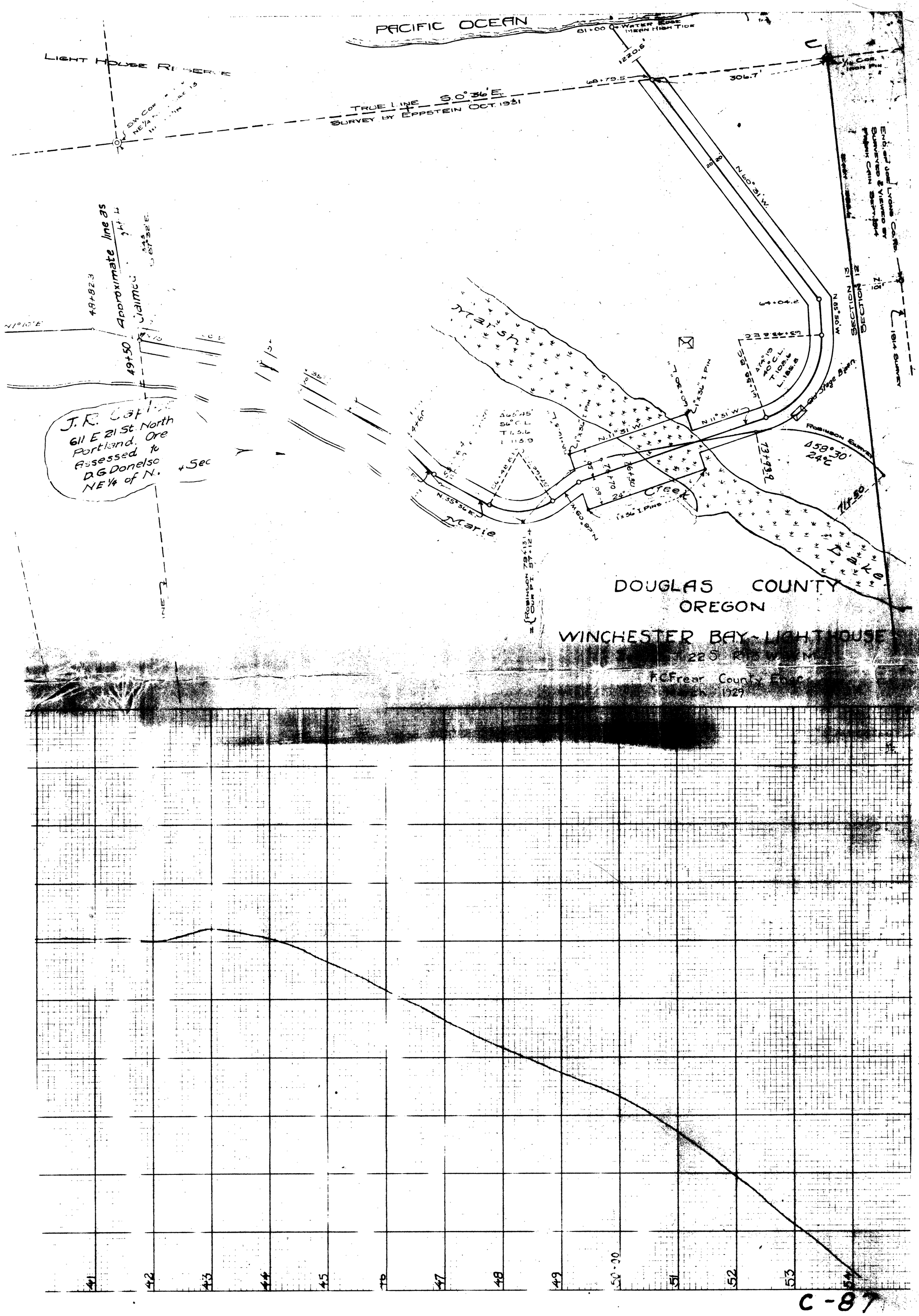


FILE 80 DRAWER 23

C-87

N ½ ca

30" Sp N35°E 52

60" S 56°W 107'

23-80

N. on N Line E² Sec 4 East

Mar 22
Mar 23

5B23

E 122.5

Hub B = 459.8' E of 1/16th Cor

Hub "B"

E. 459.8

1/16 Cor NW Cor SW¼SE¼ Sec 12

Hub Δ = 90' R = 2" G.I. Pipe 37" long

13+20

North

5+50.4 = Hub Note:- set pipe 7" S. of Sta 5+50.4 2"x36"

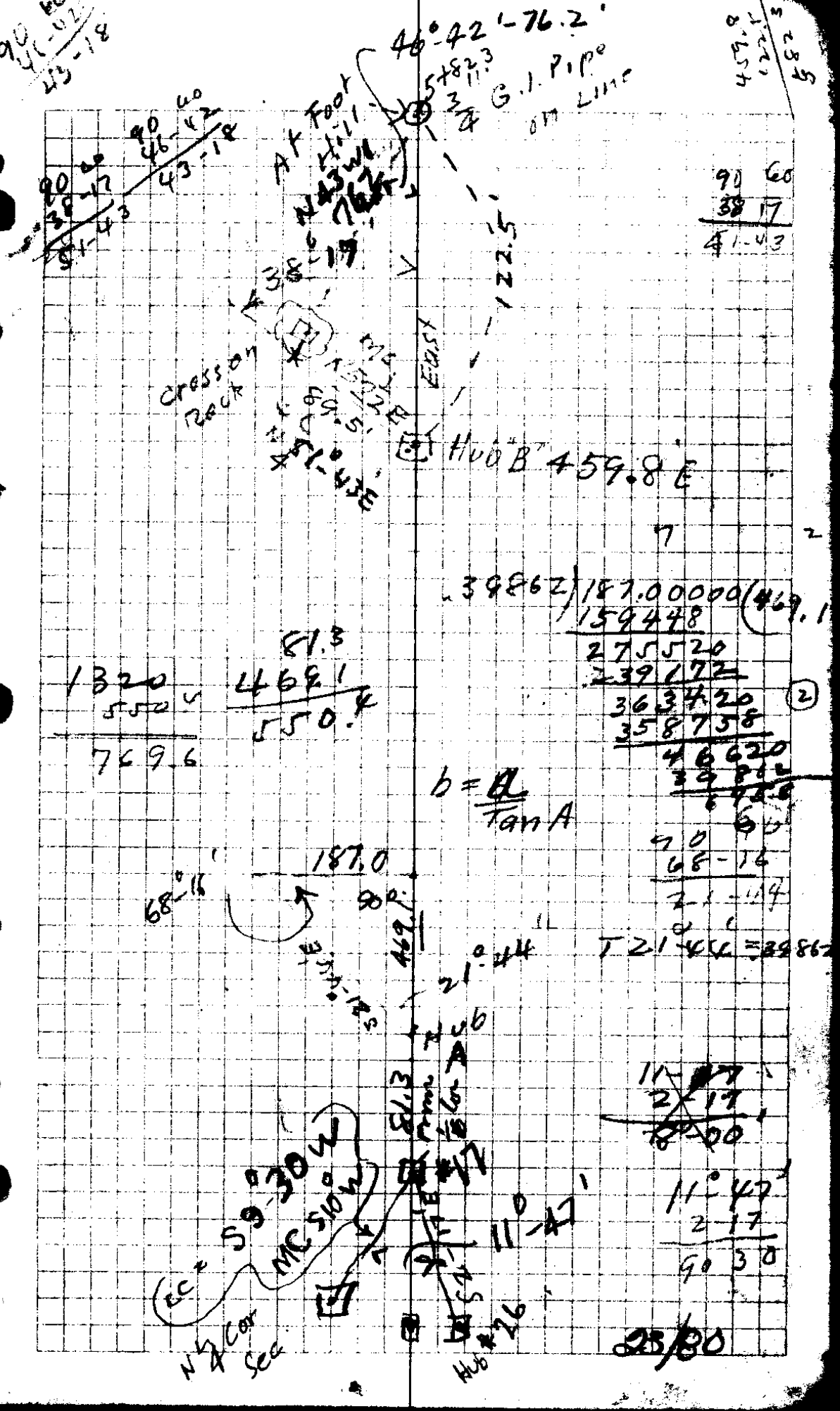
469.1

Hub A

N. 81.3'

Hub = Cor N¼ Cor Sec 13

1320
550.4
769.6


46°42'-76.2'
5+82.3
G.I. Pipe on Line
At Foot
122.5
East
Cross on Rock
Hub "B" 459.8 E
.39862) 187.00000 (469.1
159448
275520
239172
363420
358758
46620
39862
6758
1320
550
769.6
46821
550.4
b = a / Tan A
187.0
68°-16'
90°
469.1
21°-44'
T 21°-44' = .39862
Hub A
MC 510
59°30'
11°47'
N¼ Cor Sec
Hub #26
11°47'
2 17
90 30
23/80

Mar. 23-37

Hub = E Line of 40
E 140.6

Hub- Δ = 90° L
South 72.6 on 11°39' = 71.1
Δ = 90° R
Hub on W. Side Trail on Fill
E 74.7 on 10°10' = 73.5

1105.9 E + 371 N

East 97.8 + 15°55 = 94.1 } 167.6'

Δ = 90° L 371.0'
Hub ~~370.0~~ N of ¼ Line
S ~~56.x~~ 55.1

6" Spruce
Hub Δ = 90° R
E 170.6 Across Lake (Pond

Hub
41.2' E of W Line of Forty ½ of 426.1' N
E 258.9

Hub Δ = 90° R
North for offset 426.1

Hub B Δ = 90° L
5+823 East

Note: Set Hub 15' E of 1/16th Line

426.1
55.1
378
71

170.6
258.9
439.5

73.5
94.1
167.6

962
97.8
7696
6734
8658
94.0836

984
74.7
6888
3936
6888
73.5048

9994
72.6
58764
19988
69558
71.10444

459.8
122.5
258.9
170.6
1011.8
94.1
1105.9
73.5
1179.4

426.1
55.1
370.0

582.3
258.9
841.2
170.6
1011.8

1320
175.4
140.6

478.8
170.6
308.2

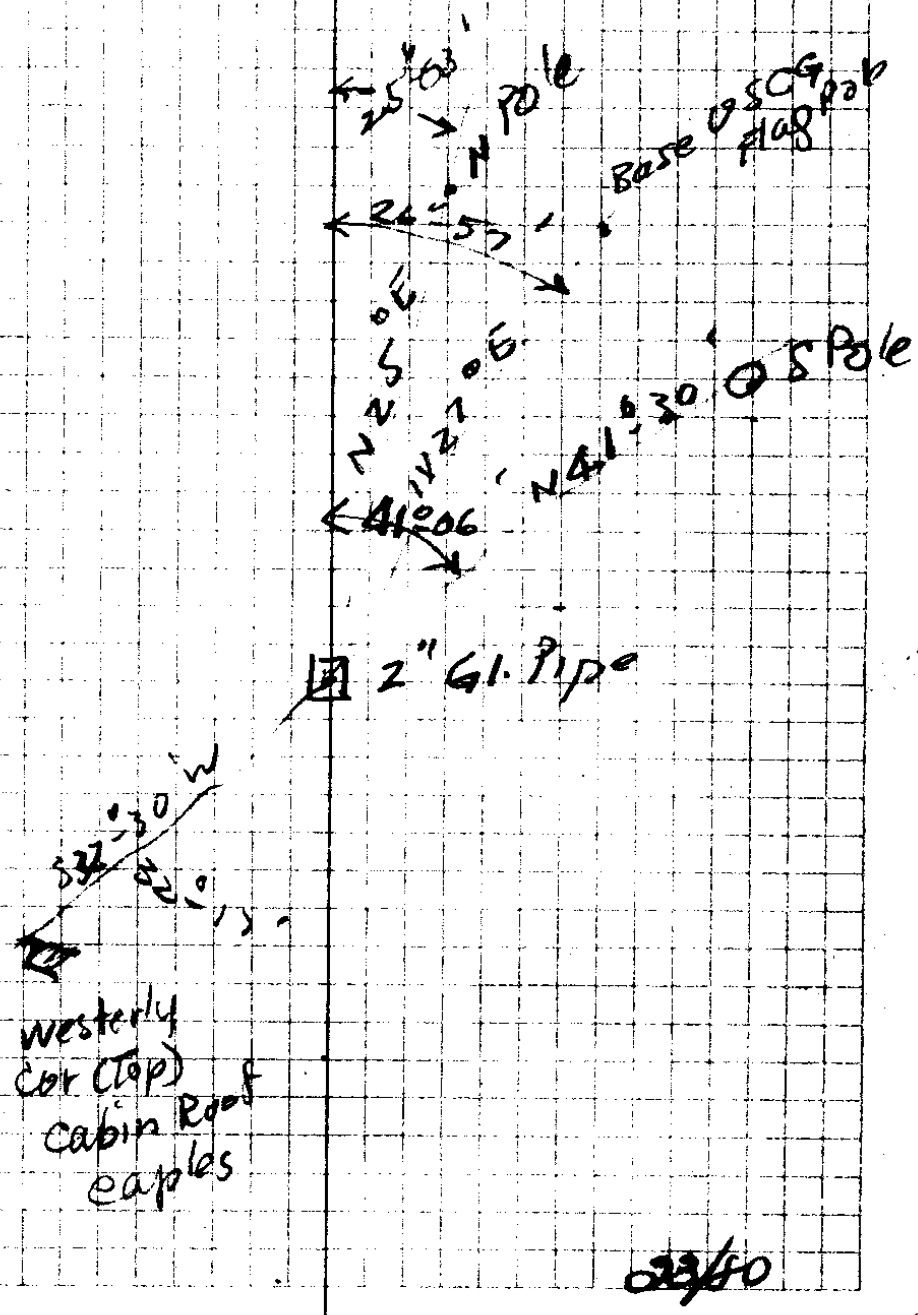
1536
1404
150

23/40

Mar 24 1937

AB - NER

Ties to 1/16 Cor - 1320' N of S¼ Cor Sec 12



23/60

106.09
3721
143.30 (11.9
1
43
21
2230
20.1

4.7
60.69
11.23
76.62

10.3
10.3
309
1030
106.09

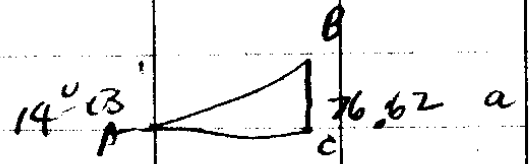
6.1
61
61
366
37.21

90
76
14

75.52
151 - 5 4

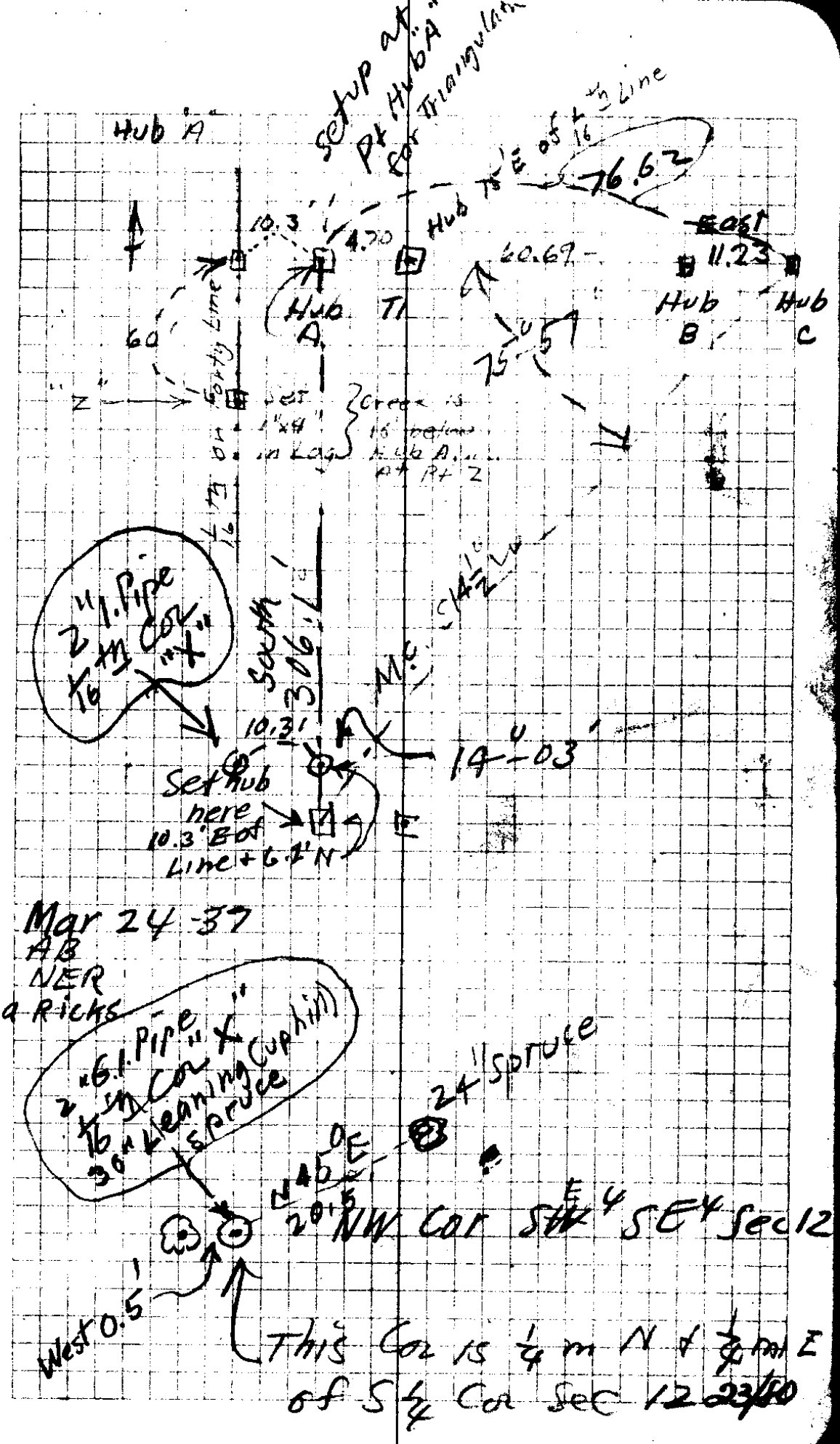
6

.25026) 76.620 (306.1
75078
154200
150156
40440
25026
15414



$\tan A = \frac{a}{b}$

$b = \frac{a}{\tan A}$


Hub "A"
Pt Hub A for Triangulation
Hub 75' E of 1/16 Line
76.62
East
10.3'
4.70
60.69
11.23
Hub A
Hub B
Hub C
60
75.5
Forty Line
Set 1"x4" in Lag
Creek is 16' below Hub A at Pt 2
2" I. Pipe in Cor "X"
South 306.1'
Mc
14.03'
10.31'
Set Hub here 10.3' E of Line + 6.2' N
E
Mar 24-37
AB
NER
Fred Ricks
6" I. Pipe in Cor "X" 36" Leaning (uphill) spruce
24" Spruce
45.0 E
20.5
NW Cor SW¼ SE¼ Sec 12
West 0.5'
This Cor is ¼ m N & ¾ mi E of S¼ Cor Sec 12 23/80

$\frac{\sin A \times c}{\sin C}$

90 60
60-27
29-33
10-25
39-58

1320
562.3
737.7
32.7
770.4

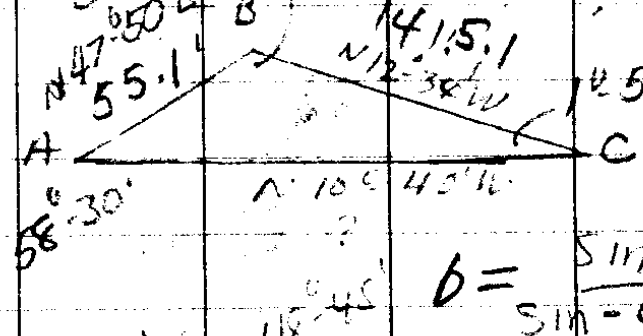
111-55
58-30
1 34
172-47

493) 737.70
493
2447

N29-33E
18-17
N47-50 E

269.4
547
816.4

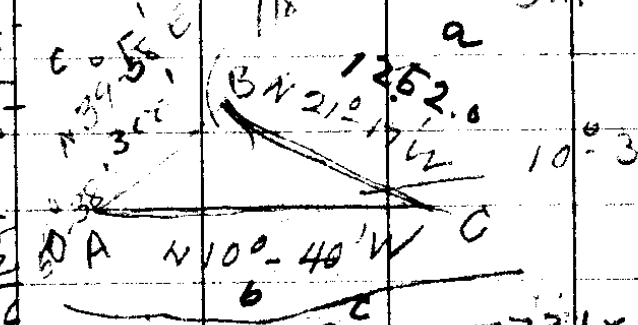
119-36



300
156
114
300
414

$b = \frac{\sin B \times 300}{\sin C}$

414
675
346.5



90 60
60-27
29-33

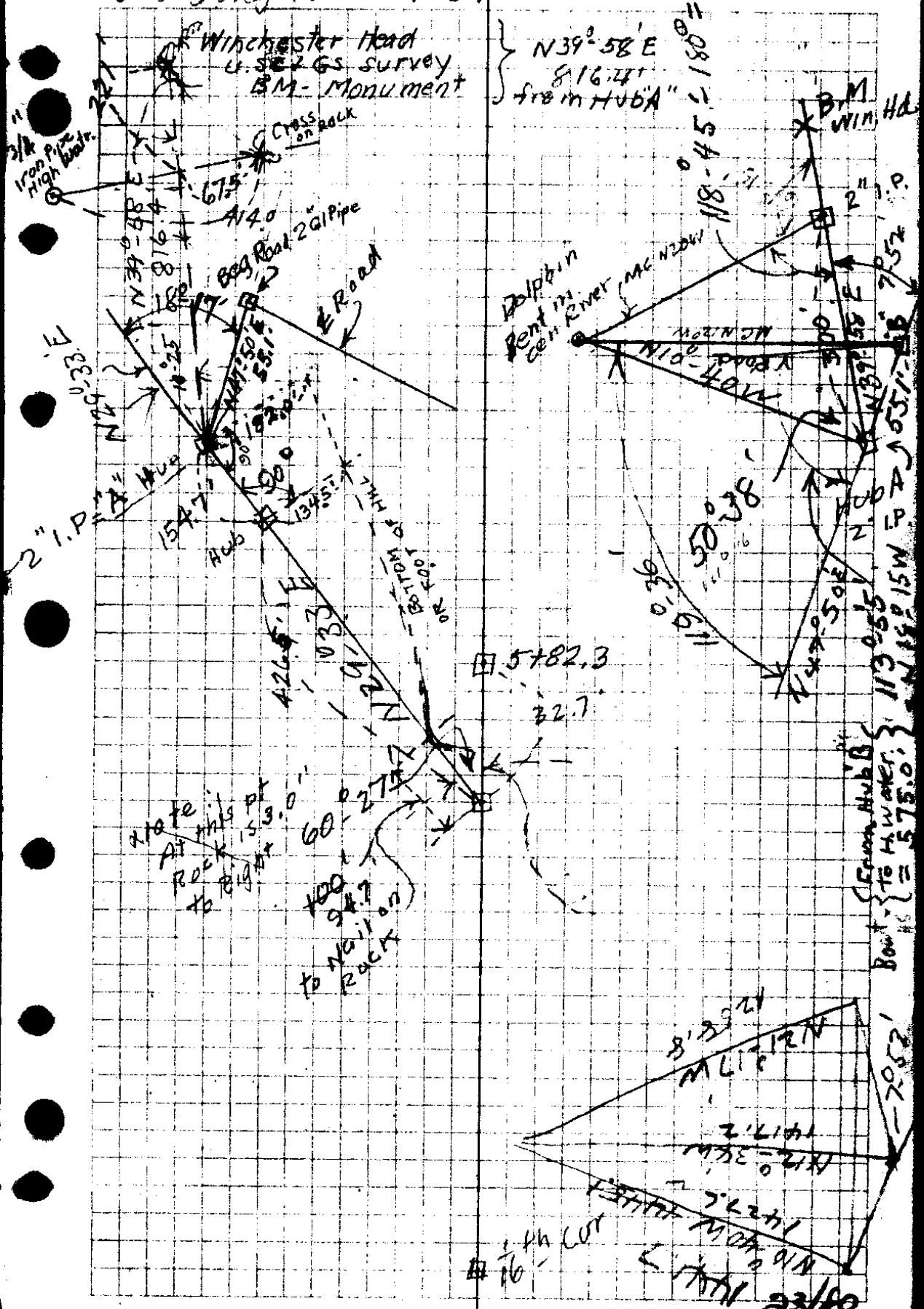
5038
111-10
5038
3958
N 10-40'W

$a = \frac{\sin A \times 300}{\sin 18-37'} = \frac{.7731 \times 300}{.1842} = 252.0$

119-36
239-12

$a = \frac{\sin A \times 55.1}{\sin 24'} = \frac{.85264 \times 55.1}{.0332} = 1451$

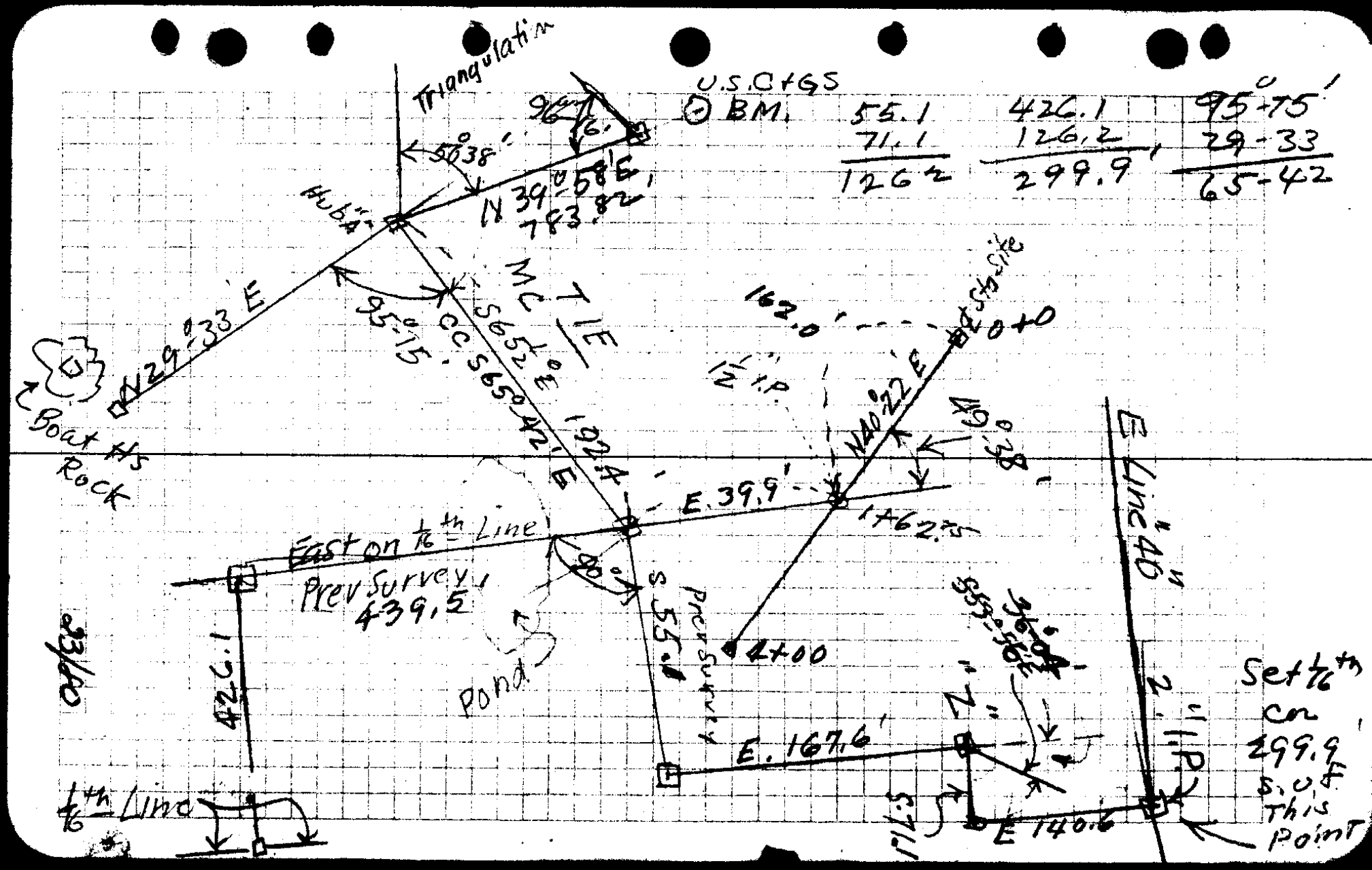
Archie Henderlie.
Fred Ricks
dno Douglas - 3-27-37



90 60
49 - 38
[illegible] - 22

90 60
36 - 04
53 - 56

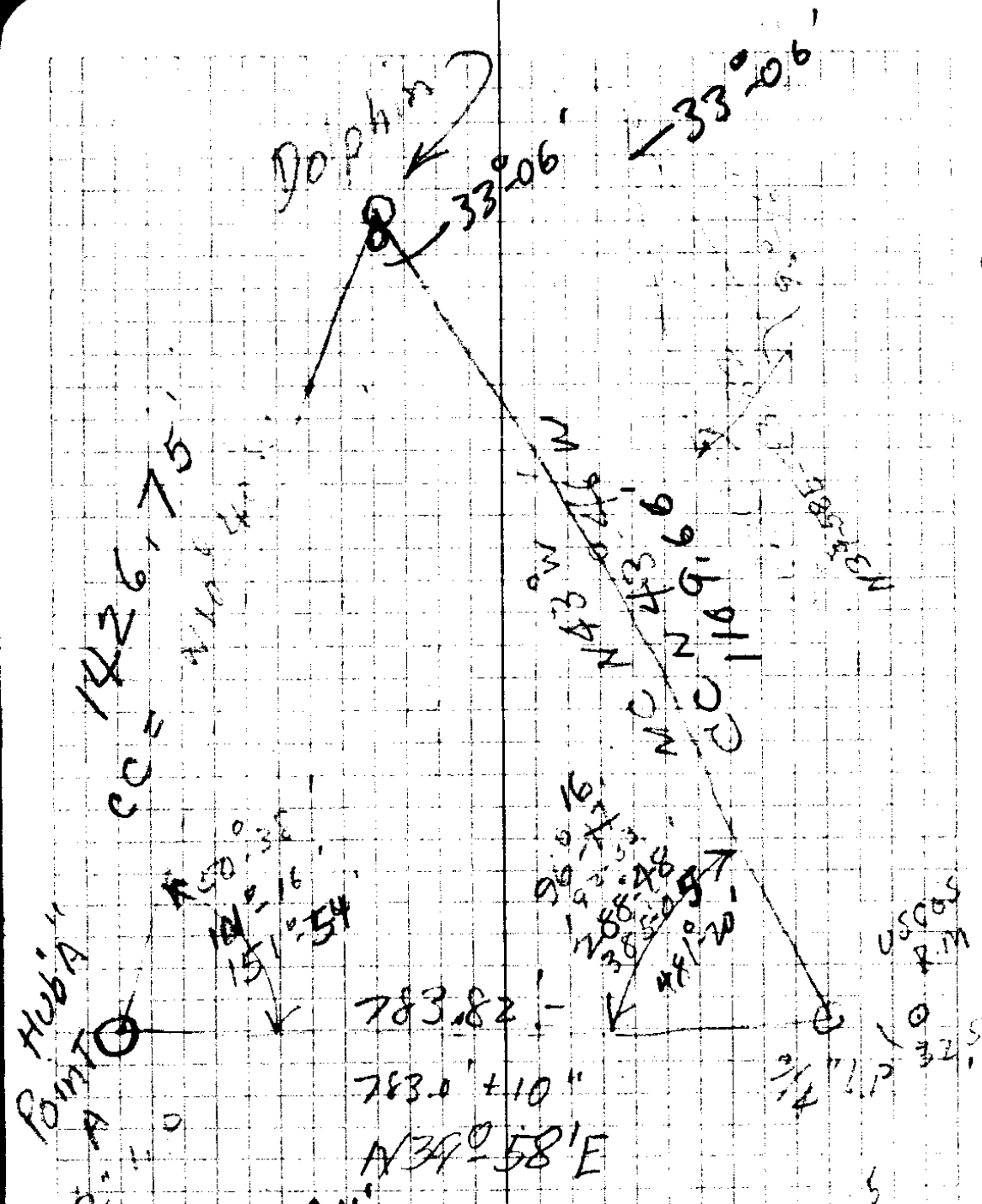
5°00' Vert ∠ to top tack
5.1' above ground at Hub


Triangulation
U.S.C+GS
BM.
55.1
71.1
126.2
426.1
126.2
299.9
95°-15'
29-33
65-42
96.6'
50°38'
N 39°58'E
783.82'
Hub
N29°33' E
95°15'
CC S65°42' E
S65°42' E
TIE
MC
Boat H/S
Rock
162.0'
0+0
1/2" I.P.
N40°22' E
49°38'
E. 39.9'
1+62.5
East on 1/16th Line
Prev Survey
439.5'
80°
S 55°
Prev Survey
4+00
Pond
426.1
E. 167.6'
559°58'
Line "A"
2" I.P.
Set 1/16th
Cor
299.9
S.U.E.
This
Point
E 140.6
1/16th Line

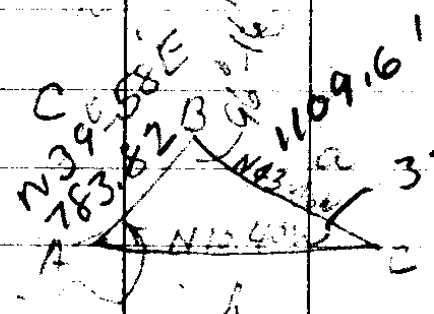
Check Levels - BM to Eng's Data on Jetty 3/26/37

Sta	+S	HI	-S	Elev	
				16.59	USC&GS.
	4.77			~~15.59~~	BM. 8-1933 on Winchester Head
		21.36 ~~20.36~~			
Shot #1			11.1		Checking Data used by US Engrs on Jetty - For
"			11.0	~~9.36~~	
AM " PM	use this →		11.2	10.16	
		19.26 ~~18.26~~		16.59 ~~15.59~~ 2.67	USC+GS Mon.
	2.67				
BM, small shelf cut in Rock - Nail set in Angle of cut B.M. is not on nail but on shelf Elev shelf 14.13		use this →	~~1.99~~ .57	~~14.20~~	B.M. N W Cor Boat HS Rock corrected Elev.
			4.13	~~14.13~~	
			4.13	15.13	"
Elk. Bar-Rock N. Face Boat HS Rock	1.48	15.61	2.90	14.13 12.71	BM 4/22

23/90



50°-38'
96°-16'
146-54
180
146-57
33-06



1426.7

$b = \frac{\sin B \times 783.82}{\sin C}$

.99402 (6)
783.82
1988.04
795216
298206
795216
695814
779.132764

.5461) 779.132764 (1426.7)
5461
23303
21844
14592
10922
36908
32766
3942 45

b → 605.97 242

$a = \frac{\sin A \times 783.82}{\sin 33°06' = C}$

783.82
77.31
783.82
235146
548674
548674
605.97 242

(2)

5461) 605.9712 (110.6
5461
5987
5461
5261
4914
3463
3276
1868

96°16
83-44

146-54
180
33-06

23/60

113 55
10 21
127-26

6.69
66
4014
4014
441.54

63.07
36
62-31

90 60
43-07
26-58

89 8
6
6 6

Cos A = 6/6

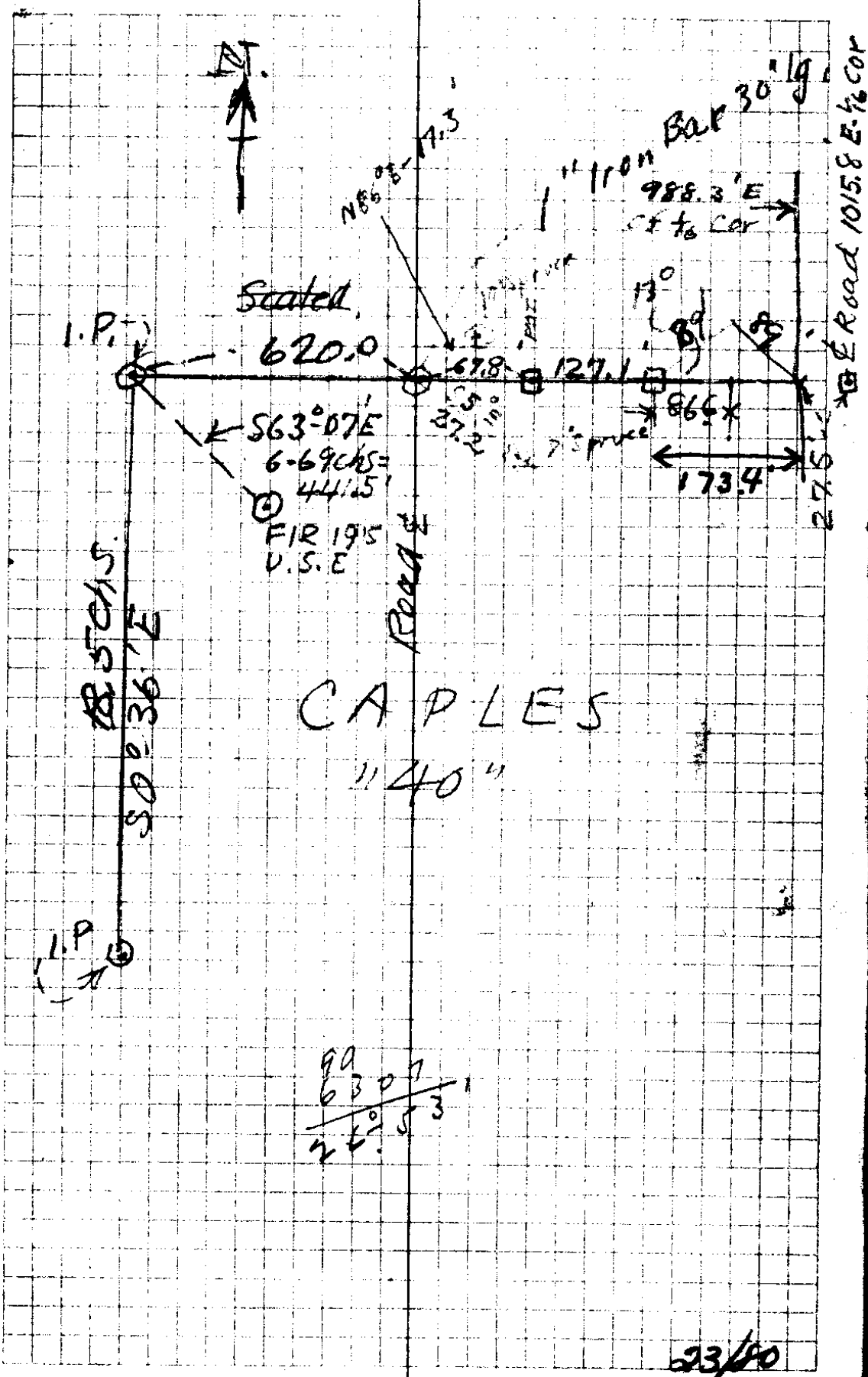
b = Cos A x C

620.0
67.8
127.1
173.4
988.3
27.5
1015.8

988.3
32.3
1020.6

.77437
89
76933
79496
8671893
2
173.43786

Mar 27-1937



23/40

Road Alignment

CC MC

27+61.8

S28°-38' W ✓

25+00 Δ=13°-13' L <S 41°-51' W 286.1

Sec Line Xings

22+19.9

S 41°-51' W ✓ 148.0

20+71.9 Δ 24°-59 Rt

S 16°-52' W ✓ 217.6

18+54.3 Δ = 8°-08 L

3/4" I. Bar 30" lg.

S 25° W 326.0 ✓

15+28.3 - 2" I. Pipe on 1/16 Line Δ=11°-34' L

S 36°-34 W ✓ 596.65

9+31.6 Δ 7°-07' R - 3/4" I. Pipe

S 29°-27' W ✓ 373.9'

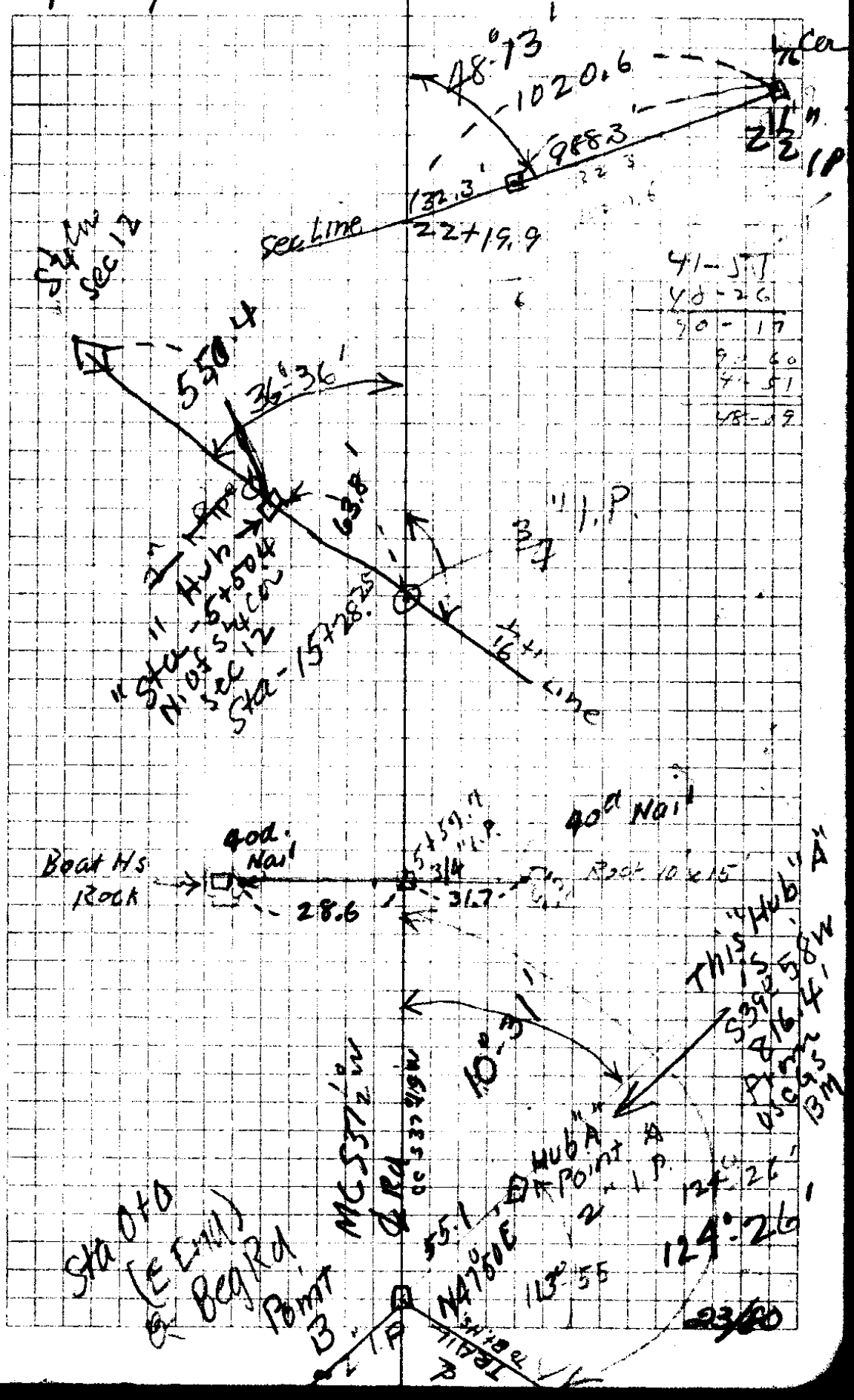
5+57.7 Δ=7°-52' L 3/4" I.P.

557.7 S 37°-19' W

37°-19'

0+0 = 2" I.P.

3/26/1937


48°13'
1020.6
Cor
9883
2½" I.P.
132.3
Sec Line
22+19.9
S¼ Cor Sec 12
41-57
40-26
90-17
550.4
36°36'
638'
3" I.P.
Hub
Sta-5+50.4
N.05 S¼ Cor Sec 12
Sta-15+28.25
16"
Cor
40d Nail
Boat Hs Rock
28.6
31.7
This "Hub" is S 39° 58' W 816.4' Prom USGS BM
10°
Hub "A" Point "A"
124°26'
55.1
N 47°50' E
113°55
Sta 0+0 (E end) Beg Rd
Point B
23/60

Road Survey.

27+61.8

40°-38'
28°-38'
12°-00'

60+30.3
58+16.3
2 13.7

28+52.8

28+024
27+618
40.6

28+024
50.4
5 28

28+88W
14.34
514-04W

27+76.5
25.9
28+024
50.4
8

28+024
27+618
406

23/50

(1) Road Profile -

Mar 29 1937

Sta	+S	HI	−S	Elev	
					U.S.C.&G.S. BM
	2.13	18.72		16.59	Winchester Head
Top Pipe 0+0			3.09	15.63	Top 1½" Pipe 0+0
	2.63	18.26			
0+0			3.80	14.5	G.S. ← Ground Elev.
+45			3.0	15.3	
1+00			5.6	12.7	
2+00			5.6	12.7	
3+06			5.0	13.3	
4+00			5.5	12.8	
+50			5.6	12.7	
+70			6.4	11.7	
5+00			4.6	13.7	
5+57.7			6.0	12.3	
" Top Pipe			5.58	12.68	
	4.76		3.09		

Boyer ⊼ Road Profile ①
Richardson Notes

L	℄	R	
$-\frac{4.3}{20} = 14.0$		$-\frac{4.4}{20} = 13.9$	0+0
$-\frac{1.8}{20} = 16.5$		$-\frac{5.4}{20} = 12.9$	0+45
$-\frac{4.2}{20}$ 13.6		$-\frac{5.4}{20}$ -12.9	1+00
$-\frac{4.2}{20}$ 14.1 $-\frac{5.4}{12}$ 12.9		$-\frac{5.6}{20}$ 12.7	2+00
$-\frac{5.4}{20} = 12.9$		$-\frac{6.0}{20} = 12.3$	3+00
$-\frac{5.8}{20} = 12.5$		$-\frac{6.1}{20} = 12.2$	4+00
$-\frac{6.3}{20} = 12.0$ $-\frac{6.1}{15} = 12.2$		$-\frac{6.6}{20} = 11.7$	+50
$-\frac{6.8}{20} = 11.5$ $-\frac{6.3}{9.0}$ W.S. $= 12.0$		$-\frac{6.9}{20} = 11.4$	+70
$-\frac{6.8}{20} = 11.5$ $-\frac{6.3}{10}$ W.S. 12.0	$-\frac{5.5}{5.0} = 12.8$	$-\frac{6.3}{20} = 12.0$	5+00
$-\frac{5.3}{20} = 13.0$	$-\frac{5.1}{10} = 13.2$	$-\frac{5.6}{20} = 12.7$	+57.7

Very Little Drift

23/10

②	Road Prof.		℄		
Sta	+S	H.I.	−S	Elev	
	4.76		3.09		
		18.26	3.55	14.71	
	5.20	19.91			
Not on Top Nail			4.78	15.13	B.M. Boat House Rock
6+00			8.1	11.8	
+60			7.0	12.9	
7+00			8.2	11.7	W.S.
+50			8.7	11.2	
8+00			7.7	12.2	
8+11			8.2	11.7	W.S.
+50			9.6	10.3	
+78			8.2	11.7	W.S
9+00	Heavier Drift Deposit starts Here		4.8	15.1	
9+31.6			4.4 GS	15.5	
"			3.1	16.8	Top 3/4" Pipe
	9.96		6.64		

3/29/37

(2)

L			R		
El = 14.0	12.0		12.1	13.2	
-5.9	-7.9		-7.8	-6.9	
20	10		15.	20	
El = 12.5	13.9		12.9		
-7.4	-6.0		-7.0		
20	10.		20		
Elev = 12.1			12.7		
7.8			7.2		
20			20		
El = 12.2	11.7		11.7 W.S.	12.4	
-7.7	-8.2		-8.2	-7.5	
20	16		17	20	
Elev = 12.9			11.7 W.S.	11.1	
-7.0			-8.2	-8.8	
20			13.0	20	
El = 13.7	11.7			11.2	
-6.2	-8.2 W.S.			8.7	
20	13			20	
El. 12.3	11.7	10.8		10.7	11.7
-7.6	-8.2	-9.1		-9.2	-8.2
20	17	12		20	24
Elev 14.2	12.6	11.7	11.7	10.7	
-5.7	-7.3	-8.2 W.S.	8.2 W.S.	-9.2	
20	15	5.0	15.0	20	
14.9			11.7	10.4	
-5.0			-8.2 W.S.	-9.5	
20			12	20	
15.3			11.7	11.1	
-4.6			-8.2 W.S.	-8.8	
20			18	20	

Very Little Drift

Very Little Drift

23/20

(3) Road Prof

Sta	+S	HI	-S	Elev
	(9.93)		(6.64)	
10+00		19.91	5.3	14.6
+40			6.1	13.8
+60			7.9	12.0
11+00			7.7	12.2
+50	Very Heavy Drift Deposit Starts Here		5.1	14.8
			4.90	15.01
	4.43	19.44		
11+50			4.6	14.8
12+00			5.5	13.9
13+00			5.0	14.4
14+00			5.6	13.8
15+00			5.2	14.2
△ 15+28.25			4.6	14.8
	(14.39)		(11.54)	

3/29/37

③

L		℄	R	
Elev. 14.3 - 5.6 20			13.6 -6.3 20	
Elev 16.5 - 3.4 20	16.4 -3.5 13.		13.2 -6.7 6.0	14.6 -5.3 20
El. 15.7 - 4.2 20	12.1 -7.8 5.0		12.1 -7.8 7.0	14.8 -5.1 20
Elev. 14.2 - 5.7 20	12.0 -7.9 8.0		14.2 -5.7 20	
Elev 15.4 - 4.5 20			14.4 -5.6 14.	13.1 -6.8 20
Elev 14.5 - 4.9 20				15.2 -4.2 20
El. 13.5 - 5.9 20				14.2 -5.2 20
El 14.5 - 4.9 20				14.3 -5.1 20
Elev 14.2 - 5.2 20				14.0 -5.4 20
El. 14.1 - 5.3 20				14.3 -5.1 20

23/80

④ Road Prof

Sta	+S (14.39)	H I	−S (11.54)	Elev
16+00		19.44	5.2	14.2
17+00			6.6	12.8
17+30	17+39 See below			
17+50	End Heavy Drift (No Drift from here on)			
18+00			5.4	14.0
18+54.3 ⊙			4.32	15.12
	4.27	19.39		
17+30			6.9	12.5
17+39			4.80	14.6
	2.16	17.28		15.12
18+00			3.2	14.1
+54.3			2.9	14.4
19+00			4.1	13.2
20+00			5.0	12.3
20+71.9 ⊙	Top Stake		4.30	12.98
	3.49	16.47		
20+00			4.20	12.3
	20.04		40.16	

3/29/37

④

℄	R
Elev 14.9 4.5 20	14.5 4.9 20
El = 12.8 6.6 20	12.8 6.6 20
El. 14.1 5.3 20	14.1 5.3 20
Elev = 13.9 5.5 20	12.9 6.5 20
El = 14.6 4.8 20	14.6 12.4 12.8 4.8 7.0 6.8 5.0 14.0 20
El. 13.9 18+54.3 = 3.4 20	14.6 2.7 20
El 12.5 4.8 20	13.5 3.8 20
El. 12.2 5.1 20	11.7 5.6 W.S. 20

23/00

(5) Road Profile

Sta	+S (20.04)	HI	−S (20.16 w.s)	Elev.	
20+30		16.47	4.9	11.6	
+71.9			4.6	11.9	Ground Surf.
21+00			4.4	12.1	
22+00			4.8	11.7	
23+00			4.7	11.8	
24+00			4.6	11.9	
25+00			3.9	12.6	
			3.25	13.22	
	5.30	18.52			
24+00			6.7	11.8	
25+67			5.5	13.0	
26+00			4.7	13.8	
+45			4.4	14.1	Water 0.3' Deep
+45			5.9	12.6	Bottom of Ditch
+47			5.9	12.6	
+47	(25.34)		4.3	14.2	

3/29/97

L	℄	R.
Elev 11.7 4.8 20		El = 11.6 4.9 20
El = 11.9 4.6 20		11.9 4.6 20
Elev 12.1 4.4 20		12.5 4.0 Ditch Bank (East) 20
El = 11.7 4.8 20		11.7 — 4.8 / 20 11.7 — 4.8 / 27 — Ditch Bank El 09.7 6.8 = Bott ℄ Ditch 30
El = 11.8 4.7 20		11.8 4.7 20 11.8 4.7 Ditch Bank 30
El = 11.9 4.6 20		11.9 4.6 20
El = 12.5 4.0 20		12.4 4.1 20
El. 13.3 25+57 = 5.2 / 20		13.4 5.1 20 Angle in Ditch 50.
El. 14.3 4.2 20		13.2 5.3 20 ∠ in Ditch 31.

23/80

(6) Road Profile

Sta	+S	HI	−S	Elev	
	20.34		25.41		
27+00		18.52	4.1	14.4	
27+61.8			2.24	16.28	on
	4.10	20.38			
27+00			5.95	14.4	
27+76.5			5.0	15.4	
B.M. Root 18" Spruce			3.43	16.95	14' N 4' E } of SW Cor Parking Space
	29.44		29.08		
					29.44 − 29.08 = 0.36
			Check → 16.95 − 16.59 = 0.36		
	4.20	21.15		16.95	
28+02.4			4.8	16.4	
28+42			4.8	16.4	
+52.8			3.8	17.4	E Edge Co Road bed
+73			2.6	18.6	℄ Co Road

3/29/37

(6)

L	℄	R
Ditch El. 15.5 3.0 22	15.5 3.0 20	13.9 4.6 20
27+76.5	El = 15.8 4.6 20	15.4 5.0 20
28+02.4	El = 15.8 5.3 20	16.0 5.1 20
	El = 16.6 4.6 20	16.9 4.2 ℄ Co Rd. 13.
	Elev. 18.6 2.6 20	18.6 2.6 20

23/80

7

03/60

3/29/37

Elev. over S. into Station Site

Sta	+S	H.I.	−S	Elev.	
0+0 Road Survey	2.61	18.24		15.63	Top 2" Pipe
			1.9	16.34	Top 1½" Pipe
	5.68	~~21.02~~ 2			
Top Pipe			4.63	~~14.39~~ 7	
" Ground	1+62.75	Sta Site	5.50	~~15.52~~ 16	
Low End of Culvert under Old Road	3.N.		1.5	20.5	
		20.1			
	3.7	~~17.1~~		~~18.39~~ 17	
			4.	16.	

23/80

Peg Levels from Road Survey to Sta Site & Reservoir Site

Boyer & Richardson

3/30/37

Sta	+S	HI	−S	Elev	
B. M	2.14	17.77		15.63	0+0 Top Pipe Road Survey 2" Pipe
⊕			1.43	16.34	
	5.98	22.32			
Top Pipe 1+62.75 Sta Site			4.92	17.40	
" Top Ground			5.80	16.52	
Low End Culvert under Old Road			1.80	20.5	
⊕			0.93	21.49	
	12.42	33.91			
⊕			0.50	33.41	
	12.42	45.83			
⊕			0.09	45.74	
	11.89	57.63			
on old Wagon Rd. Grade ⊕			0.00	57.63	
	2.42	60.05			
⊕			8.24	51.81	
	5.50	57.31	checked to here		
Bott. Ck. Lower Res. Site (Dam)			13.2	44.1	
BM 35 N. Lower ~~Dam~~ Res. Site	52.77		5.89	51.52	
⊕			2.27	55.04 ✓	
	12.88	67.92			
⊕			0.0	67.92	
	12.46	80.38			
⊕			0.42	79.96	
	25.34		2.39		

163

5277
1.09
5.76

1.43
.83
0.5
.09
0.24
+1.09

47.1
12.5
27.4

5731
15.43
41.68

5731
589
51.42

5731
227
55.04

2534
709
2265

5731
7996
735
7996
5731
2265

5504
1286
679

5514
[illegible]
[illegible]
[illegible]
2493

23/80

Sta	+S	HI	-S	Elev.	
	25.34		2.69		
				79.96	
	12.48	92.44			
W.S -72.1' above Elev Sta Site			5.80	86.64	End Peg Levels
	57.82		8.49		

3782
8.46
29.33

8664
5.731
29.33

16.5
75
$1

7244
58
86.6

8664
165
70.14

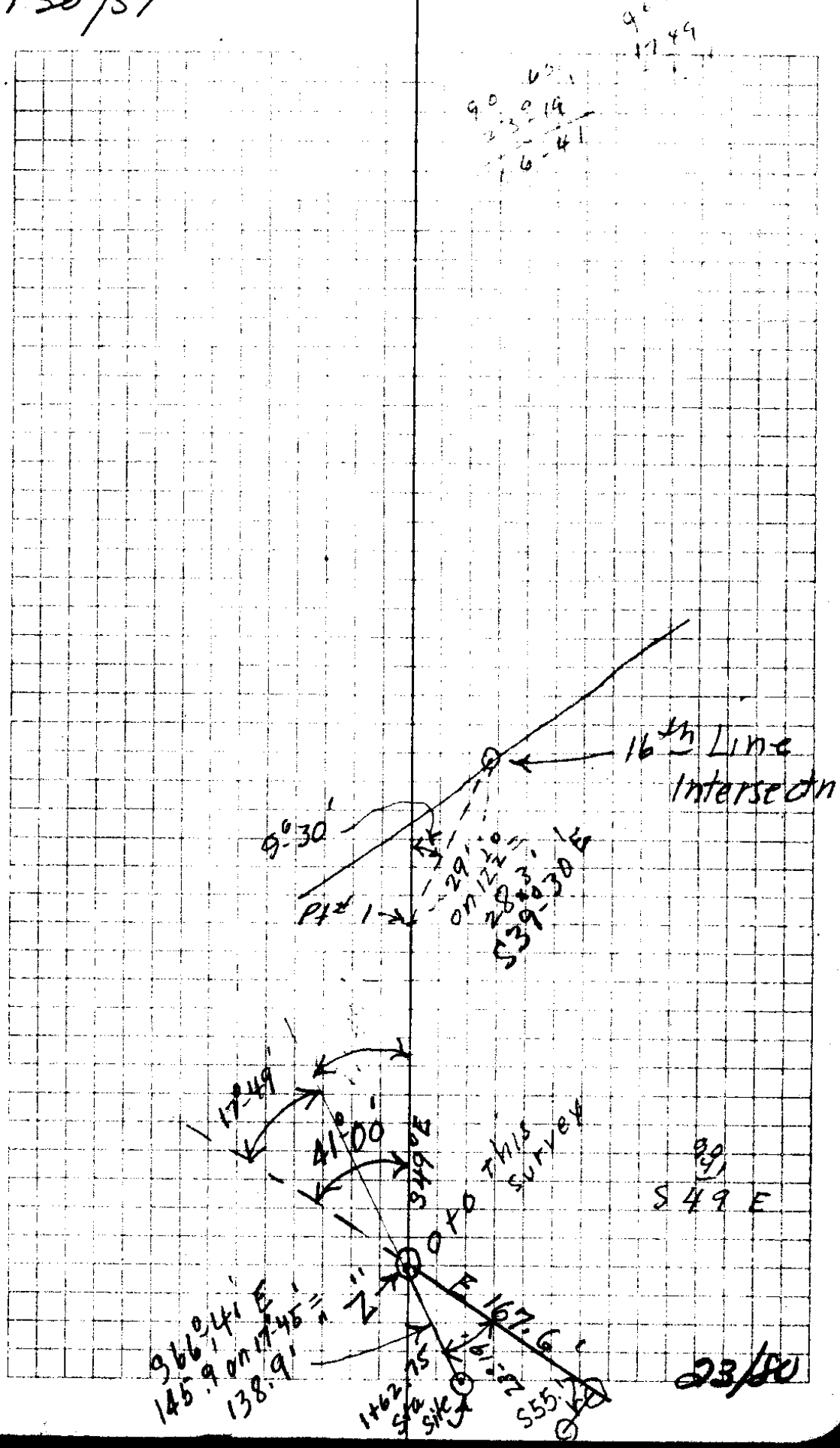
23/50

Tie to ~~Res~~ Dam Site for Diversion
Water Supply System

End = Dam Site,
S 33°-15' E 61.8 F.
Pt 4 Δ = 35°-10 R
Δ S 68°-25' E 86.° on 6°-40' Vert 85.4
Pt 3 Δ = 30°-42 L
S 37°-43' E 68.5 on 14° Vert = 66.4
Pt # 2 Δ 1°-56' L
S 35° 47' E 71.8
Pt. #1 Δ 13°-13' R

S 49° E 163.°
O+O Δ 41°-00' R
East

3/30/37


16th Line
Intersectn
9°30'
Pt # 1
on 12
28+030
S39°30'E
17°49'
41°00'
S49°E
This survey
S 49 E
167.6
145.9 on 17+46
138.9'
1+62
Sta
Site
555.

23/50

23/80

Sta. Site Topog for Grading 3/30/30

Sta.	+S	HI	-S	Elev	
Top Pipe 1+62.7 Sta Site				17.40	*
	1.72	19.12			
0+0 = E End = ℄			4.7	14.4	
			3.05	16.07	
1+00	4.40	20.47	4.5	16.0	
Top Pipe 1+62.7 Sta Site				17.40	*
2+00	4.23	21.63	5.3	16.3	
			5.62	16.01	✓
	4.10	20.11			
3+00			4.4	15.7	

TRAIL OR WALK
Prof. at Rt Angles (N) from Sta 2 (on ℄ Sta Site)
Sta 2+00 on Sta Site 16.3 ~~17.4~~

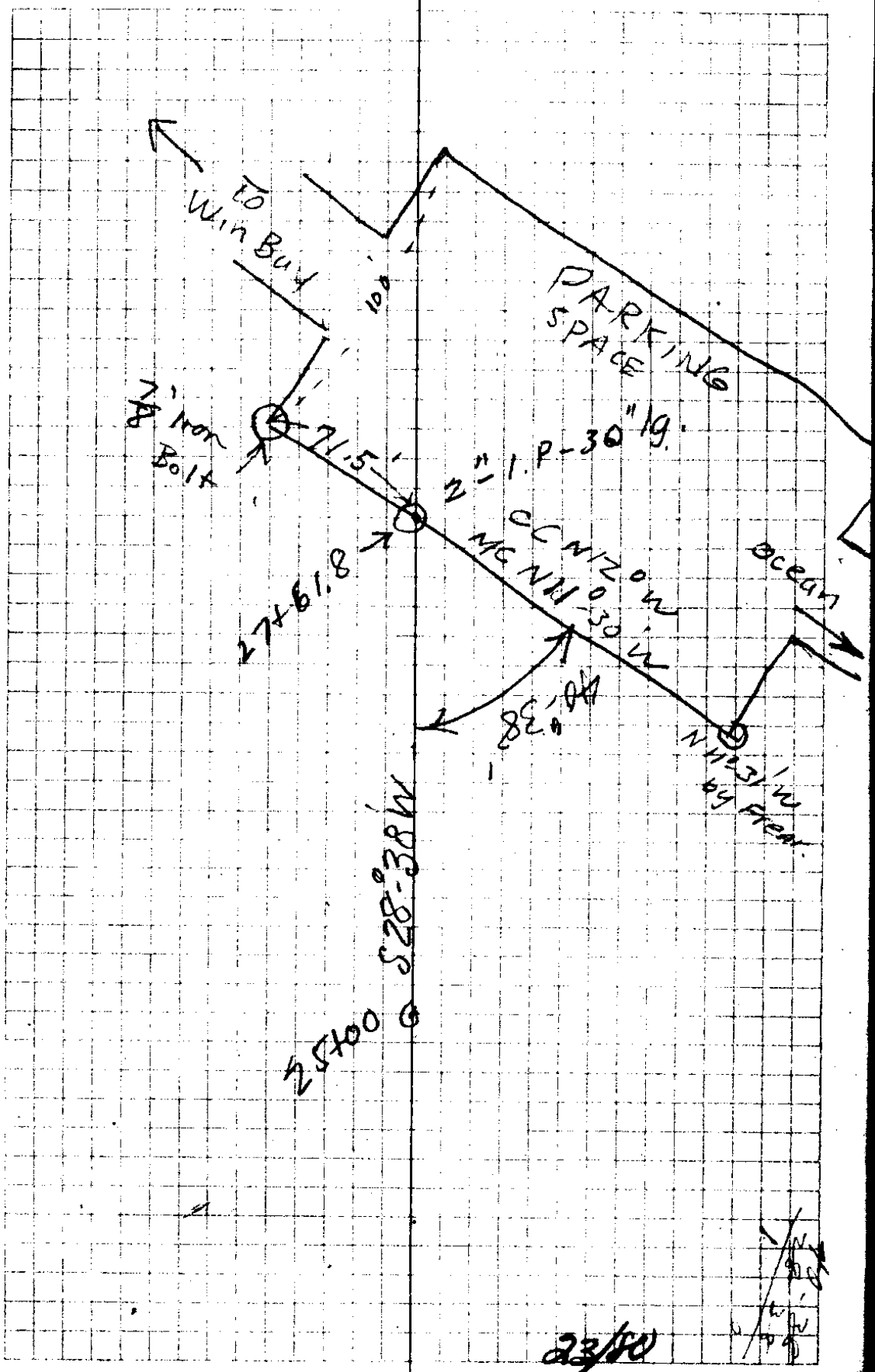
	3.4	19.7			
North 0+43.5 ~~43~~ N 2+00			7.1	12.6	W.S.
0+50			8.5	11.2	
0+95			76	12.1	
0+75			88	10.9	
1+10			7.1	12.6	W.S
1+40			71	12.6	
1+50			6.3	13.4	
2+00			3.8	15.9	

COP

South: Left		℄	Right = North
0+00	1.1 / 21.5 = 18.0	14.4	6.1 / 68.9 = 13.0
1+00	2.0 / 12.0 = 18.5	16.0	2.3 / 40.7 = 13.2
2+00	4.2 / 31.5 = 17.4	16.3	8.9 / 43.5 = 12.7
3+00	3.9 / 15.5 = 16.7	~~16.7~~ 15.7	7.7 / 50.5 = 12.4

red

23/60


To Win But
100
PARKING SPACE
7/8" Iron Bolt
71.5
1" I.P. - 30" 19.
CC Nixon
McNillon
Ocean
61.8
N 85°-04'
N 143' W
by Prop.
S 28°-38' W
25+00

23/50

Road Survey

28+52.8 = END ROAD SURVEY at E Edge of Rd as Travelled

S 14°-04' W. 50.4

28+02.4 Δ = 14°-34' L

Set to S28°-38' W 25.9' Flat

27+76.5

29+03.4
27+61.8
40.6

S28°-38' W

27+61.8

CS FILE FOLDER

CONTAINS

MORE

INFORMATION