

COUNTY
BAY
DUVAL

1964

TREMPER

ESCAMBIA

HOLMES

JACKSON

NASSAU

OKALOOSA

SANTA ROSA

VOLUSIA

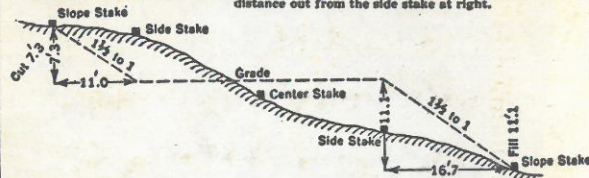
WALTON

WASHINGTON

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes $1\frac{1}{2}$ 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.

Well#	page	Well#	page
JK 3882	99	4154	133
JK 5576	101	6533	135
JK 5310	103	5825	137
JK 5303	105		
Na 3586	107		
Na 6532	109		
Na 4869	111		
113			
DJ 2960	115		
DJ 6542	117		
DJ 5823	119		
DJ 5969	121		
DJ 6516	123		
DJ 3085	125		
DJ 2923	127		
DJ 492	129		
DJ 4883	131		

Index

Vleil #	page	Well #	page
6329 Vo	1-5	2880	49
3872 Es	7-8	3139	51-53
5005 SR	9-10	2462	55-57
5256 Oa	11-13	3914	59-61
3607 Oa	15-16	4297	63
6305 Oa	17-18	4684	65
2175 Wl	19-22	5619	67
5699 Wl	23-24	3686	69-71
6484 Wl	25-26	3666	75
2917 By	27-28	3123	77
3325 By	29-30	2404	79
6287 By	31-34	3703	83
3333 By	35	3415	85
2724 W5	37-39	4234	87
4472 Ho	41	5852	89-90
6307 Ho	43	5853	91
2937 JK	45	5854	93-95
2627 JK	47	3211	97

(1)

W-6327

J.L. ~~rod~~
J.T. rod

June 11

B.M. U.S.G.S. BARTH 1938 No1

(2)

	B.S.	I.H.	F.S.	Elev.	B.M.
--	------	------	------	-------	------

T					B 100
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TP ₁	2.72	102.72	10.73	91.99	I
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TP ₂	.20	92.19	11.10	81.09	
-----------------	-----	-------	-------	-------	--

TP ₃	.59	81.68	11.52	70.16	
-----------------	-----	-------	-------	-------	--

TP ₄	2.25	72.41	11.03	61.38	
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TP ₅	.90	62.28	11.44	50.84	
-----------------	-----	-------	-------	-------	--

TP ₆	1.28	52.12	11.71	40.41	
-----------------	------	-------	-------	-------	--

TP ₇	.98	41.39	10.47	30.92	
-----------------	-----	-------	-------	-------	--

TP ₈	.04	30.96	7.45	23.51	
-----------------	-----	-------	------	-------	--

TP ₉	4.15	27.66	3.84	23.82	
-----------------	------	-------	------	-------	--

TP ₁₀	6.87	30.69	4.12	26.57	
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TP ₁₁	2.35	28.92 30.92	11.25	17.67 29.67	12
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TP ₁₂	.55	18.22 30.22	11.74	6.48 18.48	
------------------	-----	--------------------------------------	-------	-------------------------------------	--

TP ₁₃	.86	7.34 19.34	11.70	-3.36 -7.64	
------------------	-----	-------------------------------------	-------	--------------------------------------	--

TP ₁₄	1.41	-1.95 8.05	11.30	-13.25 -3.75	
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TP ₁₅	.51	-12.74	11.07	-23.81	
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ass elev.

clear afternoon

located B.M. on high hill
about 100 yd. off rd. state 95

Disregard all information
up to green line.

Information after this
point will be more accurate.
We discovered a bench mark
on a bridge at a closer point

3)	TP	B.S.	I.H.	F.S.	Elo.	-2381
	TP ₁₆	1.50	-22.31	11.69	-34.00	
	TP ₁₇	1.10	-32.90	11.51	-44.41	
	TP ₁₈	.22	-44.19	11.54	-55.73	
	TP ₁₉	1.11	-54.62	11.60	-66.22	
	TP ₂₀	1.65	-64.57	11.64	-76.21	
	TP ₂₁	.99	-75.22	9.86	-85.08	
	TP ₂₂	2.38	-82.70	4.75	-87.45	
	TP ₂₃	4.54	-82.91	3.75	-86.44	100.
	TP ₁	4.39	104.39	.25	104.14	
	TP ₂	8.27	112.41	1.41	111.00	
	TP ₃	8.95	119.95	.56	119.39	
	TP ₄	4.00	123.39	4.67	118.72	
	Σ B.S.	25.61	Σ F.S.	7.89 6.99		

118.72

4.67 123.39 3.87 119.52

.42 119.94 9.53 110.41

2.05 112.46 8.29 104.17

over

- 188.66¹⁵

+ 18.72

- 167.94

Diff between
B.M + Well

assume elev. of 100' at Bridge

B.M on Bridge Fla S.R.D. Bench
Mark Bridge 1959 - Pine Barren
creek State 95 rd

concrete slab at base of
well.

well - 6327
closing it out to bridge

(4)

5)

B.S.	I.H.	F.S.	Elev.
.32	104.49	4.45	100.04

(6)

B.M. $\rightarrow$ R.M.Elev. 208.60 ^{Barth}
1969- 167.94 ^{Barth} from 1938
A- .85 Barth $\rightarrow$

168.79

208.60

- 168.79

39.81

W. 7)	Levels	Form B.M.	along		
3872	B.S.	H.I.	F.S.	Elv.	
B.M.					100.
TP ₁	3.91	103.91	95.2	94.39	
TP ₂	2.00	96.39	7.86	88.53	
TP ₃	2.88	91.41	4.87	86.54	
TP ₄	4.97	91.51	4.31	87.20	
TP ₅	3.90	91.10	5.05	86.05	
TP ₆	4.84	90.89	5.91	84.98	
TP ₇	3.60	88.58	6.00	82.58	
TP ₈	2.47	85.05	6.94	78.11	
TP ₉	<u>4.20</u>	82.31	<u>3.66</u>	78.65	
Σ B.S.	32.77	Σ F.S. =	54.12		
			<u>32.77</u>		
		D. I. F. =	21.35		

June 19, 1964
Pensacola

J.L. π
J.T. Rod

(8)

Clear afternoon, used a
city of Pensacola B.M. - it had
no elev. or number on it.

Located at corner of 9th + Oakley
approx. elev. 115

Storm clouds began to form.

Shot taken on concrete base
approx. 2" from floor of well house

W-5005

June 12 1964

I B.S. I.H. F.S. Elev.

B.M.

136.06

T.P.₁ 4.85 140.91 4.52 136.29

T.P.₂ 4.80 ~~140.86~~ 141.09 4.14 136.95

T.P.₃ 4.84 141.79 3.65 138.14

T.P.₄ 5.09 143.23 6.30 136.93

T.P.₅ 2.11 137.04 7.00 130.04

T.P.₆ 6.88 136.92 3.31 133.61

Σ B.S. 28.57 Σ F.S. 28.92

Diff. = .35

3.31

4.43

4.10

3.58

6.04

2.31

4.78

4.51

4.30

4.50

4.14

7.44

Σ F.S.

4.51

Σ

4.69

8

(16)

J.L. - rod

Jon - level

Bench Mark - nail in

12" pecan - by state Road

Dept. Elev. 136.06

Clear hot day

Shot taken on top of well plug.

elv. 133.61

N)
W-~~5005~~ 5256

BS. IH FS. E10

100

TP ₁	4.96	104.96	4.60	100.36
TP ₂	3.32	103.68	6.48	97.20
TP ₃	1.25	98.45	5.19	93.26
TP ₄	6.60	99.86	7.73	92.13
TP ₅	2.23	94.36	3.97	5.29 90.39
TP ₆	5.29	95.68	5.75	89.93
TP ₇	1.29	90.22	5.55	84.67
TP ₈	7.37	92.04	8.59	83.45
TP ₉	1.37	84.82	9.45	75.37
TP ₁₀	.81	76.18	6.14	70.04
TP ₁₁	4.21	74.25	3.31	70.94

Σ BS 37.70 Σ FS 66.76
39.06

3.31 103.31 .46 102.85
10.35 113.20 2.95 110.25

June 13, 1962
City of Crestview

12 π (12)
JT. rod

U.S.C + G.S.

B.M. ~~U.S.C + G.S.~~ F113 L945

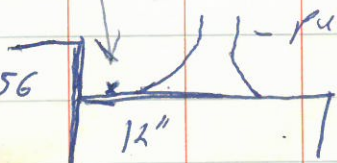
elv. 266.73

mid-morning ran line
from airport ~~down~~ 85 South
to road dirt road on ~~left~~ right.
Then ran on into the
well 5005 W-5256

266.73
29.06

237.67 elv.

concrete slab 12" from floor of
building
close W-5256
12" pump



(13)

TP

BS IH FS 110.25

9.54 119.79 3.02 116.77

119.98

113.42

3.19 113.58 6.56 107.02

119.88

6.46 100.56 1.18 118.70

5.99 124.62 5.67 119.01

5.12 124.13 .36 123.77

2.85 126.62 4.20 122.42

4.22 130.64 1.64 129.00

134.08

129.14

5.08 122 4.94 129.14

Σ BS

Σ FS

(14)

15)
W-3607

June 15

B.S. I.H. F.S. Elev.

B.M.

100

T.P.₁ 1.60 101.60 3.68 97.92

T.P.₂ 4.95 102.87 3.56 99.31

T.P.₃ 5.10 104.41 3.59 100.82

T.P.₄ 5.26 106.08 4.94 101.14

T.P.₅ 2.68 103.82 5.83 97.99

T.P.₆ 3.79 101.78 4.28 97.50

T.P.₇ 5.58 103.08 3.17 99.91

T.P.₈ 5.09 105.00 4.93 100.07

T.P.₉ 3.33 103.40 5.82 97.58

T.P.₁₀ 4.02 101.60 4.57 97.03

T.P.₁₁ 4.50 105.60 4.39 101.03

T.P.₁₂ 4.83 101.53 3.36 97.14

T.P.₁₃ 5.22 105.53 3.10 98.61

T.P.₁₄ 5.30 101.97 4.94 102.41

T.P.₁₅ 61.25 103.83 62.16

Σ B.S. 100.00 Σ F.S. 100.00

100

16

6/15 morning

J.L. - rod

Jon - level

Used B.M. under large
tower 3 miles W. of Watton
Co. line N. of U.S. 98.

Eglin AFB test site D-100

Ran line directly
along beach - direct
glue from sand made T
very short shots necessary
Even with short shots
readings were very
difficult.

Reading taken from highest
point of L-shaped 1/2"
pipe

(17) W-6305 Valparaiso

B.S. I.H. F.S. Elevation

B.M. 100

TP₁ 1.61 101.61 3.38 98.23

TP₂ 5.04 103.27 5.28 97.99

3.96 101.95 3.08 98.87

Σ B.S. 10.61 Σ F.S. 11.74 11.74 10.61

3.04 3.17

3.94 2.58

1.44 5.75

7.02

B.M.

TP₁ 2.58 102.58 3.94 100

TP₂ 3.45 3.38

Σ B.S. 6.03 Σ F.S. 7.32

7.30

Diff 7.32

6.03

1.29

Diff

7.30

6.03

1.27

June 15 1964

98.71

- 1.29

98.42

well elev. John-rod

Mid-afternoon.

B.M. U.S.C. & G. N 113 1945

B.M. on head wall of ~~Quarry~~ Elvert
on 85 north of W-6305
elev. 59.86

elev. taken on 12" concrete base
of well.

W-6305

B.M. D.S. I.H. F.S. Elevation 100

2.58 102.58 3.94 98.64

3.45 102.09 3.38 98.71

Σ B.S. 6.03 Σ F.S. 7.32

7.30

Diff 7.32

6.03

1.29

19) W-2175 9/16/64 DeFurjak Springs

B.S. I.H. F.S. E.I.v.

B.M

100

T.P. 3.19 103.19 9.26 93.93

T.P. 2 .33 94.26 .45 93.81

T.P. 3 11.89 ^{105.70} ~~105.70~~ .23 105.47

T.P. 4 8.12 113.59 6.94 106.65

T.P. 5 4.94 111.59 1.17 110.42

T.P. 6 9.50 119.92⁵ 4.75 115.17

T.P. 7 1.94 117.11 .59 116.52

T.P. 8 2.04 118.56 11.35 107.21

T.P. 9 .17 107.38 7.72 ^{99.66} ~~100.66~~

T.P. 10 3.52 103.18 ¹⁸ ~~16~~ ^{103.00} ~~103.02~~

T.P. 11 10.73 113.73 7.01 106.72

T.P. 12 2.90 109.62 4.69 104.93

T.P. 13 9.35 114.28 9.70 ^{104.58} ~~94.58~~

T.P. 14 2.13 106.71 .21 ^{101.00} 106.50

T.P. 15 10.53 ^{117.03} ~~120.3~~ 6.10 110.93

81.28

70.35

(20)

Overcast morning
J. L. - Level
Jon - Rod

U. S. G. S. B. M.

T36 D 1929 - 210 ft. 209.89

S.W. corner of 331 & S. 278

Sun is getting brighter,
shadows are shorter now.

21)

(22)

	BS	IH	FS	elv.
TP ₁₆	.45	111.38	9.83	101.55
		109.97		109.40
TP ₁₇	8.32	93.23	.47	92.76
		119.10		118.99
TP ₁₈	9.70	102.46	.11	102.35
		126.25		120.80
TP ₁₉	7.26	109.61	5.45	104.16
TP ₂₀				
	107.01		86.21	

elv. taken top of 4" casing of pump

23)

W-5699 June 16 1964

B.S. I.H. F.S. elev.

TP ₁	1.31	101.31	4.86	96.45	
TP ₂	4.12	^{100.57} 100.67	1.15	99.42	
TP ₃	4.10	103.52	4.68	98.84	elev.
Σ 0.5	9.53	Σ F.S.	10.69	^{1.50} 1.50	

diff.

T.16

100

4.64	101.68	5.44	99.71
8.42	108.13	5.61	^{10.075}

5.97	8.42	
5.21	1.65	11.19
5.61		
11.58	10.07	10.07
11.18		11.11

$$\frac{5}{100} \%$$

noon

J.L. K

(24)

John - red

B.M. U. S. C + L Thompson

1935 - located in G.M.C.A camp
on oyster ~~lake~~ lake.

Brick base of well used to
set elev. long shot over
water may account for error.
miss read numbers had
to re-run check out

W-5699 is 300^{feet} deep

(25)

W-6484

6/16/64

B.S. I.H. F.S. Elv.

B.M.

100

T.P. 3.59 103.59 0.89 102.70

T.P.₂ 6.31 109.01 3.45 105.56T.P.₃ 4.29 109.85 6.11 103.74T.P.₄ 3.05 106.79 1.34 105.45T.P.₅ 3.04 108.49 7.10 101.39T.P.₆ 10.65 112.04 0.87 111.17T.P.₇ 9.92 121.09 5.99 115.10T.P.₈ 40.85 25.75

(26)

Tues. Afternoon
OvercastJon - Level
J.L. - rodSame B.M. in Boy Scout
Camp used - Thompson 1935Top of 1 1/2" elbow leading
to pump. About one
foot above ground.

27)
W-2917

6/17/64

B.S. I.H. F.S. Elv

B.M

100

PP, 3.48 103.48 6.25 97.23

TP₂ 6.07 103.30 2.05 101.25

TP₃ 6.61 107.86 6.76 101.10

TP₄ Σ B.S. 16.16 Σ F.S. 15.06

Diff 1.10

~~TP₅~~

~~6.76~~

~~6.70~~

~~2.84~~

~~6.30~~

~~5.90~~

~~3.26~~

~~15.50~~

~~16.26~~

36

3.26

5.94⁷⁶

4.60

1.12

6.93

6.88

14.79

13.94

15.94

5

Σ B.S. 16.16 Σ F.S. 15.06 Diff 1.10

6/17/64

(28)

J.L. - Rod

Jon - Level

Clear Morning

B.M. U.S.C. + L.

at S.W. corner of The
Bay Line Depot at corner
of 6th Street + Beach Drive
Elevation - 8.34

Reading taken atop 10"
concrete base

29)

W-3325

June 17 1964

TP	B.S	I.H	F.S	elv	100
TP ₁	3.20	103.20	3.06	100.14	
TP ₂	5.49	105.63	3.95	101.68	
TP ₃	4.49	106.17	3.01	103.66	
Σ BS	13.18	Σ FS	10.02		
			13.18		
		Diff	3.16		
TP ₁	3.01		3.99		
TP ₂	3.41		5.45		
	3.14		3.29		
	9.56		12.73		

Lynn Haven St. N

(30)

B.M. - U.S. L. & S. John - red

1934 K 42 El. 14.232

Hot afternoon shot an shot
because of hot wave.

Well 3325 is located east of
state 77 about 100 yds from
center line behind a Pro-S
service station

Elv. taken on ~~top~~ pump casing
18" from floor.

31)

W- 6287

June 17, 1964

TP	B.S.	I.H.	F.S.	ch.	100
----	------	------	------	-----	-----

TP ₁	5.66	105.66	3.47	102.19	
-----------------	------	--------	------	--------	--

TP ₂	7.97	110.16	2.3	109.93	
-----------------	------	--------	-----	--------	--

TP ₃	8.12	118.15	1.47	116.68	
-----------------	------	--------	------	--------	--

TP ₄	4.28	120.96	9.50	111.46	
-----------------	------	--------	------	--------	--

TP ₅	3.72	115.18	2.24	112.94	
-----------------	------	--------	------	--------	--

TP ₆	5.02	117.96	2.03	115.93	
-----------------	------	--------	------	--------	--

TP ₇	6.55	122.58	6.72	116.46	
-----------------	------	--------	------	--------	--

TP ₈	2.42	113.54	9.71	103.83	
-----------------	------	--------	------	--------	--

TP ₉	9.1	103.94	7.26	96.68	
-----------------	-----	--------	------	-------	--

TP ₁₀	4.65		.19		
------------------	------	--	-----	--	--

TP ₁₁	8.50		.28		
------------------	------	--	-----	--	--

TP ₁₂	7.50		3.57		
------------------	------	--	------	--	--

TP ₁₃	4.03		6.45		
------------------	------	--	------	--	--

TP ₁₄	5.36		5.55		
------------------	------	--	------	--	--

TP ₁₅	3.00		2.27		
------------------	------	--	------	--	--

TP ₁₆	5.54		4.50		
------------------	------	--	------	--	--

Iron - rod

(32)

S.L. π

U.S.C. & L. B.M. located on bulk
head of Martin Bayou Dam.
Unable to read any numbers.

(33)

BF

I.H.

FS

elv.

TP₁₇ 5.44

5.45

TP₁₈ 4.49

5.80

TP₁₉ 6.35

6.20

TP₂₀ 1.83

6.89

TP₂₁ 1.75

1.64

117.41

Σ.B.S. 108.59

Σ.F.S.

91.18

Diff

91.18

117.41

(34)

elv.
~~reading~~ taken at top of
 concrete block 12" from floor
 of well house

elv. 117.41

35) W-3333

June 18, 1964

B.S. ~~EA~~. F.S. Elev.

B.M.

100

T.P.₁ 3.24 103.24 2.14 101.10T.P.₂ 7.26 108.36 0.85 107.51T.P.₃ 8.52 116.03 0.24 115.79T.P.₄ 8.64 124.43 3.69 120.74

Σ B.S. 27.66 Σ F.S. 6.92 Diff. 20.74

3.69

8.28

0.40

9.06

0.50

7.65

3.163.44

Σ B.S.

7.75

Σ F.S.

2.843

Diff. 20.68

7.75

20.68

June 18

(36)

Clear morning

Jon-level

J.L. - Rod

S.R.D. B.M. on U.S. Hwy
231. Bridge H-15 over
Will Bayou S.W. end
of bridge.

Reading taken atop
18" concrete base.

31) W-2724 June 18, 1964

T.P.	D.S.	I.H.	F.S.	E.L.	100
TP ₁	8.24	108.24	1.23	107.01	
TP ₂	5.40	112.41	6.98	105.43	
TP ₃	4.03	101.40	3.03	98.37	
TP ₄	1.32	99.69	8.21	91.48	
TP ₅	.76	92.24	9.91	82.33	
TP ₆	.37	81.96	9.78	72.18	
TP ₇	59	72.77	9.92	62.85	
TP ₈	23	62.62 53.08	10.01	53.07	
TP ₉	99	54.06	10.06	44.00	
TP ₁₀	1.71	45.71	9.21	36.50	
TP ₁₁	.72	37.22	9.69	27.53 27.53	
TP ₁₂	1.20	28.73	9.62	19.11	
TP ₁₃	.19	19.30	9.89	9.41	
TP ₁₄	.06	9.47	9.99	- .52	
TP ₁₅	.98	.46	9.86	- 9.40	
TP ₁₆	1.00	-8.40	9.60	-18.00	

X.1. π

(38)

Ion Rod

u. s. l. & s. B.M. A

Reset 1950.

Line runs down a hill.
noon, ~~the~~ hot, shots are
short.

~~B.M. is located on side
of road not as shown
on top map quadrangle~~

all shots are - from this
point on.

u. s. - 200

00.81-02.0 04.8

39)				
TP.	B.S.	I.H.	F.S.	Elv.
				-10.01
TP ₁₇	29	-18.29	8.28	-10.2
TP ₁₈	1.29	11.30	8.38	-2.92
TP ₁₉	<u>2.70</u>	5.62	4.70	-.86
Σ B.S.	32.07	Σ F.S.	158.47	Diff.
				-26.40

elv. taken at top of flat iron
plate at top of casing

B.M. elv.,

⁹⁶
294.897

- 126.40

168.50

41)
W-4472

6/19/64

B.S. I.H. F.S. Elv.

B.M

100

T.P. 3.05 103.05 5.73 99.32

T.P₂ 3.68 101.00 0.90 100.10

6.73

T.P₃ 1.90 99.10

Σ B.S. 6.73 Σ F.S. 6.63 Diff .10

~~4.0~~

~~3.63~~

~~4.65~~

~~3.93~~

~~5.38~~

~~3.35~~

~~Σ B.S. 16.90~~

~~Σ F.S. 16.91~~

~~Diff .01~~

~~3.38~~

~~5.84~~

~~4.30~~

~~1.36~~

~~2.36~~

~~7.68~~

~~7.20~~

~~1.36~~

~~4.31~~

~~5.89~~

~~3.04~~

Σ B.S. 7.25 Σ F.S. 7.35 Diff .10

6/19

(42)

Clear Morning

Jon-Level

J.L. - Rod

Used B.M. imbedded in concrete on N.W. corner of U.S. 90 and 79.

U-41

Rest 1961

U.S. 90, 8.

118.539

Reading taken on concrete floor of pump house

43
W-6307

6/19/64

B.S. I.H. F.S. EIV

B.M. 100

T.P. ² 6.42 ² 106.42 ³ 92 105.50

T.P.₂ 4.93 ¹ 10.43 ~~100.57~~ 9.95 100.48

TP₃ 57 101.05 10.05 91.00

T.P.₄ 7.43 98.43 3.29 95.14

TP₅ 6.37 101.51 66 100.85

TP₆ 7.15 108.00 49 107.51

Σ BS 32.87 Σ FS ~~26.26~~ D.I. 7.51
25.26
25.36

(44)

Late afternoon

Unable to locate B.M.

after 1 hr. search in
^{mapped} exact location. Decided to
run from headwall of
culvert where B.M. was
most likely located.

getting late - J.L. Level
Jon-Rod

Found an X on culvert
presumed this to be temp.
B.M.

elv. taken atop concrete
base 15" above ground.

45)
W-2937

6/23/64

B.S. I.H. F.S. EIV

B.M.

100

TP₁ 1.21 101.21 7.53 93.68

TP₂ 2.11 95.79 8.49 87.30

TP₃ 2.54 89.84 3.97 85.87

TP₄ 5.51 91.38 4.62 86.76

TP₅ 5.56 92.32 2.81 89.51

Z.B.S. 16.93 Σ F.S. 27.42

D.H. - 10.49

+131.00

5.22

² 3.34

120.51

4.69

8.29

EIV.

1.41

7.16

0.35

2.96

2.30

2.81

13.97

24.56

6/23

(46)

Rained all morning

Early afternoon - cloudy

J. L. - Rod

Jon - level

U.S.G.C.

131 + ft. TT60 JDN

1947

corner U.S. 77 and dirt Rd.

Reading taken atop 10"
concrete base

47)
W-2627

6/24/64

B.S. I.H. F.S. EIV

B.M

100

T.P. 4.67 104.67 3.20 101.27

TP₂ 6.17 107.44 3.41 104.03

TP₃ 4.77 108.80 3.59 105.21

TP₄ 5.16 110.37 4.19 106.18

Σ B.S. 20.77 Σ F.S. 14.39

5.01

3.30

5.35

1.64

6.37

5.24

3.98

4.19

20.71

14.37

(48)

Cloudy morning

J. L. - Rod

Jon - level

Temp. B.M. concrete
post.

Reading taken atop
6" diameter housing.

49)

W-2880

6/24/64

B.S. I.H. F.S. EIV

B.M.

100

T.P. ₁	³ ₃ 8.32	108.32	² ₂ 0.16	108.16
-------------------	--------------------------------	--------	--------------------------------	--------

T.P. ₂	6.09	114.25	8.40	105.85
-------------------	------	--------	------	--------

T.P. ₃	0.46	106.31	9.84	96.47
-------------------	------	--------	------	-------

TP ₄	1.79	98.26	7.46	90.80
-----------------	------	-------	------	-------

TP ₅	2.50	93.30	1.34	91.96
-----------------	------	-------	------	-------

TP ₆	8.94	100.90	2.35	98.55
-----------------	------	--------	------	-------

T.P. ₇	<u>4.40</u>	102.95	<u>3.43</u>	99.52
-------------------	-------------	--------	-------------	-------

Σ B.S.	32.50		32.98	D. ff 48
--------	-------	--	-------	----------

(50)

Overcast Afternoon

J.L. - Rod

Jon - level

Used Temp. B.M. on W.
side of ~~S.~~ S. 77. 200 yds
N. of intersection of
S-277 and S-77. on
culvert.

Reading taken on brass
fitting on 2" pipe leading
from housing.

Severe thunderstorms
prevented us from
closing out this well

(51)

W-31

39

6/25

~~B.S.~~
F.S.

I.H.

~~F.S.~~
B.S.

Elev.

B.M. ~~1.80~~

5

100

T.P.₁ 1.80^{1.4} 101.80 5.04^{5.3} 96.76TP₂ 3.12 99.88 3.11 96.77TP₃ 1.55 98.32 8.31 90.01TP₄ 2.41 92.42 3.13 89.29TP₅ 7.80 97.09 2.84 94.25TP₆ 1.04 95.29 2.30 92.99TP₇ 7.34 100.33 .15 100.18TP₈ 7.20 107.38 4.20 103.18TP₉ 6.47 109.65 3.52 106.13TP₁₀ 7.33 ~~98.80~~
~~99.80~~ .41 ~~98.99~~
~~113.46~~ 113.05 XTP₁₁ 7.22 ~~105.61~~
~~120.27~~ 3.91 ~~101.70~~ ~~106.96~~ 106.36TP₁₂ 4.56 ~~106.26~~
~~120.32~~ 2.58 ~~103.68~~
~~129.60~~ 126.88TP₁₃ 9.90 ~~129.24~~
~~135.58~~ 1.36 ~~127.60~~
~~136.55~~ 136.13TP₁₄ 9.67 ~~121.89~~
~~145.83~~ .42 ~~121.47~~ 12TP₁₅ 9.70 ~~132.17~~
~~131.17~~ .50 ~~130.67~~

87.11

417.8

(52)

Cloudy morning

J.L. - Level

Jon - Rod

U.S.C.G. B.M.

M11 1918

elev. 110.564

This B.M. was not listed on any charts we had.

53)

	B.S.	I.H.	F.S.	Elv.
	87.11	154.50	41.78	154.20
TP ₁₆	9.17	139.84	.30	139.54
		164.29		163.44
TP ₁₇	10.09	149.63	85	148.79
		169.81		160.21 *
TP ₁₈	6.37	155.15	9.60	145.55
		169.86		168.60
TP ₁₉	8.65	154.20	.26	153.94
		174.00		169.31
TP ₂₀	5.40	154.34	4.69	154.65
		174.70		171.66
TP ₂₁	5.39	160.04	3.04	157.00
	2.3	174.05	60.52	
			23.52	
	132.18			

71.66

+110.564

182.224 elv. A.M.S.

(54)

TP₁₈ notes elv. of corner of
 sections 9, 10, 16, 15 $\frac{9}{16} \frac{10}{15}$ R. 13W T. 4N.
 section elv. taken atop pipe in ~~the~~ dirt
 road.

Elv. of w. 3139 taken atop corner
 base inside pump house $1\frac{1}{2}$
 feet ϕ above ground level.

10.564 + ~~71.6~~

We were rained out again.

W-2462

June 25 1963

P.P. B.S. I.H. F.S. E.L.

B.M.

100

TP₁ 7.06 107.06 3.53 103.53TP₂ 9.44 ~~112.97~~ 112.97 .40 ~~93.69~~ 93.69TP₃ 8.76 ~~121.33~~ 102.45 .47 120.86TP₄ 10.09 130.95 90 130.05TP₅ 9.13 139.18 .67 138.51TP₆ 2.82 141.33 7.45 133.88TP₇ 1.35 135.23 4.43 130.80TP₈ 7.01 137.81 7.53 130.28TP₉ 3.24 133.52 1.90 131.62TP₁₀ 7.99 139.61 .40 139.21TP₁₁ 9.59 148.80 2.9 148.51TP₁₂ 4.45 152.96 7.9 152.17TP₁₃ 9.31 161.48 26 161.22TP₁₄ 7.66 168.88 10.05 158.83TP₁₅ 4.13 154.70 3.55 151.15Lon. Rod
I.L. levelB.M. ~~42615~~ U.S. Geological
survey 1947 TT54 JDN
No elev. 97.50The rain cleared up and we
started work on the well
in late afternoon

57)

TI

B.S.

I.H.

F.S.

E/L

TP₁₆

3.59

154.74

7.61

~~147.19~~

155.39

ΣBS

105.62

ΣFS

50.23

2.50

152.89

105.62

50.23

55.39

(58)

Elv. of W2462 taken atop
 shaped ^{casing} ~~cap~~ 6' above ground
 level

100 N intersection of 164
 + 273 100 yds N on 273 ~~side~~ E
 side of road

correct elv. ~~155.39~~

152.89

59)

W-3914

6/26

B.S. I.H. F.S. Elv

B.M.

100

T.P.₁ 8.17 108.17 0.66 107.51T.P.₂ 7.77 115.28 0.30 114.98T.P.₃ 9.65 124.63 .51 124.12T.P.₄ 9.50 133.62 2.41 131.21T.P.₅ 0.13 131.34 9.67 121.67T.P.₆ 0.14 121.81 9.10 112.71T.P.₇ 0.63 113.34 9.89 103.45T.P.₈ 1.35 104.80 4.13 100.67T.P.₉ 5.96 106.63 2.22 104.41T.P.₁₀ 6.10 110.51 0.75 109.76T.P.₁₁ 8.30 118.06 0.90 117.16T.P.₁₂ 10.01 127.17 0.41 126.76T.P.₁₃ 9.37 136.13 0.71 135.42T.P.₁₄ 10.02 145.44 0.27 145.17T.P.₁₅ 9.52 154.69 0.85 153.84

(60)

6/26

overcast morning

Jon-level

J.L.-Rod

B.M. - U.S.C. + G.S.

TT 54 CWH 1947

Elv 86 ft.

.2 mi. N. of Bridge over
Chipola River on S-167.

(61)

(62)

B.S. I.H. F.S. Elev.

T.P.₁₆ 7.20 161.04 0.22 160.82T.P.₁₇ 7.80 168.62 0.71 167.91T.P.₁₈ 7.66 175.57 0.36 175.21T.P.₁₉ 9.50 184.71 4.00 180.71T.P.₂₀ 3.00 183.71 0.41 183.30T.P.₂₁ 9.61 192.91 0.21 192.70T.P.₂₂ 5.01 197.71 5.75 191.96T.P.₂₃ 4.15 196.11 3.93 192.18

Σ B.S.

Σ F.S.

Diff.

$$\begin{array}{r} 86.00 \\ + 92.18 \\ \hline \end{array}$$

Elev. 178.18

Reading taken atop
10" concrete base

(63)
W-4297

6/26

B.S. I.H. F.S. Elv.

B.M

100

T.P. 0.5 100.73 6.5 94.36

T.P₂ 9.61 103.97 0.34 103.63T.P₃ 9.49 113.12 0.48 112.64TP₄ 4.59 117.23 8.09 109.14TP₅ 5.74 114.88 1.76 113.12TP₆ 9.19 122.31 0.27 122.04TP₇ 9.08 131.12 0.42 130.70TP₈ 9.84 140.54 0.38 140.16TP₉ 9.67 149.83 1.10 148.73

Σ B.S. 67.94

Σ F.S. 19.21

Diff 48.73

~~1.10~~

1.10

9.20

.56

9.85

.55

9.54

.99

9.97

1.62

1.91

Rain

T.B.M

at intersection
by prison

6/26

(64)

jon-level
gh - rodcloudy aft. beginning
to rainB.M SRD elv. 162.92
etched in cornerstone
of const. bldg. on
Hwy. 90.Reading taken atop
casing 6" in diameter

(65)

W-4684

6/26

B.S. I.H. F.S. E/V.

B.M.

100

T.P. 2.88 102.88 4.02 98.86

T.P₂ 5.01 103.87 3.96 99.917.897.98

3.96

5.08

4.052.82

8.01

7.90

(66)

6/26/64

rainy afternoon

Jon - level

J.L. - Rod

SRD B.M. 162.92

Reading taken atop
4" casing.
1

(67)
W-5619

6/30

B.S. I.H. F.S. Elev

B.M. 100

T.P.₁ 2.12 102.12 5.98² 96.14TP₂ 4.75 100.89 2.59 98.30TP₃ 4.15 102.45 4.36 98.09

Σ B.S. 11.02 Σ F.S. 12.93 D. ff 1.91

4.36 4.80

3.42 4.44

5.68 2.31

Σ B.S. 13.46 Σ F.S. 11.55 D. ff. 1.91

Well elev.135.60⁵¹

- 1.91

133.69

6/30

(68)

overcast
Jon - level morning
J.L. - RodB.M. at L. + N. R.R. Depot
S.E. corner about one
foot underground

X 134 1954

U.S.C. + H.S. elev.
135.60Reading taken on concrete
floor of bldg.elev. 133.69

(69)
W-3686

6/30/64

	B.S.	I.H.	F.S.	E.IV.
B.M.				100
T.P. ₁	6.00	106.00	3.73	102.27
T.P. ₂	2.59	104.86	1.57	103.29
T.P. ₃	3.90	107.19	0.76	106.43
T.P. ₄	4.25	110.68	0.44	110.24
T.P. ₅	6.32	116.56	0.25	116.31
T.P. ₆	6.89	123.20	0.23	122.97
T.P. ₇	4.06	127.03	5.38	121.65
T.P. ₈	5.81	127.46	4.58	122.88
T.P. ₉	0.19	123.07	9.50	113.57
T.P. ₁₀	0.36	113.93	6.06	107.87
T.P. ₁₁	0.34	108.21	9.98	98.23
T.P. ₁₂	0.21	98.44	9.55	88.89
T.P. ₁₃	3.53	92.42	6.83	85.59
T.P. ₁₄	5.77	91.36	0.17	91.19
T.P. ₁₅	9.22	100.41	0.55	99.86

6/30

(70)

cloudy afternoon
 Jon-level
 J. L. - Rod

Used B.M. approx. $1\frac{3}{4}$
 mi. N. of Round Lake
 ↓ 89, 1935
 elev. 166.115

71)

(72)

B.S. I.H. F.S. E/v.

T.P.₁₆ 9.76 109.62 0.28 109.34T.P.₁₇ 8.63 117.97 6.84 ^{111.13}
~~263~~T.P.₁₈ 2.63 113.76 4.38 109.38

Σ.B.S.

Σ.F.S.

Diff 166.12

+ 9.38

elv 175.50

Reading taken on
wing of casing shaft
16" above ground.

73)

W2565

July 1, 1964

T.P. B.S. I.H. F.S. E.L.

B.M.

100

TP₁TP₂TP₃TP₄TP₅TP₆TP₇TP₈TP₉TP₁₀TP₁₁TP₁₂TP₁₃TP₁₄TP₁₅I.I. - Level
Ion - Rod

(74)

B.M. State Road Dept. B.M. spike
in 24" pecan tree, about 5½ feet
above ground elev. 164.90

We started to ~~run~~ run
line to W2565 when we
discovered other spikes in
same tree. We were unable
to determine which was correct
spike.

(15) W. 3666 July, 1964				
TP	B.S.	I.H.	F.S.	elv.
	5			
TP ₁	7.73	107.73	3.96	103.77
TP ₂	4.16	107.93	4.20	103.73
		108.17		104.83
TP ₃	4.44	99.29	3.34	95.95
		109.02		103.34
TP ₄	4.19	100.14	5.68	94.46
		106.04		103.97
TP ₅	2.70	97.16	2.07	95.09
		110.45		102.83
TP ₆	6.48	101.57	7.62	93.95
		97.16		98.49
TP ₇	3.21	74	7.55	89.61
		106.04		101.61
TP ₈	3.49	93.10	37	92.73
		106.13		100.61
TP ₉	4.52	97.25	5.52	91.73
		104.10		100.45
TP ₁₀	3.49	95.22	7.65	91.57
		104.41		93.96
Σ B.S.	44.41	Σ F.S.	43.96	100.45
Diff	43.96			
	<u>new</u>			
	45			

John - Rod J.2 Level. (176)

B.M. headwall of culvert
100 U.S.C. & L. R128 1952

It rained all morning. We
worked through the rain
to run this line, but were
unable to close it out because
of the increased rain.

elv of W 3666

77)

July 2. W 3123

TP	B.S.	I.H.	F.S.	Elv.
B.M.				100
TP ₁	5.76	105.76	4.29	101.47
TP ₂	4.95	106.42	3.57	102.85
TP ₃	4.87	107.72	3.80	108.92
TP ₄	3.69	107.61	3.40	104.21
TP ₅	<u>5.33</u>	<u>109.54</u>	<u>4.31</u>	<u>105.23</u>
Σ B.S.	24.60	Σ F.S.	19.37	

4.31

6.45

6.57

5.33

3.45

6.40

4.455.73

18.78

23.91

18.78

5.13

(78)

I.I. Level

Iron Rod

B.M. ~~U.S. C & G~~ U.S. & L.3 JWM 1950 elev. 137 feet above
sea levelelev. taken atop L pipe ~~leading~~
ontop of casing

105.23

37.00

142.23

79)

July 2, 1964 W-2404

B.S. I.H. F.S. Elev.

B.M.

100

T.P.₁ ³7.39 107.39 ¹5.78 102.21T.P.₂ 0.93 103.14 3.89 99.25T.P.₃ 6.97 106.22 3.03 103.19T.P.₄ 5.72 108.91 4.04 104.87T.P.₅ 4.02 108.89 2.85 106.04

Σ.B.S. 25.03 Σ.F.S. 18.99 Diff 6.04

163.
169.04²1
2.85 ¹4.80

1.60 7.10

5.14 1.08

5.63 8.32

Σ.B.S. 15.22 Σ.F.S. 21.30 Diff 6.08

(80)

Overcast Morning

Jon - Level

J.L. - Rod

B.M. U.S.G.S.

5 JWM 1950

elev 163 ft.

Reading atop pipe
leading from well
9" above ground.Rain

July 6, 1964 W 3703

B.S. I.H. F.S. E/V.

TP ₁	4.67	104.67	^{2 2} 8.46	96.21	
TP ₂	43	96.64	9.22	87.42	
TP ₃	38	87.80	9.72	78.08	
TP ₄	11	78.19	9.52	68.67	
TP ₅	1.50	70.17	8.47	61.70	
TP ₆	88	62.58	4.47	58.11	elv.
Σ B.S.	7.97		1.71	60.87	elv.

Σ F.S. 49.86
 7.97
 41.89

J.L. - Level

Ion - Rod

B.M. - U. S. L. L. T 758 CWH
 1947

ground level, concrete base
below water gauge
 tank top

July 6, 1964 W-3415

B.S. I.H F.S. E/v

B.M.

100

T.P. ^{4.3} 3.84 103.84 4.99 98.85

T.P₂ 3.75 102.60 0.24 102.36

T.P₃ 2.86 105.22 9.94 ^{95.28} ~~104.28~~

TP₄ 5.26 100.54 0.25 100.29

TP₅ 9.52 109.81 0.56 109.25

TP₆ 6.53 115.78 3.28 112.50

TP₇ 7.35 119.85 2.83 117.02

TP₈ 7.11 124.13 1.38 122.75

T.P₉ 6.14 128.89 4.52 124.37

Σ.B.S. 52.36 3.87 125.02

Σ.F.S. 27.99

Diff. 24.37

ground

casing

7/6/64

Clear afternoon

Jon - Level

J.L. - Rod

S.R.D. B.M. located on
S.W. corner of Dry Creek
Bridge on S-167.

W-4234 July 8, 1964

	B.S.	I.H.	F.S.	Elv.	100
TP ₁	2.06	102.06	2.96	99.10	
TP ₂	8.51	107.61	3.14	104.47	
TP ₃	4.96	109.43	4.14	105.29	
TP ₄	7.20	112.49	1.32	111.17	
TP ₅	6.63	117.80	1.44	116.36	
TP₆	104.54	103.10			
$\Sigma B.S.$	29.36	$\Sigma F.S.$	13.00		
	13.00				
	16.36				

J. I. Level

Iron Rod

B.M. S.R.D. clv ~~#629~~ 162.92etched in corner stone of const.
bldg. on hwy 9.clv taken atop concrete
base about 8' above floor of
well house

162.92

16.36

179.28

clv

(89)
W-5852

School for Boys
Stumpy field

7/19/64

(90)

B.S. I.H. F.S. E.I.v.

B.M.

100

T.P.₁ 6.95 106.95 5.00 101.95

T.P.₂ 1.34 103.29 4.30 98.99

T.P.₃ 9.69 108.68 0.21 108.47

T.P.₄ 9.82 118.29 4.25 114.04

T.P.₅ 0.21 114.25 7.67 106.58

T.P.₆ 0.58 107.16 9.71 97.45

T.P.₇ 0.59 98.04 10.06 87.98

T.P.₈ 0.03 88.01 9.90 78.11

T.P.₉ 0.21 78.32 6.65 71.67

T.P.₁₀ 7.82 79.49 9.68 69.81

T.P.₁₁ 1.38 71.19 5.90 65.29

T.P.₁₂ 9.16 74.45 3.73 70.72

T.P.₁₃ 0.10 70.82 5.18 65.64

T.P.₁₄ 3.94 69.58 1.75 67.83

T.P.₁₅ 9.56 77.39 0.26 76.73

T.P.₁₆ 9.81 86.54 5.60 80.88

T.B.M.

AT

June 10

Cloudy morn.

Jon - level

J.L. - Rod

179.52 elv. g w 5852

Ran backward from pump
to later tie in to B.M.

Reading on top of casing.

B.M. on Water tank corner

Boys school elv. 165.66

elv. T. 31 5.33 118.53 4.67 113.86 elv.

T.P.₁₇ .73 81.61 9.68 71.93

T.P.₁₈ .22 72.15 9.99 62.16

T.P.₁₉ 4.46 66.62 .54 66.08

T.P.₂₀ 9.93 76.01 .53 75.48

T.P.₂₁ 9.55 85.03 .12 84.91

T.P.₂₂ 9.53 94.44 82.28 94.16

T.P.₂₃ 1.0.09 104.25 94.63 103.62

T.P.₃₀ 9.97 113.59 103.99 113.20

89

49.7

9.7

AT

91)

W-5853

School for boys
Round Pond

7/10/64

(92)

B.S. I. H. F.S. Elv.

B.M.

100

T. P₁ 4.42 104.42 9.25 97.17T. P₂ 1.26 98.43 9.20 89.23T. P₃ 1.77 91.00 4.73 86.27T. P₄ 4.28 90.55 4.98 85.57 *T. P₅ 1.16 9.63

6.23 5.05

3.67 4.79

7.78 1.77

6.55 5.47

7.26 5.42

1.46 9.54

2.24 9.62

2.22 1.69

.55 10.09

.33 9.77

.18 7.56

see page 95

7/10

Overcast afternoon

Jan-level

J. L. - Rod

Ran backwards from
well to tie in later toB.M. - Reading taken at top
casing.

151

165.66

- 21.77

143.89 elv.

(93)

W-5854

School for Boys
Pasture 7/10⁹

B.S. I.H. F.S. Elv.

B.M.

100

T.P.₁ 3.11 103.11 2.34 100.77T.P.₂ 5.38 106.15 1.52 104.63T.P.₃ 6.07 110.70 8.65 102.05 *T.P.₁ 1.16 103.21 9.63 93.58T.P.₂ 6.23 99.81 5.05 94.76T.P.₃ 3.67 98.43 4.79 93.64T.P.₄ 7.78 101.42 1.77 99.65T.P.₅ 6.55 106.20 5.47 100.73T.P.₆ 7.26 107.99 5.42 102.57T.P.₇ 1.46 104.03 9.54 94.49T.P.₈ 2.24 96.73 9.62 87.11T.P.₉ 2.22 89.33 1.69 87.64T.P.₁₀ 0.55 88.19 10.09 78.10T.P.₁₁ 0.33 78.43 9.77 68.66T.P.₁₂ 0.18 68.84 7.56 61.28

(94)

7/10/64 Overcast aft.

Jon-level

J.L. - Rod

B.M. Elv. 165.66

Located on extreme N.W.
rivet on N.W. lag of
water tank. About 1"
above the concrete abutment
with a cross cut in
cup of it.

(95)

(96)

B.S. I.H. F.S. Elv.

T.P.₁₃ 9.65 70.93 0.73 70.20T.P.₁₄ 9.05 79.25 0.23 79.02T.P.₁₅ 10.06 89.06 0.14 88.92T.P.₁₆ 9.16 98.08 0.63 97.45T.P.₁₇ 3.46 100.91 6.22 94.69 $\Sigma B.S.$ 95.57 $\Sigma F.S.$ 100.8695.57

5.29

165.65

elv. of B.M

5.29

casing

160.37

elv. of W

97)

W-3211

July 10, 1964

B.S.

I.H.

F.S.

Elev.

100

TP₁ 4.60 104.60 6.07 98.53TP₂ 2.86 101.39 2.13 99.26TP₃ 4.35 103.61 1.24 102.37TP₄ 3.44 105.81 8.47 97.34TP₅ ~~4.66~~ 98.00 8.69 99.31TP₆ 9.53 98.84 8.35 90.49TP₇ 31 90.80 9.96 80.84TP₈ 6.40 87.24 8.21 79.03~~TP₉~~ Σ B.S. 32.15 6.81 80.43

Σ F.S. 53.12

32.15

21.15

20.97

80.43

166.69

19.57

147.12

(98)

J. L. Level

Iron Rod

B.M. U. & C + d 1938

~~MAR~~ + ANNA Marianna~~ground level~~~~concrete base~~ ground level

concrete base

also taken ~~at~~ 1 1/2 feet

above ground level on

metal base of pump

99)

W 3882 July 14, 1964

B.S. I.H. F.S. Elv.

100

TP₁ 8.19 108.19 37 107.82TP₂ 8.13 115.95 49 111.04TP₃ 8.2 111.86 9.93 101.93TP₄ 1.56 103.49 7.15 96.34TP₅ 2.42 98.76 9.83 88.93TP₆ 5.00 93.93 87 93.06TP₇ 6.93 99.99 116 98.83TP₈ 6.86 105.69 92.2 96.47TP₉ 6.0 97.07 56.1 91.46T.P.₁₀ 7.41 98.87 3.08 95.79

Σ B.S. 47.92 2.15 96.72

Σ F.S. 52.13

Diff. 4.21 ground
3.28 fittingElv. ground 137.79
brass fitting 138.72

(100)

J.L. - Level
for - RodB.M. U. & G. 2. 5 JWM 1951
ch. 142 FeetVery overcast afternoon.
Rain is imminent.ground level
ch. of brass fitting.

(101)

W5576

July 14, 1964

TP B.S. I.H. F.S. Elv. 100

TP₁ 5.39 105.39 3.05 102.34TP₂ 9.19 111.53 .48 111.05TP₃ 10.09 121.14 .57 120.57TP₄ 9.90 ⁴⁷130.67 .45 130.22TP₅ 8.26 138.48 .94 137.54TP₆ 9.51 147.05 .42 146.63TP₇ 9.54 156.17 .41 155.76TP₈ 8.35 ⁷⁶164.18 .40 163.78TP₉ 9.73 ^{173.44}~~378~~ .35 173.09TP₁₀ 9.21 ^{182.30}~~173.30~~ .85 181.45TP₁₁ 9.96 191.41 .71 190.70TP₁₂ 1.92 192.62 9.68 182.94TP₁₃ 1.33 184.27 9.14 175.13TP₁₄ 1.16 176.29 ^{172.40}~~172.60~~ 3.69 172.60

Σ B.S. 103.54 Σ F.S. 31.14

Diff 72.40

(102)

J.L. - Level

son - Rod

B.M. - U.S.G.S. 1953 5130

Top Maple v. of B.M. 118

elv. taken atop concrete
base one foot above floor
of well house

103) Well in Woods near colored area

W- 5310

7/15/64

B.S. I.H. F.S. E/v

B.M

100

T.P₁ 8.22 108.22 0.41 107.81

T.P₂ 8.00 115.81 1.31 114.50

T.P₃ 9.13 123.63 1.04 122.59

TP₄ 9.49 132.08 2.46 129.62

T.P₅ 34.84 5.22

Diff 29.62

81.53
29.62
111.15 elev.

7/15

(104)

cloudy morning

S. Jon - level

J. L. - Rod

Used U.S. Army Corps
of Engineers B.M.
R4AW 1957.

Inside 3 Rivers State Park
elv. 81.531

Reading taken on
~~&~~ 3" pipe leading from
casing, just above end
of concrete base

(105) W-5303 7/15/64 Well at Ranger's house

B.S. I.H. F.S. Elev

B.M. 100

T.P.₁ 5.17 105.17 5.39 99.78

T.P.₂ 5.37 105.15 1.41 103.74

T.P.₃ 9.21 112.95 0.96 111.99

T.P.₄ 9.28 121.27 0.33 120.94

T.P.₅ 9.58 130.52 0.69 129.83

T.P.₆ 9.78 139.61 0.57 139.04

T.P.₇ 9.58 148.62 1.35 147.27

T.P.₈ 2.37 149.64 2.37 147.27

T.P.₉ 7.83 155.10 6.01 149.09

T.P.₁₀ 1.85 150.94 7.51 143.43

T.P.₁₁ 5.38 148.81 2.40 146.41

T.P.₁₂ 5.97 152.38 0.21 152.17

T.P.₁₃ 9.65 161.82 4.11 157.71

Σ B.S. 91.02 Σ F.S. 33.31

+ Diff - 57.71
111.15

168.86 elev

7/15

cloudy afternoon

Jon-level

J.L.-rod

Ran from elevation
of W-5310 elev. 111.15

Reading taken on
concrete base.

(106)

¹⁰⁷
W- 3586

7/21/64

B.S. I.H. F.S. Elv.

B.M.

69.48

T.P. 5.28 74.76 4.21 70.55

T.P₂ 3.43 73.98 4.32 69.66

T.P₃ 4.38 74.04 3.53 70.51

~~T.P₄~~ 13.09 1206

Diff. 1.03

(108)

7/21

Overcast morning

Jon-level

J. L. - Rod

B.M. Hilliard 1917

Elv. 69.478

Metal base of pump
1/2 inch above concrete
well base.

10.9)

W-6532

7/21

(110)

7/21

B.S. I.H. F.S. EIV.

B.M.

69.48

T.P.₁ 5.28 74.76 4.21 70.55T.P.₂ 3.43 73.98 4.32 69.66T.P.₃ 4.38 74.04 5.06 68.98T.P.₄ 2.97 71.95 1.63 70.32T.P.₅ 16.06 15.22

Diff. .84

Overcast morn.

Jon-level

J.L. - Rod

B.M. Hilliard 1917

Elev. 69.478

Atop 1 1/2" metal flange
 15" above concrete
 base.

(111):
W-4869

7/21

B.S. I.H. F.S. E.I.V.

B.M.

100

T.P.₁ ²6.11 106.11 ⁴2.87 103.24T.P.₂ 0.49 103.83 3.73 ¹⁰⁰~~99.50~~T.P.₃ 3.19 103.09 6.55 96.64T.P.₄ 6.07 102.01 2.45 100.26T.P.₅ 5.18 105.44 3.85 101.59T.P.₆ 3.47 ^{105.06}~~104.96~~ 3.60 ^{101.46}~~101.36~~T.P.₇ 3.66 105.02 3.63 ^{101.49}~~101.39~~T.P.₈ 3.47 ^{104.96}~~104.86~~ 3.10 101.86

31.64

29.78

Diff. ~~1.88~~
1.86

7/21

(112)

Rainy afternoon

J.R. - Rod

Jon - level

B.M. D 172

1956 e.l.v. ?

U.S.C. & G.S.

flowing sulfur water

top of casing

Reading on metal flange
of casing 6" above ~~to~~
concrete floor of well
house. This well completed
in 1958 approx.

Both wells located behind
city hall.

113)

W-

7/21

B.S. I.H. F.S. E.I.v.

B.M.

100

T.P.₁ 4.29 104.29 3.97 100.32T.P.₂ 4.75 105.07 4.74 100.33T.P.₃ 3.68 104.01 5.90 98.11T.P.₄ 2.24 100.35 2.23 98.12

Σ B.S. 14.96 Σ F.S. 16.84

Diff. 1.88

Wrong Well

(114)

7/21

g.L. - Rod

cloudy
aft.

Jon - Level

U.S.G.S - 1954 F144

Reading taken on casing
one foot above ground

(115)

W-2960 July 27 Cecil Field

B.S. I.H. F.S. elev.

TP 83.07

TP, .96 84.03 4.70 79.33

TP₂ 4.50 83.83 3.73 80.103.04 80.79Σ B.S. 5.46 Σ F.S. 8.43

(116)

J.L. Level

Iron Rod

Navey elev.

elev. 2 floor of well house

elev. 2 pump base

Building No 32-222

117)

W-6542

Neptune Beach

J. L. Level

(118)

B.S.

I.H.

F.S.

Elev.

100

ass elev. Iron Rod

TP₁ 3.53 103.53 5.04 98.49TP₂ 3.96 102.45 3.54 98.91TP₃ 4.72 103.63 4.10 99.53TP₄ 4.54 ^{104.07}~~103.77~~ 4.44 ^{99.63}~~99.33~~2.91 ^{102.54}~~102.24~~ 3.97 ^{98.57}~~98.27~~

Σ B.S. 19.66

3.64^{98.90}~~98.60~~

Σ F.S. 21.09

19.66

1.43

$$\begin{array}{r}
 10.111 \\
 1.10 \\
 \hline
 9.011
 \end{array}$$
B.M. U. & C. & G. and State Survey
Station No. AA 30ground level
casing

119.
W-5823

July 28

B.S.

I.H.

F.S.

Elev.

TP₁ 4.17 13.20 4.69 8.51

TP₂ 4.37 12.88 4.52 8.36

ΣBS 8.54 ΣFS 9.21

8.54

67

9.03

J. I. Rod

(120)

Iron Level

B.M. Naval elev. 9.03 A.M.S.L.

elv. taken on floor of well
house 253 No.

Sewage plant. pump is
located it serves the golf
course.

(121).

W 5969

July 30.

Court House

I.L. - Level

(122

B.S. I.H. F.S. Elv. 12.07

Iron - Rod

TP₁ 5.30 17.37 4.77 12.60 1B.M. ~~U. 2 G. 2~~ U. 2 C + G. 2 12.06TP₂ 1.37 13.97 4.68 9.29 elv. A.M.S.L.

Σ B.S. 6.67 9.45

6.67

2.78

elv. taken atop 6" casing
about 4" below ground levelW 5969 Located in
court yard at NE corner of
court house.

(123)

W 5516

B.S.

I.H.

F.S.

clu

July 30, 1964

$$\begin{array}{r} 52 \\ 14.619 \end{array}$$

$$\begin{array}{r} TP_1 \quad 1.41 \quad 16.03 \quad .35 \quad 15.68 \end{array}$$

$$\begin{array}{r} TP_2 \quad 7.91 \quad 23.59 \quad 7.80 \quad 15.79 \end{array}$$

$$\begin{array}{r} TP_3 \quad 5.33 \quad 21.12 \quad 5.56 \quad 15.56 \end{array}$$

$$\begin{array}{r} TP_4 \quad 6.59 \quad 22.15 \quad 2.60 \quad 19.55 \end{array}$$

$$\begin{array}{r} TP_5 \quad \underline{7.88} \quad 27.43 \quad 4.80 \quad \underline{22.63} \end{array}$$

$$\begin{array}{r} \Sigma BS. \quad 29.12 \quad \quad \quad \underline{12.81} \quad 14.62 \quad AMSL \end{array}$$

$$\begin{array}{r} \Sigma FS. \quad 29.12 \end{array}$$

(124)

J.L. Level

Jon. Rod

B.M. - U.S.C. & L. Survey

Downtown - run. slow.

street level

$$\begin{array}{r} \text{cl. taken atop casing } 4\frac{1}{2} \\ \text{above floor} \end{array}$$

$$\begin{array}{r} \text{well 5516 is } 8.01 \text{ feet below} \\ \text{street level} \end{array}$$

8.01

4.80

$$\begin{array}{r} 12.81 \end{array}$$

(125)

W 3085

July 30, 1964

B.S.

I.H.

F.S.

E.L.

22.63

TP₁ 5.29 27.92 6.57 21.35TP₂ 3.89 25.24 7.49 17.75TP₃ 4.95 22.70 5.24 17.46 $\Sigma B.S.$ 14.13 $\Sigma F.S.$ 19.30

14.13

5.17

(126)

I.I. Level

Iron Rod

B.M. elev. 2 street side walk
man hole cover 22.63elev. taken atop casing 6" about
1' under parking lot behind
station

(127)

W-2923

7/31/64

B.S. I.H. F.S. E.I.V

B.M.

100

T.P. 4.52 104.52 5.05 99.47

T.P. 3.76 103.23 4.57 98.66Σ B.S. 8.28 4.28 98.95

Σ F.S. 9.62

D.I.F. 1.34

5.63

7.01 12.64 4.58 8.06

4.86 12.92 4.80 8.12

Elevation casing 7.07
ground 6.78

(128)

7/31

Overcast moon.

Jon-level

J.L. - Rod

City of Jay B.M. on R.R.

Rail elev. ~~5.12~~ 8.12

ground level
concrete housing
around casing

C. + G corrected 5.632

(129)
W-3492

August 5

B.S. I.H. F.S. E.L. 100 as elv

TP₁ 2.84 102.84 7.67 95.17TP₂ 3.71 98.88 5.08 93.80TI₃ .26 94.06 7.32 86.74

4.64 91.38 3.97 87.41 *

TZ.59

12.73

(130)
J. L. Level
Jon - RodB.M. U. S. C + L. and State
survey station NO DA270
1938elv. taken on floor of well
house.E.L. 25.32¹²~~11~~
12.59
12.73

Well 3492 located in white
block house a corner of 12th and
Belvedere Well house was locked and
we couldn't get a key. So, we took
an elv on the floor of well house.

131) W 4883 August 5
 B.S. I.H. F.S. elev.

TP₁ 1.00 24.0 7.36 16.64

TP₂ 3.49 20.13 3.41 16.72

Σ B.S. 4.49 Σ F.S. 10.77

4.49

6.28

23.00

A.M.S.L.

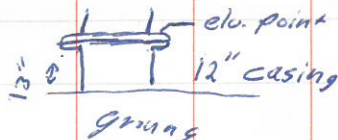
I.L. Level

Iron Rod

B.M. elev. at concrete side

of sewage tank

elev. taken at top 12" casing 13" above ground level



W 4883 located in sewage plant
 at corner of ~~Aberdeen~~ ~~Norfolk~~
 Aberdeen & Norfolk in
 Sherwood Forest

(133)

August 5 W4154

B.S. I.H. F.S. elev.

B.M.

15.60

TP,

4.50 20.10 4.55 15.55 A.M.S.L.

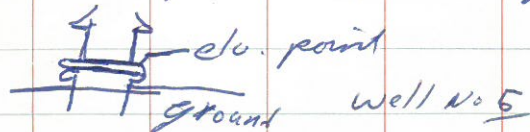
elev. taken atop 12" casing

(134)

J.L. Rod Level

Iron Rod

No. 5 deep well 12" casing



135)

W 6533

August 10, 1964

B.S. I.H. F.S. elv.

B.M.

TP₁ 4.51 30.56 3.70 26.86TP₂ 3.64 30.50 5.45 25.05TP₃ 4.62 29.67 4.85 24.82TP₄ 4.66 29.48 3.67 25.81 -

17.43

17.67 +.39

17.43 26.20

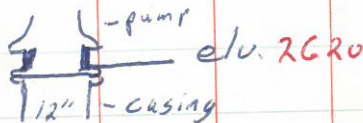
.24

corrected
city data

26.05

B.M. 26.05 city elv. bottom step,
sw corner 1923 Lane Ave.
uncorrected city data

elv. taken atop casing



elv. 26.20

- casing

J. L. Level

(136)

In Rod

W 5825

August 10, 1964

B.S.

I.H.

F.S.

elv.

B.M.

23.77

TP₁ 2.77 26.54 9.04 17.50TP₂ 7.15 24.65 3.75 20.90TP₃ 8.24 29.14 5.13 24.01

18.16

17.92

+ .39

17.92

24.40

corrected
city data

.24

J. L. Rod

Jon Level

B.M. city elv. 23.77 M.R.L.

uncorrected city data

elv. taken atop 12" casing
1" above ground level

It has rained every
afternoon for the past two
weeks. Today we had
the usual. Rain.

June 10, 1964 departed Tallahassee
5:30 A.M. for Pensacola

Mr. Warren Reel 733-2867

21. 2. 2. 2.

Ground water Branch

1453 Louisa 398-3631

Food

1.34

1.38

3.00

2.00

10.00

0.50

1.50

Room Laundry Misc. 763

7.98

.60

1.00

40

30

$$\begin{array}{r} 366 \\ 532 \\ \hline 101.60 \\ 3.68 \end{array}$$

$$\begin{array}{r} 102.93 \\ 11.02 \\ 1.91 \\ \hline 102.87 \\ 3.56 \\ \hline 99.31 \end{array}$$

$$\begin{array}{r} 109.93 \\ 170.63 \\ 6.94 \\ \hline 103.09 \end{array}$$

$$\begin{array}{r} 131 \\ 7.40 \\ 5.82 \\ \hline 1.58 \end{array}$$

$$\begin{array}{r} 10 \\ 10 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 235.2 \\ 132 \\ \hline 108.66 \end{array}$$

$$\begin{array}{r} 132.18 \\ 23.52 \\ \hline 108.66 \end{array}$$

$$\begin{array}{r} 20.71 \\ 14.37 \\ 6.33 \\ \hline 10.59 \end{array}$$

$$\begin{array}{r} 13.46 \\ 11.55 \\ \hline .91 \end{array}$$

$$\begin{array}{r} 104.41 \\ 3.59 \\ \hline 100.82 \\ 109.68 \\ 4.94 \\ \hline 5.14 \end{array}$$

$$\begin{array}{r} 7.02 \\ 5.27 \\ \hline 7.75 \end{array}$$

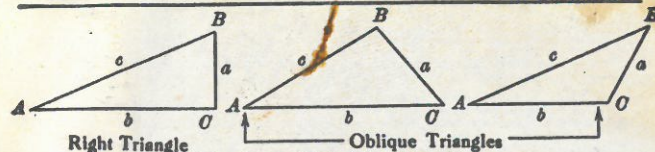
$$\begin{array}{r} 20.77 \\ 14.39 \\ \hline 6.38 \end{array}$$

$$\begin{array}{r} 27.42 \\ 16.93 \\ \hline 10.49 \end{array}$$

$$\begin{array}{r} 24.56 \\ 13.97 \\ \hline 10.59 \end{array}$$

$$\begin{array}{r} 13.46 \\ 11.55 \\ \hline .91 \end{array}$$

TRIGONOMETRIC FORMULÆ



Solution of Right Triangles

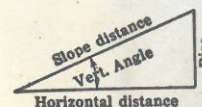
For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{a}$, $\csc = \frac{c}{b}$

Given	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 = 318.4 ft. Vert. angle = $5^\circ 10'$. From Table, Page IX, $\cos 5^\circ 10' = .9959$. Horizontal distance = $318.4 \times .9959 = 318.00$ 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. $\text{Cosine } 5^\circ 10' = .9959, 1 - .9959 = .0041, 318.4 \times .0041 = 1.31, 318.4 - 1.31 = 318.00$ 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.