

5687

5687

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

DESCRIPTIVE REPORT

Map Drawing  
~~Topographic~~  
~~Hydrographic~~

Sheet No. T-5687 ✓  
(39)

State FLORIDA

LOCALITY

ST. JOHNS RIVER

Lake Monroe  
Northern Part

Photographs taken March 20, 1935

1939

CHIEF OF PARTY

Riley J. Side; H.A. Paton

Applied to Cat Camp 688 4/27/40 Wm. Lewis.

DEPARTMENT OF COMMERCE  
U.S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET

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

Field No. 39

REGISTER NO. T5687 T5687

State FLORIDA

General locality St. JOHNS RIVER

Locality Enterprise and Vicinity  
NORTH SHORE LAKE MONROE Lake Monroe Northern Part

Scale 1:10417 Date of ~~Survey~~ Photographs March 20, 1935

Vessel Party No. A.P. 2-A

Chief of party Hubert A. Paton - Riley J. Sipe

Surveyed by See page 2

Inked by F. R. Gossett

Heights in feet above none to ground to tops of trees

Contour, Approximate contour, Form line interval none feet

Instructions dated March 4, 1935

Remarks: Camera No. 32-2 U. S. Army Air Corps.

FIELD INSPECTION: 1935, July 1937, August 1938 See page 4

REF. STATION - BENSON 1935 ✓  
LAT. 28° 52' 00.909" ✓ (28.0 m.)  
LONG. 81° 16' 00.872" ✓ (23.6 m.) Adjusted  
x = 414,568.47 ✓  
y = 1,647,927.75 ✓  
77

NOTES ON COMPILATION

SHEET No. 39

REGISTER No. T-5687

Photographs: Five Lens Flight No. 30, Nos. 1249 to 1258, 3/20/35  
" " " " 31, " 1259 " 1276, " " "

Scale Plot by: Hubert A. Paton and H. O. Fortin

Scale Factor used: 0.96

Projection by: Washington Office.

Control plotted by:

Control plotted by: H. O. Fortin

Control Checked by: H. A. Paton

Smooth Radial Plot by: H. O. Fortin

Detail inked by: F. R. Gossett

Overlay Sheet by: F. R. Gossett

Area of detail inked: 22.9 Sq. Sta. Miles

Length of Shoreline (over 200m) 11.5 Sta. Miles

Length of Shoreline (under 200m) 11.7 Sta. Miles

Length of Shoreline of small lakes 46.6 Sta. Miles.

*See next page for date of field inspection  
and supplemental surveys.*

DESCRIPTIVE REPORT

to accompany

Map Drawing No. 39

REGISTER No. T-5687

Nov. 23, 1938.

GENERAL INFORMATION:

This map drawing was compiled from air photographs taken by the U. S. Army Air Corps using five lens camera No. 32-2. This sheet was covered by parts of two flights; no 30, photographs no. 1249 to 1258 inclusive; and No. 31, photographs 1259 to 1276 inclusive. The photographs were taken at an elevation of approximately 5000 feet. The scale of flight 30 was 1:10,352 and the scale of flight 31 was 1:10,460. This sheet was constructed on a scale of 1:10,417. Areas left blank in the northeast and northwest corners of the sheet fell outside the normal tracing limits of the photographs. In the southeast corner, shoreline in the vicinity of station Mouth was checked from the Graphic Control sheets and topographic symbols were extended slightly outside the normal tracing limits.

CONTROL:

Eighteen triangulation stations and four Florida Geodetic Survey traverse stations were plotted on the sheet. All except four of the triangulation stations fell within the tracing limits of the sheet. Triangulation stations were located by K. G. Crosby in 1935 except "Mouth" which was adjusted from U. S. E. position in 1937. Control was plotted from field adjusted positions which checked very closely with office adjusted positions which were obtained later. All stations were recovered at least once by field inspection parties.

*located by  
U.S.E. in  
1934*

JUNCTIONS:

On the west this sheet is joined by Sheets No. T-5685 and T-5686. However, the junction on this sheet and T-5685 falls outside the tracing limits. On the south this sheet joins T-5688 and on the east joins T-5689. All these adjoining sheets have been completed and the junctions are in good agreement. There is no adjoining sheet to the north. In the southeast corner at the junction with sheet T-5688, the junction has not been completed because the detail on the five lense pictures is outside the normal tracing limits of photographs on sheet T-5688. Before forwarding to the office the shoreline at this junction has been checked against the nine lens photographs recently received by this party.

✓ LANDMARKS:

The three elevated tanks as submitted with report for topographic sheet X X X, L. D. Graham, 1938, are the most conspicuous and suitable objects for landmarks on this sheet. Two additional stacks are shown on attached Landmark Report.

*forwarded to Nautical Chart Section.*

GENERAL DESCRIPTION OF TOPOGRAPHY:

This sheet covers the north half of Lake Monroe and includes an area about two miles back from the shoreline. A short section of the St. Johns River about one mile in length is shown where it flows out of Lake Monroe near the southwest corner of the sheet. The shoreline of the river is low and mostly swampy except in the vicinity of fills near the highway and railroad crossings and the Florida Power and Light Co. plant. East of the river along the north shore of the lake there is some fast land around the dug out indentations in the shoreline. The northwest shore of Lake Monroe is flat, grassy marshland. For the most part the marsh is firm and is used as pasture land except in periods of prolonged wet weather. The light line around marsh and swamp defines the outer limits of vegetation visible above mean highwater or what appears as shoreline to the navigator. The broken marsh grass symbol outside this line represents, more or less, scattered grass tufting in a shoal area which is bare at various lower lake stages. The Du Bary Creek area is mostly soft muddy marshland containing numerous small pools. Fast land forms the shoreline along the north side of Lake Monroe. The northeast and east shoreline is marshland similar to that along the northwest shore except for a small section of fast land along the southwest shore of Stone Island. Stone Island is mostly covered with a dense sub-tropical growth of palm and oak with some pine on the northwest side. The island is being developed by W. C. Lawson and now has a small golf course, pool, boat slip, bridle paths and cottages. Rossiter Island along the northwest shore is a small wooded area surrounded by meadowland and marsh. The inland sections of the sheet have numerous small lakes and ponds, some of which are deep and others are shoal and almost covered with grass tufts. The shoreline of these ponds varies with the rainy seasons, but as near as could be determined the shoreline as shown represents about average conditions. Oak and palm predominate near the lake front and farther inland the vegetation is mostly pine, scrub oak and palmetto with the dry sandy areas covered with scrub jack oak. The few small swamp areas are covered mostly with bay and cypress growth.

The principal settled section is at the small town of Enterprise where the Florida Methodist Orphanage and Florida Public Utilities Co. Power Plant are located. There is a Company settlement at Benson Junction at the plant of the Ox Brush Co. (formerly Palmetto Fibre Co.) Enterprise and Benson Junction are the only Post Offices on the sheet. There are also groups of company houses at the power plant of the Florida Power and Light Co. and scattered houses and tourist camps along U. S. Highway 17. A small private airplane landing field has been cleared off on the Du Bary Estate about two miles west of Enterprise. There are five high tension power transmission lines radiating from the two electric generating plants shown on this sheet. The white sand at the site of the excavation of the poles could be seen on the photographs in many instances, however, in general, the poles as shown on the sheet should be regarded as symbols only.

FIELD INSPECTION:

Partial field inspection was made by truck in 1935. Boat inspection was made in July, 1937. Additional inspection was made by truck in August and October, 1938. Except that several buildings

## Bridge and Transmission line clearances:

The bridge clearances given on the opposite page differ slightly but not importantly from the U.S. Engineers list of Bridges for 1935. The following values from the Engineer Bridge book for 1935, Page 448 will be shown on T 5687.

Hwy. Bridge (swing) Horiz cl 90 ft both sides  
Vert cl. 13 ft above H.W. (draw closed)

RR Bridge ~~is~~ (swing) Horiz cl left 91 ft R+90 ft  
Vert cl. 7 ft above H.W. (closed) (draw closed)

The cable crossing clearances of 77' at M.H.W. and 92 ft above M.H.W. as obtained from U.S. Engineer notes are to be shown on T 5687 in preference to the elevation 106' above M.S.T. as obtained by the graphic control survey.

B.G. Jones

have been removed or destroyed and some of the roads and trails appear to have become little used at present, there have been few topographic changes since the photographs were taken.

ROADS:

Roads are shown in accordance to instructions to Lieut. L. W. Swanson dated May 13, 1938. There are two paved roads on the sheet; part of U. S. Highway 17-92 between Sanford and Orange City-De Land, and the connecting road passing through Enterprise which joins U. S. 17 near Orange City with State Highway 57 at Osteen. The road from Benson Junction to Enterprise is a well traveled shell road in good condition. The shell road which extends north from U. S. 17 about 1 mile north of the river is practically abandoned and is closed off where it crosses U. S. 17 near the N. W. corner of the sheet. Many of the trails and roads on the DuBary Estate are closed by fences or gates. Some of the less important field roads and unused trails are not shown on the sheet.

SYMBOLS:

It is believed that standard symbols were used throughout the sheet. Unsurveyed drainage where the ditches or streams could not be clearly defined on the photographs because of vegetation was shown with dashed lines. Where grass occurred in water outside the mean high water line, the broken marsh symbol was used. The solid marsh symbol is used to represent marsh above H W L and low grass land that is usually firm but wet or flooded at times. The orchard symbol represents citrus growth except on the Du Bary Estate where it is used for pecan groves.

COMPARISON WITH OTHER SURVEYS:

U. S. C. & G. S. Chart No. 509 does not show sufficient detail for an adequate comparison with this survey. The shoreline from this sheet was used by the hydrographic survey of 1937 and no discrepancies were noted during the survey. The water front areas of this sheet are covered by G. C. Sheets ~~100~~ and ~~101~~ and Hydrographic Sheet ~~48~~ 4307, 1937. Aids to navigation, piles and docks were transferred to the back of this sheet in blue. Good agreement with the photographs was found. The G. C. sheet and the hydrographic sheet differed on the location of a small dock at Enterprise. The photo location was found to check to the boat sheet location more closely and it was so shown. The shoreline in the vicinity of triangulation station Mouth was checked against the U. S. Engineers "Survey, channel from Sanford to Titusville", Sheet No. 4, 1935, and was found to agree closely.

MICELLANEOUS:

The bridge clearances shown on the sheet were obtained by Lieut. H. O. Fortin by measurement and are referred to Mean Lake Level which he determined while making a study to interpret the shoreline of the lake. This value differs from the following sources:

List of Bridges over Navigable Waters of the U. S. (1927)

ACL R.R. bridge (sw)	Hor. cl. = 90'	Vert. cl. = 8' (MLL)	SEE OPPOSITE PAGE
Hwy. bridge, (sw)	Hor. cl. = 90'	Vert. cl. = 12' (MLL)	
Cable Crossing (overhead)	west of bridges, clearance = 77' MHW		PAGE
" " "	east " " " = 92' MHW (106' above MSL according to G.C.S. 143M)		

Clearances as shown on overlay 7-5687

over St Johns River at entrance to Lake Monroe

from the  
to Geo. map  
1937

"U. S. Coast Pilot, Section D," 1936 and "U. S. Engineer Map Intracoastal Waterway and other projects in the Jacksonville, Fla. Engineer District" 1934. Aerial cable crossing clearance was obtained from U. S. Engineers data, & G. C. S. 14317

GEOGRAPHIC NAMES:

The names on the overlay sheet were obtained from the following sources:

1. Name established by local usage.
2. U. S. C. & G. S. Chart No. 509
3. Index Map of Air Photo Compilations.
4. Orlando Sectional Aeronautical Chart.
5. State Road Dept. Map of Volusia County, 1934.
6. Geological Survey, State of Florida Map, 1932.
7. U. S. Engineers, Jacksonville District Projects Map, 1934.
8. Florida Forest Service, District 4, 1934.
9. Sinclair Road Map of Florida.
10. Official Road Map of Florida.
11. Sectional Map of Florida, Dept. of Agriculture, 1938.
12. Hydrographic Sheet 48, 1938.

✓ Beany Pond:

A small pond north of Garfield, 1.

✓ Beck Point:

Marshy point on west side of Lake Monroe about one mile east

• **BETHEL CREEK.** Source 1. It is the small creek flowing out of Bethel Lake.

• **BETHEL CREEK COVE.** Source 1. It is the name of the small cove into which Bethel Creek flows.

Meandering marsh bordered stream draining out of small Mullet Lake and flowing into the north part of Lake Monroe. Sometimes this creek is called Padgett Creek, however, Du Bary is recommended. 1.

✓ Du Bary Estate:

Extensive lands and buildings of the Du Bary Estate. No attempt is made by the field party to show any limits, however most of the traced area of the sheet that is north and northwest of Du Bary Creek is posted with Du Bary Estate notices. 1.

✓ Enterprise:

Name of town, Post Office and school on north shore of Lake Monroe, recently changed from Benson Springs. 1, 2, 7, 11, 12,

• Florida Methodist Orphanage:

Institution at Enterprise, 1.

"U. S. Coast Pilot, Section D" 1936 and "U. S. Engineer Map Intracoastal Waterway and other projects in the Jacksonville, Fla. Engineer District" 1934. Aerial cable crossing clearance was obtained from U. S. Engineers data, & G. C. S. 14317

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8. Florida Forest Service, District 4, 1934.
9. Sinclair Road Map of Florida.
10. Official Road Map of Florida.
11. Sectional Map of Florida, Dept. of Agriculture, 1938.
12. Hydrographic Sheet 48, 1938.

✓ Beany Pond:

A small pond north of Garfield, 1.

✓ Beck Point:

Marshy point on west side of Lake Monroe about one mile east of St. Johns river, 1 and 12.

✓ Benson Junction:

Junction of Atlantic Coast Line and Florida East Coast Railroads. Railroad Station and Post Office by same name, 1, 3, 4, 5, 9, 11.

✓ Benson Springs:

Name is now applied only to railroad station, Post Office and town have been changed back to former name of Enterprise, 1, 3, 4, 5, 9, 10, 11.

✓ Big Lake:

Big pond on east edge of sheet, 1.

✓ Black Water Pond:

Small, dark pond that looks deep. 1.

• Bonnet Pond:

Small pond on DuBarry Estate. 1

• Deep Hole Pond:

Pond on Du Bary Estate. 1

✓ Du Bary Creek:

Meandering marsh bordered stream draining out of small Mullet Lake and flowing into the north part of Lake Monroe. Sometimes this creek is called Padgett Creek, however, Du Bary is recommended. 1.

✓ Du Bary Estate:

Extensive lands and buildings of the Du Bary Estate. No attempt is made by the field party to show any limits, however most of the traced area of the sheet that is north and northwest of Du Bary Creek is posted with Du Bary Estate notices. 1.

✓ Enterprise:

Name of town, Post Office and school on north shore of Lake Monroe, recently changed from Benson Springs. 1, 2, 7, 11, 12,

• Florida Methodist Orphanage:

Institution at Enterprise, 1.

- . Florida Power and Light Co.:  
Large electric power generating plant on St. Johns river  
near west end of Lake Monroe, 1.
- Garfield:  
Former railroad stop which has been discontinued and station  
removed. Name seldom used in locality. 5, 9 (omitted on 11 which shows  
1938 R. R. stations)
- ✓ Jenkins Pond:  
Small pond. 1.
- ✓ Jones Pond:  
Large pond on Du Bary Estate, 1.
- ✓ Karanski Pond:  
Named for former nearby resident, 1.
- . Konomoc Lake:  
Small lake west of Benson Junction. Sometimes called Mud  
or Salt Lake, 1.
- ✓ Lake Bethel:  
Small lake on east edge of sheet, 1.
- ✓ Lake Gleason:  
Lake north of Enterprise, 1.
- ✓ Lake Monroe:  
Large lake through which the St. Johns River flows, 1, 2, 3,  
4, 5, 6, 7, 8, 9, 10, 11, 12.
- . Mullet Lake:  
Small lake at head of Du Bary Creek, 1.
- . Palmetto Fibre Co.:  
Manufacturing plant at Benson Junction, now known as Ox
- . Brush Co., 1.
- . Public Utilities Co.:  
Electric power generating plant on the north shore of Lake  
Monroe just west of Enterprise, 1.
- ✓ Rossiter Island:  
Small wooded island surrounded by marsh and meadowland,  
sometimes known as Roscoe Island, 1.
- . Rossiter Pond:  
Small pond on Du Bary Estate, 1.
- ✓ Shaffer Pond:  
Small, grassy pond on Du Bary Estate, 1.
- ✓ Sidney Pond:  
Pond near northeast edge of sheet, 1.
- St. Johns River:  
1, 2, 4, 6, 7, 12.
- ✓ Stond Island:  
Large island on the Northeast side of Lake Monroe, 1, 12.
- ✓ Thompson Pond:  
Sometimes known as Reper Pond, 1.
- . Trash Pond:  
Small pond on Du Bary Estate into which trash is dumped, 1.
- ✓ Trout Lake:  
Pond at north edge of sheet, 1.

NOTE: Many of the names of lakes and ponds on and in the vicinity of the  
Du Bary Estate were obtained from or checked by Mr. Padgett who is resident  
agent of the Estate.

*Forwarded by  
Ailey J. Soper  
Chief Party*

Respectfully submitted,

*F. R. Gossett*  
F. R. Gossett,  
Jr. H. & G. Eng'r.

	Remarks	Decisions
1		USGB
2		288812
3		"
4		"
5		"
6		"
7		"
8		"
9		"
10		"
11	One word	"
12		"
13		"
14		"
15		"
16		"
17		"
18	All but railway now use name of Enterprise.	"
19		"
20		"
21		"
22		"
23	No longer exists	"
24		288813
25		"
26	Not Mud or Salt Lake (see T5686)	"
27		"
M 234		

GEOGRAPHIC NAMES

Survey No. **F-5687**

#1

Name on Survey

	On Chart No.	On previous survey No.	On U. S. quadrang. Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	
	A,	B,	C,	D	E	F	G	H	K
✓ <u>St. Johns River</u> ✓ ✓									1
✓ <u>Lake Monroe</u> ✓ ✓									2
✓ <u>Enterprise</u> ✓ ✓									3
✓ <u>Bethel Creek</u> ✓ ✓									4
✓ <u>Bethel Creek Cove</u> ✓ ✓									5
✓ <u>Lake Bethel</u> ✓ ✓									6
✓ <u>Jenkins Pond</u> ✓ ✓									7
✓ <u>Stone Island</u> ✓ ✓									8
✓ <u>Thompson Pond</u> ✓ ✓									9
✓ <u>Beany Pond</u> ✓ ✓									10
✓ <u>Blackwater Pond</u> ✓ ✓									11
✓ <u>Big Lake</u> ✓ ✓									12
✓ <u>Sidney Pond</u> ✓ ✓									13
✓ <u>Rossiter Island</u> ✓ ✓									14
✓ <u>Du Bary Creek</u> ✓ ✓									15
✓ <u>Du Bary Estate</u> ✓ ✓									16
✓ <u>Lake Gleason</u> ✓ ✓									17
✓ <u>Benson Springs R.R. Sta.</u> ✓									18
✓ <u>Shaffer Pond</u> ✓ ✓									19
✓ <u>Jones Pond</u> ✓ ✓									20
✓ <u>Karanski Pond</u> ✓ ✓									21
✓ <u>Trout Lake</u> ✓ ✓									22
<del>Garfield</del>									23
✓ <u>Back Point</u> ✓ ✓									24
✓ <u>Mullet Lake</u> ✓ ✓									25
✓ <u>Koncomoc Lake</u> ✓ ✓									26
✓ <u>Benson Junction</u> ✓ ✓									27

Remarks

Decisions

	Remarks	Decisions
1		288813
2		"
3		"
4		"
5		
6		
7		
8		
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25		
26		
27		

GEOGRAPHIC NAMES

Survey No. T-5687

#2

Name on Survey											
	A	B	C	D	E	F	G	H	K		
✓ <u>Trash Pond</u>	✓	✓									1
✓ <u>Rossiter Pond</u>	✓	✓									2
✓ <u>Bonnet Pond</u>	✓	✓									3
✓ <u>Deep Hole Pond</u>	✓	✓									4
											5
Florida Power & Light Co.											6
Palmetto Fibre Co. ✓					Names underlined in red		by L. Heck on 7/18/39				7
Brush Co.											8
Public Utilities Co.											9
✓ Florida Methodist Orphanage ✓											10
											11
											12
											13
											14
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											19
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											25
											26
											27

## REVIEW OF AIR PHOTO COMPILATION NO.

Chief of Party: Riley J. Sipe

Compiled by: F. R. Gossett

Project: H T 168

Instructions dated: March 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)  
Yes
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)  
Yes
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)  
Yes
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)  
None
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.  
Yes
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)  
~~Yes~~  
None
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." --87

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)

None shown

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)

Yes

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)

Yes

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)

Yes

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.

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)

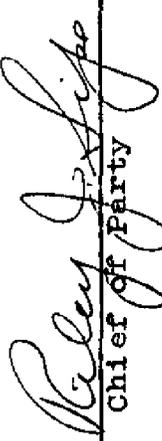
16. No additional surveying is recommended at this time.

No.

17. Remarks:

18. Examined and approved;

19. Remarks after review in office:

  
Chief of Party

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 by " ON RULING MACHINE

Grid inked on machine by "

Intersections inked by "

Points used for plotting grid:

x = 395,000 FT  
y = 1,640,000 FT

x 415,000  
y 1,650,000

x 395,000  
y 1,655,000

x  
y

x 430,000  
y 1,655,000

x  
y

x 430,000  
y 1,640,000

x  
y

Triangulation stations used for checking grid:

$X = 414,568.47 \text{ FT} - Y = 1,647,927.77 \text{ FT}$

- 1. Benson<sup>1925</sup> (Ref. Sta.) 5. \_\_\_\_\_
- $Y = 424,823.66 - Y = 1,629,651.80$
- 2. Stone Island USE 1935 6. \_\_\_\_\_
- $X = 395,709.73 - Y = 1,647,117.96$
- 3. Fibre, 1935 7. \_\_\_\_\_
- 4. \_\_\_\_\_ 8. \_\_\_\_\_

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION  
(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station 4 1,650,000  
 $\lambda$  (Central meridian) 81° 00' "  
 $\phi$  28° 52' 21.44  $\lambda$  81 15 56.07  
 $\Delta\phi$  (Excess of  $\phi$  over even 10' expressed as minutes and decimal) 2.357333  $\Delta\lambda$  (Central meridian -  $\lambda$ ) 15 56.07  
 $\Delta\lambda$  (in sec.) 956.07

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular $H$ (even 10')		Tabular $V$ (even 10')	
Interpolated $H$ (fraction of 10')	-	Interpolated $V$ (fraction of 10')	+
Cor. for second dif.	+ 67	Cor. for second dif.	+ 3
$H$	88.909.688	$V$	1.040868
		Tabular difference of $y$ for 1" of $\phi$	
$a$	- .778	$y$ (for minutes of $\phi$ )	
$b$	+ 5.080	$y$ (for seconds of $\phi$ )	
$H$ ( $\Delta\lambda''$ )	85 003.95	Tabular $y$	1,649,904.88
$ab$	- 3.95	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	95.14
$x'$	- 85 000		
	500,000.000	$c$	- .02
$x$	415	$y$	1,650,000
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F(\Delta\lambda)''$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta a''$	"
		$\Delta a$	"

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

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

T5687

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION  
(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station 430,000  
4,164,000  
81° 00' "  
 $\lambda$  (Central meridian) 81 13 07.15  
 $\phi$  28° 50' 42.73  $\lambda$  81 13 07.15  
 $\Delta\phi$  (Excess of  $\phi$  over even 10' expressed as minutes and decimal) 0.7121667  $\Delta\lambda$  (Central meridian -  $\lambda$ ) - 13 07.15  
 $\Delta\lambda$  (in sec.) 787.15

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular $H$ (even 10')		Tabular $V$ (even 10')	
Interpolated $H$ (fraction of 10')	-	Interpolated $V$ (fraction of 10')	+
Cor. for second dif.	+ 24	Cor. for second dif.	+ 1
$H$	88.933024	$V$	1.040237
$a$	- .779	Tabular difference of $y$ for 1" of $\phi$	
$b$	+ 4.243	$y$ (for minutes of $\phi$ )	
		$y$ (for seconds of $\phi$ )	
$H$ ( $\Delta\lambda''$ )	70,003.31	Tabular $y$	1,639,935.56
$ab$	- 3.31	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	64.45
$x'$	70,000		
	500,000.00	$c$	- .01
$x$	430	$y$	1,640,000
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F' (\Delta\lambda)''^3$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha''$	"
		$\Delta\alpha$	"

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

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

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION  
(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station X 395,000  
Y 1,655,000  
0  
 $\lambda$  (Central meridian) 81° 00' "  
81 19 41.18  
 $\phi$  28° 53' 10.45  $\lambda$  - 19 41.18  
 $\Delta\phi$  (Excess of  $\phi$  over even 10' expressed as minutes and decimal) 3.7741666  $\Delta\lambda$  (Central meridian -  $\lambda$ ) 118.18  
 $\Delta\lambda$  (in sec.) 118.18

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular $H$ (even 10')		Tabular $V$ (even 10')	
Interpolated $H$ (fraction of 10')	-	Interpolated $V$ (fraction of 10')	+
Cor. for second dif.	+ 81	Cor. for second dif.	+ 4
$H$	88.898094	$V$	1.041181
		Tabular difference of $y$ for 1" of $\phi$	
$a$	- .778	$y$ (for minutes of $\phi$ )	
$b$	+ 6.1368	$y$ (for seconds of $\phi$ )	
$H$ ( $\Delta\lambda''$ )	105,004.78	Tabular $y$	1,654,854.77
$ab$	- 4.78	$V$ $\left(\frac{\Delta\lambda''}{100}\right)^2$	145.26
$x'$	- 105		
	500,000.00	$c$	- .03
$x$	395,000	$y$	1,655,000
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F' (\Delta\lambda)''^3$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha''$	"
		$\Delta\alpha$	"

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

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

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PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION  
(CALCULATING MACHINE COMPUTATION)

State Fla Zone East Station 430,000  
1,655,000  
 $\lambda$  (Central meridian) 81° 00' "  
 $\phi$  28° 53' 11.24  $\lambda$  81 13 07.46  
 $\Delta\phi$  (Excess of  $\phi$  over even 10' expressed as minutes and decimal) 3.1871666  $\Delta\lambda$  (Central meridian -  $\lambda$ ) 13 07.46  
 $\Delta\lambda$  (in sec.) 787.46

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular $H$ (even 10')		Tabular $V$ (even 10')	
Interpolated $H$ (fraction of 10')	-	Interpolated $V$ (fraction of 10')	+
Cor. for second dif.	+ 81	Cor. for second dif.	+ 4
$H$	88.897910	$V$	1.041185
$a$	- 778	Tabular difference of $y$ for 1" of $\phi$	
$b$	+ 4.241	$y$ (for minutes of $\phi$ )	
		$y$ (for seconds of $\phi$ )	
$H$ ( $\Delta\lambda''$ )	70,003.30	Tabular $y$	1,654,935.45
$ab$	- 3.30	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	64.56
$x'$	-70,000	$c$	- .01
	500,000.00	$y$	1,655,000
$x$	430	$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{(\text{Tabular } y) + y}{2}$		$F' (\Delta\lambda)''$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$\Delta\alpha''$	"
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha$	"

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

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

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION  
(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station γ 395,000  
ϒ 1,640,000  
λ (Central meridian) 81° 00' "  
81 19 40.72  
φ 28° 50' 41.93 λ 19 40.72  
Δφ (Excess of φ over even 10' expressed as minutes and decimal) 0.698833 Δλ (Central meridian - λ) 1180.72  
Δλ (in sec.) 1180.72

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular $H$ (even 10')		Tabular $V$ (even 10')	
Interpolated $H$ (fraction of 10')	-	Interpolated $V$ (fraction of 10')	+
Cor. for second dif.	+ 24	Cor. for second dif.	+ 1
$H$	88.933213	$V$	1.040232
$a$	- .779	Tabular difference } of $y$ for 1" of $\phi$ }	
$b$	+ 6.136	$y$ (for minutes of $\phi$ )	
		$y$ (for seconds of $\phi$ )	
$H (\Delta\lambda'')$	105.004.78	Tabular $y$	1,639,855.01
$ab$	- 4.78	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	145.02
$x'$	- 105,000		
	500,000.00	$c$	- 07
$x$	395,000	$y$	1,640,000
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F (\Delta\lambda'')$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha''$	"
		$\Delta\alpha$	"

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

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

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION  
(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station Stone Island N.E. 1935

$\lambda$  (Central meridian) 81° 00'  
81 14 05.344

$\phi$  28° 50' 39.113

$\Delta\phi$  (Excess of  $\phi$  over even 10' expressed as minutes and decimal) 0.6518833  $\Delta\lambda$  (Central meridian -  $\lambda$ ) -14 05.344  
 $\Delta\lambda$  (in sec.) 845.344

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular $H$ (even 10')		Tabular $V$ (even 10')	
Interpolated $H$ (fraction of 10')	-	Interpolated $V$ (fraction of 10')	+
	<u>88.933856</u>	Cor. for second dif.	+
Cor. for second dif.	+ <u>20</u>	$V$	<u>1.040214</u>
$H$	<u>88.933876</u>		
		Tabular difference } of $y$ for 1" of $\phi$ }	
$a$	- <u>.779</u>	$y$ (for minutes of $\phi$ )	
$b$	+ <u>4.338</u>	$y$ (for seconds of $\phi$ )	
$H$ ( $\Delta\lambda''$ )	<u>75,179.72</u>	Tabular $y$	<u>1,639,577.49</u>
$ab$	- <u>338</u>	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	<u>74.33</u>
$x'$	- <u>75,176.34</u>	$c$	<u>1,639,651.82</u>
	<u>500,000.00</u>	$y$	<u>1,639,651.80</u>
$x$	<u>424,823.66</u>		
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F(\Delta\lambda)''$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha''$	"
		$\Delta\alpha$	"

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

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

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION  
(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station Benson 1935  
 $\lambda$  (Central meridian) 81° 00'  
 $\phi$  28° 52' 00.909  $\lambda$  81 16 00.872  
 $\Delta\phi$  (Excess of  $\phi$  over even 10' expressed as minutes and decimal) 2.01515  $\Delta\lambda$  (Central meridian -  $\lambda$ ) 16 00.872  
 $\Delta\lambda$  (in sec.) -960.872

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular $H$ (even 10')		Tabular $V$ (even 10')	
Interpolated $H$ (fraction of 10')	-	Interpolated $V$ (fraction of 10')	+
	<u>88.914484</u>	Cor. for second dif.	+ <u>3</u>
Cor. for second dif.	+ <u>60</u>	$V$	<u>1.040737</u>
$H$	<u>88.914544</u>		
		Tabular difference } of $y$ for 1" of $\phi$ }	
$a$	- <u>.778</u>		
$b$	+ <u>5.103</u>	$y$ (for minutes of $\phi$ )	
		$y$ (for seconds of $\phi$ )	
$H (\Delta\lambda'')$	<u>85,435.50</u>	Tabular $y$	<u>1,647,831.68</u>
$ab$	- <u>3.97</u>	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	<u>96.09</u>
$x'$	<u>85,431.53</u>		<u>1,647,927.77</u>
	<u>500,000.00</u>	$c$	<u>.02</u>
$x$	<u>414,568.47</u>	$y$	<u>1,647,927.75</u>
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F (\Delta\lambda)''^3$	"
$\sin \frac{\phi + \phi'}{2}$		$\Delta a''$	"
		$\Delta a$	"

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

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

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION  
(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station Fibre 1935

$\lambda$  (Central meridian) 81° 00'

$\phi$  28° 51' 52.425  $\lambda$  81 19 32.954

$\Delta\phi$  (Excess of  $\phi$  over even 10' expressed as minutes and decimal) 1.87375  $\Delta\lambda$  (Central meridian -  $\lambda$ ) -19 32.954  
 $\Delta\lambda$  (in sec.) 1172.954

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular $H$ (even 10')		Tabular $V$ (even 10')	
Interpolated $H$ (fraction of 10')	-	Interpolated $V$ (fraction of 10')	+
	<u>88.916493</u>	Cor. for second dif.	+ <u>3</u>
Cor. for second dif.	+ <u>58</u>	$V$	<u>1.040683</u>
$H$	<u>88.916551</u>		
		Tabular difference } of $y$ for 1" of $\phi$ }	
$a$	- <u>778</u>	$y$ (for minutes of $\phi$ )	
$b$	+ <u>6.100</u>	$y$ (for seconds of $\phi$ )	
$H$ ( $\Delta\lambda''$ )	<u>104,295.02</u>	Tabular $y$	<u>1,646,974.81</u>
$ab$	- <u>4.75</u>	$V\left(\frac{\Delta\lambda''}{100}\right)^2$	<u>143.18</u>
$x'$	- <u>104,290.27</u>		<u>1,647,117.99</u>
	<u>500,000.00</u>	$c$	- <u>.03</u>
$x$	<u>395,709.73</u>	$y$	<u>1,647,117.96</u>
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F(\Delta\lambda)''$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta a''$	"
		$\Delta a$	"

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V\left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

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

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# MEMORANDUM

## IMMEDIATE ATTENTION

SURVEY DESCRIPTIVE REPORT PHOTOSTAT OF	}	No. H  No. T	{	received registered verified reviewed approved
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This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
26	<i>Coast Pilot</i>	<i>A.S.P.</i>	<i>Paragraph 5 Page 5 A.</i>
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	<i>Jones Room 2229</i>
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Section of Field Records

REVIEW OF AIR PHOTOGRAPHIC SURVEY T-5687

DATA RECORD

Triangulation: 1935.

U. S. Engineers 1934.

Photographs taken: March 20, 1935.

Field Inspection: 1935, 1937, 1938.

Contemporary Graphic Control Surveys: March, 1938.

Recoverable stations of less than

3rd order accuracy: 1938.

Contemporary hydrographic surveys: March 1938.

Traverse: Florida Geodetic Survey.

The field inspection was for the purpose of interpreting the photographs and of obtaining by ground methods important changes since the photographs were taken. The detail of T-5687 is of the date of the photographs except as follows:

- (1) From 1938 Graphic Control Surveys.

Certain piles, trees offshore, Lake Monroe Bar Beacon 1, overhead cable crossings on poles, and certain pier ruins.

- (2) From Field Inspection 1935 to 1938, exact dates not given.

(As noted at top of page 5, descriptive report):

A few minor changes in buildings and roads.

Section of Field Records

REVIEW OF AIR PHOTOGRAPHIC SURVEY T-5687

Comparison with Graphic Control Surveys.

C.S. 143M (1938) 1:10,000.  
144M (1938) 1:10,000.

- (1) T-5687 has been carefully compared to the above surveys and the recent hydrographic surveys. In case of any difference between the above graphic control surveys and T-5687, the latter should now be taken as correct.
- (2) All detail on the above graphic surveys within the area of T-5687 is now shown on T-5687 except:
  - (a) Magnetic declination.
  - (b) Temporary topographic stations.
- (3) The graphic control surveys were made to locate signals, obstructions, and aids to navigation. Very little shoreline or other topographic detail is shown.
- (4) At lat.  $28^{\circ} 51.6'$ , long.  $81^{\circ} 15.1'$  there was a difference of 10 meters in the location of a ruined pier as shown on T-5687 and graphic control survey 144M. Examination of the photos showed that no exact location was made during the field inspection, and therefore, T-5687 was changed to agree with the graphic control survey.

Comparison with Previous Topographic Surveys.

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

This is a small scale reconnaissance survey with little control. It has been examined in connection with T-5687, but a detailed comparison would be of no value. T-5687 is adequate to supersede T-2027.

Comparison with Recent Hydrographic Surveys.

H-6307 (1938) 1:10,000.

- (1) Lat.  $28^{\circ} 50.2'$ , longitude  $81^{\circ} 19.1'$ .

A wrecked barge is shown on T-5687 which is not on H-6307.

- (2) Lat.  $28^{\circ} 50.4'$ , long.  $81^{\circ} 19.4'$ .

A small pier is shown on T-5687 which is not on H-6307. No change to the hydrographic sheet was made at the time of this review, but the above conflicts were called to the attention of the hydrographic review group for their disposal.

Comparison with Charts.

Chart 509 (printing 3/14/38) 1:40,000.

A detailed comparison with the present chart would be of no value because of the known inadequacy of the previous surveys. The only difference of importance to mention is the overhead transmission line which crosses the St. Johns River on poles about 1/4 mile east of the highway and railway bridge and which does not appear on the current chart. This has been called to the attention of the Nautical Chart Section.

Recoverable H. & T. Stations.

There are no described topographic stations on T-5687.

Landmarks.

The following landmarks within the area of T-5687 were recommended by the party of L. D. Graham on Form 567, according to descriptive report of graphic control survey 143M (1938):

- Triangulation Station: Sanford, Florida Power and Light Co., Water Tank 1935.
- Triangulation Station: Benson Springs, Public Utility Co., Water Tank, 1935.
- Triangulation Station: Benson Junction, Florida, Palmetto Fibre Co., Water Tank, 1935.
- Lake Monroe Bar Beacon No. 1 (located by planetable).

The following were recommended by the party of Riley J. Sipe on Form 567 submitted with the descriptive report of T-5687, and later forwarded to the Nautical Chart Section:

- Triangulation Station: Benson Springs Public Utility Company, Stack, 1935.
- Triangulation Station: Sanford, Florida Power and Light Co., Stack 1935.

Drafting.

The ink has rubbed off of both the drawing/ <sup>and</sup> the name

overlay and considerable negative work will be necessary. In some cases small islands are nearly obliterated. This is due more to the materials used than to the fault of the draftsman. The celluloid ink in use is not always satisfactory for drafting on the cellulose acetate material now being used.

Bench marks shown on T-5688 by a cross have been changed to the standard topographic symbol, a circle.

Pine tree symbols are in general too heavy to print clearly.

Reviewed by - T. M. Price, Jr.,

Inspected by - B. G. Jones.

Examined and approved:

  
T. B. Reed,  
Chief, Section of Field Records.

  
K. T. Adams  
Chief, Division of Charts.

  
Fred. L. Peacock  
Chief, Section of Field Work.

  
G. W. Wade  
Chief, Division of H. & T.