

6011

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

SEP 5 1934

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Form 504
Rev. Dec. 1933
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. J (T-5010)
Hydrographic } 6011

State CALIFORNIA

LOCALITY

SAN JOAQUIN RIVER DELTA

~~VENICE ISLAND TO DREDGER CUT~~

- a - Potato Slough - Little Potato Slough & South Fork Mokelumne River
- b - White Slough

1934

CHIEF OF PARTY

L. P. RAYNOR

6011
6010

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
SHEET 6 1934

REG. NO. 6011 a b

HYDROGRAPHIC TITLE SHEET 6 1934

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. J. (T-5010)

REGISTER NO. 6011 a b

State CALIFORNIA

General locality SAN JOAQUIN RIVER DELTA

Locality a POTATO SLOUGH-LITTLE POTATO SLOUGH AND SOUTH FORK MOKELUME RIVER
b WHITE SLOUGH
VENICE ISLAND TO DREDGER CUT

Scale 1:10,000 Date of survey JAN. FEB. MAR. 19 34

Vessel HELEN F. (Leased launch)

Chief of Party L. P. RAYNOR

Surveyed by L. P. RAYNOR & N. G. KORNEEFF

Protracted by KENNETH DeBLOIS A. H. YEOMANS

Soundings penciled by KENNETH DeBLOIS A. H. Y.

Soundings in ~~10000~~ feet

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by P.H. SCHERR

Verified by P.H. SCHERR

Instructions dated SEPTEMBER 2, 1933, et.al., 19

Remarks:

HYDROGRAPHIC TITLE SHEET

Field No. J (T-5010)

State: CALIFORNIA

General locality: SAN JOAQUIN DELTA

Locality: PORTIONS OF SOUTH FORK OF MOKELUMNE RIVER,
POTATO SLOUGH AND WHITE SLOUGH

Scale: 1:10,000 Date of survey: Jan. Feb. Mar., 1934

Chief of Party: L. P. RAYNOR

Surveyed by: L. P. RAYNOR & N. G. KORNEEFF

Protracted by: KENNETH DeBLOIS

Soundings penciled by: KENNETH DeBLOIS

Soundings in FEET

Plane of reference: M.L.L.W.

Instructions dated: SEPTEMBER 2, 1933, et.al.

Vessel: HELEN F (Leased launch)

DESCRIPTIVE REPORT

of

HYDROGRAPHIC SHEET J (T*5010)

AUTHORITY, LIMITS, DATES:

The authority for the work is contained in the following letters:

1. 22 LE 1990 March 17, 1933
2. 22 AHH 1990 August 12, 1933
3. SUPPLEMENTAL INSTRUCTIONS
PROJECT 98 HT Sept. 2, 1933
4. 26 RS 1990 Nov. 9, 1933
5. 22 AHH 1990 Nov. 16, 1933
6. 22 MEN 1990 Dec. 2, 1933

This sheet covers work in Potato Slough from longitude $121^{\circ} 33\frac{1}{4}'$ to its junction with the South Fork of the Mokelumme; work in the South Fork of Mokelumme from same longitude to Terminous; and work in White Slough from its junction with Potato Slough to longitude $121^{\circ} 26'$. The work of placing some 300 hydrographic signals was done by a party in charge of Emmet McGowan, Observer and Surveyor. The hydrography was done under supervision of N. G. Korneeff, Observer, and the Chief of Party. The work was done in January, February, and March, 1934, with some additional work on July 8 and Aug. 9, 1934, which had not been previously completely developed. ✓

SURVEY METHODS:

Hydrographic signals were located by:

1. Spotting directly on the boat sheet, topographic detail shown on the photo compilation, such as tule points, syphons, gables of buildings, and intersection of ditch lines extended and highwater line. Shown in red circles. ✓
 2. By sextant three-point fixes, using objects previously located by the photo compilation. These are shown with blue circles. ✓
 3. By planetable topography, using aluminum plate coated with tanned gum arabic on which the photo compilation had been printed. All of the signals on the South Fork of the Mokelumme were so located and a few signals on Potato Slough. These were scaled from the topographic plate and replotted on the smooth sheet. A list of these signals with "D.M's." and "D.P's." is attached. Some signals on White Slough were located by planetable, using the photo lithographic print as a planetable sheet. The sheet at the time of using was considerably distorted but an attempt was made to localize errors and it is believed the relative positions of adjacent signals are reasonably correct. A list giving these signals with their "D.M's." and "D.P's." is also attached. ✓
- T-6050
only relatively

LANDINGS:

The Western Pacific R.R. Company has a large steamer wharf with sheds located at Terminous. Large tonnages of celery, onions, and potatoes are handled over this wharf, being brought there from the various island and tracts in that vicinity. Most of this tonnage is carried in self-propelled barges drawing from 3 to 5 ft. Some sugar beets are hauled from this locality by barge to the Holly Sugar factory just above Tracy. These latter barges are towed by tugs which have a maximum draft of about 9 feet. There are no other wharves in the area covered by this sheet, although in some cases a few piles are driven to fend the boats off from the levees. In most cases, however, landing is made alongside the bank at any place where cargo is to be loaded or discharged.

CHANNELS, SHOALS:

Channels are shown by the depth curves drawn on the boat sheet, the deepest water usually being found in the center of the dredger cuts. The following shoals may be noted:

Extending southeast from the island on which OSM 4 is located is a long shoal with least depth of 4 feet at several places.

Extending south and east of island on which SM 1 is located is a long fairly wide shoal on which the least depth found was $3\frac{1}{2}$ feet.

A 6 ft. shoal extends west from SM 4.

A shoal with minimum depth of $4\frac{1}{2}$ feet extends south and west of LM 27. *South-plotted as 4'*

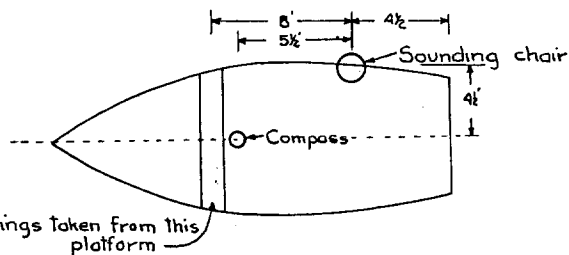
Northeast of PM 10A is a shoal in the center of the slough on which a least depth of $4\frac{1}{2}$ feet was found.

A six foot shoal lies west of PM 6 with deeper water nearer the shore. *(6v)*

A shoal with least depth of 10 feet lies northwest of PW 10.

DISCREPANCIES:

It may be noted that due to dredging operations necessary to keep the levees up to line and grade, variations in depth of 8 or 10 feet within a few meters is not entirely unreasonable. That the sounding platform is at one side of the boat and astern of where the angles are taken accounts for the fact that although the observers may be at the same place, the soundings will not necessarily be in the same spot if the boat is headed in a different direction. The relative position of the observers and the sounding chair is shown below.



The apparent discrepancies noted are given below:

1. The depth between position 6 and 7 G near LW 15 is 12 ft. & 15 ft. ✓
 The depth between position 16 & 17 C near LW 15 is $8\frac{1}{2}$ ft. ✓
 It is safe to assume that the shoreline 16-17 C is closer to the highwater line than the plotting indicates. The $8\frac{1}{2}$ ft. depth is shown. *no discrepancy on replotted sheet both plotted PHS*
2. Depth at position 1 J near LM 22 is 8 ft. ✓
 Depth between position 6 & 7 C near LM 22 is 12 ft. ✓
 In this case the lines are run in opposite directions which would tend to place the greater depth further offshore. *8' in (towards shore) plotted 12' sdg.*
3. Depth between positions 6 & 7 J near LM 18 is 23 ft. ✓
 Depth between positions 27 & 28 D near LM 18 is 17 ft. & 12 ft. ✓
 The range finder distance on 27 D indicates a possible error in the photoplot location of the high water line. The position was plotted ~~incorrect~~ on the bearing given and 10 meters off the shore line as shown. All soundings were then plotted. *27 D plotted on course, no discrepancy*
4. Depth at position 23 J near LW 2 is 23 ft. ✓
 Depth at position 36 D near LW 2 is 11 ft. ✓
 Position 23 J is actually 2 meters farther out than position 36 D. The position of the sounding chair on these lines would throw the 23 ft. depth out another meter. Both depths are shown. *23' inked. 11' falls in towards shore.*
5. Depth between position 94 & 95 J near PE 21 is 56 ft. ✓
 Depth at position 86 J near PE 21 is 44 ft. ✓
 The bottom drops off fast in this vicinity due to dredger excavations, ~~irregularities~~ and a 12 ft. variation in a few meters is quite possible. The fact that angles were taken at a slight distance from the leadsman places the soundings a few meters apart. Both soundings are plotted. *56' inked*
6. Depth between position 62 and 63 J near PE 16 is 11 ft. ✓
 Depth at position 33 K near PE 16 is $6\frac{1}{2}$ ft. ✓
 The soundings are about 4 meters apart so the $6\frac{1}{2}$ ft. depth is shown. *11' inked.*
7. Depth between position 70-71 K near PE 20 is 21 ft. ✓
 Depth between position 87-88 J near PE 20 is 15 ft. ✓
 The soundings are about 3 meters apart and the 15 ft. depth is shown. *both inked. " possible as plotted.*
8. Depth between position 116-117 J near PM 33 is 31 ft. ✓
 Depth at position 76 M near PM 33 is 22 ft. ✓
 These soundings are 9 meters apart and both depths are shown. *31' inked 22' evidently on slope.*
9. Depth between position 13-14 N near SS 5 is 10 ft. ✓
 Depth between position 9-10 S near SS 5 is 23 ft. ✓
 The boat is headed in opposite directions on these two lines which would put the sounding chair about 4 meters apart where these lines crossed. This accounts for the apparent discrepancy. *23' inked*

5010

MISCELLANEOUS:

The western shoreline of the island between PE 16 and PW 16 appears to be slightly in error. The planetable work was discontinued at PM 10 and PM 10A. The sounding line indicates the shoreline to be 8 meters to starboard of line 61-62 J, while the plotting shows about 21 meters. The positions 61 and 62 J are located by three-point fixes, using signals which had been relocated by planetable.

In revising the smooth plotting it appears that the 12 ft. spot on line 9 X-10 X may be an error in recording as line 43 BB-44 BB passes very close to this spot without any indication of the shoaling. ~~See "Added Note" below~~
See "Added Note" below

LANDMARKS:

List of Landmarks was submitted with the descriptive report of the topographic revision, as well as the photo field inspection party.

GEOGRAPHIC NAMES:

With the notes on the photo field inspection, blue prints were submitted, giving camp numbers on Bouldin, Venice, and Staten Islands. These presumably are on file at the Washington office. In addition, Captain Lent, local pilot, was consulted and names of landings and camp numbers are submitted on a separate photo lithographic print of 5010. They are shown in red ink.

The name, "Grindstone Joes," for the lagoon and landing indicated near Strawberry Landing is used to a great extent locally. This seems to be a favorite place for small fishing and pleasure cruisers to tie up for the week end.

ADDED NOTE:

On August 24th, 16 soundings were taken in the vicinity of the 12 ft. spot mentioned in the second paragraph under heading "Miscellaneous." None of them were less than 18 feet. The 12 foot spot does not exist and has been removed and the proper notes made in the sounding record.

L. P. Raylor
L. P. Raylor
Chief of Party.

T.

Verification Report

Section of Field Records

Report on H. 6011.

Surveyed in January, February, March, 1934.

Chief of Party - L. P. Raynor.

Surveyed by L. P. Raynor, N. G. Korneeff.

Protracted by - A. H. Yoemans (office) old field sheet by K. De Blois.

Soundings penciled by - " " " " " " " "

Verified and inked by - P. H. Scherr.

1. The records conform to the requirements of the General Instructions with exception that notes pertaining to piles were noted in the column for bottom characteristics. ✓
2. The usual depth curves were drawn. ✓
3. The plotting was completed to the extent prescribed in the Hydrographic Manual. ✓
4. The office draftsman changed no drafting. ✓
5. The junctions with the following contemporary sheets are satisfactory:
+ H-6012 (1934).
H. 6003 (1934), H. 6010, a and b, (1934). The junction with H. 6005, b, (1934) revealed a line of shallow soundings in the channel as delineated by H. 6011. This line on H. 6005, b, should probably be following the shore line more closely. This line was not transferred to H. 6011. ✓

Comparatively few soundings were inked from the adjoining sheets. The agreement is fairly good however.

Remarks:

- A. This sheet was completely replotted in the office, as T. 5010 had been recompiled. The replotting of the sheet straightened out a few of the discrepancies listed in the descriptive report. The rest of the discrepancies are due to the rapid slope of the bottom.
- B. The crossings are consistent.

Respectfully submitted,

Paul H. Scherr
Paul H. Scherr.

April 19, 1935.

5010

Boat positions were determined by the usual method of sextant three-point fix or by bearings with compass No. 24874, using pelorus of the same number mounted directly on the compass. Distances were obtained at the same time with range finder No. 7277.

Compass deviations were obtained by swinging ship on every 15° rhumb on range 3, San Joaquin Channel, December 14, 1933, and February 15, 1934. On March 17, 1934, deviations were checked by a swing on the South Fork of the Mokelumme River, using range between theodolite three-point fix near Camp No. 17 and triangulation station, Andrus Island Latticed Steel Pole, 1932, and on June 28, 1934, deviations were obtained in Old River in latitude 38° 55' from a sextant three-point fix, swinging on triangulation station, Middle River, West of Three Latticed Steel Poles.

The range finder was frequently tested and from results of these tests curves were drawn for the reduction of range finder readings to meters. Some of these tests are shown in the sounding volumes, but all have been abstracted or were recorded in Range Finder Books No. 1 and No. 2, the latter of which will soon be submitted.

GENERAL:

As noted in previous reports all the waterways are held within levee banks that are 10 to 20 feet in height. These were built for the reclamation of what was originally tule swamps or to protect the land from floods, which however, have been quite infrequent in the past decade.

As the signal building progressed it seemed evident that the photo compilation on this sheet was not nearly as accurate as most of the other sheets on which work was done. The entire length of the South Fork of the Mokelumme River between Bouldin Island and Staten Island was revised with a planetable, using an aluminum plate coated with tanned gum arabic.

Progress on the revision of Potato Slough had been made but further work was done after receipt of Director's letter of April 21, 1934, 26 AB 1990 (17), with reference to a replot of the photograph covering this area. The hydrography was plotted on all of the sheet in order that any local discrepancies in soundings might be detected if possible. It is believed that such changes as may be found in the replot of White Slough will not materially affect the location of the sounding lines as all control here is local and practically all positions were obtained by use of range finder and compass bearing on one signal only.

TIDAL DATA:

A portable automatic gage was maintained at Camp No. 1, Bouldin Island, on Potato Slough from January 29, 1934, to February 28, 1934. The highest tide observed was 7.0 feet on the staff on February 19, 20, 1934, and the lowest tide observed was 2.5 feet on the staff on February 1, 10, 1934.

A standard automatic tide gage was maintained at the southern end of the Western Pacific R.R. steamer sheds on Potato Slough from January 11, 1934, to April 10, 1934. The highest tide recorded was 8.4 on January 13, 14, and lowest was 3.3 on January 17, 25, 26. M.L.L.W. on the staff at Bouldin Camp No. 1 is 2.66 feet; at Terminous, 3.6 feet.

Reducers corresponding to the staff readings are as follows:

Bouldin Island
Camp No. 1

Mokelumne River
Terminous

Staff reads:

Staff reads:

1.9 to 2.4	add	$\frac{1}{2}$ ft.
2.4 to 2.9	zero	
2.9 to 3.4	subtract	$\frac{1}{2}$ ft.
3.4 to 3.9	"	1 ft.
3.9 to 4.4	"	$1\frac{1}{2}$ ft.
4.4 to 4.9	"	2 ft.
4.9 to 5.4	"	$2\frac{1}{2}$ ft.
5.4 to 5.9	"	3 ft.
5.9 to 6.4	"	$3\frac{1}{2}$ ft.
6.4 to 6.9	"	4 ft.
6.9 to 7.4	"	$4\frac{1}{2}$ ft.

2.3 to 2.8	add	1 ft.
2.8 to 3.3	"	$\frac{1}{2}$ ft.
3.3 to 3.8	zero	
3.8 to 4.3	subtract	$\frac{1}{2}$ ft.
4.3 to 4.8	"	1 ft.
4.8 to 5.3	"	$1\frac{1}{2}$ ft.
5.3 to 5.8	"	2 ft.
5.8 to 6.3	"	$2\frac{1}{2}$ ft.
6.3 to 6.8	"	3 ft.
6.8 to 7.3	"	$3\frac{1}{2}$ ft.
7.3 to 7.8	"	4 ft.
7.8 to 8.3	"	$4\frac{1}{2}$ ft.
8.3 to 8.8	"	5 ft.

MISCELLANEOUS CHANGES AND CORRECTIONS TO PHOTO COMPILATION:

1. The highwater lines of the South Fork of the Mokelumne River from Terminous to the northwest corner of the sheet has been changed to agree with the topographic revision. This included the change in the location of the two wooden power line poles just northwest of the Staten Island Ferry.

2. Changes in Potato Slough as determined by the revision have also been placed on the smooth sheet.

3. The small tule island southwest of PM 6 is not now in existence and has been deleted from the smooth sheet.

4. One of the buildings at Camp No. 4, Empire Tract, has since burned and has been deleted from the smooth sheet.

5. Signal LM 21 is located by a sextant three-point fix on a small tule shoal, which has been shown as a small thin tule island on the smooth sheet.

STATISTICS

HYDROGRAPHIC SHEET J (T-5010)

DATE	DAY	VOL.	MILES	SOUNDINGS	POSITIONS
Jan. 18	A	1	15.7	1054	116
" 19	B	1	12.4	872	109
" 26	C	2	1.5	135	21
" 29	D	2	6.0	406	53
" 30	E	2	11.0	700	95
Feb. 2	F	2	6.0	411	57
" 6	G	2	2.0	85	18
" 6	G	3	7.3	475	99
" 7	H	3	.75	69	16
" 8	J	3	8.5	497	124
" 9	K	3	8.5	428	110
" 12	L	4	.2	12	3
" 13	M	4	7.1	428	89
" 16	N	4	2.0	134	27
" 20	P	4	1.7	142	18
" 21	Q	4	4.0	244	31
" 26	R	4	5.9	324	58
" 27	S	4	2.7	228	27
Mar. 7	Y	4	0.7	53	7
Feb. 28	T	5	3.4	263	30
Mar. 6	U	5	5.5	474	67
" 8	V	5	6.2	300	42
" 12	W	5	9.0	551	116
" 13	X	5	2.5	121	37
July 18	Z	6	1.0	90	15
" 20	AA	6	0.5	27	5
Aug. 9	BB	6	2.4	248	69
TOTALS			134.45	8771	1459

HYDROGRAPHIC SIGNALS: 292

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6011 a & b (1934)

San Joaquin River Delta, Terminus and Vicinity, California.

Surveyed January-March, 1934

Instructions dated March 17, 1933 to Dec. 2, 1933(L.P.Raynor)

Hand Lead and Pole Soundings - 3 Point control on shore signals.
Compass bearings using Pelorus
Range Finder distances.

Chief of Party - L. P. Raynor.

Surveyed by - L. P. Raynor and N. G. Korneeff.

Protracted and soundings plotted by - A. H. Yeomans

Verified and inked by - P. H. Scherr.

1. Condition of Records.

The records are neat, legible and conform to the requirements of the Hydrographic Manual with the following exceptions:

a. Position letters and numbers did not appear in color on the title pages and record covers to conform with the color used in the records. This was accomplished in the office.

b. No list of Landmarks for Charts on form 567 accompanied this particular sheet.

2. Compliance with Instructions for the Project.

The plan, character and extent of the survey satisfy the instructions for the project.

3. Sounding Line Crossings.

The waterways are, in many places too narrow to allow a system of cross lines, but the crossings that do occur are satisfactory.

4. Depth Curves.

The usual depth curves may be satisfactorily drawn.

5. Junctions with Contemporary Surveys.

Junction with H-6010a (1934) and H-6010b (1934) on the north, H-6005b (1934) on the west, H-6003 (1934) on the south, and H-6012 (1934) on the east are satisfactory.

6. Comparison with Prior Surveys.

There are no prior surveys by this Bureau within the limits of the present survey.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *H6011*

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	<i>1459</i>
Number of positions checked	<i>7</i>
Number of positions revised	<i>2</i>
Number of soundings recorded	<i>8771</i>
Number of soundings revised	<i>6</i>
Number of signals erroneously plotted or transferred	<i>✓</i>

Date: *April 19, 1935.*
 Cartographer: *Paul N. Scherr*

Verification of plotting	} by <i>P. N. Scherr</i>	} Time:
Verification & taking of rocks and shoals)		
Verification of taking by	<i>P. N. Scherr</i>	Time: <i>58 hrs.</i>
Review by <i>Wm. T. Kelsch</i>		Time: <i>17 hrs.</i>

LAC

September 22, 1934.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 6011

Locality Venice Island to Dredger Cut, San Joaquin Delta, Calif.

- Chief of Party: L. P. Raynor in 1934
- Plane of reference is mean lower low water, reading
- 3.6 ft. on tide staff at Terminous
- 7.7 ft. below B. M. 5
- 2.7 ft. on tide staff at Bouldin Island
- 7.6 ft. below B. M. 1
- 2.5 ft. on tide staff at Georgiana Slough
- 10.6 ft. below B.M. 1

Height of mean higher high water above plane of reference
is approximately 3.8 feet

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents

7. Comparison with Chart.

There is no published chart covering the area of the present survey,

8. Field Plotting.

This sheet was protracted and plotted in the office, due to changes in air photo compilations.

9. Additional Field Work Recommended.

This survey is complete, and no additional field work is required.

10. Superseding Old Surveys.

There are no previous surveys to be superseded.

11. Reviewed by Harry T. Kelsh, April 1935.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green, *C. K. Green*
Chief, Section of Field Records.

H. Borden
Chief, Section of Field Work.

L. O. Robert
Chief, Division of Charts.

G. Stude
Chief, Division of H. & T.

*Applied to drawing of Chart 5527
May 7, 1935 - J.T.W.*

Signals located by P.T. using photogrammetric sheet

SHEET 5010

June 1934

Scaled from 2x Boot Sheet (140 M.G.)
Checked
Plotted
Checked
38-05 = 142.5
05 = 62.5
06 = 61.9
07 = 61.6

Signal	Lat.	D.M.	Adj. D.M.	Longit	DP	Adj. DP	Notes
WS12	38-05	(1763.5) 81.4 1844.9	(1768.4)✓ 81.6	121-28	(1066.8) 389.6 1456.4	(1071.1)✓ 391.2	140 M.G. ✓ KRO JLC
WS12A	38-05	(1218.1) 128.7 1846.8	(1221.7)✓ 128.9	121-28	(618.7) 836.9 1455.6	(621.6)✓ 840.7	140 M.G. ✓ KRO JLC
WS12B	38-05	(1658.6)✓ 190.9 1847.5	(1658.8)✓ 191.2	121-28	(383.9) 1072.4 1456.3	(385.5)✓ 1076.8	140 M.G. ✓ KRO JLC
WS12C	38-05	(1668.8) 176.8 1845.6	(1672.8)✓ 177.2	121-28	(796.0) 661.1 1457.1	(798.8)✓ 663.5	140 M.G. ✓ KRO JLC
WS12D	38-05	(1657.1) 188.4 1845.5	(1661.1)✓ 188.9	121-28	(638.0) 818.7 1456.7	(640.5)✓ 821.8	140 M.G. ✓ KRO JLC
WS13	38-05	(1586.2) 259.3 1845.5	(1590.1)✓ 259.9	121-28	(428.4) 1029.2 1457.6	(429.8)✓ 1032.5	140 M.G. ✓ KRO JLC
WS17	38-05	(1051.6) 794.9 1846.5	(1053.6)✓ 796.4	121-29	(1289.8) 166.0 1455.8	(1295.4)✓ 166.7	140 M.G. ✓ KRO JLC
WS18	38-05	(1155.7) 691.3 1847.0	(1157.6)✓ 692.4	121-29	(935.2) 519.6 1454.8	(940.0)✓ 522.2	140 M.G. ✓ KRO JLC
WN19A	38-05	(1798.0) 46.2 1844.2	(1803.7)✓ 46.3	121-28	(1254.0) 201.1 1455.1	(1260.2)✓ 202.1	140 M.G. ✓ KRO JLC
Bank WN20	38-05	(1499.0) 347.4 1846.4	(1501.9)✓ 348.1	121-28	(1199.0) 257.0 1456.0	(1204.1)✓ 258.1	140 M.G. ✓ KRO JLC
Grable WN22	38-05	(1423.5) 422.2 1845.7	(1426.3)✓ 423.7	121-28	(1135.5) 320.7 1456.2	(1140.2)✓ 322.0	140 M.G. ✓ KRO JLC
Grable WN23	38-05	(1397.7) 448.8 1846.5	(1400.3)✓ 449.7	121-28	(1124.3) 333.1 1457.4	(1128.0)✓ 334.2	140 M.G. ✓ KRO JLC
Bank WN25	38-05	(1345.8) 500.5 1846.3	(1348.5)✓ 501.5	121-28	(1009.2) 447.3 1456.5	(1013.0)✓ 449.1	140 M.G. ✓ KRO JLC

Signal	Lat.	D.M.	Adj. D.M.	Longit	DP	Adj. DP	Scanned from 2 Beats sheet (A)	Checked	Plotted	Checked
WN 28A	38-05	(1051.3)✓ 796.1✓ 1847.4	(1052.8)✓ 797.2✓	121-28	(342.2)✓ 114.8✓ 1457.0	(343.8)✓ 1118.3✓				
WN 30	38-05	(751) (749.4)✓ 1096.2✓ 1845.6	(751.2)✓ 1098.8✓	121-29	(1161.4)✓ 296.0✓ 1457.4	(1165.1)✓ 296.9✓				
WN 31	38-05	(1034.5)✓ 812.5✓ 1847.0	(1036.2)✓ 813.8✓	121-29	(984.5)✓ 472.0✓ 1456.5	(988.3)✓ 473.8✓				
WN 32	38-05	(765.8)✓ 1081.1✓ 1846.9	(767.1)✓ 1082.9✓	121-29	(954.2)✓ 503.2✓ 1457.4	(957.2)✓ 504.8✓				
WN 36	38-05	(651.6)✓ 1195.3✓ 1846.9	(652.7)✓ 1197.3✓	121-29	(879.5)✓ 578.4✓ 1456.9	(882.6)✓ 580.4✓				
WM 17A	38-05	(1780.0)✓ 66.9✓ 1846.9	(1783.0)✓ 67.0✓	121-28	(1185.1)✓ 269.6✓ 1454.7	(1191.3)✓ 271.0✓				
WM 18	38-05	(1164.0)✓ 682.8✓ 1846.8	(1166.0)✓ 684.0✓	121-28	(337.0)✓ 1118.7✓ 1455.7	(338.5)✓ 1123.6✓				
WM 18A	38-05	(1355.3)✓ 492.8✓ 1848.1	(1356.7)✓ 493.3✓	121-28	(378.8)✓ 1077.3✓ 1456.1	(380.3)✓ 1081.9✓				
WM 19	38-05	(931.1)✓ 916.1✓ 1847.2	(932.5)✓ 917.5✓	121-28	(91.2)✓ 1365.3✓ 1456.5	(91.6)✓ 1370.5✓				
WM 20	38-05	(966.4)✓ 884.2✓ 1845.6	(963.7)✓ 886.3✓	121-29	(1324.2)✓ 131.3✓ 1455.5	(1330.2)✓ 131.9✓				
WM 21	38-05	(1118.5)✓ 727.5✓ 1846.0	(1120.9)✓ 729.1✓	121-29	(982.9)✓ 474.8✓ 1457.7	(986.0)✓ 476.2✓				
WM 22	38-05	(933.5)✓ 911.7✓ 1845.2	(935.9)✓ 914.1✓ 116	121-29	(279.9)✓ 676.5✓ 1456.8	(283.0)✓ 678.6✓				
			49.9							

Signal	Lat	DM	Adj DM	Longit	DP	Adj. D.P.	Scale from Base Sheet (A)	Charted	Plotted	Checked
LE9	38-05	(1481.0) 368.3 1849.3	(1481.5) 368.5 ✓	121-30	(1398.9) 57.2 1456.1	(1404.8) 57.4 ✓	✓	✓	✓	✓
LE18	38-06	(1813.2) 37.5 1850.7	(1812.5) 37.5 ✓	121-29	(987.2) 472.1 1459.3	(989.0) 472.9 ✓	✓	✓	✓	✓
LE19	38-06	(1758.3) 91.8 1850.1	(1758.2) 91.8 ✓	121-29	(1164.3) 294.2 1458.5	(1166.6) 295.3 ✓	✓	✓	✓	✓
LE20A	38-06	(1463.2) 387.3 1850.5	(1462.8) 387.2 ✓	121-29	(1058.5) 401.0 1459.5	(1060.2) 401.6 ✓	✓	✓	✓	✓
LM31	38-05	(1180.1) 669.0 1847.1	(1180.7) 669.3 ✓	121-30	(1414.4) 41.2 1455.6	(1420.8) 41.4 ✓	✓	✓	✓	✓
LM30	38-05	(1044.9) 803.6 1848.5	(1045.7) 804.3 ✓	121-29	(281.1) 1176.0 1457.1	(282.1) 1180.0 ✓	✓	✓	✓	✓
LM19	38-05	(675.7) 1171.6 1847.3	(676.7) 1173.3 ✓	121-29	(612.3) 844.4 1456.7	(614.5) 847.5 ✓	✓	✓	✓	✓
LM23A	38-06	(1777.2) 74.2 1851.4	(1775.9) 74.1 ✓	121-29	(1083.8) 376.3 1460.1	(1085.1) 376.8 ✓	✓	✓	✓	✓
LM23B	38-06	(1668.2) 182.4 1850.6	(1667.7) 182.3 ✓	121-29	(1077.6) 380.7 1458.3	(1080.3) 381.6 ✓	✓	✓	✓	✓
PM31	38-05	(1689.4) 149.6 1839.0	(1699.4) 150.6 ✓	121-33	(-) 488.8	(-) 490.6 ✓	✓	✓	✓	✓
PM33	38-05	(1634.2) 207.5 1841.7	(1641.5) 208.5 ✓	121-33	(-) 372.1	(-) 373.5 ✓	✓	✓	✓	✓
PM34	38-05	(1493.2) 348.2 1841.4	(1500.2) 349.8 ✓	121-33	(-) 333.6	(-) 334.8 ✓	✓	✓	✓	✓

Signal	Lat.	D.M.	Adjusted	Long.	D.P.	Adjusted	Scaled from Topo. sheet	Checked	Plotted	Checked
		(1343)	(1346)		(1110)	(1115)				
PE-17	38-05	502	504	121-32	345	347	J.L.L.K.P.D.			
		(983)	(985)		(164)	(164)				
PM-5	38-05	863	865	121-31	1296	1298	J.L.L.K.P.D.			
		(1208)	(1208)		(160)	(160)				
PM-6	38-05	641	642	121-31	1201	1202	J.L.L.K.P.D.			
		(1452)	(1456)		(136)	(136)				
PAY-16	38-05	393	394	121-31	1325	1326	J.L.L.K.P.D.			

Does not check
with the known
work

Reject
Use 12

Signals preceding were located by
plane table methods using photo lithographic
print as plane table sheet

Revis 107 T 5010

Aluminum West

scale
by
REM

1	SN 20 ✓	38° 07'	(—) 1506.7 ✓	121° 33'	(—) 924.2 ✓	TMM SSW	REM
2	SN 19 ✓	38° 07'	(—) 1270.8 ✓	121° 33'	(—) 838.4 ✓		REM checked TMM
3	SN 18 ✓	38° 07'	(—) 952.2 ✓	121° 33'	(—) 730.3 ✓		REM ✓ TMM
4	SN 17 ✓ on cornice	38° 07'	(—) 727.2 ✓	121° 33'	(—) 680.2 ✓		REM ✓ TMM
5	SM 14 ✓	38° 07'	(—) 456.1 ✓	121° 33'	(—) 749.9 ✓		REM ✓ TMM
6	SN 16 ✓	38° 07'	(—) 289.3 ✓	121° 33'	(—) 573.0 ✓		REM ✓ TMM
7	SN 15 ✓	38° 07'	(—) 211.4 ✓	121° 33'	(—) 392.2 ✓		REM ✓ TMM
8	SM 13 ✓	38° 07'	(—) 143.2 ✓	121° 33'	(—) 230.8 ✓		REM ✓ TMM
9	SS 21 ✓ NE corner shed	38° 07'	(—) 1299.2 ✓	121° 33'	(—) 1023.4 ✓		REM ✓ TMM
10	SS 20 ✓ gable	38° 07'	(—) (nr. 511 C, 19323)	121° 33'	(—)		
11	SS 19 ✓	38° 07'	(—) 800.1 ✓	121° 33'	(—) 1019.3 ✓		REM ✓ TMM

12	SS 18	38° 07'	(—) 578.7	121° 33'	(—) 972.7	REM TMM
12	SS 17	38° 07'	(—) 289.8	121° 33'	(—) 857.7	REM TMM
14	SS 16	38° 07'	(—) 67.1	121° 33'	(—) 645.2	REM TMM
15	SM 12	38° 06'	(1.1) 1849.4 1850.5	121° 33'	(—) 202.5	REM TMM
16	SS 15	38° 06'	(101.5) 1749.7 1751.2	121° 33'	(—) 213.7	REM TMM
17	SM 11	38° 06'	(43.0) 1806.9 1849.7	121° 32'	(97.8) 1360.3	REM TMM
18	SS 14	38° 06'	(57.7) 1791.3 1849.0	121° 32'	(319.7) 1139.0 1458.7	REM TMM
19	SS 13 east gull shed	38° 06'	(11.5) 1839.4 1850.9	121° 32'	(604.6) 854.3 1458.9	REM TMM
20	SS 12 on corner	38° 07'	by theodolite and tape computations	121° 32'		
21	SS 10	38° 07'	(—) 162.5	121° 31'	(23.6) 1440.6 1464.2	REM TMM
22	SN 14	38° 07'	(—) 145.6	121° 32'	336.3 1122.2	REM TMM

Hard back plotted by GCW
VRSW

24	SN 14A	38° 07	152.2	121° 32	(34.2) 1424.3 1458.5	REM TMM
24	SN 13 east gable shearline	38 07	(—) 236.8	121 32	(685.6) 772.5 1458.1	REM TMM
25	SN 12 on concrete	38 07	(—) 331.3 TMM 25 W	121 32	(945.8) 512.6 1458.1	REM
26	SM 10 on concrete	38 07	(—) 337.7	121 32	(1195.6) 264.0 1459.6	REM TMM
27	SS 11	38 07	(—) 109.0	121 32	(1158.2) 301.5 1459.7	REM TMM
28	SN 11	38 07	484.5	121 31	(54.1) 1410.3 1460.4	REM TMM
29	SN 10	38 07	603.1	121 31	(291.0) 1174.3 1464.3	REM TMM
30	SN 9	38 07	723.3	121 31	(913.8) 550.5 1464.3	REM TMM
31	SN 8	38 07	778.0	121 31	(1208.5) 255.4 1463.9	REM TMM
32	SM 7	38 07	633.2	121 31	(602.8) 861.6 1464.4	REM TMM
33	SM 9	38 07	317.2	121 31	(170.0) 1295.2 1465.2	REM TMM

Here back plotted by Bliss

34	✓✓ SM 8	38° 07'	(—) 404.1 ✓	121.31	(337.5) 1127.7 ✓ 1465.2 ✓	REM TMM
35	✓✓ SS 9	38° 07'	(—) 449.2 ✓	121.31	(547.7) 917.0 ✓ 1464.7 ✓	REM TMM
36	✓✓ SM 6	38° 07'	(—) 542.4 ✓	121.31	(778.5) 686.8 ✓ 1465.3 ✓	REM TMM
37	✓✓ SS 8 on corner	38° 07'	from theodolite and tape computations	121.31		
38	✓ SM 5	38° 07'	(—) 639.9 ✓	121.31	(1177.2) 287.4 ✓ 1464.6 ✓	REM TMM
39	✓✓ SS 7	38° 07'	(—) 641.7 ✓	121.31	(1424.4) 40.8 ✓ 1465.2 ✓	REM TMM
40	✓✓ SM 4	38° 07'	(—) 656.4 ✓	121.30	(191.6) 1271.8 ✓ 1462.4 ✓	REM TMM
41	✓ SS 6	38° 07'	(—) 510.2 ✓	121.30	(341.9) 1120.0 ✓ 1461.9 ✓	REM TMM
42	✓ SN 6 east galle shed	38° 07'	(—) 706.8 ✓	121.30	(421.8) 1040.0 ✓ 1461.8 ✓	REM TMM
43	✓✓ SN 5 on corner	38° 07'	(—) 589.2 ✓	121.30	(676.2) 785.8 ✓ 1462.0 ✓	REM TMM
44	✓✓ SM 2	38° 07'	(—) 387.1 ✓	121.30	(640.4) 820.9 ✓ 1461.3 ✓	REM TMM

Revision T 5010 West Alum continued

44	SN4	38° 07	(<u> </u>) 304.3	121° 30	(746.6) 714.6 1461	REM ✓ TMM
46	SS5 SE gable shed	38 07	(<u> </u>) 255.0	121 30	(552.8) 908.8 1461	REM ✓ TMM
47	SS4A	38 07	(<u> </u>) 103.2	121 30	(753.6) 708.7 1462	REM ✓ TMM
45	SS4	38 06	(<u>50.0</u>) 1801.3 1851.3	121 30	(986.3) 476.8 1463.1	984.8 476.3 REM ✓ TMM
49	SS3	38 06	(153.0) 1698.7 1851.7	121 30	(1121.9) 340.8 1462.7	REM ✓ TMM
50	SM1	38 07	(<u> </u>) 134.8	121 30	(1003.4) 459.5 1462.7	REM ✓ TMM
51	SS2 on ditchline	38 06	(141.8) 1709.3 1851.1	121 30	(1344.9) 117.2 1462.1	REM ✓ TMM
52	SS1 on ditchline from south	38 06	(117.0) 1735.9 1852.9	121 29	(214.3)	REM ✓ TMM
53	SN2 on ditchline	38 07	(<u> </u>) 65.9	121 30	(1326.8) 135.5 1462.3	REM ✓ TMM
54	SN1	38 07	(<u> </u>) 59.4	121 29	(234.0)	REM ✓ TMM
Landmark	N. Pole	38 07	(<u> </u>) 131.2	121° 29	(374.6)	REM

Benchmark	S. Pole	38° 06'	(16.7) 1835.7 1852.4	121 29	(509.1)		REM TMM
X 57	White Water Tank Cam 9 Bouldin	38° 07'	(—) 1247.0	121 33	(—) 1036.7		TMM SSW
58	Theod 3pt setup Stake nr SS 12	✓✓	by	3 pt	computations		
59	LM 27	38° 06'	(53.8) 1797.2 1851.0	121 29	(320.9)		TMM
	Theodolite 3 pt Camp 17	✓✓ 38° 07'		121° 31'	Computed		
	Barr NE. Cor.	✓ 38° 07'	(—) 468.0	121° 31'	(1040.0) 425.5		Scaled TMM SSW

Revision

T 5010

done in 1951
Alum West

PE 4 38 05 (1266.4)
582.3
1849.7

121° 32' (156.7)
1301.6
1458.3

✓ TMM

PE 20 38 05 (1292.8)
356.5
1849.3

121° 32' (484.8)
973.8
1458.6

✓ TMM

PW 21 38 05 (1686.4)
162.7
1849.1

121° 32' (420.2)
1039.6
1459.8

✓ TMM

landmark

PW 18 38 04 (348.8)
1500.9
849.7
*west gate
pump house*

121° 32' (997.8)
462.3
1460.1

✓ TMM

PM 27 38 05 (1597.8)
252.1
1849.9

121° 32' (76.0)
1382.6
1458.6

✓ TMM

PM 25 38 05 (1485.8)
363.5
1849.3

121 32° (235.4)
1223.2
1458.6

✓ TMM

PM 24 38 05 (1524.6)
324.9
1849.5

121° 32' (478.1)
981.4
1459.5

✓ TMM

PM 23 38 05 (1585.2)
264.8
1850.0

121 32' (718.4)
740.3
1458.7

✓ TMM

PM 19 38 05 (1633.3)
215.4
849.7

121 32 (906.7)
553.6
460.3

✓ TMM

PM 22A 38 05 (1747.2)
102.3
1849.5

121 32 (587.8)
872.8
1460.6

✓ TMM

PM 22 38 04 (60.0)
1789.3
1849.3

121 32 (634.5)
824.9
1459.4

✓ TMM

PM 21 38 04 (205.2) ✓
1644.1 ✓
1849.3 ✓

121° 32' (722.5) ✓
737.3 ✓
1459.8 ✓

✓ TMM

PM 20 38 04 (2398) ✓
1610.8 ✓
1850.6 ✓

121° 32' (1010.8) ✓
449.4 ✓
1460.2 ✓

✓ TMM

PM 17 38 04 (102.3) ✓
1749.0 ✓
1851.3 ✓

121 32 (1049.9) ✓
410.0 ✓
1459.9 ✓

✓ TMM

PM 18 38 05 (1737.7) ✓
111.8 ✓
1849.5 ✓

121 32 (971.2) ✓
488.8 ✓
1460.0 ✓

✓ TMM

PM 15 38 05 (1665.6) ✓
184.1 ✓
1849.7 ✓

121 32 (1123.1) ✓
337.1 ✓
1460.2 ✓

✓ TMM

PM 16 38 04 (18.5) ✓
1830.6 ✓
1849.1 ✓

121° 32' (1249.4) ✓
211.1 ✓
1460.5 ✓

✓ TMM

PM 14 38 05 (1697.7) ✓
152.0 ✓
1849.7 ✓

121 32 1288.8 ✓
170.8 ✓
1459.6 ✓

✓ TMM

PM 13 38 05 (1558.7) ✓
291.5 ✓
1850.2 ✓

121 32 (1152.8) ✓
306.8 ✓
1459.6 ✓

✓ TMM

PM 10 38 05 (1395.3) ✓
454.8 ✓
1850.1 ✓

121 32 (1255.8) ✓
203.8 ✓
1459.6 ✓

✓ TMM

PM 10A 38 05 (1519.1) ✓
329.0 ✓
1848.1 ✓

121 32 (1380.0) ✓
79.4 ✓
1459.4 ✓

✓ TMM

theodolite 3 pt - fix 1237
38-05 (1549.4) ✓
300.6 ✓

121-32 (983.6) ✓
478.6 ✓

✓ TMM

5010 Wet down continued

PMG 38 05 (1223.5) 121 31 1300.1
625.0 (63.0) TMM

Signal Post
38 04 (397.3) 121 30 (805.4)
1453.2 660.0 ✓
north of third 3rd pit out of water in sand & water Tank. Tank
Scaled TMM ✓ SSW

1967.2 LM 11 38 04 (57.2) ✓ 121 30 (406.0)
1794.5 61.5 ✓
1851.7 1467.5 Scaled TMM ✓ SSW

LM 10 38 04 (266.3) ✓ 121 29 (46.3) ✓
1583.4 ✓ SSW
1849.7 Scaled TMM ✓ SSW

LW 2 38 04 (404.7) 121 30 (1463.4) ✓
1445.3 ✓ 2.6
1850.0 Scaled TMM ✓ SSW

LM 32 38 04 (479.2) ✓ 121 29 (113.8) ✓
1370.5 ✓
1849.7 Scaled TMM ✓ SSW

LM 33 38 04 (557.8) ✓ 121 29 (23.3) ✓
2930.1 ✓
1850.8 ✓ SSW

Windmill at Camp 6 Empire Tract
38 04 (265.1) ✓ 121 29 (177.0) ✓
1583.5 ✓ 177.0 SSW
1848.6 ✓ SSW

Theodolite 3 ft fix on Empire Tract
38 05 121 29 0