

K+Σ

LEVEL BOOK

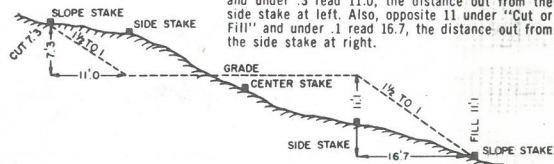
82 0040

Free Hardy

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
Distance out from Side or Shoulder Stake											
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

Book 71-1

W.R. Oglesby
Florida Dept of Natural Resources
Bureau of Geology

P.O. Drawer 631

Tallahassee Fla. 32302

Gravity Survey



The paper in this book is made of 50% high grade rag stock with a WATER RESISTING surface sizing.

KEUFFEL & ESSER CO.

- June 9 - 1971

Stat.	Time	Read	IH	FI	Bm
Crest	7:39	18061	2.0'		J-290
Base	7:41	18061	"		C+GS
	9:48	18053	"		1967
	9:50	18054	"		8J-298
	11:10	18043	"		
	11:12	18045			

Escambia River (12)	8:48	20436	0.0	62.33	SRD
Base 113-025	8:50	20435		Stab. Dist	

At Sidewalk V 6" from
intersection 6" deep

At County Ct house - 9.5' from
first step - 9.5' N of flag pole

Bridge Cross Escambia River
between Santa Rosa + Escambia Cts
NE Pier.

6/9/71

Sta	Time	Peak	Alt	E1	Bm
113-024	10:36	18077	1.2'		CFS F-298
East Mullin Base	10:38	18077	-		1967

Hwy 90 N of Intersection with
SR 87 - West of Mullin + Big Bend

6/10/71

Station Time Read IH E1 BM

DeFuniah 7:05 16474 1.5 265.13 W10

Springs 7:07 16474 264. 1918

Base 8:26 16437 ✓ CTGS

8:27 16435 ✓

✓10

1918

CTGS

Set in Wall of First Nat Bk

Can Baldwin Art 7th St

BM Dish about 14" above sidewalk

Crestview 7:45 18167 2.0

Base 7:47 18167 ✓

9:14 ^{del} 18128 ✓

9:15 18132 ✓

9:17 18134 ✓

J-298

1967

6/10/76

Stat	Time	Read	1H	E1	Bm
RR Station	8:34	16477	1.5		V-10
DeFuniak	8:35	16477			1918
Spgs					CHS

Marianville	11:36	16883	1.0'		
Base	11:37	16884	✓		
	1:10	16887	✓		
	1:12	16890	✓		
	1:13	16890			

Chattahoo	12:34	16813	1.5		
Lee	12:35	16811	✓		
Temp	2:05	16821	✓		
Base	2:07	16819	✓		
	3:30	16785	✓		
	3:31	16788	✓		
	3:32	16786	✓		

Marianville Driveway - house at No 122
 1938 Daniels Street,
 CHS
 →

Store adjoining torn down
 bldg where Chattahoochee base
 was destroyed - at base of
 3 poles holding porch roof -
 on concrete slab.

6/10/71

Stat	Time	Read	IH	EI	BM
Quincy	2:50	17385	1.5		T154
Base	2:51	17383			CHGS 1954

Dist is $\frac{1}{\lambda}$ 2.1' above G.L.
Cant House.

6/11/71

Stat	Time	Reel	1H	EI	Bm
Chipley	9:00	17763	1.2'		Chipley
Base	9:02	17763			1938
	10:10	17739			CTG
	10:12	17740			
	11:52	17765			
	11:53	17762			
	11:54	17760			

Marianna	9:34	16958	1.0		
Base	9:35	16957	✓		

DeFuria	11:02	16456	1.5		
Stess	11:03	16464			
Base	11:05	16467			
	11:07	16464			
	11:09	16465			

CTG
Marianna

1938

W-10

1918

CTG

Chipley Quad
SW on Courthouse lot
Sec 4 - 4N-13W

9 1/2 Paces from S. Side street
about 12 Paces from returning
wall of Courthouse lawn on West side
Disk is level with lawn - grass overgrown

8/13/71

Station Time Road IH EI BM

(361) ✓
Gulf Haven 10:00 9415 1.3 2.5'

Camp DB 10:02 9414 ESI

Stop #1 ✓
11:19 9214 1.3 0.0'

(362) 11:20 9215 ESI

Stop #2 ✓
12:00 9180 1.3 0.5

(363) 12:01 9179 ESI

C-3 ✓
12:24 8964 1.3 0.0

(364) 12:26 8965 ESI

(365) ✓
C-4 2:41 9531 1.3 0.0

Chino Island 2:42 9531 ESI

Gulf ✓
4:04 9459 1.3 2.5'

Haven DB 4:05 9460 ESI

(361)

Pine Island Cont. Cont

Send Sec 35-45-22E

Unnamed Key - Shells
Venus abd.

Chino Island at road cut
Near burnt house

8/14/71

Station	Time	Read	HH	FI	BM
N. Ft.	3:13	9119	1.2'		1952
Myers	3:14	9116			104
Base	3:16	9114			ERS
✓	5:03	9113			<u>USGS</u>
	5:04	9114			
(626)	7:08	9116			
	7:10	9114			

11-1 3:30 1.3' 7'
Est

26-1 3:40 9369 18'
(366) 3:42 9369 Est

Ft Myers NW Quad
N/2 - 44S - 24E
at English School.
Disk in Monument 0.5' above GL

~~South side SR 78A and West side
River Rd in 11-44S-24E~~

SW 1/4 26 - 43S - 24E
Ft Myers NW Quad.

8/14/71

Station	Time	Read	IH	EI	BM
27-1	3:52	9698	0.0	20'	SRD
(367) ✓	3:53	9699		Est	

22-1 ✓	4:03	10088	1.3	18'	
(368)	4:05	10089		Est	

9-2 ✓	4:11	10293	1.3	22'	Not Rec
(369)	4:12	10295		Est	

5-1 ✓	4:22	10649	1.2	22'	
(370)	4:23	10652		Est	

Charlee ✓	4:38	10850	1.0	23'	USGS
Base	4:39	10850			USGS
(044)					99
					ERS
					HT

Ft Myers NW Quad

SRD Disk in Culvert - E side ^{US} 41
where it joins New 41 - in 27-43S-24E

NW Cr 22-43S-24E

Sec 9-43S-24E

(Labville RE)

Black tip at E side US 41

Sec 5-43S-24E Gilchrist Quad

West side ^{US} 41 - about 50' S of
Charlotte-lee Line on west side
of ditch - BM 8" above G.L.
Sec 5-43S-24E

Gilchrist

8/14/71

Station	Time	Real	114	E1	BM
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11-1	5:14	8913	1.3	7'	
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(371)	5:15	8914		Est	
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10-1	5:30	9080	0.0	4'	SRD
------	------	------	-----	----	-----

(372)	5:32	9084		Est	Disk
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10-2	5:42	8814	1.2	5'	
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(373)	5:43	8816		Est	
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9-3	5:50	8987	1.2	9'	
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(374)	5:51	8988		Est	
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21-1	6:02	8841	1.2	7'	
------	------	------	-----	----	--

(375)	6:04	8838		Est	
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4-1	6:15	9219	1.2	12'	
-----	------	------	-----	-----	--

(376)	6:16	9216		Est	
-------	------	------	--	-----	--

Ft Myers NW

South side SR 78-A + ^{Pondella Rd}

W side Puer Rd 11-445-24E

Sec 10 - 445-24E Ft Myers NW

Culvert - E side Moody Rd N side Stipe

ST - SRD Dis C

N side Skyline Dr + E side Moody Rd

Ft Myers NW

Sec 9 - 445-24E Ft Myers NW

Sec 21 - 445-24E Ft Myers NW

Sec 4 - 445-24E Ft Myers NW

N side Pondella E side McNeill Rd

8/14/71

Station	Time	Read	HH	El	Bm
7-1	6:33	9669	1.2	13'	
(377)	6:34	9667		Est	

4-2	6:51	9408	1.2	12'	
(378)	6:52	9408		Est	

3-1	7:59	9304	1.2	11 Est	
(379)	7:00	9306			

Ft Myers NW - 7- 44S - 24E
 E side Andalusian Blvd - N side
 Pine Island Rd (78)

East Side Corbett Rd N side SR 78
 4- 44S - 24E Ft Myers NW

Sec 3- 44S - 24E Ft Myers NW

8/15/71

Sambel Quad

Station	Time	Reed	HT	EI	Bm	Perennial + Lundgren Rd
(22)	^{8:50} 9:50	8893	1.3'		R-24	Sec 19 - 46 S - 23 E
Sambel	9:51	8893			1965	
Base 2	^{10:43} 11:43	8910	✓		C165	
	11:44	8912				
(045)	^{1:08} 2:08	8921	✓			
048	2:09	8923				
	^{3:07} 4:07	8918	✓			
	4:09	8918				
	^{5:12} 6:12	8923				
	6:13	8926				

8/15/71

Station	Time	Read	1H	E1	BM
35-1	10:51	8910	1.3	5'	
(380)	10:52	8912		Est	

26-1	11:01	9016	1.3'	5'	
(381)	11:02	9014		Est	

34-1	11:11	9045	1.2'	4'	
(382)	11:12	9044		Est	

36-1	11:19	8883	1.3	5'	
(383)	11:20	8884		Est	

25-1	11:34	8936	1.3	5'	
(384)	11:35	8936		Est	

Samuel Auel
W. side Gulf Drive S side
Tampa Bay Rd
35-46 S - 22 E

Sec 26 - 46 S - 22 E
Tampa Bay Rd

Sec 34 - 46 S - 22 E N side Island
Juv Rd

Sec 36 - 46 S - 22 E

Sec 25 - 46 S - 22 E at ^{N side} Casa Ybel
Rd & ^{west side} Periwinkle Way - beneath
Sign Standard.

8/15/71

Station	Time	Read	HI	El	BM
19-1	12:02	8927	1.3	5'	Not
(385)	12:03	8930		Est	Rec

30-1	12:11	8876	1.3	4'	
(386)	12:12	8874		Est	

13-1	12:30	9132	1.3	4'	
(387)	12:31	9128		Est	

24-1	12:50	9036	1.2	2.5'	
(388)	12:51	9039		Est	

25-2	1:03	8948	1.2		
(389)	1:04	8945			

Z-24
1965
C+65

Sanibel Quad
Sec 19- 46S-23E

W side Pensacola Way +
S side Dmax St.

Sec 30 46S-23E

Woodrings Point - Sec 13-46S-22E

Sec 24- 46S-22E

BM rec (driven rod w/ disk at top)
looks okay but protective pipe
around it broken

8/15/71

Station Time Read IH FI BM

28-1 1:27 9132 1.3 6'

(390) 1:29 9133 Est

29-1 1:38 9238 1.3 5'

(391) 1:39 9239 Est

27-1 2:²⁶37 9137 1.2 5'(392) 2:²⁴39 9139 Est

21-1 2:36 9207 1.3 5'

(393) 2:37 9207 Est

21-2 2:48 9265 1.3 4'

(394) 2:50 9266 Est

Sambel Quad

Sec 28-46S-22E

Wulfert Quad

Sec 29-46S-21E

Sambel Quad

Sec 27-46S-22E

Sec 21-46S-22E

Visit Rabbit Rd

Sambel

Sec 21-46S-22E

8/15/71

Station	Time	Read	HT	F1	BM
MUNSON	3:18	10179	1.3'	7'	^{CLGS} Munson
Base	3:19	10181			1934

(846)

Captiva Quad

Sec 26 - 45S - 21 E

Disk is 8" above GL - Monument
titled ^{25°} left stream in good order

22-1	3:29	10377	1.1'	4'	^{CLGS} F-260
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(395)

3:30 10376

Fst 1966

Sec 22 - 45S - 21 E Captiva Quad

8/15/71

Station Time Read IH EI Bm

26-2 4:49 10088 1.2' 4' Corp of Engs

(396) 4:50 10086 Est 1964

3-1 5:12 9806 1.3 5' Est

(397) 5:13 9806

3-2 5:21 9854 1.3 5' Est

(398) 5:23 9854

12-1 5:35 9597 1.3 5' Est

(399) 5:36 9594

12-2 5:48 9636 1.3 4' Est

(400) 5:49 9639

Captiva Quad - 26-455-21E

N Side Coconut Rd &
W Side Munson St. BM Post
is 8" above G.L. Across Street
from Timmy's Nook.

Sec 3-465-21E Wulfert Quad

Sec 3-465-21E

Captiva Quad

Sec 12-465-21E

Wulfert Quad.

Sec 12-465-21E

8/16/71

Station Time Read HH FI BM

Sec 35-455-22E

(10) 8:48 9570 1.3 C-260

(033) 8:50 9570

Gulf Haven 8:55 9565 1.3 2.5

Camp DB 8:56 9562 Fc, f

(361)

Pine Island 9:20 10820 0.0

BMC7

Base 9:21 10821

US Eng

Pine Island Center Area

(032) 9:51 10810 ✓

1946

9:58 10811

21-3

11

8/16/71

Station	Time	Read	IH	TI	Bm
Pine land	9:41	11467	1.3	2'	
DB	9:42	11469		Est	

(401)

Not Rd	10:19	10166	1.3	11'	
21-3	10:20	10164		Est	

(402)

28-2	10:27	9993	1.2	10'	
	10:28	9994		Est	

(403)

33-1	10:35	9863	1.3	8'	
	10:36	9864		Est	

(404)

33-2	10:45	9770	1.3	7'	FSI
	10:47	9770			

(405)

Bokeelia Quad Sec 7-44S-22E

Matlacha Quad Sec 21-44S-23E
S side SR78 E side Not RdSec 28-44S-23E Pine Island
Center Quad

Sec 33-44S-23E Pine Island Center

8/16/71

Station	Time	Read	HT	FI	Bm
Pine (11)	11:08	10073	1.3	10.817	S 246
Island Pine	11:09	10074			1965
					CT65

(047)

Coral (12)	11:45	8806	1.5'	5.38	Bm
Gables Bree	11:46	8805		4.18	GL
(040)	1:54	8832			
	1:55	8834			
	4:17	8837			
	4:18	8837			
	6:10	8846			
1-3	6:12	8849			

Matlacha Quad

NW Sec 22 - 44S - 23E

Del Prado Blvd at SE 475 St
Sec 7 - 45S - 24E

Ft Myers SW

BM-is 1.2' above GL

S 246 - 23E
Del Prado Blvd

8/16/71

Stat	Time	Read	HT	FI	BM
12-2	12:27	9016	1.5	6'	
406	10:28	9015		Est	

11-2	12:36	9166	1.3	4'	
407	12:38	9166		Est	

10-3	12:48	9379	1.3'	5'	
408	12:49	9381		Est	

15-1	1:08	9264	1.3	5'	
409	1:09	9263		Est	

15-2	1:12	9329	1.3	4'	
410	1:13	9329		Est	

14-1	1:33	9160	1.3	4'	
411	1:34	9163		Est	

Ft Myers SW Quad 12-455-23E
 Gulf Station W side Granada
 Blvd + N side Cape Coral Pkwy

Ft Myers SW
 W Side Santa Barbara Blvd +
 N Side Cape Coral Pkwy 11-455-23E

Ft Myers SW
 W Side Skyline Blvd + N Side
 Cape Coral Pkwy 10-455-23E

Ft Myers SW
 N side FI Dorado Pkwy +
 W side Skyline Blvd Sec 15-455-23E

Sec 15-455-23E
 Ft Myers SW

Ft Myers SW
 N Side FI Dorado Pkwy +
 E side SW 1 Ct 15-455-23E

8/16/71

Station Time Read IH. EL Bm

2-1 2:28 9467 1.3 8'
(412) 2:29 9468 Est

2-2 2:37 9499 1.3 10'
(413) 2:38 9499 Est

34-2 2:47 9633 1.3 11'
(414) 2:48 9634 Est

2-3 2:59 9360 1.3 7'
(415) 3:00 9364 Est

35-2 3:13 9472 1.3 10'
(416) 3:14 9470 Est

36-2 3:26 9277 1.3 8'
(417) 3:27 9276 Es

Ft Myers SW

SW 2-45S-23E

S side Mainway Phwy + E side
Skyline Phwy

E side Skyline Phwy + S side
Gleason Phwy

NE Cn 34-44S-23E

Ft Myers SW. Avail

S. side
Gleason Phwy + West side
Santa Barbara Ave
7-45S-23E - Ft Myers SW.

Sec 35-44S-23E Ft Myers SW

S side Mainway Phwy - E side Santa Barbara

NE 36-44S-23E Ft Myers SW

E side SE 8th Ave + S side
Retunda Phwy

8/16/71

Station Time Road IH EI BM

6-1 3:47 9154 1.3 7'
 (418) 3:48 9153 Est

6-2 3:59 9065 1.5 7'
 (419) 4:00 9067 Est

6-3 4:29 8885 1.3' 8'
 (420) 4:30 8884 Est

17-1 4:45 9397 1.3 12'
 (421) 4:46 9398 Est

7-2 4:56 9713 1.0 12'
 (422) 4:57 9713 Est

NW 1/4 - 45S - 24E Ft Myers SW
 8th Ave + 32d St

SE 1/4 E + SSE 40th St in 6-45S-24E

S Side 40th St + W Side Del Prado
 Phwy.

Ft Myers NW
 Esabe Del Prado + S side Van Loon
 Phwy in 17-45S-24E

Jock Blvd S + Van Loon
Ft Myers NW 7 44S-24E

9/16/71

Station Time Read HH EI Bm

13-2 5:07 9521 1.3 11'

(423) 5:08 9521 Est

13-3 5:14 9710 1.3 11'

(424) 5:15 9708 Est

23-1 5:24 9560 1.3 11'

(425) 5:25 9560 Est

23-2 5:35 9775 1.3 9'

(426) 5:36 9775 Est

24-2 5:52 9379 1.3 9'

(427) 5:53 9379 Est

SE 13-44S-23E - Ft Myers NW

SE 23-44S-23E Ft Myers SW

W side Santa Barbara N side Trefalgar

BW 23-44S-23E

Ft Myers SW
SE 16 LN + County Club
BLK. (SE 24-44S-23E)

8/17/71

Station	Time	Read	HT	El	Bm
Gulf Haven	9:03	9585	1.3	2.5'	
Camp					
D B	9:04	9587	-	EST	

Punta	2:58	13169	1.5		L-38
Gorda	3:00	13170	-		Reset
Base	6:08	13177			1961
020	6:09	13179			

Placida	3:39	12639	1.5	11"	SRD
Base	3:40	12642		EST	Dist
Creek	5:34	12653			
Creek	5:35	12655			
015-024					

Disk is 3' above G.L.

Placida Quad
NW Pier of bridge over Canal
Creek in 12-42 S-20
Ground level is < 5'

8/17/71

Sta	Time	Reel	114	E1	Am
35-3	4:02	12010	1.5	5'	
015-167	4:03	12007		Est	

2-4	4:14	11838	1.3	6'	
(428)	4:15	11836		Est	

11-3	4:19	11564	1.3	6'	
(429)	4:20	11566		Est	

23-3			1.4	9' Est	
Rear	4:38	11352			
Light	4:39	11351			

(430)					
26-3	4:46	11305	1.2	4.5' Est	
(431)	4:47	11306			

Placida Quad

Sec 35 42S-20E Charlotte
City

Placida 2-43S-20E

Placida 11-43S-20E

Port Boca Grande Quad
At Lighthouse platform at
right side of 1st step (facing
Gulf) - 23-43S-20E

Port Boca Grande
Section line 23/26 - 43S-20E

8/17/71

Stat	Time	Read	HT	EI	BM
------	------	------	----	----	----

26-4	5:00	11128	0.0	5.5'	
------	------	-------	-----	------	--

(432)	5:01	11128		Est	
-------	------	-------	--	-----	--

26-5	5:24	12291	1.3	5'	
------	------	-------	-----	----	--

015-168	5:25	12292		Est	
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Port Boca Grande Gulf

Most southerly corner of
Sea wall at pier on Aug end
of Hwy.

Placida Quad Chalky

26-425-20E

8/18/71

Sta	Time	Read	HT	El	BM
	11:49	11881	0.0	3'	
	11:50	11880		Est	

Marina

D.B.

Left Wall corner facing
launching ramp

9/14/71

Station Time Real IH EI BM

071-042⁰⁴² 11:12 7668 0.0 $\frac{34}{306} = 4.064$

Station 11:14 7668

46 1:13 7691 ✓

1:14 7691

35-1x 11:24 7735 1.5 32'

Lookout 11:25 7731

071-433
Tower071-434
2F1 11:45 7667 1.2 32'

Jaguar 11:46 7667 Est

071-435
16-1 11:54 7863 1.2 32'Richmond^{Blvd} 11:55 7865 Est14-1
Eisenhower 12:08 8196 1.3 31'Blvd
071-436 12:09 8193 Est.094
4

376

Alvase G

Sec 35-455-27E

Pondy 61- Pondy Headman 11
is about 4' above G-L.

455-27E

Q

Cor Jaguar^{Blvd} & Richmond^{Av.},
below road sign 455-27E QCor Richmond & Milwaukee^{Blvd}
below sign 455-27E QCor Eisenhower Blvd & Milwaukee^{Blvd}
below sign 455-27E Q

9/11/71

Stat	Time	Read	HT	El	Bm
071-437					
13-1	12:29	8369	1.2'	32'	
Milwaukee East	12:30	8369		Est	

071-438					
12-1	12:40	8505	1.4'	29	
SUMMA Blvd	12:41	8503	1.4	Est	

071-439					
1-1	12:49	8610	1.4	28	
Sunrise Blvd	12:50	8610		Es	

2-1 Blvd					
McArthur	12:59	8502	1.5	30'	
071-440	1:00	8501		Est	

C-37
Primo Island

11 10" 10'

Alva. SE. Q

455-27E - Milwaukee &
Columbus Blvd

=
455-27E Q
Summa Blvd & Columbus Blvd

=
455-27E Q
Sunrise & Columbus Blvds

=
45-5-27E Q
McArthur & Sunrise Blvds

9/12/71

Stat	Time	Read	HT	El	Bm
C-5	9:33	11824	1.3'	1.5	
(442)	9:34	11826		EST	
(443)	9:53	12065	1.0	2.0	
C-6 ^N	9:54	12061		EST	
La Costa					
C-7 ^{NE}	10:10	12106	1.2'	1.5'	
La Costa	110:11	12102		EST	
C-8 ⁽⁴⁴⁵⁾	10:30	12063	1.4	2.0	
Pelican					
Pass	10:31	12062		EST	
C-9 ⁽⁴⁴⁹⁾	10:50	12074	1.5	2.0	
Punta Blanca	10:51	12076	✓	EST	
Base	1:23	12089	✓	✓	
	1:24	12086			
	4:02	12094	✓	✓	
	4:03	12091			

Small Island on NW of
La Costa

La Costa Isl - NE end

NE End La Costa

La Costa Island

Pier at NE end of Punta Blanca
Island - Brown Cottage - chevron sign
Mailbox - Australian Pine
"Our Hideaway"

9/12/71

Stat	Time	Read	LH	EL	Bm
------	------	------	----	----	----

(443) C-6	11:10	12073	1.0	2.0	
	11:11	12069		Est	

C-10 Mullers	12:03	12468	1.5	3.0	
(441) Mullers	12:04	12467		Est	
DB					

C-11 (446)	1:44	12194	1.3	0.0	
Punta	1:45	12196		Est	
Blanca S.					

(447) C-12	2:05	12145	1.4	-0.5	
Oyster ^{Bar}	2:06	12141		Est	

(448) C-13	2:35	12149	1.2	-0.5	
Spill	2:36	12151		Est	
Blank					

Mullers Marina on Gasparilla Isle
At outside phone booth

Oyster Bar shown as spot
bank West of Δ "63"

Spill Bank dpt "54"

9/12/71

Station	Time	Read	HT	El	BM
Pejuan ⁴⁴⁹ pt	3:04	12048	1.1	1'	
C-14	3:05	12047		Est	

C-15					
Captiva	3:24	11940	1.2	0.0	
Pass ⁴⁵⁰	3:25	11938		Est	

23-3					
Rear	5:29	12289	0.0	9'	
Light	5:30	12290	0.0	Est	
<u>430</u>					

C-10 DB					
Millers	5:39	12471	1.5	3.0	
Marble	5:40	12469	1.5	Est	
<u>441</u>					

Pier "Welcome. Let's for Sale"
about 1/3 way from Pejuan pt
to Captiva Pass - Concrete Marker
1' above GL - Front of Shack

N. End of N Captiva Isle at
broken pier

Platform - right side top step
Facing Light 23-435-20E

9/15/71

Stat 7/1 Me Road 1H 51.

Mattucha 8:34 11048 1.5 4'

D.B. 8:35 11050 Est

C-16 9:21 12115 1.4' 2'

Bokelia 9:22 12116 Est

C-17 9:52 12689 1.4 0.0'

Cape Haze 9:53 12689 Est

C-18 10:12 12606 1.4 0.5

Turtle Bay 10:13 12605 Est

C-19 10:39 12551 1.4 0.0

Bull Bay 10:40 12548 Est

C-20 DB 11:33 11784 1.5 3.0

Miller's Marina 11:34 11782 Est

Lavelle's Marina at W. end
Bm bridge to Mattucha

Concrete slab at gas pump
at initial MGL is slab.

Chart #1255 Roadway beneath
sign of "Capri Motel" Center Point

Chart 1255

C

C

9/15/71

Stat	Time	Read	HT	El	Bm	Chart
C-20	11:52	12078	1.4	0.0		Chart 1255
3 Sisters	11:53	12077	-	Est		Spring Bank Near 3 Sisters
C-21	12:07	12279	1.4	0.5'		T
Devilfish Key	12:08	12279		Est		
C-22	12:19	12399	1.4	0.5		C
Coso Pelau	12:20	12400		Est		
C-16	1:58	12134	1.4	2.0		C
Boppel	1:59	12134		Est		
C-23	2:29	12169	1.4	0.5		E
	2:30	12171		Est		
Matlacha DB				4' Est		

9/16/71

Spot	Time	Read	HH	FL	Bm
Dunn Parlan	11:17	11740	1.5	2'	
Manna DB	11:18	11741		Est	
Chris					

26-1 C-24	12:05	11953	1.4	1'	
Stewart Pool	12:06	11954		Est	
26-1					

C-24	1:22	11617	1.5	2 1/2'	
Mouanga Isle	1:23	11617		Est	

C-25	1:40	11594	1.0	0.0	
Useppu Isle N.	1:41	11593		Est	

26-435-21 E Boheelia

9/16/71

Stat Time Read LH EI Bm

C-26 2:03 11454 1.4 0.5'

Spoil 2:04 11451 1.5' 1.5' 1.5'

C-27 2:34 11431 1.4 0.0

Spoil opp 2:35 11428 1.5' 1.5' 1.5'

(4) 3:42 10760 1.4 2.0

Red Fish 3:43 10760 1.5' 1.5' 1.5'

C-28 5:09 10995 1.4 0.0

Demere Key 5:10 10993 1.5' 1.5' 1.5'

Watch Stopped

Chart 856 SC

East of Cabbage Key

C

USGS

1952

TT 83

JFS

1965 Tilted at 15°

10' above GL

9/16/71

Sta	Time	Read	H	EI	Bm
Pine Island	7:20	11155	0.0		US
Base	7:22	11157			Eng.

SR 78 & S-767

9/17/71

Sta Time Read IH FI BM

Dans 8:29 11817 1.5 2'

Mame 8:30 11818 Est

DB 4:18 11836 ✓

Pine 4:19 11839

Island

C-29 8:57 11837 1.3-0.5

Darling 8:58 11833 Est

Key 8:59 11837

C-30 9:19 11654 1.4 -0.0

9:20 11653 Est

C-31 9:48 11566 1.4 0.5

9:49 11566

9-17/21

Station	Time	Read	1H	E1	B/M
C-32	10:28	11688	1.3	-1.0	
Wood Key	10:29	11688		EST	

C-33	10:52	11741	1.4	+1.0	
Orange Pass	10:53	11741		EST	

C-34	11:49	11080	1.2	+1.0	
Shell	11:50	11081		EST	
Bar					

C-35	11:49	11145	1.0	1.0	
Murder	12:00	?			

C-PT			1.0	0.5	
------	--	--	----------------	----------------	--

C-36	12:18	11081	1.0	0.5	
	12:19	11084			

House on Ke, sign reads
"Danger Poison Gas"

9/17/21

S + Star	Time	Read	1H	EI	BM
D C-37	1.06	11285	1.4	2.5'	
Q Cogo Costa	1.07	11287		12.1	
P C-38	1:27	11357	1.0	0.0	
Primo Island	1:29	11359			
C C-39	1:45	11295	1.0	6.0	
Sunk Barge	1:46	11293			
C C-40	2:06	11329	1.5	1.5	
	2:07	11328			
C C-41	2:34	11369	1.0	0.5	
	2:35	11370			
C C-42	3.23	11031	1.9	0.5	
	3.24	11035			

State Park in NE end
Cogo Costa Isle

4-5 Blocks S -

Franklin Eng E $\frac{1}{2}$ mile
to Villager Apts on left
Apt 10.

Paddle

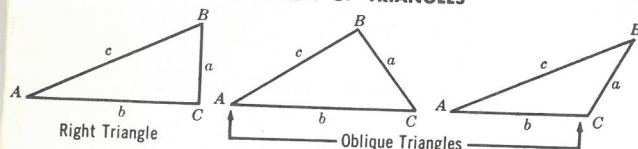
Box
Pliers

Ice Chest

Sun Glasses

Gas Can

SOLUTION OF TRIANGLES



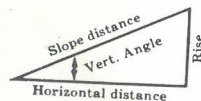
Solution of Right Triangles

For Angle A, $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{a}$, $\csc = \frac{c}{b}$		
Given a, b	Required A, B, c	$\tan A = \frac{a}{b} = \cot B$, $c = \sqrt{a^2 + b^2} = a\sqrt{1 + \frac{b^2}{a^2}}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B$, $b = \sqrt{(c+a)(c-a)} = c\sqrt{1 - \frac{a^2}{c^2}}$
A, a	B, b, c	$B = 90^\circ - A$, $b = a \cot A$, $c = \frac{a}{\sin A}$
A, b	B, a, c	$B = 90^\circ - A$, $a = b \tan A$, $c = \frac{b}{\cos A}$
A, c	B, a, b	$B = 90^\circ - A$, $a = c \sin A$, $b = c \cos A$

Solution of Oblique Triangles

Given A, B, a	Required b, c, C	$b = \frac{a \sin B}{\sin A}$, $C = 180^\circ - (A+B)$, $c = \frac{a \sin C}{\sin A}$
A, a, b	B, c, C	$\sin B = \frac{b \sin A}{a}$, $C = 180^\circ - (A+B)$, $c = \frac{a \sin C}{\sin A}$
a, b, C	A, B, c	$A+B = 180^\circ - C$, $\tan \frac{1}{2}(A-B) = \frac{(a-b) \tan \frac{1}{2}(A+B)}{a+b}$, $c = \frac{a \sin C}{\sin A}$
a, b, c	A, B, C	$s = \frac{a+b+c}{2}$, $\sin \frac{1}{2}A = \sqrt{\frac{(s-b)(s-c)}{bc}}$, $\sin \frac{1}{2}B = \sqrt{\frac{(s-a)(s-c)}{ac}}$, $C = 180^\circ - (A+B)$
a, b, c	Area	$s = \frac{a+b+c}{2}$, $\text{area} = \sqrt{s(s-a)(s-b)(s-c)}$
A, b, c	Area	$\text{area} = \frac{bc \sin A}{2}$
A, B, C, a	Area	$\text{area} = \frac{a^2 \sin B \sin C}{2 \sin A}$

REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = $5^\circ 10'$. From Table, Page X, $\cos 5^\circ 10' = .9959$. Horizontal distance = $319.4 \times .9959 = 318.09$ ft. Horizontal distance also = Slope distance minus slope distance times (1 - cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained. $\cos 5^\circ 10' = .9959$, $1 - .9959 = .0041$, $319.4 \times .0041 = 1.31$, $319.4 - 1.31 = 318.09$ ft.

When the rise is known, the horizontal distance is approximately: the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft., slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.

