

GREENS + WIND

67

1972

Book #2

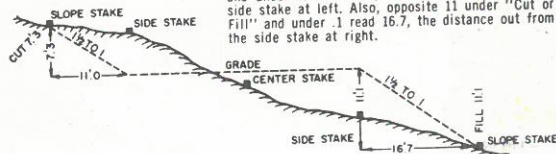
Summer 1972

Edens + Wind

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	Distance out from Side or Shoulder Stake										Cut or Fill
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
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



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

KEUFFEL & ESSER CO.

Page #	Well #	Index	Page #	Well #
1	7696		18	8532
2	10297		19	8115
3	Hawthorne Core		20	Wright Core #1
4	10841		21	X
5	10842		22	X
6	6037		23	Wright Core #4
7	6038		24	Ballast Pt. Core
8	6036		25	
9	8528		26	
10	7057			
11	10862			
12	8532			
13	8339			
14	7165			
15	8815			
16	⁷⁹ 8036			
17	10717			

W-7696 BS HI FS ELEV
 BM 4.26 72.26 68'
 MP 5.54 66.72

1.28

Desoto Co. August 3, 1972

Owner - City of Arcadia

BM - Topo paved road intersection

Elev - 68'

Frank - Rod

Mark - Level

Location - T37S-R25E-Sec 31

NE $\frac{1}{4}$ of SE $\frac{1}{4}$

Hot, clear afternoon

MP - Casing buried. Elevation
 taken at ground level.

W-10297 BS⁺ HI FS⁻ ELEV ✓

BM	6.10	92.10'	86'
TP ₁	5.21	91.94	5.37 86.73
TP ₂	5.38	91.70	5.62 86.32
TP ₃	4.66	90.97	5.37 86.31
TP ₄	4.80	90.00	5.77 85.20
TP ₅	5.34	90.04	5.30 84.70
TP ₆	5.94	89.70	6.28 83.76
MP (Ground)		6.33	83.37'
	37.43	40.06	
		37.43	
		2.63	

Desoto Co

August 4, 1972

Owner - Tropical River Groves

BM - NE corner of section 30,

T37S, R27E. Elev. 86'.

Frank - Level

Mark - Rod

Hot, partly cloudy afternoon.

Location - T37S-R26E-Sec25

NE $\frac{1}{4}$ of NE $\frac{1}{4}$.

MP - Elevation run to ground level.

Hawthorn
Core

BS HI FS ELEV



MP 4.40 104.40 100.34^{assumed}

TP₁ 7.91 106.40 5.91 98.49

TP₂ 6.26 108.32 4.34 102.06

TP₃ 5.62 109.61 4.33 103.99

TP₄ 6.30 111.92 3.99 105.62

BM 5.26 106.66^{assumed}

30.49
23.83
6.66

23.83

107.00 actual

34 diff

Elevation = 100.34'

Alachua Co.

August 8, 1972

Owner - Fla. Bureau of Geology

BM - Post in NE corner of
section 31, T10S, R22E.

Elev. - 107'

Frank - Rod

Mark - Level

Hot, cloudy afternoon.

Location - T10S-R22E-Sec. 31

NW 1/4 of NE 1/4

MP - Casing for core hole
removed. Elevation run to ground
level.

W- 10841	BS+	HI	FS	ELEV	✓
BM	5.80	40.80		35'	
TP ₁	5.27	40.67	5.40	35.40	
TP ₂	4.86	39.98	5.55	35.12	
TP ₃	5.98	38.05	7.91	32.07	
TP ₄	5.65	38.73	4.97	33.08	
TP ₅	5.97	42.30	2.40	36.33	
TP ₆	5.96	43.24	5.02	37.28	
MP ₁	Ground	4.46	38.78		
MP ₂	Casing	3.80	39.44		
		39.49			
		35.71			
		3.78			
		35.71			

De Soto Co. Aug 9, 1972

Owner - Calvin Boggs

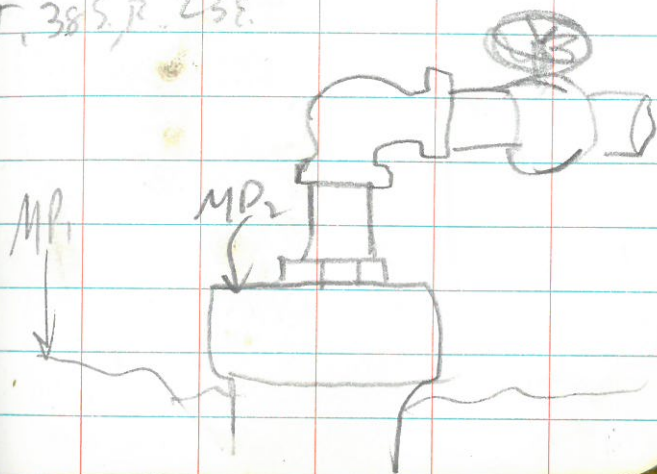
BM - Section Corner - SE corner
of sec. 27., ELEV. 37'

Frank - level

Mark - rod

Hot, threatening afternoon

Location - NE 1/4 SE 1/4 Sec 28
T. 38 S. R. 23 E.



W ^t	BS ⁺	HI	FS	Elev	✓
10842					
BM	4.75	94.75		90	
TP ₁	5.22	94.80	5.17	89.58	
TP ₂	5.41	95.05	5.16	89.64	
TP ₃	5.09	94.32	5.84	89.23	
MP.	Ground	5.38	88.94	88.92'	
	20.47	21.55	20.47		
		1.08			

DiSoto Co. Aug 9, 1972

Owner - Tropical River Groves

BM - near remodeled BM at

N^o corner Sec 21, T37S-R27E

Elev. - 90'

Frank - Rod

Mark - Level

Hot, rainy afternoon.

Location - T37S-R27E - Sec 28

NE $\frac{1}{4}$ of NE $\frac{1}{4}$

MP - Run to ground level.

W-1
6037

	BS	HI	FS	ELEV
BM	3.62	16.97		13.35'
TP	5.59	17.58	4.98	11.99'
MP		Ground	5.46	12.12'
MP		Casing	5.08	12.50'
	9.21		10.44	
			9.21	
			1.23	

Wall #7

Charlotte Co. August 11, 1972

Owner - Port Charlotte Water Dept

BM - Corner of pump in pump
house South of office
Elev 13.35'

Frank - Level

Mark - Rod

Warm, partly cloudy morning

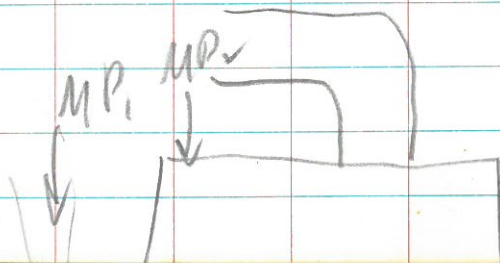
Location - SE 1/4 SE 1/4 Sec. 18,
T. 40 S., R. 22 E



W-16038 ✓
 BM 5.59 17.58 11.99'
 MR Ground 5.12 12.46
 MR casing 4.70 12.88
 5.59
 5.12
 .47

Well #8

Charlotte Co. Aug 11, 1972
 Owner - Port Charlotte W.D.
 BM - continuation from
 W-6037 (previous page)
 Frank-level
 Mark-rod
 weather conditions - see 6037
 Location - SE 1/4 SE 1/4 Sec 14,
 T. 40 S., R. 22 E.



W-
6036 BS+ HI FS ELSU #9

465 17.53 12.88

MP Ground 5.04 12.49

MP Casings 4.21 13.32

5.04

4.65

0.39

Well # 9

Charlotte Co. Aug. 11, 1972

Owner - Port Charlotte WD.

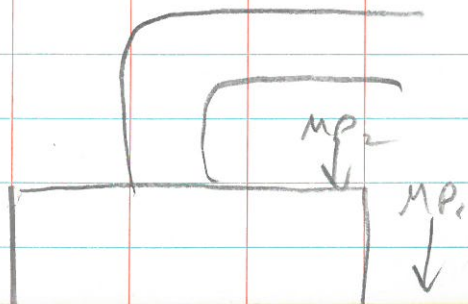
BM - Continuation of shoot
from W-6038

Frank-level

Mark-rod

Weather - see W-6037

Location - SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 14,
T. 40 S., R. 22 E.



W-8528 BS HI FS ELEV ✓

BM 5.40 28.40

23'

MP₁

5.81 22.59'

MP₂

3.01 25.39'

5.81

5.40

.41

Charlotte Co. August 11, 1972

Owner - U.S.G.S.

BM - U.S.G.S. BM stamped

"99 ERS TT." Elev. - 23'

Frank - Rod

Mark - Level

Hot, partly cloudy afternoon

Location - C. S. Line Sec 32,

T. 4LS, R. 24E.



W-7057 BS⁺ HI FS 9290 ✓
 BM 4.74 3774 33
 TP 5.17 38.10 4.81 32.93
 MP 6.48 31.62
 MP 4.93 33.17

 9.91 11.29
 9.91
 1.38

Charlotte Co Aug 15, 1972

Owner - E. J. Hall

BM - Bridge elevation on S274

Center of Sec 36 - Sec 1 line.

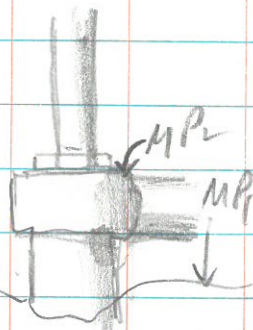
Elev. 33'

Frank - level

Mark - rod

Waver, partly cloudy afternoon

Location - SE¹/₄ SE¹/₄ Sec. 36,
 T. 40S, R. 24E.



W-10862 BS HI FS ELEV ^{Corrected}

MP _{ground} 5.40 45.40 40' = 41.67

TP₁ 5.36 45.67 5.09 40.31

TP₂ 5.38 45.73 5.32 40.35

TP₃ 4.49 45.02 5.20 40.53

TP₄ 4.70 44.95 4.77 40.25

TP₅ 5.44 44.89 5.50 39.45

TP₆ 6.16 45.77 5.28 39.61

BM _{ground} 5.44 40.33

55.93
36.60
19.33

36.60 42.00 = actual

Elevation - 41.67'

42.00
40.33

Charlotte Co. Aug 15, 1972

Owner - Exchange Oil & Gas Corp.

BM - Sec. corner - NE corner Sec. 4

on SR 74. ELEV. 42'

Frank - road

Mark - level

Warm, threatening afternoon

Location - SW 1/4 NE 1/4 Sec. 9

T. 41 S., R. 25 E.

MP - Run to ground

W- 8532	BS	HI	FS	ELEV
BM	5.23	36.23		31'
TP ₁	5.44	36.32	5.35	30.88
TP ₂	5.60	36.04	5.88	30.44
TP ₃	5.25	35.75	5.54	30.50
MP ₁	ground	5.63	30.12	
MP ₂	casing	2.80	32.95	
	21.52	22.40		
		21.52		
		88		

Charlotte Co Aug 16, 1972

Owner - USGS Well #01

(in Cecil Web. Wildlife Mgmt. Area)

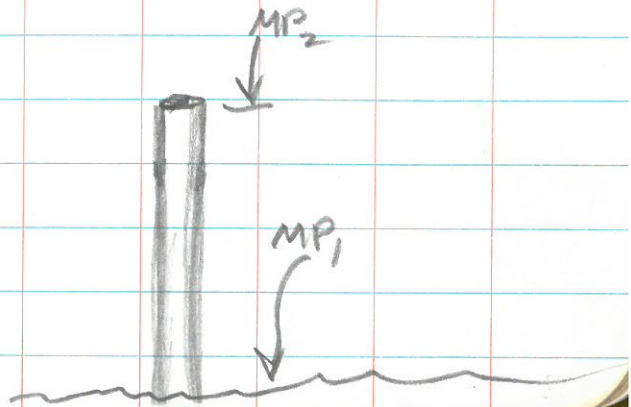
BM - U.S.G.S. BM "90 ERS TT
1952" Elev. -31'

Frank - level

Mark - rod

Hot morning scattered clouds

Location NE 1/4 NW 1/4 Sec. 2
T. 42 S, R. 24 E.



W-8339

BS⁺ HT FS ELEV

BM	4.91	59.91	55'
TOP	6.14	59.86	6.19 53.72
MP ₁	Ground	4.69	55.17'
MP ₂	Casing	3.55	56.31
	11.05	10.88	
	.17		

Charlotte Co. Aug 16, 1972

Owner - Tropical Pine Groves

BM - SE corner, sec 22.

Elev. 55'

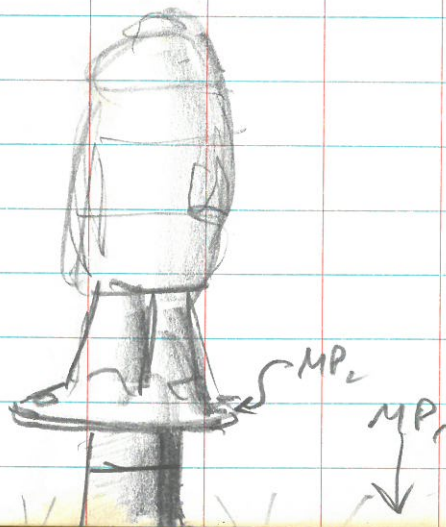
Gravel - road

Mark - Level

Warm, cloudy afternoon

Location - NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec.

27, T. 40S, R. 26E.



W	BS	HI	FS	ECG	✓
7165				55'	
BM	5.48	60.48			
TP	5.43	59.91	6.00	54.48	
MP	ground		4.25	55.66	
MP	casing		3.82	56.09	
	10.91		10.25		
	10.25				
	1.66				

Charlotte Co. Aug 16, 1972

Owner - Tropical River Groves

BM - SE corner Sec. 22

Elev. 55'

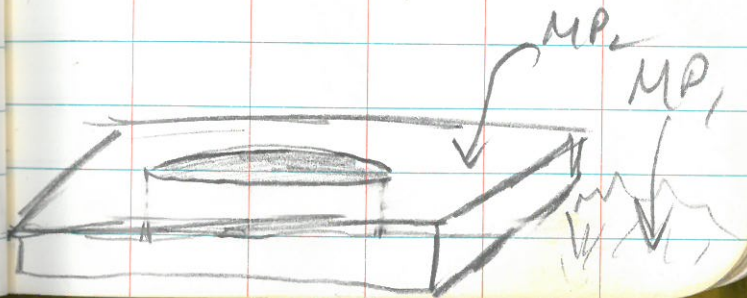
Frank - level

Mark - rod

Warm, cloudy & hazy

Location - C. & Line SE 1/4

Sec 22, T. 40 S., R. 26 E.



W-	BS	HI	FS	ELEV	✓
8815					
BM	3.82	59.91		56.09	
TP ₁	6.16	61.22	4.85	55.06	
MP ₁	Ground		4.53	56.69	
MP ₂	Casing		3.90	57.32	
	<u>9.98</u>		<u>9.38</u>		
	9.38				
	.60				

Charlotte Co. Aug. 16, 1972
 Own - Tropical River Groves

BM - Casing of W-7165
 (previous well)

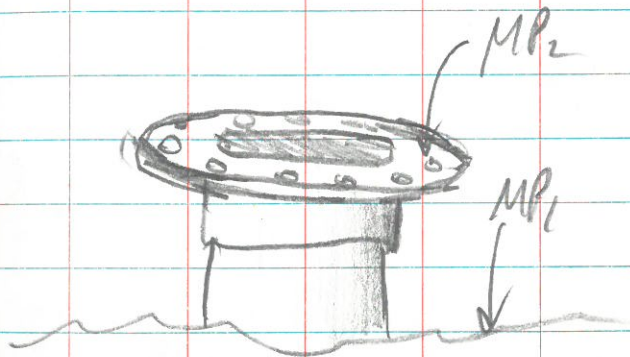
Frank-rod

Mark-level

Warm, cloudy afternoon

Location - N E 1/4 S E 1/4

Sec. 22, T. 40 S, R. 26 E.



8079
W-8036

	BS	HI	FS	ELEV
BM	6.04	42.04		36'
TP ₁	5.58	42.16	5.46	36.58
TP ₂	5.25	42.60	4.81	37.35
MP	Ground		4.97	37.63
	16.87		15.24	
	1.63			

Charlotte Co. August 17, 1972

Owner - Mobile Oil Corp. Babcock Ranch

BM - Tap spot elevation. Elev. 36'

Frank - Rod

Mark - Level

Hot, cloudy afternoon.

Location - NW¹/₄ NW¹/₄ Sec 9

T. 42S. R. 27E.

W- 10717 BS HT FS Elev. ✓
BM 5.40 67.42 62'

TP 5.87 68.19 5.10 62.32

MP (ground) 5.96 ~~62.23~~ 62.21'

11.27

11.06

11.65

.21

Charlotte Co Aug 18, 1922

Owner - Exchange Oil & Gas
Corp. # 1 - Chas. S. Payson

B.M. - Sec. corner - NW corner
sec. 7, Elev. 62'

Trunk-level

Marked.

Warm, partly cloudy afternoon

Location - NE $\frac{1}{4}$ NW $\frac{1}{4}$
Sec. 7, T. 41 S, R. 27 E

W-853.1	BS ⁺ HI	FS	ELEV	✓
BM	4.19	25.19	21'	
MP		3.86	21.33	Airport BM Char
TP ₁	4.64	23.71	6.12	19.07
TP ₂	6.00	26.13	3.58	20.13
TP ₃	3.52	25.30	4.35	21.78 TBM
TP ₄	3.42	23.75	4.97	20.33
MP ₁	Ground	5.77	17.98,	
MP ₂	Casing	2.96	20.79	
	21.77	24.79	21.77	
		3.02		

Charlotte Co. Aug 18, 1972
Owner - USGS Well # W-3

BM - Sec. corner - SE corner of
Sec. 10 ELEV. 21'

Frank - road

Mark - level

Warm, partly cloudy afternoon

Location: - T41S-R23E-Sec. 10

SW $\frac{1}{4}$ of SW $\frac{1}{4}$ $\alpha \alpha$ B.2

nr-
8/115

BB HT FS 2 LGU ✓

BM	4.62	18.98		14.36
TP ₁	4.70	18.53	5.15	13.83
TP ₂	5.60	18.80	5.33	13.29
TP ₃	5.17	17.88	6.09	12.71
TP ₄	5.46	18.12	5.22	12.66
TP ₅	5.17	17.89	5.40	12.72
TP ₆	4.86	17.37	5.38	12.51
TP ₇	4.90	16.67	5.60	11.77
TP ₈	6.14	17.81	5.00	11.67
TP ₉	5.63	19.34	4.10	13.71
TP ₁₀	5.88	20.06	5.16	14.18
TP ₁₁	5.98	21.80	5.24	15.82
TP ₁₂	5.08	21.75	5.13	16.67
TP ₁₃	6.09	21.67	6.17	15.58
TP ₁₄	5.14	20.65	6.16	15.51
TP ₁₅	5.76	20.57	5.84	14.81
TP ₁₆	4.33	19.95	4.95	15.62

Sarasota Co. Aug 22/1972
Owner - Henry Zondh.

BM-Sarasota Co. BM 356

(395) nr. center sec. 1.

Elev 14.36'

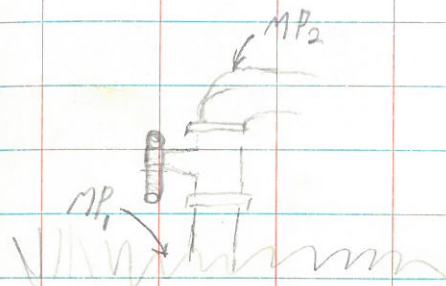
Frank-level

Mark-road.

Warm, sunny late afternoon + evening

Location - NE 1/4 SW 1/4 Sec 26

T 38 S, R 19 E



4.33 13.95 4.95 15.62

MP₁ (ground) 4.97 14.98 13.98'

MP₂ (ceasing) 2.90 17.05 16.05'

90.51
85.42 4.5

80.84 38

WRIGHT
#1

	BS ⁺	HI	FS	ELV
BM	1.98	52.98		51-
TP ₁	1.40	45.12	9.26	43.72
TP ₂			4.35	40.77

BM	2.04	41.93		39.89'
MP	Ground	2.07		39.86'

Hillsboro Co. Aug 25, 1972

Owner - Fla. Bur. of Geology

BM - Spike near entrance

Jopark - Elev. 39.89'

SE 1/4 31-1-51'

Frank-level

Mark - road.

Warm, partly cloudy morning.

Location - T29S-R20E-Sec 27

NE 1/4 of SE 1/4

MP - Run to ground level

WRIGHT
#2

BS HI FS ECG OK

BM	7.98	85.53		77.55
TP ₁	9.08	81.78	12.83	72.70
TP ₂	6.66	88.35	0.09	81.69
TP ₃	8.12	88.87	7.60	80.75
TP ₄	5.36	90.16	4.07	84.80
TP ₅	2.69	84.27	8.58	81.58
TP ₆	2.40	80.62	6.05	78.22
TP ₇	9.15	78.72	11.05	69.57
TP ₈			3.08	75.64

51.44

53.35

51.44

1.91

TPM



21

Hillsborough Co. August 25, 1972

BM - U.S.C. & G.S. BM stamped
"Q 108 1942". Elev. - 77.546'

Owner - Fla. Bureau of Geology

Frank - Rod

Mark - Level

Hot, partly cloudy afternoon.

Location -

Drilling of Core Cancelled

WRIGHT
#3

BS*

HI

FS

Elev. OK

BM

0.34

125.34

125'

13.18

112.16' TBM

13.18

-0.34

12.84

Hillsborough Co Aug 25, 1972

Owner - Fla. Bur. of Geology

BM - road intersect on

Topog. map. C.E. line Sec. 9.

Elev. 125'

Frank - level

Mark - rod

Mostly cloudy afternoon

Location -

Drilling of Core cancelled

TBM at creek intersect
in front of Pole near
mail box at corner of
squash field

WRIGHT
H 4

	BS	HT	FS	ELV.
BL	4.27	140.76		136.49
TO	5.24	140.06	5.94	134.82
TR	5.44	141.87	3.63	136.43 TBM
MP	Ground	4.83	137.04	

14.95

14.40

.55

14.40

TBM - White patch on first
dash N. of curve sign.

Manatee Co August 25, 1972

Owner - Fla. Bureau of
Geology

BM - USC & GS "N 109 1942"

ELV. 136.493

Frank - Rod

Mark - Level

Hot, partly cloudy afternoon.

Location - T33S - R22E - Sec 1
NE 1/4 of NE 1/4

Ballast Pt.
Park Core B> H5 F-S ELEV. ✓

BM 4.28 8.93

4.65'

MP (ground)

5.03 3.90'

5.03
- 4.28

.75

Hillsborough Co. Aug 29, 1972

Owner - Fla. B. & G.

BM - USGS T 261 1966

Elev. - 4.646'

Frank. level

Mark. rod

Warm, cloudy afternoon.

Location - Ballast Pt. Park in

Tampa. - SE 1/4 of NW 1/4 Sec. 11, T. 30 S,

R. 18 E

MP - Run to ground level.

BLO	BS	HI	FS	ELEV
1				
BM	2.99	102.99		100
TP ₁	2.69	93.02	12.87	90.33
TP ₁	12.64	102.15	3.51	89.51
			2.11	100.04

17.32

102.0

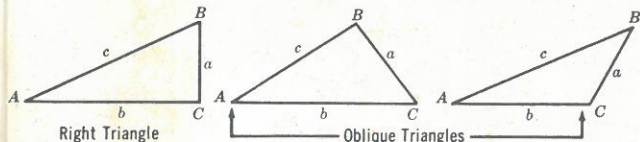
17.32

56

(1904)
488-3636 M. W. D.

488-4191 Mr. Hardy

SOLUTION OF TRIANGLES



Solution of Right Triangles

For Angle A, $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{b}$, $\csc = \frac{c}{a}$

Given	Required	
a, b	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	Required	
A, B, a	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° 10'. From Table, Page X, $\cos 5^\circ 10'=.9959$.
Horizontal distance=319.4×.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.

