MAINTENANCE MANUAL
FOR
KINGS RIVER CHANNEL IMPROVEMENT PROJECT
KINGS RIVER, CALIFORNIA

TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Paragraph</th>
<th>Subject</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PART A - INTRODUCTION</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Authorization</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>Project location</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>Project description</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>Control provided</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>Construction history</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>EXHIBITS</td>
<td></td>
</tr>
<tr>
<td>A-2-1</td>
<td>Photographs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PART B - GENERAL PROCEDURE</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Purpose of this manual</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>
<td>Definitions</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Duties of the Engineering Division</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Duties of the Operations Division</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>Project works</td>
<td>9</td>
</tr>
<tr>
<td>6.</td>
<td>Description of structures</td>
<td>10</td>
</tr>
<tr>
<td>a.</td>
<td>South Fork diversion structure (Army Weir)</td>
<td>10</td>
</tr>
<tr>
<td>b.</td>
<td>Culvert structures</td>
<td>11</td>
</tr>
<tr>
<td>7.</td>
<td>Inspection and maintenance</td>
<td>11</td>
</tr>
<tr>
<td>10.</td>
<td>Accident Prevention</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>EXHIBITS</td>
<td></td>
</tr>
<tr>
<td>B-1</td>
<td>Location map</td>
<td></td>
</tr>
<tr>
<td>B-2</td>
<td>Federal Regulations for Flood Control</td>
<td></td>
</tr>
<tr>
<td>B-3</td>
<td>Sample permit form</td>
<td></td>
</tr>
<tr>
<td>B-4</td>
<td>Check List</td>
<td></td>
</tr>
<tr>
<td>B-5-1</td>
<td>South Fork diversion structure - Plan and elevation</td>
<td></td>
</tr>
<tr>
<td>B-5-2</td>
<td>Fault, Sand and Crooked Sloughs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Culvert structures</td>
<td></td>
</tr>
<tr>
<td>B-6</td>
<td>Index of Drawings</td>
<td></td>
</tr>
</tbody>
</table>
b. Levee Repair, Lemoore Weir to Stinson Weir and Cole Slough was accomplished under contract No. DACW-05-70-C-0044 by R. & D. Watson, Inc. during the period from 1 November 1969 to 26 November 1969. Specification No. 3719 and Drawing No. KI-4-64 (3 sheets).

c. Emergency Repairs, Stinson Weir, were accomplished under contract No. DACW-05-70-C-0040 by Kaweah Construction Company during the period from 7 November 1969 to 12 January 1970. Specification No. 3720 and Drawing No. KI-4-65 (2 sheets).

d. Channel Restoration and Debris Removal, Centerville Bottoms Area near Sanger, was accomplished under equipment rental contract No. DACW-05-71-C-0054 during the period from 1 October 1970 to 6 January 1971 by R. G. Weir.

1-06. Floodflows. For the purpose of this manual the term "floodflows" or "high water period" refers to flows when the water surface in the streams reaches or exceeds a reading given in the following table:

**FLOODFLOW TABLE**

<table>
<thead>
<tr>
<th>Stream</th>
<th>Reach</th>
<th>Flow C.F.S.</th>
<th>Gage Location</th>
<th>Gage Height-Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kings River</td>
<td>Lemoore Weir to Island Weir</td>
<td>7,500</td>
<td>Downstream from Lemoore Weir</td>
<td>12.4</td>
</tr>
<tr>
<td>Kings River</td>
<td>Island Weir to Crescent Weir</td>
<td>5,000</td>
<td>Downstream from Island Weir</td>
<td>10.1</td>
</tr>
<tr>
<td>Kings River</td>
<td>Downstream from Crescent Weir</td>
<td>3,500</td>
<td>Downstream from Crescent Weir</td>
<td>10.0</td>
</tr>
<tr>
<td>Clarks Fork</td>
<td>All</td>
<td>2,000</td>
<td>Downstream from Army Weir</td>
<td>7.8</td>
</tr>
<tr>
<td>Crescent Bypass</td>
<td>All</td>
<td>500</td>
<td>(No gage)</td>
<td>-</td>
</tr>
</tbody>
</table>

e. Patrol road surfacing at 26-1/4 Avenue, channel excavation site mile 43.0, and bank protection at site mile 55.0 along the Kings River were accomplished under Contract No. DACW05-72-C-0056 by TRICO Contractors during the periods from 3 March 1972 to 22 April 1972. Specification No. 3774, Drawing No. KI 1-4-33.

1-05 Construction data and contractor

f. Patrol road surfacing, bank protection and appurtenances and levee construction from Lemoore Weir to 6th Avenue were accomplished under Contract No. DACW05-76-C-0018 by Carl J. Woods during the periods from 11 September 1975 to 17 March 1976. Specification No. 4709, Drawing No. KI 1-4-40.
diversion structures built by the Corps of Engineers (see Exhibit 3-5-2); and channel improvement in the vicinity of the structures.

4. **Control provided.** The project was built as an interim flood protection feature for the Tulare Lake Basin. Flood waters of the Kings River would be diverted either to Mendota Pool via Kings River North or to Tulare Lake via Kings River South. On completion of Pine Flat Dam the operation of the structures was coordinated with the operation of Pine Flat Dam to provide desired irrigation waters to Tulare Lake and to prevent damaging inflow to the Tulare Lake area.

5. **Construction history.** Construction of the project was accomplished under Contract No. W-04-167-eng-124 by Trehitt, Shields and Fisher. Work began in September 1943 and was completed in February 1944.
PART B
INSPECTION AND MAINTENANCE - GENERAL PROCEDURE

1. **Purpose of this manual.** The purpose of this manual is to furnish personnel of the District Office with information on the project works, and instructions as to the details of the maintenance requirements applicable to the structural features only of the project, and to indicate satisfactory methods of flood-fighting operations and emergency repairs. The structures are to be maintained and operated in such a manner and at such times as may be necessary, to obtain maximum benefits.

2. **Definitions.** As used herein the terms the "Construction-Operations Division" hereinafter referred to as the "Operations Division" and "Engineering Division" shall refer to organizations within the Sacramento District, Corps of Engineers, U. S. Army. The "Project Engineer" shall mean the Chief, San Joaquin Valley Operations Office, who shall be responsible to the Chief of the Operations Division. "Flood Season" is considered to be the period between 1 November and 31 July and "Major High Water Period" is considered to be one in which the flow at the forks exceeds 6100 c.f.s. as measured at the Army Weir. All elevations referred to herein are based on U.S.G.S. datum.

3. **Duties of the Engineering Division.** The Engineering Division shall establish regulations governing the operations of the diversion structures during flood periods. In addition the Chief of the Division shall maintain complete records of flows.
b. Files and records. The Project Engineer shall establish and maintain a file of all reports, records, and drawings concerning the project works. During flood stages a complete log shall be maintained, recording the time and amount of all gate changes, estimated flows, and all operating decisions. The files and records shall be available at all times to the Chief of the Engineering Division.

c. Encroachment of trespass on right-of-way. There shall be no encroachment of trespass which will adversely affect the efficient operation or maintenance of the project works. If it is deemed necessary the Project Engineer shall cause notices to be posted at conspicuous places along the project right-of-way directing public attention to this requirement, arrange for the prosecution of offenders under local ordinances, and report actions taken to the District Engineer, through the Chief of the Division.

d. Permits for right-of-entry or use of portion of right-of-way. Requests for permits for temporary right-of-entry or use of portions of the right-of-way shall be carefully reviewed to determine that such use will not adversely affect the safety and functioning of the project. Regulations governing issuance of permits for use of right-of-way for flood protection projects are contained in Exhibit B-3.

e. Permits for improvements or construction within the project right-of-way. All requests for permits for construction of any improvement of any nature within the limits of the project right-of-way shall be carefully reviewed by the Chief of the
g. Inspection and maintenance.

(1) The Operations Division, through the Project Engineer, shall provide at all times such maintenance as may be required to insure serviceability of the structures in time of flood. Periodic inspections shall be made by the Chief of the Division or his authorized representative to insure that the above maintenance measures are being effectively carried out. 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. Immediate steps shall 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 Chief of the Division.

(2) The check list shown in Exhibit B-4 shall be used in each inspection to insure that no features of the protective system are overlooked. Items requiring maintenance should be noted thereon; if items are satisfactory they shall be indicated by a check. Carbon copies of the inspector's original field notes as recorded on the check list shall be included as an enclosure to the annual report as provided in paragraph 4h(1) below of this manual.

(3) All repairs shall be made in accordance with standard engineering practice, to line and grade and in accordance with details shown on construction drawings for the project works, copies of which are included in Exhibits B-5-1 and B-5-2.
works is shown on Exhibit B-1. Detailed descriptions of the various structures are given in the following paragraphs.

6. Description of structures.

a. Army Weir. The diversion structure as shown on Exhibit B-5-1 is a reinforced concrete broad crested weir, 30 feet wide and 156 feet long and is equipped with flash boards for control of flows. The weir crest is a flat concrete slab, 12 inches thick, set at elevation 227.34. Cutoff walls 2' 0" x 6' 0" at the upstream side and 2' 0" x 6' 6" at the downstream side rest on top of Wakefield piling driven about 20 feet into the stream bed. Piling and cutoff walls are provided under the abutment walls and also extend under the wing walls for 29' 9". The abutment walls are 30 feet long, 12 inches thick and are 11' 8" high above the weir crest. Vertical wing walls 40 feet long are set perpendicular to the abutment walls. The top of the wing walls and abutments is at elevation 239.0. A reverse filter and 4-inch tile drains are located at the downstream end of the structure to relieve uplift at the toe of the slab. A reinforced concrete bridge spans the weir and is supported by concrete piers on 12-foot centers. Slots are provided near the upstream end of the piers to accommodate the 4" x 8" flashboards. Grooves are provided in the 4 center piers for the installation of gates. Center supports, consisting of L0WF21 beams, for the flashboards are anchored to the weir crest and bridge deck. Curbs 4" x 8" and 6" x 6" on the upstream side and downstream side respectively extend for the entire length of the bridge. Drain holes are located on 26-foot centers.
8. At each inspection required by paragraph 4g of this report, the following items, if applicable, shall be particularly noted:
   a. Damage or settlement of concrete pipe or conduits;
   b. Condition of slide gate guides, stems and hoists;
   c. Condition of concrete, e.g., cracks, spalls, erosion;
   d. Debris or other obstructions to flow;
   e. Condition of access bridges to flow control gates;
   f. Condition of embankments adjacent to structures;
   g. Condition of riprap stone blanket or protective cover adjacent to structures;
   h. Condition of paint on fence posts and gates.

9. All eroded concrete shall be repaired as soon as any reinforcing steel is exposed or erosion reaches a depth of 4 inches. The repair shall be made by thoroughly cleaning the surface by chipping or sand blasting, and building up the concrete to its original section. For this purpose, the use of pneumatically-placed Portland cement mortar is considered satisfactory. All evidence of settlement, uplift or failure of concrete structures shall be referred to the District Engineer for analysis and recommendation of remedial action. If the inspection shows the control gates have been jammed by debris or other obstructions, they shall be thoroughly cleaned so that they operate freely to a full opening or full closure. The operating mechanism of the control gate on the three outlet works shall be kept well lubricated. Following is the recommended lubrication for the gates.
c. First-aid equipment and the names of designated physicians shall be made available to maintenance personnel.

d. Sealed containers of paints, varnishes, lacquers, thinners, and other inflammable paint materials, shall be kept in a well-ventilated location free from excessive heat, smoke, sparks, flame, or the direct rays of the sun.
(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.

(9) No excavation within the limits of this unit of the Kings River Project will be permitted unless an excavation permit has been approved by the State Reclamation Board and the District Engineer.

(10) If any work is done to improve flow conditions in the Kings River Project Streams an excavation permit must be obtained from the Superintendent and approved by the District Engineer.

(11) Trees with diameters in excess of 3 inches and other vegetation and ground cover that does not seriously interfere with the passage of floodflows shall not be removed as a part of normal maintenance.

(12) Trees preserved in the floodway of site mile 43.0 and 55.0 during prosecution of contract listed in paragraph 1-05e above shall not be removed as a part of normal maintenance as long as they remain in a healthy condition.

"(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 Features, Diversion Dams and Weirs. There are six weirs within the limits of the channel improvement work. Operation and maintenance of these weirs will be the responsibility of the agency providing the assurances for the project with the exception of the Army weir which will be maintained by the Sacramento District. The agency providing the assurances for the project (KRCF) may enter into separate agreements with the irrigation districts who own the weirs for the purpose of maintaining and operating these structures. The project design flood plane at these weirs was established based on the following conditions:
TITLe 33—NAVIGATION AND NAGIVABLE WATERS

Chapter II—Corps of Engineers, War Department

PART 208—FLOOD CONTROL REGULATIONS

MANNMAINTENANCE AND OPERATION OF FLOOD CONTROL WORKS

Pursuant to the provisions of section 3 of the Act of Congress approved June 22, 1936, as amended and supplemented (49 Stat. 1571; 56 Stat. 877; and 58 Stat. 638; 33 U.S.C. 701c; 1940-1), the following regulations are hereby prescribed to govern the maintenance and operation of flood control works:

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, reimbursable agency, which furnished assurance that it will maintain and operate flood control works in accordance with regulations of the Secretary of War, as required by law, shall appoint a permanent committee consisting of the public officials of the appropriate agency to be known as the “Superintendent,” who shall be responsible for the development and maintenance of, and directly in charge of, an operation and maintenance manual 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 maintained 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 right-of-way for the protective facilities.

(5) No improvement shall be passed over, through, or under the walls, levees, improved channels or floodways, nor shall any excavation or construction be permitted within the limits of the project without proper permission, nor shall any change be made in any feature of the works without prior determination by the District Engineer of the War Department 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 practices. 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.

(8) It shall be the duty of the Superintendent to submit semiannual reports to the District Engineer concerning maintenance, inspection, and operation of the protective works.

(7) The District Engineer or his authorized representative shall have full power to inspect at any time all the structures and facilities 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 the authorized representative 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 War Department 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 these regulations.

(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 prevent the growth of weed, exterminate burrowing animals, and to provide for routine mowing of the grass and weeds, removal of trash and drift deposits, and repair of damage caused by erosion or other forces. Where practicable, measures 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 authorized representative to insure that the above maintenance measures are being effectively carried out and, further, that:

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

(ii) No crossings have 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 such facilities are not becoming clogged;

(v) Drains through the levees and gate 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 leading on and off the levee are being properly maintained;

(ix) Trestle construction 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 grasing or vehicular traffic on the levee;

(12) 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 after each major high water period, and otherwise at intervals not exceeding 90 days. Measures to eliminate encroachments and such repairs found necessary by such inspections shall be undertaken immediately. All repairs shall be accomplished by methods acceptable to 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. Flooding plants shall be allowed to lie against or tie up to the wall. Should it become necessary during a flood emergency to pass and or care over the wall, adequate covers 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 outlet facilities are kept open and that trash, drift, or debris is not allowed to accumulate in drainage structures. Flap gates and manually operated gates and valves on the levee. 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.

Exhibit B-2-1
CODE OF FEDERAL REGULATIONS (EXTRACT)

every 90 days. Where drainage structures are provided with stop log or other emergency closures, the proper functioning of the equipment, and its housing shall be inspected regularly and a trial installation of the emergency closures 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 biocenous 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 in a drainage structure will be expected for a short time before water reaches the invert of the pipe and any object which might interfere with the free flow of the water shall be removed. Automatic gates shall be closed until it has been ascertained that the structure is completely submerged. 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 repairs are being taken place and to prevent the loss of their efficiency due to prolonged contact with the embankment. Immediate steps shall be taken to correct any adverse condition.

(c) 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 bags closures and that the location of such materials will be readily accessible in times of emergency.

Tools and parts shall not be removed during any inspection or when more structures shall be made whenever a change is made in key operating personnel. Where railroad operation makes trial erection of a closure structure feasible, the 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 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 Maintenance Manual which will be furnished local interests upon completion of the project. Closure structures are expected frequently during flood periods to ascertain that no undue leakage is occurring and that drainage problems due to ordinary leakage are functioning properly. Boats or floating plant shall not be allowed to be tied 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 in the low water seasons to insure that all equipment is in order for instant use. At regular intervals, proper measurement of all pumps shall be made to ascertain that lubricants for all types of machines, fuel for gasoline or diesel powered equipments, and fuel tanks for emergency lighting shall be kept on hand at all times. Telephone service shall be maintained at all plants. All equipment, including switch gear, transformers, motors, pumps, valves, and gates shall be inspected and operated and checked at least once every 30 days. Megger tests of all insulation shall be made whenever wiring has been subjected to undue dampness and otherwise at intervals not to exceed three years. 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 inspected at such intervals and allowed to run for such length of time as may be necessary to indicate their servierability 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. All necessary equipment 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 there is an indication that a pump operation is imminent. The operator shall thoroughly inspect, trial operate, and test 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 to all equipment, and that no overheating, undue vibration or noise is occurring. Immediately upon final recretion 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.

(4) Channels and spillways – (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) It is not being restricted by the depositing of waste materials, building of unauthorized structures or otherwise;
(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 effluent channels adjacent to the improved channel or floodway are in satisfactory condition and debris 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 30 days. Immediate steps will be taken to remedy any adverse conditions disclosed by such inspections. Measures will be taken to promote the growth of grass on bank slopes and earth deflection dikes. The Superintendent shall require that all banks of selected channels 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 prevent those banks being attacked by the current or by wave wash. Proper 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 after 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.

(b) Miscellaneous facilities – (1) Maintenance. Miscellaneous structures and facilities constructed as a part of the protective works shall be maintained and the facilities which function as a part of, or affect the efficient functioning of the protective works, shall be regularly inspected by the Superintendent and appropriate maintenance measures taken. Damages caused by floodwaters shall be repaired or replaced without delay. Areas used for ponding in connection with the pumping plants or 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 flood periods which restrict channel capacities during normal years.

(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 be operated to prevent other than flood protection without approval of the District Engineer unless designed therefor.
EXHIBIT B-3
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 passage away provided by means of gates, etc. Use separate sheets if necessary, identifying each by reference hereina)

Provided That:

Upon termination or expiration of this permit (whether by voluntary relinquishment by the grantee; by revocation by the grantee 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 of impor-

...
KINGS RIVER CHANNEL IMPROVEMENT

STRUCTURES

CHECK LIST NO. 1

Inspector's Report Sheet No._________Date_________

<table>
<thead>
<tr>
<th>Item</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Name of structure and location</td>
<td></td>
</tr>
<tr>
<td>(b) Debris or obstructions to flow</td>
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<td>(c) Damage or settlement of culverts or structures</td>
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<td>(d) Condition of concrete</td>
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<td>(e) Condition of riprapped intake &amp; outlet sections</td>
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<td>(f) Condition of control gates and accessories</td>
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<td>(g) Condition of access bridges</td>
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<td>(h) Corrective action taken since last inspection</td>
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<tr>
<td>(i) Comments</td>
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Inspector

EXHIBIT E-4
Sheet 1 of 2
<table>
<thead>
<tr>
<th>File No.</th>
<th>Title</th>
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<tr>
<td>KI-6-55</td>
<td>Channel Improvement, Kings River, Excelsior Avenue to Stinson Weir in 42 sheets</td>
</tr>
<tr>
<td>KI-4-64</td>
<td>Levee Repair, Lemoore Weir to Stinson Weir and Cole Slough in 3 sheets</td>
</tr>
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<td>KI-4-65</td>
<td>Emergency Repairs, Stinson Weir, in 2 sheets</td>
</tr>
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<td>KI 1-4-33</td>
<td>Channel Improvement Sites 1, 2, and 3</td>
</tr>
<tr>
<td>KI 1-4-40</td>
<td>Channel Improvement, Lemoore Weir to 8th Avenue, in 24 sheets</td>
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<td>Sheet No.</td>
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<tr>
<td>Location Map</td>
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<tr>
<td>Crooked Slough to Island Weir, General Plan and Earthwork</td>
<td>2</td>
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<tr>
<td>Fault Slough to Sand Slough, General Plan and Earthwork</td>
<td>3</td>
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<tr>
<td>South Fork Diversion Structure, Plan and Elevation</td>
<td>4</td>
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<tr>
<td>South Fork Diversion Structure, Sections and Details</td>
<td>5</td>
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<tr>
<td>Fault, Sand, and Crooked Sloughs, Culvert Structures, Plan and Sections</td>
<td>7</td>
</tr>
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<td>Fault, Sand, and Crooked Sloughs, Culvert Structures</td>
<td>9</td>
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<td>16</td>
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<tr>
<td>South Fork Diversion Structure Reinforcing and Miscellaneous Details</td>
<td>17</td>
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<td>South Fork Diversion Structure, Reinforcing Details</td>
<td>19</td>
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<td>Fault, Sand, and Crooked Slough, Culvert Structures, Reinforcing Details</td>
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Exhibit B-6
June 2, 1972

Colonel James C. Donovan, District Engineer
Corps of Engineers, Sacramento District
650 Capitol Mall
Sacramento, California  95814

Dear Colonel Donovan:

Reference is made to your letter, dated May 2, 1972, File No. SPKCO-0, advising of the completion of work on April 24, 1972 in accordance with Contract No. DACW05-72-C-0056, and transferring the work to the Kings River Conservation District for operation and maintenance.

A tour of inspection of the work under the above referenced contract was made by the Board of Directors of the District on April 17, 1972. A final tour of inspection of the completed work by representatives of the Corps of Engineers and representatives of this District, was made on April 26, 1972, and a report of these inspections was made to the Board of Directors.

At the regular meeting of the Board of Directors held on May 12, 1972, upon motion duly made, seconded and carried unanimously, the authorized construction work completed on April 24, 1972, in accordance with Contract No. DACW05-72-C-0056, Specification No. 3774, was accepted for operation and maintenance in accordance with flood control regulations as prescribed by the Secretary of the Army.

Very truly yours,

KINGS RIVER CONSERVATION DISTRICT

/s/ Ralph A. Macdonald
RALPH A. MACDONALD, General Manager

EXHIBIT F
June 12, 1972

Colonel James C. Donovan, District Engineer
Corps of Engineers, Sacramento District
650 Capitol Mall
Sacramento, California 95814

Dear Colonel Donovan:

Reference is made to the letter from Colonel George B. Fink, District Engineer, Sacramento District, File No. SPLCO-0, dated May 28, 1969, advising of the completion of work on May 22, 1969 in accordance with Contract No. DACW05-68-C-0056, Specification No. 3187 and Drawing No. KI-6-55, and transferring the work to the Kings River Conservation District for operation and maintenance.

By letter dated July 8, 1969 this District deferred formal written acceptance of the completed work until certain deficiencies and other items necessary to complete and/or restore flood damaged facilities on the Kings River Channel Improvement Project have been completed. With the completion of Contract No. DACW05-72-C-0055 all such deficiencies have now been corrected.

At the regular meeting of the Board of Directors held on June 12, 1972, upon motion duly made, seconded and carried unanimously, the authorized construction work completed in accordance with Contract No. DACW05-68-C-0056, Specification No. 3187 and Drawing No. KI-6-55, was accepted for operation and maintenance in accordance with flood control regulations as prescribed by the Secretary of the Army.

The "Operation and Maintenance Manual for Kings River Channel Improvement", transmitted by your letter dated January 4, 1972, File No. SPKED-DL, is under review and we have found certain provisions therein which we believe are not consistent (sic) with the terms of assurances given by this District and apparently in conflict with the Code of Federal Regulations, Part 208 - Flood Control Regulations. For this reason acceptance of the completed work shall not be deemed to be acceptance of the operation and maintenance manual. When we
have completed our review of the latest draft of the manual our comments will be transmitted for review by your staff.

Sincerely yours,

KINGS RIVER CONSERVATION DISTRICT

/s/ Ralph A. Macdonald
Ralph A. Macdonald
General Manager
Colonel F. G. Rockwell, Jr.
District Engineer
Department of the Army
Sacramento District, Corps of Engineers
650 Capitol Mall
Sacramento, California 95814

RE: Kings River Channel Improvement Project

Dear Colonel Rockwell:

Reference is made to your letter, dated March 19, 1976 (SPKCO-0), advising of the completion of the Lemoore Weir to 8th Avenue segment of the Kings River Channel Improvement Project on March 18, 1976 in accordance with Contract No. DACH05-76-C-0018, Specification No. 4709, and Drawing No. KI-1-4-40.

Your letter transfers the completed work to this District for operation and maintenance and requests written acceptance by the District.

At the regular meeting of the Board of Directors held on April 13, 1976, upon motion duly made, seconded and carried unanimously, the authorized construction work completed in accordance with Contract No. DACH05-76-C-0018, Specification No. 4709, and Drawing No. KI-1-4-40, was accepted for operation and maintenance in accordance with flood control regulations as prescribed by the Secretary of The Army.

Please furnish to this office as soon as possible, the actual total "Federal First Cost" for this segment of the project. This information will be needed by our auditors in order to add the project features to the District's capitalized assets.

Sincerely yours,

/s/ Jeff L. Taylor
Jeff L. Taylor
General Manager-Chief Engineer
DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA  95814

REPLY TO
ATTENTION OF
SPKED-F

3 February 1975

SUBJECT:  Kings River Channel Improvement Project, Kings River and Tulare Lake, California – Letter Supplement No. 1 to Design Memorandum No. 3

Division Engineer, South Pacific

1. Purpose. – The approved General Design Memorandum No. 3 provided for channel improvements downstream from Lemoore Weir. The purpose of this letter supplement is to extend the improvements outlined in General Design Memorandum No. 3 from Lemoore Weir upstream to 8th Avenue and to remedy project deficiencies in this reach which became evident as a result of the record snowmelt runoff of June 1969.

2. References. –


3. General. – Construction of the Kings River Channel Improvement Project was authorized in the Flood Control Act of 1944 (Public Law 534, Seventy-eighth Congress, second session). The authorization provided for the construction of Pine Flat Dam and Lake and supplemental channel improvement work to regulate flows in the branches of Kings River in the vicinity of Laton. General Design Memorandum No. 3 for the channel improvements was approved by SPD 1st indorsement dated 20 May 1959 to SPK basic letter dated 20 April 1959. This letter constitutes Supplement No. 1 to Design Memorandum No. 3. Attached as Plate I is a map showing the limits of the work described in this supplement. This additional work was determined to be necessary to rectify project deficiencies which became evident during the 1969 flood. The work was requested by the Kings River Conservation District, the sponsoring agency which furnished the requirements of local cooperation and has agreed to accept the maintenance responsibility for the existing channels of the project upon completion of the described work.
The Department of Water Resources has recently completed an inspection of the Kings River Channel Improvement project to determine the condition of the project and to observe the operation and maintenance activities of the District. As a result of this inspection several questions came up regarding the project levees on the South Fork from the north line of Sections 11 and 12, T. 19S., R. 19E., to Empire Weir No. 1. Basically, these questions are as follows:

1) Throughout most of this reach of the river the easements acquired by this District are confined to the river channel and do not include all of the levees that exist today. Is the District responsible for maintenance of levees in this section that are outside of the easement acquired?

2) There are several meandering levees along the right bank. If the District is responsible for levee maintenance, which of these levees is to be considered as the project levee?

On July 17 and 18, 1973 a joint inspection of this problem area was made by Messrs. MacClanahan, Neudeck and Wolber of the Department of Water Resources, Mr. John Rampala of your office and Mr. David Howe of the Kings River Conservation District. Mr. Rampala has located the problem area and some of the suggested project levee alignments on aerial photographs for your reference.

During this joint inspection it was noted that some of the right bank levees show signs of sand bagging and erosion that occurred during the 1969 flood, indicating that these levees are not of sufficient height to confine standard design flood.
Department of the Army
Page 2
February 13, 1974

It will be appreciated if you will review this matter and advise us of the operation and maintenance responsibility of the District in this reach of the Kings River.

Sincerely yours,

KINGS RIVER CONSERVATION DISTRICT

Jeff L. Taylor
General Manager-Chief Engineer

Interim reply furnished 14 Feb 74

Final reply to be made within 40 days