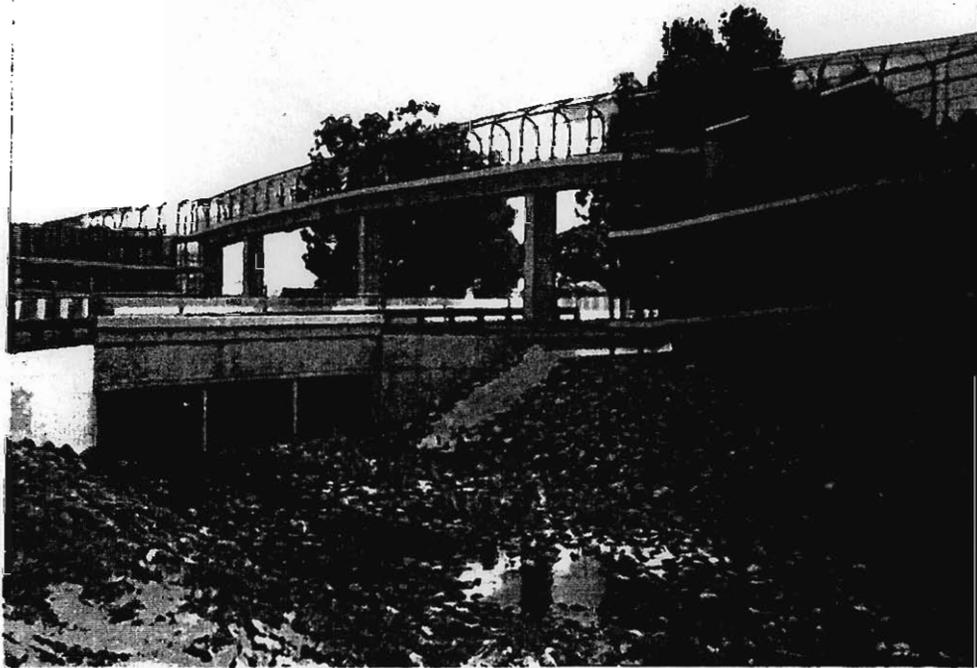


August 1994

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# FAIRFIELD VICINITY STREAMS

Solano County, California



# OPERATION & MAINTENANCE MANUAL



US Army Corps  
of Engineers  
Sacramento District

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# OPERATION AND MAINTENANCE MANUAL

## FAIRFIELD VICINITY STREAMS SOLANO COUNTY, CALIFORNIA

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**EXHIBITS**

A	General Plan	
B	Local Cooperation Agreement (Flood Control) (16 Pages)	
C	Local Cooperation Agreement (Recreation) (19 Pages)	
D	Federal Flood Control Regulations (2 Pages)	
E	Sample Permit for Use of Right-of-Way (3 Sheets)	
F	Suggested Checklist for Inspections (6 Pages)	
G	Suggested Semi-Annual Report Form (2 Sheets)	
H	Suggested Flood-Fighting Methods (8 Plates)	
I	Plans for Berm (4 Pages)	
J	Transfer Letters (16 pages)	

## SECTION I - INTRODUCTION

**1-01. Authorization.** The flood control project for streams in the vicinity of Fairfield, California, was authorized by House and Senate Public Works Committees' resolutions adopted 15 December 1970 and 17 December 1970, respectively under provisions of Section 201 of the Flood Control Act of 1965, substantially in accordance with the report of the Secretary of the Army and the Chief of Engineers in the House Document 91-159. Section 117 of Public Law 99-190, "Further Continuing Appropriations for Fiscal Year 1986" enacted on December 19, 1985 modified the project authorization. This modification is stated in part as follows:

"...the secretary shall include as part of the non-Federal contribution of the project for flood control, Fairfield Vicinity Streams, California, authorized in accordance with Section 201 of the Flood Control Act of 1965, the cost of any work carried out by non-Federal interests on the project after December 31, 1973, and before the date of the enactment of this joint resolution, if the Secretary determines such work is reasonably compatible with the project. Costs and benefits resulting from such work shall continue to be included for the purposes of determining the economic feasibility of the project."

Project authorization was also modified under the Supplemental Appropriations Act of 1987 (PL 100-71).

**1-02. Location.** The project is located in the Fairfield area in Solano County and is divided into five construction phases as follows: Phases I, II, IIA, and III encompass Union Avenue Creek, a small unnamed tributary near Highway 80, Laurel Creek from just south of Gulf Drive to McCoy Creek, and McCoy Creek south to the Buffer Channel; and Phase IV covers approximately 1 mile of LedgeWood Creek from Highway 12 to Peytonia Slough. The project location is indicated on the general plan as shown in EXHIBIT A. References to Phases throughout this manual refer to the construction phases described above. This is a final manual covering the entire project: Phases I, II, IIA, III, IV, the Pedestrian Overcrossing, and the Mitigation Plantings. Draft operation and maintenance manuals for Phases I and II, Phases IIA and III, and Phase IV have been completed and were published in April 1989, May 1991, and December 1992 respectively. This final replaces all drafts.

**1-03. Description of Project.** The project is designed to provide protection from the 100-year recurrence interval flood under future urban conditions along streams in the vicinity of Fairfield and Suisun City, California. The plan includes: unlined, stone protected, and grouted stone protected channel improvements; diversion channels; underground piping; drop structures; recreation facilities consisting of a 10-foot wide asphalt paved hiking trail paralleling most of the channels with a pedestrian bridge crossing Air Base Parkway; and environmental mitigation. The modified channels are trapezoidal in cross-section, with 1V on 2H side slopes, and a maintenance road on either one or both sides of the channel, depending on maintenance requirements and available easements (along most of Laurel Creek the patrol road doubles as a recreation trail). Relocations include modification or construction of nineteen road bridges or culverts, construction of the Southern Pacific Railroad bridge, relocation of the Vallejo Waterline, and relocation of numerous utilities. Also included are construction of appropriate type fences along channel reaches, and beautification features such as trees, shrubs and turf plantings. For a detailed description of the Project refer to Design Memorandum No. 2, Fairfield Vicinity Streams, Fairfield California, U. S. Army Corps of Engineers, Sacramento District, February 1986.

**1-04. Construction Data and Contractor.** Construction required to improve the channels, and build and improve bridges and utility relocations for the Fairfield Vicinity Streams Project was accomplished by the following contractors:

**Phase I - K.J. McGranahan, Santa Cruz, CA**

Contract No. DACW05-86-C-0104

Work Completed June 26, 1987

Spec No. 7980

Dwg. File No. 51-25-1270

**Phase II - Les McDonald Const. Co., Hayward, CA**

Contract No. DACW05-88-C-0014

Work Completed Nov 2, 1988

Spec No. 8097

Dwg. File No. 51-25-1271

**Phase IIA - Evans Brothers Inc., San Ramon, CA**

Contract No. DACW05-90-C-0076

Work Completed Nov 16, 1990

Spec No. 8331

Dwg. File No. 51-25-1281

**Phase III - P-K Construction, Spokane, WA**

Contract No. CACW05-88-C-0062

Work Completed April 18, 1990

Spec No. 8215

Dwg. File No. 51-25-1277

**Phase IV - Dutra Construction, Rio Vista, CA**

Contract No. DACW05-91-C-0073

Work Completed Dec 3, 1991

Spec No. 8500

Dwg. File No. 51-25-1283

**Five Overcrossings (Designed and Constructed by California DWR) - Shasta Constructors**

Spec No. 88-08

**Pintail Drive (Designed and Constructed by California DWR) and Highway 12 over McCoy Ck - Heide and Williams**

Spec No. 87-26.

**Pedestrian Bridge over Air Base Parkway and Repair of Ledgewood Creek Patrol Road - American Paving Company**

Contract No. DACW05-92-C-0072

Construction Completed May 13, 1993

Spec No. 9140

Dwg. File No. 51-02-1287

**Environmental Mitigation Plantings - Circuit Rider Productions**

Contract No. DACW05-92-R-0062

## SECTION II - LOCAL COOPERATION REQUIREMENTS

2-01. **Requirements of Local Cooperation.** Local cooperation requirements are pursuant to the provision of the Flood Control Act of 1965, Section 201 (Public Law 89-298), substantially in accordance with the report of the Secretary of the Army and the Chief of Engineers in House Document No. 91-159, WRDA 86 and P.L. 100-71.

2-02. **Assurances Provided by the State of California.** By the agreement dated 29 May 1986 (EXHIBIT B) the California State Reclamation Board gave assurances that are quoted in part as follows:

A. "The State shall provide, during the period of construction, an amount equal to not less than twenty-five (25) percent of the total Project costs. The amount shall include all lands, easements, rights-of-ways, and utility and facility alterations, and relocations (except railroad bridges) required for construction of the Project..." (pages 2-3 of EXHIBIT B)

B. "Upon completion of Project construction, the Government shall turn the Project over to the State, which shall be solely responsible for operating, maintaining, and rehabilitating the Project in accordance with Article VIII of this Agreement." (page 3 of EXHIBIT B)

C. "The State shall publicize floodplain information in the area concerned and shall provide this information to zoning and other regulatory agencies for their guidance and leadership in preventing unwise development in the floodplain and in adopting such regulations as may be necessary to prevent unwise development in the floodplain and in adopting such regulations as may be necessary to ensure compatibility between future development and protection levels provided by the Project." (pages 3-4 of EXHIBIT B)

D. "The State shall, to the extent of its powers, prescribe and enforce regulations to prevent obstruction of or encroachment on the Project that would reduce the level of protection it affords or that would hinder operation and maintenance." (page 4 of Exhibit B)

E. "The State shall preserve the Ledgewood Creek flow split in the vicinity of Abernathy Road as described in the approved "Supplement 1 to Design Memorandum No. 2. Fairfield Vicinity Streams. California, February 1986" in perpetuity by enactment and enforcement of adequate zoning regulations over these areas prior to commencement of construction, and ensure that the breakout flows do not reenter the Ledgewood Creek system until downstream of California State Highway 12, by either structural or non-structural means." (page 5 of Exhibit B)

2-03. **Transfer to California State Reclamation Board.** A walk-through review for the completed Phase I work was made on 7 July 1987, for Phase II on 1 November 1988, for Phase IIa on 13 November 1990, for Phase III on 30 March 1990, for Phase IV on 25 November 1990, and for the Pedestrian Overcrossing on 13 May 1993. Project works transfer and acceptance dates are listed below, and copies of transfer letters are included as Exhibit J.

Phase I:

Transfer Date:	7 July 1987
Date of Transfer Letter:	9 July 1987
Date of Acceptance Letter:	16 December 1988

Phase II:

Transfer Date: 2 November 1988  
Date of Transfer Letter: 16 November 1988  
Date of Acceptance Letter: 16 December 1988

Phase IIA:

Transfer Date: 16 November 1990  
Date of Transfer Letter: 4 December 1990  
Date of Acceptance Letter: 18 March 1991

Phase III:

Transfer Date: 18 April 1990  
Date of Transfer Letter: 30 April 1990  
Date of Acceptance Letter: 19 July 1990

Phase IV:

Transfer Date: 18 December 1991  
Date of Transfer Letter: 18 December 1991  
Date of Acceptance Letter: 4 February 1992

Mitigation Plantings:

Installation Acceptance Date: 22 April 1993  
End of Maintenance Period: 22 April 1996

Repair of Ledgewood Creek Patrol Road:

Transfer Date: 6 July 1993  
Date of Transfer Letter: 6 July 1993  
Date of Acceptance Letter: 17 September 1993

2-04. Assurances Provided by the City of Fairfield. By the agreement dated 29 May 1986 (EXHIBIT C), the City of Fairfield gave assurances for recreation development that are quoted in part as follows:

A. "Upon completion of the Project construction, the Government shall turn the Project over to the City which shall be solely responsible for operating, maintaining and rehabilitating the Project in accordance with Article XI of this Agreement." (EXHIBIT C, page 3)

B. "Future Development: Neither party is obligated by this Agreement to undertake any future development of the Project, except to the extent this Agreement may be so modified by future supplemental agreements signed by the parties and approved by the Secretary of the Army or his authorized representative." (EXHIBIT C, page 9-10)

C. "The City shall be responsible for operation, maintenance and rehabilitation without cost to the Government, of all facilities developed to support Project recreation opportunities." (EXHIBIT C, page 11-12)

D. "In acting under its right and obligations hereunder, the City agrees to comply with all applicable Federal and State laws and regulations." (EXHIBIT C, page 13)

**2-05. Transfer to City of Fairfield.** Project works transfer and acceptance dates are listed below, and copies of the Transfer Letters are included as Eshibit J.

**Recreation Facilities for Phases II and III:**

Date of Transfer:	7 January 1991
Date of Transfer Letter:	7 January 1991
Date of Acceptance Letter:	None Received

**Pedestrian Bridge:**

Transfer Date:	8 July 1993
Date of Transfer Letter:	8 July 1993
Date of Acceptance Letter:	None Received

## SECTION III - OPERATION & MAINTENANCE

**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 D, pages 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."

The principle mission of the Corps of Engineers, during flood emergencies, is to insure that flood control works are properly operated and maintained and to offer technical advice to enable local interests to obtain maximum flood protection. All other matters become secondary and will yield precedence to the accomplishment of the above-stated mission. During flood periods local interests maintain close liaison with the office of the District Engineer, Corps of Engineers. In the event it is evident that all available county and local resources are insufficient to cope with the situation and the necessity for an emergency proclamation is anticipated, requests for assistance in flood fighting should properly be made directly to the District Engineer. However, it is desired to emphasize that requests for Federal Assistance in flood-fighting should be made only when it is evident that county, State, and/or other local equipment and manpower will be exhausted and local resources are insufficient to cope with the flood emergency situation.

**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 as of 1 January 1962, 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 regulation reads 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 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. Definitions.** The following definitions are used hereinafter.

A. The term "Superintendent" shall be defined to mean the person appointed by local interests to be directly in charge of an organization which will be fully responsible for the continuous inspection,

operation, and maintenance of the project works.

B. The term "District Engineer" shall be defined to mean the District Engineer of the U. S. Army Engineer District, Sacramento, or his authorized representative.

C. The term "right bank" or "left bank" shall be defined to mean the right or left bank or side, respectively, of a stream or channel when facing downstream.

**3-05. General Provisions of Regulations.** In addition to that quoted in Paragraph 3-02 above, the general provision of the Flood Control Regulations, contained in paragraphs 208.10(a)(2) to 208.10(a)(9), both inclusive, are quoted as follows:

"(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 the 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 floodwalls, nor shall any excavation or construction be permitted within the limits of the project rights-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 to 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 access 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 ensure 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."

**3-06. Assistance to be Furnished by the District Engineer.** The District Engineer will:

A. Furnish to the Superintendent "As Constructed" drawings of the project works at the time they are transferred. "As Constructed" drawings are generally modified versions of the contract drawings. The contract drawings are as follows: Phase I, Spec 7980, File 51-25-1270; Phase II, Spec 8097, File 51-25-1271; Phase IIA, Spec 8331, File 51-25-1281; Phase III, Spec 8115, File 51-25-1277; Phase IV, Spec 8500, File 51-25-1283; Pedestrian Bridge, Spec 9140, File 51-02-1287; Mitigation Plantings, Contract No. DACWOS-92-12-0062.

B. Make periodic inspections of the project works and notify the Superintendent of any repairs or maintenance measure which the District Engineer deems necessary in addition to the measures taken by the Superintendent.

C. Submit to the Office, Chief of Engineers, all cases of noncompliance with full details thereof for determination of corrective measures to be taken.

D. Make prior determination that any proposed encroachment, improvement, excavation, or construction within the right-of-way, or alteration of the project works, will not adversely affect the functioning of the protective facilities, and to furnish the Superintendent with an approval thereof in writing.

E. Assist the Superintendent as may be practicable, in his duties of ascertaining storm developments having flood-producing potential, assembling flood-fighting forces and materials, and initiating and carrying out flood-fighting operations.

**3-07. Responsibilities of the Superintendent.** In line with the provisions of the Flood Control Regulations, the general duties of the Superintendent include the following:

A. Training of Key Personnel. Key personnel shall be trained in order that regular maintenance work may be performed efficiently and to insure that unexpected problems related to flood control may be handled in an expeditious and orderly manner. The Superintendent should have available the names, addresses, and telephone numbers of all key personnel and a reasonable number of substitutes. These key people should, in turn, have similar data on all who will assist them in the discharge of their duties. The organization of key personnel should include the following:

(1) An assistant to act in the place of the Superintendent in case of his absence or indisposition.

(2) Sector foremen in sufficient number to lead maintenance patrol work of the levee, inspect the channel, and operate the gate structures properly during flood periods. High qualities of leadership and responsibility are necessary for these positions.

B. Files and Records. The Superintendent shall maintain a file of reports, records, and drawings concerning the project works readily available at all times to the District Engineer.

C. Encroachment or Trespass on Right-of-Way. In accordance with the provisions of Flood Control Regulations 208.10(a)(4), no encroachment or trespass which will adversely affect the efficient operation or maintenance of the project works shall be permitted on the rights-of-way or protective facilities. The Superintendent will therefore have notices posted at conspicuous places along the project right-of-way directing public attention to this regulation. The Superintendent shall arrange for the

prosecution of offenders under local ordinances.

D. Permits for Right-of-Entry for Use of Portion of Right-of-Way. Permits for temporary right-of-entry or use of portions of the right-of-way shall not be issued without prior determination by the State Reclamation Board sufficiently in advance of issuance to permit adequate study, consideration, and determination of conditions to be embodied in the permit document. Executed copies, in triplicate, of the permit document as issued shall be furnished to the State Reclamation Board. See EXHIBIT E for sample permit of right-of-entry, right-of-way or installation of improvements.

E. Permits for Improvements or Construction within the Project Right-of-Way. All requests for permits for construction of any improvements of any nature within the limits of the project right-of-way shall be referred to the District Engineer through the State Reclamation Board for determination that such construction will not adversely affect the stability, safety, and functioning of the protective facilities, and for definition of conditions under which permit should be granted. These conditions will include, among others, the following items:

(1) That all work shall be performed:

a. In accordance with standard engineering practice and in accordance with plans and specifications approved by the District Engineer or his authorized representative; drawings or prints of proposed improvements or alterations to the existing flood control works must be submitted for approval to the State Reclamation Board sufficiently in advance of the proposed construction to permit adequate study and consideration of the work.

b. To the satisfaction of the District Engineer.

(2) After completion of the work, "As Constructed" drawings or prints, in duplicate, showing such improvements as finally constructed shall be furnished to the District Engineer.

F. Coordination of Local Activities. In accordance with the provisions of Flood Control Regulations, paragraph 208.10 (a) (9), the Superintendent will, during periods of flood flow, coordinate the functions of all agencies, both public and private, that are connected with the protective works. Arrangements shall be made with the local law enforcement agencies, street departments, and flood-fighting program; and an outline of this program shall be filed with the District Engineer.

G. Inspection.

(1) For the sake of uniformity, and to the extent practicable, the dates of inspection shall be as follows: 1 November, 1 May, and immediately following each major flood.

(2) The checklists and instructions shown in EXHIBIT F, pages 1 to 6, inclusive, are to be explicitly followed in each inspection to insure that no features of the protective system are overlooked. Check lists locally typed or printed in conformity with sheets 1, 3, and 5, shall have printed on the reverse side the applicable instructions shown on sheets 2, 4, and 6, EXHIBIT F. A carbon copy of the inspector's original field notes as recorded on the check list shall be transmitted to the District Engineer immediately following each inspection, and one copy included as an enclosure to the semi-annual report as provided in paragraph 3-07(i)(1) of this manual.

## H. Maintenance.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations paragraph 208.10(b)(1) are quoted in part as follows:

"(b)(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 ... . Immediate steps will be taken to correct dangerous conditions disclosed by such inspections. Regular maintenance repair measures shall be accomplished during the appropriate season as scheduled by the Superintendent."

(2) Full responsibility for making the repairs and the methods used is placed on the Superintendent, but the experience and facilities of the District Engineer will be available to him for advice and consultation.

(3) All repairs shall be made in accordance with standard engineering practice, to line and grade and in accordance with details shown on the construction drawings for the project works. No change or alterations shall be made in any feature of the project works without prior determinations by the District Engineer that such alteration will not adversely affect the stability and functioning of the protective facilities. Plans and specifications of all changes or alterations that may be proposed by the Superintendent shall be submitted to the District Engineer for investigation and approval before prosecution of the work.

I. Reports. In accordance with the provisions of the Flood Control Regulations, paragraph 208.10(a)(6), the Superintendent shall submit within a 10-day period following 1 December and 1 June of each year, a semi-annual report to the District Engineer covering inspection, maintenance, and operation of the protective works. This report will present a statement of:

- (1) The physical condition of the protective works as summarized from the logs of inspections.
- (2) Flood behavior of the protective works, and flood-fighting activities during the period.
- (3) Prosecutions for encroachment or trespass.
- (4) Permits issued for rights-of-way or use of right-of-way.
- (5) Permits issued for improvements or construction within the project right-of-way.
- (6) Maintenance measures taken; nature, date of construction, and date of removal of temporary repairs; date of permanent repairs.
- (7) Fiscal statement of cost and maintenance and operation for the period.
- (8) It is suggested that photographs showing any areas of concern be included.

A suggested form for submission of the semi-annual report is included as EXHIBIT G, sheets 1 and 2.

## SECTION IV – PROJECT FEATURES SUBJECT TO FLOOD CONTROL REGULATIONS

**4-01. Project Works.** The purpose of this section is to specifically discuss project features of the Fairfield Vicinity Streams project. Project locations and descriptions are described in paragraphs 1-02 and 1-03 respectively, of this manual.

**4-02. Channels and Floodways.** The channels of the Fairfield Vicinity Streams project have been improved by deepening, widening, and some realignments. The improved channels have a trapezoidal section. For further details and locations of stations, see the as-constructed drawings. Regulations regarding inspection, maintenance, and operation of channels and floodways will be found in this section, and Exhibit D, pages 1 and 2.

### A. Inspection.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10(g)(1) is quoted in part as follows:

“(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 ... .”

(2) The purpose of the flood-flow channels inspection is to insure that conditions which affect the channel capacity will remain the same, as far as possible, as those considered in the design assumptions and that no new conditions develop that may affect the stability of the project structures. At each inspection required by paragraph 208.10(g)(1) of the Flood Control Regulations, particular attention will, therefore, be given to the following:

- a. Location, extent, and size of vegetal growth.
- b. Unauthorized operations within the flood-flow channel right-of-way, such as excavations,

c. Rubbish and industrial waste disposal.

d. Changes in the channel bed such as aggradation or degradation, which would interfere with free-flow from side drainage structures or induce local meanders that would scour the banks.

e. Operations of any nature upstream from the project that would affect flow conditions within the limits of the flood control project.

f. Condition of project structure.

(i) Channel walls should be inspected for deviation from alignment and grade; development of cracks and spalls; and mechanical injuries.

(ii) Fencing should be inspected for injuries to posts, fencing or barbed wire; and damage to galvanizing.

(iii) Earth fills should be inspected for settlement; erosion of both slopes; excessive seepage or saturation; and condition of bank protection (concrete or stone blanket).

(iv) Right-of-way should be inspected for presence of dumped refuse, and encroachment or trespass.

(3) No excavation in the channels within the limits of this project will be permitted unless an excavation permit has been approved by the State Reclamation Board.

(4) If any work is done to improve flow conditions in the channels of this project, it should be coordinated with the District Engineer to insure that proper provisions are made for channel alignment and capacity to conform to the existing project.

(5) The intent of these inspections is to disclose all conditions which in any way affect the stability of the structures and their functioning for the control of floods. Each inspection report should note and comment on any repair measures that have been taken since the last inspection. In making these inspections, the check sheets included as EXHIBIT F, shall be explicitly followed.

#### B. Maintenance.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10(g)(1) is quoted in part as follows: "... Immediate steps will be taken to remedy any adverse conditions disclosed by such inspections ."

(2) Shoaling or aggradation at the inlets or outlets of side drainage structures may render them inoperative. It is, therefore, imperative that all drains be kept open and unobstructed at all times.

(3) Dumped rock or other suitable types of protection should be placed at locations found by experience to be critical trouble points, with a view to stabilizing the channel alignment and preserving the general uniformity of the bank lines.

(4) Sediment and debris plugs or other obstructions should be removed from the channel to prevent any tendency for the flows to be deflected within the channel or rise to a higher elevation than they would with the as-built channel. The heavy material likely to accumulate in the new

channel at the mouths of tributaries should be removed to keep the channel clear.

It is recommended that cross-section surveys be taken to determine where and when sediment removal is required. A minimum of two cross-sections should be taken between each overcrossing with a maximum distance between sections of 1000 feet. Additional sections should be taken where sediment is apparently building up or appears to have the tendency to build up. Restoration to the original shape and condition should occur when the sediment area is 30% or more of the freeboard area. The sediment area is defined as the cross-sectional area between the originally built and the higher existing channel ground surface. The freeboard area is the cross-sectional area between the design water surface (as shown on the "as constructed" drawings) and the top of bank. Surveys should be taken yearly and early enough so that maintenance measures may be taken prior to the flood season.

(5) The channel and right-of-way shall be kept reasonably clear of debris, refuse matter, or industrial wastes.

(6) With the exception of areas of mitigation planting, trees, shrubs, tules, cattails, or wild berry vines shall not be permitted to grow in the improved channel. Only annual grasses which lie down during floods may be retained. Vegetation within the right-of-way but outside the improved channel may be retained as long as it does not interfere with or threaten operations or access.

(7) All eroded concrete shall be repaired as soon as any reinforcing steel is exposed or erosion approaches a depth of 4 inches. For this purpose, it is recommended that the repair be made by thoroughly cleaning the surface by sandblasting and building up the section with pneumatically placed Portland cement mortar. All evidence of settlement, uplift or failure of concrete structures shall be referred to the State Reclamation Board for analysis and remedial measures.

(8) All damage to fencing, whether resulting from accidental or willful injuries or from corrosion, shall be promptly repaired with new material in order to maintain satisfactory protection to the public.

#### C. Operation.

Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations paragraph 208.10(g)(2) is quoted in part as follows:

"(g) Channels and Floodways - (2) Operation. Both banks of the channel shall be patrolled during periods of high water... . Appropriate measures shall be taken to prevent the formation of jams... 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...walls, drainage outlets or other flood control structures repaired."

D. Special Considerations for Stone Protection. Due to the fact that some of the banks have been constructed with stone protection, the following special considerations are added:

(1) Where scour, wash settlement or failure of a portion of the originally provided stone protection has been noted, or where inspection indicates that such damage may result during the next flood or high water period, the scour or wash shall be filled with earth free from brush, roots, sod or other unsuitable material and stone shall be replaced to bring the channel back to the design shape and alignment. For permanent repair, the size, gradation, and thickness of stone protection

including filter or grouting shall match the as-constructed drawings as close as possible. In case of emergency when stone is not available, sand bags or bags filled with gravel may be used for temporary repairs.

(2) In the event an inspection reveals that due to scour, settlement or other causes, stone protection on the bank is required beyond the limits of the original construction or in reaches of bank not originally provided with such protection, local interests should provide additional sloping of the bank and stone protection as needed to protect the completed work.

#### 4-03. Drainage and Irrigation Structures.

##### A. Description.

(1) Side drains which empty into the project channels are as follows:

Phase	Creek Or Location	Station	Size of Pipe	Side of Bank	Description
I	McCoy	15+50	24"	Right	Reinforced Concrete Pipe (RCP) With Flap gate
I	McCoy	18+30	72"	Left	RCP
I	McCoy	20+20	24"	Right	RCP
I	McCoy	28+00	24"	Right	RCP
I	McCoy	34+00	30"	Right	RCP
I	McCoy	46+20	42"	Right	Corrugated Metal Pipe (CMP)
I	McCoy	49+30	24"	Left	RCP
I	McCoy	57+60	60"	Left	CMP
I	McCoy	58+50	6"	Left	Plastic. Two side by side.
I	McCoy	60+30	18"	Left	CMP
III	Laurel	1+85	24"	Left	Storm Drain
III	Laurel	3+25	30"	Right	Storm Drain
III	Laurel	3+35	54"	Left	Storm Drain
I	Laurel	4+20	24"	Right	RCP
I	Laurel	12+00	54"	Left	RCP Twin Pipes
III	Laurel	22+70	15"	Right	Asbestos Cement Pipe (ACP)
III	Laurel	25+44	14"	Right	ACP
IIA	Laurel	44+95	1"	Left	Plastic
IIA	Laurel	45+63	4"	Right	Plastic
II	Laurel	53+07	24"	Right	RCP Abandoned and Plugged
II	Laurel	59+82	24"	Left	RCP
II	Laurel	82+72	24"	Left	RCP
II	Laurel	86+95	24"	Left	RCP
II	Laurel	88+08	24"	Right	RCP
II	Laurel	91+74	24"	Left	RCP
II	Laurel	95+20	18"	Left	RCP
III	Union	8+45	8"	Left	Side Drain (SD)
III	Union	12+50	8"	Right	SD
III	Union	13+28	24"	Left	SD
III	Union	15+00	8"	Right	SD
III	Union	17+00	8"	Right	SD
III	Union	25+81	36"	Left	SD
III	Union	30+59	8"	Left	SD
III	Union	33+40	8"	Left	SD
III	Union	42+12	12"	Left	Concrete Storm Drain
III	Union	45+53	54"	Left	RCP
IIA	Swale	20+59	18"	Right	CMP
IIA	Swale	21+80	18"	Right	CMP
IIA	Swale	24+87	18"	Right	CMP
IIA	Stockpile	13+20	24"	Right	SD
IIA	Stockpile	32+30	15"	Left	SD
IV	Ledgewood	33+20	2-66"	Right	RCP
IV	Ledgewood	40+10	18"	Left	CMP
IV	Ledgewood	43+60	18"	Left	CMP
IV	Ledgewood	60+70	36"	Left	CMP
IV	Ledgewood	62+80	none	Right	Alonzo Drain, Drainage Channel

For the location of the approximate stations, see the as-constructed drawings.

(2) Conduits which carry project flows are as follows:

Phase	Station(s)	Size	Description
IIA	0+45	35"	Laurel Diversion Channel low flow outlet
IIA	44+44 to 47+25	6-84"	Laurel Diversion Channel under SPTC Railroad Tracks and Railroad Ave.
III	1+50 (120) to 15+45 (120)	120"	Union Ave. Diversion
III	45+53 (Union) to 30+76 (72)	72"	Unnamed Tributary and Union Ave. Diversion
III	45+53 (Union) to 1+50 (96)	96"	Union Ave. Diversion
Existing	43+53 (Union) to 0+40 (54)	54"	Union Ave Diversion
Existing	0+40 (21) to 0+55 (21)	21"	Union Ave. Diversion
Existing	15+45 (72) to 17+23 (72)	72"	Union Ave. Diversion under Putah South Canal
IIA	68+42 (Swale) to 68+94 (Swale)	48"	Ditch crossing at Unnamed Tributary
IIA	"SD" 0+06.70 to "SD" 10+09.07	36"	Low flow culvert from Laurel Diversion Channel to Laurel Creek

**B. Inspection.**

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10 (d) (1), is quoted as follows:

"(d) Drainage structures - (1) Maintenance. Adequate measures shall be taken to insure that the 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 every 90 days... . 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 structures 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) At each inspection, the following items, if applicable, shall be particularly noted:

- a. Debris or other obstructions to flow.

- b. Condition of pipes and gates.
- c. Damage or settlement of pipe.
- d. Condition of concrete. (cracks, spalls, or erosion)

C. Maintenance.

- (1) All eroded concrete shall be repaired as soon as erosion reaches a depth of 4 inches or any reinforcing steel is exposed. For this purpose it is recommended that the repair be made by thoroughly cleaning the surface by sandblasting and building up the concrete to its original section with pneumatically-placed Portland cement mortar.
- (2) If the inspection shows that the automatic drainage structures have been jammed in an open position by debris or other obstructions, they shall be thoroughly cleaned so that they swing freely to a true closure. If any parts of the gates have been damaged or broken, they shall be repaired or replaced by new parts.

D. Operation.

- (1) Pertinent Regulations of the Code of Federal Regulations. Flood Control Regulation, paragraph 208.10(d)(2) is quoted in part as follows:

"(2) Operation. Whenever high water conditions impend, all gates will be inspected a short time before water reaches the invert of the pipe and objects 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 ... . All drainage structures in the levee 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 conditions."

- (2) The requirements for drainage structures as indicated above shall apply even though levees may not be present. The outlets of side drainage structures inundate at relatively low flood stages. They should, therefore, be inspected at the first sign of a rise in the channel to make certain that the gates are not jammed in an open position and thus allow floodwaters to enter. **As required by U.S. Fish and Wildlife, the gate at the Laurel Creek Diversion Stub shall be closed between 1 November and 15 April.**

4-04. Miscellaneous Facilities.

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

(1) Bridges. The term "bridges" includes all major traffic-bearing overcrossings rebuilt to accommodate the project requirements. The following table is a listing of all bridges and contractors:

Approximate Station	Creek	Location or Description	Agency or Contractor
12+50	McCoy	Hwy 12	Cal Trans/Heide and Williams
34+35	McCoy	Pintail Dr	DWR/Heide and Williams
6+90	Laurel Diversion	Worley Rd	USCE PH II /Les McDonald
21+45	Laurel Diversion	Blossom Rd	DWR/Shasta Construction
45+00	Laurel Diversion	Rail Road Ave	USEC/Evans Brothers
50+10	Laurel Diversion	Matthews Dr	DWR/Heide and Williams
73+30	Laurel Diversion	E. Tabor Ave	USCE PhII/Les McDonald
84+60	Laurel Diversion	Meadowlark Dr	DWR/Heide and Williams
99+30	Laurel Diversion	Nightingale Dr	DWR/Heide and Williams
7+80	Laurel Stub	Sunset Ave	HDR/Heide and Williams
101+38	Laurel Stub	Air Base Parkway	USCE/P-K Construction
27+15	Laurel Stub	Cement Hill Dr	City of Fairfield
5+98	Union Ave	Gulf Drive	USCE/P-K Construction
18+11	Union Ave	Dover Ave	USCE/P-K Construction
35+10	Union Ave	Camrose Ave	USCE/P-K Construction
46+10	Union Ave *	North Texas St	USCE/P-K Construction
1+10	Union Ave *	Orchid St	USCE/P-K Construction
14+05	Union Ave *	Marigold Dr	USCE/P-K Construction
32+60	Ledgewood	Cordelia Road	Solano County
43+40	Ledgewood	SPTC Railroad Tracks	USCE / Dutra Construction

\*Underground Piping Relocation for Union Ave Creek and Unnamed Tributary

(2) Berm. A berm is to be constructed yearly during the month of April in Ledgewood Creek located at Station 58+00. The berm is designed to wash out every year during annual floods, usually between November and March. The purpose of the berm is to impound water in Ledgewood Creek in order to inundate the wetlands upstream of the berm to Highway 12 and along Alonzo Drain.

(3) Drop Structures. One drop structure is located where the Unnamed Tributary enters through the I-80 soundwall at the entrance of the 72 inch Union Avenue Diversion conduit.

(4) Patrol Road/Recreation Facilities. Recreation facilities include a patrol road which doubles as a paved bicycle and pedestrian trail along most of the channel reaches, and a pedestrian bridge spanning Air Base Parkway.

(5) Mitigation Plantings. As a result of construction and maintenance activities of the flood control work, some riparian and in stream habitat has been lost. To compensate for this loss the Corps, in conjunction with the state and local agencies, has undertaken a riparian revegetation planting program to restore, in so far as possible, habitat for listed species, and the natural appearance and related values of the creek banks after construction of the flood control project.

#### B. Inspection and Maintenance.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10(h)(1) is quoted in part as follows:

"208.10(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 replaced without delay..."

(2) Berm. The berm on Ledgewood Creek will have to be rebuilt yearly after 15 April. The project plans should be referred to for the exact dimensions and placement of the berm. In order to preserve mitigation plantings, construction activities are to be limited to inside 50' of the center line of the berm. A gradation curve for the berm is also included in the project plans and should be referred to. Through past experience it was found that the gradation used for the construction of the original berm was too fine, causing the berm to wash-out too quickly. Experimentation should be used in order to determine the correct gradation which prevents premature wash-out. To the extent possible, material washed out in the previous year should be reused in constructing the berm. Exhibit I, page 4 of 4, is the gradation curve for the initial berm construction.

(3) Wetlands Area. There is a seasonal wetlands area located adjacent to Ledgewood Creek. The project was designed to keep the wetlands intact by allowing water from the creek to inundate the area annually. Proper maintenance of the berm (as described above) is required for this to function as designed. A 36" CMP pipe was placed in the east levee to allow flow in and out of the wetlands, depending on the water level. *where is this*

(4) Patrol Road/Bicycle Trail. Bike trail maintenance includes repairing the surface, clearing obstacles, pruning vegetation and maintaining signs. The asphalt paving shall be kept free of potholes, undulations, and alligator cracks. No encroachment should be permitted. There shall be no accumulation of trash or debris throughout the trails. Protective fencing and bollards shall be repaired or replaced as required. Bollards should be checked to insure that locking mechanisms are effective and the bollards themselves are easily removable after locking.

(5) Pedestrian Bridge. The pedestrian bridge over Airbase Parkway is to be inspected at regular intervals not to exceed two years in accordance with the procedures specified in AASHTO's "Manual for Maintenance Inspection of Bridges". Prior to the inspection, a checklist of all of the bridge's major features should be assembled to serve as an inspection aid. The checklist should be updated as necessary as part of the continuing inspection process. Changes in the bridges condition from prior inspections, and any corrective actions and repairs that are required will be documented in a written report. Items inspected should include, but not be limited to the following:

- a. All concrete surfaces are to be checked for unevenness, settlement, cracking, or spalling.
- b. Examine the joints and bearings for thermal movement.
- c. Note the condition of the bearing pads for any flattening or bulging which may indicate overloading.
- d. Investigate the bridge and ramp footings for evidence of significant erosion.
- e. Check the traffic barriers for damage and alignment.
- f. The electrical system including controls, wiring, conduits, and lights shall be inspected.

g. Handrailings are to be examined for corrosion, and the fencing is to be checked for integrity and damage.

(6) Ponding Areas. There are ponding areas (detention basins) and flood plains which are not a part of the Corp's construction project, but must be properly operated and maintained is for the project to function correctly. The McCoy Creek detention basin is located as shown on Exhibit A. There is a floodplain on McCoy Creek downstream from this basin which will remain a flood plain after zoning which restricts development. This floodplain is not shown on Exhibit A. Larger maps showing this area may be obtained from the District Engineers Office.

A smaller ponding area (or retention basin) exists on the eastern side of the Laurel Creek Channel about 400 feet north of Air Base Parkway. There may be other small permanent or temporary basins. The cities of Fairfield and Suisun should be consulted prior to inspections as to the status of any new or proposed basins.

**Basin capacities must be monitored and maintained to the conditions that existed at the time the project was constructed. Maintenance of the McCoy Creek Basin is mandated by Exhibit B Article III d.**

(7) Mitigation Plantings: The City of Fairfield is committed to preserve the plantings at the conclusion of the planting program which consists of the initial planting phase and a three year maintenance phase. At the end of the three year maintenance phase a viable riparian plant community will be established which; can sustain itself against competition and disease; utilize the natural water sources to meet water requirements; and reach a stage of growth where only minor attention is required to sustain itself and grow to a full canopy riparian habitat. The City will ensure that other project maintenance activities will not infringe upon or destroy any portion of the riparian habitat. Required pruning and trimming of trees and shrubs in order to maintain patrol road access will be done according to standard horticultural practices to preserve required mitigation commitments.

(8) Inspection of the miscellaneous facilities shall be made at the same time that the inspection of the other features of the project are made, and shall be reported on checklist page 5 of EXHIBIT F.

(9) The interest of the Corps of Engineers and the responsibility of the local interests in the existing highway and railroad bridges is confined to their effect on the safety and function of the flood control channel, but any conditions noted in the inspections that may affect them in any way should, as a matter of courtesy, be brought to the attention of the agencies maintaining and operating them. If the inspection of any miscellaneous structure, either existent or constructed in the future under permit, discloses any condition that indicates the probability of failure during periods of high water, the Superintendent shall address a letter to the owner of the structure, quoting this manual as authority and inviting attention to the conditions observed and requesting that immediate steps be taken to correct them. A copy of such letter shall be forwarded to the District Engineer for his information. A report on the action taken by the owner shall be submitted to the District Engineer to accompany the next semi-annual report. A suggested report form is included as EXHIBIT G of this manual.

(10) The purpose of the maintenance work is to insure continuous satisfactory operation of equipment. It is, therefore, important in such work that all possible causes of future trouble be found and corrected. Particular attention should be given to minor weakness which may be an indication of future trouble.

C. Operation.

Pertinent Regulations of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10(h)(2) is quoted as follows:

"(2) Operation. Miscellaneous facilities shall be operated to prevent or reduce flooding during periods of high water. These 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 therefore."

2-61. Inspection of Flood Control Works. Immediately upon receipt of information that high water is imminent, local district responsible for maintenance should form a special inspection committee of district engineer, and assign individuals (Work Supervisors) to have charge of different sections of the channel. At the initial survey, each supervisor should go over the entire reach and point of adjacent sector, making a detailed inspection, particularly with reference to the following matters:

A. Gate float; ascertain that the binding line between sector is clearly determined and, if necessary, marked.

B. Condition of new features and recent repairs erected by previous high water.

C. Condition of culverts, flap gates, and sluice gates.

D. Transportation facilities: roads, rail and water connections.

E. Material supply: quantity, location, and condition.

F. Communication: locate and check all necessary telephones in the sector.

2-62. Preliminary Repair Work. After the initial inspection has been made, each Work Supervisor should make a later view and provide it with tools such as shovel, saw, wheelbarrow, etc. In addition, rollers, rammers, trucks, etc., should be located and made ready for use in case of emergency. Then immediate action should be taken to perform the following work (see Exhibit H):

A. Fill up holes or water on the point road and cut slope. Where new construction has been completed during the year, fill water and deep gullies may have developed. Preparation should be made in advance to combat waves with along the exposed reaches.

## SECTION V – COMBATING FLOODS

**5-01. Suggested Methods.** Most of the methods described herein have been developed during many years of experience with the various problems that often arise during periods of high water. They are not intended to restrict the Superintendent, or others concerned, to a rigid set of rules for every condition that may arise. They should be considered as general guides to procedures that have been effective during past floods, and in themselves or with modifications indicated by an ongoing emergency, would probably be effective in the future. The following methods are primarily concerned with the earthen portions of the levee system. If problems not covered by these suggestions arise where the Superintendent is in doubt as to the procedure to be taken, he will be expected to consult the State Department of Water Resources and follow standard engineering practices in meeting the situation. It should be noted that it is much better to be over prepared for a "flood fight" than it is to find at the last moment that preparations were incomplete or unsatisfactory. Confidence of the persons and firms protected is a valuable asset that should not be carelessly lost through inefficient operation of the protection system in time of emergency.

**5-02. Security.** Personnel of the Corps of Engineers, whether military or civilian, are not vested with civil police authority in the performance of their engineering duties, and they will not attempt to exercise any such authority. The responsibility for protecting flood control works against sabotage, acts of depredation or other unlawful acts rests with the local interests through local and State governmental agencies.

**5-03. Inspection of Flood Control Works.** Immediately upon receipt of information that high water is imminent, local interests responsible for maintenance should form a skeleton organization, capable of quick expansion, and assign individuals (Work Supervisors) to have charge of definite sections of the channel. As his initial activity, each Supervisor should go over his entire sector and parts of adjacent sectors, making a detailed inspection, particularly with reference to the following matters:

- A. Sector limits; ascertain that the dividing line between sectors is plainly determined and, if necessary, marked.
- B. Condition of new features and recent repairs untested by previous high water.
- C. Condition of culverts, flap gates, and sluice gates.
- D. Transportation facilities; roads, rail and water communications.
- E. Material supply; quantity, location, and condition.
- F. Communications; locate and check all necessary telephones in the sector.

**5-04. Preliminary Repair Work.** After the initial inspection has been made, each Work Supervisor should recruit a labor crew and provide it with tools such as shovels, axes, wheelbarrows, etc. In addition, bulldozers, scrapers, trucks, etc., should be located and made ready for use in case of emergency. Then immediate action should be taken to perform the following work (see Exhibit H):

- A. Fill up holes or washes on the patrol road and cut slopes. Where new construction has been completed during the year, rain washes and deep gullies may have developed. Preparations should be made in advance to combat wave wash along the exposed reaches.

B. Repair gaps where road crossings have been worn down to below grade of the natural channel bank or project levee. In filling the road crossings, it may be necessary to obtain material from landside borrow pits, in which case excavation for material should be kept at least 50 feet from the top of the channel cut. Any filling done for this purpose should be tamped in place and, if in an exposed reach, subject to erosion, the new section should be faced with bags of sand or rock riprap.

C. Repair and close all flap gates on culverts and see that they are seated properly before they are covered with floodwaters.

D. Ascertain that all roads to and along the project are in good repair. The Superintendent should obtain assistance from the county road forces to have all roads put in first-class condition.

E. Locate necessary tools and materials (sand, sandbags, brush, lumber, lights, etc.), and distribute and store the same at points where active maintenance is anticipated.

F. Check and obtain repair of all telephone lines necessary for operation, obtain lists of all team forces, motor boats, motor cars, and truck transportation that can be made available.

G. Make thorough arrangements with reliable citizens of the community for the supply of transportation, subsistence, and shelter for the necessary labor.

H. Cut all fences crossing the maintenance road that do not have gates provided.

**5-05. Disaster Relief.** It is the responsibility of local, state and municipal authorities supported by and/or working in connection with the American Red Cross to adopt measures for the relief of flood disaster victims. Relief measures can be undertaken by the Department of the Army through its Army Area Commander under existing Army Regulations, but such measures will be undertaken only as a last resort in extreme cases and under compelling circumstances where local resources are clearly inadequate to cope with the situation.

**5-06. Technical Assistance.** The Corps of Engineers has authority to assist in emergency actions in accordance with provisions of Public Law 84-99, as amended. During a flood alert, the Corps of Engineers may give advice to local authorities on flood fighting methods, and may respond to requests for assistance in flood fighting received through the Division/District Engineers to furnish required assistance in support of other agencies by supplementing local resources as appropriate. Corps assistance may include the following:

A. Furnishing technical advice and assistance;

B. Furnishing flood fighting materials; and

C. Hiring of equipment and operators for flood fighting operations.

**5-07. Government Equipment.** The District Engineer is authorized to use or loan Government property and plant in cases of extreme emergency where life is endangered and there is no opportunity to secure prior authority for such use. The authority is also extended when protecting property if suitable private equipment is available, provided such use is without detriment to the Government.

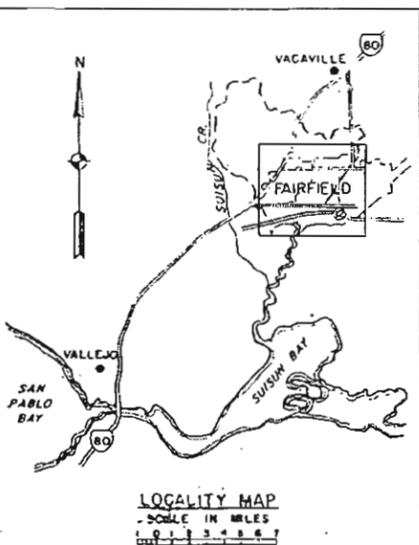
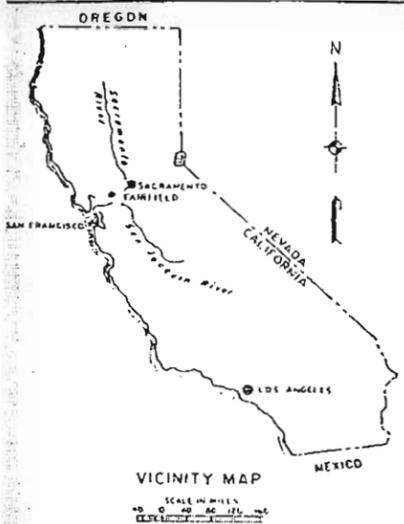
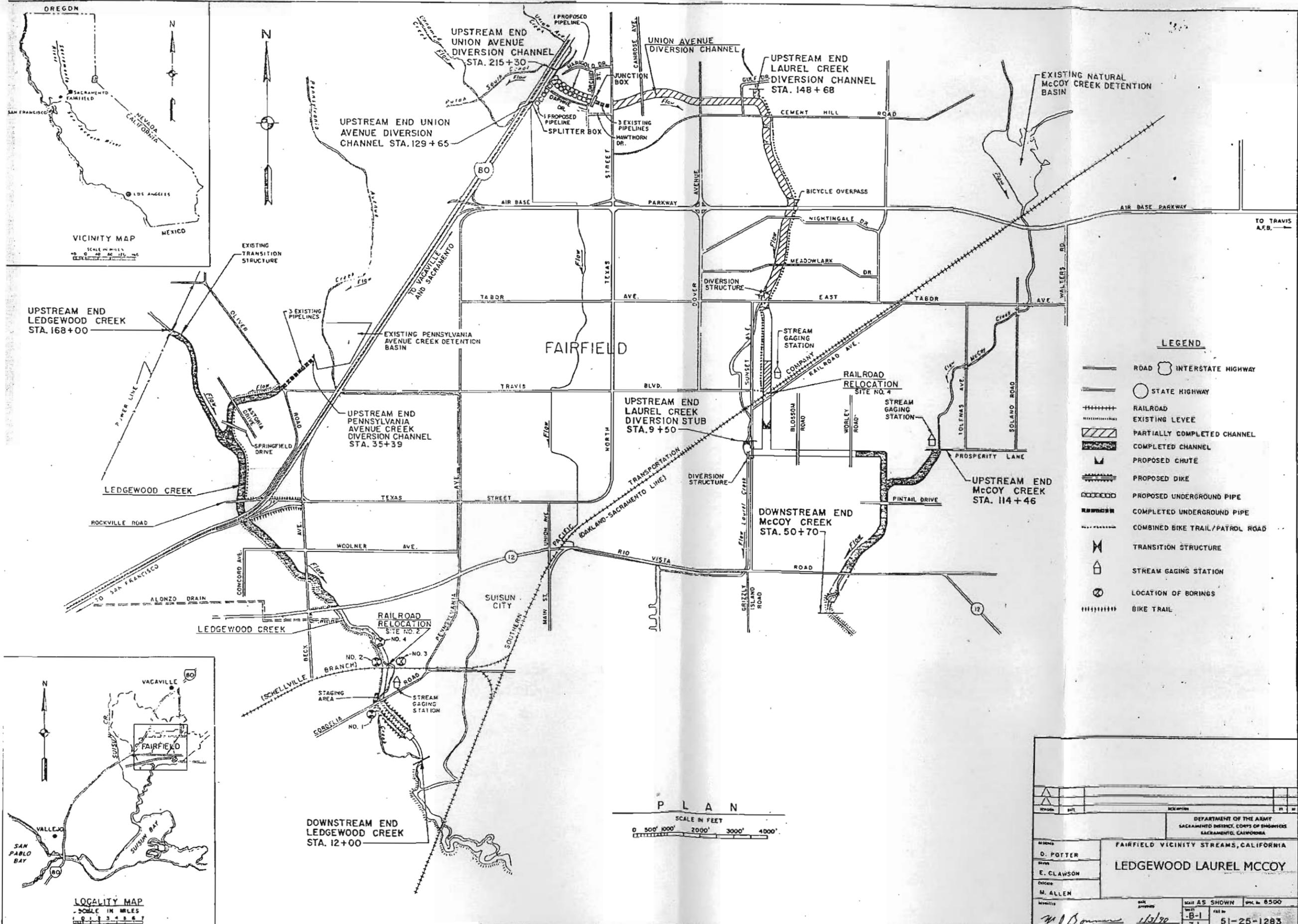
5-08. Premeditated Damages. In the event of an extraordinary flood requiring a flood fight over long stretches of levee on both sides of the channel there is a possibility that threatened landowners may be tempted to relieve the strain by premeditated breaching of the opposite levee. Local interests should continually guard against such premeditated damage to the levees.

Personnel of the U.S. Army Corps of Engineers, whether military or civilian, are not vested with any civil police authority in performance of their engineering duties and they will not attempt to exercise any such authority. The responsibility for protecting flood control works against sabotage, acts of depredation, or other unlawful acts rests with the local interests through local and State Governmental agencies. In the event that local law enforcement agencies prove inadequate, local interests, as provided by law, can request the aid of State forces and the aid of Federal Troops.

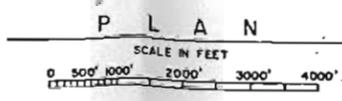
# **EXHIBIT A**

GENERAL PLAN

VALUE ENGINEERING PAYS



- LEGEND**
- ROAD
  - INTERSTATE HIGHWAY
  - STATE HIGHWAY
  - RAILROAD
  - EXISTING LEVEE
  - PARTIALLY COMPLETED CHANNEL
  - COMPLETED CHANNEL
  - PROPOSED CHUTE
  - PROPOSED DIKE
  - PROPOSED UNDERGROUND PIPE
  - COMPLETED UNDERGROUND PIPE
  - COMBINED BIKE TRAIL/PATROL ROAD
  - TRANSITION STRUCTURE
  - STREAM GAGING STATION
  - LOCATION OF BORINGS
  - BIKE TRAIL



DEPARTMENT OF THE ARMY SACRAMENTO DISTRICT, CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA	
FAIRFIELD VICINITY STREAMS, CALIFORNIA	
LEDGEWOOD LAUREL MCCOY	
DESIGNED D. POTTER	SCALE AS SHOWN 1" = 8500'
DRAWN E. CLAWSON	SHEET -B-1
CHECKED M. ALLEN	DATE 1/13/70
PROJECT NO. 51-25-1283	SECTION 31

SAFETY PAYS

DRAWING REDUCED ONE-HALF SIZE

# **EXHIBIT B**

LOCAL COOPERATION AGREEMENT  
(FLOOD CONTROL)

AGREEMENT BETWEEN  
THE DEPARTMENT OF THE ARMY  
AND  
THE CALIFORNIA STATE RECLAMATION BOARD  
FOR LOCAL COOPERATION AT  
FAIRFIELD VICINITY STREAMS, CALIFORNIA

THIS AGREEMENT, entered into this 29th day of May 1986 by and between the DEPARTMENT OF THE ARMY (hereinafter called the "Government"), represented by the Assistant Secretary of the Army (Civil Works), and the CALIFORNIA STATE RECLAMATION BOARD (hereinafter called the "State"), WITNESSETH THAT:

WHEREAS, construction of the Fairfield Vicinity Streams, California project (hereinafter called the "Project") was authorized by the House of Representatives and Senate Public Works Committees' resolutions adopted December 15, 1970 and December 17, 1970, respectively, pursuant to the provisions of the Flood Control Act of 1965, Section 201 (Public Law 89-298), substantially in accordance with the report of the Secretary of the Army and the Chief of Engineers in House Document No. 91-159, describing such Project, said Project consisting of modifications to provide an SPF level of protection along five streams in the vicinity of Fairfield and Suisun City, California, such modifications including unlined channel with limited reaches of lined channel, diversion channels, chutes, pipelines, control structures and stone protection; and

WHEREAS, the 1985 Supplemental Appropriations Act, approved 15 August 1985 (Public Law 99-88), authorizes the Secretary of the Army to initiate construction of the Project under terms and conditions acceptable to him as set forth below; and

WHEREAS, pursuant to Section 117 of Public Law 99-190; the Secretary of the Army is directed to include as part of the non-Federal contribution of the Project, the cost of any work carried out by non-Federal interests on the Project after December 31, 1973, and before December 19, 1985, if the Secretary determines such work is reasonably compatible with the Project; and

WHEREAS, the State hereby represents that it has the authority and capability to furnish the non-Federal cooperation required by the Federal legislation authorizing the Project and by other applicable law.

NOW THEREFORE, the parties agree as follows:

#### ARTICLE I - DEFINITIONS

For purposes of this Agreement:

The term "total Project costs" shall mean all costs incurred by the State and the Government directly related to construction of the flood control aspects of the Project (excluding betterments and operation and maintenance costs.) Such total Project costs shall include, but not necessarily be limited to, actual construction costs (including the actual cost of any work carried out by non-Federal interests on the Project after December 31, 1973 and before December 19, 1985, if the Secretary of the Army determines such work is reasonably compatible with the Project), the value of lands, easements, and rights-of-way made available for the Project, relocation and alteration costs, costs of applicable engineering and design, and supervision and administration costs.

#### ARTICLE II - OBLIGATIONS OF PARTIES

a. The State shall provide, during the period of construction, an amount equal to not less than twenty-five (25) percent of total Project costs. The

amount shall include all lands, easements, rights-of-way, and utility and facility alterations and relocations (except railroad bridges) required for construction of the Project as well as a cash payment equal to the difference between the value of the above items, as determined pursuant to Article IV of the Agreement and twenty-five (25) percent of total Project costs; provided, however, that in no case shall the cash payment required herein be less than five (5) percent of total Project cost. Pursuant to Section 117 of Public law 99-190 the local sponsor will receive credit toward the cash requirement for costs it has already incurred towards this Project. The amount of credit to be received is likely to exceed the cash payment required for the Project. In such event the local sponsor will not be required to provide any cash contribution. In no event shall the sponsor receive any repayment of amounts it has provided.

b. The Government, using funds provided by the State and appropriated by the Congress, shall expeditiously construct the Project, applying those procedures usually followed or applied in Federal projects, pursuant to Federal laws, regulations, and policies. Award of the Federal contracts and performance of the work thereunder shall be exclusively within the control of the Government.

c. Upon completion of Project construction, the Government shall turn the Project over to the State, which shall be solely responsible for operating, maintaining, and rehabilitating the Project in accordance with Article VIII of this Agreement.

d. No less than once each year the State shall inform affected interests regarding the limitations of the protection afforded by the Project.

e. The State shall publicize flood plain information in the area concerned and shall provide this information to zoning and other regulatory agencies for

their guidance and leadership in preventing unwise future development in the flood plain and in adopting such regulations as may be necessary to prevent unwise development in the flood plain and in adopting such regulations as may be necessary to ensure compatibility between future development and protection levels provided by the Project.

f. The State shall, to the extent of its powers, prescribe and enforce regulations to prevent obstruction of or encroachment on the Project that would reduce the level of protection it affords or that would hinder operation and maintenance.

g. Required assurances for recreation development at the Project will be the subject of a separate contract. If local cooperation in the recreation features is not forthcoming, the Project may be constructed for flood control only.

### ARTICLE III - LANDS, FACILITIES, AND RELOCATION ASSISTANCE

a. The State shall provide without cost to the Government all lands, easements, and rights-of-way, including suitable borrow and dredged material disposal areas, as may be determined by the Chief of Engineers to be necessary for construction of the Project. Prior to the award of any construction contract, the State shall furnish to the Government rights-of-entry to all lands required for the Project, together with evidence supporting the State's legal authority to grant such rights-of-entry.

b. The State shall accomplish without cost to the Government all alterations and relocations of buildings, streets, storm drains, utilities, highway bridges, and other structures and improvements (except railroad bridges) made necessary by construction of the Project.

c. The State shall prevent encroachment upon the Project channels of any works detrimental to the flood control purposes of the Project, and manage all Project-related channels, such as existing channels below Project diversions, to preserve capacities for local drainage as well as Project functions.

d. The State shall preserve the storage capacity of the McCoy Creek Detention Basin below elevation 46 feet, National Geodetic Vertical Datum, and prevent the erection of future improvements within the flood plain of McCoy Creek from the detention basin downstream to Prosperity Lane by enactment and enforcement of adequate zoning regulations over these areas prior to commencement of construction.

e. The State shall preserve the Ledgewood Creek flow split in the vicinity of Abernathy Road as described in the approved "Supplement 1 to Design Memorandum No. 2, Fairfield Vicinity Streams, California, February 1986," in perpetuity by enactment and enforcement of adequate zoning regulations over these areas prior to commencement of construction, and ensure that the breakout flows do not reenter the Ledgewood Creek system until downstream of California State Highway 12, by either structural or non-structural means.

f. The State shall comply with the applicable provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, approved January 2, 1971, in acquiring lands, easements, and rights-of-way for construction and subsequent operation and maintenance of the Project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

ARTICLE IV - VALUE OF LANDS AND FACILITIES

a. The value of the lands, easements and rights-of-way to be included in total Project costs and credited toward the State's share of total Project costs will be determined in accordance with the following procedures:

(1) If the lands, easements and rights-of-way are owned by the State as of the date this contract is signed, the credit shall be the fair market value of the lands at the time such lands are made available to the Government for construction of the Project. The fair market value shall be determined by an appraisal to be obtained by the State which has been prepared by an independent and qualified appraiser who is acceptable to both the State and the Government. The appraisal shall be reviewed and approved by the Government.

(2) If the lands, easements and rights-of-way are to be acquired by the State after the date this contract is signed, the credit shall be the fair market value of the lands at the time such lands are made available to the Government for construction of the Project. The fair market value shall be determined by an appraisal to be obtained by the State which has been prepared by an independent and qualified appraiser who is acceptable to both the State and the Government. The appraisal shall be reviewed and approved by the Government.

Provided, however, that if the State pays an amount in excess of the appraised fair market value, it may be entitled to a credit for this excess amount if the State has secured prior approval from the Government of its offer to purchase said lands.

(3) If the State acquires more lands, easements or rights-of-way than are necessary for Project purposes, as determined by the Government, then only

the value of such portions of those acquisitions as are necessary for Project purposes shall be included in total Project costs and credited to the State's share.

(4) Credit for lands, easements and rights-of-way in the case of involuntary acquisitions after the date this contract is signed will be based on court awards or stipulated settlements, in which instance the stipulated settlements must have prior Government approval.

(5) The credits provided for in this article will also include the actual costs of acquiring the land, e.g. closing and title costs, as well as the actual amounts expended for any relocation assistance made in accordance with Article III.

b. The costs of construction, relocation, alteration or modification of utilities or facilities which will be included in total Project costs and credited towards the State's share of total Project costs, shall be that portion of the actual costs incurred by the State as set forth below:

(1) Bridges and Highways: Only that portion of the cost as would be necessary to construct substitute bridges and roads to the design standard that the State of California would use in constructing a new bridge or road under similar conditions of geography and traffic loads.

(2) Utility Facilities: Actual relocation costs, less depreciation, less salvage value, plus the cost of removal, less the cost of betterments. With respect to betterments, new materials shall not be used in any relocation or alteration if materials of value and usability equal to those in the existing facility are available or can be obtained as salvage from the existing facility or otherwise, unless the provision of new material is more economical. If, despite the availability of used material, new material is used, where the use

of such new material represents an additional cost, such cost shall not be included in total Project costs.

ARTICLE V - Project Phasing and Management

a. To provide for consistent and effective communication between the State and the Government, the State and the Government shall appoint representatives to coordinate on scheduling, plans, specifications, modifications, contract costs, and other matters relating to the Project.

b. The representatives appointed above shall meet as necessary as the term of Project is implemented and shall make such recommendations as they deem warranted to the Contracting Officer.

c. The Contracting Officer shall consider the recommendations of the representatives in all matters relating to the Project, but the Contracting Officer, having ultimate responsibility for construction of the Project, has complete discretion to accept, reject, or modify the recommendations of the representatives.

ARTICLE VI - Method of Payment

a. Pursuant to Article II.a. of this Agreement, the non-Federal interests are likely to have already satisfied the requirement to pay, during the period of construction, a cash contribution of not less than 5 percent of total Project costs. Total Project costs are presently estimated to be \$25,931,000, of which an estimated \$11,992,000 will be in the form of lands, easements, rights-of-way, and utility and facility alterations and relocations which shall be provided by the State. The actual cost of work carried out by non-Federal interests on the Project after December 31, 1973 and before December 19, 1985 and determined by the Secretary of the Army to be work reasonably compatible with the Project and

therefore, allowable as a credit is \$4,511,000.

b. If a cash contribution is required the State shall provide it over the term of construction period as follows:

(1) Nine (9) months before the start of each fiscal year of the State, the Government shall credit the State's share with the value of lands, easements, rights-of-way, and relocations and alterations (including the amortized portion of costs incurred by the State prior to the date of this Agreement) provided or to be provided by the State during the corresponding Government fiscal year, and the Government shall notify the State of the estimated funds that will be required from the State to meet its share of total Project costs for that Government as expeditiously as possible through either cash payments or deposit of cash in an escrow account acceptable to the Government. The estimate of total Project costs for each Government fiscal year of construction will include the amortized portion of costs incurred by the Government prior to the date of this Agreement.

c. The Government will draw on the funds provided by the State such sums as it deems necessary to cover contractual and in-house fiscal obligations as they occur and Government costs incurred prior to the date of this Agreement.

d. Upon completion of the Project and resolution of all contract claims and appeals, the Government shall compute the total Project costs and tender to the State a final accounting of its share of total Project costs. In the event the total credit received by the State is less than its required share of total Project costs at the time of the final accounting, the State shall deposit within 90 calendar days after receipt of written notice whatever sum is required to meet its required share of total Project costs.

ARTICLE VII - DISPUTES

Before any party to this Agreement may bring suit in any court concerning an issue relating to this Agreement, such party must first seek in good faith to resolve the issue through negotiation or through other forms of nonbinding alternative dispute resolution.

ARTICLE VIII - OPERATION, MAINTENANCE AND REHABILITATION

a. The State shall operate, maintain, and rehabilitate the Project upon completion in accordance with regulations or directions prescribed by the Secretary of the Army. The State shall be responsible for the excavation and removal of accumulated sediment and debris so as to maintain Project capacity.

b. The State hereby gives the Government a right to enter, at reasonable times and in a reasonable manner, upon land which it owns or controls for access to the Project for the purpose of inspection, and, if necessary, for the purpose of completing, operating, repairing, and maintaining the Project. If an inspection shows that the State for any reason is failing to complete, operate, repair, and maintain the Project in accordance with the assurances hereunder, the Government will send a written notice to the State. If the State persists in such failure for 30 calendar days after receipt of the notice, then the Government shall have a right to enter, at reasonable times and in a reasonable manner, upon lands the State owns or controls for access to the Project for the purpose of completing, operating, repairing, or maintaining the Project. No completion, operation, repair, or maintenance by the Government shall operate to relieve the State of responsibility to meet its obligations as set forth in this Agreement, or to preclude the Government from pursuing any other remedy at law or equity to assure faithful performance pursuant to this Agreement.

ARTICLE IX - RELEASE OF CLAIMS

The State shall hold and save the Government free from all damages arising from the construction and operation of the completed Project, except for damages due to the fault or negligence of the Government or its contractors.

ARTICLE X - MAINTENANCE OF RECORDS

The Government and the State shall keep books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect total Project costs. The Government and the State shall maintain such books, records, documents, and other evidence for a minimum of three years after completion of construction of the Project and resolution of all claims arising therefrom, and shall make available at their respective offices at reasonable times, such books, records, documents, and other evidence for inspection and audit by authorized representatives of the parties to this Agreement.

ARTICLE XI - FEDERAL AND STATE LAWS

a. In acting under its rights and obligations hereunder, the State agrees to comply with all applicable Federal and State laws and regulations.

b. The State agrees to comply with Section 601 of Title VI of the Civil Rights Act of 1964 (Public Law 88-352) and Department of Defense Directive 5500.II issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, in connection with the construction, operation, and maintenance of the Project.

ARTICLE XII - RELATIONSHIP OF PARTIES

The parties to this Agreement act in an independent capacity in the performance of their respective functions under this Agreement, and neither party is to be considered the officer, agent, or employee of the other.

ARTICLE XIII - OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress, or resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

ARTICLE XIV - COVENANT AGAINST CONTINGENT FEES

The State warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the State for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this Agreement without liability, or, in its discretion, to add to the Agreement or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE XV - TERMINATION OR SUSPENSION

a. If at any time the State fails to make the payments required under this Agreement, the Secretary of the Army shall terminate or suspend work on the Project until the State is no longer in arrears or unless the Secretary determines that continuation of work on the Project is in the interest of the United States. For purposes of this Article, a payment shall be deemed

delinquent if (1) the amount required to be provided by the State pursuant to Article VI.b.2. or VI.b.3. is not available to the Government at the time it attempts to withdraw funds pursuant to Article VI.c.; or (2) any amount due the Government under Article VI.d. or paragraph b. of this Article has not been provided within the time allotted. Any delinquent payment shall be charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 (one hundred fifty) percent of the average bond equivalent rate of the 13 week treasury bills auctioned immediately prior to the date on which such payment became delinquent or auctioned immediately prior to the beginning of each additional 3-month period if the period of delinquency exceeds 3 months.

b. If the Government fails to receive annual appropriations in amounts sufficient to meet expenditures for the then-current fiscal year, the Government shall so notify the State. After sixty days either party may elect without penalty to terminate the Agreement or to suspend performance thereunder, and defer Project completion. The parties shall wrap up their activities relating to the Project and proceed to a final accounting in accordance with Article VI.b.

#### ARTICLE XVI - STATEMENT OF INTENT

As required under Title I, Chapter IV of P.L. 99-33, the State hereby affirms its willingness and capability to meet its cost-sharing obligations as set forth in this Agreement.

#### ARTICLE XVII - EFFECT OF SUBSEQUENT LEGISLATION

If, subsequent to the date of this Agreement, Congress enacts into law a change in the cost-sharing for this Project, the parties hereto shall renegotiate this Agreement to conform to such change; provided, however, any

renegotiated agreement shall take effect only after being approved by the State and the Government. If no renegotiated agreement is approved by both parties within 180 days of the effective date of the law changing the cost-sharing for this Project, the parties shall wind up their activities relating to the Project and proceed to a final accounting in accordance with Article VI.b. hereof.

ARTICLE VII - STATEMENT OF INTENT

As required under Title I, Chapter 10 of P.L. 92-52, the State hereby affirms its willingness and capability to meet its cost-sharing obligations as set forth in this agreement.

ARTICLE VIII - EFFECT OF SUBSEQUENT LEGISLATION

If, subsequent to the date of this agreement, Congress enacts any law which changes the cost-sharing for this Project, the parties hereto shall renegotiate this agreement to conform to such amended provisions, except that any

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first written.

THE DEPARTMENT OF THE ARMY

CALIFORNIA STATE RECLAMATION BOARD

By *Robert H. ...*  
Assistant Secretary of the Army  
(Civil Works)

By *Wallace McConal*  
President,  
The Reclamation Board

ATTEST:

By *David B. ...*  
Counsel,  
State of California Reclamation  
Board

DATE 3 June 82

DATE 5/29/82

AS WITNESSED BY:

<u><i>Virginia</i></u>	<u><i>Raymond J. Scholl</i></u>	_____
<u><i>Sperry</i></u>	_____	_____
<u><i>H. ...</i></u>	_____	_____

CERTIFICATE OF AUTHORITY

I, David B Anderson, do hereby certify that I am the Counsel for the State of California Reclamation Board, that the California State Reclamation Board is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the California State Reclamation Board in connection with the Fairfield Vicinity Streams, California project, and to pay damages, if necessary, in the event of the failure to perform in accordance with Section 221 of Public Law 91-611, and that the person who has executed the Agreement on behalf of the California State Reclamation Board has acted within their statutory authority.

In Witness Whereof, I have made and executed this Certificate this 17<sup>th</sup> day of February, 1986.

BY David B Anderson  
Counsel,  
State of California Reclamation  
Board

**EXHIBIT C**

LOCAL COOPERATION AGREEMENT  
(RECREATION)

AGREEMENT BETWEEN  
THE DEPARTMENT OF THE ARMY  
AND  
THE CITY OF FAIRFIELD  
FOR RECREATION DEVELOPMENT AT  
FAIRFIELD VICINITY STREAMS, CALIFORNIA

THIS AGREEMENT, entered into this 29th day of May 1986 by and between the DEPARTMENT OF THE ARMY (hereinafter called the "Government"), represented by the Assistant Secretary of the Army (Civil Works), and THE CITY OF FAIRFIELD (hereinafter called the "City"), WITNESSETH THAT:

WHEREAS, construction of the Fairfield Vicinity Streams, California project, (hereinafter called the "Project") was authorized by the House of Representatives and Senate Public Works Committees' resolutions adopted December 15, 1970 and December 17, 1970, respectively, pursuant to the provisions of the Flood Control Act of 1965, Section 201 (Public Law 89-298), substantially in accordance with the report of the Secretary of the Army and the Chief of Engineers in House Document No. 91-159 describing said Project and the recreation facilities of said Project shall consist primarily of 25,100 feet of hiking and bicycling trails; and

WHEREAS, the 1985 Supplemental Appropriations Act, approved 15 August, 1985 (Public Law 99-88), authorizes the Secretary of the Army to initiate construction of the Project under terms and conditions acceptable to him as set forth below; and

WHEREAS, pursuant to Section 117 of Public Law 99-190, the Secretary of the Army is directed to include as part of the non-Federal contribution of the Project, the cost of any work carried out by non-Federal interests on the

Project after December 31, 1973, and before December 19, 1985 if the Secretary determines such work is reasonably compatible with the Project; and

WHEREAS, the City is authorized to administer Project land and water areas for recreational purposes, and operate, maintain and replace facilities provided for such purposes and is empowered to contract for such purposes, and is empowered to contract in these respects.

NOW THEREFORE, the parties agree as follows:

ARTICLE I - DEFINITION OF TERMS

For the purposes of this Agreement certain terms are defined as follows:

a. The term "Project" shall mean recreation features consisting of 25,100 feet of bicycling and hiking trails, which shall be in the form of a 10 foot wide by 2-inch thick asphalt path laid upon already existing maintenance roads, and also including a staging area which will provide parking for 10 cars, bicycle racks and two chemical toilets.

b. The term "total Project costs" means all costs incurred by the local sponsor and the Government directly related to construction of the Project (excluding betterments and operation and maintenance costs). Such total Project costs shall include, but not necessarily be limited to, actual construction costs, the value of lands, easements, and rights-of-way made available for the Project, relocation and alteration costs, costs of applicable engineering and design, and supervision and administration costs.

ARTICLE II - OBLIGATION OF PARTIES

a. The City shall provide, during the period of construction an lands, easements, rights-of-way, and utility and facility alterations and relocations

required for construction of the Project, as well as an additional cash contribution equal to the difference between the value of the above items, together with credits that may be granted pursuant to Article VI of this Agreement, and fifty (50) percent of the total cost of the Project:

b. The Government, using funds provided by the City and appropriated by Congress, shall expeditiously construct the Project, applying those procedures usually followed or applied in Federal projects, pursuant to Federal laws, regulations and policies. Award of the Federal contracts and performance of the work thereunder shall be exclusively within the control of the Government.

c. Upon completion of the Project construction, the Government shall turn the Project over to the City which shall be solely responsible for operating, maintaining and rehabilitating the Project in accordance with Article XI of this Agreement.

### ARTICLE III - LANDS, FACILITIES, AND RELOCATION ASSISTANCE

a. Subject to the cost-sharing terms set forth in this Agreement, the Government agrees to design and construct this Project to provide for general recreation consistent with authorized flood control Project purposes. Lands necessary for such recreation facilities will be situated within the lands acquired by local interests for the basic flood control Project.

b. In addition to easements to be acquired by the California State Reclamation Board for flood control Project purposes, the City agrees to acquire, without cost to the United States, additional fee title estates needed to support recreational development, and to make at their expense all changes and relocations in existing improvements, including utilities and highway and railway bridges, necessary for recreation development.

c. The recreation facilities which the Government will construct in accordance with this Agreement are indicated in the approved "Supplement 1 to Design Memorandum No. 2, Fairfield Vicinity Streams, California, February 1986." The presently estimated cost of facilities to be provided is contained in Exhibit A entitled "Estimated Project Costs-Recreation" attached hereto and made part hereof. Such estimate of facility cost is subject to reasonable adjustment as appropriate during the term of construction.

d. Title to all lands and facilities specifically acquired, developed or constructed by or with Government assistance to enhance the recreation potential of the Project shall at all times be in the name of a legally constituted public body with full authority and capability to perform the terms of this Agreement. Changes in the title and/or cessation of general recreation uses shall not be made without consent of the District Engineer, Sacramento District, U.S. Army Corps of Engineers, or his successor in authority. A copy of this paragraph shall be recorded in such a fashion as to become part of the chain of title of all land acquired.

e. The City shall comply with the applicable provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, approved January 2, 1971, in acquiring lands, easements, and rights-of-way for construction and subsequent operation and maintenance of the Project recreation facilities, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

#### ARTICLE IV - VALUE OF LANDS AND FACILITIES

a. The value of the lands, easements and rights-of-way to be included in total Project costs (and credited toward the City's share of total Project costs) will be determined in accordance with the following procedures:

(1) If the lands, easements and rights-of-way are owned by the City as of the date this contract is signed, the credit shall be the fair market value of the lands at the time such lands are made available to the Government for construction of the Project. The fair market value shall be determined by an appraisal to be obtained by the City which has been prepared by an independent and qualified appraiser who is acceptable to both the City and the Government. The appraisal shall be reviewed and approved by the Government.

(2) If the lands, easements and rights-of-way are to be acquired by the City after the date this contract is signed, the credit shall be the fair market value of the lands at the time such lands are made available to the Government for construction of the Project. The fair market value shall be determined by an appraisal to be obtained by the City which has been prepared by an independent and qualified appraiser who is acceptable to both the City and the Government. The appraisal shall be reviewed and approved by the Government.

Provided, however, that if the City pays an amount in excess of the appraised fair market value, it may be entitled to a credit for this excess amount if the City has secured prior approval from the Government of its offer to purchase said lands.

(3) If the City acquires more lands, easements or rights-of-way than are necessary for Project purposes, as determined by the Government, then only the value of such portions of those acquisitions as are necessary for Project purposes shall be included in total Project costs and credited to the City's share.

(4) Credit for lands, easements and rights-of-way in the case of involuntary acquisitions after the date this contract is signed will be based on court awards or stipulated settlements, in which instance the stipulated

settlements must have prior Government approval.

(5) The credits provided for in this article will also include the actual costs of acquiring the land, e.g. closing and title costs, as well as the actual amounts expended for any relocation assistance made in accordance with Article III.

b. The costs of construction, relocation, alteration or modification of utilities or facilities which will be included in total Project costs and credited towards the City's share of total Project costs, shall be that portion of the actual costs incurred by the City as set forth below:

(1) Bridges and Highways: Only that portion of the cost as would be necessary to construct substitute bridges and roads to the design standard that the State of California would use in constructing a new bridge or road under similar conditions of geography and traffic loads.

(2) Utility Facilities: Actual relocation costs, less depreciation, less salvage value, plus the cost of removal, less the cost of betterments. With respect to betterments, new materials shall not be used in any relocation or alteration if materials of value and usability equal to those in the existing facility are available or can be obtained as salvage from the existing facility or otherwise, unless the provision of new material is more economical. If, despite the availability of used material, new material is used, where the use of such new material represents an additional cost, such cost shall not be included in total Project costs.

#### ARTICLE V - PROJECT PHASING AND MANAGEMENT

a. To provide for consistent and effective communication between the City and the Government during the term of construction, the City and the Government

shall appoint representatives to coordinate on scheduling, plans, specifications, modifications, contract costs, and other matters relating to construction of the recreation facilities.

b. The representatives appointed above shall meet as necessary during the term of Project construction and shall make such recommendations as they deem warranted to the Contracting Officer.

c. The Contracting Officer, having ultimate responsibility for construction of the Project, has complete discretion to accept, reject or modify the recommendations of the representatives.

#### ARTICLE VI - METHOD OF PAYMENT

a. Pursuant to Article II of this Agreement, the City shall provide during the period of construction fifty (50) percent of the total Project costs. Total Project costs are presently estimated to be \$760,000. The City will provide a cash contribution equal to the difference between the value of any lands, easements, rights-of-way or utility and facility alterations and relocations of the Project, and fifty percent of the total cost of the Project. The value of lands, easements, rights-of-way and utility and facility alterations and relocations provided by the City is presently estimated to be \$125,000. In accordance with P.L. 99-190, Section 117, the actual costs of work carried out by non-Federal interests on the Project after December 31, 1973 and before December 19, 1985 shall be credited against the aforementioned cash contribution if the Secretary of the Army determines such work is reasonably compatible with the Project. The cost of work carried out by non-Federal interests on the Project is presently estimated to be \$105,000. The estimated cash payment required from the sponsor is \$150,000. The Government will conduct a preconstruction audit of non-Federal work accomplished to verify the extent of

costs creditable towards the cash contribution. Upon completion of the Project, an adjustment will be made on the basis of actual costs incurred.

b. The City shall provide its required cash contribution over the term of the construction period. The following provisions apply:

(1) Three (3) months before the start of each fiscal year of the City the Government shall credit the City's share with the value of lands, easements, rights-of-way, and relocations and alterations (including the amortized portion of costs incurred by the City prior to the date of this Agreement) provided or to be provided by the City during the corresponding Government fiscal year, and the Government shall notify the City of the estimated funds that will be required from the City to meet its share of total Project costs for that Government fiscal year. The City shall then make those funds available to the Government as expeditiously as possible through either cash payment or deposit of cash in an escrow account acceptable to the Government, or by irrevocable letter of credit drawn upon a bank acceptable to the Government. The estimate of total Project costs for each Government fiscal year of construction will include the amortized portion of costs incurred by the Government prior to the date of this Agreement.

(2) 60 days prior to the advertisement of each construction contract, the Government shall notify the City of its required share of contract costs, plus supervisory and administrative expenses, as calculated under paragraph a. of this Article. Within 30 calendar days thereafter, the City shall verify to the satisfaction of the Government that sufficient funds are available to the Government in the funding institution or mechanism referred to in paragraph b.1. of this Article to meet its share of the contract costs. If the Government determines that sufficient sums are not available to it, it shall so notify the

City and the City shall deposit said funds within 10 calendar days and provide verification of such deposit. If the contract is expected to extend into more than one Government fiscal year, the City may make the deposit in installments, with each installment to be made prior to each Government fiscal year in the amount required for that year's work on the contract, plus supervisory and administrative costs.

(3) When bids are opened on any given contract and additional funds are needed from the City to meet its required share of contract costs, the Government shall so notify the City and the City shall deposit the additional funds within 10 calendar days after demand is made by the Government.

c. The Government will draw on the funds provided by the City such sums as it deems necessary to cover contractual and in-house fiscal obligations as they occur and Government costs incurred prior to the date of the Agreement.

d. Upon completion of construction and resolution of all contract claims and appeals, the Government shall compute the actual total Project costs and tender the City a final accounting of its share of actual total Project costs. In the event the total contribution by the City is less than its required share of actual total Project costs, the City shall deposit within 90 calendar days after receipt of written notice whatever sum is required to meet its required share of actual total Project costs. In the event the City has made excess cash contributions which result in the City's having provided more than its required share of actual total Project costs, the Government shall return to the City within 90 calendar days such cash contributions to the extent they exceed fifty percent (50%) of actual Project costs.

e. Future Development: Neither party is obligated by this Agreement to undertake any future development of the Project, except to the extent this

Agreement may be so modified by future supplemental agreements signed by the parties and approved by the Secretary of the Army or his authorized representative. If at any time the City wishes to undertake further development of the facilities to be developed hereunder, it may do so at its expense provided prior approval of the Contracting Officer is obtained, but the Government shall not be obligated to reimburse the City for any portion of such expense in the absence of a supplemental agreement hereto as aforesaid.

f. Other Federal Funds: No credit of any kind whatsoever will be allowed the City for expenditures financed by, involving, or consisting of, either in whole or in part, contributions or grants of assistance received from any Federal agency, in providing any lands or facilities for recreation enhancement hereunder.

g. Adjustments To Reflect Costs: The dollar amounts set forth in this Article are based upon the Government's best estimates, and are subject to adjustments based on the costs actually incurred. Such estimates are not to be construed as representations of the total financial responsibilities of each of the parties.

#### ARTICLE VII - CONSTRUCTION AND OPERATION OF ADDITIONAL FACILITIES

Certain types of facilities, including but not necessarily limited to restaurants, lodges, golf courses, cabins, clubhouses, overnight or vacation type structures, stables, swimming pools, commissaries, and such similar revenue-producing facilities, may be constructed and operated by the City. Any such construction and operation of these types of facilities shall be compatible with all Project purposes and shall be subject to the prior approval of the Contracting Officer. However, the City shall not receive credit for costs of such facilities against amounts due and payable under Article VI and such

facilities shall not be deemed to be developed or constructed with Government assistance for purposes of Article III.d.

#### ARTICLE VIII - FEES AND CHARGES

The City may assess and collect fees for entrance to and use of developed recreation facilities and areas, in accordance with a fee schedule mutually agreed to by the parties. Not less often than every five years, the parties will review such schedule and, upon the request of either, renegotiate the schedule. The renegotiated fee schedule shall, upon written agreement thereto by the parties, supersede the previous fee schedule without the necessity of modifying this contractual document.

#### ARTICLE IX - TRANSFER OR ASSIGNMENT

The City shall not transfer or assign this contract nor any rights acquired thereunder, nor grant any interest, privilege, or license whatsoever in connection with this Agreement without the approval of the Secretary of the Army or his authorized representative except as provided in Article VII of this Agreement.

#### ARTICLE X - DISPUTES

Before any party to this Agreement may bring suit in any court concerning an issue relating to this Agreement, such party must first seek in good faith to resolve the issue through negotiation or through other forms of non-binding alternative dispute resolution.

#### ARTICLE XI - OPERATION, MAINTENANCE AND REHABILITATION

a. The City shall be responsible for operation, maintenance and rehabilitation without cost to the Government, of all facilities developed to

support Project recreation opportunities. The City shall maintain all Project recreation facilities in a manner satisfactory to the Contracting Officer and pursuant to the provisions of any lease or license which may subsequently be entered into between the parties hereto with the exception of lands required for operation of the Project facilities as described in paragraph c. of this Article.

b. The City hereby gives the Government a right to enter, at reasonable times and in a reasonable manner, upon land which it owns or controls for access to the Project for the purpose of inspection, and, if necessary, for the purpose of operating, repairing, and maintaining the Project. If an inspection shows that the City for any reason is failing to operate, repair, and maintain the Project recreation facilities in accordance with the assurances hereunder, the Government will send a written notice to the City. If the City persists in such failure for 30 calendar days after receipt of the notice, then the Government shall have a right to enter, at reasonable times and in a reasonable manner, upon lands the City owns or controls for access to the Project for the purpose of operating, repairing, or maintaining the Project recreation facilities. No operation, repair or maintenance by the Government shall operate to relieve the City of responsibility to meet its obligations as set forth in this Agreement, or to preclude the Government from pursuing any other remedy at law or equity to assure faithful performance pursuant to this Agreement.

c. The California State Reclamation Board will be responsible for operation and maintenance of those lands, structures, and facilities such as levees, channels, bank protection works and patrol roads required for flood control.

## ARTICLE XII - RELEASE OF CLAIMS

The Government and its officers and employees shall not be liable in any manner to the City for or on account of damage caused by the development of the general and recreation facilities of the Project, except for damages due to the fault or negligence of the Government or its contractors. The City hereby releases the Government and agrees to hold it free and harmless and to indemnify it from all damages, claims, or demands that may result from development and operation and maintenance of the general and recreation areas and facilities, except for damages due to the fault or negligence of the Government or its contractors.

## ARTICLE XIII - MAINTENANCE OF RECORDS

The Government and the City shall keep books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect all net costs. The Government and the City shall maintain such books, records, documents and other evidence for a minimum of three years after completion of construction of the Project and resolution of all claims arising therefrom, and shall make available at their respective offices at reasonable times, such books, records, documents and other evidence for inspection and audit by authorized representatives of the parties to this Agreement.

## ARTICLE XIV - FEDERAL AND STATE LAW

a. In acting under its right and obligations hereunder, the City agrees to comply with all applicable Federal and State laws and regulations.

b. The City agrees to comply with Section 501 of Title VI of the Civil Rights Act of 1964 (Public Law 88-352) and Department of Defense Directive

5500.II issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, in connection with the construction, operation, and maintenance of the Project recreation facilities. The City agrees also that it will obtain such assurances from all of its concessionaires.

ARTICLE XV - RELATIONSHIP OF PARTIES

The parties to this Agreement act in an independent capacity in the performance of their respective functions under this Agreement and neither party is to be considered the officer, agent or employee of the other.

ARTICLE XVI - OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress, or resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

ARTICLE XVII - COVENANT AGAINST CONTINGENT FEES

The City warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the City for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this Agreement without liability or in its discretion to add to the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE XVIII - TERMINATION OR SUSPENSION

a. If at any time the City fails to make the payments required under this

Agreement, the Secretary of the Army shall suspend work on the Project recreation facilities until the City is no longer in arrears or unless the Secretary determines that continuation of work on the Project recreation facilities is in the interest of the United States. Any delinquent payment shall be charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 (one hundred-fifty) percent of the average bond equivalent rate of the 13 week Treasury bills auctioned immediately prior to the date on which such payment became delinquent, or auctioned immediately prior to the beginning of each additional 3 month period if the period of delinquency exceeds 3 months.

b. If the Government fails to receive annual appropriations in amounts sufficient to meet expenditures for the then-current fiscal year, the Government shall so notify the City. After sixty days either party may elect without penalty to terminate the Agreement or to suspend performance thereunder, and defer completion of Project recreation facilities. The parties shall wrap up their activities relating to the Project recreation facilities and proceed to a final accounting in accordance with Article VI.e.

#### ARTICLE XIV - STATEMENT OF INTENT

As required under Title I, Chapter IV of Public Law 99-38, the City hereby affirms its willingness and capability to meet its cost-sharing obligations as set forth in this Agreement.

#### ARTICLE XV - EFFECT OF SUBSEQUENT LEGISLATION

If, subsequent to the date of this Agreement, Congress enacts into law a change in the cost-sharing for this Project, the parties hereto shall renegotiate this Agreement to conform to such change; provided, however, any

renegotiated agreement shall take effect only after being approved by the State and the Government. If no renegotiated agreement is approved by both parties within 180 days of the effective date of the law changing the cost-sharing for this Project, the parties shall wind up their activities relating to the Project and proceed to a final accounting in accordance with Article VI.b. hereof.

ARTICLE VII - STATEMENT OF INTENT

As provided under Title 1, Chapter 10 of Public Law 92-50, the City hereby affirms its willingness and capability to meet its cost-sharing obligations as set forth in this Agreement.

ARTICLE VIII - EFFECT OF SUBSEQUENT LEGISLATION

If, subsequent to the date of this Agreement, Congress enacts any law which changes the cost-sharing for this Project, the parties hereto shall renegotiate this Agreement to conform to such changes provided, however, that

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

THE DEPARTMENT OF THE ARMY

THE CITY OF FAIRFIELD

By *William H. Brown*  
Assistant Secretary of the Army  
(Civil Works)

By *Ben F. [Signature]*  
Mayor,  
City of Fairfield

DATE 3 June 1986

APPROVED AS TO LEGAL FORM AND SUFFICIENCY, INCLUDING THE EFFECT OF SECTION 221, PUBLIC LAW 91-511.

By *Thomas Haas*  
CHIEF LEGAL OFFICER,  
City of Fairfield

DATE 5/29/86

AS WITNESSED BY:

*[Signature]* \_\_\_\_\_  
*[Signature]* \_\_\_\_\_  
\_\_\_\_\_

CERTIFICATE OF AUTHORITY

I, Thomas Heas, do hereby certify that I am the Chief Legal Officer, for the City of Fairfield, that the City of Fairfield is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the City of Fairfield in connection with the Fairfield Vicinity Streams, California project, and to pay damages, if necessary, in the event of the failure to perform in accordance with Section 221 of Public Law 91-511, and that the person who has executed the Agreement on behalf of the City of Fairfield has acted within their statutory authority.

In Witness Whereof, I have made and executed this Certificate this 29 da, of May, 1986.

Thomas Heas

EXHIBIT A  
ESTIMATED PROJECT COSTS - RECREATION 1/  
(1 October 1985 Price Level)

Item	Quantity	Unit	Unit Cost	Amount
			\$	\$
<b>LANDS AND DAMAGES</b>				
Fee (Additional Estate)				
Single Family Residence	0.59	AC	3000.00	1,770
Single Family Residence	7.50	AC	2500.00	18,750
Multi-Family Residence	2.00	AC	6000.00	12,000
Light Industrial	0.20	AC	7500.00	1,500
Industrial	8.50	AC	2000.00	17,000
Commercial	0.90	AC	20000.00	18,000
Commercial	0.50	AC	11000.00	5,500
Orchard	4.24	AC	2000.00	9,680
Grazing	3.00	AC	150.00	450
Subtotal				84,650
Contingencies 35%±				29,350
<b>TOTAL LANDS AND DAMAGES</b>				<b>114,000</b>
<b>RECREATION FACILITIES</b>				
New Bicycle Trail	15,100	LF	8.70	131,370
Upgrade Existing Trail	10,000	LF	6.25	62,500
Chemical Toilet	2	EA	1000.00	2,000
Bicycle Rack	1	EA	720.00	720
Excavation	6,000	CY	5.00	30,000
Stabilized Aggregate	1,100	TON	12.00	13,200
Asphalt Plant Mix	300	TON	45.00	13,500
Concrete Bumper	1,300	LF	9.00	11,700
Recreation Sign	25	EA	160.00	4,000
Esthetic Treatment	1	JOB	LS	9,100
Pedestrian Bridge	1	JOB	LS	30,200
Subtotal				307,290
Contingencies 20%±				61,458
<b>TOTAL RECREATION FACILITIES</b>				<b>368,748</b>
<b>ENGINEERING AND DESIGN</b>				<b>90,000</b>
<b>SUPERVISION AND ADMINISTRATION</b>				<b>40,000</b>
<b>REPORTED COSTS INCURRED ON RECREATION FACILITIES</b>				<b>105,000</b>
<b>TOTAL SEPARABLE RECREATION FIRST COST</b>				<b>\$715,000</b>

1/ These figures do not reflect an adjustment for inflation.

# **EXHIBIT D**

FEDERAL FLOOD CONTROL REGULATIONS

## CODE OF FEDERAL REGULATIONS (EXTRACT)

### 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 structure 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 invert 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 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) (17 F.R. 9399, Aug. 17, 1944; 9 F.R. 10303, Aug. 22, 1944)

# **EXHIBIT E**

SAMPLE PERMIT FOR USE OF RIGHT-OF-WAY

PERMIT  
FOR  
RIGHT-OF-ENTRY

\_\_\_\_\_  
(Name of Levee Commission or City)

\_\_\_\_\_  
(Location)

Permission is hereby granted to:

\_\_\_\_\_  
(Name of Firm or Individual)

\_\_\_\_\_  
(Address)

TO: (Describe in these spaces the proposal, including kind and type of construction, purpose intended, location by stationing. Indicate passageway provided by means of gates, etc. Use separate sheets if necessary, identifying each by reference herein.)

PROVIDED THAT:

Upon termination or expiration of this permit (whether by voluntary relinquishment by the grantee, by revocation by the grantor or otherwise) the grantee shall remove all structures, improvements, or appurtenances which may have been erected or constructed under this permit, and shall repair or replace any portion of the flood protection structure or right-of-way which may have been damaged by his operations (including grading and seeding, or sodding, if necessary), to the satisfaction of the grantor.

The structure or operation for which this permit is issued shall be maintained by the grantee in such manner as shall not injure or damage the flood protection structure, or interfere with its operation and maintenance in accordance with regulations of the Secretary of the Army.

The structure or operation covered by this permit may be damaged, removed or destroyed by the grantor in time of flood emergency if such action is determined by the grantor to be necessary in order to preserve life or property or prevent damage or impairment to the use or safety of the flood protection structure, and the grantor shall not be liable to the grantee for such damage or destruction.



REGULATIONS GOVERNING ISSUANCE OF PERMITS FOR USE OF  
RIGHTS-OF-WAY FOR FLOOD PROTECTION PROJECTS

As the flood protection works and rights-of-way are owned by the Local Interests and will be operated and maintained by them in accordance with Regulations of the Secretary of the Army, and issuance of any permits to use any part of the rights-of-way will be handled by the Local Interests, with the restriction that no such permit may be issued without the approval of the District Engineer, as stated in paragraph No. 208.10, (a) General, (5) of the Regulations, a copy of which is attached hereto.

Applications for use of the rights-of-way should be addressed to the City or Levee Commission having jurisdiction over the local flood protection project. The City or Levee Commission will then forward the application to the District Engineer, Corps of Engineers, Sacramento, California, with its recommendation, with reasons for such recommendation. It is suggested that the application and recommendations be forwarded with a draft copy of the permit, in order that all objectionable features may be eliminated prior to its proffer to the applicant as this may prevent misunderstandings and arguments. If for any reason it is desired to forward the permit itself without this intervening stop, five copies of the proposed permit should be included on which is stated the exact use of the rights-of-way, for which permission is being requested, together with any condition or restriction of the permit. The permit should be signed by the applicant and an official of the Local Interests. A drawing, sketch or detailed plan as may be required to show the exact location, nature of work and proposed method of construction should be attached to each copy of permit. If the permit is approved by the District Engineer, three copies will be returned. This will enable each party concerned to have a copy of the approved permit.

In any case where a permit is requested for any purpose for any purpose which might cause disfigurement or damage to the flood protection rights-of-way or structure in its erection, use, or removal, it is suggested that the applicant be required to post a bond of sufficient amount to protect the Local Interests from any cost of repair or removal, and to guarantee faithful performance of the permit conditions. In such cases the permit should state the amount and conditions of the bond.

In cases involving major construction or other work which may directly affect the flood protection structure, it will be necessary that the United States inspect the work and the Local Interests may also desire to inspect it. As stated in the permit form, such inspection will be at the expense of the grantee, and this should be called to his attention. Except in cases of known financial security, arrangements should be made with the grantee for an advance deposit or bond to cover such costs.

# **EXHIBIT F**

SUGGESTED CHECKLIST FOR INSPECTIONS

**INSPECTION CHECKLIST  
FOR  
LEVEES AND EARTH CHANNELS**

Inspector \_\_\_\_\_  
Superintendent \_\_\_\_\_

Date \_\_\_\_\_  
Sheet No. \_\_\_\_\_

ITEM	REMARKS
A) Location by creek and station	
B) Landside levee conditions	
C) Waterside levee conditions	
D) Evidence of seepage	
E) Channel bed conditions	
F) Extent of vegetative growth	
G) Accumulation of debris and refuse	
H) Condition of riprap	
I) Condition of roadways and ramps	
J) Condition of gates and fences	
K) New construction or encroachment within right-of-way	
L) Measures taken since last inspection	
M) Comments	

**INSTRUCTIONS FOR COMPLETING  
INSPECTION CHECKLIST FOR LEVEES AND EARTH CHANNELS**

**ITEM A)** Indicate creek name and station corresponding to plans of project. Indicate left or right bank, facing downstream.

**ITEM B)** Indicate condition of the levee landside embankment and levee crown. Note if there is any settlement, sloughing, loss of grade or erosion on the levee. Indicate amount of settlement to tenths of a foot. Indicate the new slope if sloughing has occurred. Indicate extent of erosion if it occurred.

**ITEM C)** Indicate condition of the levee waterside embankment. Note if there is any settlement, sloughing, loss of grade or erosion on the levee. Indicate amount of settlement to tenths of a foot. Indicate the new slope if sloughing has occurred. Indicate extent of erosion if it occurred. Indicate any evidence of rodent holes and the extent to which it occurred.

**ITEM D)** Indicate any evidence of seepage through the embankment section, such as boils, drainage pipe leaks, etc.

**ITEM E)** Indicate condition of the channel invert. Note the extent of aggradation or degradation. Indicate any change in channel grade or alignment. Note amount of sediment buildup such as shoals or extent of scouring.

**ITEM F)** Note nature, extent and size of vegetal growth within the limits of the flood flow channel.

**ITEM G)** Note nature and extent of debris and refuse that might interfere with flow capacity of the channel or flood fighting operations. This includes clogging of conduits, interference with gates or bridges and obstructing channel flow.

**ITEM H)** Indicate condition of riprap. Note if the rock has been deteriorated or damaged. Note any movement of rock or if any erosion has taken place. Note the presence of any vegetal growth through the riprap.

**ITEM I)** Indicate condition of roadways and ramps. Note any changes such as potholes, undulations, or any other damage. Note any inadequacy in the surface drainage system.

**ITEM J)** Indicate the condition of all gates across the embankment section. Note if any maintenance is required, such as painting.

**ITEM K)** Indicate any construction along the project right-of-way. Note any new structure which encroaches the right-of-way.

**ITEM L)** Indicate any maintenance measures that have been performed since inspection, and their present condition.

**ITEM M)** Note any comments and observations not covered under other items.

**INSPECTION CHECKLIST  
FOR  
CONCRETE CHANNELS AND DRAINAGE STRUCTURES**

Inspector \_\_\_\_\_  
 Superintendent \_\_\_\_\_

Date \_\_\_\_\_  
 Sheet No. \_\_\_\_\_

ITEM	REMARKS
A) Location by creek and station	
B) Bank conditions	
C) Concrete and channel wall conditions	
D) Channel bed conditions	
E) Accumulation of refuse and debris	
F) Condition of roadways and ramps	
G) Condition of gates and fences	
H) Condition of pipes or conduits	
I) Condition of headwalls, inlets, or outlets	
J) Condition of flapgates	
K) New construction or encroachment within right-of-way	
L) Measures taken since last inspection	
M) Comments	

**INSTRUCTIONS FOR COMPLETING  
INSPECTION CHECKLIST FOR CONCRETE CHANNELS AND DRAINAGE STRUCTURES**

**ITEM A)** Indicate creek name and station corresponding to plans of project. Indicate left or right bank (facing downstream).

**ITEM B)** Indicate the condition of the landside embankment and backfill. Note if there is any settlement, sloughing, loss of grade or erosion. Indicate amount of settlement to tenths of a foot. Indicate the new slope if sloughing has occurred. Indicate extent of erosion if it occurred.

**ITEM C)** Indicate condition of the concrete and channel walls. Note if there is any deterioration such as cracking, chipping or breaking. Note if concrete has eroded and exposed any reinforcing steel.

**ITEM D)** Indicate condition of the channel invert. Note the extent of aggradation or degradation. Note amount of sediment buildup such as shoals or extent of scouring.

**ITEM E)** Note nature and extent of debris and refuse that might interfere with flow capacity of the channel or flood fighting operations. This includes clogging of conduits, interference with gates or bridges and obstructing channel flow.

**ITEM F)** Indicate condition of roadways and ramps. Note any changes such as potholes, undulations or any other damage. Note any inadequacy in surface drainage system.

**ITEM G)** Indicate the condition of all gates across embankment section. Note if any maintenance is required, such as painting.

**ITEM H)** Indicate condition of pipes or conduits. Note any settlement or damage that has occurred. Note any leakage.

**ITEM I)** Indicate condition of structure. Note any damage of the concrete structure such as settlement, cracks, displacement, scour, etc.

**ITEM J)** Indicate condition of flapgates. Note if they have become corroded, misaligned or jammed. Note if the adjustable pivot points are stiff or jammed.

**ITEM K)** Indicate any construction along the project right-of-way. Note any new structures which encroach the project right-of-way.

**ITEM L)** Indicate any maintenance measures that have been performed since inspection on their present condition.

**ITEM M)** Note any comments and observations not covered under other items here.

**INSPECTION CHECKLIST  
FOR  
BRIDGES, CULVERTS, AND OTHER MISCELLANEOUS MAINTENANCE**

Inspector \_\_\_\_\_  
Superintendent \_\_\_\_\_

Date \_\_\_\_\_  
Sheet No. \_\_\_\_\_

ITEM	REMARKS
A) Location by creek and station	
B) Condition of bridge	
C) Condition of culvert	
D) Upstream approach conditions	
E) Downstream departure conditions	
F) Accumulation of debris and refuse	
G) Condition of fishways	
H) Condition of landscaping	
I) Condition of recreation trail	
J) Miscellaneous	
K) New construction or encroachment within right-of-way	
L) Measures taken since last inspection	
M) Comments	

**INSTRUCTIONS FOR COMPLETING  
INSPECTION CHECKLIST FOR BRIDGES, CULVERTS, AND MISCELLANEOUS  
MAINTENANCE**

**ITEM A)** Indicate creek name and station corresponding to plans of project. Indicate left or right bank (facing downstream).

**ITEM B)** Indicate condition of bridge. Note any damage to footing, such as settlement and scour. Note if any maintenance is required such as painting.

**ITEM C)** Indicate condition of culvert. Note any damage to the structure such as scouring, clogging or cracking. Note if concrete has eroded and exposed any reinforcing steel.

**ITEM D)** Indicate condition of upstream approach to structure. Note if any aggradation or degradation has occurred. Note amount of sediment buildup such as shoals or extent of scouring. Note if erosion has occurred.

**ITEM E)** Indicate condition of downstream departure to structure. Note if any aggradation or degradation has occurred. Note amount of sediment buildup such as shoals or extent of scouring. Note if erosion has occurred.

**ITEM F)** Note nature and extent of debris and refuse that might interfere with flow capacity of the channel or flood fighting operations. This includes clogging of conduits, interference with gates or bridges, and obstructing channel flow.

**ITEM G)** Indicate condition of fishways. Note if they are filled with sediment or debris.

**ITEM H)** Indicate condition of landscaping. Note if any maintenance is required such as watering, weeding, pruning, or spraying. Indicate condition of irrigation system and sprinklers.

**ITEM I)** Indicate condition of recreation trail. Note any changes such as potholes, undulations, or any other damage. Note any inadequacy in the surface drainage system.

**ITEM J)** Indicate condition of other miscellaneous structures. Note any damage and maintenance measure necessary.

**ITEM K)** Indicate any construction along the project right-of-way. Note any new structures which encroach the project right-of-way.

**ITEM L)** Indicate any maintenance measures that have been performed since inspection on their present condition.

**ITEM M)** Note any comments and observations not covered under other items here.

# **EXHIBIT G**

SUGGESTED SEMI-ANNUAL REPORT FORM

To: The District Engineer  
Sacramento District  
U.S. Army Corps of Engineers  
1325 J Street  
Sacramento, CA 95814-2922

Dear Sir:

The semi-annual report for the period of ( ) for the Fairfield Vicinity Streams Project, Solano County, California is as follows:

A) The physical condition of the protective works is indicated by the Inspector's Report, copies of which are enclosed, and may be summarized as follows:

(Superintendent's summary of conditions may be inserted here)

It is our intention to perform (within 6 months) the following maintenance operations in order to repair or correct the conditions indicated above:

(Superintendent's summary of maintenance operations for the following 6 months)

B) During this report period major high water periods occurred on the following dates:

<u>STREAM</u>	<u>GAGE STATION</u>	<u>DATE</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 for the Fairfield Vicinity Streams Project )

C) The inspections have indicated (no) or (the following) encroachments or trespasses upon the project right-of-way.

D) (No) ( \_\_\_\_\_ ) permits have been issued for (the following improvements) or (construction within) the project right-of-way.

Executed copies of the permit documents issued are transmitted for your files.

E) The status of maintenance measures, indicated in the previous semi-annual report as being required or as suggested by the representatives of the District Engineer, is as follows:

(Statement of maintenance operations, item by item with percent completion)

F) The fiscal statement of the Superintendent's operations for the current report period is as follows:

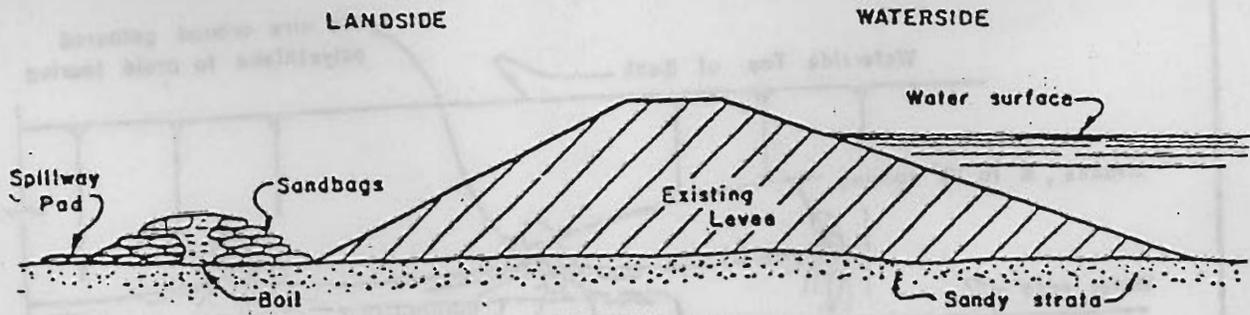
	<u>Labor</u>	<u>Material</u>	<u>Equipment</u>	<u>Overhead</u>	<u>Total</u>
1. Inspection					
2. Maintenance					
3. Flood Fighting Operations					
TOTAL					

Respectfully submitted,

\_\_\_\_\_  
Superintendent of Works

# **EXHIBIT H**

PLATES OF SUGGESTED FLOOD-FIGHTING METHODS



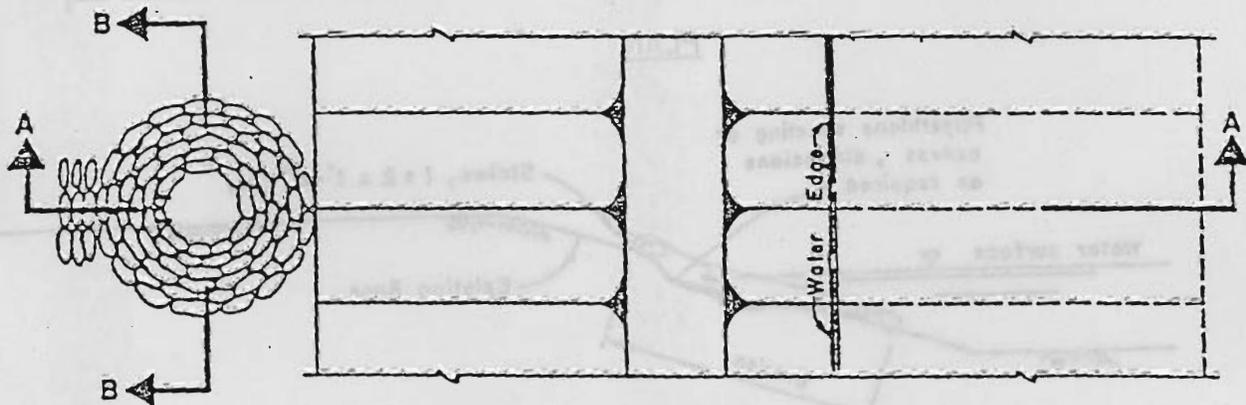
NOTE:

Bottom width to be no less than 1.5 times height.

Be sure to clear sand discharge.

Tie into levee if boil is near toe.

SECTION A - A



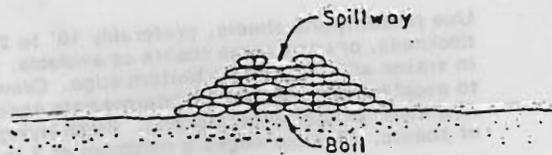
PLAN

NOTE:

Do not sack bolts which do not put out material.

Height of sack loop or ring should be only sufficient to create enough head to slow down flow through boil so that no more material is displaced and boil runs clear.

Never attempt to stop completely the flow through a boil.

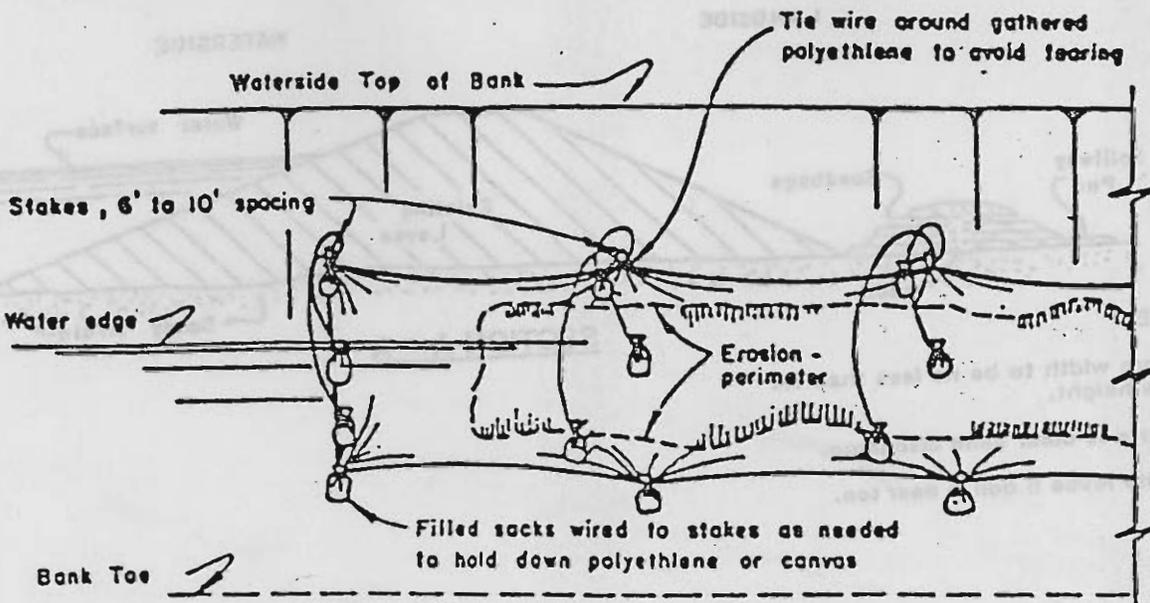


SECTION B - B

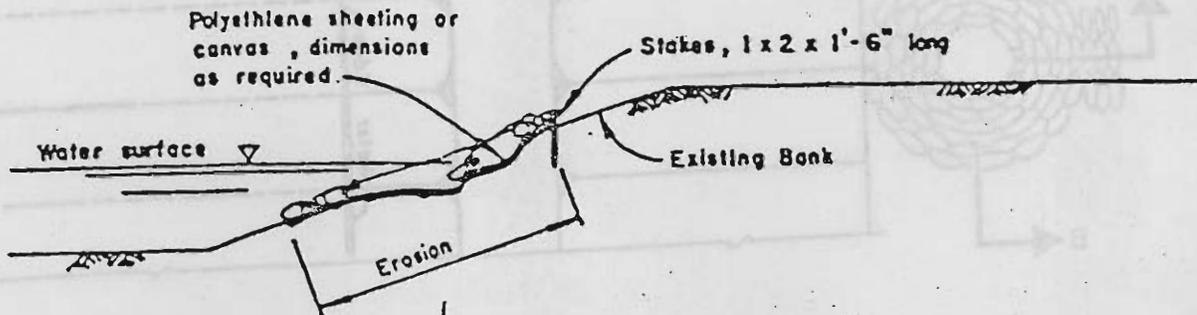
FAIRFIELD VICINITY STREAMS, CALIFORNIA

PLATE 1  
CONTROL OF SAND BOILS

SACRAMENTO DISTRICT  
US ARMY CORPS OF ENGINEERS



PLAN



SECTION

NOTE:

Use polyethylene sheets, preferably 16' to 20' wide, available in standard 100' long rolls, approximately 6 mil thickness, or use canvas sheets as available. Lay length of sheeting parallel to edge of bank top. Tie upper edge to stakes and tie sacks to bottom edge. Crew will then simultaneously toss all bottom sacks over damaged slope to avoid tearing. Remaining intermediate sacks will be immediately placed as shown to hold down sheeting. Have ALL items prepared beforehand. Begin laying sheets from downstream end of erosion to enable correct lapping of sheets. Overlap edges a minimum of 2 feet.

BILL OF MATERIAL FOR 100 FEET

LUMBER

30 Sharpened stakes 1" x 2" x 18"

SANDBAGS

120 Bags

SHEETING

Polyethylene or Canvas sheeting as required

WIRE

650 ft. 16 Gauge Baling Wire

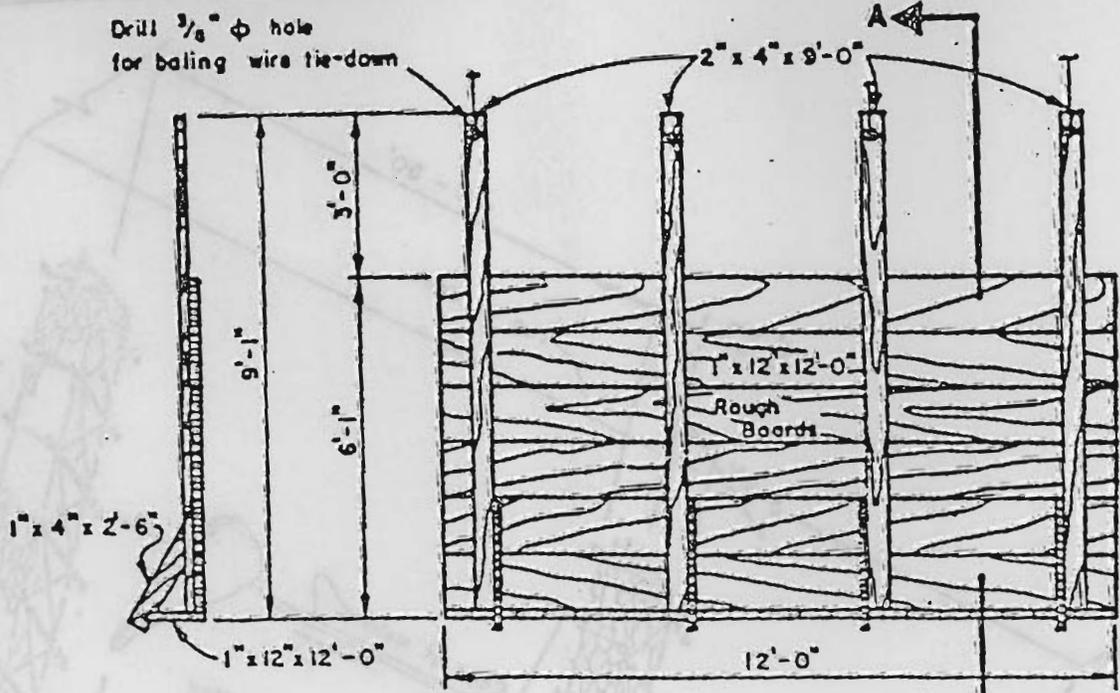
FAIRFIELD VICINITY STREAMS, CALIFORNIA

PLATE 2

WAVE WASH PROTECTION

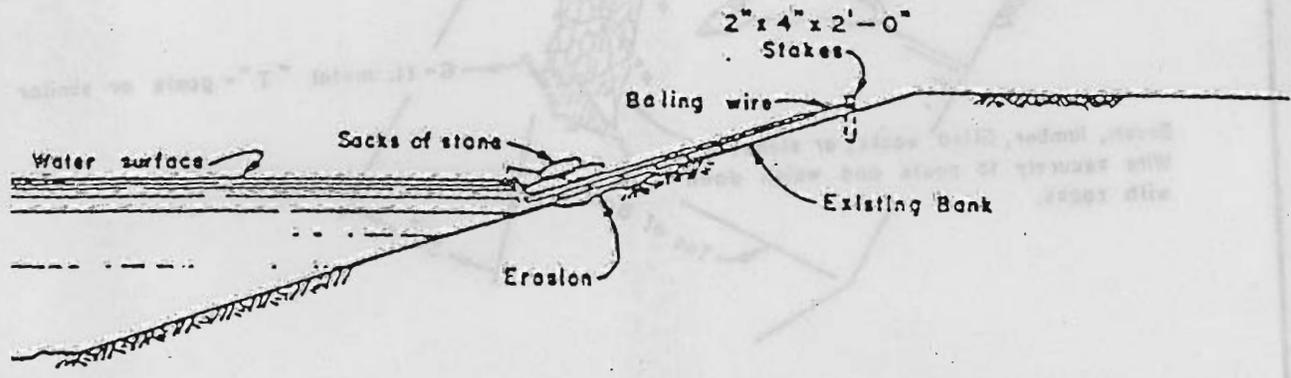
SACRAMENTO DISTRICT

US ARMY CORPS OF ENGINEERS



SECTION A - A

PLAN



ELEVATION

BILL OF MATERIAL FOR 100 FEET

LUMBER

56 pieces 1" x 12" x 12'-0"

32 pieces 1" x 4" x 2'-6"

32 pieces 2" x 4" x 9'-0"

\*32 pieces 2" x 4" x 2'-0"

\*sharpened

WIRE

200 ft. Baling Wire

NAILS

4-1/2 lbs. 8d nails

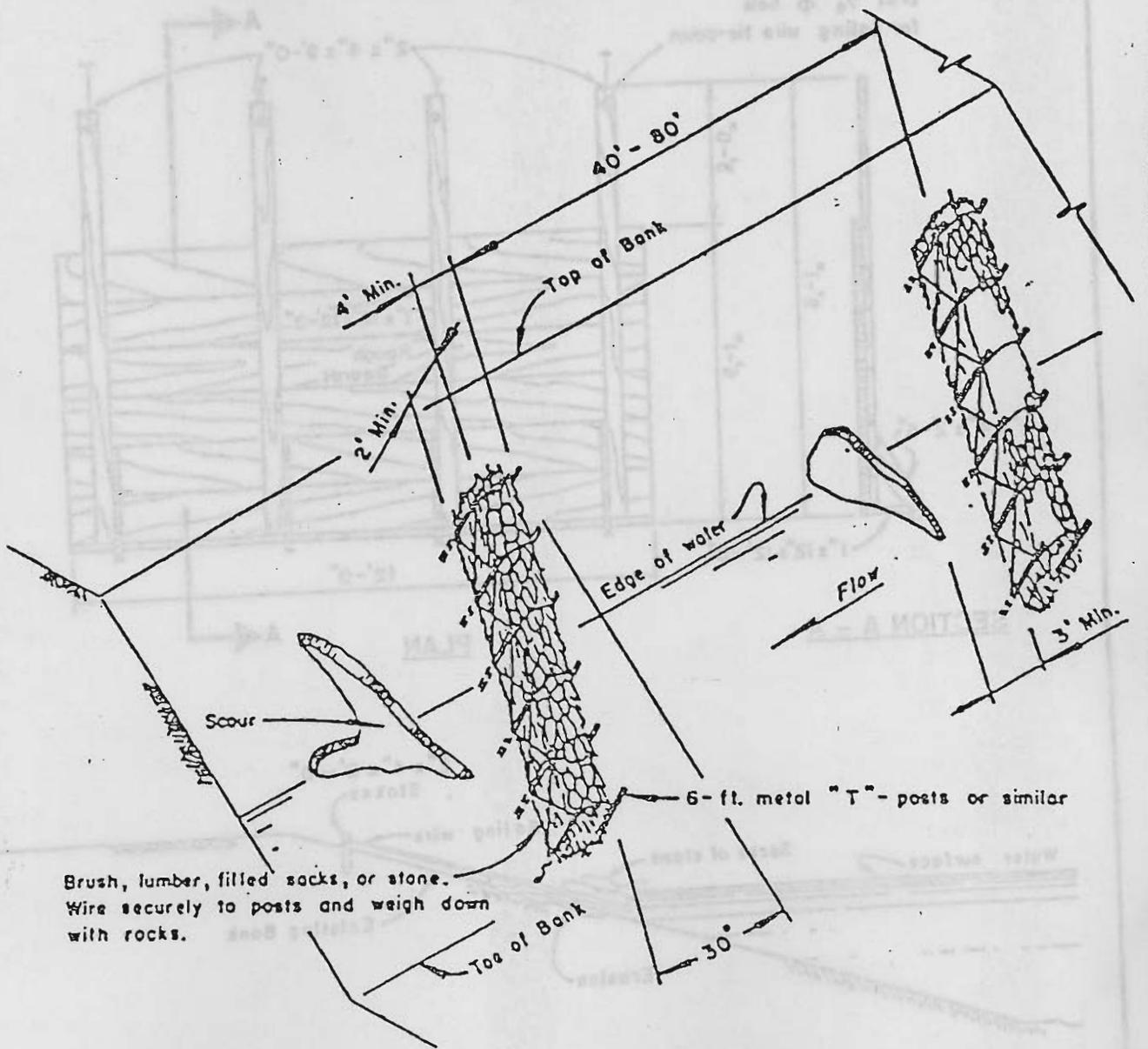
FAIRFIELD VICINITY STREAMS, CALIFORNIA

PLATE 3

MOVABLE WAVE WASH PROTECTION

SACRAMENTO DISTRICT

US ARMY CORPS OF ENGINEERS



FAIRFIELD VICINITY STREAMS, CALIFORNIA

PLATE 4  
DEFLECTION DIKE  
FOR SCOUR CONTROL

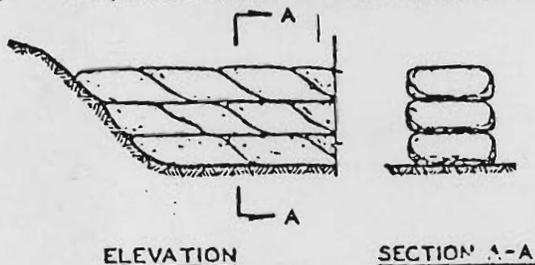
SACRAMENTO DISTRICT  
US ARMY CORPS OF ENGINEERS

## LEVEE CONSTRUCTION

Sandbagging is used to prevent overtopping of existing levees and for retaining flood waters where no back up material is available.

### INSTRUCTIONS

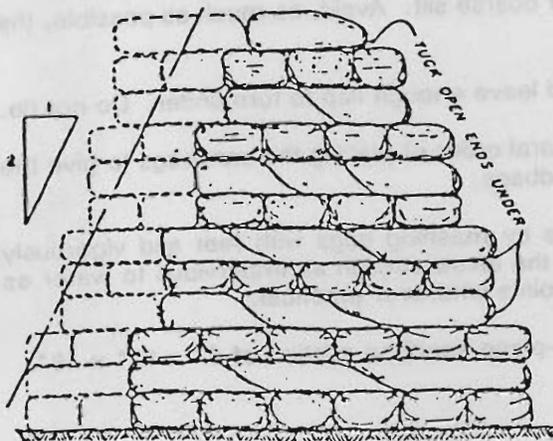
1. Fill sandbags 1/2 to 2/3 full but leave enough flap to turn under. Do not tie. Leave ends open.
2. For heights of one foot or less, lay 3 single courses with sacks lengthwise as shown in sketch "A" below.
3. For heights greater than one foot, place as indicated in sketch "B" below.
4. When bags are placed, flatten out and fill voids by mashing bags with feet and vigorously tramp each course of the levee section. This is an extremely important operation for providing a levee which will be as impervious to water as possible and to insure stability of section. Loosely placed sandbags, improperly keyed together, may result in failure and cause serious damage.



ELEVATION

SECTION A-A

SKETCH "A"



LEVEE SECTION

For heights in excess of the above (approx. 3'-6") hold same batter and build on the side as indicated by dashed lines above. Alternate header courses (bags placed crosswise) and stretcher courses (bags placed lengthwise).

SKETCH "B"

### ESTIMATING DATA:

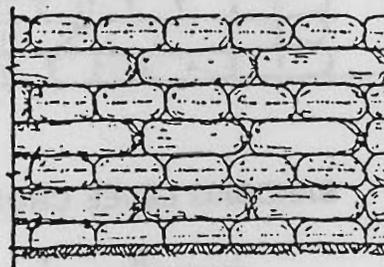
1. Average sandbag weight- approx. 50 lbs.
2. Approx. 1000 sandbags are required for 100 sq. ft. of surface (height x distance).

## REVETMENTS

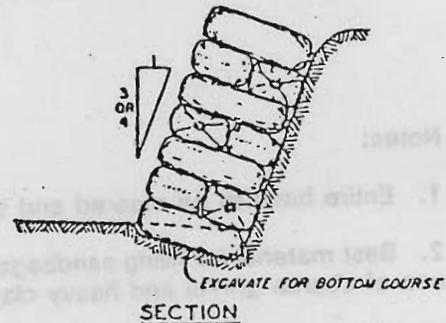
Used for emergency bank protection to prevent under cutting and control course of flood channels.

### INSTRUCTIONS:

1. Fill sandbags 2/3 full and tie open ends.
2. Tuck in bottom corners of bag after filling.
3. Place bags perpendicular to slope.
4. Lay stretcher and header courses with choke and side seams in as shown below:



ELEVATION



SECTION

### ESTIMATING DATA:

1. Average sandbag weight- approx. 65 lbs.
2. Approx. 320 sandbags are required for each 100 sq. ft. of surface to be reveted.

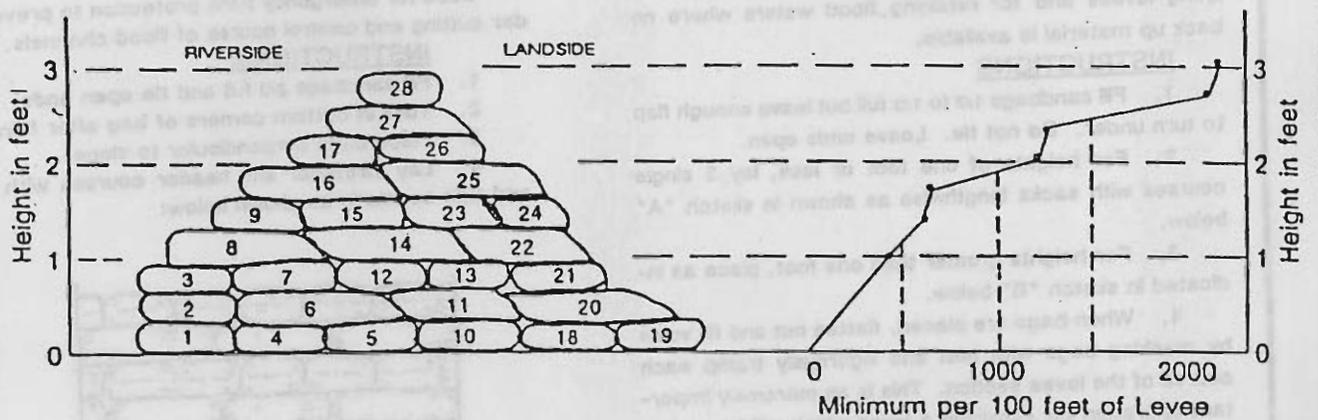
### FILL MATERIAL:

The ideal material for filling sandbags is a fine sand or coarse silt. Avoid, as much as possible, the use of coarse gravel and heavy clays.

FAIRFIELD VICINITY STREAMS, CALIFORNIA

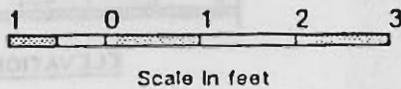
## PLATE 5 (1 OF 2) INSTRUCTIONS FOR PLACING SANDBAGS

SACRAMENTO DISTRICT  
US ARMY CORPS OF ENGINEERS



SANDBAG LEVEE CROSS SECTION

NUMBER OF SANDBAGS



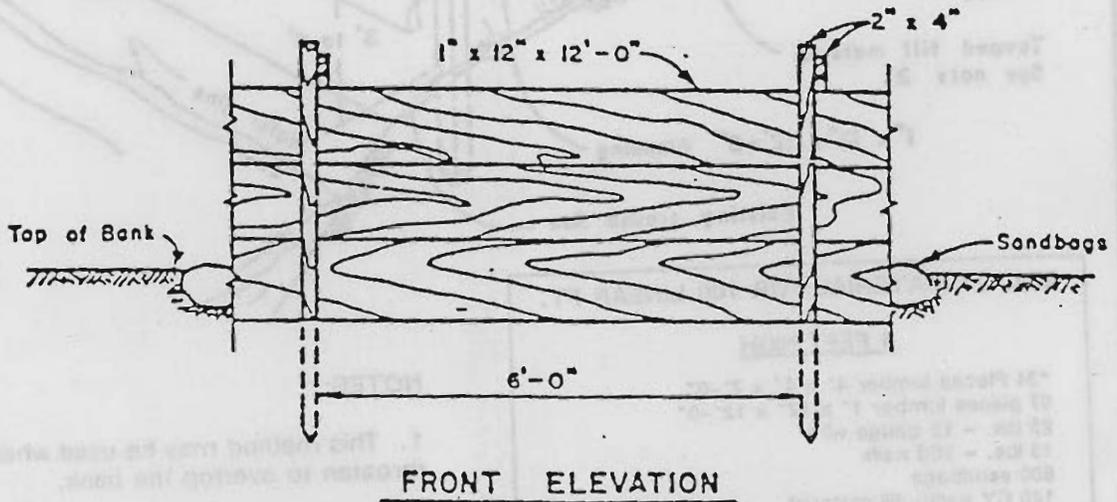
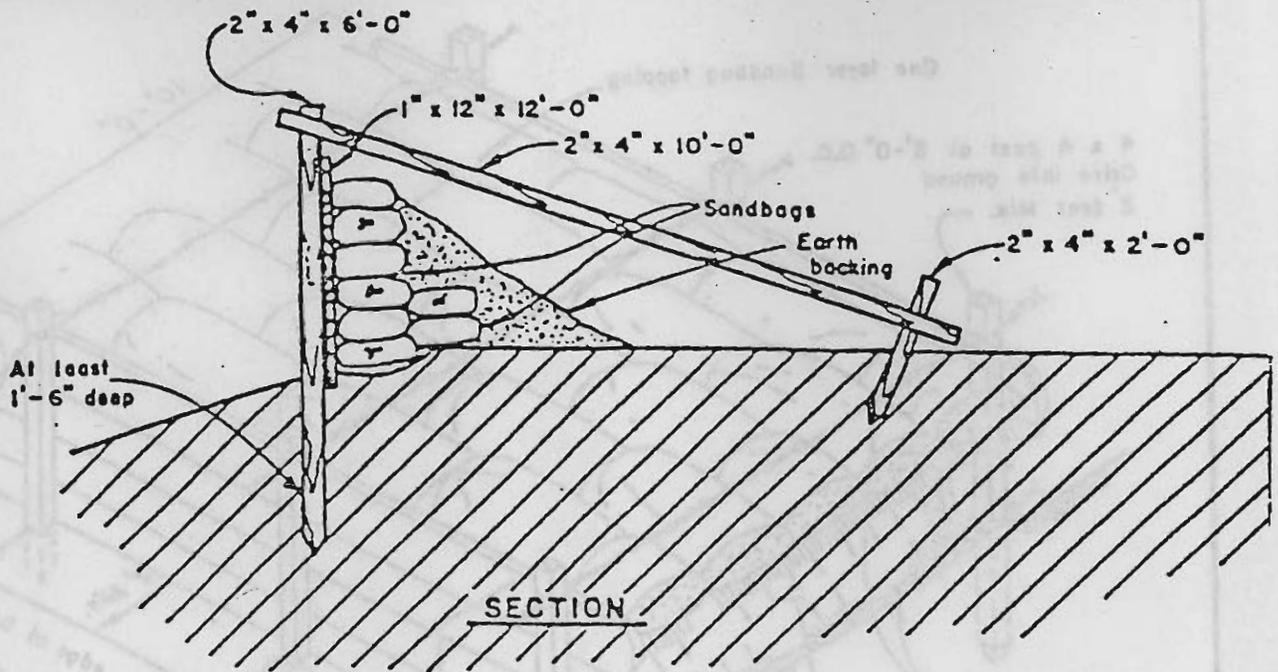
Notes:

1. Entire base to be cleared and scarified.
2. Best material for filling sandbags is a fine sand or coarse silt. Avoid, as much as possible, the use of coarse gravel and heavy clays.
3. Fill sandbags 1/2 to 2/3 full, 50 to 60 pounds, and leave enough flap to turn under. Do not tie.
4. Numbers shown on the sandbags are for the general order of placing the sandbags to give the highest protection with the minimum number of sandbags.
5. When bags are placed, flatten out and fill voids by mashing bags with feet and vigorously tramping each course of the levee. This will make the levee section as impervious to water as possible. Alternate direction of sacks and stagger joints wherever practical.
6. The above section is based upon an average in-place sandbag section of 4" x 12" x 18".

FAIRFIELD VICINITY STREAMS, CALIFORNIA

PLATE 5 (2 OF 2)  
INSTRUCTIONS FOR  
PLACING SANDBAGS

SACRAMENTO DISTRICT  
US ARMY CORPS OF ENGINEERS



**BILL OF MATERIAL FOR 100  
LINEAR FEET OF BANK**

**LUMBER**

- 25 pieces 1" x 12" x 12'-0"
- 17 pieces 2" x 4" x 10'-0"
- \*17 pieces 2" x 4" x 6'-0"
- \*17 pieces 2" x 4" x 2'-0"
- \* sharpened

**NAILS**

- 1 lb. 8d nails
- 2 lbs. 16d nails

**SANDBAGS**

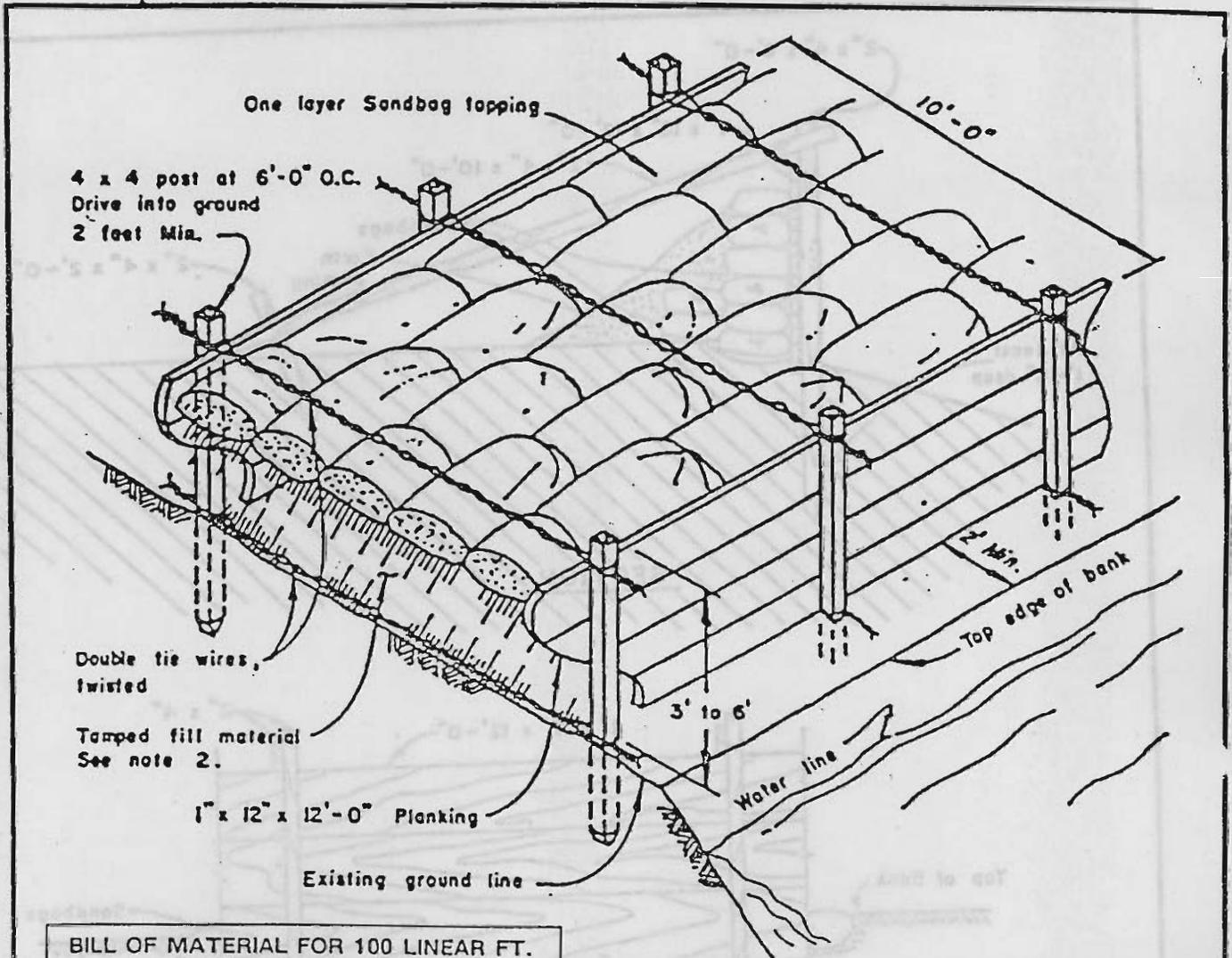
- 120 Bags

FAIRFIELD VICINITY STREAMS, CALIFORNIA

PLATE 6

LUMBER & SANDBAG TOPPING

SACRAMENTO DISTRICT  
US ARMY CORPS OF ENGINEERS



**BILL OF MATERIAL FOR 100 LINEAR FT.**

**4 FEET HIGH**

- \*34 Pieces lumber 4" x 4" x 7'-0"
- 67 pieces lumber 1" x 12" x 12'-0"
- 25 lbs. - 12 gauge wire
- 13 lbs. - 10d nails
- 600 sandbags
- 140 CY earth-fill material

**5 FEET HIGH**

- \*34 Pieces lumber 4" x 4" x 8'-0"
- 84 pieces lumber 1" x 12" x 12'-0"
- 25 lbs. - 12 gauge wire
- 15 lbs. - 10d nails
- 600 sandbags
- 185 CY earth-fill material

**6 FEET HIGH**

- \*34 Pieces lumber 4" x 4" x 9'-0"
- 100 pieces lumber 1" x 12" x 12'-0"
- 25 lbs. - 12 gauge wire
- 17 lbs. - 10d nails
- 600 sandbags
- 222 CY earth-fill material

\* Sharpened

**NOTES:**

1. This method may be used when flood flows threaten to overtop the bank.
2. Inside walls of planking should be lined with canvas or polyethylene sheeting when fill material has a soupy consistency.
3. Moderate to heavy vegetation should be cleared to discourage water seepage.

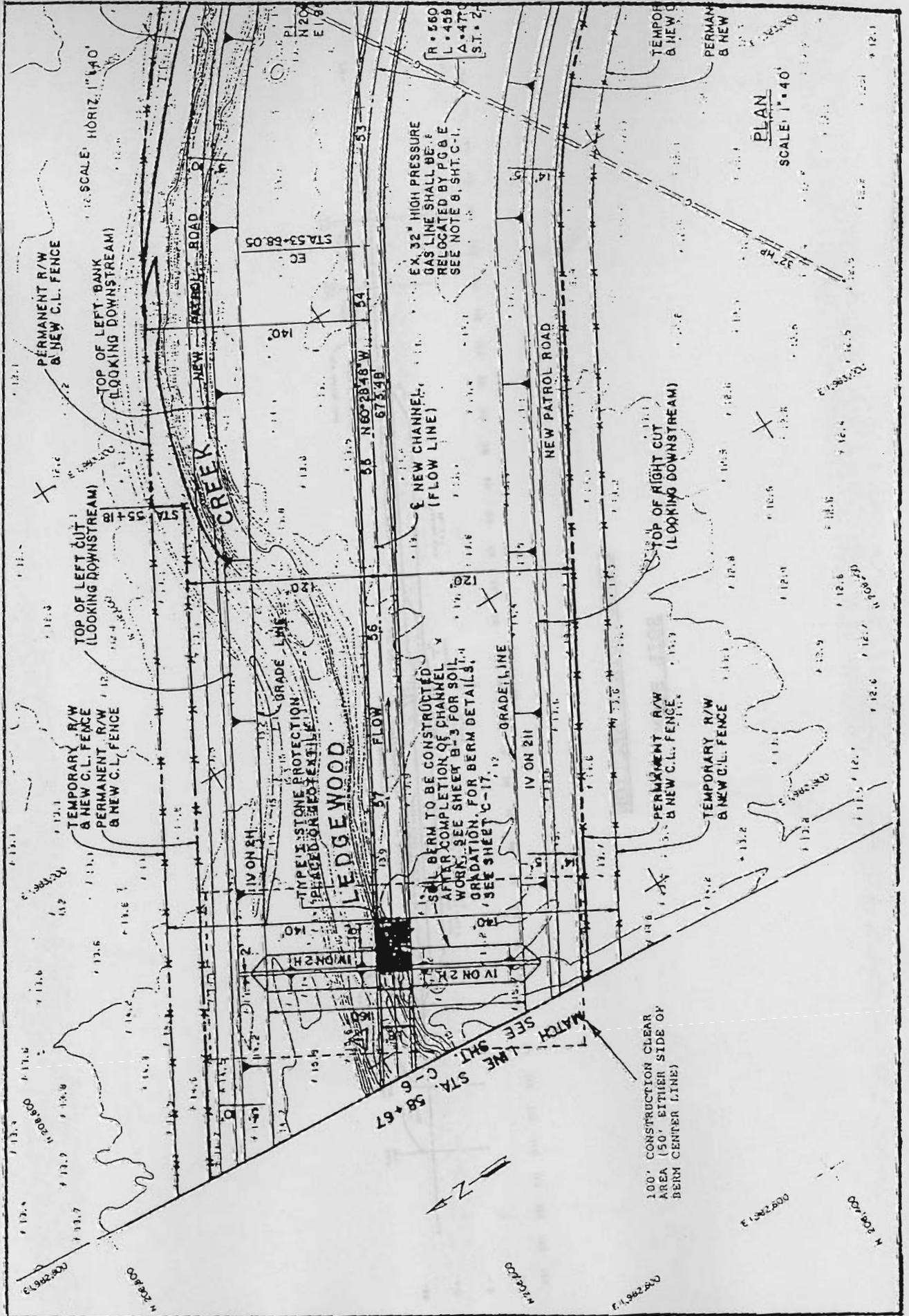
**FAIRFIELD VICINITY STREAMS, CALIFORNIA**

**PLATE 7  
MUD BOX LEVEE  
TO PREVENT OVERTOPPING**

**SACRAMENTO DISTRICT  
US ARMY CORPS OF ENGINEERS**

# **EXHIBIT I**

PLANS FOR LEDGEWOOD CREEK BERM

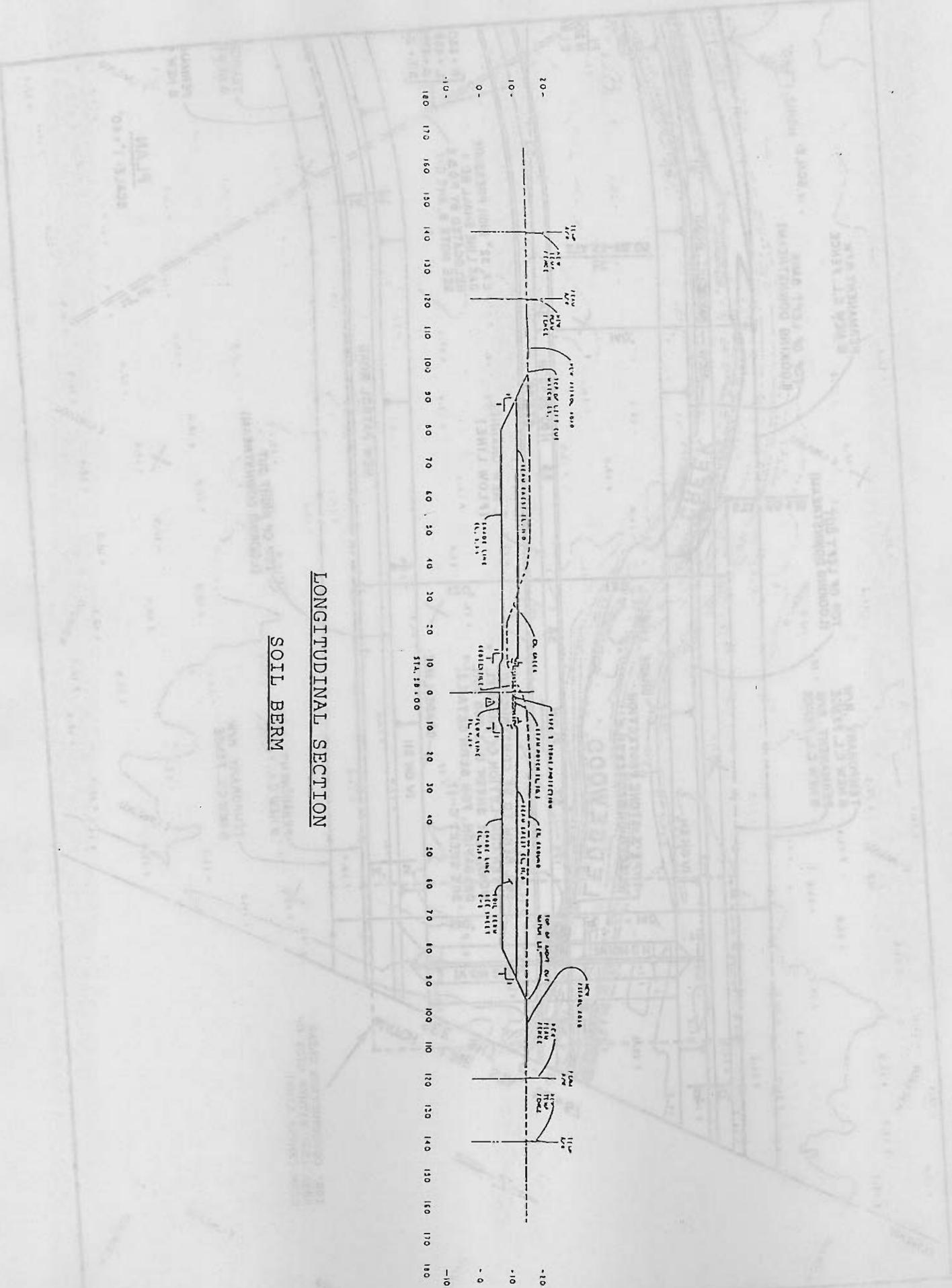


PLAN  
SCALE: 1"=40'

SOIL BERM TO BE CONSTRUCTED  
AFTER COMPLETION OF CHANNEL  
WORK. SEE SHEET B-3 FOR SOIL  
GRADATION. FOR BERM DETAILS,  
SEE SHEET C-17.

100' CONSTRUCTION CLEAR  
AREA (50' EITHER SIDE OF  
BERM CENTER LINE)

LEDGEWOOD CREEK BERM PLAN  
EXHIBIT I



LONGITUDINAL SECTION

SOIL BERM





**EXHIBIT J**  
**TRANSFER LETTERS**

July 9, 1987

Navigation and Flood Control Unit

**CERTIFIED**

No. 789367  
RETURN RECEIPT REQUESTED



The Reclamation Board  
State of California  
1416 - 9th Street, Room 455-G  
Sacramento, California 95814

Members of the Board:

This is in regard to the joint inspection of July 7, 1987, made for the purpose of transferring a completed portion of Channel Improvements - Phase 1, Fairchild Vicinity Streams California, McCoy Creek & Laurel Creek Diversion Channel to the State of California for operation and maintenance. The work was authorized by Section 201 of the Flood Control Act of 1935 (P.L. 69-298), 69th Congress and the Further Continuing Appropriations Act for Fiscal Year 1936 (P.L. 69-190), 69th Congress.

The work consists of channel improvements, stone bank protection and patrol roads on McCoy Creek from Station 0+00 to Station 60+00 and Laurel Creek Diversion from Station 0+00 to Station 14+00.

The work was completed on June 26, 1987, in accordance with Contract Number DACH-05-86-C-0104, Specification Number 7900 and Drawing Number 51-25-1270. Therefore, this completed work together with the waterway bank contiguous, thereto, is hereby transferred to the State of California as of July 7, 1987, for operation and maintenance in accordance with agreements of local cooperation signed on May 29, 1936 and Title 33, Code of Federal Regulations, Part 206 - Flood Control Regulations.

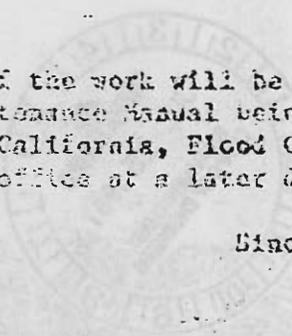
CERTIFIED  
NO. 777 367  
RETURN RECEIPT REQUESTED

July 9, 1957  
-2-

Navigational and Flood Control Unit

This portion of the work will be described in detail in the Operation and Maintenance Manual being prepared for the Fairfield Vicinity Streams, California, Flood Control Project and will be furnished to your office at a later date.

Sincerely,



Major General  
The Honorable

Member of the Board

This is in reply to your letter of July 4, 1957, and for the purpose of clarifying the portion of General Order 100-100-100, which provides for the construction of a flood control project in the Fairfield Vicinity Streams, California, Flood Control Project. The work was completed by Section 101 of the Flood Control Act of 1955 (P.L. 86-100), with the approval of the Federal Board of Engineers and Architects, and the Federal Board of Engineers and Architects, and the Federal Board of Engineers and Architects.

The work consists of general improvements, such as protection and general work on the Fairfield Vicinity Streams, California, Flood Control Project, and the construction of a flood control project in the Fairfield Vicinity Streams, California, Flood Control Project.

The work was completed on July 4, 1957, in accordance with Contract Number 100-100-100, Specification Number 100-100-100, and the work was completed in accordance with the specifications of the Fairfield Vicinity Streams, California, Flood Control Project, and the construction of a flood control project in the Fairfield Vicinity Streams, California, Flood Control Project.

November 16, 1988

Navigation and Flood Control Unit

The Reclamation Board  
State of California  
1416 - 9th Street, Room 455-6  
Sacramento, California 95814

Members of the Board:

This is in regard to the joint inspection of November 1, 1988, made for the purpose of transferring a completed portion of Channel Improvement - Phase II, Fairfield Vicinity Streams California, Laurel Creek Diversion Channel to the State of California for operation and maintenance. The work was authorized by Section 201 of the Flood Control Act of 1965 (P.L. 89-298), 89th Congress, the further Continuing Appropriations Act for Fiscal Year 1986 (P.L. 99-190), 99th Congress and the Supplemental Appropriations Act of 1987 (P.L.100-71), 100th Congress.

The work consists of channel improvements, stone bank protection and bicycle trail and patrol roads on Laurel Creek Stub from Station 0+00 to 9+80, Laurel Creek Diversion from Station 0+00 to Station 101+80, Worley Road and East Tabor Avenue over crossings and miscellaneous appurtenant work.

The work was completed on November 2, 1988, in accordance with Contract Number DACW-05-88-C-0014, Specification Number 8097 and Drawing Number 51-25-1271. Therefore, this completed work together with the waterway bank contiguous, thereto, is hereby transferred to the State of California as of November 2, 1988, for operation and maintenance in accordance with agreements of local cooperation signed on May 29, 1986 and Title 33, Code of Federal Regulations, Part 208 - Flood Control Regulations.

This portion of the work will be described in detail in the Operation and Maintenance Manual being prepared for the Fairfield

November 15, 1955

Navigation and Flood Control Unit

Vicinity Streams, California, Flood Control Project and will be furnished to your office at a later date.

Sincerely,

Jack A. Le Cuyer  
Colonel, Corps of Engineers  
District Engineer

The Reclamation Board  
State of California  
1418 - 5th Street, Room 455-6  
Sacramento, California 95814

Members of the Board:

This is in regard to the joint inspection of November 1, 1955, made for the purpose of transferring a completed portion of Channel Improvement - Phase II, Fairfield Vicinity Streams, California, Laurel Creek Diversion Channel to the State of California for operation and maintenance. The work was authorized by Section 301 of the Flood Control Act of 1952 (P.L. 82-288), such Congress, the further Continuing Appropriations Act for Fiscal Year 1953 (P.L. 82-150), such Congress and the Supplemental Appropriations Act of 1953 (P.L. 82-100-71), 1953 Congress.

The work consists of channel improvements, stone bank protection and bicycle trail and patrol roads on Laurel Creek from station 0+00 to 2+80, Laurel Creek Diversion from station 0+00 to station 101+80, Worley Road and East Labor Avenue over crossings and miscellaneous improvement work.

The work was completed on November 1, 1955, in accordance with Contract Number DACW-05-58-C-0014, Specification Number 8027 and Drawing Number 51-25-1271. Therefore, this completed work together with the waterway bank contiguous thereto, is hereby transferred to the State of California as of November 2, 1955, for operation and maintenance in accordance with agreements of local cooperation signed on May 19, 1954 and Title 30, Code of Federal Regulations, Part 308 - Flood Control Regulations.

This portion of the work will be described in detail in the Operation and Maintenance Manual being prepared for the Fairfield

April 30, 1990

Navigation and Flood Control Unit

The Reclamation Board  
State of California  
1416 - 9th Street, Room 455-6  
Sacramento, California 95814

Members of the Board:

This is in regard to the joint inspection of March 30, 1990, made for the purpose of transferring a completed portion of Channel Improvement - Phase III, Fairfield Vicinity Streams, California, Laurel Creek and Union Avenue Creek Diversion Channel, to the State of California for operation and maintenance. The work was authorized by Section 201 of the Flood Control Act of 1965 (P.L. 89-298), 89th Congress, the further Continuing Appropriations Act for Fiscal year 1986 (P.L. 99-190), 99th Congress, and the Supplemental Appropriations Act of 1987 (P.L. 100-71), 100th Congress.

The work, briefly described, consists of channel improvements, stone bank protection, bicycle trails, and patrol roads on Laurel Creek from Stations 0+56 to 34+00, Union Avenue Creek Diversion Channel from Stations 0+00 to 45+53, storm drain conduits, Air Base Parkway, Gulf Drive, and Dover Avenue box culverts, Camrose Avenue bridge, utility relocation and miscellaneous appurtenant work.

The work was completed on April 18, 1990, in accordance with Contract Number DACW05-88-C-0062, Specification Number 8215, and Drawing Number 51-25-1277. Additional corrective work at Marigold Avenue will be completed under the Phase II A Contract. Therefore, this completed work, together with the waterway bank contiguous, thereto, is hereby transferred to the State of California as of April 18, 1990, for operation and maintenance in accordance with agreements of local cooperation signed on May 29, 1986, and Title 33, Code of Federal Regulations, Part 208 - Flood Control Regulations.

April 30, 1950

Operation and Flood Control Unit

This portion of the work will be described in detail in the Operation and Maintenance manual being prepared for the Fairfield Vicinity Streams, California, Flood Control Project and will be furnished to your office at a later date.

Sincerely,

Jack A. Le Cuyer  
Colonel, Corps of Engineers  
District Engineer

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

Members of the Board:

This is in regard to the joint inspection of March 30, 1950, made for the purpose of transferring a completed portion of Channel Improvement - Phase III, Fairfield Vicinity Streams, California, Laurel Creek and Union Avenue Creek Division Channel, to the State of California for operation and maintenance. The work was authorized by Section 301 of the Flood Control Act of 1948 (P.L. 80-328), 85th Congress, the further Continuing Appropriations Act for Fiscal Year 1948 (P.L. 80-190), 80th Congress, and the Supplemental Appropriations Act of 1947 (P.L. 100-71), 80th Congress.

The work, briefly described, consists of channel improvements; stone bank protection, bicycle trails, and patrol roads on Laurel Creek from stations 0+56 to 34+00, Union Avenue Creek Division Channel from stations 0+00 to 45+23, stone drains, conduits, air base pathway, Gulf Drive, and Dover Avenue box culverts, Lawrence Avenue bridge, utility relocation and miscellaneous apparatus work.

The work was completed on April 18, 1950, in accordance with Contract Number DAM05-88-C-0062, Specification Number 0112, and Drawings Number 81-52-1277. Additional corrective work at Northside Avenue will be completed under the Phase II A Contract. Therefore, this completed work, together with the waterway bank, conduits, culverts, is hereby transferred to the State of California as of April 18, 1950, for operation and maintenance in accordance with agreements of local cooperation signed on May 22, 1947, and Title 32, Code of Federal Regulations, Part 408 - Flood Control Regulations.

December 4, 1990

Navigation and Flood Control Unit

The Reclamation Board  
State of California  
1416 - 9th Street, Room 455-6  
Sacramento, California 95814

Members of the Board:

This is in regard to the joint inspection of November 13, 1990 made for the purpose of transferring a completed portion of Channel Improvement - Phase IIA, Fairfield Vicinity Streams, California, to the State of California for operation and maintenance. The work was authorized by Section 201 of the Flood Control Act of 1965 (P.L. 89-298), 89th Congress, the further Continuing Appropriations Act for Fiscal Year 1986 (P.L. 99-190), 99th Congress, and the Supplemental Appropriations Act of 1987 (P.L. 100-71), 100th Congress.

The work, briefly described, is as follows:

- a. Laurel Creek Diversion Channel crossing of the SPTC RR and Railroad Avenue.
- b. Laurel Creek Stub Diversion Channel upstream from Sunset Avenue.
- c. Low flow culvert from Laurel Creek Diversion Channel to Laurel Creek.
- d. Removal of the Laurel Creek plug upstream from Tabor Avenue.
- e. Final grading and installation of drain inlets along the Orchid-Marigold right-of-way.
- f. Completion of drainage swale adjacent to Interstate 80.
- g. Connection of existing Union Avenue Creek culvert under Putah South Canal to existing Union Avenue storm drain conduit.
- h. Completion of splitter box and construction of chute and channels on unnamed tributaries at Interstate 80.

i. Miscellaneous stone protection, utility relocations, fencing, and appurtenant work.

The work was completed on November 16, 1990 in accordance with Contract Number DACW05-90-C-0076, Specification Number 8331, and Drawing Number 51-25-1281. Therefore, this completed work, together with the waterway bank contiguous thereto, is hereby transferred to the State of California as of November 16, 1990, for operation and maintenance in accordance with agreements of local cooperation signed on May 29, 1986, and Title 33, Code of Federal Regulations, Part 208 - Flood Control Regulations.

This portion of the work will be described in detail in the Operation and Maintenance Manual being prepared for the Fairfield Vicinity Streams, California, Flood Control Project and will be furnished to your office at a later date.

Sincerely,

Laurence R. Sadoff  
Colonel, Corps of Engineers  
District Engineer

January 7, 1991

*Routed Jan 3*

Navigation and Flood Control Unit

Mayor Gary Falati  
City of Fairfield  
1000 Webster Street  
Fairfield, California 94533

Dear Mayor Falati:

This is to advise you that the recreation facilities constructed as part of the Phase II and Phase III contracts for the Fairfield Vicinity Streams Project, California, are transferred to the City of Fairfield as of the date of this letter for operation and maintenance. This transfer is made in accordance with Article IIc of the Agreement Between the Department of the Army and the City of Fairfield for Recreation Development at Fairfield Vicinity Streams, California, dated May 29, 1986. Written acceptance of these facilities is requested.

The work was authorized by Section 201 of the Flood Control Act of 1965 (P.L. 89-298), 89th Congress, the further Continuing Appropriations Act for Fiscal Year 1986 (P.L. 99-190), 99th Congress, and the Supplemental Appropriations Act of 1987 (P.L. 100-71), 100th Congress.

The recreation facilities consist of approximately 8,200 lineal feet of paved biking trail located along the left bank of Laurel Creek between Matthews Drive and Gulf Drive. The trails were constructed in accordance with the Phase II contract (Contract Number DACW05-88-C-0014, Specification Number 8097, Drawing Number 51-25-1271) and the Phase III contract (Contract Number DACW05-88-C-0062, Specification Number 8215, Drawing Number 51-25-1277). The Phase II work was completed on November 2, 1988 and the Phase III work was completed on April 18, 1990.

*Yellow orig of  
this letter is lost*

*Robert Jones*

January 1, 1991

Navigation and Flood Control Unit

An interim Operation and Maintenance Manual for the facilities was furnished to you by letter dated April 28, 1989. A final Operation and Maintenance Manual will be furnished to your office at a later date.

Sincerely,

Laurence R. Sadoff  
Colonel, Corps of Engineers  
District Engineer

Mayor Gary Palaci

City of Fairfield

1000 Webster Street

Fairfield, California

Post Mayor Palaci

This is to advise you that the recreation facilities constructed as part of the Phase II and Phase III contracts for the Fairfield Vicinity Stream Project, California, are transferred to the City of Fairfield as of the date of this letter for operation and maintenance. This transfer is made in accordance with Article IIC of the agreement between the Department of the Army and the City of Fairfield for Recreation Development at Fairfield Vicinity Stream, California, dated May 29, 1986. Written acceptance of these facilities is requested.

The work was authorized by Section 201 of the Flood Control Act of 1952 (P.L. 82-582), 82nd Congress, the further continuing Appropriations Act for Fiscal Year 1986 (P.L. 99-190), 99th Congress, and the Supplemental Appropriations Act of 1987 (P.L. 100-71), 100th Congress.

The recreation facilities consist of approximately 8,300 linear feet of paved biking trail located along the left bank of Laurel Creek between Matthews Drive and Golf Drive. The trails were constructed in accordance with the Phase II contract (Contract Number DACW05-88-C-0014, Specification Number 8027) having Number 81-25-1271 and the Phase III contract (Contract Number DACW05-88-C-0022, Specification Number 8212, Drawing Number 81-25-1271). The Phase II work was completed on November 2, 1988 and the Phase III work was completed on April 18, 1990.

*Follow copy of the letter is last page*

December 18, 1991

Navigation and Flood Control Unit

The Reclamation Board  
State of California  
1416 Ninth Street, Room 455-6  
Sacramento, California 95814

Members of the Board:

This is in regard to the joint inspection of November 25, 1991, made for the purpose of transferring the completed Phase IV Channel Improvement, Ledgewood Creek, Fairfield Vicinity Streams, California, to the State of California for operation and maintenance. The work was authorized by Section 201 of the Flood Control Act of 1965 (P.L. 89-298), 89th Congress, the Further Continuing Appropriations Act for Fiscal Year 1986 (P.L. 99-190), 99th Congress, and the Supplemental Appropriations Act of 1987 (P.L. 100-71), 100th Congress.

The work consists of approximately 5,000 feet of channel improvement on Ledgewood Creek extending downstream from State Highway 12, 300 feet of channel improvement on Alonzo Drain, approximately 3,000 feet of levees along both banks of Ledgewood Creek extending downstream from Cordelia Road, a reinforced concrete culvert under the SPTC Railroad, and miscellaneous bank protection, utility relocations, fencing, and appurtenant work.

The work was completed on December 3, 1991, in accordance with Contract Number DACW05-91-C-0073, Specification Number 8500, and Drawing Number 51-25-1283. Therefore, this completed work is hereby transferred to the State of California as of the date of this letter for operation and maintenance in accordance with agreements of local cooperation signed on May 29, 1986, and Title 33, Code of Federal Regulations, Part 208 - Flood Control Regulations.

This portion of the work will be described in detail in the Operation and Maintenance Manual being prepared for the Fairfield Vicinity Streams, California, Flood Control Project and will be furnished to your office at a later date.

Sincerely,

Laurence R. Sadoff  
Colonel, Corps of Engineers  
District Engineer  
The National Academy of Sciences  
5200 North Washington Avenue  
Washington, D.C. 20012

Members of the Board:  
This is in regard to the joint inspection of November 25, 1951, made for the purpose of transferring the completed Phase IV Channel Improvement, Ledgerwood Creek, Fairfield Vicinity Streams, California, to the State of California for operation and maintenance. The work was authorized by Section 301 of the Flood Control Act of 1955 (P.L. 84-328), 84th Congress, the further Continuing Appropriations Act for Fiscal Year 1956 (P.L. 84-150), 84th Congress, and the Supplemental Appropriations Act of 1957 (P.L. 85-71), 85th Congress.

The work consists of approximately 5,000 feet of channel improvement on Ledgerwood Creek extending downstream from State Highway 18, 700 feet of channel improvement on Alameda Drain, approximately 1,000 feet of levees along both banks of Ledgerwood Creek extending downstream from Cordelia Road, a reinforced concrete culvert under the SPTC Railroad, and miscellaneous bank protection, utility relocations, fencing, and appurtenant work.

The work was completed on December 3, 1951, in accordance with Contract Number DACW05-51-C-0073, Specification Number 2200, and Drawing Number 51-35-1287. Therefore, this completed work is hereby transferred to the State of California as of the date of this letter for operation and maintenance in accordance with provisions of local cooperation signed on May 15, 1950, and Title 37, Code of Federal Regulations, Part 105 - Flood Control Regulations.



July 6, 1993

Navigation and Flood Control Unit

*Case 72*  
*File*

The Reclamation Board  
State of California  
1416-9th Street, Room 455-6  
Sacramento, California 95814

Members of the Board:

This is in regard to the joint inspection of May 13, 1993, made for the purpose of transferring the completed work on Ledgewood Creek patrol road, Fairfield Vicinity Streams, California, to the State of California for operation and maintenance.

The work was authorized by Section 201 of the Flood Control Act of 1965 (P.L. 89-298), 89th Congress, the Further Continuing Appropriations Act for Fiscal Year 1986 (P.L. 99-190), 99th Congress, and Supplemental Appropriations Act of 1987 (P.L. 100-71), 100th Congress. The work consists of repair of a 40-foot-long section of Ledgewood Creek patrol road by placing a concrete lining to prevent erosion.

The work was completed on May 13, 1993, in accordance with Contract Number DACW05-92-0072, Specification Number 9140, and Drawing Number 51-05-1287. Therefore, this completed work is hereby transferred to the State of California as of the date of this letter for operation and maintenance in accordance with agreements of local cooperation signed on May 29, 1986, and Title 33, Code of Federal Regulations, Part 208 - Flood Control Regulations.

This portion of the work will be described in detail in the final Operation and Maintenance Manual being prepared for the Fairfield Vicinity Streams, California, Flood Control Project and will be furnished to your office at a later date.

Sincerely,

John N. Reese  
Colonel, Corps of Engineers  
District Engineer

*File*

*(Faint, mirrored text bleed-through from the reverse side of the page, including phrases like "The work was authorized by Section 201 of the Flood Control Act of 1955 (P.L. 84-325)", "This is in regard to the joint inspection of May 13, 1957", and "The work was completed on May 13, 1957, in accordance with...")*

July 8, 1993

Navigation and Flood Control Unit

Honorable Gary Falati  
Mayor of Fairfield  
1000 Webster Street  
Fairfield, California 94533



Dear Mayor Falati:

This is in regard to the joint inspection of May 13, 1993, made for the purpose of transferring the completed work on Airbase Parkway Pedestrian Bridge, Fairfield Vicinity Streams, California, to the City of Fairfield for operation and maintenance.

The work was authorized by Section 201 of the Flood Control Act of 1965 (P.L. 89-298), 89th Congress, the Further Continuing Appropriations Act for Fiscal Year 1986 (P.L. 99-190), 99th Congress, and Supplemental Appropriations Act of 1987 (P.L. 100-71), 100th Congress. The work consists of construction of a reinforced concrete box girder bridge for pedestrian and bicycle traffic spanning over Airbase Parkway at Laurel Creek and a new concrete inclined ramp at each end of the pedestrian bridge.

The work was completed on May 13, 1993, in accordance with Contract Number DACW05-92-0072, Specification Number 9140, and Drawing Number 51-05-1287. Therefore, this completed work is hereby transferred to the City of Fairfield as of the date of this letter for operation and maintenance in accordance with Article IIc of the agreement between the Department of the Army and the City of Fairfield for recreation development at Fairfield Vicinity Streams, California, dated May 29, 1986.

July 8, 1953

This portion of the work will be described in detail in the final Operation and Maintenance Manual being prepared for the Fairfield Vicinity Streams, California, Flood Control Project and will be furnished to your office at a later date.



Sincerely,

John N. Reese  
Colonel, Corps of Engineers  
District Engineer

Honorable Gary Fairfield  
Mayor of Fairfield  
1000 Webster Street  
Fairfield, California  
Dear Mayor Fairfield:

This is in regard to the joint inspection of May 13, 1953, and for the purpose of transferring the completed work on the Fairfield Vicinity Streams, California, to the City of Fairfield for operation and maintenance.

The work was authorized by Section 301 of the Flood Control Act of 1952 (P.L. 82-528), 82nd Congress, the further Continuing Appropriations Act for Fiscal Year 1952 (P.L. 82-189), 82nd Congress, and Supplemental Appropriations Act of 1952 (P.L. 100-71), 100th Congress. The work consists of construction of a reinforced concrete box girder bridge for pedestrian and bicycle traffic spanning over Airbase Parkway at Laurel Creek and a new concrete inclined ramp at each end of the pedestrian bridge.

The work was completed on May 13, 1953, in accordance with Contract Number DACW02-51-0073, Specification Number 2140, and Drawing Number 51-05-1287. Therefore, this completed work is hereby transferred to the City of Fairfield as of the date of this letter for operation and maintenance in accordance with Article 11c of the agreement between the Department of the Army and the City of Fairfield for recreation development at Fairfield Vicinity Streams, California, dated May 25, 1952.



**US Army Corps  
of Engineers**  
Sacramento District

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## **FAIRFIELD VICINITY STREAMS PROJECT**

Solano County, California

# **DRAFT OPERATION AND MAINTENANCE MANUAL**

**CONSTRUCTION PHASES I AND II  
FROM BUFFER CHANNEL TO NIGHTINGALE DRIVE  
EXCEPT STUB AND RAILROAD CROSSING**

April 1989

U.S. ARMY CORPS OF ENGINEERS

DRAFT  
OPERATION AND MAINTENANCE MANUAL  
FAIRFIELD VICINITY STREAMS PROJECT  
CONSTRUCTION PHASES I AND II  
SOLANO COUNTY, CALIFORNIA

RECEIVED

JUN 7 1989

Flood Control Project Branch  
Division of Flood Management  
DEPARTMENT OF WATER RESOURCES

U.S. ARMY ENGINEER DISTRICT  
SACRAMENTO, CALIFORNIA  
APRIL 1989

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EXHIBITS

A	General Plan
B	Agreement Between Department of the Army and the California State Reclamation Board (16 pages)
C	Agreement Between Department of the Army and the City of Fairfield for Recreation Development (18 pages)
D	Federal Flood Control Regulations (2 pages)
E	Sample Permit for Use of Right-of-Entry Right-of Way, or Installation of Structures (3 sheets)
F	Suggested Check List for Inspections (6 pages)
G	Suggested Semi-Annual Report Form (2 sheets)
H	Suggested Flood Fighting Methods (6 plates)

## SECTION I - INTRODUCTION

1-01. Authorization. The flood control project for streams in the vicinity of Fairfield, California, was authorized by House and Senate Public Works Committees' resolutions adopted 15 December 1970 and 17 December 1970, respectively under provisions of Section 201 of the Flood Control Act of 1965, substantially in accordance with the report of the Secretary of the Army and the Chief of Engineers in the House Document 91-159. Section 117 of Public Law 99-190, "Further Continuing Appropriations for Fiscal Year 1986" enacted on December 19, 1985 modified the project authorization. This modification is stated in part as follows:

"...the secretary shall include as part of the non-Federal contribution of the project for flood control, Fairfield Vicinity Streams, California, authorized in accordance with Section 201 of the Flood Control Act of 1965, the cost of any work carried out by non-Federal interests on the project after December 31, 1973, and before the date of the enactment of this joint resolution, if the Secretary determines such work is reasonably compatible with the project. Costs and benefits resulting from such work shall continue to be included for the purposes of determining the economic feasibility of the project."

Project authorization was also modified under the Supplemental Appropriations Act of 1987 (PL 100-71).

1-02. Location. The project is located in the Fairfield area in Solano County and is divided into construction phases as follows: Phases I, II, IIA, and III encompass Union Avenue Creek, a small unnamed tributary near Highway 80, Laurel Creek from just south of Gulf Drive to McCoy Creek, and McCoy Creek south to the Buffer Channel. Phase IV covers approximately 1 mile of Ledgewood Creek from Highway 12 to Peytonia Slough. The project location is indicated on the general plan as shown in EXHIBIT A. References to phases throughout this draft manual refer to the construction phases described above. THIS DRAFT MANUAL COVERS ONLY PHASES I AND II. A final operation and maintenance manual that encompassed the entire project will be prepared upon completion of all construction. This draft manual will be replaced by the final.

1-03. Description of Phases I and II the Project Works. The project plan consists of modifications to provide a 100-year level of protection along streams in the vicinity of Fairfield and Suisun City, California. The plan includes unlined, stone protected and grouted stone protected channel improvements, diversion channels, drop structures, and recreation facilities consisting of a 10-foot wide asphalt paved hike trail paralleling most of the channels. All of the modified channels are trapezoidal in cross section, with 1V on 2H side slopes, with a maintenance road on either one or both sides of the channel, depending on maintenance requirements and available easements. The bike trail is combined with the patrol road along most of Laurel Creek. Relocations include modification or construction of nine road bridges, or culverts, and relocation of numerous utilities. Also included are construction of appropriate type fences along channel reaches. Project phases I and II are complete. The Southern Pacific Railroad Overcrossing and Railroad Avenue will be included in a separate (Phase IIA) contract. The California Dept. of Water Resources relocated the following bridges under a separate (DWR) contract: Pintail Drive, Sunset Avenue, Blossom Road, Matthews Drive, Meadowlark Drive, and Nightingale Drive. Warley and East Tabor were designed by the DWR and included in the Corps' Phase II contract. Highway 12 was a Caltrans contract.

1-04. Protection Provided. The project is designed to provide protection from the 100-year recurrence interval flood under future urban conditions.

The peak flow for McCoy Creek upstream to the confluence with Laurel Creek is 3,700 cfs. At this confluence, the peak inflow from McCoy is 2,000 cfs and 3,700 cfs from Laurel Diversion. At the Laurel diversion confluence with the Diversion Stub the peak is 700 cfs from the Diversion stub and 2,600 cfs from the channel.

1-05. Construction Data and Contractor. Construction-required to improve the channels and build and improve the bridge, and utility relocations on the Fairfield Vicinity Streams Project was accomplished by the following contractors:

Spec No.	7980	Phase I — K.J. McGranahan, Santa Cruz, CA
Spec No.	8097	Phase II— Les McDonald Const Co., Hayward, CA
Spec No.	88-08	Five Overcrossings (Calif DWR)—Shasta Constructors
Spec No.	87-26	Pintail Drive (Calif DWR)— Heide & Williams Highway 12 over McCoy Ck— Heide & Williams

## SECTION II

### LOCAL COOPERATION REQUIREMENTS

2-01. Requirements of Local Cooperation. Local cooperation requirements are pursuant to the provisions of the Flood Control Act of 1965, Section 201 (Public Law 89-298), substantially in accordance with the report of the Secretary of the Army and the Chief of Engineers in House Document No. 91-159, WRDA 86 and P.L. 100-71.

2-02. Assurances Provided by the State of California. By the agreement dated 29 May 1986 (EXHIBIT B) the California State Reclamation Board gave assurances that are quoted in part as follows:

a. "The State shall provide, during the period of construction, an amount equal to not less than twenty five (25) percent of the total Project costs. The amount shall include all lands, easements, rights of ways, and utility and facility alterations and relocations (except railroad bridges) required for construction of the Project..." (pages 2-3 of EXHIBIT B)

b. "Upon completion of Project construction, the Government shall turn the Project over to the State, which shall be solely responsible for operating, maintaining, and rehabilitating the Project in accordance with Article VIII of this Agreement." (page 3 of EXHIBIT B)

c. "The State shall publicize flood plain information in the area concerned and shall provide this information to zoning and other regulatory agencies for their guidance and leadership in preventing unwise development in the flood plain and in adopting such regulations as may be necessary to prevent unwise development in the flood plain and in adopting such regulations as may be necessary to ensure compatibility between future development and protection levels provided by the Project." (page 4 of EXHIBIT B)

d. The State shall, to the extent of its powers, prescribe and enforce regulations to prevent obstruction of or encroachment on the Project that would reduce the level of protection it affords or that would hinder operation and maintenance.

2-03. Transfer to California State Reclamation Board. A walk-through review for the completed phase I work was made on 7 July 1987 and for phase II, on 1 November 1988. Project works for Phases I and II were officially accepted by the California State Reclamation Board for maintenance and operation as of 16 December 1988.

2-04. Assurances Provided by the City of Fairfield By the agreement dated 29 May 1986 (EXHIBIT C), the City of Fairfield gave assurances for recreation development that are quoted in part as follows:

a. "Upon completion of the Project construction, the Government shall turn the Project over to the City which shall be solely responsible for operating, maintaining and rehabilitating the Project in accordance with Article XI of this Agreement." (EXHIBIT C, page 3)

b. "Future Development: Neither party is obligated by this Agreement to undertake any future development of the Project, except to the extent this Agreement may be so modified by future supplemental agreements signed by the parties and approved by the Secretary of the Army or his authorized representative." (EXHIBIT C, page 9-10)

c. "The City shall be responsible for operation, maintenance and rehabilitation without cost to the Government, of all facilities developed to support Project recreation opportunities." (EXHIBIT C, page 11-12)

d. "In acting under its right and obligations hereunder, the City agrees to comply with all applicable Federal and State laws and regulations." (EXHIBIT C, page 13)

## 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 D, pages 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."

The principle mission of the Corps of Engineers, during flood emergencies, is to insure that flood control works are properly operated and maintained and to offer technical advice to enable local interests to obtain maximum flood protection. All other matters become secondary and will yield precedence to the accomplishment of the above-stated mission. During flood periods local interests maintain close liaison with the office of the District Engineer, Corps of Engineers. In the event it is evident that all available county and local resources are insufficient to cope with the situation and the necessity for an emergency proclamation is anticipated, requests for assistance in flood fighting should properly be made direct to the District Engineer. However, it is desired to emphasize that requests for Federal Assistance in flood fighting should be made only when it is evident that county, State, and/or other local equipment and manpower will be exhausted and local resources are insufficient to cope with the flood emergency situation.

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 as of 1 January 1962, 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 regulation reads 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 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. Definitions. As used hereinafter, the term "Superintendent" shall be defined to mean the person appointed by local interests to be directly in charge of an organization which will be fully responsible for the continuous inspection, operation, and maintenance of the project works; the term "District Engineer" shall be defined to mean the District Engineer of the U.S. Army Engineer District, Sacramento, or his authorized representative. The term "right bank" or "left bank" shall be defined to mean the right or left bank or side, respectively, of a stream or channel when facing downstream.

3-05. General Provisions of Regulations. In addition to that quoted in paragraph 3-02 above, the general provisions of the Flood Control Regulations, contained in paragraphs 208.10 (a) (2) to 208.10 (a) (9), both inclusive, are quoted as follows:

- (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 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~~ of 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 features of the work 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 shall be constructed in accordance with standard engineering practice. Advice regarding the effect of proposed improvements or alterations on the function 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 works.
- (6) It shall be the duty of the Superintendent to submit a semi-annual report to the District Engineer covering inspection, maintenance, and operation of the protective works.
- (7) The District Engineer or his authorized representative shall have access 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."

3-06. Assistance to be Furnished by the District Engineer. The District Engineer will:

a. Furnish to the Superintendent "As Constructed" drawings of the project works at the time they are transferred. "As Constructed" drawings are generally modified versions of the contract drawings. The contract drawings are as follows: Phase I Spec 7980, file 51-25-1270; Phase II Spec 8097, file 51-25-1271.

b. Make periodic inspections of the project works and notify the Superintendent of any repairs or maintenance measures which the District Engineer deems necessary in addition to the measures taken by the Superintendent.

c. Submit to the Office, Chief of Engineers, all cases of noncompliance with full details thereof for determination of corrective measures to be taken.

d. Make prior determination that any proposed encroachment, improvement, excavation, or construction within the right-of-way, or alteration of the project works, will not adversely affect the functioning of the protective facilities, and to furnish the Superintendent with an approval thereof in writing.

e. Assist the Superintendent as may be practicable, in his duties of ascertaining storm developments having flood-producing potential, assembling flood-fighting forces and materials, and initiating and carrying out flood-fighting operations.

3-07. Responsibilities of the Superintendent. In line with the provisions of the Flood Control Regulations, the general duties of the Superintendent include the following:

a. Training of Key Personnel. Key personnel shall be trained in order that regular maintenance work may be performed efficiently and to insure that unexpected problems related to flood control may be handled in an expeditious and orderly manner. The Superintendent should have available the names, addresses, and telephone numbers of all key personnel and a reasonable number of substitutes. These key people should, in turn, have similar data on all who will assist them in the discharge of their duties. The organization of key personnel should include the following:

- (1) An assistant to act in the place of the Superintendent in case of his absence or indisposition.
- (2) Sector foremen in sufficient number to lead maintenance patrol work of the levee, inspect the channel, and operate the gate structures properly during flood periods. High qualities of leadership and responsibility are necessary for these positions.

b. Files and Records. The Superintendent shall maintain a file of reports, records, and drawings concerning the project works readily available at all times to the District Engineer.

c. Encroachment or Trespass on Right-of-Way. In accordance with the provisions of Flood Control Regulations 208.10 (a)(4), no encroachment or trespass which will adversely affect the efficient operation or maintenance of the project works shall be permitted on the rights-of-way for protective facilities. The superintendent will therefore cause notices to be posted at conspicuous places along the project right-of-way directing public attention to this regulation. The Superintendent shall arrange for the prosecution of offenders under local ordinances.

d. Permits for Right-of-Entry or Use of Portion of Right-of-Way. Permits for temporary right-of-entry or use of portions of the right-of-way shall not be issued without prior determination by the State Reclamation Board sufficiently in advance of issuance to permit adequate study and consideration and determination of conditions to be embodied in the permit document. Executed copies, in triplicate, of the permit document as issued shall be furnished to the State Reclamation Board. See EXHIBIT E for sample permit of right-of-entry, right-of-way or installation of improvements.

e. Permits for Improvements or Construction within the Project Right-of-Way. All requests for permits for construction of any improvements of any nature within the limits of the project right-of-way shall be referred to the District Engineer through the State Reclamation Board for determination that such construction will not adversely affect the stability, safety, and functioning of the protective facilities, and for definition of conditions under which permit should be granted. These conditions will include, among others, the following items:

(1) That all work shall be performed:

(a) In accordance with standard engineering practice and in accordance with plans and specifications approved by the District Engineer or his authorized representative; drawings or prints of proposed improvements or alterations to the existing flood control works must be submitted for approval to the State Reclamation Board sufficiently in advance of the proposed construction to permit adequate study and consideration of the work.

(b) To the satisfaction of the District Engineer.

- (2) After completion of the work, "As Constructed" drawings or prints, in duplicate, showing such improvements as finally constructed shall be furnished to the District Engineer.

f. Coordination of Local Activities. In accordance with the provisions of Flood Control Regulations, paragraph 208.10 (a) (9), the Superintendent will, during periods of flood flow, coordinate the functions of all agencies, both public and private, that are connected with the protective works. Arrangements shall be made with the local law enforcement agencies, street departments, and railroad and utility companies for developing a coordinated flood-fighting program; and an outline of this program shall be filed with the District Engineer.

g. Inspection.

- (1) For the sake of uniformity, and to the extent practicable, the dates of inspection shall be as follows: 1 November, 1 May, and immediately following each major flood.
- (2) The check lists and instructions shown in EXHIBIT F, pages 1 to 6, inclusive, are to be explicitly followed in each inspection to insure that no features of the protective system are overlooked. Check lists locally typed or printed in conformity with sheets 1, 3, and 5, shall have printed on the reverse side the applicable instructions shown on sheets 2, 4, and 6, EXHIBIT F. A carbon copy of the inspector's original field notes as recorded on the check list shall be transmitted to the District Engineer immediately following each inspection, and one copy included as an enclosure to the semi-annual report as provided in paragraph 3-07 (i)(1) of this manual.

h. Maintenance.

- (1) Flood Control Regulations paragraph 208.10 (b)(1) are quoted in part as follows:

"(b)(1) Maintenance. The Superintendent shall provide at all times such maintenance as may be required to insure service-ability of the structures in time of flood. Measures shall be taken to . . . . Immediate steps will be taken to correct dangerous conditions disclosed by such inspections. Regular maintenance repair measures shall be accomplished during the appropriate season as scheduled by the Superintendent."

- (2) Full responsibility for making the repairs and the methods used is placed on the Superintendent, but the experience and facilities of the District Engineer will be available to him for advice and consultation.
- (3) All repairs shall be made in accordance with standard engineering practice, to line and grade and in accordance with details shown on the construction drawings for the project works. No change or alteration shall be made in any feature of the project works without prior determination by the District Engineer that such alteration will not adversely affect the stability and functioning of the protective facilities. Plans and specifications of all changes or alterations that may be proposed by the Superintendent shall be submitted to the District Engineer for investigation and approval before prosecution of the work."

i. Reports.

- (1) Semi-Annual Report. In accordance with the provisions of the Flood Control Regulations, paragraph 208.10 (a) (6), the Superintendent shall submit within a 10-day period following 1 December and 1 June of each year, a semi-annual report to the District Engineer covering inspection, maintenance, and operation of the protective works. This report will present a statement of:
  - (a) The physical condition of the protective works as summarized from the logs of inspections.
  - (b) Flood behavior of the protective works, and flood-fighting activities during the period.
  - (c) Prosecutions for encroachment or trespass.
  - (d) Permits issued for right-of-way or use of right-of-way.
  - (e) Permits issued for improvements or construction within the project right-of-way.
  - (f) Maintenance measures taken; nature, date of construction, and date of removal of temporary repairs; date of permanent repairs.

(g) Fiscal statement of cost and maintenance and operation for the period.

(h) It is suggested that photographs showing any areas of concern be included.

A suggested form for submission of the semi-annual report is included as EXHIBIT G, sheets 1 and 2.

## SECTION IV

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

4-01. Project Works. The purpose of this section is to specifically discuss project features particular to Phases I and II of the Fairfield Vicinity Streams project. Project locations and descriptions are described in paragraphs 1-02 and 1-03 respectively, of this manual.

4-02. Channels and Floodways. The channels of Phases I and II of the Fairfield Vicinity Streams project have been improved by deepening, widening, and some realignment. The improved channel has a trapezoidal section. For further details and locations of stations, see the as-constructed drawings. Regulations regarding inspection, maintenance, and operation of channels and floodways will be found in paragraph 4-02b, 4-02c, and 4-02d of this manual.

#### b. Inspection.

- (1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10 (g) (1) are quoted in part as follows:

(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 to be 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. . . ."

- (2) The purpose of the flood-flow channels inspection is to insure that conditions which affect the channel capacity will remain the same, as far as possible, as those considered in the design assumptions and that no new conditions develop that may affect the stability of the project structures. At each inspection required by paragraph 208.10(g)(1) of the Flood Control Regulations, particular attention will, therefore, be given the following:

- (a) Location, extent and size of vegetal growth.
- (b) Unauthorized operations within the flood-flow channel right-of-way, such as excavations, buildings, and structures, levees, bank protection, or training dikes.
- (c) Rubbish and industrial waste disposal.
- (d) Changes in the channel bed such as aggradation or degradation, which would interfere with free-flow from side drainage structures or induce local meanders that would scour the banks.
- (e) Operations of any nature upstream from the project that would effect flow conditions within the limits of the flood control project.
- (f) Condition of project structure.
  - 1. Channel walls:
    - a. Deviation from alignment and grade.
    - b. Development of cracks and spalls.

c. Mechanical injuries.

2. Fencing:

a. Injuries to posts, fencing or barbed wire.

b. Damage to galvanizing.

3. Earth fills:

a. Settlement.

b. Erosion of both slopes.

c. Excessive seepage or saturation area back of fills.

d. Condition of bank protection — concrete or stone blanket.

4. Right-of-way:

a. Presence of dumped refuse.

b. Encroachment or trespass.

- (3) No excavation in the channels within the limits of this unit will be permitted unless an excavation permit has been approved by the State Reclamation Board.
- (4) If any work is done to improve flow conditions in the channels of this project, it should be coordinated with the District Engineer to insure that proper provisions are made for channel alignment and capacity to conform to the existing project.
- (5) The intent of these inspections is to disclose all conditions which in any way affect the stability of the structures and their functioning for the control of floods. Each inspection report should note and comment on any repair measures that have been taken since the last inspection. In making these inspections, the check sheets included as EXHIBIT F, shall be explicitly followed.

c. Maintenance.

Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 208.10 (g)(1) are quoted in part as follows: ". . . . Immediate steps will be taken to remedy any adverse conditions disclosed by such inspection . . . . ."

- (1) Shoaling or aggradation at the inlets or outlets of side drainage structures may render them inoperative. It is, therefore, imperative that all drains be kept open and unobstructed at all times.
- (2) Dumped rock or other suitable types of protection should be placed at locations found by experience to be critical trouble points, with a view to stabilizing the channel alignment and preserving the general uniformity of the bank lines.
- (3) Sediment and debris plugs or other obstructions should be removed from the channel to prevent any tendency for the flows to be deflected within the channel or rise to a higher elevation than they would with the as-built channel. The heavy material likely to accumulate in the new channel at the mouths of tributaries should be removed to keep the channel clear. a. It is recommended that cross sectional surveys be taken to determine where and when sediment removal is required. A minimum of two cross sections should be taken between each overcrossing with a maximum distance between sections of 1000 ft. Additional sections should be taken where sediment is apparently building up or appears to have the tendency to build up. Restoration to the original shape and condition should occur when the sediment area is 30% or more of the freeboard area. The sediment area is defined as the cross sectional area between the originally built and the higher existing channel ground surface. The freeboard area is the cross sectional area between the design water surface (as shown on the "as constructed" drawings) and the top of bank. Surveys should be taken yearly and early enough so that maintenance measures may be taken prior to the flood season.
- (4) The channel and right-of-way shall be kept reasonably clear of debris, refuse matter, or industrial wastes.

- (5) Trees, shrubs, tules, and cattails or wild berry vines shall not be permitted to grow in the improved channel. Only annual grasses which lie down during floods may be retained. Vegetation within the right-of-way but outside the improved channel may be retained as long as it does not interfere with or threaten operations or access.
- (6) All eroded concrete shall be repaired as soon as any reinforcing steel is exposed or erosion approaches a depth of 4 inches. For this purpose, it is recommended that the repair be made by thoroughly cleaning the surface by sandblasting and building up the section with pneumatically placed Portland cement mortar. All evidence of settlement, uplift or failure of concrete structures shall be referred to the State Reclamation Board for analysis and remedial measures.
- (7) All damage to fencing, whether resulting from accidental or willful injuries or from corrosion, shall be promptly repaired with new material in order to maintain satisfactory protection to the public.

d. Operation

- (1) Pertinent Requirements of the Code of Federal Regulations, paragraph 208.10 (g)(2) are quoted in part as follows:

"(g) Channels and Floodways (2) Operation. Both banks of the channel shall be patrolled during periods of high water . . . . Appropriate measures shall be taken to prevent the formation of jams . . . . of 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 . . . walls, drainage outlets or other flood control structures repaired."

e. Special Considerations for Stone Protection

Due to the fact that some of the banks have been constructed with stone protection, the following special considerations are added.

- (1) Where scour, wash settlement or failure of a portion of the originally provided stone protection has been noted, or where inspection indicates that such damage may result during the next flood or high water period, the scour or wash shall be filled with earth free from brush, roots, sod or other unsuitable material and stone shall be replaced to bring the channel back to the design shape and alignment. For permanent repair, the size, gradation and thickness of stone protection including filter or grouting shall match the as-constructed drawings as close as possible. In case of emergency when stone is not available, sand bags or bags filled with gravel may be used for temporary repairs.
- (2) In the event an inspection reveals that due to scour settlement or other causes, stone protection on the bank is required beyond the limits of the original construction or in reaches of bank not originally provided with such protection, local interests should provide additional sloping of the bank and stone protection as needed to protect the completed work.

4-03. Drainage and Irrigation Structures.

a. Description. Side drains which empty into phase I and II project channels are as follows:

Station - phase	Size of Pipe	Side of Bank	Description	Corps construction
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(stationing conforms with that from the corresponding as-constructed drawings)

McCOY CREEK

15+50	24"	Right	RCP. Has a flapgate	phase I
18+30	72"	Left	RCP.	"
20+20	24"	Right	RCP.	"
28+00	24"	Right	RCP.	"
34+00	30"	Right	RCP.	"
46+20	42"	Right	Corrugated steel	"
49+30	24"	Left	RCP.	"
57+60	60"	Left	Corrugated steel	"
58+50	6"	Left	Plastic. Two side by side.	"
60+30	18"	Left	Corrugated steel.	"

Station	Size of Pipe	Side of Bank	Description
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LAUREL CREEK

4+20	24"	Right	RCP.	phase I
12+00	54"	Left	RCP twin pipes	"
53+07	24"	Right	RCP abandoned & plugged.	phase II
59+82	24"	Left	RCP.	"
82+72	24"	Left	RCP.	"
86+95	24"	Left	RCP.	"
88+08	24"	Right	RCP.	"
91+74	24"	Left	RCP.	"
95+20	18"	Left	RCP.	"

For the location of stations see the as-constructed drawings.

b. Inspection.

- (1) Pertinent Requirements of the Code of Federal Regulations. Flood Control

Regulations, paragraph 208.10 (d) (1), are quoted as follows:

"(d) Drainage structures (1) Maintenance. Adequate measures shall be taken to insure that the 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 every 90 days . . . . . 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 build near bituminous coated pipes;
- (iv) Erosion is not occurring adjacent to the structures 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) At each inspection, the following items, if applicable, shall be particularly noted:
  - (a) Debris or other obstructions to flow.
  - (b) Condition of pipes and gates.
  - (c) Damage or settlement of pipe.
  - (d) Condition of concrete—cracks, spall, erosion.

c. Maintenance.

- (1) All eroded concrete shall be repaired as soon as erosion reaches a depth of 4 inches or any reinforcing steel is exposed. For this purpose it is recommended that the repair be made by thoroughly cleaning the surface by sandblasting and building up the concrete to its original section with pneumatically-placed Portland cement mortar.
- (2) If the inspection shows that the automatic drainage structures have been jammed in an open position by debris or other obstructions, they shall be thoroughly cleaned so that they swing freely to a true closure. If any parts of the gates have been damaged or broken, they shall be replaced by new parts.

d. Operation

- (1) Pertinent Regulations of the Code of Federal Regulations. Flood Control Regulation, paragraph 208.10 (d) (2) are quoted in part as follows:

(2) Operation. Whenever high water conditions impend, all gates will be inspected a short time before water reaches the invert of the pipe and objects 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 . . . . . All drainage structures in the levee 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 conditions."

- (2) The requirements for drainage structures as indicated above shall apply even though levees may not be present. The outlets of side drainage structures inundate at relatively low flood stages. They should, therefore, be inspected at the first sign of a rise in the channel to make certain that the gates are not jammed in an open position and thus allow flood waters to enter.

4-04. Miscellaneous Facilities.

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

- (1) Bridges. The term "bridges" includes all major traffic-bearing overcrossings rebuilt to accommodate the project requirements within phases I and II.

Approx. Station      Creek      Location or Description Agency or Constr

(stationing conforms  
with that from the  
corresponding  
as-  
constructed drawings)

12+50	—	McCoy	Highway 12	Cal Trans/Heide&Williams
34+35		"	Pintail Drive	DWR/Heide&Williams
6+90	Laurel Diversion		Worley Road	USCE ph II/Les McDonald
21+45		"	Blossom Road	DWR/Shasta Constrs
50+10		"	Matthews Drive	DWR/Heide&Williams
73+30		"	East Tabor Ave	USCE ph II/Les McDonald
84+60		"	Meadowlark Drive	DWR/Heide&Williams
99+30		"	Nightingale Drive	DWR/Heide&Williams
7+80	Laurel Stub		Sunset Avenue	DWR/Heide&Williams

(2) Utility Relocations. Utility relocations accomplished by the local interests and other interests include the following:

	McCOY CREEK	Corps' Constr phase
Highway 12	2-15" Dia. Sanitary Sewer	I
	Telephone Cables	I
	6' Dia. Fuel Line	I
	8" Dia. Fuel Line	I
	16" Dia. Gas Line	I
	32" Dia. Gas Line	I
	12" Dia. Water Line	I
Pintail Drive	12" Dia. Water Line	I
LAUREL CREEK DIVERSION CHANNEL		
Worley Road	30" Dia. Sanitary Sewer	II
	12" Dia. Water Line	II
Blossom Road	8" Dia. Water Line	II
Sunset Avenue	10" Dia. Sanitary Sewer	II
Station 40+90	36" Dia. Water Line	II
Station 51+80	8" Dia. Water Line	II
	12" Dia. Irrigation Water Line	II

LAUREL CREEK SYSTEM

Location	Utility	
Station 62+50	12" Dia. Water Line	II
	8" Dia. Sanitary Sewer	II
East Tabor Avenue	12" Dia. Sanitary Sewer	II
	12" Dia. Water Line	II

LAUREL CREEK SYSTEM

Location	Utility	
Meadowlark Drive	8" Dia. Water Line	II
Nightingale Drive	12" Dia. Water Line	II

b. Inspection and Maintenance.

(1) Pertinent Requirements of the Code of Federal Regulations. Flood Control Regulations, paragraph 209.10 (h) (1) are quoted in part as follows:

(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 replaced without delay . . . . . "

(2) Recreation Facilities - Recreation facilities consist primarily of the bike trail which doubles as a patrol road but has asphalt paving. Bike trail maintenance includes repairing the surface, clearing obstacles, pruning vegetation and maintain signs. The asphalt paving shall be kept free of potholes, undulations and alligator cracks. No encroachment should be permitted. There shall be no accumulation of trash or debris throughout the trails.

Protective fencing and bollards shall be repaired or replaced as required. Bollards should be checked to insure that locking mechanisms are effective and the bollards themselves are easily removable after unlocking.

- (3) Ponding Areas - There are ponding areas (detention basins) which although not a part of the Corps' project, do flow into the Corps' project. As such, their proper operation and maintenance is required for the project to function correctly. The McCoy Creek detention basin is located as shown on EXHIBIT A. There is a flood plain on McCoy Creek downstream from this basin which will remain a flood plain after project completion and which must therefore have zoning which restricts development. This flood plain is not shown on EXHIBIT A. Larger maps showing this area may be obtained from the District Engineer's Office.

A smaller ponding area (or retention) basin exists on the eastern side of the Laurel Creek Channel about 400 feet north of Air Base Parkway. There may be other small permanent or temporary basins. The Cities of Fairfield and Suisun should be consulted prior to inspections as to the status of any new or proposed basins.

Basin capacities must be monitored and maintained to their as-constructed conditions. Maintenance of the McCoy Creek Basin is mandated by EXHIBIT B Article III d.

- (4) Inspection of the miscellaneous facilities shall be made at the same time that the inspection of the other features of the project are made, and shall be reported on check list page 5 of EXHIBIT F.
- (5) The interest of the Corps of Engineers and the responsibility of the local interests in the existing highway and railroad bridges is confined to their effect on the safety and functioning of the flood control channel, but any conditions noted in the inspections that may affect them in any way should, as a matter of courtesy, be brought to the attention of the agencies maintaining and operating them. If the inspection of any miscellaneous structure, either existent or constructed in the future under permit, discloses any condition that indicates

the probability of failure during periods of high water, the Superintendent shall address a letter to the owner of the structure, quoting this manual as authority and inviting attention to the conditions observed and requesting that immediate steps be taken to correct them. A copy of such letter shall be forwarded to the District Engineer for his information. A report on the action taken by the owner shall be submitted to the District Engineer to accompany the next semi-annual report. A suggested report form is included as EXHIBIT G of this manual.

- (6) The purpose of maintenance work is to insure continuous satisfactory operation of equipment. It is, therefore, important in such work that all possible causes of future trouble be found and corrected. Particular attention should be given to minor weaknesses which may be an indication of future trouble.

c. Operation.

- (1) Requirements of the Code of Federal Regulations.  
Flood Control Regulations, paragraph 208.10 (h)  
(2) is quoted as follows:

"(2) Operation. Miscellaneous facilities shall be operated to prevent or reduce flooding during periods of high water. These 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 therefore."

## SECTION V

### SUGGESTED METHODS OF COMBATING FLOOD CONDITIONS

5.01 Methods Suggested. Most of the methods described herein have been developed during years of experience with the various problems that often come up during periods of high water, and they are not intended to restrict the Superintendent, or others concerned, to a rigid set of rules for every condition that may arise. Exhibit H (plates 1 through 6) illustrate various suggested methods for emergency flood mitigation. If problems not covered by these suggestions arise where the Superintendent is in doubt as to the procedure to be taken, he will be expected to consult the State Department of Water Resources and follow standard engineering practices in meeting the situation. It should be noted that it is better to be over-prepared for a "flood-flight" than it is to find at the last moment that preparations were incomplete or unsatisfactory. Confidence of the persons and firms protected is a valuable asset that should not be carelessly lost through inefficient operation of the protection system in time of emergency.

5.02 Security. Personnel of the Corps of Engineers, whether military or civilian, are not vested with civil police authority in the performance of their engineering duties, and they will not attempt to exercise any such authority. The responsibility for protecting flood control works against sabotage, acts of depredation or other unlawful acts rests with the local interests through local and State governmental agencies.

5.03 Inspection of Flood Control Works. Immediately upon receipt of information that high water is imminent, local interests responsible for maintenance should form a skeleton organization, capable of quick expansion, and assign individuals (Work Supervisors) to have charge of definite sections of the channel. As his initial activity, each Supervisor should go over his entire sector and parts of adjacent sectors, making a detailed inspection, particularly with reference to the following matters:

- a. Sector limits; ascertain that the dividing line between sectors is plainly determined and, if necessary, marked.
- b. Condition of new features and recent repairs untested by previous high water.
- c. Condition of culverts, flapgates, and sluice gates.
- d. Transportation facilities; roads, rail and water communications.
- e. Material supply; quantity, location, and condition.

f. Communications; locate and check all necessary telephones in the sector.

5-04 Preliminary Repair Work. After the initial inspection has been made, each Work Supervisor should recruit a labor crew and provide it with tools such as shovels, axes, wheelbarrows, etc. In addition, bulldozers, scrapers, trucks, etc., should be located and made ready for use in case of emergency. Then immediate action should be taken to perform the following work:

a. Fill up holes or washes on the patrol road and cut slopes. Where new construction has been completed during the year, rain washes and deep gullies may have developed. Preparations should be made in advance to combat wave wash along the exposed reaches.

b. Repair gaps where road crossings have been worn down to below grade of the natural channel bank. In filling the road crossings, it may be necessary to obtain material from landside borrow pits in which case excavation for material should be kept at least 50 feet from the top of the channel cut. Any filling done for this purpose should be tamped in place and, if in an exposed reach, subject to erosion, the new section should be faced with bags of sand or rock riprap.

c. Repair and close all flapgates on culverts and see that they are seated properly before they are covered with flood waters.

d. Ascertain that all roads to and along the project are in good repair. The Superintendent should obtain assistance from the county road forces to have all roads put in first-class condition.

e. Locate necessary tools and materials (sand, sandbags, brush, lumber, lights, etc.), and distribute and store the same at points where active maintenance is anticipated.

f. Check and obtain repair of all telephone lines necessary for operation, obtain lists of all team forces, motorboats, motor cars, and truck transportation that can be made available.

g. Make thorough arrangements with reliable citizens of the community for the supply transportation, subsistence, and shelter for the necessary labor.

h. Cut all fences crossing the maintenance road that do not have gates provided.

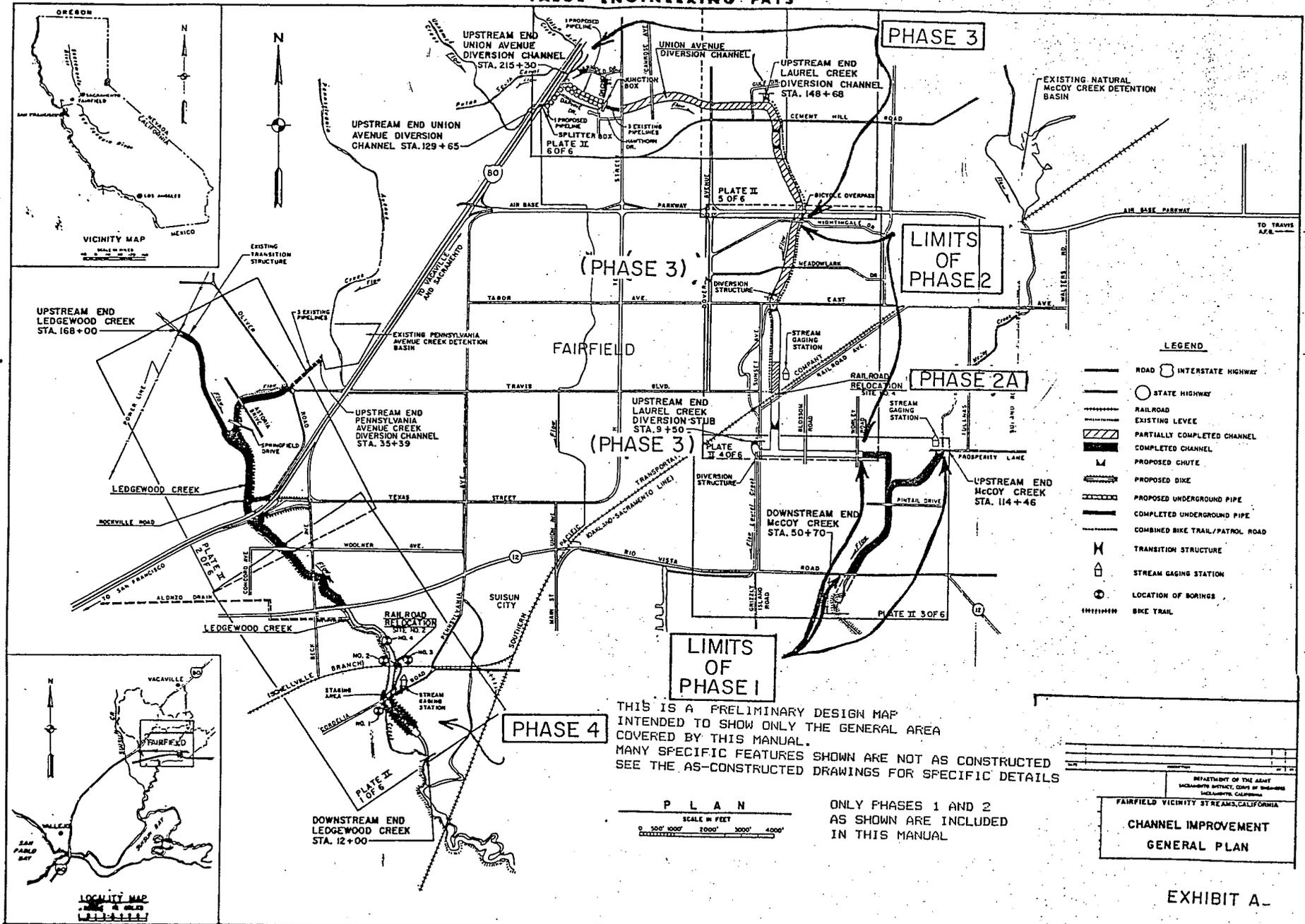
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EXHIBIT A

GENERAL PLAN

EXHIBIT A

VALUE ENGINEERING PAYS



PHASE 4

LIMITS OF PHASE I

PHASE 3

PHASE 2A

(PHASE 3)

(PHASE 3)

THIS IS A PRELIMINARY DESIGN MAP INTENDED TO SHOW ONLY THE GENERAL AREA COVERED BY THIS MANUAL. MANY SPECIFIC FEATURES SHOWN ARE NOT AS CONSTRUCTED SEE THE AS-CONSTRUCTED DRAWINGS FOR SPECIFIC DETAILS

PLAN  
SCALE IN FEET  
0 300' 600' 900' 1200' 1500' 1800' 2100' 2400'

ONLY PHASES 1 AND 2 AS SHOWN ARE INCLUDED IN THIS MANUAL

DEPARTMENT OF THE ARMY  
WATERWAYS DIVISION, OFFICE OF ENGINEERING  
SACRAMENTO, CALIFORNIA  
FAIRFIELD VICINITY STREAMS, CALIFORNIA  
CHANNEL IMPROVEMENT  
GENERAL PLAN

EXHIBIT A-

SAFETY PAYS

EXHIBIT B

AGREEMENT BETWEEN THE DEPARTMENT OF THE ARMY  
and  
THE CALIFORNIA STATE RECLAMATION BOARD  
for  
LOCAL COOPERATION

AGREEMENT BETWEEN  
THE DEPARTMENT OF THE ARMY  
AND  
THE CALIFORNIA STATE RECLAMATION BOARD  
FOR LOCAL COOPERATION AT  
FAIRFIELD VICINITY STREAMS, CALIFORNIA

THIS AGREEMENT, entered into this 29th day of May 1986 by and between the DEPARTMENT OF THE ARMY (hereinafter called the "Government"), represented by the Assistant Secretary of the Army (Civil Works), and the CALIFORNIA STATE RECLAMATION BOARD (hereinafter called the "State"), WITNESSETH THAT:

WHEREAS, construction of the Fairfield Vicinity Streams, California project (hereinafter called the "Project") was authorized by the House of Representatives and Senate Public Works Committees' resolutions adopted December 15, 1970 and December 17, 1970, respectively, pursuant to the provisions of the Flood Control Act of 1965, Section 201 (Public Law 89-298), substantially in accordance with the report of the Secretary of the Army and the Chief of Engineers in House Document No. 91-159, describing such Project, said Project consisting of modifications to provide an SPF level of protection along five streams in the vicinity of Fairfield and Suisun City, California, such modifications including unlined channel with limited reaches of lined channel, diversion channels, chutes, pipelines, control structures and stone protection; and

WHEREAS, the 1985 Supplemental Appropriations Act, approved 15 August 1985 (Public Law 99-88), authorizes the Secretary of the Army to initiate construction of the Project under terms and conditions acceptable to him as set forth below; and

WHEREAS, pursuant to Section 117 of Public Law 99-190; the Secretary of the Army is directed to include as part of the non-Federal contribution of the Project, the cost of any work carried out by non-Federal interests on the Project after December 31, 1973, and before December 19, 1985, if the Secretary determines such work is reasonably compatible with the Project; and

WHEREAS, the State hereby represents that it has the authority and capability to furnish the non-Federal cooperation required by the Federal legislation authorizing the Project and by other applicable law.

NOW THEREFORE, the parties agree as follows:

ARTICLE I - DEFINITIONS

For purposes of this Agreement:

The term "total Project costs" shall mean all costs incurred by the State and the Government directly related to construction of the flood control aspects of the Project (excluding betterments and operation and maintenance costs.) Such total Project costs shall include, but not necessarily be limited to, actual construction costs (including the actual cost of any work carried out by non-Federal interests on the Project after December 31, 1973 and before December 19, 1985, if the Secretary of the Army determines such work is reasonably compatible with the Project), the value of lands, easements, and rights-of-way made available for the Project, relocation and alteration costs, costs of applicable engineering and design, and supervision and administration costs.

ARTICLE II - OBLIGATIONS OF PARTIES

a. The State shall provide, during the period of construction, an amount equal to not less than twenty-five (25) percent of total Project costs. The

amount shall include all lands, easements, rights-of-way, and utility and facility alterations and relocations (except railroad bridges) required for construction of the Project as well as a cash payment equal to the difference between the value of the above items, as determined pursuant to Article IV of the Agreement and twenty-five (25) percent of total Project costs; provided, however, that in no case shall the cash payment required herein be less than five (5) percent of total Project cost. Pursuant to Section 117 of Public Law 99-190 the local sponsor will receive credit toward the cash requirement for costs it has already incurred towards this Project. The amount of credit to be received is likely to exceed the cash payment required for the Project. In such event the local sponsor will not be required to provide any cash contribution. In no event shall the sponsor receive any repayment of amounts it has provided.

b. The Government, using funds provided by the State and appropriated by the Congress, shall expeditiously construct the Project, applying those procedures usually followed or applied in Federal projects, pursuant to Federal laws, regulations, and policies. Award of the Federal contracts and performance of the work thereunder shall be exclusively within the control of the Government.

c. Upon completion of Project construction, the Government shall turn the Project over to the State, which shall be solely responsible for operating, maintaining, and rehabilitating the Project in accordance with Article VIII of this Agreement.

d. No less than once each year the State shall inform affected interests regarding the limitations of the protection afforded by the Project.

e. The State shall publicize flood plain information in the area concerned and shall provide this information to zoning and other regulatory agencies for

their guidance and leadership in preventing unwise future development in the flood plain and in adopting such regulations as may be necessary to prevent unwise development in the flood plain and in adopting such regulations as may be necessary to ensure compatibility between future development and protection levels provided by the Project.

f. The State shall, to the extent of its powers, prescribe and enforce regulations to prevent obstruction of or encroachment on the Project that would reduce the level of protection it affords or that would hinder operation and maintenance.

g. Required assurances for recreation development at the Project will be the subject of a separate contract. If local cooperation in the recreation features is not forthcoming, the Project may be constructed for flood control only.

### ARTICLE III - LANDS, FACILITIES, AND RELOCATION ASSISTANCE

a. The State shall provide without cost to the Government all lands, easements, and rights-of-way, including suitable borrow and dredged material disposal areas, as may be determined by the Chief of Engineers to be necessary for construction of the Project. Prior to the award of any construction contract, the State shall furnish to the Government rights-of-entry to all lands required for the Project, together with evidence supporting the State's legal authority to grant such rights-of-entry.

b. The State shall accomplish without cost to the Government all alterations and relocations of buildings, streets, storm drains, utilities, highway bridges, and other structures and improvements (except railroad bridges) made necessary by construction of the Project.

c. The State shall prevent encroachment upon the Project channels of any works detrimental to the flood control purposes of the Project, and manage all Project-related channels, such as existing channels below Project diversions, to preserve capacities for local drainage as well as Project functions.

d. The State shall preserve the storage capacity of the McCoy Creek Detention Basin below elevation 46 feet, National Geodetic Vertical Datum, and prevent the erection of future improvements within the flood plain of McCoy Creek from the detention basin downstream to Prosperity Lane by enactment and enforcement of adequate zoning regulations over these areas prior to commencement of construction.

e. The State shall preserve the Ledgewood Creek flow split in the vicinity of Abernathy Road as described in the approved "Supplement 1 to Design Memorandum No. 2, Fairfield Vicinity Streams, California, February 1986," in perpetuity by enactment and enforcement of adequate zoning regulations over these areas prior to commencement of construction, and ensure that the breakout flows do not reenter the Ledgewood Creek system until downstream of California State Highway 12, by either structural or non-structural means.

f. The State shall comply with the applicable provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, approved January 2, 1971, in acquiring lands, easements, and rights-of-way for construction and subsequent operation and maintenance of the Project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

ARTICLE IV - VALUE OF LANDS AND FACILITIES

a. The value of the lands, easements and rights-of-way to be included in total Project costs and credited toward the State's share of total Project costs will be determined in accordance with the following procedures:

(1) If the lands, easements and rights-of-way are owned by the State as of the date this contract is signed, the credit shall be the fair market value of the lands at the time such lands are made available to the Government for construction of the Project. The fair market value shall be determined by an appraisal to be obtained by the State which has been prepared by an independent and qualified appraiser who is acceptable to both the State and the Government. The appraisal shall be reviewed and approved by the Government.

(2) If the lands, easements and rights-of-way are to be acquired by the State after the date this contract is signed, the credit shall be the fair market value of the lands at the time such lands are made available to the Government for construction of the Project. The fair market value shall be determined by an appraisal to be obtained by the State which has been prepared by an independent and qualified appraiser who is acceptable to both the State and the Government. The appraisal shall be reviewed and approved by the Government.

Provided, however, that if the State pays an amount in excess of the appraised fair market value, it may be entitled to a credit for this excess amount if the State has secured prior approval from the Government of its offer to purchase said lands.

(3) If the State acquires more lands, easements or rights-of-way than are necessary for Project purposes, as determined by the Government, then only

the value of such portions of those acquisitions as are necessary for Project purposes shall be included in total Project costs and credited to the State's share.

(4) Credit for lands, easements and rights-of-way in the case of involuntary acquisitions after the date this contract is signed will be based on court awards or stipulated settlements, in which instance the stipulated settlements must have prior Government approval.

(5) The credits provided for in this article will also include the actual costs of acquiring the land, e.g. closing and title costs, as well as the actual amounts expended for any relocation assistance made in accordance with Article III.

b. The costs of construction, relocation, alteration or modification of utilities or facilities which will be included in total Project costs and credited towards the State's share of total Project costs, shall be that portion of the actual costs incurred by the State as set forth below:

(1) Bridges and Highways: Only that portion of the cost as would be necessary to construct substitute bridges and roads to the design standard that the State of California would use in constructing a new bridge or road under similar conditions of geography and traffic loads.

(2) Utility Facilities: Actual relocation costs, less depreciation, less salvage value, plus the cost of removal, less the cost of betterments. With respect to betterments, new materials shall not be used in any relocation or alteration if materials of value and usability equal to those in the existing facility are available or can be obtained as salvage from the existing facility or otherwise, unless the provision of new material is more economical. If, despite the availability of used material, new material is used, where the use

of such new material represents an additional cost, such cost shall not be included in total Project costs.

ARTICLE V - Project Phasing and Management

a. To provide for consistent and effective communication between the State and the Government, the State and the Government shall appoint representatives to coordinate on scheduling, plans, specifications, modifications, contract costs, and other matters relating to the Project.

b. The representatives appointed above shall meet as necessary as the term of Project is implemented and shall make such recommendations as they deem warranted to the Contracting Officer.

c. The Contracting Officer shall consider the recommendations of the representatives in all matters relating to the Project, but the Contracting Officer, having ultimate responsibility for construction of the Project, has complete discretion to accept, reject, or modify the recommendations of the representatives.

ARTICLE VI - Method of Payment

a. Pursuant to Article II.a. of this Agreement, the non-Federal interests are likely to have already satisfied the requirement to pay, during the period of construction, a cash contribution of not less than 5 percent of total Project costs. Total Project costs are presently estimated to be \$25,831,000, of which an estimated \$11,992,000 will be in the form of lands, easements, rights-of-way, and utility and facility alterations and relocations which shall be provided by the State. The actual cost of work carried out by non-Federal interests on the Project after December 31, 1973 and before December 19, 1985 and determined by the Secretary of the Army to be work reasonably compatible with the Project and

therefore, allowable as a credit is \$4,511,000.

b. If a cash contribution is required the State shall provide it over the term of construction period as follows:

(1) Nine (9) months before the start of each fiscal year of the State, the Government shall credit the State's share with the value of lands, easements, rights-of-way, and relocations and alterations (including the amortized portion of costs incurred by the State prior to the date of this Agreement) provided or to be provided by the State during the corresponding Government fiscal year, and the Government shall notify the State of the estimated funds that will be required from the State to meet its share of total Project costs for that Government as expeditiously as possible through either cash payments or deposit of cash in an escrow account acceptable to the Government. The estimate of total Project costs for each Government fiscal year of construction will include the amortized portion of costs incurred by the Government prior to the date of this Agreement.

c. The Government will draw on the funds provided by the State such sums as it deems necessary to cover contractual and in-house fiscal obligations as they occur and Government costs incurred prior to the date of this Agreement.

d. Upon completion of the Project and resolution of all contract claims and appeals, the Government shall compute the total Project costs and tender to the State a final accounting of its share of total Project costs. In the event the total credit received by the State is less than its required share of total Project costs at the time of the final accounting, the State shall deposit within 90 calendar days after receipt of written notice whatever sum is required to meet its required share of total Project costs.

ARTICLE VII - DISPUTES

Before any party to this Agreement may bring suit in any court concerning an issue relating to this Agreement, such party must first seek in good faith to resolve the issue through negotiation or through other forms of nonbinding alternative dispute resolution.

ARTICLE VIII - OPERATION, MAINTENANCE AND REHABILITATION

- a. The State shall operate, maintain, and rehabilitate the Project upon completion in accordance with regulations or directions prescribed by the Secretary of the Army. The State shall be responsible for the excavation and removal of accumulated sediment and debris so as to maintain Project capacity.
- b. The State hereby gives the Government a right to enter, at reasonable times and in a reasonable manner, upon land which it owns or controls for access to the Project for the purpose of inspection, and, if necessary, for the purpose of completing, operating, repairing, and maintaining the Project. If an inspection shows that the State for any reason is failing to complete, operate, repair, and maintain the Project in accordance with the assurances hereunder, the Government will send a written notice to the State. If the State persists in such failure for 30 calendar days after receipt of the notice, then the Government shall have a right to enter, at reasonable times and in a reasonable manner, upon lands the State owns or controls for access to the Project for the purpose of completing, operating, repairing, or maintaining the Project. No completion, operation, repair, or maintenance by the Government shall operate to relieve the State of responsibility to meet its obligations as set forth in this Agreement, or to preclude the Government from pursuing any other remedy at law or equity to assure faithful performance pursuant to this Agreement.

ARTICLE IX - RELEASE OF CLAIMS

The State shall hold and save the Government free from all damages arising from the construction and operation of the completed Project, except for damages due to the fault or negligence of the Government or its contractors.

ARTICLE X - MAINTENANCE OF RECORDS

The Government and the State shall keep books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect total Project costs. The Government and the State shall maintain such books, records, documents, and other evidence for a minimum of three years after completion of construction of the Project and resolution of all claims arising therefrom, and shall make available at their respective offices at reasonable times, such books, records, documents, and other evidence for inspection and audit by authorized representatives of the parties to this Agreement.

ARTICLE XI - FEDERAL AND STATE LAWS

a. In acting under its rights and obligations hereunder, the State agrees to comply with all applicable Federal and State laws and regulations.

b. The State agrees to comply with Section 601 of Title VI of the Civil Rights Act of 1964 (Public Law 88-352) and Department of Defense Directive 5500.II issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, in connection with the construction, operation, and maintenance of the Project.

ARTICLE XII - RELATIONSHIP OF PARTIES

The parties to this Agreement act in an independent capacity in the performance of their respective functions under this Agreement, and neither party is to be considered the officer, agent, or employee of the other.

ARTICLE XIII - OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress, or resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

ARTICLE XIV - COVENANT AGAINST CONTINGENT FEES

The State warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the State for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this Agreement without liability, or, in its discretion, to add to the Agreement or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE XV - TERMINATION OR SUSPENSION

a. If at any time the State fails to make the payments required under this Agreement, the Secretary of the Army shall terminate or suspend work on the Project until the State is no longer in arrears or unless the Secretary determines that continuation of work on the Project is in the interest of the United States. For purposes of this Article, a payment shall be deemed

delinquent if (1) the amount required to be provided by the State pursuant to Article VI.b.2. or VI.b.3. is not available to the Government at the time it attempts to withdraw funds pursuant to Article VI.c.; or (2) any amount due the Government under Article VI.d. or paragraph b. of this Article has not been provided within the time allotted. Any delinquent payment shall be charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 (one hundred fifty) percent of the average bond equivalent rate of the 13 week treasury bills auctioned immediately prior to the date on which such payment became delinquent or auctioned immediately prior to the beginning of each additional 3-month period if the period of delinquency exceeds 3 months.

b. If the Government fails to receive annual appropriations in amounts sufficient to meet expenditures for the then-current fiscal year, the Government shall so notify the State. After sixty days either party may elect without penalty to terminate the Agreement or to suspend performance thereunder, and defer Project completion. The parties shall wrap up their activities relating to the Project and proceed to a final accounting in accordance with Article VI.b.

#### ARTICLE XVI - STATEMENT OF INTENT

As required under Title I, Chapter IV of P.L. 99-88, the State hereby affirms its willingness and capability to meet its cost-sharing obligations as set forth in this Agreement.

#### ARTICLE XVII - EFFECT OF SUBSEQUENT LEGISLATION

If, subsequent to the date of this Agreement, Congress enacts into law a change in the cost-sharing for this Project, the parties hereto shall renegotiate this Agreement to conform to such change; provided, however, any

renegotiated agreement shall take effect only after being approved by the State and the Government. If no renegotiated agreement is approved by both parties within 180 days of the effective date of the law changing the cost-sharing for this Project, the parties shall wind up their activities relating to the Project and proceed to a final accounting in accordance with Article VI.b. hereof.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of  
the day and year first written.

THE DEPARTMENT OF THE ARMY

By *[Signature]*  
Assistant Secretary of the Army  
(Civil Works)

CALIFORNIA STATE RECLAMATION BOARD

By *[Signature]*  
President,  
The Reclamation Board

ATTEST:

By *[Signature]*  
Counsel,  
State of California Reclamation  
Board

DATE 3 June 86

DATE 5/29/86

AS WITNESSED BY:

<u><i>[Signature]</i></u>	<u><i>[Signature]</i></u>	_____
<u><i>[Signature]</i></u>	_____	_____
<u><i>[Signature]</i></u>	_____	_____

CERTIFICATE OF AUTHORITY

I, David B. Anderson, do hereby certify that I am the Counsel for the State of California Reclamation Board, that the California State Reclamation Board is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the California State Reclamation Board in connection with the Fairfield Vicinity Streams, California project, and to pay damages, if necessary, in the event of the failure to perform in accordance with Section 221 of Public Law 91-611, and that the person who has executed the Agreement on behalf of the California State Reclamation Board has acted within their statutory authority.

In Witness Whereof, I have made and executed this Certificate this 27<sup>th</sup> day of May, 1986.

BY David B. Anderson  
Counsel,  
State of California Reclamation  
Board

EXHIBIT C

AGREEMENT BETWEEN THE DEPARTMENT OF THE ARMY  
and  
THE CITY OF FAIRFIELD  
for  
RECREATION DEVELOPMENT

AGREEMENT BETWEEN  
THE DEPARTMENT OF THE ARMY  
AND  
THE CITY OF FAIRFIELD  
FOR RECREATION DEVELOPMENT AT  
FAIRFIELD VICINITY STREAMS, CALIFORNIA

THIS AGREEMENT, entered into this 29th day of May 1986 by and between the DEPARTMENT OF THE ARMY (hereinafter called the "Government"), represented by the Assistant Secretary of the Army (Civil Works), and THE CITY OF FAIRFIELD (hereinafter called the "City"), WITNESSETH THAT:

WHEREAS, construction of the Fairfield Vicinity Streams, California project, (hereinafter called the "Project") was authorized by the House of Representatives and Senate Public Works Committees' resolutions adopted December 15, 1970 and December 17, 1970, respectively, pursuant to the provisions of the Flood Control Act of 1965, Section 201 (Public Law 89-298), substantially in accordance with the report of the Secretary of the Army and the Chief of Engineers in House Document No. 91-159 describing said Project and the recreation facilities of said Project shall consist primarily of 25,100 feet of hiking and bicycling trails; and

WHEREAS, the 1985 Supplemental Appropriations Act, approved 15 August, 1985 (Public Law 99-88), authorizes the Secretary of the Army to initiate construction of the Project under terms and conditions acceptable to him as set forth below; and

WHEREAS, pursuant to Section 117 of Public Law 99-190, the Secretary of the Army is directed to include as part of the non-Federal contribution of the Project, the cost of any work carried out by non-Federal interests on the

Project after December 31, 1973, and before December 19, 1985 if the Secretary determines such work is reasonably compatible with the Project; and

WHEREAS, the City is authorized to administer Project land and water areas for recreational purposes, and operate, maintain and replace facilities provided for such purposes and is empowered to contract for such purposes, and is empowered to contract in these respects.

NOW THEREFORE, the parties agree as follows:

ARTICLE I - DEFINITION OF TERMS

For the purposes of this Agreement certain terms are defined as follows:

a. The term "Project" shall mean recreation features consisting of 25,100 feet of bicycling and hiking trails, which shall be in the form of a 10 foot wide by 2-inch thick asphalt path laid upon already existing maintenance roads, and also including a staging area which will provide parking for 10 cars, bicycle racks and two chemical toilets.

b. The term "total Project costs" means all costs incurred by the local sponsor and the Government directly related to construction of the Project (excluding betterments and operation and maintenance costs). Such total Project costs shall include, but not necessarily be limited to, actual construction costs, the value of lands, easements, and rights-of-way made available for the Project, relocation and alteration costs, costs of applicable engineering and design, and supervision and administration costs.

ARTICLE II - OBLIGATION OF PARTIES -

a. The City shall provide, during the period of construction (an) lands, easements, rights-of-way, and utility and facility alterations and relocations

required for construction of the Project, as well as an additional cash contribution equal to the difference between the value of the above items, together with credits that may be granted pursuant to Article VI of this Agreement, and fifty (50) percent of the total cost of the Project.

b. The Government, using funds provided by the City and appropriated by Congress, shall expeditiously construct the Project, applying those procedures usually followed or applied in Federal projects, pursuant to Federal laws, regulations and policies. Award of the Federal contracts and performance of the work thereunder shall be exclusively within the control of the Government.

c. Upon completion of the Project construction, the Government shall turn the Project over to the City which shall be solely responsible for operating, maintaining and rehabilitating the Project in accordance with Article XI of this Agreement.

### ARTICLE III - LANDS, FACILITIES, AND RELOCATION ASSISTANCE

a. Subject to the cost-sharing terms set forth in this Agreement, the Government agrees to design and construct this Project to provide for general recreation consistent with authorized flood control Project purposes. Lands necessary for such recreation facilities will be situated within the lands acquired by local interests for the basic flood control Project.

b. In addition to easements to be acquired by the California State Reclamation Board for flood control Project purposes, the City agrees to acquire, without cost to the United States, additional fee title estates needed to support recreational development, and to make at their expense all changes and relocations in existing improvements, including utilities and highway and railway bridges, necessary for recreation development.

c. The recreation facilities which the Government will construct in accordance with this Agreement are indicated in the approved "Supplement 1 to Design Memorandum No. 2, Fairfield Vicinity Streams, California, February 1986." The presently estimated cost of facilities to be provided is contained in Exhibit A entitled "Estimated Project Costs-Recreation" attached hereto and made part hereof. Such estimate of facility cost is subject to reasonable adjustment as appropriate during the term of construction.

d. Title to all lands and facilities specifically acquired, developed or constructed by or with Government assistance to enhance the recreation potential of the Project shall at all times be in the name of a legally constituted public body with full authority and capability to perform the terms of this Agreement. Changes in the title and/or cessation of general recreation uses shall not be made without consent of the District Engineer, Sacramento District, U.S. Army Corps of Engineers, or his successor in authority. A copy of this paragraph shall be recorded in such a fashion as to become part of the chain of title of all land acquired.

e. The City shall comply with the applicable provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, approved January 2, 1971, in acquiring lands, easements, and rights-of-way for construction and subsequent operation and maintenance of the Project recreation facilities, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

#### ARTICLE IV - VALUE OF LANDS AND FACILITIES

a. The value of the lands, easements and rights-of-way to be included in total Project costs (and credited toward the City's share of total Project costs) will be determined in accordance with the following procedures:

(1) If the lands, easements and rights-of-way are owned by the City as of the date this contract is signed, the credit shall be the fair market value of the lands at the time such lands are made available to the Government for construction of the Project. The fair market value shall be determined by an appraisal to be obtained by the City which has been prepared by an independent and qualified appraiser who is acceptable to both the City and the Government. The appraisal shall be reviewed and approved by the Government.

(2) If the lands, easements and rights-of-way are to be acquired by the City after the date this contract is signed, the credit shall be the fair market value of the lands at the time such lands are made available to the Government for construction of the Project. The fair market value shall be determined by an appraisal to be obtained by the City which has been prepared by an independent and qualified appraiser who is acceptable to both the City and the Government. The appraisal shall be reviewed and approved by the Government.

Provided, however, that if the City pays an amount in excess of the appraised fair market value, it may be entitled to a credit for this excess amount if the City has secured prior approval from the Government of its offer to purchase said lands.

(3) If the City acquires more lands, easements or rights-of-way than are necessary for Project purposes, as determined by the Government, then only the value of such portions of those acquisitions as are necessary for Project purposes shall be included in total Project costs and credited to the City's share.

(4) Credit for lands, easements and rights-of-way in the case of involuntary acquisitions after the date this contract is signed will be based on court awards or stipulated settlements, in which instance the stipulated

settlements must have prior Government approval.

(5) The credits provided for in this article will also include the actual costs of acquiring the land, e.g. closing and title costs, as well as the actual amounts expended for any relocation assistance made in accordance with Article III.

b. The costs of construction, relocation, alteration or modification of utilities or facilities which will be included in total Project costs and credited towards the City's share of total Project costs, shall be that portion of the actual costs incurred by the City as set forth below:

(1) Bridges and Highways: Only that portion of the cost as would be necessary to construct substitute bridges and roads to the design standard that the State of California would use in constructing a new bridge or road under similar conditions of geography and traffic loads.

(2) Utility Facilities: Actual relocation costs, less depreciation, less salvage value, plus the cost of removal, less the cost of betterments. With respect to betterments, new materials shall not be used in any relocation or alteration if materials of value and usability equal to those in the existing facility are available or can be obtained as salvage from the existing facility, or otherwise, unless the provision of new material is more economical. If, despite the availability of used material, new material is used, where the use of such new material represents an additional cost, such cost shall not be included in total Project costs.

#### ARTICLE V - PROJECT PHASING AND MANAGEMENT

a. To provide for consistent and effective communication between the City and the Government during the term of construction, the City and the Government

shall appoint representatives to coordinate on scheduling, plans, specifications, modifications, contract costs, and other matters relating to construction of the recreation facilities.

b. The representatives appointed above shall meet as necessary during the term of Project construction and shall make such recommendations as they deem warranted to the Contracting Officer.

c. The Contracting Officer, having ultimate responsibility for construction of the Project, has complete discretion to accept, reject or modify the recommendations of the representatives.

#### ARTICLE VI - METHOD OF PAYMENT

a. Pursuant to Article II of this Agreement, the City shall provide during the period of construction fifty (50) percent of the total Project costs. Total Project costs are presently estimated to be \$750,000. The City will provide a cash contribution equal to the difference between the value of any lands, easements, rights-of-way or utility and facility alterations and relocations of the Project, and fifty percent of the total cost of the Project. The value of lands, easements, rights-of-way and utility and facility alterations and relocations provided by the City is presently estimated to be \$175,000. In accordance with P.L. 99-190, Section 117, the actual costs of work carried out by non-Federal interests on the Project after December 31, 1973 and before December 19, 1985 shall be credited against the aforementioned cash contribution if the Secretary of the Army determines such work is reasonably compatible with the Project. The cost of work carried out by non-Federal interests on the Project is presently estimated to be \$105,000. The estimated cash payment required from the sponsor is \$150,000. The Government will conduct a preconstruction audit of non-Federal work accomplished to verify the extent of

costs creditable towards the cash contribution. Upon completion of the Project, an adjustment will be made on the basis of actual costs incurred.

b. The City shall provide its required cash contribution over the term of the construction period. The following provisions apply:

(1) Three (3) months before the start of each fiscal year of the City the Government shall credit the City's share with the value of lands, easements, rights-of-way, and relocations and alterations (including the amortized portion of costs incurred by the City prior to the date of this Agreement) provided or to be provided by the City during the corresponding Government fiscal year, and the Government shall notify the City of the estimated funds that will be required from the City to meet its share of total Project costs for that Government fiscal year. The City shall then make those funds available to the Government as expeditiously as possible through either cash payment or deposit of cash in an escrow account acceptable to the Government, or by irrevocable letter of credit drawn upon a bank acceptable to the Government. The estimate of total Project costs for each Government fiscal year of construction will include the amortized portion of costs incurred by the Government prior to the date of this Agreement.

(2) 60 days prior to the advertisement of each construction contract, the Government shall notify the City of its required share of contract costs, plus supervisory and administrative expenses, as calculated under paragraph a. of this Article. Within 30 calendar days thereafter, the City shall verify to the satisfaction of the Government that sufficient funds are available to the Government in the funding institution or mechanism referred to in paragraph b.1. of this Article to meet its share of the contract costs. If the Government determines that sufficient sums are not available to it, it shall so notify the

City and the City shall deposit said funds within 10 calendar days and provide verification of such deposit. If the contract is expected to extend into more than one Government fiscal year, the City may make the deposit in installments, with each installment to be made prior to each Government fiscal year in the amount required for that year's work on the contract, plus supervisory and administrative costs.

(3) When bids are opened on any given contract and additional funds are needed from the City to meet its required share of contract costs, the Government shall so notify the City and the City shall deposit the additional funds within 10 calendar days after demand is made by the Government.

c. The Government will draw on the funds provided by the City such sums as it deems necessary to cover contractual and in-house fiscal obligations as they occur and Government costs incurred prior to the date of the Agreement.

d. Upon completion of construction and resolution of all contract claims and appeals, the Government shall compute the actual total Project costs and tender the City a final accounting of its share of actual total Project costs. In the event the total contribution by the City is less than its required share of actual total Project costs, the City shall deposit within 90 calendar days after receipt of written notice whatever sum is required to meet its required share of actual total Project costs. In the event the City has made excess cash contributions which result in the City's having provided more than its required share of actual total Project costs, the Government shall return to the City within 90 calendar days such cash contributions to the extent they exceed fifty percent (50%) of actual Project costs.

e. Future Development: Neither party is obligated by this Agreement to undertake any future development of the Project, except to the extent this

Agreement may be so modified by future supplemental agreements signed by the parties and approved by the Secretary of the Army or his authorized representative. If at any time the City wishes to undertake further development of the facilities to be developed hereunder, it may do so at its expense provided prior approval of the Contracting Officer is obtained, but the Government shall not be obligated to reimburse the City for any portion of such expense in the absence of a supplemental agreement hereto as aforesaid.

f. Other Federal Funds: No credit of any kind whatsoever will be allowed the City for expenditures financed by, involving, or consisting of, either in whole or in part, contributions or grants of assistance received from any Federal agency, in providing any lands or facilities for recreation enhancement hereunder.

g. Adjustments To Reflect Costs: The dollar amounts set forth in this Article are based upon the Government's best estimates, and are subject to adjustments based on the costs actually incurred. Such estimates are not to be construed as representations of the total financial responsibilities of each of the parties.

#### ARTICLE VII - CONSTRUCTION AND OPERATION OF ADDITIONAL FACILITIES

Certain types of facilities, including but not necessarily limited to restaurants, lodges, golf courses, cabins, clubhouses, overnight or vacation type structures, stables, swimming pools, commissaries, and such similar revenue-producing facilities, may be constructed and operated by the City. Any such construction and operation of these types of facilities shall be compatible with all Project purposes and shall be subject to the prior approval of the Contracting Officer. However, the City shall not receive credit for costs of such facilities against amounts due and payable under Article VI and such

facilities shall not be deemed to be developed or constructed with Government assistance for purposes of Article III.d.

#### ARTICLE VIII - FEES AND CHARGES

The City may assess and collect fees for entrance to and use of developed recreation facilities and areas, in accordance with a fee schedule mutually agreed to by the parties. Not less often than every five years, the parties will review such schedule and, upon the request of either, renegotiate the schedule. The renegotiated fee schedule shall, upon written agreement thereto by the parties, supersede the previous fee schedule without the necessity of modifying this contractual document.

#### ARTICLE IX - TRANSFER OR ASSIGNMENT

The City shall not transfer or assign this contract nor any rights acquired thereunder, nor grant any interest, privilege, or license whatsoever in connection with this Agreement without the approval of the Secretary of the Army or his authorized representative except as provided in Article VII of this Agreement.

#### ARTICLE X - DISPUTES

Before any party to this Agreement may bring suit in any court concerning an issue relating to this Agreement, such party must first seek in good faith to resolve the issue through negotiation or through other forms of non-binding alternative dispute resolution.

#### ARTICLE XI - OPERATION, MAINTENANCE AND REHABILITATION

a. The City shall be responsible for operation, maintenance and rehabilitation without cost to the Government, of all facilities developed to

support Project recreation opportunities. The City shall maintain all Project recreation facilities in a manner satisfactory to the Contracting Officer and pursuant to the provisions of any lease or license which may subsequently be entered into between the parties hereto with the exception of lands required for operation of the Project facilities as described in paragraph c. of this Article.

b. -The City hereby gives the Government a right to enter, at reasonable times and in a reasonable manner, upon land which it owns or controls for access to the Project for the purpose of inspection, and, if necessary, for the purpose of operating, repairing, and maintaining the Project. If an inspection shows that the City for any reason is failing to operate, repair, and maintain the Project recreation facilities in accordance with the assurances hereunder, the Government will send a written notice to the City. If the City persists in such failure for 30 calendar days after receipt of the notice, then the Government shall have a right to enter, at reasonable times and in a reasonable manner, upon lands the City owns or controls for access to the Project for the purpose of operating, repairing, or maintaining the Project recreation facilities. No operation, repair or maintenance by the Government shall operate to relieve the City of responsibility to meet its obligations as set forth in this Agreement, or to preclude the Government from pursuing any other remedy at law or equity to assure faithful performance pursuant to this Agreement.

c. The California State Reclamation Board will be responsible for operation and maintenance of those lands, structures, and facilities such as levees, channels, bank protection works and patrol roads required for flood control.

ARTICLE XII - RELEASE OF CLAIMS

The Government and its officers and employees shall not be liable in any manner to the City for or on account of damage caused by the development of the general and recreation facilities of the Project, except for damages due to the fault or negligence of the Government or its contractors. The City hereby releases the Government and agrees to hold it free and harmless and to indemnify it from all damages, claims, or demands that may result from development and operation and maintenance of the general and recreation areas and facilities, except for damages due to the fault or negligence of the Government or its contractors.

ARTICLE XIII - MAINTENANCE OF RECORDS

The Government and the City shall keep books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect all net costs. The Government and the City shall maintain such books, records, documents and other evidence for a minimum of three years after completion of construction of the Project and resolution of all claims arising therefrom, and shall make available at their respective offices at reasonable times, such books, records, documents and other evidence for inspection and audit by authorized representatives of the parties to this Agreement.

ARTICLE XIV - FEDERAL AND STATE LAW

a. In acting under its right and obligations hereunder, the City agrees to comply with all applicable Federal and State laws and regulations.

b. The City agrees to comply with Section 601 of Title VI of the Civil Rights Act of 1964 (Public Law 89-352) and Department of Defense Directive

" 5500.II issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations, in connection with the construction, operation, and maintenance of the Project recreation facilities. The City agrees also that it will obtain such assurances from all of its concessionaires.

ARTICLE XV - RELATIONSHIP OF PARTIES

The parties to this Agreement act in an independent capacity in the performance of their respective functions under this Agreement and neither party is to be considered the officer, agent or employee of the other.

ARTICLE XVI - OFFICIALS NOT TO BENEFIT

No member of or delegate to the Congress, or resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

ARTICLE XVII - COVENANT AGAINST CONTINGENT FEES

The City warrants that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the City for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this Agreement without liability or in its discretion to add to the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE XVIII - TERMINATION OR SUSPENSION

a. If at any time the City fails to make the payments required under this

Agreement, the Secretary of the Army shall suspend work on the Project recreation facilities until the City is no longer in arrears or unless the Secretary determines that continuation of work on the Project recreation facilities is in the interest of the United States. Any delinquent payment shall be charged interest at a rate, to be determined by the Secretary of the Treasury, equal to 150 (one hundred-fifty) percent of the average bond equivalent rate of the 13 week Treasury bills auctioned immediately prior to the date on which such payment became delinquent, or auctioned immediately prior to the beginning of each additional 3 month period if the period of delinquency exceeds 3 months.

b. If the Government fails to receive annual appropriations in amounts sufficient to meet expenditures for the then-current fiscal year, the Government shall so notify the City. After sixty days either party may elect without penalty to terminate the Agreement or to suspend performance thereunder, and defer completion of Project recreation facilities. The parties shall wrap up their activities relating to the Project recreation facilities and proceed to a final accounting in accordance with Article VI.e.

#### ARTICLE XIV - STATEMENT OF INTENT

As required under Title I, Chapter IV of Public Law 99-88, the City hereby affirms its willingness and capability to meet its cost-sharing obligations as set forth in this Agreement.

#### ARTICLE XV - EFFECT OF SUBSEQUENT LEGISLATION

If, subsequent to the date of this Agreement, Congress enacts into law a change in the cost-sharing for this Project, the parties hereto shall renegotiate this Agreement to conform to such change; provided, however, any

renegotiated agreement shall take effect only after being approved by the State and the Government. If no renegotiated agreement is approved by both parties within 180 days of the effective date of the law changing the cost-sharing for this Project, the parties shall wind up their activities relating to the Project and proceed to a final accounting in accordance with Article VI.b. hereof.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

THE DEPARTMENT OF THE ARMY

By [Signature]  
Assistant Secretary of the Army  
(Civil Works)

THE CITY OF FAIRFIELD

By [Signature]  
Mayor,  
City of Fairfield

DATE 3 June 1986

APPROVED AS TO LEGAL FORM AND SUFFICIENCY, INCLUDING THE EFFECT OF SECTION 221, PUBLIC LAW 91-611.

By [Signature]  
CHIEF LEGAL OFFICER,  
City of Fairfield

DATE 5/29/86

AS WITNESSED BY:

[Signature] \_\_\_\_\_  
[Signature] \_\_\_\_\_  
\_\_\_\_\_

CERTIFICATE OF AUTHORITY

I, Thomas Heas, do hereby certify that I am the Chief Legal Officer, for the City of Fairfield, that the City of Fairfield is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Department of the Army and the City of Fairfield in connection with the Fairfield Vicinity Streams, California project, and to pay damages, if necessary, in the event of the failure to perform in accordance with Section 221 of Public Law 91-611, and that the person who has executed the Agreement on behalf of the City of Fairfield has acted within their statutory authority.

In Witness Whereof, I have made and executed this Certificate this 29 day of May, 1986.

*Thomas Heas*

EXHIBIT D

FEDERAL FLOOD CONTROL REGULATIONS

CODE OF FEDERAL REGULATIONS (EXTRACT)

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

missing pg 2

EXHIBIT E

SAMPLE PERMIT  
for  
USE OF RIGHT-OF-ENTRY  
RIGHT-OF-WAY  
or  
INSTALLATION OF STRUCTURES

EXHIBIT E

EXHIBIT  
PERMIT

\_\_\_\_\_  
(Name of Levee Commission or City)

\_\_\_\_\_  
(Location)

Permission is hereby granted to:

\_\_\_\_\_  
(Name of Firm or Individual)

\_\_\_\_\_  
(Address)

TO: (Describe in these spaces the proposal, including kind and type of construction, purpose intended, location by stationing. Indicate passageway provided by means of gates, etc. Use separate sheets if necessary, identifying each by reference herein.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Provided That:

Upon termination or expiration of this permit (whether by voluntary relinquishment by the grantee, by revocation by the grantor or otherwise) the grantee shall remove all structures, improvements, or appurtenances which may have been erected or constructed under this permit, and shall repair or replace any portion of the flood protection structure or right-of-way which may have been damaged by his operations (including grading and seeding, or sodding, if necessary), to the satisfaction of the grantor.

The structure or operation for which this permit is issued shall be maintained by the grantee in such manner as shall not injure or damage the flood protection structure, or interfere with its operation and maintenance in accordance with regulations of the Secretary of the Army.

The structure or operation covered by this permit may be damaged, removed or destroyed by the grantor in time of flood emergency if such action is determined by the grantor to be necessary in order to preserve life or property or prevent damage or impairment to the use

or safety of the flood protection structure, and the grantor shall not be liable to the grantee for such damage or destruction.

Unless otherwise specifically provided herein, this permit may be cancelled at any time by the grantor upon 10 days written notice mailed to the address shown above. During such 10 day period (or such other period as may be provided herein), the grantee will be permitted to remove any property or improvements installed under this permit, and to repair or replace any damage to the flood protection right-of-way or structures resulting from his use or operations. At the end of such period, the grantor shall have the right to possess and dispose of any such property or improvements remaining upon its right-of-way, and may proceed to repair or replace any such damage, and the grantee herein shall be liable to the grantor for the full cost of such repairs or replacements.

The construction, installation and maintenance of the structure or structures covered by this permit shall be subject to inspection by representatives of the grantor and the United States at all reasonable times.

In the event the work covered by this permit consists of or includes major construction, the cost of inspection thereof by the grantor and/or the United States shall be paid by the applicant.

Grantee agrees that it will not use the area or facilities covered by this permit, or permit such use to be used, for any purpose other than is specifically covered by this permit.

(Use these spaces for special conditions applicable to this permit.)

THIS PERMIT SHALL NOT BE VALID UNTIL APPROVED BY THE DISTRICT ENGINEER, CORPS OF ENGINEERS, U. S. ARMY, OR HIS AUTHORIZED REPRESENTATIVE.

\_\_\_\_\_  
Signature (Grantor) (Title) (Date)

Terms of this permit  
are hereby accepted

Approved:

\_\_\_\_\_  
Signature (Grantee) (Date) (Date)

District Engineer

REGULATIONS GOVERNING ISSUANCE OF PERMITS FOR USE OF  
RIGHTS-OF-WAY FOR FLOOD PROTECTION PROJECTS

As the flood protection works and rights-of-way are owned by the Local Interests and will be operated and maintained by them in accordance with Regulations of the Secretary of the Army, and issuance of any permits to use any part of the rights-of-way will be handled by the Local Interests, with the restriction that no such permit may be issued without the approval of the District Engineer, as stated in paragraph No. 208.10, (a) General, (5) of the Regulations, a copy of which is attached hereto.

Applications for use of the rights-of-way should be addressed to the City or Levee Commission having jurisdiction over the local flood protection project. The City or Levee Commission will then forward the application to the District Engineer, Corps of Engineers, Sacramento, California, with its recommendation, with reasons for such recommendation. It is suggested that the application and recommendations be forwarded with a draft copy of the permit, in order that all objectionable features may be eliminated prior to its proffer to the applicant as this may prevent misunderstandings and arguments. If for any reason it is desired to forward the permit itself without this intervening stop, five copies of the proposed permit should be included on which is stated the exact use of the rights-of-way, for which permission is being requested, together with any condition or restriction of the permit. The permit should be signed by the applicant and an official of the Local Interests. A drawing, sketch or detail plans as may be required to show the exact location, nature of work and proposed method of construction should be attached to each copy of permit. If the permit is approved by the District Engineer, three copies will be returned. This will enable each party concerned to have a copy of the approved permit.

In any case where a permit is requested for any purpose which might cause disfigurement or damage to the flood protection rights-of-way or structure in its erection, use, or removal, it is suggested that the applicant be required to post a bond of sufficient amount to protect the Local Interests from any cost of repair or removal, and to guarantee faithful performance of the permit conditions. In such cases the permit should state the amount and conditions of the bond.

In cases involving major construction or other work which may directly affect the flood protection structure, it will be necessary that the United States inspect the work and the Local Interests may also desire to inspect it. As stated in the permit form, such inspection will be at the expense of the grantee, and this should be called to his attention. Except in cases of known financial security, arrangements should be made with the grantee for an advance deposit or bond to cover such costs.

EXHIBIT F  
SUGGESTED CHECK LIST FOR INSPECTIONS

INSPECTION CHECK LIST  
FOR  
LEVEES AND EARTH CHANNELS

Inspector \_\_\_\_\_

Date \_\_\_\_\_

Superintendent \_\_\_\_\_

Sheet No. \_\_\_\_\_

ITEM	REMARKS
A) Location by creek and station	
B) Landside levee conditions	
C) Waterside levee conditions	
D) Evidence of seepage	
E) Channel bed conditions	
F) Extent of vegetative growth	
G) Accumulation of debris and refuse	
H) Condition of riprap	
I) Condition of roadways and ramps	
J) Condition of gates and fences	
K) New construction or encroachment within right-of-way	
L) Measures taken since last inspection	
M) Comments	

INSTRUCTIONS FOR COMPLETING SHEET 1 OF EXHIBIT F

INSPECTION CHECK LIST FOR LEVEES AND EARTH CHANNELS

- ITEM A) Indicate creek name and station corresponding to plans of project. Indicate left or right bank (facing downstream).
- ITEM B) Indicate condition of the levee landside embankment and levee crown. Note if there is any settlement, sloughing, loss of grade or erosion on the levee. Indicate amount of settlement to tenths of a foot. Indicate the new slope if sloughing has occurred. Indicate extend of erosion if it occurred.
- ITEM C) Indicate condition of the levee waterside embankment. Note if there is any settlement, sloughing, loss of grade or erosion on the levee. Indicate amount of settlement to tenths of a foot. Indicate the new slope if sloughing has occurred. Indicate extend of erosion if it occurred.
- ITEM D) Indicate any evidence of seepage through the embankment section, such as boils, drainage pipe leaks, etc.
- ITEM E) Indicate condition of the channel invert. Note the extent of aggradation or degradation. Indicate any change in channel grade or alignment. Note amount of sediment buildup such as shoals or extent of scouring.
- ITEM F) Note nature, extent and size of vegetal growth within the limits of flood flow channel.
- ITEM G) Note nature and extent of debris and refuse that might interfere with flow capacity of the channel or flood fighting operations. This includes clogging of conduits, interference with gates or bridges and obstructing channel flow.
- ITEM H) Indicate condition of riprap. Note if the rock has been deteriorated or damaged. Note any movement of rock or if any erosion has taken place. Note the presence of vegetal growth through the riprap.
- ITEM I) Indicate condition of roadways and ramps. Note any changes such as potholes, undulations or any other damage. Note any inadequacy in surface drainage system.
- ITEM J) Indicate the condition of all gates across the embankment section. Note if any maintenance is required, such as painting.
- ITEM K) Indicate any construction along the project right-of-way. Note any new structures which encroach the project right-of-way.
- ITEM L) Indicate any maintenance measures that have been performed since inspection and their present condition.
- ITEM M) Note any comments and observations not covered under other items here.

INSPECTION CHECK LIST  
FOR  
CONCRETE CHANNELS AND DRAINAGE STRUCTURES

Inspector \_\_\_\_\_

Date \_\_\_\_\_

Superintendent \_\_\_\_\_

Sheet No. \_\_\_\_\_

ITEM	REMARKS
A) Location by creek and station	
B) Bank conditions	
C) Concrete & channel wall conditions	
D) Channel bed conditions	
E) Accumulation of debris and refuse	
F) Condition of roadways and ramps	
G) Condition of gates and fences	
H) -Condition of pipes or conduits	
I) Condition of headwalls, inlets or outlets	
J) Condition of flapgates	
K) New construction or encroachment within right-of-way	
L) Measures taken since last inspection	
M) Comments	

INSTRUCTIONS FOR COMPLETING SHEET 3 OF EXHIBIT F

INSPECTION CHECK LIST FOR CONCRETE CHANNELS AND DRAINAGE STRUCTURES

- ITEM A) Indicate creek name and station corresponding to plans of project. Indicate left or right bank (facing downstream).
- ITEM B) Indicate condition of the landside embankment and backfill. Note if there is any settlement, sloughing, loss of grade or erosion. Indicate amount of settlement to tenths of a foot. Indicate the new slope if sloughing has occurred. Indicate extent of erosion if it occurred.
- ITEM C) Indicate condition of the concrete and channel walls. Note if there is any deterioration such cracking, chipping or breaking. Note if concrete has eroded and exposed any reinforcing steel.
- ITEM D) Indicate condition of the channel invert. Note the extent of aggradation or degradation. Note amount of sediment buildup such as shoals or extent of scouring.
- ITEM E) Note nature and extent of debris and refuse that might interfere with flow capacity of the channel or flood fighting operations. This includes clogging of conduits, interference with gates or bridges and obstructing channel flow.
- ITEM F) Indicate condition of roadways and ramps. Note any changes such potholes, undulations or any other damage. Note any inadequacy in surface drainage system.
- ITEM G) Indicate the condition of all gates across the embankment section. Note if any maintenance is required, such as painting.
- ITEM H) Indicate condition of pipes or conduits. Note any settlement or damage that has occurred. Note any leakage.
- ITEM I) Indicate condition of structure. Note any damage of the concrete structure such as settlement, cracks, displacement, scour, etc.
- ITEM J) Indicate condition of flapgates. Note if they have become corroded, misaligned or jammed. Note if the adjustable pivot points are stiff or jammed.
- ITEM K) Indicate any construction along the project right-of-way. Note any new structures which encroach the project right-of-way.
- ITEM L) Indicate any maintenance measures that have been performed since inspection and their present condition.
- ITEM.M) Note any comments and observations not covered under other items here.

INSPECTION CHECK LIST  
FOR  
BRIDGES, CULVERTS AND OTHER MISCELLANEOUS MAINTENANCE

Inspector \_\_\_\_\_

Date \_\_\_\_\_

Superintendent \_\_\_\_\_

Sheet No. \_\_\_\_\_

ITEM	REMARKS
A) Location by creek and station	
B) Condition of bridge	
C) Condition of culvert	
D) Upstream approach conditions	
E) Downstream departure conditions	
F) Accumulation of debris and refuse	
G) Condition of fishways	
H) Condition of landscaping	
I) Condition of Recreation Trail	
J) Miscellaneous	
K) New construction or encroachment within right-of-way	
L) Measures taken since last inspection	
M) Comments	

INSTRUCTIONS FOR COMPLETING SHEET 5 OF EXHIBIT F

INSPECTION CHECK LIST FOR BRIDGES, CULVERTS AND OTHER MISC. MAINTENANCE

- ITEM A) Indicate creek name and station corresponding to plans of project. Indicate left or right bank (facing downstream).
- ITEM B) — Indicate condition of bridge. Note any damage to footing, such as settlement and scour. Note if any maintenance is required such as painting.
- ITEM C) Indicate condition culvert. Note any damage to the structure such as scouring, clogging or cracking. Note if concrete has eroded and exposed any reinforcing steel.
- ITEM D) Indicate condition of upstream approach to structure. Note if any aggradation or degradation has occurred. Note amount of sediment buildup such as shoals or extent of scouring. Note if erosion has occurred.
- ITEM E) Indicate condition of downstream departure to structure. Note if any aggradation or degradation has occurred. Note amount of sediment buildup such as shoals or extent of scouring. Note if erosion has occurred.
- ITEM F) Note nature and extent of debris and refuse that might interfere with flow capacity of the channel or flood fighting operations. This includes clogging of conduits, interference with gates or bridges and obstructing channel flow.
- ITEM G) Indicate condition of fishways. Note if they are filled with sediment or debris.
- ITEM H) Indicate condition of landscaping. Note if any maintenance is required such as watering, weeding, pruning or spraying. Indicate condition of irrigation system and sprinklers.
- ITEM I) Indicate condition or recreation trail. Note any changes such as potholes, undulations or any other damage. Note any inadequacy in surface drainage system.
- ITEM J) Indicate condition of other miscellaneous structure. Note any damages and maintenance measures necessary.
- ITEM K) Indicate any construction along the project right-of-way. Note any new structures which encroach the project right-of-way.
- ITEM L) Indicate any maintenance measures that have been performed since inspection and their present condition.
- ITEM M) Note any comments and observations not covered under other items here.

EXHIBIT G

SUGGESTED SEMI-ANNUAL REPORT FORM

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

Dear Sirs:

The semi-annual report for the period of ( ) Fairfield  
Vicinity Streams Project, Solano County, is as follows:

a. The physical condition of the protective works is indicated by the  
inspector's report, copies of which are enclosed, 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:

Dates	Maximum Elevation
_____	_____
_____	_____

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

(Superintendent's log of flood conditions)

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 for the Fairfield Streams Vicinity Project)

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 the 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					

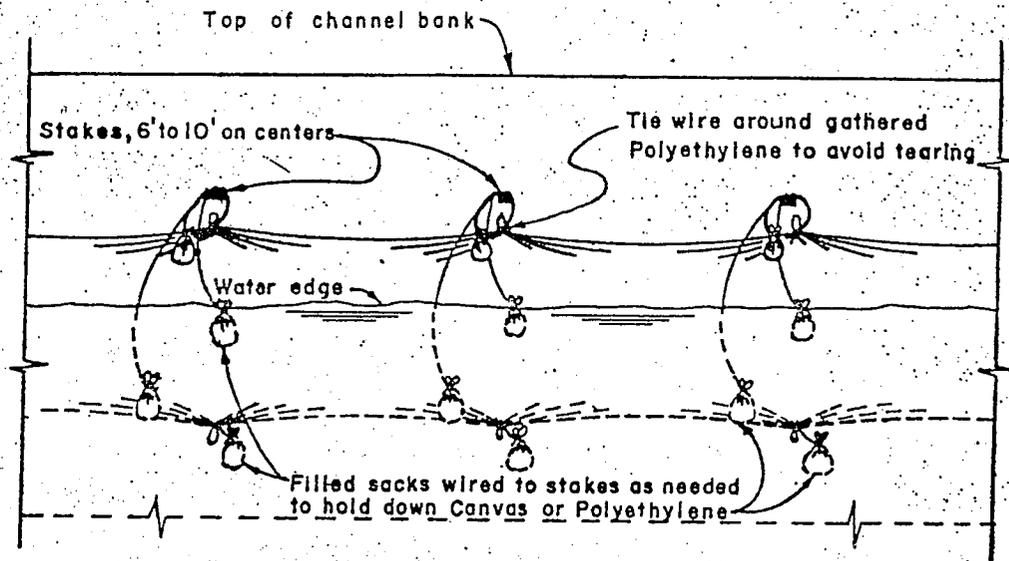
Respectively submitted,

\_\_\_\_\_  
Superintendent of Works

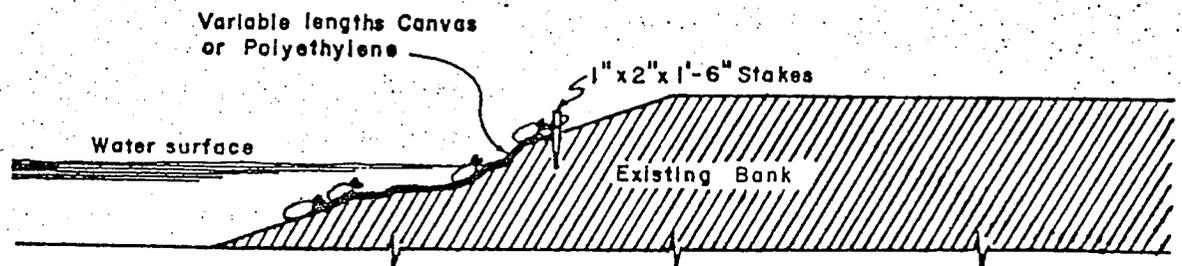
EXHIBIT H

PLATES OF SUGGESTED FLOOD FIGHTING METHODS

EXHIBIT H



PLAN



SECTION

**NOTE:**

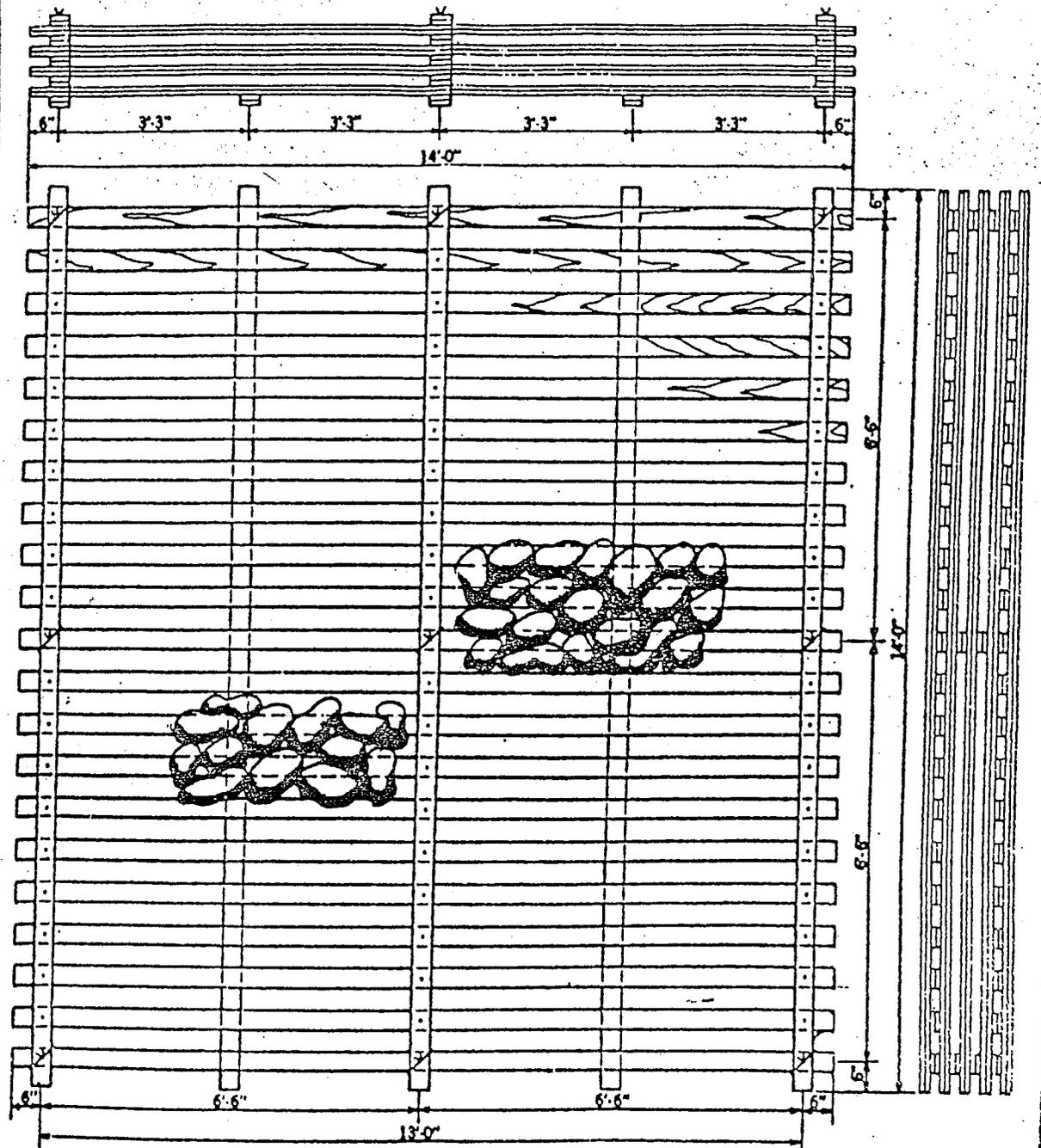
Use Polyethylene sheets, preferably 16' to 20' wide available in std.-100' long rolls, approx. 6 mil thickness, or canvas as available. Lay chosen length of Polyethylene sheeting or canvas parallel with channel slope, tie upper edge to stakes, tie sacks to bottom edge. Crew will then toss all bottom sacks over damaged slope at the same time to avoid tearing. Intermediate filled sacks will be immediately placed to hold down canvas or plastic. HAVE ALL ITEMS PREPARED BEFOREHAND.

MATERIAL REQUIRED FOR 100 LINEAR FEET OF CHANNEL
LUMBER
• 30 Stakes 1"x2"x1'-6" • (Sharpened)
SANDBAGS
• 120 sandbags • Canvas or Polyethylene sheeting as required

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FAIRFIELD VICINITY STREAMS PROJECT

**WAVE WASH PROTECTION**

US Army Engineer District  
Sacramento, California



**Notes:**

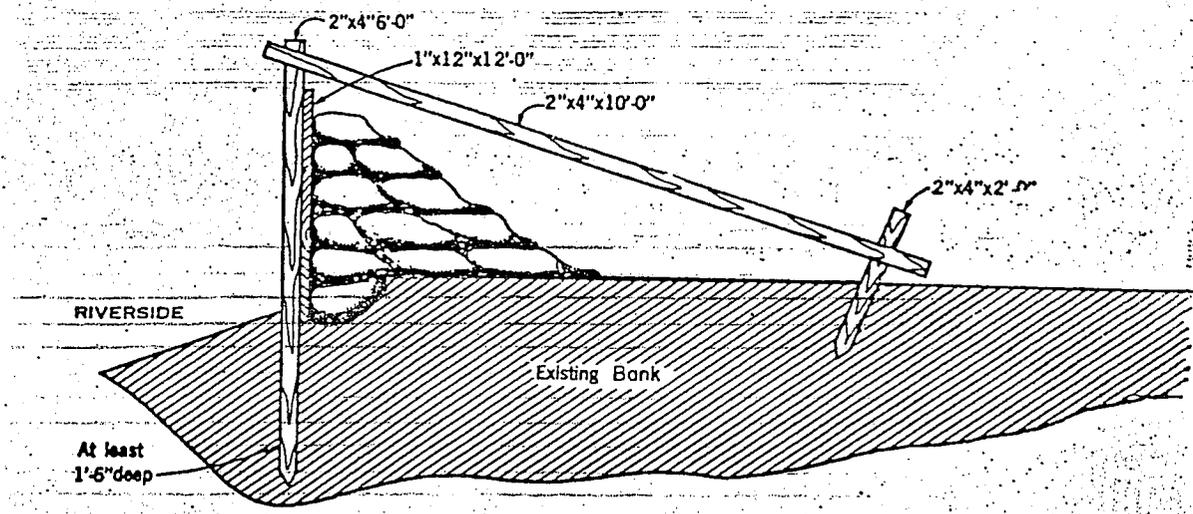
Crib constructed of double thickness of 1"x4"x14'-0" lumber. Nail all intersections with 1-20d nail. Each intersection of walls securely fastened by a loop of No. 9 wire, tightly twisted.

BILL OF MATERIAL FOR ONE CRIB 13'-0"	
LUMBER	
130 pieces	1"x4"x14'-0"
WIRE	
30'	No. 9 wire
NAILS	
121 lbs.	20d nails

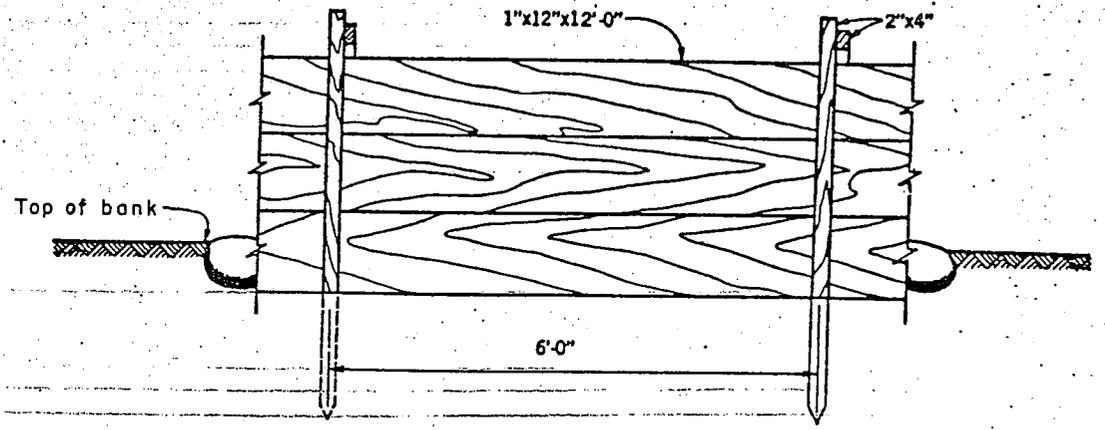
FAIRFIELD VICINITY STREAMS PROJECT  
FLOOD CONTROL PROJECT

**CAVING BANK PROTECTION**

U.S. ENGINEER DIST., SACRAMENTO, CALIF.



SECTION



FRONT ELEVATION

BILL OF MATERIAL FOR 100 LINEAR FEET OF CHANNEL	
LUMBER	
25 pieces	1"x12"x12'-0"
17 pieces	2"x4"x10'-0"
• 17 pieces	2"x4"x6'-0"
• 17 pieces	2"x4"x2'-0"
•	(Sharpened)
NAILS	
1 lb.	.8d nails
2 lbs.	.16d nails
SANDBAGS	
1100	bags

FAIRFIELD VICINITY STREAMS PROJECT  
 FLOOD CONTROL PROJECT

**LUMBER AND SACK TOPPING**

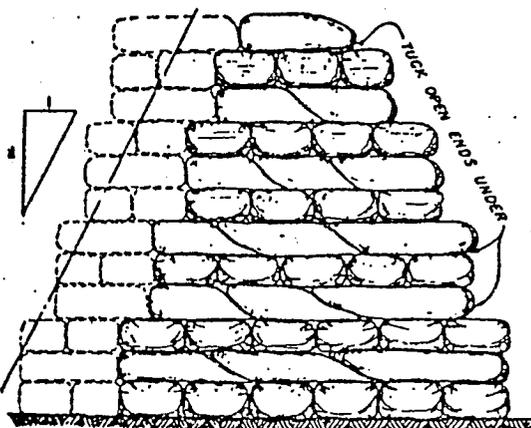
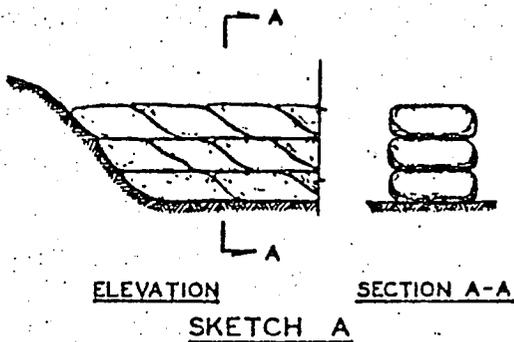
U. S. ENGINEER DIST., SACRAMENTO, CALIF.

**LEVEE CONSTRUCTION**

SANDBAGGING USED TO PREVENT OVERTOPPING OF EXISTING BANKS AND FOR RETAINING FLOOD WATERS WHERE NO BACK-UP MATERIAL IS AVAILABLE.

**INSTRUCTIONS:**

1. FILL SANDBAGS 1/2 TO 2/3 FULL BUT LEAVE ENOUGH FLAP TO TURN UNDER. DO NOT TIE. LEAVE ENDS OPEN.
2. FOR HEIGHTS OF 1 FOOT AND LESS, LAY 3 SINGLE COURSES WITH BAGS LENGTHWISE AS SHOWN IN SKETCH 'A' BELOW.
3. FOR HEIGHTS GREATER THAN 1 FOOT, PLACE AS INDICATED IN SKETCH 'B' BELOW.
4. WHEN BAGS ARE PLACED FLATTEN OUT AND FILL VOIDS BY MASHING BAGS WITH FEET AND VIGOROUSLY TRAMP EACH COURSE OF THE LEVEE SECTION. THIS IS AN EXTREMELY IMPORTANT OPERATION FOR PROVIDING A LEVEE WHICH WILL BE AS IMPERVIOUS TO WATER AS POSSIBLE AND TO INSURE STABILITY OF SECTION. LOOSELY PLACED SANDBAGS IMPROPERLY KEYED TOGETHER MAY RESULT IN FAILURE AND CAUSE SERIOUS DAMAGE.



**LEVEE SECTION**

FOR HEIGHTS IN EXCESS OF THE ABOVE (APPROX. 3'-6") HOLD SAME BATTER AND BUILD ON THE SIDE AS INDICATED BY DASHED LINES ABOVE. ALTERNATE HEADER COURSES (BAGS PLACED CROSSWISE) AND STRETCHER COURSES (BAGS PLACED LENGTHWISE).

**SKETCH B**

**ESTIMATING DATA:**

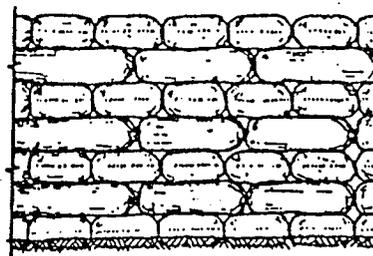
1. AVERAGE WEIGHT OF EACH FILLED SANDBAG, APPROX 50 LBS.
2. APPROXIMATELY 1000 SANDBAGS ARE REQUIRED FOR EACH 100 SQ. FT. OF SURFACE (HEIGHT MULTIPLIED BY DISTANCE)

**REVETMENTS**

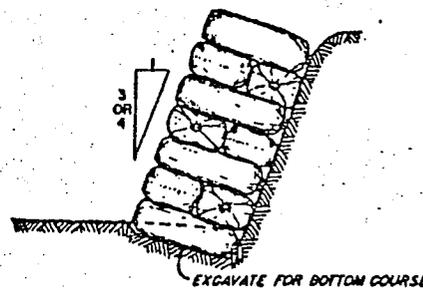
USED FOR EMERGENCY BANK PROTECTION TO PREVENT UNDER CUTTING AND CONTROL OF COURSE OF FLOOD CHANNELS.

**INSTRUCTIONS:**

1. FILL SANDBAGS 2/3 FULL AND TIE OPEN END.
2. TUCK IN BOTTOM CORNERS OF BAG AFTER FILLING.
3. PLACE BAGS PERPENDICULAR TO SLOPE.
4. LAY STRETCHER AND HEADER COURSES WITH CHOKE AND SHOE BEAMS IN: THUS:-



**ELEVATION**



**SECTION**

**ESTIMATING DATA:**

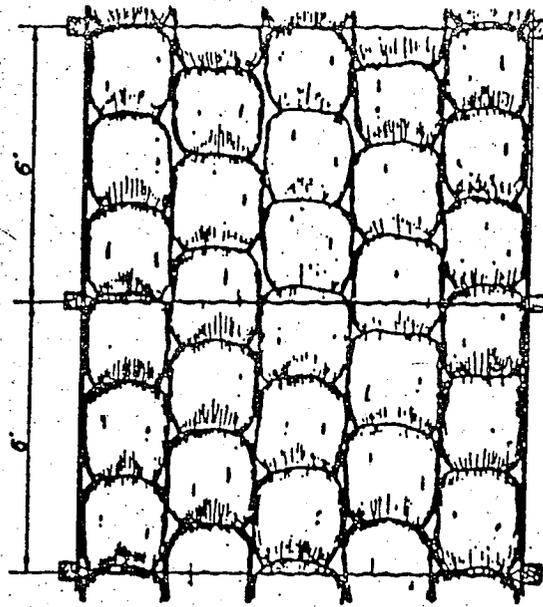
1. AVERAGE WEIGHT OF EACH FILLED SANDBAG APPROXIMATELY 65 LBS.
2. APPROXIMATELY 320 SANDBAGS ARE REQUIRED FOR EACH 100 SQ. FT. OF SURFACE TO BE REVETED.

**FILL MATERIAL:**

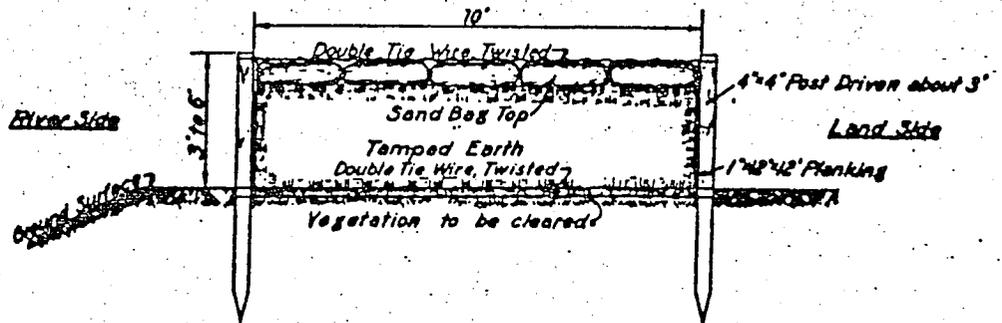
THE IDEAL MATERIAL FOR FILLING SAND BAGS IS A FINE SAND OR COARSE SILT. AVOID, AS MUCH AS POSSIBLE, THE USE OF COARSE GRAVEL AND HEAVY CLAYS.

FAIRFIELD VICINITY STREAMS PROJECT  
FLOOD CONTROL PROJECT  
INSTRUCTIONS FOR  
PLACING SANDBAGS

U. S. ENGINEER DIST., SACRAMENTO, CALIF.



PLAN



END ELEVATION

MATERIAL REQUIRED FOR 100 LINEAR FEET OF CHANNEL		
4 FT HIGH	5 FT HIGH	6 FT HIGH
34 pieces 4"x4"x7' (sharpened) 1122	34 pieces 4"x4"x8' (sharpened) 1371	34 pieces 4"x4"x9' (sharpened) 1608
67 pieces 1"x12"x12' board feet	64 pieces 1"x12"x12' board feet	100 pieces 1"x12"x12' board feet
25 lbs. wire #12 gage	25 lbs. wire #12 gage	25 lbs. wire #12 gage
15 lbs. 10d nails	15 lbs. 10d nails	17 lbs. 10d nails
600 sand bags	600 sand bags	600 sand bags
148 cu. yds. earth	185 cu. yds. earth	222 cu. yds. earth

FAIRFIELD VICINITY STREAMS PROJECT  
 FLOOD CONTROL PROJECT  
 3-6FT. MUD BOX LEVEE  
 CONSTRUCTION DETAILS

US Army Engineer District  
 Sacramento, California

