#12

1791

Please return
this book to
Eugene Schaub
Co. Surveyor
Logan Utah

Leah Schaub. 953 N
Logan Utah

Calculations for a survey to be made for The Telluride Power

Dist.	Course	Lat E	Lat W	Dep N	Dep S	D.
	Beg at a pt					
1475.1	S 30°22' E	745.6				1273.0
113.8	Thence N 16°06' W		31.60	109.30		
212.5	N 2°43' W		10.07	212.20		
255.5	N 18' E	1.3		255.50		
119.5	N 34°58' E	68.48		97.94		
169.5	N 65°56' E	154.7		69.12		
390.	S 84°21' E	388.0		744.06		38.40
50	~~S 50~~ South	1358.08				1311.40
						50.00
40	N 63°05' W		35.66	18.11		
126.3	S 85°46' W		126.00	772.17		9.32
256.3	S 47°15' W		188.20			174.00
158.5	S 52°30' W		125.70			96.48
89.1	S 24°50' W		37.42			80.86
279.5	S 7°22' E	36.00				277.20
118.3	S 77°50' W	to beg.	115.60			24.93
		1394.08	690.25			2024.19
		- 745.6				- 1273
		648.48				851.19

cos 24°21' = T. 997885
390 = 2.591061
2.588950 388
2 2.993222
cos 24°21 = 2 591061
390 = T. 58.4287 38.4

From the NW cor. of sec 36 in T 12 N. R 1 E. of U. L. Base & Mer.

On E boundary of ½ of NW ¼ of NW ¼ sec. 36

1358.08 1311.4
41.67 744.6
1316.41 566.8 S

566.8

+ 91.91

log 1316.4 = 3.119256
log 566.8 = 2.753420
0.365826

log S 66°42' E

log 1316 = 3.119256
log = 66°42 1.963054
3.156202
1433

3

Set on the NW cor
sec 36 Tp 12 N R 1 E

	angles	R	HI		
1		N 66° 24' W			
2	875	S 66° 42' E		4.80	
	220.5	" "			23° 12'
3	300'				
4					
5	37.5				
4				1° 43	
6 (7.4)		S 6A° 57' E			
4 256'		S 71° 50' E		5° 9'	
6					
4 471		" "			
7					

4

875
220
1095

1433
1095
338

to pt on brow of hill
on " " " " "
220.5

Log 2.340238
T. 963379
2.343590
220.5

to stake on bank
to edge of River

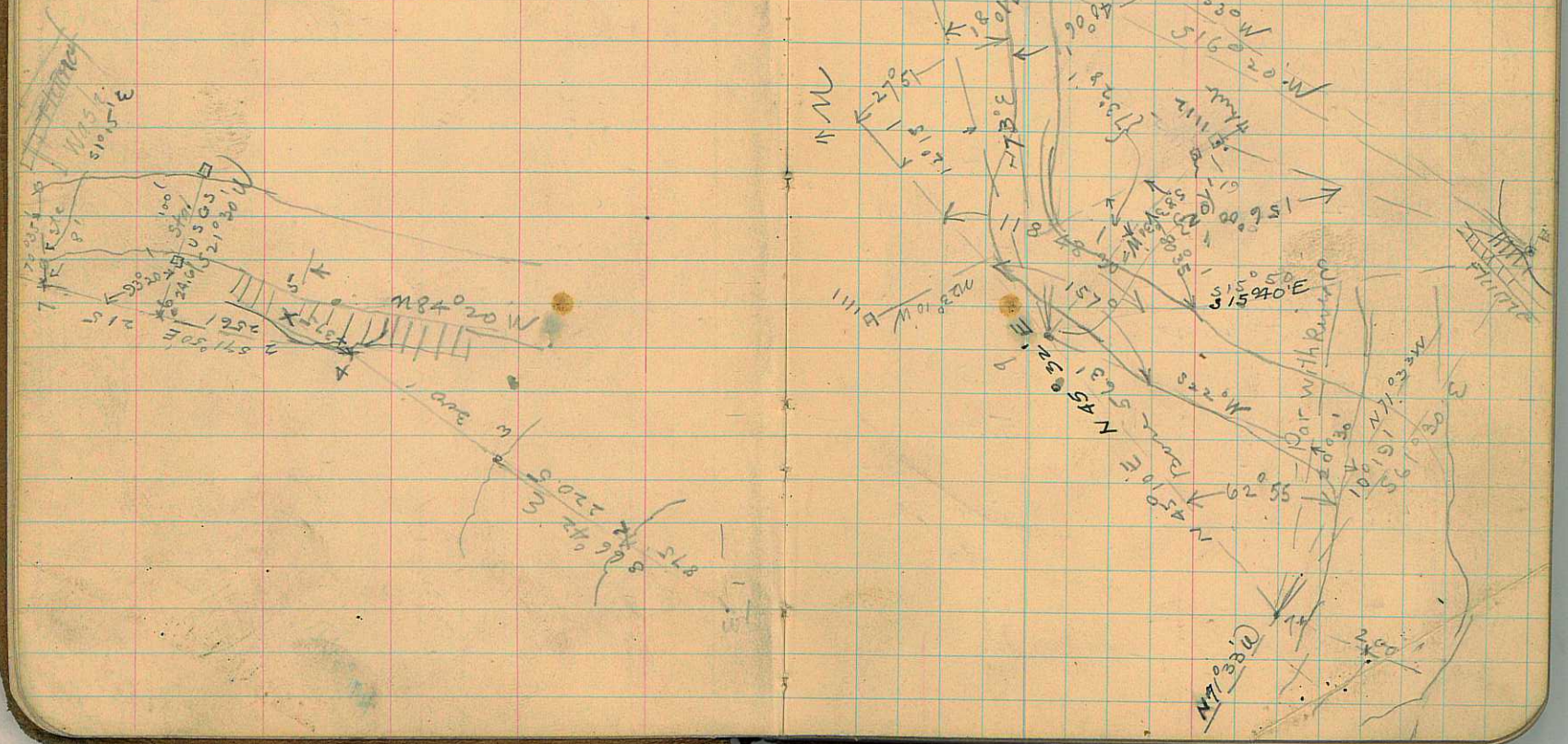
Log cos

{which pt is 139.5 ft S 66° 42' E of
NW cor
to old stake found on bank

5

15

6


1/4 cor
Stake
N 45° E
N 84° 20' W
S 15° 50' E
S 15° 40' E
N 71° 33' E
N 71° 33' W
S 32° W
S 63° 30' E
S 10° 15' E
S 21° 30' E
S 68° 45' E
S 53° 30' W
S 51° 20' W
N 62° 55' E
N 45° E
N 27° 30' E
N 17° 30' E
N 11° 30' W
N 23° 10' W
N 17° 30' W
N 27° 30' W
N 11° 30' E
N 23° 10' E
N 17° 30' E
N 27

4 Direct Levels from pt 8 to No 4.

5/19/08	BS	FS	HI	Elv		
8	13.00			93.60		on H_2O
8			6.60	100.00	106.60	on Stake in lawn
		5.95		100.65		
	2.05				102.70	
Bm 5/20/08		2.80		99.90		on a large rock by Pole. Spike E of Canal
Bm	0.39				100.29	
			11.75	88.54		on wood just opposite No 9
			16.00	84.29		on H_2O in River oppo. No 9
		6.65		93.64		
	0.50				94.14	
		10.85		83.29		
	4.49				87.78	
			3.16	84.62		on top of cable post upper gage at No 7
			10.40	77.38		on top of H_2O in River at No 7. 5/20/08
		5.26		82.52		on ground at No 6
	10.22				92.74	
		7.03		85.71		on top of Stake at 104

Started at dam site and went east.

	5.54			80.98		on stake at intake on Road Grade
			21.2	65.32		on Running River H_2O 5/20/08 at dam site
		6.54			86.52	
	4.88			85.98		
			12.50	78.36		on Road in a low place
		5.93			90.86	2' higher than Road
	4.40			84.93		
			15.70	73.63		on H_2O opposite No 4
		3.62			89.33	No Stake No 4

10.30 S77°50'W 118.3 feet to beg 8

77.38
65.32
12.06

9. 5/20/08

for Telluride P Co

Set m M°4

Stadia

W Last Course ∠ angle R N E

4

38 Ent 23°36 194°10 5.00

640 S 75°50 W 79 20'

528.6 S 3°20 E 86°30

14' E

mag var = 18°15' E

Logs E W N S

1278 38 558.8

6.20.5 156.6 — 11'

32.3 527.6

1.4 12430

13623 6205 7418

To make table 640 stake

log 75°50 = T. 998587

cos 75°50 T 1387 11

640 = 2.806180

2.194891

8960 7617 1343

1278 38 13.16.5 6205 695.5 E

5 12 73 5 7 45.4

5276

45.6

6.1

Large Rock Cross

119°45'

76.1

Elevation

Pole

T.P. Co

11945 7617 4328

log 50 = 1.698970

log 527.6 = 2.722305

2.971665

748970

5 02 5' E

55 75 30"

787 15

12

$14\frac{10\frac{1}{2}}{3}$

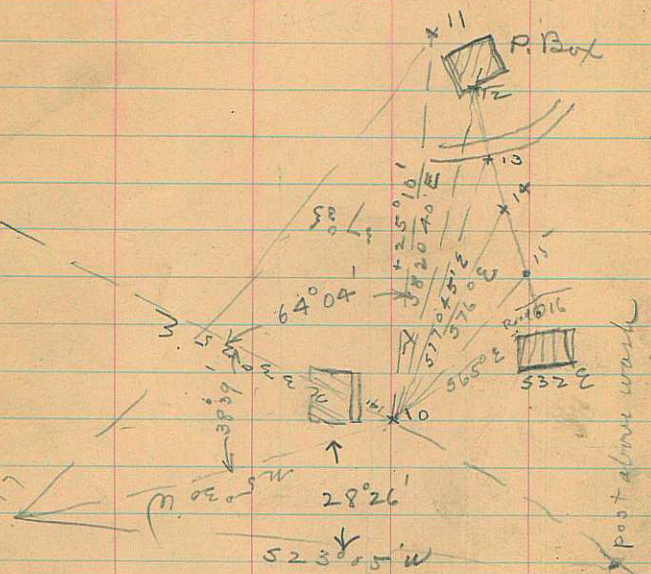
Notes

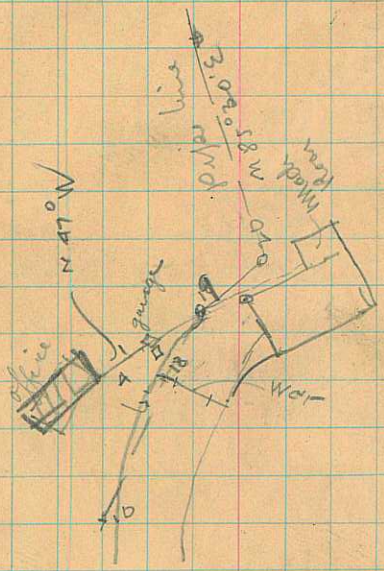
Avg 5271.6 → 2.722305

{ Outside Cir. of steel pipe at first change from bottom = $11-10\frac{1}{2}$" Avg = $\frac{3/8}{8}$" metal — Avg 2930 — 1.499159 — 1.723116 — 1.785675 — 1.508741

{ Outside Cir. of steel pipe 2nd change = $11'-8\frac{1}{2}$" $\frac{1}{4}$" min Metal

Outside Cir at 3 change = $11'-8\frac{1}{2}$" $\frac{1}{4}$" metal





see over for notes

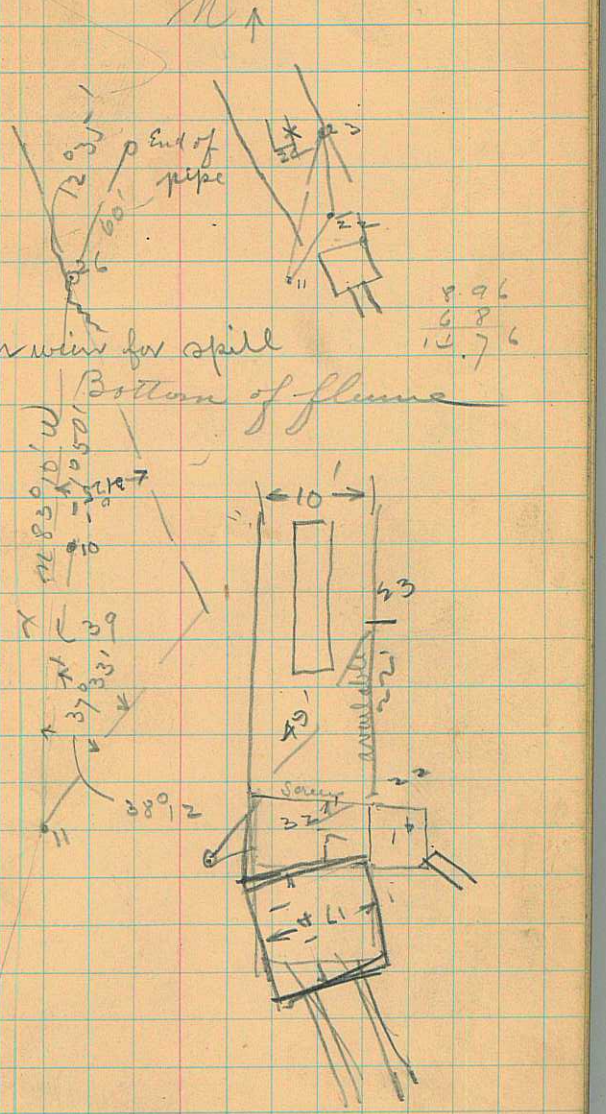
Sta	No.	Course	Angles ∠	R	Dist	angle −or+	HI
10				64°04'			
		S82°40'E				+25°10'	
11							
10		S80°15'E		66°28'		+23°29'	
12							
10		S77°45'E		68°59'		+22°17'	
13							
10		S76° E		70°40'		+18°15'	
14							
10		S73°45'E		72°55'		+9°23'	
15							
10		S65° E		81°29		+1°01	
16							
10		N5°30'W	38°39'				
17							
10		S69°10'E		77°31'	113.5		
18							
10		S69°10'E		77°31	200		
19							
19		S47°50'E		18°31	55.2		
20							
19		S27°30'E		38°52	25'		
21							
19		S32°E		35°15			
20			47°26				
		N45°30'E	~~Set on 17~~				
			Set on 17				
17				28°26			
17			39°45' ✓				
		S45°E				+4°28	
11							
17			34°09' ✓				
13		S39°30'E					
17			31°47 ✓				
14							
17			38°00 opp ✓				
		S43°15'E	~~38°00 opp~~				
12							
17							

B.S to Post for wash
on SW. side on sill
at bottom of pressure box
on canal bank.

to line with weir
to T.P.
to a St. in line with pipe on Road
to NW cor. Plant
parallel with N side Plant

along pipe
on canal Bank 1=56.10
to Post above wash at Smart flume
to stake at or near pressure box

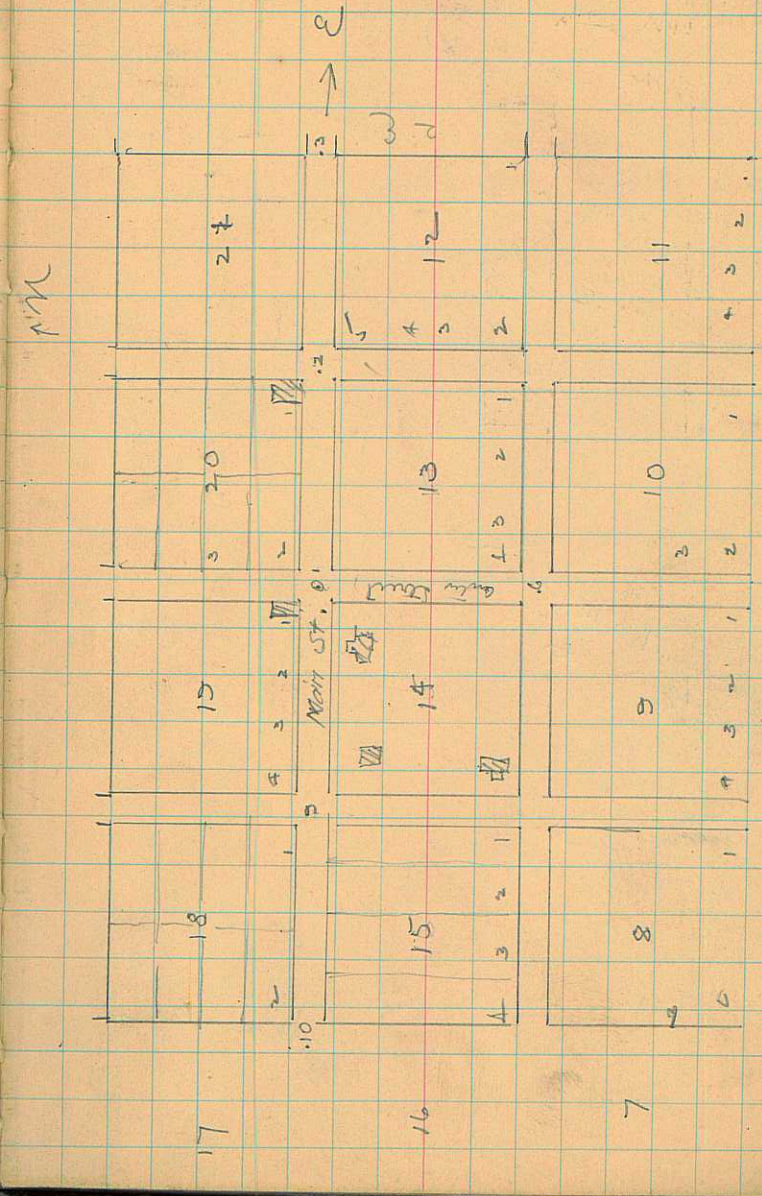
Sta	Course	∠ any R	dist	L's +or−	H I	RR.
17		28°40 app.				
15		Set on BS to 10				
11		37°33			4.90	
17	N 37°45 E	44°52				
11					9.10	
22		29°				
11					9.20	
23					8.96	on wire for spill
24					14.76	Bottom of flume
25						
26		BS to 11				

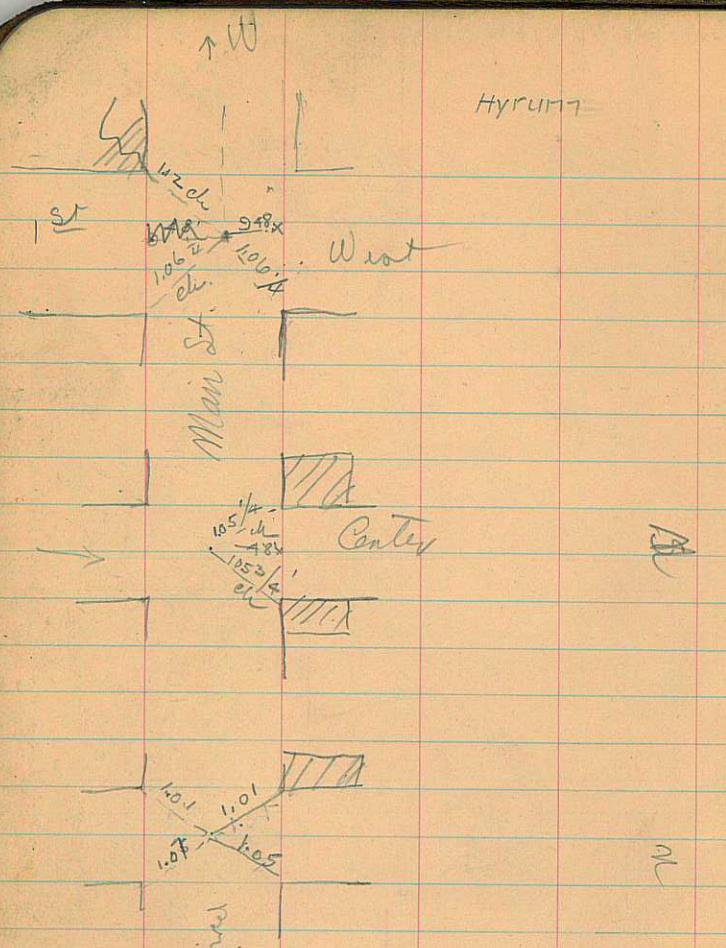


Difference of Elevation between outlet at mouth of canyon on pipe line and spill box = 35'

h = 35'
L = 1800'
Q = 16 cubic feet per sec.
d = 18"
Wood pipe

Sketch of part Hyrum City.


N
Main St.
Main St.
27
12
11
3
2
1
4
3
2
1
2
1
3
2
1
3
2
1
3



1.12 / 66 / 672 / 672 / 73.92

1.06 / 66 / 636 / 636 / 996

1.05 / 66 / 630 / 630

1.07 / 66 / 672 / 672

1.05 / 66 / 630 / 631.2 / 661.32

669

20

Beg at SE cor Blk 20 Pl'a
on a line 48' N of center line
of Main St.

Sta	R	R	
0			
0+8	7' to T.	2" to Bu.	SE cor Blk 20 no trees to interfer with water, SE 20 going West
0+24	7' to T	~~6~~ 6" to Bu	all SW cor stone
0+44	~~7' to T~~		
0+57	7' to T		
0+74	6.5 T		
0+90	7' T		
1+08	7' t		
1+24	6.7 t		
1+55	7.5' t		
1+67			to property line N + S.
1+71	7 t		
1+88	6.5 t		
2+00	6.5 t	6" to fence	fence at this pt is 6"
2+16	7.5 t	00 to fence	
2+36	8 t		
2+56	8 t		
2+71	8 t.	00' to fence	from here to Sta
3+28	9 t		to property line
3+33		00 to fence	
1+97.2		to Solom	to property line
5+04.4		2.6 t to Solom	to E. side Solom
5+21.4		2.78	to W " Solom

Sta	L	R
6+07	6.7 t	2' to F
6+29.8		2.02 Bu
6+40		2.02 Bu
6+62.6		1.79 to Bu
7+59.6		2.01 to Bu
9+88		
8+00	6.9 t	
8+16	6.8 t	1.62 to F
8+21.8		
8+33	6.2 t	
8+49	6.8 t	
9+50	6.3 t	
10+00	6.3 t	
10+17	6.4 t	1.73 to F
10+33	6.2 t	
10+50	5.9 t	
10+66	5.7 t	
10+70.5		2.19 to Bu
10+83		
10+88.5		
11+17	6.5 t	
11+35	6.2 t	
11+88	6	

7 5 9.6
6 6 2.6
9 7.0

-2 24-

~~to E side Millenery shop.~~
to E side Millenery shop
to W " " " E side Rock(Store)
SW cor. old drug store built of Sand Stone
One tree at SE cor 19 foot inter. S E cor Co-op
to SW cor Co-op.
first tree from SE cor

to support pro. L n + S

from this Sta to 9+50 Trees far enough away

no trees between 9+50 + 10

large Box elder
to E side Shoe shop
to W " " "
to pro. line n + S.

Skirt no account tree

14 1 88
7.59.6
6 5 9.2

-26-

12+19.7	6. L a stump	R 3.01 to Bm
12+34		3.34 to Bm
12+38	5.6 ℄	
12+54.7		
12+67.6		
12+80.8		3.11 to Bm
12+85.7		
12+87.4		
13+01.7		
13+08.1		
13+10		3.39 Bm
13+24.1		
13+36.4		
13+46.1		3.5 Bm
13+50.6		
13+54	9.70 ℄	4.
13+70.7	8.4 ℄	
13+71.1		
13+60.		
13+90.4		
14+09.7		
14+18.8		
15+20.7		on BLR 1.58.5
15+25	5.6 ℄	
15+30.7	5.7	
15+49	5.1	

to E side Candy Kitchen
to W " " "

to E side Drug Store
center doorway " "
to W side Drug Co
to pro Line.
E side Butcher Shop
to W " "
to E side Barber Shop
to center doorway of Barber Shop
W side Barber Shop E side Saloon
to center door Way Saloon
to W side Saloon
to E side Pool Hall

E W side Pool Hall
to E Opera House
center door Pool Hall
center of door Allen Store
" " " Butcher Shop
SW cor Opera House.
SE cor BLR 1.8
1¼" dia

E W cor B.19

Sta	L	R.
15+61	5.9 t	
15+72	4.7	
15+95	4.2 stump	
16+17	5.4 t	
16+29	6	
16+45	7	
16+62	6.7	
17+25	6	
17+41	6.5	
17+59	6.5	
17+53		
17+75	7	
17.90	6.20	
17+98		
18+00		
18+06	6.5	
18+32	6.5 dia stump	to F 2.02
18+51		
18+60		
19+32	8.2 t	
19+99.8		

Coeat

prop.

prop. Cen

E side Gate to E church

in Gate Way

to center of Chr. Ditch

to pro- Cen

to E side Cons of Sorin Manor

Sun 11.15 am
Sprung June 9/08

pole

NW cor Tp 9 N
R 4 E.

Tree N 12° 30' E

N 12° 30' E 10 links

N 134° E

S 61° E

N 61° 50' E

S 13° 51' E

S 14° 36' E

E. Enclosure
16' - 4 7/8"
= 2 × 8' 2 7/16"

16' 4 7/8

2 7/16
2 7/16
16 8

1215
10636
11851
17960
11851
6109

1215
13427
1642
17960
1642
3318
17960
13427
4533

Dep 13 = 1.113943
Dep 16 = .204120
2.909823

.812

Lat 13 = 1.113943
.1014 = 2.146124
2.967815
928'

0477 4
.0317 2
.01602

11.1
3
8.1

.260 48
24 65
.0139 3

Not Obsn Pt C
h = 67° 11'
35. to Tp cor R 27° 51'
time 1-30. p.m.

h 65° 40'
R = 30°
time same
mag var 5 + 2° 10' W

6671
6540
131

Cal for Ob.

Mer at Greenwich

noon June 9/08 = 22°55'41".

LD for 1 hr = 12.66"

MC cor. To get Mer R.A. east

- 41°33' N

Long 111°33'

at 1-30 pm dec = 22°57'40

Log cos 22°57'40 = T.590984 / 199 / T.591183

Log cos 41°33 − T.874121

cos 67°10'40 T.717062

T.588690

0.128372

Log tan 41°33 = T.947572

Log 0.375905

0.323467

= 2.10610
1.34400
0.76210

S 40°21 W

S 39 81 W

27 51
12.30

5.99 10
235.60
375670
235
375905

30.6

.017452 00

69.8000

698 : 60 : 30.6 ~
60
1836.0 | 69.8
1396 | 27
4400
4886

41.60
27

Log cos 41.83 = T.874121

Log 4000 = 3.602060

3.476181

Log ~ 1° = T.241855

1.718036

1.718036 ; 60 : 18 : ~
60
1080

2

1.718036 ÷ 3.033424
1.718036
1.315388
20
4.9760
198.80

11 53
20
111.33
60
6660
33
6693 < 900
6300 7.043
3930 1.30
3600.0 8.543
33

Log 8.543 = 0.931610

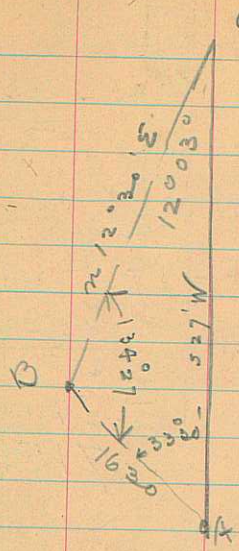
12.66 = 1.102434

2.044044

Log 60 = 1.778150

0.265894

1.84
60
.5024 0



13427
3330
16757

17960
16757
1203
13427
3336
18060

Log r = 0.301030
Log .002 = $\bar{3}$.301030
2 ($\bar{3}$.602060
$\bar{2}$.801030
114 . 2.056905
0.857935

4.86 | 12
1.40

16.40

Log 50°49' = T.998766
2
T.997532

Log 16.40 = 3.214844
T.997532
3.212376

1630

Canal

52.80
12
10.560

C = 73.8



27
114
8.4
6
27.0 | 4

103.3 | 1.4
98 73.8
53
42
110
V18 | 4.2
16 200
80

C = 103.3 / .1021 x 43

114

103.3 | 9
13 43 114

.43
.1021
44
86
.00964

103.3
1 + (43 .0094
28 2
376
1.4042

Levels for Mill Race
for C Anchor of Hyrum

Sta	BS	FS	HI	Elev	HI
	8.06			10000	
		1.63			
	8.62				
			4.50		
		0.73			
	12.03				
	28.71	.84			
	3.20				
	25.51	3.20			

Sta	Curve	ang	R
0			
0			
1	S 76°50'E		
2			
3			
4			
4+41		16°35	
	S 60°15'E		
6+32		11°17	
7+70		25°13	
	S 74°10'E		
8+80		8°8'	
	S 82°30'E		
11+39			

16.68
6.13
10.55

1.63
4.50
6.13

on H2O below ripple

on ground a propose pen Stock

at intake of pen Stock

HI
4.93

a intake penstock

to intake

Sta	BS	FS	RR on grade	C, RR	C cut
8+80		6.59	9.59		
9					
10			9.365	4.65	
11			9.165	7.5	1.7
~~8~~ +80			9.590		
9			9.560	6.3	3.2
8+80			9.590		
8		6.52	9.753	6.52	3.233
8	8.63		11.863		
7			12.067	9.88	2.2
6+32			12.207	9.2	3'
6			12.261	10.	2.3
5			12.465	10.42	2.1
4.41			12.585	9.7	2.9
4		11.10	12.669	11.1	1.569
4	9.82		11.389		
3			11.583	7.2	4.33
2			11.787	8.05	3.7
1			11.991	8.9	3.7
0			12.195	9.26	3

R R Rock	R out	R C
7.2	2'	2
5.72	3.8	3.8
	4	4.75
7.2		4.8
9.72	8'5'	
~~8.6~~	7	3.7
8.6	7	4.1 - 3.86'
8.5	7	4.1
10.48'	4.2	
8.6	8	5
6.83	7	4.9
	9	5
8.28	7	3.9

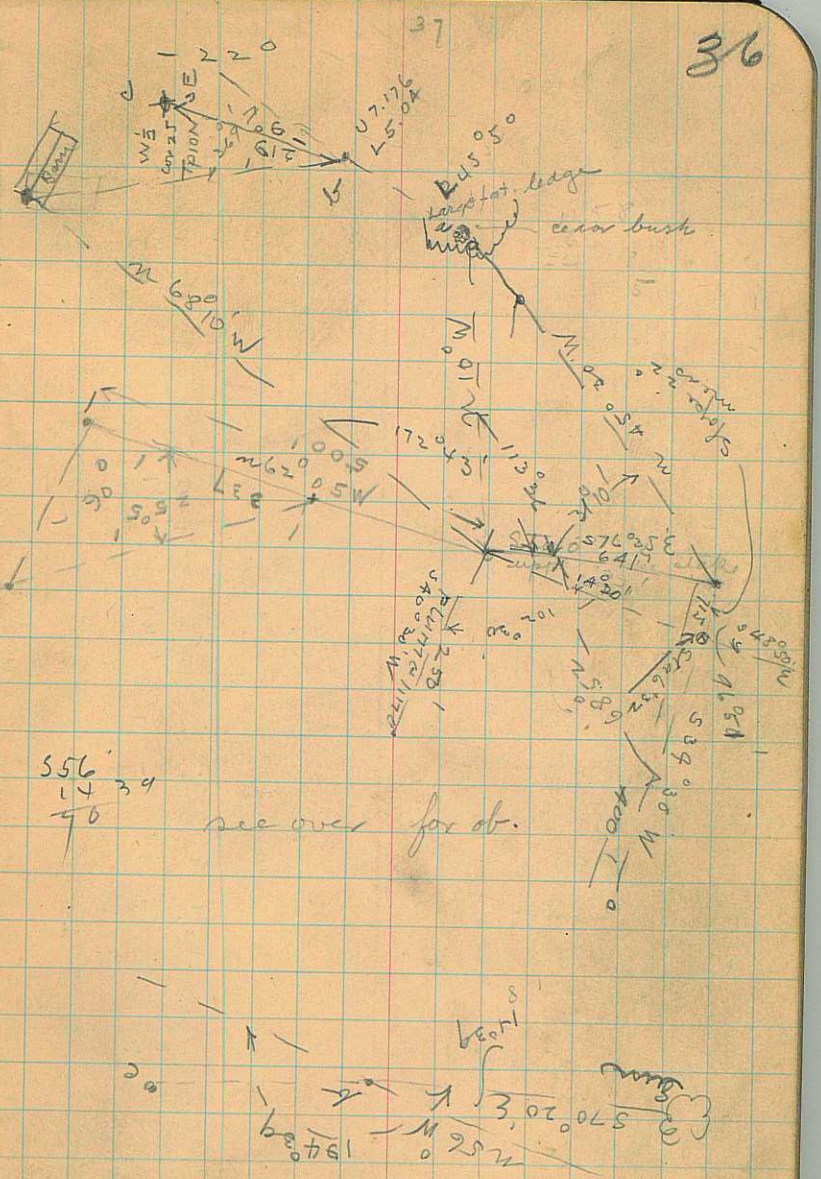
Sur of Mill Ground

Notes	Course	Angle	and +−	Stadia
a	5.04	45°50′ L		
b	4.16	N 56° W	21°18 R	+1°47	7.176 5.04
c	2.10	N 77° W		−9°	

L 53°58

5.

7.



Levels for

Sta every 66=1 ch

Sta	BS	FS	grade RR on	RR on ground	Cut + for
0	6.53		6.53 00		
0				5.530	1
				.16	
1				5.690	
				.16	
2				5.850	
				.16	
3				6.010	
				.16	
4		6.17		6.17	
4	3.35			3.35	
				.16	
5				3.51	
				.16	
6				3.67	
				.16	
7				3.83	
				.16	
8				3.99	
				.16	
9				4.15	
				.16	
10				4.31	
				.16	
11		4.47		4.47	
11	5.58			5.580	
				.16	
12				5.74	✓
				.16	
13				5.90	✓
				.16	
14				6.06	
				.16	
15				6.22	
				.16	
16				6.38	
				.16	
17				6.54	
				.16	
18				6.80+	
				.16	
19				6.96	
				.16	
20				7.12	
				.16	
21				7.28	

467 / 934

8.67 Z ↓ 467

28 / 26 / 168 / 168 / 468

38

on H₂O in Mill Creek

9.73 (12) 30.62

S 9.615
3

Set on NE cor
Sec 12. T 10 N R 3 E
West Magvar 18° E
R

List	Courses				Stakes	+/-
	West		9.615	3.00	- 10°	
	West	45°	9474	3 00	- 1° 35	
1848'	N 5° W					

W →

NE cor Sec — True bearing N89°44'W — No 1
2561'

June 10/08 No 1. h = 17°28'30"
time 6.10 pm.

B Stone on L R 15°25'
No 2 h = 16°57'
L R = 15°50'30"
time 6-15 pm
Sun N 74°30' W

9.615
3
6.615
2
3222

= 9474
3
6.474
2
12948

T. 99335 1
2
T. 98670 2

Log 1322 = 3.121231
3.107933

1282

Log 1°35 = T. 999834
2
T. 999668

To NW cor of SE¼ of SW¼
1320
6

1295 3.112270
3.111938

1294
1282
2576

2640
2576
64

1384

800 | 28.6
4
4000 | 28
3844 | 66
160 | 168
168
2 11848
9.2 L
12000
9224
276

NW

SW¼ SE¼

SE¼ SW¼

576

64

Stone

12

Cal. for Obs on opposite page

246
256

69.8 : 60' ; 25.6 :
60
1536.0 | 69.8
1396 | 22
1400
1396
04

Log cos 41°38" = T. 873560
Log 4000 = 3,602060
3.475620
2 sin 1° = 3.241855
0.717475
07 17475

½ 0.717475 ; 60 : 17.5 "
60
Log 1050.0 3.021189
0.717475
1.303714

Log
60 = 1.778151
20
11153
20
11033

0f
4160
22
4138

Dat. 41°38
Long. 111°33'
29 hrs for 1 hr
Adj to time = 7.439 hr
6
Lapse 13.439

11133 | 60
6660 | 7.437
33
6693
6300
3930
3600
3300
2700
6000
5400

Log 13.44 = 1.128399
Log 11.64 = 1.065953
2.194352
Log 60 = 1.778151
0.416201
2.68
60
40.80

2 1 40
2300 328
2303 128

01745 = 42"
6000
69.8 00 00
June 10th 1908

log 23303 = T. 5-92770
log 41°38 = T. 1 87 35 60
T. 1 79 21 0
log 17°27 = T. 97 95 39
T. 73 96 79

.54913

tan 41°38 = T. 94 88 44
tan 17°27 = T. 49 73 99
T. 44 62 43

.54913
.27943
.26970

N 74°21 W
15 25
N 89 46 W

T. 79210
log 16°55'30" = T. 98 30 04
T. 73 62 06

.54475

tan 41°38 = T. 94 88 44
tan 16°55'30" = T. 45 53 47
T. 40 41 91

.25363

.6030 | 165660
18.06 | 1 30
16 55 30

7.99 | 98307 2
30 | 18
23, 97 | 0 6

J 5 5 10 7
2 4 0
.54475 | 25363, 45 73 47
-25363
.29112

7304
15 50 30
8 8 5 4 3 0

88 106 30
88 54 30
52 00

Levels for Profile
m Hyum. Ave Paving

Sta	BS	FS	HI	Ele	
0	5.65			499.2	
Bm 0			4.83	500.000	504.83
			3.10	501.7	
			0.5	504.3	
1			4.91	499.9	
1			5.4	499.4	
1+82			6.	498.8	
2			5.1	499.7	
2			3.9	500.9	
3			6	498.8	
3			6.65	498.2	
3+20			7.90	496.9	
4	3.465	6.62		498.21	
4					501.675
4			2.80	498.87	
4+12			4.30	497.37	
4+24			4.30	497.37	
5			4.20	497.47	
5+04			5.30	496.37	
6			4.90	496.77	
6			3.90	497.77	
6+63.6			5.08	496.59	
6+63.6			5.45	496.22	
6+75.6			5.30	496.37	
6+63.6			3.90	497.77	
			3.3	498.37	
7+61.3			4.52	497.15	
0			5.30	496.37	
0			3.70	497.97	
			3.30	498.37	
			3.42	498.25	
0+77			5.60	496.07	
1			4.63	497.04	
1+69			6.100	495.67	
2		4.732		496.883	
2	4.070				500.953
2			3.30	497.65	
3			4.30	496.65	
3+48			5.4	495.55	
4			4.62	496.33	
4			5.3	495.65	
5			4.54	496.41	
5+17			4.38	496.57	
5+33			5.80	495.15	
5			5.	495.95	
5			3.6	497.35	

7.5 (12 / 6 2 / 30) 6.63 6 / 9 7 / 7 6 1 3 6.62

o with reference to S E cor Blk 2 IPC a.
of S E cor B. 21
on 20 d. nail in Boulder in first one west
Cent. Strut. main
N E cor B. 5 of the S E cor B. 21
on ground Sid walk
m lot. lot of N
in bot. of water way = W. W
S. W. = Side Walk
C. St. = Center of Street
m lot.
on S. W.
m W. W.
on S. W
on S. W
m C St.
m Water Way
" " "
on S. W
m W W + ~~on~~ on m L. = Lot.
on S W
m C Sta.
S W cor B 21
in Lot S W cor B 21.
on m m heitch at intersection
C. Str.
1 W. S. of S W cor B 21
which also Sta 10 of E. side Pave dist.
m main Outer
Center St.
1 W. S. of S E cor B 20
on corr S W. all in Main Stem
W W
on S W
m W. W.
on S W
on S W
m Str.
on S W
m S W
on C St.
on E. sid Stre entrance to 2 = Stor above Salon
on Side entrance to Salon
m W. W
on S W
m C St.

Sta	BS	FS	HI	Ele	
6					
6			5.40	495.55	500.953
6+26.5			4.00	496.95	
6+51			5.00	495.95	
6+62.6			4.80	496.15	
6+62.6			5.90	495.05	
			4.50	496.45	
7+59.6			3.50	497.45	
7+59.6		5.619	495.334		
7+59.6	4.29				499.624
			2.9	496.72	
7+79			2.1	497.52	
8			3.18	495.82	
9			4.20	495.42	
			4.30	495.32	
10			4.30	495.32	
10			4.70	494.92	
10+50			4.40	495.22	
10+83			5.25	494.37	
11			6.20	493.42	
12			5.20	494.42	
12			3.80	495.82	
12			4.70	494.92	
			4.3	495.32	
12+67	5.50	3.242	496.382		
					501.882
			4.76	497.12	
			5.28	496.60	
			5.32	496.56	
13+10			4.02	497.86	
			3.80	498.08	
			4.54	497.24	
			3.77	498.11	
			4.52	497.36	
			4.40	497.48	
Bm			4.93	496.95	
			4.26	497.622	
			5.80	496.08	
0					
1+32			6.10	495.78	
			7.9	493.98	
1+50			8	493.88	
2					
2	1.81	10.84	491.042		
					492.852

on S.W.
in Str.
Centre door way millinery Store
" " " Old Rock building
SW cor B1.20
centre Str
100' South of Sta 6+62.6

in centre St
N E cor public square
Centre of door way Hymn - Co - op
on S.W.
" "
in lot.
on S.W
in Str.
on S.W in low place
in W W
on S.W
on S.W.
in W.W
in Str.
in SW

on floor line Drug Store
on Stone wall " "
on S.W. West side Bus shops
on floor line Barber shop
door W ajt Saloon
E side Saloon on plank floor
Centre door way Allen Store
on plank floor SW cor B19
Cent Str SW cor 19.
NW cor Square
on road East in Tel. pole S of SW cor 19
bottom plate SW cor 19
going on from SW cor 19
and set Wall End of Opera House
in W. W
on S.W
in Centre of St. on West

5918
5908

Sta	BS	FS	HI	Ele	H.I.	
2+50			5.6	487.25	492.852	on S.W
3			7.2	485.65		on S.W. in front of hse & church
3+50		10.1	10.1	482.752		on S.W.
3+50	1.1				483.852	" " "
3+85			6	477.85		in W.W
3+85			5.5	478.35		in center str
4			6.7	477.15		
x		11.30		472.552		
x	0.00				472.552	
5			4	468.55		on S.W.
6			8.7	463.85		on " " .
6+66			10.50	462.05		mw cor 19
6+66			9.50	463.05		in str.
Bmm			10.06	462.492		on 30d nail in Ele. L. Pole wite .2' W 4"
Bm	3.92			497.622	501.542	on Tel. pole S. of SW cor 13 19
+			4.50	497.04		on ground SW cor 13 19
15+20.7			5.10	496.44		in Main ditch SE cor 13 18
			5.30	496.24		in W Way to lot 60' N of SE cor 13 18
15+20.7			4.50	497.04		on S.W SE cor 13 18
16			4.6	496.94		in lot " " " "
16			5.7	495.84		on SW
x			6.5	495.04		in W.W
x	3.517	6.54		495.002	498.519	
16+50			3.80	494.72		on S.W
17			4.20	494.32		" "
17			4.60	493.92		on str
17+50			4.40	494.12		on S.W
18			4.30	494.22		on str
18			4.7	494.12		in lot
18+50			4.2	494.72		on S.W
18+50			5.1	493.82		in ditch
18+50			6.2	492.72		in str.
			7.30	491.62		on H20 in Small Ditch N. of Farm House
18+50			4.91	493.61		on " " at walk
19			6.6	491.92		on S.W
19+50			8.6	490.42		on S.W Str.
19+50			7.6	491.02		in S.W
20		9.03		489.489		on S.W
20	0.12				489.609	

6/12/08

489.61
9.71
479.91

S-2

Sta	BS	FS	HI	Elev	HI	
20+50				487.61	489.609	on St. walk.
20+50				489.01		in Str.
21				485.91		on S.W.
21				482.83		on area wall of 3rd ward church. S side
21				481.11		in lot
21+50				482.91		on S.W.
21+50				484.81		in Str.
21+85				481.21		To in line with W. side block on Walk also Str.
BM 21+50				484.25		on 30 d nail in Tel pole 42' E of W line 2d Blk 18
						Beg. again at SW cor Blk 18 Sta 0.0
0				481.21		go in on E side St.
0+33				479.01		
TP 0+50		11.686		477.923		
0+50	0.30				478.223	
1				477.61		on cement approch main west entrance.
2				476.22		on S.W.
2				473.22		on " "
3				472.12		in Str.
TP 4		9.972		470.92		on S.W.
4	0.1			468.251		on S.W.
4					468.351	on " "
5				466.95		in Str.
66				466.65		on S.W.
6+				463.15		on " "
6+66				461.85		on " " NW cor B 18.
				457.95		on " " across the Str N of NW cor B 18.
				460.55		in Str
BM				462.691		First Tel. Pole S of N line B 18. (No 15)

Description of assessment of water mains in Richmond City.

On Main Str. from 3 E to pt 60 rds north of H west St.
On 3 E. from 3 N. to a pt. 10 rds. S. of 2 S. Str.
On 2 E from 3 N to a pt. 10 rds S of 3 S Str
on 1 E from 3 N to a pt 120 rd S of 4 S Str
on State Str from pt 10 rds N of 2nd N Str to pt 170 rd S of 4S
on 1st West Str from 1st N to 3 S
on 2 West " " " " " to a pt 5-4 rd S of 3 South Str
on 3 west from Main to 1st South Str
on 1st N Str from State to 2 West.
on 3 S Str from " to 2 West.

Direct Levels from Richmond City Old Res to N° #9 on 3 E. & Main

BS	FS	Con BS	Con FS
.94			
1.47	11.794	2.25	11.925
0.22	11.720		(7.58
.68	11.696		
2.03	11.26		
1.55	11.836		
1.29	11.540		
1.58	11.814		
1.81	11.65		

on spill of Old Res 26' lower than R R R

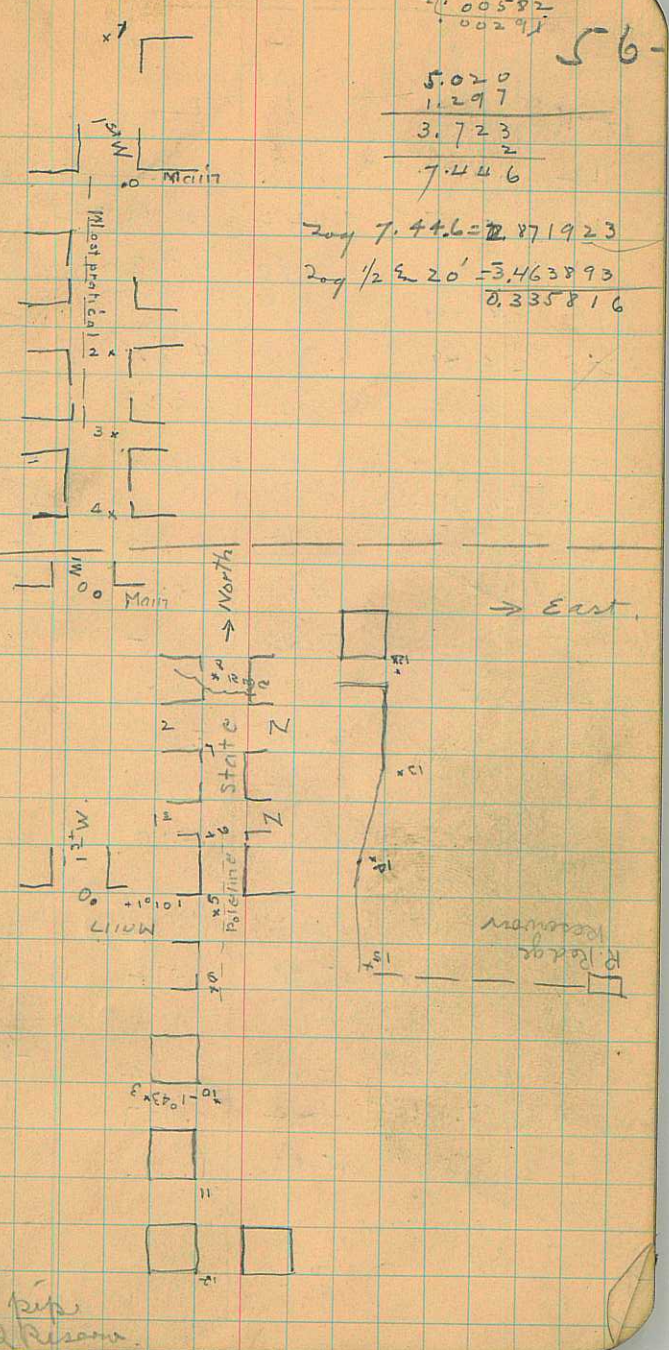
on N° 49 on 3 E.

Stadia Notes

For Richmond City Water Works

June 23/08

Sta.	HI	U Stadia	L	angle +	angle −
0	4.96				
1		4.96	1.422		27'
0					
2	4.40	9.08	4.96		36'
3	5.02	4.40	0.93		39'
4		5.02	1.297	20'	
0	5.01	~~5.01~~	~~1.40~~		
5	4.87	5.01	1.40	1°10'	
6	4.97	8.36	4.87		− 10'
7		8.782	4.97		1°07'
6	4.97				
8		9.982	4.97		31'
5	4.70				
9	5.12	8.365	4.70		33'
10	4.87	9.072	5.12	15'	
3 ~~4~~		8.352	4.87		1°43'
10	4.87				
11	4.94	8.514	4.87	39'	
12	4.94	8.926	4.94	1°24'	
13	5.02	8.327	4.94	2°29'	
14	4.94	5.02	2.61	48'	
15	X	4.94	1.167	1°03'	



at ~~1st~~ of pipe.

Continued

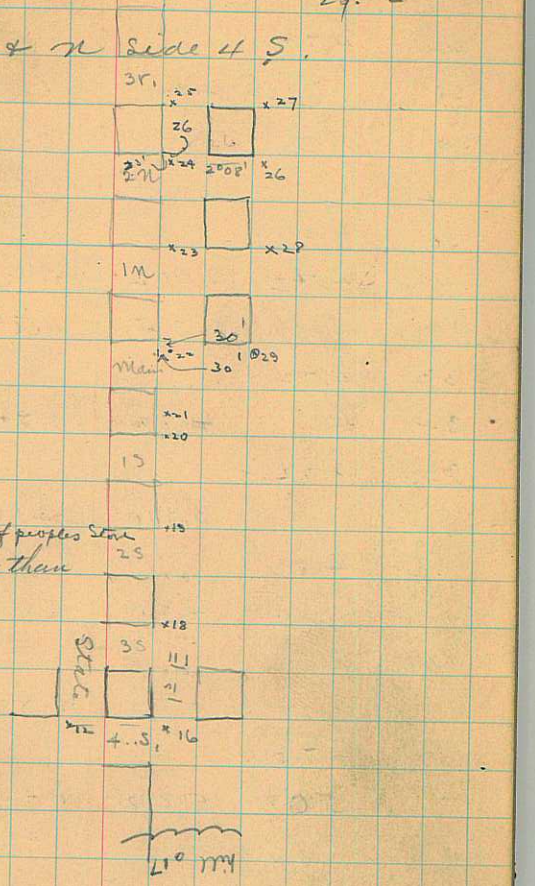
Sta No	HI	Stadia U	Stadia L	angles +	angles −
12	4.92				
16	4.77	8.922	4.92	2°22'	
17		9.492	4.77	4°25'	
16	4.77				
18	4.91	8.761	4.77		-1°39'
19	4.84	4.91	1.033		- 55'
20		4.84	0.984	03'	
19	4.84			~~32'~~	
21	4.68	~~10.012~~ ~~4.84~~	4.84	32'	
22	5.06	4.68	2.345	05'	
5		5.06	1.015		1°55'
22	5.06				
23	4.94	8.991	5.06		30'
24	4.90	4.94	1.87		45'
25	X	4.90	1.470		48'
24	4.90				
26	5.08	4.90	1.012	2°08'	
27		5.08	1.572	11'	
26	5.08			~~25~~	
28	4.94	5.08	1.314	25'	
29	5.06	4.94	0.927	28'	
22		5.06	1.21		1°53'

5.06
4.64
.42

8.991
5.06
3.931
7862
660
1202.
99
27.2

5.08
1.572
3502
4.90
1.570
3430

on W side State & N side 4 S.

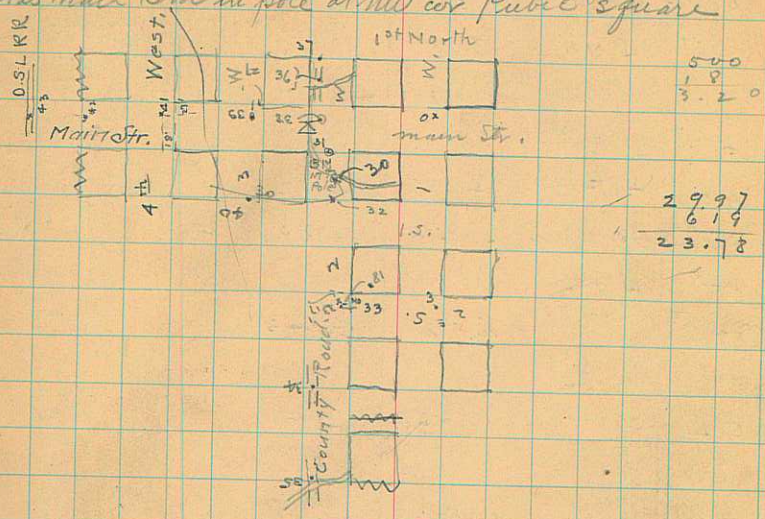


No	HI	Stadia J	Stadia L	angles +	angles −
30	4.700				
BM 31		4.700	2.627	1°10'	
30	4.700				
32		6.004	4.700		2°13'
30					
33	4.72	9.902	4.700		1°13'
3		8.537	4.72	1°49'	
33	4.72				
34		4.72	0.943	0°03'	
33	4.72				
35		10.770	3.00	0°04'	
36	4.80				
31		4.80	2.892	1°13	
36	4.80				
37		4.80	2.863		2°30'
38	5.00				
39	5.08	5.00	1.422		1°15'
40		5.08	1.430		1°09'
39	5.08				
41	5.06	5.08	2.055		1°22'
42	4.99	9.48	5.06		1°21'
43		6.652	4.99		5°33'

Sta	BS	FS.
22	12.03	0.58
	11.46	0.55
	6.48	5.06
	29.97	6.19
29	→	

Note; pipe line c ↑ N.
{ could be on the E or W side of 2 & W
but I think in between the Ind. Tel and H C.
E. L + Power line is the better.

on S. bank ditch
This BM is about 2' lower than street grade
31 is nail BM in pole at NW cor Rubec Square



5.00
1.80
3.20

2997
619
23.78

in Tel. Pole.
R.R on BM = 1.80 ∴ 38 is 3.20 lower than BM

on East Rail.

Difference of Elv. between 22 + 29
= 23.78 ft

1.24

No	H I	Stadia U	L	angle +	−
29	5.06				
44	5.00	7.516	5.06	2 4'	
45	4.89	5.00	3.80		2°39'
46	4.44	4.80	0.94	0°04'	
47	4.84	5.00	1.163	3°35'	
48	4.99	4.84	0.812		45'
49	4.99	4.99	1.318	20'	
50	4.86	4.97	4.13	2°10'	
51		4.86	2.163		53'
50	4.86				
52		11.350	4.86		20'
50					
53			4.86	0°07'	

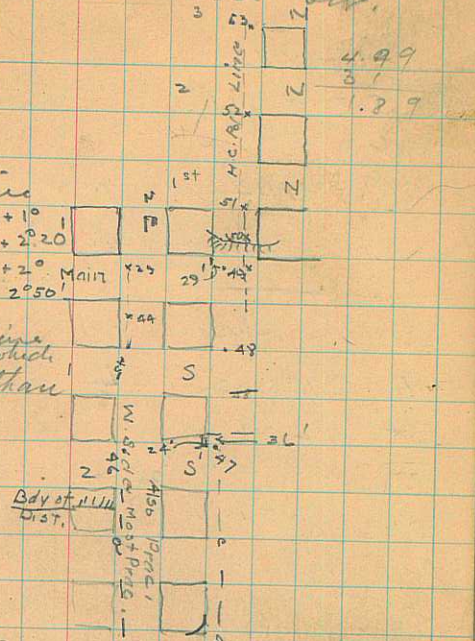
Direct levels from 49 and invert to 29

Sta	B S	F S.
49	1.24	
	1.41	11.770
	0.07	11.650
	3.34	11.71
		5.52

Direct levels from Richmond City Res.

.55	.54
11.63	.57
11.58	.79
10.39	6.25
34.15	8.15

{ Note on 3rd E. lateral most practical one E side Str.



{ Note line is about 6' E pole Line location of pipe on E side, which

{ no Stadia could be taken line from 50. dist. to estimated from plat.
{ Note. 53 on 3rd N. was taken on the N side of Str. instead on the S. side

1.90

1.90 + X − 34.15 = 26

34.15
1.90
32.25
26
6.25

34.15
8.15
2600

Note when

$n = .013$ $\overline{n} .013$

$S = .00873 = 30'$ $S .01746$

$d = 6''$ $d = 6''$

$Q = 144$ gal per min $Q = 300$ gal per min

6" sewer pipes

Sur. of pipe line from Spring

Sta	Course	Angle L	Angle R	HI	+/-	R Read angle	R Rod ground	Cut	
0				4.85					
1+37	N 74°35'W	20°08'	~~20°08'~~	4.93	-2°35'	7.74		m	of spring
2+33	S 85°20'W	5°29		4.40	-1°			4'	small creek down end of culv
3	S 80°W				2°31'	8.40	5.9	2.5	Thus Sta 3 bucket 1.5 lower than bottom of culv Sta on the South intersect condenser pipe
3+50	" "				" "	8.40	5.4	3	
4							5.5	2.9	
4+50							5.6	2.8	R 7°30 from 2+33
5							5.6	2.8	R 6°21 " "
5+50							5.4	3	R 6° " 2+33
6+00							5.2	3.2	R 5°29 " "
TP 6+10.6	N 78°W 1 S 14 E 2.5	1°39		4.92	2°36'	7.92		3	(Sd. U 5.4 L 3.48 ft) app
6+50							5.1	2.8	L 8°32
7							4.92	3	L 6°55
7+37	V		37°08'	4.80	2°19	7.80		3	
7+50							4.80	3	R 26°11'
7+97									to June M + S.
8	N 45°W 1 N 20 W 1						5	2.8	R 27°9.

4.92 − 4.29 = .63 → 126 → 127

7.74 − 4.89 = 2.85

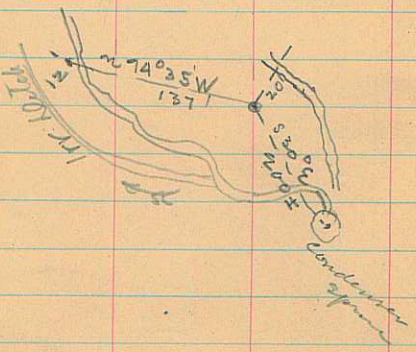
4.86 − 4.40 = .46

4.86 − .50 = 4.36

4.86 − 2.72 = 2.14 64

5.4 − 3.484 = 1.916 → 1.915

(see over)


N 74°35' W
137
S 30° 00' North
Condemned
Hwy 101

Sta	Course	angles ∠ R	HI	angle + or −	R Rod on grade	R Rod grams	Cut	
8+50					7.80	4.4	3.4	R 32°28
9						4.7	3.1	R 36°35
9+50						5.2	2.6	R 36°48
10+00	N 65° W					4.8	3	R 37°05
10+50	Sa. 0+46 L 3.07					4.9	2.9	R 36°46
TP 11+00	N 87°50' W 23°08'		4.86	2°19	7.86	4.8	3	R 37°08'
11+50						4.86	3	L 20°22
12						4.3	3.5	L 21°46
12+50	Sa. 0+46 L 1.72					4.86	3	L 22°34
13						4.2	3.6	L 22°57
TP 13+26.7		28°53'	4.97	2°35	7.97		3	
13+50	S 63°10' W					5.2	2.7	L 23°43
14	U 4.91 L 4.31					5.1	2.8	L 31°52'
14+50						4.97	3	L 30°33
R 14+58.6		47°13	5.08	2°31'	8.08		3	
15						4.1	3.9	R 47°52
15+50	N 69°32' W					4.5	3.5	R 48°27'
16	U 5.08 L 3.867					4.5	3.5	R 47°12'
16+50						5.5	2.6	R 46°52
TP 17		19°26	4.95	2°28'	7.95	5.08	3	R 47°13
17+50	N 89° W					5.5	2.5	L 19°26
18	U 3.45 L 2.187					4.7	3.2	L 19°26
18+50						5.3	2.6	L 20°20'
19						5.2	2.7	L 20°39
19+50								

11 7 3 7 3 6 3

4 8 6 9 6 3 0 1 8 1 4 2 3 6 2

7 4 1 5 1 0 3 4 5 2 9 5

8 1 5 5 2 6

Sta	Course	∠	R	HI	and +/−	R Read on grade	R Read on ground	Cut
TP 19+50		20°		5.00	−2°38'	9.50		4.50
20							6.4	3.1
20+10							6.4	3.1
21							6.6	2.9
TP 21+35.6			R9°27	4.97		7.97		3
21+50							4.4	3.5
TP 21+51.6			R32°27		−2°36'			3
22+00							4.5	3.4
22+50							4.3	3.6
TP 22+79.7		12°09		5.05	−5°34	8.05		
23							5.05	3
23+50							5.7	2.3
TP 23+55			10°45'	4.93	2°40'	7.93		
24							4.6	3.3
24+50							4.5	3.4
25							5.3	2.6
25+50							5.2	2.7
26							4.93	3
26+34.2			18°30	4.94	2°40'	7.94		
26+50							4.3	3.6
27							4.6	3.2
27+50							4.7	3.2
27+93.3				4.90				

∠ 14°06'
∠ 21°08'
∠ 23°17'

to a post which is 2105' N & 1347 W of E'ly corner of

~~R 33°11'~~
~~R 33°26~~

R 33°11

R 33°26

∠ 12° 09'
∠ 12°09

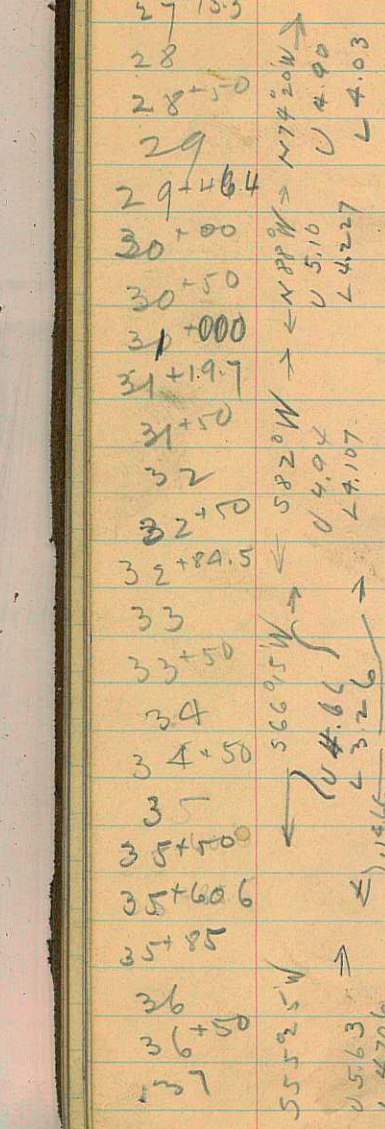
R 12°30
R 13°14
R 8°53'
R 9°37
R 10°19

R 18°29'
R 18°50
R 18°35'

70

Sta	Course	∠ and R	HI	∠ and +− or	R Read on Grade	R Read on ground	Cut	Vert Ele	
27+73.3		15°9'	4.90	-3°20	7.9				
28						4.9	3		∠ 10°
28+50						4.9	3		∠ 14°09'
29						4.5	3.4		∠ 14°3[illegible]
29+46.4		13°40	5.10	-3°42	8.10		3		
30+00						5.10	3		∠ 10°25'
30+50						4.9	3.2	11.2	∠ 12 07
31+00			~~4.41~~		~~7.94~~	6	2.1		∠ 14°08
31+19.7		10°	4.91	-3°56'	7.94	~~5.3~~	~~2.6~~		~~∠ 6°1'~~
31+50						5.3	2.6		∠ 6°14
32						5.5	2.3	11.3	∠ 9°21
32+50						4.94	3		∠ 9°5[illegible]
32+84.5		15°40	5.16	3°52 + 4°02	8.16		3	21.2	
33						4.8	3.4	Mate from 32+84.5 to 35+60.6 − 3°52 and from 32+84.5 to − 4°02'	∠ 15°40
33+50						4.9	3.3		∠ 15°40
34						3.6	4.6		∠ 15° 40
34+50						4.8	5.4		∠ 15°40
35						4.4	3.8		" "
35+50						4.7	3.5		" "
35+60.6						4.66	3.5		" "
35+85		10°50'	5.13	2°30'	8.63	~~4.66~~	3.5		" "
36						5.1	3.5		
36+50						5.5	3.1		
37						5.7	2.9		∠ 12°02'

8.16
5.13
3.03



Sta	Course	ang fwd L	ang fwd R	HI	ang bk +or−	R Read on Grade	R Read on Rod	Cut	Stadia
37+50						8.63	5.9	2.7	L 11°17
37+66.7	1	6°15		4.86	2°25'	7.86	5.63	3	
38+							4	3.8	
38+50							5.6	2.2	
39							4.5	3.3	L 5°57
39+50							4.6	3.2	L 6°05
40							5.3	2.5	L 6°16
40+50							4.7	3.1	L 6°06'
41							4	3.8	L 6°16'
41+50							4.3	3.5	L 6°16'
41+56.7		42'		4.97	2°30'	7.97	4.86	3	
42							4.2	3.7	L 39'
42+50							5.4	2.6	L 42'
43							4.6	3.3	L 42'
43+									
43+47.4				5.03		8.03		3	

Preliminary work from Sta 43+47.4

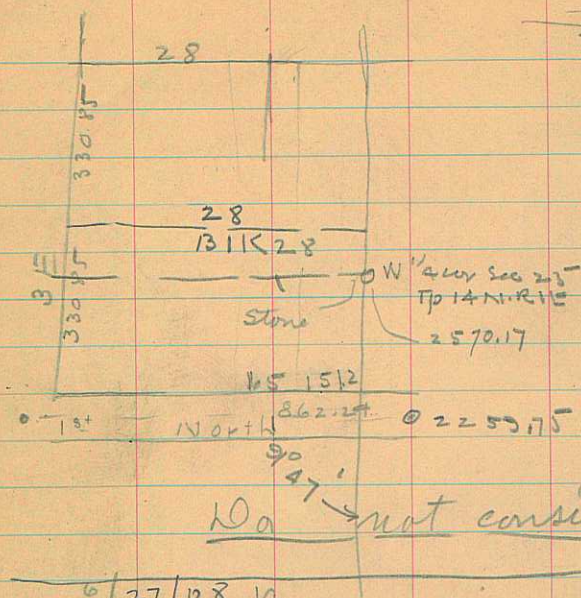
43+47.4		8°08'			
578'	1	1.5°10	5.08		
	2		4.96	−2°25	
	3		4.90	2°55	
	4	1°42	4.79	6°44	
				8°10'	

5.03 + 3.827
5.08 2.085
10.306 4.96
4.90 3.118
9.171 4.79 To proposed

3.827 .1510
-74 4479
1328
142

2570.17
2259.75
310.42
2570.17

2152
1510
1470
30
1500



No not consider

6/27/08 Beg. again at

Sta	Curve	∠ angles R	H I	L S + −	R Road on grade	R Road on ground	Cut	
43+47.4		23°49	4.95	+2°33'	7.95			BS. 41+56.7
43+75						5.30	2.6	∠ 16°10'
44+						6.4	1.5	∠ 22°35
44+28.8		21°54	N cur 4.95	2°27'	7.95	4.95	3	∠ 23°49'
44+50						4.1	3.8	R 16°44
45+50						4.2	3.7	R 21°08
PT 45+91		21°52	5.14	2°21	8.94 Should give 8.94	4.1	3.8	R 23°01'
46						5.4	2.5	∠ 13°10
46+50						4.4	3.7	∠ 20°
47						1.4	3.7	∠ 21°52
47+50						4.6	3.5	∠ 21°52

S 24°30' W ∠ 4.95 ∠ 4.55
S 74°30' E ∪ 4.95 ∠ 4.13
S 52°45' W ∪ 5.14 ∠ 4.11

Sta	Course	L	R	HI	+ −	R Read. on grade	R Read on ground	Cut	
new Sta 47+947		Ls		new 4.74	−5°33'	7.74		3'	
48+									
48+50									
new Sta 48+85.5				5.08	2°19'	7.58	5.9	1.8	
49							5.25	2.5	
49+50							4.9	2.7	
50							4.5	3.1	
50+50							4.4	3.2	
51							3.8	3.8	
51+50				5.02			2.8	4.9	
51+85.7				5.02	2°19'	11.82	1.2	6.4	
52							.78	6.8	
52+50							5.4	6.4	
53							6.7	5.1	
53+50							6.8	5.0	
53+80				5.12	−7°51'	11.52	5.5	6.3	
54							5.4	6.4	9.
X							5.0	6.5	
54+50							6	5.5	
54+69				5.00	2°36'	7.50	7	4.5	
55							9	2.5	
55+50							4.4	3.1	
56							3.1	4.4	
							3.5	4.0	

56°19

53
1.7
5.2
6.56

net
ob on this Sta 10 – 15 am
h – 56°19 R 91°25' to tangent
n 2 h = 56°43' 10 – 17 am
R 90°46' S 56°05' E
N 06 48+01 in at fence near section

E+W

6/27/08

7.7
3.8
3.7

7.4
2.8
4.9

7.6
1.2
6.4

7.58
6.8
7.8

11.8
5.4
6.4

5.09

Sta	Course	L	R	HI	L S + −
56+50					-2° 36'
57					
57+9.4				4.78	-8°
57+50					
57+92.7				4.98	2°19
58+					
58+50					
59					
59+50					
60					
60+36.5				5.09	
60+50					
61					
61+50 new cut					
62				4.58	
62+50					
63					
63+50 new cut					

Cross sections of some of the sta.

62						
62+50						
61+50						

(cor over)

12 7.66

RR on grade	RR on ground	cent. cut
7.50	5.6	1.9
	4.6	2.9
7.78	4.5	3
	5.1	2.7
7.98		3
	3.5	2.4
	5.9	2.1
	3.7	4.3
	2.6	5.4
	6.7	9.3
16.05	5.09	10.9
	6.7	9.3
	11.4	4.6
	9.	7.1
16.28	4.3	11.7
	8.7	7.6
	13.66	2.6
	13.4	2.9

	Hit	L Cut	L RR
16.28	4.58	7'	14.1 2.2
18.38	10.78	5	9.7 8.7
14.4	7.3	3.8	8.1 6.3

16.05 / 11.7 / 4.58 / 16.28 / 13.28

12 / 14 / 62 / 1.7 / 16.3 / 1.7 / 14.6 / 7.3

16.28 / 13.9 / 2.38

16.3 / 2 / 16.3 / 7.1

2' E of fence

16.3 / 8.7 / 7.6

16.3 / 13.4

7.5 / 5.6 / 7.8 / 5.1

10.65 / 5.4 / 16.05

16.00 / 6.7 / 9.3 / 16.00 / 10.9

16.05 / 6.7 / 9.35 / 16.0 / 11.4 / 4.6

16.05 / 4.3 / 11.7

16.28 / 13.66 / 2.62

80

-82-

Sta	Cont. Cut	RR Cen	L. Read	L Cut	L cut	RR on grade
60+50	9.30	5.96	4.45	10.8	5	15.26
60+36.5	10.9	3.86	3.77	11.1	5.5	14.76
60	9.3	3.90	3	10.2	5	13.2

Sta	Curve	L L^S	R	H I	+ L^S −	R Reading on grade	R Rod ground	Cut
63+50				5.10	-9°	7.80		2.9
64							4.70	3.1
64+50							5.8	2.0
64+67.6				4.99	-2°57'	7.89		2.9
65							4.2	3.7
65+24				4.80	-9°30'	8.3		3.5
66							4.9	3.
66+50							4.7	3.4
66							4.8	3.4
66+39				4.85	-13°43'	8.25	4.8	3.4
66+50							4.6	3.5
67							4.5	3.5
67+50							6.2	2.
67+57				4.87	-5°04'	7.87	5.25	3.
68							4.5	3.4
68+50							5	2.8
69							5.3	2.6
69+19.7				4.90		7.98		3

14.76
3.77
2 | 11.09
5.5

3.9
9.3
13.2

13.2
3.65
10.15

5.96
9.30
.1526
0.45
2 | 10.81
5.4

10.9
3.86
14.76
15.26
1.50

2 | 10.2
5.

4.69
2.9
7.89
3.1
4.39

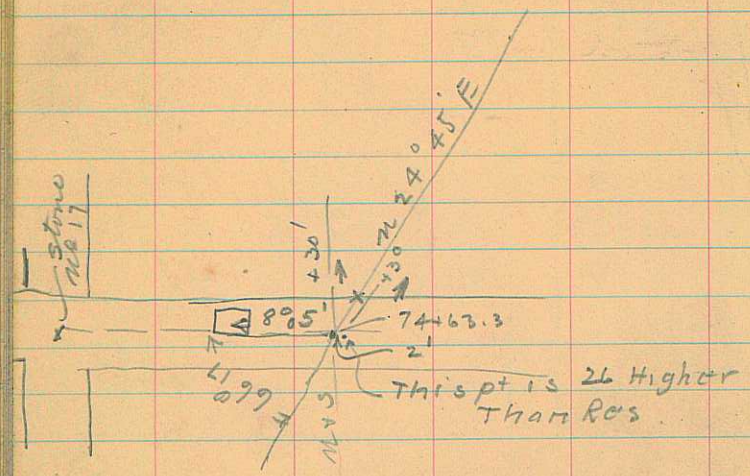
4.8
3.1

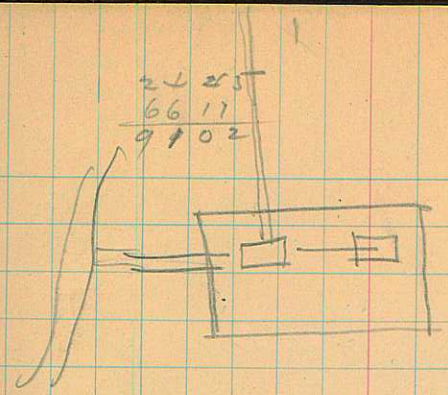
Sta	Course	LS ← R	HI	CS +−	R Road on grade	R Res ground	Cut	
69+197			4.90	-13°	7.90		3	
69+50						3.2	3	
70						4.1	3	
70+50						4.9	3	
70+597			5.22	-7°	8.22		3	
71+00						6.4	2.8	
71+26								cut Reservoir intersect the line to Richm.
71+50						6.3	2.8	
72+22			5.14	3°34	8.14	5.5	3.	
72+50						6.1	2.8	
73						6.7	2.8	
73+50						6.3	2.8	
74						5.3	2.8	
74+25						#		intersect N side Main St.
74+50.0						4.7	3.4	on Str.
74+63.3		66°17						to pt in St.
183	N 89 10' W							line runs along S side Res to E side old Res.
226.3								to W side old Res.
1596		34'						along center line of Main Str

+20

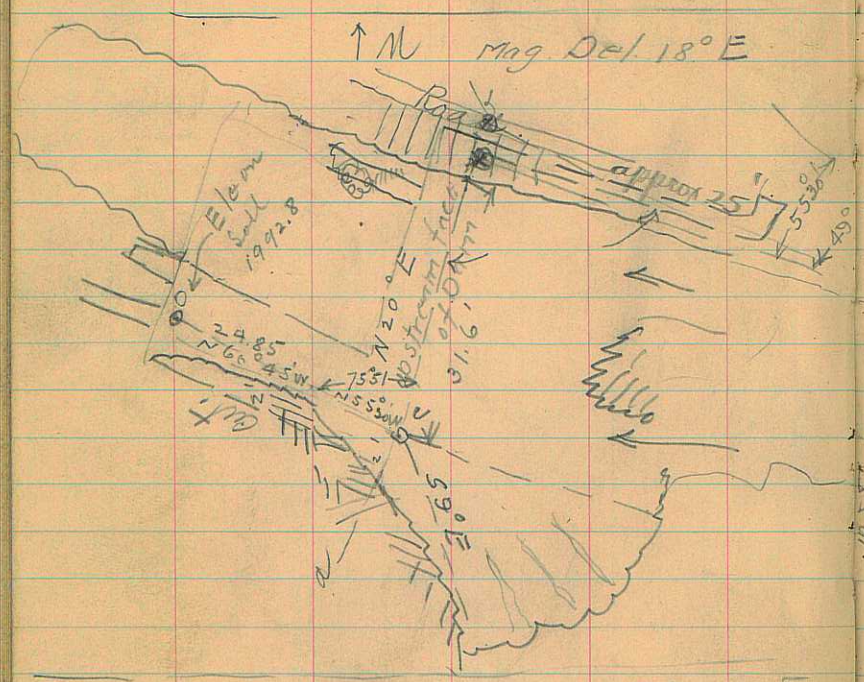
200 ↓9.5 ↓9.5

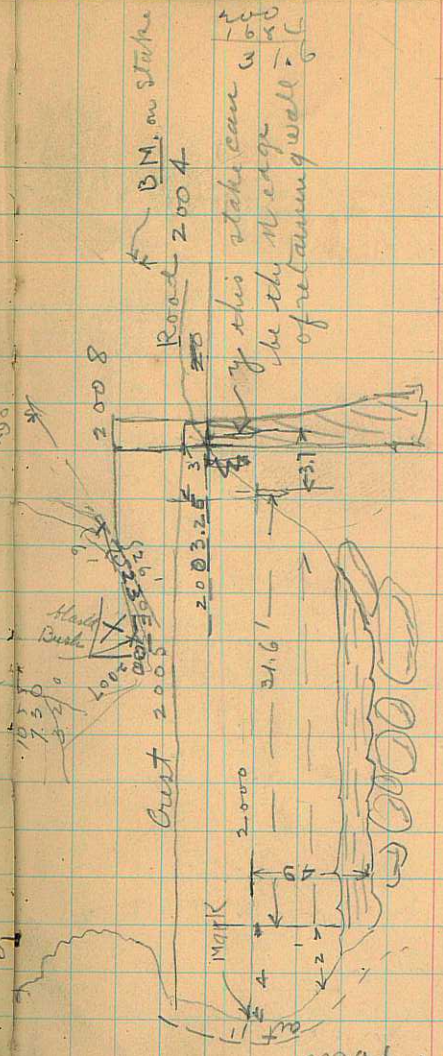
150.5


Stone
N 24° 45' E
+30'
+30'
8905'
74+63.3
2'
L 099
This pt is 26 Higher
Than Res


24 25
66 11
91 02

Sur. of Willard Creek
Power line
6/20/08





Sta	BS	FS	HI	Elev	H.I.
1	10.55				2010.55
BM 2		6.57 on road			
3		5			
		7.30		2007	
	.28			2010.27	
	8.40				
	~~10.79~~			2018.67	
		11.67		2007	
4	6.57	10.51			at 4
	2.11	6.57			
	6.57	3.98		2 4	

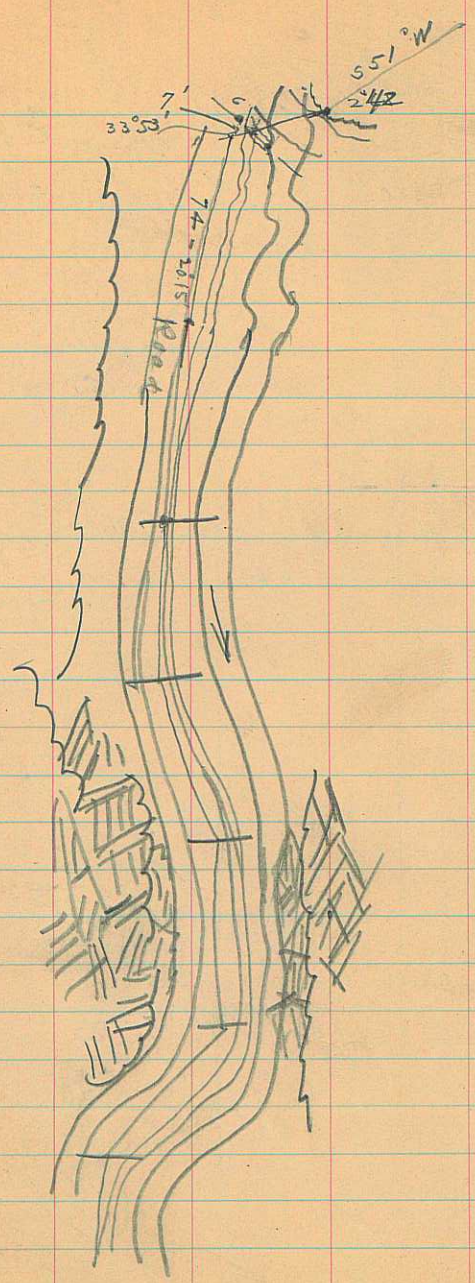
max. high water
Note B.S. 1.1 to bush where high water intersects
R 49° to pt to be
L 55° 30' to Stake Y

S 23° E

2000
5
1995
1992.28
2010.55
28
2010.27
10.79
2021.06
2010.27
8.40
2018.67
2007
11.67

Sta	Course	L	R	HI	LS	R.R. Row grade	R.R. Row ground	Cut	fill	
0		135 to C 3°34		4.44	+13°27	4.44				1½ feet loose soil.
0+35	N 59° W						1.4	3'		
0+57.7	N 59° W	26°49		5.17	16°33		4.44	0.0	0.0	Fet.
0+91.1	N 86° W	43°07		3.74	12°58	5.25		1.5		
1+25	S 51° W						3.7	0	0	hard rock
2+42	S 51° W		28°54	4.66	-27°30	4.66	5.25	0	0	this sta on cliff for brige abutment
2+68	S 79°45' W			4.66					F 3.3	
2+87	" "			4.97	20°15'	6.27	1.3			This pt is on N side trench
2+96.7 (No 6)							4.33	Grade.		Top of abutment
2+76.7		66°45'		4.97	20°15'	6.27		3.1	.66	
3+50.7	S 12°30' W	5°31		4.64	16°37'	7.64	(3.1	3)		side of trench 3.3 on T10
3+96.1	S 7°05' W	3°33'	?	4.71	20°07'	7.71	(4.5	3')		Note from 276 to
4+64.9	S 1° W	15°34		4.95	14°21		(4.71	3)		
5+32.7	S 12° E		11°35	5.02	18°25	8.02		3		-18°25 from Sta 5+32.1
5+71.7	S 45' E		29°18	4.66	18°14	7.66		3'		
6+59.5	S 28°50' W	26°37		4.87	19°10	7.87		3		
7+05.0	S 2°15' W									
7/1/08 Work Note. Some grade —										
5+71.7				4.71			4.9	2.8		on a rock by point on S side trench
5+32.7						9.4		3		N base rock S side.
4+64.9				5.20		8.30	5.7	1.6		on " " " "
3+96.1				6.4		9.4		3		on or by stake
3+50.7						9	6.9	2.1		

90

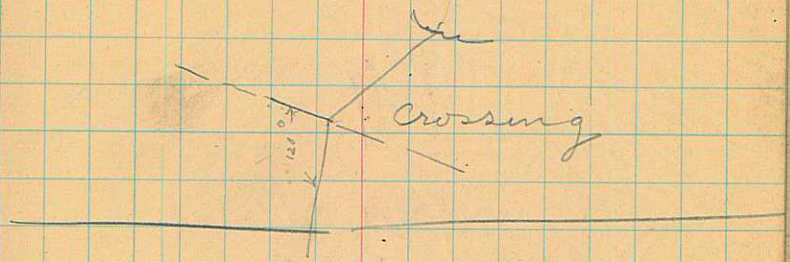


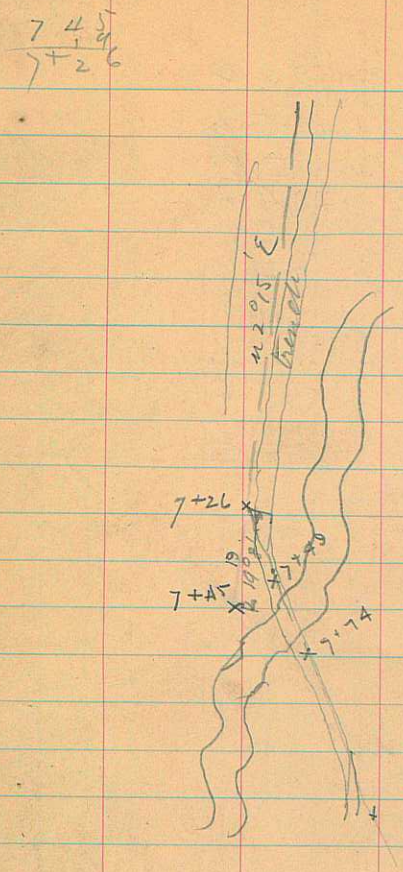
180 / 60 / 12 40 / 120 — (1.4) 4.97

179 60 / 126 7 / 33 53 — 4.97

-92-

Note, on Sta 2+68 a 66° fit is abright. about-ment to bisect ∠ of 60 to ∠



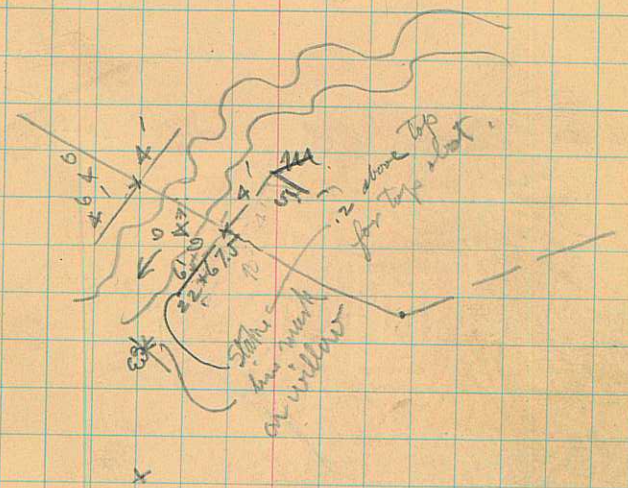


183

6.50
5.16
1.34

log 1.34 = 0.127105
log 183 = 2.262451
3.864654

25'



Sta	Course	L	R	HI	LS + −
7+26		24°44	4.26	4.26	-11°58
7+55	S21°20E				
← 7+74					
× 7+88					
8+00					
7+49					
8+60.6	S28°W		49°20	4.46	-8°15
8+97					
9+69		00	00	4.57	-11°42
10+00	S28°W				
10+52				5.13	
10+00					
11+07					
11+10.7	S46°30W		13°22	5.13	6°50
×					
× 12+49.7	S51°W		10°42'	5.16	12°53
12+87.8		00	00	5.10	12°58
×					
×					
×					
14+32.3	S74°15W		23°10'	4.91	-7°16
+					
15+15.4			20°35	2.80	

RR on grade	RR on ground	cut	Fill
7.26		3	
	7.5		.2' pt of abutment this abut. should be at Sta 7+49
7.26	6.7		1.75 S. abutment
	8.3		
8.46	11.	2.5	end of wood pipe beg of steel pipe
8.46	8	1.5	cut 9'
8.46	3.3	4	
	4.57		
	4.57		
5.13	4.7	c. 1' L 2	
5.13			
	2.8		
	2.76		
	5.13	00	00
10.26	00	5.16	
	3.3	6.4	
	5	5.3	
	7.4	2.9	
	10.26	00	00
4.91	3.00	1.95	
4.45	3.26	1.65	

3.3

Steel

L 86°19 S59°E 7.1
L 2 Stake RPC 3.7

10° to Sta mark on Rock 5.8

This sta was obtained by meas. from grade @ 12+49 to 5.16 above grade at

on rock

Top of stake driven in side of bank.

mark on Rock on N. side trench C. 3. R 119°30'

mark on Rock S-2°W c 1.2 R 93°42'

Sta	Course	L	R	N I	+ L
15+15.4	N85°15W			4.62	16°53'
17+46.3	S68°10W			3.27	12°10'
18+48.1	S54°30W			2.35	-16°30'
19+26.3	S54°30W	0 0	0 0	4.98	-11°58'
20+09.4	S61°50W		6°43'	4.87	12°28'
21+92.9	N77°50W		40°41'	3.17	~~11°56'~~
22+67.5		0 0	0 0	4.51	~~10°9'~~
22+97.5					
21+92.9	from final		40°41	2.75	11°08'
22+67.5	regarde				

RR grade	RR original	cut	fill
6.27			
	6.27		
	4.47	on Rock 1.9	
	8		~~2.5~~ 1.7
	7.3	+	1.1
6.27	3.27	3.00	
	1.76	4.6	
	on R. 2.5	C 2.4	
	1.6	3.3	
	10.0	4.87	on rock
9.10		at PI 5.93	
		4	
3.10 on R.	10.1	+	ext. 1.5
4.01 on R.	4.3	1.3	1 to top dr.
8.70		PI 5.93	
	5.	3.7	on rock
	10.7		

Obj a large vertical Rock 10' high just appos. where rock goes N across crick

C. mark on rock S of tracel 5.8 '8

on large rock 1.8 S. on large rocks under two large rocks mark on S rock 1.8 S of line C 3.8 mark on rock S " " " 3.2

Grade on tracel mark on Med Rock 5.3 S. C 4.1

R 111° mark on stake on ~~R~~ line Main Line 9.1 Stake 11' from PI C by estim 7.5

on large rock however I uncovered the fill .5' side

Rod about 1' West side on West side 5 to ne at stak & on willow ~~root~~ stump

on rock

2 You pt .3 lower than top of a large willow ~~root~~ reference stake S of the east abutment

Sta	Course	L S L	R	HI	L S + −
22+97.5					
23+67.7	S 85° ~~30~~ W	16°39		5.22	4°45'
59.3					
24+27.9	S 74°00W	11°45		11.7	4°40'
	" "				
25+05.7	"	00	00		
91.1					
25+96.8		00	00	4.87	5°18'
182.8				4.89	
27+79.6	S 88°50W		14°59'	4.89	4°57'
167					
29+46.6	N 84°15W		6°42'	4.86	6°04'
176.2					
31+22.8	S 66°15W	29°29'		4.57	14°40'
141				4.14	15°30'
31+36.9					
32+95.5				4.58	−7°12'
33+97.5				4.48	−12°57'
35+46.4				4.79	

R Road or grade	R/R or gra	cut	Field
8.7	9.8		1.1 (23+67.7 out to side of hill)
6.65	7.25	1.45	
6.65	1.8	4.8	
11.7	6.6	4.5	
	5.45	5.25	
4.87	00	00	
	.8	4.1	
8.74	1.02	3.85	
	4.02	4.7	
	6.5	2.2	
5.51	8.09	0.65	
	5.51	00	
	2.15	3.4	
8.27	1.83	3.7	
12.47	00	8.27	
	9.5	3	
	10.6	2.2	
	7.5	4.9	
9.48		4.9	
	3.1	6.4	
13.66	0.3	9.18	
	7.7	7	
	1.3	13.36	

at west abutment

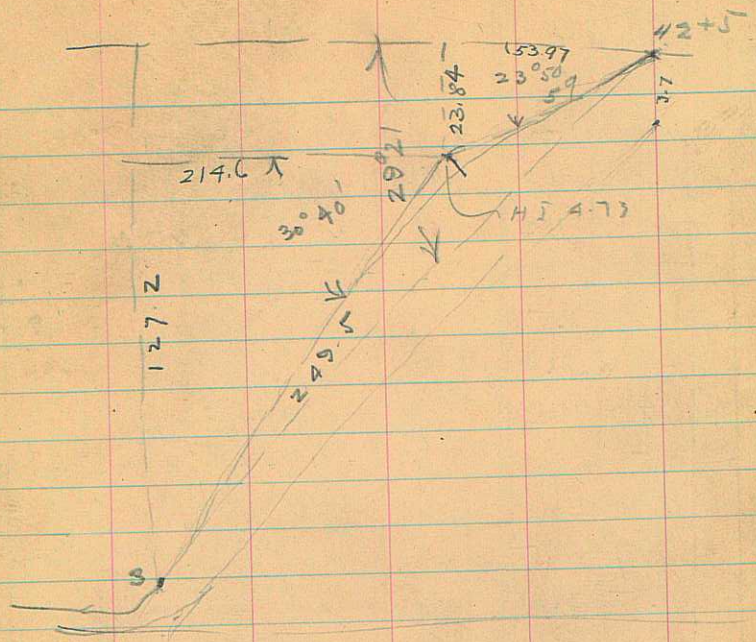
{ on lag on N side Road cut 2.3
Station on S side Road 12 from PI R 90°
grade on trench
on Stump 6.65 − 1.8 = 4.85
on large quartz rock this is where I set into N side
on large rock slip on a stake 4.1 R 90°
E. 1.7 from top of rock
on large rock
on S bank R 90° R 6½
stake on N bank E 6.5
on rock S side
on " N side
E. 4.2 on ground by stake on S bank 3.8 from PI
on N rock

{ from this Sta draw straight to Power Station
∠ 111°30 to get work on bank E 5.7 on Rock
Bur

9 ∠ 8
3 1

Sta	Course	LS	R	HI	LS +/−	R Read on Grade	R Rod on Ground	Cut	Fill
35+46.4				4.79	−15°46′	18.15		13.36	
							7.3	10.8	
							11.	7.2	
37+08.6				5.1	−8°52′	11.87	11.38	6.77	
							9.4	4.5	
							11	0.9	
							10.80	1.2	
39+48.5				4.88	+7°28′	10.18	6.5	5.3	
							7.6	2.6	
							5.9	4.5	
40+65				4.76	−9°08′	8.44	6.5	3.68	
							2.8	5.6	
							1.5	6.9	
42+15				see sketch over		8.50	4.76	3.68	
				4.82	−23°50′	14.93	4.82	3.68	temporary final 10.2
				4.73					
							5.9	9	
							7.5	7.4	
							8.4	6.5	
							10.6	4.3	
							10.6	4.3	
							12.2	2.7	
							11.8	3.0	
45+23.5				5.14			9.47	5.4	

over ridge



Log tan 29.21 = T. 749871
1.732142
Log 1.482013

10.2
4 7 3
14.93

3 3.4

30.34
23.84
6.50
3 7
10.2

1 1
5 0 4
4 2 0 3 5
1 4 6 3 5
5 5 2

1 4 8
5.1

3 7 4 7
1 7 3
5.4

249.5 · 104.

Log cos 23°50 = T. 961290
1.770852
1.732142 = 53.97

53.97
214.60
26857

Log 30°40 T. 934574
Log 249.1 = 2.397076
2.331645 214.6
268.57

Log tan 23.50 = T. 645174
Log 53.97 = 1.732142
1.377316 = 23.84

Log tan 30°40 = T. 773033
214.6 = 2.331641
2.104678 127.2

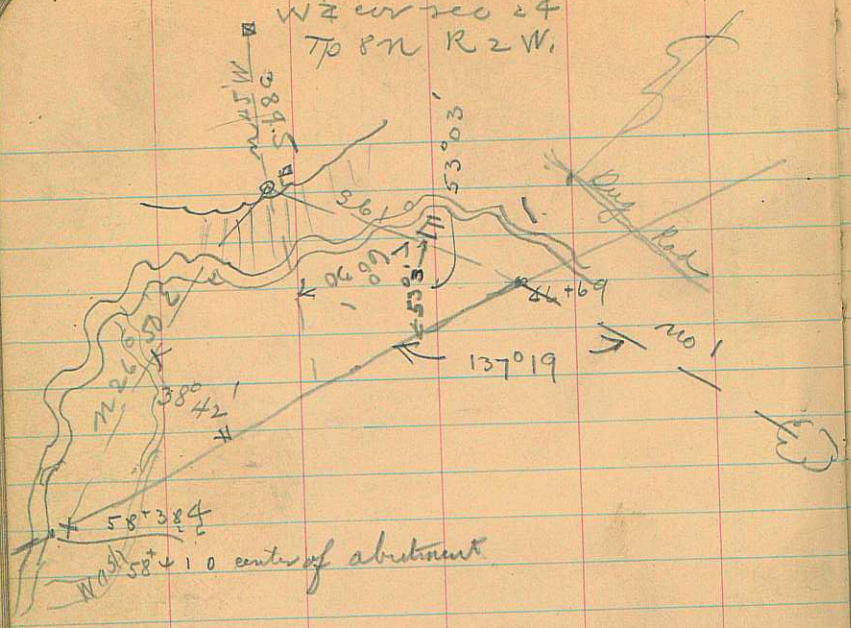
23.84
127.2
151.04 = 2.178977
= 268.6 2.429106
T. 749871

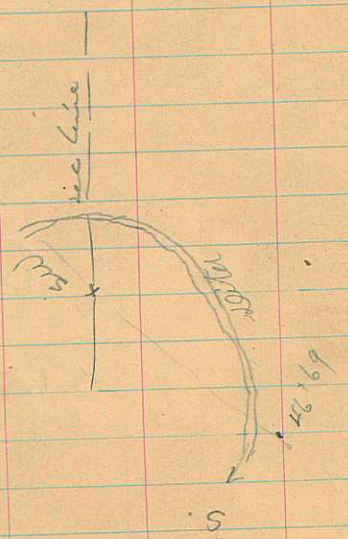
29°21

1 4 4 3
4 7 3
10.2

SW cor Sec
24. Tp 8 N. R2 West

Sta	Curve	L S	R	H S	L S	R Rail Grade	R Rail ground	cut	fill	
45+23.5				5.14	-6°17	10.44		5.4		
45+42.6 hor							11.8		1.4	
45+66.1							16.5		6.2	edge of Creek
387							16.9		6.6	in Creek place of one abutment
46+04.8							10.3		Grade	West bank #6 250 246
246										from here to east 40' fut 254
46+29.4										
46+54.8										
46+69				4.60	-6°17	8.1	6.9	3.5		
							4.5	3.6		
47+67	237.6						5.	3.1		E edge of small wash 69 3.5
48+50	Slope						15.3		7.2	in bottom of wash
48+83										to west edge hollow
49+06.6 hor				4.84	8°02'	4.84	8.06	0.04		4906.6 27 38
							3.7	1.1		5 1+8 0.4 202
	Slope ±738						5.	0.2	0.2	5 3+8 2 4
							2.	2.8		
							1.	3.8		
51+80.4				5	8°02'	8		3		
							5.7	2.3		
							8.8		.8	in hollow about 100 from 51+80
							7.1	.9		
53+82	Slope 271.6									to fence N+S
							5.2	2.8		
54+52							4.3	3.7		

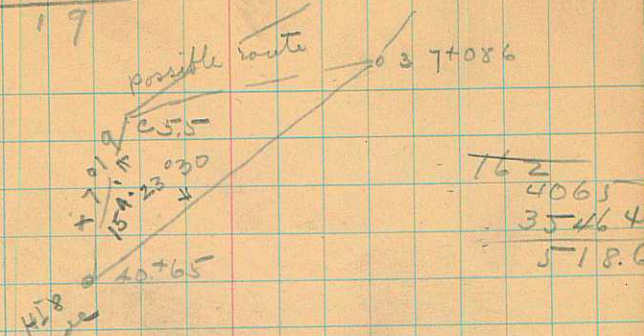




7° 5.2
33
7 1 9

108

35+64



T 2
4065
3546
518.6

log 13 = 1.113943
log 5-18 = 2.285330
Σ. 399613

log 5. = 0.698970
2.714330
3.984640

Note observation on Sta 46+69 Thurs 10 am 7/4/08

FS along Long Tan
L 137°19 h = 53° 28' Σ = 57° 45' E

No 2)
L
h = 54° 35
L 135° 48
Σ = 57° 15' E
} OK 10 am

Sta	Course	L	R	HI	+/−	R Rail grade	R/R on ground	cut	fill
54+52				4.87	−6°44	8.57		3.7	
54+95							5.4	3.2	
							7.5	1.1	
							6.4	2.2	
							8.7	0.0	0.0
							8.5	0.1	
							10.4		1.8
58+38.4			E3 to east 38°42 to flagon hill — see sketch	4.89	−5°35	6.59	6.87	1.7	
58+66.4							5.3	1.3	
							4.8		
							4.5	2'	
							2.9	3.7	
							5.8	.8	
							3.8	2.8	
61+04.8				5.01	5°33'	8.01	3.6	3	
							5.9	2.1	
							4.8	3.2	
							4.6	3.4	
							4.4	3.6	
							7.6	0.4	
							4.6	3.4	
65+79.3							3.76	4.25	

Stopped meas. 386.4

N66.4 Slope 5°33'

474 L

to E side detail
west bank detail

1.8 on wash bear SW

this pt is 2.6' too far east

point of abutment in gable bed on HZO.

at end of pipe

at end of pipe property line should be 12 E along line

10.4 − 8.6 = 1.8

8.57 − 6.87 = 1.70

4.87 + 3.7 + 8.57 − 7.7 = 6.87

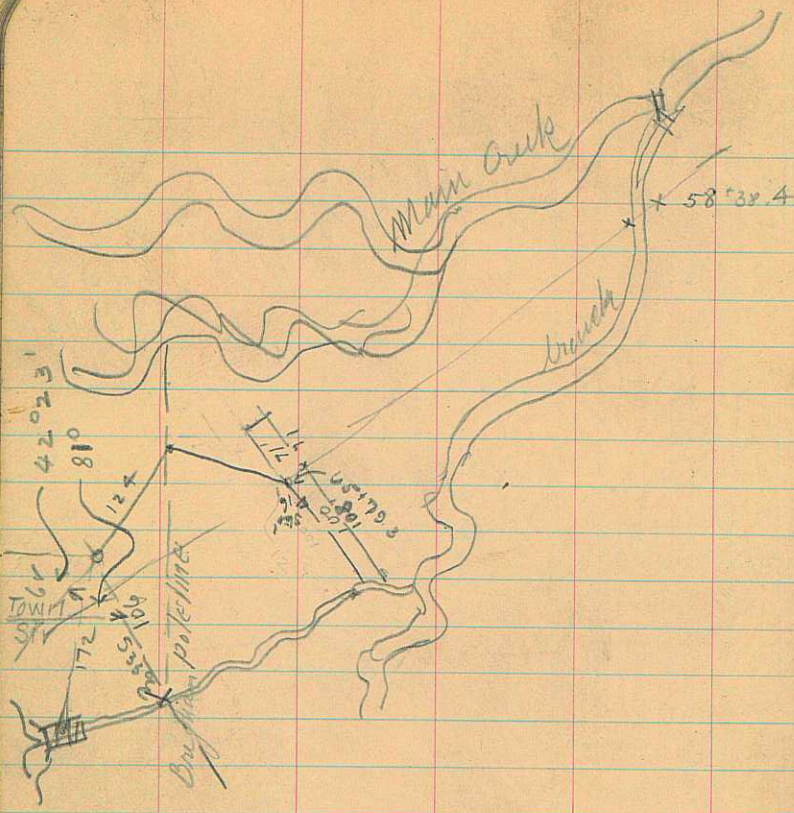
5452. + 386.4 = 5838.4

6.6 − 5.8 = .8; 6.6 + 2.9 = 3.7

6.6 − 3.8 = 2.8

8.01 + 3.76 = 4.25

8.01 − 5.9 = 2.1


Main Creek
branch
58°38.4
42°02.3'
81°
124
172
109
S 33° W
S 61° 30' E
TOWN
ST
Bar
Pole Line

102.5

Sta	Course	L	R	HE
65+793			32°41	
102.5	N 81°45'W	50°14		
124,	S 47°50'W	50°30		
172	S 42°15'W			

(wrote to Inverter.

(20°30) Sur for the Telluride Power Co 7/6/08
on West pole line over NW¼ sec. 9. T 40 16 S R 4 E

Pt. Set on point No 1
B.S to NW cor sec. 9.

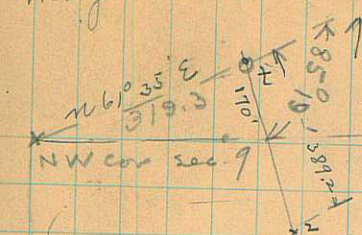
List	No	Course	L	Ls	R	Ls	+	−	HI
					85°13			−6°15	5.00
170		S 33°05 E							
389.2	669							−6°42'	5.1
291.7	670							−10°05'	5.1
315.3	671							−6°30	5.1
364.8	672							~~−18°07~~	5.1
~~718~~ from 165 S	672							18°07'	
scope 241 S	672							12°50'	
22.5	673								
N 18.8	674						19°29'	~~32~~	
249.3	675								
259.8	676								
182.5	677								
38	678								
13	679								
(325)	680								
95	681								
300	682								
	683								

mag. 180° E

N 61°35' E

-116-

N°1 is N 61°35 E 319.3 feet from NW cor sec. 9



Sta

to sec. lin E & W.

0

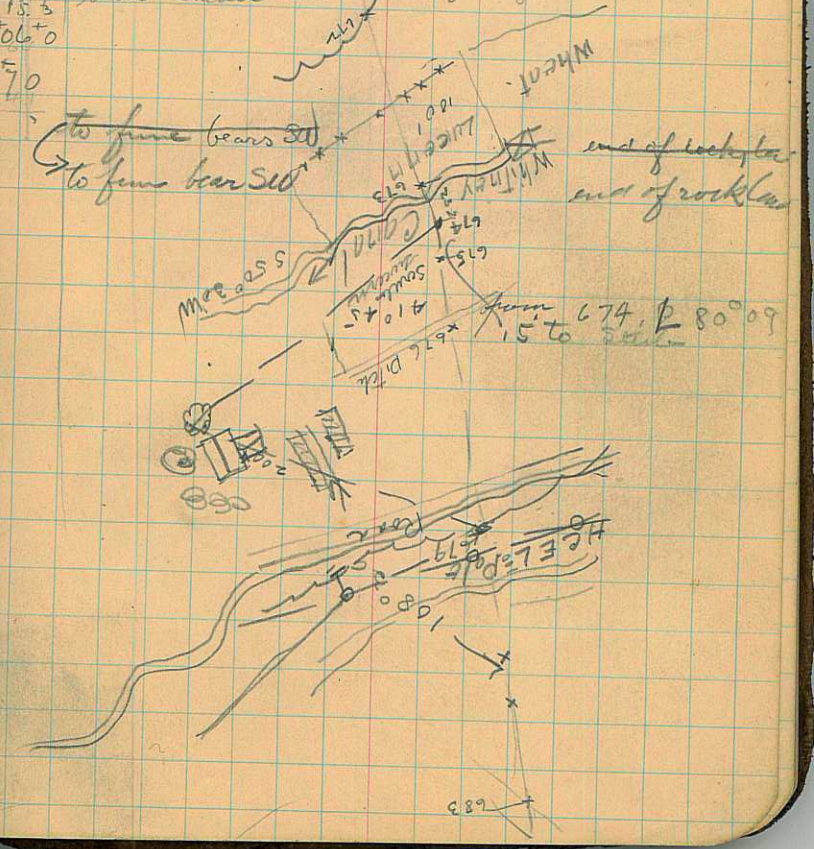
291.7 trees Small hill

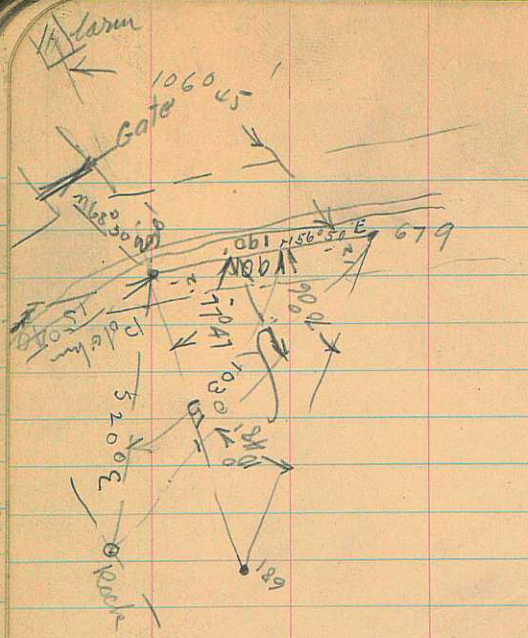
315.3

606+0

970

{ this pt fell 2.5' E of Draymen line.




Corner
1060 45'
Gate
N68°30'00"E
190'
N56°50'E
679
N61°
1704'
1403'
300'
200'
Ditch
189

Levels for Telluride Power Co. for Fish pond at Plant 7/8/08

Sta	BS	FS	HI	Ele
0	8.80		104.8	96.00
		2.82		101.98
	10.16		112.14	
		4.30		107.84
	3.40		111.24	
		12.50		98.74

8.8 / 8

96.
8.8
104.8
2.82
101.98
10.16
112.14
4.30
107.84
3.40
111.24
12.50
98.74
36

· 120 ·

inbottom 100 on H_2O

100.00
98.74
1.26

on H_2O in River near bridge at Res.

2.36
1.962
2.73
4.00
2.73
1.27

Line for Telluride Power

7/15/08

× 1079

263

× 1080

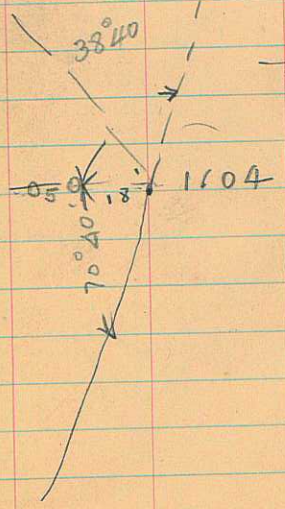
300

× 1081

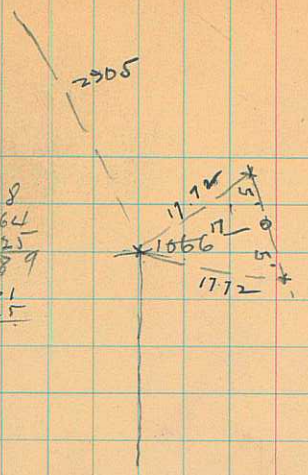
300

× 1082

Set on PI 1066



17960
3840
2 | 14120
0 40
3840
3200
3840
7040
10920



16
21
41
36
25
61
10
5

8
64
25
89
8
125

17
17
119
17
289

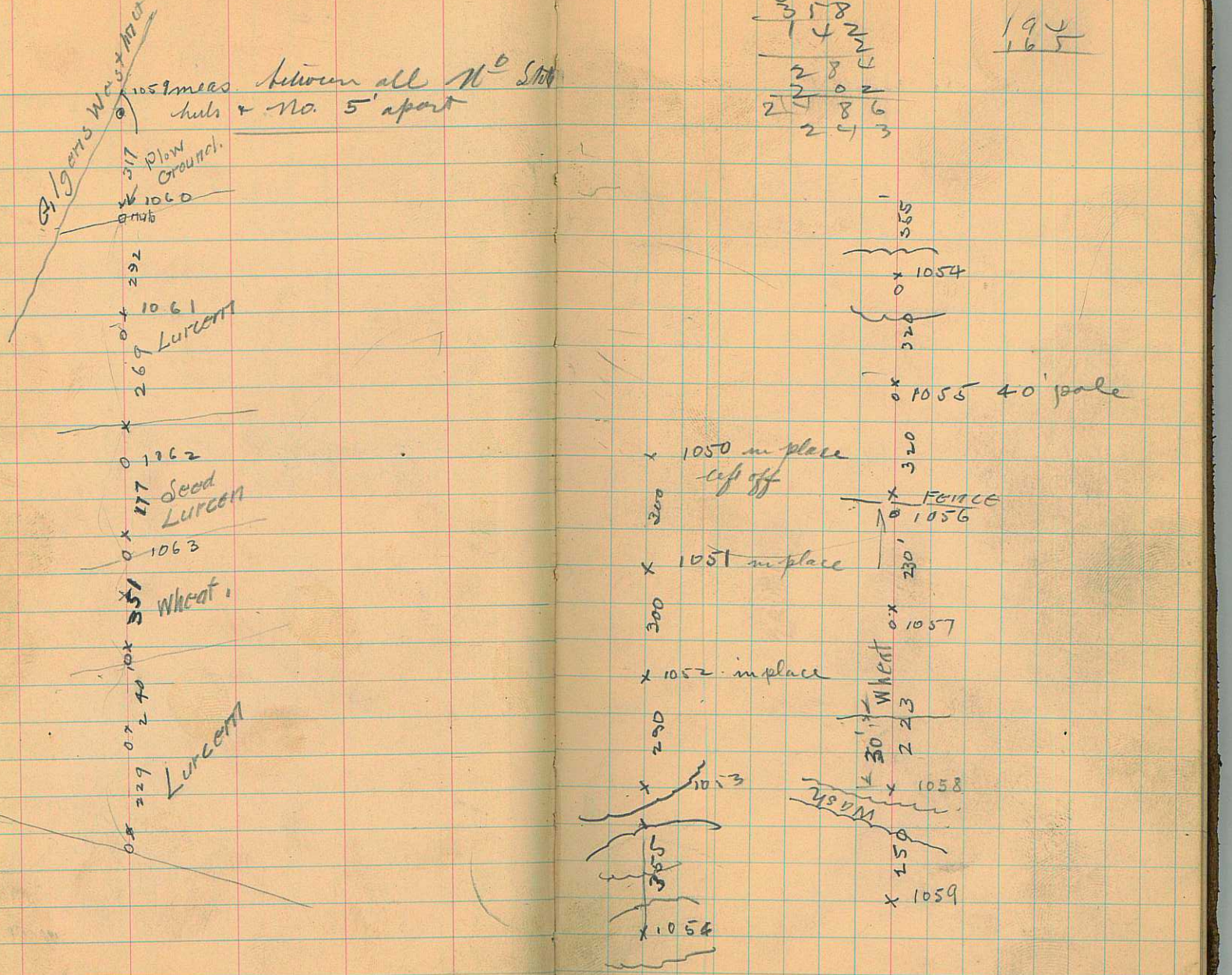
25
289
314

Log 314 = 2.496930
1.248465
17.72

L 29°05' { and R 75°27' 180
to stub 2 | 209.5
104 32
2905
7527

2 | 2905
1432
90

1945
165


Gilgerts West fence
1059 meas. between all No 5 hubs + no. 5' apart
311
plow Ground.
1060
292
1061
269
Lurcem
1062
177
Seed Lurcem
1063
351
Wheat.
229
Lurcem
500
318
142
284
202
286
243
365
1054
320
1055 40' pole
1050 in place
cut off
FENCE
1056
320
300
1051 in place
230'
1057
300
1052 in place
Wheat
223
290
1053
30'
1058
USDM
150
1059
1056

Leah Schaub.

Language lesson

1 I can see with my ey

Language. lesson.

1. I can see with my eyes.
I can see a sea.
my sister is hear
I can hear with

Leah Schaub. 9 3rd
8 East
Logan Utah - 134 -

Language lesson.

1 I can see that tree.
2 I have seen a sea
3 I might here you
4 I can hear the wind
5 good by from your
6 O-buy-albert
7 and right 9 things
8 am going to sure
9 sure you before
10 I have a kangeroo book
11 I have a rabbit for
12 I have a fur

arithmetic Leah

9 X 1 = 9
9 X 2 = 18
9 X 3 = 27
9 X 4 = 36
9 X 5 = 45
9 X 6 = 54
9 X 7 = 63
9 X 8 = 72
9 X 9 = 81
9 X 10 = 90
9 X 11 = 99
9 X 12 = 108

Schaub
Leah 2 grade
Schaub
home
lesson
9 3 March
8 East
9 3 rd
Miss Leah
Isabell
Schaub.

1
9 3
X 6
128

2
72
X 6
942

3
3 4
X 6
3 04

4
34
X 6
184

5
72
X 6
422

6
21
X 6
126

7
12
X 6
62

8
39
X 6
84

9
45
X 6
240

10
87
X 6
482

950 | 43
866 | 22
90
43 h = p

200

.437 (f

$d = \sqrt{\frac{Q^2 f^2}{h^2 g \cdot .7854^2}}$

600
.02
12.00

.02 600
12.00

32.16
2
64.32

.78
78
624
6.44
.606

2 log .125 = $\bar{1}$. 096910
2
$\bar{2}$. 193820

log 2 log 12
1. 079181
$\bar{1}$. 273001

log 200
2. 301030
4. 971971

64.32
1. 808211
5. 163761

log .60
$\bar{1}$. 778151
4 | $\bar{5}$. 33825610
$\bar{2}$. 846402

.07

7.5
.12
150
75
.900

60
9
540

2 10
24
5
39

8

3200
4000
1950
1495
462
675
350
12082
10000
13000

106
12.4
2.2

665
03
2.3

522
1.45
6.67
56

4.50

12043

~~Log t = 0.~~

Log 162 = 2.209515

Cos Cos 12°43 = T.989214

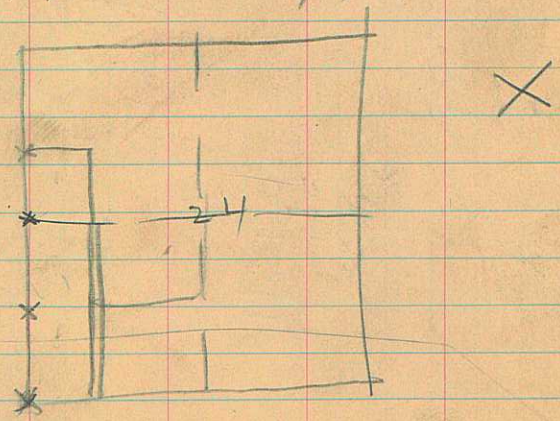
2.198729

2376
23
2.146
4669
2376
4906

Log 4 = 0.602060
2.198729
2.400331

414
827
1241

1027
1243
1410



×

56
54

center of pipe to ~~to~~ bottom tail rigg, 2' outside 14 3/4 pipe 14", on ground West about 4.7 on Rod 1.32 West side brige

451
4.22
.29

9.1
3.17
5.93
2.45
868

8.70
7.25
1.45

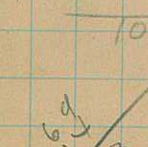
Log Cos 11°08 = T.991749
L 174.8 = 2.242541
2.234290

12.4
10.6

Log 1. 0.000000
2.234290
3.765710

1108
1068
20
10.28

4669
98
5767



6.3 $\Delta = 13°29$

log cos 13°29 = $\bar{1}.987862$
log 102 = 2.008600
1.996462

log 2.3 = 0.361728
log 1.996462
2.365266

Sta 17+66 119

1329
119
1210
1919
4329
1428

17463
1018
18481

20094
1835
21+029

$2^0 45'$

2193
2169
24

5.17
2.27
2.90
5.17
8.07

99.1
4.87
94.23

1049
24
1916
958
1.1496

3.17
9
2.27

5' 2.27

1.15
25
.90

Σ 12°28

.2158
24
8632
4316
5.1792

9.1

Elev on Rock 100.00
HI = 99.1
Grade at 21+69 = 95.13
grade at 21+93 = 90.00

11.40



91
32
5.9

log 108.4 = 2.035029
log Σ 8°15' = $\bar{1}.156830$
1.191859 15.55

log 141.7 = 2.151370
$\bar{1}.305819$
1.457189

141.7
108
2501

28.6
15
26 44.1 = 1.644439

log 250 = 2.397940
$\bar{1}.246499$

10000
487
95.13

log Σ 10° = $\bar{1}.239670$
108 2.035029
1.274699

3.17
9
2.27
5.18
2.27
2.91

18.8
15
3.3

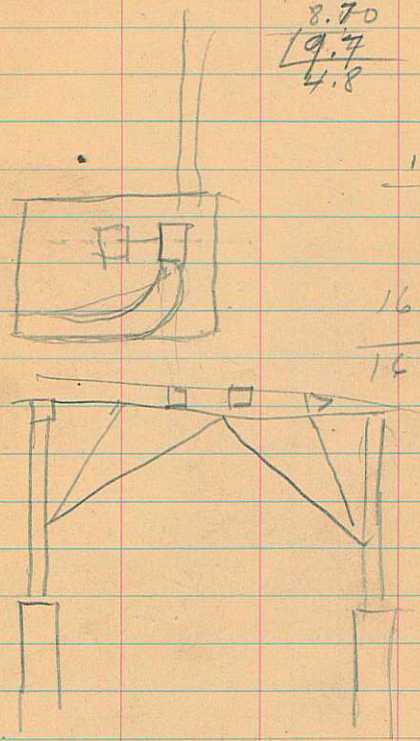
1078
7.6
18.38

16.3
2.2
14.1

18
8.40
10.0
18
8.70
19.7
4.8

1228
25
1253

1638
18
1620



Log 1°42' 1.472454
858 - 2.933650
1.406104
Log 2854 3.455454
3.950640

(∠ 31')

7.1
7.3
14.4
5.8
8.6
14.4 4.3
6.3
8.1

14.4
6.2
8.2
4.1

Log 231 = 2.363612
Log cot 16°31' = 1.981436
2.345048

Log 1 = +1-1 0.000000
2.345048
3.654952

Calc

$n = 0.013$

$S = .0407 = 2°20$

$d = 6''$

$$23 + \frac{0}{0.013} + \frac{.0015}{.0407}$$

$$5521 \div \left(23 + \frac{.0015}{.0407}\right) \Gamma$$

23
7692
99.92
038
99.958

.0015 50 .0407
1221 038
3290
3256

$\log .013 = \bar{2}.113943$

$\log \Gamma .953 = \bar{1}.547775$

$\bar{2}.561618$

$\log 23.04 \quad 1.362482$

$\bar{1}.928650$

0.752450
7.292255
0.045706

$= .848$
552
1400

$\log 99.96 = 1.999826$

$\log \Gamma = 0.146128$

1.853698
89875
0.752450

$\log r = 12.5 = \bar{1}.096910$

$\log .0407 = \bar{2}.699594$

$\bar{2}(3.796504)$

$\bar{1}.898752$

Chin

$n = 0.013$

$S = 0.0407$

$d = 6''$

$Q = 1.10 \text{ cc} = 495 \text{ gal per min}$

4347
2854
7201

5.080
2.085
2.995
599.0

$\log \cos 2°25' \quad \bar{1}.999614$

$\bar{1}.999228$
2.777427
2.776655

$\log 599$

10.306
4.96
5346
.1069.2

578

578
1067
351
858
2854

4.96
3.118
1.782
356.4

$\log \cos 6°44 = \bar{1}.996994$

$\bar{1}.993988$
2.551450
2.545438

356

9.171
4.79
4381
876.2

$\log \cos 8°10 = \bar{1}.995573$

$\bar{1}.991146$
2.942504
2.933650

876
858

log .013 = $\bar{2}.113943$

log $\sqrt{r}$ = $\bar{1}.610660$

$\bar{2}.503283$ 3.0333 .5321 .1854

log 23.044 = 1.362482

$\bar{2}.503283$

$\bar{1}.865765$

.724
.52
1.286

log 99.96 = 1.999870

1.286 = 0.109241

1.890629 = log e

log r = .1666 − log = $\bar{1}.221675$

$\bar{2}.543074$

$2(\bar{3}.176449)$

$\bar{2}.882374$

1.890629

$\bar{0}.773003$

$\bar{1}.542825$

0.315828

2.00

.0349
96
2094
3141
$2\overline{)3.3504}$
1.67

12.4
7.5
4.9

157.02 3300 = 146
13200 .047
25000
23100

.03492

23
76.92

99.92
.0443
99.9643 .00155 .03492

491
326
1.65

log .00155 = $\bar{3}.190332$

log 76.2° $\bar{2}.543084$

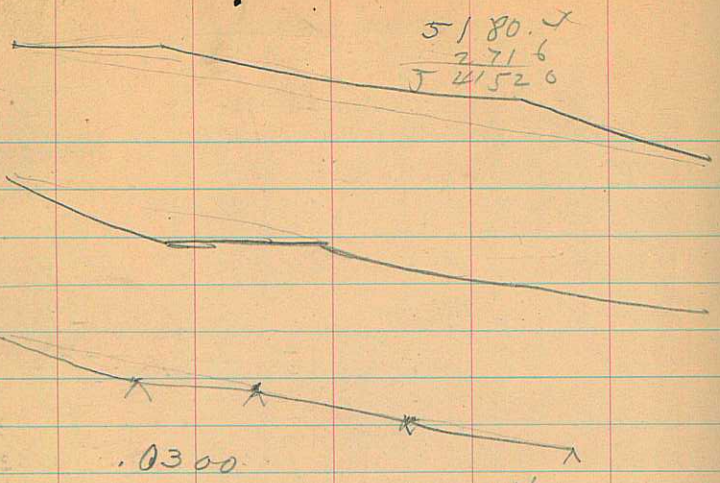
$\bar{2}.647248$

.0443 = .00155 / 5

99.9643

.03492

5.7
12
114
57
68.4 Slope meas. at N° 19 in B. SF



5180.7
2716
5 41520

.088.77
23.92
79
10 3,00 0

.001550 .01746
13968 .088.77
15320
13968
13520
12222
12980
10476
504

Log 2.566168
Log 23.0 1.363236
Log .01746 2.242044 T.929404 = .85
Log 125 T. 096910 1.50
3. 338954 1.40

Log 103 = 2,012837
2 (3.338954 T. 669477 2.669477 T.816810
.66 0.682314
7.5 T.134496
330
462
.495 0

5

- 148 -

.00.01.746

S = .01746 .01746
5

C .00873

$23 + \frac{1}{.013} + \frac{.00155}{.00873}$

$.5521 + \left[23 + \frac{.00155}{.00873}\right] \frac{.013}{.353}$

1.00 .013
91 76.92
90
78
120
117
30

23.
76.92
17
10 0.09

Log .371286
.353 T.134496
T.505782

.001550 (.00873
873 .177
6770
6111
6590

.32
7.5
.32
150
225
2.40 0
60
144.00

.00873
.177
6111
6111
873
.001545 2.1

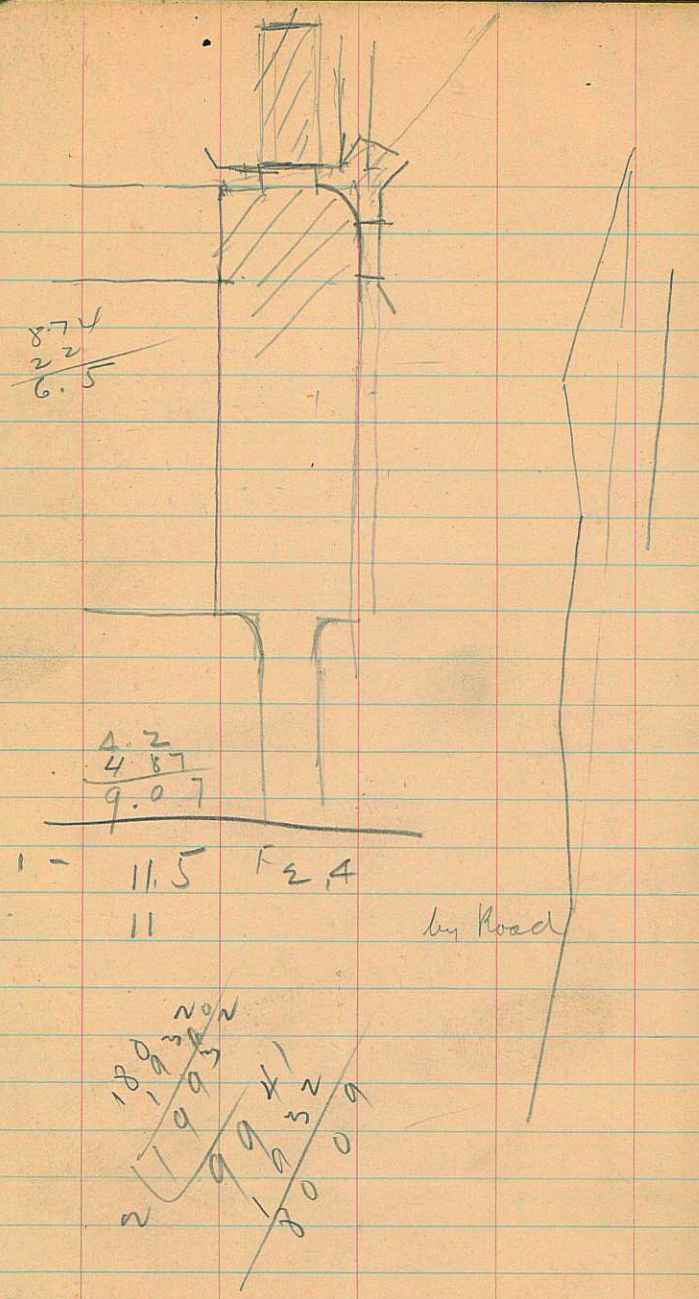
Log .013 = 2. 113943
Log .353 - T. 547775
2. 566168
Log 23.17 - 1. 364926
T. 931094

= .853
.552
1.405

Log 100 = 2.000000
1.405 = 0.147676
1.852324 = e

Log r = T. 096910
Log .00873 3 94.1014
2 3.037924
2. 518962

1.852324
2.518962
0.371286



5.06
1.21
385
2
790

~~Log 770 = 2.~~

Log 1°53 = T.999765
2
T.999530

Log 770 = 2.886491
2.886021
3.516726
T.402747
25.28
23 78
1.50

6104.8
4745
1359
65+9

Log 770 = 2.886491
3.516726
Log 2 0.301030
1.704247
0.301030
1.403247

233
137
796

.04507
137
31549
13521
4507
6.17459

6.17
1,67
7.84

.01745
96
10470
15705
1.6752 0

7.84 | 233

10.84 | 233
~~9320~~ 10465
1520
1398
1220
932
288

513
216
297

aga. for

160r 4

66r

4 66

198r

6 99

100'

Blk by Kluig Store

40'

16'

25'
36'
19'

129' 261r

Blk cen t/ E.

65

100'
330r
33
1144 10r 165
6r 99
6
600

1366
176
96
6.

165
36
129

165
33
198

180
1322
19322
2 13222
6641

96 41
1322
8619

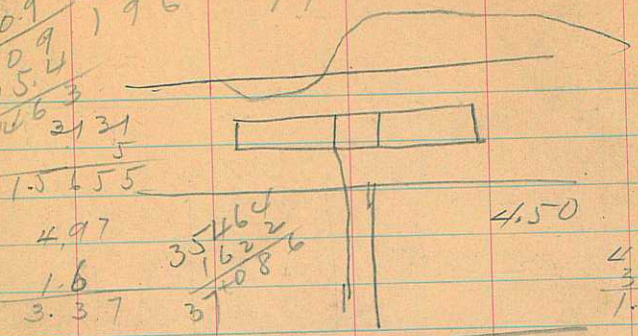
918
448
13.66

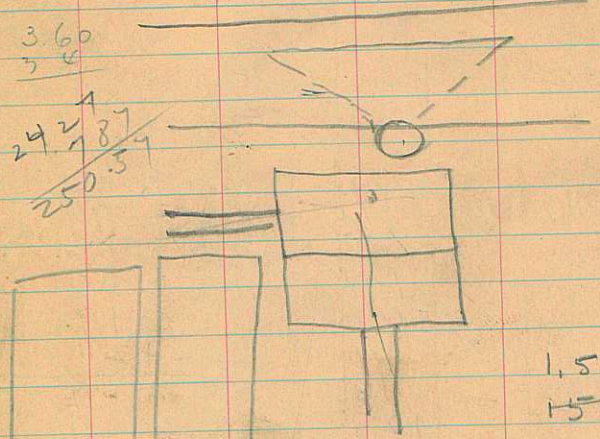
165
2
330

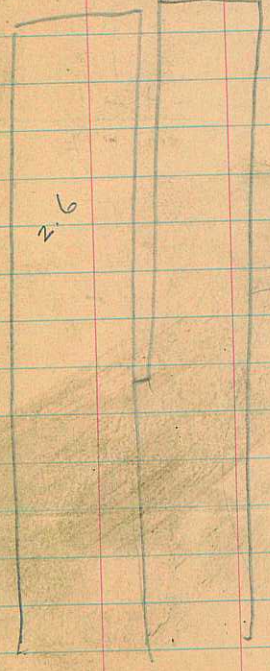
165
66
198
100
40
16
129
430
3
1144
674

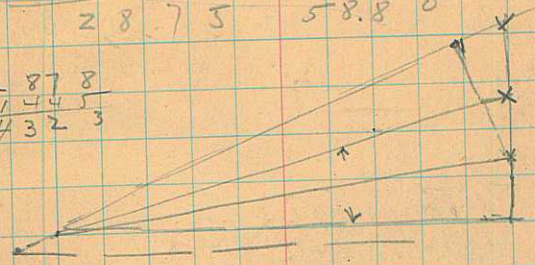
3 18118
606

66
99
25
36
19
429
674
606
68
15
1
\









Sun = 66°24 = 1.962067

1395 = 3.144574

3.106644

= 12.78

1316

1278

38

Zu = 66°21 = 1.602439

3.144774

2.747213

558

558.8

556.8

12.0

8960

6622

2338

(E 38
N 121)

35.1

Zu = 27°19 = 1.661726

35.1 = 1.545307

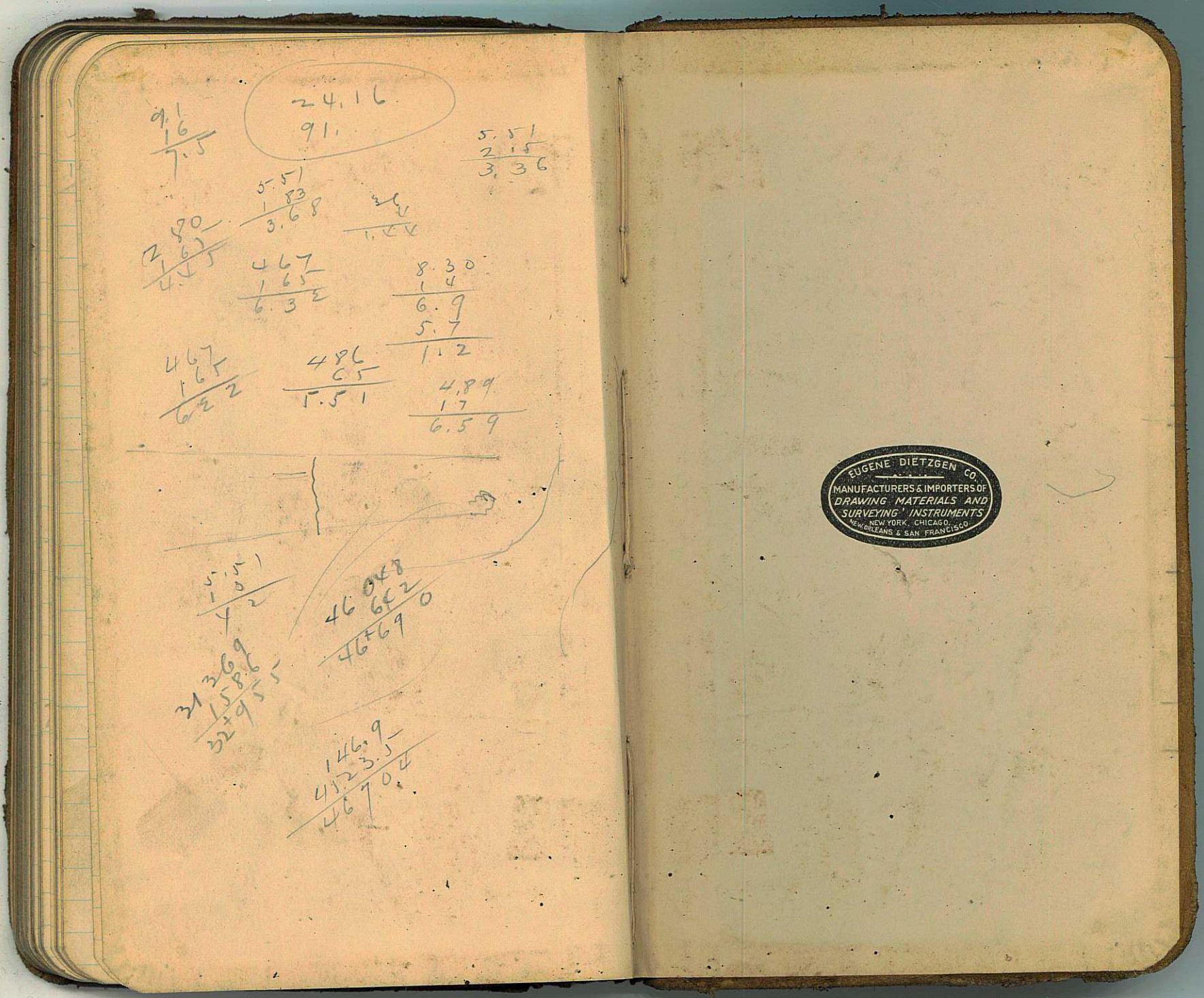
1.207033

5

16.

5.2

21 2


24.16
91.
9.1
1.6
7.5
5.51
1.83
3.68
5.51
2.15
3.36
2.80
1.65
4.45
4.67
1.65
6.32
8.30
1.4
6.9
5.7
1.2
4.67
1.67
6.42
4.86
.65
5.51
4.89
1.7
6.59
5.51
1.0
4.2
46.048
6.42
46.69
31.369
1.58.6
32.95.5
146.9
13.5
46.04
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