MINUTE ITEM
This Calendar Item No. C03(A)
was approved as Minute Item
No. 13(A) by the State Lands
Commission by a vote of 3
to 0 at its 7-5-94
meeting.

CALENDAR ITEM

C03 (A)

A 26

S 5

07/05/94
W 24964
D. Jacobs
J. Sekelsky
D. Simmons

AUTHORIZE EXECUTION OF A
MEMORANDUM OF AGREEMENT (MOA)
BETWEEN MTC STATEN RANCH,
THE CALIFORNIA DEPARTMENT OF FISH AND GAME,
AND THE STATE LANDS COMMISSION FOR PURPOSES OF
A CHANNEL ISLAND RESTORATION AND PROTECTION PROJECT
IN THE SOUTH FORK OF THE MOKELUMNE RIVER

PARTIES:

MTC Staten Ranch
Attn: Jim Shanks and Sally Hearne
P. O. Box 408
Walnut Grove, California 95690

California Department of Fish and Game
Region II - Frank Gray
1704 Nimbus Road
Rancho Cordova, California 95670

State Lands Commission
1807 - 13th Street
Sacramento, California 95814

AREA, TYPE LAND AND LOCATION:

Tide and submerged land in the South Fork of the Mokelumne River adjacent to Staten Island, San Joaquin County.

LAND USE:

The proposed MOA would provide for a channel island restoration and protection project to preserve and restore riparian, marsh, and aquatic habitats and provide levee protection. The project would be accomplished by a combination of structural and vegetative techniques.

TERM:

Forty-nine (49) years.

STATUTORY AND OTHER REFERENCES:

A. P.R.C.: Div. 6. Parts 1 and 2; Div. 13.
B. Cal. Code Regs.: Title 3, Div. 3; Title 24, Div. 6.

AB 884:
N/A

OTHER PERTINENT INFORMATION:

1. The MTC Staten Ranch (MTC) of Staten Island, San Joaquin County, in consultation with the Department of Fish and Game (DFG) and the State Lands Commission (SLC), proposes to carry out a channel island restoration and protection project in the Delta. The project will be funded by the Delta Flood Protection Act of 1988 (SB 34), from the $3 million past impacts mitigation account. The project was jointly designed by MTC, their consultants DCC Engineering, and staff of the SLC and DFG.

   The proposed project will involve a total of five channel islands adjacent to Staten Island in the South Fork Mokelumne River. Four of these islands will be fortified with rock and fill to protect against erosive wave action. At these four sites, trees will be planted in the fill material in such a manner that they will ultimately overhang the water and provide approximately 1.5 miles of Shaded Riverine Aquatic (SRA) cover facing the South Fork Mokelumne main channel. In addition, woody stumps and snags will be anchored within the rock fill to provide immediate aquatic habitat benefits.

   Various configurations of log and piling wave attenuators will also be installed at and near the four numbered channel islands. At the fifth site, Sycamore Island, located in the South Fork Mokelumne, just upstream of the mouth of Sycamore Slough, a wave attenuation fence will be placed to protect existing SRA habitat and a Black-crowned Night Heron rookery on the island.

   In addition to protecting and restoring channel island habitats, the proposed project will also demonstrate the feasability and effectiveness of erosion control techniques which could also provide alternative, environmentally sensitive methods of levee protection.

2. Several other public agencies have assisted in the design of this project; three others are providing assistance in its implementation. The California Conservation Corps (CCC) will be used to install the root wads and stumps during construction, install filter fabric, construct Geoweb® frames and carry out vegetation planting later in the year when the timing is more appropriate for plant establishment. Some

plant materials are being grown at a CCC nursery. The Department of Water Resources (DWR) staff provided flood control expertise which was utilized in the environmental review process and will carry out various sediment and water quality tests. The U.S. Bureau of Land Management (BLM) is providing untreated cull logs for the required pilings and booms.

Finally, MTC has granted to the California Delta Protection Commission a conservation easement over that portion of MTC's land which is dedicated to the project, giving the Commission authority to enforce the terms of the easement restricting and limiting the use of said property for project purposes.

3. The proposed project includes work at five channel islands located within the South Fork Mokelumne River, San Joaquin County. Four of these islands, at the southern end of Staten Island, are narrow in configuration and do not have names, and are referred to as Islands 3, 4, 5 and 7 (San Joaquin County APNs 069-020-03, 069-020-04, 069-020-05, and 069-020-07). The fifth site is called Sycamore Island (APN 011-020-05), which is just upstream from the mouth of Sycamore Slough, also within the South Fork Mokelumne. Sycamore Island is owned by the Merlo family, and the DFG holds a conservation easement over this island.

MTC Staten Ranch holds record title to Staten Island and the four numbered islands included in this project. The State, acting by and through the State Lands Commission, holds sovereign ownership interests in the beds of tidal and navigable waterways, including the South Fork Mokelumne River, below the last natural location of the ordinary high water mark. The precise location of the boundary between the uplands owned by MTC and the tide and submerged lands owned by the State has not been defined and need not be defined to implement the proposed project. The proposed MOA will be without prejudice to their respective titles.

4. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (14 Cal. Code Regs. 15025), the staff has prepared a Proposed Mitigated Negative Declaration identified as ND 651, State Clearinghouse No. 94052025. Such Proposed Negative Declaration was prepared and circulated for public review pursuant to the provisions of CEQA.

Based upon the Initial Study, the Proposed Mitigated Negative Declaration, and the comments received in response thereto, there is no substantial evidence that the project will have a significant effect on the environment. (14 Cal. Code Regs. 15074(b))

5. A Mitigation Monitoring Plan, substanstially in the form attached hereto as Exhibit C, has been prepared in conformance with the provisions of the CEQA. (Section 21081.6, P.R.C.)

6. This activity involves lands identified as possessing significant environmental values pursuant to P.R.C. 6370, et seq. Based upon the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the project, as proposed, is consistent with its use classification.

FURTHER APPROVALS REQUIRED:

United States Army Corps of Engineers, Central Valley Regional Water Quality Control Board.

EXHIBITS:

A-1, A-2. Location and Site Map
B. Negative Declaration
C. Mitigation Monitoring Plan
D. Draft Memorandum of Agreement

IT IS RECOMMENDED THAT THE COMMISSION:

1. CERTIFY THAT A PROPOSED NEGATIVE DECLARATION, ND 651, STATE CLEARINGHOUSE NO. 94052025, WAS PREPARED FOR THIS PROJECT PURSUANT TO THE PROVISIONS OF THE CEQA AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.

2. ADOPT THE MITIGATED NEGATIVE DECLARATION ATTACHED HERETO AS EXHIBIT "B" AND DETERMINE THAT THE PROJECT, AS APPROVED, WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.

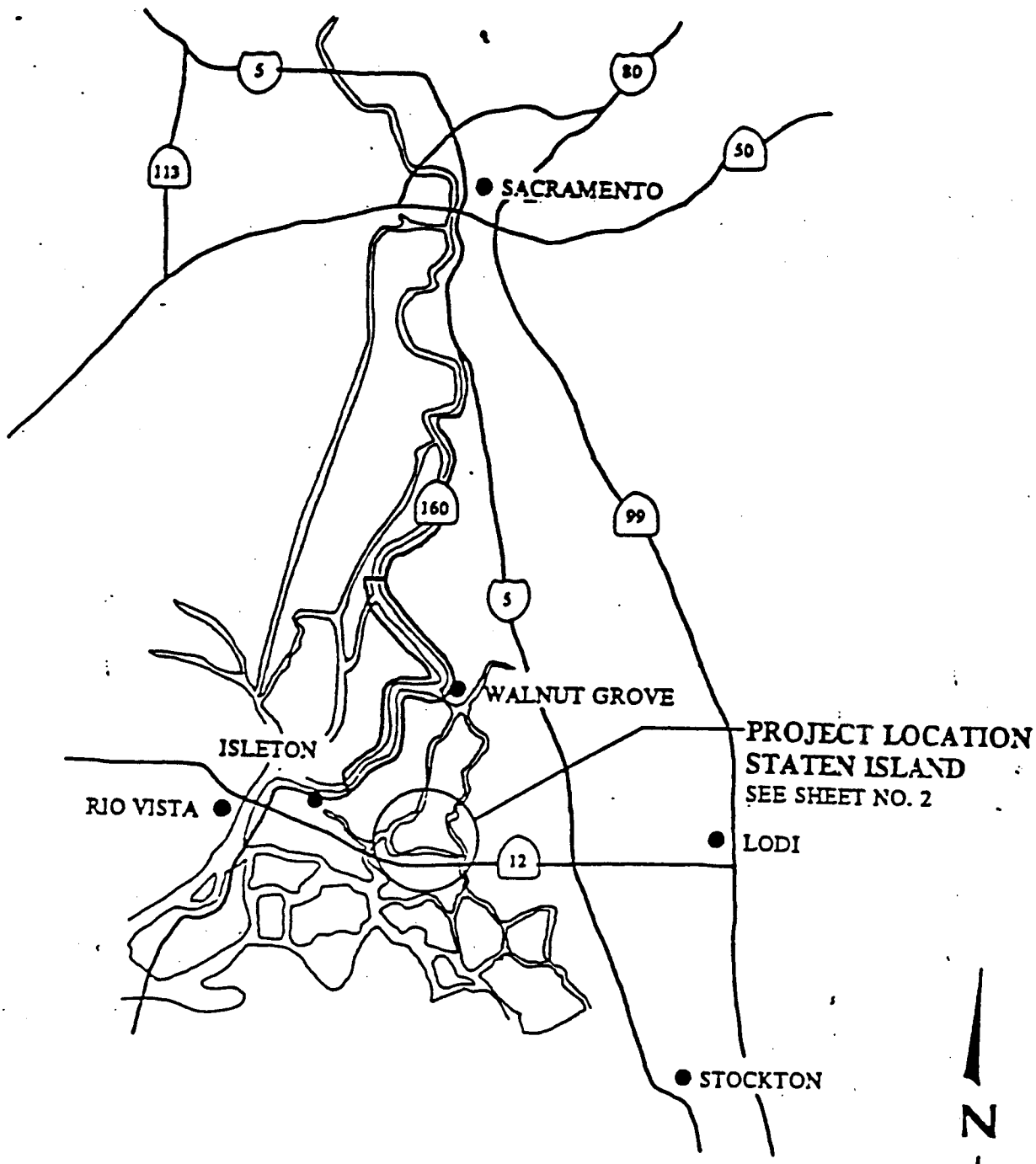
3. ADOPT THE MITIGATION MONITORING PLAN, AS CONTAINED IN EXHIBIT "C", ATTACHED HERETO.

4. FIND THAT THIS ACTIVITY IS CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED FOR THE LAND PURSUANT TO P.R.C. 6370, ET SEQ.

5. AUTHORIZE THE EXECUTION OF A MEMORANDUM OF AGREEMENT BETWEEN THE COMMISSION, THE CALIFORNIA DEPARTMENT OF FISH AND GAME AND MTC STATEN RANCH, SUBSTANTIALLY IN THE FORM ATTACHED HERETO AS EXHIBIT "D", SUBJECT TO COMPLIANCE WITH ALL APPLICABLE LAWS, RULES, AND REGULATIONS OF ALL STATE, FEDERAL AND LOCAL JURISDICTIONS, FOR PURPOSES OF A CHANNEL ISLAND RESTORATION AND PROJECTION PROJECT FOR THE SOUTH FORK OF THE MOKELUMNE RIVER ADJACENT TO STATEN ISLAND, SAN JOAQUIN COUNTY.

EXHIBIT A-1

Figure 1



PURPOSE: Riverine habitat enhancement and stabilization. DATUM: USGS ADJACENT OWNERS: Not applicable.	CONTENTS: VICINITY MAP OWNER: M&T Staten Ranch Post Office Box 408 Walnut Grove, CA 95690	PROJECT: Channel Island restoration COUNTY: San Joaquin STATE: CA MAPPED TO BY: DCC E 2-4-94 SHEET 1 OF 10 DATE: 02/15/94

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EXHIBIT A-2

Figure 2

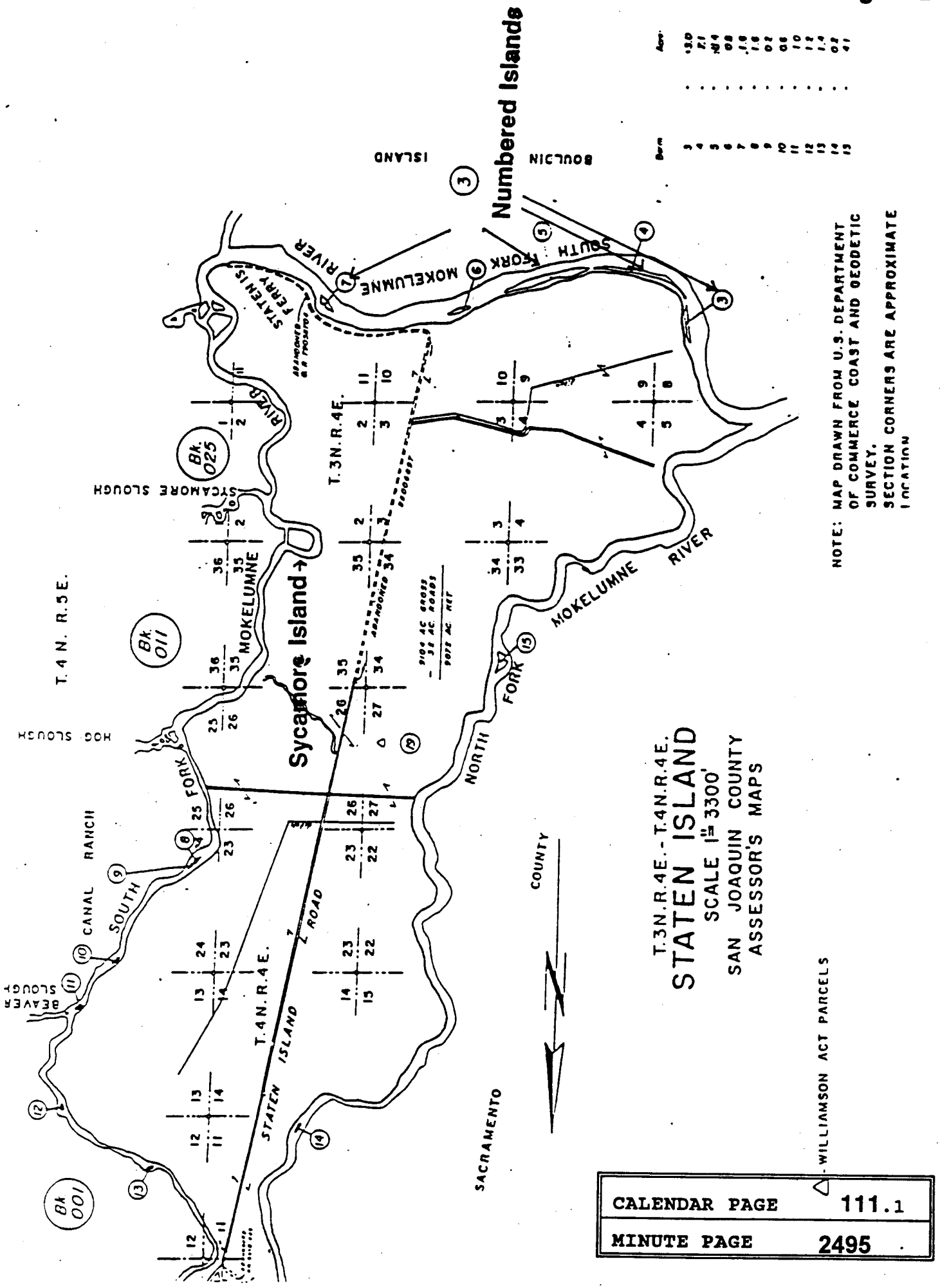

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EXHIBIT "B"

STATE OF CALIFORNIA

PETE WILSON, *Governor*

STATE LANDS COMMISSION

LEO T. McCARTHY, *Lieutenant Governor*
GRAY DAVIS, *Controller*
THOMAS W. HAYES, *Director of Finance*

EXECUTIVE OFFICE
1807 - 13th Street
Sacramento, CA 95P

CHARLES WARREN
Executive Officer

May 13, 1994
File: W 24964
ND 651
SCH No. 94052025

NOTICE OF PUBLIC REVIEW OF A PROPOSED NEGATIVE DECLARATION
(SECTION 15073 CCR)

A Negative Declaration has been prepared pursuant to the requirements of the California Environmental Quality Act (Section 21000 et seq., Public Resources Code), the State CEQA guidelines (Section 15000 et seq., Title 14, California Code Regulations), and the State Lands Commission Regulations (Section 2901 et seq., Title 2, California Code Regulations) for a project currently being processed by the staff of the State Lands Commission.

The document is attached for your review. Comments should be addressed to the State Lands Commission office shown above with attention to the undersigned. All comments must be received by June 13, 1994.

Should you have any questions or need additional information, please call the undersigned at (916) 445-5034.

Diana Jacobs

DIANA JACOBS
Division of Environmental Planning
and Management

Attachment

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STATE OF CALIFORNIA

PETE WILSON, *Governor*

STATE LANDS COMMISSION

LEO T. McCARTHY, *Lieutenant Governor*
GRAY DAVIS, *Controller*
THOMAS W. HAYES, *Director of Finance*

EXECUTIVE OFFICE
1807 - 13th Street
Sacramento, CA 95814

CHARLES WARREN
Executive Officer

PROPOSED NEGATIVE DECLARATION

File: W 24964
ND 651
SCH No. 94052024/5

Project Title:	Staten Island Channel Island Restoration Project 1994
Project Proponent:	M & T Staten Ranch
Project Location:	South Fork of the Mokelumne River, Staten Island, San Joaquin County.
Project Description:	Restoration and protection of channel island habitats with rock-prism dikes and log pilings and booms.
Contact Person:	Diana Jacobs Telephone: (916) 445-5034

This document is prepared pursuant to the requirements of the California Environmental Quality Act (Section 21000 et seq., Public Resources Code), the State CEQA Guidelines (Section 15000 et seq., Title 14, California Code Regulations), and the State Lands Commission regulations (Section 2901 et seq., Title 2, California Code Regulations).

Based upon the attached Initial Study, it has been found that:

/__/ this project will not have a significant effect on the environment.

/X/ mitigation measures included in the project will avoid potentially significant effects.

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ENVIRONMENTAL IMPACT ASSESSMENT CHECKLIST - PART II
Form 13.20 (7/82)

File Ref.: W 24964

I. BACKGROUND INFORMATION

A. Applicant: M & T Staten Ranch
James Shanks
PO Box 408
Walnut Grove, CA 95690

B. Checklist Date: 5 / 9 / 1994

C. Contact Person: Diana F. Jacobs

Telephone: (916) 445-5034 FAX (916) 322-0525

D. Purpose: Restore and protect Delta channel island habitats

E. Location: South Fork Mokelumne River, Staten Island, San Joaquin County

F. Description: Four eroding channel islands will be restored with rock-prism dikes back-filled with dredged material to create new berms along t sides of the islands. The berms will be revegetated with native species, primarily trees and shrubs. In addition, wave attentuation structures ma of log pilings and floating log booms will be placed at several places near the four restored islands and near a fifth island which is a valuable her rookery. At some of the wave attentuation structures "owen's fences" made of Geoweb Brand cellular confinement systems will be installed vertically in the water column.

G. Persons Contacted: Frank Gray, Ed Littrell, Ryan Broddrick, Deborah McKee, - Department of Fish and Game
Steve Roberts - Department of Water Resources
Matt Vandenberg, Mark Littlefield - US Fish and Wildlife Service
Tom Cavanaugh - US Army Corps of Engineers

II. ENVIRONMENTAL IMPACTS. (Explain all "yes" and "maybe" answers)

A. Earth. Will the proposal result in:

	Yes	Maybe	No
1. Unstable earth conditions or changes in geologic substructures?			
2. Disruptions, displacements, compaction, or overcovering of the soil?	X		
3. Change in topography or ground surface relief features?	X		
4. The destruction, covering, or modification of any unique geologic or physical features?			
5. Any increase in wind or water erosion of soils, either on or off the site?			
6. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?			
7. Exposure of all people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?			X

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B. Air. Will the proposal result in:

	Yes	Maybe	No
1. Substantial air emissions or deterioration of ambient air quality?	—	—	—
2. The creation of objectional odors?	—	—	—
3. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?	—	—	—
C. Water. Will the proposal result in:			
1. Changes in the currents, or the course or direction of water movements, in either marine or fresh waters?	X	—	—
2. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?	—	—	—
3. Alterations to the course or flow of flood waters?	—	—	—
4. Change in the amount of surface water in any water body?	—	—	—
5. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	X	—	—
6. Alteration of the direct on or rate of flow of ground waters?	—	—	—
7. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	—	—	—
8. Substantial reduction in the amount of water otherwise available for public water supplies?	—	—	—
9. Exposure of people or property to water-related hazards such as flooding or tidal waves?	—	—	X
10. Significant changes in the temperature, flow or chemical content of surface thermal springs?	—	—	X
D. Plant Life. Will the proposal result in:			
1. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	—	—	X
2. Reduction of the numbers of any unique, rare or endangered species of plants?	—	—	X
3. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	—	—	X
4. Reduction in acreage of any agricultural crop?	—	—	X
E. Animal Life. Will the proposal result in:			
1. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)?	—	X	—
2. Reduction of the numbers of any unique, rare or endangered species of animals?	—	—	X
3. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	—	—	X
4. Deterioration to existing fish or wildlife habitat?	—	—	X
F. Noise. Will the proposal result in:			
1. Increase in existing noise levels?	—	—	X
2. Exposure of people to severe noise levels?	—	—	X
G. Light and Glare. Will the proposal result in:			
1. The production of new light or glare?	—	—	X
H. Land Use. Will the proposal result in:			
1. A substantial alteration of the present or planned land use of an area?	—	—	X
I. Natural Resources. Will the proposal result in:			
1. Increase in the rate of use of any natural resources?	—	—	X
2. Substantial depletion of any nonrenewable resources?	—	—	X

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J. Risk of Upset. Does the proposal result in: Yes Maybe

1. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals, or radiation) in the event of an accident or upset conditions? ..... ___ ___

2. Possible interference with emergency response plan or an emergency evacuation plan? ..... ___ ___

K. Population. Will the proposal result in:

1. The alteration, distribution, density, or growth rate of the human population of the area? ..... ___ ___

L. Housing. Will the proposal result in:

1. Affecting existing housing, or create a demand for additional housing? ..... ___ ___

M. Transportation/Circulation. Will the proposal result in:

1. Generation of substantial additional vehicular movement? ..... ___ ___

2. Affecting existing parking facilities, or create a demand for new parking? ..... ___ ___

3. Substantial impact upon existing transportation systems? ..... ___ ___

4. Alterations to present patterns of circulation or movement of people and/or goods? ..... ___ ___

5. Alterations to waterborne, rail, or air traffic? ..... ___ ___

6. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians? ..... ___ ___

N. Public Services. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:

1. Fire protection? ..... ___ ___

2. Police protection? ..... ___ ___

3. Schools? ..... ___ ___

4. Parks and other recreational facilities? ..... ___ ___

5. Maintenance of public facilities, including roads? ..... ___ ___

6. Other governmental services? ..... ___ ___

O. Energy. Will the proposal result in:

1. Use of substantial amounts of fuel or energy? ..... ___ ___

2. Substantial increase in demand upon existing sources of energy, or require the development of new sources? .... ___ ___

P. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:

1. Power or natural gas? ..... ___ ___

2. Communication systems? ..... ___ ___

3. Water? ..... ___ ___

4. Sewer or septic tanks? ..... ___ ___

5. Storm water drainage? ..... ___ ___

6. Solid waste and disposal? ..... ___ ___

Q. Human Health. Will the proposal result in:

1. Creation of any health hazard or potential health hazard (excluding mental health)? ..... ___ ___

2. Exposure of people to potential heath hazards? ..... ___ ___

R. Aesthetics. Will the proposal result in:

1. The obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view? .....

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S. Recreation. Will the proposal result in:

	Yes	Maybe	No
1. An impact upon the quality or quantity of existing recreational opportunities?	—	X	—

T. Cultural Resources

1. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archeological site?	—	—	X
2. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?	—	—	X
3. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?	—	—	X
4. Will the proposal restrict existing religious or sacred uses within the potential impact area?	—	—	X

U. Mandatory Findings of Significance.

1. Does the project have the potential to degrade the quality of the environment, 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 periods of California history or prehistory?	—	—	X
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	—	—	X
3. Does the project have impacts which are individually limited, but cumulatively considerable?	—	—	X
4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	—	—	X

III. DISCUSSION OF ENVIRONMENTAL EVALUATION (See Comments Attached)

IV. PRELIMINARY DETERMINATION

On the basis of this initial evaluation:

___ I find 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 the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.

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

Date: 5/11/91

For the State Lands Commission

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INITIAL STUDY
Staten Island Channel Island Restoration Project 1994
M & T Staten Ranch

INTRODUCTION

Project Overview

The M & T Staten Ranch (M&T) of Staten Island, San Joaquin County, in consultation with the Department of Fish and Game (DFG) and the State Lands Commission (SLC), proposes to carry out a channel island restoration and protection project in the Delta. The project will be funded by the Delta Flood Protection Act of 1988 (SB 34), from the $3 million past impacts mitigation account, as mandated by SB 1065 (1991). The project was jointly designed by M & T, their consultants DCC Engineering, and staff of the SLC and DFG.

The proposed project will involve a total of five channel islands adjacent to the present Staten Island in the South Fork Mokelumne River. Four of these islands will be fortified with rock and fill to protect against erosive wave action. At these four sites, trees will be planted in the fill material in such a manner that they will ultimately overhang the water and provide approximately 1.5 miles of Shaded Riverine Aquatic (SRA) cover facing the South Fork Mokelumne main channel. In addition, woody stumps and snags will be anchored within the rock fill to provide immediate aquatic habitat benefits.

Various configurations of log and piling wave attenuators will also be installed at and near the four numbered channel islands. At the fifth site, Sycamore Island, located in the South Fork Mokelumne, just upstream of mouth of Sycamore Slough, a wave attenuation fence will be placed to protect existing SRA habitat and a Black-crowned Night Heron rookery on the island.

In addition to protecting and restoring channel island habitats, the proposed project will also serve to demonstrate erosion control techniques which could be used as alternative environmentally sensitive methods of levee protection.

Project Participants

- The SLC is acting as the Lead Agency under the California Environmental Quality Act (CEQA), and will contribute the use of state-owned sovereign lands at the project sites.

- DFG is providing staff services and project funding through the SB 34 mitigation account as described above. DFG has done a biological assessment of the existing environmental conditions at

the site and will monitor project implementation and the post project conditions, including performance of the structures and habitat values, for a minimum of five years following construction. DFG is also helping in the procurement of the geotechnical erosion control products to be used at some of the work sites, and will supervise plantings. DFG is contributing the use of the Sycamore Island conservation easement property for the project.

- M & T will contribute the use of their lands at the project site, procure all necessary logs, root wads, and rock, and contract for the proposed dredging, filling, placement of the structures, and planting.

- The California Conservation Corps (CCC) will be used to install the root wads and stumps during construction, install filter fabric, construct Geoweb® frames and carry out vegetation planting later in the year when more appropriate for plant establishment. Some plant materials are being grown at a CCC nursery.

- Department of Water Resources (DWR) staff has provided flood control expertise for the purposes of environmental review and will carrying out various sediment and water quality tests.

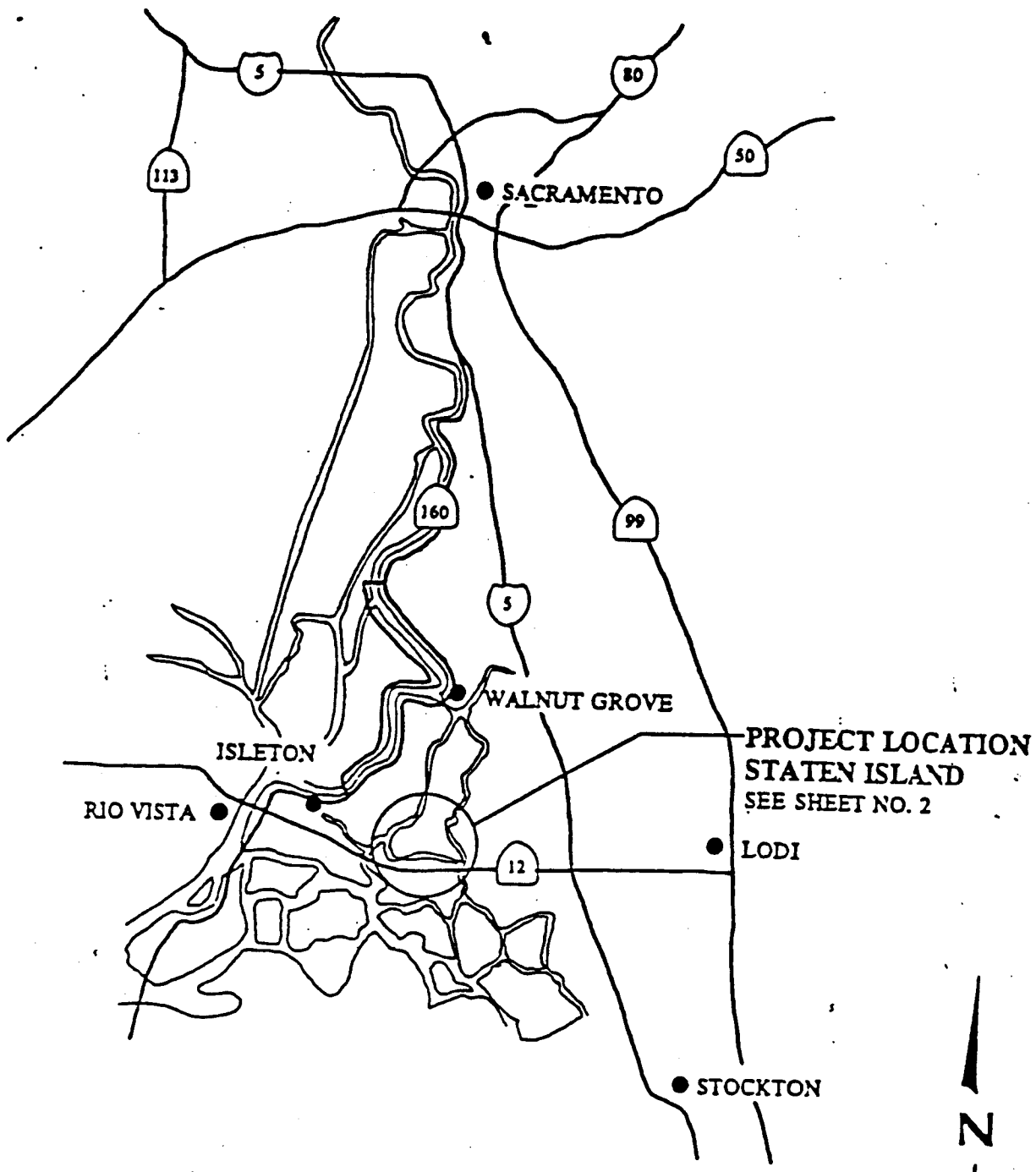
- US Bureau of Land Management is providing untreated cull logs to be used for pilings and booms.

Project Location and Ownership

The proposed project includes work at five channel islands located within the South Fork Mokelumne River, San Joaquin County. Four of these islands, at the southern end of Staten Island, are narrow in configuration and do not have names, and are referred to as Islands 3,4, 5 and 7 (San Joaquin County APNs 069-020-03, 069-020-04, 069-020-05, and 069-020-07). The fifth site is called Sycamore Island (APN 011-020-05), which is just upstream from the mouth of Sycamore Slough, also within the South Fork Mokelumne. Sycamore Island is owned by the Merlo family, and the DFG has a conservation easement for this island. (See Figures 1-3).

M & T Staten Ranch holds record title to Staten Island and the four numbered islands included in this project. The State, acting by and through the State Lands Commission, holds sovereign ownership interests in the beds of tidal and navigable waterways, including the South Fork Mokelumne River, below the last natural location of the ordinary high water mark. The precise location of the boundary between the uplands owned by M & T and the tide and submerged lands owned by the State has not been defined and need not be defined to implement the proposed project. It is anticipated that M & T and the SLC, as the two landowners, will enter into a Memorandum of Agreement committing their respective lands to the proposed project.

Figure 1



PURPOSE: Riverine habitat enhancement and stabilization. DATUM: USGS ADJACENT OWNERS: Not applicable.	CONTENTS: VICINITY MAP OWNER: M&T Staten Ranch Post Office Box 408 Walnut Grove, CA 95690	PROJECT: Channel Island restoration LOCATION: Lower Mokelumne River COUNTY: San Joaquin STATE: CA PREPARED BY: DCC Engineering SHEET 1 OF 10 DATE: 02/15/94

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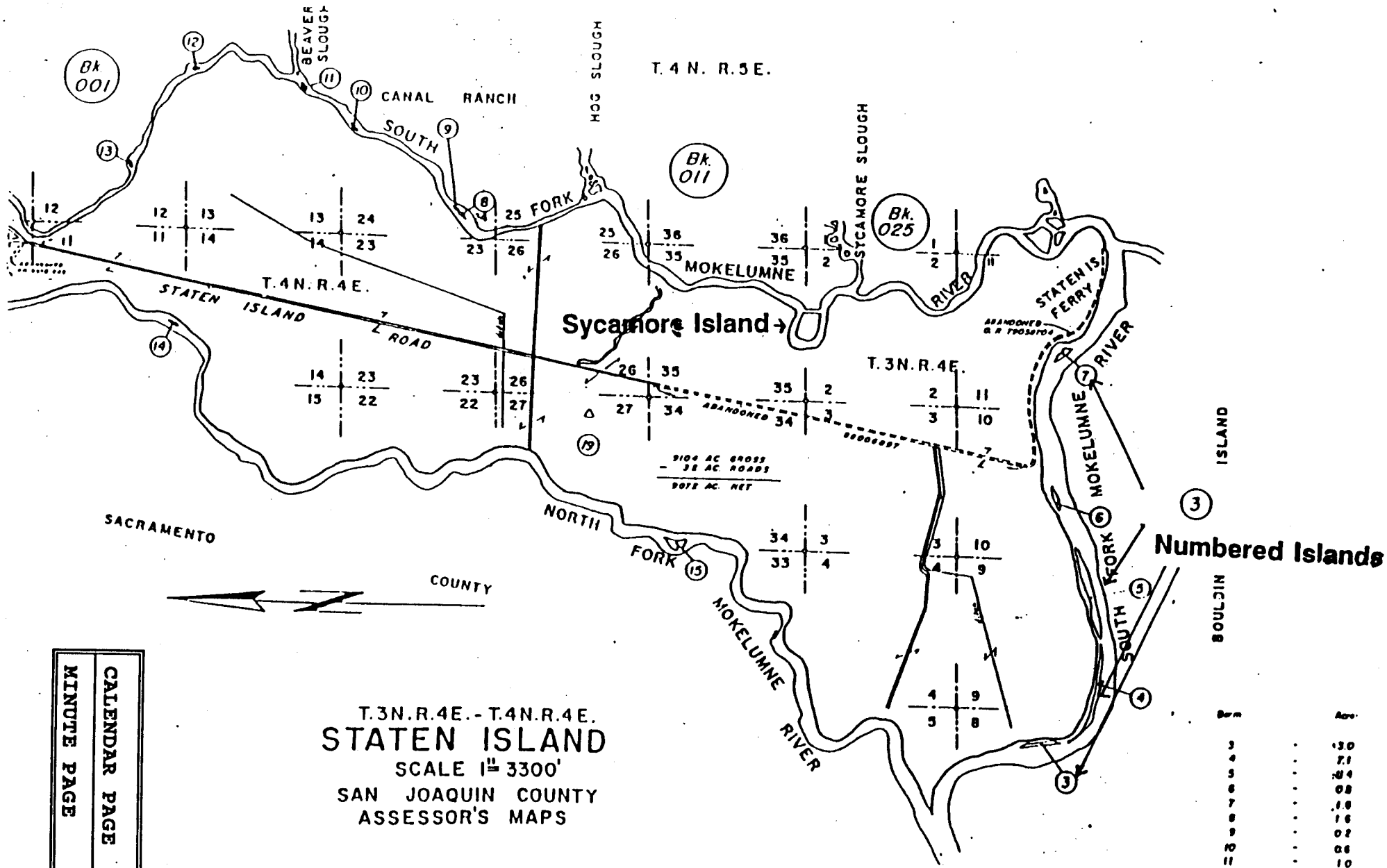

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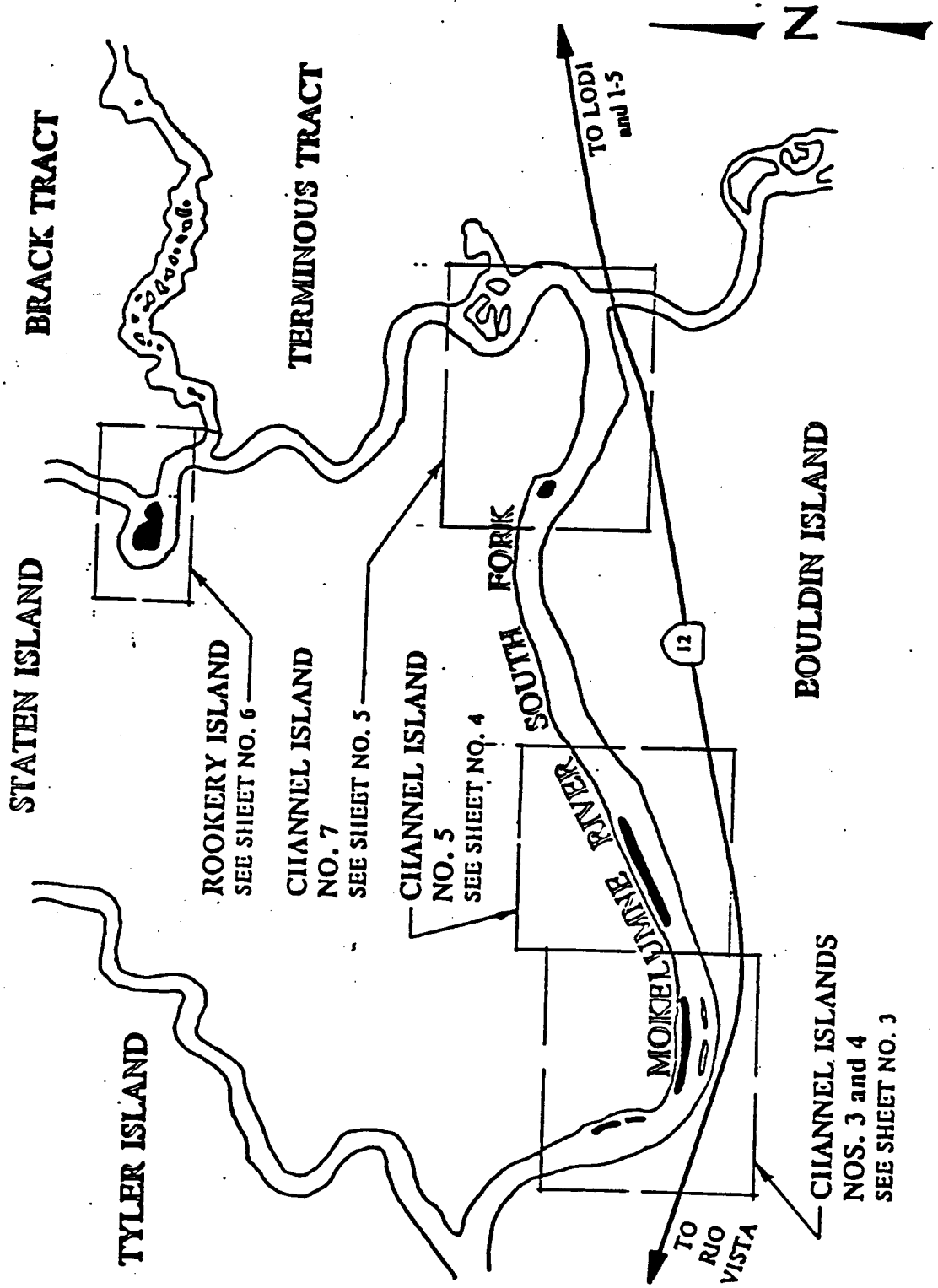
Figure 2

Figure 3



PURPOSE: Riverine habitat enhancement and stabilization.

DATUM: USGS

CONTENTS:

SITE PLAN & KEY MAP

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PROJECT: Channel Island restoration

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SHEET 2 OF 10, REV.

Project Background

In 1992 and 1993, similar restoration projects were carried out at Staten Island, upstream of the proposed 1994 project, to demonstrate several environmentally sensitive methods of levee protection and habitat restoration. Of particular relevance to the proposed work, these two previous projects tested the feasibility of using a quarry rock prism with dredged fill to restore berm land area and create sites suitable for woody and marsh vegetation establishment.

In 1992, a total of about 1,500 lineal feet of shoreline was modified as part of a combined levee protection and wildlife enhancement demonstration project by creating a low elevation berm next to the levee. The project included the placement of a quarry rock prism, the placement of earthen fill, and filter fabric landward of the prism.

The results of the project to date appear successful. The fill material behind the prism appears stable and protected from wave and high flow erosion. A total of 58 plant species were recently identified to be growing at the 1992 project site, mainly tules, willows, sedges, and other plants valuable as wildlife habitat.

The 1993 project added the component of stumps and snags installed within the rock and protruding into the water (see Figure 4). The underwater woody material will provide aquatic habitat benefits in the short-term until new woody vegetation can grow up and out over the rock dike.

The following overview of issues, germane to the proposed 1994 project, is excerpted from the Initial Study/Negative Declaration adopted for the 1993 demonstration project (SCH. 93062041).

Throughout the Delta, habitats formed at the interface of vegetation and water are in short supply. These include the habitat created at the edge between woody riparian plants and submerged areas, also called Shaded Riverine Aquatic (SRA) Cover, and various types of emergent marsh vegetation, which are commonly called "tule berms" or "tule islands". Tule berms or islands may be dominated by tules (bulrushes), cattails, common reed, sedges, or rushes.

The remaining small amounts of woody riparian and marsh vegetation within the region continue to be destroyed or degraded by levee protection works, chiefly rock riprap or levee slope maintenance activities, and erosion losses. Erosion of Delta islands and berms can be caused by the scouring effects of currents or by waves from wind or boat wakes.

The protection and restoration of SRA cover is difficult in the Delta. Suitable substrates high enough to support woody

Figure 4

1993 Demonstration Project - Woody Debris in Rock-prism Dike

riparian plant species are found on levees, and on remnant berms and islands. However, under currently accepted engineering practices, levee slopes are not judged to be suitable for woody growth for reasons of structural safety and inspection visibility. (Oversized levees can be an exception, but few, if any, Delta levees are large enough to be considered oversized). Certain levees do contain riparian vegetation which creates valuable SRA cover. However, typically, when riprap slope protection is placed, this vegetation is removed and not allowed to regrow.

Levee maintenance standards, especially after riprap has been placed, leave berms and islands as the primary areas left available for woody riparian growth restoration. However, because the waterways are confined, many berms and islands are being eroded away. In most channels little deposition of new berms or islands is occurring to counteract this loss.

The challenge is to create substrates high enough and stable enough to support woody plants. Methods which prevent erosion such as riprap or wooden cribwalls may protect many riparian habitat values, but also diminish the vegetation-water interface, thereby decreasing SRA cover values. Further, the best sites to create new higher islands or berms are areas of existing shallow water or low islands or berms. Such sites already have valuable shoal or emergent vegetation habitat values which could be lost if the areas are built up to enable the establishment of woody plants.

Levee protection work throughout the Delta 1987-1991, funded by SB 34, has impacted many linear miles of fish and wildlife habitat, primarily SRA cover. In 1991, funds were provided to the DFG, through SB 1065, to provide for mitigation of these impacts. The proposed project, because it will provide for the establishment and protection of SRA and other Delta habitats, will be considered by DFG as partial mitigation for past SB 34 impacts within the Delta.

Purpose of Proposed Project

At the project site, continuing erosion of the channel islands is occurring and is reducing the amount of island land forms and the woody riparian and freshwater marsh habitat they support. Continued erosion would result in the eventual loss of additional valuable habitat on the islands and subsequently diminish security of the adjacent levees.

Dramatic evidence of channel island erosion can be seen from comparing aerial photos of the site from 1937 to 1992, available for inspection at the offices of M & T or the SLC. The loss of island acreage, determined planimetrically, is as follows:

Channel Island	1937 acres	1992 acres
3.	3.0	1.9
4.	7.1	2.4
5.	11.4	7.1
7.	1.6	.3
Sycamore Is.	13.1	8.9

Scaled overlays of islands #3, 4, and 5 traced from 1937, 1963, and 1992 photos are shown in Figure 5 to illustrate the loss of land. Islands #4 and #5 were nearly connected in 1937. All that remains of the previous connection between the two islands is a shallow water shoal, typically 3-6 feet deep, depending upon tide.

Sycamore Island is a rookery for Black-crowned Night Herons, supporting several hundred birds. A large hole in the island is visible today that was not present in 1937 photography (see Figures 6, 7). The heron colony, which is the largest of its kind in the Delta, will be protected by the proposed wave attenuation device.

No counter-balancing deposition of islands or berms is evident in the vicinity. The primary cause of contemporary erosion appears to be wave action caused by boat wakes.

The purpose and the design of the proposed project are intended to arrest further loss of channel island area, restore island land mass, and create SRA cover habitat values.

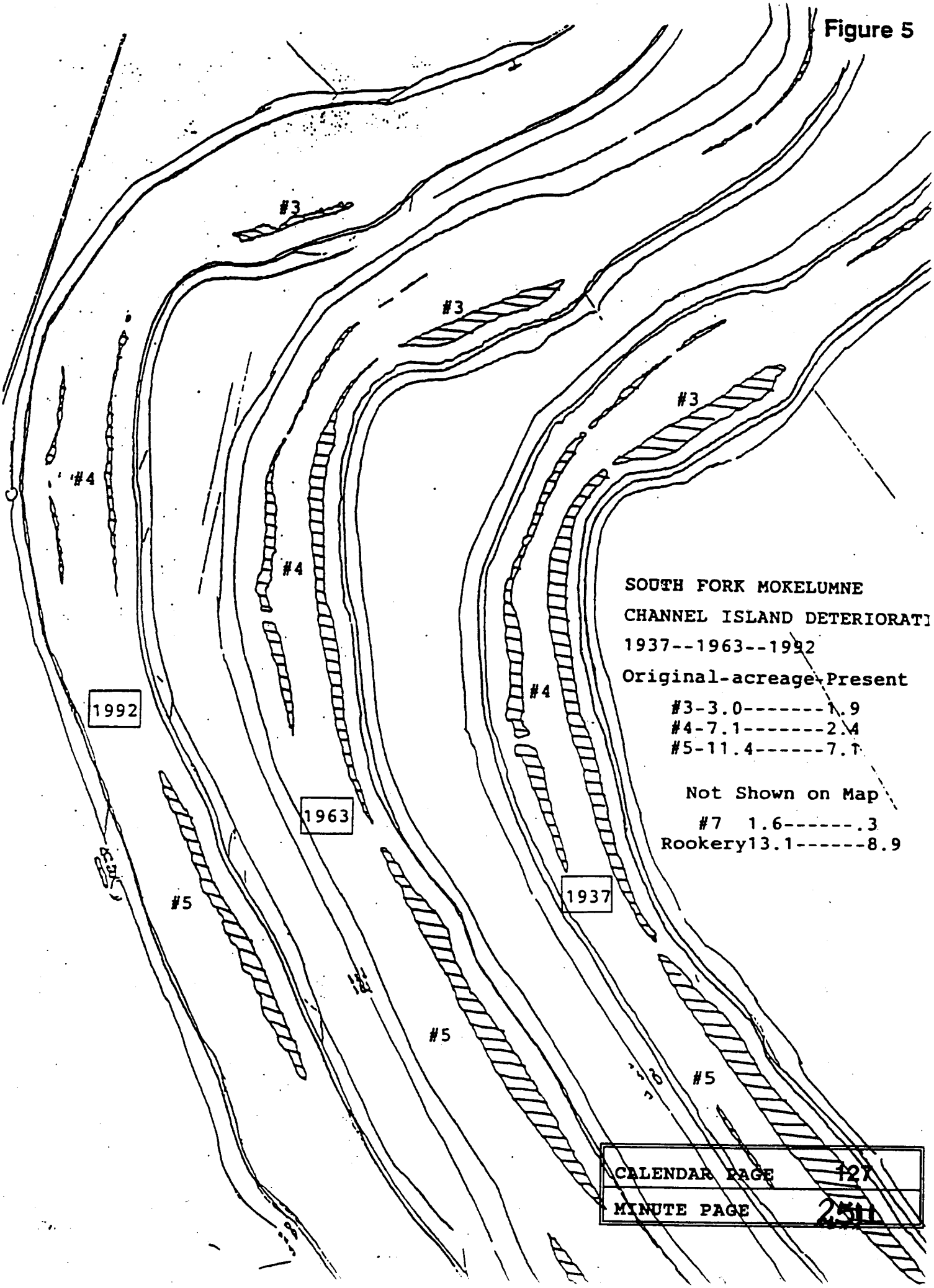
Alternatives to the Proposed Project

The techniques selected for this project were chosen to emphasize the use of natural materials such as logs and stumps with consideration of the materials, equipment, and staff readily available to M & T, with the assistance of DFG. Also, the project was designed to emphasized the use of traditional methods employed by Delta land managers, in order to encourage other reclamation or levee districts to implement these type of projects.

Another alternative which would reduce wake erosion would be to limit boat traffic. Although this idea is being explored, this does not appear to be a feasible option for the foreseeable future due to legal and policy issues and budgetary limits for enforcement by local jurisdictions to which such responsibilities are given. However, eliminating boat traffic alone would not contribute to the restoration of island land mass.

If no action is taken, it is likely that the sites will continue to erode with the loss of wetland and aquatic habitat values. The loss of channel islands may also increase the erosion threat to the adjacent levees.

Figure 5

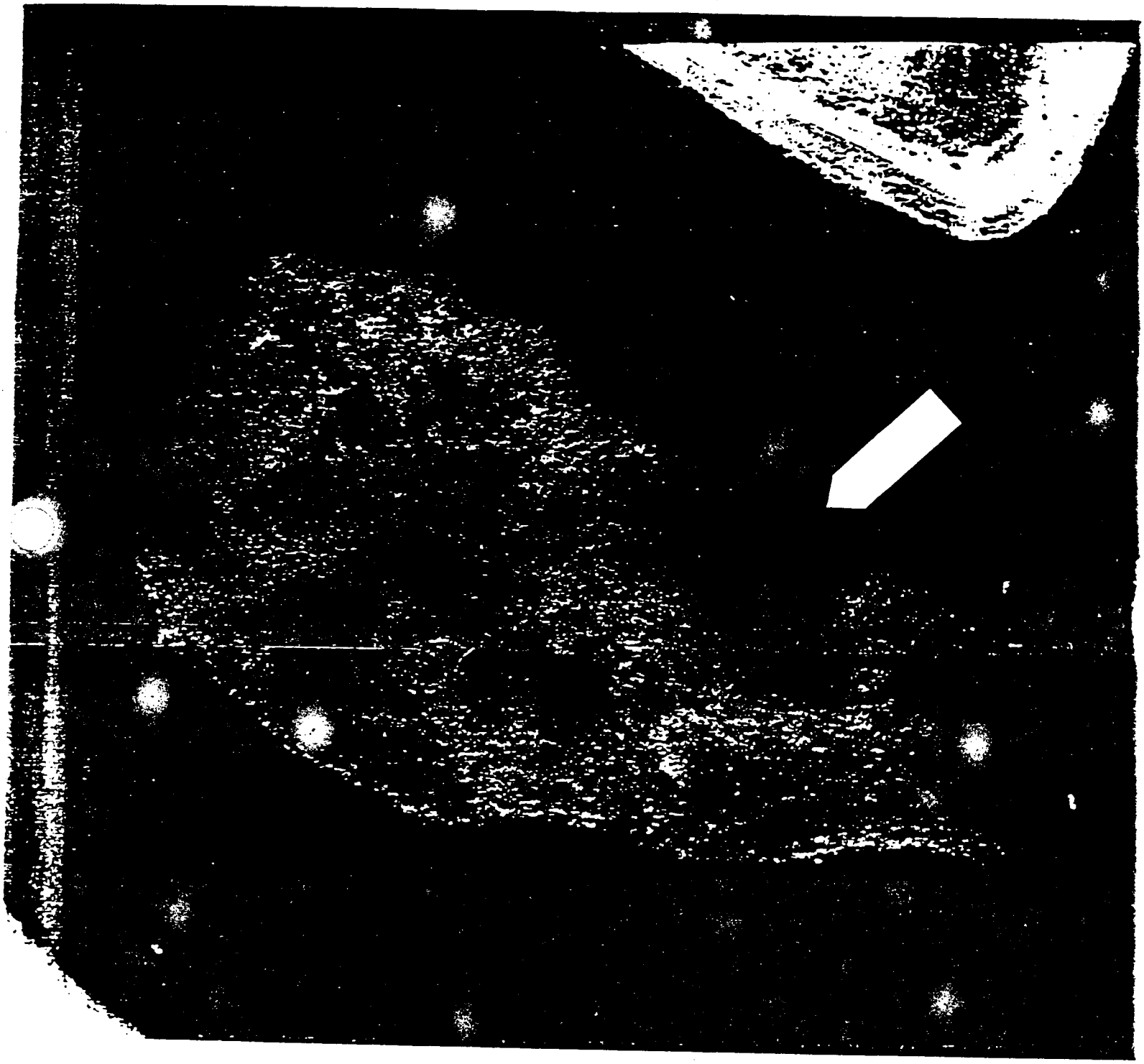


CALENDAR PAGE	127
MINUTE PAGE	2511

Figure 6

1937 Sycamore Island

Figure 7



1992 Sycamore Island - Note general perimeter erosion and large erosion hole

CALENDAR PAGE	129
MINUTE PAGE	2513

PROJECT DESCRIPTION

The proposed project involves a number of different elements, including project construction components, revegetation, transplanting, and monitoring. There are two main construction components 1) rock prism dike and dredge fill and 2) floating log boom and piling wave attenuators. Sketches of construction components are shown in Figures 8-15.

Proposed Project Components

1. Rock Prism Dike and Dredge Fill

A major element of the project is the placement of about 1.5 miles of quarry rock prism dikes along the main channel side of Islands 3, 4, 5, and 7 (Figure 12, Condition A). The dikes will be placed parallel to the general shoreline, about 15 feet outboard of the existing islands on the side which receives the most wave erosion. Fill material dredged from nearby channels will be placed between the existing island and the rock prism adding about 2.75 additional acres to the islands. The newly created berms will become vegetated over time, creating SRA habitat.

At the time of construction, dead tree stumps and branches will be anchored within the rock, with ends protruding, to provide temporary fish habitat until SRA vegetation becomes established on the berms.

Filter fabric will be used to line the inner surface on the rock dikes. The function of the rock is to break the impact of boat wake wave action and the filter fabric will hold in fine sediments which could otherwise be washed through the rock by remaining water forces. This technique has evolved through modification and enhancement of a technique used at the 1992 and 1993 demonstration projects at Staten Island.

The rock will be placed at or near lower low tide to assure accurate and efficient placement. The top of the rock prism will be at about +3.0 feet elevation or higher, approximating the height of a typical high tide during each tidal cycle. The dredged fill material will be mounded up to one foot in height above the level of the existing rock prism and backsloped downward away from the prism, toward the existing islands. At the location(s) of any significant tule beds, the rock prism height will be +1½ instead of +3, to allow sufficient tidal exchange. The rock and dredge fill would be sloped down and outward to avoid stranding any fish.

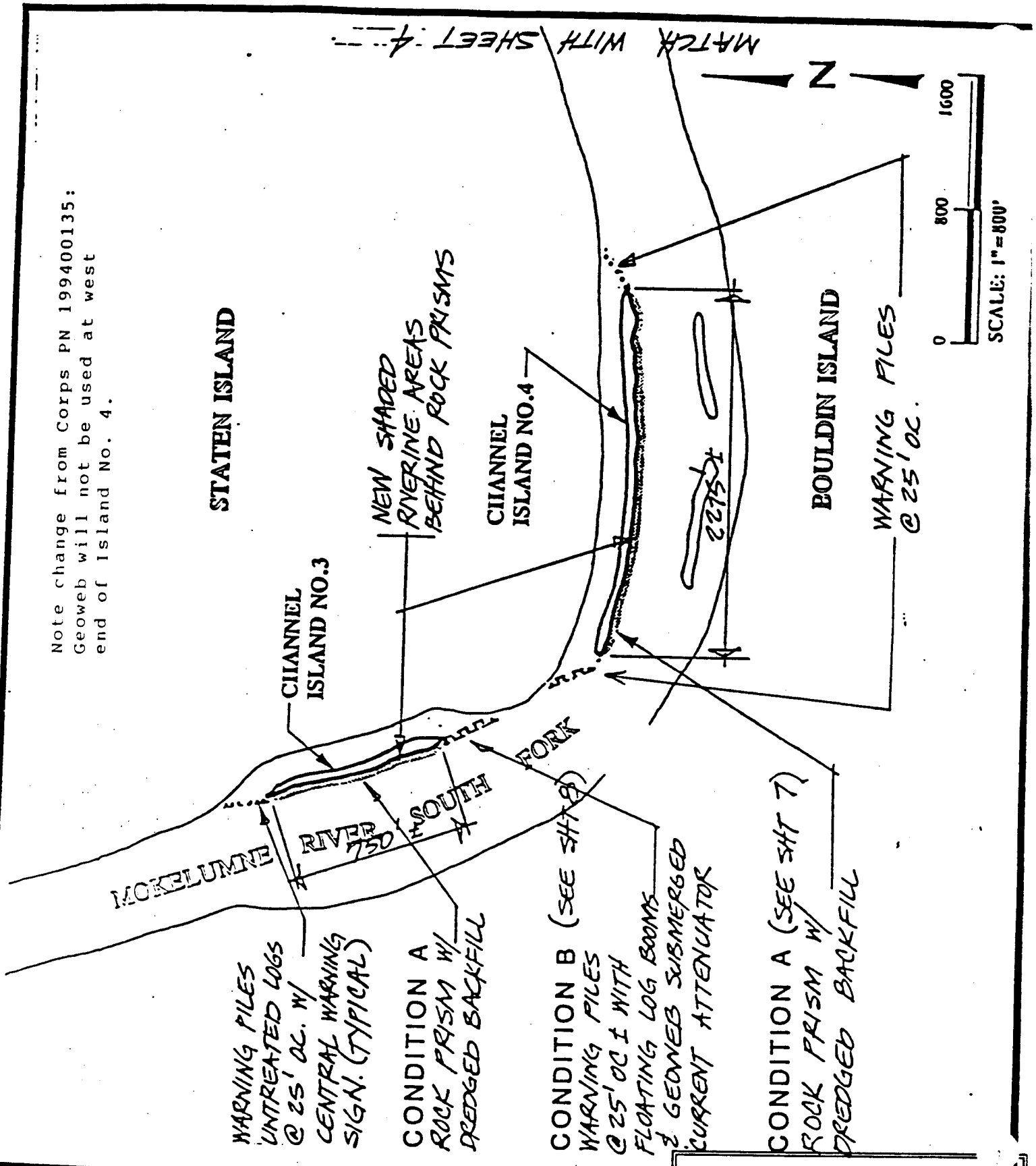
Where Mason's lilaeopsis or Delta mudwort, sensitive plant species, occur on the outside edges of the islands, a shallow ditch will be maintained between the present shoreline and the new fill such that the existing plants will continue to experience tidal inundation. No fill material will be directly placed on the Mason's lilaeopsis or Delta mudwort. Referring to Figure 12, Condition A, the dredged spoil backfill would not reach all the way back to the channel island in the locations of the rare plants. The bottom of the shallow ditch will be about one foot below mean high tide. In addition, it is expected that water will be conveyed from the backside of the island through existing openings which will help insure that an adequate supply of water reaches the plants. DFG will stake or otherwise identify the sensitive plant locations and monitor their protection during construction.

It is anticipated that vegetation in the new berm will be established in about three years and begin to provide SRA cover values. To provide immediate aquatic habitat benefits to a variety of organisms including pond turtles and fish, stumps, snags and branches will be placed in the rock riprap (Figure 4). The woody debris will be placed close enough so that the ends of each stump or snag touch (Figure 12). The stumps will come from cleared vineyards, pear orchards, and other salvage sources.

The construction of the rock prism and berm will follow the following procedure: (1) a layer of rock will be craned in from a barge at low tide to form the prism dike base (2) the CCCs will follow behind and will wedge the woody debris in place on top of the rock base (3) the barge will make a final pass and place the rest of the riprap over the woody debris to complete the prism (4) filter fabric will be installed on the inner side of the rock prism dike (5) a clam shell dredger, working from a barge, will place dredged fill from the main channel behind the rock prism dike.

An estimated 19,000 tons of quarry rock will comprise the rock prism. Approximately 22,000 cu. yards of dredge fill will be used to construct the berm. About 6,100 square feet of filter fabric will line the rock prism dikes.

Figure 8



Note change from Corps PN 199400135: Geoweb will not be used at west end of Island No. 4.

PURPOSE: Riverine habitat enhancement and stabilization.

DATUM: USGS

CONTENTS:

DETAILED SITE PLAN

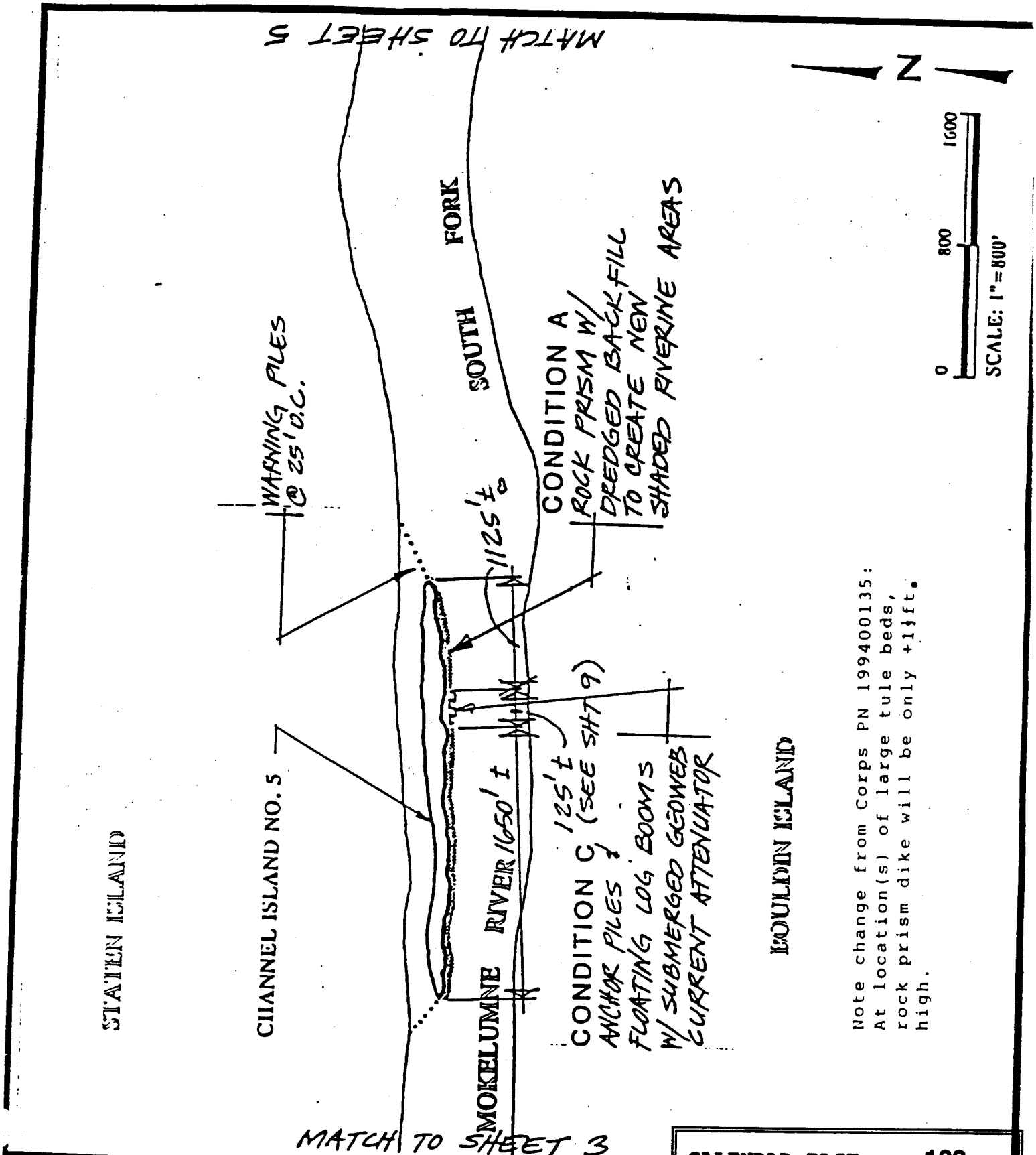
CALENDAR PAGE 132

PROJECT: Channel Island restoration

MINUTE PAGE 2516

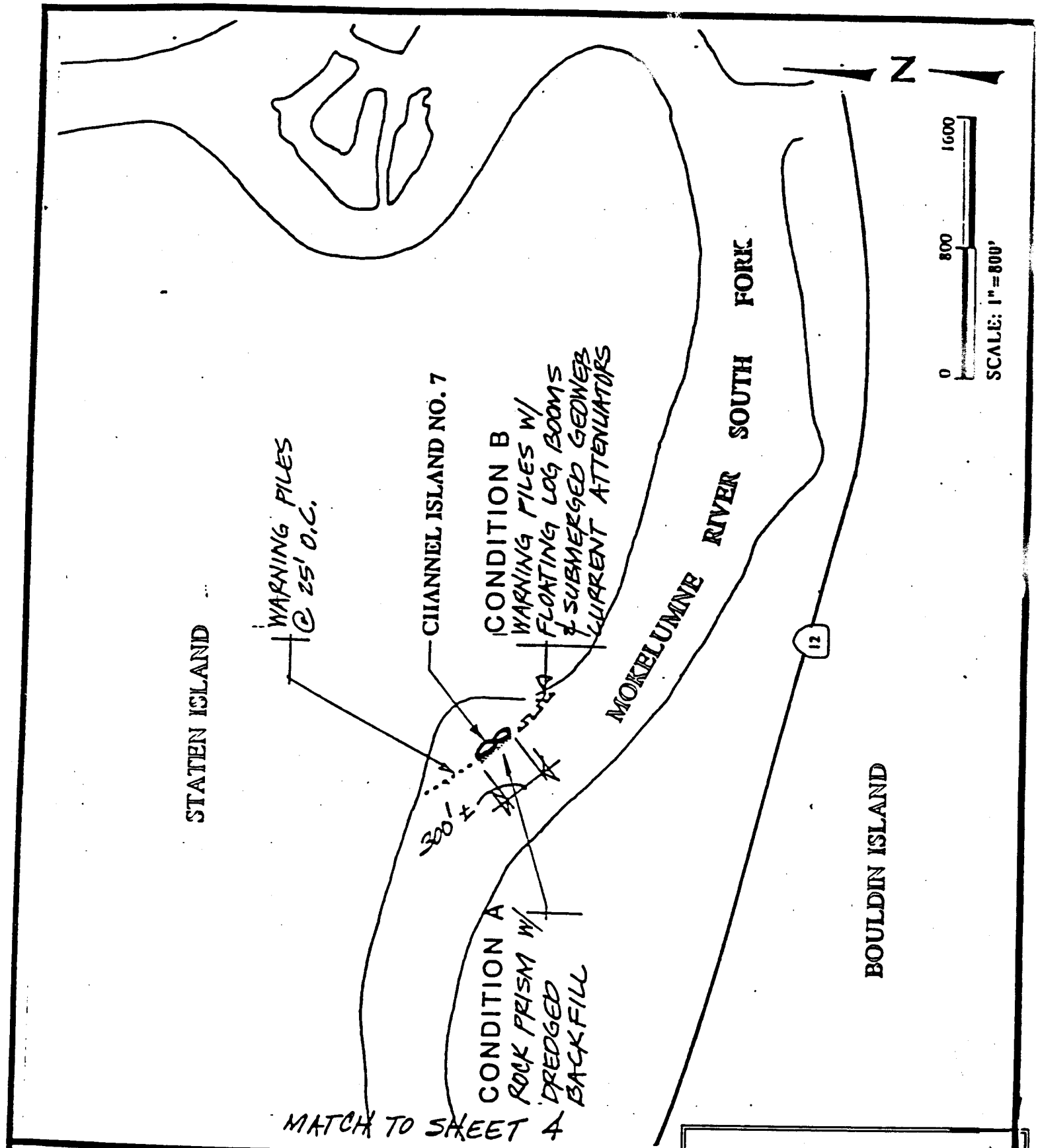
SHEET 3 OF 10, REV.

Figure 9



PURPOSE: Riverine habitat enhancement and stabilization. DATUM: USGS	CONTENTS: DETAILED SITE PLAN	CALENDAR PAGE 133
		PROJECT: Channel Island restoration
		SHEET 4 OF 10, REV.

Figure 10



PURPOSE: Riverine habitat enhancement and stabilization.

DATUM: USGS

CONTENTS:

DETAILED SITE PLAN

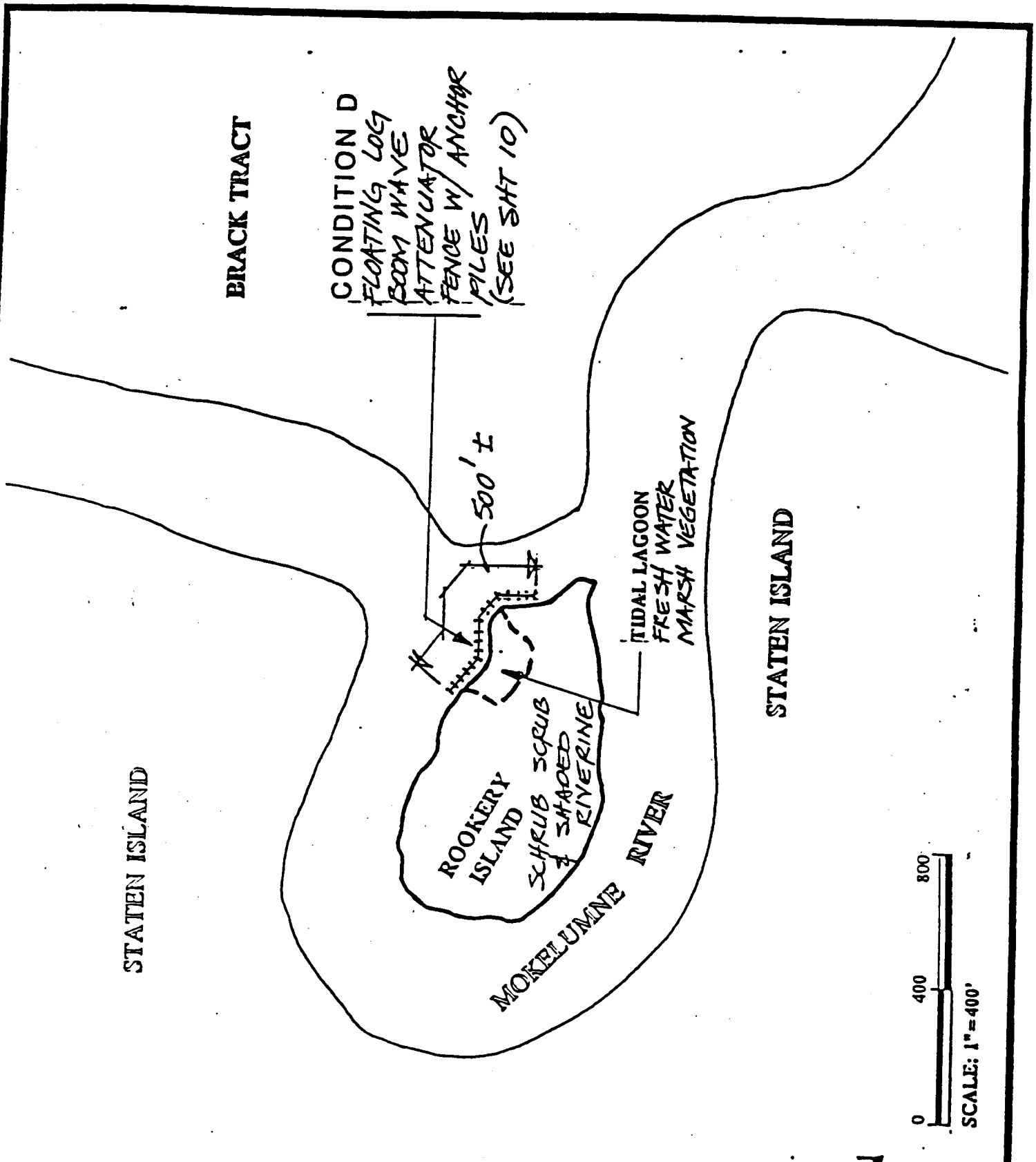
CALENDAR PAGE 134

PROJECT: Channel Island restoration

MINUTE PAGE 2518

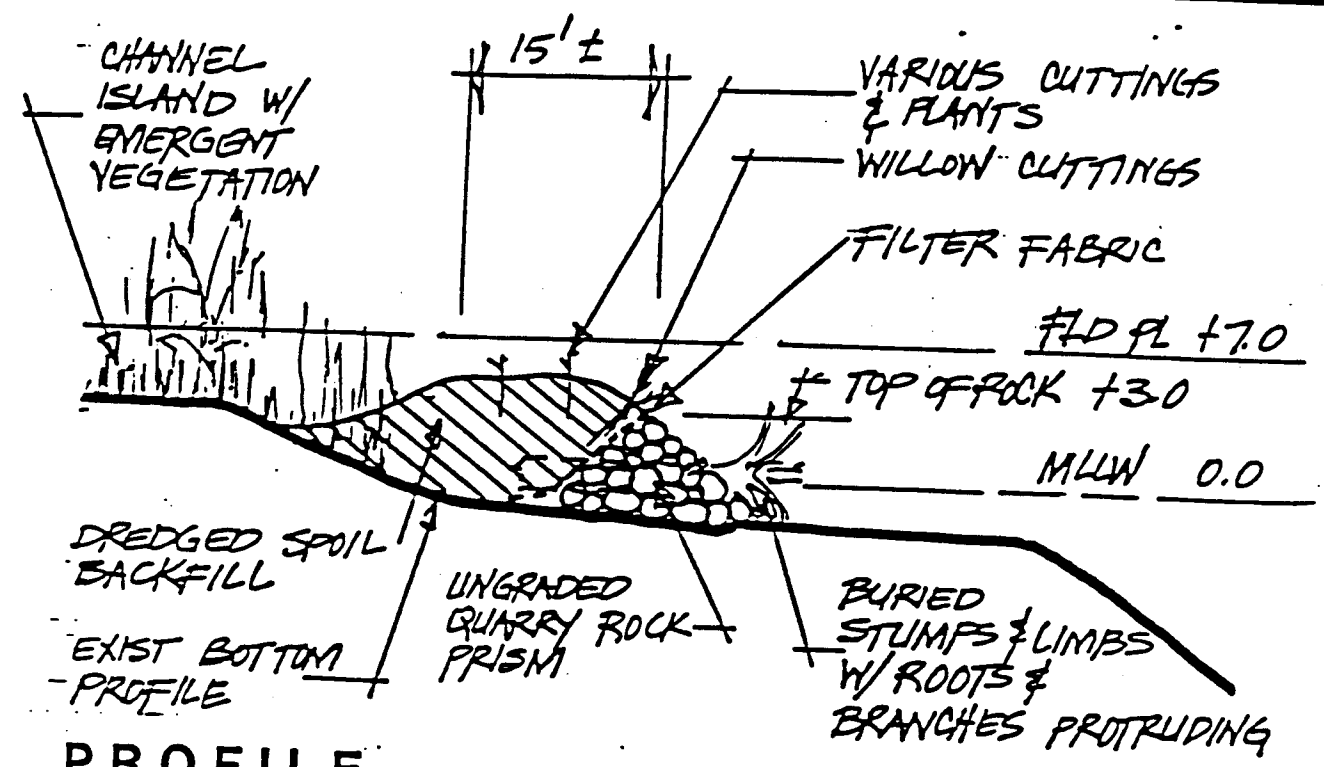
SHEET 5 OF 10, REV.

Figure 11

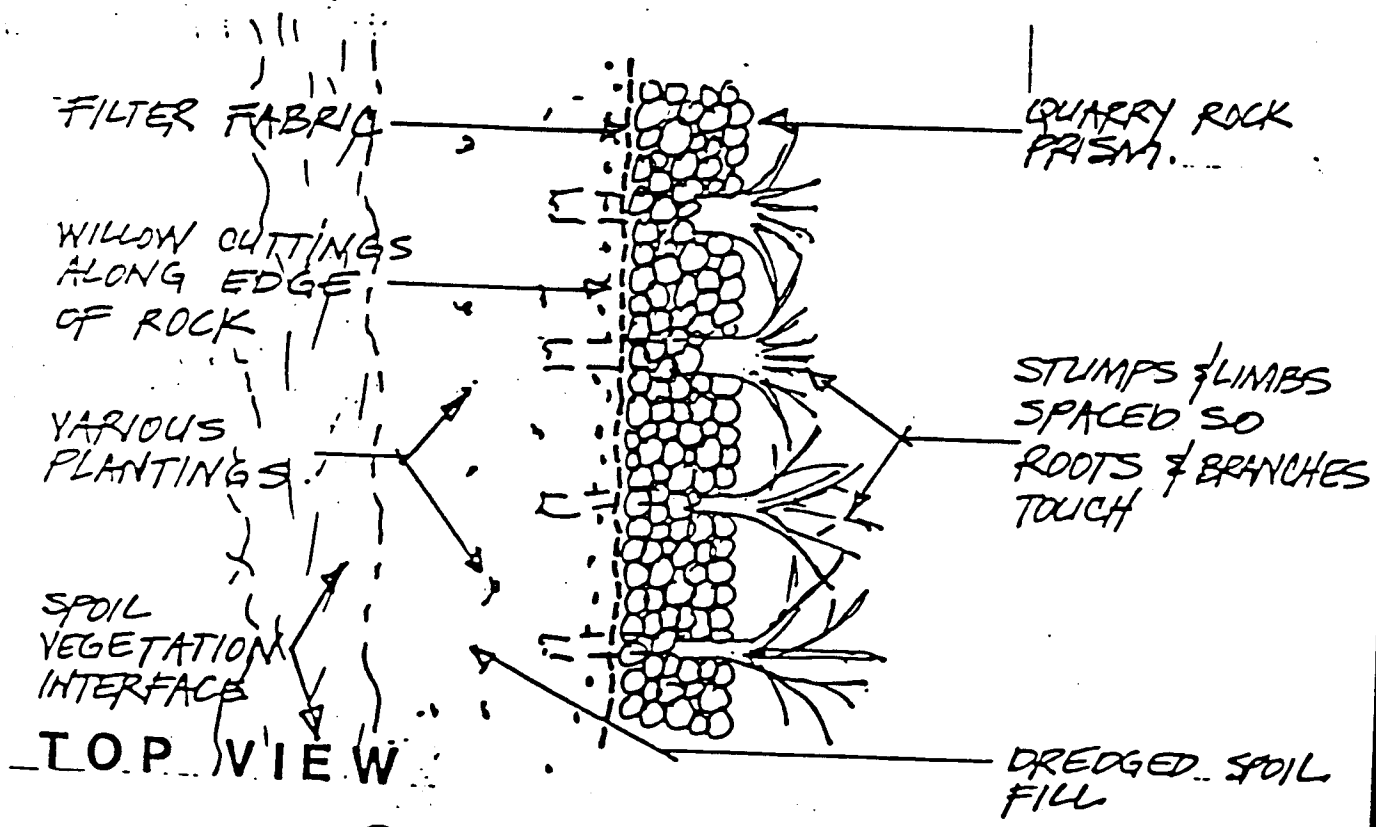


PURPOSE: Riverine habitat enhancement and stabilization.	CONTENTS:	CALENDAR PAGE 135
DATUM: USGS	DETAILED SITE PLAN	PROJECT: Channel Island restoration
		MINUTE PAGE 2519
		SHEET 6 OF 10, REV.

Figure 12



PROFILE

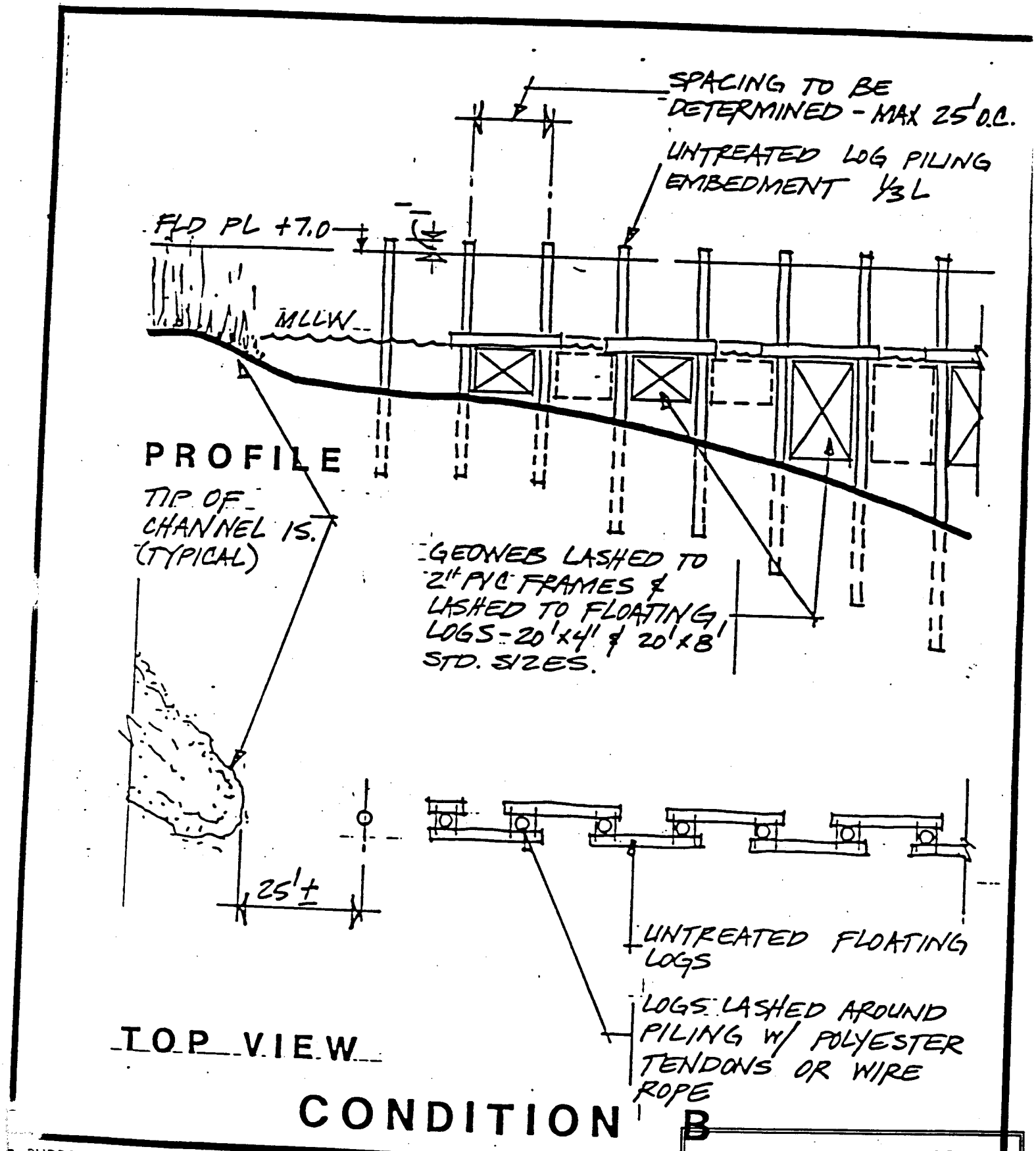


TOP VIEW

CONDITION A

PURPOSE: Riverine habitat enhancement and stabilization.	CONTENTS:	CALENDAR PAGE 136
DATUM: USGS	CONSTRUCTION DETAIL	PROJECT: Channel Island restoration MINUTE PAGE 2520
		SHEET 7 OF 10, REV.

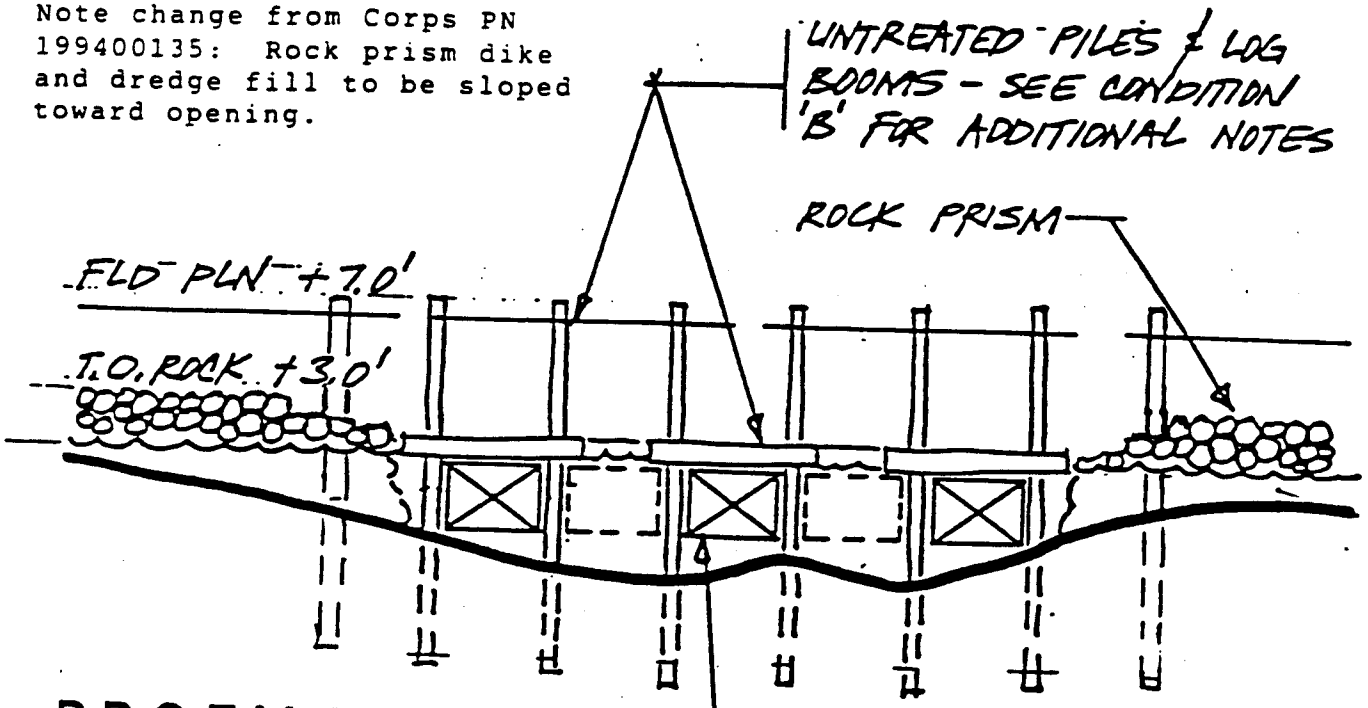
Figure 13



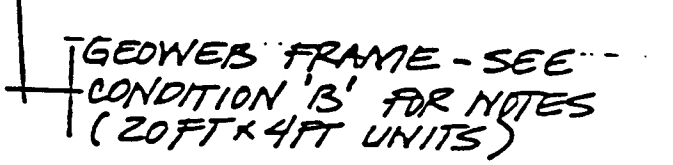
PURPOSE: Riverine habitat enhancement and stabilization.	CONTENTS:	CALENDAR PAGE 137
DATUM: USGS	CONSTRUCTION DETAIL	PROJECT: Channel Island restoration
		MINUTE PAGE 2321
		SHEET 8 OF 10, REV.

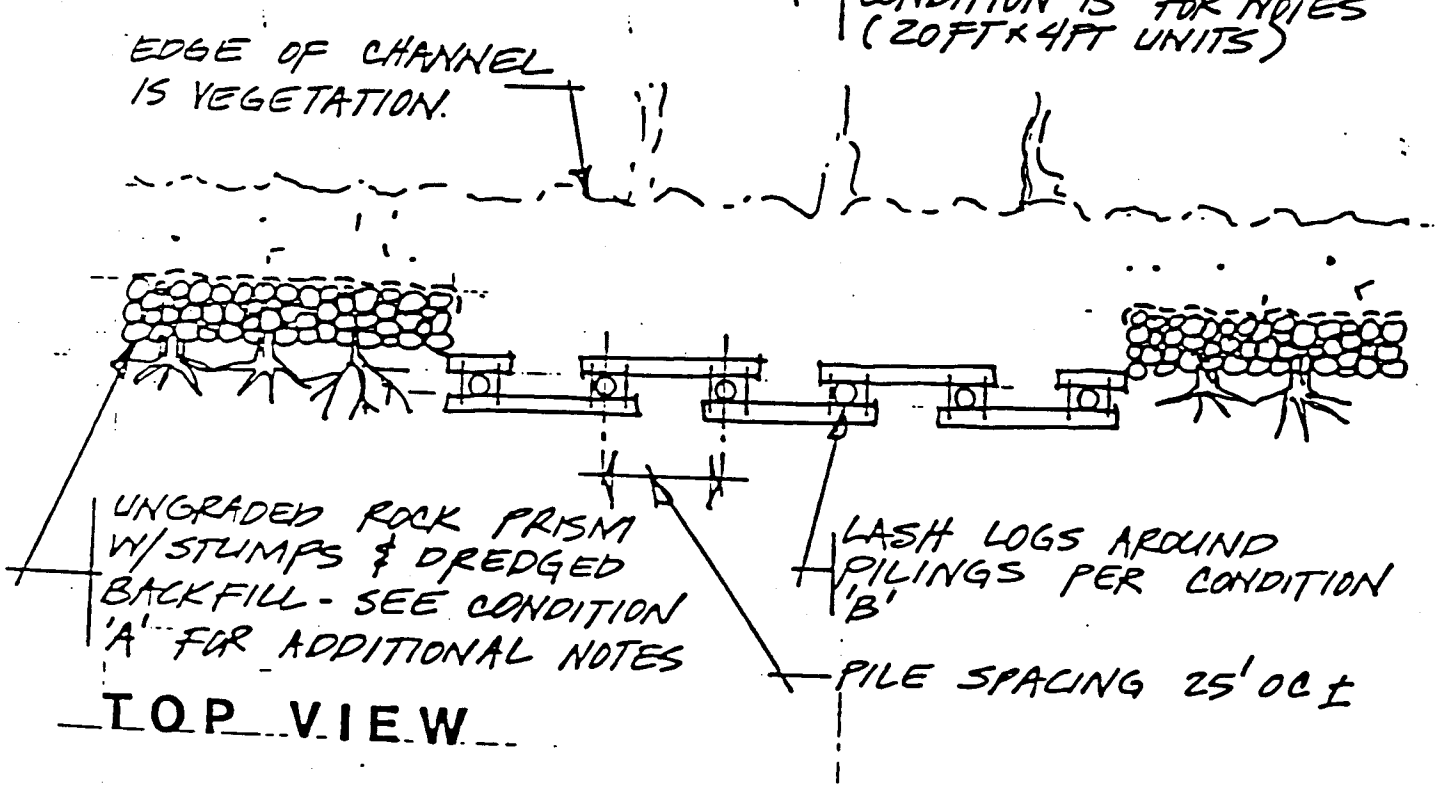
Figure 14

Note change from Corps PN 199400135: Rock prism dike and dredge fill to be sloped toward opening.



PROFILE



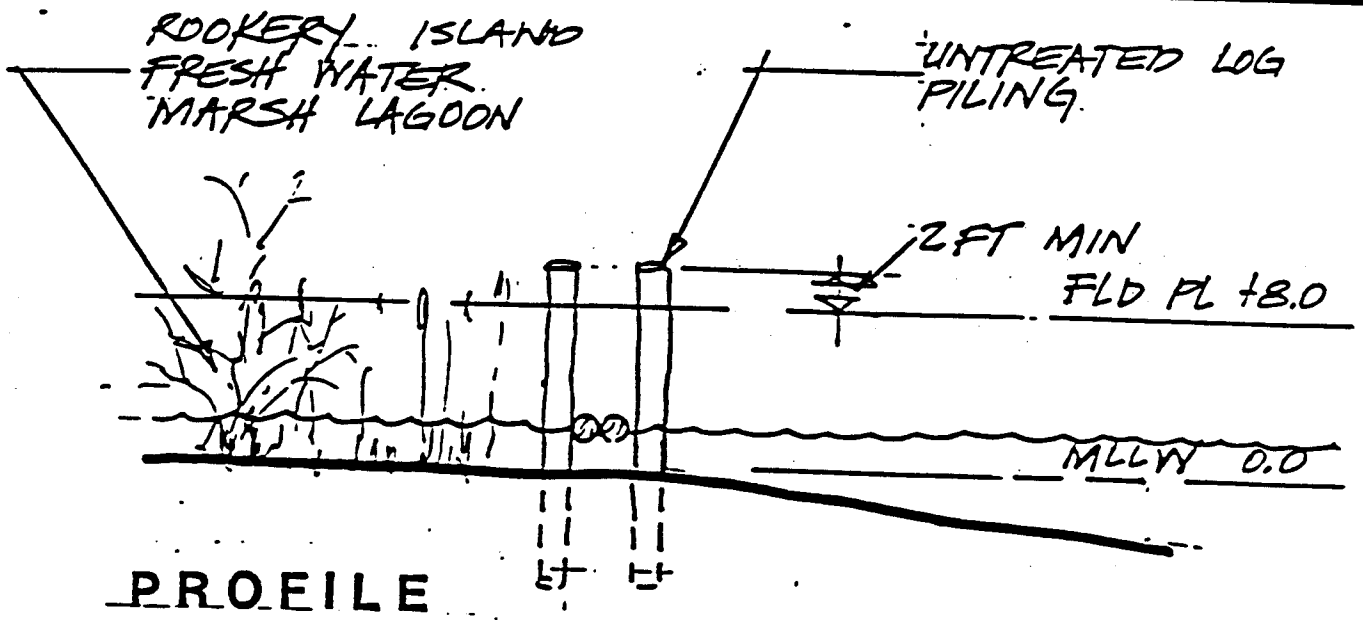


TOP VIEW

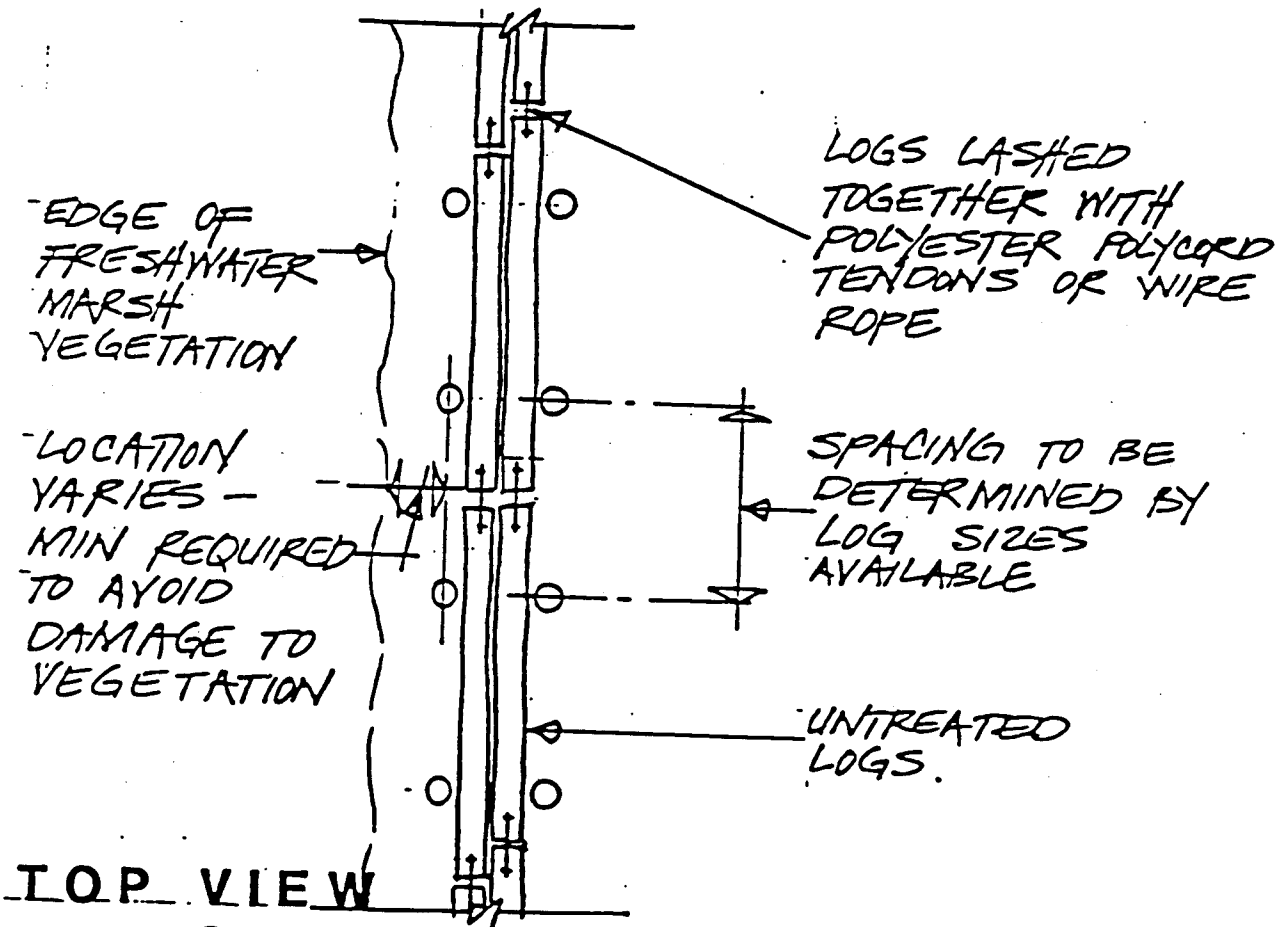
CONDITION C

PURPOSE: Riverine habitat enhancement and stabilization.	CONTENTS:	CALENDAR PAGE 138
DATUM: USGS	CONSTRUCTION DETAIL	PROJECT: Channel Island restoration MINUTE PAGE 2522
		SHEET 9 OF 10, REV.

Figure 15



PROFILE



TOP VIEW

CONDITION D

PURPOSE: Riverine habitat enhancement and stabilization. DATUM: USGS	CONTENTS: CONSTRUCTION DETAIL	CALENDAR PAGE 139 MINUTE PAGE 2523 Channel Island restoration SHEET 10 OF 10, REV.

2. Floating Log Boom and Piling Wave Attenuators (Conditions B, C, and D)

Log pilings and floating log booms, installed from a barge, will be placed at strategic locations to reduce erosion primarily by attenuating wavewash. In addition, some of the piling and boom installations will have submerged rectangular sheets of Geoweb® brand polyethylene cellular confinement material to reduce erosion and provide aquatic habitat. Four variations of pilings and logs will be used:

(1) Warning pilings in a staggered row to reduce boater speed; installed at downstream end of Island 3, upstream and downstream end of Island 4, upstream and downstream end of Island 5, and downstream end of Island 7 (see Figures 8, 9, 10)

(2) Condition B - single rows of pilings supporting single floating log booms with submerged rectangular Geoweb® sheets mounted horizontally and vertically; installed at upstream end of Island 3, and upstream end of Island 7 (see Figures 8, 9, 10, 13)

(3) Condition C - single rows of pilings supporting single floating log booms with submerged Geoweb® sheets mounted horizontally; installed in a break in the rock prism dike on Island 5 (see Figures 9, 14). The rock and dredge fill will be sloped down and outward towards the hole to avoid stranding any fish.

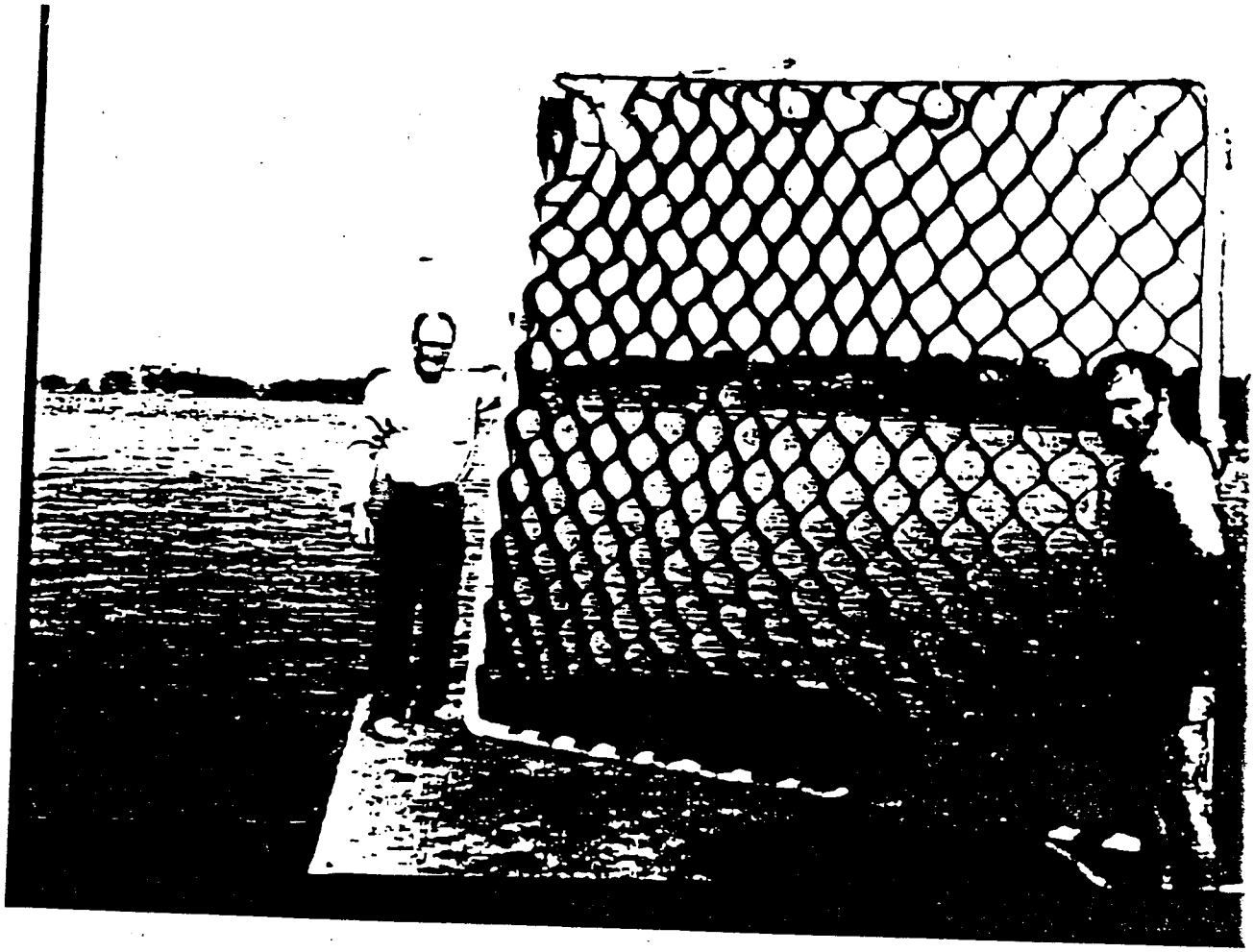
(4) Condition D - double rows of pilings supporting double rows of floating log booms (or single row of oversized logs); installed in the gap at Sycamore Island (Figure 15).

The wave attentuators will allow small craft, at slow speeds, to maneuver freely. Warning signs will be installed on piling rows. Logs for pilings and booms will be untreated cull logs obtained from BLM forestry activities.

One element of the wave attentuators consists of "owens fences" made of framed Geoweb® weighted at the bottom and attached at the top to the wooden booms (Figure 16). Geoweb® sheets of 4 ft X 20 Ft and 8 ft X 20 ft will be used, as shown in Figures 13, 14. A total of 30 Geoweb® units may be installed. In the future, if the "owens fence" appears to be deleterious to native species, e.g by being an attractant for non-native fishes which are predatory on native species, these components will be removed by DFG.

Pilings will be installed by a small drop hammer operated from a barge. No significant noise impacts are expected. A biologist from DFG will monitor the pile-driving at Sycamore Island to observe whether the noise causes an adverse impact on the heron rookery. At any sign of such impacts, the work will be stopped immediately at the direction of the DFG monitor.

Figure 16



"Owens Fence" constructed of plastic pipe and Geoweb

Revegetation

The project is designed to create and help maintain environmental conditions suitable for natural plant establishment. However, additional planting will be carried out or supervised by biologists from DFG to speed revegetation.

Species of woody plants native to the Delta will comprise the majority of plantings. In addition, California Hibiscus, a sensitive plant species found on the Islands, will be planted, if available. The CCC's, local youth groups, and M & T staff will be planting a total of 8,000 trees at Islands 3, 4, 5, and 7, under the direction of DFG. Some cuttings will be installed with construction, but most planting will begin November 1, 1994, and will be completed no later than April, 1995.

The following types and numbers of tree species will be planted. These species are all indigenous to Islands 3, 4, 5, and 7.

a. Willows - 5,500 plants; an average of one willow/linear ft.

b. Fremont cottonwoods - 50 plants planted only on Island #5; average of one cottonwood every 50 feet.

c. California black walnut - 30 plants planted an average of 250 feet apart.

d. Blue elderberry - 20 plants placed on Island #5 to provide habitat for the Federally Threatened Valley Elderberry longhorn beetle.

e. White alders - 150 plants placed on average about 50 feet apart.

f. California hibiscus - If available, a total of 30 hibiscus plants will be placed at various locations on the islands.

Willows, alders, and other tree species will be planted from super cell tubes, and are being raised at the California Conservation Corps (CCC) nursery in Napa. Cuttings of willows or cottonwoods, from Staten and Tyler Island, will also be used.

Cuttings will be planted 1-3 feet deep. Willows will be planted in a row, mostly within one and a half feet of the rock prism. The other trees will be planted further inland on the earthen berm.

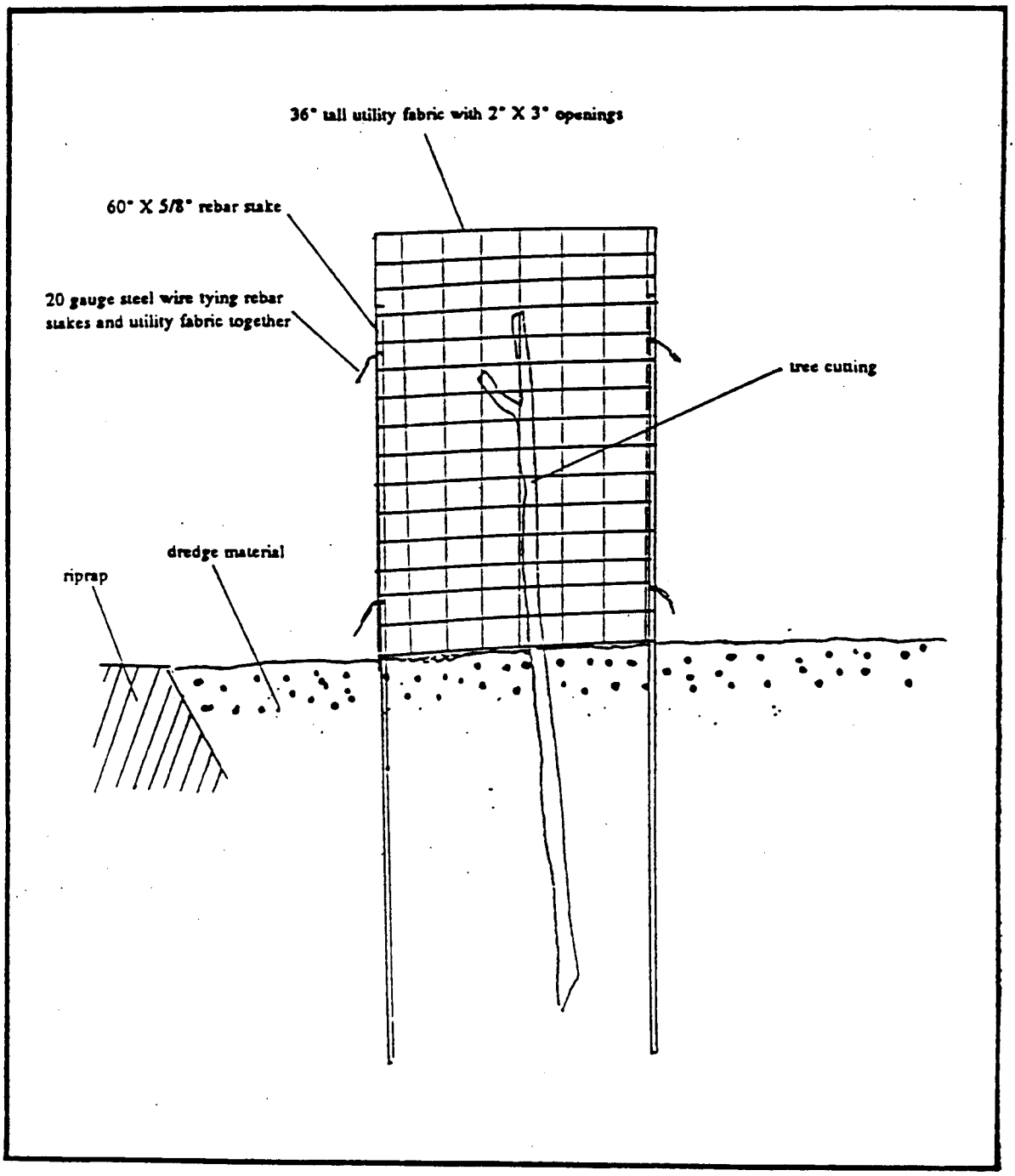
There is a probable need for "willow baskets" (shown in Figure 17) to protect some of the plantings from predation by beavers. Test willow cuttings were placed at the east end of Island #5, to determine whether the cuttings would be damaged by beavers. They could not be relocating, indicating a likely need for protection. Willow baskets have been used successfully elsewhere in the Delta to control beaver damage.

Transplanting

At a minimum of five locations at the project site, a small portion of existing populations of the Mason's lilaeopsis and Delta mudwort will be transplanted from the exterior of the islands to the interior. The new location will be at the same tidal elevation as the original site. The transplanted populations will be marked by permanent stakes. Yearly observations will be made on the transplanted populations by DFG to record survival and measure cover and abundance.

Figure 17

Possible method for protection of tree cuttings from beaver predation.



Monitoring

The DFG will monitor the installation of all project components to insure adherence of construction and other activities to the project description.

Fish fauna will be monitored by DFG in the waters adjacent to all installations prior to construction and at least twice yearly for five years. Standard methods of fish sampling will be used, e.g. gillnetting, electroshocking, or seining, will be used as appropriate. Fish surveys will be carried out by DFG, or other qualified resource professionals under contract to or in cooperation with DFG.

The fish monitoring program will be designed to avoid harm to Winter-run Chinook, Delta smelt and Sacramento Splittail. For example, gill netting with a mesh size of 1 -3 " should not be used when juvenile or adult Winter-run chinook are present. Details on fish monitoring will be developed in consultation with species experts with the DFG, US Fish and Wildlife Service, and National Marine Fisheries Service.

If the "owens fence" appears to be deleterious to native species, e.g by being an attractant for non-native fishes which are predatory on native species, these components will be removed by DFG.

Prior to construction, accurate measurements of plant cover and abundance of Mason's lilaeopsis and Delta mudwort will be taken at subsamples of the plants' occurrences which are presently located on the project islands on the side nearest the fill area. Subsample locations will be marked by permanent stakes (e.g. metal pipe or Re-bar) so that the same area can be visited over the monitoring period, which will be at least five years. Data will be collected by or under the direction of a qualified botanist. Transplanted populations will also be monitored, as noted above.

Vegetation at the site, both naturally established and planted, will be monitored. If, after a short period of monitoring, it becomes evident that the dredge fill sites would support emergent marsh species, clumps or culms (stems) of tules, cattails or other vigorous marsh species will be transplanted.

M & T Staten Ranch and/or DFG will visit the project sites at least quarterly and make written observations on the functioning of the project. In addition, M & T Staten Ranch, with assistance with project participants, will procure aerial photography of the project site after five years to monitor the success of the project in controlling island erosion. If at any time, the installations are observed to pose a threat to public safety or deleterious to the environment, remedial action will be taken by M & T and/or DFG in consultation with SLC and other interested parties.

Yearly reports presenting results of monitoring and other observations will be submitted to the SLC, Corps, National Marine Fisheries Service, US Fish and Wildlife Service, and other interested parties.

At the end of five years, DFG will prepare a written report summarizing the performance of the project in controlling erosion, and providing aquatic, wetland and riparian habitat values. This report will be submitted to the SLC, Corps, National Marine Fisheries Service, US Fish and Wildlife Service, and other interested parties.

More details are found in Attachment 3, draft Monitoring Plan. A final monitoring plan will be adopted at by the SLC, as Lead Agency, when it considers the Negative Declaration and proposed project.

Mitigation Measures and Conditions Incorporated Into the Project

Construction Window - To avoid affecting the Winter-run Chinook Salmon, Delta Smelt, and Sacramento Splittail, in-water work will be limited to a window between July 5 and September 1. This should also avoid any disturbance impacts to birds nesting in adjacent riparian areas.

Project Monitoring - Prior to project construction DFG will document the condition of the work sites by photography and precise notes. DFG will monitor project installation to insure structures are placed as designed. DFG will monitor project performance and habitat conditions for five years after project installation.

Water Quality Monitoring - Although not required, DWR will take sediment and water quality samples as outlined below (See Checklist Explanation C.5.)

No Vegetation Disturbed - No existing vegetation is to be cleared or otherwise damaged during construction, other than the collecting of transplant materials.

Tidal Inundation for Sensitive Plants - Shallow ditches will be left between dredge fill and locations of sensitive plant species Mason's lilaeopsis and Delta mudwort to allow the continuation of tidal influence. In addition, small portions of the existing populations on the outboard side of the islands will be transplanted to the inner (Staten Island) side.

Vegetation Planting - All project sites will be planted, by the CCC, local youth groups, or M & T staff under the supervision of DFG. See discussion under Project Description.

Heron Rookery Protection - A biologist from DFG will monitor the pile-driving at Sycamore Island to observe whether the noise causes an adverse impact on the heron rookery. At any sign of adverse impacts, the work will be stopped immediately at the direction of the DFG monitor.

ENVIRONMENTAL SETTING

Staten Island is located about eight miles west of the City of Lodi. The island is bordered by Tyler Island on the west, New Hope Tract on the northeast, Canal Ranch and Brack Tract on the east, Terminous Tract on the southeast, and Bouldin Island on the south. The waterways surrounding Staten Island are the North and South Forks of the Mokelumne River. The project area includes Channel Islands 3,4, 5 and 7 and Sycamore Island in the South Fork of the Mokelumne (Figures 1-3). There is a twice-daily tidal fluctuation in water levels in the river at the project location.

Historic photos reveal that berm and channel islands within the South Fork Mokelumne River have been reduced by erosion (see Project Purpose discussion above). In general, currents in the South Fork are not strong enough to explain the severe erosion which has occurred. It appears that the observed erosion is in large part due to boat wakes generated by high speed craft. South Fork Mokelumne is heavily used by the boating public, especially motorized boats.

Levee rehabilitation and maintenance at Staten Island has included stone revetting(riprapping) of the waterside levee slopes, maintaining of the levee crown patrol/access road, and vegetation control.

A detailed description of the existing biological resources is contained in a habitat assessment done by DFG staff. The habitat assessment is presented in its entirety after the environmental checklist (Attachment 2), and is hereby incorporated into this document by this reference. The following is a summary of biotic resources in the area.

All of the islands are valuable habitat for a variety of fish and wildlife species. The islands were surveyed by the DFG in January, February, and March, 1994. Wildlife found included beavers, muskrats, and miscellaneous songbirds. The existing vegetation on the islands is summarized below:

a. Channel Island 3 is about 1,100 feet long and up to 30 feet wide at low tide. The dominant plant species are bulrushes and cattails.

b. Channel Island 4 is about 1,960 feet long and 15 feet wide at low tide. The main plant species are bulrushes and cattails.

c. Channel Island 5 is about 2,650 feet long and 40 feet wide at low tide. The dominant plants of the island are bulrushes, cattails, dogwood, and blackberries.

d. Channel Island 7 is about 150 feet long and 30 feet wide at low tide. Bulrushes and cattails are the dominant plants.

e. Sycamore Island is about 600 feet wide and about 1,100 feet long. The island is covered primarily by willows and alders which are greater than 20 feet in height. The Island is an area for nesting and roosting (a rookery) for several Black-crowned Night Herons.

Several sensitive species (e.g. State or Federally classified Rare, Threatened, Candidate, Endangered, or Proposed) are found or expected in the area:

Plants:

Mason's lilaeopsis (Lilaeopsis masonii)
State Listed Rare; CNPS List 1B, Federal Candidate 2.

Delta mudwort (Limosella subulata)
CNPS List 2

California hibiscus, Rose-mallow (Hibiscus lasiocarpus)
CNPS List 2

Fishes:

Sacramento Splittail (Pogonichthys macrolepidotus)
State Species of Concern; Federally Proposed Threatened

Delta Smelt (Hypomesus transpacificus)
State Listed Threatened, Federal Threatened

Sacramento Winter-run Chinook (Oncorhynchus tshawytscha)
State Endangered, Federal Endangered

Reptiles:

Western Pond Turtle (Clemmys marmorata)
State Species of Concern; Federal Candidate

The three sensitive plant species are found in the proposed project area as described in the attached Habitat Assessment. Mason's lilaeopsis and Delta mudwort are typically found in high energy, high intertidal environments with little or other vegetation present. They do not survive in association with dense competing vegetation and are limited to the edges of the islands. The California hibiscus can grow within heavy vegetation and is present only on Island 5 in the project area.

It is unlikely that the Winter-run Chinook would be present in the South Fork Mokelumne during the time of project construction. Out-migrating young Winter-run Chinook move down the Sacramento River in the spring.

Delta Smelt spawn in winter and spring in upper portions of the Delta, primarily the Sacramento River. Time of spawning varies year to year, although the peak of spawning is generally February through May. Delta smelt eggs are deposited on permanently submerged hard surfaces such as roots, branches, stumps and rocks.

The Sacramento Splittail are resident throughout the Delta, and spawn in areas of flooded vegetation. Spawning occurs in winter and spring, with the peak from March through May.

DISCUSSION OF ENVIRONMENTAL IMPACT ASSESSMENT CHECKLIST

A. **Earth.** Will the proposal result in:

1. Unstable earth conditions or changes in geologic substructures?

No. The project will involve the placement of only small amounts of structural materials on the surface which will not disturb or otherwise affect underlying geologic conditions.

2. Disruptions, displacements, compaction, or overcovering of the soil?

Yes. Minor amounts of river sediments will be moved from the project channel to the fill sites waterward of the levees and small amounts of rock fill and geotechnical matting will be placed to contain such sediments. This activity is designed to restore and subsequently protect the berms and islands which formerly existed.

3. Change in topography or ground surface relief features?

Yes. As referenced above, the project will arrest the further loss of islands due to erosion and rebuild these features. This will be a beneficial effect.

4. The destruction, covering, or modification of any unique geologic or physical features?

No. No unique geological features are present at the project sites where structures and fill will be placed.

5. Any increase in wind or water erosion of soils, either on or off the site?

No. The project will not affect any upland soils; see below for effects on waterway substrates.

6. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet, or lake?

Yes. Many of the project components are designed to repair the effects of, and arrest further, erosion of channel islands and accompanying loss of vegetation. These project components include rock-prism dikes, pilings, floating log booms, and vertical sections of Geoweb® (See Project Description for details). The placement of these structures is designed to attenuate wave-caused erosion. This effect is beneficial. The project will also involve the dredging of minor amounts of

river sediments from the channel and placement behind rock-prism dikes. This will have insignificant effects on the configuration of the river channel and will contribute to the restoration of the island areas.

7. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?

No. There will be no change in exposure of the public to these hazards. As the project is designed to preserve, restore and protect habitat values, access by the public will be restricted.

B. **Air.** Will the proposal result in:

1. Substantial air emissions or deterioration of ambient air quality?

No. Equipment needed for the project uses small diesel and gasoline engines commonly used by Delta farmers and levee maintenance districts. Operation will be of short duration, only a few days at each project site. The operation of equipment will generate some emissions and exhaust odors within the immediate vicinity of the project, but in amounts which do not violate existing standards.

2. The creation of objectional odors?

No. See # 1 above.

3. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?

No. The project will not create any significant changes in air movements, temperature, climate, nor create any abnormal weather conditions.

C. **Water.** Will the proposal result in:

1. Changes in the currents, or the course or direction of water movements, in either marine or fresh waters?

No. As noted in the Project Description, and A.6. above, certain components of the project are designed, in part, to slow erosive wave forces. These effects will be confined to areas immediately adjacent to remaining channel islands, and will have not affect flows in the South Fork Mokelumne.

2. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?

No. The work will take place in environments which are already submerged all or much of the time.

3. Alterations to the course or flow of flood waters?

No. The proposed project components will occupy only a minute fraction of the total cross-sectional area of the entire channel at the project locations, as determined by soundings and other measurements taken by DCC Engineering, project design consultants. The proposed project was evaluated for any potential to impact flooding by Mr. Stein Buer, Chief Long-Term Planning Support and North Delta Management of the Department of Water Resources. It was concluded that "the proposed project will not have a significant impact on flood stages, flows or velocities in the South Fork Mokelumne River or adjoining channels". The full text of Mr. Buer's consultation letter of March 7, 1994, is Attachment 1.

4. Change in the amount of surface water in any water body?

No. No water will be diverted from or added to the South Fork of the Mokelumne River.

5. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?

Yes. The project involves dredging small amounts of sediment from the center of the South Fork channel adjacent to the work sites. A total of 22,000 cu yards will be dredged from the channel and deposited behind rock-prism dikes, at Islands 3, 4, 5 and 7.

Some minor turbidity may result during construction. Dredging will be done during low tide periods and dredge material will be deposited behind areas protected by filter fabric to minimize release of fines into the water column. No significant impacts to water quality are expected and it is expected that water quality certification will not be necessary. An application will be made to the Central Valley Regional Water Quality Control Board to confirm this.

The dredging from a similar restoration project in 1992 did not result in any known impacts to water quality, according to monitoring test results by DWR staff.

Both dredge material and water collected from the water column

during the previous project was tested for tributyltin and various inorganic compounds, and a 96-hour bioassay was done. The inorganic compounds tested for, such as mercury, zinc, lead, and chromium, were in most cases nondetectable and in no cases exceeded the concentrations found at various other locations in the Delta. Likewise, the concentrations of tributyltin, an anti-fouling compound formerly common in boat hull paints and extremely toxic to aquatic life, were low or nondetectable. The bioassay results with stickleback and plankton also did not indicate a significant adverse water quality problem.

In 1993, similar water and sediment quality testing was again done by DWR. Although the results of 1993 tests are not yet available in a final written report, preliminary inspection of the data indicates the same results as for 1992, i.e. no significant adverse impacts to water quality.

DWR staff proposes to conduct similar water quality sampling of both dredged sediment and effluent water for this year's project. Testing of baseline and dredged sediment, as well as baseline and dredge plume water quality, will be done.

The project is to expected to reduce erosion and thus reduce localized turbidity, a minor, beneficial effect.

6. Alteration of the direction or rate of flow of ground waters?

No. The project will not affect ground water aquifers.

7. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?

No. See # 6 above.

8. Substantial reduction in the amount of water otherwise available for public water supplies?

No. No water is needed for the project and none will be drawn from the river as a result of this project.

9. Exposure of people or property to water-related hazards such as flooding or tidal waves?

No. The project will not affect current directions or channel capacity through the South Fork of the Mokelumne River. One of the results of the project will be better protection of the levees which surround Staten Island (see C.3. above and attached letter from Stein Buer, DWR).

10. Significant changes in the temperature, flow or chemical content of surface thermal springs?

No. No thermal springs are in the area.

D. **Plant Life.** Will the proposal result in:

1. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?

Maybe. The project will not result in any adverse impact to the riparian forest or shrub or emergent marsh habitat. The project is designed to prevent continued shoreline erosion and protect existing vegetation. The addition of the constructed berms on the channel islands may increase plant species diversity over present conditions, a beneficial effect.

2. Reduction of the numbers of any unique, rare or endangered species of plants?

No. Three sensitive plant species are found in the project vicinity, Mason's lilaeopsis (Lilaeopsis masonii), Mudwort (Limosella subulata) and California hibiscus (Hibiscus lasiocarpus). (See attached Habitat Assessment). None of the proposed project construction will directly affect any individuals of these species. No structures, including the dredge fill, will be placed onto any individual plants.

The Mason's lilaeopsis and Mudwort typically occur on the edges of the islands, in the intertidal zone. The rock dike and dredge-fill berms will be installed outboard of the existing plants' locations. The fill material will be placed up to one foot in height above the level of the existing rock prism and backsloped downward away from the prism, and will not impinge upon the existing plants. To maintain a tidal connection to the plants, a shallow ditch will be maintained between the present shoreline and the new fill such that the existing plants will continue to experience tidal inundation. The bottom of the shallow ditch will be about one foot below mean high tide. In addition, it is expected that water will be conveyed from the backside of the island through existing openings which will help insure that an adequate supply of water reaches the plants. DFG will stake or otherwise identify the sensitive plant locations and monitor their protection during construction.

At a minimum of five locations at the project site, a small portion of existing populations of the Mason's lilaeopsis and Delta mudwort will be transplanted from the exterior of the islands to the interior. The new location will be at the same

tidal elevation as the original site. The transplanted populations will be marked by permanent stakes. Yearly observations will be made on the transplanted populations by DFG to record survival and measure cover and abundance.

The log structures may be colonized over time by these two plant species. Observations for this will be made by DFG during the 5-year project monitoring period.

Over a long time, it is probable that the area between the created berm and the existing island will fill in with vegetation and sediments. This would likely result in the eventual reduction or elimination of Mason's lilaeopsis and mudwort from their former locations. These species generally require habitats with active tidal washing and minimal competition from other vegetation. It is unknown whether these plants could colonize the outer surfaces of the rock prisms. However, in the absence of the proposed project, the channel islands would be completely lost to erosion over time, thus eliminating completely any substrate suitable for these plants.

3. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?

No. Only cuttings and other plant material of locally-growing native plants and fill from the adjacent river channel will be used. Natural plant establishment of local native species will continue, in fact will be encouraged by the project.

4. Reduction in acreage of any agricultural crop?

No. No farmland or potential farmland will be affected.

E. **Animal Life.** Will the proposal result in:

1. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects)?

Maybe. The project is designed to increase the fish and wildlife habitat values of the site over what it would be in the future without the project. If it is successful, animal diversity and abundance at the site should increase due to the project.

The proposed placement of the rock prism dikes and fill at (Condition A) will result in a loss of a small amount of unvegetated shoal or tide flat fish habitat. However, it is

expected that the SRA habitat which will be developed from plantings and the large amount of surface area generated by the buried logs, with protruding roots, will more than compensate for fisheries habitat lost during construction. The proposed placement of piling and owens fences will also increase fish habitat values.

Pilings will be installed by a small drop hammer operated from a barge. No significant noise impacts to fish or wildlife is expected. Disturbance to nesting riparian bird species which may utilize the area will be avoided by the construction window. A biologist from DFG will monitor the pile-driving at Sycamore Island to observe whether the noise causes an adverse impact on the heron rookery. At any sign of adverse impacts, the work will be stopped at the direction of the DFG monitor.

2. Reduction of the numbers of any unique, rare or endangered species of animals?

No. The waters surrounding Staten Island may contain the Federally and State Threatened Delta Smelt and the State Endangered and Federally Threatened Winter-run Chinook Salmon. It is unlikely these two species would be present in the South Fork Mokelumne during the time of construction. Out-migrating young Winter-run Chinook move down the Sacramento River in the spring. The proposed construction would be at the Delta Smelt spawn January to June in upper portions of the Delta, primarily the Sacramento River. Sacramento Splittail spawn in winter and spring, peaking in March through May. Impacts to these fish species are avoided by the proposed construction window of July 5 through September 1.

The proposed project will prove beneficial in the long run for the Delta Smelt and Sacramento Splittail by creating new vegetation-water interface habitats.

Fish fauna will be monitored for at least five years by DFG in the waters adjacent to all installations. If the "owens fence" appears to be deleterious to native species, e.g. by being an attractant for non-native fishes which are predatory on native species, these components will be removed by DFG.

3. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?

No. None of the project components will pose a problem to animal movements.

4. Deterioration to existing fish or wildlife habitat?

No. The project is designed to protect and improve fish and wildlife habitat values. See #1 above.

F. **Noise.** Will the proposal result in:

1. Increase in existing noise levels?

No. Equipment needed for the project uses small diesel and gasoline engines commonly used by Delta farmers and levee maintenance districts. Duration of construction will be a few days at each location, with the total construction period extending from July 1994 to August 1994.

2. Exposure of people to severe noise levels?
No. See # 1. above.

G. **Light and Glare.** Will the proposal result in:

1. The production of new light or glare?

No. No artificial lights will be used in the project and the rock and geotechnical structures will be very small and vegetation will cover them within a short time.

H. **Land Use.** Will the proposal result in:

1. A substantial alteration of the present or planned land use of an area?

No. Overall land use in the vicinity will be unaffected.

I. **Natural Resources.** Will the proposal result in:

1. Increase in the rate of use of any natural resources?
No. The root wads and snags to be used within the rock prism are will be salvaged from various farm disposal operations. The logs to be used for pilings and booms will be cull logs from Bureau of Land Management forestry activities.

2. Substantial depletion of any nonrenewable resources?

No. There will be only small amounts of fuels, quarry rock, and raw materials for filter fabric and Geoweb® expended in the project.

J. **Risk of Upset.** Does the proposal result in:

1. A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals, or radiation) in the event of an accident or upset conditions?

No. Proposed equipment and activities are common and customary in Delta, and pose insignificant risk of accidents.

2. Possible interference with emergency response plan or an emergency evacuation plan?

No. The Project could not affect any emergency plans.

K. **Population.** Will the proposal result in:

1. The alteration, distribution, density, or growth rate of the human population of the area?

No. The project will not affect human populations in the area as the agricultural use of the island will not be affected by the project.

L. **Housing.** Will the proposal result in:

1. Affecting existing housing, or create a demand for additional housing?

No. Housing will not be affected and is not part of the project.

M. **Transportation/Circulation.** Will the proposal result in:

1. Generation of substantial additional vehicular movement?

No. No additional traffic is anticipated beyond existing ranch operations.

2. Affecting existing parking facilities, or create a demand for new parking?

No. See # M. 1 above.

3. Substantial impact upon existing transportation systems?

No. See # M. 1 above.

4. Alterations to present patterns of circulation or movement of people and/or goods?

No. See # M. 1 above.

5. Alterations to waterborne, rail, or air traffic?

No. See # M. 1 above.

6. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?

No. See # M. 1 above.

N. **Public Services.** Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:

1. Fire protection?

No. This short duration project will not create any additional demands on government agencies and services such as fire, police protection, parks and recreation, road maintenance, etc.

2. Police protection?

No. The project will not affect the existing agricultural activities on the island and as such will not increase demands on such public services.

3. Schools?

No. See above.

4. Parks and other recreational facilities?

No. See above.

5. Maintenance of public facilities, including roads?

No. See above.

6. Other governmental services?

No. See above.

O. **Energy.** Will the proposal result in:

1. Use of substantial amounts of fuel or energy?

No. This project will only use minute amounts of fuel over a short term for equipment. It will not create any additional use of fuel or energy by the general public.

2. Substantial increase in demand upon existing sources of energy, or require the development of new sources?

No. See # 1 above.

P. **Utilities.** Will the proposal result in a need for new systems, or substantial alterations to the following utilities:

1. Power or natural gas?

No. The project will not create a need for new nor alternations to existing utility systems. There will be no additions to any existing facilities which will affect the current uses of power, communications, water, septic tanks, storm water drainage, or solid waste disposal.

2. Communication systems?

No. See # 1 above.

3. Water?

No. See # 1 above.

4. Sewer or septic tanks?

No. See # 1 above.

5. Storm water drainage?

No. See # 1 above.

6. Solid waste and disposal?

No. See # 1 above.

Q. **Human Health.** Will the proposal result in:

1. Creation of any health hazard or potential health hazard (excluding mental health)?

No. The completed habitat protection and restoration project will not pose any significant health hazard.

2. Exposure of people to potential heath hazards?

No. See # 1 above.

R. **Aesthetics.** Will the proposal result in:

1. The obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?

No. The rock and geotechnical structures will be very small.

and unobtrusive and vegetation will obscure them within a short time. The Geoweb® fish fence structures will be submerged and not visible. The project will be more aesthetically pleasing than riprap on the face of adjacent levees and when grown, the restored vegetation will provide a more pleasing vista for those using the waterway.

S. **Recreation.** Will the proposal result in:

1. An impact upon the quality or quantity of existing recreational opportunities?

Maybe. The project is designed to preserve and restore habitat values which will enhance scenic values and may increase fishing opportunities in the area. Certain of the structures are designed in part to slow motorized boat speed near Channel Islands in the South Fork Mokelumne. However, the project will potentially enhance general recreational boating and sport fishing activities.

T. **Cultural Resources**

1. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archeological site?

No. Although this general area of the Delta was within the homeland of the Plains Miwok there are no known triblet or village sites at the project location. Temporary camps, which were occupied seasonally for fishing, could exist in the vicinity, but would have been placed on natural levees or areas of higher ground, which are not present at the project site.

The only shipwreck known for the Mokelumne River at large is the W. A. Fletcher, built in 1918 and sunk October 7, 1927 (SLC Shipwreck Database). The location is not known, but this is not known to be a significant vessel.

2. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?

No. See # 1 above.

3. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?

No. See # 1 above.

4. Will the proposal restrict existing religious or sacred

Uses within the potential impact area?

No. See # 1 above.

U. **Mandatory Findings of Significance.**

1. Does the project have the potential to degrade the quality of the environment, 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 periods of California history or prehistory?

No. The project will not significantly degrade the environment and will result in the restoration and protection of species, habitats, and natural communities. Beneficial effects on special status plant and animal species are anticipated from the proposed project.

2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?
No. The long-term effect of the proposed project will be to benefit the environment through habitat restoration and protection. See project description.

3. Does the project have impacts which are individually limited, but cumulatively considerable?

No. The completed project is expected to result in net environmental benefits. See project description.

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

No. The potential immediate environmental effects of the project are not significant and the potential long-term environmental effects are beneficial. Therefore the potential environmental effects of the project will not cause any significant impacts to human beings.

STATE OF CALIFORNIA—THE RESOURCES AGENCY

DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

Attachment 1

PETE WILSON, Governor

RECEIVED
MAR 0 8 1994
M&T STATEN RANCH

March 7, 1994

Ms. Sally Hearne
M&T Staten Ranch
Post Office Box 408
Walnut Grove, California 95690

Dear Ms. Hearne:

This letter is in response to your request for an assessment of the potential flood impacts of the proposed channel island dredge berms project along the southern end of Staten Island. While the Department of Water Resources has no regulatory or advisory responsibilities regarding this project, I am pleased to provide my evaluation of the project, based on my five years' involvement in flood assessments for the north Delta area.

In my opinion, the proposed project will not have a significant impact on flood stages, flows, or velocities in the South Fork Mokelumne River or adjoining channels. On the other hand, there could be a long-term, incremental reduction in flood risk through reduced erosion of the Staten Island levees. The proposed project is consistent with the Department's Interim North Delta Program, in which waterside berms and channel islands are proposed to help protect levees and enhance riparian habitat. The dredge berms that you previously constructed along the upper South Fork Mokelumne River are already providing very valuable practical data that would be useful if the Department chooses to proceed with the INDP.

I anticipate that the proposed channel island dredge berms project will also provide valuable data. The proposed project involves placing rock about 15 feet from the existing southern shores of the channel islands, laying construction fabric over it, then filling in the area between the rock and shore with material dredged from the channel. The berms thus created would provide a substrate for vegetative growth, which would in turn help protect the berm and the island from wave wash. Except for the placement of rock in the channel, the project essentially involves moving channel sediment from one location to another within the channel

cross-section, with no significant net change in cross-sectional area and flow capacity.

The proposed project also includes placement of synthetic webbing on piles to create artificial fishery enhancement in the channels between the islands and the Staten Island levee. This would not significantly reduce the flow capacity of the South Fork Mokelumne River.

If you have any questions or comments about this assessment, please feel free to call me at (916) 653-6628.

Sincerely,

Stein M. Buer

Stein M. Buer, Chief
Long-Term Planning
Support and North
Delta Management

RECEIVED
STATE LANDS COMMISSION
94 MAR 10 PM 1:11

Attachment 2

SB 34
HABITAT ASSESSMENT

FIVE CHANNEL ISLANDS
STATEN ISLAND, SAN JOAQUIN COUNTY

Sacramento-San Joaquin Delta, California

Prepared by

Frank Gray
Environmental Specialist III
and
Barry Baba
Scientific Aid

Prepared for the

California State Lands Commission

and

California Department of Fish and Game

April 1994

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EXECUTIVE SUMMARY

This is an assessment of fish and wildlife and associated habitat at five channel islands located at the south and southeast end of Staten Island, San Joaquin County, in the Sacramento-San Joaquin Delta. The results of the assessment support the feasibility of a proposed SB 34 mitigation project planned for summer, 1994.

The primary findings are as follows:

1) The Mason's lilaeopsis (Lilaeopsis masonii), a Federal-listed Category 2 Candidate and State-listed Rare plant, was found at four of the five channel islands.
2) The California hibiscus (Hibiscus lasiocarpus), a California Native Plant Society (CNPS)-listed 2 plant, was found at two locations on one channel island.
3) Mudwort (Limosella subulata), a CNPS-listed 1B plant, occurs throughout four of the five channel islands.
4) Two Sacramento splittail (a Federal Proposed Threatened Species) were caught.
5) Two chinook salmon were caught in a gillnet.
6) Western pond turtles were found at several locations, typically in groups of eight or nine.
6) The habitat types found at the channel islands consisted of 5 types: freshwater marsh, scrub shrub, riparian forest, shaded riverine aquatic, and riverine aquatic bed.
7) Freshwater marsh habitat was the most abundant habitat type.
8) An estimated total of less than 100 lineal feet of shaded riverine aquatic (SRA) habitat was found at proposed rock prism sites.

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INTRODUCTION

The goal of the assessment is to identify habitat types existing on the channel islands and determine if any significant habitat will be impacted by the proposed project, including any species that are identified as CEQA-defined rare or endangered. It will be used as part of a mitigated Negative Declaration prepared pursuant to the California Environmental Quality Act (CEQA).

The assessment was completed to determine habitat conditions relative to a mitigation project planned for 1994. The project will mitigate for habitat losses due to past levee rehabilitation and maintenance work.

The Delta Flood Protection Act of 1988 (SB 34) program funds flood control levee maintenance projects for nonproject levee systems in the Sacramento-San Joaquin Delta. It requires that such projects do not result in a net long-term loss of fisheries, riparian, or wildlife habitat.

The main goal of the proposed mitigation project is to mitigate for net long-term losses of shaded riverine aquatic (SRA) habitat that occurred between 1987 and 1991 as a result of levee rehabilitation and maintenance work. An incidental goal is to stabilize channel islands from wave erosion. Another incidental goal of the project is to demonstrate the effectiveness of various techniques involving placement of riprap, filter fabric, dredged materials, Geoweb®, and wooden pilings, which may be valuable for planning future SB 34 funded projects.

SRA habitat has been defined in the SB 34 program as a habitat type includes all trees and shrubs which overhang the water. This habitat will be considered SRA even if the vegetation only overhangs the water during a small part of the tidal cycle.

SRA habitat in the Delta is found along channel islands and the waterside of levees. SRA

vegetation established on levees for mitigation may be removed for required levee maintenance. This is extremely unlikely with habitat created on the channel islands, which has the potential for remaining in perpetuity.

Many channel islands in the Delta are decreasing in area as indicated by aerial photos and other evidence. This is believed to be due to any one or a combination of factors, including erosion from boat wakes, and wind generated waves. The cumulative acreage of large and small channel islands in the Delta has not yet been computed, but they constitute one of the most significant habitat resources and one of the most threatened in the Delta. Further erosion and loss of habitat can be expected without efforts to stabilize these islands from erosion.

The study area for the habitat assessment includes the islands where the mitigation project is planned. The M & T Staten Ranch (M & T) and the Department of Fish and Game (DFG) are cooperatively planning a project to provide mitigation at five islands in the South Fork Mokelumne River, San Joaquin County (Figure 1). Four of these islands are unnamed to the best of anyone's knowledge, and are identified in this assessment as Channel Island #3, #4, #5, and #7, following the nomenclature established by M & T. The fifth island is Sycamore Island, an oval shaped island contiguous to Brack Tract owned by the Ed Merlo family.

Islands #3, #4, #5, and #7 are owned by the State of California and M & T. The precise ownership boundaries of these lands have not been defined and are not in dispute.

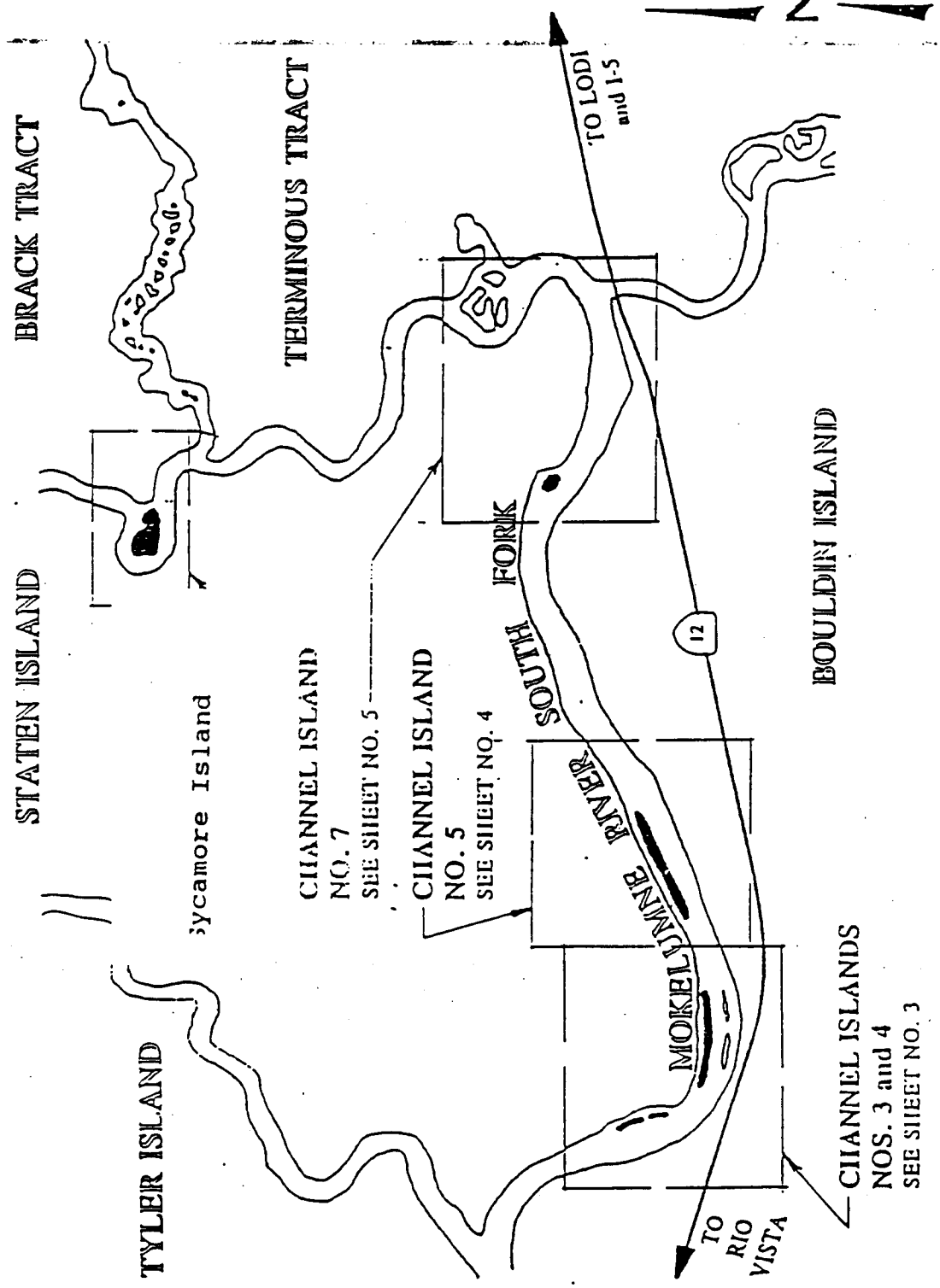
A general physical description of the islands is as follows:

A. Island #3 - This island is about 1,100 feet long and up to 70 feet wide at low tide.

B. Island #4 - This island is about 1,960 feet long and up to 60 feet wide at low tide.

C. Island #5 - This island is about 2,650 feet long and up to over 80 feet wide

Figure 1. Channel Islands in 1994 [illegible]
Staten Island, San Joaquin County



at low tide.

D. Island #7 - This island is about 150 feet long and up to over 30 feet wide at low tide.

E. Sycamore Island - This island is about 550 feet wide and about 1,100 feet long.

Aerial photos show that all the project islands area are diminishing in size. Comparison of photos taken in 1937 and 1992 show that collectively the area of the five islands has diminished by more than 57% during this time period.

An intensive field survey of all project areas is required, since the project will include major modifications to the existing shoreline. Islands #3, #4, #5, and #7 will be modified by placement of a rock riprap prism on the south side (facing the main channel) to hold dredge fill material, where about 1.5 miles of SRA vegetation will be established. Sycamore Island will also be protected, but no dredge material will be placed and only wave deflection devices will be used.

It is necessary to know the fish and wildlife resources on both sides of Islands #3, #4, #5, and #7, even though the rock prism will only be placed on one side of the island. Among the many reasons for this is the fact that sites on the north side of these islands, although not sites for rock placement, may be used as possible areas for transplanting of vegetation which could be impacted by the placement of the rock prism.

It is necessary to determine the approximate amount of SRA vegetation present at each of the proposed mitigation sites before the project, so that adequate mitigation credits for the project can be established. Also, it will be valuable to determine the plant species composition on each of the islands and the presence of all plant species which are classified as rare or endangered under CEQA.

Dredging will be completed along portions of the channel and there is a need to determine

channel depths relative to dredging conditions. Collection of soil samples is useful in determining the concentrations of silt, sand, and clay in the dredge material relative to conditions for establishment of vegetation in the project area.

There is very little existing information about the status of fish and wildlife populations in the project area. There is no general habitat survey for Staten Island, as there is for many other Reclamation district areas in the Delta. Staten Island is no longer participating in the SB 34 program. However, there is a Delta map showing the current known distribution of CEQA-defined rare or endangered species near Staten Island (Figure 2). A total of eight known CEQA species have been found at Staten Island, but other species may also be present.

There is a need to collect data regarding indigenous fish species. This will enable a determination of significant adverse impacts under CEQA and will help answer the fundamental question about whether the proposed establishment of SRA habitat will benefit these species. Also, several components are being considered as elements of the project that will improve fish habitat, including placement of tree branches.

Midwater trawl surveys conducted by the Bay Delta Project for the DFG have shown that there were delta smelt present in the South Fork of the Mokelumne River during the months of February through April 1993 (Figures #3, #4 and #5). Trawl surveys conducted during the summer indicate that delta smelt population will be further downstream during the summer.

The project area is part of the DFG designated essential habitat for the winter-run chinook salmon, and is outside of the Federal designated Critical Habitat for the winter-run chinook salmon. There have also been DFG electrofishing surveys conducted of the Delta for various freshwater fish species during the period from 1987 to 1991. These surveys included areas near the channel islands (Department of Fish and Game, 1987).