
**SUPPLEMENT TO STANDARD
OPERATION AND MAINTENANCE
MANUAL**

**SACRAMENTO RIVER
FLOOD CONTROL PROJECT**

**UNIT NO. 155
COLUSA WEIR AND TRAINING LEVEES
SACRAMENTO RIVER, CALIFORNIA**



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

2

FILE COPY

CORPS OF ENGINEERS
U. S. ARMY

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OPERATION AND MAINTENANCE MANUAL
SACRAMENTO RIVER FLOOD CONTROL PROJECT

UNIT NO. 155
COLUSA WEIR AND TRAINING LEVEES
SACRAMENTO RIVER, CALIFORNIA

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

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SACRAMENTO RIVER FLOOD CONTROL PROJECT**

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LOCATION	ADDITION OR REVISION	DATE
Exhibit F	Add copy of letter of transfer dated 1 Dec 1951	28 Dec 2010
Exhibit F	Add copy of letter of transfer dated 18 Dec 1951	28 Dec 2010
Exhibit F	Add copy of letter of transfer dated 2 Apr 1952	28 Dec 2010
1-04	Add subparagraph a	2 Feb 2011
Exhibit F	Add copy of letter of transfer dated 12 Dec 1967	2 Feb 2011
Exhibit F	Add copy of letter of acceptance dated 10 Jan 1968	2 Feb 2011
Exhibit B	Add drawing no. 50-4-4078	12 Oct 2011

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

UNIT NO. 155
COLUSA WEIR AND TRAINING LEVEES
SACRAMENTO RIVER, CALIFORNIA

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 Colusa Weir together with its outflow channel and training levees. The weir structure includes a concrete apron, cobble revetments and a highway bridge. The weir is located along the easterly side (left bank) of the Sacramento River one mile north of Colusa, California in Reclamation District No. 1005 as shown on location map exhibit A-1.

1-02. Project Works. – Colusa Weir is a reinforced concrete structure with crest length of 1,650 feet and width of 20 feet. It is flanked by training levees that extend from the Sacramento River to Butte Basin. A highway bridge supported by concrete pile bents traverses the length of the Weir. For more complete details of the structure see drawings of Exhibit B. (Levees extended by Rec. Board in 1968)

1-03. Protection Provided. – The primary function of Colusa Weir and training levees is to provide a means for release of excess overflow waters of the Sacramento River into Butte Basin. Adjoining training levees provide direct protection to adjacent agricultural lands. The project design capacity of this weir is 70,000 cubic feet per second. (There is no design flood plane – use 3 foot freeboard below top of As-constructed levees to determine flood plan elevation)

1-04. Construction Data and Contractor. – The Colusa Weir and Training Levees described in this manual form an integral part of the Sacramento River Flood Control Project. Construction of Colusa Weir was accomplished by the Corps of Engineers under Contract No. W-1105-eng-1063 with Fredrickson and Watson Construction Company. Work was started on 16 October 1932 and completed on 30 January 1933.

a. Bank sloping and stone protection on the Sacramento River at Site Mile 147.55, left bank, was completed on 15 November 1967 under Contract No. DACW05-68-C-0014. Specification No. 3288, Drawing No. 50-4-4078.

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 66.0 on the U.S. Corps of Engineers and State Division of Water Resources continuous water stage recorder and staff gage located on the upstream end of Colusa Weir. This gage is set on 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. Acceptance by 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 copy of letter contained in 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.

a. Description. The Colusa Weir is a fixed concrete drainage structure located along the easterly side of the Sacramento River about one mile north of Colusa, California. The Weir is a reinforced concrete structure, placed on steel sheet piling cut-off walls on the upstream side and on wood sheet piling cut-off walls on the downstream side. The base of the Weir is set at elevation 61.8 (U. S. Corps of Engineers datum). Cobble paving adjoins the concrete base of the Weir and extends for a distance of 20 feet above and below the structure. A highway bridge supported by concrete pile bents, set at 40 foot centers traverses the length of the Weir. Upstream from the Weir revetted training levees extend 400 feet to the Sacramento River. Downstream from the Weir the training levees extend about 5,500 feet to the Butte Basin. For more complete details of the structure 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.

2-02. Channel.

a. Description. The channel extends from the Sacramento River to Butte Basin as described in paragraphs 1-02 and 1-03.

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 66.0 on the gage located on the upstream end of the Colusa 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 at Colusa Weir reaches the gage readings to 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 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 training levees have a crown width of 20 feet with slopes of 1 on 2 on the landside and 1 on 3 on the channel side and are paved with cobbles from station 2,400 to the lower end on the channel side; also on the landside slopes a cobble blanket has been placed from station 14,400 to the lower end of the training levees. For complete details of the training levees in this project refer to paragraphs 1-02 and 1-03 of this manual and Drawing No. 50-9-1333 of Exhibit B. *Levees extended by Rec. Bd in 1968. See Rec. Bd, dwg # TR-2-1011-3 (9 sheets) filed in back.*

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) Utility Relocation. The County road on top of the Sacramento River Levee was located over a concrete bridge which extends the full length of Colusa Weir. This bridge is 20 feet wide from curb to curb.

(2) Hydrographic Facilities. U. S. Corps of Engineers and State Division of Water Resources continuous water stage recorder and staff gage located near the north end of Colusa 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

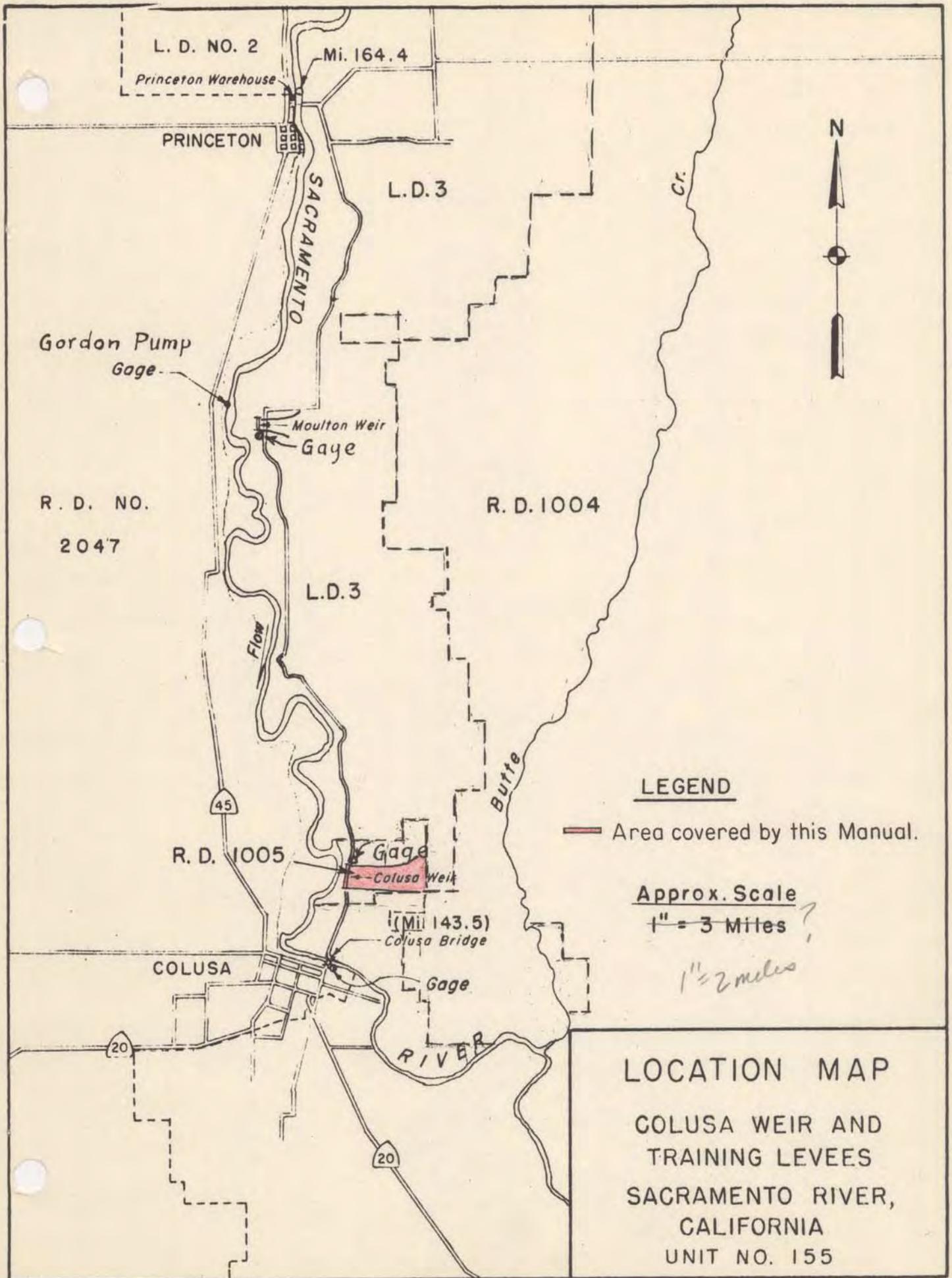
3-01. Repair of Damage. In the event of serious damage to the project works, whether due to flood conditions or other causes, and which may be beyond the capability of local interests to repair, the Superintendent will contact a representative of the Division of Water Resources, State of California who 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)



L. D. NO. 2

Princeton Warehouse

Mi. 164.4

PRINCETON

L.D.3

Cr.



Gordon Pump
Gage

SACRAMENTO

Flow

Flow

Moulton Weir
Gage

R. D. NO.
2047

R. D. 1004

L.D.3

LEGEND

— Area covered by this Manual.

Approx. Scale

1" = 3 Miles

1" = 2 miles

R. D. 1005

Gage
Colusa Weir

(Mi. 143.5)

Colusa Bridge

Gage

Butte

COLUSA

RIVER

LOCATION MAP

COLUSA WEIR AND
TRAINING LEVEES
SACRAMENTO RIVER,
CALIFORNIA
UNIT NO. 155

EXHIBIT B

“AS CONSTRUCTED”
DRAWINGS

(See separate folder for the following Drawings)

<u>File No.</u>	<u>Title</u>
50-9-1326-1	Colusa Weir – Viaduct Details. Sheets 3 and 4.
50-9-1326-2	Colusa Weir – Plan, Location & Borings; Weir Details and Viaduct Details. Sheets 1, 2 and 3.
50-9-1333	Colusa Weir – Levees. 1 sheet.
TR 2-1011-3	Rec. Bd. Dwgs. for extension of levees.
50-4-4078	Bank Protection, Various Locations, Right and Left Banks Sacramento River and Feather River, in 20 sheets.

EXHIBIT C

PLATES OF SUGGESTED FLOOD FIGHTING METHODS

(See Standard Manual)

EXHIBIT D

CHECK LIST NO. 1

LEVEL 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

COLUSA WEIR AND TRAINING LEVEES

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.
- Item (c) If sufficient erosion or gullying of slopes of levee has taken place to be noticeable by visual inspection, indicate area affected and depth.
- Item (d) Note any other 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.

CHECK LIST NO. 3

CHANNEL AND RIGHT-OF-WAY

COLUSA WEIR AND TRAINING LEVEES

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 channels.
- Item (c) Note nature and extent of debris and refuse that might cause 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 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

WEIR STRUCTURE

COLUSA WEIR

Inspector's Report Sheet No. _____

Inspector _____

Date _____

Superintendent _____

Item	Remarks
(a) Condition of concrete bridge and piling	
(b) Condition of concrete weir section	
(c) Condition of riprapped sections	
(d) Vegetal growth	
(e) Accumulation of trash and debris	
(f) Measures taken since last inspection	
(g) Comments	

Instructions For Completing Sheet 6, Exhibit E
(To be printed on back of Sheet 6)

- Item (a) Inspect condition of concrete bridge and piling bents and record observations.
- Item (b) Note condition of concrete weir section for abrasion, chipping or spalling.
- Item (c) Note condition of riprap such as erosion, movement of the rock or presence of vegetal growth through the riprap.
- Item (d) Note nature, extent, and size of vegetal growth in and around the weir structure.
- Item (e) Note nature and extent of debris that might cause scour around the weir or bridge structure or tend to decrease the channel capacity.
- Item (f) Indicate maintenance measures that have been performed since the last inspection and their condition at time of this inspection.
- Item (g) Record opinion, if any, of contributory causes for conditions observed, also any observations not covered under other items.

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 F

LETTER OF ACCEPTANCE

BY STATE RECLAMATION BOARD

THE RECLAMATION BOARD
of the
State of California

11 March 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 waterway banks for operation and maintenance, and rejected others. A tabulation of the units so accepted or rejected is attached hereto.

Yours very truly

A. M. BARTON
Chief Engineer and General Manager
The Reclamation Board

/s/ D. M. CARR

EXHIBIT F
Sheet 1 of 2

18 December 1951

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

<u>No.</u>	<u>Date of Letter</u>	<u>Levee Location</u>	<u>Remarks</u>
* 1	* * * * * 1 December 1951	* * * * * N and S Training Levees Colusa Weir	* * * * * Maintained by State
* 8	* * * * * 8 December 1951	* * * * * E. Levee, Sacra- mento River At Colusa Weir	* * * * * Maintained by State
*	* * * * *	* * * * *	* * * * *

NOTE: Only items pertaining to Operation and Maintenance Manual No. 155 are included in the above copy.

*TRP
Coleman*
RONALD REAGAN, Governor

THE RECLAMATION BOARD

ROOM 1335, RESOURCES BUILDING, 1416 9TH STREET • SACRAMENTO 95814



JAN 10 1968
4130.60.203

District Engineer
Corps of Engineers
U. S. Army
650 Capitol Mall
Sacramento, California

Dear Sir:

Reference is made to your letter of December 12, 1967 concerning transfer to the State of California of the Sacramento River Bank Protection Project, Unit No. 12, Site Mile 147.55, left bank and Site Mile 79.5, right bank, in accordance with Specification No. 3288.

The Reclamation Board, at its meeting of January 5, 1968, formally accepted the above referred to work for operation and maintenance.

Sincerely yours,

A. E. McCOLLAM
Chief Engineer and
General Manager

JHMacC:pa

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Units 123, 155

copy to Sacramento 11 Jan 68

12 December 1967

SPKKO-F

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

Gentlemen:

Reference is made to the joint inspection of 8 December 1967, made for the purpose of transferring a portion of the Sacramento River Bank Protection work (Unit #12), to the State of California for operation and maintenance.

The flood control work consisting of bank sloping and placement of stone bank protection on Sacramento River at Site Mile 147.55, left bank and Site Mile 79.5, right bank is listed on the attached inclosure. The work was completed on 15 November 1967, in accordance with Specification No. 3288, Contract No. DACW05-68-C-0014, Drawing No. 50-4-4078.

The work was performed under the general authority of the Flood Control Act of 1960, 86th Congress, 2nd Session; and Section 2304(a), Title 10.

The flood control work now meets the requirements of the Sacramento River Bank Protection Project. Therefore, said flood control work, together with the waterway banks contiguous thereto, are transferred to the State of California for operation and maintenance.

This portion of the project work will be added by amendment to the operation and maintenance manual, Supplement Nos. 123 & 155, Sacramento River Flood Control Project. Copies will be furnished your office at a later date.

Sincerely yours,

CRAWFORD YOUNG
Colonel, CE
District Engineer

HR
ROMPAIA/P

[Signature]
COLEMAN

[Signature]
HANSON

[Signature]
HATCH

[Signature]
YOUNG

✓ 1 Incl
as stated

✓ Copy furnished:
Dept Water Resources

✓ O.C.E.

✓ S.P.D.

cc: Engr-Lev & Chan; Engr-ProgDev; Valley; F&A (Cordano)

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Units 123, 155

*To AGICK HUMAN
72-00067 JK*

SUMMARY OF SACRAMENTO RIVER BANK PROTECTION PROJECT
PORTION OF UNIT #12

<u>LEVEE MILE</u> <u>SITE MILE</u>	<u>STONE PROTECTION</u> <u>STATION</u>	<u>LINEAL FEET</u>	<u>ROCK TOE WALL</u> <u>STATION</u>	<u>LINEAL FEET</u>
Right Bank: 79.5	33+00 to 56+00	2300	-	-
Left Bank: 147.55	17+00 to 28+00	1100	20+40 to 21+10 23+40 to 25+00	70 160

281
 150
 W.L.F.M.V.

EARL WARREN
GOVERNOR

A. R. GALLAWAY, JR., SACRAMENTO
PRESIDENT

GROVER SHANNON, YUBA CITY
VICE PRESIDENT

GEO. H. HOLMES, CLARKSBURG
SECRETARY

W. P. HARKEY, GRIDLEY
GEO. R. WILSON, WALNUT GROVE
GEO. E. LODI, ARBUCKLE
DOUGLAS B. COHEN, BANTA

A. M. BARTON
CHIEF ENGINEER AND GENERAL MANAGER

EDMUND G. BROWN, ATTORNEY GENERAL
LEGAL ADVISER

G. F. MELLIN
ASSISTANT ENGINEER AND APPRAISER

S. A. HONAKER
ASSISTANT SECRETARY

THE RECLAMATION BOARD
OF THE
STATE OF CALIFORNIA

1100 O STREET
SACRAMENTO 14, CALIFORNIA

April 2, 1952

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

Dear Sir:

This is in reply to your 1 December 1951, your file SPKKA 824.3 (Sac. Riv. F.C.P.) transferring levees and contiguous waterway banks to The Reclamation Board as follows:

- Item 1* a. Southerly Moulton Weir Training Levee
- Item 2* b. Northerly Moulton Weir Training Levee
- Item 3* c. Southerly Colusa Weir Training Levee
- Item 4* d. Northerly Colusa Weir Training Levee
- Item 5* e. Grasshopper Diversion Channel from Grasshopper Creek to South Dry Creek

Levees, a, b, c, and d themselves constitute all of the waterway banks involved. Maintenance of these levees since their construction and the adjoining by-pass areas has been continuously performed by the State as required by Section 8361 of the Water Code of the State of California and Chapter 774, Statutes of California of 1927. Acceptance of these levees has been an actual fact since their construction. Formal acceptance by The Reclamation Board was made December 18, 1951.

Grasshopper Diversion Channel is less than one mile in length and does not constitute a unit capable of single economic maintenance. Formal acceptance will be made upon formal transfer of the south levee of South Dry Creek and the north levee of Bear River east of Reclamation District No. 817, at which time Sections

Items 1 to 5

-2-

District Engineer
April 2, 1952

8400 to 8447 of the Water Code of the State of California, may become operative.

No Federal maintenance of this channel has been done and none is required.

Yours very truly,

THE RECLAMATION BOARD

By 

A. M. BARTON

Chief Engineer and General Manager

AMB:FK

cc: Chief of Engineers
Washington, D. C.

Division Engineer
South Pacific Division
Corps of Engineers, U. S. Army
P.O. Box 3339, Rincon Annex
San Francisco 19, California

State Engineer
Sacramento

Items 1 to 5

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

Accepted Items

December 18, 1951

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

No.	Date of Letter	Levee Location	Remarks
1-2	1 Dec. 1951	N. and S. Training* Levees Moulton Weir*	Maintained by State
3-4	Do	N. and S. Training* Levees Colusa Weir*	Maintained by State
6	3 Dec. 1951	W. Levee Sacramento River, Mile 177.5 Mile 174.1	Maintained as Maintenance Area No. 2
9	4 Dec. 1951	E. Levee Yolo By-pass Fremont* Weir to Miner Slough*	N. 2 mi. maintained by State. Remainder by local districts. Conditioned upon completion of levee section and no acceptance of banks of Sacramento Deep Water Channel.
10 11	Do	N.&S. Levees Sacra- mento By-pass*	Maintained by State. Waterward slopes on 4 to 1 not required.
21a	6 Dec. 1951	Back levee Egbert District*	Maintained by R. D. No. 536
22	6 Dec. 1951	W. Levee Yolo By-pass Lindsey* Slough to Watson Hollow Drain*	Maintained by R. D. No. 536
24	Do	N. Levee Watson Hollow Drain*	Do
16	6 Dec. 1951	W. Levee Sacramento River Mile 59.0 to Lake Wash- ington Barge Canal	Maintained by R. D. No. 900
18	Do	W. Levee Sacramento Riv. Mile 50.8 to 50.5	Bank protection contract. Maintained by R. D. No. 765

Copy to USED.

1 21b

Accepted Items

No. Date of Letter

Levee Location

Remarks

6 6 Dec. 1951

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

Maintained by State. Water-
ward slopes on 4 to 1 not
required.

12-13-14-15

7 7 Dec. 1951

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

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

= 329 87-A

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

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

= 331 89-A

8 8 Dec. 1951

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

Maintained as Maintenance
Area No. 1.

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

8 Do

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

Maintained by State
Separate completed contracts.

58-59-60-61-62-63

8 Do

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

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

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

8 Do

West levee, Sutter By-pass*

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

71-72-73

8 Do

North levee Tisdale
By-pass†

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

74

8 Do

South levee Tisdale
By-pass†

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

75

8 Do

East levee Sutter
By-pass*.

Maintained by State.

76

9 Do

W. levee Sacramento River
Mile 35.15 to 35.86.

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

81

21
2

Accepted Items

No.	Date of Letter	Levee Location	Remarks
(91) 10	8 Dec. 1951	Cross levee Steamboat Slough to Sacramento River.*	Maintained by R.D. No. 3 (along U.S.spoil bank).
(140) 11	Do	N. levee American River from Jibboom St. Bridge to Sacramento River.	Maintained by R.D. No. 1000.
(141) 11	Do	E. levee Sacramento River American River to Natomas Cut.	Maintained by R.D.No. 1000.
(142) 11	Do	E. bank Sacramento River At Moulton Weir.	Maintained by State.
(143) 11	Do	E. Levee Sacramento River Mile 158.5 to Mile 164.4.	Maintained partly by State; remainder by Levee District.No. 3, Glenn County, Completed Contract.
(146) 11	Do	W. levee Sacramento River Mile 61.8 to Mile 62.65.	Maintained by Maintenance Area No. 4. Completed contract.
(147) 11	Do	W. Levee Sacramento River Mile 62.65 to Mile 63.1.	Maintained by R.D. No. 537 Completed contract.
(148) 11	Do	Sacramento Weir.	Maintained by State.
(152) 11	Do	Fremont Weir.	Maintained by State.
(153) 11	Do	W. Levee Sacramento River Mile 87.6 to Mile 88.4; Mile 89.2 to Sycamore Slough	Maintained by R.D. No. 730 Completed contracts.
(155) (156) (157) 11	Do	W. Levee Sacramento River Mile 100.6 to Mile 101.4	Maintained by Sacramento River West Side Levee District. Completed contract.
(160) (161) (162) (163) 11	Do	W. Levee Feather River except: 3.31 Mi. North from Nicolaus Bridge; 1400 ft. in Yuba City; from Sta.774+80 to Sta. 1188+00 of "Y.C.H.B" Traverse.	Maintained by Maintenance Area No. 3, Levee Dist. Nos. 1 & 9 of Sutter Co. Recl. Dist.No. 777 and State.
(164) 11	Do	E. Levee Sacramento River, Natomas Cut to Feather River	Maintained by Recl.Dist.No.1001.
(165) (166) (167) (168) (169) (170) 11	Do	E. Levee Feather River from mouth to Mile 26.5, except from 2.37 miles of Nicolaus Bridge to Bear River	Maintained by R.D. Nos. 1001 and 784.

Accepted
Items

5

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

(21)

4

Accepted
Items

No.	Date of Letter	Levee Location	Remarks
-----	----------------	----------------	---------

12 8 Dec. 1951

Five reaches of Ryer Island levee along Miner Slough as follows:

a. Junction Miner and Sutter Sloughs westerly 5000 feet.

b. From State Highway Bridge West. 3035 ft.

c. Spec. 1473, Sta. 53+00 to 64+00 about one mi. No. of Ryde Road. *Mile 29.4 to 29.6*

d. Spec. 1473, Sta. 0+00 to 12+00 being 600 ft. each side of Ryde Road. *Mile 30.4 to 30.6*

e. Ryer Island cut-off levee beginning at east bank of Cache Slough and extending upstream 3,300 feet at junction of Cache and Miner Sloughs.

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

Covered by letter dated 16 Nov. 1951

321 → (32) (79A) ✓

303 Covered by letter dated

(53A) ✓

304 17 Nov. 1951

(54A) ✓

(23) ✓

(50) ✓

*No waterway banks contiguous to these levees.

REGISTERED MAIL
Return Receipt
Requested

Arrieta

①

Letter No 1

1 DEC 1951

Legend Notes:

Accepted Items

Not accepted Items

15

18

SPKKA 624,3(Sac. Riv. F.C.P.)

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

Refer. Recl. Board letter 2 April 1952:

Items ① to ④ were formally accepted
by the Board on 18 Dec. 1951.

Item ⑤ will not be accepted. ^{The} Board
considers this unit is not suitable
for maintenance.

The Board requests formal transfer of ~~leves~~
South Levee of South Dry Creek and North Levee
of Bear River east of Reclamation District No. 817

Ref. map - Reach No. 45: Information ^{showing} acceptance of
levees east the S.P.R.R. is incorrect.

Gentlemen:

A recent review of the status of the works comprising the Sacramento
River Flood Control Project as authorized prior to the Flood Control Act
of 1944 has disclosed that the following works meet the requirements of
the Project:

Reach 12 ① a. Southerly Moulton Weir Training levee from Sacramento River
southeasterly to the County Road. 154

Reach 11 ② b. Northerly Moulton Weir Training levee from Sacramento River
to Moulton Weir. 154

Reach 12 ③ c. Southerly Colusa Weir Training levee from Sacramento River
easterly to its terminus in Butte Basin. 155

Reach 12 ④ d. Northerly Colusa Weir Training levee from Sacramento River
easterly to its terminus in Butte Basin. 155

Reach 45 ⑤ e. Grasshopper Creek Diversion Channel, easterly from Wheatland,
from its head at Grasshopper Creek northerly to South Dry Creek. 146

The works covered by Items a. to e., inclusive, above, although com-
plete have not been formally transferred as contemplated by the Project
documents. Accordingly said works, together with the waterway banks con-
tiguous thereto, are 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

111A
106 to 158

Reach 45 ?

Items 1 to 5

①

Letter No. 1

1

SPKRA 924.3 (Sec. Div. F.C.P.)
The Reclamation Board

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

Sincerely yours,

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

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



1

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 - Colusa Weir and training levees 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 66.0 on the gage at north end of colusa 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

Colusa Basin

*Lynn -
Is this going to
be part of the
manual? If so,
how does it
affect the oper-
maint. manual?*

*W. J. ...
T.D. ...
File
24 March 1967
Edman*

SPEKIP

Reclamation Board
State of California
1416 Ninth Street
Sacramento, California 95814

*Report filed in
bookcase behind 'Red'.
J*

Gentlemen:

Reference is made to your letter of 10 March 1967 which requested our views on the plan proposed in Office Report for the Reclamation Board entitled, "Colusa Weir Investigation."

Deposition of sediment within the training levees downstream from Colusa Weir and extending into Butte Basin has been developing since construction of Colusa Weir in 1937. The deposition has reached a stage where the functioning of Colusa Weir may soon be adversely affected, and the channel of Butte Creek may be in danger of filling with sediment. The covering of Laux Road by debris is of course a problem of some years standing. Accordingly, remedial action is desirable.

We concur in the proposed stage 1 construction plan in the report. This plan generally consists of: (a) clearing of trees, brush and deposited debris within the existing Colusa Bypass training levees and beyond; (b) extending a levee north and east from the terminus of the north existing training levee in order to limit overflow and deposition of materials north of the vicinity of Laux Road; (c) relocating Laux Road; (d) providing necessary drainage for lands adjacent to the levee extension and (e) planting vegetative screening as required.

The second stage of the proposed plan would consist of construction of a sedimentation basin in the existing bypass and extension of the south training levee southerly one-half mile and easterly about one mile. Before stage 2 work is done it is recommended that the problem be restudied in the light of the conditions then prevailing.

*Red -
I assume that if it involves changing a project feature "as constructed" it will become part of the project and will require a change in the manual. If it is an additional or new feature it will not be a part of project & it will come up with O & M requirements.
5/Henerson*

**SFRGP
Reclamation Board**

24 March 1967

We also concur that a rigid annual maintenance program is needed to maintain the proper functioning of the project for flood control.

Sincerely yours,

**CRAWFORD YOUNG
Colonel, CE
District Engineer**

**cc: Const Oper Div
Proj Png Br
Levees
Inv Sec A**

**T. S. MEADE
Lieutenant Colonel, CE
Deputy District Engineer**

JOHNSON/11

DOYLE

BARSDALE

GOMEZ

HART

YOUNG

THE RECLAMATION BOARD

ROOM 1335, RESOURCES BUILDING, 1416 9TH STREET • SACRAMENTO 95814



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H. TERRILL SARTAIN

DONALD L. WEILER

COL. A. E. McCOLLAM, *General Manager*

March 10, 1967

Refer to: 1004.70.300

District Engineer
Sacramento District
U. S. Corps of Engineers
650 Capitol Mall
Sacramento, California

Dear Sir:

Enclosed is a report prepared by the Department of Water Resources for the Reclamation Board and a modification plan for the Colusa Weir portion of the Sacramento River Project.

You will note from the report that the Board adopted phase 1 of the project at its September 15, 1966 meeting and the Board has budgeted in Fiscal Year 1967/68 the project to construct the first phase.

In view of the fact that the proposed construction would modify the levee system of the Sacramento River Project, it is requested that you give us your views on the necessity and urgency for proceeding with this plan and that you approve the plan as adopted by the Board.

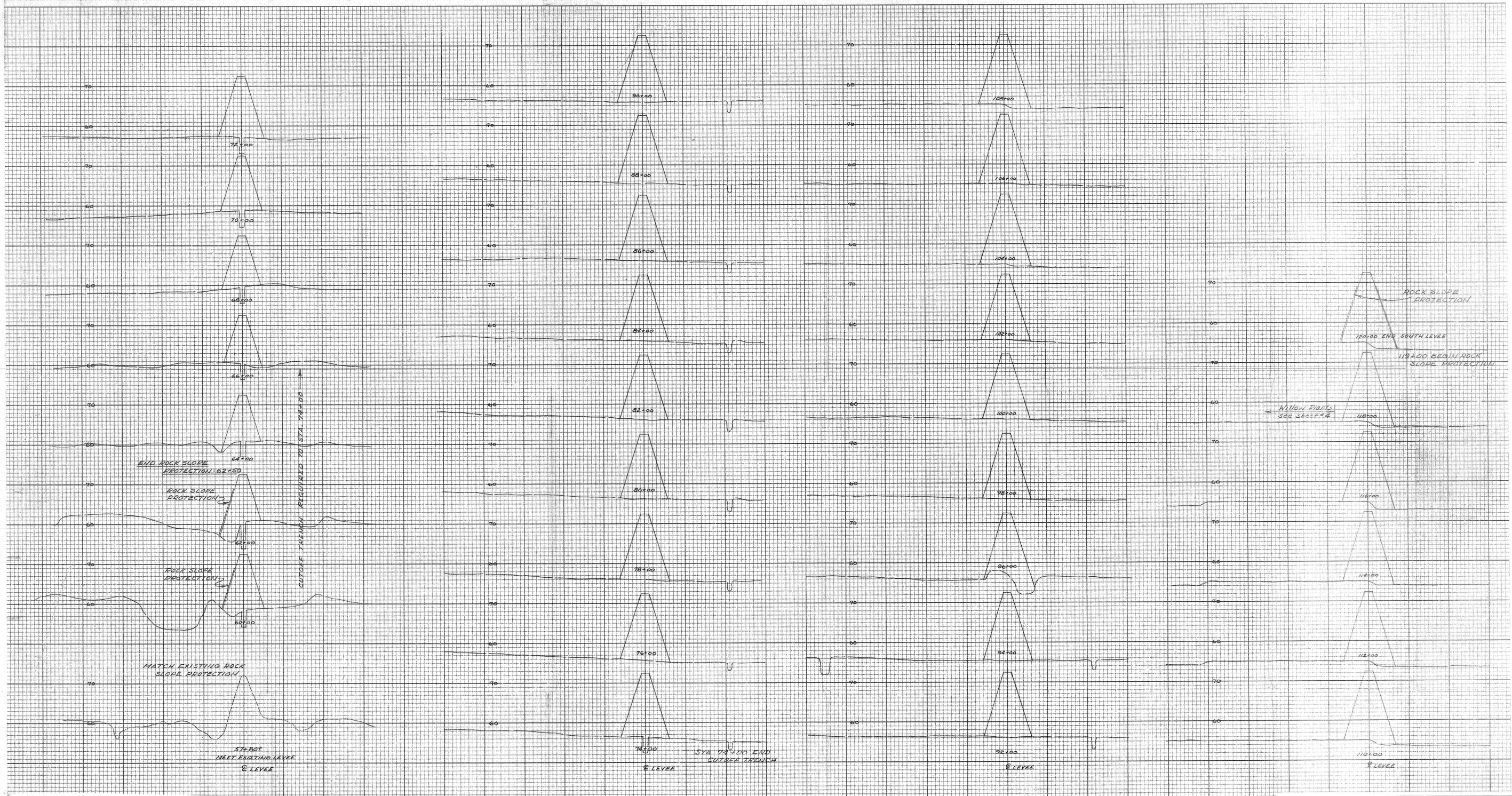
Very truly yours,

A handwritten signature in cursive script that reads 'A. E. McCollam'.

A. E. McCOLLAM
General Manager

AEM:ms

Encls



Note: Ground Grade Elevations are approximate

SCALE:
Vert. 1"=10'
Horiz. 1"=100'

State of California
THE RECLAMATION BOARD

COLUSA WEIR - BYPASS MODIFICATION
Phase III - Clearing and Levee Construction

X-SECTIONS
(South Levee)

PREPARED: <i>John C. Johnson</i> C.E. 12257 DESIGN: <i>John C. Johnson</i> CHECKED: _____ LAYOUT: <i>John C. Johnson</i> CHECKED: <i>John C. Johnson</i> SUBMITTED: <i>Charles Tolo</i> C.E. 8399 C. Tolo, DESIGN & CONSTR. ENGR. RECOMMENDED: <i>Howard S. Hitchcock</i> C.E. 6797 HOWARD S. HITCHCOCK, ASST. CHIEF ENGR.	APPROVED: <i>A. E. McCollam</i> C.E. 17277 A. E. McCollam, CHIEF ENGR. TR. 2-1011-3 DATE: APR 8 1958
--	---

REVISION	DATE	DESCRIPTION	BY	APP'D
COMP. BK.	FIELD BK.	C. OF E. FILE	SCALE	

SHEET
OF
9