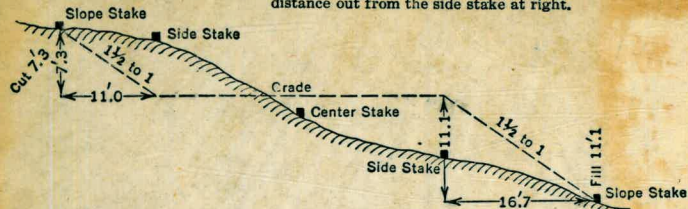


W

604

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING
 Roadway of any Width. Side Slopes 1 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.



San Vicente
Darry

DRILLING GROUT HOLES
BOOK No. 4

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.

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.

10,939. ca. ck. ys. cM.

Hole No. 6-25 Top Elev. _____ Date 4-14-43

Inspector _____ Foreman _____ Crew No. Page 1

Time		Hr.-Min.	Depth		Core
From	To		From	To	Recov.
8:00 A	9:00 A	1-0	153.4	154.5	4.0

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M.&S.U.	Lost
	1.1 ✓				
0.0	1.1	0.0	0.0		pe

Hole No. 7-0 Top Elev. Date

Inspector Foreman Crew No. page 2

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

9:00 A	10:00 A	1-0		
--------	---------	-----	--	--

10:00 A	11:30 A	1-30	133.9 135.0	2.0
---------	---------	------	-------------	-----

12:00 M	2:15 P	2-15	135.0 146.0	0
---------	--------	------	-------------	---

2:15 P	3:00 P	0-45	146.0 146.0	10.06
--------	--------	------	-------------	-------

Lost core had to recover it = 5' of good

3:15 P			146.0	
--------	--	--	-------	--

146.0 157.0

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M&S.U.	Lost

					10
--	--	--	--	--	----

	3.0 ✓				
--	-------	--	--	--	--

	11.0 ✓				
--	--------	--	--	--	--

	0				
--	---	--	--	--	--

Core - 5' b grounded and broken up.

D. R. Barry Dan McKenzie J McKenzie

	11.0 ✓				
--	--------	--	--	--	--

0.0	24.1	0.0	0.0		
-----	------	-----	-----	--	--

12

Hole No. 13.25
 Top Elev. -----
 Date 4-14-112

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

8:00			3.0		0
------	--	--	-----	--	---

Drilled on swing

3.0	50.25	
50.2 ³	61.6	11.0
61.6	72.6	10.4
72.6	76.6	3.12

Inspector -----
 Foreman -----
 Crew No. Page 3

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M.&S.U.	Lost

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

8 Day McCowan,
 47.2³ Grout.
 11.4³ Broken 1" to 4.0
 11 ✓ Broken 1" to 5.0
 4 ✓ Broken 1" to 12"

0.0 26.3 47.3 0.0 bl

Hole No. 1470 Top Elev. _____ Date 4-15-42 GT

Inspector McCown Foreman _____ Crew No. _____ Page 4

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

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M.&S.U.	Lost

			0	2.0	
--	--	--	---	-----	--

2.0	(Mar. 25, 1942 - Curry)				
-----	-------------------------	--	--	--	--

12.0	5.0		2.0	5.0	1.2
			5	10.0	5.0
			10	16	4.0
			16	20	3.0
	4 AM		20	25	5

	3.0			Broken	1" to 5"
	5			"	1 to 18"
	6				1" to 12"
	4				1" to 2"
	5				1" to 6"

2.0	23.0	0.0	0.0	Noted	
-----	------	-----	-----	-------	--

Hole No. 16-25 Top Elev. 546.3 Date 4-15-42

Time		Depth		Core
From	To	From	To	Recov.
		22.5'	27.5'	
	2 ⁰⁰ AM	27.5'	33.0'	4.0'
2 ⁰⁰ AM		33	35.8	
	4 ⁰⁰ AM	35.8	40.4	
4 ⁰⁰ AM		40.4	42.0	1.6
		42.0	51.0	4.5
	8 ⁰⁰ AM	51	55.8	3.0

Inspector McCann Foreman _____ Crew No. _____ Page 5

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M.&S.U.	Lost
		5.0			9 root
	5.5	Broken		1" to 6"	
	2.8	Broken		1" to 6"	
	4.6	Broken		1" to 3"	
	1.6	Broken		1" to 12"	
	9.0	Broken		1" to 3"	
	4.8	Broken		1" to 6"	

0.0 28.3 5.0 0.0

pe

Hole No.

14725

Top Elev.

5130

Date

4-15

Inspector

Foreman

Crew No.

Page 6

Time		Depth		Core Recov.
From	To	From	To	
4 AM	8 AM	4 00	0 25	

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M.&S.U.	Lost
		25		Drilling Grout	

0.0

0.0

25.0

0.0

Hole No. 16-25 Top Elev. Date 4-16-42

Inspector F. L. H. N. Foreman Crew No. Page 7

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

8:30 A	10:45 A		58.8	64.5	4.5
--------	---------	--	------	------	-----

10:45 A	1:45 P	3-0	64.5	71.5	4.0
---------	--------	-----	------	------	-----

This hole cased in at 54.42 causing a Re-Dr of 16.0 - Core broken up and showing many small seams.

1:45 P	3:30 P	2-45	71.5	81.5	8.0
--------	--------	------	------	------	-----

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min)	
				M.&S.U.	Lost

	5.5 5.7			0	0
--	-----------------------	--	--	---	---

	7.0			0	0
--	-----	--	--	---	---

	10.0			0	0
--	------	--	--	---	---

0.0	22.7	0.0	0.0		RL
-----	------	-----	-----	--	----

Hole No. 16-0
 Top Elev. -----
 Date 9-16-42

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

8:00 PM	8:30 PM	0-30	0.0	25.0	
---------	---------	------	-----	------	--

Inspector D.B. Curry
 Foreman Gehard
 Crew No. ----- Page 8

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M.&S.U.	Last

			25.0		
--	--	--	------	--	--

0.0	0.0	0.0	25.0		
-----	-----	-----	------	--	--

Hole No. 17-0
 Top Elev. -----
 Date A-16-A2

Inspector D.P. Curry
 Foreman Orchard
 Crew No. Page 9

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

7:30 P.M.	8:00 P.M.	0-30	0.0	7.0	
-----------	-----------	------	-----	-----	--

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.) M.&S.U. Lost
---------------	--------------	------------	----------	------------------------------

7.0 or 3.0

Notes this hole washed out down to 7.3 ft and then cased in at 3.0 ft. The hole is only open to a depth of 3.0 ft now.

0.0 0.0 0.0 7.0

Hole No. 18-13
~~19655~~ axis. --- Date 4-16-42

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

Day shift.			66.0	76.0	2.25
------------	--	--	------	------	------

I got this data from the core Box they have extended the 2 1/2 in pipe from 13.0 ft to 18.0 ft.
 W.R.O.

Inspector H.R. Conroy Foreman --- Crew No. --- Page 10

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M.&S.U.	Lost

	10.0				
--	------	--	--	--	--

0.0	100	00	00		
-----	-----	----	----	--	--

✓

Hole No. 14-0
 Top Elev. -----
 Date 4-18/42

Inspector E. E. Hen
 Foreman Betzer
 Crew No. Page 11

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

8:00 H	8:48 H	0-45	40.0	43.0	5.5
--------	--------	------	------	------	-----

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M.&S.U.	Lost

	3 ✓				
--	-----	--	--	--	--

0.0 3.0 0.0 0.0 ✓

Hole No. A-10-13 Top Elev. 106.55 Date 4-18-42

Time		Depth		Core
From	To	Hr.-Min.	From	To
9:00 A	4:00 P	7-0	76.0	101 75

10-13 4-18-42.

4:00 PM	4:50 PM	0-50	95.0	105.0	
4:50 PM	5:30 PM	0-40	removing core		5.75
5:30 P.M.	6:55 PM	1-25	105.0	116.0	
6:55 P.M.	7:36 PM	0-35	removing core		5.5
7:36 PM	8:00 PM	0-30		116.0	
8:00 P.M.	8:30 P.M.	0-30	lunch		
8:36 PM	9:56 PM	1-20	116.0	127.5	
9:56 P.M.	10:25 P.M.	0-35	removing core		10.33
10:25 P.M.	11:30 P.M.	1-05	127.5	138.5	
11:30 P.M.	12:00 M.	0-30	removing core		10.4

see page 14

Notes at 76.0 ft 5.0 ft of pipe was added.

Inspector Allen Foreman Ritz Crew No. Page 12

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M.&S.U.	Lost
	19 25				
This hole is broken up and very little core is being recovered.					
	10.0				
some of this core is better.					
	11.0				
Core not so good.					
	11.5				
Good core					
	11.0				
good core					
					0-30
0.0	62.5	0.0	0.0		✓

Hole No	Top Elev.	Date	Depth		Core
From	To	Time	From	To	Recov.
17-0					
8:45 A	10:00 A	1-15	39.5 46.9	46.9	6.0
10:00 A	11:45 A	1-45	46.9	56.4	7.3
This core very hard broken in to small pieces showing small seams					
11:45 A	2:15 P	2-30	56.4	65.9	5.0
2:15 P	3:30 P	1-15	65.9	65.9	0
Broken gas and shut down because shortage of water.					
3:30 P			65.9		
17-0		4-18-42			
4:00 P.M.	5:30 P.M.	1-30	65.9	71.5	
5:30 P.M.	6:00 P.M.	0-30	removing core 2.6		
6:00 P.M.	8:00 P.M.	2-00	71.5		
8:00 P.M.	8:30 P.M.	0-30	Lunch		
8:30 P.M.	9:00 P.M.	0-30	71.5	78.0	
9:00 P.M.	9:30 P.M.	0-30	removing core 2.0		
9:30 P.M.	11:20 P.M.	1-50	78.0	85.0	
11:20 P.M.	11:40 P.M.	0-20	removing core 4.25		
11:40 P.M.	12:00 M	0-20	Nothing to do. see Page 15.		

Inspector H. L. Egan		Foreman B. J. Per		Crew No. Page 13	
Perc. Dr. H. ft.	Core Dr. H. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr. - Min.)	
				M. & S. U.	Lost
	7.4 7.4			0	0
	10.4 9.5			0	0
	9.4 9.5			0	0
	0			0	1-15
	5.6				
	Very poor core.				
	6.5				0-30
	Very poor core.				
	7.0				
	Core seems to be getting better				
0.0	45.5	0.0	0.0		0-20

Hole No. A-10-13 Top Elev. 106.5 Date A-20-42

Inspector D.R. Curry Foreman McKenzie Crew No. 21 Hay Page 14

Time		Depth		Core
From	To	Hr.-Min.	From To	Recov.
12:50 a.m.	2:10 a.m.	1-20	138.5 149.0	
2:10 a.m.	3:00 a.m.	0-50	removing core	10.33
3:00 a.m.	4:00 a.m.	1-00	149.0	
4:00 a.m.	4:30 a.m.	0-30	lunch	
4:30 a.m.	4:50 a.m.	0-20	149.0 160.0	
4:50 a.m.	5:50 a.m.	1-00	removing core	10.33
5:50 a.m.	7:30 a.m.	1-40	160.0 171.0	
7:30 a.m.	8:00 a.m.	0-30	removing core	7.0

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	M.&S.U.	Last
	10.5					
	good core					
						0-30
	11.0					
	good core one piece was 7.0' long.					
	11.0					
	some open seams					
0.0	32.5	0.0	0.0			

Notes This hole is
159.0 Deep. (Below rock
surface)

Hole No. 17-25 Top Elev. 552.9 Date A-20-42

Inspector D.R. Curry Foreman McKenzie Crew No. 1 (McKenzie) Page 15

Time		Depth		Core	
From	To	Hr.-Min.	From	To	Recov.
1:45am	2:15am	0-30	moving & set up.		
2:15am	4:00am	1-45	48.5		
4:00am	4:30am	0-30	lunch		
4:30am	6:05am	1-35	48.5	61.0	
6:05am	6:30am	0-25	removing core 4.0		
6:30am	8:00am	1-30	61.0	69.0	
			removing core 7.0		

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min)	
				M.&S.U.	Last
				0-30	
	12.5				0-30
	8.5' of this core washed out.				
	8.0				
	good core.				
0.0	20.5	0.0	0.0		

PL

Hole No. 16-0 Top Elev. Date 4-21-42 Inspector F. H. Cox Foreman BITZ-en Crew No. Page 16

Time		Depth		Core	
From	To	Hr.-Min.	From	To	Recov.
8:00 A	11:30 A	3-30	41.5	55.0	6

No Record of drilling from
41.5 - 35.2 41.5

Note Core box shows
35.2 46.5 3.7

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (M. & Hr. Min.)	
				M. & S. U.	Lost
	13.5			0	0
	6.3				
0.0	19.8	0.0	0.0		

Broken 1/2" to 10"

Noted

Hole No. 14-25 Top Elev. Date 4-21-42 Inspector Allen Foreman Bitzer Crew No. Page 17

Time		Depth		Core	Perc.	Core	Re-Dr.	W.O.	Time (Hr.-Min.)	
From	To	From	To	Recov.	Dr. ft.	Dr. ft.	ft.	ft.	M&S.U.	Last
	10:00 A	72.0	79.0	6.5		7.0			0	0
	12:30 P	79.0	90.0	7.0		11.0			0	0
		90.0	99.0	Core		9.0				
14-25	5:13.0		4-21-42							
	4:00 P.M.	99.0	114.5	10.0		15.5				
	12: M.	114.5	132.5	10.2		18.0				
<p>Notes: This hole was drilled 24.5' before making 10.0' of core also went 18.0' to get 10.2' core must be very soft spot. I got this data for swing shift W.R. Curry.</p> <p>No record of drilling from 62.8' 72.0'</p> <p>Note - Core box shows 62.8 72.0 9.0</p>										
						9.2				
									Broken 2"	24"
					0.0	69.7	0.0	0.0		Hotel

Hole No. 17-25 Top Elev. 52.9 Date 4-21-42

Inspector D.R. Curry Foreman Hogate Crew No. 21 Tom Page 18

Eff Time		Depth		Core
From	To	From	To	Recov.

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M. & S.U.	Lost

4:00 PM.		69.0	81.0	7.0					
		81.0	90.0	2.85					
12.M.		90.0	95.0	3.7					

	12.0				
	9.0				
	5.0				

I got this data for swing shift, D.R. Curry

0.0 26.0 0.0 0.0

Noted

Hole No. 8-3487
 Top Elev. 441.0
 Date 4-21-42

Inspector D.R. Curry
 Foreman Hogate
 Crew No. 11 (Hogate) Page 19

Time		Depth		Core
From	To	From	To	Recov.
4:00 PM		15.0 [*]	20.0	2.5
		20.0	25.0	5.33
12. M.		25.0	30.0	5.1

Perc Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr. - Min.)	
				M.&S.U.	Lost
	5.0				
	5.0				
	5.0				

* This 15.0 is from top of concrete to where drilling in rock started and top of 2.5" pipe protrudes 0.5' above concrete level.
 (El. top of concrete 455.4)

0.0 15.0 0.0 0.0

Noted

Hole No. 15+25 Top Elev. _____ Date 4-23-42

Inspector McCoun Foreman Betzer Crew No. _____ Page 20

Time		Depth		Core
From	To	From	To	Recov.

Perc. Dr. ft.	Core Dr. ft.	Re-Dr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M.&S.U.	Last

8:00 AM		52.3	63.0	10°					
12 M		63.0	73.0	9.3					
water tested open.									

	10.7			Core broken 2"-8"					
	10.0			Core broken 2"-56"					

0.0 20.7 0.0 0.0 PL

Hole No. 16100 Top Elev. _____ Date 4-23-42

Inspector McCown Foreman Betzler Crew No. _____ Page 21

From	Time		Depth		Core
	To	Hr.-Min	From	To	Recov.
8-AM			55°	69°	7°
12 M			69°	80°	10°
			water tested tight.		
10	3° PM	2-00	80°	90.6	9°
3 PM	5:15	2-15	90.6	98.0	7.2
5:15 PM	6:45	1-30	98.0	108.3	7.6

Moving to 15-0

Perc. Dr. ft.	Core Dr. ft.	ReDr. ft.	W.O. ft.	Time (Hr.-Min.)	
				M.&S.U.	Lost
	14.9				Core broken 1" to 12"
	11.0				Core broken 1" to 33"
	10.6				Core broken 1" to 30"
	7.4				Core broken
	10.3				Core broken

0.0 53.3 0.0 0.0

Pl

Hole No. Top Elev. Date

4-23-92

14+00 Time Depth Core
From To Hrs Min from to Recor.

1:30 PM	3:00 PM	1-30	69.5	80°	9.5
3:00 PM	4:30 PM	1-30	80.0	90.0	9.5
4:30	6:20 PM	1-50	90.0	102	10.0
6-20	7:45	1-25	102	111	5.0
8:15	Water tested O.K. at 111 ft.				
PM					
8:30	10:30	2-0	111	119	3.8
PM					
10:30	12:00	1-30	119	126	6.0

Inspector Foreman Crew No Page

22

Para. Core ReDr. WO Time H. Min
Drill Drill ft. ft. M&SU Lost.

10.5	Core Broken 2" to 14"				
10.0	Core broken				
12.0	Core broken				
9.0	Core broken				
	Adolph Bock				
	Inspector				
8.0	Core recov. in short pc. 4: PM to 12 PM.				
7.0	Core recov. is good				

0.0 56.5 0.0 0.0

pl

Hole No 10+13
 11.5
 Top Elev 442.1
 Date 4-23-92

Time		Depth		Core
From	To	Hrs	Min	Rec.

7 AM	Note Concrete 18° Thick			
10:30	0	5	35	
A.M.	5	10	30	
3:10	10	15	35	
3-10	15	20	4.0	
6:30	20	25	3.8	

Moved to 10.34

Inspector Foreman Crew No Page
 23

Pero Drill	Core Drill	Fe Drill	W.O.	Time	Hrs	Min
ft.	ft.	ft.	ft.	M&SU	Lost	

O.P. = Top Rock.

5'	Broken	1" to 5"
5'	Broken	1" to 6"
5'	Broken	1" to 6"
5'	Broken	Adolph Bock
5'	Broken	Inspector
		4-1 to 12 M

0.0 25.0 0.0 0.0

KL

Hole # 15-00 Top Elev Date 4-23-42

Inspector Adolph Back Foreman Betzer Crew 24

Time		Hr. Min	Depth		Core recovery
From	To		From	To	
6:45 PM	8:30	1-45			
8:30	10:00	1-30	49.5	56.5	5.7
10:00 PM	12:00	2-00	56.5	62.0	5.0

Perc	Core	Re Dr.	W.O.	Time	Hr. Min.
Dr. ft	Dr. ft	ft.	ft.	M+SU	Lost
					1-45
	7.0				core broken
	5.5				core good.

0.0 12.5 0.0 0.0

Hole # 5
10-34

Top Elev
444.4

Date
4-23-42

Inspector
Adolph Beck

Foreman
Betzer

Crew
25

Time		Depth		Core
From	To	Mr. Min	From to	Recor.

Note Concrete 16' ✓

P.m	P.m			
6:30	8:00	1-30		
8:00			0 5	2.3
			5 10	3.0
	10:30		10 15	4.9
	11:45		15 20	4.6

~~11:55-12:00~~

~~8:30 11 10:00 11 30 20.0 22.0 4.0~~

~~FINAL DRILLING =
to be grouted~~

Rec	Core	Re Dr.	W.O.	Time	At Min
Dr. ft.	Drift	ft.	ft.	M+SU	Lost.

Thick 0.0 Top rock

50 ✓	Core broken.			1:30	
50 ✓	Core broken				
50 ✓	Core good but broken				
50 ✓	Core broken				

0.0 20.0 0.0 0.0

PL

Hole #
15-0

4-23-1942

Inspector
Adolph Bock

Foreman
Achor

26

7:00 PM 7:30 0-30 0 49.5

M.O
+7
49.5

0.0 0.0 0.0 49.5

✓

Hole #
15-25

4-23-42

7:30 P.M. 8:00 0-30 0 73

Inspector
Adolph Bock

Foreman
Richard

27

M.O.
ft
73

0.0 0.0 0.0 73.0 ✓

10.30

4-25-42

28

8:30 ~~7~~ 18⁰⁰ ~~7~~ 1-31 20.0 25.0 4.0

Love
Dr.

5 ✓

5.0

28

121-0

31-27-42

8:00H 10:30H 2-30 126.0 136.0 9.5

Final Depth.

FLYEN

BITZER - 29

Core

~~DO~~

10.0

10.0

RR

15=0

4-27-42

8:00 H 10:30 H 2-30 62.0 72.0 9.0

10:30 12:00 M 1-30 72.0 77.0 3.5

HLLen

BITZER

30

~~Core~~

~~Dr.~~

10.0

5.0

15.0

9-34

4-27-42

ALLEN

BITZER

31

Rock Surface Elev. 442.9					
		0	2.0		
8:00 A	10:00 A	2-0	0:0	5.0	3.0
10:00 A	12:30 P	2-30	5.0	10.0	2.0
12:30 P	2:15 P	1-45	10:0		3.5
2:15 P	2:30 P	1-15	15:0	20.0	2.0
3:30 P			20.0	25.0	

Perc Dr.	Core Dr.				
2.0					
	5.0				
	5.0				
	5.0				
	5.0				
	5.0				
	5.0				
	5.0				
	5.0				

Notes - I was told it was
9.0 ft from top of concrete
to top of Rock
Elev at top of concrete
is 449.9

Rock surface 7.0 below top of
concrete. Total depth drilled
27.0

2.0 25.0

pl

off-set
A-9-44

4-27-45

Phoen

Butler

Page
31A

10:30A 2:30P 4-0 0:0 10:0 3:0

2:30P 3:30P 1-15 10:0 15:0 2:0

3:30P 15:0 19:0

40-3. axis
9+44

4:00 P.M.

19.0 21.0

11:30P 21.0 52.0 14.5

11:30PM 12:00M. 0-30 Out of Bits.

Notes Driller on swing
shift did not know depth
from top of concrete to top
of Rock.

This Grout Pipe had been
set and Pere dr. to approx
depth of 2.0 ft.

Perc.
Dr.

Core
Dr.

10.0

3.0

4.0

H.R. Curry

Hogate

Hay

2.0

31.0

0-30

2.0

2.0 52.0

✓

15-25

4-27-42

1:00 P 2:30 P 1-30 73.0 78.0 5.0

2:30 P 78.0 83.0

15-25 540.0 4-27-42

4:00 PM 8:00 PM 4-00 recovering core

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

8:30 PM 11:00 PM 2-30 83.0 94.0

11:00 PM 12:00 AM 1-00 Lost core
trying to recover
Recovered 4.0

Allen

Bitter

Page
32Perc. Dr Core
Dr

5.0 → ✓

5.0 → ✓

D. R. Curry

Tomilson

11.0 ✓

0-30

Some core remaining in hole.

0.0

21.0

0.0

0.0

11

Hole No	Top Elev	Date	Inspector	Foreman	Crew No	Page
9+11.6	441.2	4-27-42	D. R. Curry	Hogart	Hogart	33

Time		Depth		Core	Pore Core	Red Hill	W.O.	Time	Chr-Min
From	To	From	To	Recon	Dr-Ft	Dr-Ft	Ft.	Ft.	M.S.U. Lost
		8.6	9.0		0.4				
4:00 PM	4:40	0-40		Moving & Set up				0-40	
4:40		9.0	14.0	1.6	5.0 ✓				
		14.0	17.0	0.2	3.0 ✓				
		17.0	21.0	2.9	4.0 ✓				
		21.0	24.0	1.6	3.0 ✓				
		24.0	29.0	4.8	5.0 ✓				
	12-M.	29.0	35.0	4.8	6.0 ✓				

Notes Top of concrete
or 0.0 on this hole is
Elev- 449.85

0.4 26.0 0.0 0.0 pl

A-9-4^{1/2}

4-29-42

106.5 121.0

8:00 A 10:00 A 2-0 121.0 133.0 1.0

133.0 143.0 4.0

143.0 160.0 5.0

Datum: 0.0 = Elev. 440.2

HLEN

121
12
133

BITZER.

34

Core

Dr.

14.5 ✓

~~10.0~~ ?

10.0 ✓

~~19.0~~ ?

(Dripped on swing shift)

4-28-42

12.0

17.0

53.5

RR

15-0

4-29-42

8:00 A 11:30 A 3-30 92.0 ✓ 108.0 3.0

11:30 A 2:30 A 3-0 108.0 122.0 3.5

= FINAL =

- To be grouted -

8:00 P.M 8:30 0-30 0 122.0

Note: this hole was filled
with grout while grouting
hole #14-0. So I had them
wash it out.

35

FT-DT

W.O
FT.

16 ✓

14 ✓

Adolph Beck Inspector

9:00 P.M to 12:00 P.M

122.0 ✓

0.0 30.0 0.0 122.0

PR

7-34⁵

4-29-42

Top Elev. (Rock) = 440.8

9:30 A 10:30 A 1-0 ~~2.6~~ 1-0 0.5

10:30 A 12:00 M 1-30 1.0 6.0 5.0

12:00 M 2:00 P 2-0 6.0 11.0 1.5

2:00 P 3:00 P 1-0 11.0 17.0 2.0

3:00 P 4:00 P 1-0 17.0 25.0 2.5

Core is very hard but broken in to short lengths.

FINAL

Note concrete elev. 450.17
0.0 as recorded in field
notes is 9.0' below concrete
level.

Final depth: 24.6 below
rock surface.

ALLEN

BITZER.

36

Perc.
Dr.Core
Dr.~~1.0~~
0.6

5.0 ✓

5.0 ✓

6.0 ✓

8.0 ✓

00 24.6

RP

Hole #	Top Elev	Date	Depth		Core
Time			From	To	recor.
7-11	443.4	4-29-42			
From	To	Hr. Min	From	To	recor.
4:00	5:00	1:00			
5:00	6:00	1:00	0	5.0	1.7
6:00	7:30	1:30	5.0	10.0	4.9
7:30	9:00	1:30	10.0	14.0	2.4

Note oo starts ~~7~~^{6.9} ft down from the top of concrete. Drillers report shows 16 1/2 but he did not pull his drill.

Concrete elevation 450.3

Inspector Adolph Beck Foreman

37

PERC	Core	Ac Dr.	W.O	Time	Hr. Min
Drift	Drift	ft	ft.	M+SU	Lost
				1:00	
	5.0 ✓			core broken in short pc.	
	5.0 ✓			core broken	
	4.0 ✓			core broken	

0.0 14.0 0.0 0.0

Handwritten signature

Hole #
18-0

Top Elev.

Date

4-29-42

Inspector
Adolph Bock

Foreman

38

Time		Hr. Min	Depth		Core Recor.
From	To		From	To	
4:00	5:00	1-00	26.5	36.0	5.0'
			36.0	48.0	7.0
			46.0	56.0	2.0

Core Drift	Core Drift	Mc Dr. ft.	N.O. ft.	TIME M+S.U.	Hr. Min Lost
	9.5	Core recovered			is broken
	10.0	Core recovered			is broken
	10.0	Core recovered			is broken

0 26.5

26.5

This hole washed out April 27, 1942
(See book 602, page 61 - Allen)

0.0 29.5 0.0 26.5

RL

18-0

5-1-42

9:00 A	11:00 A	2-0	89.0	96.0	2.0
11:00 A	1:30 P	3-0	96.0	106.0	3.0

Allen

Bitzer.

39

Core
Dr

 7.0 ✓
 10.0 ✓

 17.0

18-25

5-1-42

Top Elev. 569.8

0

1.5

2:00 P 3:00 P 1-0 0.0^{1.5} 5.0 3

3:00 P 4:00 P 1-0 5.0 10.0 1.0

Nipple came loose - W.A.

Note ~~This work has been lost as this Grant Pipe will be set at a new location~~
N.R.C.

~~Hole Lost~~

ALIEN

BITZER

40

Per. Dr. Core Dr. Re Dr. W.O.

1.5

(4-30-42 - Curry)

~~3.5~~

5

0.0

0.0

0.0

0.0

2-31 5-1-42

Drilled - To 25.0

Ready To Grout FINAL =
WMA. ✓

8:00 A	10:00 A	2-0	10.0	20.0
10:00 A	11:30 A	1-30	20.0	25.0

41

~~Core
Dr.~~

10.0 ✓

5.0 ✓

15.0

Hole No
3-31⁵

~~3-37~~ 5-1-42

Time		Hr+Min	Depth		Core
From	To		From	To	
11:30 A	2:00 P	2-30	0.0	6.0	5'

2:00 P	4:00 P	2-0	6.0	15.6	
= Drilling =				16.0	

3-31⁵

5-1-42

4:00 P.M.			16.0	18.0	1.8
	6-05		18.0	26.0	6.5
6-05 PM Moving to hole No 2-12 ⁵					

Allen

Bitzer 42

Perf	Core	Retrill	W.O.	Time (hr-Min)
Drift	Drift	ft	ft	M&SU. Post

6 →

→ 10.0

D.R. Curry

Crew No
McKenzie

2.0 Good core.

8.0 Good core.

0.0 26.0 0.0 0.0

Hole No	Top Elev.	Date
2-12 ⁵	618.0	5-1-42

Inspector	Foreman	crew No	Page
I.R. Curry		McKenzie	43

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

Perf	Core	Rebll	W.O.	Time	Chr-Min
Dr-ft.	Dr-ft.	ft.	ft.	No Su.	lost

6-05PM 7-00PM 0-55 Moving & Set up

7-00PM 8-00PM 1-00 0.0 7.0 4.0

8-00 8-30 0-30 Lunch

8-30 7.0 12.0 5.0

12.0 19.5 3.8

11-00PM 19.5 24.5 5.0

Did not move machine.

0-55

0-30

7.0

5.0

7.5

5.0

0.0 24.5 0.0 0.0

Hole No 6-37⁵ Top Elev 446.4 Date 5-1-42

Inspector J. R. Curry Foreman Hogate, 44 Crew No Page

Time From To hr-Min Depth From To Core Recov

Perc Core Ret Mill W.O. Time (hr-Min) Dr-Mt, Dr-Ft. Ft. Ft. M.S.U. Lost.

19.1 20.0
 4-00 PM 8-00 PM 4-00 M.S.U. from hole 18-0
 8-00 PM 8-30 PM 0-30 lunch
 8-30 PM 20.0 25.0 3.0
 25.0 33.0 8.0
 33.0 37.0 3.0
 37.0 40.0 2.2
 12-00 M. 40.0 45.0 1.8

0.9
 5.0 ✓
 8.0 ✓
 4.0 ✓
 3.0 ✓
 5.0 ✓

Note 20.0' as in Field notes is 20.0 Below Elev 465.5

0.9 25.0 0.0 0.0

Hole #	Top Elev.	Date
6-12-5	466.5	5-2-1942

Time		Hr. Min	Depth		Core Recov.
From	to		From	to	
4:00 P.M.	7:00	3:00	20.0	25.0	4.5

Moved to 5-12-5

0 24.1

Inspector Foreman Crew
 Adolph Beck 45

Perc. Dr.	Core ft.	Pc. dr.	Who.
	59		Core recovered is good

Lost some time
 due to a shortage
 of water pressure.

0 24.1 Depth of hole as
 measured by D.R.C.

0.0 24.1 0.0 0.0

RL

Hole #	Top Elev.	Date
3-12.5	584.8	5-2-42

Time		Depth		Core
From	to	ft. Min	from to	recov.
4:00 PM			0 4	3.5
			4 11	7.9
			11 21	9.8
10 P.M			21 26	4.6

Inspector	Foreman
Adolph Bock	

46

Core
dr. ft4.0 ✓
7.0 ✓
10.0 ✓
5 ✓Core recovered
is good.

26.0

Hole No 16-375
Top Elev 548.8

Date May 5-42

Inspector D. R. Carry
Foreman Paul Betze
Crew No Page Richardson 47

Time
From To hr-min
Depth From To
Core Record

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

8-00 AM

33.0 43.0 9.9

10.0 ✓ Core broken short

43.0 47.0 3.0

4.0 ✓ " " "

47.0 51.0 4.0

4.0 ✓ " " "

51.0 55.0 4.0

4.0 ✓ " " "

55.0 61.0 2.0

6.0 ✓ " " "

61.0 63.0 1.25

2.0 ✓ " " "

4-00 PM

63.0 65.0

2.0

Swing Shift

4⁰⁰ PM

65° 70° 1°

Mc down

5° ✓ broken 1" - 4"

70 75 2°

5° ✓ broken 1" - 8"

10.30 PM

75 84 3°

9° ✓ broken 1" - 12"

Run out of Bits.

0.0 51.0 0.0 0.0

Hole No	Top Elev	Date	
4-125	552 ⁷ 33	May 5-42	
Time		Depth	Core
From	To	From	To
hr-Min			Recor

		0	5.0	
8.00 AM		5.0	7.0	5.1
	4-00 PM	7.0	12.0	5.0

Swing shift

4 PM		12.0	18.0	5.0
	6.30 PM	18.0	25.0	3.0

Inspector	Foreman	Crew No	Page
J.R. Curry	Paul Betzer	Hogate	48
Per	Core	Re Drill	W.O.
Dr-ft	Dr-ft.	ft.	ft.
		Time (hr min)	MS.U. lost.

	5.0	(No record of drilling)	
	2.0	good core	
	5.0	"	"

McLown

6.0	broken	1" to 20"
7.0	broken	1" - 6"

0.0 25.0 0.0 0.0

Hole No	Tap Elev	Date	Depth		Core
From	To	hr-Min	From	To	Recor

Datum: Elev. 453.2

4:00 PM	4:30 PM	0-30	0.0	15.0	
---------	---------	------	-----	------	--

Swing Shift

Elev. 441.2

Note 0.0 = top of ~~rock~~
12.0 ft below concrete

P.M.	7.0	7.15	0-15	3	4.5	
	7.15	7.25	0-10	4.5	16.5	
	7.25	9.00	1-35	16.5	25.0	
	9.00	11.10	2-10	25.0	35.0	4.7
A.M.	11-10	1:00	1-50	35.0	45.0	1.4
	11:00	3:00	2-00	45.0	52.0	5.7

Total depth drilled:
51.6' below rock surface.

Inspector	Foreman	Crew No	Face
J. R. Curry	A. Chord		49
Core Core	Re Drill	W.O. Time	Chr-Min
Dr. Ft.	Drift	Ft.	Ft.
			MSU. Lost

15.0

McCown

1.5' Drill grout
12.0' Rod dropped
grout washed out.
8.5' Drill grout,
10.0' broken 1"-12"

Adolph Back Graveyard

10.0' core broken
7.0' core broken

0.0 27.0 10.0 27.0

Hole No
15-0

April 27, 1942

Depth
from to
0 77.0

This hole washed out by Allen
April 27, 1942

See book #602, pg. 64

Allen

50

Peris Dr.	Core Dr.	Re-Dr.	W.O.
-----------	----------	--------	------

			77.0
--	--	--	------

0.0	0.0	0.0	77.0
-----	-----	-----	------

Hole No 15-37^E Top Elev ----- Date 5-7-42 -----

INSPECTOR Foreman Crew/No Page
D.P. Curry Paul Betzer (Richardson) 54

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

Perc	Core	Re Drill	W.O.	Time (hr-Min)
In-ft.	In-ft.	ft.	ft.	M.S.U. Lost

8-00am

8.5	12.0	2.9
12.0	17.0	3.17
17.0	23.0	5.0
23.0	25.0	1.1

3.5	Broken in short pieces.
5.0	Broken in short pieces
6.0	Good core
2.0	Broken very short.

Moving to hole 15-12^E
Page 52

0.0 16.5 0.0 0.0

RL

Hole No 15-12⁵ Top Elev 533.0 Date 5-7-42

Inspector H. R. Curry Foreman Paul Betzer Crew No (Richardson) Page 52

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

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

?

0.0 4.0 3.25

4.0' Broken up some

4.0 9.0 3.5

5.0' Good core

9.0 15.0 4.8

6.0' Very good core.

4:00 P.M.

15.0 18.0

3.0' core was not removed.

0.0 18.0 0.0 0.0

18

Hole No 9-18^e Top Elev. 443.0 Date 5-8-42

(3" D.) Time From To hr-Min Depth From To Core Recorder

9-30 a.m. 12.7
~~12.25~~ 25.25

5-8-42 Swing McCown

400PM 11 PM 25.25 37.25

Note 5' of Core did not pull up to midnight.

Datum ~~12.25~~ ~~15 Feb 1942~~
concrete Elev. 555.67

Inspector Dr. R. Curry Foreman Paul Betzer (Richardson) Crew No Page 53

Core Dr. - ft.	Core Dr. - ft.	Re Drill ft.	W.O. ft.	Time hr-min	M.F.S.U.	Cost
----------------	----------------	--------------	----------	-------------	----------	------

12.6
~~13.0~~

Driller Simmons.

12.0

0.0 24.6 0.0 0.0

PR

Hole No 18-25 Top Elev ----- Date 5-8-42 -----

Inspector ----- Foreman ----- Crew No ----- Page 54

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

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

0 30.0
Washed-out - Allen

30

00 00 0.0 30.0 ✓

Hole No 19-25 Top Elev. 613.2 Date 5-8-42

Inspector H.R. Curry Foreman Paul Betzer Crew No Hogate Page 55

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

8-00 AM	10-00 AM	2-00	Morning	95.0 9
10-00 AM	3-00 PM	5-00	0.0	29.0
3-00 PM	4-00 PM	1-00	29.0	39.0

5-8-42	Swing	McLown		
4 00 PM		29.0	39.0	8.5
		39.	41.5	2.3
		41.5	52.0	7.5

Perce	Core	ReDrill	W.O.	Time (hr-min)	
Dr.-ft.	Dr.-ft.	ft.	ft.	MSU.	lost.

Repair.

29.0
10.0 Core tube still in hole.

Driller McKenzie.

Core pulled broken 1" to 15"
2.5 broken 1" to 5"
10.5 broken 1" to 13"

0.0 23.0 29.0 0.0

16

Hole No 20-0 Top Elev 627.7 Date 5-12-42

Inspector Allen Foreman Tracy Crew No Hogate Page 56

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

Pore Dr-Ft.	Core Dr-Ft.	Re-Drill Ft.	W.O. ft.	Time hr-Min	hr-Min lost.
----------------	----------------	-----------------	-------------	----------------	-----------------

8:00 A	10:00 A	2-0	55.5	65.0	6.0					
--------	---------	-----	------	------	-----	--	--	--	--	--

10:00 A	11:30 A	1-30	65.0	70.5	4.0					
---------	---------	------	------	------	-----	--	--	--	--	--

Moving to hole 19-0
Page 58.

0.0 15.0 0.0 0.0

Hole No D-7-09³ Top Elev 441.0 Date 5-12-42
 Core 455.83

Inspector D.R. Curry Foreman Paul Betzer Crew No Richardson 57

Time		Depth		Core
From	To	hr-Min	From To	Recor

Pore	Core	ReDrill	W.O.	Time	hr	Min
Dr-ft	Dr-ft.	ft	ft	meas.	lost.	

8-00am 3-20pm 7-20 27.33 39.83
 Moving to Hole 7-18⁶
 Page 59.

Datum: Elev. 455.83

0.0 12.5 0.0 0.0

Hole No	Top Elev	Date	
19-0	588.0	5-12-42	
Time		Depth	Core
From	To	From	To
hr-Min	hr-Min	From	To
		Recor	

		0	2.0
12-30 PM	3-00 PM	2-30	2.0 12.0

Note brought from hole
No 20-0 Reappeared in this
hole and if had to be
capped off.

Inspector		Foreman		Crew No	Page
D.R. Curry		Paul Betzer		Higate	58
Perf	Core	Re-drill	W.O.	Time (hr-Min)	
In. Ft	In. Ft	ft	ft	M&SU	Lost
2.0	(Curry)				
	10.0				
	12.0				
2.0	10.0	0.0	0.0		✓

Hole No 07-186 Top Elev ~~442~~ 455.83 Date 5-12-42

Inspector J.R. Curry Foreman Paul Betzer Crew No (Simmons) 59 Page

Time		Depth		Core
From	To	From	To	Recov

Perf Dr-ft.	Core Dr-ft.	ReDrill Ft.	W.O. Ft.	Time (hr-min)	MASH Lost
-------------	-------------	-------------	----------	---------------	-----------

4-00 PM

12 P.M

0.0 ^{13.6} ~~12.93~~
~~12.93~~ 25.73
 13.6

Datum: Elev 455.8

Through concrete
 3" Drain hole

0.0 12.1 0.0 0.0

9 ✓

Hole No 119-37 Top Elev. ----- Date 5-14-42

Inspector J.R. Curry Foreman Paul Betzer Crew No Richardson Page 60

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

8-00am	3-00pm	7-00	32.0 44.5	
--------	--------	------	-----------	--

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

	12.5				
--	------	--	--	--	--

0.0	12.5	0.0	0.0		
-----	------	-----	-----	--	--

PL

Hole No D-7+18.6 Top Elev. ----- Date 5-14-42 Swing

Inspector McCown Foreman Betzer Crew No 5161 Page 61

Time ----- Depth ----- core -----
 From To hr-Min From To Recov

Perc core ReDrill W.O. Time (hr-Min)
 Dr-ft Dr-ft ft ft 17954 Lost

Note Machine moved from block 9 back to this hole when first short piece of core was pulled found in barrel steel pipe hanger and large gravel which had been washed into hole.

4 PM 12:00 8:00 18.6⁴ 25.0

6.4⁶

0.0 6.6 0.0 0.0

RL

Hole No 19100 Top Elev. --- Date 5-14-42 Swing

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

4⁰⁰ PM

40.5 50° 21⁶

12⁰⁰ PM

50.° 67.6

Inspector McCown Foreman Belzar Crew No Page McKenzie 62

Perc Dr-ft	Core Dr-ft	ReDrill ft	W.O. ft	Time (hr-Min)	MES. U Lost.
------------	------------	------------	---------	---------------	--------------

9.5

broken 1" to 3"

Note: No Core pulled will not block.

0.0

9.5

0.0

0.0

12

Hole No H-7-37	Top Elev. -----	Date 5-16-42	Inspector J.R. Curry	Foreman Paul Betzer	Crew No Richardson	Page 63
-------------------	--------------------	-----------------	-------------------------	------------------------	-----------------------	------------

Time		Depth		core	Perc	Core	ReDrill	W.C.	Time (hr-Min)	
From	To	hr-Min	From	To	Rev	Dr-ft	Dr-ft	ft	ft	meSU. Lost.

8-00 am	4-00 pm	8-00	25.0	43.0			18.0			
---------	---------	------	------	------	--	--	------	--	--	--

Note concrete Ele 460.75,
driller reports 19' of concrete

5-16-42 - Swing McGowan
43 44

Simmons.

0.0	19.0	0.0	0.0
-----	------	-----	-----

Hole No 14-123 Top Elev. 508.1 Date 5-16-42

Inspector I. R. Curry Foreman Paul Betzer Crew No Hogate Page 6A

Time		Depth		Core	Perc	Core	ReDrill	W.O.	Time			
From	To	hr	Min	From	To	Recov	Dr-ft	Dr-ft	ft	ft	Chr-Min	Lost
8-00 am				0.0	5.0	3.5		5.0				
				5.0	10.0	4.5		5.0				
				10.0	13.0	3.0		3.0				
				13.0	20.0	6.75		7.0				
	3-00 PM	7-00		20.0	25.0	5.0		5.0				
3-00 PM	4-00 PM	1-00		Moving to hole 13-0								

0.0 25.0 0.0 0.0

Hole No 13-0 Top Elev Date

Inspector Foreman Crew No Page 65

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

Perc Dr.-ft	Core Dr.-ft	ReDrill ft	W.O. ft	Time hr-Min	M.P.S.U. Lost
-------------	-------------	------------	---------	-------------	---------------

8:30 A 11:20 A 3-0 99.0 110.0 9.8

11 ✓

13-0

5-21-A2

D.P. Curry Paul Betzer (Richardson)

110.0 113.0 2.0

3.0 ✓ Broken in short pieces.

113.0 115.0 1.0

2.0 ✓ Good core.

115.0 120.0 4.5

5.0 ✓ Good core.

120.0 123.0 1.1

3.0 ✓ Good core.

123.0 127.0 3.1

4.0 ✓ Good core.

127.0 130.0 2.25

3.0 ✓ Good core.

130.0 133.0 2.6

3.0 ✓ Good core.

133.0 141 7.0

8.0 ✓ Good core

Note Top of Grout pipe
Elev 476.9
Ground Elev 476.2

0.0 42.0 0.0 0.0

RE

Hole No 19-0 Top Elev. Date 5-25-42

Inspector Miller Foreman BITER Crew No Page 66

Time		Depth		Core
From	To	From	To	Recor.
8:30 A	4:00 P	33.0	52.0	14.5
4:00 P.M.		52.0	56.0	3.3
		56.0	61.0	4.5
		61.0	65.0	3.2
		65.0	71.0	4.7
		71.0	75.0	3.7
	P.M. 12:00	75.0	85.0	10.0

Perf	Core	ReDrill	W.O.	Time (hr-min)
Dr-ft	Dr-ft	ft	ft	Ms.U. Lost.
	19.0			
	4.0			
	5.0			
	4.0		core broken	
	6.0		from 1" to 6"	
	4.0		Pieces.	
	10.0			

Adolph Back Insp.
4:00 P.M. to 12 P.M.

0.0 52.0 0.0 0.0 RP

Hole No 12-22 Top Elev. --- Date 5-25-82

Inspector HILLEN Foreman RITZ ET Crew No --- Page 67

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.W. lost.
------------	------------	------------	---------	---------------	--------------

8:30 A 4:00 P 7-30 58.0 74.0 12.0

16.0

0.0 16.0 0.0 0.0

14

~~No~~ No Top Elev. Date
 27 D. 441.2 5-25-92

08-219 Time Depth Core
 From To hr-Min From To Recov.

8:00 AM 4 PM 0 17.0
 4:00 PM 12:00 PM 17.0 26.0

Inspector Foreman Crew No
 F. Beck 68

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

17 Drain hole
 9

0.0 26.0 0.0 0.0 KL

Hole No 19-13 Top Elev. Date 5-29-42

Inspector ALTON Foreman BITZER Crew No Page 69

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&SU.	lost.

8:30 A 4:00 P 7-30 0:0 25.0 15:0

25.0

9.5

Core broken up.

0.0 25.0 0.0 0.0

AP

Hole No 17-12-5 Top Elev 550.2 Date 5-29-42

Inspector H. L. C. V. Foreman B. J. Ger Crew No 70 Page 70

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

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

8:30 AM 4:00 PM 7-30 0:0 18.0 4.5

18 3

Core very badly broken up -
drilling in bad broken up fault.

0.0 0.0 0.0

0.0 18.0 0.0 0.0

RF

12-25

6-2-1/2

Time -- Hr. min DEPTH -- C-R

10.00 A 4.00 P 6-0 97.5 124.0 25

4:00 P.M. 124.0 136.0 7.3

136.0 145.0 7.7

11:00 P.M. 145.0 154.0 3.7

Note: Depth of 154.0 as recorded = 150.4' below rock surface. - D.W.L.

ALLEN

BITZER 71

C-D

26.5

26.0

Adolph Back Swing

12.0 core broken in
9.0 short pieces 1" to
9.0 6" long

0.0

56.5

0.0

0.0

RD

Elev. 574.2

16-40 # 6-2-3/2
K. m DEPTH C-R

Time

8:30 # 11:00 # 1-30 20.0 25.0 2.0

C-D

5.0

0.0

5.0

0.0

0.0

Elev. 567.3

16-20 #

Time

11:00 # 4:00 P 5-0 0.0 25.0 17.0

C-D

25.0

0.0

25.0

0.0

0.0

Hole # Top Elev
A-15-40 563.9

Date
6-2-42

Time

Depth Core
Re.

4:00 P.M.

0 5.0 1.0

5.0 8.0 2.1

8.0 10.0 1.3

10.0 12.0 1.5

12.0 15.0 2.0

15.0 21.0 3.8

P.M.
10:00

21.0 26.0 4.9

Adolph Bock

73

Core
Dr.

5.0 ✓

3.0 ✓

2.0 ✓

2.0 ✓

3.0 ✓

6.0 ✓

5.0 ✓

Core recovered
in short pieces
from 1" to 8"

0.0 26.0 0.0 0.0

TOP
Elev. 477.5

13-120

6-4-42

Time

Hr-Min

Depth-

C-R

8:00A 4:00P 7-30 0:0 25.0 11.0

18-37

6-4-42

C-R

8:30A 10:00A 1-30 0:0 4.0 1.0

Ahhen

C-D

Witzer 24

25.0

0.0 25.0 0.0 0.0

C-D
4.0

0.0 4.0 0.0 0.0

20-37

6-4-42

Time

74-mi

Depth

C-R

10:00A 4:00P 6-0 0:0 5.0 3.0

7 PM

5.0 13.0 6.0

Had to reset nipple

Allen

Bitzer⁷⁵

C-D-

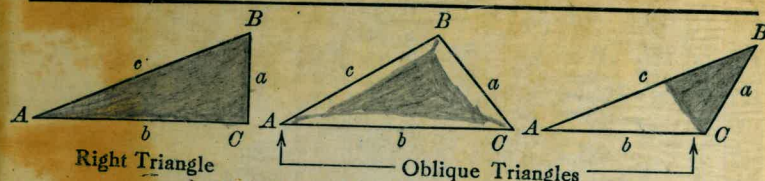
5.0 ✓

Adolph Bock swing
8.0 ✓ core in short pieces.

0.0 13.0 0.0 0.0

1"	.08
2"	.17
3"	.25
4"	.33
5"	.42
6"	.50
7"	.58
8"	.67
9"	.75
10"	.83
11"	.92
12"	1.00

TRIGONOMETRIC FORMULÆ



Solution of Right Triangles

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

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. $\text{Cosine } 5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ 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.

