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Revised 29 Dec 2016

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

UNIT NO. 142
BACK LEVEE OF
RECLAMATION DISTRICT NO. 1001



U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

Incl 11

**CORPS OF ENGINEERS
U. S. ARMY**

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

UNIT NO. 142

**BACK LEVEE OF
RECLAMATION DISTRICT NO. 1001**

**Sacramento District
Corps of Engineers
U. S. Army
June 1959**

**2SUPPLEMENT TO STANDARD
OPERATION AND MAINTENANCE MANUAL
SACRAMENTO RIVER FLOOD CONTROL PROJECT**

UNIT NO. 142

BACK LEVEE OF
RECLAMATION DISTRICT NO. 1001

LOCATION	ADDITION OR REVISION	DATE
1-04	Add subparagraph c.	May 1988
Exhibit B	Add drawings BE-4-14 (sheets 1 & 2)	May 1988
Exhibit F	Add copy of letter of transfer dated 20 Jan 1987	27 Dec 2010
2-05	Add subparagraph a, Environmental Protection	May 1988
1-04	Add subparagraph d	Nov 2010
Exhibit B	Add Plan Sheets G-1, C-1 to C-5 (6 sheets) Ref No. RD1001-0-1	Nov 2010
Exhibit F	Add copy of letter of transfer dated 4 Jan 2011	11 May 2011
Exhibit F	Add copy of letter of transfer dated 29 Nov 2016	29 Dec 2016

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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.....	Sheets 1 thru 8
F	Letters of Transfer to the State Reclamation Board.....	Sheets 1 thru 6
G	Suggested Semi-Annual Report Form.....	Sheets 1 and 2

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

UNIT NO. 142
BACK LEVEE OF
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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 levee and channel along the northerly side (right bank) of the Natomas Cross Canal and the westerly side (right bank) of the East Side Canal also known as the Coon Creek Interceptor. The area lies about 5 miles southeast of Nicolaus, California in Sutter County and is the back levee of Reclamation District No. 1001 as shown on the location map, Exhibit A-1.

1-02. Protection Provided. The levee of this unit is an essential feature of the Sacramento River Flood Control Project. It provides direct protection to the towns of Nicolaus and East Nicolaus and adjacent agricultural lands against floodwaters of the Natomas Cross Canal and the East Side Canal. The grade of the adopted flood plane profile along the Natomas Cross Canal varies from elevation 42.1 at its upper end to elevation 41.2 at its junction with the Sacramento River. Along the East Side Canal the grade of the adopted flood plane profile varies from elevation 49.4 at its upper end to elevation 42.1 at its junction with the Natomas Cross Canal. Elevations are referred to U. S. Corps of Engineers' datum. The Natomas Cross Canal has a project design capacity of 22,000 cubic feet per second. The East Side Canal has a project design capacity of 16,000 cubic feet per second from the head of the Natomas Cross Canal to Auburn Ravine; from Auburn Ravine to Markham Ravine 12,000 cubic feet per second and from Markham Ravine to Coon Creek 5,000 cubic feet per second. The levee provides for a freeboard of at least 3 feet above the adopted flood plane profile 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 Acts of 1928, 1937 and 1941, and consists of the north levee (right bank) and channel of the Natomas Cross Canal for its length of about 5.44 miles.

Also the levee and channel of the East Side Canal from its upper end to the Natomas Cross Canal, a distance of about 4.80 miles. The above described levee was constructed by local interests and the levees, as shown on the drawings listed in Exhibit B, were repaired or enlarged by the Corps of Engineers to project standards.

1-04. Construction Data and Contractor. Construction required by the Corps of Engineers to bring levees of this unit to project standards and to perform repair work to locally built levees was accomplished under the following job orders and contracts:

a. Emergency levee repairs to Natomas Cross Canal in R.D. No. 1001, Sutter County was accomplished under Contract No. DA-04-167-CIVENG-57-61 by Lee Stephens, Contractor, during 18 October 1956 to 9 May 1957. Spec. No. 2243, Drwg. 50-4-3318

b. Levee construction of back levees of R.D. No. 1001 in Sutter County was accomplished under Contract No. DA-04-167-CIVENG-58-14 by Lee Stephens, Contractor, during the period from 2 August 1957 to 27 January 1958. Spec. No. 2271, Drwg. No. 50-4-3164

c. PL84-99 Emergency Levee Repairs on the right bank of Natomas Cross Canal between Sacramento River and Highway 99/70 was accomplished under Contract No. DACW05-86-0107 by Ford Construction Company Inc., during the period from 20 September 1986 to 13 November 1986 (Ref. Drawing File BE-4-14, sheets 1 & 2, and Specification No. 8010). Federal Cost, which included levee repairs on Bear River and Yankee Slough, totaled \$212,997.18.

d. PL 84-99 rehabilitation repairs on the right bank levee of the Natomas Cross Canal, under Contract No. W91238-08-D-0016 (Task Order No. 0003) by Santos Excavating, Inc., was completed on September 30, 2008. Specifications: P.L. 84-99 Levee Rehabilitation Repairs. Drawing: "PL 84-99 Levee Rehabilitation Repairs, CY2007 Order 3-5 Sites, Reclamation District 1001".

TABLE 1: NATOMAS CROSS CANAL

SITE	COORDINATES (NAD 83)				SITE LENGTH (FT)
	(N)	(W)	(N)	(W)	
1F	38.79132,	-121.59658	to 38.79206,	-121.59612	440
1E	38.79396,	-121.59165	to 38.79290,	-121.59341	620
1D	38.79509,	-121.58984	to 38.79553,	-121.58907	270
1C	38.79578,	-121.58868	to 38.79654,	-121.58742	440
1G	38.80067,	-121.58054	to 38.80093,	-121.58009	160
1B	38.82184,	-121.54254	to 38.82101,	-121.49587	550

1-05. 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 35.0 on the staff gage located on the second pile bent at the southeast corner of the El Centro Road Bridge. The gage is set on U.S. Corps of Engineers' datum. Also when the water surface reaches or exceeds a reading of 35.0 on the State Department of Water Resources and U.S.G.S. continuous

water stage recorder and staff gage located on the left bank of the Sacramento River on a bridge over the Natomas Cross Canal, 0.8 miles southeast of Verona. The gage is set at 0.06 feet below U.S. Corps of Engineers' datum.

1-06. 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).

1-07. Transfer to the State Reclamation Board. The levee within this unit was transferred to the State Reclamation Board for maintenance and operation by letters dated 13 December 1951, 14 February 1958 and 24 March 1958, all as shown on copies of transfer, Exhibit F.

1-08. Superintendent. The name and address of the Superintendent appointed by local interests to be responsible for 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. Levee.

a. Description. The levee along the right bank of the East Side Canal and the right bank of the Natomas Cross Canal is located as described in paragraphs 1-01 and 1-03 of this manual. The crown of the East Side Canal and the Natomas Cross Canal is 20 feet wide with surfacing 12 feet or more in width for patrol road purposes. For more complete detail in construction of the above-mentioned levee, refer to the "As Constructed" drawing listed in Exhibit B.

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.

2-02. Drainage and Irrigation Structures.

a. Description. Drainage and irrigation structures which extend through the levee are located and described as follows:

Drainage and Irrigation Structures

Location Levee Mileage	Size of Pipe	Gate Location	Other Structure Description	Invert - ft below crown
<u>North Levee Natomas Cross Canal - Mile 0.0 at Sacramento River</u>				
0.80	5-4'x5'	L.S.	R.D. 1001 Drainage Pumping Plant	25.0
0.80	2-50"	L.S.	R.D. 1001 Drainage Pumping Plant	25.0

Drainage and irrigation structures, Cont'd.

<u>Location</u> <u>Levee</u> <u>Mileage</u>	<u>Size</u> <u>of</u> <u>Pipe</u>	<u>Gate</u> <u>Loca-</u> <u>tion</u>	<u>Other Structure Description</u>	<u>Invert-ft.</u> <u>below</u> <u>crown</u>
0.80	20"	L.S.	R.D. 1001 Drainage Pumping Plant	25.0
3.69	2-24"	W.S.	Pumphouse W.S.	2.5
3.74	18"	W.S.	Pumphouse W.S.	3.5
3.74	24"	W.S.	Pumphouse W.S.	11.8
3.85	42"	W.S.		21.3

West Levee East Side Canal - Mile 0.0 at S.N.R.R. Crossing

0.03	36"	W.S.	Riser Unit W.S. - pipe under channel	16.3
0.56	36"	W.S.	Riser Unit W.S. - pipe under channel	15.0
1.53	30"	W.S.	Riser Unit W.S.	19.4
1.72	30"	W.S.	Riser Unit W.S. - pipe under channel	13.4
2.03	24"	W.S.	Riser Unit W.S. - pipe under channel	15.9
2.05	24"	W.S.	Riser Unit W.S. - pipe under channel	14.0
2.31	36"	W.S.	Riser Unit W.S. - pipe under channel	16.1
2.70	24"	W.S.	Riser Unit W.S. - pipe under channel	12.4
3.04	14"	W.S.	Pump W.S.	3.4
3.08	24"	W.S.	Riser Unit W.S. - pipe under channel	12.8
3.28	24"	W.S.	Riser Unit W.S. - pipe under channel	12.8
3.59	24"	W.S.	Riser Unit W.S. - pipe under channel	13.6
3.93	24"	W.S.	Riser Unit W.S. - pipe under channel	13.6
4.38	30"	W.S.	Riser Unit W.S.	15.0

Note on abbreviations: W.S. = Waterside
L.S. = Landside

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.

2-03. Channel.

a. Description. The floodway of the Natomas Cross Canal is confined between levees along both banks with the distance between levees being about 550 feet. The floodway of the East Side Canal is also confined between levees along both banks with the distance between levees varying between 400 feet on the lower end and 250 feet near the upstream of the levee. However, the levee on the easterly side is not a project levee. The project design capacity of both channels is as indicated in paragraph 1-02 of this manual.

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 in excess of a reading of 35.0 on the staff gage at the El Centro Road Bridge or 35.0 on the gage on a bridge over the Natomas Cross Canal near Verona as indicated in paragraph 1-05 of this manual. For the staff gage at the El Centro Bridge gage readings shall be taken in accordance with the following schedule:

<u>Gage Reading</u>	<u>Stage at El Centro Road</u>
Every 12 hours	above 35 feet to 38 feet
Every 6 hours	above 38 feet to 42 feet
Every 2 hours	above 42 feet

The Superintendent shall dispatch messages by the most suitable means to the State Department of Water Resources whenever the water surface reaches or exceeds the gage readings indicated above and record the time of observations. One copy of the readings shall be forwarded to the District Engineer following the flood, and a second copy transmitted as an inclosure to the semi-annual report in compliance with paragraph 3-05 of the Standard Manual.

2-04. Miscellaneous Facilities.

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

(1) Bridges.

(a) The Garden Highway Bridge at Station 1100+44 crossing the Natomas Cross Canal near its junction with the Sacramento River.

(b) The El Centro Bridge at Station 873+53 crossing the Natomas Cross Canal.

(c) The Sacramento Northern Railroad Bridge at Station 1391+19 crossing the East Side Canal.

(d) The Pacific Avenue Bridge at Station 1414+62 crossing the East Side Canal.

(e) The Catlett Road Bridge at Station 1445+39 crossing the East Side Canal.

(f) A bridge crossing the East Side Canal at Station 1604+26.

(g) A bridge crossing the East Side Canal at Station 1619+77.

For location of stations see the "As Constructed" drawings as listed in Exhibit B.

(2) Utility Relocations. Because of the nature of the construction of the levee by local interests, no records of any utility relocations are available.

(3) Hydrographic Facilities.

(a) A continuous water stage recorder and staff gage located on the left bank of the Sacramento River near the mouth of the Natomas Cross Canal. This gage to be maintained by the State Department of Water Resources or the U.S.G.S.

(b) A staff gage located on the second pile bent at the southeast corner of the El Centro Road Bridge. This gage to be maintained by local interests.

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

- Manual. (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

2-05.

a. Vegetation preserved as a part of selective clearing on the waterside berm or slope above the bank protection during prosecution of the contract shall not be removed as a part of normal maintenance. Dead trees with wildlife value will be retained except where they constitute a hazard to existing flood control works.

SECTION III

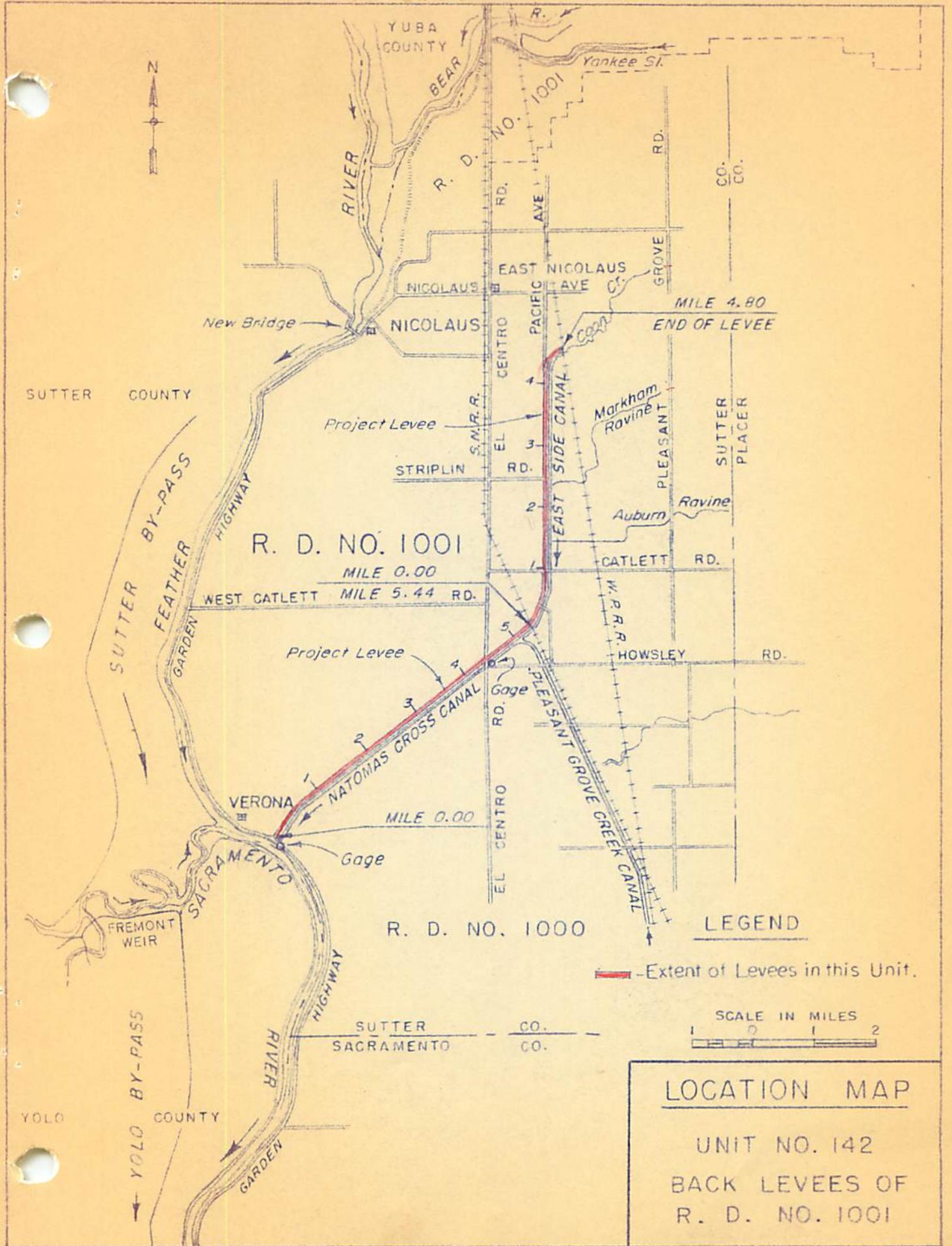
REPAIR OF DAMAGE TO PROJECT WORKS AND METHODS OF COMBATING FLOOD CONDITIONS

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 of the Department 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 advise, 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 Standard Operation and Maintenance Manual, revised May 1955, where the subject is fully covered.

EXHIBIT A
FLOOD CONTROL REGULATIONS
(See Standard Manual)

EXHIBIT A
Unattached



New Bridge

R. D. NO. 1001

MILE 0.00

WEST CATLETT MILE 5.44 RD.

Project Levee

VERONA

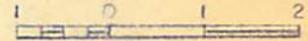
Gage

R. D. NO. 1000

LEGEND

— Extent of Levees in this Unit.

SCALE IN MILES



LOCATION MAP

UNIT NO. 142
BACK LEVEES OF
R. D. NO. 1001

EXHIBIT A-1

EXHIBIT B

“AS CONSTRUCTED”
DRAWINGS

See separate folder for the following drawings:

<u>File No.</u>	<u>Title</u>
50-4-3318	Emergency Levee Repairs along Natomas Cross Canal, 8 sheets.
50-4-3164	Levee Construction, Back Levee of R.D. 1001 in Sutter County, sheet 1 and sheets 17 to 26, incl.
BE-4-14	Sutter and Yuba Counties – PL 84-99 Levee Rehabilitation, Bear River – RD 817 and Yankee Slough & Natomas Cross Canal – RD 1001, Emergency Levee Repairs in 2 sheets.
Ref no. RD1001-0-1	PL 84-99 Levee Rehabilitation Repairs, CY2007 Orders 3-5 Sites, Reclamation District 1001, Sutter County, California, in 6 sheets.

For further details, additional drawings are available from the office of the Sacramento District Engineer.

EXHIBIT C

PLATES OF SUGGESTED FLOOD FIGHTING METHODS

(See Standard Manual)

**EXHIBIT C
Unattached**

EXHIBIT D
CHECK LIST NO. 1
LEVEE INSPECTION REPORT
(See Standard Manual)

EXHIBIT D
Unattached

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

UNIT NO. 142
BACK LEVEE OF R.D. 1001

Inspector's Report Sheet No. _____ Inspector _____

Date _____ Superintendent _____

Item	Remarks
(a) Location by Station	
(b) Settlement, sloughing, or loss of grade	
(c) Erosion of bank slope of levee	
(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 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 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

UNIT NO. 142
BACK LEVEE OF R. D. 1001

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 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 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 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 or 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, 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

UNIT NO. 142

Inspector's Report Sheet No. _____

Inspector _____

Date _____

Superintendent _____

(a) Location by Levee Mileage	(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
0.80 0.80 0.80 3.69 3.74 3.74 3.85	Rt. Rt. Rt. Rt. Rt. Rt. Rt.		North Levee of Nathmas Cross Canal				Mile 0.0 at Sacramento River
0.03 0.56 1.53 1.72 2.03 2.05 2.31 2.70	Rt. Rt. Rt. Rt. Rt. Rt. Rt. Rt.		West Levee East Side Canal				Mile 0.0 at S.N.R.R. Crossing

Instructions for Completing Sheets 6 and 7, Exhibit E
(To be printed on back of Sheets 6 and 7)

- (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 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 over flow 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, 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

**LETTERS OF TRANSFER TO
THE STATE RECLAMATION BOARD**

EXHIBIT F



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



DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

REPLY TO
ATTENTION OF

Flood Protection and Navigation Section

JAN - 4 2011

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, California 95821

Dear Mr. Punia:

The U.S. Army Corps of Engineers has completed a portion of work under PL 84-99, Flood Control and Coastal Emergencies (FCCE) (33 U.S.C. 701n) (69 Stat. 186) for emergency management activities. Repairs were made to rehabilitate various sites along the Natomas Cross Canal within Reclamation District 1001. Additional information about the repair and location of the sites may be found in the document titled, "Project Information Report for Public Law 84-99 Levee Rehabilitation, Reclamation District 1001, (Final)", dated June 25, 2007.

The rehabilitation work meets the requirements of the existing Operation and Maintenance Manuals and enclosed revisions. The subject flood damage reduction project is considered complete as of the date of this letter. The repairs were completed under Contract Number W91238-08-D-0016, Task Order Number 3. As-constructed drawings and revisions to the Operation and Maintenance Manual are enclosed. Please note that the drawings show repairs for Yankee Slough and the Natomas Cross Canal, however, only the Natomas Cross Canal portion of the repair is within the boundaries of Unit 142 of the Sacramento River Flood Control Project. The repairs for Yankee Slough are part of Unit 141 and will be covered in a separate letter. The Central Valley Flood Protection Board shall continue to operate and maintain the completed Rehabilitation Effort as part of the project.

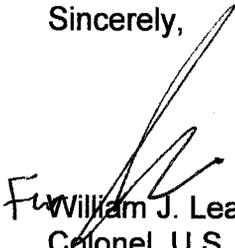
Mitigation plantings for the above work are required but have not been completed. The estimated completion date for the plantings is Spring 2011. All mitigation plantings will be ETL 1110-2-571 compliant. After completion of the plantings, a separate letter with addendum and as-builts will be sent to you.

If you have any questions regarding this project, please contact Ms. Paige Caldwell (916) 557-6919 or Ms. Christy Jones (916) 557-7107, Readiness Section. If you have any questions regarding this transfer, please contact Mr. Ryan Larson at (916) 557-7568 or Mr. Robert Murakami at (916) 557-6738, Flood Protection and Navigation Section.

WJH

A copy of this letter is being furnished to Reclamation District 1001, 1959 Cornelius Avenue, Rio Oso, CA 95674.

Sincerely,


WJR.
William J. Leady, P.E.
Colonel, U.S. Army
District Commander

Enclosure

Unit 142

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

January 20, 1967

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 3 of the Flood Control Act of August 18, 1941, as amended (Public Law 99, 84th Congress, 1st Session). The work was completed on November 8, 1966, and consisted of restoring a portion of the Yankee Slough and Natomas Cross Canal right bank levees in Reclamation Districts 1001 and the Bear River right bank levee in Reclamation District 817, in accordance with Contract Number DACW93-86-C-0107 and Drawing Number EE-4-14. 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 141, 142 and 143, Sacramento River Flood Control Project. Copies will be furnished to your office at a later date.

Sincerely,

Love

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

Wayne J. Scholl
Colonel, Corps of Engineers
District Engineer

Copies furnished:

DNR, ATTN: J. Angel
DNR, ATTN: G. Saw
Commander, South Pacific Division, ATTN: SPDCO-O

*Unit 51411/421
1416*

*M 1-15
POMPALA/jg*

*REK
KELLY*

*AS
A. SMITH*

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*BEAR R. R.B IN RPB17
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SPKKA 824.3(Sac.Riv.F.C.P.)

13 December 1951

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

Gentlemen:

Reference is made to your letter of 2 July 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:

k. Northerly levee of Natomas Cut.

- (1) From Sacramento River easterly to a point 1,550 feet easterly from the Garden Highway Bridge.
- (2) From a point 2,550 feet easterly from the Garden Highway Bridge to a point 3,250 feet easterly from the Garden Highway Bridge.

The records of this office show that your Board has accepted the levees and/or works covered by Items d.(14), d.(15), d.(16), d.(28), d.(50), d.(52), d.(54), d.(57), d.(59), d.(61), h.(3), h.(5), h.(7), h.(9), i., m., n., o., p., q., r., and s., 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. to c., inclusive, d.(1) to d.(13), inclusive, d.(17) to d.(27), inclusive, d.(29) to d.(49), inclusive, d.(51), d.(53), d.(55), d.(56), d.(58), d.(60), e., f., g., h.(1), h.(2), h.(4), h.(6), h.(8) and j. to l., inclusive, above, although complete, has not been formally transferred as contemplated by the Project documents.

EXHIBIT F
Sheet 1 of 6

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

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 203.10(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.

NOTE: Only portion pertaining to
Unit No. 142 contained
in this copy.

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SPKKO-P 824.3 (Sac.Riv.F.C.P.)

14 February 1958

The Reclamation Board
State of California
1215 "O" Street
Sacramento, California

Gentlemen:

Reference is made to District Engineer's letter dated 4 September 1957, which referred in part to the completion of emergency levee repairs on the Natomas Cross Canal of the Sacramento River Flood Control Project.

The work consisting of construction of certain levee units referred to above was completed on 9 May 1957 in accordance with Specification No. 2243, Contract No. DA-04-167-CIVENG-57-61 and Drawing No. 50-4-3318. The levee sections referred to above are listed as follows:

<u>Levee Section No.</u>	<u>River Mile Points</u>	<u>Right or Left Bank</u>
617 ---	0.0 to 5.44 -----	Right -----

The levee sections, Sec. 617 and 618, described above, now meet the requirements of the Sacramento River Flood Project; therefore said levee sections, together with the water banks contiguous thereto, are hereby transferred to the State of California for maintenance and operation beginning 29 November 1957, in accordance with the provisions of the "Supplement to the Memorandum of Understanding" executed as of that date.

The maintenance work required under the provisions of the Sacramento River Flood Control Project shall be performed in accordance with existing Flood Control Regulations, inclosed herewith, 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 by the current issue of the Standard Operation and Maintenance Manual for the Sacramento River Flood Control Project. As provided under paragraph 208.10(10) of these regulations, a

EXHIBIT F
Sheet 3 of 6

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

supplement to the Standard Operation and Maintenance Manual covering these units of work is in process of preparation and will be furnished to you upon completion.

A copy of this letter is being transmitted to the Department of Water Resources.

Sincerely yours,

A. E. McCOLLAM
Colonel, CE
District Engineer

NOTE: Only portion pertaining to Unit No. 142 included in this copy.

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SPKKO-P 824.3 (Sac.Riv.F.C.P.)

24 March 1958

The Reclamation Board
State of California
1215 "O" Street
Sacramento, California

Gentlemen:

Reference is made to District Engineer's letter dated 3 December 1957, relative to the joint inspection made on 10 December 1957, of certain levee units pertaining to the Sacramento River Flood Control Project for the purpose of transferring them to the jurisdiction of the State of California for operation and maintenance.

The required work consisting of Construction of the levee units referred to above was completed on 27 January 1958 in accordance with Specification No. 2271, Contract No. DA-04-167-CIVENG-30-14 and Drawing No. 50-4-3164. Completion of the contract excluded two road ramps at approximately Stations 620+00 and 627+00. Work at these two sites will be completed later by purchase order when weather conditions permit.

	<u>Levee Section No.</u>	<u>River Mile Points</u>	<u>Right or Left Bank</u>
<u>Coon Creek Interceptor</u>	623	0.0 to 4.8	Right

The levee sections, Nos. 619 to 623 inclusive, described above, now meet the requirements of the Sacramento River Flood Control Project; therefore said levee sections, together with the waterway banks contiguous thereto, are hereby transferred to the State of California.

The maintenance work required under the provisions of the Sacramento River Flood Control Project shall be performed in accordance with existing Flood Control Regulations, inclosed herewith, which have been prescribed by the Secretary of the Army pursuant to Section 5 of the Act of Congress, approved 22 June 1936, as amended and supplemented by the current issue of the Standard Operation and Maintenance Manual for the Sacramento River Flood Control Project. As provided under paragraph 200.10(10) of these regulations, a supplement to the Standard Operation and Maintenance Manual covering these units of work is in process of preparation and will be furnished to you upon completion

EXHIBIT F
Sheet 5 of 6

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

A copy of this letter is being transmitted to the Department
of Water Resources.

Sincerely yours,

A. E. McCOLLAM
Colonel, CE
District Engineer

NOTE: Only portion pertaining
to Unit No. 142 contained
in this copy.

EXHIBIT G
SUGGESTED SEMI-ANNUAL REPORT FORM

EXHIBIT G

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__) Unit No. 142 of the Sacramento River Flood Control Project (Back Levees of R.D. 1001) 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 periods (water level at 35.0 on the State Department of Water Resources gage located on the left bank of the Sacramento River near Verona or 35.0 on the staff gage located on the El Centro Road Bridge) 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 G
Sheet 2 of 2