12

Final topog.

LEVEL BOOK

370

W102

KEUFFEL & ESSER CO.

DRAWING MATERIALS
AND
SURVEYING INSTRUMENTS.

NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

Tables for Excavations and Embankments.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.
FOR SINGLE TRACK EXCAVATION.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	0
1	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	1
2	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	2
3	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	3
4	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	4
5	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	5
6	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	6
7	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	7
8	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	8
9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	9
10	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	10
11	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	11
12	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	12
13	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	13
14	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	14
15	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	15
16	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	16
17	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	17
18	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	18
19	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	19
20	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	20
21	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	2
22	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	22
23	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	23
24	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	24
25	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	25
26	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	26
27	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	27
28	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	28
29	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	29
30	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	30
31	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	31
32	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	32
33	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	33
34	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	34
35	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	35
36	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.

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"	" "	6/20/18	10 - 13
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Final	2' Topog	6/26/18	14 - 18
"	" "	6/27/18	18 - 26
"	2 "	6/28/18	26 - 29
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6/8/18

Continued from Back 10.

H=50

5943 A+D 5443

R=5.4

54	32	233-30	56 Conorato	62	322-30
RC 54	20	189-30	"	57	343
RC 54	31	179	"	64	350-15
RC 54	40	193	"	64	6-45
RC 54	38	214	"	55	23
" "	31	234	"	42	39-30
	19	272-30	"	56	60-45
54	17	298	"	68	64-15
54	10	333-30	"	80	57
"	15	343	"	100	47
"	35	297-15	"	104	42-30
"	54	300-30	"	150	40-30
Conorato "	61	293	"	196	40-45
			"	197	40 15
34 56			58	199	40 15
			60	201	40 15

H=50

Willcomb Bob

5943 A+D 5443

56	208	45-45	56	176	99-45
5860	212	45-45	56	176	109
56	224	49-45	56	172	118
58-60	226	49-45	"	191	127-15
56 58-60-62	245	54-10	"	213	131
56	230	57	"	211	133-15
56	216	64-30	"	225	134-30
56	223	72	"	243	131-30
56	201	78	"	246	133-30
56	218	80	58	397	151-30
56	205	87-30	58	386	150
56	209	97	58	399	147-45
56	197	97	58	379	144-45
56	197	87	58	367	144-30
56	181	84-45	58	344	145-45
56	163	87-45	58	323	145
56	167	95-30	—	—	

H1 = 5.0 6/8/18

59.13	At D 11				54×3
58	252	132-30	58	242	62
58	272	127-15	58	253	59
58	270	126-30	58	253	57
58	280	124	vert for 4' 58	257	56
58	280	120-30	58	172	30
"	264	114-30	58	150	29
"	252	110	58	136	24-30
"	229	112-15	"	122	23
"	207	113	"	114	16-15
"	202	108	"	92	8-45
"	207	101-30	"	95	350
"	237	100-30	"	82	344-30
"	270	100-45	"	84	333
"	262	96-45			
"	263	72-15			
"	281	66			
"	250	63-30			

H1 4.7
72.28
68
4.28
(B=4.3)

6/10/18 Y.W. Willcomb Sub

	At B 16		15 w 10.07 H.	67.58	✓
		1015	72.28		62.3
68	9.6	249	68	20.3	92°
"	7.8	263-15	"	25.6	90-30
"	6.2	265	"	29.2	93-15
"	~~4.9~~	~~289-30~~	70	17.2	99-45
"	~~2.4~~	~~292-30~~		17.2	105-30
"	5.3	284-30		18.5	109
"	1.7	284-30		16.8	111-15
"	1.8	234-30		13.2	120-30
"	1.2	146-30		9.5	134-30
"	2.7	141-45		7.4	165-15
"	4.0	134-45		5.4	163-30
"	7.8	149		4.9	175
"	9.4	132-45		1.4	165-15
"	11.3	123-30		1.8	200-30
"	9.9	115-30		3.7	202-45
"	14.2	104°		4.07	235-45

				At		6/10/18		Willcomb	
				HI=5.2					
70	3.9	284-				At B15-15'W			5.94
	5.2	272-30		Auxiliary Point A.	35.5	98-40			
	5.7	262-		B.M.		0.98	63.1		62.3
	7.5	244-						6.7	56.94
	8.5	235		HI=5.8		5.94 at B15-15'W for O.			
	9.7	229-30		6.24		At Auxiliary A.			56.94
				Point B.	27.50	222° 37'			
				58	4.6	253 steel	58	17.-	215-30
				"	8.6	254-30 steel	"	18.9	220-15
				"	8.3	247-30	"	20.5	218-30
				"	9.8	240-45 top of concrete	"	17.2	202-30
				"	14.0	246-	"	17.7	197
				"	20.8	234-15 end of concrete	"	19.2	194-
				"	20.4	231-15	"	19.3	191-
				"	21.1	227-	" check shot	21.3	187-15
				"	22.	224.	60 ± ft road	19.7	194-45
				"	20.7	221	" RC	20.3	193
				"	18.6	227-30	"	20.6	195-30
				"	16.8	221	"	19.6	199-

5.3
62.24

At Point A

56.94

60 ✓	18.4	196-30	60	10.5	244-30
	RC finished			steel	
" ✓	19.	196	"	9.9	255-45
" ✓	21.3	197	"	9.6	257-15
				steel	
" ✓	21.2	199-30	62	10.1	255
" ✓	20.2	201-45	"	10.3	246
"	20.1	207	"	12.8	246-15
"	20.	207	"	20.6	236-30
"	20.6	209-30	"	25	232-30
"	20.3	210-30	"	24.3	228-
"	21.3	216-30	"	24.3	226-15
"	20.4	219-30	"	23.4	224
"	21.1	222-45	"	24.1	223-15
"	22.2	224-	"	24.9	220-45
" ✓	21.4	226-45	"	24.6	219
				crevice lines of rock face is dark	
"	21.9	228-30	"	26.	213-15
"	21.3	231-	"	22.7	216-15
		concrete			
"	21.9	233-	"	22.4	215
		concrete			
"	13.9	245	"	22.7	214

62.24

At A

56.94 4

62	20.2	203-15
	~~20.7~~	~~200~~

	−	+	Ht	−	Elo
Point B.			62.24		
	7.92	68.59		1.57	60.67

HI = 4.7
68.59

At Auxil B.

64.82

Sight N. 16 for Zero Az Lt.

	concrete				
64 ✓	8.6	206	66	10.6	345-45
" ✓	4.1	125-30	"	9.6	348-
" ✓	3.9	83-	"	8.5	18-30
" ✓	2.8	56-	"	7.6	359-
" ✓	2.3	55-15	"	6-	4-45
" ✓	1.-	48-30	"	4.6	59.
" ✓	3.4	320-45	"	3.6	111-30
				concrete	
" ✓	5.6	328-15	"	4.9	133-30
" ✓	11.	346-	"	7.1	198

HE 5'
69.56
5

		Ht C11-19.6E			64.56
BM		7.43	69.56		62.13
RC					
60	26.	251	60	22	236-30
"	30	243-30	"	22.9	238
"	31.5	240-	"	22.5	245-30
"	30,	236-	"	24.4	248-
"	24.8	238.30	tie her in	24.4	247
"	26.0	235-	60	6.3	217
"	27.-	232-45	"	6.	220.30
"	26.4	229	"	9.2	not 236.30
"	27.8	228-30	"	12.3	225
"	28.4	230-	"	15.8	229-
"	30	229-	"	14.4	236-
"	28.	223-	"	16.3	244.45
"	25.3	223 30	"	16	254-
"	25.5	229	"	17	255
"	24.9	233-30	RC	19.7	244-30
"	22.9	233	"	18.8	246-30

60	30.	255	
"	21.	253 30	
"	22.5	256-15	
"	24-2	255-30	
"	24.3	254-	
"	23.2	248 45	
"	22.5	249-15	
"	20.	248-	
	tie her up		
"	20.4	245-30	

At P15-15W.

Measure 126 East & set

P15-14W.

BM		0.88	63.07		62.13
Nail		1.67	51.79	12.89	50.12
P15-14W.				8.35	43.44
HI-48					
43.56					
48.34	At P15-14W.				43.44

40.	19.5	340	40	25.5	310-45
"	19.8	333-15	"	26.8	309-15
"	20.8	333-30	"	27.3	310-30
"	21.5	327-45	"	28.2	310-30
"	20.5	322-15	"	29.5	309-15
"	22.2	323-30	"	31.	309-30
"	23.1	320-45	"	34	306-15
"	22-0	315-45	42	33.2	305-45
"	23-8	314	"	32.2	304-15
"	25.0	310-15	"	30.8	305-45

42	29.5	306-15	42	13.0	291-30
"	26.5	298-45	"	11.5	292-
"	25.2	301-	"	11.8	298-15
"	24.0	298-	"	10.2	305-30
"	24.4	296-45	"	8.3	305-30
"	23.8	293-30	"	8.8	281-30
"	24.5	288-30	"	5.	301-45
"	25.3	283-30	"	7.8	334-30
"	27.4	269-	"	9.	
"	22.6	266-30	"	9.2	323-
"	20.	266-	"	10.0	333-30
"	19.	273-	"	11.0	336-30
"	18.	272-	"	bottom sand 10.5	347-15
"	18	275-45	44	3.0	100-15
"	17.1	279-30	"	.5	150-
"	16.3	275-15	"	1.5	223-30
"	15.2	278-45	"	3.	195-
"	14.8	286-	"	5.	177-30

A8.34		St P	15-14 W	43.44
44	7.2	212-45	44	29.3	257-30
" ✓	9.5	229-0	" ✓	33.5	255-15
" ✓	7.5	234-	" ✓	34.0	256-45
" ✓	8.3	238-15	" ✓	35.0	256 256
" ✓	8.1	243-45	" ✓	35.5	254-30
" ✓	9.2	247-	" ✓	39.0	256-
" ✓	9.8	251-30	" ✓	40.8	257-
" ✓	11.5	252-45	" ✓	43.0	259-45
" ✓	12.7	249-45	" ✓	43.0	262-
" ✓	14.0	252-30	" ✓	44.5	262-30
" ✓	14.8	249-45	" ✓	44.0	266
" ✓	17.4	248-	" ✓	43.2	267-45
" ✓	17.4	254-	" ✓	43.0	271-30
" ✓	19.5	254-45	" ✓	37.8	272-30
" ✓	19.3	257-15	" ✓	32-3	275-45
" ✓	19.5	259-0	" ✓	31.5	281-30
" ✓	20.8	261-45	" ✓	27.8	282-30
" ✓	25.0	259-15	" ✓	26.5	289-

A834		P15-14-40		43.44
44	25.5	291-30			
" ✓	26.8	294-	46	20.8	244-15
" ✓	27.8	293-45	" ✓	19.5	248-
" ✓	28.0	298	" ✓	19.8	249-45
" ✓	30.5	295-30	" ✓	16-	244-
" ✓	31.2	296-30	" ✓	13.8	242
" ✓	32.0	300-30	" ✓	12.3	238
" ✓	32.2	302-45	" ✓	8.5	225
" ✓	33.3	302-15	" ✓	7.8	214
" ✓	34.0	305	" ✓	8.0	188-
46 ✓	34.5	276-30	" ✓	9.0	181-15
" ✓	39.0	274-	" ✓	9.3	174-15
" ✓	45.3	257-	" ✓	sand 10.0	169-45
" ✓	41.8	259-	48 ✓	12.3	160-
" ✓	40.7	259-5	" ✓	11.0	173-30
" ✓	33.2	253-45	" ✓	10.0	175
" ✓	25.5	254-4	" ✓	10.-	201-45
" ✓	23.5	251-	" ✓	10.1	206

1834	At P.15 = 14 W		
48	9.2	210	✓
"	8.8	215-15	✓
"	11.4	231	✓
"	14.0	236-30	✓
"	15.8	235-	✓
"	17.5	228-30	✓
"	18.2	231-45	✓
"	19.8	231-30	✓
"	20.	236-45	✓
"	20.8	242-15	✓
~~Point A~~	~~180°~~		
Point A	17.27	180°	✓
	At Point A		

4344

HI = 4.85 57.85	At Auxil. A	+ 7.73	HI 57.85	53.00 −	8 Elev 5012
✓ 50	13.3	277-30	50 ✓	3.8	20-30
✓ "	14.5	289	" ✓	5.5	31-15
✓ "	10.8	279	" ✓	6.0	41
✓ "	11.3	298	" ✓	6.0	45-30
✓ "	11.5	301	" ✓	sand 7.0	63
✓ "	11.2	307-30	52 ✓	9.0	77
✓ "	11.8	306-45	" ✓	6.8	74
✓ "	11.3	314-30	" ✓	2.	44-15
✓ "	12.2	316	" ✓	1	358-30
✓ "	12.0	323-30	" ✓	4.3	351-45
✓ "	11.0	323-30	" ✓	5.2	332
✓ "	9.5	319-15	" ✓	6.-	335-
✓ "	7.2	340-30	" ✓	8.2	315-30
✓ "	6.1	351	" ✓	7.8	305-30
✓ "	5.8	0-45	" ✓	4.8	242-30
✓ "	4.5	5-15	" ✓	7.0	261-30

#1 4.85

57.85 at Anvil a — 53.00

(R = 3.9)

52 ✓	8-	269-30
" ✓	10.5	268-15
" ✓	12.5	271-30
~~54~~	~~14.5~~	~~272-30~~
"	11.8	270
"	10.3	268-30
"	8.5	255-30
"	6.8	247-30
"	5.2	241
"	4.0	217-30
"	4.8	204-30
"	4.4	163-
"	5.5	143-
56		

54	14.2	272
" ✓	10.	265-15
" ✓	~~5.8~~	~~267~~
" ✓	9.00	267-45
" ✓	7.2	257-
" ✓	6.8	250-30
" ✓	4.3	229-
" ✓	3.5	199-30
" ✓	4.5	150-15
(R 1.9) 56	7.5	156-15
" ✓	6.0	168
" ✓	5.1	183
" ✓	5.3	195-15
" ✓	5.0	212-45
" ✓	5.8	238-45
" ✓	7.2	240-30
" ✓	7.8	248-

#2 4.85

57.85 at Anvil a — 9/53 -

(R-1.7)

56 ✓	8.8	253
✓	10.8	265
✓	13.8	261-45
(R minus)		
58 ✓	12	245
" ✓	10.5	239
" ✓	8.5	234-45
" ✓	8.8	229-15
" ✓	7.5	223-30
" ✓	6.4	224
" ✓	5.0	207-30
" ✓	6.1	185-
" ✓	8.5	161-45
" ✓	8.0	157-
" ✓	10.5	143-45

HI = 48.2

57.82	At Axil A				53.00	1			
B.	28.62	61.36'				1 62	37.0	347-	
TP Rock		+ 7.70	57.82	–	Elev. 50.12	1 "	38.3	349-	
TP Rock		8.82	62.66	398	53.84	1 "	38.3	351-	
						1 "	41.5	356-	
HI = 3.75						1 "	43.8	358-	
62.66		At Axil B			58.91	1 "	43.4	1°	
R = 2.7		Sight A for Zero Az. Lt.				1 "	43.5	2°	
60'	43.8	6°	1 60	31.5	345	1 "	45.5	2°30'	
" 1	42.9	2°	1 "	30.	337-45	1 "	46	4°30'	
" 1	41.0	0°30'	1 "	~~30.~~ sand		1 "	47.5	6°30'	
" 1	41.5	358-30	1 R=.7	28.8	333	1 "	48.2	6°30'	
" 1	40.8	357-15	1 62	29.8 sand	332°	1 "	50.8	8°	
" 1	40.9	355-30	1 "	31.7	339				
" 1	38.8	352°	1 "	32.8	346-15				
" 1	35.2	351-30	1 "	34.8	343-				
" 1	33.6	350-45	1 "	35.7	341-45				
" 1	32	347-15	1 "	36-8	344				
" 1	31.2	345-30	1 "	37	345-30				

6-20-18

At B14-15' W.

Willcomb
Smith
Y.W.

~~B.M.~~		~~2.20~~	~~64.33~~		~~62.13~~
~~H.I. 64.33~~					
~~Rod - 10.33~~					
~~54~~					
B.M.		1.46	63.59		62.13
H.I. 63.59					
Rod 9.59					
54					
Rod 7.59	52.7	8°55' ✓			
56	49.3	13°56' ✓			
	47.5	12°5' ✓			
	47.3	9°25' ✓			
	47.9	4°00' ✓			
Rod 5.59					
58	47.5	358°-22' ✓			
	45.3	359°-32' ✓			
	43.3	357°-03' ✓			
	43.6	355°-39' ✓			

Rod 5.59					
58	42.4	357°-43' ✓	~~60~~		
	42.4	354°-06' ✓	60	49.8	356°-33' ✓
	41.6	353°-25' ✓		~~49.9~~	~~356°~~
	42.3	352°-24' ✓		49.9	355°-33' ✓
	41.4	351°-14' ✓			
	39.2	350°-5' ✓			
	38.9	349°-30' ✓			
	41.2	345°-19' ✓			
	39.9	341°-43' ✓			
Rd 3.59	Ring				
60	45.6	352°-04' ✓			
	46.4	350°-20 ✓			
	47.1	350°-45' ✓			
	46.7	351°-49' ✓			
	~~Ring~~				
	~~49.4~~	~~355°-08~~			
	Ring				
	49.4	355°-08 ✓			
	48.8	354°-51' ✓			
	47.9	355°-35' ✓			
	48.6	356°-30' ✓			

Willcomb 6-20-18.
Smith

At. C-11 – 19.6 E

			HI		Elev
B.M.		+6.66	68.79		62.13
Rod 12.79					
56	13.4	197°-20' ✓	21.4	132°-21'	✓
	15.3	202°-39' ✓	21.3	129°-48'	✓
	18.1	204°-15' ✓	19.5	131°-40'	✓
	20.0	201°-55' ✓	18.5	133°-41'	✓
	28.2	191°-15' ✓	17.5	134°-56'	✓
	26.9	184°-00' ✓	15.8	134°-51'	✓
	27.9	179°-00' ✓	15.0	131°-12'	✓
	26.0	172°-50' ✓	13.7	132°-52'	✓
	26.1	167°-00' ✓	12.1	145°-09'	✓
	24.9	165°-37' ✓	11.4	153°-42'	✓
	23.4	159°-00' ✓	13.2	156°-15'	✓
	22.8	153°-00' ✓	14.1	160°-00'	✓
	21.6	149°-35' ✓	14.5	166°-32'	✓
	21.8	143°-48' ✓	14.8	171°-21'	✓
	20.8	136°-11' ✓	10.9	170°-45'	✓

12

Rod 12.79			
56	10.4	191°-35'	✓
	12.8	199°-50'	✓
	13.4	197°-20'	✓
Rod 0.19			
68.	42.8	36°-55'	✓

SAND STORAGE SITE.

June 21-18
C.E.S.
Y.W.J.
E.M.

13

Sta. (H-1)	B.S. (0.99)	HI (465.55)	F.S.	Elev. ± (464.56)
I-1=0+00	1.65	465.57		463.92
+25 N.			2.9	462.7
+50 W			5.1	460.5
+75 W			6.8	458.8
1+00 W			8.0	457.6
1+25 W			10.5	455.1
T.P.1+50 W	1.79	454.72	12.64	452.93
1+75 W			5.4	449.3
2+00 W			11.2	443.5

Measured along I-1 Line

Copied in Book 11 Page 37

Continued Page 15

Left or South

0+25

0+50

0+75

335 300 285

June 26-18
Willcomb
Smith
Joques

B.M.		1.66	363.79		362.13
T.P.		2.54	353.68	12.65	351.14
R.O.R.				11.69	341.99

At C11-19-6E

C-11-19.6E
Measure -Az 122°-13' - 82.9' and set
(Easting = 70.14 - Northing = 44.20)
point on rock - Elev. 341.99 = Inst Point No 1.

H.I. 4.8
41.99
46.79

At Inst. Point No 1.

Rod 10.8 encrete

36	40.9	243°	36	31.2	243°-50'
"	39.6	242°-52'	"	28.7	251°-04'
"	38.3	244°-46'	"	27.9	248°-39'
"	37.3	245°-03'	"	29.0	243°-30'
"	36.8	247°-05'	"	28.5	241°-17'
"	34.9	246°-42'	"	26.3	239°-56'
"	34.2	245°	"	25.2	239°-56'
"	35.0	242	"	23.9	238°-48'
"	33.9	241	"	22.5	240°-42'
36	27.3	239°-14'	36	22.2	217°-22'
"	27.1	239°-03'	"	21.6	212°-40'
"	26.3	236°-08'	"	20.1	209°-38'
"	21.8		"	21.8	202°-00'
"	21.8	235°-55'	"	20.2	198°-03'
"	23.7	233°-17'	"	20.6	192°-50'
"	24.0	229°-22'	"	24.3	190°-25'
"	23.3	224°-10'	"	25.1	185°-49'
"	21.7	226°-30'	"	24.8	180°-19'
"	21.8	229°-53'	"	23.8	172°-05'
"	20.0	229°-35'	"	20.3	163°-19'
"	19.8	233°-33'	"	19.6	155°-53'
"	17.3	239°-27'	"	18.3	145°-00'
"	16.9	234°-30'	"	17.5	140°-20'
"	18.9	228°-51'	"	16.4	136°-20'
"	19.2	223°-15'	"	16.7	130°
"	22.2	219°-13'	"	16.0	128°-03'

36	14.1	123°-22'	36	46.7	230°-42'	36	27.2	177°-00	36	sheeting 45.3	129°-32'
"	13.9	115°-08'	"	42.7	228°-10'	"	28.5	165°-		Rod 8 sheeting	
"	14.7	108°-07'	"	42.2	226°-15'	"	31.4	162°-49'	38	50.8	131 38°-25'
"	16.6	104°-39'	"	41.2	224°-52'	"	32.3	160°-17'	"	49.	133°-51'
"	17.7	107°-25'	"	39.1	222°-08'	"	34.1	159°-41'	"	48.1	136°-15'
"	17.3	114°-30'		36.6	219°-18'	"	35.7	155°-23'	"	48.1	139°-10'
"	18.8	113°-15'	"	36.	219°-20'	"	35.6	152°-50'	"	43.6	139°-48'
"	19.6	117°-15'	"	33.9	217°-00'	"	35.5	148°-46'	"	41.9	141°-
"	24.3	125°-12'	"	32.	212°-12'	"	34.2	144°-37'	"	41.5	143°-14'
"	27.5	122°-30'	"	30.4	212°-17'	"	34.9	142°-10'	"	40.6	143°-10'
"	27.9	122°-46'	"	29.7	207°-24'	"	37.7	138°-25'	"	41	143°-33'
"	28.8	122°-37'	"	28.4	204°-00'	"	39.3	138°-25'	"	39.6	143°-14'
"	30.6	122°-	"	28.2	198°-00'	"	39.8	136°-37'	"	38.6	144°-30
"	sheeting 31.4	121°-40'	"	27.8	190°-06'	"	39.1	135°-54'	"	37.5	146°-32
"	sheeting 36.7	125°-30'	"	28.4	187°-55'	"	39.8	134°-06'	"	37.5	151°-30
"	concrete 46.5	231°-33'	"	27.2	182°-37'	"	41.2	132°-30'	"	36.2	156°-06
"	46.5	232°-05'		27.5	179°-46'	"	43.5	131°-57'	"	36.5	156°-30'

38	35.9	158°55'	38	32.1	204°-16'
"	34.0	159°40'	"	34.1	208°-06'
"	32.7	160°40'	"	36.	210°-45'
"	31.1	164 169°03'	"	35.7	212°-49'
"	31.1	169°	"	34.5	214°-10'
"	31.7	170°43'	"	35.4	216°-49'
"	32.2	171°-10'	"	37.7	218°-49
"	31.9	172°-30'	"	38.4	219°-40'
"	31.2	177°	"	38.9	219°-22'
"	28.2	182°	"	38.6	220°-14'
"	28.4	184°52'	"	39.1	221°-55'
"	34.0	187°12'	"	41.3	224°-43'
"	32.2	187°-30'	"	43.4	227°-43'
"	30.5	191°-18'	"	44.7	230°-46'
"	30.7	192°-45'	"	46.5 concrete	231°-33'
"	31.6	194°-10'	Rod 12.8 depression in concrete		
"	32.6	200°	34	45.7 concrete	232°-36'

34	42.2	229°-17'	34	33.0	238°-08'
"	42.2	227°-47'	"	34.2	238°-35'
"	40.9	226°-49'	"	36.5	239°-08'
"	40.1	226°-10'	"	38.1	241°-02'
"	38.6	225°-35'	"	39.1	240°-12'
"	38.4	225°-08'	"	40.2	240°-32'
"	36.1	224°-34'	"	41.7 concrete	240°-35'
"	35.1	222°-51'	Rod 8.8 concrete		
"	33.9	222°-40'	38	37.9	255°
"	31.9	219°-10'	"	36.1	255°-52'
"	31.1	220°-50'	"	35.9	258°-22'
"	32.4	222°-39'	"	35.0	259°-07'
"	34.6	227°	"	33.0	258°-32'
"	35.1	230°-35'	"	31.9	262°-07'
"	34.3	233°-22'	"	30.2	263°-42'
"	33.1	233°-41'	"	29.0	260°-25'
"	33.3	236°-23'	"	27.7	260°-55'

38	26.4	265°-35'	38	14.3	237°-42'
"	24.3	262°-35'	"	14.9	238°-30'
"	24.0	265°-42'	"	15.2	235°
"	21.7	262°-08'	"	12.8	232°-15'
"	20.2	262°-33'	"	14.	~~234°-16'~~
"	20.6	258°-08'	"	16.1	217°-47'
"	20.1	249°-45'	"	15.0	213°-35'
"	18.1	252°	"	13.5	217°
"	17.9	253°05'	"	12.8	213°-15'
"	16.1	254°	"	13.0	206°-15'
"	14.6	262°47'	"	13.6	195°-45'
"	13.7	269°-18'	"	12.3	188°-13'
"	13.0	258°-35'	"	12.8	178°
"	13.2	256°-34'	"	15.6	179°
"	13.7	255°-30'	"	16.6	~~170°~~ 45.
"	14.9	246°-30	"	16.8	167°-35'
"	13.9	242°	"	16.0	166°-34'

38	17.3	163°-13'
"	17.1	158°-50'
"	15.3	149°-45'
"	12.6	133°-42'
"	11.8	124°-06'
"	9.6	100°-12'
"	10.5	76°-06'
"		
"		

June 27-18

Instrument Point No. 1.

At 82.9 ft Az. 122°-13' from C11-19 E

HI = 346.7
338.0
Rod 8.7

341.99
4.7

At Inst Point No 1

38	13.3	68°-04'	38	23.7	113°-47'
"	13.8	69°-50'	"	23.2	116°-10'
"	14.9	66°-15'	"	23.8	116°-53'
"	16.7	66°-45'	"	23.2	118°-22'
"	17.5	73°-35'	"	24.0	119°-55'
"	16.1	82°-00'	"	25.4	118°-53'
"	15.3	90°-11'	"	26.3	119°-37'
"	16.1	99°-20'	"	25.4	123°-06'
"	16.7	99°-20'	"	27.7	122°
"	17.8	106°-10'	"	30.9 sheeting	121°-32'
"	19.4	107°-10'	Rod 6.1 Doheeting 40	30.9 sheeting	121°-44'
"	20.6	106°-45'	"	27.8	118°-22'
"	21.1	108°-09'	"	27.2	119°-24'
"	21.7	109°-11'	"	25.8	117°-30'
"	22.8	110°-06'	"	24.6	115°-45'

Willcomb
Smith
Y.W.

40	24.0	113°	40	16.3	55°-03'
"	23.8	108°-30'	"	13.	56°-50'
"	22.7	109°-17'	"	11.2	63°-23'
"	20.7	105°-54'	"	10.	62°-10'
"	20.4	101°-45'	"	8.7	72°-20'
"	18.3	99°-13'	"	8.2	78°-37'
"	17.9	96°-03'	"	7.	78°-34'
"	17.6	93°-54'	"	6.7	89°-50'
"	18.9	88°-07'	"	7.8	97°-35'
"	18.8	74°-36'	"	8.	117°-30'
"	17.5	68°-43'	"	8.	122°
"	18.6	67°-34'	"	7.5	129°-45'
"	18.5	64°	"	7.9	133°-50'
"	19.2	57°-25'	"	7.6	138°-15'
"	20.6	50°-47'	"	6.2	142°-06'
"	18.4	50°	"	7.2	150°-48'
"	16.5	52°-27'	"	8.3	161°-35'

H	40	8.	169°-10'	40	12.2	247°-15'
	"	6.	181°-08'	"	11.0	246-10'
	"	6.3	192°-04'	"	11.7	283°-05'
	"	7.4	192°-24'	"	13.7	287°-30'
	"	6.7	203°-50'	"	15.0	287°-51'
	"	5.1	216°45'	"	16.0	280°-20'
	"	5.8	228°-19'	"	15.5	273°-20'
	"	5.4	233°-20'	"	15.8	271°-30'
	"	5.6	238°-05'	"	16.9	270°-
	"	5.3	244°-50'	"	17.8	267°-15'
	"	4.9	239°-35'	"	18.9	270°-05'
	"	5.8	262°-12'			
	"	7.8	265°-10'	"		
	"	9.9	276°-34'	"		
	"	Rung 10,3	Center 251°-40'			
	"	11.3	255°-35'			
	"	12.2	253°-03'			

the up

had to move a/c last

	HI-346 79					341.99
	340 6.79					H.8 346.79
40	19.1	280°-22'				
"	19.6	277°-20'	42	36.2	263° 33'	
"	22.	276°-34'	"	35.5	266°-34'	
"	24.9	276°-22'	"	35.4	268°-25'	
"	26.8	273°-	"	35.2	269°-07'	
"	29.2	272°25'	"	30.1	271°-16'	
"	30.2	270°30'	"	27.6	274°-56'	
"	32.7	270°30'	"	27.4	275°-55'	
"	35.5	268°-52'	"	25.2	280°-37'	
"	35.4	~~270°~~ 265°-13'	"	24.9	282°-52'	
"	35.8	263°55'	"	24.9	285°-49'	
"	34.6	264°-07'	"	22.4	287°-10'	
"	34.2	262°-55'	"	21.2	290°-03'	
"	35.7	261°-43'	"	18.6	286°-40'	
"	26.9 Emerald	261-33'	"	18.1	288°-20'	
42	(Rod 4.8) ~~36.9~~	Emerald 262.14	"	17.6	292°-25'	

Rod 4.8						Rod 4.8					20
42	18.0	295°-00'	42	4.6	35°-47'	42	20.6	69°-00'			
"	15.6	291°-52'	"	6.1	44°-50'	"	21.2	75°-30'	Gap here		
"	14.2	299°-08'	"	7.8	35°-12'	"	21.8	85°-30'	44	13.4	15°-30'
"	12.8	300°-07'	"	8.3	39°-00'	"	21.8	91°-30'	"	11.7	21°-30'
"	10.1	288°-30'	"	9.3	40°-04'	"	26.0	111°-30'	"	9.4	16°-30'
"	8.6	292°-30'	"	10.0	37°-50'	"	32.2	116°-40'	"	10.7	8°-00'
"	8.4	287°-03'	"	11.6	40°-50'	"	30.6	119°-30'	"	8.5	11°-00'
"	6.7	283°-10'	"	13.2	41°-30'	"	34.0	122°-30'	"	6.2	356°-30'
"	5.8	284°-30'	"	15.3	40°-20'	Rod=2.8	35.2	120°-30'	"	7.2	337°-30'
"	3.7	257°-45'	"	18.1	36°-35'	44	32.2	115°-00'	"	6.9	312°-30'
"	2.7	260°-10'	"	19.7	39°-00'	"	27.7	108°-30'	"	10.2	301°-30'
"	1.5	287°-00'	"	23.1	37°-18'	"	23.6	95°-30'	"	17.2	317°-30'
"	1.5	340°-16'	"	25.3	33°-25'	"	23.9	76°-30'	"	16.2	311°-30'
"	1.4	50°-15'	"	24.3	38°-15'	"	22.4	53°-30'	"	16.2	298°-00'
"	0.0	—	"	21.0	50°-30'	"	Top rock exc 22.8	47°-00'	"	17.7	296°-00'
"	0.5	180°-00'	"	20.1	55°-30'	"	25.2	39°-30'	"	18.9	298°-00'
"	1.0	95°-45'	"	20.1	61°-30'	"	27.9	33°-30'	"	20.2	302°-00'
"	2.4	57°-00'	Top rock " Exc	20.1	64°-30'	Gap in here			"	22.2	306°-00'

Rod 2.8 44	22.2	303°-00	46	27.9	282°-00	Rod 0.8 46	32.4	29°-30	Rod 14.8 32	conc. 43.1	237°-35
"	20.5	296°-30	"	26.2	285°-00	"	29.7	32°-30	37	41.2	235°-30
"	20.7	293°-00	"	27.2	288°-00	"	29.0	35°-00	"	42.5	234°-00
"	24.2	291°-00	"	26.0	288°-30	"	27.6	37°-00	"	41.1	232°-30
"	25.2	288°-00	"	26.6	299°-00	"	26.5	43°-00	"	37.5	230°-00
"	25.0	283°-00	"	24.9	302°-00	"	25.1	43°-00			
"	27.5	275°-30	"	24.8	305°-30	"	Top rock arc 24.1	47°-00			
"	30.2	273°-00	"	25.2	310°-00	"	24.2	54°-00			
"	31.2	271°-20	"	24.3	312°-30	"	24.5	58°-00			
"	34.7	269°-00	"	24.8	317°-00	"	26.2	62°-30			
"	conc. 36.7	268°-00	"	27.0	323°-00	"	25.0	69°-30			
Rod 0.8 46	36.7	268°-00	Gap in here			"	25.7	83°-00			
"	32.6	271°-30				"	25.2	89°-30			
"	32.2	272°-30				"	33.7	112°-00			
"	29.7	274°-00	"	33.8	17°-00	"	37.1	118°-00			
"	29.8	276°-00		35.7	25°-00	HI = 346.8 332.9					
"	28.9	277°-30	"	34.9	26°-30	Rod 14.8 32	conc. 43.9	236°-30			
"	29.1	279-30	"	34.7	29°-30	"	42.4	237°-00			

Instrument Point No. 2. & No. 3.

Inst. Point No. 2 is 43.36 ft. dist. from Inst. Point No. 1 with Az. 208° - 24'
(= M14 · 5.88'W. - 7.34'N.)

Inst. Point No. 3 is 62.18 ft. dist. from Inst Point No. 1 with Az. 144° - 28'
(= O14 · 0.87'E 19.80 N.)

HI = 348.3
340.0
Rod 8.3

341.99
6.34
348.33

At Inst. Point No 2

40	18.4	299°-30'	Rod 8.3 40	5.7	357°-15'
"	17.5	301°-00'	"	4.9	17°-00'
"	15.6	301°-45'	"	5.1	34°-00'
"	12.7	314°-06'	"	7.5	41°-10'
"	12.0	314°-45'	"	7.3	52°-00'
"	11.4	314°-00'	"	7.5	59°-00'
"	10.6	323°-40'	"	7.3	69°-30'
"	9.8	329°-00'	"	7.4	84°-33'
"	9.4	327°-15'	"	8.2	96°-10'
"	8.7	329°-05'	"	8.5	109°-38'
"	8.2	338°-10'	"	6.2	121°-00'
"	7.7	349°-00'	"	8.8	175°-00'

At #2

Rod 8.3 40	10.2	131°-00'	Rod 8.3 40	21.8	74°-38'
"	8.6	134°-40'	"	22.7	73°-35'
"	9.7	137°-50'	"	26.4	77°-45'
"	11.5	135°-30'	"	27.1	76°
"	12.3	131°-05'	"	29.2	75°-15'
"	12.1	124°-24'	"	32.1	77°-35'
"	12.7	121°-55'	"	31.9	79°-40'
"	13.0	109°-20'	"	30.9	82°-04'
"	12.1	95°-00'	"	32.4	81°-55'
"	13.0	83°-40'	"	33.3	82°-10'
"	14.3	87°-00'	"	36.1	84°-44'
"	15.6	83°-15'	"	37.4	85°-20'
"	17.1	84°-30'	Rod 8.3 42	37.4	85°-23'
"	17.8	75°-50'	"	34.3	84°
"	18.7	74°-35'	"	33.8	84°-55'
"	19.2	76°-00'	"	30.7	81°-53'
"	20.0	73°-55'	"	~~25.9~~ 24.4	~~75°-25'~~ 77°-45'
"	21.4	75°-20'	"	22.9	73°-30'

At #2

Red 6.3							42	6.2	178°-45'	42	6.6	314°-30'
42	22.0	74°	42	10.9	163°-10'		"	5.9	168°-40'	"	7.4	310°-45'
"	21.5	75°	"	12.4	170°-20'		"	6.1	165°-20'	"	~~6.3~~	~~312°-45'~~
"	20.8	74°-30'	"	12.9	172°-30'		"	4.0	148°-30'	"	~~6.3~~	~~301°-50~~
"	20.	73°-40'	"	12.2	178°-20'		"	4.4	138°-40'	"	~~5.4~~	~~349°-25~~
"	19.4	74°-35'	"	11.5	178°-20'		"	4.1	123°-00'	"	~~3.9~~	
"	18.8	74°-35'	"	10.6	174°-40'		"	4.6	117°-35'	"	7.3	312°-15'
"	18.7	76°-	"	9.9	175°-55'		"	4.4	91°-41'	"	9.8	319°-42'
"	18.4	75°-35'	"	10.8	182°-33'		"	3.4	85°-40'	"	10.8	311°-00'
"	17.5	83°-38'	"	15.7	183°-20'		"	3.5	71°-36'	"	9.9	277°-25'
"	17.0	84°-20'	"	16.1	189°-40'		"	4.1	61°-00'	"	11.8	301°-25'
"	15.2	84°-17'	"	13.0	189°-22'		"	3.0	45°-42'	"	13.2	301°-09'
"	14.5	86°-15'	"	12.1	195°-30'		"	3.4	41°-33'	"	14.5	303°-00'
												enlarged
"	14.7	104°-40'	"	10.7	195°-25'		"	4.6	32°-30'	"	18.0	296°-35'
										Red 4.3		enlarged
"	13.1	106°-08'	"	9.5	200°-00'		"	4.7	15°-50'	44	17.7	294°-45'
	Follow next lower contour between these points						"	3.9	337°-05'	"	16.8	294°-15'
"	12.4	131°-39'	"	4.3	192°-30'		"	5.8	350°-00'	"	16.2	290°-39'
"	10.5	144°-45'	"	5.4	180°-05'		"	6.2	327°-50'	"	15.2	291°-52'

At #2

44	13.9	287°-30'	44	23.5	204°-20'
"	14.4	274°-45'	"	23.9	200°-10'
"	15.6	269°-30'	"	22.9	195°-45'
"	16.0	256°-30'	"	22.1	195°-08'
"	15.3	252°-45'	"	19.8	174°-30'
"	17.5	242°-15'	Broken goes through, can get from other side from point 3		
"	15.9	243°-30'			
"	14.2	257°-00'	"	19.1	171°-03'
"	13.9	248°-30'	"	17.1	175°-15'
"	14.6	239°-30'	→ follows next lowest contours to	12.4	170°-05'
"	17.6	231°-17'			
"	16.9	230°-55'		12.9	116°-50'
"	19.1	223°-20'	"	13.4	112°-10'
"	23.1	218°-40'	"	13.7	105°-13'
"	21.3	217°-30'	"	15.9	104°-08'
"	22.8	211°-20'	"	15.6	89°-45'
"	24.4	209°-45'	"	16.1	85°-15'

At #2

44	18.7	83°-30'	46	30.4	86°-05'
"	19.3	80°-20'	"	29.4	85°-00'
"	19.9	80°-39'	"	29.6	83°-00'
"	20.6	74°-45'	"	27.2	79°-45'
"	22.5	75°-00'	"	25.7	79°-30'
"	25.2	79°-07'	"	25.6	80°-37'
"	25.9	77°-30'	"	23.5	77°-35'
"	26.3	77°-30'	"	22.3	76°-45'
"	31.1	83°-50'	"	21.7	80°-50'
"	35.6	85°-42'	"	22.0	83°-20'
"	37.2	85°-39'	"	22.0	85°-34'
Pipe 2.3 46	36.0	86°-00'	"	22.7	87°-36'
"	35.2	86°-00'	"	22.4	89°-23'
"	34.5	86°-30'	"	21.1	87°-45'
"	33.5	86°-03'	"	20.3	90°-45'
"	31.8	89°-00'	"	19.9	89°-53'
"	30.9	90°-00'	"	20.0	86°-30'

At #4

46	19.3	84°-25'	46	20.5	174°-15'
"	18.4	84°-22'	"	22.3	195°-50'
"	17.5	91°-55'	"	24.2	196°-45'
"	16.4	91°-52'	"	25.9	197°-00'
"	15.7	100°-47'	"	28.8	194°-40'
"	16.7	103°-25'	"	30.6	194°-30'
"	15.8	105°-04'	"	32.2	203°-00'
"	15.6	110°-00'	"	33.7	205°-30'
"	14.5	111°-40'	"	34.2	206°-30'
"	13.5	121°-40'	"	29.8	208°-23'
"	13.5	127°-00'	"	30.1	204°-12'
"	12.8	126°-45'	"	28.7	205°-40'
"	11.2	138°-55'	"	28.7	209°-35'
"	10.5	144°-00'	"	26.2	211°-30'
"	11.0	160°-35'	"	27.2	214°-00'
"	18.4	171°-42'	"	27.5 face corrected	216°-33'
"	19.2	166°-11'	"	25.2	218°-33'

chasm between this and next reading

46	22.8 corrected	223°-55'			
"	22.2	227°-15'			

HI = 346.3
340.0
6.3 Rod

341.99
4.28
346.27

Instrument Point No 4 is Az. 253°-30' This is for a sight from Inst. Point No. 3

AT INST. POINT NO 3

6.3 Rod 40	24.4	309°-05'	40	12.6	352°-40'
"	22.4	311°-30'	"	13.6	3°-30'
"	22.0	314°-52'	"	12.6	6°-00'
"	16.5	319°-10'	"	13.4	11°-00'
"	15.3	316°-38'	"	Sheeting 15.4	10°-30'
"	14.6	320°-36'	4.3 Rod 42	Sheeting 25.5	13°-00'
"	13.8	320°-00'	"	22.5	0°-15'
"	13.1	328°-10'	"	Sheeting 20.1	1°-05'
"	11.2	334°-10'	"	Sheeting 13.1	30°-05'
"	13.0	340°-17'	"	10.1	30°-30'
"	13.0	346°-22'	"	6.2	45°-40'
"	11.9	348°-15'	"	4.8	51°-42'

Rod 4.3 42	4.0	91°-00'	Rod 4.3 42	15.7	267°-35'
"	4.5	136°-45'	"	14.4	273°-30'
"	3.2	155°-20'	"	14.5	277°-10'
"	3.1	101°-15'	"	13.2	281°-00'
"	2.7	92°-15'	"	13.1	286°-50'
"	1.2	92°-15'	"	12.3	288°-28'
"	1.4	44°-30'	"	13.4	296°-05'
"	1.3	329°-30'	"	12.8	297°-15'
"	4.4	249°-20'	"	13.6	305°-20'
"	7.7	238°-00'	"	15.6	301°-40'
"	7.5	248°-15'	"	18.3	311°-50'
"	10.6	246°-30'	"	21.3	307°-30'
"	12.1	237°-00'	"	22.2	310°-45'
"	13.2	242°-45'	"	24.5	308°-40'
"	14.1	242°-00'	HI =	346.3	
"	15.1	247°-00'		3.7	
"	19.7	250°-20'		342.6 Elev.	
"	17.8	265°-20'		Inst. Point #3	

June 28-18 Willcomb Smith

HI = 346.3
344.0
Rod 2.3

At Inst. Pt. No. 3

342.6
3.7
346.3

Rod 2.3 44	24.6	307°-35'	Rod 2.3 44	20.6	267°-10'
"	23.1	309°-20'	"	22.1	264°-37'
"	22.2	303°-30'	"	24.1	265°-00'
"	21.1	305°-45'	"	25.7	264°-00'
"	20.4	299°-55'	"	29.1	262°-35'
"	19.8	295°-20'	"	33.2	262°-45'
"	21.0	293°-45'	"	37.6	263°-00'
"	20.3	291°-10'	"	43.5	262°-40'
"	17.1	296°-20'	"	43.8	261°-15'
"	16.7	295°-20'	"	37.6	261°-20'
"	16.6	291°-20'	"	54.1	263°-30'
"	15.5	290°-35'	"	48.0	262°-30'
"	16.1	288°-15'	"	45.7	262°-35'
"	15.8	281°-05'	"	45.5	261°-00'
"	16.9	273°-45'	"	48.7	261°-00'
"	18.4	271°-30'	"	55.3	261°-35'
"	20.2	270°-07'			

Then continued next page

In Channel "Closed contour"

Channel

Rod 2.3 44	33.6	261°-00' ✓	Rod 2.3 44	12.7	226°-25' ✓	Rod 2.3 44	14.1	37°-12' ✓	Rod 0.3 46	17.6	222°-30' ✓
"	33.2	260°-35' ✓	"	12.9	222°-30' ✓	Rod 0.3 46	17.1	40°-00' ✓	"	18.9	224°-08' ✓
"	33.9	258°-30' ✓	"	13.6	220°-20' ✓	"	16.3	53°-50' ✓	"	20.3	227°-50' ✓
"	35.0	257°-05' ✓	"	11.9	213°-04' ✓	"	16.6	70°-00' ✓	"	21.3	227°-30' ✓
"	35.9	252°-20' ✓	"	12.9	208°-00' ✓	"	17.4	81°-00' ✓	"	21.0	228°-45' ✓
"	34.1	250°-20' ✓	"	11.2	202°-05' ✓	"	17.8	96°-00' ✓	"	24.1	233°-13' ✓
"	34.3	246°-00' ✓	"	10.2	202°-00' ✓	"	16.5	111°-33' ✓	"	25.4	235°-45' ✓
"	33.0	244°-34' ✓	"	8.8	187°-10' ✓	"	17.1	133°-30' ✓	"	28.5	237°-30' ✓
"	32.0	242°-20' ✓	"	9.0	162°-15' ✓	"	17.2	144°-30' ✓	"	28.5	238°-22' ✓
"	28.3	239°-30' ✓	"	10.3	155°-00' ✓	"	15.7	145°-20' ✓	"	30.1	240°-40' ✓
"	27.4	240°-30' ✓	"	11.8	161°-40' ✓	"	12.7	153°-45' ✓	"	34.2	242°-45' ✓
"	26.4	240°-05' ✓	"	13.7	142°-55' ✓	"	11.7	164°-45' ✓	"	37.4	246°-00' ✓
"	26.1	238°-30' ✓	"	14.5	141°-12' ✓	"	12.2	189°-00' ✓	"	37.9	247°-40' ✓
"	21.8	237°-25' ✓	"	13.2	134°-22' ✓	"	13.4	202°-05' ✓	"	37.2	249°-30' ✓
"	20.7	235°-30' ✓	"	11.1	124°-05' ✓	"	15.8	208°-00' ✓	"	38.1	250°-20' ✓
"	20.4	236°-30' ✓	"	13.0	113°-40' ✓	"	14.6	211°-05' ✓	"	37.7	251°-30' ✓
"	15.7	235°-50' ✓	"	13.9	91°-40' ✓	"	15.4	213°-30' ✓	"	37.4	253°-00' ✓
"	13.4	232°-20' ✓	"	12.4	62°-04' ✓	"	16.7	212°-53' ✓	"	38.3	254°-30' ✓

Rod 0.3 46	39.7	255°-00' ✓	Rod 0.3 46	26.3	264°-40' ✓	HI=346.3 3350 Rod 11.3 35	At Inst. Point No 3		Rod 11.3 35	342.6 3.7 346.3 39.6	314°-15' ✓	
"	38.7	256°-50' ✓	"	24.5	267°-45' ✓	23.5	339°-22' ✓			39.6	314°-15' ✓	
"	40.8	257°-52' ✓	"	23.4	269°-50' ✓	24.1	334°-20' ✓		"	39.4	320°-40' ✓	
"	41.1	259°-05' ✓	"	21.1	270°-25' ✓	25.6	331°-30' ✓		"	41.5	323°-00' ✓	
"	40.1	260°-07' ✓	" Ring Center	19.6	271°-20' ✓	26.9	327°-20' ✓		"	38.4	323°-37' ✓	
"	41.4	260°-25' ✓		19.2	274°-00' ✓	26.9	325°-00' ✓		"	36.9	320°-30' ✓	
"	41.8	259°-30' ✓	"	19.6	277°-35' ✓	26.5	321°-07' ✓		Ring "	35.1	319°-45' ✓	
"	43.0	259°-50' ✓	"	23.4	274°-25' ✓	26.8	317°-08' ✓		"	34.8	321°-30' ✓	
"	43.1	261°-00' ✓	"	22.7	286°-38' ✓	27.2	314°-20' ✓		"	34.7	325°-15' ✓	
"	48.3	260°-55' ✓	"	20.0	288°-30' ✓	27.3	310°-35' ✓		"	35.6	323°-50' ✓	
"	55.3	261°-30' ✓	"	21.1	293°-35' ✓	29.6	308°-30' ✓		"	38.1	324°-25' ✓	
	jumped charm									HI=346.3		
"	52.5	263°-35' ✓	"	21.5	300°-40' ✓	31.2	310°-50' ✓	334.0 Rod 12.3		31.7	330°-30' ✓	
"	47.5	262°-30' ✓	"	22.2	299°-08' ✓	32.8	312°-00' ✓	334.1 12.2		26.9	322°-06' ✓	
"	43.2	263°-00' ✓	"	23.1	307°-42' ✓	34.9	311°-30' ✓	334.0 12.3		27.1	319°-06' ✓	
"	39.4	264°-15' ✓	"	24.3	305°-50' ✓	37.3	308°-00' ✓	334.1 12.2		28.8	323°-50' ✓	
"	37.3	263°-22' ✓	"	25.5	305°-40' ✓	40.7	306°-15' ✓	334.2 12.1		34.8	316°-55' ✓	
"	34.4	262°-51' ✓				41.5	307°-05' ✓	334.1 12.2		37.9	315°-10' ✓	
"	29.5	264°-00' ✓				41.2	311°-30' ✓	334.0 12.3		39.4	310°-00' ✓	

HI = 346.3

Low Points

334.3 / 12.0	39.4	322°-39'	✓
333.9 / 12.4	39.8	330°-50'	✓
334.0 / 12.3	35.4	327°-30'	✓
334.0 / 12.3	36.2	332°-30'	✓
Rod 11.3 3.5	41.0	322°-15'	✓
"	41.9	326°-30'	✓
"	41.7	329°-25'	✓
"	43.4	334°-00'	✓
"	41.0	334°-30'	✓
"	40.6	334°-20'	✓
"	40.1	334°-38'	✓
"	39.8	333°-35'	✓
"	37.3	333°-45'	✓
"	Forms down stream face dam 35.4	340°-00'	✓
"	Forms D.S.F. Dam 32.0	339°-26'	✓
"	30.5	338°-05'	✓
"	29.4	337°-25'	✓
"	Form D S F Dam 28.9	339°-17'	✓

July 3-18 Willcomb Smith

			HI		
B.M.		+0.87	363.00		362.13
T.P.		+0.44	350.78	12.66	350.34

At 76.95 ft. Az. 116°-32' from C11-19.5 E = Instrument Point #5 (M12-13.5' E - 9.3' N)

HI 350.78
344.00
Rod 6.8

At Inst. Point #5

			Rod 6.8		
44	3.5	159°-45' ✓	44	10.3	12°-30' ✓
"	2.7	128°-15' ✓	"	11.2	17°-40' ✓
"	3.1	121°-00' ✓	"	13.0	31°-09' ✓
"	2.6	82°-00' ✓	"	15.7	40°-45' ✓
"	4.5	93°-06' ✓	"	16.9	37°-48' ✓
"	5.6	76°-45' ✓	"	16.8	31°-20' ✓
"	5.8	63°-00' ✓	"	15.4	20°-45' ✓
"	6.4	40°-30' ✓	"	17.9	25°-52' ✓
"	6.6	16°-30' ✓	"	20.2	26°-00' ✓
"	8.6	6°-15' ✓	"	21.8	30°-18' ✓

Rod 6.8 44	24.8	31°-30' ✓	Rod 4.8 46	15.3	0°-30' ✓
"	27.0	33°-10' ✓	"	13.7	359°-40' ✓
"	27.0	39°-40' ✓	"	12.5	354°-00' ✓
"	27.6	41°-07' ✓	"	13.4	351°-00' ✓
"	26.6	42°-45' ✓	"	15.1	349°-45' ✓
"	25.3	44°-24' ✓	"	13.9	342°-30' ✓
"	23.4	45°-50' ✓	"	12.5	340°-30' ✓
"	21.6	51°-00' ✓	"	14.9	315°-15' ✓
Rod 4.8 46	24.9	25°-20' ✓	"	17.9	312°-38' ✓
"	24.6	21°-00' ✓	"	19.3	308°-50' ✓
"	24.6	18°-30' ✓	"	18.1	299°-00' ✓
"	23.6	16°-45' ✓	Rod 2.8 48	conc. 37.2	252°-42' ✓
"	22.8	12°-00' ✓	"	36.3	253°-00' ✓
"	20.0	11°-30' ✓	"	36.1	254°-08' ✓
"	19.8	8°-20' ✓	"	34.6	253°-30' ✓
"	18.9	9°-00' ✓	"	34.2	255°-07' ✓
"	17.4	6°-00' ✓	"	33.7	254°-22' ✓
"	15.8	5°-37' ✓	"	32.6	256°-30' ✓

					3°
Rod 2.8 48 ✓	30.6	257°-00'	Rod 2.8 48 ✓	17.7	318°-00'
" ✓	29.5	261°-30'	" ✓	15.7	320°-50'
" ✓	28.8	264°-30'	" ✓	14.7	335°-10'
" ✓	27.9	266°-40'	" ✓	18.7	349°-30'
" ✓	27.6	270°-50'	" ✓	18.6	351°-00'
" ✓	26.2	276°-10'	" ✓	20.0	353°-00'
" ✓	25.5	282°-00'	"	~~19.8~~	~~351°-10'~~
" ✓	25.7	285°-45'	" ✓	22.2	354°-30'
" ✓	23.0	285°-00'	" ✓	23.3	356°-45'
" ✓	21.4	288°-53'	" ✓	23.6	1°-25'
" ✓	21.8	292°-37'	" ✓	23.9	6°-00'
" ✓	22.7	293°-45'	" ✓	28.0	36°-00'
" ✓	23.8	292°-08'	" ✓	27.2	38°-38'
" ✓	22.8	298°-00'	" ✓	27.7	42°-00'
" ✓	23.1	301°-00'	" ✓	25.1	46°-50'
" ✓	21.9	300°-45'	" ✓	23.4	53°-00'
" ✓	22.1	306°-24'	" ✓	23.1	65°-00'
" ✓	21.1	308°-30'	" ✓	22.2	68°-15'

Tie in from here to here on next lower contour (annotation with arrows between 23.9 and 28.0)

Rod 2.8 48	/	End of work 25.3	76°-15′	Rod 0.8 50	/	25.2	5°-00′
"	/	28.3	90°-00′	"	/	25.8	0°-00′
"	/	28.0	94°-30′	"	/	23.9	356°-00′
"	/	29.5	100°-30′	"	/	24.2	344°-00′
"	/	29.6	105°-15′	"	/	21.3	339°-00′
Rod 0.8 50	/	31.8	104°-00′	"	/	18.4	328°-00′
"	/	30.4	86°-20′	"	/	20.0	317°-10′
"	/	29.5	83°-00′	"	/	20.8	315°-10′
"	/	Begin work 28.1	76°-45′	"	/	20.7	312°-30′
"	/	28.1	74°-00′	"	/	23.8	307°-30′
"	/	27.4	73°-30′	"	/	27.0	300°-00′
"	/	27.0	71°-10′	"	/	27.7	297°-50′
"	/	25.9	70°-10′	"	/	28.1	298°-00′
"	/	25.1	68°-30′	"	/	28.1	290°-50′
"	/	24.0	56°-40′	"	/	28.5	283°-30′
"	/	26.4	49°-00′	"	/	30.8	279°-40′
"	/	28.2	39°-50′	"	/	32.3	275°-00′
"	/	28.0	33°-50′	"	/	32.3	269°-10′

Rod 0.8 50	/	31.8	268°-00′
"	/	31.5	264°-30′
"	/	33.1	263°-00′
"	/	34.5	261°-00′
"	/	34.5	259°-35′
"	/	35.4	258°-50′
"	/	Cone 36.1	259°-30′

HI 350.78
347.20
Rod 3.58

HI = 5.2 7/7/18

63.1	At B15 - 15 W				57.94
	Sight A 15 turn	3°13'	to Right for A point		
	70.6	3°13'			
B.M.		1.00	6313		62.13
				12.75	50.38
HI. 5.1					
5548	At Auxil Point A				50.38
	Sight B15-15W for OA2 ∠				
R 748 48	288	345°			
✓ "	30.1	337°40	✓ 48	11.8	326°-15
✓ "	32.3	328°45	✓ "	11.0	321-45
✓ "	30.4	329°-45	✓ "	9.8	314-15
✓ "	29.2	330°	✓ "	10.8	309-30
✓ "	27.0	318-30	✓ "	10.4	304-15
✓ "	23.6	321-30	✓ "	13.4	299-15
✓ "	24.2	328	✓ "	12.1	295
✓ "	21.2	334	✓ "	10.0	288-15
✓ "	18.9	338-45	✓ "	9.6	256-30
✓ "	17.1	338-45	✓ "	10.2	250-45
✓ "	14.7	334-30	R.C. 48	6.0	313-15

Willcomb
Bob

3r

HI = 5548	At Auxil Point A				50-38
✓ Re 48	55	343-15	✓ Re 48	12.3	120-30
✓ "	48	336-30	✓ "	14.4	121-45
✓ "	52	347-15	✓ "	14.7	125-15
✓ "	49	4°15'	✓ "	14.8	129
✓ "	56	8°-10	✓ "	14.9	138
✓ "	56	29°	✓ "	14.9	135-15
✓ "	47	38-30	✓ "	14.3	138-30
✓ "	48	65°15'	✓ "	16.8	138
✓ "	42	86-45	✓ "	17.8	145-45
✓ "	53	94-45	✓ "	19.8	144-15
✓ "	63	112-30	✓ "	19.5	138-00
✓ "	84	121-30	✓ "	21.2	138-00
✓ "	87	124	✓ "	22.9	139-30
✓ "	104	120-45	✓ "	23.5	144-15
✓ "	109	130-30	✓ "	23.7	147-15
✓ "	114	130	✓ "	19.8	144-15
✓ "	108	122-30	✓ "	21.5	153-15

7/7/18

A1=5548		At Auxil Point A			5038	5548	At Auxil Point A					5038
LC 48	21.3	155-30	48	325	208-15	50	13.8	312-15	50	32.1		328-45
=			48	365	205-30	"	12.6	319-15	50	31.9		331
			Corner - Rock						Concrete			
48	14.0	261-15	48	388	203-45	"	11.5	323-45	50	30.8		335-30
"	14.6	262-15	"	406	203-45	"	11.9	328-15	=			
									RC 3.48			
"	14.7	255-30	"	427	205°	"	15.4	336	52	33.3		329
"	15.2	248-15	"	436	205-30	"	19.0	338-30	52	32.6		328
"	15.8	250-30	"	447	203-45	"	20.4	335	"	32.0		328-45
"	16.4	255-30	"	449	200-30	"	22.4	328	"	31.0		328-30
"	16.6	250	"	447	198-30	"	23.4	322-30	"	29.3		328-15
"	17.9	238	"	457	197	"	19.6	311-30	"	28.0		327-00
"	19.5	230-0	"	490	196	"	19.0	308	"	25.9		324-15
"	23.0	218-30	=			"	19.3	308	"	23.7		319
"	25.0	218-30	50	158	185-15	"	17.8	319-15	"	19.3		307-45
"	26.2	218-15	"	175	199-15	"	27.0	327	"	17.4		300-45
"	28.4	215-45	"	150	302-30	"	29.0	329-30	=			
"	29.4	211-15	"	143	307-45	"	30.4	329-45	RC 52	17.5		303-15
"	31.9	209-15	"	145	307-15	"	31.6	328-45	"	19.4		312

7/7/18

5548		At Auxil Point A			50.38
Rc 52 ✓	226	320.45	Rc 54 ✓	21.8	320-45
" ✓	214	327-45	" 54 ✓	21.3	321-45
" ✓	20.5	328	" ✓	21.4	322-30
" ✓	19.6	332-45	" ✓	20.3	325-45
" ✓	18.0	334	" ✓	19.2	328-45
" ✓	16.8	333-30	" ✓	15.6	325
" ✓	16.2	335	" ✓	15.9	322
" ✓	14.6	334-30	" ✓	18.2	317-45
" ✓	15.4	332	" ✓	18.8	315-45
" ✓	13.3	331	=		
			Rod 010	✓	323-15
" ✓	12.6	326	Top Rock.	18.4 Ele	55.38
			Rod 00	✓	319-45
" ✓	13.3	321-30	Top Rock	19.4	55.48
" ✓	16.3	314-30	≡		
" ✓	16.6	310			
" ✓	15.1	305-45			
≡					
Rod 1.48					
Rc 54	19.7	315			

H = 45 7/9/18 Willcomb Bob

34

54.88	At Auxil Point A				50.38
Rod 6.9 48	~~[illegible]~~	~~164~~-30	Rc 48. ✓	16.1	188-30
Rc " ✓	19.3	155	" " ✓	12.0	197-00
" " ✓	18.7	153	" " ✓	5.5	215-30
" " ✓	18.6	154	" " ✓	4.6	258-30
" " ✓	22.8	158-45	" " ✓	4.6	285-45
" " ✓	26.0	161-30	≡		
" " ✓	25.8	162-30	Rod 49 50 ✓	3.2	315-45
" " ✓	22.9	160-15	Rc 50 ✓	2.9	332°
" " ✓	22.3	163-45	" " ✓	2.0	324
" " ✓	19.3	161	" " ✓	1.3	1°
" " ✓	18.7	161-30	" " ✓	1.7	88
" " ✓	18.2	164-30	" " ✓	1.3	142-15
" " ✓	20.0	167-30	" " ✓	1.7	212
" " ✓	20.1	173-15	" " ✓	1.1	227
" " ✓	19.9	178-30	" " ✓	1.9	266-30
" " ✓	20.5	181-30	" " ✓	1.3	304-15
" " ✓	20.0	184-20	" " ✓	3.0	308-45
			≡		

2H=45		7/9/18						7/9/18					
54.88		At	Auxil	Point	A	50.38	5488		At	Auxil	A		50.38
L=49	Rc 50	Az	227-30	Rc 50	136	140-30	Rc 50		5.1	213-30	Rc 50	7.6	204-30
" "		2.9	204-15	" "	144	142-30	" "		4.8	228-30			
" "		2.7	192-30	" "	157	148-15					Rod Rc		
" "		3.5	167-45	" "	168	149-15	Rc	Rz 9 52	4.9	204-45	R. 1.6 Top R.	7.0	53.3 198-30
" "		4.2	148-45	" "	165	151-30	" "		4.6	194-30	R=1.6 Top R.	10.4	53.3 194-30
" "		2.4	169-30	" "	164	155	" "		7.5	172-30	R=1.9 Top R.	12.9	53.0 181-30
" "		2.1	143-15	" "	11.1	158	" "		6.9	171-45			
" "		2.6	140-45	" "	137	165-30	" "		7.1	160	Rod 09		
" "		2.6	130	" "	192	172	"		9.8	147-15	Rc 52		
" "		4.0	117-15	" "	196	174-30	" "		11.3	161-45	09 Top Rock	9.5	161-45
" "		8.6	137	" "	194	185	" "		11.0	170-45			
" "		9.4	139-15	" "	177	186-45	" "		14.1	175			
" "		10.0	145-45	" "	170	186-45	" "		14.0	181-45			
" "		10.9	142-30	" "	155	189	" "		14.1	182-30			
" "		11.9	148-30	" "	11.9	195-45	" "		14.8	187-30			
" "		12.5	152-30	" "	91	202	" "		17.4	193.30			
" "		11.9	144	" "	64	208-15	" "		10.0	198			

7-13-18

Note Azimuths from Q15 should be corrected by adding 1° to all readings at Q15 PSTW.

		+	H.I.							
T.B.M.		3.09	365.22		362.13	3'E of B14-15W-15N.				
H.I. 4.5										
65.22										
R.O. 13.22										
54	42.0	240°15'	56	33.4	317°30'	56	32.8	235°45'		21.4	69°30'
	38.7	241°		30.2	312°		42.1	236°		21.5	61°30'
	31.1	239°15'		22.0	320°30'	58	42.4	234°		15.5	29°30'
	27.2	243°30'		15.3	57°0'		36.3	231°		29.9	319°30'
54+56	23.2	252°		14.8	62°45'		32.1	233°30'		32.4	321°
	19.7	262°45'		10.5	57°45'		24.4	237°45'		40.8	322°
	20.4	281°15'		6.8	52°		22.8	243°	60	40.9	326°15'
	11.4	305°		3.6	325°30'		18.0	248°		34.6	326°
	9.3	38°30'		15.0	283°30'		20.0	255°15'		30.7	326°15'
	8.7	12°30'		15.1	278°		19.1	262°30'		18.7	28°30'
	19.8	312°30'		19.2	277°15'		12.9	267°		24.2	53°30'
	30.5	304°45'		19.7	258°45'		11.0	278°		29.0	70°
	31.7	310°		21.3	251°15'		6.7	295°		26.3	73°
	40.2	313°45'		23.7	250°15'		2.9	6°		19.3	69°30'
56	39.6	318°45'		28.4	240°15'		17.0	65°		9.9	71°

m = 45

65 vv At Q 15

60	/	4.1	68°	62	✓	5.9	181°
	/	1.5	348°		/	4.1	116°
	/	5.0	239°		/	10.2	95°
	/	9.1	242°30′		/	24.4	75°
	/	15.2	244°		/	30.9	76°30′
	/	18.8	238°		/	33.8	74°
	/	18.7	236°30′		/	34.3	71°
	/	22.5	238°		/	24.9	44°
	/	33.3	230°45′		/	21.9	25°
	/	36.1	229°0		/	27.1	340°
	/	41.1	229°0		/	32.5	332°
62	/	34.3	226°30′		/	42.5	329
	/	31.3	226°30′	64	/	42.8	329°30′
	/	25.9	230°		/	41.5	332°
	/	17.9	228°		/	33.7	336°
	/	17.2	233°		/	30.2	344°30′
	/	15.1	231°30′		/	23.6	45°

65 vv At Q 15

/	24.5	32°		~~27.4~~	~~221°~~
/	28	43°30′	/	30.2	220°45′
/	29.7	53°	/	28.7	216°
/	38.2	69°30′			
/	36.6	79°30′			
/	29.8	78°			
/	17.8	91°			
/	12.3	98°			
/	16.9	107°			
/	23.7	110°			
/	22.7	115°			
/	20.	121°			
/	13.8	140°			
/	9.5	170°			
/	16.0	223°			
/	19.1	220°			
/	25.3	224°30′			

At 56.05' - 328° 04' Az. From Q15

set hob	+	H.I.			
Q 15	4.05	64.77			60.72

52 ✓	39.7	311°	54 ✓	9.4	270°	
✓	38.2	310°	✓	11.5	313°30'	
✓	End of Rock 36.5	311°	✓	17.2	343°	
✓	34.4	311°45'	✓	21.1	341°30'	
✓	27.6	306°	✓	24.1	319°	
✓	18.1	325°	✓	29.7	314°30'	
✓	15.5	310°45'	✓	Rock 32.7	315°15'	
✓	19.4	284°30'	✓	34.8	313°45'	
✓	14.7	266°	✓	36.4	311°30'	
✓	12.4	270°	✓	37.9	312°30'	
✓	13.5	229°40	✓	39.2	312°	
✓	14.3	201°	✓	40.1	311°15'	
54 ✓	12.7	194°30'	56 ✓	40.0	311°30'	
✓	9.2	241°	✓	38.4	312°30'	

At Auxil Point A

56 ✓	37.3	314	58 ✓	18.1	15°30'
✓	35.9	314°30'	✓	22.9	0° 65.22 +5.5 60.72
✓	End of Rock 32.9	318°	✓	Rock 26.0	348°30'
✓	25.7	322°15'	✓	25.0	331°30'
✓	23.6	344°15'	✓	31.9	321°
✓	20.2	359°	✓	33.1	320°30'
✓	18.1	2°30'	60 ✓	35.2	317°
✓	9.2	323°30'	✓	34.1	320°30'
✓	5.7	284°	✓	32.1	324°30'
✓	7.7	256°30'	✓	30.2	325°
✓	8.9	232°	✓	27.5	331°30'
✓	12.5	193°	✓	End Rock 27.0	349°30'
58 ✓	11.3	186°30'	✓	27.0	356°30'
✓	8.3	209°	✓	24.5	11°
✓	5.8	278°	✓	21.8	21°30'
✓	6.7	336°30'	✓	16.8	24°
✓	12.1	4°30'	✓	10.1	4°

		At Auxil Sight A			
60	4.1	307°	64	~~36.4~~	324°
/	5.0	219°		~~34.2~~	327° 30
62 → /	10.5 4.4	155° 30' 165°		31.5	333°
/	6.1	0°	/	28.2	349°
/	18.0	35°	/	31.4 End Rock	354° 30'
/	25.6	20°	/	31.2	4° 30'
/	27.4	12°	/	29.2	25°
/	29	1°	/	19.2	33°
/ /	Rock 28.5	352°	/	17.8	39° 30'
	27.2	350°	/	14.6	43°
/	~~27.2~~	~~343~~ 330'	/	9.7	31°
/	27.5	341°	/	5.7	25°
/	28.9	336°	/	6.5	147° 30'
/	28.6	335°	/	12.1	145°
/	35.5	324			
/	34.0	321° 30'			
64 /	~~37.9~~	321°			

7-13-18		At 015				
		+	341			
Rod 875		555	352.75			347.2
/ 44	Form 64	23° 30'	46 /	21.2	59° 40'	
/ "	71	52°	" /	18.4	85°	
/ "	105	82°	" /	13.2	101°	
/ "	149	77° 45'	" /	7.7	110° 30'	
/ "	178	57° 30'	48 /	15.9	130°	
/ "	179	42° 15'	" /	16.3	131°	
/ "	184	31°	End Rock " /	18.0	127° 15'	
/ "	272	9°	48 /	19.3	111° 50'	
/ "	368	358° 20'	" /	24.1	72° 50'	
/ "	446	353	" /	25.5	56° 30'	
/ "	482	351° 20'	" /	24.5	45° 45'	
/ 46	491	353°	" /	25.4	34° 30'	
/ "	412	359°	50'	28.5	37° 30'	
/ "	325	11° 45'	" /	28.0	52°	
/ "	213	33° 10'	" /	27.3	59°	

7/-13-18

At 0-15

50	27.4	70°45'	5x	30.4	43°10'
"	26.x	73°50'	"	32.5	33°
"	25.3	84°	"		
"	27.x	89°09	"		
"	20.7	129°30'	"		
5x	21.7	134°30'			
"	24.x	127°			
"	28.8	84°30'			
"	29.x	77°15'			
"	27.3	72°30'			
"	29.3	71°15'			
"	31.1	74°15'			
"	3x.6	70°30'			
5x	31.6	65°15'			
"	28.1	57°30'			
"	28.3	53°30'			
"	30.6	51°15'			

7-19-18 Bob Willcomb

From B15 - 15'W set M15 - thence 70' S and set point M12 - 5'N -

B.M.		1.10	363.23		362.13
T.B.M.				11.21	352.02
		3.38	355.40		

355.40
48 - 7.4

At M12 - 5'N.

48	22.1	31°		35.1	75° 30'
/	25.8	40°	/	34.9	73°
/	29.2	51°	/	35.0	70° 30'
/	35.2	58°	/	36.0	67°
/	35.1	61°	52	36.2	66° 30'
/	35.5	63°	/	35.8	69° 30'
/	35.2	64°	/	36.5	75°
/	35.2	67°	/	38.0	75°
/	34.0	69°	/	37.9	78°
/	33.2	72°	/	37.6	79°
/	34.4	81°	/	39.4	79°
50 /	36.4	80°	/	40.5	86° 30'
54 /	41.5	86°	50 /	20	12° 30'
/	39.6	81° 30'	/	23.8	13°
/	39.4	78° 30'	/	25.5	20°
/	37.5	73° 30'	/	25.6	22°
/	36.8	68°	/	25.9	30°
50 /	15.2	282°	/	27.3	35° 30'
/	15.0	289°	/	26.3	38°
/	16.0	295°	52 /	26.5	38°
/	15.2	301°	/	27.5	36°
/	14.7	299° 30'	/	26.8	27°
/	14.4	307°	/	26.1	21°
/	13.7	310°	/	25.6	16°
/	14.1	318° 30'	/	24.5	9° 30'
/	11.6	333°	/	24.2	7°
/	10.7	340°	/	22.1	-5°
/	10.6	356° 30'	/	21.5	1°
/	19.3	4° 30'	/	21.1	0°

355.4°

At N12-5'W

52	21.0	356°	54	21.8	293°
	18.6	343°		22.2	299°
	21.0	328°		25.1	304°
	19.5	312°		26.6	303°
	18.9	308°		29.2	310°30'
	19.8	304°30'		26.4	315°
	18.5	299°30'		25.9	321°
	19.2	291°		27.8	324°30'
	18.2	275°30'		27.9	333°
	19.7	272°		27.6	338°
	20.7	272°		26.6	348°30'
	21.3	271°30'		26.9	353°
54	old Concrete 22.5	257°		26.3	4°
	22.1	259°30'		24.9	5°30'
	22.7	264°		24.9	7°30'
	21.1	275°30'		26.6	24°
	21.0	289°30'		27.7	36°

7-19-18

At N12-5 N

54	27.9	40°
	On Vertical Cliff 29.5 (?)	49°

From B15-15'W measure 40' E and set A15- thence-

Grades for top of Apron

T.B.M.		2.41	354.43	352.02
	Rod			
347.2	7.23			
349.0	5.43			

7/23/18 Sight A 0 for 0 Az Left

At A12 55.94

H.I. 5.0
60.94

		+	HI	-	Elev
BM		107	6320		36213
A12				726	5594
Auxil Point	43.25	12° 4'		045	6049

H.I. = 4.6
65.09

Sight A12 for 0 Az Lt.
At Auxil Point 6049

Rod = 9.1

56 ✓	27.8	306.45	56 ✓	227	327
56 ✓	27.0	307-30	" ✓	225	331-30
56 ✓	266	306-45	" ✓	215	337-45
56 ✓	263	306-30	" ✓	209	338-45
" ✓	258	306	" ✓	210	340
" ✓	247	307-30	" ✓	209	342
" ✓	235	308	" ✓	198	344
" ✓	220	307-30	" ✓	188	347-45
" ✓	20	308-30	" ✓	190	350
" ✓	198	316	" ✓	187	354-30
" ✓	216	322 ✓	" ✓	195	357-30
" ✓	227	324	" ✓	185	358

H.I. = 5.0
65.09

At Auxil Point 6049

Y.W. Bob

43

56 ✓	17.0	359	concrete 58 ✓	255	20-30
56. ✓	17.0	2°	" ✓	186	30-30
56 ✓	119	9°	" ✓	15.4	27
56 ✓	107	17	Concrete " ✓	9.5	71
56 ✓	7.5	34	" ✓	57	70
" ✓	7.0	49-30	" ✓	50	43-30
concrete " ✓	9.9	84-30	" ✓	90	11-30
" ✓	155	27-30	" ✓	125	00
" ✓	187	20-30	" ✓	130	350
" ✓	218	18	" ✓	122	336
" ✓	240	17-30	" ✓	122	319-30
" ✓	265	11-30	" ✓	168	323-30
" ✓	269	5-45	" ✓	155	309-30
" ✓	283	8-30	" ✓	165	304-30
" ✓	293	4-45	Vert 5 " ✓	163	297-30
"	349	5-45	" ✓	215	305
Rod 7.1	298	190	" ✓	232	305-15

56

6509		At Axil Point			6049
58 ✓	248	304-45	60 ✓	159	29-30
" ✓	276	304	60 ✓	205	31-30
" ✓	303	301-30	60 ✓	214	30-30
			60 ✓	216	32-30
Rod 5.1 ✓			Rod 3.1 ✓	Steel	
60 ✓	277	301°	62 ✓	134	57-30
" ✓	237	30 ✓	62 ✓	Concrete 126	65-15
" ✓	205	299-15	" ✓	113	65
" ✓	181	301	Corner of Concrete ✓ " ✓	197	132-45
" ✓	161	297-30	Shot ✓		
" ✓	93	295	62 ✓	154	144-30
" ✓	68	279-30	" ✓	87	132-15
" ✓	40	256	" ✓	63	163
" ✓	20	239-30	" ✓	49	187-30
" ✓	20	340	" ✓	73	277-30
" ✓	38	31-45	" ✓	95	294
" ✓	48	70	" ✓	172	294
Concrete ✓	94	69-45	" ✓	163	297-30
			" ✓	180	299-15

7/23/18

42

6509		At Axil Point	6049
62 ✓	213	296-30	
Rod 1.1			
64 ✓	201	291-30	
" ✓	146	295	
" ✓	128	295	
" ✓	78	270-30	
" ✓	52	197	
" ✓	82	163-30	
" ✓	88	150-30	
" ✓	140	154-30	
" ✓	165	150-45	
Corner Concrete ✓	197	133	
Concrete 64 ✓	122	101	
" ✓	112	75-30	
Steel " ✓	173	75	

7/23/18

Sand Storage Site

Continued from page 13

Sta 2+00	0.9	44.40		43.5
2+25			4.9	39.5
+50			8.1	36.3
+75			10.5	33.9
3+00			13.1	31.3

Copied in Book "
Page 32

ER Edge Rd
59.5 62.5 65.7 65.7
283 267 237 203

63.5 64.2 63.1 61.9 61.0 61.3 59.9 56.3 54.9 50.7 45.1 42.4 39.5
192 183 155 129 128 117 112 84 66 39 25 18 00

50.0 56.5 60.9 61.8 60.3 59.4
296 276 249 211 184 176

ER.
58.3 58.7 54.5 53.1 51.7 50.4 47.5 45.2 42.5 41.9 39.2 36.3
157 144 120 108 98 75 64 37 25 20 17.0 00

49.7 53.3 55.1 56.9 54.9 52.9 51.3 48.5 46.9 45.7 43.7 41.3 39.9 33.9
266 25.4 238 195 141 111 100 86 60 57 45 38 26 00

50.7 52.7 53.2 54.1 53.5 50.5 50.5 47.9 44.5 42.3 38.9 31.3
250 242 209 192 140 135 112 100 70 56 33 00

7/25/18 July Estimate

Estimate Etc. Spillway

	+	HI	−	Elev
T32	3.9	74.32		70.42

Lt ℄ Rt

2+90 00 00 00

3+00 3.9/70.4/18.8 3.9/70.4/9.0 5.1/69.2/6.8 5.6/68.7/00 5.0/69.3/7.5 3.8/70.5/7.8 4.0/70.3/18.8

TP 5.6 72.3 7.6 66.7

3+20 1.9/70.4/18.8 1.5/70.8/11.0 4.1/68.2/6.8 4.8/66.7/4.0 5.6/65.7/00 3.8/68.5/10.0 1.7/70.6/13.4 1.9/70.4/18.8

TP 5.6 72.2 5.7 66.6

3+40 1.9/70.3/18.8 1.8/70.4/10.2 4.4/67.8/7.5 5.6/66.6/00 6.0/66.2/5.8 5.6/66.6/11.0 1.8/70.4/18.7

TP 5.6 64.9 12.9 59.3

3+60 Concrete wall 00/64.9/19.0 5.0/59.9/19.0 5.6/59.3/5.0 6.6/58.3/00 5.6/59.3/13.0 3.6/61.3/17.0 Concrete 19.0

TP 5.6 62.4 8.1 56.8

3+80 Concrete wall 18.8 3.8/58.6/14.0 4.2/58.2/5.0 5.6/56.8/00 4.5/57.9/2.0 4.9/57.5/10.0 0.4/62.0/17.8 Bottom wall 18.8

TP (about Bottom Spil) 5.6 62.4 5.6 56.8

4+00 69.8/19.7 −/68.8/17.7 1.6/60.8/17.3 4.6/57.8/12.0 4.6/57.8/3.0 5.6/56.8/00 5.0/57.4/11.0 1.0/61.4/18.5 −8.9/70.3/18.5

4+00 Same as above with 1.0/61.4/18.5 67.9/22.5 74.4/23.0

TP 5.6 59.6 8.4 54.0

4+20 69.3/20.8 3.3/56.3/13.8 3.7/55.9/6.0 5.6/54.0/00 5.3/54.3/10.0 5.8/53.8/16.0 4.4/55.2/21.0 67.−/30.0

Bub

Lt ℄ HI Rt

59.6

TP 5.6 58.3 6.9 52.7

4+40 65.4/22.5 7.4/54.9/20.0 4.0/54.3/6.0 5.6/52.7/00 7.7/50.6/8.0 6.8/51.5/14.0 5.0/53.3/19.0 6.5/51.8/27.0 00/58.3/38.0

TP 5.6 57.9 6.0 52.3

4+60 63.4/23.8 57.9/22.8 58.9/19.8 3.5/54.4/18.5 5.3/52.6/14.0 5.6/52.3/00

TP 5.6 55.7 7.8 50.1

4+80 3.0/52.7/15.5 5.2/50.5/13.0 5.6/50.1/00

Copied Page 70 Book "Estimates"

7/30/18

47

At E 11

Rug East 75' set B 11.

At B 11 Sight E11 for 270° Azimuth

Auxil Point	377.5	60°34'			
DM		2.91	6504		6213
Auxil Point				427	60.77

H.I. 5.2

6597 At Auxil Point 60.77

		Dist.	Azimuth			
~~Rod 8'~~ ~~58~~						
Rod 6' 60	✓	8.5	254°-15'	62 ✓	5.8	321
	✓	9.7	303° 45'	✓	16.0	340
	✓	9.7	310°	✓	15.2	333
	✓	9.2	310°	✓	14.6	323
	✓	8.4	302°	✓	13.1	317°-30'
	✓	7.4	302°	✓	13.8 Concrete	313°
60	✓	5.1	273°	✓	10.2 Concrete	283°

6597			At Auxil Point			60.77
62	✓	Steel 10.3	260	64 ✓	7.0	352°
	✓	Steel 12.9	241	✓	6.8	7°
	✓	11.0	264	66 ✓	19.6	118°
	✓	Concrete face 12.2	270°	✓	17.0	122°
	✓	13.0	292°	✓	16.1	127°
64	✓	Concrete Face 12.4	285°	✓	13.9	121°
	✓	steel 11.4	284°	✓	12.5	118°
	✓	Steel 11.2	259°	✓	11.1	107°
	✓	11.2	287°	✓	6.4	70°
	✓	Concrete face 10.4	285°	✓	5.5	46°
	✓	Cor. in Concrete 18.1	326°	✓	7.4	8°
	✓	19.9	337°	✓	10.4	8°
	✓	20.3	342°	✓	14.0	353°
	✓	18.9	347°	✓	15.2	352°
	✓	15.2	345°	✓	16.2	350°
	✓	11.1	349°	✓	16.3	353°
	✓	9.1	349°	✓	21.0	351°

7/30/18

6597 At Auxil Rapt.

✓	22.1	349
/	23.5	349
/	22.6	346
/	Concrete 22.9	342°
/	Cor. Concrete 18.1	326°
/	11.0	295°30'
/	Steel 11.8	293°
/	Steel 12.4	299°
/	Face Concrete 13.4	297°

H = 5.1 8/7/18 Pat Bob

630 At B15-15W 579

Rods 58	436	Corner 133°	✓ 6	27.3	173.30	✓ 6	32.7	165	
✓ 58	408	138-30	✓ "	25.4	166-30	✓ "	31.5	167-30	
✓ "	39.4	145	✓ "	27.4	162-30	✓ "	28.1	166	
✓ Vent 5' "	39.1	150-45	✓ "	30.0	154-30	✓ "	26.6	167-30	
✓ "	Vent 7' 40.2	153-30	✓ "	40.1	161-30	✓ "	27	172-45	
✓ "	28.3	138-30	✓ "	Vent 7 40.2	153-30	✓ "	29.3	175-45	
✓ "	26.0	141	✓ "	Vent 5' 39.1	150-45	✓ "	29.9	185	
✓ "	26.5	149	✓ "	39.2	144-30				
✓ "	24.9	152-30	✓ "	44.3	134-45				
✓ "	23.8	162-15	✓ 6						
✓ "	Vent 4' 26.2	168-45	✓ 6	Corner 45	137				
✓ "	25.6	183	✓ 6	40.2	144				
✓ "	25.5	192-30	✓ 6	Vent 5 39.1	150-85				
✓ 60			✓ 6	40.2	153-30				
R=8° 60	27.7	192	✓ "	39.4	166				
✓ 60	Vent 3' 29.6	181	✓ "	42.4	169-30				
✓ "	29.2	176							

8/13/18

Final Topog

At A11 - 21.85 'S

#1
369.26

60	13.5	210°-30	60	31.5	240°
	12.7	222°	6" R.C.	286	232°
	10.6	247°		308	225°30'
	135	246°		32	222°
	141	221°-30'		29.1	222°
	17.3	209		25.5	220°
	18.7	208°		234	226-30
	204	211°30'		212	229°
	230	220°-30'		208	228-30'
	287	216°30'		20.0	236°
	321	216°30		225	237°-30
	340	219°	6" Ring	264	237°30'
	353	223°	Top Rock 363.4	24.3	233°
	277	240°30'	263.3	264	228°-30
	290	242°30'	Continued next page		

At A11 - 21.85 S

364	19.6	303°-30		345	262-30
"	23.3	301-30		37.3	261
	24.8	297-30	364	386	261-30
	26.3	297-30	366	383	270-30
	28.1	289-00		360	270-30
	29.9	284-30		357	273-30
	26.7	279-30		39.5	273
	266	275-30		424	275-30
	280	270-30		433	278
	26.7	265-30		46.2	277
	27.3	260		443	288
	27.3	258-30		37.6	291
	28.5	253		361	293-30
	30.2	253		357	295-30
	30.6	255-30		335	298
	31.8	256		304	298
	33	261-30	366	257	306

8/3/18

At A11 - 2185 S

362	27.5	253	64	16.5	308-30	
	25.4	257-30				
	24.7	264	See page 50			
	25.6	267	for balance of			
	20.6	269-30	Contour 64			
	21.0	274-30				
	19.5	278				
	20.9	293				
	16.1	298-30				
	13.9	299 30				
	11.0	304-30				
	17.8	314-30				
362	Vert for 10' 13.0	339-30				
364	Vert 9' 13.0	340-30				
	13.9	333-30				
	13.1	331-30				
	14.3	321-30				
	14.7	315-30				

At A11 - 2185 South 51

Contour 66 Cont from page 50

20.5	310	
18.5	319-30	
16.6	322-30	
16.7	334	

Next two shots same as lower Contour.

8/8/18

Continued from page 13

Sand Sections

Copied in Cabinet Book II Page 37

BM	1.00	95.89			94.89			
		7.0	4.5	4.7	7.0	10.6	16	
0+50		89.9	91.4	91.1	88.9	85.3	79.5	
		200	228	260	270	310	340	
0+75		10.0	7.8	8.7	12.0	17.7		
		85.9	88.1	87.2	83.9	78.2		
		200	248	275	300	325		
A Rock	3.90	86.86	12.93		82.96			
	40	3.6	76	2.1	2.0	3.9	5.4	10.1
1+00	ER 2.9	ER 3.3	84.3	84.8	84.9	83.0	81.5	76.8
	1+90	2+00	225	248	262	290	300	324
		7.7	5.6	7.9	10.7	15.0		
1+25		79.2	81.3	79.0	76.2	71.9		
		200	247	285	300	320		
		12.3	14.2	10.5	9.6	10.0	13.0	18.0
1+50		74.6	74.6	76.4	77.3	76.9	73.9	68.9
		174	182	200	218	234	288	329
	0.67	95.56			94.89			
	385	86.94	12.57		82.99			

H.I. 525 Aug 15 1918 Mixter Sub

64.99 At C 12 5974

R=5

60	Pier 289	4-30	60 RC	16.5	7°
"	212	7-30	" "	17.4	6-30
"	209	11-30	" "	19.3	00
"	185	13-15	" "	18.7	359
"	181	21-15	" "	19.1	355
"	180	27-15	" "	191	349
"	190	34-45	" "	164	352
			Top 60.4	17.3	4°
"	230	33.0	" 60.4	18.6	00
			R=3°		
"	284	45-45	RC 6 W	27.3	36-30
"	309	47-15	" "	27.7	39-30
"	321	47-30	" "	28.4	42
"	360	39°	" "	29.7	41
"	40	36-45	" "	29.6	38-30
"	Connect 405	38-45	" "	28.2	35-30
60 RC	16.9	00	Top 61.4	28.2	38-30
" "	175	3°			
" "	164	3°			

8/30/18

Set up on 227.12'R

Divide Wall Line - Sight on

325'R = 270° Azimuth

		6.75	368.88		362.13
360.8 = El. Foot of Wall					
End of Divide Wall	13.65	90° -	62'	14.6	72° 40'
End of Divide Wall					
359.8 '	13.9	76° 30'	66'	21.5	67° 30'
359.8 '	9.3	66°	" '	20.4	55° 50'
360. '	11.2	52° 15'	" '	19.5	49°
364.2 '	15.0	39° 20'	" '	17.4	34° 20'
64 '	18.1	69° 10'	" '	18.6	26° 50'
" '	18.4	57° 15'	" '	19.9	17° 20'
" '	16.0	48° 30'	" '	23.7	6° 30'
" '	15.8	45° 15'	" '	26.4	358° 30'
" '	15.0	41° 15'	" '	30.1	352° 45'
62 '	13.1	44° 30'	" '	31.8	351° 45'
" '	15.2	52° 20'	" '	34.3	350°
" '	16.7	62° 30'	" '	36.6	350°
66 '	37.3	348° 30'	67 '	20.3	45° 10'
" '	40.5	347° 30'			
" '	41.5	349°			
" '	44.5	348° 30			
" '	47.1	347°			
Concrete '	47.1	345° 30'			
Concrete 67 '	47.1	345° 30'			
" '	42.8	346° 40'			
" '	44.4	348° 40'			
" '	39.8	349° 50'			
" '	37.1	351°			
" '	32.5	353° 30'			
" '	28.3	357° 30'			
" '	23.6	10° 30'			
" '	19.4	27° 30'			
" '	18.0'	30° 10'			
" '	18.5'	38° 50'			

8/20/18

69.82 at C12 5974

Set auxiliary point 47.6' with 25°06' Az

C12 59.74

Rod 7.8 10.08 69.82

62	/	5.7	153°45'	64	/ 15.1	254°30'
"	/	5.5	168°20'	"	/ 12.9	250°30'
"	/	7.7	188°20'	"	/ 9.5	252°50'
"	/	9.7	213°15'		/ 8.1	257°
"	/	11.5	224°		/ 6.8	253°
"	/	12.3	248°		/ 3.3	249°
"	/	17.9	256°45'		/ 3.6	237°40'
"	/	21.8	259°30'		/ 3.8	199°30'
"	/	25.2	263°10'		/ 4.0	180°30'
64	/	26.1	265°30'		/ 5.1	173°20'
	/	23.3	267°30'		/ 5.0	152°30'
	/	20.2	270°30'		/ 3.9	123°30'
	/	19.6	262°30'	62	/ 15.0	192°15'
	/	16.0	260°			

9-16-18

6.5
18.03
24.53

At E 11

Set pt. on random line 24.53'

Azimuth 45°32' – from which –

		+	H.I.		Elev.
C 12 –		11.40	71.14		59.74
Rod 13.14		Face Curtain Wall	11.14		
58	✓ 10.0	160°30'	60 ✓	27.8	95°30'
	✓ 10.0	151°30'	✓	24.0	95°15'
	✓ 9.3	143°45'	✓	23.1	91°
	✓ 12.4	132°15'	✓	25.1	78°30'
	✓ 11.9	124°	✓	24.4	77°30'
	✓ 13.5	113°	✓	25.0	74°45'
	✓ 16.3	105°45'	✓	21.0	73°30'
	✓ 15.7	91°45'	✓	16.4	68°15'
	✓ 18.3	90°15'	✓	14.1	72°30'
	✓ 20.6	94°30'	✓	13.8	90°30'
	✓ 23.0	92°45'	✓	9.0	101°45'
	✓ 23.2	94°15'	✓	5.7	110°
	✓ 27.8	95°30'	✓	6.6	142°30'
Rod 9.1					
62	✓ 6.6	49°			
	✓ 8.3	53°45'	64 ✓	27.3	70°
	✓ 8.6	61°15'	✓	26.9	68°30'
	✓ 10.3	62°30'	✓	29.0	57°45'
	✓ 11.7	53°	✓	23.3	45°15'
	✓ 13.1	55°	✓	20.0	54°30'
	✓ 17.3	63°	✓	18.4	53°
	✓ 26.4	68°	✓	17.5	56°
	✓ 25.4	74°	✓	16.0	51°
	✓ 25.1	92	✓	Face Curtain Wall 9.0	40°15'
	✓ 27.8	95°30'	66 5.1 ✓	9.0	343°15'
7.1					
64	✓ 35.0	90°30'	✓	8.6	3°
	✓ 33.5	93°30'	✓	10.5	31°
	✓ 32.5	88°	✓	15.4	47°
	✓ 26.4	92°45'	✓	18.0	49°
	✓ 25.9	92°45'	✓	18.5	46°45'
	✓ 25.1	83°30'	✓	20.0	48°
	✓ 26.1	74°30'	✓	24.0	43°15'

66	✓	27.9	42°		✓	38.9	87°30'
	✓	32.0	53°		✓	41.5	88°
	✓	31.0	54°	Rd 3.5 67.6	✓	High Pt. 33.5	80°30'
	✓	29.4	59°30'	3.1 68	✓	38.9	59°
	✓	32.7	63°30'		✓	35.7	58°30'
	✓	30.2	66°15'		✓	34.0	57°
	✓	29.7	71°		✓	32.5	50°30'
	✓	31.6	75°30'		✓	28.1	38°45'
	✓	28.5	73°45'		✓	24.9	41°30'
	✓	27.4	75°15'		✓	23.1	39°45'
	✓	25.5	84°30'		✓	20.9	42°45'
	✓	26.7	84°		✓	20.0	39°30'
	✓	28.3	79°45'		✓	18.0	43°30'
	✓	31.4	81°30'		✓	15.5	40°30'
	✓	33.3	80°		✓	12.1	28°30'
	✓	35.9	85°30'		✓	10.4	0°30'
	✓	37.0	88°30'		✓	11.3	350°15'

Rd. N. ~~70~~	✓	8.2	337°15'	✓	7.4	316°
	✓	6.7	309°	✓	7.6	327°15'
	✓	6.0	249°	✓	13.7	349°30'
	✓	9.1	234°	✓	12.4	9°30'
	✓	13.1	231°15'	✓	13.7	21°30'
	✓	17.4	217°30'	✓	14.9	"
	✓	19.0	217°	✓	15.1	24°30'
	✓	22.3	211°30'	✓	14.7	26°30'
	✓	28.4	208°45'	✓	20.6	28°45'
Rd 1.1 70	✓	27.6	209°30'	✓	23.1	34°
	✓	25.0	213°30'	✓	23.6	36°30'
	✓	22.0	214°30'	✓	25.4	34°
	✓	19.3	219°15'	✓	29.5	37°30'
	✓	15.7	225°45'	✓	34.2	52°30'
	✓	14.8	234°30'	✓	36.0	54°30'
	✓	10.2	234°30'			
	✓	5.7	252°30'			

9/25/18

E 11		3.28	377.74		374.46
Auxl. Pt.				11.54	366.20
	At Auxl. Pt. See page 56.				

H.I. 66.2 / 5.2 / 71.2

Rd 11.2 / 6.0

	11.3	94°45'		23.9	86°
	13.4	69°15'		25.0	94°
	15.1	62°30'	Rd 9.2 / 62	25.0	94°
	17.2	66°45'		24.3	85°30'
	20.0	65°30'		25.8	74°
	20.9	57°30'		25.4	72°
	21.9	59°		27.5	63°30'
	21.2	60°45'		26.9	61°30'
	24.3	62°		25.5	58°30'
	25.3	65°		23.5	56°
	26.9	66°		21.1	54°
	24.5	77°45'		19.7	52°

62	18.1	52°		28.5	58°30'
	15.2	52°30'		27.8	62°
	11.7	48°15'		28.6	63°30'
	10.4	42°45'		27.9	64°15'
	9.7	43°30'		26.7	69°45'
	8.9	50°		27.1	72°
	Concr. 6.9	50°		25.9	76°30'
Rd 72 / 64	8.7	38°	Rd 5.2 / 66	27.6	73°30'
	8.8	35°30'		29.4	72°30'
	9.2	30°30'		29.3	70°
	12.4	38°30'		30.1	66°
	13.5	43°15'		33.0	65°30'
	16.9	49°30'		30.9	62°
	18.1	52°		29.2	62°30'
	20.6	51°		32.1	52°30'
	24.0	44°30'		27.5	43°
	26.4	48°		22.9	42°

9/25/18

dec = 5°

66	✓	18.6	48°
"	/	14.7	38°45'
"	/	9.9	28°
"	/	9.2	343°
"	/	6.0	313'

9/30/18 — Willamb Bub — 60

Set pt. 23.81' distant, Azimuth 56°40'

from	17					
B.M. 3A		0.51	373.17		372.66	
△				7.07	366.10	
		3.34	369.44			
Rod 11.4						
58 ✓	19.3	56°45'	58 ✓	16.6	14°30'	
✓	18.2	61°	✓	20.4	9°15'	
✓	17.3	49°	✓	20.9	346°	
✓	15.5	40°30'	58 ✓	23.9	345°	
✓	13.0	36°45'	58 ✓	24.4	21°	
			Rod 9.4			
✓	13.5	33°45'	60 ✓	18.6	6.6°	
✓	11.3	21°30'	✓	16.3	63°	
✓	6.6	44°	✓	14.3	52°30'	
✓	6.8	29°	✓	11.4	53°15'	
✓	12.5	14°	✓	9.0	70°	
✓	12.3	350°30'	✓	11.5	94°	
✓	14.6	351°30'	✓	11.5	107°30'	

✓	12.4	113°30'	✓	17.4	115°15'
✓	11.9	115°	✓	16.5	108°30'
✓	12.7	125°	✓	13.5	109°
✓	9.5	123°	✓	11.6	91°
✓	6.0	120°	✓	12.4	73°30'
✓	5.7	11°	✓	11.3	65°
✓	9.4	345°30'	✓	14.3	64°
✓	11.5	342°30'	✓	16.6	64°
✓	12.7	341°	✓	18.5	66°
Rod 7.4					
6.2 ✓	12.7	341°	✓	20.8	62°30'
✓	5.1	108°30'	✓	22.0	61°30'
✓	14.7	150°30'	✓	23.8	67°30'
✓	16.4	150°	✓	22.2	74°
✓	17.9	144°	✓	24.1	78°
✓	21.1	135°	✓	23.0	91°30'
✓	21.5	122°30'	✓	23.4	101°30'
✓	21.5	116°30'	✓	23.5	95°

9/30/18

62 Rod 5A	31.4	89°	Top. 65.4	15.0	101°30'
64	31.5	89°30'	64	22.0	119°30'
	23.9	94°30'		22.0	126°
	23.6	101°15'		21.9	132°15'
	20.1	104°		18.9	145°30'
	Ring 17.1	100°30'		Conc. 16.1	154°
	16.8	81°			
	14.9	66°			
	12.3	63°45'			
	11.4	65°30'			
	~~10.8~~	~~72°15'~~			
Ring	12.5	72°			
	12.2	83°15'			
	14.1	89°			
	13.5	103°30'			
	14.8	107°15'			
	15.1	104°			

10-3-18

Checking Forms D.S. Face Overflow

Section -

B.M.		2.76	375.42		372.66
T.B.M.	Check.			9.32	366.10
A		6.		6.53	368.89
		5.02	373.91		
Lower forms				7.26	366.65

Lower forms = El. 66.6 = R 225.8

225.8 + 2.1 = 227.9 = El. 369.17

Rod = 4.74

		4.44	373.33	368.89
Bottom.			4.99	366.54
	Rod to top =		4.16	

Diff. in radius = El.

2.1	69.17	4.16
2.2	69.29	4.04
2.3	69.41	3.92

Distances paced.

10/10/18

Profile - Curtain Wall to Sand Deposit

B.M		2.02	374.68		372.66
Low point in Curtain Wall	0+00			9.55	65.13
25' above Cofferdam W.S.	2+70			7.50	67.18
		5.33	72.51		
	5+55			4.7	67.8
	Δ			3.77	68.74
		10.13	78.87		
40' below W.S.	Sump Dam				
	8+70			10.65	68.2
10' above Sump Dam W.S.	9+30			10.15	68.7
Sand Wash. Plant W.S	1370			7.4	71.5
		5.32	76.82		
	1570			3.9	72.9
	1670 Δ			2.85	73.97
		4.56	78.53		
	1770			4.45	74.1
	1870			4.3	74.2
	1930	Edge S.S. pit		3.6	74.9
	1940	W.S. in S.S. pit.		6.15	72.4

Note 11/27/18

60 batches placed in bottom -

1 set Derrick weights

Take topog over Concrete

and add above amount.

Wilcomb

Bus - Winter 11/29/18

Measure 11.44 East from E11

to Edge of top of Vert Wall

Bottom of Wall is at 13.39

$11.44 + 1.5 + 27\frac{35}{} = 40\frac{29}{} = D10\text{-}15\frac{29}{}E$

$11.44 + 15 + 12.06 = D11$

	+	24	-	E/c.
B.M.	596	78.62		37266
T.B.M. Top Bolder in old Conc Wall -		024		78.38
D10 $15\frac{29}{}$E		936		69.26
D10		1103		6759

11/29/18

64

Measure 38.56 South from

D10-$15\frac{29}{}$E = D9 { 13.56 South / $15\frac{29}{}$ East

At D10 $15\frac{29}{}$E.

		I.H. 4.45	H.I. 73.71		69.26
Contour 69	1.7	26.1	280°	E.C.	40.3	71° 30'
		23.4	277° 30'	E.C.	41.0	69° 30'
		17.8	280° 15		41.2	71° 30'
		13.2	295°		47.6	74° 30'
		14.0	298° 30'		51.0	74° 45'
		13.2	307° 30'		52.7	77°
		12.7	331° 30'	E.C.	54.0	77° 15'
		15.7	332° 30'	Con.	55.3	80° 30'
		16.2	342°		56.5	81°
		16.4	344° 30'		56.2	83°
		13.3	21°	Steel	56.8	83° 30
		13.1	36° 30'	70	57.2	82°
Edge Conc.		18.5	41° 30'		56.3	82°

11/5/18

70	56.3	81°	70	19.9	330°
	55.8	81°		15.1	324°
	53.7	76°45'		16.4	317°45'
	52.4	73°10'		15.3	313°30'
	51.2	67°		16.1	300°30'
	45.8	66°		15.1	296°30'
	45.1	69°30'		19.3	293°
E.C.	43.5	66°30'		19.8	284°
Conc	40.1	71°45'	Bot. Cliff.	25.6	284°
E.C.	17.0	33°30'		26.0	278°
	13.7	25°30'		26.8	276°45'
	15.1	346°10'		26.5	267°30'
	17.6	347°30'		28.0	264°
	18.0	340°		30.4	250°
	21.0	341°40'		33.1	250°15'
	22.3	339°30'		34.4	247°15'
	19.0	335°		38.3	244°30'

70	38.5	242				
Conc. step 70.9	42.9	235	} Wall 1.3 thick			
U/S Face of Dam 70.9	39.8	231°30'				
70	43.4	233°	72	27.2	271°	
72	48.5	232°30'		26.6	272°30'	
	46.3	231°45'		26.9	274°	
	45.0	234°15'		25.3	284°45'	
	42.5	236°30'		25.9	286°30'	
	42.0	238°30'		22.3	289°	
	39.7	242°30'		23.5	295°30'	
	38.0	245		21.2	301°	
	35.0	246°30'		18.6	304°	
	34.0	248°		21.5	307°30'	
	32.8	250°15'		16.0	318°30'	
	30.0	250°		15.7	323°30'	
	27.7	265°		17.7	326°30'	
	26.8	267°		21.7	325°45'	

17/5/18

72	21.9	327°		51.0	71°15′
	25.5	329°		53.4	73°45′
	24.9	341°		52.9	75°48′
	26.9	342°30′		55.6	81°
	27.0	344°15′		57.0	81°15′
	29.7	345°			
	29.8	347°			
	— Gap —				
	15.0	347°			
	15.8	358°			
	16.7	14°30′			
	18.1	18°30′			
	19.0	25°15′			
	27.2	24°30′			
	31.0	21°0′			
	Gap				
	53.7	66°			

At D9 { 13.56 S / 15.29 E

		11.96	81.22		69.26
72 9.2	7.9	233°	72	9.5	47°30′
	5.3	213°		12.7	53°
	8.3	199°		14.6	62°30′
	11.1	189°		16.0	71°
	13.2	195		17.8	63°30′
	14.7	193		19.7	62°
	15.2	195		20.7	61°
	18.7	193°30′		28.1	76°
Depression 69.3	12.1	204°30′		29.9	79°30′
70	13.3	200°30′		30.8	92°30′
Depression Ring	12.5	209°30′		33.2	96°
	11.5	207°30′		36.0	96°
	13.0	200°		38.3	97°30′
72	13.3	116°30′		40.4	96°
	12.3	86°30′		42.7	99°30′
	12.0	81°		44.3	102°30′

81.22 17/5/15 81.22

72 /	46.0	104°30'	74 ✓	43.9	99°	74 /	17.4	61°45'	74 /	30.8	222°
/	47.5	105°30'	/	42.9	99°15'	/	15.1	56°45'	/	35.1	219°30'
/	50.4	104°	/	41.2	94°30'		– Gap –		/	37.2	217°30'
~~Steel~~ /	51.7	106°15'	/	40.5	91°15'	/	13.5	345°15'	/	39.4	216°30'
Ring /	30.6	102°30'	/	38.8	87°30'	/	11.6	338°	/	40.4	217°45'
/	29.0	106°	/	36.7	94°30'	/	12.1	330°30'	/	43.4	217°
/	29.6	109°	/	35.1	95°	/	11.1	326°30'	/	44.8	217°30'
/	34.0	111°30'	/	32.6	95°15'	/	10.0	312°30'	/	57.0	210°30'
/	36.2	112°	/	30.8	92°	/	8.2	289°	Ring /	19.7	191°
/	35.9	108°	/	30.2	79°	/	9.8	272°15'	/	21.6	189°
/	33.4	~~113°~~ 110°	/	29.2	77°	/	7.3	252°	/	20.4	181°30'
Top 73.5	32.8	109°	/	29.2	76°	/	12.2	234°	/	20.6	171°30'
74	52.1	106°	/	28.5	72°	/	15.1	218°	/	18.7	171°30'
/	50.1	102°15'	/	25.4	67°	/	20.9	220°		19.3	179°45'
/	46.9	101°45'	/	~~21.5~~	~~61°~~	/	24.3	223°30'		18.2	184°30'
/	46.4	100°30'	/	20.0	56°30'	/	26.6	227°	Top 74.8 /	20.1	190°
/	44.9	100°15'	/	19.0	61°30'	/	29.1	225°15'	74 Ring /	10.1	180°45'

81.7 W

12/5/15

74 Ring	15.3	151°	76	1.0	96°	80	19.4	252°30′	80	21.8	343°30′
	12.9	138°	End Ring	2.6	175°	"	19.1	266°	"	20.6	357°
	10.0	107°30′	78 +80	39.4	218°30′	"	18.2	273°30′	78	20.5	346°
	8.3	98°30′	+80	29.7	229°30′	78	15.2	261°45′	"	19.3	352°
	9.0	79°	~~80~~	28.3	227°	"	15.6	267°30′	"	19.8	357°
	5.4	30°	80	28.2	229°	"	14.6	277°15′	78	22.5 Sat	23°
	7.1	331°	78	26.2	230°30′	"	15.2	288°30′	78 +80	21.4	27°30′
	3.9	312°	80	27.2	228°30′	80	19.9	290°30′	"	21.2	37°
	3.7	238°	"	26.2	231°45′	"	21.4	304°	"	20.3	43°30′
	6.9	204°	78	24.5	230°30′	"	21.2	312°	"	20.6	50°30′
End of Ring	8.6	194	80	24.7	232°	78	16.2	295°	"	21.1	58°30′
76	6.4	189°30′	78	22.5	233°30′	"	16.5	307°	"	24.5	66°
Ring	5.1	185°30′	"	20.5	235°30′	"	19.0	312°30′	"	28.3	71°
	5.7	193°30′	80	23.8	234°15′	"	16.6	320°	78	30.2	77°
Ring	1.0	254°	78	18.2	238°30′	"	17.7	333°30′	80	29.7	74°30′
	3.0	328°	80	20.7	246	80	18.9	326°	78	30.5	80°30′
	2.6	30°	78	17.1	260°	"	20.4	334°	"	31.7	86°45′

12/5/15

78	38.1	70°45'	80	52.2	104°
"	38.1	79°15'	"	51.2	99°
"	38.7	81°15'	"	49.3	98°45'
"	45.5	88°30'	"	48.0	97°15'
"	48.2	97°	"	50.1	97°
"	49.0	99°15'	"	49.7	94°30'
"	48.9	100°30'	"	48.2	"
"	51.3	100°45'	"	46.1	89°
"	52.7	106°15'	"	43.5	86°
"	57.7	105°30'	"	39.9	81°30'
"	58.9	110°	"	39.2	75°30'
"	60.2	112°	"	39.2	70°
" steel	61.5	112°	— Sat —		
80 steel	60.1	108°15'	Set point	33.92'	
"	58.7	108°15'	Azimuth 72°07'		
"	57.7	105°15'			
"	54.7	105°30'			

Sta 83.12

At Auxil Point

			81.22	2.10	79.12
		I.H. 4.00	83.12		
				~~2.7~~	
80	2.7	328°			
	6.5	340°			
	9.8	351°			
	6.5	7°			
	4.4	25°			
	5.1	56°			
	4.9	88°			

Sta. 79.46

At E 11 —

		I.H. 5.0	79.46		74.46
70	8.2	150°	72	7.6	191°
				6.8	181°
	7.4	165°		6.6	174°
	8.2	172°		4.9	164°
	8.6	183		5.2	135°
	7.7	191			
72	6.3	198°	74	3.0	224°

12/5/15

74	3.8	211°		2.8	310°
	3.2	185°	78	7.0	347°30′
	1.6	150°		9.8	23°30′
	1.7	90°			
	2.9	49°		11.2	26°
	4.0	60°		12.0	30°
	8.2	36°		15.2	28°30′
	11.5	31°		18.0	35°
	12.5	34°		18.7	34°30′
	15.2	29°30′		19.9	35°30′
	18.0	37	80	20.3	34°30′
76	"	"	"	18.1	30°
	15.4	28°30′		16.9	29°30′
	12.7	33°30′		14.8	20°30′
	10.6	25°30′		12.6	5°
	4.8	48°			
	2.7	39°			
	2.4	358°			

12/6/18 Willcomb, Bob Mixter

At D9- { 13.56 S, 15.29 E

T.B.M.		200	80.38		78.38
76	Steel 62.4	114°30′	76	42.9	86°
"	61.3	115°		40.7	89°30′
	60.5	113°30′		39.2	88°15′
	55.8	114°45′		38.4	83°30′
	52.0	106°30′		38.1	80°30′
	51.8	104°30′		35.0	86°45′
	50.1	102°30′		33.2	85°30′
	50.0	101°30′		33.2	90°30′
	47.1	101°30′		33.5	90°30′
	46.3	99°30′		32.9	94°15′
	45.6	96°15′		31.3	93°15′
	47.1	96°		31.0	87°15′
	45.8	89°15′		30.5	86°30′
	44.7	87°15′		30.1	77°
	38.4	81°	Cont. on Page 74		

11-30-18

Willcomb
Bulo
Mizter

At D10 { 13.56 S
15.29 E

		2.36	80.74		78.38	80 0.7	21.0	347°
72 8.7	✓	13.8	87°	74	~~12.0~~	~~30°~~		353°30'
	/	11.9	82°		~~13.4~~	~~2°~~		357°
	/	10.8	72°30'		~~12.6~~	~~353°~~		2°30'
	/	9.5	52°		~~13.9~~	~~349°30'~~		5°
	/	13.5	50°30'		~~12.5~~	~~331°~~		2°30'
	/	14.5	64°30'	76 4.7	~~17.6~~	~~352°~~		14°
	/	16.2	72°		~~21.2~~	~~5°30'~~		20°
	/	16.9	62°		~~20.5~~	~~14°15'~~		
	/	19.2	63°		~~22.4~~	~~23°30'~~		
74 6.7	(	17.5	60°30'	78 2.7	~~24.7~~	~~17°~~		
	✓	14.8	50°30'		~~23.8~~	~~13°~~		
	✓	14.7	43°		~~22.0~~	~~7°~~		
	✓	17.8	38°		~~22.2~~	~~3°~~		
		~~20.4~~	~~27°~~		19.9	356°30'		
		~~17.3~~	~~21°30'~~		19.5	350°30'		
		~~15.2~~	~~31°30'~~		20.8	346°		

Willcomb
Bub
Mixter

12-5-18

At D10 { 13.56 S
15.29 E

B.M.		2.47	80.85		78.38	78	17.3	332°	
						80	18.9	327°30'	
74	20.3	38°30'	76	23.6	355°		20.4	332°30'	
	21.5	27°30'		25.6	358°30'		27	354°	
	20.9	23°		28.0	8°		27.9	354°45'	
	18.2	23°		26.6	12°		30.6	2°30'	
	13.6	25°		26.1	14°		28.1	7°30'	
	13.5	30°30'		24.8	14°30'		26.5	14°	
	12.6	7°30'		23.1	20°30'		23.4	20°	
	15.4	6°30'	78	23.1	20°30'				
	18.1	11°		26.2	14°30'				
	17.3	2°		28.0	7°45'				
	14.5	4°		30.0	3°15'				
	12.9	355°30'		27.8	355°45'				
	13.7	349°30'		25.6	355°				
76	16.6	343°30'		22.3	347°30'				
	17.3	349°		19.2	339°				

Willcomb 30 b Winter 12/5/18

Set on E-11 - Set point

93' feet, azimuth 80°14'

On Auxiliary Point - Jerrick Tier

B.M.		0.92	79.30		78.38
68	steel 15.2	5°45'	72	27.1	23°15'
	Conc. 15.6	7°15'		25.4	32°15'
	Conc 17.6	8°30'		27.3	43°30'
	Conc. 19.7	12°30'	74	27.0	31°15'
70	23.7	33°30'		28.1	42°15'
	24.2	23°30'		28.6	25°30'
	Conc. 24.2	15°		29.0	21°30'
	Conc. 18.3	10°15'		Conc. 29.6	16°15'
	Conc 16.6	6°45'		Conc 24.7	15°
	steel 16.5	4°45'		Conc 22.9	6°30'
72	17.2	5°15'		Conc 19.4	7°15'
	17.9	8°30'		steel 18.8	5°30'
	18.8	6°15'	76	steel 21.6	4°30'
	26.4	15°30'		conc. 23.2	6°15'
76	Conc 24.0	4°30'		Conc 33.1	5°30'
	Conc 29.6	6°15'		Conc 32.6	9°15'
	29.5	20°15'		Conc 31.5	9°
	30.6	22°45'		Conc 30.5	6°
	28.1	27°		steel 26.1	3°45'
	28.3	30°	80	steel 31.3	3°15'
	29.4	39°30'		31.4	4°30'
78	31.3	29°30'		32.6	5°
	31.4	36°30'		(Str. up for 7') 36.2	10°50'
	31.7	24°15'		34.1	11°30'
	31.0	22°		33.4	16°
	30.6	21°		30.8	20°10'
	29.7	20°15'		33.4	23°
	31.4	14°		32.5	25°30'
	33.8	14°		32.6	30°
	33.9	11°30'			
	36.4	11°			

12/6/18

Continued from Page 70

			80.38		
4.4 76	24.6	69°	76	15.5	230°
	24.0	65°45'		18.5	222°30'
	21.9	63°		19.4	228°30'
	21.0	57°30'		21.0	223°30'
	20.6	49°		22.8	227°30'
	20.0	42°45'		24.7	230°
	21.0	35°45'		26.4	229°
	21.7	25°30'		27.9	226°30'
	—Gap—				
76	16.4	343°		29.6	226°30'
	13.4	338		33.0	222°30'
	12.6	320°30'		36.0	220°30'
	11.7	307°30'		39.5	217°30'
	13.5	299°30'		41.9	218°30'
	12.9	286°30'		43.7	217°15'
	12.0	248°	Good for 80	44.4	218°
	12.6	247°		56.8	210°45'

0.4 80	~~54.2~~	211°30'
	39.0	218°30'

Set point 16' - 17°49'

At Auxiliary Point

		0.92	79.30	78.38
5.3 12+74	54.1	123°10'		
12+74	60.5	129°45'		
74	63.9	127°45'		
74	67.0	131°		
74	67.7	130°15'		
72	61.5	130°50'		
72	67.2	131°40'		
72	68.4	131°10'		

Willcomb
Bob

12-15-18

ATC16-9' East

Sta. 3+85.12	Inspection	Gallery		363.67	
	8.56	372.23			
6.23 66-68	19.1	150°15'	64 to 68	27.8	240°
66 to 68	18.4	158°30'	64 to 68	29.5	252°
64 to 66 to 68 to 70	25.8	168°30'	64 to 68	29.9	255°30'
64 66 to 68	25.9	170°30'	corner cut 66 Concrete	30.7	258°
64 66 to 68	26.9	172°	(66.2) Concrete	30.1	274°
64-66 to 68	28.1	182°45'	64	31.9	261°30'
64 to 66	27.9	187°	66	31.2	259°30'
64 to 78	33.1	202°	68	31.8	258°15'
64 to 74	33.1	206°	64	34.9	264°30'
64	30.3	212°30'	66	35.8	261°
66 to 80	31.3	212°30'	68	36.1	259°30'
64 to 78	30.5	219°	64	42.4	265°45'
64 to 68	30.4	225°30'	66	43.4	260°30'
64 to 66	27.9	232°	68	43.4	259°
64 to 68	28.7	235°	70	42.9	256°

AC16-9' East

70	34.7	258°	72	27.5	172°
	31.3	257°30'	68	26.3	169°
	30.2	255°30'	70	27.2	169°
	29.9	248°30'	72	27.6	169°
	28.9	244°30'	70	18.5	159°
70 to 72	28.7	242°	72	19.0	160°
70 to 72	29.4	237°15'	70	19.0	151°
70 to 72	29.1	231°15'	72	19.1	154°
70 to 72	30.9	225°30'	68 to 74	21.9	139°
68 to 74	29.0	186°15'			
68	27.8	182°30'			
70	28.5	181°30'			
72	28.3	181°30'			
68	26.7	175°			
70	27.1	175°			
72	27.3	175°			
68	27.3	172°			
70	27.3	172°			

On E 10-

H.I = 4.3

T.B.M.		12.07	390 45		378.38
A		7.38	393 32	4.51	385.94
13.3			11.3		
80	12.1	156°30'	82	23.6	47°
	13.2	144°		21.8	48°30'
	13.0	128°		19.5	56°
	13.3	122°		16.3	57°
	12.7	76°		14.3	68°
	14.0	69°		12.2	86°30'
	18.6	61°30'		13.1	118°30'
	22.3	49°		12.5	127°45'
	23.5	46°30'		12.6	134°30'
	28.0	44°30'		10.4	146°30'
	29.2	44°		10.6	155°30'
82	28.6	40°30'	84	8.4	147°30'
	27.4	40°30'		9.1	137°
	25.6	42°		10.9	127°
84	11.7	108°		9.9	108°
	11.7	99°		7.6	117°
	12.4	80°30'		7.2	146°30'
	13.0	71°	88	5.6	116°30'
	13.6	68°30'		6.8	90°30'
	18.6	47°		8.3	76°
	21.2	46°30'		11.4	72°30'
	22.8	43°		15.5	56°30'
	24.3	45°		18.0	45°30'
86	24.1	44°30'		21.2	38°30'
	22.0	39°45'		23.9	44°15'
	20.9	41°			
	17.8	52°			
	14.8	65°30'			
	14.3	66°30'			
	12.6	68°30'			
	11.6	89°			

19.5
61.57
81.07

At E 10 -

Set point Azimuth 46° 03' - 81.07'

on ledge near foot of stiff-leg derrick.

HI = 4.9
389.12

At Auxil point set from E10

TP top forms.		318	389.12			385.94
Rod 7.1						
82	6.0	91°15'	R5.1 El 84.0	87	77.0	306°
Top Concrete for Derrick						
82	10.4	43°			73.0	300°45'
"	9.2	142°15'			23.4	293°
"	8.2	160°			25.4	281-15'
"	5.9	171°30'			27.0	277°
"	5.0	198°45'			28.0	270°45'
"	4.4	217°10'			34.0	265°30
"	5.4	240 30			33.0	264-30'
"	5.4	264-30			35.4	262°45'
"	7.2	274-30			35.0	262.45
"	17.2	311-45			37.6	259°
"	19.7	311-15			38.8	254-15

Hi. 49

At Auxil Point from E10.

82	41.0	244°		84	4.8	194
82	43.4	237.15		84	1.50	201
"	48.2	231-30		"	38	235
"	49.2	231-35		"	7.2	278
"	51.4	229-30		"	16.7	313-30
"	53.7	229-15		"	20.7	309-30
"	55.4	227-30		"	23.7	301-45
				"	25.4	292-45
R 5.1						
84	12.2	70-30		"	27.2	285.0
"	11.5	62-45		"	28.7	272-15
"	11.4	54-30		"	33.2	268-45
"	10.2	46-15		"	35.9	263
"	13.7	12-30	Vert 7' Corner	"	38.0	259
"	11.0	357-30		"	39.0	254
"	3.0	308-30		"	41.2	249
"	1.0	353°		"	42.7	239-30
"	1.0	150°		"	45.7	234-30

HI = 4.9

3891.2

R 5.1

At Axil Point from E10

84	✓	47.7	23x-30	86	✓	8.8	299°
"	✓	49x	231-15		✓	15.0	313°
"	✓	51.0	229-30		✓	18.3	315°30'
"	✓	52.0	229-30		✓	24.1	303°
"	✓	Vert ↑ 54.0	230-15		✓	27.0	288°
"	✓	56 ✓	226-30		✓	30.3	279°
					✓	29.4	275°
R. 3.1							
86	✓	1x8	7x-30		✓	30.2	271°45'
"	✓	11.5	6x-30		✓	33.3	269°15'
"	✓	11x	5x°		✓	34.5	267°45'
"	✓	10x	47°		✓	36.7	260°
"	✓	13.7	13°-0		✓	39.4	258°
"	✓	10.7	346°45'		✓	41.1	250°
"	✓	11.5	337°		✓	42.1	248°15'
"	✓	12.2	336°		✓	41.9	246°30'
"	✓	12.6	330°		✓	43.7	242°30'
"	✓	9.5	317°30'		✓	45.2	236°45'
"	✓	48.2	233°				
"	✓	51.1	229°45'				
"	✓	52.5	229°30'				
"	✓	53.9	230°				
"	✓	56.2	226°30'				

Continued in Book # 15

Topog

List of B.M.

USGS Cross in Brass Cap West End Spillway		486.569
#1 Nail in Boulder ½ Way down Slope below		440.24
#2 " Ledge 20' above bottom below #1	below W Side	401.22
#3 Bolt in Rock Ledge (covered up old Diverting Dam)		
#4 Bolt in Flat Ledge W. Side Canyon 50 below		377.59
#6 Rock West End Concrete Basin West of W. End Dam		494.89
Paint Mark on Boulder in old Concrete T.B.M. 3' E of B14-15W-15 North		362.13
Plug in Concrete Abutment of old Core Wall R.P. 1+70		439.11
RR Spike in Plug Upstream Face of old Masonry		337.23
#3A Bolt in Rock Ledge 75' E of N End Diverting Dam		372.66

0+50 - 300 - 8.80

P-15-14 W.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ TO 1.

FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37 0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40.0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41 7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47 1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51 1	51.3	51.4	51.6	51 7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57 1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.