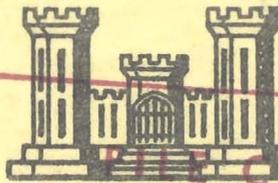


SUPPLEMENT TO STANDARD
OPERATION AND MAINTENANCE
MANUAL

SACRAMENTO RIVER
FLOOD CONTROL PROJECT

UNIT NO. 120

RELOCATED WILLOW SLOUGH CHANNEL AND LEVEES
AND
WEST LEVEE YOLO BYPASS
FROM
MOUTH OF RELOCATED WILLOW SLOUGH
TO YOLO CAUSEWAY



FILE COPY
RETURN TO
SACRAMENTO DISTRICT
CORPS OF ENGINEERS
FLOOD OPERATIONS CENTER
U. S. ARMY

SACRAMENTO, CALIFORNIA

CORPS OF ENGINEERS

U. S. ARMY

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Sacramento District
Corps of Engineers
U. S. Army
June 1952

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LOCATION	ADDITION OR REVISION	DATE
Exhibit F	Add copy of letter of transfer dated 22 Sep 1948	21 Dec 2010
Exhibit F	Add copy of letter of transfer dated 13 Jun 1950	21 Dec 2010
Exhibit F	Add copy of letter of transfer dated 30 Aug 1950	21 Dec 2010
Exhibit F	Add copy of letter of transfer dated 4 Dec 1951	21 Dec 2010
Exhibit F	Add copy of letter of transfer dated 8 Dec 1951	21 Dec 2010
Exhibit F	Add copy of letter of acceptance dated 18 Dec 1951	21 Dec 2010
1-04	Add subparagraph c	21 Dec 2010
Exhibit F	Add copy of letter of transfer dated 4 Feb 1987	21 Dec 2010
Exhibit B	Add drawing no. 50-4-5767	21 Dec 2010
Exhibit F	Add copy of letter of transfer dated 29 Nov 2016	29 Dec 2016

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1504-06 *Levee Sec* *Krohn*
①
Corps of Engineers
SACRAMENTO RIVER, CALIF., FLOOD CONTROL PROJECT

WILLOW SLOUGH CHANNEL RELOCATION
AND LEVEE CONSTRUCTION

ANALYSIS OF DESIGN



SACRAMENTO DISTRICT
CORPS OF ENGINEERS, WAR DEPARTMENT
SACRAMENTO, CALIFORNIA

FEBRUARY 1947

Willow Slough Channel Relocation
Design Analysis

Design Analysis for the following phases are inclosed under the tabulated headings:

- (1) Channel Relocation (capacity design)
- (2) Reinforced Concrete Culvert Headwalls
- (3) Intercepting Ditch (area and run-off computations)
- (4) Irrigation Ditches and Siphons (capacity design)
- (5) Discharges at Diversion Weir
- (6) Soils:
 - (A) Mechanical Analysis Diagrams (grading of materials encountered)
 - (B) Compaction Tests (moisture-density relations of the material)
 - (C) Consolidation Tests (consolidation characteristics of the foundation material, performed on undisturbed samples)
 - (D) Direct Shear Tests (shear characteristics of foundation material)

A study of the logs of the drill holes and the test data results in the following conclusions:

- (a) The excavation from the channel relocation will be satisfactory material for levee embankment.
- (b) The material is of fine enough texture that through seepage will not be a problem.
- (c) There is no danger from underseepage.
- (d) There is no danger from foundation failure.

Willow Slough Channel Relocation
Design Criteria
(Basis for Design)

1. Channel. - To provide a waterway to accommodate a 6,000 c.f.s. discharge, a frequency relation flow to be expected once in 20 years, with the Yolo Bypass at flood stage elevation 29.16 Corps of Engineers datum. Channel sections and grades to provide channel velocities within erosive limitations throughout the length of relocated channel.

2. Excavation. - Channel excavation is controlled by ground-water conditions, to provide a semi-compacted levee embankment during construction operations, the channel grade, widths and berms for the required channel capacity were governed by the ground-water conditions and to obtain sufficient borrow material for the embankment requirements, which includes a shrinkage factor of 33-1/3 percent.

3. Embankment. - The flood plane is based on backwater curve computations, with a 6,000 c.f.s. discharge through the relocated channel and the Yolo Bypass at flood plane stage, to provide ample levee section for this condition a 3-foot freeboard is utilized through the area not subject to wave wash. In the area where wave wash is anticipated a 6-foot freeboard is used to provide additional levee section and to provide a longer through seepage path. Twenty-foot crown width, one on three waterside slope and a one on two landside slopes are provided as the normal section, where crown of levees are utilized for the relocated county road an additional 5-foot crown width is used, and the landside slope becomes one on one and one-half.

4. Diversion and closures:

a. Closing off the existing Willow Slough 200 feet downstream from the point of relocation by a compacted earthfill with a gate controlled inlet structure to divert 200 c.f.s. flow into the existing Willow Slough, which will fulfill the requirements of local interests. A diversion weir downstream from the above fill, constructed across the relocated channel to provide a diversion pool at inlet structure. ~~Three 5-foot by 4-foot~~ flashboard controlled openings to be incorporated in diversion weir to regulate pool elevation, and to provide means of scouring the pool basin of shoaling by removing the flashboards prior to heavy runoff of floodwaters.

b. Closing off the lower end of existing Willow Slough at its confluence with Yolo Bypass by a compacted earthfill, with gate controlled inlet and outlet structures, to provide intake of

waters from the Yolo Bypass for storage of irrigation water, and the outlet of floodwaters impounded during heavy run-offs. Reinforced concrete headwalls at the inlets and outlets of the above closures are designed to withstand surcharges and uplift, bearing piles to provide sufficient bearing value for headwalls are to be installed, as the bearing capacity of the foundation material encountered at these locations is questionable.

5. Drainages:

a. Intercepting ditch designed to provide waterway for 200 c.f.s. run-off expected during wet seasons; to provide training levees (to pocket run-off from adjacent higher ground) with adequate freeboard and section. Intercepted waters to be discharged into relocated channel through culvert with automatic gate on channel side.

b. Drainage culverts leading to relocated channel on the various adjacent properties, to provide drainage for local run-off and waste irrigation water, requested by local interests.

6. Irrigation. - Irrigation facilities to provide 50 c.f.s. for local interest located south of the relocated channel. (The existing irrigation system will be severed by relocated channel construction) Siphon, inlet and outlet structures, and irrigation ditches designed to meet the requested requirements.

7. Berms:

a. Channel berms varying from a minimum requirement of 20 feet to 30 feet utilized or determined by soil classification and limitations of right-of-way.

b. Berm fills (semi-compacted) on landside adjacent to irrigation ditches set at 30 feet minimum to provide protection against saturation and offer a longer through seepage path from irrigation and/or floodwaters.

8. Reinforced concrete bridge (Live load H-20). - To provide means of access across relocated channel at the severance of county road between Davis and Woodland; this county road being an important link in Yolo County highway system and is used by heavy traffic, therefore, it was arranged by obtaining approval from higher authority to have the bridge design prepared by the Division of Highways, State of California, the basic data being furnished by this office.

main - approved by part of project although not discussed in O&M manual

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JUNE 1952

SECTION I

INTRODUCTION

1-01. Location. The improvement covered by this manual is that part of the Sacramento River Flood Control Project which includes Willow Slough between U. S. Highway 99W and the Southern Pacific Railroad, Relocated Willow Slough between the Southern Pacific Railroad and the Yolo Bypass, and the west levee of the Yolo Bypass from the mouth of Relocated Willow Slough to the Yolo Causeway. Willow Slough is one of the tributaries of the Yolo Bypass and is located in the Yolo Basin in Yolo County. It lies between Cache Creek on the north and Putah Creek on the south, in the general area between the cities of Woodland and Davis. The location of the completed unit of the Sacramento River Flood Control Project covered by this manual is shown on exhibit A-1 herewith.

1-02. Protection Provided. The project works are designed to protect adjacent agricultural lands from a flood flow of 6,000 cubic feet per second in Relocated Willow Slough with the Bypass at flood stage, a flow which it is estimated would not be exceeded more often than once in 20 years. The west levee of the Yolo Bypass is designed to protect adjacent agricultural land from a flood flow of 480,000 cubic feet per second in the Yolo Bypass. In the Relocated Willow Slough Channel, the grade of the adopted flood plane profile varies from elevation 46.09 at Station 23/00 (beginning of embankment) to elevation 29.16 at Station 400/00, where the Relocated Willow Slough Channel joins the Yolo Bypass. The levee grade provides a freeboard of 3 feet above

the flood plane profile from the Southern Pacific Railroad to Station 325+00; from Station 325+00 to station 352+00, the freeboard increases uniformly from 3 feet to 6 feet; and from Station 352+00 to Station 400+00, the freeboard above the adopted flood plane profile is 6 feet.

In the Yolo Bypass, the adopted flood plane profile varies from elevation 29.16 at the mouth of the Relocated Willow Slough Channel to elevation 28.80 at the Yolo Causeway at Station 446+86. The levee grade provides a freeboard of 6 feet above the flood plane profile.

It is estimated that a flow of 6,000 cubic feet per second will produce the adopted flood plane profile in the Relocated Willow Slough Channel, while a flow of 480,000 cubic feet per second will produce the adopted flood plane profile in the Yolo Bypass within this unit.

1-03. Project Works. The flood-control improvement covered by this manual is a part of the Sacramento River Flood Control Project authorized by the Flood Control Act of 1917 as modified by the Acts of 1928, 1937, and 1941, and consists of:

- a. The cleared and excavated channel of Willow Slough between U.S. Highway 99W and the Southern Pacific Railroad.
- b. The relocated channel of Willow Slough between the Southern Pacific Railroad and the Yolo Bypass.
- c. Levees along both banks of the relocated channel between the Southern Pacific Railroad and the Yolo Bypass.
- d. West Levee of the Yolo Bypass from the mouth of Relocated Willow Slough Channel to the Yolo Causeway.
- e. A diversion weir, constructed in the relocated channel just downstream from the point of bifurcation (Station 4+97) to divert flows other than flood flows into the original Willow Slough Channel for irrigation purposes.
- f. An irrigation control structure in the original Willow Slough channel at the point of bifurcation. It consists of two gated 48-inch corrugated metal pipes through an earth-fill dike.
- g. Hard-surfaced low water channel crossings at Yolo County Highways Nos. 103 and 104.

1-04. Construction Data. Unit No. 120 of the flood control works described in this manual forms an integral part of the Sacramento River Flood Control Project. The construction to bring this unit to project standards was completed under contracts described as follows:

a. Relocation of Willow Slough Channel and construction of West Levee of Yolo Bypass, started 7 July 1947 and completed 31 August 1948.

b. Channel clearing between U.S. Highway 99W and the Southern Pacific Railroad, and the low water crossings at County Roads No. 103 and 104, started 6 March 1950 and completed 6 May 1950.

c. Emergency repairs to project levees along the right bank of the Yolo Bypass and portions of the left bank of Willow Slough in Reclamation District 2035 was completed on 21 November 1985.

1-05. Contractor. The prime work was performed under the following contracts, record copies of which are on file with the Corps of Engineers, U. S. Army, Sacramento District, Sacramento, California:

a. Relocation of Willow Slough and construction of west levee of Yolo Bypass, Contract No. W-04-167-eng-1309, Peter Ferry & Son and John M. Ferry, Contractors. Drawing 50-4-2281.

b. Channel clearing between U.S. Highway 99W and the Southern Pacific Railroad, and the low water crossing at County Roads Nos. 103 and 104, Contract No. DA-04-167-eng-146, H. Earl Parker, Inc., Contractors. Drawings 50-6-2611 and 50-5-2612.

c. Emergency repairs to project levees along the right bank of the Yolo Bypass and portions of the left bank of Willow Slough, Contract No. DACW05-87-C-0020, Drawing No. 50-4-5767.

1-06. Flood Flows. For purposes of this manual, the term “flood” or “high water period” shall refer to flows when the water surface reaches or exceeds a reading of 39.0 on the enameled staff gage on the upstream side of the Pole Line Road Bridge over the Relocated Willow Slough Channel (Yolo County Road No. 102) or a reading of 32.5 on the Division of Water Resources and U.S. Geological Survey jointly operated gaging station just upstream from the Sacramento Northern Railroad bridge over the Yolo Bypass.

1-07. Assurances Provided by Local Interests. Assurance of cooperation by local interests is provided by state legislation, as contained in Chapter 3, Part 2, Division 5 of the State Water code (See paragraph 2-02a of the Standard Manual).

1-08. Superintendent. The name and address of the superintendent appointed by local interests to be responsible for the continuous inspection, operation, and maintenance of the project works shall be furnished the District Engineer, and in case of any change of superintendent, the District Engineer shall be so notified.

SECTION II

FEATURES OF THE PROJECT SUBJECT TO FLOOD-CONTROL REGULATIONS

2-01. Channels.

a. Description. The principal structures consists of:

(1) Improved Channel. The original channel of Willow Slough between U. S. Highway 99W and the Southern Pacific Railroad which has been cleared of trees, brush, and debris and has been enlarged by excavation as indicated on Drawing No. 50-6-2611, of exhibit B.

(2) Relocated Channel. A relocated channel, excavated by new construction, extending from the Southern Pacific Railroad to the Yolo Bypass. Drainage structures, consisting of corrugated metal pipes, extend through the levees for the purpose of discharging intercepted drainage water from areas adjacent to the channel.

b. Inspection.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10 (g)(1) are quoted in part as follows:

- "(g) Channels and Floodways..... (1) Maintenance. Periodic inspections of improved channels and floodways shall be made by the Superintendent to be certain that:
- (i) The channel or floodway is clear of debris, weeds, and wild growth.
 - (ii) The channel or floodway is not being restricted by the depositing of waste materials, building of unauthorized structures or other encroachments.
 - (iii) The capacity of the channel or floodway is not being reduced by the formation of shoals.
 - (iv) Banks are not being damaged by rain or wave wash, and that no sloughing of banks has occurred.
 - (v) Riprap sections and deflection dikes and walls are in good condition.
 - (vi) Approach and egress channels adjacent

to the improved channel or floodway are sufficiently clear of obstructions and debris to permit proper functioning of the project works.

Such inspections shall be made prior to the beginning of the flood season and otherwise at intervals not to exceed 90 days. Immediate steps will be taken to remedy any adverse conditions disclosed by such inspections....."

(2) The purpose of the flood-flow channel inspection is to insure that conditions which affect the channel capacity will remain the same, as far as possible, as those considered in the design assumptions and that no new conditions develop that may affect the stability of the project structures. At each inspection required by paragraph 208.10 (g)(1) of the Flood Control Regulations, particular attention will, therefore, be given the following:

- (a) Location, extent and size of vegetal growth.
- (b) Unauthorized operations within the flood-flow channel right-of-way, such as excavations, buildings, and other structures, levees, bank protection, or training dikes.
- (c) Rubbish and industrial waste disposal.
- (d) Changes in the channel bed such as aggradation or degradation, which would interfere with free-flow from side drainage structures or induce local meanders that would scour the banks.
- (e) Operations of any nature upstream from the project that would affect flow conditions within the limits of the flood control project.
- (f) Condition of project structures.
 - 1. Channel walls:
 - a. Deviation from alignment and grade.
 - b. Development of cracks and spalls.
 - c. Mechanical injuries.
 - 2. Fencing:
 - a. Injuries to posts, fencing or barbed wire.

b. Damage to galvanizing

3. Earth Fills:

a. Settlement

b. Erosion of backslopes

c. Excessive seepage or saturation area back of fills.

d. Condition of bank protection - concrete or stone blanket.

4. Right-of-way:

a. Presence of dumped refuse

b. Encroachment on trespass.

(3) No excavation within the limits of the Relocated Willow Slough Channel will be permitted unless an excavation permit has been approved by the State Reclamation Board.

(4) If any work is done to improve flow conditions in Willow Slough above the project, it should be coordinated with the District Engineer to insure that proper provisions are made for channel alignment and capacity to conform to the existing project.

(5) The intent of these inspections is to disclose all conditions which in any way affect the stability of the structures and their functioning for the control of floods. Each inspection report should note and comment on any repair measures that have been taken since the last inspection. In making these inspections, the check sheets included as exhibit C shall be explicitly followed.

c. Maintenance.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10 (g)(1), are quoted in part as follows: "...Immediate steps will be taken to remedy any adverse conditions disclosed by such inspection...."

(2) Shoaling or aggradation at the inlets or outlets of side drainage structures may render them inoperative. It is, therefore, imperative that all drains be kept open and unobstructed at all times.

(3) Dumped rock or other suitable types of protection should be placed at locations found by experience to be critical trouble points, with a view to stabilizing the channel alignment and preserving the general uniformity of the bank lines.

(4) Sediment and debris plugs or other obstructions should be removed from the channel to prevent any tendency for the flows to be deflected within the channel. The heavy material likely to accumulate in the new channel at the mouths of tributaries should be removed to keep the channel clear.

(5) The channel and right-of-way shall be kept reasonably clear of debris, refuse matter, or industrial wastes.

(6) Weeds and other vegetal growth in the channel shall be cut in advance of the flood season and, together with all debris, removed from the channel.

(7) All eroded concrete shall be repaired as soon as any reinforcing steel is exposed or erosion approaches a depth of 4 inches. For this purpose, it is recommended that the repair be made by thoroughly cleaning the surface by sandblasting and building up the section with pneumatically placed Portland cement mortar. All evidences of settlement, uplift, or failure of concrete structures shall be referred to the State Engineer for analysis and remedial measures.

(8) All damage to fencing, whether resulting from accidental or willful injuries or from corrosion, shall be promptly repaired with new material in order to maintain satisfactory protection to the public.

(9) All subdrainage structures which have become clogged due to the evaporation of groundwater or other causes, shall be thoroughly cleaned out and repacked with fresh gravel.

d. Operation.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10 (g) (2), are quoted in part as follows:

"(g) Channels and floodways. (2) Operation. Both banks of the channel shall be patrolled during periods of high water Appropriate measures shall be taken to prevent the formation of jams of debris. Large objects which become lodged against the bank shall be removed. The improved channel or floodway shall

be thoroughly inspected immediately following each major high water period. As soon as practicable thereafter all snags and other debris shall be removed and all damage to banks, riprap.... walls, drainage outlets or other flood control structures repaired."

(2) It shall be the duty of the Superintendent to maintain a patrol of the project works during all periods of flow in excess of a reading of 39.0 on the staff gage at the bridge at Yolo county road No. 102, as indicated in paragraph 1-06 of this manual. The Superintendent shall dispatch a message by the most suitable means to the District Engineer whenever the water surface in the channel reaches the gage reading of 39.0 feet. The Superintendent shall also cause staff readings to be taken at the gage at intervals of one to two hours during the period when the water surface is above the flood-flow stage indicated above and record the time of the observations. One copy of the readings shall be forwarded to the District Engineer immediately following the flood, and a second copy transmitted as an inclosure to the semi-annual report in compliance with paragraph 3-03c of the standard manual.

2-02. Levees.

a. Description. Levees were constructed on both banks of the Relocated Willow Slough Channel from the Southern Pacific Railroad near Merritt Station to the Yolo Bypass. The then existing west levee of the Yolo Bypass from the mouth of Relocated Willow Slough to the Yolo Causeway was enlarged on the landside to the required grade and section. Crushed rock surfacing was applied to the crown of the levees, as indicated on drawing No. 50-4-2281, sheets 1, 4, and 5 of exhibit B. Required turnouts and road approaches were also provided.

b. Inspection.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10 (b)(1), are quoted in part as follows:

"(b) Levees - (1) Maintenance Periodic inspection shall be made by the Superintendent... to be certain that

(i) No unusual settlement, sloughing, or material loss of grade of levee cross section has taken place.

(ii) No caving has occurred on either the landside or the riverside of the levee which might affect the stability of the levee section.

- (iii) No seepage, saturated areas, or sand boils are occurring.
- (iv) Toe drainage systems and pressure relief wells are in good working condition, and that such facilities are not becoming clogged;
- (v) Drains through the levees and gates on said drains are in good working condition.
- (vi) No revetment work or riprap has been displaced, washed out, or removed.
- (vii) No action is being taken, such as burning grass and weeds, during inappropriate seasons, which will retard or destroy the growth of sod; (see Note (a) below)
- (viii) Access roads to and on the levee are being properly maintained.
- (ix) Cattle guards and gates are in good condition.
- (x) Crown of levee is shaped so as to drain readily, and roadway thereon, if any, is well shaped and maintained.
- (xi) There is no unauthorized grazing or vehicular traffic on the levees.
- (xii) Encroachments are not being made on the levee right-of-way which might endanger the structure or hinder its proper and efficient functioning during times of emergency.

Note (a)

Since the growth of sod on the slopes of the levees of this project is not practicable and as the nature of the levee growth warrants burning thereof to facilitate inspection, the provisions of subparagraph b(1) of the regulations inconsistent therewith shall not apply. In place of item (vii), therefore, the following shall be observed:

Weeds, grasses and debris on the levee are burned during appropriate seasons, where not dangerous or impracticable, in order to permit the detection of cracks, holes, burrows, slips, and other damage and to permit the detection and extermination of burrowing animals and that grass and weeds on levee slopes be mowed where removal by burning is dangerous or impracticable, such as peat levees or where burning would constitute a hazard.

Such inspections shall be made immediately prior to the beginning of the flood season immediately following each major high water period, and otherwise at intervals not exceeding 90 days; and such intermediate times as may be necessary to insure the best possible care of the levee..."

(2) To insure the taking of such maintenance measures as will be required for proper functioning of the levee, the following items shall be specifically covered in each inspection:

- (a) Aggradation or degradation of the stream bed along the toe.
- (b) Settlement of levee fill.
- (c) Erosion of levee slopes; both sides of levees.
- (d) Presence of seepage; saturated areas, or sand boils back of levee.
- (e) Condition of access roads and roadway on levee.

c. Maintenance.

(1) Repairs to Levee Embankment. Methods used for repair or reconstruction of the levee fill will depend on the extent of the damaged section. If of small extent, the most suitable method will be to bring the levee back to line and grade by a fill made in 6-inch layers of earth free from brush, roots, sod or other unsuitable matter. If of larger extent, the fill should be made in the same manner as the original construction, of selected material from the borrow pits approved for the project, placed in uniform layers of loose material and not more than 6 inches in depth and compacted in accordance with the specifications under which the work was completed.

(2) Depredations of Burrowing Animals. Dens and runways formed within the levee by burrowing animals are frequently the causes of levee failures during flood stages. Burrowing animal such as muskrats, ground hogs, ground squirrels, moles and gophers, found in the levee should be exterminated. The dens and runways should be opened up and thoroughly compacted as they are backfilled. Levees kept properly cleared are not seriously menaced by burrowing animals as they prefer areas where a protective cover, such as high grass, weeds, and brush, is found. Several methods of extermination are found effective, such as trapping, baiting, and poison gases, depending on the type of animal present and the time of year the work is done. Advice concerning the best methods in each locality can be obtained from the county agricultural agent.

(3) Access Roads. Access roads to and on the levees shall be maintained in such condition that they will be accessible at all times to trucks used to transport equipment and supplies for maintenance or flood fighting.

d. Operation.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations paragraph 208.10 (b)(2) is quoted in part as follows:

"(2) Operation. During flood periods, the levee shall be patrolled continuously to locate possible sand boils or unusual wetness of the landward slope to be certain that:

- (i) There are no indications of slides or sloughs developing;
- (ii) Wave wash or scouring action is not occurring;
- (iii) No low reaches of levee exist which may be overtopped;
- (iv) No other conditions exist which might endanger the structure;

Appropriate advance measures will be taken to insure the availability of adequate labor and materials to meet all contingencies. Immediate steps will be taken to control any condition which endangers the levee and to repair the damaged section."

2-03. Drainage and Irrigation Structures.

a. Description. Drainage and irrigation structures provided in the project works are located and described as follows:

(1) Corrugated metal pipes extending through the Relocated Willow Slough levees to drain the areas adjacent to the Relocated Willow Slough Channel are as listed in the following table:

Location Station	Bank	C. M. P.	Gate Model No. (a)	Description
47/00	Right	24"	100	(b)
66/98	Right	"	"	(b)
85/00	Left	"	"	(b)
86/00	Right	"	"	(b)
110/97	Left	"	"	(b)
118/00	Left	"	"	(b)
158/69	Right	"	"	(b)
165/69	Left	"	"	(b)
191/90	Left	"	"	(b)
192/50	Left	"	"	(b)
192/80	Right	48"	"	(b)
192/88	Right	"	"	(b)
192/88	Left	30"	100 & 101	(b)
228/46	Right	24"	100	(b)
232/43	Left	24"	"	(b)
244/47	Right	24"	"	(b)
268/57	Right	"	"	(b)
270/70	Left	30"	"	(b)
271/54	Left	36"	"	(b)
287/19	Right	24"	"	(b)
289/33	Left	36"	101 & 1001	(b)
290/37	Left	48"	101 & 1001	(b)
296/34	Right	24"	100	(b)
297/26	Right	36"	100	(b)
324/51	Right	24"	100	(b)
327/75	Left	36"	100 & 101	(b)
374/00	Right	42"	100 & 101	(b)
West Levee Yolo Bypass				
442/75		30"	100	(b)
446/08		30"	100	(b)

(2) Corrugated metal pipes extending through levees of the intercepting drain ditch at Station 193/75 are as follows:

Location Station	Bank	C. M. P.	Gate Model No. (a)	Description
2/50 "A"	Left	24"	100	(c)
5/00 "A"	"	"	"	(c)
12/00 "A"	"	"	"	(c)
18/00 "A"	"	"	"	(c)

Notes pertaining to tables:

(a) Gate Model No. 100 is Calco automatic drainage gate on outlet end of pipe. It closes against face pressure and opens automatically to permit outflow when pressure is released.

Gate Model No. 101 is Calco slide gate which operates by handscrew on steel frame.

Gate Model No. 104 is Calco slide gate operated by hand screw and constructed with a flat back so that it can be attached to a concrete wall.

Gate Model No. 1001 is a combination of gates No. 100 and 101.

(b) With 2 C.M. cut-off walls, 1 reinforced concrete headwall and 1 saddle and apron with cobble paving on channel side.

(c) Concrete headwall and saddle on each pipe.

(3) Steel pipe siphons for irrigation are located at;

Station 193/70 42" Steel Pipe No. 104 gate
(Siphon under Relocated Willow Slough)

Station 192/82 30" Steel Pipe No. 104 gate
to 194/33
(Siphon under intercepting ditch along
south bank).

(4) Corrugated metal pipes through an earth fill irrigation structure across old Willow Slough Channel at the point of bifurcation:

Station 4/36 48" C.M.P. No. 101 gate in well
Station 4/44 48" C.M.P. No. 101 gate in well

b. Inspection.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulation, paragraph 208.10 (d)(1), are quoted in part as follows:

"(d) Drainage Structures (1) Maintenance.

Adequate measures shall be taken to insure that inlet and outlet channels are kept open and that trash, drift, or debris is not allowed to accumulate near drainage structures. Flap gates and manually operated gates and valves on drainage structures shall be examined, oiled, and trial operated at least once every 90 days.... Periodic inspections shall be made by the Superintendent to be certain that:

- (i) Pipes, gates, operating mechanism, riprap, and headwalls are in good condition;
- (ii) Inlet and outlet channels are open;
- (iii) Care is being exercised to prevent the accumulation of trash and debris near the structures and that no fires are being built near bituminous coated pipes;
- (iv) Erosion is not occurring adjacent to the structures which might endanger its water tightness or stability.

Immediate steps will be taken to repair damage, replace missing or broken parts, or remedy adverse conditions disclosed by such inspections.

(2) At each inspection required by paragraph 4-02 (b)(2) of the standard manual, the following items, if applicable, shall be particularly noted:

- (a) Debris or other obstructions to flow.
- (b) Condition of pipes and gates.
- (c) Damage or settlement of pipe.
- (d) Condition of concrete - cracks, spalls, erosion.

c. Maintenance.

(1) All eroded concrete shall be repaired as soon as any reinforcing steel is exposed. For this purpose it is recommended that the repair be made by thoroughly cleaning the surface by sandblasting and building up the concrete to its original section with pneumatically-placed portland cement mortar. All evidences of settlement, uplift, or failure of concrete structures should be referred to the State Engineer for analysis and recommendation of remedial measures.

(2) If the inspection shows that the automatic drainage gate in the side drainage structures have been jammed in an open position by debris or other obstructions, they shall be thoroughly cleaned so that they swing freely to a true closure. If any parts of the gates have been damaged or broken, they shall be replaced by new parts.

(3) Compliance with the provisions prescribed above pertain to drainage structures is essential for proper maintenance of the levee system covered by this manual. Levee failures caused by neglected drainage structures are of common occurrence; it is, therefore, of utmost importance that these structures always be kept in perfect working condition in accordance with the regulations.

(4) Care should be taken not to bury any of the side drainage inlets in the event that it becomes necessary to fill any of the low-lying pockets in back of the levee. Plans for the maintenance of drainage facilities at any such points should be submitted to the District Engineer for approval before such work is started.

d. Operation.

(1) Pertinent Regulations of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10 (d)(2), is quoted in part as follows:

"(2) Operation. Whenever high water conditions impend, all gates will be inspected a short time before water reaches the invert of the pipe and objects which might prevent closure of the gate shall be removed. Automatic gates shall be closely observed until it has been ascertained that they are securely closed.....All drainage structures in the levees shall be inspected frequently during floods to ascertain whether seepage is taking place along the lines of their contact with the embankment. Immediate steps shall be taken to correct any adverse conditions."

(2) The outlets of side drainage structures inundate at relatively low river stages. They should, therefore, be inspected at the first sign of a rise in the river to make certain that the gates are not jammed in an open position and thus allow flood waters to enter behind the levee.

2-04. Miscellaneous Facilities.

a. Description. Miscellaneous structures or facilities which were constructed as a part of, or in conjunction with, the protective works, and which might affect their functioning, include the following:

(1) Bridge.

(a) A reinforced concrete bridge was constructed at Yolo County Road No. 102 (Station 87/55) (See exhibit B).

(2) Low Water Crossings.

(a) The excavation of the Relocated Willow Slough channel necessitated the severance of Yolo County Highways Nos. 103 and 104, and since the light traffic did not warrant the construction of bridges, a hard-surfaced low water crossing was built across the channel at each road.

(3) Diversion Weir.

- (a) A collapsible diversion weir was constructed in the relocated channel at Station 4/97, just downstream from the point of bifurcation, to divert flows other than flood flows into the original Willow Slough for irrigation purposes.

(4) Irrigation Structure.

- (a) An earth-fill irrigation control structure was built across the original Willow Slough channel at the point of bifurcation. The structure consists of two 48-inch corrugated metal pipes through an earth-fill dike. Each pipe is controlled by a Calco 101 gate which regulates the flow through the structure.

(5) Utility Relocations. Miscellaneous utilities which interfered with the construction of the channel were relocated during the channel construction as follows:

A buried 8-inch gas main at Station 46/50 was replaced in a deeper trench by the Pacific Gas & Electric Company.

Telephone line relocated from south to north side of channel between Stations 86/50 and 140/00.

(6) Hydrographic Facilities. In order to maintain a record of flood flows in the Relocated Willow Slough Channel, an enameled steel staff gage has been installed on the upstream side of the bridge at County Road No. 102 and the maintenance of which is the responsibility of local interests. Condition of the staff gage should be reported after each inspection.

b. Inspection and Maintenance.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10 (h)(1) are quoted in part as follows:

"(h) Miscellaneous Facilities. (1) Maintenance. Miscellaneous structures and facilities constructed as a part of the protective works and other structures and facilities which function as a part of, or affect the efficient functioning of the protective works, shall be periodically inspected by the Superintendent and appropriate maintenance measures taken. Damaged or unserviceable parts shall be replaced without delay

(2) Inspection of the miscellaneous facilities shall be made at the same time that the inspection of the other features of the project are made, and shall be reported on check list No. 3, sheet No. 4 of exhibit E.

(3) The interest of the Corps of Engineers and the responsibility of the local interests in the existing highway and railroad bridges is confined to their effect on the safety and functioning of the flood control channel, but any conditions noted in the inspections that may affect them in any way should, as a matter of courtesy, be brought to the attention of the agencies maintaining and operating them. If the inspection of any miscellaneous structure, either existent or constructed in the future under permit, discloses any condition that indicates the probability of failure during periods of high water, the Superintendent shall address a letter to the owner of the structure, quoting this manual as authority and inviting attention to the conditions observed and requesting that immediate steps be taken to correct them. A copy of such letter shall be forwarded to the District Engineer for his information. A report on the action taken by the owner shall be submitted to the District Engineer to accompany the next semi-annual report under provisions of paragraph 3-03c of the standard manual. A suggested report form is included as exhibit G of this manual.

(4) The purpose of maintenance work is to insure continuous satisfactory operation of equipment. It is, therefore, important in such work that all possible causes of future trouble be found and corrected. Particular attention should be given to minor weaknesses which may be an indication of future trouble.

c. Operation.

(1) Pertinent Requirements of the Code of Federal Regulations Flood Control Regulations, paragraph 208.10 (h)(2) are quoted in part as follows:

"(h) Miscellaneous Facilities. (2) Operation. Those facilities constructed as a part of the protective works shall not be used for purposes other than flood protection without approval of the District Engineer unless designed therefor."

(2) Operation of Diversion Weir. The irrigation diversion weir located at Station 4/97 shall be kept completely open at all times during the usual flood season from 1 November to 1 April. During the remainder of the year, floods are rare and the weir may be operated as desired except that it shall be temporarily opened as rapidly as possible whenever there is sufficient flood flow in Willow Slough to cause the water level to rise or threaten to rise to within 1/2 foot of the top of the weir. Under these circumstances, the weir shall not be reclosed until the flood threat has passed.

SECTION III

REPAIR OF DAMAGE TO PROJECT WORKS AND METHODS OF COMBATING FLOOD CONDITIONS

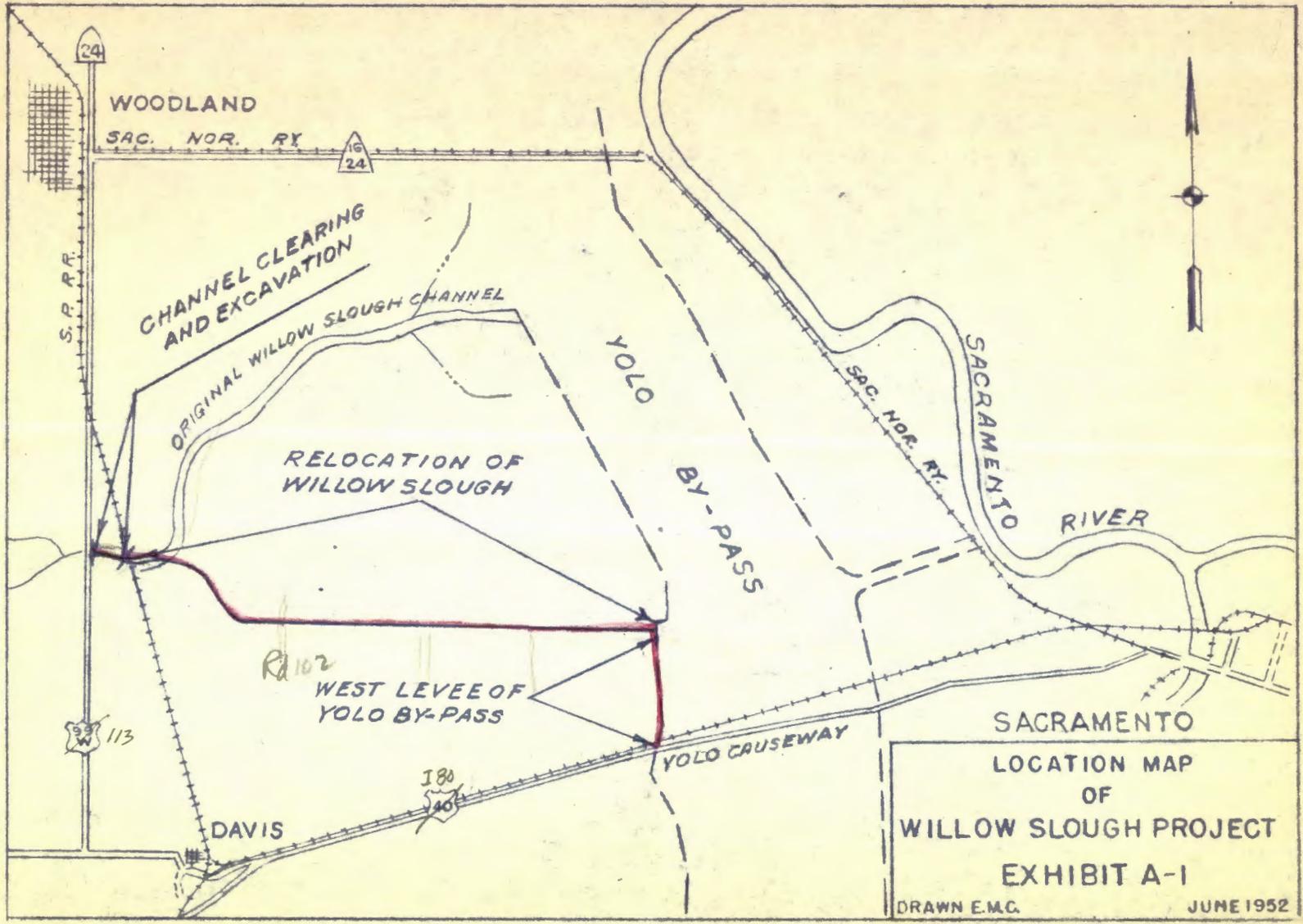
3-01. Repair of Damage. In the event of serious damage to the project works, whether due to flood conditions or other causes, and which may be beyond the capability of local interests to repair, the Superintendent will contact a representative the Division of Water Resources, State of California, who coordinates maintenance of project works of the Sacramento River Flood Control Project. The State representative will give assistance or advice, or will determine appropriate action to be taken.

3-02. Applicable Methods of Combating Floods. For applicable methods of combating flood conditions reference is made to Section V of the Standard Manual, where the subject is fully covered.

EXHIBIT A

FLOOD CONTROL REGULATIONS

(See Standard Manual)



24

16
24

S.P.R.R.

113

R102

180

405



EXHIBIT B
“AS CONSTRUCTED”

DRAWINGS

See separate folder for the following drawings:

50-4-2281	Proposed Willow Slough channel Relocation and Levee Construction along West Levee Yolo Bypass, Sheets 1 through 5 and 7 through 14.
50-4-2398	Proposed Drainage Details, Willow Slough Channel Relocation, in 1 Sheet.
50-5-2612	Low Water Crossing, Willow Slough Project in 1 Sheet.
50-2-2336	Willow Slough Channel Relocation Reinforced Concrete Bridge, sheets 1 through 4.
50-6-2611	Willow Slough Channel Clearing, in 1 Sheet.
50-4-5767	Emergency levee repairs, right bank Yolo Bypass and portions of left bank Willow Slough- RD 2035

EXHIBIT C

PLATES OF SUGGESTED FLOOD FIGHTING METHODS

(See Standard Manual)

EXHIBIT D

CHECK LIST NO. 1

LEVEE INSPECTION REPORT

(See Standard Manual)

EXHIBIT E

CHECK LISTS OF LEVEES,
CHANNEL AND STRUCTURES

For definition of "flood" of "high water
period", see paragraph 1-06 of this manual

EXHIBIT E

SHEET 1 OF 9

CHECK LIST NO. 2

LEVEES OF RELOCATED WILLOW SLOUGH

Inspector's Report Sheet No. _____

Inspector _____

Date _____

Superintendent _____

Item	Remarks
(a) Location by Station	
(b) Settlement, sloughing, or loss of grade	
(c) Erosion of back slope	
(d) Condition of roadways, including ramps	
(e) Evidence of seepage	
(f) Condition of farm gates and fencing	
(g) Maintenance measures taken since last inspection	
(h) Comments	

Instructions for Completing Sheet 2, Exhibit E
(To be printed on back of sheet 2)

- Item (a) Indicate levee station of observation, obtained by pacing from nearest reference point; indicate right or left bank.
- Item (b) If sufficient settlement of earth work has taken place to be noticeable by visual observation, indicate amount of settlement in tenths of a foot. If sloughing has caused a change in slope of the embankment sections, determine the new slope. Note areas where erosion or gullyng of the section has occurred.
- Item (c) If sufficient erosion or gullyng of back face or back toe of levee has taken place to be noticeable by visual inspection, indicate area affected and depth.
- Item (d) Note any natural change in grade and section of roadway or ramps. Indicate any inadequacy in surface drainage system.
- Item (e) Indicate any evidence of seepage through the embankment section
- Item (f) Indicate the serviceability of all farm gates across the embankments and roadway, and indicate if repainting is required
- Item (g) Indicate maintenance measures that have been performed since last inspection and their condition at the time of this inspection.
- Item (h) Record opinion, if any, of contributory causes for condition observed and also any observations not covered under other columns.

NOTE: One copy of the Inspector's Report is to be mailed to the District Engineer immediately on completion and one copy is to be attached to and submitted with the Superintendent's semi-annual report.

CHECK LIST NO. 3

CHANNEL AND RIGHT-OF-WAY

Inspector's Report Sheet No. _____

Inspector _____

Date _____

Superintendent _____

Item	Remarks
(a) Name of channel and location by stations	
(b) Vegetal growth in channel	
(c) Debris and refuse in channel	
(d) New construction within right-of-way	
(e) Extent of aggradation or degradation	
(f) Condition of riprapped section	
(g) Condition of bridges	
(h) Measures taken since last inspection	
(i) Comments	

Instructions for Completing Sheet 4, Exhibit E
(To be printed on the back of sheet 4)

- Item (a) Indicate station of observation obtained by pacing from nearest reference point.
- Item (b) Note nature, extent, and size of vegetal growth within the limits of the flood flow channel.
- Item (c) Note nature and extent of debris and refuse that might cause clogging of the conduits of the irrigation intake works, fouling of the tainter gates, or the bridges over the channel.
- Item (d) Report any construction along the diversion channel or above the diversion works that has come to the attention of the inspector and that might affect the functioning of the project.
- Item (e) Indicate any change in grade or alignment of the channels, either by deposition of sediment or scour, that is noticeable by visual inspection. Estimate amount and extent.
- Item (f) Indicate any change that has taken place in the riprap such as disintegration of the rock, erosion, or movement of the rock. Note the presence of vegetal growth through the riprap.
- Item (g) Note any damage or settlement of the footings of the bridges. Indicate condition of wooden structures and if repainting is required. Indicate condition of bridge approaches, headwalls, and other appurtenances.
- Item (h) Indicate maintenance measures that have been performed since the last inspection and their condition at time of this inspection.
- Item (i) Record opinion, if any, of contributory causes for conditions observed, and also any observations not covered under other columns.

NOTE: One copy of the Inspector's Report is to be mailed to the District Engineer immediately on completion, and one copy is to be attached to and submitted with the Superintendent's semi-annual report,

CHECK LIST NO. 4

DRAINAGE AND IRRIGATION STRUCTURES

Inspector's Report Sheet No. _____

Inspector _____

Date _____

Superintendent _____

(a) Location by Station	(b) Bank	(c) Debris or other obstruction to flow	(d) Damage or settlement of pipe or conduit	(e) Condition of concrete headwall or invert paving	(f) Condition of right- of-way adjacent to structure	(g) Repair measures taken since last inspection	(h) Comments
47/00	Right						
66/98	"						
85/00	Left						
86/00	Right						
110/97	Left						
118/00	"						
158/69	Right						
165/69	Left						
191/90	"						
192/50	"						
192/80	Right						
192/88	Right						
192/88	Left						
228/46	Right						
232/43	Left						
244/47	Right						
268/57	"						
270/70	Left						

CHECK LIST NO. 4

DRAINAGE AND IRRIGATION STRUCTURES

Inspector's Report Sheet No. _____

Inspector _____

Date _____

Superintendent _____

(a) Location by Station	(b) Bank	(c) Debris or other obstruction to flow	(d) Damage or settlement of pipe or conduit	(e) Condition of concrete headwall or invert paving	(f) Condition of right- of-way adjacent to structure	(g) Repair measures taken since last inspection	(h) Comments
271/54	Left						
287/19	Right						
289/33	Left						
290/37	Left						
296/34	Right						
297/26	"						
324/51	"						
327/75	Left						
374/00	Right						
West Levee Yolo Bypass							
442/75							
446/08							
Intercepting Drain Ditch							
2/50"A"	Left						
5/00"A"	"						
12/00"A"	"						
18/00"A"	"						

CHECK LIST NO. 4

DRAINAGE AND IRRIGATION STRUCTURES

Inspector's Report Sheet No. _____

Inspector _____

Date _____

Superintendent _____

(a) Location by Station	(b) Bank	(c) Debris or other obstruction to flow	(d) Damage or settlement of pipe or conduit	(e) Condition of concrete headwall or invert paving	(f) Condition of right- of-way adjacent to structure	(g) Repair measures taken since last inspection	(h) Comments
Irrigation Siphons 193/70 192/82 to 194/33 Willow Slough Irrigation Control Structure 4/36 4/44 Diversion Weir 4/97							

Instructions for completing sheets 6, 7 and 8, Exhibit E
(To be printed on backs of sheets 6, 7 and 8)

- (1) Enter station of all structures under column (a) for check list.
- (2) Inspect inlet, barrel, and outlet for accumulation of sediment, rubbish, and vegetal matter.

Note condition under column (c).

- (3) If any settlement or damage to the pipe, barrel, or invert of the drain has occurred, estimate the location and amount. Note particularly if any of the backfill has come into the pipe or been disturbed. Record observations under column (d).
- (4) Inspect the concrete portions of the structures for evidence of settlement, cracks, "pop-outs", spaces, abrasive wear, or other deterioration. Record conditions under column (e).
- (5) Inspect backfill area adjacent to structure for evidence of erosion caused by overflow of the drainage structure and note conditions in column (f).
- (6) Under column (g) indicate physical measures that have been taken to correct conditions reported in last inspection, and their condition at time of this inspection.
- (7) Under column (h) record opinion, if any, of contributory causes for conditions observed, and also any observations not covered under other columns.
- (8) A copy of the inspector's report is to be mailed to the District Engineer immediately on completion, and a record copy shall be attached to the Superintendent's semi-annual report.

EXHIBIT F

LETTER OF ACCEPTANCE
BY STATE RECLAMATION BOARD



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

NOV 29 2016

Ms. Leslie M. Gallagher
Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

The purpose of this letter is to notify the Central Valley Flood Protection Board of the completion of an effort to update the Operation and Maintenance Manual Supplements for the Sacramento River Flood Control Project and the Lower San Joaquin River Levees and Lower San Joaquin River and Tributaries Project. These updates are a compilation of revisions made to the project over time and where we had record of a transfer letter to the Board. These updated supplements are the most current version and should be utilized as the baseline version for any future project modifications.

This process and the compiled updates have been coordinated with the Central Valley Flood Protection Board and Department of Water Resources staffs for review and comment. All comments have been addressed or incorporated into the manuals.

The Board staff has been provided a copy of the manuals in electronic format. Future updates will include entire unit supplements so updates can be seen in context with the entire unit supplement. The list of completed supplements, by the unit number and title, are attached. If you have any questions regarding this transmittal, please contact Gary Kamei at 916-557-6845.

Sincerely,

A handwritten signature in black ink, appearing to read "D. G. Ray", written over a horizontal line.

David G. Ray, P.E.
Colonel, U.S. Army
District Commander

Enclosures

Standard O&M Manual Sacramento River Flood Control Project	
Unit No.	Project Name
101	RD 341 Sherman Island
102	E. Levee of Sac River, Isleton to Threemile Slough & N. Levee of Threemile Slough from Sac River to SJ River
103	Both Levees of Georgiana Slough & E. Levee of Sac River from Walnut Grove to Isleton
104	Levees around Grand Island
105	Levees Around Reyer Island
106	S. Levee Lindsey Slough & W. Levee of Yolo BP from Lindsey Slough to Watson Hollow and N. Levee of Watson Hollow Drain
107	Levees Around Hastings Tract
108	Levees Around Peters Tract
109	West Levee of Yolo Bypass & E. Levee of Cache Slough
110	Levees Around Sutter Island
111	E. Levee of Sac River from Freeport to Walnut Grove
112	Levees Around Merritt Island
113	E. Levee Yolo Bypass, N. Levee Miner Slough, W. Levees Sutter Slough, Elkhorn Slough & Sac River, All Bordering RD 999
114	W. Levee of Sac River from Northern Boundary of RD 765 to Southern Boundary of RD 307
115	E. Levee of Sac River from Sutterville Rd to Northern Boundary of RD 744
116	W. Levee of Sac River from Sac Weir to Mi 51.2 & S. Levee of Sac Bypass & E. Levee of Yolo Bypass from Sac Bypass to Southern Boundary of RD 900
117	E. Levee Sac River through City of Sac from Tower Bridge to Sutterville Rd
118.1	E. Levee of Sac River from American River to Tower Bridge & S. Levee of American River from Mayhews Downstream to Sac River
118.2	N. Levee American River, E. Levee Natomas Canal, Both Levees Arcade Creek, S. Levee Linda Creek, & Magpie Creek Diversion Channel
118.2 Sup	Vegetation on Mitigation Sites E. Levee of Sac River from American River to Tower Bridge & S. Levee of American River from Mayhews Downstream to Sac River
119	Putah Creek Channel & Levees & W. Levee of Yolo Bypass from Yolo Causeway Downstream 3 mi. Includes O&M manual for the Yolo Basin wetlands, and South Fork Putah Creek Preserve Restoration Section 1135 Authorization.
120	Relocated Willow Slough Channel & Levees & W. Levee Yolo Bypass from mouth of Relocated Willow Slough to Yolo Causeway
121	R. Levee of Yolo Bypass from Willow Slough Bypass to Woodland Rd RD2035
122.1	W. Levee of Sac River from Mi 70.8 to Sac Weir & N. Levee of Sac Bypass & E. Levee of Yolo Bypass from Woodland Hwy to Sac Bypass
123	W. Levee of Sac River from East End of Fremont Weir to Mi 70.8 & E. Levee of Yolo Bypass from East End Fremont Weir to Woodland Hwy RD 1600

124	N. Levee of American River from Natomas E. Canal to Sac River & E. Levee of Sac River from Natomas Cross Canal to American River. Includes supplement, Vegetation on Mitigation Sites.
125	Back Levee of RD 1000
126	Cache Creek Levees & Settling Basin Yolo Bypass to High Ground
127	Knights Landing Ridge Cut & Sac River & Yolo BP Levees of RD's 730 and 819 & S. Levee of Sycamore Slough
128	E. Levee of Sac River from Sutter Bypass to Tisdale Weir all within RD 1500
129	S. Levee of Tisdale By-Pass from E. Levee Sac River to W. Levee Sutter BP & W. Levee of Sutter BP Downstream to E. Levee of Sac River
130	W. Levee Sac River from Sycamore Slough to Wilkins Slough (Mi. 89.9 to Mi. 117.8)
131	W. Levee Sac River from Wilkins Slough to Colusa (Mi. 117.8 to Mi. 143.5)
132	Back Levees of RD 108
133	E. Levee of Sac River from Winship School to Tisdale BP & N. Levee of Tisdale BP & W. Levee of Sutter BP from Long Bridge to Tisdale BP
134	Levees of RD 70, E. Levee of Sac River from Butte Slough Outfall Gates to Winship School & W. Levee of Sutter BP from Butte Slough Outfall Gates to Long Bridge
135	E. Levee of Sutter BP from Sutter Buttes Southerly to Junction with Feather River & E. & W. Levees of Wadsworth Canal & Levee of Intercepting Canals
136	E. Levee of Sac River from Butte Slough Outfall Gates to the Princeton-Afton Rd (Mi. 138.3 to Mi. 164.4)
137	W. Levee of Sac River from North End of Princeton Warehouse to Colusa Bridge
138	E. Levee of Sac River from Parrott-Grant Line to Princeton-Afton Rd
139	W. Levee of Sac River from N. Boundary of LD 2 to North End of Princeton Warehouse
140	W. Levee of Sac River in LD 1 (Mi. 170.5 to Mi. 184.7). Includes mitigation site O&M manual, Yuba County
141.1	E. Levee of Feather River from Bear River to Natomas CC & S. Levee of Bear River & Both Levees of Yankee Slough. Parts 1 and 2
141.2	E. Levee of Feather River from Bear River to Natomas CC & S. Levee of Bear River & Both Levees of Yankee Slough. Parts 1 and 2
142	Back Levee of RD 1001
143	W. Levee of Feather River from North Boundary of RD 823 to E. Levee of Sutter Bypass
144	W. Levee of Feather River from North Boundary of LD 1 to North Boundary of RD 823
145	E. Levee of Feather River, S. Levee of Yuba River, Both Levees of WPRR Intercepting Channel, W. Levee of South Dry Creek & N. Levee of Bear River
146	N. Levee of Bear River & S. Levee of South Dry Creek RD 817 & Vicinity of Wheatland
147	Levee Around the City of Marysville & N. Levee of Yuba River to a Point 1.8 Mi. Upstream from Marysville

148	W. Levee of Feather River from North Boundary of RD 777 to North Boundary of LD 1
149	S. Levee of Yuba River Maintenance Area No. 8
151	E. Levee Feather River from Honcut Creek to Marysville & S. Levee of Honcut Creek & E. Levee of RD 10
152	W. Levee of Feather River from N. Boundary of RD 777 to Western Canal Intake (Levee of Drainage District No. 1)
153	Lower Butte Creek Channel Improvement, Colusa, Glenn & Butte Counties
154	Moulton Weir & Training Levee Sacramento River
155	Colusa Weir & Training Levee Sacramento River
156	Tisdale Weir & Bypass
157	Fremont Weir, Sacramento River
158	Sacramento Weir, Sacramento River
159	Pumping Plants No. 1, 2 & 3, Sutter Bypass
160	Sutter Butte Canal Headgate
161	Butte Slough Outfall Gates
162	Knights Landing Outfall Gates, Sacramento River

Standard O&M Manual San Joaquin River

Unit No.	Project Name
1	Right Bank Levee of the San Joaquin River & French Camp Slough within RD 404
2	Right Bank Levee of the San Joaquin River & French Camp Slough within RD 17
3	North Levee of Stanislaus River & East Levee of the San Joaquin River within RD 2064, 2075, 2094 and 2096
4	East Levee of San Joaquin River within RD 2031
5	East Levee of the San Joaquin River Within RD No. 2092
6	East Levee of the San Joaquin River in RD Nos. 2063 & 2091
7	West Levee of San Joaquin River & North Levee of Old River RD Nos. 524 & 544
8	Right Banks of Old River & Salmon Slough Within RD No. 1 & RD No. 2089
9	Levees Around RD No. 2062 & San Joaquin County Flood Control District Area No.2
10	West Levee of Paradise Cut RD No. 2058 & SJ County Flood Control District, Area No.2
11	West Levee of San Joaquin River from Durham Bridge to Paradise Dam Within RD No. 2085 & 2095
12	West Levee of San Joaquin River From Opposite Mouth of Tuolumne River Downstream to Stanislaus County Line Within RD Nos. 2099, 2100, 2101, & 2102
13	West Levee of the San Joaquin River in RD No. 1602

CERTIFIED
No. 785702
RETURN RECEIPT REQUESTED

February 4, 1987

Navigation and Flood Control Unit

The Reclamation Board
State of California
1416 - 9th Street, Room 455-6
Sacramento, California 95814

Members of the Board:

You are hereby notified that the Corps of Engineers has completed emergency repairs to project levees under authority of Section 5 of the Flood Control Act of August 18, 1941, as amended (Public Law 99, 84th Congress, 1st Session). The work was completed on November 21, 1986, and consisted of restoring portions of the Yolo Bypass right bank levee and portions of Willow Slough left bank levee in Reclamation District 2033, in accordance with Contract Number DACW03-87-C-0020 and Drawing Number 50-4-3767. This work shall be maintained in accordance with the assurances which your Board provided for the Sacramento River Flood Control Project. This portion of the work will be added by amendment to the Operation and Maintenance Manual, Supplement Numbers 120 and 121, Sacramento River Flood Control Project. Copies will be furnished to your office at a later date.

Sincerely,

Wayne J. Scholl
Colonel, Corps of Engineers
District Engineer

- cc:
- E.M. (Garrett)
- > Ops Br
- Engr Div (Civ Des Sec D - Pahl)
- Valley Res Ofc (Cameron)

Copies furnished:

- DWR, ATTN: J. ANGLE
- DWR, ATTN: C. SNOW
- Commander, South Pacific Division, ATTN: SPDCO-0



148-3
KOMPALA/th

JK for
KELLY

AS
A. SMITH

HFSM

FAST

DENNIS

~~McCOLLUM~~

~~SCHOLL~~

WANG #6373a

Units 1801/21

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814

SPKCO-0

23 December 1968

The Reclamation Board
State of California
1416 - 9th Street, Room 1335
Sacramento, California 95814

Gentlemen:

Reference is made to the Willow Slough Bypass project and channel clearing work accomplished under Contract DA-04-167-eng-146. Work on this project started 14 November 1948, and was completed 9 May 1950 and transferred to the State of California for maintenance and operation on 30 August 1950.

A recent field inspection of the improved channel of Willow Slough project revealed that about a 4,000 foot portion below State Highway 113 to the diversion weir at Station 4+97, is not being maintained by any maintaining agency. It is suggested that your Board take necessary action as soon as possible to insure that maintenance on the project channel is performed.

Sincerely yours,

O. H. HART
Chief, Construction-Operations
Division

Copy furnished;
DWR, ATTN: John Wright

2

This copy was furnished on 24 Feb. 1953
B. de A.

Accepted Items

December 18, 1951

The Board accepted the transfer from the Corps of Engineers, in letters of dates listed below, the following reaches of levees and their contiguous waterway banks where applicable for flood control operation and maintenance, as complete and meeting the requirements of the Sacramento River Flood Control Project.

No.	Date of Letter	Levee Location	Remarks
①-②	1 Dec.1951	N. and S. Training* Levees Moulton Weir*	Maintained by State
③-④	Do	N. and S. Training* Levees Colusa Weir*	Maintained by State
⑥	3 Dec.1951	W. Levee Sacramento River, Mile 177.5 Mile 174.1	Maintained as Maintenance Area No. 2
⑨	4 Dec.1951	E. Levee Yolo By-pass Fremont* Weir to Miner Slough*	N. 2 mi. maintained by State. Remainder by local districts. Conditioned upon completion of levee section and no acceptance of banks of Sacramento Deep Water Channel.
⑩ ⑪	Do	N.&S. Levees Sacra- mento By-pass*	Maintained by State. Waterward slopes on 4 to 1 not required.
⑫ ⑬	6 Dec.1951	Back levee Egbert District*	Maintained by R. D. No. 536
⑭ ⑮	6 Dec.1951	W. Levee Yolo By-pass Lindsey* Slough to Watson Hollow Drain*	Maintained by R. D. No. 536
⑰ ⑱	Do	N. Levee Watson Hollow Drain*	Do
⑲ ⑳	6 Dec.1951	W. Levee Sacramento River Mile 59.0 to Lake Wash- ington Barge Canal	Maintained by R. D. No. 900
㉑ ㉒	Do	W. Levee Sacramento Riv. Mile 50.8 to 50.5	Bank protection contract. Maintained by R. D. No. 765

Copy to USED.

①

Accepted Items

No. Date of Letter Levee Location Remarks

6 6 Dec. 1951

Levees of Wadsworth Canal* South levees of E. and W. Intercepting Canals.

Maintained by State. Waterward slopes on 4 to 1 not required.

12-13-14-15

7 7 Dec. 1951

Site 2 Part A. W. Levee Sacramento River-Mile 28.5 -Grand Island.

Maintained by R.D. No. 3. Completed contract.

= 329 87-A

Site 1, Part B. E. levee Sacramento River-Mile 15.0 Brannan Island.

Maintained by R.D.No. 2067 Completed contract.

= 331 89-A

8 8 Dec. 1951

W. levee Sacramento River Mile 163.8 to Mile 143.5 except 320 ft. at Colusa Warehouse & Mile 146.1 to Mile 146.4.

Maintained as Maintenance Area No. 1.

51-52-53-54-55-56-57

8 Do

E. levee Sacramento River, Mile 153.3 to Mile 152.7; Mile 149.9 to Mile 149.7; Mile 149.4 to Mile 149.0; at Colusa Weir; Mile 143.3 to Mile 140.2; Mile 139.3 to Mile 138.2.

Maintained by State Separate completed contracts.

58-59-60-61-62-63

8 Do

E. levee Sacramento River Mile 138.2 to Mile 137.9; Mile 136.9 to Mile 133.8; Mile 133.2 to Mile 132.3; Mile 131.8 to Mile 125.9; Mile 125.8 to Mile 123.1; Mile 122.6 to Mile 122.0.

Maintained by R.D.No. 70, Completed contracts.

64-65-66-67-68-69-70

8 Do

West levee, Sutter By-pass*

Maintained by R.D.Nos. 70, 1660, 1500. Condition upon completion of remaining part to standard section.

71-72-73

8 Do

North levee Tisdale By-pass†

Maintained by R.D.No. 1660. Waterward slope of 4 to 1 not required.

74

8 Do

South levee Tisdale By-pass†

Maintained by R.D.No. 1500. Waterward slope of 4 to 1 not required.

75

8 Do

East levee Sutter By-pass*.

Maintained by State.

76

9 Do

W. levee Sacramento River Mile 35.15 to 35.86.

Maintained by R.D.No. 150 (Merritt Island). Completed contract bank protection.

81

21 2

Accepted Items

No.	Date of Letter	Levee Location	Remarks
(91) 10	8 Dec. 1951	Cross levee Steamboat Slough to Sacramento River.*	Maintained by R.D. No. 3 (along U.S.spoil bank).
(140) 11	Do	N. levee American River from Jibboom St. Bridge to Sacramento River.	Maintained by R.D. No. 1000.
(141) 11	Do	E. levee Sacramento River American River to Natomas Cut.	Maintained by R.D.No. 1000.
(142) 11	Do	E. bank Sacramento River At Moulton Weir.	Maintained by State.
(143) 11	Do	E. Levee Sacramento River Mile 158.5 to Mile 164.4.	Maintained partly by State; remainder by Levee District.No. 3, Glenn County, Completed Contract.
(146) 11	Do	W. levee Sacramento River Mile 61.8 to Mile 62.65.	Maintained by Maintenance Area No. 4. Completed contract.
(147) 11	Do	W. Levee Sacramento River Mile 62.65 to Mile 63.1.	Maintained by R.D. No. 537 Completed contract.
(148) 11	Do	Sacramento Weir.	Maintained by State.
(152) 11	Do	Fremont Weir.	Maintained by State.
(153) (156) (157) 11	Do	W. Levee Sacramento River Mile 87.6 to Mile 88.4; Mile 89.2 to Sycamore Slough	Maintained by R.D. No. 730 Completed contracts.
(158) 11	Do	W. Levee Sacramento River Mile 100.6 to Mile 101.4	Maintained by Sacramento River West Side Levee District. Completed contract.
(160) (161) (162) (163) 11	Do	W. Levee Feather River except: 3.31 Mi. North from Nicolaus Bridge; 1400 ft. in Yuba City; from Sta.774+80 to Sta. 1188+00 of "Y.C.H.B" Traverse.	Maintained by Maintenance Area No. 3, Levee Dist. Nos. 1 & 9 of Sutter Co. Recl. Dist.No. 777 and State.
(164) 11	Do	E. Levee Sacramento River, Natomas Cut to Feather River	Maintained by Recl.Dist.No.1001.
(165) (166) (167) (168) (169) (170) 11	Do	E. Levee Feather River from mouth to Mile 26.5, except from 2.37 miles of Nicolaus Bridge to Bear River	Maintained by R.D. Nos. 1001 and 784.

Accepted
Items

No.	Date of Letter	Levee Location	Remarks
(171) (172) 11	8 Dec. 1951	Marysville levees from W.P.R.R. at Simmerly Slough E. to Yuba River and from D St. Bridge on Yuba River upstream to Valley Meat Co.	Maintained by Marysville Levee Commission.
(173) (174) 11	Do	N. Levee Simmerly Slough from W.P.R.R. to S.P.R.R. and E. Levee Feather River from Simmerly Slough upstream 4.8 miles	Maintained by R.D. No. 10 Completed contract.
(175) 11	Do	N. Levee Yuba River from back levee of Marysville upstream 1.8 miles	Maintained by Marysville Levee Commission.
(176) 11	Do	S. Levee Yuba River from S.N.R.R. to S.P.R.R.	Maintained by R.D. No. 784.
(177) 11	Do	N. Levee Bear River from Feather River to W.P.R.R. Interceptor	Maintained by R.D. No. 784.
(178) 11	Do	E. Levee R.D. 784 (W. Levee W.P.R.R. Interceptor) Bear River to intersection with W.P.R.R. in S $\frac{1}{2}$ Sec. 17, T. 14 N., R. 4 E.	Maintained by R.D. No. 784.
(179) (180) 11	Do	S. Levee American River from 16th St. Bridge to Mayhew except from S.N.R.R. to a point 800 ft. E. of W.P.R.R.	Maintained by American River Flood Control District.
(181) (182) (183) (184) (185) (186) (187) (188) 11	Do	W. Levee Yolo By-pass from Sacramento* River to Putah Creek except from N. line Cache Cr. Settling Basin to S.N.R.R. & from old Willow Slough pipes south 1.48 mi.*	Maintained by State and R. D. #2035.
(190) 11	Do	N.&S. levees Willow Slough Interceptor*	Maintained by State and R. D. No. 2035.
(191) (192) 11	Do	N.&S. levees of Putah Creek	Maintained by State.
(197) (198) 11	Do	N.&S. levees Sycamore Slough from Sacramento River to Knights Landing Outfall Gates	Maintained by R.D. 730 and Sacramento River West Side Levee District.

(21)

4

Accepted
Items

No. Date of Letter Levee Location Remarks

12 8 Dec. 1951

Five reaches of Ryer Island levee along Miner Slough as follows:
a. Junction Miner and Sutter Sloughs westerly 5000 feet.
b. From State Highway Bridge West. 3035 ft.
c. Spec. 1473, Sta. 53+00 to 64+00 about one mi. No. of Ryde Road. *Mile 29.4 to 29.6*
d. Spec. 1473, Sta. 0+00 to 12+00 being 600 ft. each side of Ryde Road. *Mile 30.4 to 30.6*
e. Ryer Island cut-off levee beginning at east bank of Cache Slough and extending upstream 3,300 feet at junction of Cache and Miner Sloughs.

Maintained by R.D. No. 501. All are completed separate contracts.

Covered by letter dated 16 Nov. 1951 } 321 → (79A) ✓
303 Covered by letter dated 17 Nov. 1951 } (53A) ✓
304 } (54A) ✓

(23)
(50)

*No waterway banks contiguous to these levees.

RECEIVED MAIL
Receipt Receipt
Requested

Letter No. 12

12

SPKKA 824,3(Sac. Riv. F.C.P.)

8 DEC 1951

The Reclamation Board
State of California
1100 "G" Street
Sacramento 16, California

Gentlemen:

Reference is made to your letter of 22 June 1951 acknowledging that certain reaches of the levees of the Sacramento River Flood Control Project and the waterway bank contiguous to said levee reaches meet the requirements of the project as authorized prior to the Flood Control Act of 1944.

The levee reaches in question are located as follows:

140. a. Northerly levee of the American River from Jibboom Street Bridge to Sacramento River. 118.2 (P)

b. Easterly levee of the Sacramento River.

Reach 15 ✓ 141. (1) American River to Natones Out. 60.25 to 79.0 124

Reach No. 11 ✓ 142. (2) At Moulton Weir. (Man 2) 154

✓ 143. (3) Mile 158.5 (North End Moulton Weir) to Mile 164.4 (Princeton Ferry). (man 2) ? 134

✓ 144. (4) Mile 168.5 to Mile 168.9 (at Butte City). (man 2) ? 138

c. Westerly levee of the Sacramento River.

✓ 145. (1) Mile 59.9 to Mile 60.75. 116

✓ 146. (2) Mile 61.8 to Mile 62.65 (at Drye Bend) 116

62.65

Accepted by letter dated 9 March 1953

Reach No. 11

Letter 12

Items 140 to 198

12

SPKRA 624,8 (Sac. Riv. F.C.P.)
The Reclamation Board

Letter No. 12

12

c. Westerly levee of the Sacramento River, (cont'd)

- ✓ 147. (8) Mile 62.65 to Mile 63.1 (South End Sacramento Weir). 116
- ✓ 148. (4) At Sacramento Weir. 158
- ✓ 149. (5) Mile 63.5 (North End Sacramento Weir) to Mile 67.11. 122
- ✓ 150. (6) Mile 68.42 to Mile 70.9. 122
- ✓ 151. (7) Mile 76.5 to Mile 81.7 (East End Fremont Weir). 123
- ✓ 152. (8) Along Fremont Weir. 157
- ✓ 153. (9) Mile 84.0 (West End Fremont Weir) to Mile 85.3. 128
- ✓ 154. (10) Mile 85.5 to Mile 85.9. 128
- ✓ 155. (11) Mile 87.6 to Mile 88.4. 128
- ✓ 156. (12) Mile 89.2 to Mile 89.8 (Knights Landing Highway Bridge). 128
- ✓ 157. (13) Mile ^{89.2} 89.8 (Knights Landing Highway Bridge) to Sycamore Slough. 89.9 128
- ✓ 158. (14) Mile ^{100.6} 100.6 to Mile 101.4. 128
- ✓ 159. (15) Mile 110.9 to Mile 111.2. 128

Reach No. 5

Reach No. 4

d. Westerly levee of the Feather River.

- Reach 39 ✓ 160. (1) Sutter Bypass to Nicolaus Bridge. 143
- ✓ 161. (2) From a point 3.51 miles northerly from Nicolaus Bridge to the Fifth Street Bridge between Marysville and Yuba City. 143, 144
- Reach 38 ✓ 162. (3) From a point 1,400 feet northerly from the Fifth Street Bridge between Marysville and Yuba City to Station 774+00 "Y.C.N.B." Traverse. 144
- ✓ 163. (4) From a point east of Station 1188+00 "Y.C.N.B." Traverse to high ground just northerly from the Western Canal Headgate. 144

Reach 42 ✓ 164. e. Easterly levee of the Sacramento River from Natomas Cut to Feather River. 141.1

12

Letter No. 12

12

f. Easterly levee of the Feather River.

- Reach 42 ✓ 165. (1) Sacramento River to a point 2.37 miles southerly from Nicolaus Bridge. 141 Pt 1
- ✓ 166. (2) Bear River to Mile 14.4. }
- Reach 41 ✓ 167. (3) Mile 14.4 to Mile 14.7. }
- ✓ 168. (4) Mile 14.7 to Mile 21.5. }
- ✓ 169. (5) Mile 21.5 to Mile 22.75. } 145
- ✓ 170. (6) Mile 22.75 to Mile 26.5 (Point where levee and S.N.R.R. meet). 145

g. Levees protecting the City of Marysville. All 147

- Reach 43 ✓ 171. (1) From the W.P.R.R. at Sinnerly Slough easterly to the Yuba River.
- ✓ 172. (2) Along the Yuba River from the "D" Street Bridge to the back levee near the Valley Meat Company.

h. Levees protecting Reclamation District No. 10.

- Reach No. 40 ✓ 173. (1) Northerly levee of Sinnerly Slough from the W.P.R.R. to the S.P.R.R. 151
- ✓ 174. (2) Easterly levee of the Feather River from Sinnerly Slough to a point 4.3 miles northerly from Sinnerly Slough. 151

Reach 46 ✓ 175. i. Northerly levee of the Yuba River from the back levee of the City of Marysville to a point 1.3 miles easterly from said back levee. 147

Reach 47 ✓ 176. j. Southerly levee of the Yuba River from Feather River (i.e. S.N.R.R.) easterly to the S.P.R.R. Main Line. 147

45 ✓ 177. k. Northerly levee of Bear River from Feather River easterly to the W. P.R.R. Interceptor. 145

45 ✓ 178. l. Westerly levee of the W.P.R.R. Interceptor and Clark Slough Interceptor (i.e. back levee of Reclamation District No. 784) from Bear River to the southerly end of the Clark Slough Interceptor. 145

12

SPEKA 824.3(Sac.Riv.F.C.P.)
The Reclamation Board

Letter No. 12

12

m. Southerly levee of the American River.

Reach No. 25

- ✓ 179. (1) Sixteenth Street Bridge to the S.N.R.R. 118.1
- ✓ 180. (2) From a point 800 feet easterly from the W.P.R.R. to Mayhew Station. 118.1

n. Westerly levee of the Yolo Bypass.

- ✓ 181. (1) Sacramento River to Knights Landing Ridge Cut. 127
- ✓ 182. (2) Knights Landing Ridge Cut to the northeast corner of the Cache Creek Settling Basin. 126
- 28 ✓ 183. (3) S.N.R.R. Woodland Branch to a point 1.6 miles southerly from said railroad. 121
- 28 ✓ 184. (4) From a point 1.6 miles southerly from the S.N.R.R. Woodland Branch to the Willow Slough Pipes. 121
- 28 ✓ 185. (5) From a point 1.48 miles southerly from the Willow Slough Pipes to a point 1.9 miles southerly from said pipes. 121
- 28 ✓ 186. (6) From a point 1.9 miles southerly from the Willow Slough Pipes to the Willow Slough Interceptor. 121
- 28 ✓ 187. (7) From the Willow Slough Interceptor to Highway U.S. 40. 120
- ✓ 29 ✓ 188. (8) From Highway U.S. 40 to Putah Creek. 119

27 ✓ 189 o. Easterly and Westerly training levees of Cache Creek Settling Basin from Cache Creek southerly. 126

28 ✓ 190 p. Northerly and Southerly levees of the Willow Slough Interceptor from the S.P.R.R. to the Yolo Bypass. 120

29 ✓ 191 q. Northerly levee of Putah Creek from Yolo Bypass westerly to high ground. 119

✓ 192 r. Southerly levee of Putah Creek from high ground on Dixon Ridge westerly to high ground. 119

s. Southerly levee of Knights Landing Ridge Cut. 127

- 26 ✓ 193 (1) From Yolo Bypass westerly 600 feet. Also covered under Unit 96-A
- 26 ✓ 194 (2) { From a point 2,500 feet westerly from Yolo Bypass to a point 2,900 feet westerly from Yolo Bypass. 127
Also covered under 96-A

12

SPKKA 824.3(Sac.Riv.F.C.P.)
The Reclamation Board

Letter No. 12

12

s. Southerly levee of Knights Landing Ridge Cut. (cont'd)

- 26 ✓ 195 (S) { From a point 3,500 feet westerly from Yolo Bypass to a point 7,100 feet westerly from Yolo Bypass. 127
Also covered under Unit No. 96-A
- 35 ✓ 196 t. That portion of the back or westerly levee of Hastings Tract which runs east and west along the County Road for a distance of approximately one mile. 107
- ✓ 197 u. Northerly levee of Sycamore Slough from Sacramento River to Knights Landing Outfall Gates. 130
- ✓ 198 v. Southerly levee of Sycamore Slough from Sacramento River to Knights Landing Outfall Gates. 132

The records of this office show that your Board has accepted the levees and/or works covered by Items b.(1), b.(2), b.(3), c.(2), c.(4), c.(8), c.(11), c.(12), c.(14), d.(1), d.(3), d.(4), f.(3), f.(5), g., h., i., l., m., n.(1), n.(2), n.(3), n.(4), n.(7), n.(8), o., p., q., r. and s.(1) above, as complete. Accordingly the waterway bank contiguous to said Items is hereby transferred to the State of California for maintenance and operation.

The levee covered by Items a., b.(4), c.(1), c.(3), c.(5), c.(6), c.(7), c.(9), c.(10), c.(15), c.(16), d.(2), e., f.(1), f.(2), f.(4), f.(6), j., k., n.(4), n.(5), s.(2), s.(3), t., u. and v., above, although complete has not been formally transferred as contemplated by the Project documents. Accordingly the levee covered by said Items, together with the waterway bank contiguous thereto, is hereby transferred to the State of California for maintenance and operation.

The maintenance work required under the provisions of the Sacramento River Flood Control Project shall be performed in accordance with existing Flood Control Regulations which have been prescribed by the Secretary of the Army pursuant to Section 3 of the Act of Congress approved 22 June 1936, as amended and supplemented. As provided under paragraph 208.10(10) of these regulations, a maintenance manual covering these works is in process of preparation and will be furnished your Board upon completion.

A copy of this letter is being transmitted to the State Engineer.

FOR THE DISTRICT ENGINEER:

Sincerely yours,

Copy Furnished:
Office, Chief of Engrs.
So. Pac. Div. Engr.
State Engineer
Engr. Div. (2)
C. de Arrieta

H. R. Reifsnnyder
Lt. Colonel, Corps of Engineers
Executive Officer

12

C. de ARRIETA

REGISTERED MAIL
Return Receipt
Requested

Letter No. 3

3

SPKHA 824.5(Sac. Riv. F.C.P.)

4 DEC 1951

Refer. Recl. Board letter dated 2 April 1952.

The Board accepted Item No. 9 on 18 Dec. 1951 with the condition that the Federal Gov. complete the enlargement of the levee with no obligation for the State to maintain the banks along the Sacramento Deep Water Channel.

The Board also accepted Items No. 10 and 11 on 18 Dec. 1951, without reservations other than an statement indicating that flatter slopes on this levees are not required.

The Reclamation Board
State of California
1100 "O" Street
Sacramento 14, California

Item No. 9 was previously accepted on 6 June 1951,

Gentlemen:

Reference is made to your letter of 18 May 1951 acknowledging that certain reaches of the levees of the Sacramento River Flood Control Project and the waterway bank contiguous to said levee reaches meet the requirements of the project as authorized prior to the Flood Control Act of 1944.

The levee reaches in question are located as follows:

- Reach No. 32 9 a. Easterly levee of the Yolo Bypass from Fremont Weir to Miner Slough. 127, 126, 121, 120, 119, 109, 107, 105 accepted 6-6-51
- Reach No. 32 10 b. Northerly levee of Sacramento Bypass. 122
- Reach No. 33 11 c. Southerly levee of Sacramento Bypass. 116

The records of this office show that on 6 June 1951 your Board accepted the levee covered by Item a, above as complete. Accordingly, the waterway bank contiguous to said Item a, is hereby transferred to the State of California for maintenance and operation.

The levee covered by Items b, and c, above although complete has not been formally transferred as contemplated by the Project documents. Accordingly, the levee covered by said Items b, and c., together with the waterway bank contiguous thereto, is hereby transferred to the State of California for maintenance and operation.

The maintenance work required under the provisions of the Sacramento River Flood Control Project shall be performed in accordance with existing

Reaches 32 and 33
Items 9 to 11

3

Mile 0 to 50
" 50 to 106

SPEKA 824.3(Sac.Riv.F.C.P.)
The Reclamation Board

Letter No. 3

3

Flood Control Regulations which have been prescribed by the Secretary of the Army pursuant to Section 3 of the Act of Congress approved 22 June 1936, as amended and supplemented. As provided under paragraph 206.10(10) of these regulations, a maintenance manual covering these works is in process of preparation and will be furnished your Board upon completion.

A copy of this letter is being transmitted to the State Engineer.

Sincerely yours,

G. C. Haug
Colonel, Corps of Engineers
District Engineer

Copy Furnished:
Office, Chief of Engrs.
So. Pac. Div. Engr.
State Engineer
Engr. Div. (2)
D. de Arrieta

Willow Slough

DETACH
13
S. R. F. C. PROJ.
11/1/50

Concurrence	
Originator	6/24/50
Date	8-30-50
Exec. C.	
Chief Ad. Aff.	R
Asst. Dir. Engr.	
Manag. Office	
Spec.	
Oper.	
Engr'g	
R. E.	
Fisc.	
Pers.	
Legal	
U. E. T.	

PSKKO-P 824.3 (Sac. R. F.C. Proj.)

AUG 30 1950

The Reclamation Board
State of California
1100 "O" Street
Sacramento 14, California

Gentlemen:

Reference is made to letter from this office dated 23 June 1950 and letter from your office dated 26 June 1950 wherein a procedure for transfer of completed units of the Sacramento River Flood Control Project was proposed and accepted respectively.

In accordance with your letter of 16 August 1950, the Willow Slough Levees and the West Levee of Yolo Bypass, including relocation of Willow Slough Channel, completed 31 August 1948 under Contract W-04-167-eng-1309 with Peter L. Ferry and Son and John M. Ferry, Contractors, and the Channel Clearing and Low Water Crossings at Willow Slough, completed 9 May 1950 under Contract DA-04-167-eng-146 with H. Earl Parker, Inc., are hereby transferred to the State of California as of 16 August 1950.

There is inclosed a copy of the Flood Control Regulations prescribed by the Secretary of the Army pursuant to the provisions of Section 3 of the Act of Congress approved 22 June 1936, as amended and supplemented, to govern the maintenance and operation of flood control works, of which the construction referred to is a part. In accordance with paragraph 203.10(10) of these regulations this office will furnish you and local interests at a later date, with an operation and maintenance manual to assist in carrying out the obligations established. Copies of the contract drawings have previously been furnished to you.

A copy of this letter with inclosure, is being transmitted to the State Engineer.

Sincerely yours,

G. C. BAUC
Lt. Colonel, Corps of Engineers
District Engineer

- ✓ Incl.
- ✓ P. G. Reg.
- ✓ C.R.R. w/o Incl.
- ✓ Engr. Div. w/o incl.
- ✓ 008 w/o incl.
- ✓ Div. Engr. w/o incl.
- State engr w/incl.

824.3(SAC. R. F.C. PROJ.)PSK

THE RECLAMATION BOARD
OF THE
STATE OF CALIFORNIA

August 16, 1950

District Engineer
Sacramento District
U. S. Corps of Engineers
P. O. Box 1739
Sacramento, California

Dear Sir:

Reference is made to your letters of 22 September 1948, file PSKKB, June 13, 1950, file PSKKB-B, and July 18, 1950, file PSKKO-D, all in connection with completion of the Willow Slough Channel Project near Davis, California; and to our letters in answer dated July 26, 1950, August 8, 1950, and August 9, 1950.

Inspection has been made by State representatives accompanied by representative of this office and recommendation was made to the Reclamation Board this morning that the Willow Slough Project be accepted.

The Reclamation Board at its regular meeting this morning directed that you be advised that the State hereby accepts the Willow Slough Project for maintenance and operation by the State of California.

Yours very truly,

THE RECLAMATION BOARD
A. M. BARTON
Chief Engineer and General Manager

/s/ By _____
S. A. HOMAKER
Assistant Secretary

SAH:emw

cc: State Engineer

EXHIBIT F

TYPED COPY

CRR/EMM

PSKKW-B

Jun 13 1950

The Reclamation Board
State of California
1100 "O" Street
Sacramento, California

Gentlemen:

Channel clearing and construction of low water crossings along Willow Slough near ~~XX~~ Davis, California, have been completed. Therefore, in accordance with established procedure, this construction is hereby transferred to the State of California for maintenance.

This construction forms an integral part of the Sacramento River Flood Control Project. The details and extent of the work are shown on the inclosed drawings.

There is also inclosed a copy of the Flood Control Regulations prescribed by the Secretary of the Army pursuant to the provisions of Section 3 of the Act of Congress approved 22 June 1936, as amended and supplemented, to govern the maintenance and operation of flood control works, of which the construction referred to is a part. In accordance with paragraph 208.10(10) of these regulations, at a later date, ~~we~~ we will furnish you and local interests with an operation and maintenance manual to assist in carrying out the obligations established by these regulations.

For our records, acknowledgement of receipt of this letter is requested on or before 10 July 1950.

A copy of this letter, with inclosures, is being ransmitted to the State Engineer.

Sincerely yours,

3 Incls
Drawing File No. 50-6-2611
Drawing File No. 50-~~6~~-2612
Flood Control Regulations

C. C. HAUG
Lt.Col, C.E.
District Engineer

Copy furnished:
State Engineer, with Incls.

cc: CRR w/o Incls
Engr Div w/o incls

Work completed 9 June 1950 under Contr.
DA-04-167-eng-146 with H.Earl Parker

120

TYPED COPY

WVG/EMM

PSKKB

22 September 1948

SUBJECT: Maintenance of Willow Slough levees and West levee of
Yolo Bypass ;from Causeway Northerly approximately two miles

The Reclamation Board
State of California
1100 "O" Street
Sacramento, California

Gentlemen:

Relocation of Willow Slough channel from a point approximately two miles north of Davis to a point approximately one-half mile north of the west end of the causeway, and levee construction along the ~~WEST~~ West Levee of Yolo Bypass from the causeway northerly approximately two miles, have been completed. Therefore, in accordance with established procedure, these portions of completed levees are hereby transferred to the State of California for maintenance.

This construction forms a integral part of the Sacramento River Flood Control Project. The details and extent of the work are shown on the inclosed drawings.

There is also inclosed copy of Flood Control Regulations prescribed by the Secretary of War (now designated the Secretary of the Army) pursuant to the provision of Section 3 of the Act of Congress approved 22 June 1936, as amended and supplemented, to cover the maintenance and operation of flood control works, of which the levees referred to are a part. In accordance with paragraph 208.10(10) of said regulations, at a later date this office will furnish your Board and local interests with an Operation and Maintenance Manual to assist in carrying out their obligations established by these regulations.

For the records of this office, acknowledgement of receipt of this letter is requested on or before 1 November 1948.

120

PSKKB
The Reclamation Board

22 September 1948

Copy of this letter, with inclosures, is being transmitted to the State Engineer.

Sincerely yours,

10 Incls
Drawings, File Nos.
50-4-2281 (17 sheets)
50-2-2336 (4 sheets)
50-4-1717, X 1825, 2209,
2393, 2357, 2398, 2528 and
Flood Control Regulations

JOSEPH S. GORLINSKI
Colonel, Corps of Engineers
District Engineer

Copy, with inclosures, furnished:
State Engineer
Sacramento, California

EXHIBIT G

SUGGESTED SEMI-ANNUAL REPORT FORM

(1 May 19__)
(1 Nov 19__)

TO: The District Engineer
Sacramento District
Corps of Engineers
1209 - 8th Street
Sacramento, California

Dear Sir:

The semi-annual report for the period (1 May 19__ to 31 October 19__) (1 November 19__ to 30 April 19__) on the Relocated Willow Slough Channel, Unit No. 120 of the Sacramento River Flood Control Project, is as follows:

a. The physical condition of the protective works is indicated by the inspector's reports, copies of which are inclosed, and may be summarized as follows:

(Superintendent's summary of conditions)

It is our intention to perform the following maintenance work in order to repair or correct the conditions indicated:

(Outline the anticipated maintenance operations for the following 6 months.)

b. During this report period, major high water periods (water level at 39.0 on the staff gage at the bridge at county road No. 102) occurred on the following dates:

<u>Dates</u>	<u>Maximum Elevation</u>
_____	_____
_____	_____
_____	_____

Comments on the behavior of the protective works during such high water periods are as follows:

(Superintendent's log of flood observations)

During the high water stages when the water level reached a height of _____ on the gage or in excess thereof (dates) _____, it was necessary to organize and carry out flood operations as follows:

(See Maintenance Manual _____)

c. The inspections have indicated (no) or (the following) encroachments or trespasses upon the project right-of-way.

Action or prosecution for abatement of these encroachments or trespasses is summarized as follows: (or state none has been necessary).

d. (No) () permits have been issued for (the following improvements or construction within the project right-of-way.

Executed copies of the permit documents issued are transmitted for your files.

e. The status of maintenance measures, indicated in the previous semi-annual report as being required or as suggested by the representatives of the District Engineer, is as follows:

(Statement of maintenance operations, item by item with percent completion).

f. The fiscal statement of the Superintendent's operations for the current report period is as follows:

	<u>Labor</u>	<u>Material</u>	<u>Equipment</u>	<u>Overhead</u>	<u>Total</u>
1. Inspection					
2. Maintenance					
3. Flood fighting operations					
TOTAL					

Respectfully submitted,

Superintendent of Works