
**OPERATION AND MAINTENANCE
MANUAL**

**McCLURE CREEK
TEHAMA COUNTY, CALIFORNIA**

CLEARED FLOODWAY



**DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA**

CORPS OF ENGINEERS

U. S. ARMY

OPERATION AND MAINTENANCE MANUAL

MCCLURE CREEK, TEHAMA COUNTY

CLEARED FLOODWAY

U. S. ARMY ENGINEER DISTRICT
Corps of Engineers
Sacramento, California
May 73

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OPERATION AND MAINTENANCE MANUAL
McCLURE CREEK, TEHAMA COUNTY

CLEARED FLOODWAY

SECTION I

INTRODUCTION

1-01. Authorization. The flood-control improvement covered by this manual is a part of channel improvement on McClure Creek authorized by Section 2 of the Flood Control Act of 1937 as amended by Section 208 of the 1954 Flood Control Act.

1-02. Location. The McClure Creek Channel Clearing Project, as covered by this manual, is located in Tehama County. The clearing performed constitutes that part of the waterway of McClure Creek in the reach from a point about 0.7 mile downstream of Road 99W and to a point of about 1.0 mile upstream from Road 99W. The area is generally as shown on the Location Map, EXHIBIT A-1.

1-03. Description of the project works. The works covered by this manual consist of channel clearing and snagging of McClure Creek. The channel was cleared of all brush and floatable debris to a maximum width of 50 feet in an 8,700-foot reach. Any trees necessitating removal from within the channel had trunk diameters of less than 10 inches.

1-04. Construction Data and Contractor. Clearing necessary to bring the waterway area of McClure Creek to project standards in the reach described above was accomplished under the Channel Improvement Project for McClure Creek by Frank J. Fuller, Contract No. DACW05-72-C-0041 during the period from 16 November 1971 to 7 December 1971, Specification 1014-C, Drawing No. 50-6-4691, and by Gravelle & Gravelle Contract No. DACW05-73-0042, during the period from 16 October 1972 to 12 December 1972, Specification 4314, Drawing No. 50-6-4780.

SECTION II

LOCAL COOPERATION REQUIREMENTS

2-01. Requirements of Local Cooperation. Pursuant to the provisions of Section 205 of the 1948 Flood Control Act, as amended, local interests are required to furnish all lands, easements, rights-of-way, and relocations necessary for construction and subsequent maintenance and operation of the project works; to hold and save the United States free from damages; to operate and maintain the completed works at their own expense in accordance with prescribed rules and regulations; and to prevent future encroachment which might interfere with proper functioning of the project for flood control. Thus, the responsibilities to be fulfilled by local interests include the "a-b-c" requirements (i.e., those listed above) normally specified for local protection projects of the type described herein.

2-02. Assurances Provided by Local Interests. Section 12657 of the State Water Code states:

"12657. Except as otherwise provided in Chapters 1 and 2 of this part, the Reclamation Board shall give assurances satisfactory to the Secretary of Army that local cooperation required by Section 3 of the Act of Congress approved December 22, 1944 (Public, numbered 534, Seventy-eighth Congress, Second Session), and Section 2 of the Act of Congress approved August 18, 1941 (Public, numbered 228, Seventy-eighth Congress, First Session), will be furnished by the State in connection with the flood control projects authorized and adopted in Sections 12648, 12650, 12651, 12652, 12654 and 12656.5 and on any flood control projects on any stream flowing into or in the Sacramento Valley or in the San Joaquin Valley hereafter approved and authorized by Congress."

2-03. Acceptance by the State Reclamation Board. Responsibility for operating and maintaining the cleared portion of McClure Creek was officially accepted by the Reclamation Board of the State of California on 15 December 1972 as shown on the copy of the letter of acceptance dated 18 December 1972, see EXHIBIT D.

SECTION III

MAINTENANCE AND OPERATION - GENERAL PROCEDURE

3-01. Reference to Approved Regulations. This manual is submitted in accordance with provisions of Title 33 - Navigation and Navigable Waters, Chapter II, Corps of Engineers, Department of the Army, Part 208 - Flood Control Regulations, Maintenance and Operation of Flood Control Works, as of 1 January 1962, a copy of which is included as EXHIBIT A, Sheets 1 and 2.

3-02. Intent of Regulations. The general intent of the regulations approved by the Secretary of the Army is stated in paragraph 208.10(a)(1) as follows: "The structures and facilities constructed by the United States for local flood protection shall be continuously maintained in such a manner and operated at such times and for such periods as may be necessary to obtain the maximum benefits."

3-03. Purpose of this Manual. In view of the large number of local flood protection projects authorized by Congress and the repetitious nature of regulations to govern maintenance and operation of each individual project, and in order that local interests may be fully aware of the extent of the obligations assumed by them in furnishing assurances of local cooperation for projects to be constructed in the future, the general regulations described above were established by the Secretary of the Army. The general regulations approved by the Secretary of the Army, August 1944, were intended to be sufficiently broad in scope and general in nature as to be applicable to all flood-protection-projects for which such regulations are required by law.

Section 208.10(a)(10) of the regulations read as follows: "The Department of the Army will furnish local interests with an Operation and Maintenance Manual for each completed project, or separate useful part thereof, to assist them in carrying out their obligations under this part." This manual has, therefore, been prepared to furnish local interests with information on the project works and advise as to the details of the operation and maintenance requirements applicable to this particular project, to state procedure required by the Department of the Army, and to indicate satisfactory methods of flood-fighting operations and emergency repairs. The project works are to be maintained and operated in accordance with the Flood Control Regulations referred to above and interpretations thereof contained herein.

3-04. Environment Protection. It is the responsibility of the maintaining agency to comply with all State and Federal laws concerning environmental protection as related to any proposed maintenance work.

SECTION IV

FEATURES OF THE PROJECT SUBJECT TO FLOOD CONTROL REGULATIONS

4-01. Channel.

a. General. The channels within this project area are as described in paragraph 1-02 which covers the cleared channel of McClure Creek from a point about 0.7 mile downstream from Road 99W to a point about 1 mile upstream from Road 99W. The channel widths vary and are as shown on the drawings of EXHIBIT B. The maintenance and operation of the channel within this unit shall be limited to flood-control requirements as referred to below. In general, the channels shall be maintained to the approximate cleared condition that existed after completion of the contracts listed in paragraph 1-04 of this manual. The channels shall be maintained annually, or as required, by clearing all dense growth that has or will have a detrimental effect on the project works by restricting the passage of floodflows. Healthy large diameter trees left standing after completion of the contract listed in paragraph 1-04 shall not be removed during normal maintenance operations. All cleared floatable debris shall be burned to ashes or removed outside the project area prior to 1 November of each year.

b. For pertinent requirements of the Code of Federal Regulations see paragraph 208.10(g), EXHIBIT A and for other requirements see checklist, EXHIBIT C of this manual. Inclosed as EXHIBIT F are photographs of the channel taken at varying intervals showing the condition of the stream after completion of the project work. It shall be the responsibility of the maintaining agency to maintain the channel floodway to the approximate condition shown in the photographs.

SECTION V

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

5-01. Repair of Damage. In the event excessive amounts of debris are deposited in the project area, whether due to flood conditions or other causes, and which may be beyond the capability of local interests to remove, the Superintendent (local representative appointed by the sponsoring agency) will contact a representative of the Department of Water Resources, State of California, who coordinates maintenance of project works on the Sacramento River Flood Control Project. The State representative will give assistance or advice, or will determine appropriate action to be taken.

5-02. Applicable methods of Combating Floods. For applicable methods of combating flood conditions, reference is made to paragraph 208.10(g)(2) of the Flood Control Regulations, EXHIBIT A.

EXHIBIT A

FLOOD CONTROL REGULATIONS

**TITLE 33 - NAVIGATION AND
NAVIGABLE WATERS**

**Chapter II - Corps of Engineers,
Department of the Army**

PART 208 - FLOOD CONTROL REGULATIONS

AUTHORITY: § 208.10 issued under Sec. 7, 58 Stat. 890; 33 U.S.C. 709.

§ 208.10 *Local flood protection works; maintenance and operation of structures and facilities - (a) General.* (1) The structures and facilities constructed by the United States for local flood protection shall be continuously maintained in such a manner and operated at such times and for such periods as may be necessary to obtain the maximum benefits.

(2) The State, political subdivision thereof, or other responsible local agency, which furnished assurance that it will maintain and operate flood control works in accordance with regulations prescribed by the Secretary of the Army, as required by law, shall appoint a permanent committee consisting of or headed by an official hereinafter called the "Superintendent," who shall be responsible for the development and maintenance of, and directly in charge of, an organization responsible for the efficient operation and maintenance of all of the structures and facilities during flood periods and for continuous inspection and maintenance of the project works during periods of low water, all without cost to the United States.

(3) A reserve supply of materials needed during a flood emergency shall be kept on hand at all times.

(4) No encroachment or trespass which will adversely affect the efficient operation or maintenance of the project works shall be permitted upon the rights-of-way for the protective facilities.

(5) No improvement shall be passed over, under, or through the walls, levees, improved channels or floodways, nor shall any excavation or construction be permitted within the limits of the project right-of-way, nor shall any change be made in any feature of the works without prior determination by the District Engineer of the Department of the Army or his authorized representative that such improvement, excavation, construction, or alteration will not adversely affect the functioning of the protective facilities. Such improvements or alterations as may be found to be desirable and permissible under the above determination shall be constructed in accordance with standard engineering practice. Advice regarding the effect of proposed improvements or alterations on the functioning of the project and information concerning methods of construction acceptable under standard engineering practice shall be obtained from the District Engineer or, if otherwise obtained, shall be submitted for his approval. Drawings or prints showing such improvements or alterations as finally constructed shall be furnished the District Engineer after completion of the work.

(6) It shall be the duty of the Superintendent to submit a semiannual report to the District Engineer covering inspection, maintenance, and operation of the protective works.

(7) The District Engineer or his authorized representatives shall have ac-

cess at all times to all portions of the protective works.

(8) Maintenance measures or repairs which the District Engineer deems necessary shall be promptly taken or made.

(9) Appropriate measures shall be taken by local authorities to insure that the activities of all local organizations operating public or private facilities connected with the protective works are coordinated with those of the Superintendent's organization during flood periods.

(10) The Department of the Army will furnish local interests with an Operation and Maintenance Manual for each completed project, or separate useful part thereof, to assist them in carrying out their obligations under this part.

(b) *Levees - (1) Maintenance.* The Superintendent shall provide at all times such maintenance as may be required to insure serviceability of the structures in time of flood. Measures shall be taken to promote the growth of sod, exterminate burrowing animals, and to provide for routine mowing of the grass and weeds, removal of wild growth and drift deposits, and repair of damage caused by erosion or other forces. Where practicable, measures shall be taken to retard bank erosion by planting of willows or other suitable growth on areas riverward of the levees. Periodic inspections shall be made by the Superintendent to insure that the above maintenance measures are being effectively carried out and, further, to be certain that:

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

(ii) No caving has occurred on either the land side or the river side of the levee which might affect the stability of the levee section;

(iii) No seepage, saturated areas, or sand boils are occurring;

(iv) Toe drainage systems and pressure relief wells are in good working condition, and that such facilities are not becoming clogged;

(v) Drains through the levees and gates on said drains are in good working condition;

(vi) No revetment work or riprap has been displaced, washed out, or removed;

(vii) No action is being taken, such as burning grass and weeds during inappropriate seasons, which will retard or destroy the growth of sod;

(viii) Access roads to and on the levee are being properly maintained;

(ix) Cattle guards and gates are in good condition;

(x) Crown of levee is shaped so as to drain readily, and roadway thereon, if any, is well shaped and maintained;

(xi) There is no unauthorized grazing or vehicular traffic on the levees;

(xii) Encroachments are not being made on the levee right-of-way which might endanger the structure or hinder its proper and efficient functioning during times of emergency.

Such inspections shall be made immediately prior to the beginning of the flood season; immediately following each major high water period, and otherwise at intervals not exceeding 90 days; and such intermediate times as may be necessary to insure the best possible care of the levee. Immediate steps will be taken to correct dangerous conditions disclosed by such inspections. Regular maintenance repair measures shall be accom-

plished during the appropriate season as scheduled by the Superintendent.

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

(i) There are no indications of slides or sloughs developing;

(ii) Wave wash or scouring action is not occurring;

(iii) No low reaches of levee exist which may be overtopped;

(iv) No other conditions exist which might endanger the structure.

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

(c) *Flood walls - (1) Maintenance.* Periodic inspections shall be made by the Superintendent to be certain that:

(i) No seepage, saturated areas, or sand boils are occurring;

(ii) No undue settlement has occurred which affects the stability of the wall or its water tightness;

(iii) No trees exist, the roots of which might extend under the wall and offer accelerated seepage paths;

(iv) The concrete has not undergone cracking, chipping, or breaking to an extent which might affect the stability of the wall or its water tightness;

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

(vi) Care is being exercised to prevent accumulation of trash and debris adjacent to walls, and to insure that no fires are being built near them;

(vii) No bank caving conditions exist riverward of the wall which might endanger its stability;

(viii) Toe drainage systems and pressure relief wells are in good working condition, and that such facilities are not becoming clogged.

Such inspections shall be made immediately prior to the beginning of the flood season, immediately following each major high water period, and otherwise at intervals not exceeding 90 days. Measures to eliminate encroachments and effect repairs found necessary by such inspections shall be undertaken immediately. All repairs shall be accomplished by methods acceptable in standard engineering practice.

(2) *Operation.* Continuous patrol of the wall shall be maintained during flood periods to locate possible leakage at monolith joints or seepage underneath the wall. Floating plant or boats will not be allowed to lie against or tie up to the wall. Should it become necessary during a flood emergency to pass anchor cables over the wall, adequate measures shall be taken to protect the concrete and construction joints. Immediate steps shall be taken to correct any condition which endangers the stability of the wall.

(d) *Drainage structures - (1) Maintenance.* Adequate measures shall be taken to insure that inlet and outlet channels are kept open and that trash, drift, or debris is not allowed to accumulate near drainage structures. Flap gates and manually operated gates and valves on drainage structures shall be examined, oiled, and trial operated at least once

CODE OF FEDERAL REGULATIONS (EXTRACT)

every 90 days. Where drainage structures are provided with stop log or other emergency closures, the condition of the equipment and its housing shall be inspected regularly and a trial installation of the emergency closure shall be made at least once each year. Periodic inspections shall be made by the Superintendent to be certain that:

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

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

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

(e) *Closure structures—(1) Maintenance.* Closure structures for traffic openings shall be inspected by the Superintendent every 90 days to be certain that:

- (i) No parts are missing;
- (ii) Metal parts are adequately covered with paint;
- (iii) All movable parts are in satisfactory working order;
- (iv) Proper closure can be made promptly when necessary;
- (v) Sufficient materials are on hand for the erection of sand bag closures and that the location of such materials will be readily accessible in times of emergency.

Tools and parts shall not be removed for other use. Trial erections of one or more closure structures shall be made once each year, alternating the structures chosen so that each gate will be erected at least once in each 3-year period. Trial erection of all closure structures shall be made whenever a change is made in key operating personnel. Where railroad operation makes trial erection of a closure structure infeasible, rigorous inspection and drill of operating personnel may be substituted therefor. Trial erection of sand bag closures is not required. Closure materials will be carefully checked prior to and following flood periods, and damaged or missing parts shall be repaired or replaced immediately.

(2) *Operation.* Erection of each movable closure shall be started in sufficient time to permit completion before flood waters reach the top of the structure sill. Information regarding the proper method of erecting each individual closure structure, together with an estimate

of the time required by an experienced crew to complete its erection will be given in the Operation and Maintenance Manual which will be furnished local interests upon completion of the project. Closure structures will be inspected frequently during flood periods to ascertain that no undue leakage is occurring and that drains provided to care for ordinary leakage are functioning properly. Boats or floating plant shall not be allowed to tie up to closure structures or to discharge passengers or cargo over them.

(f) *Pumping plants—(1) Maintenance.* Pumping plants shall be inspected by the Superintendent at intervals not to exceed 30 days during flood seasons and 90 days during off-flood seasons to insure that all equipment is in order for instant use. At regular intervals, proper measures shall be taken to provide for cleaning plant, buildings, and equipment, repainting as necessary, and lubricating all machinery. Adequate supplies of lubricants for all types of machines, fuel for gasoline or diesel powered equipment, and flash lights or lanterns for emergency lighting shall be kept on hand at all times. Telephone service shall be maintained at pumping plants. All equipment, including switch gear, transformers, motors, pumps, valves, and gates shall be trial operated and checked at least once every 90 days. Megger tests of all insulation shall be made whenever wiring has been subjected to undue dampness and otherwise at intervals not to exceed one year. A record shall be kept showing the results of such tests. Wiring disclosed to be in an unsatisfactory condition by such tests shall be brought to a satisfactory condition or shall be promptly replaced. Diesel and gasoline engines shall be started at such intervals and allowed to run for such length of time as may be necessary to insure their serviceability in times of emergency. Only skilled electricians and mechanics shall be employed on tests and repairs. Operating personnel for the plant shall be present during tests. Any equipment removed from the station for repair or replacement shall be returned or replaced as soon as practicable and shall be trial operated after reinstallation. Repairs requiring removal of equipment from the plant shall be made during off-flood seasons insofar as practicable.

(2) *Operation.* Competent operators shall be on duty at pumping plants whenever it appears that necessity for pump operation is imminent. The operator shall thoroughly inspect, trial operate, and place in readiness all plant equipment. The operator shall be familiar with the equipment manufacturers' instructions and drawings and with the "Operating Instructions" for each station. The equipment shall be operated in accordance with the above-mentioned "Operating Instructions" and care shall be exercised that proper lubrication is being supplied all equipment, and that no overheating, undue vibration or noise is occurring. Immediately upon final recession of flood waters, the pumping station shall be thoroughly cleaned, pump house sumps flushed, and equipment thoroughly inspected, oiled and greased. A record or log of pumping plant operation shall be kept for each station, a copy of which shall be furnished the District Engineer following each flood.

(g) *Channels and floodways—(1) Maintenance.* Periodic inspections of improved channels and floodways shall be made by the Superintendent to be certain that:

(i) The channel or floodway is clear of debris, weeds, and wild growth;

(ii) The channel or floodway is not being restricted by the depositing of waste materials, building of unauthorized structures or other encroachments;

(iii) The capacity of the channel or floodway is not being reduced by the formation of shoals;

(iv) Banks are not being damaged by rain or wave wash, and that no sloughing of banks has occurred;

(v) Riprap sections and deflection dikes and walls are in good condition;

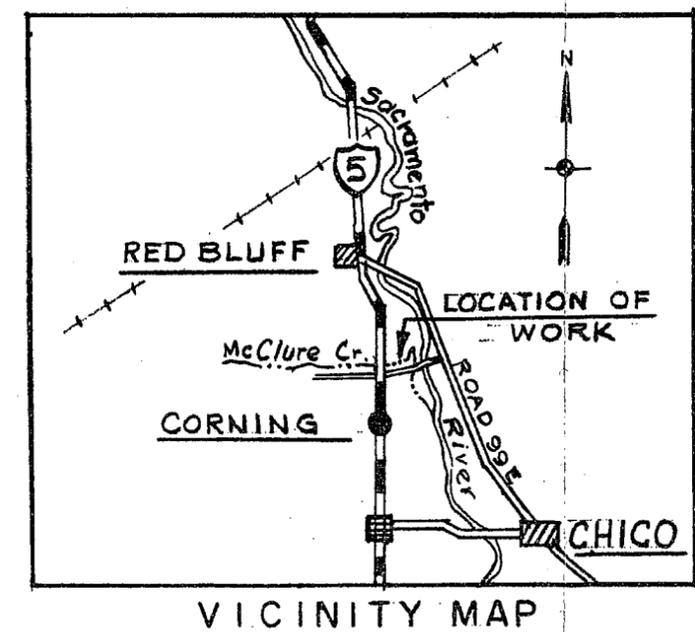
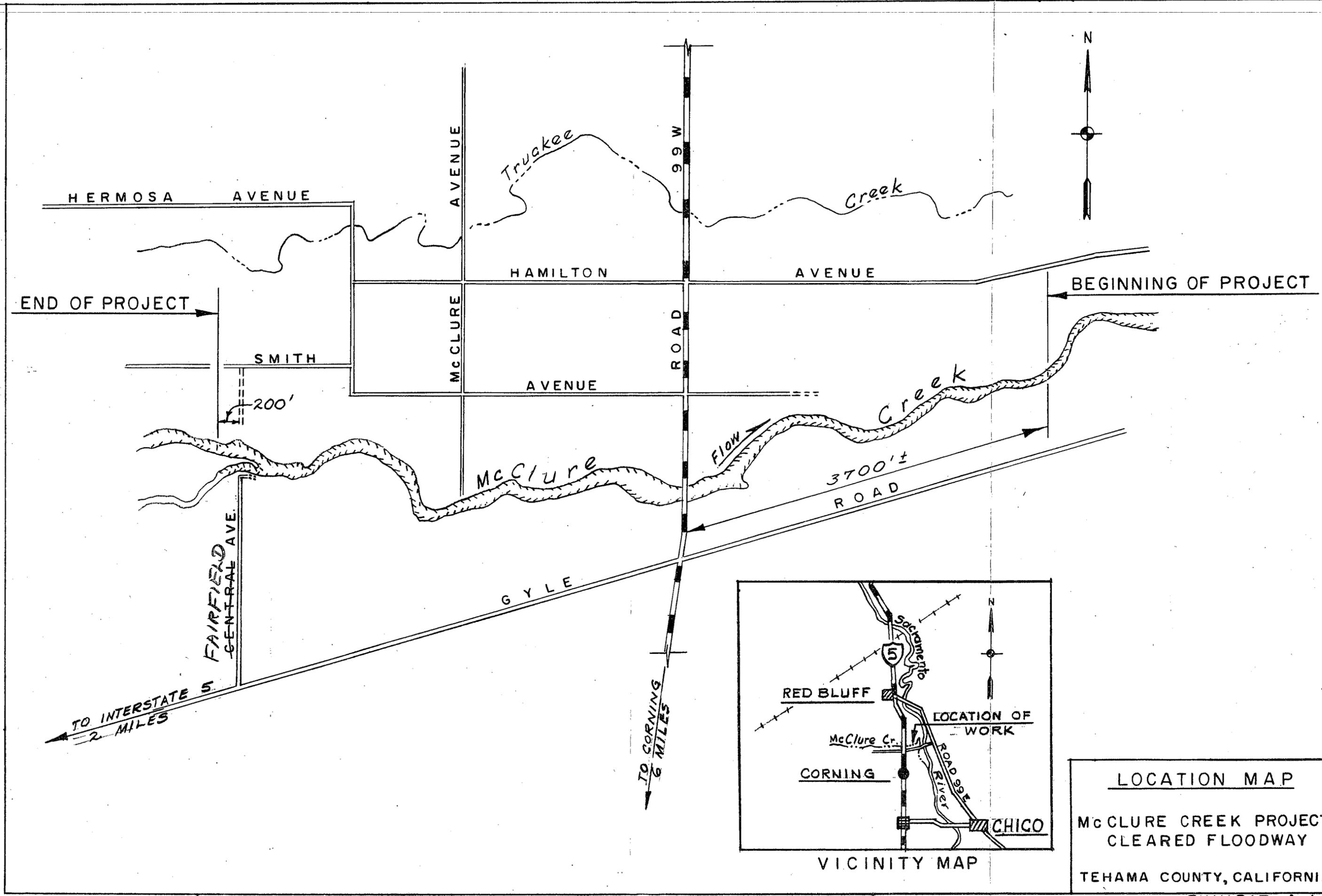
(vi) Approach and egress channels adjacent to the improved channel or floodway are sufficiently clear of obstructions and debris to permit proper functioning of the project works.

Such inspections shall be made prior to the beginning of the flood season and otherwise at intervals not to exceed 90 days. Immediate steps will be taken to remedy any adverse conditions disclosed by such inspections. Measures will be taken by the Superintendent to promote the growth of grass on bank slopes and earth deflection dikes. The Superintendent shall provide for periodic repair and cleaning of debris basins, check dams, and related structures as may be necessary.

(2) *Operation.* Both banks of the channel shall be patrolled during periods of high water, and measures shall be taken to protect those reaches being attacked by the current or by wave wash. Appropriate measures shall be taken to prevent the formation of jams of ice or debris. Large objects which become lodged against the bank shall be removed. The improved channel or floodway shall be thoroughly inspected immediately following each major high water period. As soon as practicable thereafter, all snags and other debris shall be removed and all damage to banks, riprap, deflection dikes and walls, drainage outlets, or other flood control structures repaired.

(h) *Miscellaneous facilities—(1) Maintenance.* Miscellaneous structures and facilities constructed as a part of the protective works and other structures and facilities which function as a part of, or affect the efficient functioning of the protective works, shall be periodically inspected by the Superintendent and appropriate maintenance measures taken. Damaged or unserviceable parts shall be repaired or replaced without delay. Areas used for ponding in connection with pumping plants or for temporary storage of interior run-off during flood periods shall not be allowed to become filled with silt, debris, or dumped material. The Superintendent shall take proper steps to prevent restriction of bridge openings and, where practicable, shall provide for temporary raising during floods of bridges which restrict channel capacities during high flows.

(2) *Operation.* Miscellaneous facilities shall be operated to prevent or reduce flooding during periods of high water. Those facilities constructed as a part of the protective works shall not be used for purposes other than flood protection without approval of the District Engineer unless designed therefor. (Sec. 3, 49 Stat. 1571, as amended; 33 U.S.C. 701C) [9 F.R. 9999, Aug. 17, 1944; 9 F.R. 10203, Aug. 22, 1944]



LOCATION MAP
 Mc CLURE CREEK PROJECT
 CLEARED FLOODWAY
 TEHAMA COUNTY, CALIFORNIA
 EXHIBIT A-1

EXHIBIT B

"AS CONSTRUCTED"

DRAWINGS

File No.

Title

50-6-4691

Channel Improvement - McClure Creek, Tehama County,
in one sheet

50-6-4780

Channel Improvement - McClure Creek, Tehama County,
in one sheet

EXHIBIT B

EXHIBIT C

CHECKLISTS OF CHANNELS

CHECKLIST

CHANNEL AND RIGHT-OF-WAY

McCLURE CREEK
CLEARED FLOODWAY

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 low water crossings and access ramps	
(g) Measures taken since last inspection	
(h) Comments	

INSTRUCTIONS FOR COMPLETING SHEET 1, EXHIBIT C

- 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 floodflow 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 cleared channel or above the project area that has come to the attention of the inspector and that might affect the functioning of the project.
- Item (e) Indicate any change in grade or alignment of the channels, either by deposition of sediment or scour, that is noticeable by visual inspection. Estimate amount and extent.
- Item (f) Indicate any change that has taken place in the riprap such as disintegration of the rock, erosion, or movement of the rock. Note the presence of vegetal growth through the riprap.
- Item (g) Note any damage or settlement of the footings of the bridges. Indicate condition of wooden structures and if repainting is required. Indicate condition of bridge approaches, headwalls, and other appurtenances.
- Item (h) Indicate maintenance measures that have been performed since the last inspection and their condition at time of this inspection.
- Item (i) Record opinion, if any, of contributory causes for conditions observed, also any observations not covered under other columns.

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

EXHIBIT D
LETTER OF ACCEPTANCE
BY THE STATE RECLAMATION BOARD

C
O
P
Y

THE RECLAMATION BOARD
STATE OF CALIFORNIA

C
O
P
Y

18 December 1972

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

Refer to: 4130.70.406

Dear Sir:

Reference is made to your letter of December 12, 1972, concerning transfer to the State of California of the Channel Improvement Clearing Project, McClure Creek, Tehama County, in accordance with Specification Nos. 4314 and 1014C.

The Reclamation Board, at its meeting of December 15, 1972, formally accepted the above referred to work for operation and maintenance.

Sincerely yours,

A. E. McCOLLAM
Chief Engineer and
General Manager

EXHIBIT D

EXHIBIT E

SUGGESTED SEMI-ANNUAL REPORT FORM

TO: The District Engineer
Sacramento District
Corps of Engineers
650 Capitol Mall
Sacramento, California 95814

(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__) on the McClure Creek Channel Improvement 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 occurred on the following dates:

<u>Dates</u>	<u>Maximum Elevation at Road 99W Bridge (Estimated)</u>
_____	_____
_____	_____
_____	_____

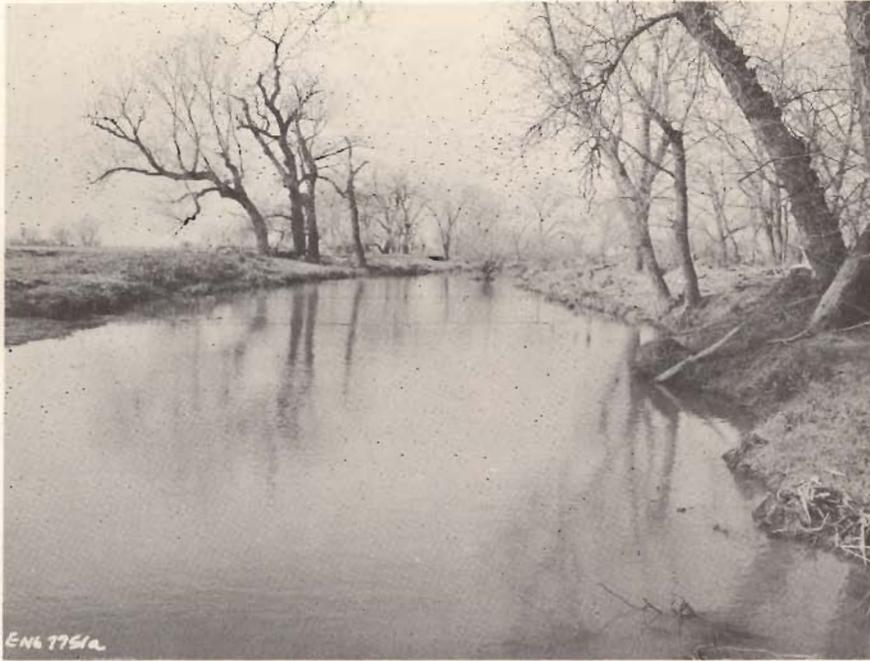
Comments on the behavior of the protective works during such high water periods are as follows:

(Superintendent's log of flood observations)

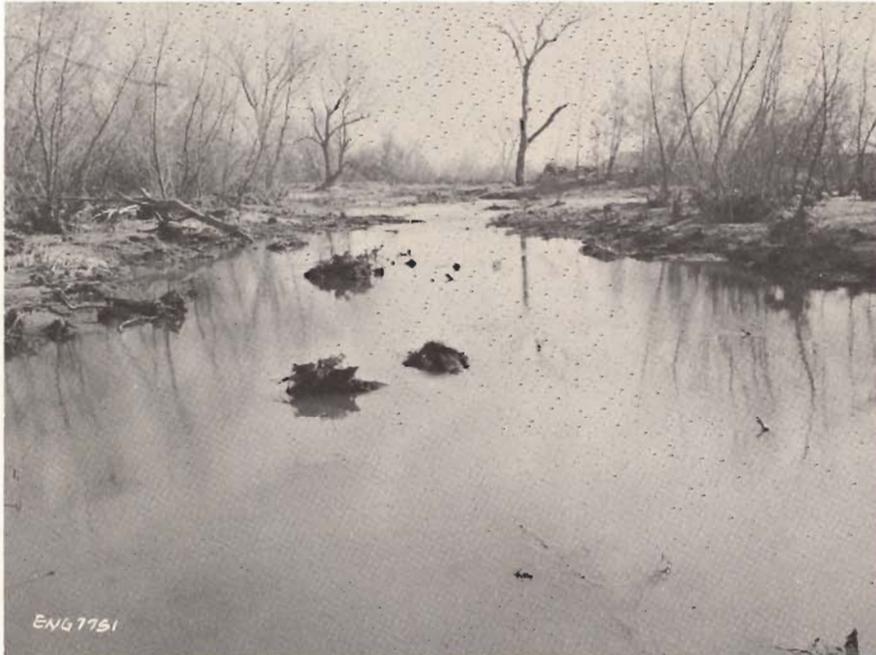
During the high water stages when the water level reached a height of about two feet below the bottom of stringers at Road 99W Bridge or excess thereof (dates) _____, it was necessary to organize and carry out flood operations as follows:

(See Maintenance Manual _____.)

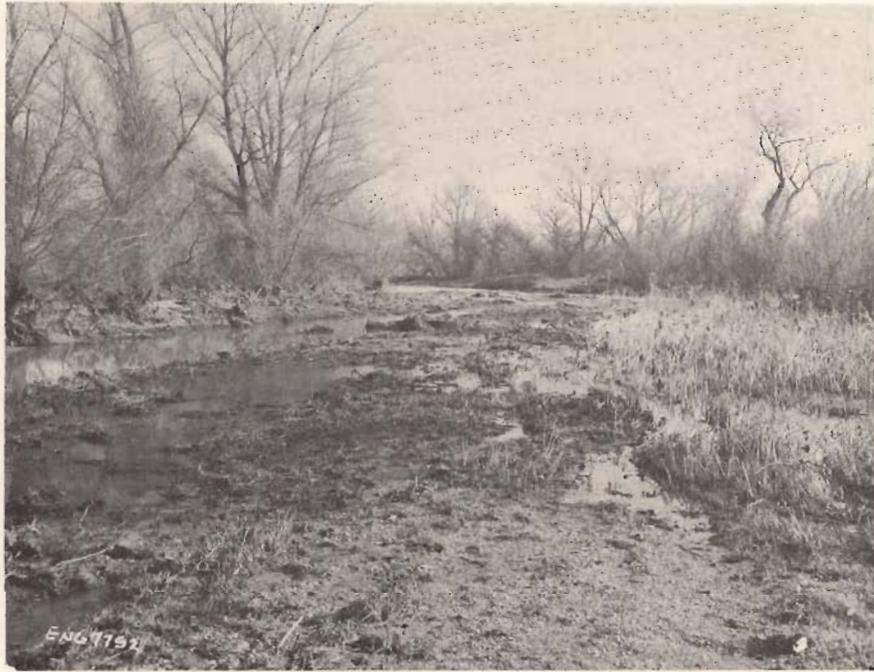
EXHIBIT F
POST PROJECT PHOTOS



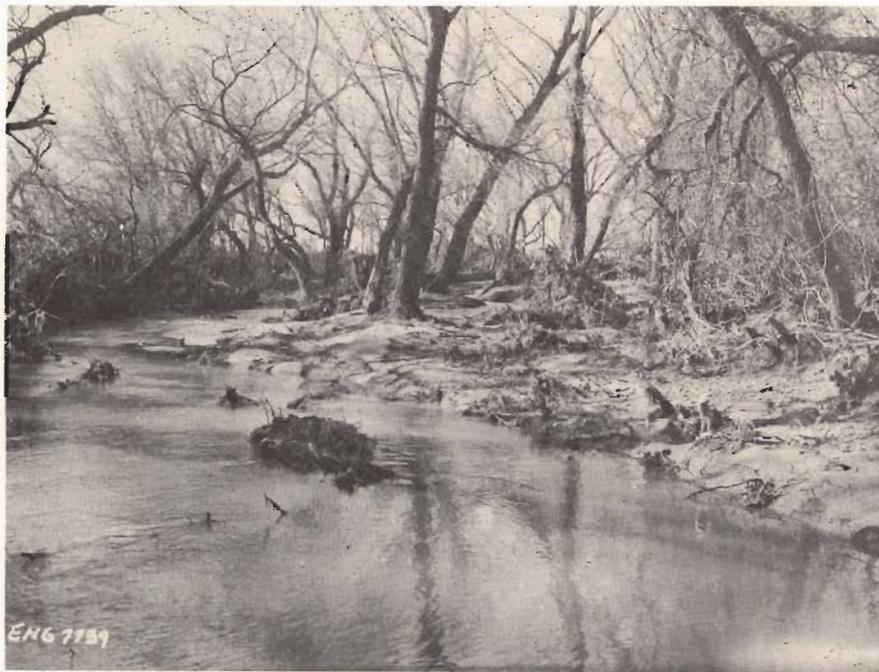
LOOKING UPSTREAM FROM END OF PROJECT
200 FEET ABOVE CENTRAL AVENUE



LOOKING DOWNSTREAM FROM ABOUT END OF PROJECT
200 FEET ABOVE CENTRAL AVENUE



LOOKING DOWNSTREAM FROM ABOUT
600 FEET BELOW CENTRAL AVENUE



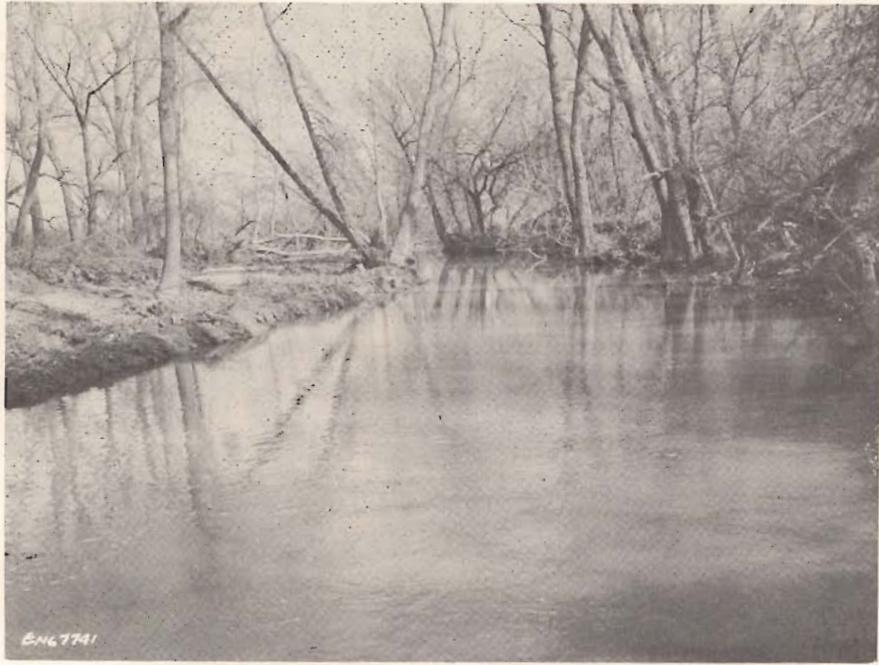
LOOKING UPSTREAM FROM McCLURE AVENUE



LOOKING DOWNSTREAM FROM McCLURE AVENUE



LOOKING UPSTREAM FROM ABOUT
900 FEET BELOW McCLURE AVENUE



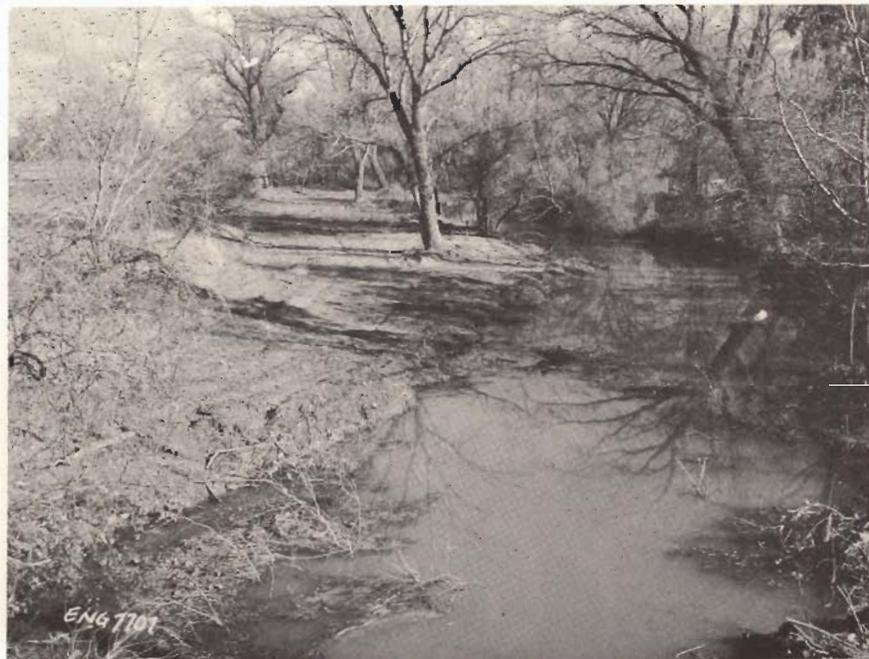
LOOKING DOWNSTREAM FROM ABOUT
1,000 FEET BELOW McCLURE AVENUE



LOOKING DOWNSTREAM AT ROAD 99W BRIDGE
FROM ABOUT 600 FEET ABOVE BRIDGE



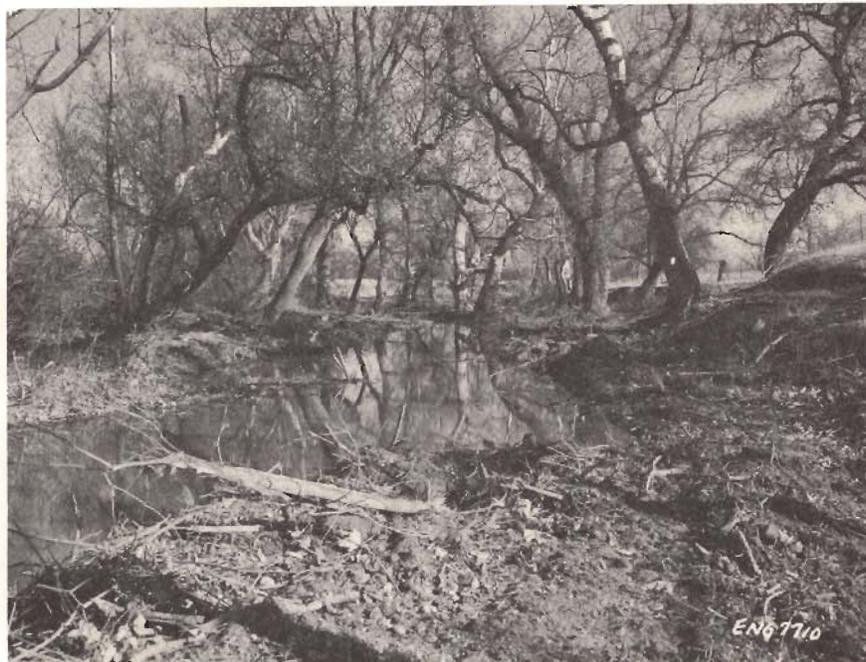
LOOKING UPSTREAM FROM ROAD 99W BRIDGE



LOOKING DOWNSTREAM FROM ROAD 99W BRIDGE



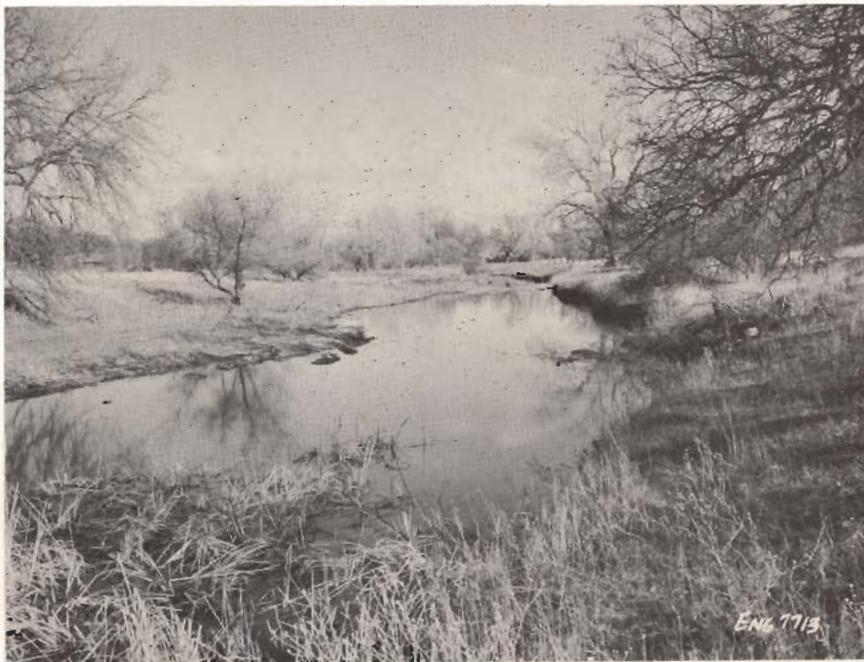
LOOKING UPSTREAM FROM ABOUT 800 FEET
BELOW ROAD 99W BRIDGE, BERM CLEARED



LOOKING DOWNSTREAM FROM ABOUT 900 FEET BELOW 99W BRIDGE



LOOKING DOWNSTREAM FROM ABOUT 1,400 FEET
BELOW ROAD 99W BRIDGE



LOOKING DOWNSTREAM FROM ABOUT 2,700 FEET
BELOW ROAD 99W BRIDGE



LOOKING DOWNSTREAM FROM ABOUT 3,500 FEET
BELOW ROAD 99W BRIDGE (NEAR CENTERLINE OF CHANNEL)



LOOKING DOWNSTREAM FROM ABOUT 4,000 FEET
BELOW ROAD 99W BRIDGE (APPROXIMATE END OF PROJECT)