

5151

5151

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

DESCRIPTIVE REPORT

Topographic }
Hydrographic } Sheet No. 28 75151

State FLORIDA

LOCALITY
St. JOHNS RIVER
WELAKA

Photographs taken March, 1935
~~1938~~

CHIEF OF PARTY
Hubert A. Patton

Applied to Chart Comp 687 November 25, 1939 H. MacSwain

✓ JHP

Notes on Compilation

Sheet No. 28

T5151

Register No. T-5151

Photo: Five Lens Flight No. 12, Nos. 201-221, Feb. 28, 1935 *12:15 P.M.*
 No. 16, Nos. 656-667, Mar. 1, 1935 *12:40 P.M.*
 No. 26, Nos. 976-980, Mar. 13, 1935 *12:40 P.M.*

Scale Plot: Henry O. Fortin. *No tide.
River Height Normal.*

Scale Factor Used: 1.00

Projection by: Washington, D. C. Office.

Control Plotted by: Hubert A. Paton, May 17-18, 1937.

Control Checked by: William O. Russell, May 18, 1937.

Topography Transferred by: HAP & HOF

Topography Checked by: HOF

Shoreline Inked by: HAP

Other Detail Inked by: Lester S. Leavenworth.

Overlay Sheet by: HOF

Area of Detail Inked	35.4	Sq. Statute Miles
Length of Shoreline (over 200 meters)	17.1	Statute Miles
Length of Shoreline (under 200 Meters)	20.8	Statute Miles
Length of shoreline of small lakes	24.6	Statute Miles

Ref. Sta.: Beasley, 1935
 ✓ Lat. $29^{\circ} 27' - 06.82''$ (210.0 m) unadjusted
 ✓ Long. $81^{\circ} 40' - 34.30''$ (924.4 m)

Descriptive Report

to accompany

Map Drawing No. 28

Register No. T-5150

Jan. 10, 1938.

GENERAL INFORMATION:

This sheet was compiled from air photographs taken by the U. S. Army Air Corps, using a five lens camera No. 32-2. The sheet was covered by three flights, Nos. 12 and 16 and 26. Part of the eastern side of the sheet was left blank because the area extended beyond the normal tracing limits of Flight No. 12.

The photos were taken at an elevation of approximately 5000 feet and their average scale was almost exactly 1:10,000. The individual pictures were free from excessive tilt or scale differences and the flight lines were straight and well located. The quality of the photos were below average in distinctness.

CONTROL:

Nine triangulation stations of first or second order were found on this sheet and one third order station was located by this party - Fire Tower, Welaka. These stations were quite well distributed for our purpose. The southeastern and northeastern corners of the sheet did not have much control, but the radial plot went through without much difficulty and no further control was deemed necessary. There were no State Control Survey traverses on this sheet.

A large number of additional control points were secured from the Graphic Control Sheets, surveyed by Lieut. Comdr. L. D. Graham in 1937 on a scale of 1:5,000. The following described H. & T. Stations were located by the field inspection parties and used for control when possible:

Sheet TT	Sheet UU	Sheet VV	Sheet WW
Tank	Yet	Tea	Har
T-6394	Ate	Eta	Two
	Rear	Ven	Nin
	Fro	Sev	Whit
	Sil	Zero	Day
	Six		

In addition to these the following hydrographic signals were used for control, but as they were not permanently marked, they have not been inked on the celluloid sheet :

Sheet TT	Sheet UU	Sheet VV	Sheet WW
Pot	Nig	Abe	Pix
Pie	Cro	Hot	Roy
	Quad	Sin	Dok
	Mus	Shed	Jar
	Rap	So	

All control stations that had definite reference points for spotting on the photographs, checked the plot without trouble. In some cases the stations were located on a heavily wooded shore and these could not be picked accurately. There was such a density of control however, that it was not difficult to eliminate the stations in error.

✓ RADIAL PLOT:

See Descriptive Report accompanying Sheet T-5195 for a discussion of the difficulties encountered in previous radial plots. In order to eliminate these difficulties, the photographs for this sheet were mounted in accordance with the calibration tests furnished by the office for this camera. Note the duplication of detail on the inner edges of the wing prints and the B prints. This was found to be a great improvement but there were still occasional photographs which would not check without slight adjustments. This may be due to distortion in the negative or in the print.

The plot is believed to be quite accurate. Good intersections for the radial points were obtained. A few points had to be re-picked. Great care was taken to reject all points that did not check very closely.

✓ FIELD INSPECTION:

Field inspection was done on this sheet during the months of April and August, 1937, by two different parties. The area has also been visited by all members of the party at different times and by frequent conferences the details on the photographs have been interpreted to the best of all their knowledge. While there may not be a great number of notes shown on the field prints, this does not indicate that there was inadequate field inspection. One inspector used the term "swamp" to mean "marsh" on the field prints, but these places could all be readily identified in the office without trouble.

✓ GENERAL DESCRIPTION OF TOPOGRAPHY:

The topography that is found along this section of the St. Johns River begins, generally, with a dense deciduous swamp at the rivers edge. This is especially true in the Oklawaha River vicinity where the swamp extends one to two miles inland. The terrain then changes to a narrow strip that is locally known as "hammock land," which has nearly all the features of the swamp except that it is not quite so wet and boggy. Cypress which is quite common in the swamp will not grow in the hammock land and in the winter when the cypress is bare the two areas can readily be distinguished from the air. It is not quite so easy to find the dividing line between these two areas on the photographs, even under the stereoscope. From the hammock land the ground changes to fine sand covered with scrub palmettoes and scattered pine trees, breaking into dense pine woods, as in the southwestern corner of the sheet, or into dense scrub-oaks as found in the north central section of the sheet. The main exceptions to this general rule appear on the southernly portion of the sheet where the terrain is flat and without adequate runoff. Here are found numerous intermittent ponds, sink holes and grassy ponds. The interpretation of these various features on the photographs was comparatively simple. The swamps appear as a heterogeneous blur turning darker at the hammocks. The scattered pine and scrub palmetto areas are characterized by light smooth gray areas dotted with occasional

darker spots caused by the pine. Wooded pine areas can generally be distinguished from hardwoods by the degree of darkness on the photographs, while the deciduous trees, especially the variety of live oaks in this part of the country which have shiny leaves, together with the magnolias, which reflect light, appear lighter on the photographs. The most striking example of this is on the east side of the river where a clear almost straight line break extends from in back of Camp Welaka to the Fruitland-Crescent City Highway dividing the pine area from the scrub oak area. In this connection it may also be stated that fallen pine needles tend to mat together and form a carpet over the sandy soil, while the deciduous leaves tend to dry up and disintegrate, leaving the sand bare. The distinct break between the pines and hardwoods referred to above, could not be clearly shown on the map drawing due to the density of oaks and pines being the same on both sides of the dividing line. All of this interpretation of detail was based on adequate field inspection and not on presumption.

The tree symbol was used for the entire shoreline on this sheet except southward from Welaka to Mud Creek Cove, south of Orange Point, Fruitland Cove, and around the vicinity of Fort Gates. Here the solid line indicated solid ground above the water level.

Around Fort Gates Point there exists an old masonry wall, which has not been kept in repair and is consequently crumbling in many places.

ROADS:

There are only three paved roads in the area covered by this sheet, namely, the Welaka-Pomona Road, the Welaka-Georgetown Road and the Fruitland-Crescent City Road. These are the only ones shown on the map drawing with double solid lines. Since it was necessary to show all other roads with either a double broken or single broken line, considerable field inspection had to be made to determine what roads were travelable. All roads shown with the double broken lines, are those which are known to be open to automobile travel, though the quality may vary from a shell road well drained to a woods road that is impassable after a tropical storm. An example of the latter case is the road on the west side of the river leading from the ferry, to the north of the settlement of Norwalk and hence along the scrub bordering the Oklawaha River to Davenport and Orange Springs. To the people on the area, this is one of their main roads and is known as The River Road.

To interpret travelable roads from the photographs presented difficulties due to over-hanging trees and man-made development. These latter developments include firebreaks and plowed lines marking quartersection land boundaries. The plowed lines, which only occur on the map drawing around Norwalk were laid out in 1932 and were designated on the sheet by the trail symbol. In the case of firebreaks, where a road existed before the firebreak was constructed it was shown as a double dashed road, otherwise the firebreak symbol was used.

The trail symbol was used to mark old lumbering roads, old county roads now impassable and other roads only passable to horse drawn vehicles or foot traffic. An abandoned railroad symbol was used to mark the location of old tram roadbeds, formerly used for hauling lumber to the river's edge. An excellent example of this is found at Norwalk Landing where the road bed ends at a long row of piling, presumably the remains of a loading wharf.

✓ PILINGs:

The remains of old docks are shown by a broken line. In case the piles are scattered, small circles are used to indicate their position. Most of these could not be seen on the photographs and the information was transferred from the Graphic Control Sheets. All fishtrap stakes are shown on this sheet by a row of dots in accordance with Director's Letter dated June 7, 1937, Ref. No. 80-DRM.

✓ *Some piles near piers were shown by dots and labelled*
MISCELLANEOUS:

There are no bridges, railroads, cable crossings, or power lines over rivers on this sheet. All tanks have been designated on the overlay. (*shown on drawing by O or A*)

It is believed that all buildings in the rural sections have been shown on the map drawing. However in the town of Welaka only the public buildings and those visible along the waterfront have been shown, in accordance with instructions.

The auto ferry has no particular local name. It crosses the St. Johns River from the vicinity of Mount Royal to Fort Gates as shown on the sheet. This ferry is in operation 24 hours per day and can accommodate two automobiles. Its use affords the quickest access to the Ocala National Forest from Palatka and towns on the east side of the River. It is operated by a man named Saunders and is known locally as either the Welaka Ferry, Saunders Ferry, Fort Gates Ferry, or just plain The Ferry.

✓ STREAMS:

Due to the swampy character of the ground most of the streams in this area are not clearly defined and are probably intermittent. The exceptions being the stream which drains the small pond and swamp area at Lat. 29° 25' Long. 81° 42', and Beecher Run. This latter stream has been dammed since the photographs were taken, forming an artificial pond which is further described in Special Features. One intermittent stream, Allons Branch, deserves mention. It drains south from Lake Margaret, connecting with Johns Branch on Sheet T-5150. Approximately 80 years ago an attempt was made to drain Lake Margaret by a series of canals along the course of the present intermittent stream. Some of these canals connecting intermittent ponds are plainly seen on the photographs at Lat 29° 25', Long. 81° 37'. *Lake Margaret falls just E. of sheet limits.*

Name "Allons Branch" rejected by Section of geog. names.

✓ SWAMPS AND MARSHES:

Swamps were shown on the map drawing by the use of a combination symbol, combining the cypress swamp and deciduous tree symbols. This was resorted to, due to the fact that most of the large cypress trees in these swampy areas had been cut out, leaving small cypress, magnolias, gum, live oaks, and a dense undergrowth of bushes and vines. The standard marsh symbol was used in boggy areas where there was an absence of large trees.

✓ PONDS:

It was necessary to make intensive field inspection of all ponds on this sheet in order to determine whether they were intermittent, clear water, or grassy ponds, or "prairies". This latter

term is applied, in this locality, to an old lake, now overgrown with a dense growth of grass. The intermittent pond symbol was used as much as possible on the smaller ponds of prairie phase, but it was thought necessary to place grass symbols in the larger ponds whenever they were prominent. Another interpretation might be to class these grassy ponds as marshes, but they are generally well defined with definite shorelines and appear as ponds from the air. With the shoreline and dark color tone on the photographs so distinct, it was thought they came closer to being ponds than marshes.

SPECIAL FEATURES:

Since the photographs were taken, many changes in topography have occurred within the boundaries of the Welaka Wildlife and Forest Conservation Project. These changes include construction of firebreaks, dams, artificial ponds, fish-breeding ponds, channel changes in Beecher Run, wire fence inclosures for game farms, clearing for proposed airport and new buildings. As it would have entailed considerable expense to make a complete survey of these changes, the following procedure was resorted to: A print was secured from the Resettlement Administration, showing this new work on a scale of 1:7200. A tracing was made of the new features and transferred in blue ink to the back of the map drawing by means of the projector. The triangulation stations Fire Tower, Welaka, 1937 and Camp Welaka Water Tank, 1935 and several roads were common to both maps and were used for orientation. It was found that the Resettlement Administration's map was not very accurate but by adjusting the features to the nearest detail that was located on the map drawing they were transferred without much error. The results checked very well with thorough field inspection of the area.

GEOGRAPHIC NAMES:

The geographic names for this sheet were obtained from the following sources, which will be referred to hereafter by their accompanying symbols;

Symbol	Source.
a	Well established by local usage.
b	Bureau of Soils Map, 1914, Putnam County.
c	Maps and charts of the U. S. C. & G. Survey.
d	U. S. Engineers, Route 13-B, topographic maps.
e	U. S. Dept. of Agriculture, Forest Service, Ocala Nat'l. Forest.
f	Official Map of Putnam County.
h	Graphic Control Sheets, L. D. Graham, 1937.
i	Welaka Wildlife and Forest Conservation Project map.
j	Old Map of Putnam County by local surveyors.

The following names are in use on our chart No. 508 and are in common use on all other maps,- Welaka, Mt. Royal, Ft. Gates, Norwalk, Beechers Point, Oklawaha River and Little Lake George.

Welakásaga small town on the north edge of the sheet and adjoining the Welaka Wildlife and Forest Conservation Project.

Mt. Royal is a small community at the northwest end of Fruitland Cove.

Ft. Gates is a small community across the St. Johns River from Mt. Royal.

Norwalk is a small community about three miles north west from Ft. Gates. It probably was a busy logging center when the Upchurch Lumber Co. was operating in this vicinity.

Beechers Point is the first prominent point southwest of Welaka, along the St. Johns River.

Oklawaha River is a very prominent river emptying into the St. Johns River just southwest of Welaka. It is sometimes spelled "Ocklawaha" in the newspapers of this state but all maps are in agreement with the former spelling.

Little Lake George is a prominent body of water in the St. Johns River extending north and south for two miles and about one mile in width, between Welaka and Lake George proper.

Fruitland,- the area around the cross roads formed by the Welaka-Georgetown Road and the Fruitland-Crescent City Road. There is no postoffice located there now and only a few buildings remain of what was once a small community. Derived from a,b,f,j.

Lake Margaret,- only the southwestern shore appears on the map drawing. Derived from a,b,f,&j.

Lake Estella. This lake was formerly one large body of water, but now it consists of three separate bodies of water with a grassy marsh between. The name applies to all three lakes. Derived from a,b,f, and j.

Reeves Lake. This lake is just west of Lake Margaret. The name does not appear on any maps of the region but is well established locally.

Hear Creek. The southern branch of the Oklawaha River, emptying into the St. Johns River. Derived from a.

Mud Spring is a prominent spring just east of Mud Creek Cove, derived from a and j.

Mud Creek is the stream that flows from Mud Spring into Mud Creek Cove. Derived from a.

Mud Creek Cove is the prominent cove about one mile southeast of Beechers Point and is a well established local name. A discrepancy is hereby noted. G. C. Sheet VV gives the name of Mud Creek Cove to the cove just north of Central Norwalk Point. This is locally known as Cromker Hole Cove, and the names are changed in accordance with this information on this sheet.

Beecher Springs is the head waters of Beecher Run, a stream that empties into Fruitland Cove just east of Mt. Royal. It was formerly known as Sulphur Springs and Sulphur Creek, but both names have recently been changed by the Welaka Wildlife and Forest Conservation Project. Names derived from a, i and f.

Lake Laura, a small lake about one mile west of Fort Gates. Name derived from a and b.

Buzzard Roost Cove is a small cove just north of Buzzards Point, both names derived from a. Buzzards Point also derived from h. .

Fruitland Cove is a prominent cove just east of Mount Royal. It was derived from a.

Norwalk Landing, sometimes called Norwalk Docks, but the former name is more common. It is no longer used as a landing but the name is still used locally to designate this area. Derived from a,e, and h.

Central Norwalk Point. This also used to be a landing but is now used only to mark the locality. Derived a and h. On G. C. Sheet VV the name Central Norwalk only appear. The word Point should be added.

Orange Point is a prominent point south of Mud Creek Cove. Derived from a and h.

Jenerson Point is a prominent point south of Fruitland and across the river from Ft. Gates. Derived from a.

Fort Gates Landing is a landing on the east side of Fruitland Cove. Derived from a and d. However, on "d" it is known as Days Ft. Gates Landing. Since this person is still living the word Days was not added.

Sanchez Grant. A Land grant just south of the Oklawaha River. Derived from a, e, f, and j.

Triay Grant. This was a land grant just east and south of Welaka. It was not used on this sheet as it is now within the boundary limits of the Welaka Wildlife and Forest Conservation Project.

Ocala National Forest covers most of the western portion of the Sheet. Name derived from a and e.

welaka Wildlife and Forest Conservation Project. The area east and south of Welaka. It was a state project for a number of years but has recently been taken over by the Federal Government. Found on a and k.

River Road. A road on west side of the river leading from the auto ferry north of Norwalk to Davenport and Orange Springs. It derives its name from the fact that it follows along the Oklawaha River.

Old Fort Gates Road. An old road leading from Ft. Gates westward by Lake Laura to Lake Kerr. Derived from a and e.

✓ **COMPARISON WITH PREVIOUS SURVEYS.:**

The U. S. Engineers compiled topographic maps from air photographs for most of the area covered by this sheet, in 1933. After a careful comparison had been made with their sheets, it was found that sheet No. 19, Route 13-B agreed quite closely when differences in datum had been adjusted. However Sheet No. 15 was found to be very much in error especially in the vicinity around Mud Creek Cove. A large number of new trails and fire breaks have been cut and a few trails can not now be seen on the more recent photographs. All other maps available have been compared with this compilation, but due to smallness of scale or obsolescence of surveys, not much value could be obtained from a minute comparison.

✓ **LANDMARKS:** - see office review in regard to the landmarks

Three prominent objects on this sheet were selected by L. D. Graham as landmarks and submitted with his reports. They are Whit, Day and Sil. Two water tanks have been indicated on this sheet along the water front, one in Welaka and the other in Mt. Royal. The tank in Welaka was transferred from G. C. Sheet TT as it could not be picked distinctly on the photographs. The other tank showed quite plainly on the photographs and was located by the radial plot. Since there are a great number of described recoverable stations in these area, descriptions on Form No. 524 was not considered necessary. No other objects were of sufficient important to be designated as landmarks.

✓ **TRANSMITTED DATA:**

filed in air photo section

There is transmitted with this sheet a map furnished by the Welaka Wildlife and Forest Conservation Project. A tracing of the Town Plat of Welaka, showing the names of all streets will be forwarded in a few weeks with Sheet No. 5152 which is now being drawn.

✓ **NEW LIGHTS AND AIDS TO NAVIGATION:**

Two new lights and aids to navigation have recently been established in this area, one near Welaka and the other near Mt. Royal. These are but two of the forty that have been built in the last month or so. They will all be located by the hydrographic survey party under Lieut. Comdr. L. D. Graham before he completes his surveys of this region. *Not added to T-5151*

Welaka Light No. 84A has been renumbered 84D and is so shown on this sheet.

Inked in back of sheet with black circles until hydro. sheet is reviewed, after which they will be removed.

HYDROGRAPHIC SIGNALS:

Hydrographic signals were erected in the Oklawaha River for the survey parties on the Launch MIKAWA, Lieut. Comdr. L. D. Graham, Commanding. These signals were picked on the photographs and transferred to the sheet and indicated by means of a ~~green square~~^{black circle}. They are all temporary signals and will not remain in place more than a few months. The positions were carefully scaled and checked and lists of the geographic positions furnished to Captain Graham. These lists are not transmitted with the sheet, but can be furnished if it is considered necessary.

Respectfully submitted,

Henry O. Fortin
Henry O. Fortin,
Lieut. (j.g.) U.S.C.&G.S

Approved and forwarded,

Hubert A. Paton
Hubert A. Paton,
Lieut. C. & G. S.
Chief of Party.

symbols used on this sheet

- Fire break _____
 - Abandoned railway bed _____ *labelled*
 - Trail _____
 - Plowed lines along $\frac{1}{4}$ section boundaries (vicinity Norwalk only) _____
 - Fernery (place where ferns are raised)  *labelled*
 - Ponds, usually dry, occasionally wet 
 - Ponds, usually wet, grass covered 
- if question regarding other symbols see p. 7 des. report T-5133*
- Rec. H. & T. stations:
16 filed under No. T-5157

Notes in red by:
T. M. Price
Insh. Office
March 16 1938

MAP DRAWING NO. T-5151
 REVIEW OF ~~XXXXXXXXXXXXXXXXXXXX~~ NO.

✓ J. W. P.

Chief of Party: Hubert A. Paton

Compiled by: Lester S.
Leavenworth

Project: H. T. 168

Instructions dated: Mar. 4, 1935

1. The charts of this area have been examined and topographic information necessary to bring the charts up to date is shown on this compilation. (Par. 16a, b, c, d, e, g and i; 26; and 64) Charts should be completely revised in accordance with recent surveys.
2. Change in position, or non-existence of wharfs, lights, and other topographic detail of particular importance to navigation which affect the chart, is discussed in the descriptive report. (Par. 26; and 66 g, n) New lights and aids to navigation will be located by Launch MIKAWA hydrographic survey parties.
3. Ground surveys by plane table, sextant, or theodolite have been used to supplement the photographic plot where necessary to obtain complete information, and all such surveys are discussed in the descriptive report. (Par. 65; and 66 d, e) Pilings, docks, and fish stakes not visible on photographs were transferred from G. C. Sheets.
4. Blue-prints and maps from other sources which were transmitted by the field party contain sufficient control for their application to the charts. (Par. 28) Welaka Wildlife and Forest Conservation map is transmitted with this sheet. A tracing of the town plat of Welaka will be forwarded with sheet No. 5152.
5. Differences between this compilation and contemporary plane table and hydrographic surveys have been examined and rectified in the field before forwarding the compilations to the office and are discussed in the descriptive report. No differences.
6. The control and adjustment of the photo plot are discussed in the descriptive report. Unusual or large adjustments are discussed in detail and limits of the area affected are stated. (Par. 12b; 44; and 66 c, h, i) No unusual or large adjustments were necessary.
7. High water line on marshy and mangrove coast is clear and adequate for chart compilation. (Par. 16a, 43, and 44) Yes.

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Refer also to the pamphlet "Notes on the Compilation of Planimetric Line Maps from Five Lens Air Photographs."

8. The representation of low water lines, reefs, coral reefs and rocks, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41) These are non-tidal waters, so there are no low water lines shown. The shoreline, in swampy regions is shown with the tree symbol in accordance with office recommendations. *Changed in office to light solid line.*
9. Recoverable objects have been located and described on Form 524 in accordance with circular 30, 1933, circular letter of March 3, 1933, and circular 31, 1934. (Par. 29, 30, and 57) submitted by L. D. Graham previously.
10. A list of landmarks was furnished on Form 567 and instructions in the Director's letter of July 16, 1934, Landmarks for Charts, complied with. (Par. 16d, e; and 60) Submitted by L. D. Graham previously.
11. All bridges shown on the compilation are accompanied by a note stating whether fixed or draw, clearance, and width of draw if a draw bridge. Additional information of importance to navigation is given in the descriptive report. (Par. 16c) No bridges on sheet.
12. Geographic names are shown on the overlay tracing. The accepted local usage of new names has been determined and they are listed in the report, together with a general statement as to source of information and a specific statement when advisable. Complete discussion of place names differing from the charts and from the U. S. G. S. Quadrangles is given in the descriptive report, together with reasons for recommendations made. (Par. 64, and 66k) Yes.
13. The geographic datum of the compilation is N. A., 1927 and the reference station is correctly noted. ~~its values are differing~~
~~adjusted.~~
14. Junctions with adjoining compilations have been examined and are in agreement. (Par. 66j) Yes.
15. The drafting is satisfactory and particular attention has been given the following:
 1. Standard symbols authorized by the Board of Surveys and Maps have been used throughout except as noted in the report. Yes
 2. The degrees and minutes of Latitude and Longitude are correctly marked. Yes

3. All station points are exactly marked by fine black dots. Yes
4. Closely spaced lines are drawn sharp and clear for printing. Yes
5. Topographic symbols for similar features are of uniform weight. Yes
6. All drawing has been retouched where partially rubbed off. Yes
7. Buildings are drawn with clear straight lines and square corners where such is the case on the ground. Yes

(Par. 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48)

16. No additional surveying is recommended at this time.

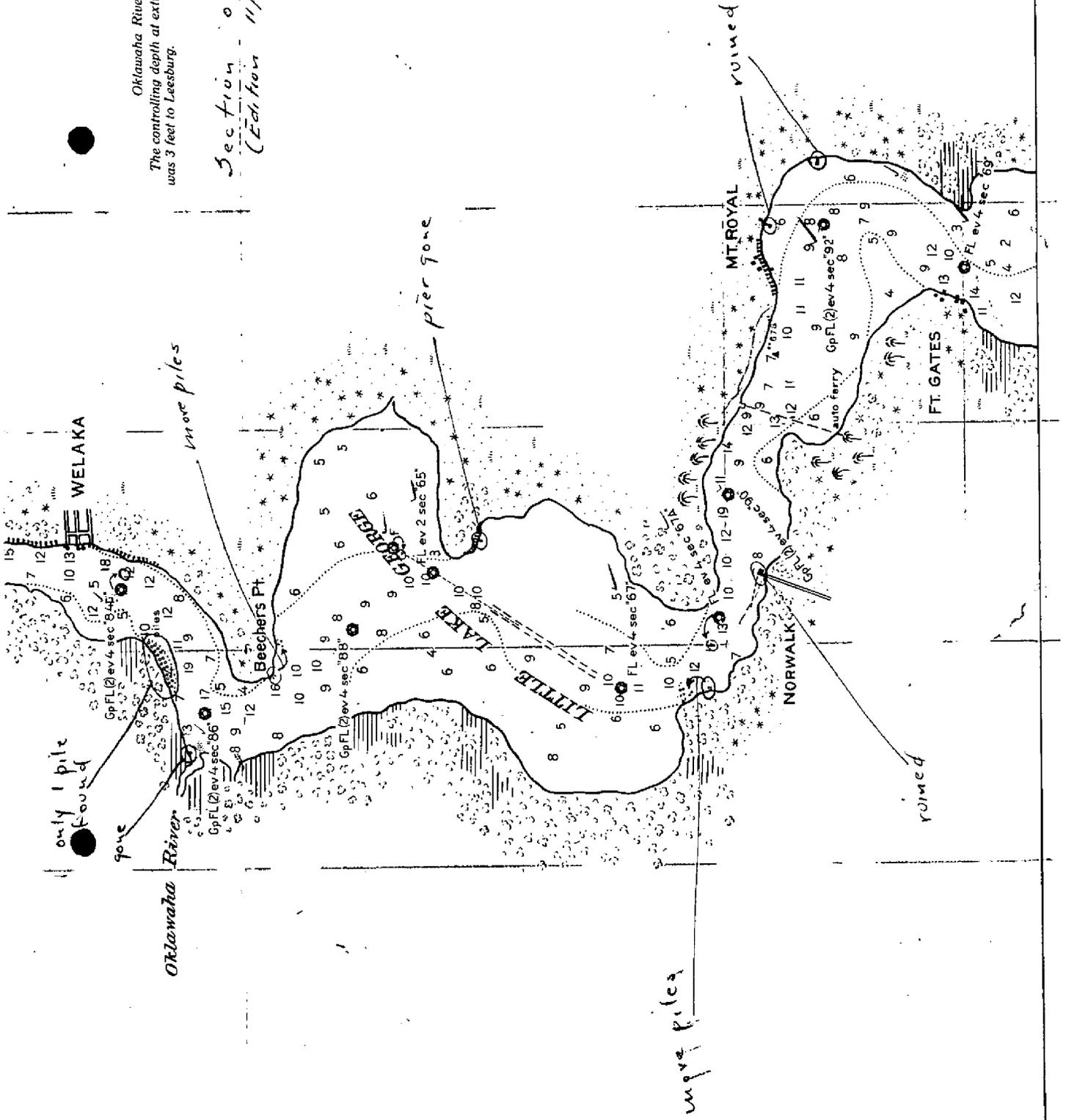
17. Remarks: New symbols were devised for abandoned railroad beds and fire breaks. Barners were shown as large buildings. They are covered fields and appear as flat sheds from the air.

18. Examined and approved;

Hubert A. Paton
Hubert A. Paton
Chief of Party

Oklawaha River
The controlling depth at extreme low stages
was 3 feet to Leesburg.
Oct. 1936

Section of Chart 508
(Edition 11/12/36)



PLANE COORDINATE GRID SYSTEM

Positions of grid intersections used for fitting the grid to this compilation were computed by Division of Geodesy and the computation forms are included in this report.

Positions plotted by H. D. REED, Jr.

Positions checked ^{on} by Ruling Machine

Grid inked on machine by H. D. REED, Jr.

Intersections inked by H. D. REED, Jr.

Points used for plotting grid:

x = 275,000 FT.
y = 1,870,000 FT.

x 30,000
y 1,845,000

x 310,000
y 1,870,000

x
y

x 295,000
y 1,866,000

x
y

x 275,000
y 1,845,000

x
y

Triangulation stations used for checking grid:

x = 284,786.31 FT y = 1,861,157.43 FT.

- 1. Beasley, 1935 5. _____
- 2. _____ 6. _____
- 3. _____ 7. _____
- 4. _____ 8. _____

Geodetic positions from transverse Mercator coordinates

State Fla. East

Station x 295,000
 y 1,855,000

x		$\log S_g$	
C		$\log (1200/3937)$	9.48401583
$x' (=x-C)$	- 205,000	$\log (1/R)$	
$x'^3/(6\rho_0^2)_g$	- 3.29	$\log S_m$	
S_g	204,996.71	cor. arc to sine	-
		$\log S_1$	4.79578135
$\log S_m^2$	9.591577	$\log A$	8.50937130
$\log C$	1.157046	$\log \sec \phi$	0.06002536
$\log \Delta\phi$	0.748623	$\log \Delta\lambda_1$	3.36517801
		cor. sine to arc	+ 915
y		$\log \Delta\lambda$	3.36518716
ϕ' (by interpolation)	29° 26' 12".0415	$\Delta\lambda$	2318."3935
$\Delta\phi$	- 5.6056	λ (central mer.)	81° ' "
ϕ	→ 29° 26' 06".4359	$\Delta\lambda$	
		λ	→ 81° 38' 38".3935

Station _____

x		$\log S_g$	
C		$\log (1200/3937)$	9.48401583
$x' (=x-C)$		$\log (1/R)$	
$x'^3/(6\rho_0^2)_g$	-	$\log S_m$	
S_g		cor. arc to sine	-
		$\log S_1$	
$\log S_m^2$		$\log A$	
$\log C$		$\log \sec \phi$	
$\log \Delta\phi$		$\log \Delta\lambda_1$	
		cor. sine to arc	+ _____
y		$\log \Delta\lambda$	
ϕ' (by interpolation)	° ' "	$\Delta\lambda$	"
$\Delta\phi$	-	λ (central mer.)	° ' "
ϕ		$\Delta\lambda$	
		λ	

Explanation of form:

$$x' = x - C$$

$$S_g = x' - \frac{x'^3}{(6\rho^2)_g}$$

$$S_m = \frac{1}{R} \left(\frac{1200}{3937} \right) S_g$$

R = scale reduction factor

ϕ' is interpolated from table of y

$$\Delta\phi = C S_m^2$$

$$\phi = \phi' - \Delta\phi$$

$$\Delta\lambda_1 = S_1 A \sec \phi$$

$$\log S_1 = \log S_m - \text{cor. arc to sine}$$

$$\log \Delta\lambda = \log \Delta\lambda_1 + \text{cor. arc to sine}$$

$$\lambda = \lambda(\text{central mer.}) - \Delta\lambda$$

Geodetic positions from transverse Mercator coordinates

State Fla. East

Station $\begin{matrix} x & 275,000 \\ y & 1,870,000 \end{matrix}$

x		log S_g	
C		log (1200/3937)	9.48401583
$x' (=x-C)$	- 225,000	log (1/R)	
$x'^3/(6\rho_0^2)_g$	- 4.35	log S_m	4.83621550
S_g	224,995.65	cor. arc to sine	- 834
		log S_1	4.83620716
log S_m^2	9.672431	log A	8.50937040
log C	1.157773	log sec ϕ	0.06020057
log $\Delta\phi$	0.830204	log $\Delta\lambda_1$	3.40577813
		cor. sine to arc	+ 1103
y		log $\Delta\lambda$	3.40578916
ϕ' (by interpolation)	29° 28' 40".5467	$\Delta\lambda$	2545".5941
$\Delta\phi$	- 6.7640	λ (central mer.)	81° ' "
ϕ	29° 28' 33".7827	$\Delta\lambda$	
		λ	81° 42' 25".5941

Station $\begin{matrix} x & 310,000 \\ y & 1,870,000 \end{matrix}$

x		log S_g	
C		log (1200/3937)	9.48401583
$x' (=x-C)$	- 190,000	log (1/R)	
$x'^3/(6\rho_0^2)_g$	- 2.62	log S_m	
S_g	189,997.38	cor. arc to sine	-
		log S_1	4.76278304
log S_m^2	9.525578	log A	8.50937039
log C	1.157773	log sec ϕ	0.06020288
log $\Delta\phi$	0.683351	log $\Delta\lambda_1$	3.33235631
		cor. sine to arc	+ 787
y		log $\Delta\lambda$	3.33236418
ϕ' (by interpolation)	29° 28' 40".5467	$\Delta\lambda$	2149".6323
$\Delta\phi$	- 4.8234	λ (central mer.)	81° ' "
ϕ	29° 28' 35".7233	$\Delta\lambda$	
		λ	81° 35' 49".6323

Explanation of form:

$$x' = x - C$$

$$S_g = x' - \frac{x'^3}{(6\rho^2)_g}$$

$$S_m = \frac{1}{R} \left(\frac{1200}{3937} \right) S_g$$

R = scale-reduction factor

ϕ' is interpolated from table of y

$$\Delta\phi = C S_m^2$$

$$\phi = \phi' - \Delta\phi$$

$$\Delta\lambda_1 = S_1 A \sec \phi$$

$$\log S_1 = \log S_m - \text{cor. arc to sine}$$

$$\log \Delta\lambda = \log \Delta\lambda_1 + \text{cor. arc to sine}$$

$$\lambda = \lambda(\text{central mer.}) - \Delta\lambda$$

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

State Fla. East Station Beasley 1935

ϕ 29° 27' 06.82"

λ (Central meridian)

87° 00' "

λ

81 40 34.30

$\Delta\lambda$ (Central meridian- λ)

- 40 34.30

$\Delta\lambda$ (in sec.)

- 2434.30

log $\Delta\lambda$	3.38637410	log S_m^2	9.633807
Cor. arc to sine	- 1008	log C^*	1.157344
log $\Delta\lambda_1$	3.38636402	log $\Delta\phi$	0.791151
log cos ϕ	9.93990287		
colog A	1.49062907	ϕ	29° 27' 06.82
log S_1	4.81689596	$\Delta\phi$	+ 6.1823
Cor. sine to arc	+ 763	ϕ'	13.0023
log S_m	4.81690359		
log 3937/1200	0.51598417	Tabular difference } of y for 1" of ϕ' }	
log R	- 2555		
log S_g	5.33286221	y (for min. of ϕ')	
log S_g^3	15.9985866	y (for seconds of ϕ')	+ _____
log $1/6\rho_0^2R^2$	4.5821873	y	1,861,157.43
log $(S_g^3/6\rho_0^2)_g$	0.5807739		
S_g	215,209.88	log sin $\frac{\phi+\phi'}{2}$	
$(S_g^3/6\rho_0^2)_g$	3.81	log $\Delta\lambda$	
x'	- 215,213.69	log $\Delta\alpha_1$	
	2 500,000.00	log $(\Delta\lambda)^3$	
x	284,786.31	log F	
		log b	
		$\Delta\alpha_1$	"
		b	
		$\Delta\alpha$	"
		$\Delta\alpha$	o ' "

* Take out C first for ϕ and correct for approximate ϕ' .

$$x = 2,000,000.00 + x'$$

$$x' = S_g + \left(\frac{S_g^3}{6 \rho_0^2} \right)_g$$

$$S_g = \frac{3937}{1200} S_m R$$

$$\log S_m = \log S_1 + \text{cor. sine to arc}$$

$$S_1 = \frac{\Delta \lambda_1 \cos \phi}{A}$$

$$\log \Delta \lambda_1 = \log \Delta \lambda - \text{cor. arc to sine}$$

$$\left(\frac{S_g^3}{6 \rho_0^2} \right)_g = \frac{S_g^3}{6 \rho_0^2 R^2}$$

$$\phi' = \phi + \Delta \phi$$

$$\Delta \phi = C S_m^2$$

$$\Delta \alpha = \Delta \lambda \sin \frac{\phi + \phi'}{2} + F(\Delta \lambda)^3$$

S_m = distance in meters from point to central meridian

S_1 = distance in meters from point to central meridian reduced to sine

S_g = grid distance in feet from point to central meridian

R = scale reduction factor

Values of y in minutes and tabular difference for one second, scale reduction

factors, colog A , and log C are given in auxiliary tables.

Remarks

Decisions

1		USGB decision
2		" "
3		
4		USGB decision
5		
6		OK for Planimetric Map only
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		OK for Planimetric Map only
19		
20		
21		
22		
23		
24	"Days Fort Gates Landing" on USED Topo Map (see D.R.) After a living person	
25		
26		
27		

GEOGRAPHIC NAMES

Survey No. T-5151

Name on Survey	<div style="display: flex; justify-content: space-between; font-size: small;"> On Chart No. 508 On previous survey No. T-2027 On U. S. Maps From local information On local Maps P. O. Guide or Map Rand McNally Atlas U. S. Light List Soil Maps (See D.R.) </div>										
	A	B	C	D	E	F	G	H	K		
✓ Oklawaha River	✓	Oklawaha R.	✓	✓						1	
✓ St. Johns River	✓	✓	✓							2	
✓ Bear Creek				✓						3	
✓ Welaka	✓	✓	✓	✓		✓				4	
✓ Beecher Point	✓	Beecher pt.	✓	✓	✓			Beecher pt.		5	
✓ Sanchez Grant			✓	✓						6	
✓ Mud Creek				✓						7	
✓ Mud Spring				✓	✓					8	
✓ Mud Creek Cove				✓						9	
✓ Little Lake George	✓	✓	✓	✓						10	
✓ Orange Point				✓						11	
✓ Buzzard Roost Cove				✓						12	
✓ Croaker Hole Cove				✓	see note on Mud Creek Cove					13	
✓ Buzzards Point				✓						14	
✓ Central Norwalk Point				✓				Norwalk pt.		15	
✓ Norwalk Landing			✓	✓						16	
✓ Norwalk (settlement)	✓		✓	✓						17	
✓ Ocala National Forest			✓							18	
✓ Lake Laura				✓					✓	19	
✓ Mount Royal	✓	✓		✓				✓		20	
✓ Fruitland Cove				✓						21	
✓ Fruitland			✓		✓	Discont				22	
✓ Fort Gates	✓	✓	✓	✓				✓		23	
Fort Gates Landing				✓						24	
Fort Gates Point										25	
✓ Jenerson Point				✓						26	
										27	

Remarks

Decisions

	Remarks	Decisions
1		
2		
3	<i>Formerly one large lake - now 3 small lakes Name applies to 3 lakes.</i>	
4	<i>Intermittent Stream of no importance</i>	
5	●	
6		
7		<i>ok for Planimetric Map only</i>
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20	●	
21		
22		
23		
24		
25		
26		
27		

GEOGRAPHIC NAMES

Survey No. T-5151

Name on Survey	Sources										
	A	B	C	D	E	F	G	H	K		
	On Chart No. 508 On previous survey No. On U. S. Geographic ^{Coast and Geodetic} Maps. <i>Not for.</i> From local information See D.V. On local Maps see D.R. P. O. Guide or Map Rand McNally Atlas U. S. Light List										
✓ <u>Beecher Springs</u>				✓	✓						1
✓ <u>Beecher Run</u>				✓							2
✓ <u>Estrella Lakes</u> Lake Estrella				✓	✓						3
Attens Branch											4
✓ <u>Lake Margaret</u>	outside of sheet limits										5
✓ <u>Reeves Lake</u>				✓							6
✓ <u>Welaka Wildlife and Forest Conservation Project</u>											7
											8
											9
											10
											11
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											23
											24
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> Names underlined in red approved by <u>GTE</u> on <u>2/25/38</u> </div>											25
											26
											27

Section of Field Records

REVIEW OF AIR PHOTOGRAPHIC SURVEY T-5151

Scale 1:10,000

Data Record

Triangulation, 1935

Photographs taken February and March, 1935. Refer to page 2 of descriptive report for time and stage of tide.

Field inspection, April and August, 1937

Planetable graphic control surveys, 1935, 1937

Hydrographic surveys, 1937

The field inspection was for the purpose of interpreting the photographs and for surveying changes since the photographs were taken. The detail of T-5151 is of the date of the photographs except for the following:

(1) From 1935 and 1937 graphic control surveys:

- (a) Certain stakes, piles, poles, and ruined piers.
- (b) Certain small piers, small houses, and a platform offshore.
- (c) Described recoverable topographic stations, including aids to navigation.

(2) From 1937 hydrographic surveys:

- (a) Certain stakes, piles, and pier ruins.
- (b) Marine railway at Lat. $29^{\circ} 25.8'$, Long. $81^{\circ} 39.5'$.

(3) From a map of Welaka Wildlife and Forest Conservation Project

- (a) Various items of construction done after the photographs were taken. Obtained by ties to features appearing on the photographs.

Graphic Control Surveys

T-6394 (1935, 1937), 1:5,000 -

CS 130 M (1937), 1:5,000

CS 131 M (1937), 1:5,000

CS 132 M (1937), 1:5,000

General

The graphic control surveys are on 1:5,000 scale whereas T-5151 is on 1:10,000 scale.

The graphic control surveys were made to locate signals, obstructions, aids to navigation, and details of certain piers. Only scattered sections of shoreline are shown.

In general the air photographs show the detail clearly, and the field inspection was adequate. T-5151 has been carefully compared to and corrected against the field photographs and notes, the above graphic control surveys and the recent hydrographic surveys. In case of any differences between the above graphic control surveys and T-5151, the latter should now be taken as correct.

All detail on the above graphic control surveys within the area of T-5151 is now shown on T-5151 except the magnetic declination, temporary topographic stations, and Welaka Tide Station which is shown on the hydrographic survey.

The following differences between the graphic control surveys and T-5151 were noted during this review:

1. At Lat. 29° 25.8', Long. 81° 39.1' a line of piles is 10 meters in error on the graphic control survey CS 132 M, correct on T-5151.
2. At Lat. 29° 25.8', long. 81° 39.3' the shoreline on CS 132 M differs 20 meters from T-5151. T-5151 is accepted as correct after examination of the photographs and field inspection notes.
3. At Lat. 29° 27.0', Long. 81° 41.2' a minor error in position of piling transferred to T-5151 from the graphic control survey has been corrected on T-5151.
4. At Lat. 29° 25.5', Long. 81° 28.8', pier ruins have been corrected on T-5151 to agree with the hydrographic survey on which they were located by sextant. The ruins do not appear on the photographs.

Previous Topographic Surveys

T-2027 (1875), 1:80,000

This is an inadequately controlled reconnaissance survey. It has been examined in connection with T-5151, but no detail comparison is considered necessary. T-5151 is adequate to supersede the section of T-2027 which it covers.

Recent Hydrographic Surveys

H-6290 (1937), 1:5,000

H-6295 (1937), 1:5,000

The above hydrographic surveys are on a scale of 1:5,000 whereas T-5151 is on a scale of 1:10,000.

The shoreline on the hydrographic surveys was transferred by projector from the air photographic surveys. The accuracy of the transfer was not checked by the reviewer, except in a few places. There are several differences between the shoreline on the hydrographic sheets and on T-5151. When the hydrographic surveys are reviewed, the shoreline on T-5151 should be accepted as correct.

There were no conflicts between the soundings on the hydrographic surveys and T-5151.

There are a number of alongshore and offshore obstructions which appear on T-5151 which were not shown on the hydrographic surveys. Some of these have been noted on the hydrographic sheets for correction upon review. However, when the review is made, a detailed comparison will be necessary in order to make the transfer of detail complete, since the omissions are too numerous to note conveniently. This matter has been reported to the hydrographic verifying unit.

Comparison with Chart 508 (plate corrected to 11/12/36), scale 1:40,000

The important differences between T-5151 and the chart have been noted on a section of the chart which is attached to this review.

Besides these differences in detail, there are large differences in the type of culture along the shore.

The large area of piling on chart 508 north of the mouth of the Oklawaha River is shown in part on H-6290 by a dashed line.

Several two-foot bluffs formerly charted were not considered of sufficient prominence to indicate on the new survey.

Landmarks

The landmarks within the area of T-5151 were submitted by L. D. Graham and are contained in chart letter 259 (1938) which also includes the lighted aids to navigation. These landmarks are (exclusive of the aids to navigation): Tank SIL (d); Boathouse WHIT (d); Boathouse DAY (d).

Recently established beacons were located later by the hydrographic party and are not noted in the above chart letter. They do not appear on T-5151 because their position was not available at the time of this review.

There are several tanks, other than SIL (d), which have been shown with standard size landmark circles on T-5151. These are not recommended as landmarks because they are not prominent from the water, but they might be valuable to chart as permanent reference objects, using a circle smaller than that used for landmarks.

Welaka Light 84 A was changed to Welaka Light 84 D in 1937 but its position was not changed.

Recoverable Topographic Stations

Sixteen described topographic stations appear on this sheet. They are filed on Form 524 under number T-5151.

At TEA (d) and ETA (d) the shoreline on T-5151 was revised 10 m. to agree with measured ground distances as given on Form 524 which agreed also with the photographic appearance.

General

All cypress shoreline was redrafted in the office from the open tree symbol to a light line in accordance with Field Memorandum No. 1, 1938. The shoreline as drafted in the field was in accordance with the instructions issued to the party prior to Field Memorandum No. 1, 1938.

Certain small piers, pier ruins, and piling were added to T-5151 in this office from information contained in the field inspection notes, the photographs, and the graphic control surveys.

As submitted from the field the drafting on T-5151 was neat and the compilation complete except for minor additions and corrections noted in the preceding paragraphs.

Accuracy

No statement of accuracy is given in the report but from a review of the sheet it is believed that the probable error in geographic position is 8-10 m. except for the new features taken from the Welaka Wildlife Project for which no check is available.

Additional Work

This survey is complete and adequate for chart compilation.

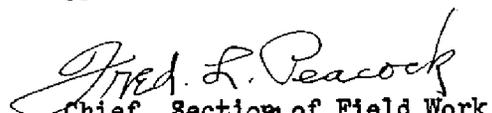
Reviewed in office by T. M. Price, Jr., May 27, 1938.

Inspected by B. G. Jones.

Examined and approved:


Thos. B. Reed
Chief, Section of Field Records


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