

**FRIANT WATER USERS AUTHORITY
SECTION 1600
MEMORANDUM OF UNDERSTANDING**

Submitted to:

California Department of Fish and Game
1234 East Shaw Avenue
Fresno, CA 93710

Prepared for:

Friant Water Users Authority
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Lindsay, CA 93247-1715

Prepared by:

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August 13, 1997

TABLE OF CONTENTS

INTRODUCTORY STATEMENTS OF FACT 1

I. DEFINITIONS 2

II. AUTHORIZED ACTIVITIES 5

III. TIME AND MANNER OF MAINTENANCE ACTIVITIES 13

IV. REPORTING REQUIREMENTS 13

V. FEES 14

VI. AMENDMENT AND TERMINATION 14

VII. ENTIRE AGREEMENT 14

VIII. OTHER ENVIRONMENTAL LAWS, STATUTES, OR REGULATIONS 14

IX. FIGURES

Figure 1. Unimproved Channel Definitions 3

Figure 2. Unimproved Channel Definitions 4

Figure 3. General Location Map 6

Figure 4. Control of Aquatic and Woody Growth 8

Figure 5. Control of Non-Native Vegetation 9

Figure 6. Minor Erosion Control Work 11

Figure 7. Minor Erosion Control Work 12

X. APPENDICES

Appendix 1. A list of Natural channels, leveed channels and toe-drains
affected by this MOU 16

Appendix 2. Individual milepost data inventory sheets,
photographs, general location maps and right-of-way, and milepost maps
of canal 21

Appendix 3. Field Construction and Spill Contingency Plan 22

Notification #4-197-98
Channels & Drainages at
Friant-Kern Canal
Fresno/Tulare/Kern Cos.
Friant Water Users
Authority

MEMORANDUM OF UNDERSTANDING

Between

FRIANT WATER USERS AUTHORITY
and

CALIFORNIA DEPARTMENT OF FISH AND GAME

regarding

ROUTINE MAINTENANCE ACTIVITIES IN IMPROVED/UNIMPROVED CHANNELS

This Memorandum of Understanding (MOU) by and between the California Department of Fish and Game, hereinafter called the "Department", and the Friant Water Users Authority, hereinafter called the Authority, (both hereinafter referred to as "Parties") is for the purpose of delineating and defining routine maintenance activities in unimproved natural channels, leveed or improved natural channels and drain ditches and other drainages associated with the operations and maintenance of the Friant-Kern Canal which shall not require further notice and agreement pursuant to Section 1601 of the Fish and Game Code.

WHEREAS, Section 1601 of the Fish and Game Code allows the Department to propose reasonable modifications to certain Authority construction projects as would allow for the protection and continuance of certain existing fish and wildlife resources that may be substantially adversely affected by that construction project and operation or maintenance of existing facilities; and

WHEREAS, with regard to any project that involves routine maintenance and operation of water supply, drainage, flood control, or waste treatment and disposal facilities, notice to the Department, pursuant to Section 1600 et seq. is not required subsequent to the initial notification and agreement, unless the work as described in the agreement is substantially changed or conditions affecting fish and wildlife resources change, and the resources are adversely affected by the activity conducted under the agreement; and

Missing → WHEREAS, it is essential that the Authority perform routine maintenance and operations activities within improved/unimproved channels to maintain the design or discharge capacity of the channel(s), to protect the Authority's investment, to prevent loss of life and property, to promote efficient and wise use or

disposal of water; to restore and enhance endangered species, their habitat and other wildlife values in accordance with the federal endangered species Biological Opinions; and

WHEREAS, consistent with the policies of California Fish and Game Code Section 1600 et seq., the protection and conservation of the fish and wildlife resources of California are of utmost public interest, and fish and wildlife conservation is a proper responsibility of the State; and

WHEREAS, in order to avoid future conflicts, it is mutually beneficial to delineate and define routine maintenance, to establish procedures to expedite maintenance activities, and to provide for the protection, continuance, enhancement and restoration of the existing fish or wildlife resources during such maintenance activities as required by the Friant contract Biological Opinions; and

WHEREAS, nothing in this agreement shall constitute a waiver of any future or current Department claims to the use and maintenance of natural conditions under the public trust doctrine; and

WHEREAS, nothing in this agreement shall constitute a waiver of the Authority's claimed rights to maintain and operate the channel(s) solely from the irrigation and or flood control standpoint without a 1601 agreement; and

WHEREAS, this MOU is not intended to affect the Authority's rights under Fish and Game Section 1601 (f) to undertake emergency work necessary to protect life or property.

NOW THEREFORE, the Department and the Authority agree as follows:

I. DEFINITIONS

The following definitions shall govern this MOU:

Exhibit 1 - Exhibit 1 (Figure 3) is a map submitted by the Authority which shows properties and/or facilities that will be subject to this MOU. Known problem areas and sites requiring intensive work have been highlighted, and briefly discussed.

Natural channel - A natural channel is defined as a stream or river bed which is not confined by man-made levees, berms or banks.

Unimproved channel - An unimproved channel is defined as a channel of a stream or river in which significant man-made alteration and/or improvements have not occurred (concrete lining, etc.).

Improved channel - An improved channel is a natural waterway with existing fish or wildlife resources in which significant man-made alterations have occurred to improve the passage of flows, including straightening and containing the flows within constructed banks and concrete-lined, rip-rapped, or earth trapezoidal channels with engineered banks. The inclusion of certain improved channels in this MOU is not concurrence by the Authority that the Department has jurisdiction on all improved channels.

Leveed channel - A natural channel of a stream or river which is confined by man-made levees, berms or banks.

Channel banks, channel bottoms, low flow channels and other appurtenant features of unimproved channels are defined by the illustrations shown on Figures 1 and 2.

DBH - The diameter of a tree at breast height (1.4m) is termed DBH.

Drain ditches - A drain ditch is defined as a man-made channel which collects water from cross-land flow where natural channels are not present or have been eliminated by adjacent landowners on the uphill or downhill side of the Friant-Kern Canal or any of its associated structures. This water is then either held in the drain ditch or channeled across the Friant-Kern Canal.

Maintenance activities - Maintenance activities in unimproved channels are defined as: (1) the removal/displacement of sand, silt, sediment, debris, rubbish, woody or aquatic vegetation and other obstructions to flow on the channel floor or banks; and (2) the control of trees, shrubs, weeds, grasses, and emergent vegetation either via mechanical or chemical means; and the cleaning and clearing of erosion control facilities as authorized in this MOU.

Reclamation activities - Reclamation activities are defined as site preparation, including soil preparation, filling of erosion gullies, seeding, mulching and/or transplanting of species (trees, shrubs, grasses or forbs) for the control of erosion, sedimentation, slope stabilization and/or habitat enhancement.

Toe-drain - A toe-drain is a drain ditch which runs parallel to the base of the canal banks.

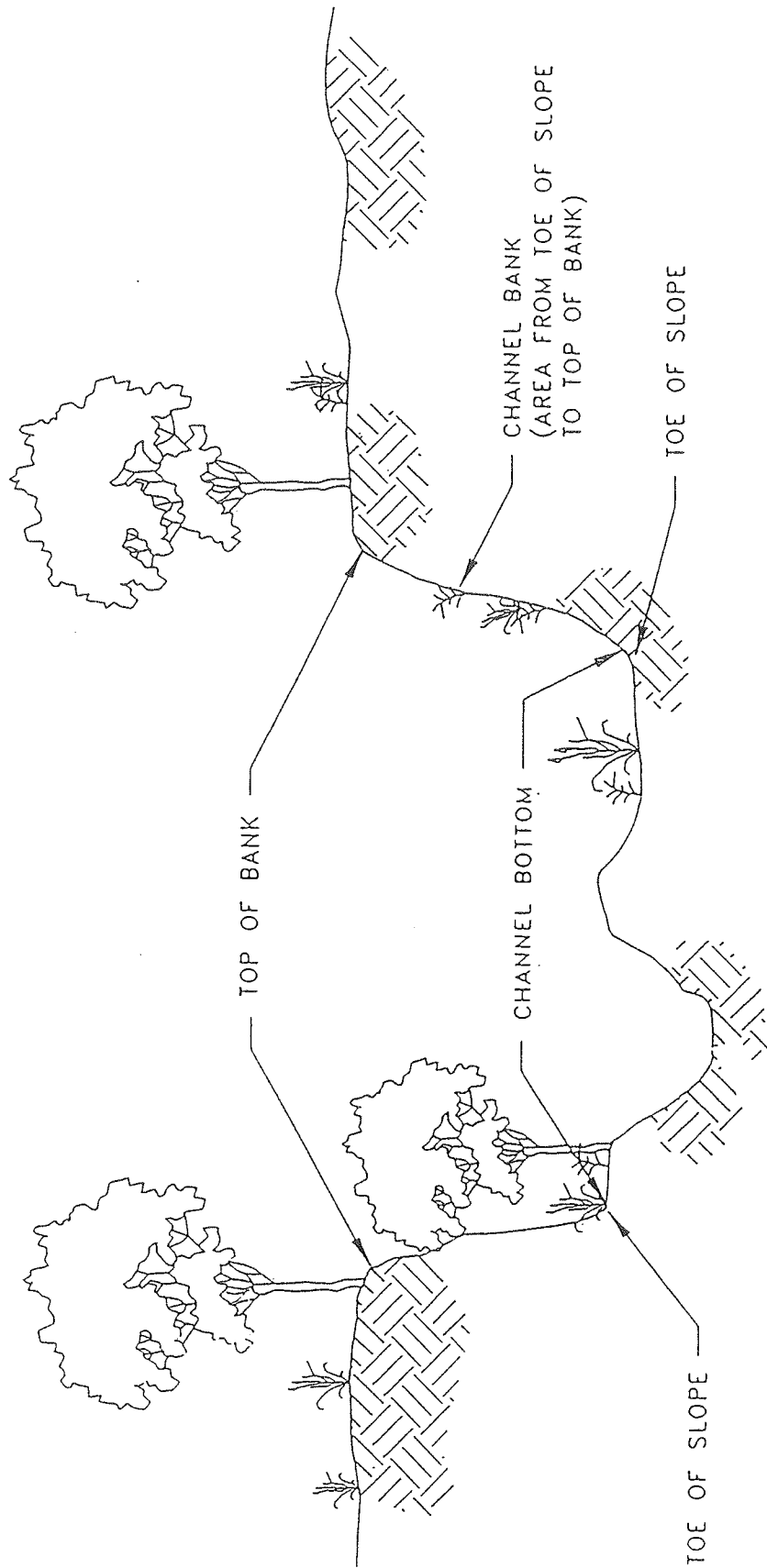


Figure 1. Unimproved channel definitions (channel bank, bottom, low flow channel, etc.)

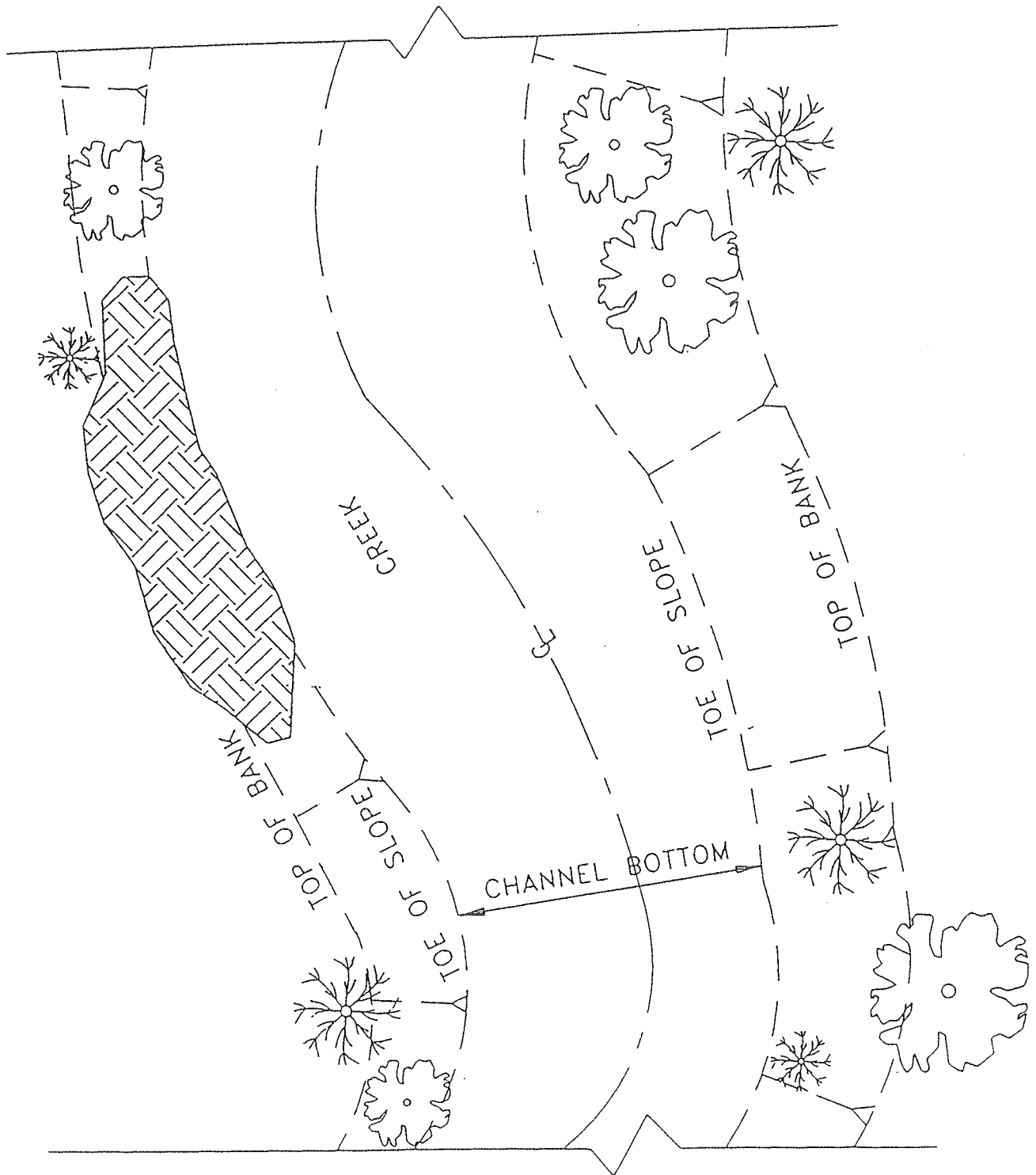


Figure 2. Unimproved channel definitions.

Siphon - A siphon is an underground pipe which transports the canal water under a channel, or sometimes a road or other structures. In addition to the aforementioned, siphons are also included, channels above siphons must be maintained to prevent bed cutting and damage or disruption to the siphon.

II AUTHORIZED ACTIVITIES

Authorized activities include those described in this part which occur on the Friant-Kern Canal system illustrated on Figure 3. The maintenance activities will occur on the improved channels, unimproved channels, leveed channels, drain ditches, toe-drains, and work areas specified in Appendix 1, and described in Appendix 2. Detailed milepost maps in Appendix 3 show the specific location of each drainage.

The maintenance activities shall be in accordance with the procedures described below, shall not require further notice to, or agreement with the Department.

A. Debris or Obstruction Removal

Debris or obstruction removal may include the removal of fallen trees, substantial amounts of debris, rubbish, and other obstructions from areas (not to exceed the length of legal channel right-of-way) of man-made facilities, and the removal of those materials only in the necessary vicinity (not to exceed the length of legal channel right-of-way) of a bridge, culvert, toe-drain, diversion, or flow control structure when said materials cause obstruction(s) to flow. Human generated debris, such as lawn and farm cuttings, garbage, and trash may be removed from any section.

B. Silt, Sand or Sediment Removal

Removal/displacement of silt, sand, or sediment, debris, rubbish and other obstructions when said materials cause obstruction(s) to flow.

C. Maintenance of Channel Capacity

Maintenance may include removal/displacement of accumulated sand, silt, sediment, debris, rubbish and other obstructions to maintain channel capacity. The bottom half of channel banks are to be cleared in strips in alternating years, if possible, in

order to retain habitat for wildlife, or in accordance with recommendations of a qualified biologist following a field evaluation of habitat conditions. These are indicated in Appendix 1.

D. Vegetation Control

D1) Mechanical control

Mechanical control of aquatic vegetation and woody growth of less than 4 inches DBH, for removal of obstructions to flow in the channel bottom from toe-to-toe, will be conducted as shown on Figure 4. Where appropriate, removal of non-native vegetation (bamboo {arundo}, tamarix {salt cedar}, tree tobacco, castor bean, pampas grass, eucalyptus, acacia, etc.), regardless of DBH, including stump and root removal from top of bank, as shown on Figure 5. Control of aquatic vegetation and woody growth of less than 6 inches DBH which restrict flow, will be accomplished by use of mechanical devices, chemicals, controlled burning, or hand labor in reaches of the channels specified in Figure 4 and listed in Appendices 1 and 2. Flow restricting branches hanging into channels from trees or shrubs rooted in the upper half or tops of banks may be removed. Some drainages may support trees in the channel floor which exceed the above dimensions because the channels have not been cleared in many years. A variance for these locations will be negotiated on a case-by-case basis.

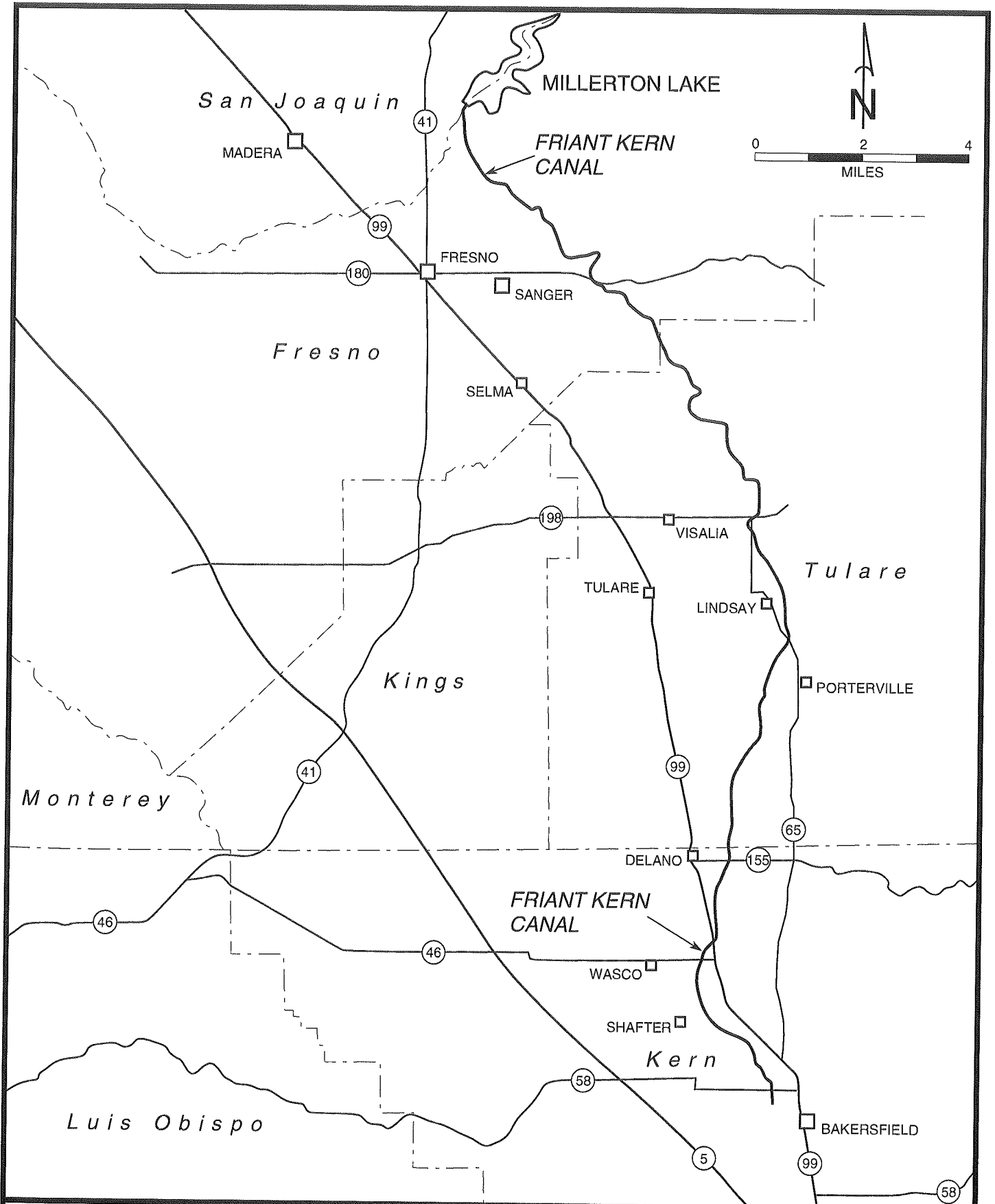
Removal of vegetation from the total bank profile may be allowed if a Department representative agrees to the removal after an on-site inspection, and limits of the removal are specifically defined in writing.

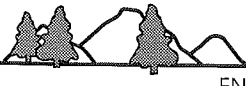
D2) Aquatic vegetation control

To minimize adverse impacts and accelerated sedimentation, chemical control of vegetation in water will be accomplished with the use of an herbicide approved for in-channel or aquatic use, as applicable. Application shall be done in accordance with the label. Heavy thick growth may require removal by mechanical means.

D3) Chemical vegetation control

An herbicide will be used for spot control of bamboo and/or




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 ENVIRONMENTAL CONSULTING INC

FRIANT KERN CANAL		LOCATION MAP	FIGURE NO 3
DATE: SEPT. 1996	DRAFTED BY: JCF		

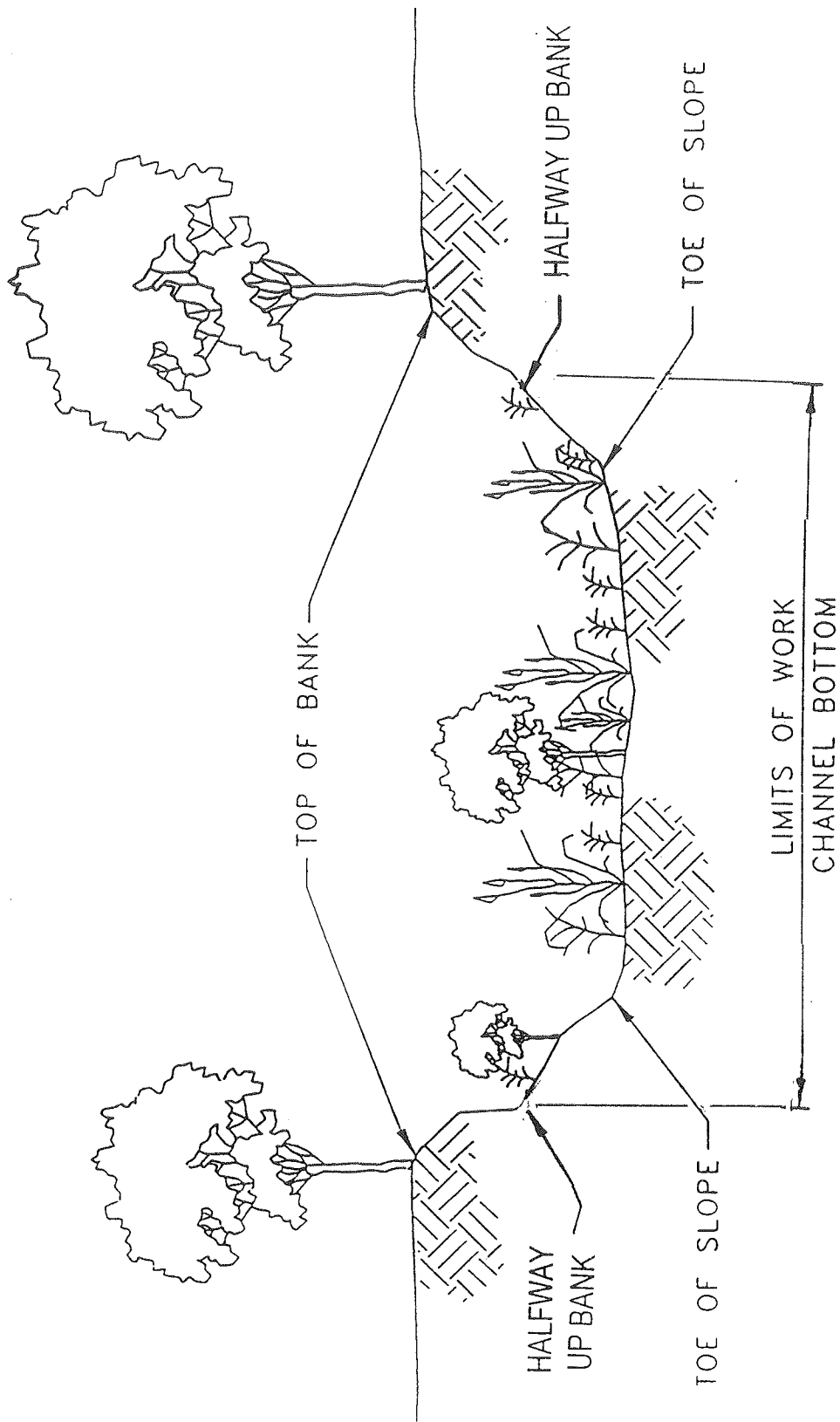


Figure 4. Control of aquatic and woody growth.

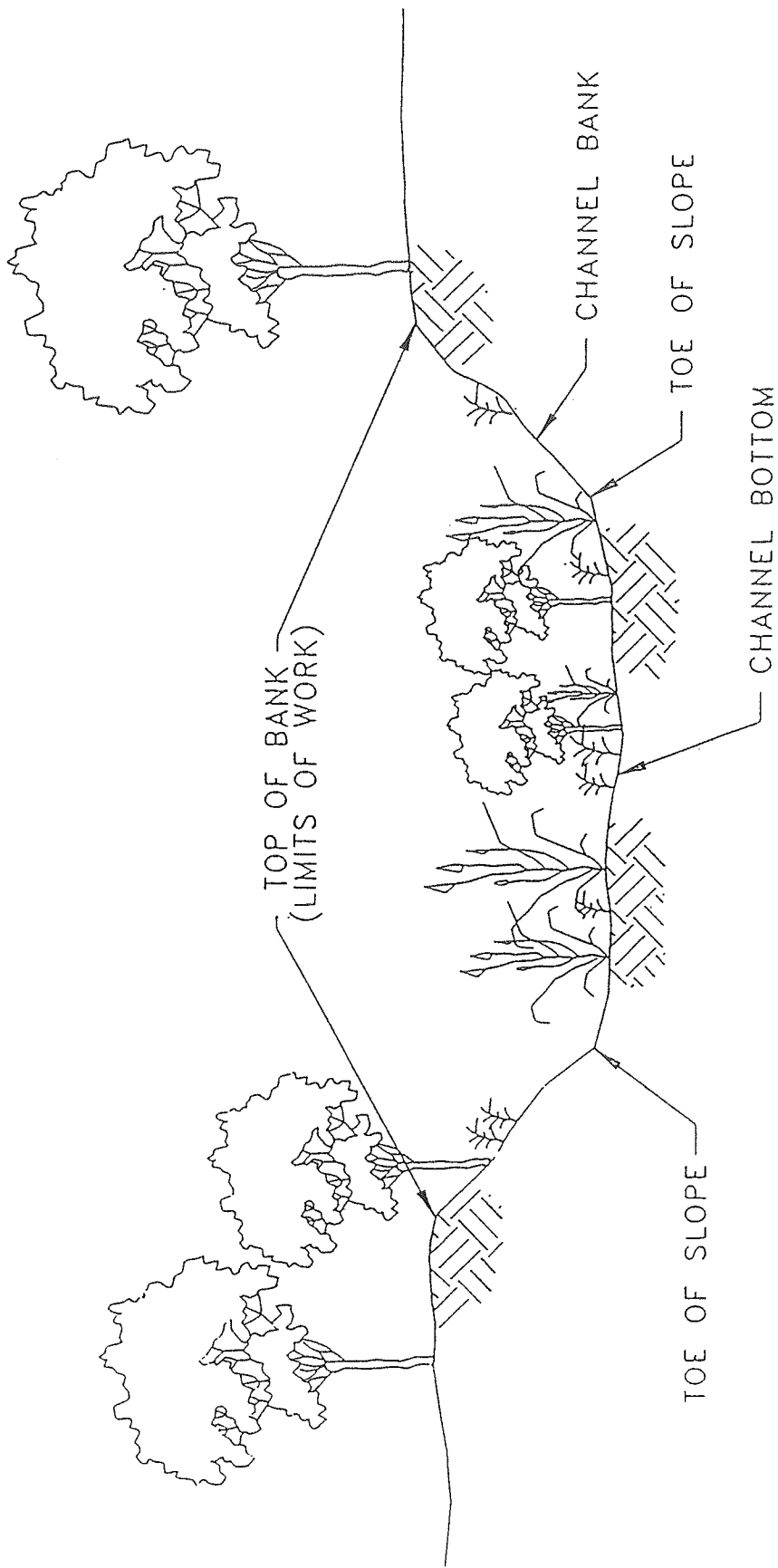


Figure 5. Control of non-native vegetation.

other noxious or exotic vegetation to maintain control following mechanical removal. Such treatment is anticipated on alternate years, or as necessary. Applications shall be made in accordance with the chemical label.

E. Repair of Existing Erosion Control Work

Repairs may include, but not be limited to failed rock, sacked concrete, gabion section, or concrete linings, as appropriate. Maintenance activities shall be confined to the failed section and immediately adjacent areas affected by the failure. Surface water, if any, shall be diverted from the work area when using equipment in the channel. Sediment control measures shall be implemented as appropriate.

F. Minor Erosion Control Work

Sloping, installation of rock, gabions, or other erosion control measures as shown in Figures 6 and 7, may occur from the toe of slope in the channel to a maximum of the 100 year storm event evaluation, measured vertically, above the channel invert to stabilize the eroded areas. Project work shall be limited to periods of low stream flow if possible. Unless agreed otherwise, and should stream flow exist, the stream flow shall be diverted around the work area in a temporary culvert/pipe, by pumping, or by a low flow channel. Project work shall be performed in a manner that minimizes stream turbidity. Removal of vegetation shall be minimized to that necessary to safely accomplish the repair work. Native trees greater than 6 inches DBH outside of the toe-to-toe channel shall remain, unless absolutely necessary to obtain access. To the extent possible, the stream channel shall be returned to its natural state without creating a possible future bank erosion problem.

Upon project completion, the stream channel bottom shall be scarified from the work site to the equipment entrance, where activities have caused compaction of the streambed soil material. Unless agreed otherwise, disturbed areas outside of the channel and access road, and areas left barren of vegetation as a result of the maintenance activities shall be restored to its natural state by seeding, re-planting, or other agreed upon means with native species of trees, shrubs, and grasses, within 30 days or an agreed upon date immediately prior to the next season of precipitation.

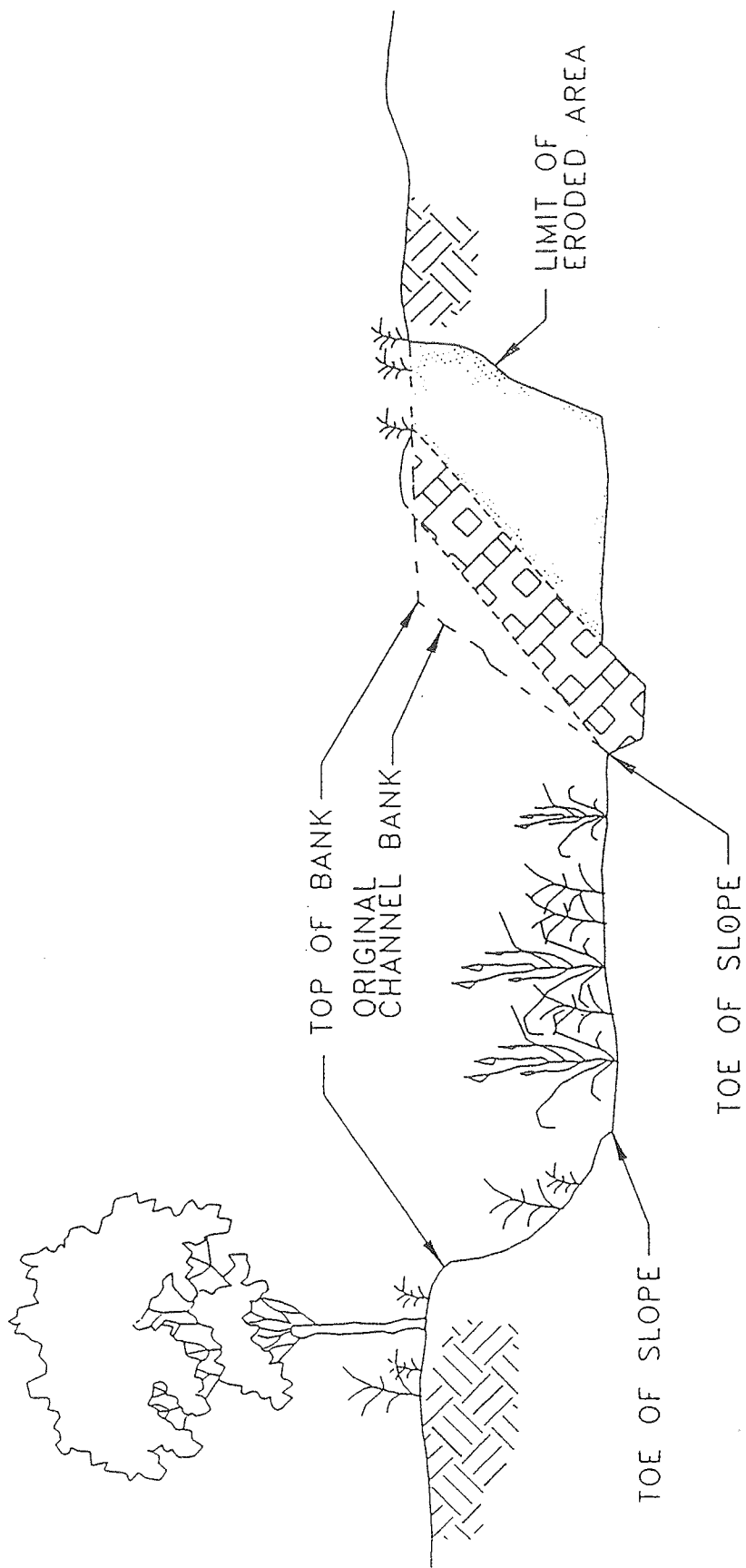


Figure 6. Minor erosion control work.

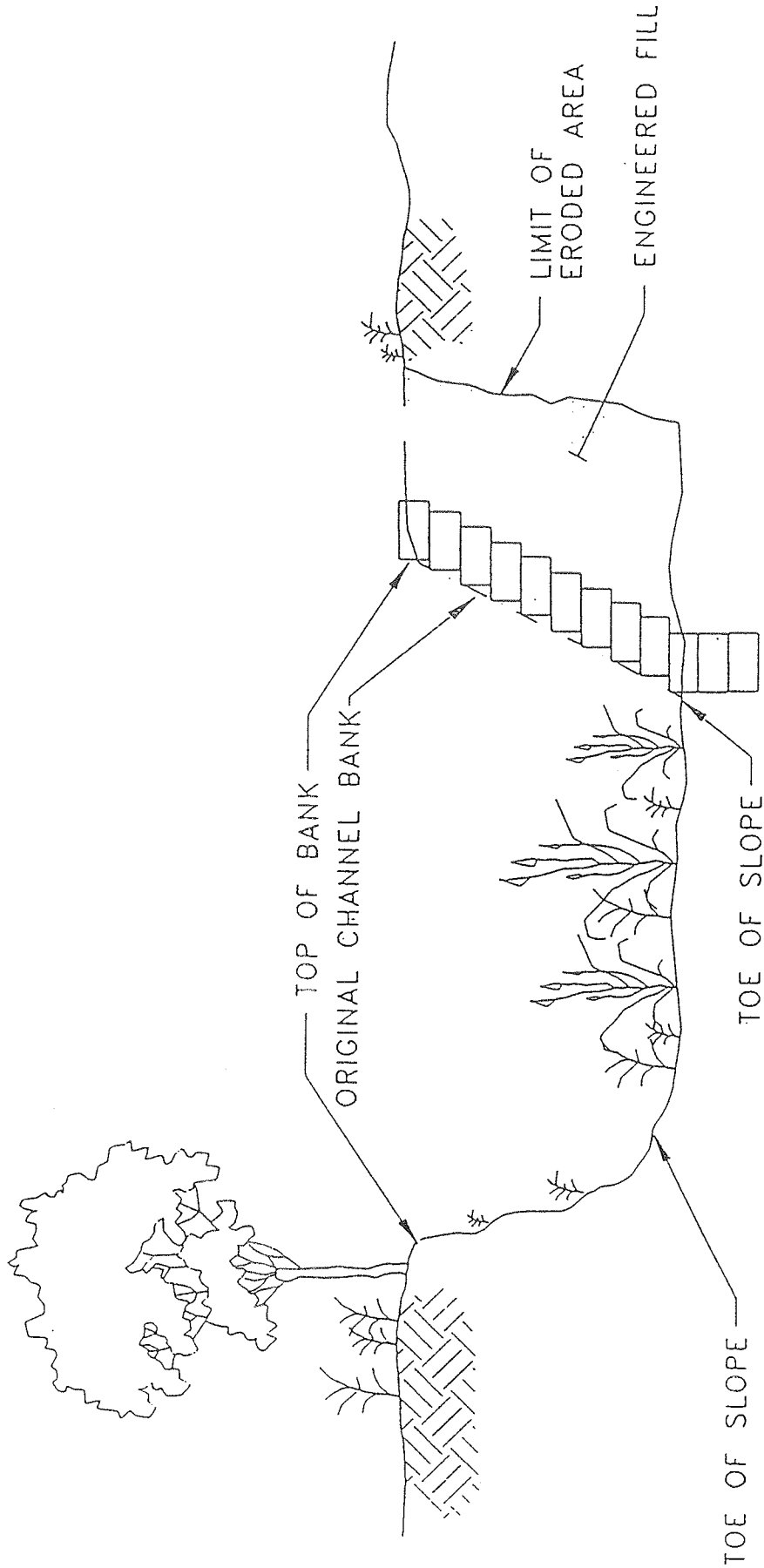


Figure 7. Minor erosion control work.

III. TIME AND MANNER OF MAINTENANCE ACTIVITIES

A. Schedules

Maintenance activities shall be performed at a time and a manner so that the proposed maintenance activities minimize adverse impacts and provide for the protection and continuance of the fish and wildlife.

B. Manner

In consideration of minimizing impacts to fish and wildlife resources, including but not limited to reptiles, amphibians, birds, mammals, and fish, maintenance activities will be conducted whenever possible when channels are dry. However, that may not always be possible. In that event, other measures as necessary, will be taken to minimize adverse impacts to wildlife and water quality.

In consideration of threatened and endangered fish and wildlife resources, environmental pre-activity surveys shall be conducted as necessary in advance of construction work in accordance with the Friant Division Long-term Contract Renewal Biological Opinion.

Equipment shall not be parked or staged within the channel. Staging and/or parking shall occur on uplands outside of the primary flood plain whenever possible. The Authority will follow its "Field Construction and Spill Contingency Plan (Appendix 3)."

IV. REPORTING REQUIREMENTS

A. Annual Plan

The Authority shall provide a written report to the Regional Manager, Region 4 of the Department, describing the proposed maintenance activities and time schedule, if requested by the Department. The report shall be submitted annually, or as otherwise agreed by both parties.

Notification # 4-197-98
Channels & Drainages at
Friant-Kern Canal
Fresno/Tulare/Kern Cos.
Friant Water Users
Authority

B. Annual Report

The Authority shall submit an annual report withing 60 days of year-end of the maintenance work conducted, if requested by the Department.

V. FEES

This MOU is not valid until an initial filing fee of \$111 is Received by the Department. This fee is based on the anticipated costs that will be reasonably incurred by the Department to administer and monitor the routine maintenance described in this MOU. No other fees will be collected throughout the term of this MOU, unless the MOU is amended by agreement of the Parties. Any amendment shall incur a fee of \$55.

VI. AMENDMENT AND TERMINATION

This MOU cannot be amended or modified in any way except by a written agreement duly executed by the Department and the Authority. Any proposal for amendment or modifications must be delivered for review and approval by the Regional Manager or the official designee of the Regional Manager. This MOU shall terminate on January 1, 2004. If, during the interim, the Authority gives notice to and obtains the agreement of the Department to maintain additional specific facilities, any such additional facilities may be added to Appendices 1 and 2 by written amendment to this MOU. All provisions of this Agreement shall hereafter apply to such additional facilities.

The maximum term for a MOU is five years. This MOU may be renewed for five year increments upon agreement of the parties. Renewals shall incur a filing fee of \$111.

VII. ENTIRE AGREEMENT


This MOU, along with the figures and appendices attached hereto, constitutes the entire Agreement and understanding between the Department and the Authority for routine maintenance activities. This Agreement supersedes all prior and contemporaneous routine activity agreements and/or understandings (if any), whether oral or written.

VIII. OTHER ENVIRONMENTAL LAWS, STATUTES, OR REGULATIONS

This MOU does not constitute any form of authorization, permit,

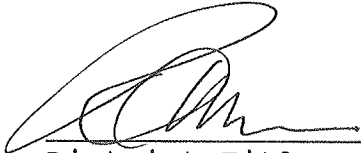
Notification # 4-197-98
Channels & Drainages at
Friant-Kern Canal
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Friant Water Users
Authority

biological opinion, or compliance with the requirements and provisions of any other statute, regulation, requirement, or ordinance respecting the protection or conservation of fish and wildlife resources. Those statutes include, but are not limited to, the California Environmental Quality Act, the California Endangered Species Act, the Federal Endangered Species Act, or the Federal Clean Water Act. The need for separate compliance with these and other laws is understood by the parties. A Biological Opinion (USFWS, 1991) issued to the U.S. Bureau of Reclamation addresses endangered species on the Friant-Kern Canal and associated service areas.



Department of Fish and Game
Regional Manager
Region 4

Dated: 11/02/98



District Title
FRIANT WATER USERS AUTHORITY

Dated: 2/4/99

Appendix 1. A list of natural channels, leveed channels and toe-drains affected by this MOU.

Alphabetical List of Named Channels

Natural Channels:

	<u>Location on Friant-Kern Canal</u>	<u>County</u>
Kaweah River	71.29	Tulare
Kings River	28.31/28.53	Tulare
Little Dry Creek	5.50	Fresno
St. John's River	69.49	Tulare
Tule River	95.67	Tulare

Leveed natural channels (named):

<u>Drainage</u>	<u>Location on Friant-Kern Canal</u>	<u>County</u>
Cottonwood Creek	66.50	Tulare
Deer Creek	102.69	Tulare
Dog Creek	14.57	Fresno
Dog Creek	15.49	Fresno
Ford Creek (Hills Valley Drain)	40.85	Fresno
Lewis Creek	85.56	Tulare
Mud Creek	22.28	Fresno
Mud Creek	22.96	Fresno
Navalencia Creek	36.10	Fresno
Porter Slough	94.85	Tulare
Poso Creek	130.03	Kern
Sand Creek	46.04	Tulare
Sand Creek	104.11	Tulare
Surprise Creek	40.20	Tulare
White River	112.90	Tulare
Wooten Creek	42.42	Fresno
Yokohl Creek	73.74	Tulare

Sequential Milepost List of Channels, Siphon Crossings, and Toe-drains

<u>Drainage</u>	<u>Location on Friant-Kern Canal</u>	<u>County</u>
	1.37	Fresno
	1.82	Fresno
	2.87	Fresno
	3.02	Fresno
	3.49	Fresno
Little Dry Creek	5.50	Fresno
	6.40	Fresno
Ambrosio Tract	7.40	Fresno
	7.93	Fresno
	8.32	Fresno
	9.07	Fresno
	9.65	Fresno
	11.10	Fresno
	11.54	Fresno
	11.80	Fresno
	12.38	Fresno
	13.87	Fresno
Big Dry Creek	14.57	Fresno
Dog Creek	15.49	Fresno
	16.50	Fresno
	17.11	Fresno
Rock Spring	17.65	Fresno
	18.47	Fresno
	18.91	Fresno
Fancher Creek/Hog Creek	19.92	Fresno
Mud Creek	22.96	Fresno
Kings River	28.31/28.53	Fresno
White Tank Spring	30.34	Fresno
	33.89	Fresno
	35.16/35.58	Fresno
Wahtoke Creek	35.58/35.63	Fresno
Navalencia Creek	36.10	Fresno
	36.78/36.95	Fresno
	36.95/38.40	Fresno
	38.40/38.74	Fresno
	38.78	Fresno

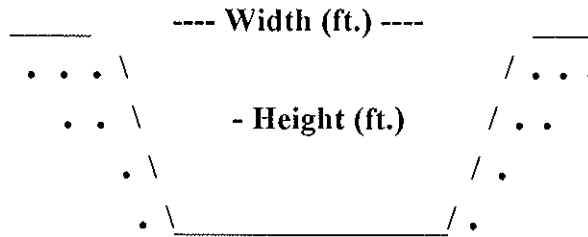
	38.88	Fresno
	39.00/40.20	Fresno
Surprise Creek	40.20	Fresno
Ford Creek (Hills Valley Drain)	40.85	Fresno
	41.11/41.14	Fresno
	41.75/42.90	Fresno
Wooten Creek	42.42	Fresno
	43.38	Fresno
	43.64	Fresno
	44.18/44.59	Fresno
	44.74	Tulare
Sand Creek	45.89	Tulare
	48.60	Tulare
Negro Creek	48.69	Tulare
	49.56	Tulare
	49.75	Tulare
	50.72	Tulare
	51.01	Tulare
	51.62	Tulare
	52.46	Tulare
	53.81	Tulare
	54.04	Tulare
	54.31	Tulare
	57.96	Tulare
	58.62	Tulare
	58.81	Tulare
	59.86	Tulare
	60.50	Tulare
	60.96	Tulare
	61.38	Tulare
Cottonwood Creek	66.48	Tulare
	66.60	Tulare
St. John's River	69.49	Tulare
	71.29	Tulare
	71.37/72.29	Tulare
	72.85/73.40	Tulare
Yokohl	73.74	Tulare
	73.99	Tulare
	78.08/78.97	Tulare
	79.85	Tulare
	84.45/84.85	Tulare
	85.56	Tulare

	89.21	Tulare
	89.70/89.97	Tulare
	90.01	Tulare
	91.36	Tulare
	92.53	Tulare
Porter Slough	94.85	Tulare
Tule River	95.67	Tulare
	99.37/99.68	Tulare
Sand Creek	101.11	Tulare
	101.13/101.66	Tulare
Deer Creek	102.69	Tulare
	104.11	Tulare
	104.98	Tulare
	108.07	Tulare
	108.90	Tulare
White River	112.90	Tulare
Poso Creek	130.03	Kern

Appendix 2. Individual milepost data inventory sheets, photographs and location and right-of-way maps.

Appendix 2. Individual milepost data inventory sheets, photographs and location and right-of-way maps.

Milepost # 1.37



Type of Structure: Siphon _____ Toe-Drain _____ Underdrain X Other _____

Width (ft.): 25'

Type of Maintenance: Chemical application.

Height (ft.): 6'

Length (ft.): *ISCROW

Road (L or R): No access

% Vegetation:

Habitat Type: Aquatic: weedy marsh
Upland: non-native grassland.

Trees: Willow (*Salix* sp.) Shrubs: None

Herbaceous: X (in canal)

Quadrangle Map Name: Friant

County: Fresno

NW1/4, Section 17, T. 11S, R. 21E, M.D.B. & M.

Notes: Downstream: cattails (*Typha* sp.), willow herb (*Epilobium ciliatum* var. *ciliatum*), mint, Compositae, knot weed (*Polygonum* sp.), nettle (*Urtica dioica* ssp. *holosericea*). Upstream: willow (*Salix* sp.); and herbaceous.

*Inside canal right-of-way.

**Two coyotes (juveniles) sighted ~13:05 hrs.

Date: October 2, 1995

Milepost # 1.37



Upstream

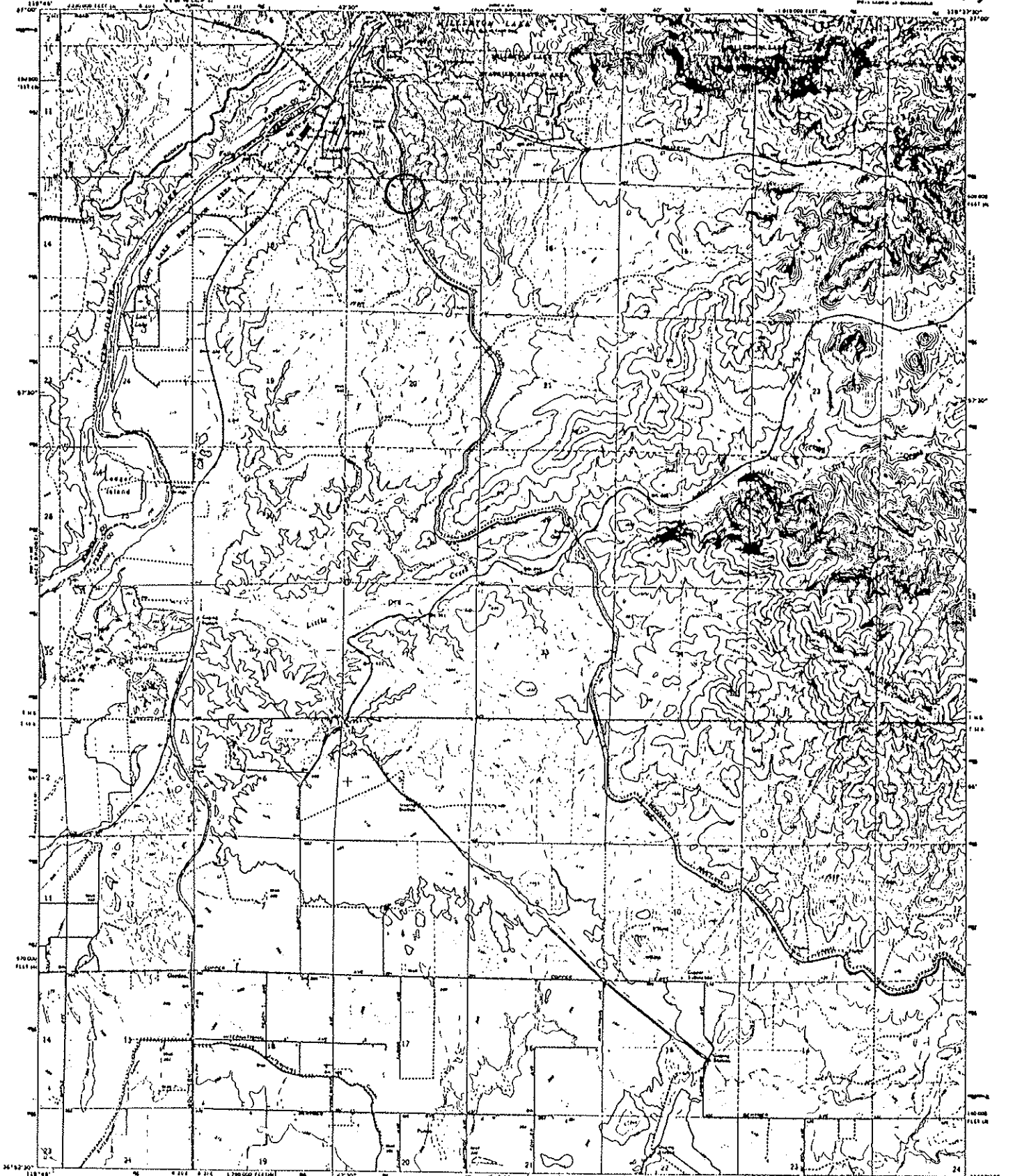


Downstream

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
FIRST EDITION, 1954



Map made, edited, and published by the Geological Survey
Control by U.S.G.S., U.S.C.A.D. and U.S. Bureau of Reclamation
Topography by photogrammetric methods from aerial
photographs taken 1962. First checked 1966
Photographic projection: 1927 North American datum
100,000-foot grid based on Canadian charted system,
zones 6 and 7
100-foot vertical interval in horizontal grid scale,
zone 11, datum as above
Five red dashed lines indicate selected fence lines
White outlined land areas are the present boundaries
of unincorporated areas
Areas covered by dashed light blue pattern
are subject to the Subdivision of Lands Act

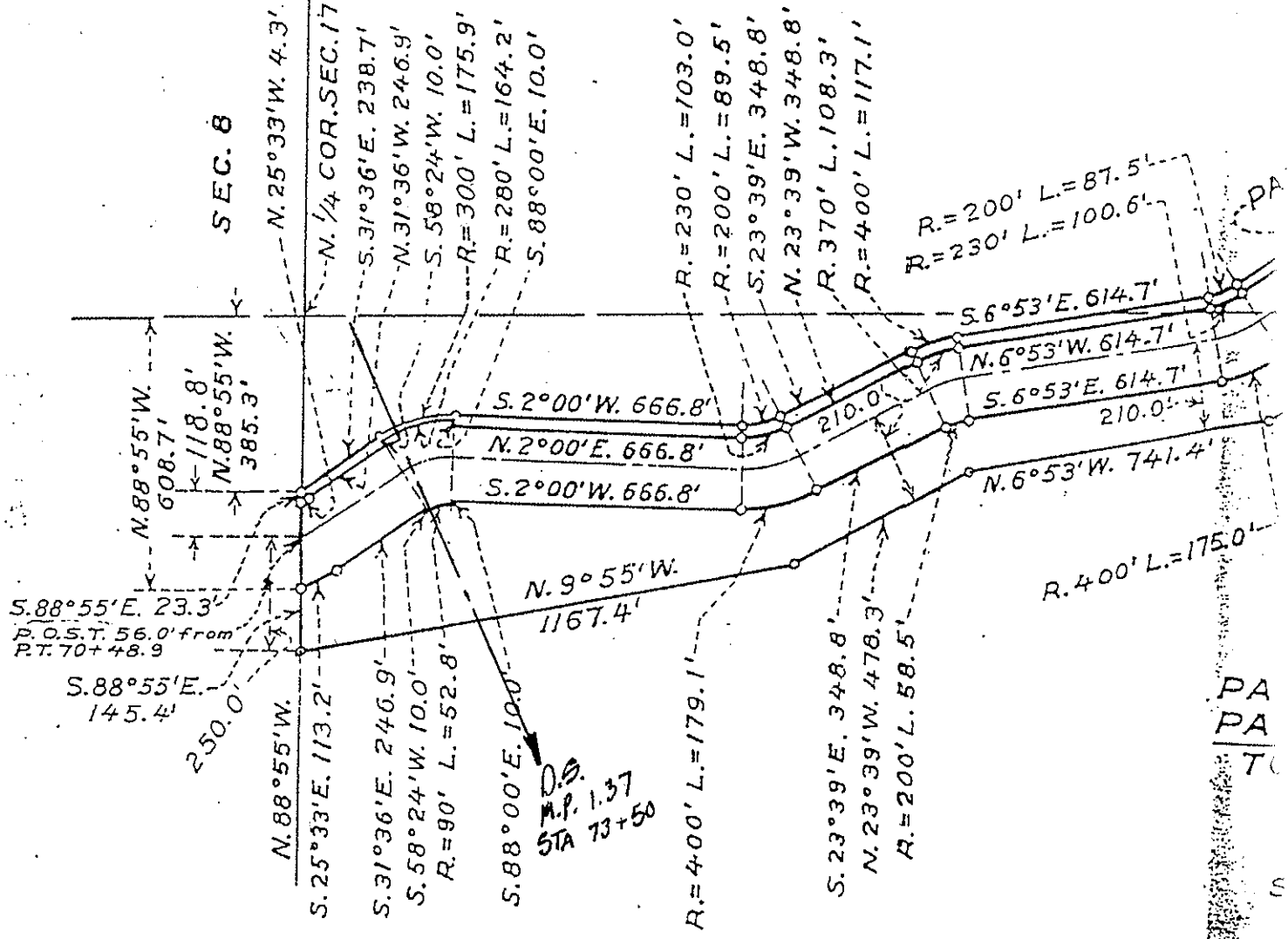
THIS MAP COMPILED WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR, WASHINGTON, D.C. 20508
A POLAR PROJECTION TOPOGRAPHIC MAP AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
 Major hwy. —————
 Light hwy. - - - - -
 Unimproved rd.

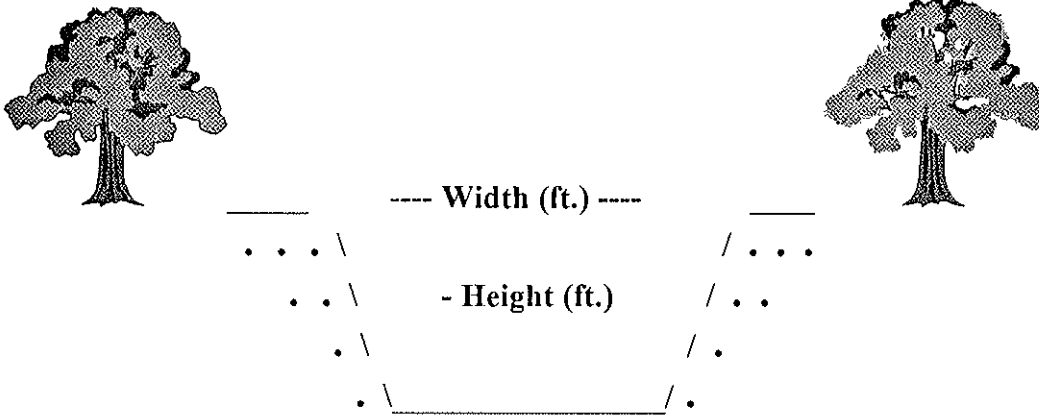
FRIANT, CALIF.
 7.5 MINUTE QUADRANGLE
 43432 5 - 111117 5/7.5
 1964
 APR. 1967 1:50,000 7500

S. R. 21 E. M. D. M.
Reestablished by
U.S.G.L.O. 1937

SEC. 8



Milepost # 1.82



Type of Structure: Siphon Toe-Drain Underdrain Other

Width (ft.): 61'

Type of Maintenance: Chemical application and crane with clam shell excavator.

Height (ft.): 18'

Length (ft.): 73' to fence (*INCROW)

Road (L or R): No access

% Vegetation: In drainage

Habitat Type: Weedy wetland; non-native grassland.

Trees:

Shrubs:

Herbaceous: X (upstream and downstream)

Quadrangle Map Name: Friant

County: Fresno

NE1/4, Section 17, T. 11S, R. 21E, M.D.B.& M.

Notes: Nettle (*Urtica dioica* ssp. *holosericea*); willow herb (*Epilobium ciliatum* var. *ciliatum*); sedge (*Carex* sp.).

*Inside canal right-of-way.

Date: October 2, 1995

Milepost # 1.82



Upstream

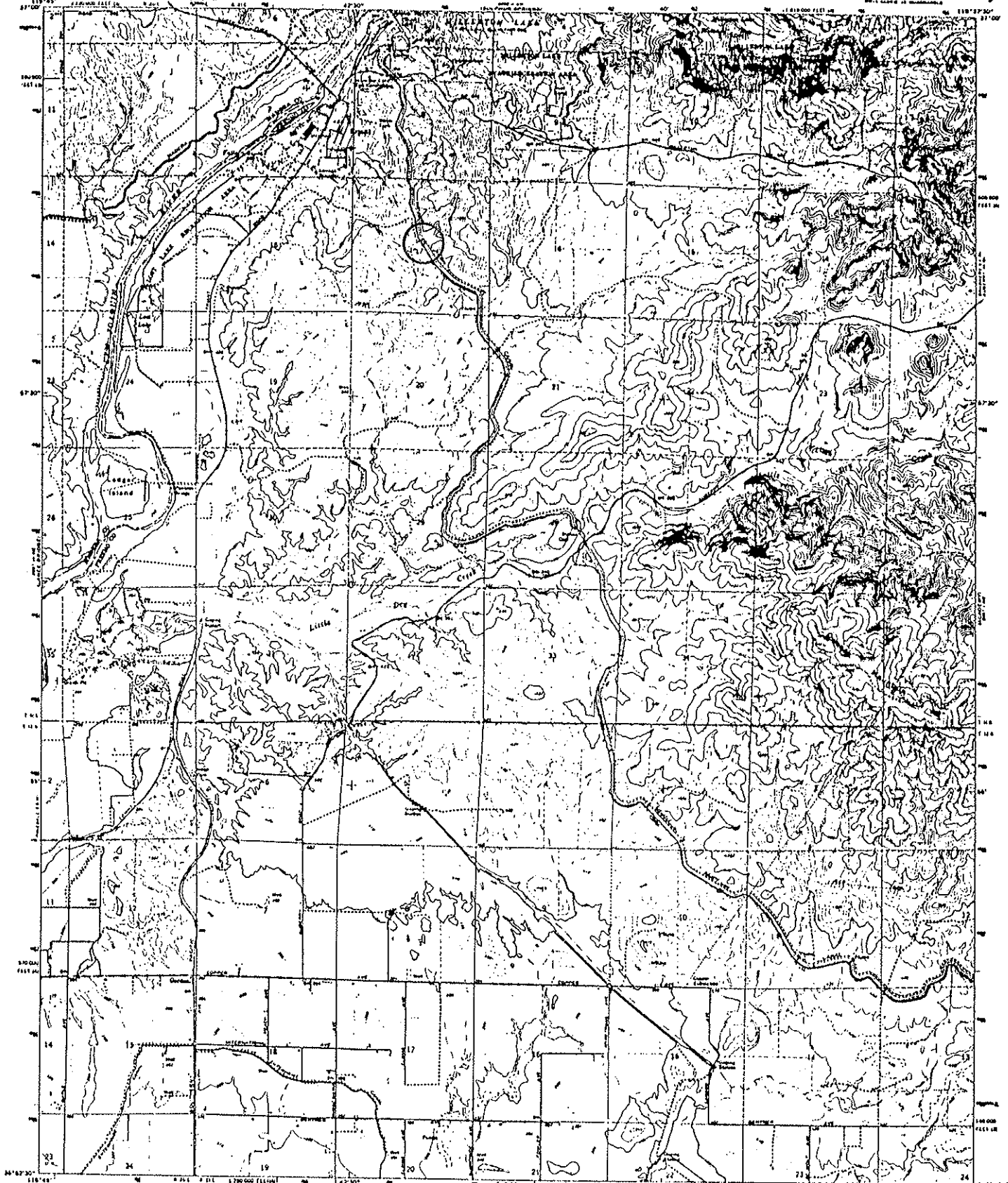


Downstream

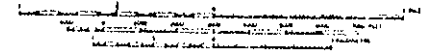
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
PREPARED BY PHOTOGRAPHY



Map, edited, and published by the Geological Survey
Control by USGS, USCAUS and U.S. Bureau of Reclamation
Photography by photogrammetry, derived from aerial
photographs taken 1942. Contour interval 10 feet.
Photographic projection, 1927 North American datum
1:62,500 based on a Lambertian conic projection,
zones 4 and 5
1:62,500 contour interval (horizontal) and 10 feet
vertical, unless noted
For the detailed base indicate contour lines
Where contour lines are not shown, the interval
is indicated by the contour interval
Areas shown in dashed light gray pattern
are subject to change without notice



CONTOUR INTERVAL, 10 FEET
VERTICAL CURVE, 10 FEET
NATIONAL MAGNETIC DECLINATION OF 1978

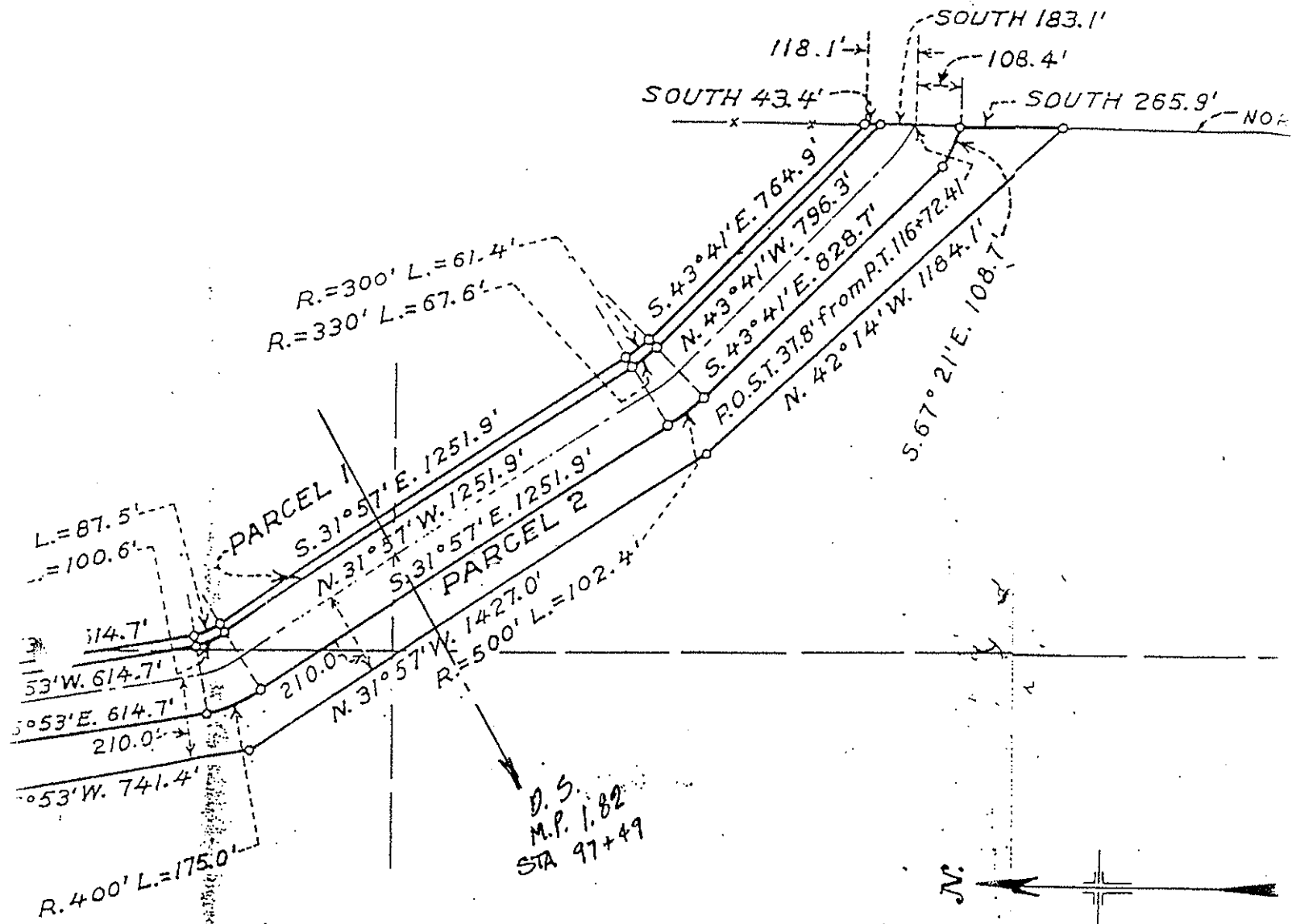


ROAD CLASSIFICATION

Main body	Light gray
Unimproved	Dotted

This map conforms with national map accuracy standards
FOR SALE BY U.S. GEOLOGICAL SURVEY, BENTLEY COLLEGE BOOKS FOR THE YEAR 2002
A POLAR PROJECTION TOPOGRAPHIC MAP AND SYMBOLS IS AVAILABLE ON REQUEST

FRIANT, CALIF.
PREPARED BY PHOTOGRAPHY
1:62,500 - 811933 8/78
1964
AM 381 1 00 - 82488 1/86

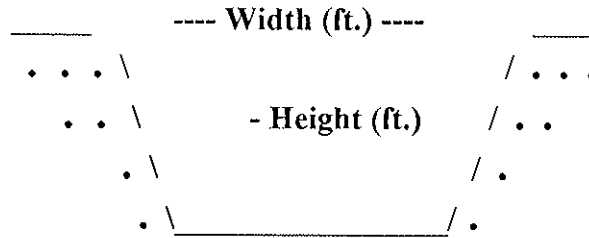


PARCEL 1 = 3.0 ACRES
PARCEL 2 = 15.0 ACRES

TOTAL 18.0 ACRES

SCALE 1" = 400'

Milepost # 2.87



Type of Structure: Siphon Toe Drain Underdrain Other

Width (ft.): 33'

Type of Maintenance: Chemical application and crane with drag line excavator.

Height (ft.): 8'

Length (ft.): *INCROW

Road (L or R): No access

% Vegetation:

Habitat Type: Weedy wetland; non-native grassland.

Trees:

Shrubs:

Herbaceous: X

Quadrangle Map Name: Friant

County: Fresno

NW1/4, Section 21, T. 11S, R. 21E, M.D.B.& M.

Notes: Downstream and upstream: cocklebur (*Xanthium strumarium*); thistle (*Cirsium* sp.); rush (*Juncus* sp.); willow herb (*Epilobium ciliatum* var. *ciliatum*); Bermuda grass (*Cynodon dactylon*); unidentified grass.

*Inside canal right-of-way.

Date: October 2, 1995

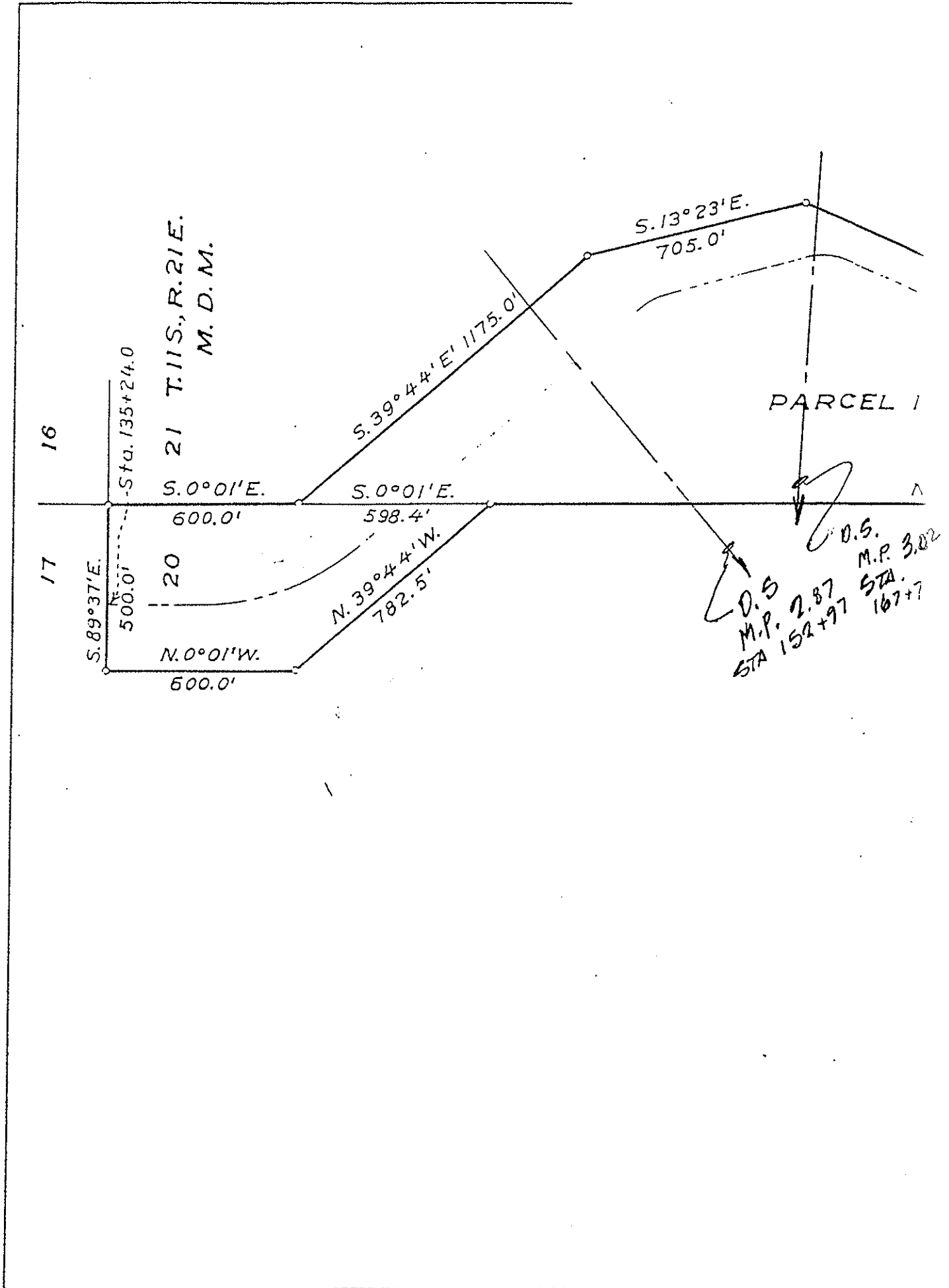
Milepost # 2.87



Upstream



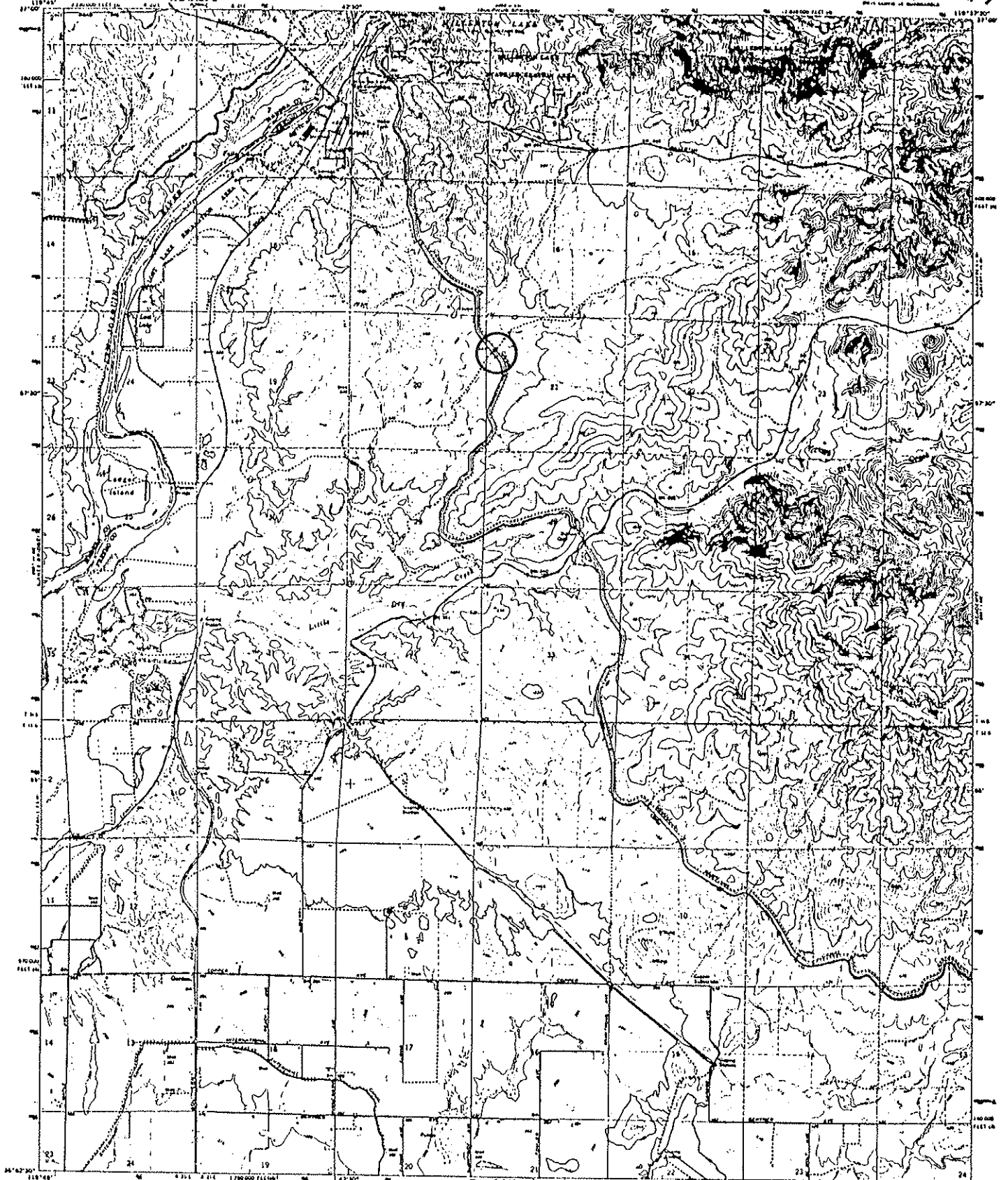
Downstream



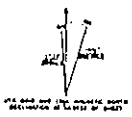
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
The name of quadrangle



Mapped, edited, and published by the Geological Survey
Control by U.S.G.S., U.S.C.A. and U.S. Bureau of Reclamation
Photography by photogrammetry, measured from aerial
photographs taken 1962. First edition 1964.
Projection: projection 1927 North American datum
10,000-foot grid based on Lambertian conic system,
zones 4 and 5
1000-meter Universal Transverse Mercator grid ticks,
zone 10, shown in blue.
Fires and dashed lines indicate selected fence lines
which enclose lands held by the State of California
of unincorporated date
Areas covered by dashed light-blue pattern
are subject to construction easements



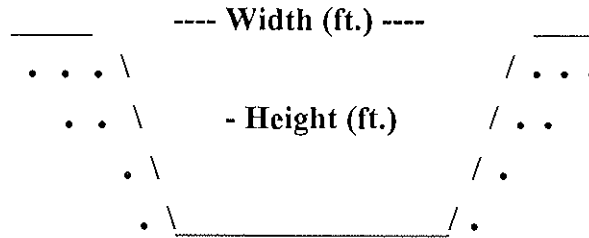
CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT BEAUFORT SANDHILLS
NATIONAL MONUMENT, FEDERAL SURVEY OF 1878

ROAD CLASSIFICATION
Main road ————— Light road - - - - -
Unimproved rd.

THIS MAP CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, CENTER FOR SCIENTIFIC INFORMATION, BOX 35002
A POLAR PROJECTION, TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

FRIANT, CALIF.
7.5 MINUTE SERIES
1964
GPO: 1964 O-568-888 1004

Milepost # 3.02



Type of Structure: Siphon _____ Toe-Drain _____ Underdrain X Other _____

Width (ft.): 45'

Type of Maintenance: Chemical application and crane with drag line excavation.

Height (ft.): 16'

Length (ft.): *INCROW

Road (L or R): No access

% Vegetation:

Habitat Type: Weedy wetland - upstream; non-native grassland.

Trees: X

Shrubs: X

Herbaceous: X

Quadrangle Map Name: Friant

County: Fresno

NW1/4, Section 21, T. 11S, R. 21E, M.D.B.& M.

Notes: Downstream: willow (*Salix* sp.); fig (*Ficus carica*); cocklebur (*Xanthium strumarium*); cattail (*Typha* sp.)~100'; unidentified grass. Upstream: non-native grassland. Good size pond at outlet (20' x 20' x 6' deep).

*Inside canal right-of-way.

Date: October 2, 1995

Milepost # 3.02



Upstream

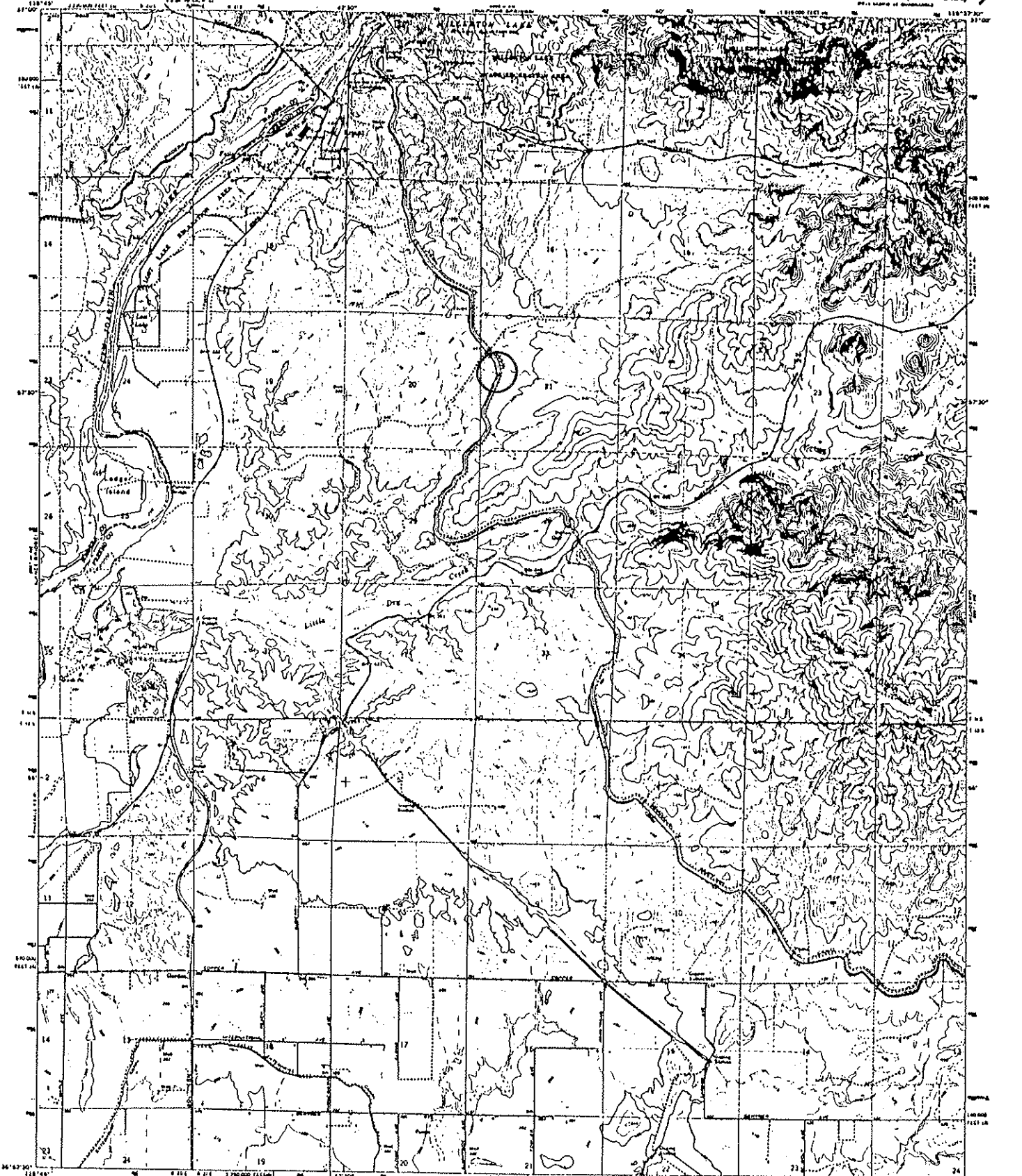


Downstream

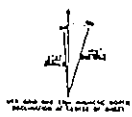
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
U.S. BUREAU OF GEOGRAPHIC NAMES



Mappe, edited, and published by the Geological Survey
Control to U.S.G.S. (USGCS) and U.S. Bureau of Reclamation
Elevation by photogrammetry, adjusted from aerial
photographs taken 1942. Field checked 1964
Projection projection 1927 North American datum
(1983) from grids based on California state plane system,
zones 4 and 5
USGS uses Geopack Standard as National grid ticks,
zone 4 and 5
Five red dashed lines indicate selected force lines
White dashed lines show and are shown for lines
of unadjusted data
Areas covered by dashed light blue pattern
are shown in the California jurisdiction



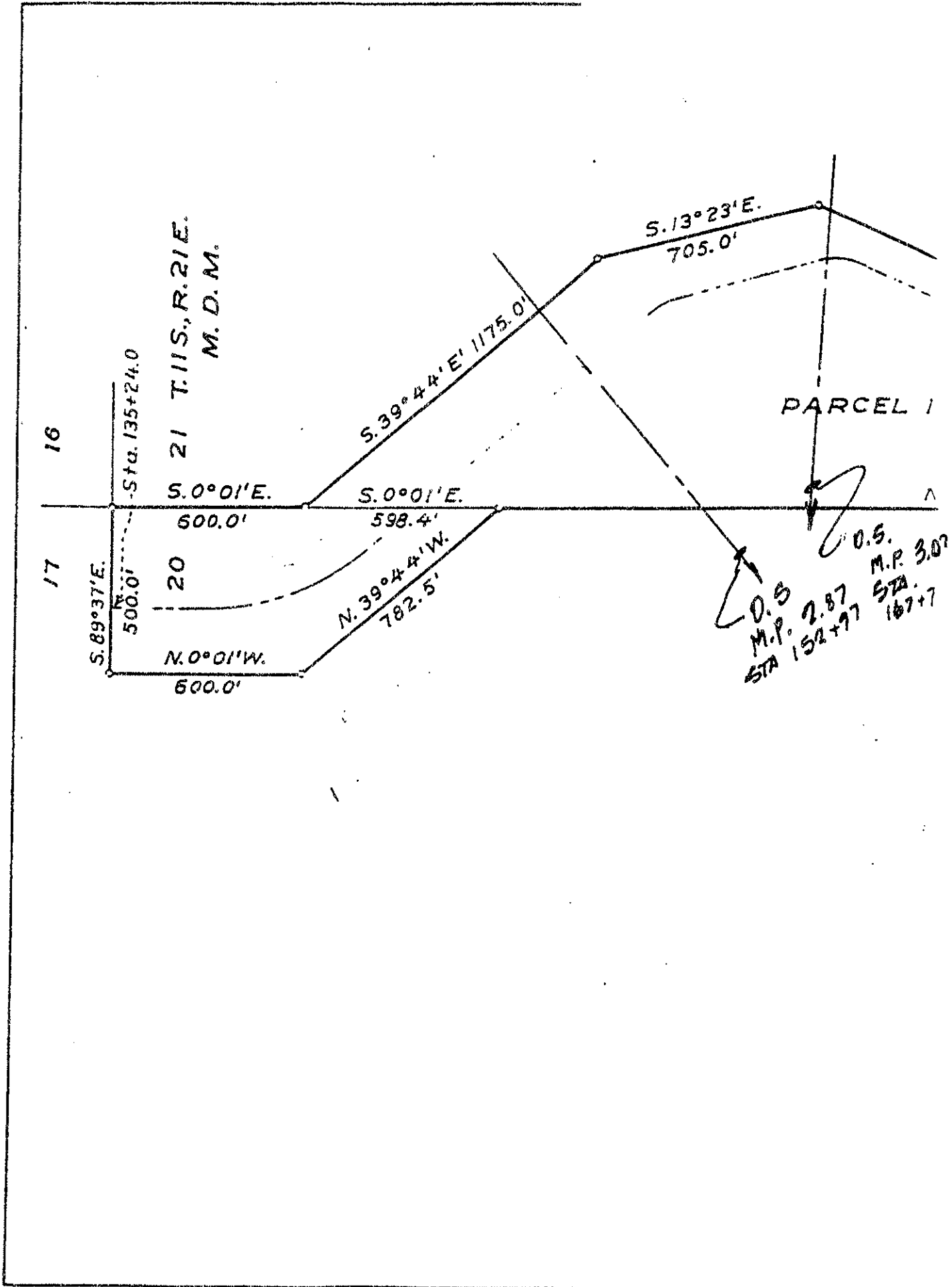
CONTOUR INTERVAL 20 FEET
ELEVATION REFERRED TO MEAN LOW WATER
NATIONAL MEANISTIC VERTICAL DATUM OF 1929



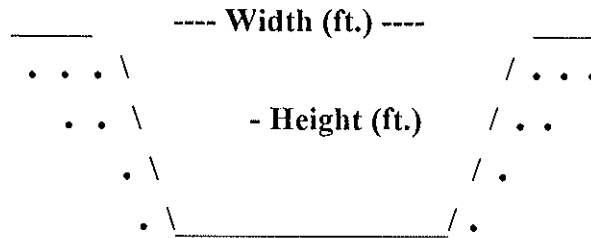
ROAD CLASSIFICATION
Medium duty ——— Light duty ———
Unimproved rd ———

THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, CENTER OF GEOGRAPHIC NAMES ON WESTON VIRGINIA 22062
A POLAR PROJECTION TOPOGRAPHIC MAP AND STRIPMAP IS AVAILABLE ON REQUEST

FRIANT, CALIF.
PHOTOGRAPH BY PHOTOGRAPHIC
43453 6-81 (51) 11 6/78
1964
AM 5007 3 BY 62000 1000



Milepost # 3.49



Type of Structure: Siphon _____ Toe-Drain _____ Underdrain X Other _____

Width (ft.): 30'

Type of Maintenance: No maintenance needed. Some chemical application and drag line with crane excavation.

Height (ft.): 6'

Length (ft.): *INCROW

Road (L or R): No access

% Vegetation:

Habitat Type: Weedy

Trees:

Shrubs:

Herbaceous: X

Quadrangle Map Name: Friant

County: Fresno

SW1/4, Section 21, T. 11S, R. 21E, M.D.B.& M.

Notes: Downstream: Bermuda grass (*Cynodon dactylon*); mare's tail (*Coryza canadensis*); cocklebur (*Xanthium strumarium*); curly dock (*Rumex crispus*).
Upstream: drier, rocky.

*Inside canal right-of-way.

Date: October 2, 1995

Milepost # 3.49



Upstream

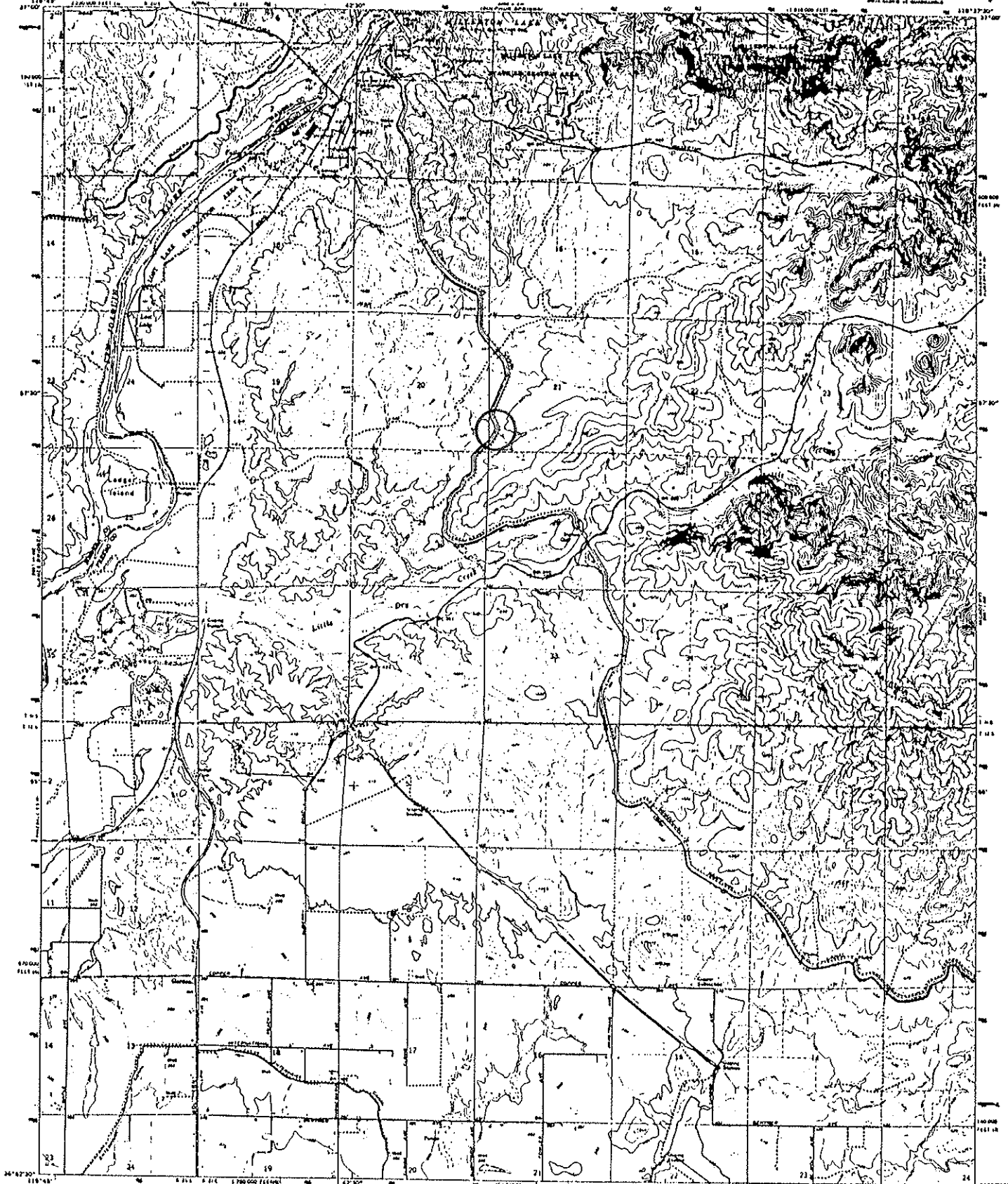


Downstream

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
First issue of quadrangle



Mapped, edited, and published by the Geological Survey
Consent by USGS, USCAOS and U.S. Bureau of Reclamation
Copyright by photographer, publisher, from aerial
photographs taken 1962. Date checked 1964
Photocopy prepared by 2027 from American edition
100,000 scale grid based on Canadian coordinate system,
NAD 83 and U.S. 1983 datum. Conversion to NAD 83 and U.S.
1983 datum is shown in the margin.
Fine red dashed lines indicate contour lines based on
white vertical lines and are not shown because of
unavailable data
Areas shown by dashed light blue pattern
are subject to change of ownership



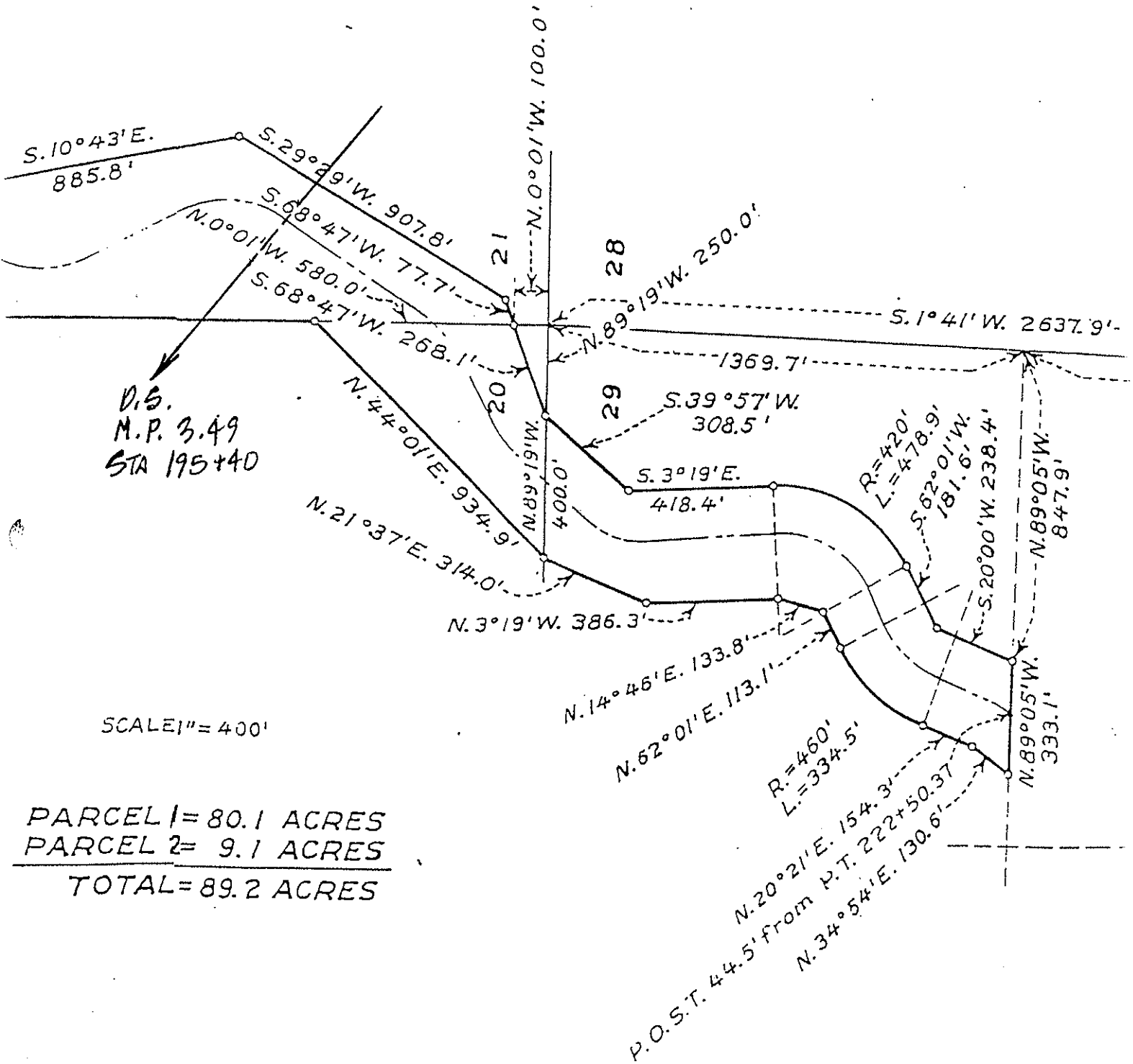
CONTOUR INTERVAL IN FEET
BOTTED LINES REPRESENT STAGE CONTOURS
NATURAL SLOPE VERTICAL CURVE OF 1978

ROAD CLASSIFICATION
Main road Light road
Unimproved rd



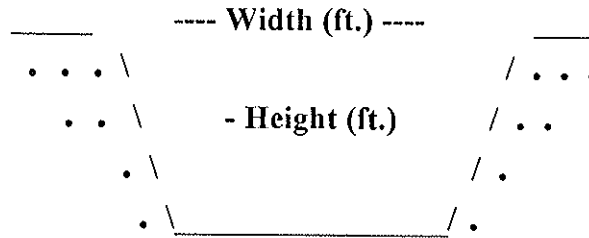
THIS MAP CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY CENTER EQUIPMENT ROOMS OR FIELD STATIONS 2002
A POLAR BEARING TOPOGRAPHIC MAP AND SYMBOLS & SYMBOLS ON REQUEST

FRIANT, CALIF.
U.S. GEOLOGICAL SURVEY
1:50,000 - 75107 5/75
1964
GPO 5027 1-77-50000 1964



Milepost # 5.50
"Little Dry Creek"

Milepost # 5.50
"Little Dry Creek"



Type of Structure: Siphon Toe-Drain _____ Underdrain _____ Other _____

Width (ft.): 306'

Type of Maintenance: Chemical application; crane with drag line clam shell and dozer work; excavator.

Height (ft.):

Length (L or R): *INCROW

Road (L or R): Crosses stream

% Vegetation:

Habitat Type: Stream riparian

Trees: X

Shrubs: X

Herbaceous: X

Quadrangle Map Name: Friant

County: Fresno

NE1/4, Section 28, T. 11S, R. 21E, M.D.B. & M.

Notes: Upstream and downstream: cattail (*Typha* sp.); willow (*Salix* sp.) trees and shrubs; willow herb (*Epilobium ciliatum* var. *ciliatum*); nettle (*Urtica dioica* ssp. *holosericea*); California sunflower (*Helianthus annuus*); knotweed (*Polygonum* sp.); fig (*Ficus carica*); cocklebur (*Xanthium strumarium*).

*Inside canal right-of-way.

Date: October 2, 1995

Milepost # 5.50
"Little Dry Creek"



Upstream

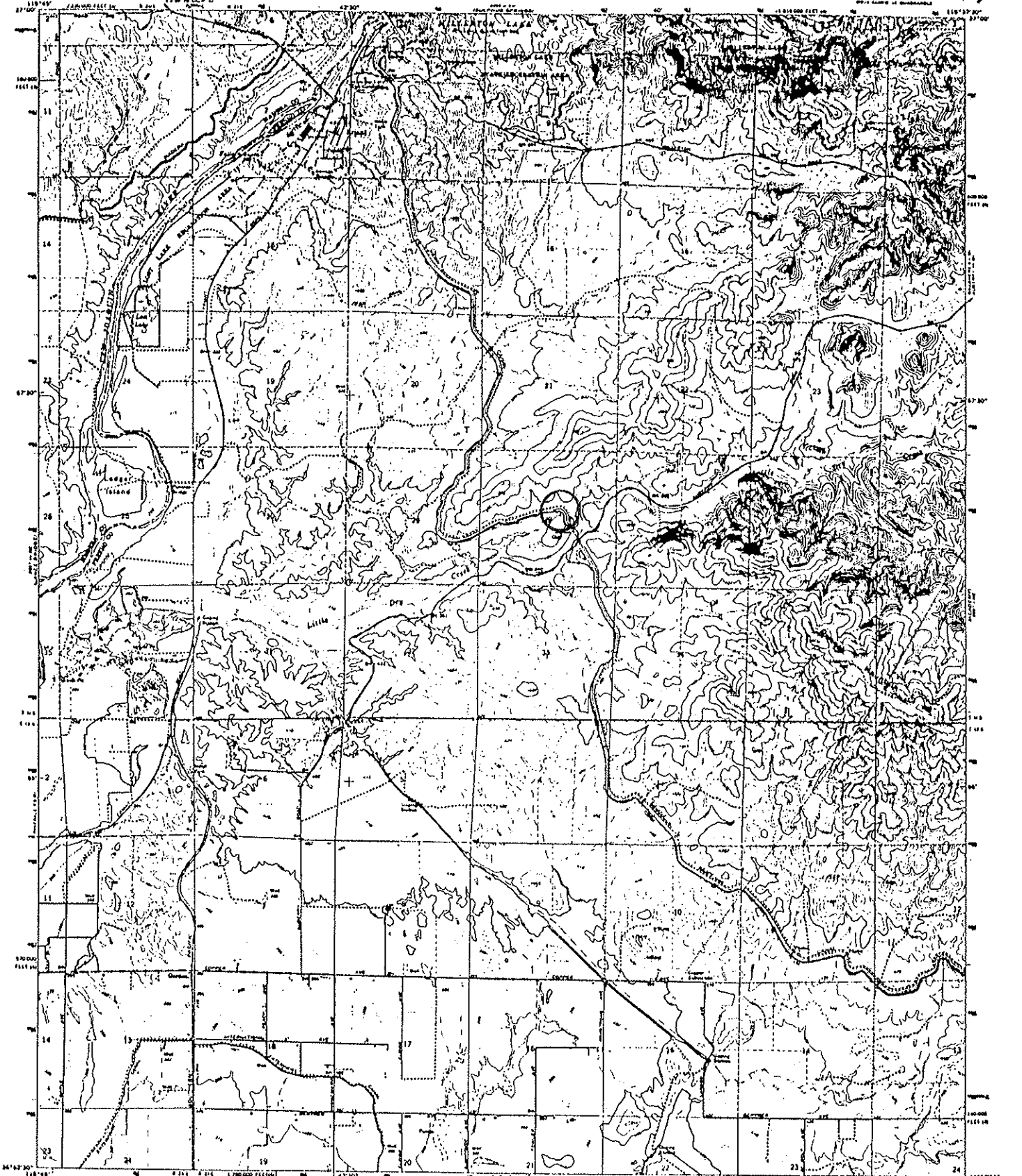


Downstream

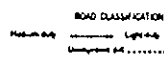
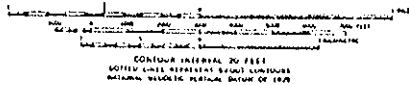
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)



Map compiled, edited, and published by the Geological Survey
Control by USGS, USC&GS and US Bureau of Reclamation
Photography by photogrammetry, made from aerial
photographs taken 1962. First edition 1964.
Polyconic projection. 1923 North American spheroid
1:50,000 scale, grid based on California state plane system,
zones 8 and 9.
USGS and USGS of Transverse Mercator grid scale,
zone 12, datum is true.
Five red dashed lines indicate selected bench lines.
Where indicated, bench lines are not shown because
of insufficient data.
Areas covered by dashed light blue pattern
are subject to subsequent modification.

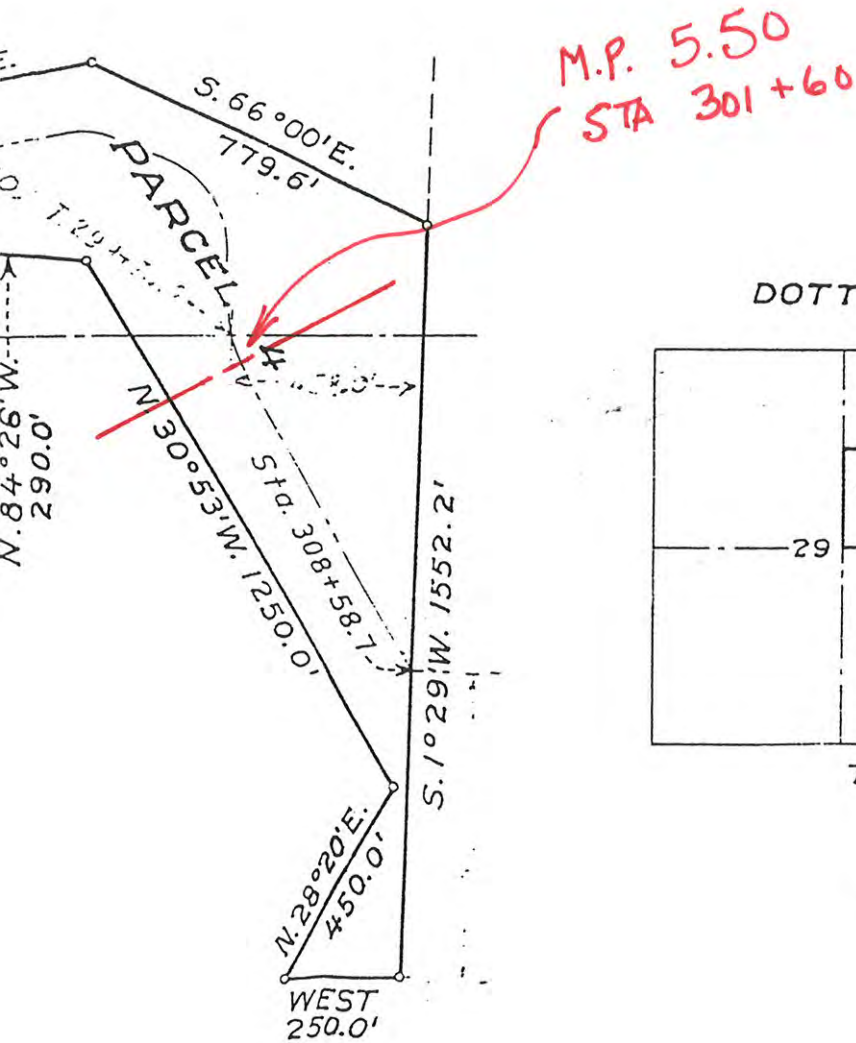


CONTOUR INTERVAL, 20 FEET
SOFTLY SLOPED TERRAIN, SHADY CONTOURS
NATIONAL BUREAU OF PLATEAU, DIVISION OF 1928

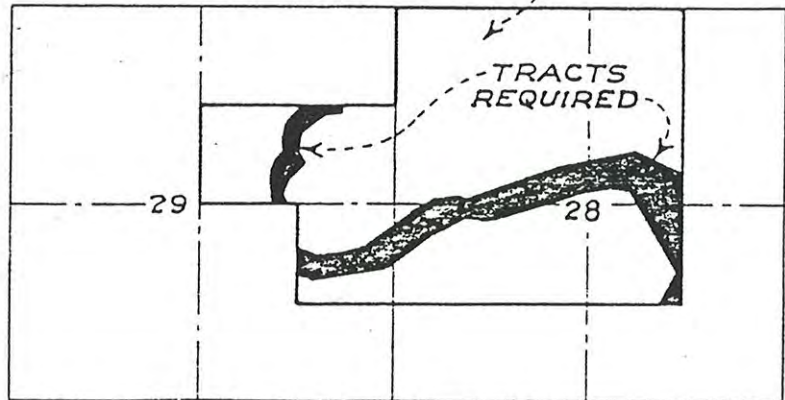


THIS MAP CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR, WASHINGTON, D.C. 20508
A POLAR PROJECTION TOPOGRAPHIC MAP, ONE STRIP IS AVAILABLE ON REQUEST

FRIANT, CALIF.
7.5 MINUTE SERIES
83642 5 - 011117 4-75
1964
AM 801 3 BY GEORGE 1960



DOTTIE BARNHART, TRACT



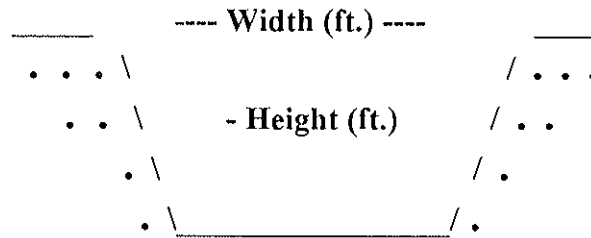
T. 11 S., R. 21 E. M. D. M.

KEY MAP

SCALE 1" = 2640'

11-4-41 A.T.	REV. 3-21-39	7-7-39	DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION CENTRAL VALLEY PROJECT-CALIFORNIA FRIANT DIVISION	
			FRIANT-KERN CANAL RIGHT OF WAY DOTTIE BARNHART	
		DRAWN: J. L. S.	SUBMITTED: <i>Alfred...</i>	
		TRACED: H. L. E.	RECOMMENDED: <i>H. L. E.</i>	
		CHECKED: <i>H. L. E.</i>	APPROVED:	
		F65A	FRIANT, CALIF. JUNE 24, 1937	

Milepost # 6.40



Type of Structure: Siphon _____ Toe-Drain _____ Underdrain X Other _____

Width (ft.): 60'

Type of Maintenance: Chemical application; crane with drag line excavation.

Height (ft.): 30'

Length (ft.): *INCROW

Road (L or R): L & R

% Vegetation:

Habitat Type: Weedy wetland; non-native grassland.

Trees: X (upstream) Shrubs:

Herbaceous: X

Quadrangle Map Name: Friant

County: Fresno

NW1/4, Section 34, T. 11S, R. 21E, M.D.B.& M.

Notes: Downstream: knotweed (*Polygonum* sp.); willow herb (*Epilobium ciliatum* var. *ciliatum*); cattails (*Typha* sp.). Upstream: willows (*Salix* sp.).

*Inside canal right-of-way.

**Buck in drainage, short-eared owl (*Asio flammeus*)

Date: October 2, 1995

Milepost # 6.40



Upstream

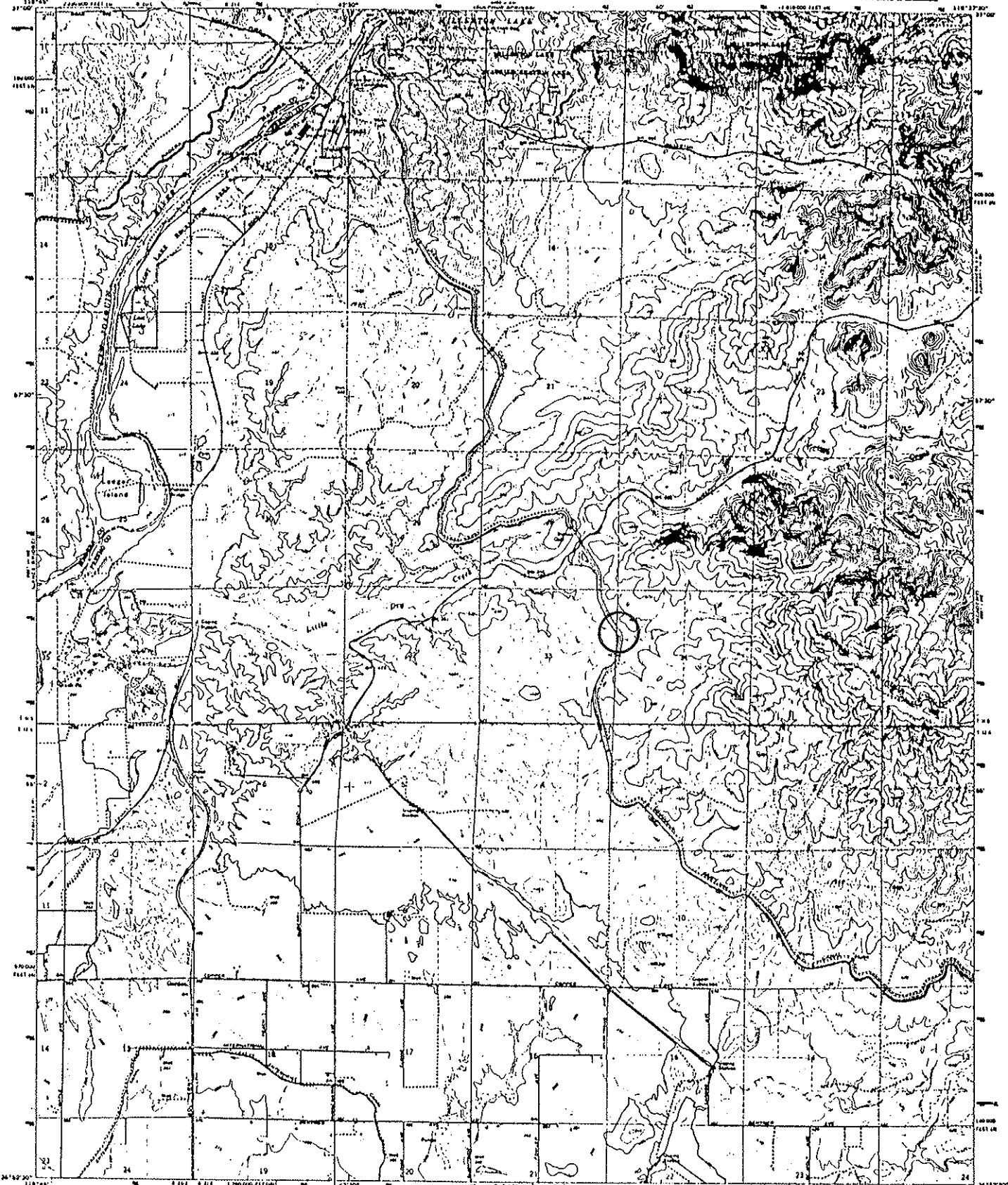


Downstream

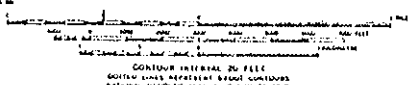
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
FIRST CORRECTED EDITION



Mapped, edited, and published by the Geological Survey
 Control by USGS, USCGA and U.S. Bureau of Reclamation
 Topography by photogrammetric methods from aerial
 photographs taken 1942. First checked 1946.
 Photometric projection. 1927 North American datum
 (USNG horizontal grid) based on Cassini's spheroid system,
 zones 4 and 5
 2000-meter Universal Transverse Mercator grid ticks,
 zone 11, shown in blue
 First 100-foot ticks indicate selected bench marks
 where available; other ticks are not shown because
 of insufficient data
 Area covered by shaded topographic features
 not shown by this method of reproduction



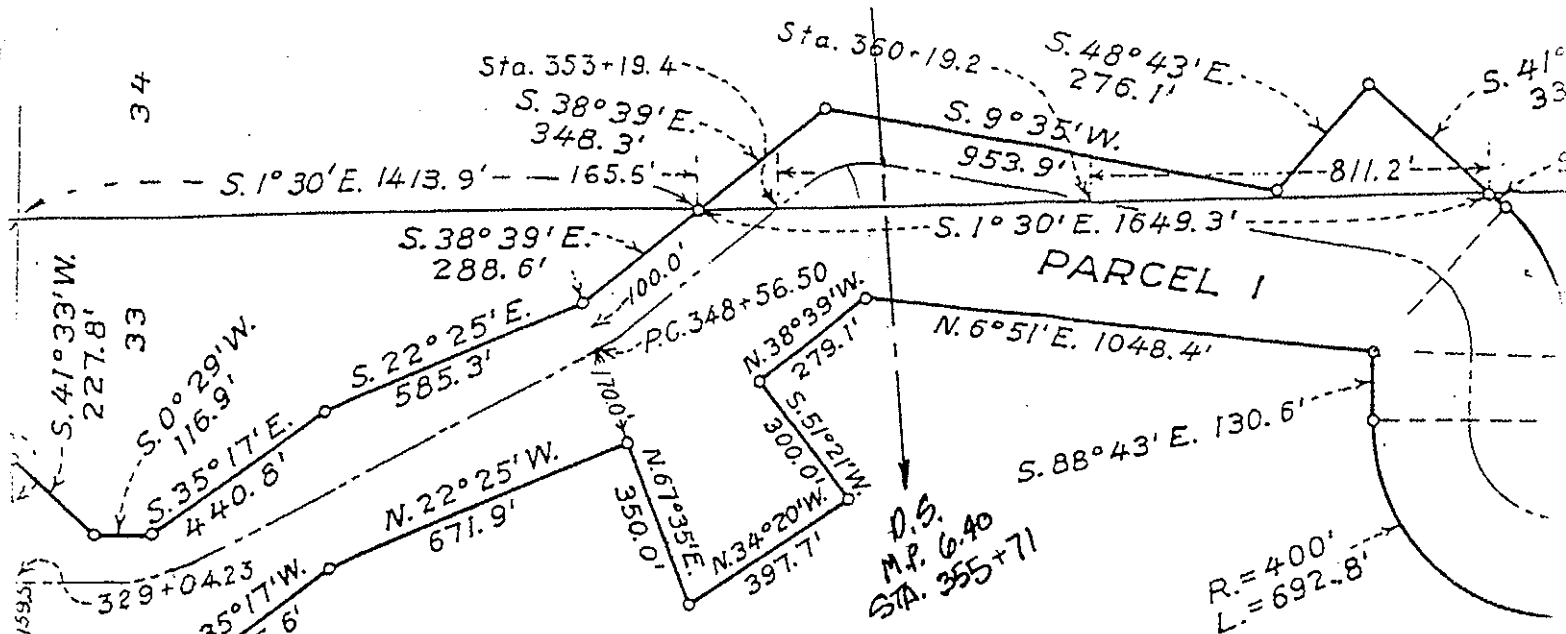
CONTOUR INTERVAL 20 FEET
 SOLID LINES REPRESENT BENCH CONTOURS
 DOTTED LINES INDICATE OTHER CONTOURS

ROAD CLASSIFICATION
 Main Road ————
 Unimproved Rd. - - - - -



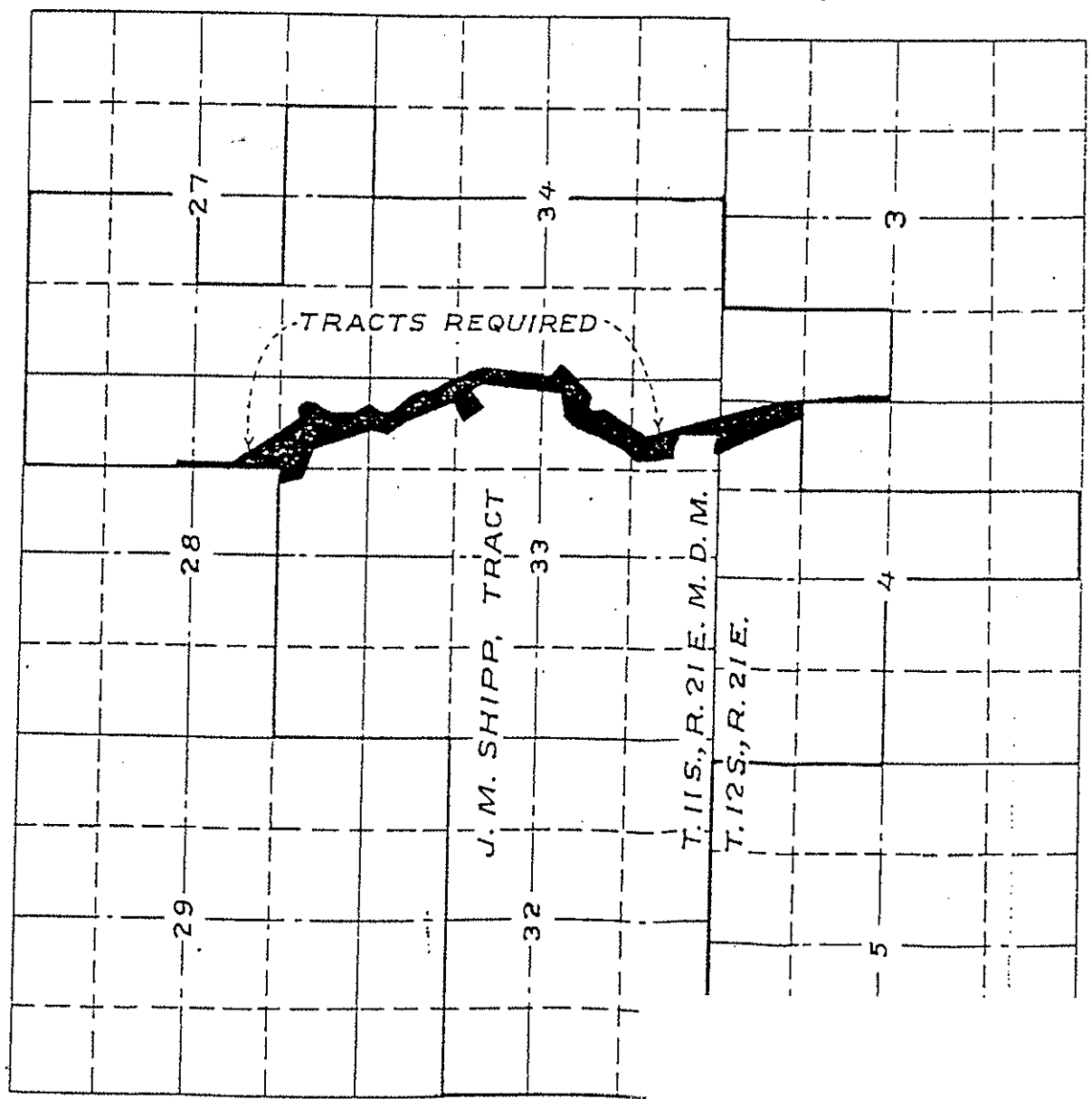
THIS MAP CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U.S. GEOLOGICAL SURVEY (SERIES COLLECTOR'S BOOKS OR SECTION NUMBER 23004)
 A POLAR PROJECTION TOPOGRAPHIC MAPS AND VECTORS IS AVAILABLE ON REQUEST

FRIANT, CALIF.
 U.S. GEOLOGICAL SURVEY
 1964
 APRIL 1962 1:50,000 1:50,000



D.S.
M.P. 6.40
STA. 355+71

R=400'
L=692.8'



TRACTS REQUIRED

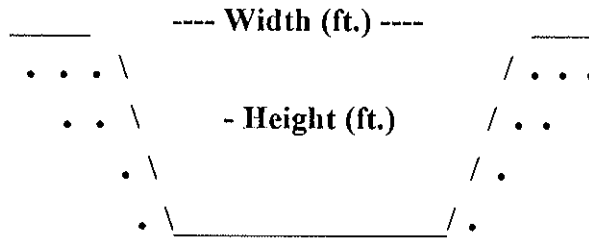
J. M. SHIPP, TRACT

T. 11 S., R. 21 E. M. D. M.

T. 12 S., R. 21 E.

Milepost # 7.40
"Ambrosio Tract"

Milepost # 7.40
"Ambrosio Tract"



Type of Structure: Siphon _____ Toe-Drain _____ Underdrain X Other _____

Width (ft.): 46'

Type of Maintenance: Chemical application; crane with dragline excavator.

Height (ft.): 20'

Length (ft.): 2,693'

? from wheel

Road (L or R): South-side

% Vegetation:

Habitat Type: Emergent wetland; non-native grassland.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Friant

County: Fresno

NW1/4, Section 4, T. 12S, R. 21E, M.D.B.& M. (on line between Sections 3 and 4)

Notes: Downstream: cattails (*Typha* sp.); willow herb (*Epilobim ciliatum* var. *ciliatum*); cottonwood (*Populus fremontii*). Upstream: fairly dry non-native grassland. Road access south side. Culvert: 90 degrees.

*Inside canal right-of-way.

**White-tailed kite (*Elanus caeruleus*) Scrub jay (*Aphelocoma coerulescens*)

Date: October 2, 1995

Milepost # 7.40
"Ambrosio Tract"



Upstream

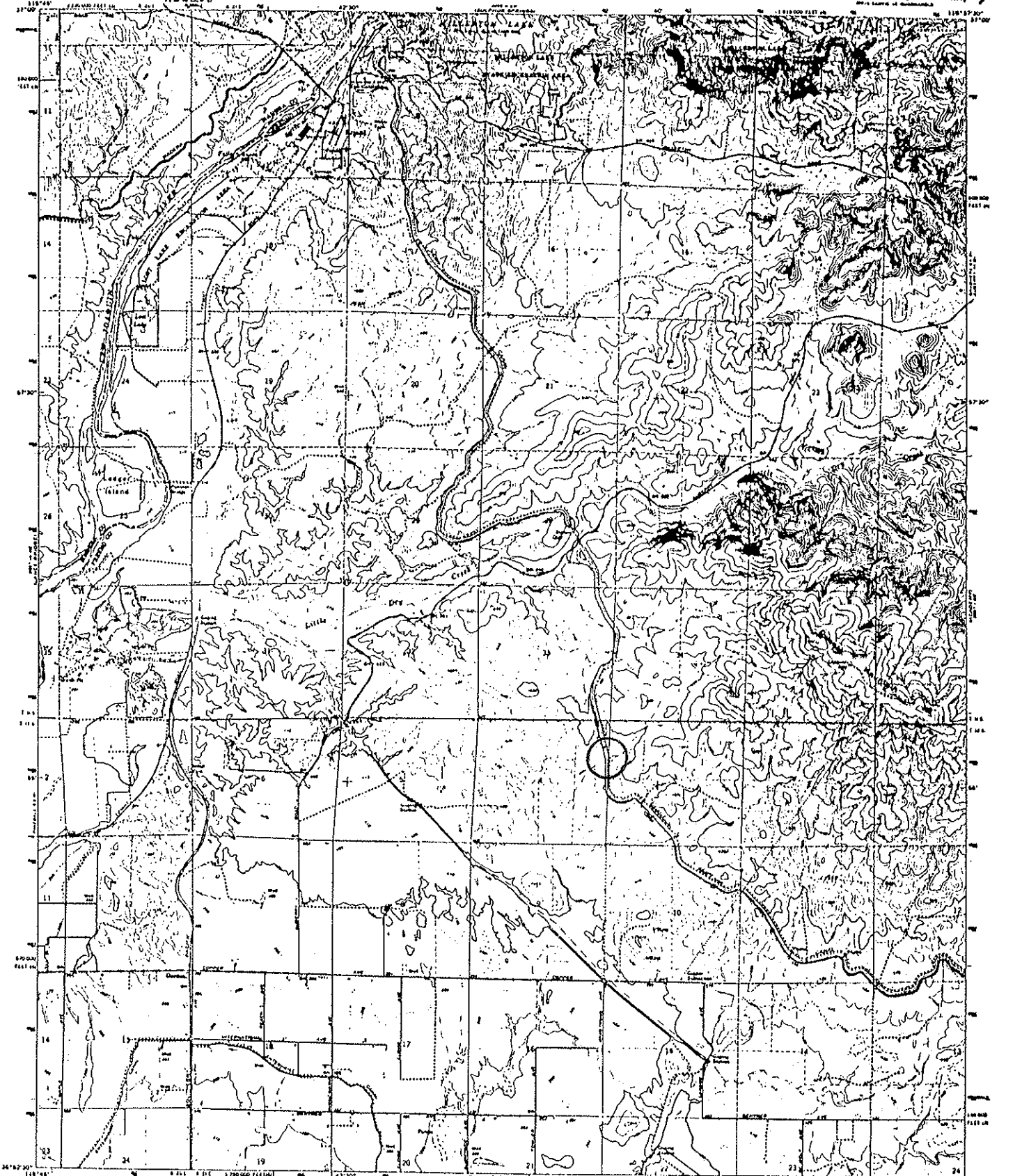


Downstream

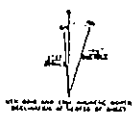
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
15 MINUTE SERIES (TOPOGRAPHIC)
First Issue of 1964



Map compiled, edited, and published by the Geological Survey
Control by USGS, USACE and U.S. Bureau of Reclamation
Photography by stereogrammetric methods from aerial
photographs taken 1962. First checked 1964
Photocopy projection, 1927 North American datum
100,000 scale grid based on Conrads coordinate system,
zone 10 and 9
USGS metric universal Transverse Mercator grid ticks,
zone 10, 1000 m apart
Fire red dashed lines indicate correct fence lines
Where uncorrected land lines are shown because
of insufficient data
Area covered by dashed light blue pattern
are subject to technical modification

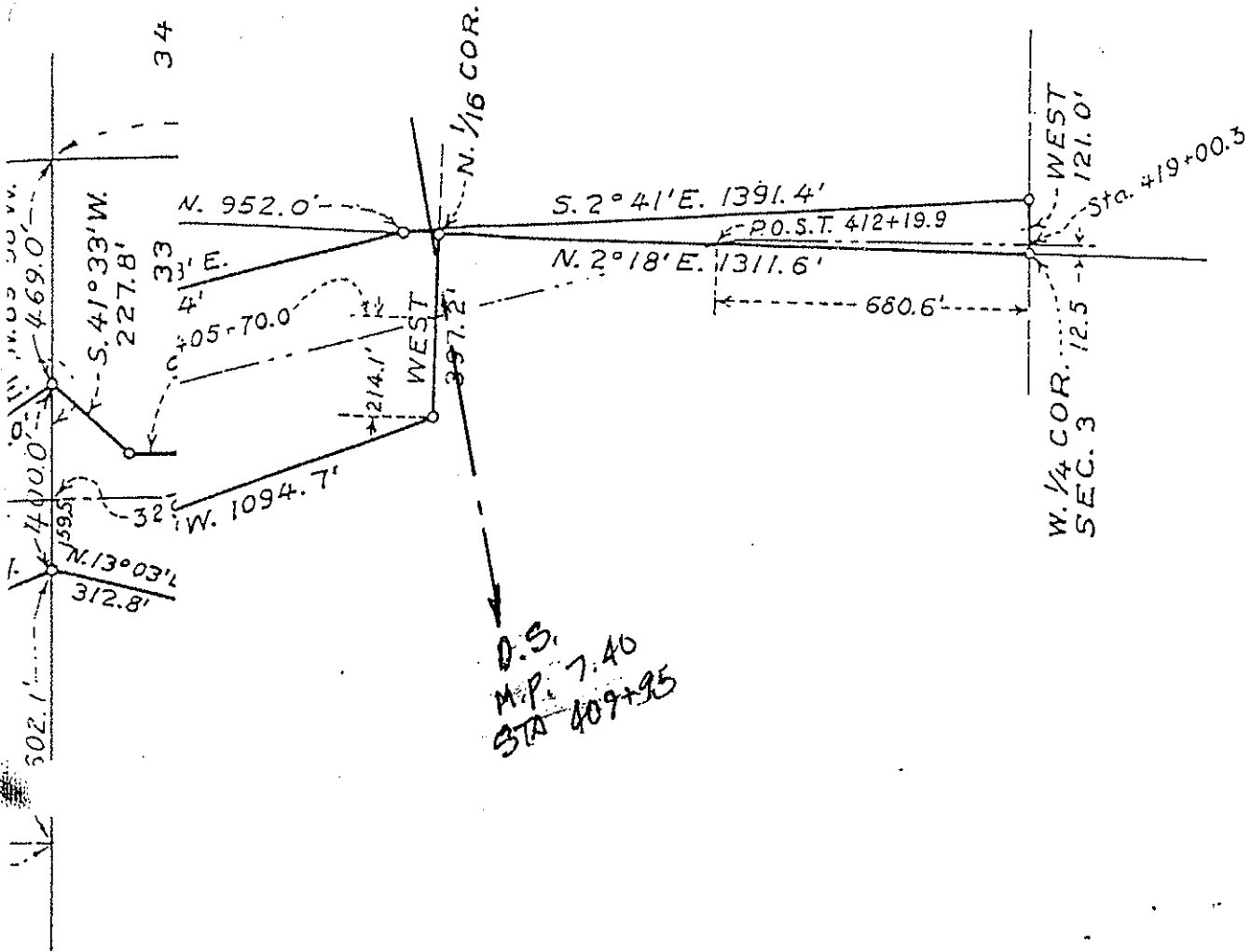


Scale of 1:50,000
CONTINUOUS INTERVAL, 20 FEET
DOTTED LINES REPRESENT SPARSE CONTOURS
NATURAL BARRIERS, STIPPLE, DUTUM OF 100'

ROAD CLASSIFICATION
Major highway
Light road
Unimproved road

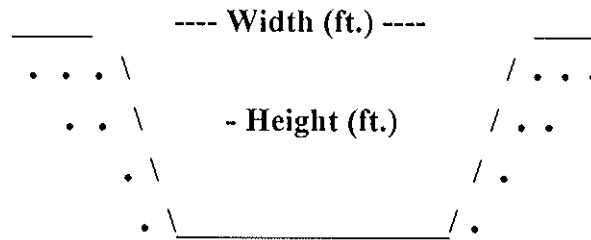
This map conforms with national map accuracy standards
FOR SALE BY U.S. GEOLOGICAL SURVEY (OFFICE COLLEGE PARK, MD) OR REGIONAL OFFICES
A POLAR PROJECTION TOPOGRAPHIC MAP AND STIPPLES IS AVAILABLE ON REQUEST

FRIANT, CALIF.
PUBLISHED BY AUTHORITY
15643-5-64 (11/11) 5/78
1964
GPO: 1964 O - 646-006 1000



2-17-45	10-12-36	DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION CENTRAL VALLEY PROJECT-CALIFORNIA FRIANT DIVISION FRIANT-KERN CANAL RIGHT OF WAY J. M. SHIPP	
8-9-39	11-4-41	DRAWN: G. B. R.	SUBMITTED: <i>[Signature]</i>
REV 4-17-39	8-2-39	TRACED: H. L. E.	RECOMMENDED: <i>[Signature]</i>
		CHECKED: <i>[Signature]</i>	APPROVED:
F68A		FRIANT, CALIF. JUNE, 22, 1937	

Milepost # 7.93



Type of Structure: Siphon _____ Toe-Drain _____ Underdrain X Other _____

Width (ft.): 371'

Type of Maintenance: Chemical application; crane with drag line excavator.

Height (ft.): 15'

Length (ft.): *INCROW

Road (L or R):

% Vegetation:

Habitat Type: Downstream: emergent wetland; upland. Upstream: wetland.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Friant

County: Fresno

SW1/4, Section 3, T. 12S, R. 21E, M.D.B.& M.

Notes: Downstream: cattail (*Typha* sp.); willow herb (*Epilobium ciliatum* var. *ciliatum*); willow (*Salix* sp.); thistle (*Cirsium* sp.); knotweed (*Polygonum* sp.). Upstream: rush (*Juncus* sp.); cattail (*Typha* sp.); cocklebur (*Xanthium strumarium*); nutsedge (*Cyperus* sp.); Bermuda grass (*Cynodon dactylon*).

*Inside canal right-of-way.

Date: October 2, 1995

Milepost # 7.93



Upstream

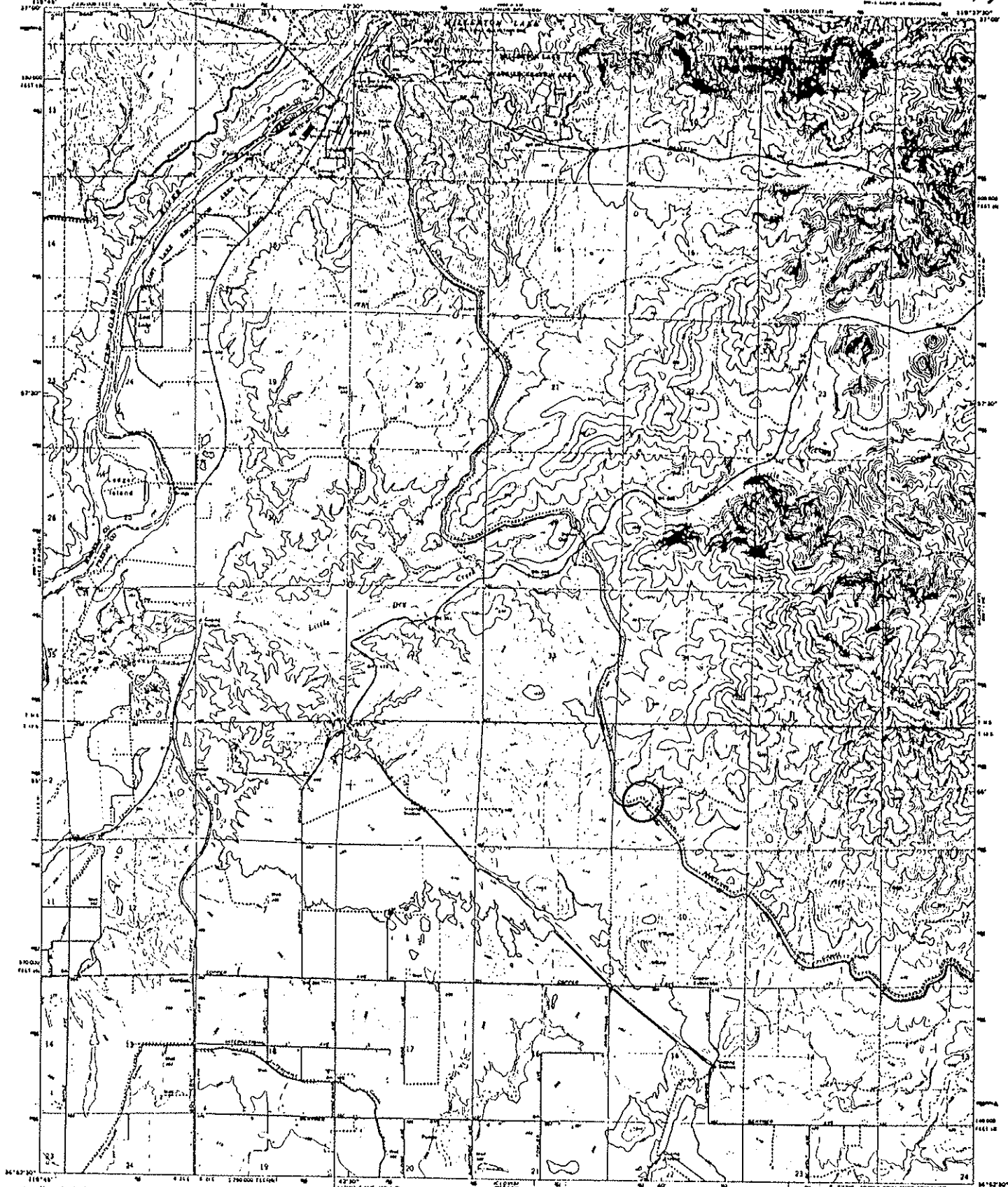


Downstream

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
WITH LARGE SCALE ADJUSTMENTS



Map compiled, edited, and published by the Geological Survey
Compiled by USGS, USCA-205 and U.S. Bureau of Reclamation
Topography by photogrammetry, derived from aerial
photographs taken 1962. From checked 1964
Projection projection: 1927 North American datum
[100,000-foot grid based on Cartesian coordinate system,
zones 8 and 9
[100,000-meter UTM grid based on WGS 84 datum,
zone 11, datum as that
From red dashed lines indicate uncorrected bench lines
Where indicated have been on the ground because
of insufficient data
Areas covered by dashed light blue pattern
are subject to hydrographic modification



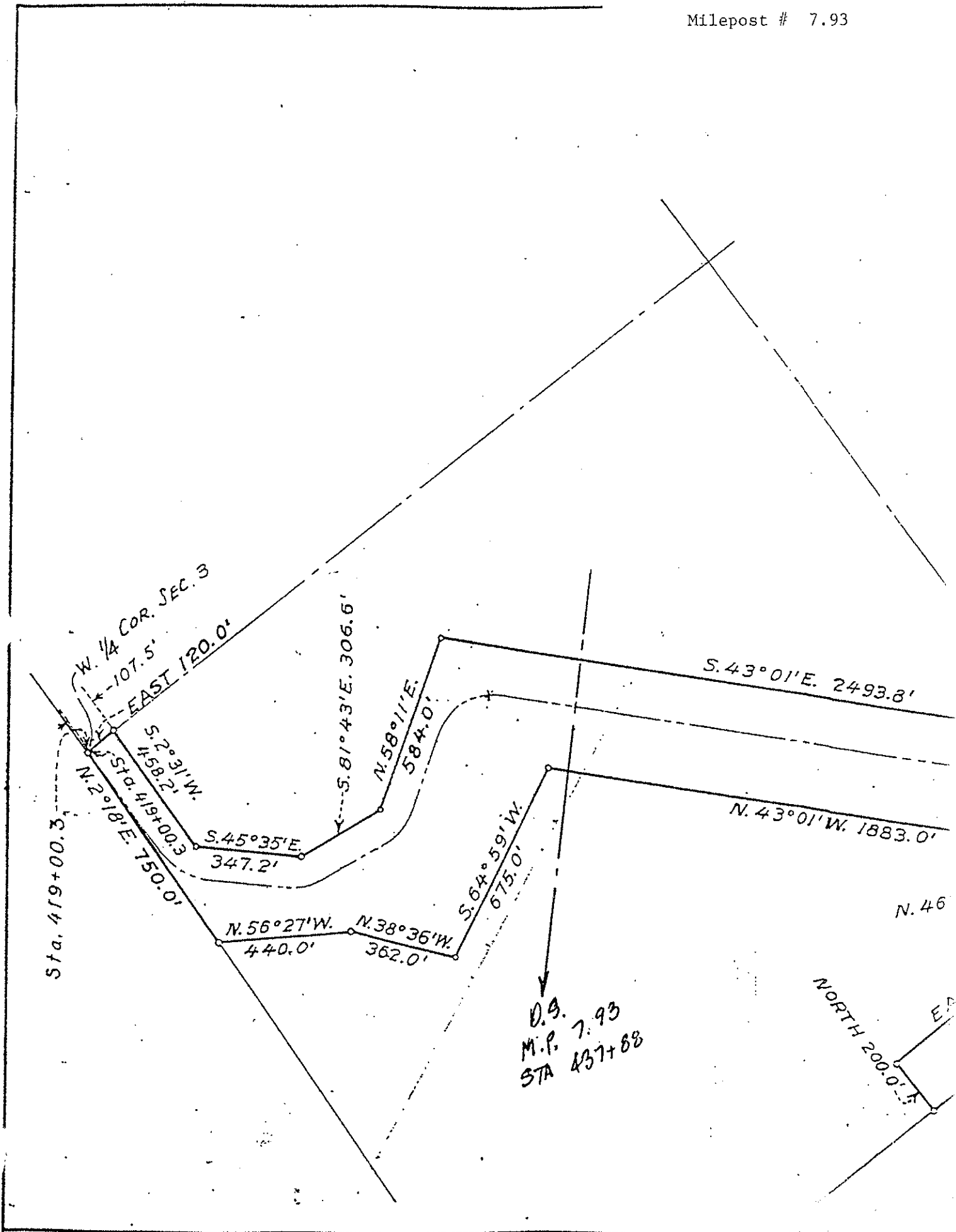
CONTINUOUS INTERVAL IN FEET
SLOTTED LINES REPRESENT GRADE CONTINUED
NATURAL SLOPES; NATURAL SLOPE OF 1:20

ROAD CLASSIFICATION
Mainline Highway Light Highway
Unimproved Road

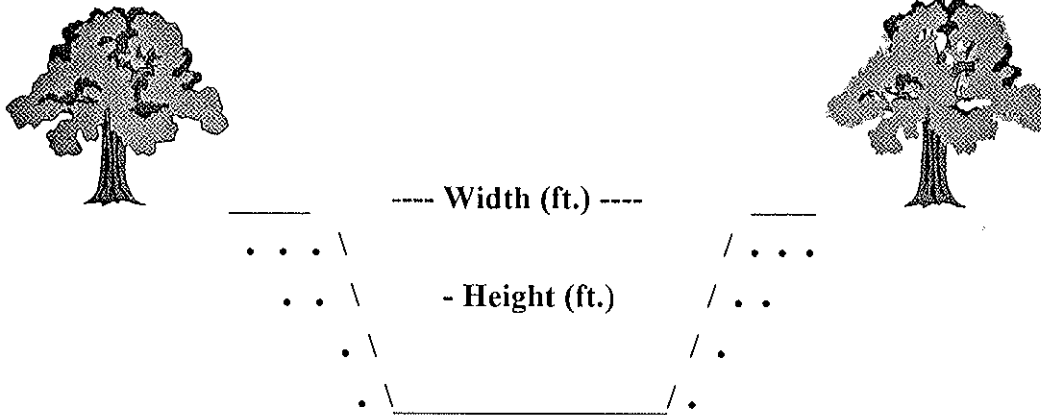
This map complies with National Map Accuracy Standards
FOR SALE BY U.S. GEOLOGICAL SURVEY CENTER OF MASSACHUSETTS 33062
A POLAR PROJECTION TOPOGRAPHIC MAP AND STRIPMAP IS AVAILABLE ON REQUEST



FRIANT, CALIF.
7.5 MINUTE QUADRANGLE
83425-S-10113/5-7.5
1964
JAN 1961 1:50,000 1964



Milepost # 8.32



Type of structure: Siphon _____ Toe-Drain _____ Underdrain X Other _____

Width (ft.): 40'

Type of Maintenance: Chemical application; crane with drag line; excavator.

Height (ft.): 25'

Length (ft.): 1,505'

Road (L or R):

% Vegetation:

Habitat Type: Emergent wetland.
Upstream: upland; non-native grassland.

Trees:

Shrubs:

Herbaceous: X

Quadrangle Map Name: Friant

County: Fresno

SE1/4, Section 3, T. 12S, R. 21E, M.D.B. & M.

Notes: Downstream: cattail (*Typha* sp.); knotweed (*Polygonum* sp.); pondweed (?); willow herb (*Epilobium ciliatum* var. *ciliatum*). Upstream: non-native grassland; cocklebur (*Xanthium strumarium*); California sunflower (*Helianthus annuus*); cattail (*Typha* sp.); Bermuda grass (*Cynodon dactylon*).

Date: October 2, 1995

Milepost # 8.32



Upstream

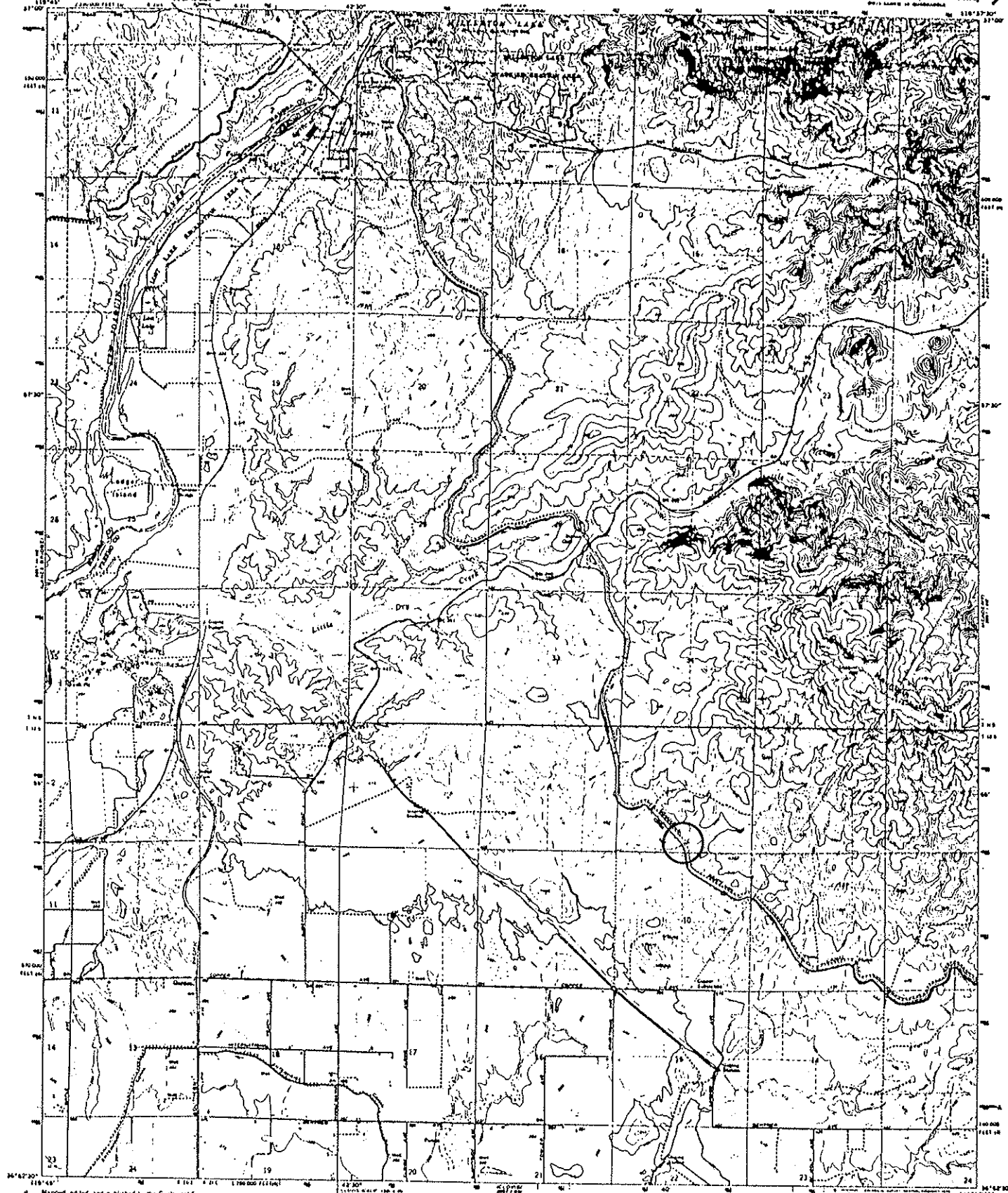


Downstream

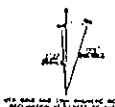
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
THE NAME IS UNCHANGED



Map prepared, edited, and published by the Geological Survey
Control by USGS, USCAUS and U.S. Bureau of Reclamation
Topography by photogrammetry, contours from aerial
photographs taken 1942. First edition 1944.
Photocopy prepared 1927 from American datum
USNGS base grid based on Canadian datum system,
zones 4 and 5
1927-1928 composite Transverse Mercator grid scale,
zone 11, shown in blue.
Five red dashed lines indicate section lines.
Where section lines have not been shown because
of insufficient data.
Areas shown by dashed light-blue pattern
are subject to California reclamation.

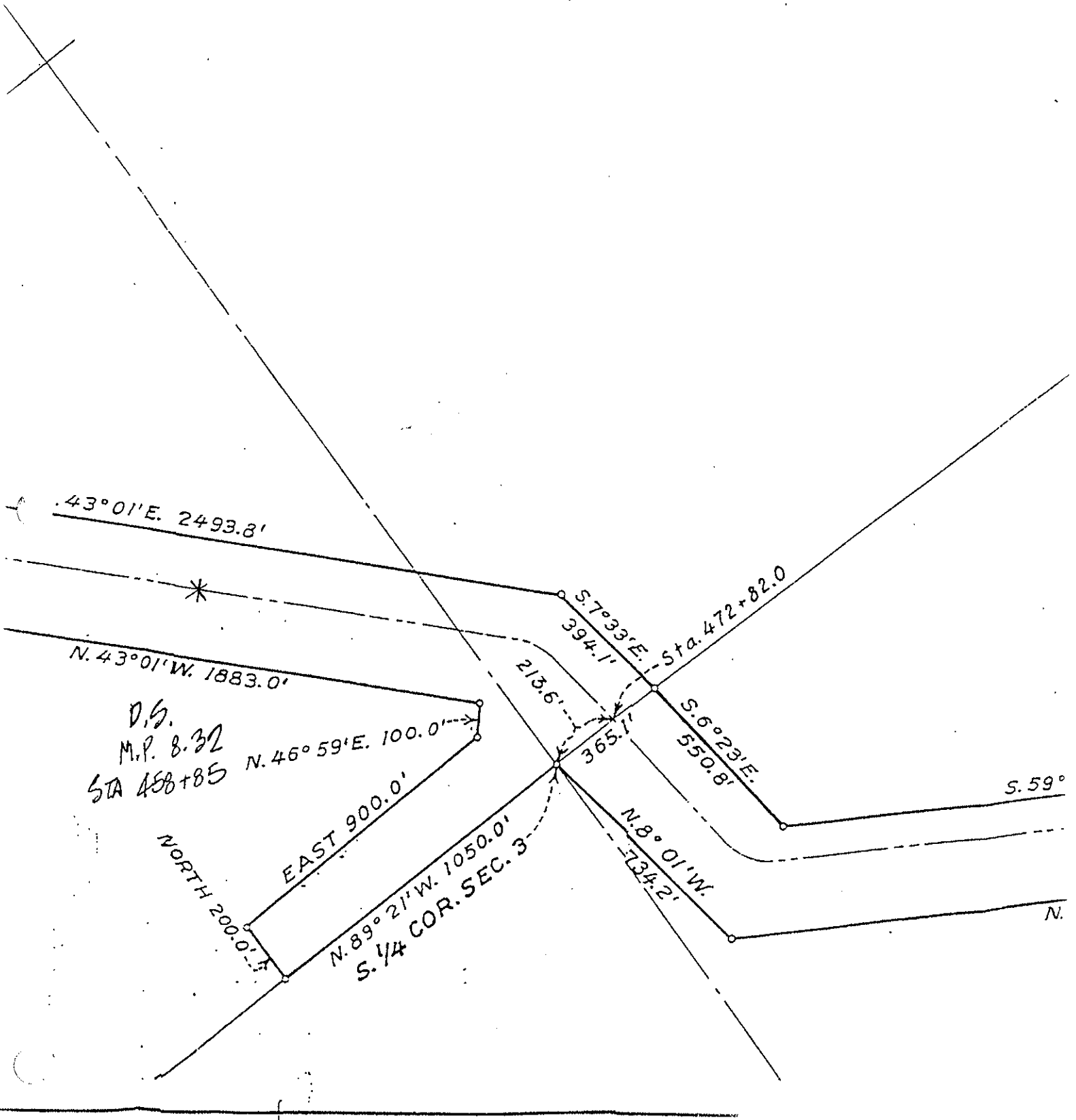


CONTINUOUS INTERVAL, 20 FEET
BOTTED AND REVERTED, BEARS NUMEROUS
NATURAL GEODESIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION
Mainline Highway Light Road
Unimproved Road

THIS MAP CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR, WASHINGTON, D.C. 20508
A POLAR BEARING, TOPOGRAPHIC MAP, AND STANDARDS IS AVAILABLE ON REQUEST

FRIANT, CALIF.
PRICE: 50¢ (U.S. MONEY)
#3462 6 - #11937 6/7/6
1964
AM. SHEET 1 OF 6 SHEETS 1964



D.S.
M.P. 8.32
STA 458+85

N. 43° 01' E. 2493.8'

N. 46° 59' E. 100.0'

NORTH 200.0'
EAST 900.0'

N. 89° 21' W. 1050.0'

S. 1/4 COR. SEC. 3

S. 7° 33' E. 394.1'

Sta. 472+82.0

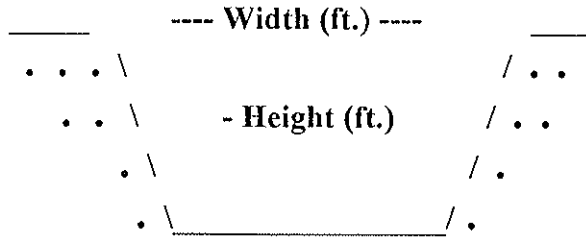
S. 6° 23' E. 550.8'

N. 8° 01' W. 734.2'

S. 59°

N.

Milepost # 9.07



Type of Structure: Siphon _____ Toe-Drain _____ Underdrain X Other _____

Width (ft.): 25'

Type of Maintenance: Chemical application; crane with drag line; excavator.

Height (ft.): 15'

Length (ft.): 608'

Road (L or R): R

% Vegetation:

Habitat Type: Downstream: emergent wetlands. Upstream: upland; non-native grassland.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Friant

County: Fresno

NE1/4, Sections 10 and 11, S, R. 21E, M.D.B.& M.

Notes: Downstream: cattail (*Typha* sp.) across channel; willow herb (*Epilobium ciliatum* var. *ciliatum*); thistle (*Cirsium* sp.); extensive cattail wetland downstream; willow (*Salix* sp.); fig (*Ficus carica*) in side channel. Upstream: some cattail (*Typha* sp.); one fig tree (*Ficus carica*); California sunflower (*Helianthus annuus*); willow herb (*Epilobium ciliatum* var. *ciliatum*).

* White-crowned sparrow (*Zonotrichia atricapilla*)

Date: October 2, 1995

Milepost # 9.07



Upstream

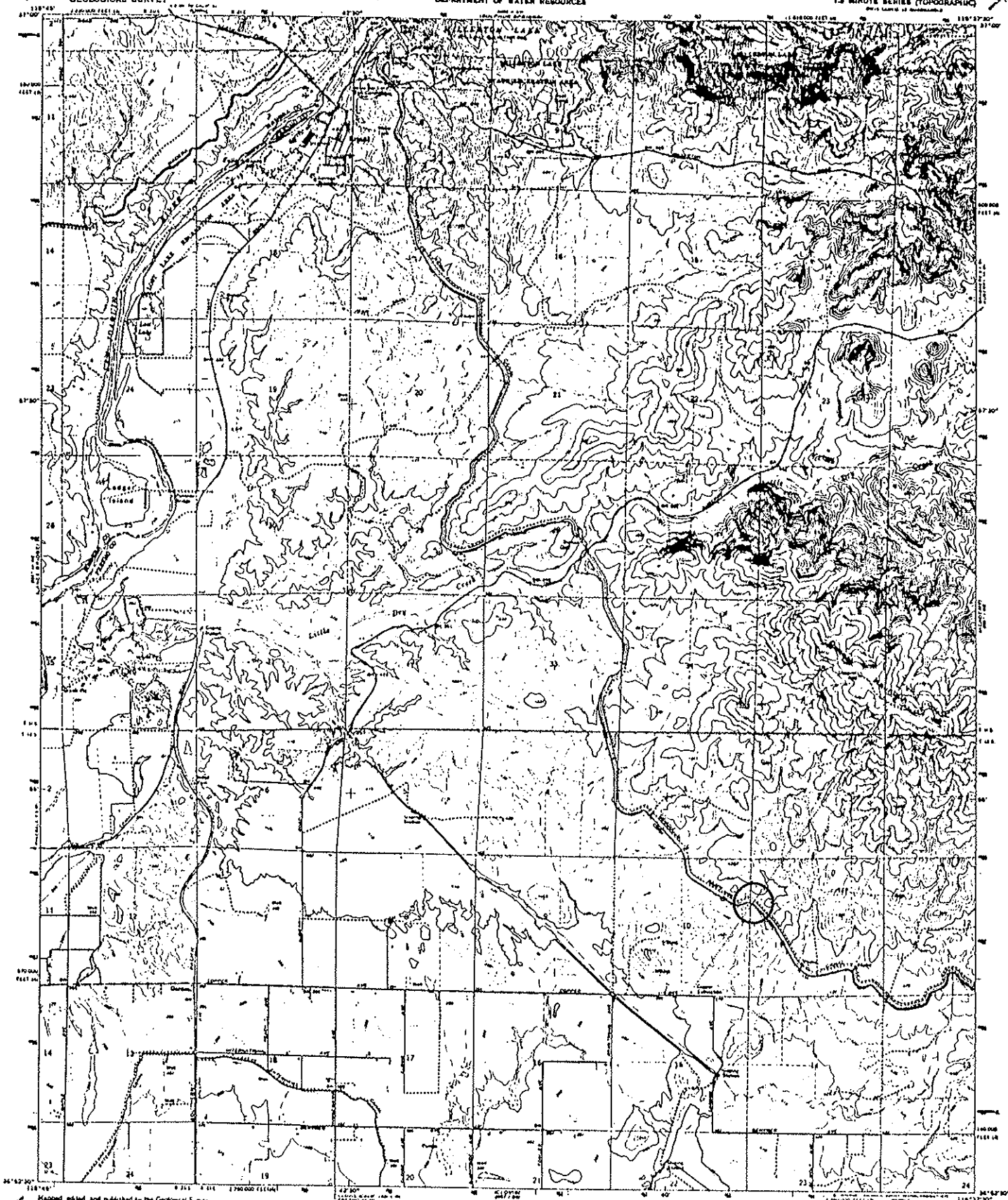


Downstream

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
1.5 MINUTE SERIES (TOPOGRAPHIC)
First Edition of Quadrangle



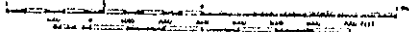
Mapped, edited, and published by the Geological Survey

Control by U.S.G.S., U.S.C.G.S. and U.S. Bureau of Reclamation
Topography by photogrammetry, based on aerial
photographs taken 1943. First Edition 1964.

Physical features: 1977 North American datum
100-foot base of the datum on California vertical datum,
pages 8 and 9
1:50,000-scale Universal Transverse Mercator grid, with
zone 11, shown on page 8

Five red dashed lines indicate special flood zones
whose vertical base lines are not shown because of
insufficient data

Areas covered by dashed light blue pattern
are subject to liquefaction



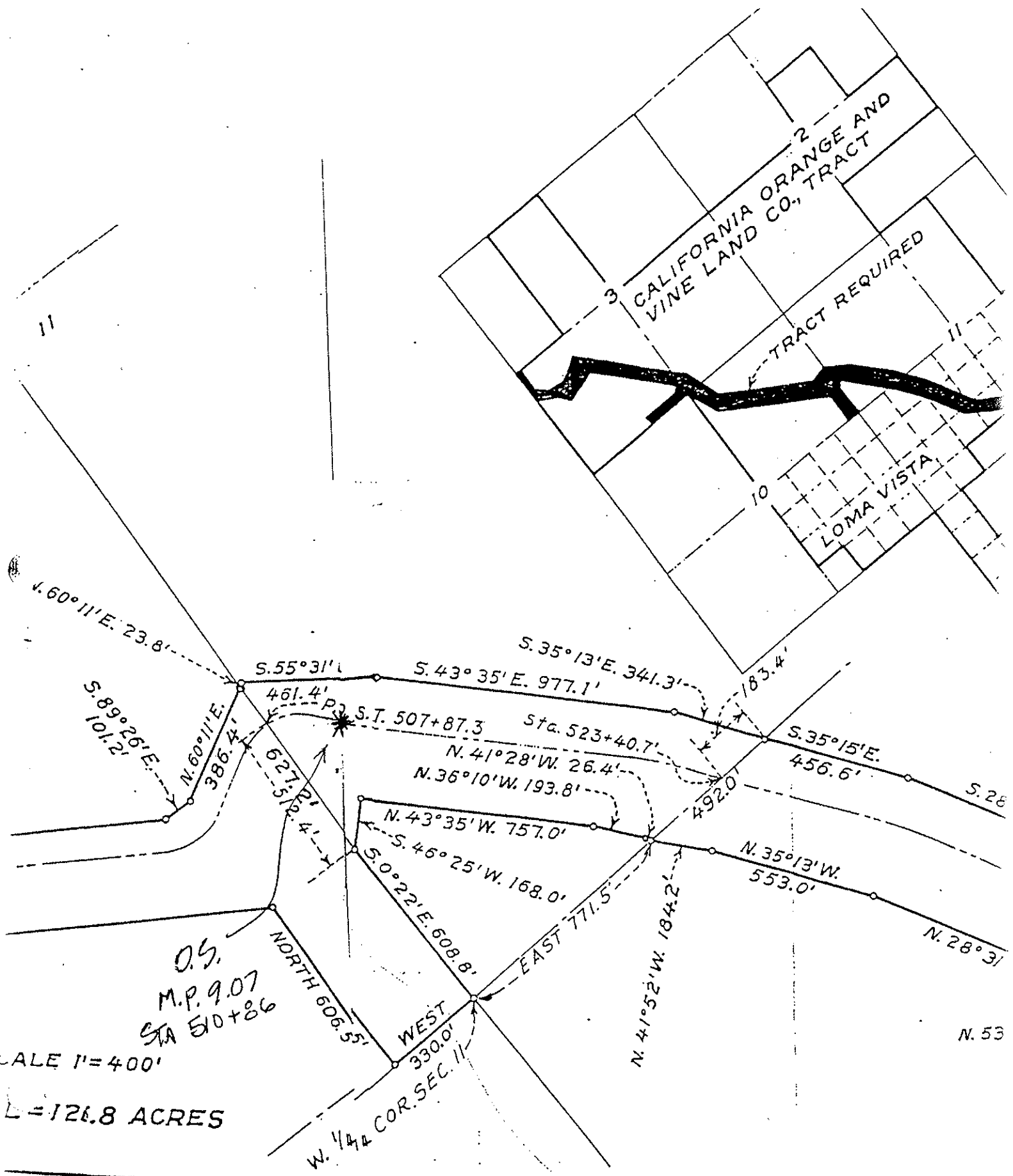
CONTOUR INTERVAL, IN FEET
DOTTED LINES REPRESENT SPACED CONTOURS
NATIONAL GEODESIC DATUM, DATUM OF 1929

ROAD QUALIFICATION	
Highway	Light Gray
Unimproved Rd.	Dotted



THIS MAP CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, CENTER FOR MAPPING, 3055 M. STREET, WASHINGTON, D.C. 20002
A POLAR PROJECTION TOPOGRAPHIC MAP AND SYMBOLS IS AVAILABLE ON REQUEST

FRIANT, CALIF.
FIRST EDITION OF QUADRANGLE
1:50,000 S - W 11933 6/73
1964
MAY 1967 1:50 - JANUARY 1966



O.S.
M.P. 9.07
STA 510+86

SCALE 1"=400'
L=126.8 ACRES

2 CALIFORNIA ORANGE AND VINE LAND CO. TRACT

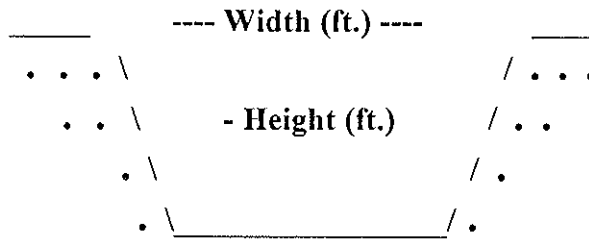
TRACT REQUIRED

LOMA VISTA

W. 1/4 COR. SEC. 11

N. 53

Milepost # 9.65



Type of Structure: Siphon _____ Toe-Drain _____ Underdrain _____ Other X
 Wash over chute.

Width (ft.): 61'

Type of Maintenance: Chemical application.

Height (ft.): 15'

Length (ft.): *INCROW

Road (L or R):

% Vegetation:

Habitat Type: Downstream: herbaceous (weedy) wetland. Upstream: upland; non-native grassland

Trees:

Shrubs:

Herbaceous: X

Quadrangle Map Name: Friant

County: Fresno

SW1/4, Section 11, T. 12S, R. 21E, M.D.B.& M.

Notes: Downstream: rush (*Juncus* sp.); cocklebur (*Xanthium strumarium*); mare's tail (*Conyza canadensis*); willow herb (*Epilobium ciliatum* var. *ciliatum*).
 Upstream: non-native grassland with cocklebur (*Xanthium strumarium*).

*Inside canal right-of-way.

Date: October 2, 1995

Milepost # 9.65



Upstream

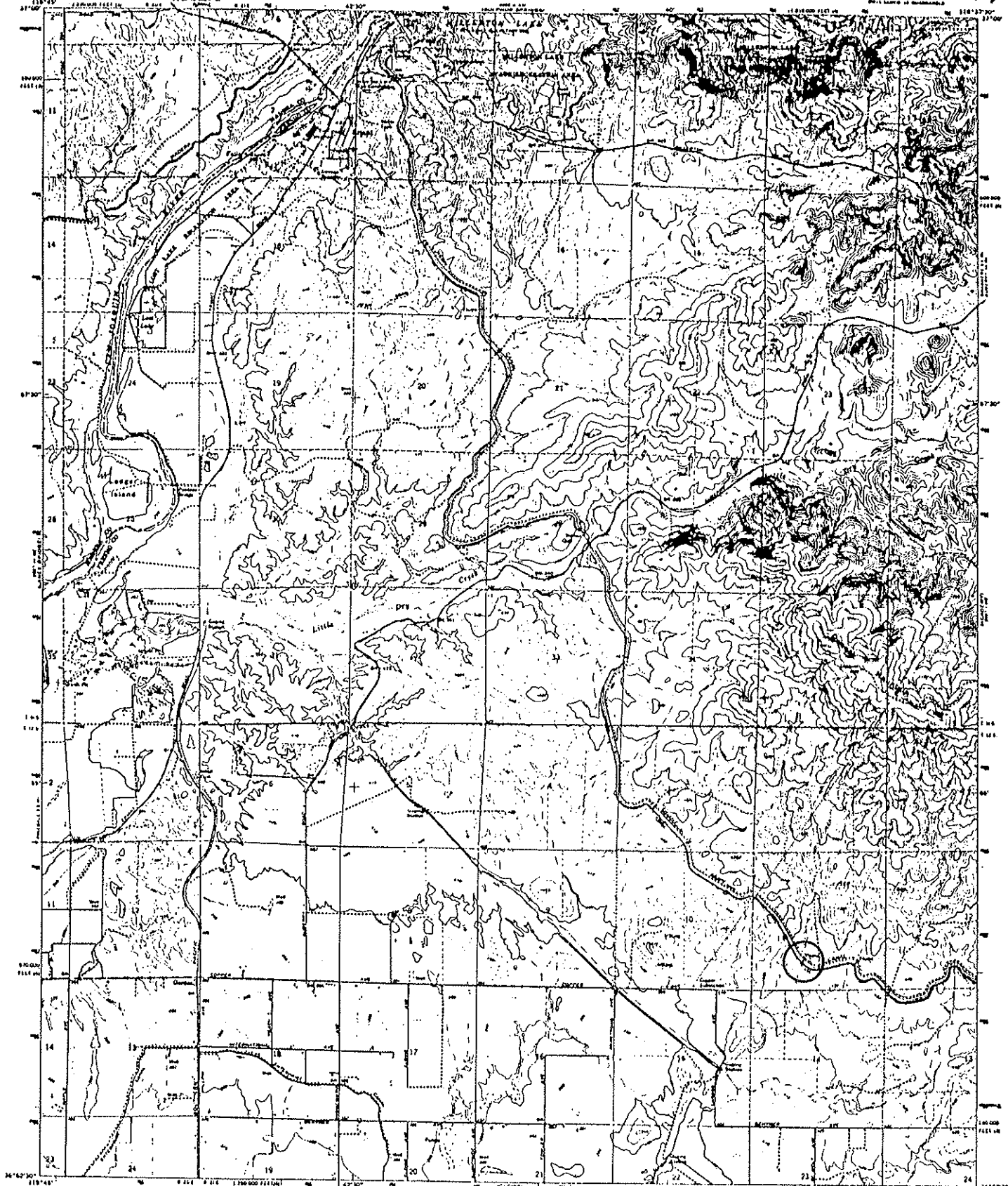


Downstream

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

FRIANT QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
First Issue of September 1964

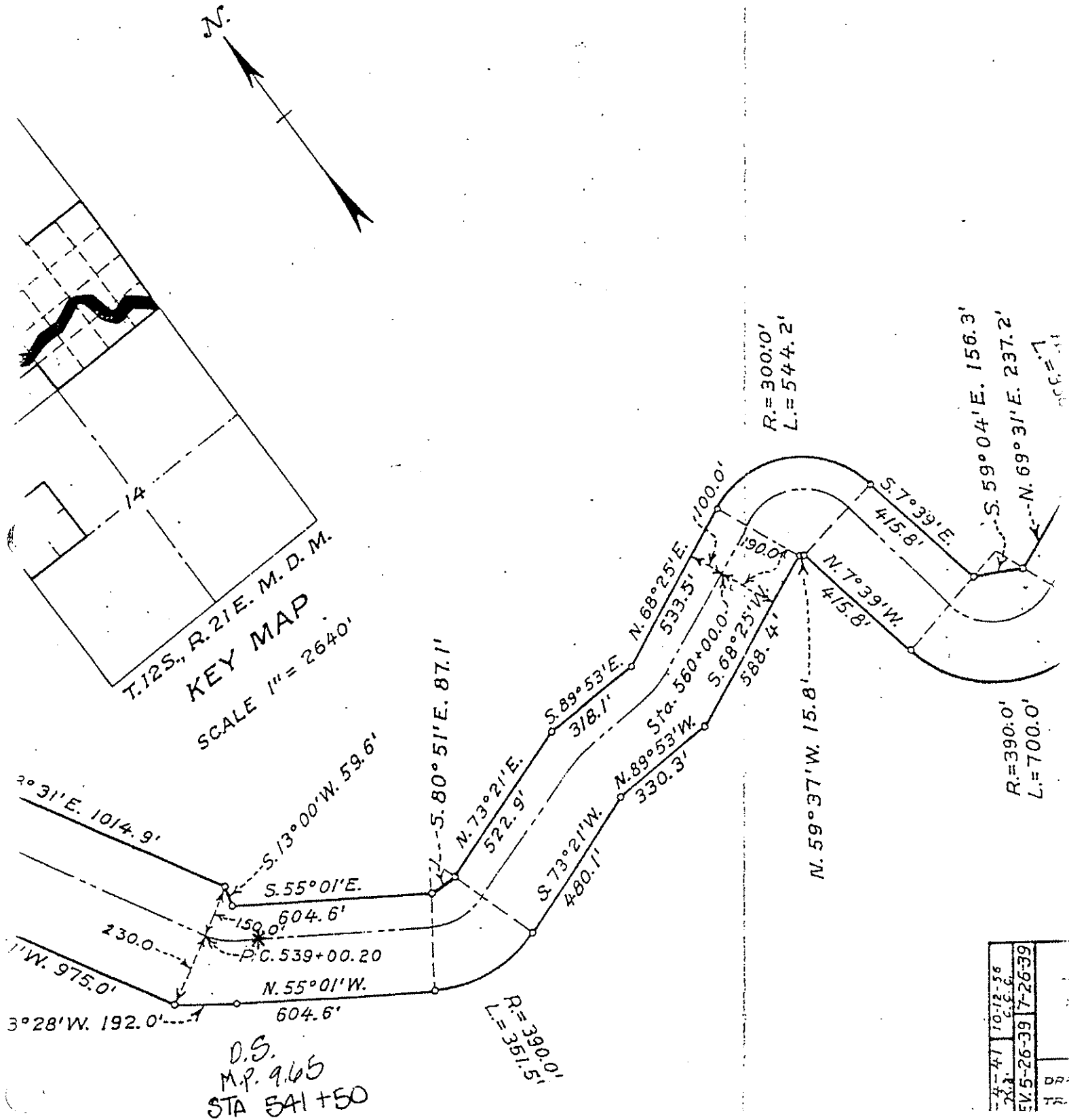


Map made, edited, and published by the Geological Survey
Control by USGS, USC&GS and U.S. Bureau of Reclamation
Topography by photogrammetry; contours from aerial
photography taken 1942. First checked 1964
Polyconic projection. 1927 North American datum
100,000-foot grid based on Standard Meridian system,
zone 11, and 2
1000-meter Universal Transverse Mercator grid ticks,
zone 11, shown in blue
Five red dashed lines indicate selected fence lines
White vertical lines show one-mile sections of
uncontoured areas
Areas covered by former agricultural patterns
are shown by dashed lines

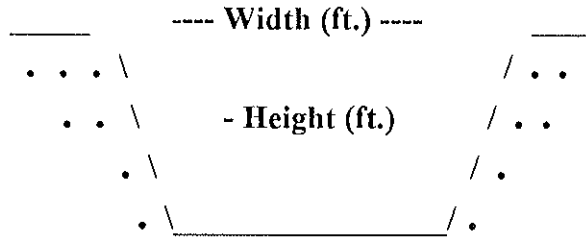
CONTOUR INTERVAL 20 FEET
DOTTED LINES, NEARBY, SHOW CONTOURS
NATIONAL MEAN SEA LEVEL DATUM OF 1929

THIS MAP COMPLETES WITH NATIONAL MAP RECLASSEMENT STRATEGIES
FOR SALE BY U.S. GEOLOGICAL SURVEY, DEPT. OF THE INTERIOR, WASHINGTON, D.C. 20508
A FOLDER CONTAINING TOPOGRAPHIC MAPS AND STRATA IS AVAILABLE ON REQUEST

RIANT, CALIF.
First Issue of September
1964
1:62,500 - 1:62,500 7.5
1964
GPO 5007-2 (9-64) 8888 1006



Milepost # 11.10



Type of Structure: Siphon Toe-Drain Underdrain Other

Width (ft.): 154'

Type of Maintenance: Chemical application; drag line; excavator.

Height (ft.): 20'

Length (ft.): 6,916'

Road (L or R): R

% Vegetation: 30% mare's tail

Habitat Type: Downstream: emergent (*Coryza canadensis*) wetland. Upstream: upland; non-native grassland.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Academy

County: Fresno

SE1/4, Section 12, T. 12S, R. 21E, M.D.B.& M.

Notes: Downstream: cattail (*Typha* sp.); willow herb (*Epilobium ciliatum* var. *ciliatum*); thistle (*Cirsium* sp.).

*2 fig trees (*Ficus carica*).

Date: October 2, 1995

Milepost # 11.10



Upstream

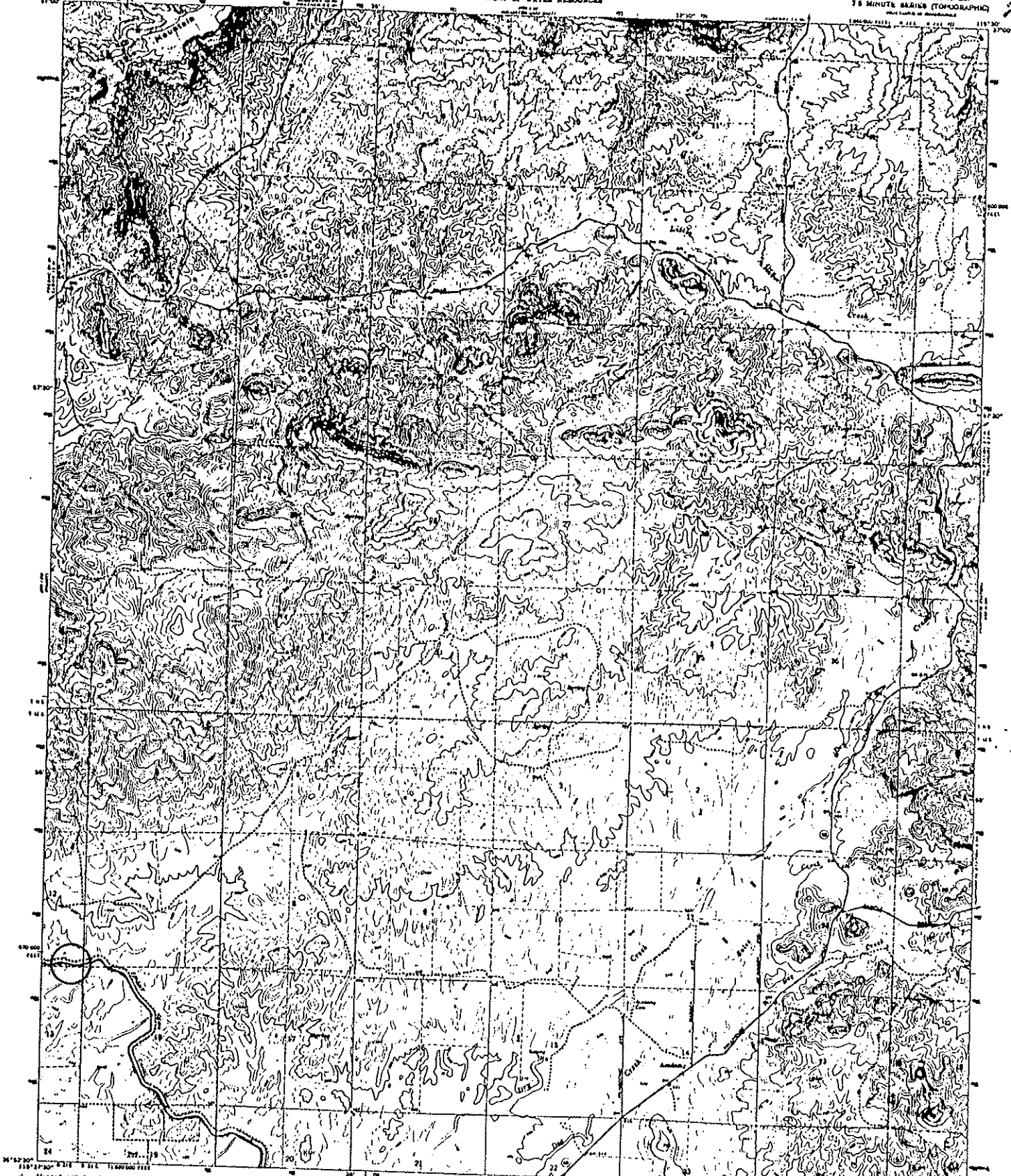


Downstream

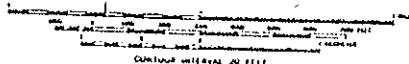
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

ACADEMY QUADRANGLE
CALIFORNIA - FRIKING CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Revised, edited, and published by the Geological Survey
Compiled by USGS and USGS
Photography by photogrammetric methods from aerial
photographs taken 1942 (and checked 1964)
Elevation map dates 1964
Projection: pseudocylindrical (North American datum)
Datum: North American datum
Scale: 1:50,000
Map projection: Universal Transverse Mercator, zone 10
North datum: North American datum
Contour interval: 20 feet
Banded lines: 10-foot contour interval
National Geodetic Vertical Datum of 1929
Contour interval: 20 feet
Banded lines: 10-foot contour interval
National Geodetic Vertical Datum of 1929

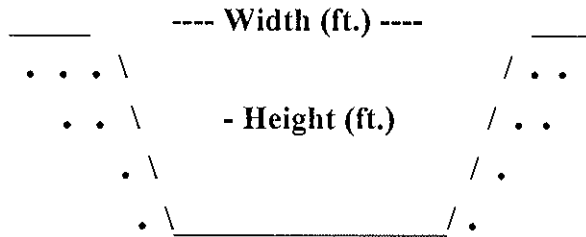


ROAD CLASSIFICATION
Light Gray
Unimproved or
Dotted lines

FOR SALE BY THE GEOLOGICAL SURVEY LEANING, COGNAC, WAZZ, OR BELTON, VIRGINIA 22092
A POLAR PROJECTION REFERENCE MAP AND TYPING IS AVAILABLE ON REQUEST

ACADEMY, CALIF.
PHOTOGRAPHY: 1942
DATE: 1964
PHOTOGRAPHY: 1942
DATE: 1964

Milepost # 11.54



Type of Structure: Siphon _____ Toe-Drain _____ Underdrain _____ Other X

Width (ft.): 35'

Type of Maintenance: Chemical application; drag line; excavator.

Height (ft.): 15'

Length (ft.): See Milepost 11.10 for total. (2,184')

Road (L or R): R

% Vegetation: 25% weeds, 25% bare
50% cattails

Habitat Type: Downstream: emergent wetland. Upstream: non-native grassland.

Trees:

Shrubs:

Herbaceous: X

Quadrangle Map Name: Academy

County: Fresno

SW1/4, Section 7, T. 12S, R. 22E, M.D.B.& M.

Notes: Cattail (*Typha* sp.)

*See 11.8 for diagram.

Date: October 2, 1995

Milepost # 11.54



Upstream

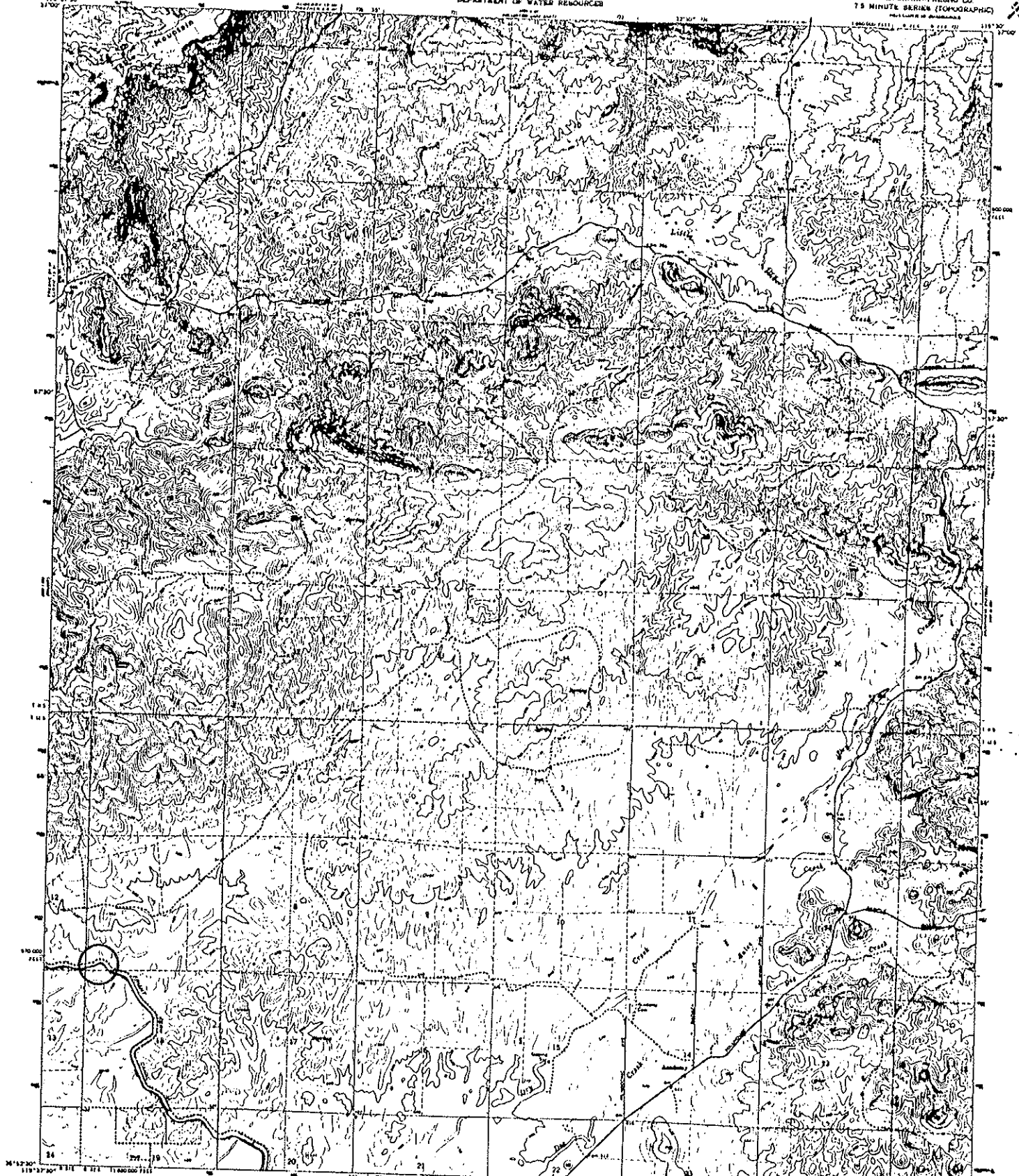


Downstream

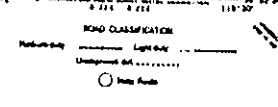
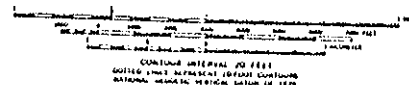
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

ACADEMY QUADRANGLE
CALIFORNIA - FRESNO CO
7.5 MINUTE SERIES (TOPOGRAPHIC)



Map, compiled, edited, and published by the Geological Survey
Control by USGS and WSC&B
Compiled by photogrammetric methods from aerial
photography taken 1947. First edition 1948.
Supersedes map dated 1944.
Projection, pseudo-cyl. 1927 North American datum.
Elevation based on datum of Los Angeles vertical system, zone 4
(1928 mean universal time; mean sea level, zone 1), unless
otherwise noted.
Five-foot contour lines indicate selected base data.
Contour lines are not shown between 100-foot and 200-foot
elevation. Areas covered by dashed light blue pattern
are subject to inundation by floodwaters.
First publication 1944.
No other contours or features changed since then.



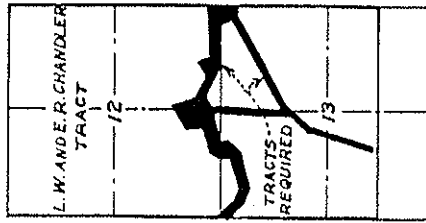
THIS MAP COMPLETES THE NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A POLAR PROJECTION, MERCATOR, AND UTM SYSTEMS IS AVAILABLE ON REQUEST

ACADEMY, CALIF.
FIRST EDITION 1948
#1412 B - #1119 107/75
1944
PHOTOGRAPHIC (1947)
AND 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025

2170-5

Total 72.9 Acres Unit No. 15

Milepost # 11.54

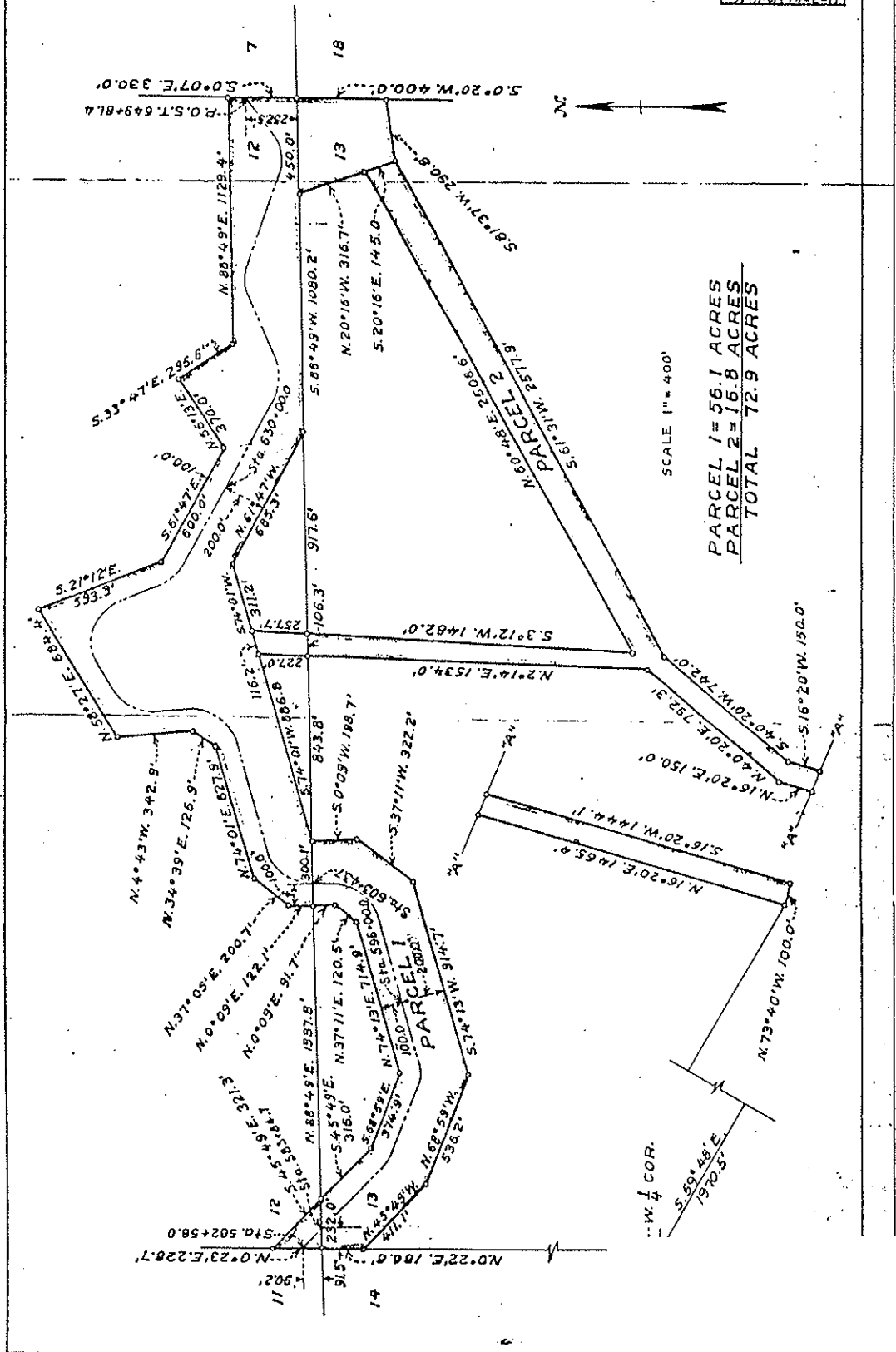


T. 12 S., R. 21 E. M. D. M.

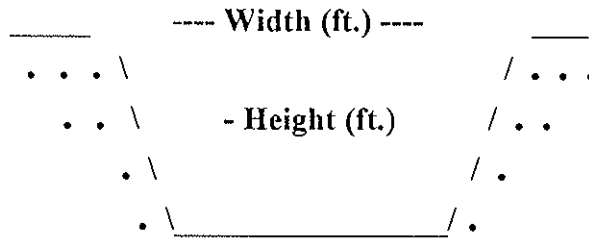
KEY MAP

SCALE 1" = 2640'

11	1671-16	1671-16
12	1671-17	1671-17
13	1671-18	1671-18
14	1671-19	1671-19
DEPARTMENT OF THE CENTRAL VALLEY DISTRICT FRIANT-KERN CANAL L. W. ANDER, C.H. DRAWN BY: S.E. ... SUBMITTED TRACED BY: L.E. ... RECOMMEND CHECKED BY: ... APPROVED F71A FRIANT, CALIF. 70		



Milepost # 11.80



Type of Structure: Siphon Toe-Drain Underdrain Other

Width (ft.): 123'

Type of Maintenance: Chemical application; drag line; excavator.

Height (ft.): 33'

Length (ft.): 1,667'

Road (L or R): L

% Vegetation: 10% (sm.) mare's tail
10% (lg.) fig trees
80 % bare

Habitat Type: Downstream: emergent wetland. Upstream: non-native grassland.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Academy

County: Fresno

NE1/4, Section 18, T. 12S, R. 22E, M.D.B.& M.

Notes: Road access mare's tail (*Conyza canadensis*) growing downstream near wing walls. Also some willow (*Salix* sp.) and cottonwood trees (*Populus fremontii*). California sunflower (*Helianthus annuus*); monkey flower (*Mimulus guttatus*); knot weed (*Polygonum* sp.); cattail (*Typha* sp.).

Date: October 2, 1995

Milepost # 11.80



Upstream

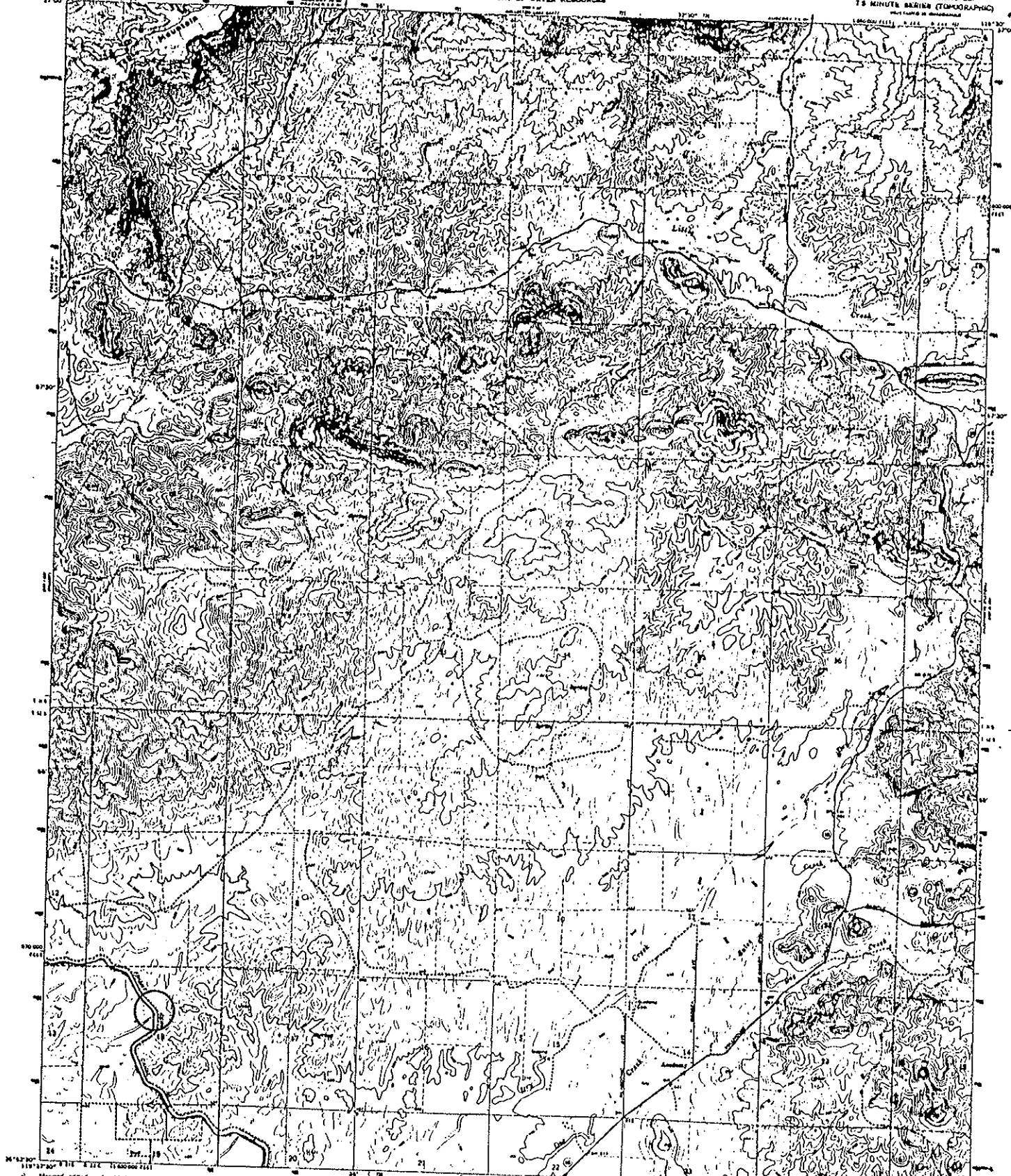


Downstream

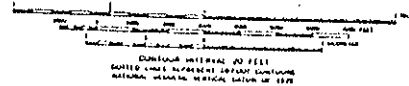
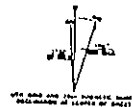
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

ACADEMY QUADRANGLE
CALIFORNIA-FRESNO CO
7.5 MINUTE SERIES (TOPOGRAPHIC)



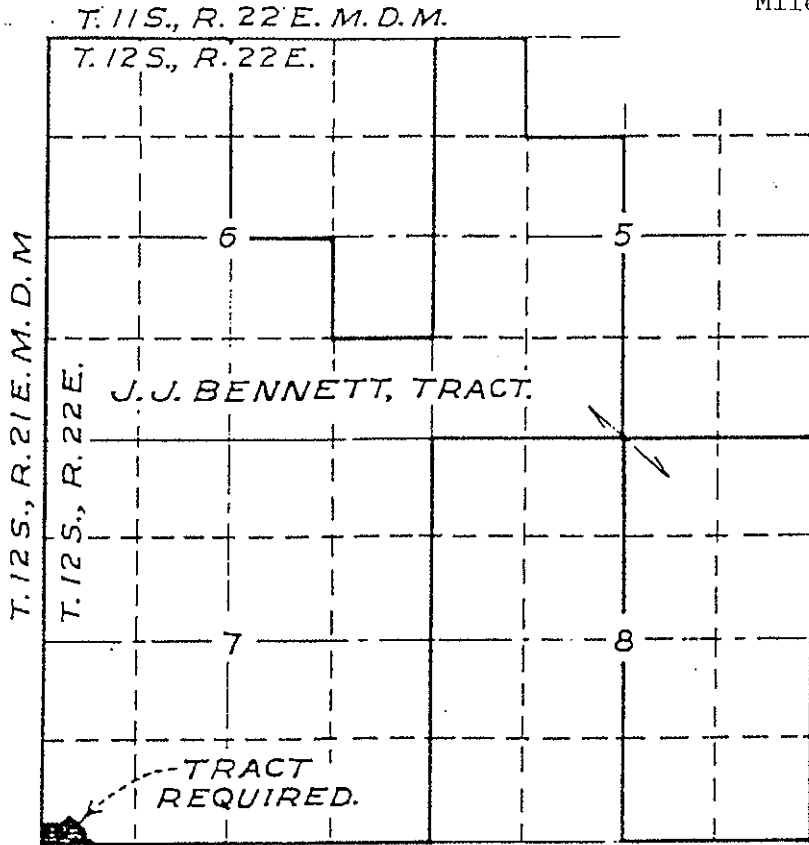
Mapped, edited, and published by the Geological Survey
Control by USGS and USGS/CAS
Topography by photogrammetry is derived from aerial
photographs taken 1947 and 1948
Horizontal map scale 1:62,500
Projection, projection 1927 North American datum
10,000-foot grid based on Louisiana meridian, zone 1
1883 under Universal Transverse Mercator grid scale,
zone 11, datum to NAD
This map should not be used for navigation
Control points are indicated because of insufficient data
Areas covered by shaded topographic sheets
are shown in contour lines
For photomaps see 1:25,000
The shape factors in design photos observed



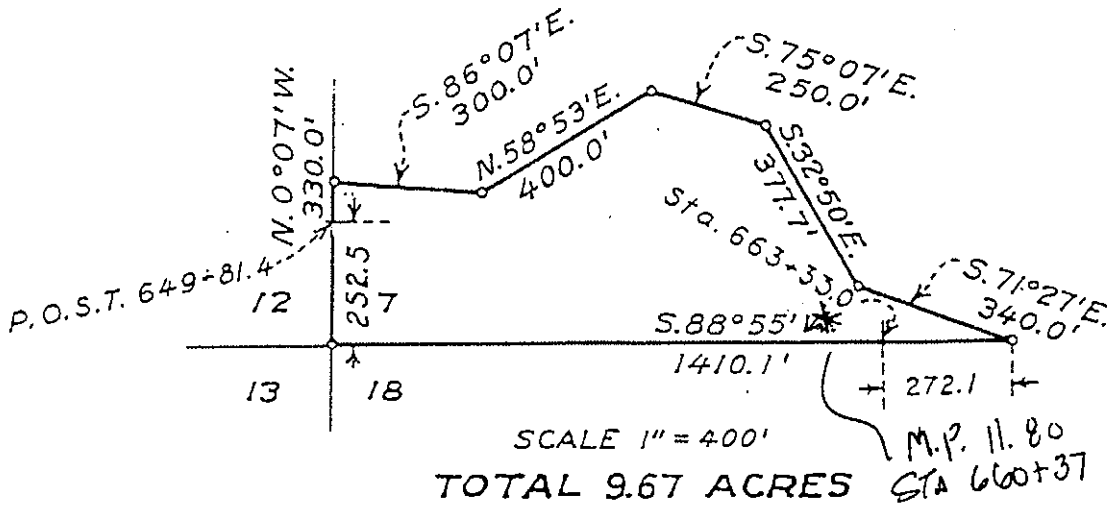
ROAD CLASSIFICATION
Light road
Unimproved road
Road route

THIS MAP COMPLETES WITH NATIONAL MAP SECURITY EXCHANGES
FOR SALE BY U.S. GEOLOGICAL SURVEY, WATER RESOURCES DIVISION, RESTON, VIRGINIA 20192
A POLAR PROJECTION, GEODESIC MAP, AND SYMBOLS IN ACCORDANCE WITH USGS 1:250,000

ACADEMY, CALIF.
PHOTOGRAPHED BY GEODESIC SURVEY
64423-1-11/1950/13
1966
PHOTOMOUNTED 1972
AND PUBLISHED BY THE GEOLOGICAL SURVEY



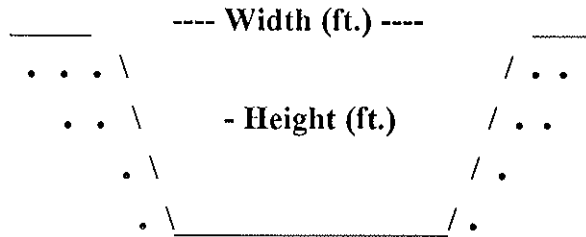
KEY MAP
SCALE 1" = 2640'



SCALE 1" = 400'
TOTAL 9.67 ACRES
M.P. 11.80
STA 660+37

REV 9-14-56 C.C.C.	REV 3-1-39 11-3-41 73	DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION CENTRAL VALLEY PROJECT-CALIFORNIA FRIANT DIVISION FRIANT-KERN CANAL RIGHT OF WAY J. J. BENNETT,	
	DRAWN: S. B. R.		SUBMITTED: <i>[Signature]</i>
	TRACED: M. L. E.		RECOMMENDED: <i>[Signature]</i>
	CHECKED: <i>[Signature]</i>		
F72A			

Milepost # 12.38



Type of Structure: Siphon Toe-Drain Underdrain Other

Width (ft.): 61'

Type of Maintenance: Chemical application; drag line; excavator.

Height (ft.): 20'

Length (ft.): 3,036'

Road (L or R): R

% Vegetation: 100% cattails

Habitat Type: Downstream: emergent wetland. Upstream: non-native grassland.

Trees:

Shrubs:

Herbaceous: X

Quadrangle Map Name: Academy

County: Fresno

SW1/4, Section 18, T. 12S, R. 22E, M.D.B.& M.

Notes: Downstream: cattail (*Typha* sp.) with a little knotweed (*Polygonum* sp.) and cocklebur (*Xanthium strumarium*). Upstream: curly dock (*Rumex crispus*); Bermuda grass (*Cynodon dactylon*); rush (*Juncus* sp.) and some cattail (*Typha* sp.).

Date: October 2, 1995

Milepost # 12.38



Upstream



Downstream

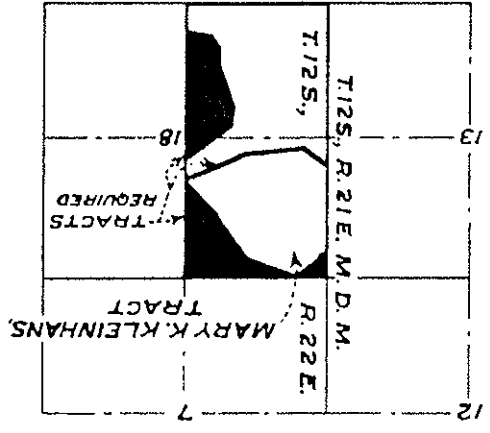
2171-2

UNIT N 17

Milepost # 12.38

SCALE 1" = 2640'

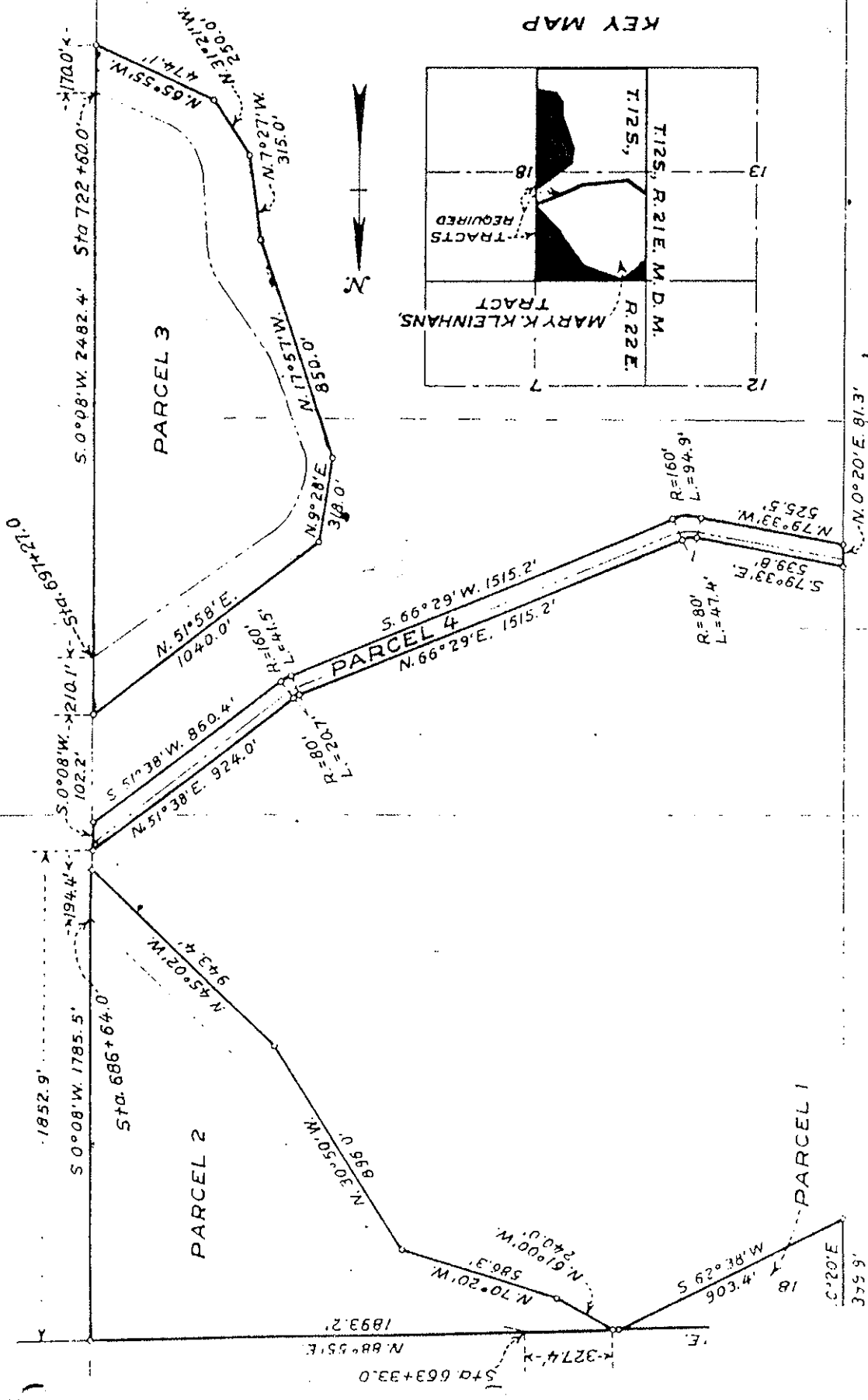
KEY MAP



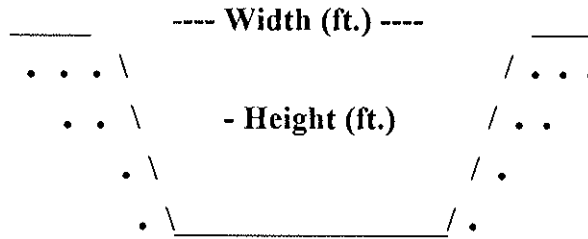
8-2-39	8-2-39	HEV 3-6-39	1-13-39
DRAWN J.L.S. SUBMITTED:		TRACED M.L.E. RECOMMENDED:	
CHECKED: <i>[Signature]</i> APPROVED:		F73A	
FRYANT, CALIF. OCT. 8.			

FOR FIELD USE

PARCEL 1	3.7 ACRES
PARCEL 2	32.9 ACRES
PARCEL 3	33.4 ACRES
PARCEL 4	5.5 ACRES
TOTAL	75.5 ACRES



Milepost # 13.87



Type of Structure: Siphon _____ Toe-Drain X Underdrain X Other _____

Width (ft.): 139'

Type of Maintenance: Chemical application; drag line; excavator.

Height (ft.): 16'

Length (ft.): 4,804'

Road (L or R): No road

% Vegetation: 100% cattails

Habitat Type: Downstream: emergent wetland. Upstream: non-native grassland.

Trees:

Shrubs:

Herbaceous: X

Quad. Angle Map Name: Academy

County: Fresno

NW1/4, Sections 19 and 20, T. 12S, R. 22E, M.D.B. & M.

Notes: Mostly cattails (*Typha* sp.) with knotweed (*Polygonum* sp.) at outlet. Channel accessible but there is no road.

Date: October 2, 1995

Milepost # 13.87



Upstream

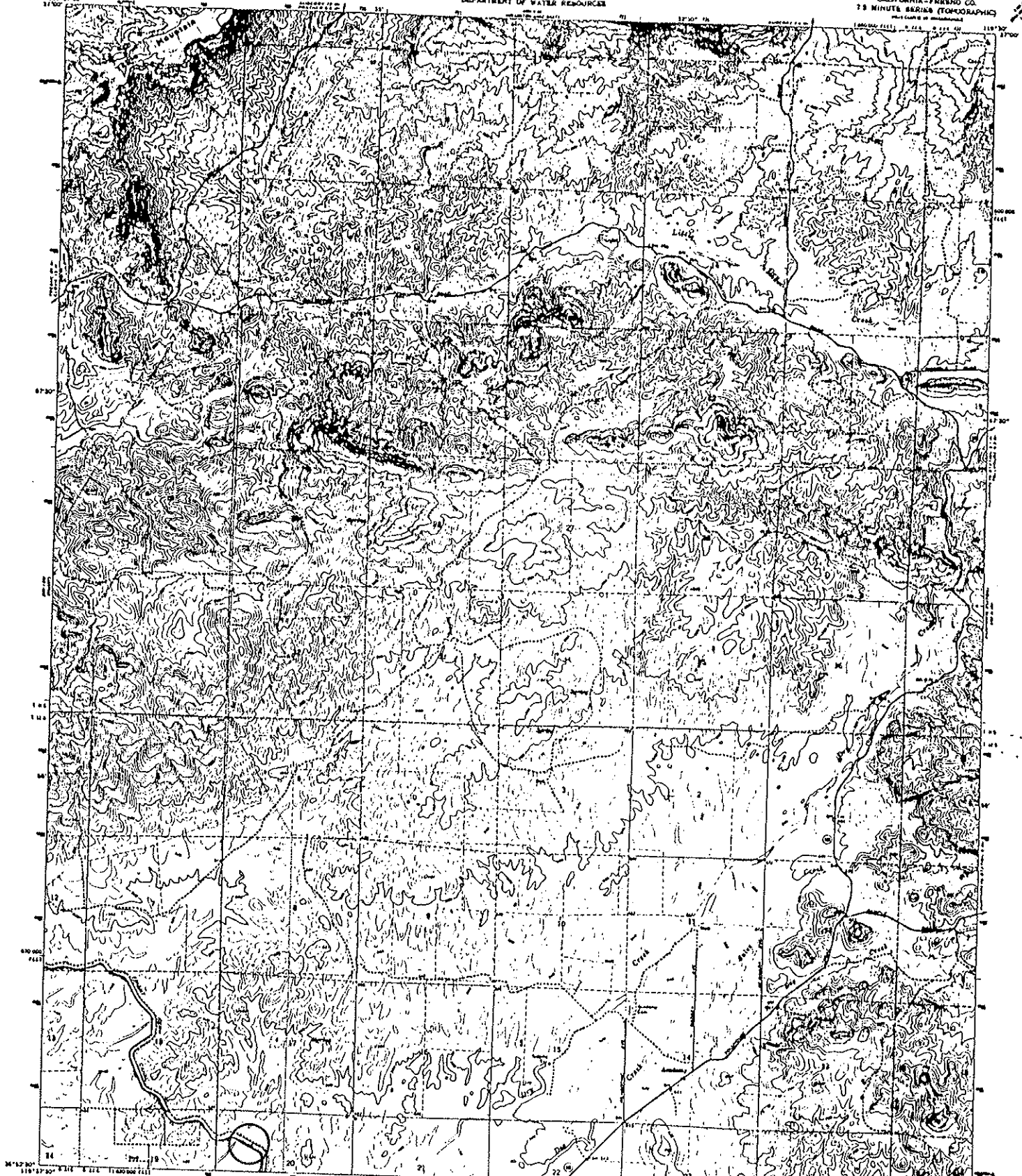


Downstream

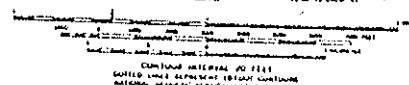
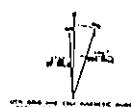
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

ACADEMY QUADRANGLE
CALIFORNIA-FRESNO CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey
Controlled by USGS and USGS/USDA
Topography by photogrammetric methods from aerial
photographs taken 1947 (and updated 1964)
Hydrography from data (1946)
Trigonometry, 1927 North American datum
Elevations based on California vertical datum, zero at
1929 mean low water, San Francisco Bay, San Francisco
Harbor, 41° 30' N, 122° 25' W
Contour lines are solidly spaced from 200
feet to 1000 feet and broken between 1000 and 2000
feet
Mount elevations by double spirit-level methods
are marked in unbroken figures
Map photography used 1972
No major changes in drainage channels observed

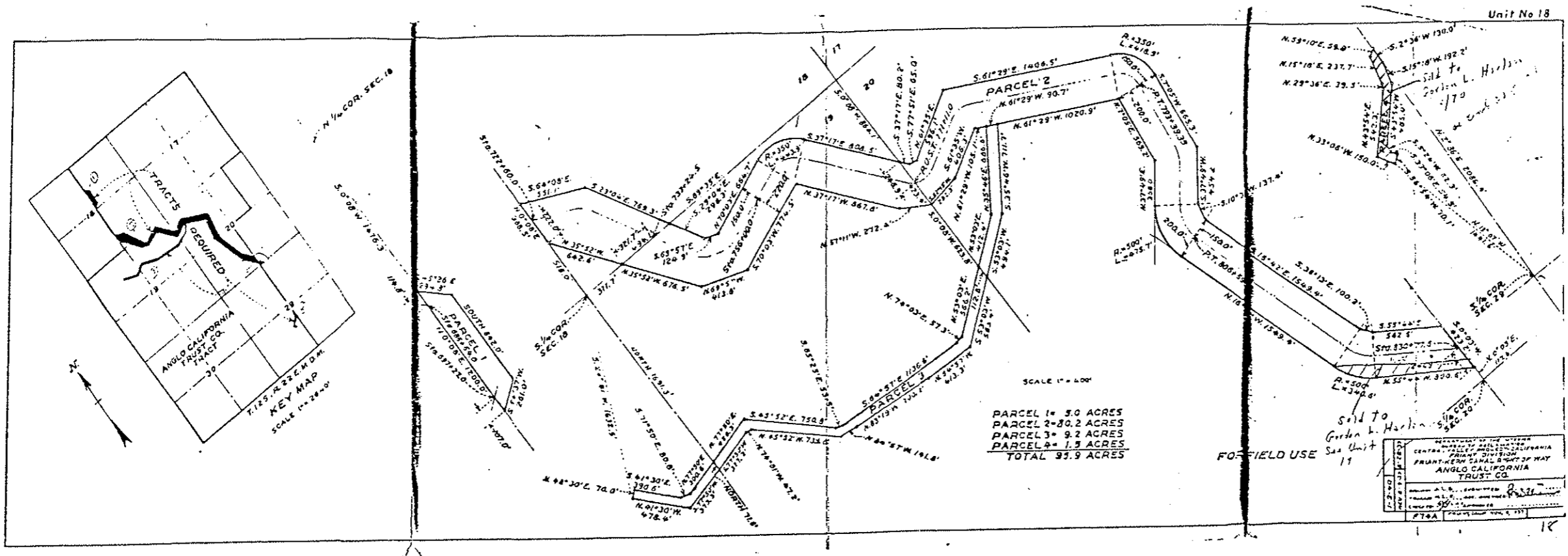


ROAD CLASSIFICATION
Main Road Light Gray
Unimproved Road Dotted
Some Roads Circle

THIS MAP COMPLETES THE NATIONAL MAP ACQUISITION STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, SCIENTIFIC SERVICES DIVISION, RESTON, VIRGINIA 22092
A FOLDER OF RELATED TOPOGRAPHIC MAPS AND STANDARDS IS AVAILABLE ON REQUEST

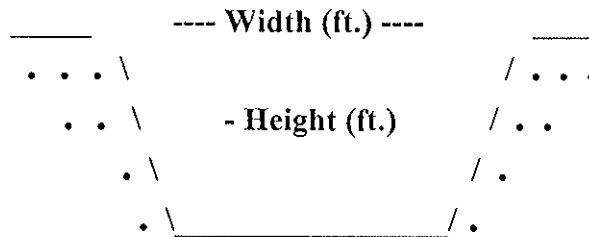
ACADEMY, CALIF.
PHOTOGRAPHIC SURVEY
1964
PHOTOGRAPHICALLY REPRODUCED
AND PRINTED IN THE U.S.A.

2171-3



Milepost # 14.57
"Big Dry Creek"

Milepost # 14.57
"Big Dry Creek"



Type of Structure: Siphon Toe-Drain _____ Underdrain _____ Other _____

Width (ft.): 139'

Type of Maintenance: Chemical application; drag line; excavator.

Height (ft.): 15'

Length (L or R): *INCROW

Road (L or R):

% Vegetation:

Habitat Type: Streamside riparian "dry".

Trees: X

Shrubs: X

Herbaceous: X

Quadrangle Map Name: Round Mountain County: Fresno

SW1/4, Section 20, T. 12S, R. 22E, M.D.B. & M.

Notes: Lots of cottonwood (*Populus fremontii*) and willow (*Salix* sp.) seedlings; cocklebur (*Xanthium strumarium*); California sunflower (*Helianthus annuus*); cattail (*Typha* sp.); Bermuda grass (*Cynodon dactylon*); some bulrush (*Scirpus* sp.).

*Inside canal right-of-way.

Date: October 2, 1995

Milepost # 14.57
"Big Dry Creek"



Upstream

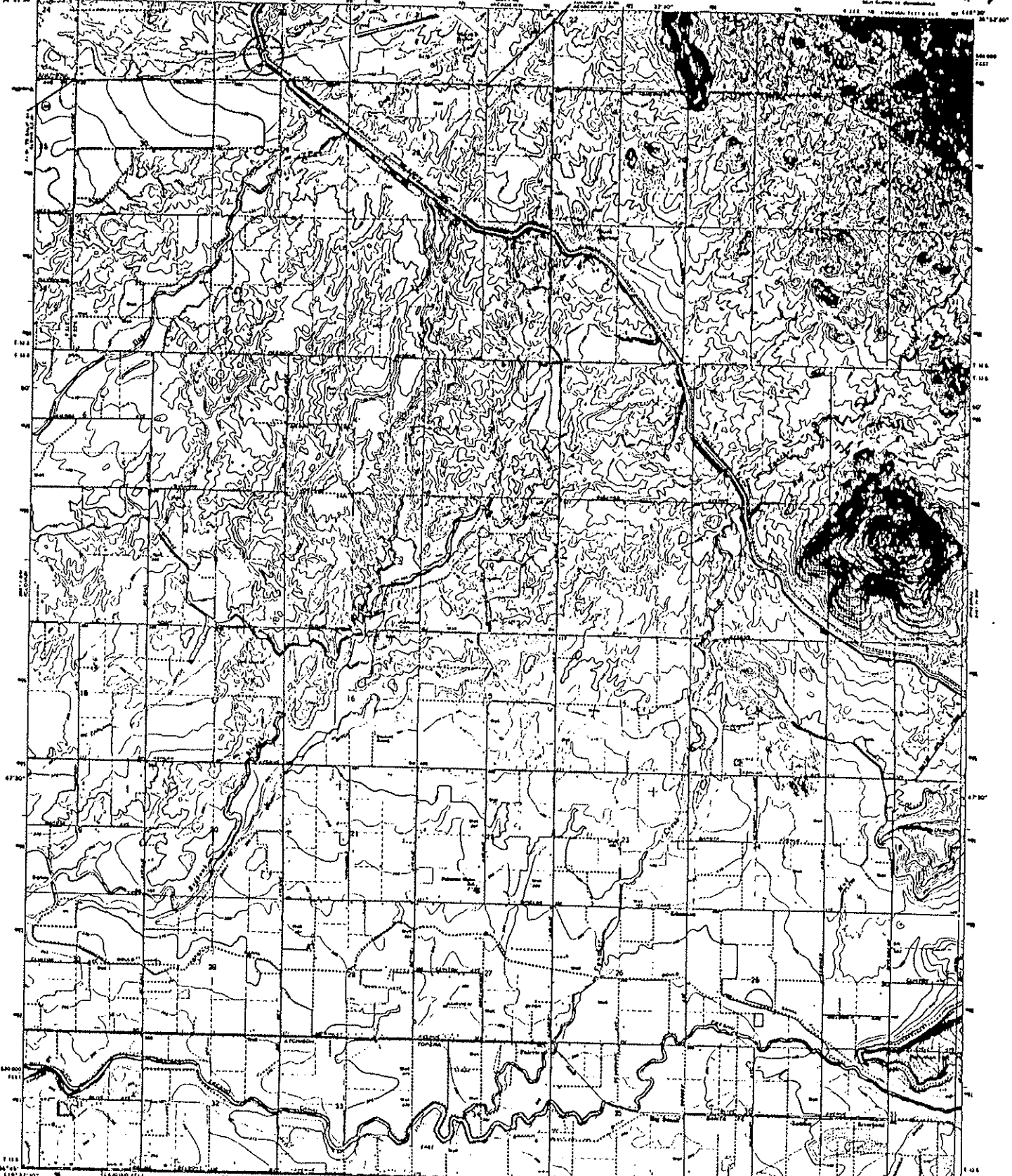


Downstream

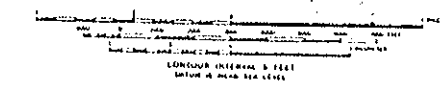
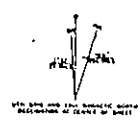
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

ROUND MOUNTAIN QUADRANGLE
CALIFORNIA - FRESNO CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
Scale 1:62,500



Map compiled and published by the Geological Survey
Control by USGS and USCGS
Topography by photogrammetric methods from aerial
photographs taken 1962-7 (plus checked 1964)
Publication from the 1977 North American datum
Elevations based on the Canadian vertical datum, plus a
5.685 meter (Dawson) adjustment (National grid list),
zone 18, datum in use
Five red dashed lines indicate selected fence lines
Areas covered by dashed light blue pattern
are subject to landward inundation



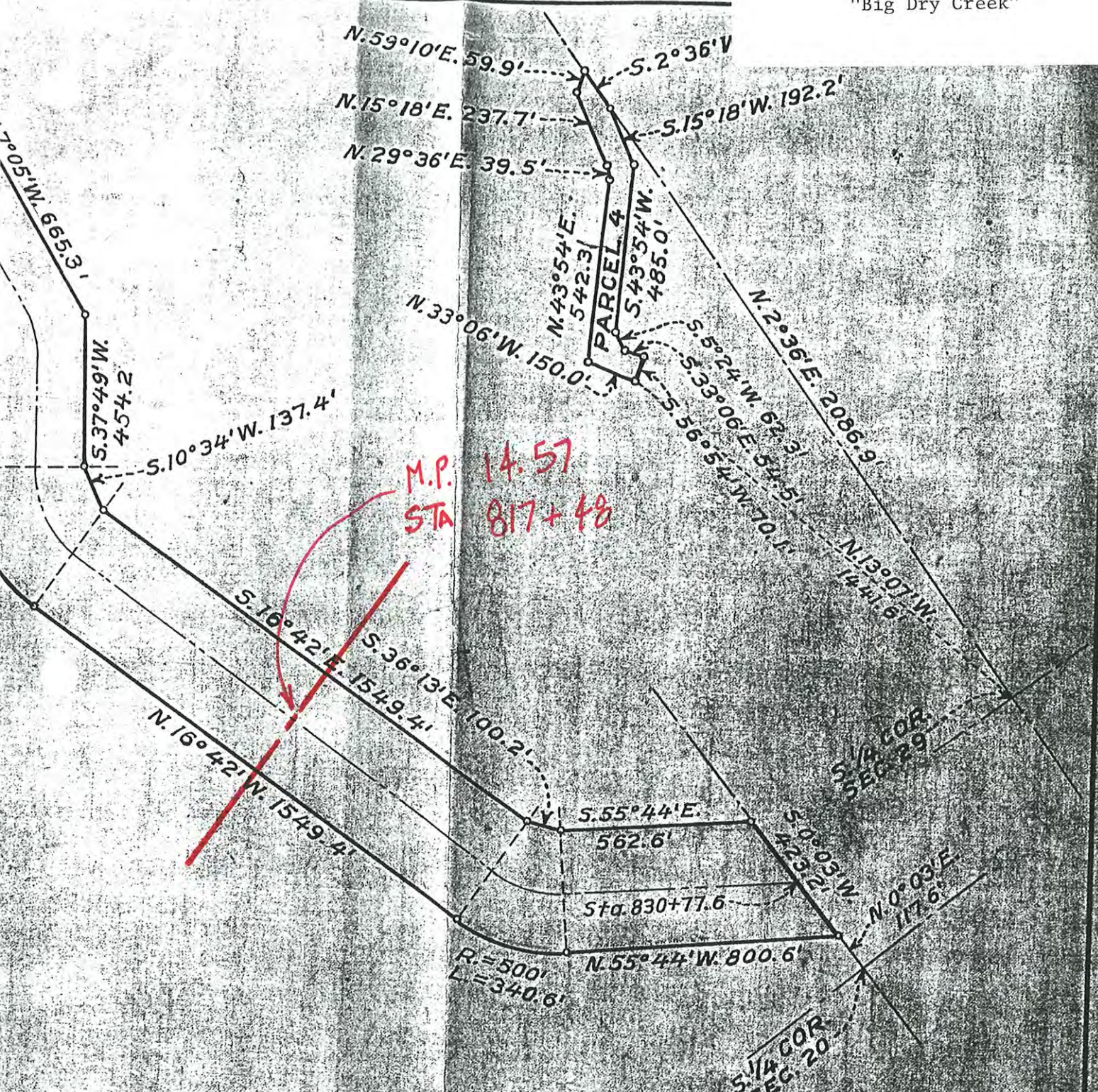
ROAD CLASSIFICATION

Highway	Light Rail
Unimproved Rd	Other Road

ROUND MOUNTAIN, CALIF.
M. S. LINDEN, JR., GEOPHYSICIST
A. B. BENTLEY, JR., PHOTOGRAPHER
1964
AND 1967 & 84 - SCALE 1:62,500

THIS MAP COMPLETES THE NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, CENTER FOR LAND-USE DATA, WASHINGTON, D. C. 20542
A TOPOGRAPHIC MAP OF CALIFORNIA, SERIES 7.5 MINUTE SERIES IS AVAILABLE ON REQUEST

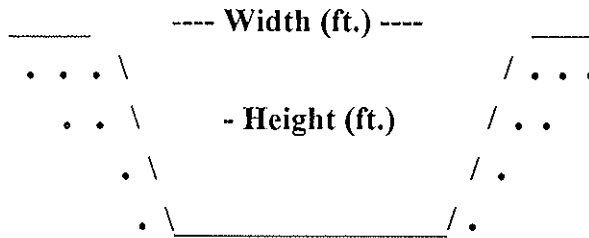
Milepost # 14.57
 "Big Dry Creek"



14-2-40	10-31-41	REV. 6-5-39	8-28-39	DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION CENTRAL VALLEY PROJECT CALIFORNIA FRIANT DIVISION FRIANT-KERN CANAL RIGHT OF WAY ANGLIC CALIFORNIA TRUST CO.
DRAWN BY L.S.		SUBMITTED BY		
CHECKED BY L.H.K.		RECOMMENDED BY		
F74A				FRIANT CALIF. NOV. 5, 1939

Milepost # 15.49
"Dog Creek"

Milepost # 15.49
"Dog Creek"



Type of Structure: Siphon Toe-Drain _____ Underdrain _____ Other _____

Width (ft.): 247'

Type of Maintenance: Chemical application; drag line; excavator.

Height (ft.): 35'

Length (ft.): 1,318'

Road (L or R): L & R

% Vegetation: 10% weeds
90% cattails

Habitat Type: Downstream: emergent wetland. Upstream: non-native grassland.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Round Mountain County: Fresno

NE1/4, Section 29, T. 12S, R. 22E, M.D.B.& M.

Notes: Bulrush (*Scirpus* sp.); cattail (*Typha* sp.); scattered willows (*Salix* sp.); knotweed (*Polygonum* sp.). Also 5 large willow trees.

Date: October 2, 1995

Milepost # 15.49
"Dog Creek"



Upstream

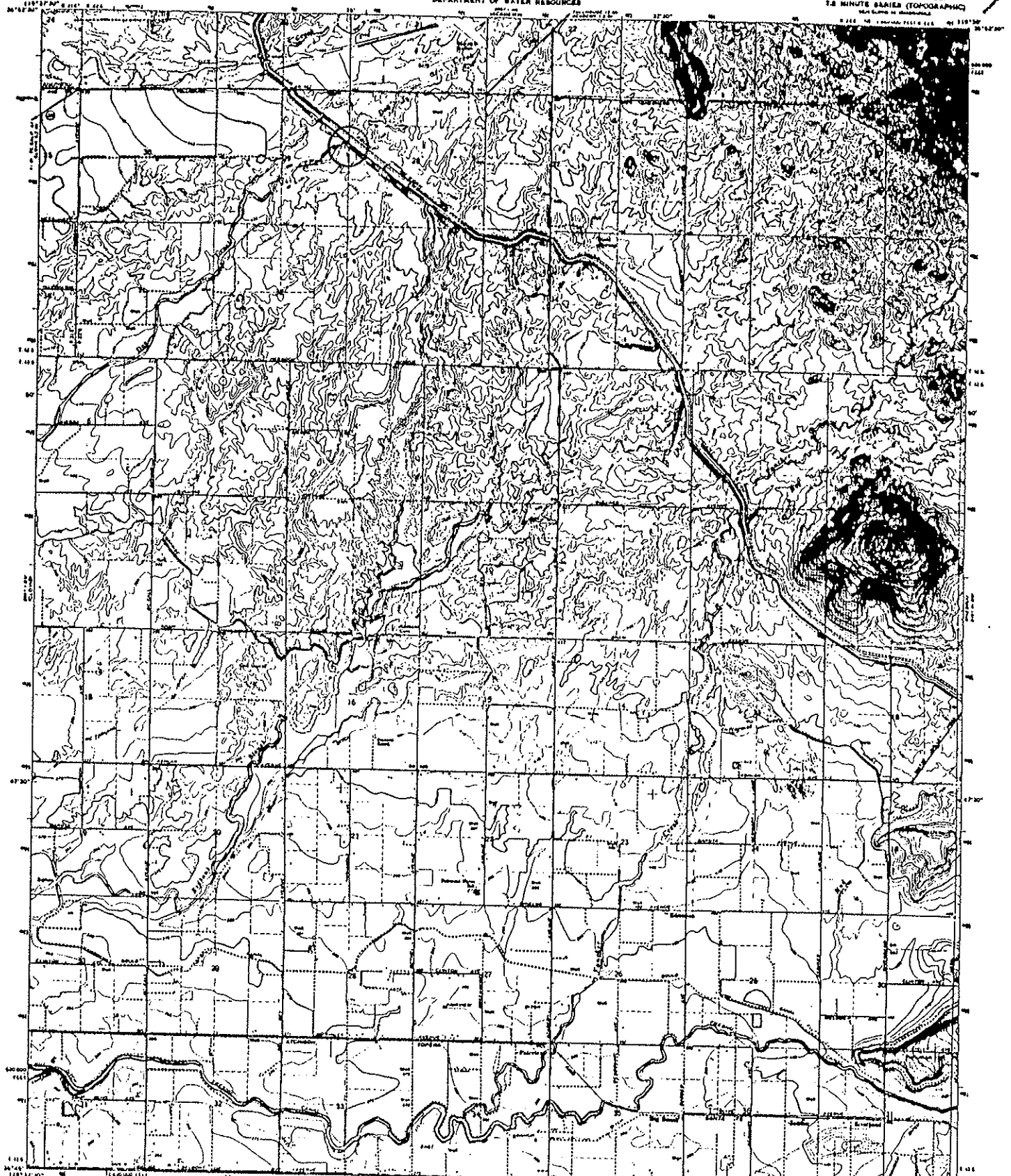


Downstream

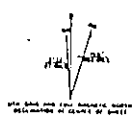
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

ROUND MOUNTAIN QUADRANGLE
CALIFORNIA - FRESONO CO.
15 MINUTE SERIES (TOPOGRAPHIC)
1:62,500 (1:62,500)



Revised, edited, and published by the Geological Survey
Controlled by USGS and USACE
Imagery from photogrammetric methods, from aerial
photographs (after 1967) and charts (1964)
Pneumatic projection, 1927 North American datum
Universal Transverse Mercator projection, zone 4
USGS metric universal Transverse Mercator grid scale,
1:62,500, unless noted
Line and symbol colors indicate selected source lines
Areas covered by shaded relief have features
not subject to contour interval reduction



CONTINUED ON OTHER SHEETS
EQUIDISTANT PROJECTION
GEOLOGICAL SURVEY
WASHINGTON, D. C. 20540



ROAD CLASSIFICATION
Main Road
Light Road
Unimproved Rd
Side Road

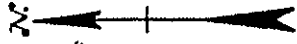
ROUND MOUNTAIN, CALIF.
1:62,500 (1:62,500)
1:62,500 (1:62,500)

THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D.C. 20540
A POLAR PROJECTION TOPOGRAPHIC MAP AND STANDARD IS AVAILABLE ON REQUEST

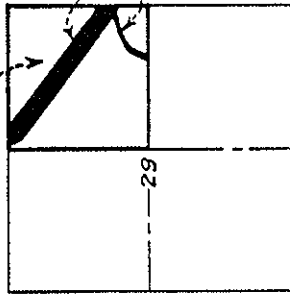
1984
GPO 1984 1:62,500 100

2171-5

Milepost # 15.49
"Dog Creek"



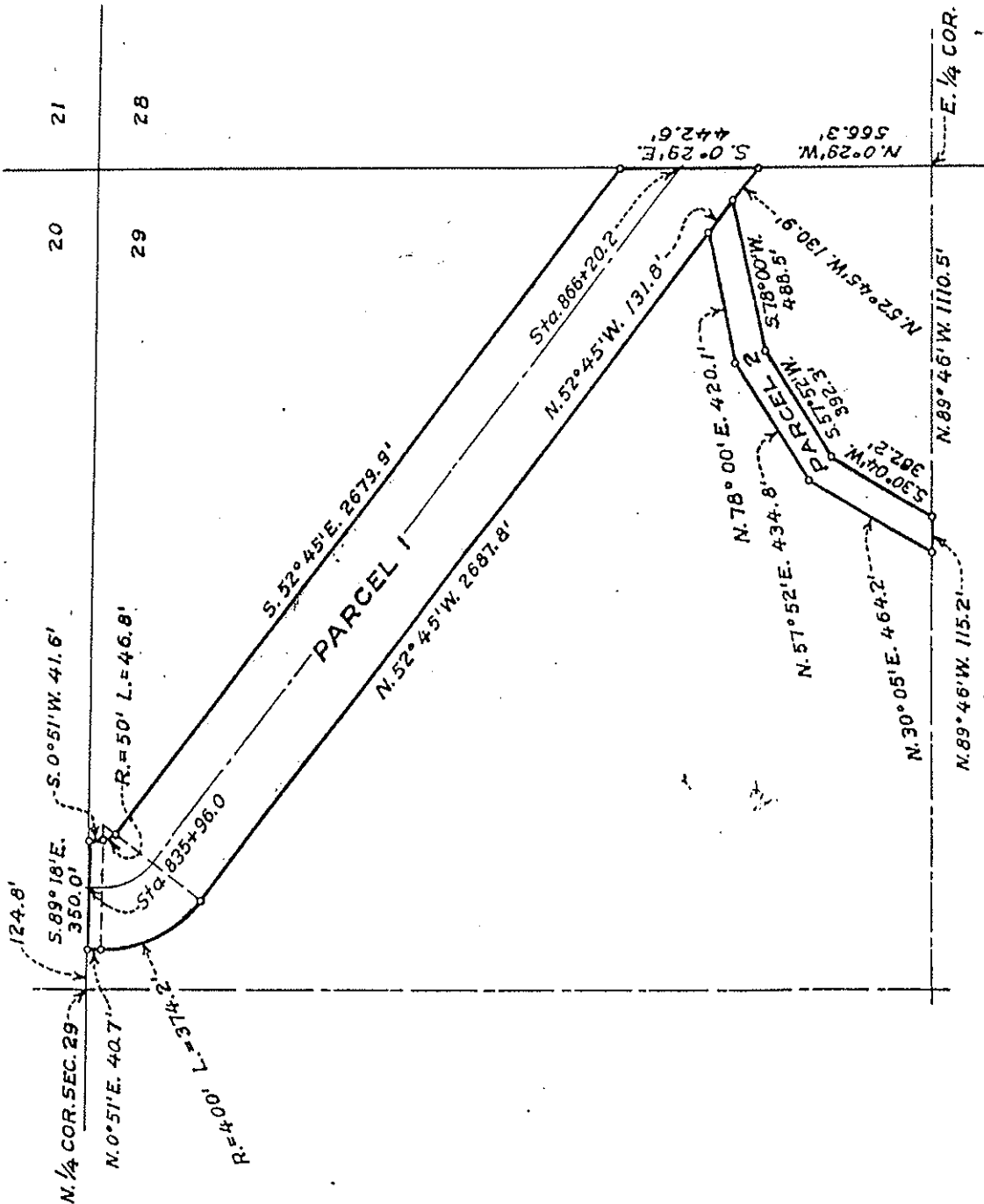
SALLIE E. WILCOX TRACT



T. 12S, R. 22E. M.D.M.

KEY MAP

SCALE 1"=2640'

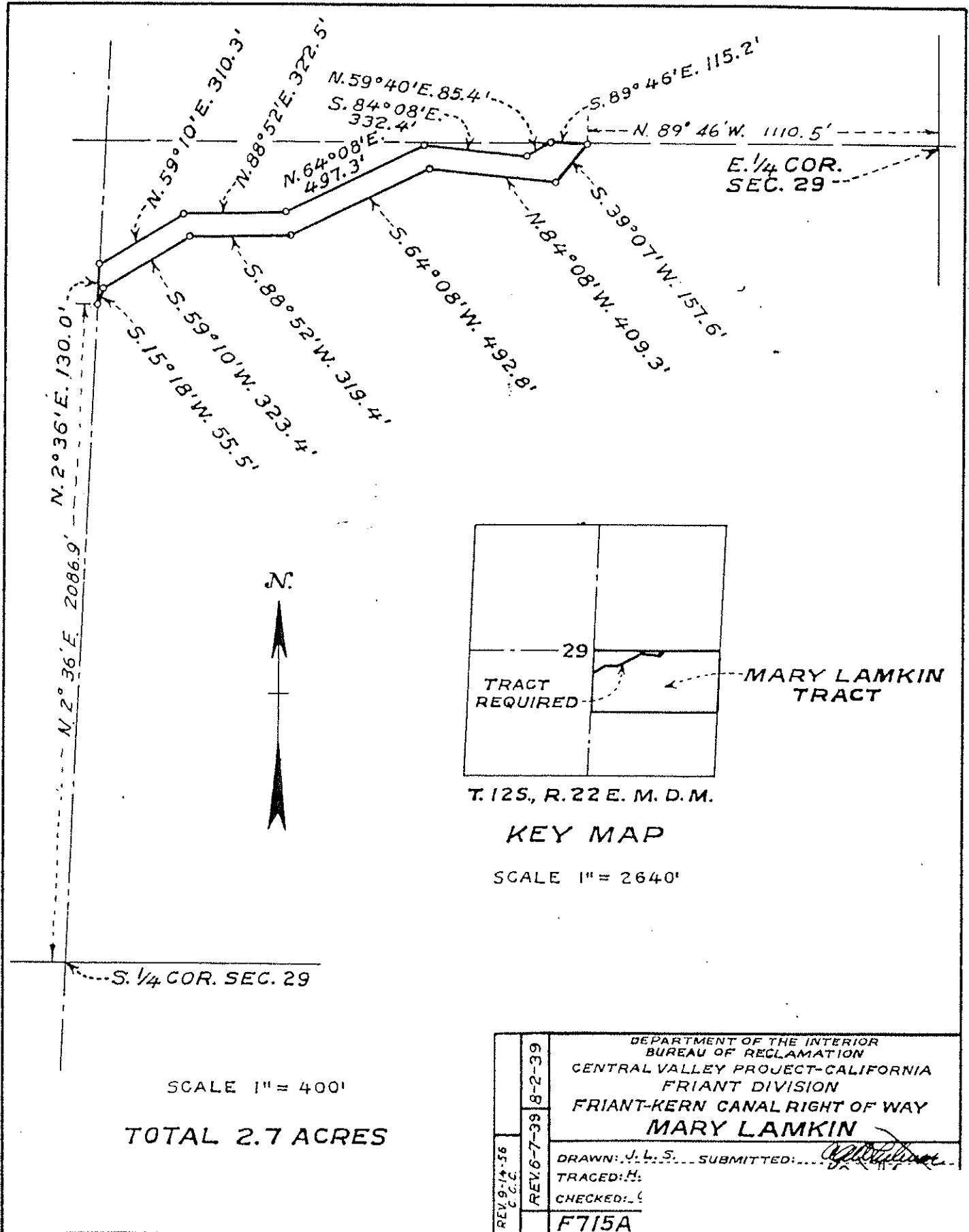


18-22-41	14-29-39	8-1-39
DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION CENTRAL VALLEY PROJECT-CA FRIANT-KERN CANAL RIGHT SALLIE E. WILCO		
DRAWN: J.L.S. ... SUBMITTED: [Signature] TRACED: H.L.E. ... RECOMMENDED: [Signature] CHECKED: [Signature] ... APPROVED: [Signature]		
F76A FRIANT, CALIF. NOV. 6, 1937		

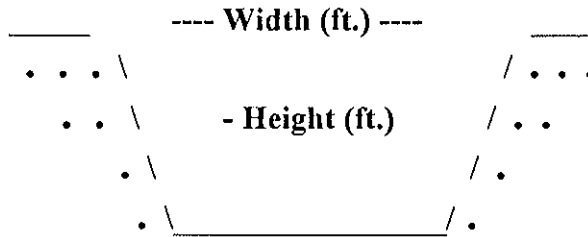
SCALE 1"=400'

PARCEL 1 = 24.6 ACRES
 PARCEL 2 = 3.0 ACRES
 TOTAL 27.6 ACRES

214-718 7



Milepost # 16.50



Type of Structure: Siphon Toe-Drain Underdrain Other

Width (ft.): 154'

Type of Maintenance: Chemical application.

Height (ft.): 20'

Length (ft.): 3,469'

Road (L or R): R

% Vegetation:

Habitat Type: Downstream: weedy wetland. Upstream: non-native grassland.

Trees:

Shrubs:

Herbaceous: X

Quadrangle Map Name: Round Mountain County: Fresno

SE1/4, Section 28, T. 12S, R. 22E, M.D.B.& M.

Notes: No cattails. Low growing rushes (*Juncus* sp.)

Date: October 2, 1995

Milepost # 16.50



Upstream

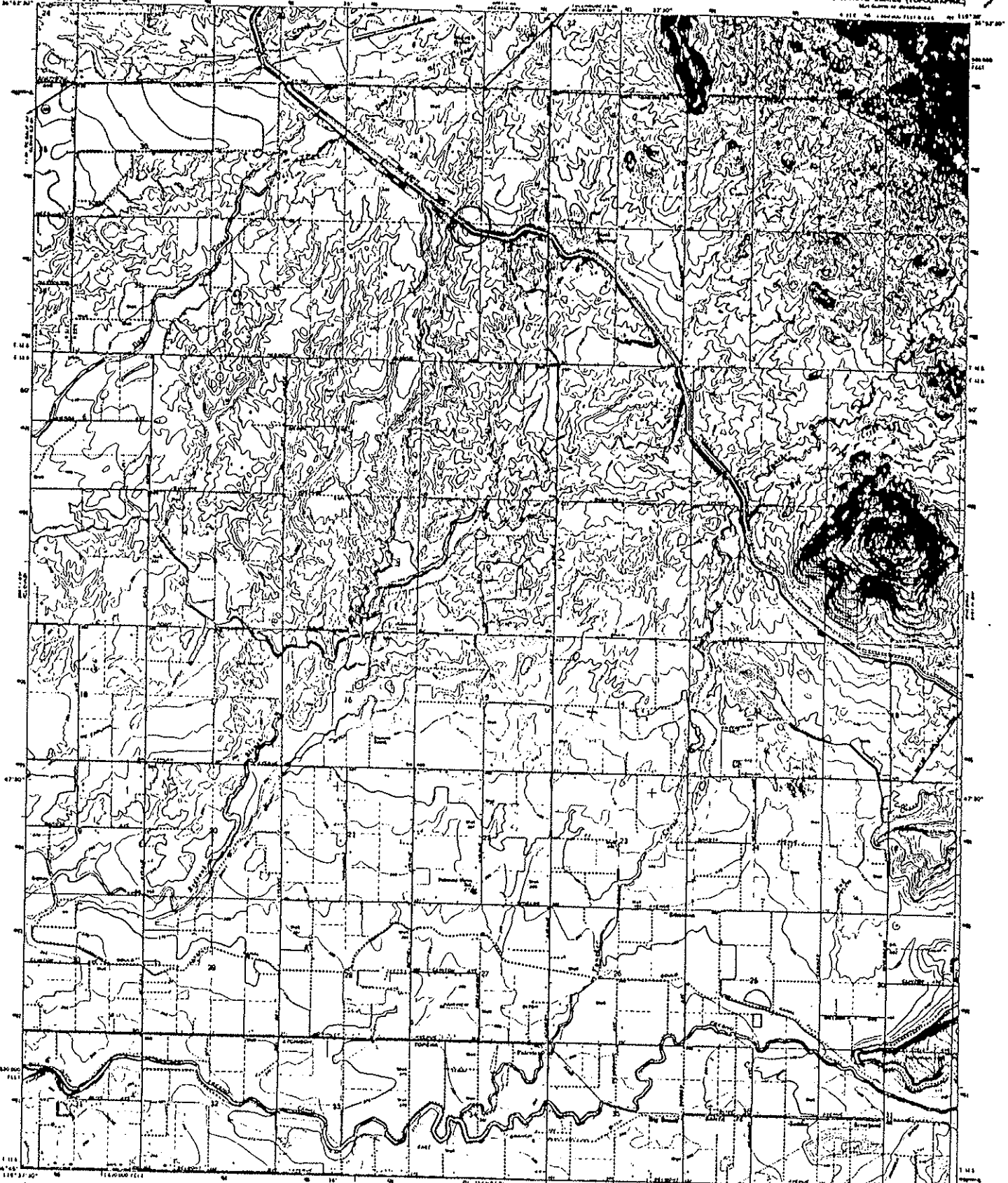


Downstream

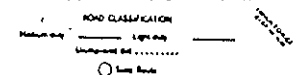
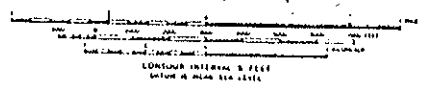
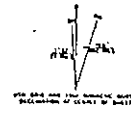
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

ROUND MOUNTAIN QUADRANGLE
CALIFORNIA - FRESNO CO.
15 MINUTE SERIES (TOPOGRAPHIC)
Map Scale as Shown



Revised, edited, and published by the Geological Survey
Controlled by USGS and USGACE
Form type by photogrammetric methods from aerial
photographs taken 1962 (and checked 1964)
Publication information: 1977 North American datum
10 USGS feet per inch on California coordinate system, zone 4
(USGS metric Universal Transverse Mercator grid lists
zone 10, 100000 m East)
Some road names shown in black letters
Areas shown by dashed lines have names
not subject to published information

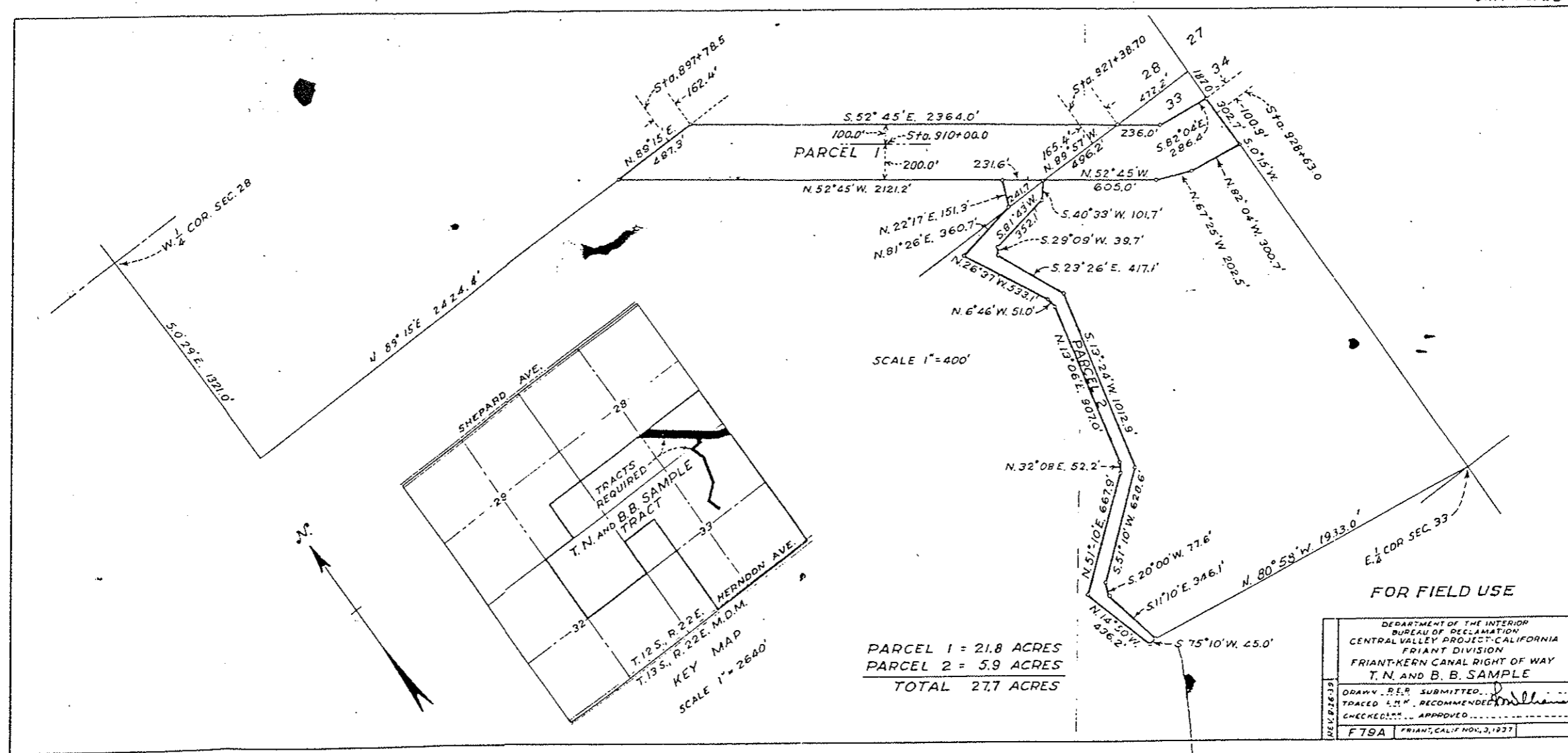


THIS MAP COMPILED IN ACCORDANCE WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, OF WASHINGTON, D.C. 20508
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

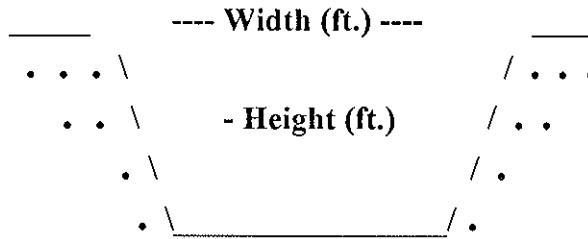
ROUND MOUNTAIN, CALIF.
U.S. GEOLOGICAL SURVEY
1:50,000
1964
AND SHEET 106 - 62423 106

2171-8

Unit No. 23



Milepost # 17.11



Type of Structure: Siphon Toe-Drain Underdrain Other

Width (ft.): 61'

Type of Maintenance: Chemical application.

Height (ft.): 11'

Length (ft.): 2,959'

Road (L or R): L

% Vegetation:

Habitat Type: Downstream: wetland non-native grassland.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Round Mountain County: Fresno

NW1/4, Section 34, T. 12S, R. 22E, M.D.B.& M.

Notes: One fig tree (*Ficus carica*); low growing rushes (*Juncus* sp.); Bermuda grass (*Cynodon dactylon*) in dry parts of bottom.

Date: October 2, 1995

Milepost # 17.11



Upstream

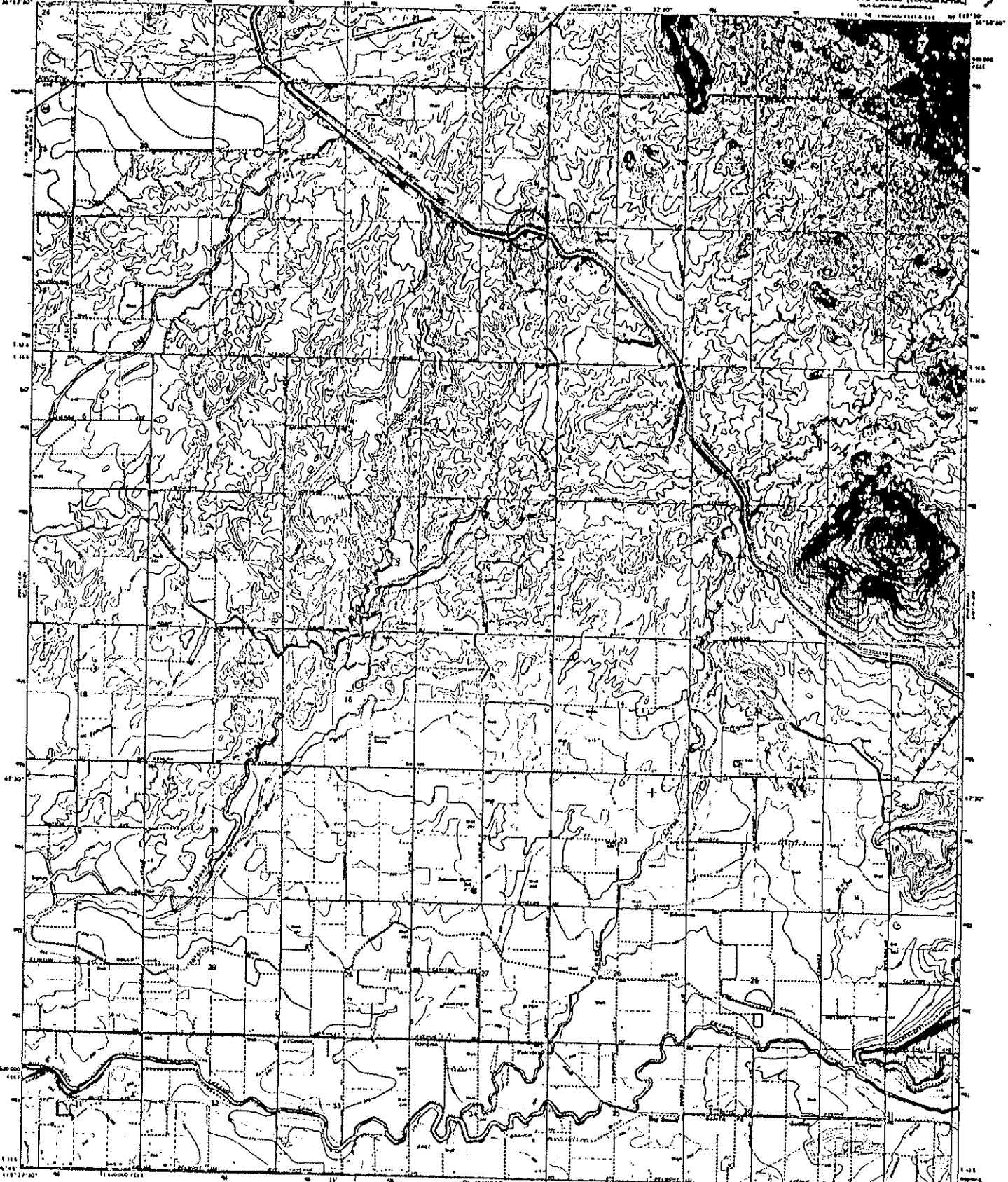


Downstream

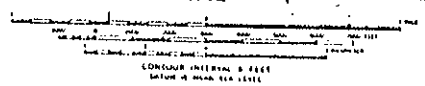
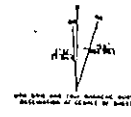
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

ROUND MOUNTAIN QUADRANGLE
CALIFORNIA - FRESNO CO.
15 MINUTE SERIES (TOPOGRAPHIC)



Map compiled, edited, and published by the Geological Survey
Controlled by USGS and USC&GS
Topography by photogrammetric methods from aerial
photographs taken 1963. First checked 1964
Projection projection 1927 North American datum
111,000 feet grid based on Center of gravity station, zone 4
1:62,500 meter contour (Elevation in feet, and feet,
zone 11, 100000 in feet)
2 mile and 100000 meter intervals labeled (contour lines)
Areas covered by shaded relief have portion
of subject by contour method



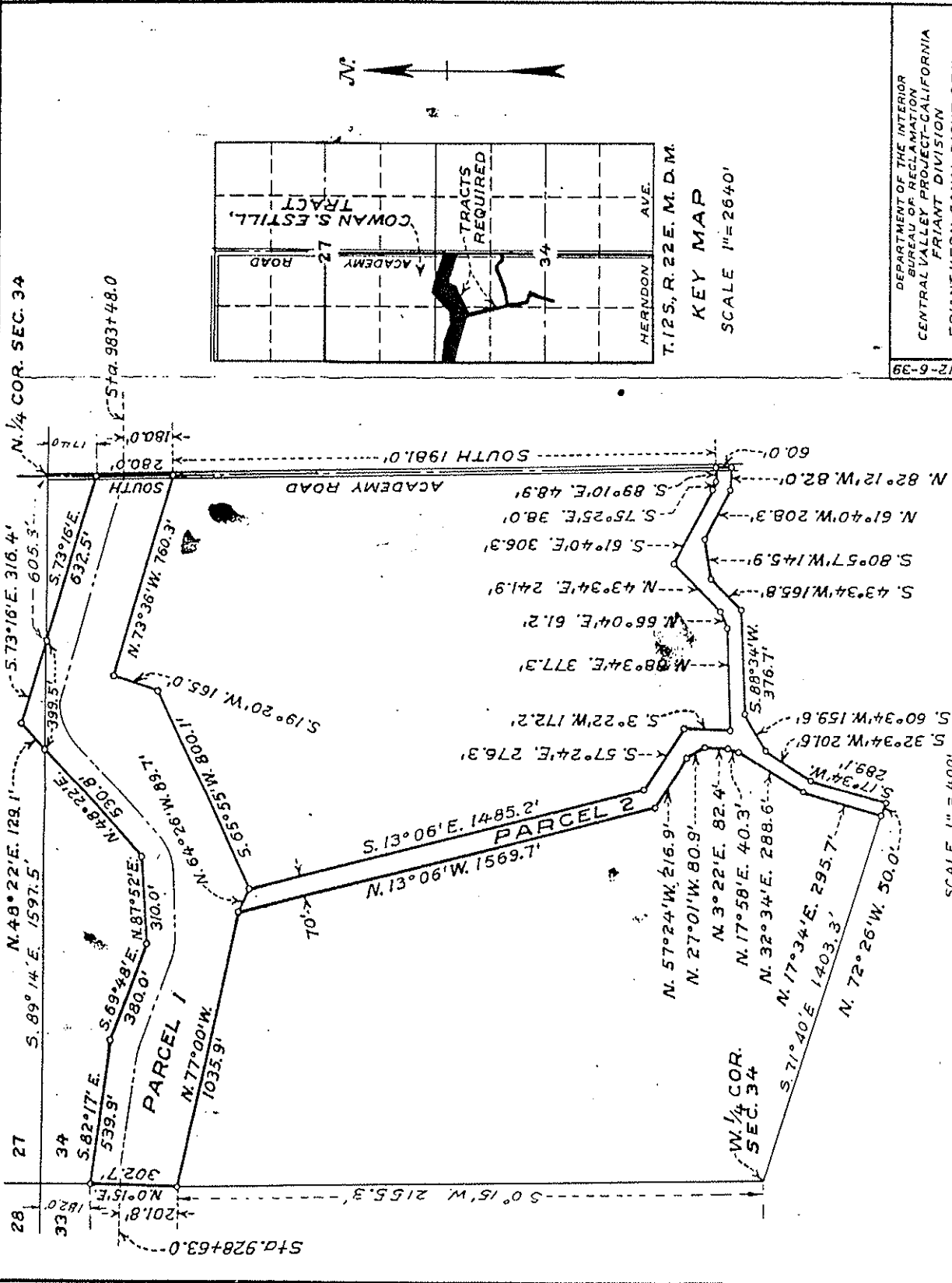
ROAD CLASSIFICATION
Main road ——— Light road - - - - -
Unimproved rd
Rail Road ○

THIS MAP COMPILED WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, OF THE U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR, D.C. 20548
A FOLDER OF SIMILAR TOPOGRAPHIC MAPS AND STATIONS IS AVAILABLE ON REQUEST

ROUND MOUNTAIN, CALIF.
1:62,500
15 MINUTE SERIES
1964
GPO 1967 O - 662-662 1964

2171-9

Unit No. 24



SCALE 1" = 400'
PARCEL 1 = 20.8 ACRES
PARCEL 2 = 5.3 ACRES
TOTAL = 26.1 ACRES

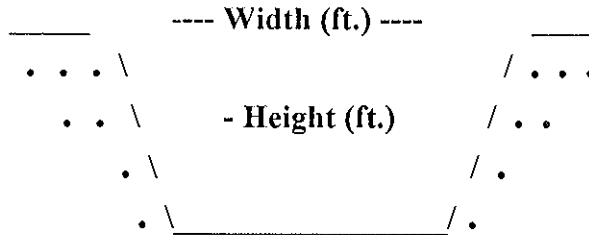
DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 CENTRAL VALLEY PROJECT-CALIFORNIA
 FRIANT DIVISION
COWAN S. ESTILL
 FRIANT-KERN CANAL RIGHT OF WAY

DRAWN: G.R.S. SUBMITTED: [Signature]
 TRACED: M.L.E. RECOMMENDED: [Signature]
 CHECKED: [Signature] APPROVED: [Signature]
 F700A FRIANT CALIF. OCT. 8, 1937

R.R.V. 3-27-39 / 12-6-39

Milepost # 17.65
"Rock Spring"

Milepost # 17.65
"Rock Spring"



Type of Structure: Siphon Toe-Drain Underdrain Other

Width (ft.): 200'

Type of Maintenance: Chemical application; dozer; drag line; handwork. Need to build a road and remove trees.

Height (ft.): 20'

Length (ft.): 3,469'

Road (L or R): L & R

% Vegetation: 50% cattails
50% trees

Habitat Type: Emergent wetland/ some riparian. Upstream: non-native grassland.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Round Mountain County: Fresno

NE1/4, Section 34, T. 12S, R. 22E, M.D.B.& M.

Notes: Standing water on downstream side. Cattail (*Typha* sp.)~100' downstream; nice little riparian corridor starts ~250' downstream. Upstream: cattail (*Typha* sp.); willow (*Salix* sp.); cottonwood (*Populus fremontii*); Bermuda grass (*Cynodon dactylon*); fig (*Ficus carica*); and curly dock (*Rumex crispus*).

*~ 10 large willow and fig trees.

*Great egret (*Casmerodius albus*)

Date: October 4, 1995

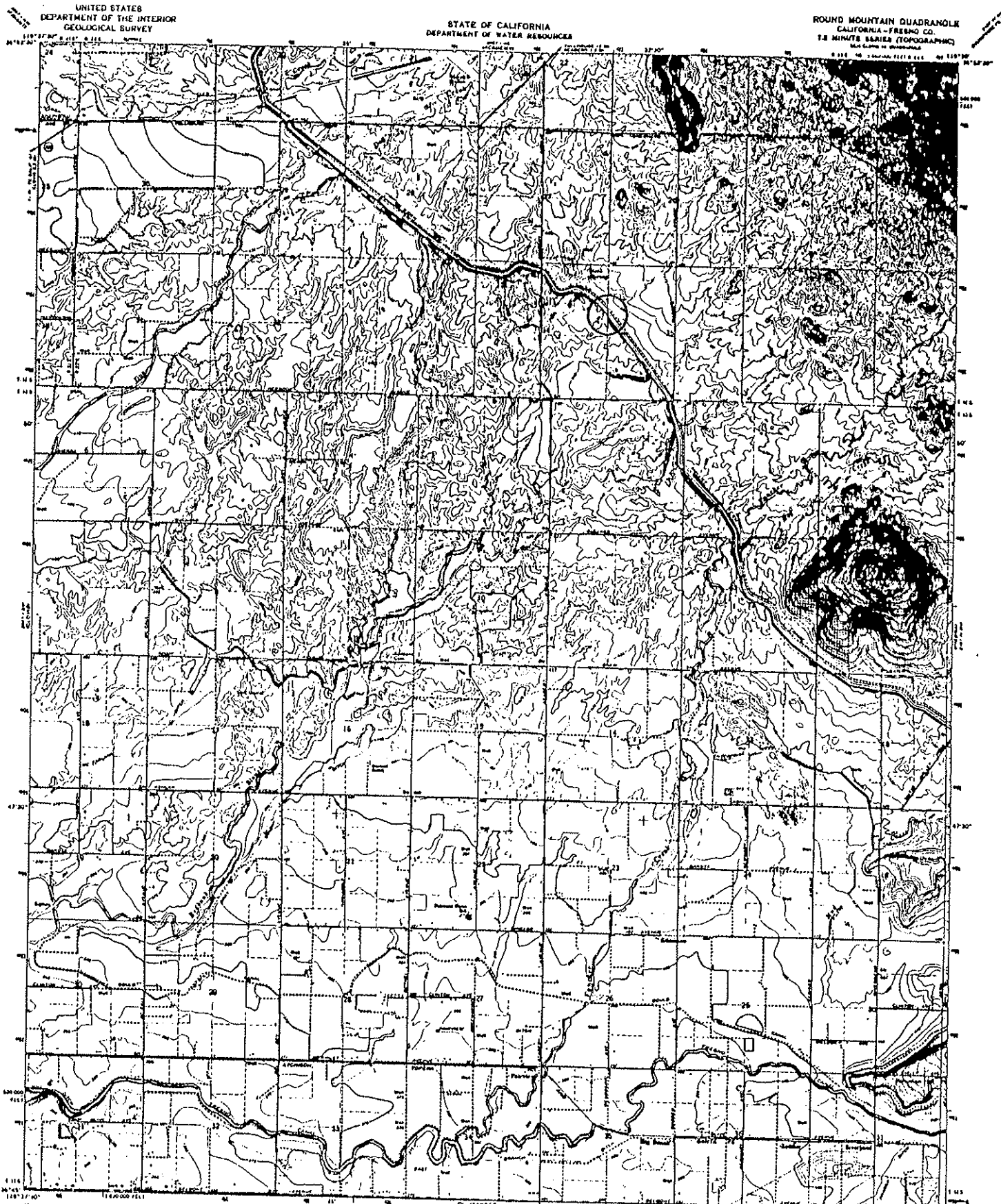
Milepost # 17.65
"Rock Spring"



Upstream



Downstream



Maped, edited, and published by the Geological Survey
Control by USGS and USC&GS

Topography by photogrammetric methods from aerial
photographs taken 1962. First checked 1964

Photogram projection: 1927 North American system
(USGS) but grid based on Clarke and Goussier spheroid, zone 8
TUGO metric Universal Transverse Mercator grid cells,
zone 11, datum as GRS

Scale for printed map: inches to feet
Scale shown by dashed light blue bar

Areas covered by dashed light blue bar
are subject to substantial modification

USGS and USC&GS
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

1:50,000

CONTOUR INTERVAL: 5 FEET
Below 4, MEAN SEA LEVEL

ROUND MOUNTAIN, CALIF.

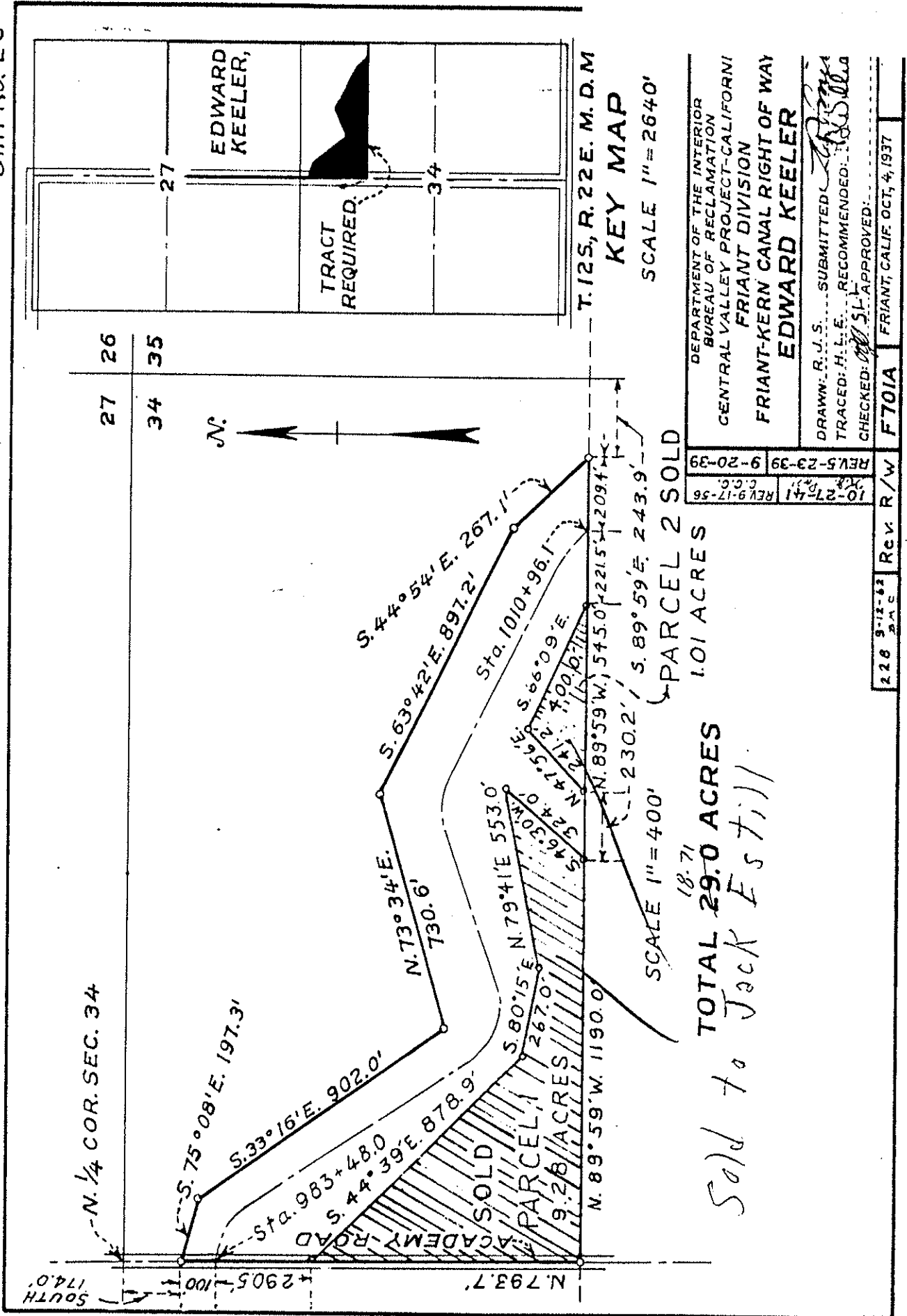
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, COLORADO 80521, OR WASHINGTON, D. C. 20542
A FOLDER BEARING PHOTOGRAPHIC SLIPS AND STAMPS IS AVAILABLE ON REQUEST

1965

1:50,000

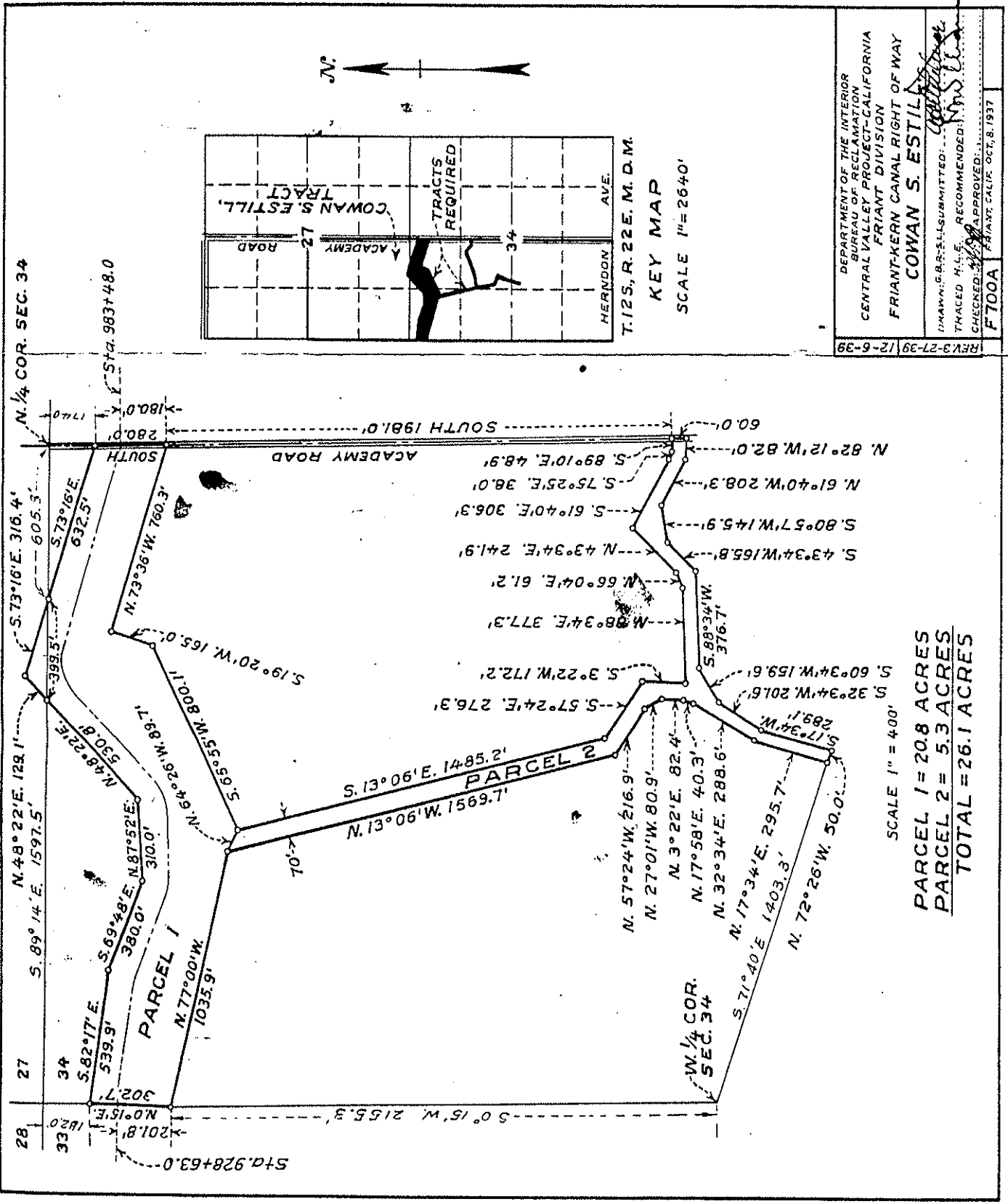
2171-11

Unit No. 25



2171-9

Unit No. 24

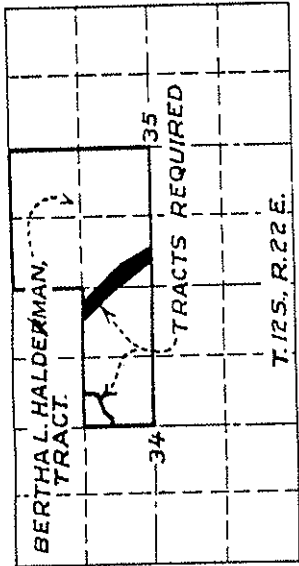


SCALE 1" = 400'

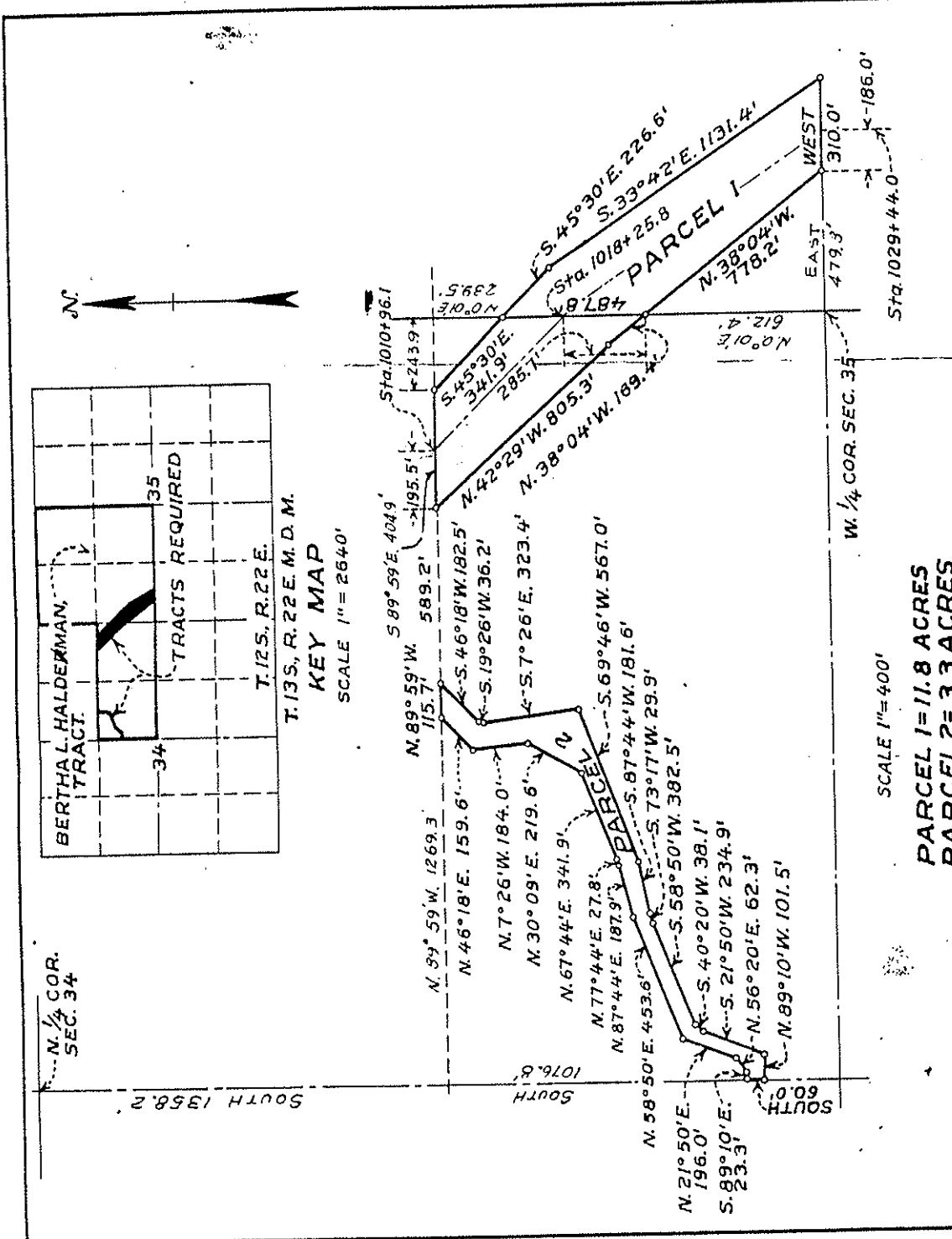
PARCEL 1 = 20.8 ACRES
PARCEL 2 = 5.3 ACRES
TOTAL = 26.1 ACRES

2171-9

Unit No. 26



T. 13S., R. 22E. M.D.M.
KEY MAP
 SCALE 1" = 2640'



SCALE 1" = 400'

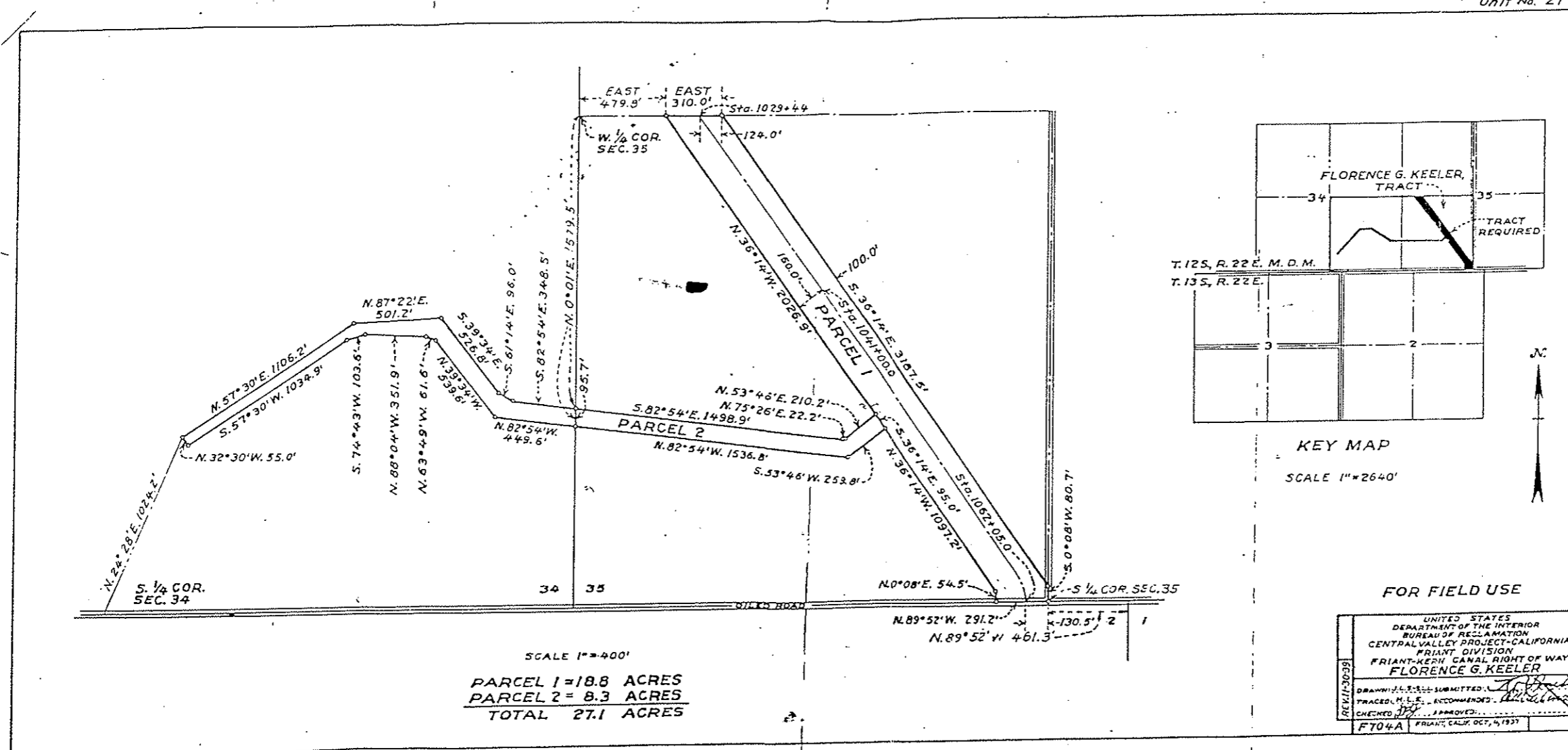
PARCEL 1 = 11.8 ACRES
PARCEL 2 = 3.3 ACRES
TOTAL 15.1 ACRES

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION CENTRAL VALLEY PROJECT-CALIFORNIA FRIANT DIVISION FRIANT-KERN CANAL RIGHT OF WAY BERTHA L. HALDERMAN	DRAWN: R.R. 3-1-55 SUBMITTED: [Signature] TRACED: H.L.E. RECOMMENDED: [Signature] CHECKED: [Signature] APPROVED: [Signature] F702A FRIANT, CALIF. DEC. 4, 1957
---	---

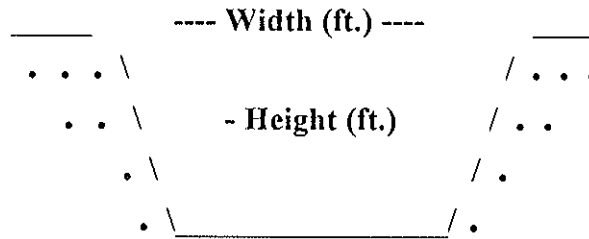
REV. 11-27-39

2171-12

Unit No. 27



Milepost # 18.47



Type of Structure: Siphon Toe-Drain _____ Underdrain _____ Other _____

Width (ft.): 64'

Type of Maintenance: Chemical application; drag line; excavator.

Height (ft.): 40'

Length (ft.): 4,081'

Road (L or R): L

% Vegetation: 90% cattails
10% large fig

Habitat Type: Downstream: emergent treeswetland. Upstream: non-native grassland.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Round Mountain County: Fresno

SW1/4, Section 35, T. 12S, R. 22E, M.D.B.& M.

Notes: Downstream: cattail (*Typha* sp.); fig (*Ficus carica*).

Date: October 4, 1995

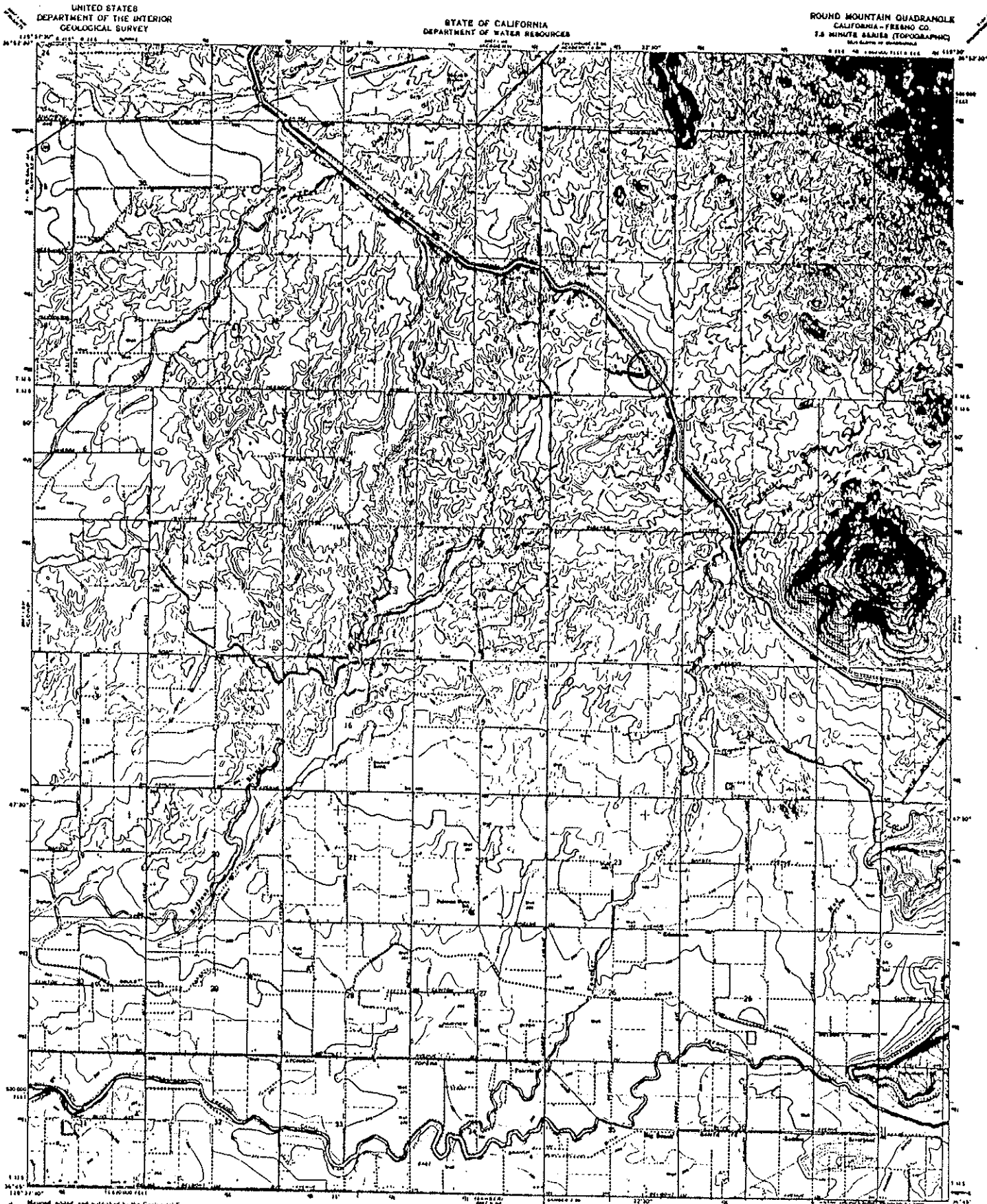
Milepost # 18.47



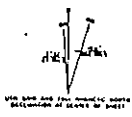
Upstream



Downstream



Revised, edited, and published by the Geological Survey
 Contour interval 100 feet
 Contouring by photogrammetric methods from aerial
 photographs taken 1962. Contour checked 1965.
 Publication 1977. Based on American datum.
 10,000-foot grid based on California coordinate system, zone 4
 1962 meter international Transverse Mercator grid used,
 zone 11, datum as true.
 Line and dashed lines indicate selected fence lines
 Areas covered by dashed lines show partial
 coverage of selected features.



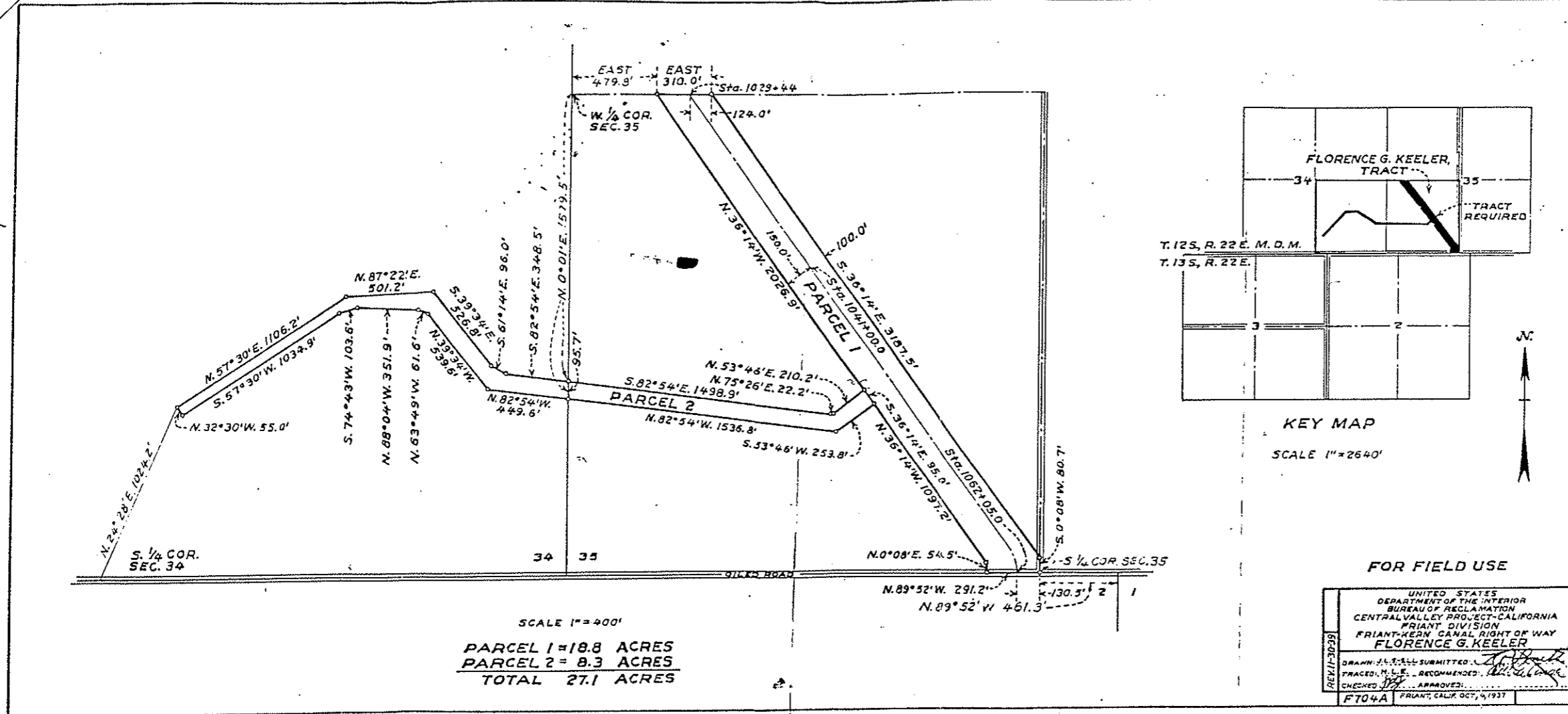
THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U.S. GEOLOGICAL SURVEY, DEPT. OF INTERIOR, COLLEGE PARK, MARYLAND, D.C. 20740
 A FOLDER OF RELATED TOPOGRAPHIC MAPS AND STUDIES IS AVAILABLE ON REQUEST



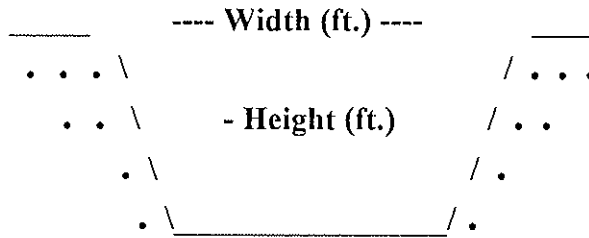
ROUND MOUNTAIN, CALIF.
 M. 1:50,000
 15 MINUTE SERIES
 1967

2171-12

Unit No. 27



Milepost # 18.91



Type of Structure: Siphon _____ Toe-Drain X Underdrain X Other _____

Width (ft.): 46'

Type of Maintenance: Chemical application; dozer; drag line; excavator. Hand work. Need to build a road and remove trees.

Height (ft.): 40'

Length (ft.): 5,918'

Road (L or R): Accessible on L (no road)

% Vegetation: 50% cattails
50% (lg.) willow trees

Habitat Type: Downstream: emergent wetland and riparian.
Upstream: non-native grassland.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Round Mountain

County: Fresno

NE1/4, Section 2, T. 13S, R. 22E, M.D.B.& M.

Notes: Cattail (*Typha* sp.); thistle (*Cirsium* sp.); willow (*Salix* sp.); prickly lettuce (*Lactuca serriola*).

*Pool = 25' x 15' x ~6' deep.

Date: October 4, 1995

Milepost # 18.91



Upstream

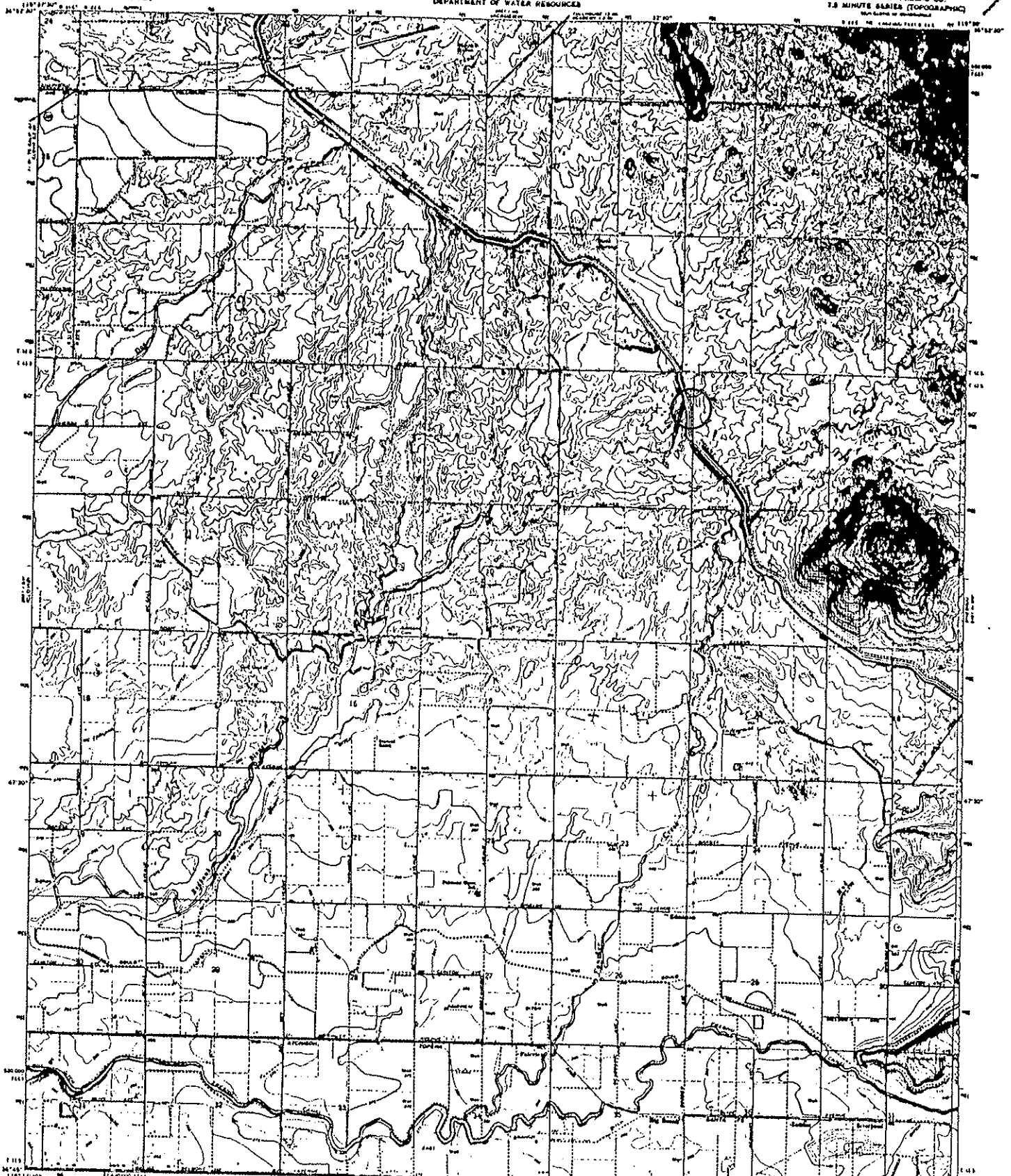


Downstream

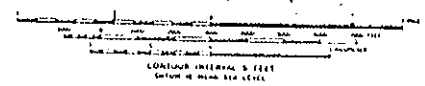
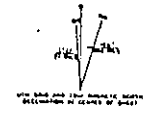
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

ROUND MOUNTAIN QUADRANGLE
CALIFORNIA - FRESNO CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
MAP SCALE OF 1:50,000



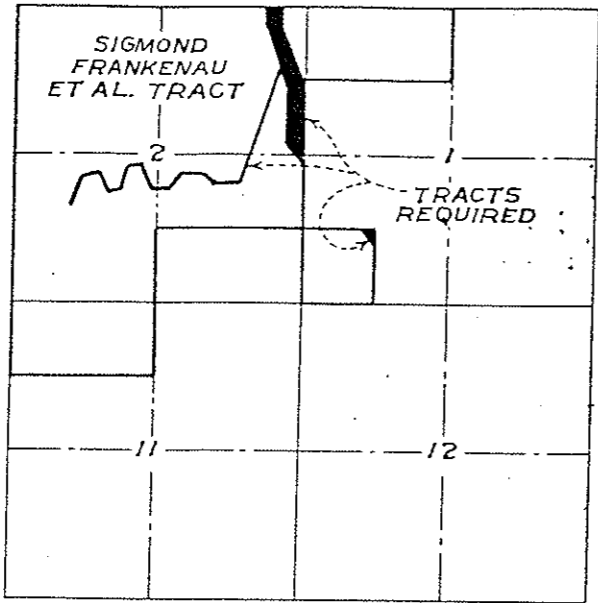
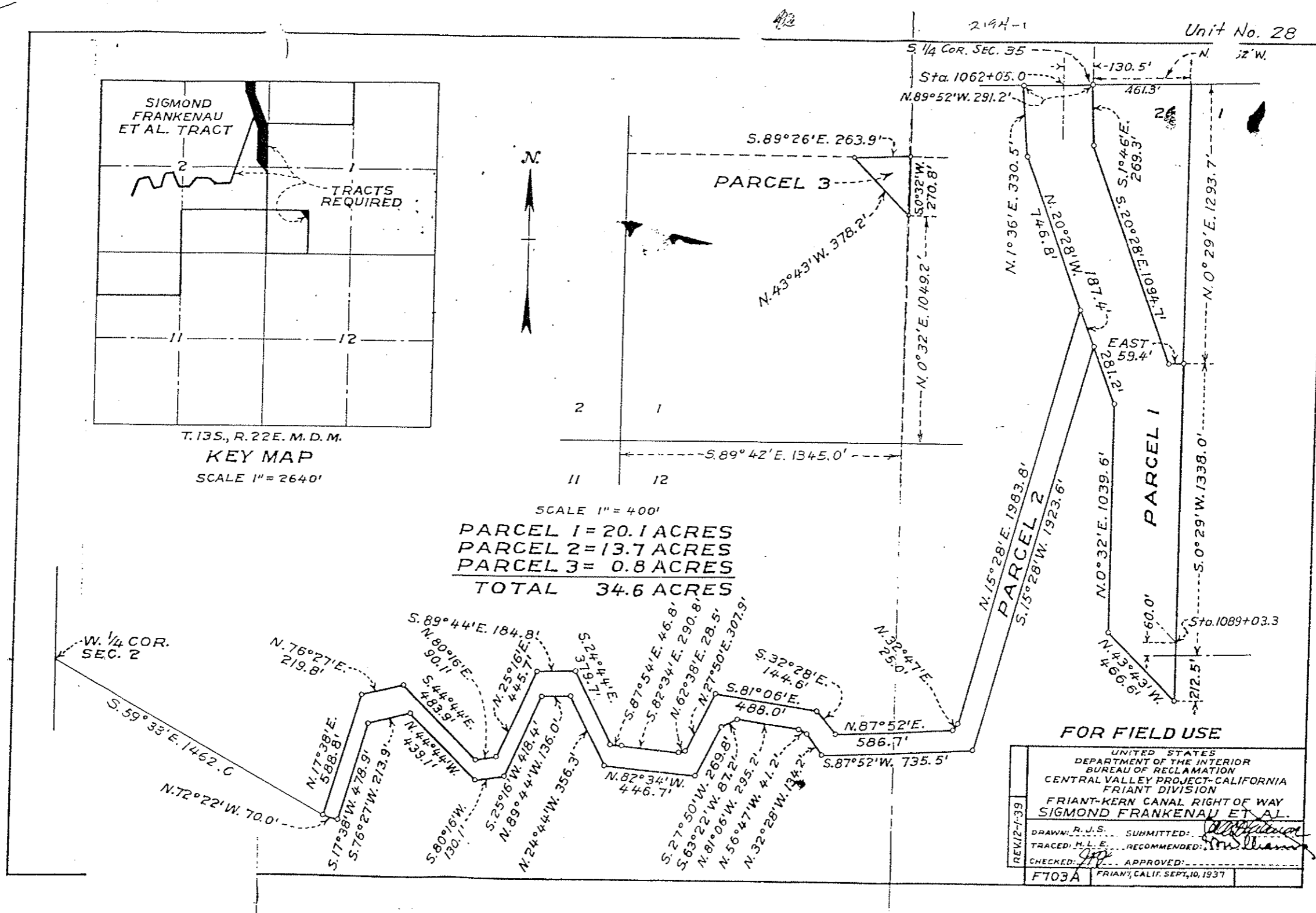
Mapped, edited, and published by the Geological Survey
Contract by USGS and USFWS
Topography by photogrammetric methods from aerial
photographs taken 1962 (and checked 1964)
Picture projection: 1927 North American datum
USGS grid based on California coordinate system, zone 4
USGS metric Universal Transverse Mercator grid used,
zone 11, unless so noted
Contour interval: 5 feet
Area covered by dashed light blue pattern
is subject to land-use modification



ROAD QUALIFICATION
Highway Light Blue
Unimproved Road Dotted
Rail Road

THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR, WASHINGTON, D.C. 20508
A POLAR PROJECTION PHOTOGRAPHIC MAP AND STRIPS IS AVAILABLE ON REQUEST

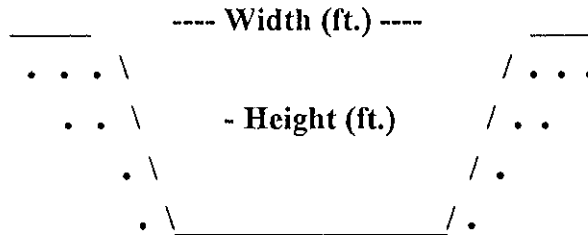
ROUND MOUNTAIN, CALIF.
U.S. GEOLOGICAL SURVEY
1:50,000 (1962)
1961
AND 1967 1:50,000 (1964)



T. 13S., R. 22E. M. D. M.
KEY MAP
SCALE 1" = 2640'

Milepost # 19.91
"Fancher Creek"

Milepost # 19.91
"Fancher Creek"



Type of Structure: Siphon Toe-Drain Underdrain Other Overchute

Width (ft.): 46'

Type of Maintenance: No maintenance.

Height (ft.):

Length (L or R): 612'

Road (L or R):

% Vegetation:

Habitat Type: Downstream: open water, emergent wetland. Upstream: concrete. Upland: non-native grassland.

Trees: X

Shrubs:

Herbaceous: X

SW1/4, Section 1, T. 13S, R. 22E, M.D.B.& M.

Quadrangle Map Name: Round Mountain County: Fresno

Notes: Cattail (*Typha* sp.); willow (*Salix* sp.); rush (*Juncus* sp.) - Fancher Creek overshoot.

*Pool 150' x 80' x ? deep (downstream).

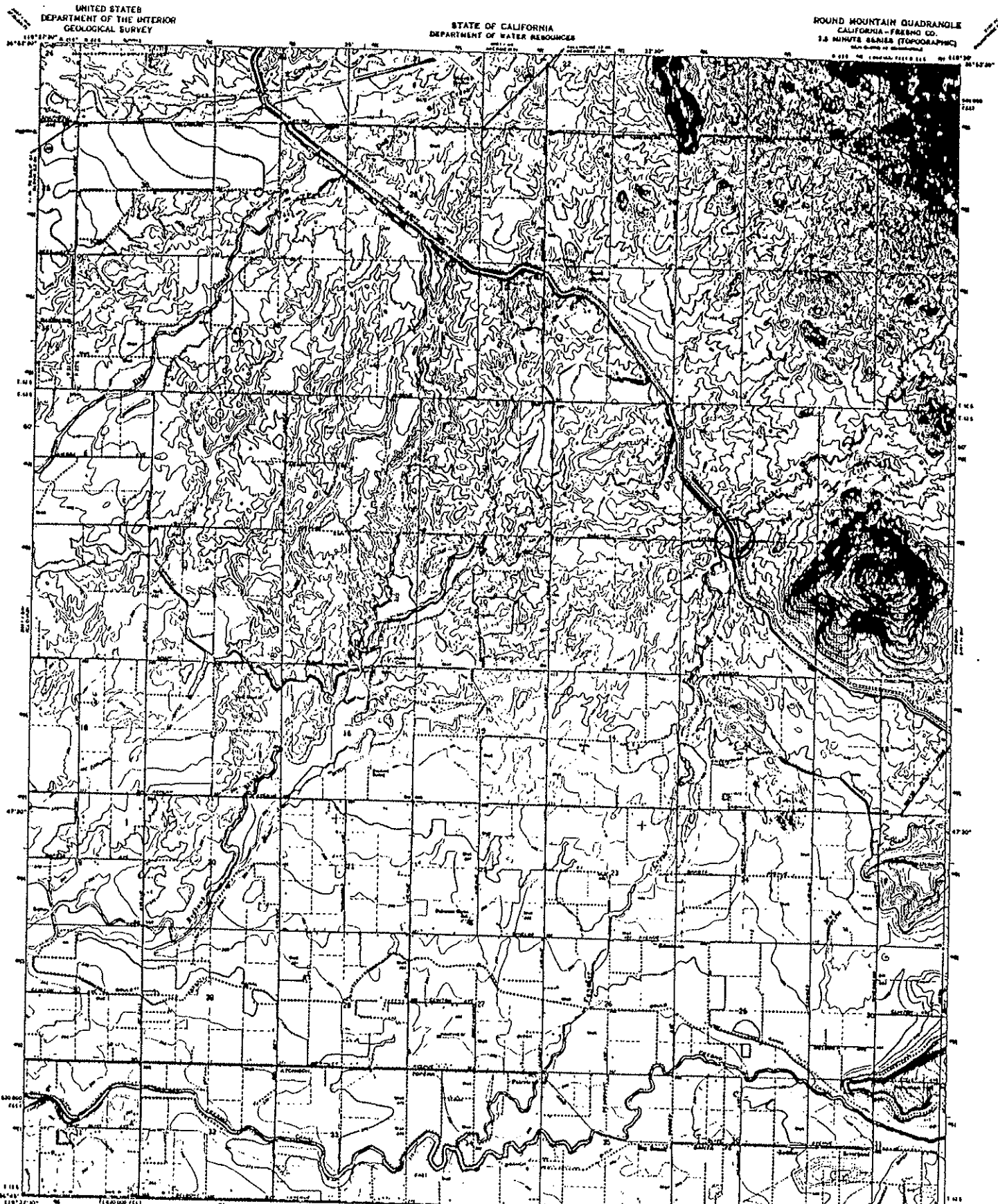
Date: October 4, 1995

Milepost # 19.91
"Fancher Creek"

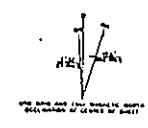
No Channel Upstream



Downstream



Map of, edited, and published by the Geological Survey
 Contour lines by aneroid methods from aerial
 photographs taken 1962. Road classes (B&C)
 Photographic projection. 1927 North American datum.
 (USGS) metric grid based on California State Plane, zone 4
 zone 11, datum on datum.
 Contour interval 100 feet. Spot heights
 shown 10 feet or more.
 Contour lines are not shown where they
 are obscured by shaded relief from photos.
 are subject to correction.



THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U.S. GEOLOGICAL SURVEY, DEPT. OF THE INTERIOR, WASHINGTON, D.C. 20542
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

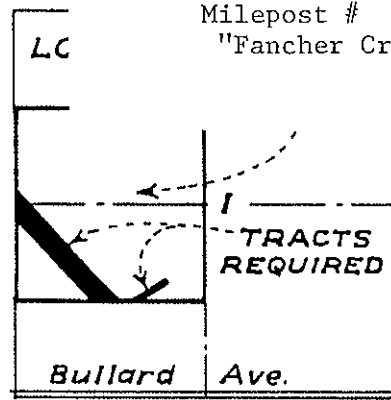


ROAD CLASSIFICATION
 Primary Highway
 Secondary Highway
 Unimproved Road
 Trail
 FANCHER CREEK
 ROUND MOUNTAIN, CALIF.
 15 MINUTE SERIES (TOPOGRAPHIC)
 1964
 AMERICAN GEOLOGICAL SURVEY

Milepost # 19.91
"Fancher Creek"

LC

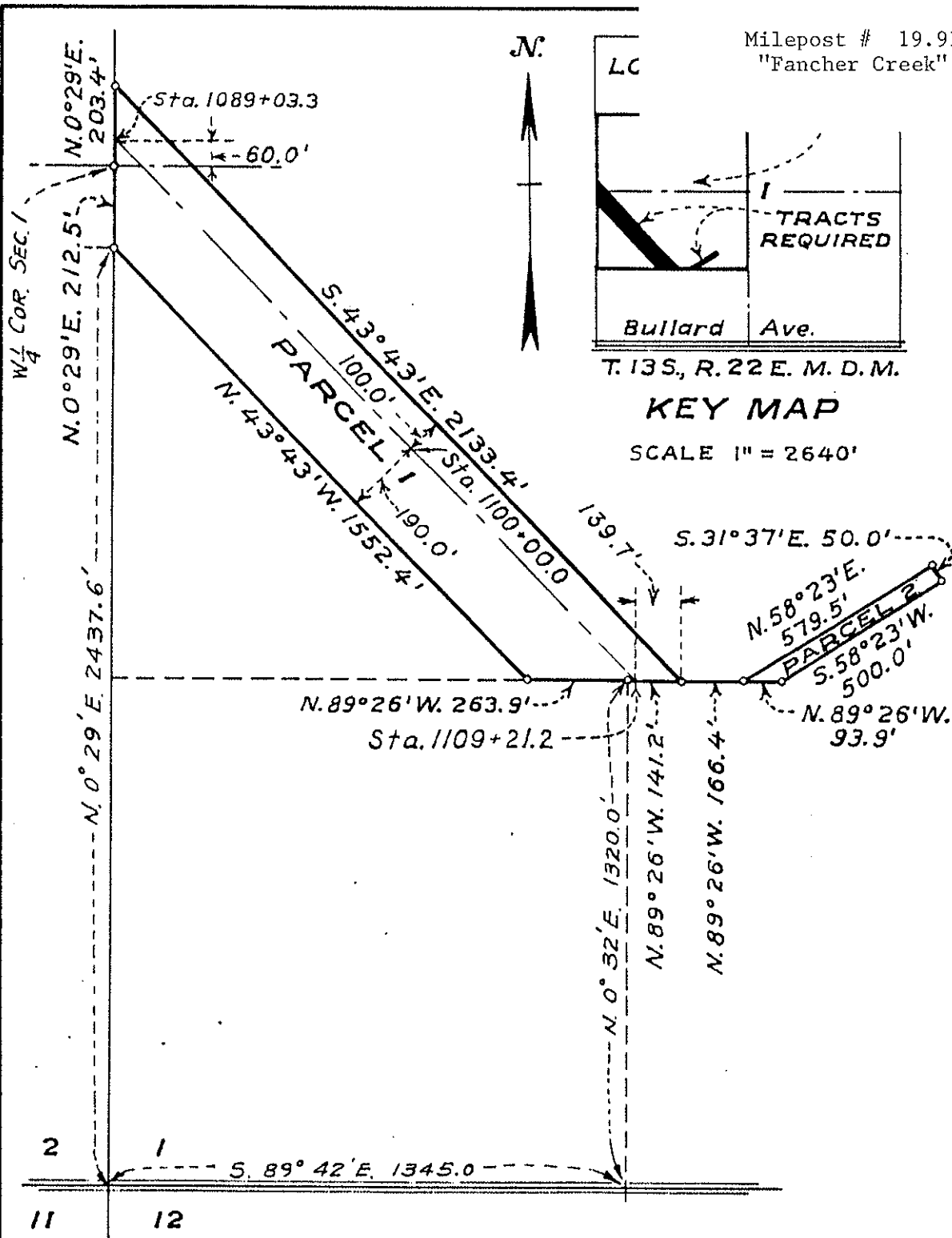
N



T. 13S., R. 22 E. M. D. M.

KEY MAP

SCALE 1" = 2640'

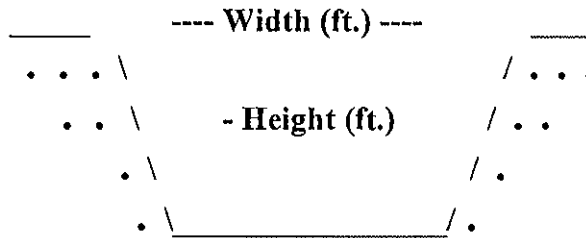


SCALE 1" = 400'

PARCEL 1 = 12.3 ACRES
PARCEL 2 = 0.6 ACRES
TOTAL = 12.9 ACRES

70-27-41 REV 9-17-56 X-3 REV 6-7-39 18-18-39 E.C.C.	DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION CENTRAL VALLEY PROJECT-CALIFORNIA FRIANT DIVISION FRIANT-KERN CANAL RIGHT OF WAY LORETTA R. QUALLS	
	DRAWN: J. L. S.	SUBMITTED: <i>[Signature]</i>
	TRACED: H. L. E.	RECOMMENDED: <i>[Signature]</i>
	CHECKED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>
F705A		FRIANT, CALIF. SEPT, 28, 1937

Milepost # 22.96
"Mud Creek"



Type of Structure: Siphon _____ Toe-Drain _____ Underdrain X Other _____

Width (ft.): 61'

Type of Maintenance: Chemical application; drag line; excavator.

Height (ft.): 20'

Length (ft.): *INCROW

Road (L or R): Accessible on R (no road)

% Vegetation:

Habitat Type: Emergent wetland.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Piedra

County: Fresno

SW1/4, Section 11, T. 13S, R. 23E, M.D.B.& M.

Notes: Downstream: cattails (*Typha* sp.); cocklebur (*Xanthium strumarium*); yellow star thistle (*Centaurea solstitialis*); bulrush (*Scirpus* sp.) - starts 200' down. Upstream: Bermuda grass (*Cynodon dactylon*); some cattail (*Typha* sp.); rush (*Juncus* sp.); cocklebur (*Xanthium strumarium*); cottonwood (*Populus fremontii*); fig (*ficus carica*).

*Inside canal right-of-way.

**Pool = 20' x 30' x 5' deep.

Date: October 4, 1995

Milepost # 22.96
"Mud Creek"



Upstream



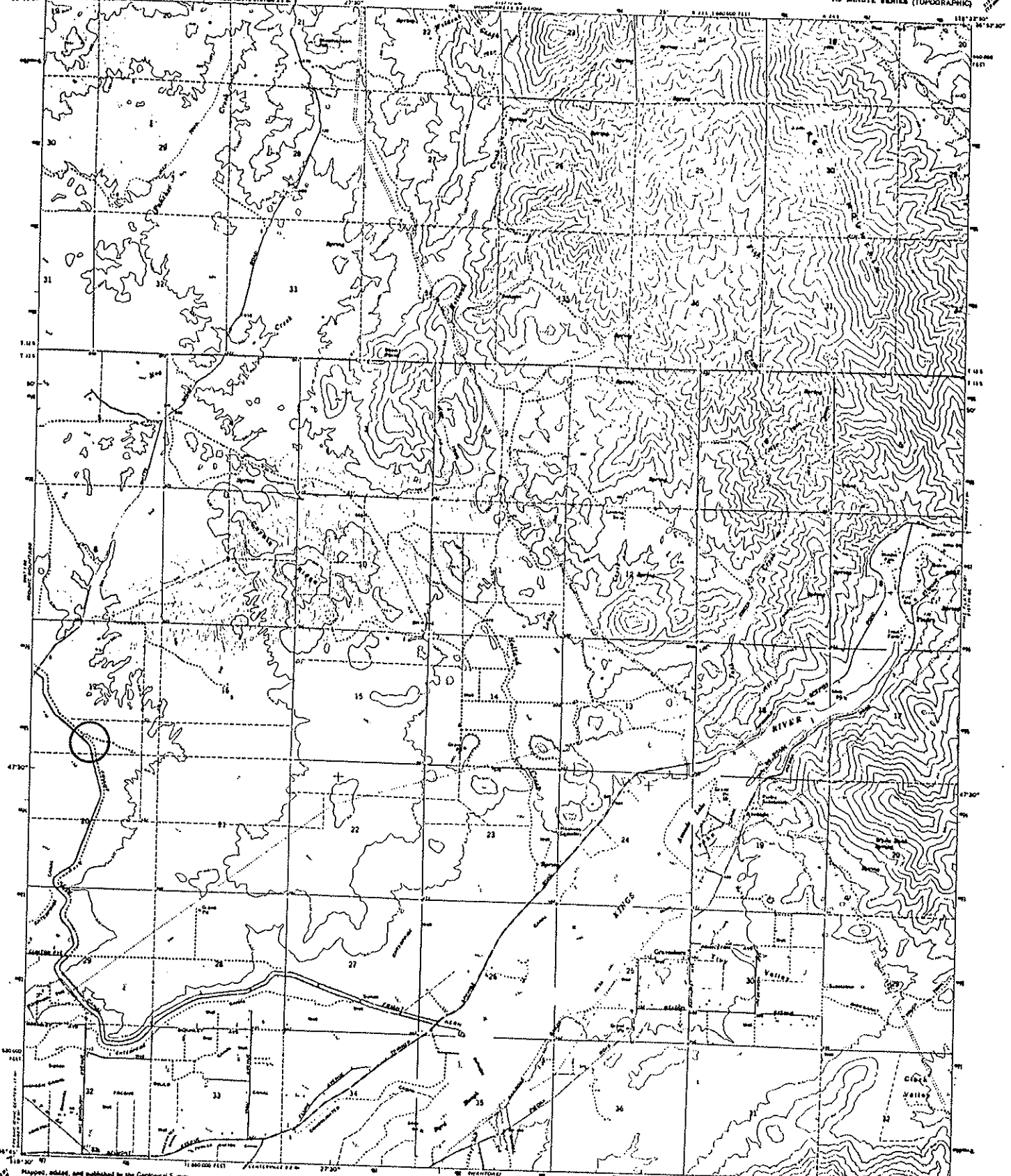
Downstream

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



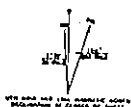
STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

PIEDRA QUADRANGLE
CALIFORNIA-FREDDO CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey
Coastal by USGS and USC&GS

Topographic base by photogrammetric methods from aerial
photographic base (1943) First checked (1945)
Supplements by topographic base map for road (1930)
Photogram projection: 1927 Pacific Albers equal area
(10000 feet per inch) on Clarke geocentric spheroid, base of
1922 meridian Universal Transverse Mercator grid zone,
zone 11, shown in blue
Five foot contour lines selected base line



EDMONTON INTERVAL 30 FEET
BOTTED AND REPRINTED (1960) CONTIGUOUS
REGIONAL GEOPHYSICAL SURVEY, DATUM OF 1929

ROAD CLASSIFICATION
Main road
Light road
Unimproved rd

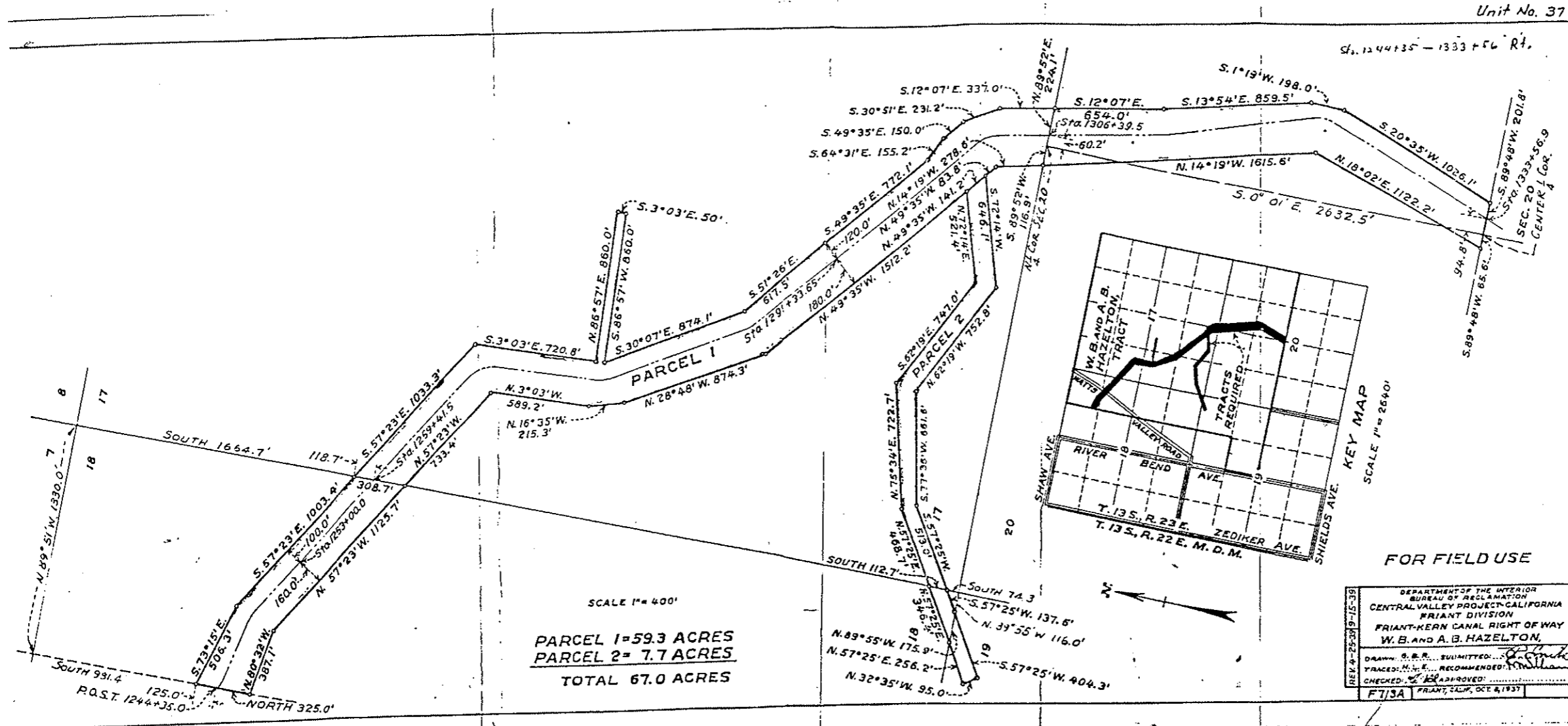
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY'S OVERSEAS EDITIONS BOOTH ON BEHALF OF THE
A POLAR PROJECTION CONSTRUCTION, MAPS AND STATISTICS ON REQUEST



PIEDRA, CALIF.
112445-111922 5/7.5
1960
ANN 2151 P 10 - JANUARY 1960

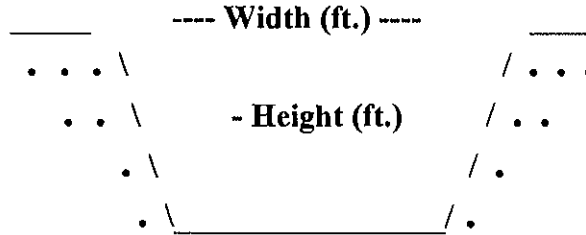
2193-5

Unit No. 37



Milepost # 28.31 to 28.53
"Kings River"

Milepost # 28.31 to 28.53
"Kings River"



Type of Structure: Siphon _____ Toe-Drain X Underdrain _____ Other _____

Width (ft.): 25'

Type of Maintenance: Chemical application; crane drag line excavation and backhoe.

Height (ft.): 20'

Length (L or R): *INCROW

Road (L or R):

% Vegetation:

Habitat Type: Riparian

Trees: 50%

Shrubs: 30%

Herbaceous: 20%

Quadrangle Map Name: Piedra

County: Fresno

SW1/4, Section 26, T. 13S, R. 23E, M.D.B.& M.

Notes: Cottonwoods (many mature); willows (*Salix* sp.); valley oaks (*Quercus lobata*); blackberry (*Rubus ursinus*); rushes (*Juncus* sp.) and cattails (*Typha* sp.)

*Inside canal right-of-way.

Date: August 1995

Milepost # 28.31 to 28.53
"Kings River"



Upstream



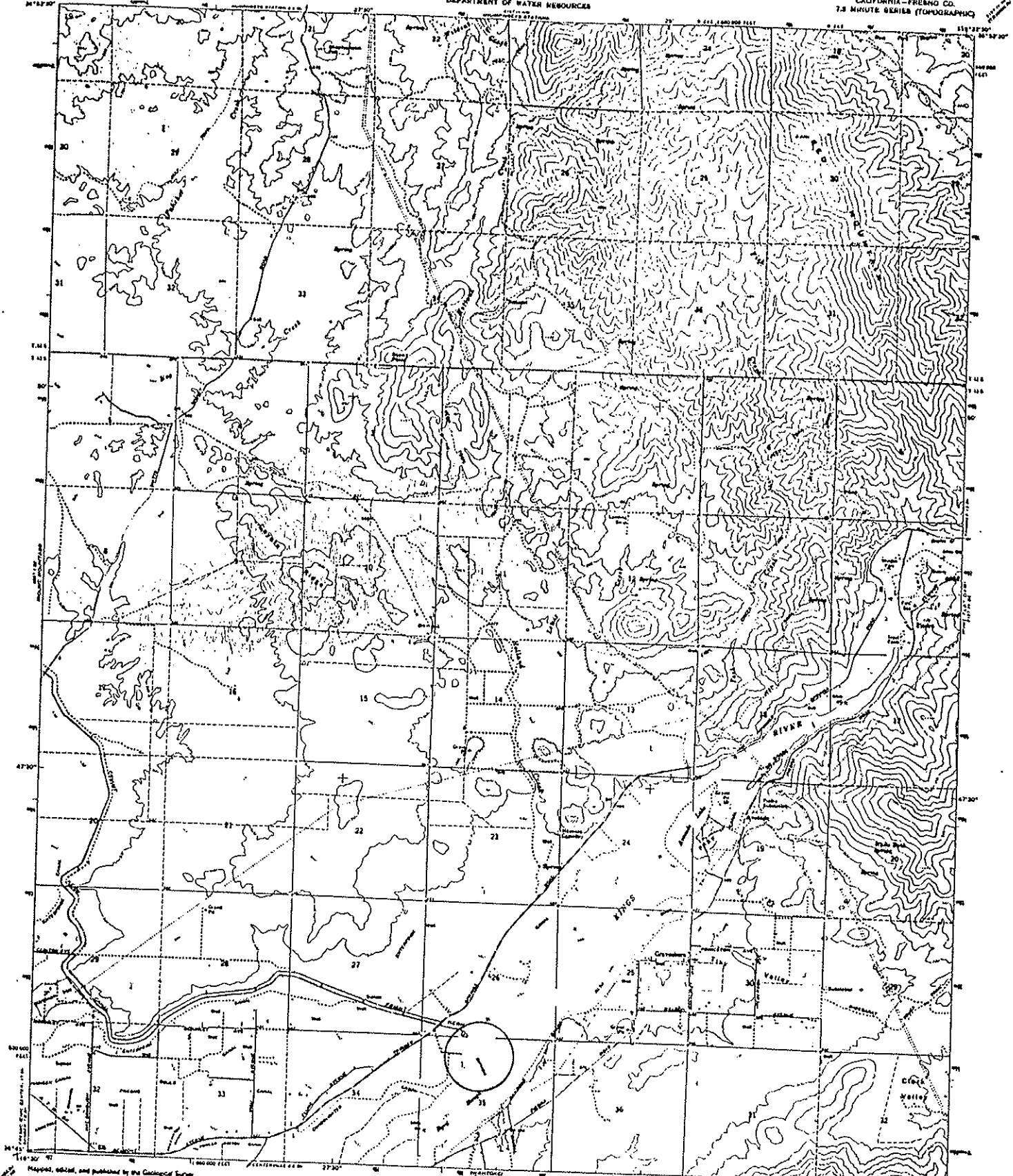
Downstream

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

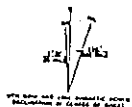


STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

PIEDRA QUADRANGLE
CALIFORNIA—FRESNO CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Map, edited, and published by the Geological Survey
Control by USGS and USGACG
Topographic by photogrammetric methods from air
photographs taken 1948. First Edition 1948
Supersedes 1:50,000 scale map of 1930
Vertical datum 1929 Mean American Sea Level
1:50,000 scale of 1930 to California coordinate system, and
1:25,000 scale of 1930 to National Plane grid system.
Scale 1:50,000
This map shows road and stream network from 1948



CONTOUR INTERVAL 30 FEET
5000 FEET REPRESENTS 10000 FEET
NATIONAL METER SYSTEM, BEING USEFUL IN 1995

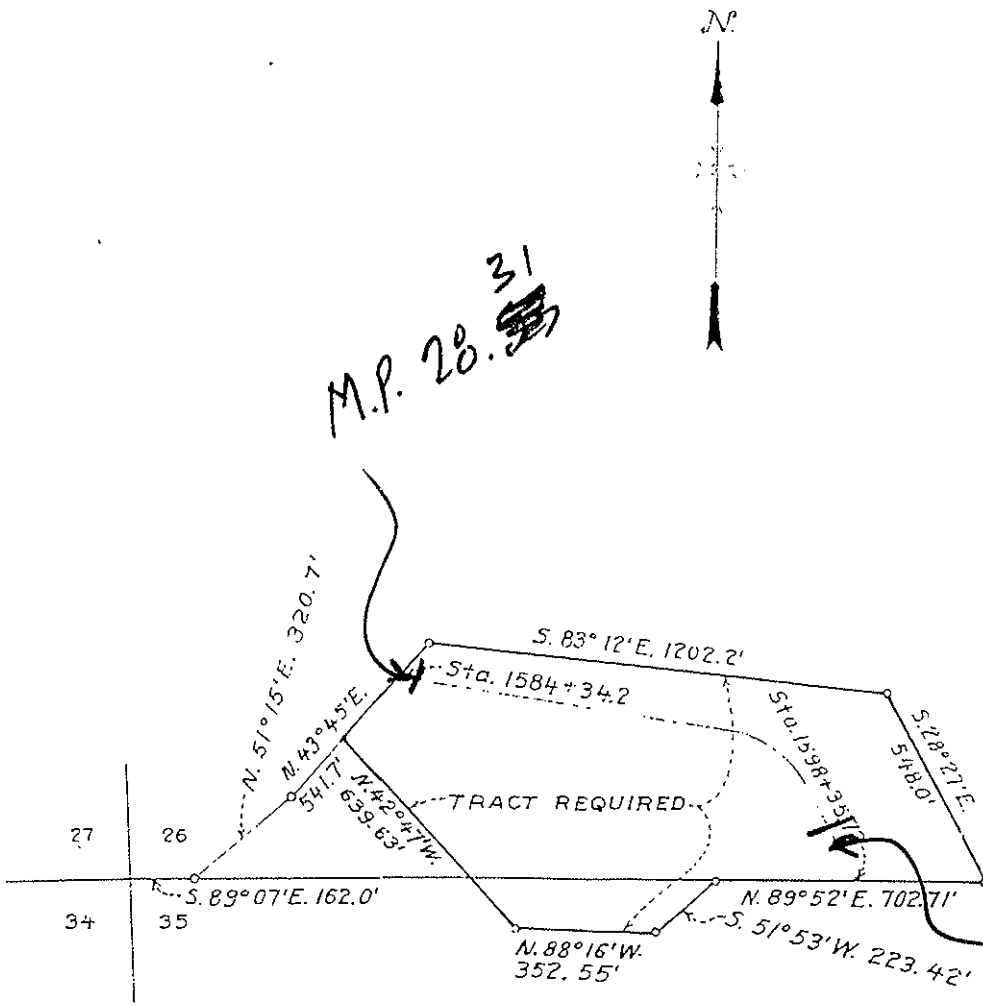
THIS MAP CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, WASHINGTON, D.C. 20506. FOR MORE INFORMATION
A FORMER U.S. GEOLOGICAL SURVEY MAP AND SYMBOLS ARE AVAILABLE ON REQUEST

ROAD CLASSIFICATION
National 6.5 4.5 3.5 2.5 1.5 0.5
Lump 4.5
Unimproved 4.5



PIEDRA, CALIF.
13245—811923 5/75
1965
FORM 13245 BY GSI—REVISED 1965

Unit 1

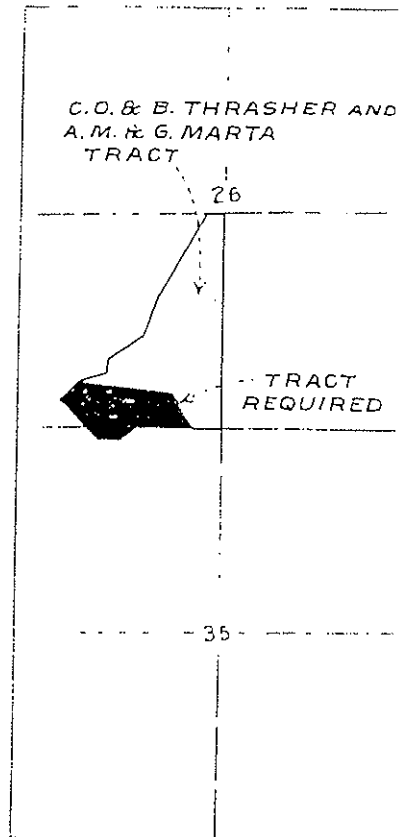


M.P. 28.31

M.P. 28.53

AREA = 19.0 ACRES

SCALE 1" = 400'



C.O. & B. THRASHER AND
A.M. & G. MARTA
TRACT

T. 13 S., R. 23 E.
M. D. M.

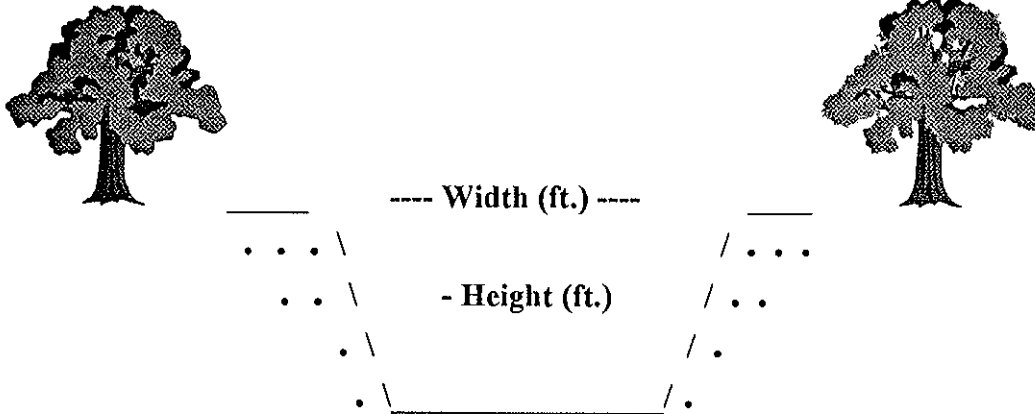
KEY MAP

SCALE 1" = 2000'

REV. 10-12-44	UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION CENTRAL VALLEY PROJECT-CALI FRIANT DIVISION FRIANT-KERN CANAL RIGHT C. O. THRASHER, ET. L	
	DRAWN: P. A. N.	SUBMITTED: <i>P. A. N.</i>
	TRACED: <i>H. L. E.</i>	RECOMMENDED: <i>P. A. N.</i>
	CHECKED: <i>H. L. E.</i>	APPROVED: <i>P. A. N.</i>
	F750A	FRIANT, CALIF. SEPT. 27, 1943

Milepost # 30.34
"White Tank Spring"

Milepost # 30.34
"White Tank Spring"



Type of Structure: Siphon Toe-Drain Underdrain Other

Width (ft.): 231'

Type of Maintenance: Chemical application; drag line; excavator.

Height (ft.): 20'

Length (ft.): *INCROW

Road (L or R): L

% Vegetation: 75% trees
25% cattails

Habitat Type: Upstream: weedy wetland; riparian. Downstream: emergent wetland; riparian. Upland: pasture.

Trees: X

Shrubs:

Herbaceous: X

Quadrangle Map Name: Wahtoke

County: Fresno

NE1/4, Section 2, T. 14S, R. 23E, M.D.B.& M.

Notes: Overcrossing. Very large willow (*Salix* sp.); cattails (*Typha* sp.) and fig (*Ficus carica*) trees.

*Inside canal right-of-way.

Date: August 1995

Milepost # 30.34
"White Tank Spring"



Upstream

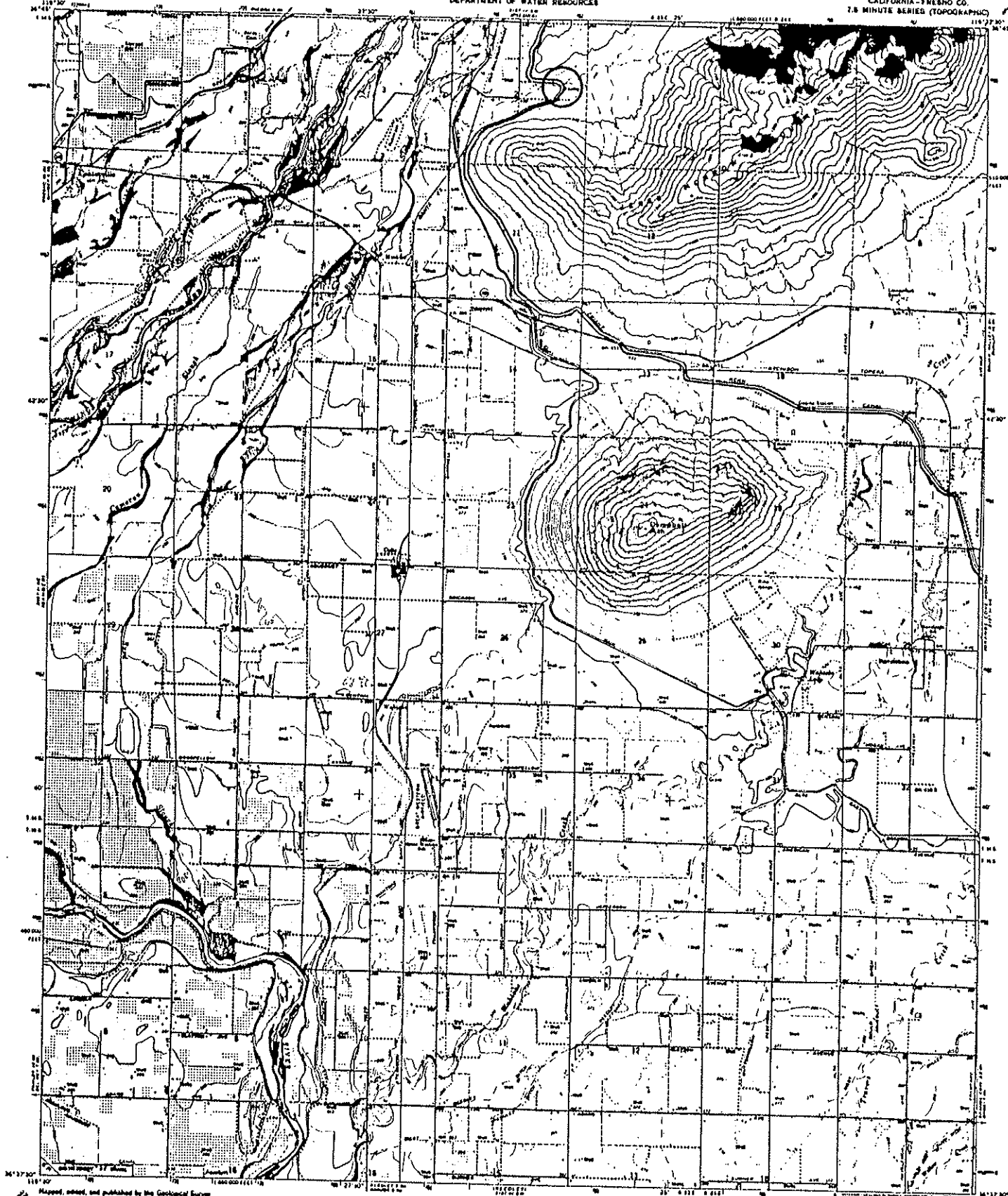


Downstream

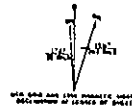
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

WANTOKE QUADRANGLE
CALIFORNIA - FRESNO CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Prepared, edited, and published by the Geological Survey
Contract by USGS and USCGRS
Forming series by photogrammetric methods from aerial
photographs taken 1963. First published 1966
Supersedes map dated 1921-66
Projection: projection 1807 North American datum
1:50,000 scale of 1:50,000 on California coordinate system, zone 4
USGS major Universal Transverse Mercator grid 8424,
zone 11, shown in blue
The 1:50,000 scale edition selected same lines



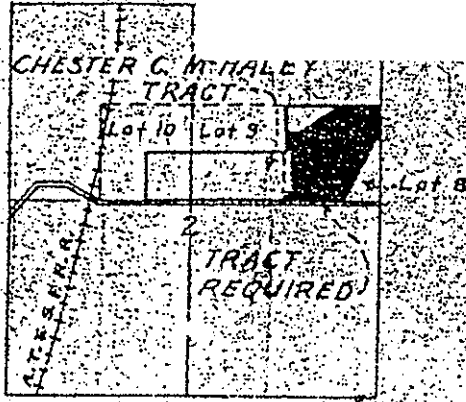
CONTOUR INTERVAL 30 FEET
BOTTED LINES REPRESENT STEEP SLOPES
Below a 1:50,000 Scale



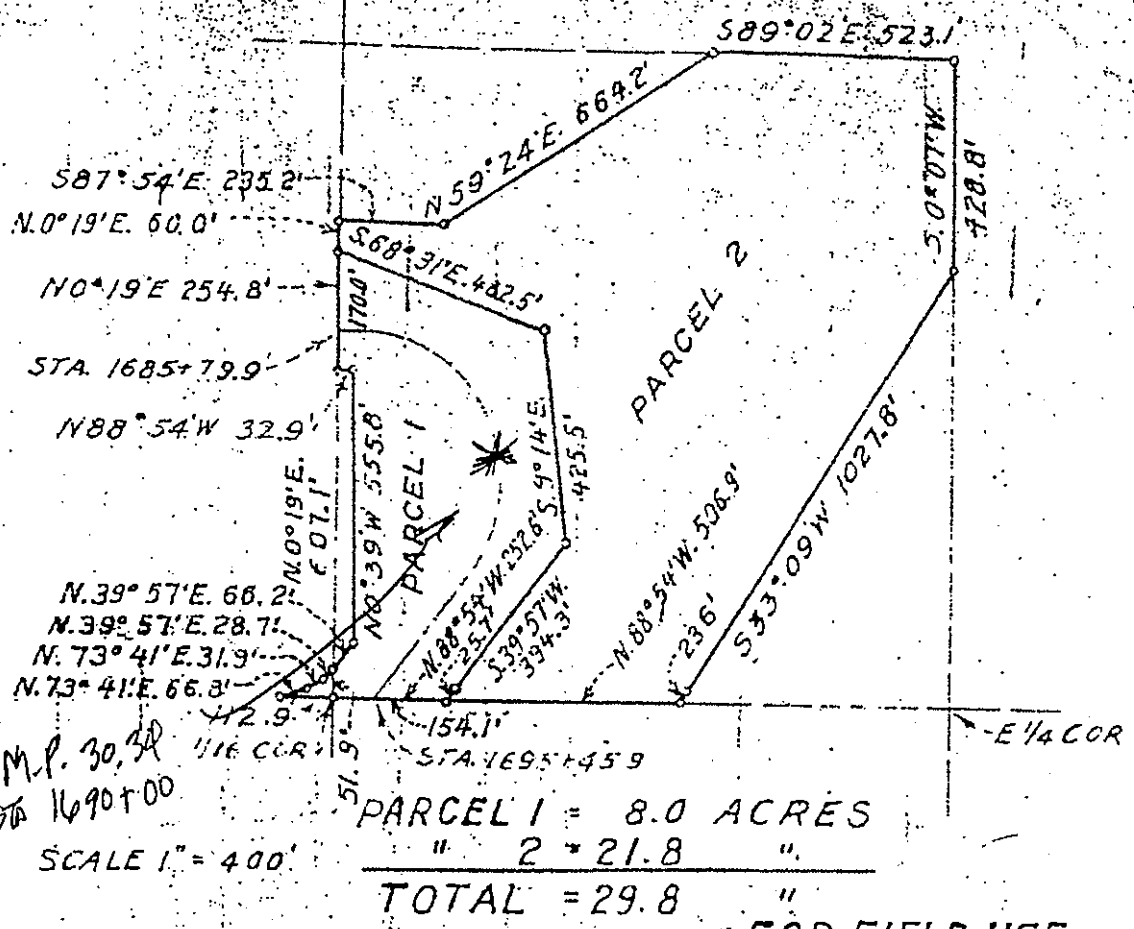
ROAD CLASSIFICATION
Medium duty ——— Light duty ———
Unimproved dirt ———
State Road ○

THIS MAP COMPLETES THE NATIONAL MAP ACCURACY STANDARD
FOR SALES BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225 OR WASHINGTON, D.C. 20542
& FOLIO REFERENCE: BATHYMETRIC, MAPS AND STATISTICS IS AVAILABLE ON REQUEST

WANTOKE, CALIF.
H46778 - H11922 5/78
1966
ANSI Z39.48-1968 PERM 906

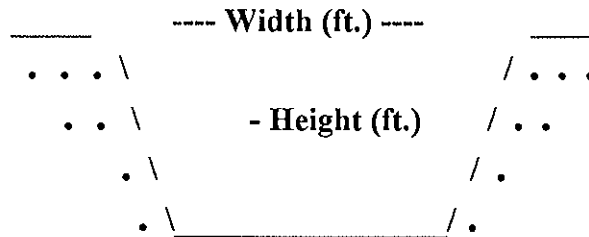


T14S. R23E. M.D.M.
 KEY MAP
 SCALE, 1" = 2640'



WA-544
 REV 8-25/12-7-45
 UNITED STATES
 DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 CENTRAL VALLEY PROJECT-CALIFORNIA
 FRIANT DIVISION
 FRIANT-NERN CANAL RIGHT OF WAY
 CHESTER C. McHALEY
 DRAWN: W.S. SUBMITTED BY: [Signature]
 TRACED: C.J.E. RECOMMENDED BY: [Signature]
 CHECKED: [Signature]
 FT73A

Milepost # 33.89



Type of Structure: Siphon Toe-Drain Underdrain Other

Width (ft.): 25'

Type of Maintenance: No maintenance.

Height (ft.): 1'

Length (ft.): *INCROW

Road (L or R): L & R

% Vegetation: 75% weeds

Habitat Type: Upstream and downstream:
poor riparian. Upland: non-native grassland

Trees:

Shrubs: X

Herbaceous: X

Quadrangle Map Name: Wahtoke

County: Fresno

SE1/4, Section 13, T. 14S, R. 23E, M.D.B.& M.

Notes: Two willow (*Salix* sp.) shrubs downstream. One salt cedar (*Tamarix ramosissima*) shrub upstream.

*Inside canal right-of-way.

Date: August 1995

Milepost # 33.89



Upstream

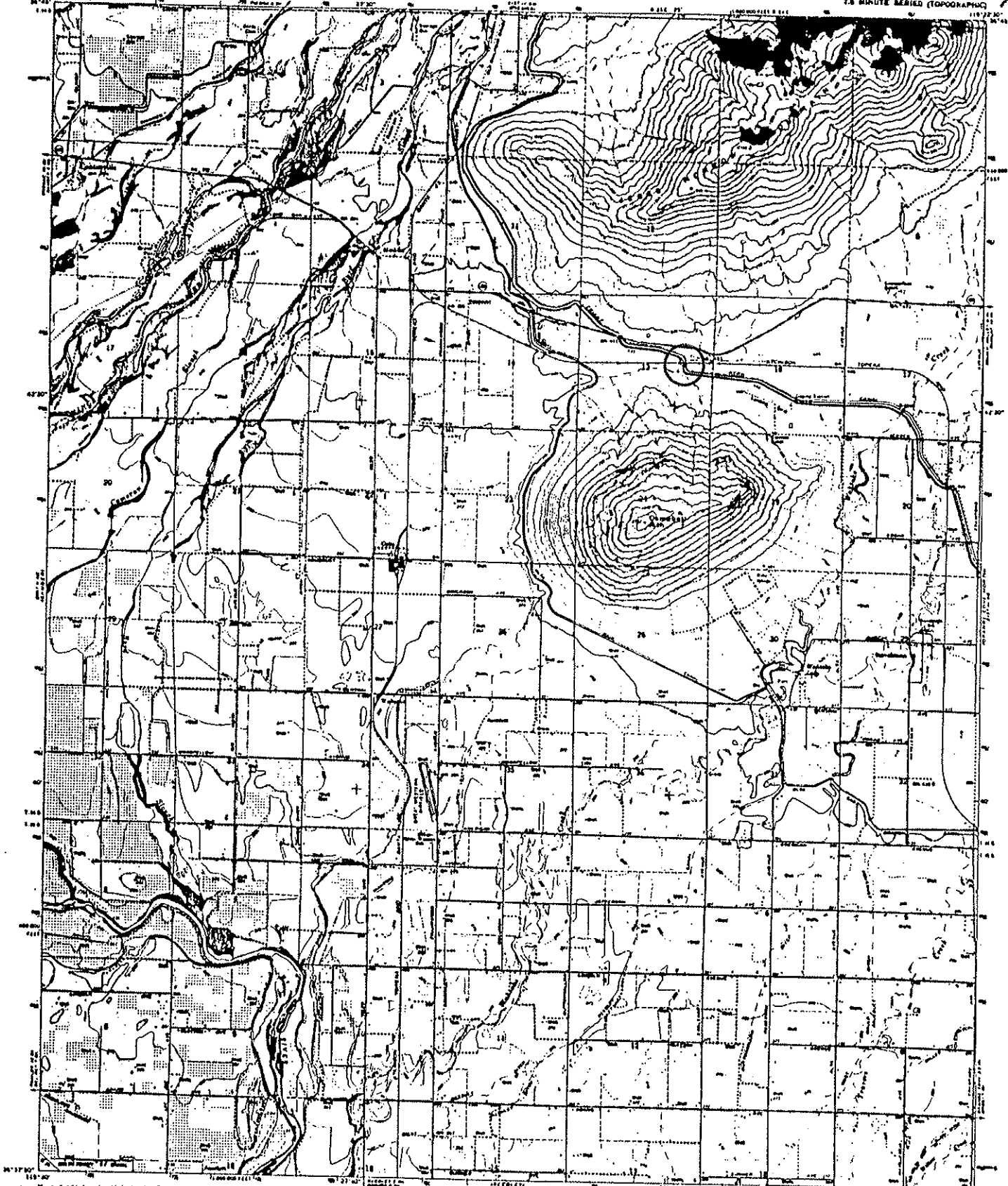


Downstream

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

WANTOKE QUADRANGLE
CALIFORNIA-FRESNO CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Maped, drawn, and published by the Geological Survey
 under authority of the U.S. GEOLOGICAL SURVEY
 Copyright © 1964 by the U.S. Geological Survey
 This map is a reproduction of the original map
 published in 1927 and is not a substitute for the
 original map. It is based on the original map and
 contains minor corrections and changes in scale.
 This map is not a substitute for the original map.



Scale: 1 inch = 1 mile
 Contour Interval: 20 Feet
 Spot Elevation: 10 Feet
 Contour Interval: 20 Feet
 Spot Elevation: 10 Feet

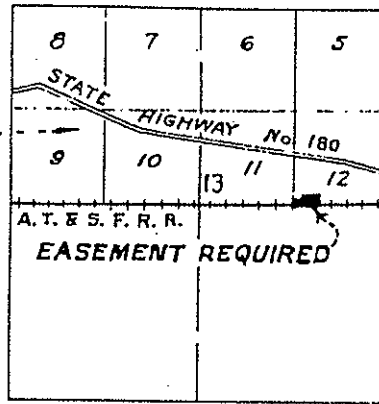
NO. CLASSIFICATION
 Legend:
 Contour Interval: 20 Feet
 Spot Elevation: 10 Feet



THIS MAP CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U.S. GEOLOGICAL SURVEY, OFFICE OF GEOGRAPHIC NAMES AND MAP INFORMATION, D.C. 20508
 A FOLDER DESCRIBING MAP INFORMATION, MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

WANTOKE, CALIF.
 7.5 MINUTE SERIES
 1964
 AND 1957 IN PART—GENEAL 1964

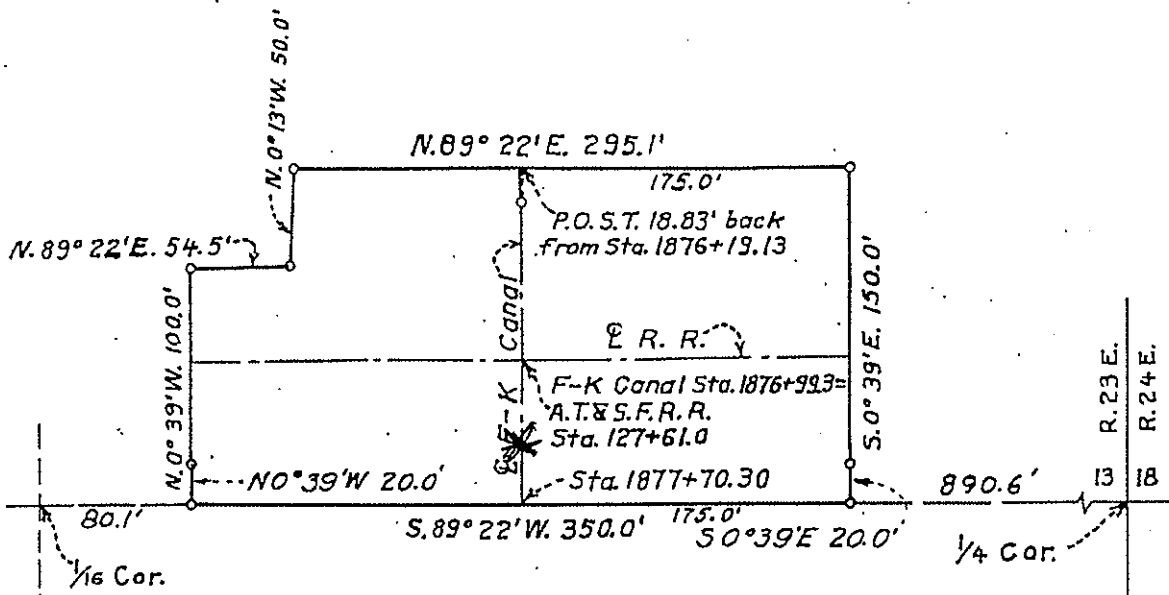
PORTION OF WAHTOKE
THERMAL TRACT



T. 14 S., R. 23 E. M.D.M.

KEY MAP

SCALE 1" = 2640'



AREA = 1.3 ACRES

SCALE 1" = 100'

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
CENTRAL VALLEY PROJECT - CALIFORNIA
FRIANT DIVISION
FRIANT-KERN CANAL RIGHT OF WAY
ATGHISON TOPEKA AND SANTA FE
RAILROAD CO.

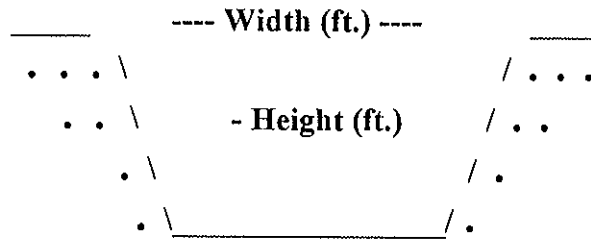
REV 10-31-56
222

DRAWN: J.L.S. SUBMITTED: *J. Cravner*
TRACED: H.L.E. RECOMMENDED: *H.L.E.*

CHECKED: S.L.

F777A

Milepost # 35.16 to 35.58



Type of Structure: Siphon _____ Toe-Drain X Underdrain _____ Other _____

Width (ft.): 20'

Type of Maintenance: Chemical application; crane drag line excavation and backhoe.

Height (ft.): 15'

Length (L or R): *INCROW ~ 500' (about to Wahtoke Creek)

Road (L or R):

% Vegetation:

Habitat Type: Ruderal

Trees:

Shrubs:

Herbaceous: 100%

Quadrangle Map Name: Wahtoke

County: Fresno

SW1/4, Section 17, T. 14S, R. 24E, M.D.B.& M.

Notes: California sunflower (*Helianthus annuus*); grasses; telegraph weed (*Heterothea*); cattails (*Typha* sp.).

*Inside canal right-of-way.

Date: August 1995

Milepost # 35.16 to 35.58



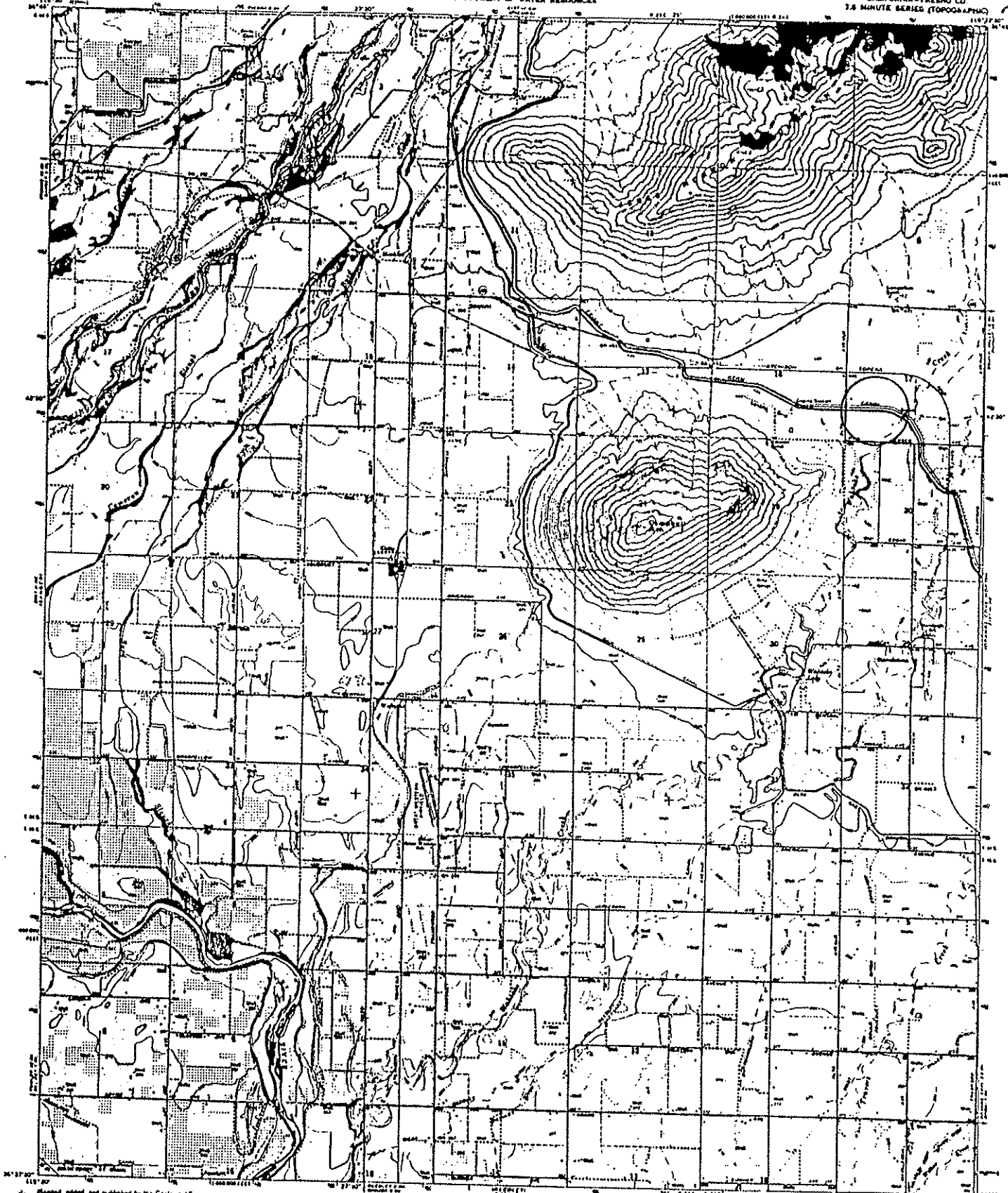
Upstream

No Channel Downstream

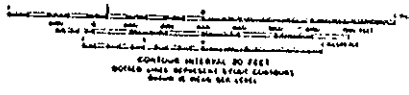
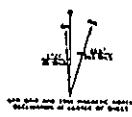
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

WANTOKE QUADRANGLE
CALIFORNIA-FRESNO CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey
Control by USGS and USCGS
Photography by airplane-mounted cameras from aerial
photographs taken 1953-54 and 1964
Supplements may show 1965-66
Publication 1967 1:25,000 scale
50,000 feet g.c. based on California coordinate system, zone 4
1960 datum. Interval of contour lines 20 feet,
less 10 feet above 4,000
Five feet contour lines indicate selected lower lines



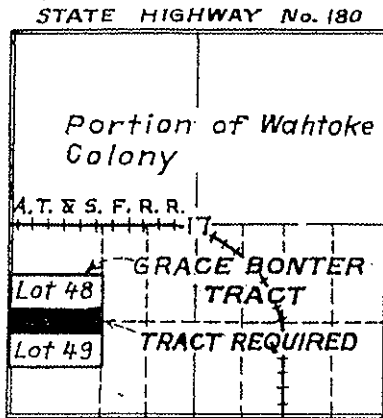
CONTOUR INTERVAL 20 FEET
BOTTLE NECKS REPRESENT 15-FOOT CONTOURS
Below 4,000 FEET LEVEL

ROAD CLASSIFICATION
Highway 1
Unimproved rd 2
Rail Road



THIS MAP COMPLIES WITH NATIONAL MAP ACTUACITY STANDARDS
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WANTOKE, CALIF.
846376-811322 1/1 S
1967
AND 8157 IN BUY-SHARE PLAN

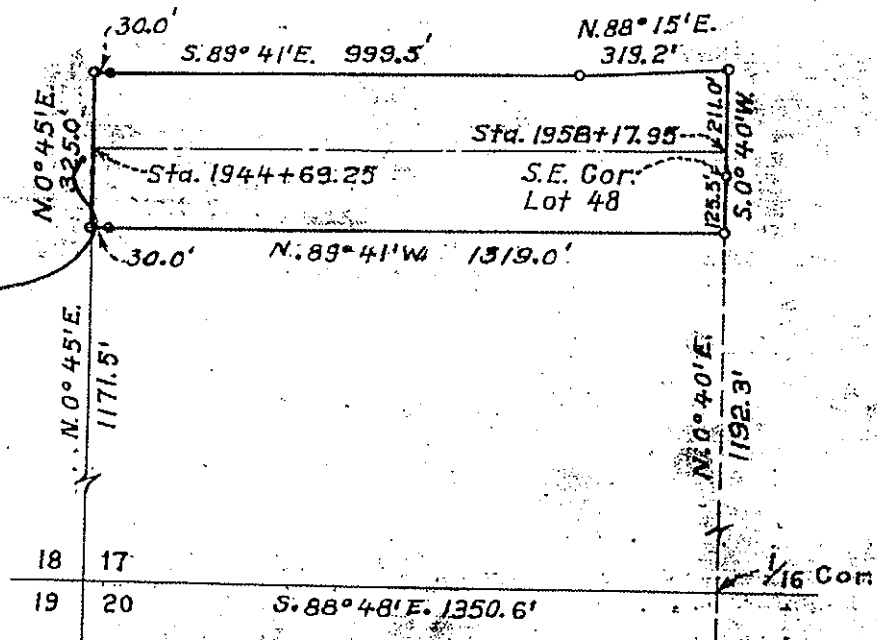


T. 14 S., R. 24 E. M. D. M.

KEY MAP

SCALE 1" = 2640'

M.P.
35.16



AREA = 10.1 ACRES

SCALE 1" = 400'

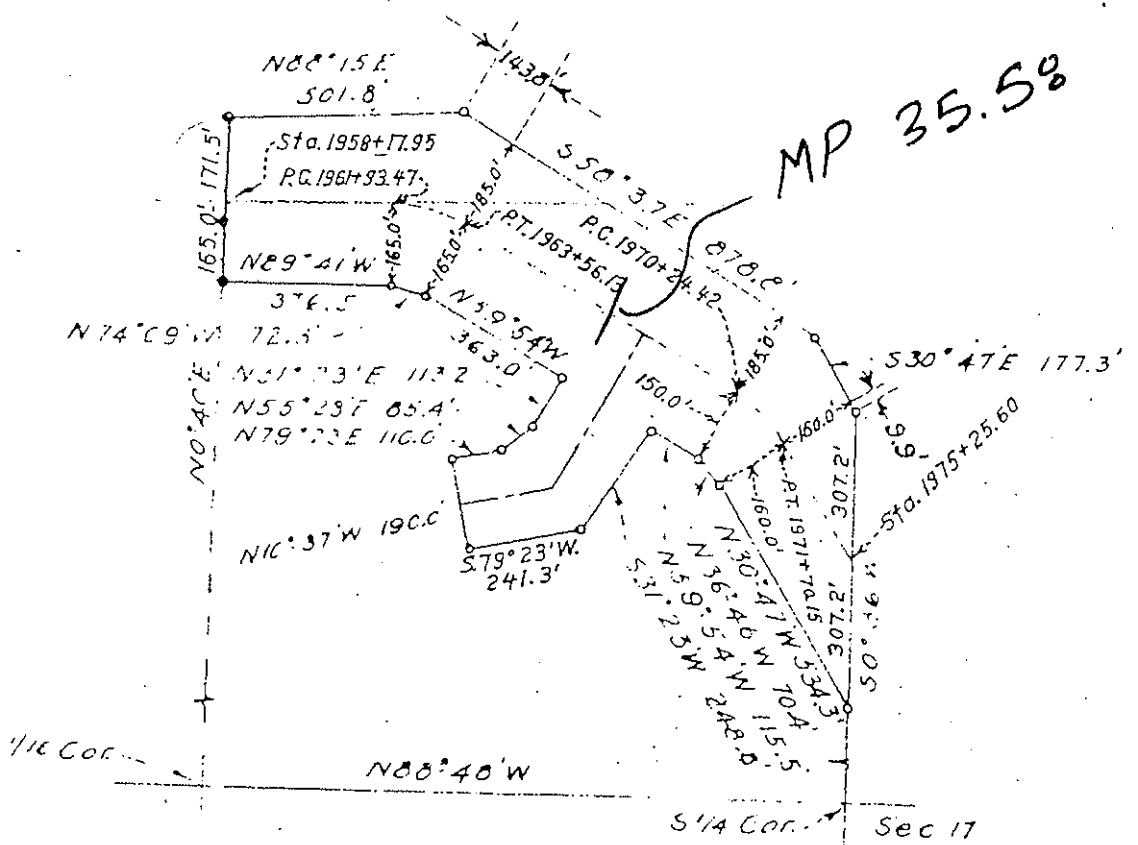
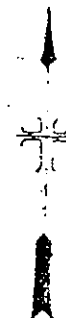
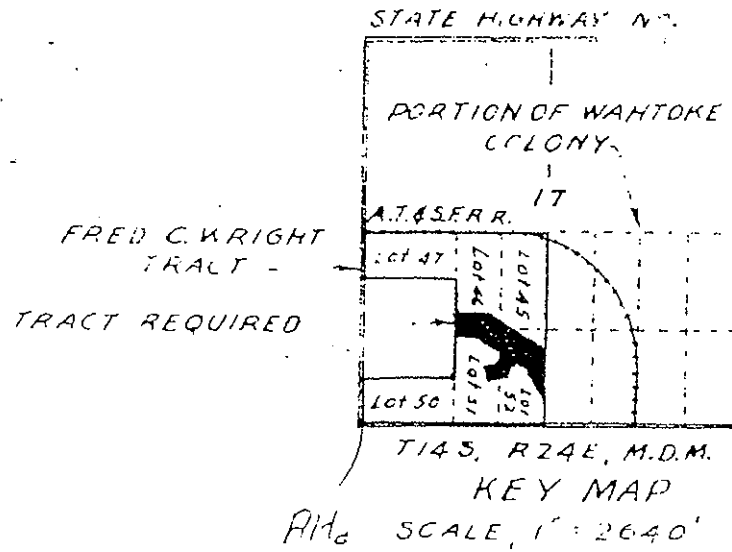
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
CENTRAL VALLEY PROJECT - CALIFORNIA
PRIANT DIVISION
PRIANT-KERN CANAL RIGHT OF WAY
GRACE BONTER

DRAWN: J. L. S. SUBMITTED: *[Signature]*

TRACED: *[Signature]*

CHECKED: *[Signature]*

F782A



AREA = 14.5 ACRES
SCALE, 1" = 400'

FOR FIELD USE

GNW - G.H. Karscher

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION CENTRAL VALLEY PROJECT - CALIF. FRIANT DIVISION FRIANT-KERN CANAL RIGHT OF WAY FRED C. WRIGHT	
DRAWN: C.J.E.	SUBMITTED: <i>[Signature]</i>
TRACED: G.J.E.	RECOMMENDED: <i>[Signature]</i>
CHECKED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>
F783A	

Property line on channel goes to pipe line line