

MINUTE ITEM

This Calendar Item No. 58
was approved as Minute Item
No. 58 by the State Lands
Commission by a vote of 3
to 0 at its 7-19-93
meeting.

MINUTE ITEM

58

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STATE LANDS COMMISSION AND M & T STATEN RANCH,
DBA RECLAMATION DISTRICT NO. 38 (PARTIES)

Calendar Item 58 was moved from Regular Calendar to
Consent Calendar.

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CALENDAR ITEM

58

A 26

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07/19/93

W 24964

Jacobs

J. Sekelsky

Simmons

AUTHORIZE EXECUTIVE OFFICER TO ENTER INTO
A MEMORANDUM OF AGREEMENT ("MOA") BETWEEN M & T STATEN RANCH,
dba RECLAMATION DISTRICT NO. 38, AND THE STATE LANDS COMMISSION
FOR PURPOSES OF IMPLEMENTING A HABITAT RESTORATION
AND EROSION CONTROL DEMONSTRATION PROJECT AND OF PERFORMING
EMERGENCY LEVEE REPAIRS ON STATEN ISLAND
ALONG THE SOUTH FORK OF THE MOKELUMNE RIVER, SAN JOAQUIN COUNTY.

PARTIES:

M & T Staten Ranch, dba Reclamation District
No. 38 ("District")
Attn: Jim Shanks and Sally Hearne
P. O. Box 408
Walnut Grove, California 95690

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

AREA, TYPE LAND AND LOCATION:

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

LAND USE:

The proposed MOA would provide for implementation of a
Habitat Restoration and Erosion Control Demonstration
Project ("Project") which would restore berms to preserve
and restore riparian, emergent marsh, and aquatic habitats
and to control erosion to provide levee protection in an
environmentally beneficial manner. Berm restoration would
be accomplished by a combination of structures and
vegetative techniques. The Project is more specifically
described in the Negative Declaration attached hereto as
Exhibit A and by this reference incorporated herein. The
MOA would also provide for emergency repair to a damaged
section of levee.

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TERMS:

Two (2) years, beginning July 19, 1993

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 14, Div. 6.

AB 884:

N/A

OTHER PERTINENT INFORMATION:

1. On December 17, 1992, the Commission authorized staff to work with the District to develop a plan for a berm restoration project at Staten Island along the South Fork of the Mokelumne River in San Joaquin County. The Project is to serve two purposes; first, to protect adjoining levees from erosion, and second, to protect and restore shaded riverine aquatic cover and other aquatic and wetland habitat. The Project has been designed by the District and Staff with the assistance of the California Department of Fish and Game. The Project is similar in intent to a berm protection and restoration project authorized by the Commission on January 8, 1992, and implemented during the summer of 1992. Commission and Department staff have inspected the Project site and believe that berm restoration may represent a viable alternative to the use of barren rip rap on levee faces to protect levee integrity, and also may prove successful in preserving and restoring fish and wildlife habitats which are fast disappearing throughout the Delta.
2. The MOA by which the State and the District would agree to implement the project would authorize the District to post signs on the Project lands advising the public that the lands are part of a cooperative habitat restoration and erosion control project between the District, the State Lands Commission and the Department of Fish and Game, and that public access to and over said lands is restricted or prohibited to protect habitat and public trust resource values of the lands.
3. The precise boundary between the sovereign lands of the State and the private lands of the District has not been determined. Staff believes that it is in the best interests of the State to implement the proposed project which is

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beneficial to all parties in leading to both restoration of wildlife habitat and levee protection. In furtherance of these interests, the District and the Commission would implement the proposed project without prejudice to their respective land 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 Negative Declaration identified as ND 623, State Clearinghouse No. 93062041. Such Proposed Negative Declaration was prepared and circulated for public review pursuant to the provisions of CEQA.

Based upon the Initial Study, the Proposed 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. After designing the Project outlined above, it was discovered that, as this winter's high waters receded, a twenty-five foot section of the levee at Station 140, Staten Island, slipped into the river. The damaged section of the levee continues to erode and poses an extreme threat to the flood safe security of the island. The District proposes to repair the damaged section of the levee by placement of a log or rock prism at approximately the low water line, extending parallel to the shore to create a transition from existing rip rap on one end of the slip to a tree-lined berm on the other. Dredged material would be used to fill behind the prism and rapid growing native grasses and trees would be planted immediately to establish cover before next winter.

6. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines (14 Cal. Code Regs. 15061) repairs to the damaged section of levee outlined in paragraph 4, above, would be exempt from the requirements of the CEQA as a categorically exempt project. The project is exempt under Class 4, Minor Alteration to Land, 2 Cal. Code Regs. 2905(c)(2).

Authority: P.R.C. 21084, 14 Cal. Code Regs. 15300, and 2 Cal. Code Regs. 2905.

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7. These activities involve 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 process, it is the staff's opinion that the project, as proposed, is consistent with its use classification.

APPROVALS OBTAINED:

None

FURTHER APPROVALS REQUIRED:

United States Army Corps of Engineers, State Lands Commission, California Department of Fish and Game, Central Valley Regional Water Quality Control Board.

EXHIBITS:

- A. Negative Declaration
- B. Monitoring Program
- C. Location and Site Map

IT IS RECOMMENDED THAT THE COMMISSION:

1. CERTIFY THAT A PROPOSED NEGATIVE DECLARATION, ND 623, STATE CLEARINGHOUSE NO. 93062041, WAS PREPARED FOR THE HABITAT RESTORATION AND EROSION CONTROL DEMONSTRATION PROJECT PURSUANT TO THE PROVISIONS OF THE CEQA AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.
2. ADOPT THE NEGATIVE DECLARATION AND DETERMINE THAT THE HABITAT RESTORATION AND EROSION CONTROL DEMONSTRATION PROJECT, AS APPROVED, WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.
3. ADOPT THE MITIGATION MONITORING PLAN, AS CONTAINED IN EXHIBIT "B", ATTACHED HERETO.
4. FIND THAT THE REPAIR OF THE DAMAGED SECTION OF LEVEE AT STATION 140, STATEN ISLAND, IS EXEMPT FROM THE REQUIREMENTS OF CEQA AS A STATUTORILY EXEMPT PROJECT PURSUANT TO P.R.C. 21080(b)(4) AND 14 CAL. CODE REGS. 15269(c), SPECIFIC ACTIONS NECESSARY TO PREVENT OR MITIGATE AN EMERGENCY.

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5. FIND THAT THESE ACTIVITIES ARE CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED FOR THE LAND PURSUANT TO P.R.C. 6370, ET SEQ.
6. AUTHORIZE THE EXECUTIVE OFFICER TO EXECUTE A MEMORANDUM OF AGREEMENT BETWEEN THE COMMISSION AND M & T STATEN RANCH, dba RECLAMATION DISTRICT 38, FOR PURPOSES OF IMPLEMENTING A HABITAT RESTORATION AND EROSION CONTROL DEMONSTRATION PROJECT AND OF PERFORMING EMERGENCY REPAIRS ALONG THE SOUTH FORK OF THE MOKELUMNE RIVER ADJACENT TO STATEN ISLAND, SAN JOAQUIN COUNTY.

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Exhibit "A"

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

June 10, 1993
File: W 24873
ND 623

**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 July 12, 1993.

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

DIANA JACOBS
Division of Environmental
Planning and Management

(LL)

Attachment

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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 24873
ND 623
SCH No. 93062041

Project Title: Habitat Restoration & Erosion Control Demonstration Project

Project Proponent: M & T Staten Ranch

Project Location: South Fork of the Mokelumne River, Staten Island, San Joaquin County.

Project Description: Demonstration project for riparian, wetland, and aquatic habitat restoration and erosion control.

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.

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

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I. BACKGROUND INFORMATION

- A. Applicant: M & T Staten Ranch
James Shanks
PO Box 408
Walnut Grove, CA 95690
- B. Checklist Date: 6 / 10 / 1993
- C. Contact Person: Diana F. Jacobs
 Telephone: (916) 445-5034
- D. Purpose: Restore riparian, wetland, and aquatic habitats and demonstrate erosion control methods.
- E. Location: South Fork Mokelumne River, Staten Island, San Joaquin County
- F. Description: Riparian, wetland and aquatic habitat restoration and levee erosion control demonstration. Small amounts of rock, logs, root wads, dredge fill and geotechnical fabric and cellular confinement systems will be used to restore berm and island areas, which will be revegetated.
- G. Persons Contacted: Frank Gray, Ed Littrell, Jim Messersmith - Department of Fish and Game
Steve Roberts - Department of Water Resources
Richard DeHaven, Cindy Levy - US Fish and Wildlife Service
Michael Thabault - National Marine Fisheries Service
Nancy Dubbs and Paul Jones - US Environmental Protection Agency
Mike Mosbacher - Central Valley Regional Water Quality Control Board
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?	—	—	X
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?	—	—	X
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 estuary?	X	—	—
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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	Yes	Maybe	No
B. Air. Will the proposal result in:			
1. Substantial air emissions or deterioration of ambient air quality?	—	—	<u>X</u>
2. The creation of objectional odors?	—	—	<u>X</u>
3. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?	—	—	<u>X</u>
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?	<u>X</u>	—	—
2. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?	—	—	<u>X</u>
3. Alterations to the course or flow of flood waters?	—	—	<u>X</u>
4. Change in the amount of surface water in any water body?	—	—	<u>X</u>
5. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	<u>X</u>	—	—
6. Alteration of the direction or rate of flow of ground waters?	—	—	<u>X</u>
7. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	—	—	<u>X</u>
8. Substantial reduction in the amount of water otherwise available for public water supplies?	—	—	<u>X</u>
9. Exposure of people or property to water-related hazards such as flooding or tidal waves?	—	—	<u>X</u>
10. Significant changes in the temperature, flow or chemical content of surface thermal springs?	—	—	<u>X</u>
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)?	—	—	<u>X</u>
2. Reduction of the numbers of any unique, rare or endangered species of plants?	—	—	<u>X</u>
3. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	—	—	<u>X</u>
4. Reduction in acreage of any agricultural crop?	—	—	<u>X</u>
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)?	<u>X</u>	—	—
2. Reduction of the numbers of any unique, rare or endangered species of animals?	—	—	<u>X</u>
3. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	—	—	<u>X</u>
4. Deterioration to existing fish or wildlife habitat?	—	—	<u>X</u>
F. Noise. Will the proposal result in:			
1. Increase in existing noise levels?	—	—	<u>X</u>
2. Exposure of people to severe noise levels?	—	—	<u>X</u>
G. Light and Glare. Will the proposal result in:			
1. The production of new light or glare?	—	—	<u>X</u>
H. Land Use. Will the proposal result in:			
1. A substantial alteration of the present or planned land use of an area?	—	—	<u>X</u>
I. Natural Resources. Will the proposal result in:			
1. Increase in the rate of use of any natural resources?	—	—	<u>X</u>
2. Substantial depletion of any nonrenewable resources?	—	—	<u>X</u>

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	Yes	Maybe	No
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?	—	—	<u>X</u>
2. Possible interference with emergency response plan or an emergency evacuation plan?	—	—	<u>X</u>
K. Population. Will the proposal result in:			
1. The alteration, distribution, density, or growth rate of the human population of the area?	—	—	<u>X</u>
L. Housing. Will the proposal result in:			
1. Affecting existing housing, or create a demand for additional housing?	—	—	<u>X</u>
M. Transportation/Circulation. Will the proposal result in:			
1. Generation of substantial additional vehicular movement?	—	—	<u>X</u>
2. Affecting existing parking facilities, or create a demand for new parking?	—	—	<u>X</u>
3. Substantial impact upon existing transportation systems?	—	—	<u>X</u>
4. Alterations to present patterns of circulation or movement of people and/or goods?	—	—	<u>X</u>
5. Alterations to waterborne, rail, or air traffic?	—	—	<u>X</u>
6. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	—	—	<u>X</u>
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?	—	—	<u>X</u>
2. Police protection?	—	—	<u>X</u>
3. Schools?	—	—	<u>X</u>
4. Parks and other recreational facilities?	—	—	
5. Maintenance of public facilities, including roads?	—	—	<u>X</u>
6. Other governmental services?	—	—	<u>X</u>
O. Energy. Will the proposal result in:			
1. Use of substantial amounts of fuel or energy?	—	—	<u>X</u>
2. Substantial increase in demand upon existing sources of energy, or require the development of new sources?	—	—	<u>X</u>
P. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:			
1. Power or natural gas?	—	—	<u>X</u>
2. Communication systems?	—	—	<u>X</u>
3. Water?	—	—	<u>X</u>
4. Sewer or septic tanks?	—	—	<u>X</u>
5. Storm water drainage?	—	—	<u>X</u>
6. Solid waste and disposal?	—	—	<u>X</u>
Q. Human Health. Will the proposal result in:			
1. Creation of any health hazard or potential health hazard (excluding mental health)?	—	—	<u>X</u>
2. Exposure of people to potential health hazards?	—	—	<u>X</u>
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?	—	—	<u>X</u>

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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?	—	—	<u>X</u>
T. Cultural Resources			
1. Will the proposal result in the alteration of or the destruction of a prehistoric or historic archeological site? ...	—	—	<u>X</u>
2. Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?	—	—	<u>X</u>
3. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?	—	—	<u>X</u>
4. Will the proposal restrict existing religious or sacred uses within the potential impact area?	—	—	<u>X</u>
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?	—	—	<u>X</u>
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	—	—	<u>X</u>
3. Does the project have impacts which are individually limited, but cumulatively considerable?	—	—	<u>X</u>
4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	—	—	<u>X</u>

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.
- 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: 6/10/93

Diana Jacoby
 For the State Lands Commission
 CHIEF CLERK
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NEGATIVE DECLARATION/INITIAL STUDY
Habitat Restoration and Erosion Control Demonstration Project
M & T Staten Ranch

INTRODUCTION

The State Lands Commission (SLC), M & T Staten Ranch (M & T), and the Department of Fish and Game (DFG) are jointly sponsoring a project on the South Fork Mokelumne River to restore and protect riparian, emergent marsh, and aquatic habitats. The project is also designed to demonstrate erosion control and berm and island restoration techniques which could be used as alternative environmentally sensitive methods of levee protection or for mitigation for more traditional rock riprap projects.

The proposed project involves a number of separate work sites, at which will various methods of erosion control and restoration will be installed, including the use of rock, logs and root wads, and commercially available geotechnical fabric and cellular confinement systems.

The project was jointly designed by staff of the SLC, DFG, and M & T, with input and advice from other state and federal agencies obtained through numerous contacts and field visits to the proposed work area. The assistance of staff from the US Army Corps of Engineer (COE), Department of Water Resources (DWR), National Marine Fisheries Service (NMFS), US Fish and Wildlife Service (FWS), Environmental Protection Agency (EPA), and the Central Valley Regional Water Quality Control Board (CVRWQCB) is gratefully acknowledged. Representatives from GEOWEB, manufacturers of polyethylene cellular confinement system, also advised in the design of some of the work.

The project will be carried out with the help and cooperation of many public and private parties.

Project Participants

- The SLC is acting as the Lead Agency under the California Environmental Quality Act (CEQA), and has prepared this Proposed Negative Declaration (ND).
- DFG has done an assessment of the existing environmental conditions at the site which was used in the preparation of the ND, and will monitor project implementation and the post project conditions, including performance of the structures and habitat values, for five years following construction. DFG is also coordinating the procurement of the geotechnical erosion control products to be used at some of the work sites, and will carry out or supervise all plantings.
- M & T will procure all necessary logs, root wads, and rock

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and will be responsible for the proposed placement of the structures, dredging and filling.

- DWR staff is carrying out sediment and water quality monitoring.

In January, 1992, a similar project was installed by M & T and DFG upstream of the proposed project. A major benefit of this project was protection of the levee in addition to habitat restoration. The 1992 project (COE Permit 9101089; SLC lease PRC 7606) rebuilt two sections of berm, 150 and 500 feet long. Rock dike walls were placed out about 10 to 20 feet from the levee waterside toe and dredge material taken from the adjacent channel was used to fill behind. A portion of the rock dikes had filter fabric placed on the interior wall. Various plantings, both cuttings of woody species and clumps of tules, were installed. Growth of tules, willows, and other vegetation at the site appears very good and the berm does not appear to be eroding from wave action or high streamflows. The proposed project is, in part, based on the results to date of this previous demonstration site.

Project Location and Ownership

The proposed project is located on the right bank of the South Fork Mokelumne River, at and downstream of the confluence with Beaver Slough (See Maps on Sheets 1 - 4, prepared by DCC Engineering). The upland land owner is M & T Staten Ranch, which maintains the levee as Reclamation District No. 38. The tide and submerged lands within the project area are state-owned sovereign lands under the jurisdiction of the SLC. The precise location of the boundary between the uplands owned by M & T and the tidelands 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.

Project Background

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

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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 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.

Purpose of Proposed Project

At the project site, shoreline erosion is occurring which is reducing the amount of island and berm land forms and the woody riparian and freshwater marsh habitat they support. Continued erosion would result in the eventual loss of valuable habitat on the site and threaten levee security. Once erosion reaches to the levee, it is likely the slopes would be armored with riprap.

Evidence of shoreline erosion can be seen in the comparison of shorelines taken from a 1913 map and aerial photos taken in 1937, 1957, 1975, and 1992, depicted on attached Sheets A, B, and C, covering the project area. It can be seen that in most places the shoreline in the project vicinity is eroding and the

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waterline is getting closer to the levees, or already has reached the toe, and berms and islands are reduced. On Sheet B, for example, the island on the left bank which was visible on 1937 has disappeared. In another example, measurements of the island depicted on Sheet B show it is 15-35% shorter than it was in 1975.

At the proposed project work sites specifically, the nature of undercutting around existing vegetation and the presence of sunken snags also indicate a gradual loss of land from erosion. 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 proposed project is a demonstration of low-cost techniques which are designed to protect existing and create new SRA cover and other aquatic and wetland habitat areas. The project is designed so that there will be no net loss of habitat values and will result in the development of additional habitat.

Alternatives to the Proposed Project

There are a variety of erosion control and landform restoration methods which could meet the project goals, including cabled logs, wooden pilings, cribwalls, boulders, rock, plantings, geotechnical fabrics and mats, pre-cast interlocking concrete blocks, and combinations of these methods. The alternatives selected for this demonstration project were chosen with in consideration of the materials, equipment, and staff readily available to M & T, with the assistance of DFG. Also, alternatives were chosen which relied on traditional methods used by Delta land managers, 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.

If no action is taken it is likely that the sites will continue to erode, reducing riparian, wetland and aquatic habitat values and possibly threatening levee security.

PROJECT DESCRIPTION

The proposed project consists of 4 different techniques at 12 work sites: (1) rock prism dikes with dredge material fill, with and without root wads (Condition A in attached drawings); (2) spot fill of rock over filter fabric (Condition B and C1); (3) use of GEOWEB Brand polyethylene cellular

confinement system	
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(Conditions C2, C3, F and G); and (4) placement of logs and root wads (Condition E).

IMPORTANT NOTE: An application for the proposed project has been made to the US Army Corps of Engineers, Sacramento District, for a Section 10 and Section 404 permit, and a Public Notice (PN 199300245) was issued May 28, 1993. Since the PN was released, certain aspects of the proposed project have been changed. These refinements reflect the results of informal consultations between state and federal natural resources agencies (as noted above) and M & T to improve the environmental benefits of the project. Drawings used for the Corps PN are part of this ND with the addition of notes, as well as new drawings which show some of the project amendments and more project details.

In brief, the project as now proposed differs from the project in the Corps' PN in the following ways:

- The rock prism dike and fill method, Condition A, will have one or more logs placed through the rock wall in at least one of the sites;
- The proposed work at the inner entrance to the upstream lagoon, Condition B - Sheet 5, will not be done and the only work will be rock placed on the outside of the lagoon entrance;
- The rock prism groins in the tule berm, Condition D, will not be done;
- The proposed lagoon filter dike, Condition E - Sheet 8 will be made of waterlogged stumps and root wads, not rock;
- The most downstream GEOWEB site, Condition G - Sheet 9, will have filter fabric placed under the GEOWEB, and rock fill sites, Condition B and C1 will also filter fabric placed under the rock.

Mitigation Measures and Conditions Incorporated Into the Project

Construction Window - To avoid affecting the Winter-run Chinook Salmon, dredging will be limited to a window between July and September 1, or when the Delta Cross Channel is closed. The project will not begin until July 14, 1993. This should also avoid any disturbance impacts to birds nesting in adjacent riparian areas.

Staking Work Site - Prior to installation of

the project, the	
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individual work sites will be staked and their final locations approved by DFG. DFG will stake the location of sensitive plant species, Delta Tule Pea and Mason's Lilaeopsis, which will be avoided by all construction activities.

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.

Vegetation Planting - All project sites except Condition E will be planted by or under the supervision of DFG; see discussion under Project Description.

Proposed Project Components

1. Rock Prism Dike and Fill (Condition A)

At four locations where riparian vegetation and SRA Cover are absent due to erosion, a rock prism dike will be placed parallel to the general shoreline, with fill placed behind to build up a small berm. The rock dike will be joined to existing vegetated low banks at upstream and downstream ends of the erosion site.

Rock will be placed on or near the sites at or near low tide to assure accurate and efficient placement. The dike will be raised to a height approximately one foot above the mean high water elevation, but not above mean higher high water so that the area is kept moist and the outer zone of the new berm is occasionally subjected to inundation. Dredged material fill will be placed on the landward side of the prism. Permeable filter fabric will be placed on the landward side of the prism between the rock and the dredge fill material to minimize fill material reentering the river through the prism.

On at least one of the berm reconstruction sites, one or more large logs, with roots attached, will be placed on the site to be covered by fill material and rock dike. The root end will be left exposed on the waterward side to provide aquatic habitat

cover values. (See amendment drawing to Sheet 5, showing log alternative to Condition A.)

At the time of construction, stout cuttings of riparian woody plant species will be placed along the interior dike face, on top of the filter fabric, prior to filling with dredge material. These cuttings will be placed at each of the four work sites. Other planting will be done as described below.

The berm restoration will arrest further losses of riparian vegetation at each site. The old root crowns will provide some immediate aquatic habitat value and the new berm and banks will eventually provide for growth of woody and other vegetation for riparian habitat and SRA Cover.

Berm restoration at the downstream island will be placed so as to stop short of the "hummock" containing two sensitive plant species, the Delta Tule Pea and Mason's Lilaeopsis (see Environmental Setting below and Figure 2).

2. Spot fill of rock over filter fabric (Condition B, as amended; and Condition C1)

At the outside entrance to the upstream lagoon, woody vegetation is being undermined by erosion. The outer lagoon entrance will be lined with a shallow layer of rock placed over filter fabric. Placement of filter fabric and rock will be done over and around existing roots, branches, and trunks. No vegetation is to be removed or disturbed. The rock will be placed on the upstream and downstream sides of the lagoon opening to a distance of approximately 15 feet (See new drawing of Condition B, Amendment to Sheet 5). Previously, it was proposed to carry the rock around to the interior of the lagoon and place GEOWEB on the bottom of the interior lagoon opening. This portion is now dropped from consideration.

On the outside tide flat of the upstream lagoon, a portion of the eroding beach will be armored with a small layer of rock 60-80 feet long (Condition C1). Depending on microtopography, this rock layer may take the form of a prism, set against the low bank. The rock will be placed over a layer of filter fabric.

At both rock work sites, the rock will function to break the impact of boat wake wave action and weigh down the filter fabric; the filter fabric will hold in fine sediments which could otherwise be washed through the rock by remaining water forces.

3. Geotechnical products trial (Conditions C2, C3, F, G)

Several sites will be trials of GEOWEB Brand polyethylene cellular confinement system. The GEOWEB to be used comes in units 8 feet wide by 40 feet long. The cell walls are 8 inches

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high and the cell openings are 16 inches in diameter.

Four sites, each using slightly different techniques, will be assessed to evaluate effectiveness in minimizing erosion and allowing vegetation reestablishment. Conditions C2 and C3 will place GEOWEB units over dredged fill (see Sheets 6 and 7, and new drawings). These sites are intended to protect the site against boat wake erosion and to rebuild the low bank sufficient to grow emergent marsh species (or perhaps woody riparian plants). One work site, Condition F, will utilize GEOWEB to rebuild a part of the downstream island which has eroded away, leaving unvegetated substrate (Sheet 8). The fourth site, Condition G, will test the effectiveness of GEOWEB in arresting erosion from waves and backwater eddies. At this site, several units of GEOWEB will be placed on top of filter fabric and anchored with "J" shaped metal stakes.

At all sites the GEOWEB cells will be filled by dredge material. The areas where the ground has been built up by dredge fill will be planted with woody cuttings, through holes punched in the underlying filter fabric. Marsh vegetation such as tules will be planted in lower areas.

4. Log and root wad barrier (Condition E)

Between the downstream island and the adjacent levee, a small jumble of waterlogged stumps, root wads, and logs will be placed a short distance across the narrowest section of the mud shoal to slow the current at peak flows through the shallow lagoon. This will protect the levee from erosion and at the same time allow water to flow through the lagoon and will provide aquatic habitat values.

Dredging

All dredging will be completed with a clamshell. Dredging sites will require about 700 cubic yards of fill material for the entire operation. Times of the year for the dredging will be from July 1, 1993 to September 1, 1993 or when the delta cross channel is closed and there is no Sacramento River influence. The dredger will operate at low tide and place fill material behind the rock dike structures at each site. Care will be taken by the dredge operator to avoid damage to the existing riparian vegetation at all sites. Sediment in the river at this location is coarse sand. The channel is about 200 feet wide in the area proposed for dredging.

For Conditions A, C2, and C3 dredged material will be placed to create a relatively flat berm surface which will be at or near the mean high water elevation. For Condition E the dredge material will be mounded up, to the elevation

of the other parts	
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of the island, if possible. For filling the GEOWEB cells, the minimum amount of dredge fill necessary will be placed.

Revegetation

It is anticipated that the project will 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. The stout cuttings installed along the inside face of the rock dikes (Condition A) will be placed at the time of construction. All other planting will be done later in the fall or winter after construction, when more appropriate for plant establishment.

Cuttings of woody riparian species such as willow, alder, elderberry, and cottonwood, will be inserted into the surface of the berms or openings within the GEOWEB. Holes will be punched through the underlying filter fabric as necessary. Willow bundles or wattles will be planted near the waterside edges of the berms. The cuttings will be obtained from nearby existing trees.

If, after a short period of monitoring, it becomes evident that the dredge fill sites would support emergent marsh species, clumps or culms of tules, cattails or other vigorous marsh species will be transplanted.

Construction Equipment and Material Needs

Logs and root wads will be placed from boom trucks from the levee road or craned into place from a barge. The dredging and rock placement will be done from a barge. Dredging will be done with a clamshell. All equipment will be those types commonly in use in the Delta throughout the year. No additional access is necessary.

Logs and root wads will be obtained from sources where such material was going to be removed or destroyed anyway. No additional loss of any habitat values will be caused in procuring material for this project.

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, Brack Tract, and Terminous Tract on the west, and Bouldin Island on the south. The waterways surrounding Staten Island are the North and South Forks of the Mokelumne River. The project area is on Staten Island

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abuts the South Fork of the Mokelumne between Stations 220+00 and 250+00.

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. This rehabilitation is not longer being performed through Delta Flood Protection Act of 1988 (SB 34) funding.

A biological field survey was completed on May 26, 1993 by DFG Environmental Specialist Frank Gray and assisted by Scientific Aid Barry Baba. Additional general observations were made on January 5, 1993, and on May 24, 1993. The May survey was performed at the general locations of the proposed habitat enhancement/bank stabilization project. There is no other habitat assessment of record for Staten Island. Information on fisheries is derived in part from: Kohlhorst, David. 1987. *Associations between environmental factors and the abundance and distribution of resident fishes in the Sacramento-San Joaquin Delta*. California Department of Fish and Game, Bay/Delta Project.

The field survey was completed from shore with access from the levee road. An aerial photo of Staten Island taken in October 1992 was used to trace and develop field survey maps. The boundaries of habitat areas and their approximate dimensions were confirmed in the field by use of a measuring tape. Possible sites for Special Status species were surveyed. The survey took place in the afternoon to take advantage of the low tide.

In overview, habitat consists of two large areas of riparian forest, large tule patches, two lagoons, miscellaneous scrub shrub habitat, and Shaded Riverine Aquatic (SRA) habitat. Two Special Status plant species were found in the study area at Staten Island. These were the Delta Tule Pea (Lathyrus jepsonii) a Candidate species for Federal listing, and the Mason's lilaeopsis (Lilaeopsis masonii), a Candidate for Federal listing and a State listed Rare plant.

Vegetation at the project site can be categorized into five plant associations which are described as follows:

1. Ruderal - refers to a vegetation association consisting of plants which are opportunistic or weedy species which in this study are found on or beside the levee crown, or on dry areas of the backslope. This association consists of introduced exotic annuals and perennials with a few native species. Representative species found here include the wild radish, milk thistle, prickly lettuce, Nettle, and Bermuda grass.

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4. Emergent Freshwater Marsh/riverine - This includes vegetated and unvegetated shallow mudflats, shoals, submerged logs, and aquatic vegetation such as pondweed found on the waterside of the levee. Dominant plants include tules (bulrushes), cattails, common reed, sedges, and rushes.

2. Riparian Scrub Shrub - riparian trees and woody shrubs and vines (alder, willow, wild rose, box elder, wild blackberries) less than twenty feet in height.

3. Riparian Forest - Riparian trees greater than twenty feet in height with a shrub understory layer.

4. Shaded Riverine Aquatic (SRA) Cover - the habitat type created at the interface of woody riparian bank vegetation and water; important attributes are shade and the complex physical environment provided by overhanging or undercut branches, roots, and trunks.

Flora and Fauna Species

The plant associations and trees on the levee found in the survey were mapped in the field and are shown in Figures 1 and 2.

a. Common Flora on the Site, observed on 5/26/93.

cattails (Typha spp.)
 white alder (Alnus rhombifolia)
 water milfoil (Myriophyllum spicatum)
 sandbar willow (Salix hindsiana)
 unidentified willows (Salix spp.)
 box elder (Acer negundo)
 cottonwood (Populus fremontii)
 water hyacinth (Eichornia crassipes)
 buttonbush (Cephalanthus occidentalis)
 blackberry (Rubus spp.)
 smartweed (Polygonum spp.)
 sedges (Cyperus spp.)

b. Fauna Observed On the Site

Amphibians None Observed

Reptiles observed on 5/26/93

western fence lizard (Sceloporous occidentalis)

Birds observed on 5/26/93

yellowthroat (Geothlypis trichas)

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belted kingfisher (Megaceryle alcyon)
 green-backed heron (Butorides striates)
 snowy egret (Egretta thula)
 northern harrier (Circus cyaneus)
 mallard (Anus platyrhynchos)
 song sparrow (Melospiza melodia)
 red-winged blackbird (Agelaius phoeniceus)
 great blue heron (Ardea herodias)
 rufous sided towhee (Pipilo erythrophthalmus)
 common crow (Corvus brachyrhynchos)

Mammals observed on 5/26/93

California ground squirrel (Spermophilus beecheyi)

Fish None were sampled for or observed. Fish species present in this part of the Delta include the following:

largemouth bass (Micropterus salmoides)
 striped bass* (Morone saxatilis)
 redear sunfish* (Lepomis microlophus)
 carp (Cyprinus carpio)
 chinook salmon* (Oncorhynchus tshawytscha)
 steelhead (Oncorhynchus mykiss)
 bluegill* (Lepomis macrochirus)
 golden shiner (Notemigonus crysoleucas)
 channel catfish* (Ictalurus punctatus)
 white catfish* (Ictalurus catus)
 black crappie* (Pomoxis nigromaculatus)
 splittail (Pogonichthys macrolepidotus)
 Sacramento blackfish (Orthodon microlepidotus)

* Fish known to orient to vegetation or other cover at any stage of their life history.

There are two areas where the waterline is far from the levee toe. These areas are near the center of Figures 1 and 2 and are herein referred to as "islands," either north or upstream, or south and downstream. The shoreline offshore of either of the two islands has a shallow (<20 %) gradient and appears, when observed at low tide, to be devoid of in-water cover. However, these shoreline areas are used by young striped bass for rearing (See Stevens, Donald E. 1966. Food habits of striped bass, Morone saxatilis, in the Sacramento-San Joaquin Delta, in Fish Bulletin 136, California Department of Fish and Game).

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. Out-migrating young Winter-run Chinook move down the Sacramento River in the spring. When the

is closed, salmon are precluded from straying into the Mokelumne system. Delta Smelt spawn January to June in upper portions of the Delta, primarily the Sacramento River. They have been absent from the eastern Delta in recent surveys (See Stevens, Donald E, Lee W. Miller and Betsy C. Bolster. 1990. A Status Review of the Delta Smelt [*Hypomesus transpacificus*] in California. A Report to the Fish and Game Commission. Department of Fish and Game Candidate Species Report 90-2).

There are two shallow water lagoon areas on the interior of the islands. Irrespective of normal tidal cycle, these lagoons provide shallow water (from one foot to three feet in depth depending upon tide) habitat for juvenile fish. Portions of the north lagoon are choked with water hyacinth.

The riparian forest of the north island and south islands (Figures 2,3) is particularly valuable as wildlife habitat. The largest tree at the north area was a cottonwood about 70 feet tall. The composition of the northern forest consisted of about 65% willow, 20% alder, 5% buttonbush, 5% cottonwood, 5% box elder and other species. This appeared to provide good wildlife habitat because of its height (average > 20 feet) and density (>80%). Most of the ground under the tree canopy was covered with blackberry. The riparian forest at the southern island appeared to consist entirely of willows, with a blackberry understory.

The SRA Cover along the perimeter of the north and south islands averages about 30 feet in width over the water and from the edge of the earthen banks.

A tule berm approximately 580' x 30' parallels the levee north of the south island. Scattered tules were found between the south island and the levee.

The vegetation along either side of the levee access road near the north and south island is dominated by sedges, fennel, thistles, and miscellaneous introduced grasses. This is classified as ruderal vegetation and will not be affected by the project.

Many of the shoreline areas show evidence of shoreline erosion. The mud banks had a 2'-3' vertical dropoff and then the shoreline gradient is shallow. The shoreline contains many indentations which project laterally towards the interior of the island. Crayfish burrows were found within the vertical banks of the south island.

The Delta tule pea was found in three locations at the south island and one at the north island. At one of the locations, at the southern tip of the downstream island (see Figure 2), both the Mason's lilaeopsis and the Delta tule pea

were found on the	
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same isolated "hummock" of vegetation.

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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 levee and small amounts of rock fill and geotechnical matting will be placed to contain such sediments. This is not significant.

3. Change in topography or ground surface relief features?

Yes. The project will arrest the further loss of islands and berms 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 structure 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. The project will involve minor dredging of river sediments from the channel and is designed to decrease the adverse affects of water erosion, chiefly caused by boat wakes, on islands, berms and intertidal mudflats.

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

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No. There will be no change in exposure to these hazards. The project is designed to preserve, restore and protect habitat values and 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 total. The operation of equipment will generate some emissions and exhaust odors within the immediate vicinity of the project, but not in significant amounts.

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?

Yes. One component of the project, Condition E, is designed to slow the erosive current forces at the tule beds and interior levee slopes of the downstream island site. This is anticipated to result in less erosion, turbidity, and destruction of habitat, a minor, beneficial effect.

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 minor works proposed will not adversely affect channel capacity between the levees or cause any significant changes to flood flows.

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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.

The dredging from last year's berm restoration project did not result in any known impacts to water quality, based on monitoring test results. 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.

DWR staff proposes to conduct similar water quality sampling of both dredged sediment and effluent water for this year's project. Two samples of sediment and four samples of water will be taken.

Some minor turbidity may result, but informal consultations with staff of the CVRWQCB indicate that because the amounts to be dredged are very small, no more than 700 cu. yards, no significant impacts to water quality are expected and no water quality certification is necessary. An application will be made to the CVRWQCB to confirm this.

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.

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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 is better protection of the levees which surround Staten Island.

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)?

No. 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.

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

No. Two sensitive plant species are found in the project vicinity, Mason's lilaepsis (Lilaeopsis masonii) and Delta tulle pea (Lathyrus jepsonii var. jepsonii). (See Environmental Setting above and Figures 1 and 2). None of the proposed project components will directly affect any individuals of these species. All structures will be placed so as to avoid disturbance of the plant sites.

The outer entrance to the north lagoon will be stabilized with riprap. Original plans were revised to eliminate placement of riprap and Geoweb inside of the upper lagoon entrance, thus avoiding the chance for adverse impact to the small (about 6'x 6') diameter patch of Mason's lilaepsis at the north side of the lagoon entrance.

The berm restoration at the downstream island will be placed so as to stop short of the "hummock" containing the Delta Tulle Pea and Mason's Lilaepsis.

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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 collected from 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. (See discussions above in text.)

The proposed placement of a row of rock riprap and fill at the 40' x 30' and 15' x 30' "bays" (Condition A on project maps) 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 rock riprap immediately paralleling the shoreline and following the shoreline indentations (condition C1 on project map) and the GEOWEB sites can also be expected to result in short-term minor losses of shoal or tide flat habitat. However, the proposed project is expected to have a net overall positive impact on fish populations.

Most of the fish species in the South Fork of the Mokelumne benefit from establishment of cover, particularly submerged vegetation. Electrofishing surveys completed by the Department in the Delta in 1980-1984 indicate that members of the sunfish family (largemouth bass, bluegill, redear sunfish, black crappie, etc.) are attracted to submerged vegetation and other cover. Cover is especially valuable to these species for spawning and the rearing of juveniles.

Any disturbance to nesting riparian bird species which may utilize the area will be avoided by the construction window.

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. Out-migrating young Winter-run Chinook move down the Sacramento River in the spring. When the Delta Cross Canal is closed, salmon are precluded from straying into the Mokelumne system. Delta Smelt spawn January to June in upper portions of the Delta, primarily the Sacramento River. They have been absent from the eastern Delta in recent surveys (See Stevens, Donald E, Lee W. Miller and Betsy C. Bolster. 1990. *A Status Review of the Delta Smelt [Hypomesus transpacificus] in California*. A Report to the Fish and Game Commission. Department of Fish and Game Candidate Species Report 90-2).

Although it is unlikely these species would be present, any impacts will be avoided by the construction window as noted above. The project will prove beneficial in the long run for any individuals which may use the South Fork by improvement and protection of vegetation-water interface habitats.

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 only a few days.

2. Exposure of people to severe noise levels?

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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?
2. Substantial depletion of any nonrenewable resources?

No. There will be no increase in use of any resources, including nonrenewable.

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. 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. Project will not affect human populations in the area.

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MINUTE PAGE	1720

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

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

No. Housing will not be affected.

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

1. Generation of substantial additional vehicular movement?

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

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

No. See # 1 above.

3. Substantial impact upon existing transportation systems?

No. See # 1 above.

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

No. See # 1 above.

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

No. See # 1 above.

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

No. See # 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. See # 1 above.

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3. Schools?

No. See # 1 above.

4. Parks and other recreational facilities?

No. See # 1 above.

5. Maintenance of public facilities, including roads?

No. See # 1 above.

6. Other governmental services?

No. See # 1 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.

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MINUTE PAGE	1722

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 health 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.

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. No structures, including Condition E will not impede recreational boating in the South Fork Mokelumne.

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

CALENDAR PAGE	461.29
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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 probably not 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. No adverse impacts to special status plant and animal species is 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 environmental conditions. See project description.

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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.

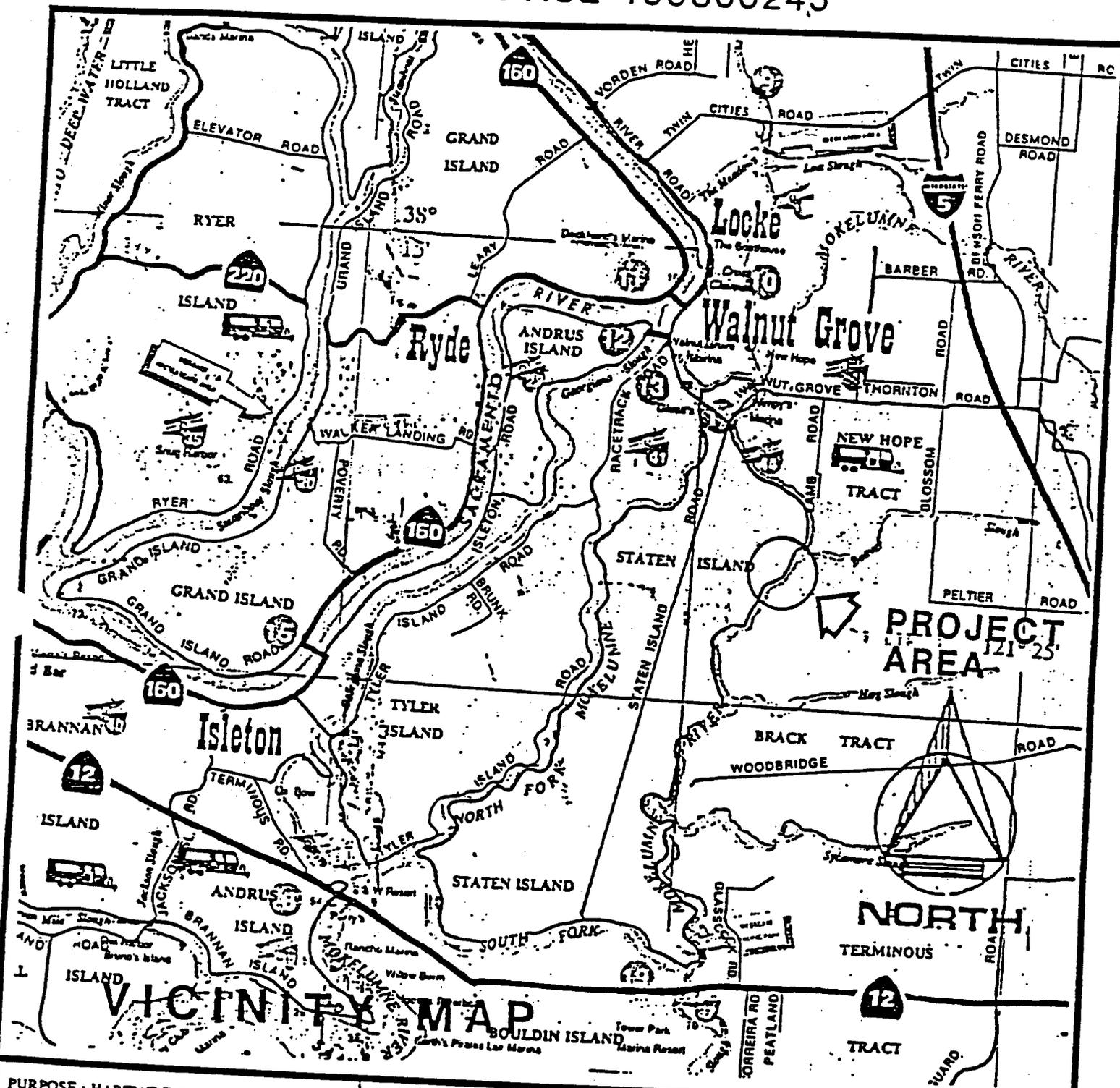
CALENDAR PAGE	461.31
MINUTE PAGE	1725

SHEETS 1-9
(WITH AMENDMENTS)
PROJECT LOCATION AND PROJECT DESCRIPTION

CALENDAR PAGE	461.32
MINUTE PAGE	1726

PUBLIC NOTICE 199300245

28



PURPOSE : HABITAT ENHANCEMENT

DATUM : USGS

ADJACENT PROPERTY OWNERS:

M&T, INC. - STATEN RANCH
 POST OFFICE BOX 408
 WALNUT GROVE, CA 95690

SCALE : AS SHOWN

MOKELUMNE RIVER RIPARIAN VEGETATION RESTORATION PROJECT

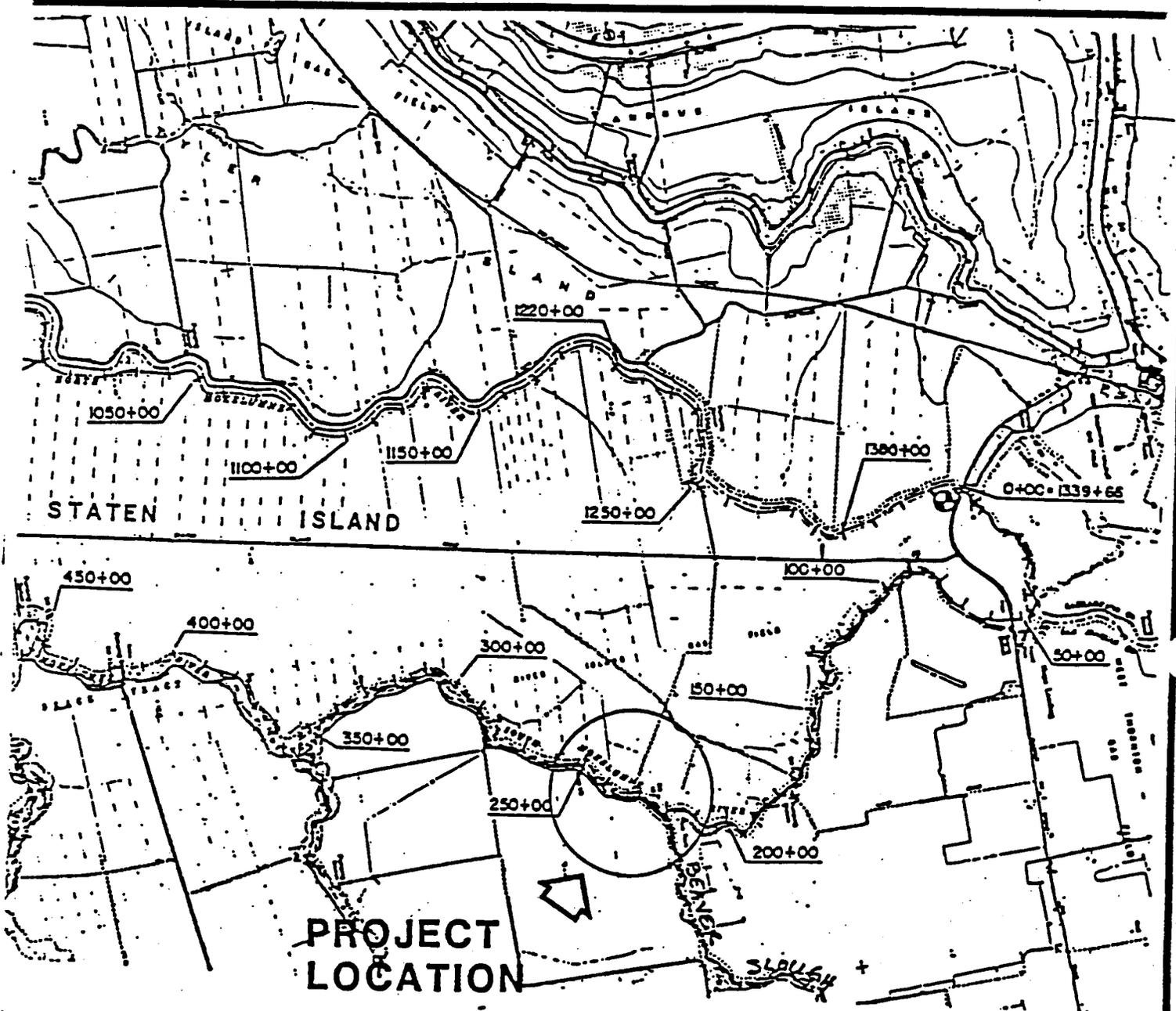
OWNER : M & T, INC. - STATEN RANCH
 POST OFFICE BOX 408
 WALNUT GROVE, CA 95690
 (916) 776-1531

AGENT : DCC ENGINEERING CO., INC.
 P.O. BOX 488
 RIO VISTA, CA 94571
 (707) 374-6111

LOCATION : STATEN ISLAND EAST LEVEE, SOUTH FORK OF THE MOKELUMNE RIVER.

COUNTY OF: SAN JOAQUIN	461.38
STATE OF: CALIFORNIA	1727
MINUTE PAGE	9

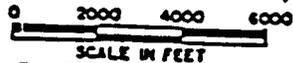
SUBMITTED : 5-3-93
 REVISED :



STATEN ISLAND BASE MAP

DATA FROM U.S. GEOLOGICAL SURVEY MAPS, 1978 EDITIONS

⊕ REFERENCE BENCHMARK DISK "RINC2" 1967 IN S.E. ABUTMENT OF GIUSTI BRIDGE OVER NORTH FORK OF MOKELUNGE RIVER AT THE NW CORNER OF STATEN ISLAND. ELEVATION 18.182 U.S.C. & G.S. DATUM.



LOCATION MAP

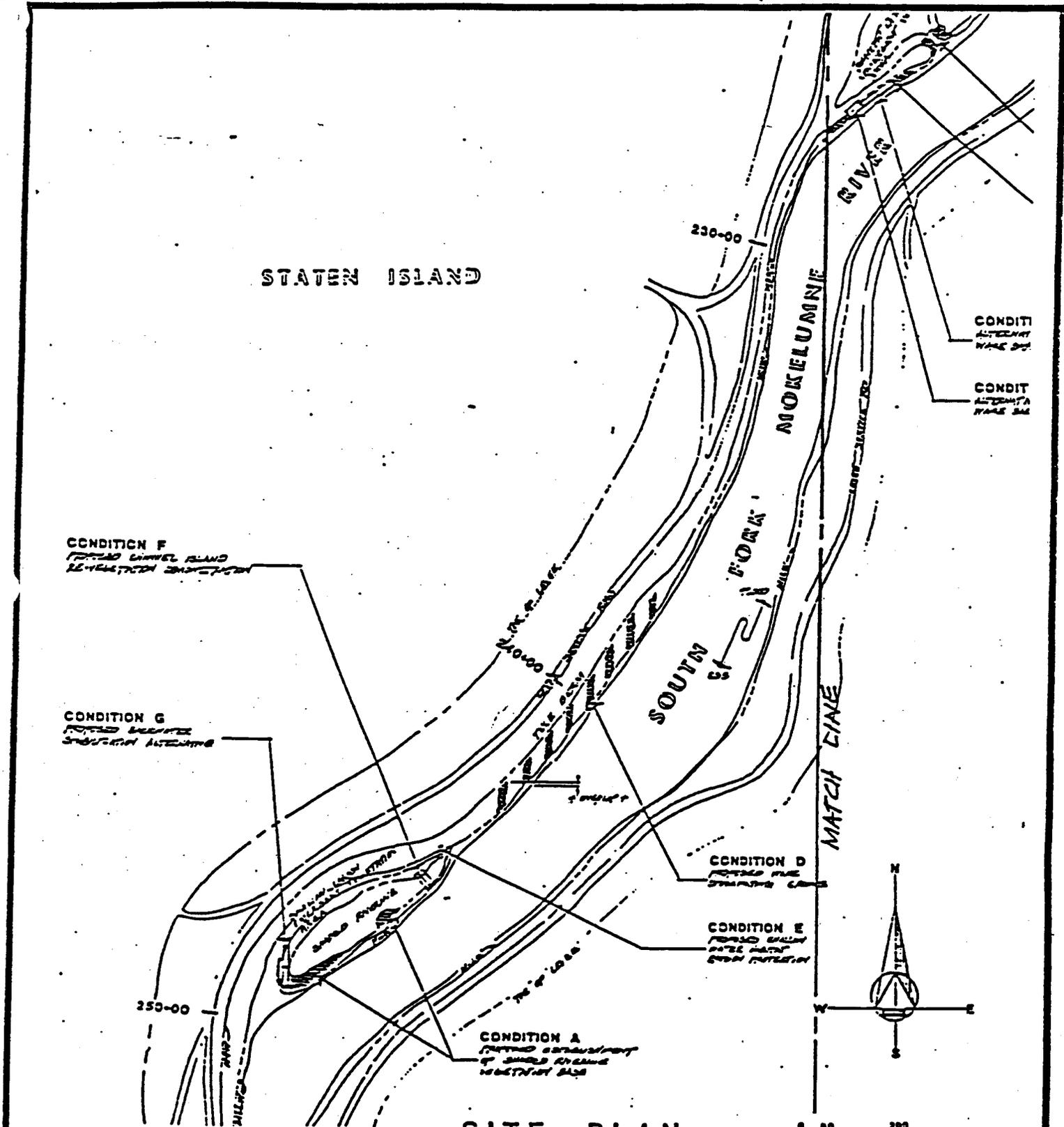
DATUM : USGS (See Note)

SCALE : AS SHOWN

MOKELUNGE RIVER RIPARIAN
VEGETATION RESTORATION
PROJECT

CALENDAR PAGE	461.14
MINUTE PAGE	1728

SHEET 7 OF 7
SUBMITTED 5/3/93 REVISED :



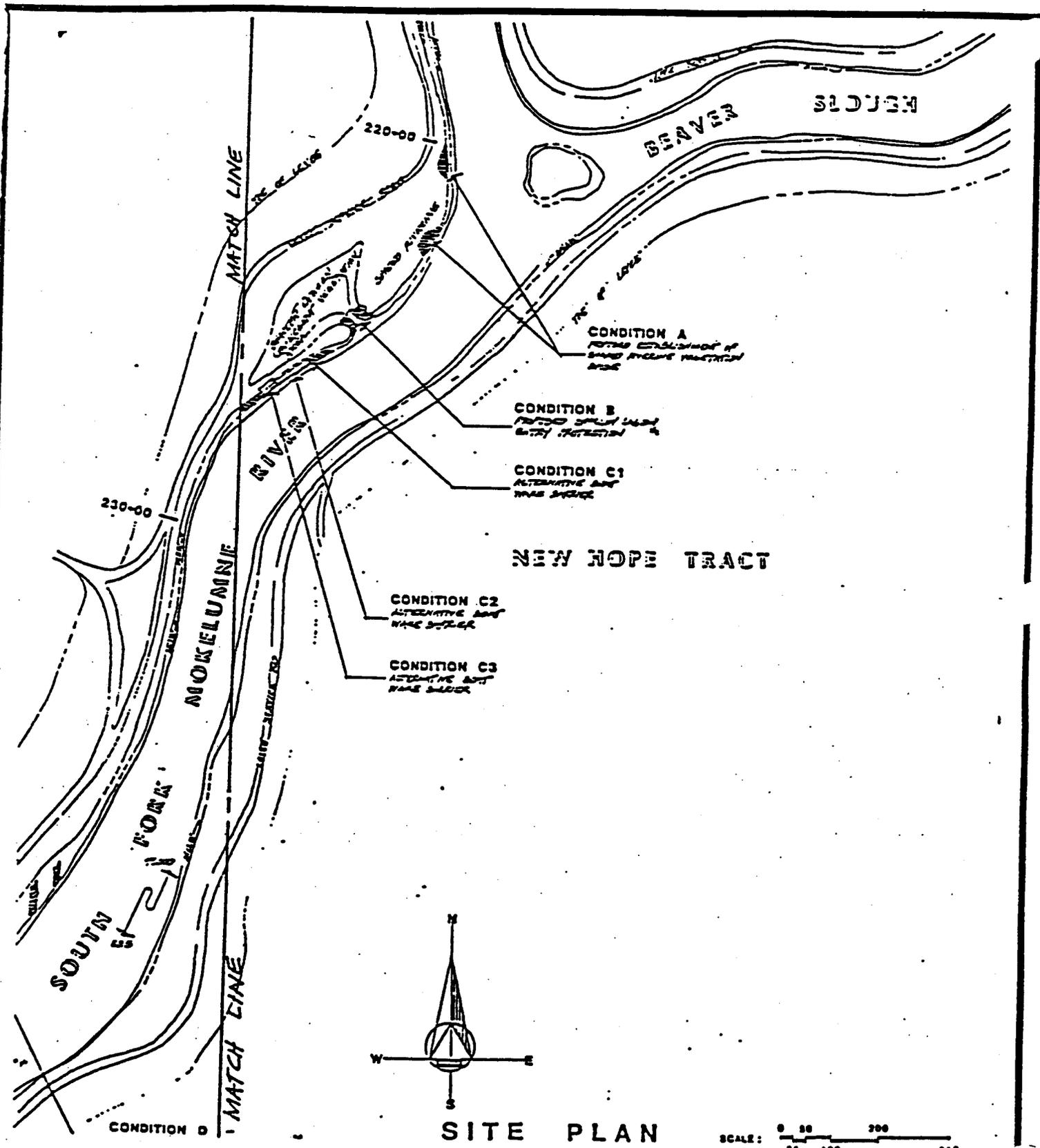
SITE PLAN

CALENDAR PAGE 461.35

DATUM : USGS (See Note)
SCALE : AS SHOWN

MOKELUNNE RIVER RIPARIAN
VEGETATION RESTORATION
PROJECT

MINUTE PAGE 9 1729
SUBMITTED: 5/3/93 REVISED: _____



SITE PLAN

SCALE: 0 50 100 200 300

DATUM : USGS (See Note)

SCALE : AS SHOWN

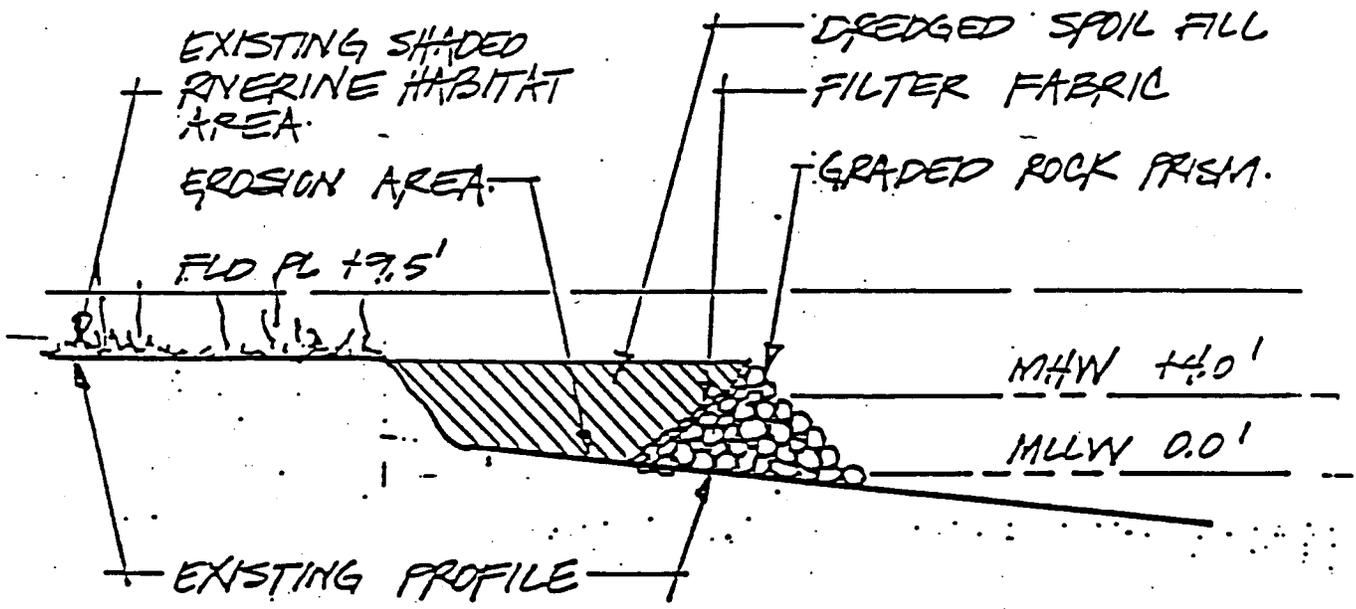
MOKELUMNE RIVER RIPARIAN
VEGETATION RESTORATION
PROJECT

CALENDAR PAGE 461.36

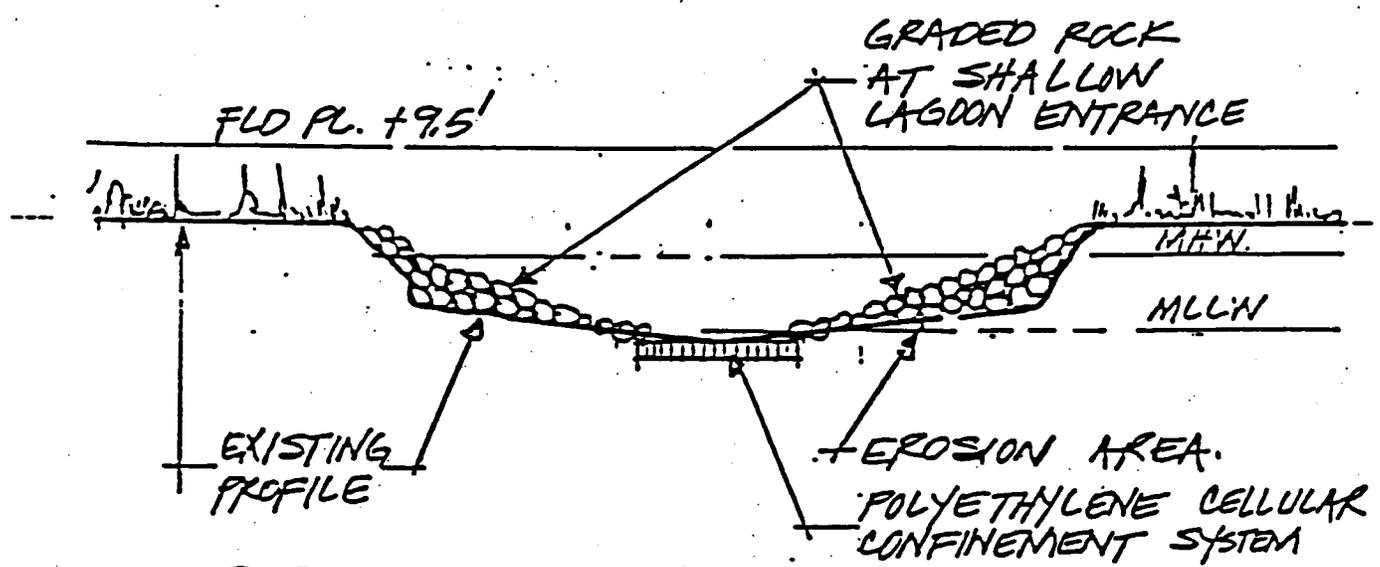
SHEET 4 OF 9 MINUTE PAGE 1730

SUBMITTED: 5/3/93 REVISED: _____

PUBLIC NOTICE 199300245



CONDITION A 1" = 10'-0"
 << SEE AMENDMENT >>



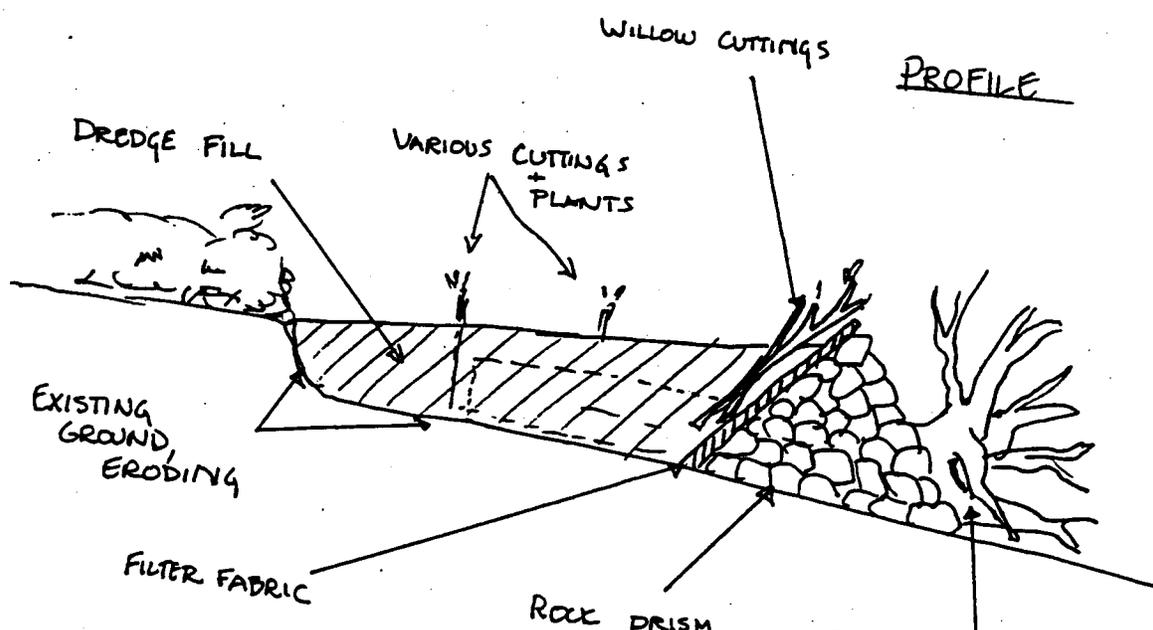
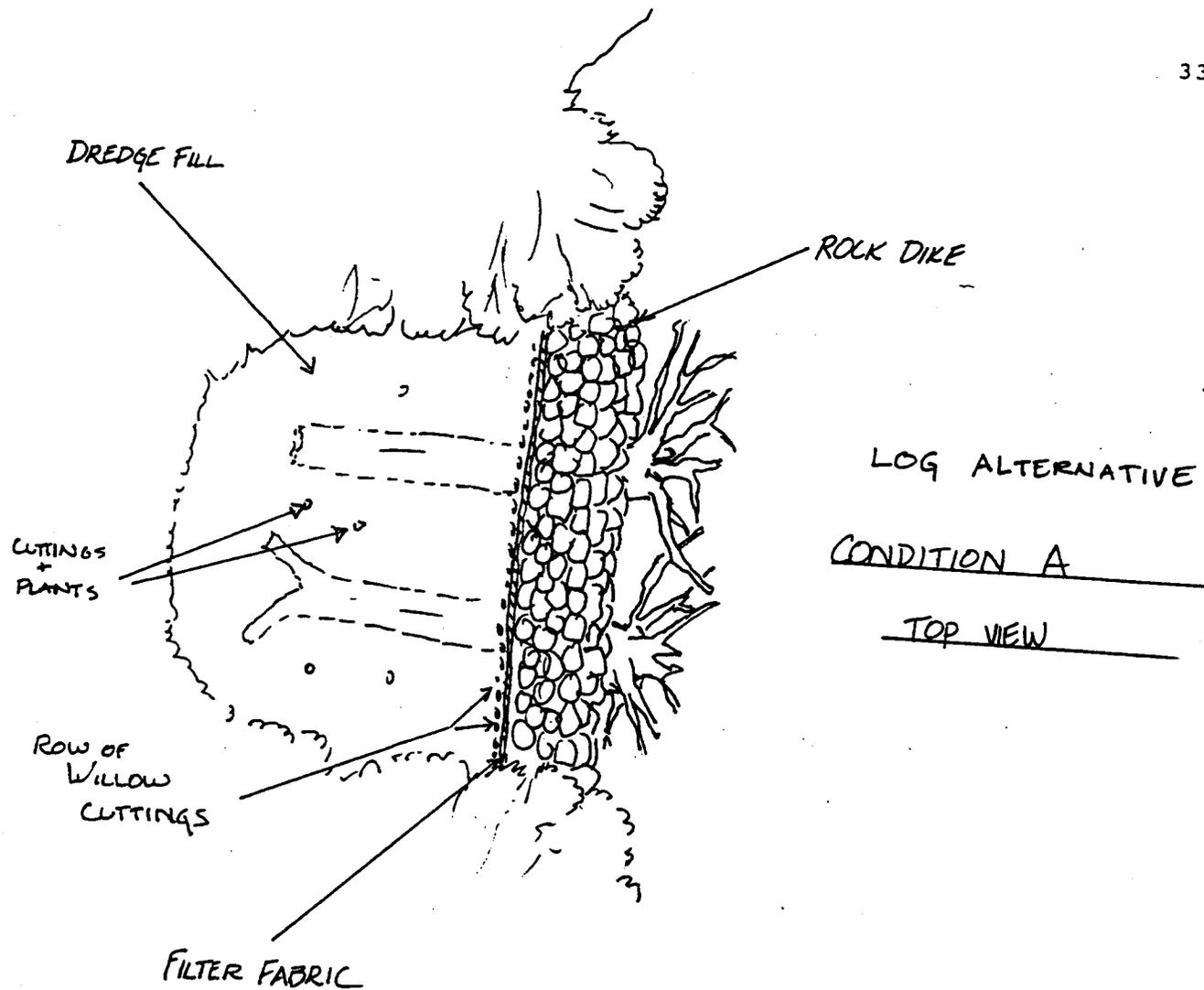
CONDITION B 1" = 10'-0"
 << SEE AMENDMENT >>

CALENDAR PAGE	461.37
MINUTE PAGE	1731

DATUM : USGS (See Note)
 SCALE : AS SHOWN

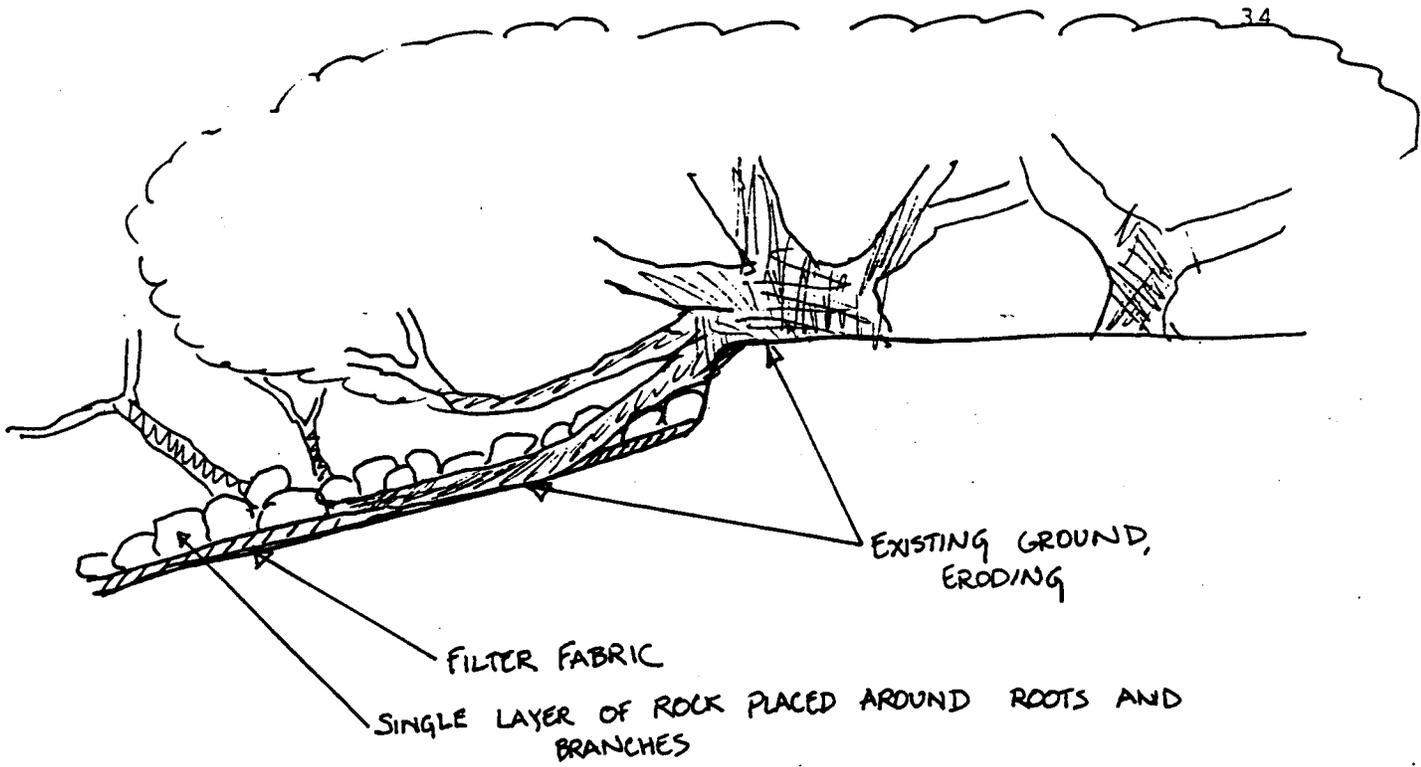
MOKELUNE RIVER RIPARIAN
 VEGETATION RESTORATION
 PROJECT

SHEET 5 of 9
 SUBMITTED: 5/3/93 REVISED: _____

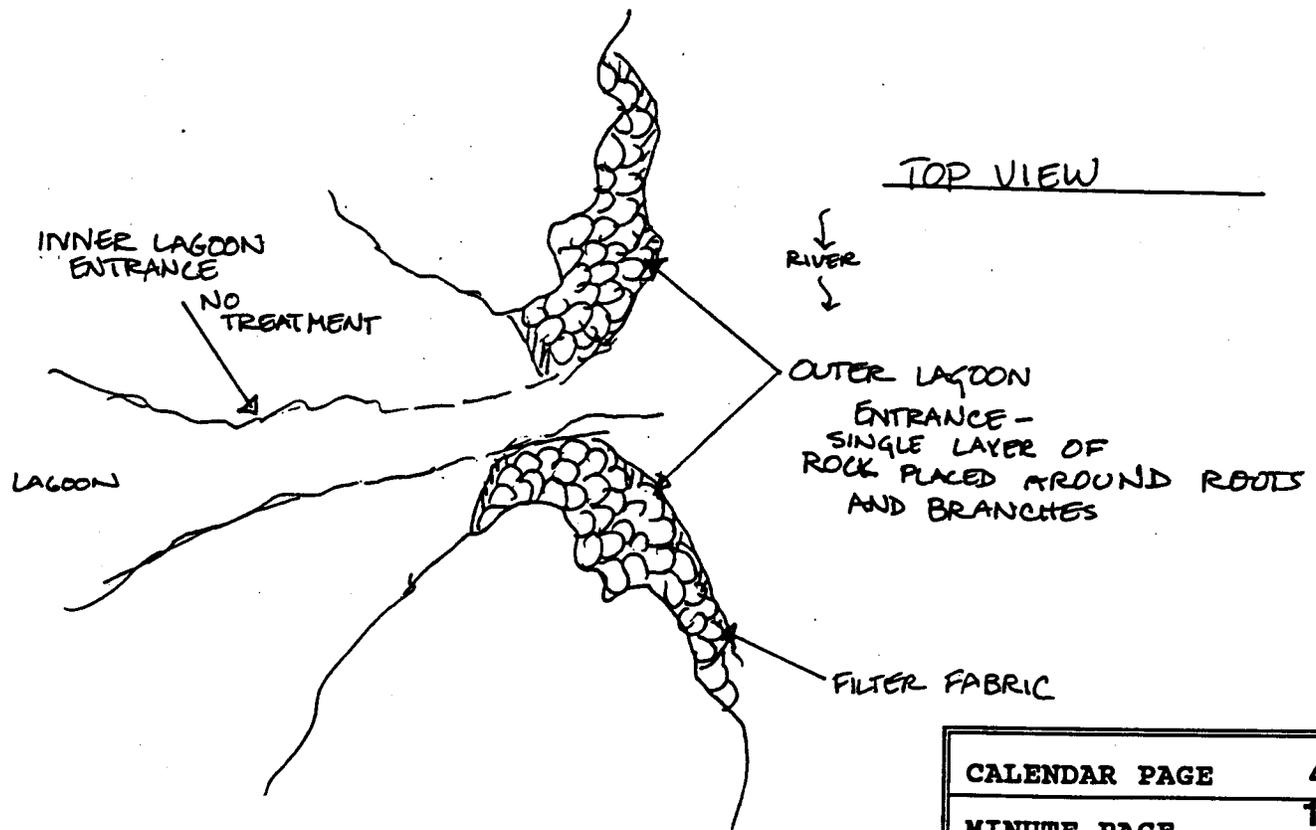


Amendment to Sheet 5 of 9

CALENDAR PAGE	461.38
MINUTE PAGE	1732



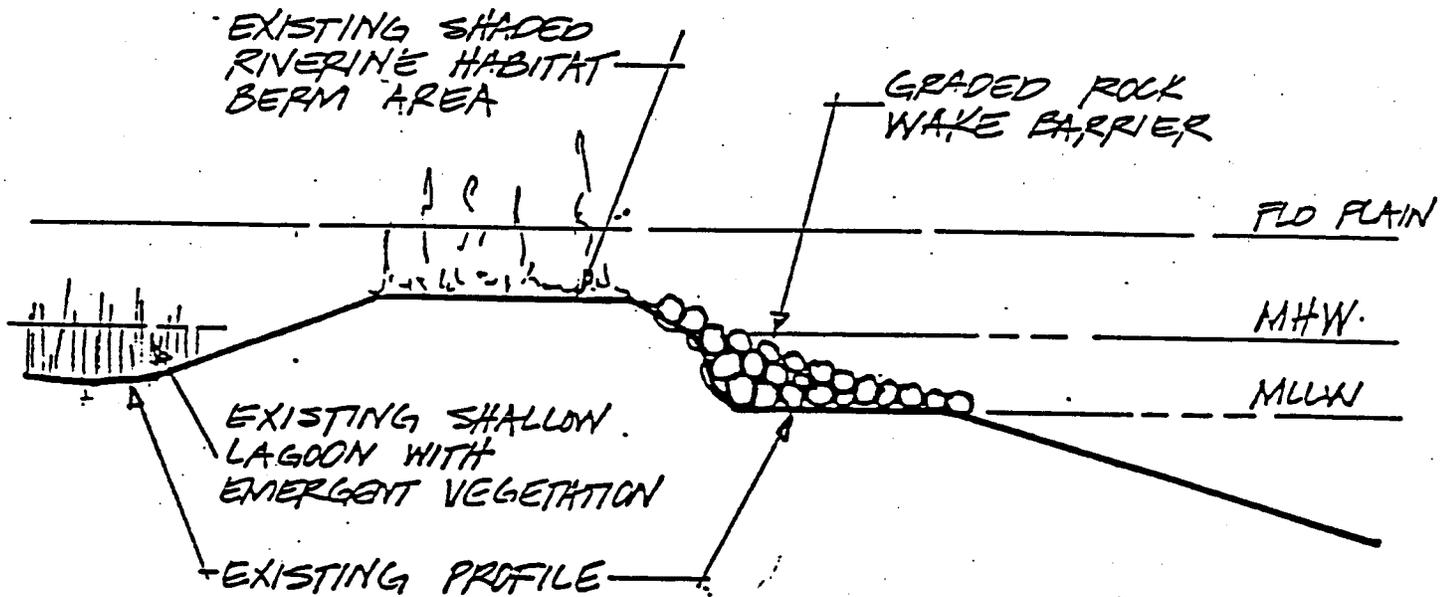
CONDITION B - OUTER EDGE OF LAGOON ENTRANCE
PROFILE



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MINUTE PAGE	1733

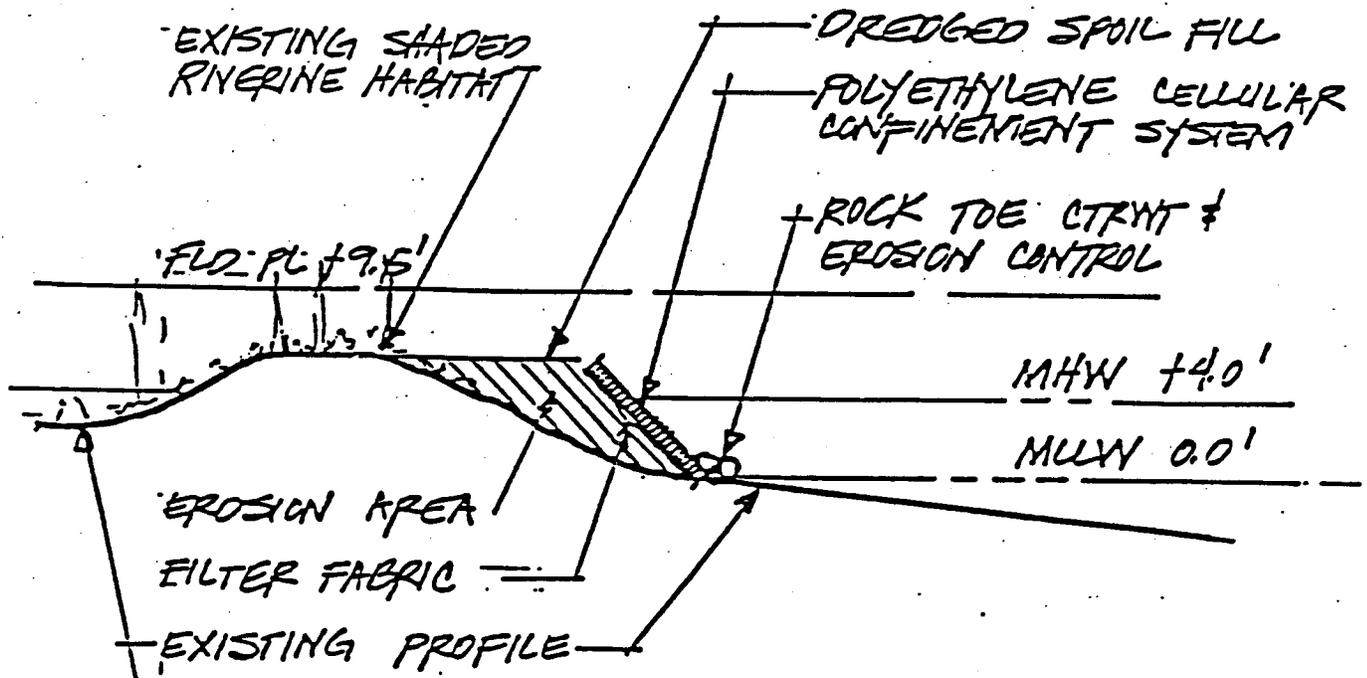
Amendment to sheet 5 of 9

PUBLIC NOTICE 199300245



CONDITION C1 1" = 10'.0"

<<SEE ADDITIONAL DRAWING>>



CONDITION C2 1" = 10'.0"

<<SEE ADDITIONAL DRAWING>>

DATUM : USGS (See Note)

SCALE : AS SHOWN

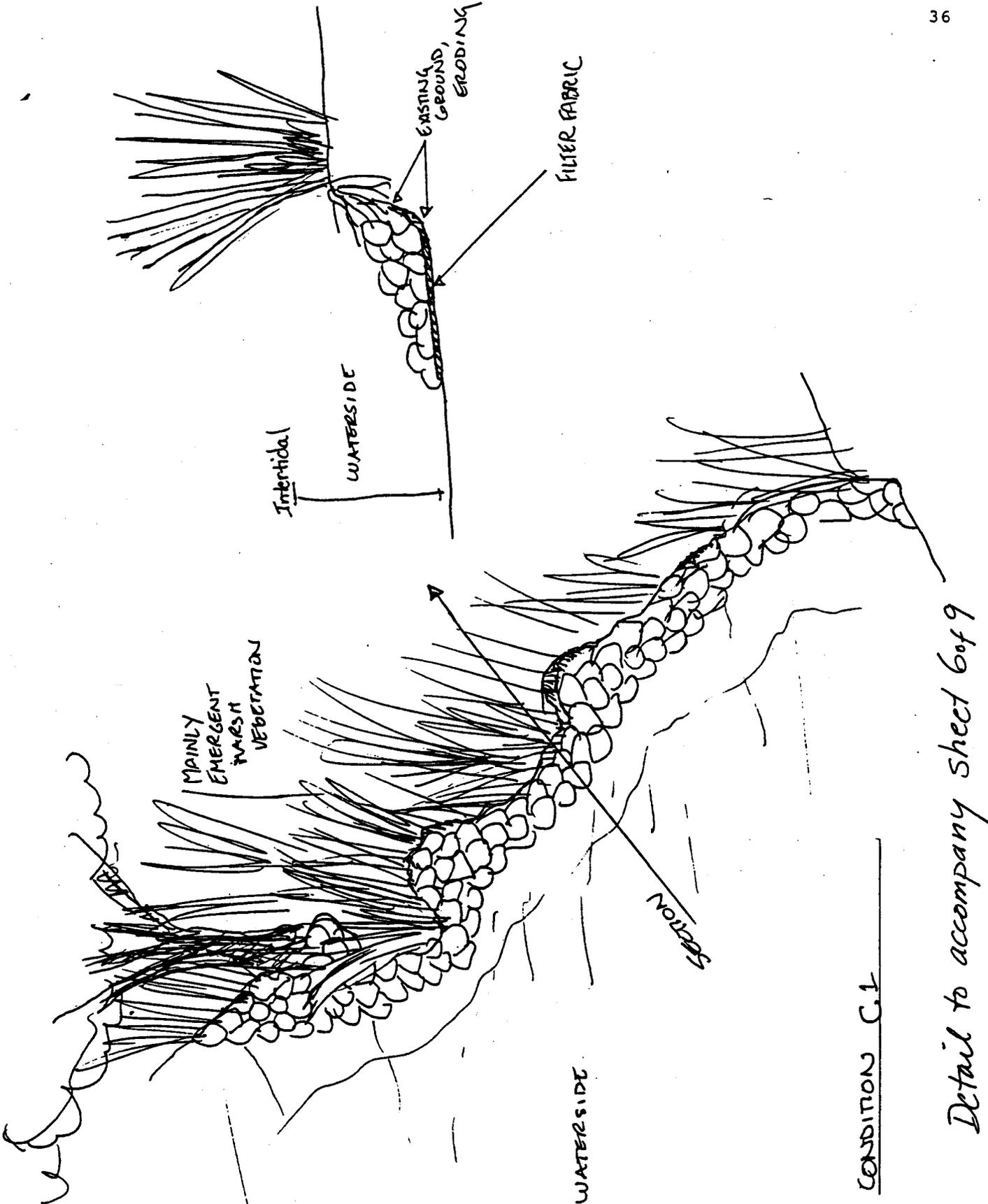
MOKELUMNE RIVER RIPARIAN VEGETATION RESTORATION PROJECT

CALENDAR PAGE 461.40

MINUTE PAGE 1734

SHEET 6 OF 9

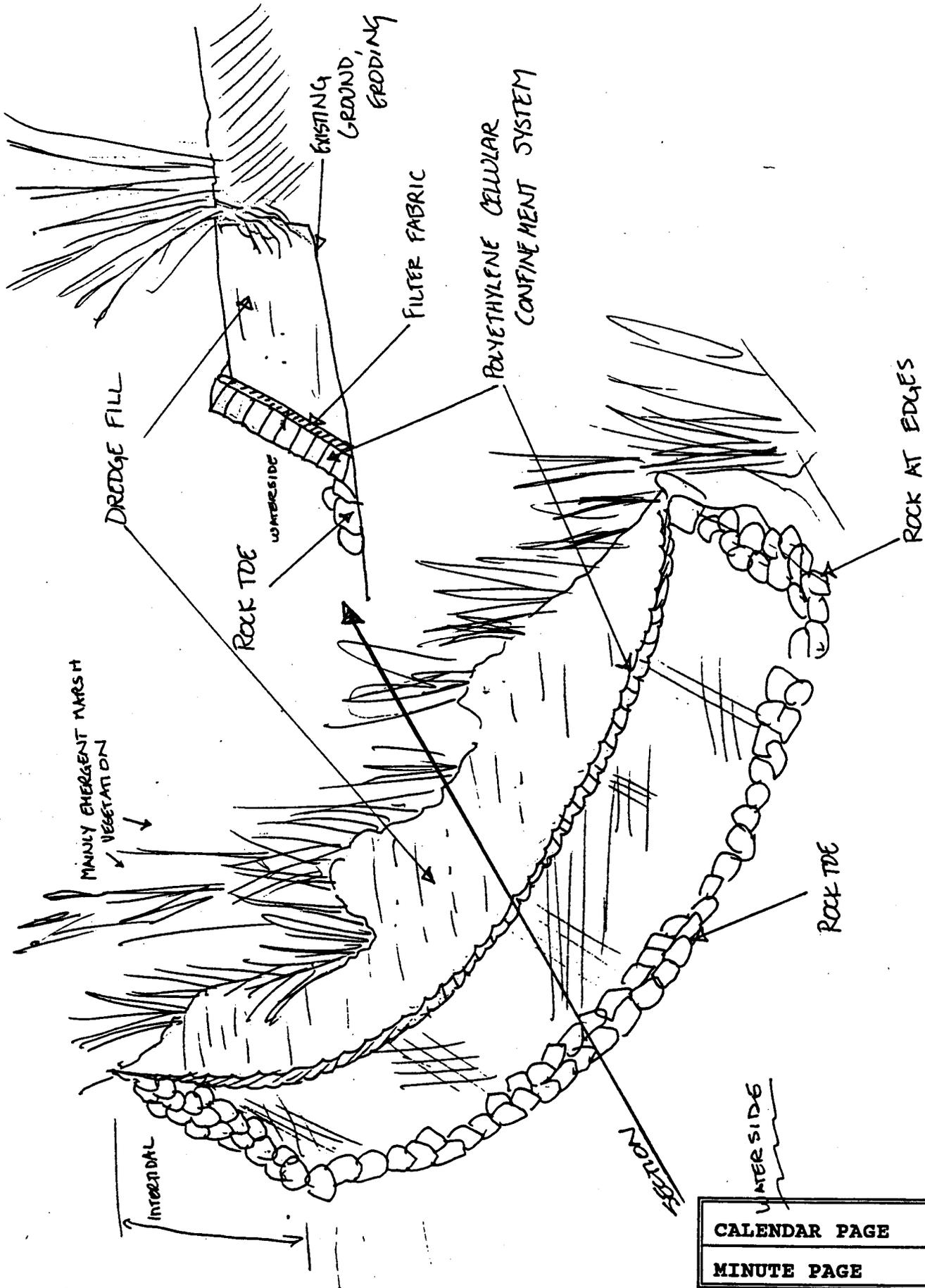
SUBMITTED : 5/4/93 REVISED :



CONDITION C.1

Detail to accompany sheet 6 of 9

CALENDAR PAGE	461.41
MINUTE PAGE	1735

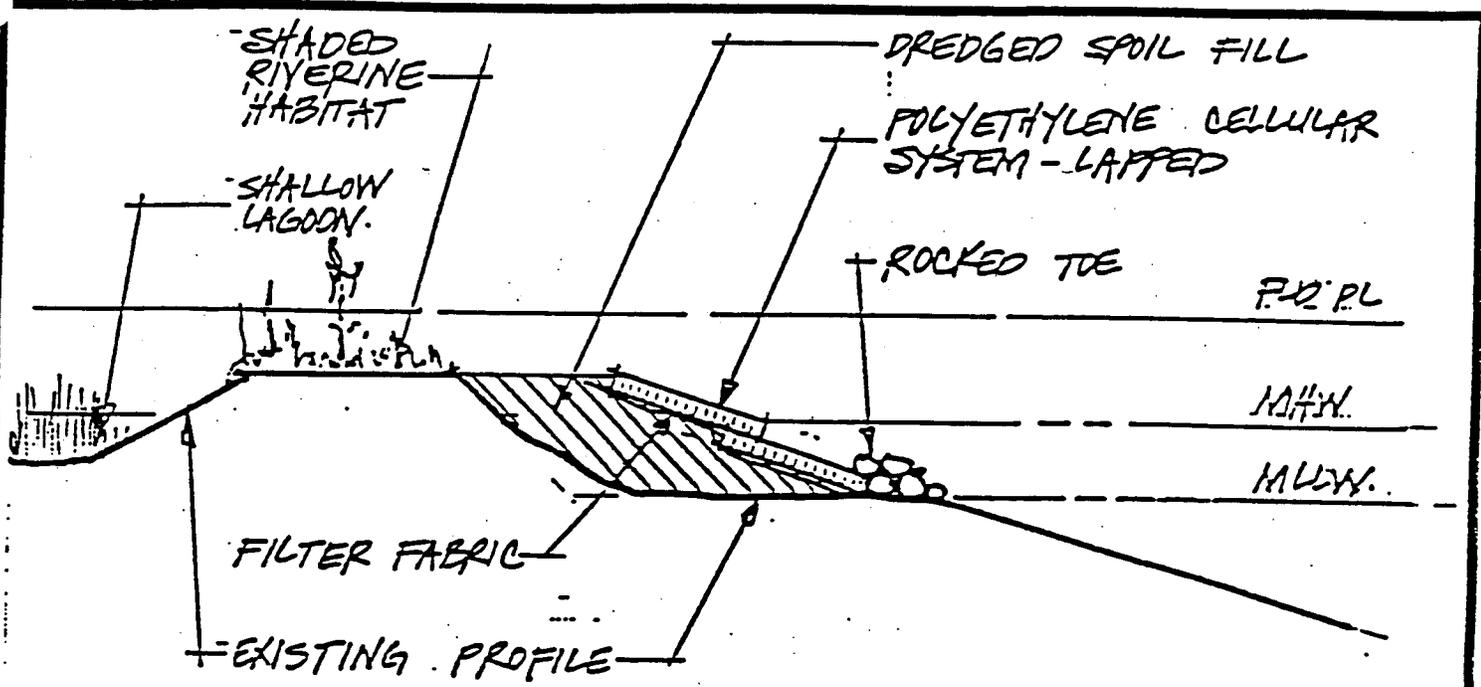


CONDITION C.2

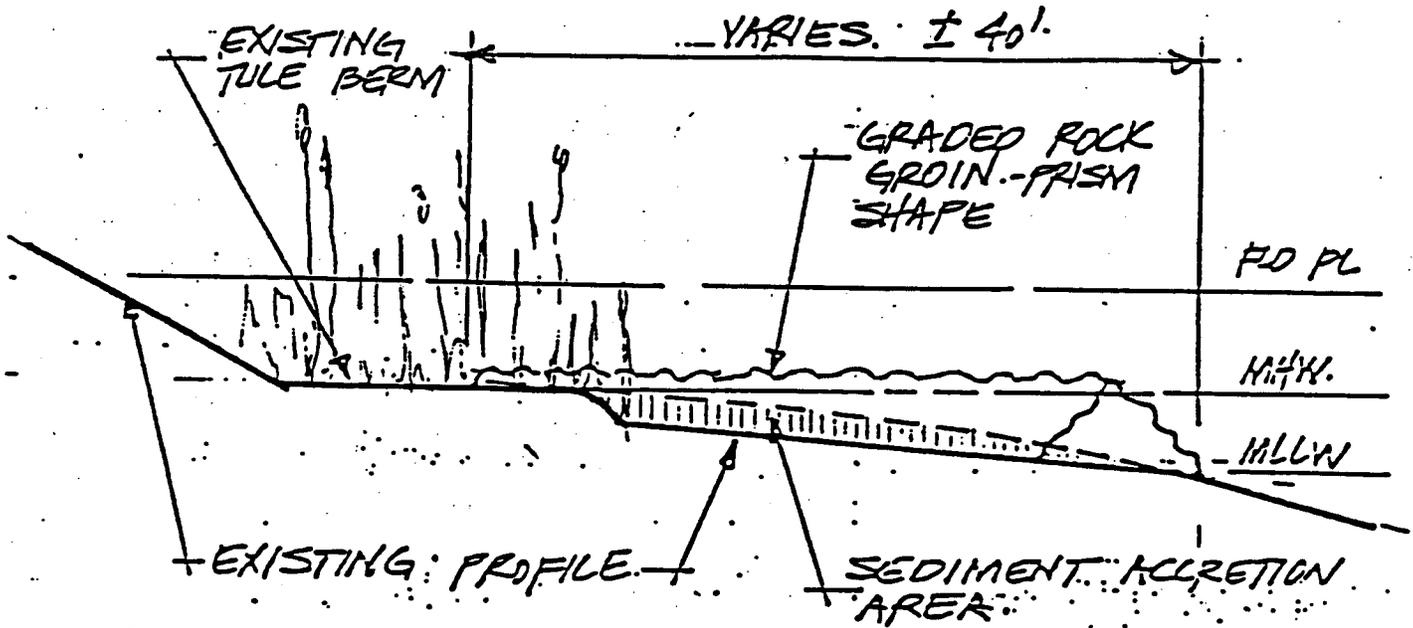
Detail to accompany Sheet 6 of 9

CALENDAR PAGE	461.4c
MINUTE PAGE	1736

PUBLIC NOTICE 199300245



CONDITION C3 $1" = 10.0'$
 <<SEE ADDITIONAL DRAWING>>



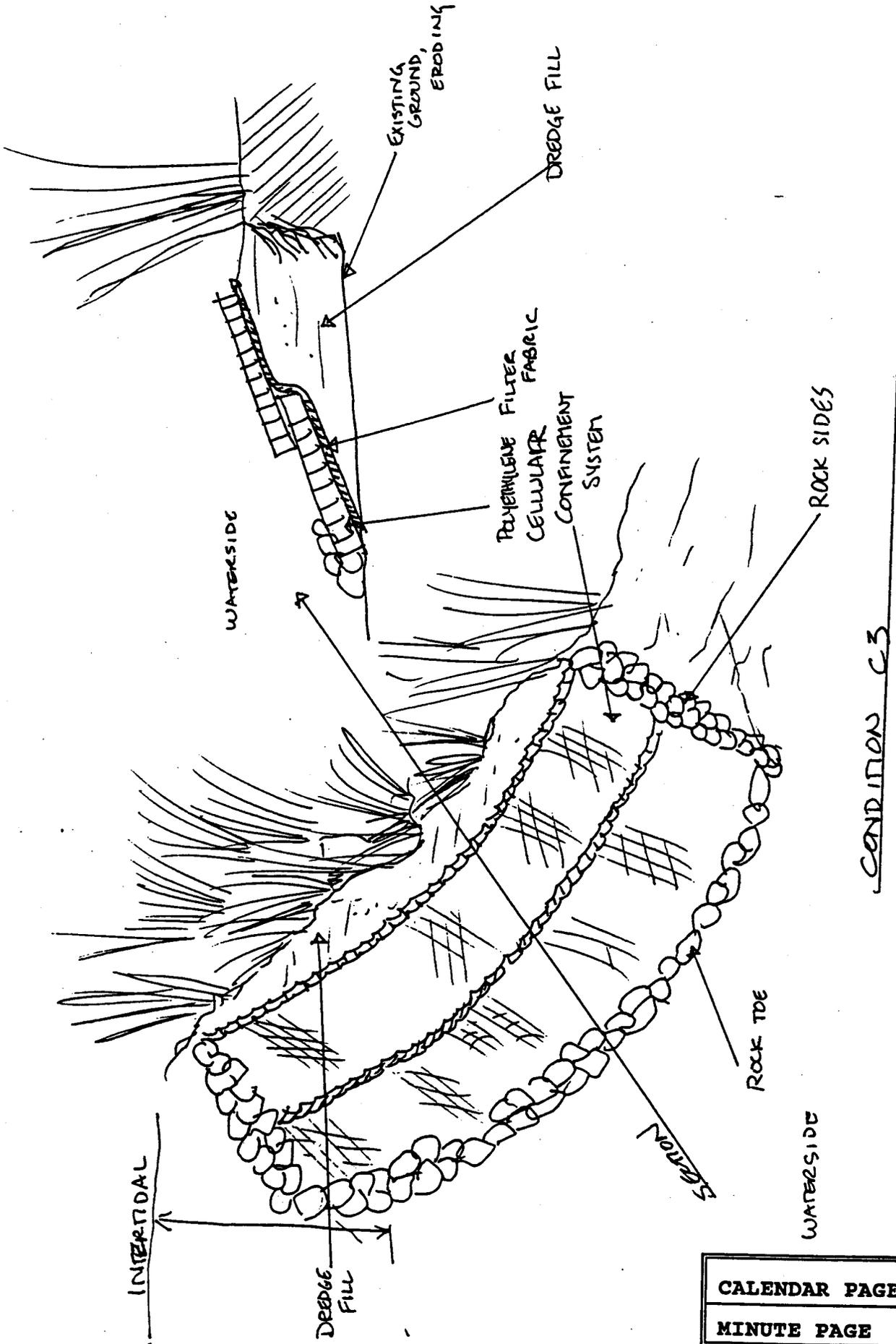
CONDITION D
 <<AMENDMENT: THIS IS DROPPED

MINUTE PAGE 1737
 $1" = 10.0'$
 CALENDAR PAGE 461 of 463
 FROM CONSIDERATION 1737
 MINUTE PAGE 7 of 19
 SHEET

DATUM : USGS (See Note)
 SCALE : AS SHOWN

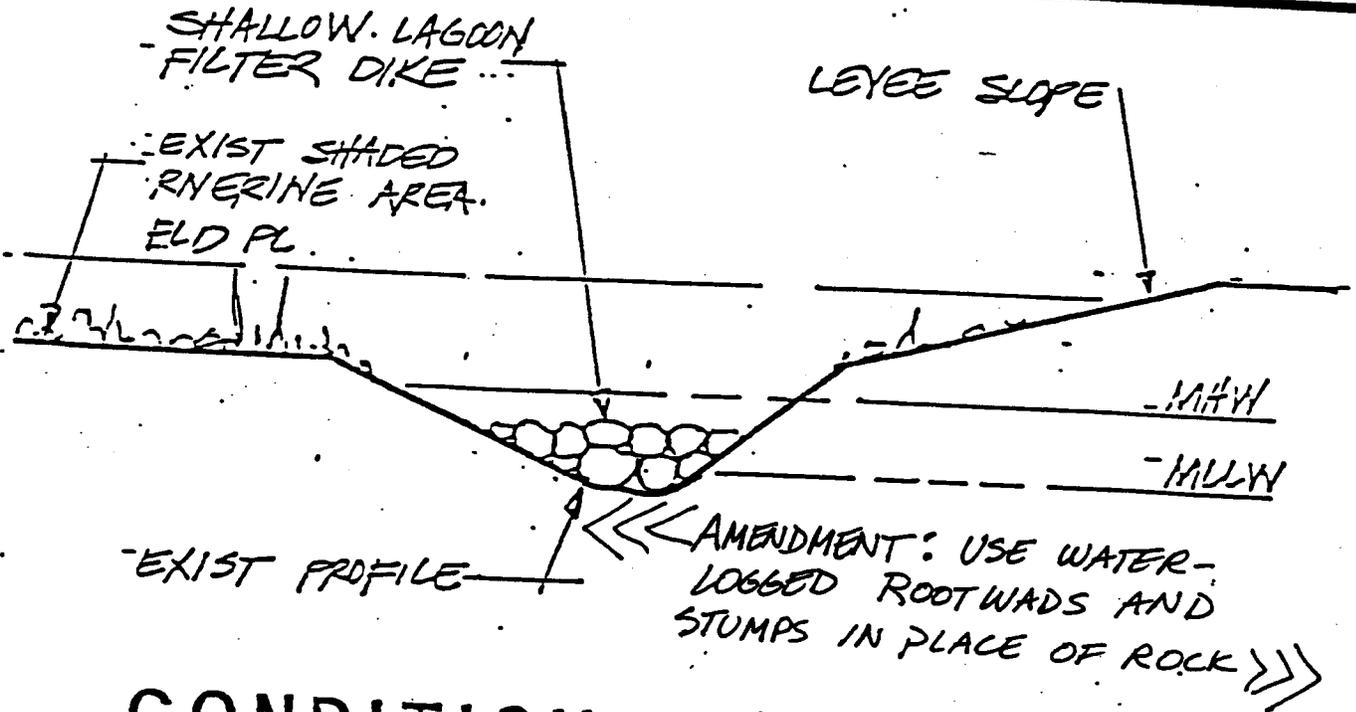
MOKELUMNE RIVER RIPARIAN
 VEGETATION RESTORATION
 PROJECT

SUBMITTED: 5/2/93 REVISED:

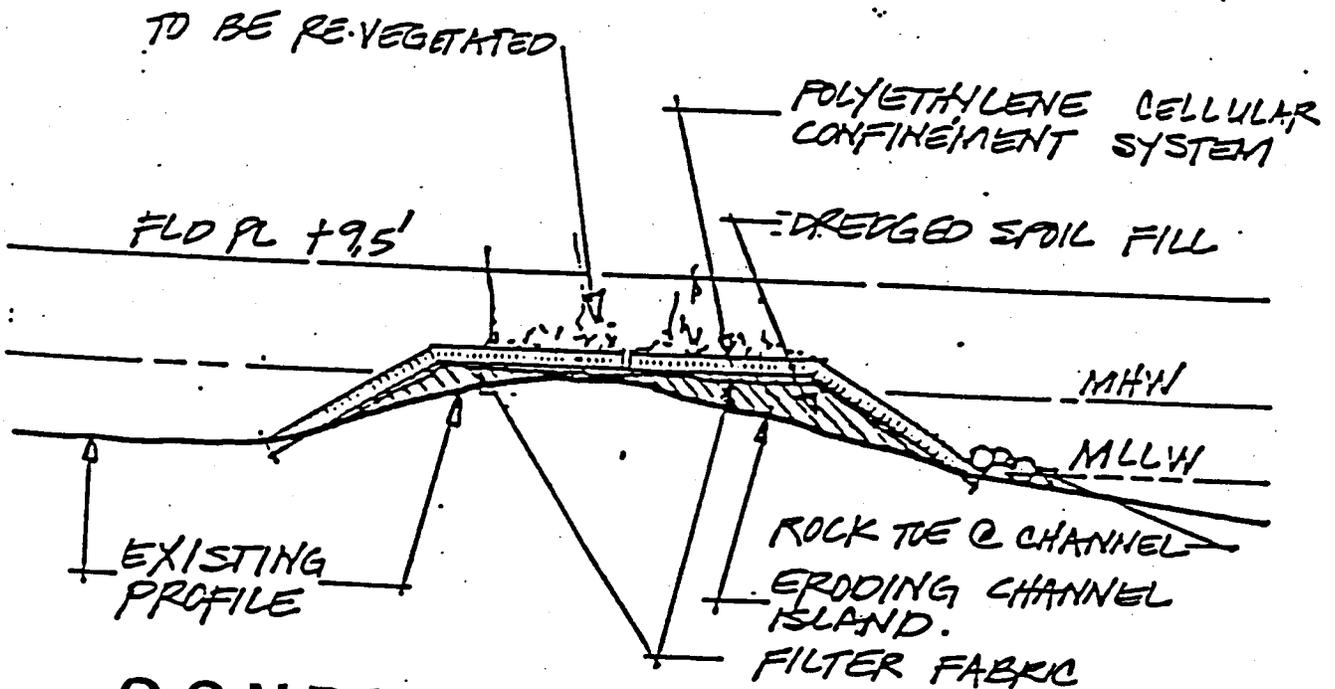


Detail to accompany sheet 7 of 9

CALENDAR PAGE	461.44
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CONDITION E 1" = 10' 0"



CONDITION F 1" = 10' 0"

DATUM : USGS (See Note)

SCALE : AS SHOWN

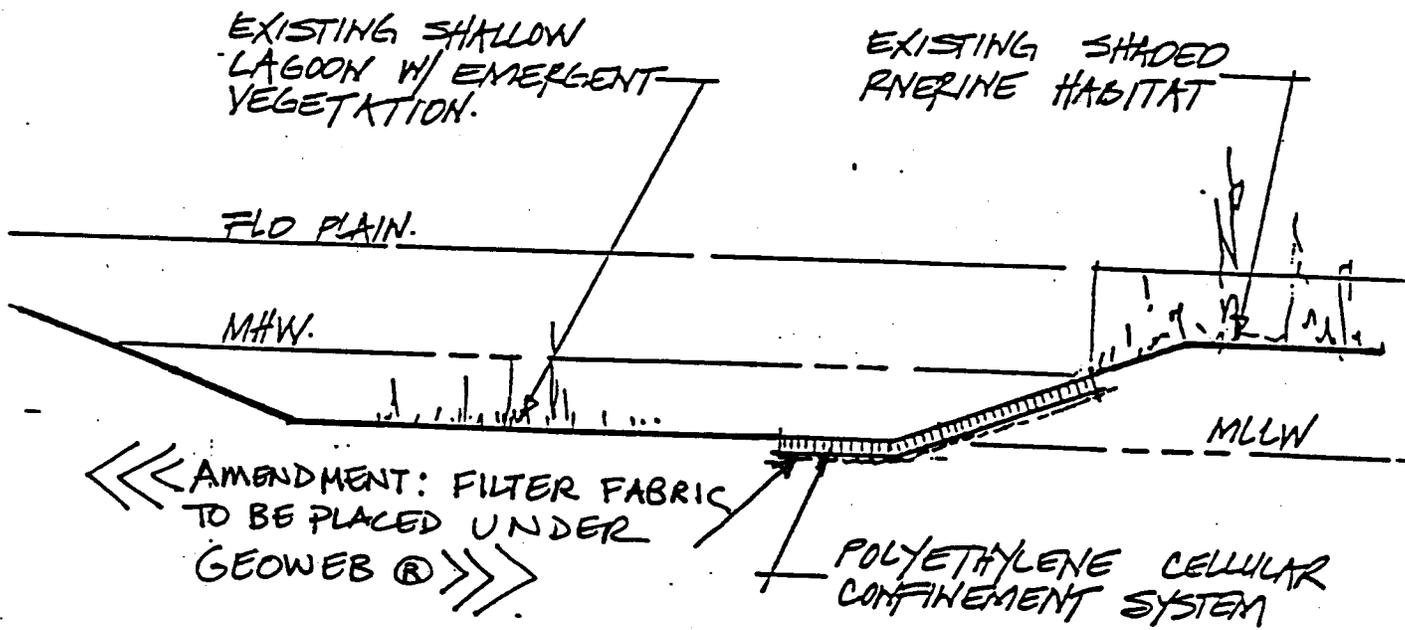
MOKELUMNE RIVER RIPARIAN VEGETATION RESTORATION PROJECT

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SHEET MINUTE PAGE

SUBMITTED: 5/3/93 REVISED:



CONDITION G 1" = 10'.0"

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MINUTE PAGE	1740

DATUM : USGS (See Note)
SCALE : AS SHOWN

MOKELUMNE RIVER RIPARIAN
VEGETATION RESTORATION
PROJECT

SHEET 9 OF 9

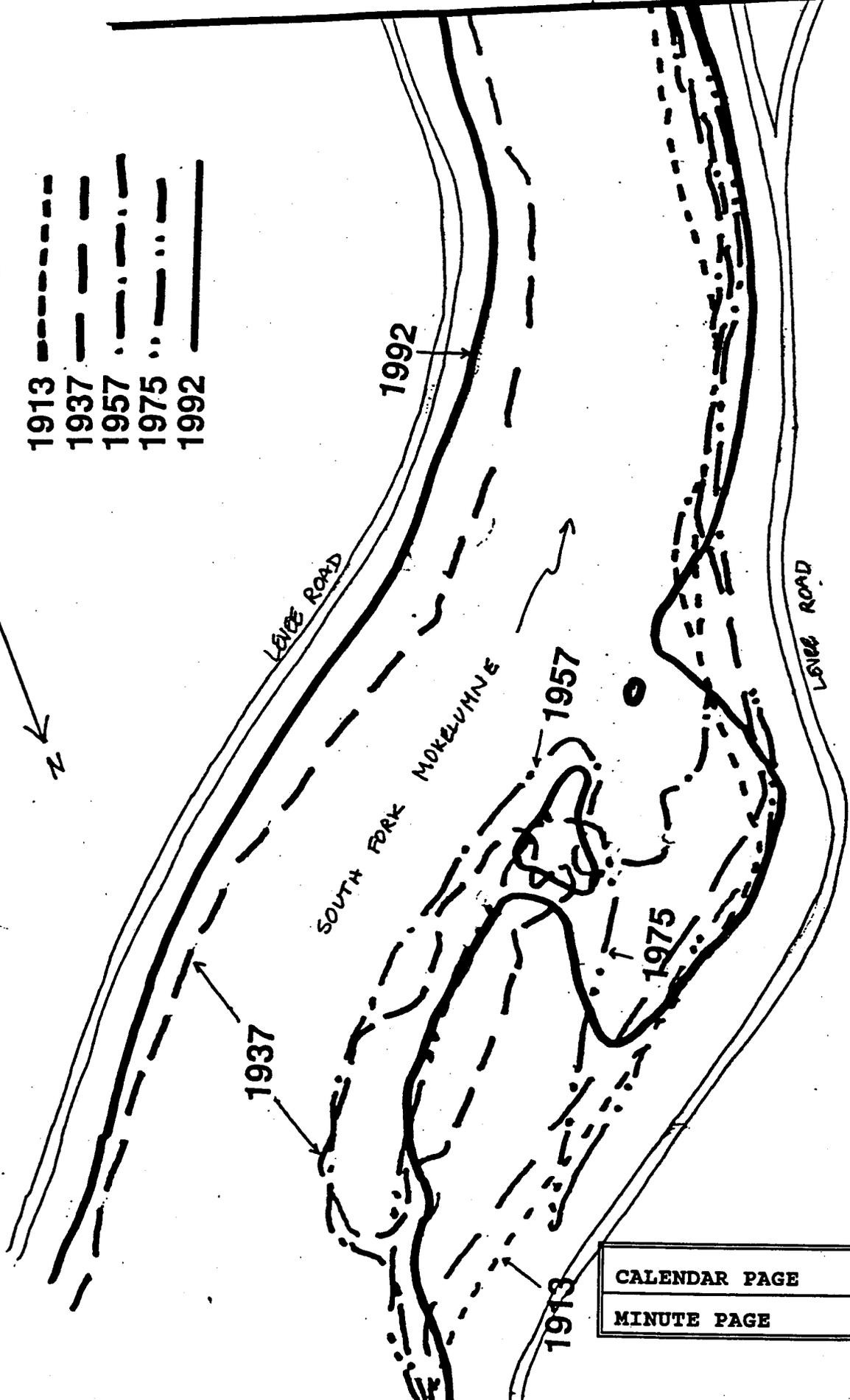
SUBMITTED: 5/3/93 REVISED:

SHEETS A-C
SHORELINE CHANGES
SOUTH FORK MOKELUMNE RIVER

CALENDAR PAGE	461.47
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SHEET A

- 1913 - - - - -
- 1937 - - - - -
- 1957 - · - · - -
- 1975 - · - · - -
- 1992 - - - - -

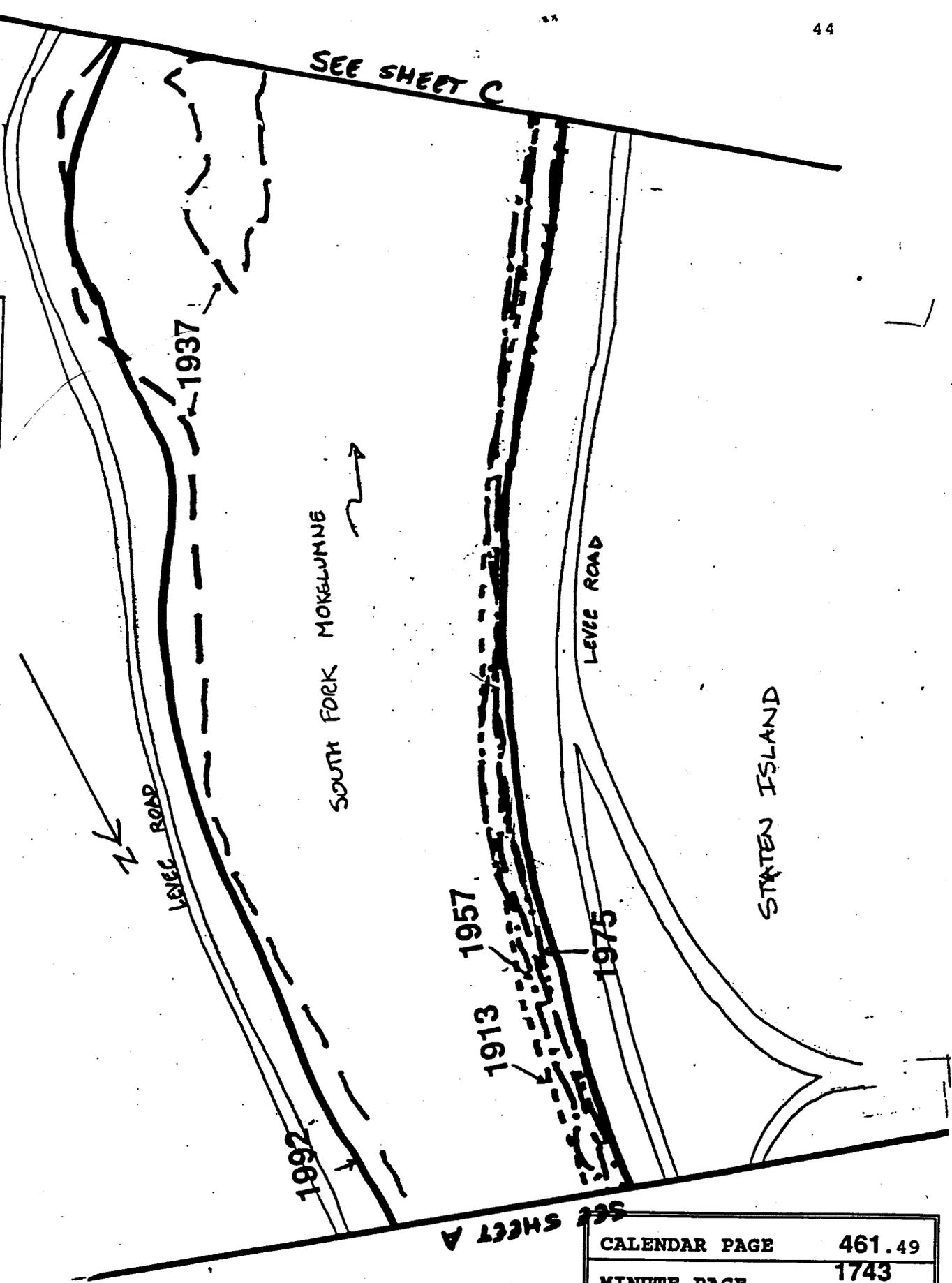


STATEN ISLAND

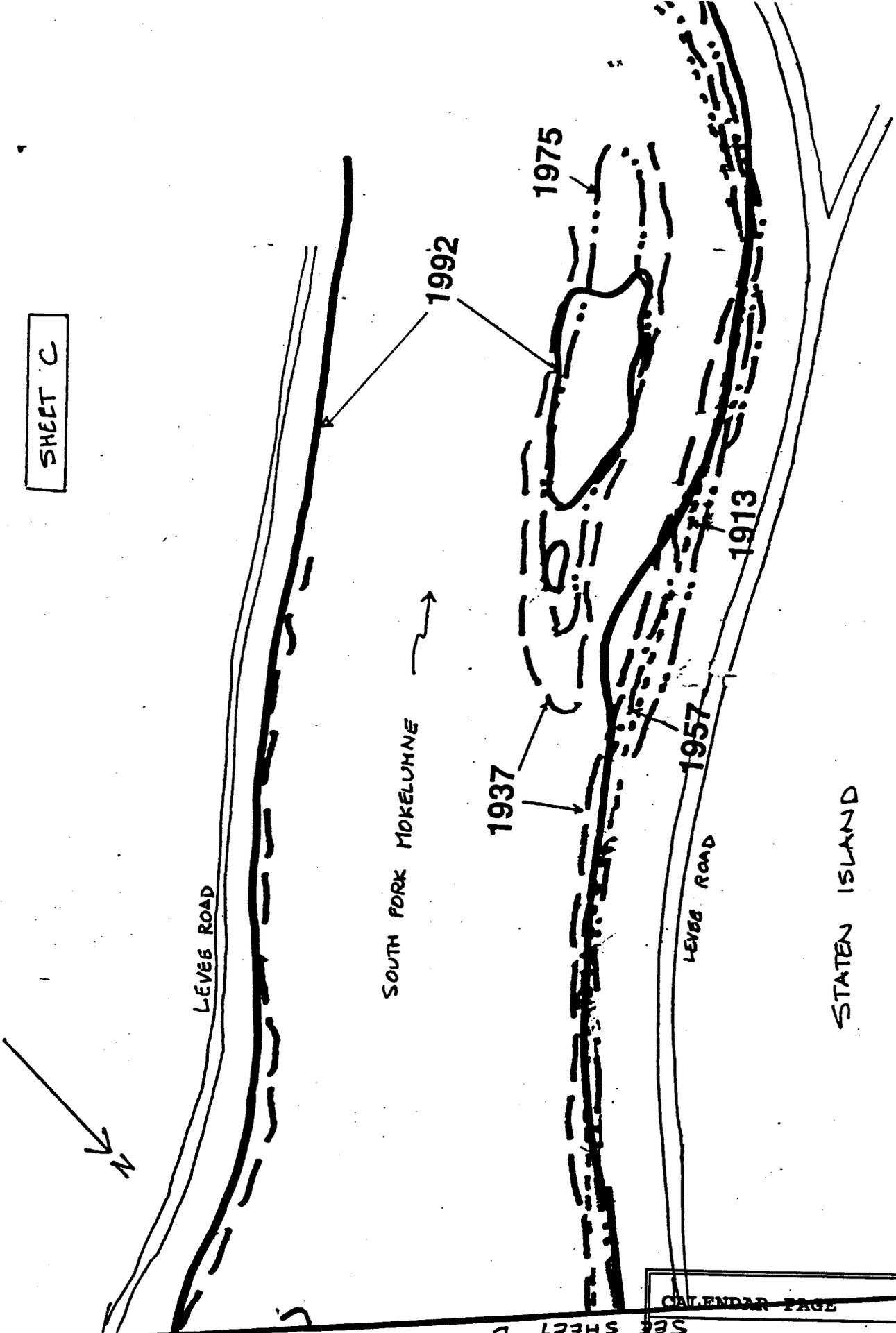
CALENDAR PAGE	461.48
MINUTE PAGE	1742

SEE SHEET C

SHEET B



SHEET C



CALENDAR PAGE	461.50
MINUTE PAGE	1744

SEE SHEET B

FIGURES 1-2
BIOLOGICAL SETTING
(By Frank Gray, DFG)

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FIGURE 1

47
New Hope
+

Stater Island



landside toe of levee

scattered longtruss levee access rd.

fence post

riparian forest

Open Water.
S. Fork
Mokelumne
River.

boundary of SRA
very small "bay" (15' x 30')

SRA

small "bay" with sandy beach (40' x 30')

SRA

SRA habitat

Open Water

Canal Ranch

boundary of SRA

SRA habitat

tules

Open Water

- ! = riparian forest
- ! = scrub shrub
- ⊗ = SRA habitat
- = open water

⊗	Mason's <i>Lilicopsis</i>	461.52
⊗	Delta tule per	1746
CALENDAR PAGE		MINUTE PAGE

Scale 0 100

FIGURE 2

Staten Island
(fields)

landside toe of levee

landside of levee

levee access road

lagoon "island" with dense forest

Open Water

shallow lagoon
Open water channel

riparian forest

SRA habitat

SRA habitat

Open Water

S. Fork Mokelumne

levee road

⊗ = SRA hab.

| = riparian forest

- - - = tules

• = open water

⊙ = Delta tule

Canal Ranch

CALENDAR PAGE	461
MINUTE PAGE	174

Scale 0 100

EXHIBIT "B"
MONITORING PROGRAM
M & T STATEN RANCH RESTORATION/DEMONSTRATION PROJECT
ND 623, SCH 93062041

Fish and Wildlife

1. **Impact:** The proposed project involves dredging which could potentially impact the endangered Winter-run Chinook Salmon.

Project Modification:

The dredging construction window will be limited as indicated in the DFG Streambed Alteration Agreement II 241-93 to be between July 1 and September 30, or when the Delta Cross Channel is closed.

Monitoring:

Staff of the State Lands Commission, or its designated representative will site inspect the project to ensure compliance with project modification.

Flora

2. **Impact:** The proposed project construction is located within an area identified by DFG to contain sensitive plant species.

Project Modifications:

A minimum of five (5) days before initiation of any aspect of project construction, the individual work sites will be staked by the applicant and their final locations approved by DFG. DFG will assist the applicant in identifying and marking the location of sensitive plant species, Delta Tule Pea and Mason's Lilaepsis.

DFG representatives will be notified of the completion of the above marking a minimum of ten (5) days before project construction.

Dredge fill to be placed at the south end of the island as shown on the DCC Engineering map at the locations shown as Condition A will not be placed in such manner that it precludes tidal exchange to the stand of Mason's Lilaepsis at that site closest to levee Station 250+00.

Monitoring:

1. The Department of Fish and Game (DFG) will coordinate monitoring studies of the project in conjunction with the State Lands Commission, the M&T Staten Island Ranch, Reclamation District #38, the Presto Products Company (for Geoweb), and the Department of Water Resources. The studies will include surveys of existing vegetation in association with bank stabilization measures. Vegetative planting success and continued berm stability will be evaluated and discussed by the DFG in consultation with the State Lands Commission and personnel of the M&T Staten Ranch at Staten Island to determine the appropriate corrective action.
 2. Project performance and habitat conditions will be monitored as noted in #1, above, for five years after project installation, and as indicated in DFG Streambed Alteration Agreement II-241-93.
 3. DFG personnel shall photograph all worksites to assess pre-project conditions before project construction.
3. **Impact:** The proposed project will involve berm restoration which will involve establishment of environmental conditions suitable for natural plant establishment. The newly constructed berm areas will require establishment of natural plant species.

Project Modification:

1. Cuttings of woody riparian species such as willow, alder, elderberry, and cottonwood will be inserted into the surface of the berms or openings within the GEOWEB. Holes will be punched through the underlying filter fabric as necessary. Willow bundles or wattles will be planted near the waterside edges of the berms. The cuttings will be obtained from nearby existing trees. Stout cuttings installed along the inside face of the rock dikes (Condition A) will be placed at the time of construction. Additional planting will be carried out or supervised by biologists from DFG to speed revegetation.

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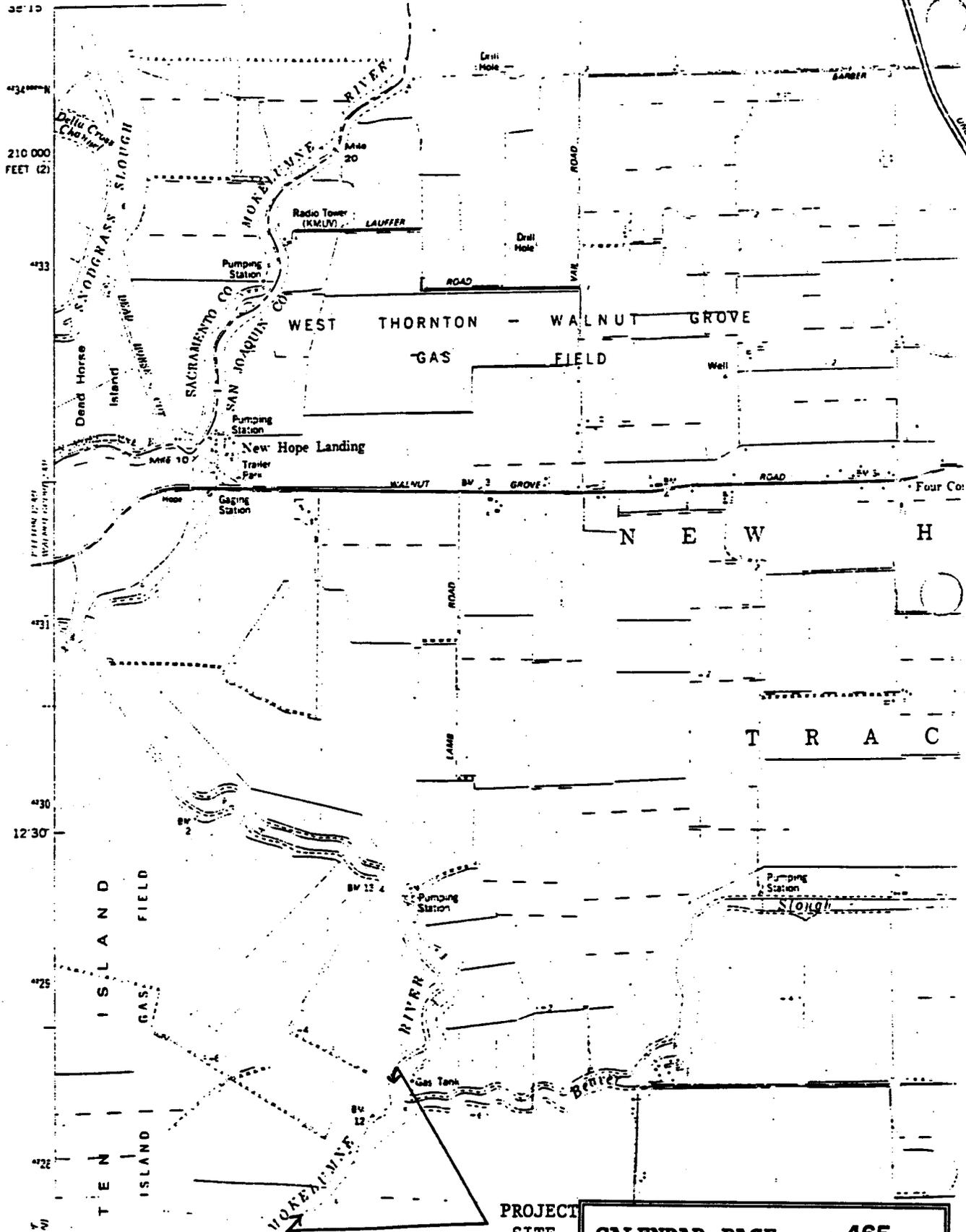
2. All tree and shrub plantings will be marked with colored plastic flagging with the planting date and species at the time of planting. Separate written records will be kept of all plantings.

Monitoring:

1. Staff of the State Lands Commission, or its designated representative, will periodically monitor the project site and consult with the California Department of Fish and Game, Reclamation District #38, Presto Products Company, and the Department of Water Resources to ensure compliance with the identified project modifications.
2. For the first year after project construction, the CDFG will monitor all project sites on a bi-monthly basis to determine vegetative growth and survival. Annual monitoring reports will be prepared by the CDFG and available for review.

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MINUTE PAGE	1750

EXHIBIT C
 SITE MAP
 W24964



PROJECT SITE	CALENDAR PAGE	465
	MINUTE PAGE	1751