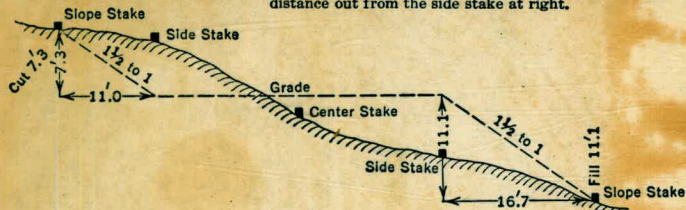


W

609

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING
 Roadway of any Width. Side Slopes 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

KEUFFEL & ESSER CO., N. Y.
 For Curve Tables see end of book.

San Vicente
 609
 Dam

RECORD OF DRILLING GROUT HOLES
 Book No. 5

MICROFILMED

JAN 13 1965

The paper in this book No. F363A

is made of 50% high grade rag stock
 with a WATER RESISTING surface sizing.

Hole No. Top Elev. 441.6

1127.9 (Block 7)

Date 5-15-42

Inspector

Foreman Crew 1.

J. R. Curry Paul Betzer (Richardson)

TIME		Hrs.	DEPTH		Core Recon.
From	To		Fr	To	

Perce Dr.	Core Dr.	Redr.	W.D.	Time M&SU. Lost
--------------	-------------	-------	------	--------------------

8-00 AM

0.0 16.0

16.0

5-15-42 Swing McCown

4⁰⁰ PM 7³⁰ PM 3-30 16.0 29.0

13.0

Note 19.0 ft of concrete above
0.0.

0.0 29.0 0.0 0.0

PL

Hole No 137375 Top Elev. 490.3 Date 5-15-42

Inspector McCown Foreman Betzer Crew No McLennan Page 3

Time		Depth		Core
From	To	hr	Min	Recor.

Perc	Core	ReDrill	W.D.	Time (hr-Min)	
Dr.-ft	Dr.-ft	ft	ft	M.S.U.	Lost

4 ⁰⁰ PM		0	13	1.5					
		13	20	2.0					
11 ⁰⁰ PM		20	25	2.4					

13.0				Broken	1"-5"
7.0				Broken	1"-3"
5.0				Broken	1"-13"

0.0 25.0 0.0 0.0

RR

Hole No 18-25 DATE 5-18-42

Inspector Foreman Crew No. 5

Time		No. mi	Depth		Core Recov
From	To		From	To	
1:00 P	4:00 P	4-0	30.0	47.0	73.0

Pore Dr-ft	Core Dr-ft	RetDrill ft	RetDrill ft	Time (hr-Min)	
				MA. SH.	Lost.
	17.0	30.0	✓		

18-25 569.4 5-18-42

4:00 PM			47.0	55.0	2.75
			55.0	60.0	1.5
			60.0	65.0	2.0
11:00 PM	7-00		65.0	75.0	2.0

Run out of Bits.

J. R. Curry Paul Betzer (Simmons)

8.0 ✓ Very Broken core

5.0 ✓ Very Poor core

5.0 ✓ Very Poor core

10.0 ✓ Very Poor core

0.0 45.0 30.0 0.0

pl

Hole No 13-0 DATE 5-18-42

TIME		DEPTH		Core
Fr	To	Fr	To	Recov
11:00 A	4:00 P	5-0	45.0	18.0

TIME		DEPTH		Core
Fr	To	Fr	To	Recov
13-0			5-18-42	
4-00 PM		45.0	53.0	4.0
		53.0	58.5	7.5
10-30 AM	6-30	58.5	65.0	5.5

Run out of Bits

Datum: Elev. 476.2
 Elev. of rock surface
 not known

Rock surface Elev. 475.2

Inspector Foreman Crew No Page

Per Core	Core	Redrill	W.O.	Time (hr-min)	
Dr-ft	Dr-ft	ft	ft	INRSH	lost
	44.0 / 45.0				
	8.0				
	5.5				
	6.5				

W.P. Curry Paul Betzer Mc Kenzie
 Good core
 Same From Pier Run
 Good core

0.0 64.0 0.0 0.0

Noted

Hole No 18-25 Top Elev 569+4 Date 5-20-42

Time		Depth		Core
From	To	hr-Min	From To	Recov.

5-00PM			75.0 85.0	4.0
			85.0 95.0	2.0
12-00PM	7-00		95.0 102.0	3.0

Inspector D. R. Curry Foreman Paul Betzer Crew No Tomilson ^{Page 1}

Pere	Core	Retrill	W.O.	Time (hr-Min)	
Dr-ft.	Dr-ft	ft	ft	made	lost

	10.0			Broken very small.	
	10.0			Some of core was lost	
	7.0			dropped in hole & was broken up poor core	

0.0 27.0 0.0 0.0

pl

Hole No 13-0
 Top Elev. -----
 Date 5-20-42

Inspector B.R. Curry
 Foreman Paul Betzer
 Crew No Richards
 Page 8

Time		Depth		Core
From	To	hr-Min	From To	Recov.

Perf Dr-ft	Core Dr-ft	ReDrill ft	W.O. ft	Time (hr-Min)	
				M&S.U.	Lost

5-00PM			65.0 73.0	5.4						
			73.0 82.0	9.0						
			82.0 86.0	4.0						
			86.0 91.0	4.2						
11-00PM	6-00		91.0 99.0	8.0						

mored off for test.

	8.0									
	9.0									
	4.0									
	5.0									
	8.0									

Note Top of Pipe on
 this hole is Elev-477.7

~~Datum: Elev-477.2~~
~~Rock surface elev.~~
~~not known.~~

0.0 34.0 0.0 0.0

Noted

Hole No 13-0 Top Elev. --- Date 5-22-42 Inspector Allen Foreman Bill Lee Crew No 9 Page ---

Time		Depth		Core Recor	Perc Dr-ft	Core Dr-ft	ReDrill ft	W.O. ft	Time (hr-Min)	
From	To	hr-Min	From To						M&S.U.	Lost

8:30 A 2:30 P 6-0 141.0 158.0 14.0

17 ✓

Ready to grouted.

Note: Depth of 158 as recorded = 157.0' below rock surface

0.0 17.0 0.0 0.0

RL

Hole No D-8-37 Top Elev. 441.5 Date 5-22-42

Time		Depth		Core
From	To	From	To	Recor

8-00 AM	4-00 PM	8-00	38.0 43.0	
---------	---------	------	----------------------	--

D-8-37 5-22-42

4-00 PM	9-00 PM	5-00	43.0	48.0
---------	---------	------	------	------

Had to quit on account of drillings bothering in Block 9 - where concrete was being placed.

Datum 0.0 or top of 38' Pipe placed in hole in concrete 15 Elev 480.8

(cont'd on Page 13)

Inspector Allen by NIP Foreman Paul Betzer Crew No Simmons ¹⁰/_{Page}

Perc Dr-ft	Core Dr-ft	ReDrill ft	W.O ft	Time (hr-min)
------------	------------	------------	--------	---------------

	3.7 5.0			
--	--------------------	--	--	--

D. R. Carry Paul Betzer Richardson

	5.0			
--	-----	--	--	--

0.0	8.7	0.0	0.0	
-----	-----	-----	-----	--

Hole No 12-25 Top Elev. 466.6 Date 5-22-42

Inspector Allen ^{b70RE} Foreman Paul Betzer Crew No Hogate Page

Time		Depth		Core
From	To	From	To	Recor

Perc Dr-ft	Core Dr-ft	ReDrill ft.	W.O. ft	Time (hr-min)	M&S.U.	Lost
------------	------------	-------------	---------	---------------	--------	------

		3.6	5.0			
Day shift		0.0 5.0	7.0	1.1		

1.4						
	2.0					

12-25 5-22-42

D.R. Curry Paul Betzer Tomilson

4:00 PM	7.0	9.0	1
	9.0	15.0	4.9
	15.0	21.0	4.0
	21.0	26.0	5.0
10:30 PM	26.0	32.0	5.1

Run out of Bits

2.0	core broken up.
6.0	Good core
6.0	Fair core
5.0	Good core
6.0	Good core.

Datum Elev 470.2 ←
 is Top of Pipe. and Top
 of pipe is 0.0

See field book 618

8:30 - Water Tests - O.K.
 0 32

1.4	27.0	0.0	0.0
-----	------	-----	-----

Hole No D-8-37 Top Elev 44.5 Date MAY 23rd

Time		Depth		Core
From	To	hr-Min	From To	Recov.

(Contd from Page 13)

8 ⁰⁰ AM	4 ⁰⁰ PM	48.0	57.0	
--------------------	--------------------	------	------	--

D-8-37 MAY 23-42

4 ⁰⁰ PM	12 ⁰⁰ M.	57.0	65.0	
--------------------	---------------------	------	------	--

FINAL = 64.3

Inspector DICKINSON Foreman Paul Betzer Crew No 13 Page
simmons

Peri	Core	ReDrill	W. O.	Time (hr-Min)	
Dr-ft	Dr-ft	ft.	ft.	MPS.U.	Lost.

	9.0				
--	-----	--	--	--	--

J. R. Curry	8.0	Paul Betzer	Richardson		
-------------	-----	-------------	------------	--	--

0.0 17.0 0.0 0.0

R

Hole No 12-25 Top Elev --- Date MAY-23-42

Time		Depth		Core
From	To	From	To	Recov

4-00 PM		32.0	35.0	2
		35.0	38.0	1.7
		38.0	47.0	8.0
		47.0	53.0	5.25
1200m	8-00	53.0	58.0	5.0

Inspector D.R. Curry Foreman Paul Betzer Crew No 14 Page Tamlinson

Perf Dr-ft	Core Dr-ft	Re-drill ft.	W.O. ft.	Time (hr-Min)	MSU	lost
------------	------------	--------------	----------	---------------	-----	------

	3.0			Fair core		
	3.0			Poor core		
	9.0			Good core		
	6.0			Good core		
	5.0			Good core.		

0.0 26.0 0.0 0.0 R

Hole No Top Elev

12-0

Date

5-26-42

Inspector

Allen

Foreman

B. J. Zer

Crew No

15
Page

Time		Depth		Core
From	To	hr-min	From To	Recov.

8:30	2:30	6-0	85.0 108.0	17.0
------	------	-----	------------	------

Perc	Core	ReDrill	W.O.	Time (hr-min)	
Dr-ft	Dr-ft	ft	ft.	me S.U.	Lost

	23.0				
--	------	--	--	--	--

0.0 23.0 0.0 0.0

14

Hole No 12-25 Top Elev _____ Date 5-26-42

Time		Date		Core
From	To	hr-min	From To	Recoy.

2:30 P	4:00 P	1-30	74.0 79.0	2.5
4:00 P			79.0 82.0	2.5
			82.0 87.0	5.0
	9:00 P		87.0 92.0	4.4

out of bits.

Inspector ALLEN Foreman BITZER Crew No 16 Page

Perc Dr-ft	Core Dr-ft	ReDrill ft	W.O. ft	Time (hr-min)	
				MESU.	Lost
	5.0				
	3.0				
	5.0				
	5.0				

Adolph Bock
4:00 P.M. to 12:00

Core recovered
in short pieces
1" to 6" long.

0.0 18.0 0.0 0.0

PL

H. Hole No ~~8-17-18~~ ~~D~~ Top Elev. 442.6 Date 5-26-42

Inspector _____ Foreman _____ Crew No 17 Page

Time		hr-min	Depth		Core Recor.
From	To		From	To	

Per Dr-ft	Core Dr-ft	ReDrill ft	W.O. ft	Time (hr-min)	
				MASU	Lost

8:30 A	4:00 P	7-30	0:0	15.0	15.0					
--------	--------	------	-----	------	------	--	--	--	--	--

13.0

Adolph Bock
4:00 P.M. to 12:00

4:00 P.M.	9:00 P.M.	5	15	24.0	9.0					
-----------	-----------	---	----	------	-----	--	--	--	--	--

9.0

Concrete Elev. 480.0'

Concrete to rock 37'

0.0 24.0 0.0 0.0

18

Holo no 12-25

5-28-42

Depth. 2-2 6-12.

Time

8:30 A 11:30 A 3-0 92.0 97.5 5.5

Fahren

Bitzer

c-d

5.5

0.0 5.5 0.0 0.0

(P)

Hoheho 12-0

Time

Depth

5-28-42

= = C-12

12:00 M 4:00 P 4-0 108.0 128.0 10.0

4:00 PM 128.0 131.0 1.2

131.0 147.5 6.1

10:30 147.5 158.0 5.0

19

Allen Bitzer

C-D

20.0 ✓

Adolph Bock

4:00 P.M. to 12 M

3.0 ✓

core recovered

16.5 ✓

is in short pieces.

10.5 ✓

0.0 50.0 0.0 0.0

pl

D-8-9

5-28-42

8.30 A

4.00 P

7-30

13-0

25.0

0

13.0

Ahnen Bitzer

20

0-0

13.0

12.0

(5-27-42 Book)

00

25.0

0.0

0.0

pl

16-46

Top Elev
550.1

5-28-42

From to

4:00 P.M.

0 4.0 1.0

4.0 10.0 4.3

10.0 14.0 2.8

14.0 19.0 4.2

19.0 21.0 1.2

10:00 6:00 21.0 25.0 3.2

Moved to hole 17-12.5

Adolph Bock

21

4.0' Core recovered

6.0' is broken in

4.0' pieces from 1" to

5.0' 6" long.

2.0'

4.0'

0.0 25.0 0.0 0.0

Noted

Hole no 17-12⁰ 6-1-41
Time Depth C-R

8:30 A 12:00 M 3-30 18.0 25.0 0.5

Ahlen
C-D-

BITZER

22

7.0

0.0 7.0 0.0 0.0

Noted

A-17-23

Kelvin

~~17-12-B~~

6-1-42

Time

Depth

C-R

12:30 P

4:00 P

3-30

0:0

19.0

10.0

4:00 PM

5:00

19.0

25.0

5.1

23

Allen

BITZER

C-D

19.0

Adolph Beck swing

6.0

0.0

25.0

0.0

0.0

Noted

Woh. No

19

~~25~~
37.5

6-1-42-

Top Elev. 621.4

8:30 A 4:00 P 9-30 0:0 28.0 23.5

P I think this should

be 19-37.5 A. Bock

24

C.D.

28.0

0.0 28.0 0.0 0.0

Noted

Hole #
12:25

Top Elev

Date
6-1-42

4:30

5130

1-00

3.6
8

97.5

Adolph Bock

Achord

25

W. 0

f +

~~97.5~~

93.9

0.0

0.0

0.0

~~97.5~~
93.9

Noted

Hole #	Top Elev.	Date	Core R
20-R.5	633.3	6-1-42	

4:00 P.M.

0	5.0	4.7
5.0	11.0	4.8
11.0	17.0	4.0
17.0	27.0	5.3

Adolph Bock

26

5.0 ✓	Core recovered
6.0 ✓	in short pieces
6.0 ✓	1" to 12" long.
10.0 ✓	

0.0 27.0 00 00

Noted

Hole #	Top Elev	Date	Core
H-16-40	574.2	6-1-42	

5:00PM	0	4.0	1.0
	4.0	7.0	0.8
	7.0	10.0	0.7
	10.0	12.0	1.2
	12.0	15.0	1.5
11:00PM	15.0	20.0	1.5

Adolph Beck

#6
27

4.0 ✓	Core recovered
3.0 ✓	in very short
3.0 ✓	pieces 1" to 3"
2.0 ✓	long
3.0 ✓	
5.0 ✓	

0.0 20.0 0.0 0.0

Noted

El. 453.7

11-11 $\frac{5}{-}$

6-3-42

Time

Hr. min

Depth

C-B-

ALLEN

BITZER

27
28

9:30 A 4:00 A 6-30 0:0 26.0 16.0

26.0

0.0 26.0 0.0 0.0

E1.544.6

16-12-6-3-42

Time

No-min

Depth

C-TC

Allen

Bitzer

28
29

C-D

8:30A 2:00P 5-30 0:0 25.0 21.0

25.0

0.0

25.0

0.0

0.0

El. 555.7

17-37

6-3-42

30

Time	Time	Depth	C.R.
2:00 P	4:00 P	2-0	0:0 18.0 14.0
4:00 P	5:30 P	1:30	18.0 25.0 4.9

C-D.

18.0

Adolph Beck swing

7.0 core in short pc.

0.0 25.0 0.0 0.0

Hole No	Top Elev.	Date		
11-34	457.2			
Time		From	to	Core Rec.
4:00 PM		0	5.0	4.8
		5.0	10.0	2.4
		10.0	15.0	2.2
		15.0	18.0	3.0
		18.0	22.0	3.7
		22.0	29.0	6.3

Adolph Bock

30
31

Core Dr.

5.0 ✓ Core recovered
 5.0 ✓ is broken from
 5.0 ✓ 1" to 1.0' in length.
 5.0 ✓
 1.0 ✓
 7.0 ✓

0.0 29.0 0.0 0.0

Hole #
118-12.5

Top Elev.
563.2

Date
6-3-42

Insp.
Adolph Bock

32

Time
P.m.
5:30

From	To	Core Recov.
0	2.0	0.7
2.0	5.0	2.2
5.0	8.0	2.4
8.0	13.5	5.4
13.5	20.0	3.3
20.0	23.0	1.5
23.0	25.0	1.5

P.m.
12:00

Core Drilled

2.0 ✓
3.0 ✓
3.0 ✓
5.5 ✓
6.5 ✓
8.0 ✓
2.0 ✓

Core recovered
15 in short pc.
1" to 8" long

0.0 25.0 0.0 0.0

AP

Hole No. 20+37
Top Elev

Date 6-9-42

Inspector J.R. Curry

Foreman Paul Betzer

Crew No (Richardson) Page 33

Time		Depth		Core
From	To	hr-Min	From To	Recor

4-00 PM

13.0 15.0 2.0

15.0 20.0 4.9

11-00 PM

20.0 25.5 5.3

Perf	Core	Redrill	W O	Time (hr & min)	
Dr-ft	Dr-ft	ft.	ft.	M&SU	Lost

2.0

5.0

5.5

0.0 12.5 0.0 0.0

RR

Rock DATE -
Nohoho D-6-30 EL. 450' 6-10-42
Time In-m ~~450.0~~ C-R

4:00 P 12:00 M 8-0 1.0

Trace of steel in bottom of hole.

Allen-
C-D.

Bitzer

34

0.0 1.0 0.0 0.0

rl

Hole No Top Elev. Date
 11-6+30 - - - - - 6-11-42

Inspector Foreman Crew No Page
 Allen Betzer Betzer 35

Time	Depth	Core
From To hr-min	From To	Recov.

Perc	Core	ReDrill	W.O.	Time (hr-Min)
Dr-ft.	Dr-ft.	ft.	ft.	m&S.U. post.

8-00A	12 N	4-00	1.0					
12-N	12-30P	0-30	Lunch					0-30
12-30P	4-00P	3-30	7.0	6.0				

6-11-42

4-00P	8-00P	4-00	7.0					
8-00P	8-30P	0-30	Lunch					0-30
8-30P	12-M.	3-30	25.0	18.0				

Datum

concrete Elev. 495.65

Driller Reports ~~44.5~~ concrete

0.0 = Elev. ~~449.65~~

450.1

0.0 24.0 0.0 0.0

RP

Hole No D-6-10 Top Elev. 476.6 Date 6-15-42

Time	Depth	Core
From To	From To	Recov.

8:00AM	12: N	4-00	0.0 ^{2.1}
12:00N.	12:30PM	0-30	Lunch
12:30PM	4:00PM	3-30	9.0

D-6-10 6-15-42

4:00PM	8:00PM	4:00	9.0
8:00PM	8:30PM	0-30	Lunch
8:30PM	10:30PM	2:00	27.0

Datum Top of concrete
 is Elev 495.73. 0.0 is
 17.0' below top of concrete.

Inspector Allen Foreman Betzer Crew No Betzer Page 36

Perc. Core	ReDrill	W.O.	Time (hr-min)
Dr-ft.	Dr-ft.	ft	m & S.U. Lost.

~~6.9~~
~~9.0~~

D. R. CURRY Betzer Richardson

18.0

0.0 24.9 0.0 0.0

Hole No II-10+0 Top Elev. 439.8 Date 6-17-42

Inspector Allen Foreman Betzer Crew No Betzer Page 37

Time		Depth		Core	Perc	Core	ReDrill	W.O.	Time (hr.-Min)		
From	To	From	To	Recor.	Dr.-ft	Dr.-ft.	ft	ft	M&SU	Lost.	
8:00 AM	12:00 N	4-00	8.0								
12:00 N	12:30 PM	0-30	Lunch							0-30	
12:30 PM	4:00 PM	3-30	14.0			6.0					
II-10+0					6-17-42		D.R. Curry		Betzer Richardson		
4:00 PM	8:00 PM	4-00	14.0								
8:00 PM	8:30 PM	0-30	Lunch							0-30	
8:30 PM	9:30 PM	1-00	20.0			6.0					
crew run out of sharp bits											
Datum Top of concrete											
is Elev 500.0 0.0 is 61.0											
Below This Elev. 60.0											
					0.0	12.0	0.0	0.0	PR		

Hole No 11-10+0 Top Elev. Date 6-19-42

Inspector Allen Foreman Betzer Crew No Page Betzer 38

Time		Depth		Core
From	To	hr-min	From To	Recor.

8:00 AM 12:00 N 4-00 26.0 24.0

12:00 N 12:30 PM 0-30 Lunch

12:30 PM 4:00 PM 3-30 Moving & Setup.

Perc Dr-ft	Core Dr-ft	ReDrill ft.	W.O. ft	Time (hr.-min)	
				M&S.U.	Lost

4.0

0-30

3-30

Note - This is a correction to datum turned in previously. Betzer reports 60 ft of concrete instead of 61 as previously turned in.

0.0 4.0 0.0 0.0

PL

Hole No 11-9+0 Top Elev. 440.6 Date 6-19-42

Inspector J.R. Curry Foreman Betzek Crew No Richardson 39 Page

Time		Depth		Core
From	To	hr-min	From To	Recor.

Perc.	Core	ReDrill	W.O.	Time (hr-min)
In-ft	In-ft	ft	ft	M. & S.U. Lost.

4:00 PM	8:00 PM	4:00	0.0	
8:30 PM	8:30 PM	0:30	Lunch	
8:30 PM	12: M.	3:30	2.0'	

				0-30
		2.0		

12 M ^{A.M} 8:00

Adolph Beck Graveyard
 Did not make
 any progress struck
 some steel in the
 hole.

Datum Top of concrete
 is Elev 505.0
 64.5 ft to rock

0.0 2.0 0.0 0.0 11

Hole No D-3-10 Top Elev. 597.0 Date 6-22-42

Inspector H. W. N. Foreman BITZER Crew No 40 Page 40

Time		Depth		Core
From	To	From	To	Recor

Perc. Dr.	Core Dr.	ReDrill	W.O.	Time (hr.-min)	
ft	ft	ft	ft	M.	S.W. Lost.

8:00 A	4:00 P	8.0	14.0	24.9"	10.9				
--------	--------	-----	------	-------	------	--	--	--	--

10.9

0.0 10.9 0.0 0.0

al

No
D-3-40

Elev
565.3

DATE -
6-22-42

Time -

- Depth - C-12.

Allen

41
Bitzer

From To 247 mi

Dr. 1

4:30 P 12:00 M 7-30 0:0 14.0 14.0

14.0

0 14.0 0 0

pl

D-3-40

Time

From

To

Th. M

From

To

C.R.

DATE -

6-23-42

DEPTH -

8:30 A 9:30 P 7'-0 14'0 24.8 10'10"

Ahhen

BITZER

42

C.D.

10'10"

0

10.8

0.0

0.0

PL

Hole No 11-5+40 Top Elev. 496³ Date 6-29-42

Inspector Allen Foreman Betzler Crew No Betzler Page 43

Time		Depth		Core	Perc.	Core	Rebrill	W.O.	Time (hr-Min)	
From	To	hr-Min	From To	Recov.	Dr-ft.	Dr-ft.	ft	ft	M&SU	Lost
8-00 AM	12-00 N	4-00	14.0							
12-00 N	12-30 PM	0-30	Lunch							0-30
12-30 PM	4-00 PM	3-30	28.5			14.5				

0.0 14.5 0.0 0.0 pl

Hole No B-4+10 Top Elev 557.5 ✓ Date 6-29-42

Inspector A. Bock Foreman Betzer Crew No Richardson 44 Page

Time		Depth		Core
From	To	hr.	Min	Recon.
4-00 PM	8-00 PM	4-00		Moving & Set up
8-00 PM	8-30 PM	0-30		Lunch
8-30 PM	10-30 PM	2-00		Moving & Set up
10-30 PM	12-00 M.	1-30		0-0 5-0

Perc. Dr.	Core Dr.	Re-drill ft.	W. O. ft.	Time (hr.-min)
				4-00
				0-30
				2-00
	5.0			

Datum Elev conc 565.0
~~540.0~~
 Driller reports ~~8.5'~~ through concrete, 7.5

00 5.0 0.0 0.0

RP

Hole No Top Elev Date
 D-2-40

Inspector Foreman Crew No Page
 45

Time		hr. Min.	Depth		Core Recor
From	To		From	To	
	June	23	0	2	
	"	24	2	10	
	"	"	10	12	

Perc. Drift	Core An. ft.	ReDrill ft	W.O. ft	Time (hr-min.)	
				m & s	Lost
	2.0				
	8.0				
	2.0				

Dickinson
 by D.W.L.

0.0 12.0 0.0 0.0

PL

Hole No D-3-10 Top Elev Date June 20, 1942

Inspector Foreman Crew No Page 46

Time		Depth		Core
From	To	hr	Min	From To Recov

0 14

Dickinson

by D.W.L.

Perc Dr-ft	Core Dr-ft	Ret Hill ft	W.O. ft	Time (hr min)	M&S Lost
------------	------------	-------------	---------	---------------	----------

14.0

0.0 14.0 0.0 0.0

RL

Hole No 0-13 Top Elev 656.2 Date May 2, 1942

Inspector Foreman Crew No Page
Richardson 47.

Time		Depth		Core
From	To	hr.	Min	From To Recor.

Perc Dr-ft	Core Dr.ft.	Re Drill ft	W.O. ft	Time (hr-Min)
				M&S.L. Last

0 25

25.0

(From Drill Foreman's daily report. -D.W.L.)

0.0 25.0 0.0 0.0

Hole No D-4-10 Top Elev. --- Date J 6-30-42

Time		Depth		Core
From	To	From	To	Recor

~~8³⁰ A 4⁰⁰ A 7-30 5-0 31.0 16.0~~

VOID

Inspector ALLEN Foreman BITZER Crew No page 48

Perc	Core	Relkil	W.O.	Time (hr. min)
Dr. ft	Dr. ft.	ft	ft	M&S.L. Lost

~~16.0~~

VOID

00 0.0 0.0 0.0

Hole No Top Elev. Date
 D-6-40 448.9 7-1-42

Inspector Foreman Crew No Page
 Rhen Bitzer 49

Time		Depth		Core
From	To	hr-min	From To	Recor

Perc.	Core	ReDrill	W.O.	Time (hr. Min.)	
In. ft.	Dr. -ft.	ft.	ft.	M&S.U.	Lost

9:00 A	4:00 P	7-0	0.0 10:0	10.0							
--------	--------	-----	----------	------	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--	--	--	--	--

4-00 PM	12-00 M		10.0 24.0								
---------	---------	--	-----------	--	--	--	--	--	--	--	--

Adolph Back swing
 14.0

5.0 0.0 0.0

0.0 24.0 0.0 0.0

Hole No	Top Elev.	Date	Inspector	Foreman	Crew No	Page
13-0		5-19-42				50

Time		Depth		Core	Perce.	Core	Retrill	W.O.	Time (hr. Min)	
From	To	hr.-Min	From To	Recor.	Dr. ft	Dr. ft.	ft.	ft	M&SU	Lost

1.0 65.0

Washed out hole

— Allen
by D.W.L.

64.0

0.0 0.0 0.0 64.0

Hole No 40 Top Elev. 448.8 Date 7-1-42 Inspector ALBANY Foreman BITZER Crew No 52 Page 52

Time		Depth		Core	Perc	Core	ReDrill	W.O.	Time (hr-Min)	
From	To	From	To	Recor	Dr-ft	Dr-ft.	ft	ft	M&S	Last.

~~0:0 10:0 10:0 10:0~~

VOID

VOID

0.0 0.0 0.0 0.0

Hole No 70P Eler Date 7-8-42
D-5-30 Reck-499.7

Inspector Allen Foreman Bitzer Crew No 53

Time		Depth		Core
From	To	hr.	min	Recon.

Perf	Core	Rebill	W O	Time (hr.-min)
Dr-ft	Dr-ft	ft.	ft.	M&S. Lost

8:00 A	4:00 P	8-0	0:0	8.0	8.0				
--------	--------	-----	-----	-----	-----	--	--	--	--

0.0 8.0 0.0 0.0

kl

Hole No ~~Top~~ Elev ✓ Date
D-3-30R-5685 7-3-42

Inspector Foreman Crew No Page
H. L. C. N. BITZER 54

Time Depth Core
From To hr. Min From To Recor

Perc Core Redrill W.O. Time (hr-min)
Dr. ft Dr. ft ft ft m&S.D. Lost

8⁰⁰A 4⁰⁰P 8-0 10.0 27.0 17.0

17.0

0.0 17.0 0.0 0.0 12

Hole No D-4-40 Top Elev 536.9 Date 7-9-42

Inspector Ahhen Foreman Bitzer Crew No 55

Time		Depth		Core
From	To	From	To	Recov.

Perc Dr.	Core Dr.	ReDrill	W.O.	Time	Thr Min
ft	ft	ft	ft	M&S	Lost

8:00 A	4:00 P	8.0	0.0	9.0	9.0				
--------	--------	-----	-----	-----	-----	--	--	--	--

				9.0					
--	--	--	--	-----	--	--	--	--	--

D-4-40 7-9-42.

D.R. Curry Betzer Richardson

4:00 PM 8:00 PM 4-00 9.0

8:00 PM 8:30 PM 0-30 Lunch

0-30

8:30 PM 9:30 PM 1-00 20.0

11.0

Driller used up all of his sharp bits

0.0 20.0 0.0 0.0

12

Hole No J:4+30 Top Elev 545.0 Date 7-14-42

Inspector Foreman Crew No Page
 J.P. Curry Betzer Richardson 57

Time		Depth		Core	Perc	Core	ReDrill	W.O.	Time (hr-min)	
From	To	From	To	Recov.	Dr-ft	Dr-ft	ft	ft	M&S	Lost

?

J:4+30 7-14-42

4:00 PM	8:00 PM	4:00	2.0							
8:00 PM	8:30 PM	0:30	lunch							0-30
8:30 P.M.	12:00 M.	3:30	15.0			13.0				

J.P. Curry Betzer Richardson

0.0 13.0 0.0 0.0

Note No. EXTRA.

F/3-24-9

Elev. 472.9

Time

Depth. C-P.

8:00 A 4:00 P 8-0 0.0 27.0 23.0

4:00 PM 5:00 PM 1.0 27.0 29.0 1.9

Ahhen
C-D-

Pitzer 61

27.0

Adolph Bock

2.0

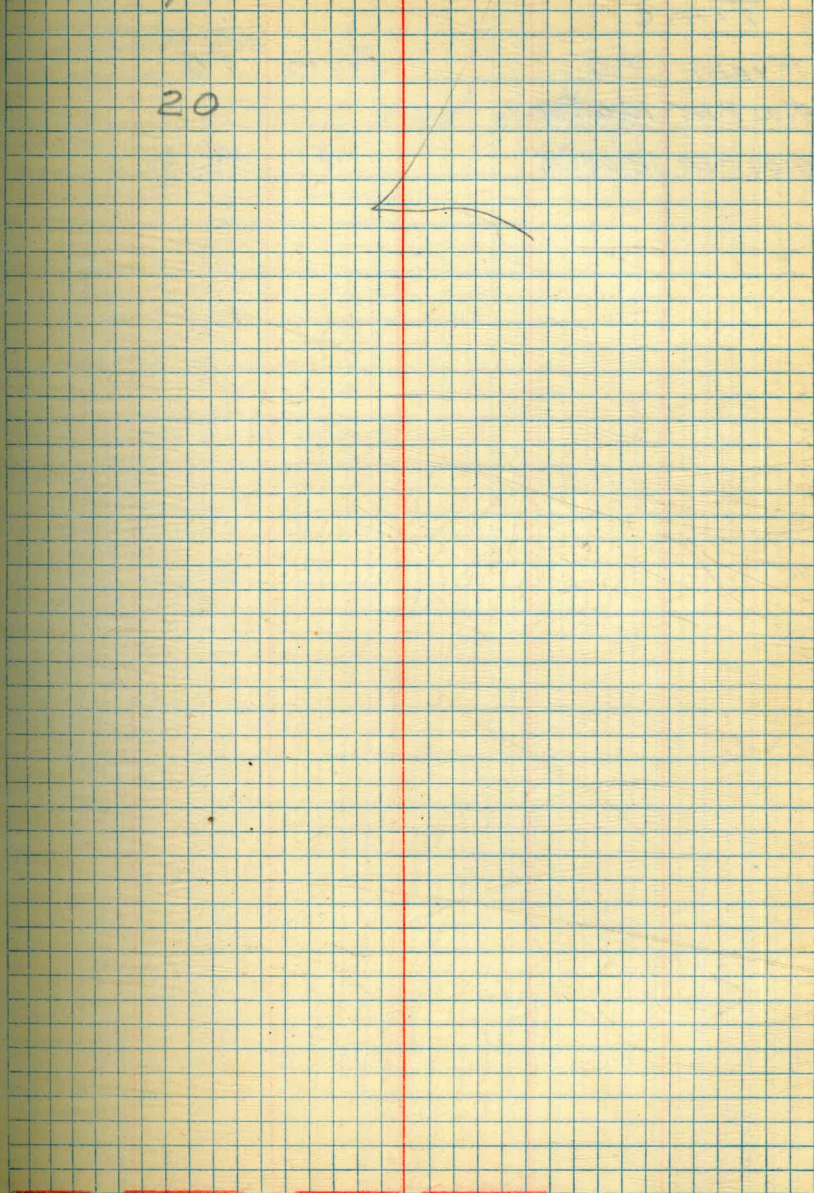
0.0 29.0 0.0 0.0

Noted

Hole # 4-20 Drain El. 547.8 7-27-42

Time
From to From To
5:00 P. 12:00 7:00 0 20

17dolph Bock 62



0.0 20.0 0.0 0.0 R

Hole#

D3-0

El. 592.4

Date

7-28-42

Time

From

to

From

to

4:00 P.M.

10:00 P.M.

10:00 P.M.

12:00 P.M.

0

4

Adolph Bock

63

Core Dr.

Move and setup

4

0.0

4.0

0.0

0.0

al

Wohlsch

D-5-10

Elev. 516.5

DATE -

7-31-42

Time -

H-m.

DEPTH

C-B

8⁰⁰A

4⁰⁰P

8.0

0.0

11.0

11.0

Ahren

C-D

Bitzer

64

11.0

0.0

11.0

0.0

0.0

Hole #

D-9-0

Date

8-3-42

Adolph Bock

Betzer 66

Time

Depth

From To hr.min From to

Had trouble trying to
get steel out of hole
Finally put some cement
in bottom of hole to
hold steel in place.

00. 00 0.0 0.0

Hole#
D-9-0

Date
8-9-42

Adolph Bock

Betzer 67

Time
From to

Started drilling this hole again but still having trouble with steel so cemented it up again and moved machine to D-8-0.

Did not show any footage as the amount shown on the ticket was refilled with cement.

0.0 0.0 0.0 0.0

Hole #
D-8-0

Date
9-5-42

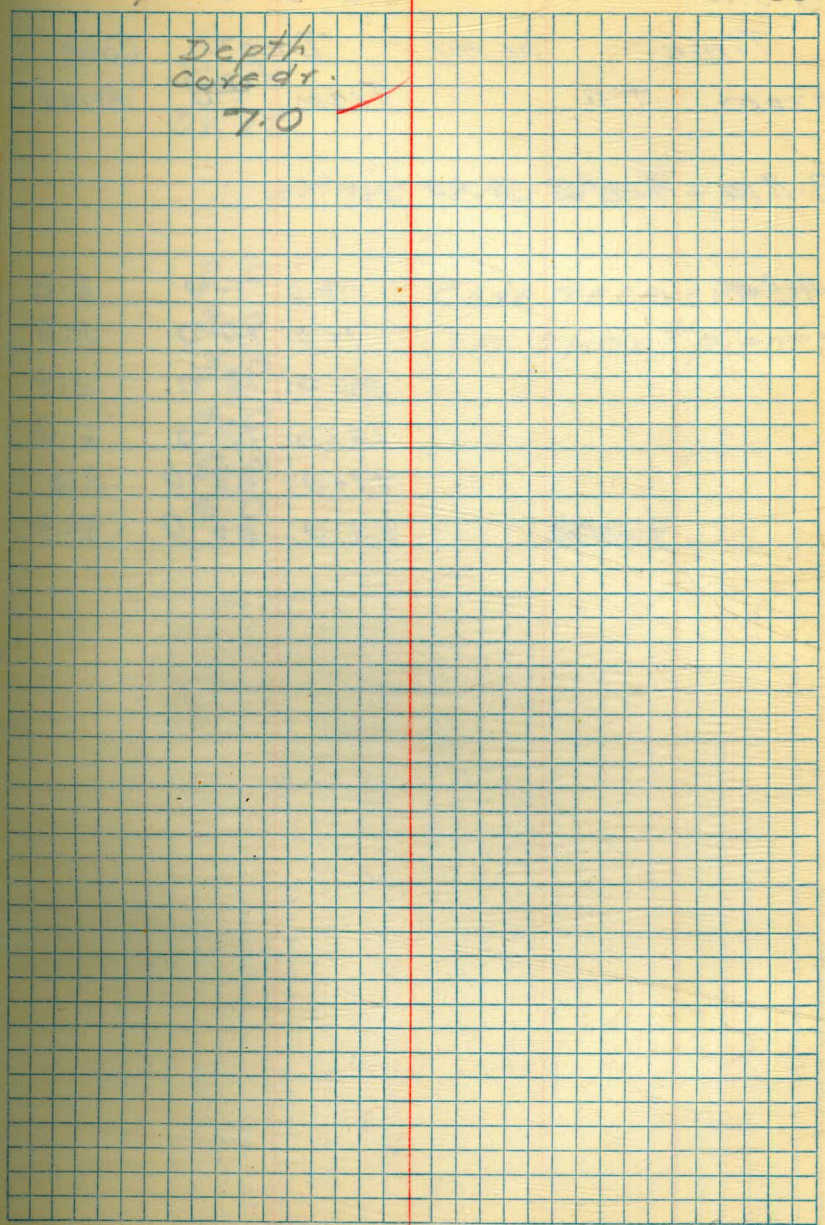
Adolph Bock

Betzer.
68

Time
From to
8:00 AM 4:00 PM 8 hr.

Depth
From to
7 14

Depth
core dr.
7.0



0.0 7.0 0.0 0.0

R

Hole #
18-37.5

Date
8-6-42

Time	hr. mi.	Depth	Core
From	To	From	To
8:00 AM	4:00 PM	8:00	
4:00 PM		4.0 7-0	2.2
		7-0 10-0	2.9
		10-0 13-0	2.9
		13-0 17-0	2.9
		17-0 22-0	3.5
9:00 PM		22-0 26-0	2.3

Adolph Boet

Betzey 69

Core
Dr. ft.

Move and set up.

3.0 ✓
3.0 ✓
3.0 ✓
4.0 ✓
5.0 ✓
4.0 ✓

Core recovered
in short pieces.

0.0 22.0 0.0 0.0

pp

Hole # 18-27.7

571.7

Date

8-6-42

Adolph Bock

Betzey
Richardson 70

Time		Hz. min.	Depth.		Core
From	To		From	To	Recov.

10 A.M.	12: A.M.	2-0	0	1.5	
---------	----------	-----	---	-----	--

9:00 P.M.	12:00 P.M.		1.5	4.0	1.5
			4.0	7.0	1.5
			7.0	10.0	2.0
			10.0	14.0	2.6

Perc. Drift.	Core Drift.
--------------	-------------

1.5 ✓

drilled hole and
set 2-0' pipe nipple.

2.5 ✓

3.0 ✓

3.0 ✓

4.0 ✓

core recovered
is broken into
short pieces.

11.5

12.5

0.0

0.0

RL

Hole #1
18-33.1

Date
Aug. 13, 1942

Time	Dept.	Core
From to	From to	Recor.

0 1.5

8:00 AM

1.5 2.5 1.0

2.5 5.0 2.1

5.0 10.0 4.1

10.0 13.0 2.6

13.0 16.0 2.9

16.0 20.0 2.1

3:30 PM 20.0 28.0 5.7

PM.
4:00

28.0 30.0 1.6

30.0 38.0 6.0

38.0 48.0 2.25

48.0 52.0 1.25

52.0

M.
12:00

Betzey 73

Adolph Beck

P.C. Dr.	Core
ft.	Dr. ft.

1.5 ✓

Drilled 1.5' hole and
set nipple Aug 12, 1942.

1.0 ✓ Core rec. in short
pieces 1" to 4"

2.5 ✓ " "

5.0 ✓ " "

3.0 ✓ " "

3.0 ✓ Core good 9" to 1"

4.0 ✓ Core in short

8.0 ✓ pieces 1" to 4"

H.R. Curry

Betzey Richardson

Good core

Good core

Core recov was good
lots of core missing
This was very soft.

24.0 ✓

1.5

50.5

0.0

0.0

Hole No D-4-0 Top Elev Date 8-17-42

Inspector Adolph Bock Foreman Betzey Crew No 2 Page 74

Time Depth Core
 From To hr-Min From To Recor.

Perc Core ReDrill W.O. Time chr min
 Dr-ft Dr-ft ft ft Masl Lost.

4:00 PM 12:00 5.0 16.0

11.0

0.0 11.0 0.0 0.0

Hole No	Top Elev	Date
IT-540	527.1	8:19-42

Inspector	Foreman	Crew No	Page
J.R. Curry	Betzer	Tamlinson	15

Time		Depth		Core
From	To	From	To	Recov

Perc	Core	ReDrill	W.O.	Time (Hr Min)
Dr-ft	Dr-ft	ft	ft	M&SU Lost

8:00 ^{9.M}	12:00 ^N	4:00	1.0	8.0					
---------------------	--------------------	------	-----	-----	--	--	--	--	--

7.0

0.0 7.0 0.0 0.0

Hole #

D-11-9.3

Date

Sept. 1, 1942

Inspector.

Adolph Bock

Foreman

Betzey

78

Time

From to

Depth

From to

8:00 AM 4:00 PM

15.0 24.0

Core

Dr. ft.

9.0

0.0

9.0

0.0

0.0

Hole #

D-11279

Time

From to

8:00 A.M. 4:00 P.M.

Date

Sept. 2, 42

Dept

From to

0 12.0

Insp.

Adolph Bock

Foreman

Betzer.

79

Core

Dr. ft.

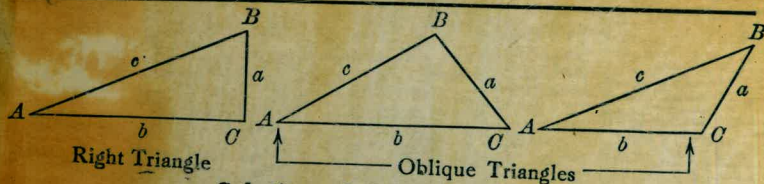
12.0

0.0 12.0 0.0 0.0

14-30-1-W- off 190 lb-

41-S-

TRIGONOMETRIC FORMULÆ



Solution of Right Triangles

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

Given	Required	Formulas
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	Formulas
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 = $5^\circ 10'$. From Table, Page IX. $\cos 5^\circ 10' = .9959$. 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.

