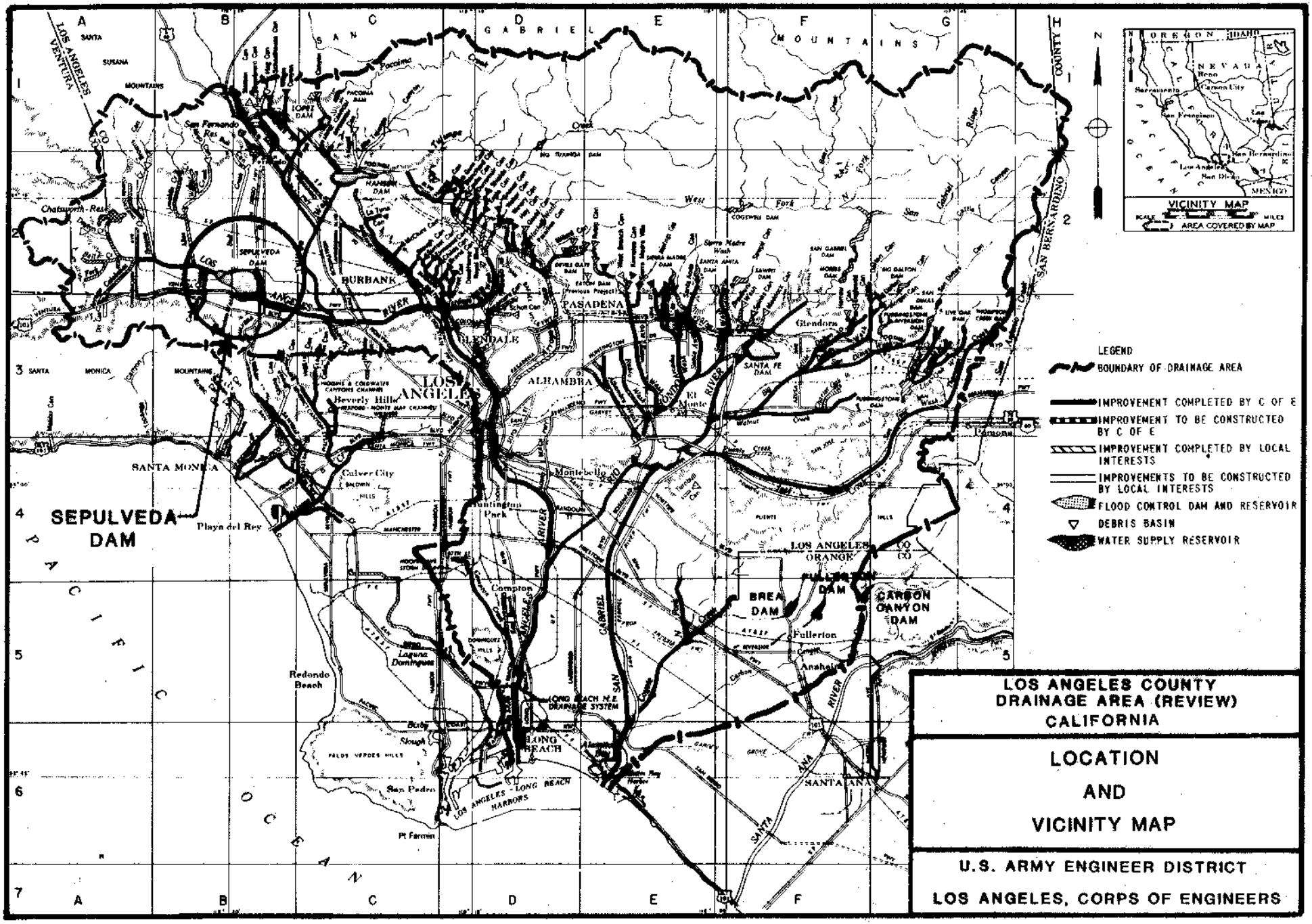

LEGEND
BOUNDARY OF DRAINAGE AREA
IMPROVEMENT COMPLETED BY C OF E
IMPROVEMENT TO BE CONSTRUCTED BY C OF E
IMPROVEMENT COMPLETED BY LOCAL INTERESTS
IMPROVEMENTS TO BE CONSTRUCTED BY LOCAL INTERESTS
FLOOD CONTROL DAM AND RESERVOIR
DEBRIS BASIN
WATER SUPPLY RESERVOIR
VICINITY MAP
AREA COVERED BY MAP
SEPULVEDA DAM
BREA DAM
CARBON CANYON DAM
FULLERTON DAM
LOS ANGELES
PASADENA
BURBANK
GLENDALE
ALHAMBRA
SANTA MONICA
LONG BEACH
SANTA ANA
PACIFIC OCEAN
SAN GABRIEL MOUNTAINS
LOS ANGELES COUNTY DRAINAGE AREA (REVIEW) CALIFORNIA
LOCATION AND VICINITY MAP
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES, CORPS OF ENGINEERS

PLATE 2-01

PACOIMA DAM
BIG TUJUNGA DAM
LOS ANGELES RESERVOIR
LOPEZ DAM
PACOIMA WASH
HANSEN DAM
DEVIL'S GATE DAM
COGSWELL DAM
SAN GABRIEL DAM
SIERRA MADRE DAM
SANTA ANITA DAM
MORRIS DAM
BIG DALTON DAM
SAN DIMAS DAM
CHATSWORTH RESERVOIR
RUBBER DAM
TUJUNGA WASH
VERDUGO WASH
SECO
EATON WASH DAM
SAWPIT DAM
SAWPIT WASH
SANTA ANITA WASH
EATON WASH
LITTLE DALTON WASH
DALTON WASH
SAN DIMAS WASH
THOMPSON CREEK DAM
LIVE OAK DAM
PUDDINGSTONE DIVERSION DAM
PUDDINGSTONE DAM
LOS ANGELES RIVER
ENCINO RESERVOIR
SEPULVEDA DAM
16,900 CFS CHANNEL CONSTRAINT
20,000 CFS CHANNEL CONSTRAINT
35,000 CFS CHANNEL CONSTRAINT
ARROYO
HONDO
RIVER
BIG WALNUT CR
SANTA FE DAM
WHITTIER NARROWS DAM
RIO SAN JOSE WASH
PACIFIC OCEAN
COMPTON
LOS ANGELES
GABRIEL
BREA DAM
FULLERTON DAM
MILLER BASIN (DIVERSION)
CR
COYOTE
CARBON
CR.
SAN
LOS

5 0 5 10 15 STATUTE MILE
5 0 5 10 20 KILOMETERS

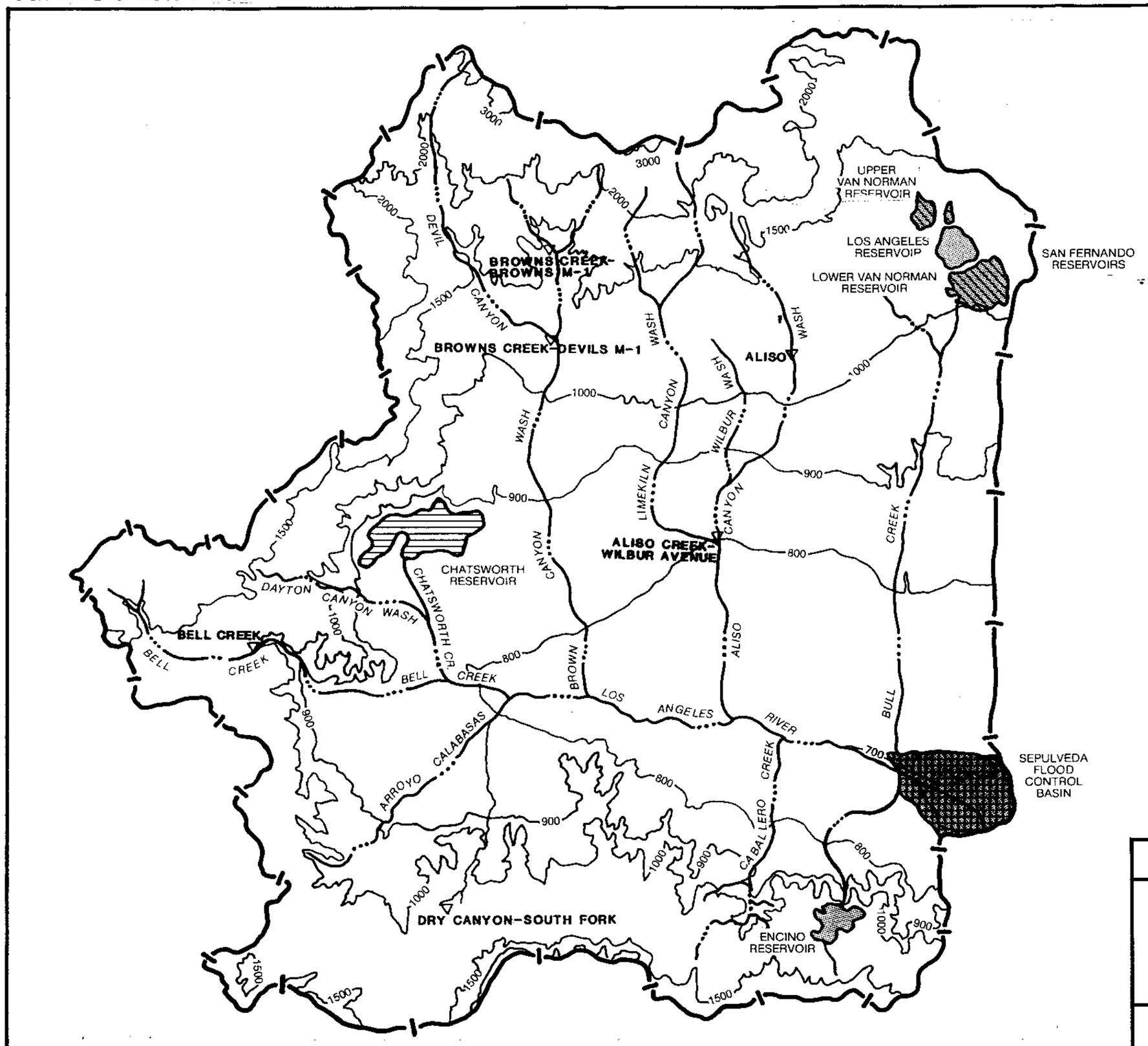
SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

LOS ANGELES COUNTY DRAINAGE AREA

RIVERS AND DAMS

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

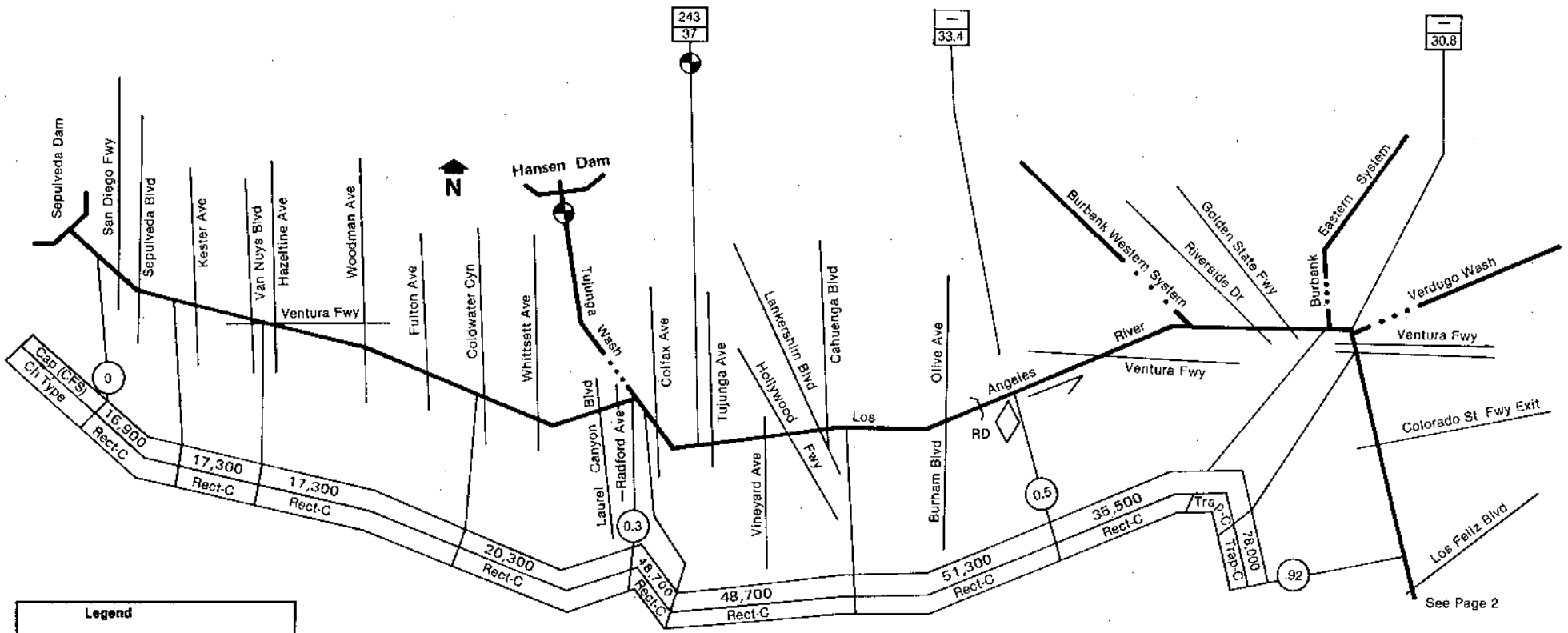
PLATE 2-02



SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

RIVERS AND RESERVOIRS ABOVE SEPULVEDA DAM

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Legend

- Dam
- Recharge Basin
- RD Rubber Dam
- Drop Structure
- Stream Gage
- Drainage Area
- Miles From Stream Mouth
- Travel Time (Hours)
- Foot Bridge
- U Channel Unlined
- R Rip Rap Side Slopes
- S Soft Bottom
- C Concrete
- G Grouted Stone
- G/C Side Slope / Bottom
- L Levee

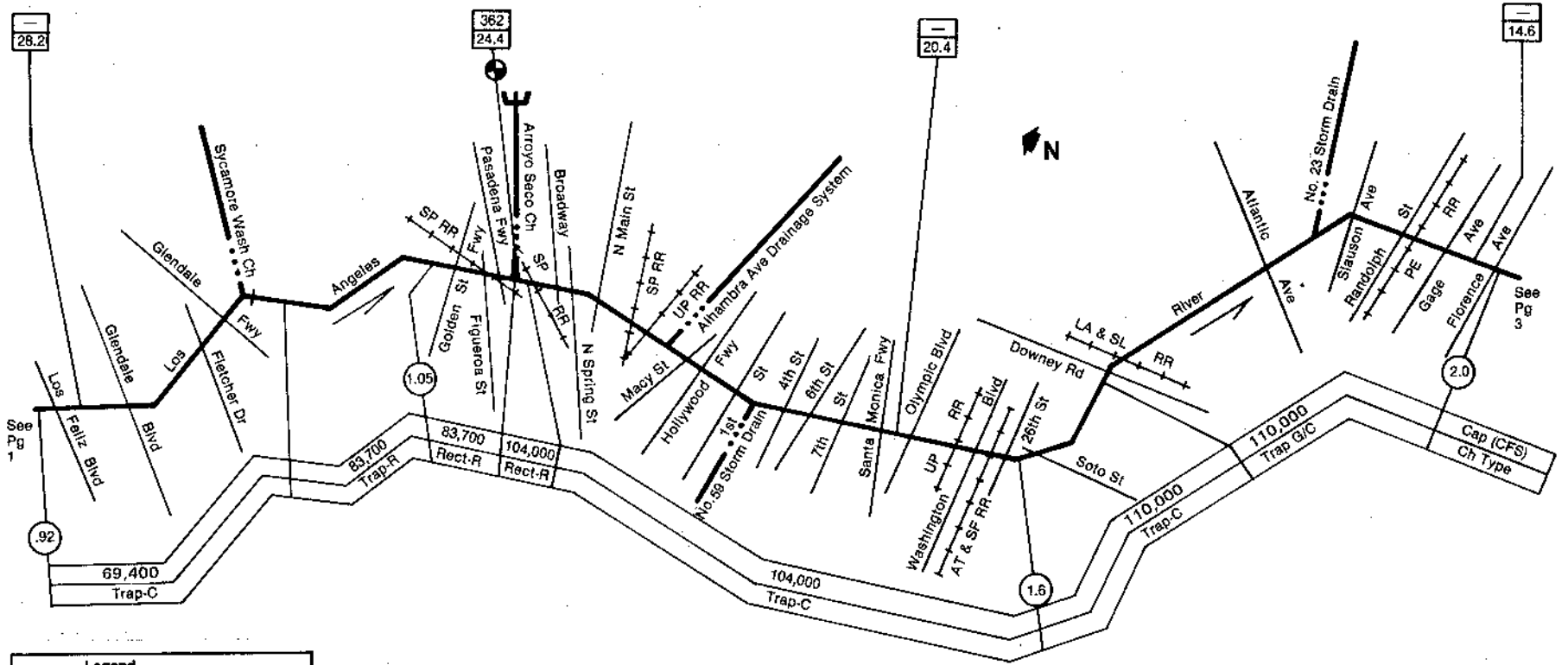
	Significant Features	Miles	Remarks
RD	Headworks Spreading Grounds	33.4	Intake Capacity 40 CFS at Rubber Dam
	Los Angeles River at Tujunga (LACFCD)	37	Telemetry LART
	Tujunga Wash	37.8	Flows Regulated by Hansen, Big Tujunga, Pacoima and Lopez Dams

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

CHANNEL CAPACITIES & CONFIGURATIONS LOS ANGELES RIVER

SEPULVEDA DAM TO LOS FELIZ BLVD

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Legend

- Dam
- Recharge Basin
- RD Rubber Dam
- Drop Structure
- Stream Gage
- Drainage Area / Miles From Stream Mouth
- Travel Time (Hours)
- Foot Bridge
- U Channel Unlined
- R Rip Rap Side Slopes
- S Soft Bottom
- C Concrete
- G Grouted Stone
- G/C Side Slope / Bottom
- L Levee

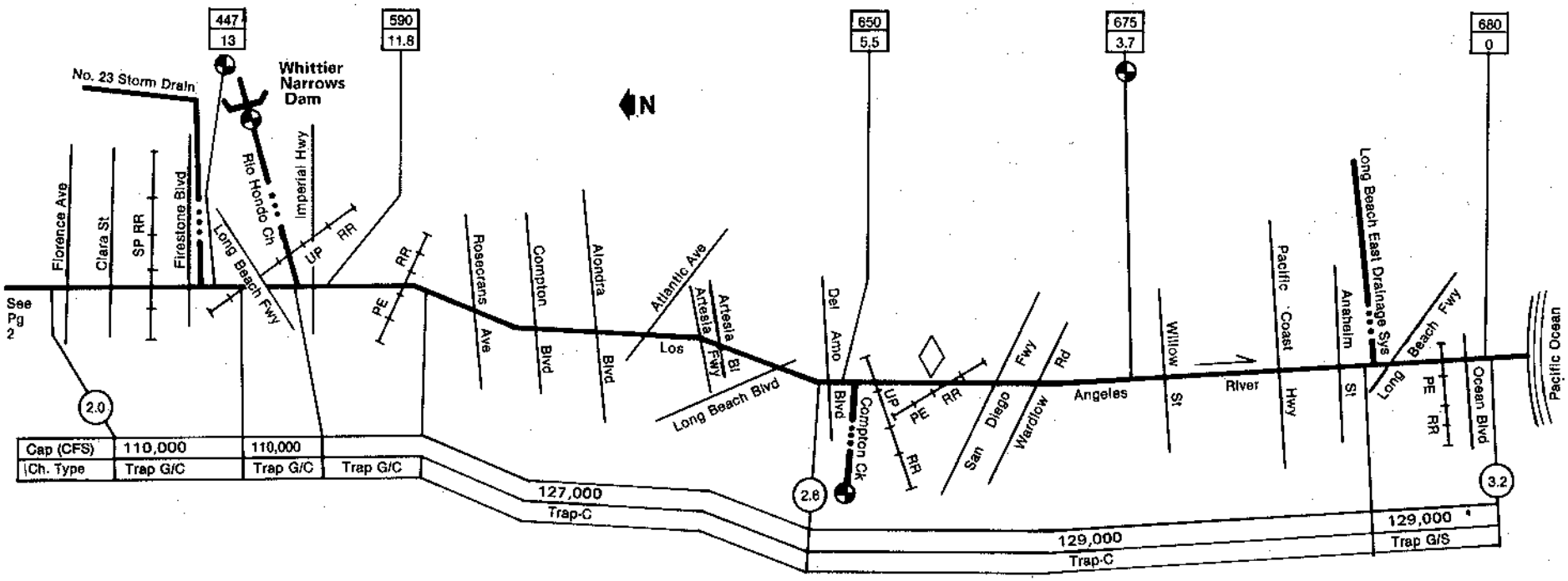
	Significant Features	Miles	Remarks
◓	Los Angeles River Above Arroyo Seco	24.4	Telemetry 002 LARA
	Arroyo Seco Channel	24.3	Flow Regulated by Devils Gate Dam (Max Q = 43,000 CFS)

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

CHANNEL CAPACITIES & CONFIGURATIONS LOS ANGELES RIVER

LOS FELIZ BLVD
TO
FLORENCE AVE

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



Legend

- Dam
- Recharge Basin
- RD Rubber Dam
- Drop Structure
- Stream Gage
- Drainage Area / Miles From Stream Mouth
- Travel Time (Hours)
- Foot Bridge
- U Channel Unlined
- R Rip Rap Side Slopes
- S Soft Bottom
- C Concrete
- G Grouted Stone
- G/C Side Slope / Bottom
- L Levee

	Significant Features	Miles	Remarks
◔	Los Angeles River Near Firestone	13	Telemetry LARF
◔	Rio Hondo Channel near Downey	12.1	Flows Regulated by Whittier Narrows Flood Control Reservoir
◇	Dominguez Gap Spreading Grounds	4.7-5.1	Intake Capacities 3-20 CFS
◔	Los Angeles River Near Wardlow	3.7	Telemetry LARW
◔	Compton Creek Near Greenleaf		(LACFCD)

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

CHANNEL CAPACITIES & CONFIGURATIONS LOS ANGELES RIVER

FLORENCE AVE TO PACIFIC OCEAN

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

The Plate you are attempting to access is not currently available.

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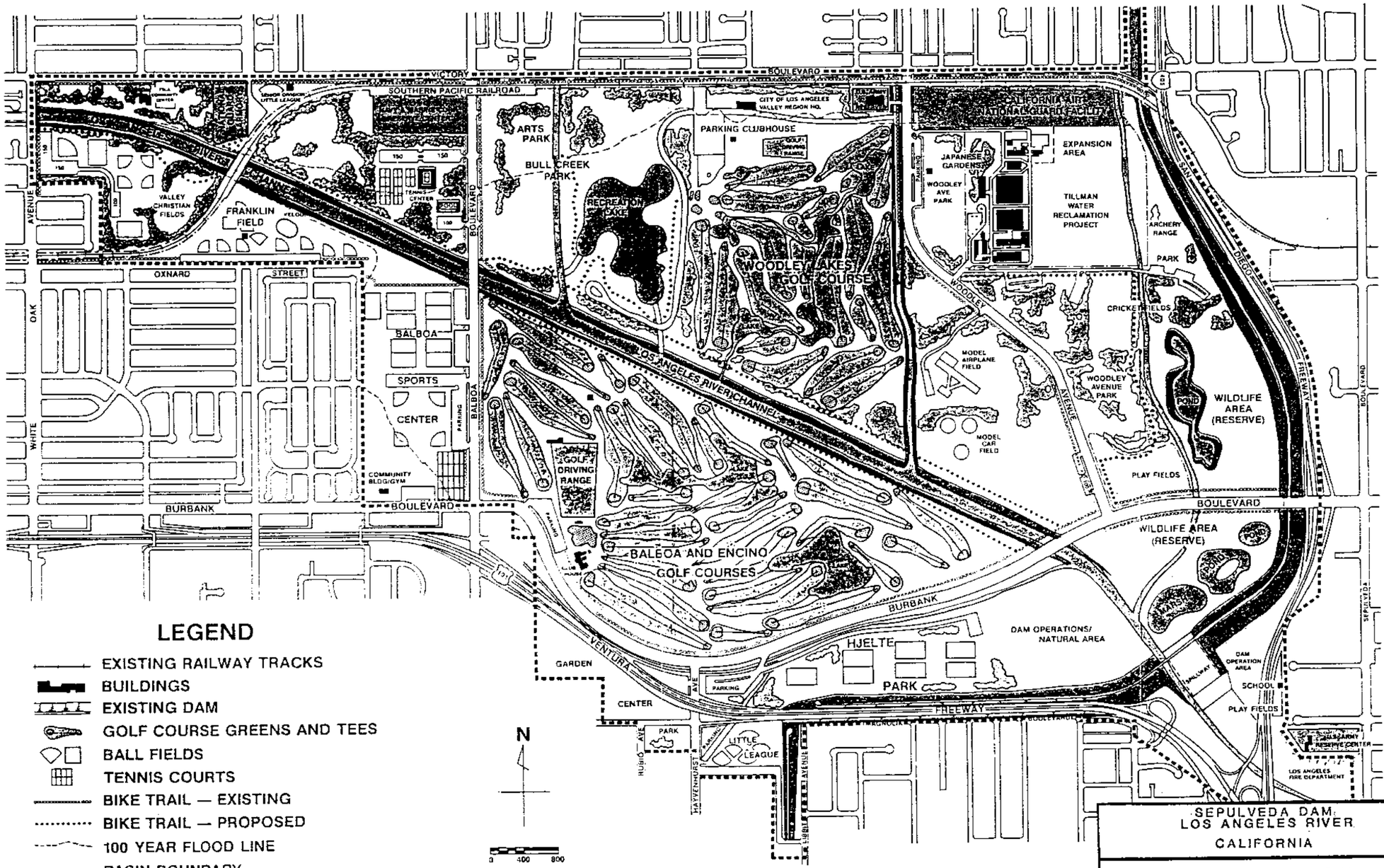

LEGEND

- EXISTING RAILWAY TRACKS
- BUILDINGS
- EXISTING DAM
- GOLF COURSE GREENS AND TEES
- BALL FIELDS
- TENNIS COURTS
- BIKE TRAIL — EXISTING
- BIKE TRAIL — PROPOSED
- 100 YEAR FLOOD LINE
- BASIN BOUNDARY
- MILITARY FACILITIES

SEPULVEDA BASIN MASTER PLAN

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

SEPULVEDA BASIN
WILDLIFE AND RECREATION
MASTER PLAN

U.S. CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 2-07

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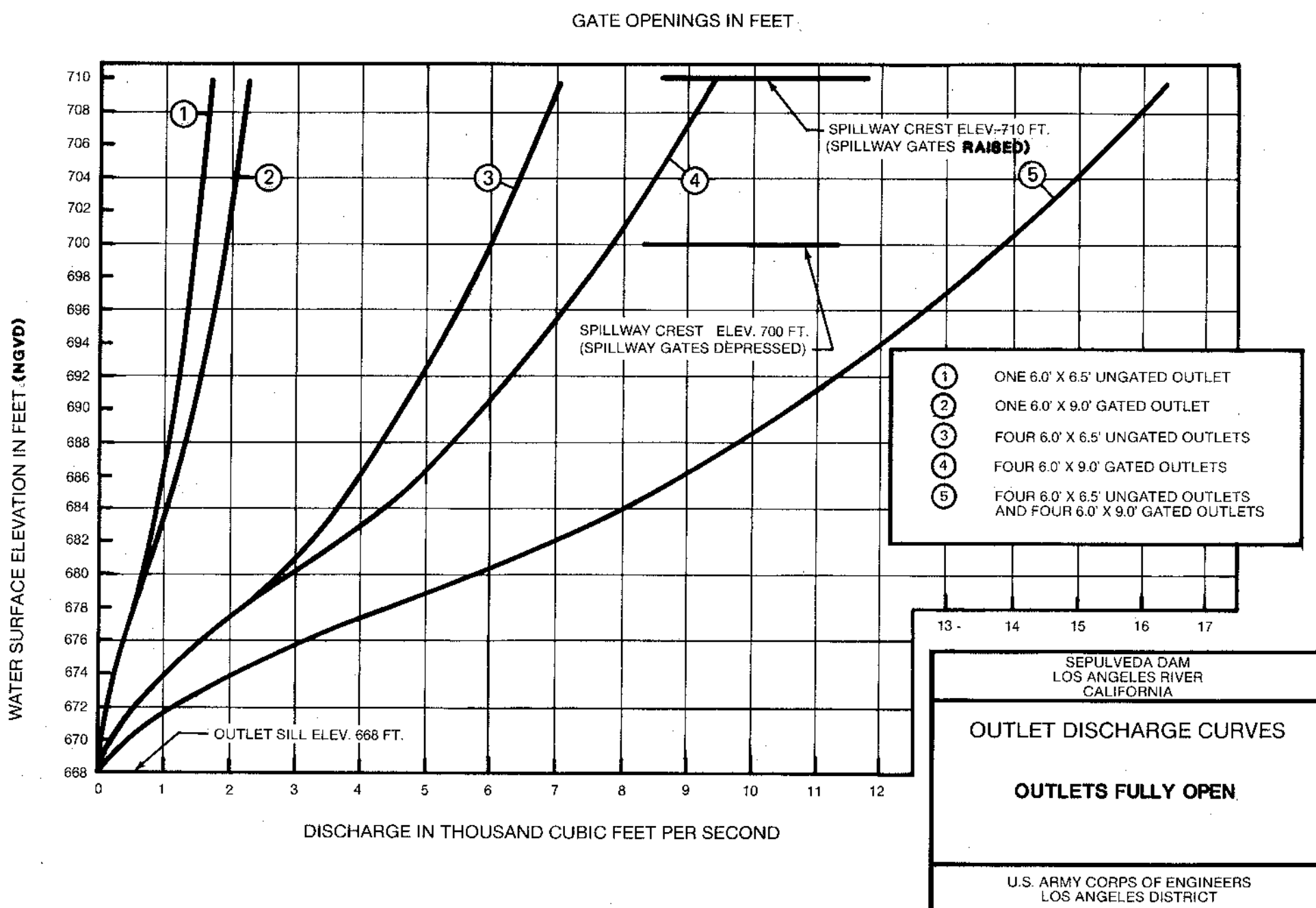
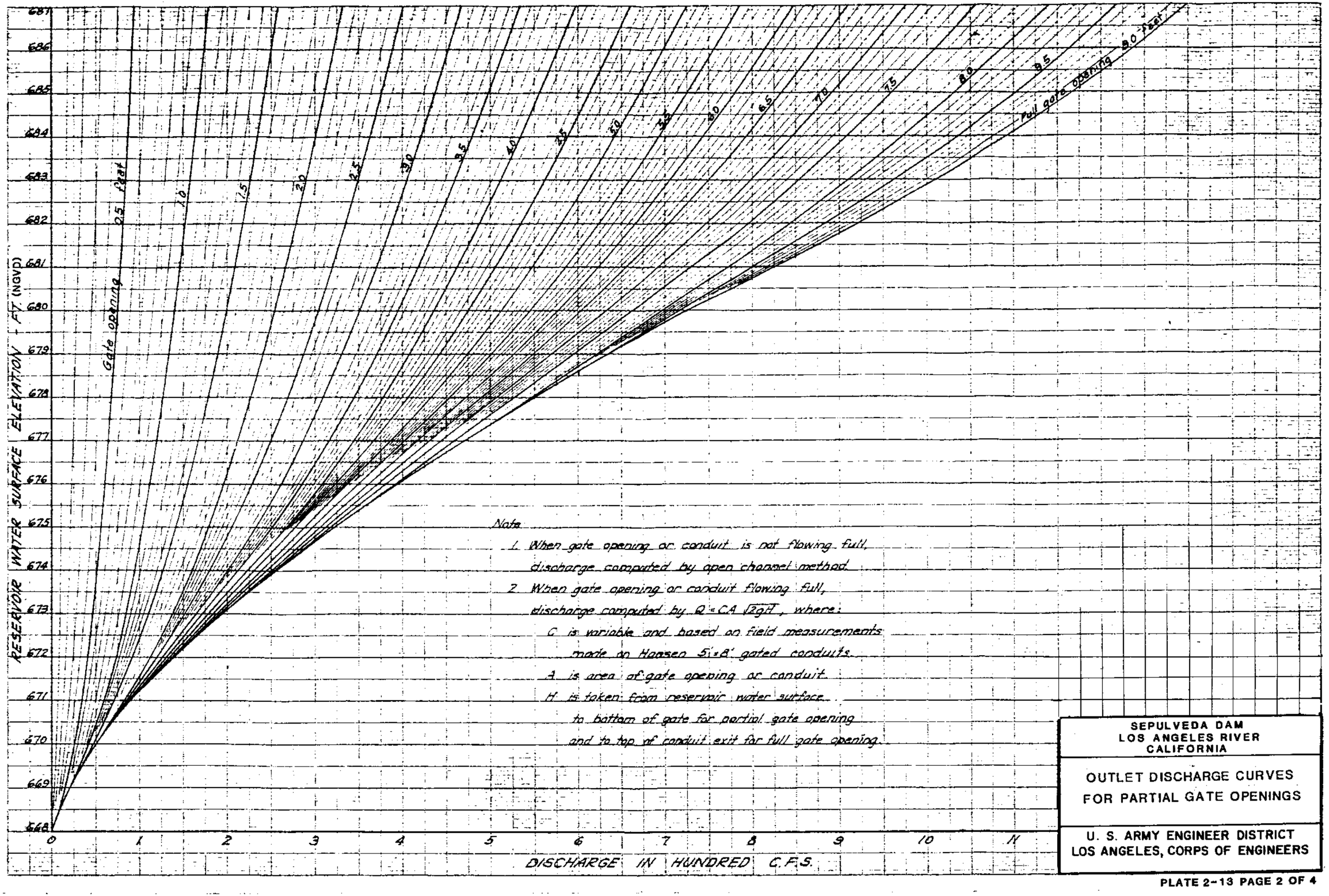


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

OUTLET DISCHARGE CURVES

OUTLETS FULLY OPEN

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



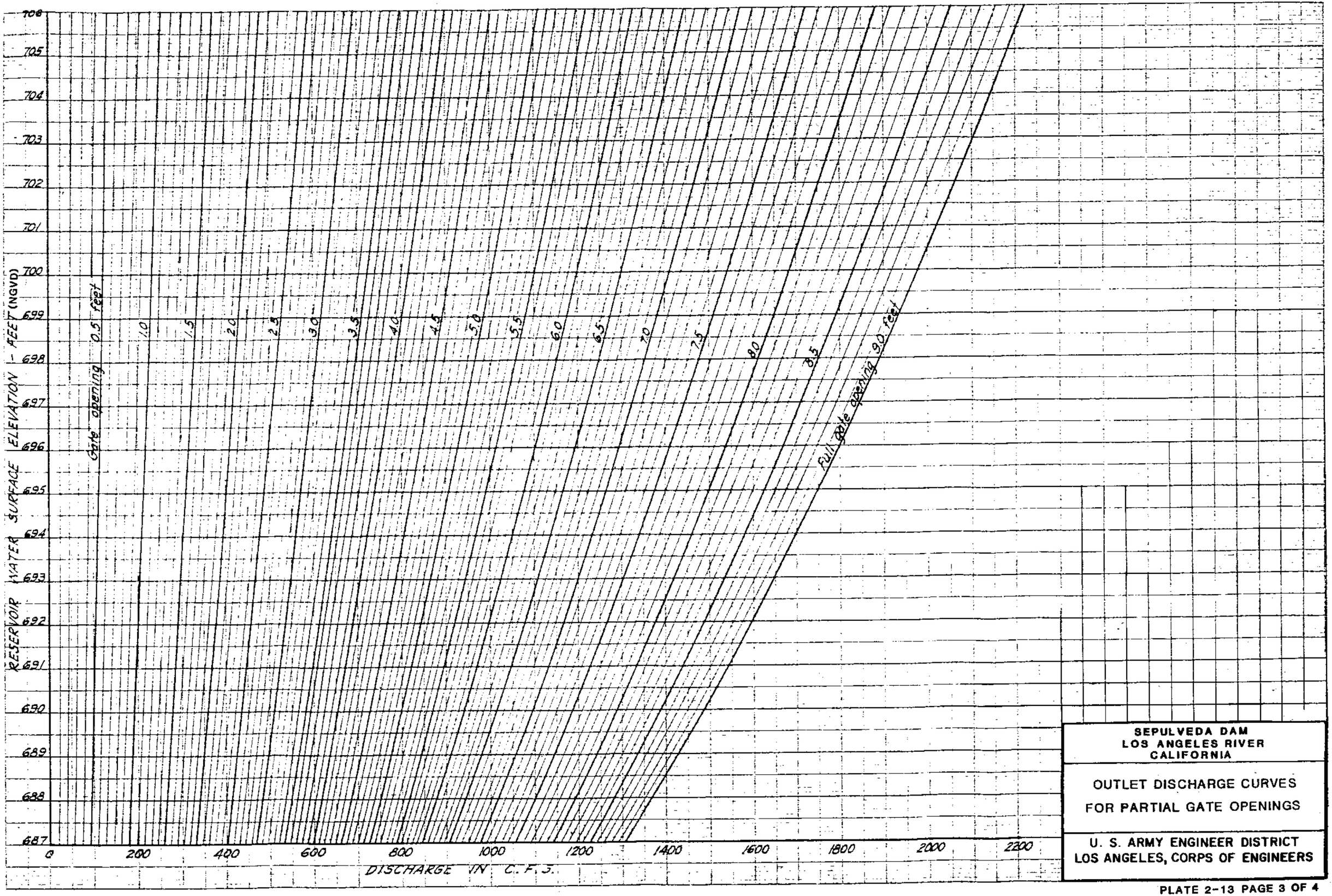
Note

1. When gate opening or conduit is not flowing full, discharge computed by open channel method.
2. When gate opening or conduit flowing full, discharge computed by $Q = CA\sqrt{2gH}$, where:
   - C is variable and based on field measurements made on Hansen 5'×8' gated conduits.
   - A is area of gate opening or conduit.
   - H is taken from reservoir water surface to bottom of gate for partial gate opening and to top of conduit exit for full gate opening.

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

OUTLET DISCHARGE CURVES
FOR PARTIAL GATE OPENINGS

U. S. ARMY ENGINEER DISTRICT
LOS ANGELES, CORPS OF ENGINEERS



SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

OUTLET DISCHARGE CURVES
FOR PARTIAL GATE OPENINGS

U. S. ARMY ENGINEER DISTRICT
LOS ANGELES, CORPS OF ENGINEERS

RESERVOIR WATER SURFACE ELEVATION - FEET (NGVD)

725
724
723
722
721
720
719
718
717
716
715
714
713
712
711
710
709
708
707
706

Gate opening - 0.5 feet

10'
15'
20'
25'
30'
35'
40'
45'
50'
55'
60'
65'
70'
75'
80'
85'
Full gate opening 90 ft.

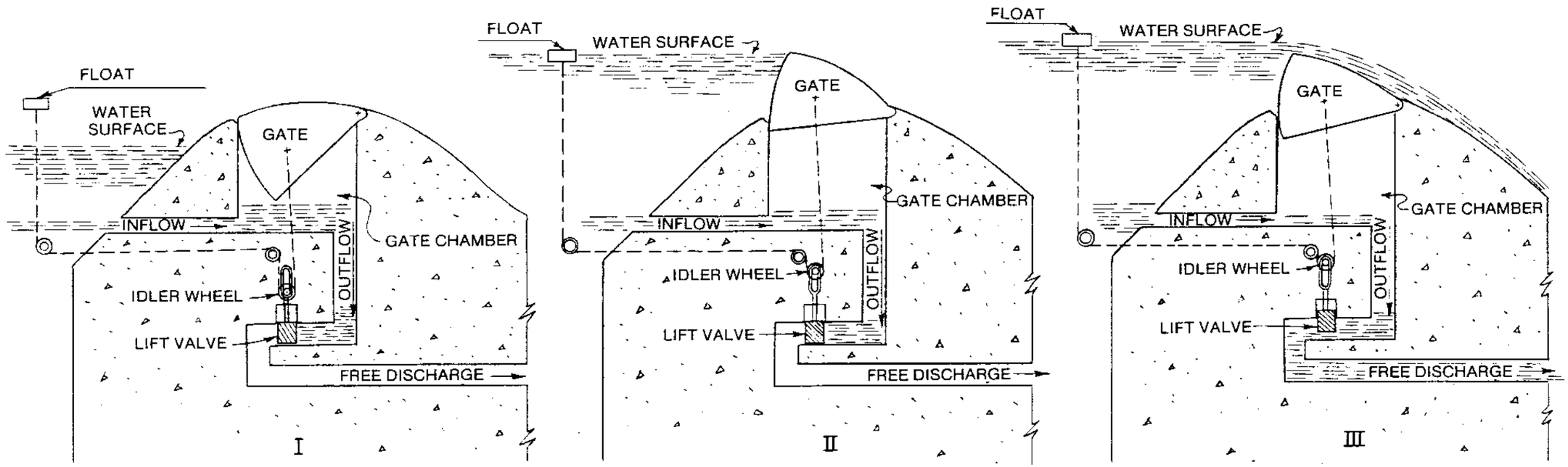
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200

DISCHARGE IN C.F.S.

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

OUTLET DISCHARGE CURVES
FOR PARTIAL GATE OPENINGS

U. S. ARMY ENGINEER DISTRICT
LOS ANGELES, CORPS OF ENGINEERS



WATER IS RISING, GATE IS CLOSED, AND FLOAT IS AT LOWEST POSITION. IDLER WHEEL IS AT BOTTOM OF SLOT TO TAKE UP SLACK IN CABLE. LIFT VALVE IS CLOSED BY ITS OWN WEIGHT.

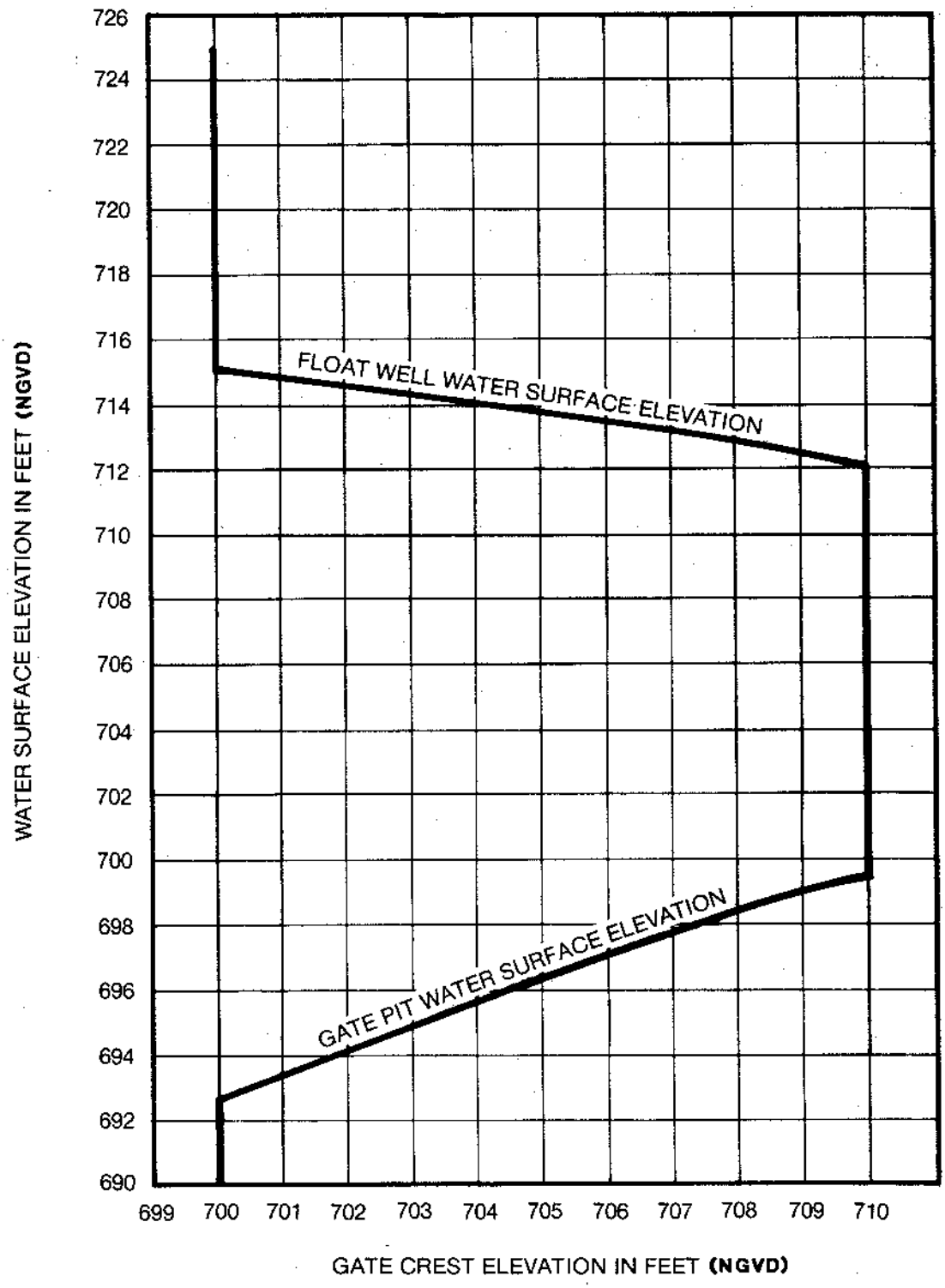
WATER IS AT MAXIMUM ELEVATION WITHOUT SPILLING. GATE HAS FLOATED TO TOP POSITION BY WATER IN GATE CHAMBER. IDLER WHEEL IS RAISED TO NEAR TOP OF SLOT, BUT LIFT VALVE IS STILL CLOSED. A FURTHER RISE OF THE FLOAT BY MORE THAN 1 FOOT WILL OPEN THE LIFT VALVE.

WATER IS PASSING OVER GATE. A FLOAT ELEVATION OF MORE THAN 1 FOOT ABOVE POSITION II (THE THRESHOLD OF SPILLING) OPENS THE LIFT VALVE. WHEN OUTFLOW EXCEEDS INFLOW TO THE GATE CHAMBER, THE GATE IS LOWERED. THE LOWERING OF THE GATE ALLOWS THE LIFT VALVE TO CLOSE UNDER ITS OWN WEIGHT UNTIL THE OUTFLOW AND INFLOW BALANCE, AND THE GATE REMAINS STATIONARY.

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

SCHEMATIC DIAGRAM OF CREST GATE OPERATION

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

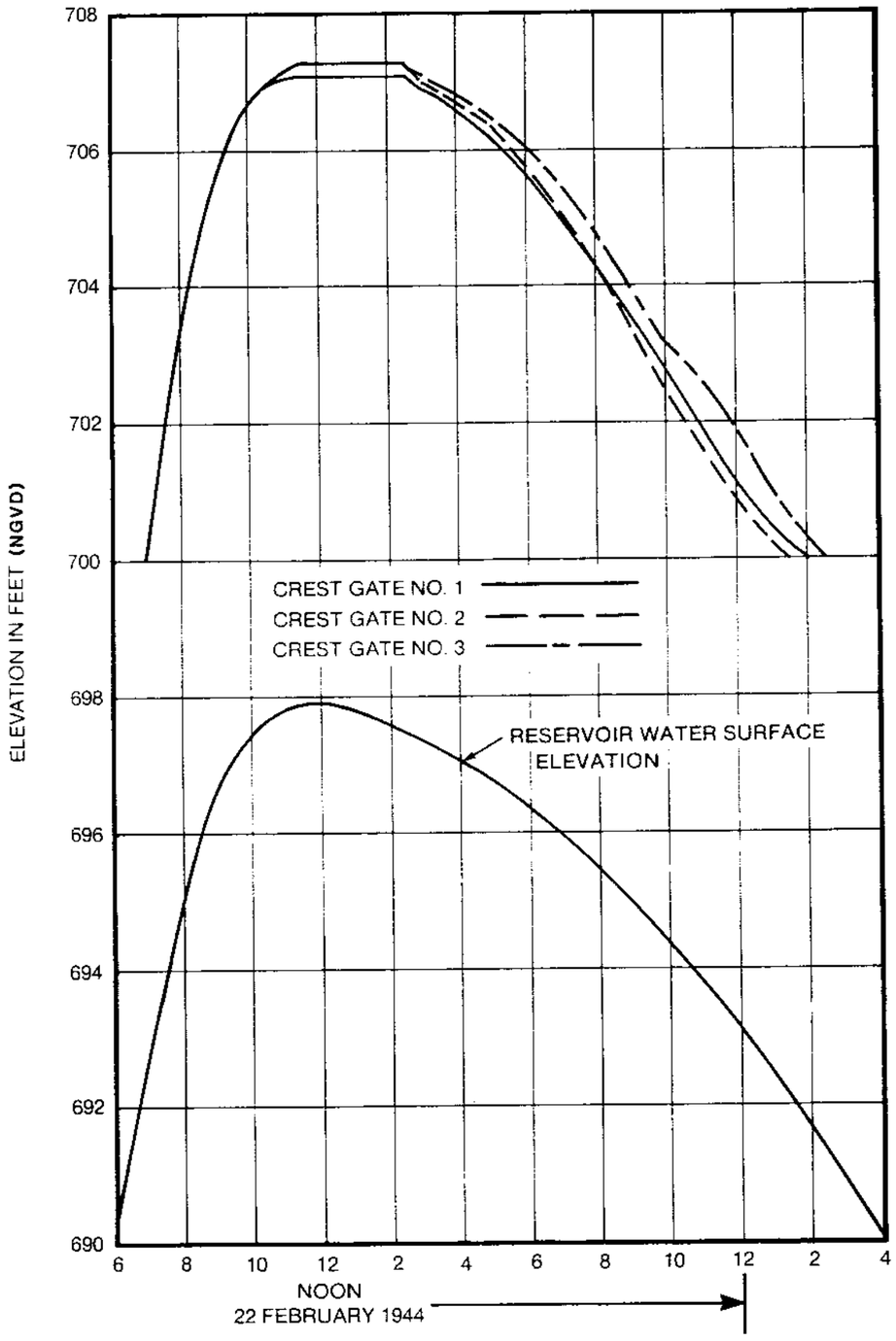


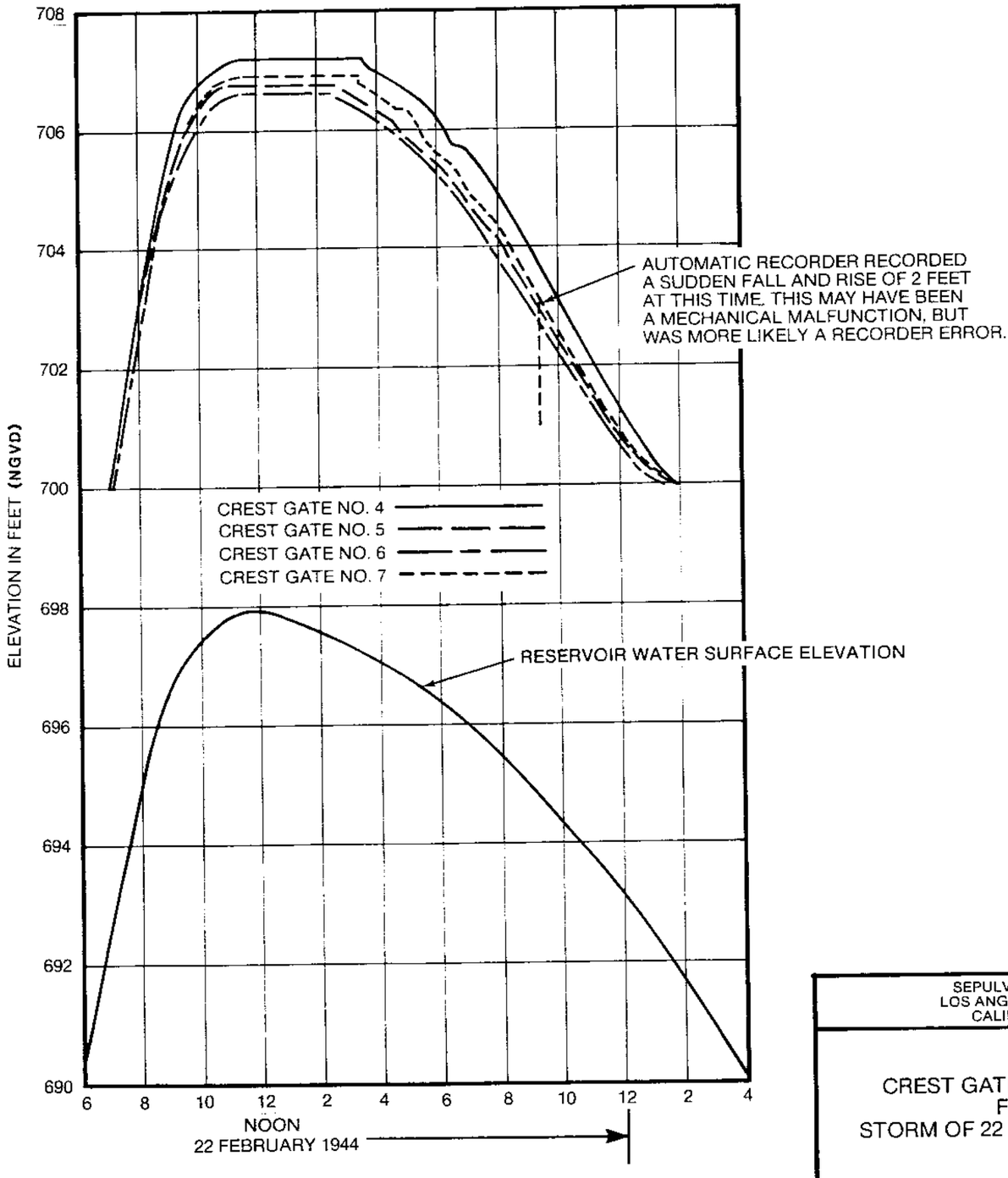
SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

ELEVATION OF CREST GATES VS WATER SURFACE ELEVATION IN GATE PIT AND FLOAT WELL

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 2-15

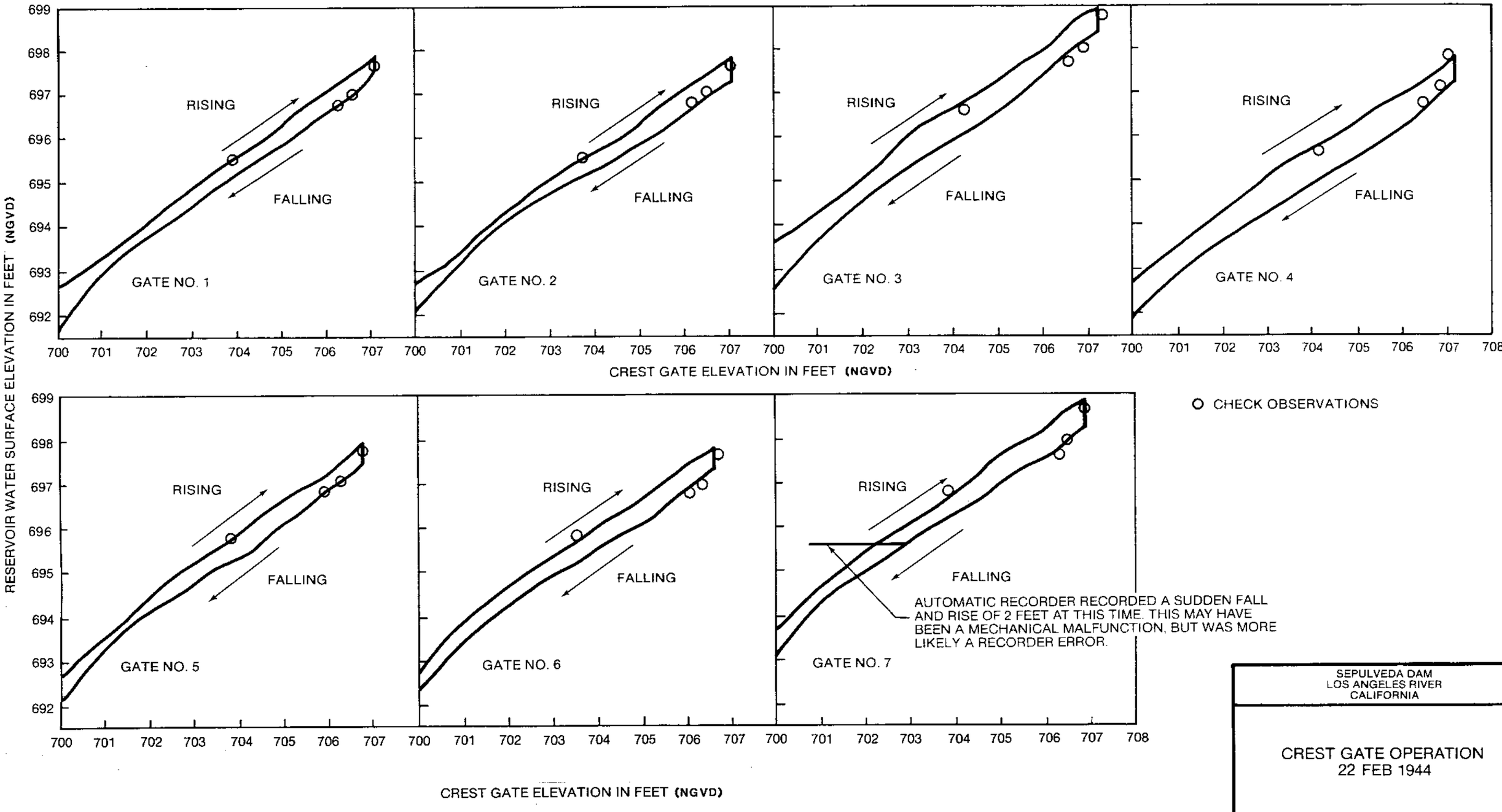




SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

CREST GATE OPERATION FOR STORM OF 22 FEBRUARY 1944

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT



SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

CREST GATE OPERATION
22 FEB 1944

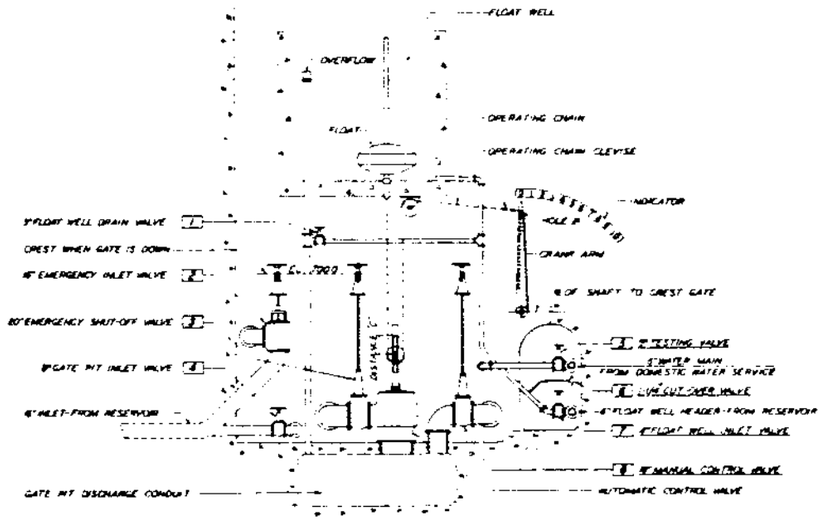
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

GENERAL

THE CREST GATES ARE DESIGNED TO PERMIT STORAGE OF FLOOD WATERS TO ELEV 710.0 WHEN THE GATES ARE FULLY RAISED, OR TO PERMIT DISCHARGE OF FLOOD WATERS DOWN TO ELEV 700.0 WHEN THE GATES ARE LOWERED. THE FLOATS WHICH NORMALLY CONTROL THE ELEVATION OF THE CREST GATES, HAVE A WORKING RANGE BETWEEN RESERVOIR WATER SURFACE ELEVATION OF 709.6 AND RESERVOIR WATER SURFACE ELEVATION OF 716.0

WITHIN THE LIMITS SET FORTH ABOVE, AN INFINITELY LARGE NUMBER OF OPERATING CHARACTERISTICS ARE AVAILABLE.

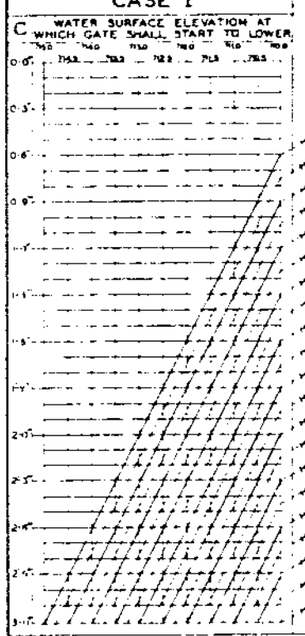
THE INSTRUCTIONS ON THIS SHEET ARE INTENDED TO FACILITATE THE ADJUSTMENT OF THE MECHANISM TO MEET ANY OPERATING CHARACTERISTIC WITHIN THE LIMITS SET FORTH ABOVE.

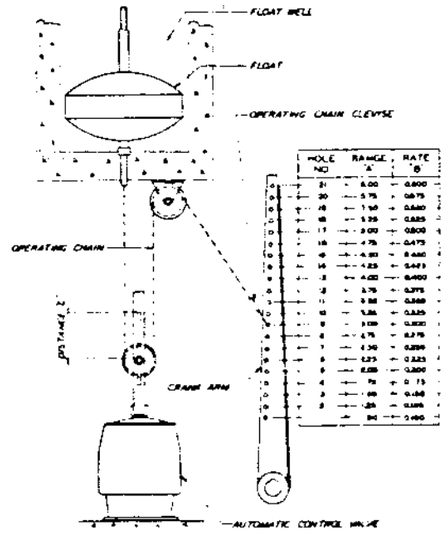


SCHEMATIC SKETCH
NOT TO SCALE

CASE I

C = WATER SURFACE ELEVATION AT WHICH GATE SHALL START TO LOWER



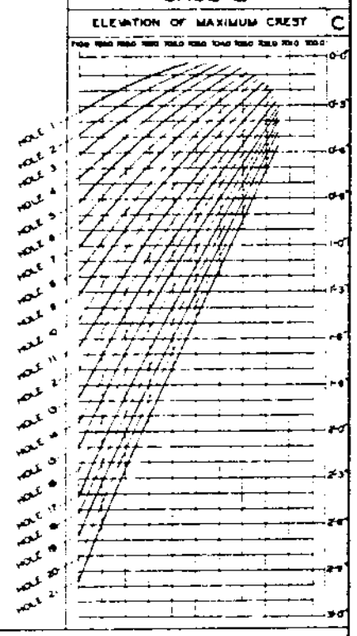


HOLE NO	RANGE A	RATE B
21	6.00	0.800
20	5.75	0.875
19	5.50	0.880
18	5.25	0.885
17	5.00	0.800
16	4.75	0.875
15	4.50	0.880
14	4.25	0.941
13	4.00	0.900
12	3.75	0.875
11	3.50	0.880
10	3.25	0.900
9	3.00	0.875
8	2.75	0.880
7	2.50	0.900
6	2.25	0.875
5	2.00	0.880
4	1.75	0.915
3	1.50	0.933
2	1.25	0.960
1	1.00	1.000

SCHEMATIC SKETCH
NOT TO SCALE

CASE II

ELEVATION OF MAXIMUM CREST = C



THE ABOVE SCHEMATIC SKETCH SHOWS THE VALVES BY WHICH THE CREST GATES ARE CONTROLLED

TESTING WITH CITY WATER TO TEST THE GATE DURING THE DRY SEASON CLOSE VALVES NUMBERED 1 2 3 4 5 6 7 8 THEN
- TO RAISE GATE OPEN VALVE 5
- TO RAISE FLOAT OPEN VALVE 6
- TO DRAIN GATE PIT OPEN VALVE 4
- TO DRAIN FLOAT CHAMBER OPEN VALVE 7

FULL AUTOMATIC CONTROL THIS IS THE NORMAL OPERATING CONDITION FOR WHICH THE CREST GATES ARE DESIGNED. TO PERMIT THE FULL AUTOMATIC MECHANISM TO FUNCTION, VALVES 5 & 7 SHALL BE OPEN AND VALVES 1 2 3 6 & 8 SHALL BE CLOSED. DETAILED INSTRUCTIONS ARE GIVEN ELSEWHERE ON THIS SHEET EXPLAINING THE METHOD OF ADJUSTING THE CONTROL MECHANISM TO PRODUCE THE DESIRED OPERATING CHARACTERISTIC.

SEMI-AUTOMATIC CONTROL TO ADJUST THE CONTROL MECHANISM TO MAINTAIN THE GATE CREST AT ANY CHOSEN ELEVATION REGARDLESS OF THE FLOOD STAGE.—

1ST CLOSE VALVES 2 3 6 7 & 8 AND OPEN VALVES 1 5 & 4

2ND CONNECT THE OPERATING CHAIN CLEVISE TO HOLE 21 IN THE CRANK ARM

3RD (a) IF THE INDICATOR READS ZERO (CREST ELEV 700.0) ADJUST THE LENGTH OF THE OPERATING CHAIN SO THAT DISTANCE 'C' (SEE SKETCH ABOVE) IS 3'-0"

(b) IF THE INDICATOR READS 10 (CREST ELEV 710.0) ADJUST THE LENGTH OF THE OPERATING CHAIN SO THAT DISTANCE 'C' (SEE SKETCH ABOVE) IS 0'-0"

4TH CLOSE VALVE 1

THE CREST GATE IS NOW SET TO RISE IN ADVANCE OF A FLOOD TO REACH A MAXIMUM CREST OF 710.0. TO LOWER THE CREST (OR TO CHECK ITS RISE) OPEN VALVE 8 UNTIL THE INDICATOR SHOWS THE DESIRED CREST. SHOULD IT BE DESIRED TO RAISE THE CREST, WHILE BEING MAINTAINED BELOW ELEVATION 710.0, OPEN VALVE 1 UNTIL THE INDICATOR SHOWS THE DESIRED CREST. THE MECHANISM WILL THEN MAINTAIN THIS CREST AT A VIRTUALLY CONSTANT ELEVATION WITHOUT FURTHER ATTENTION.

NOTE: UNDER CERTAIN CONDITIONS THERE WILL BE A TIME LAG WHILE ADJUSTING THE CREST FOR SEMI-AUTOMATIC CONTROL, HENCE ALLOW A FEW MINUTES FOR THE MECHANISM TO ATTAIN EQUILIBRIUM.

EMERGENCY MANUAL OPERATION SHOULD THE CONTROL MECHANISM BECOME INOPERATIVE, EMERGENCY MANUAL CONTROL MAY BE RESORTED TO. CLOSE VALVES 1 2 3 4 5 6 7 THEN TO LOWER GATE OPEN VALVE 8 TO RAISE GATE CLOSE VALVE 8 AND OPEN VALVE 4.

OUT OF COMMISSION SHOULD IT BE DESIRED TO PUT THE GATE OUT OF COMMISSION, CLOSE VALVES 2 3 4 5 6 7 AND OPEN VALVES 1 & 8. THE CREST GATE WILL THEN REMAIN LOWERED REGARDLESS OF THE FLOOD STAGE.

TO SET THE CREST GATE CONTROL MECHANISM TO MEET A FULL AUTOMATIC OPERATING REQUIREMENT

CASE I—IN WHICH THE MAXIMUM CREST SHALL BE AT ELEVATION 710.0

NOTE: THIS CASE INCLUDES ALL NORMAL OPERATING REQUIREMENTS

1ST SUBTRACT THE WATER SURFACE ELEVATION AT WHICH THE GATE SHALL START TO LOWER, FROM THE WATER SURFACE ELEVATION AT WHICH THE GATE SHALL BE FULLY LOWERED. THE REMAINDER SHALL BE DESIGNATED 'RANGE A'

2ND SELECT THE HOLE IN THE CRANK ARM (SEE SKETCH) WHICH MOST NEARLY AGREES WITH THE DESIRED 'RANGE A' AND CONNECT THE OPERATING CHAIN CLEVISE THERETO

3RD ON THE CASE I CHART (ABOVE) TRACE THE LINE CORRESPONDING TO THE SELECTED CRANK ARM HOLE TO ITS INTERSECTION WITH THE W.S. ELEV. AT WHICH GATE SHALL START TO LOWER. READ DISTANCE 'C' TO THE LEFT

4TH ADJUST THE LENGTH OF THE OPERATING CHAIN SO THAT DISTANCE 'C' (SEE SKETCH) AGREES WITH DISTANCE 'C' FROM THE CHART

EXAMPLE CASE I

PROBLEM. GATE SHALL START TO LOWER WHEN W.S. REACHES EL 711.0 AND SHALL BE FULLY LOWERED WHEN W.S. REACHES EL 714.0

SOLUTION: 714.0 − 711.0 = 3'-0" = 'RANGE A', WHICH CORRESPONDS (SEE SKETCH) TO HOLE 8. FROM CASE I CHART, INTERSECTION OF HOLE 8 LINE AND W.S. EL. 711-0 IS OPPOSITE C = 2'-0" WHICH IS USED

CASE II—IN WHICH THE MAXIMUM CREST SHALL BE LESS THAN ELEVATION 710.0

NOTE: IN THIS CASE THE RESERVOIR W.S. AT WHICH GATE STARTS TO LOWER IS ELEV 709.6

1ST SUBTRACT 709.6 FROM THE W.S. ELEV AT WHICH THE GATE SHALL BE FULLY LOWERED. DIVIDE THE REMAINDER BY THE FINAL WHOLE DIGIT AND ITS DECIMAL FRACTION IN THE DESIRED MAXIMUM CREST. THE QUOTIENT SHALL BE DESIGNATED 'RATE B'.

2ND SELECT THE HOLE IN THE CRANK ARM (SEE SKETCH) WHICH MOST NEARLY AGREES WITH THE DESIRED 'RATE B' AND CONNECT THE OPERATING CHAIN CLEVISE THERETO.

3RD ON THE CASE II CHART (ABOVE) TRACE THE LINE CORRESPONDING TO THE SELECTED CRANK ARM HOLE TO ITS INTERSECTION WITH THE DESIRED MAXIMUM CREST. READ DISTANCE 'C' TO THE RIGHT

4TH ADJUST THE LENGTH OF THE OPERATING CHAIN SO THAT DISTANCE 'C' (SEE SKETCH) AGREES WITH DISTANCE 'C' FROM THE CHART

EXAMPLE CASE II

PROBLEM. DESIRED MAXIMUM CREST = EL 707.0 AND GATE SHALL BE FULLY LOWERED WHEN W.S. REACHES EL 713.0.

SOLUTION: 713.0 − 709.6 = 3.4' = 0.48 = 'RATE B', WHICH CORRESPONDS (SEE SKETCH) TO HOLE 16. FROM CASE II CHART, INTERSECTION OF HOLE 16 LINE AND MAXIMUM CREST EL. 707.0 IS OPPOSITE C = 1'-5 1/4" WHICH IS USED

FUNCTION OF VALVES

VALVE 1—THIS VALVE DRAINS THE FLOAT CHAMBER UNDER SEMI-AUTOMATIC CONTROL. THIS ACTION RAISES THE GATE BY CLOSING THE AUTOMATIC CONTROL VALVE

VALVE 2—THIS VALVE IS AN AUXILIARY VALVE TO VALVE 4. IT ADMITS WATER INTO THE GATE CHAMBER THEREBY TENDING TO RAISE THE GATE. THIS VALVE SHOULD BE OPENED ONLY IF VALVE 4 IS OF INSUFFICIENT CAPACITY TO RAISE THE GATE, WHICH MAY HAPPEN IF THE GATE SEALS SHOULD LEAK EXCESSIVELY, OR AN OUTLET VALVE SHOULD BECOME INOPERATIVE IN OPEN POSITION. THIS VALVE SHOULD BE LOCKED CLOSED

VALVE 3—THIS VALVE IS IN SERIES WITH THE AUTOMATIC CONTROL VALVE AND MUST BE CLOSED ONLY IF THE AUTOMATIC CONTROL VALVE SHOULD BECOME INOPERATIVE IN OPEN POSITION

VALVE 4—THIS VALVE ADMITS WATER INTO THE GATE CHAMBER THEREBY TENDING TO RAISE THE GATE

VALVE 5—THIS VALVE ADMITS WATER FROM THE DOMESTIC WATER SUPPLY TO THE GATE CHAMBER IN THIS WAY THE GATE MAY BE OPENED FOR TESTING DURING THE DRY SEASON.

VALVE 6—THIS VALVE ADMITS WATER FROM THE DOMESTIC WATER SUPPLY TO THE CONTROL FLOAT WELL. THIS VALVE IS USED IN SEMI-AUTOMATIC OPERATION

VALVE 7—THIS VALVE ADMITS WATER FROM THE RESERVOIR INTO THE CONTROL FLOAT WELL. THIS VALVE IS OPEN FOR AUTOMATIC OPERATION

VALVE 8—THIS VALVE BYPASSES THE AUTOMATIC CONTROL VALVE IT CAN BE USED TO RELEASE WATER FROM THE GATE CHAMBER AND THUS LOWER THE GATE

NOTE: ALL ADJUSTMENTS COVERED ABOVE IN CASE I & II SHALL BE MADE WITH CREST GATE FULLY LOWERED AND WITH FLOAT WELL EMPTY

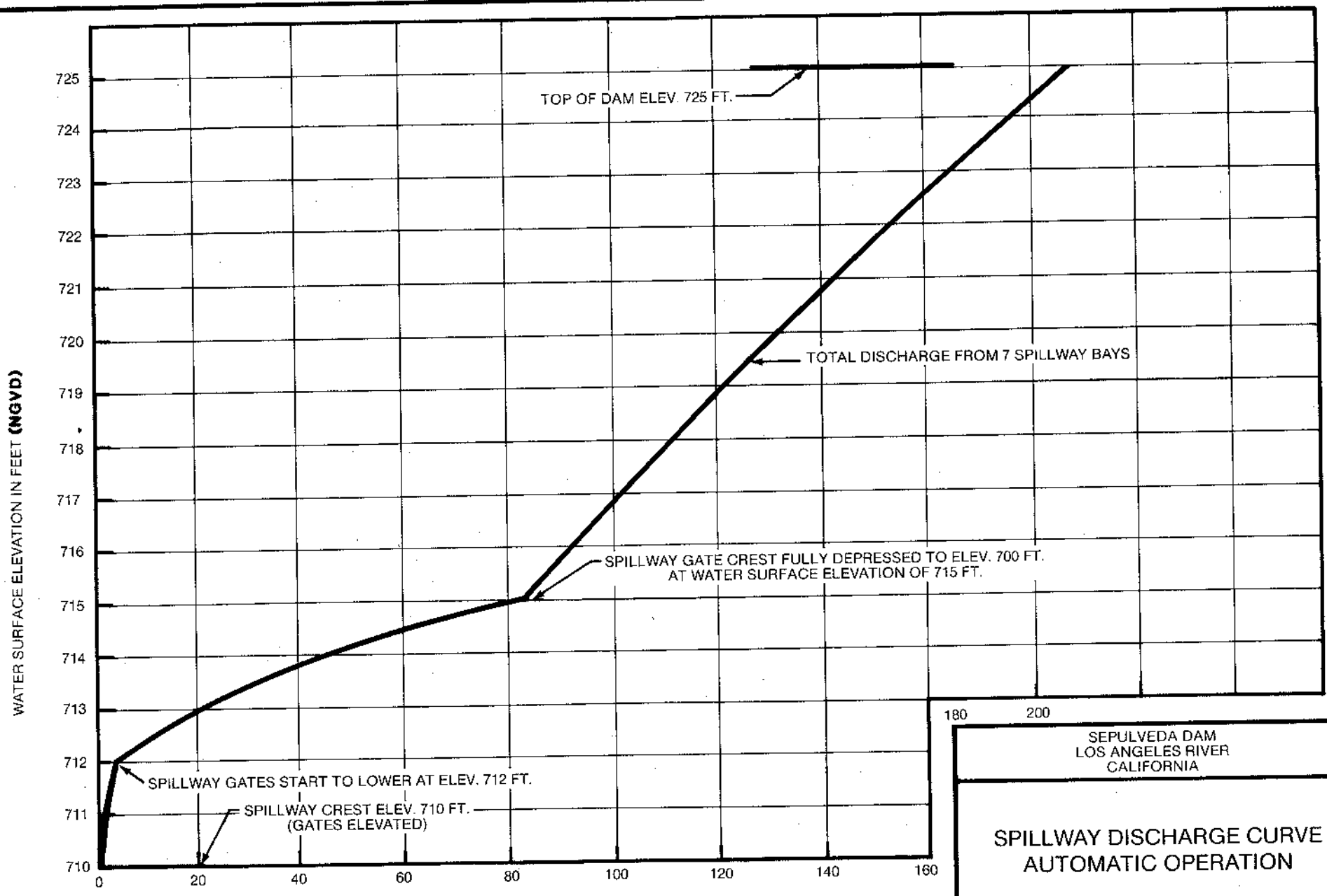
SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

OPERATING INSTRUCTIONS

FOR CREST GATES

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 2-18

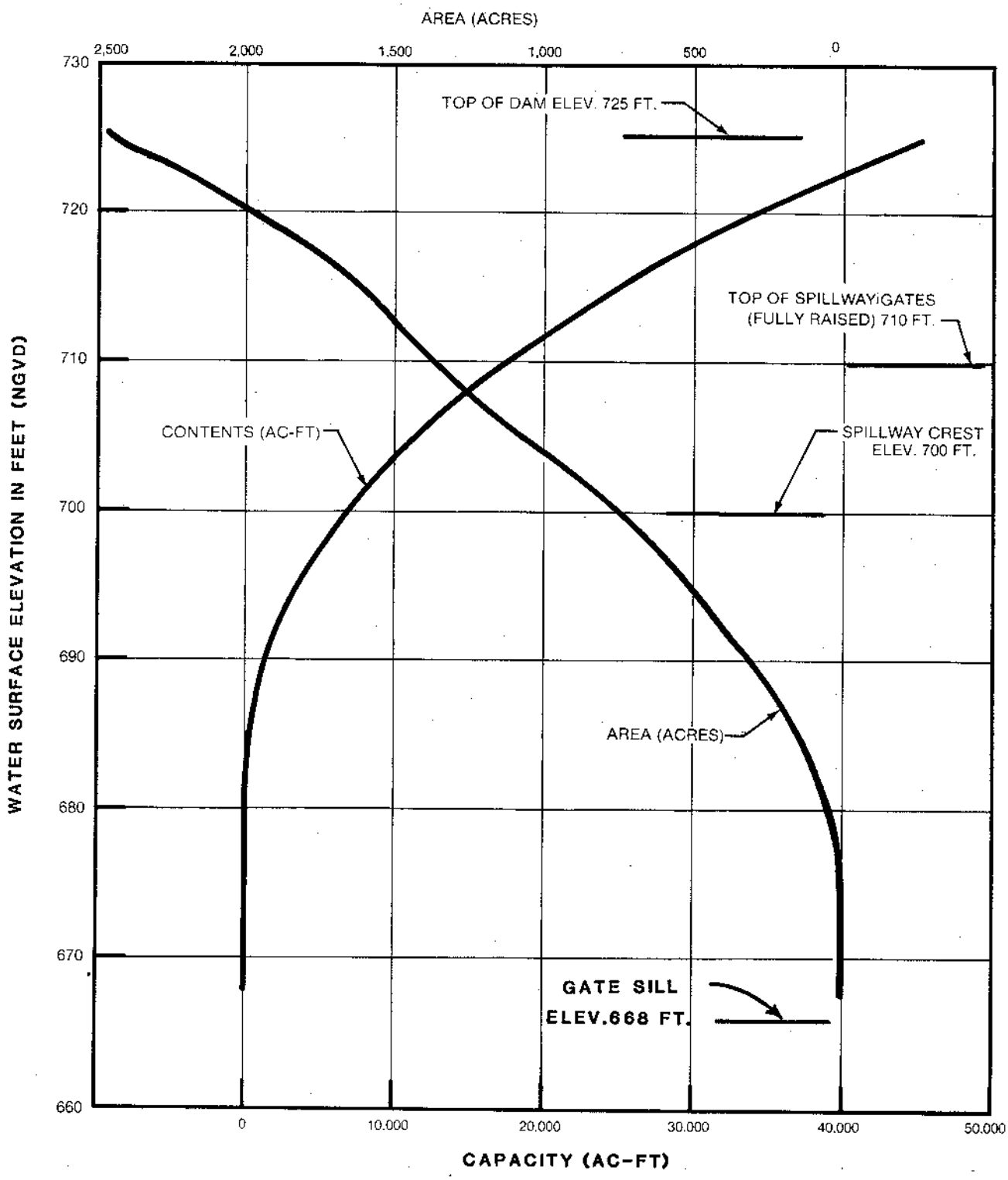


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

SPILLWAY DISCHARGE CURVE AUTOMATIC OPERATION

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 2-19

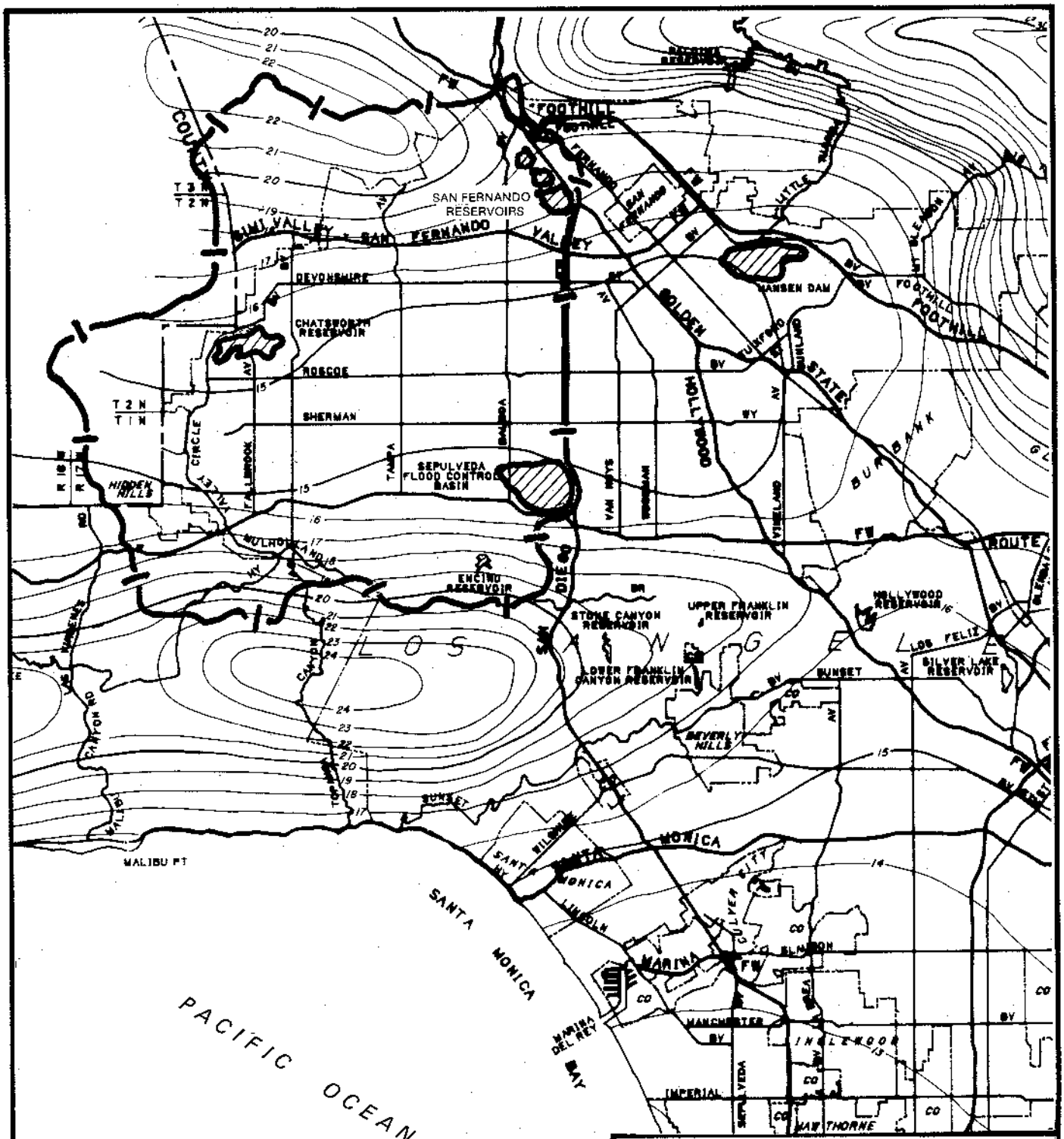


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

WATER SURFACE ELEVATION VS CAPACITY AND AREA

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 2-20



SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

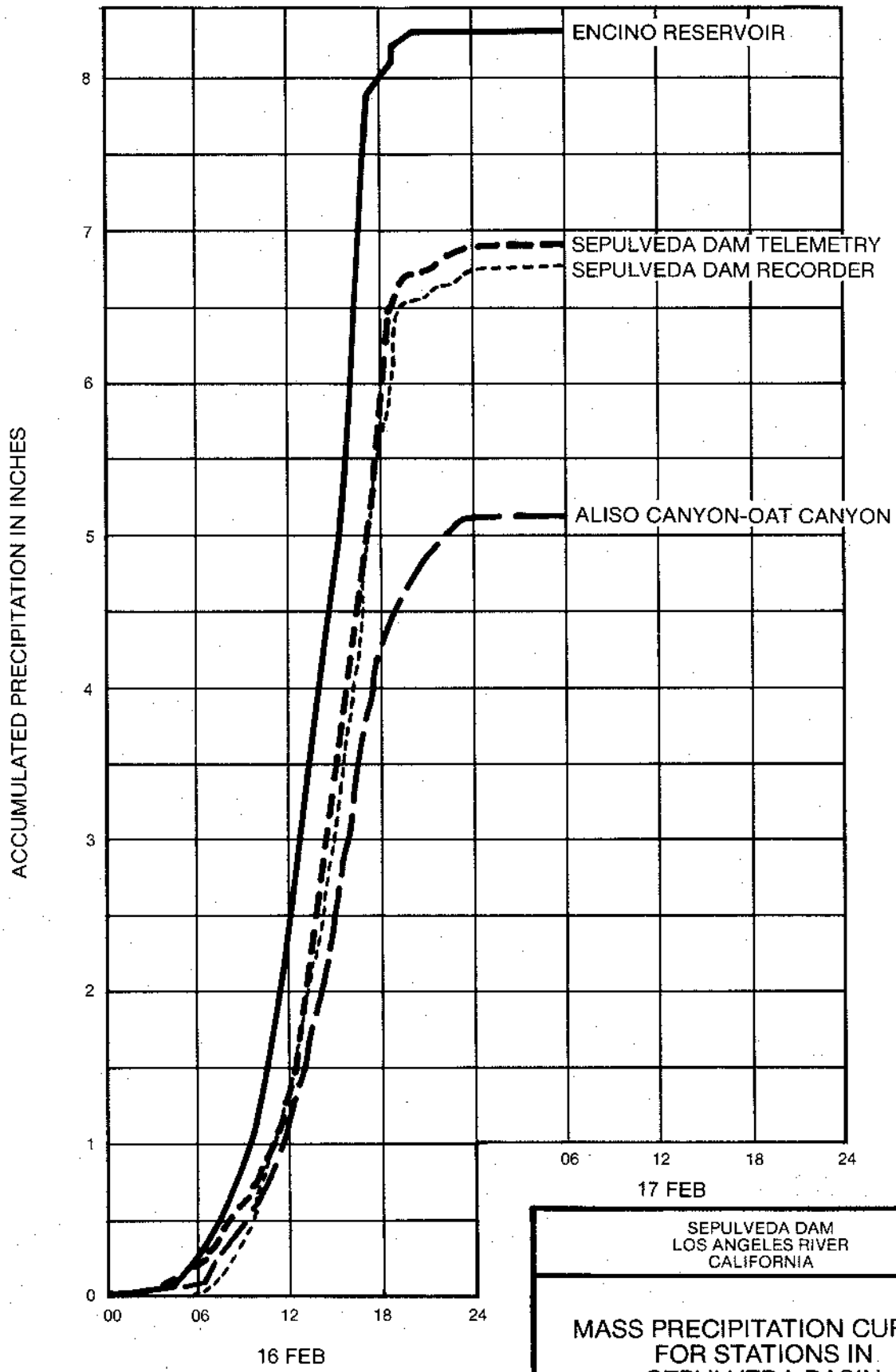
MEAN ANNUAL

PRECIPITATION

IN INCHES

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 4-01

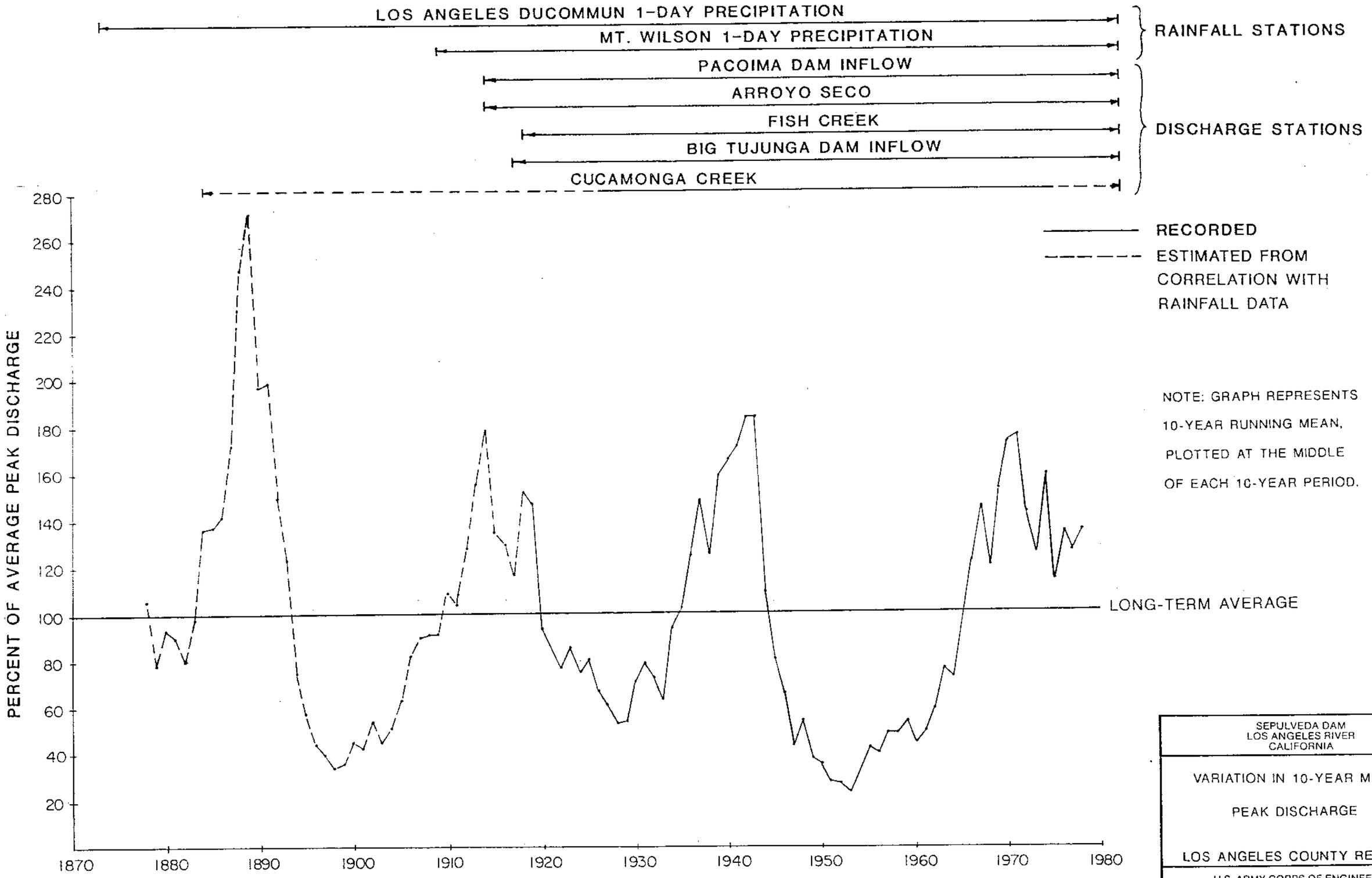


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

MASS PRECIPITATION CURVES FOR STATIONS IN SEPULVEDA BASIN 16-17 FEB, 1980

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 4-02

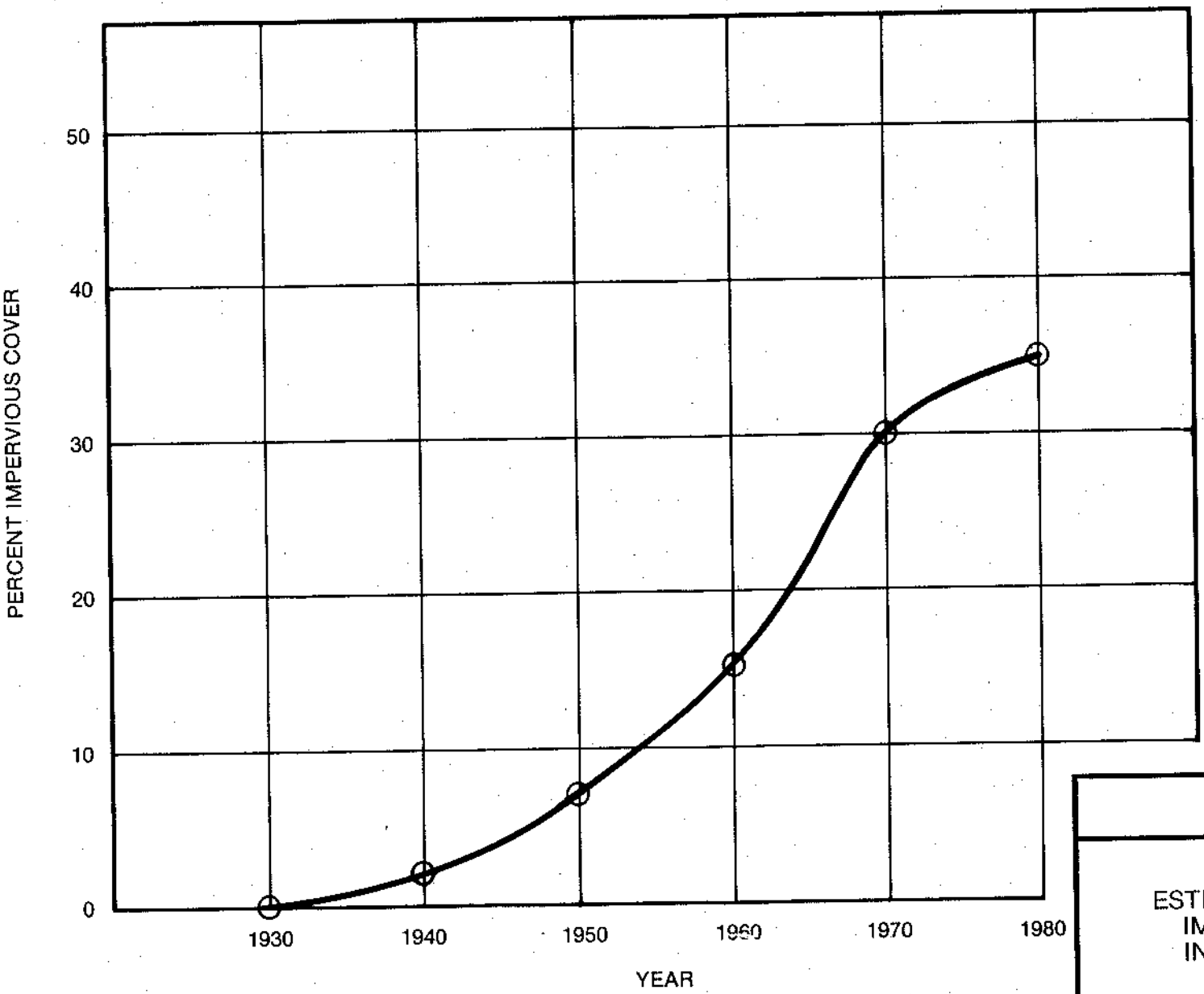


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

VARIATION IN 10-YEAR MEAN PEAK DISCHARGE

LOS ANGELES COUNTY REGION

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

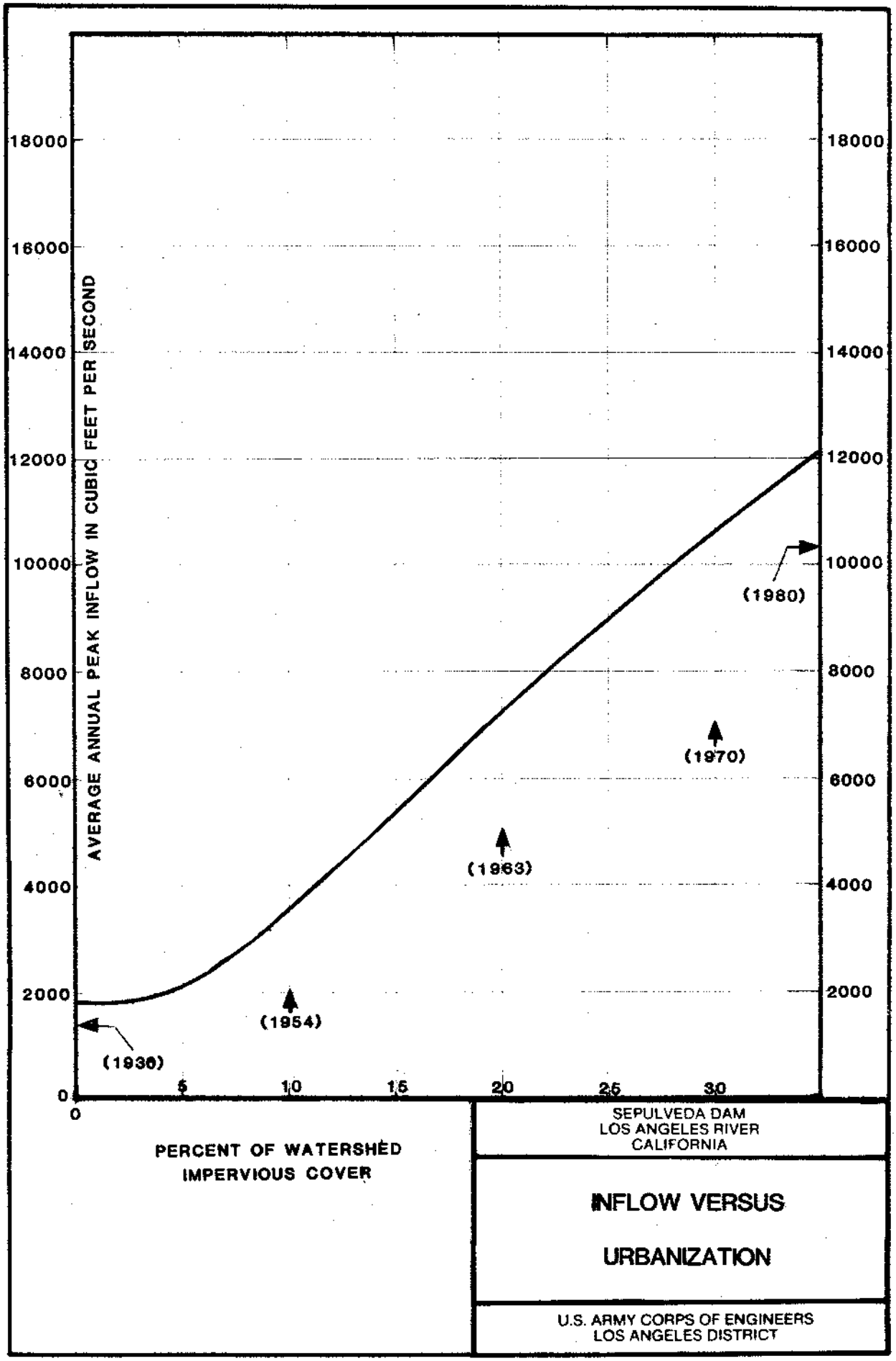


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

ESTIMATED PERCENT OF IMPERVIOUS COVER IN DRAINAGE BASIN

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 4-04

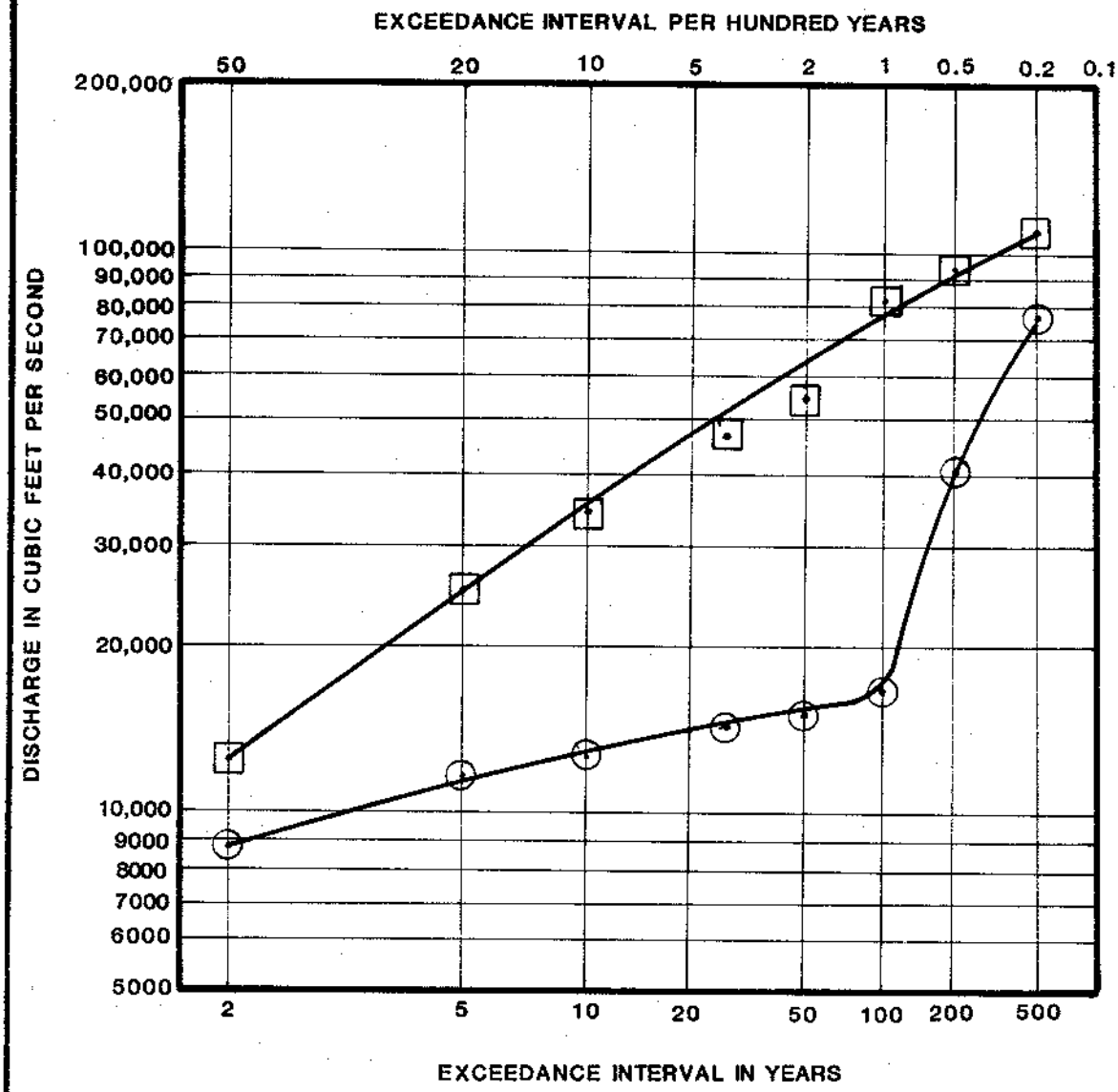


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

INFLOW VERSUS URBANIZATION

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 4-05



INFLOW

OUTFLOW

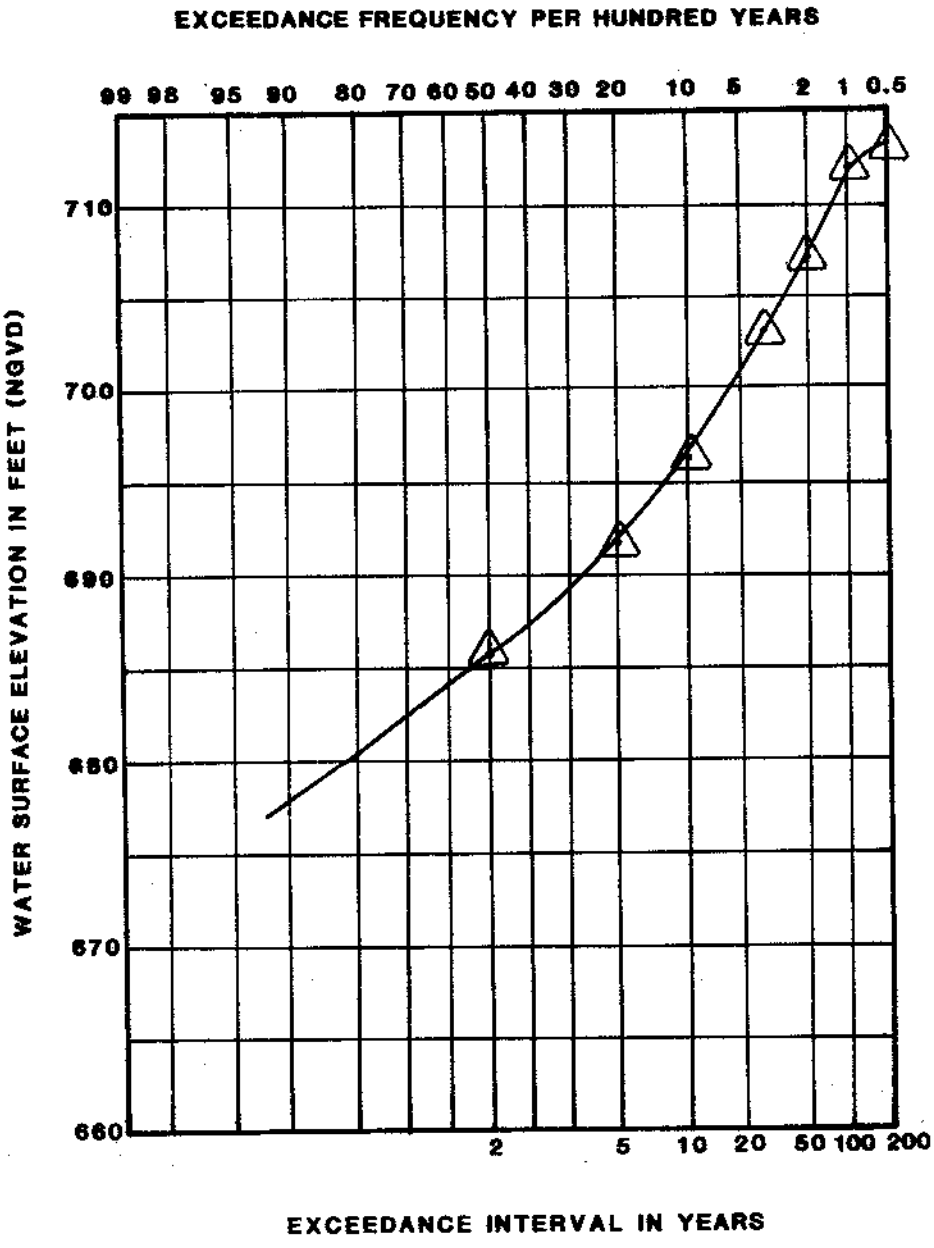
⊡, ⊙ Data points derived from a rainfall-runoff analysis as a part a 1985 Corps of Engineers review study. Frequency values from the curves of this plate are listed in Table 4-08.

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

DISCHARGE FREQUENCY CURVES
1980 CONDITIONS

U. S. ARMY ENGINEER DISTRICT
LOS ANGELES, CORPS OF ENGINEERS
TO ACCOMPANY REPORT DATED:

PLATE 4-06



△ Data points derived from a rainfall-runoff analysis as part of a 1985 Corps of Engineers review study. Frequency values from the curves of this plate are listed in Table 4-08.

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

ELEVATION FREQUENCY CURVE
1980 CONDITIONS

U. S. ARMY ENGINEER DISTRICT
LOS ANGELES, CORPS OF ENGINEERS

PLATE 4-07

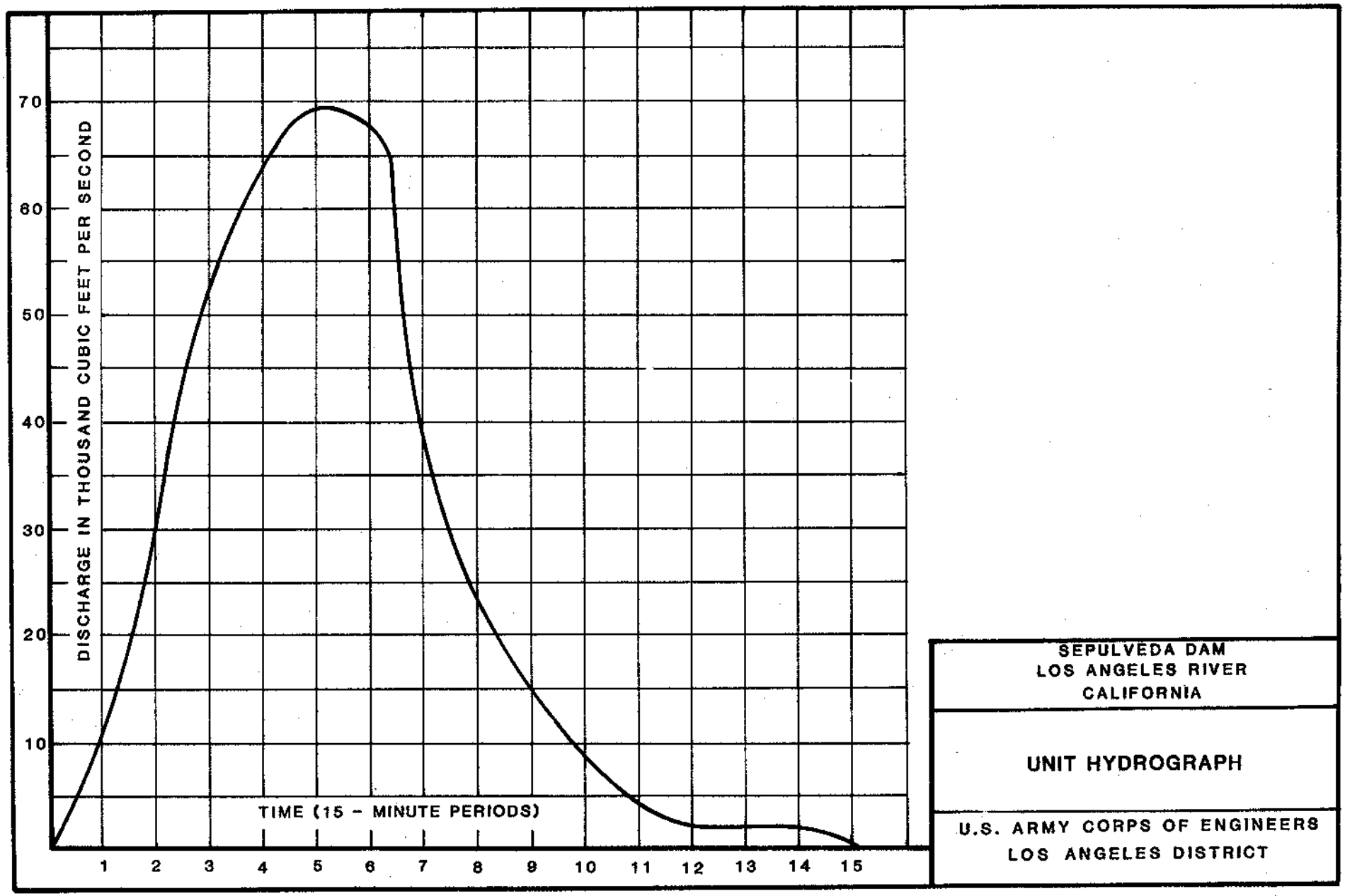
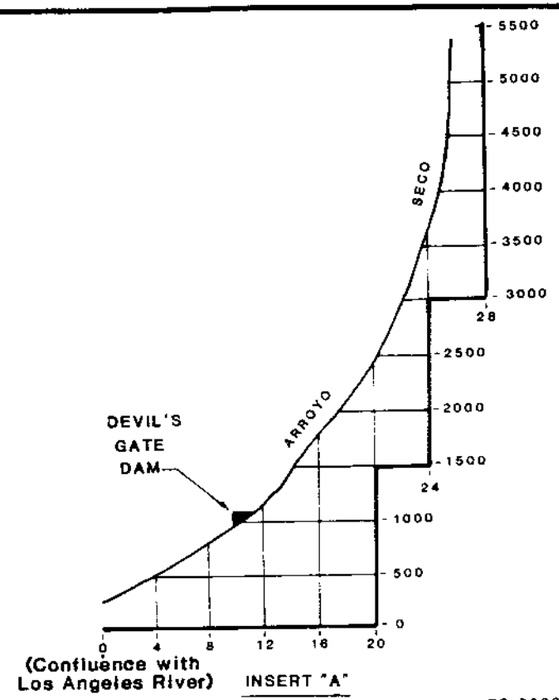
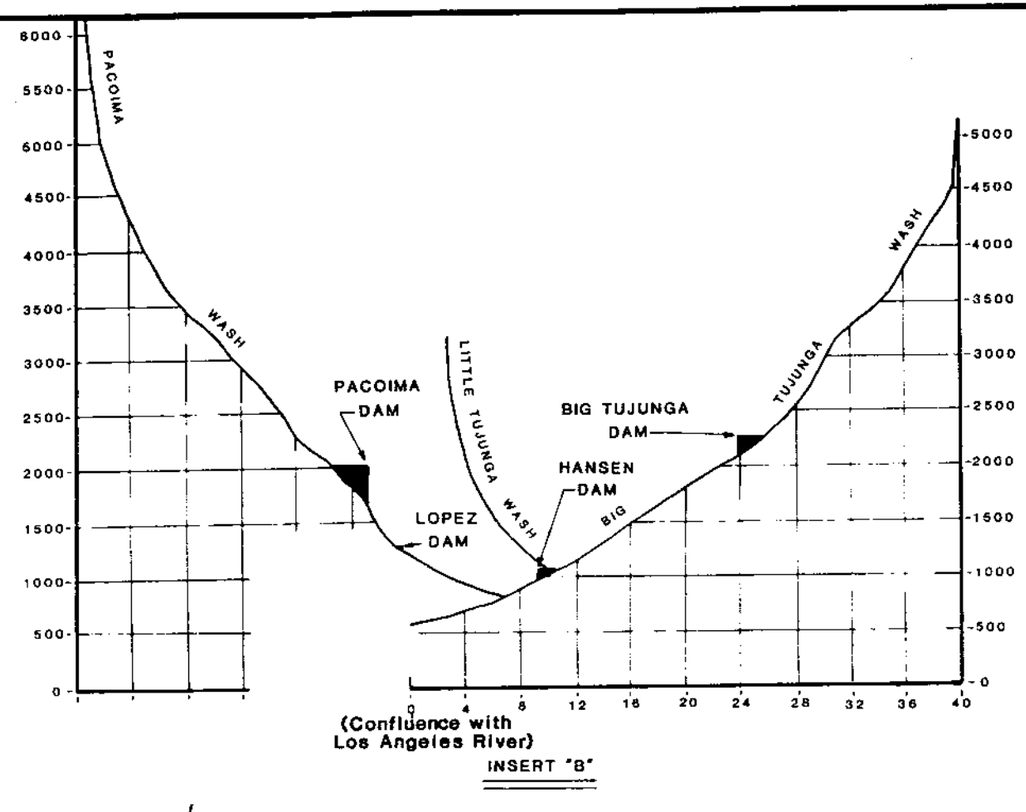

DISCHARGE IN THOUSAND CUBIC FEET PER SECOND
70
60
50
40
30
20
10
TIME (15 - MINUTE PERIODS)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA
UNIT HYDROGRAPH
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

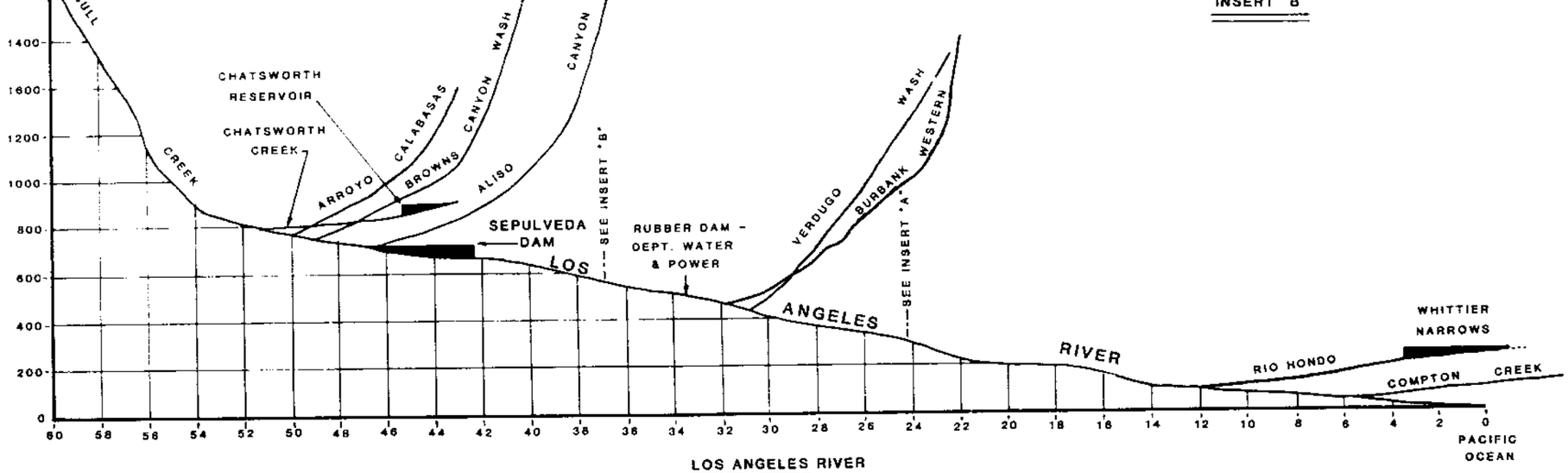
PLATE 4-08



INSERT "A"



INSERT "B"



LOS ANGELES RIVER

NOTES:

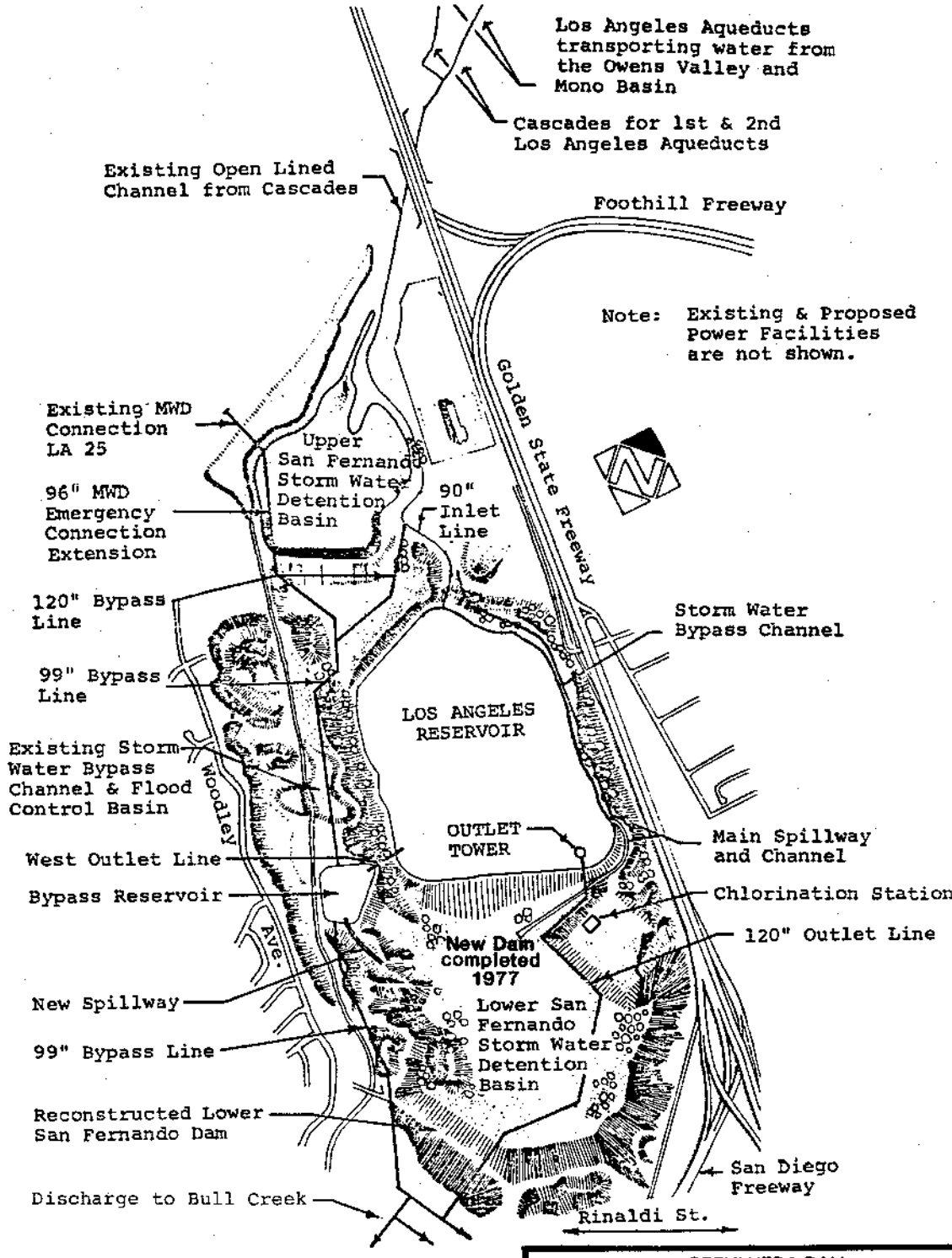
1. HORIZONTAL SCALES INDICATE MILES
2. VERTICAL SCALES INDICATE FEET (NGVD)

LOS ANGELES COUNTY
DRAINAGE AREA (REVIEW)
CALIFORNIA

LOS ANGELES RIVER & MAJOR TRIBUTARIES STREAMBED PROFILES

U.S. ARMY ENGINEERING DISTRICT
LOS ANGELES, CORPS OF ENGINEERS

PLATE 4-09



SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

SAN FERNANDO

RESERVOIRS

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 4-10

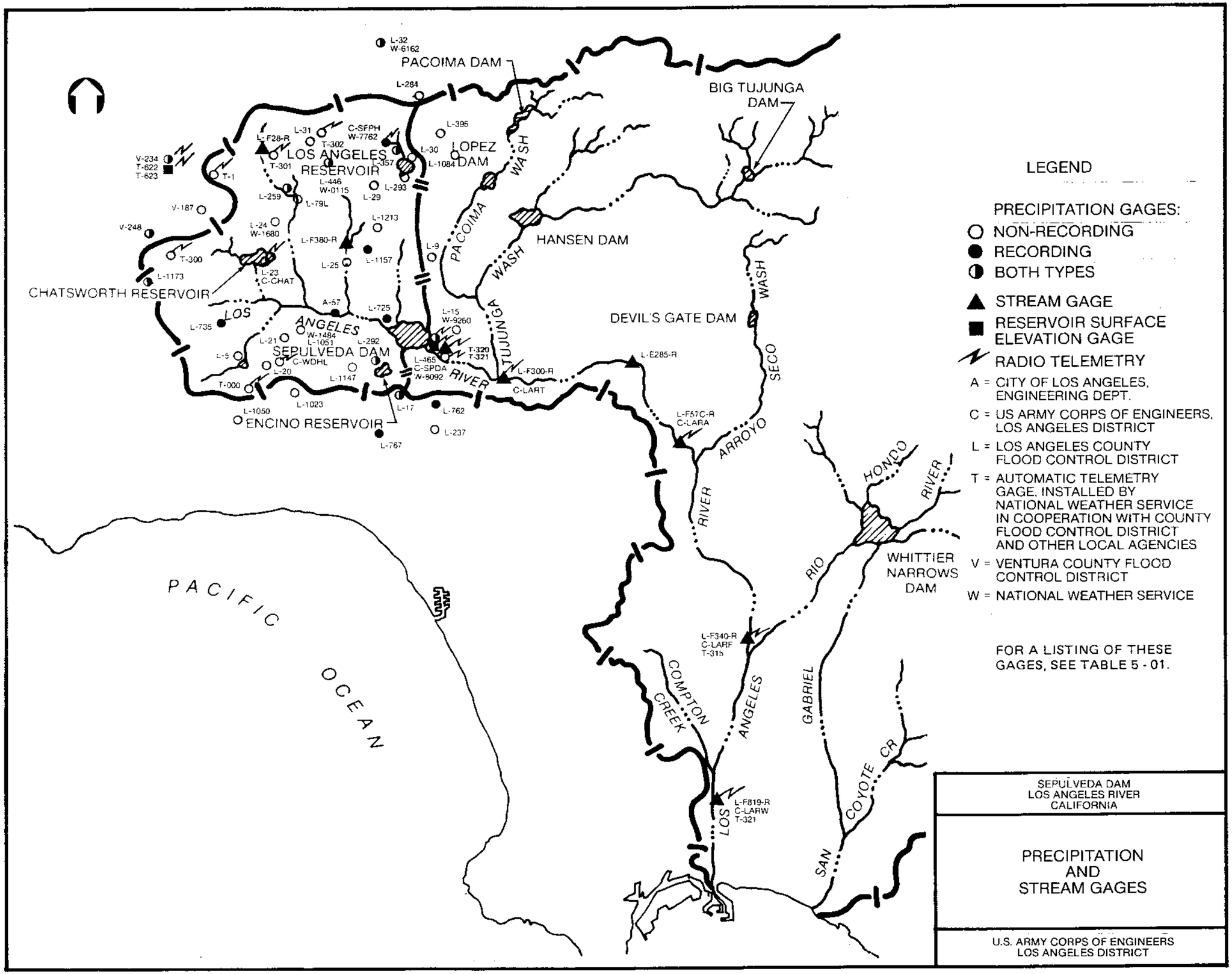
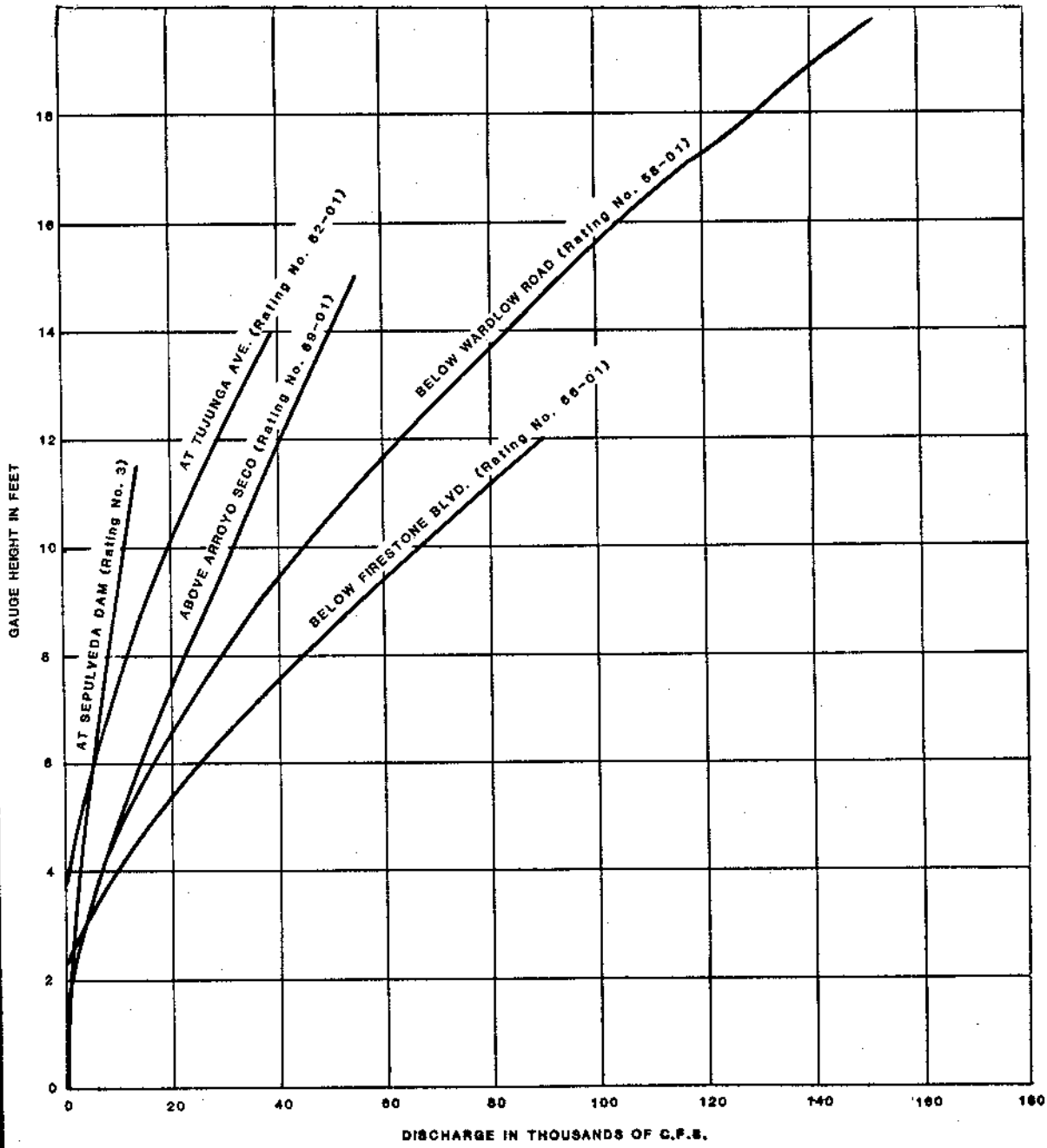

PACOIMA DAM
BIG TUJUNGA DAM
LOPEZ DAM
LOS ANGELES RESERVOIR
HANSEN DAM
CHATSWORTH RESERVOIR
SEPULVEDA DAM
DEVIL'S GATE DAM
ENCINO RESERVOIR
WHITTIER NARROWS DAM
PACOIMA WASH
TUJUNGA WASH
LOS ANGELES RIVER
ARROYO SECO
HONDO RIVER
RIO HONDO
COMPTON CREEK
GABRIEL RIVER
SAN GABRIEL RIVER
COYOTE CR
PACIFIC OCEAN
L-32 W-6162
L-284
L-31
C-SFPH W-7762
L-395
L-F28-R
T-302
T-301
L-357
L-30
L-1084
V-234 T-622 T-623
T-1
L-446 W-0115
L-293
L-29
L-259
L-79L
V-187
L-1213
V-248
L-24 W-1680
L-F380-R
L-9
T-300
L-25
L-1157
L-1173
L-23 C-CHAT
A-57
L-725
L-15 W-9260
L-735
L-21
W-1484
L-1051
L-292
T-320 T-321
L-5
C-WDHL
L-465 C-SPDA W-8092
L-F300-R
L-20
L-1147
C-LART
L-E285-R
T-000
L-1023
L-17
L-762
L-1050
L-237
L-767
L-F57C-R C-LARA
L-F340-R C-LARF T-315
L-F819-R C-LARW T-321
LEGEND
PRECIPITATION GAGES:
NON-RECORDING
RECORDING
BOTH TYPES
STREAM GAGE
RESERVOIR SURFACE ELEVATION GAGE
RADIO TELEMETRY
A = CITY OF LOS ANGELES, ENGINEERING DEPT.
C = US ARMY CORPS OF ENGINEERS, LOS ANGELES DISTRICT
L = LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
T = AUTOMATIC TELEMETRY GAGE, INSTALLED BY NATIONAL WEATHER SERVICE IN COOPERATION WITH COUNTY FLOOD CONTROL DISTRICT AND OTHER LOCAL AGENCIES
V = VENTURA COUNTY FLOOD CONTROL DISTRICT
W = NATIONAL WEATHER SERVICE
FOR A LISTING OF THESE GAGES, SEE TABLE 5 - 01.
SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA
PRECIPITATION AND STREAM GAGES
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 5-01

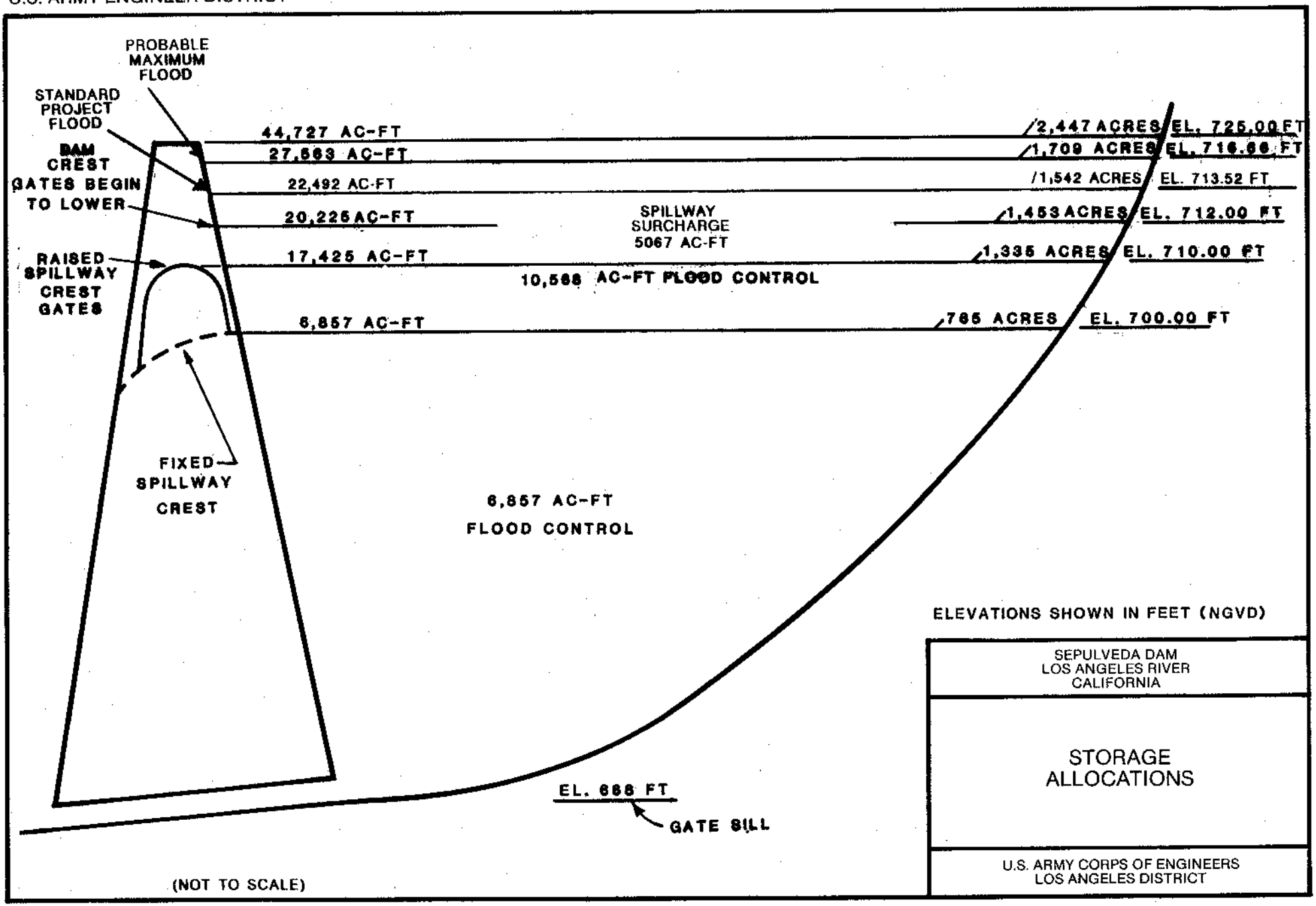


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

RATING CURVES FOR STREAM GAUGES ON THE LOS ANGELES RIVER

U. S. ARMY ENGINEER DISTRICT
LOS ANGELES, CORPS OF ENGINEERS
TO ACCOMPANY REPORT DATED:

PLATE 5-02



ELEVATIONS SHOWN IN FEET (NGVD)

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

STORAGE ALLOCATIONS

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 7-01

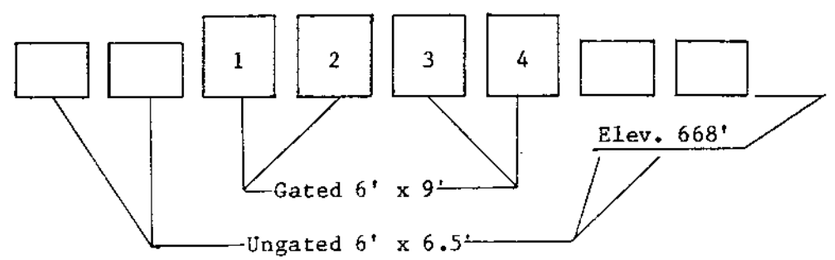
Sepulveda Dam Reservoir Regulation Schedule
(for rising and falling stages)

Step No	When reservoir water surface is between elevation	Gate setting for gates as indicated				Computed discharge*	Downstream gage height
		No. 1	No. 2	No. 3	No. 4		
	Feet, NGVD	Feet of opening	Feet of opening	Feet of opening	Feet of opening	Cubic feet per second	Feet
1....	668.0 & 710.2	9.0	9.0	9.0	9.0	0 to 16,780	0 - 13.61
2....	710.2 & 710.7	7.6	9.0	9.0	7.6	15,770 to 16,550	13.14 - 13.48
3....	710.7 & 711.3	7.6	7.6	7.6	7.6	15,530 to 16,830	13.04 - 13.66
4....	711.3 & 711.6	6.0	7.6	7.6	6.0	15,870 to 16,760	13.18 - 13.60
5....	711.6 & 712.0**	6.0	5.7	5.7	6.0	15,680 to 16,890	13.09 - 13.67
6....	712.0 & 712.2	0.0	4.5	4.5	0.0	13,420 to 16,620	11.95 - 13.52
7....	Above 712.2	0.0	0.0	0.0	0.0	14,400+	12.45

*Includes discharge of ungated outlets. Crest gates in action above elevation 710.0 feet, NGVD (National Geodetic Vertical Datum).

**At elevation 712.0 feet, NGVD, crest gates automatically begin to lower. At elevation 715.0 feet, NGVD, crest gates are completely lowered.

OUTLETS
(Looking Downstream)



DAM OPERATOR INSTRUCTIONS

1. Communication with the District Office is available.

   a. Notify the Reservoir Operations Center when a gate change will be required according to the schedule.

   b. Notify the Reservoir Operations Center if unable to set the gates as instructed.

2. Communication with the District Office is not available.

   a. Try to reestablish communications through the Los Angeles County Department of Public Works (WUK 4470).

   b. (i) Rising Stages. Allow a period of one half hour to pass to reestablish communication with the District Office. If after one half hour communication is not reestablished follow the gate operation schedule.

   (ii) Falling Stages. Maintain current downstream gage height until communication is reestablished.

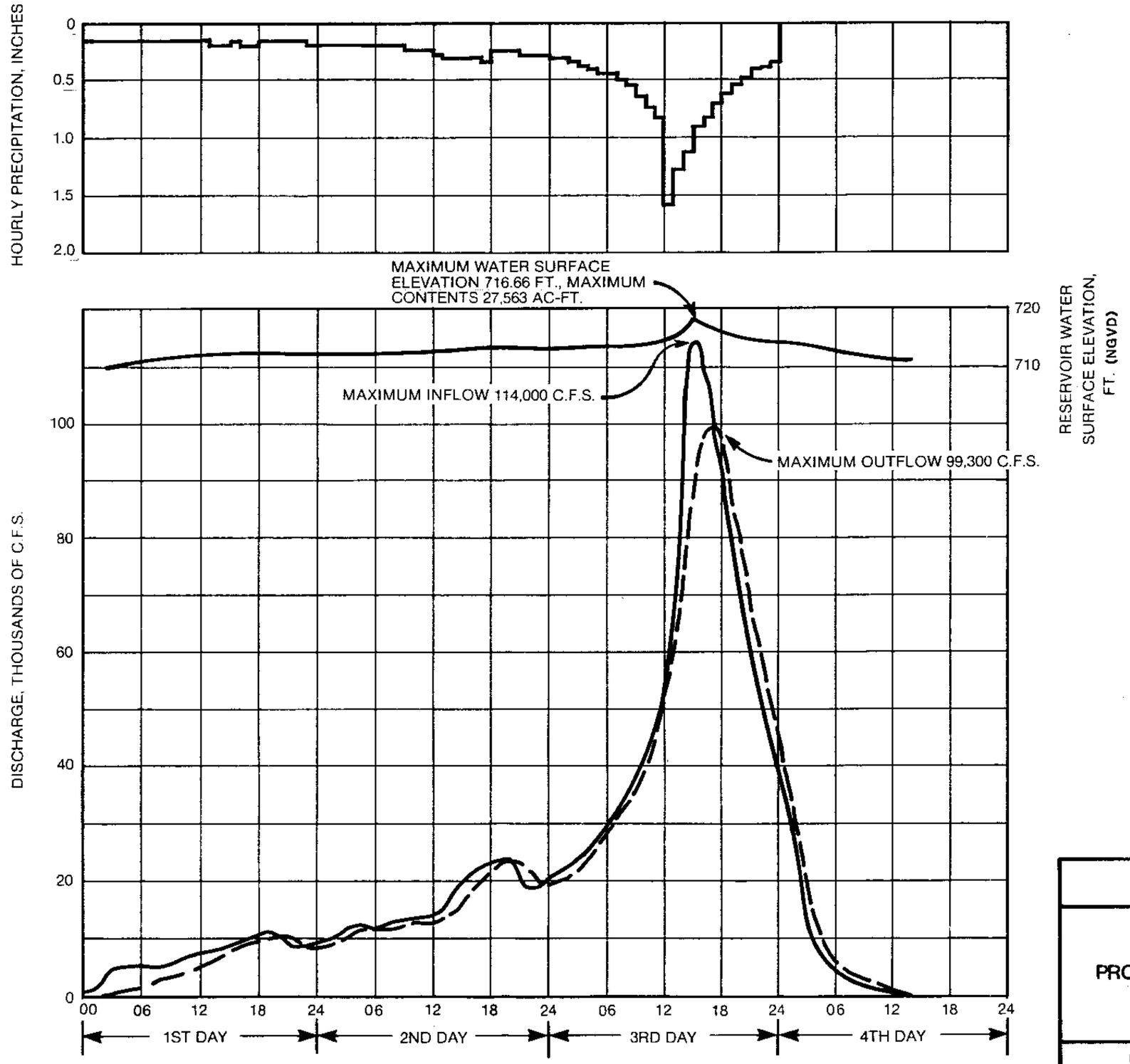
   c. If one of the gates cannot be operated, adjust the remaining gates gradually until the downstream gage height agrees with scheduled values. Keep a close check on gage height and change the gate openings as often as required. If the downstream gage height is not obtainable, adjust the gates that are functioning so that the gate openings are equal to the sum of the openings shown in the schedule.

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

RESERVOIR REGULATION
SCHEDULE

U. S. ARMY ENGINEER DISTRICT
LOS ANGELES, CORPS OF ENGINEERS

PLATE 7-02

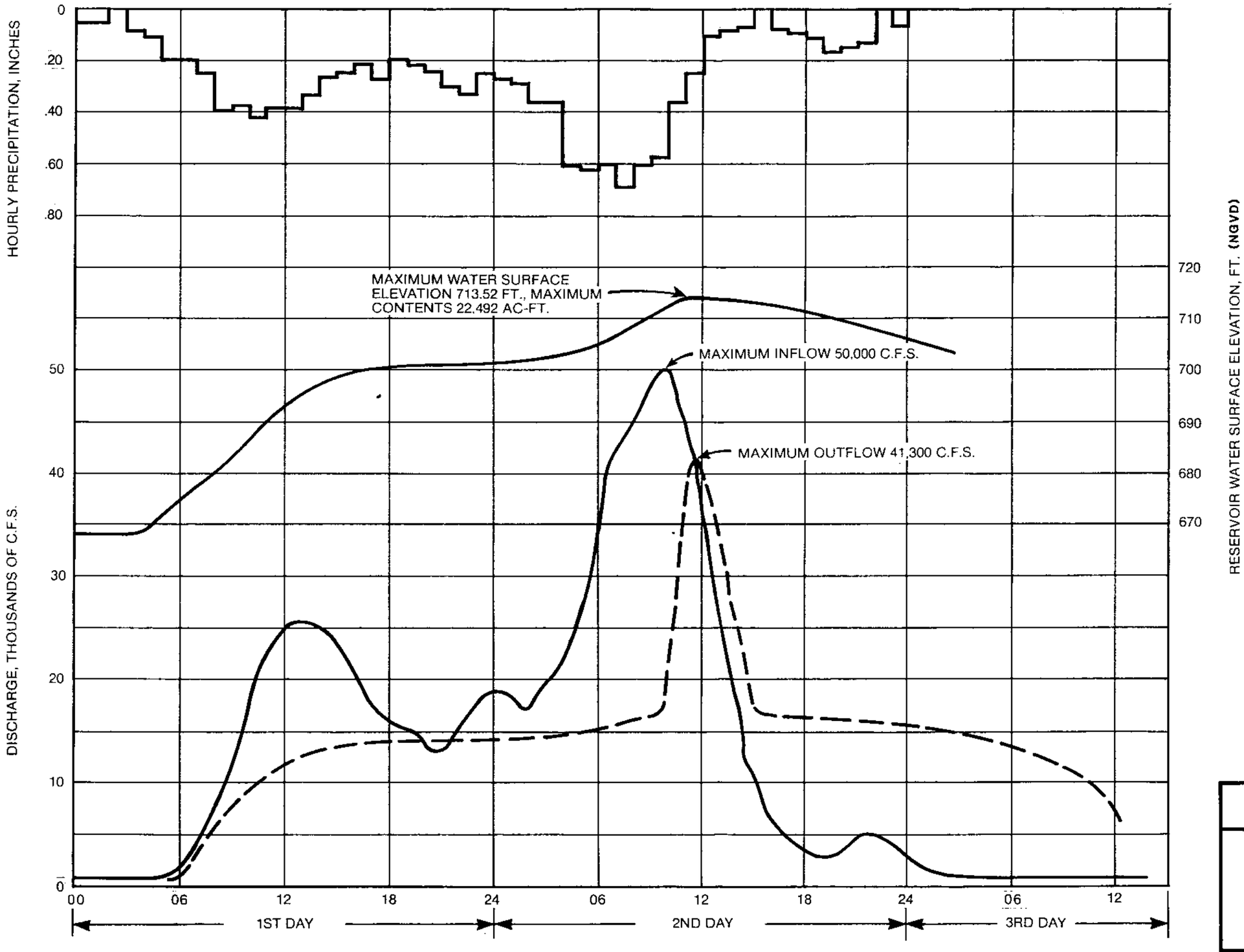


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

PROBABLE MAXIMUM FLOOD ROUTING

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 8-01

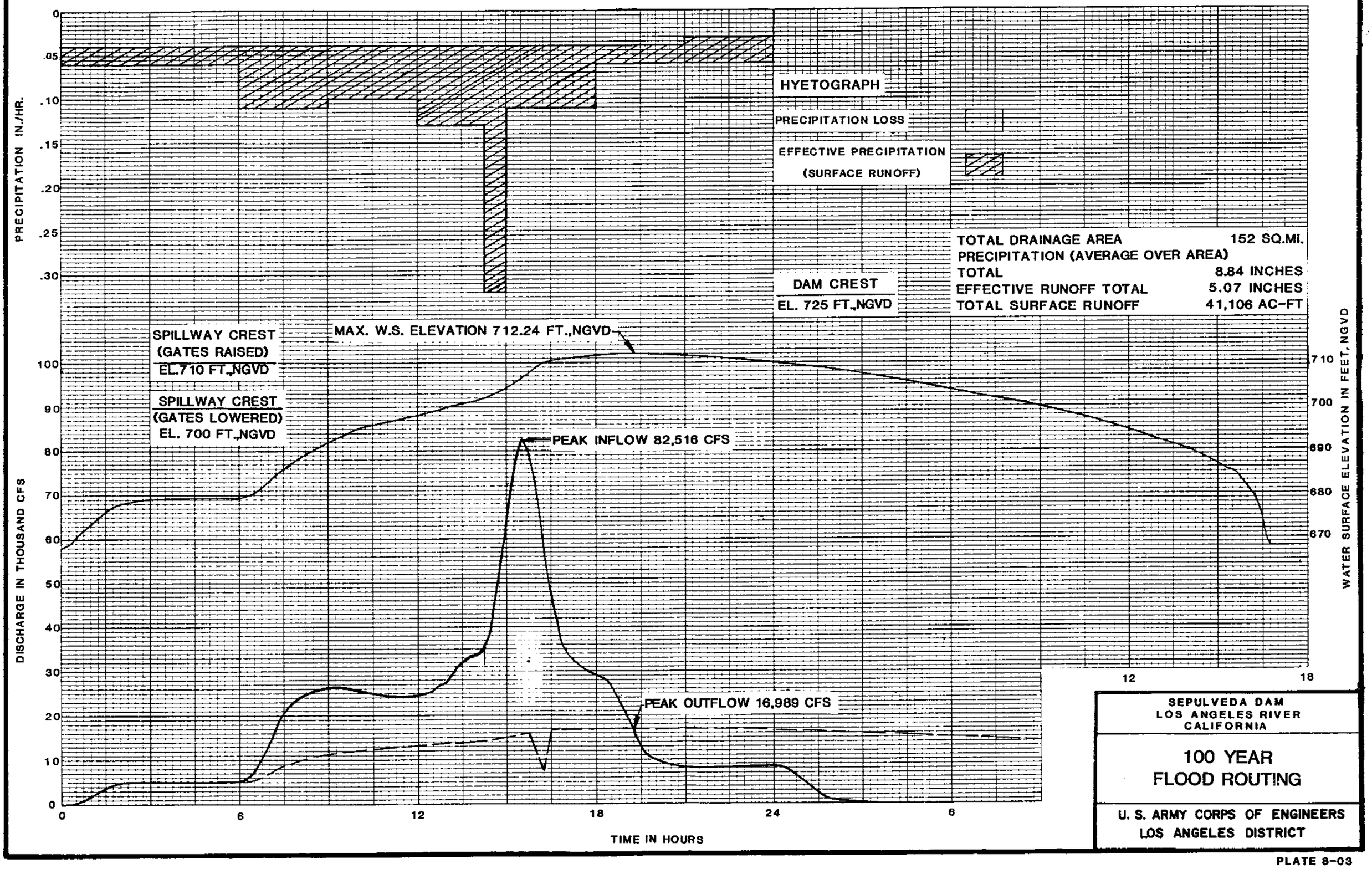


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

STANDARD PROJECT FLOOD ROUTING

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 8-02

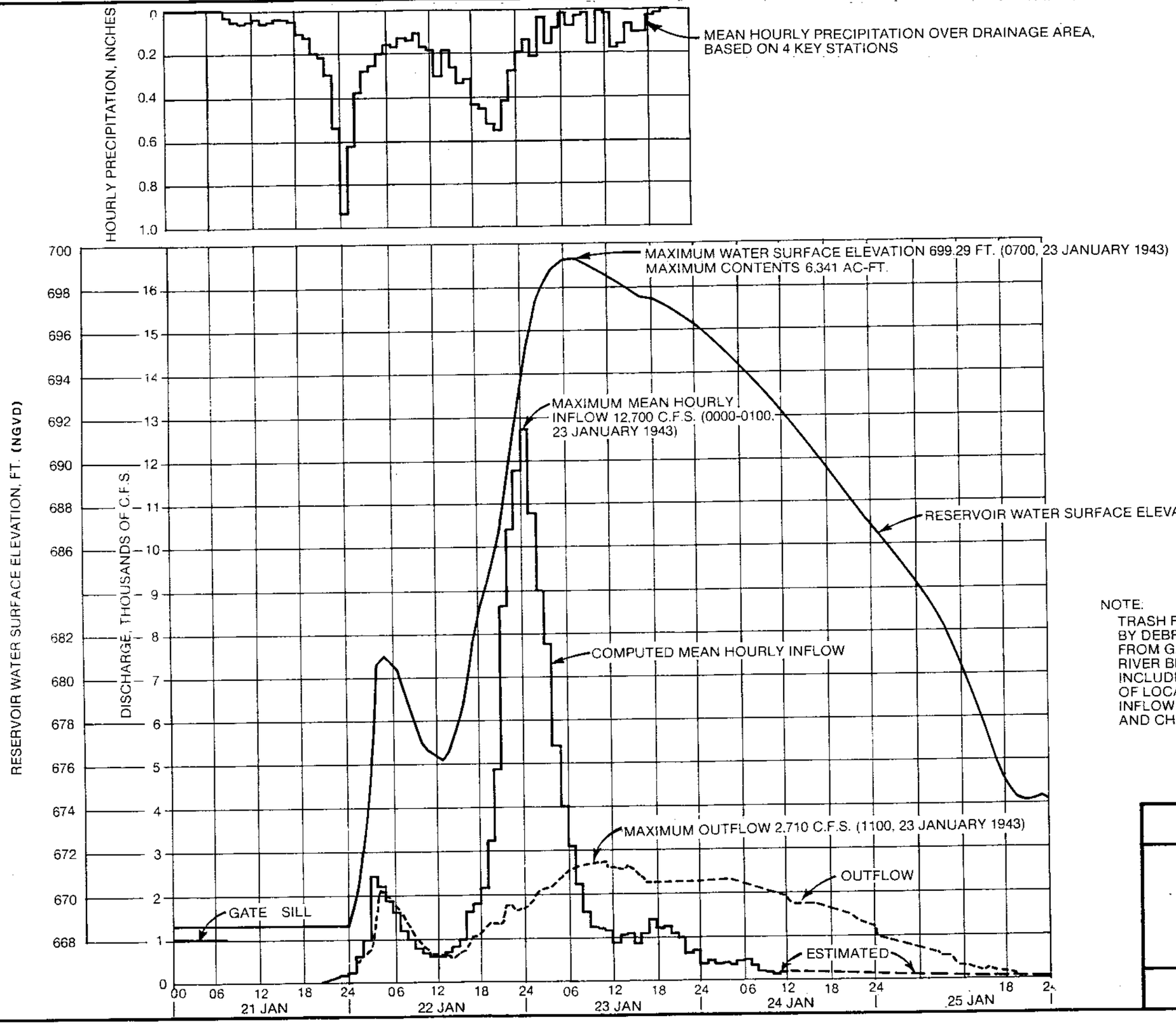


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

100 YEAR FLOOD ROUTING

U. S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 8-03



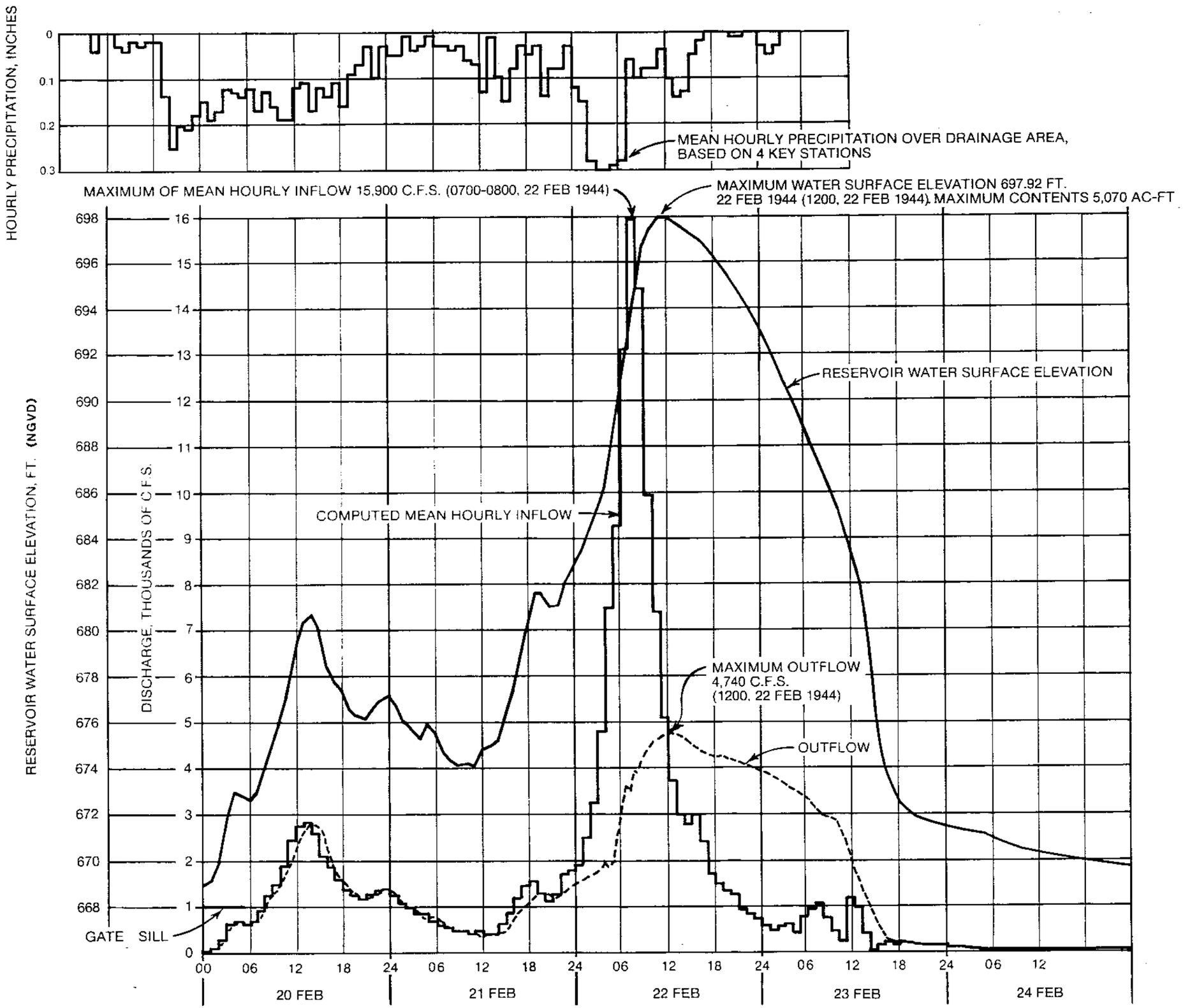
NOTE:
TRASH RACKS WERE PARTIALLY BLOCKED BY DEBRIS. OUTFLOW WAS DETERMINED FROM GAGING STATION ON LOS ANGELES RIVER BELOW SEPULVEDA BLVD WHICH INCLUDED A MAXIMUM OF SOME 100 C.F.S. OF LOCAL DRAINAGE BELOW THE DAM. INFLOW COMPUTED ON BASIS OF OUTFLOW AND CHANGE IN STORAGE.

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

OPERATION HYDROGRAPHS 21-25 JANUARY 1943

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 8-04



NOTES:

RAINFALL IN SOUTH PORTION OF DRAINAGE AREA OF CLOUDBURST INTENSITY PROBABLY CAUSED PEAK.

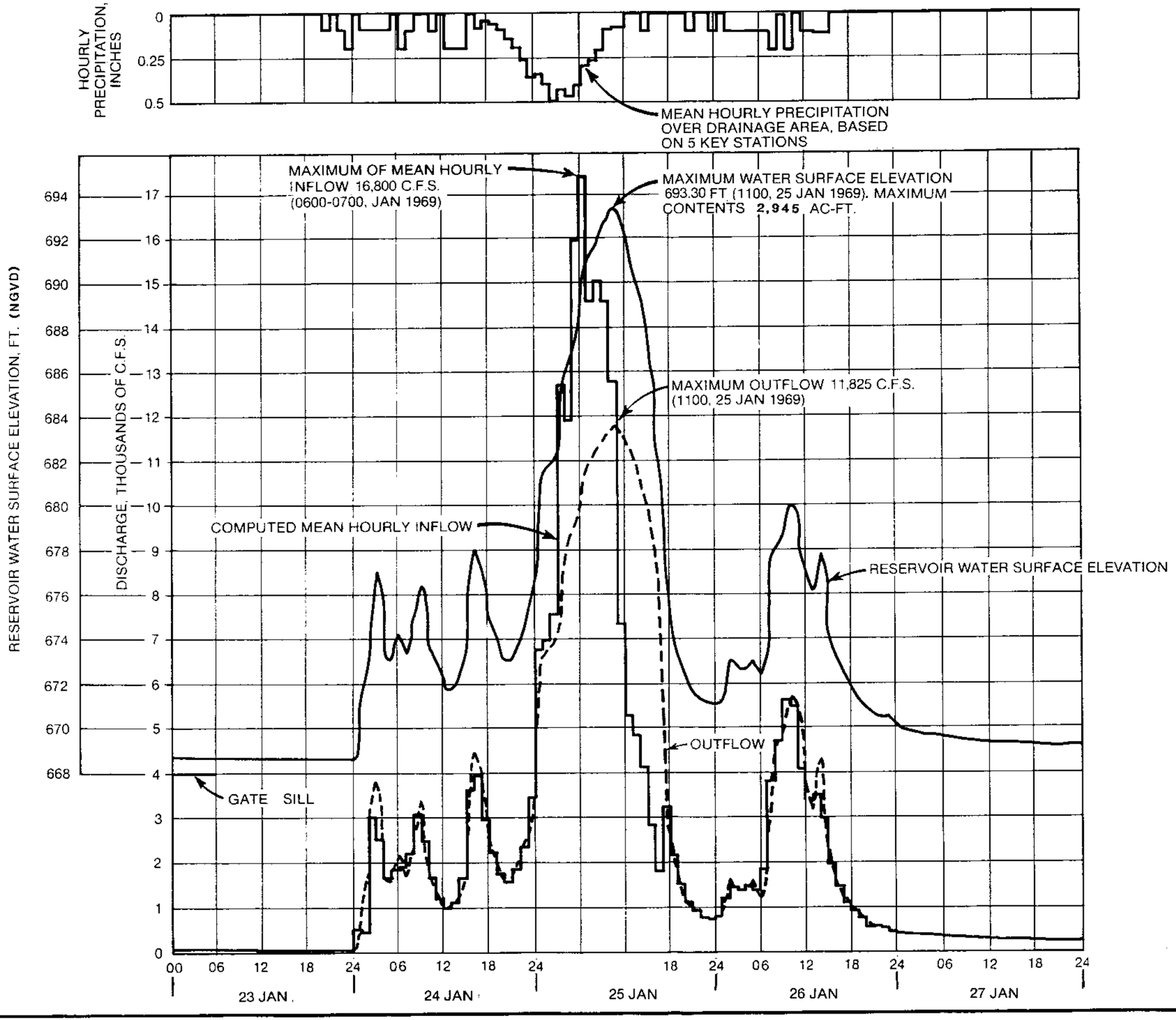
OUTFLOW AFFECTED BY CLOGGING OF TRASH RACKS

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

OPERATION HYDROGRAPHS 20-24 FEBRUARY 1944

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 8-05



SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

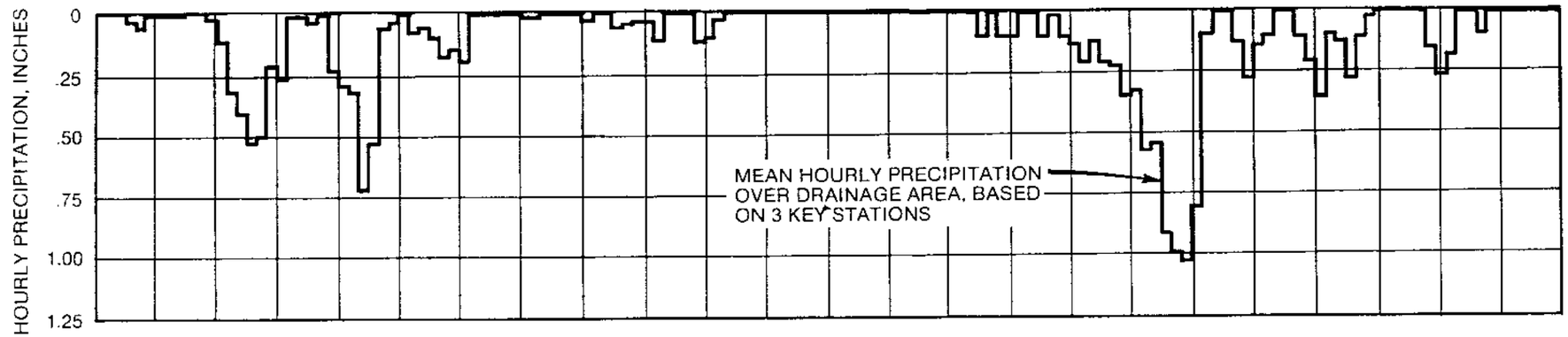
OPERATION HYDROGRAPHS
23-27 JANUARY 1969

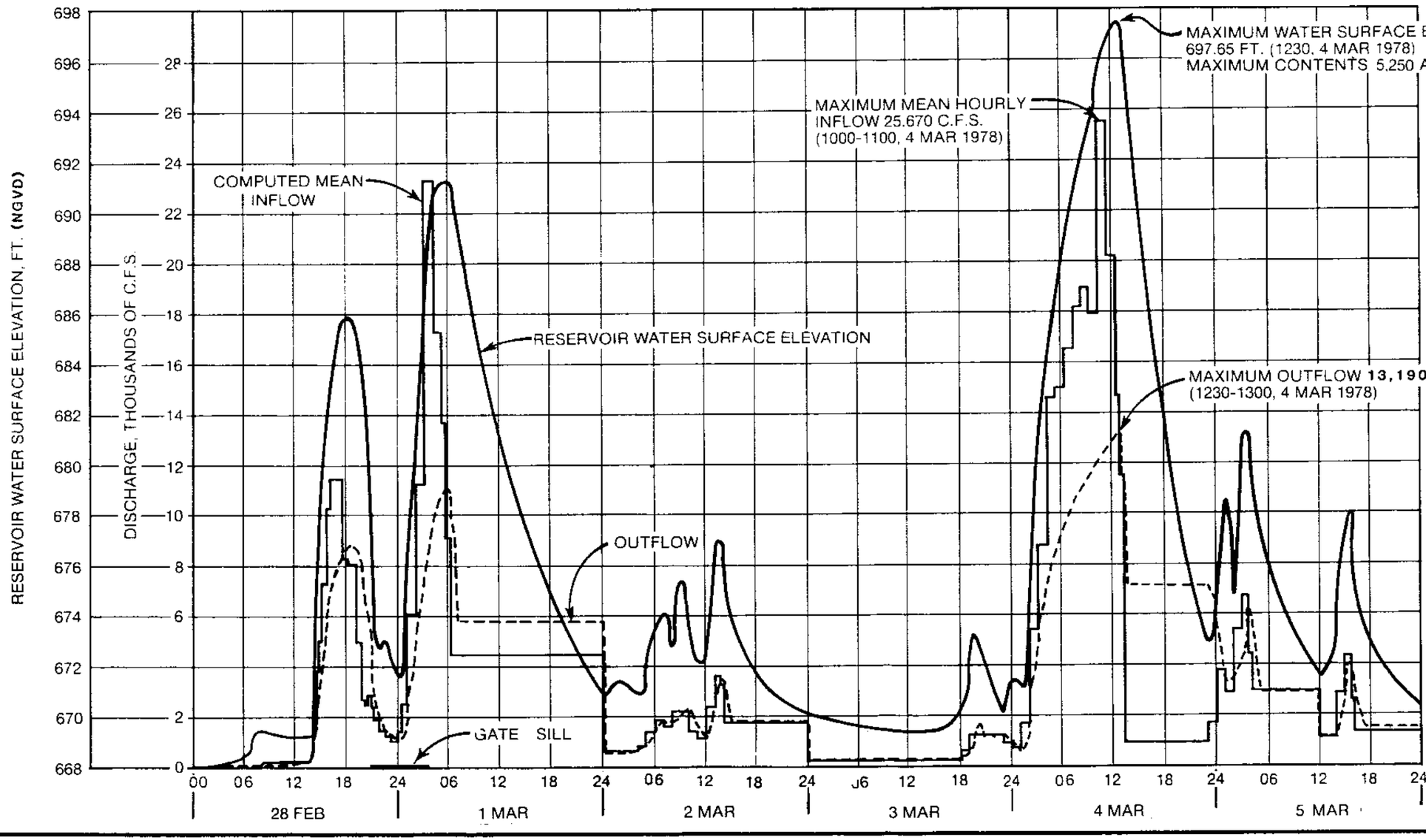
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 8-06

U.S. ARMY ENGINEER DISTRICT

CORPS OF ENGINEERS



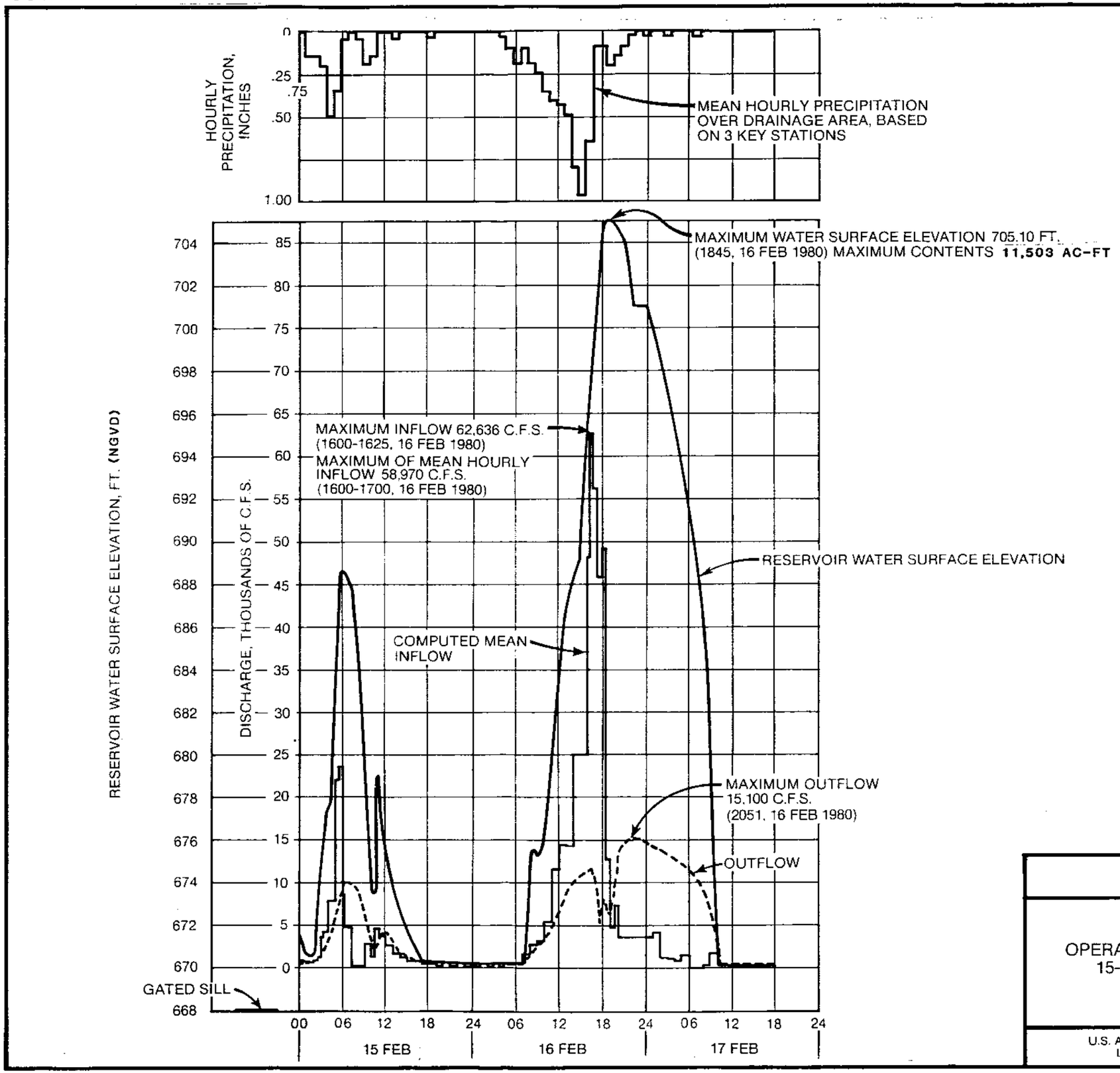


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

OPERATION HYDROGRAPHS
28 FEBRUARY-5 MARCH 1978

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 8-07

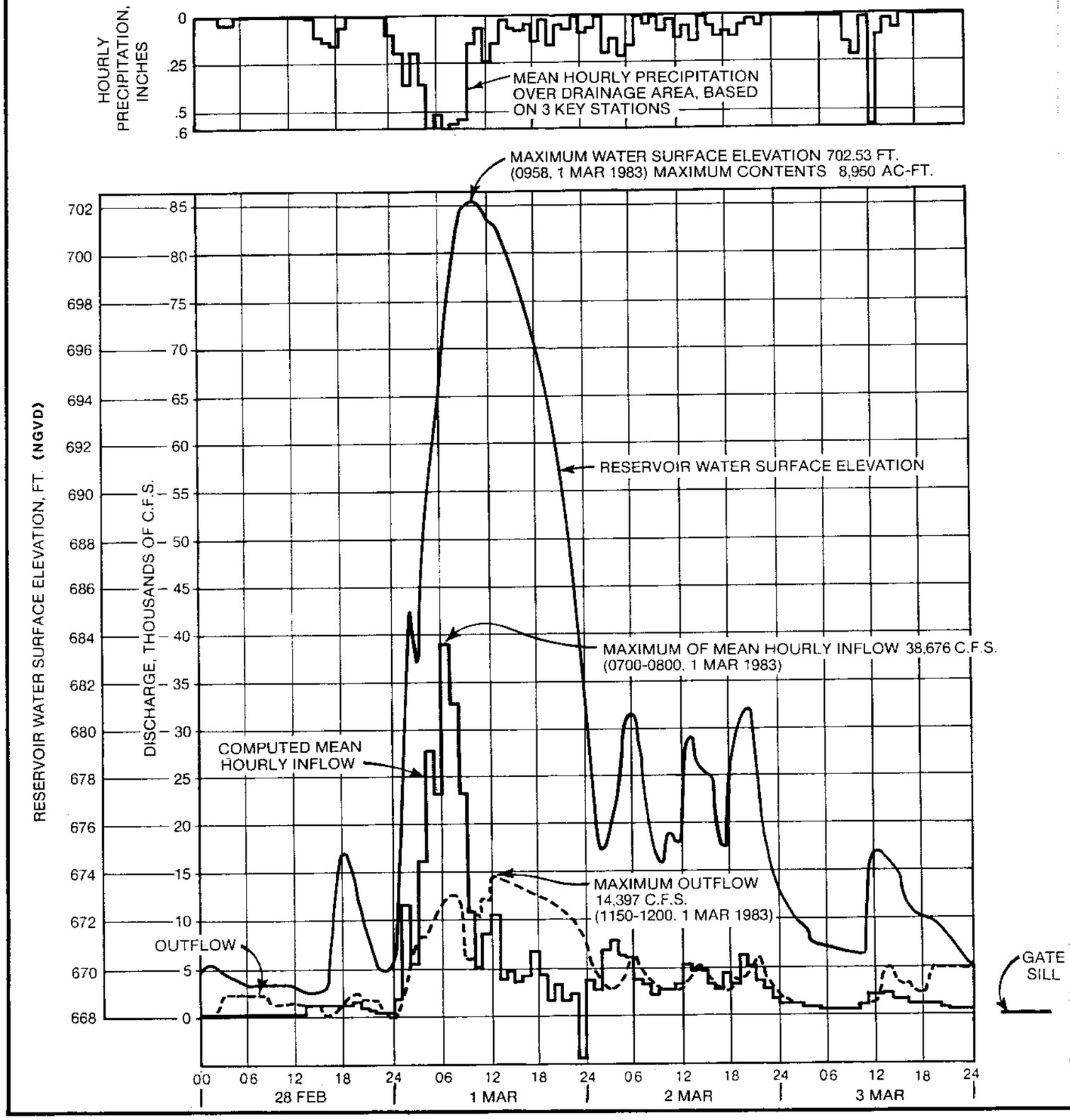


SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

OPERATION HYDROGRAPHS
15-17 FEBRUARY 1980

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 8-08

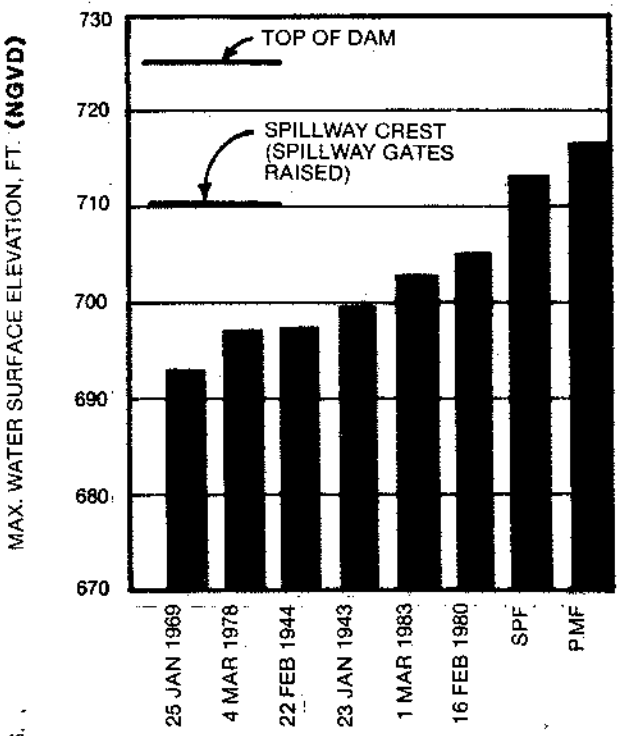


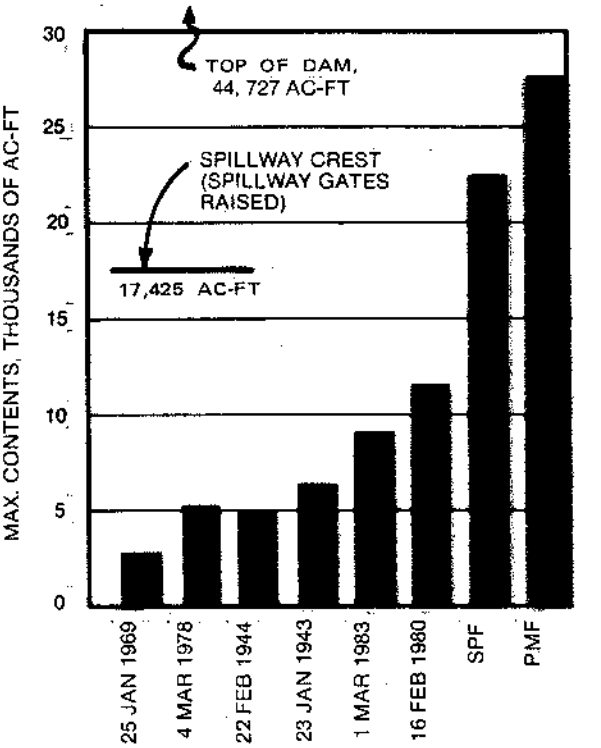
SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

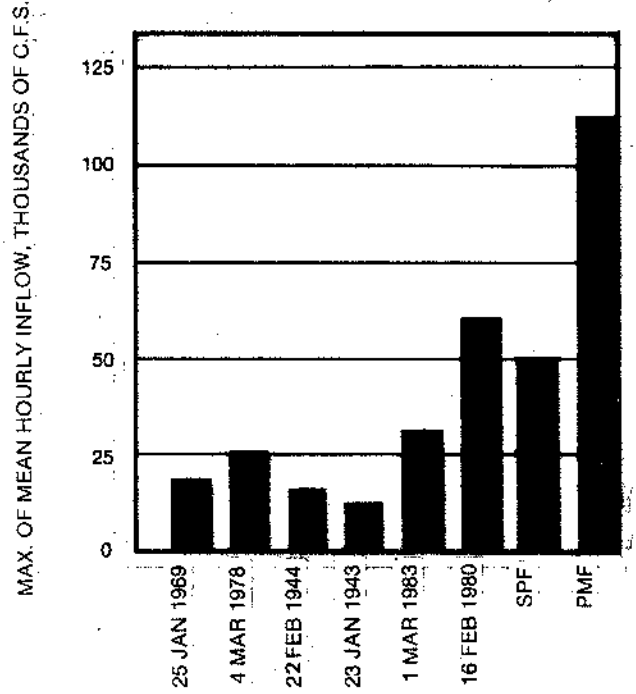
OPERATION HYDROGRAPHS
28 FEBRUARY - 3 MAR 1983

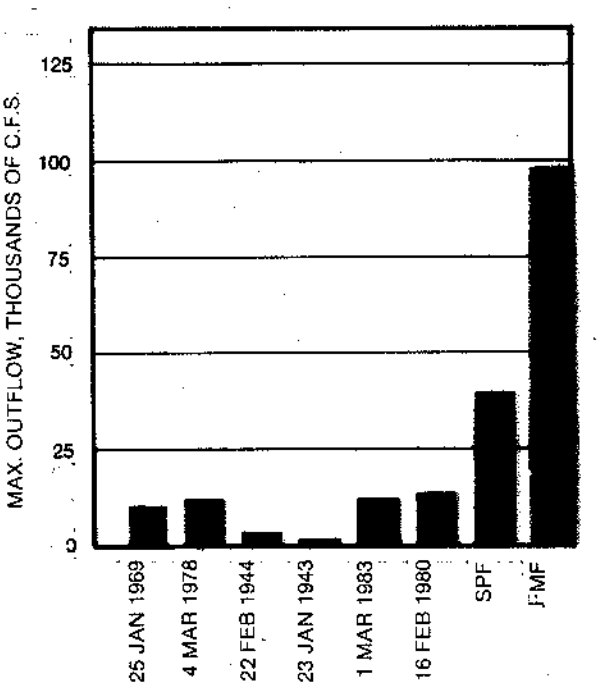
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 8-09









SPF = STANDARD PROJECT FLOOD
PMF = PROBABLE MAXIMUM FLOOD

A listing of each of the values depicted here can be found in Table 8-01 and on Plates 8-01 through 8-08.

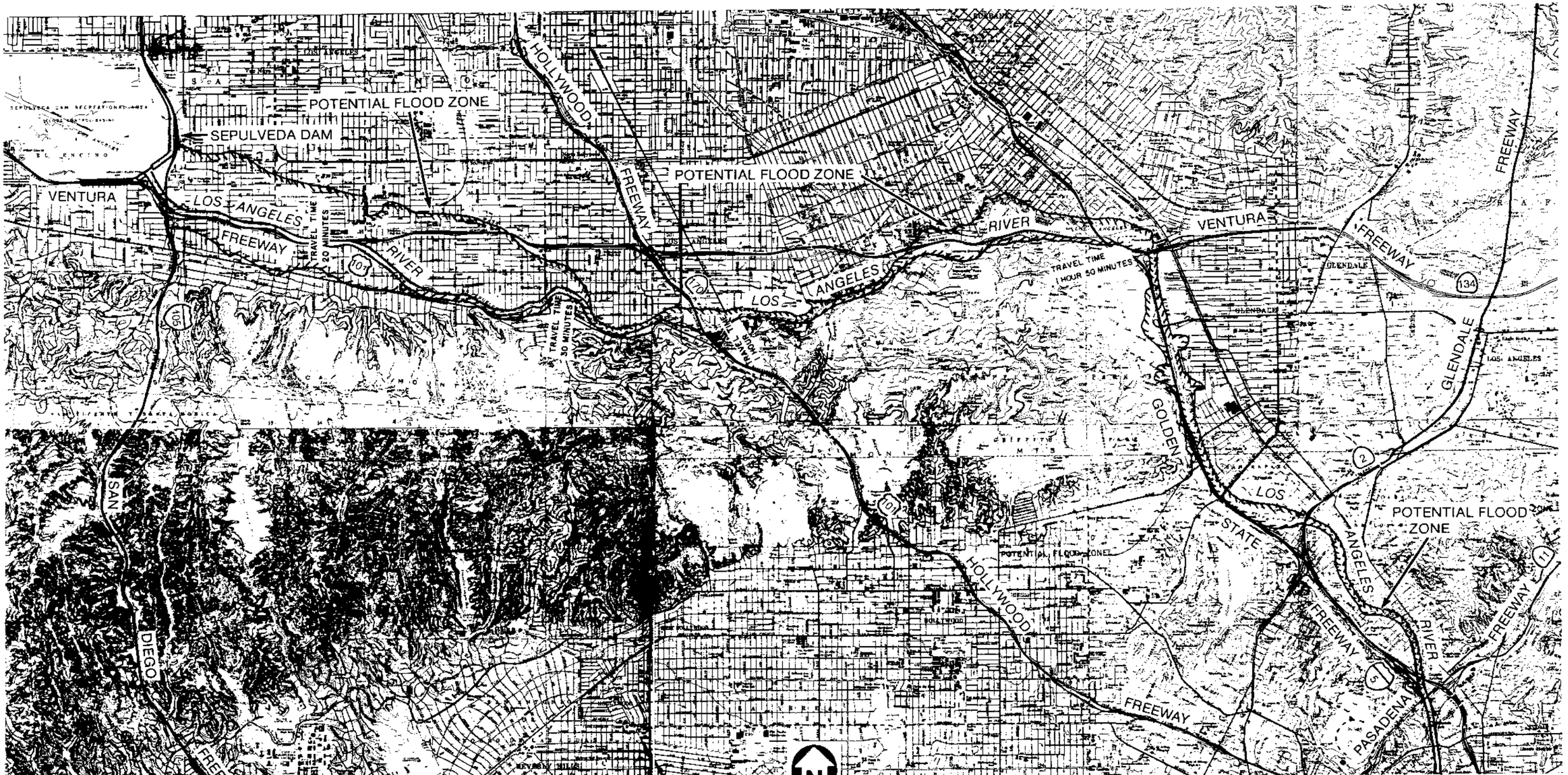
SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

COMPARISON OF HISTORICAL FLOODS AND DESIGN FLOODS

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

U.S. ARMY ENGINEER DISTRICT

CORPS OF ENGINEERS



SCALE 0 1 2 3 4 5 MILES

SEPULVEDA DAM
LOS ANGELES RIVER
CALIFORNIA

DAM FAILURE INUNDATION MAP

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PLATE 8-11