

Notes:-
 All Elevations are referred to Mean Sea Level.
 Kutter's formula with "n", .020 used in computation of Flow.
 Section 'A' is located 4 1/2 Miles below Mare Island Light. Effective Flow Channel assumed to extend from the 6' depth at Low Water on the South Side to the 9' depth on the North Side. Section taken from U.S. and G.S. Chart N° 5533, issue of June, 1925.
 One Cubic Foot per Second \approx .0413 Acre Feet per Half Hour.

APPROVED FOR ESTIMATING PURPOSES:
A. J. Walter
 CHIEF ENGINEER

DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 SACRAMENTO VALLEY INVESTIGATIONS
 SALT WATER BARRIER
 DISCHARGE AND SLOPE CURVE

Drawn - W.A.P.C.M. Submitted - W.P.J. Jorg
 Checked _____ Approved - J.P. Savage

SV-139 Berkeley, California, Mch 1926 1930-92

DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 SACRAMENTO VALLEY INVESTIGATIONS
 SALT WATER BARRIER
 FLOOD DISCHARGE AT POINT SAN PABLO
 WATER SURFACE ELEVATIONS FOR 750,000 CFS

Drawn: W.B. CAM
 Submitted: *William B. Cameron*
 Checked: *William B. Cameron*
 Approved: *William B. Cameron*
 193-D-93

2V-140
 Berkeley, California, March, 1936

APPROVED FOR ESTIMATING PURPOSES
A. J. Foster
 CHIEF ENGINEER

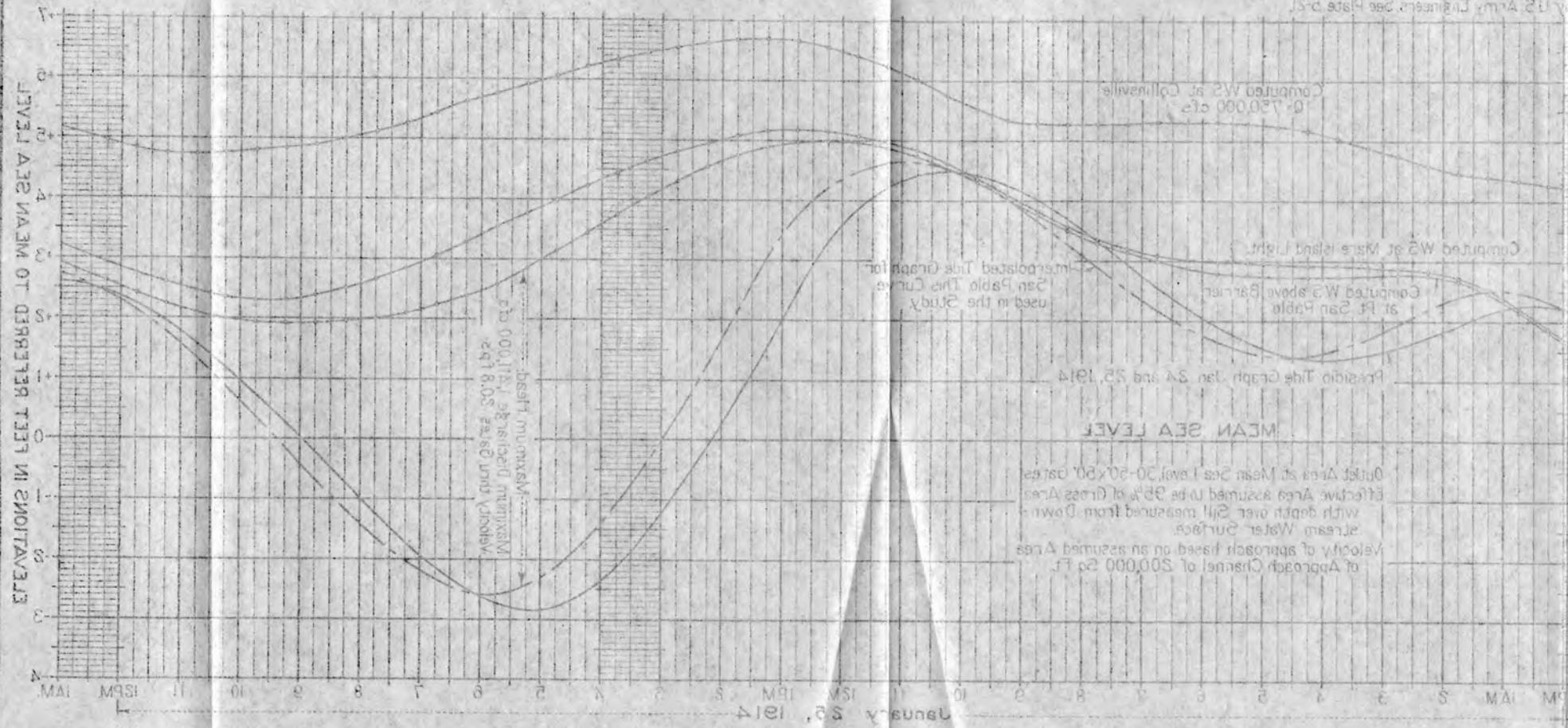


Plate 5-17

FLOOD DISCHARGE AT POINT SAN PABLO
Water Surface Elevations for "Q"=750,000 c. f. s.

US Army Engineers, See Plate 5-21
 See Plate 5-20

US Army Engineers, See Plate 5-21
 See Plate 5-20

US Army Engineers, See Plate 5-21

ELEVATIONS AT COLLINSVILLE-U.S. ENGINEER DATUM

+14
13.52 USED Top of Levee recommended for adoption by Flood Control Office, State Dept. of Public Works. See Plate 5-20.

+13

+12

+11

+10

+9

+8

+7

+6

+5

+4

+3

+2

+1

0

-1

-2

-3

-4

2PM 3 4 5 6 7 8 9 10 11 12PM 1AM 2 3 4 5 6 7 8 9 10 11 12PM 1AM

January 24, 1914

January 25, 1914

2PM 3 4 5 6 7 8 9 10 11 12PM 1AM

January 24, 1914

January 25, 1914

2PM 3 4 5 6 7 8 9 10 11 12PM 1AM

January 24, 1914

January 25, 1914

2PM 3 4 5 6 7 8 9 10 11 12PM 1AM

January 24, 1914

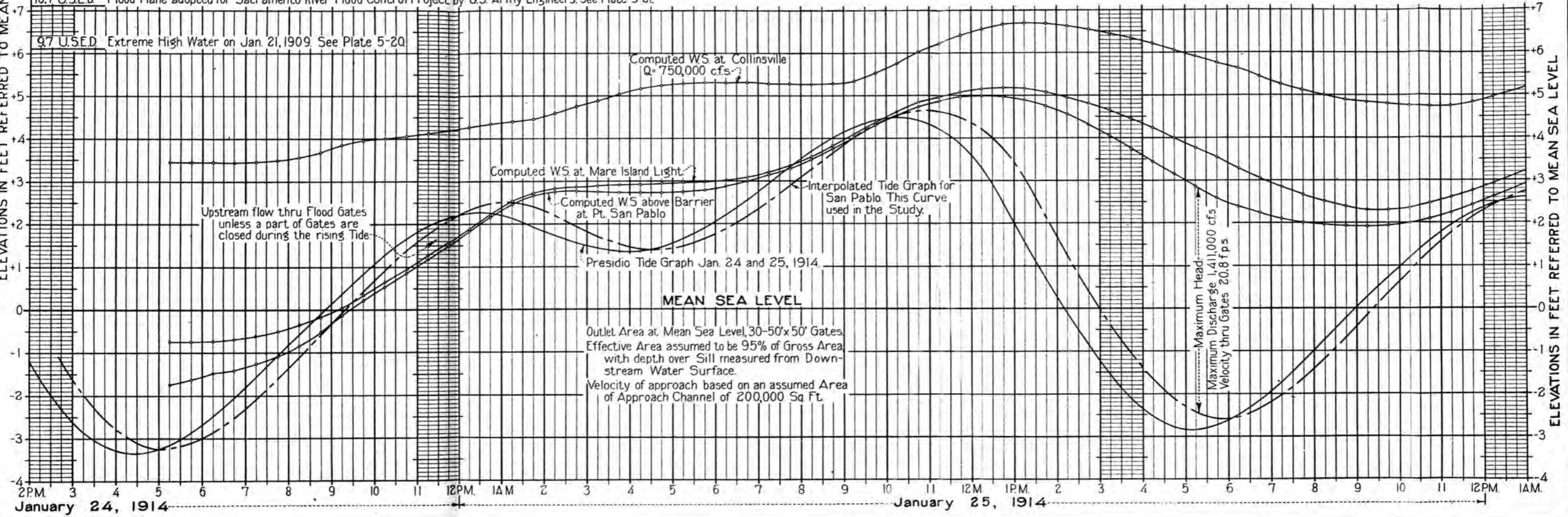
January 25, 1914

FLOOD DISCHARGE AT POINT SAN PABLO

Water Surface Elevations for "Q" = 750,000 c.f.s.

DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
FLOOD DISCHARGE AT POINT SAN PABLO
WATER SURFACE ELEVATIONS FOR "Q" = 750,000 C.F.S.
Drawn: WAP: CAM Submitted: *Walker R. Young*
Checked: Approved: *J. H. Savage*
SV-140 Berkeley, California March 1926
193-D-93

APPROVED FOR ESTIMATING PURPOSES:
A. J. Dralter
CHIEF ENGINEER



DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
FLOOD DISCHARGE AT ARMY POINT
 WATER SURFACE ELEVATIONS FOR 1934
 BY W. W. TAMM
 Approved: *W. W. Tamm*
 193-D-94

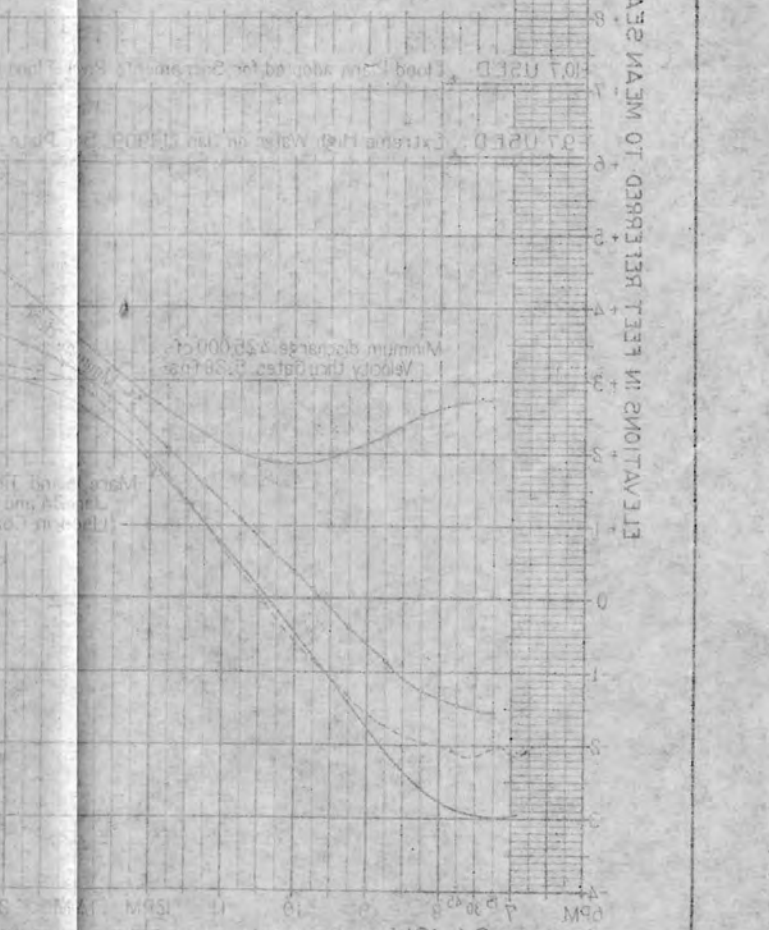
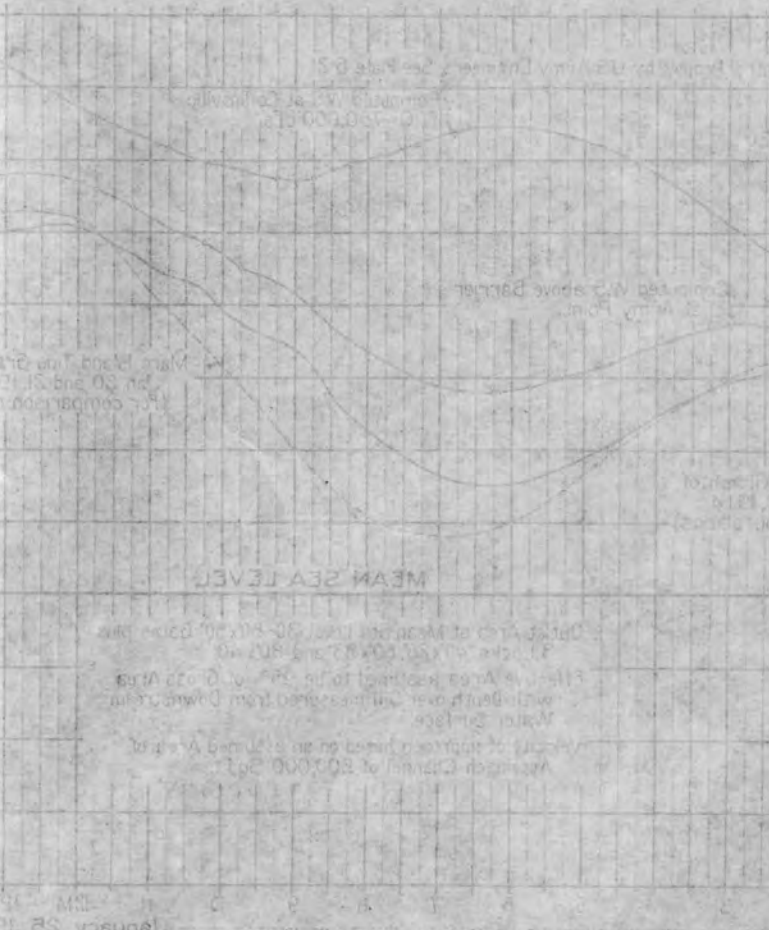
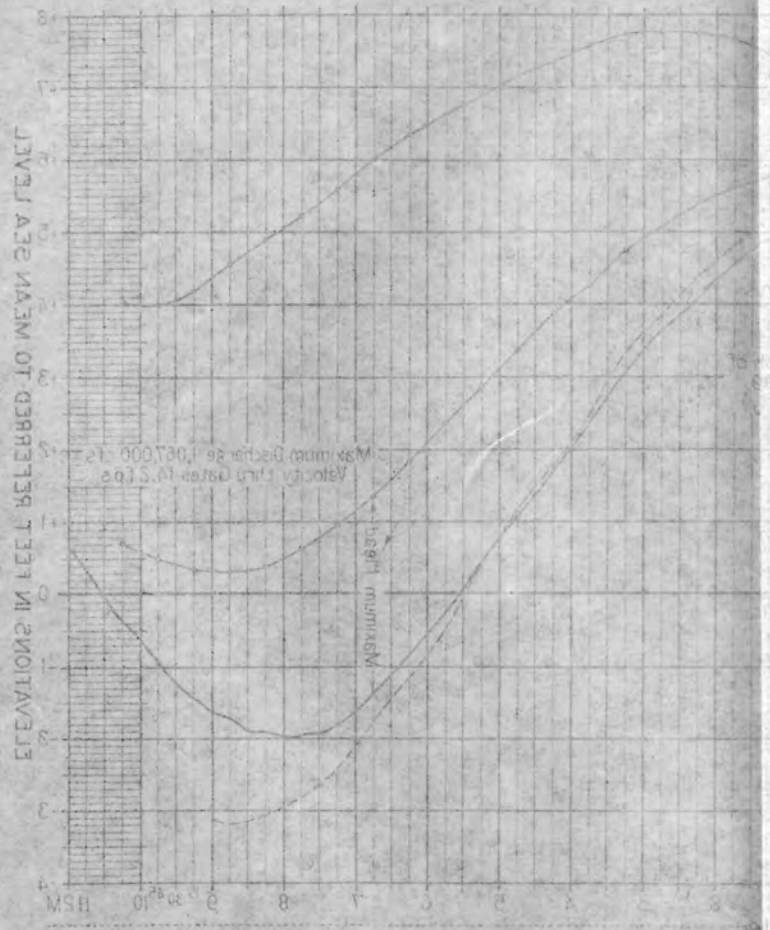


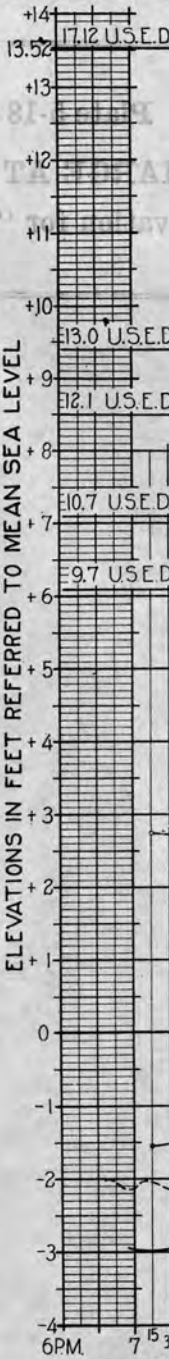
Plate 5-18
FLOOD DISCHARGE AT ARMY POINT
 Water Surface Elevation for "Q" = 750,000 c. f. s.

ELEVATIONS AT COLLEGEVILLE-US ENGINEER DATUM
 (Elevation in feet relative to datum)

ELEVATIONS AT COLLEGEVILLE-US ENGINEER DATUM
 (Elevation in feet relative to datum)

ELEVATIONS AT COLLEGEVILLE-US ENGINEER DATUM
 (Elevation in feet relative to datum)

ELEVATIONS AT COLLINSVILLE-U.S. ENGINEER DATUM.



13.52 U.S.E.D. Top of Levee recommended for adoption by Flood Control Office, State Dept. of Public Works. See Plate 5-20.

13.0 U.S.E.D. Elevation estimated by Flood Control Office, State Dept. of Public Works, which a Flood 50% greater than that of 1907 might reach if confined within Sacramento Project Flood Channels. See Plate 5-20.

12.1 U.S.E.D. Extreme High Tide assumed for Sacramento River Flood Control Project by US Army Engineers. See Plate 5-21.
High Tide assumed by Flood Control Office, State Dept. of Public Works. See Plate 5-20.

10.7 U.S.E.D. Flood Plane adopted for Sacramento River Flood Control Project by US Army Engineers. See Plate 5-21.

9.7 U.S.E.D. Extreme High Water on Jan 21, 1909. See Plate 5-20.

DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
FLOOD DISCHARGE AT ARMY POINT
WATER SURFACE ELEVATIONS FOR "Q" = 750,000 C.F.S.

Drawn: WAP-CAM Submitted: *Walker R. Young*
Checked: _____ Approved: *J.H. Savage*

SV-141 193-D-94

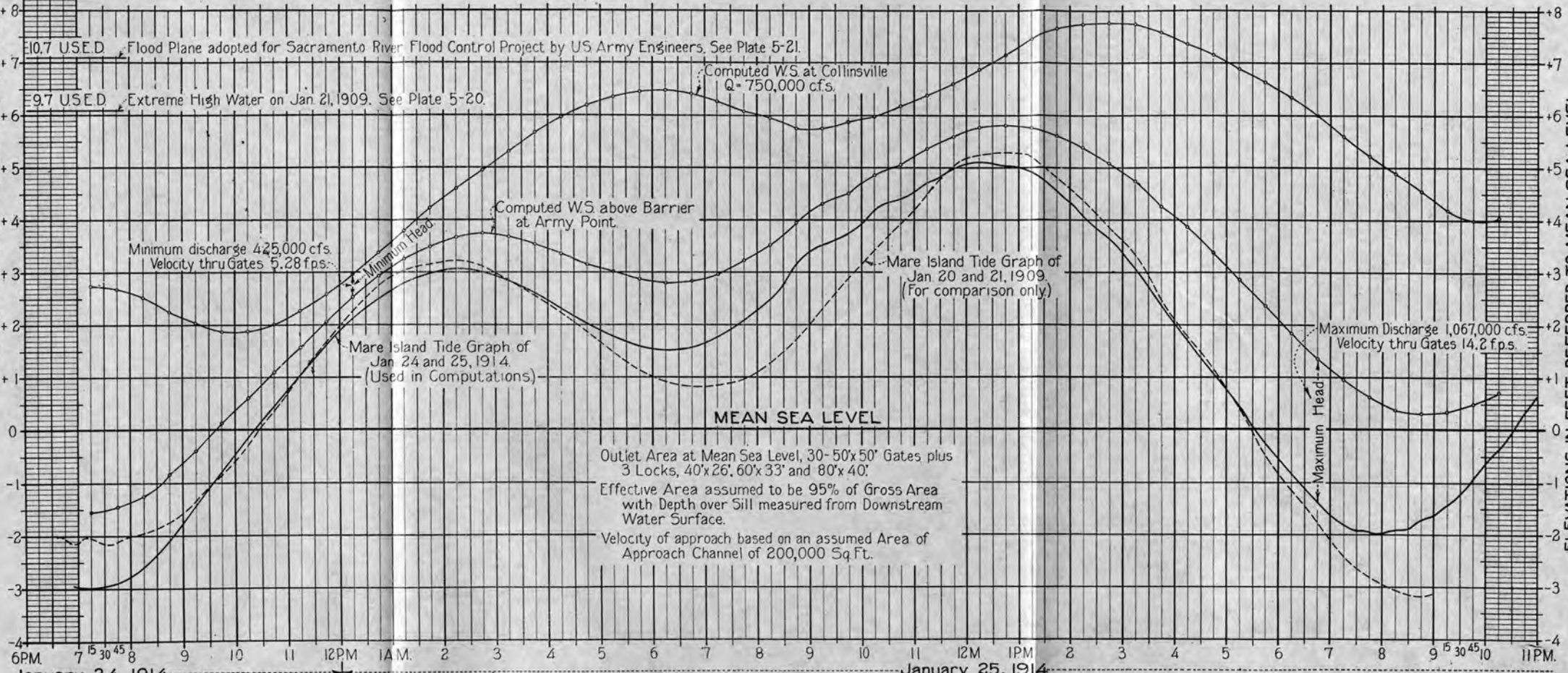
Berkeley, California. March, 1926.

APPROVED FOR ESTIMATING PURPOSES-

A. J. Dralter
CHIEF ENGINEER

ELEVATIONS IN FEET REFERRED TO MEAN SEA LEVEL

ELEVATIONS IN FEET REFERRED TO MEAN SEA LEVEL



MEAN SEA LEVEL

Outlet Area at Mean Sea Level, 30-50x50' Gates plus 3 Locks, 40'x26', 60'x33' and 80'x40'.
Effective Area assumed to be 95% of Gross Area with Depth over Sill measured from Downstream Water Surface.
Velocity of approach based on an assumed Area of Approach Channel of 200,000 Sq.Ft.

January 24, 1914

January 25, 1914

ELEVATIONS AT COLLINSVILLE-U.S. ENGINEER DATUM

+14
13.52
+13
+12
+11
+10
+9
+8
+7
+6
+5
+4
+3
+2
+1
0
-1
-2
-3
-4

17.12 U.S.E.D. Top of Levee recommended for adoption by Flood Control Office, State Dept. of Public Works See Plate 5-20

13.0 U.S.E.D. Elevation estimated by Flood Control Office, State Dept. of Public Works, which a Flood 50% greater than that of 1907 might reach if confined within Sacramento Project Flood Channels See Plate 5-20

12.1 U.S.E.D. Extreme High Tide assumed for Sacramento River Flood Control Project by US Army Engineers See Plate 5-21
High Tide assumed by Flood Control Office, State Dept. of Public Works See Plate 5-20

10.7 U.S.E.D. Flood Plane adopted for Sacramento River Flood Control Project by US Army Engineers See Plate 5-21

9.7 U.S.E.D. Extreme High Water on Jan 21, 1909 See Plate 5-20

DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
FLOOD DISCHARGE AT ARMY POINT
WATER SURFACE ELEVATIONS FOR "Q" = 500,000 CFS

Drawn: WAP-CAM Submitted: *Walker R. Young*
Checked: _____ Approved: *J.L. Savage*
SV-142 193-D-95

Berkeley, California, March 1926

APPROVED FOR ESTIMATING PURPOSES-

A. J. Walter
CHIEF ENGINEER

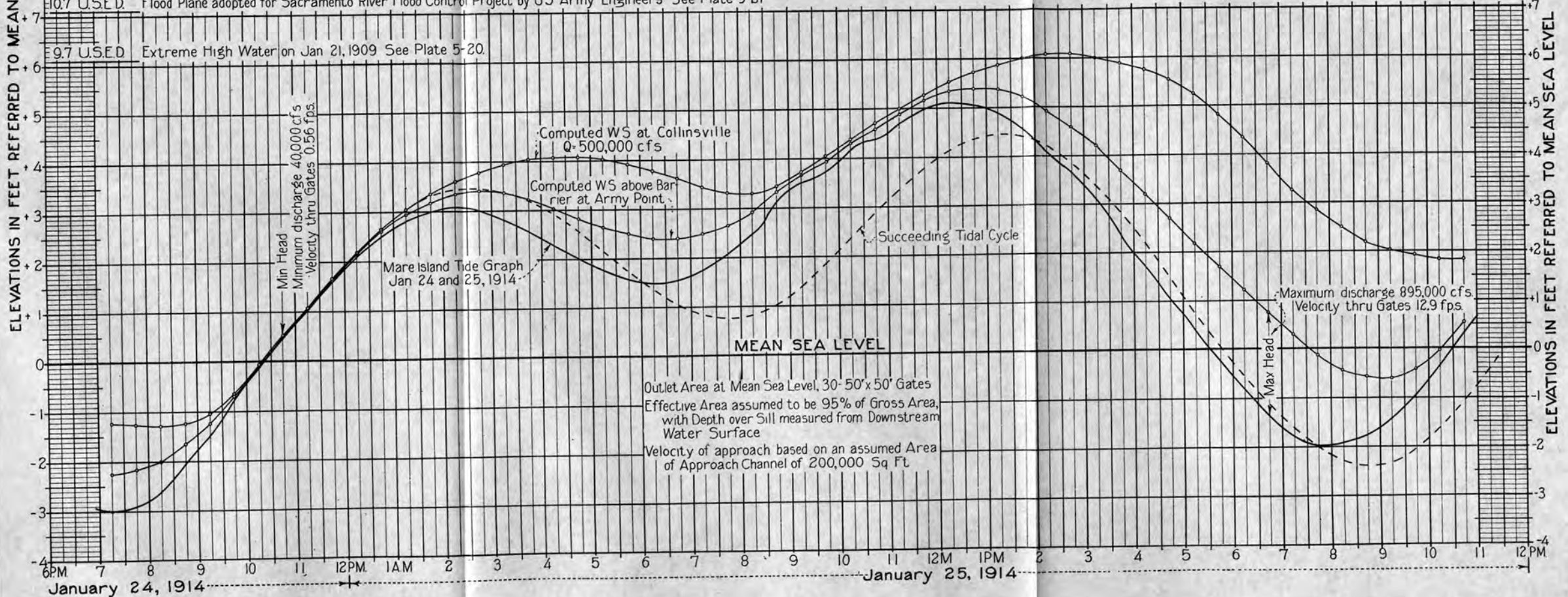
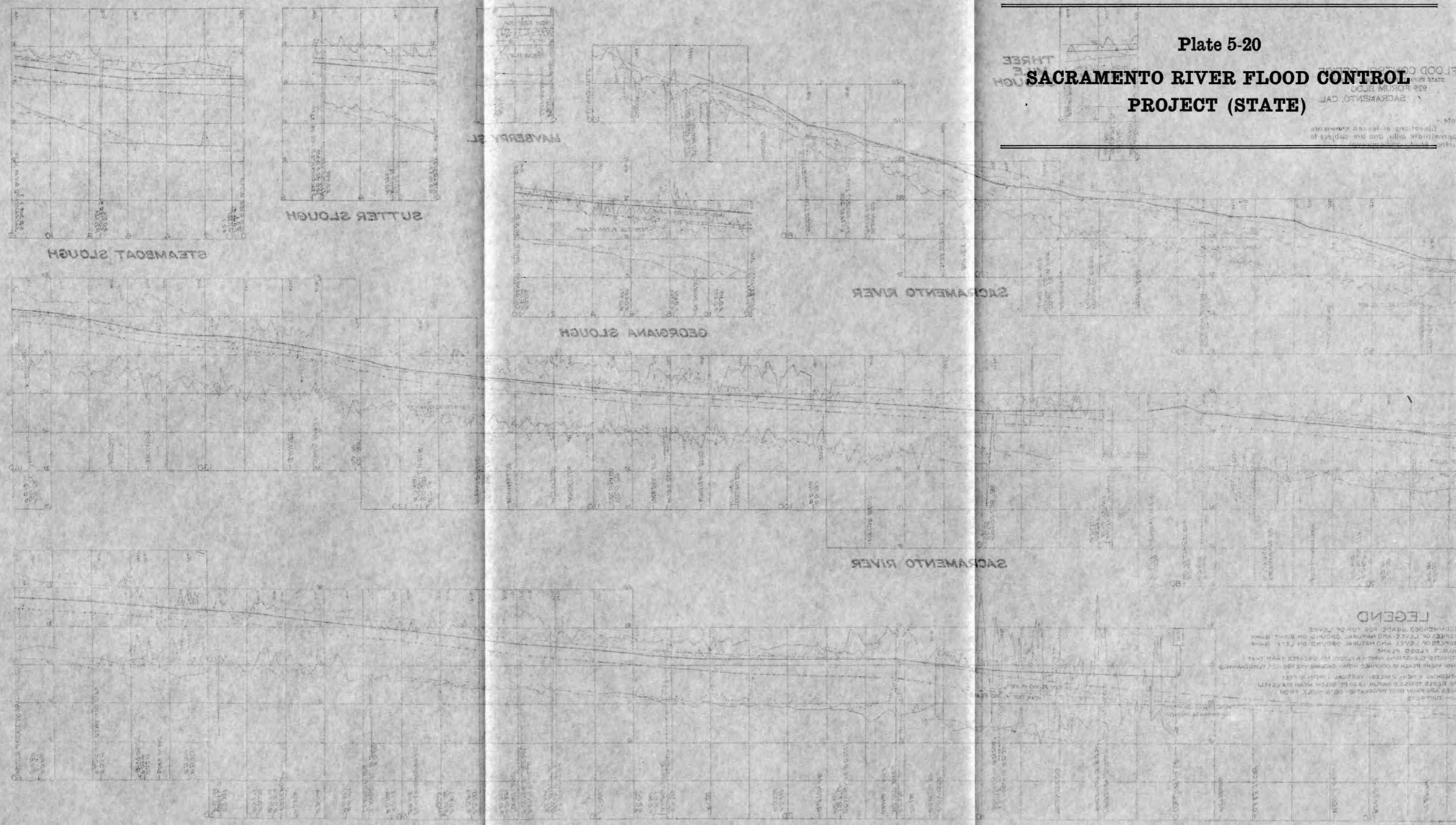


Plate 5-20

SACRAMENTO RIVER FLOOD CONTROL PROJECT (STATE)

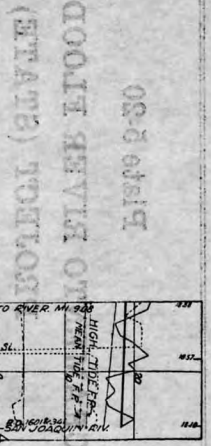


LEGEND

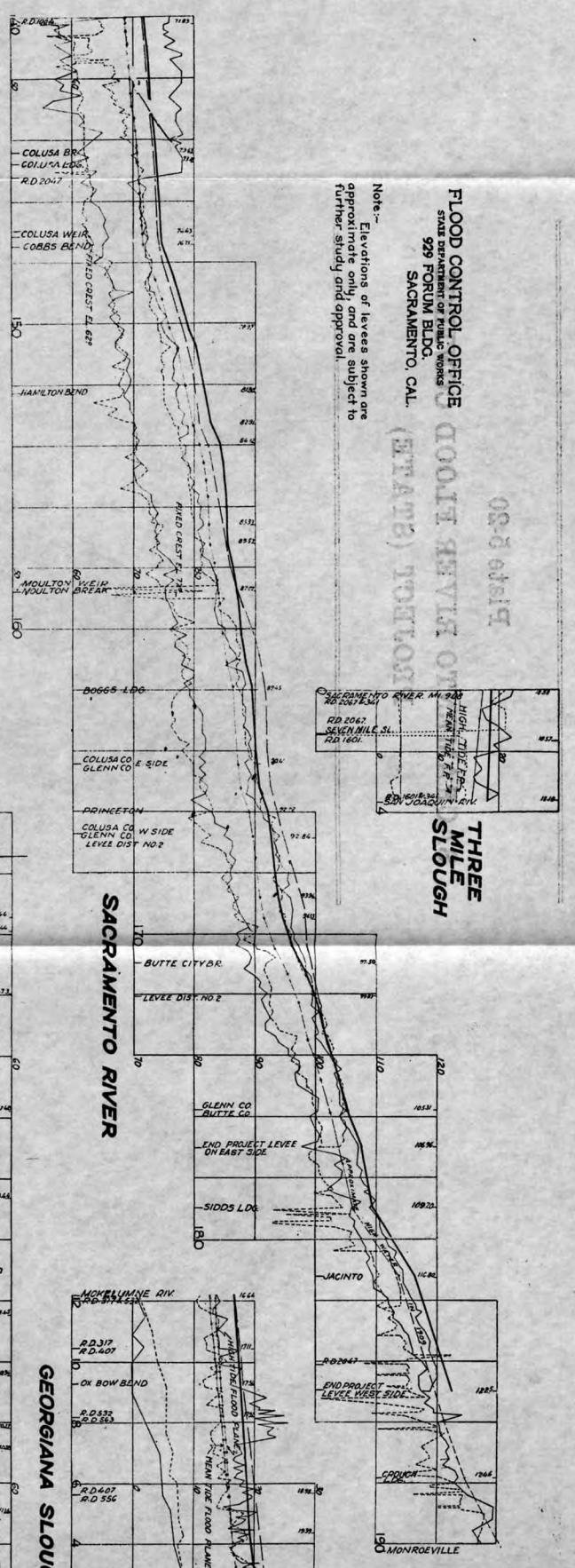
- Observed water level
 - Predicted water level
 - Discharge
 - Flood stage
 - Normal stage
 - High water mark
 - Low water mark
 - Mean high water
 - Mean low water
 - Mean sea level
 - Datum
 - Elevation
 - Feet
 - Feet above datum
 - Feet below datum
 - Feet above mean sea level
 - Feet below mean sea level
 - Feet above low water
 - Feet below low water
 - Feet above high water
 - Feet below high water
 - Feet above normal stage
 - Feet below normal stage
 - Feet above flood stage
 - Feet below flood stage
 - Feet above high water mark
 - Feet below high water mark
 - Feet above low water mark
 - Feet below low water mark
 - Feet above mean high water
 - Feet below mean high water
 - Feet above mean low water
 - Feet below mean low water
 - Feet above mean sea level
 - Feet below mean sea level
 - Feet above datum
 - Feet below datum

FLOOD CONTROL OFFICE
STATE DEPARTMENT OF PUBLIC WORKS
929 FORUM BLDG.
SACRAMENTO, CAL.

Note: Elevations of levees shown are approximate only and are subject to further study and approval.



THREE MILE SLOUGH



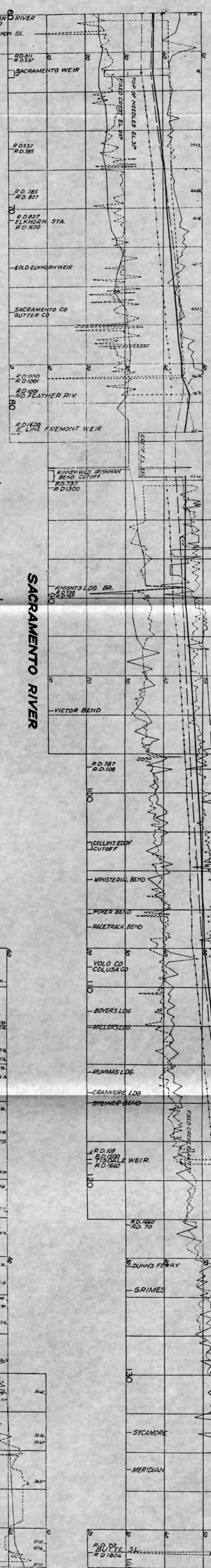
SACRAMENTO RIVER

GEORGIANA SLOUGH

MAYBERRY SL.

SUTTER SLOUGH

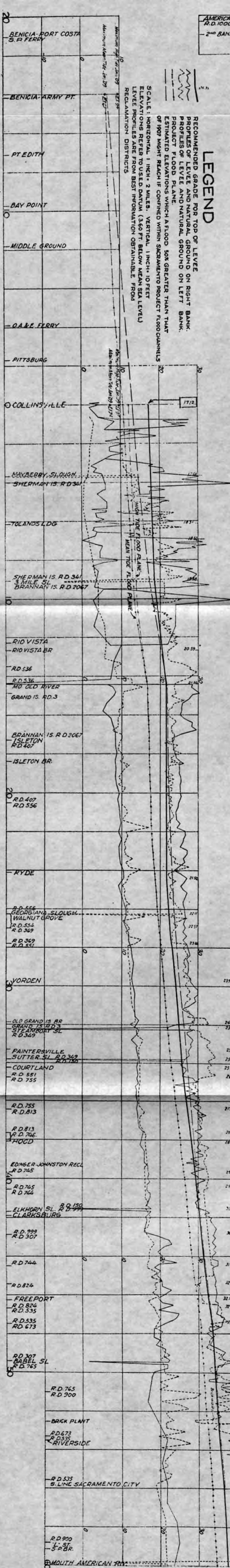
STEAMBOAT SLOUGH



SACRAMENTO RIVER

LEGEND

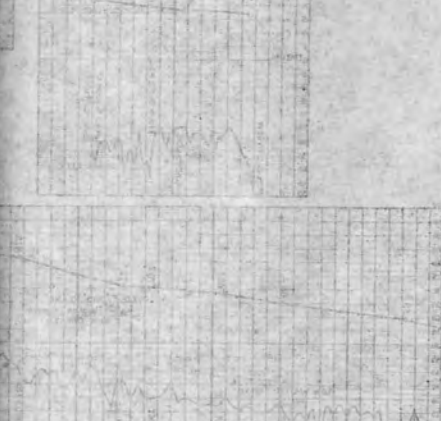
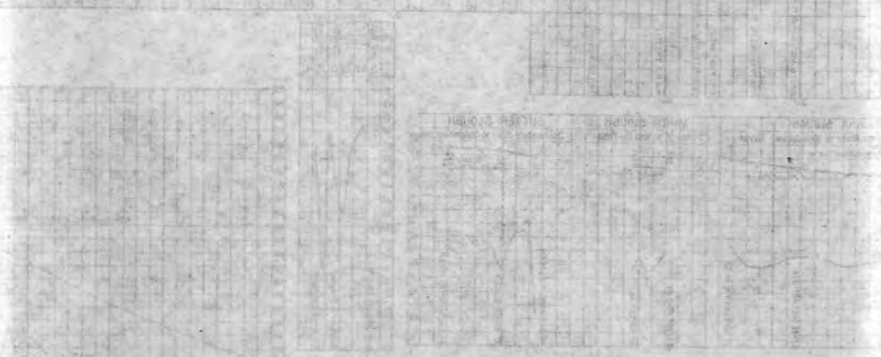
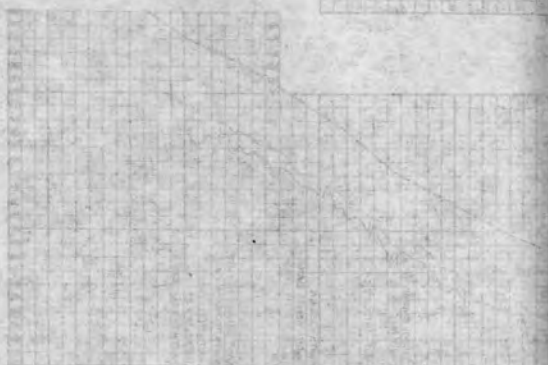
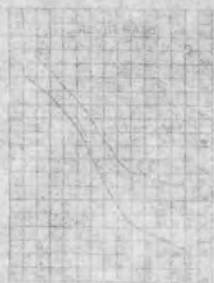
RECOMMENDED GRADE FOR TOP OF LEVEE
PROFILES OF LEVEE AND NATURAL GROUND ON RIGHT BANK.
PROFILES OF LEVEE AND NATURAL GROUND ON LEFT BANK.
PROJECTED FLOOD PLANE
FLOOD PLANE WHICH A FLOOD 50% GREATER THAN THAT
OF 100% HEIGHT REACH IS CONFIRMED WITH SACRAMENTO PROJECT FLOOD CHANNELS
ELEVATIONS REFER TO USED DATUM (3.60 FT. BELOW MEAN SEA LEVEL)
LEVEL PROFILES ARE FROM BEST INFORMATION OBTAINABLE FROM
RECLAMATION DISTRICTS



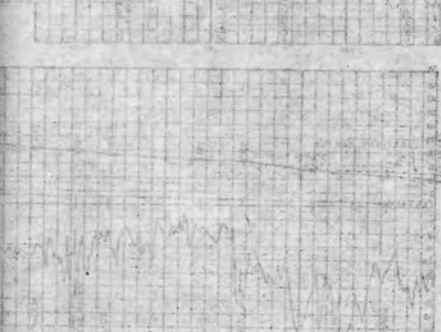
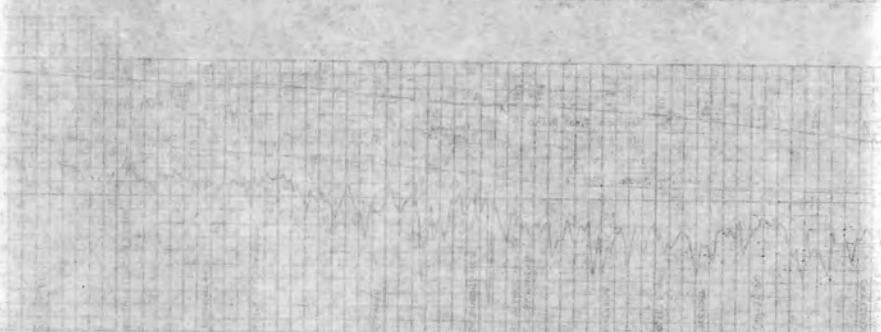
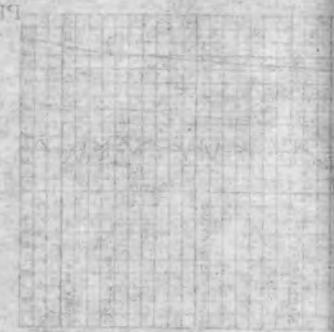
Sacramento River Flood Control Project (State)

Plate 5-21
**SACRAMENTO RIVER FLOOD CONTROL
 PROJECT (ARMY)**

PLATE 5-21



SA-CR-100-100
 SACRAMENTO RIVER FLOOD CONTROL PROJECT
 DIVISION OF FLOOD CONTROL PROJECT
 SACRAMENTO, CALIFORNIA
 193-D-27



SA-CR-100-100
 SACRAMENTO RIVER FLOOD CONTROL PROJECT
 DIVISION OF FLOOD CONTROL PROJECT
 SACRAMENTO, CALIFORNIA
 193-D-27

PROFILE OF YOLO SLIVER & BUTTE BY-PASS & FEATHER BASIN

WATER DEPARTMENT

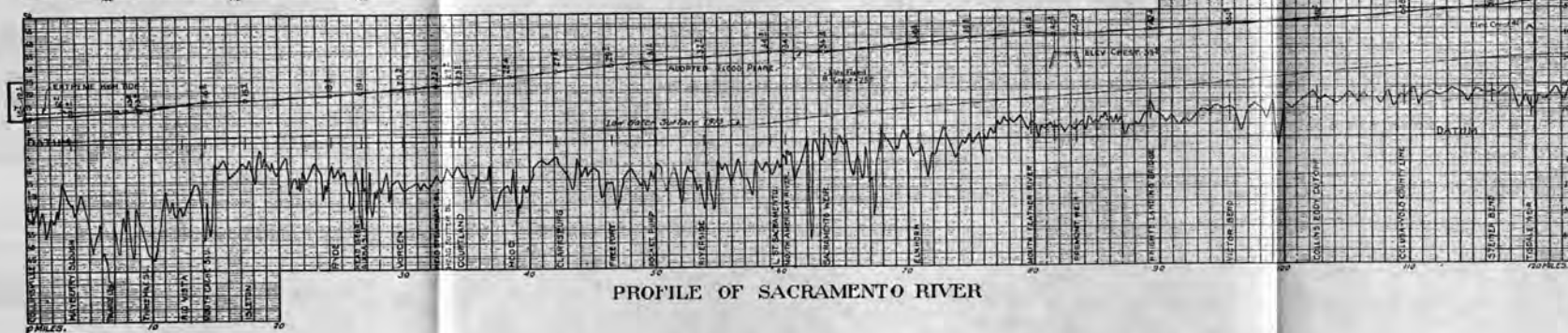
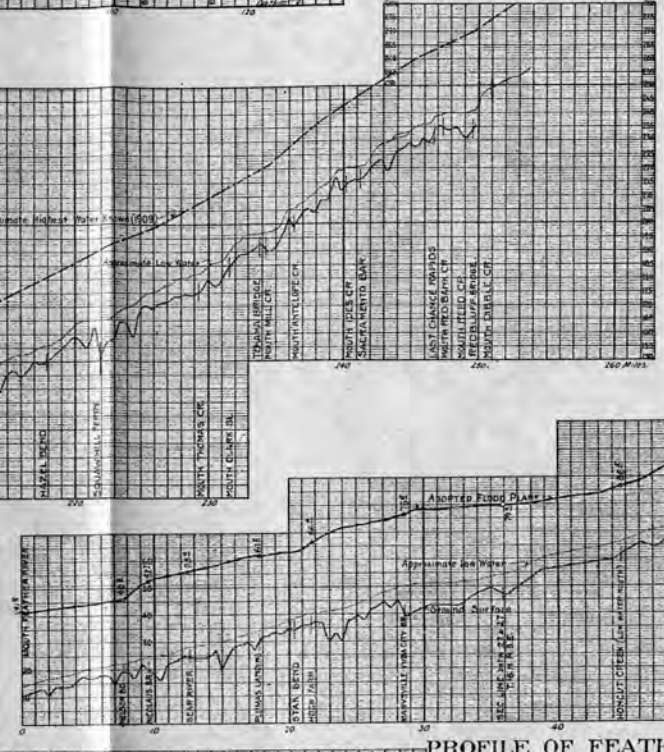
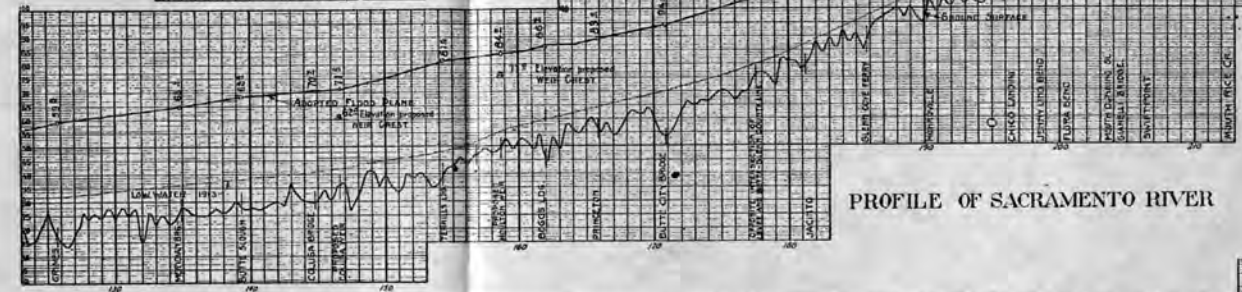
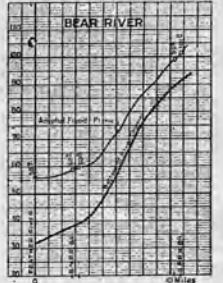
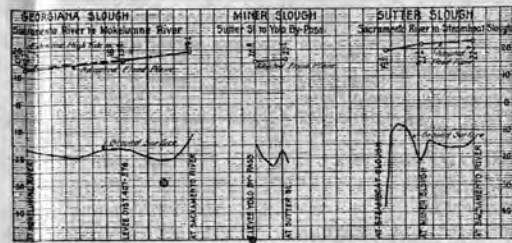
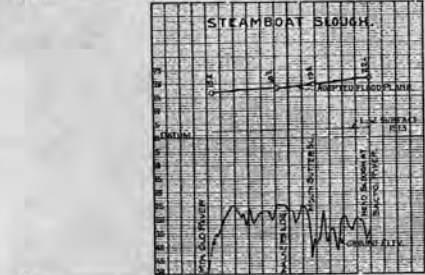
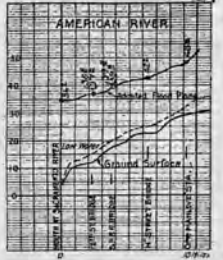
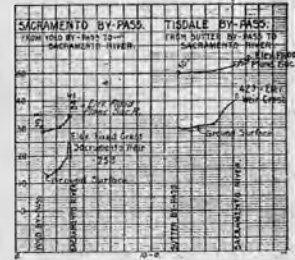
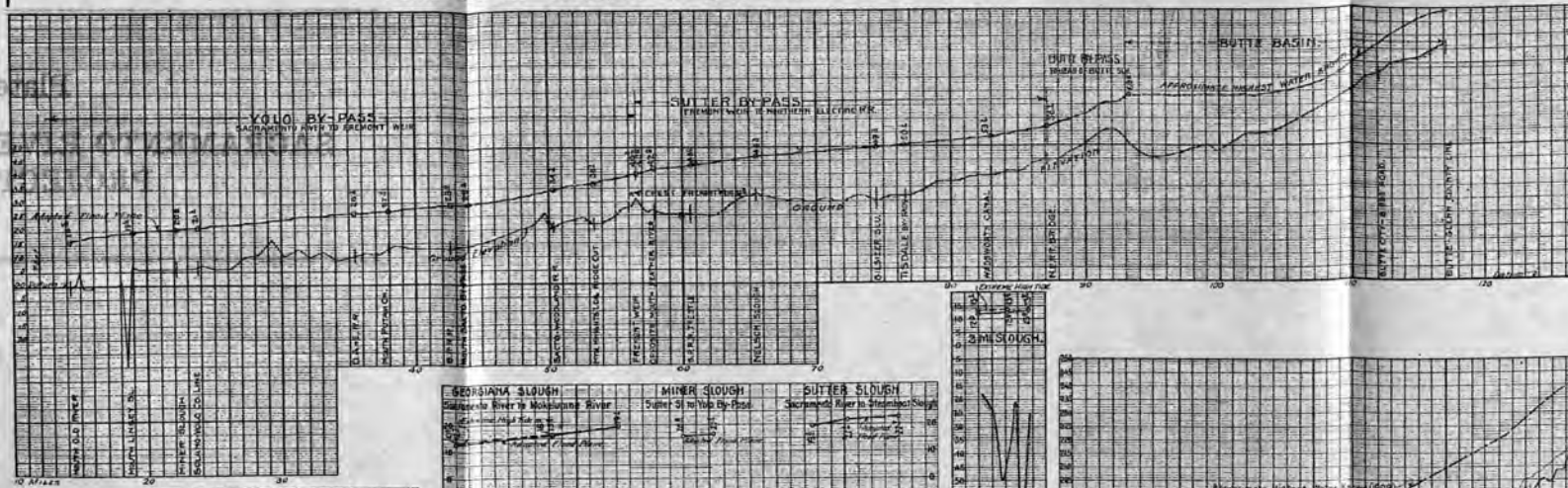
PROFILE OF SACRAMENTO RIVER

PROFILE OF SACRAMENTO RIVER

Sacramento River Flood Control Project (Army)

WAR DEPARTMENT

PROFILE OF YOLO, SUTTER, & BUTTE BY-PASSES & BUTTE BASIN

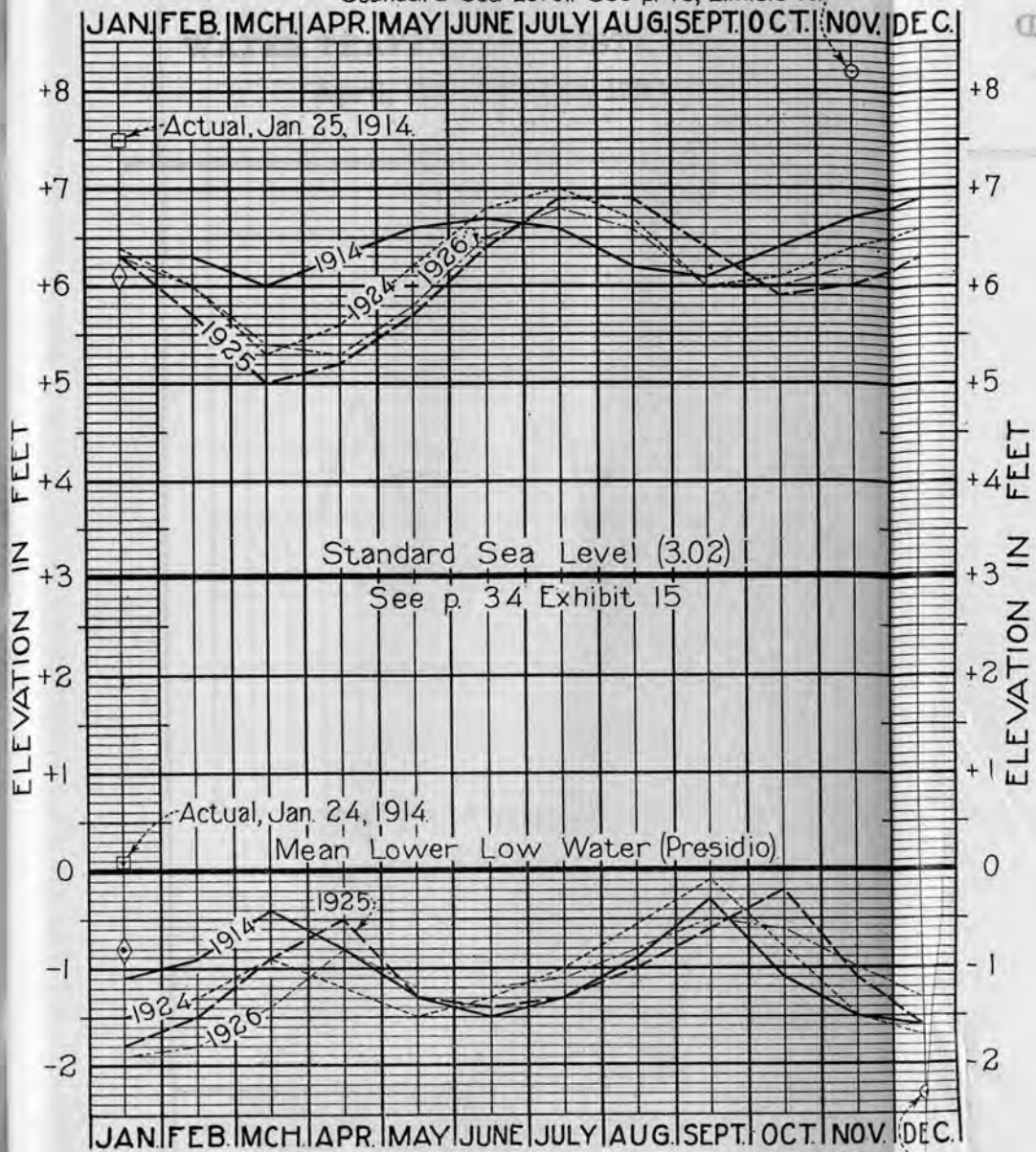


PROFILE OF FEATHER RIVER.

SACRAMENTO RIVER, CALIFORNIA. REVISION OF FLOOD CONTROL PROJECT. SHOWING PROFILES

IN 11" SHEET HOR. 1 IN = 4 MILES
 VERT. 1 IN = 20 FT.
 U.S. ENGINEER OFFICE 2ND S. F. DIST. SAN FRANCISCO CAL.
 Submitted: *Charles H. ...*
 Approved: *W. H. ...*
 Drawn by: N.S.
 File No. 50-25-785
 SV-144
 Corrected, Oct. 6, 1925
 193-D-97

Highest Tide of record at Presidio due to Storm on Ocean, occurred on Nov. 18, 1918. Height 5.2 Ft. above Standard Sea Level. See p. 19, Exhibit 15.



Lowest Tide of record at Presidio due to Storm occurred on Dec. 25, 1912 and Dec. 9, 1923. Height -5.3 Ft. below Standard Sea Level. See p. 19, Exhibit 15

NOTES:-

The Points of the Curves show the Maximum Tide for the Month and the corresponding Minimum as indicated in the Tide Tables for Presidio, California. In practically all cases the Minimum occurred with the Maximum but if not, the Minimum was only 0.1 or 0.2 lower than shown. It should not be inferred from the position of the Points on the Curves that the Maximum or Minimum Tides occurred on the 15th of each Month.

Latest Standard Sea Level is at Elevation 2.97 above Mean Lower Low Water.

EXPLANATION:-

- Year 1914.
 - - - " 1924.
 - · - " 1925.
 - · · " 1926.
- Points show Maximum and corresponding Minimum Tide which occurred during the Storm of Jan. 19, 1914 as taken from Plate 5-14.
 - ◇ Points show the corresponding predicted Heights.

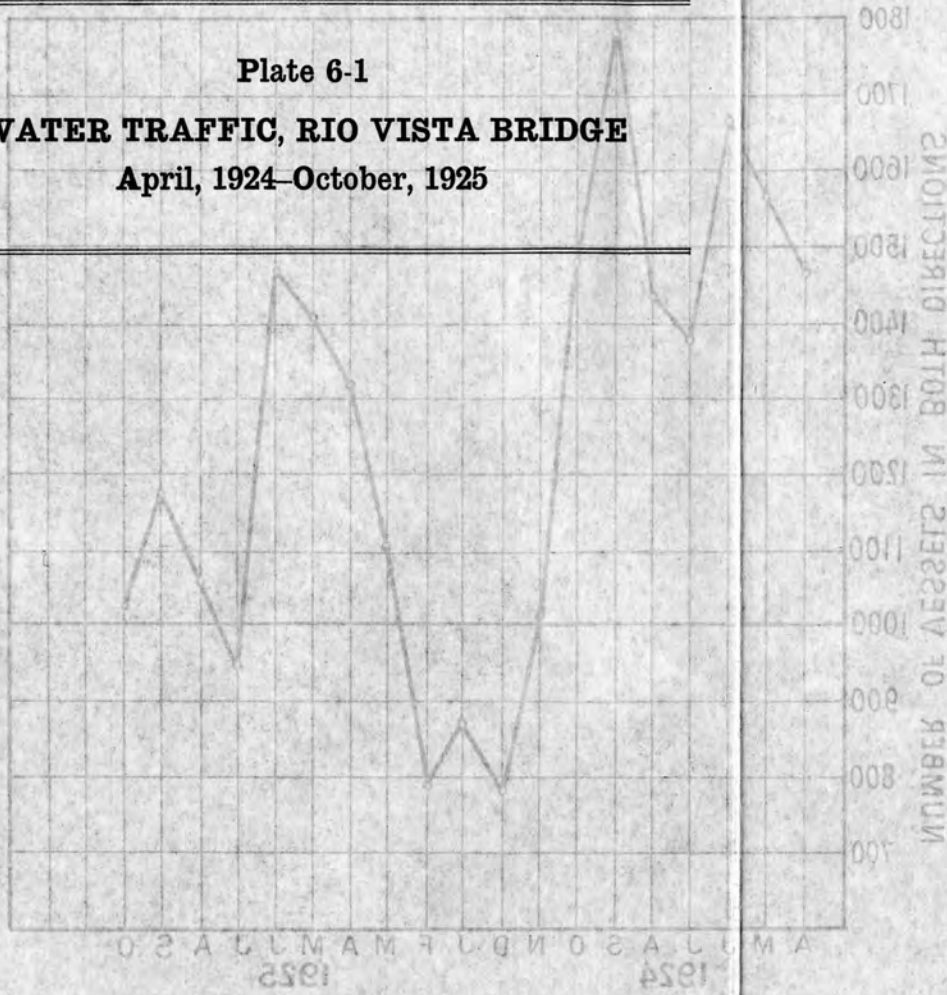
APPROVED FOR ESTIMATING PURPOSES:-

R. F. Walter
CHIEF ENGINEER.

DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
MAXIMUM AND MINIMUM PREDICTED TIDES
AT PRESIDIO FOR 1914-24-25 AND 26

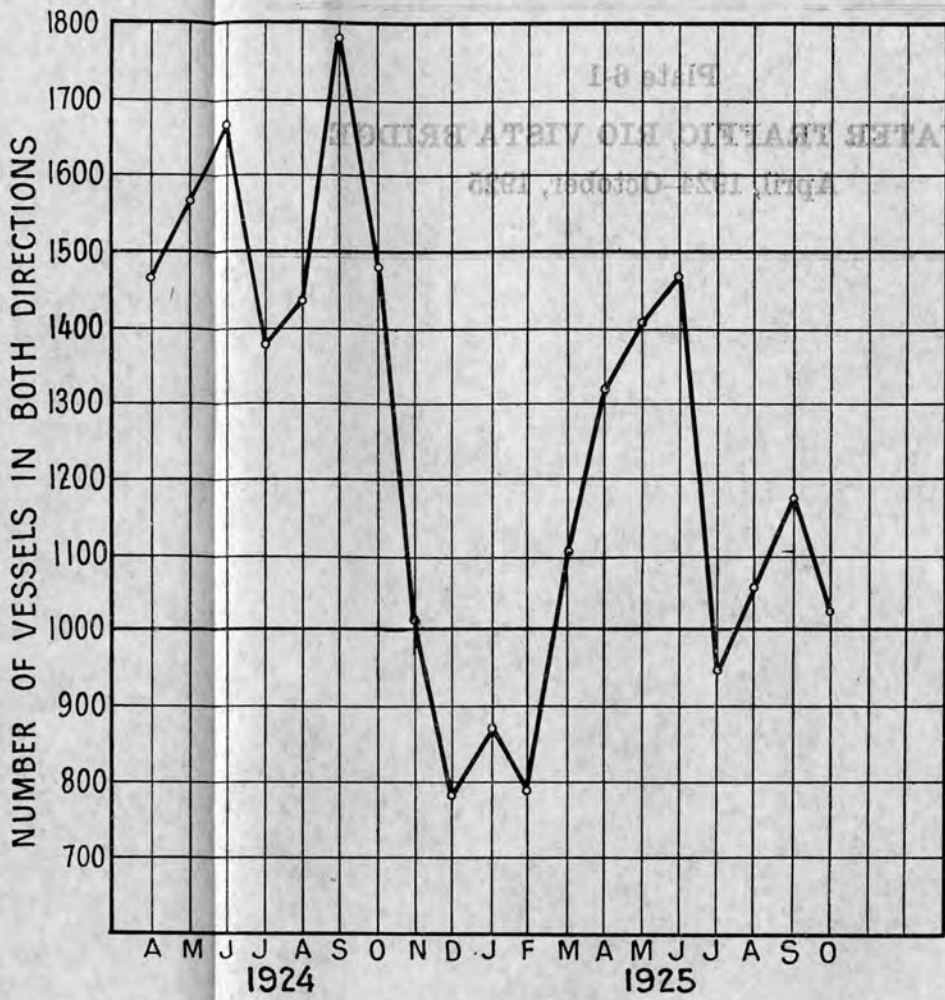
Drawn: WRY-CAM. Submitted: *W. R. Young*
Checked: Approved: *J. V. Savage*

Plate 6-1
WATER TRAFFIC, RIO VISTA BRIDGE
April, 1924—October, 1925



June 1925 inclusive 14,830
 Total Vessels from July 1924 to
 Total Vessels in 1925 13,738
 Three Mile Slough and Seven Mile Slough
 Traffic reaches points above bridge via
 this point and some Sacramento River
 traffic on San Joaquin River does not pass
 operation of lift bridge.
 Figures include only vessels which required

SV-64 Berkeley, Calif. 11-27-1925
 DRAWN BY: M. J. SUBMITTED BY: [Signature]
 CHECKED BY: E. M. APPROVED BY: [Signature]
 APRIL 1924 - OCTOBER 1925
 WATER TRAFFIC - RIO VISTA BRIDGE
 SALT WATER BARRIER
 SACRAMENTO VALLEY INVESTIGATION, CALIF.
 BUREAU OF REGULATION
 DEPARTMENT OF THE INTERIOR



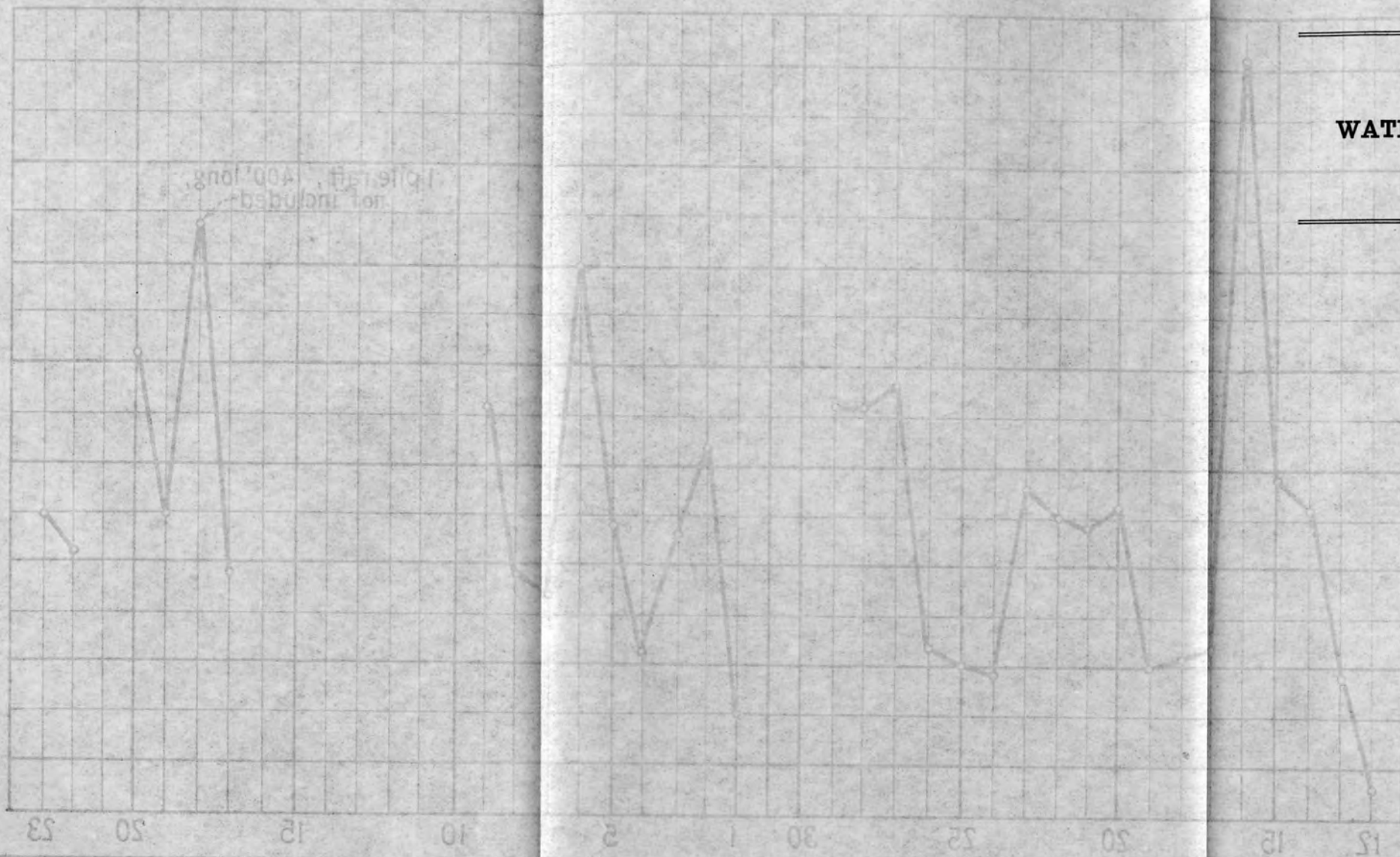
Figures include only vessels which required operation of lift bridge.
 Traffic on San Joaquin River does not pass this point and some Sacramento River traffic reaches points above bridge via Three Mile Slough and Seven Mile Slough.
 Total Vessels in 192313,798
 Total Vessels from July 1924 to June 1925, inclusive14,830

DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 SACRAMENTO VALLEY INVESTIGATIONS, CALIF.
 SALT WATER BARRIER
WATER TRAFFIC-RIO VISTA BRIDGE
 APRIL 1924 - OCTOBER 1925

DRAWN N.B.H. M.C. SUBMITTED *W.B. Young*
 CHECKED N.S.H. APPROVED *A.P. Walker*

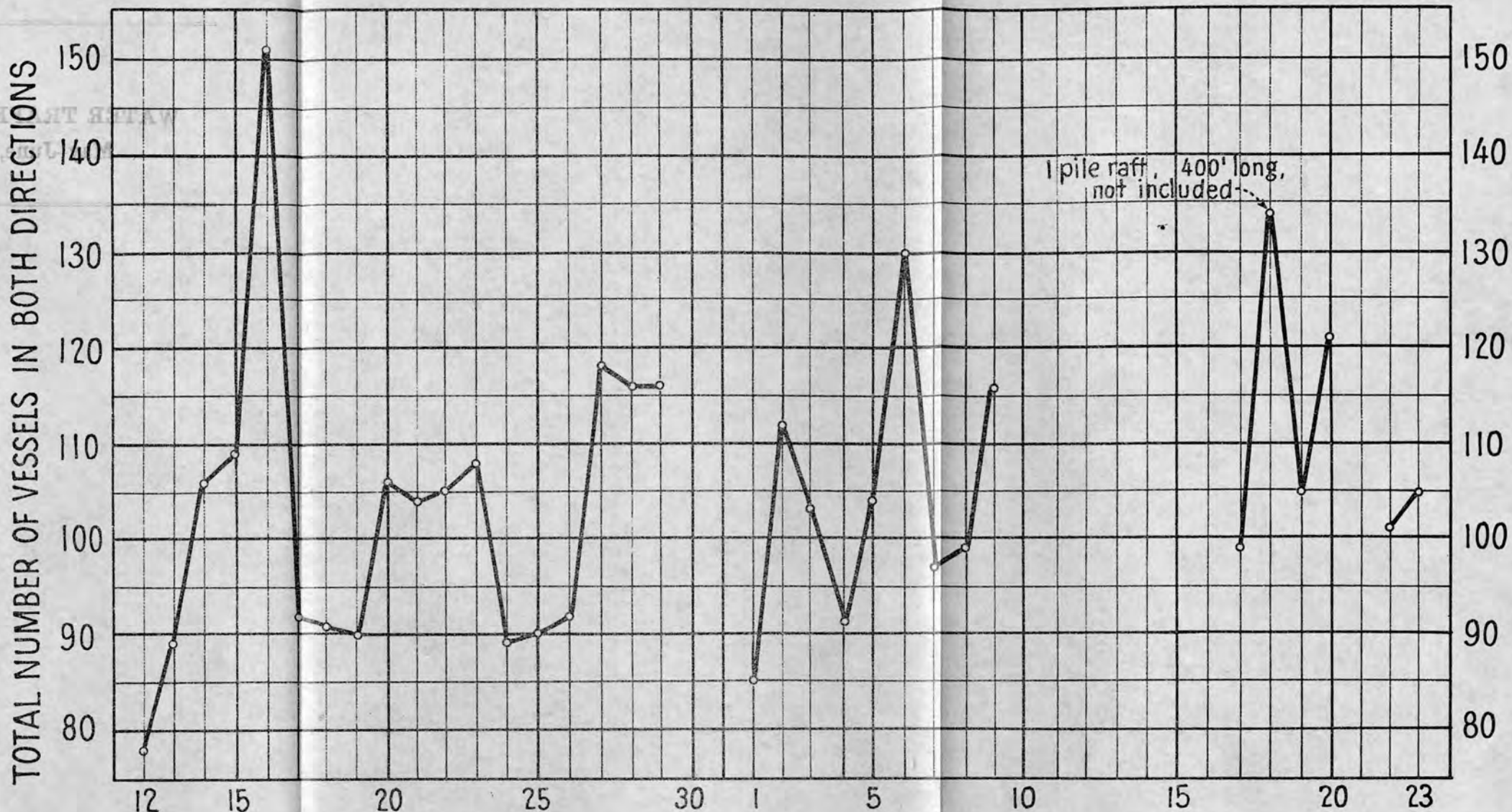
SV-64 BERKELEY, CALIF., 11-3-25 193-D-113

Plate 6-2
WATER TRAFFIC, SAN PABLO STRAIT
 May-June, 1925 (Discontinuous)



Ratio Maximum to Average	1.44
Average	105
Maximum	151
Minimum Number per day	78

DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 SACRAMENTO VALLEY INVESTIGATIONS-CALIF.
 SALT WATER BARRIER
 WATER TRAFFIC - SAN PABLO STRAIT
 MAY-JUNE, 1925
 DRAWN BY H. M. McSUBMITTED BY R. L. KIMMEL
 CHECKED BY R. N. APPROVED BY D. S. HOLT
 SV-63 BERKELEY CALIF. 11-3-25 103-D



1 pile raft, 400' long,
not included

Minimum Number per day..... 78
 Maximum " " " 151
 Average " " " 105
 Ratio Maximum to Average..... 1.44

DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 SACRAMENTO VALLEY INVESTIGATIONS-CALIF.
 SALT WATER BARRIER
WATER TRAFFIC- SAN PABLO STRAIT
 MAY-JUNE, 1925

DRAWN: N.B.H., M.C. SUBMITTED: *W.K. Young*
 CHECKED: N.B.H. APPROVED: *R.S. Walter*

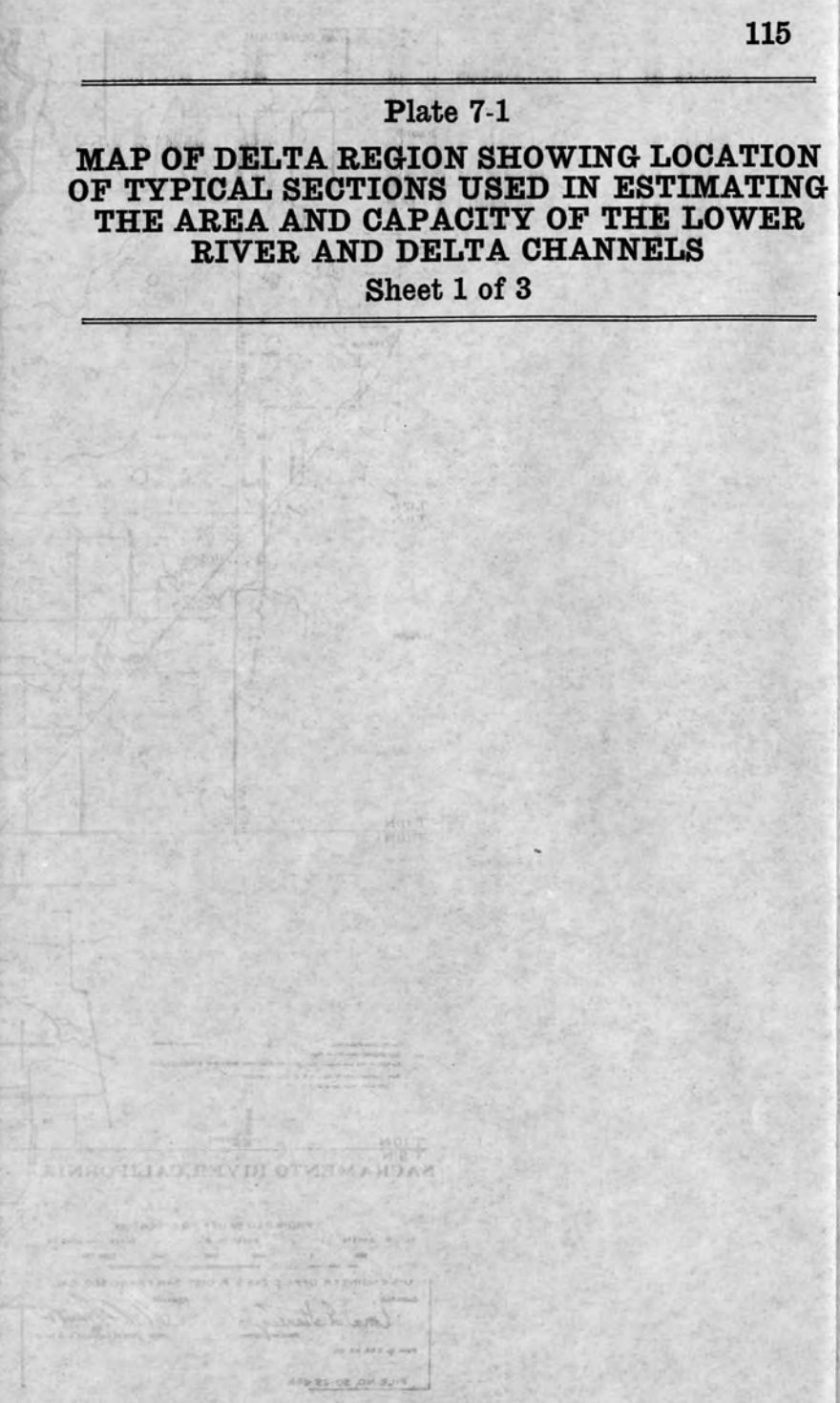
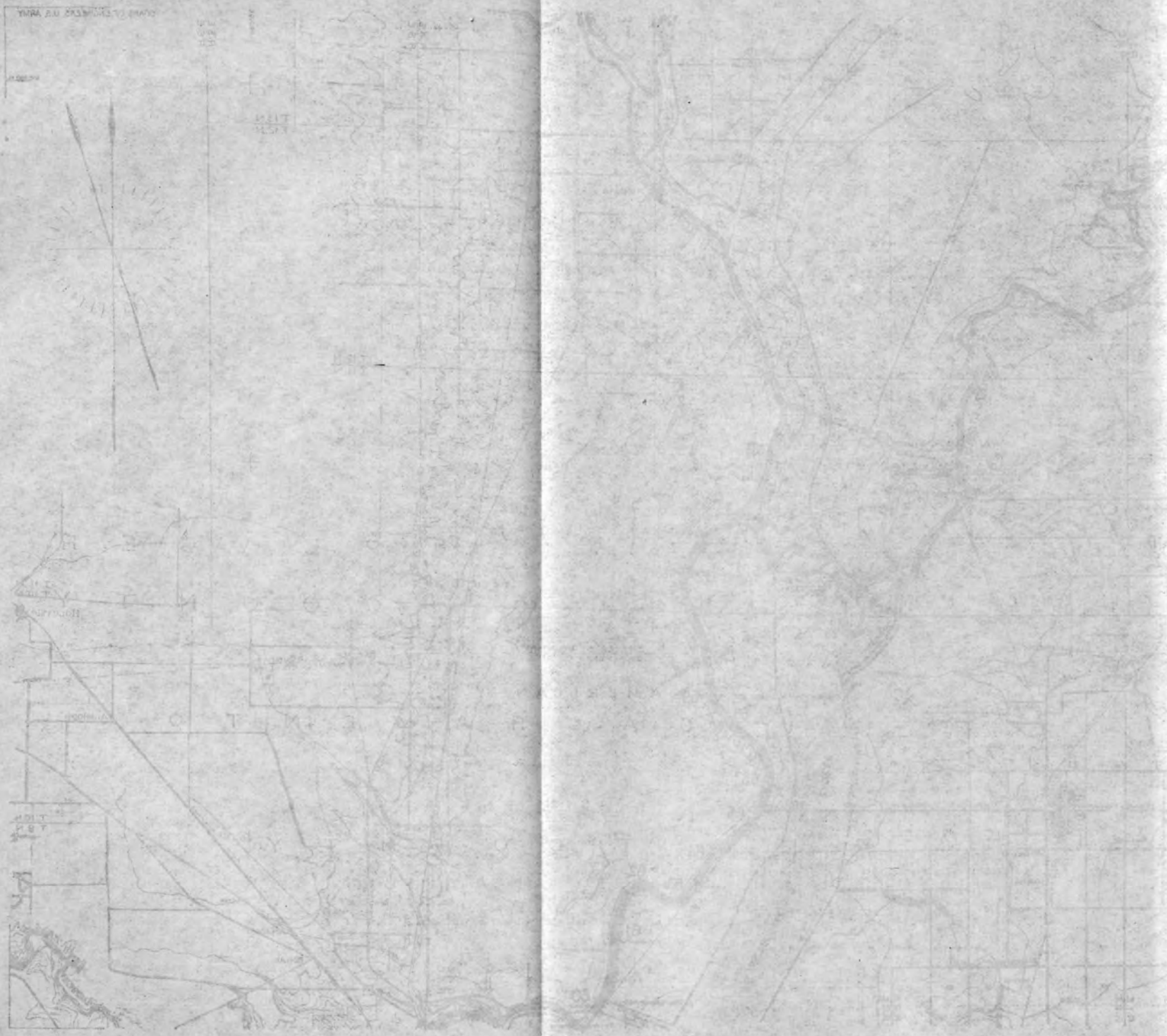
SV-63 BERKELEY, CALIF., 11-3-25 193-D-112

Plate 7-1

**MAP OF DELTA REGION SHOWING LOCATION
OF TYPICAL SECTIONS USED IN ESTIMATING
THE AREA AND CAPACITY OF THE LOWER
RIVER AND DELTA CHANNELS**

Sheet 1 of 3

PLATE 7-1



Sheet 1 of 3

SACRAMENTO RIVER, CALIFORNIA

PROJECT NO. 10-10-100

DATE: 10-10-100

BY: [Signature]

CHECKED BY: [Signature]

APPROVED BY: [Signature]



County lines shown in thin lines
 Section grid lines shown in thin lines
 Boundaries and lot lines shown in thin lines
 All lot lines shown in Part 1, 2 & 3 of each area sheet
 1:25,000 scale map

T.10.N.
 T.9.N.
SACRAMENTO RIVER, CALIFORNIA.

FROM RED BLUFF TO STOCKTON
 SHEET NO. 48
 SCALE: 1 IN = 3000 FT
 0 500 1000 1500 2000 FEET

U.S. ENGINEER OFFICE 2nd DIST. SAN FRANCISCO CAL.
 Approved: *Conrad E. Stearns*
 Major, Corps of Engineers, U.S. Army

FILE NO. 50-28-449.

See Note on Sheet 3

Map of Delta Region showing location of typical sections used in estimating the area and capacity of the lower river and delta channels

Plate 7-2

MAP OF DELTA REGION SHOWING LOCATION OF TYPICAL SECTIONS USED IN ESTIMATING THE AREA AND CAPACITY OF THE LOWER RIVER AND DELTA CHANNELS

Sheet 2 of 3



12-15-1922

GRAND RIVER CALIFORNIA

PLATE 7-2

MAP OF DELTA REGION SHOWING LOCATION OF TYPICAL SECTIONS USED IN ESTIMATING THE AREA AND CAPACITY OF THE LOWER RIVER AND DELTA CHANNELS. Sheet 2 of 3



SACRAMENTO RIVER, CALIFORNIA.

FROM RED BLUFF TO STOCKTON
 SHEET NO. 5
 U.S. ENGINEER OFFICE 2nd DIST. SAN FRANCISCO, CAL.
 Approved: *Chas. J. Henry*
 Major Corps of Engineers, U.S. Army
 FILE NO. 50-25-640.

See Note on Sheet 3

SV 61 Sheet 2 of 3

Map of the Delta Region showing location of typical sections used in estimating the area and capacity of the lower river and delta channels

193-P-135

Plate 7-3

**MAP OF DELTA REGION SHOWING LOCATION
OF TYPICAL SECTIONS USED IN ESTIMATING
THE AREA AND CAPACITY OF THE LOWER
RIVER AND DELTA CHANNELS**

Sheet 3 of 3



NOTE:
 The cross sections of the channels were
 determined from records of soundings on
 file in the District Engineers Office
 at San Francisco, that were used by the Bureau
 in estimating the approximate
 capacity of the Delta Channels in connection
 with the proposed Salt Water Barrier.

SACRAMENTO RIVER CALIFORNIA

APPROVED FOR THE DISTRICT ENGINEER
 BY THE DISTRICT ENGINEER
 DATE

APPROVED FOR THE DISTRICT ENGINEER
 BY THE DISTRICT ENGINEER
 DATE

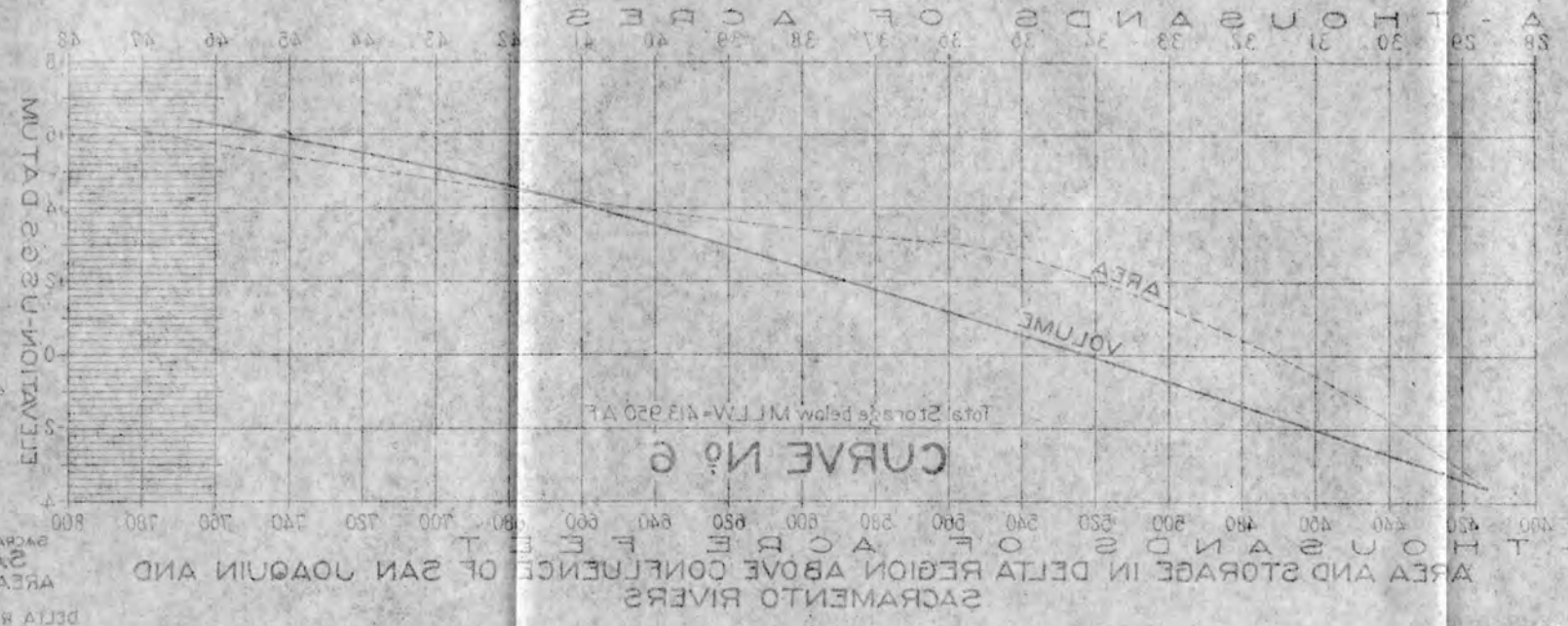
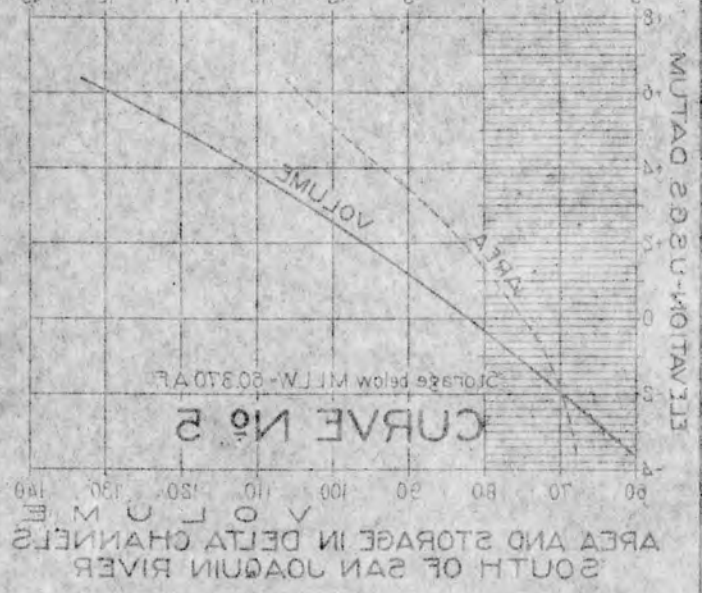
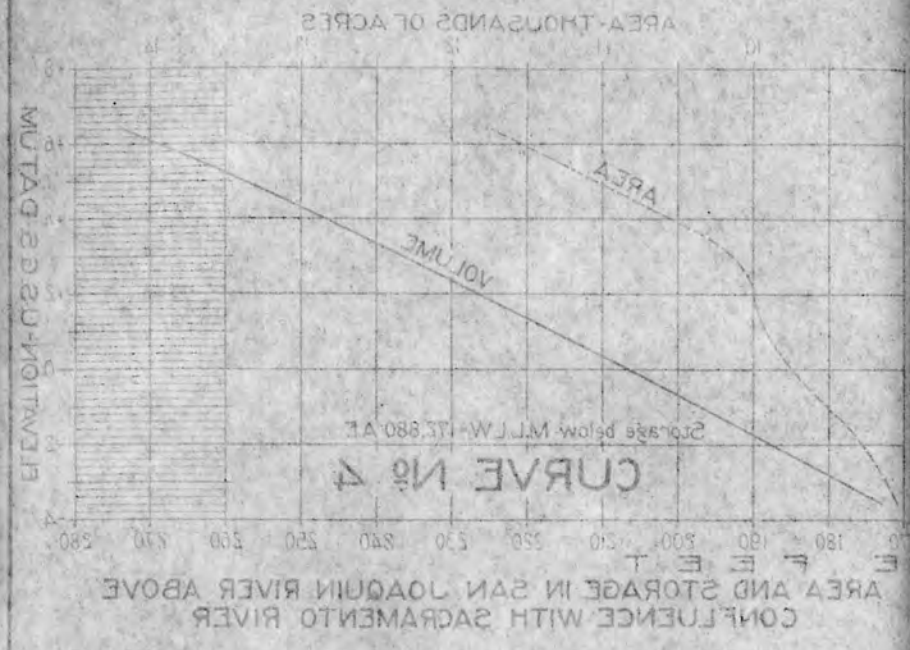
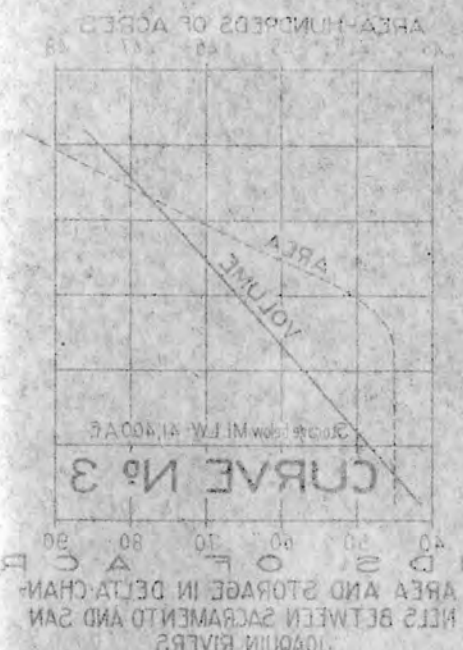
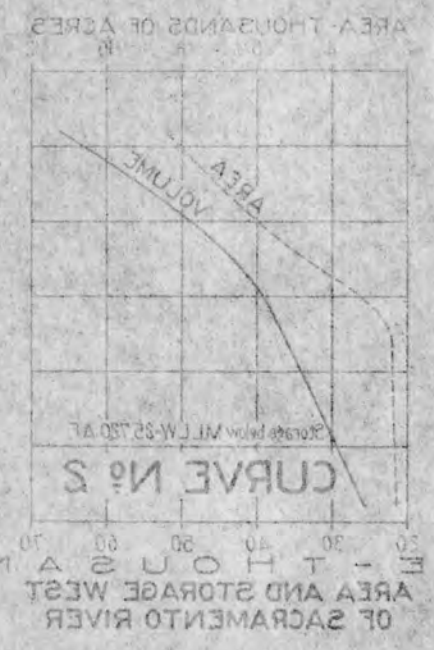
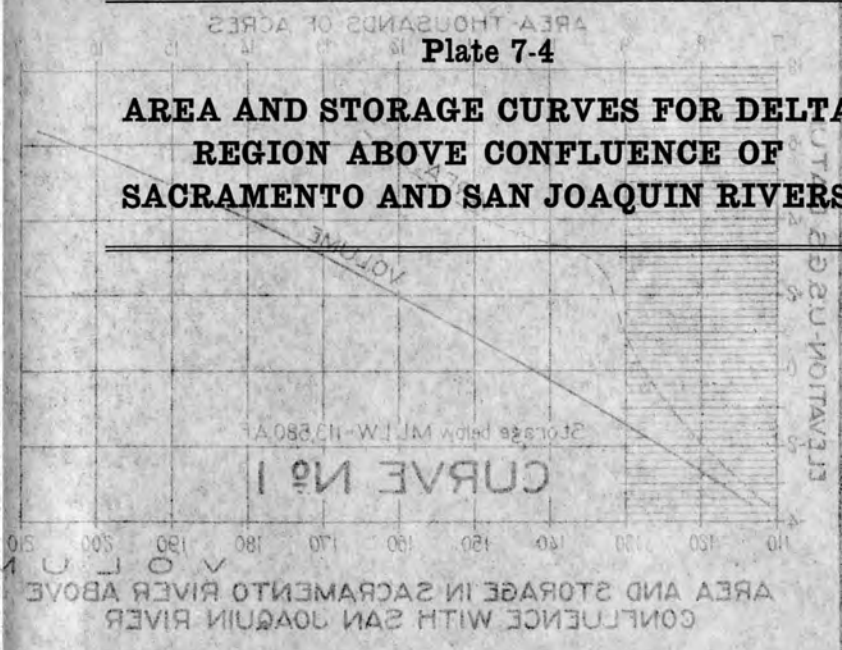
NOTE

Numbering indicates points at which the cross sectional area of the channel was determined from records of soundings on file in the 2nd District Engineers Office San Francisco. That were used by the Bureau of Reclamation in estimating the approximate capacity of the Delta Channels in connection with the proposed Salt Water Barrier.



Map of the Delta Region showing location of typical sections used in estimating the area and capacity of lower river and delta channels

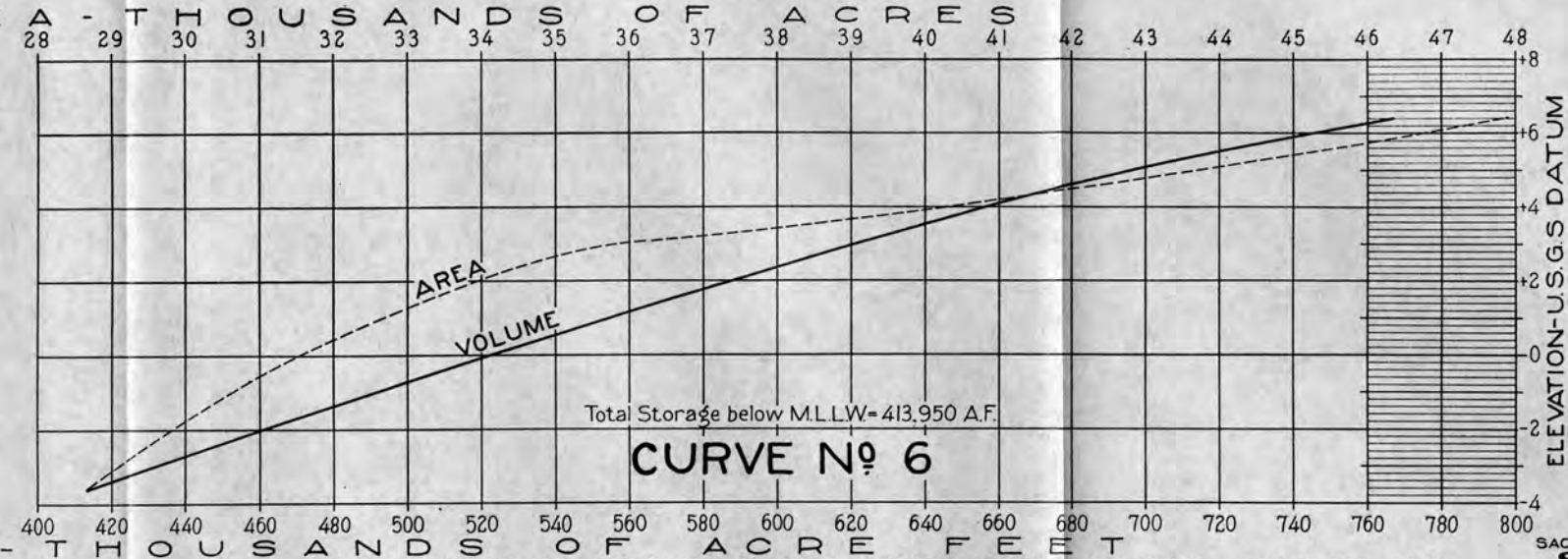
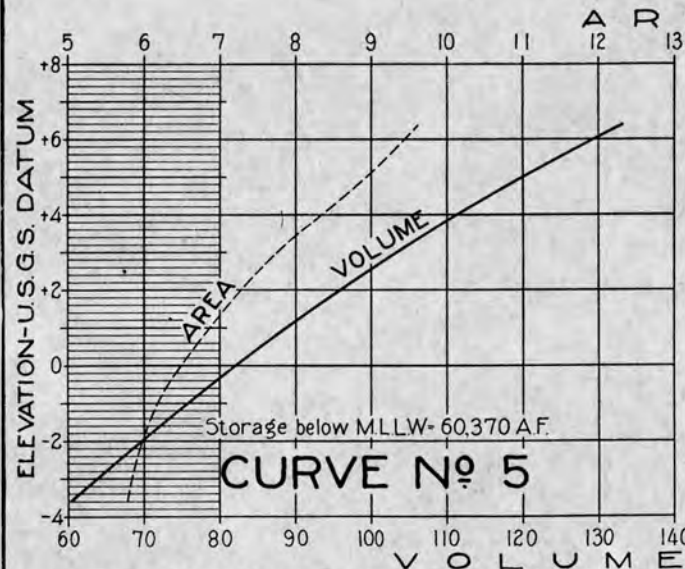
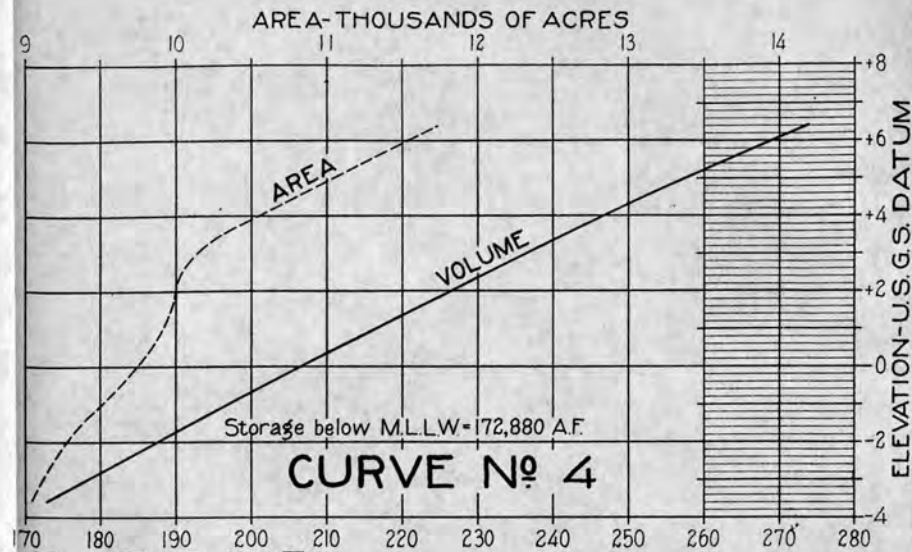
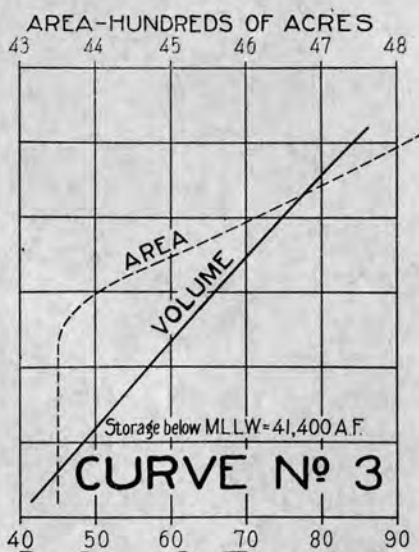
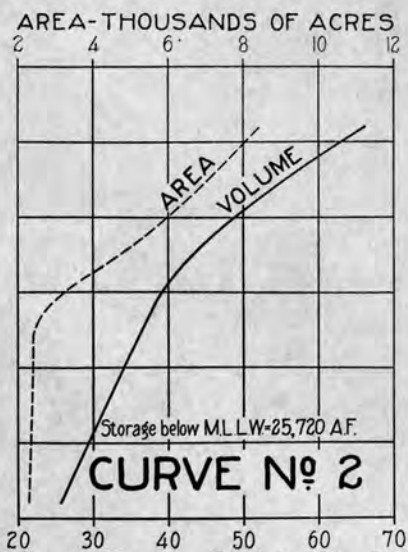
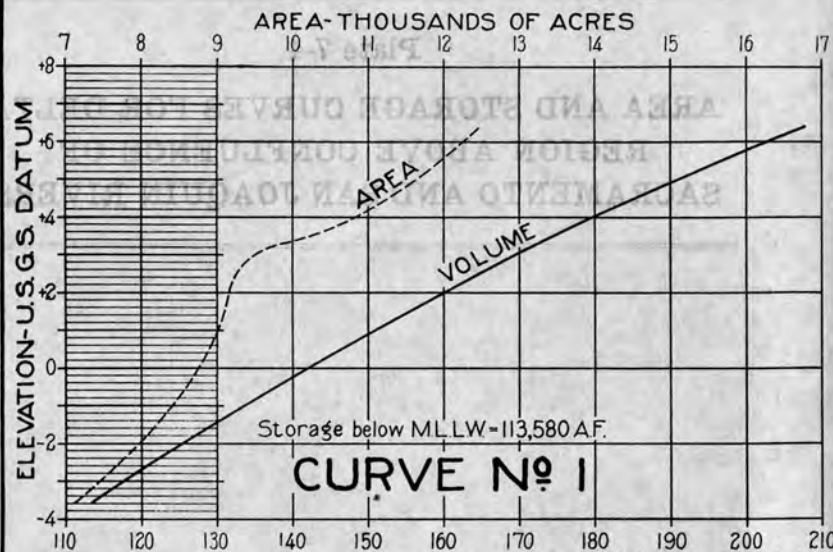
AREA AND STORAGE CURVES FOR DELTA REGION ABOVE CONFLUENCE OF SACRAMENTO AND SAN JOAQUIN RIVERS



Notes:
 M.L.W. on curves refers to Mean Lower Low Water at the lower limit of the river which is 3.0 feet above datum and is 0.0 U.S.T. Datum.
 Volumes are computed using End Areas. Area curves were derived from the volumes by taking average Area for each foot of depth.

Prepared for Estimating Purposes
 O. P. B. Baker
 Chief Engineer

24-156
 Delta Region Above Confluence of Sacramento and San Joaquin Rivers
 Salt Water Barrier
 Area and Storage Curves
 U.S. Army Corps of Engineers
 193-D-104

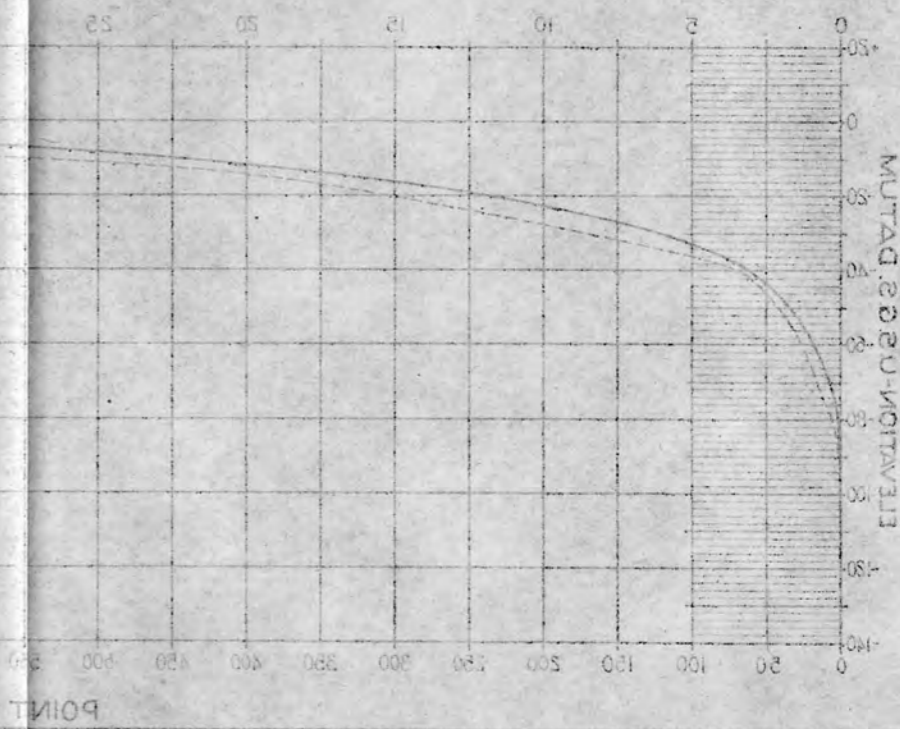
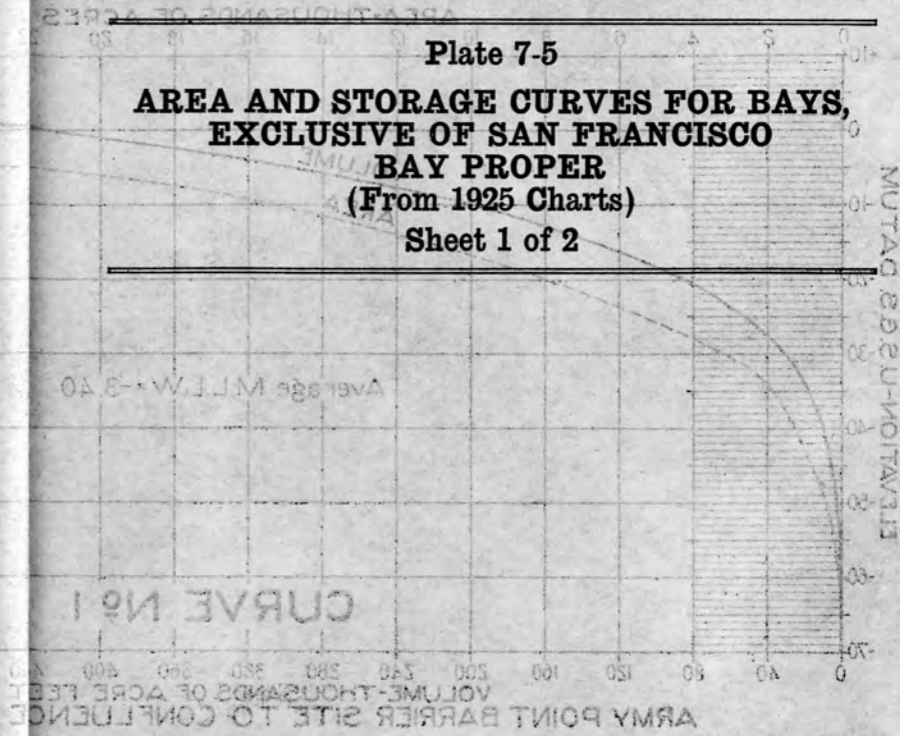


Notes:-
 M.L.L.W. on Curves refers to Mean Lower Low Water at the Confluence of the Rivers, which is -3.6 Feet U.S.G.S. Datum and is 0.0 U.S.E. Datum.
 Volumes are computed using End Areas. Area Curves were developed from the Volume Curves by taking average Area for each Foot of Depth

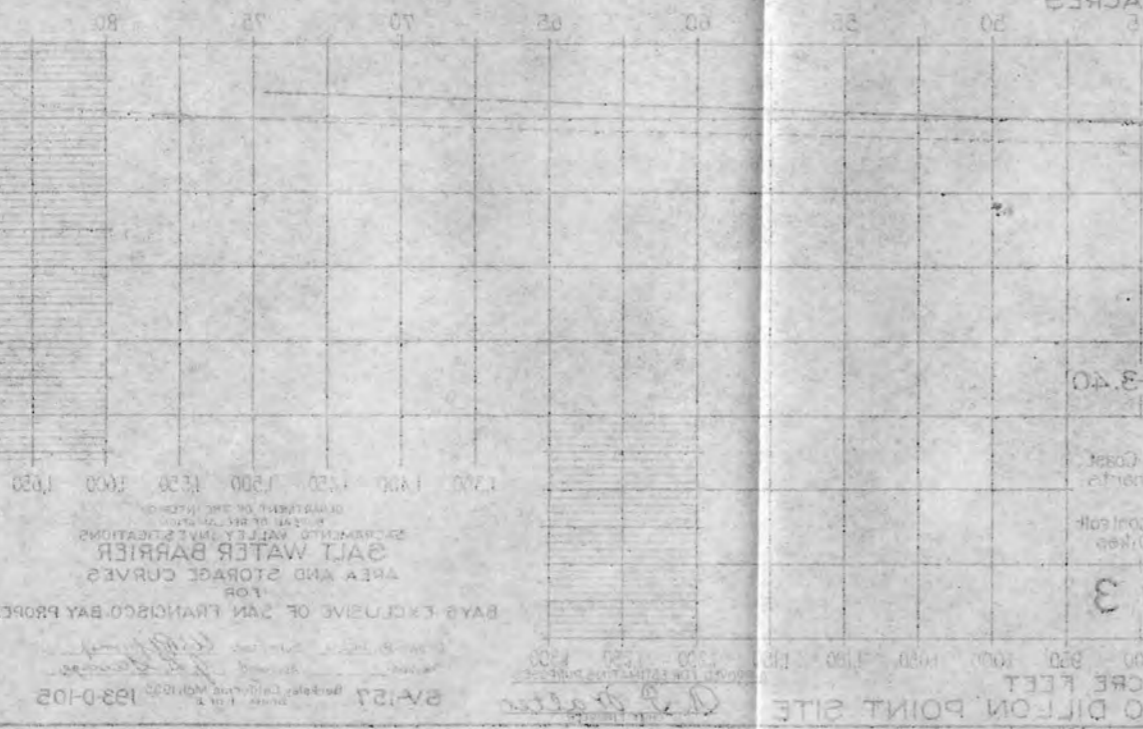
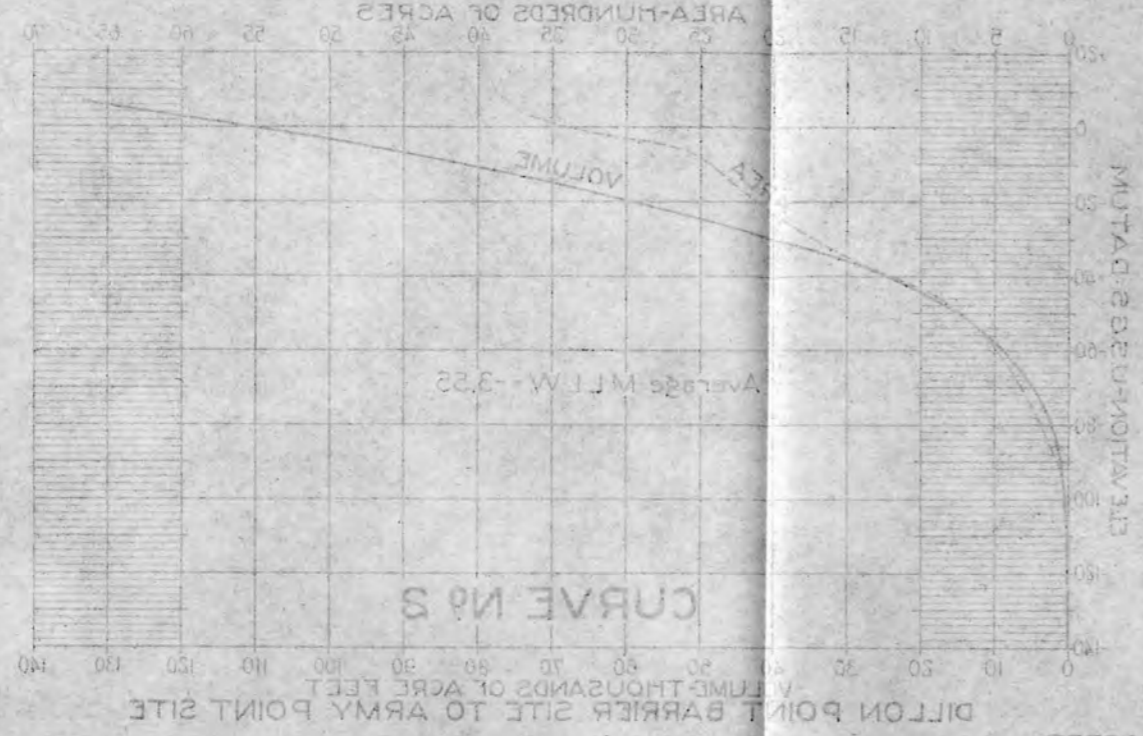
APPROVED FOR ESTIMATING PURPOSES:-
A. P. Walter
 CHIEF ENGINEER

DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
 AREA AND STORAGE CURVES
 FOR
 DELTA REGION ABOVE CONFLUENCE OF
 SACRAMENTO AND SAN JOAQUIN RIVERS
 Drawn: PAJ-CAM Submitted: *W. J. Young*
 Checked: _____ Approved: *J. S. Garage*

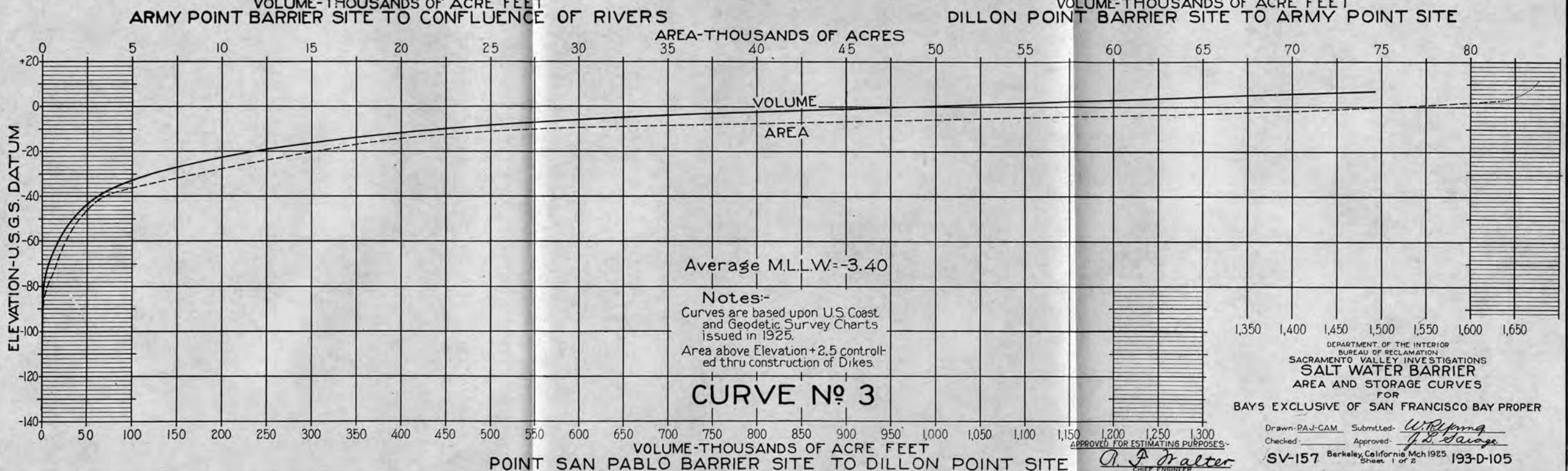
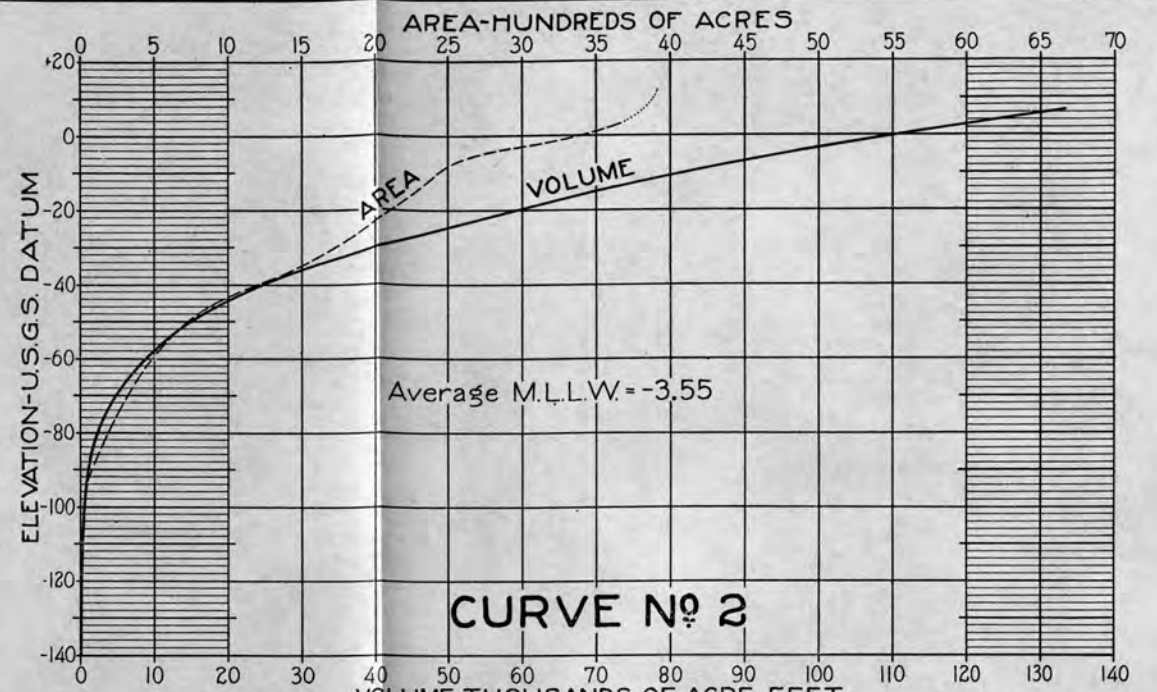
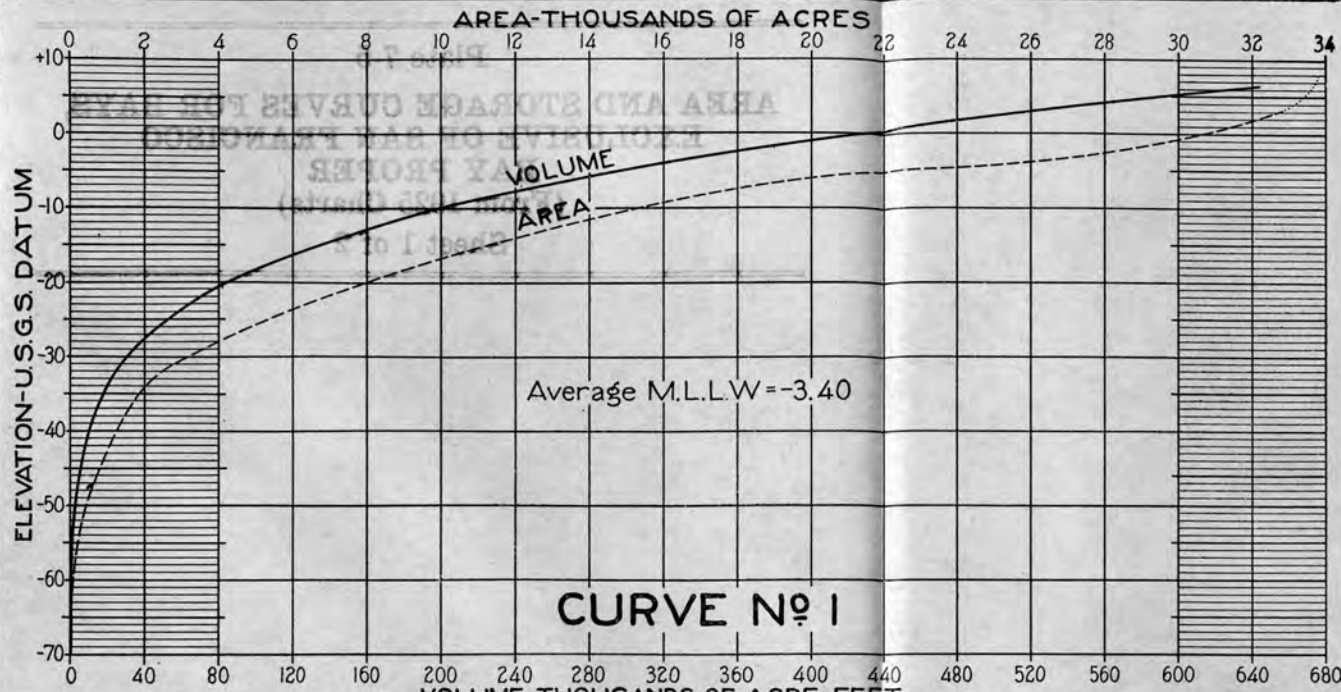
Plate 7-5
**AREA AND STORAGE CURVES FOR BAYS,
 EXCLUSIVE OF SAN FRANCISCO
 BAY PROPER**
 (From 1925 Charts)
 Sheet 1 of 2



Notes-
 Area above Elevation 3.25 contour and first construction of Dikes
 and Geologic Survey Charts
 issued in 1925.
 Curves are based upon U.S. Coast
 and Geologic Survey Charts



DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 SACRAMENTO VALLEY DIVISION
 SACRAMENTO, CALIFORNIA
 1933-1935
 1933-1935
 1933-1935



1,350 1,400 1,450 1,500 1,550 1,600 1,650

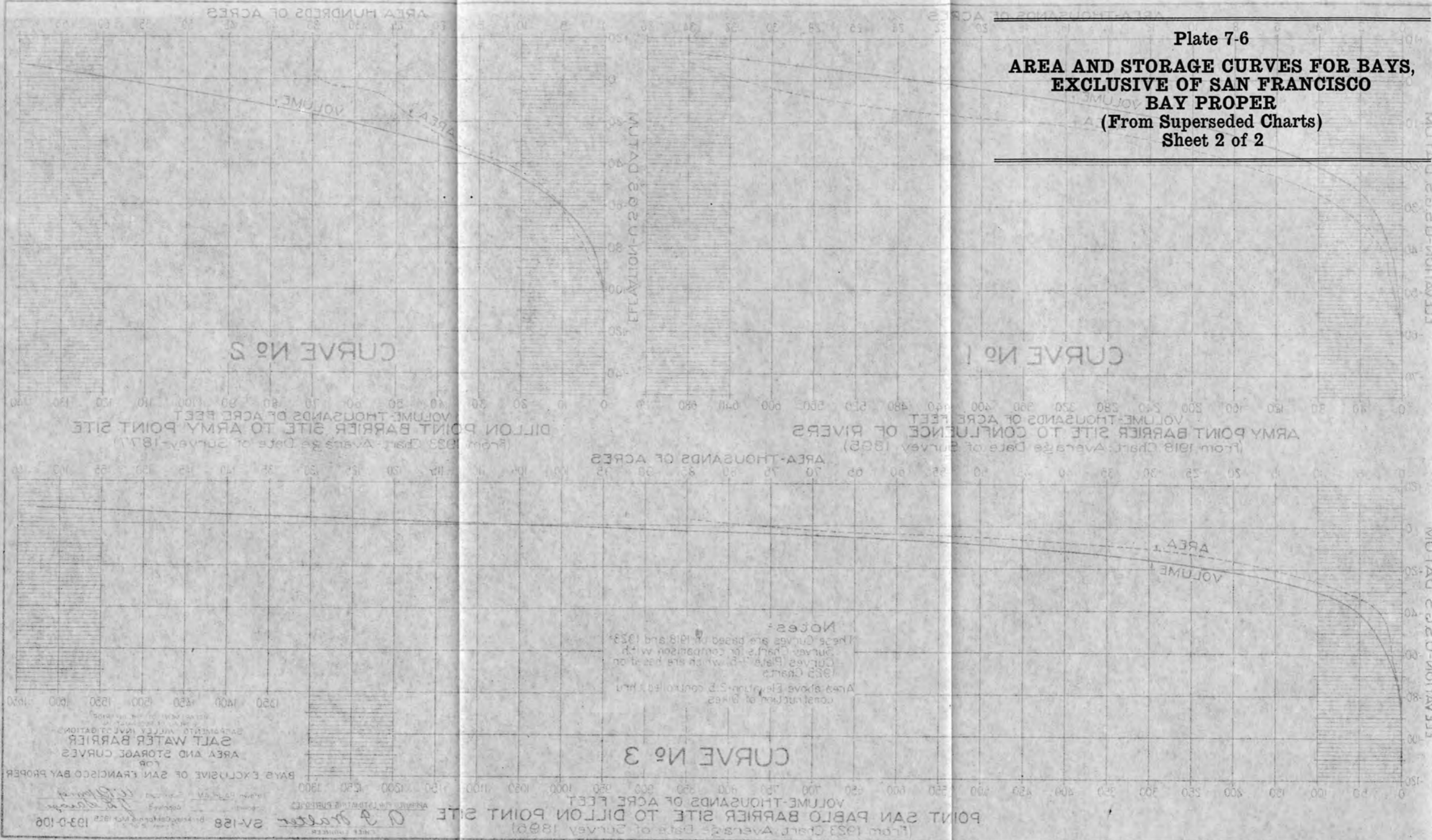
DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
 AREA AND STORAGE CURVES
 FOR
 BAYS EXCLUSIVE OF SAN FRANCISCO BAY PROPER

Drawn-PAJ-CAM Submitted- *W. P. Young*
 Checked- Approved- *J. P. Savage*
 APPROVED FOR ESTIMATING PURPOSES-
A. J. Walter
 CHIEF ENGINEER

SV-157 Berkeley, California, Mch 1925 Sheet 1 of 2 193-D-105

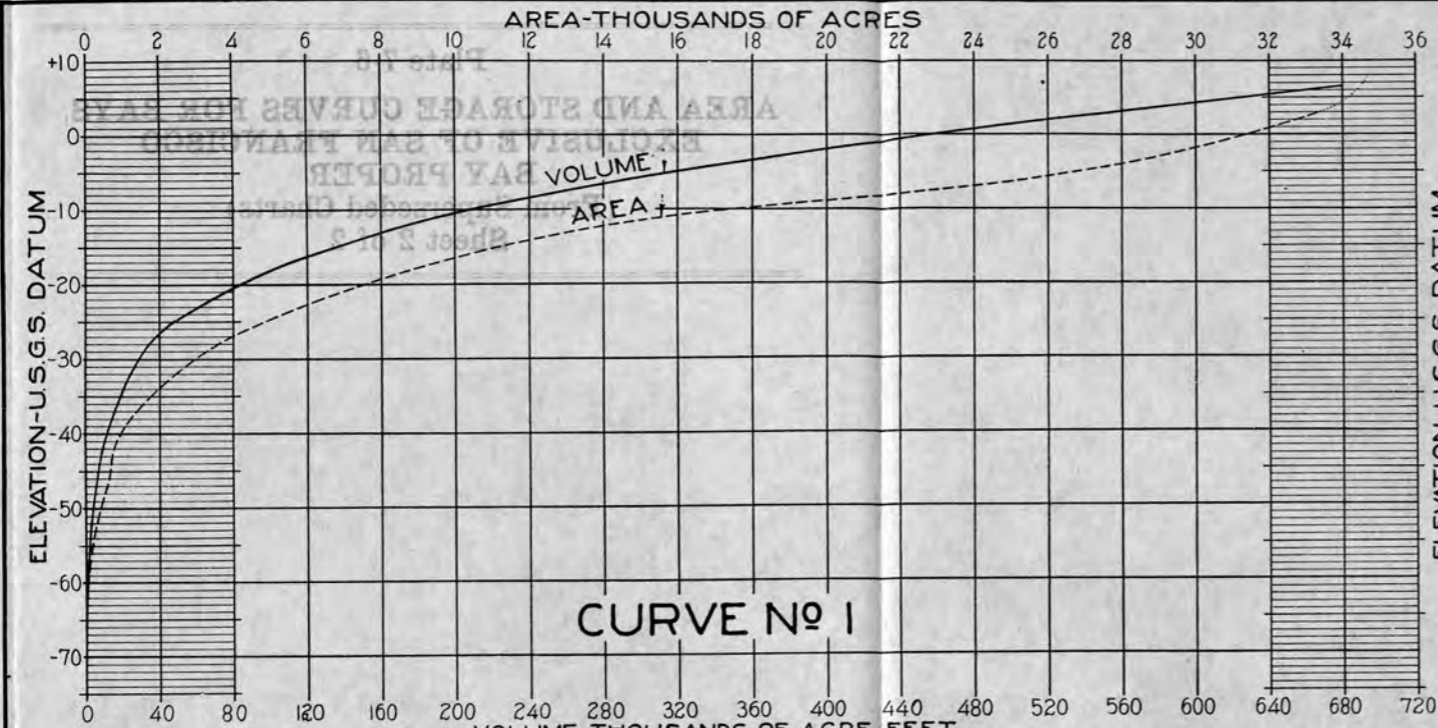
Plate 7-6

AREA AND STORAGE CURVES FOR BAYS, EXCLUSIVE OF SAN FRANCISCO BAY PROPER (From Superseded Charts) Sheet 2 of 2



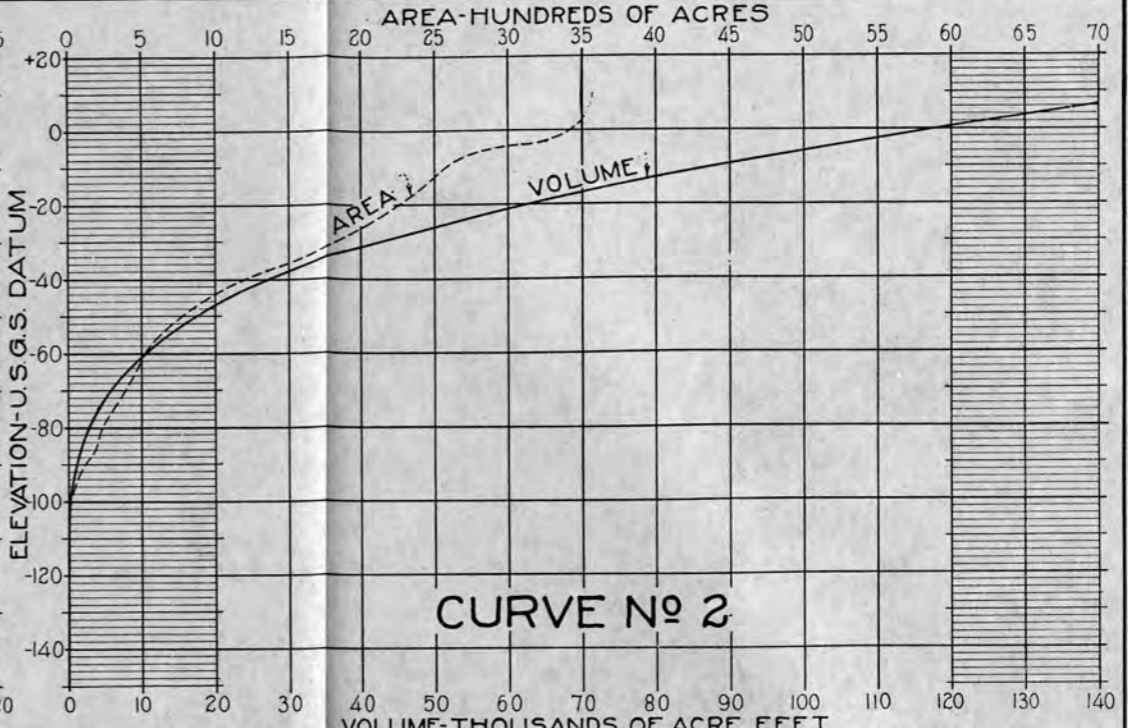
Notes:
 These curves are based on 1918 and 1923
 Survey data for comparison with
 Curves Plate 7-5 which are based on
 1923 Charts
 Area above Elevation 25 controlled thru
 construction of Bays

POINT SAN PABLO BARRIER SITE TO DILLON POINT SITE
 (From 1923 Chart Average Date of Survey 1895)
 VOLUME - THOUSANDS OF ACRE FEET
 AREA - THOUSANDS OF ACRES
 CURVE No 3
 AREA AND STORAGE CURVES
 FOR
 BAYS EXCLUSIVE OF SAN FRANCISCO BAY PROPER
 SALT WATER BARRIER
 SURVEY AND INVESTIGATION
 UNITED STATES ARMY
 CIVIL ENGINEER
 D. J. Walter
 SV-158
 193-D-106



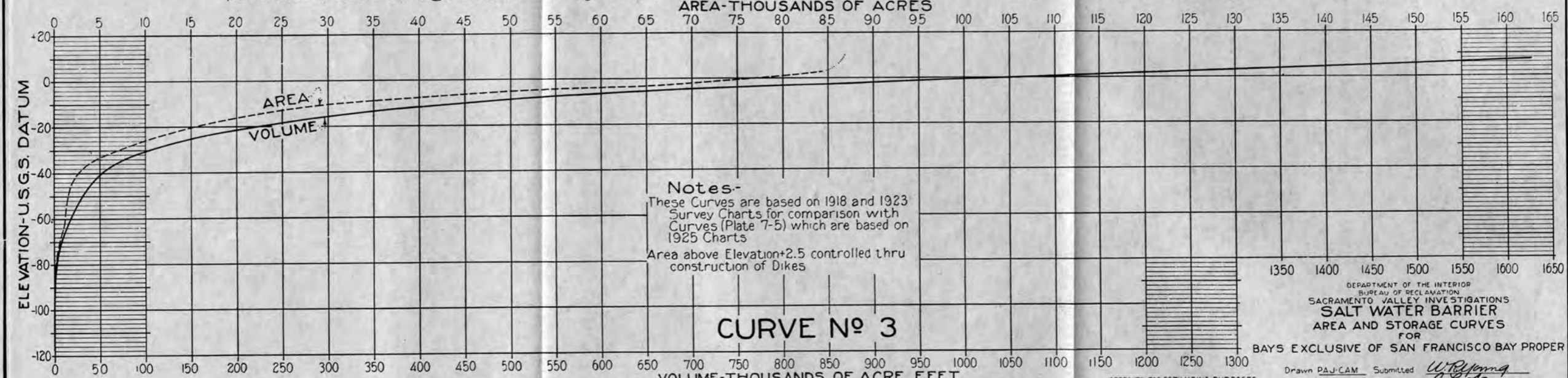
CURVE No 1

ARMY POINT BARRIER SITE TO CONFLUENCE OF RIVERS
(From 1918 Chart-Average Date of Survey 1895)



CURVE No 2

DILLON POINT BARRIER SITE TO ARMY POINT SITE
(From 1923 Chart-Average Date of Survey 1877)



CURVE No 3

POINT SAN PABLO BARRIER SITE TO DILLON POINT SITE
(From 1923 Chart-Average Date of Survey 1896)

Notes-
These Curves are based on 1918 and 1923 Survey Charts for comparison with Curves (Plate 7-5) which are based on 1925 Charts
Area above Elevation+2.5 controlled thru construction of Dikes

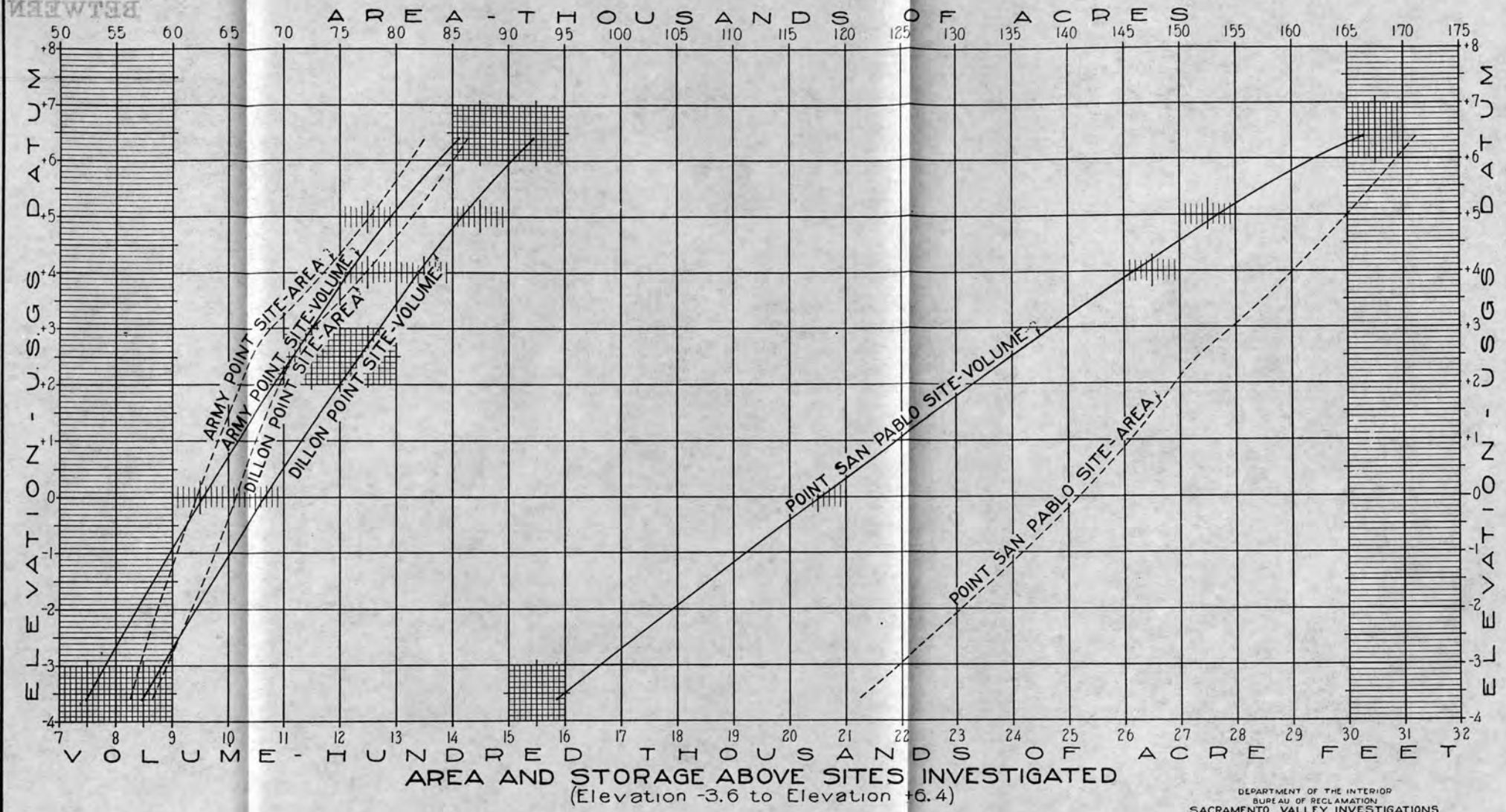
APPROVED FOR ESTIMATING PURPOSES

A. J. Dralter
CHIEF ENGINEER

Drawn PAJ-CAM Submitted *W. P. Young*
Checked _____ Approved *J. B. Savage*
SV-158 Berkeley, California, Mch 1925 Sheet 2 of 2

DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
AREA AND STORAGE CURVES
FOR
BAYS EXCLUSIVE OF SAN FRANCISCO BAY PROPER

Plate 7-7
 AREA AND STORAGE ABOVE BARRIER
 BETWEEN ELEVATION -3.6 and
 U.S.G.S.



Notes:-
 The Curves include the Bays
 Rivers and Delta Channels

APPROVED FOR ESTIMATING PURPOSES:
O. J. Dralter
 CHIEF ENGINEER

DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
 AREA AND STORAGE ABOVE BARRIER SITES
 ELEVATION -3.6 TO ELEVATION +6.4
 Drawn: P.A.J.-CAM Submitted: *W. P. Young*
 Checked: _____ Approved: *J. P. Saraga*
 SV-159 Berkeley, California, Mch 1925 193-D-107

Plate 8-1

PLAN AND SECTIONS OF GOLDEN GATE BAR



Figure No 1
 Plan of the Golden Gate bar showing the divisions referred to in the text. All contours are in fathoms based on the surveys by the United States Coast and Geodetic Survey and U.S. Engineer Department in 1900 & 1921.

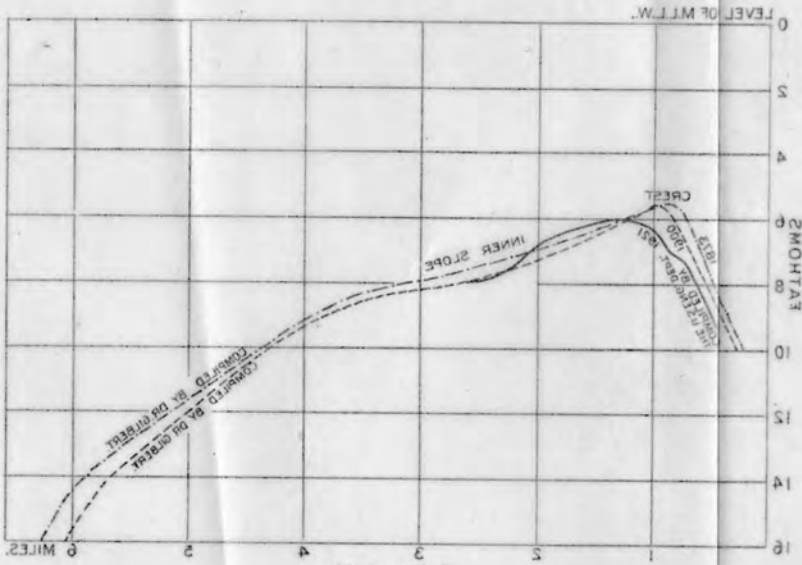


Figure No 2
 Generalized cross profiles of the Golden Gate bar in its middle division



Figure No 1

Plan of the Golden Gate bar, showing the divisions referred to in the text. All contours are in fathoms based on the surveys by the United States Coast and Geodetic Survey and U.S. Engineer Department in 1900 & 1921.

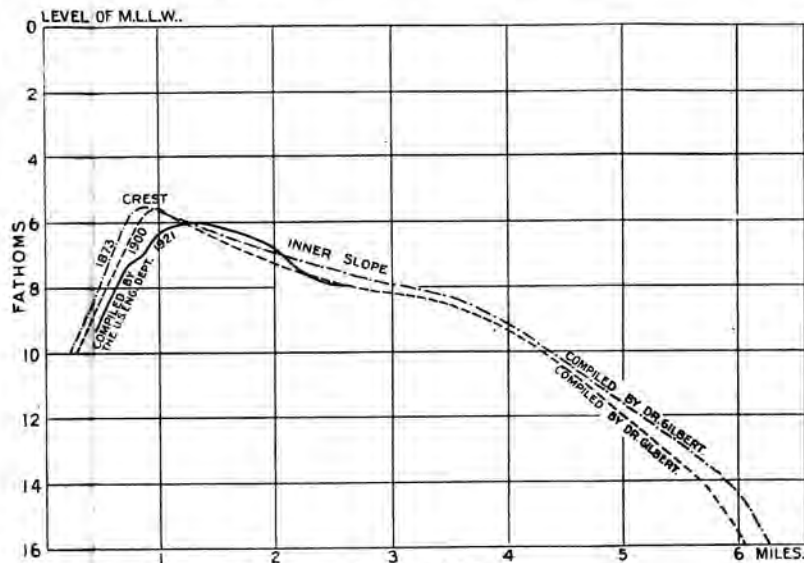
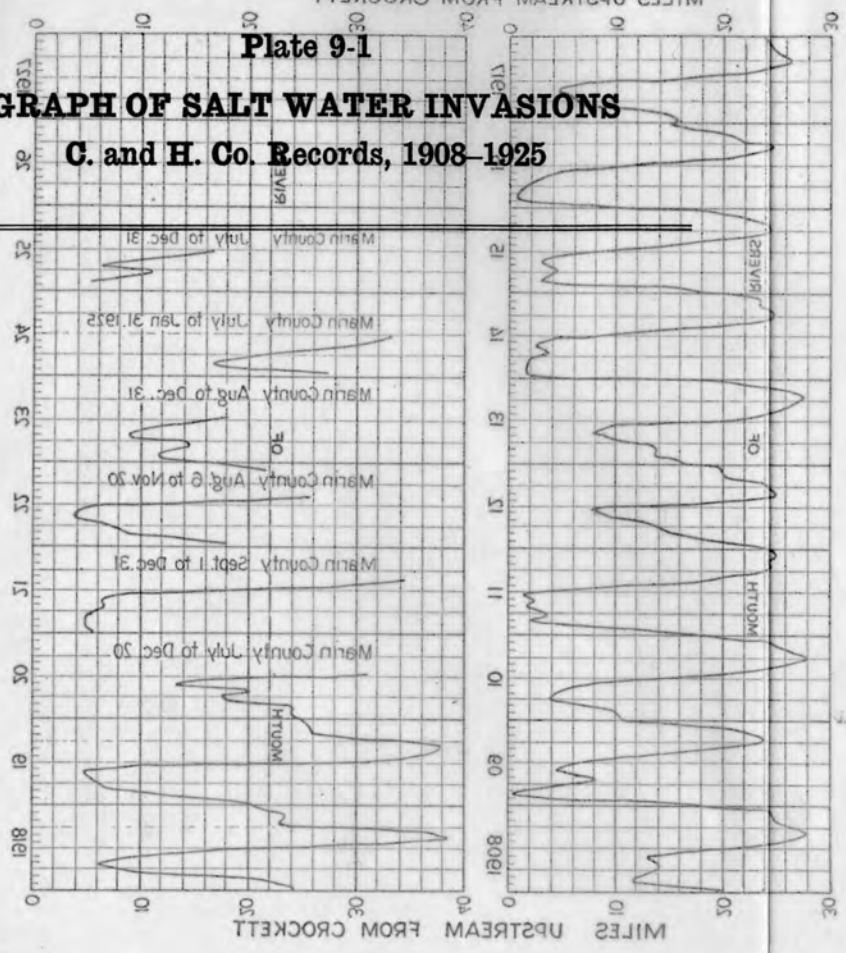


Figure No 2

Generalized cross profiles of the Golden Gate bar in its middle division

Plate 9-1 GRAPH OF SALT WATER INVASIONS

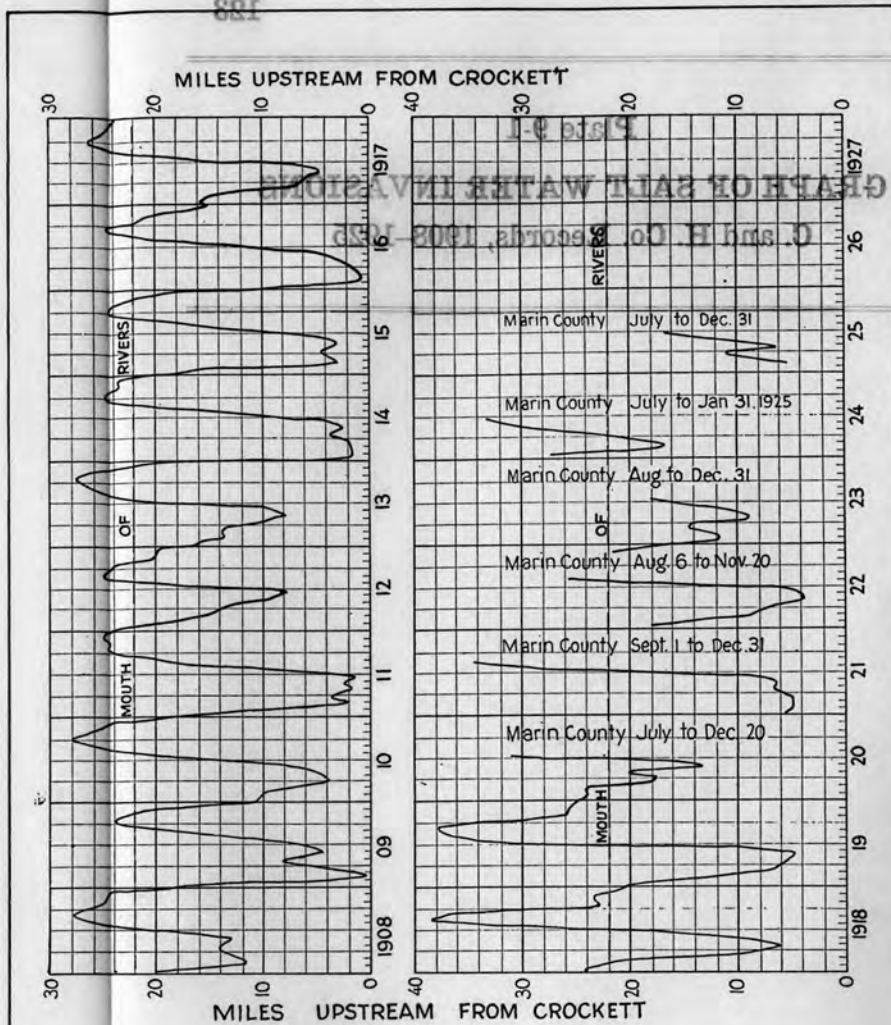
C. and H. Co. Records, 1908-1925



Retinery,
to obtain water suitable for use at their
& Hawaii Sugar Refining Corporation
each month by barges of the California
Average distance above Crockett traveled

2V-161. Elnsburg, Wash. July 1922 193-D-109
Checked _____ Approved _____
Drawn W.E.Y.M. Submitted _____
From C. & H. Co. Records, 1908-1925
GRAPH OF SALT WATER INVASIONS
SALT WATER BARRIER
SACRAMENTO VALLEY INVESTIGATIONS
BUREAU OF RECLAMATION
DEPARTMENT OF THE INTERIOR

APPROVED FOR ESTIMATING PURPOSES
D. J. [Signature]
CHIEF ENGINEER



Average distance above Crockett, traveled each month by barges of the California & Hawaiian Sugar Refining Corporation to obtain water suitable for use at their Refinery

DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
GRAPH OF SALT WATER INVASIONS
from C. & H. Co. Records; 1908-1925

Drawn W.R.Y., M. Submitted *W.R.Y.*
Checked _____ Approved *J. S. Savage*

SV-161 Ellensburg Wash, July 1927 193-D-109

APPROVED FOR ESTIMATING PURPOSES-

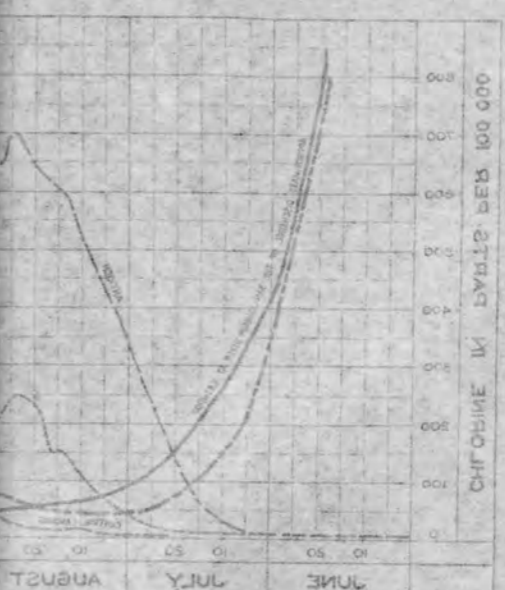
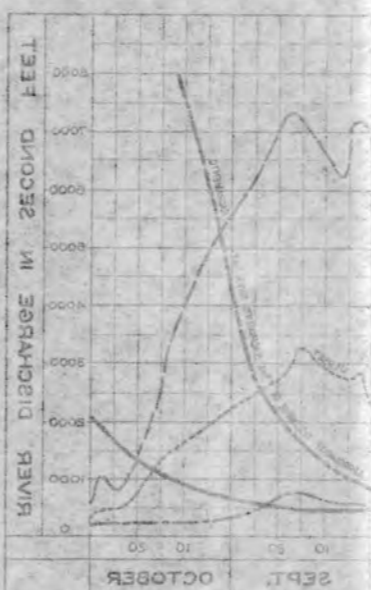
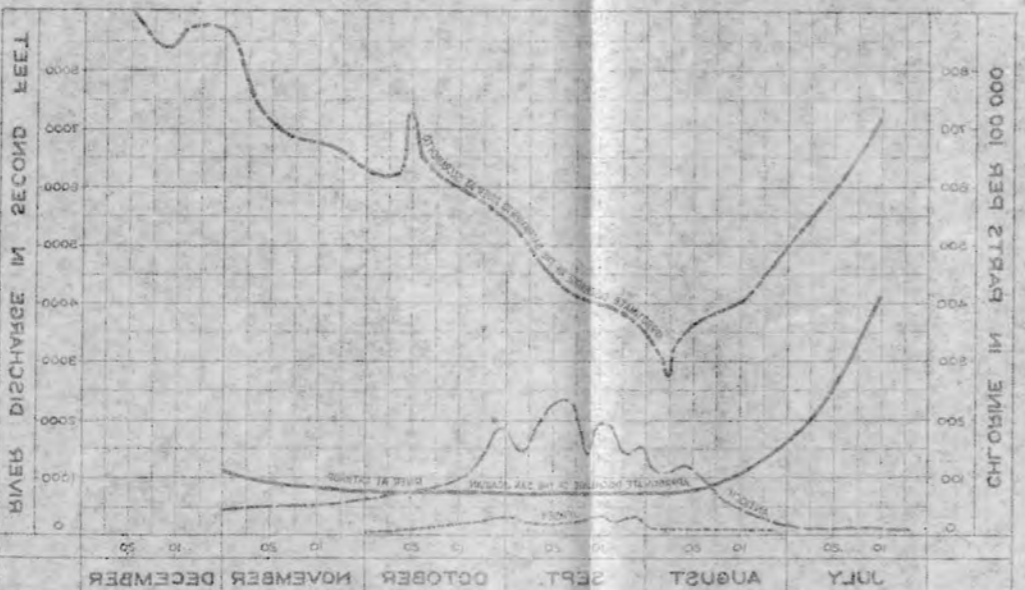
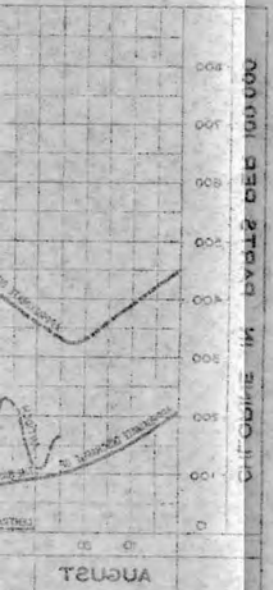
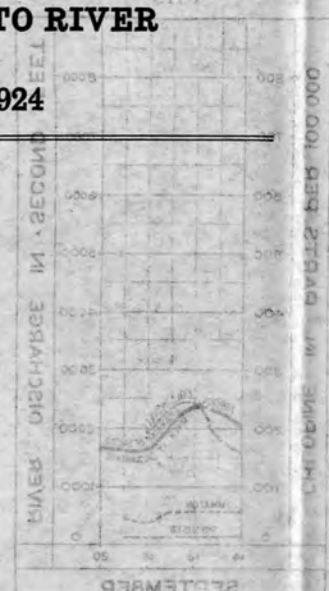
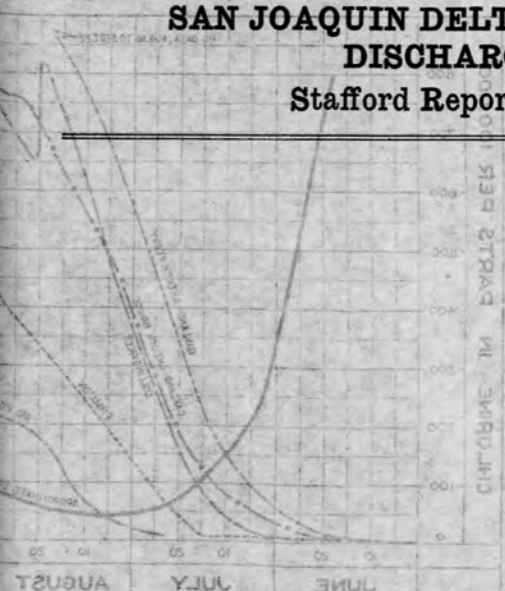
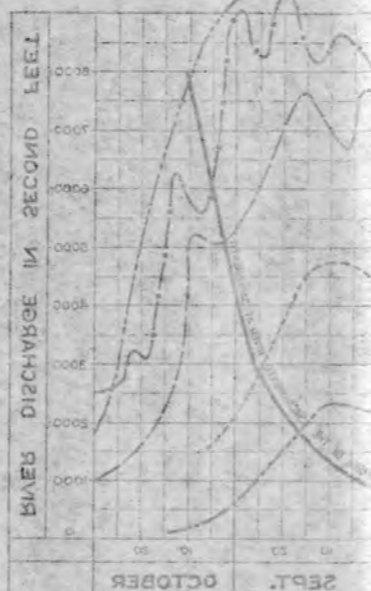
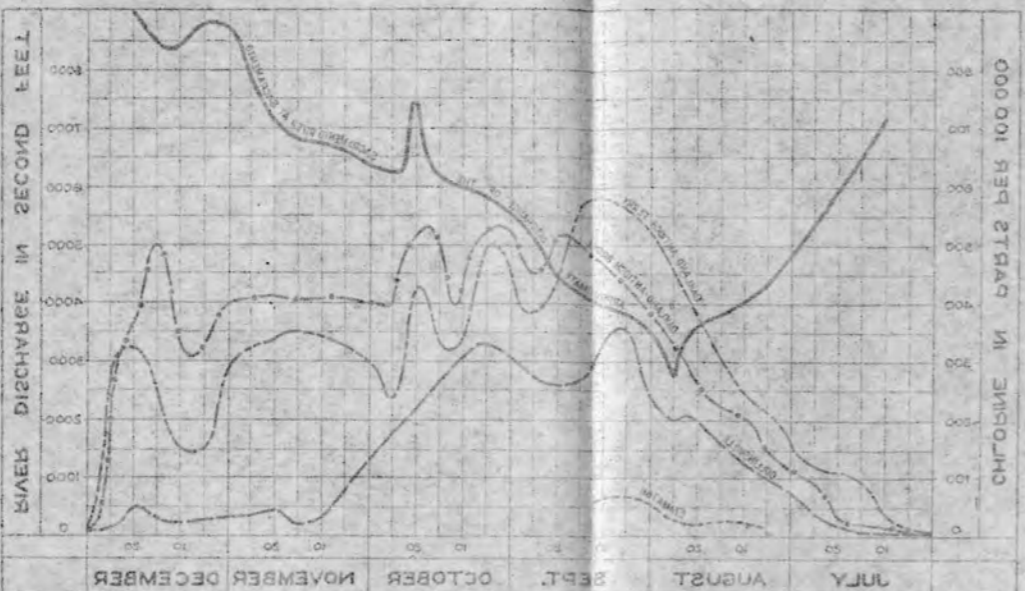
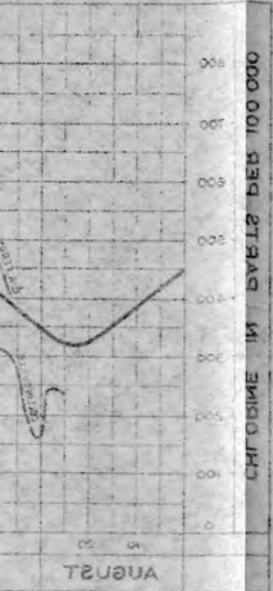
A. P. Walter
CHIEF ENGINEER

Plate 9-2

RELATION OF SALINITY IN SACRAMENTO-SAN JOAQUIN DELTA TO RIVER DISCHARGE
Stafford Report, 1924

RELATION OF SALINITY IN THE SACRAMENTO-SAN JOAQUIN DELTA TO RIVER DISCHARGE
NOTE: SALINITY CURVES INDICATE MAXIMUM SALINITY DURING DAYLIGHT HOURS

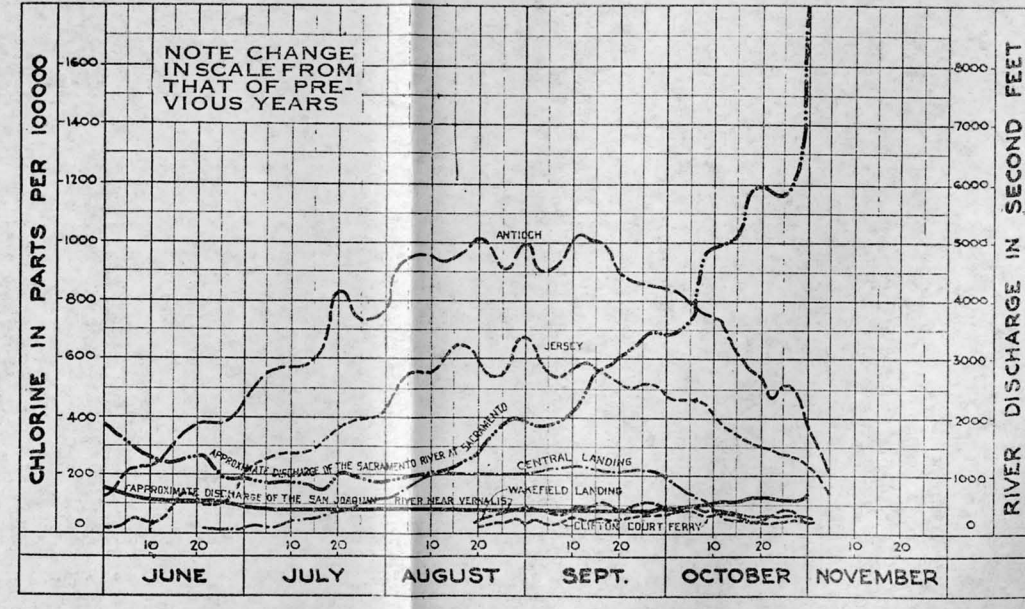
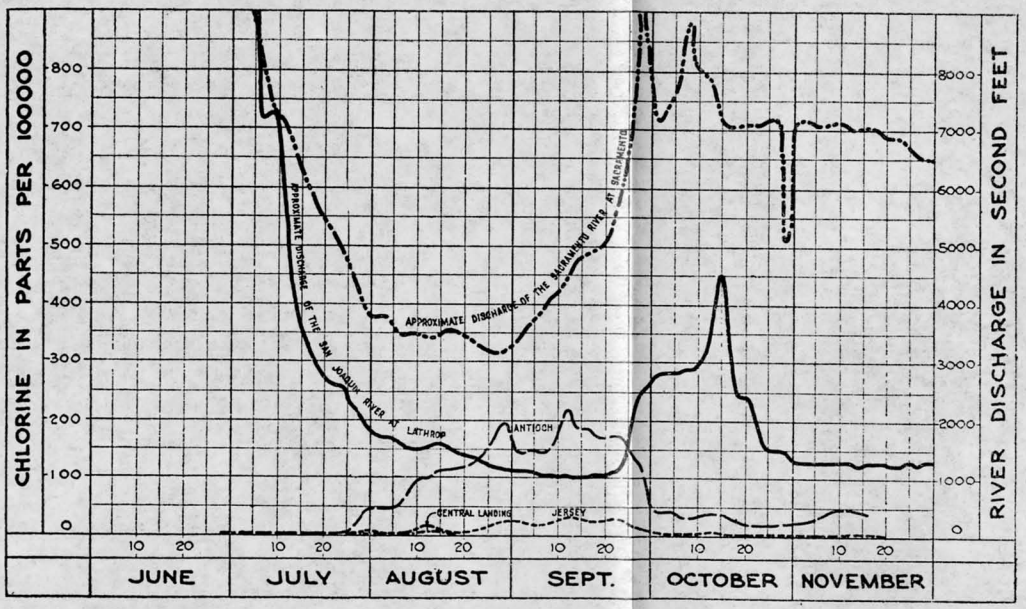
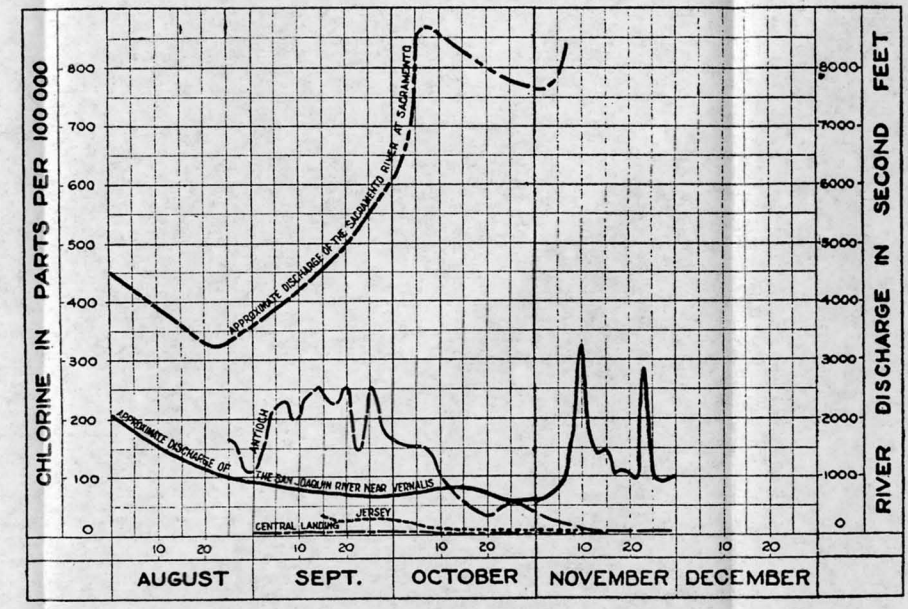
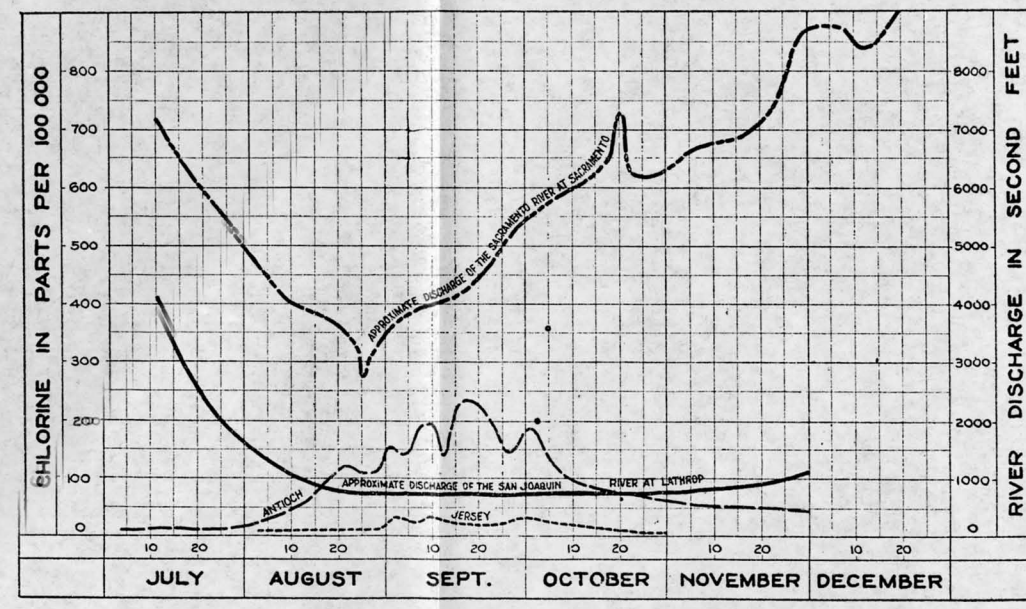
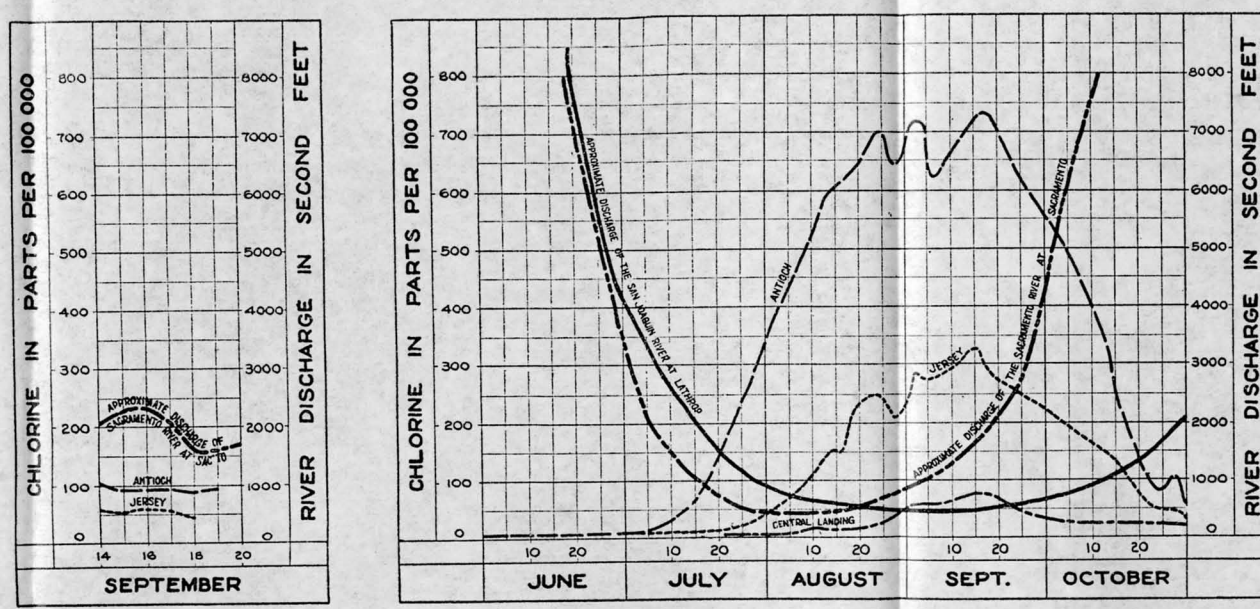
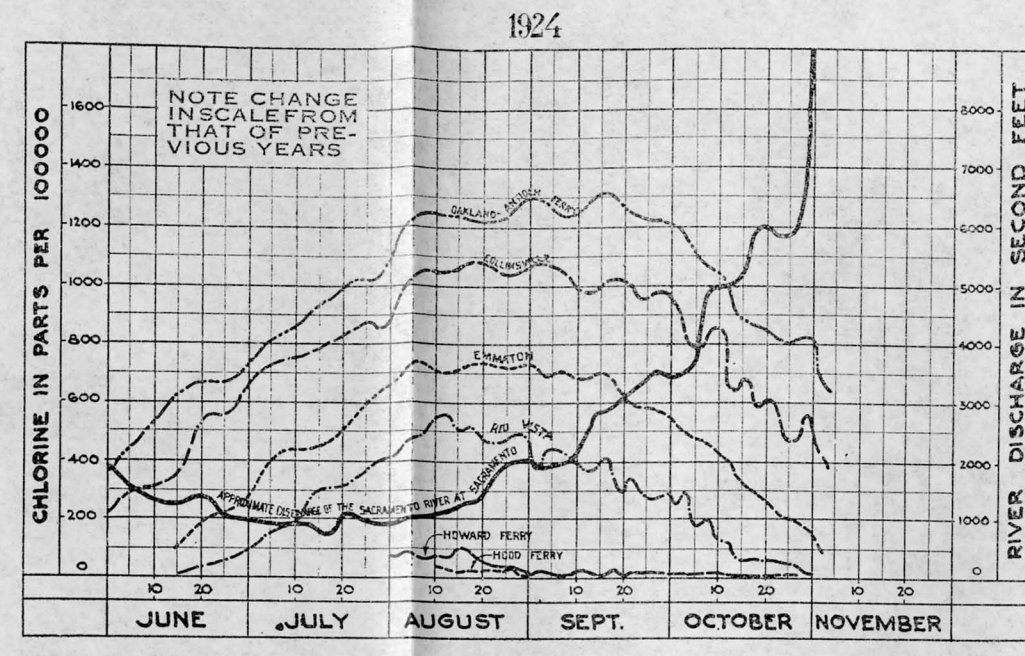
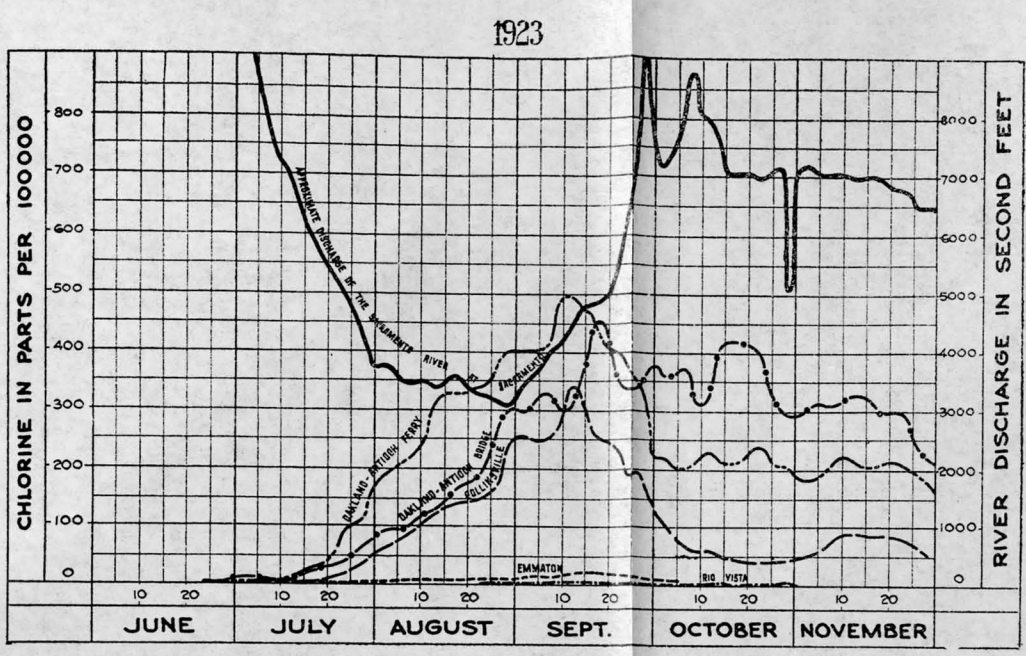
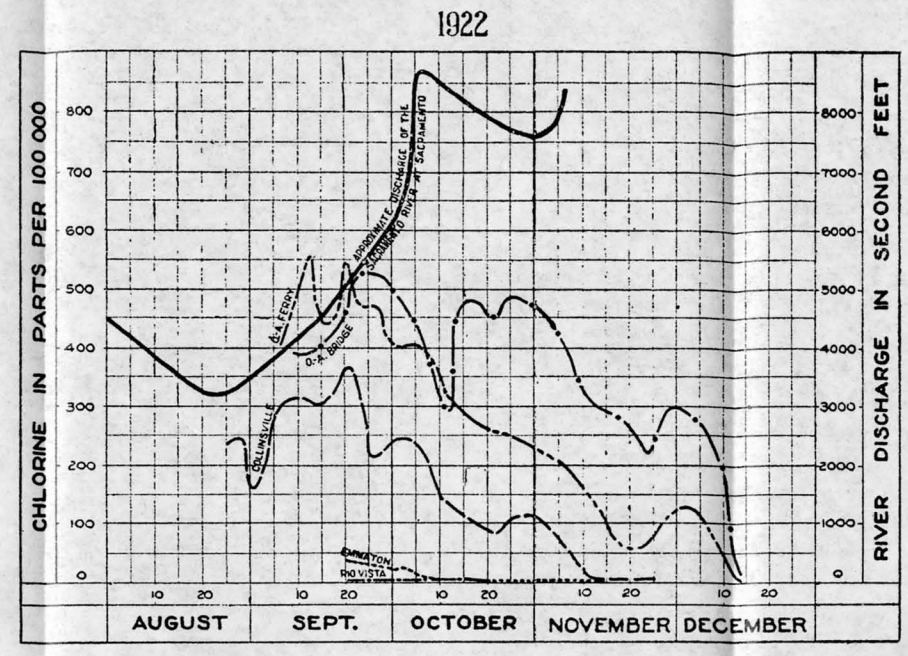
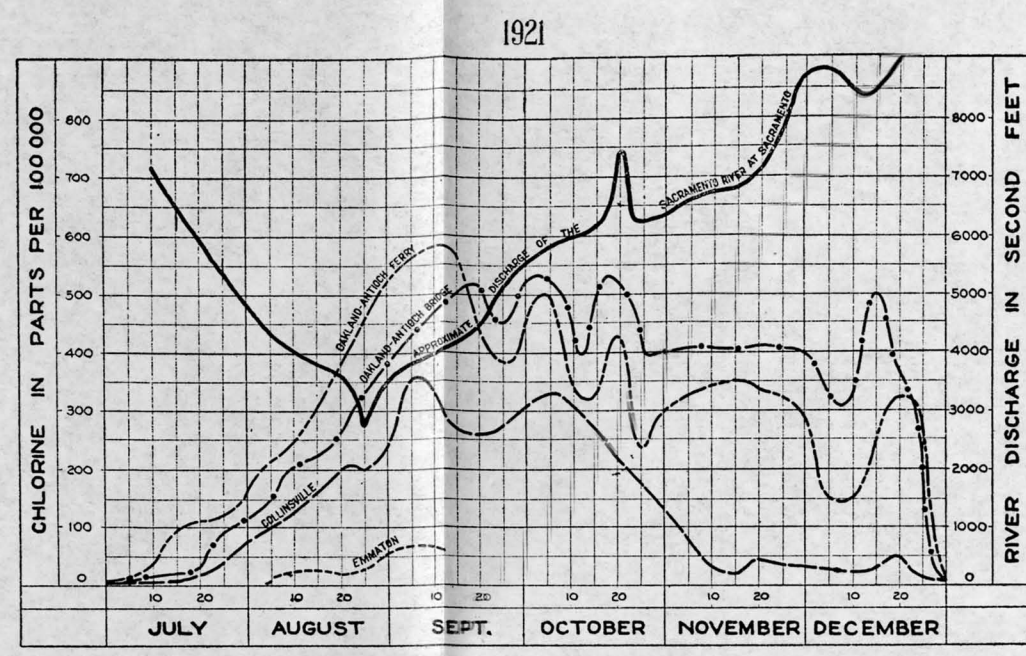
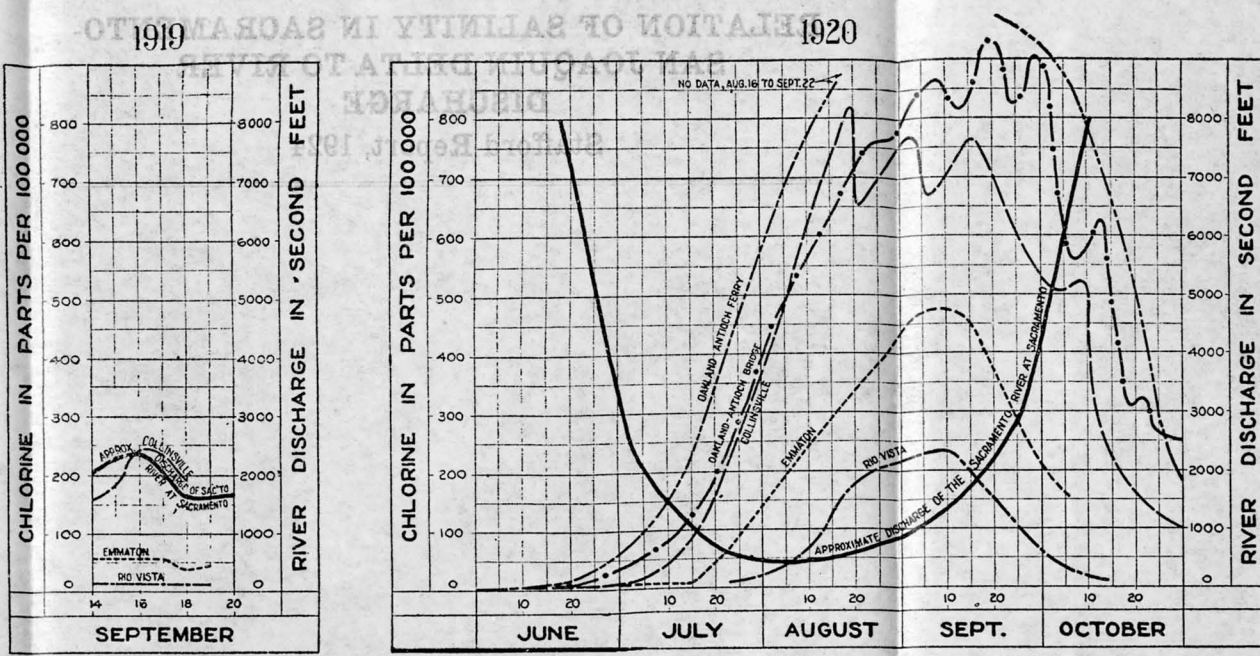
1921



RELATION OF SALINITY IN THE SACRAMENTO-SAN JOAQUIN DELTA TO RIVER DISCHARGE
NOTE SALINITY CURVES INDICATE MAXIMUM SALINITY DURING DAYLIGHT HOURS

SACRAMENTO RIVER POINTS

SAN JOAQUIN RIVER POINTS



SACRAMENTO RIVER POINTS

SAN JOAQUIN RIVER POINTS

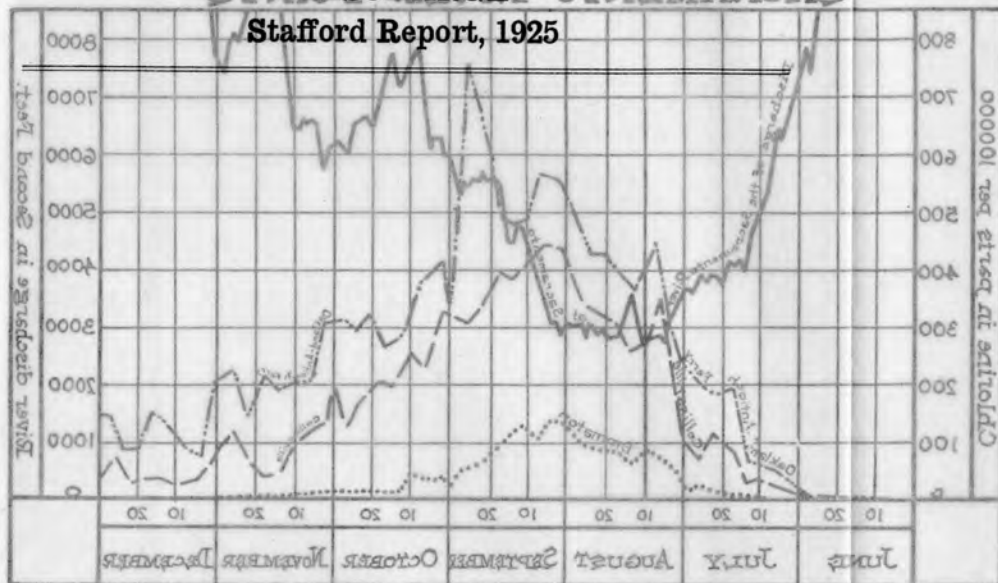
RELATION OF SALINITY IN THE

SACRAMENTO-SAN JOAQUIN DELTA

TO RIVER DISCHARGE

RELATION OF SALINITY IN SACRAMENTO-SAN JOAQUIN DELTA TO RIVER DISCHARGE

Stafford Report, 1925



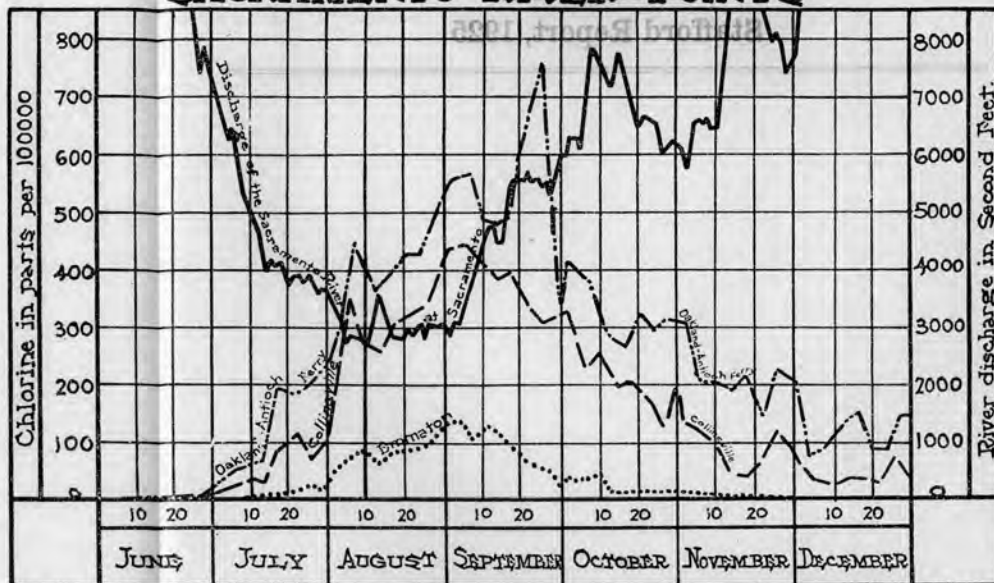
SAN JOAQUIN RIVER POINTS



RELATION OF SALINITY
IN THE
SACRAMENTO - SAN JOAQUIN DELTA
TO
RIVER DISCHARGE

1925
RELATION OF SALINITY IN SACRAMENTO - SAN JOAQUIN DELTA TO RIVER DISCHARGE

SACRAMENTO RIVER POINTS



SAN JOAQUIN RIVER POINTS

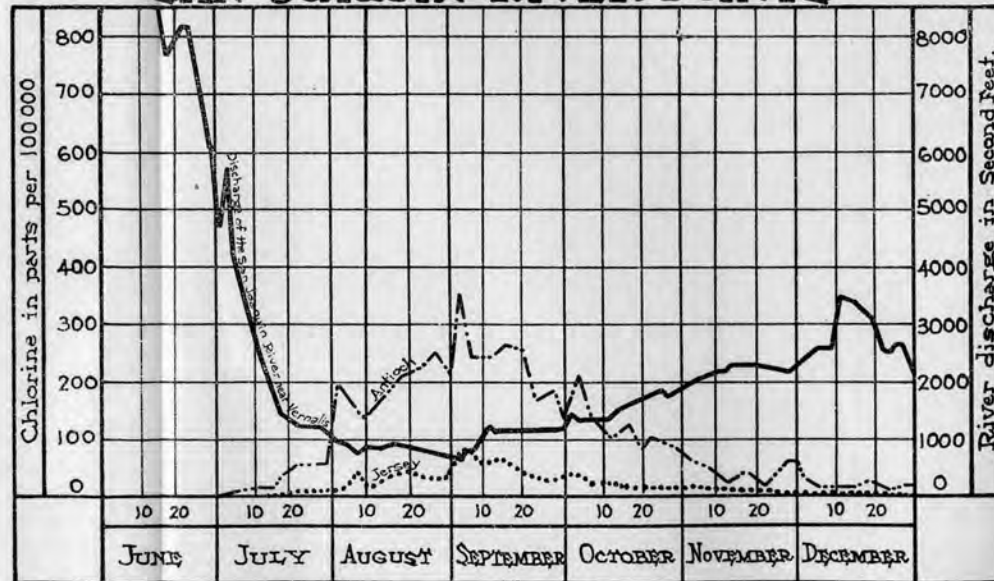
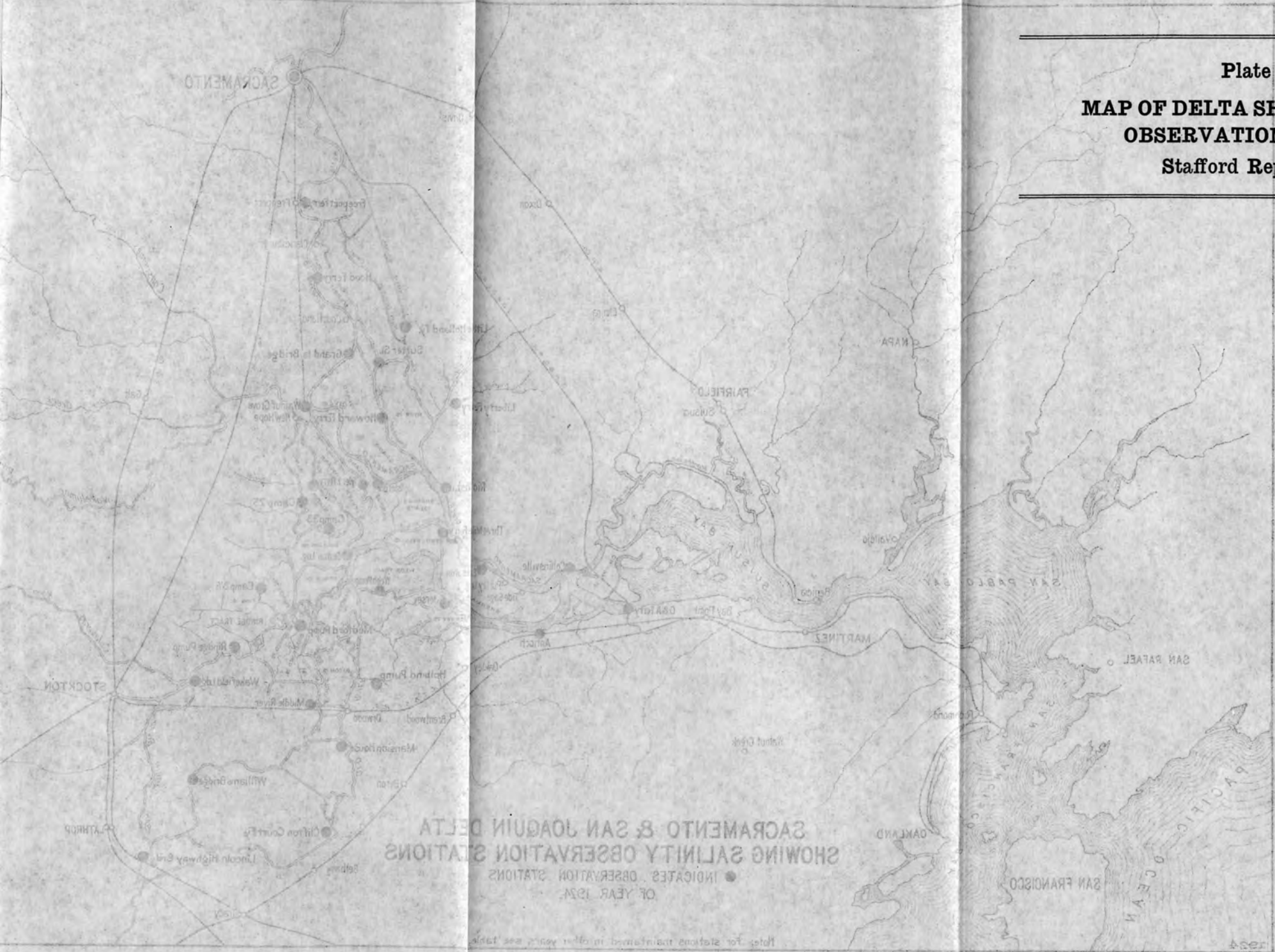


Plate 9-4

MAP OF DELTA SHOWING SALINITY
OBSERVATION STATIONS

Stafford Report, 1924



SALINITY OBSERVATION STATIONS MAINTAINED BY DIVISION OF WATER RIGHTS, 1919 TO 1923, INCLUSIVE, AND BY SACRAMENTO-SAN JOAQUIN WATER SUPERVISOR, 1924



Station	Periods under observation					
	1919	1920	1921	1922	1923	1924
Antioch	Sept. 14-Sept. 19	June 3-Nov. 22	July 5-Nov. 28	Aug. 26-Nov. 28	June 28-Nov. 16	May 24- *
Blylock Landing on Bradford Island	Sept. 13-Sept. 19					July 22- *
Camp 11		Sept. 18-Oct. 19				July 30- *
Camp 24						July 22- *
Camp 25						July 30- *
Camp 33						July 22- *
Camp 35						July 22- *
Central Landing	Sept. 13-Sept. 15	Aug. 26- July 22-Nov. 11		Sept. 2-Nov. 16	June 28-Aug. 22	June 22- *
Clifton Court Ferry						Aug. 20-Nov. 14
Collinsville	Sept. 13-Sept. 19	June 2-Nov. 25	July 1-Dec. 7	Aug. 26-Nov. 30	June 24-Nov. 28	May 28- *
Emmaton	Sept. 14-Sept. 19	June 4-Oct. 6	Aug. 6-Sept. 13	Sept. 20-Nov. 16	June 24-Oct. 6	June 14- *
Freeport						Aug. 16-Oct. 6
Grand Island Bridge						Aug. 6-Oct. 30
Hood Ferry						Aug. 10-Oct. 28
Holland Pump						July 26- *
Howard Ferry						July 30-Oct. 26
Isleton		Aug. 14-Sept. 29 Aug. 14-Sept. 28				July 2-Nov. 20
Jersey	Sept. 13-Sept. 18	June 2-Dec. 14 Aug. 27-Sept. 28	Aug. 6-Oct. 31	Sept. 16-Nov. 10	June 28-Nov. 20	May 22-Nov. 14
Jones Landing						
Junction of North Fork and South Fork of Mokelumne River		Aug. 26-Nov. 19				
King Island-Camp 3 1/2						Aug. 12- *
Liberty Ferry						Aug. 4-Nov. 14
Lincoln Highway-San Joaquin River						Sept. 8- *
Little Holland Ferry						Aug. 10-Oct. 2
Mansion House-Victoria Island						Aug. 6- *
McDonald Pump		July 23-Nov. 19				
Medford Island Pump						July 18-Nov. 20
Middle River						Aug. 8- *
New Hope Bridge		Aug. 26-Nov. 19				
North Fork Pump		Sept. 18-Oct. 9				
Oakland and Antioch Bridge		June 16-Nov. 19	July 1-Dec. 31	Sept. 8-Dec. 14	June 24-Nov. 30	
Oakland and Antioch Ferry		June 2-Dec. 2	July 1-Dec. 30	Sept. 6-Dec. 14	June 24-Nov. 30	May 24- *
Orwood Pump		July 22-Nov. 24				
Quimby Pump		July 23-Nov. 24				
Rindge Pump						
Rio Vista	Sept. 13-Sept. 19	July 23-Oct. 9		Sept. 22-Oct. 16	Aug. 22-Nov. 16	Aug. 8- *
Ryer Island Ferry		Aug. 16-Sept. 28				June 16-Nov. 20
Sacramento		Sept. 21-				
Sing Kee Landing		Oct. 9-Oct. 15				
Sherman Island Ferry		June 2-Sept. 30	Aug. 6-Oct. 31			
Sutter Slough						July 26-Oct. 30
Terminus		Sept. 18-Nov. 19				
Three-Mile Ferry		June 2-Oct. 31	Aug. 7-Oct. 27		July 2-Oct. 30	June 14- *
Tyler Island Ferry		Aug. 14-Oct. 30				July 30-Oct. 14
Venice		July 23-Nov. 13				
Wakefield Landing		Aug. 7-				Aug. 18- *
Walker Landing		Sept. 15-Oct. 6				
Walnut Grove		Aug. 14-Nov. 1				July 18-Oct. 24
Webb Pump		July 23-Dec. 13				July 16-Nov. 18
Williams Bridge						Aug. 20-Oct. 20
Zuckerman Pump		July 25-Dec. 3				

*Observation season not closed.

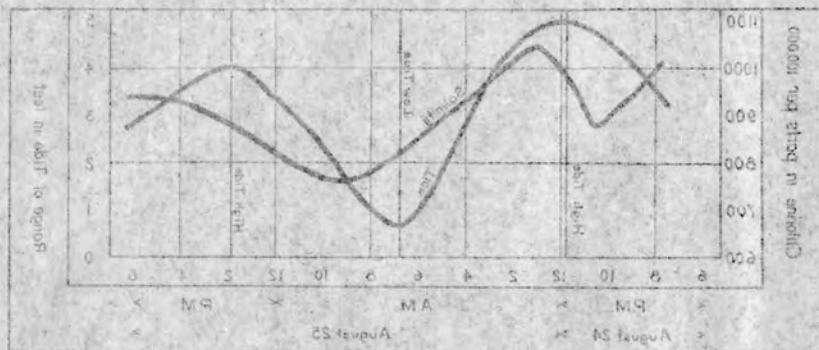
Plate 9-5

CURVES SHOWING VARIATION OF
SALINITY WITH TIDE

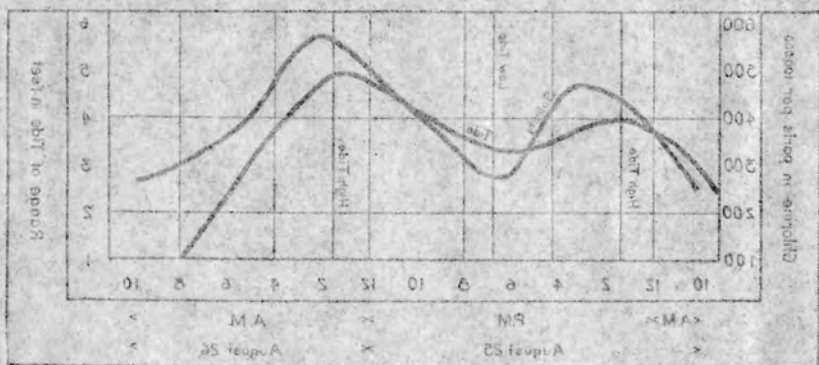
Stafford Report, 1924

PLATE 9-5

AUGUST - AUGUST 25



AUGUST 25 - AUGUST 26

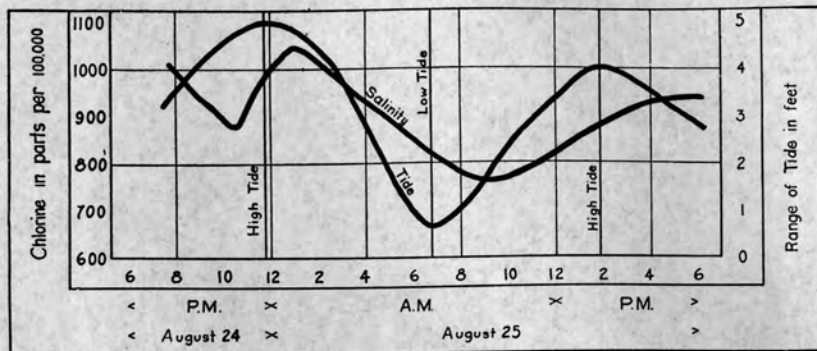


VARIATION OF SALINITY WITH TIDE, AUGUST, 1924

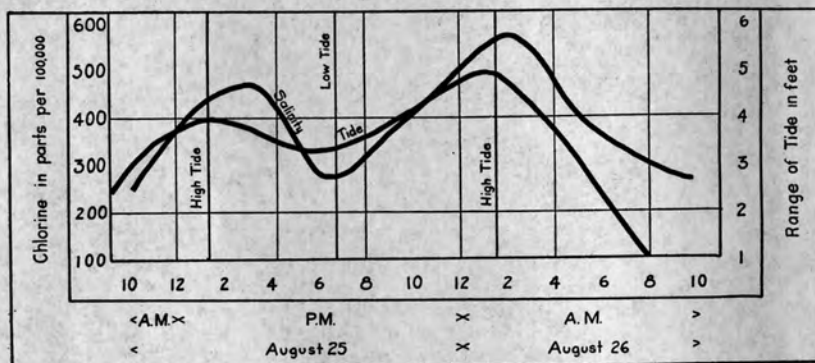
Plate 9-5
 CURVES SHOWING VARIATION OF
 SALINITY WITH TIDE
 Station Report 1924

PLATE 9-5

ANTIOCH-AUGUST 24 AND 25



RIO VISTA-AUGUST 25 AND 26

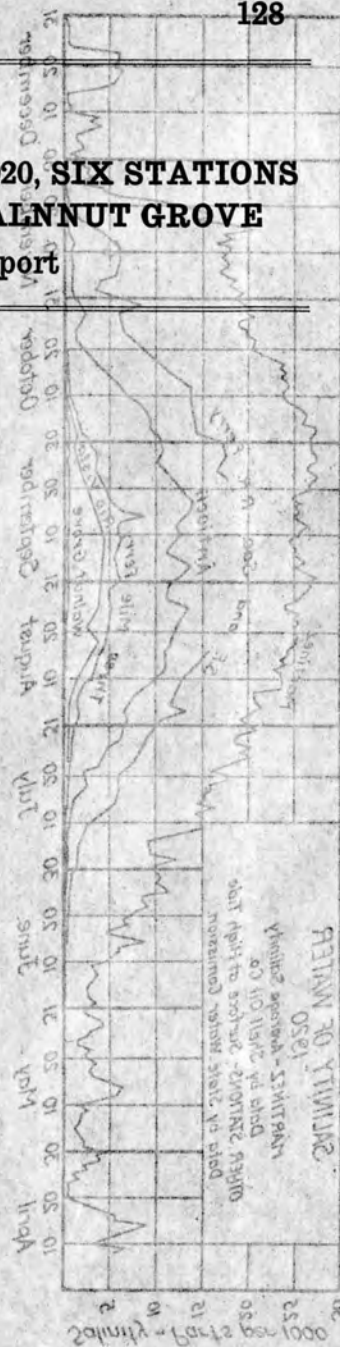


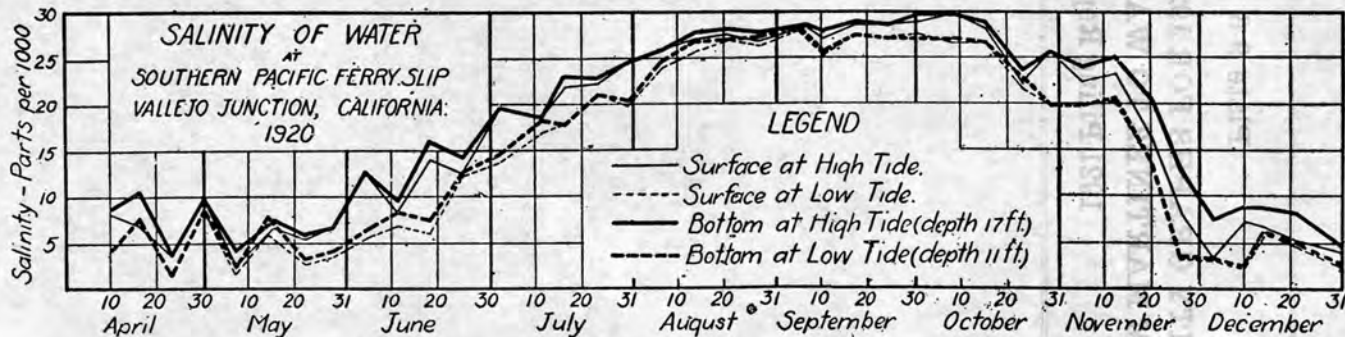
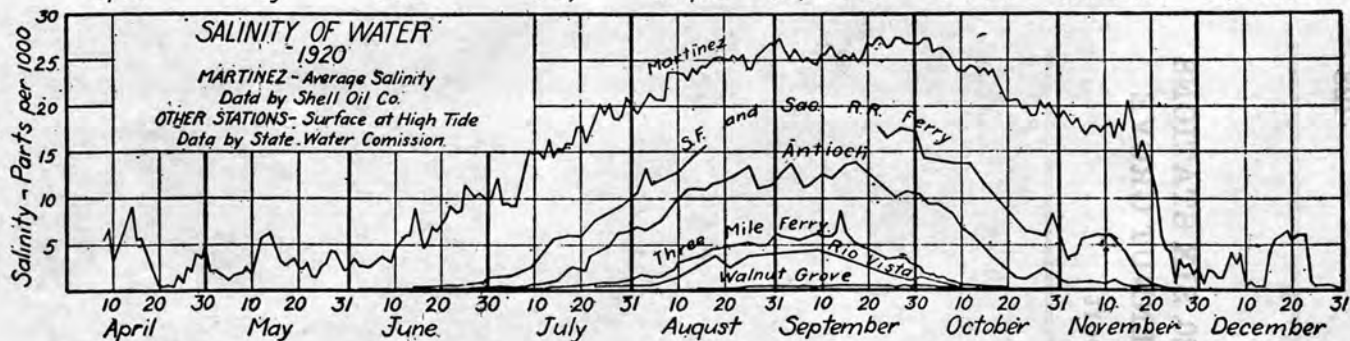
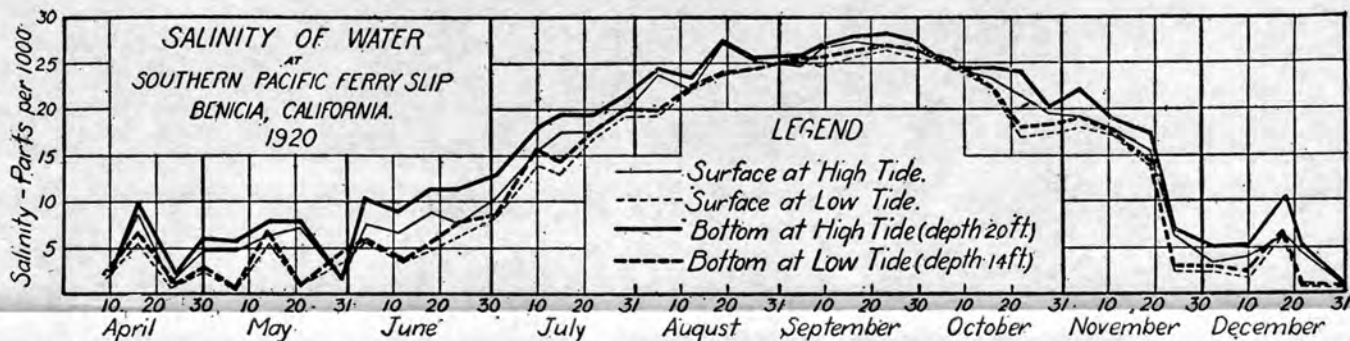
VARIATION OF SALINITY WITH TIDE, AUGUST, 1924

SALINITY GRAPHS FOR 1920, SIX STATIONS FROM MARTINEZ TO WALNUT GROVE

1921 Piling Report

SALINITY GRAPH





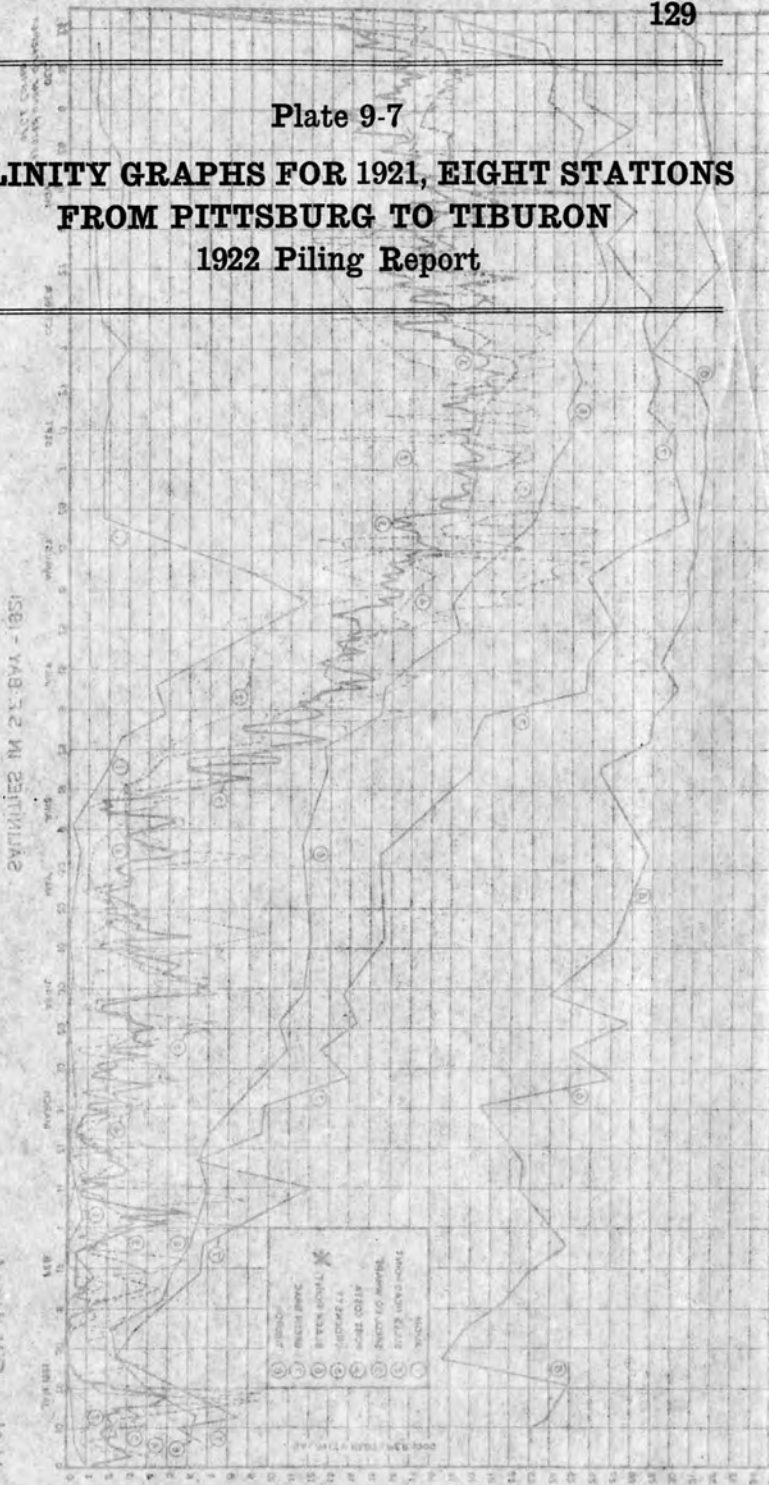
Salinity graphs.

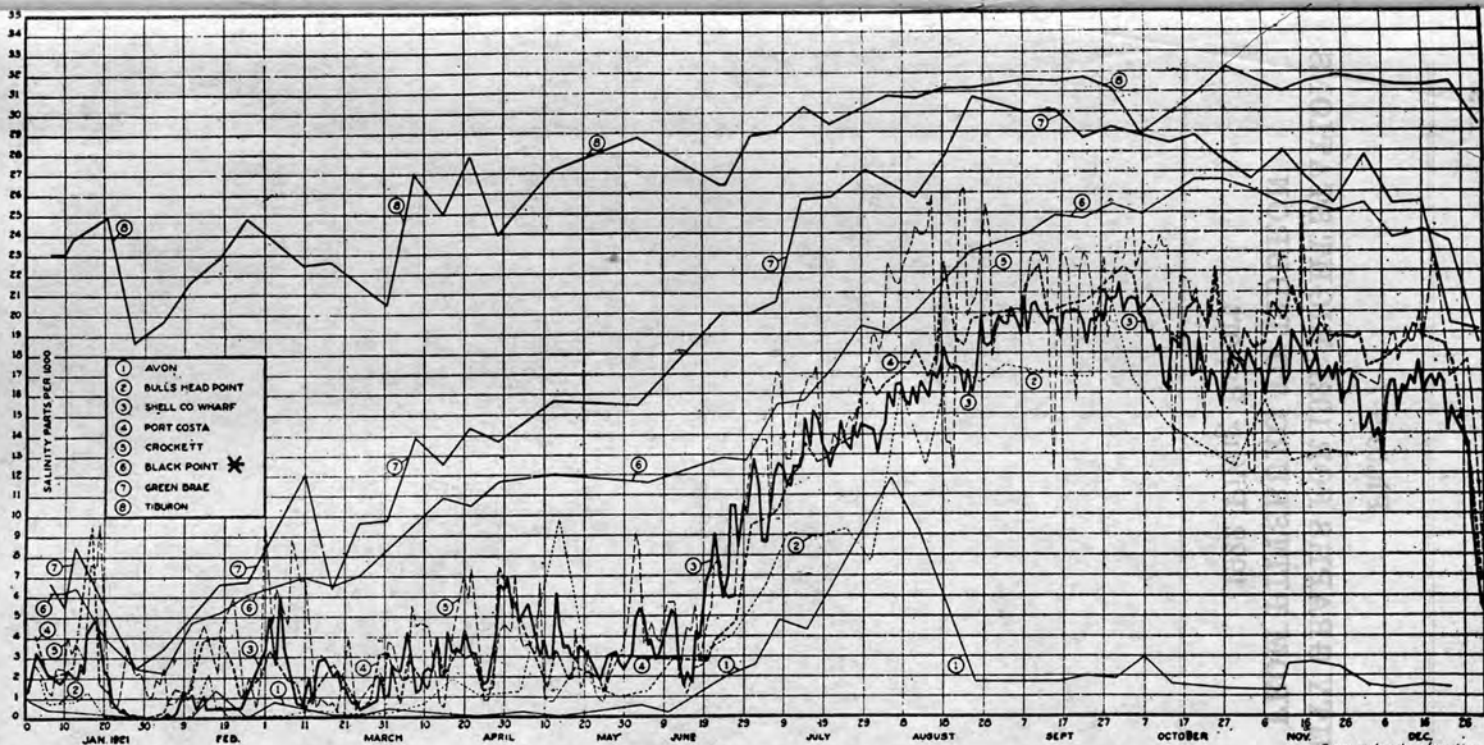
Plate 9-7

**SALINITY GRAPHS FOR 1921, EIGHT STATIONS
FROM PITTSBURG TO TIBURON**
1922 Piling Report

SALINITY IN PER MIL - (PS)

* 1921 Salinity *





SALINITIES IN S. F. BAY - 1921

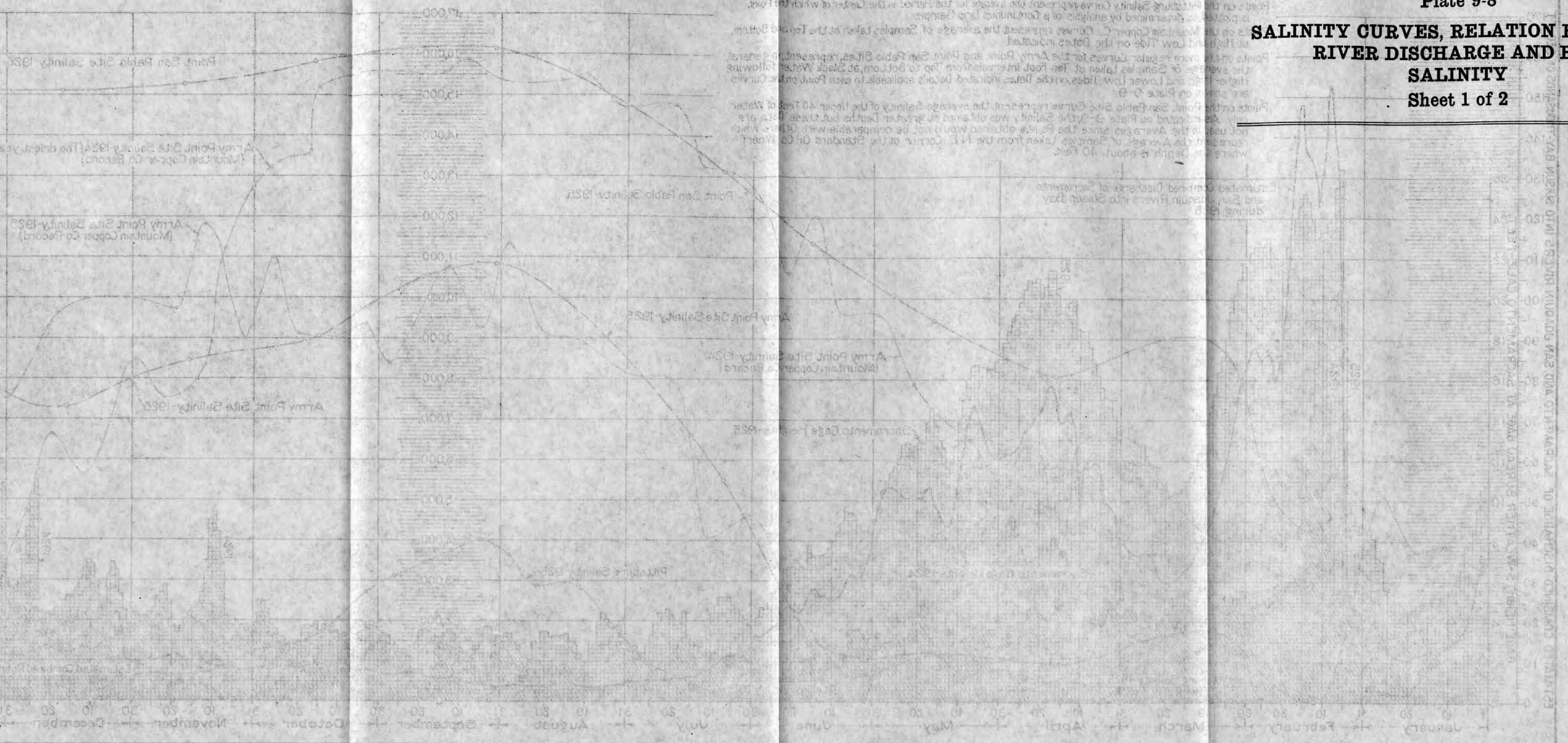
Prepared under direction
of G. E. Cortes

* Now Pittsburg.

Plate 9-8

SALINITY CURVES, RELATION BETWEEN RIVER DISCHARGE AND BAY SALINITY

Sheet 1 of 2



Notes:
 Points on the salinity curves represent the average salinity of the water at the center of which the point is plotted. The salinity curves were prepared by averaging the salinity of the water at the center of the point plotted on the Mountain Copper Co. Curves. The salinity of the water at the center of the point plotted on the Mountain Copper Co. Curves was expressed in terms of the average of samples taken at the center of the point plotted on the Mountain Copper Co. Curves. The salinity of the water at the center of the point plotted on the Mountain Copper Co. Curves was expressed in terms of the average of samples taken at the center of the point plotted on the Mountain Copper Co. Curves. The salinity of the water at the center of the point plotted on the Mountain Copper Co. Curves was expressed in terms of the average of samples taken at the center of the point plotted on the Mountain Copper Co. Curves.

Estimated Discharge of Sacramento and San Joaquin Rivers into Suisun Bay during 1926

Estimated Discharge of Sacramento and San Joaquin Rivers into Suisun Bay during 1925

Estimated Discharge of Sacramento and San Joaquin Rivers into Suisun Bay during 1924

Plate 9-8

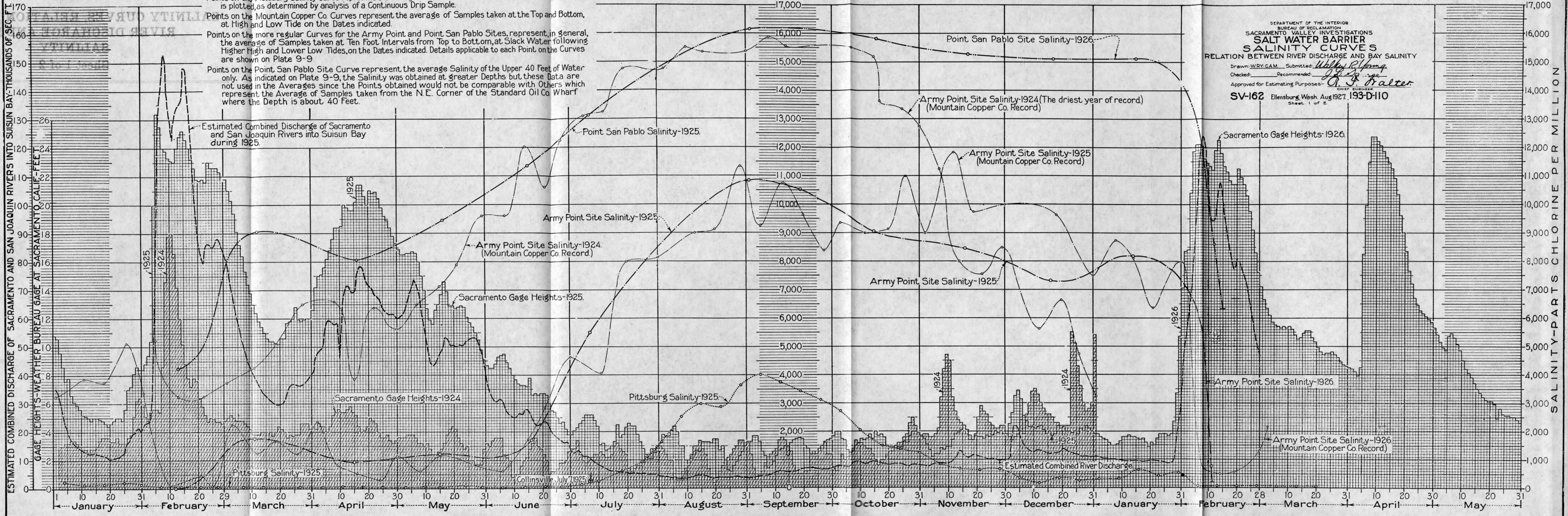
Notes:

Points on the Pittsburg Salinity Curve represent the average for the Period in the Center of which the Point is plotted, as determined by analysis of a Continuous Drip Sample.

Points on the Mountain Copper Co. Curves represent the average of Samples taken at the Top and Bottom, at High and Low Tide on the Dates indicated.

Points on the more regular Curves for the Army Point and Point San Pablo Sites, represent, in general, the average of Samples taken at Ten Foot Intervals from Top to Bottom, at Slack Water following Higher High and Lower Low Tides, on the Dates indicated. Details applicable to each Point on the Curves are shown on Plate 9-9

Points on the Point San Pablo Site Curve represent the average Salinity of the Upper 40 Feet of Water only. As indicated on Plate 9-9, the Salinity was obtained at greater Depths but these Data are not used in the Averages since the Points obtained would not be comparable with Others which represent the Average of Samples taken from the N.E. Corner of the Standard Oil Co. Wharf where the Depth is about 40 Feet.

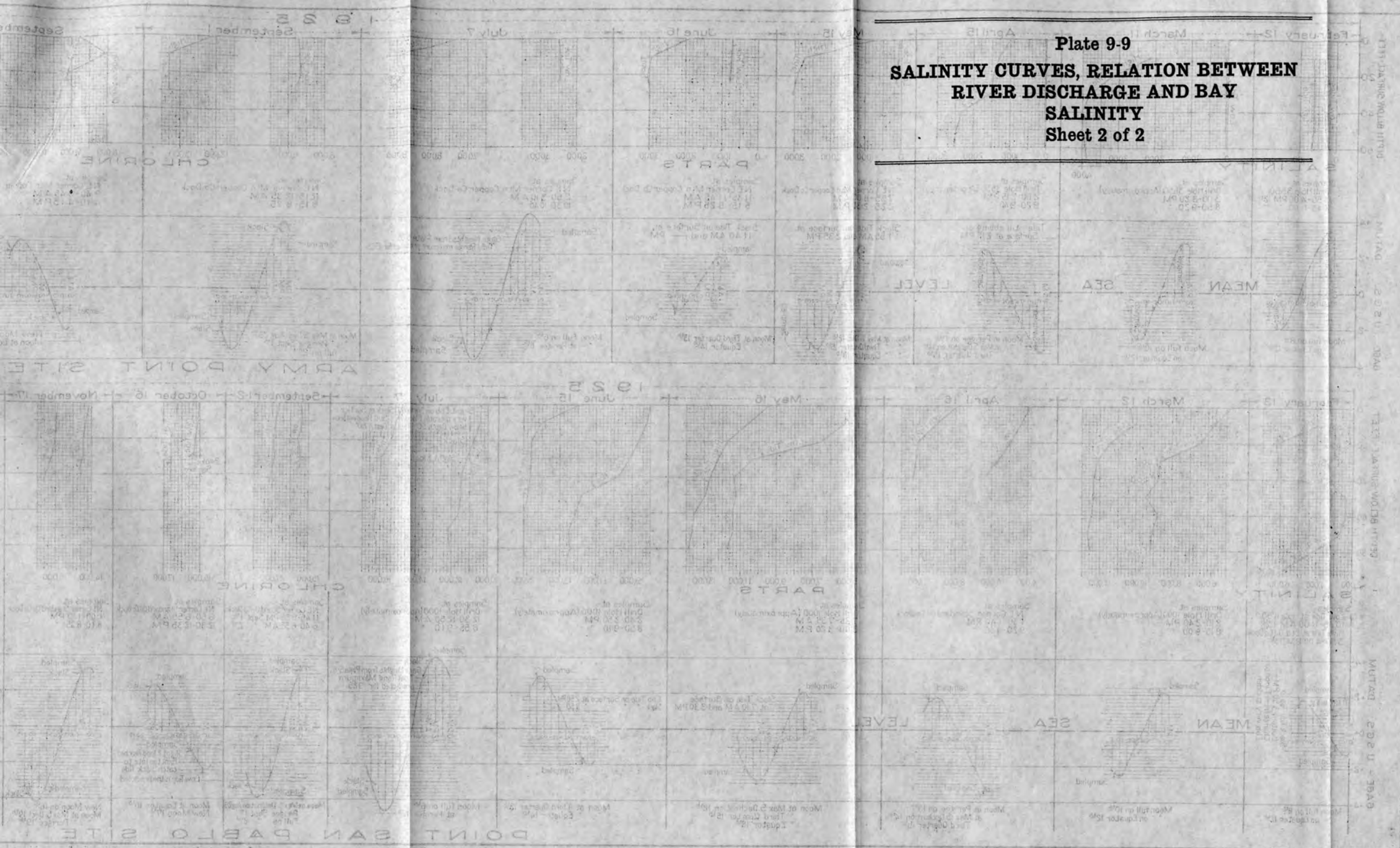


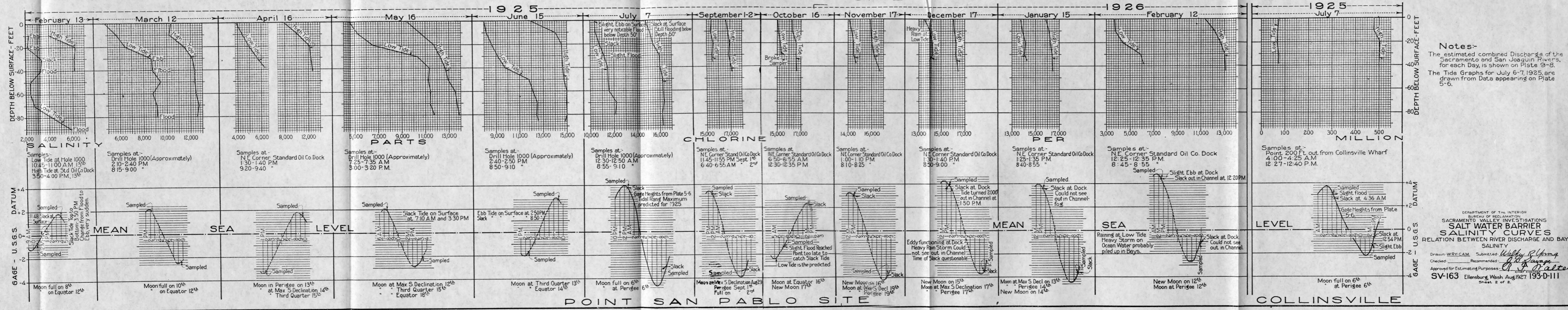
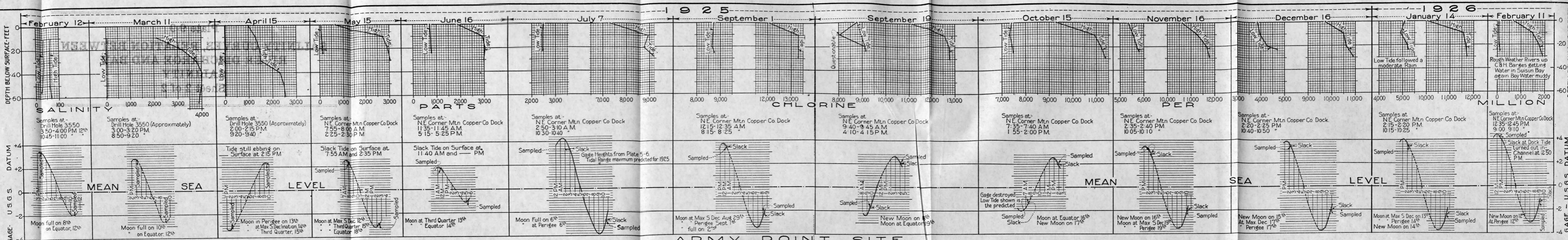
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
SALINITY CURVES
RELATION BETWEEN RIVER DISCHARGE AND BAY SALINITY

Drawn: WRY:GAM Submitted: *Walter R. Young*
Checked: _____ Recommended: _____
Approved for Estimating Purposes: *A. J. Walter*
CHIEF ENGINEER

SV-162 Ellensburg, Wash. Aug 1927. 193-D-110
Sheet 1 of 2.

Plate 9-9
SALINITY CURVES, RELATION BETWEEN
RIVER DISCHARGE AND BAY
SALINITY
 Sheet 2 of 2





Notes:
 The estimated combined Discharge of the Sacramento and San Joaquin Rivers, for each Day, is shown on Plate 9-8. The Tide Graphs for July 6-7, 1925, are drawn from Data appearing on Plate 5-6.

DEPARTMENT OF THE INTERIOR
 BUREAU OF RECLAMATION
 SACRAMENTO VALLEY INVESTIGATIONS
SALT WATER BARRIER
SALINITY CURVES
 RELATION BETWEEN RIVER DISCHARGE AND BAY SALINITY
 Drawn WRY-CAM. Submitted *Wally R. Camp*
 Checked *W. J. ...* Recommended *W. J. ...*
 Approved for Estimating Purposes *W. J. ...*
 SV-163 Ellensburg Wash Aug 1927 193-D-111
 Sheet 2 of 2

