

E. Pratt

Revised 29 Dec 2016

Book L

**SUPPLEMENT TO STANDARD
OPERATION AND MAINTENANCE
MANUAL**

**SACRAMENTO RIVER
FLOOD CONTROL PROJECT**

UNIT NO. 158

**SACRAMENTO WEIR
SACRAMENTO RIVER, CALIFORNIA**



SACRAMENTO DISTRICT

CORPS OF ENGINEERS

U. S. ARMY

SACRAMENTO, CALIFORNIA

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SUPPLEMENT TO STANDARD
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SACRAMENTO RIVER FLOOD CONTROL PROJECT

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SACRAMENTO RIVER, CALIFORNIA

Prepared by the Sacramento District
Corps of Engineers, U. S. Army
August 1955

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SACRAMENTO RIVER FLOOD CONTROL PROJECT**

UNIT NO. 158

SACRAMENTO WEIR
SACRAMENTO RIVER, CALIFORNIA

LOCATION	ADDITION OR REVISION	DATE
	Delete Exhibit H dated 25 Nov 1940	Feb 1966
	Add Exhibit H dated Nov 1963	Feb 1966
	Delete Exhibit H dated Nov 1963	Dec 1966
	Add Exhibit H dated Dec 1966	Dec 1966
	Add letter from state department of water resources dated 19 Dec 1966	Dec 1966
	Delete Exhibit H dated Dec 1966	May 1975
	*Add Exhibit H dated Mar 1975	May 1975
Exhibit H	Add letter from state department of water resources dated 28 Jan 1975	May 1975
	Paragraph 1-05 revised (Page 1 and 2)	May 1976
Exhibit H	*Add letter from state divisions of resource development dated 30 Jan 1975	May 1976
Exhibit F	Add copy of letter of transfer dated 8 Dec 1951	28 Dec 2010
Exhibit B	Add drawing no. 5035-3769	28 Dec 2010
1-04	Add subparagraph a	28 Dec 2010
Exhibit F	Add copy of letter of transfer dated 14 Jan 1987	28 Dec 2010
Exhibit F	Add copy of letter of transfer dated 29 Nov 2016	29 Dec 2016

* This revision changes the datum on the staff gage at the Sacramento Weir to coincide with the datum of the gage located at the I Street Bridge. Elevation of 0.00 feet on the gage at the weir equals 0.00 feet U.S.C.&G.S. datum (see page 1 and 2 for more details). The above is in conformance with the letter from the Division of Resources Development, attached.

UNIT NO. 158
TABLE OF CONTENTS
SUBJECT
SECTION I - INTRODUCTION

<u>Paragraph</u>		<u>Page</u>
1-01	Location - - - - -	1
1-02	Project Works - - - - -	1
1-03	Protection Provided - - - - -	1
1-04	Construction Data and Contractor - - - - -	1
1-05	Flood Flows - - - - -	1
1-06	Assurances Provided by Local Interests - - - - -	2
1-07	Acceptance by State Reclamation Board - - - - -	2
1-08	Superintendent - - - - -	2

SECTION II - FEATURES OF THE PROJECT
SUBJECT TO FLOOD CONTROL REGULATIONS

2-01	Drainage and Weir Structure - - - - -	3
2-02	Channel - - - - -	4
2-03	Levees - - - - -	5
2-04	Miscellaneous Facilities - - - - -	5

SECTION III - REPAIR OF DAMAGE TO PROJECT WORKS
AND METHODS OF COMBATING FLOOD CONDITIONS

3-01	Repair of Damage - - - - -	7
3-02	Applicable Methods of Combating Floods - - - - -	7

TABLE OF CONTENTS
(Continued)

EXHIBITS

<u>Exhibit</u>	<u>Description</u>
A	Flood Control Regulations - - - - - Unattached (Contained in Standard Manual)
A-1	Location Map - - - - - 1 Sheet
B	"As constructed" Drawings - - - - - Unattached
C	Plates of Suggested Flood Fighting Methods - - - - - Unattached (Contained in Standard Manual)
D	Check List No. 1 = Levee Inspection Report - - - - - Unattached (Contained in Standard Manual)
E	Check Lists - Levees, Channels and Structures - - - - - Sheet 1 thru 7
F	Letter of Acceptance by State Reclamation Board - - - - - Sheet 1 and 2
G	Semi-Annual Report Form - - - - - Sheet 1 and 2
H	Schedule of Operation, Sacramento Weir - - - - - 1 Sheet

SUPPLEMENT TO STANDARD
OPERATION AND MAINTENANCE MANUAL
SACRAMENTO RIVER FLOOD CONTROL PROJECT

UNIT NO. 158
SACRAMENTO WEIR

Note: See Exhibit H for Schedule
of Operation

SECTION I – INTRODUCTION

1-01. Location. The improvement covered by this manual is that part of the Sacramento River Flood Control Project which comprises the Sacramento Weir together with its adjoining channel, levees at the abutments, railroad bridge, highway bridge and appurtenances, as shown on the location map, Exhibit A-1 and drawings of Exhibit B. The weir is located in Yolo County, California along the right bank of the Sacramento River near Bryte, California and about 3.1 miles northwesterly from the City of Sacramento.

1-02. Project Works. The Sacramento Weir is a reinforced concrete weir with wooden needles that provide a movable crest. There are 48 weir sections each 38 feet long. A highway bridge 36* feet wide and a single track railroad traverses the length of the weir. Concrete abutments at each end tie into the west levee of the Sacramento River and the north and south levees of the Sacramento Bypass. For more complete details of these structures, see drawings of Exhibit B.

1-03. Protection Provided. The Sacramento Weir is designed to protect the City of Sacramento and adjacent area from flood damage by providing means for release of excess over-flow waters of the Sacramento and American Rivers into the Yolo Bypass system. The project design capacity of the Sacramento Weir is 112,000 cubic feet per second.

1-04. Construction Data and Contractor. The Sacramento Weir was constructed by Teichert & Ambrose under contract which was awarded by the City of Sacramento in June 1916. Subsequently the city was reimbursed for the costs of construction by the Sacramento District. In addition to structures built by local interests, construction required by the U.S. Corps of Engineers to perform emergency repairs and to bring this unit to project standards was accomplished under the following contracts:

a. Emergency repairs to the Sacramento River Weir were completed on 3 November 1986 under Contract No. DACW05-86-C-0116. Drawing No. 5035-3769.

1-05. Flood Flows. For purposes of this manual, the term “flood” or “high water period” shall refer to flows when the water surface in the Sacramento River reaches or exceeds the reading of 25.0 on the continuous water stage recorder and staff gage of the U.S. Weather Bureau and State Division of Water Resources located on the left bank of the Sacramento River at the foot of “I” Street, City of Sacramento. Zero of staff gage and recorders is set at elevation 3.00 U.S. Corps of Engineers datum and 0.00 foot U.S.G.S. datum. The term “flood” or “high water period” may also apply when the water surface in the Sacramento River reaches or exceeds

*Highway bridge formerly 20 feet wide. 36 feet constructed in 1977. Re: Reclamation Board #11625 and 5589 Stop Logs.

the reading of 29.0 m.s.l. on the continuous water stage recorder and staff gage of the U.S. Corps of Engineers and the State Department of Water Resources located on the pile dolphin on the right bank of the Sacramento River 100 feet downstream from the Sacramento Weir. Zero of this gage is set at 3.00 feet U.S. Corps of Engineers datum and 0.00 feet U.S.G.S. datum.

1-06. Assurances Provided by Local Interests. Assurances 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).

1-07. Acceptance by the State Reclamation Board. Responsibility for operating and maintaining the completed works was officially accepted by the Reclamation Board of the State of California on 18 December 1951, as shown on the attached letter of acceptance, Exhibit F.

1-08. Superintendent. The name and address of the superintendent appointed by the State or acting as a representative of the State Division of Water Resources 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. Drainage and Weir Structure. *REC BOARD PERMIT
R# 5589 STOP LOGS & GUIDES*

a. Description. The Sacramento Weir is a reinforced fixed concrete structure located along the right bank of the Sacramento River about 3.1 miles northwesterly from the City of Sacramento. A concrete sheet pile cut-off wall extends the full length of the weir, a distance of 1,980 feet. The weir crest elevation is 24.75 feet. Hinged 3" x 12" wooden needles backed by a 20" x 28" wooden needle beam make it possible to raise the crest to elevation 31.0. ~~A float release mechanism capable of dropping the needle gates to elevation 25.0 can be adjusted to release when the water level reaches any elevation from 31.0 to 38.0.~~ Concrete piers on 41.25 foot centers carry highway and railroad bridges across the weir. Concrete abutments at each end of the weir tie into the levees on the west side of the Sacramento River at this location. The abutments also tie into the north and south levees of the Sacramento Bypass. The leveed bypass has an average channel width of 1,800 feet and extends southwesterly from the weir to the Yolo Bypass. For more complete details of these structures see drawings of Exhibit B.

b. For pertinent Requirements of the Code of Federal Regulations and other requirements see the following:

- (1) Maintenance - Paragraph 5-02 of the Standard Manual.
- (2) Check Lists - Exhibit E of this Supplement Manual.
- (3) Operation - Paragraph 5-04 of the Standard Manual.
- (4) Additional Requirements - Paragraph 5-05 of the Standard Manual.
- (5) Safety Requirements - Paragraph 5-06 of the Standard Manual.

c. Special requirements pertaining to the Sacramento Weir:

(1) All missing parts of the hinged needles shall be replaced immediately following each flood period and that another inspection is made prior to the next flood season to be certain that all missing posts have been replaced.

(2) On the tripping devices the Superintendent shall make certain that:

- (a) No parts are missing.

- (b) Metal parts are adequately covered with paint.
- (c) All movable parts are in satisfactory working order.
- (d) All padlocks are not corroded and can be opened with a proper key.
- (e) Sufficient replacement materials are on hand and will be readily available in times of emergency.

(3) A sufficient stockpile of needle beams, hinged needles, and cable is available for replacement in times of emergency. The extra beam used for raising needles is readily available and in good operating condition at all times. Make certain that arrangements have been made to employ a mobile crane capable of handling the needle beams if and when needed.

(4) There are no encroachments upon the right-of-way which might endanger the structure or hinder its functioning in time of flood.

(5) A schedule of operation for the movable top of the Sacramento Weir is contained in Exhibit H of this manual.

2-02. Channel.

a. Description. For purpose of this manual the channel will be considered as that portion which extends from the Sacramento River to a point 200 feet downstream from the lower face of the weir structure. Beyond this point the channel maintenance is covered by other manuals.

b. For pertinent Requirements of the Code of Federal Regulations and other requirements see the following:

- (1) Maintenance - Paragraph 6-02 of the Standard Manual.
- (2) Check Lists - Exhibit E of this Supplement Manual.
- (3) Operation - Paragraph 6-04 of the Standard Manual.
- (4) Safety Requirements - Paragraph 6-05 of the Standard Manual.

It shall be the duty of the Superintendent to maintain a patrol of the project works during all periods of flood flow in excess of a reading of 25.0 on the gage located at the foot of "I" Street or 29.0 on a gage located 100 feet downstream from the Sacramento Weir, as indicated in paragraph 1-05 of this manual. The Superintendent shall dispatch a message by the most suitable means to the District Engineer

whenever the water surface in the Sacramento River reaches the gage readings indicated above. The Superintendent shall cause readings to be taken at intervals of two to four hours during the period when the water surface is above flood-flow stage 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 3-06 of the Standard Manual.

2-03. Levees.

a. Description. The bypass levees will not be described in this manual, except that portion of the north and south levees of the Sacramento Weir north and south abutments and which may be considered a part thereof.

b. For pertinent Requirements of the Code of Federal Regulations and other requirements see the following:

- (1) Maintenance - Paragraph 4-02 of the Standard Manual.
- (2) Check Lists - Exhibit E of this Supplement Manual.
- (3) Operation - Paragraph 4-04 of the Standard Manual.
- (4) Special Instructions - Paragraph 4-05 of the Standard Manual.

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) Bridges.

(a) A reinforced concrete bridge over the Sacramento Weir ^{*}20 feet wide that carries traffic of State Highway No. 16 and No. 24.

** WIDEN TO 36' IN 1977 REC. BOARD PERMIT # 11625*

(b) A steel plate girder single track, bridge of the Sacramento Northern Railroad.

(2) Utility Relocation.

(a) A power pole line anchored to four wing walls. This line crosses the Sacramento Bypass channel and is parallel to and about 400 feet downstream from the railroad trestle.

(3) Hydrographic Facilities. Water level gages to be maintained by the following Government agencies within this unit are listed as follows:

(a) U. S. Weather Bureau and State Division of Water Resources gage located on the Sacramento River at the foot of "I" Street, City of Sacramento.

(b) U. S. Corps of Engineers and State Division of Water Resources gage located on the right bank of the Sacramento River about 100 feet downstream from the Sacramento Weir.

b. For pertinent Requirements of the Code of Federal Regulations and other requirements see the following:

- (1) Maintenance - Paragraph 7-02 of the Standard Manual.
- (2) Check Lists - Paragraph 7-03 of the Standard Manual.
- (3) Operation - Paragraph 7-04 of the Standard Manual.

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

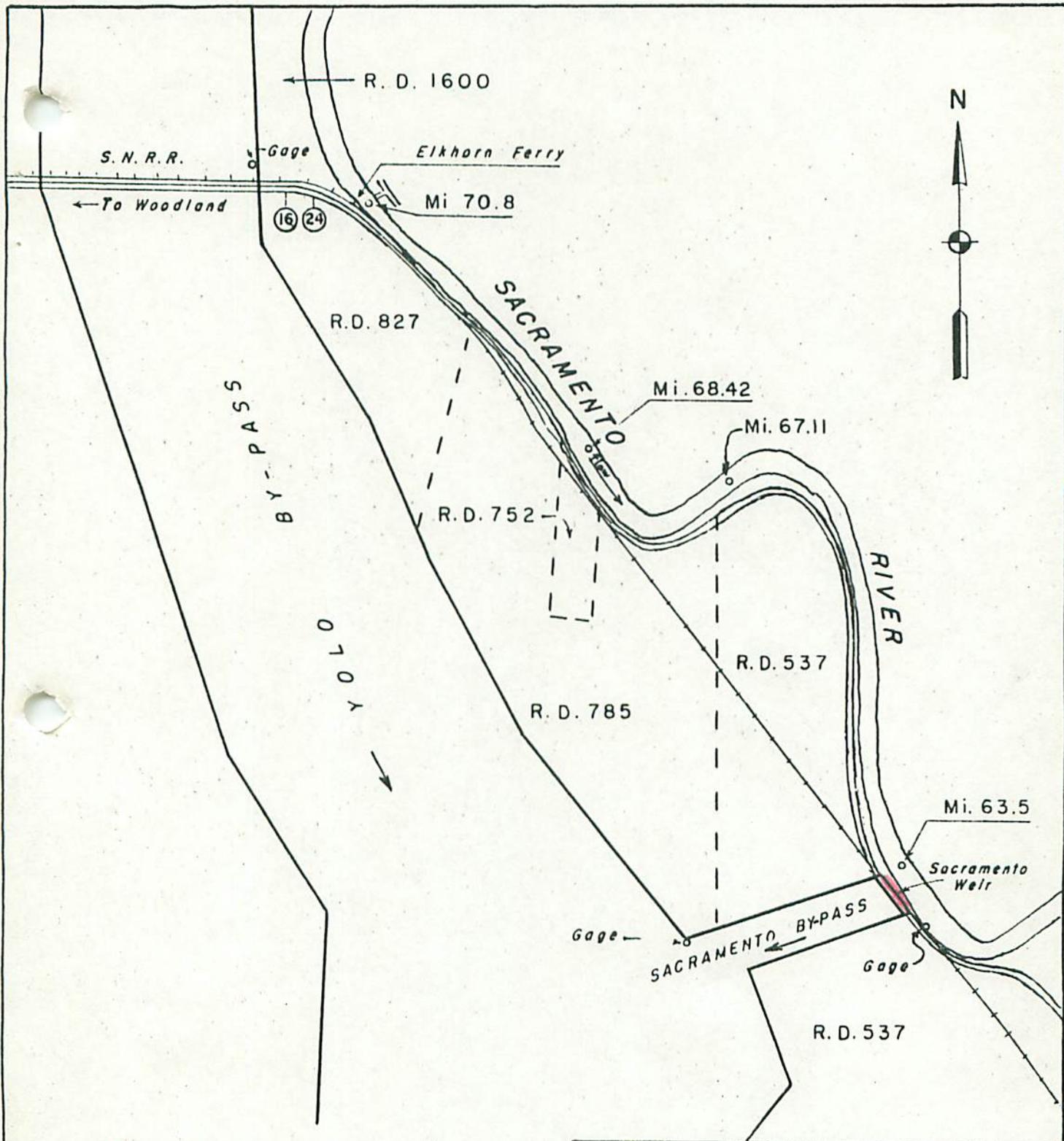
3-01. Repair of Damage. In the event of damage to the project works, whether due to flood conditions or other causes, and which may be beyond the capability of local interests to repair, the Superintendent will contact a representative of the Division of Water Resources, State of California, who coordinates 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 VIII of the Revised Standard Manual, where the subject is fully covered.

EXHIBIT A

FLOOD CONTROL REGULATIONS

(See Standard Manual)



Approx. Scale
 One inch = One Mile

LEGEND

 Area covered by this Manual.

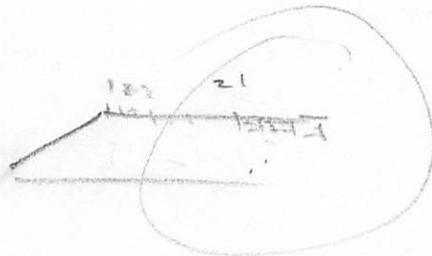
LOCATION MAP
 SACRAMENTO WEIR
 SACRAMENTO RIVER,
 CALIFORNIA
 UNIT NO. 158

EXHIBIT B

"AS CONSTRUCTED"
DRAWINGS

See separate folder for the following drawings:

<u>File No.</u>	<u>Title</u>
50-9-2985	General Location Plan - - - - - 1 sheet
50-9-2985	General Plan and Arrangement of Weirs and Levees - - - - - Sheet No. 1c
50-9-2985	General Plan for Weir and Piers Sheet C2
50-9-2985	Details of Abutments - - - - - Sheet C3
50-9-2985	Details of Hinged Needle Con- nections - - - - - Sheet C4
50-9-2985 *	General Details of Railway and Highway Bridges - - - - - Sheet C5
50-9-2985	Details of Float and Tripping Device - - - - - Sheet C6
50-9-2985	Details of Highway Bridge Skew Spans - - - - - Sheet C7
5035-3769	Repairs to the Sacramento River Weir



* REFER TO PLANS IN REC. BOARD
PERMIT # 11625

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" or "high water period"
see paragraph 1-05 of this manual

CHECK LIST NO. 2

SACRAMENTO WEIR

Inspector's Report Sheet No. _____

Inspector _____

Date _____

Superintendent _____

Item	Remarks
(a) Location by Station	
(b) Settlement, sloughing, or loss of grade	
(c) Erosion of both slopes	
(d) Condition of roadways, including ramps	
(e) Evidence of seepage	
(f) Condition of 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 earthwork 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 gulying of the section has occurred.
- Item (c) If sufficient erosion or gulying of back face of 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 any 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 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.

EXHIBIT E

Sheet 3 of 7

CHECK LIST NO. 3

CHANNEL AND RIGHT-OF-WAY

SACRAMENTO WEIR

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	

INSTRUCTION FOR COMPLETING SHEET 4, EXHIBIT E
(To be printed on back 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 flood flow channel.
- Item (c) Note nature and extent of debris and refuse that might cause fouling of the bridges over the channel.
- Item (d) Report any construction along or above the diversion channel 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, 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, 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

WEIR STRUCTURE

SACRAMENTO WEIR

Inspector's Report Sheet No. _____

Inspector _____

Date _____

Superintendent _____

Item	Remarks
(a) Condition of concrete weir section stilling basin and abutments	
(b) Condition of concrete highway bridge	
(c) Condition of railroad bridge	
(d) Condition of needles, beams and tripping devices	
(e) Condition of concrete revetment	
(f) Vegetal growth	
(g) Accumulation of trash and debris	
(h) Measures taken since last inspection	
(i) Comments	

INSTRUCTIONS FOR COMPLETING SHEET 6, EXHIBIT E
(To be printed on back of sheet 6)

- Item (a) Inspect condition of concrete weir, stilling basin and abutments with respect to abraision, chipping or spalling and record observations.
- Item (b) Note condition of highway bridge for abraision, chipping, road surfacing or damage due to traffic.
- Item (c) Note condition of railroad tracks, ties and beams or structural members of bridge.
- Item (d) Note conditions of needles and beams as to state of preservation of wood and mechanical tripping mechanism.
- Item (e) Note condition of concrete revetment such as erosion, undue settlement or mis-alignment.
- Item (f) Note nature, extent, and size of vegetal growth in and around the weir structure with particular emphasis on growth on the upstream side between the weir and the Sacramento River.
- Item (g) Note nature and extent of debris that might cause scour around the weir section or abutments or tend to decrease the channel capacity.
- 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, also any observations not covered under other items. A copy of the Inspector's Report is to be mailed to the District Engineer immediately on completion.

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

January 14, 1927

Navigation and Flood Control Unit

CERTIFIED
No. *785563*
RETURN RECEIPT REQUESTED

The Registration Board
State of California
1414 - 9th Street, Room 453-4
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 3 of the Flood Control Act of August 18, 1941, as amended (Public Law 49, 84th Congress, 1st Session). The work was completed on November 3, 1946, and consisted of repairs to the Sacramento River Weir, in accordance with Contract Number DACW01-86-D-0116 and Drawing Number 5033-3769. 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 115, 121 and 128, Sacramento River Flood Control Project. Copies will be furnished to your office at a later date.

WJ
BOMPALA/jg

RCK
KELLY

AS
A. SMITH

H
HELM

J
FAST

D
DENNIS

McCOLLAM

SCHOLL
WANG #6290a

WJ
WJ

Sincerely,

WJ

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:

Commander, South Pacific Division
DSS, AFM: J. Angel
DSS, AFM: G. Ince



Units 116, 158, 122

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 61.3 to Mile 62.65 (at Drye Bend) 116

62.65

Accepted by letter dated 9 March 1953

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 65.5 (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. a. 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
- Reach 41 ✓ 166. (2) Bear River to Mile 14.4. } 145
- ✓ 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.
- ✓ 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 3,300 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.

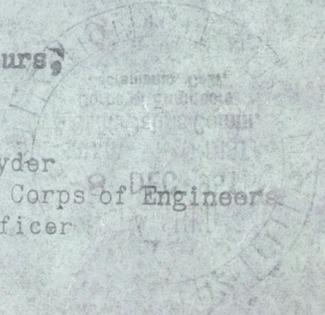
A copy of this letter is being transmitted to the State Engineer.

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

THE RECLAMATION BOARD
OF THE
STATE OF CALIFORNIA

March 11, 1953

District Engineer
Sacramento District
Corps of Engineers, U.S. Army
P.O. Box 1739
Sacramento 8, California

Dear Sir:

Reference your letters file No. SPKKO-P 824.3 (Sac. R.F.C.P.) dated 1 December 1951, 3 December 1951, 4 December 1951, three letters dated 6 December 1951, 7 December 1951 and six letters dated 8 December 1951. Subject letters transferred to The Reclamation Board for operation and maintenance, various levee units of the Sacramento River Flood Control Project.

The Reclamation Board at its 18 December 1951 meeting, on behalf of the State of California, accepted certain of the transferred units together with their contiguous banks for operation and maintenance, and rejected others. A tabulation of the units so accepted or rejected is attached hereto.

Yours very truly,

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

Signed D. M. Carr
D. M. CARR

December 18, 1951

The Board accepted the transfer from the Corps of Engineer, 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.

<u>No.</u>	<u>Date of letter</u>	<u>Levee Location</u>	<u>Remarks</u>
*	*****	*****	*****
11	8 Dec. 1951	Sacramento Weir	Maintained by State
*	*****	*****	*****

NOTE: Only item pertaining to Operation and Maintenance Manual No. 158 is included in the above copy.

EXHIBIT F
Sheet 2 of 2

EXHIBIT G

SUGGESTED SEMI-ANNUAL REPORT FORM

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

(1 May 19____)
(1 Nov 19____)

Dear Sir:

The semi-annual report for the period (1 May 19____ to 31 October 19____)
(1 November 19____ to 30 April 19____) Sacramento River Flood Control Project,
Sacramento Weir is as follows:

a. The physical condition of the protective works is indicated by the inspector's report, 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 stages (water level at 25.0 on the gage at foot of "I" Street or 29.0 on the gage 100 feet downstream from Sacramento Weir) 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 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.

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

EXHIBIT H

SCHEDULE OF OPERATION, SACRAMENTO WEIR

C
O
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C
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Y

January 30, 1975

Mr. George C. Weddell
Chief of Engineering Division
Sacramento District, Corps of Engineers
Department of the Army
650 Capitol Mall
Sacramento, California 95814

Dear Mr. Weddell:

In accordance with discussions between Mr. Joe Countryman of your staff and Robert Whiting of our Department, this is to propose that the datum base of our stream gaging station "Sacramento River at Sacramento Weir, DWR No. A-9-2105" be reset to mean seal level (USC&GS datum), so that it will be at the same base as the station "Sacramento River at Sacramento, DWR No. A-0-2100".

We believe that possible confusion in the operating criteria for the Weir could be avoided in the future if these gages are both set at USC&GS datum.

We have consulted with other concerned offices, including Mr. John Duensing of the U. S. Geological Survey, and they have no objection to this change.

Sincerely yours,

/s/ Herbert W. Greydanus
HERBERT W. GREYDANUS
Division Engineer
Division of Resources
Development

C
O
P
Y

STATE OF CALIFORNIA - RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

C
O
P
Y

January 28, 1975

Mr. George C. Weddell
Chief of Engineering Division
Sacramento District, Corps of Engineers
Department of the Army
650 Capitol Mall
Sacramento, California 95814

Dear Mr. Weddell:

This letter is in regard to the proposal considered by our staffs to modify the operating criteria for the Sacramento Weir to reduce the effects on improvements within the channel in the vicinity of the Weir.

We have no objection to reverting back to the approved weir operating criteria that were used for operation of the Weir from 1940 to 1963, as set forth in the War Department's letter of November 25, 1940, subject to a one-half foot datum change that was made at the Weir in 1966.

We understand that you intend to document in a memorandum the reasons for reverting back to the earlier operating criteria, and that you will coordinate this with the Department of Water Resources and the State Reclamation Board.

We have appreciated your close coordination on this subject, and will work with you as necessary to complete action on it.

Sincerely yours,

/s/ Herbert W. Greydanus
HERBERT W. GREYDANUS
Division Engineer
Division of Resources
Development

UNIT NO. 158

SACRAMENTO WEIR

The Sacramento Weir will be operated by the Department of Water Resources of the State of California in accordance with the following schedule adopted in 1975:

SCHEDULE OF OPERATION - SACRAMENTO WEIR

The operational objectives of the Sacramento Weir are to limit flood stages in the Sacramento River to the project flood plane, insofar as possible, with maximum feasible utilization of the flood capacity of the Sacramento River Channel below the weir. In order to accomplish these objectives, the following schedule of operation shall be used.

1. Opening of the weir gates will not be initiated until a stage of 27.5 feet msl datum is exceeded at the I Street gage, Sacramento.

2. As many gates as necessary shall be opened so that the stage at I Street does not exceed 29.0 feet msl datum, insofar as possible.

3. Subject to provisions 1 and 2 above, the stage at the Sacramento Weir shall be maintained during the gate opening period at 27.5 feet msl datum, insofar as practicable.

4. Gates shall be closed at the stage drops below 25.0 feet msl datum at the Sacramento Weir. The gate closing shall be prosecuted with dispatch so that all gates are closed within as short a period as practicable.

This schedule of operation is subject to temporary modification by the District Engineer, Corps of Engineers, if found necessary.