

STATE OF CALIFORNIA

The Resources Agency

The Reclamation Board

WEST LEVEE AND DRAIN
CACHE CREEK SETTLING BASIN

OPERATION & MAINTENANCE MANUAL

Prepared By
Department of Water Resources

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WEST LEVEE AND DRAIN
CACHE CREEK SETTling BASIN
OPERATION AND MAINTENANCE

SECTION I
INTRODUCTION

1-01. Purpose. - The purpose of this manual is to define the operation and maintenance procedures to be used for the west levee and drain of the Cache Creek Settling Basin. This manual supplements the Corps of Engineers' Standard Operation and Maintenance Manual and the Corps of Engineers' Supplement - Unit No. 126, Cache Creek Levees and Settling Basin Yolo Bypass to High Ground.

1-02. Project Authority. - The project works covered by this manual are a part of the Sacramento Flood Control Project funded by the State Budget - Fiscal Year 1970-71.

1-03. Location. - The improvement covered by this manual is a portion of the Sacramento River Flood Control Project - Cache Creek Settling Basin in Yolo County, California, approximately 2 miles east of the City of Woodland. The improvement forms the western boundary of the Cache Creek Settling Basin and is described as follows:

Unit A - Commences at levee Station 0+00 on the centerline of the basin's south levee 171 feet east of County Road 103 centerline and extends northwesterly to levee Station 59+09.75 on the centerline of County Road 20.

Unit B - Commences at levee Station 59+09.75 and extends to levee Station 135+76 at the end of the project

levee which lies 61.35 feet south of County Road 18B center-line.

Unit C - Commences at levee Station 135+76 and extends northerly to the end of the boundary dike at Station 167+30 which lies approximately 1,000 feet south of the Cache Creek right bank levee.

1-04. Description of Maintenance Areas

Unit A - Includes the levee section, landside berm between levee and ditch, and the area between the waterside right-of-way line and the levee toe. Total width of the area to be maintained is approximately 80 feet. The following structures are to be maintained and operated by others and are subject to the regulations as indicated in Section II, Article 2-04:

1. Station 1+20 Irrigation Structure owned by Investment Operation Corporation. Presently operated by Woodland Farms.
2. Station 1+40 30" Drain Pump Pipe - City of Woodland.
3. Station 2+20 48" Gravity Drain Pipe - City of Woodland.
4. Station 2+40 36" Sewer Line - City of Woodland.
5. Station 2+50± 42" Drain Pump Pipe - City of Woodland.
6. Station 2+45 to Station 58+68 Landside Drain Ditch - City of Woodland.
7. Station 29+59 24" Sewer Line - City of Woodland.
8. Station 29+83 30" Sewer Line - City of Woodland.

Unit B - Includes the levee section, landside ditch together with ditch drain pipes, berm between levee and ditch, and the area between the waterside right-of-way line and the levee toe. Total width of area to be maintained is approximately 106 feet.

The following structures are to be maintained subject to the regulations as indicated in Section II, Article 2-04:

1. Station 83+85 Irrigation Structure
2. Station 125+30 Irrigation Structure

During irrigation season, the structure gates may be operated by others for irrigation purposes. Irrigation ditches connecting to the structures are to be permitted within the right-of-way limits and are solely the responsibility of others to operate and maintain. Such ditches are to be removed by others prior to flood season to an extent that flood control maintenance is not interfered with.

Unit C - Includes the boundary dike, landside ditch together with ditch drain pipes, berm between ditch and dike, and the area between waterside right-of-way and dike toe. Total width of area to be maintained is approximately 100 feet.

The following structures are to be maintained as indicated in Section II, Article 2-04:

1. Station 136+02 Drop Inlet. Trash rack and surface drainage area to be maintained by others.
2. Station 135+92 Irrigation Structure. Maintenance and operation of structure and connecting ditches are to be by others.

Road Crossings. - Included are all road crossings in all units. The road crossings including surfacing, embankment, appurtenances, and drainage are to be maintained and operated by others.

Levee gates are to be maintained and operated as project facilities.

1-05. Construction Data and Contractor - Considerable work has been accomplished on Cache Creek and the Settling Basin under contracts by the Corps of Engineers and are outlined in the Supplement - Unit No. 126.

The work required to complete the project works as described in this manual was accomplished by State of California contracts as follows:

a. Construction of levee, drainage ditch and appurtenances in Unit A was accomplished under Contract No. C50006 by A. Teichert and Son, Inc. and completed on June 11, 1971.

b. Construction of Levee, drainage ditches and appurtenances in Units B and C was accomplished under Contract No. C50019 by H. Earl Parker and completed October 8, 1971.

1-06. Flood Flows. - It is anticipated that the construction of levees described in this manual will have no effect on the water surface elevation of the Cache Creek Settling Basin; therefore all references to water surface elevations in Supplement No. 126 shall be applicable to this manual.

SECTION II
OPERATION AND MAINTENANCE PROCEDURES
OF THE PROJECT

2-01. Levees. - The levees of Units A and B extend from Station 0+00 to Station 135+76 and shall be subject to the operation and maintenance standards as outlined in Supplement Unit No. 126 and meet the pertinent requirements of the federal regulations. These levees have been constructed with slopes of 1 on 3 waterside and 1 on 2 landside with a crown width of 12 feet and a gravel surfaced patrol road on the crown. The necessary drainage structures, irrigation structures, road approaches, and appurtenances were also included in the work.

2-02. Boundary Dike. - The boundary dike of Unit C extending from Station 136+81 to Station 167+30 lies generally above design floodplane and need not be patrolled or maintained during flood season. The purpose of the boundary dike is to designate the limits of the settling basin.

On the rare occasions where flood elevations could exceed design elevation in the basin, the reach across Road 18B between the northerly end of the project levee and the southerly end of the boundary dike may be temporarily closed by sand-bagging or placing embankment.

Unit C is to be maintained during the dry season. Access is to be within the limits of the waterside right-of-way and the dike or between the dike and the drain ditch.

Graveled road is not provided.

Maintenance for the boundary dike shall be as required for waterside right-of-way.

2-03. Berm Area and Waterside Right-of-Way. - The berm areas and waterside right-of-way for Units A, B, and C shall be maintained as follows:

a. All brush, trees and wild growth other than sod are to be removed.

b. All weeds, grass and debris shall be burned during the appropriate season, when not dangerous, impractical or unlawful.

c. All grass and weeds shall be mowed or sprayed, if allowable, where removal by burning is a hazard to improvements or unlawful.

d. All burrowing animals are to be exterminated.

e. All caves, sloughs, burrows, holes, slips, and other damaged portions of the levee are to be repaired.

f. The berm area shall be maintained to drain toward the drain ditch.

g. Encroachments and use of the areas shall not be allowed except as authorized by permit from the State Reclamation Board.

Unit A - The drain ditch is to be maintained by others. Access on and use of the berm area by others to accommodate such maintenance is to be allowed.

Such sediments as may be removed from the ditch may be placed on the berm by others to drain and, after such sediments are properly drained, may be spoiled on the berm provided such depositions are graded and sloped to drain toward the ditch.

Vegetative material removed from the ditch may be temporarily stored on the berm until burned or otherwise removed by others.

Unit B and Unit C. - The drain ditch is to be maintained as part of the project works. Use of the berm for such ditch maintenance shall be as allowed for others in Unit A. The berm area in Units A, B, and C may be used as a borrow area for material as may be required for maintenance of project works.

For detail of construction of the levees in Units A, B, and C refer to the "As-Built" drawings of Exhibit 2.

2-04. Drainage, Irrigation and other Structures. In accordance with Reclamation Board Encroachment Control policies set forth in Manager's Guide 20, the structures listed under this article are issued automatic Board Orders authorizing the structures as encroachments within the project limits.

All structures listed under Unit A and Unit C are to be operated and maintained by others. The ownerships are listed under Article 1-04.

All structures listed under Unit B are to be owned and operated as part of the project works with provision for use by others as indicated under Article 1-04.

Other structures within the project limits, but not an integral part of the levee structure, are listed under Article 2-05.

All the structures listed below extend through the project levee.

Approx. Station	Size of Pipe	Structure Description	Feet Below Crown
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UNIT A

1+20	6'x6' Concrete Box	Irrigation L.S. to W.S. - Gate Riser W.S.	11.0
1+40	30" Steel	Drainage Pump Discharge - Flapgate W.S. (In 72" C.M.P. Riser)	10.0
2+20	48" R.C.P.	Gravity Drain - Gate Riser W.S.	
2+40	36" R.C.P.	Sanitary Sewer-Flow W.S. to L.S.	15.0
2+50	42" Steel	Drainage Pump Discharge	3.0
29+59	24" R.C.P.	Sewer Line	
29+83	30" R.C.P.	Sewer Line	

UNIT B

83+85	30" R.C.P.	Irrigation, L.S. to W.S. - Slide Headgate W.S.	6.5
125+30	30" R.C.P.	Irrigation, L.S. to W.S. - Slide Headgate W.S.	6.0

UNIT C

135+92	30" C.M.P.	Irrigation L.S. to W.S. - Flapgate on W.S.	5.0
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Note on abbreviations:

C.M.P.	-	Corrugated Metal Pipe
R.C.P.	-	Reinforced Concrete Pipe
W.S.	-	Waterside of Levee
L.S.	-	Landside of Levee

The irrigation, drainage, and sewage structures within Units A and B shall be subject to the operation and maintenance standards as outlined in Supplement Unit No. 126 and meet the pertinent requirements of the federal regulations.

The irrigation structure in Unit C is to be maintained and operated by others. The structure is to be inspected to assure structural integrity and operational use. During periods of high water, the flapgate is to be closed.

2-05. Drainage Ditch. - A landside drainage ditch has been constructed from Station 2+45 in Unit A to Station 167+30 in Unit C. The ditch acts as an interceptor for all landside drainage for conveyance to the southerly end of the Unit A levee where the drainage is transmitted by gravity (48" R.C.P. - Station 2+20) or pump (42" pipe-Station 2+50) into a drainage channel within the settling basin.

The above-mentioned pump structures shall be operated and maintained by the City of Woodland subject to inspections made by the Department of Water Resources, State of California (See paragraph 1-08. - Inspection Procedure Supplement Unit No. 126).

The drainage ditch and appurtenances in Unit A shall be operated and maintained by others.

The drainage ditch in Units B and C is to be operated and maintained as part of the project works. The ditch was constructed to provide landside borrow for the levee construction and is sized larger than is necessary for the anticipated drainage flows. The conduits at the road crossings and irrigation

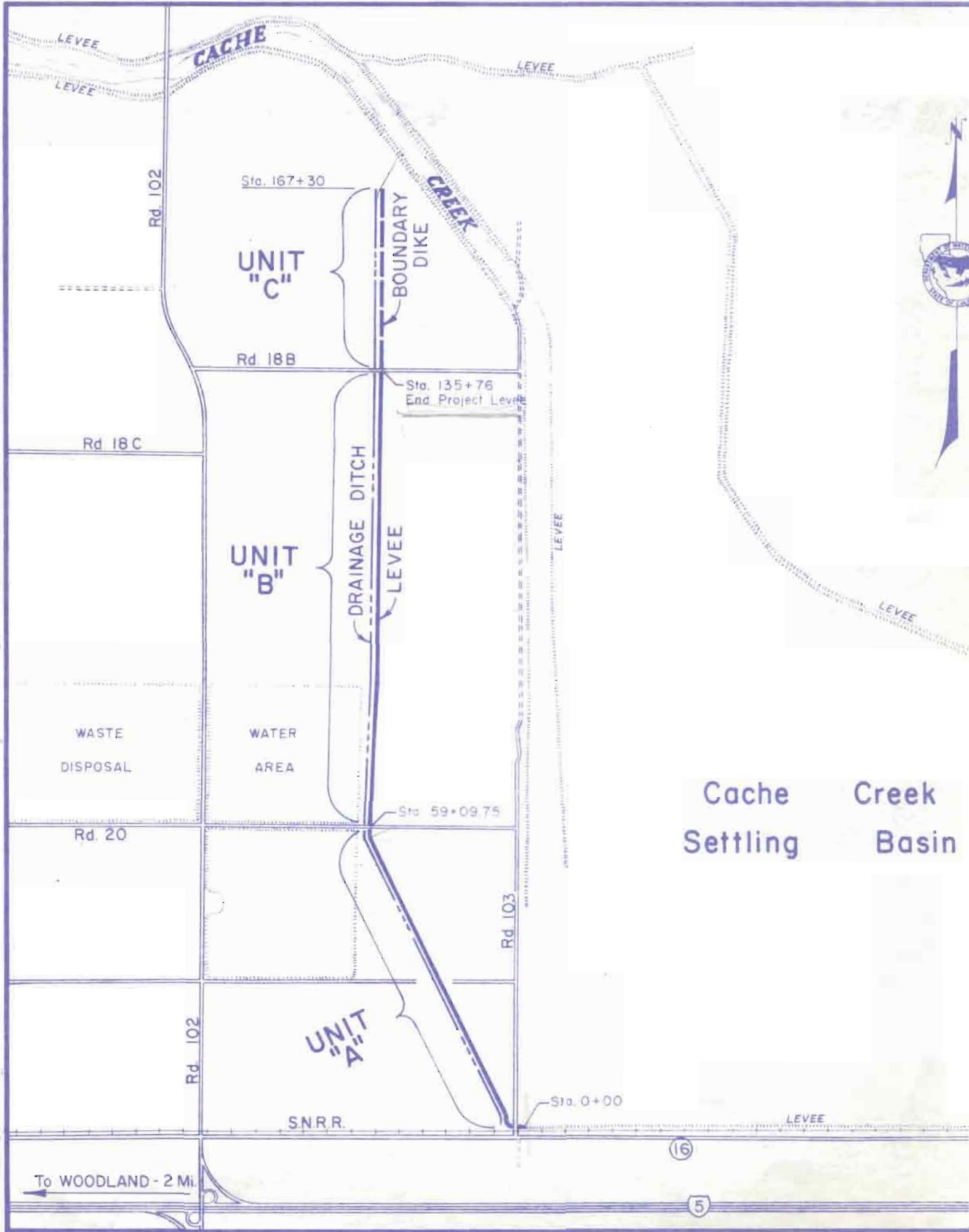
ditch crossings control the flow capacity of the channel. Maintenance of the ditch will be necessary only to the extent that ponding or constriction of flow to that less than the capacity of the control conduits is prevented.

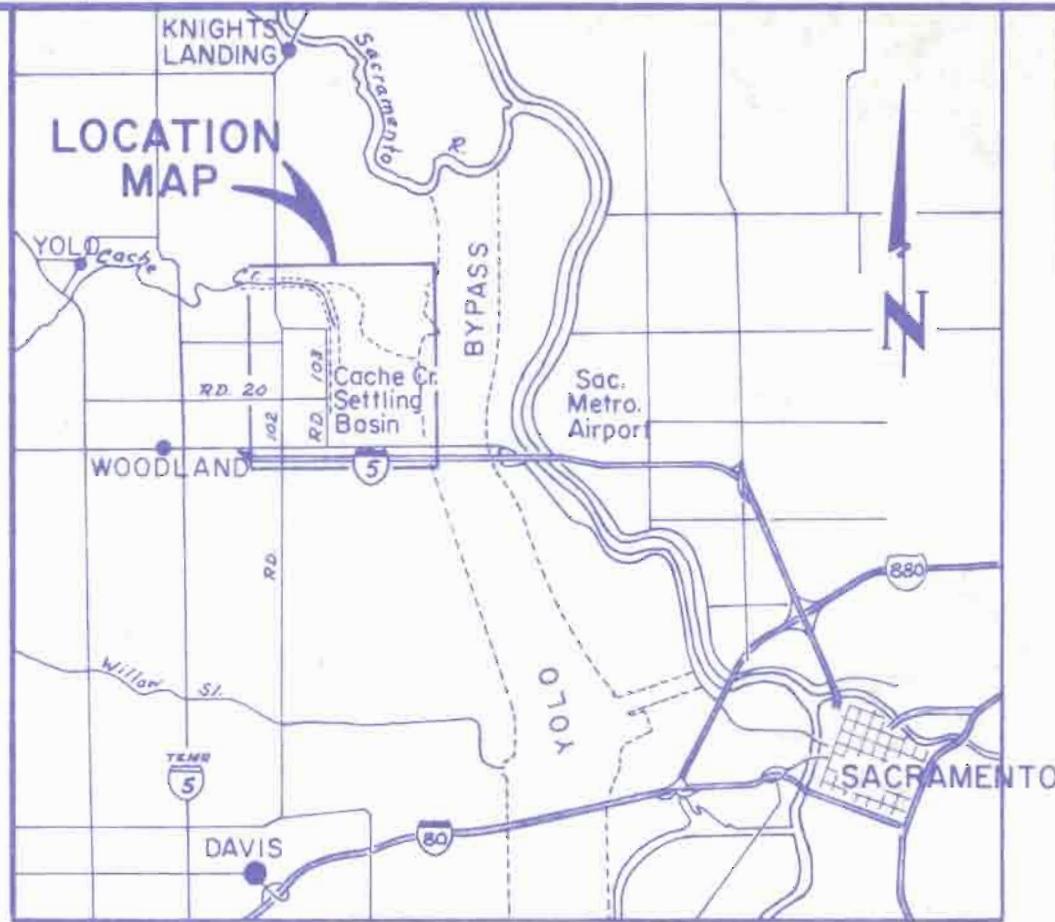
Ditch maintenance shall consist of removing sediments; vegetative growth and debris; repairing caving, sloughing, or eroding side slopes; maintaining the pipe structures free of debris and sediment to allow passage of maximum flow in the pipes.

The berm areas adjacent to the ditch may be used for maintaining the ditch as described under Section II, Article 2-03.

Structures constructed in conjunction with the drainage ditch in Units B and C and required to be maintained hereunder are as follows:

Approx. Station	Structure Description
<u>UNIT B</u>	
59+10	2-30" C.M.P. Culverts under Road 20
60+00	24" C.M.P. Pipe inlet to drainage channel
83+85	30" C.M.P. Culvert under irrigation ditch
103+62	Rock slope protected drop inlet to drainage channel
113+82	Rock slope protected drop inlet to drainage channel
125+30	30" C.M.P. Culvert under irrigation ditch
125+54	Rock slope protected drop inlet to drainage channel
<u>UNIT C</u>	
136+38	30" C.M.P. Culvert under Road 18B





CACHE CREEK SETTLING BASIN
WEST LEVEE AND DRAIN
LOCATION MAP

Scale: 1" = 2000'

EXHIBIT 1

TR. 2-1037, 1/1

EXHIBIT 2

For copies of "As-Built" plans

for

Cache Creek Settling Basin Modification
Interim Project Plan Phase I*

Cache Creek Settling Basin Modification
Interim Project Plan Phase II**

contact

Micro Document Management Unit
Department of Water Resources
1416 - Ninth Street
Sacramento, California

*Phase I includes construction of Unit A.

**Phase II includes construction of Units B & C..