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

# UNIT No. 141-PART No. 2
# EAST LEVEE OF FEATHER RIVER
# AND
# SOUTH LEVEE OF BEAR RIVER

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

Corps of Engineers
U. S. Army

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Sacramento District
Corps of Engineers
U. S. Army
_____ 1960

## TABLE OF CONTENTS

### SECTION I - INTRODUCTION


| Paragraph | Subject | Page |
|---|---|---|
| 1-01 | Location | 1 |
| 1-02 | Project Works | 1 |
| 1-03 | Protection Provided | 1 |
| 1-04 | Construction Data and Contractor | 2 |
| 1-05 | Flood Flows | 2 |
| 1-06 | Assurances Provided by Local Interests | 3 |
| 1-07 | Acceptance by or Transfer to the State Reclamation Board | 3 |
| 1-08 | Inspection Procedure | 3 |
| | **SECTION II - FEATURES OF THE PROJECT SUBJECT TO FLOOD CONTROL REGULATIONS** | |
| 2-01 | Levees | 6 |
| 2-02 | Drainage and Irrigation Structures | 6 |
| 2-03 | Channels | 7 |
| 2-04 | Miscellaneous Facilities | 8 |
| | **SECTION III - REPAIR OF DAMAGE TO PROJECT WORKS AND METHODS OF COMBATING FLOOD CONDITIONS** | |
| 3-01 | Repair of Damage | 10 |
| 3-02 | Applicable Methods of Combating Floods | 10 |

## EXHIBITS

| Exhibit | Description | |
|---|---|---|
| A | Flood Control Regulations (Contained in Standard Manual) | Unattached |
| A-1 | Location Map | 1 Sheet |
| B | "As Constructed" Drawings | Unattached |
| C | Plates of Suggested Flood Fighting Methods (Contained in Standard Manual) | Unattached |
| D | Suggested Check List No. 1 - Levee Inspection Report (Contained in Standard Manual) | Unattached |
| E | Suggested Check List - Levee, Channels and Structures | Sheets 1 thru 7 |
| F | Letters of Acceptance by or Transfer to the State Reclamation Board | Sheets 1 thru 3 |
| G | Suggest Semi-Annual Report Form | Sheets 1 and 2 |

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

UNIT NO. 141 - PART NO. 2
EAST LEVEE OF FEATHER RIVER
AND
SOUTH LEVEE OF BEAR RIVER

## SECTION I
## INTRODUCTION

1-01. Location. - The improvement covered by this manual is that part of the Sacramento River Flood Control Project levee and channel that is located on the left bank of the Feather River and left bank of the Bear River that lies north of the City of Sacramento and southwesterly from the town of Wheatland. Location by levee mileage is from about mile 5.2, Unit No. 4, on the Feather River to mile 2.57, Unit No. 2, on the south levee of Yankee Slough. The area is located in Reclamation District No. 1001 in the Counties of Sutter and Placer, California and in the general vicinity as shown on the Location Map, Exhibit A-1.

1-02. Project works. - The project works covered by this manual is a part of the Sacramento River Flood Control Project authorized by the Flood Control Act of 1917, as modified by the Acts of 1928, 1937, and 1941, and consists of the east levee and channel (left bank) of the Feather River from the junction of the Feather and Bear Rivers to a point located 3.21 miles downstream from the old Nicolaus Bridge; the south levee and channel of the Bear River (left bank) from the WPRR downstream to the Feather River and the lower end of the left bank of Yankee Slough.

Part No. 2 completes Unit No. 141 and covers that portion of the levee which was not completed at the time when Unit No. 141 - Part No. 1 was written (August 1955).

1-03. Protection provided. - Levees of the Feather and Bear Rivers, as described in this unit, provide direct protection to adjacent agricultural land within Reclamation District No. 1001, the communities of Nicolaus, East Nicolaus and Rio Oso, a State highway and county roads. Along the east levee of the Feather River within this area the grade of the adopted flood plane profile varies from elevation 57.1 near the confluence of the Bear River to elevation 41.9 near the mouth of the Feather River. Along the south levee of the Bear River the grade of the adopted flood plane profile varies from elevation 112.0 at the upper end to elevation 57.1 at its junction with the Feather River. All elevations are referred to U. S.

Corps of Engineers datum. Levee grades within this unit provide for a freeboard of at least 3 feet above the adopted flood plane profile. Within this unit the project design flood for the Feather River is 320,000 cubic feet per second and for the Bear River 40,000 cubic feet per second from the junction with the Feather River to the W. P. Railroad crossing.

1-04. Construction data and contractor. - Work required by the Corps of Engineers to bring levees of this unit to project standards was accomplished under the following contracts:

a. Levee repairs along the south levee of Bear River was accomplished under Contract No. DA-04-167-eng-396 by H. Earl Parker, Inc., during the period from 24 November 1950 to 5 December 1950.

b. Stone protection and levee setback along the east levee of the Feather River from the Nicolaus Bridge downstream 4,000 feet was accomplished under Contract No. DA-04-167-eng-1365 by James H. Clack, during the period from 21 June 1955 to 2 December 1955.

c. Emergency repairs on 7,500 feet of levee on the left bank of the Feather River downstream from the Nicolaus Bridge was accomplished under Contract Nos. DA-04-167-CIVENG-56-85, 56-97, 56-117, 56-155, 56-156, 56-46, 56-211, and 56-173 by a Teichert & Son, Inc., Hydraulic Dredging Co., Ltd., Basalt Rock Co., Inc., H. Earl Parker, Inc., Associated Dredging Co., and Pacific Gas and Electric Co., during the period from 2 January 1956 to 13 April 1956.

d. Emergency stone protection of the left bank of the Feather River was accomplished under Contract No. DA-04-167-CIVENG-57-30 by Gene Richards, Inc., during the period from 23 August 1956 to 7 December 1956.

e. Seeding and fertilizing the riverside berm and slope on the Feather River below Nicolaus was accomplished by Purchase Order No. SPKSA-57-1252 by W. L. Spangler, during the period from 23 January 1957 to 25 January 1957.

f. Levee enlargement on the left banks of the Feather and Bear Rivers from Nicolaus upstream was accomplished under Contract No. DA-04-167-CIVENG-59-62 by M. Malfitano & Son, Inc., during the period from 16 April 1959 to 16 October 1959.

g. Bank protection on the left bank of the Feather River (Contract No. 7) was placed under Contract No. DA-04-167-CIVENG-64-33 by H. Earl Parker, Inc. during the period from 12 September 1963 to 10 December 1963, Specification No. 2985, Drawing No. 4-4-542.

h. Bank protection and selective clearing on the left bank of the Bear River at Site Mile 2.6 (Unit No. 27) was accomplished under Contract No. DACW05-75-C-0085 by Luhr Bros. Inc. during the period from 21 July 1975 to 15 October 1976. Specification No. 4461, Drawing No. 50-4-4892.

Corps of Engineers datum. Levee grades within this unit provide for a freeboard of at least 3 feet above the adopted flood plane profile. Within this unit the project design flood for the Feather River is 320,000 cubic feet per second and for the Bear River 40,000 cubic feet per second from the junction with the Feather River to the W. P. Railroad crossing.

1-04. Construction data and contractor. - Work required by the Corps of Engineers to bring levees of this unit to project standards was accomplished under the following contracts:

a. Levee repairs along the south levee of Bear River was accomplished under Contract No. DA-04-167-eng-396 by H. Earl Parker, Inc., during the period from 24 November 1950 to 5 December 1950.

b. Stone protection and levee setback along the east levee of the Feather River from the Nicolaus Bridge downstream 4,000 feet was accomplished under Contract No. DA-04-167-eng-1365 by James H. Clack, during the period from 21 June 1955 to 2 December 1955.

c. Emergency repairs on 7,500 feet of levee on the left bank of the Feather River downstream from the Nicolaus Bridge was accomplished under Contract Nos. DA-04-167-CIVENG-56-85, 56-97, 56-117, 56-155, 56-156, 56-46, 56-211, and 56-173 by a Teichert & Son, Inc., Hydraulic Dredging Co., Ltd., Basalt Rock Co., Inc., H. Earl Parker, Inc., Associated Dredging Co., and Pacific Gas and Electric Co., during the period from 2 January 1956 to 13 April 1956.

d. Emergency stone protection of the left bank of the Feather River was accomplished under Contract No. DA-04-167-CIVENG-57-30 by Gene Richards, Inc., during the period from 23 August 1956 to 7 December 1956.

e. Seeding and fertilizing the riverside berm and slope on the Feather River below Nicolaus was accomplished by Purchase Order No. SPKSA-57-1252 by W. L. Spangler, during the period from 23 January 1957 to 25 January 1957.

f. Levee enlargement on the left banks of the Feather and Bear Rivers from Nicolaus upstream was accomplished under Contract No. DA-04-167-CIVENG-59-62 by M. Malfitano & Son, Inc., during the period from 16 April 1959 to 16 October 1959.

1-05. Flood flows. - For purposes of this manual, the term "flood" or "high water period" for the Feather and Bear Rivers shall refer to flows when the water surface in the Bear River reaches or exceeds the reading of 12.0 feet on the U. S. Geological

Survey gage located near the middle on the downstream side of U. S. Highway No. 99E over the Bear River about one mile southeast of Wheatland, California. (Zero on this gage is elevation 78.9 feet U. S. G. S. datum). Such term for the Feather River portion of this unit shall refer to flows when the water surface in the Feather River reaches or exceeds the reading of 43.0 feet on the State Department of Water Resources and U. S. G. S. gage located on the left bank of the Feather River about 2,000 feet downstream from Nicolaus. (This water stage recorder and staff 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 or transfer to the State Reclamation Board. Responsibility for operating and maintaining a portion of the completed works was transferred to the State by letter dated 13 December 1955. Another portion of this unit was accepted by the State Reclamation Board by letter dated 24 November 1959, as shown on the attached letters, EXHIBIT F.

1-08. Inspection procedure. - Since the enactment of State Legislation of Chapter 1528, Statutes of 1947, the Department of Water Resources, State of California, has made semi-annual inspections of all levees of authorized flood control projects in the Sacramento-San Joaquin drainage basin pursuant to the Federal Regulations of 16 August 1944 (Title 33), and reports its findings to the local agency, the State Reclamation Board and the Sacramento District, Corps of Engineers, U. S. Army. This activity, initiated pursuant to Section 208.10(a) of the Federal Regulations, has in effect provided for transfer from the local agencies to the State Department of Water Resources the obligation of compliance with Sections 8371, 8372, and 8373 of the Water Code of the State of California. These sections of the Code require the local responsible agencies to submit a report to the State Department of Water Resources on or before 1 June of each year on the condition of the levees within their jurisdiction. Supervisory powers and duties of the Department are applicable to all works of the Sacramento River Flood Control Project maintained and operated by the local agencies without regard to status of completion, or expenditure of Federal funds on the construction of such works.

The following procedure is used in inspecting the levees of the responsible maintaining agency:

Personnel of the State Department of Water Resources make a detailed inspection in the spring and fall of each year and make a report on any required maintenance. The inspection objectives are to determine if the following items, which are a condensation of Federal Regulations, are being adhered to:

a. That all brush, trees and wild growth other than sod are removed from the levee crown and slopes.

b. That all weeds, grass and debris on the levee have been burned during the appropriate season, where not dangerous or impractical.

c. That all grass and weeds on the levee have been mowed where removal by burning is dangerous or impracticable. This applies only on peat levees or where burning would constitute a hazard to improvements.

d. That all burrowing animals have been exterminated.

e. That all caves, sloughs, burrows, holes, slips or other damaged portions of the levee have been repaired.

f. That all irrigation and drainage structures through the levee are in good working condition.

g. That no revetment work or riprap have been displaced, washed out or removed.

h. That the crown of the levee is well shaped and maintained and that unauthorized vehicular travel is restricted.

i. That stock grazing on the levee is restricted to conditions and seasons when the levee would not be seriously scarred or otherwise damaged thereby.

j. That encroachments are not being erected on the levee which would hinder travel by authorized patrol vehicles.

k. Prevent the erection of structures on, additions to, or alterations of, the levee unless authorized by permit from the State Reclamation Board.

Following this detailed inspection a joint field inspection is made with representatives of the responsible maintaining agency and the State Department of Water Resources to review and discuss the inspection report.

Upon completion of the fall inspection the State Department of Water Resources publishes an annual report entitled, "Status of Project Levee Maintenance" which indicates the degree of proficiency attained by each obligated local agency in providing required maintenance.

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

2-01. Levees. -

a. Description. The levee described in this manual lies along the east side of the Feather River and the south side of the Bear River and extends for a total distance of about 8.23 miles. The levee has been reconstructed with slopes of 1 on 3 waterside and 1 on 2 landside with a crown width of 20 feet. The necessary drainage structures, road approaches, bank protection, and appurtences were also included in the work. For more complete detail in construction of the above-mentioned levee, refer to the "As Constructed" drawings of 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) Suggested 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 listed as follows:

| Levee Mileage | Size of Pipe | Location of Gate | Other Structure Description | Invert Below Crown |
|---|---|---|---|---|
| | Feather River | | | |
| 1.41 | 24" | W. S. | | 8.5' |
| 3.24 | 12" | --- | | 6.2' |
| 3.25 | 7" | --- | | 0.5' |
| 4.44 | 14" | L. S. | Standpipe L. S. | 5.2' |
| | Bear River | | | |
| 12.55 | 12" | --- | Plugged | 26.5' |
| | Yankee Slough | | | |
| 2.88 | 24" | --- | Plugged | --- |

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) Suggested 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. Channels. -

a. Description. The main channel and floodway of the Feather and Bear Rivers for this unit lie adjacent to levees as described in paragraph 1-02. The project design capacities of said channels are as listed in paragraph 1-03 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) Suggested Check Lists - EXHIBIT E of this Supplement Manual.

(3) Operation - paragraph 6-04 of the Standard Manual.

(4) Safety Requirements - 6-05 of the Standard Manual.

It shall be the duty of the local agency responsible for maintenance to keep in contact with the State Departmemt of Water Resources' Flood Operation Center during all periods of flood danger, and maintain a patrol of the project works in their area during periods of flood in excess of a reading of 12.0 on the gage located on the Bear River Bridge at Highway No. 99E or a reading of 43.0 on the gage located on the Feather River near Nicolaus, as referred to in paragraph 1-05 of this manual.

The Flood Operations Center is responsible for data collection and issuance of a joint river forecast with the U. S. Weather Bureau and coordinates with the Sacramento District Engineer, and other agencies to keep appraised of the current situation in accordance with terms of the Memorandum of Understanding dated 1 November 1956, between the Division Engineer, U. S. Army Engineer Division, South Pacific, and the Director, Department of Water Resources, State of California for cooperative action during flood emergencies.

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) W. P. R. R. Bridge crossing the Bear River and Yankee Slough near Rio Oso (same bridge and trestle).

(b) Sacramento Northern Railroad trestle crossing the Bear River near Rio Oso.

(c) County bridge crossing the Bear River at Rio Oso.

(d) Highway Bridge crossing the Feather River near Nicolaus.

(2) Utility relocation. Because of the nature of the construction of structures by local interests, records of utility relocations are not available.

(3) Hydrologic facilities. Hydrologic facilities provided within this unit consist of the following:

(a) U. S. Geological Survey continuous water stage recorder and staff gage located near the middle of the downstream side of U. S. Highway No. 99E bridge over the Bear River about one mile southeast of Wheatland. This gage to be maintained by the U. S. G. S.

(b) State Department of Water Resources and U. S. G. S. continuous water stage recorder and staff gage located on the left bank of the Feather River about 2,000 feet downstream from the old Nicolaus Bridge. This gage to be maintained by the State Department of Water Resources and the U. S. G. S.

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) Suggested 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 local agency responsible for maintenance 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 Manual and Maintenance Manual, revised May 1955, where the subject is fully covered.

EXHIBIT A

FEDERAL FLOOD CONTROL REGULATIONS

(SEE STANDARD MANUAL)

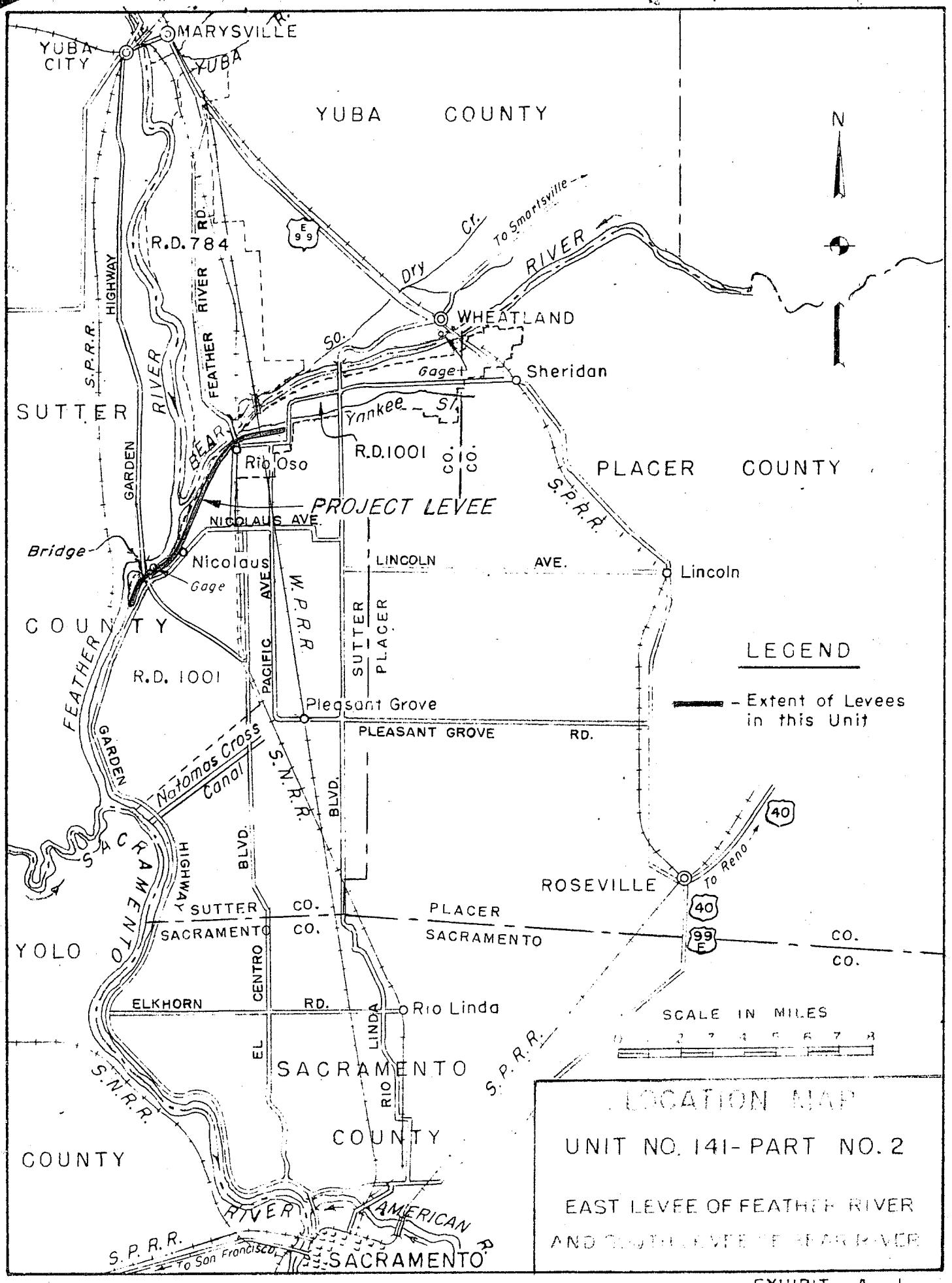
YUBA CITY
MARYSVILLE
YUBA R.
YUBA COUNTY
N
R.D. 784
HIGHWAY
S.P.R.R.
FEATHER RIVER RD.
FEATHER RIVER
Dry Cr.
To Smartsville
RIVER
WHEATLAND
SO.
Gage
Sheridan
SUTTER
Yankee St.
BEAR
Rio Oso
R.D.1001
CO.
CO.
PLACER COUNTY
S.P.R.R.
GARDEN
PROJECT LEVEE
NICOLAUS AVE.
Bridge
Nicolaus
Gage
LINCOLN AVE.
Lincoln
COUNTY
W.P.R.R.
PACIFIC AVE
SUTTER
PLACER
R.D. 1001
FEATHER
GARDEN
Pleasant Grove
PLEASANT GROVE RD.
Natomas Cross Canal
S.N.R.R.
BLVD.
SACRAMENTO
HIGHWAY
BLVD.
ROSEVILLE
To Reno
40
SUTTER CO.
SACRAMENTO CO.
PLACER CO.
SACRAMENTO CO.
99 E
YOLO
CENTRO
ELKHORN RD.
Rio Linda
EL
LINDA
RIO
SACRAMENTO COUNTY
S.P.R.R.
S.N.R.R.
COUNTY
RIVER
AMERICAN R.
S.P.R.R.
To San Francisco
SACRAMENTO
SCALE IN MILES
0 1 2 3 4 5 6 7 8
LEGEND
Extent of Levees in this Unit
LOCATION MAP
UNIT NO. 141- PART NO. 2
EAST LEVEE OF FEATHER RIVER
AND SOUTH LEVEE OF BEAR RIVER

EXHIBIT A - 1

EXHIBIT B

"AS CONSTRUCTED"
DRAWINGS

See separate folder for the following drawings:

| File No. | Title | |
|---|---|---|
| 2-4-120 | Levee Repairs along South Levee of Bear River | 1 sheet |
| 4-4-360 | Emergency Stone Protection and Levee Set back, East Levee Feather River from Nicolaus Bridge downstream 4,000 feet. | Sheets 1 thru 7 |
| 4-4-399 | Emergency Stone Protection, left bank of Sacramento and Feather Rivers. | Sheets 1 thru 3 |
| 4-4-425 | Emergency Stone Protection, left bank of Feather River near Nicolaus. | 1 Sheet |
| 4-4-450 | Left Bank Feather and Bear Rivers from Nicolaus Bridge to W. P. R. R. Bridge. | Sheets 1 thru 15 |
| 4-4-542 | **Bank Protection Left Bank Feather River Mile 6.7 and Right Bank Elder Creek, in 4 sheets.** | |
| 50-4-4892 | **Bank Protection, Various Locations on Sacramento and Bear Rivers and Elder Creek, in 20 sheets.** | |

EXHIBIT B
Unattached

EXHIBIT C

PLATES OF SUGGESTED FLOOD FIGHTING METHODS

(SEE STANDARD MANUAL)

EXHIBIT C
Unattached

# EXHIBIT D

SUGGESTED CHECK LIST NO. 1

LEVEE INSPECTION REPORT

(SSE STANDARD MANUAL)

# EXHIBIT E

## SUGGESTED CHECK LISTS OF LEVEES, CHANNEL AND STRUCTURES

For definition of "flood" or "high water period", see paragraph 1-05 of this manual.

SUGGESTED CHECK LIST NO. 2
UNIT NO. 141-2

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 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 gullying of the section has occurred.

Item (c) If sufficient erosion or gullying 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.

SUGGESTED CHECK LIST NO. 3

CHANNEL AND RIGHT-OF-WAY

UNIT NO. 141-2

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 a aggradation or degradation | |
| (f) Condition or 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.

SUGGESTED CHECK LIST NO. 4

DRAINAGE AND IRRIGATION STRUCTURES

UNIT NO. 141-2

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 |
|---|---|---|---|---|---|---|---|
| | | Feather River | | | | | |
| 1.41 | Lt. | | | | | | |
| 3.24 | " | | | | | | |
| 3.25 | " | | | | | | |
| 4.44 | " | | | | | | |
| | | Bear River | | | | | |
| 12.55 | Lt. | | | | | | |
| | | Yankee Slough | | | | | |
| 8.64 | Lt. | | | | | | |

EXHIBIT E
Sheet 6 of 7

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

(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 overflow of the drainage structure and note conditions in Column (f).

(6) Under Column (g) indicate physical measures that have been taken to correct conditions reported in last inspection, and their condition at time of this inspection.

(7) Under Column (h) record opinion, if any, of contributory causes for conditions observed, also any observations not covered under other columns.

(8) A copy of the inspector's report is to be mailed to the District Engineer immediately on completion, and a record copy shall be attached to the Superintendent's semi-annual report.

# EXHIBIT F

LETTER OF ACCEPTANCE BY OR TRANSFER

TO THE STATE RECLAMATION BOARD

COPY COPY

SPKKO-P 824.3 (Sac. Riv. F.C.P.) 13 December 1955

The Reclamation Board
State of California
1215 "O" Street
Sacramento 14, California

Gentlemen:

Reference is made to District Engineer's letter dated 9 November 1958, suggesting a joint inspection of a certain levee section pertaining to the Sacramento River Flood Control Project, for the purpose of transferring it to the jurisdiction of the State of California for operation and maintenance. Reference is also made to the joint inspection of this levee section made on 15 November 1955.

The levee section referred to above is described as follows:

Levee Section No. 477: Easterly levee of the Feather River from the Nicolaus Bridge downstream approximately 2.37 miles, River Mile 9.65 to 7.28.

This levee section was completed on 2 December 1955, under Contract No. DA-04-167-eng-1365 and Drawing No. 4-4-360, and now meets the requirements of the Sacramento River Flood Control Project. The relocation of a section of county road, financed with State Funds, on the southerly side of this levee, from Station 1+00 to 21+36, was also accomplished under said Contract No. DA-04-167-eng-1365. Therefore, said levee section No. 477, together with the waterway bank contiguous thereto, is hereby transferred to the State of California for operation and maintenance.

It is to be noted that levee section No. 477, described above, combined with another section previously transferred, now forms a continuous levee along the left bank of the Feather River from its junction with the Sacramento River to the Nicolaus Bridge, River Mile 0. to 9.65, to be maintained under your responsibility.

EXHIBIT F
Sheet 1 of 3

COPY COPY

SPKKO-P 824.3 (Sac. Riv. F.C.P.) 13 December 1955
The Reclamation Board

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 28 June 1956, 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 supplement to the Standard Operation and Maintenance Manual covering this unit 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 State Engineer.

Sincerely yours,

WM. J. ELY
Col. CP
District Engineer

EXHIBIT F
Sheet 2 of 3

COPY COPY

November 24, 1959

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

Dear Sir:

Reference is made to your letter of November 10, 1959, SPKKO-P, regarding transfer to the State of levee sections on the left bank of the Feather River, Bear River, and Yankee Slough, at the locations listed below:

| Levee Sect. | Location | Mile Points |
|---|---|---|
| 646 | Left Bank, Feather River | 9.92 to 12.55 |
| 647 | Left Bank, Bear River | 0.00 to 3.30 |
| 648 | Left Bank, Yankee Slough | 0.00 to 0.75 |
| 649 | Left Bank, Yankee Slough (Patrol road surfacing only) | 0.75 to 1.95 |

The Reclamation Board at its meeting of November 19, 1959 formally accepted these levee sections for operation and maintenance.

Sincerely yours,

A. N. MURRAY
General Manager and Chief Engineer

EXHIBIT F
Sheet 3 of 3

# 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__) Unit No. 141-2 of the Sacramento River Flood Control Project 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 12.0 on the gage at Wheatland on the Bear River, and 43.0 on the gage at Nicolaus on the Feather River) occurred on the following dates:

| Dates | Maximum Elevation |
|---|---|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

EXHIBIT G
Sheet 1 of 2

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:

| | Labor | Material | Equipment | Overhead | Total |
|---|---|---|---|---|---|
| 1. Inspection | | | | | |
| 2. Maintenance | | | | | |
| 3. Flood fighting operations | | | | | |
| TOTAL | | | | | |

Respectfully submitted,

_____
Superintendent of Works

EXHIBIT G
Sheet 2 of 2

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

UNIT NO. 141 - PART NO. 2

EAST LEVEE OF FEATHER RIVER AND
SOUTH LEVEE OF BEAR RIVER

REVISIONS OR ADDITIONS

| ADDITIONS | DATE |
|---|---|
| *Paragraph 1-04 g. ------ add Contract No. 64-33 | Oct. 1964 |
| EXHIBIT B ---------- add Drawing No. 4-4-542 | Oct. 1964 |
| EXHIBIT F ---------- add copy of letter of acceptance dated 7 January 1964 | Oct. 1964 |

*This work was performed under the Sacramento River Bank Protection Project authorized by the Flood Control Act of 14 July 1960, Eighty-sixth Congress, Second Session, Senate Document No. 103.

UNIT NO. 141 - PART NO. 2

1-04.

g. Bank protection on the left bank of the Feather River (Contract No. 7) was placed under Contract No. DA-04-167-CIVENG-64-[illegible] by H. Earl Parker, Inc. during the period from 12 September 1963 to 10 December 1963, Specification No. 2985, Drawing No. 4-4-542.

EXHIBIT B

| File No. | Title |
|---|---|
| 4-4-542 | Bank Protection Left Bank Feather River Mile 6.7 and Right Bank Elder Creek, in 4 sheets. |

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THE RECLAMATION BOARD

January 7, 1964

Refer to: 7001.60.401
4130.60.401

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

Dear Sir:

Reference is made to your letter of December 6, 1963, concerning transfer to the State of California of bank protection work on the Sacramento River Bank Protection Project, Contract 7, Left Bank Feather River at Mile 6.7 in the vicinity of Nicholaus in accordance with Specification No. 2985.

The Reclamation Board, at its meeting of January 3, 1964, formally accepted the above referred to bank protection work for operation and maintenance.

Sincerely yours,

A. E. McCOLLAM /s/
A. E. McCOLLAM
General Manager

EXHIBIT

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

UNIT NO. 141 - PART NO. 1

EAST LEVEE OF FEATHER RIVER FROM
BEAR RIVER TO NATOMAS CROSS CANAL
AND SOUTH LEVEE OF BEAR RIVER
AND BOTH LEVEES OF YANKEE SLOUGH

REVISIONS OR ADDITIONS

| ADDITIONS | DATE |
|---|---|
| * Paragraph 1-04 e. ------ add Contract No. 66-28 | July 1966 |
| EXHIBIT B ---------- add Drawing No. 50-4-4118 | July 1966 |
| EXHIBIT F ---------- add letter of acceptance dated 11 January 1966 | July 1966 |

* This work was performed under the Sacramento River Bank Protection Project authorized by the Flood Control Act of 14 July 1960, Eighty-Sixth Congress, Second Session, Senate Document No. 103.

UNIT NO. 141 - PART NO. 1

1-04.

e. Bank protection on the left bank of the Feather River was accomplished under Contract No. DA-04-167-CIVENG-66-28 by A. Teichert & Son, Inc. during the period from 19 August 1965 to 10 December 1965. Specification No. 3283, Drawing No. 50-4-4118, (Contract No. 14)

EXHIBIT B

| File No. | Title |
|---|---|
| 50-4-4118 | Bank protection various locations left bank Sacramento and American Rivers, right and left banks Feather River and Elder Creek, in 12 sheets. |

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THE RECLAMATION BOARD
State of California
January 11, 1966

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

Dear Sir:

Reference is made to your letter of November 29, 1965, concerning transfer to the State of California of the Sacramento River Bank Protection Project, Contract 14, ten sites between Sacramento and Gerber, in accordance with Specification No. 3283.

The Reclamation Board, at its meeting of January 6, 1966, formally accepted the above referred to work for operation and maintenance.

Sincerely yours,

/s/ A. E. McCollam
A. E. McCOLLAM
General Manager

EXHIBIT F

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

UNIT NO. 141 - PART NO. 2

EAST LEVEE OF FEATHER RIVER AND
SOUTH LEVEE OF BEAR RIVER

| REVISIONS OR ADDITIONS | DATE |
|---|---|
| Paragraph 1-04 - - - Add subparagraph h. | September 1977 |
| Paragraph 2-05 - - - Add subparagraph a. (page 9) | September 1977 |
| EXHIBIT B - - - - - - - Add Drawing No. 50-4-4892 | September 1977 |
| EXHIBIT F - - - - - - - Add copy of letter of acceptance dated 18 August 1976 | September 1977 |

SECTION I

RD No 1001

1-04.

h. Bank protection and selective clearing on the left bank of the Bear River at Site Mile 2.6 (Unit No. 27) was accomplished under Contract No. DACW05-75-C-0085 by Luhr Bros. Inc. during the period from 21 July 1975 to 15 October 1976. Specification No. 4461, Drawing No. 50-4-4892.

EXHIBIT B

| File No. | Title |
|---|---|
| 50-4-4892 | Bank Protection, Various Locations on Sacramento and Bear Rivers and Elder Creek, in 20 sheets. |

RECEIVED
SEP 16 1977
Flood Control Development Branch
Division of Resources Development
DEPARTMENT OF WATER RESOURCES

## TABLE OF CONTENTS

### SECTION I - INTRODUCTION


| Paragraph | Subject | Page |
|---|---|---|
| 1-01 | Location | 1 |
| 1-02 | Project Works | 1 |
| 1-03 | Protection Provided | 1 |
| 1-04 | Construction Data and Contractor | 2 |
| 1-05 | Flood Flows | 2 |
| 1-06 | Assurances Provided by Local Interests | 3 |
| 1-07 | Acceptance by or Transfer to the State Reclamation Board | 3 |
| 1-08 | Inspection Procedure | 3 |
| | **SECTION II - FEATURES OF THE PROJECT SUBJECT TO FLOOD CONTROL REGULATIONS** | |
| 2-01 | Levees | 6 |
| 2-02 | Drainage and Irrigation Structures | 6 |
| 2-03 | Channels | 7 |
| 2-04 | Miscellaneous Facilities | 8 |
| 2-05 | Environment Protection | 9 * |
| | **SECTION III - REPAIR OF DAMAGE TO PROJECT WORKS AND METHODS OF COMBATING FLOOD CONDITIONS** | |
| 3-01 | Repair of Damage | 10 |
| 3-02 | Applicable Methods of Combating Floods | 10 |




*(Added Sep 1977)

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) Suggested Check Lists - paragraph 7-03 of the Standard Manual.

(3) Operation - paragraph 7-04 of the Standard Manual.

2-05. Environment Protection.

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.



*(Revised Sep 1977)

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THE RECLAMATION BOARD
STATE OF CALIFORNIA

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August 18, 1

District Engineer
Sacramento District
U. S. Army Corps of Engineers
650 Capitol Mall
Sacramento, CA 95814

Dear Sir:

The Reclamation Board at its regular meeting of August 13, 1976, formally accepted from the District Engineer the completed flood control work on a portion of Unit No. 27 of the Sacramento River Bank Protection Project. The flood control work was transferred to the State of California by your letter of August 3, 1976.

The flood control work consisted of selective clearing, levee ba sloping, placement of stone bank protection, and such miscellane work as necessary to complete the construction at Sites Miles 2. Right Bank and 3.83 Left Bank, Elder Creek, Site Mile 2.6 Left B Bear River and Sites Miles 173.8, 174.4 and 177.4 Right Bank, Sacramento River.

The work was constructed in a workmanlike manner and in conforma with Drawing No. 50-4-4892, Specification No. 4461, and Contract No. DACW 05-75-C-0085, insofar as could be determined visually.

Sincerely,

/s/ John F. Wright
for PAUL L. CLIFTON
General Manager