2076

ENGINEER'S

FIELD BOOK

No. 404E

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be 30.6+(20—16)÷2 or 2 ft. added to 30.6 =32.6. For slopes of 1 on 1½ see inside of back cover.

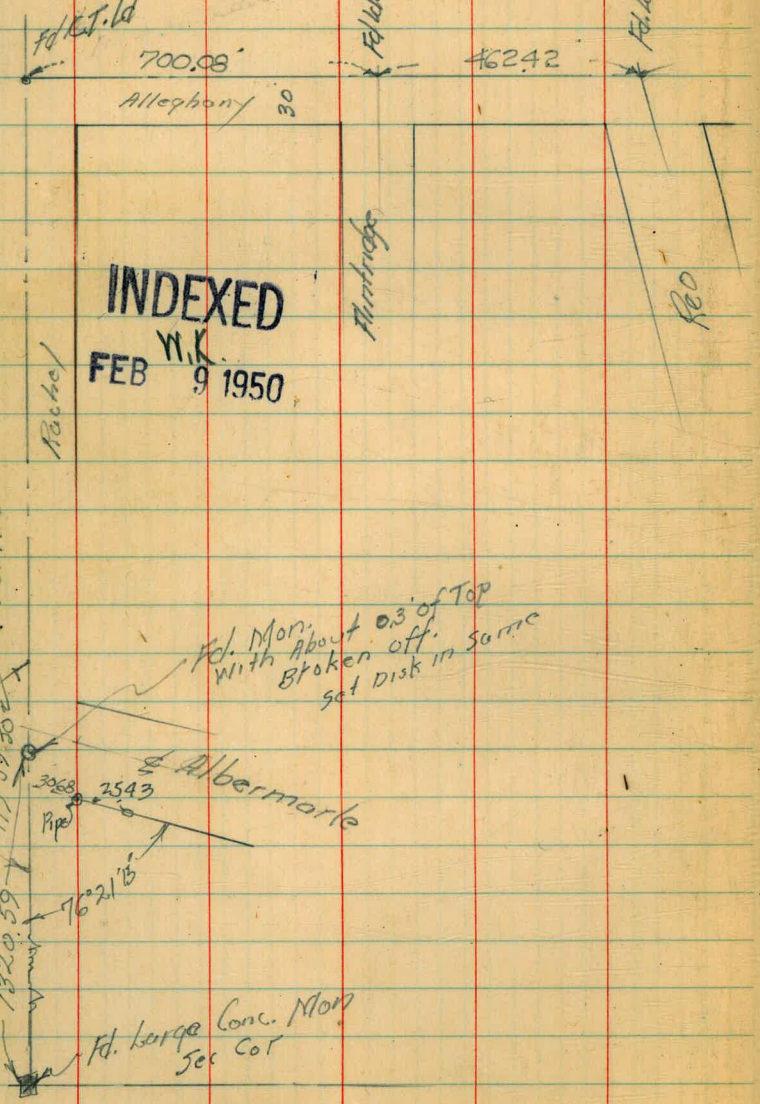
This Field Book is manufactured of a High Grade 50% Rag Paper having a WATER RESISTING SURFACE, and is sewed with Bing Special Enamel Waterproof thread.

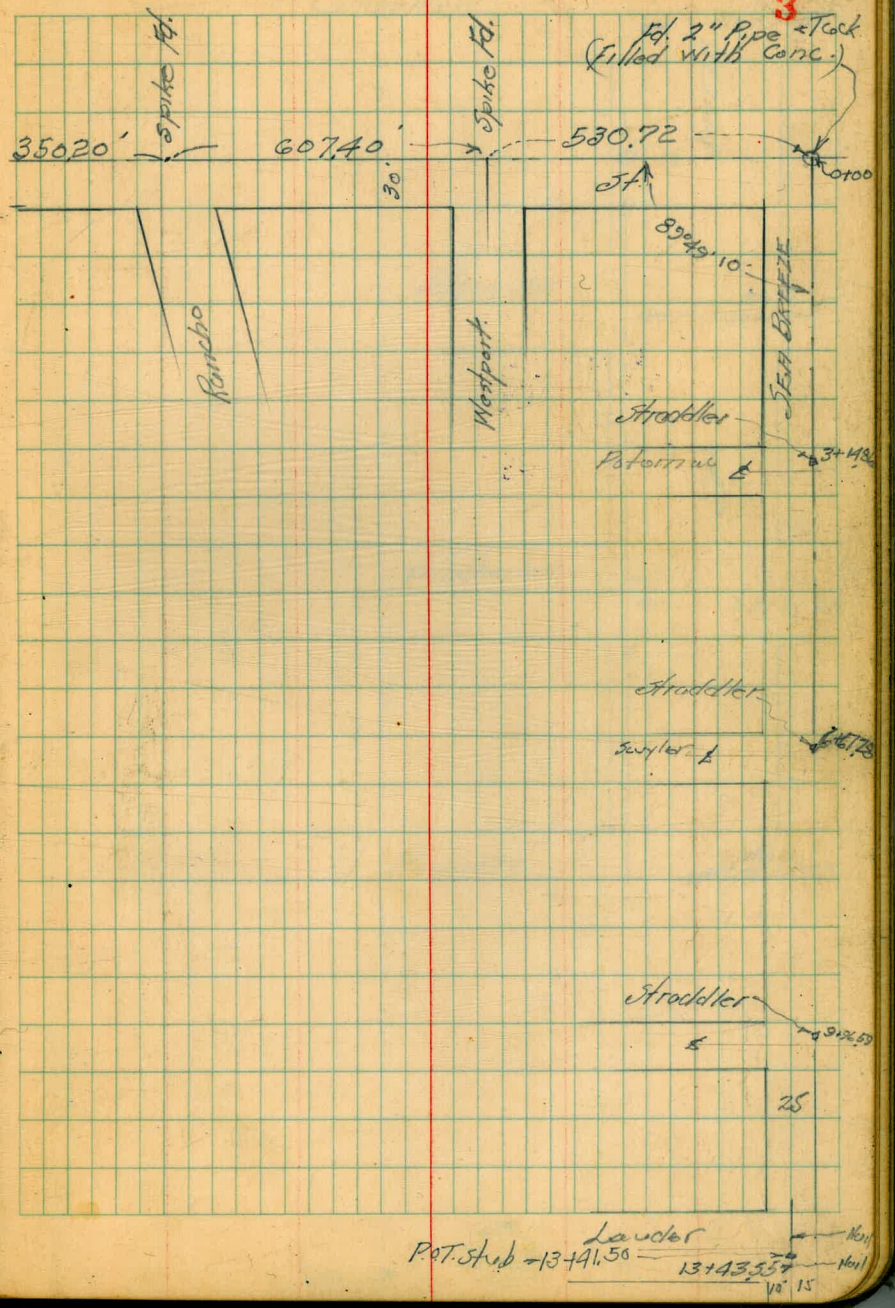
Made in U. S. A.

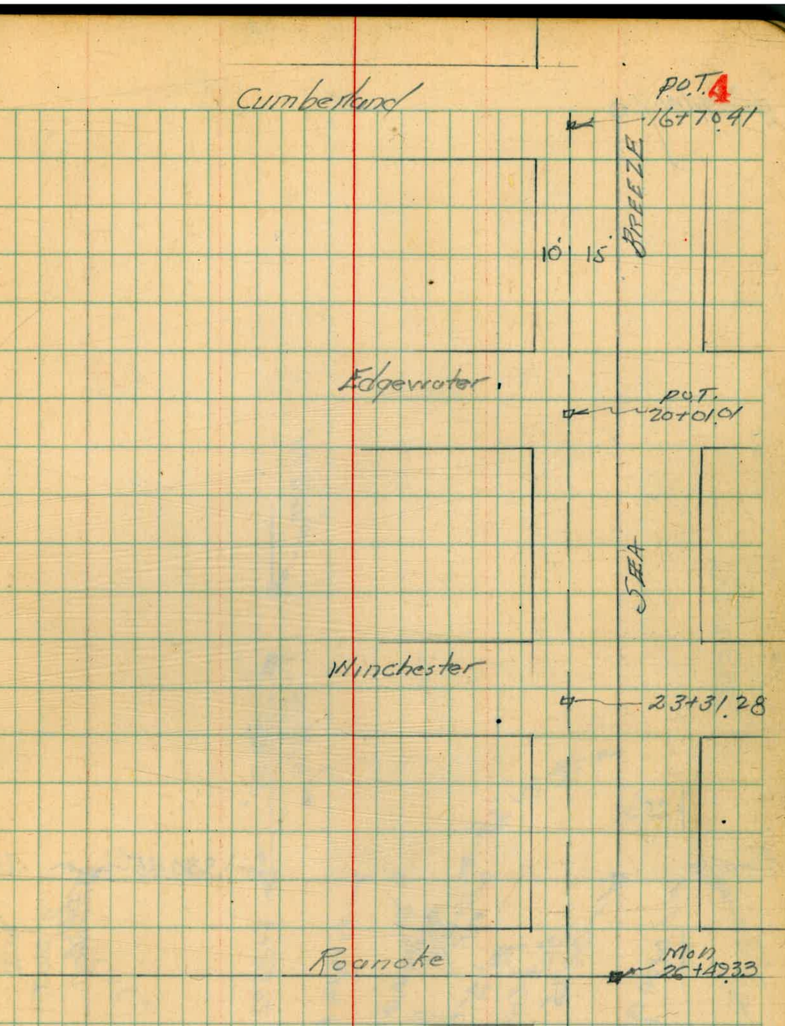
Index

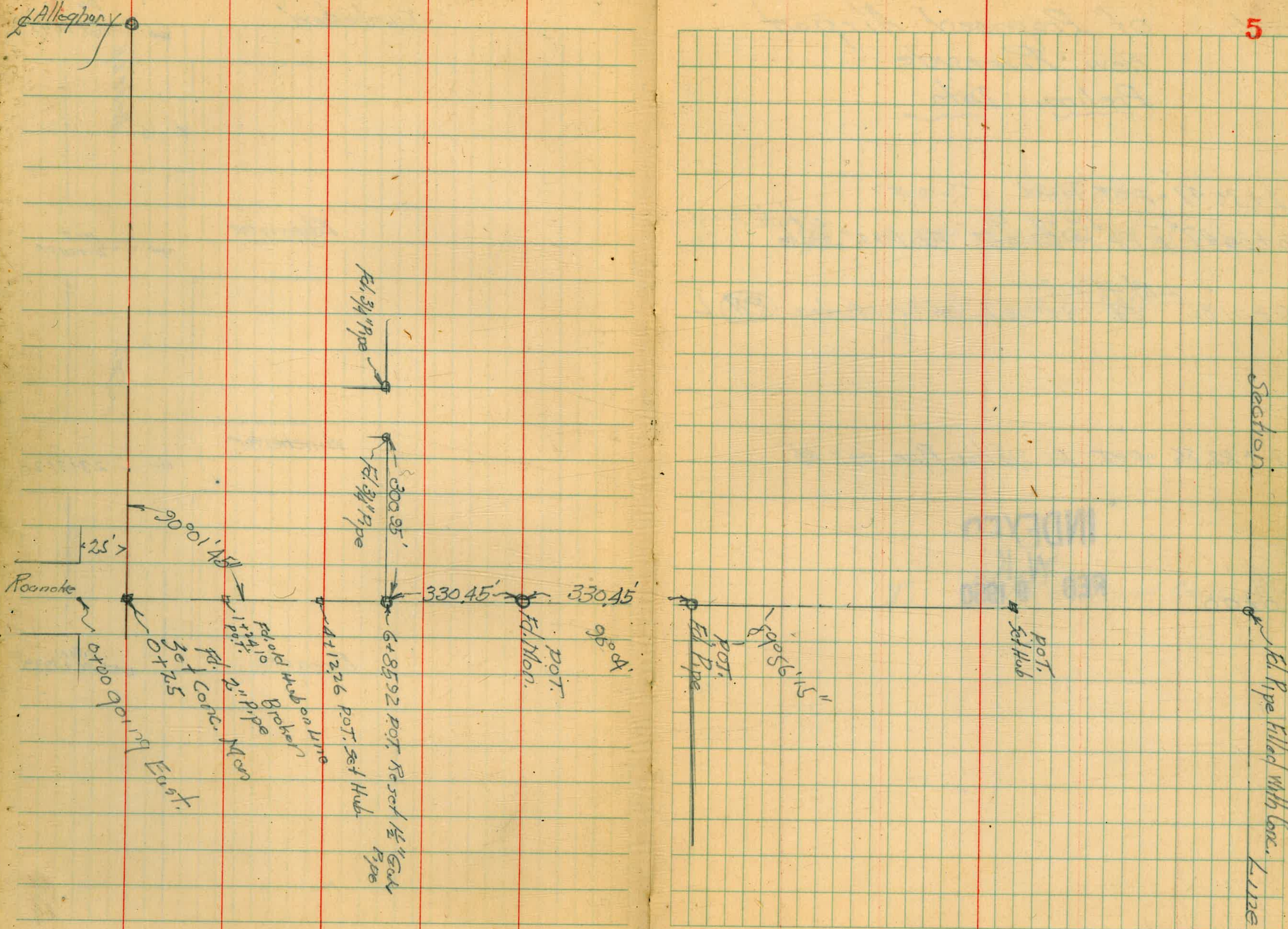
Walker
Hendricks
Hunter
Carey 5-24-46

Preliminary Data For Tie Points in Paradise Hills.






Cumberland
P.O.T.
16+70.41
BREEZE
10'
15'
Edgewater
P.O.T.
20+01.01
SEA
Winchester
23+31.28
Roanoke
Mon
26+49.33



℄ Allegheny
Roanoke
25'
90°01'45"
0+00 90°01'29" East
0+25 Set Conc. Mon
1+24.10 P.O.T. Fd. 2" Pipe
Fd. old Hub on Line Broken
At 12.26 P.O.T. Set Hub
6+85.92 P.O.T. Reset 1½" Galv. Pipe
Fd. 3/4" Pipe
Fd. 3/4" Pipe
330.45'
330.45'
P.O.T. Fd. Mon.
P.O.T. Fd. Pipe
89°56'15"
P.O.T. Set Hub
Section Line
Fd. Pipe Filled with Conc.

Traverse Boundary Line
of Proposed Airport
New Riverside
Prelim. Data

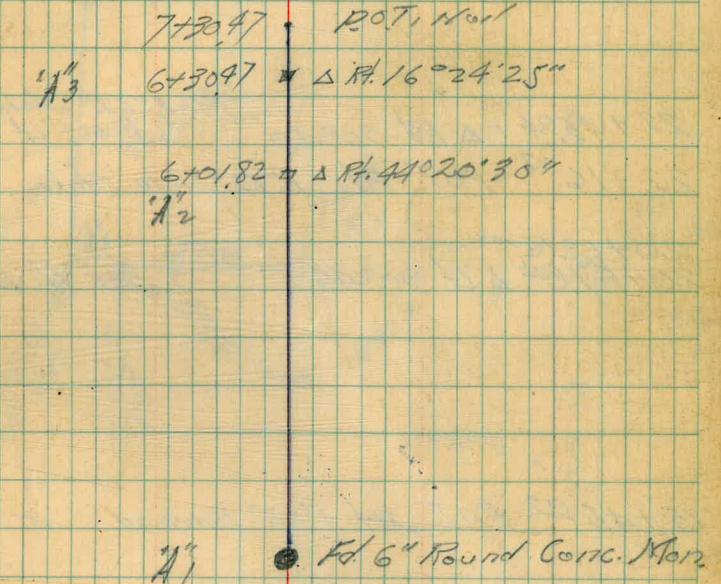
7+30.47 = P.O.T. Nail

6+30.47 Δ Rt 16°24'25" 16°21'45" State Hwy. Fd. 1"x2" Stake

6+01.82 Δ Rt 44°20'30" Fd. 1"x2" Stake Stake Marked (RW) L

3+82.56 = P.O.T. Fd. 3/4" Iron Pipe 0.07 Rt

0+00



26+69.93 = P.O.T. Nail

22+45.94 = Δ Rt 90°40' Fd. 2"x2" Stake (State) Tack 0.03' Lt from Back Tan

22+16.02 = P.O.T. Fd. 1"x2" Hub Stake

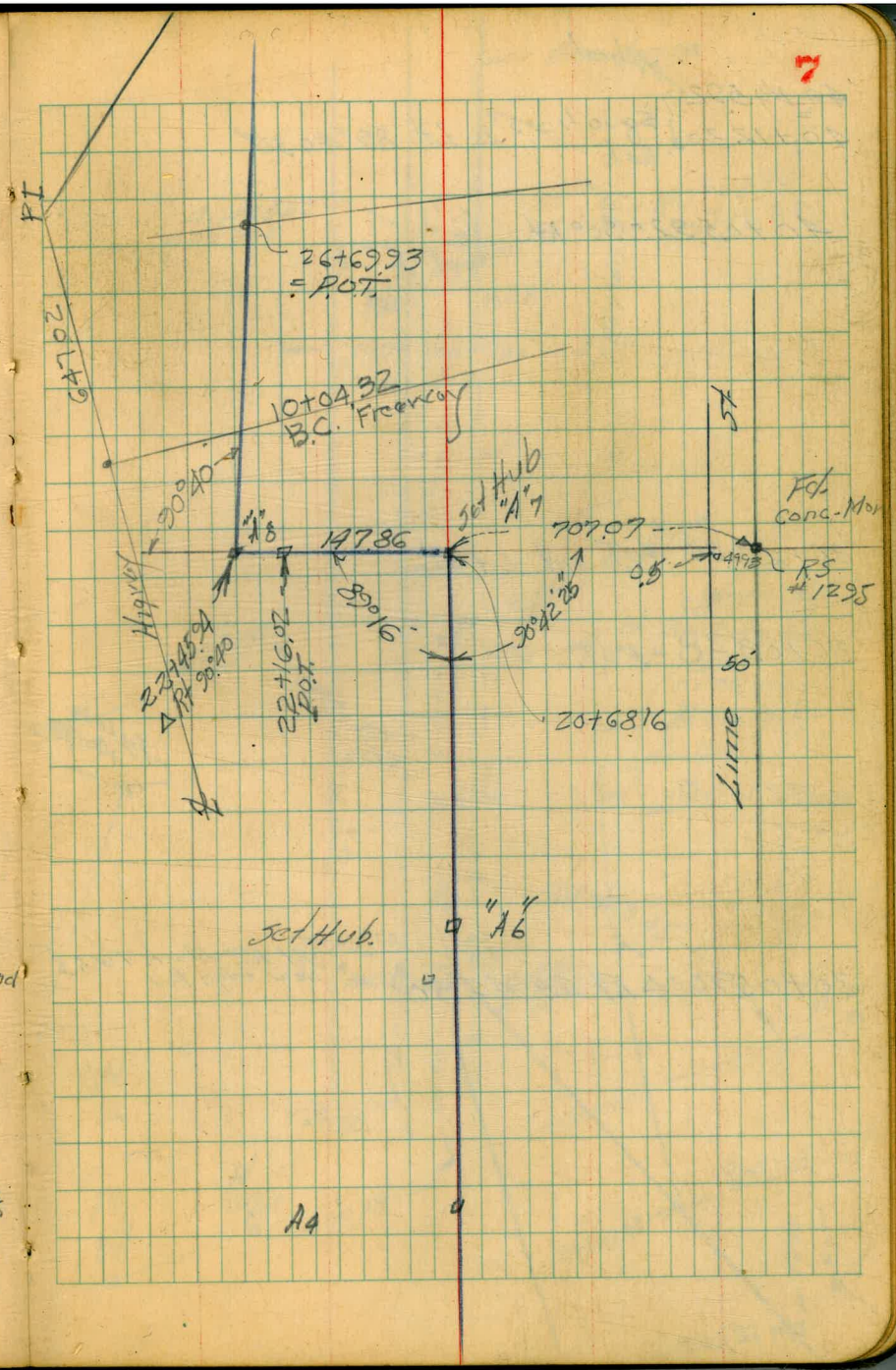
20+68.16
20+67.64 Δ Lt 90°44' Set Hub

15+45.22 P.O.T. Set 1"x2" Redwood

14+07.64 Δ Lt 89°20' Stuck Loosely in Ground

13+97.2 Fd 2"x2" Scarf Stake 1.2' Lt

9+90.28 Δ Rt 55°38'30" Fd. 1"x2" Stake & Tack



40+05.92 Ahead
=
40+12.20 Back } Equation. Δ Lt 89°40'30"

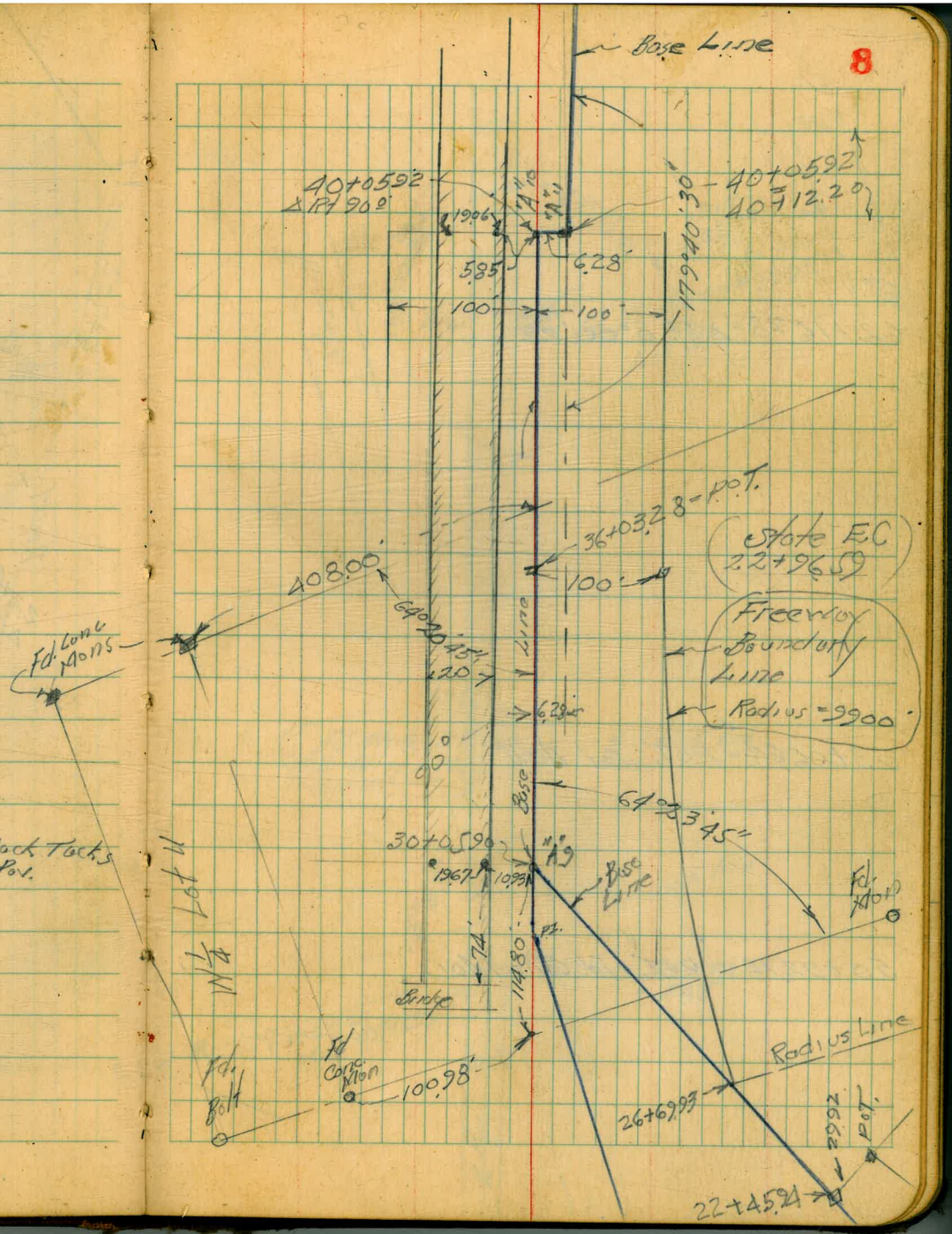
40+05.92 = 90° Rt.

36+22.84 P.O.T. int. Lot Line

36+03.28 = P.O.T.

30+05.90 = Δ Rt 24°46'30"

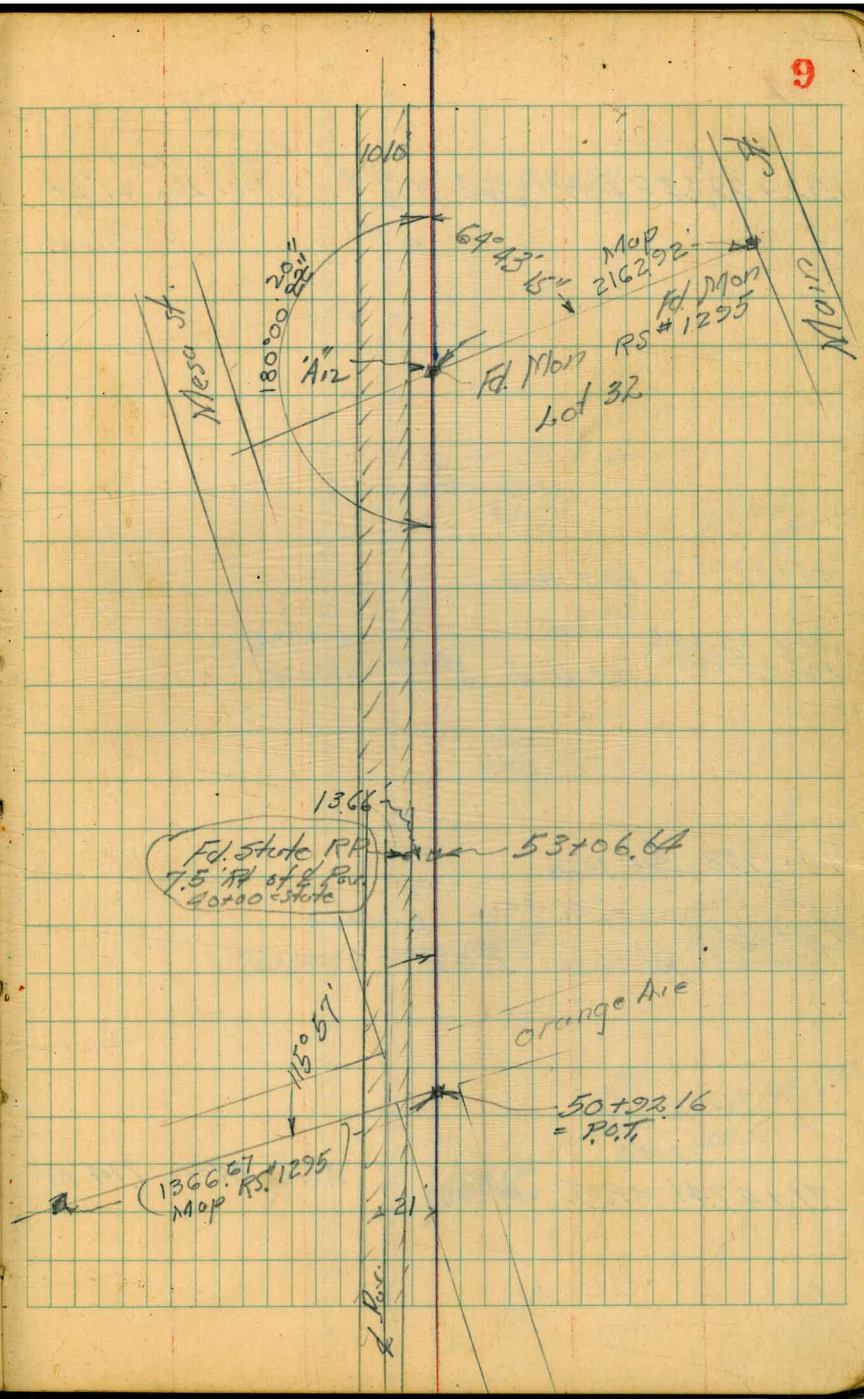
Set R.P. Block Tacks Near edge Pvt.



62+16.28 = Δ Rt 0°00'20"

53+06.64 = P.O.T. Jct Hub

50+92.16 = P.O.T. Fd. Conc Mon



92+99.64 = P.O.T. Set Hub Set Nail in Pav. 21' Lt.

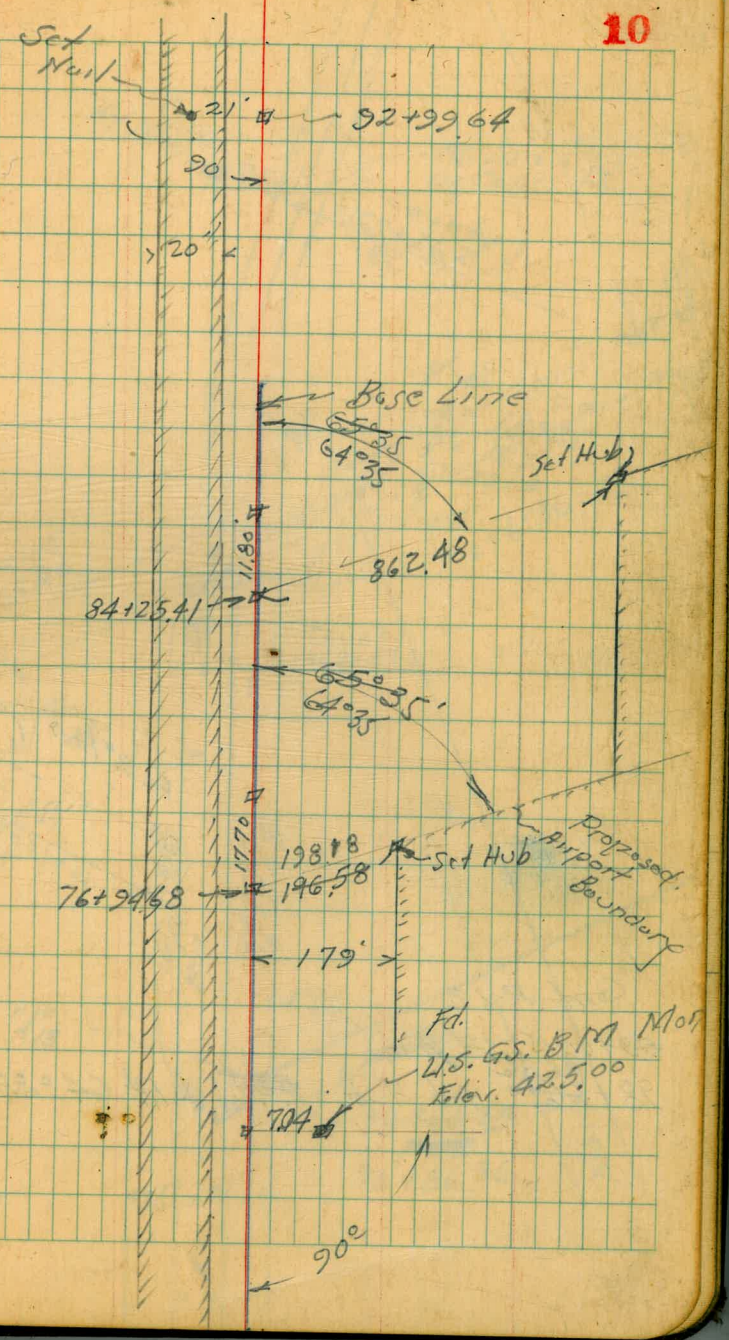
84+37.21 Set POT Hub

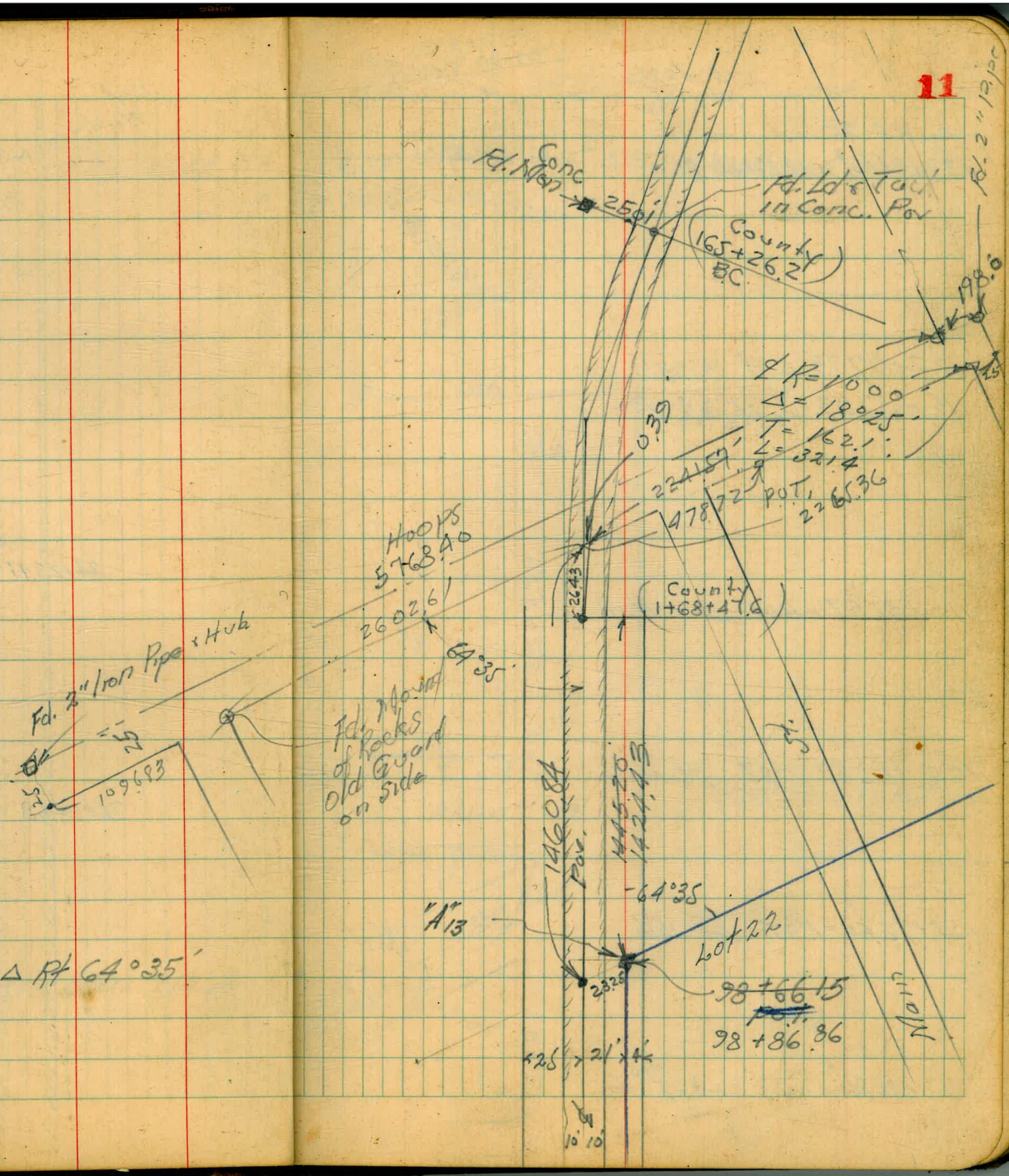
84+25.41
84+37.21 Set Hub P.O.T. 6-25-47

77+12.38 Set Hub

76+94.68
77+12.38 Set Hub = P.O.T. 6-25-47

71+47.41 = P.O.T. Set Hub R.R. Mon. 7.14 Rt.





Cont P-12

~~99+66.15 Set Hub~~

98+66.86 Set Hub - ~~P.O.T.~~ Δ Rt 64°35'

140+88.45
Fd. 2" Pipe

30'

140+58.45
△ Rt

Cont P-20

133+85.54 △ Lt 89°32'30"

Rose

30

90°29'

25'

89°31'

122+97.93 △ Rt 89°31'

116+37.93 = △ Lt 89°31'

110+31.57 = P.O.T. Set Hub

226.536

105+52.89 = P.O.T. Set Hub.

104+76.62 = P.O.T. Set Hub.

2643

25

25

1460.84

98+86.86 = △ Rt 64°35'

2602.6'

89°31'

134+04.05
△ Lt 89°23'

1482.46'

Fd. 1/4" Pipe

3rd &c

133+85.54 △ Lt 89°32'30" → Cont P-22

"A" 16

Traverse Line

122+97.93

89°31'

660'

116+37.93
△ Lt 89°31

"A" 15

"A" 14

Tel. Pole Line

90°29'

89°31

5'

45'

Main St.

Multiple Tel & Pole Line

104+76.62

1460.84

50

25

25

98+86.86

℄ Rose

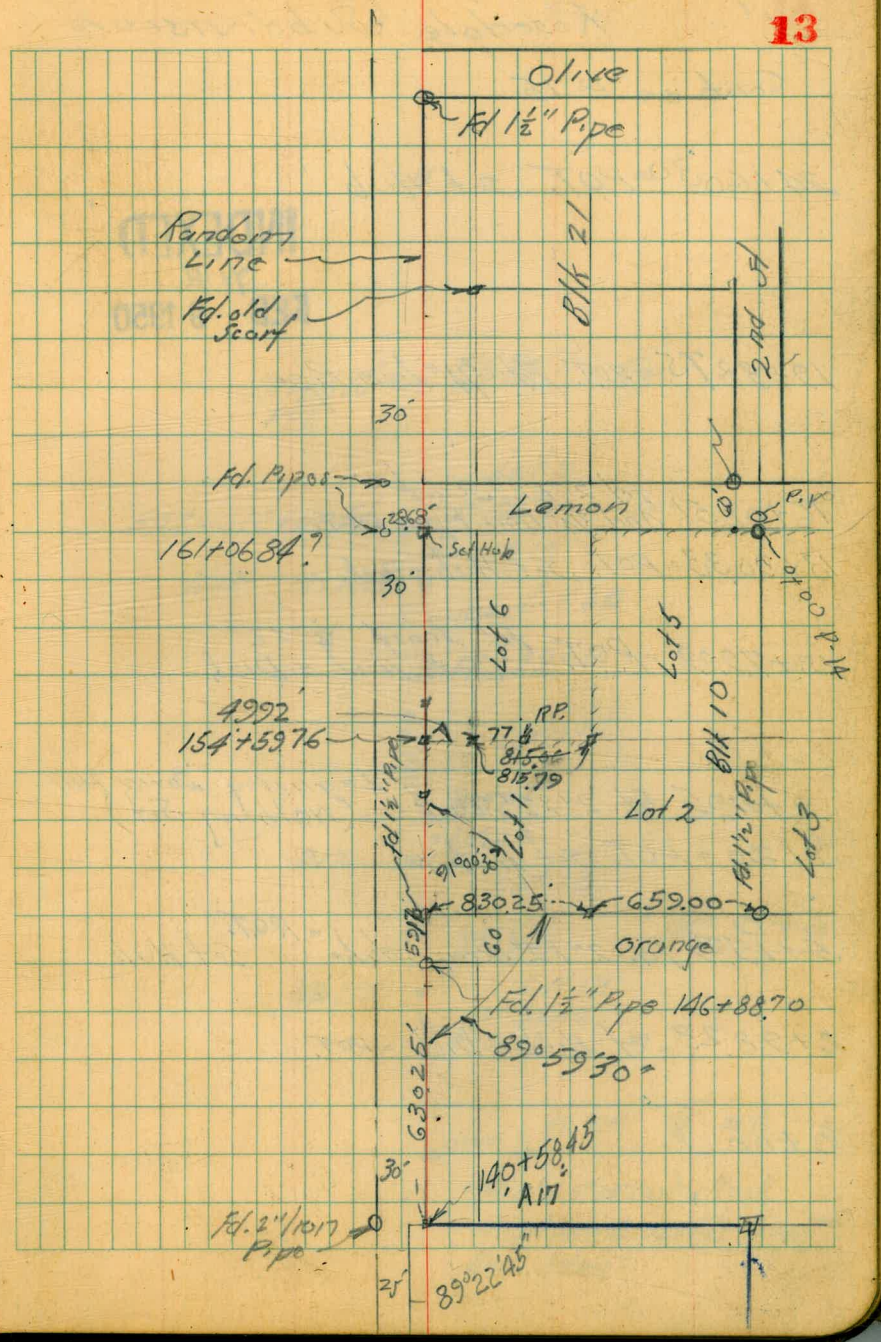
See P-20 Change of Line

161+06.84? = Set Hub = NE Cor Blk 10

159+92.82 = P.O.T. Set Hub & Disk
159+59.76 = P.O.T. Set Hub
151+77.72 = P.O.T. Set Hub.

147+47.87 Fd 1½" Pipe 0.30' Lt.
146+88.70 = P.O.T. Fd. 1½" Iron Pipe 0.96' Lt

140+58.45 Δ Rt 89°02'40"



1-3-47 West Boundary Rosedale Subdivision

Cont. on P. 15

24+60.30 = P.O.T. Set Hub

19+38.75 = P.O.T. Fd. 3/4" Iron Pipe

16+08.51 Fd 2"x2" Scurf and 3/4" Iron Pipe = P.O.T.

13+90.33 = P.O.T. Set Hub & Disk

12+79.09 = P.O.T. Fd. Scurf 2"x2" Set Hub & Disk

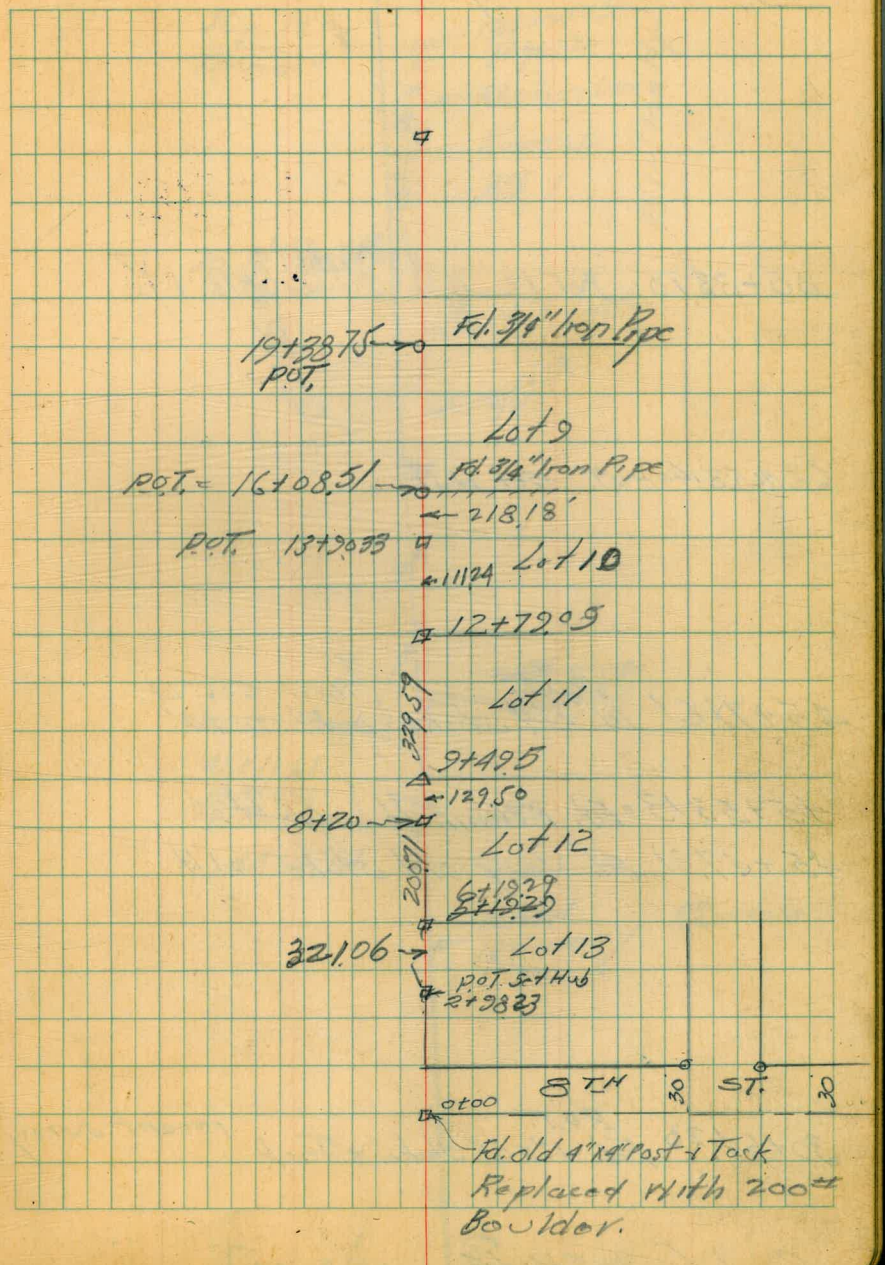
9+49.5 Fd. 2"x2" Scurf Beginning Down Hill (Nothing Set)

8+20 = P.O.T. Set Hub

6+19.29
~~5+19.29~~ Fd. 2"x2" Scurf Stake = P.O.T. Set Hub

2+98.23 Set Hub & Disk = P.O.T.

0+00



West Boundary Rosedale Sub. running North

80+33.10 Fd 1½" Pipe (Marked SW Cor Blk 1).

62+58.14 = P.O.T. Set Hub.

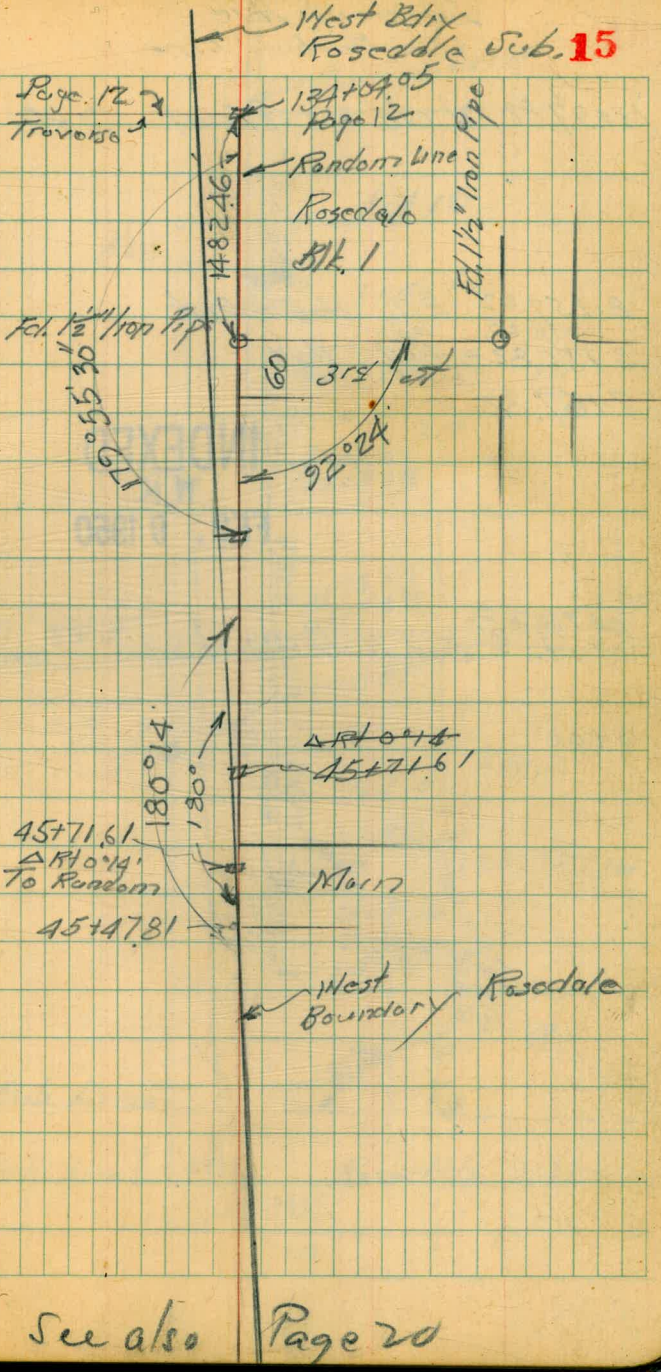
45+71.61 ~~P.O.T.~~ Fd old stake ~~△Rt 0°14'~~ Nail 0.06' Lt.

45+53.13 = Fd 1" Iron Bolt 0.5' Lt

45+47.81 Fd. Very old stake 0.1' Lt.

30+64.20 P.O.T. Fd. 1"x2" Stake & Tack recent survey

Cont. from P. 14



See also Page 20

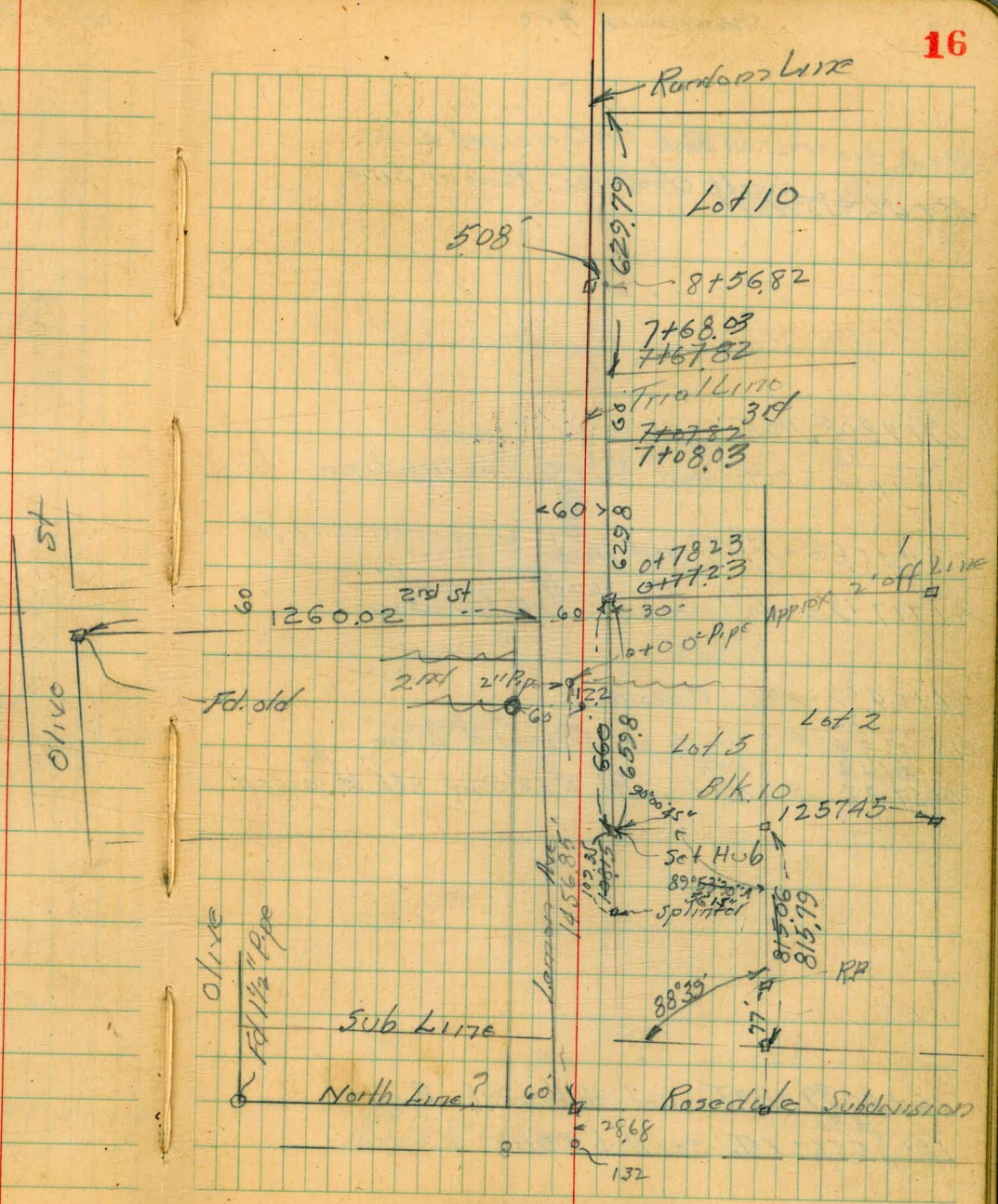
Lemon Ave
Random Line

13+97.82 Fd old 2"x2" Scurf 0.9' Lt.

8+57.82 - .20 = P.O.T. ~~Set~~ Hub & Disk
8+56.82 = P.O.T. Nail
7+67.82

0+78.23
~~0+77.23~~ Set Hub & Disk

0+00



Lemon Ave

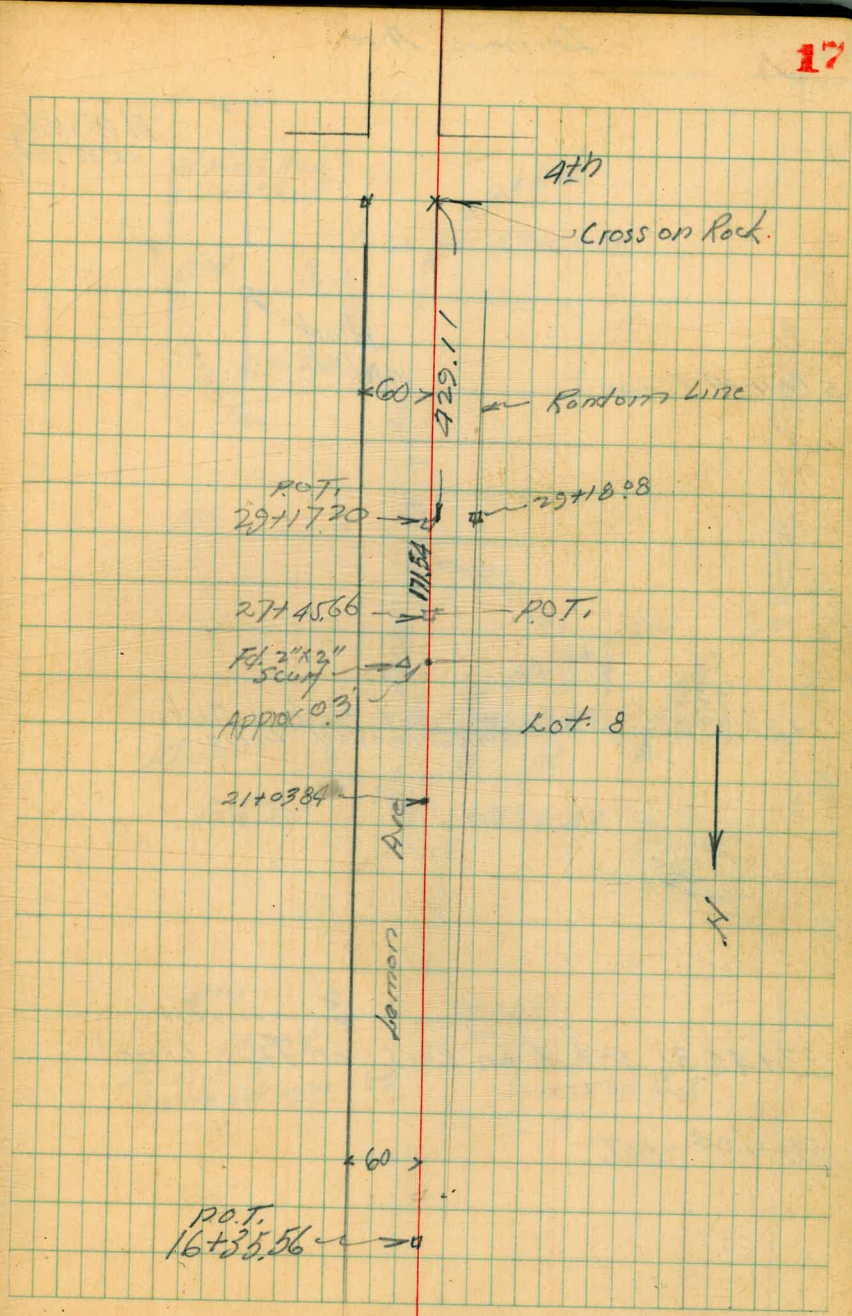
33+46.31 = cross on Rock on Corrected Line
33+46.45 = South Stadia Random Line Nail

29+18.08 = P.O.T.
.88
29+17.20 = P.O.T. Hub on Corrected Line

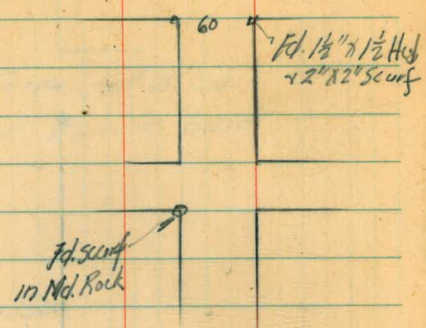
27+45.66 = P.O.T. set Hub on Corrected Line
27+17.19 = Nail Fd. scarf very old on Corrected Line

21+04.09 = P.O.T. Random
.25
21+03.84 = P.O.T. Nail on Corrected Line
46.46
20+57.38 P.O.T. Set Nail Fd 2"X2" Scarf 0.85' Lt And 0.85' Lt.

16+50.39 = P.O.T. Set Hub & Disk Random
14.83
16+35.56 = P.O.T. Set Hub & Disk



Lemon Ave

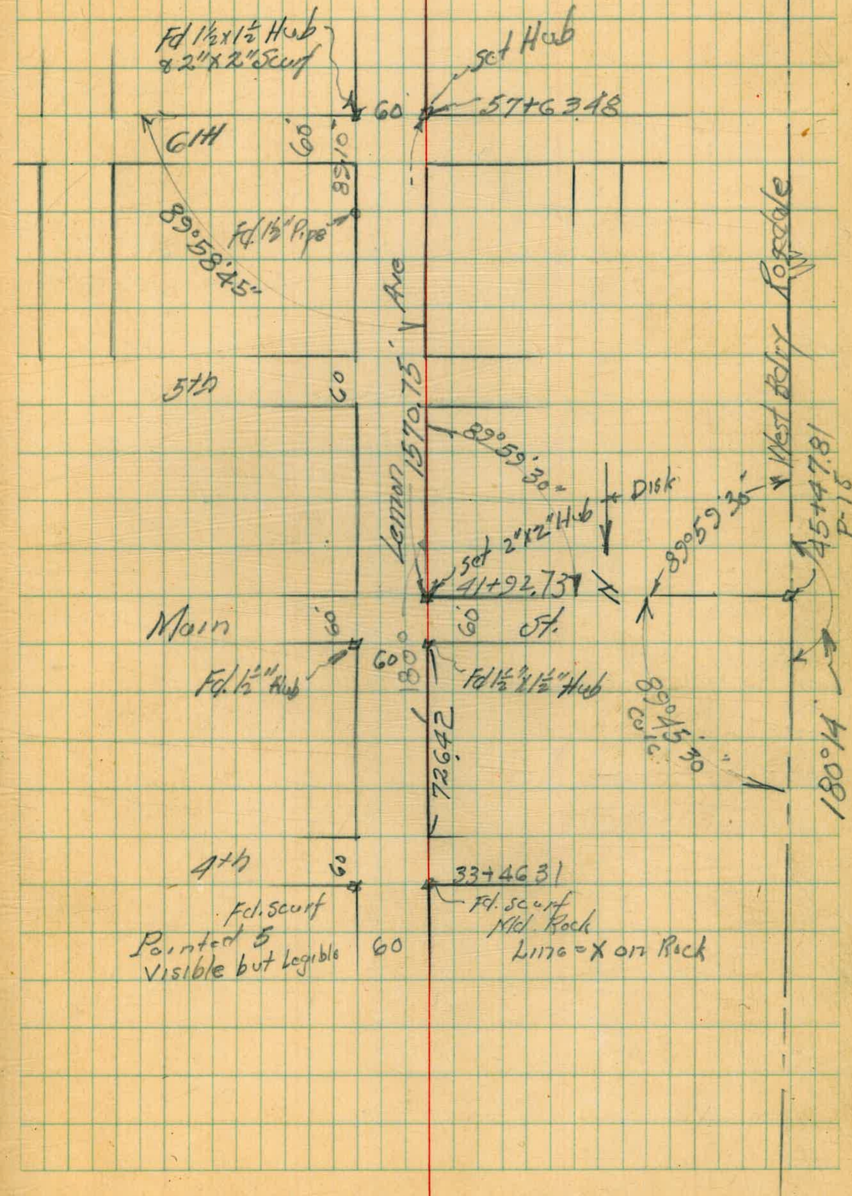


(51+11.04 Random)

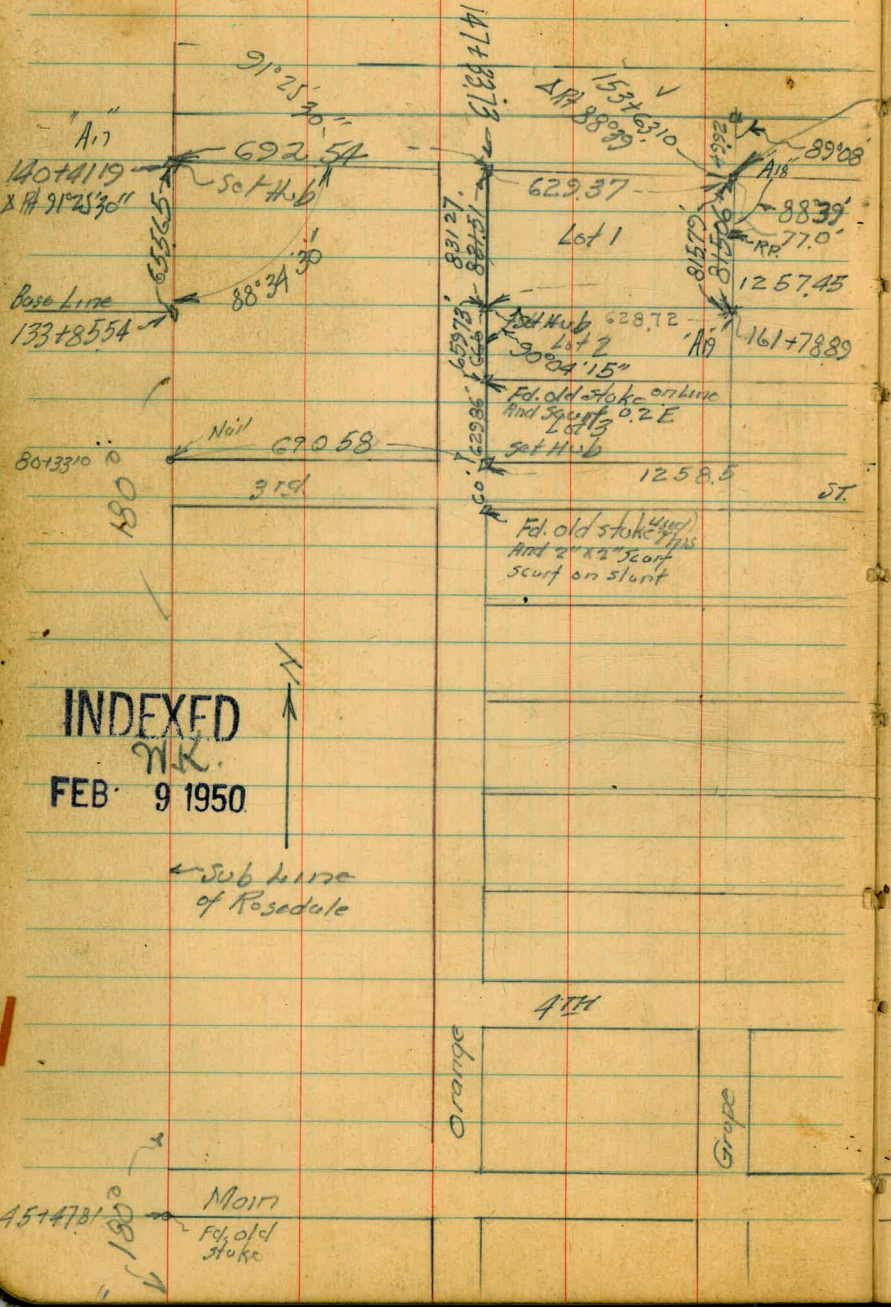
41+92.73/64 = S.L. Main St. set Hub & Disk on corrected Line

33+46.31 set X on Rock on (corrected) True Line

51+11.04 = P.O.T.



North Portion Rosedale Subdivision



INDEXED
WK.
FEB 9 1950

← Sub Line of Rosedale

See page 15

161+78.79 Δ Lt. 90°03'45"

168+07.61 Δ Rt 89°59'15" = NE Lot 5 Blk 10
174+67.41 = P.O.T. Set Hub SE Lot 5 Blk 10
207+35.49 Δ Lt. "A21" 89°58'30 NE Lemon + 4th

220+54.54 Δ Rt. "A22" 89°58'45" NW Olive + 4th

229+00.07 Δ Lt "A23" 90°01'15" SW Main + Olive

232+93.26 = Back
232+91.54 = Ahead } Equation Δ Rt "A24" 95°07'30"

237+07.75 Δ Lt. "A25" 11°32'15" Δ in Peach St.

248+11.93 Δ Rt "A26" 96°25'30" NW Peach + 6th

252+92.02 Δ Lt "A27" 89°58' NW. Olive & ~~Peach~~ 6th

260+77.95 Δ Rt "A28" 89°58'15" NW " + 7th

273+36.29 Δ Lt "A29" 90°00'30" NE Lemon + 7th

□ 180+97.21 P.O.T. NW 3rd + Lemon
□ 182+46.00 P.O.T.
□ 190+24.74 = P.O.T.
□ 201+34.34 = P.O.T.
□ 203+06.38 = P.O.T.
□ 215+71.22 = P.O.T.
□ 219+52.73 P.O.T.

SW Main & Peach
□ 224+78.52 = P.O.T.
□ 226+22.57 = P.O.T.
□ 233+81.08 P.O.T.
□ 238+16.83 P.O.T.

Base Line

Cont. from P-12

280+25.52 △ Rt "A30" 89°58'45"

293+49.83 △ Rt "A31" 90°02'30" East side Orange Ave

293+92.83 △ Lt "A32" 90°03'30" " E side " "

300+82.43 △ Lt "A33" 89°56'45" WL Rosedale Sub.

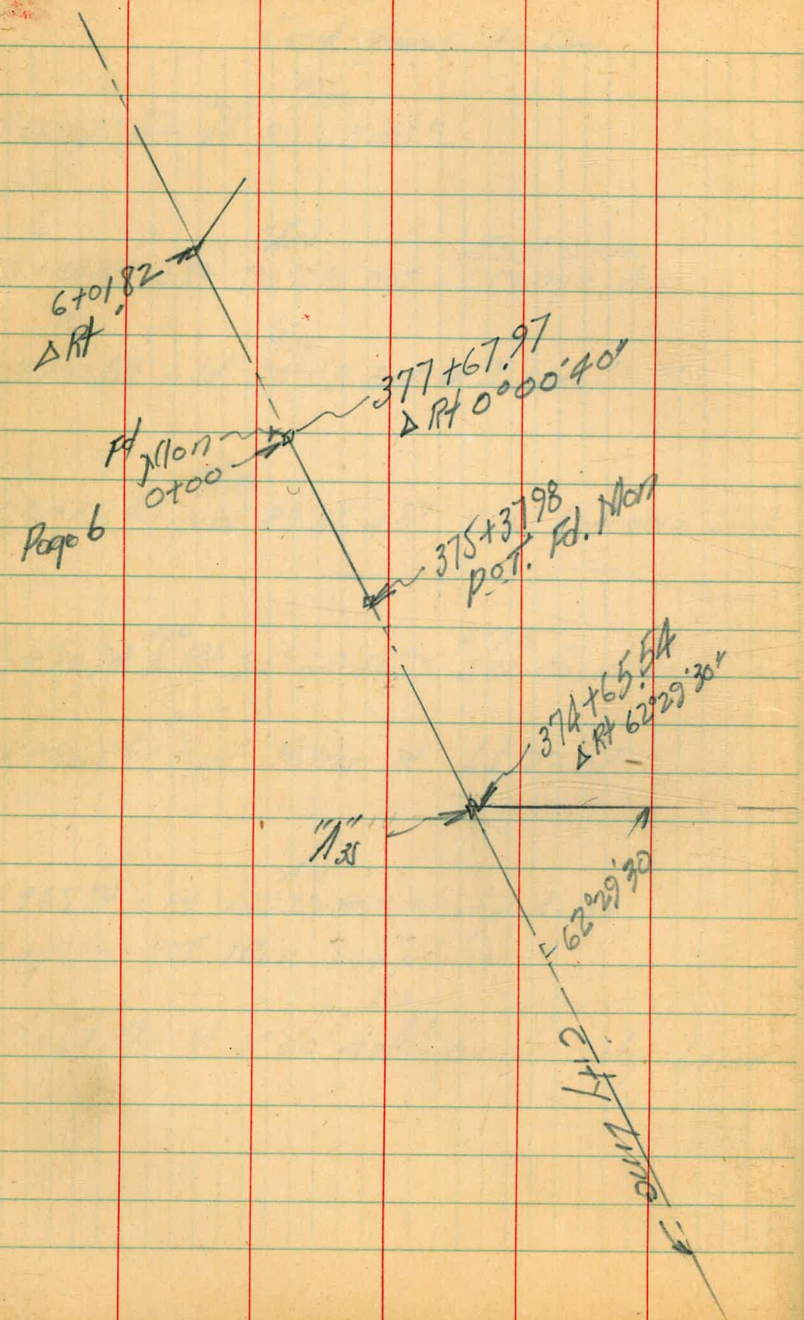
316+90.94 △ Rt A34 90°23'30" = 4"x8" SW Rosedale

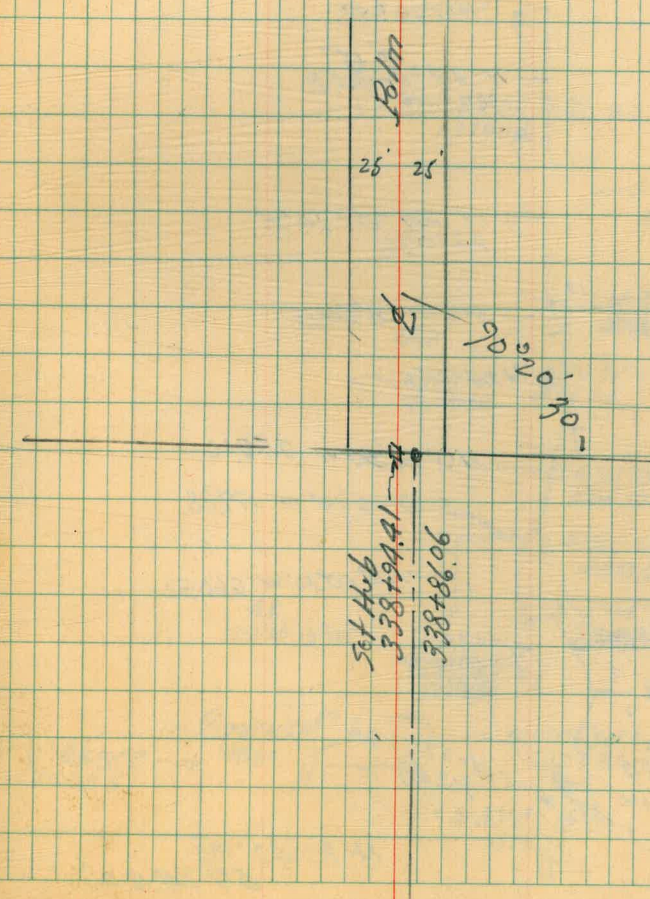
338+86.06 = P.O.T. Pipe Palm St 45.22 o/

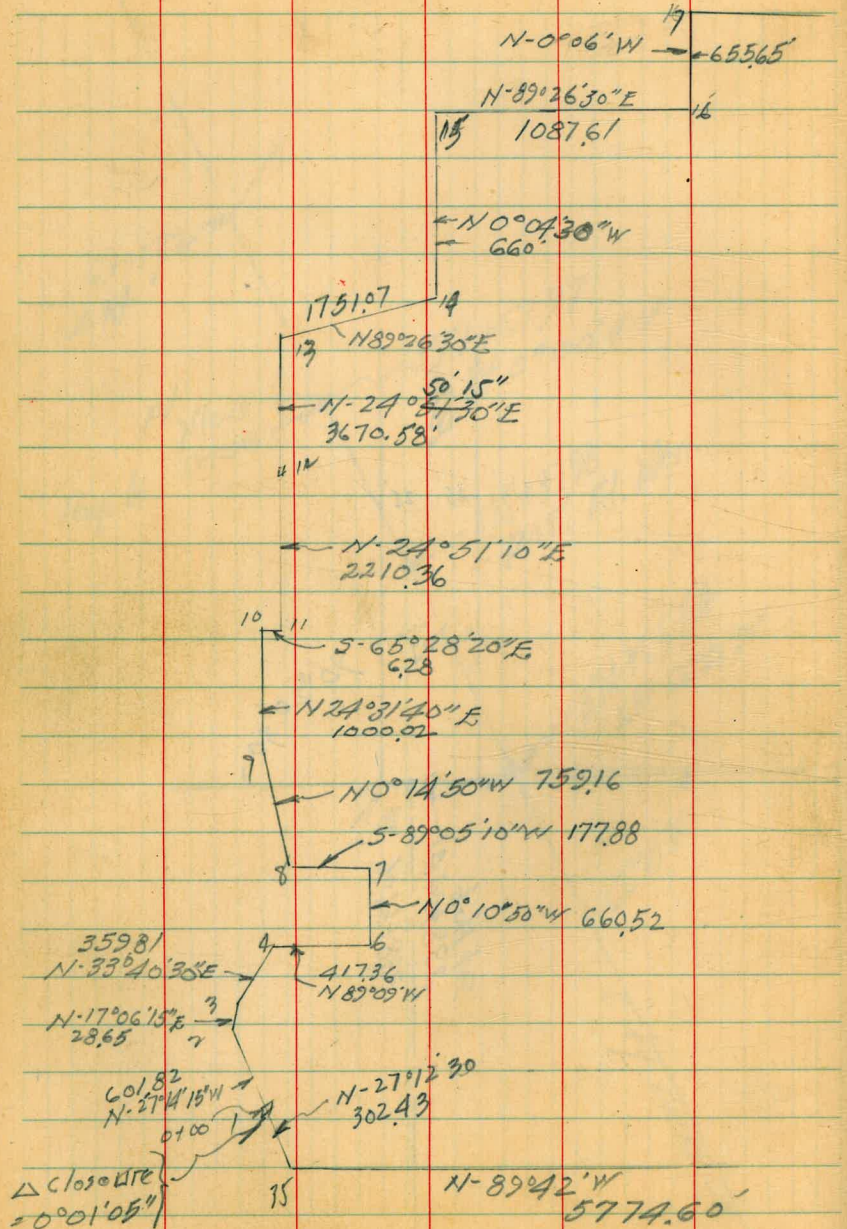
374+65.54 △ Rt "A35" 62°29'30" = city Line

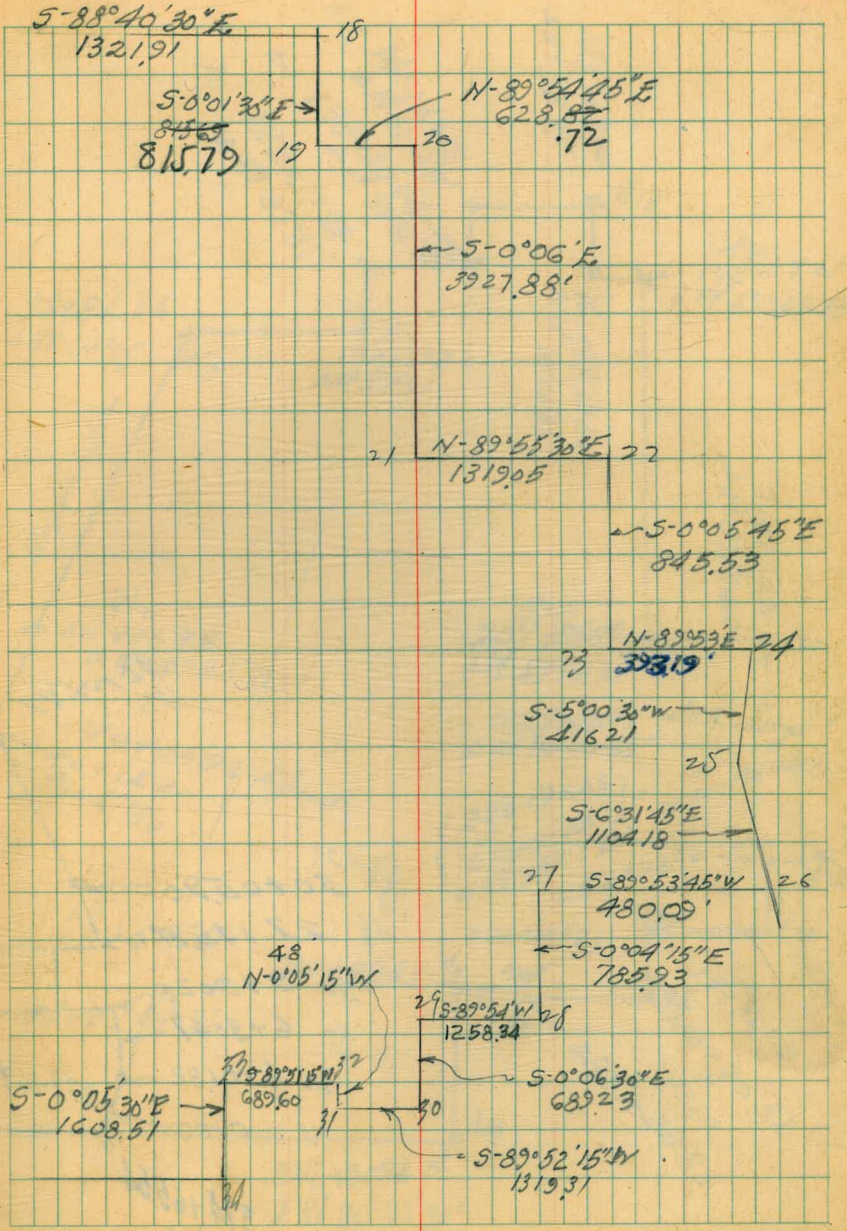
375+37.98 P.O.T. Mon city Line

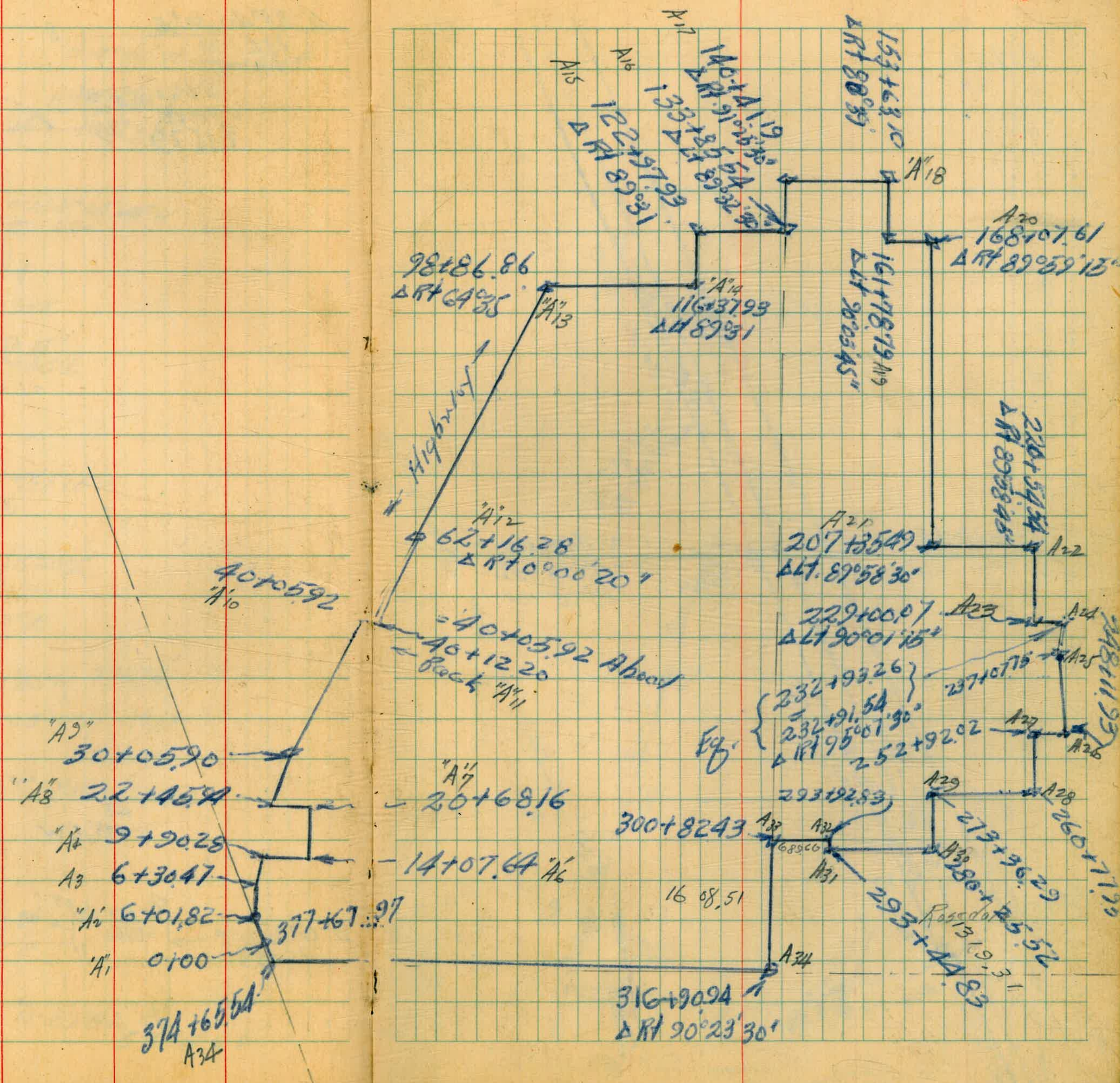
377+67.97 = Rt "A1" 0°00'40" = 0+00 city Line


6+01.82
ΔRt
377+67.97
ΔRt 0°00'40"
Fd Mon
0+00
Page 6
375+37.98
pot. Fd. Mon
374+65.54
ΔRt 62°29'30"
62°29'30
Line 2


25'
25'
90°20'30"
Set Hub
338+94.41
338+86.06

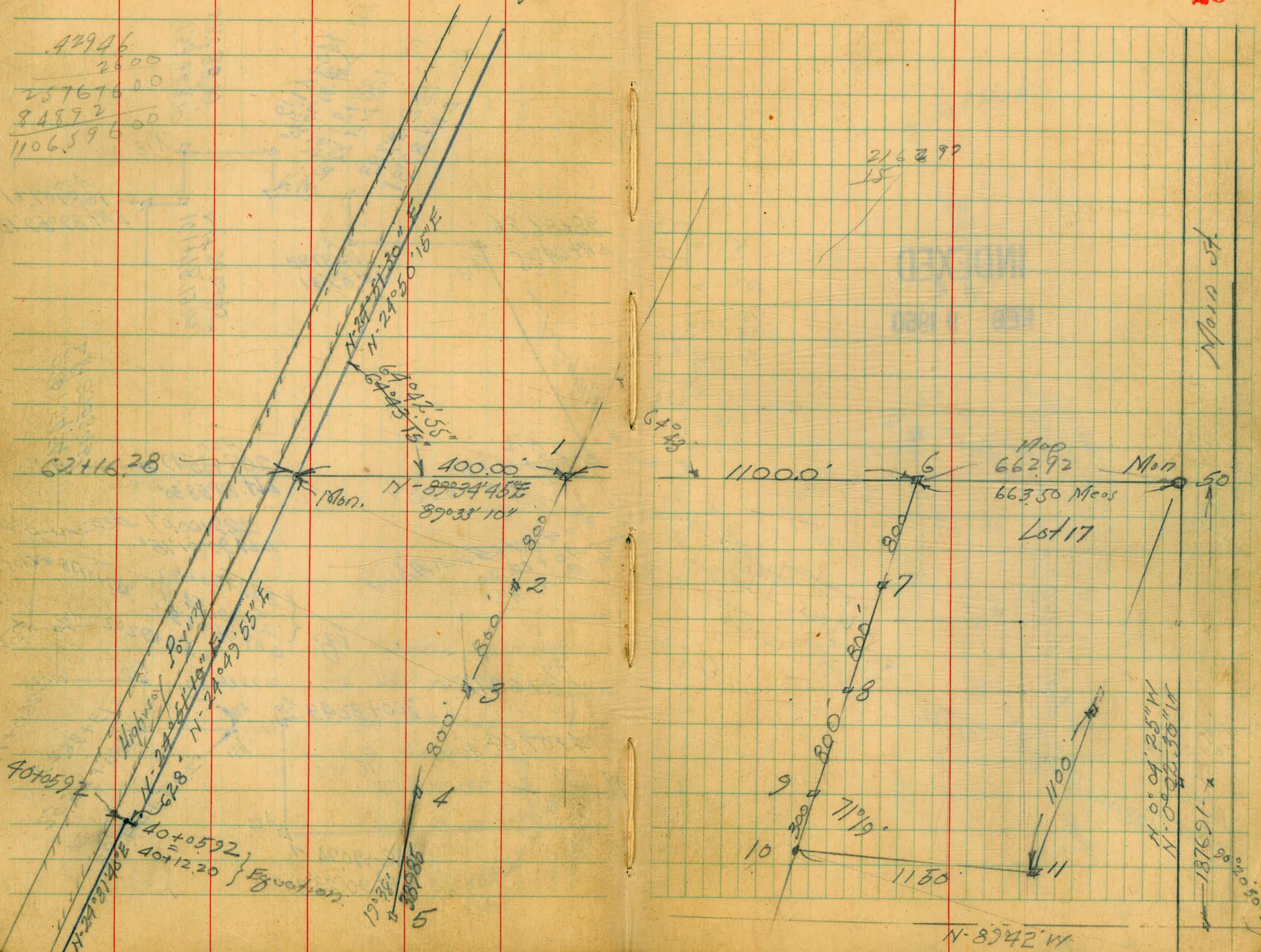

N-0°06'W
655.65
N-89°26'30"E
1087.61
N 0°04'30"W
660'
1751.07
N89°26'30"E
N-24°51'30"E
3670.58'
50'15"
N-24°51'10"E
2210.36
S-65°28'20"E
6.28
N24°31'40"E
1000.02
N0°14'50"W 759.16
S-89°05'10"W 177.88
N0°10'50"W 660.52
359.81
N-33°40'30"E
417.36
N89°09'W
N-17°06'15"E
28.65
601.82
N-27°14'15"W
N-27°12'30
302.43
Δ Closure
=0°01'05"
N-89°42'W
5774.60'


S-88°40'30"E
1321.91
S-0°01'30"E
815.79
N-89°54'45"E
628.72
S-0°06'E
3927.88'
N-89°55'30"E
1319.05
S-0°05'45"E
845.53
N-89°53'E
3939'
S-5°00'30"W
416.21
S-6°31'45"E
1104.18
S-89°53'45"W
480.09'
S-0°04'15"E
785.93
48
N-0°05'15"W
S-89°54'W
1258.34
S-89°51'15"W
689.60
S-0°05'30"E
1608.51
S-0°06'30"E
689.23
S-89°52'15"W
1319.31

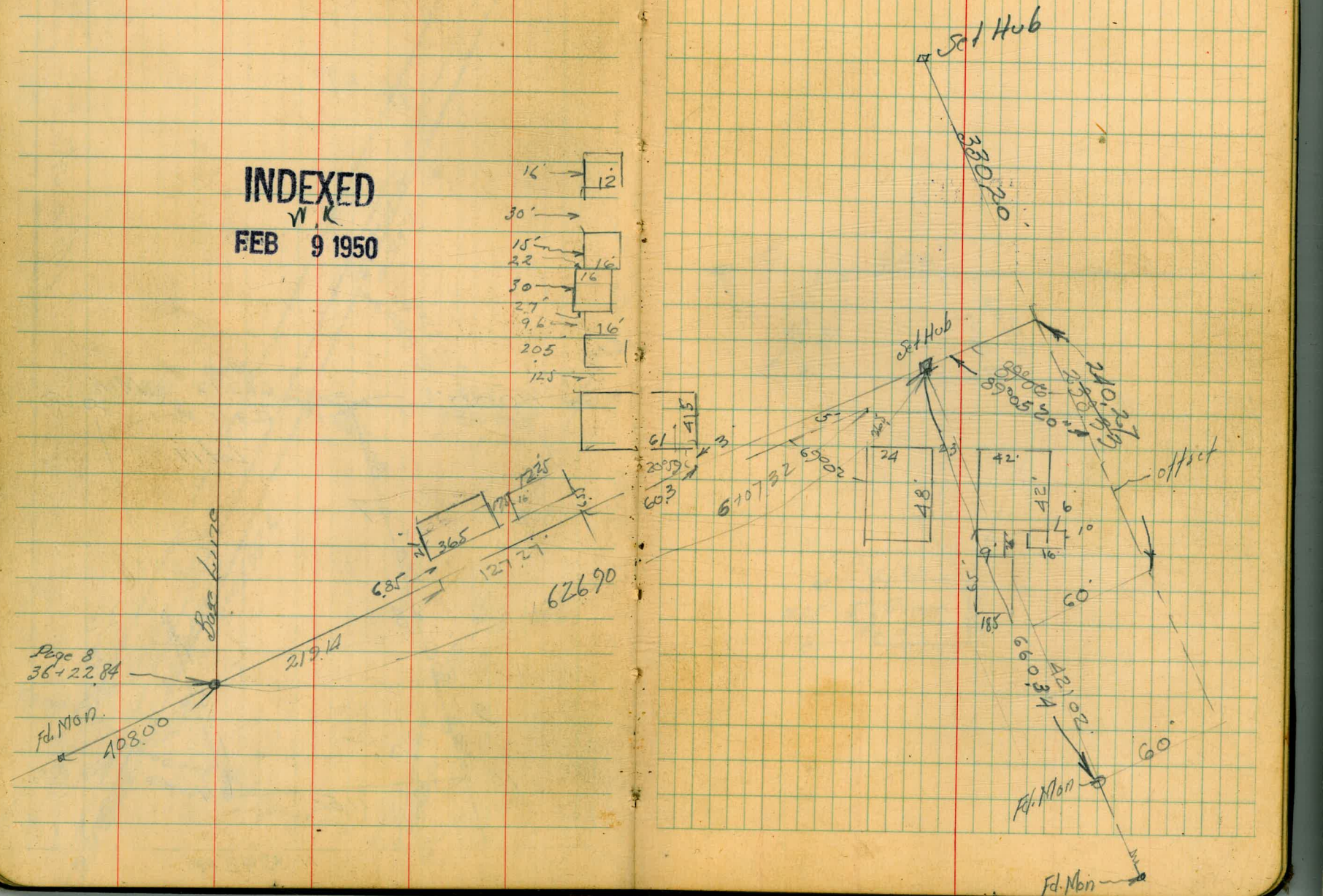

98+86.86
ΔRt 64°35'
"A"13
116+37.93
ΔLt 89°31'
"A"14
"A"18
A20
168+07.61
ΔRt 89°59'15"
Highway
"A12"
62+16.28
ΔRt 0°00'20"
40+05.92
"A10"
=40+05.92 Ahead
46+12.20
Back "A"11
207+35.49
ΔLt. 89°58'30"
A22
229+00.07
ΔLt 90°01'15"
A23
A24
A25
A26
A27
A28
A29
A30
A31
A32
A33
A34
252+92.02
"A9"
30+05.90
"A8" 22+14.54
"A"7
20+68.16
"A4" 9+90.28
14+07.64 "A6"
A3 6+30.47
"A2" 6+01.82
377+67.97
"A1" 0+00
374+65.54
A34
300+82.43
316+90.94
ΔRt 90°23'30"
279+96.29
260+71.77

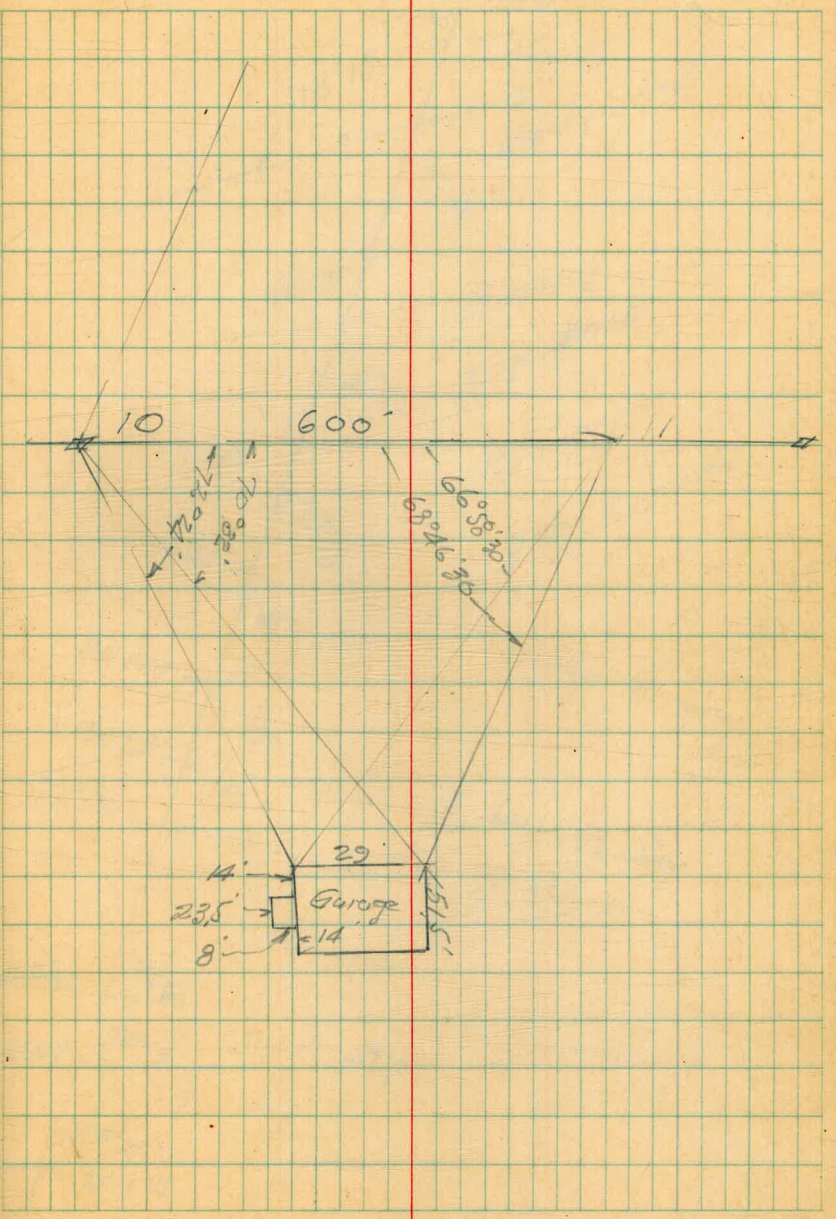
Control Points. – Topography.

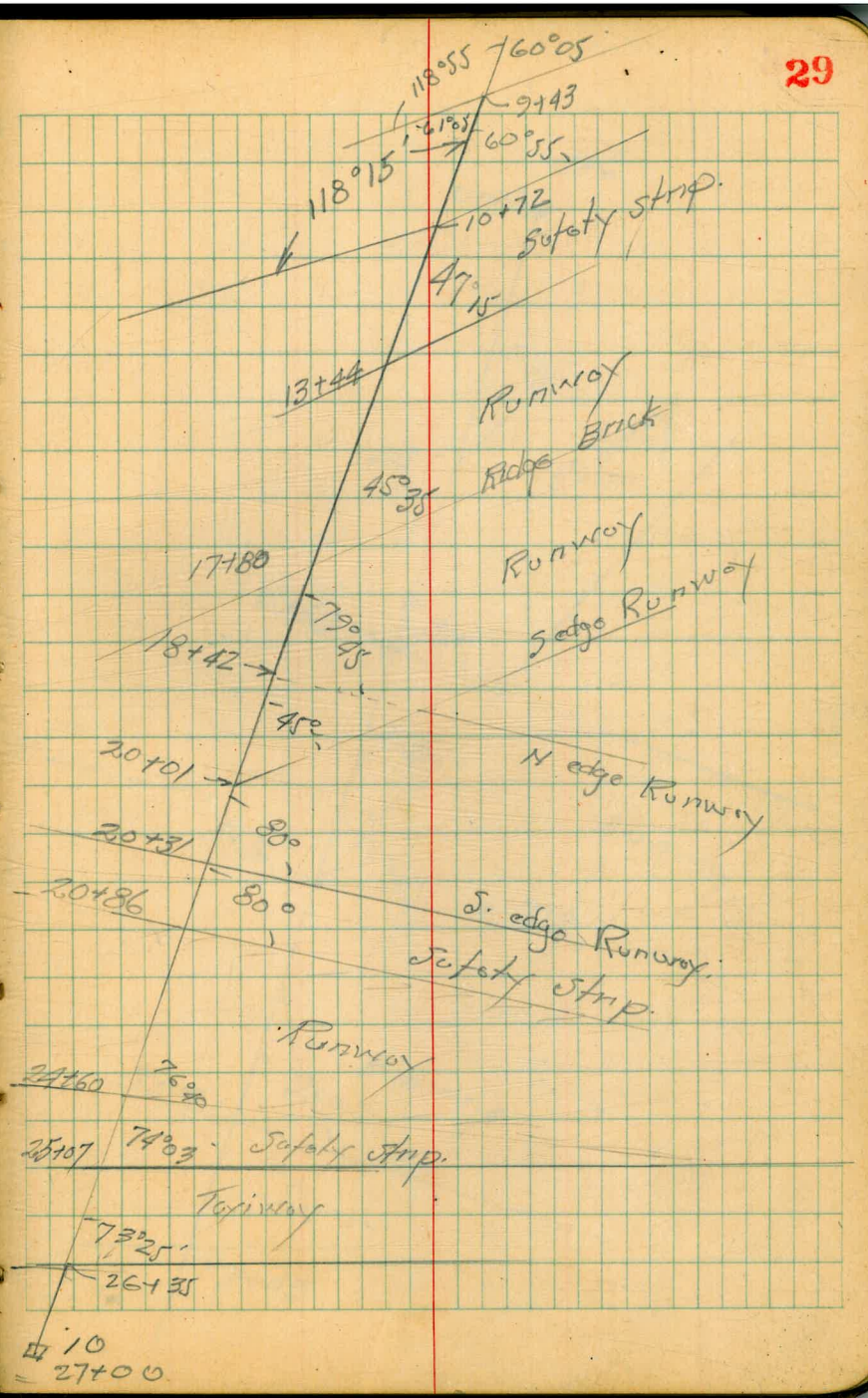
.42946
2600
257676 00
84892
1106596 00

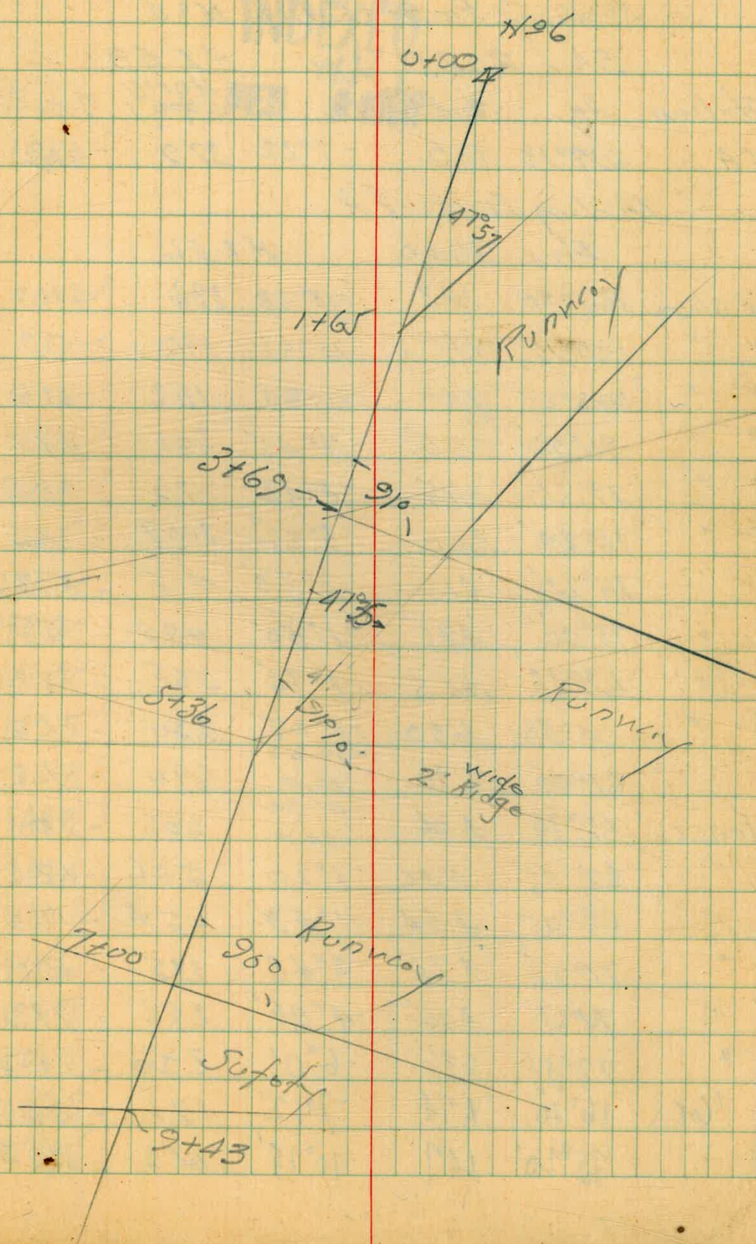


Location Bldg. - Gibbs Airport




10
600'
66°56'30"
68°46'30"
29'
14'
23,5'
8'
Garage
14'
15,5'


118°55
60°05
9+43
118°15
60°55
10+72
Safety strip.
47°15
13+44
Runway
Ridge Brick
45°35
Runway
17+80
S edge Runway
79°45
18+42
45°
20+01
N edge Runway
80°
20+31
20+86
80°
S. edge Runway.
Safety strip.
Runway
24+60
76°40
25+07
74°03
Safety strip.
Taxiway
73°25
26+35
10
27+00



1+96
0+00
47°57
1+65
Runway
3+69
91°
47°35
5+36
91°10
2' wide Bridge
Runway
7+00
90°
Runway
Safety
9+43

Balboa Riding Stables
Topog. Az. from True North
Reading From Control No 4
Elev. 202.9 H.I. 5.3

Station	Az.	Stadia	VA	Horiz	diff. El	Elev
4A	297°18	385'	-7°22	379	-48.9	154.0

Reading From 4A
Elev. 154.0 H.I. 5.2

Station	Az.	Stadia	VA	Horiz	diff. El	Elev
Toe slope	161°30'	143	-15°28	134	-36.8	117.2 ✓
" "	129°15'	140	-15°25	130	-35.9	118.1 ✓
" "	102°05	158	-11°23'	152	-30.6	123.4 ✓
" "	86°50'	205'	-7°45'	201	-27.2	126.8 ✓
" "	79°20'	275'	-4°42'	273	-22.8	131.2 ✓
" "	76°20'	350	-3°22'	349	-20.5	133.5 ✓
" "	76°20'	415	-2°28'	415	-17.8	136.2 ✓
" "	73°30'	495'	-1°50'	495	-15.8	138.2 ✓
" "	68°45	565	-1°25'	565	-13.8	140.2 ✓
" "	64°50	630	-1°03'	630	-11.5	142.5
	61°05	690	-0° 22 10.0	690	-9.2	144.8
Fence	62°14	606	-0° 36 10.0	606	-10.1	143.9
"	65°35'	536	-1°20'	536	-12.6	141.4
"	69°05	454	-1°53	454	-15.0	139.0
"	71°25	376'	-2°48'	375	-18.4	135.6
"	74°27'	300'	-4°05'	298	-21.3	132.7
"	77°55	236'	-6°0'	230	-24.3	129.7
SLY End 'Cor	86°10'	174	-9°12'	171	-26.5	127.5
	75°20'	147	-10°35'	143	-26.5	127.5

Reading From 4A

Elev 154.0 HI = 5.2

Station	Radia	Az	V Δ	Horiz	diff Elev
E. edge Rd.	220	199°20	-11°38'	211	- 26.3
W " "	203'	209°15	-12°20'	194	- 43.2
~~E. " "~~	~~315'~~	~~206°12~~	~~-18°38~~		~~- 95.0~~
" " "	385'	206°10'	-7°12	379	- 48.1
W " "	465'	222°05'	-6°05	461	- 49.0
E. " "	545'	204°30'	-4°31'	542	- 42.7
	550	219°0	-5°28'	545	- 52.3
E. " "	655	202°45	-3°15'	653	- 37.1
E. " "	700	201°15	-2°33' 10.0	699	- 35.9
	470	216°55	-6°0	465	- 48.9
	480	209°0	-5°33'	475	- 46.2
	347	212°0	-7°35	344	- 45.4
	755	212°50	-2°24'	754	- 31.8
	796	210°12	-2°18'	794	- 31.9
	890'	224°50	-1°40	890	- 25.8
	925	222°15	-1°38	924	- 26.4
	625'	227°05'	-3°42	623	- 40.3
Control Pt # 3	467'	182°06	+4°12 10.0	465.	+ 29.8
	~~43'~~				

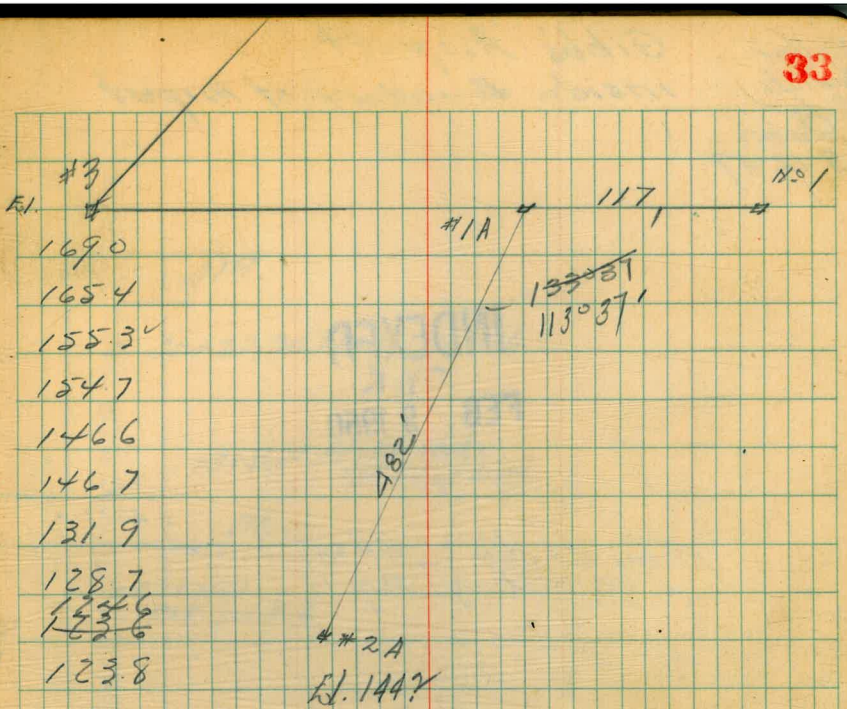
Toe El.	
127.7	Toe Slope
110.8	
?	= Toe Slope
105.9	" "
105.0	" "
105.3	
101.7	SW edge Rd up SE
116.9	
118.1	
105.1	SW Cor Island Safety
107.8	SE " "
108.6	NW " "
122.2	NE Cor Conc. Bridge
122.1	SE " " "
128.2	NW " " "
127.6	SW " " "
113.7	West edge Road to Bridge
183.8	
183.3	
0.5	

Readings From 2 A

Elev. 144.2 H.I. 4.9

Azimuths Lt. or Rt from #2A to #1A

Station	Stadia	Angle	V Δ +3°05	Horiz	diff
S edge Rd	407	R 31°35	R ~~31°35~~	406	+ 24.8
" "	405	R 28°08'	+3°	404	+ 21.2
" "	292	R 35°50'	+2°10'	292	+ 11.1
" "	290	R 31°40'	+2°04'	290	+ 10.5
" "	177	R 34°15'	+0°12'	177	+ 2.4
	183	R 28°23'	+0°05'	183	+ 2.5
S edge "	43	Lt 35°10	-17°25	42	- 12.3
N " "	87	Lt 38°40	-10°26'	84	- 15.5
N " "	145	Lt 79°0	-7°50'	144	-19.6
S " "	187	Lt 96°10	-6°19	185	- 20.4
N " "	197	Lt 86°06	-6°24'	195	- 21.8
N " "	290	Lt 90°51'	-4°48'	288	- 24.1
N " "	356	Lt 89°	-4°05	353	- 25.2
Pole Hub No 3	184	Lt 53°40	-1°07	184	- 3.6
	494	Lt 50°31	+4°32	491	+ 39.0
Toe	145	Lt 51°40	-5°40	144	- 14.3
Toe	193	Lt 11°	11.7	193	- 6.8
	112	Lt 41°45	-7°45'	109	- 18.7
	157'	Lt 6°20	-4°45'	156	- 13.0
	180	Rt 8°0	-2°50'	180	- 8.9
	253	Rt 23°50'	-0°30	253	- 2.2

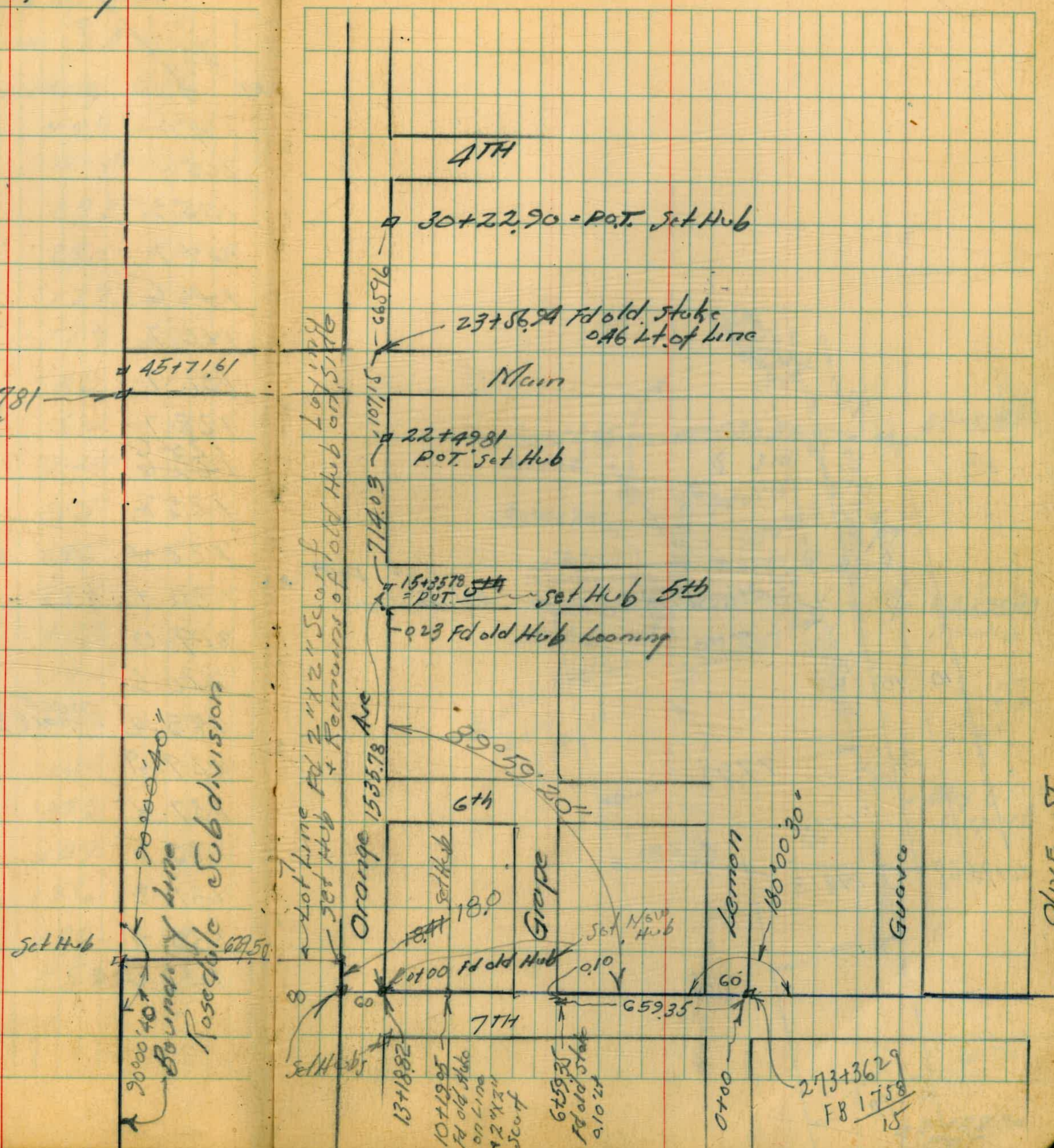


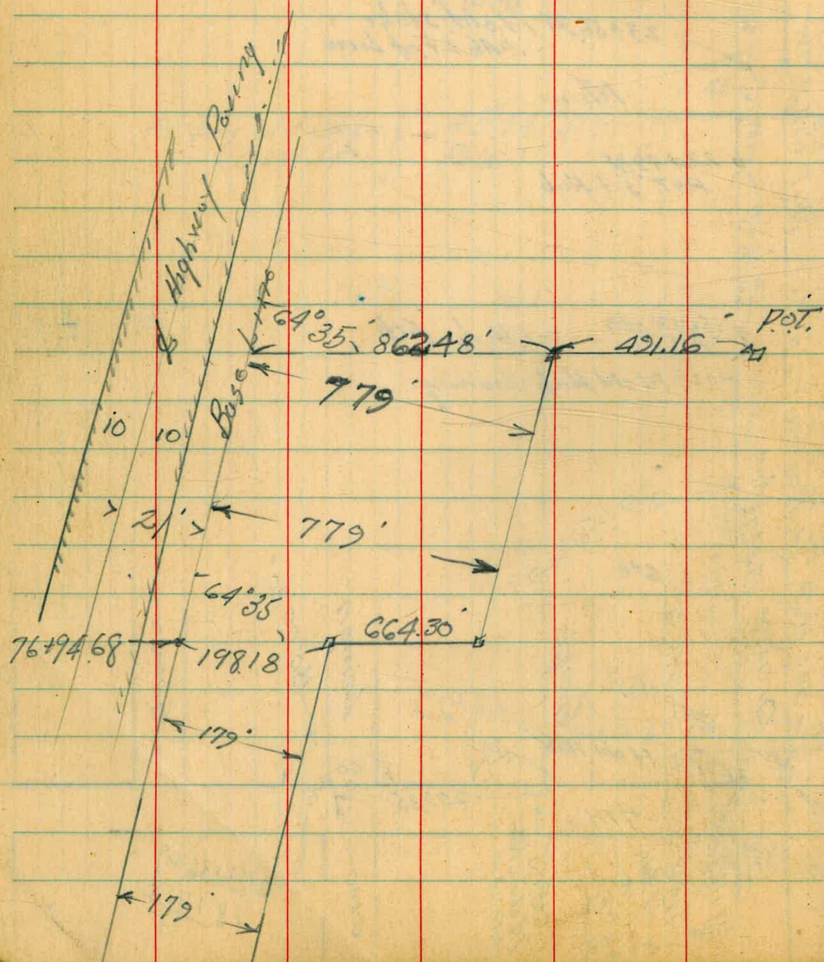
El.	
169.0	
165.4	
155.3	
154.7	
146.6	
146.7	
131.9	
128.7	
~~132.6~~	
123.8	
122.4	Toe Slope
120.1	
119.0	
140.6	
183.2	Check 183.3
129.9	
137.4	
125.8	
131.2	
135.3	
142.0	

Walker
Hedricks
Becker
Johnson
5-12-47

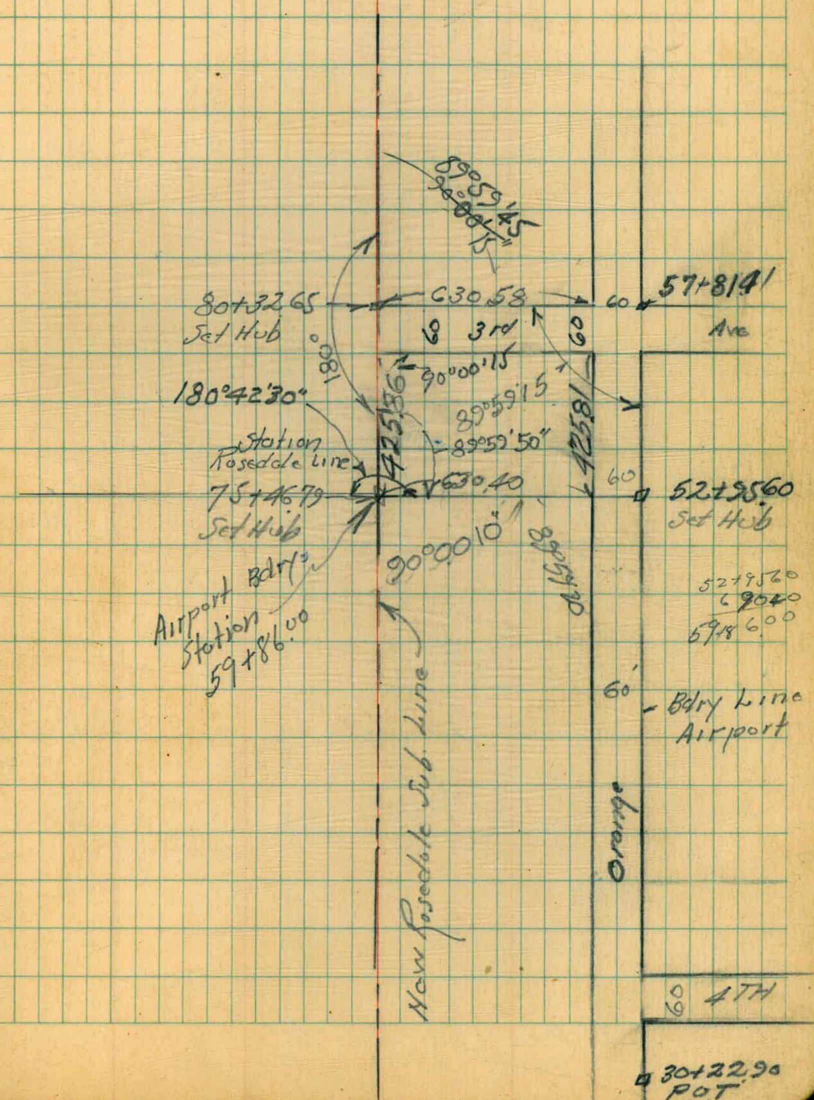
Gibb's Airport
inside Boundary of Airport

Fd very old stake 0.10' Lt } 45+4781 Page 15

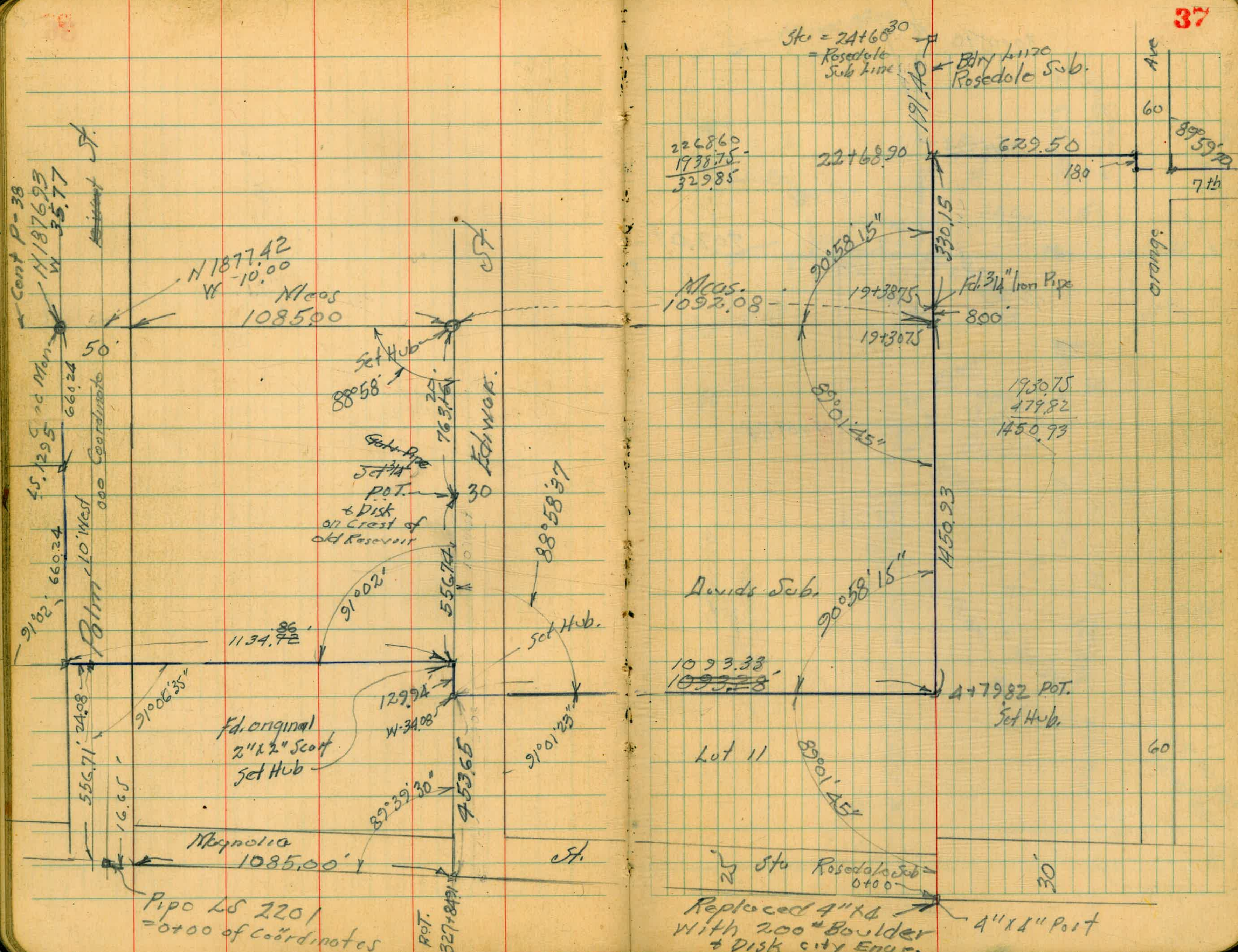

45+71.61
Set Hub
4TH
30+22.90 = P.O.T. Set Hub
23+56.A Fd old stake 0.46 Lt. of Line
Main
22+4981 P.O.T. Set Hub
15+3578 = P.O.T. Set Hub 5th
0.23 Fd old Hub Leaning
89°59'20"
6th
Lot Line Fd 2"x2" S.c of Old Hub on Lot Line
Orange Ave
18.0
Grape
Set New Hub
Fd old Hub
0+00
7TH
659.35
60
Lemon
180°00'30"
Guava
Olive ST
Boundary Line
Rosedale Subdivision
90°00'40"
669.50
Set Hubs
13+18.82
10+19.05 Fd old Stake on Line 2"x2" S.c of
6+59.35 Fd old Stake 0.10 Lt
0+00
273+3629
FB 1758 15

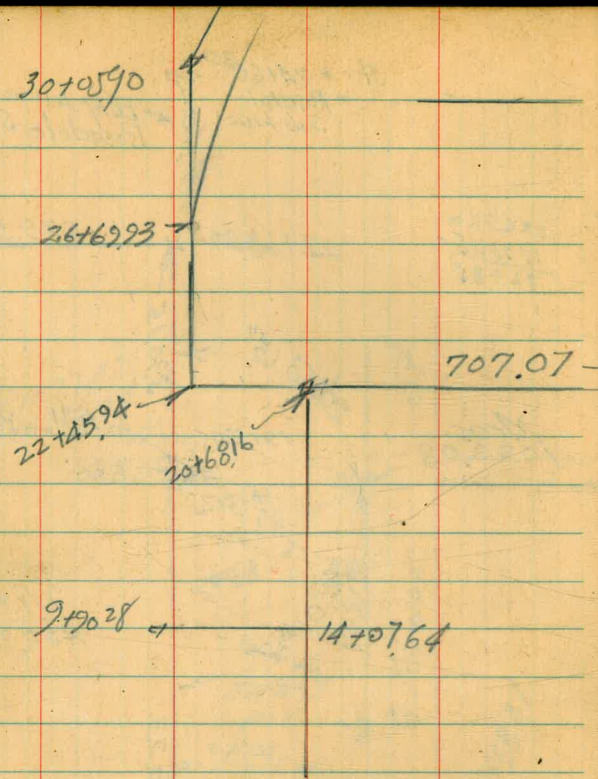


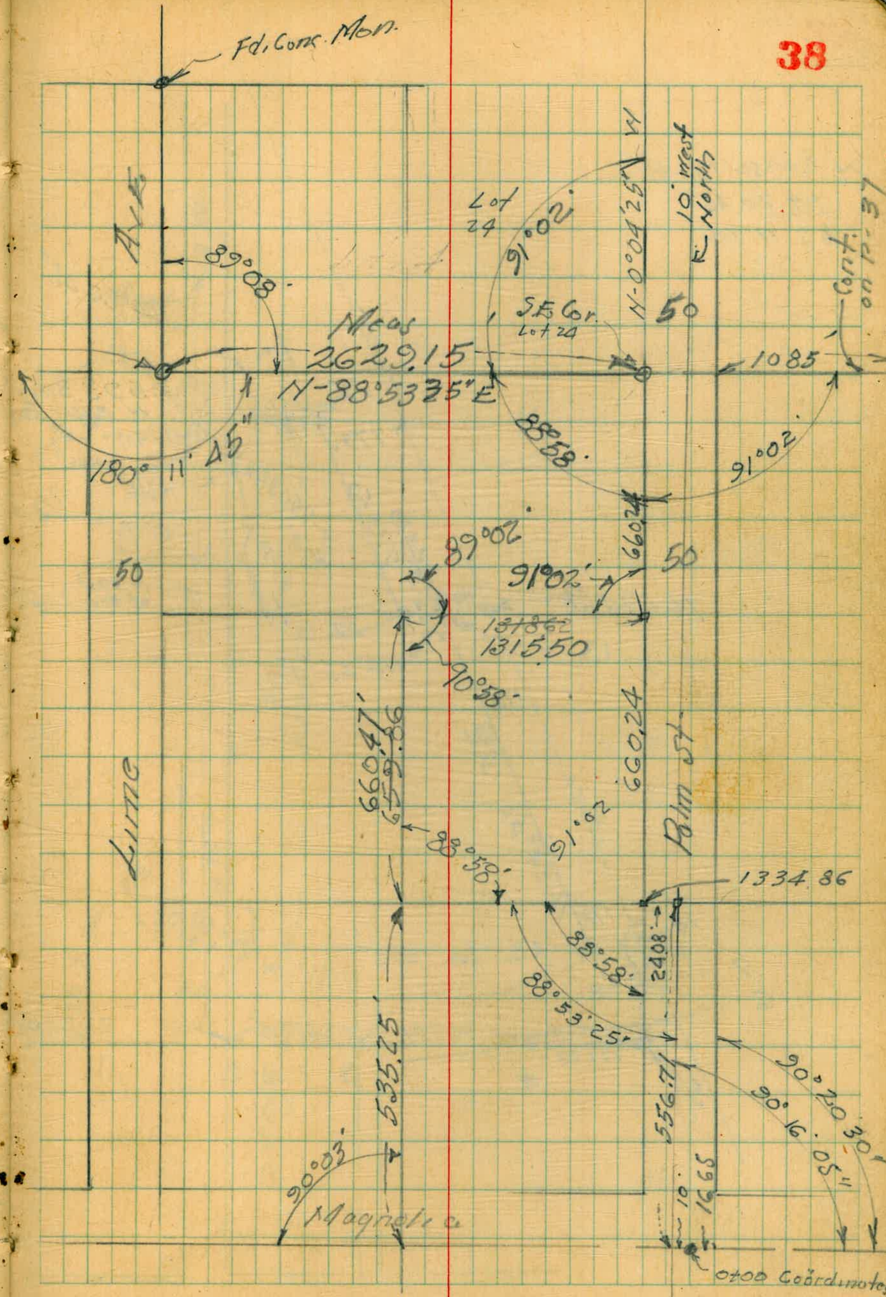
℄ Highway Paving
Base
64°35'
862.48'
491.16'
P.O.T.
779'
10
10
21'
779'
64°35'
76+94.68
198.18
664.30'
179'
179'

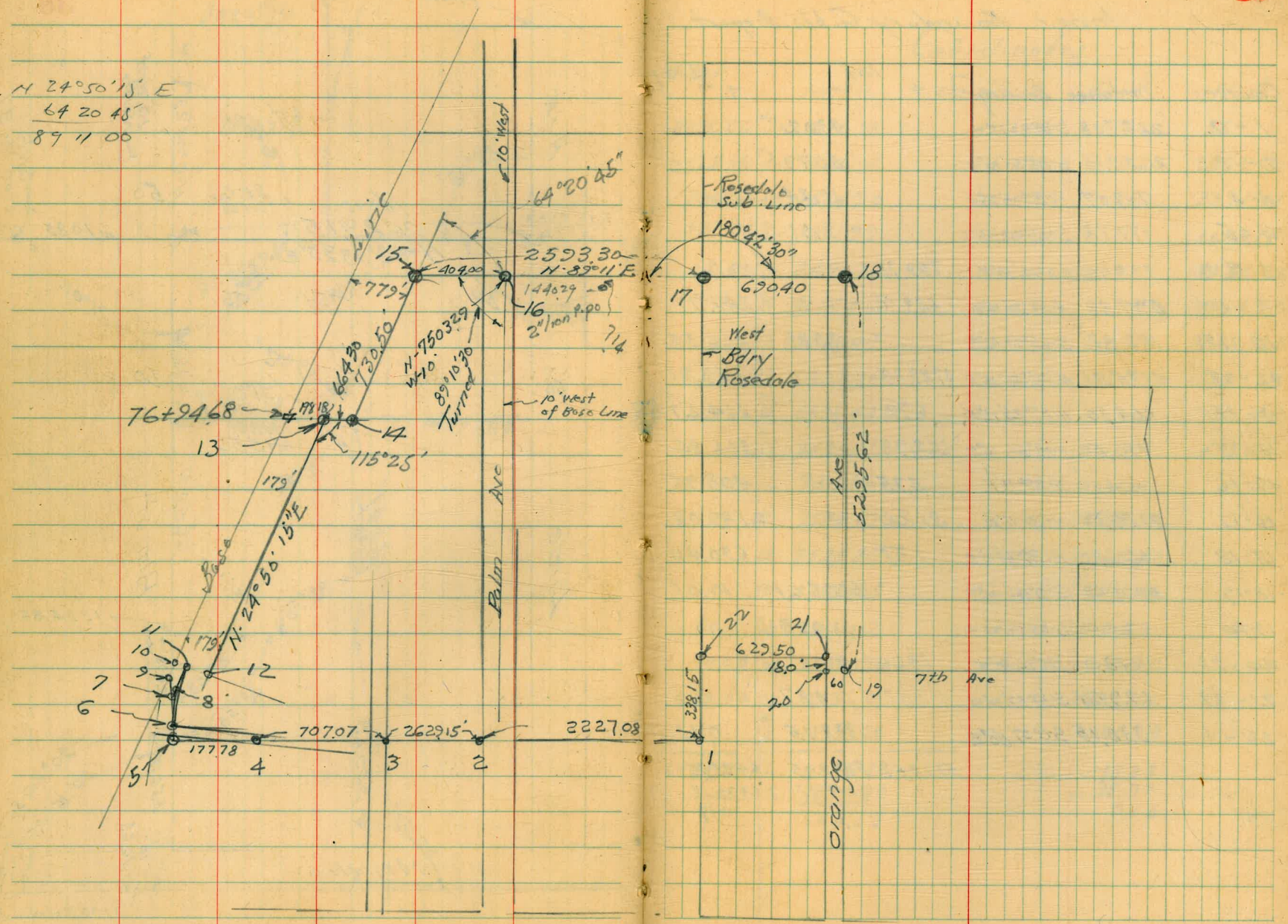


89°59'45"
80+32.65
Set Hub
630.58
60
57+81.41
3rd
Ave
60
180°
90°00'15"
180°42'30"
89°59'15"
89°59'50"
Station
Rosedale Line
425.36
425.81
75+46.79
Set Hub
630.40
60
52+95.60
Set Hub
90°00'10"
Airport Bdry's
Station
59+86.00
52+95.60
6 90.40
59+86.00
60'
Bdry Line
Airport
New Rosedale Sub. Line
Orange
4TH
60
30+22.90
P.O.T.


Cont P-38
N 187693
W 35.77
N 1877.42
W -10.00
Meas
1085.00
50'
Std Mon
66.24
45.1295
660.24
91°02'
10' West
000 Coordinate
Palm
1134.86
Set Hub
88°58'
25
763.76
Edinger St.
Set 1/4" POT.
& Disk
on Crest of
old Reservoir
30
88°58'37"
91°00'2'
556.74
Set Hub.
129.94
W-34.08
91°06'35"
24.08
Fd. original
2"x2" Scott
Set Hub
556.71'
16.65'
89°39'30"
453.65
91°01'23"
Magnolia
1085.00'
St.
Pipe LS 2201
=0+00 of Coordinates
P.O.T.
327+84.91
Sta = 24+68.30
= Rosedale Sub Line
Bdry Line
Rosedale Sub.
191.40
226860
193875
32985
22+68.90
629.50
180
Ave
60
89°59'20"
7th
330.15
90°58'15"
Meas.
1092.08
19+38.75
Fd. 3/4" Iron Pipe
800
19+30.75
orange
89°01'45"
193075
47982
1450.93
1450.93
Davids Sub.
90°58'15"
1093.33
4+79.82 POT.
Set Hub.
Lot 11
89°01'45"
60
25
Sta
Rosedale Sub
0+00
30
Replaced 4"x4
With 200# Boulder
& Disk City Engr.
4"x4" Post


30+05.90
26+69.93
22+45.94
20+68.16
707.07
9+90.28
14+07.64


Fd. Conc. Mon.
Ave
89°08'
180° 11' 45"
Meas
2629.15
N-88°53'35"E
Lot 24
91°02'
N-0°04'25"W
10' west
North
SE Cor. Lot 24
50
1085
88°58'
91°02'
Cont. on p. 37
89°02'
91°02'
660.24
50
1318.62
1315.50
90°58'
660.47
659.86
660.24
Lime
Palm St.
88°58'
91°02'
1334.86
88°58'
88°53'25'
2408
535.25
556.71
90°20'30"
90°16'05"
90°03'
Magnetic
10
16.65
0+00 Coördinates


N 24°50'15" E
64 20 45
89 11 00
Base Line
10' West
64°20'45"
15
2593.30
N. 89° 11' E.
779'
40.00
144.29
16
2" Iron 8.00
714
N. 750329
W 10.
89°10'30"
Turned
64.39
120.50
76+94.68
179.18
14
13
115°25'
179'
N. 24°50'15" E
Base
10' west of Base Line
Balboa Ave
11
10
9
12
7
8
6
179'
707.07
262.15'
2227.08
177.78
5
4
3
2
1
Rosedale Sub. Line
180°42'30"
17
690.40
18
West Bdry Rosedale
Ave
5295.62'
2"
21
629.50
180'
20
60
19
77th Ave
338.15'
Orange

Bearings & Dist. etc.

Inner Boundary Gibbs Airport

Courses	Distance	Bearing	Lat +	Lat −	Dep +	Dep −
1 - 2	2227.08	S-88°53'35"W		43.02		
2 - 3	2629.15	S-88°53'35"W		50.79		
3 - 4	707.07	S-89°05'20"W		11.24		
4 - 5	177.78	S-89°03'45"W		2.91		
5 - 9	759.76	N 0°16'15"E	759.75			
9 - 10	597.38	N-24°30'15"E	543.56		247.77	
10 - 12	182.82	S-65°29'45"E		75.83	166.35	
12 - 13	4175.51	N-24°30'15"E	3789.29		1753.91	
13 - 14	664.30	N-89°25'15"E	6.72		664.27	
14 - 15	730.50	N-24°50'15"E	662.93		306.84	
15 - 16	404.00	N-89°11'E	5.75		403.96	
16 - 17	2189.30	N-89°11'E	31.20		2189.08	
17 - 18	690.40	N-89°53'10"E	1.37		690.40	
18 - 19	5295.62	S 0°06'30"E		5295.61	10.01	
19 - 20	60.0	S-89°52'30"W		0.13		
20 - 21	18.0	N 0°06'30"W	18.00			
21 - 22	629.50	S-89°52'30"W		1.37		
22 - 1	338.15	S 0°07'50"E		338.15	0.77	
			5818.57	5819.05	6433.36	
				5818.57	6433.18	
				0.48	0.18	

Coördinates

Dep. −		North	South	East	West
2226.66	#2 =	1876.93			35.77
2628.66	#3 =	1826.14			2664.43
706.98	#4 =	1814.90			3371.41
177.76	#5 =	1811.99			3549.17
3.59	#9	2571.74			3552.76
	#10	3115.30			3304.99
	#12	3039.47			3138.64
	#13	6828.76			1384.73
	#14	6835.48			720.46
	#15	7498.41			413.62
	#16	7503.29			10.00
	17	7534.49		2179.08	
	18	7535.86		2869.48	
	19	2240.25		2879.49	
60.0	20	2240.12		2819.49	
0.03	21	2258.12		2819.46	
629.50	22	2256.75		2189.96	
	#1	1918.60		2190.73	
6433.18	2	1875.58		35.93	
	#2	1876.93		35.77	
		1.35		0.16	

Walker Johnson Pope Crawford	Levels	for	Traverse	#2	
57+50	⊡ #34			3.40	374.27
T.P.		10.81	377.67	11.09	366.86
49+37	Δ Rt ⊡ #33			4.75	373.20
T.P. 46+35	⊡ #32	6.40	377.95	5.55	371.55
T.P. 41+00	Δ Pt. Lt ⊡ #31	5.96	377.10	11.75	371.14
38+00	⊡ #30			8.64	
T.P.		2.29	382.89	10.85	380.60
30+00	⊡ #29			3.13	
T.P.		1.25	391.45	10.03	390.20
26+37.8	⊡ #28			5.42	
T.P. 23+37.8	Δ Pt. Lt ⊡ #27	6.67	400.23	6.15	393.56
20+00	⊡ #26 Δ Rt.			4.88	
T.P.		3.65	399.71	9.77	396.06
13+00	⊡ #25			5.19	
T.P. 10+00	⊡ #24	6.72	405.83	2.26	399.11
7+00	⊡ #23			9.49	
T.P.		4.41	401.37	12.67	396.96
T.P.		0.86	409.63	8.79	408.77
0+56	⊡ #22			6.59	
0+00	⊡ #21			5.72	
		5.93	417.56		411.63

T.P. #5 F.B. #2007-20

Alley Catalina Villas. X-Sec. for Grade. Est.

Between Alicia + Tennyson
Wells to Catalina.

Sommermeyer
McCoy
Allen
Bunch

2-28-50
W.O. 25020

INDEXED
M. K.
MAY 1 1950

■ = Fd. Mon. Tie sheet 740
● = Fd. L+T., or pipe, or disk, as noted.
□ : Set. ½ hub + disk

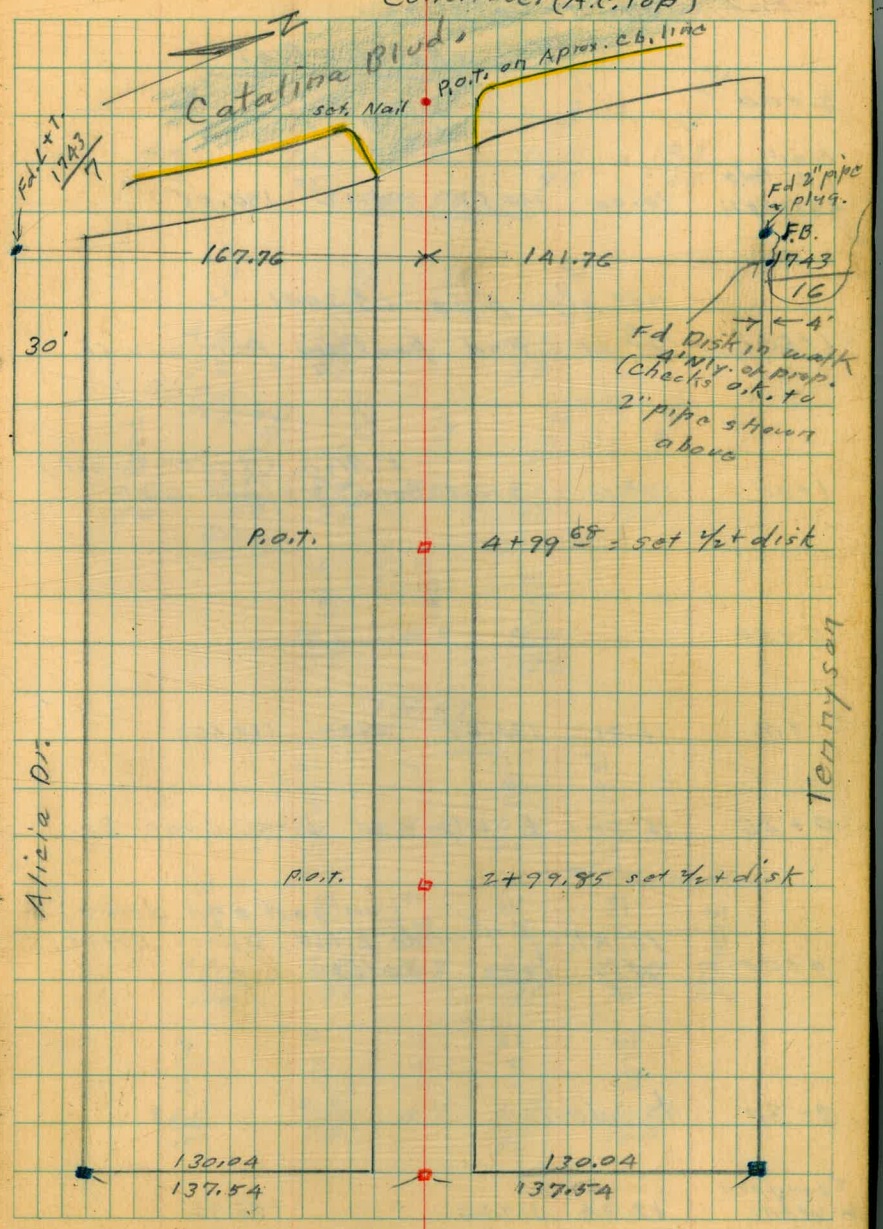
℄ of alley established on mean of Nly. line Alica Dr. + Sly. line Tennyson.

F.B. 1743
Map 1892 - sheet 1
T.P. Book # 26

Reduced 3-1-50 P.V.S.

1

42



Alley Between Alicia + Tennyson

From Wells to Catalina

Sketch - P. 42

2+00				
Nail T.P. Pole A93505H	10.00	140.55	0.12	130.55
	75 Rt. = pipe - LS 2001.			
1+50	7 8 Lt. = End footing for wall.			
1+00	7 Lt. = Start Conc. + block wall 5' High. (Under. Const.)			
0+50				
T.P.	12.01	130.67	0.60	118.66
0+26	16' Rt. = ℄ Wly end E+W. Conc. Dr.			
0+00 =	16' Rt. = ℄ 7' wide E+W. Conc. Drive (on east end drive) Wly. line Wells			
0-30 =	℄ Wells			
Tennyson + Wells. S.W. Mon.	12.34	119.26	—	106.92

℄

43

136.2 / 4.4 / 50 — 131.0 / 9.6 / 75 — 130.3 / 10.3 — 130.1 / 10.5 / 75 — 127.8 / 13.3 / 50

140.55

126.1 / 4.6 / 75 — 127.9 / 2.8 / 75 — 127.6 / 3.1 — 126.3 / 4.4 / 75

Base of Footing

129.2 / 1.5 / 50 — 122.1 / 8.1 / 75 Base wall — 123.7 / 7.0 / 75 — 123.2 / 7.5 — 122.6 / 8.1 / 75 — 119.0 / 11.7 / 50

120.1 / 10.6 / 75 — 120.0 / 10.7 — 119.7 / 11.0 / 75

130.67

119.2 / 0.1 / 75 — 118.3 / 1.0 — 118.1 / 1.2 / 75 — 119.0 / 0.25 / 16 at Gar. on Floor.

122.5 / +3.2 / 100 — 117.3 / 2.0 / 75 — 116.0 / 3.3 — 115.1 / 3.8 / 75 — 114.8 / 4.40 / 16 — 109.8 / 9.5 / 100

121.3 / +2.0 / 100 — 115.0 / 4.3 / 75 — 114.6 / 4.7 — 114.0 / 5.3 / 75 — 109.8 / 11.5 / 100

119.26

T.P. 0.40 127.93 13.02 127.53

Note - Ground east of wall at 50' Lt. is Level with top of wall. Ground west of wall is 2° below top of wall

also: ℄ N.+S. wall

5+00 $7\frac{6.5}{}$ Lt. = start 8" wide Conc. Ret. wall.

4+50 $7\frac{8}{}$ Lt. = End brick wall on Conc. footing

4+00 $7\frac{7}{}$ Lt. = Start 5' High brick wall on conc. footing

3+50

3+00

2+50

130.6 / 10.0 / 50 — Top of wall

127.1 / 13.5 / 8.4 — Base of wall

128.0 / 12.6 / 8.4 — Ground Inside of wall

130.2 / 10.4 / 7.6.5 — Top of wall

130.1 / 10.5 / 7.5

130.0 / 10.6

130.5 / 10.1 / 7.5

131.1 / 9.5 / 50

130.6 / 10.0 / 7.8 — Base of Footing

132.0 / 8.6 / 7.5

131.9 / 8.7

131.7 / 8.9 / 7.5

134.1 / 6.5 / 50

133.5 / 7.1 / 7.7 — Bottom of footing

134.5 / 6.1 / 7.5

133.8 / 6.8

133.4 / 7.2 / 7.5

133.3 / 7.3 / 50

136.2 / 4.4 / 7.5

135.7 / 4.9

135.1 / 4.9 / 7.5

138.0 / 1.8 / 50

136.6 / 4.0 / 7.5

136.0 / 4.6

134.9 / 5.7 / 7.5

132.5 / 8.1 / 50

134.5 / 6.1 / 7.5

134.0 / 6.6

133.1 / 7.5 / 7.5

140.55

5+99 $7\frac{7}{}$ Lt. = end Conc. Ret. wall

5+90 $7\frac{7}{}$ Lt. = start Conc. Ret. wall

5+65 8' Rt. = start Conc. block wall

30' Lt. of ℄.
Ord. to east = level with top of wall
" " west 4' below " " "

5+50 $7\frac{3}{}$ Lt. = End conc. Ret. wall

5+44 $7\frac{3}{}$ Lt. = Footing + $1\frac{5}{}$ High Ret. wall

5+30 $7\frac{6}{}$ Lt. = conc. footing for wall

℄

121.9 — 6.0 / 50 — Ord

121.9 — 6.0 / $7\frac{8}{}$ — Top. wall + Ord, Tr. So.

119.9 — 8.0 / $7\frac{7}{}$ — Base wall

122.2 — 5.7 / $7\frac{7}{}$ — Top of wall.

120.8 — 7.1 / $7\frac{7}{}$ — Base of wall

126.5 — 1.4 / $7\frac{5}{}$

122.9 — 5.0 — base of wall 8' Rt.

127.2 — 0.7 / 8 — top of wall

127.5 — 0.4 / 30 — Top of wall + Ord to East.

127.48 — 0.45 / $7\frac{4}{}$ — Top of wall

124.6 — 3.3 / $7\frac{3}{}$ — Base Footing + Ord.

125.0 — 2.9

125.9 — 2.0 / $7\frac{5}{}$

126.1 — 1.8 / $7\frac{3}{}$ — Base of Footing

127.1 — 0.2 / $7\frac{7}{}$ — Top of Footing

127.1 — 0.8 / $7\frac{6}{}$ — Base of Footing

127.93

6+78 7.4 Rt. = Start. Conc. block wall

6+50 8.2 Lt. start. Conc. Ret. wall
8.1 Rt. = end Conc. block Ret. wall.

T.P. 1.13 116.90 12.16 115.77

grd. inside of wall level with top of wall.

6+14 8.2 Rt. = start Conc. Block Ret. wall

Cont.

= ℄ N.+S. Conc. block wall
7.7 Rt. = End Conc. block wall also
6+00 7.7 Lt. = ℄ N.+So. Conc. block wall

111.8 / 5.1 / 7.4 Grd
110.4 / 6.5 / 7.4 Base
113.8 / 1.1 / 7.4 Top

113.7 / 3.2 / 8.2 Top wall
112.9 / 4.0 / 8.0 Base of wall
114.5 / 2.4 / 7.5
114.5 / 2.4
114.5 / 2.4 / 7.5
113.5 / 3.4 / 8.1 Base wall
119.9 / +3.0 / 8.1 Top wall + grd. inside of wall

116.90

117.1 / 10.2 / 8.2 Base
119.9 / 8.0 / 8.2 Top

118.8 / 9.1 / 30 Ground To West
121.7 / 6.2 / 30 Top of wall + Grd To east
127.4 / 0.5 / 30 Grd. east of wall + Top of wall
121.0 / 6.9 / 30 Grd. west of wall

122.0 / 5.9 / 7.7 Top of wall + Grd. to South
118.7 / 9.2 / 7.2 Base wall
119.9 / 8.0 / 7.5
120.2 / 7.7
120.6 / 7.3 / 7.5
120.0 / 7.9 / 7.7 Base wall
121.0 / 0.9 / 8.0 Top of wall + Grd East of N.+S. wall

127.93

8+35 7^{5} Lt. = start alley Ret. Cb. + pavement.

8+00 7^{6} Rt. = End Conc. block wall.

T.P. 0.20 104.10 13.00 103.90
Nail Pole # 493501H.

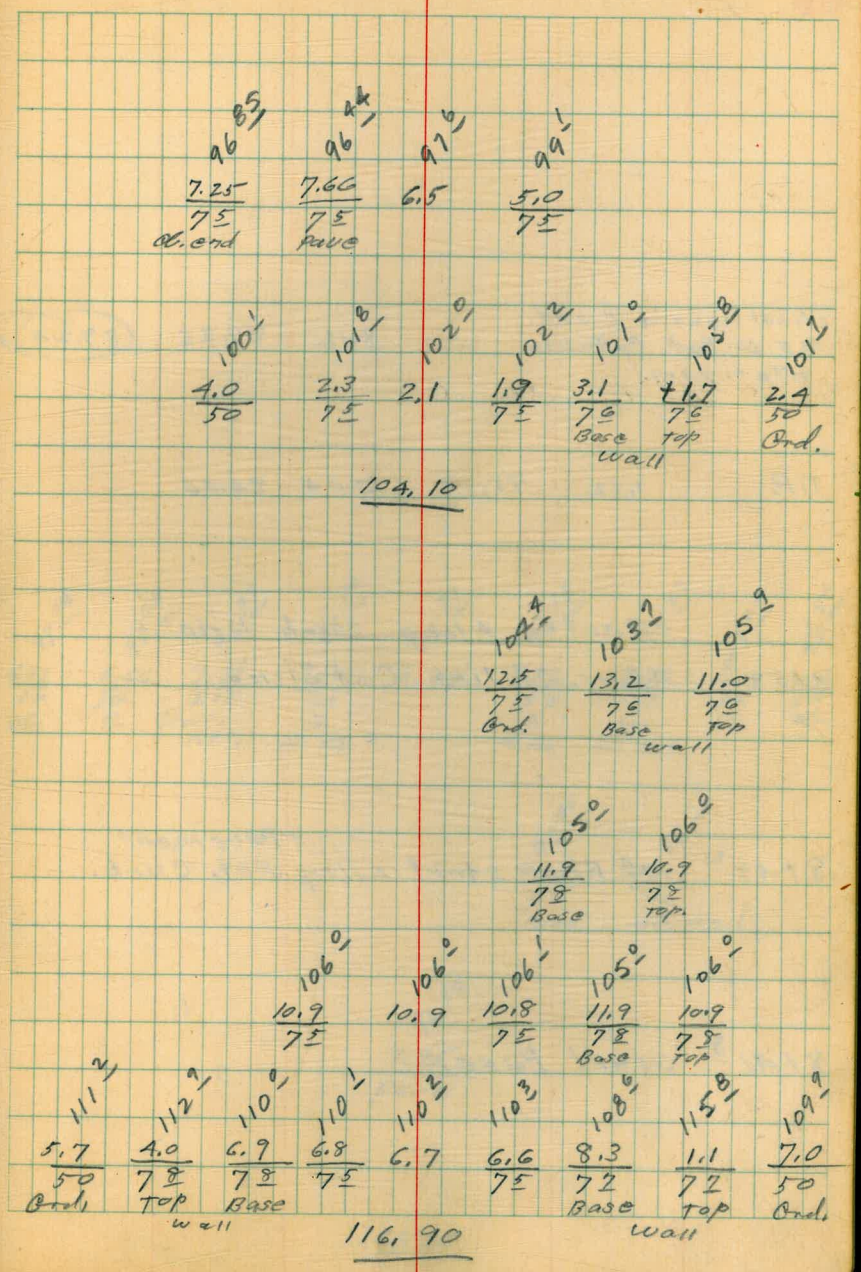
7+74 7^{6} Rt. = start Conc. block wall

7+62 7^{8} Rt. = End Conc. block wall.

7+50 7^{8} Rt. = start Conc. block wall.

7^{8} Lt. = End Conc. Ret. wall.

7+00 7^{2} Rt. = end Conc. block Ret. wall.



Chisel square E. end. N.E. ch. Ret. Catalina + Tennyson		8.12	87.26	(87.24)
T.P.	1.32	95.38	10.04	94.06

Section Along curb line

8+58.9 = Aprox. Ch. line Catalina

8+48.2 7.4 Rt. = start Alley + Pavement Ret. Curb.

8+41.8 start Pave.

97.98	97.94	96.77	96.10	95.21	94.78	95.27	93.03	93.54
6.12	6.66	7.33	8.00	8.89	9.32	8.83	11.07	10.56
50	50	21.5	21		11.2	11.5	50	50
ok.	G	Check. Ret.	G. ok. Rt.		G. ok. Rt.	Ch. Ret.	G	ok.

95.90	96.09
8.20	8.01
7.4	7.2
pave	ok. end.

96.15
7.95
Pave

10A.10

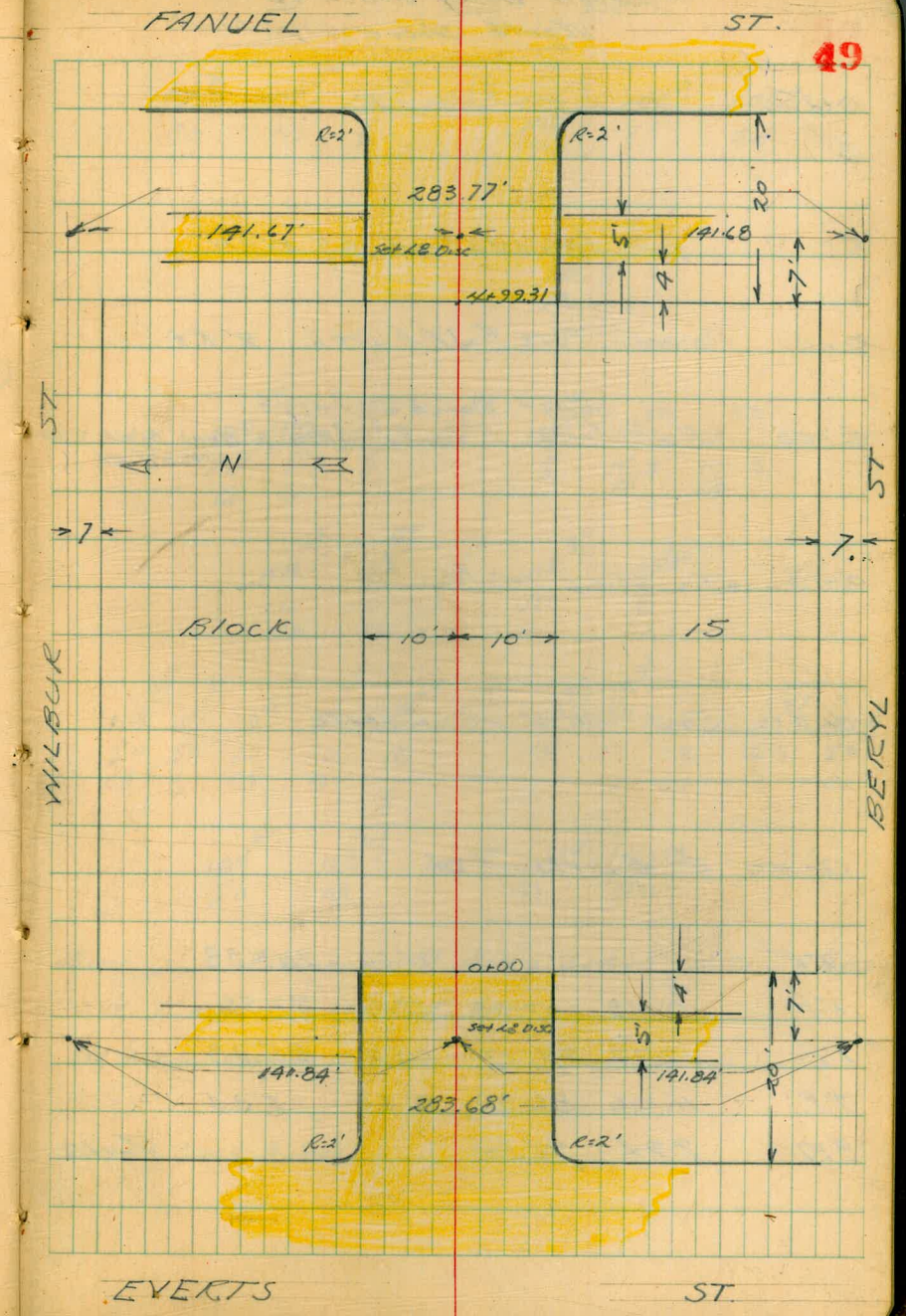
7-27-50

Hendricks
Johnson
Greer
Crawford
NO # 25020

X SECTION 20 ALLEY

BLOCK 15 NO. SHORE HIGHLANDS

INDEXED
JUL 28 1950



Levels Alley Block 15
North Shore Highlands

0+25

0+10 for foundation of wall

0+01 Power Pole #JPA 1202 9' Rt.

Edge Conc. Paving
0+00 East Line Everts (Beg. 7' Conc. Block wall 10.32' Rt.

0-18 ECs of Cb Rds.

0-20 East Cb Line Everts

0-40 ℄ Everts St.

TP			7.66	103.33
T.P.	10.43	107.99	0.61	97.56
T.P.	12.79	98.17	1.52	85.38
TP	11.06	86.90	0.50	75.84
B.M	9.94	76.34		

66+40

East 7' Line Everts & Alley Blk 15 N. Shore Highlands

S.W. 7' L&T Beryl & Everts

S.W. 7' L&T Law & Everts

S.W. B.P. Coss & Law

Alley Block 15 Cont'd

2+00 Power Pole # JPA 1240 9' Rt.

1+76 ℄ 4.5 Conc Walk 10.5' Lt.

1+50

1+32 End 6" Conc. Ret. Wall 10' Lt

1+00 { Beg. 6" Conc. Ret. Wall 10' Lt
End Conc. Block Wall 10.4' Lt.
Power Pole 8.8' Rt. Wall 10.2 Rt

0+79 ℄ 9' Conc. Dr. 10.8 Rt.

0+78 ℄ 3' Conc. Walk 9.7 Lt.

0+50 Beg. Conc. Block Wall on Lt. 9.9'

℄

110^{8} 110^{2} 109^{4} 109^{3} 108^{10} 108^{9} 108^{5} 108^{3}
20 11 10 10.6 Fdn 10.8 Ground at Wall 12 20

110^{28}
10.5
Walk

109^{7} 109^{7} 109^{1} 109^{0} 108^{9} 107^{6} 107^{6}
20 13 10 10 11 20

109^{93} 108^{44}
10 10
Top of Wall Fdn.

110^{2} 109^{95} 108^{27} 108^{5} 108^{6}
20 10 10 10
Top Wall Fdn. of Ret Wall

108^{38}
10.8

108^{58} 108.46
15 9.7

109^{8} 108^{1} 107^{74} 107^{4} 107^{9} 106^{8} 107^{3} 107^{2}
20 9.9 9.5 Fdn. of Wall 10.2 Ground 10.2 Fdn of Wall 11 20

Alley Blk 15 Cont'd

3+88 ℄ 3' Conc. Walk 10.6 Rt.

3+50

3+00 Power Pole # PA 1260 9.4' Rt.

2+70

2+50 Sewer M.H. on Line

2+45

2+20

℄

111.9 / 10.6

111.7 / 20 111.2 / 10 110.5 / 10 110.3 / 20 110.1

110.8 / 20 110.5 / 10 110.0 / 10 109.4 / 20 109.2

110.9 / 20 110.4 / 10 109.6 / 10 109.6 / 11 109.3 / 20 109.1

110.0 / East Rim

111.4 / 20 111.3 / 11 111.0 / 10 110.5 / 7 110.4 / 10 109.4 / 11 108.9 / 20 108.9

110.7 / 20 110.6 / 11 110.0 / 10 109.3 / 20 108.6 / 20 108.6

Alley Block 15 Cont'd

BM			1.93	125.12	(125.08 ? 124.94 ?)
T.P.	11.32	127.05	3.08	115.73	
T.P	7.55	118.81	5.61	111.26	
TP	5.70	116.87	10.03	111.17	
T.P.	5.56	121.20			115.64
5+39.31					
5+19.31					
5+17.31	BCs of Rets				
$4+99^{.31}$	West Line Fanuel				
4+65					
4+37	℄ Double Garage				
4+00	Power Pole # PA1280 9.7' Rt.				

SW 7' L&T Ingraham ℄ & Beryl
SW 7' L&T Haines & Beryl
S.W. 7' L&T Gresham & Beryl
N.E. 7' L&T Fanuel & Beryl
(L& Disc West 7' Line Fanuel & ℄ Alley Blk 15)

118^{21} 50 | 116^{72} 10 | 116^{31} | 115^{89} 10 | 114^{26} 50

117^{95} 50 Cb | 117^{37} 50 G | 116^{61} 12 Cb | 115^{97} 12 G | 115^{81} 10 | 115^{45} | 115^{09} 10 | 114^{99} 12 G | 115^{69} 12 Cb | 113^{48} 50 G | 114^{07} 50 Cb

116^{51} 10 Cb | 115^{93} 10 G | 115^{48} | 115^{25} 10 G | 115^{71} 10 Cb

116^{67} 10 Cb | 116^{12} 10 G | 115^{60} | 115^{65} 10 G | 115^{90} 10 Cb

116^{6} 20 | 116^{1} 10 | 115^{9} | 116^{0} 10 | 115^{4} 20

115^{4} 20 | 115^{0} 10 | 114^{4} | 114^{2} 10 | 114^{18} 15.7 | 114^{50} 19.7

Ramp Floor

113^{6} 20 | 113^{2} 10 | 112^{7} | 112^{7} 10 | 112^{0} 11 | 111^{5} 20

	+	HI	-	Elev.
				0.01 Error
				284.82
			-4.01	284.81
			-4.31	284.51
T.P.	5.19	288.82	-5.60	283.63
T.P.	5.10	289.23	-5.03	284.13
			-4.08	285.08
T.P.	3.03	289.16	-5.36	286.13
			-4.51	286.98
T.P.	3.43	291.49	-6.39	288.06
			-4.93	289.52
T.P.	3.34	294.45	-4.60	291.11
T.P.	9.10	295.71	-5.33	286.61
			-6.09	285.85
T.P.	6.82	291.94	-0.60	285.12
			-6.90	278.82
T.P.	10.08	285.72	-5.04	275.64
T.P.	3.51	280.68	-7.84	277.17
			-7.62	277.39
T.P.			-8.64	276.37
	1.46	285.01		283.55

10+81.90 NAIL IN ASPHALT DRIVEWAY
CHecked ON NAIL ENTRANCE TO ZOO PARKING AREA.
18+19.95 DISK IN Cb. FRONT OF ZOO GATE #4 CAFE ENTRANCE
16+90.54 O&O NAIL IN DRIVEWAY S.E. OF Red Cross BLdg.
ANGLE POINT
15+00 LARGE NAIL IN DIRT WALK (10.9 FROM Cb. FACE)
14+14.30 NAIL IN ASPHALT WALK ENTRANCE TO Red CROSS BLdg.
13+00 LARGE NAIL IN DIRT WALK (9.8 FROM Cb. FACE)
12+00 LARGE NAIL IN DIRT WALK (6.6 FROM FENCE)
11+00 LARGE NAIL IN DIRT WALK (6.5 FROM FENCE)
10+00 LARGE NAIL IN DIRT WALK (6.5 FROM FENCE)
8+39 NAIL IN WALK BY GATE EAST OF BIRD CAGES
6+65 NAIL IN PAVING BETWEEN BIRD CAGES & REFRESHMENT STAND
6+20 NAIL IN PAVING. S.W. OF REFRESHMENT STAND
ON ROCK WEST SIDE OF ROAD
3+95 NAIL IN PAVING SOUTH OF SLOTH BEAR CAGE
3+40 NAIL. NAIL IN PAVING N.W. COR. Red Cross BLdg.
0+00 HUB EAST RIM OF FERN CANYON.
HUB By LITE POLE EAST RIM OF FERN CANYON
NAIL IN ℄ ROAD NORTH OF CAFE BLdg.
B.M. & Top Conc. Landing - West Cafe Entrance

Pull 300' Tape K+E 1/4"

Pull	Dist	Correct Dist
23.0#	100	100'
30#	200	199.97
30#	300'	299.82

100' Tape 3/8" Wide K+E

31#	100'	100'

on Ground 10# Flat Surface

Line 70+00 North 417.32 #60
Cont from PP 60.

2265	+	HI	−	ELEV	STA.
TP	5.69	423.46	5.47	417.99	
T.P.	7.70	425.69	4.29	421.40	
T.P.	5.46	426.86	4.10	422.76	
T.P	4.31	427.07	3.69	423.38	
T.P	5.21	428.59	4.30	424.29	

Rock

Hub 25+25 #64

Rock

Hub 18+15 #65

Rock

	+	HI.	-	Elev.
	2.57	418.09		415.52
T.P.	8.51 ~~2.57~~	421.03 ~~418.09~~	5.57	412.52
~~T.P.~~	~~8.51~~	421.03	2.93	418.10
T.P.	3.54	422.96	1.61	419.42
T.P.	3.15	422.14	3.97	418.99
T.P.	5.14	419.64	7.64	414.50
T.P.	4.69	420.72	3.61	416.03
T.P.	9.47	428.85	1.34	419.38
T.P.	3.21	430.08	1.98	426.87
T.P.	4.56	424.08	10.56	419.52
T.P.	9.12	426.03	7.17	416.91
T.P.	5.40	425.26	6.17	419.86
T.P.	6.26	422.80	8.82	416.44
T.P.	6.05	423.87	4.98	417.82
T.P.	5.11	423.77	5.21	418.66
T.P.	3.93	424.09	3.61	420.16
T.P.	2.74	422.74	4.09	420.00
T.P.	4.05	420.64	6.15	416.59
T.P.	2.26	420.14	2.76	417.88
			5.45	414.69
				414.71
				0.02

4511 Pole = 415.23

Mon'd. 414.71

BM Nail Pole #4526

Rock
Hub — 700 EAST 5000 NORTH — CONTROL #56
Rock
Hub — 1000 EAST 5000 NORTH — CONTROL #57
Rock
Hub — 1850 EAST 5000 NORTH — CONTROL #58
Rock
Hub — 3000 EAST 5000 NORTH — CONTROL #59
Rock
Rock
Rock
Rock
Hub — 2265 EAST 6000 NORTH — CONTROL #60
Hub — 1780 EAST 6000 NORTH — CONTROL #61
Rock
Hub — 945 EAST 6000 NORTH — CONTROL #62
Rock
Hub — 198 EAST 6000 NORTH — CONTROL #63
MONUMENT.

61 Walker Hendricks Becker Greer — 12-19-46 Temp = 68° — Etched

Test for Pull For 100' Tape

Unsupported

Dist.	Pull Lbs.
100	26

Supported

100	8

For 300' Tape Unsupported.

100	11#
150	11.5#
200	12#
250	13#
300	

300' Tape Unsupported

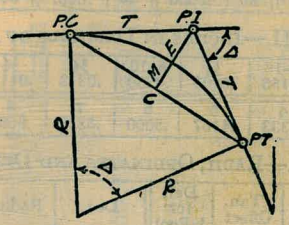
Dist	Pull	True Dist	Correction
100	~~30~~ 23#	100	~~+0.002 to be added~~
150	30#	150	-0.01 " "Subtracted
200	30#	200	-0.045 " " "
250	30#	250	-0.11 " " "
300	30#	300.000	-0.18 " " "

500' Tape Unsupported Temp 68°

100	15½"
200	21½"
300	24½"
400	31#
500	33#

3060
1093
1967

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES



CURVE FORMULAS

Radius = $R = \frac{50}{\sin. D/2}$ (1) Degree of Curve = D and $\sin. \frac{D}{2} = \frac{50}{R}$ (2)

Tangent = $T = R \tan \frac{\Delta}{2}$ (3) Length of Curve = $L = 100 \frac{\Delta}{D}$ (4)

Middle ordinate = $M = R(1 - \cos. \frac{\Delta}{2})$ (5) = $R \text{vers} \frac{\Delta}{2}$ (6)

External = $E = T \tan \frac{\Delta}{4}$ (7) = $R \div \cos. \frac{\Delta}{2} - R$ (8) = $R \text{exsec} \frac{\Delta}{2}$ (9)

Long Chord = $C = 2 R \sin. \frac{\Delta}{2}$ (10) Δ = Central Angle

EXPLANATION AND USE OF TABLES

Stations.—Given P. I. = Sta. 161+60.35 to find Sta. of P. C. and P. T. $\Delta = 62° 10'$ $D = 8° 20'$. From Table IV for 1° curve T = 3454.1 and $\div 8\frac{1}{3} = 414.49$ ft. From Table V correction = .36 or T = 414.85 ft. P. C. = Sta. P.I.—T = 157 + 45.50. Also from (4) L = 746.00 and P. T. = Sta. P. C. + L = 164+91.50.

Offsets.—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft. = 7.27 ft. Distance = 158—Sta. P. C. = 54.50, hence offset = $7.27 \ (54.50 \div 100)^2 = 2.16$ ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2 \div (2 \times 688.26) = 2.16$ ft.

Deflections.—Deflection angle = ½ D for 100 ft., ¼ D for 50 ft., etc. For c ft. = (in minutes) .3 x C x D° or = defl. for 1 ft. from Table III x C. For Sta. 158 of above curve = .3 x 54.5 x $8\frac{1}{3}$ = 136.2′ or 2° 16.2′, or = 2.50 x 54.5 = 136.2′ from Table III. For Sta. 159 deflection angle = 2° 16.2′ + 8° 20′ ÷ 2 = 6° 26.2′, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 115.37. For from Table IV for 1° curve E = 960.6 for 8° 20′ = $960.6 \div 8\frac{1}{3} = 115.27$ and from Table V correction = .10 or E = 115.37 ft. Or suppose $\Delta = 32°$ and E is measured and found to be 42 ft. What is D? From Table IV E = 230.9 and ÷ 42 = 5.5 or D = 5° 30′.

Table I.—Minutes in Decimals of a Degree.

1′	.0167	11′	.1833	21	.3500	31′	.5167	41′	.6833	51′	.8500
2	.0333	12	.2000	22	.3667	32	.5333	42	.7000	52	.8667
3	.0500	13	.2167	23	.3833	33	.5500	43	.7167	53	.8833
4	.0667	14	.2333	24	.4000	34	.5667	44	.7333	54	.9000
5	.0833	15	.2500	25	.4167	35	.5833	45	.7500	55	.9167
6	.1000	16	.2667	26	.4333	36	.6000	46	.7667	56	.9333
7	.1167	17	.2833	27	.4500	37	.6167	47	.7833	57	.9500
8	.1333	18	.3000	28	.4667	38	.6333	48	.8000	58	.9667
9	.1500	19	.3167	29	.4833	39	.6500	49	.8167	59	.9833
10	.1667	20	.3333	30	.5000	40	.6667	50	.8333	60	1.0000

Table II.—Inches in Decimals of a Foot.

1–16	3–32	1/8	3–16	1/4	5–16	3/8	1/2	5/8	3/4	7/8
.0052	.0078	.0104	.0156	.0208	.0260	.0313	.0417	.0521	.0625	.0729

1	2	3	4	5	6	7	8	9	10	11
.0833	.1667	.2500	.3333	.4167	.5000	.5833	.6667	.7500	.8333	.9167

Table III.—Radii, Ordinates and Deflections.

Deg.	Radius	Mid. Ord.	Tan. Offset	Def. for 1 Foot	Deg.	Radius	Mid. Ord.	Tan Offset	Def. for 1 Foot
0° 10′	34377.5	.036	.145	0.05′	7°	819.02	1.528	6.105	2.10′
20	17188.8	.073	.291	0.10	20′	781.84	1.600	6.395	2.20
30	11459.2	.109	.436	0.15	30	764.49	1.637	6.540	2.25
40	8594.42	.145	.582	0.20	40	747.89	1.673	6.685	2.30
50	6875.55	.182	.727	0.25	8	716.78	1.746	6.976	2.40
1	5729.65	.218	.873	0.30	20	688.16	1.819	7.266	2.50
10	4911.15	.255	1.018	0.35	30	674.69	1.855	7.411	2.55
20	4297.28	.291	1.164	0.40	40	661.74	1.892	7.556	2.60
30	3819.83	.327	1.309	0.45	9	637.28	1.965	7.846	2.70
40	3437.87	.364	1.454	0.50	20	614.56	2.037	8.136	2.80
50	3125.36	.400	1.600	0.55	30	603.80	2.074	8.281	2.85
2	2864.93	.436	1.745	0.60	40	593.42	2.110	8.426	2.90
10	2644.58	.473	1.891	0.65	10	573.69	2.183	8.716	3.00
20	2455.70	.509	2.036	0.70	30	546.44	2.292	9.150	3.15
30	2292.01	.545	2.181	0.75	11	521.67	2.402	9.585	3.30
40	2148.79	.582	2.327	0.80	30	499.06	2.511	10.02	3.45
50	2022.41	.618	2.472	0.85	12	478.34	2.620	10.45	3.60
3	1910.08	.655	2.618	0.90	30	459.28	2.730	10.89	3.75
10	1809.57	.691	2.763	0.95	13	441.68	2.839	11.32	3.90
20	1719.12	.727	2.908	1.00	30	425.40	2.949	11.75	4.05
30	1637.28	.764	3.054	1.05	14	410.28	3.058	12.18	4.20
40	1562.88	.800	3.199	1.10	30	396.20	3.168	12.62	4.35
50	1494.95	.836	3.345	1.15	15	383.07	3.277	13.05	4.50
4	1432.69	.873	3.490	1.20	30	370.78	3.387	13.49	4.65
10	1375.40	.909	3.635	1.25	16	359.27	3.496	13.92	4.80
20	1322.53	.945	3.718	1.30	30	348.45	3.606	14.35	4.95
30	1273.57	.982	3.926	1.35	17	338.27	3.716	14.78	5.10
40	1228.11	1.018	4.071	1.40	18	319.62	3.935	15.64	5.40
50	1185.78	1.055	4.217	1.45	19	302.94	4.155	16.51	5.70
5	1146.28	1.091	4.362	1.50	20	287.94	4.374	17.37	6.00
10	1109.33	1.127	4.507	1.55	21	274.37	4.594	18.22	6.30
20	1074.68	1.164	4.653	1.60	22	262.04	4.814	19.08	6.60
30	1042.14	1.200	4.798	1.65	23	250.79	5.035	19.94	6.90
40	1011.51	1.237	4.943	1.70	24	240.49	5.255	20.79	7.20
50	982.64	1.273	5.088	1.75	25	231.01	5.476	21.64	7.50
6	955.37	1.309	5.234	1.80	26	222.27	5.697	22.50	7.80
10	929.57	1.346	5.379	1.85	27	214.18	5.918	23.35	8.10
20	905.13	1.382	5.524	1.90	28	206.68	6.139	24.19	8.40
30	881.95	1.418	5.669	1.95	29	199.70	6.360	25.04	8.70
40	859.92	1.455	5.814	2.00	30	193.18	6.583	25.88	9.00

Note. Chord Deflection=2 times tangent deflection.

Table IV.—Tangents and Externals to a 1° Curve.

Central Angle	Tangent	External	Central Angle	Tangent	External	Central Angle	Tangent	External
1°	50.00	.22	11°	551.70	26.50	21°	1061.9	97.57
10′	58.34	.30	10′	560.11	27.31	10′	1070.6	99.16
20	66.67	.39	20	568.53	28.14	20	1079.2	100.75
30	75.01	.49	30	576.95	28.97	30	1087.8	102.35
40	83.34	.61	40	585.36	29.82	40	1096.4	103.97
50	91.68	.73	50	593.79	30.68	50	1105.1	105.60
2	100.01	.87	12	602.21	31.56	22	1113.7	107.24
10	108.35	1.02	10	610.64	32.45	10	1122.4	108.90
20	116.68	1.19	20	619.07	33.35	20	1131.0	110.57
30	125.02	1.36	30	627.50	34.26	30	1139.7	112.25
40	133.36	1.55	40	635.93	35.18	40	1148.4	113.95
50	141.70	1.75	50	644.37	36.12	50	1157.0	115.66
3	150.04	1.96	13	652.81	37.07	23	1165.7	117.38
10	158.38	2.19	10	661.25	38.03	10	1174.4	119.12
20	166.72	2.43	20	669.70	39.01	20	1183.1	120.87
30	175.06	2.67	30	678.15	39.99	30	1191.8	122.63
40	183.40	2.93	40	686.60	40.99	40	1200.5	124.41
50	191.74	3.21	50	695.06	42.00	50	1209.2	126.20
4	200.08	3.49	14	703.51	43.03	24	1217.9	128.00
10	208.43	3.79	10	711.97	44.07	10	1226.6	129.82
20	216.77	4.10	20	720.44	45.12	20	1235.3	131.65
30	225.12	4.42	30	728.90	46.18	30	1244.0	133.50
40	233.47	4.76	40	737.37	47.25	40	1252.8	135.35
50	241.81	5.10	50	745.85	48.34	50	1261.5	137.23
5	250.16	5.46	15	754.32	49.44	25	1270.2	139.11
10	258.51	5.83	10	762.80	50.55	10	1279.0	141.01
20	266.86	6.21	20	771.29	51.68	20	1287.7	142.93
30	275.21	6.61	30	779.77	52.89	30	1296.5	144.85
40	283.57	7.01	40	788.26	53.97	40	1305.3	146.79
50	291.92	7.43	50	796.75	55.13	50	1314.0	148.75
6	300.28	7.86	16	805.25	56.31	26	1322.8	150.71
10	308.64	8.31	10	813.75	57.50	10	1331.6	152.69
20	316.99	8.76	20	822.25	58.70	20	1340.4	154.69
30	325.35	9.23	30	830.76	59.91	30	1349.2	156.70
40	333.71	9.71	40	839.27	61.14	40	1358.0	158.72
50	342.08	10.20	50	847.78	62.38	50	1366.8	160.76
7	350.44	10.71	17	856.30	63.63	27	1375.6	162.81
10	358.81	11.22	10	864.82	64.90	10	1384.4	164.86
20	367.17	11.75	20	873.35	66.18	20	1393.2	166.95
30	375.54	12.29	30	881.88	67.47	30	1402.0	169.04
40	383.91	12.85	40	890.41	68.77	40	1410.9	171.15
50	392.28	13.41	50	898.95	70.09	50	1419.7	173.27
8	400.66	13.99	18	907.49	71.42	28	1428.6	175.41
10	409.03	14.58	10	916.03	72.76	10	1437.4	177.55
20	417.41	15.18	20	924.58	74.12	20	1446.3	179.72
30	425.79	15.80	30	933.13	75.49	30	1455.1	181.89
40	434.17	16.43	40	941.69	76.86	40	1464.0	184.08
50	442.55	17.07	50	950.25	78.26	50	1472.9	186.29
9	450.93	17.72	19	958.81	79.67	29	1481.8	188.51
10	459.32	18.38	10	967.38	81.09	10	1490.7	190.74
20	467.71	19.06	20	975.96	82.53	20	1499.6	192.99
30	476.10	19.75	30	984.53	83.97	30	1508.5	195.25
40	484.49	20.45	40	993.12	85.43	40	1517.4	197.53
50	492.88	21.16	50	1001.7	86.90	50	1526.3	199.82
10	501.28	21.89	20	1010.3	88.39	30	1535.3	202.12
10	509.68	22.62	10	1018.9	89.89	10	1544.2	204.44
20	518.08	23.38	20	1027.5	91.40	20	1553.1	206.77
30	526.48	24.14	30	1036.1	92.92	30	1562.1	209.12
40	534.89	24.91	40	1044.7	94.46	40	1571.0	211.48
50	543.29	25.70	50	1053.3	96.01	50	1580.0	213.86

Table VIII.—Natural Trigonometrical Functions.

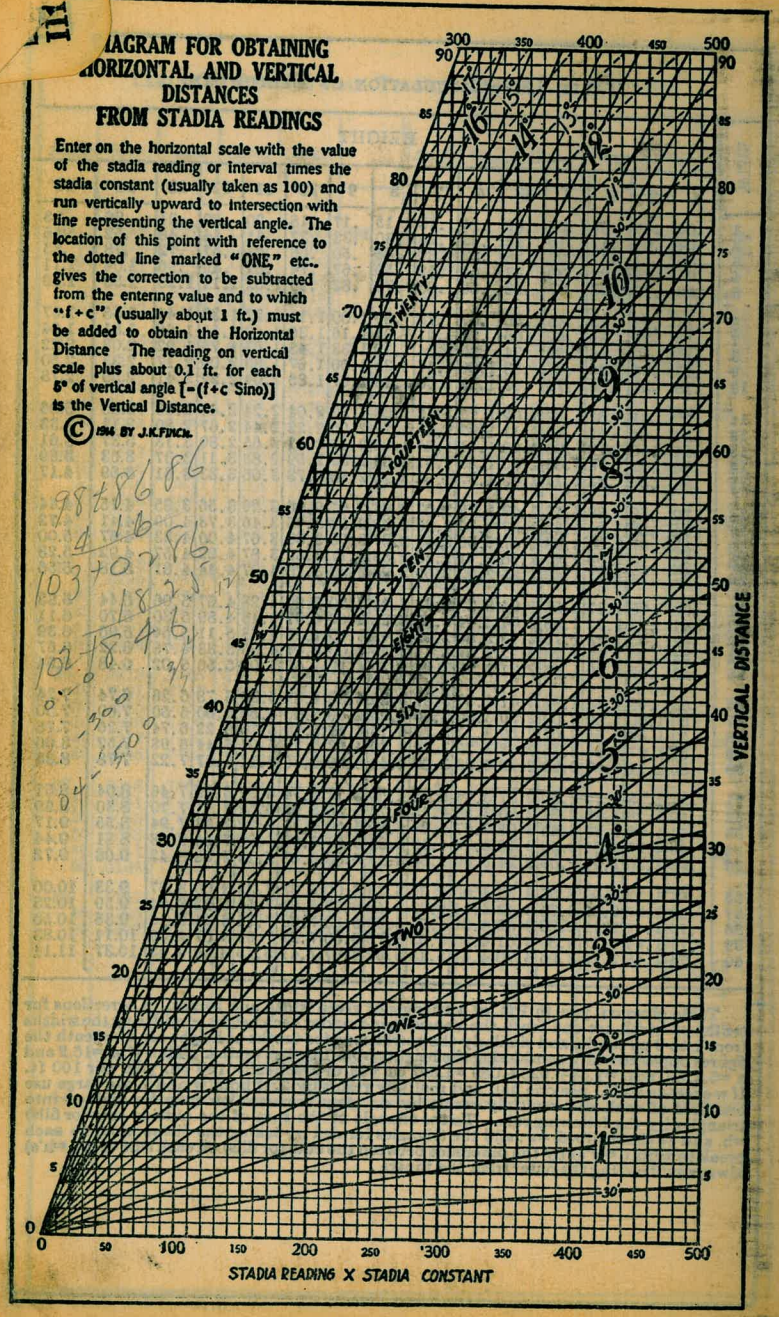
Angle	Sine.	Tan.	Cotg.	Cosin.		Angle	Sine.	Tan.	Cotg.	Cosin.	
°						°					
0	0	0	00	1	90	8	.1392	.1405	7.115	.99027	82
10	.0029	.0029	343.8	1	50	10	.1421	.1435	6.968	.98986	50
20	.0058	.0058	171.9	.99998	40	20	.1449	.1465	6.827	.98944	40
30	.0087	.0087	114.6	.99996	30	30	.1478	.1495	6.691	.98902	30
40	.0116	.0116	85.94	.99993	20	40	.1507	.1524	6.561	.98858	20
50	.0145	.0145	68.75	.99989	10	50	.1536	.1554	6.435	.98814	10
1	.0175	.0175	57.29	.99985	89	9	.1564	.1584	6.314	.98769	81
10	.0204	.0204	49.10	.99979	50	10	.1593	.1614	6.197	.98723	50
20	.0233	.0233	42.96	.99973	40	20	.1622	.1644	6.084	.98676	40
30	.0262	.0262	38.19	.99966	30	30	.1650	.1673	5.976	.98629	30
40	.0291	.0291	34.37	.99958	20	40	.1679	.1703	5.871	.98580	20
50	.0320	.0320	31.24	.99949	10	50	.1708	.1733	5.769	.98531	10
2	.0349	.0349	28.64	.99939	88	10	.1736	.1763	5.671	.98481	80
10	.0378	.0378	26.43	.99929	50	10	.1765	.1793	5.576	.98430	50
20	.0407	.0407	24.54	.99917	40	20	.1794	.1823	5.485	.98378	40
30	.0436	.0437	22.90	.99905	30	30	.1822	.1853	5.396	.98325	30
40	.0465	.0466	21.47	.99892	20	40	.1851	.1883	5.309	98272	20
50	.0494	.0495	20.21	.99878	10	50	.1880	.1914	5.226	.98218	10
3	.0523	.0524	19.08	.99863	87	11	.1908	.1944	5.145	.98163	79
10	.0552	.0553	18.07	.99847	50	10	.1937	.1974	5.066	.98107	50
20	.0581	.0582	17.17	.99831	40	20	.1965	.2004	4.989	.98050	40
30	.0610	.0612	16.35	.99813	30	30	.1994	.2035	4.915	.97992	30
40	.0640	.0641	15.60	.99795	20	40	.2022	.2065	4.843	.97934	20
50	.0669	.0670	14.92	.99776	10	50	.2051	.2095	4.773	.97875	10
4	.0698	.0699	14.30	.99756	86	12	.2079	.2126	4.705	.97815	78
10	.0727	.0729	13.73	.99736	50	10	.2108	.2156	4.638	.97754	50
20	.0756	.0758	13.20	.99714	40	20	.2136	.2186	4.574	.97692	40
30	.0785	.0787	12.71	.99692	30	30	.2164	.2217	4.511	.97630	30
40	.0814	.0816	12.25	.99668	20	40	.2193	.2247	4.449	.97566	20
50	.0843	.0846	11.83	.99644	10	50	.2221	.2278	4.390	.97502	10
5	.0872	.0875	11.43	.99619	85	13	.2250	.2309	4.331	.97437	77
10	.0901	.0904	11.06	.99594	50	10	.2278	.2339	4.275	.97371	50
20	.0929	.0934	10.71	.99567	40	20	.2306	.2370	4.219	.97304	40
30	.0958	.0963	10.39	.99540	30	30	.2334	.2401	4.165	.97237	30
40	.0987	.0992	10.08	.99511	20	40	.2363	.2432	4.113	.97169	20
50	.1016	.1022	9.788	.99482	10	50	.2391	.2462	4.061	.97100	10
6	.1045	.1051	9.514	.99452	84	14	.2419	.2493	4.011	.97030	76
10	.1074	.1080	9.255	.99421	50	10	.2447	.2524	3.962	.96959	50
20	.1103	.1110	9.010	.99390	40	20	.2476	.2555	3.914	.96887	40
30	.1132	.1139	8.777	.99357	30	30	.2504	.2586	3.867	.96815	30
40	.1161	.1169	8.556	.99324	20	40	.2532	.2617	3.821	.96742	20
50	.1190	.1198	8.345	.99290	10	50	.2560	.2648	3.776	.96667	10
7	.1219	.1228	8.144	.99255	83	15	.2588	.2679	3.732	.96593	75
10	.1248	.1257	7.953	.99219	50	10	.2616	.2711	3.689	.96517	50
20	.1276	.1287	7.770	.99182	40	20	.2644	.2742	3.647	.96440	40
30	.1305	.1317	7.596	.99144	30	30	.2672	.2773	3.606	.96363	30
40	.1334	.1346	7.429	.99106	20	40	.2700	.2805	3.566	.96285	20
50	.1363	.1376	7.269	.99067	10	50	.2728	.2836	3.526	.96206	10
					82						74
	Cosin.	Cotg.	Tan.	Sine.	Angle.		Cosin.	Cotg.	Tan.	Sine.	Angle.

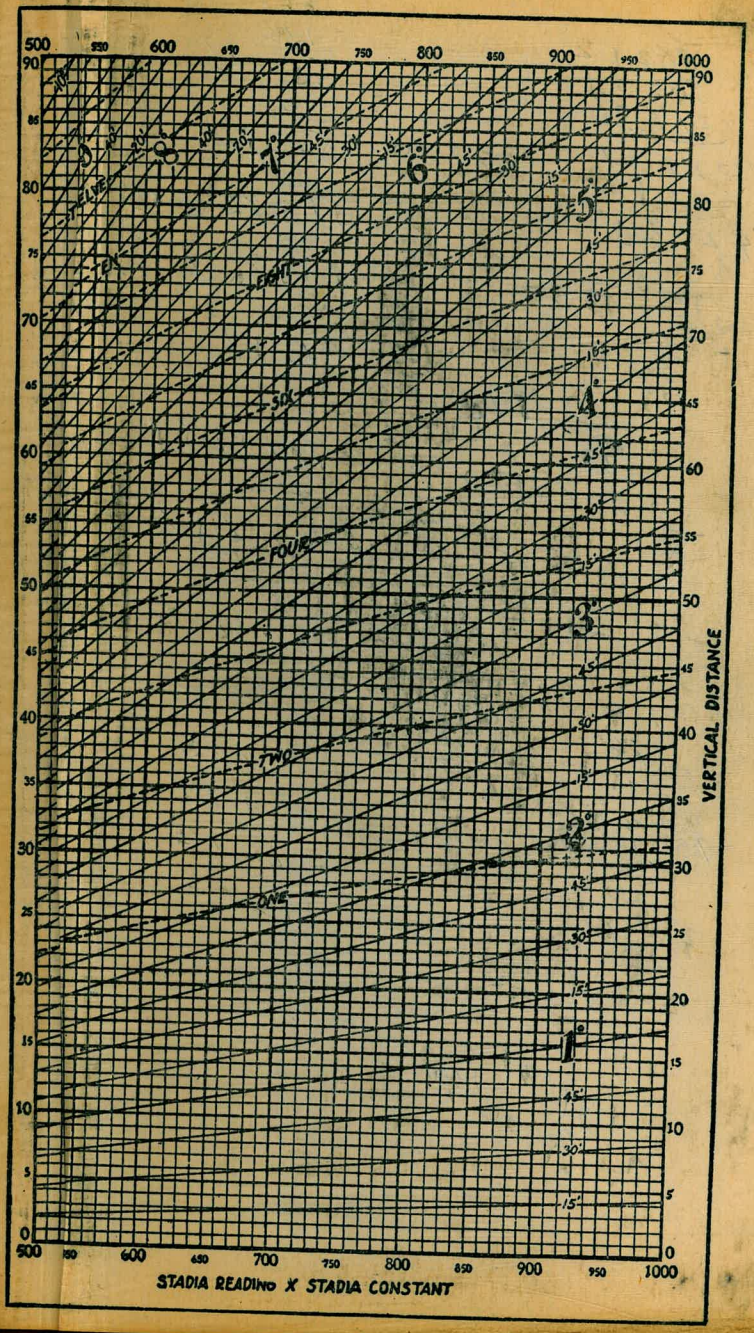
Table VIII.—Natural Trigonometrical Functions.

Angle	Sine.	Tan.	Cotg.	Cosin.		Angle	Sine.	Tan.	Cotg.	Cosin.	
°						°					
16	.2756	.2867	3.487	.96126	74	24	.4067	.4452	2.246	.91355	66
10	.2784	.2899	3.450	.96046	50	10	.4094	.4487	2.229	.91236	50
20	.2812	.2931	3.412	.95964	40	20	.4120	.4522	2.211	.91116	40
30	.2840	.2962	3.376	.95882	30	30	.4147	.4557	2.194	.90996	30
40	.2868	.2994	3.340	.95799	20	40	.4173	.4592	2.177	.90875	20
50	.2896	.3026	3.305	.95715	10	50	.4200	.4628	2.161	.90753	10
17	.2924	.3057	3.271	.95615	73	25	.4226	.4663	2.145	.90631	65
10	.2952	.3089	3.237	.95545	50	10	.4253	.4699	2.128	.90507	50
20	.2979	.3121	3.204	.95459	40	20	.4279	.4734	2.112	.90383	40
30	.3007	.3153	3.172	.95372	30	30	.4305	.4770	2.097	.90259	30
40	.3035	.3185	3.140	.95284	20	40	.4331	.4806	2.081	.90133	20
50	.3062	.3217	3.108	.95195	10	50	.4358	.4841	2.066	.90007	10
18	.3090	.3249	3.078	.95106	72	26	.4384	.4877	2.050	.89879	64
10	.3118	.3281	3.048	.95015	50	10	.4410	.4913	2.035	.89752	50
20	.3145	.3314	3.018	.94924	40	20	.4436	.4950	2.020	.89623	40
30	.3173	.3346	2.989	.94832	30	30	.4462	.4986	2.006	.89493	30
40	.3201	.3378	2.960	.94740	20	40	.4488	.5022	1.991	.89363	20
50	.3228	.3411	2.932	.94646	10	50	.4514	.5059	1.977	.89232	10
19	.3256	.3443	2.904	.94552	71	27	.4540	.5095	1.963	.89101	63
10	.3283	.3476	2.877	.94457	50	10	.4566	.5132	1.949	.88968	50
20	.3311	.3508	2.850	.94361	40	20	.4592	.5169	1.935	.88835	40
30	.3338	.3541	2.824	.94264	30	30	.4617	.5206	1.921	.88701	30
40	.3365	.3574	2.798	.94167	20	40	.4643	.5243	1.907	.88566	20
50	.3393	.3607	2.773	.94068	10	50	.4669	.5280	1.894	.88431	10
20	.3420	.3640	2.747	.93969	70	28	.4695	.5317	1.881	.88295	62
10	.3448	.3673	2.723	.93869	50	10	.4720	.5354	1.868	.88158	50
20	.3475	.3706	2.699	.93769	40	20	.4746	.5392	1.855	.88020	40
30	.3502	.3739	2.675	.93667	30	30	.4772	.5430	1.842	.87882	30
40	.3529	.3772	2.651	.93565	20	40	.4797	.5467	1.829	.87743	20
50	.3557	.3805	2.628	.93462	10	50	.4823	.5505	1.816	.87603	10
21	.3584	.3839	2.605	.93358	69	29	.4848	.5543	1.804	.87462	61
10	.3611	.3872	2.583	.93253	50	10	.4874	.5581	1.792	.87321	50
20	.3638	.3906	2.560	.93148	40	20	.4899	.5619	1.780	.87178	40
30	.3665	.3939	2.539	.93042	30	30	.4924	.5658	1.767	.87036	30
40	.3692	.3973	2.517	.92935	20	40	.4950	.5696	1.756	.86892	20
50	.3719	.4006	2.496	.92827	10	50	.4975	.5735	1.744	.86748	10
22	.3746	.4040	2.475	.92718	68	30	.5000	.5774	1.732	.86603	60
10	.3773	.4074	2.455	.92609	50	10	.5025	.5812	1.720	.86457	50
20	.3800	.4108	2.434	.92499	40	20	.5050	.5851	1.709	.86310	40
30	.3827	.4142	2.414	.92388	30	30	.5075	.5890	1.698	.86163	30
40	.3854	.4176	2.394	.92276	20	40	.5100	.5930	1.686	.86015	20
50	.3881	.4210	2.375	.92164	10	50	.5125	.5969	1.675	.85866	10
23	.3907	.4245	2.356	.92050	67	31	.5150	.6009	1.664	.85717	59
10	.3934	.4279	2.337	.91936	50	10	.5175	.6048	1.653	.85567	50
20	.3961	.4314	2.318	.91822	40	20	.5200	.6088	1.643	.85416	40
30	.3987	.4348	2.300	.91706	30	30	.5225	.6128	1.632	.85264	30
40	.4014	.4383	2.282	.91590	20	40	.5250	.6168	1.621	.85112	20
50	.4041	.4417	2.264	.91472	10	50	.5275	.6208	1.611	.84959	10
					66						58
	Cosin.	Cotg.	Tan.	Sine.	Angle.		Cosin.	Cotg.	Tan.	Sine.	Angle.

DIAGRAM FOR OBTAINING HORIZONTAL AND VERTICAL DISTANCES FROM STADIA READINGS

Enter on the horizontal scale with the value of the stadia reading or interval times the stadia constant (usually taken as 100) and run vertically upward to intersection with line representing the vertical angle. The location of this point with reference to the dotted line marked "ONE," etc., gives the correction to be subtracted from the entering value and to which "f + c" (usually about 1 ft.) must be added to obtain the Horizontal Distance. The reading on vertical scale plus about 0.1 ft. for each 5° of vertical angle [= (f + c Sino)] is the Vertical Distance.

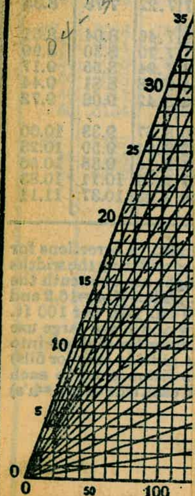




111

DIAGRAM FO[...]
HORIZONTAL [...]
DIST[...]
FROM STAD[...]

Enter on the horizont[...] of the stadia reading [...] stadia constant (usual[...] run vertically upward [...] line representing the [...] location of this point [...] the dotted line mark[...] gives the correction [...] from the entering valu[...] "f+c" (usually abo[...] be added to obtain t[...] Distance The readin[...] scale plus about 0.1' [...] 5° of vertical angle [(...] is the Vertical Distanc[...]



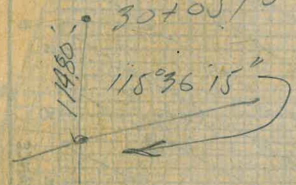
98+86 86
4 16
103+02 86
18 2[...]
102+84 6[...]

38252
362 65
277.30
1022.47
601.82
42065

88
4)355°43 30
32
35
32
3
223 (58 08.
20
33

27730

30+0590



115°36 15"

1950

52.26
48 72
10098

36 60
40 57
406 17
1 43
408 00

2)137°33
68 46 30

00.29
00 58
00.29

660.86
-110
550.86
25
525.86
10
515.86
20
495.86
20
475.86

98+86.86
4 00
102+86.86

98+86 86
4 16
103+02 86
18 50
87+84 86
104+76 72
192.36

000.87

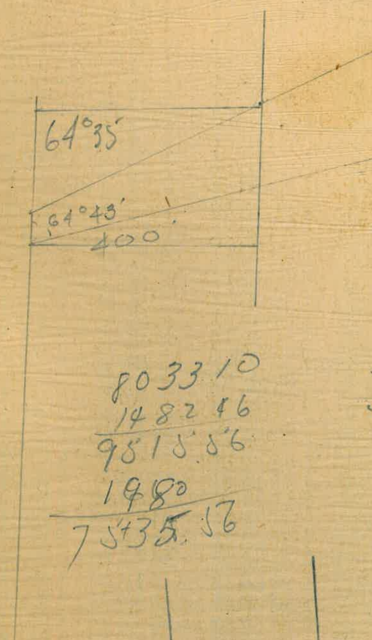
104+76.62
1 89 25
102+87.37

140 58 X8
10 19.24
151+77.72

30+X8
136.38
60
135 80
635.86
25
660.86

40+05 92
36+03 28
4 02 64

11'45"
147
44
3
18

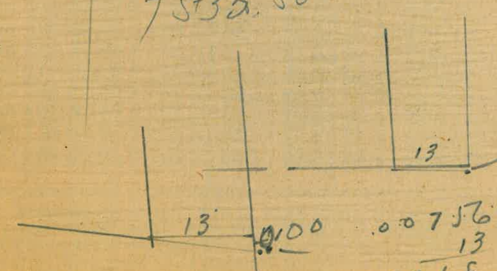


64°35'
64°45'
400

90419
400
361676 00

90321
400
361284 00

803310
148246
951556
1980
753556



13
13
0.100

.00756
13
2268
756
.09828

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	26.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For some slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be 41.9 + (20—16) ÷ 2 or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.

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