

Final Topog

10

LEVEL BOOK

370

W100

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DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.

FOR SINGLE TRACK EXCAVATION.

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	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	21
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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Jan 5 1918.
2' Topog in Bottom

T.B.M.	+	H.I.	—	362.13
	644	364.34		357.90
(352)	1237	517	364.37	359.20

H.I. 364.37

Dist.	Azimuth	Contour	Rod	Contour
	At F-15			
	352 Contour			
62	82°	12.37	38.2	109° 30'
63	83°-10'	..	40.8	116° 40'
60	87°-20'		41	112°-40'
61.5'	89°-10'		43.2	110° 45'
56	91°-40'		42.9	109°-20'
53.7	93°-15'		42.9	107°-15'
51.2	96°-30'		42.6	102°-45'
44.8	98°		43.6	"
39.5	101°		44	98° 20'

1/5/18 2

Top Rock 3'E about B13-15W-15'N
 Nail in Hub B15-15'N
 Hub - B-15 +15'W
 Hub. B-14 + 15'W - Use this -

Willcomb Mt.
B2 to Road.

Dist.	Azimuth	Contour	Contour
	At F-15		
	354' Contour		
46.2	96° 45'	10.37	62.0
48.6	96° 30'		59.2
50.3	97° 20'		56.8
50.3	100° 10'		51.7
51	98°-15'		52.5
52	"		55.1
51.4	96°-15'		58.8
59	95°-15'		61.1
61.5	94°-15'	Concrete	60.7
62.6	51°-30'	"	57.5

356' Contour
95°-15' Concrete 8.37

561 5
Jan 5 1918
Plotted

11.1
264.37

Topog on Bed Rock

			Sta		Elev
35.6	A F-15 Contour - Rod		64.37		
52.8	105°40'	8.37	64.5	101°20'	
52.2	107°20'		62	99°20'	Contour
54.3	"		63.4	81°	"
53	109°		Elevations - Top of Concrete		
47	112°30'		63.7	81°15'	Elev 60.2 R 4.2
40.3	119°40'		62.8	86°45'	Elev 60.2 R 4.15
43.1	358' Contour Rod 120°	6.37	62.8	96°	Elev 59.5 R 4.85
46.5	115°40'		63.7		Elev 59.6 R 4.8
51.1	112°30'				
53.7	111°15'		364.37		Elev
56	107°50'	1.85	307.50	97.2	4 355.65
58.7	105°50'			c.s. 5.82	350.68 351.68
62.3	"				
61.7	103°40'				
66.2	"				
69.0	102°20'				
67.6	101°				

1/5/18 3

Plotted Jan 5 1918
Wilcomb - Mt
1306 - Rod

Point on Rock P.T.

A-15 - Spike in rock -

H1 = 49

364.1	At B14-15'W		359.20
56	41.8	316-30	52 19. 304-15
56	42.5	314-45	52 48. 304-15
56	42.5	306-30	52 45.5 304-15
56	45.0	308	52 43.5 303
56	46.5	312	52 39.0 308
56	48.5	311-45	52 36.8 307-15
56	50.5	315	52 35.8 309-15
56	50.5	315-45	52 37.2 314
56	53.3	314-15	52 34.5 319
		Face Concrete	
		52	33.1 321-15
54	33.9	314-20	
54	38.0	319	
54	38.0	312.30	
54	36.8	309-45	
54	38.2	309	
54	43.0	303-45	
54	45.0	305	
54	46.0	308	

Plotted
Jan 16, 1918
MPP

H1 = 47 on Spike

355.4	At D15		5
	+ 241	-	350.68
	34	355.4	Con 352
350	53	354-30	48 51.5 350°15'
50	51.5	356°	
50	49.0	356-20	46 49.8 347-45'
50	48.5	359-45	46 49.2 351-30
50	48.0	4°-45'	46 46.0 353°-15'
50	46.0	5°-30'	46 44.5 354-45'
Con Face 50	47.4	17°-30'	46 45.5 3°
			46 44.0 4-45'
			Con Face
348	47.4	17°30'	46 47.2 17°-30'
48	45	9°15'	
48	46.1	8°0'	
48	45.6	4°15'	
48	48.4	1°30'	
48	48.0	358°45'	
48	46.0	355°-15'	
48	48.5	352°	

Plotted on
field sheet
11/15/18

2' Topography - Surface Rock

B.M. + H.T. - 371.30
0.25 371.55

F13 10.99 360.56

T.B.M. 9.42 362.13

362.13 ✓ Top Rock 3' E about B13-15W-15'N

Set up F15 Sight on F10

Measure 50' and set F13

^{4.3}_{136.7} Rod 6.9 AT F13 360.56

Plotted Jan 16, 1918
HPR

Station	Dist	Angle	Dist	Angle	Dist	Angle	Dist	Angle
✓ 58	59.5	79° 30'	58	42.5	52° 30'			
✓ "	62.0	67° 30'	"	43.5	49° 15'	60	66'	69° 30'
✓ "	58.2	64° 45'	"	35.2	38°	60	70'	67° 15'
✓ "	54.3	69° -	^{Rod 4.9} 60	35.2	36° 15'	^{Rod 2.9} 62	71.5'	66°
✓ 55	50.5	64° -	60	45.3	50° 15'	62	66'	69° 15'
✓ "	48.0	65° - 15'	60	44.2	52° 15'	62	58'	64° 30'
✓ "	41.6	61° 15'	60	47.5	55° 45'	62	54.4'	68° 30'
✓ "	40.3	62°	60	49	58° 30'	62	52.8'	66° 30'
✓ "	39.2	59° 45'	60	52.8	69° -	62	50.0'	61°
✓ 58	43.3	54° 15'	60	58	64° - 30'	62	52.5'	57° 15'

Bub - Inst - Paddock - Rod Willcomb - Hole

^{Rod 0.9}
69

H.I.
364.9

AT F13

1/9/18

7

✓ 64	46.8	36°30'	56	✓ 39.5	55°15'
✓ 64	49.1	40°45'	56	✓ 38.5	57°
✓ 64	52.2	43°30'	56	✓ 39.5	62°45'
✓ 64	52.2	48°45'	56	✓ 41.2	62°
✓ 64	53.8	49°30'	56	✓ 42.2	64°15'
✓ 64	56.5	49°15'	56	✓ 44.0	66°15'
✓ 64	65.0	54°	56	✓ 48.2	66°15'
✓ 64	64'	58°15'	56	✓ 48.9	71°
✓ 64	66.3	62°45'	54	✓ 48.6	92°15'
✓ Rad 0.4 Top Rock	64.5 El. 43.2	47°	54	✓ 47.6	83°
✓ <u>Ring Contour</u> 64	42.9	39°45'	54	✓ 48.0	84°
✓ 64	44.5	44°15'	54	✓ 47.5	83°30'
✓ 64	42.2	42°30'	54	✓ 46.8	80°30'
✓ <u>Rad 3.9</u> 56	29.1	47°	54	✓ 44.9	80°15'
✓ 56	32.3	50°45'	54	✓ 43.5	78°
✓ 56	34.8	52°15'	54	✓ 42.2	68°15'
✓ 56	37.2	51°	54	✓ 40.8	70°30'

Rad 10.9

4.8
HS 3555
Rad 1.5

At D15

~~54 48.8 83°~~

54 51.7 59°15'

54 54.5 358°30'

54 57.0 357°30'

54 57.8 354°30'

54 59.5 352°45'

54 63 355°30'

54 65.0 355°15'

54 61.8 352°15'

54 49.2 69°15'

54 49 67°15'

54 47 67°

54 45.3 71°45'

54 43.3 71°

54 43.3 67°30'

29.8 60°45'

Plotted Jan 16
1918
H.P.P.

350.68

54 66.8 352°30'

54 67 350°30'

54 65 349°15'

54 64.8 345°30'

54 63.5 344°45'

54 64.0 343°

54 69.5 340°

54 67.3 338°15'

54 69.0 335°15'

H. 1355.5

Rod 3.5

AT D 15

A. D. 15

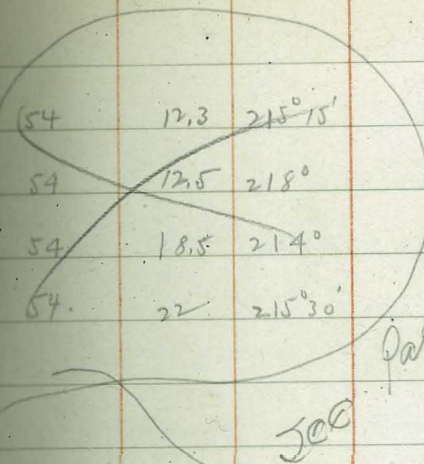
1/9/18

8

52	64.5'	335°30'	Rod 2.5 48	58.8	334°	46	57	341°	Rod 9.5 Concrete 46	Face - 21.3	34°30'
52	67.2'	339°45'	48	57.5'	336°	46	54.7	338°45'	46	17.8	25°
52	59.5'	343°45'	48	59'	338°	46	57.5	334°45'	46	14.2	24°
52	58.5'	350°45'	48	54.8'	345°45'	46	53.3	330°	46	13'	15°30'
52	59.6'	352°45'	48	5.2	347°15'	Rod 11.5 44	42	348°	46	10.5'	9°45'
52	55.0	356°15'	48	53.5	350°30'	44	43.3	352°45'	46	12.5'	3°
52	52.8	354°15'	48	52'	353°30'	44	44.0	1°0'	46	12.4	355°45'
Rod 5.5 50	49.1	356°15'	48	48.3	352°30'	Concrete 44	43.3	18°45'	46	12	323°
50	50.5	357°	48	45.3	356°	Concrete 44	25	30°30'	46	13.8	301°30'
50	52.8	354°	Rod 9.5 46	44.8	356°	44	25	24°45'	46	17	325°
50	57°	353°15'	46	44.8	355°	44	22.5	21°30'	46	18.7	322°
50	58.5'	349°0'	46	47.2	352°	44	23.0	18°	46	22	304°15'
50	58.0'	345°15'	46	49.0	351°30'	44	19.5	10°45'	46	24	304°
50	59.0'	342°45'	46	49	350°15'	44	21.3	7°15'	46	25.8	301°45'
50	63.0'	339°	46	47	349°45'	44	21	354°30'	46	57	304°15'
50	61.5'	337°	46	47.5	346°	44	21.3	346°30'	Rod 7.5 48	Run 20.2	292°
50	62.2'	336°	46	52	346°30'	Rod 7.5				19.2	272°

AT D 15

Red 7.5	48	✓	15.8	275°	50	✓	4.8	308°45'
	48	✓	10	292°30'	50	✓	7.5	271°
	48	✓	9.3	303°	50	✓	11	267°
	48	✓	8.3	303°	50	✓	15.5	261°30'
	48	✓	9	327°	52	✓	21.5	224°30'
	48	✓	9	349°45'	52	✓	16.5	274°45'
	48	✓	7.5	13°	52	✓	13.5	235°
	48	✓	12.3	36°	52	✓	11	234°
	48	✓	18	29°	52	✓	9	229°15'
Concrete	48	✓	20.5	36°30'	52	✓	12.8	117°30'
Red 5.5 Concrete	50	✓	19	40°15'	54	✓	13.2	121°45'
	50	✓	16	38°	54	✓	10.2	124°
	50	✓	10	58°	54	✓	5.8	164°
	50	✓	5.5	69°30'	54	✓	7.8	176°30'
	50	✓	5.5	46°	54	✓	6.0	187°
	50	✓	4	27°	54	✓	6.8	214°
	50	✓	4.5	5°	54	✓	9	227°



Page 2 for contours

Joe

Plotted Jan. 15 1918

H.I.
4.6
55.28

At D15

350.68

2.54

A868

Jan 14/18

10

At D15-15-S

4414

5528

40 / 155 346.45

D15

15-South

45.4 48.68 11.4

44.14

40 / 130 6°45

5.94

42.74

Concrete

40 / 160 52.

H.I. = 45.4

A868 ✓

At D15-15-South

4414

Concrete

Plotted Jan 15 1918

42 ✓ 15.8 55°15' 42 / 27.3 2°45

42 ✓ 12.5 40 42 / 26.5 21 15

42 ✓ 8.8 31-30 Concrete 42 / 27.5 29 30

42 ✓ 10.2 10°15'

42 ✓ 13 298 Concrete 40 / 26.5 30 15

42 ✓ 15.8 304 15 40 / 25.2 14 15

42 ✓ 24.2 308-15 40 / 26.8 4 45

42 ✓ 29.2 315 45 40 / 26.5 324 45

42 ✓ 24.0 336 45 40 / 22.0 346-30

42 ✓ 24.0 343 40 / 27.3 320-15

42 ✓ 27.8 351-15 40 / 25.5 314-15

40 / 15.8 322 15

Profile of Bottom Against Concrete

Willcomb
Rubbish
Paddock

1/17/18

11

+ H.I.

F 13
360.56

1.33 361.89

D15

10.66 351.23

0.00 Profile - Intersection 15' Line
and is C15 + 14.91 W.

60.1	56.1	55.1	55.2	53.7	53.3	54.8	53.5	53.2	52.1	46	51.8	49.3
2.8	5.8	4.8	6.7	8.7	8.6	7.1	8.4	8.7	9.8		10.1	12.6
17.9	17.0	13.6	7.6	5.9	4.7	3.3	0	6.1	9.0		12.5	15.7
						57.8	58.8	57.2	52.6	52.5	51.0	
						2.1	3.1	4.7	8.3	9.6	10.9	
						73.1	62.9	58.2	56.6	51.5	45.8	

607 47.50
48.75

341.43

342.68

1.33 m On Top of Plank - Face of Concrete

44.5	41.8	38.3	36.6	35.6	34.7	35.8	39.7	40.4	42.1	44.1	45.1
4.0	5.7	9.2	10.9	11.9	12.8	11.7	7.8	7.1	5.4	3.4	2.4
18.2	22.6	25.3	24.3	24.5	25.0	37.8	38.6	38.0	39.5	43.1	45

4.7
46.84

At D15 - 15'5"

44.14

At D15 - 15'5"

Clay
seams

27.5 314°45'

4.8

3.8 58° ~~24~~ 3.9 330°30'

" 21.3 328°15'

3.3 23° 4.2 302°

" 18.7 7°0'

5.5 6°30' 8.7 266°30'

" 21.3 36°10'

4.1 334° 11.3 267°30'

H.A.7

48.84

At DIS-15'S

44.4

AK	✓	4.8	11.9	283°	Ab	✓	24.7	283°30'
AK	✓		13	293°15'	Ab	✓	26.2	283°15'
AK	✓		14.8	291°30'	Ab	✓	28.8	292°30'
AK	✓		19.1	277°20'	Ab	✓	32.5	298°20'
AK	✓		22	279°50'	Ab	✓	33.3	305
AK	✓		24	293°30'	Ab	✓	37.7	311°50'
AK	✓		25.7	"	Ab	✓	38.6	317°
AK	✓		29.4	305°	Ab	✓	41.0	319°30'
AK	✓		30.1	308°30'				
AK	✓		32.4	314°	Ab	✓	43.9	328°30'
AK	✓		32.2	317°10'	Ab	✓	45.8	325°
AK	✓		31.5	319°45'	Ab	✓	42.3	319°30'
AK	✓		30.9	326°	Ab	✓	41.3	312°30'
AK	✓	4.8	320	332	Ab	✓	38.4	306°15'
AK	✓	2.8	21	281°30'	Ab	✓	35.7	302°30'
Ab	✓		24.6	262°30'	Ab	✓	33.8	295°30'
Ab	✓		22.1	269°30'	Ab	✓	30.4	287°30'
Ab	✓		23.9	274°30'	Ab	✓		

Platted Jan 18 1918

M.I.
363.22

Topog Top of Concrete

Wilcox - Inst
Bob - Reel

14

Jan 17-1918

A + B 15-15' W

3.22	60	22	271°	60	25.0	14° 36'
	60	20.5	265° 30'	60	24.0	11°
	60	19.5	"	60	24.1	7° 30'
	60	19	267° 50'	60	25.5	8° 15'
	60	19	286° 30'	60	25.8	4° 20'
	60	21.2	289° 30'	60	27	5° 15'
	60	22	294° 30'	60	28.7	2° 45'
	60	20.2	"	60	31.5	2° 10'
	60	21.8	298° 45'	60	33	0° 30'
	60	22.8	306° 15'			
	60	23.2	311° 45'			
	60	22.3	318° 30'			
	60	34.8	27°			
	60	32.8	26° 30'			
	60	30.2	30° 50'			
	60	28	27° 45'			
	60	25.2	22° 30'			

Plotted
on Field Sheets
Jan 18 1918
BPP

1/10/18

Willsomb Instr.
Bub
Podolsck

15

Upstream Toe of Curtain Wall
At intersection with Surface Rock

+ Sta - Ele

T.B.M.	507	367.20	362.13
2+85 ⁸⁸			3.3 363.9
2+95 ⁸⁸			10.6 356.6
P.	0.30	55.40	17.30 354.90
3+05 ⁸⁸			2.3 352.9
3+15 ⁸⁸			6.1 349.1
3+25 ⁸⁸			10.3 344.9
3+55 ⁸⁸			9.8 345.4
3+65 ⁸⁸			7.1 348.1
3+85 ⁸⁸			+4.0 357.2
T.B.M.	175	342.18	

Top Rock 3'E B 13-15'W-15'N

7.6+10' from Base line

8.4+10'

8.7+10' out

9.1+10''

9.5+10''

9.5+10''

9.4+10''

9.3+10''

Batter 11.5' 10'
from Ele 440.2

Copied from
Page 63 Book Tran #1
1/28/18

Pt on Face of old Concrete Top of 2x12

2/25/18

Toe of Curtain Wall

Sta	Dist. to back slope	Elev
280	10.7	351.3
290	9.5	339
3+00	8.55	335.5
3+10	8.8	331.7
3+20	8.7	331
	5' + 5' Back on account water	
3+30	8.55	329.5
3+40	Omitted on account water	
3+50	8.7	331
3+60	9.2	336

Fort
Wilcomb 16
Bub

2/25/18

Pat Rod
Sub Inst.
willow
Y.W. 11/12

326.76

At D 15 $\left\{ \begin{matrix} 1.05W \\ 12.5 \\ 1908 \end{matrix} \right.$

26 32
19 88
5.44

17

2' Topog Final

25' Coord points

Point on Concrete = B 15-22 214

3912 + 2221 = 61 53 = D 26 324

- 515 = 1.32 West minus $\frac{199.0}{53.2} = D 15 - 1.1W$

B.W.

Splice in Plug

+ H.I.

337.23

-0.47 336.76

330- 7.0 331.30 Rod 29 7.2 22.5 6° 15'

" 7.6 351° 0' 332 30.9 332° 30'

" 15.5 350° 30' 334 29.6 328° 15'

" 18.6 14° 332 31.0 322° 15'

" 23. 22° 15' 332 29.6 321° 15'

" 26. 21° 45' 332 24.5 326° 45'

" 26.2 9° 15' 332 22.6 324° 45'

" 24.4 357° 332 15.3 318°

" 33.8 359° 332 8.3 291° 45'

" 35.8 355° 332 5.4 243°

" 37.8 349° 45' 332 3.7 201° 30'

" 39.0 346° 45' 332 3. 170° 30'

" 38.7 340° 45' 332 1. 138° 30'

" 7.6 Rod 29 27 334° 45' 332 2. 82° 45'

" 7.4 Rod 29 24.7 342° 32 1. 351°

" 7.3 Rod 29 22.8 353° 32 3.5 350° 30'

" 7.3 Rod 29 21.8 358° 32 7.8 34°

H.I.
336.76

At D 15 $\left\{ \begin{matrix} 1.05 West \\ 12 South \end{matrix} \right.$

Sight D 5 at 0 Az. Lt

Red 328°

8.5 30 325° 30' ✓ *look at*

330 38.8 340° ✓ 320 22.2 328° 30'

" 30.5 333° 45' ✓ 20 17.7 321° 30'

" 30.3 326° 30' ✓ 20 18.0 327° 15'

" 31.7 322° 45' ✓ 20 14.5 335° 30'

" 30.7 320° 45' ✓ 20 ~~11.5~~

" 23.7 327° 45' ✓ 20 8.7 322

check
Rod

7.6 Rod 29

7.4 Rod 29

7.3 Rod 29

7.3 Rod 29

336.76 At D 15-12' S. -1.05W
 332 ✓ 10. 29°30' 334 ✓ 44.4 342°
 " ✓ 15.8 31°15' 34 ✓ 31. 332°15'
 " ✓ 15.8 24° 34 ✓ 32. 330°
 " ✓ 22.3 28°30' 34 ✓ 24.4 326°30'
 " ✓ 27.8 29° 34 ✓ 20.2 319°30'
 " ✓ 28.3 20° 34 ✓ 15.2 315°45'
 " ✓ 31.9 14°15' 34 ✓ 8.4 273°
 " ✓ 30.5 8° 34 ✓ 8.5 241°15'
 " ✓ 28.2 4°15' 34 ✓ 6.1 240°
 " ✓ 35.8 2°30' 34 ✓ 5.2 196°
 " ✓ 42.1 2°30' 34 ✓ 3.5 160°
 " ✓ 43.3 354°30' 34 ✓
 " ✓ 43.0 352°30'
 " ✓ 50.0 352°30'
 " ✓ 50.0 349°
 " ✓ 45 343°30'
 " ✓ 40.1 340°
 334 ✓ 49. 342°30'

336.06 At D 15-12' S -1.05W 2/25/18 18
 1376 Spike in Plug + H 2 337.23
 -1.17 336.06 33
 334 ✓ 1. 130°5' 36 33 24°
 34 ✓ 6. - 57.30 36 28.8 29°15'
 34 ✓ 8.6 67° 36 21.1 41°
 34 ✓ 10.8 55°30' 36 18.4 40°45'
 34 ✓ 13.8 52°30' 36 17. 50°45'
 34 ✓ 17.0 43° 36 14.8 60°
 34 ✓ 18. 34°30' 36 11.2 61°45'
 34 ✓ 24.8 34° ^{bottom concrete} 36 9.2 66°
 34 ✓ 32.5 25°45' 36 8.4 77°30'
 34 ✓ 33.9 23° 36 3. 133°30'
 34 36 36 ~~45~~
 34 ✓ 35.8 19° 36 4.5 164°30'
 34 ✓ 41.6 17° 36 6.5 190°30'
 336 ✓ 41.5 19° 36 6.9 207°30'
 36 ✓ 35.9 21°30' 36 6.7 218°45'

H1.

33606 At D 15-17' S -1.05 West

372 ✓ 10 232 30

32 ✓ 8.3 261.15

32 ✓ 9.9 286°

32 ✓ 15.7 315° 30'

32 ✓ 20.4 319°

32 ✓ ^{Common points} 25. 325° 30'

36 ✓ 30.2 328° 45'

36 ✓ 31.2 332° 30'

36 ✓ 37.5 336° 45'

36 ✓ 38.4 336°

36 ✓ 48.8 342°

H1.
344.18Sight D 15-1.1 west for 180°
At D 12 - 0.8 west 42 to Lt.

372 ✓ 695 344.18 337.23

36 ✓ 27.6 152° 30'

H1=344.18 At D 12 ✓ 36 25.3 153°

check 32 ✓ 21.5 219° 30' ✓ 36 21.3 151°

34 ✓ 17.5 225° 15' ✓ 36 19.8 160° 45'

34 ✓ 16. 224° 45' ✓ 36 17.6 161° 15'

34 ✓ 11.8 230° 45' ✓ 36 13.4 155°

34 ✓ 10.4 227° 15' ✓ 36 13. 169°

34 ✓ 11.2 216° 30' ✓ 36 12. 168° 15'

34 ✓ 9.7 197° 30' ✓ 36 11.3 177°

34 ✓ 15. 190° 30' ✓ 36 7.2 180°

34 ✓ 15.8 169° 15' ✓ 36 6.3 188° 30'

34 ✓ 17.4 164° 30' ✓ 36 4.2 244° 30'

34 ✓ 22.6 168° 30' ✓ 36 6.6 256°

34 ✓ 22.7 158° 45' ✓ 36 8.8 270°

34 ✓ 25.3 156° ✓ 36 11.5 258°

34 ✓ 26.6 153° ✓ 36 14.0 239°

41.

34418

At D 12 - 0.8 west

36 ✓ 15.0 240° 38 ✓ 6.1 285°

36 ✓ 19.7 230° 38 ✓ 4.4 237° 0'

36 ✓ ^{check} 23.1 221° 15' 38 ✓ 5.0 206°

38 ✓ 32.4 209° 15' 38 ✓ 6.1 121° 30'

38 ✓ 31.5 209° 45' 38 ✓ 7.5 138° 45'

38 ✓ 26.7 209° 45' 38 ✓ 9.6 133°

38 ✓ 32.4 207.45 38 ✓ 12.1 148° 30'

38 ✓ 32.0 209.45 38 ✓ 18.2 155° 30'

38 ✓ 27.2 216° 30' 38 ✓ 24.0 149° 0'

38 ✓ 23.0 223° 30' 38 ✓ 29.0 ^{15'} 154° 30'

38 ✓ 16.2 244° 30' 38 ✓ 32.8 156° 15'

38 ✓ 14.6 246° 15' 38 ✓ 34.6 157° 30'

38 ✓ 13.1 262° 15' 38 ✓ 36.4 157° 30'

38 ✓ 11.8 261° 15' 38 ✓ ^{circumference} 39.3 157° 30'38 ✓ 11.7 288° 30' 38 ✓ ^{circumference} 50 163° 45'38 ✓ 11.0 298° 45' 40 ✓ ^{circumference} 51 164°38 ✓ 9.6 301° 15' 40 ✓ ^{circumference} 39.2 158° 15'

34418

At D 12 - 0.8 west 20

40 ✓ 34.2 156° 40 14.4 280° 30'

40 ✓ 30.5 153° 45' 40 13.8 263° 45'

40 ✓ 26.8 149° 40 20.8 231°

40 ✓ 24.2 147° 15' 40 27.0 219°

40 ✓ 21.8 140° 40 32.3 213°

40 ✓ 18.2 134° 40 40 32.2 210° 30'

40 ✓ 14.8 147° 30' 42 33.2 213° 15'

40 ✓ 9.7 128° 40 32.8 216° 15'

40 ✓ 9.0 111° 40 26 224° 30'

40 ✓ 7.6 110° 40 19.7 236° 45'

40 ✓ 6.5 81° 30' 40 14.5 262° 30'

40 ✓ 3.9 79° 40 16.3 288°

40 ✓ 3.7 267° 30' 40 14.7 291°

40 ✓ 5.2 281° 40 14.5 ^{297° 15'} 220° 15'

40 ✓ 7.8 307° 45' 40 13.9 305°

40 ✓ 9.6 305° 40 14.3 311°

40 ✓ 12.2 307° 30' 40 10.4 ^{306° 15'} 308° 45'40 ✓ 12.7 294° 30' 40 8.7 ^{306° 15'} 323° 15'

30418

At D 12-08W

42	6.5	322°30'	44	26.8	149°
42	10.6	37°	44	22.	136°45'
42	11.6	42°	44	20.3	133°30'
42	12.2	51°	44	16.4	102°
42	10.9	72°30'	44	17.4	92°
42	14.4	61°30'	44	16.6	90°
42	15.3	65°	44	16.	75°30'
42	13.5	84°15'	44	17.2	65°30'
42	14.3	94°15'	44	17.0	58°
42	12.	97°30'	44	12.6	45°15'
42	16.1	107°15'	44	8.6	23°
42	21.4	138°	44	7.1	312°30'
42	23.6	146°	44	12.	315°
42	25.3	146°30'	44	15.8	322°
42	30.3	154°45'	44	19.6	309°15'
42	35.3	156°	44	17.8	294°30'
42	31.9	155°	44	18.2	295°
42	35.3	155°	44	17.6	285°

4130418

At D 12-08W

44	16.5	271°30'
44	16.5	258°30'
44	22.7	233°15'
44	34.2	217°
44	33.6	215°15'

21
2/25/18

4130418

At D 15-110 west

+ 341		E10	
70.5 44.28		33723	
Concrete			
38	30.3	27°	38 9.6 308°
38	28	28°30'	38 13.8 321°
38	23.7	30°	38 17.8 328°30'
38	21.8	34°15'	38 23.7 333°15'
38	17.7	35°30'	38 25.6 331°30'
38	10.2	51°	38 31.9 331°0'
38	5.4	23°	38 36.2 333°15'
38	3.	40°	40 37 332°
38	2.1	352°30'	40 30.6 328°15'
38	3.7	335°	40 27.2 329°

#1-4428

At D 15-1.1W.

Concrete

40	25.	331° 45'	40	28.45	
40	22.2	332°	42	26.9	31°
40	16.3	320°	42	23.3	34°
40	11.2	307°	42	16.6	48°
40	7.	302° 30'	42	14.7	49°
40	5.	301° 30'	42	13.2	53°
40	3.2	241°	42	9.3	63°
40	1.	213.45	42	3.2	31° 30'
40	2.4	188	42	6.6	178°
40	2.4	188°	42	6.5	196°
40	1.8	131°	42	4.3	182°
40	3.6	37°	42	2.8	198° 15'
40	10.7	55° 30'	42	5.8	228° 15'
40	12.3	49°	42	4.4	251° 15'
40	17.6	42° 30'	42	5.3	292°
40	19.6	37° 30'	42	11.7	307°
40	21.	37°	42	18.5	323°
40	23.8	32° 15'	42	18.9	327° 15'

#1-4428

At D N-1.1W.

22

42	22.7	331°	44	6.5	294°
42	28.1	327° 30'	44	6	256° 45'
42	32.3	326° 15'	44	7.3	221°
42	37.6	328° 45'	44	6.7	188° 30'
42	39.8	326° 30'	44	11.1	178° 30'
42	43.1	328° 30'	44	14.4	168° 15'
42	42.6	333°	44	13.4	162°
42	47.4	337° 30'	44	9.	162° 30'
42	50.8	338° 45'	44	5.5	117°
42	49.6	340° 45'	44	7.1	83° 30'
42	41.8	334° 45'	44	11.2	76° 45'
42	40.4	332° 30'	44	11.7	66° 30'
42	38.7	330°	44	23.2	35.45'
42	23.1	329°	44		
42	20.4	327° 30'			
42	15.	318°			
42	10.8	302° 30'			
42	7.7	300° 30'			

B.M.
BoH 17. W. End
Rock
Luffordham

At D 15 - 1.1 W.

+ sh -

1.31 372.61

T.P.

13.06

T.P.

0.57 360.12

E-11.32 W.

shub

8.53

T.B.M.

Rock

8.16

56.55

At E 15 - 1.32 W

51.59

+ 3

46

24.8

109° 15'

48

6.2

74°

22.

109° 15'

9.

96°

22.2

106° 30'

11.1

82°

21.3

107°

17.6

78° 30'

20.3

102° 15'

19.1

81°

19.5

101° 15'

18.5

92° 30'

19.

80° 45'

20.5

113° 30'

16.

72° 15'

22.7

114°

15.9

63° 30'

24

117° 30'

17.8

58° 45'

26.6

119° 45'

16.6

53° 30'

28.2

122° 15'

19.2

43° 45'

29

125°

18.2

42° 15'

36.9

114° 30'

14.4

36° 15'

36.2

105°

12.2

35° 45'

34.5

103° 30'

6.9

31°

35.4

95° 30'

8.6

40° 15'

35.8

87° 45'

8.7

51°

37.8

80° 30'

sh.

56.55

At E 15 - 1.32 W

51.59

46

37.8

77° 15'

46

32.7

101° 15'

Concrete

42.0

66° 15'

33.1

103°

End of cut

19.2

43° 45'

29

125°

36.7

86°

34.9

106°

18.2

42° 15'

36.9

114° 30'

34.9

91° 15'

35.5

110° 30'

14.4

36° 15'

36.2

105°

33.3

95° 30'

34.0

116° 45'

12.2

35° 45'

34.5

103° 30'

32.9

98° 45'

30.3

122° 15'

48

6.9

31°

35.4

95° 30'

34.

98° 45'

27.6

117°

8.6

40° 15'

35.8

87° 45'

~~34.2~~
43.2

100° 30'

25.3

115°

8.7

51°

37.8

80° 30'

56.55

A + E 15 - 132 W

51.59

48	39.5'	72°	⁵⁰ end of cut	19.9	108°
}	41.7	66°		16.9	112°30'
50	41.4	69°15'		12.8	126°
}	40	72°30'		9	130°
}	38.8	79°15'		6	114°
}	37.9	82°45'		5	84°30'
	35.7	88°45'		6.4	72°
	35.4	95°		7.9	45°
	36.3	102°		6	21°
	38	113°30'		6.7	12°
	35.2	116°30'	Ring ⁵⁰	11.2	101°30'
	28.4	125°45'	}	17	92°
	27	122°30'	}	16.5	106°
	25.6	123°30'	}	13.7	107°30'
	24.1	117°45'	Ring ⁵⁰	11.7	107°
	22.2	119°	52	4.2	168°
	20.6	115°15'	1	14.8	146°45'

56.55

A + E 15 - 132 W

54

51.59

52	17.7	131°30'		36.6	97°
	16.3	121°45'		36.8	91°30'
	18.	113°	Circuit	39.2	77°30'
	18.8	107°15'	54.	37.9	93°15'
	20.7	115°30'		37.3	94°30'
	22.9	121°15'		37.8	96°30'
	24	120°30'		37.9	99°15'
	26	125°		37.5	101°45'
	26.8	124°45'		37.8	106°15'
	27.7	127°		38.9	113°30'
	32.6	119°45'		26.9	128°
	38.5	113°45'		25.1	123°30'
	38.2	108°30'		22.5	123°
	37.1	101°15'		21.6	127°15'
	37	99°30'		22.1	135°30'
	37.4	99°		19.	154°45'
	37.5	97°15'		18.8	161°15'

5655

At E 15-13 W

last on rock

54 19.3 170°

14.1 167°30'

56 13.8 173°

first on rock

19.3 173°30'

19.5 165°

21.4 163°30'

24.2 142°

27.1 133°30'

27.0 131°

28.9 127°45'

30. 127°45'

30.3 126°45'

32.6 121°

34.3 119°30'

34.5 118°30'

37.5 115°

38.6 115°15'

40.3 114°

5159

Check Spots from.

D 15-1-1 west - Sight DS

for 0 Az - Left

	Ele	Dist.	Az.
N. End Cor. at Ele	340	28.2	29°14'
S. End " " "	340	41.4	20°35'
N. End " " "	345	22.4	37°35'
S. End " " "	345	46.4	18°50'

75

T. B. M.

+

351.96 Rock

4.30 356.26

H. I 356.26

At E 15 - 1.32 W.

Rod 6.3

~~344~~ 350

5.4

16° 15'

4.8

55.76 3/2/18 Sub. Instr
Willcomp - Rod

55.8 Sight Bis-15W for 90° 27

At E 15-132 West 35.96
Sight Bis-15W for 90° 27

At E 15-132 West 351.96

Contour 3.80 55.76 351.96

144 24 37 46 37.3 359-15

44 22 40° 46 31.7 0-30 144 24.5 32.30 46 31.6 357

144 24 37 46 37.3 359-15

End Cot 44 24.5 35° 46 24.2 357

144 22 33-30 46 24.2 354-45

44 24.2 27° 46 23 5-30 144 22.8 18.45 46 23 3-30

144 22 33-30 46 24.2 354-45

44 35.2 17-30 46 14.4 12.30 144 28 7° 0' 46 16.8 8-45

144 28 7° 0' 46 16.8 8-45

44 27.2 11-30 46 14.5 16-30 144 25.8 00 46 15.4 17

144 28 7° 0' 46 16.8 8-45

44 31 7-30 46 17.5 29-30 144 32.5 4° 46 12.5 21

144 28 7° 0' 46 16.8 8-45

44 36.3 5-15 End Cot 46 14.5 1-45 144 35.8 2° 46 14.5 35-30

144 32.5 4° 46 12.5 21

44 38.5 11-30 46 14.5 1-45 144 35.8 2° 46 14.5 35-30

144 32.5 4° 46 12.5 21

44 45.0 10-30 46 14.5 1-45 144 35.8 2° 46 14.5 35-30

144 32.5 4° 46 12.5 21

44 46.5 9-15 46 14.5 1-45 144 35.8 2° 46 14.5 35-30

144 32.5 4° 46 12.5 21

44 48.5 8° 46 14.5 1-45 144 35.8 2° 46 14.5 35-30

144 32.5 4° 46 12.5 21

44 48.5 5° 45' 46 14.5 1-45 144 35.8 2° 46 14.5 35-30

144 32.5 4° 46 12.5 21

46 47 5° 30' 46 14.5 1-45 144 35.8 2° 46 14.5 35-30

144 32.5 4° 46 12.5 21

46 46.6 6° 46 14.5 1-45 144 35.8 2° 46 14.5 35-30

144 32.5 4° 46 12.5 21

46 39.8 5° 46 14.5 1-45 144 35.8 2° 46 14.5 35-30

144 32.5 4° 46 12.5 21

46 37.7 359-30 46 14.5 1-45 144 35.8 2° 46 14.5 35-30

144 32.5 4° 46 12.5 21

144 38.7 8-15 48 17.7 78°
144 43.5 9° 48 11.6 81-45
144 44.8 7-30 48 9.7 98-15
144 46.2 7-30 Boulder 48 6.6 74-15
46 47.2 4-45 B. 48 9.0 63-30
144 43.8 3-35 48 9.5 38-30
46 44.4 1° 48 7.5 28-30
46 40.2 357 48 11° 16-70

Vertical End Cut.
Boulder.
B.

3/2/18

5576

At E-15 1.32 West

35196

Contour

48	17.9	3-15	54	55	334
48	10.2	35-30	54	78	315-15
48	20.3	350	54	15	342-30
48	22.7	347	54	22.4	339
48	26.4	350	54	38.2	349-15
48	41.9	354-30	54	44.9	350
48	45	358-30	54	53	356
48	49.8	1030	54	51	352-30
50	51	357-45	54	45.7	348-20
50	41.7	351	54	29.4	337-30
50	33.5	349	54	14.7	331
50	22.7	343	54	9.0	311
50	13.1	343-30	54	6.0	354-30
50	8.2	335-15	54	12.9	169
50	5.5	346	56	2.4	143-15
Boulder	7.8	40°	56	20.8	164
54	4.2	167	56	19.6	176

3/2/18

H1

28

5576

At E 15 1-32 W

5196

56	14.8	172
56	6.3	208
56	7.0	290
56	15.2	325
56	23.4	332
56	35.2	342-30
56	47	348-30

	At G 15	3/2/18			15 comb Rod						
Sta	+ 241		Elo.	7053	Sub Instr. Photos	29					
B 17	208	373.38	371.30		At G 15	Sight	65.56				
T.P. Hub		937	64.6	60	40.4	320	62	44.5	19°		
G 15		782	65.56	60	335	331	62	41	10-30		
I 15 Original Point Hub		551	67.87	60	29.0	338	62	35	8-30		
<u>Note O-AZ to A 15</u>											
Sta. 70.53	At G 15										
	+ 241		Elo								
B M	190	73.20	371.30 (66.93)	60	46	19°30	62	30	326		
I 15		6.3	66.90	60	54.4	230	62	36	311		
G 15		7.64	65.56	60	56	20.15	62	42	301-45		
T.P. of Flume	638	<u>70.53</u>	9.05	60	59	24	62	51.8	294		
58	594	23°	68	35							
58	57.4	19.30	58	37	333.30	62	52.5	24-30	64	55	282.30
58	54.4	21.15	58	42	321	62	49.5	23-15	64	47	290.15
58	A7	18.15	58	55	305-45	62	A88	25-30	64	32.8	308
58	A4	12.45	60	53.5	300.45	62	A4.5	28.0	64	23.5	318-30
58	42	+	60	41	310.30	62	42.3	21-30	64	10.5	322

H.I. = At 9 15 Sigt A15						Sigt E18 for 180% 4 30						
7053 for Zero Az H 65.56 627'						At E 12						
64	132	18°	66	65	274							
64	26.3	8-75	66	76	276	Reok						
64	302	17				TBM	10.25	62.21		35.96		
64	345	12-30										
64	385	15-15				62	13	13°30'	60	78.8	247-15	
64	38	21-30				62	12.8	13°45'	60	11.6	239-30	
64	42	25°				62	10.5	11°30'	60	5.2	305	
64	435	28-45				Edge Cut	62	7.8	10°45'	60	3.3	1°30
						62	6.0	338	60	5.5	20 15	
F	66	23.2	50.30			62	9.0	316-30	Edge Cut	60	11.5	23
						62	12.5	272-15				
						62	20.5	262-30	vert.	58	12.5	27-45
						62	24.2	246-45	58	9.0	35-30	
						62	26.5	236-15	58	4.8	39-30	
						62	32.2	231-15	58	4.2	41-45	
						62	38	226-15	58	3.0	347-30	
						60	34	222	58	5.0	224	
						60	26	225	58	8.0	230-30	

3/2/18
HI=

6221

At E12

58 12 218 54 6.5 61.45

58 16.5 229-15 54 6.8 150-30

58 22 219-45 54 5.5 160-45

58 28.5 216 54 11.5 191

56 27.2 201-30 54 12.0 196-30

56 20.2 207-45 54 16.0 196-30

56 16.0 205-30 54 21.8 193-30

56 14.8 213-15 52 22.2 189.45

56 1.5 199-45 52 13.0 181-15

56 4.5 177-45 52 12.8 174-15

56 3.0 158-30 52 9.3 163-30

Edge Cot
56 4.0 134-30 52 6.3 123-30

56 1.3 77-30 52 7.2 62-30

56 5.3 49-15 50 7.5 62-45

56 8.8 13-45 50 6.8 84°

50 6.5 110-30

50 8.2 140

HI

6221

At E12

50 10.0 158-15

Edge Cot
50 17.5 174

50 21.5 186

HI

6221

At E12

Auxil
Point

HI

6221

Dist
26.56 46°35'

H. Rock

477 56.22 10.76 51.45

At Auxil Point

HI 5622

Sight E12 for zero Az Lt.

At 11.5 325-45 44 205 345-30

At 11.5 325-45 44 245 340

At 6.5 343-30 46 48 334

At 12.0 13.30 46 358 338

At 14.8 358 46 243 343-30

At 18.2 354-30 46 205 347

3/2/18

31

3/2/18

H.

32

241
56.22

At Axel Point.

46⁴⁸ 19.0 354-15

46 14.0 1° 30'

46-48 14.0 14-15

48 12.0 14-15

48 14.8 358

48 16.0 357-45

48 19.0 354-15

48 20.5 347-30

48 25.5 346-15

48 30.5 340-30

48 31.2 341-30

48 14.8 336

3/7/18

3/7/18

Y.W. - Red
Sub-Inst.

33

+ H1 - E10

H1
36202

GHE12

191 364.04 36213 5✓ 2✓ 33-05 54 29.3 24-30

T.P. Plank

10.40 6202 1242 51.62 5✓ 19.2 32-10 54 31.0 34-45

4' Vertical

5✓ 17.0 28 54 32.2 27-30

4' Vert.

5✓ 15.2 29-45 54 31.8 30-45

5✓ 13.5 32.45 54 31.0 31-30

H1

36202

AT E 12

50 100 45° 52 35.3 66 5✓ 12.3 30-45 54 32.6 36.0

54 56

54 50 13.5 32.45 52 36.2 60 4' Vert. 5✓ 10.5 35-30 54 33.3 36.00

50 17.0 33.15 52 35.0 58 5✓ 8.8 47 54 33.6 42

50 18.8 36.45 52 32.1 57-30 56-54 8.8 42.45 54 31.6 44

50 19.7 40 52 30.3 54-15 5' Vert. 54 12.2 29-15 54 31.4 50

50 19.9 46-30 52 29.9 60-30 2' Vert. 54 14 38 54 33.8 50-30

Face

50 21.5 51-15 54 28.0 50-10 2' Vert. 54 15.9 27-45 54 37.4 50

50 25.2 55-15 52 28.8 46 54 18.4 28-15 54 37.0 52-30

50 27.4 54.45 52 29.0 40.45 54 20.6 27 54 37.7 56

50 29.5 56-15 52 25.6 39-45 54 14.7 26 54 37.6 60

50 31.8 58-15 52 26.6 34-15 54 26.5 24.30 54 36.1 65

50 32.2 66 52 25.6 29-15 54 27.7 22-15

36402

At E 12

At

1497

At C 12

56 378 65-30 / 56 88 / 41-30

Trop. Plant 13.35 64.97 51.62

56 40.0 57-30 /

56 43.5 285-30 58 / 39.5 327-45

56 388 53-45 /

56 45.0 287-30 58 / 43.3 321

2' Vort

56 39.0 49.0 /

56 43.9 290-45 58 / 47.0 314-15

56 38.7 46-15 /

56 45.3 295 58 / 51.5 318

56 40.3 39-15 /

vort fr

12 56 46.0 296-30 58 / 52.0 315

56 34-3 30-45 /

Use Notes from E 12

56 45.5 297-15 58 / 51.2 313-30

56 34.2 27 /

56 46.2 299-30 58 / 51.2 309-30

56 34.6 22 /

56 48.2 307-30 58 / 49.0 306-30

56 32.5 19-30 /

56 49.5 309-30 58 / 48.5 305-15

56 28.9 23-15 /

v

56 48.5 31.2 2' vort 58 / 47.5 298-30

56 28.8 22 /

58 20 31.2 7' vort 58 / 46.5 295

56 25.7 22-15 /

58 27.5 324-15 7' vort 58 / 45 291

56 23.4 24 /

58 31.5 322-15 58 45.8 287-30

56 21.2 22-30 /

58 35.5 324-15

56 18.0 27-30 /

58 37 326

56 15.6 28.0 /

58 38.3 326

Alt.
64.97

At C12

62	60	495	306-45	62	20.5	326-30
62-60	509	310	62	26.8	331	
60	52	314	62	30.2	326	
60	51.3	318-30	62	32.8	327-15	
60	485	320	62	36.5	330-30	
60	480	317	62	41.8	328-05	
60	452	319	62	44.0	325	
62 60	444	324	Face Cliff Vert 62	46.9	327-30	
60	420	325-30	62	50.0	321	
60	400	328	Vert cliff, add 2' for undercut 62	52.5	319	
60	35	327-15	Vert cliff 62	53.5	316	
60	315	323-30	62	49.5	305	
60	285	326	Vert. 62	48.2	301	
62-60	20	325-45				
			64	51	308	
			66. 64	53	311-30	
			64	53.8	315	
			follow 62 around			

Alt. =
60.97

At C12

3/7/18

35

Vert face	64	50.8	321
End Vert	64	45.5	320-15
Face 64	64	41.8	330
	64	41.2	322-30
	64	39.5	321
	64	37.5	331
	64	31.8	333-45
	62	32.8	330-30
	64	26.5	333-15
	64	23.0	330
	64	21.5	329-45
	64	15.8	335

3/7/18

Yw - Pool
Sub - Instr

Measured 3.21 East from

C 15-1221 W and set C 15-9'W

H₁ = 56

64.62

TBM.

on Boulder.

At C 15-9'W Split Instr

243 64.56

~~249~~ 64.62

362.13

60 ✓ 24.8 262-45 ✓ 60 334 316-45

60 ✓ 23.5 218-45 ✓ 60 374 321.15

60 ✓ 23.0 272

60 ✓ 21.3 274-30 62 350 313-30

60 ✓ 20.2 281 62 ^{37.0}~~323~~ 315-30

60 ✓ 20.8 287 62 330 309

60 ✓ 22.4 287-30 62 287 308-30

60 ✓ 24.2 295-15 62 290 302-45

60 ✓ 25.2 300-30 62 268 299-30

60 ✓ 27.2 305 62 25.7 296

60 ✓ 27.0 307 62 24.7 291

60 ✓ 29.8 312-30 62 24.8 287-45

H

Sight I N for Zero Az 36

6456 At C 15-9'W

62 ✓ 24.2 282-30

62 ✓ 26.0 278

62 ✓ 25.7 273

62 ✓ 26.2 265

62 ✓ 26.6 261

64 ✓ 29.0 262-45

64 ✓ 30.0 269-45

64 ✓ 27.6 277-45

64 ✓ 27.0 287

64 ✓ 30.0 301-45

64 ✓ 34.0 308-45

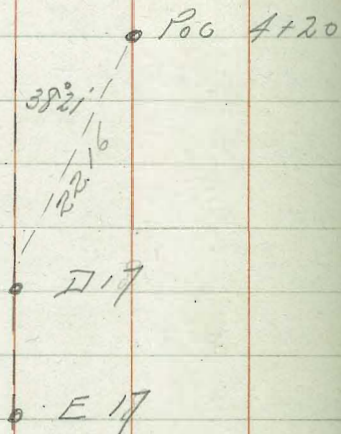
64 ✓ 37.0 312-30

3/9/18

Y-VV- Rod
B.O.D- Instr

Tie to P.O.C 4+20-325.R.

from D-17



I-15 Hub

818

75.16

6698

H.I. 545

7516

At P.O.C 4+20-325.R. ⁶⁹⁷¹
Sight D-17 of O-AZ Lt.

66 353 46-45 66 264 47-45

66 310 47 66 252 48-15

66 285 48-15 66

At P.O.C 4+20-315 Radius

7516 Sight D-17 for O-AZ Lt.

37

6971

66 20.4 55-45

66 16.9 57-15

Vert fr 4

66 14.3 65-30

66 11.4 67-15

66 9.9 75

66 8.2 75-45

66 7.2 70-45

66 4.5 121

66 5.0 163-45

66 5.5 184-45

66 10.1 200

66 14.3 198-15

64 140 198

64 116 196-15

64 91 187-15

64 67 174-15

3/9/18

Yup Rod
Bub Inst

38

Set B.M.

B.M.

1.955 373.255

371.300

Bolt in Rock Ledge 50' E of Sand Div. D
75' E of Dam

0.595 372.660

Bolt in Rock Ledge North End Division

4/10/18.

Pot-
Willcomb
Bub

39

At II 17 - 20' East - 5' South

I.B.M.	8.30	363.5	355.20	Kil mark on forms.							
Ed N.S. 48	31.5	340°30'	52	22.2	314°15'	56	26.4	343°15'	58	25.4	317°30'
"	31.0	332°15'	"	30.	320°15'	"	24.6	348°	"	20.4	312°0'
"	33.5	323°	"	34.6	319°45'	"	22.5	346°	"	19.3	304°30'
"	39.7	324°	"	39.8	322°	"	21.5	349°30'	"	10.7	303°
50	39.4	323°	54	40.7	320°-15'	"	19.7	344°30'	"	8.7	301°15'
"	35.7	319°15'	"	35.0	318°	"	16.7	345°30'	"	7.1	293°15'
"	33.2	321°45'	"	30.0	320°15'	"	14.7	350°	"	6.7	353°
"	28.5	322°45'	"	19.2	313°30'	"	12.4	351°15'	"	10.0	356°30'
"	23.5	320°30'	"	15.0	308°45'	"	8.4	320°45'	"	14.2	352°30'
"	22.1	341°	"	13.0	321°30'	"	11.7	307°30'	"	16.5	346°45'
"	28.2	341°15'	"	15.4	342°30'	"	16.8	308°45'	"	18.3	345°15'
"	39.7	345°45'	"	27.6	342°30'	"	18.7	305°45'	"	22.7	347
52	39.5	345°30'	"	38.2	346°30'	"	20.5	313°15'	"	25	347°45'
"	29.6	342°15'	56	37.7	346°30'	"	23.7	315°30'	"	26.6	345°30'
"	17.2	336°15'	"	34.5	345°30'	"	29.7	319°	"	34.9	346°30'
"	17.3	312°30'	"	30	342°30'	58	28.0	318°	60	24.0	350°15'

A/10/18

At 17 - { 20' E
5' South }

40

60	✓	19.5	349°45'	62	✓	13.3	299°30'	64	✓	8.5	183°30'
"	✓	15.2	351°15'	"	✓	10.5	301°45'	"	✓	5.8	207°45'
"	✓	13.4	357°45'	"	✓	7.9	291°	"	✓	6.7	263°15'
"	✓	10.4	1°45'	"	✓	5.5	207°30'	"	✓	8.2	278°45'
"	✓	6.6	14°	"	✓	5	181°30'	"	✓	7.7	289°
"	✓	3.2	19-30	"	✓	2.5	135°	"	✓	11	300°45'
"	✓	2.7	64	"	✓	4.7	87°30'	"	✓	15.4	305°
"	✓	00	00	"	✓	5.4	62°30'	"	✓	19.4	307°
"	✓	3.0	337-30	"	✓	8.8	15°45'	"	✓	22.5	309°30'
"	✓	5.6	258-15	"	✓	11.0	3°45'				
"	✓	11.0	304°	"	✓	15.0	4°				
"	✓	14.2	303-30	"	✓	14.0	3°58'				
"	✓	18.2	311-45	64	✓	12.0	12°				
" + 62	✓	22.8	315°15'	"	✓	6.0	55°30'				
62	✓	18.3	306°	"	✓	7.3	118°45'				
"	✓	14.9	308°30'	"	✓	10.8	174°45'				

4/22/18
 HI = 485
 79.31 At E II 74.46
 Auxil Point A Sight All turn 49° Right
 for distance of 39"
 79.31 76.1 71.70

HI = 50
 76.70 At A Auxil Point 71.70
 Sight E" for Zero Az Lt.

64	6	340° 30	66	42	347 30
"	5.8	350	66	38.7	348
"	5.3	5 15	66	31.9	353 45
"	11.6	29 45	"	27.2	359
"	19.4	30 45	"	23.0	359 30
"	29.8	355 30	"	19.2	3°
"	33.	352-30	"	14.8	15 20
"	38	349 45	"	12.5	27 15
"	38	347 15	"	10.3	33
"	43	345-30	"	7.6	27
			"	5.8	14 15

HI = 50
 76.70 At Auxil Point A 41
 71.70
 66 57 354 30
 Form 66 60 345 15
 68 Form 58 342 30

"	5.8	358-38
"	5.1	24° 0
"	8.4	31
"	9.6	40
"	11.3	24
"	14.5	19
"	18.8	3 30
"	22.4	0 15
"	27.4	0 15
"	31.5	353-38
"	37.0	349-45
"	42.1	349-15

5/2/18

42

At E11 - Sight E17

Set point 61' N = E13 - 11' N

B.M.	0.75	373.41	372.66	Bolt in rock ledge 75' E. of N. end Diverting Dam		
T.B.M.		11.87	361.54			
	0.56	362.10	352.0	61.9	155° 10'	Face Dam Bottom 2 nd lift
At E13 - 11' N			352.3	62.5	159° 5'	Contact " "
359.9	48.2	9° 0'	352.0	55.6	154° 35'	Face Dam Top 3 rd lift
360.2	47.7	5° 45'	349.9	22.0	22° 5'	" Level 16 contact
365.9	48.2	9° 45'	349.9	37.1	11°	" "
365.9	55.1	5° 10'	354.2	37.1	11° 15'	" "
360.1	51.0	7° 40'	354.7	48.2	9° 15'	" "
358.0	67.7	155° 10'				Face of Dam Bot. 1 st lift
362.5	67.7	154° 55'				" " Top "
358.0	67.4	158° 15'				Contact Rock Bot. 1 st lift
361.5	67.4	158° 15'				" " Top "
362.5	72.9	156° 40'				Face of Dam Back Top 1 st lift
357.8	64.9	155° 5'				Face of Dam Top 2 nd Lift
357.8	64.9	148° 50'				Contact " "

5/11/18

At B 15 - 15 W -

B.M.

1.08

363.21

362.18

3' E of B 14 - 15 West - 15' North

362	30.1	216°10'	362	29.4	175°55'	360	25.3	196°15'	258	25.9	188°30'
	29.6	212°20'		27.1	172°		25.6	200°15'		26.1	184°30'
	29.7	210°45'		26.7	166°45'		27.5	199°35'		26.7	178°50'
	29.0	207°55'		28.8	165°55'		28.3	199°15'		25.8	176°30'
	30.2	205°55'		31.8	165°55'		27.2	203°		26.5	170°
	30.4	203°05'	But Not Excavated -				28.4	204°		24.0	161°40'
	29.4	203°05'	360	28.9	160°		25.7	212°40'		24.7	155°50'
	28.3	198° -	"	28.2	153°30'		28.0	211°40'		25.2	148°
	29.4	195°45'		31.2	153°15'		29.6	216°20'		27.3	146°30'
	29.7	194°25'		25.6	166°20'	258	28.5	214°10'		27.2	140°10'
	30.3	193° -		29.5	176°20'	*	25.4	212°40'		28.8	138°30'
	30.4	189°10'		27.4	179°45'		26.2	206°30'		31.0	141°30'
	31.9	189°10'		28.8	183°30'		24.7	200°40'	compete *	22.6	210°
	29.6	184°40'		27.3	190°		24.9	196°10'		19.6	206°
	29.7	181°30'		27.9	193°30'		25.9	192°		15.1	200°30'

43

At B 15 - 15 W

5/11/18

At B15 - 15'W -

25.8	14.2	203°40'	20.6	46°
✓	13.6	199°30'	✓	21.5 50°30'
✓	11.7	199°50'	✓	23.0 50°30'
✓	11.8	204°30'	✓	24.4 39°30'
✓	10.2	205°30'	As far as cleared -	
✓	6.5	189°30'		
✓	5.4	200°30'		
✓	3.5	180°		
✓	0	0		
✓	1.4	70°		
✓	3.2	45°		
✓	6.3	56°		
✓	7.8	33°30'		
✓	12.3	28°45'		
✓	15.5	40°		
✓	18.0	37°		
✓	20.3	40°45'		

44

At A15 - 5'W -

B.M.	-0.12	362.01	362.13	Same -
362	Concrete	15.0	182°30'	✓ 32.4 126°50'
	Concrete	19.8	181°30'	✓ 34.9 129°
	Steel diaphragm	15.1	176°20'	✓ 39 122°10'
		15.6	169°10'	✓ 41 117°30'
		18.6	167°45'	✓ 45.2 113°15'
		22.2	162°	✓ 51.8 109°
	Sand		360	✓ 52.0 108°50'
		25.2	140°	✓ 50.1 109°5'
		23.6	132°	✓ 49.0 106°20'
		24.2	129°40'	✓ 47.0 104°15'
		25.4	128°20'	✓ 44.5 105°40'
		25.6	125°	✓ 44.8 108°50'
		29.3	123°30'	✓ 46.6 112°45'
		30.2	126°30'	✓ 43.6 115°15'

5/11/18

At A15 - 5' W

360	41.9	118° 45'	358 Diaph 10.1	174° 30'	
	35.9	127° 0'	14.2	175° 10'	
	33.8	125° 0'	13.7	168° 0'	
	30.6	125° 50'	14.3	161° 20'	
	30.5	123° 0'	19.9	148°	
	26.9	123° 0'	22.2	141° 30'	
	24.2	127° 15'	20.2	132°	
	23.4	135° 50'	24.1	118° 40'	
	24.8	142° 0'	28.7	182° 20'	
	Sand		28.6	122°	
	Conc.	15.7	165° 0'	30.3	121° 30'
	Diaph.	14.0	175° 40'	31.1	125° 30'
		14.7	182° 0'	36.3	122° 30'
		19.7	181° 40'	37.6	124° 30'
358		18.6	183° 40'	39.	127° 20'
		8.8	188° 30'	39.2	118° 30'
		8.6	178° 20'	38.0	115° 10'

45

At A15 - 5' W

358	39.4	114°	356	25.9	118° 15'
	41.9	118° 10'		23.3	119°
	44.2	114°		21.3	123° 30'
	42.3	108° 30'		20.5	126° 50'
	45.4	104° 30'		17.9	126°
	47.7	104° 25'		11.7	134° 30'
	50.8	108° 45'		11.0	150°
	42.1	117° 40'	356 Conc.	9.6	160°
	41.7	109° 30'		3.5	145°
	40.2	108° 30'		7.6	90°
	37.7	110° 30'		3.2	35°
	36.1	109° 30'		5.4	33°
	35.7	113°		8.7	18°
	37.3	118°			
	35.8	119°			
	31.7	119° 10'			
	30.7	116° 40'			

5/11/18

B.M.	0.36	362.49		367.13	
0-15-10'E			717	355.32	
$\frac{355.32}{359.8}$					
✓	At	0 15 - 10'E			
360	25.0	207°30'	360	35.5	245°30'
362	25.4	208°30'	62 ⁹	35	241°30'
360	25.8	219°	60	37	247°10'
362	27.7	215°30'	60	Connect	
62	27.9	212°30'	62 ¹⁰	38	241°
60	26.9	221°30'	62	38.7	244°30'
60	28.7	223°	62	Connect	
62	29.9	223°	358	23.8	208°15'
62	32.5	219°20'		24.2	211°45'
62	33.5	222°30'		23.8	218°
60	29.8	227°30'		24.1	225°30'
62	31.3	228°40'		24.3	236°40'
60	34.6	240°		25.9	240°
62	35.	240°		28.2	238°40'

At 0 15 - 10'E

26

355.32

355	30.5	240°20'	354	23.0	238°40'
	32.7	244°		24.5	242°30'
	34.9	247°		27.5	245°30'
	42	247°30'		34.1	247°
	45.2	248°30'		39.2	248°10'
358	45.5	254°40'		38.2	254°45'
56	45.1	254°30'		44.	255°30'
	43.8	255°		45.7	255°10'
	43.3	248°30'		51.1	255°50'
	41.2	247°45'		51.5	256°40'
	33.9	247°10'		47.3	256°30'
	30.6	244°30'		46.6	259°40'
	29.	243°50'	54	47.6	259°40'
	26.6	243°15'	Ring	47.1	262°
	23.7	240°		45.9	263°10'
	23.1	227°40'		45.8	268°30'
	22.8	216°		51.1	267°30'
				53.5	264°40'
				53.0	258°10'

5/11/18

At 015-10'E 3553'

356	49.8	258°30'	✓	
	48.3	260°50'	✓	
356 Ring	48.7	262°30'	✓	
	51.2	261°	✓	
	52.2	259°	✓	
Top 356's	50.5	259°15'	✓	

At 017-18'S

P17	-0.20	76.09	✓	76.29
364	4.9	63°40'	✓	15.3 298°30'
	3.5	39°15'	✓	19.6 304°15'
	4.2	28°30'	✓	21.1 301°
	4.5	11°	✓	22.9 298°30'
	5.2	355°30'	✓	26.9 297°15'
	6.5	332°40'	✓	29.6 301°15'
	8.6	327°15'	✓	30.7 298°
	10.9	305°	✓	32.8 297°45'

49

At 017-18'S

35.6	295°10'	366	4.5	7°30'	
40.1	290°	✓	3.7	38°	
366	40.6	289°30'	✓	5.2	67°
✓	37.7	292°30'	✓	6.6	81°
✓	34	296°10'	✓	8.1	94°
✓	31.2	297°	✓	10.4	95°30'
✓	30.3	294°	✓	16.8	115°
✓	27.4	296°10'			
✓	22.3	298°			
✓	21.7	300°			
✓	19.6	304°			
✓	16.4	301°			
✓	14.6	297°			
✓	10.7	303°			
✓	8.7	302°			
✓	6.0	328°			
✓	4.9	330°			

5/20/18

At A15-5'W

Measure 42.42 E. along 15 Line

Set point M15-~~742~~¹⁸⁴E.

B.M.

362.13

3'E of B14 - 15'W - 15'N.

3.97

366.10

50

3.6

277°30'

50

10.9

5°30'

M15-742'E
1242

12.30

353.80

2.9

291-

11.0

18°

- At M15-742'E -

3.8

288-

11.7

11-

353.8
5.3
359.1

52

58

348°50'

6.2

310-

13.7

124°

Rod 7.5

356.6

4.7

0°40'

6.5

315-

13.5

18-

Rod 7.1
52

11.4

70°15'

3.9

320°40'

8.5

315-

14.7

27°30'

11.8

61°35'

2.9

305°30'

Ring

6.9

311°30'

14.1

33°30'

10.2

63°40'

3.6

276°

351

9.1

310-

9.7

19-

9.1

59°20'

7.5

239°30'

9.0

287°30'

8.6

29°30'

9.3

56°15'

50

15.1

273°30'

6.9

280-

14.8

58°15'

7.5

32°30'

12.2

270°50'

6.0

300-

14.0

64°10'

9.3

23°10'

10.0

272°20'

Top

Elev 350.5

13.0

95-

9.8

12°40'

7.4

252°10'

10.4

353°15'

48

14.

91°40'

8.6

4°20'

6.0

245.11

9.9

6°30'

14.9

61-

At M¹⁵ 1242 E.

28

5/40/18

At M 15 - 1242 E

At M 15 - 1442 E

49

48	17.6	73°30'	48	22.4	25°50'	48	14.0	287°30'	46	25.4	38°45'
	20.1	69°30'		15.6	20°30'		14.9	290-		26.9	42-
	22.7	59-		18.2	25°20'	46	12.3	327°30'		27.6	45-
	22.1	52-		16.7	26°10'		12.9	339-		25-	49°40'
	21.2	53°30'		16.6	19°10'		12.3	346-		25.8	51°30'
	21.9	52°15'		14.5-	12-		16.9	353-		23.9	54-
	20.3	48-		15.5-	11-		17.2	357°15'		24.0-	55°30'
	21.8	41°50'		15.6	6-		19.9	358°50'		22.8	62°20'
	23.4	38°20'		17.2	0°30'		19.9	3°15'		21.6	64°40'
	21.6	35°		13.7	347°30'		18.0	6°40'		22.3	70°40'
	22.1	31-		12.2	346°30'		20.7	8°30'			
Ring	20.9	48°20'		10.8	333°15'		23.1	9°50'			
348	22.8	51°20'		11.6	320°50'		22.8	18-			
	24.	48°50'		13.4	313-		23.9	19-			
	22.5	46°30'		12.6	303°30'		23.9	28°15'			
348.4 for	27.0	49°45'		13.9	294°15'		23.2	32°20'			
				13.2	288°30'		23.6	37°10'			

5/20/18

At E11.

Measure 11.50 + 50 + 8.10 = 69.6 E

= C11 + 19.6 E

B.M.

362.13

3'E of B14 - 15'W - 15'N.

H.I.

7.50

369.63

Rod 9.6
360Steel
26.0

86°30'

360

8.8

233°30'

-

At C11 + 19.6 E -

Concrete
24.5

87°30'

12.3

223°30'

H.I.: 369.6

Concrete
22.7

84°30'

14.2

231

Rod 3.6

66

~~Steel~~
~~31.3~~~~28.6~~

28.6

51°

64

2.5

214°

21.6

72°

Rod 11.6
358

17.3

208°45'

62

28.6

51°

62

4.4

221°

19.3

77°40'

13.3

208°15'

64

22.8

56°

64

3.7

186°15'

15.5

86°30'

11.0

208°15'

64

20.7

47°45'

64

3.7

117°

13.3

95°30'

9.9

201°

64

26.6

54°15'

64

6.7

90°

10.9

110°30'

5.7

201°30'

64

23.3

57°

64

7.8

88°

8.8

120°30'

5.1
4.7

177°45'

64

18.7

57°30'

64

8.8

99°

7.2

123°

6.4

141°30'

64

15.1

58°30'

64

14.8

79°45'

6.9

115°30'

7.6

131°30'

64

13.2

62°

64

15.8

72°30'

5.4

131°15'

10.6

127°

64

10.2

61°45'

64

18.9

71°30'

5.1

158°30'

12.4

129°45'

64

9.2

74°30'

64

21.6

65°30'

5.9

214°30'

14.7

124°30'

50

At C11 - 19.6 E

At C11 - 19.6 E

358	15.6	115°30'
/	18.2	105°30'
/	17.3	86°15'
/	Concrete	
	20.6	85°30'
/	cm	
	21.6	90°20'
/	cm	
	24.1	110°
/	cm	
	25.1	108°
/	Concrete	
	26.2	101°20'
/	Steel	
	26.4	86°30'

5/25/8

Buh. +
Mixer

51

Location of powder holes: Spillway.

Number Dist. Angle Lt Angle Rt Depth

Set of	Coord pt.	V 30	Sight V 31	12N
1	33.9	104°30'	13.2	
2	36.5	90°14'	12.3	
3	41.3	79°30'	11.5	930 Spring #2 3 sticks
4	31.3	66°42'	11.5	
5	26.2	81°02'	11.0	
6	23.5	102°22'	12.4	
7	12.4	96°0'	12.4	
8	17.0	61°35'	12.0	
9	24.5	46°32'	11.7	
10	22.3	20°34'	11.4	
11	12.4	21°20'	12.0	
12	3.0	26°35'	12.1	
13	10.4		56°0'	11.0
14	16.0		19°23'	11.3
15	24.9		30°23'	10.4
16	30.6		20°25'	11.0
17	24.4		37°30'	11.2
18	21.0		63°47'	9.2
19	29.0		65°37'	10.5
20	31.2		45°56'	10.3
21	36.6		30°10'	8.0
22	43.4		36°40'	7.5
23	39.0		50°20'	3.5
24				

5/21/18

52

Setting Elevs on D.S. Face Old Masonry

B.M.

362.13

2.98 365.11

rod-

360

5.11

TP. Rock

~~255~~

10.11

10.14 354.97

2.08 357.05

350

7.05

7.8 349.2

5.0 357.

5/25/18

At C11-196E

N11 ^{1.7E} Set point of Rock 82.1 EastM11 ^{5.5E} = " " " 60.9 EastM12 ^{5.5E} At M11 5.5E

3.9N Set point Rt. 15 North 28.9

(5.5E)
At M12 (3.9N)
+ H1 - E10
BM 374 65.87 362.13

TP. Rock 0.75 5364 1298 52.89

M12 ^(5.5E) (3.9N) 783 45.81

H1 = 5.1

50.91

At M12 ^(5.5E) (3.9N) 4581

R10.9 10 ✓ 33.7 232 45 40 ✓ 18.5 229-45

" ✓ 33.5 230 30 " ✓ ~~17-45~~

" ✓ 30.9 230 15 " ✓ 15.9 217-45

" ✓ 27.5 237-15 " ✓ 17.9 211

" ✓ 23.4 235 " ✓ 14.9 206

" ✓ 21.5 231 " ✓ 13.2 207-30

5/25/18

Bob
Wilcox

53

50.91 At M. 12 ^{5.5E} 3.9N 4581

✓ 40 11.4 206-45 ✓ 17 122-30

✓ 40 14.2 180-30 ✓ " 17.2 129-45

✓ 40 16.5 167-30 ✓ " 17.6 139-15

✓ " 21.4 166-15 ✓ " 18.0 148-30

✓ " 23.1 162-0 ✓ " 16.8 155-15

✓ " 23.9 150-15 ✓ " 16.5 161-15

✓ " 23.3 142-20 ✓ " 13.8 166-45

✓ " 20.8 133-10 ✓ " 13.0 176-15

✓ " 20.4 124-0 ✓ " 11.7 185-15

✓ " 19.3 116-30 ✓ " 9.0 189-0

✓ " 21.0 108-0 ✓ " 9.8 211-30

✓ " 23.3 94-45 ✓ " 10.3 220-15

✓ " ~~23.3~~ 42 ✓ " 12.7 221-30

✓ " 24.2 96-15 ✓ " 13.0 232-15

✓ " 24.5 91-15 ✓ " 14.8 235-45

✓ " 19.3 102-45 A2-A4 16.6 240

✓ " 17.9 108- A2-A4 17.6 236-45

5/25/18.

5091	AM 12	55E 3914	4581	5091	AM 12	55E 3914	4581			
42-44	✓ 22.1	235-30	44	✓ 12.4	133-45	✓ 46	83 250.30	✓ 48	27.0	241
42-44 Concrete	✓ 25.5	236-15	"	✓ 12.5	122	✓ 46	89 261.30	✓ "	24.8	240-30
42-44-46-48	✓ 31.7	238-45	"	✓ 14.2	105-15	✓ 46	106 263	✓ "	20.0	254-45
			"	✓ 14.4	94-45	✓ 46	10.7 253-15	✓ "	18.1	261-30
44.	✓ 15.9	243-30	"	✓ 17.9	78° 0'	✓ "	12.0 249-30	✓ "	16.1	272-15
44	✓ 13.3	241	"	✓ 22.0	89-15	✓ "	12.8 257-15	✓ "	12.9	273
"	✓ 11.5	238-45	"	✓ 24.6	88.0	✓ "	14.6 255-45	✓ "	12.0	298-30
"	✓ 8.8	241-30	"	✓ 26.4	90-30	✓ "	16.1 249-10	✓ "	9.2	290-30
"	✓ 9.7	229	"	✓		✓ "	18.3 240-45	✓ "	6.7	307
"	✓ 9.5	219-45	R 49 46	✓ 27.0	86 30	✓ "	21.7 241	✓ "	3.7	31.3
"	✓ 8.0	209-30	46	✓ 21.5	84-30	✓ "	22.6 238	✓ "	6.0	348-30
"	✓ 3.9	210	"	✓ 13.9	55-30	✓ "	24.6 237-45	✓ "	5.6	5.0
"	✓ 9.8	179	"	✓ 11.3	46-45	Concrete ✓ 38.7	238-45	✓ "	9.6	15-45
"	✓ 11.0	157-45	"	✓ 6.5	32-45	R 48 ✓ 31.7	238-45	✓ "	10.8	28-30
"	✓ 9.3	148-45	"	✓ 4.0	5-45	✓ 48 ✓ 31.0	239.0	✓ "	11.8	30-15
"	✓ 10.8	148-45	"	✓ 1.5	258-30	✓ 4 ✓ 30	240 30	✓ "	14.8	40-15
"	✓ 11.0	139-45	"	✓ 5.4	257-45	✓ 4 ✓ 27.1	238-15	✓ "	14.8	53-45

H.L. = 5.1

	50.91	AT 17/2	SSE 3.9N	4581		
48	16.1	61-45	✓ 50	16.7	530	
over-hang 48	15.3	66-30	✓ 50	16.9	39-30	
48	18.4	71-45	✓ "	15.4	35-15	
"	21.8	80 0	✓ "	14.0	25	
"	25.4	85-30	✓ "	10.8	8-15	
"	27.6	84-15	✓ "	10.1	330	
"	30.8	85.0	✓ "	14.0	305-15	
"	31.2	90-30	✓ "	17.0	300-30	
			✓ "	19.5	286	
R. 09 50	35.1	87-45	✓ "	20.7	271-30	
"	34.8	85-45	✓ "	24.1	263-15	
"	33.8	85-30	✓ "	24.8	257	
"	31.3	83	✓ "	24.7	250-30	
"	29.8	77	✓ "	28.0	247-30	
"	23.0	76-30	✓ "	29.4	245-45	
"	19.7	64-45	✓ ^{Pogreco}	29.5	247.0	
"	18.8	65-30				

H.L. = 5.1

5/35/18

	50.91	AT 17/2	SSE 3.9N	4581			55
Pogreco 40	38.9	224°	38	30	196-45		
Depression Rog. Cap.	35.4	220-30	✓ 20	29	208		
"	39.5	216	"	23.8	210		
"	46.3	210-45	"	23.4	203-15		
"	51.0	210-15	"	20.2	196-30		
Pogreco R. 10	49.5	213	"	23.7	186		
			"	22.5	181-45		
✓ 38	47.5	163	"	26.2	172-15		
"	48.7	166-15	"	29.0	162-15		
"	43.5	170	"	32.5	163-45		
"	44.8	175-30	"	33.8	156		
"	44.2	181	"	32.3	150-30		
"	44.0	186-30	"				
"	43.4	191-15	"				
"	37.5	192	"				
"	32.6	184-45	"				
"	29.0	189	"				

H1-51

5/20/18

H1-51

ab-Willcomb

65.79

AM 11 5-5-E

60.69

65.79

AM 11 5-5-E

56

60.69

577

366

65.79

362.13

54

11.7

149-30

56

458

228.0

Coyardo

453

213

52

306

54

10.7

176-15

56

428

230

52

487

214

52

350

54

135

198

56

375

240-30

52

42

319

52

37.0

11

185

212-15

56

31.5

250-45

52

391

221-30

52

39.3

11

182

218-30

56

30.6

272-45

52

368

218

52

38.8

11

20.4

221

56

25.1

273-30

52

320

225

52

44.8

11

22.9

230

52

254

225

52

44.8

11

24.3

230

Contiguo

166

52

322

218-30

54

46.7

11

29.3

238-15

52

196

209-30

54

43.2

11

33.8

225

52

195

199-45

54

38.8

11

36.0

224-65

52

163

188-30

54

36.0

11

42.5

220-30

56

5.2

199-30

52

140

180-45

54

30.4

11

42.4

218-45

53

168

52

125

161

54

27.4

11

44.0

218-15

6.8

168-30

52

160

149-30

54

24.5

11

12.7

142-15

52

195

139-30

54

23.2

56

49.4

221-15

12.7

138-45

52

237

138-15

54

13.9

56

45.4

219-45

11.8

129-15

52

27.7

135.0

54

13.2

11

11.8

129-15

52

160

149-30

54

27.4

11

11.8

129-15

52

140

180-45

54

30.4

11

11.8

129-15

52

125

161

54

27.4

11

11.8

129-15

52

160

149-30

54

27.4

11

11.8

129-15

52

195

139-30

54

23.2

56

49.4

221-15

12.7

138-45

52

237

138-15

54

13.9

56

45.4

219-45

11.8

129-15

52

27.7

135.0

54

13.2

11

11.8

129-15

52

160

149-30

54

27.4

11

11.8

129-15

52

195

139-30

54

23.2

56

49.4

221-15

12.7

138-45

52

237

138-15

54

13.9

56

45.4

219-45

11.8

129-15

52

27.7

135.0

54

13.2

11

11.8

129-15

5/25/18

6579 AM 11-5-5E 6069

56 175 122-15 58' 326 118-15

" 188 125-30 58' 317 115-30

" 215 121-30 " 322 112

" 227 126-15 " 296 113-30

" 283 124-15 " 306 118-45

" 290 128-30 " 300 121-45

" 330 126 " 233 125-30

" 346 122.0 " 230 117-45

" 388 123-30 " 200 121-15

" 432 127-15 " 4.7 153-45

" 460 124-30 " 3.5 207-30

" 474 125.0

58 476 123-15

" 460 124

" 425 126.0

" 420 124-45

5/28/18

H¹ = 4.8

371.89

At N4 - 1.7 E

67.05

5/28/17

Pot
Dub

58

371.89

At N4 - 1.7 E

367.09

87m.

976 371.89

362.13

1.62

28.3

145-15

'62

54

222-15

R = 11.9

"

26.7

144-45

"

40

235-45

✓ 60

23.7

266-30

60

18.4

133

"

25.1

149-30

"

9.5

255-45

✓ 60

19.7

262-15

"

19.3

140-15

"

23.0

150-15

"

7.1

262-30

✓ "

18.7

265-30

"

19.5

145-15

"

21.5

146-30

"

10.9

267

✓ "

16.8

266-15

"

22.6

151-15

"

21.9

137-15

"

12.7

266

✓ "

9.3

255-30

"

26.1

148-30

"

21.0

126-

"

13.2

279-15

✓ "

9.8

248-30

"

26.8

148-15

"

15.6

138-30

"

14.0

263-30

✓ "

9.7

234-15

"

28.2

150-30

"

13.0

149-15

"

18.0

270

✓ "

7.7

235-30

"

30.1

146-15

"

8.7

147-30

"

20.7

274

✓ "

11.2

216-30

"

30.2

144-30

"

8.4

149-45

"

22.0

275-15

✓ "

10.7

189-45

"

32.0

143-30

"

10.1

159-15

"

-

✓ "

10.7

162

"

35.9

139-15

"

10.5

191-45

6.4

15.9

284

✓ "

12.9

175

-

-

-

"

9.8

194-30

"

14.8

285-30

✓ "

14.4

170-15

6.2

33.6

132-45

"

10.5

203

"

14.0

283-30

✓ "

15.5

156-15

"

30.8

144-15

"

9.7

219

"

7.5

284

✓ "

13.3

151-45

"

29.5

141-30

"

6.0

232-30

"

9.2

288-30

5/28/17

H1-48

371.89

At 1711-17E

367.09

371.89

At 1711-17E

59

367.09

64	71	266-45	64	13.6	144	64	278	132-0	66	114	138-15
"	35	274-45	"	15.2	140	64	322	134-0	"	78	121-45
"	15	234-30	"	14.0	134-15	64	356	132-30	"	75	110-30
"	38	240-30	"	13.1	134-15				"	82	102-15
"	56	212-45	"	14.7	126-30	66	357	131-30	"	50	137-15
"	92	205	"	17.0	134	"	322	134-0	"	55	161
"	77	195-30	"	21.7	124-30	"	30.0	133-0	"	8.6	174
"	10.1	191-0	"	23.0	133-30	"	26.2	130-30	"	9.3	191
"	10.0	180-0	"	22.4	140	"	24.7	133-45	"	6.8	188
"	10.0	162-30	"	23.3	142	"	22.0	124-0	"	5.4	211-30
"	88	153-30	"	23.6	145-45	"	18.7	129-0	"	3.8	231-30
"	7.1	153-30	"	25.0	148-15	"	15.3	120-30	"	0.0	0.0
"	6.0	140-0	"	25.5	143	"	12.8	115	"	2.5	321
"	7.1	133-0	"	27.2	141	"	14.2	123-30	"	4.7	280-30
"	96	143	"	29.0	142-30	"	12.8	132	"	7.7	307-30
"	108	147-15	"	28.3	137-45	"	12.1	130-45	"	8.2	287
"	11.6	139-15	"	26.0	132-0	"			"	10.6	291

5/28/18

H1=48

371.89

A/M 11-17 E

367.09

66 140 183-45 ✓

66 166 290-30 ✓

H1=5.1

353.98

A/M 15-12.42 E

353.80

Back

3.98 358.98

355.00

R=32

56 12.5 162 56 240 242

" 12.9 190-30 56 264 244-15

" 14.5 212-30 " 30.1 244

" 16.2 214-30 " 31.3 242-30

" 19.8 207-45 " 36.6 243-15

" 21.7 213-30 " ^{Concrete} 40.9 237

" 18.9 214-45 " 40.9 242-30

" 21.0 223-30 " 40.0 253-30

" 19.7 226-0 " 40.7 262-15

H1=5.2

353.98

A/M 15-12.42 E

60

353.80

56 400 278-30 54 184 230-30

56 42.5 290.45 " 12.5 204-15

" 43.7 295-30 P " 11.5 204-30

54 ^{Face Concrete} 38.6 297 " 12.5 190-30

" 38.8 259-15 " 12.1 163-15

" 38.8 251-15 " 11.4 151-0

" 37.9 243 " 13.2 135-0

" 34.6 247-15 " 15.3 132

" 31.5 246-45 " 17.8 146-30

" 26.3 243-30 " 19.4 134

" 23.5 253-0 " 26.0 115

" 19.4 254 " 30.0 113

" 18.5 257-30 " 33.7 115-30

" 16.8 259 " 37.8 115-15

" 17.5 246 " 41.6 114-30

" 20.4 238-15

" 20.5 235-15

5/28/18

41-52

358-98

A/M 15

1242 E

35380

52	500	106-45	52	23	68
"	492	104-45	52	55	73
"	462	104	52	113	73
"	436	105-15	52	12.1	60
"	438	108-15	-		
"	420	114-30	-		
"	385	115	-		
"	347	114	52	31	280
"	304	111	"	54	241
"	276	112-45	"	88	236-30
"	248	117-30	v.4	126	205-15
"	188	134-15	"	133	212-30
"	152	129-15	"	172	225-45
"	127	136-45	"	196	234-30
"	112	165-15	"	171	241-30
"	51	121-15	"	148	256-15
"	37	90	"	213	260-15

41-52

358-98

A/M 15-1242 E

61

35380

52	224	258-15	50	20.0	262-15
"	248	255-30	"	160	261-15
"	262	252-15	"	134	255
"	268	243-45	"	138	249
"	336	248	"	178	233-45
"	368	246-20	"	145	224-15
"	375	246-45	"	123	220
Cigarette Face	359	252-30	"	105	210-45
50	358	253-45	"	88	231-45
"	370	248	"	75	237-45
"	353	247-30	"	90	248-
"	344	248-15	"	84	258-30
"	331	248-45	"		
"	368	243-45	"		
"	260	250-30	"		
"	255	256-30	"		
"	240	260-30	"		

5/28/18

#1=52

59.00

A/M 15-1242 E 35380

#1=52

59.00

A/M 15-1242-E

62

35380

50.0

56

67.3

50

21.3

298-15

48

60

124

48

9.0

234-45

"

33

102-30

"

24.8

293-30

48

58

116-15

"

9.6

228-45

"

28

109-30

"

30.0

289-45

48

48

77

"

14.0

235-30

"

41

105-15

"

37.8

293

48

137

75

"

11.4

250-30

"

50

137-15

"

5.2

West 270

48

138

69-45

"

14.5

259-45

"

67

136-15

48

34.6

110-0

-

"

24.0

262

"

84

127-15

"

31.2

107-30

-

"

26.7

252-45

-

"

28.3

110-0

48

11.5

344-15

"

26.8

245-30

-

"

24.3

110-45

"

10.8

320-30

"

31.5

248

-

"

23.6

113-30

"

13.4

314-15

"

31.5

250-45

Connect.

50

125

253-15

"

22.2

117-30

"

13.0

299-45

"

32.0

253

50

28

246-15

"

20.5

117-30

"

13.9

293-15

"

34.0

252-45

"

54

290-

"

18.0

125-30

"

12.5

277

"

35.0

257-30

"

68

322-45

"

16.4

127-45

"

11.1

269-30

"

34.2

271

"

110

340

"

15.5

125

"

8.5

262-30

"

-

"

150

310

"

14.2

130-15

"

9.7

248-45

"

34.8

275-15

"

190

312-15

"

11.8

146-30

"

8.0

238-45

46

32.0

275-15

Dist 90° Spinning East

712.17

Connect. (ok)

46

5/28/18

H₁=52

35900

At M15

1242E

353.80

H₁=51

5/28/18

H₁=50.91

At M12

SSE

3.9N

63

45.81

16 324 103.30

16 335 102.0

16 444 98.0

16 150 275-45 16 464 99.0

16 164 297-15

16 145 306

16 138 314-45

16 123 326

24.05 141.51

E10

10.99 39.92

H₁=51

45.02

At Auxil point A 339.92

Sight M12 SSE 3.9N for Zero Az Lt.

44 412 195-0 440 31.9 231-15

" 400 194-30 440 33.0 230-45

" 392 196 " 34.7 234-45

" 381 195-30 " 39.8 233-45

" 352 196 " 40.2 237

" 317 207 " 42.0 237-15

" 298 214 " 44.5 239

" 290 220 42.0 438 238-30

" 298 221 42.0 39.9 235-15

" 292 226-15 42.0 35.2 236-45

" 300 229-15 42.0 34.1 238

" 320 230 42.0 31.2 232-45

16 154 128

16 194 117-45

16 272 107-15

16 293 107-15

16 310 102-45

H1=5.1

5/28/78

4502 At Auxil Point A 339.92

✓ 420 299 232 40 347 193

✓ 420 283 227 40 341 196

✓ 420 285 220-30 40 310 204-30

✓ 420 320 206-45 " 295 207-30

✓ 420 342 197-0 " 288 208-15

✓ 420 363 193-15 " 274 213-30

✓ " 378 194-45 " 280 218-0

✓ " 387 192-30 " ^{Verked} 283 219-15

✓ " 430 194-15 " 284 227

✓ " 440 191 " 295 228-30

✓ " 471 189 " 299 232

✓ ^{omit} (" 486 185-15) " 305 232

" 316 234

✓ 40 397 188 " 340 234

✓ " 388 188-45 " 344 236-30

✓ " 374 190-15 " 357 237-30

✓ " 360 191-15 " 370 249

H1=5.1

Rod 5'

4502 At Auxil Point A

✓ 40 362 255

✓ ~~38~~ 84 201-30

✓ 40 387 258-30

✓ 40 384 264

✓ " 406 267-15

✓ " 409 269

✓ " 435 272

✓ " 474 275

✓ ^{Coperto Fall} " 494 276-45

✓ 90 268 248 360

✓ 92 215 256 358

✓ 83 165 234 367

✓ 92 437 239-30 358

64

339.92

5/28/18

At C11-19.6E

Measure 22.3 + 22.3 = 44.6 Toward E11 =

I11

BM 234 364.47 362.13

I11 10.04 54.43

H.I. = At I11 54.43

5/29/18 Measure North 9.00 + 3.5 = 12.5 for set up =

I11 12.5 North

Measure 50 North for set up = I13

H.I. 52 336.97 At I13 331.77

BM Rod Dist - 0.26 336.97 337.23

12.2 18.8 163-15 24.77

13.8 17.3 158-45 24.17

H.I. 54 37.17 At I13 331.77

13.8 14.1 156° 23.4

BM 26 13.6 152-45

26 13.2 156 45

H.I. = 54

At I13

26 19.4 163°

26 19.6 160-45

28 20.4 159-45

28 20.1 167-15

28 17.3 161-15

28 13.0 158

28 13.4 151

28 14.9 152-30

28 16.0 146

28 17.4 149-30

28 16.9 152-45

28 18.0 156-15

30 20.8 159-15

30 20.4 165-30

30 18.2 166

30 19.8 172-30

30 19.6 182

65

331.77

Copperplate 30 13.4 187-45

" 12.2 177

" 12.2 164-45

" 13.2 162-30

" 12.3 159-45

" 13.3 147-15

" 14.6 150-30

" 16.8 140-45

" 18.9 144

" 18.8 148-30

Copperplate " 18.5 151-45

52 32

32 6.2 314-45

32 3.4 335 30

32 0.0 0.0

" 2.2 188-30

" 2.5 130-45

H1-5.4

5/29/18

H1-5.4

5/29/18

66

37.17

A+II 13

31.77

37.12

A+II 13

31.77

(5.2)

32 78 166-30 32 203 147

34 88 356-45 ^{tie in} 36 11.8 82

32 86 164-45 32 208 154-15

" 91 345-30

32 77 157-15 32 217 156-30

" 102 340

" 80 151 32 219 162

" 157 346-45

" 62 130 ^{tie in to old topo g} 32 240 166

" 163 338-45

" 88 125-45 34 244 158-15

① ^{concrete} 36 23.3 342 30

" 88 122 34 228 154-15

" 232 349

" 68 111-45 34 213 148-45

" 187 354-15

" 93 87-30 ^{concrete} 34 215 142-30

" 18.3 1° 0

" 91 105-15 34 157 123

" 158° 0° 30'

" 123 136-45 34 133 120

" 153 17°

" 133 135-30 34 120 99-30

" 98 26-30

" 145 141-15 34 110 97-45

" 80 41-0

" 173 138 " 110 80-30

" 90 55

" 186 135-30 " 89 75°

" 10.3 56-30

" 200 139-45 " 43 56°

" 11.1 70

" 196 142-45 " 10.1 24

" 10.8 79-15

H1=51

34896

At D 11-12.514

343.86

H1=51

34896

At D 11-12.514

67

343.86

(P 1.0)

Concrete

38.9	11.73	212-30	40	17.2	154	337.23
------	-------	--------	----	------	-----	--------

38	11.7	212-15	40	15.9	154-45	
----	------	--------	----	------	--------	--

38	14.5	200	40	8.7	129-15	
----	------	-----	----	-----	--------	--

"	13.6	198-15	"	5.0	152-15	
---	------	--------	---	-----	--------	--

"	16.2	189-15	"	4.8	178-45	
---	------	--------	---	-----	--------	--

"	16.1	166-15	"	10.4	172	
---	------	--------	---	------	-----	--

"	15.6	158-30	"	13.0	203	
---	------	--------	---	------	-----	--

"	18.6	159-30	"	11.7	213	
---	------	--------	---	------	-----	--

"	25.4	168°	"	9.3	218-45	
---	------	------	---	-----	--------	--

"	30.2	167-30	"	10.7	225-30	Concrete 3 Tenths further west
---	------	--------	---	------	--------	--------------------------------

"	32.7	161-45				
---	------	--------	--	--	--	--

Tie 17.	35.2	161	42	10.7	225-30	
---------	------	-----	----	------	--------	--

(P 2.0)

"			42	9.3	218-45	
---	--	--	----	-----	--------	--

40	27.8	153-30	42	4.7	161-30	
----	------	--------	----	-----	--------	--

40	35.8	165-30	42	3.6	140-45	
----	------	--------	----	-----	--------	--

40	19.6	161	"	4.4	117	
----	------	-----	---	-----	-----	--

(3.0) Concrete

42	6.0	109-45	46	5.0	288	
----	-----	--------	----	-----	-----	--

"	8.3	114-0	"	2.5	323-45	
---	-----	-------	---	-----	--------	--

"	13.4	123	"	4.4	20-45	
---	------	-----	---	-----	-------	--

"	13.4	115	"	6.5	44-0	
---	------	-----	---	-----	------	--

Tie 17	14.8	115	"			
47	21.3	138	"	6.8	91°	

44	17.8	119-45	"	12.0	105	
----	------	--------	---	------	-----	--

44	16.5	112-45	"	13.2	100-45	
----	------	--------	---	------	--------	--

44	13.9	103-30	"	15.9	110-15	
----	------	--------	---	------	--------	--

44	8.8	111	"	17.6	113-45	vert for 6.11 Tie 17
----	-----	-----	---	------	--------	-------------------------

"	7.1	99				
---	-----	----	--	--	--	--

"	5.7	65-30				
---	-----	-------	--	--	--	--

"	3.2	41-15				
---	-----	-------	--	--	--	--

"	1.0	200				
---	-----	-----	--	--	--	--

"	5.0	155				
---	-----	-----	--	--	--	--

"	9.9	220-45				
---	-----	--------	--	--	--	--

Concrete	9.9	229-45				
----------	-----	--------	--	--	--	--

5/29/18
H.I. = 53
359.10

At N 15-1242 E 35380

Set 14' South of 00° =

N 15-
{ 12.42 E
14.0 S

H.I. = 48
353.90

At N 15-
{ 12.42 E
14.0 S 34910

R 119

Sight N 15-1242 E for Zero

Ar ✓ 62 76° Ar ✓ 286 111.0

Ar ✓ 86 68° " ✓ 290 108°

Ar ✓ 135 68-45 " ✓ 306 110-30

Ar ✓ 164 60-30 " ✓ 330 111-15

Ar ✓ 184 76 Concrete " ✓ 360 108-30

Ar ✓ 140 91 45 " ✓ 390 107-30

Ar ✓ 152 109-30 " ✓ 328 105-05

Ar ✓ 172 108-30 " ✓ 322 90-15

" ✓ 182 113-30 " ✓ 322 90-15

" ✓ 217 115-30 R 44 ✓ 268 98

" ✓ 245 113-15 " ✓ 264 102

" ✓ 267 114-0 " ✓ 271 108-15

H.I. =

353.90

R 119

Top

44

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

"

1242 E

14.0 S

68

349.10

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

46. ✓

103-45

101-0

67-30

57-0

43-15

47-0

50-30

58-15

65-30

67-30

67-30

62-45

65-0

65-30

47-0

42-0

28.0

29.4

29.0

33.1

32.3

22.4

22.0

22.0

19.0

16.0

12.8

9.3

7.5

13.5

16.0

50.3

32.0

29.6

34.8

38.0

36.4

37.8

35.7

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

36.4

53-30

50

57

60-45

63

69-45

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

71-15

6/3/18.

H.I. = 46

71.69	165	289	64	37.5	279-45
66	172	293	64	37.5	279-45
R.S. 7	183	299-30	64	32.7	280
"	215	298-15	64	58.6	284-15
"	244	295-15	"	24.0	283-30
"	31.0	288-30	"	23.2	287
"	325	284-45	"	18.3	299-15
"	351	282-15	"	16.5	290-30
"	380	282	"	16.2	285
"	410	284-30	"	15.0	284-30
"	437	285	"	14.0	283
"	48.7	295-0	"		
R.S. 7	62	44	62	44	263-30
"	64	475	62	78.0	269-30
"	66.3	290-15	62	19.6	274-30
"	75.4	285-15	"	22.6	275-30
"	81.7	284-15	"	26.5	278
"	80.7	281-30	"	31.5	273-45

H.I. = 46

71.69	34.2	272-45	60	21.4	263
"	36.5	274	60	19.2	262-30
"	41.5	275-30	"		
"	44.4	277-30	58	24.7	261-30
"	45.3	283-30	58	28.0	263-45
"	47.4	287	58	32.6	264
"			58	36.7	268-30
"	46.6	285-15	"	39.8	268-30
"	45.9	281-30	"	41.2	270
"	46.9	280-45	"	44.7	269-45
"	44.6	277-45	"	46.0	274
"	44.3	273-15	"	47.7	281-15
"	40.3	272-45	"		
"	55.5	270-30	"		
"	31.7	267-30	"		
"	48.7	269	"		
"	24.7	269	"		

Willcomb
Bob

69

6/4/18

2 Topog on old Masonry

6450

Pot
Bub

70

Sta

At B14-15 W

+ At

- At

E10

②

At B14-15 W

#1 = 6450

1 Bm

237

6450

6213

58

36.4

328

58

253

64-45

② Point ✓

94

22°30'

RC

60

195

56

37.2

346-30

"

162

82-30

② Point

62

343

20°30'

RC

60

340

271-30

31.4

9°-30'

"

17.3

112-45

RC 60 ✓

300

21°

RC

60

340

271-30

42.3

9°

"

17.3

170

RC 60 ✓

320

13-30

"

"

187

219

45.9

12-30

"

19.0

171

RC 60 ✓

416

11°

"

"

68

225

48.7

20

"

37.3

185-30

" " ✓

132

16°

"

"

7.9

187-30

47.0

23-45

"

40.4

192-30

" " ✓

340

27-45

"

"

55

177-15

41.4

22

"

45.4

206-45

RC 60 ✓

22.1

36

"

"

35

118-45

37.0

30-30

"

46.4

206

" " ✓

196

17-30

60

108

240-45

33.9

31

"

42.5

195-30

" " ✓

180

3-30

"

125

297-15

39.8

30

"

46.2

193

" " ✓

85

5-30

"

111

317

34.4

35

"

49.8

193

" " ✓

20

90-30

"

15.1

337-30

23.3

45-30

②

56

53.0

156-30

" " ✓

4.4

114-30

"

20.6

324-15

32.0

46-15

"

49.8

155

" " ✓

10

101-30

"

26.5

310

21.9

53-30

"

49.3

158-30

" " ✓

15.3

86

"

"

"

23.2

55

"

43.3

159

6/4/15.

6450	B14-15W.		
56	465	164-15	✓
"	483	178-30	✓
"	325	171-30	✓
"	300	154-30	✓
"	310	129-30	✓
"	265	129	✓
"	295	125-45	✓
"	307	119-30	✓
"	322	110-15	✓
"	309	97-15	✓
"	326	102-45	✓
"	52	140-45	✓
111	51	131-15	✓
"	385	96	✓
"	382	74	✓
"	446	51-15	✓
"	53	45	✓

41-	6276	A/B15-15W.			71
B77	0.63	6276			6213
(68) 56	316	138-30	58	148	151-30
56	332	139	"	237	162-30
"	390	142	"	277	174
"	435	1330	"	257	190
"	395	129			
Concret	Concret				
"	366	116	60	257	165
			"	285	150-30
(69) 59	Concret				
	372	115-45	"	34	154-15
Concret					
"	386	119-30	"	382	148-30
"	376	122-30	"	387	144
"	398	128-15	Concret	437	134
Concret of Rock + Concret					
"	437	133	"	410	130
"	390	143	"	397	127-15
"	376	149	Concret	390	119
"	305	151	"	360	108-45
"	277	116			

6/4/18

64.50

At B 15-15 W

62 / 375 113-15

62 / 442 131

64 / 433 132-15

62 / 445 137

62 / 398 143-30

" / 362 155-45

" / 347 157-45

" / 317 164-15

" / 264 167

At B 15-15 W

Measure 30.29 + 478 = 3507 North.

for Point at 90° to 15 1/2

H = 72.36 1073 72.26 15 W 6218

(2.34) At B 16 10.07 North.

64 / 125 272-45 64 / 17.7 89-15

" / 117 279 64 / 28.2 89-30

" / 48 291-30 concrete 64 / 30.5 88-30

" / 52 333 concrete 64 / 33.2 80-10

" / 57 35-15 steel 64 / 39.6 61°

" / 72 59-15 steel 64 / 40.8 62°

" / 86 130 64 / 42.6 63-30

" / 100 128-15 64 / 44.6 75-15

" / 94 118

" / 112 106

" / 116 97

6/4/18.

72.36	At 1316	15.0			
(68)		10.07M			
66	42.6	76-15	66	10.0	270.30
66	39.6	76	66	10.5	282
"	33.4	78-15	66	13.0	218
End Concrete					
"	30.8	89-45	66	16.0	201-45
"	22.7	90	66	20.0	203-30
"	21.5	91	66	24.8	214-30
"	15.3	98-30	66	25.0	222
"	10.2	105-15	66	23.3	233
"	9.4	117-30	66	25.2	243-45
"	10.5	129-30	66	24.2	252-45
"	8.5	144-15	66	25.5	256-30
"	6.8	138	66	25.8	261-45
"	7.1	120-30	"	27.0	270
"	6.6	74	"	30.0	275
"	6.4	58-30			
"	4.0	27-30			
Final topog. here					
92	284-30				

4/7/18

41-47

65.30

At 1711-5.5 E

+ 24

with comb
sub

73

60.60

E/c

6.93	✓	317	65.30		362-13
56	5.5	227	(73)	58	340 272-45
56	10.0	234-15			320 275
56	11.1	234-30			315 280
56	12.6	239-15			343 296
"	15.2	256			274 294-30
"	21.2	266-15			
"	24.0	266-15			
"	25.2	272-30			
"	26.0	276-15			
"	27.5	286-15			
Concrete		318			282
"		313			279-45
"		315			273-30
"		320			269
"		337			261-30

HI=51				HI=51				48/18					
At C11-19.6E				At C11-19.6E				At C11-19.6E					
	+	2A	-	64.6 Elev.	69.7			127	74	64.6			
	75.5	69.68		362.13	56.1	152	190.30	58	250	201-45			
Low Point.			161	53.6	"	107	191-45	"	224	205			
RC.					"	106	214-15	"	216	205			
54	16.6	216-15			"	124	220.	"	200	209-30			
"	20.5	216-30	56	236	217-45			"	200	213			
"	20.0	212-15	56	277	211			"	200	213			
"	21.0	209-45	"	270	204	58	434	217	"	190	211-30		
"	21.5	212	"	272	198	"	426	212-45	"	172	213-30		
"	21.7	209.	"	252	188	"	400	112	"	163	212-30		
"	17.5	200-45	"	230	172-30	"	390	210	"	162	210		
"	14.5	200-45	"	216	169-30	"	396	204-30	"	14.9	211		
"	14.4	207-15	"	223	160	"	360	206	"	130	214-30		
Re. "	17.4	210-30	"	210	148	"	355	203-30	"	113	204-30		
56			"	150	148-30	"	340	202-45	"	92	201-30		
56	14.0	220	"	140	155-45	"	336	201	"	53	201-30		
"	17.5	223-15	"	126	163	"	313	199.	"	50	174-30		
"	21.7	219-45	"	116	171-30	"	302	199-15	"	67	141		
"	22.7	217	"	138	173	"	278	200	"	82	139		

A1-51

6/8/18

71
646

6968	A/CN-19.6E					646	6967	A/CN-19.6-E		
58	11.1	128	60	300	78-45	64	27.4	52-30		
58	12.7	129-15	60	330	63	64	22.5	56-15		
"	14.4	128	= Ring Unit			64	18.5	57-30		
"	16.0	110	66	217	54.0	=				
"	17.8	104-45	66	29.0	49.0	68	39.0	34.0		
"	17.3	96-45	66	377	37.0	68	43.7	32.0		
"	17.0	86	Concrete		66	42.7	37-30			
"	19.8	82-30	66	429	36-30	68	39.0	42-30		
p Concrete	"	21.6	82	"	430	37-30	"	39.5 44-15		
"	21.3	91	66	36	46-30					
"	24.3	110-45	66	36.7	48	70	39.7	47-15		
"	25.9	107-15	=			70	40.4	42-15		
			Concrete		64	33.9	50			
(9.7R) Concrete	22.5	90-15	64	36	46-30	70	43.8	31-30		
Concrete	24.4	92-45	64	43	37-30	70	38.5	34		
Steel 60	26.6	82-45	64	422	35	=				
"	27.7	83	64	305	47	(7) 60				

H1.50

W11 comb
Bob

H1-50

6/8/18

76

59.43

At D 11

5443

5943

At D 11

5443

50.0

48.0

11.5

304°

50

9.4

448

162-10

50

7.4°

193-15

52

154

127-45

(14)

48

10.2

187

50

41.6

160-45

50

9.2

203

"

18.3

132-15

48

8.0

168

"

40.2

158-45

50

11.5

203-30

"

20.0

137

"

9.0

147-45

"

38.1

157-45

"

"

20.7

138

"

10.6

144-30

"

36.4

155

(15)

52

7.7

218-45

"

22.2

135-30

"

14.3

147

"

33.0

152-30

52

6.3

208

"

24.4

136

"

14.0

148

"

29.8

148-30

"

15.0

202

52-54

56-58

26.5

137-30

"

15.8

140-45

"

27.2

147-15

"

7.1

182

52-54

56-58

28.7

141-30

"

19.3

140

"

24.5

137-45

"

6.8

171

52-54

56-58

30.8

145

"

21.6

137-45

"

21.7

136-45

"

6.7

150

52-54

56-58

32.7

146-45

"

24.8

141

"

20.7

138

"

7.3

141

52-54

56

35.6

151-10

"

27.2

147

"

18.0

138-45

"

10.2

143

52-56

36.7

152-30

"

30.8

151-45

"

17.0

135

"

14.3

135

52-54

38.8

155

"

38.6

159

"

13.8

147-45

"

10.3

132-30

52-54

139.8

155-30

OK

"

39.3

161

"

9.7

138

"

17.3

143-30

52

39.9

157-30

"

44.8

162-10

"

8.5

159-30

"

14.8

144

52

41.8

159-45

"

7.2

171-30

"

"

14.2

"

13.0

52-54

56

Face on

134

159-45

6/8/18

59-43		A+D-11		5443
R-54 ⁵⁸ 54	41.6	157-45	54	197 45-45
-	-		54	142 47-30
-	-		54	132 57-45
56-58 52-54 corner	26.5	137-30	54	124 63-45
54	24.4	133-15	54	104 62
54	23.7	133-15	Re	
54	20.8	137-30	54	114 70
54	18.8	131-45	"	118 80-45
54	15.8	120	"	106 89
"	14.6	112	"	99 90
"	17.6	107-30	P.C.	102 68-30
"	12.4	94-30	P.C.	74 76-30
"	16.3	78	"	50 85
"	14.5	77-30	"	37 82
"	14.8	71-30	"	26 103
"	18.0	62-30	"	10 99-30
"	20.5	50	"	1.7 148

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87

R.P.s 25' Coords

B15-15W Plug

19

List of B.M.

- U.S.G.S. Cross in Brass Cap in Boulder 486.569
 East End Dam.
 West End Spillway
 #1 Nail in Boulder $\frac{1}{2}$ way down Slope below 440.24
 below #1
 #2 Nail in Ledge 20' above Bottom Draw W Side 401.22
 217' W of Core Wall
 #3 Bolt in Rock Ledge W Side Canyon 371.30
 50' below old Diverting Dam
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 West of West End Dam.
 #6 Rock West End Concret Basin 494.89
 Paint Mark on Boulder in old Concrete
 3'E of B14-15 West-15' North 362.13
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 Bolt in Rock Ledge 75 E of N End Diverting 372.66

Sight D. 6 D12 to N End 340
 28.2 to N. End 340 29°14'
 22.4 to N. E. 345 37°35'
 41.1 to S End 340 20°35'
 46.4 to S End 345 18°50'

From E 15

2387
 2
 2367
 182
 2499

From 9 13280
 1990
 532
 1522

10.6
 1.1
 1.22
 12.92
 22.2
 35.12

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 Jullen A. Hall, M. Am. Soc. C. E.