performing the work, the Engineer will recommend to the Owner the amount of adjustment in cost and time he considers reasonable. The Owner will make the final decision on all Change Orders to the Contract regarding any adjustment in cost or time for completion.

4. UNDERGROUND UTILITIES

In accordance with CONSTRUCTION SPECIFICATIONS Section 01160 – Site Conditions:

GENERAL – The Contractor shall be responsible for contacting all utility companies and/or utility districts as to location and/or relocation of existing utilities prior to construction. The Contractor shall contact Underground Service Alert [USA], Telephone 1–800–642–2444, a minimum of three (3) days prior to any excavation.

A reasonable effort has been made to locate and delineate all known underground utilities. The Contractor is cautioned that only excavation will reveal the types, extent, sizes, locations, and depths of such underground utilities. However, the Owner and Engineer assume no responsibility for the completeness or accuracy of the delineation of such underground utilities, or for the existence of other buried objects or utilities which are not shown on these drawings.

The Contractor is hereby notified that, prior to commencing construction, he is responsible for contacting the utility companies involved, and requesting a visual verification of the locations of their underground facilities. Where such facilities may possibly conflict with the placement of improvements as shown on these improvement plans, the Contractor shall be notified by the Engineer of the scheduled time and place of such visual verification to enable the Engineer to have a representative present. Should a conflict become apparent, the Engineer will contact the parties responsible for the relocation of the conflicting facility.

The Contractor is responsible for any damage to underground or above ground utilities which may be incurred as a result of any work performed by him under this contract, regardless of the fact that the utilities= existence was known and unknown.

5. LAND MONUMENTS

In accordance with CONSTRUCTION SPECIFICATIONS Section 01160 – Site Conditions:

The Contractor shall notify the Engineer of any existing Federal, State, Town, County, and private land monuments encountered. Private monuments shall be preserved, or replaced by a licensed surveyor at the Contractor's expense. When Government monuments are encountered, the Contractor shall notify the Engineer at least two (2) weeks in advance of the proposed construction in order that the Engineer will have ample opportunity to notify the proper authority and reference these monuments for later replacement.

6. SUBMITTALS

In accordance with CONSTRUCTION SPECIFICATIONS Section 01345 – Submittals:

Contractor shall furnish, process, deliver, reproduce and perform other necessary functions incidental to scheduling and handling of shop drawings, project data and samples, operation and maintenance manuals, equipment record sheets, manufacturers' certificate of proper installation, and record drawings, as indicated on Drawings or as specified, and in accordance with provisions of the CONSTRUCTION SPECIFICATIONS.

Review or acceptance of substitutions, schedules, shop drawings, lists of materials, and procedures submitted or requested by the Contractor shall not add to the Contract Price, and all additional costs which may result therefrom shall be solely the obligation of the Contractor. It shall not be the responsibility of the Owner to provide engineering or other services to protect the Contractor from additional costs accruing from such review or acceptance.

No equipment or material for which listings, drawings, or descriptive material is required shall be installed until the Engineer has on hand copies of such accepted lists and the appropriately stamped final shop drawings. The review of drawings by the Engineer will be limited to general design requirements only, and shall in no way relieve the Contractor from responsibility for errors or omissions contained therein. Submittals will be acted upon by the Engineer as promptly as possible. Delays caused by the need for resubmittals shall not constitute reason for an extension of Contract Time. The Engineer will perform only two (2) reviews on a specific submittal. If additional review by the Engineer is required, all costs associated with the additional review will be borne by the General Contractor.

Operation and Maintenance Manual information and Equipment Record Sheets specific to one piece of equipment or material shall be submitted to the Engineer for acceptance.

7. CONSTRUCTION FACILITIES TEMPORARY CONTROLS

In accordance with CONSTRUCTION SPECIFICATIONS Section 01500 – Construction Facilities Temporary Controls:

The Contractor shall take reasonable measures to avoid unnecessary noise when work is being performed in populated areas.

The Contractor shall equip construction machinery and vehicles with practical sound and muffling devices and operate in a manner to minimize noise consistent with efficient performance of the work. The Contractor shall take reasonable measures to prevent unnecessary dust;

8. MATERIAL AND EQUIPMENT

In accordance with CONSTRUCTION SPECIFICATIONS Section 01600 – Material And Equipment Section:

The Bidder may substitute and include in his bid price a material or product other than those specified by name or brand, provided that requests are submitted and accepted in writing by the Engineer prior to the bid.

Specifying of proprietary products is not meant to exclude competition, but is intended to set a minimum standard. The words "or accepted substitute" are implied after any proprietary name. Substitutions will be considered according to specified substitution procedures.

9. CONTRACTORS'/MANUFACTURERS' SPECIAL SERVICES

In accordance with CONSTRUCTION SPECIFICATIONS Section 01650 – Contractors'/Manufacturers' Special Services:

The Contractor shall provide, at no additional cost to the Owner, the services of competent and experienced technical personnel who shall represent the manufacturers of all equipment and systems as may be necessary to resolve assembly or installation problems at the work site which are attributable to, or associated with, the equipment furnished.

Where startup services are called for in the Specifications, or when technical assistance is necessary due to any malfunction of the equipment or system furnished, the Contractor shall provide the services of a manufacturer's representative who shall provide such services as necessary to provide the Owner with an acceptable operating facility.

10. MOVE IN AND SITE PREPARATION

In accordance with CONSTRUCTION SPECIFICATIONS Section 02100 – Move In And Site Preparation:

The Contractor shall stake out the construction, establish temporary benchmarks, lines, levels, batterboards, reference points, centerlines, and verify all dimensions in relation to connection with existing facilities. The Contractor shall be solely responsible for all errors in connection with this work. Prior to commencement of the work, the Contractor shall report to the Engineer any inconsistencies in the proposed lines, levels, grades, dimensions, or locations shown on the Drawings.

The location of some utilities and obstructions may not be shown. Bidders are advised to carefully inspect the existing facilities before preparing their proposals. The removal and replacement of minor obstructions such as electrical conduits, air, water, and waste piping, and similar items shall be anticipated and accomplished, even though not shown or specifically mentioned. Major obstructions encountered that are not shown on the Contract Drawings or could not have been foreseen by visual inspection of the site prior to bidding should immediately be brought to the attention of the Engineer. The Engineer will make a determination for proceeding with the work. If the Engineer finds that the obstruction adversely affects the Contractor's costs or schedule for completion, a proper adjustment to the Contract will be made in accordance with the General Conditions.

GENERAL NOTES

11. EARTHWORK

In accordance with CONSTRUCTION SPECIFICATIONS Section 02200 – Earthwork:

A geotechnical investigation may have been performed for the Owner in order to obtain relative data concerning the character of material in and upon which the project is to be built. If an investigation has been performed, the information will be available to the Contractor for information purposes only, and is not to be considered a part of the Contract Documents. The Contractor shall satisfy himself as to the kind and type of soil to be encountered and any water conditions which might affect the construction of the project.

The location of existing utilities are shown in an approximate way only and not all utilities may be shown. The Contractor shall determine the exact location of all existing utilities prior to commencing work. The Contractor shall be fully responsible for any and all damages which might be occasioned by his failure to exactly locate and preserve any and all utilities. If utilities are to remain in place, the Contractor shall provide adequate means of support and protection during construction.

Should drawn, or incorrectly drawn piping or other utilities be encountered during excavation, the Contractor shall advise the Engineer within thirty (30) minutes of encountering the utility. The Contractor shall cooperate the with Engineer and utility companies in keeping respective services and facilities in operation to the satisfaction of the respective owners. The owners reserve the right to perform any and all work required should the Contractor fail to cooperate with the respective companies, and back charge the Contractor for any and all expenses.

12. TANK CLEANING, TESTING, & DISINFECTION

In accordance with CONSTRUCTION SPECIFICATIONS Section 01662 – Tank Cleaning, Testing, & Disinfection:

The work to be performed includes the cleaning, testing, and disinfection of all liquid holding vessels and tanks. All appurtenant operations involving cleaning, testing, and disinfecting the tanks shall be done in strict conformance with the Drawings and other terms and conditions of the Contract. All standard specifications made a portion of these Specifications by reference shall be the latest edition and revision thereof.

It is the intent of this Specification to be in conformance with AWWA C 652 and all local, state, and federal standards. In the event a conflict occurs between this Specification and AWWA C 652 and/or the local, state or federal regulation, AWWA C 652 or the local, state or federal regulation shall in all cases prevail.

WATERTIGHTNESS TEST

Mild Steel Reinforced Vessels and Pre–Cast Vessels

The backfill surrounding a buried vessel shall not be placed until after an acceptable watertightness test.

The vessel shall be filled at a rate as approved by the Engineer to a minimum of six (6) inches above the top of the tank. The test shall commence five (5) days after the vessel is filled; the watertightness test shall then commence for a period of forty–eight (48) hours. The maximum acceptable loss of water during the forty–eight (48) hours time period shall be four hundredths of one percent (0.04%). This loss of water shall be determined by measuring the drop in the water surface over the test period.

If the loss of water exceeds the acceptable volume loss during the test period the vessel shall be tested after five days for an additional forty–eight (48) hours. The total acceptable loss of water during the forty–eight (48) hours time period shall be less than eight hundredths of one percent (0.08%) of the volume measured by a drop in the water surface

If after both tests the loss of water exceeds the acceptable volume the Contractor shall be responsible for determining and remediating the cause of test failure. The Engineer shall review and approve the proposed remediation methods prior to the remediation work.

If the loss of water is less than that permitted, but visible water loss occurs in the walls or joints, the test shall not be considered acceptable until all visible signs of water loss are corrected.

RE–TESTING

If the vessel is drained to remedy the cause of water loss, the Contractor shall be responsible for cleaning and disinfecting (if required) the vessel prior to refilling and re–testing. The method and point of discharge as well as allowable water quality to drain the vessel shall be as approved by the Engineer.

The Contractor shall be charged the current rate for water consumed to perform all testing.

13. TOXIC MATERIALS DISCHARGED INTO WASTEWATER SYSTEM

The wastewater treatment system processes are biological and highly sensitive to all substances that enter the septic tank. Industrial wastes, toxic chemicals, hazardous materials, or other substances that are not considered domestic wastes are not allowed in the wastewater treatment system. These materials may cause catastrophic failure of the system. Completely avoid or minimize discarding high organic wastes such as kitchen scraps or garbage disposal wastes as well as coffee grounds and cooking fat. Never dispose of solids such as kitty litter, feminine hygiene products, paper towels, diaper, cigarettes, or other non–biodegradable materials. All areas with drainage fixtures shall have a written notice stating the facility's waste disposal policy.

14. INSTALLATION

The wastewater treatment system shall be installed by an installation company certified by the treatment system manufacturer.

15. OPERATION AND MAINTENANCE

The wastewater treatment system shall be continuously maintained by an O&M company certified by the treatment system manufacturer.

16. BUILDING MODIFICATIONS

The wastewater engineer must be contacted prior to any renovations to ensure that the capacity of the wastewater treatment system is adequate for the additional flow, if any.

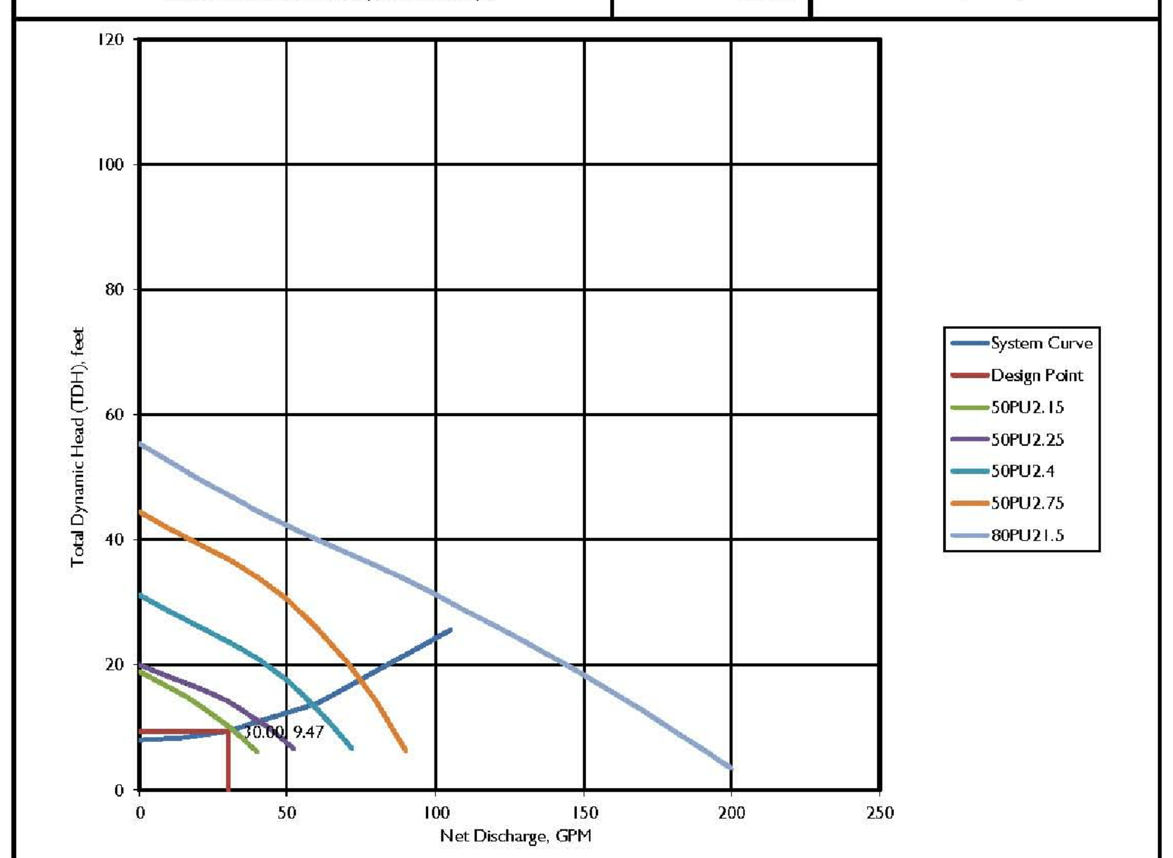
17. FLOW IN EXCESS OF DESIGN

Should actual flows exceed the design flow, modification of the wastewater treatment system may be required.

Ensitu Engineering Inc
685 Main Street Suite A
Morro Bay, CA 93442
tel: 805.772.0150
fax: 805.772.0813
ENSITU ENGINEERING INC
www.ensitu.com

Tsurumi Pump PU Series

Project: 530-01
Address: Dan Blocker State Beach Equalization Pumps
Designed By: ESC
Checked By: JNY
Design Date: June 26, 2012
Check Date: June 26, 2012



11 / C3.07 *EQUALIZATION PUMP CURVE*
NO SCALE

Prepared for you by 6/27/2012

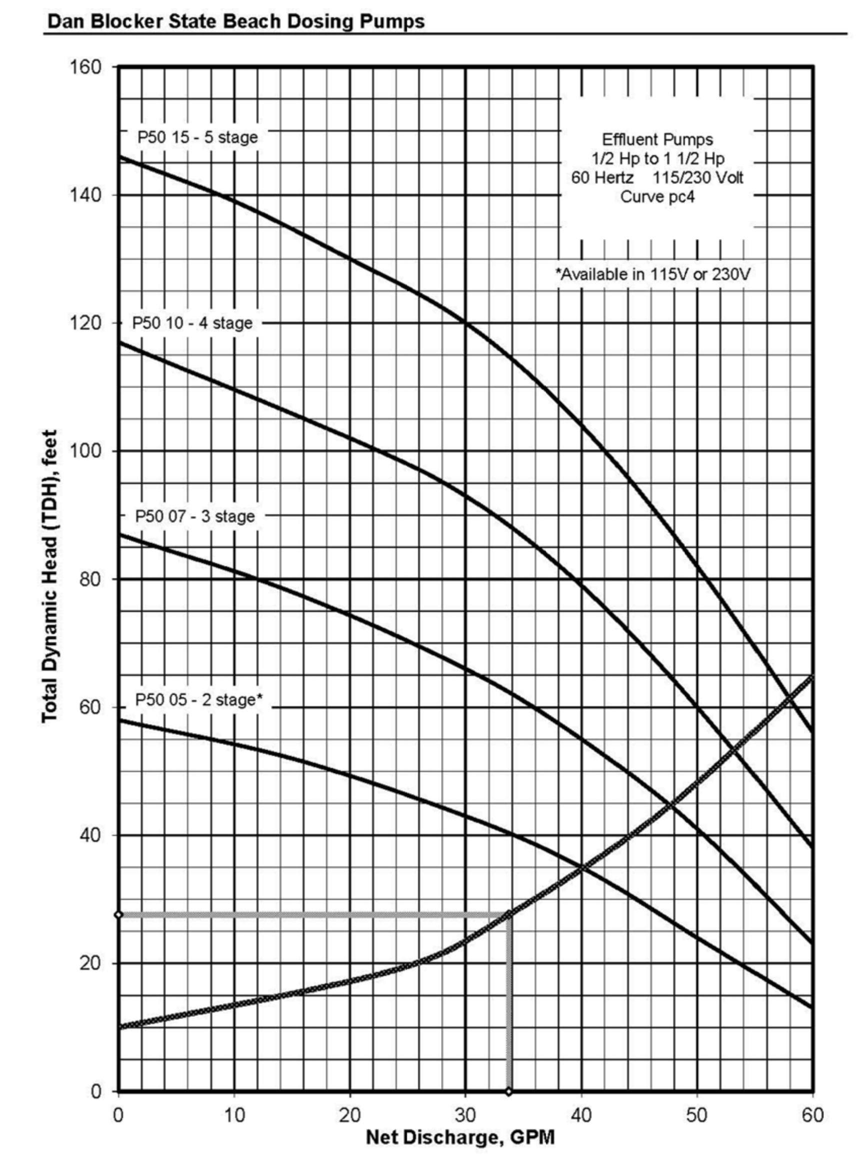
Pump Selection for Pressurized System

Orifice Size	0.125	inches
Residual Head at Last Orifice	5.00	feet
Lateral Length	75	feet
Total Number of Laterals per Cell	2	
Orifice Spacing	2.00	feet
Distributing Valve Model (# of Zones)	1	
Lift to Manifold	8	feet
Discharge Assembly Size	1.25	
Transport Line Size	1.25	inches
Pipe Class/Schedule	40	
Transport Length	8	feet
Manifold Size	1.25	inches
Pipe Class/Schedule	40	
Manifold Length	89.00	feet
Lateral Size	1.25	inches
Pipe Class/Schedule	40	
Flow Meter	2.00	inches

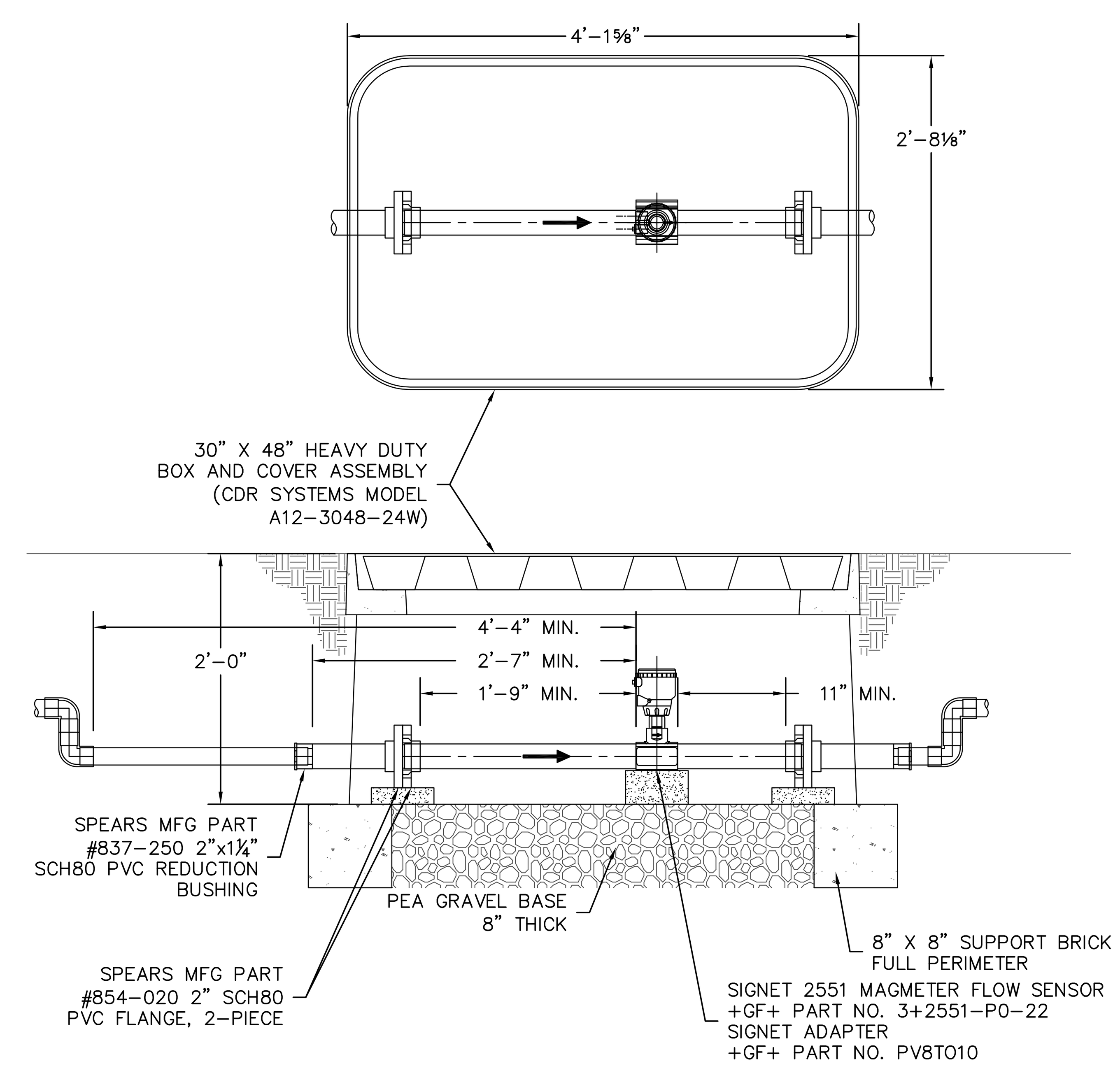
Calculation

Minimum Flow Rate per Orifice	0.43 gpm
Number of Orifices per Zone	76
Total Actual Flow Rate	33.7 gpm
Number of Laterals per Zone	2
Total Dynamic Head:	
Lift to Manifold	8.0 feet
Residual Head at Last Orifice	5.0 feet
Frictional Head Losses:	
Head Loss in Transport Pipe	1.1 feet
Head Loss through Discharge Assembly	5.7 feet
Head Loss in Distribution Header	3.4 feet
Head Loss in Laterals	1.0 feet
'Add-on' Friction Losses	2.0 feet
Head Loss through Distributing Valve	0.0 feet
Head Loss through Flow Meter	1.3 feet

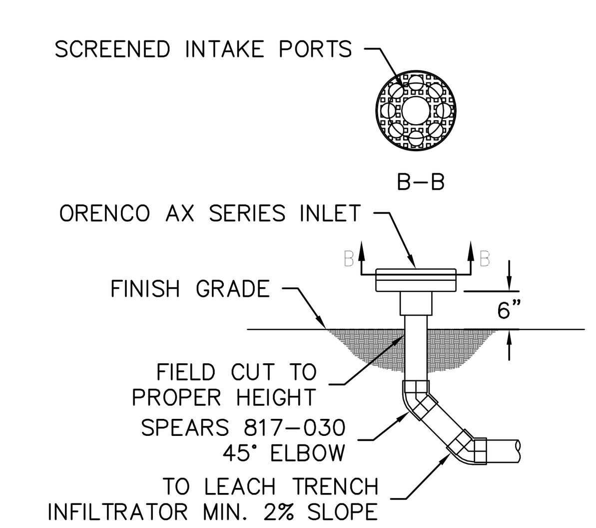
Size Pump for:
TOTAL FLOW RATE 33.7 gpm
@
TOTAL DYNAMIC HEAD 27.6 feet



10 / C3.07 *DOSING PUMP CALCULATIONS AND CURVE*
NO SCALE



12 / C3.07 *FLOWMETER ENCLOSURE*
NO SCALE



13 / C3.07 *AIR VENT DETAIL*
NO SCALE

COUNTY OF LOS ANGELES
PUBLIC WORKS
Public Service That Works

ARCHITECTURAL
ENGINEERING
DIVISION
DESIGN & REVIEW SECTION

900 S. FREMONT AVE.
ALHAMBRA, CA 91803

APPROVED: USER DEPARTMENT
BY DATE
REVIEWED:
BY ASSISTANT DEPUTY DIRECTOR (AED) DATE
REVIEWED:
BY PRINCIPAL ENGINEER (AED) DATE
REVIEWED:
BY PROJECT MANAGER DATE

REGISTERED PROFESSIONAL ENGINEER
BARBARA L. HALL
No. 42206
Exp. 03/31/14
CIVIL
STATE OF CALIFORNIA

PROJECT ARCHITECT/ENGINEER DATE

PROJECT TITLE
LA CO. DEPT. OF BEACHES & HARBORS
DAN BLOCKER BEACH PARKING LOT
GENERAL IMPROVEMENTS PROJECT
26200 PACIFIC COAST HIGHWAY, MALIBU, CA 90265

SHEET INDEX
WASTEWATER
GENERAL NOTES

REVISIONS
1
2
3

DRAWN	DATE
	04-02-12
JOB CAPTAIN	SPEC. NO.

CHECKED	CAPITAL PROJECT

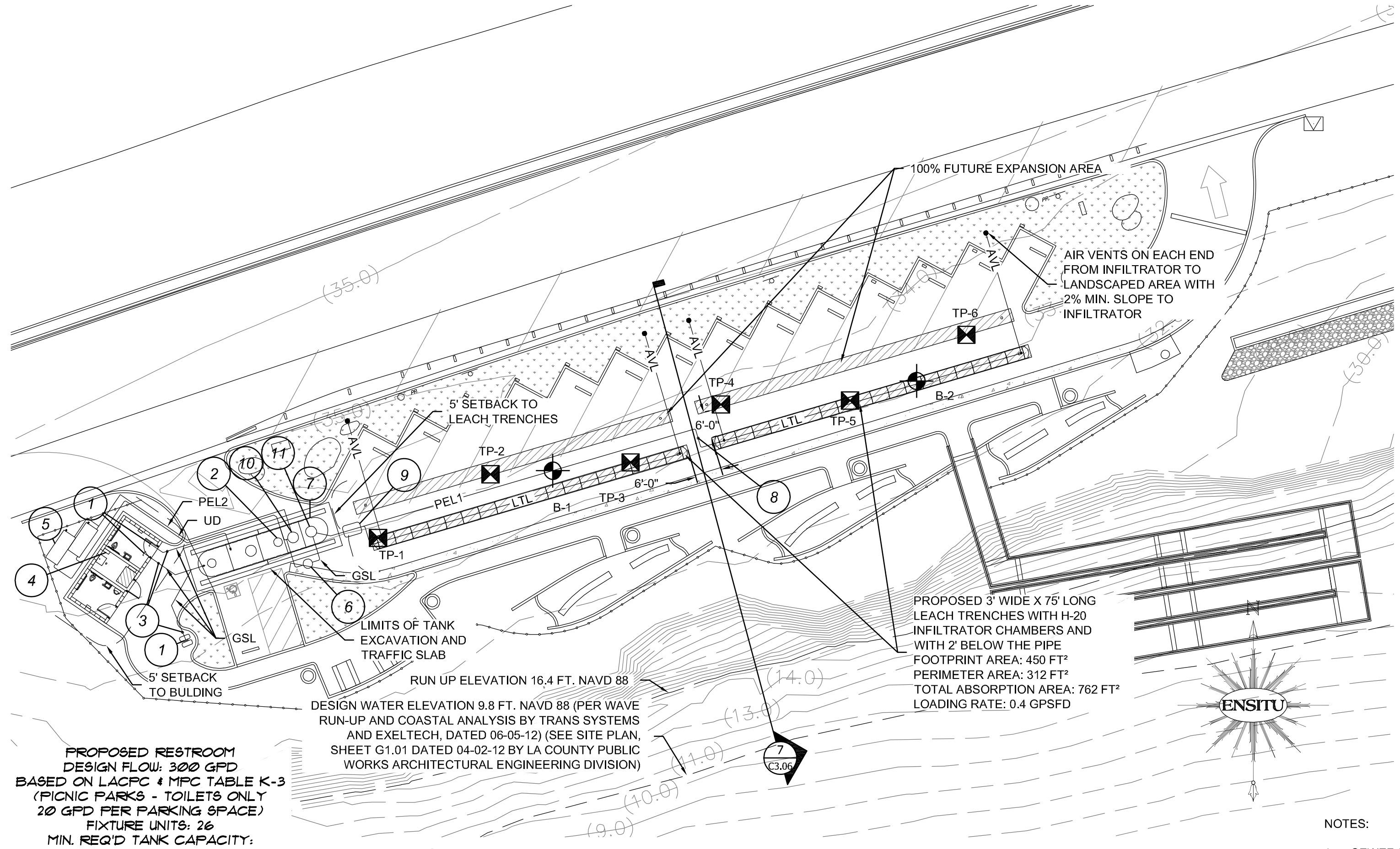
SHEET NUMBER

DRAWINGS ARE DIVIDED INTO SEPARATE SHEETS FOR GENERAL CONVENIENCE ONLY. SHEET DESIGNATIONS OR NUMBERING SHALL NOT BE CONSIDERED TO LIMIT AREAS OF WORK RESPONSIBILITY. THE TRADES, THE CONTRACTOR MUST COORDINATE THE DRAWINGS WITH EACH OTHER AND THE PROJECT MANUAL IN ORDER TO COMPLETE THE PROJECT AS DESIGNED.

C3.07

ALL INFORMATION WITHIN THESE BORDER LINES ARE CONSIDERED LEGAL AND BINDING.

NOTE: CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME.



PROPOSED RESTROOM
DESIGN FLOW: 300 GPD
BASED ON LACPC & MPC TABLE K-3
(PICNIC PARKS - TOILETS ONLY
20 GPD PER PARKING SPACE)
FIXTURE UNITS: 26
MIN. REQ'D TANK CAPACITY:
1500 GAL. BASED ON
LACPC & MPC TABLE K-2

SITE PLAN

0 40' 80'

SCALE: 1" =40'-0"

LEGEND

B-X BORING LOCATION (SEE REPORT DATED 04-17-2012 BY GEOTECHNICAL PROFESSIONALS, INC.)

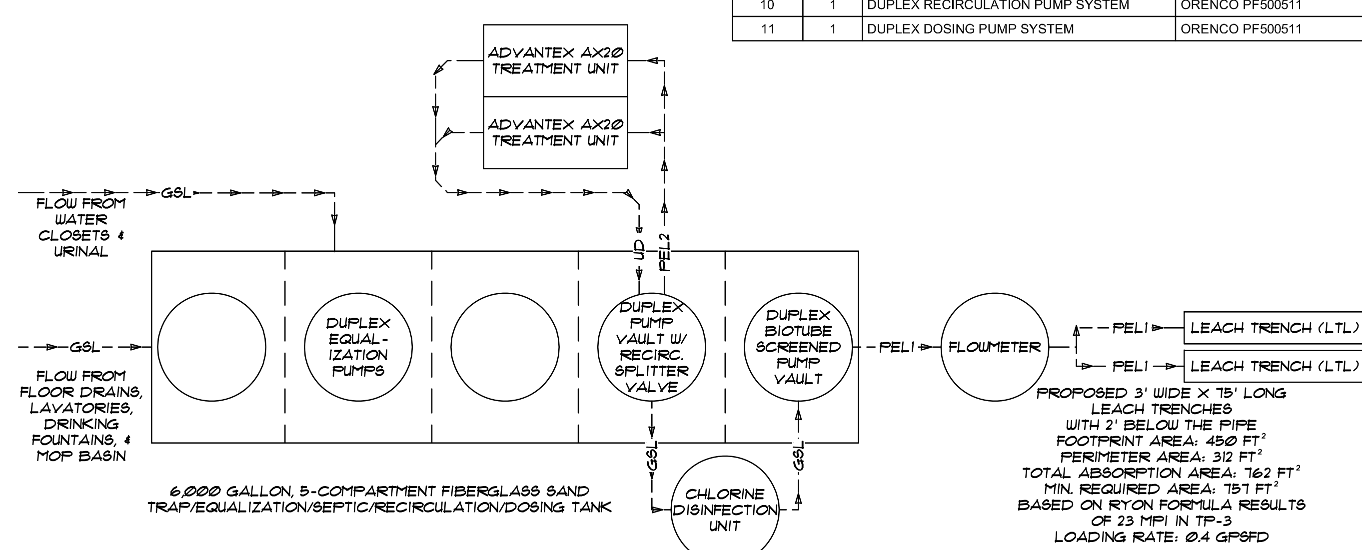
TP-X PERCOLATION TEST LOCATION (SEE REPORT DATED 04-17-2012 BY GEOTECHNICAL PROFESSIONALS, INC.)

EQUIPMENT SCHEDULE

ITEM	QTY	DESCRIPTION	MFG/PART NUMBER
1	3	CONNECTION TO BUILDING SEWER	
2	1	DUPLEX EQUALIZATION PUMP SYSTEM	TSURUMI 50PUW2.15S
3	3	GRAVITY CLEAN-OUT	DETAIL 1/C3.04
4	1	REMOTE TELEMETRY CONTROL UNIT	ORENCO T-COM DAX1PTROETMCTETMCT
5	2	TREATMENT UNIT	ORENCO ADVANTEX AX20
6	1	DISINFECTION UNIT	NORWECO BIOKINETIC BK2000
7	1	SAND TRAP / EQUALIZATION / SEPTIC / RECIRCULATION / DOSING TANK (6,000 GALLON, 5-COMPARTMENT FIBERGLASS)	XERXES
8	1	PRESSURE CLEAN-OUT	DETAIL 2/C3.04
9	1	FLOWMETER	SIGNET 2551
10	1	DUPLEX RECIRCULATION PUMP SYSTEM	ORENCO PF500511
11	1	DUPLEX DOSING PUMP SYSTEM	ORENCO PF500511

NOTES:

1. SEWER PIPE SHALL BE BEDDED IN ACCORDANCE WITH SPECIFICATIONS AND 2011 COUNTY OF LOS ANGELES PLUMBING CODE.
2. SYSTEM COMPONENTS AND APPURTENANCES (INCLUDING CLEAN-OUTS) SHALL BE INSTALLED IN ACCORDANCE WITH 2011 COUNTY OF LOS ANGELES PLUMBING CODE.
3. ELECTRICAL COMPONENTS AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH 2011 COUNTY OF LOS ANGELES ELECTRICAL CODE.
4. A REGISTERED GEOTECHNICAL ENGINEER, UNDER THE DIRECTION OF THE OWNER, SHALL DETERMINE IF THE WASTEWATER LOADING RATE WILL CAUSE THE EXISTING SLOPE TO BECOME UNSTABLE. ENSITU ENGINEERING INC., IS NOT A GEOTECHNICAL ENGINEERING FIRM, THEREFORE, WE CAN NOT PREDICT AND/OR DETERMINE THE STABILITY OF THE EXISTING SLOPE. REF: GEOTECHNICAL FEASIBILITY REPORT FOR ONSITE WASTEWATER TREATMENT SYSTEM BY GEOTECHNICAL PROFESSIONALS, INC. DATED 04-17-2012.
5. ALL DIMENSIONS AND GRADES SHALL BE VERIFIED BY CONTRACTOR PRIOR TO SYSTEM INSTALLATION, BUILDING SEWER DEPTH OR CONNECTION POINT WAS NOT PROVIDED AND SHALL BE DETERMINED BY CONTRACTOR PRIOR TO CONSTRUCTION
6. ONSITE WASTEWATER TREATMENT SYSTEM SHALL BE VENTED THROUGH THE DRAINAGE PIPING OF THE RESTROOM BUILDING IN ACCORDANCE WITH REQUIREMENTS OF THE 2011 COUNTY OF LOS ANGELES PLUMBING CODE (CHAPTER 9).
7. CONTRACTOR TO VERIFY DEPTH AND LOCATION OF BUILDING SEWER CONNECTION, MINIMUM 2% SLOPE FROM STRUCTURE TO CONNECTION POINT.
8. THERE IS NO EXISTING SEPTIC SYSTEM.



PROCESS SCHEMATIC
NO SCALE

PIPING SCHEDULE

TAG	DESCRIPTION	SPECIFICATION
GSL	PROPOSED GRAVITY SEWER LINE	4" SDR35 PVC
PEL2	PROPOSED PUMPED EFFLUENT LINE	2" SCH40 PURPLE PVC
UD	PROPOSED GRAVITY UNDERDRAIN	4" SDR35 PVC
LTL	PROPOSED LEACH TRENCH LATERAL	1½" SCH40 PURPLE PVC
PEL1	PROPOSED PUMPED EFFLUENT LINE	1¼" SCH40 PURPLE PVC
AVL	PROPOSED AIR VENT LINE	3" SCH40 PVC

FINAL FOR APPROVAL
ISSUED
14 August 2012

JOHN N. YAROSLASKI
PRINCIPAL ENGINEER

ENSITU
ENSITU ENGINEERING, INC.
885 MAIN ST., SUITE A
Morro Bay, CA 93442
Tel: 805.772.0150
Fax: 805.772.0813
ENSITU@ensitu.com
"Dedicated to achieving higher standards in onsite and decentralized wastewater systems."

REVISIONS

NO.		DATE	BY

DAN BLOCKER STATE BEACH
SITE PLAN & PROCESS SCHEMATIC 11x17
MALIBU, CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
JOHN N. YAROSLASKI
60149
EXP 06/2014
CIVIL
STATE OF CALIFORNIA

DATE: JUNE 2012
DESIGNED BY: ESC
DRAWN BY: ESC
CHECKED BY: JNY

JOB NO. 530-01
SHEET 1 OF 1

Appendix IV. –
Geotechnical Investigation (2012)

GEOTECHNICAL
PROFESSIONALS INC.

GEOTECHNICAL INVESTIGATION
PROPOSED SITE IMPROVEMENTS
DAN BLOCKER BEACH
26000 PACIFIC COAST HIGHWAY
MALIBU, CALIFORNIA

Prepared for:
County of Los Angeles
Department of Public Works
900 South Fremont Avenue, 5th Floor
Alhambra, California 91803

Prepared by:
Geotechnical Professionals Inc.
5736 Corporate Avenue
Cypress, California 90630
(714) 220-2211

Project No. 2380.06I

April 16, 2012

GPI GEOTECHNICAL PROFESSIONALS INC.

April 16, 2012

County of Los Angeles Department of Public Works
Project Management Division I
900 S. Fremont Avenue, 5th Floor
Alhambra, California 91803-1331

Attention: Mr. Edward Andrews

Subject: Report of Geotechnical Investigation
Proposed Site Improvements
Dan Blocker Beach
26000 Pacific Coast Highway
Malibu, California
GPI Project No. 2380-06I

Dear Mr. Andrews:

Transmitted herewith are six copies of our report (6 bound and a pdf copy on CD) of geotechnical investigation for the subject project. The report presents our evaluation of the geotechnical conditions at the site and recommendations for design and construction.

We appreciate the opportunity of offering our services on this project and look forward to seeing the project through its successful completion. Feel free to call us if you have any questions regarding our report or need further assistance.

Very truly yours,
Geotechnical Professionals Inc.

Donald A. Cords, G.E.
Associate

DAC:sph

2380-06I-03L.doc (4/12)

TABLE OF CONTENTS

LIST OF FIGURES

1.0 INTRODUCTION

1.1 GENERAL

This report presents the results of a geotechnical investigation performed by Geotechnical Professionals Inc. (GPI) for the proposed site improvements at Dan Blocker Beach located adjacent to Pacific Coast Highway in Malibu, California. The geographical site location is shown on Figure 1, Site Location Map.

1.2 PROJECT DESCRIPTION

The proposed improvements at Dan Blocker Beach will consist of the construction of a paved vehicular parking area, a restroom structure, picnic and viewing areas, walkways, and a ramp for beach access. An on-site waste water treatment system is planned for the restroom including a septic tank and leach lines underneath the pavement area. The proposed site configuration is shown on Figure 2, Site Plan.

The site currently consists of approximately 2 acres of undeveloped land sitting at the top of a coastal bluff along Pacific Coast Highway. The distance from the edge of Pacific Coast Highway to the top of the bluff face varies from approximately 60 to 75 feet. The bluff drops steeply to the underlying beach. The height of the bluff face to the underlying beach varies from approximately 10 to 15 feet. The slopes and heights of the bluff face are based upon a topographic map provided by the County of Los Angeles and shown on Figure 2.

The restroom structure will be relatively small with an anticipated footprint of approximately 240 square feet. Plans indicate the building will be masonry block wall construction with a slab-on-grade floor. We have assumed maximum wall loads of 1 to 2 kips per linear foot.

The beach access ramp will extend from the top of the coastal bluff to the underlying beach. The ramp will be supported on a series of fourteen concrete piles as the ramp extends downward to the beach. Figure 3 shows the location of the concrete piles within the ramp. Preliminary structural loads provided by the Structural Engineer, Mr. Sabir Umerani, indicate a vertical load of 75 kips and lateral load of 25 kips for the piles for the ramp. We have assumed the ramp is supported at a distance of 3 to 8 feet above the underlying ground surface. These loads do not include the potential wave impact loads for the piles within the lower portion of the stairway ramp at beach level.

Our recommendations are based upon the above structural and grading information. We should be notified if the actual loads and/or grades change during the project design to either confirm or modify our recommendations.

1.3 REVIEW OF EXISTING REPORTS

The County of Los Angeles provided existing geotechnical reports for the site prepared by Group Delta Consultants (GDC). In 2001, GDC prepared a geotechnical reconnaissance report (Reference 1) with an overview of the site conditions including geologic hazards, coastal bluff geomorphology, wave climate, sea-level change, bluff retreat, slope stability, and structural alternatives for the site improvements. Reference 1 did not include borings or other subsurface explorations. In 2005, GDC prepared a geotechnical investigation report (Reference 2) with discussion and recommendations concerning the geologic and seismic hazards, the stairway ramp structure, earthwork, slope stability, and pavement design. This investigation included three bucket auger borings within the proposed parking area.

We were also provided a wave run-up analysis performed in 2005 by Concept Marine Associates, Inc. (Reference 3). This report provided an anticipated water level along the bluff face using the extreme run-up level for Dan Blocker Beach.

1.4 PURPOSE OF INVESTIGATION

The primary purpose of this investigation and report is to provide an evaluation of the existing geotechnical conditions at the site as they relate to the design and construction of the proposed site improvements. More specifically, this investigation was aimed at providing geotechnical recommendations for planning earthwork, and design of foundations, floor slabs, and pavements.

2.0 SCOPE OF WORK

Our scope of work for this investigation consisted of review of existing subsurface information (References 1 to 3), field exploration, laboratory testing, engineering analysis, and the preparation of this report.

The field exploration consisted of two exploratory borings, three exploratory test pits, and a geophysical seismic survey. The borings were performed within the proposed parking area and the test pits near edge of the top of bluff face and at the base of the bluff face. The approximate locations of the subsurface explorations are shown on Figure 2. The geophysical survey lines were performed at the top of the bluff and along the toe of the bluff on the beach sand.

The borings were drilled using truck-mounted bucket auger equipment and extended to depths of 20 to 25 feet below existing site grades. Details of the drilling and Logs of Borings are presented in Appendix A. The test pits were excavated with hand equipment to depths ranging from 6 to 9 feet below existing site grades.

Laboratory soil tests were performed on selected representative samples as an aid in soil classification and to evaluate the engineering properties of the soils. The geotechnical laboratory testing program included determinations of moisture content and dry density, grain size analysis, shear strength (direct shear), and compaction (maximum density/optimum moisture). Laboratory testing procedures and results are summarized in Appendix C.

The geophysical seismic survey was performed by Terra Geosciences under subcontract to GPI. Details of the geophysical survey are provided in Appendix D.

Engineering evaluations were performed to provide earthwork criteria, foundation design parameters, preliminary pavement sections and assessments of seismic hazards. The results of our evaluations are presented in the remainder of the report.

3.0 SITE CONDITIONS

3.1 SURFACE CONDITIONS

The ground surface at the site along the top of the coastal bluff is relatively flat with a very gentle slope away from Pacific Coast Highway. The elevation varies from approximately +35 feet at Pacific Coast Highway to approximately +30 feet along the bluff edge. The bluff face drops to the beach with an elevation shown on the topographic map ranging from approximately Elev. +13 to +15 feet. The bluff face varies from approximately near-vertical to ¾:1 (horizontal:vertical). The elevation of the sandy beach at the toe of the bluff may decrease significantly due to seasonal beach fluctuations (Reference 3).

The ground surface in a portion of the site contains abandoned asphalt concrete pavements in very poor condition. The remainder of the upper portion of the site contains grasses, brush, and bushes. The bluff face is very sparsely vegetated with grasses. The lower beach contains sands with intermittent rip rap rock and concrete throughout the beach adjacent to the bluff.

The site area is bounded on the north by Pacific Coast Highway, on the east by a condominium building, on the south by the Pacific Ocean, and on the west by beach and bluff top. On the opposite side of Pacific Coast Highway, a large face of bedrock cut has been exposed to construct Pacific Coast Highway.

3.2 SUBSURFACE SOILS

Our field investigation disclosed a subsurface profile consisting of artificial fills over natural soils consisting of beach sand. A previous investigation by others (Reference 2) and the geophysical investigation (Appendix D) indicate the beach sands overlie hard bedrock.

Our investigation indicated approximately 15 to 20 feet of fill has been placed over the beach sands at the boring locations on the top of the bluff. Based upon Reference 2 and the geophysical investigation, the thickness of the beach sand overlying the bedrock likely varies from approximately 3 to 7 feet.

The fill soils consisted of silty sands with gravels in the upper 12 to 15 feet. The fill soils appear to be derived from nearby exposed road cuts of native bedrock and terrace deposits. Documentation regarding the placement and compaction of the fill is not available.

Review of aerial photographs performed by Concept Marine Associates (Reference 3) indicates the fill was placed in the 1940's during a reconstruction of Pacific Coast Highway. Reference 3 indicates that aerial photographs in 1929 and 1939 show Pacific Coast Highway extending along the top of beach sand. Aerial photographs taken in 1952 (Reference 4) show the fill for Pacific Coast Highway to appear to be near the current alignment. Reference 3 indicates the photographs in 1959 show a presence of a wider bluff between Pacific Coast Highway and the beach.

At the toe of the bluff face, we encountered 9 feet of fill soils in our exploratory test pits consisting of silty sands with gravels. Just outside the toe of the bluff face, a seismic refraction line showed 6 to 9 feet of fill material and/or beach sand overlying the bedrock.

The consistency of the fill soils is variable at the site varying from loose to medium dense. The soils have moisture contents within a few percentages of optimum moisture. Based on in-place and laboratory density testing, the fill soils have dry densities ranging from 77 to 79 pcf. The dry density value of the fill soils are significantly lower than the maximum dry densities in accordance with ASTM D-1557. Shear wave velocities measured within the fill indicate values of approximately 400 to 700 feet/second (Appendix D). Shear wave velocities within this range indicate a soft soil site. This data is consistent with the blowcounts during drilling with the bucket borings during our investigation and the investigation by others (Reference 2). In general, the fill soils exhibit medium to high compressibility and low to moderate strength characteristics.

The beach sands are clean sands with very little fines. The sands are slightly moist to moist and loose to medium dense. The sands exhibit medium compressibility and moderate strength characteristics.

The underlying bedrock is hard from a soil consistency standpoint with shear wave velocities of approximately 2500 feet/second. The bedrock exhibits very low compressibility and very high strength characteristics.

Detailed descriptions of the conditions encountered are shown on the Logs of Borings in Appendix A and Logs of Test Pits in Appendix B. Laboratory testing provided in Appendix C shows the grain size distribution of the fill materials. Detailed seismic properties of the subsurface materials encountered in the geophysical survey are provided in Appendix D.

3.3 GROUNDWATER AND CAVING

Significant caving was not observed in the fill soils in the relatively large diameter bucket auger borings. Caving may be encountered if loose or dry layers of the fill are encountered.

Caving within the beach sand underlying the fill was significant, causing refusal of the large diameter bucket auger borings.

Groundwater was not encountered in our borings or test pits at the site. We anticipate groundwater would be near the level of the tides. We would anticipate high groundwater to be near Elevation +5 feet (mean sea level). Reference 3 indicates the highest tidal level to be near Elevation +8 feet.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 GENERAL

Based on the results of our investigation, it is our opinion that from a geotechnical viewpoint it is feasible to develop the site, provided the recommendations discussed herein are incorporated into the design and construction of the project. The proposed structures can be supported on shallow and deep pile foundations provided the geotechnical constraints discussed below are mitigated. The most significant geotechnical issues that will affect the design and construction of the proposed structures are as follows:

- Our investigation indicated approximately 15 to 20 feet of fill has been placed over the beach sands to construct the coastal bluff. The thickness of the beach sand overlying the bedrock likely varies from approximately 3 to 7 feet. In general, the fill soils consisted of silty sands with gravels.

- Documentation regarding the placement and compaction of the fill is not available (likely placed in the 1940's). Our findings indicate that the fill is not uniformily well-compacted.

- The consistency of the fill soils is variable at the site varying from loose to medium dense. Shear wave velocities measured within the fill indicate values of approximately 400 to 700 feet/second indicating a soft soil site. In general, the fill soils exhibit medium to high compressibility and low to moderate strength characteristics.

- Gross stability analysis was performed for cross-sections of the existing coastal bluff. We determined the existing bluff exhibits a factor of safety for gross stability under static conditions ranging from 1.1 to 1.7. Under seismic conditions, the bluff exhibited a factor of safety for gross stability ranging from 0.8 to 1.1. The standard of practice requires slopes to exhibit a factor of safety of at least 1.5 under static conditions and 1.1 under seismic conditions. Our results indicate the overall gross stability of the coastal bluff does not meet current standards for slope stability.

- Based upon our analysis, we anticipate localized surficial failures of the bluff face to occur adjacent to the project site. Undermining of the toe of the bluff by wave impact would also have the potential to cause further bluff instabilities.

- For the restroom structure planned at the north end of the site, we recommend a minimum setback of at least 35 feet from the top of bluff. We recommend a minimum setback of at least 25 feet from the top of bluff be provided for the pavements. If leach lines are used for an on-site waste water treatment system, we recommend a minimum setback of at least 30 feet from the top of the bluff to the footprint of the leach lines.

- We recommend the ramp foundations be supported on piles because of the low strength of the existing fills, instabilities of the bluff, and potential scour due to wave run-up at the base of the bluff face. The piles supporting the ramp should be socketed into the underlying bedrock. We do not recommend the ramp be supported on shallow footings within a ramp wall extending down the bluff face.

- The proposed bathroom structure may be supported on conventional isolated and/or continuous shallow footings, provided the County of Los Angeles understand the potential impacts of supporting the structure on undocumented fills. The standard of practice is to remove the undocumented fill beneath buildings and replace with engineered fill materials. The bathroom structure can be supported over this undocumented fill with expectations of potential settlement beyond that which is generally accepted for structures. If this is not acceptable the building will need to be supported on piles, as removal and recompaction of the fill in its entirety is not considered to be feasible.

- In the areas of the restroom structure and pavement, we recommend placement of a heavy duty geogrid to help mitigate potential surface impacts from the settlement of the underlying fills due to seismic settlement or hydroconsolidation due to the infiltration from the proposed leach lines.

- The drilling contractor should plan his method of drilling to account for the severe caving of dry sands overlying the bedrock. Caving may also be encountered within loose, dry lenses of the granular fill material. The bedrock material may likely be difficult to excavate to the recommended rock socket embedment. The drilling method may require hammer of the rock and/or hard rock coring bits.

- Positive surface gradients should be provided adjacent to the improvements so as to direct surface water run-off and roof drainage away from the bluff face toward suitable discharge facilities near Pacific Coast Highway.

Our recommendations related to the geotechnical aspects of the development of the site are presented in the subsequent sections of this report.

4.2 SEISMIC CONSIDERATIONS

4.2.1 General

We assume the seismic design of the proposed development will be in accordance with 2010 CBC criteria. For the 2010 CBC, a Site Class D may be used. The remaining seismic code values can be determined by the Project Structural Engineer using the value above and the pertinent internet websites and tables from the building code (Reference 5 for S_S, S_1, S_D, and S_M values).

The actual method of seismic design should be determined by the Project Structural Engineer.

4.2.2 Strong Ground Motion Potential

The site is located in a seismically active area of Southern California and is likely to be subjected to strong ground shaking due to earthquakes on nearby faults. Based on published information presented in Reference 6, the most significant faults in the proximity of the site are the Malibu Coast and Santa Monica Faults. These faults are within 5 km of the project site.

During the life of the project, the site will be subject to strong ground motions due to earthquakes on nearby faults. Based on the USGS website (Reference 2), we computed that the site could be subjected to a peak design ground acceleration of 0.49g. This acceleration was computed using 40 percent of S_{DS}, the 5 percent damped design spectral acceleration at short periods, for the project.

4.2.3 Potential for Ground Rupture

The site is not located within an Alquist-Priolo Earthquake Fault Zone. The Latigo Fault is mapped by Dibblee (Reference 7) to trend east-west through the site along the beach. The Latigo Fault is not considered an active fault. There are no known active faults crossing or projecting toward the site. Therefore, ground rupture due to faulting is considered unlikely at this site.

4.2.4 Liquefaction

Soil liquefaction is a phenomenon in which saturated cohesionless soils undergo a temporary loss of strength during severe ground shaking and acquire a degree of mobility sufficient to permit ground deformation. In extreme cases, the soil particles can become suspended in groundwater, resulting in the soil deposit becoming mobile and fluid-like. Liquefaction is generally considered to occur primarily in loose to medium dense deposits of saturated cohesionless soils. Thus, three conditions are required for liquefaction to occur: (1) a predominantly sandy or silty soil of loose to medium density; (2) a saturated condition; and (3) rapid large strain, cyclic loading, normally provided by earthquake motions.

The beach portion of the site is located within an area mapped by the State of California as having a potential for soil liquefaction (Reference 8). Groundwater was not encountered in borings by others (Reference 2) to the depth of hard bedrock. Reference 3 indicates the highest tidal level to be near Elevation +8 feet which is where hard rock is anticipated.

Soil liquefaction is not likely to be significant at this site primarily because of the groundwater level and the underlying hard rock. Minor liquefaction may occur within beach sands below the base of the coastal bluff.

4.2.5 Seismic Ground Subsidence

Seismic ground subsidence (not related to liquefaction induced settlements) occurs when strong earthquake shaking results in the densification of loose to medium dense sandy soils above the groundwater.

Based upon the variable nature of the fill soils consisting of loose to medium dense sands, we anticipate that seismic settlement from approximately ½-inch to 1-inch could occur within the granular fill soils during strong ground shaking.

4.3 BLUFF STABILITY

4.3.1 General

As discussed above, the coastal bluff consists of fill material placed during the reconstruction of Pacific Coast Highway in the 1940's. We performed slope stability analysis of the bluff on four cross-sections based on the topographic map provided by the County of Los Angeles. In addition, we performed a slope stability analysis on the one cross-section provided in the previous geotechnical report by GDC (Reference 2).

We utilized soil design parameters for the fill in our analysis based upon direct shear testing data performed on relatively undisturbed samples from four locations within the fill. We analyzed the slope stability using both an average shear strength value and low shear strength value from our test results. We used results of laboratory testing for the shear strength of the beach sand. We used an assumed strength value for the hard rock.

4.3.2 Slope Stability Analysis

Gross stability analysis was performed for five cross-sections of the existing coastal bluff using the computer program SLIDE v6.0 and the Modified Bishop Method of analysis. We performed both static and seismic analysis of the existing bluff. We utilized a pseudo-static seismic coefficient of 0.2g for the seismic analysis.

We determined the existing bluff exhibits a factor of safety for gross stability under static conditions ranging from 1.2 to 1.7 using the average shear strengths for the fill soils. Under seismic conditions, the bluff exhibited a factor of safety for gross stability ranging from 0.9 to 1.1 using the average shear strengths for the fill soils. We used average shear strength parameters for cohesion of 250 psf and phi angle of 27 degrees.

Using a lower-bound shear strength value, we determined the existing bluff exhibits a factor of safety for stability under static conditions ranging from 1.1 to 1.5. Under seismic conditions with lower-bound shear strengths, the bluff exhibited a factor of safety for stability ranging from 0.8 to 1.0. We used lower-bound shear strength parameters for cohesion of 200 psf and phi angle of 23 degrees.

The standard of practice requires slopes to exhibit a factor of safety of at least 1.5 under static conditions and 1.1 under seismic conditions. Our results indicate the overall gross stability of the coastal bluff does not meet current standards for slope stability.

Details of the slope stability analysis, including summary of results and SLIDE v6.0 output for each case is provided in Appendix E.

The surficial stability of the slopes was determined using the method of infinite slope. The surficial stability of the bluff face exhibits a factor of safety of 1.5 at an inclination of approximately 2:1 (horizontal:vertical) using low shear strength values and a factor of safety of 1.5 at an inclination of approximately 1.5:1 (horizontal:vertical) using the average shear strength values. Based upon the steepness of the bluff face, the surficial stability does meet a factor of 1.5 for surficial stability for the majority of the bluff face.

Based upon our analysis, we anticipate localized surficial failures of the bluff face to occur adjacent to the project site. The failures may be slumping of significant portions of the bluff face or surficial erosion. Concept Marine Associates (Reference 3) indicates a potential for wave run-up to impact the lower portion of the bluff during winter storm events. Undermining of the toe of the bluff by wave impact would also have the potential to cause further bluff instabilities.

4.3.3 Recommended Setbacks

We determined the stability of slope consisting of the fill materials within the existing coastal bluff to have a static factor of safety of 1.5 when the slope inclination is between 1.5:1 and 2:1 (horizontal:vertical). Slope stability charts for these inclinations with the design soil parameters and bluff height are provided in Appendix E.

Using a stable 2:1 (horizontal:vertical) slope inclination, we determined a minimum slope setback by projecting the stable slope back from the toe of the bluff. The projection has been plotted on the analyzed cross-sections of the existing bluff. We determined the setback distance from the top of the bluff face to range from 14 to 22 feet. The plots and summary of the setback distances are included in Appendix E.

In reviewing our findings, we recommend a minimum setback of at least 25 feet from the top of bluff be provided for the pavements. We recommend that improvements within the setback consist of pathways and fencing that may tolerate potential movement, such as decomposed granite or natural paths and post/rope fencing.

For the restroom building, we recommend a minimum setback of at least 35 feet from the top of the bluff. This meets the County of Los Angeles slope setback requirements that footings shall be located a distance of one-third the vertical height of the adjacent slope measured horizontally from the stable slope surface to the lower edge of the footing.

If the public is allowed within seating areas, picnic areas, or paths within the minimum setback from the bluff face, appropriate warning signs should be provided that the bluff surfaces may be unstable.

If leach lines are used for an on-site waste water treatment system, we recommend a minimum setback of at least 30 feet from the bluff edge to the footprint of the leach lines.

4.4 RAMP FOUNDATIONS

4.4.1 General

A ramp to provide pedestrian access to the beach is planned along the bluff face as shown in Figures 2 and 3. We recommend the ramp foundations be supported on piles because of the low strength of the existing fills, instabilities of the bluff, and potential scour due to wave run-up at the base of the bluff face. We do not recommend the ramp be supported on shallow footings within a ramp wall extending down the bluff face.

Structural plans indicate that the piles supporting the ramp will consist of concrete 30-inch diameter cast-in-drilled-hole (CIDH) piles extending into the underlying bedrock.

4.4.2 Allowable Capacity

We recommend the CIDH pile lengths be socketed into the bedrock to develop the required vertical capacity. The following axial capacities and depths may be used for design:

Recommended Pile Embedment and Allowable Capacity

AREA	PILE TIP DEPTH SOCKETED INTO THE BEDROCK (ft)	ALLOWABLE PILE CAPACITY (kips)
		30-inch Diameter Concrete CIDH Pile
Ramp Foundations	4	135

The approximate elevation of the bedrock surface at each proposed pile location is presented in Figure 3.

The allowable pile capacities have been calculated assuming the resistance to axial load is developed from the side resistance from the socket into the bedrock material. The allowable capacities presented above include a factor of safety of greater than 2.

The total settlement of stairway columns supported by piles under a maximum total load of approximately 75 kips is estimated to be less than ½-inch. Differential settlements between similarly loaded adjacent columns are expected to be less than ¼-inch.

4.4.3 Uplift Capacity

To resist uplift loads, the piles will derive their resistance from friction between the subsurface rock socket and the pile surface. The uplift capacity of 30-inch diameter concrete CIDH piles may be taken as ½ the downward capacities presented above. We should be notified if the uplift capacities govern the pile design lengths.

4.4.4 Lateral Capacity

We analyzed the lateral load response of 30-inch diameter CIDH piles using LPILE, a finite difference computer program. The soil is modeled as a series of non-linear lateral springs, with lateral response defined by segmentally-variable p-y curves. Pile deflection with load is assumed to follow a linear-elastic relationship. Therefore, the results of our analyses are valid up to the bending moment capacity of the pile. At higher loads, the deflections will be greater than those predicted by the computer model.

The lateral capacity of the piles will depend on the permissible deflection and on the degree of fixity at the top of the pile. We performed our lateral pile analyses assuming free-head conditions for the piles. We have determined preliminary lateral deflections for the top of the pile based upon the static lateral load of 25 kips as provided by Structural Engineer at the ramp level. We have assumed the ramp to be approximately 3 to 8 feet above the existing ground. We have also calculated preliminary lateral deflections at the top of the pile based upon a seismic load of 55 kips. This value was used in the analysis for lateral load in the past geotechnical report (Reference 2).

The estimated lateral deflections for the piles with lateral loads discussed above are presented in the following table.

Lateral Deflections at Top of CIDH Pile

Case	Length of Pile from Ground Surface to Ramp Level (feet)	Estimated Length of Pile Below Ground Surface (feet)	Pile Diameter (inches)	Lateral Load at Ramp Level (kips)	Estimated Deflection at Top of Pile (inches)
Upper Ramp	3	24	30	25	0.4
				55	1.1
Mid Bluff	8	22	30	25	0.8
				55	2.6
Lower Ramp	5	11	30	25	0.7
				55	3.8
Mid Bluff (w/assumed soil movement)	15	15	30	25	2.0
				55	14.5

The lateral deflection, bending moment, and shear diagrams for 30-inch diameter concrete CIDH piles are provided in Appendix F.

The lateral pile analysis assumes the piles are socketed at least 5 feet into the bedrock.

We recommend the piles for the upper ramp foundation be located at least 3 diameters from the face of the bluff in order to limit deflections as shown above.

The lateral deflections presented above assume that scour of the soils around the piles for the lower ramp is not greater than 2 feet below the original grade.

The lateral deflections presented above do not account for wave impact forces directly against the pile or stairway ramp. We should be provided with these forces when they have been determined by the County of Los Angeles.

The lateral deflections presented above do not account for debris flow along the slope face or movements within the slope face due to failures within the slope. If slope face failure does occur surrounding the piles, there may be a loss of soils within the upper portions of the piles. The second pile from the top of the ramp within the steepened slope face (see Figures 2 and 3) is most likely to be impacted by slope instabilities. If the slope within this area retreats to a near stable slope, we anticipate the unsupported length of the pile would increase by approximately 6 to 8 feet. The piles within the steepened slope should be designed to resist this additional unsupported length. We evaluated this condition and included the estimated pile deflections in the above table (mid bluff pile with assumed soil movement).

If the pile within the steepened slope area is to be designed to resist the soil loading during slope failure, we recommend a detailed analysis be performed with slope stability cross-sections performed at each potentially impacted pile location. This level of detailed analysis is beyond the scope of this report.

4.4.5 Pile Construction

Since the drilled piles will be designed to derive resistance from friction only, rigorous cleaning of loose material from the bottom of the excavation prior to placement of steel and concrete is not considered essential. Every effort should be made to clean the bottom with the drill rig-mounted equipment.

We encountered severe caving of the beach sands overlying the bedrock. The drilled pile contractor should evaluate the potential drilling conditions when planning the installation methods. The drilling contractor should plan his method of drilling to account for the caving of dry sands overlying the bedrock. Caving may also be encountered within loose, dry lenses of the granular fill material.

The bedrock material may likely be difficult to excavate to the recommended rock socket embedment. The contractor should review the geophysical data in Appendix D to estimate the relative hardness of the rock. The drilling method may require hammering/breaking of the rock and/or hard rock coring bits.

Groundwater may be encountered within the hard rock at the bottom of the pile excavation. The contractor should pump the bottom of the excavations in order to place the concrete in a dry condition.

Pile excavations should be filled with concrete on the same day they are drilled. Concrete mix designs should include provisions to minimize shrinkage which can lead to lower frictional resistance of the pile shaft and reduced allowable capacity. The concrete should be placed with special equipment so that it is not allowed to fall freely more than 5 feet or strike the walls of the excavations. Drilling for piles should not be performed within 5 feet of recently excavated or recently poured piles until the concrete has been allowed to set for at least 6 hours. The piles should be poured in a manner that will not result in concrete flowing into adjacent drilled pile excavations and prevent segregation of aggregate.

We recommend that GPI review the final foundation plans and specifications to ascertain that the recommendations presented herein have been properly incorporated into the contract documents.

Downhole inspection of drilled pile excavations (by lowering an inspector into the excavation) is not needed as the piles are designed as frictional elements. However, pile and footing excavations should be observed by a representative of GPI to confirm and document the depth, diameter, and embedment into the hard bedrock materials.

Prior to placement of concrete and steel, a representative of GPI should observe and approve all footing excavations.

4.5 SHALLOW FOUNDATIONS

The proposed bathroom structure may be supported on conventional isolated and/or continuous shallow footings, provided the County of Los Angeles understand the potential impacts of supporting the structure on undocumented fills. The subsurface soils consist of 15 to 20 feet of undocumented fill soils underlying the site. The standard of practice is to remove the undocumented fill beneath buildings and replace with engineered fill materials. The bathroom structure can be supported over this undocumented fill with expectations of potential settlement beyond that which is generally accepted for structures. If this is not acceptable the building will need to be supported on piles.

We recommend the bathroom structure be supported on at least 3 feet of properly compacted fill over the entire footprint of the building. We recommend the existing soils be removed to a depth of 2 feet below the bottom of the footing and replaced with properly compacted fill. We recommend two layers of heavy duty geogrid (such as Tensar TX160 or equivalent) be placed within the building pad with one layer at the bottom of the excavation and one layer within the center of the 3 feet of compacted fill.

Based on the shear strength and elastic settlement characteristics of the recompacted on-site soils, a static allowable net bearing pressure of up to 1,500 pounds per square foot (psf) may be used for both continuous footings or isolated column footings. These bearing pressures are for dead-plus-live loads, and may be increased one-third for short-term, transient, wind and seismic loading. The actual bearing pressure used may be based on economics and structural loads, and will determine the minimum width for footings as discussed below. The maximum edge pressures induced by eccentric loading or overturning moments should not be allowed to exceed these recommended values.

The following minimum footing widths and embedments are recommended for the corresponding allowable bearing pressure.

STATIC BEARING PRESSURE (psf)	MINIMUM FOOTING WIDTH (inches)	MINIMUM FOOTING* EMBEDMENT (inches)
1,500	18	18
1,000	15	15

* Refers to minimum depth below lowest adjacent grade.

A minimum footing width and depth of 15 inches should be used even if the actual bearing pressure is less than 1,000 psf.

Total settlement of the wall footings (1 to 2 kips per lineal foot) due to structural loads is expected to be less than 2-inches. Settlement of the fill material due to seismic shaking may be an additional 1-inch. Maximum differential settlements between similarly loaded adjacent footings or along a 30-foot span of a continuous footing are expected to be on the order of 1-inch.

The above estimates are based on the assumption that the recommended earthwork will be performed and that the footings will be sized in accordance with our recommendations.

Soil resistance to lateral loads will be provided by a combination of frictional resistance between the bottom of footings and underlying soils and by passive soil pressures acting against the embedded sides of the footings. For frictional resistance, a coefficient of friction of 0.35 may be used for design. In addition, an allowable lateral bearing pressure equal to an equivalent fluid weighing of 250 pounds per cubic foot, may be used, provided the footings are poured tight against compacted fill soils. These values may be used in combination without reduction.

Prior to placement of concrete and steel, a representative of GPI should observe and approve all footing excavations.

4.6 FOUNDATION CONCRETE

Laboratory testing performed in a previous geotechnical investigation (Reference 2) indicates that the near surface soils exhibit a soluble sulfate content of 198 ppm. For the 2010 CBC, foundation concrete should conform to the requirements outline in ACI 318, Section 4.3, for negligible levels of soluble sulfate exposure from the on-site soil.

Concrete mix designs for foundations should include provisions to minimize shrinkage which can lead to lower frictional resistance of the drilled pier resulting in a reduced allowable capacity.

Concrete mix design for foundations should include provisions for exposure to salt water associated with the wave run-up for lower ramp foundations and salt water in the air for the other exposed foundations.

4.7 EARTHWORK

The earthwork anticipated at the project site will consist of clearing and grubbing, excavation of a portion of the low-density fill soils and disturbed soils, subgrade preparation including moisture conditioning, and placement and compaction of fill.

Prior to grading, the areas to be developed should be stripped of vegetation and cleared of debris. Buried obstructions, such as footings, utilities and tree roots, should be removed. Deleterious material generated during the clearing operation should be removed from the site.

Prior to construction of the restroom structure, a portion of the fill soils directly below the proposed pad elevations should be removed and replaced with properly compacted fill. As discussed in Section 4.5, we recommend that removals within the footprint of the restroom structure extend to a depth of 3 feet below footings.

Within the parking area, a portion of the fill soils directly below the proposed pavements should be removed and replaced with properly compacted fill. We recommend that removals within the footprint of the parking area extend to a depth of 2 feet below the proposed finished grade.

The actual depths of removal of unsuitable soils should be determined in the field during grading by a representative of the GPI.

The base of the removals should extend laterally a minimum of 5 feet beyond building line for the restroom and to the edge of pavement within the parking and drive areas. The project surveyor should confirm the limits of removal, both vertically and laterally, relative to the actual building to confirm that the recommended remedial excavations have been performed. GPI does not practice surveying; therefore, we cannot confirm lines, grades, or limits of excavations.

Temporary construction excavations may be made vertically without shoring to a depth of 5 feet below adjacent grade. Excavations in near surface soils, deeper than 5 feet, should be sloped at 1:1 or flatter. No surcharge loads should be permitted within a horizontal distance equal to the height of cut from the top of the excavation or 5 feet from the top of the slopes, including the bluff, whichever is greater, unless the cut is properly shored. Excavations that extend below an imaginary plane inclined at 45 degrees below the edge of any adjacent existing site facilities should be properly shored to maintain support of adjacent elements. All excavations and shoring systems should meet the minimum requirements given in the most current State of California Occupational Safety and Health Standards.

Prior to placing fills or construction of the proposed improvements, the subgrade soils should be scarified to a depth of 6 inches, moisture-conditioned, and compacted with heavy earthmoving equipment to dry densities equal to at least 90 percent of the maximum dry density (ASTM D-1557).

In the areas of the restroom structure and pavement areas, we recommend placement of a heavy duty geogrid (such as Tensar TX160 or equivalent) to help mitigate potential surface impacts from the settlement of the underlying fills due to seismic settlement or hydroconsolidation resulting from the infiltration from the proposed leach lines. As discussed in Section 4.5, we recommend two layers of the geogrid underlying the pad for the restroom structure. It should be understood that the geogrid does not eliminate the potential surface manifestations of settlement due to the poor quality of the underlying undocumented fills. The geogrid may help lessen future maintenance of the building and pavements due to the poor quality of the underlying fills.

The on-site soils are suitable for use as compacted fill. If required, imported fill material should be predominately granular (less than 40 percent fines passing the No. 200 sieve) and relatively non-expansive (E.I. less than 20). The import should exhibit an R-value of at least 30 if used in pavement areas. GPI should be provided with a sample (at least 50 pounds) and notified of the location of soils proposed for import at least 72 hours in advance. Each proposed import source should be sampled, tested and accepted for use prior to delivery of the soils to the site. Soils imported prior to acceptance by the GPI may be rejected if not suitable.

Fill soils should be placed in horizontal lifts, moisture-conditioned, and mechanically compacted to at least 90 percent of the maximum dry density (95 percent for the upper 12 inches of the pavement subgrade) in accordance with ASTM D-1557.

The optimum lift thickness will depend on the compaction equipment used and can best be determined in the field. The following uncompacted lift thickness can be used as preliminary guidelines.

Plate compactors	4-6 inches
Small vibratory or static rollers	6-8 inches
Heavy loaders and large vibratory rollers	8-12 inches

The maximum lift thickness should not be greater than 12 inches. Each lift should be thoroughly compacted and accepted prior to subsequent lifts.

The moisture content of the on-site soils are, in general, variable, in that they are slightly above and below the optimum moisture content. Therefore, moisture conditioning may be required for fill derived from on-site soils. Soils should be moisture-conditioned to 0 to 3 percent over the optimum moisture content.

Shrinkage is the loss of soil volume caused by compaction of fills to a higher density than before grading. Subsidence is the settlement of in-place subgrade soils caused by loads generated by large earthmoving equipment. For earthwork volume estimating purposes, an average shrinkage value of about 20 to 25 percent and subsidence of 0.2 foot may be assumed for the loose to medium dense surficial soils. These values are estimates only and exclude losses due to removal of vegetation or debris. Actual shrinkage and subsidence will depend on the types of earthmoving equipment used and should be determined during grading.

In backfill areas where mechanical compaction of soil backfill is impractical due to space constraints, sand-cement slurry may be substituted for compacted backfill. The slurry should contain one sack of cement per cubic yard and have a maximum slump of 5 inches. When set, such a mix typically has the consistency of compacted soil.

A representative of GPI should observe all excavations, subgrade preparation, and fill placement activities. Sufficient in-place field density tests should be performed during fill placement and in-place compaction to evaluate the overall compaction of the soils. Soils that do not meet minimum compaction requirements should be reworked and retested prior to placement of any additional fill.

4.8 CORROSIVITY

Resistivity testing of on-site soils performed in a previous geotechnical investigation (Reference 2) indicates a minimum resistivity of 1915 ohm-cm. This indicates the on-site soils are potentially corrosive to buried metals. GPI does not practice corrosion engineering. If buried metallic structures or pipe are planned, a corrosion engineer such as HDR/Schiff should be consulted.

4.9 DRAINAGE

Positive surface gradients should be provided adjacent to the improvements so as to direct surface water run-off and roof drainage away from foundations and the bluff face toward suitable discharge facilities near Pacific Coast Highway. Long-term ponding of surface water should not be allowed on pavements or adjacent to the restroom building or bluff face.

4.10 EXTERIOR CONCRETE AND MASONRY FLATWORK

Due to the significant amounts of undocumented fills with variable quality, we recommend exterior concrete and flatwork be minimized at the site. We recommend soft path surfaces such as decomposed granite, pavers, or natural surfaces such as bark, rock, or dirt.

If utilized, exterior concrete flatwork should be supported on non-expansive, compacted fill. Although not anticipated on-site, the use of the clayey soils within 1-foot of the slab subgrade should not be permitted unless differential heave is tolerable. This includes exterior sidewalks, stamped concrete, non-traffic pavement, pavers, etc. Prior to placement of concrete, the subgrade should be prepared as recommended in the "Earthwork" section of this report. Distress to the exterior concrete or masonry flatwork should be anticipated without significant removals of the undocumented fills underlying the site.

4.11 PAVED AREAS

Preliminary pavement design has been based on an R-value of 30 and the following assumed Traffic Indices (TI's) typically used for parking lots for autos and light trucks. The California Division of Highways Design Method was used for design of the recommended preliminary pavement sections. These recommendations are based on the assumption that the pavement subgrades will consist of existing on-site soils. Final pavement design should be based on R-value testing performed near the conclusion of rough grading. The following pavement sections are recommended for planning purposes only.

PAVEMENT SECTION

PAVEMENT AREA	ASSUMED TRAFFIC INDEX	SECTION THICKNESS (inches)	
		ASPHALT CONCRETE	AGGREGATE BASE COURSE
Asphalt Concrete			
Auto Parking	4	3	4
Auto Circulation Drives (light trucks)	5	3	5
Portland Cement Concrete		**Concrete**	
Auto Parking	4	6.0	---
Auto Circulation Drives (light trucks)	5	6.5	---

The pavement subgrade underlying the aggregate base or concrete should be properly prepared and compacted in accordance with the recommendations outlined under "Subgrade Preparation".

As previously discussed, we recommend a layer of heavy duty geogrid be placed under the aggregate base of the pavement section.

The pavement base course should be compacted to at least 95 percent of maximum density (ASTM D-1557). Aggregate base should conform to the requirements of Section 26 of the California Department of Transportation Standard Specifications for Class II aggregate base (three-quarter inch maximum) or Section 200-2 of the Standard

Specifications for Public Works Construction (Green Book) for untreated base materials, excluding processed miscellaneous base.

The concrete should have a modulus of rupture of at least 550 psi (equivalent to an approximate compressive strength of 3,700 psi) at the time the pavement is subjected to traffic. The upper 12 inches of subgrade soils should be compacted to at least 95 percent of maximum density (ASTM D-1557).

The above recommendations are based on the assumption that the base course and compacted subgrade will be properly drained. The design of paved areas should incorporate measures to prevent moisture build-up within the base course, which can otherwise lead to premature pavement failure. For example, curbing adjacent to landscaped areas should be deep enough to act as a barrier to infiltration of irrigation water into the adjacent base course.

5.0 LIMITATIONS

The report, exploration logs, and other materials resulting from GPI's efforts were prepared exclusively for use by the County of Los Angeles and their consultants in designing the proposed development. The report is not intended to be suitable for reuse on extensions or modifications of the project or for use on any project other than the currently proposed development, as it may not contain sufficient or appropriate information for such uses. If this report or portions of this report are provided to contractors or included in specifications, it should be understood that they are provided for information only.

Soil deposits may vary in type, strength, and many other important properties between points of exploration due to non-uniformity of the geologic formations or to man-made cut and fill operations. While we cannot evaluate the consistency of the properties of materials in areas not explored, the conclusions drawn in this report are based on the assumption that the data obtained in the field and laboratory are reasonably representative of field conditions and are conducive to interpolation and extrapolation.

Furthermore, our recommendations were developed with the assumption that a proper level of field observation and construction review will be provided during grading, excavation, and foundation construction by GPI. If field conditions during construction appear to be different than is indicated in this report, we should be notified immediately so that we may assess the impact of such conditions on our recommendations. If construction-phase services are performed by others, they must accept full responsibility for all geotechnical aspects of the project, including this report.

Our investigation and evaluations were performed using generally accepted engineering approaches and principles available at this time and the degree of care and skill ordinarily exercised under similar circumstances by reputable Geotechnical Engineers practicing in this area. No other representation, either expressed or implied, is included or intended in our report.

Respectfully submitted,
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DAC/JEH:sph

APR 16 2012

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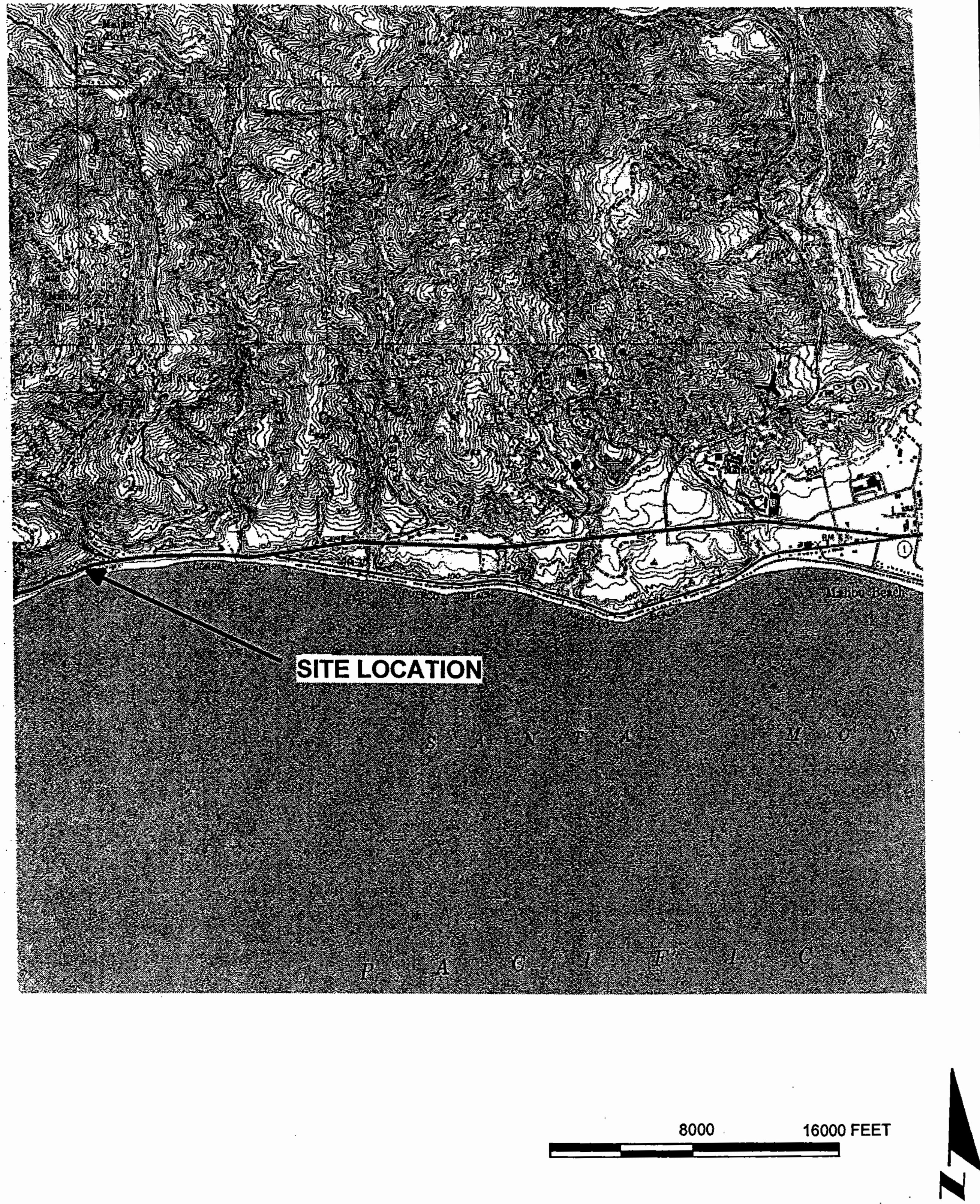
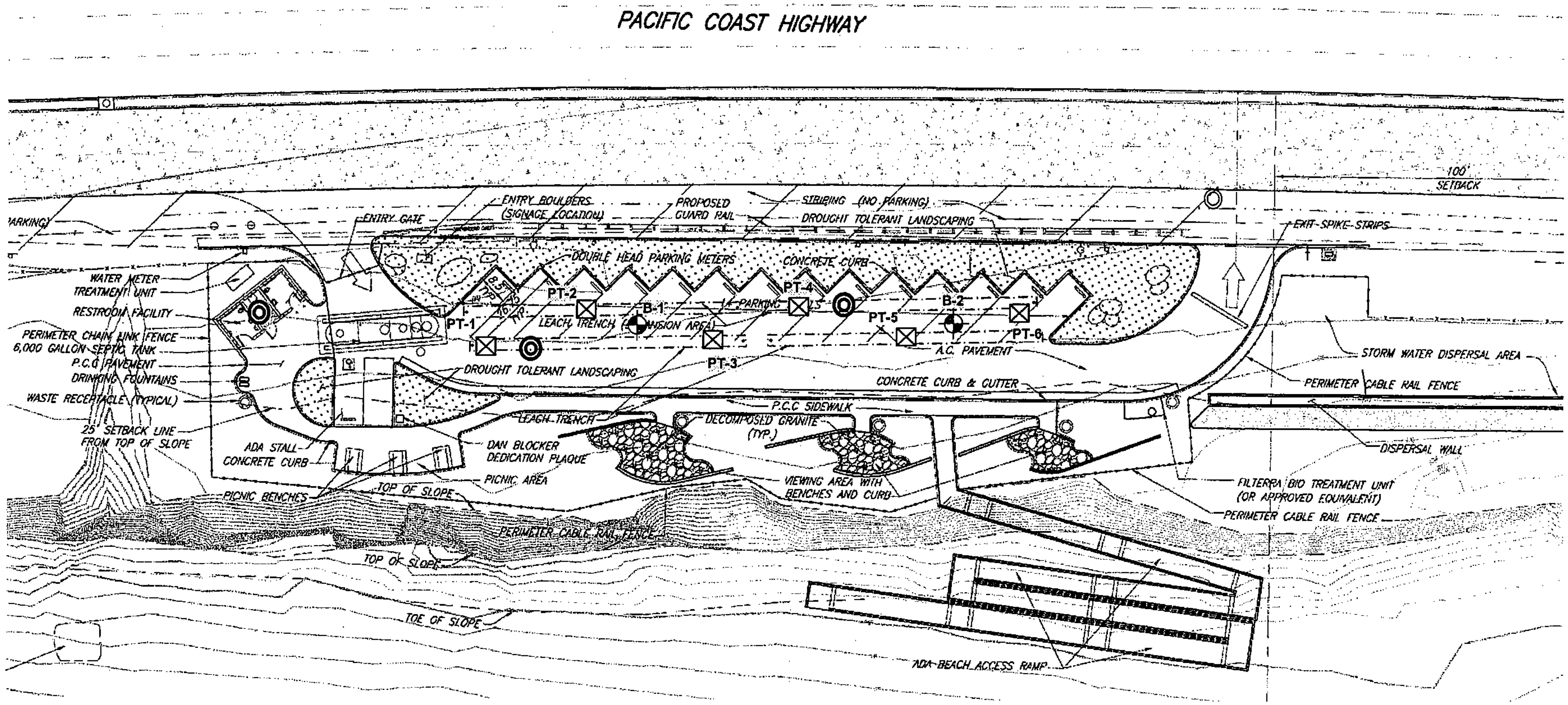


BASE PLAN REPRODUCED FROM USGS MALIBU BEACH QUADRANGLE

GPI GEOTECHNICAL PROFESSIONALS, INC.	SITE LOCATION
DAN BLOCKER BEACH	
GPI PROJECT NO.:2380-06.I — SCALE 1" = 8000'	FIGURE 1



EXPLANATION

B-1 APPROXIMATE LOCATION AND NUMBER OF EXPLORATORY BUCKET BORING

PT-1 APPROXIMATE LOCATION AND NUMBER OF TEST PIT/PERCOLATION TEST

APPROXIMATE LOCATION OF EXPLORATORY BUCKET BORING BY OTHERS (REF. 3)

0 30 60 FEET

BASE PLAN REPRODUCED FROM SITE PLAN PROVIDED BY COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS: ARCHITECTURAL ENGINEERING DIVISION DATED 4/2/12

GPI GEOTECHNICAL PROFESSIONALS, INC.

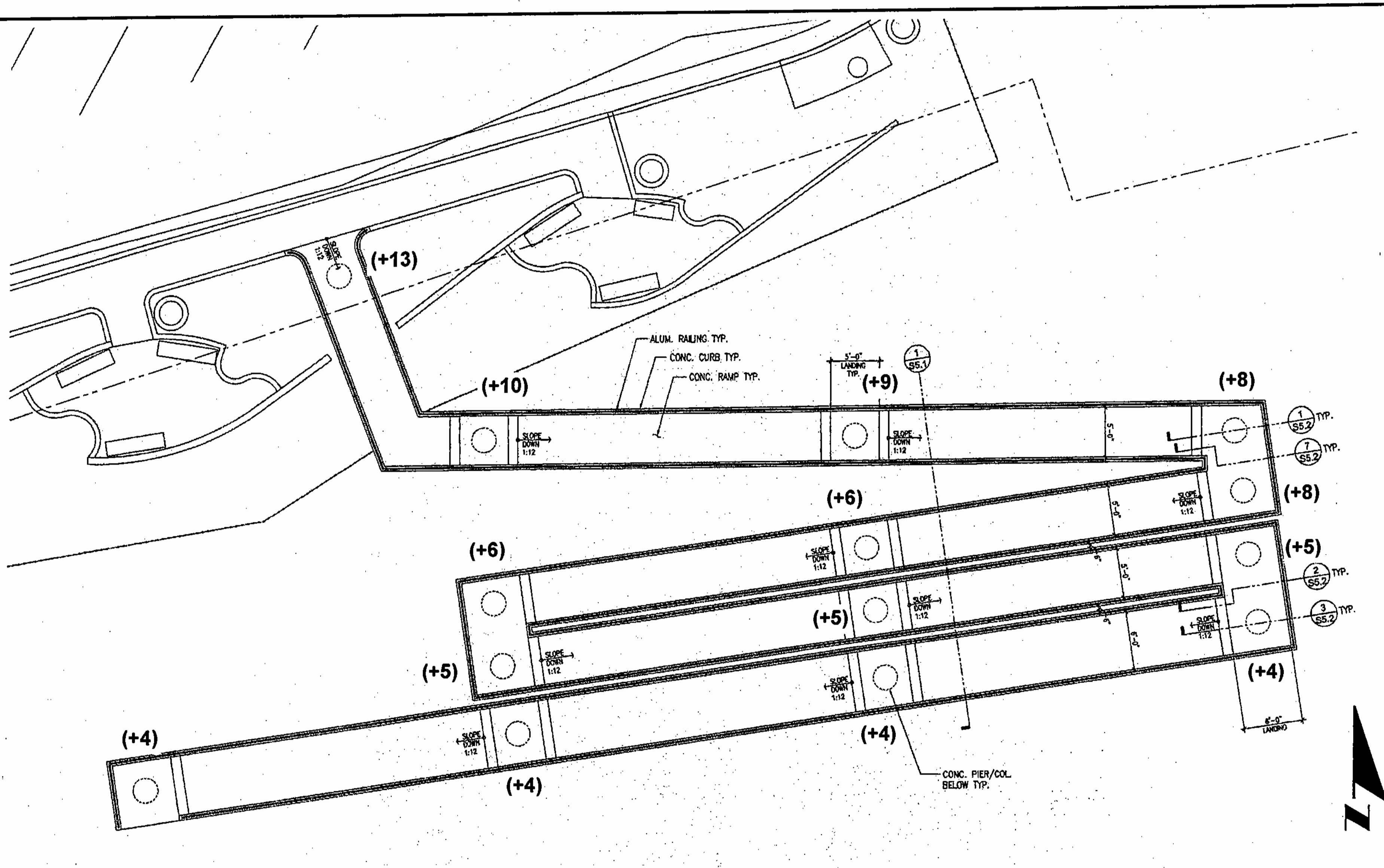
DAN BLOCKER BEACH

GPI PROJECT NO.:2380-06.I

SCALE: 1" = 30'

SITE PLAN

FIGURE 2



(+2): APPROXIMATE ELEVATION IN FEET OF BEDROCK SURFACE AT PILES (ESTIMATED FROM GEOPHYSICALY DATA

BASE PLAN REPRODUCED FROM RAMP PLAN PROVIDED BY COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS: ARCHITECTURAL ENGINEERING DIVISION DATED 1/12/09

GPI GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.: 2380.06I | SCALE: 1" = 15'

RAMP PLAN

FIGURE 3

APPENDIX A

APPENDIX A

EXPLORATORY BORINGS

The subsurface conditions at the site were investigated by drilling and sampling two exploratory borings. The borings were advanced to depths of 20 to 25 feet below the existing ground surface. The location of the exploration is shown on the Site Plan, Figure 2.

The borings were drilled using truck-mounted EZ Bore bucket auger equipment. Relatively undisturbed samples were obtained using a brass-ring lined sampler (ASTM D 3350). The ring samples were driven into the soil by a 4900-pound hammer dropping 12 inches to depths up to 25 feet. The number of blows needed to drive the sampler into the soil was recorded as the penetration resistance. It should be noted that the number of blows, in this case, is much lower than the Standard Penetration Resistance, because of the greater driving weight. One blow with the 4,900-pound Kelly bar (upper 25 feet) typically provides equivalent penetration of 15 to 24 blows in the Standard Penetration Test.

The field explorations for the investigation were performed under the continuous technical supervision of GPI's representative, who visually inspected the site, maintained detailed logs of the borings, classified the soils encountered, and obtained relatively undisturbed samples for examination and laboratory testing. The soils encountered in the borings were classified in the field and through further examination in the laboratory in accordance with the Unified Soils Classification System. Detailed logs of the borings are presented in Figures A-1 and A-2 in this appendix.

The boring locations were laid out in the field by measuring from existing site features. Existing ground surface elevations at the exploration locations were estimated from the base plan provided to the County of Los Angeles by Barbara Hall, P.E. in November 2011. The ground surface elevations of the boring locations should be considered approximate. Upon completion, the borings were backfilled with the excavated materials and compacted using the bucket.

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	*DESCRIPTION OF SUBSURFACE MATERIALS* This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	ELEVATION (FEET)
				0	3" Asphalt	
					Artificial Fill (af): **SILTY SAND (SM)** brown to dark brown to dark reddish brown, slightly moist, loose, trace clay, with gravel, composed of about 30% silty fines, 25% fine grained sand, 15% medium sand, 10% coarse sand, 30% fine gravel of volcanic andesite breccia	30
			BAG			
18.4	96	PUSH	D	5		
					@ 8 feet, dark brown, higher clay content	25
12.8	98	PUSH	D	10		
					@ 12 feet, large andesite breccia boulder	
			BAG		**SAND (SP)** dark brown, slightly moist	
					CLAYEY SAND (SC) and SAND WITH SILT (SP-SM) dark brown and greyish brown, slightly moist, loose, no layering or structure	20
				15		
9.8	89	PUSH	D		Beach Sand (Qs): **SAND (SP)** light brown, slightly moist, poorly graded, composed of 80% fine sand with 15% medium sand and about 5% silty fines, loose caving	
			BAG			
9.7	94	PUSH	D			15
				20	Total Depth 20 feet Boring halted due to caving Downhole logged by Engineering Geologist	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED:
11-17-11

EQUIPMENT USED:
24" Bucket Auger

GROUNDWATER LEVEL (ft):
Not Encountered

GPI

PROJECT NO.: 2380.06I

DAN BLOCKER BEACH

LOG OF BORING NO. B-1

FIGURE A-1

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
					This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	
				0	Artificial Fill (af): **SILTY SAND (SM)** brown to dark brown, slightly moist, loose, about 30% silty fines, 30% fine grained sand, 15% medium grained sand, 5% coarse grained sand, and 20% fine gravel, trace clay, no structure, massive, no clast orientation	
			BAG			30
12.1	97	PUSH	D	5		
					@ 9 feet, light brown, slightly moist, loose, no clay, coarser grained, some lenses of grey poorly graded sand, no bedding orientation	25
11.7	86	PUSH	D	10		
			BAG			
						20
4.8	89	1	D	15	**SAND WITH SILT (SP-SM)** light brown, slightly moist, loose, poorly graded, with 75% fine sand, 15% medium sand, 10% silty fines, caving, possible native beach sand	
			BAG			
						15
		PUSH	D	20	Beach Sand (Qs): **SAND (SP)** light brown, slightly moist, loose, with about 60% fine grained rounded sand, 40% medium grained sand, caving	
			BAG			
						10
				25	Total Depth 25 feet Boring halted due to caving Downhole logged by Engineering Geologist	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED: 11-17-11
EQUIPMENT USED: 24" Bucket Auger
GROUNDWATER LEVEL (ft): Not Encountered

GPI

PROJECT NO.: 2380.06I
DAN BLOCKER BEACH

LOG OF BORING NO. B-2

FIGURE A-2

APPENDIX B

APPENDIX B

EXPLORATORY TEST PITS

Three exploratory test pits were performed at the site to further investigate the subsurface soils. The test pits were excavated to depths ranging from 6 to 9 feet. The test pits measured in plan approximately 2½ feet wide to 4½ feet long. The test pit locations are shown on the Site Plan, Figure 2.

The test pits were performed manually using a hand shovels and picks with wood shoring. The hand equipment was used because the locations at the base of the slope were not easily accessible by the backhoe or drill rig.

Relatively undisturbed samples were obtained using a brass-ring lined sampler (ASTM D 3350). The ring samples have an inside diameter of 2.42 inches. The ring samples were driven into the soil by a 35-pound hammer dropping approximately 24 inches. The number of blows needed to drive the sampler into the soil was recorded as the penetration resistance. The number of blows need to drive the sampler into the soils are not comparable to the Standard Penetration blow-count.

The field exploration was performed under the continuous technical supervision of GPI's field technician, who visually inspected the site, maintained detailed logs of the test pits, classified the soils encountered, and obtained bulk samples for examination and laboratory testing. The soils encountered in the test pits were classified in the field and through further examination in the laboratory in accordance with the Unified Soils Classification System. The detailed logs of the test pits are presented in Figures B-1 to B-3 in this appendix.

The test pit locations were laid out in the field by measuring from existing site features. Existing ground surface elevations at the exploration locations were estimated from the base plan provided to the County of Los Angeles by Barbara Hall, P.E. in November 2011. The ground surface elevations of the test pits at the base of the bluff (TP-2 and TP-3) should be considered very approximate due to the likelihood of beach sand fluctuations from wave and wind impacts. Upon completion, the test pits were backfilled with the excavated materials and compacted using hand tamps.

	MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
						This summary applies only at the location of this test pit and at the time of trenching. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	
					0	Fill: **GRAVELLY SILTY SAND (SM)** brown, moist, with roots	
			15	D			
	11.8	79	15	B&D		@ 2 feet, sand cone density test dry density = 77 pcf, moisture = 18.2 %	30
	10.7	83	19	B&D		@ 4 feet, sand cone density test dry density = 77 pcf, moisture = 16.3 %	
					5	@ 5 feet, trace roots	
	12.1	84	19	B&D			
						Total Depth 7 feet	25

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE TRENCHED:
1-18-12

EQUIPMENT USED:
28" x 54" Test Pit

GROUNDWATER LEVEL:
Not Encountered

GPI

PROJECT NO.: 2380.06I
DAN BLOCKER BEACH

LOG OF TEST PIT NO. TP-1

FIGURE B-1

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
					This summary applies only at the location of this test pit and at the time of trenching. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	
				0	Fill: **SAND (SP)** light brown, moist	15
					SILTY SAND (SM) dark brown, moist, with gravel	
16.3	90	14	B&D		@ 2 feet, trace clay	
15.7	90	9	B&D	5		10
			B		@ 6 feet, sand cone density test dry density = 79 pcf, moisture = 14.5 %	
			B			
					Total Depth 9 feet	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE TRENCHED:
1-18-12

EQUIPMENT USED:
28" x 54" Test Pit

GROUNDWATER LEVEL:
Not Encountered

GPI

PROJECT NO.: 2380.06I
DAN BLOCKER BEACH

LOG OF TEST PIT NO. TP-2

FIGURE B-2

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
					This summary applies only at the location of this test pit and at the time of trenching. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	
				0	Fill: **SAND (SP)** light brown, moist	15
					SILTY SAND (SM) dark brown, moist, with gravel	
14.7	75	12	B&D			
					@ 4 feet, brown	
				5		10
14.2	94	16	B&D			
14.8						
		16	B&D			
					Total Depth 9 feet	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE TRENCHED:
1-18-12

EQUIPMENT USED:
28" x 54" Test Pit

GROUNDWATER LEVEL:
Not Encountered

GPI

PROJECT NO.: 2380.06I
DAN BLOCKER BEACH

LOG OF TEST PIT NO. TP-3

FIGURE B-3

APPENDIX C

APPENDIX C

LABORATORY TESTS

INTRODUCTION

Representative undisturbed soil samples and bulk samples were carefully packaged in the field and sealed to prevent moisture loss. The samples were then transported to our Cypress office for examination and testing assignments. Laboratory tests were performed on selected representative samples as an aid in classifying the soils and to evaluate the physical properties of the soils affecting foundation design and construction procedures. Detailed descriptions of the laboratory tests are presented below under the appropriate test headings. Test results are presented in the figures that follow.

MOISTURE CONTENT AND DRY DENSITY

Moisture content and dry density were determined from a number of the ring samples. The samples were first trimmed to obtain volume and wet weight and then were dried in accordance with ASTM D 2216. After drying, the weight of each sample was measured, and moisture content and dry density were calculated. Moisture content and dry density values are presented on the boring and test pit logs in Appendices A and B.

GRAIN SIZE DISTRIBUTION

A total of eight soil samples were dried and run through a standard set of sieves in accordance with ASTM D 422. The weight of soil retained on each sieve was recorded and the total dry weight was calculated. The grain size distribution data for the samples are presented in Figures C-1 and C-2.

Hydrometer analyses were performed on selected samples of soils to estimate the distribution of particle sizes finer than the No. 200 sieve. The hydrometer analysis is based on the relationship between the velocity of falling particles in a fluid and the size of those particles. Results include an estimate of the distribution of the soil particle size from the No. 200 (0.075mm) sieve to approximately 0.001 mm. The tests were performed in accordance with ASTM D422-63. The test results are presented in Figure C-1.

DIRECT SHEAR

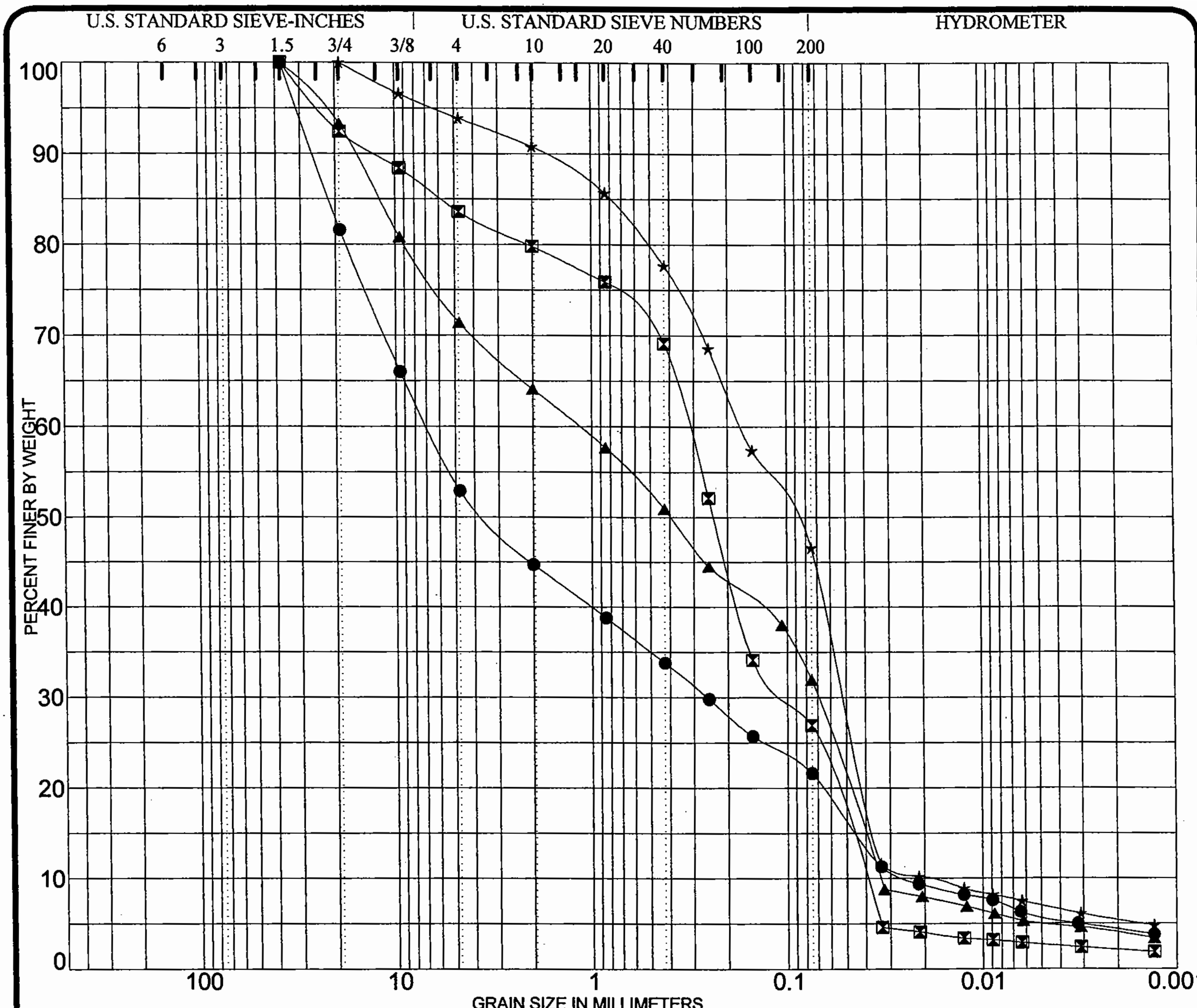
Direct shear tests were performed on relatively undisturbed and remolded bulk samples in accordance with ASTM D 3080. The bulk sample was remolded to approximately 90 percent of the maximum dry density (ASTM D 1557). The samples were placed in the shear machine, and a normal load comparable to the in-situ overburden stress was applied. The samples were inundated, allowed to consolidate, and then were sheared to failure. The tests were repeated on additional test specimens under increased normal loads. Shear stress and sample deformation were monitored throughout the test. The results of the direct shear tests are presented in Figures C-3 to C-10.

A summary of the results of the direct shear tests for relatively undisturbed samples in fill material at ultimate strength is presented in Figure C-11.

COMPACTION TEST

Maximum dry density/optimum moisture tests were performed in accordance with ASTM D 1557 on representative bulk samples of the surficial soils. The test result is as follows:

BORING NO.	DEPTH (ft)	SOIL DESCRIPTION	MAXIMUM DRY DENSITY (pcf)	OPTIMUM MOISTURE (%)
B-1	0-4	Silty Sand (SM)	111	15.0
B-1	12	Silty Sand (SM)	122	11.5



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location		Classification	MC%	LL	PL	PI	Cc	Cu
●	B-1	4.0	FILL: SILTY SAND (SM) WITH GRAVEL					0.39	281.1
⊠	B-1	13.0	FILL: SILTY SAND (SM) WITH GRAVEL					0.79	7.9
▲	B-2	3.0	FILL: SILTY SAND (SM) WITH GRAVEL					0.13	34.4
★	B-2	12.0	FILL: SILTY SAND (SM)					0.79	8.6

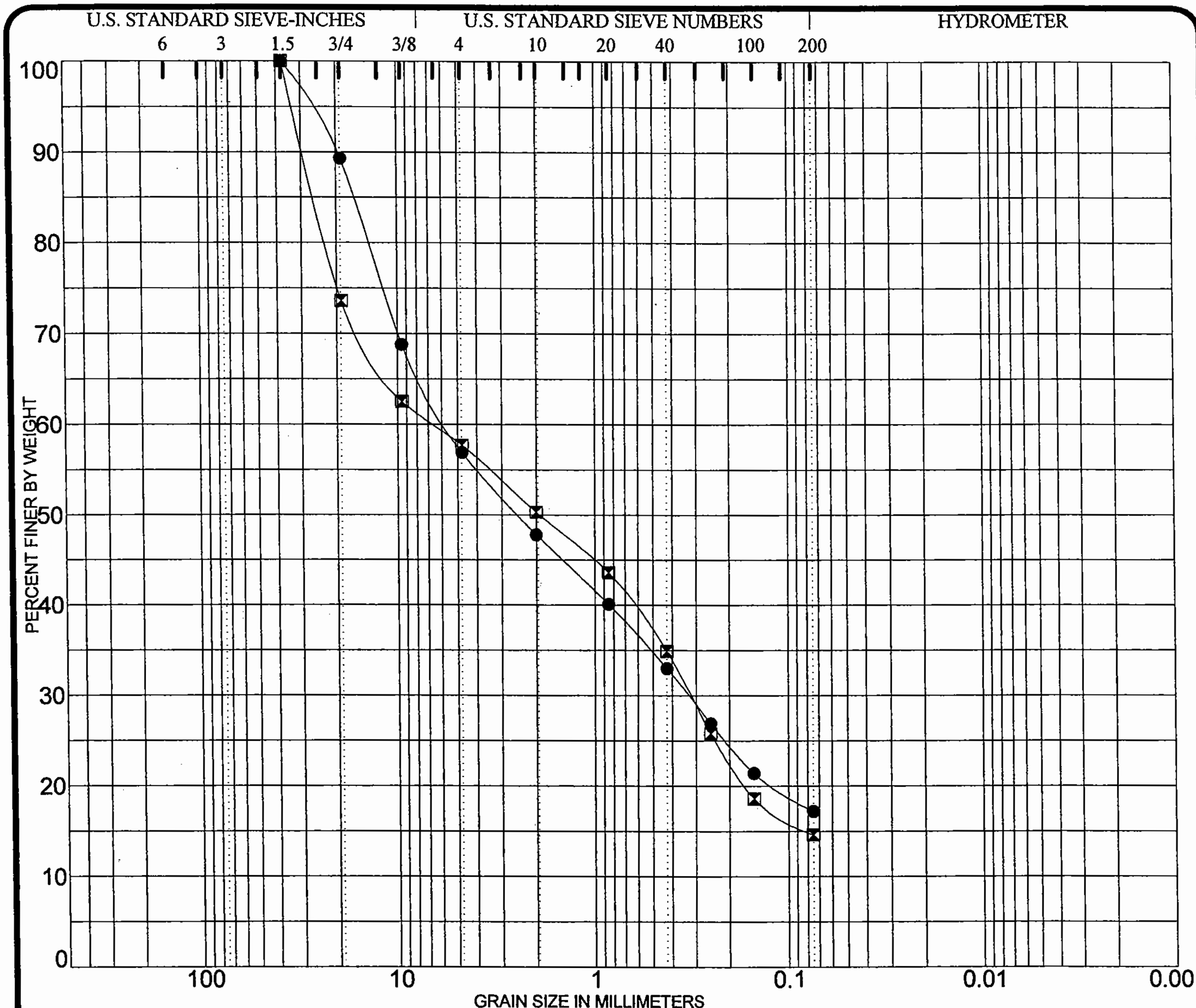
	Sample Location		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-1	4.0	37.50	6.92	0.257	0.0246	47.1	31.3	15.8	5.8
⊠	B-1	13.0	37.50	0.32	0.101	0.0404	16.4	56.7	24.2	2.7
▲	B-2	3.0	37.50	1.16	0.070	0.0336	28.6	39.5	26.8	5.1
★	B-2	12.0	19.00	0.17	0.051	0.0197	6.1	47.3	39.6	7.0

PROJECT: DAN BLOCKER BEACH PROJECT NO. 2380.06I

GPI

GRAIN SIZE DISTRIBUTION

FIGURE C-1



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location		Classification	MC%	LL	PL	PI	Cc	Cu
●	TP-1	4.0	FILL: SILTY SAND (SM) WITH GRAVEL						
⊠	TP-3	6.0	FILL: SILTY SAND (SM) WITH GRAVEL						

	Sample Location		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	TP-1	4.0	37.50	5.69	0.327		43.1	39.7	17.2	
⊠	TP-3	6.0	37.50	6.62	0.319		42.3	43.1	14.6	

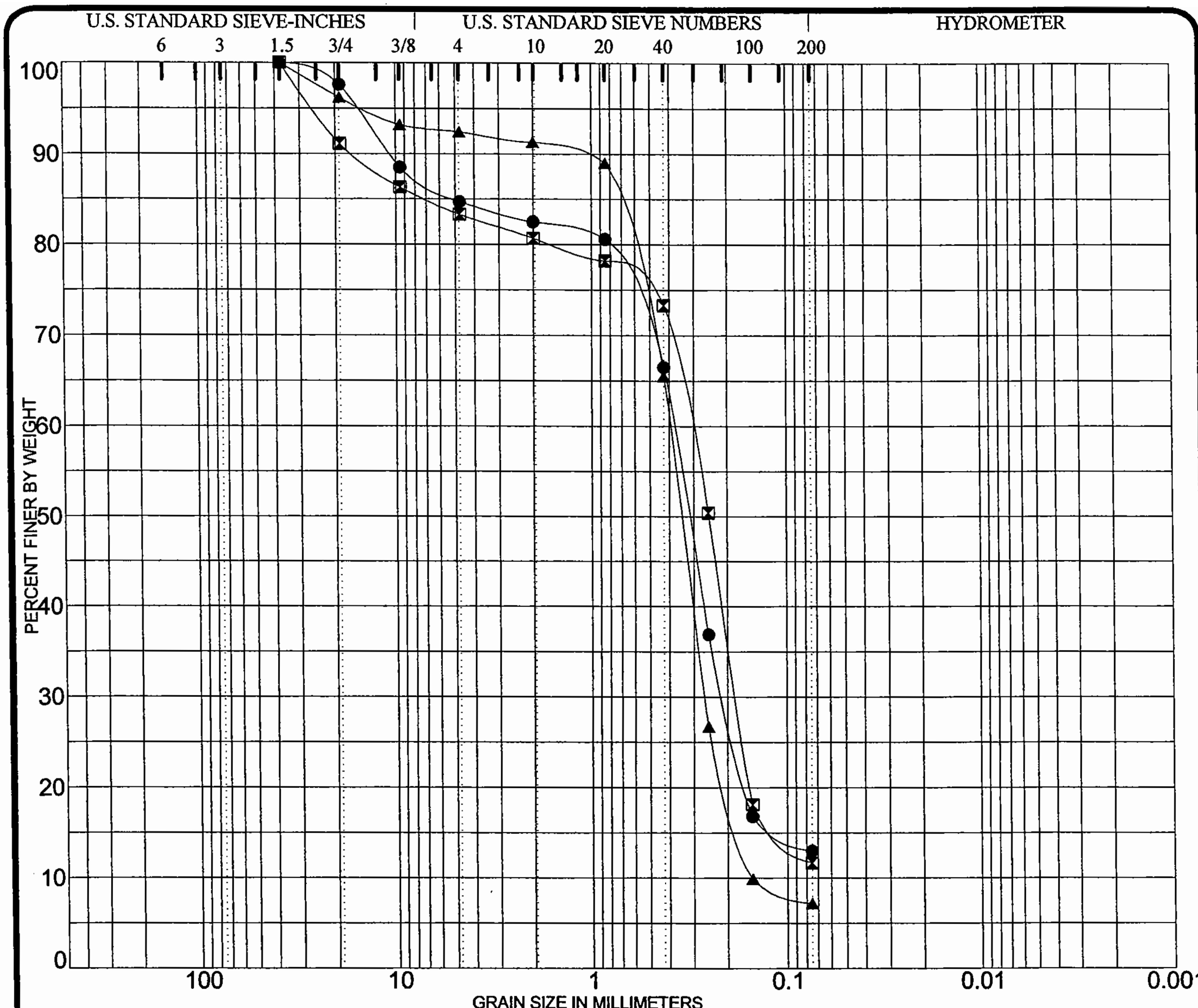
PROJECT: DAN BLOCKER BEACH

PROJECT NO. 2380.06I

GPI

GRAIN SIZE DISTRIBUTION

FIGURE C-2



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location		Classification	MC%	LL	PL	PI	Cc	Cu
●	B-1	17.0	SILTY SAND (SM)						
⊠	B-2	18.0	SAND WITH SILT (SP-SM)					1.68	5.0
▲	B-2	22.0	SAND WITH SILT (SP-SM)					1.15	2.6

	Sample Location		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-1	17.0	37.50	0.38	0.210		15.3	71.7	13.0	
⊠	B-2	18.0	37.50	0.31	0.181		16.7	71.6	11.7	
▲	B-2	22.0	37.50	0.39	0.262	0.1505	7.6	85.2	7.2	

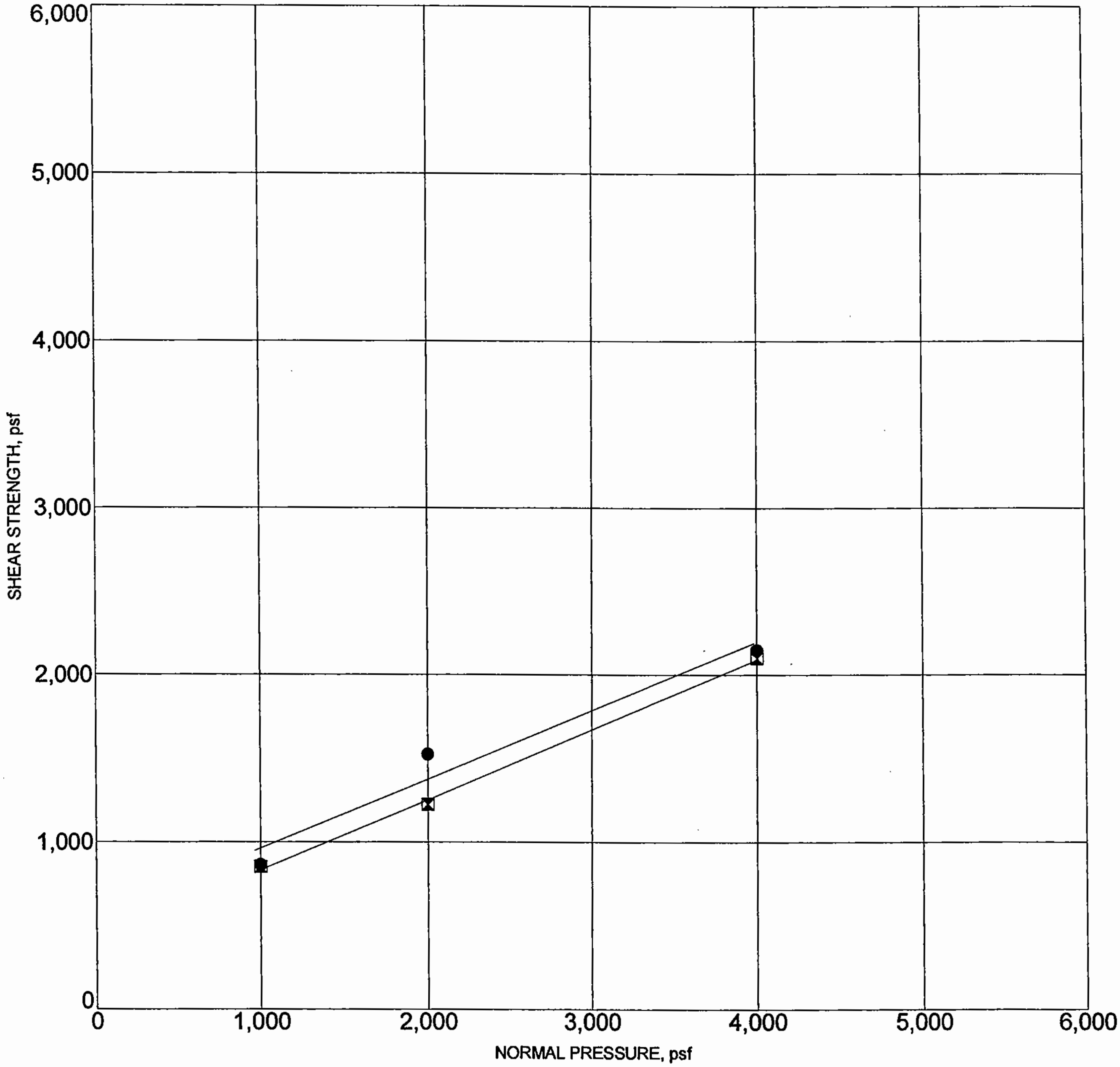
PROJECT: DAN BLOCKER BEACH

PROJECT NO. 2380.06I

GPI

GRAIN SIZE DISTRIBUTION

FIGURE C-3



● **PEAK STRENGTH**
Friction Angle= 22 degrees
Cohesion= 552 psf

⊠ **ULTIMATE STRENGTH**
Friction Angle= 23 degrees
Cohesion= 414 psf

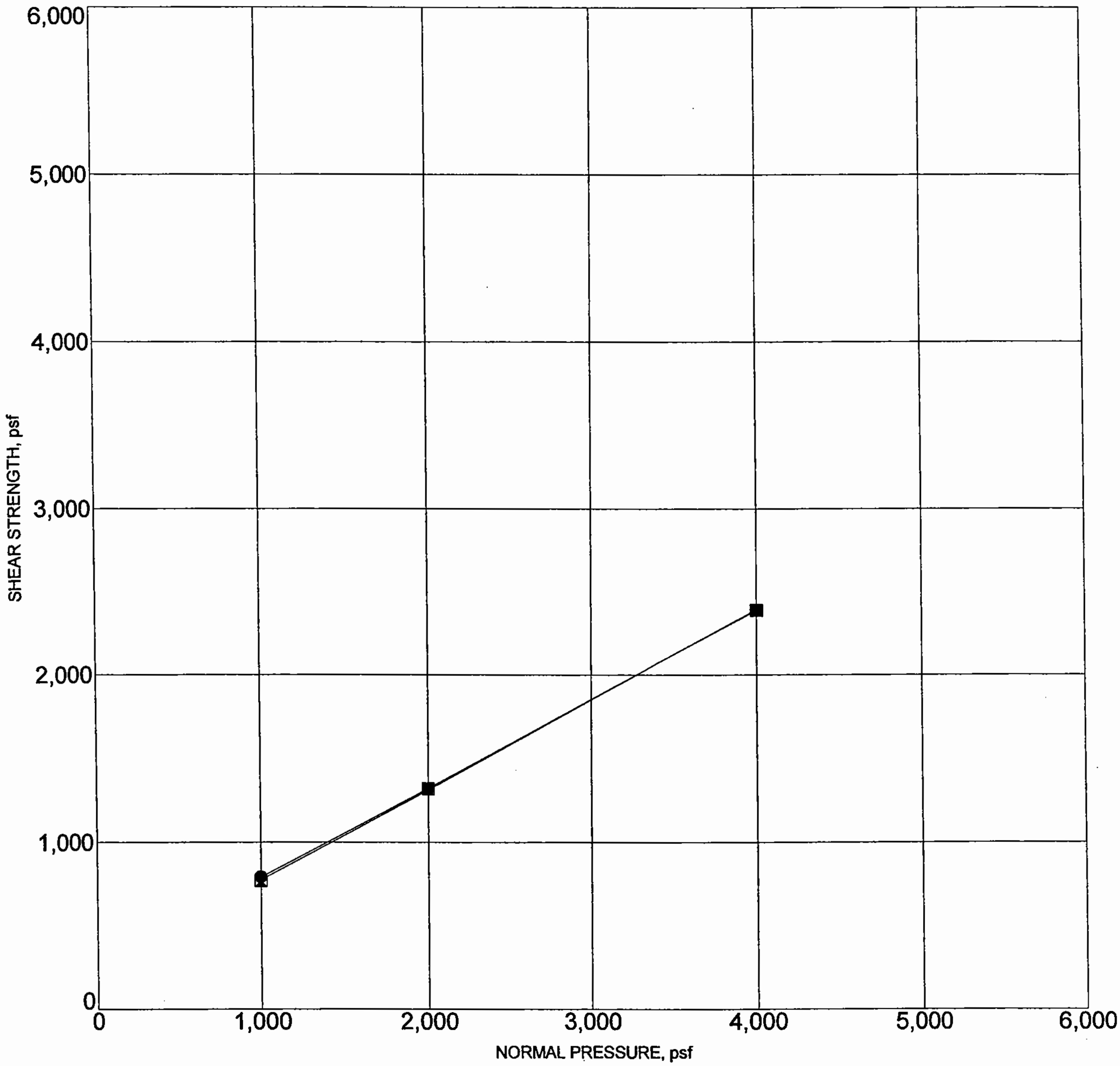
Sample Location		Classification	DD,pcf	MC,%
B-1	5.0	FILL: SILTY SAND (SM)	96	18.4

PROJECT: DAN BLOCKER BEACH

PROJECT NO.2380.06I

DIRECT SHEAR TEST RESULTS

FIGURE C-4



● **PEAK STRENGTH**
Friction Angle= 28 degrees
Cohesion= 258 psf

⊠ **ULTIMATE STRENGTH**
Friction Angle= 28 degrees
Cohesion= 234 psf

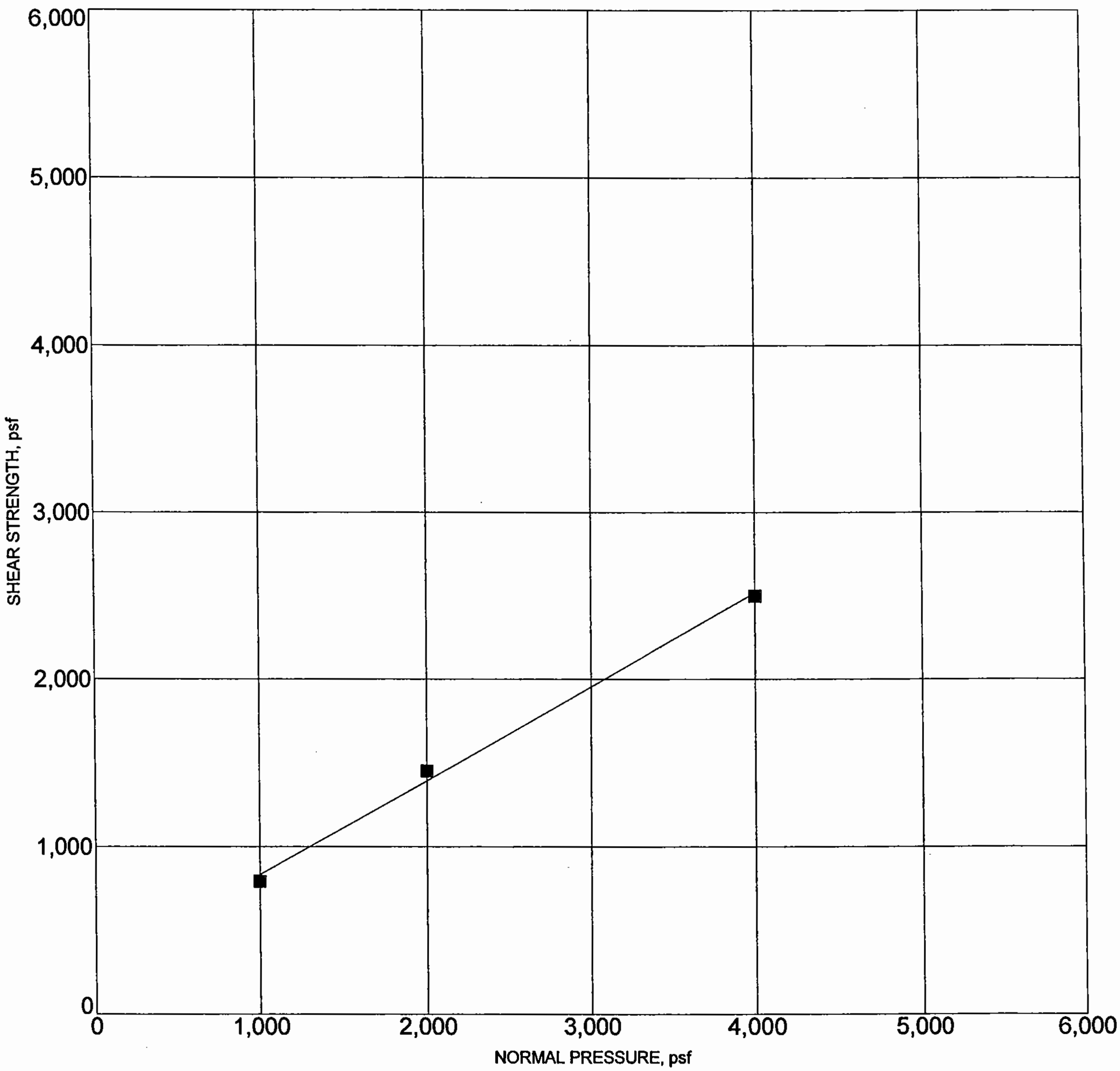
Sample Location		Classification	DD,pcf	MC,%
B-1	10.0	FILL: SILTY SAND (SM)	98	12.8

PROJECT: DAN BLOCKER BEACH PROJECT NO.2380.06I

GPI

DIRECT SHEAR TEST RESULTS

FIGURE C-5



● **PEAK STRENGTH**
Friction Angle= 29 degrees
Cohesion= 270 psf

☒ **ULTIMATE STRENGTH**
Friction Angle= 29 degrees
Cohesion= 270 psf

Sample Location		Classification	DD,pcf	MC,%
B-2	10.0	FILL: SILTY SAND (SM)	86	11.7

PROJECT: DAN BLOCKER BEACH PROJECT NO.2380.06I

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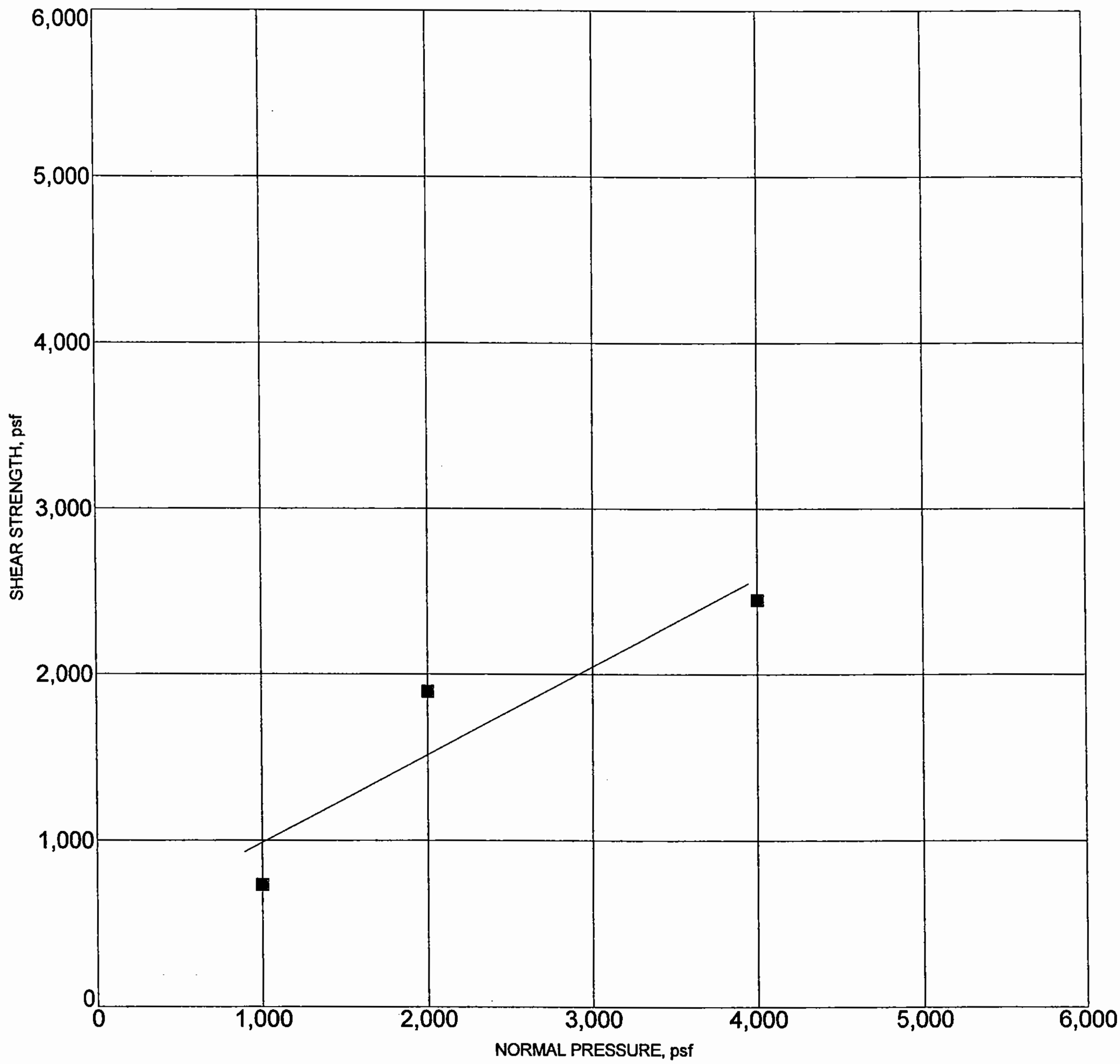
DIRECT SHEAR TEST RESULTS

FIGURE C-6



● **PEAK STRENGTH**
Friction Angle= 28 degrees
Cohesion= 456 psf

☒ **ULTIMATE STRENGTH**
Friction Angle= 28 degrees
Cohesion= 456 psf

Sample Location		Classification	DD,pcf	MC,%
TP-1	4.0	FILL: SILTY SAND (SM) WITH GRAVEL	83	10.7

PROJECT: DAN BLOCKER BEACH

PROJECT NO.2380.06I

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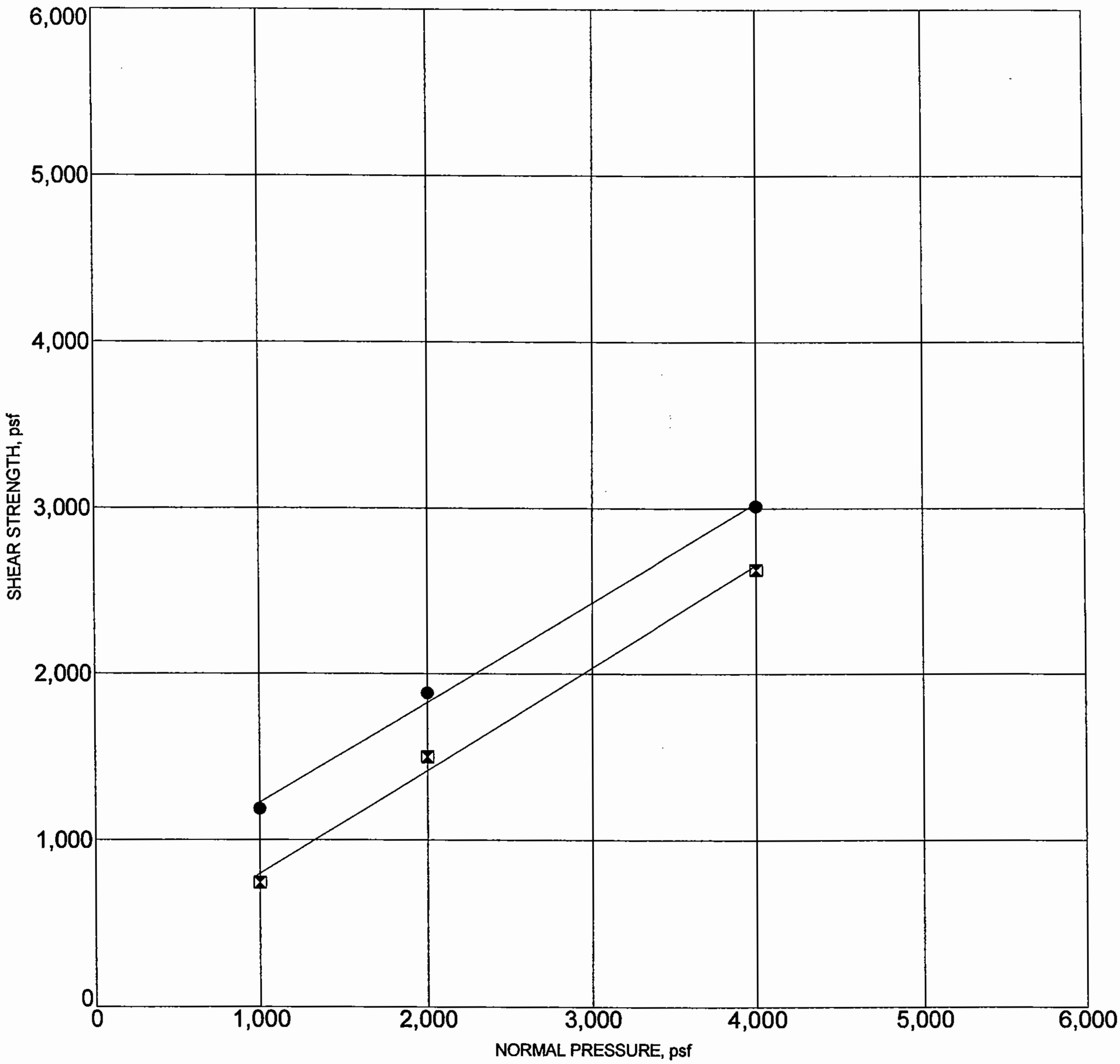
DIRECT SHEAR TEST RESULTS

FIGURE C-7



● **PEAK STRENGTH**
Friction Angle= 31 degrees
Cohesion= 624 psf

⊠ **ULTIMATE STRENGTH**
Friction Angle= 32 degrees
Cohesion= 180 psf

Note: Samples remolded to 90% of maximum dry density

Sample Location		Classification	DD,pcf	MC,%
B-1	4.0	FILL: SILTY SAND (SM) WITH GRAVEL	100	15.3

PROJECT: DAN BLOCKER BEACH PROJECT NO.2380.06I

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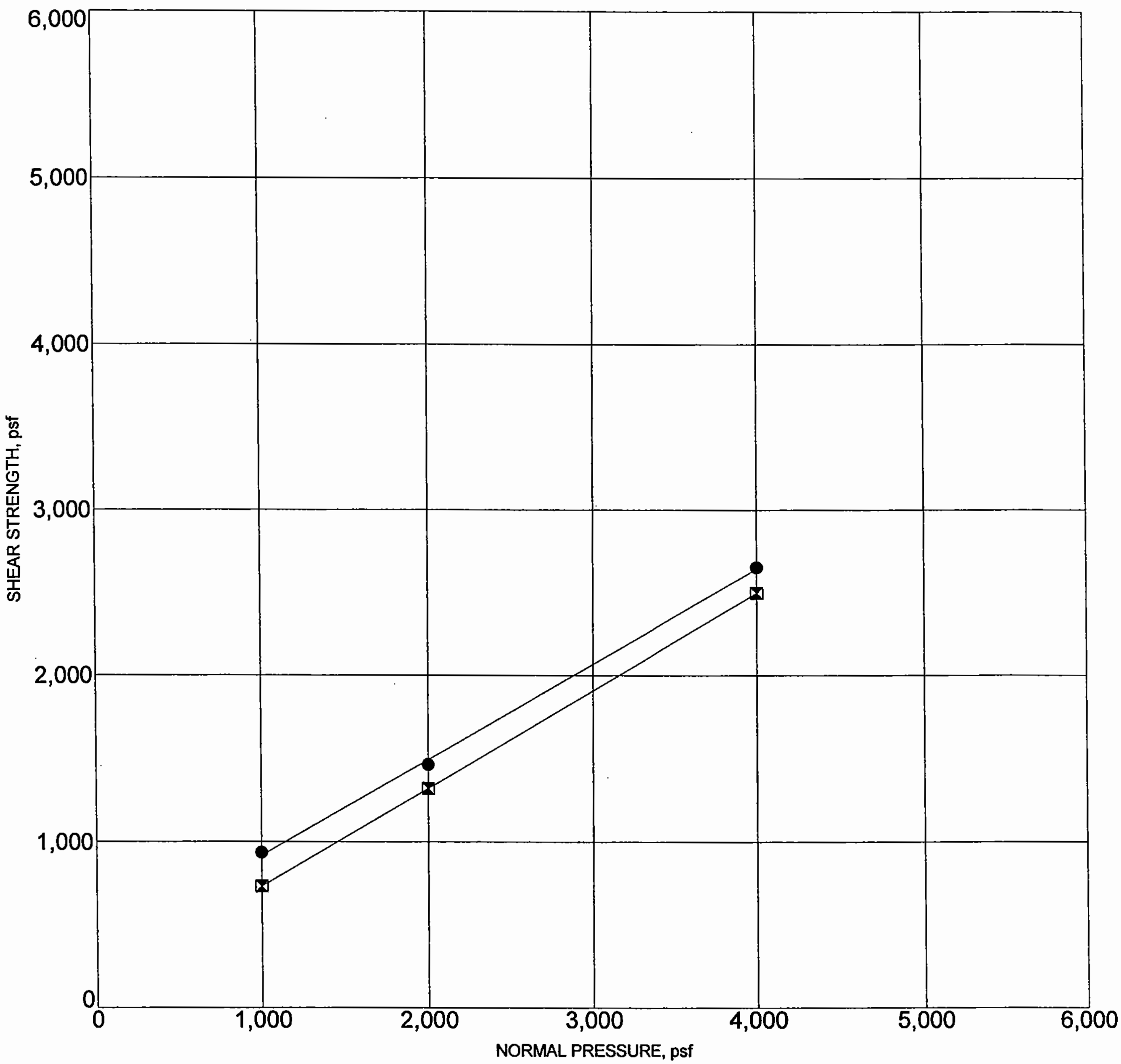
DIRECT SHEAR TEST RESULTS

FIGURE C-8



● **PEAK STRENGTH**
Friction Angle= 30 degrees
Cohesion= 342 psf

⊠ **ULTIMATE STRENGTH**
Friction Angle= 30 degrees
Cohesion= 144 psf

Note: Samples remolded to 90% of maximum dry density

Sample Location		Classification	DD,pcf	MC,%
B-1	12.0	SILTY SAND (SM)	110	12.0

PROJECT: DAN BLOCKER BEACH

PROJECT NO.2380.06I

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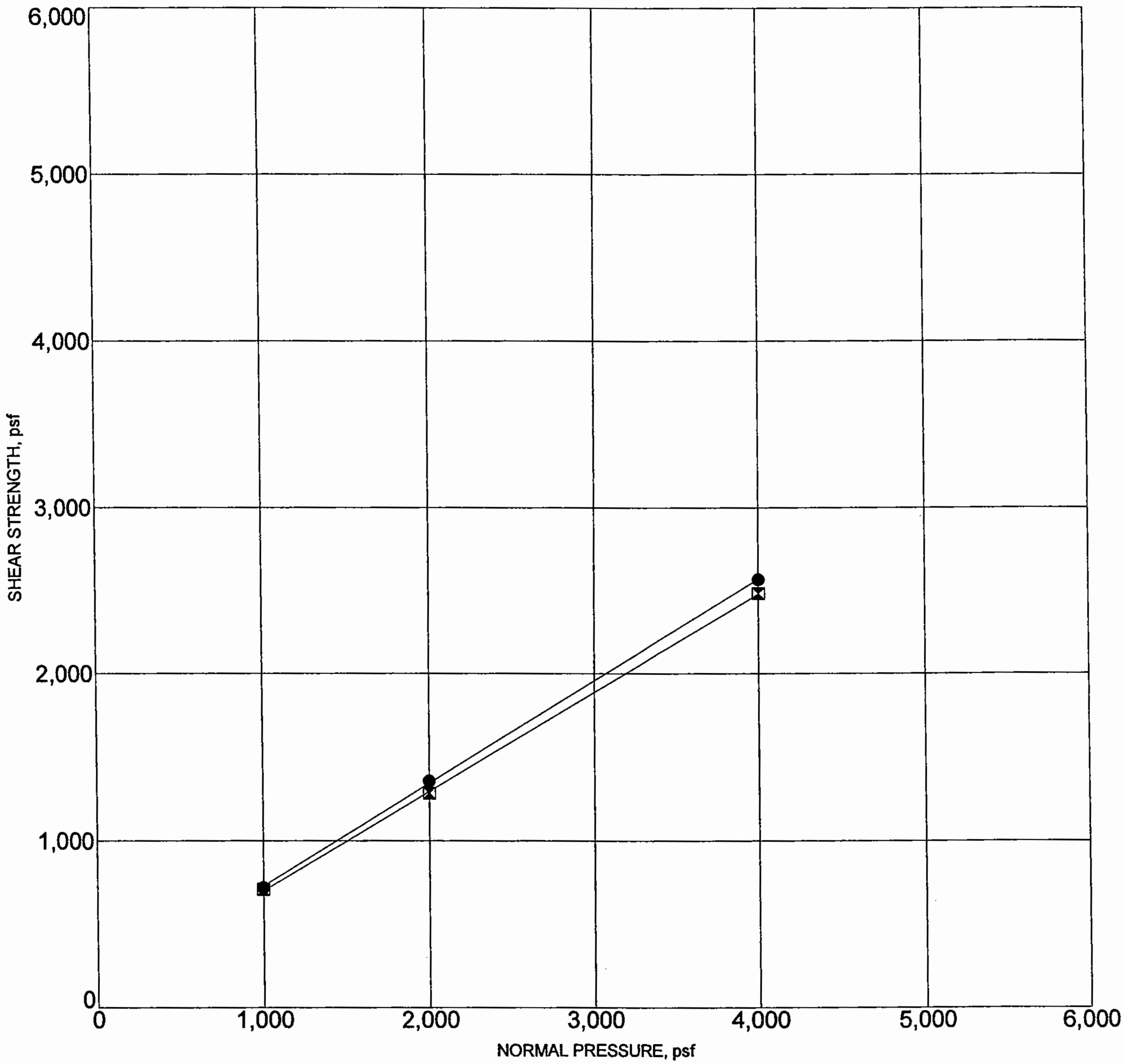
DIRECT SHEAR TEST RESULTS

FIGURE C-9



● **PEAK STRENGTH**
Friction Angle= 32 degrees
Cohesion= 114 psf

☒ **ULTIMATE STRENGTH**
Friction Angle= 31 degrees
Cohesion= 108 psf

Sample Location		Classification	DD,pcf	MC,%
B-2	15.0	SAND WITH SILT (SP-SM)	89	4.8

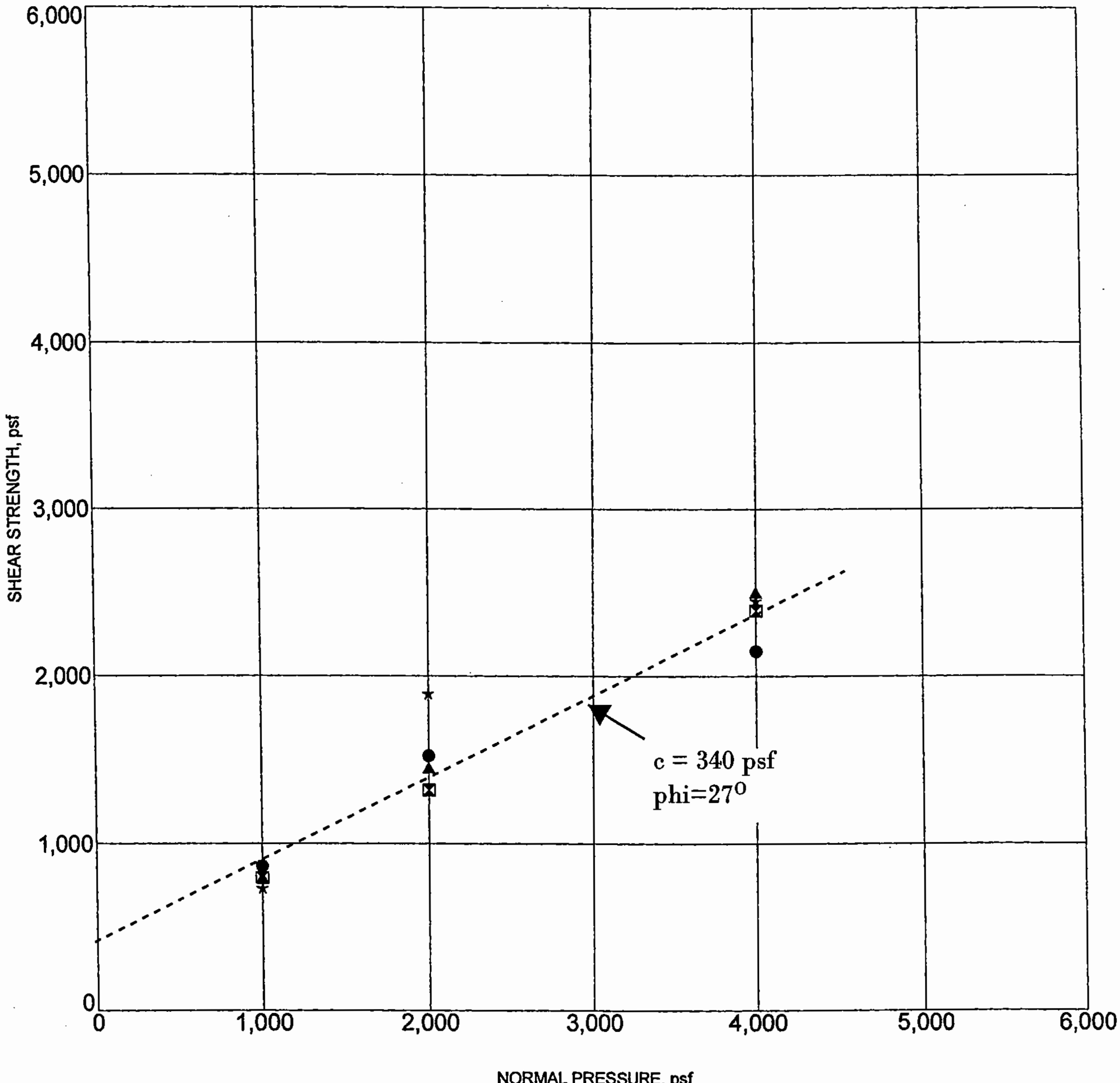
PROJECT: DAN BLOCKER BEACH

PROJECT NO.2380.06I

GPI

DIRECT SHEAR TEST RESULTS

FIGURE C-10



Note: Peak Strength Values

	Sample Location		Classification	DD,pcf	MC,%
●	B-1	5.0	FILL: SILTY SAND (SM)	96	18.4
⊠	B-1	10.0	FILL: SILTY SAND (SM)	98	12.8
▲	B-2	10.0	FILL: SILTY SAND (SM)	86	11.7
★	TP-1	4.0	FILL: SILTY SAND (SM) WITH GRAVEL	83	10.7

PROJECT: DAN BLOCKER BEACH PROJECT NO.: 2380.06I

GPI

DIRECT SHEAR TEST RESULTS

FIGURE C-11

APPENDIX D

TERRA
GEOSCIENCES

GEOPHYSICAL SEISMIC SURVEY
DAN BLOCKER BEACH PROJECT
26000 PACIFIC COAST HIGHWAY
MALIBU, LOS ANGELES COUNTY, CALIFORNIA

Project No. 112552-1

November 18, 2011

Prepared for:

Geotechnical Professionals, Inc.
5736 Corporate Avenue
Cypress, CA 90630

Geotechnical Professionals, Inc.
5736 Corporate Avenue
Cypress, CA 90630

November 18, 2011
Project No. 112552-1

Attention: Mr. Don Cords, G.E.

Regarding: Geophysical Seismic Survey
Dan Blocker Beach Project
26000 Pacific Coast Highway
Malibu, Los Angeles County, California

EXECUTIVE SUMMARY

In accordance with your request, we have completed a Geophysical Seismic Survey at the Dan Blocker Beach Project, located in the Malibu area of Los Angeles County, California. We understand that the site will be utilized for parking and beach access, along with a public restroom requiring the placement of an on-site wastewater disposal system. This survey involved the use of two seismic methods to aid in evaluating the seismic velocity characteristics and the subsurface geologic structure, being the refraction (P-wave) and shear-wave (S-wave) seismic methods.

The methodology, field procedures, data processing, and findings of both survey methods are detailed within this report along with the representative subsurface survey models and supportive illustrations being presented within Appendices A and B for visual and reference purposes.

This opportunity to be of service is sincerely appreciated. If you should have any questions regarding this report or do not understand the limitations of this survey or the data that is presented, please do not hesitate to contact our office at your earliest convenience.

Respectfully submitted,
TERRA GEOSCIENCES

Donn C. Schwartzkopf
Professional Geophysicist
PGP 1002

PROFESSIONAL GEOPHYSICIST
DONN C.
SCHWARTZKOPF
No. 1002
STATE OF CALIFORNIA

TABLE OF CONTENTS

INTRODUCTION

As requested, this firm has performed a geophysical survey using various seismic methods for the above-referenced site along accessible areas. The purpose of this survey was to evaluate the general S-wave (shear-wave) and P-wave (compressional-wave) velocity characteristics of the underlying earth materials which will in turn aid in both modeling the subsurface geologic structure and obtaining seismic engineering material properties. The goal of this survey was to aid in evaluating the local thickness of the surficial earth materials across the site that overlies the bedrock materials.

Based upon geologic mapping by Dibblee (1993), the northern portion of the site is shown to be underlain by andesitic breccia of the Miocene age Conejo Volcanics, with the southern portion of the site surficially mantled by Holocene age beach sands. Based on our surficial reconnaissance and bluff exposures along the beach, the terrace portion of the site may consist of fill materials created during the construction of the Pacific Coast Highway that borders the site along the north. Pieces of concrete along with abundant volcanic detritus were observed within the bluff face, of which the overall assemblage of these materials appeared to be massive and unstructured in nature.

The location of our seismic survey traverses are approximated on the provided beach layout map, as presented on the Seismic Line Location Map, Plate 1. Several site photographs have been included as Figure 1 for visual and reference purposes. Processing of the seismic shear-wave data was performed with partial support by Optim, Inc., Reno, Nevada, of which offered both an unbiased analysis and provided quality control.

SCOPE OF SERVICES

As authorized by you the following services were performed during this study:

- **Review of available published and unpublished geologic/geophysical data in our files pertinent to the site.**

- **Performing a seismic survey by a State of California licensed Professional Geophysicist, to include one traverse using the seismic refraction method and two traverses using the shear-wave survey method along selected portions of the site.**

- **Data processing and compilation of the seismic survey images for presentation purposes along with obtaining partial processing support from Optim, Inc. for purposes of providing additional analysis and quality control.**

- **Preparation of this report, presenting the results of our findings with respect to the seismic velocity characteristics and the subsurface geologic structure of the underlying earth materials where locally surveyed.**

SEISMIC REFRACTION SURVEY

Methodology

The seismic refraction method consists of measuring (at known points along the surface of the ground) the travel times of compressional waves (P-waves) generated by an impulsive energy source, which is a function of the distance between the energy source and fixed receivers, the depth to the refractor, and the seismic velocities of the materials through which the wave passes. This information can then be used to estimate the layering, structure, and seismic acoustic velocities of subsurface horizons. Seismic waves travel down and through the soils and rocks, and when the wave encounters a contact between two earth materials having different velocities, some of the wave's energy travels along the contact at the velocity of the lower layer. The fundamental assumption is that each successively deeper layer has a velocity greater than the layer immediately above it. As the wave travels along the contact, some of the wave's energy is refracted toward the surface where it is detected by a series of motion-sensitive transducers (geophones). The arrival time of the seismic wave at the geophone locations can be related to the relative seismic velocities of the subsurface in feet per second (fps), which can then be used to aid in interpreting both the depth and type of materials encountered.

Field Procedures

Initially, a seismic refraction line was performed along the same traverse location as shear-wave line SW-1 within the central portion of the site along the terrace. However, it was found that a substantial portion of the site is surficially covered with asphalt pavement along with unusually heavy amounts of traffic vibration noise originating from the adjacent highway, both of which precluded the use of the seismic refraction method along the upper terrace portion of the subject property.

One seismic refraction survey line was successfully performed along the base of the bluff (Seismic Line S-1) of where we understand a proposed beach access ramp is proposed (see Plate 1). A photograph of this seismic line is presented within the Site Photographs, Figure 1, for visual and reference purposes. Only minor background "noise" was encountered, primarily from ocean wave action and to a lesser degree distant traffic vibration. In order to produce the seismic wave energy necessary for this survey line, a 16-pound sledge-hammer was used as the energy source. For detection of both the direct and refracted waves a series of twenty-four, 40-Hz (Hertz) geophones were employed that were spaced at regular 5-foot intervals. The seismic wave arrivals were digitally recorded in SEG-2 format on a Geometrics StrataVisor™ NZXP model signal enhancement refraction seismograph. Seven shot points were utilized along the spread using forward, reverse, and several intermediate locations in order to obtain high resolution survey data for velocity analysis and depth modeling purposes. Multiple hammer blows were employed at each shot point for purposes of signal enhancement. The data was acquired using a sampling rate of 0.0624 milliseconds having a record length of 0.08 seconds with no acquisition filters.

During acquisition, the seismograph provides both a hard copy and screen display of the seismic wave arrivals, of which are digitally recorded on the in-board seismograph computer. The data on the paper record and/or display screen were used to analyze the arrival time of the primary seismic "P"-waves at each geophone station, in the form of a wiggle trace, or wave travel-time curve, for quality control purposes in the field. Each geophone and shot location was surveyed using a hand level and ruler for topographic correction purposes using the elevation data that is shown on the provided beach layout map (see Plate 1). Although assumed to be relatively accurate, the elevation data presented on Seismic Line S-1 should be considered approximate, as erosion and beach migration may have may have altered the existing topography since the original topographic map was prepared.

Data Processing

All of the recorded seismic data was subsequently transferred to our office computer for further processing, analyzing, and printing purposes, using the computer programs **SIPwin** (**S**eismic Refraction **I**nterpretation **P**rogram for **Win**dows) developed by Rimrock Geophysics, Inc. (2004). **SIPwin** is a ray-trace modeling program that evaluates the subsurface using layer assignments based on time-distance curves and is better suited for layered media, using the "Seismic Refraction Modeling by Computer" method (Scott, 1973). The first step in the modeling procedure is to compute layer velocities by least-squares techniques. Then the program uses the delay-time method to estimate depths to the top of layer-2. A forward modeling routine traces rays from the shot points to each geophone that received a first-arrival ray refracted along the top of layer-2. The travel time of each such ray is compared with the travel time recorded in the field by the seismic system. The program then adjusts the layer-2 depths so as to minimize discrepancies between the computed ray-trace travel times and the first arrival times picked from the seismic waveform record. The process of ray tracing and model adjustment is repeated a total of three times to improve the accuracy of depths to the top of layer-2. This first-arrival picks were then used to generate the layer modeling profile using the **SIPwin** computer program, which presents the subsurface velocities as individual layers.

Data Analysis

The analysis of the data was performed using the computer program **SIPwin**. In general, the survey area where explored was noted to be characterized by two major subsurface layers with respect to seismic velocities (layers V1 and V2). The following summaries have been prepared using the **SIPwin** analysis, with the representative Seismic Refraction Profile (S-1) presented within Appendix A, displaying the "weighted average" subsurface velocities in generalized layers. In addition, the Time-Distance Plot for the survey line showing the individual data picks of the first "P-Wave" arrival times also appears in Appendix A. It was noted on this plot that the refracted wave time arrivals are generally linear and parallel indicating uniformity and good data control. The P-Wave intersection point (between the V1 and V2 layers) was found to be very sharp which indicate the velocity interface boundary to be very well-defined.

Velocity Layer V1:

This uppermost velocity layer (V1) is presumably comprised of unconsolidated fine- to coarse grained beach sand. This layer has an average weighted "P"-Wave velocity of 1,247 fps, which is typical for theses types of sediments.

- **Velocity Layer V2**:

The second layer (V2) yielded a "P"-Wave velocity of 5,795 fps, indicating the possibility of saturated sediments, bedrock, or saturated bedrock. Although the velocity characteristics of the local volcanic bedrock is not know at this time, this velocity appears to be higher than expected for these types of bedrock materials. Based on the shear-wave velocities measured at depth (as discussed further below), the corresponding compressional seismic velocities would be expected to be less than 5,000 fps. Using current geophysical principles as stated by Milson (1989); "Wet, poorly consolidated materials have velocities a little greater than that of water and the top of the water table is often a prominent seismic interface." Saturated sediments would be expected to have velocities somewhat in excess of 5,000 fps.

Since a seismic velocity of greater than 5,000 fps (approximate speed of sound waves in free-water) was measured within the V2 velocity layer (i.e., 5,795 fps), this velocity layer may represent saturated sediments with the V1/V2 contact boundary being the top of the water-table, or the V2 materials could be comprised of saturated bedrock. Based on the water-level at the time the survey was performed (10± feet below the elevation of the survey line), the greater than 5,000 fps velocity obtained, it is possible that the contact boundary between the V1/V2 layers may be the water-table interface at the time of our survey. However, it should be noted that this interface may also represent the boundary between the overlying sediments and saturated bedrock materials.

SHEAR-WAVE SURVEY

The fundamental premise of the shear-wave survey method is based on the fact that the Earth is always in motion at various seismic frequencies. These relatively constant vibrations of the Earth's surface are called microtremors, which are very small with respect to amplitude and are generally referred to as background "noise" that contain abundant surface waves. These microtremors are caused by both human activity (i.e., cultural noise, traffic, factories, etc.) and natural phenomenon (i.e., wind, wave motion, rain, atmospheric pressure, etc.) which have now become regarded as useful signal information. Although these signals are generally very weak, the recording, amplification, and processing of these surface waves has greatly improved by the use of technologically improved seismic recording instrumentation and recently developed computer software. For this application, we are mainly concerned with the Rayleigh wave portion of the seismic signals, which is also referred to as "ground roll" since the Rayleigh wave is the dominant component of ground roll.

The measurement of surface-wave (shear-waves) is basically a method that enables us to estimate the dispersion of these waves that are contained within microtremors. Since dispersion is a function of subsurface structure, in theory, this structure can be estimated from the dispersion. Dispersion, or the change in phase velocity of the seismic waves with frequency, is the fundamental property utilized in the analysis of surface wave methods. The fundamental assumption of this methods is that the signal wavefront is planar, stable, and isotropic (coming from all directions) making it independent of source locations. The shear wave velocity (V_s) can then be calculated by mathematical inversion of the dispersive phase velocity of the surface waves which can be significant in the presence of velocity layering, which is common in the near-surface environment.

General

Since the propagation of shear-waves are not affected by water (of which shallow water-table conditions were expected locally), the data that was collected was not affected by the presence of shallow water conditions and therefore imaging below the groundwater table becomes possible. This would allow imaging of any anomalous structural characteristics and or bedrock at depth below the groundwater table, whereas the seismic refraction method cannot. Therefore, this survey method collected both deeper and unimpeded seismic data that could not be obtained by the standard refraction method. As discussed below, two-dimensional (2D) tomographic cross-section profiles were created for each individual survey line that allowed imaging of any lateral variations in the shear-wave velocity as well as the presence and depth to any alluvial/bedrock contact also indicated in the 1D profiles.

Methodology

This study used the **SeisOpt® ReMi™** software that was written by Optim, Inc. (2010), based on the **Re**fraction **Mi**crotremor method (**ReMi**) that was developed by Louie (2001). This seismic method economically and efficiently estimates one-dimensional subsurface shear-wave velocities using data collected from standard primary-wave (P-wave) refraction surveys, having 5%-15% accuracy that decreases with depth. This method does not require any artificial seismic source and uses ambient "noise" as the energy source for data collection.

The refraction microtremor technique is principally based on two fundamental ideas. The first is that common seismic-refraction recording equipment, deployed the same as a typical shallow P-wave refraction survey, can efficiently record surface waves at frequencies as low as 2 Hz, and the second being that a simple, two-dimensional slowness-frequency (p-f) transform of a microtremor record can separate Raleigh waves from other seismic arrivals and allow recognition of the true phase velocity against apparent velocities. This separation allows recognition of the true phase velocity and discriminates against energy propagating in other modes without dispersion. The slowness-frequency (slowness is inverse of velocity) wavefield transformation is particularly effective in allowing accurate picking of Rayleigh-wave phase-velocity dispersion curves despite the presence of waves propagating across the linear array at high apparent velocities, higher-mode waves, body waves, airwaves, and incoherent noise (Louie, 2001).

A wavefield transformation data processing technique and an interactive Rayleigh-wave dispersion-modeling tool is used for the analysis thus exploiting the most effective aspects of the microtremor (MAM), spectral analysis of surface wave (SASW), and multi channel analysis of surface wave (MASW) techniques. The refraction microtremor method interactively forward-models the normal-mode dispersion data picked from the p-f images and iterates on phase velocity at each period (or frequency), reports when a solution has not been found within the iteration parameters, and can model velocity reversals with depth.

Field Procedures

Two survey lines were performed within the subject study area as approximated on the Seismic Line Location Map (SW-1 and SW-2, see Plate 1), which ranged in length from 115 and 299 feet, dependent upon the available space where locally selected to be performed. The field data was collected using a Geometrics StrataVisor™ NZXP model signal-enhancement refraction seismograph. The ground vibrations were detected by the use of a series of twenty-four 4.5 Hz geophones that were spaced at regular 5- and 13-foot intervals depending on the length of each line. No artificial seismic source is generally required for this passive shear-wave analysis.

A total of 20 separate seismic records were recorded for each survey line using a 30-second time window with a sampling rate of two-milliseconds. These records were recorded using the background ambient noise (i.e., wave action, vehicular traffic, wind, etc.) to produce the deeper traveling low-frequency waves, along with the use of hammer impacts off of the end of the survey lines to enhance the shallower, high-frequency waves in order to maximize the data quality. The data that was displayed on the computer screen were used to analyze the quality of the seismic waveforms and frequency spectrum at each geophone station, in the form of a wiggle trace and spectral curves for quality control purposes in the field. The acceptable records that were digitally recorded on the in-board seismograph computer were then transferred to a flash drive so that they could be subsequently transferred to our office computer.

Data Processing

Upon downloading of the recorded seismic shear-wave data files to our office computer, they were then electronically transferred to Optim, Inc. (Reno, Nevada), for further processing and analysis. Their analysis was used to create both the 1D and 2D cross-section shear-wave models that are presented within Appendix B. In general, there were three processing steps that were used to derive the 1D models shear-wave models (for CBC Site Classification), with the fourth step used to develop the 2D tomographic structural models. They are as follows:

➢ ***Step 1:*** Generate slowness vs. frequency curves-

After acquiring a series of noise records from the ambient background noise, a velocity spectrum or slowness (p) versus frequency (f) curve (i.e., a *p-f plot*) was generated. The distinctive slope of dispersive surface waves is an advantage of the p-f analysis; body waves and airwaves cannot have such a slope. Even if most of the energy in a seismic record is in a phase other than Rayleigh waves, the p-f analysis will identify the dispersion of the surface waves (Pullammanappallil and others, 1993 and 1994).

➢ ***Step 2:*** Pick the Rayleigh-wave dispersion-

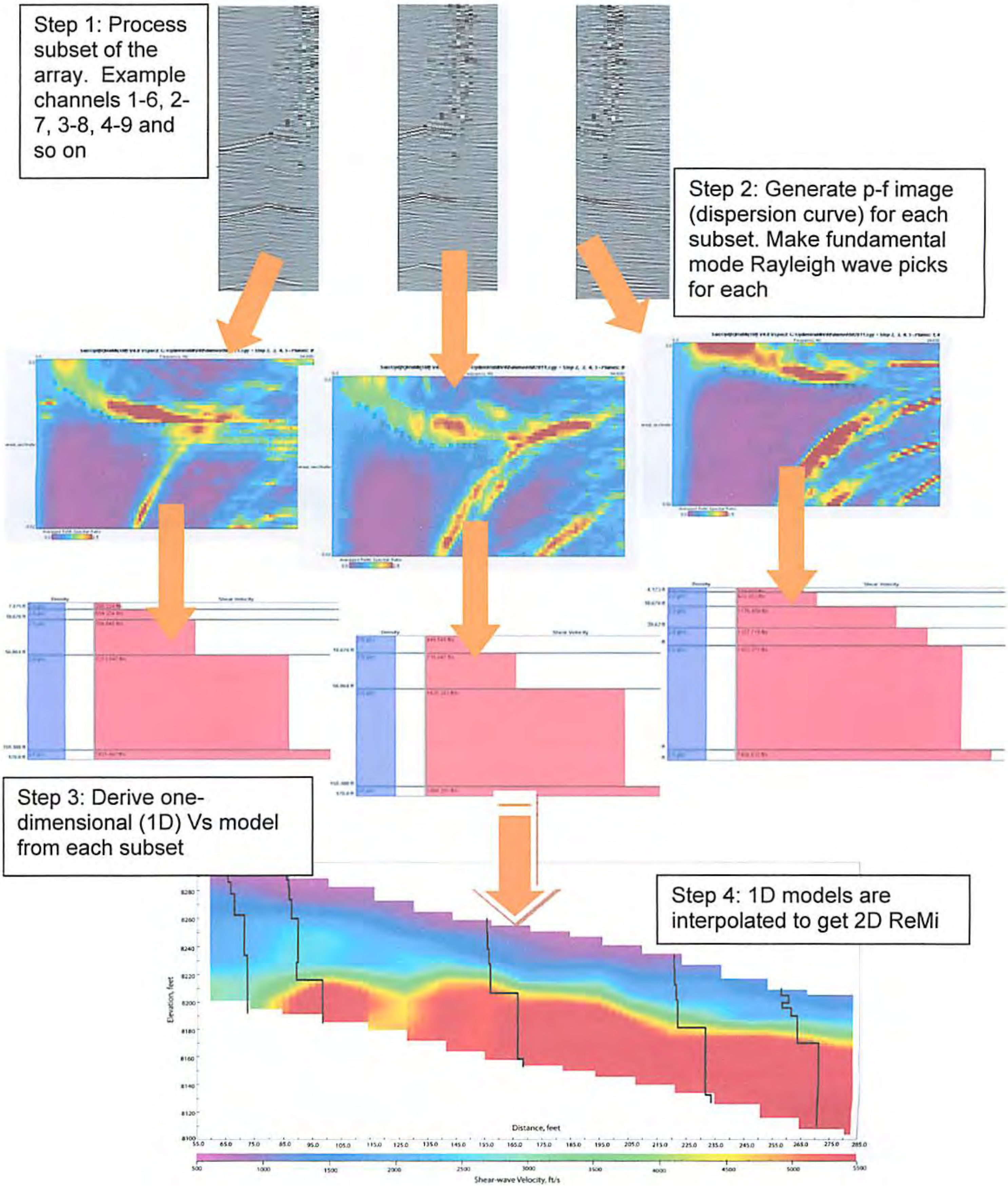
Picking of the Rayleigh-wave dispersion curve is done along a lowest p-f envelope bounding the dispersed energy appearing on the p-f image. The picks thus discriminate against higher apparent velocities present when "noise" impacts the linear array from off-line or out-of-line directions. Picking a surface-wave dispersion curve along an envelope of the lowest phase velocities at each frequency has a further desirable effect. Because higher-mode Rayleigh waves have phase velocities above those of the fundamental mode, the refraction microtremor technique preferentially yields the fundamental-mode surface wave phase velocities.

➢ ***Step 3:*** Generate 1D shear wave velocity sounding-

For each seismic line a 1D shear wave velocity sounding was then produced. The ReMi method interactively forward-models the normal-mode dispersion data picked from the p-f images with a code adapted from Saito (1979) that produces results identical to those of the forward-modeling codes used by Iwata et al. (1998) and by Xia et al. (1999) within their inversion procedure. The modeling iterates on phase velocity at each period (frequency). The analysis approach and the propagation properties of surface waves allow velocity reversals (low Vs layers at depth) to be modeled successfully.

➢ ***Step 4:*** Generate 2D shear wave profiles-

Once a series of 1D Vs soundings have been modeled, the data are entered into an interpolating algorithm that produces a 2D smooth-model of a series of 1D inverted Vs models. The 2D profile represents a cross-section of the subsurface that uses combined geophone groupings that are spaced at 65 feet (SW-1) and 25 feet (SW-2), having a total of six geophones for each group. For both survey lines SW-1 and SW-2, this method was performed by using geophone groupings 1-6, then 2-7, 3-8, etc, ending at 19-24. Initially an 'unsmoothed' profile is generated, which only plots the 1D sounding without any smoothing operation applied, then the smoothing is applied appropriately for the anticipated geologic setting. A generalized flow chart with respect to developing both the 1D and 2D images is presented on the following page for reference purposes.


Step 1: Process subset of the array. Example channels 1-6, 2-7, 3-8, 4-9 and so on
Step 2: Generate p-f image (dispersion curve) for each subset. Make fundamental mode Rayleigh wave picks for each
Step 3: Derive one-dimensional (1D) Vs model from each subset
Step 4: 1D models are interpolated to get 2D ReMi
Elevation, feet
Distance, feet
Shear-wave Velocity, ft/s

Upon completion of their analysis, the results for each of the shear-wave survey lines were then electronically transferred to our office and are included within Appendix B, for presentation and reference purposes. It should be noted that since the 2D survey lines were processed within discrete six-geophone group blocks (as previously discussed on Page 7, in Step 4), a portion of both the beginning and end of each survey line is not able to be imaged. It should be noted that because the analysis uses these discrete block groupings there is not a generally smooth gradient surface that can be modeled between these groupings, which can be seen as the small "step" features on each of the 2D profiles.

Data Analysis

The 1D **ReMi** shear-wave models which were generated for Seismic Lines SW-1 and SW-2 (as presented within Appendix B) present the velocity boundaries and associated seismic shear-wave velocities (feet/second) and have been tabulated below for reference. These 1D models average all of the 24 geophone channels as a singular group in the general process as described for the first three process steps as noted on Page 7. The velocities recorded within the upper 100 feet of the subject survey area were 978 and 1,145 feet per second as shown on the shear-wave models for Seismic Lines SW-2 and SW-1, respectively. The "weighted average" velocity is computed from a formula that is used by the ASCE (2007; ASCE 7-05, 20.4.1) to determine the average shear-wave velocity for the upper 100 feet of the subsurface (V100). This formula is as follows:

$$\mathbf{V100' = 100/[(t1/v1) + (t2/v2) + ... + (tn/vn)]}$$

Where t1, t2, t3,...,tn, are the thicknesses for layers 1, 2, 3,...n, up to 100 feet, and v1, v2, v3,...,vn, are the seismic velocities (feet/second) for layers 1, 2, 3,...n. The shear-wave models display these calculated layer boundaries/depths and associated velocities (feet/second) within the upper 100 feet where locally sampled. The associated dispersion curves and slowness-frequency plots (*p-f* image) are also included within Appendix B for visual and reference purposes, which illustrates the data quality and associated dispersion picks.

SEISMIC LINE SW-1

Depth Range (feet)	Shear-Wave Velocity (feet/second)
0 – 2.2	239
2.2 – 18.8	417
18.8 – 21.0	313
21.0 – 100.0 (depth limit)	2,523
Average Shear-Wave Velocity (0-100 feet): 1,145 ft/sec.	

SEISMIC LINE SW-2

Depth Range (feet)	Shear-Wave Velocity (feet/second)
0 – 2.2	86
2.2 – 6.7	312
6.7 – 18.5	606
18.5 – 21.8	285
21.8 – 88.8	2,504
88.8 – 100.0 (depth limit)	2,539
Average Shear-Wave Velocity (0-100 feet): 978 ft/sec.	

The 2D **ReMi** shear-wave models for Seismic Lines SW-1 and SW-2 are also presented within Appendix B which show the velocity boundaries and associated seismic shear-wave velocities (feet/second) using a tomographic approach. This method allows a visualization of the approximated subsurface structure, with respect to shear-wave velocities. These models were generated based on the previous discussion (as outlined on the flow chart presented on Page 8).

SUMMARY OF FINDINGS

Seismic Line S-1

The refraction data obtained along Seismic Line S-1 which was acquired along the base of the bluff on the beach was considered to be of good quality with minor amounts of ambient "noise" that was introduced during our survey from the nearby wave-action along the beach and from distant vehicular traffic. Effort was made to time our seismic survey shots when there was a window of little to no "noise" where practical while the water was generally calm and waves were not breaking, with only the background vehicular vibrations being introduced into the data. Therefore, analysis of the data and picking of the primary "P"-wave arrivals was performed with little difficulty resulting in only very minor interpolation of the data being necessary. The initial seismic refraction line that was performed along the upper terrace portion of the site (same location as SW-1) proved to be of little to no value due to the excessive vehicle noise and partial underlying asphaltic pavement which precluded identification of the "P"-Wave arrivals from the underlying earth materials. Seismic Line S-1 revealed a very sharp velocity boundary interface at a depth around 9± feet, with the upper layer (V1) most likely consisting of unconsolidated and unsaturated beach sands. The underlying V2 layer may consist of either saturated sands and/or saturated bedrock. The introduction of water into the pore spaces of either of these materials would generally create the same greater than 5,000 fps velocity and therefore it cannot be determined at this time if this velocity boundary is the top of the water-table within unconsolidated sands, of the top of saturated bedrock materials.

Seismic Lines SW-1 and SW2

Data acquisition for the shear-wave survey went smoothly and good quality data was obtained. The largest ambient noise sources are believed to have originated from vehicular traffic along the adjacent Pacific Coast Highway and to a lesser degree from wave action and wind sources, which appeared to provide adequate background low-frequency noise. Additionally, the supplemented hammer impact source also delivered good-quality high-frequency noise sources to enhance the data. The 1D models which average the overall length of the survey lines, indicate there are relatively low-velocity materials in the upper portion of the site with a small velocity reversal layer generally between 19± feet to 22± feet in depth. This layer may represent the original native beach sand deposits that were covered with fill materials during construction of the Pacific Coast Highway. Directly below this reversal layer, the velocity greatly increases along a sharp boundary. Since water does not have an effect on shear-wave velocities it is believed that these high velocity materials at depth are the local bedrock materials. The 2D tomographic images also indicate this condition with the bedrock surface being relatively flay-lying, with no unusual structural variations or lateral discontinuities.

CLOSURE

This seismic survey was performed using "state-of-the-practice" geophysical techniques, computer processing, and equipment, along the localized area as delineated by you. The raw data processing and seismic analysis were performed in accordance with standard geophysical industry practices. We make no warranty, either expressed or implied. It should be understood that when using these theoretical geophysical principles and techniques, sources of error are possible in both the data obtained and in the interpretation. Compared with traditional borehole shear-wave surveys of which use vertical body waves, the sources of error (if present) using horizontal surface waves for this project are not believed to be greater than 15 percent. Estimates of velocity boundaries using refraction methods are generally considered to be within 10±-percent of the depth of the contact.

Veiw looking westerly along Seismic Line SW-1.

Veiw looking easterly along Seismic Line SW-1.

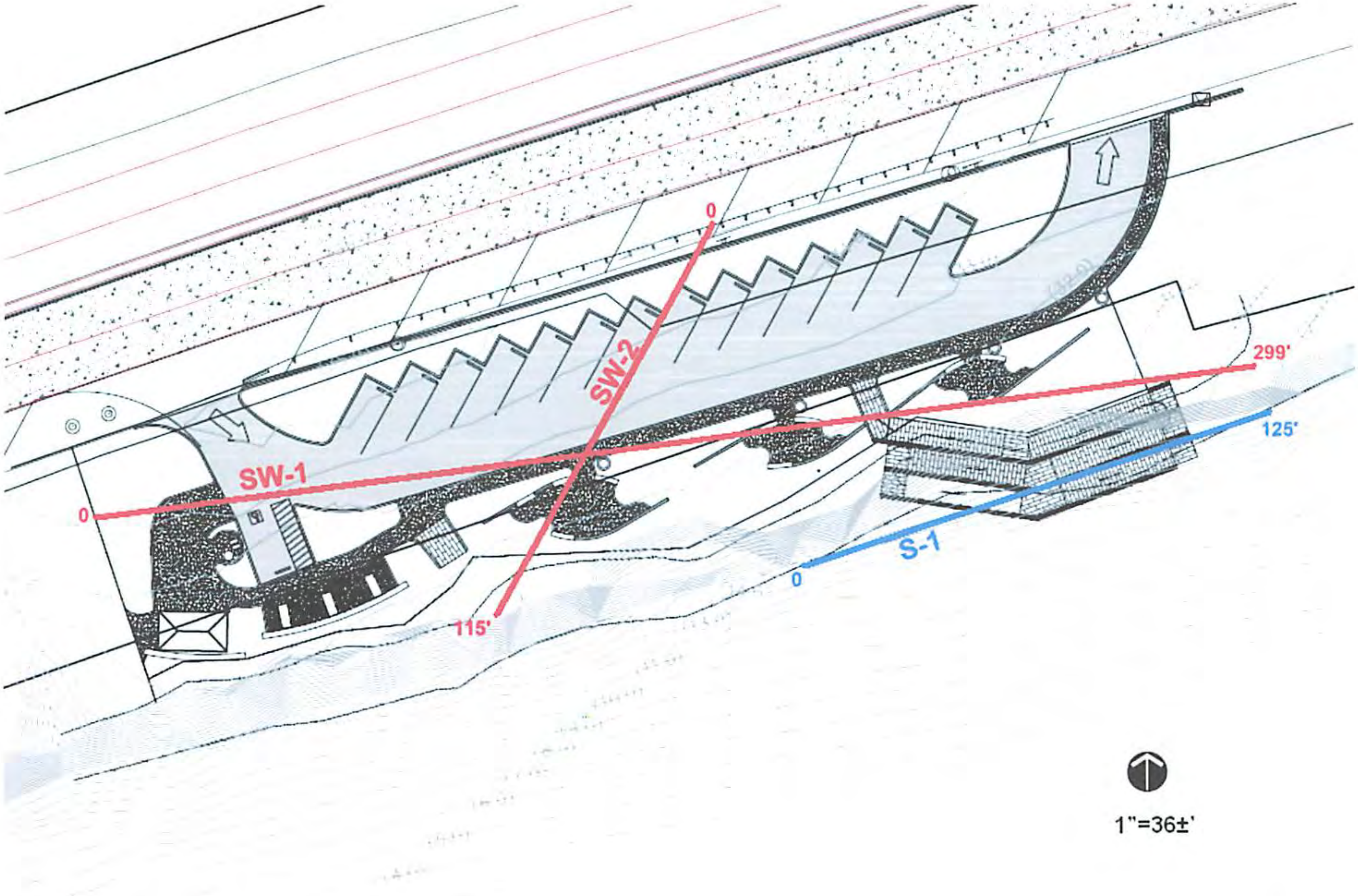
Veiw looking southwest along Seismic Line SW-2.

Veiw looking easterly along Seismic Line S-1.

PROJECT NO. 112552-1

FIGURE 1

SEISMIC LINE LOCATION MAP



PROJECT NO. 112552-1

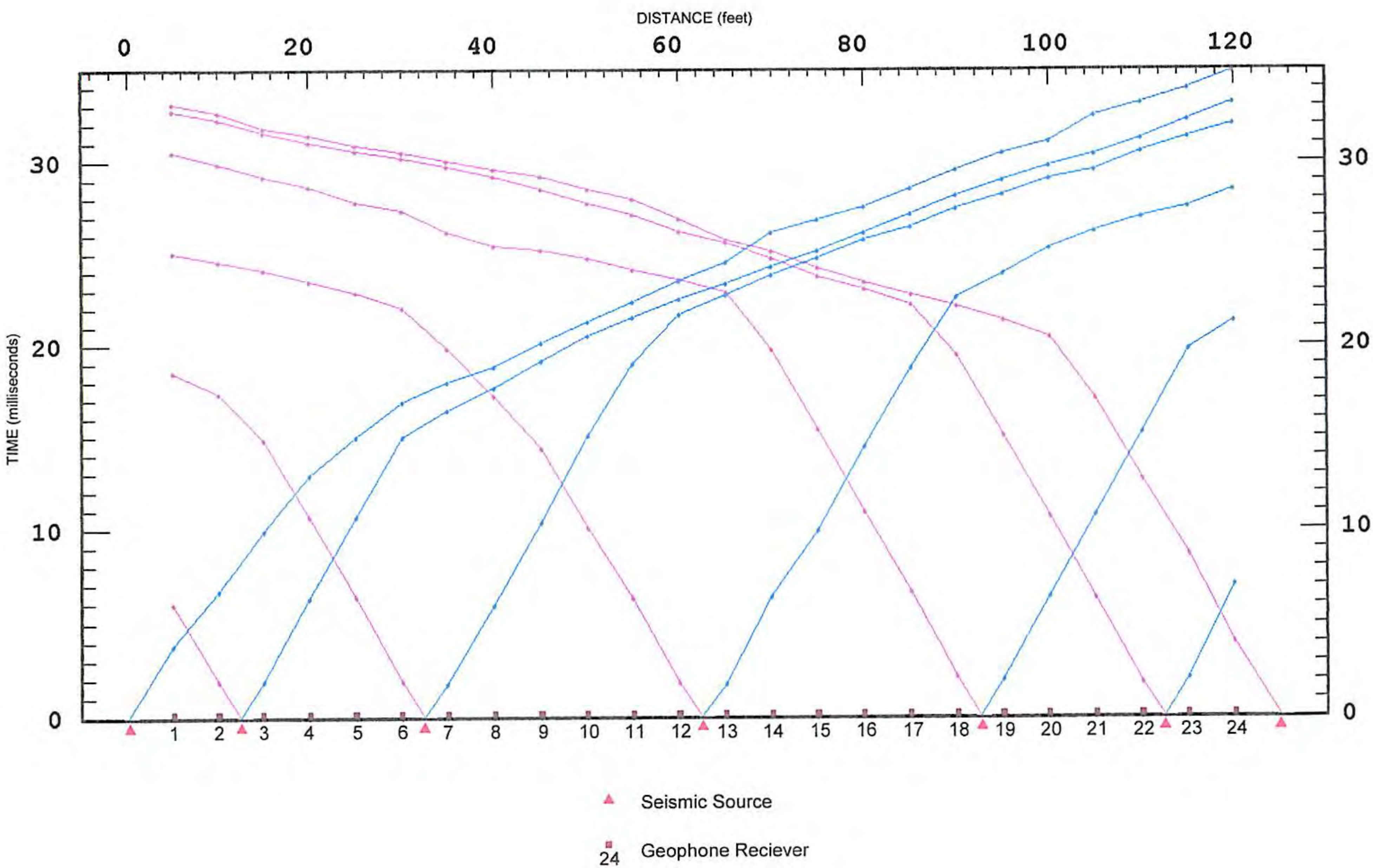
PLATE 1

APPENDIX A

SEISMIC REFRACTION MODEL

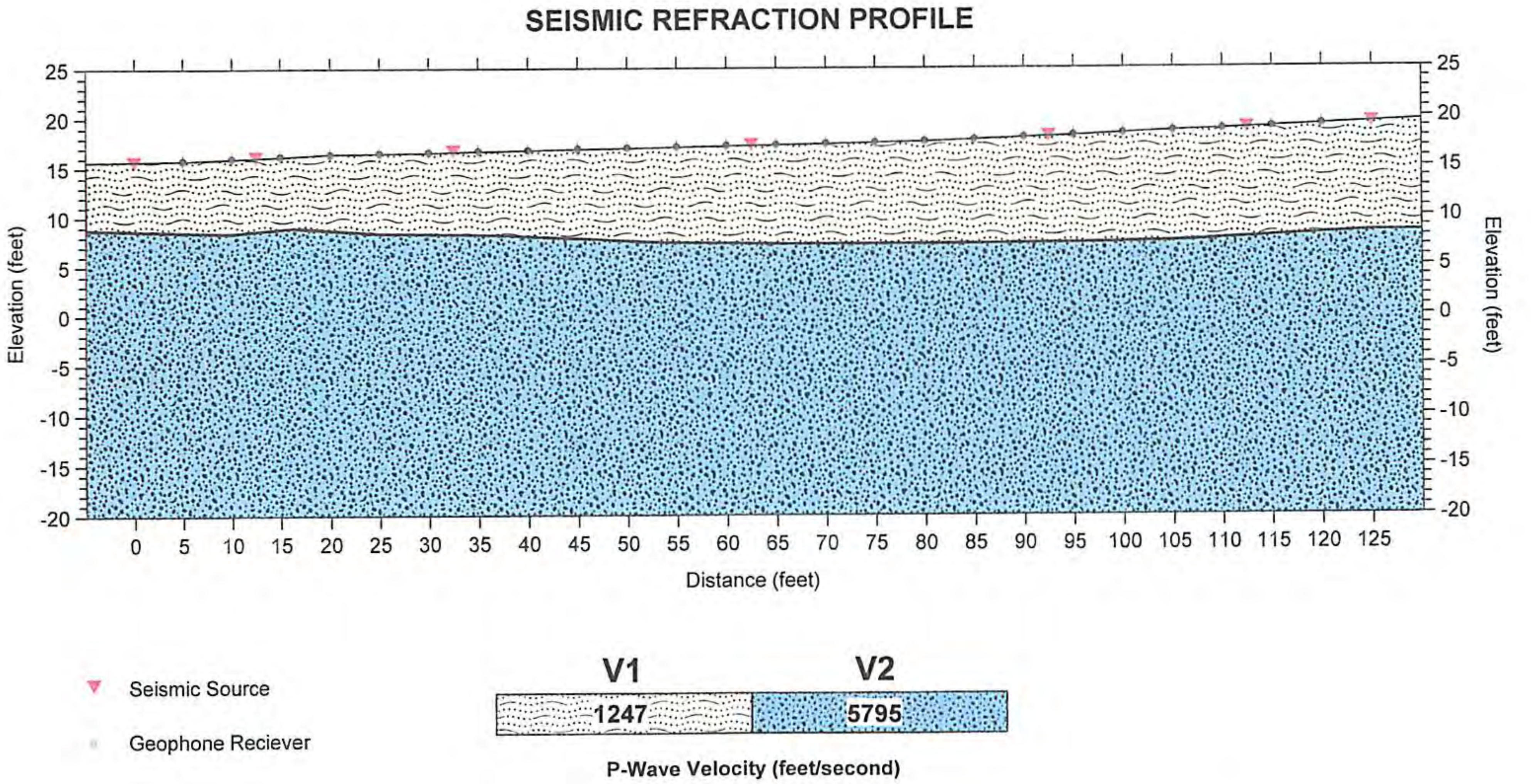
TIME-DISTANCE PLOT

SEISMIC LINE S-1



SEISMIC LINE S-1

North 72° East →

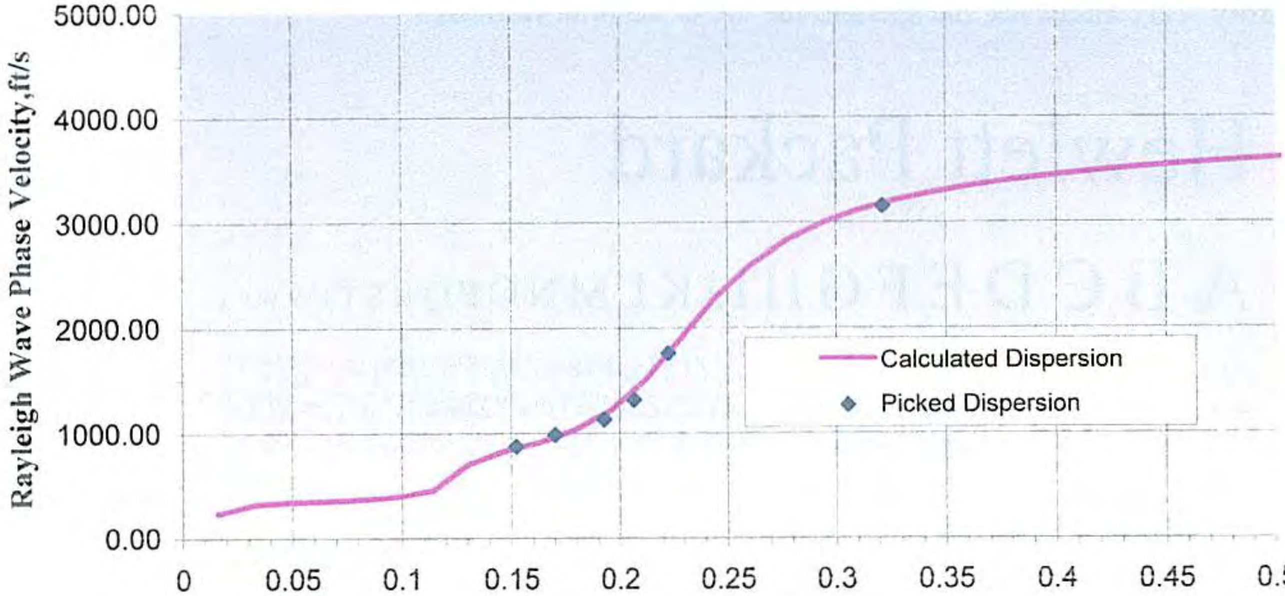


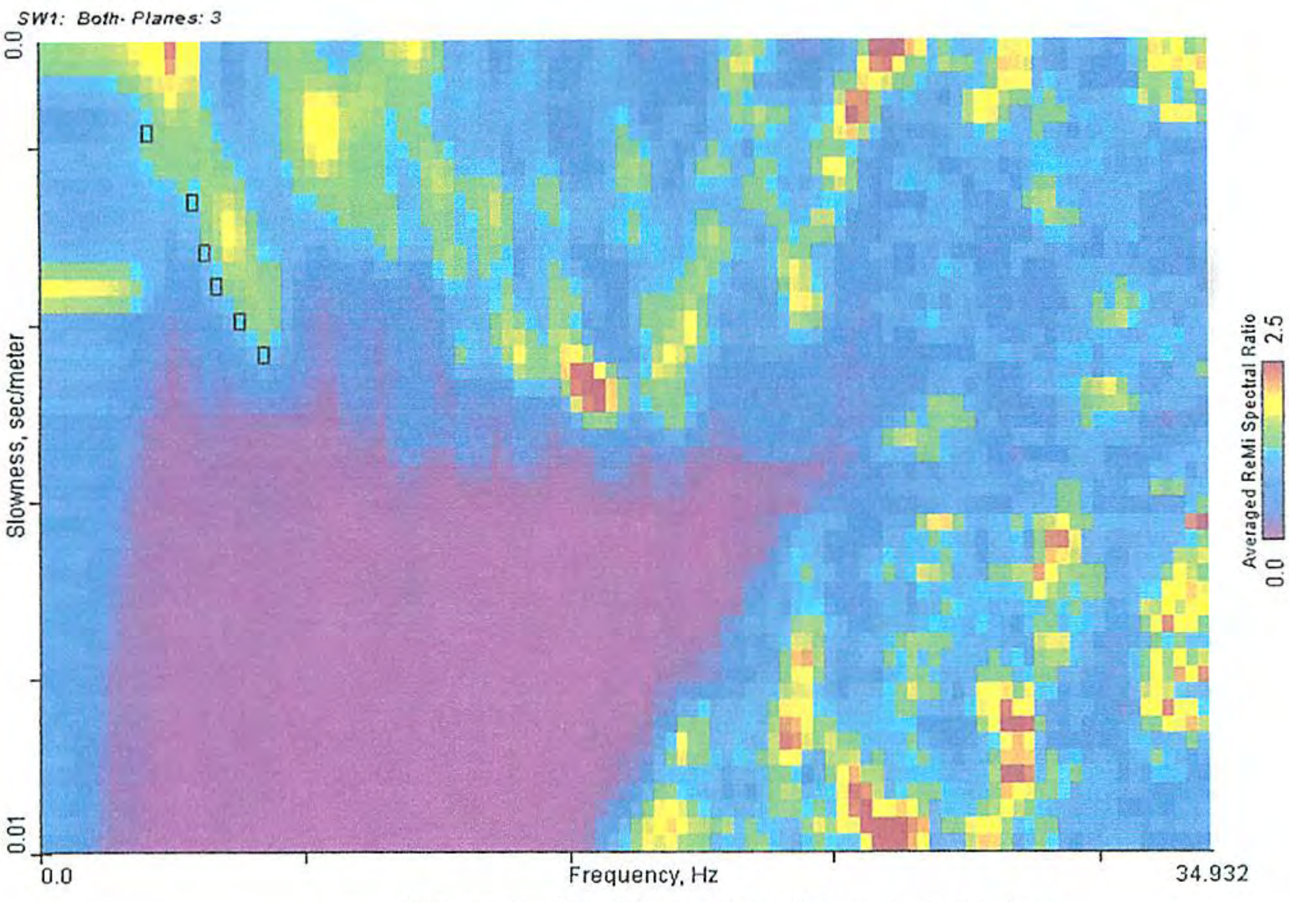
APPENDIX B

SHEAR-WAVE MODELS

SHEAR-WAVE LINE SW-1

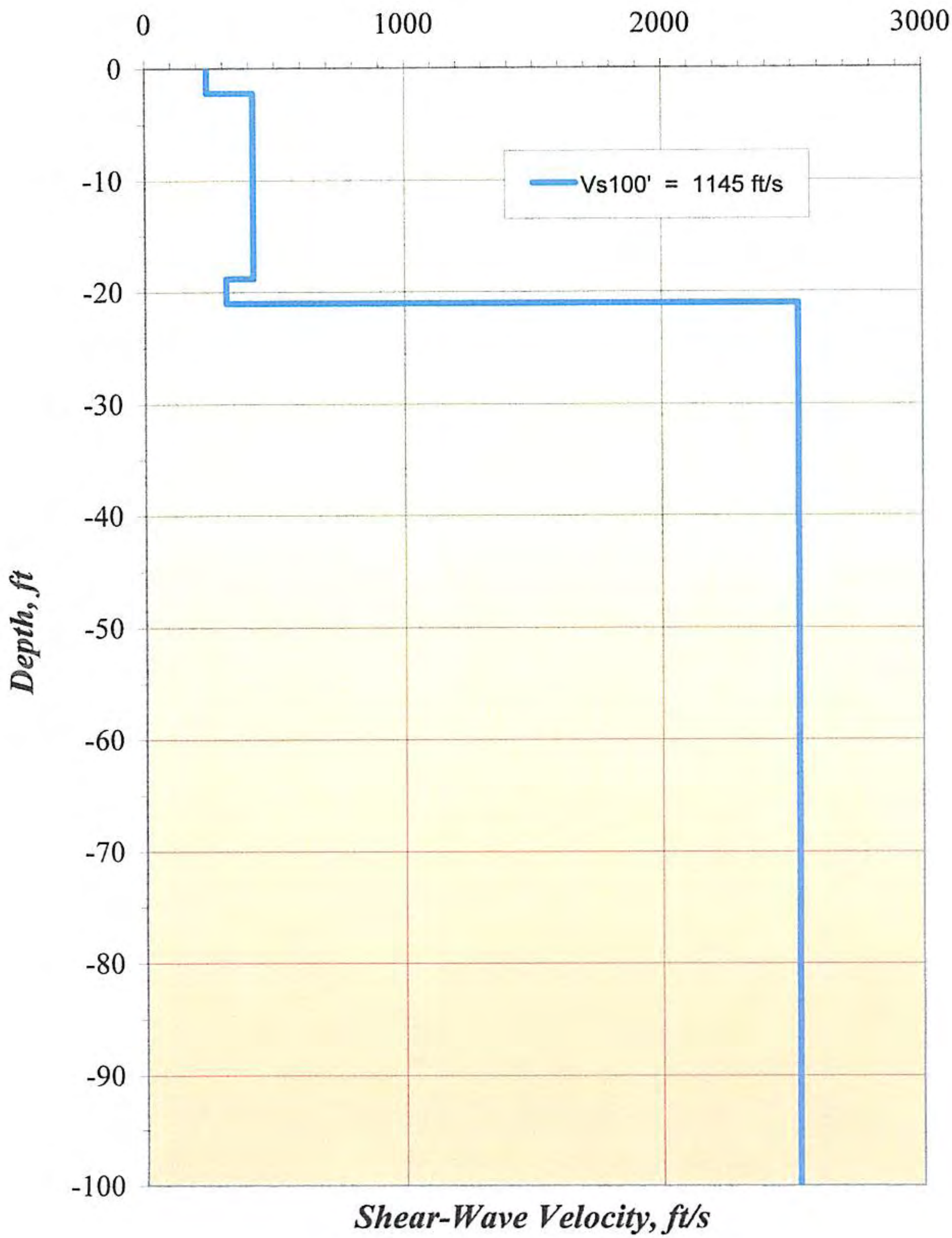
Dispersion Curve Showing Picks and Fit



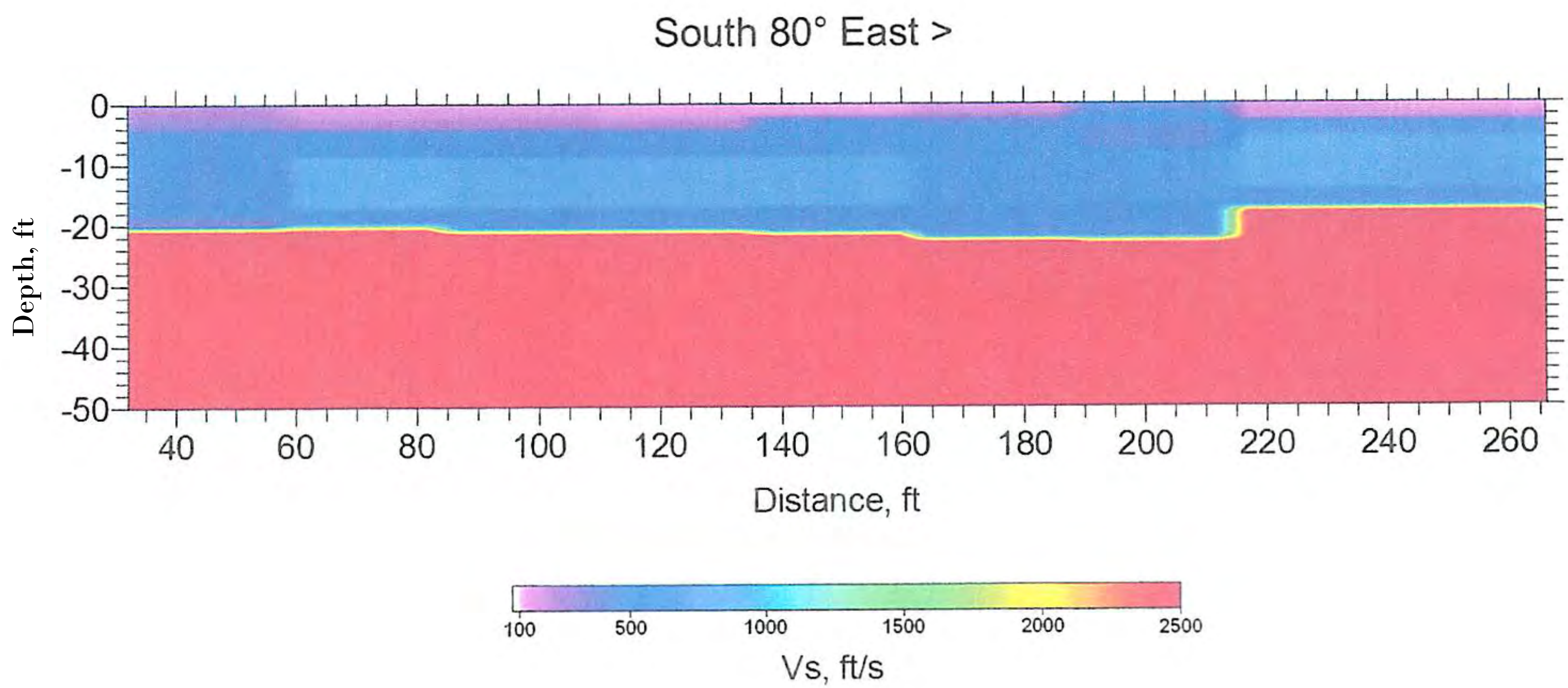


p-f Image with Dispersion Modeling Picks

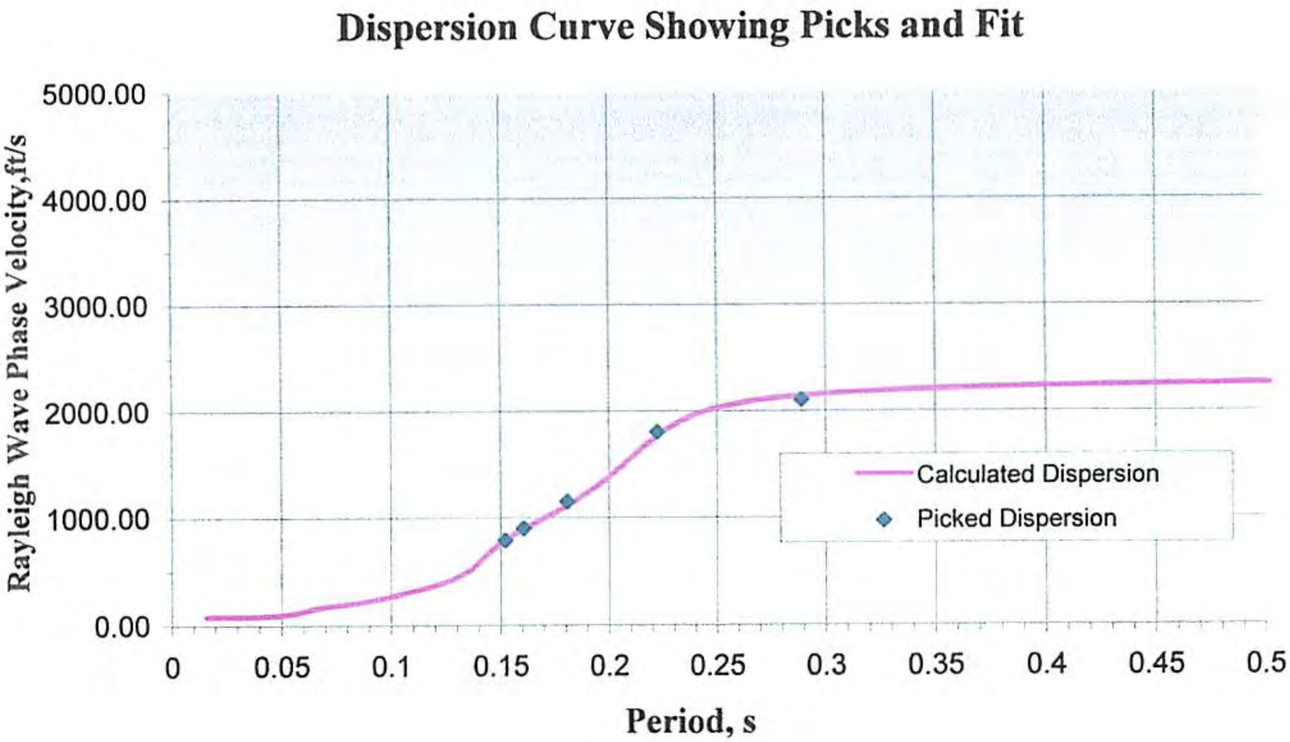
1D SHEAR-WAVE MODEL SW-1

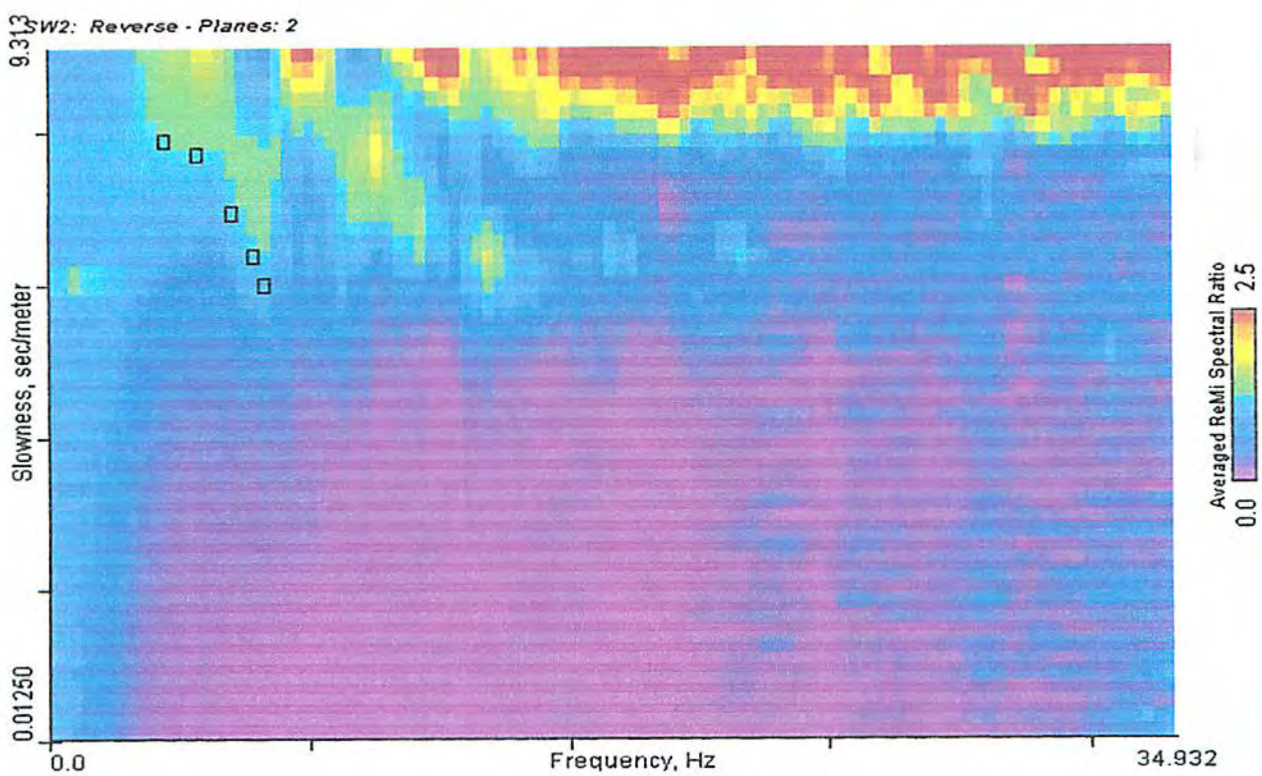


2D SHEAR-WAVE MODEL SW-1



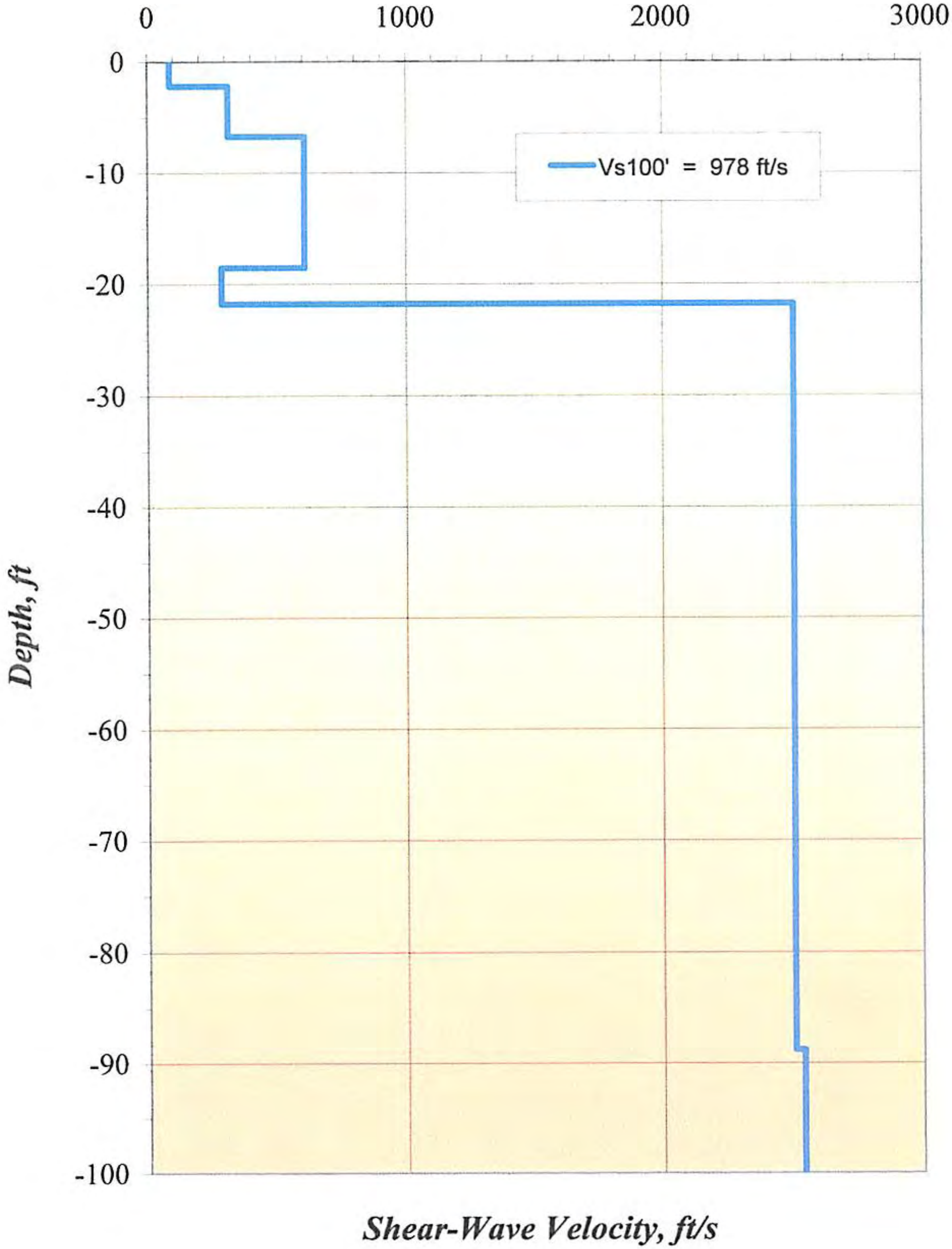
SHEAR-WAVE LINE SW-2



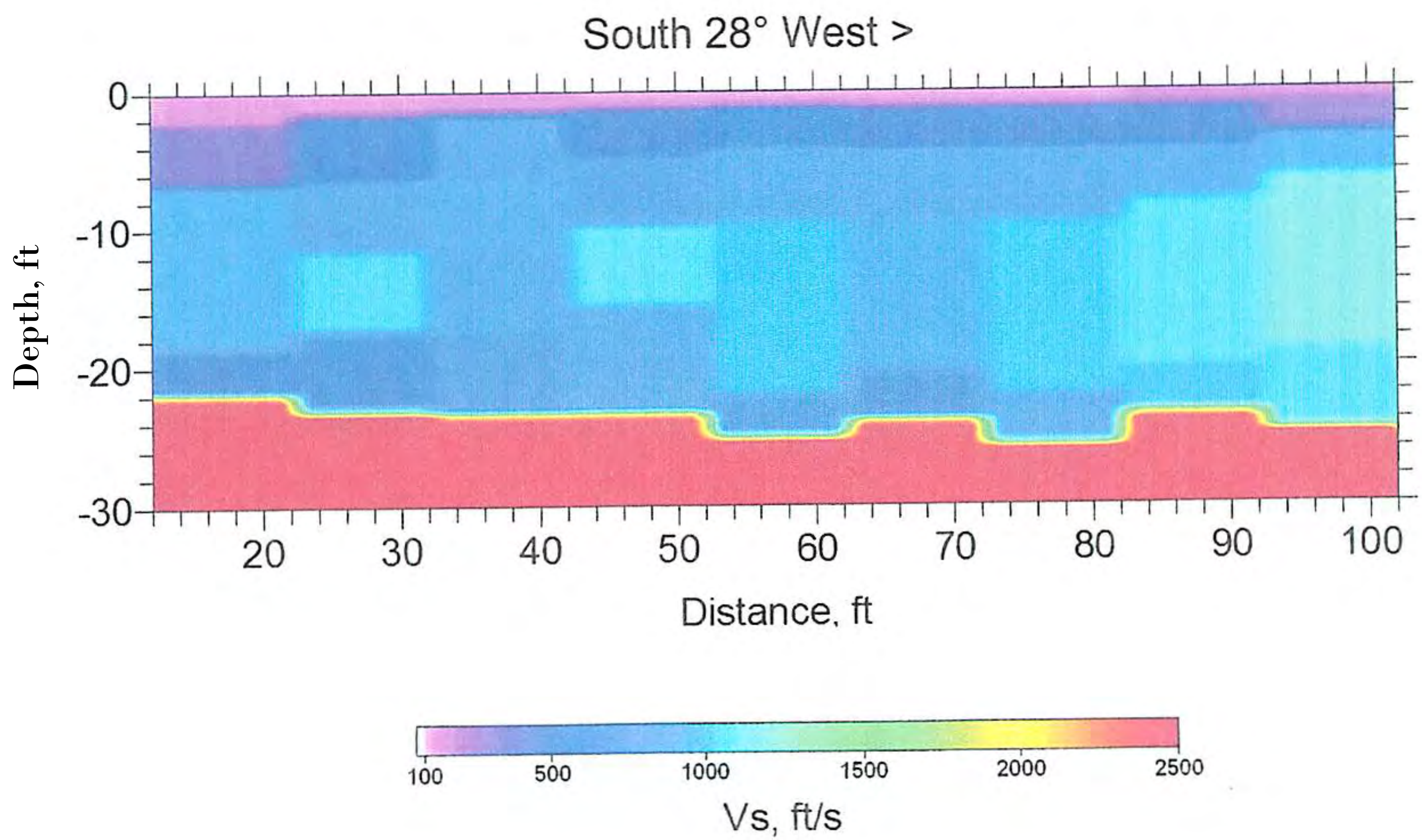


p-f Image with Dispersion Modeling Picks

1D SHEAR-WAVE MODEL SW-2



2D SHEAR-WAVE MODEL SW-2



APPENDIX C

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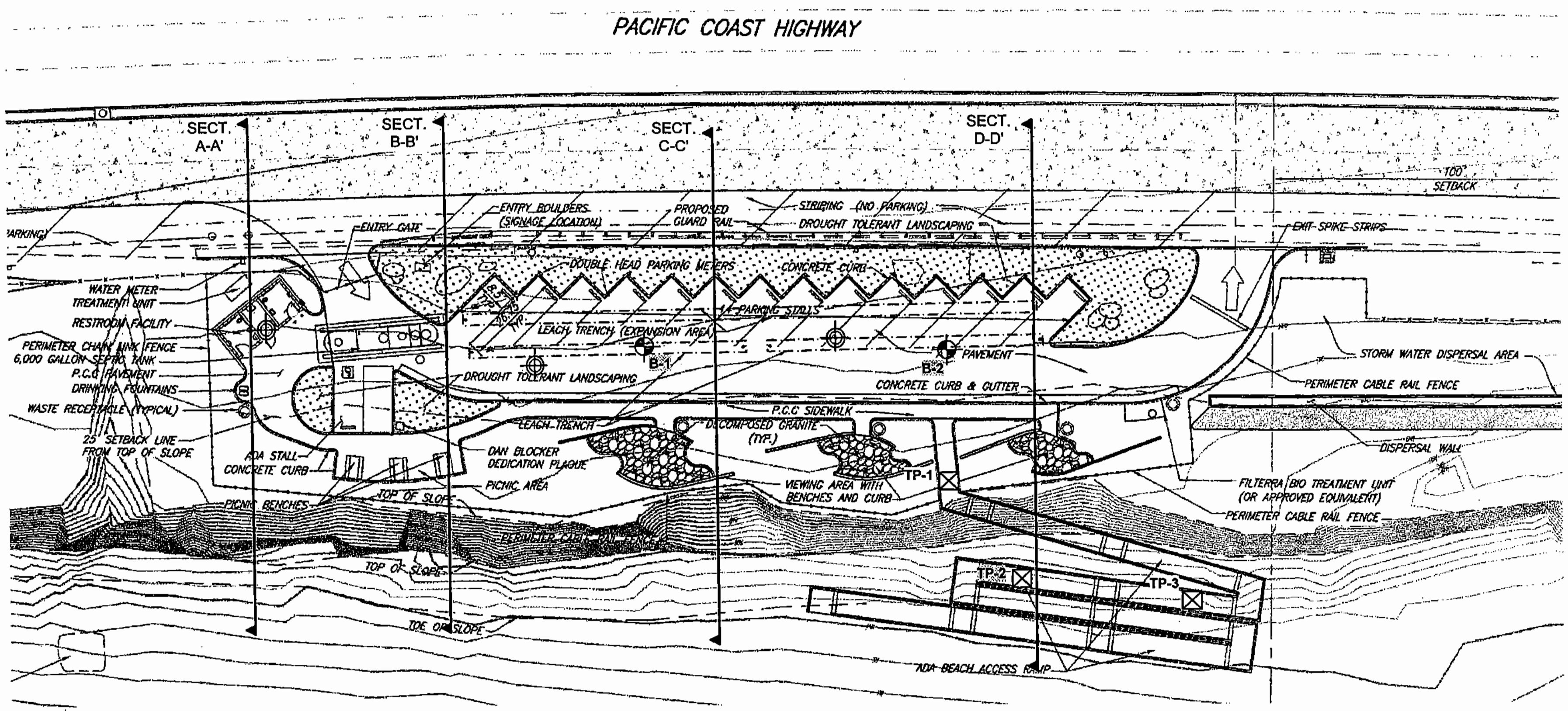
APPENDIX E



EXPLANATION

B-1 APPROXIMATE LOCATION AND NUMBER OF EXPLORATORY BUCKET BORING

TP-1 APPROXIMATE LOCATION AND NUMBER OF EXPLORATORY TEST PIT

APPROXIMATE LOCATION OF EXPLORATORY BUCKET BORING BY OTHERS (REF. 3)

SUBSURFACE CROSS SECTION

0 30 60 FEET

BASE PLAN REPRODUCED FROM SITE PLAN PROVIDED BY COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS: ARCHITECTURAL ENGINEERING DIVISION DATED 4/2/12

GPI GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06.I

SCALE: 1" = 30'

SITE PLAN

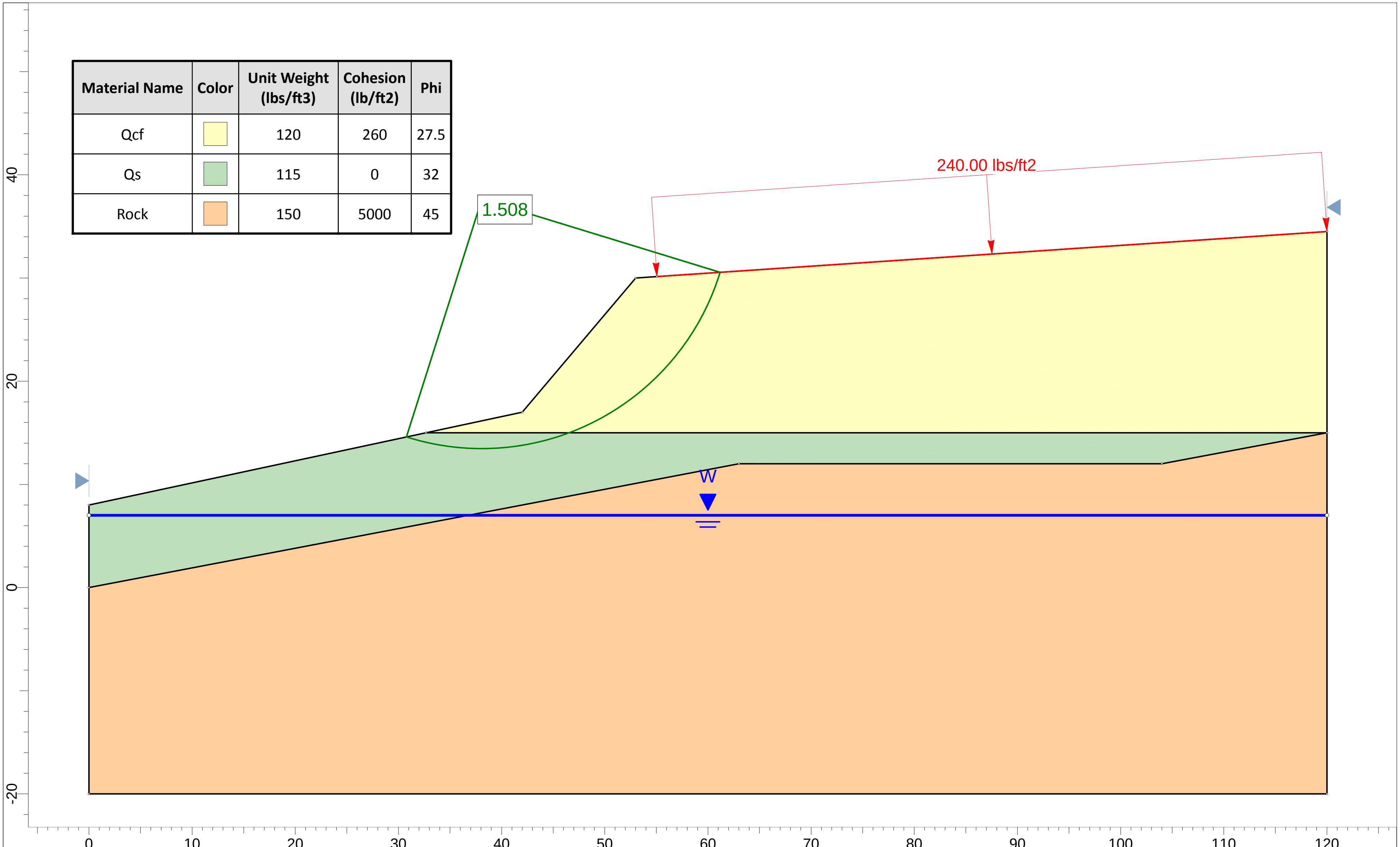
FIGURE E-1

APPENDIX E - SLOPE STABILITY ANALYSIS
Dan Blocker Beach

No.	Case	Soil Parmeters	Stability			
1	GDC Slope Configuration	GDC Soil Parmeters Qoal: c = 260 psf, phi = 27.5 deg Beach Sand: c = 0, phi = 32 deg Rock: c = 5000, phi = 45 dg	Static FS =	1.51	Seismic FS =	1.12
2	GDC Slope Configuration	GPI Soil for Fill (Average Shear) Qaf: c = 250 psf, phi = 27 deg Beach Sand: c = 0, phi = 32 deg Rock: c = 5000, phi = 45 dg	Static FS =	1.48	Seismic FS =	1.10
3	GDC Slope Configuration	GPI Soil for Fill (Low Shear) Qaf: c = 200 psf, phi = 23 deg	Static FS =	1.27	Seismic FS =	0.95
4	COLA Survey Section A-A'	GPI Soil for Fill (Average Shear) Qaf: c = 250 psf, phi = 27 deg	Static FS =	1.24	Seismic FS =	0.93
5	COLA Survey Section A-A'	GPI Soil for Fill (Low Shear) Qaf: c = 200 psf, phi = 23 deg	Static FS =	1.08	Seismic FS =	0.81
6	COLA Survey Section A-A' Sectback Requirement	GPI Soil for Fill (Low Shear) Qaf: c = 200 psf, phi = 23 deg	Static FS = Required Setback (ft):	1.5 22		
7	COLA Survey Section B-B'	GPI Soil for Fill (Average Shear) Qaf: c = 250 psf, phi = 27 deg	Static FS =	1.37	Seismic FS =	1.00
8	COLA Survey Section B-B'	GPI Soil for Fill (Low Shear) Qaf: c = 200 psf, phi = 23 deg	Static FS =	1.20	Seismic FS =	0.88
9	COLA Survey Section B-B' Sectback Requirement	GPI Soil for Fill (Low Shear) Qaf: c = 200 psf, phi = 23 deg	Static FS = Required Setback (ft):	1.5 22		
10	COLA Survey Section C-C'	GPI Soil for Fill (Average Shear) Qaf: c = 250 psf, phi = 27 deg	Static FS =	1.57	Seismic FS =	1.09
11	COLA Survey Section C-C'	GPI Soil for Fill (Low Shear) Qaf: c = 200 psf, phi = 23 deg	Static FS =	1.39	Seismic FS =	0.98
12	COLA Survey Section C-C' Sectback Requirement	GPI Soil for Fill (Low Shear) Qaf: c = 200 psf, phi = 23 deg	Static FS = Required Setback (ft):	1.5 22		
13	COLA Survey Section D-D'	GPI Soil for Fill (Average Shear) Qaf: c = 250 psf, phi = 27 deg	Static FS =	1.73	Seismic FS =	1.0
14	COLA Survey Section D-D'	GPI Soil for Fill (Low Shear) Qaf: c = 200 psf, phi = 23 deg	Static FS =	1.51	Seismic FS =	1.05
15	COLA Survey Section D-D' Sectback Requirement	GPI Soil for Fill (Low Shear) Qaf: c = 200 psf, phi = 23 deg	Static FS = Required Setback (ft):	1.5 14		

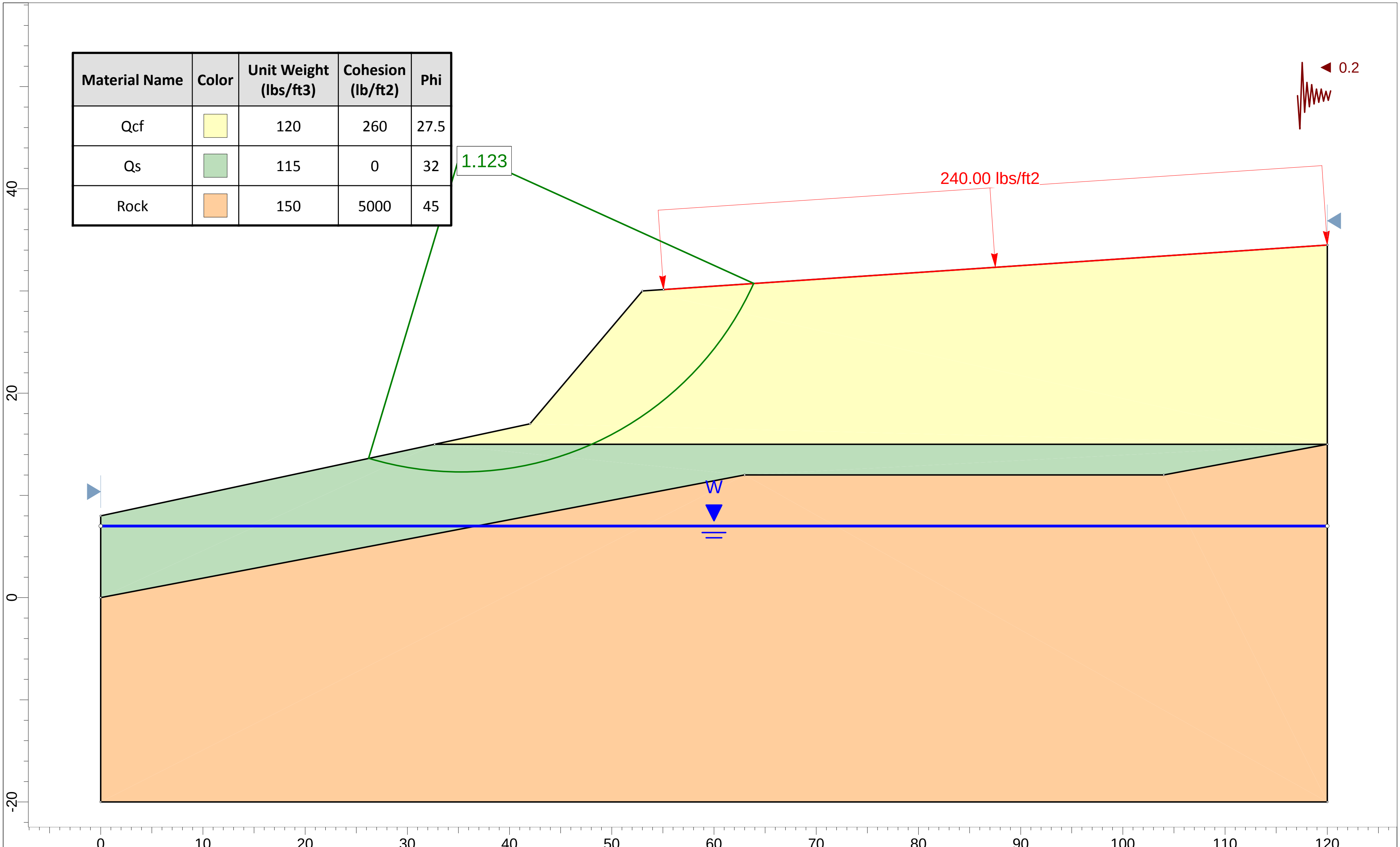
> GPI Soil Parameter for Beach Sand is Beach Sand: c = 0, phi = 32 deg
> GPI Soil Parameter for Rock is c = 5000, phi = 452 deg
> GPI assumed groundwater at highest tide of +4 feet.
> Seismic coefficient of 0.2 used in slope stability

Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Qcf		120	260	27.5
Qs		115	0	32
Rock		150	5000	45



GPI GEOTECHNICAL PROFESSIONALS INC.	*Project* 1A - GDC Soil - Dan Blocker Beach - Malibu, California - GPI Project No. 2380.06I		
	File Name 1A - Group Delta Section A - Soil Parameters.slim		
	Drawn By Dylan Boyle	*Scale* 1:154	*Company* Geotechnical Professionals Inc.
SLIDEINTERPRET 6.008	*Date* 1/30/2012 11:56:52 AM		*Analysis Description* Circular Method

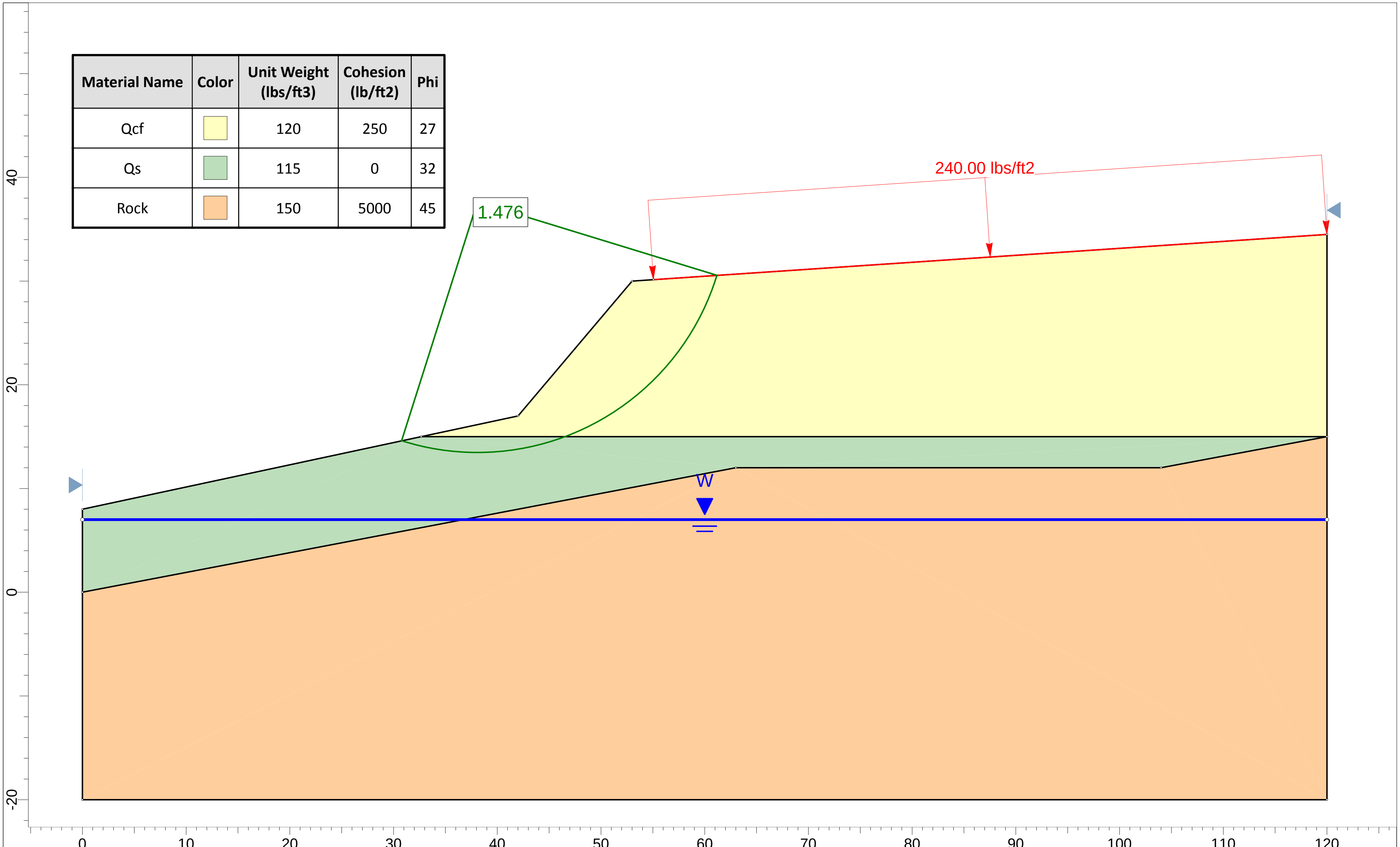
Case No. 1 - Static
GDC Slope/Parameters



Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Qcf		120	260	27.5
Qs		115	0	32
Rock		150	5000	45

GPI GEOTECHNICAL PROFESSIONALS INC.	*Project* 1B - GDC Soil - Dan Blocker Beach - Malibu, California - GPI Project No. 2380.06I		
	File Name 1B - Group Delta Section A - Soil Parameters.slim		
	Drawn By Dylan Boyle	*Scale* 1:156	*Company* Geotechnical Professionals Inc.
SLIDEINTERPRET 6.008	*Date* 1/30/2012 12:03:06 PM		*Analysis Description* Circular Method

Case No. 1 - Seismic
GDC Slope/Parameters



Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Qcf		120	250	27
Qs		115	0	32
Rock		150	5000	45

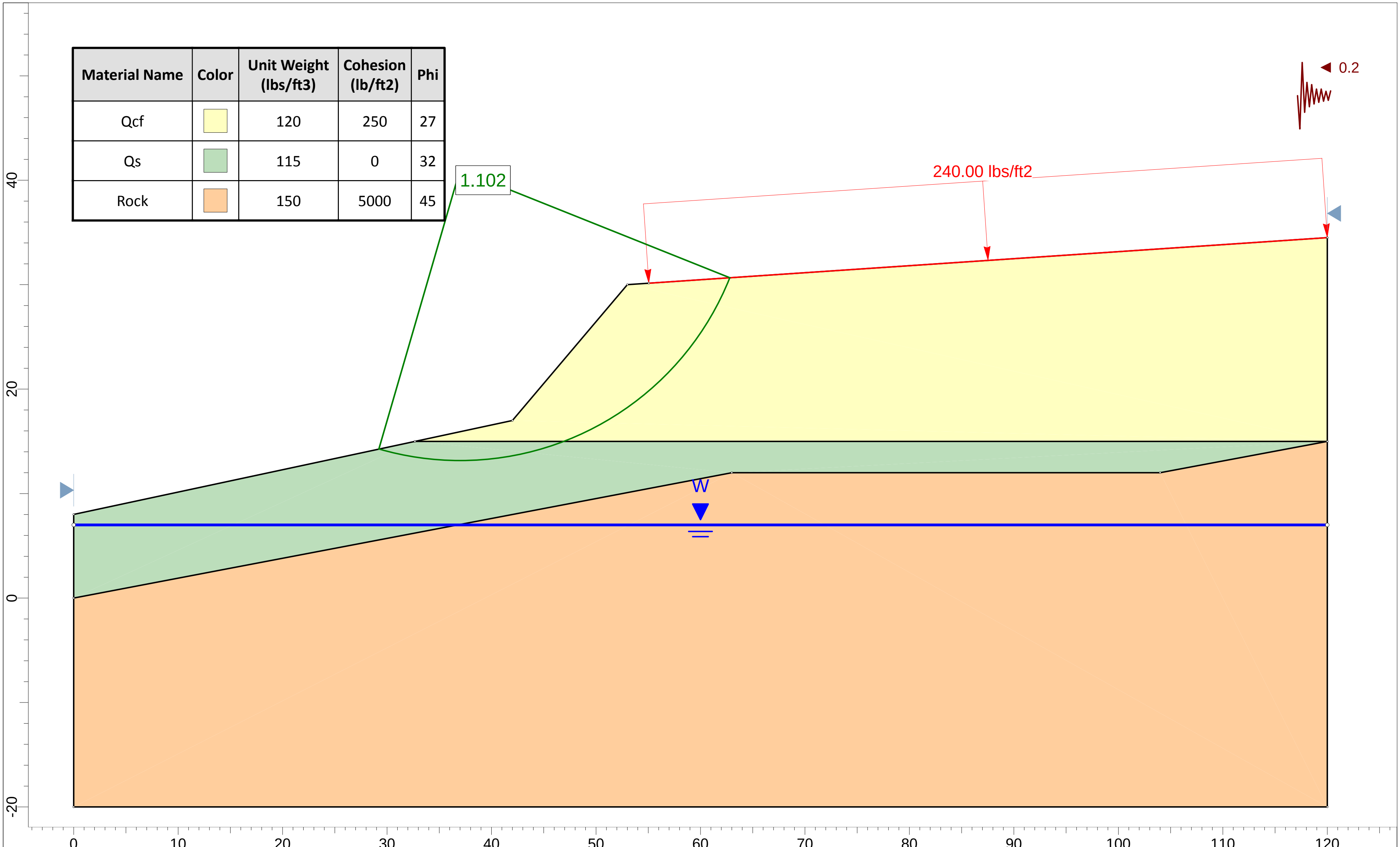
GPI GEOTECHNICAL PROFESSIONALS INC.

Project	2A - GDC Soil - Dan Blocker Beach - Malibu, California - GPI Project No. 2380.06I
File Name	2A - Group Delta Section A - Soil Parameters.slim
Drawn By	Dylan Boyle
Scale	1:154
Company	Geotechnical Professionals Inc.
Date	1/30/2012 12:03:54 PM
Analysis Description	Circular Method

SLIDEINTERPRET 6.008

Case No. 2 - Static
GDC Slope/GPI Parameters

Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Qcf		120	250	27
Qs		115	0	32
Rock		150	5000	45



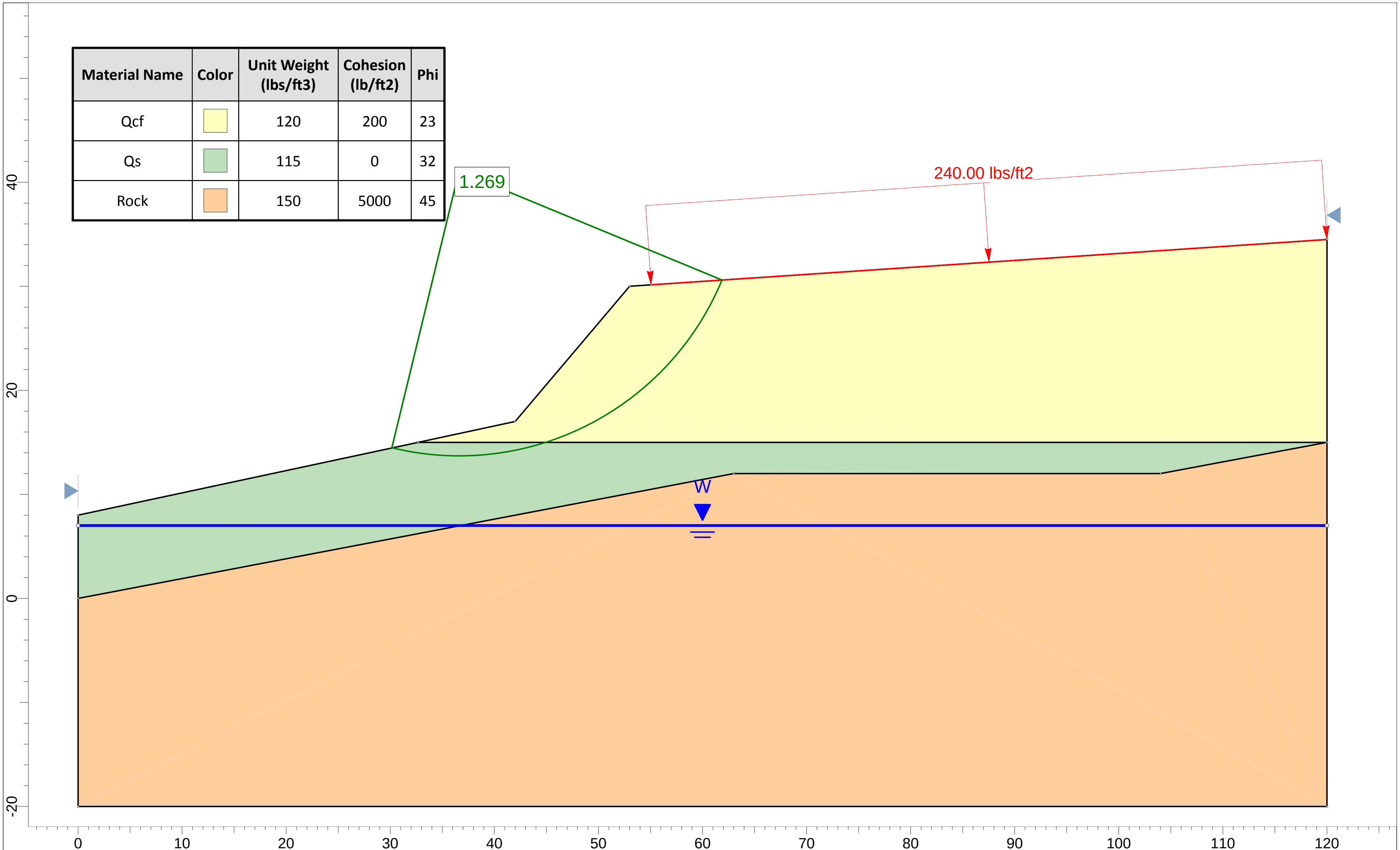
GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	2B - GDC Soil - Dan Blocker Beach - Malibu, California - GPI Project No. 2380.06I
File Name	2B - Group Delta Section A - Soil Parameters.slim
Drawn By	Dylan Boyle
Scale	1:153
Company	Geotechnical Professionals Inc.
Date	1/30/2012 12:06:45 PM
Analysis Description	Circular Method

Case 2 - Seismic
GDC Slope/GPI Parameters

Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Qcf		120	200	23
Qs		115	0	32
Rock		150	5000	45

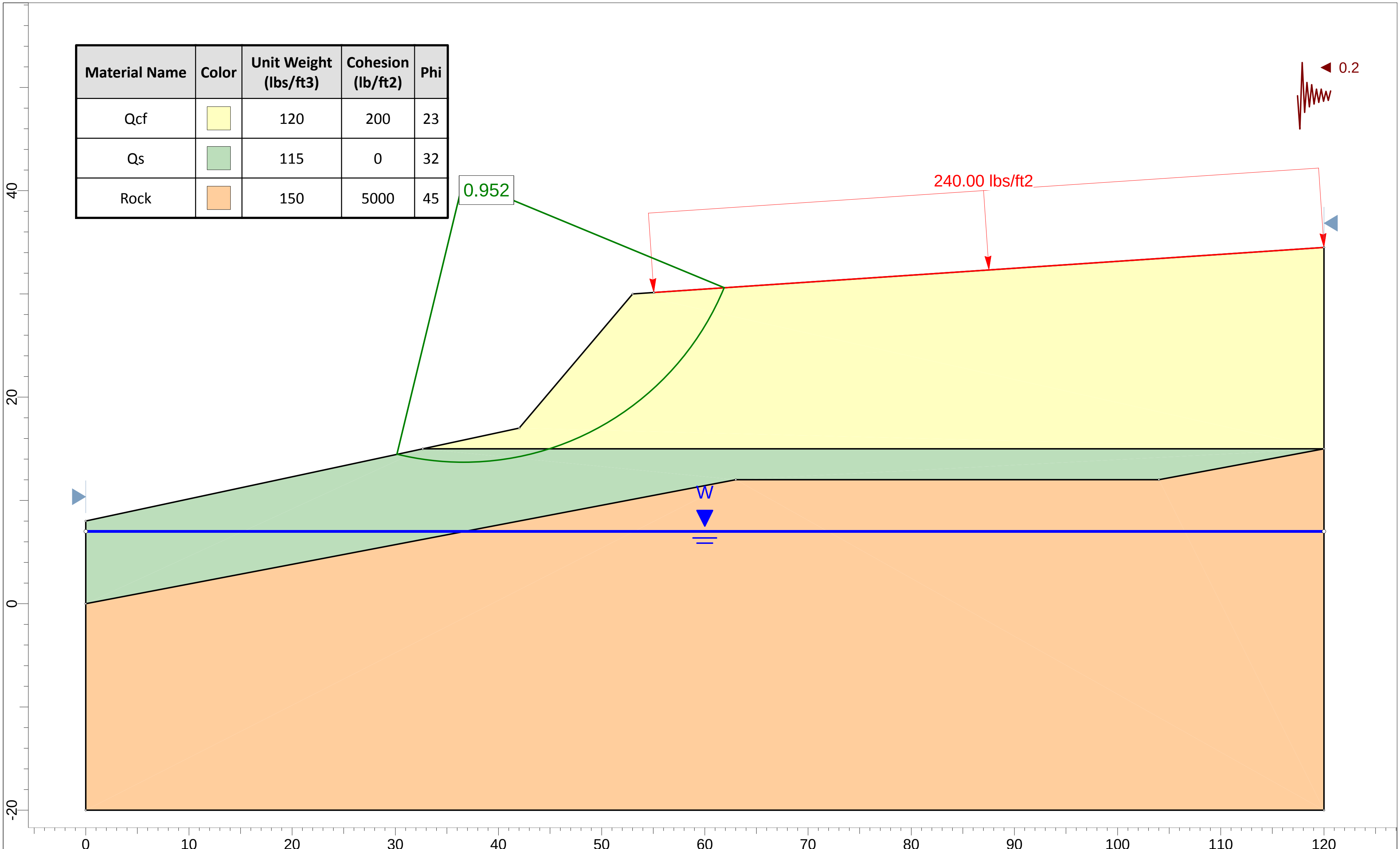


GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	3A - GDC Soil - Dan Blocker Beach - Malibu, California - GPI Project No. 2380.06I
File Name	3A - Group Delta Section A - Soil Parameters.slim
Drawn By	Dylan Boyle
Scale	1:153
Company	Geotechnical Professionals Inc.
Date	1/30/2012 12:07:52 PM
Analysis Description	Circular Method

Case 3 - Static
GDC Slope/GDC Low Parameters



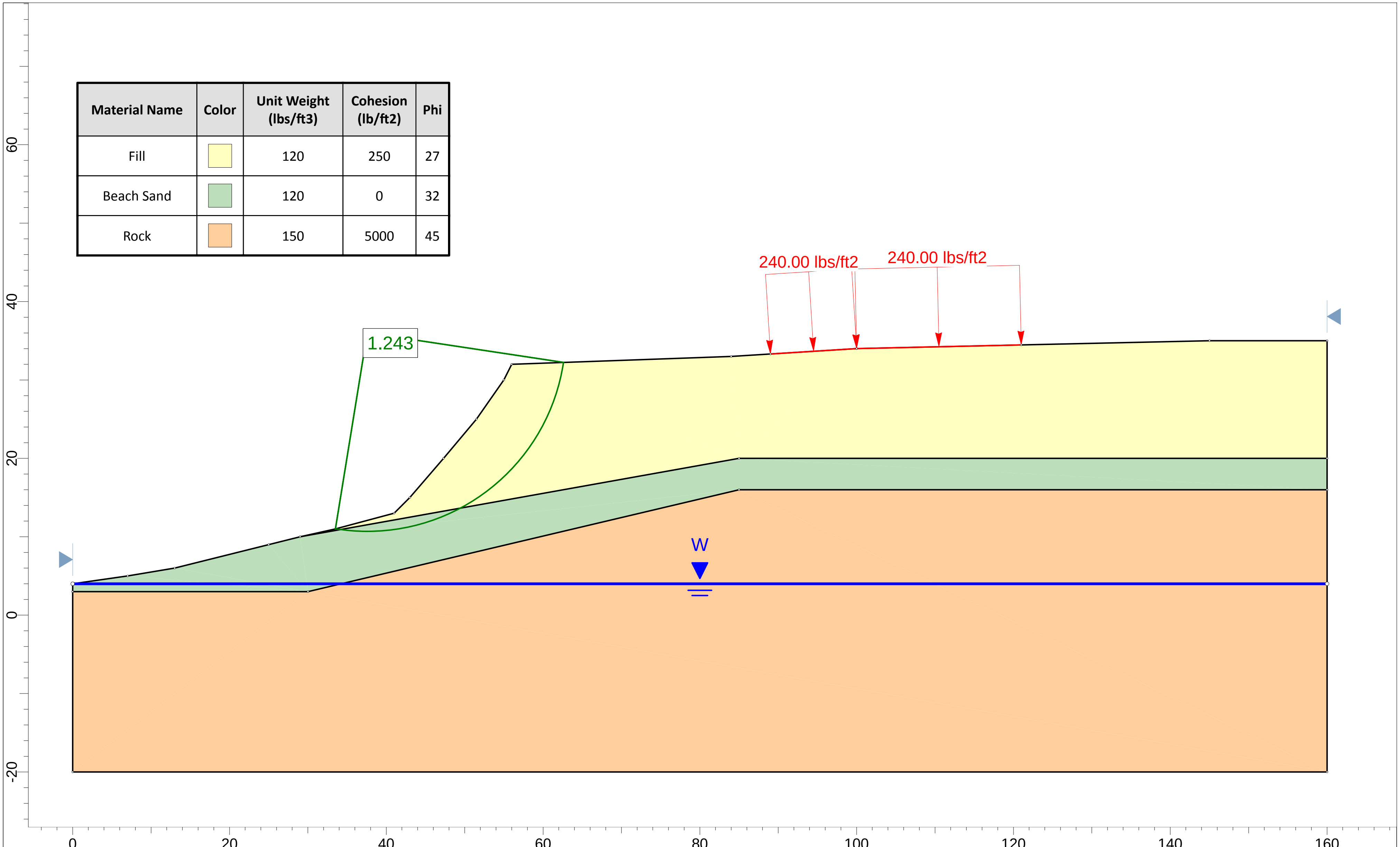
Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Qcf		120	200	23
Qs		115	0	32
Rock		150	5000	45

GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	3B - GDC Soil - Dan Blocker Beach - Malibu, California - GPI Project No. 2380.06I
File Name	3B - Group Delta Section A - Soil Parameters.slim
Drawn By	Dylan Boyle
Scale	1:154
Company	Geotechnical Professionals Inc.
Date	1/30/2012 12:08:32 PM
Analysis Description	Circular Method

Case 3 - Seismic
GDC Slope/GPI Low Parameters



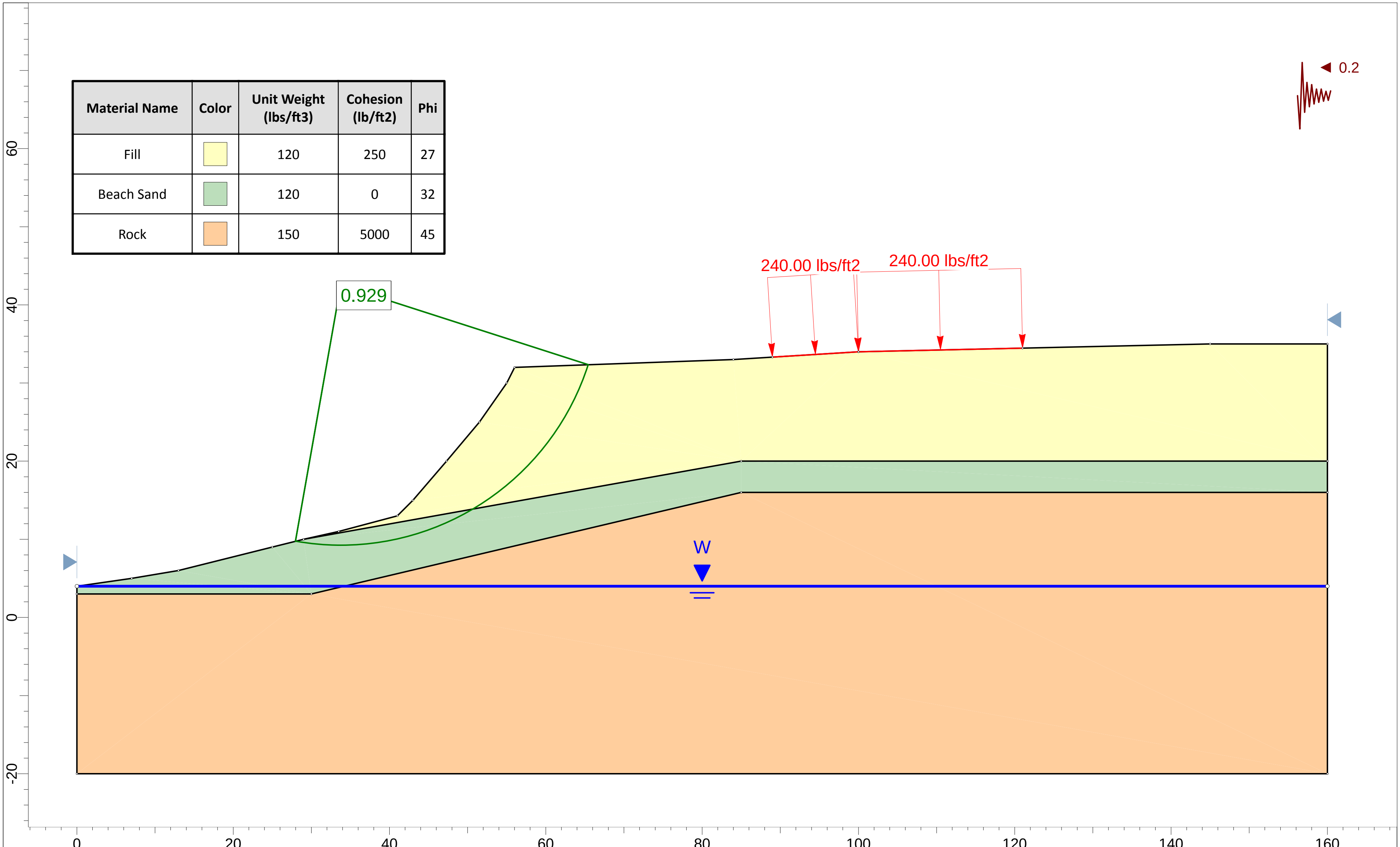
Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	250	27
Beach Sand		120	0	32
Rock		150	5000	45

GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	5A - Dan Blocker Beach Section A Average - Malibu, California - GPI Project No. 2380.06I
File Name	5A - GPI - Section A - Dan Blocker Beach - Average.slim
Drawn By	Dylan Boyle
Scale	1:203
Company	Geotechnical Professionals Inc.
Date	1/30/2012 12:13:46 PM
Analysis Description	Circular Method

Case 4 - Static
Section A-A' Average Parameters



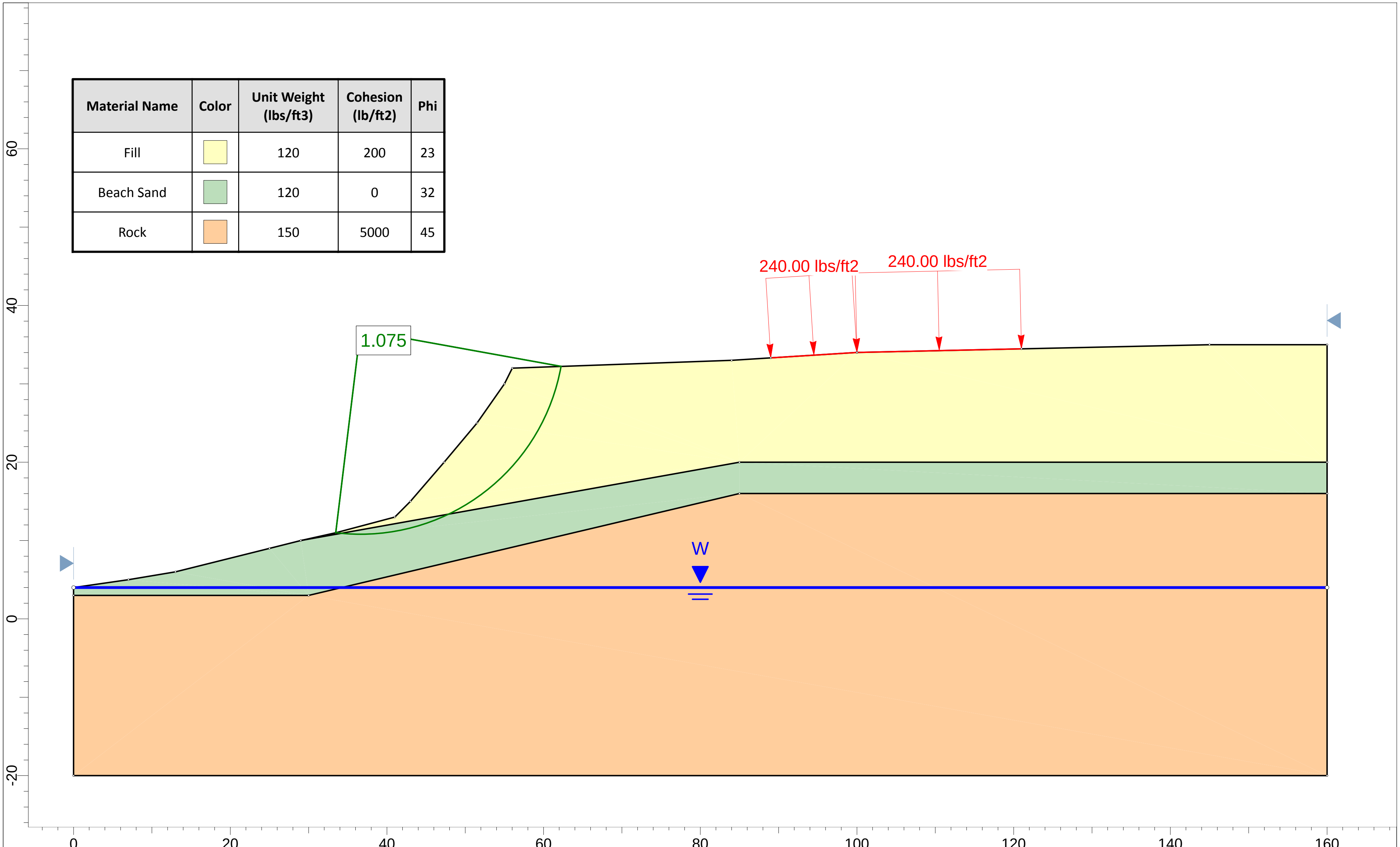
Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	250	27
Beach Sand		120	0	32
Rock		150	5000	45

GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	5B - Dan Blocker Beach Section A Average - Malibu, California - GPI Project No. 2380.06I
File Name	5B - GPI - Section A - Dan Blocker Beach - Average.slim
Drawn By	Dylan Boyle
Scale	1:204
Company	Geotechnical Professionals Inc.
Date	1/30/2012 12:18:13 PM
Analysis Description	Circular Method

Case 4 - Seismic
Section A-A' Average Parameters



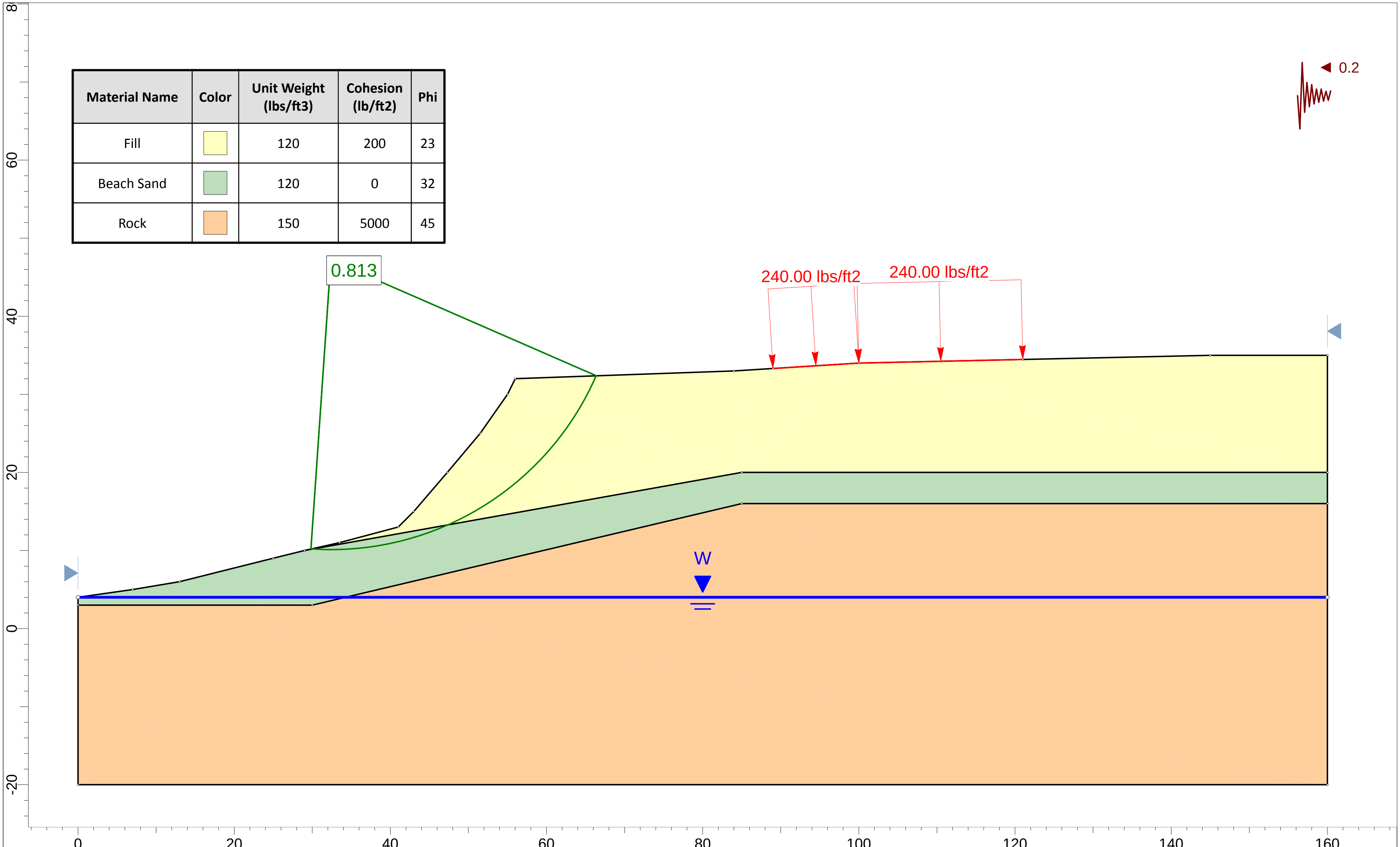
Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		150	5000	45

GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	Dan Blocker Beach Section A Worst - Malibu, California - GPI Project No. 2380.06I		
File Name	6A - GPI - Section A - Dan Blocker Beach - Worst.slim		
Drawn By Dylan Boyle	*Scale* 1:203	*Company*	Geotechnical Professionals Inc.
Date	1/30/2012 12:21:01 PM	*Analysis Description*	Circular Method

Case 5 - Static
Section A-A' Low Parameters



Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		150	5000	45

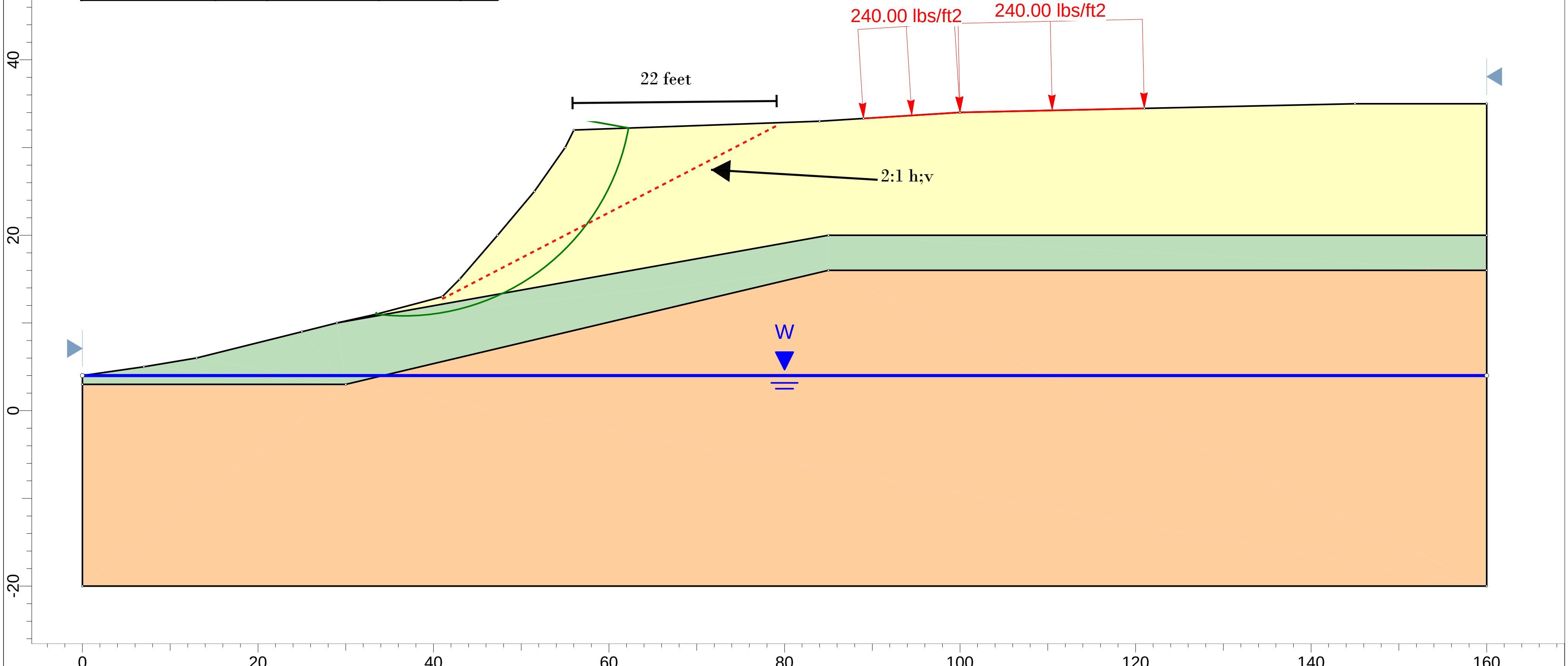
GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	6B - Dan Blocker Beach Section A Worst - Malibu, California - GPI Project No. 2380.06I
File Name	6B - GPI - Section A - Dan Blocker Beach - Worst.slim
Drawn By	Dylan Boyle
Scale	1:204
Company	Geotechnical Professionals Inc.
Date	1/30/2012 12:23:39 PM
Analysis Description	Circular Method

Case 5 - Seismic
Section A-A' Low Parameters

Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		150	5000	45



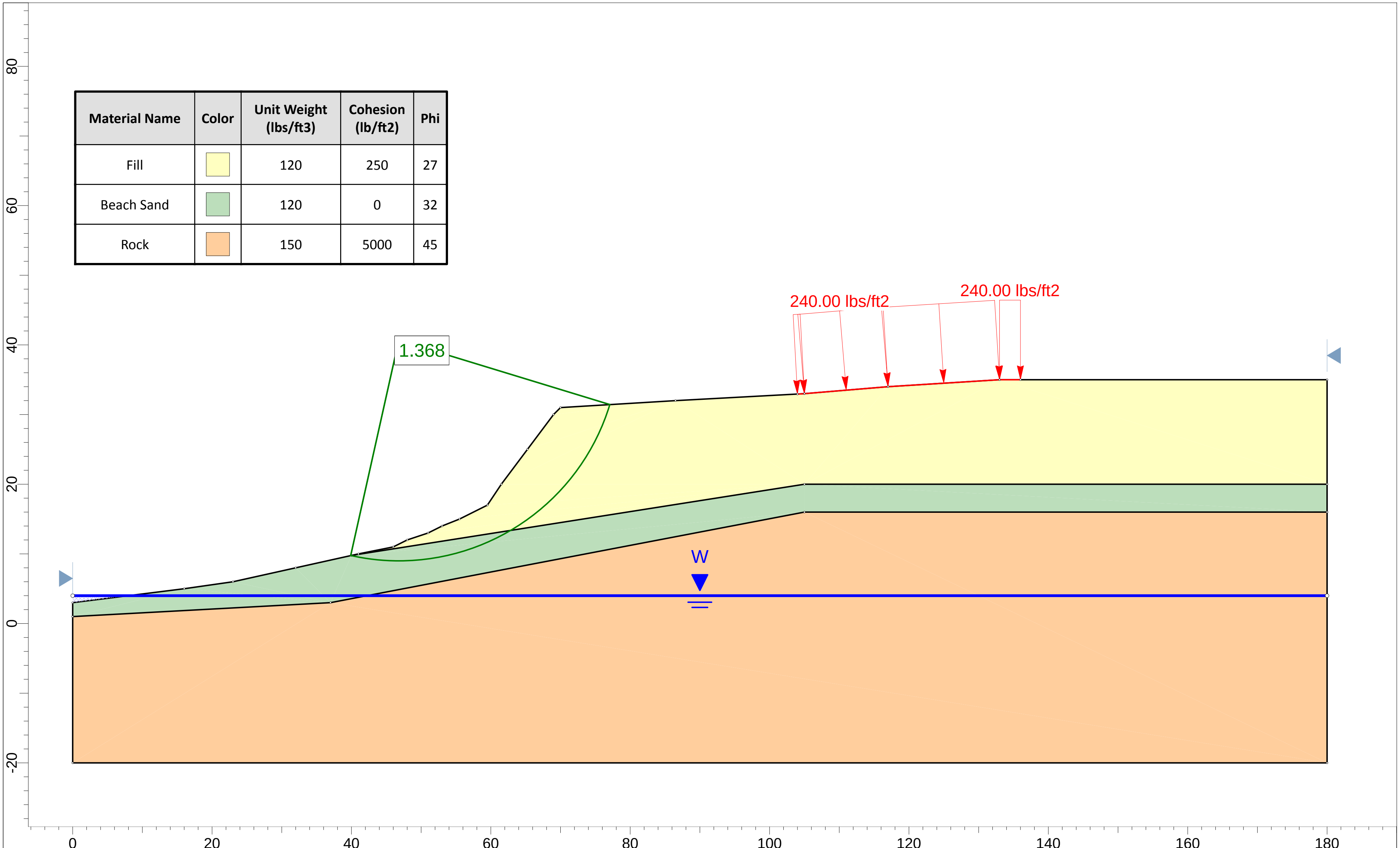
GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	Dan Blocker Beach Section A Worst - Malibu, California - GPI Project No. 2380.06I
File Name	6A - GPI - Section A - Dan Blocker Beach - Worst.slim
Drawn By	Dylan Boyle
Scale	1:203
Company	Geotechnical Professionals Inc.
Date	1/30/2012 12:21:01 PM
Analysis Description	Circular Method

Case 6 - Setback Requirement
Section A-A'

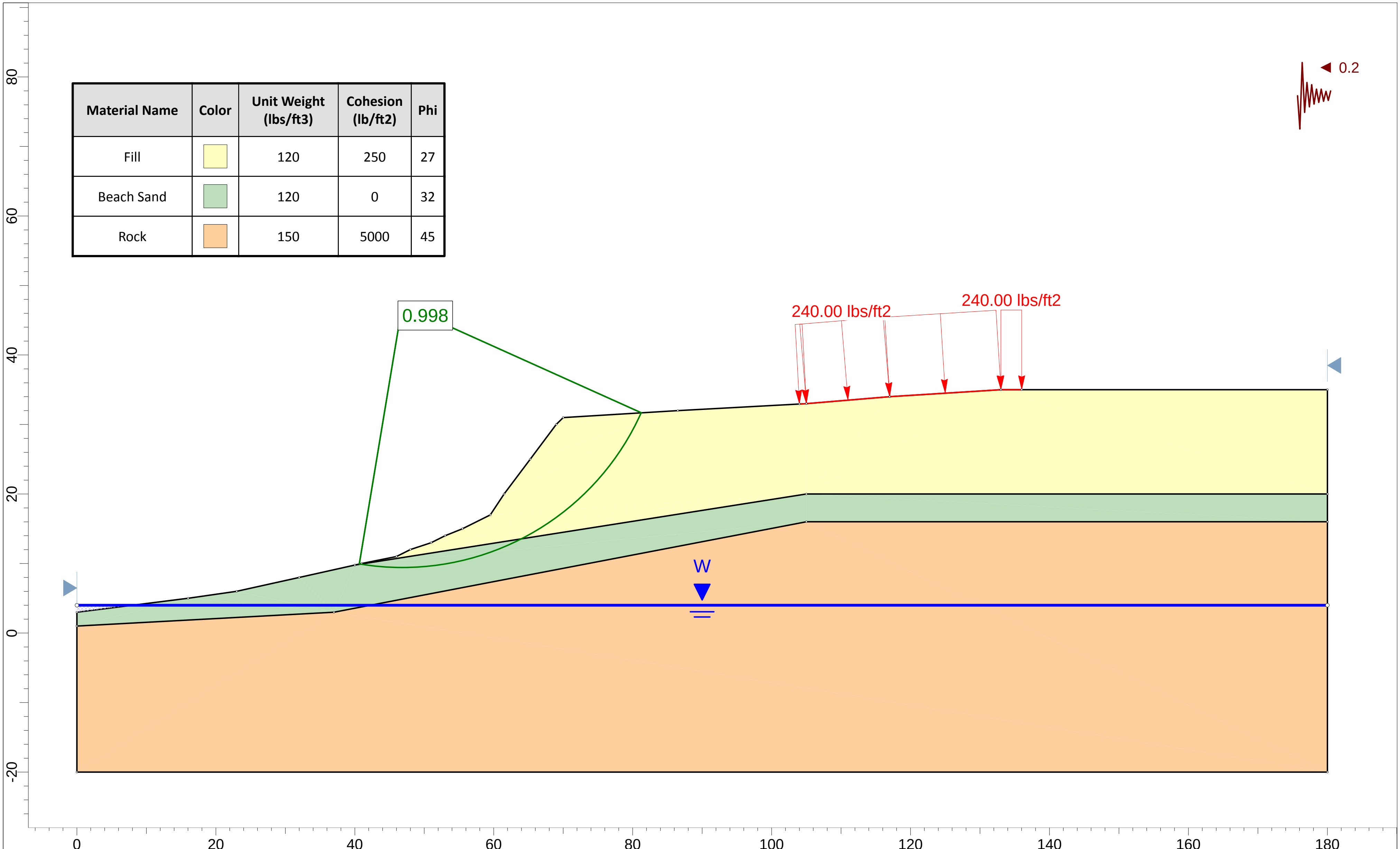
Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	250	27
Beach Sand		120	0	32
Rock		150	5000	45



GPI GEOTECHNICAL PROFESSIONALS INC.	*Project* Dan Blocker Beach Section B Average - Malibu, California - GPI Project No. 2380.06I
	File Name 9A - GPI - Section B - Dan Blocker Beach - Average.slim
	Drawn By Dylan Boyle · *Scale* 1:229 · *Company* Geotechnical Professionals Inc.
SLIDEINTERPRET 6.008	*Date* 1/30/2012 12:28:42 PM · *Analysis Description* Circular Method

Case 7 - Static

Section B-B' Average Parameters



Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	250	27
Beach Sand		120	0	32
Rock		150	5000	45

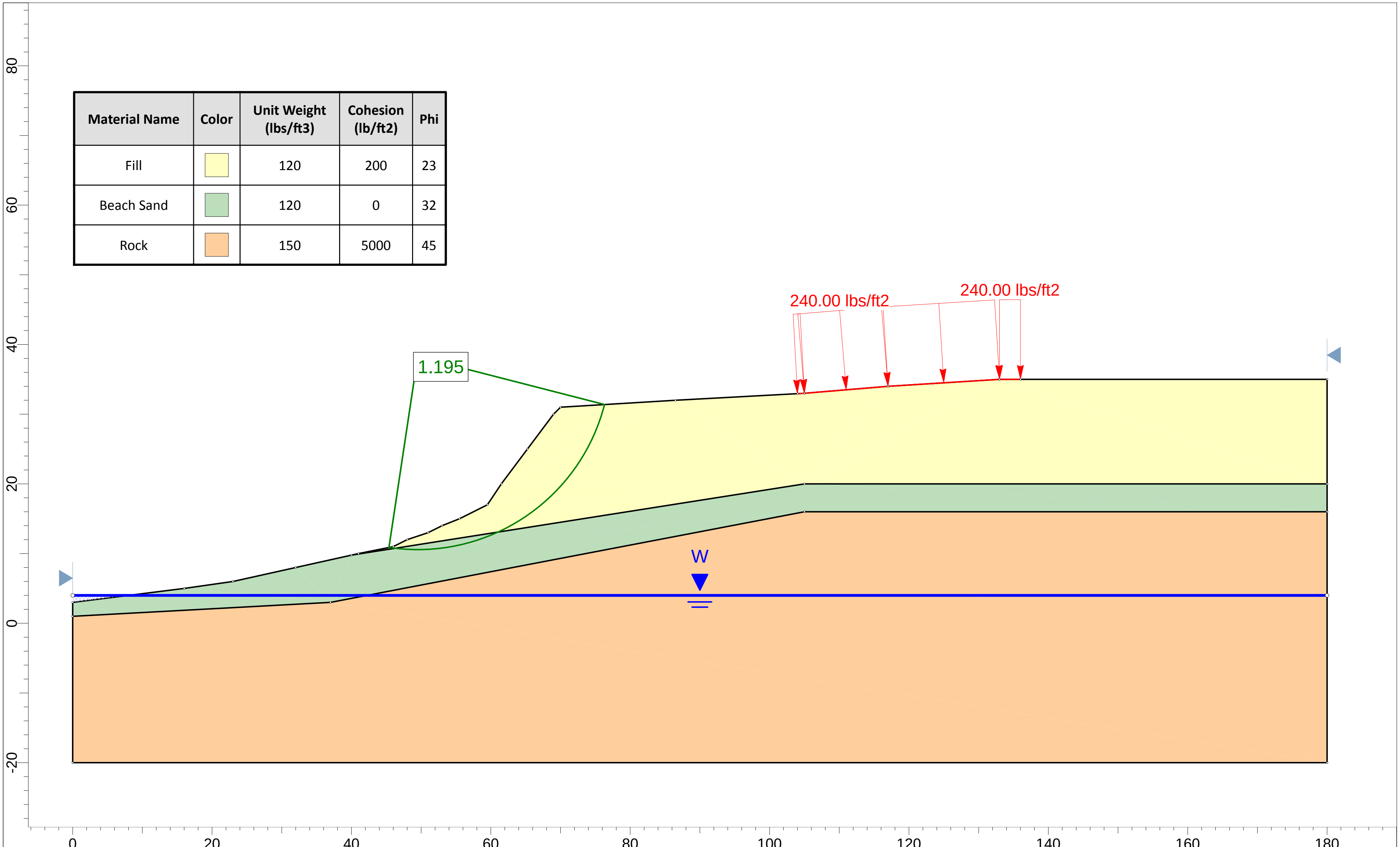
GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	9B - Dan Blocker Beach Section B Average - Malibu, California - GPI Project No. 2380.06I
File Name	9B - GPI - Section B - Dan Blocker Beach - Average.slim
Drawn By	Dylan Boyle
Scale	1:229
Company	Geotechnical Professionals Inc.
Date	1/30/2012 12:30:21 PM
Analysis Description	Circular Method

Case 7 - Seismic

Section B-B' Average Parameters



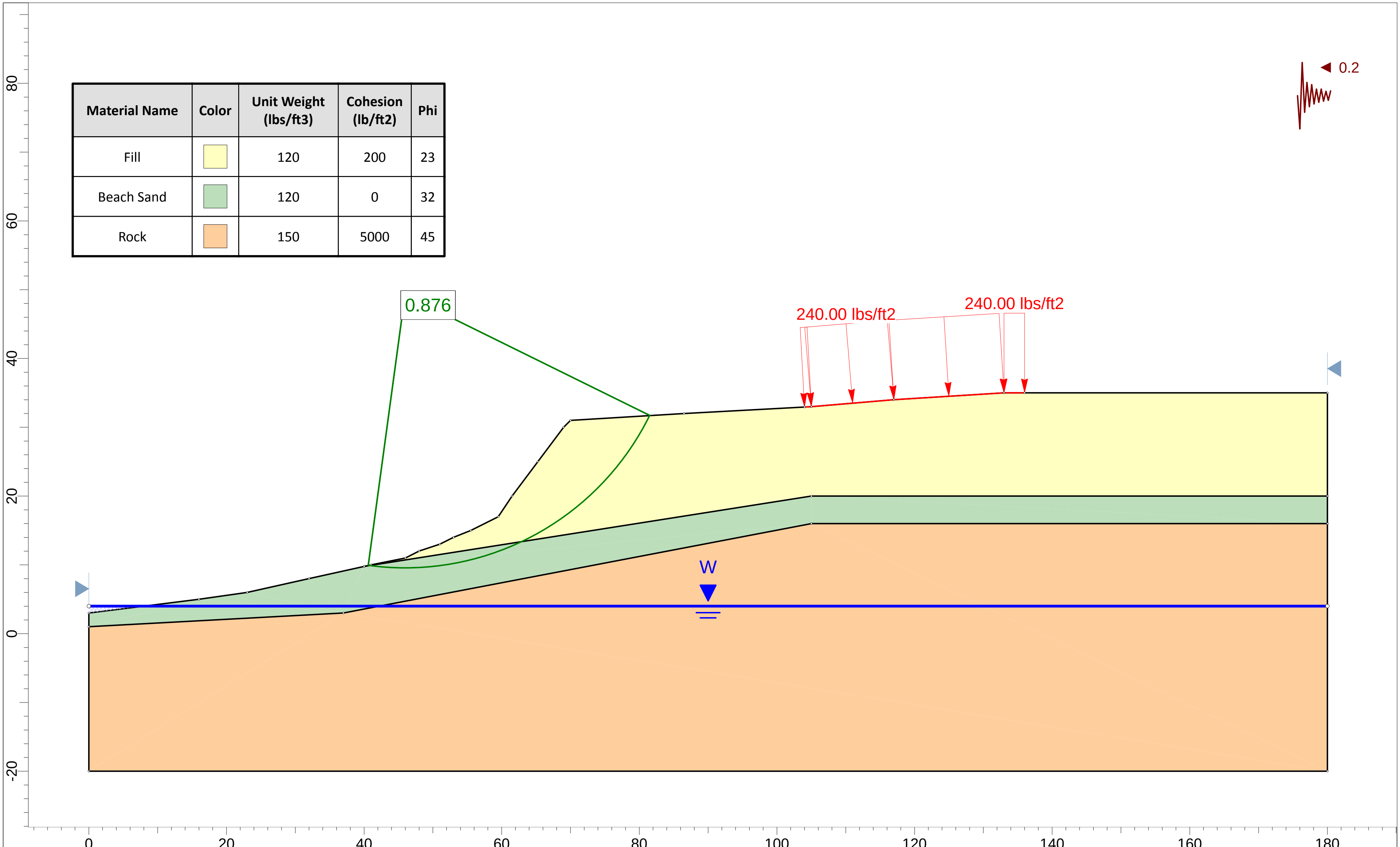
Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		150	5000	45

GEOTECHNICAL PROFESSIONALS INC.

Project	Dan Blocker Beach Section B Worst - Malibu, California - GPI Project No. 2380.06I		
File Name	10A - GPI - Section B - Dan Blocker Beach - Worst.slim		
Drawn By Dylan Boyle	*Scale* 1:229	*Company*	Geotechnical Professionals Inc.
Date 1/30/2012 12:32:10 PM		*Analysis Description*	Circular Method

SLIDEINTERPRET 6.008

Case 8 - Static
Section B-B' Low Parameters



Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		150	5000	45

GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project 10B - Dan Blocker Beach Section B Worst - Malibu, California - GPI Project No. 2380.06I

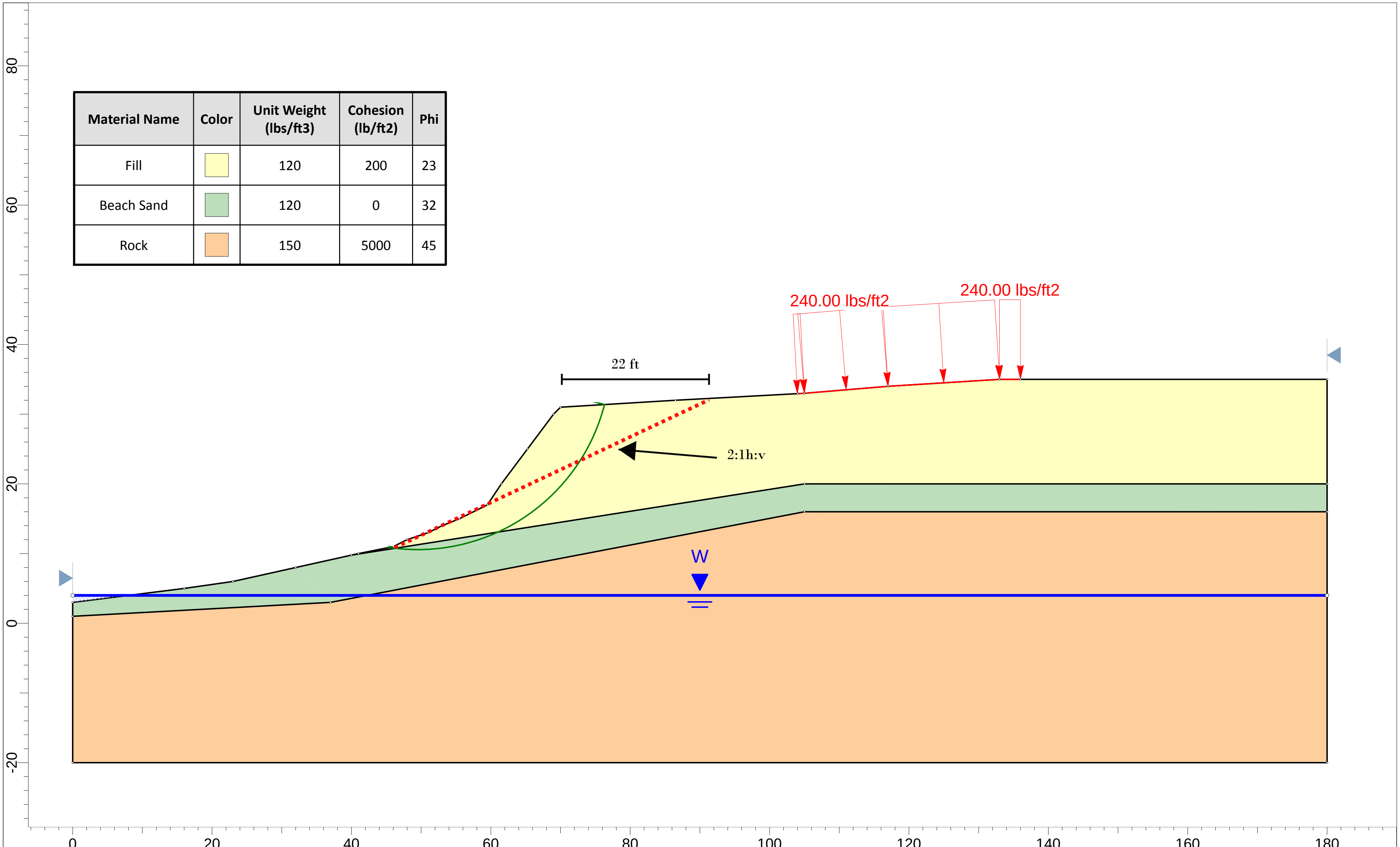
File Name 10B - GPI - Section B - Dan Blocker Beach - Worst.slim

Drawn By Dylan Boyle | *Scale* 1:232 | *Company* Geotechnical Professionals Inc.

Date 1/30/2012 12:34:13 PM | *Analysis Description* Circular Method

Case 8 - Seismic
Section B-B' Low Parameters

Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		150	5000	45

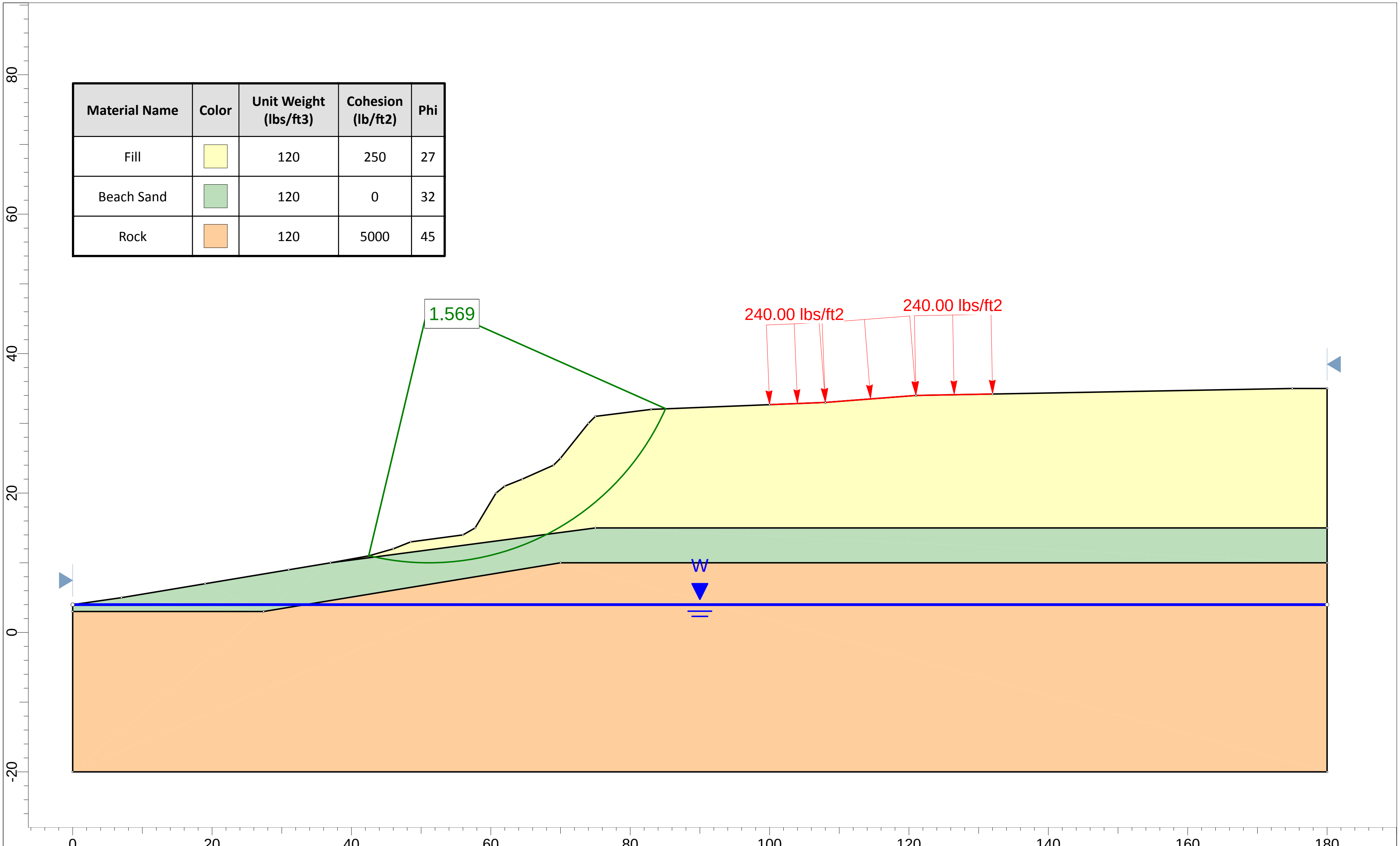


GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	Dan Blocker Beach Section B Worst - Malibu, California - GPI Project No. 2380.06I
File Name	10A - GPI - Section B - Dan Blocker Beach - Worst.slim
Drawn By	Dylan Boyle
Scale	1:229
Company	Geotechnical Professionals Inc.
Date	1/30/2012 12:32:10 PM
Analysis Description	Circular Method

Case 9 - Setback
Section B-B'



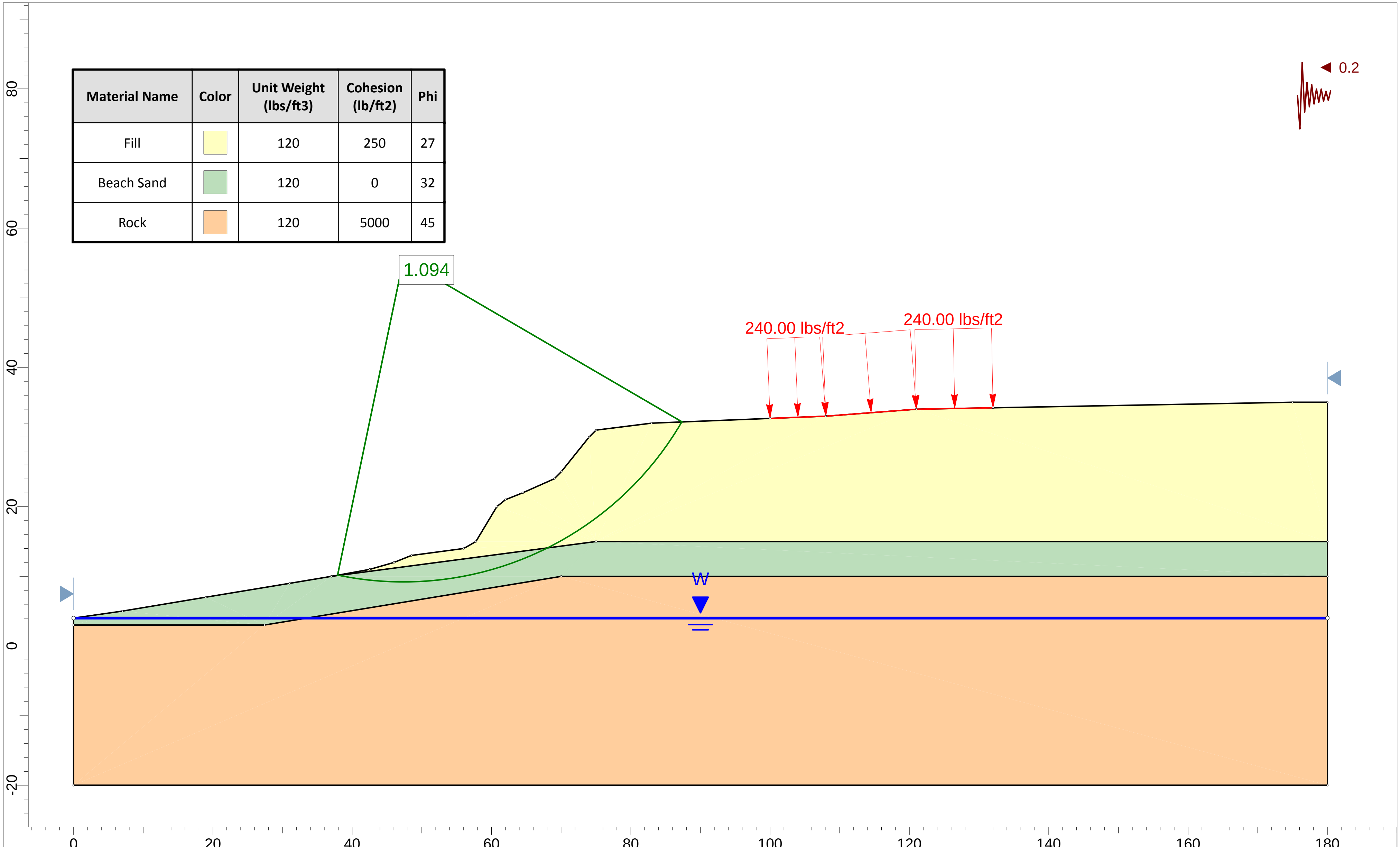
Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	250	27
Beach Sand		120	0	32
Rock		120	5000	45

GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	Dan Blocker Beach Section C Average - Malibu, California - GPI Project No. 2380.06I
File Name	13A - GPI - Section C - Dan Blocker Beach - Average.slim
Drawn By	Dylan Boyle
Scale	1:229
Company	Geotechnical Professionals Inc.
Date	1/30/2012 4:23:22 PM
Analysis Description	Circular Method

Case 10 - Static
Section C-C' Average Parameters



Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	250	27
Beach Sand		120	0	32
Rock		120	5000	45

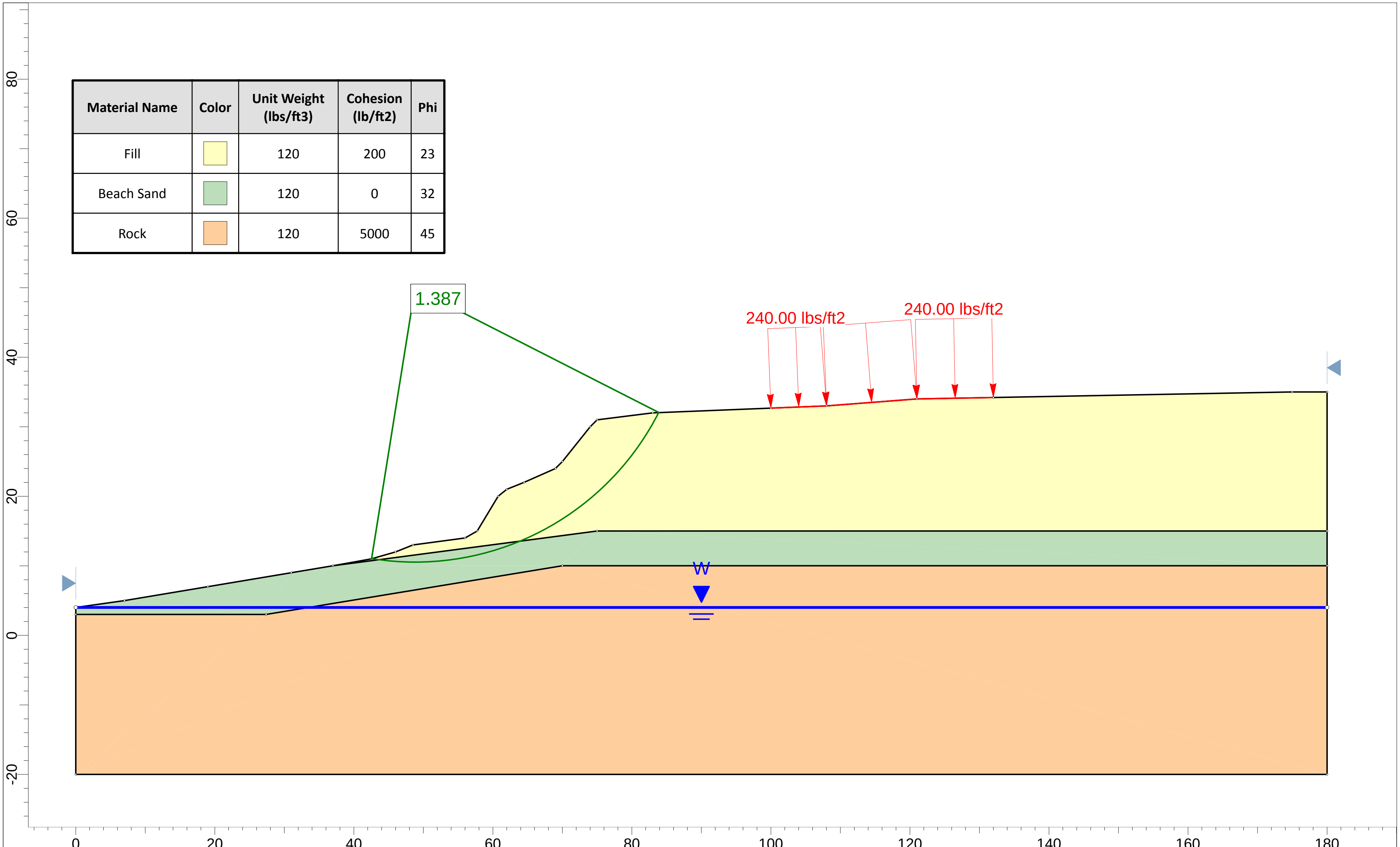
GEOTECHNICAL PROFESSIONALS INC.

Project	Dan Blocker Beach Section C Average - Malibu, California - GPI Project No. 2380.06I
File Name	13B - GPI - Section C - Dan Blocker Beach - Average.slim
Drawn By	Dylan Boyle
Scale	1:229
Company	Geotechnical Professionals Inc.
Date	1/30/2012 4:24:11 PM
Analysis Description	Circular Method

SLIDEINTERPRET 6.008

Case 10 = Seismic
Section C-C' Low Parameters

Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		120	5000	45

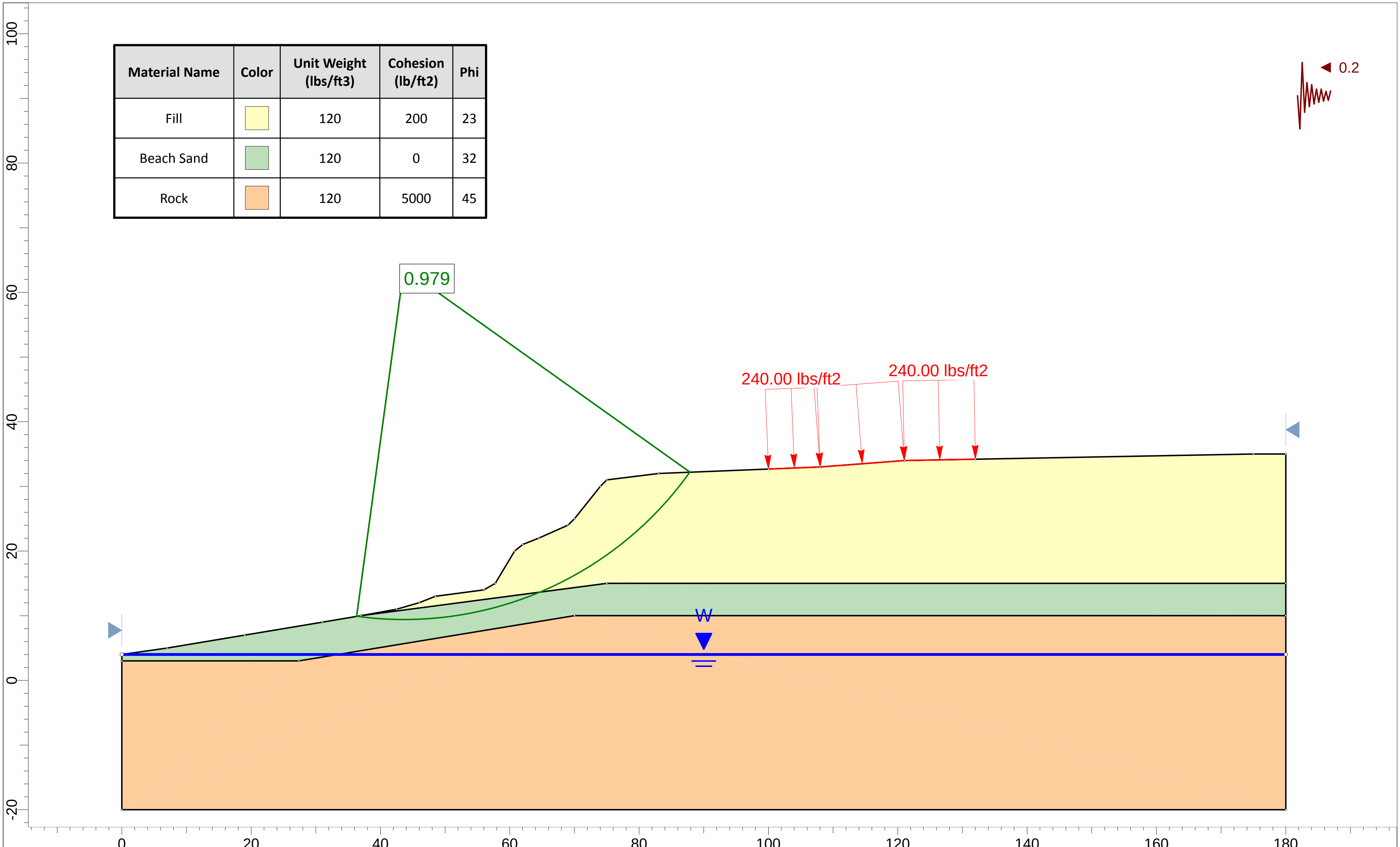


GPI GEOTECHNICAL PROFESSIONALS INC.

Project	Dan Blocker Beach Section C Worst - Malibu, California - GPI Project No. 2380.06I
File Name	14A - GPI - Section C - Dan Blocker Beach - Worst.slim
Drawn By	Dylan Boyle
Scale	1:229
Company	Geotechnical Professionals Inc.
Date	1/30/2012 3:55:02 PM
Analysis Description	Circular Method

SLIDEINTERPRET 6.008

Case 11- Static
Section C-C' Low Parameters



Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		120	5000	45

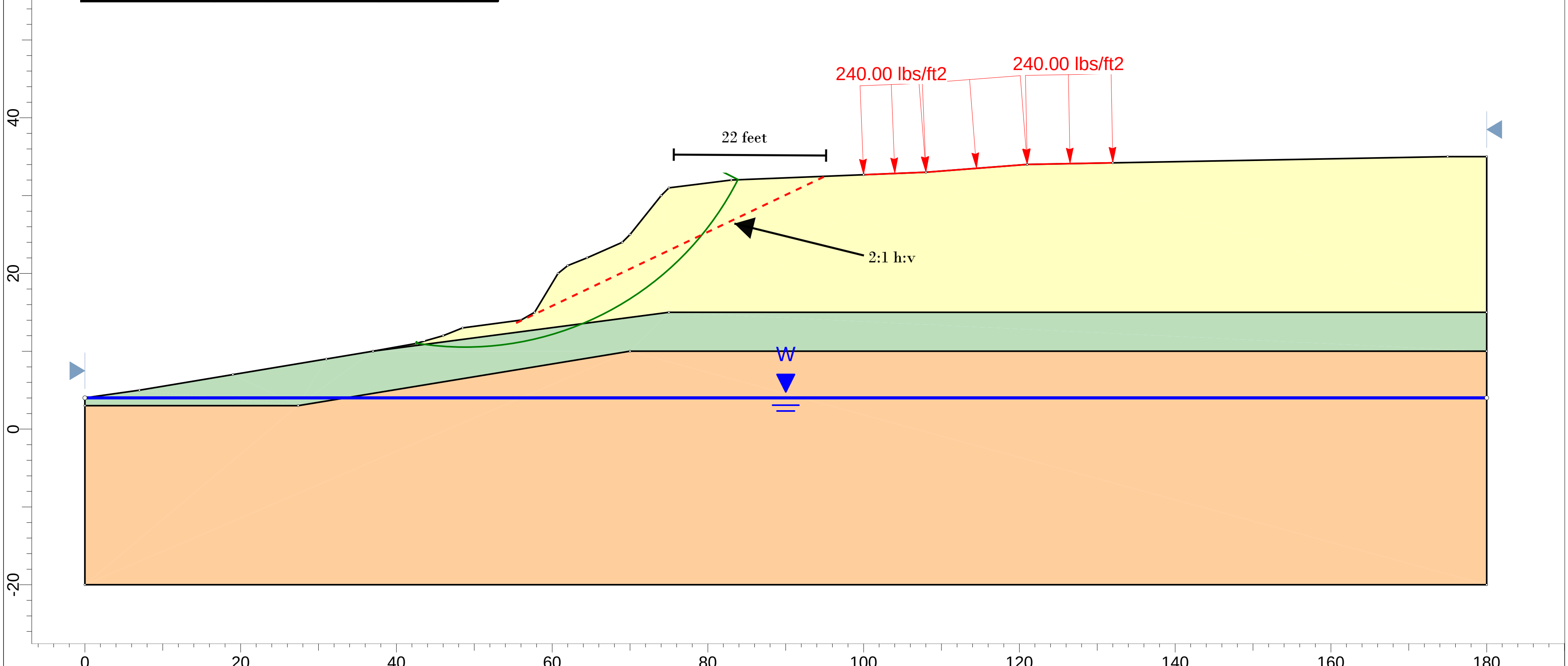
GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	Dan Blocker Beach Section C Worst - Malibu, California - GPI Project No. 2380.06I
File Name	14B - GPI - Section C - Dan Blocker Beach - Worst.slim
Drawn By	Dylan Boyle
Scale	1:246
Company	Geotechnical Professionals Inc.
Date	1/30/2012 4:25:48 PM
Analysis Description	Circular Method

Case 11 - Seismic
Section C-C' Low Parameters

Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		120	5000	45



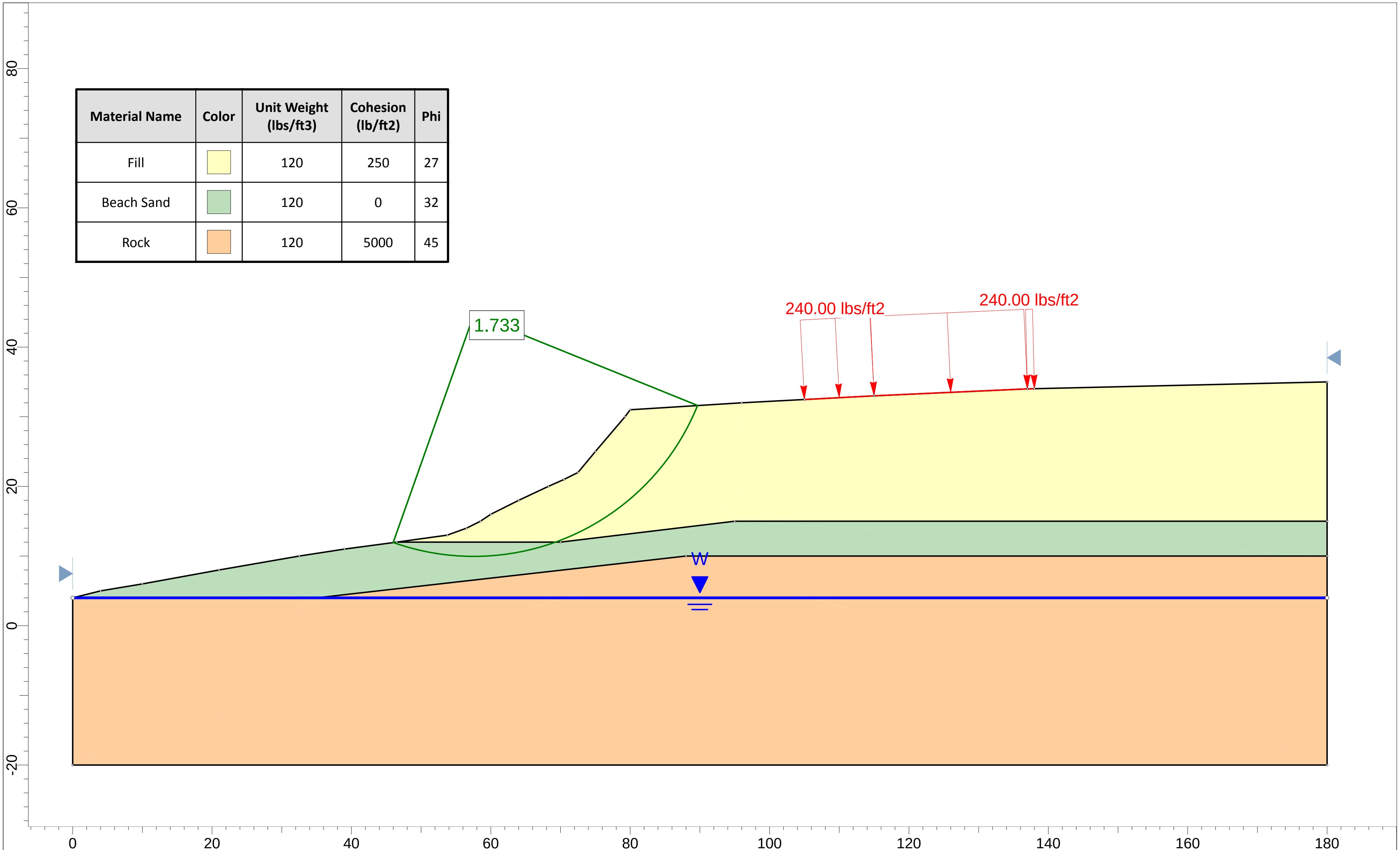
GPI GEOTECHNICAL PROFESSIONALS INC.

Project	Dan Blocker Beach Section C Worst - Malibu, California - GPI Project No. 2380.06I		
File Name	14A - GPI - Section C - Dan Blocker Beach - Worst.slim		
Drawn By Dylan Boyle	*Scale* 1:229	*Company*	Geotechnical Professionals Inc.
Date	1/30/2012 3:55:02 PM	*Analysis Description*	Circular Method

SLIDEINTERPRET 6.008

Case 12- Setback
Section C-C'

Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	250	27
Beach Sand		120	0	32
Rock		120	5000	45



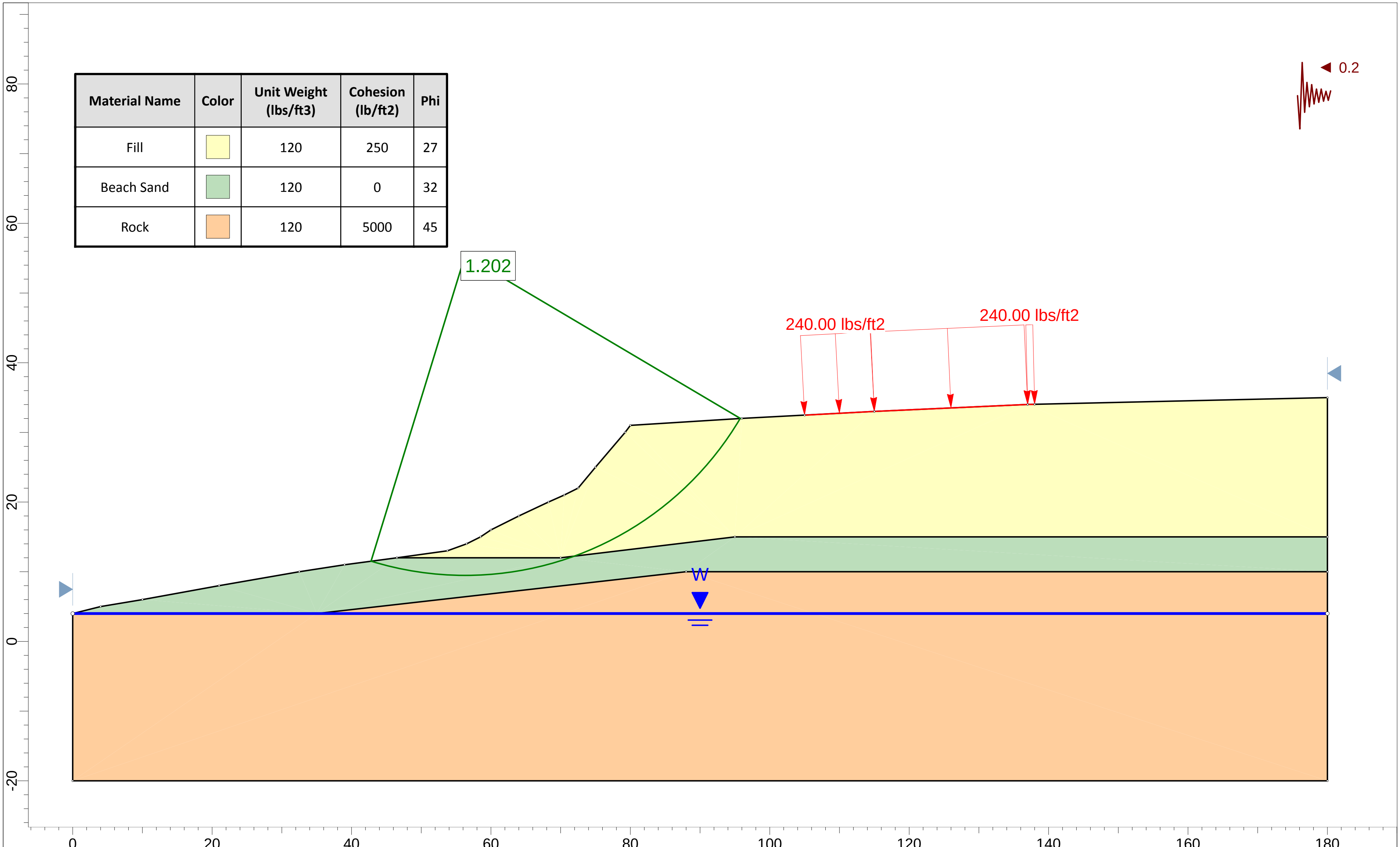
Project	Dan Blocker Beach Section D Average - Malibu, California - GPI Project No. 2380.06I
File Name	17A - GPI - Section D - Dan Blocker Beach - Average.slim
Drawn By	Dylan Boyle
Scale	1:229
Company	Geotechnical Professionals Inc.
Date	1/30/2012 4:52:09 PM
Analysis Description	Circular Method

GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Case 13 - Static

Section D-D' Average Parameters



Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	250	27
Beach Sand		120	0	32
Rock		120	5000	45

GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

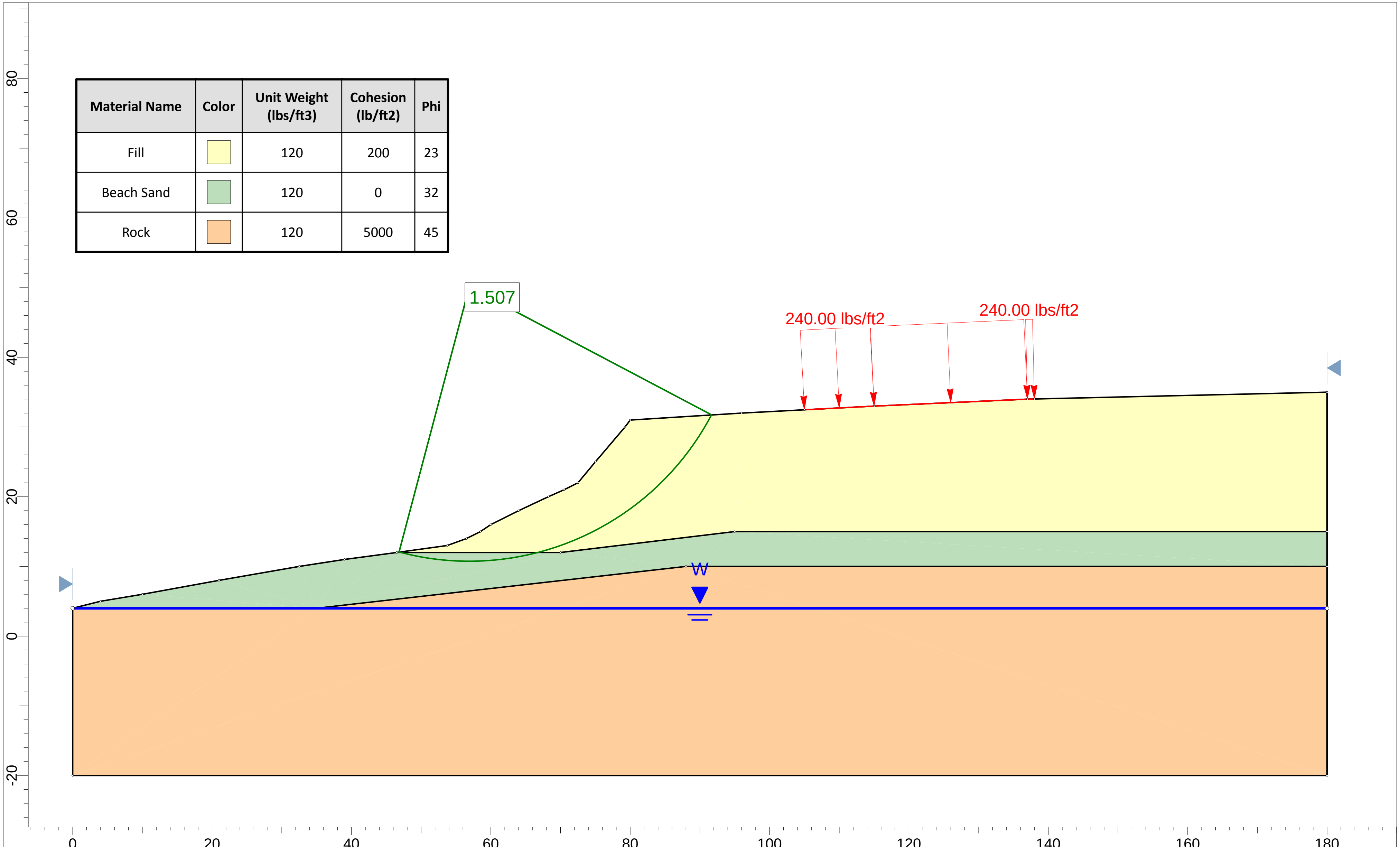
Project
Dan Blocker Beach Section D Average - Malibu, California - GPI Project No. 2380.06I

File Name
17B - GPI - Section D - Dan Blocker Beach - Average.slim

Drawn By Dylan Boyle
Scale 1:229
Company Geotechnical Professionals Inc.

Date 1/30/2012 4:56:10 PM
Analysis Description Circular Method

Case 13 - Seismic
Section D-D' Average Parameters



Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		120	5000	45

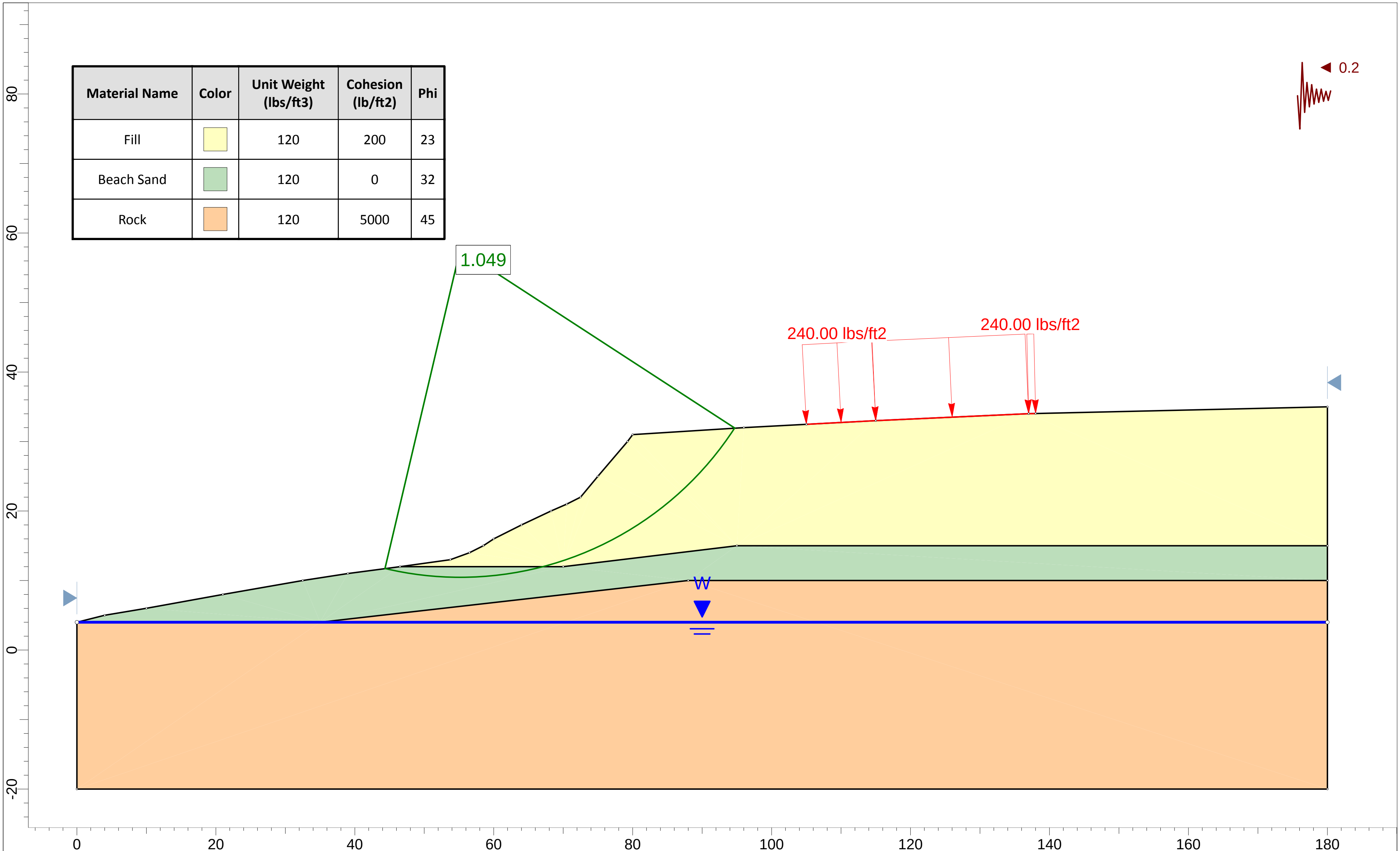
GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	Dan Blocker Beach Section D Average - Malibu, California - GPI Project No. 2380.06I
File Name	18A - GPI - Section D - Dan Blocker Beach - Worst.slim
Drawn By	Dylan Boyle
Scale	1:229
Company	Geotechnical Professionals Inc.
Date	1/31/2012 7:59:25 AM
Analysis Description	Circular Method

Case 14 - Static
Section D-D' Low Parameters

Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		120	5000	45

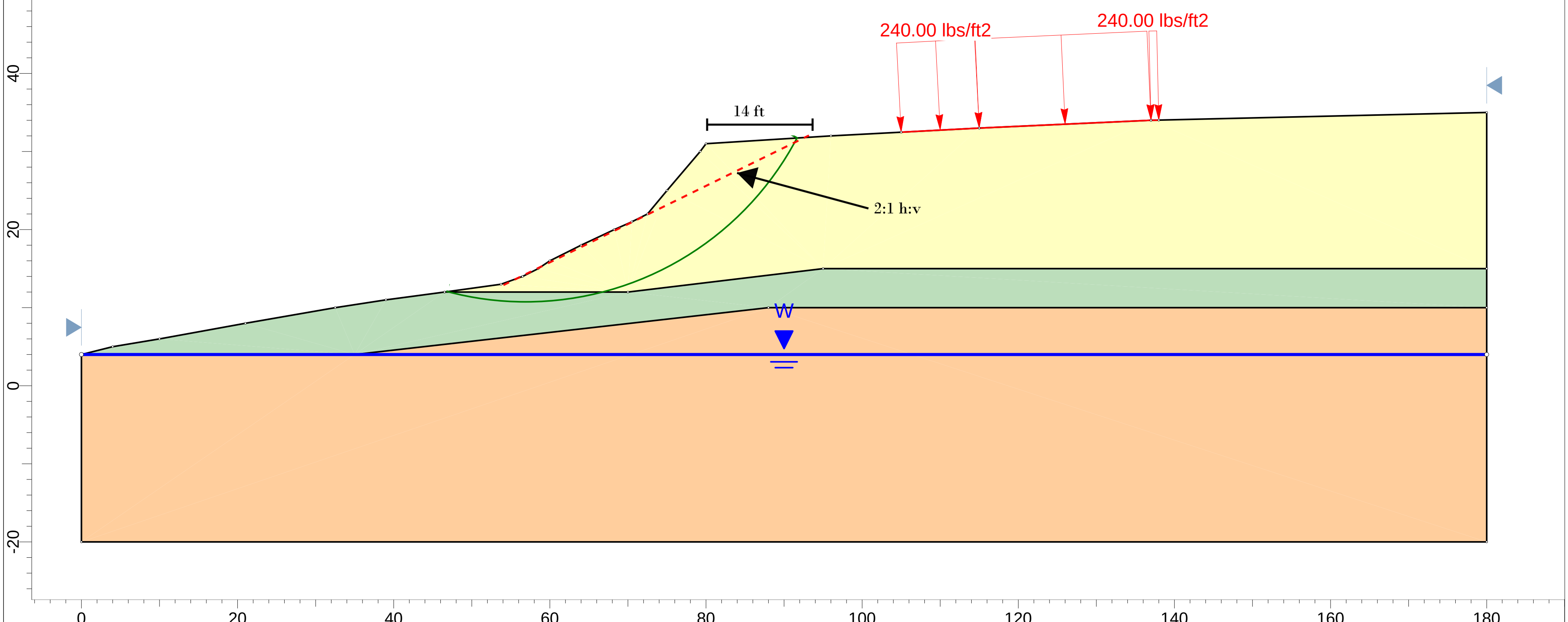


GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	Dan Blocker Beach Section D Average - Malibu, California - GPI Project No. 2380.06I
File Name	18B - GPI - Section D - Dan Blocker Beach - Worst.slim
Drawn By Dylan Boyle	*Scale* 1:229
Company	Geotechnical Professionals Inc.
Date 1/31/2012 8:04:44 AM	*Analysis Description* Circular Method

Case 14 - Seismic
Section D-D' Low Parameters



Material Name	Color	Unit Weight (lbs/ft3)	Cohesion (lb/ft2)	Phi
Fill		120	200	23
Beach Sand		120	0	32
Rock		120	5000	45

GPI GEOTECHNICAL PROFESSIONALS INC.

SLIDEINTERPRET 6.008

Project	Dan Blocker Beach Section D Average - Malibu, California - GPI Project No. 2380.06I		
File Name	18A - GPI - Section D - Dan Blocker Beach - Worst.slim		
Drawn By Dylan Boyle	*Scale* 1:229	*Company*	Geotechnical Professionals Inc.
Date	1/31/2012 7:59:25 AM	*Analysis Description*	Circular Method

Case 15 - Setback
Section D-D'

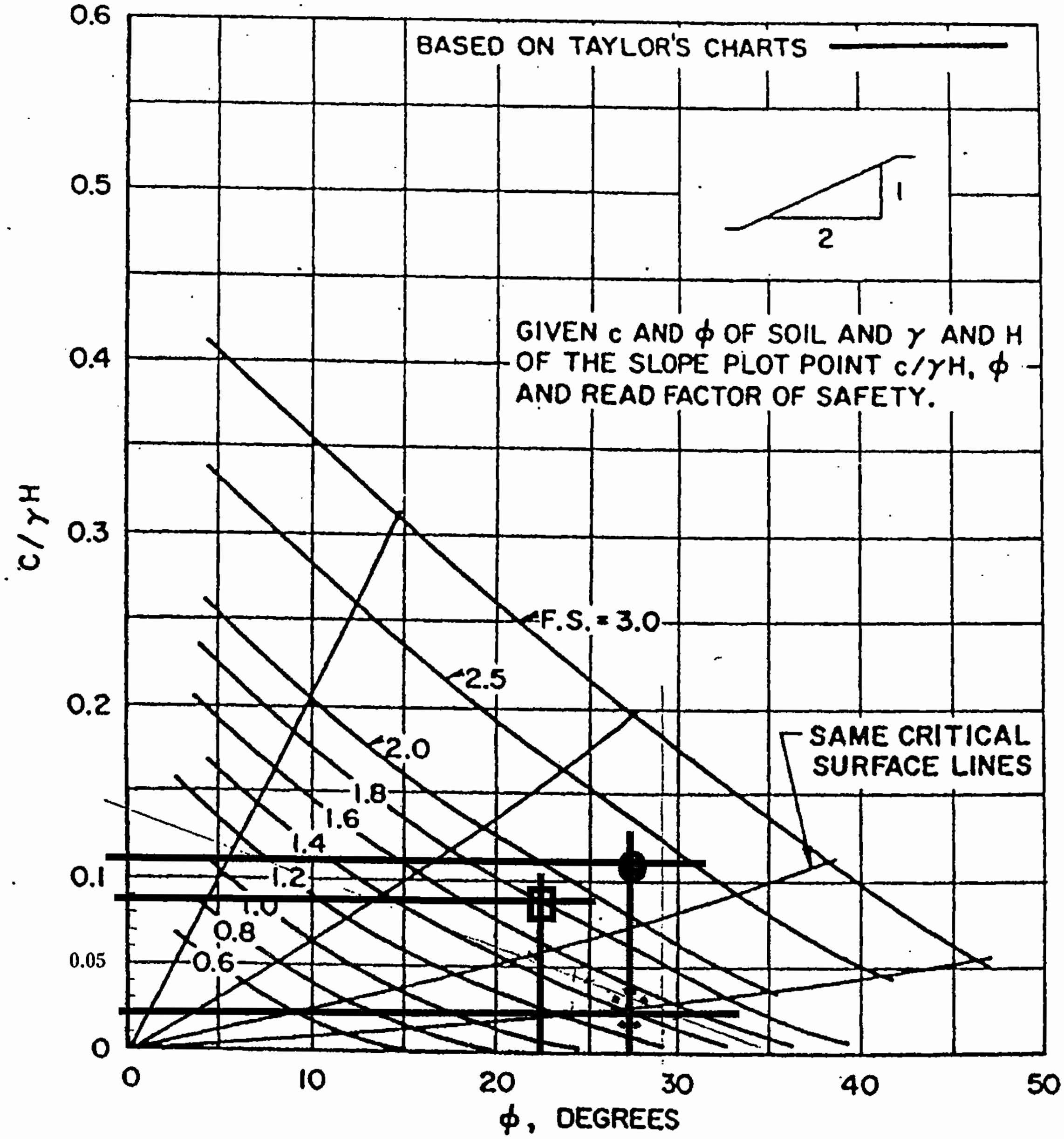


FIG. 12.—F-CONTOURS FOR SLOPE 2:1

● Average Values, c=250 psf, phi=27 degrees, unit weight = 120 feet, H=18 feet

□ Low Values, c=200 psf, phi=23 degrees, unit weight = 120 pcf, H=18 feet

⁘ Minimal Cohesion, c=50 psf, phi=27 degrees, unit weight = 120 pcf, H=18 feet

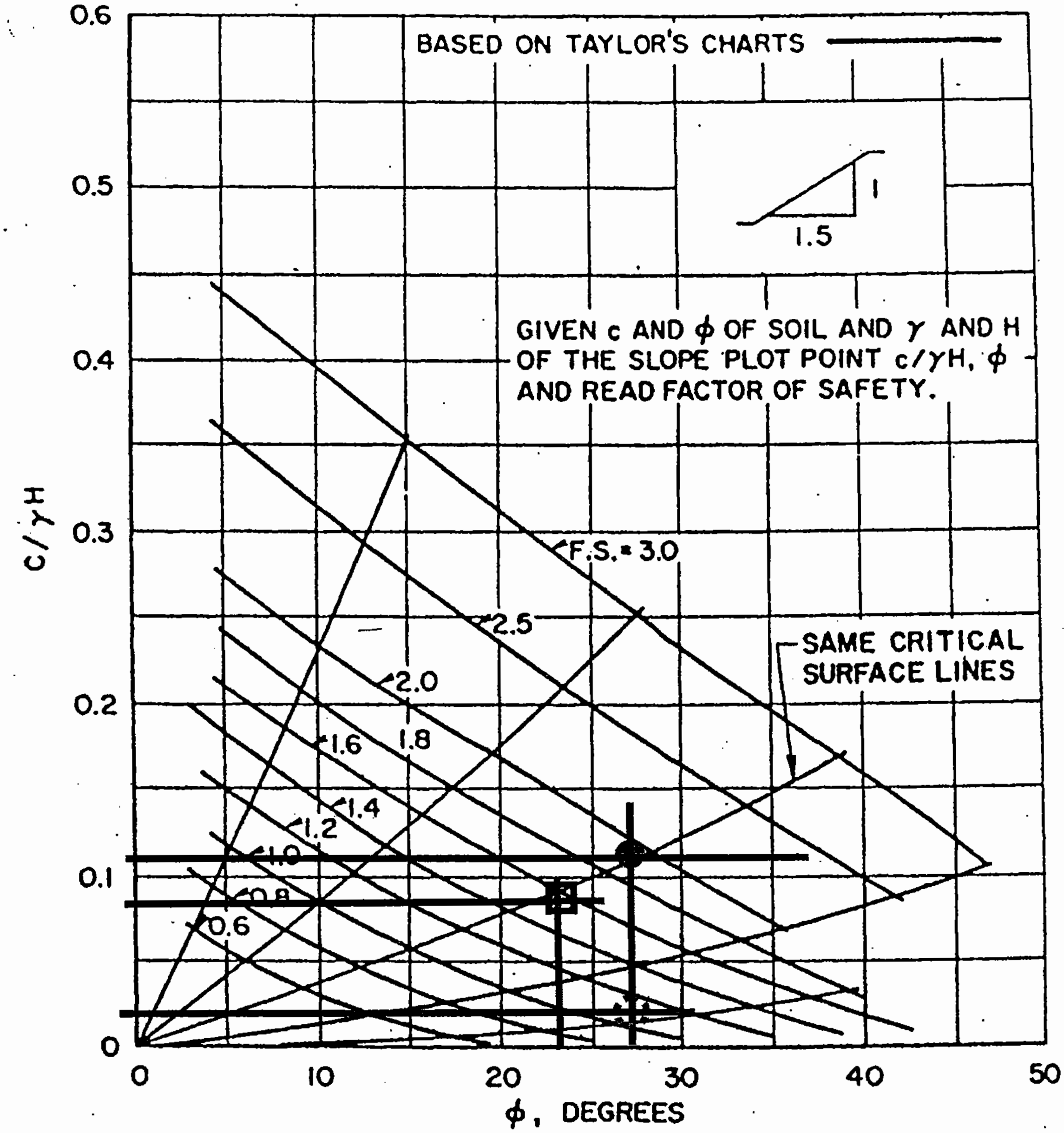
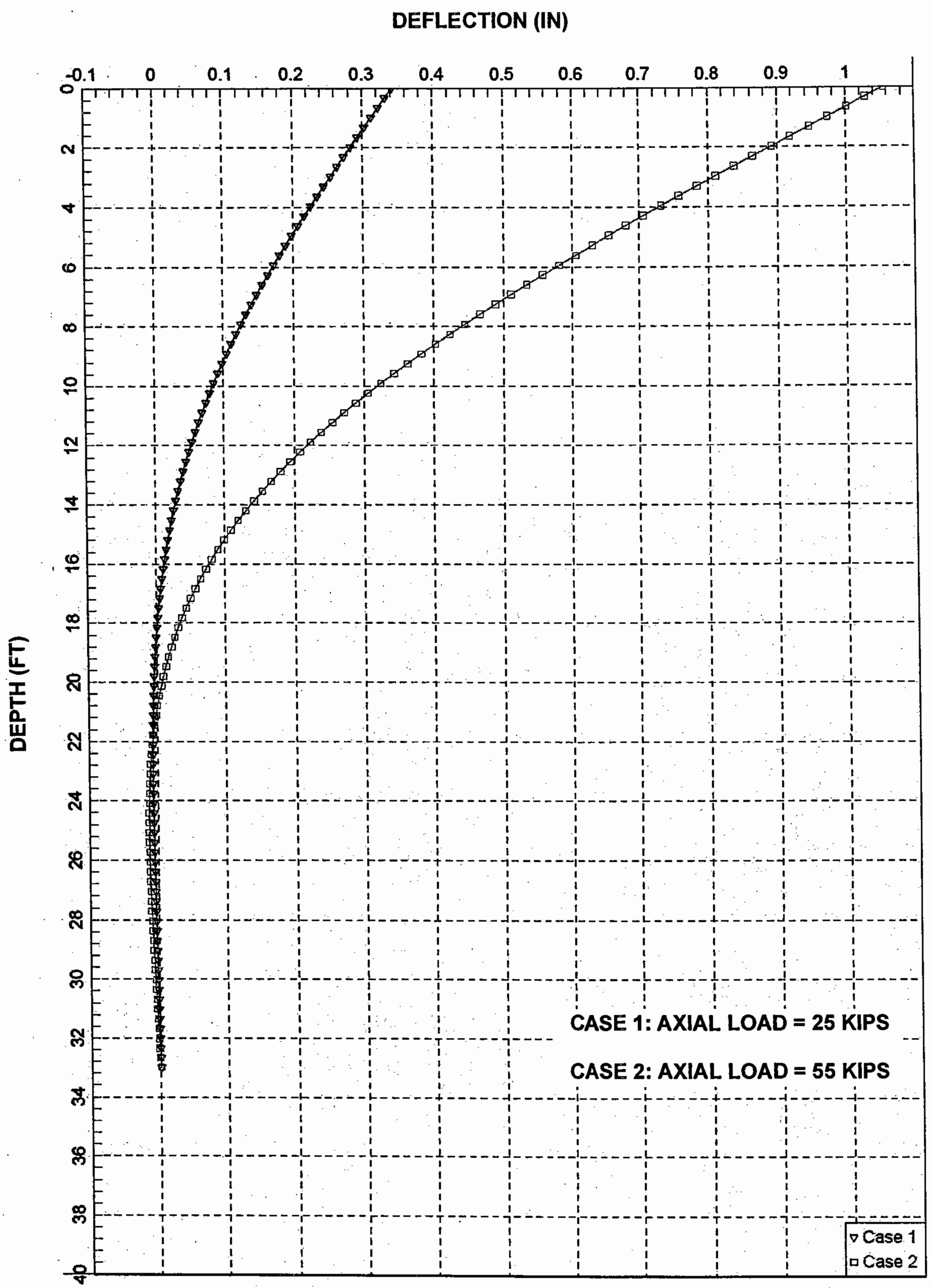


FIG. 11.—F-CONTOURS FOR SLOPE 1-1/2:1

APPENDIX F



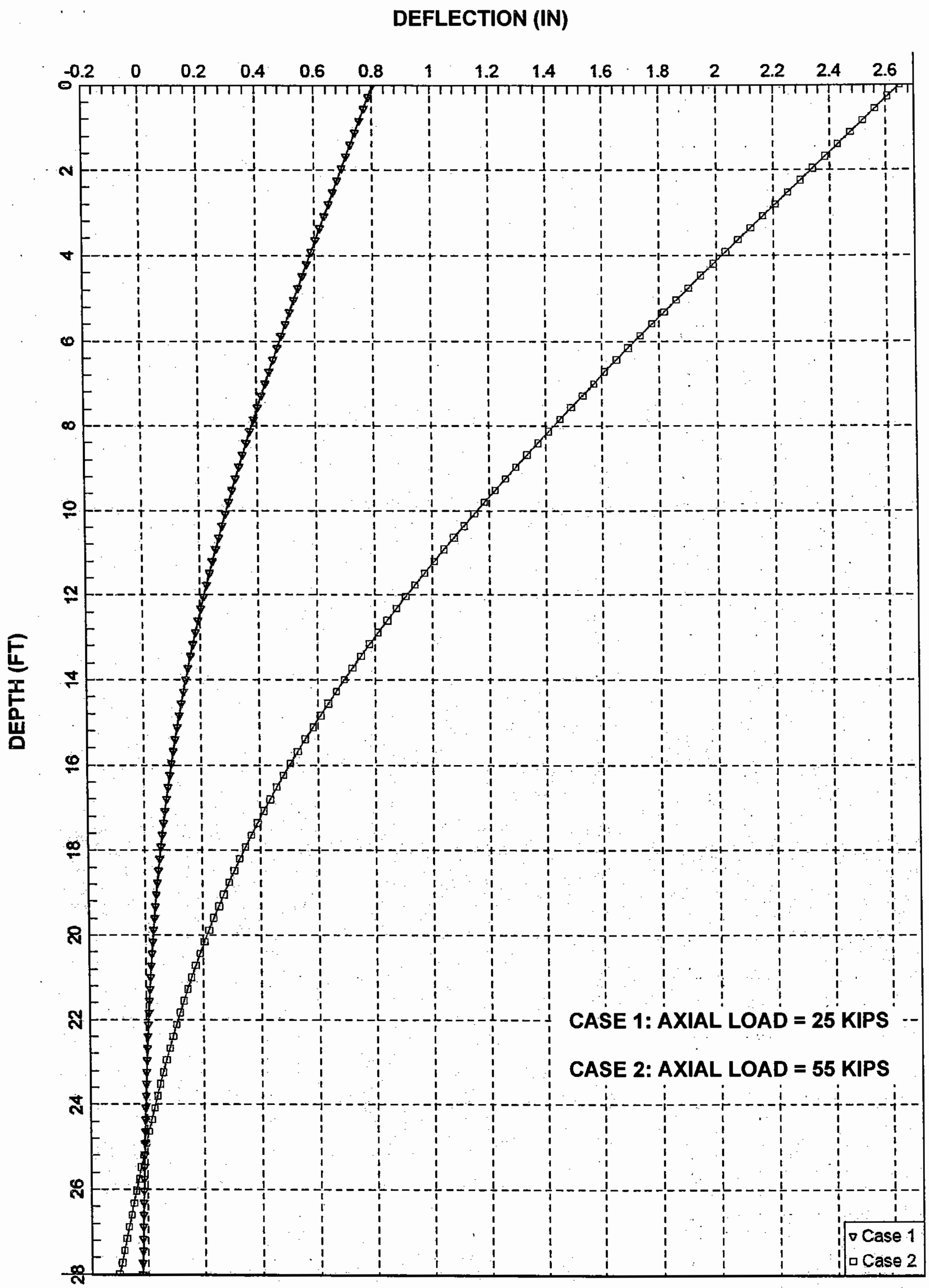
GPI GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I | NO SCALE

LATERAL PILE DEFLECTIONS: UPPER RAMP

FIGURE F-1



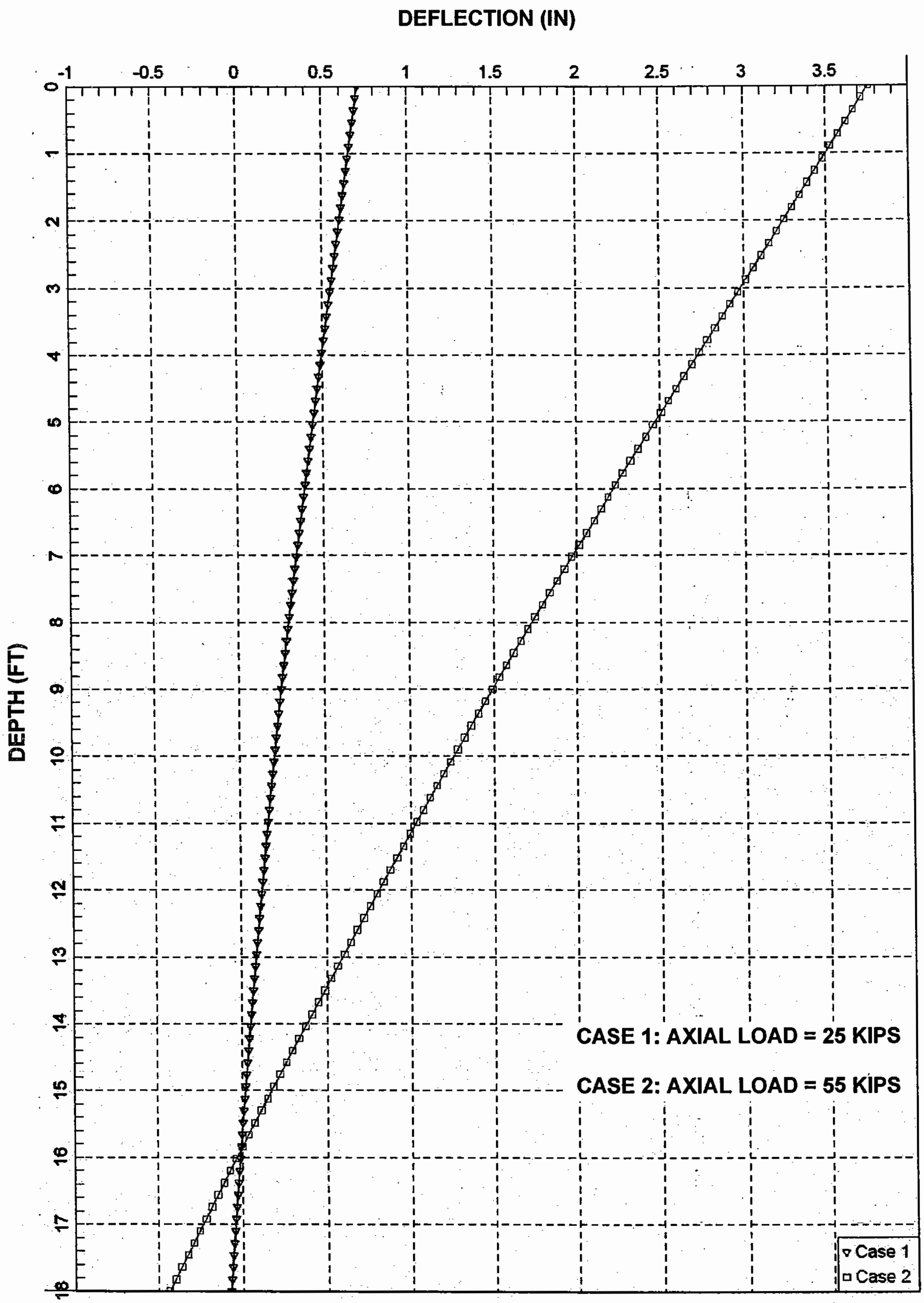
GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I | NO SCALE

LATERAL PILE DEFLECTIONS: MID RAMP

FIGURE F-2



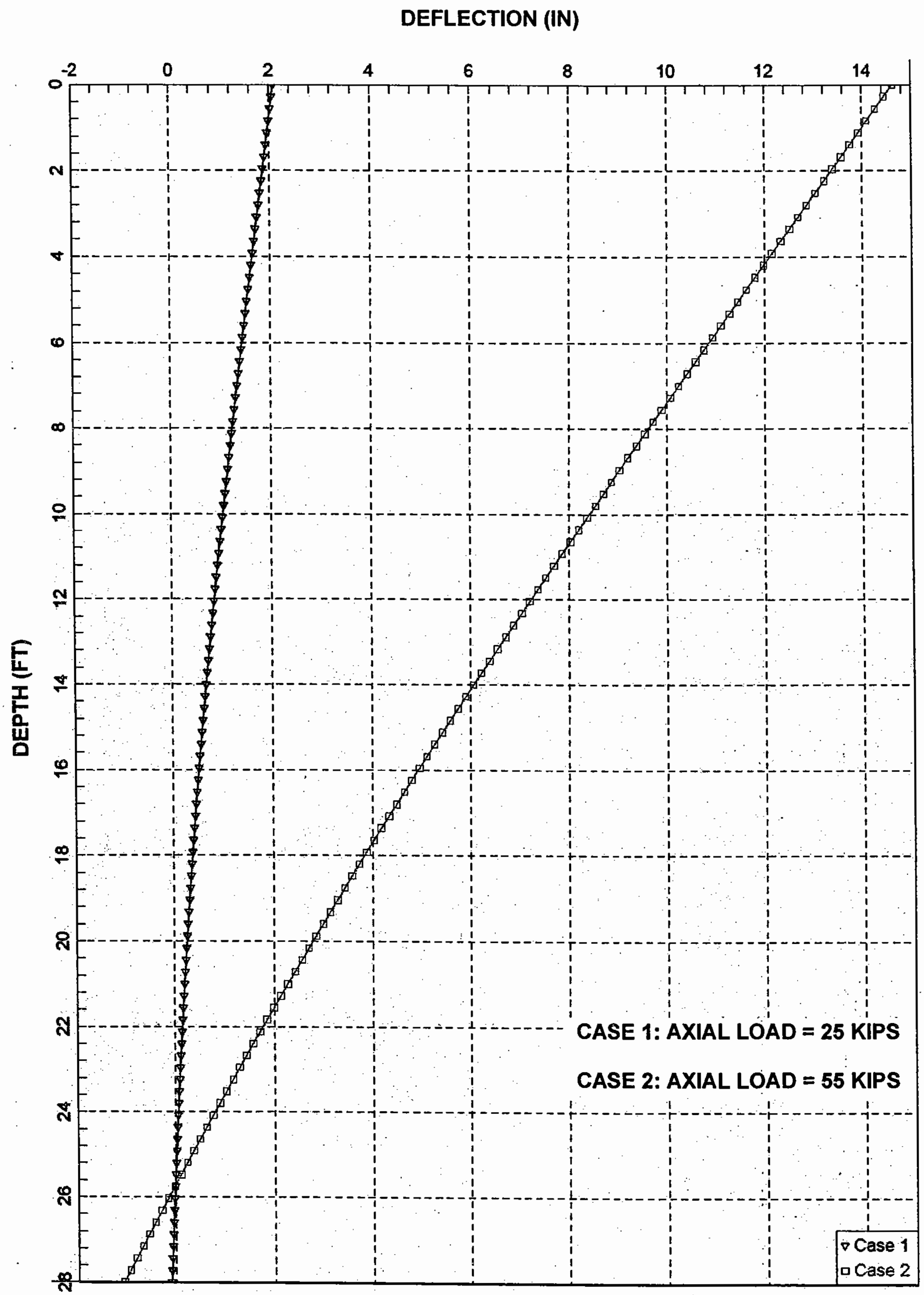
GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I | NO SCALE

LATERAL PILE DEFLECTIONS: LOWER RAMP

FIGURE F-3



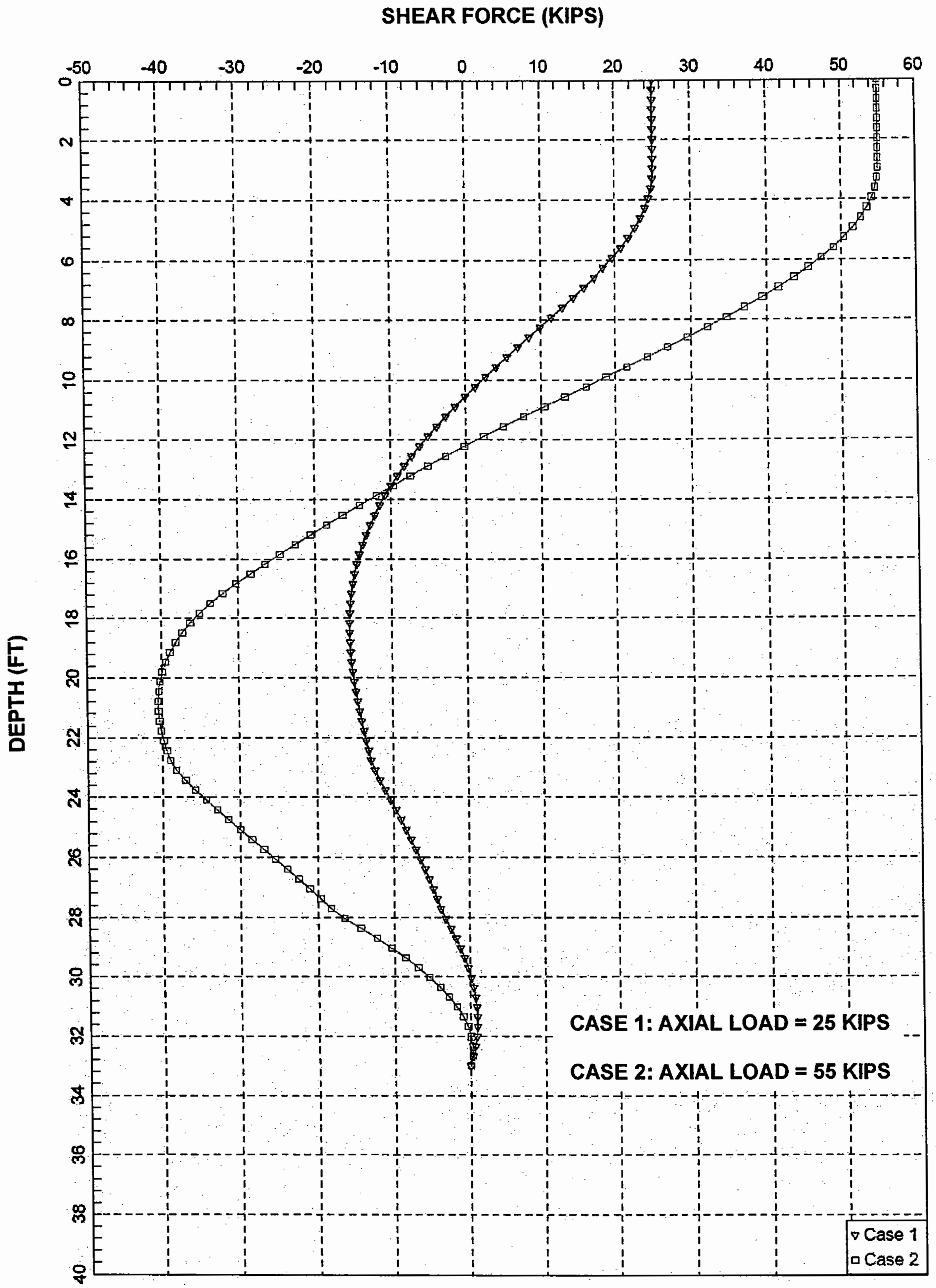
GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I | NO SCALE

LATERAL PILE DEFLECTIONS: MID RAMP W/ ADDITIONAL UNSUPPORTED LENGTH

FIGURE F-4



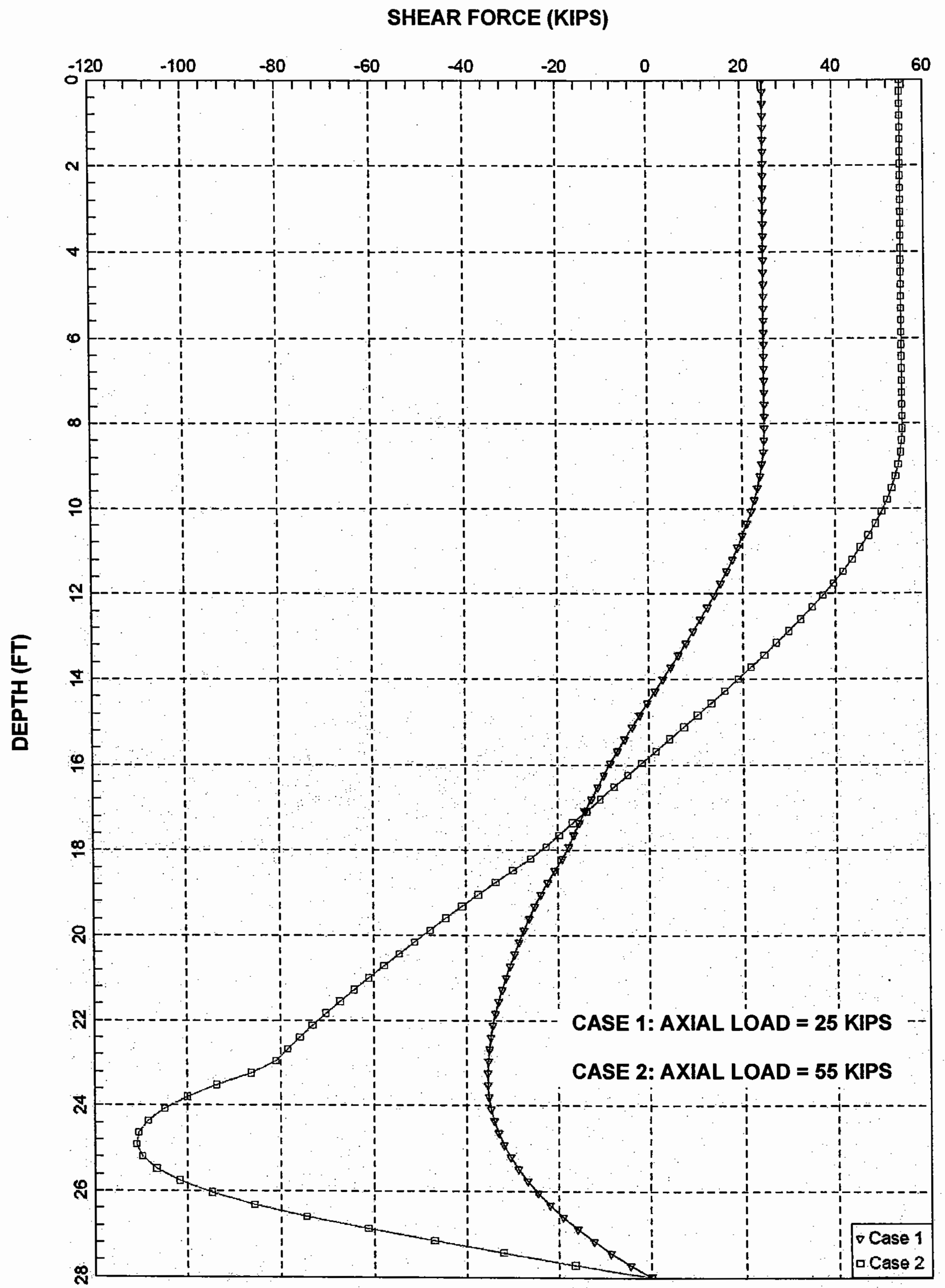
GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I	NO SCALE

PILE SHEAR FORCES: UPPER RAMP

FIGURE F-5



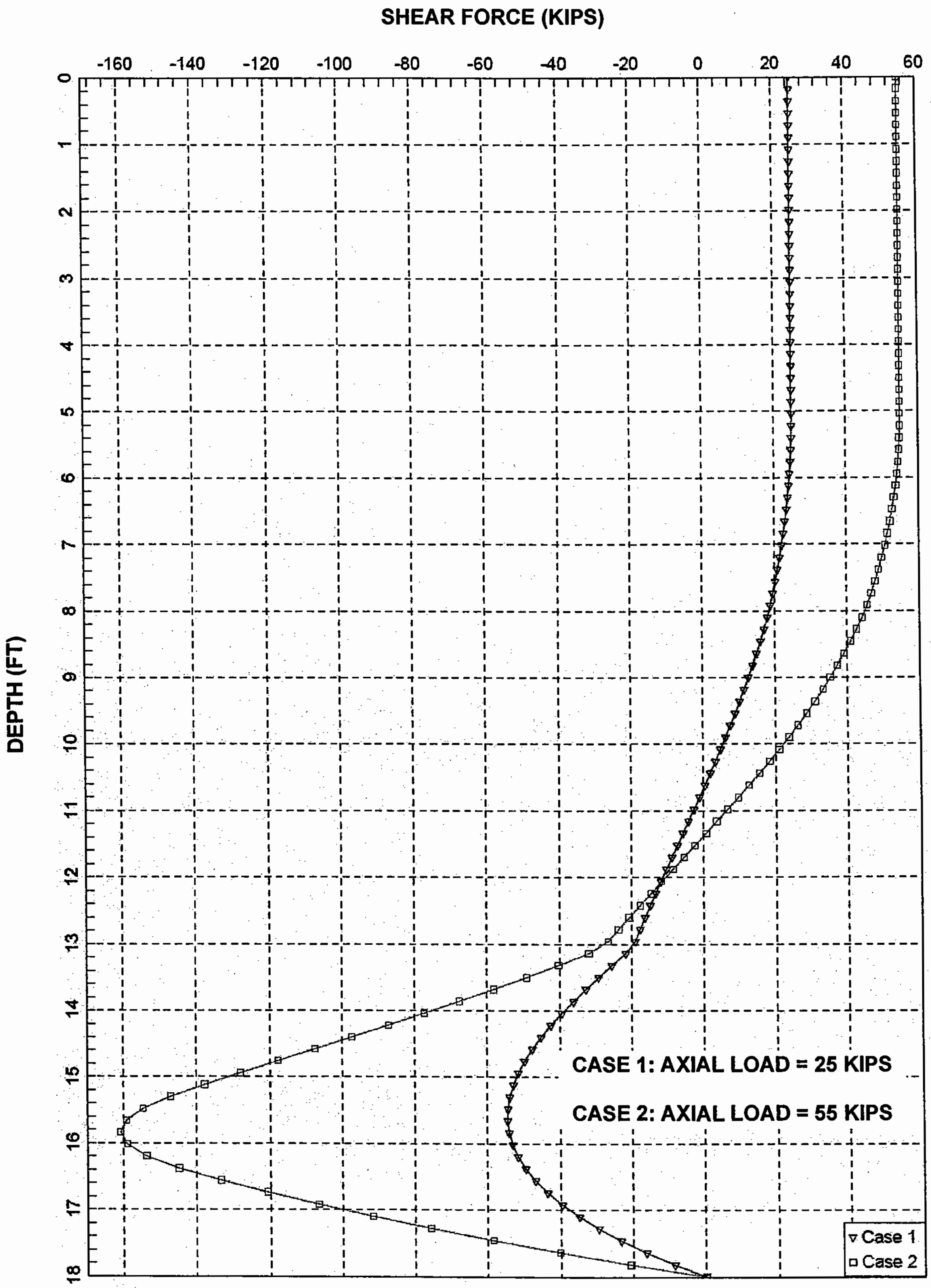
GPI GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I | NO SCALE

PILE SHEAR FORCES: MID RAMP

FIGURE F-6



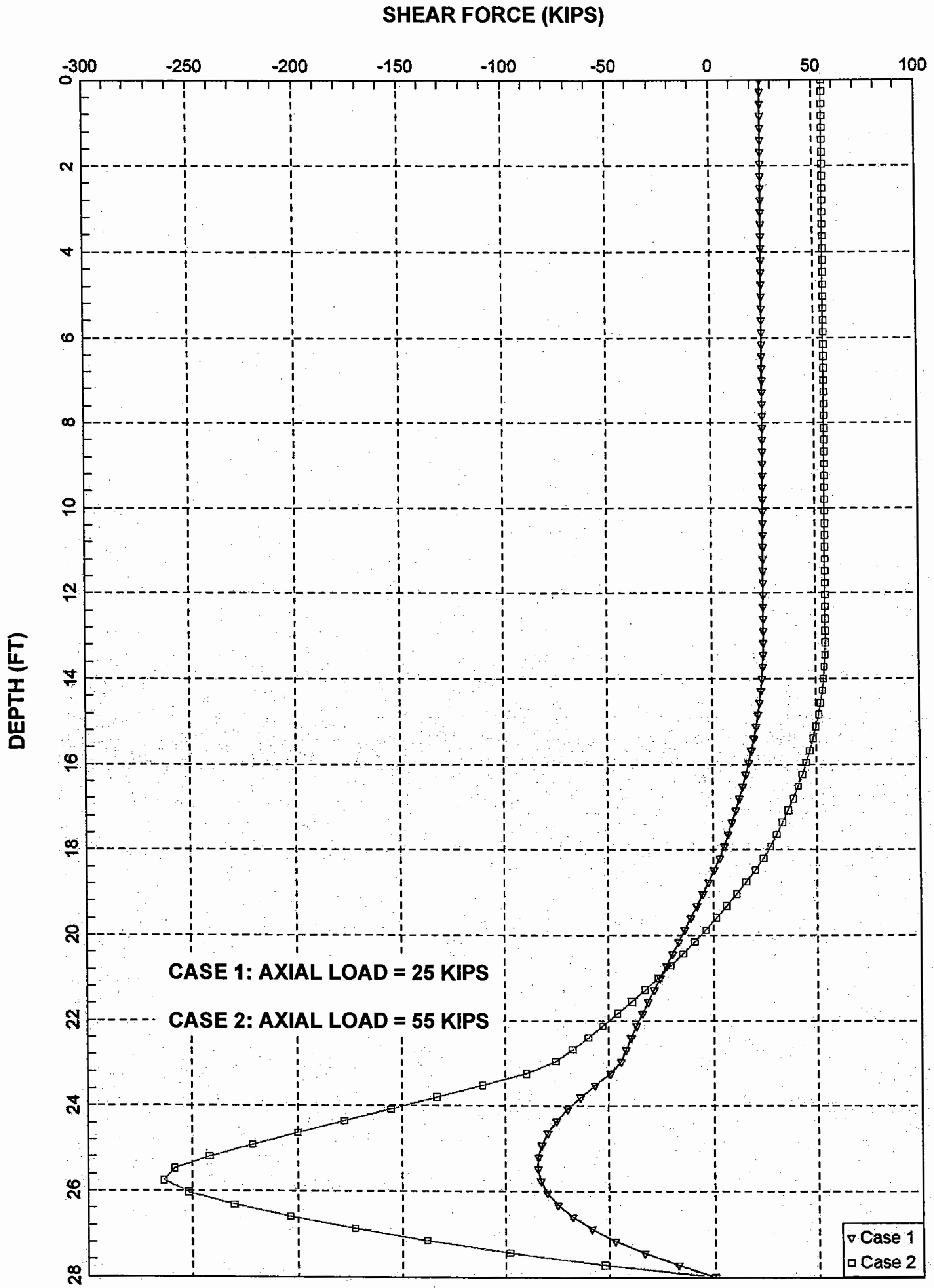
GPI GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I	NO SCALE

PILE SHEAR FORCES: LOWER RAMP

FIGURE F-7



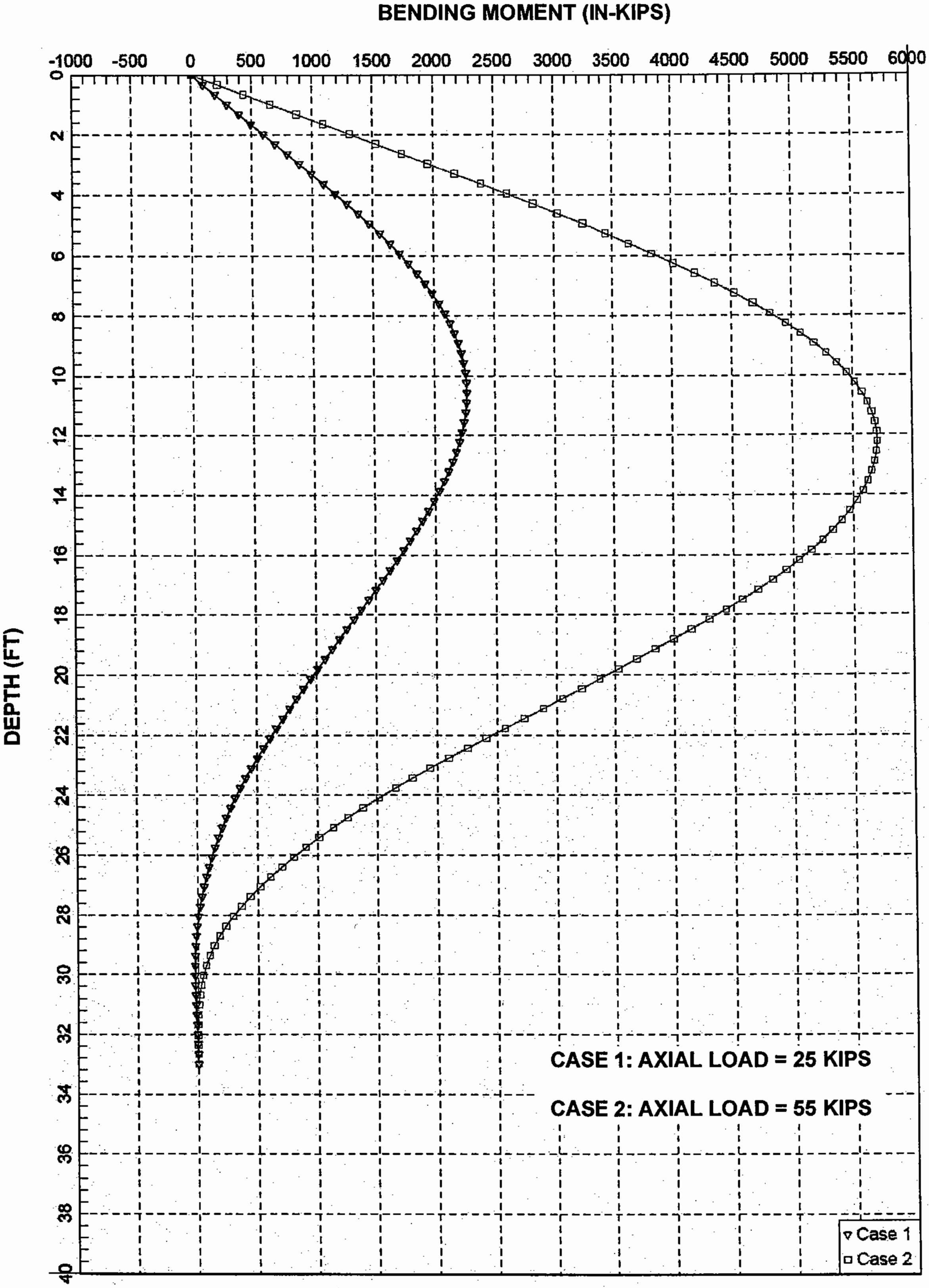
GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I	NO SCALE

PILE SHEAR FORCES: MID RAMP W/ ADDITIONAL UNSUPPORTED LENGTH

FIGURE F-8



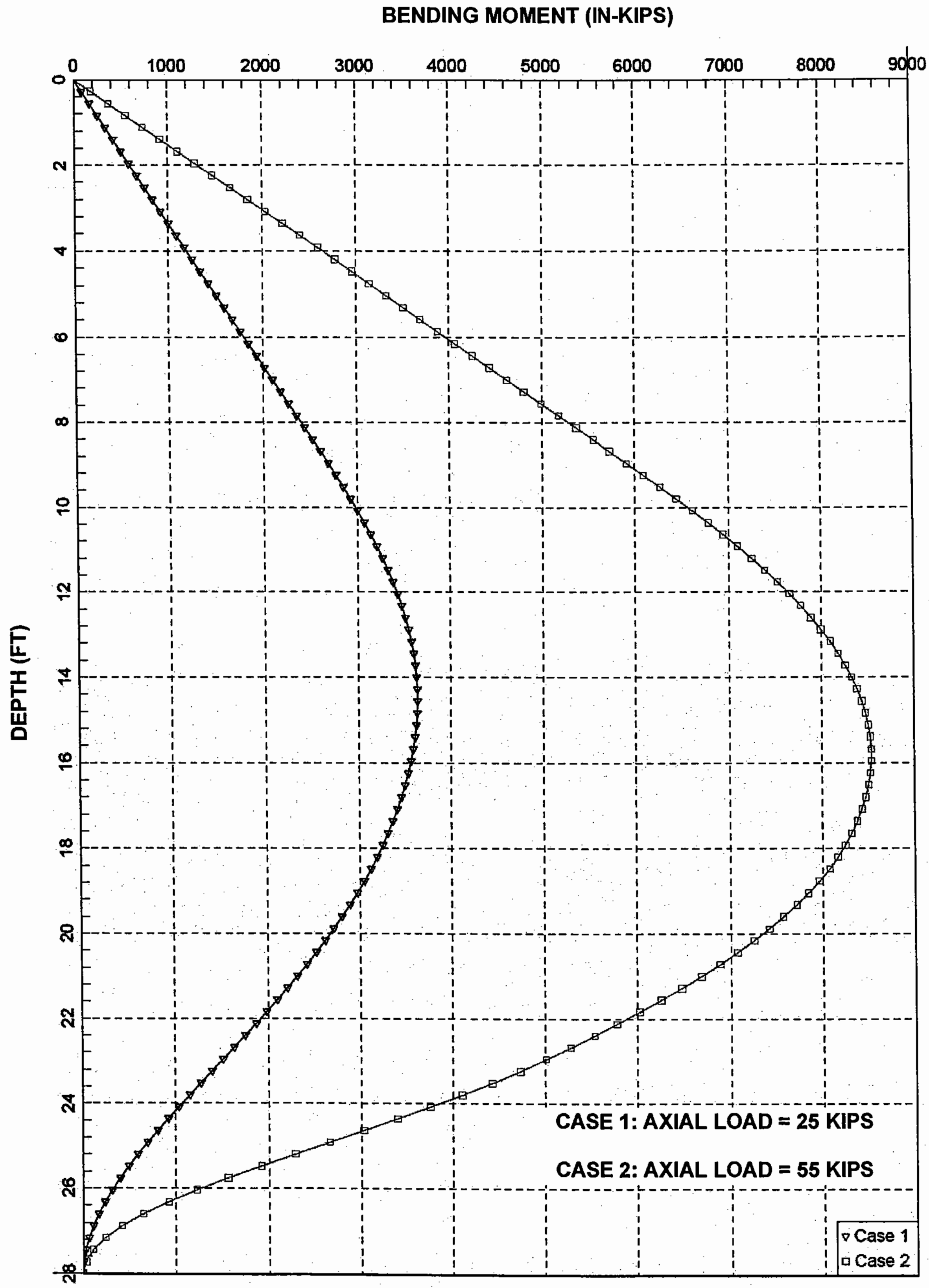
GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I | NO SCALE

PILE BENDING MOMENT: UPPER RAMP

FIGURE F-9



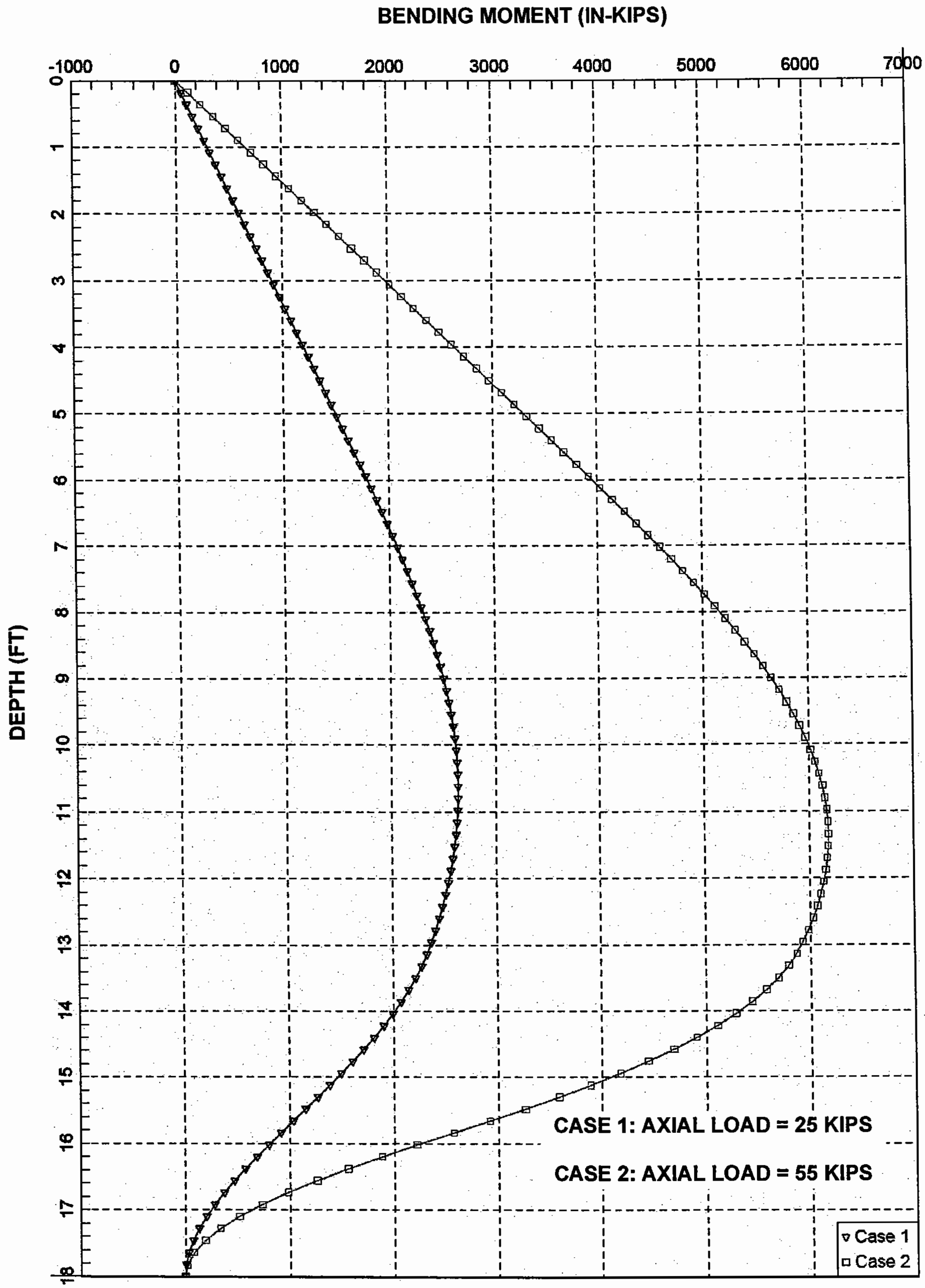
GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I | NO SCALE

PILE BENDING MOMENT: MID RAMP

FIGURE F-10



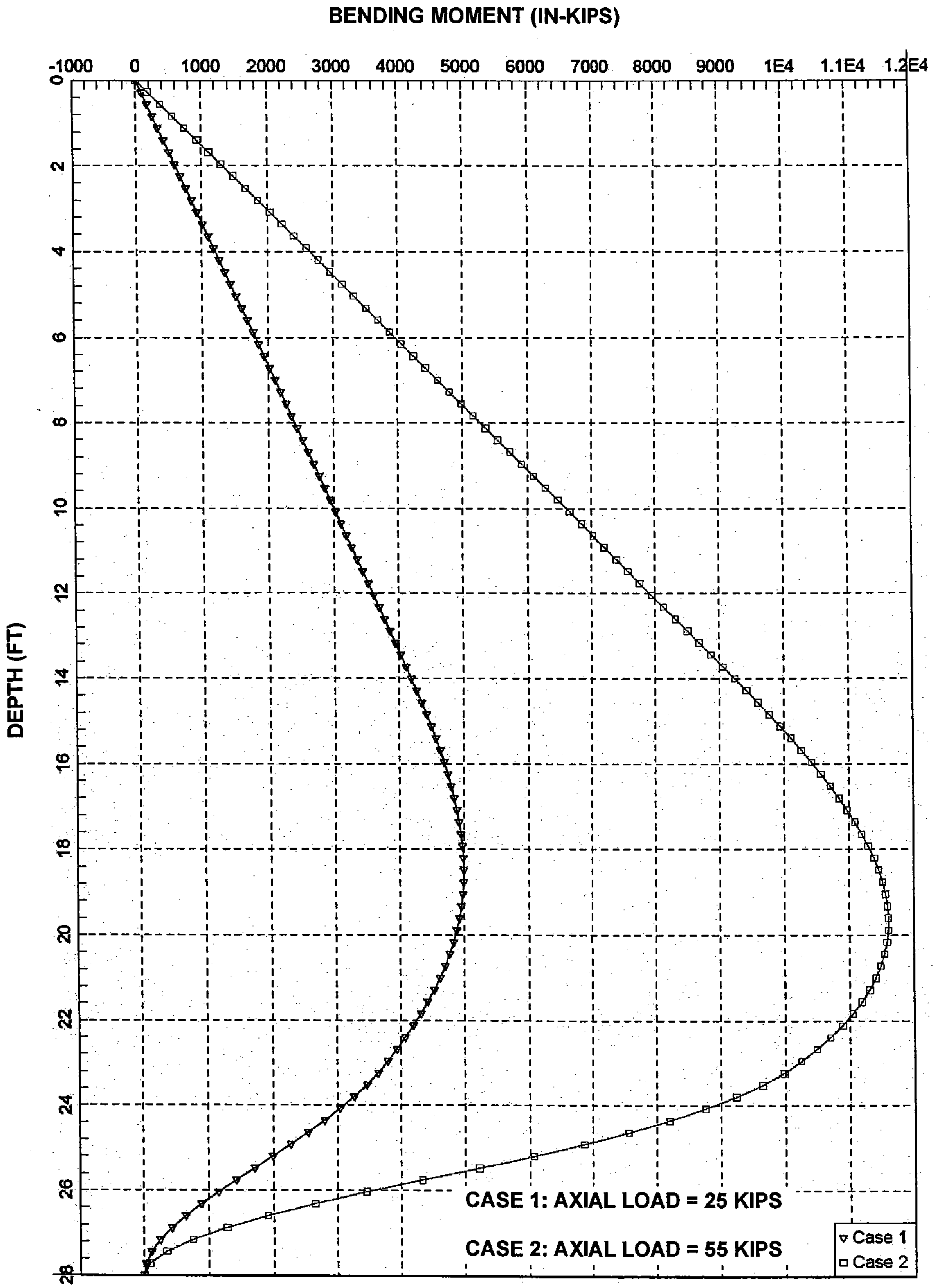
GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I	NO SCALE

PILE BENDING MOMENT: LOWER RAMP

FIGURE F-11



GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380.06I	NO SCALE

PILE BENDING MOMENT: MID RAMP W/ ADDITIONAL UNSUPPORTED LENGTH

FIGURE F-12

Appendix V. –
Geotechnical Feasibility Report
Onsite Wastewater Treatment System (2012)

April 17, 2012

County of Los Angeles Department of Public Works
Project Management Division I
900 S. Fremont Avenue, 5th Floor
Alhambra, California 91803-1331

Attention: Mr. Ed Andrews

Subject: Geotechnical Input for Feasibility Report
Onsite Wastewater Treatment System
Proposed Site Improvements for Dan Blocker Beach
26000 Pacific Coast Highway
Malibu, California
GPI Project No. 2380.06I
Los Angeles County/GPI Contract PW-13459
PCA: P8000023/Project ID: 00047

Dear Mr. Andrews:

This letter report presents the results of our geotechnical investigation and percolation tests for the proposed onsite wastewater treatment system (OWTS) for the subject project. Our services were performed in accordance with the OWTS guidelines prepared by the County of Los Angeles Department of Public Health.

This submittal is intended to provide geotechnical and percolation input for a feasibility report that conforms to the applicable provisions of the Los Angeles County Code-Plumbing Section and the feasibility report requirements of the Department of Public Health - Environmental Health. Our services have been performed in accordance with the Department of Public Health Onsite Wastewater Treatment System (OWTS) Guidelines (Reference 1).

The location of the site is presented in Figure 1, Site Location Plan. The currently planned site configuration is presented in Figure 2, Site Plan.

PROJECT DESCRIPTION

It is planned to install leach lines as part of an infiltrator system in the configuration of a leach field for the planned improvement project. The leach lines are planned to consist of trenches that are 3 feet wide and extending to about 3.5 to 4 feet below the finished grade. The wastewater will be carried in 4-inch diameter perforated pipe within an infiltrator chamber, with 1 foot of 1.5 to 2-inch drain rock extending below the pipe, 6 inches of drain rock extending over the infiltrator chamber, and 1 to 1.5 feet of compacted fill cover above the rock. The drain rock will be separated from the overlying soil with Mirafi HP570

5736 Corporate Avenue • Cypress, CA 90630 • (714) 220-2211, FAX (714) 220-2122

geotextile fabric. The finished grade is planned to be at about the existing grade. A septic tank, chlorine disinfection unit, and treatment pod are also planned as part of the system. Figure 2 shows a preliminary plan configuration of the leach line areas. Figure 3 shows a preliminary section of the infiltration system.

We prepared a geotechnical investigation report (Reference 2) for the overall site improvements for the project. That report included explorations and laboratory testing. Another consultant had prepared a previous geotechnical investigation report (Reference 3) in 2005 with further explorations and laboratory testing, as well as percolation testing that did not follow the guidelines in Reference 1.

The owner of the project is the County of Los Angeles. The contact information for the owner is listed above, with a contact phone number of 626-300-2319.

SCOPE OF WORK

Our scope of work for this investigation consisted of drilling, logging, and sampling soil borings, excavating test pits, excavating percolation test pits, field percolation testing, and the preparation of this supplemental report.

We drilled two exploratory borings to depths of 20 to 25 feet using bucket-auger drilling equipment. The borings were down-hole logged by the undersigned Certified Engineering Geologist. Samples were obtained at approximately 3 to 5-foot increments in the upper fill and natural soils within the borings. We did not install a groundwater monitoring well in the borings because of the dry conditions we encountered to the depth of the borings where caving sands caused refusal of the drilling.

To supplement the boring information, we performed a geophysical investigation consisting of two shear wave lines and one seismic refraction line within the project site. A report of the geophysical investigation (Reference 4) is included as Appendix D of our geotechnical investigation report (Reference 2).

Supplementing our boring information, another consultant performed three bucket auger borings to depths ranging from 16 to 20 feet within the area of the proposed OWTS in 2005 (Reference 3).

Percolation testing was performed at six exploratory test pit locations (three locations in the planned leach field, and three locations in the 100% expansion area). The percolation test pits were excavated to depths of 4 to 4½ feet below grade, which corresponds to the approximate planned depth of the leach field trenches. At the base of the backhoe test pit, we hand excavated percolation tests holes that were 1-foot by 1-foot in plan, and 1-foot deep. Details of the fieldwork are presented in following sections of this report.

SUBSURFACE CONDITIONS

Our field investigation disclosed a subsurface profile consisting of artificial fills over natural soils consisting of beach sand. A previous investigation by others (Reference 3) and the geophysical investigation (Reference 4) indicate the beach sands overly hard bedrock. Our investigation indicated approximately 15 to 20 feet of fill has been placed over the beach sands at the boring locations. Based upon the References 3 and 4, the thickness of the beach sand overlying the bedrock likely varies from approximately 3 to 7 feet.

The fill soils consisted of silty sands with gravels in the upper 12 to 15 feet. The fills soils were likely derived from nearby exposed road cuts of native bedrock and terrace deposits. Review of aerial photographs performed as part of the report by Concept Marine Associates (Reference 5) indicates the fill was placed in the 1940's during a reconstruction of Pacific Coast Highway. Detailed descriptions of the conditions encountered are shown on the Logs of Borings in Appendix A.

We performed laboratory testing of the fill soils to classify the soil type. Sieve analysis and hydrometer testing of the fill soils provided a distribution of the grain sizes. Based upon the laboratory testing, the fill soils are classified as sandy loam and loamy sand in accordance with the USDA Textural Classification System as shown on Figure 4.

Groundwater was not encountered in our borings or test pits at the site. We anticipate groundwater would be near the level of the tides. We would anticipate high groundwater to be near Elevation +4 feet (mean sea level) or at approximately 29 feet below the existing ground surface in the area of the OWTS. Reference 5 indicates the highest tidal level to be near Elevation +8 feet.

PERCOLATION TEST RESULTS

As previously discussed, we performed six percolation tests at the site. As outlined in Reference 1, we performed three tests in an area that appears to be feasible for the leach line field based on our subsurface findings and three additional tests in an area that appears to be suitable for the 100 percent expansion area. Throughout our field exploration and testing process, we provided notification to the Department of Public Health with respect to our schedule.

We performed our percolation tests in test pits designated PT-1, PT-2, PT-3, PT-4, PT-5, and PT-6. The location of the test pits is shown on Figure 2. The percolation testing was performed by Mr. Richard Grimm, who is an employee of Geotechnical Professionals Inc. and works under the direct supervision of Donald A. Cords, G.E., the undersigned. The percolation test pits were located about 30 feet apart to provide representation of the overall dispersal area.

The excavation of the test pits were made with a backhoe to depths of 4 to 4½ feet, which we understand is near the planned floor of the leach line trenches planned within the infiltrator chamber. The pits were approximately 3 feet by 4 feet in plan, with a 1-foot by 1-foot by 1-foot test hole hand excavated at the base of the test pit. We saturated the test holes on December 14, 2011 and maintained the saturation until performing the percolation testing in the morning of December 15, 2011. Mesh cages were used in the holes during saturation to retain the sidewalls and maintain the integrity for testing.

For the percolation testing, the test hole was filled with clean water, and allowed to percolate while we recorded the time required for each 1-inch drop in water level. The time required for the water to drop from the 5th to the 6th inch was determined. The time, T, for the water to drop from the 5th to the 6th inch for each test hole is presented in the following table:

Test Pit No.	T (minutes)
PT-1	13.5
PT-2	3
PT-3	23
PT-4	20
PT-5	12.5
PT-6	22

The percolation test within PT-2 was repeated a second time due to an adsorption rate of less than 5 minutes for the water to drop from the 5th to the 6th inch for the test hole. We measured a similar duration of 3 minutes for the last 1-inch drop in water level in each percolation test. A summary of the measurements for the percolation tests is shown in Table 1.

As shown, the slowest elapsed time measured in the test holes at the site was 23 minutes in Test Pit PT-3. Reference 1 requires the slowest time to be used for site wide design. This value is considered to be favorable for onsite wastewater treatment. The fastest elapsed time measured in the test holes at the site was 3 minutes in Test Pit PT-2. Since the elapsed time was less than 5 minutes, either supplemental treatment or soil replacement methods will be required prior to discharging effluent into the receiving environment below ground surface as prescribed in the Los Angeles Plumbing Code. The elapsed time is required to be within 5 and 60 minutes to avoid supplemental treatment and soil replacement methods.

CONCLUSIONS AND RECOMMENDATIONS

For our initial investigation, the preliminary leach lines were proposed at the locations shown in Figure 1, Site Plan. These locations were selected by Ensitu Engineering based on the constraints of the site. A coastal bluff face exists at the western edge of the site at a distance of approximately 25 feet from the edge of proposed pavement. The topography provided by the County of Los Angeles indicates the bluff is approximately 16 feet high sloping very steeply to the underlying beach. We recommend a minimum daylight setback from the bluff face of at least 30 feet from the outside edge of the infiltrator system.

The OWTS Guidelines (Reference 1) require at least 3 feet of continuous natural, unsaturated undisturbed, earthen material, excluding non-porous materials, below the bottom of the dispersal field. Natural, undisturbed, earthen materials do not exist to a depth of approximately 15 to 20 feet below the existing ground surface. As discussed above, the soils at the site consist of fill materials likely derived from nearby exposed road cuts of native bedrock and terrace deposits. The fill soils are classified as classified as sandy loam and loamy sand in accordance with the USDA Textural Classification System. Figure 5 shows the grain size distribution of the fill soils tested from samples of the bucket borings performed in the footprint of the proposed leach line trenches. The percentage of sand, silt, and clay particles, according to USDA Textural Classification, for the samples tested, are also shown on Figure 3.

Based on the planned leach line trench depth of 4 to 4½ feet below grade, a minimum depth to the relatively impervious bedrock underlying the fill and beach sand would be significantly greater than the required 10 feet. Similarly, the minimum depth to high groundwater underlying the proposed leach line trench would be significantly greater than the required 10 feet. We did not encounter bedrock or groundwater within our borings drilled to a minimum depth of 15 feet below the planned leach line trench depth.

We recommend the civil engineer review the percolation test results, the configuration of the test locations, and the subsurface conditions outlined herein to determine a suitable onsite wastewater treatment system.

LIMITATIONS

This geotechnical input report, percolation test results, and other materials resulting from GPI's efforts were prepared exclusively for use by the County of Los Angeles and their consultants in designing the proposed development. If this report or portions of this report are provided to contractors or included in specifications, it should be understood that they are provided for information only. This report cannot be utilized by another entity without the express written permission of GPI.

Soil deposits may vary in type, strength, and many other important properties between points of exploration due to non-uniformity of the geologic formations or to man-made cut and fill operations. While we cannot evaluate the consistency of the properties of materials in areas not explored, the conclusions drawn in this report are based on the assumption that the data obtained in the field and laboratory are reasonably representative of field conditions and are conducive to interpolation and extrapolation. Infiltration of water into the site soils can vary significantly from percolation test results or flow laterally on impermeable layers of soils away from the disposal areas.

Our investigation and evaluations were performed using generally accepted engineering approaches and principles available at this time and the degree of care and skill ordinarily exercised under similar circumstances by reputable Geotechnical Engineers practicing in this area. No other representation, either expressed or implied, is included or intended in our report.

Respectfully submitted,
Geotechnical Professionals Inc.

PROFESSIONAL GEOLOGIST
JEFFREY J. JOHNSTON
No. 1893
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Jeffrey Johnston, C.E.G. 1893
Engineering Geologist

REGISTERED PROFESSIONAL ENGINEER
DONALD A. CORDS
No. GE 2529
Exp. 6-30-13
GEOTECHNICAL
STATE OF CALIFORNIA

Donald A. Cords, G.E.
Associate

DAC:sph

APR 17 2012

Attachments: References

	Table 1	- Percolation Test Data
	Figure 1	- Site Location
	Figure 2	- Site Plan
	Figure 3	- Infiltration System Section
	Figure 4	- USDA Textural Soil Classification
	Figures 4.1 to 4.2	- Logs of Borings
	Figure 5	- Grain Size Analysis

Distribution: (6) Addressee (6 bound and a pdf CD)

REFERENCES

1. County of Los Angeles, Department of Public Health, "Onsite Wastewater Treatment System (OWTS) Guidelines," dated September 1, 2009.

2. Geotechnical Professionals Inc., "Geotechnical Investigation, Proposed Site Improvements, Dan Blocker Beach, 26000 Pacific Coast Highway, Malibu, California," GPI Project No. 2380-06.I, dated April 16, 2012.

3. Group Delta Consultants, "Geotechnical Report, Dan Blocker Beach Improvements, 26000 Pacific Coast Highway, County of Los Angeles, California," GDC Project No. I-352, dated January 21, 2005 (rev.).

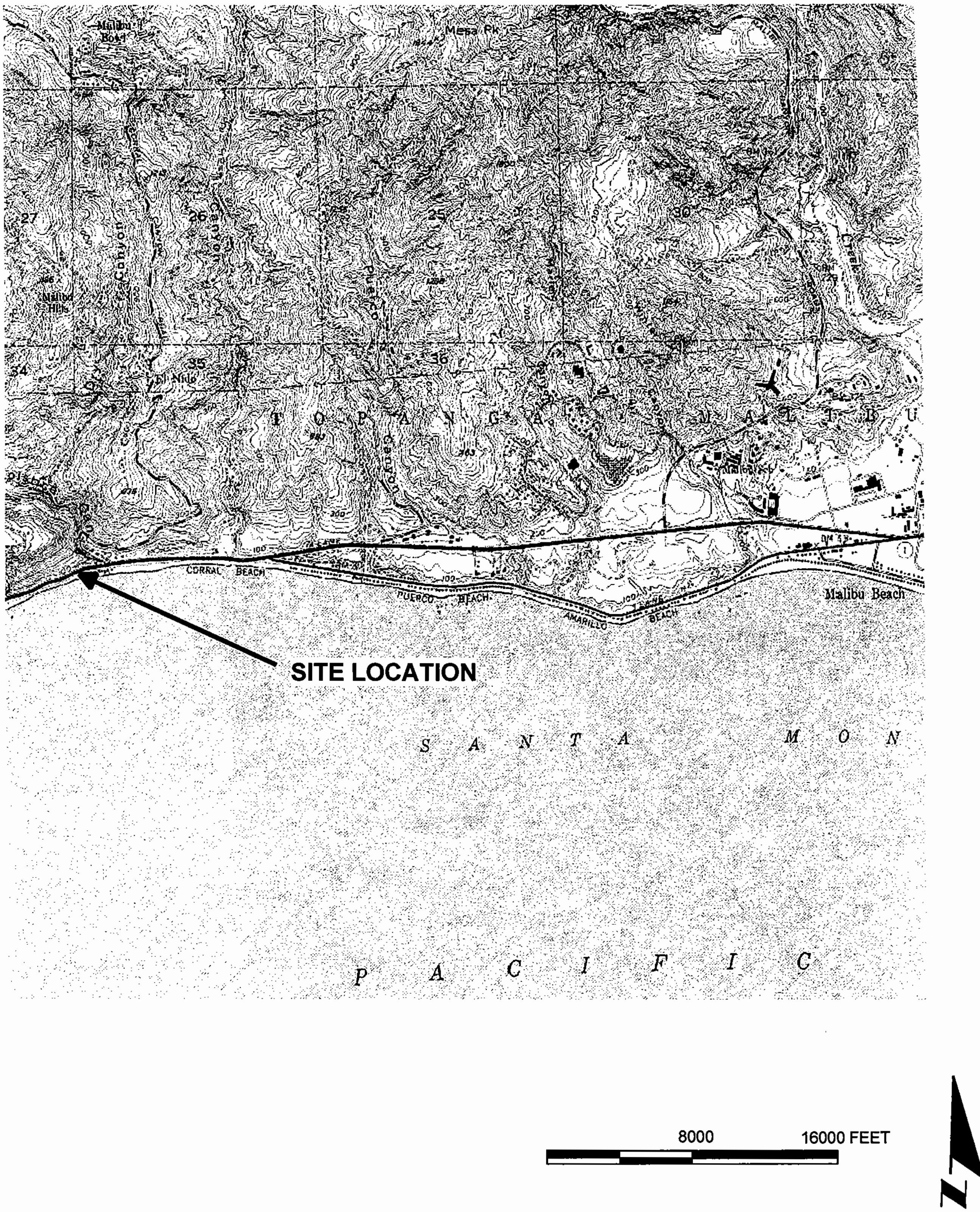
4. Terra Geoscience, "Geophysical Survey, Dan Blocker Beach Project, 26000 Pacific Coast Highway, Malibu, County of Los Angeles, California," GDC Project No. 112552-1, dated November 18, 2011.

5. Concept Marine Associates, Inc., "Wave Run-up Analysis, Dan Blocker Beach - West, County of Los Angeles, California," Project No. 20423/0111/1301, dated April 25, 2005.

TABLE 1
PERCOLATION TEST DATA

Drop (inch)	Time Interval of Drop (minutes)						
	PT-1	PT-2	PT-2R	PT-3	PT-4	PT-5	PT-6
0-1	5.5	---	0	11	---	3.5	8
1-2	8.5	0.5	0.5	15	9	5	11
2-3	8.5	0.5	0.5	16	13	7	12
3-4	11	1	1	17	11	7.5	14
4-5	12.5	1.5	1.5	22	13	9.5	18
5-6	13.5	3	3	23	20	12.5	22

1) Testing performed after 24 hour presoak
2) Presoaking performed on December 14, 2011
3) Testing performed on December 15, 2011
4) Measurements rounded to the nearest half minute



BASE PLAN REPRODUCED FROM USGS MALIBU BEACH QUADRANGLE

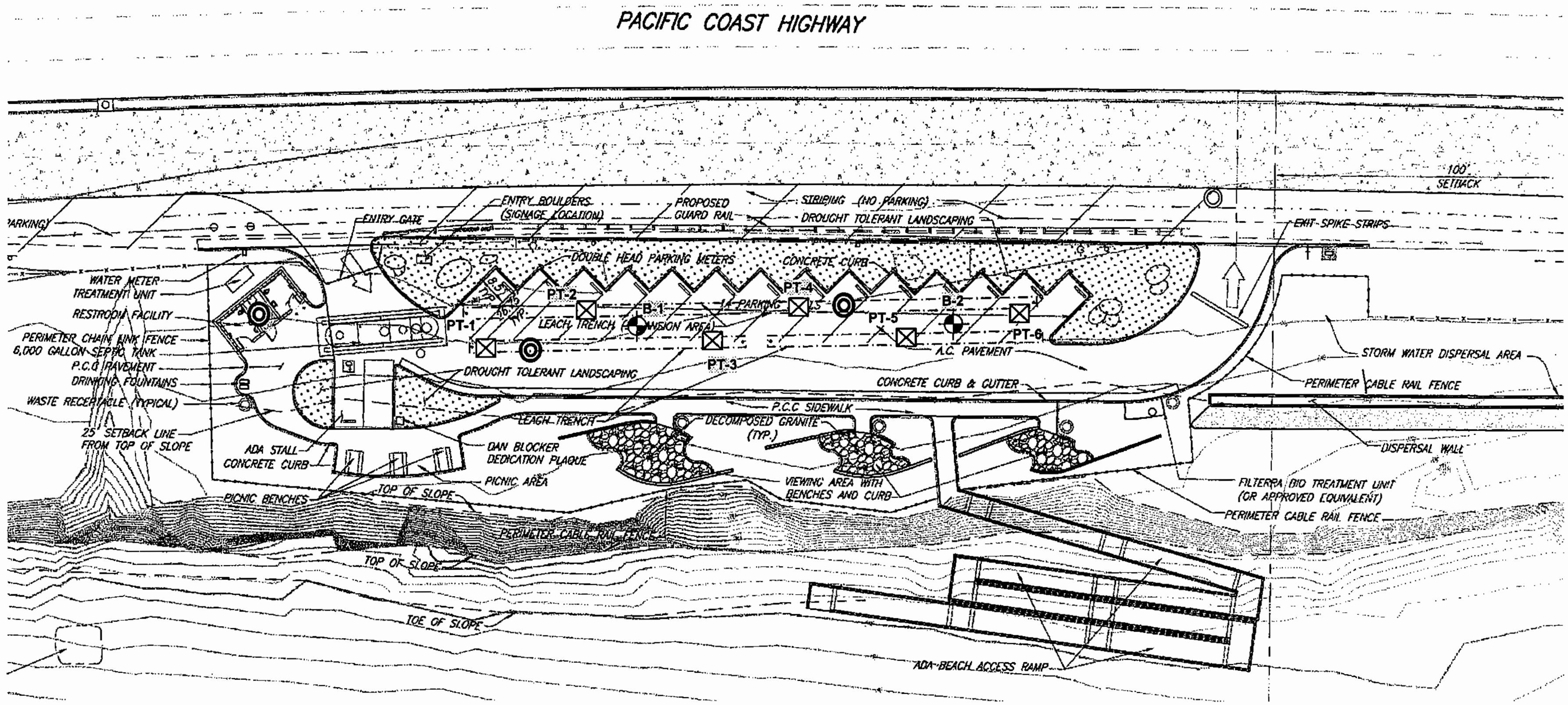
GPI GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380-06.I	SCALE 1" = 8000'

SITE LOCATION

FIGURE 1



EXPLANATION

B-1 APPROXIMATE LOCATION AND NUMBER OF EXPLORATORY BUCKET BORING

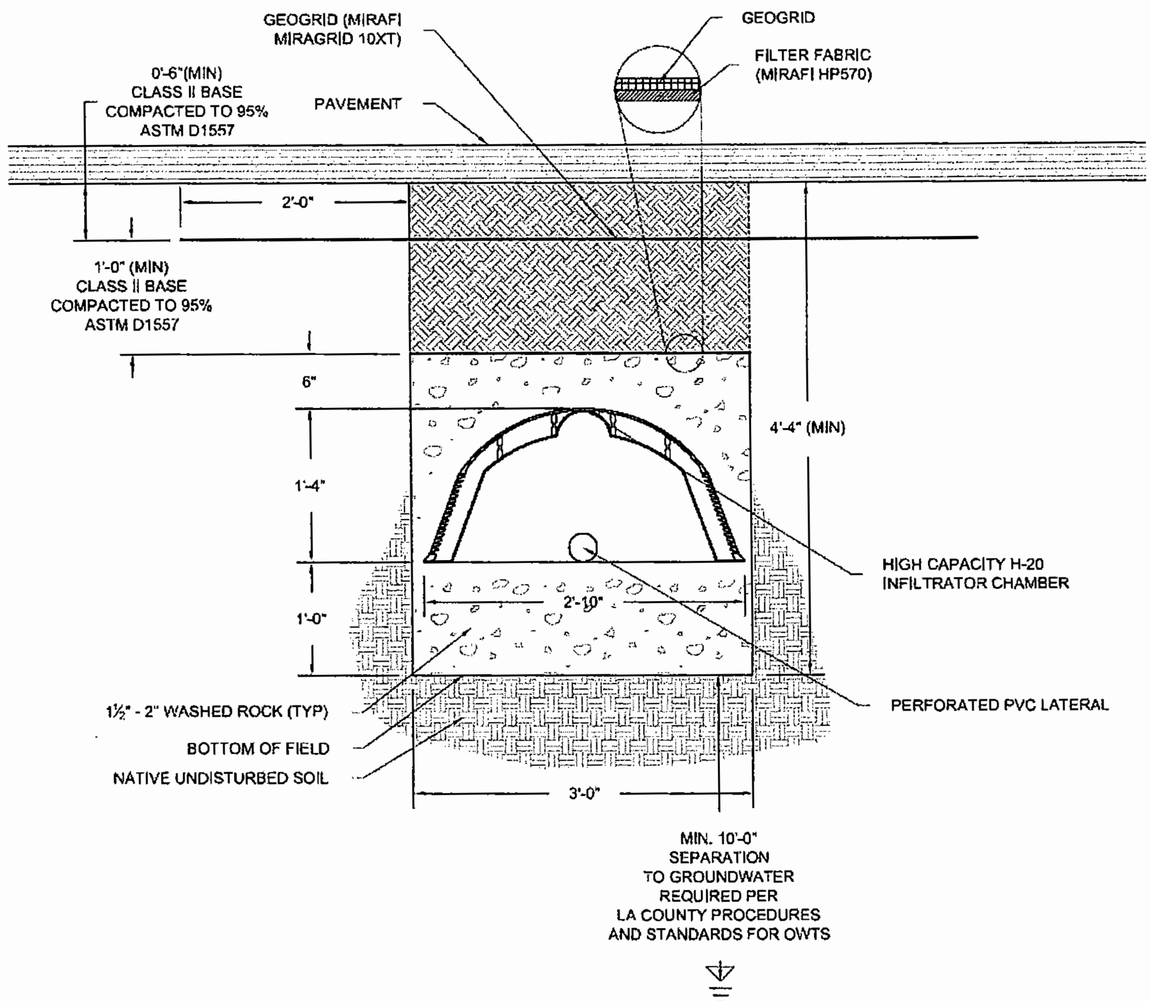
PT-1 APPROXIMATE LOCATION AND NUMBER OF TEST PIT/PERCOLATION TEST

APPROXIMATE LOCATION OF EXPLORATORY BUCKET BORING BY OTHERS (REF. 3)

0 30 60 FEET

BASE PLAN REPRODUCED FROM SITE PLAN PROVIDED BY COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS: ARCHITECTURAL ENGINEERING DIVISION DATED 4/2/12

GPI GEOTECHNICAL PROFESSIONALS, INC.	SITE PLAN
DAN BLOCKER BEACH	
GPI PROJECT NO.:2380-06.I — SCALE: 1" = 30'	FIGURE 2



INFILTRATOR SECTION

NO SCALE

BASE PLAN REPRODUCED FROM PRELIMINARY OWTS PLAN PROVIDED BY ENSITU ENGINEERING, INC.: DATED 11/8/11

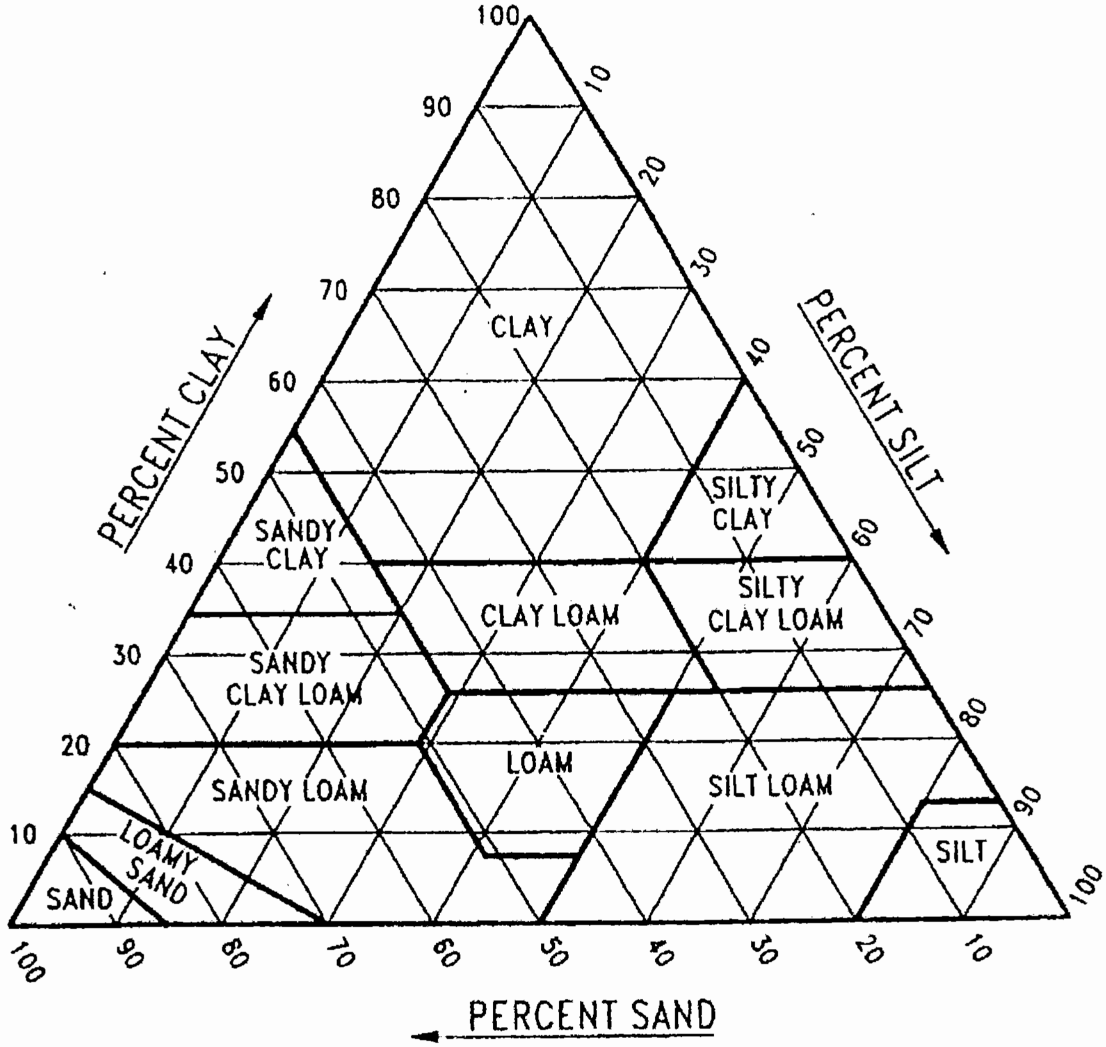
GPI GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380-06.I

INFILTRATION SYSTEM SECTION

FIGURE 3



USDA Textural Classification System

Note: Percent sand = 2.0 mm to 0.050 mm, percent silt = 0.050 mm to 0.002 mm, and percent clay is finer than 0.002 mm.

Sample Classification:

B-1 @ 3 feet, Sand = 64%, Silt = 27%, Clay = 9%
B-1 @ 13 feet, Sand = 76%, Silt = 21%, Clay = 3%
B-2 @ 3 feet, Sand = 65%, Silt = 29%, Clay = 6%
B-1 @ 12 feet, Sand = 69%, Silt = 25%, Clay = 6%

Note: Gravel portion of sample excluded to determine percentages.

GPI GEOTECHNICAL PROFESSIONALS, INC.

DAN BLOCKER BEACH

GPI PROJECT NO.:2380-06.I

USDA TEXTURAL CLASSIFICATION

FIGURE 4

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	*DESCRIPTION OF SUBSURFACE MATERIALS* This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	ELEVATION (FEET)
				0	3" Asphalt	
					Artificial Fill (af): **SILTY SAND (SM)** brown to dark brown to dark reddish brown, slightly moist, loose, trace clay, with gravel, composed of about 30% silty fines, 25% fine grained sand, 15% medium sand, 10% coarse sand, 30% fine gravel of volcanic andesite breccia	30
15.3	100		BAG			
15.3	100	PUSH	D	5		
18.4	96					
					@ 8 feet, dark brown, higher clay content	25
12.8	98	PUSH	D	10		
12.0	110				@ 12 feet, large andesite breccia boulder	
12.0	110		BAG		**SAND (SP)** dark brown, slightly moist	20
				15	**CLAYEY SAND (SC) and SAND WITH SILT (SP-SM)** dark brown and greyish brown, slightly moist, loose, no layering or structure	
9.8	89	PUSH	D		Beach Sand (Qs): **SAND (SP)** light brown, slightly moist, poorly graded, composed of 80% fine sand with 15% medium sand and about 5% silty fines, loose caving	
			BAG			
9.7	94	PUSH	D			15
				20	Total Depth 20 feet	
					Boring halted due to caving	
					Downhole logged by Engineering Geologist	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED:
11-17-11

EQUIPMENT USED:
24" Bucket Auger

GROUNDWATER LEVEL (ft):
Not Encountered

GPI

PROJECT NO.: 2380.06I

DAN BLOCKER BEACH

LOG OF BORING NO. B-1

FIGURE 4.1

MOISTURE (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FOOT)	SAMPLE TYPE	DEPTH (FEET)	DESCRIPTION OF SUBSURFACE MATERIALS	ELEVATION (FEET)
					This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	
				0	Artificial Fill (af): **SILTY SAND (SM)** brown to dark brown, slightly moist, loose, about 30% silty fines, 30% fine grained sand, 15% medium grained sand, 5% coarse grained sand, and 20% fine gravel, trace clay, no structure, massive, no clast orientation	
			BAG			30
12.1	97	PUSH	D	5		
					@ 9 feet, light brown, slightly moist, loose, no clay, coarser grained, some lenses of grey poorly graded sand, no bedding orientation	25
11.7	86	PUSH	D	10		
			BAG			
						20
4.8	89	1	D	15	**SAND WITH SILT (SP-SM)** light brown, slightly moist, loose, poorly graded, with 75% fine sand, 15% medium sand, 10% silty fines, caving, possible native beach sand	
			BAG			
						15
		PUSH	D	20	Beach Sand (Qs): **SAND (SP)** light brown, slightly moist, loose, with about 60% fine grained rounded sand, 40% medium grained sand, caving	
			BAG			
						10
				25	Total Depth 25 feet Boring halted due to caving Downhole logged by Engineering Geologist	

SAMPLE TYPES
- C Rock Core
- S Standard Split Spoon
- D Drive Sample
- B Bulk Sample
- T Tube Sample

DATE DRILLED:
11-17-11

EQUIPMENT USED:
24" Bucket Auger

GROUNDWATER LEVEL (ft):
Not Encountered

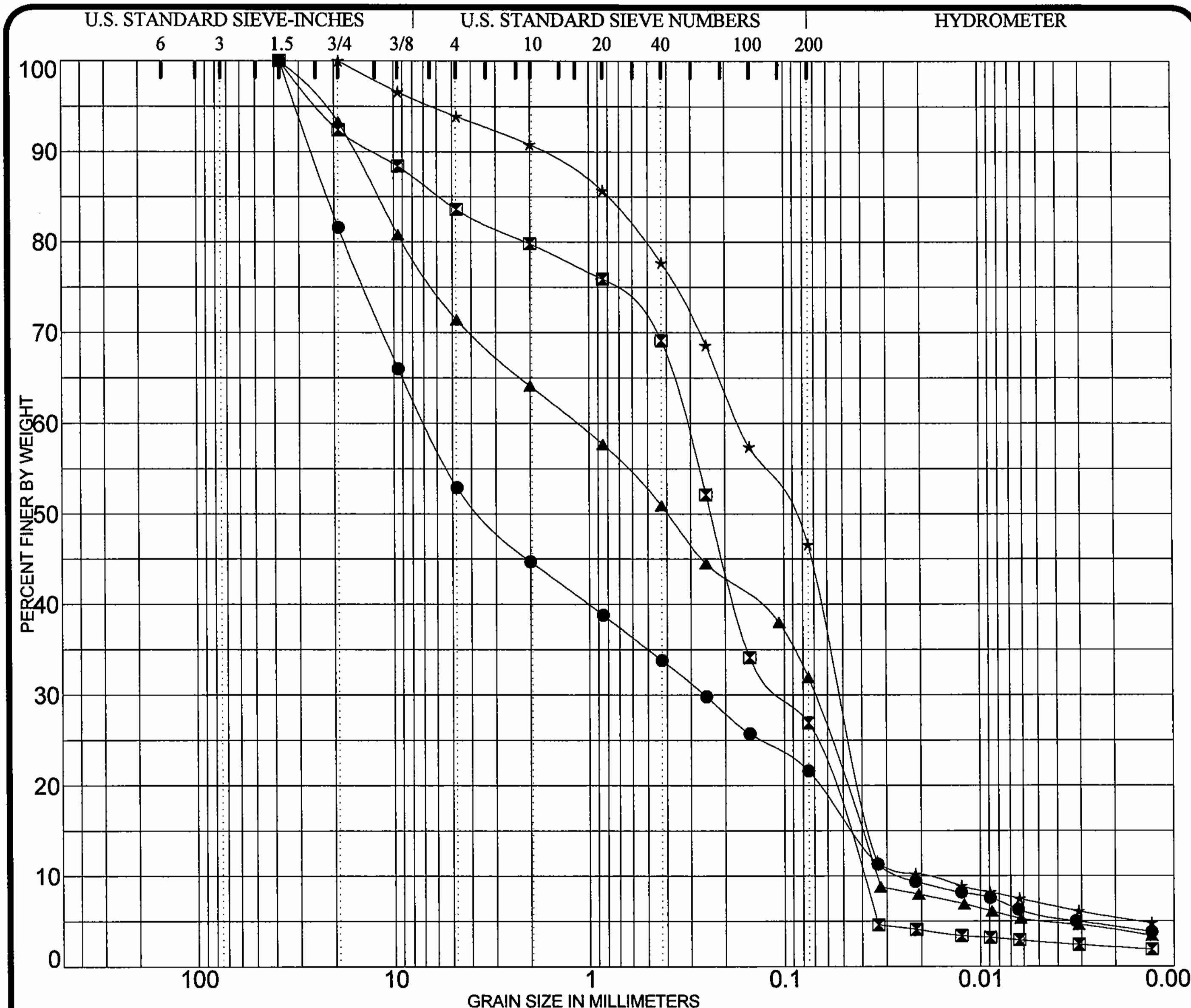
GPI

PROJECT NO.: 2380.06I

DAN BLOCKER BEACH

LOG OF BORING NO. B-2

FIGURE 4.2



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location		Classification	MC%	LL	PL	PI	Cc	Cu
●	B-1	4.0	FILL: SILTY SAND (SM) WITH GRAVEL					0.39	281.1
⊠	B-1	13.0	FILL: SILTY SAND (SM) WITH GRAVEL					0.79	7.9
▲	B-2	3.0	FILL: SILTY SAND (SM) WITH GRAVEL					0.13	34.4
★	B-2	12.0	FILL: SILTY SAND (SM)					0.79	8.6

	Sample Location		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-1	4.0	37.50	6.92	0.257	0.0246	47.1	31.3	15.8	5.8
⊠	B-1	13.0	37.50	0.32	0.101	0.0404	16.4	56.7	24.2	2.7
▲	B-2	3.0	37.50	1.16	0.070	0.0336	28.6	39.5	26.8	5.1
★	B-2	12.0	19.00	0.17	0.051	0.0197	6.1	47.3	39.6	7.0

PROJECT: DAN BLOCKER BEACH PROJECT NO. 2380.06I

GPI

GRAIN SIZE DISTRIBUTION

FIGURE 5

Appendix VI. –
Wave Run-Up and Coastal Analysis (2012)

DAN BLOCKER BEACH PARKING LOT

Wave Run-Up and Coastal Analysis Report

PREPARED FOR

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September 10, 2012

DAN BLOCKER BEACH – WEST

Wave Run-up and Coastal Analysis – Report

Introduction and Background

The County of Los Angeles is planning to construct public access improvements at a location along Dan Blocker Beach known as Dan Blocker Beach – West . The purpose of this report is to document the findings of the wave run-up and coastal analysis performed for this location Dan Blocker Beach lies west of Malibu, California along the Pacific Coast Highway (PCH) in Los Angeles County. The site lies at the north end of the Santa Monica Littoral Cell, which extends from Point Dume (west of the project site) to Palos Verdes Peninsula (southeast of the project site). See Figure 1 for a vicinity map. This section of coastline is bounded by Corral Canyon to the east and Latigo Canyon to the west and is characterized by narrow beaches and steep, erosive bluffs.

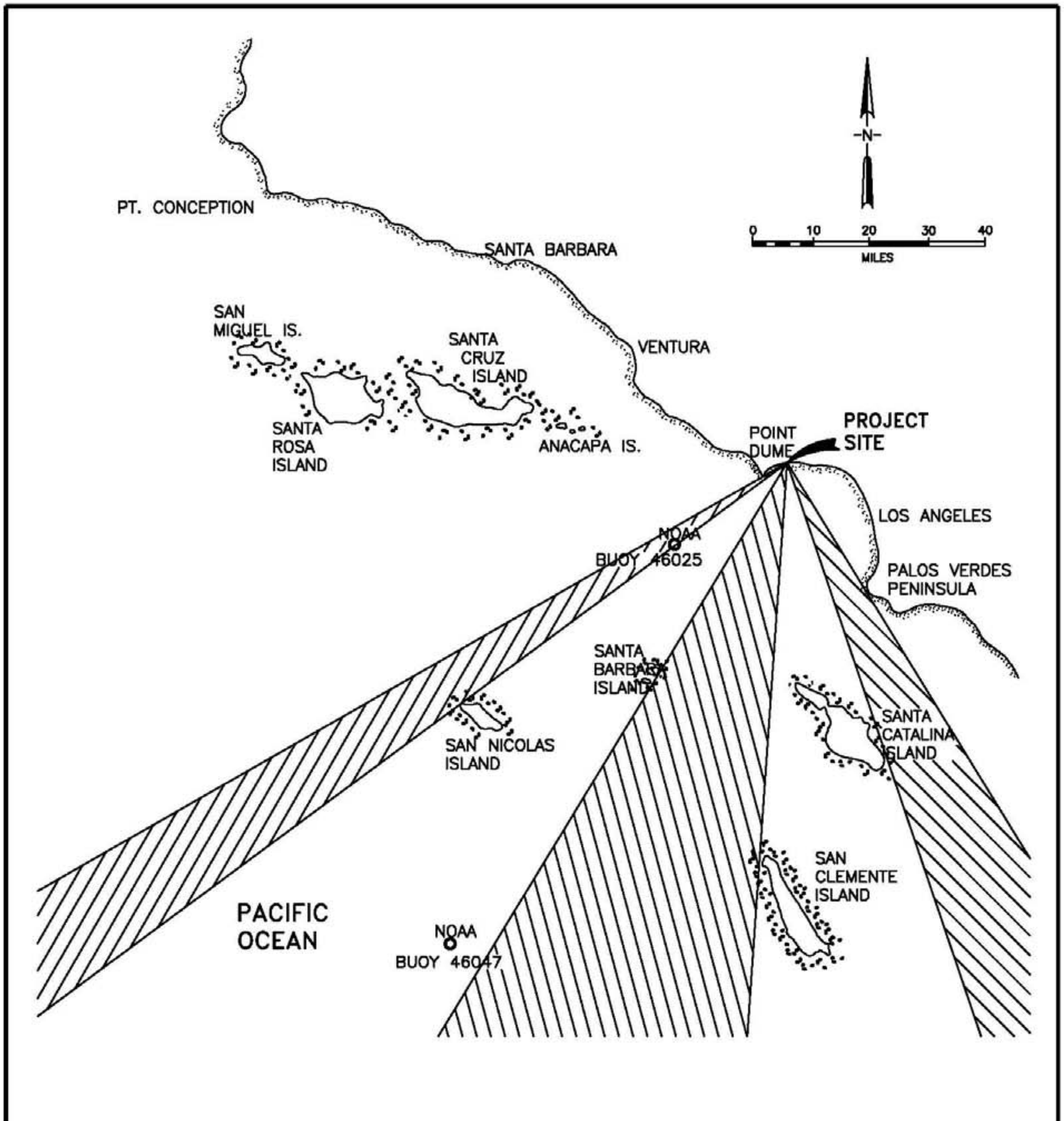
The improvements proposed by the County at Dan Blocker Beach – West include a small parking area adjacent to the PCH, picnic tables, benches, view areas, interpretive displays, native landscaping, restroom building, on-site sanitary waste water treatment system and a concrete ramp to provide beach access for pedestrians. See Figures 5 and 6 in Appendix A. Since the proposed improvements are positioned along the top of the existing steep bluff, and extend down to a narrow beach, an evaluation of the possible effects of wave run-up and coastal processes was determined to be necessary.

Wave run-up is defined as the maximum elevation of wave up-rush above the still water level of the ocean. The upper limit of run-up is an important parameter for the determination of the active portion of the beach profile where coastal processes will occur. Other coastal processes were considered with respect to the effects on and from the proposed improvements including sediment transport, erosion and wave forces. As a part of this report it was necessary to determine the design water level and design wave height for the site. This data was used to calculate the wave run-up elevation. Once the design run-up level was established for the site, an evaluation of the run-up and other coastal process effects on and from the proposed improvements was performed. Recommendations regarding the design and maintenance of the proposed improvements and public safety issues are also provided in this report.

Design Water Elevations

The water levels at Dan Blocker Beach are dependent upon astronomical tides, storm surge and climatological variations (i.e. sea level rise). According to the California State Lands Commission (CSL), the Mean High Tide Line (MHTL) for the Malibu area is 4.49 feet North American Vertical Datum (NAVD). See Appendix B for the CSL's Coastal Project Review Plan for Malibu and Figure 5 in Appendix A for the location of the MHTL with respect to the proposed improvements at Dan Blocker Beach - West.

To determine the design water level for the site, the design tide elevations adopted by Los Angeles County of 6.0 feet Mean Lower Low Water (MLLW) datum was used as a baseline for this report. In order to establish the design water elevation, an estimate of the potential storm surge was added to the design tide elevation.



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PROJ NO: P506110023
SCALE: AS SHOWN
DATE: 8/16/2012
DESIGNED BY: G.R.
DRAWN BY: J.S.Y.
CHECKED BY: G.P.M.

SHEET TITLE
VICINITY MAP & WAVE EXPOSURE

PROJECT
DAN BLOCKER BEACH PARKING LOT
MALIBU, CALIFORNIA

FIG. 1

According to research performed by Reinhard Flick[1], the peak storm surge reached 1.5 feet on several occasions in 1983 and reached a surge of 1.8 feet in 1998. Using Mr. Flick's data, a storm surge of 2 feet was adopted for this report as a conservative value for the potential storm surge at the site. Therefore, adding the potential surge to the design tide results in a design water elevation of 8 feet MLLW.

To validate this design water elevation, it was compared to the extreme tide level data collected by National Oceanic and Atmospheric Administration (NOAA) tidal gauges 9410840 (Santa Monica) and 9411340 (Santa Barbara). Of the two gauges, the Santa Monica gauge was determined to more accurately represent water levels at the project site. According to the data gathered by NOAA at this tidal station, the highest water level recorded was 8.63 feet MLLW (November 30, 1982). Since the proposed design water elevation is just 0.63 feet lower than the highest recorded level at the Santa Monica gauge, a design water elevation of 8 feet MLLW was determined to be an appropriate value for the project site.

To convert the design water elevation from the MLLW vertical datum to the North American Vertical Datum of 1988 (NAVD88) which was used for the site survey, 0.34 feet is subtracted from the MLLW value to give a design water elevation of 7.66 feet (NAVD88). See Appendix C for tidal datum elevation data from the Santa Monica (9410840) Bench Mark Sheet and the COOPS/NGS Elevation Data Graphic of the vertical datum relative to MLLW.

Due to ongoing observation of long-term mean tide level increases, a concern regarding continued sea level rise has developed. Additionally, concern for accelerated sea level rise has been stated by climatologists and oceanographers due to continued warming of the atmosphere. Because of the potential implications of sea level rise, the National Research Council (NRC) recently assessed the potential sea level rise for California, Oregon and Washington[2]. Included in the NRC findings are revisions to the observed amount of sea level rise that was previously reported. For the California coast south of Cape Mendocino (which includes the project site), a sea level rise of 12 to 61 centimeters (5 to 24 inches) is predicted by 2050. Continued sea level rise will result in a tendency for increased wave run-up levels, which needs to be considered during the design of improvements along the coast including those proposed at the Dan Blocker Beach project site. Since accelerated sea level rise is also a concern, a conservative estimate of the future sea level rise of 61 cm or 2 feet was adopted for this wave run-up analysis. Applying the additional sea level rise increase to the design water level of 7.66 feet (NAVD88) results in an overall design water elevation of 9.66 feet (NAVD88) for the purposes of this study and report.

Wave Exposure & Design Wave Heights

The coastline at Dan Blocker Beach faces south-southwest with an east-west orientation, which limits the direct exposure at the site to waves from the southwest to south-southeast. Waves at the site are generated by local winds and deep water swells. The design wave will be dictated by deep-water swells, since the magnitude (height and period) of these waves is much greater than those locally generated by winds. The presence of Point Dume to the west, the Palos Verdes Peninsula to the south and the orientation of this portion of the Santa Monica Cell result in the site being sheltered from large, deep-water storm waves that often reach the Southern California Bight from the northwest. Additional island shadowing is provided by the presence of Santa Catalina, San Clemente, Santa Barbara, and San Nicolas Islands to the south and southwest of the site. The presence of the Palos Verdes peninsula to the south further shelters the site. As a result, deep-water wave exposure at the site is limited to a small corridor from the west-southwest, a larger corridor from the southwest and another small corridor from the south-southeast, as shown on Figure 1.

In order to establish design wave heights for the site, the wave climatology was evaluated. Historical wave data was obtained from the NOAA Buoy 46025, which is located to the west-southwest of the site and Buoy 46047 near the larger corridor to the southwest. Figure 1 shows the locations of Buoys 46025 and 46047. Buoy 46025 has been collecting wave data since 1982, while Buoy 46047 has been operating since 1991. See Figures 2 and 3 for graphs of the historical significant wave heights for these buoys. The graphs show that extreme high wave heights (circled diamond symbols) for the area can reach 8 and 8.7 meters (26.2 and 28.5 feet), and typical waves range (red bars) from 0.6 meters to 1.2 meters (2.0 feet to 3.9 feet).

For this evaluation, design wave criteria set forth by Los Angeles County along with an extreme wave event was evaluated. The County utilizes two design waves, a smaller but longer wave (H_0 = 3.8', T = 18 seconds) and a taller, shorter wave (H_0 = 11.7', T = 10 seconds). These waves were used to evaluate the function of the proposed improvements during typical wave conditions while the extreme wave (H0 = 28.5, T = 20 seconds) was utilized to evaluate potential extreme run-up levels and the resulting forces that could be imposed on the proposed improvements that are within the wave run-up zone.

Figure 2: Graph of Significant Wave Heights for Buoy 46025

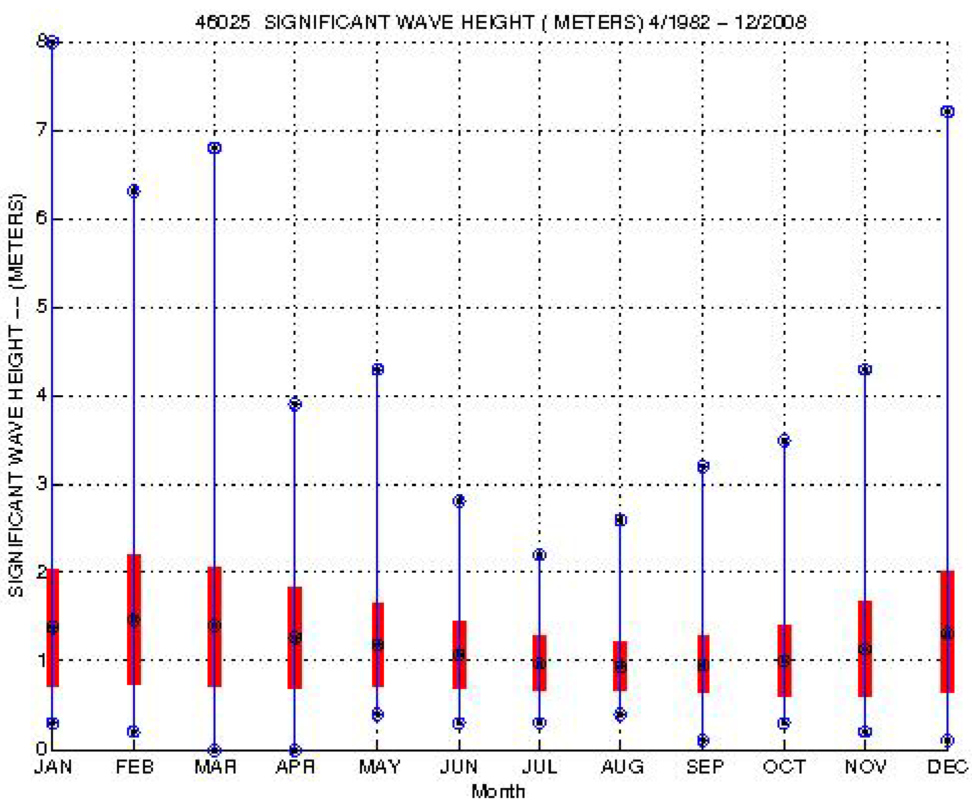
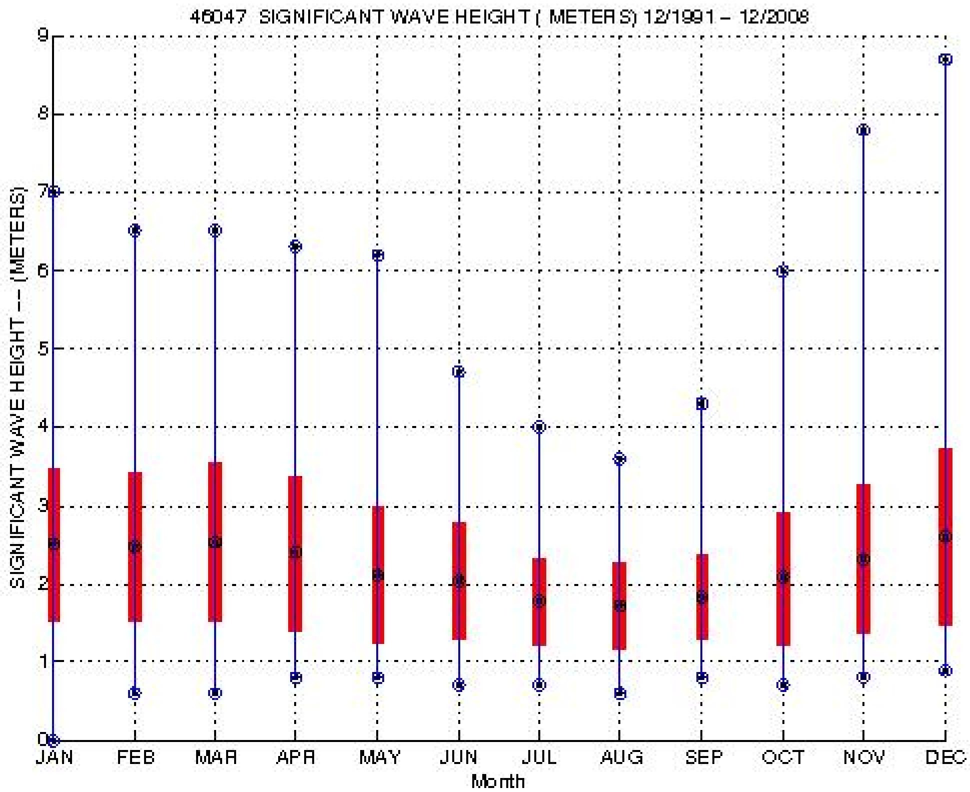


Figure 3: Graph of Significant Wave Heights for Buoy 46047

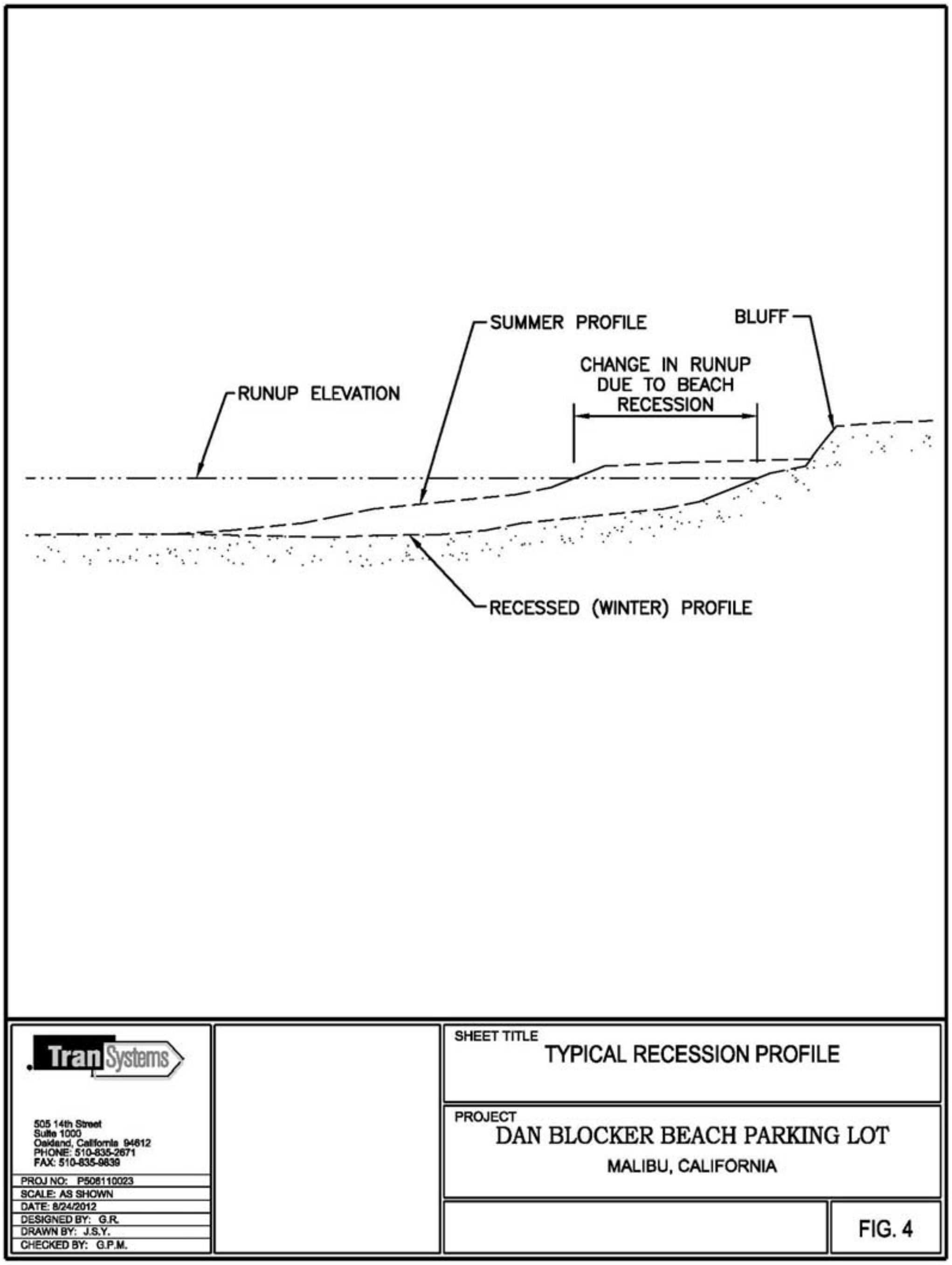


Beach Recession

During the winter months, increased wave energy along most sandy California shorelines, including Dan Blocker Beach, causes the profile of the beach to recede (beach recession). Beach recession along the project site is limited due to the narrow width of the existing beach. According to Wayne Schumaker of the LADBH, beach recession at Dan Blocker extends to the bluff resulting in direct wave impact on the bluff during the winter storm season. See Figure 4 for a typical depiction of beach recession. The variation in the amount of recession is dependent upon the intensity and frequency of winter storms which are believed to carry sand from the upper beach profile out to offshore sand bars. During periods of lower wave energy, sand is transported back to the beach. As shown on Figure 4, beach recession can have a dramatic effect on the location of wave run-up along the beach profile and bluff.

Topographic data for the project site was initially obtained in January of 2004 and updated in March of 2012. Comparing the beach grades between the 2004 and 2012 surveys reveals that the 2012 survey depicts a more recessed profile. This is likely due to the 2004 survey being performed earlier in the winter storm season prior to the beach being fully recessed, while the 2012 survey was taken towards the end of the winter storm season when the beach is more likely to have experienced more recession. Mr. Schumaker indicated that, during seasons of intense winter storms, it can take a couple of years for Dan

Blocker Beach to regain a typical summer (not receded) profile. In addition to the two site surveys, the 2005 LA County Beach profiles were reviewed with respect to the site. Profile #347 was determined to cross the subject site and was incorporated into the site survey and cross sections. Profile #347 depicts an even greater level of beach recession than the 2012 survey. See Figure 5 for the location of Profile #347 and Figure 6, Section 2 for a cross section of the data. Since the 2005 data was determined to provide the most recessed profile for the site and extends through the nearshore area, it was used to establish the nearshore slope (H/V) of 33/1 (0.03) for the site.



Wave Run-Up Calculations

Two methods were used to estimate the wave run-up at the site. Both of the methods were provided by the U.S. Army Corps of Engineers (USACE). The first method was developed by Saville (1958) and presented in the USACE's Shore Protection Manual (SPM)[3]. The Saville approach considers regular waves on smooth, impermeable composite slopes. No correction is made for the porosity or roughness of the sand slope at the project site, which likely results in a more conservative run-up estimate. This conservative approach is appropriate for the Dan Blocker site since actual site conditions will predominantly have irregular waves that are difficult to quantify with respect to wave run-up and can result in higher run-up levels. The presence of the bluff, which is impacted by wave run-up along portions of this beach, will also affect the actual run-up height. However, evaluation of the LA County beach profile data revealed that the off-shore profile is characterized by a relatively consistent slope and since the bluff will only affect the final stages of wave run-up well after a majority of the wave energy has been dissipated through breaking, the increase in wave run-up due to potential interaction with the bluff is anticipated to be relatively small.

The second method was obtained from the USACE's Coastal Engineering Manual (CEM)[4] and was presented by Hunt (1959). Hunt empirically determined run-up for regular, breaking waves as a function of beach slope, incident wave height, and wave steepness based on laboratory data. An irregular wave approach (Mase, 1989) was also evaluated as part of the Dan Blocker Beach study, but was found to give excessively large run-up values which did not correlate with observations made at the site. This determination was found to be consistent with field measurements of run-up made by Holman 1986 and Nielsen/Hanslow 1991 which found actual field run-up values to be consistently lower than what was predicted using the Mase equations. Therefore, the Mase approach is not presented in this report.

1. SPM (Saville) Method

In order to determine the wave run-up using the SPM method, the breaking wave height (Hb) and depth of breaking (db) must first be determined. Since the dimensionless ratio db/Hb has been found (as documented in previous studies) to vary with changes in the near-shore slope (m) and wave steepness (Ho'/(gT2)), the often used approximation db/Hb = 1.3 should not be used for design purposes. Instead, Figures 7-2 and 7-3 from the SPM can be used to compute more appropriate values. Figures 7-2 and 7-3 are provided in Appendix D to this report. Once these values were obtained, the composite slope method (including Figure 7-11 provided in Appendix D) was used to determine the run-up (R) for the three wave scenarios. See Table 1 for the design values and resulting run-up using this method.

Table 1: SPM Method Values and Results

Parameter	Situation 1	Situation 2	Situation 3	Figure Used
H_0’	3.8	11.7	28.5	N/A
T	18	10	20	N/A
$H_0'/(gT^2)$	0.0004	0.0036	0.0022	N/A
Slope, m	0.03	0.03	0.03	N/A
H_b/H_0' =	2.28	1.25	1.4	7-3
$H_b/(gT^2)$	0.0008	0.0045	0.0031	N/A
d_b/H_b	1.01	1.09	1.06	7-2
$d_b = d_s$ =	8.75	15.94	42.29	N/A
ds/H_0' =	2.30	1.36	1.48	N/A
Cot θ =	30	30	30	N/A
R/H_0' =	0.51	0.22	0.25	7-11
Run-up, R (ft) =	**1.94**	**2.57**	**7.13**	**N/A**

2. CEM (Hunt) Method

Hunt’s formula given in non-dimensional form (Battjes 1974) is

$R/H_0 = \xi_0$ for $0.1 < \xi_0 < 2.3$.

The formula was developed for uniform, smooth, impermeable slopes, where ξ_0 is the surf similarity parameter.

$\xi_0 = (\tan\beta)(H_0/L_0)^{-1/2}$

The values utilized and findings for this method are presented below in Table 2.

Table 2: CEM Method Values and Results

Parameter	Situation 1	Situation 2	Situation 3
Tanβ = Beach Slope (Rise/Run) =	0.03	0.03	0.03
H_0 = Deep Water Wave Height (ft) =	3.8	11.7	28.5
T_0 = Wave Period (Seconds) =	18	10	20
L_0 = Deep Water Wave Length (ft) = $gT_0^2/(2\pi)$ =	1,661	513	2051
$\xi_0 = (\tan\beta)(H_0/L_0)^{-1/2}$ =	0.63	0.20	0.25
R (ft) = $(H_0)(\xi_0)$ =	**2.38**	**2.32**	**7.25**

Upon inspection of Tables 1 and 2, it was determined that the two approaches resulted in similar run-up values particularly for the extreme wave condition (Situation 3). Therefore, the higher of the two values will be used to determine the run-up elevation for each situation. See the Table 3 for the resulting run-up elevations determined by adding the run-up to the design water elevation.

Table 3: Run-up Elevations

Parameter	Situation 1	Situation 2	Situation 3
Design Tide (ft, NAVD88) =	5.66	5.66	5.66
Storm Surge (ft)	2	2	2
Sea Level Rise (ft)	2	2	2
Run-up (ft) =	2.38	2.57	7.25
Run-up Elevation (ft, NAVD88) =	**12.04**	**12.23**	**16.91**

Since empirical run-up values alone are not recommended to be used for design without validation, local observations were determined to be needed to validate the results. In order to obtain this information, Wayne Schumaker, Past Division Chief, Facilities & Property Maintenance Division, Los Angeles County Department of Beaches and Harbors (LADBH), was interviewed. Mr. Schumaker indicated that the large run-up events that had been observed at the site occur primarily in the winter and extend to the bluff. The increased exposure of the bluff at the site in the winter is the result of both increased wave energy (increased wave heights occurring more frequently) during the winter storm season and beach recession, which will be discussed in more detail later in this report. Mr. Schumaker also indicated that, although it is less likely due to the narrow width of portions of the beach along the site, wave run-up has been observed to reach the bluff face in some areas even during the summer. Correlating this observation with the existing plan gives an observed run-up level of somewhere between 12 feet and 16 feet NAVD88.

Upon review of the calculated run-up levels with respect to the historical observations reported for the site and observations made during the site visit which indicated that run-up appears to periodically extend to the toe of bluff, it was determined that the values obtained appear to be consistent with observations. Therefore, a typical design run-up elevation utilizing the higher of Situations 1 and 2 (12.23' NAVD88) will be used to evaluate the impacts of run-up on and from the proposed structures while the extreme run-up level of 16.91 feet NAVD88 will be used to evaluate possible extreme events that could affect the proposed improvements at Dan Blocker Beach - West.

Wave Forces

Upon evaluation of the identified water levels and run-up elevations for the site with respect to the proposed improvements, it was determined that although the proposed structures are all above the design water level, wave run-up will extend past the proposed concrete, beach access ramp. Since the ramp is above the design water level, direct forces from wave transmission and breaking will not affect the structure. However, the surging run-up that extends past the structure will exert a force on the structure. The force exerted is related to the height of the surge (H_w) at the structure. As indicated in the CEM, Camfield (1991) approximated the force of the surge per unit horizontal width of vertical was based on work performed by Cross (1967) to be

$$F_{surge} \approx 4.5\rho g(H_w)^2$$

where ρ is the density of the water and g is gravity. Since the ramp structure is pile supported, the force of the surge will act on the piles to the full height of the surge and will act only on the thickness or height of the deck (2'-2") between the piles. Therefore, two design forces will be calculated, the force on the piles and the force on the walkway or ramp structure between the piles. The force on the piles will be determined by identifying the pile with the greatest vertical exposure below the extreme runup height of

16.91 feet NAVD88 which will provide the worst case (highest) scenario for the surge force on the piles. Inspection of the design with respect to the recessed beach profile from the 2005 LA County Beach Profiles reveals that the lowest toe elevation for the piles exposed to the full run-up height is approximately 11 feet NAVD88 which results in a surge height of 5.91 feet. Utilizing Camfield's formula results in a force of 10,055 lbf/ft across the width of the 30" diameter concrete piers (30 kips total per pile). For the walkway structure between the piles, the surge force will be computed for the locations where the surge acts on the full height (thickness) of the deck (2'-2") which will provide the worst case loading on the walkway. This results in a force of 1,351 lbf/ft along the walkway. See Table 4 below for a summary of the wave forces of the structure.

Table 4: Wave Surge Forces on Access Ramp Structure

Structural Element	Force (lbf/ft)
Pile	10,055
Walkway or Ramp	1351

<u>Long-Term Erosion</u>

Long-term beach and bluff erosion can have a dramatic effect on structures built along the bluff top and beach. Unlike beach recession, bluff erosion has the added problem of not recovering during periods of low energy due to the overall loss of material. Due to the relatively unconsolidated material that forms the bluff along Dan Blocker Beach, bluff erosion is a concern. See Photographs 1 and 2 for a depiction of the bluff that shows undermining of the toe of the bluff and recent slumps that appear to be the result of wave attack. Mr. Schumaker indicated that Caltrans had historically used Dan Blocker Beach as a disposal site for landslide material deposited on the PCH between Kanan Road and Malibu Pier. The fill material placed by Caltrans was said to have been deposited at the edge of the bluff and would slump down onto the beach, which may explain the looseness of the bluff material present at the site. The deposition of material likely either slowed the erosion of the bluff or resulted in its extension seaward. Mr. Schumaker recalled that the last time he was aware that material was deposited at the Dan Blocker site was in 1995. See the Aerial Photograph Archive Review section that follows for further discourse regarding the deposition of landslide material and bluff erosion at the site.

Photograph 1: Undermining along toe of bluff at Dan Blocker Beach (April 2012).

Photograph 2: Recent slump of along toe of bluff at Dan Blocker Beach (April 2012).

The condominium complex adjoining the site to the east is supported by piles, protected by a seawall and extends well beyond the current bluff-line, which was not likely the case when the condominiums were constructed according to the historical aerials reviewed. See the discussion of the historical aerials for additional information. These observations suggest that this shoreline has eroded landward. See Photograph 3 which shows how the condominium extends beyond the existing bluff. Also shown in Photographs 3 and 4, is the presence of a wider beach along the toe of the bluff of the Dan Blocker site immediately adjoining the condominium complex. This portion of the beach is wider than that along the remainder of the portion of Dan Blocker beach west of the condominiums. The wider beach area indicates that the condominium complex appears to be affecting sediment transport along the shoreline and appears to be trapping sand on the up-drift side of the structure (the easterly end of the Dan Blocker Beach project site.. The amount of sand present in this area will vary, dependent upon numerous factors, including seasonal beach recession, recent storm intensity, and the availability of sand to be transported by littoral drift.

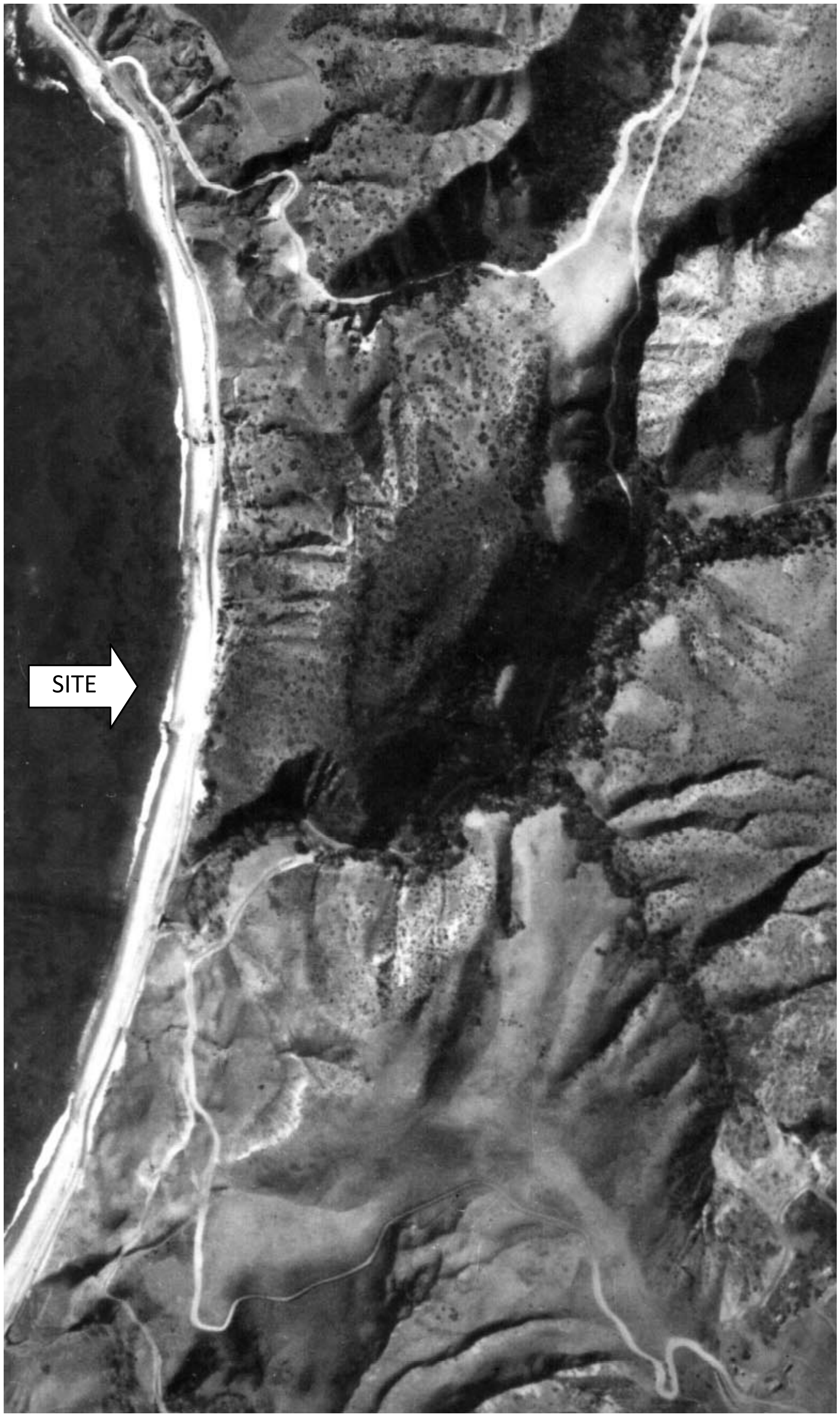
Photograph 3: Looking easterly towards the Dan Blocker Beach site with condominiums beyond.

Photograph 4: Looking easterly across the Dan Blocker Beach site with condominiums beyond.

Aerial Photograph Archive Review

Due to the identified risk of ongoing bluff erosion at the Dan Blocker Beach site, historical aerial archives were reviewed to determine whether any historical trends for bluff erosion could be identified. Aerials were reviewed from the Air Photo Archives at the UCLA Department of Geography and from the Fairchild Aerial Photograph Collection at Whittier College. The aerials reviewed are dated from 1929 to 1959. Photographs 5 and 6 are from 1928/1929 and 1935, respectively. These two aerials depict the shoreline in the project area as it existed prior to the expansion of the Pacific Coast Highway from two lanes to four lanes. The Dan Blocker Beach – West project site was identified on the aerials to be just west of the first major rock outcropping along the shoreline to the west of the intersection of Corral Canyon Road and PCH and is indicated by a white arrow on the aerials. As shown in these early aerial photographs, the project site was very much different than it exists today. The PCH extended along the toe of the hills adjacent to a wider beach than that observed in the photographs taken after the widening of the PCH. Although the exact historical elevation of the site could not be verified during this aerial archive review, PCH appears to extend along the top of the beach in the 1929 and 1935 without a bluff between it and the beach.

Photograph 5: 1928/1929 aerial depicting project site prior to PCH expansion.



(Fairchild Collection, Whittier College, C-300, J:16, 1928-1929)

Photograph 6: 1935 aerial depicting the project site prior to PCH expansion.

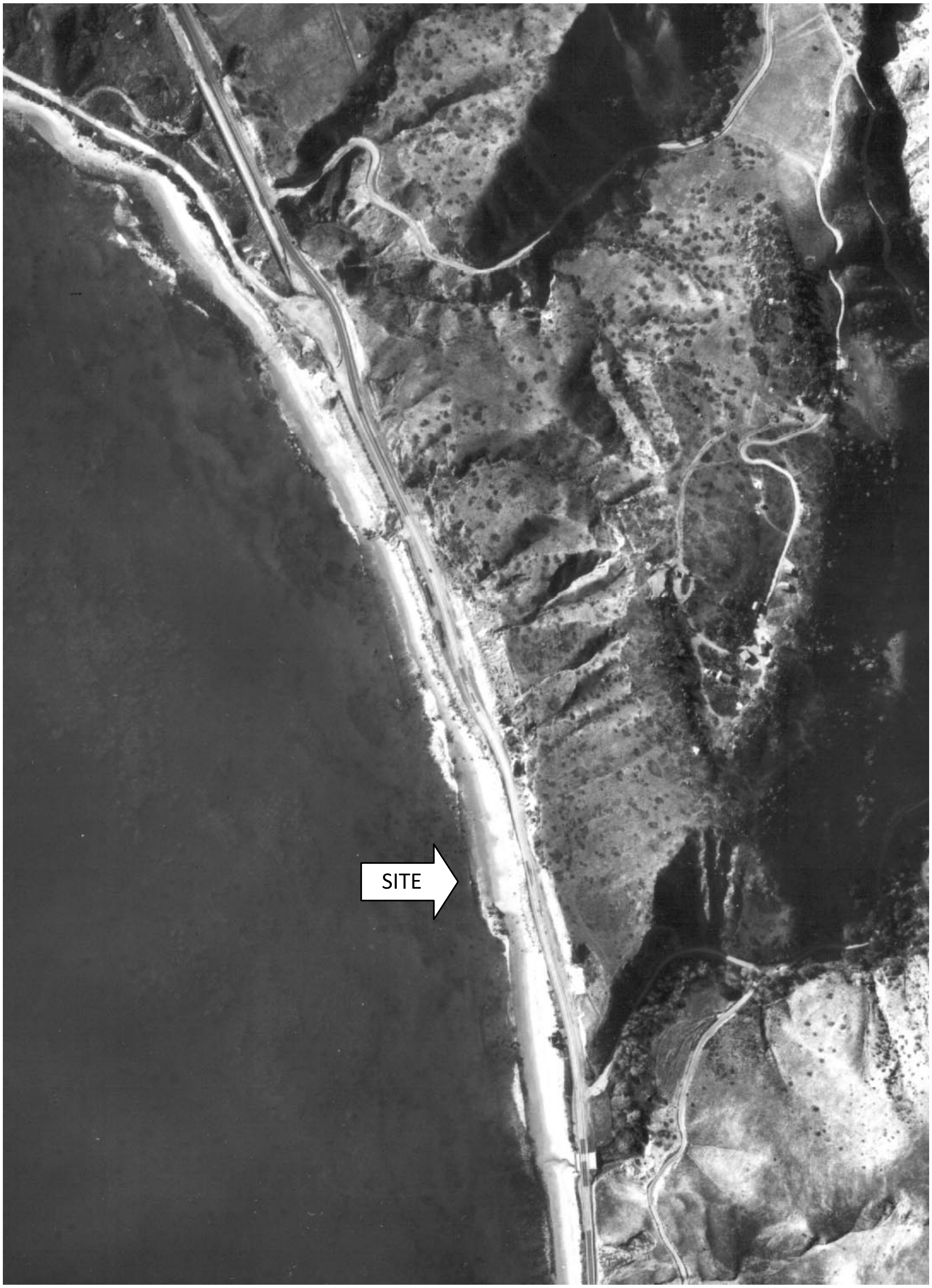
(Fairchild Collection, Whittier College, C-3814, 27, 12/22/1935)

The 1944 aerial photograph appears to depict the shoreline at the project site during the reconstruction of the PCH which is apparent due to the significant realignment of the roadway away from the shoreline to the west of the site near Latigo Shore. See Photograph 7. The roadway at the project site appears to have been widened and raised. This was identified in the 1944 aerial by what appears to be a cut slope extending into the hillside above the roadway and a fill slope on the ocean side of the PCH that extends to the beach. Construction activities had further modified the project site when the 1949 aerial was taken as shown in Photograph 8. A significant amount of fill is observed to have been placed shoreward of the highway at the project site, creating a wider bluff top between the highway and the beach. This work pushed the edge of bluff towards the ocean and narrowed the beach at the site. The 1959 aerial provided in Photograph 9 also shows the presence of the wider bluff between the PCH and the beach.

By comparing the current location of the edge of the bluff at the proposed project site with that observed in the 1949 and 1959 aerials, significant bluff erosion was identified. In order to attempt to quantify the amount of erosion that has occurred, the width of the bluff was measured in the 1949 aerial using the southern edge of PCH as a reference point. The 1959 aerial was not used as a dimensional reference since it is an oblique photograph. The bluff width from 1949 was then compared to the bluff width measured using the topographic surveys prepared for this project which were conducted in January 2004 and March 2012. Since the bluff width in 1949 was measured at approximately 133 feet and the current width was found to average approximately 75 feet, there appears to have been up to 58 feet of bluff erosion over the 63 year period. Thus, an average rate of bluff erosion of just less than one foot per year appears to have occurred. This average rate does not represent an annual rate of erosion, which is dependent upon seasonal storm and wave events and can result in varying amounts of bluff erosion on an annual basis. The average rate represents the amount of bluff erosion that could be expected over an extended period of time given similar weather and shoreline conditions that existed during the period of time the erosion was measured.

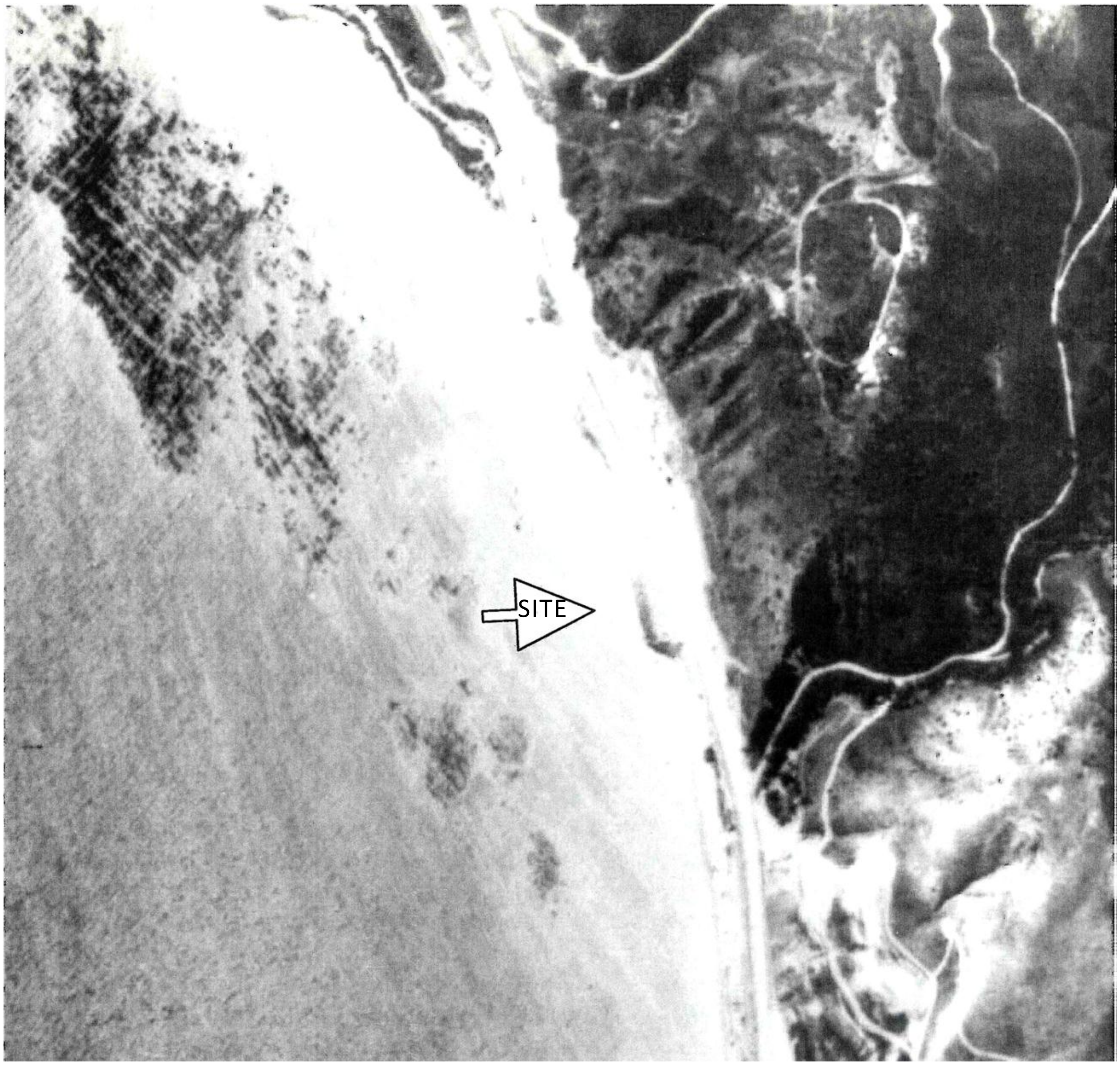
To evaluate the effect of this identified historical erosion on the proposed project site, the history of this shoreline and the mechanics of bluff erosion were considered. One item that needs to be understood is the effect of the fill placed at the project site after the expansion of the PCH that extended the edge of the bluff seaward. The widening of the bluff through the placement of fill moved the toe of the bluff seaward onto the beach to a lower elevation and increased the wave exposure and potential for bluff erosion. As previously discussed, this shoreline was used by Caltrans as a disposal site for landslide materials. The input of this material into the littoral drift (materials transported along the shoreline by wave action and currents) would have the effect of reducing the potential erosion in the area. The observation that bluff erosion continued in spite of the placement of the landslide material demonstrates the instability of the bluff after being extended seaward. Since deposition of the landslide material has been discontinued, concern for an increase in the potential for erosion was identified. However, as the extended bluff eroded and receded, the elevation of the toe of the bluff likely increased and the width of the beach also increased. These changes would result in an overall decrease in the potential for bluff erosion, but does not account for seasonal variations in storm and wave events nor does it account for future sea level rise. Assuming that the increased potential for erosion from the discontinued deposition of landslide material and continued sea level rise is offset by the decreased potential for erosion due to a wider beach and an increased toe of bluff elevation, the potential for continued bluff erosion at a rate similar to the one foot per year observed between 1949 and 2012 appears to be a reasonable assumption provided that the erosive nature of the soils comprising the bluff remain relatively constant.

Photograph 7: 1944 aerial depicting the project site during PCH expansion.



(Fairchild Collection, Whittier College, C-8666, 3:22, 1/8/1944)

Photograph 8: 1949 aerial depicting the project site after PCH expansion and fill created a wider bluff between PCH and the beach.



(Fairchild Collection, Whittier College, C-13775, J:19, 5/22/1949)

Photograph 9: **1959 aerial depicting the project site after PCH expansion and after seaward bluff extension.**

(Air Photo Archives, UCLA Dept. of Geology,E-17179,2/24/1959)

In order to further validate the estimated average erosion rate of one foot per year, a comparison of the location of the top of bluff between the 2004 and 2012 topographic surveys was performed. See Figure 5 for the location of the 2004 and existing top of bluff lines. Evaluation of the two bluff lines revealed varying levels of bluff erosion across the site with isolated locations were the appeared to have accreted (extended seaward). Variation in the amount of erosion is to be expected along a given shoreline particularly considering the varying site conditions (varying amounts of rock along beach, inconsistent bluff fill material, etc.) that exist at this site. However, inspection of the survey data at the locations that showed accretion revealed large gaps between survey points (and resulting triangulation of the surface) in these areas which appear to have resulted in an inaccurate representation of the top of bluff. Inspection of the bluff lines in areas where survey points are more closely aligned reveal that the bluff has eroded from 0 up to as much as 7 feet along some areas of the site. This indicates a bluff erosion rate of just less than one foot per year in some areas. Since these findings are consistent with the findings from the review of historical aerials, a bluff erosion rate of one foot per year has been determined to be an appropriate value for the site.

Tsunami Inundation

A tsunami is a wave, or series of waves, generated by an earthquake, landslide, volcanic eruption or even a large meteor hitting the ocean. Tsunamis occur when a significant mound or depression of water at the ocean surface creates a wave that moves away from the mound or depression in all directions. Tsunamis can travel at about 500 miles per hour. As the wave approaches land and the ocean shallows, the wave slows down to about 30 miles per hour and grows significantly in height (amplitude)[5]. Due to the length of tsunami waves, they do not resemble large breaking waves but actually resemble a large flood or surge.

In order to evaluate the potential impacts to the proposed improvements at Dan Blocker Beach – West, the Tsunami Inundation map for the area was obtained and reviewed. See Appendix E for the Tsunami Inundation Map for Dan Blocker Beach and the surrounding area. Review of the map indicates that the predicted tsunami inundation at the site would not extend across PCH but would terminate at the bluff along the site. Therefore, the affects of the tsunami are not expected to affect the upland improvements set back from the bluff. Inundation of the concrete ramp extending onto the beach should be anticipated which could result in localized scour around the structure as the tsunami rushes up the beach and recedes. Since the ramp structure design indicates that the concrete piers will be founded in bedrock, no structural damage is anticipated but replenishment of the scoured areas may be necessary to re-establish safe public access to the beach. Since the tsunami inundation is anticipated to extend to the bluff, saturation of the existing, unconsolidated bluff material could result in increased bluff erosion as a result of localized slumps or even more extensive landslides along the bluff. This could result in material being deposited on the ramp which will require removal and could impact the upland improvements along the bluff including the view areas.

Discussion

In order to evaluate the effect of the design run-up and the potential for bluff erosion on the proposed Dan Blocker Beach improvements, a plan view and sections were prepared. See Figures 5 and 6. As shown on these drawings, the predicted wave run-up extends to the toe of bluff along the proposed location for the improvements, exposing the bluff to erosion. Since the design survey does not depict a completely recessed profile, an even greater portion of the bluff would be exposed to wave attack and erosion as observed by Mr. Schumaker and illustrated by the LA County beach profile which depicts a more recessed profile. Mr. Schumaker also indicated that beach maintenance equipment cannot access this portion of shoreline due to the narrowness of the beaches and lack of access down the bluffs to the east and west of the site. This presents critical issues with respect to the maintenance of the proposed improvements which should be considered during their design. A brief discussion of the issues related to the planned improvements and public safety is provided below.

1. Parking Lot & Associated Bluff-Top Improvements

The bluff top improvements should be setback away from the edge of the bluff to extend their useful life. The amount of setback needed can be estimated using the average rate of bluff erosion for the shoreline of 1 foot per year. For example, a 10 year design life would require the improvements to be set back at least 10 feet depending on the improvement type. Foundations that require lateral support from surrounding soils will require an additional setback to accommodate the load path of the foundations. See Figure 5 for a depiction of a 10 foot setback. Since the erosion of the bluff is inconsistent (varies from year to year and also varies along the bluff), it is recommended that the setback be measured from the location along the bluff that currently has the most erosion and least setback distance. Since the current bluff erosion rate can only be estimated, it is recommended that the bluff erosion be monitored. This will allow the actual rate of erosion and the potential effects on the improvements to be tracked. If increased rates of erosion are identified, protective measures may be needed to reduce the erosion rate and maintain the integrity of the improvements and public safety. The protective measures could include armoring the toe of the bluff and bluff face with riprap. Since such a structure would result in impacts to the beach and bluff, permitting may be difficult and will require mitigation. Therefore, the feasibility of permitting protective measures should be evaluated through discussions with the permitting agencies prior to incorporating such measures into the planning (design life) of the improvements. Due to the ongoing bluff erosion and if protective measures are not feasible, the design life of the improvements will be limited by the existing width of the site which is constrained by the PCH.

2. Concrete Beach Access Ramp

As currently shown on the plans, the beach access ramp will be founded in an area of active wave run-up and along a bluff that appears to be actively eroding. This creates a challenging design situation due to the exposure of the structure's foundations to erosion and the potential for the beach profile elevation to fluctuate seasonally. In order to increase the design life of the proposed ramp, the following modifications should be considered. It is recommended that the ramp be constructed on deep foundations (piles or caissons) in order to withstand the varying sand levels that will exist on the beach due to beach recession and to accommodate the loss of soils surrounding the foundations due to the potential for continued erosion. If possible the deep foundations should be extended into the underlying bedrock (as illustrated on the current design plans) in order to prevent localized scour that could reach depths of five (5) feet, from affecting the stability of the structure.

In order to prevent fluctuations in the beach profile elevation at the bottom of the ramp from causing the termination of the ramp to be above beach level, the ramp should be extended downward into the existing beach. It is recommended that one additional ramp segment and landing be added to the structure which will extend the ramp almost 2.5 feet deeper into the beach. Since the more recessed LA County Beach Profile indicates a one (1) foot lower beach profile than the design survey, the extension will provide for an additional 1.5 feet of recession before renourishment of the beach or other measures would be necessary to reconnect the lower segment of the ramp to the beach. The alignment of the extension should be designed to parallel the beach contours or extend up the beach so that the embedment is not decreased by extending it down the beach profile. See Figure 5 for one alternative alignment that is aligned parallel to the beach contours.

Since the concrete access ramp is within the typical and extreme wave run-up area (see Figure 5), it will impede run-up propagation and has the potential to affect shoreline processes, including sediment transport and bluff erosion. Although sediment transport at the site will change directions depending upon the direction from which waves approach the beach, the orientation of the shoreline and predominant direction of wave approach (particularly large waves from the west and northwest) results in predominant sediment transport being to the east at the subject site. The presence of the structure within the run-up zone will typically impede sediment transport rates resulting in a build-up of material on the updrift side of the structure and loss of material on the downdrift side of the structure. Since the structure is to be pile supported, it would impede, but not block, transport across the site. However, inspection of the site and surrounding shoreline reveals that the condominium complex to the east of the project site extends further into beach profile and results in a more significant barrier to sediment transport since it is surrounded by concrete walls which prohibit transport beneath the pile supported complex. This determination was validated by review of more recent aerial photographs (compliments of Google Earth) that show accretion (build-up) of material on the updrift (west) side of the complex and erosion (narrower shoreline) on the downdrift (east) side of the complex. Inspection of the design water elevation line on the site survey for the project (see Figure 5) also supports this determination since the line depicts a much wider beach near the complex and the beach decreases in width as it extends to the west away from the complex. Further inspection of the beach width updrift of the complex reveals that the proposed ramp structure is in the shadow of the condominium complex's affect (wider beach) on the beach profile. Therefore, the ramp structure is not anticipated to have a significant effect on sediment transport processes along the shoreline.

Since the ramp structure is above the design water elevation which represents an extreme water level for the site, the structure will not be subject to direct wave action since it is located in the wave uprush zone. Therefore, the structure is not anticipated to result in significant wave refraction or deflection that could direct increased wave energy towards the adjoining shorelines. However, the structure will impede wave uprush which will reduce the potential for bluff erosion behind it. This could result in differential bluff erosion rates across the site which should be monitored throughout the life of the facility.

3. Public Safety

Some public safety concerns associated with this site have been identified during this evaluation. It is recommended that public safety issues also be evaluated and addressed as a part of the planning and design process for this site. Since the bluff consists of loose materials that appear to be actively eroding, the edge of the bluff top is unstable resulting in a landslide hazard. Signage and access barricades are recommended to warn people of this hazard and restrict access to the edge of the bluff top. This also presents a hazard along the toe of the bluff, particularly during periods of high tides and run-up or tsunami inundation that could result in bluff instability and landslides. Warning signs should also notify people of this hazard. The ability of wave run-up at this site to extend to the toe of bluff and past the concrete access ramp presents a risk to those on the beach since there would be nowhere to retreat in order to avoid the wave up-rush and the resulting rip current as the water rushes back offshore. Users should be cautioned to avoid the beach during high tides and large wave events.

4. Maintenance

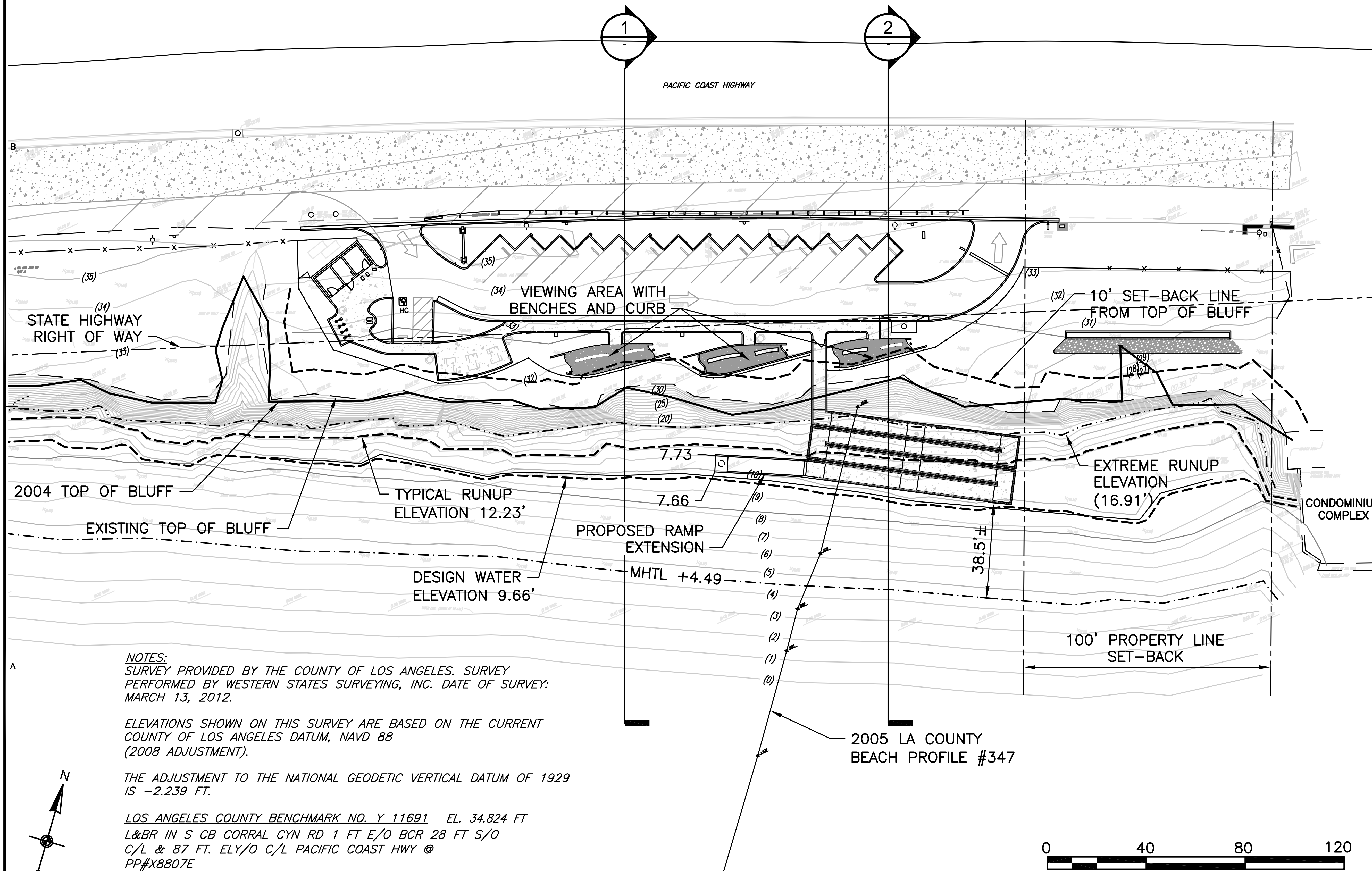
According to Wayne Shumaker's indication that the site cannot be reached by beach maintenance vehicles/equipment, maintaining the beach access ramp will be impaired. If the recommendation to extend the ramp beneath the beach surface is incorporated into the design, the frequency that equipment is needed to renourish the area around the ramp will be reduced. However, the means of filling scour pits around the structure including the ramp extension after significant run-up or tsunami events will need to be coordinated with Los Angeles County Department of Beaches and Harbors maintenance staff.

REFERENCES

1. Flick, R.E., 1998. Comparison of California Tides, Storm Surges, and Mean Sea Level During the El Nino Winters of 1982-83 and 1997-98: California Department of Boating and Waterways & Scripps Institute of Oceanography.
2. Committee on Sea Level Rise in California, Oregon, and Washington: Robert A. Dalrymple, Chair, 2012. Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future: National Research Council.
3. Unites States Army Corps of Engineers, 1984. Shore Protection Manual: Coastal Engineering Research Center.
4. Unites States Army Corps of Engineers, 2001. Coastal Engineering Manual: Coastal Engineering Research Center.
5. California Geological Survey, 2009. Tsunamis Note 55: State of California Department of Conservation.

Appendix A

Figure 5 - Site Plan & Figure 6 – Sections



NOTES:

SURVEY PROVIDED BY THE COUNTY OF LOS ANGELES. SURVEY PERFORMED BY WESTERN STATES SURVEYING, INC. DATE OF SURVEY: MARCH 13, 2012.

ELEVATIONS SHOWN ON THIS SURVEY ARE BASED ON THE CURRENT COUNTY OF LOS ANGELES DATUM, NAVD 88 (2008 ADJUSTMENT).

THE ADJUSTMENT TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 IS −2.239 FT.

LOS ANGELES COUNTY BENCHMARK NO. Y 11691 EL. 34.824 FT
L&BR IN S CB CORRAL CYN RD 1 FT E/O BCR 28 FT S/O C/L & 87 FT. ELY/O C/L PACIFIC COAST HWY @ PP#X8807E

MEAN HIGH TIDE LINE (MHTL) OF 4.49 FEET NAVD88 BASED ON 1983–2001 TIDAL EPOCH PER CALIFORNIA STATE LANDS COMMISSION.

G:\LB11\0023\Site\0023-C-Site Plan-Revised.dwg, Plotted: Sep 10, 2012 - 6:30pm

TranSystems
505 14th Street
Suite 1000
Oakland, California 94612
PHONE: 510-835-2671
FAX: 510-835-9839

CONSULTANTS

exeltech

DAN BLOCKER BEACH PARKING LOT
MALIBU, CALIFORNIA

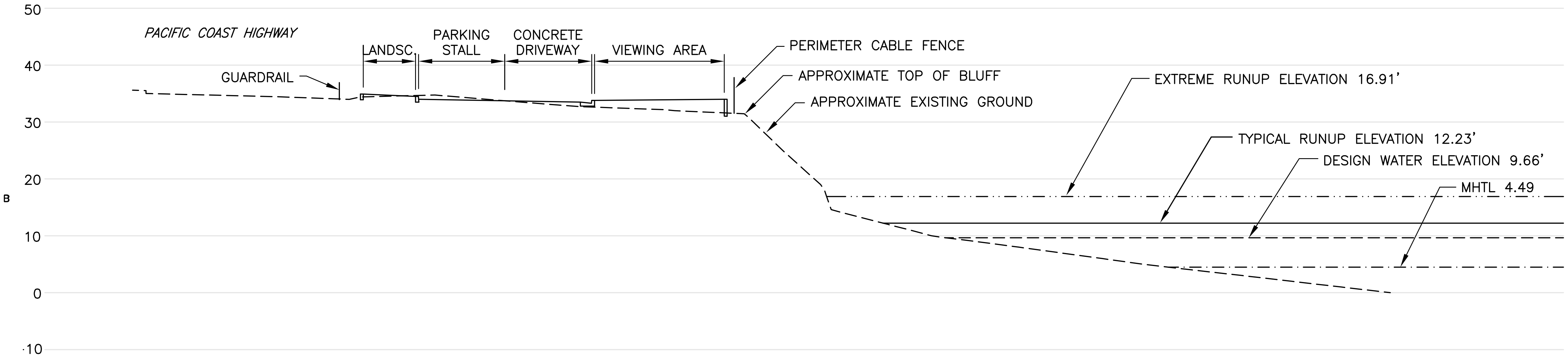
MARK	DATE	DESCRIPTION

PROJ NO: P506110023
SCALE: AS SHOWN
DATE: 9/10/2012
DESIGNED BY: L.A. COUNTY
DRAWN BY: J.S.Y.
CHECKED BY: G.P.M.

SHEET TITLE

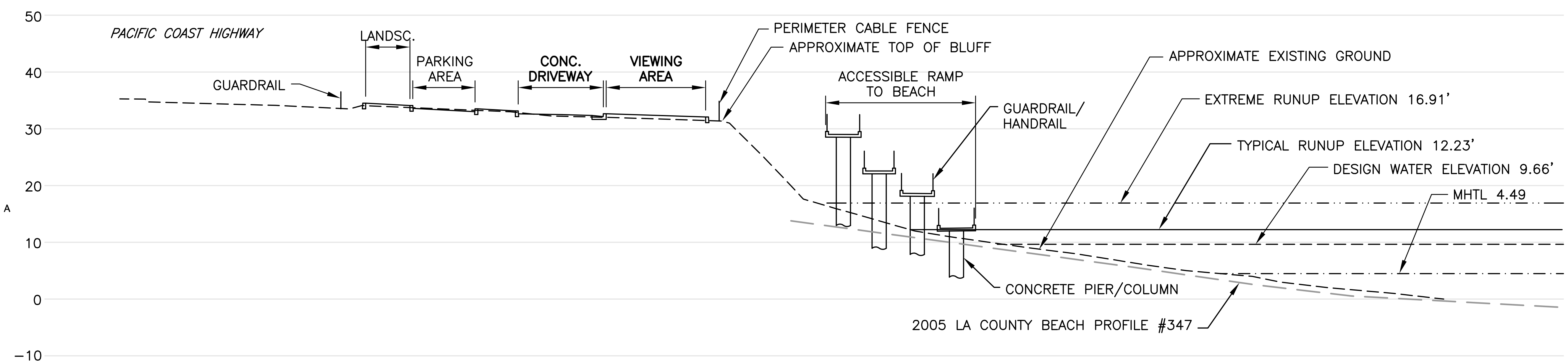
SITE PLAN

FIGURE 5



1 SECTION

SCALE: 1" = 20'



2 SECTION

SCALE: 1" = 20'

0 20 40 60

SCALE FEET

1" = 20'

TranSystems

505 14th Street
Suite 1000
Oakland, California 94612
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FAX: 510-835-9839

CONSULTANTS

exeltech

DAN BLOCKER BEACH PARKING LOT

MALIBU, CALIFORNIA

MARK	DATE	DESCRIPTION

PROJ NO: P506110023
SCALE: AS SHOWN
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DESIGNED BY: L.A. COUNTY
DRAWN BY: J.S.Y.
CHECKED BY: G.P.M.

SHEET TITLE

SECTIONS

FIGURE 6

Appendix B

California State Lands
Coastal Project Review Plan for Malibu

COASTAL PROJECT REVIEW PLAN

FOR MALIBU

In order for California State Lands Commission staff to analyze your coastal development project, we will need the following:

1. Brief project description including existing square footage and proposed square footage.

2. One legible, full-size copy***** of a plot plan, (not reduced copy) depicting the existing and proposed improvements with a stringline showing the most seaward extent of the structures on either side. The plan will show distances from property boundaries and monuments to existing structures, and ground contours with no less than two-foot contour intervals down to and including the mean high tide line (MHTL) elevation. The MHTL will be field-located to a vertical accuracy of +/- 0.1 foot; field shots used to generate the MHTL will be shown on the plot plan. All elevations and contour lines will be referenced to one of the following datums: National Geodetic Vertical Datum – 1929 (NGVD29), or the North American Vertical Datum 1988 (NAVD88). All MHTL's should be labeled with the survey date, datum and MHTL elevation. If possible, relate the MHTL to NAD83 California coordinates, identifying the control used and the coordinate epoch date. All plot plans should include the name of the Professional Land Surveyor or Survey Company responsible for the MHTL survey.

   Surveys displayed on the plot plan performed prior to 04/21/2003 should use the 1960 - 1978 tidal epoch data for Santa Monica (Published Bench Mark Sheet 9410840). The MHTL elevation at Santa Monica based on NGVD29, 1960 -1978 tidal epoch, is 1.96 feet.

   The MHTL elevation for surveys in the Malibu area based on the 1983-2001 tidal epoch is 2.06 feet NGVD29, or 4.49 feet NAVD88.

   Information on benchmarks in the Malibu area can be found at

   www.co-ops.nos.noaa.gov/benchmarks/9410840. Page 7 of the Published Benchmark Sheet for Station 941084 gives the web site for the Benchmark elevations relative to NAVD88 and NGVD29. Survey questions can be directed to Steve Lehman, Supervising Boundary Determination Officer at (916) 574-1832.

   Projects proposing construction along the seaward edge of the site must include a MHTL survey that was performed no more than 6 months prior to the date the request is submitted to the CSLC.

3. Current (with date and time) ground level photography depicting the project site and adjacent properties in relation to the shoreline. In addition, we require a duplicate set of photographs of the project site, marked to indicate the approximate location of the proposed development.

4. Include all surveys, plot plans and photos on CD in PDF format and AutoCAD, if available.

5. If available, submit the following items to assist staff in a determination of State interest:

    - Ground photos showing the site and structure at various times of the year.

    - Survey data and/or mapping of water lines over a period of years both prior and subsequent to known artificial changes such as groins, piers, or seawalls. This data may be available through the local public works department.

Please submit the above in hard copy **and**, if available, in digital format to:

California State Lands Commission

100 Howe Avenue, Suite 100-South

Sacramento, CA 95825-8202

Attn: Drew Simpkin

Email address: drew.simpkin@slc.ca.gov

You should be aware that the above information will enable staff to make a preliminary determination only. Additional information may be requested to complete the initial review process.

Please contact Drew Simpkin, Public Land Management Specialist at (916) 574-2275, if you have further questions.

***IF AN APPLICATION HAS NOT BEEN FILED WITH THE CALIFORNIA COASTAL COMMISSION, SUBMIT TWO FULL SIZE COPIES.**

Appendix C

Santa Monica (9410840) Bench Mark Sheet
&
COOPS/NGS Elevation Data Graphic

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service

Datums Page

PUBLICATION DATE: 07/24/1991
SUPERCEDED DATE: 04/21/2003

Station ID: 9410840
Name: SANTA MONICA, PACIFIC OCEAN CALIFORNIA
NOAA Chart: 18744
USGS Quad: TOPANGA

Latitude: 34° 0.5' N
Longitude: 118° 30.0' W

To reach the tidal bench marks from the Interstate Highway 10 (Santa Monica Freeway) exit on Interstate 40S (San Diego Freeway), proceed west on Santa Monica Freeway to the Lincoln Avenue (U.S. Highway 1) exit, turn right and go NW on Lincoln Avenue two blocks to Colorado Avenue, turn left on Colorado Avenue and go SW until Colorado Avenue dead ends at Santa Monica Municipal Pier. The bench marks are near Colorado Avenue and in Palisades Park along Ocean Boulevard. The tide gauge and staff are on the offshore end of the pier.

T I D A L B E N C H M A R K S

PRIMARY BENCH MARK STAMPING: TIDAL BM 12 1974

MONUMENTATION: Survey Disk
AGENCY:
SETTING CLASSIFICATION: Curb

VM#: 929
PID#: EW6840

The bench mark is set in the south curb of the westbound access road to U.S. Highway 1, 79 feet (24 m) NW of the centerline of the Colorado Avenue overpass, 13 feet (4 m) SW of the centerline of the access road, 0.7 foot (0.2 m) north of the south end of a concrete guardrail, and 0.6 foot (0.2 m) above street level.

BENCH MARK STAMPING: 3 1940

MONUMENTATION: Survey Disk
AGENCY:
SETTING CLASSIFICATION: Curb

VM#: 924
PID#: EW1586

The primary bench mark is set in the NW curb on the west end of the Colorado Avenue bridge, SW of Ocean Avenue where the bridge connects with Santa Monica Municipal Pier, 632 feet (193 m) SW of the centerline of Ocean Avenue, and 9.5 feet (2.9 m) east of the west end of the bridge.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service

PUBLICATION DATE: 07/24/1991

Station ID: 9410840 **SUPERCEDED DATE: 04/21/2003**
Name: SANTA MONICA, PACIFIC OCEAN CALIFORNIA
NOAA Chart: 18744 **Latitude: 34° 0.5' N**
USGS Quad: TOPANGA **Longitude: 118° 30.0' W**

T I D A L   B E N C H   M A R K S

BENCH MARK STAMPING: 2 1936

MONUMENTATION: Survey Disk VM#: 925
AGENCY: PID#: EW1597
SETTING CLASSIFICATION: Buttress

The bench mark is set vertically in the west face of the east buttress at the north side of the east entrance to the highway tunnel leading under the intersection of Colorado and Ocean Avenues, at the SE corner of the intersection of Colorado and Ocean Avenues, directly across the street from the extended Colorado Avenue bridge leading to the municipal pier, and 1.0 foot (0.3 m) above the sidewalk level of Colorado Avenue.

BENCH MARK STAMPING: 4 1940

MONUMENTATION: Survey Disk VM#: 927
AGENCY: PID#: EW1591
SETTING CLASSIFICATION: Curb

The bench mark is set in the SW curb of Appian Way at the beginning of the curve on Appian Way, near the point where Appian Way passes under the Colorado Avenue bridge, 68.5 feet (20.9 m) NW of the centerline of the Colorado Avenue bridge, and 12.7 feet (3.9 m) SW of the centerline of Appian Way.

BENCH MARK STAMPING: 5 1941

MONUMENTATION: Survey Disk VM#: 928
AGENCY: PID#: EW1593
SETTING CLASSIFICATION: Concrete Wall

The bench mark is set in the SW concrete wall around a flower bed on the NW side of the SW entrance of Santa Monica City Hall, 23.0 feet (7.0 m) west of the center of the entrance driveway at Santa Monica City Hall, 8.3 feet (2.5 m) NW of the SE end of the wall around the flower bed, and 2.5 feet (0.8 m) above the sidewalk.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service

		PUBLICATION DATE:	07/24/1991
Station ID:	**9410840**	**SUPERCEDED DATE:**	**04/21/2003**
Name:	**SANTA MONICA, PACIFIC OCEAN CALIFORNIA**		
NOAA Chart:	**18744**	**Latitude:**	**34° 0.5' N**
USGS Quad:	**TOPANGA**	**Longitude:**	**118° 30.0' W**

T I D A L B E N C H M A R K S

BENCH MARK STAMPING: 0840 L 1977

MONUMENTATION:	Survey Disk	VM#:	932
AGENCY:		PID#:	EW6838
SETTING CLASSIFICATION:	Copper-clad Steel Rod		

The bench mark is set in Palisades Park, 135 feet (41 m) west of the centerline of Ocean Avenue, 99.5 feet (30.3 m) SW of light standard #1530, 17.3 feet (5.3 m) east of a fence at the edge of a bluff, and 2.5 feet (0.8 m) ENE of a metal witness post. The bench mark is crimped to a copper-clad steel rod driven 23 feet (7 m), and encased in a 4-inch PVC pipe.

BENCH MARK STAMPING: 0840 M 1977

MONUMENTATION:	Survey Disk	VM#:	933
AGENCY:		PID#:	EW6836
SETTING CLASSIFICATION:	Copper-clad Steel Rod		

The bench mark is set in the park, 85 feet (26 m) west of the centerline of Ocean Avenue, 43.3 feet (13.2 m) south of light standard #1402, 26.7 feet (8.1 m) east of the Will Rogers Highway monument, and 1.0 foot (0.3 m) west of a metal witness post. The bench mark is crimped to a copper-clad steel rod driven 48 feet (15 m), and encased in a 4-inch PVC pipe extending 0.3 foot (0.1 m) above the mark.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service

PUBLICATION DATE: 07/24/1991

Station ID: 9410840 **SUPERCEDED DATE: 04/21/2003**
Name: SANTA MONICA, PACIFIC OCEAN CALIFORNIA
NOAA Chart: 18744 **Latitude: 34° 0.5' N**
USGS Quad: TOPANGA **Longitude: 118° 30.0' W**

T I D A L B E N C H M A R K S

BENCH MARK STAMPING: SAWTELLE A11A 1936 RE 2177

MONUMENTATION: Survey Disk VM#: 934
AGENCY: PID#: EW1580
SETTING CLASSIFICATION: Concrete Monument

The bench mark is set in the top of a concrete monument set flush in the pavement of a small walkway in the park near the intersection of Ocean and Arizona Avenues, 127.4 feet (38.8 m) SE of the extended centerline of Arizona Avenue, 46.4 feet (14.1 m) SW of the SW curb of Ocean Avenue, and 44.5 feet (13.6 m) SW of light pole #1814, and 3.7 feet (1.1 m) SW of the NE edge of the walkway.

BENCH MARK STAMPING: 0840 N 1990

MONUMENTATION: Survey Disk VM#: 935
AGENCY: PID:
SETTING CLASSIFICATION: Concrete Slab

The bench mark is set in the NE corner of a 7 x 6-foot (2 x 2 m) concrete slab that supports a cannon in the park, about 200 feet (61 m) NW of the centerline of the Colorado Avenue bridge, 42 feet (13 m) SE of a drinking fountain, 39 feet (12 m) NE of a concrete fence that lines the edge of the park, 0.5 foot (0.2 m) NE of the NE edge of the cannon, and 2 feet (1 m) above ground level.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service

PUBLICATION DATE: 07/24/1991
SUPERCEDED DATE: 04/21/2003

Station ID: 9410840
Name: SANTA MONICA, PACIFIC OCEAN CALIFORNIA
NOAA Chart: 18744
USGS Quad: TOPANGA
Latitude: 34° 0.5' N
Longitude: 118° 30.0' W

T I D A L   D A T U M S

Tidal datums at SANTA MONICA, PACIFIC OCEAN based on:

LENGTH OF SERIES:	14 YEARS
TIME PERIOD:	1976-1989
TIDAL EPOCH:	1960-1978
CONTROL TIDE STATION:	9410660 LOS ANGELES

Elevations of tidal datums referred to Mean Lower Low Water (MLLW), in FEET:

HIGHEST OBSERVED WATER LEVEL (11/30/1982)		=	8.63
MEAN HIGHER HIGH WATER	MHHW	=	5.49
MEAN HIGH WATER	MHW	=	4.73
MEAN TIDE LEVEL	MTL	=	2.84
* NATIONAL GEODETIC VERTICAL DATUM	NGVD29	=	2.77
MEAN LOW WATER	MLW	=	0.95
MEAN LOWER LOW WATER	MLLW	=	0.00
LOWEST OBSERVED WATER LEVEL (12/17/1933)		=	-2.70

* NGVD reference based on elevations published in Quad L24301, 1980, and NOS leveling of 1990.

North American Vertical Datum (NAVD88)

Bench Mark Elevation Information — In FEET above:

Stamping or Designation	MLLW	MHW
TIDAL BM 12 1974	47.11	42.38
3 1940	25.69	20.96
2 1936	61.50	56.77
4 1940	28.35	23.62
5 1941	66.84	62.11
0840 L 1977	62.67	57.94
0840 M 1977	72.99	68.26
SAWTELLE A11A 1936 RE 2177	80.40	75.67
0840 N 1990	62.81	58.08

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NOAA Chart: 18744
USGS Quad: TOPANGA
Latitude: 34° 0.5' N
Longitude: 118° 30.0' W

D E F I N I T I O N S

Mean Sea Level (MSL) is a tidal datum determined over a 19-year National Tidal Datum Epoch. It pertains to local mean sea level and should not be confused with the fixed datums of North American Vertical Datum of 1988 (NAVD88).

NAVD88 is a fixed datum derived from a simultaneous, least squares, minimum constraint adjustment of Canadian/Mexican/United States leveling observations. Local mean sea level observed at Father Point/Rimouski, Canada was held fixed as the single initial constraint. NAVD88 replaces NGVD29 as the national standard geodetic reference for heights. Bench mark elevations relative to NAVD88 are available from NGS through the World Wide Web at National Geodetic Survey.

NGVD29 is a fixed datum adopted as a national standard geodetic reference for heights but is now considered superseded. NGVD29 is sometimes referred to as Sea Level Datum of 1929 or as Mean Sea Level on some early issues of Geological Survey Topographic Quads. NGVD29 was originally derived from a general adjustment of the first-order leveling networks of the U.S. and Canada after holding mean sea level observed at 26 long term tide stations as fixed. Numerous local and wide-spread adjustments have been made since establishment in 1929. Bench mark elevations relative to NGVD29 are available from the National Geodetic Survey (NGS) data base via the World Wide Web at National Geodetic Survey.

NAVD88 and NGVD29 are fixed geodetic datums whose elevation relationships to local MSL and other tidal datums may not be consistent from one location to another.

The Vertical Mark Number (VM#) and PID# shown on the bench mark sheet are unique identifiers for bench marks in the tidal and geodetic databases, respectively. Each bench mark in either database has a single, unique VM# and/or PID# assigned. Where both VM# and PID# are indicated, both tidal and geodetic elevations are available for the bench mark listed.

The NAVD88 elevation is shown on the Elevations of Tidal Datums Table Referred to MLLW only when two or more of the bench marks listed have NAVD88 elevations. The NAVD88 elevation relationship shown in the table is derived from an average of several bench mark elevations relative to tide station datum. As a result of this averaging, NAVD88 bench mark elevations computed indirectly from the tidal datums elevation table may differ slightly from NAVD88 elevations listed for each bench mark in the NGS database.

Elevation Information

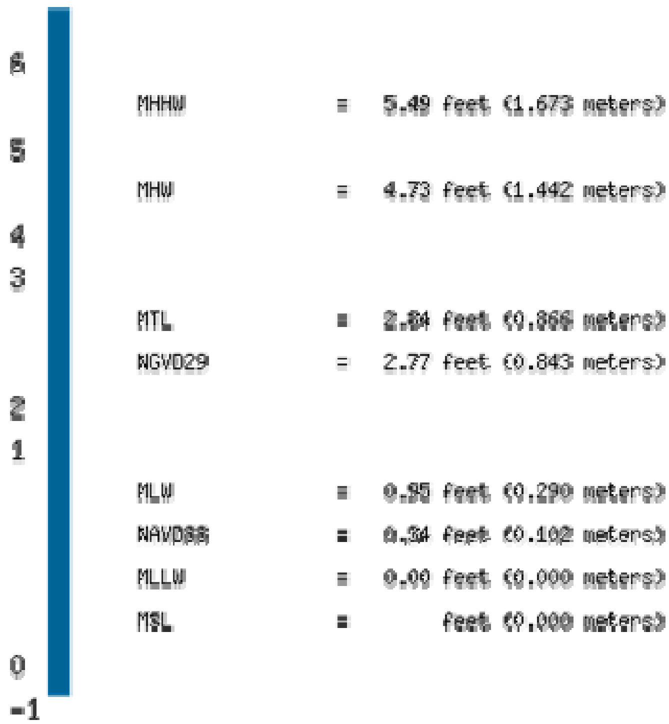
PID: EW6840

VM: 929

Station ID: 9410840

Epoch: 1960-1978

Date: Tue Jun 5 13:25:37 EDT 2012



The NAVD 88 and the NGVD 29 elevations related to MLLW were computed from Bench Mark, 941 0840 TIDAL 12, at the station.

Displayed tidal datums are Mean Higher High Water(MHHW), Mean High Water (MHW), Mean Tide Level(MTL), Mean Sea Level (MSL), Mean Low Water(MLW), and Mean Lower Low Water(MLLW) referenced on 1960-1978 Epoch.

Appendix D

Shore Protection Manual

Figures 7-2, 7-3 & 7-11

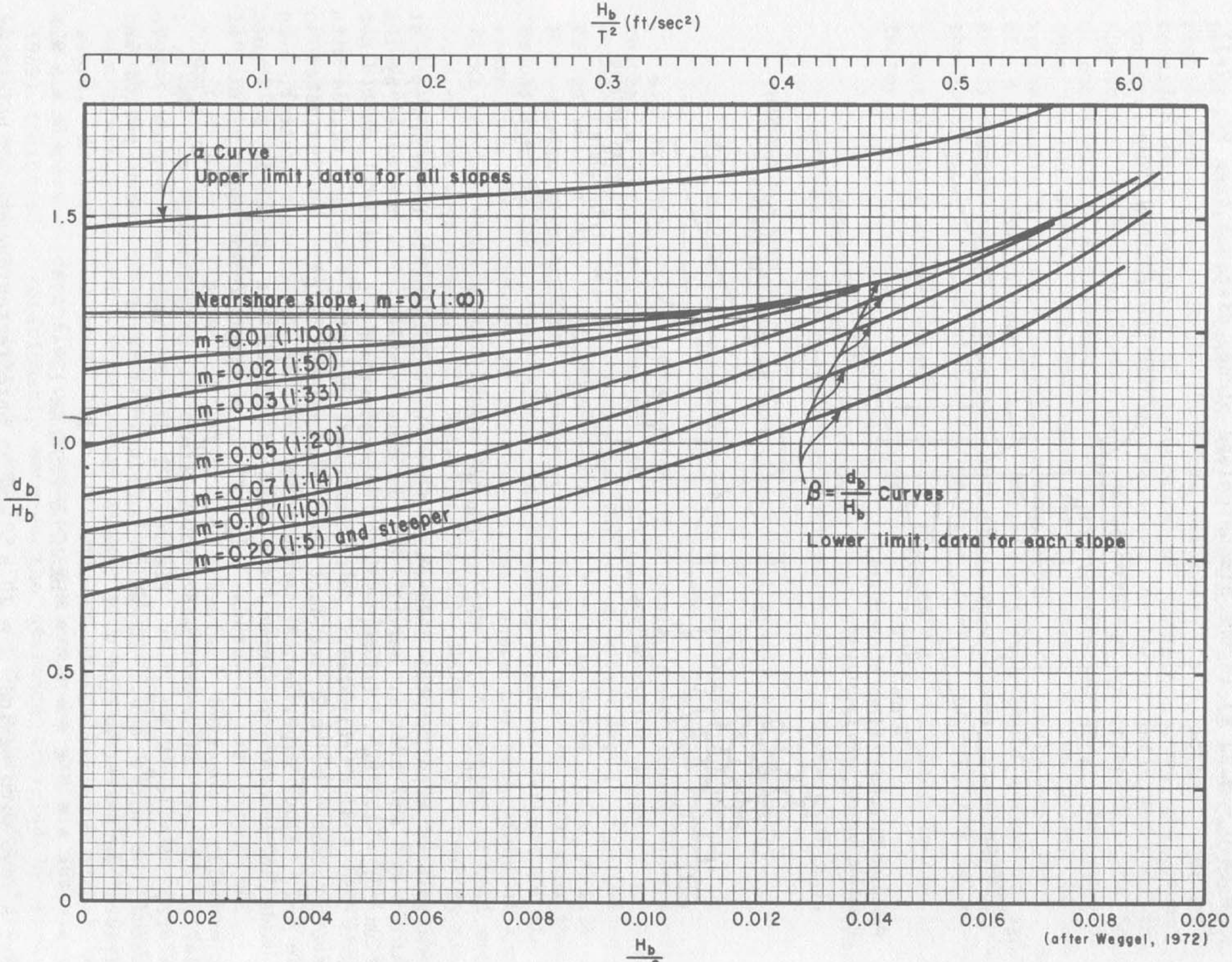


Figure 7-2. α and β versus H /gT^2 .

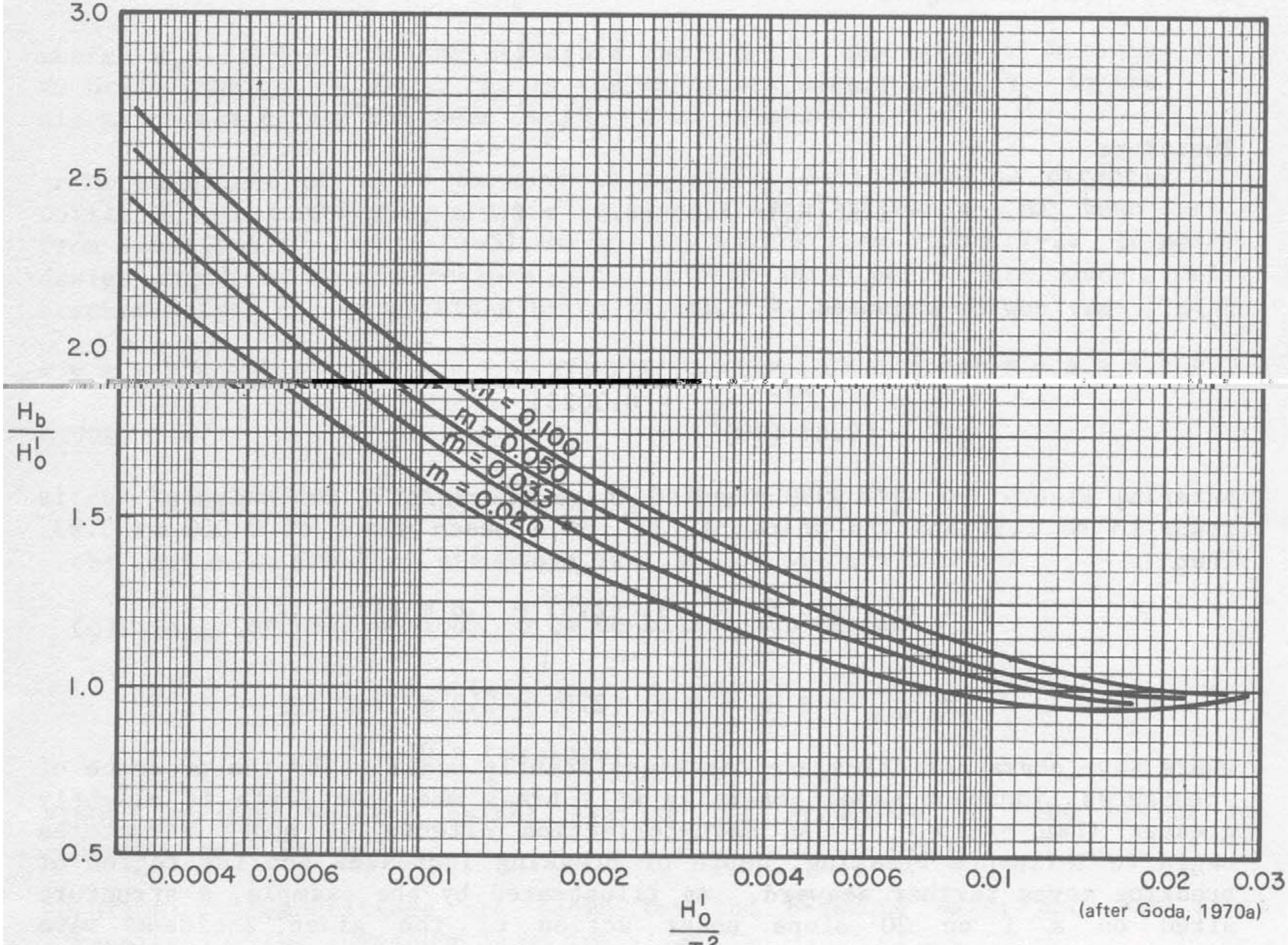


Figure 7-3. Breaker height index H_b/H'_o versus deepwater wave steepness H'_o/gT^2 .

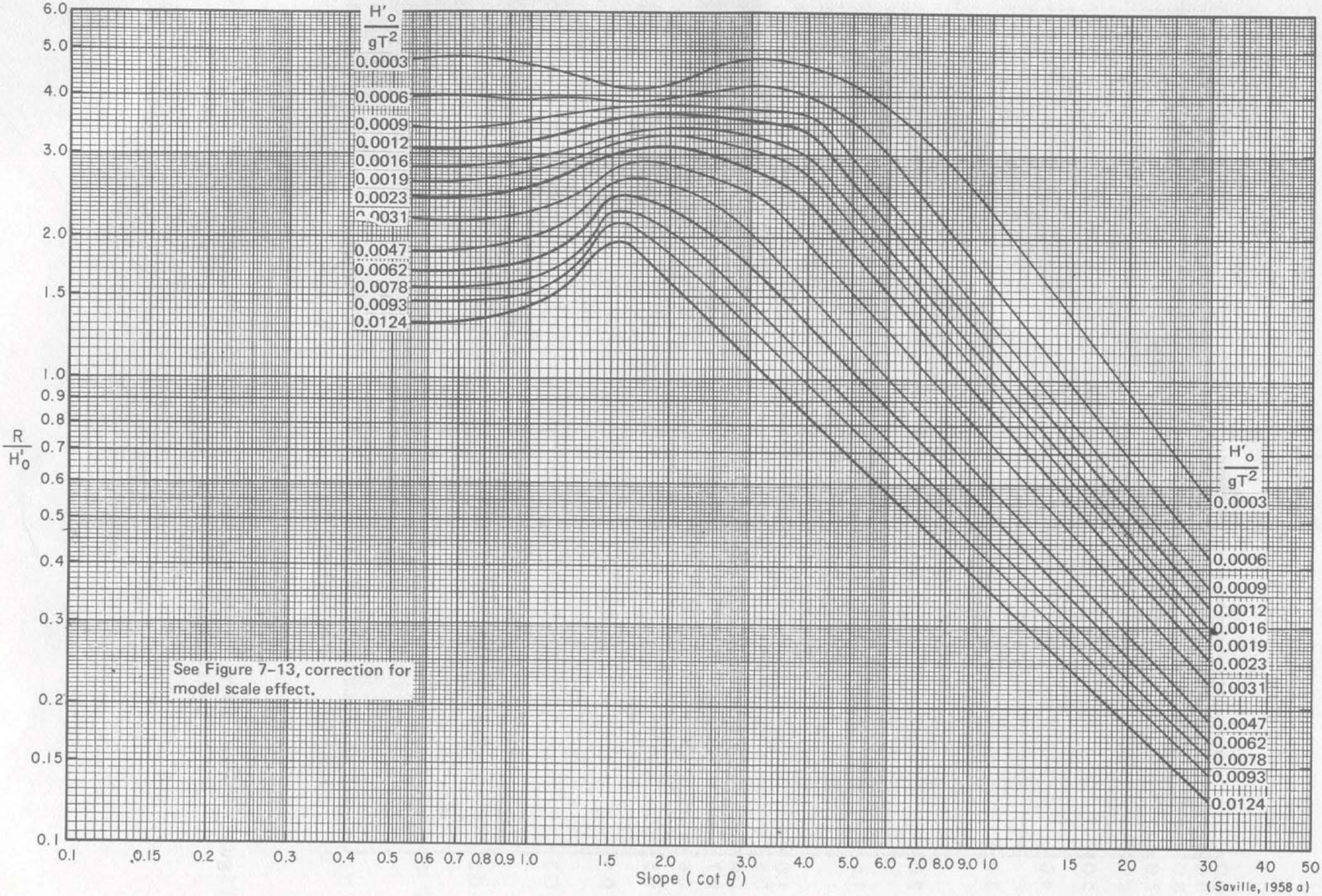


Figure 7-11. Wave runup on smooth, impermeable slopes when $d_s/H'_o \approx 2.0$.

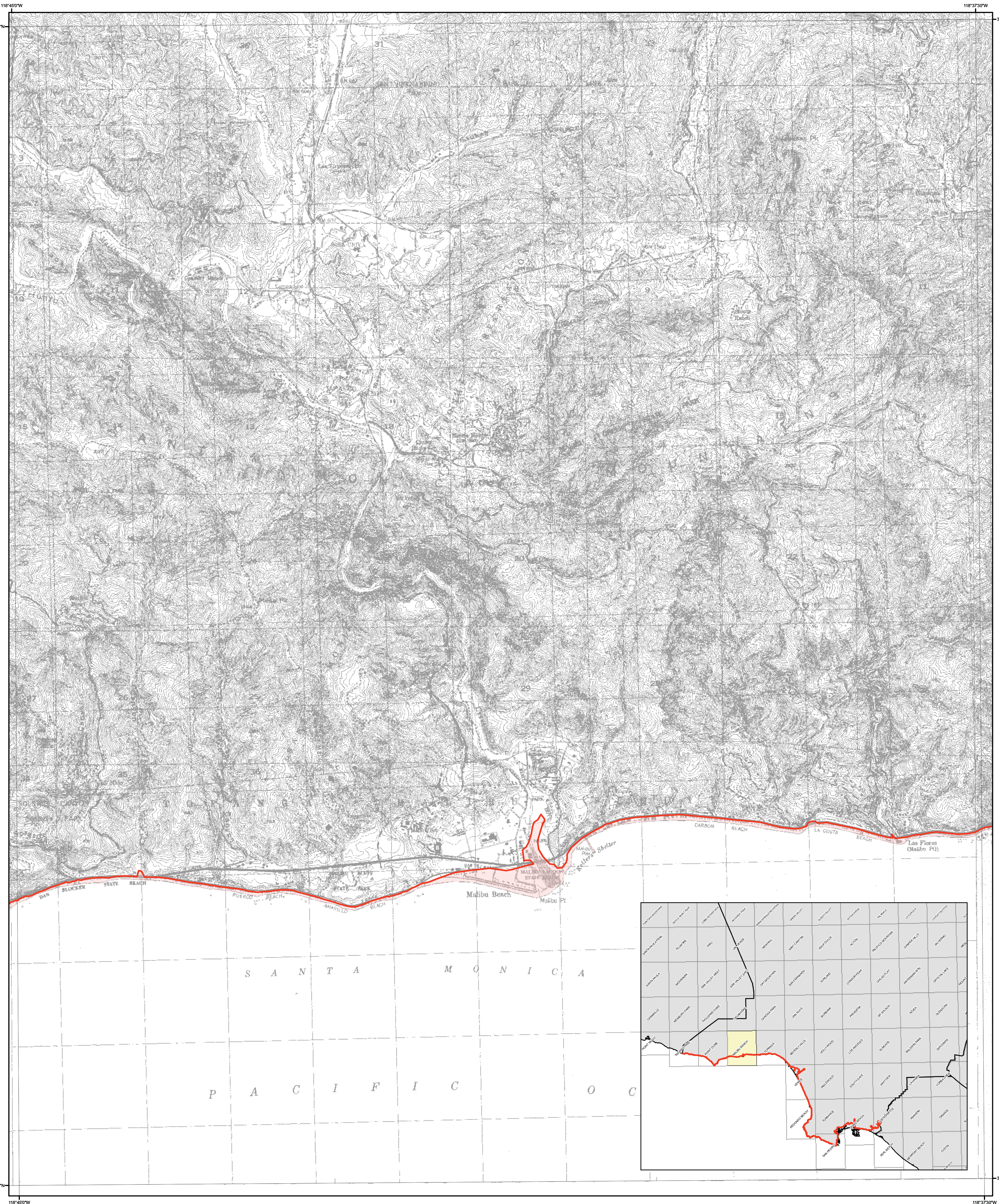
Appendix E

Tsunami Inundation Map

California Emergency Management Agency
California Geological Survey
University of Southern California

Tsunami Inundation Map for Emergency Planning
Malibu Beach Quadrangle

State of California
County of Los Angeles



METHOD OF PREPARATION

Initial tsunami modeling was performed by the University of Southern California (USC) Tsunami Research Center funded through the California Emergency Management Agency (CalEMA) by the National Tsunami Hazard Mitigation Program. The tsunami modeling process utilized the MOST (Method of Splitting Tsunamis) computational program (Version 0), which allows for wave evolution over a variable bathymetry and topography used for the inundation mapping (Titov and Gonzalez, 1997; Titov and Synolakis, 1998).

The bathymetric/topographic data that were used in the tsunami models consist of a series of nested grids. Near-shore grids with a 3 arc-second (75- to 90-meters) resolution or higher, were adjusted to "Mean High Water" sea-level conditions, representing a conservative sea level for the intended use of the tsunami modeling and mapping.

A suite of tsunami source events was selected for modeling, representing realistic local and distant earthquakes and hypothetical extreme undersea, near-shore landslides (Table 1). Local tsunami sources that were considered include offshore reverse-thrust faults, restraining bends on strike-slip fault zones and large submarine landslides capable of significant seafloor displacement and tsunami generation. Distant tsunami sources that were considered include great subduction zone events that are known to have occurred historically (1960 Chile and 1964 Alaska earthquakes) and others which can occur around the Pacific Ocean "Ring of Fire."

In order to enhance the result from the 75- to 90-meter inundation grid data, a method was developed utilizing higher-resolution digital topographic data (3- to 10-meters resolution) that better defines the location of the maximum inundation line (U.S. Geological Survey, 1993; Intermap, 2003; NOAA, 2004). The location of the enhanced inundation line was determined by using digital imagery and terrain data on a GIS platform with consideration given to historic inundation information (Lander, et al., 1993). This information was verified, where possible, by field work coordinated with local county personnel.

The accuracy of the inundation line shown on these maps is subject to limitations in the accuracy and completeness of available terrain and tsunami source information, and the current understanding of tsunami generation and propagation phenomena as expressed in the models. Thus, although an attempt has been made to identify a credible upper bound to inundation at any location along the coastline, it remains possible that actual inundation could be greater in a major tsunami event.

This map does not represent inundation from a single scenario event. It was created by combining inundation results for an ensemble of source events affecting a given region (Table 1). For this reason, all of the inundation region in a particular area will not likely be inundated during a single tsunami event.

References:

Intermap Technologies, Inc., 2003, Intermap product handbook and quick start guide: Intermap NEXTmap document on 5-meter resolution data, 112 p.

Lander, J.F., Lockridge, P.A., and Kozuch, M.J., 1993, Tsunamis Affecting the West Coast of the United States 1806-1992: National Geophysical Data Center Key to Geophysical Record Documentation No. 29, NOAA, NESDIS, NGDC, 242 p.

National Atmospheric and Oceanic Administration (NOAA), 2004, Interferometric Synthetic Aperture Radar (IfSAR) Digital Elevation Models from GeoSAR platform (EarthData): 3-meter resolution data.

Titov, V.V., and Gonzalez, F.I., 1997, Implementation and Testing of the Method of Tsunami Splitting (MOST): NOAA Technical Memorandum ERL PMEL – 112, 11 p.

Titov, V.V., and Synolakis, C.E., 1998, Numerical modeling of tidal wave runup: Journal of Waterways, Port, Coastal and Ocean Engineering, ASCE, 124 (4), pp 157-171.

U.S. Geological Survey, 1993, Digital Elevation Models: National Mapping Program, Technical Instructions, Data Users Guide 5, 48 p.

TSUNAMI INUNDATION MAP FOR EMERGENCY PLANNING

State of California ~ County of Los Angeles

MALIBU BEACH QUADRANGLE

March 1, 2009

SCALE 1:24,000

0.5 0.25 0 0.5 1 Miles

1,000 500 0 1,000 2,000 3,000 4,000 5,000 Feet

0.5 0.25 0 0.5 1 Kilometers

Table 1: Tsunami sources modeled for the Los Angeles County coastline.

Sources (M = moment magnitude used in modeled event)		Areas of Inundation Map Coverage and Sources Used		
		Malibu	Santa Monica	Los Angeles Harbor
Local Sources	Anacapa-Dume Fault	X	X	
	Catalina Fault	X	X	X
	Channel Island Thrust Fault		X	
	Newport-Inglewood Fault			X
	Santa Monica Fault	X	X	
	Palos Verdes Landslide #1		X	X
	Palos Verdes Landslide #2			X
Distant Sources	Cascadia Subduction Zone #2 (M9.2)		X	X
	Central Aleutians Subduction Zone#1 (M8.9)		X	X
	Central Aleutians Subduction Zone#2 (M8.9)		X	X
	Central Aleutians Subduction Zone#3 (M9.2)	X	X	X
	Chile North Subduction Zone (M9.4)	X	X	X
	1960 Chile Earthquake (M9.3)		X	X
	1964 Alaska Earthquake (M9.2)	X	X	X
	Japan Subduction Zone #2 (M8.8)		X	X
	Kuril Islands Subduction Zone #2 (M8.8)		X	X
	Kuril Islands Subduction Zone #3 (M8.8)		X	X
	Kuril Islands Subduction Zone #4 (M8.8)		X	X

Cal EMA California Emergency Management Agency

CGS California Geological Survey

USC University of Southern California

MAP EXPLANATION

Tsunami Inundation Line

Tsunami Inundation Area

PURPOSE OF THIS MAP

This tsunami inundation map was prepared to assist cities and counties in identifying their tsunami hazard. It is intended for local jurisdictional, coastal evacuation planning uses only. This map, and the information presented herein, is not a legal document and does not meet disclosure requirements for real estate transactions nor for any other regulatory purpose.

The inundation map has been compiled with best currently available scientific information. The inundation line represents the maximum considered tsunami runup from a number of extreme, yet realistic, tsunami sources. Tsunamis are rare events; due to a lack of known occurrences in the historical record, this map includes no information about the probability of any tsunami affecting any area within a specific period of time.

Please refer to the following websites for additional information on the construction and/or intended use of the tsunami inundation map:

State of California Emergency Management Agency, Earthquake and Tsunami Program:
http://www.oes.ca.gov/WebPage/oeswebsite.nsf/Content/B1EC51BA215931768825741F005E8D80?OpenDocument

University of Southern California – Tsunami Research Center:
http://www.usc.edu/dept/tsunamis/2005/index.php

State of California Geological Survey Tsunami Information:
http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/index.htm

National Oceanic and Atmospheric Agency Center for Tsunami Research (MOST model):
http://nctr.pmel.noaa.gov/time/background/models.html

MAP BASE

Topographic base maps prepared by U.S. Geological Survey as part of the 7.5-minute Quadrangle Map Series (originally 1:24,000 scale). Tsunami inundation line boundaries may reflect updated digital orthophotographic and topographic data that can differ significantly from contours shown on the base map.

DISCLAIMER

Appendix VII. –
Air Quality Worksheets (2012)

7/9/2012 11:24:46 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\pelletierga\My Documents\Projects\Dan Blocker\URBEMIS\Dan Blocker_revised.urb924

Project Name: Dan Blocker Beach Project

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

7/9/2012 11:24:46 AM

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (tons/year unmitigated)	0.18	1.05	0.95	0.00	0.10	0.08	0.18	0.02	0.07	0.09	161.41
2013 TOTALS (tons/year mitigated)	0.18	0.92	0.95	0.00	0.05	0.02	0.08	0.01	0.02	0.03	161.41
Percent Reduction	0.00	11.93	0.00	0.00	46.93	72.23	57.64	46.11	72.33	66.05	0.00

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.06	0.00	0.28	0.00	0.00	0.00	0.51

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.25	0.38	3.10	0.00	0.68	0.13	391.99

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.31	0.38	3.38	0.00	0.68	0.13	392.50

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

7/9/2012 11:24:46 AM

2013	0.18	1.05	0.95	0.00	0.10	0.08	0.18	0.02	0.07	0.09	161.41
Demolition 02/01/2013-02/28/2013	0.01	0.08	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.34
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.08	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.41
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Fine Grading 03/01/2013-03/31/2013	0.02	0.11	0.07	0.00	0.10	0.01	0.11	0.02	0.01	0.03	13.39
Fine Grading Dust	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.02	0.11	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	12.41
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98
Asphalt 04/01/2013-05/06/2013	0.03	0.19	0.15	0.00	0.00	0.02	0.02	0.00	0.01	0.01	22.51
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.03	0.19	0.12	0.00	0.00	0.02	0.02	0.00	0.01	0.01	17.70
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
Paving Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44
Building 05/07/2013-09/30/2013	0.13	0.67	0.68	0.00	0.00	0.05	0.05	0.00	0.04	0.05	115.17
Building Off Road Diesel	0.11	0.50	0.41	0.00	0.00	0.04	0.04	0.00	0.04	0.04	54.11
Building Vendor Trips	0.01	0.15	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.14
Building Worker Trips	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.93

Phase Assumptions

Phase: Demolition 2/1/2013 - 2/28/2013 - Clear and Grub

Building Volume Total (cubic feet): 0

7/9/2012 11:24:46 AM

Building Volume Daily (cubic feet): 0

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Fine Grading 3/1/2013 - 3/31/2013 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 1.92

Maximum Daily Acreage Disturbed: 0.48

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 4/1/2013 - 5/6/2013 - Default Paving Description

Acres to be Paved: 0.48

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

1 Pressure Washers (1 hp) operating at a 0.6 load factor for 8 hours per day

1 Pumps (53 hp) operating at a 0.74 load factor for 2 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

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Phase: Building Construction 5/7/2013 - 9/30/2013 - Default Building Construction Description

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

7/9/2012 11:24:46 AM

2013	0.18	0.92	0.95	0.00	0.05	0.02	0.08	0.01	0.02	0.03	161.41
Demolition 02/01/2013-02/28/2013	0.01	0.07	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.34
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.07	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.41
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Fine Grading 03/01/2013-03/31/2013	0.02	0.10	0.07	0.00	0.05	0.00	0.05	0.01	0.00	0.01	13.39
Fine Grading Dust	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.02	0.10	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.41
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98
Asphalt 04/01/2013-05/06/2013	0.03	0.16	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.51
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.03	0.16	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.70
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37
Paving Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.44
Building 05/07/2013-09/30/2013	0.13	0.60	0.68	0.00	0.00	0.02	0.02	0.00	0.02	0.02	115.17
Building Off Road Diesel	0.11	0.43	0.41	0.00	0.00	0.01	0.01	0.00	0.01	0.01	54.11
Building Vendor Trips	0.01	0.15	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.14
Building Worker Trips	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.93

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Demolition 2/1/2013 - 2/28/2013 - Clear and Grub

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

7/9/2012 11:24:46 AM

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Fine Grading 3/1/2013 - 3/31/2013 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Trenchers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Trenchers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 4/1/2013 - 5/6/2013 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

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NOX: 15%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pumps, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pumps, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 5/7/2013 - 9/30/2013 - Default Building Construction Description

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

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For Air Compressors, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Air Compressors, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.02	0.00	0.28	0.00	0.00	0.00	0.51
Consumer Products	0.00						
Architectural Coatings	0.04						
TOTALS (tons/year, unmitigated)	0.06	0.00	0.28	0.00	0.00	0.00	0.51

Area Source Changes to Defaults

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Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Dan Blocker Beach	0.25	0.38	3.10	0.00	0.68	0.13	391.99
TOTALS (tons/year, unmitigated)	0.25	0.38	3.10	0.00	0.68	0.13	391.99

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2013 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Dan Blocker Beach		125.00	acres	1.92	240.00	2,153.52
					240.00	2,153.52

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.3	0.4	99.4	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.1	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0

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Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	53.6	46.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Dan Blocker Beach				2.0	1.0	97.0

Operational Changes to Defaults

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\pelletierga\My Documents\Projects\Dan Blocker\URBEMIS\Dan Blocker_revised.urb924

Project Name: Dan Blocker Beach Project

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	2.45	14.71	12.98	0.01	9.60	1.22	10.32	2.01	1.12	2.66	2,193.76
2013 TOTALS (lbs/day mitigated)	2.45	12.57	12.98	0.01	4.98	0.32	5.09	1.04	0.29	1.14	2,193.76

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.36	0.02	1.55	0.00	0.01	0.01	2.81

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.28	1.97	17.20	0.02	3.72	0.72	2,218.10

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	1.64	1.99	18.75	0.02	3.73	0.73	2,220.91

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 2/1/2013-2/28/2013 Active Days: 20	0.99	7.82	4.39	0.00	0.00	0.38	0.39	0.00	0.35	0.35	1,034.43
Demolition 02/01/2013-02/28/2013	0.99	7.82	4.39	0.00	0.00	0.38	0.39	0.00	0.35	0.35	1,034.43
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.97	7.79	3.76	0.00	0.00	0.38	0.38	0.00	0.35	0.35	941.18
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.02	0.04	0.63	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.25
Time Slice 3/1/2013-3/29/2013 Active Days: 21	1.55	10.88	6.40	0.00	**9.60**	0.71	**10.32**	**2.01**	0.66	**2.66**	1,274.86
Fine Grading 03/01/2013-03/31/2013	1.55	10.88	6.40	0.00	9.60	0.71	10.32	2.01	0.66	2.66	1,274.86
Fine Grading Dust	0.00	0.00	0.00	0.00	9.60	0.00	9.60	2.00	0.00	2.00	0.00
Fine Grading Off Road Diesel	1.53	10.85	5.76	0.00	0.00	0.71	0.71	0.00	0.65	0.65	1,181.61
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.02	0.04	0.63	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.25
Time Slice 4/1/2013-5/6/2013 Active Days: 26	**2.45**	**14.71**	11.86	0.00	0.02	**1.22**	1.24	0.01	**1.12**	1.13	1,731.39
Asphalt 04/01/2013-05/06/2013	2.45	14.71	11.86	0.00	0.02	1.22	1.24	0.01	1.12	1.13	1,731.39
Paving Off-Gas	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.32	14.44	9.48	0.00	0.00	1.21	1.21	0.00	1.11	1.11	1,361.39
Paving On Road Diesel	0.01	0.15	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	28.09
Paving Worker Trips	0.07	0.13	2.32	0.00	0.02	0.01	0.03	0.01	0.01	0.01	341.91

Time Slice 5/7/2013-9/30/2013 Active Days: 105	2.40	12.67	**12.98**	**0.01**	0.05	0.93	0.98	0.02	0.85	0.87	**2,193.76**
Building 05/07/2013-09/30/2013	2.40	12.67	12.98	0.01	0.05	0.93	0.98	0.02	0.85	0.87	2,193.76
Building Off Road Diesel	2.05	9.58	7.76	0.00	0.00	0.80	0.80	0.00	0.74	0.74	1,030.62
Building Vendor Trips	0.27	2.92	2.26	0.01	0.03	0.12	0.14	0.01	0.11	0.12	726.40
Building Worker Trips	0.09	0.17	2.96	0.00	0.02	0.01	0.03	0.01	0.01	0.02	436.74

Phase Assumptions

Phase: Demolition 2/1/2013 - 2/28/2013 - Clear and Grub

Building Volume Total (cubic feet): 0

Building Volume Daily (cubic feet): 0

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Fine Grading 3/1/2013 - 3/31/2013 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 1.92

Maximum Daily Acreage Disturbed: 0.48

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 4/1/2013 - 5/6/2013 - Default Paving Description

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Acres to be Paved: 0.48

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day

1 Pressure Washers (1 hp) operating at a 0.6 load factor for 8 hours per day

1 Pumps (53 hp) operating at a 0.74 load factor for 2 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 5/7/2013 - 9/30/2013 - Default Building Construction Description

Off-Road Equipment:

1 Air Compressors (106 hp) operating at a 0.48 load factor for 8 hours per day

1 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 2/1/2013-2/28/2013 Active Days: 20	0.99	6.65	4.39	0.00	0.00	0.06	0.06	0.00	0.05	0.06	1,034.43
Demolition 02/01/2013-02/28/2013	0.99	6.65	4.39	0.00	0.00	0.06	0.06	0.00	0.05	0.06	1,034.43
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.97	6.62	3.76	0.00	0.00	0.06	0.06	0.00	0.05	0.05	941.18
Demo On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.02	0.04	0.63	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.25
Time Slice 3/1/2013-3/29/2013 Active Days: 21	1.55	9.25	6.40	0.00	4.98	0.11	5.09	1.04	0.10	1.14	1,274.86
Fine Grading 03/01/2013-03/31/2013	1.55	9.25	6.40	0.00	4.98	0.11	5.09	1.04	0.10	1.14	1,274.86
Fine Grading Dust	0.00	0.00	0.00	0.00	4.97	0.00	4.97	1.04	0.00	1.04	0.00
Fine Grading Off Road Diesel	1.53	9.22	5.76	0.00	0.00	0.11	0.11	0.00	0.10	0.10	1,181.61
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.02	0.04	0.63	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.25
Time Slice 4/1/2013-5/6/2013 Active Days: 26	**2.45**	12.57	11.86	0.00	0.02	0.20	0.22	0.01	0.18	0.19	1,731.39
Asphalt 04/01/2013-05/06/2013	2.45	12.57	11.86	0.00	0.02	0.20	0.22	0.01	0.18	0.19	1,731.39
Paving Off-Gas	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.32	12.29	9.48	0.00	0.00	0.19	0.19	0.00	0.17	0.17	1,361.39
Paving On Road Diesel	0.01	0.15	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	28.09
Paving Worker Trips	0.07	0.13	2.32	0.00	0.02	0.01	0.03	0.01	0.01	0.01	341.91

Time Slice 5/7/2013-9/30/2013 Active Days: 105	2.40	11.36	**12.98**	**0.01**	0.05	0.32	0.36	0.02	0.29	0.31	**2,193.76**
Building 05/07/2013-09/30/2013	2.40	11.36	12.98	0.01	0.05	0.32	0.36	0.02	0.29	0.31	2,193.76
Building Off Road Diesel	2.05	8.28	7.76	0.00	0.00	0.19	0.19	0.00	0.17	0.17	1,030.62
Building Vendor Trips	0.27	2.92	2.26	0.01	0.03	0.12	0.14	0.01	0.11	0.12	726.40
Building Worker Trips	0.09	0.17	2.96	0.00	0.02	0.01	0.03	0.01	0.01	0.02	436.74

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Demolition 2/1/2013 - 2/28/2013 - Clear and Grub

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Fine Grading 3/1/2013 - 3/31/2013 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Trenchers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Trenchers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 4/1/2013 - 5/6/2013 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pumps, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

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For Pumps, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 5/7/2013 - 9/30/2013 - Default Building Construction Description

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Air Compressors, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Air Compressors, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth - No Summer Emissions							
Landscape	0.12	0.02	1.55	0.00	0.01	0.01	2.81
Consumer Products	0.00						
Architectural Coatings	0.24						
TOTALS (lbs/day, unmitigated)	0.36	0.02	1.55	0.00	0.01	0.01	2.81

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Dan Blocker Beach	1.28	1.97	17.20	0.02	3.72	0.72	2,218.10
TOTALS (lbs/day, unmitigated)	1.28	1.97	17.20	0.02	3.72	0.72	2,218.10

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2013 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

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Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Dan Blocker Beach		125.00	acres	1.92	240.00	2,153.52
					240.00	2,153.52

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	51.3	0.4	99.4	0.2
Light Truck < 3750 lbs	7.3	1.4	95.9	2.7
Light Truck 3751-5750 lbs	23.1	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.7	0.9	99.1	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.6	0.0	81.2	18.8
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.6	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.8	53.6	46.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.9	0.0	88.9	11.1

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9

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Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Dan Blocker Beach				2.0	1.0	97.0

Operational Changes to Defaults