

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING
SLOPE 1 TO 1. ROADWAY OF ANY WIDTH

	0	.1	.2	.3	.4	.5	.6	.7	.8	9
0	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
1	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90
2	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90
3	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90
4	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90
5	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90
6	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90
7	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90
8	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90
9	9.00	9.10	9.20	9.30	9.40	9.50	9.60	9.70	9.80	9.90
10	10.00	10.10	10.20	10.30	10.40	10.50	10.60	10.70	10.80	10.90
11	11.00	11.10	11.20	11.30	11.40	11.50	11.60	11.70	11.80	11.90
12	12.00	12.10	12.20	12.30	12.40	12.50	12.60	12.70	12.80	12.90
13	13.00	13.10	13.20	13.30	13.40	13.50	13.60	13.70	13.80	13.90
14	14.00	14.10	14.20	14.30	14.40	14.50	14.60	14.70	14.80	14.90
15	15.00	15.10	15.20	15.30	15.40	15.50	15.60	15.70	15.80	15.90
16	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80	16.90
17	17.00	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.80	17.90
18	18.00	18.10	18.20	18.30	18.40	18.50	18.60	18.70	18.80	18.90
19	19.00	19.10	19.20	19.30	19.40	19.50	19.60	19.70	19.80	19.90
20	20.00	20.10	20.20	20.30	20.40	20.50	20.60	20.70	20.80	20.90
21	21.00	21.10	21.20	21.30	21.40	21.50	21.60	21.70	21.80	21.90
22	22.00	22.10	22.20	22.30	22.40	22.50	22.60	22.70	22.80	22.90
23	23.00	23.10	23.20	23.30	23.40	23.50	23.60	23.70	23.80	23.90
24	24.00	24.10	24.20	24.30	24.40	24.50	24.60	24.70	24.80	24.90
25	25.00	25.10	25.20	25.30	25.40	25.50	25.60	25.70	25.80	25.90
26	26.00	26.10	26.20	26.30	26.40	26.50	26.60	26.70	26.80	26.90
27	27.00	27.10	27.20	27.30	27.40	27.50	27.60	27.70	27.80	27.90
28	28.00	28.10	28.20	28.30	28.40	28.50	28.60	28.70	28.80	28.90
29	29.00	29.10	29.20	29.30	29.40	29.50	29.60	29.70	29.80	29.90
30	30.00	30.10	30.20	30.30	30.40	30.50	30.60	30.70	30.80	30.90
31	31.00	31.10	31.20	31.30	31.40	31.50	31.60	31.70	31.80	31.90
32	32.00	32.10	32.20	32.30	32.40	32.50	32.60	32.70	32.80	32.90
33	33.00	33.10	33.20	33.30	33.40	33.50	33.60	33.70	33.80	33.90
34	34.00	34.10	34.20	34.30	34.40	34.50	34.60	34.70	34.80	34.90
35	35.00	35.10	35.20	35.30	35.40	35.50	35.60	35.70	35.80	35.90
36	36.00	36.10	36.20	36.30	36.40	36.50	36.60	36.70	36.80	36.90
37	37.00	37.10	37.20	37.30	37.40	37.50	37.60	37.70	37.80	37.90
38	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70	38.80	38.90
39	39.00	39.10	39.20	39.30	39.40	39.50	39.60	39.70	39.80	39.90
40	40.00	40.10	40.20	40.30	40.40	40.50	40.60	40.70	40.80	40.90
41	41.00	41.10	41.20	41.30	41.40	41.50	41.60	41.70	41.80	41.90
42	42.00	42.10	42.20	42.30	42.40	42.50	42.60	42.70	42.80	42.90
43	43.00	43.10	43.20	43.30	43.40	43.50	43.60	43.70	43.80	43.90
44	44.00	44.10	44.20	44.30	44.40	44.50	44.60	44.70	44.80	44.90
45	45.00	45.10	45.20	45.30	45.40	45.50	45.60	45.70	45.80	45.90
46	46.00	46.10	46.20	46.30	46.40	46.50	46.60	46.70	46.80	46.90
47	47.00	47.10	47.20	47.30	47.40	47.50	47.60	47.70	47.80	47.90
48	48.00	48.10	48.20	48.30	48.40	48.50	48.60	48.70	48.80	48.90
49	49.00	49.10	49.20	49.30	49.40	49.50	49.60	49.70	49.80	49.90
50	50.00	50.10	50.20	50.30	50.40	50.50	50.60	50.70	50.80	50.90

Distance of slope stake from side or shoulder stake for any width roadway, slope 1 to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

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*Engt Conduits
with Bobs
etc*

838

*Alignment
for
Sutherland-San Vicente
conduit*

Sec. 16

MICROFILMED

JAN 10 1965

TABLE XIII—CORRECTIONS FOR TANGENTS AND EXTERNALS

These corrections are to be added to the approximate values, found by dividing the tangent, or external, for a 1° curve (Table VIII) by the degree of curve, in order to obtain the true tangents, or externals. Intermediate values may be obtained by interpolation.

FOR TANGENTS ADD

Central Angle	DEGREE OF CURVE													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.03	.06	.09	.13	.16	.19	.22	.25	.28	.31	.34	.38	.42	.46
15°	.04	.10	.14	.19	.24	.29	.34	.39	.45	.51	.53	.58	.63	.68
20°	.06	.13	.19	.26	.32	.39	.45	.51	.58	.65	.72	.79	.84	.90
25°	.08	.16	.24	.33	.40	.49	.58	.67	.75	.83	.90	.99	1.06	1.14
30°	.10	.19	.29	.39	.49	.59	.69	.79	.89	.99	1.09	1.20	1.29	1.39
35°	.11	.22	.34	.47	.58	.69	.79	.81	.92	1.04	1.29	1.42	1.54	1.66
40°	.13	.26	.40	.53	.67	.80	.93	1.06	1.20	1.34	1.49	1.64	1.79	1.94
45°	.15	.30	.44	.60	.76	.91	1.06	1.21	1.37	1.52	1.70	1.87	2.04	2.21
50°	.17	.34	.51	.68	.85	1.02	1.19	1.36	1.54	1.72	1.91	2.10	2.29	2.48
55°	.19	.38	.57	.76	.95	1.14	1.32	1.52	1.72	1.92	2.14	2.35	2.56	2.77
60°	.21	.42	.63	.84	1.05	1.27	1.49	1.71	1.94	2.17	2.38	2.60	2.83	3.07
65°	.23	.46	.69	.93	1.16	1.40	1.64	1.88	2.13	2.38	2.63	2.88	3.13	3.39
70°	.25	.51	.76	1.02	1.28	1.54	1.80	2.06	2.33	2.60	2.88	3.16	3.44	3.72
75°	.27	.56	.83	1.12	1.40	1.69	1.98	2.27	2.57	2.87	3.16	3.47	3.78	4.09
80°	.30	.61	.91	1.22	1.53	1.84	2.15	2.46	2.78	3.10	3.44	3.78	4.12	4.46
85°	.33	.66	1.00	1.33	1.68	2.02	2.36	2.70	3.05	3.40	3.77	4.14	4.55	4.89
90°	.36	.72	1.09	1.45	1.83	2.20	2.57	2.94	3.32	3.70	4.10	4.50	4.91	5.32
95°	.39	.79	1.19	1.55	2.00	2.40	2.80	3.20	3.61	4.02	4.40	4.98	5.38	5.83
100°	.43	.86	1.30	1.74	2.18	2.62	3.06	3.50	3.95	4.40	4.88	5.37	5.85	6.34
110°	.51	1.03	1.56	2.08	2.61	3.14	3.67	4.21	4.76	5.31	5.86	6.43	7.01	7.60
120°	.62	1.25	1.93	2.52	3.16	3.81	4.45	5.11	5.77	6.44	7.12	7.80	8.50	9.22

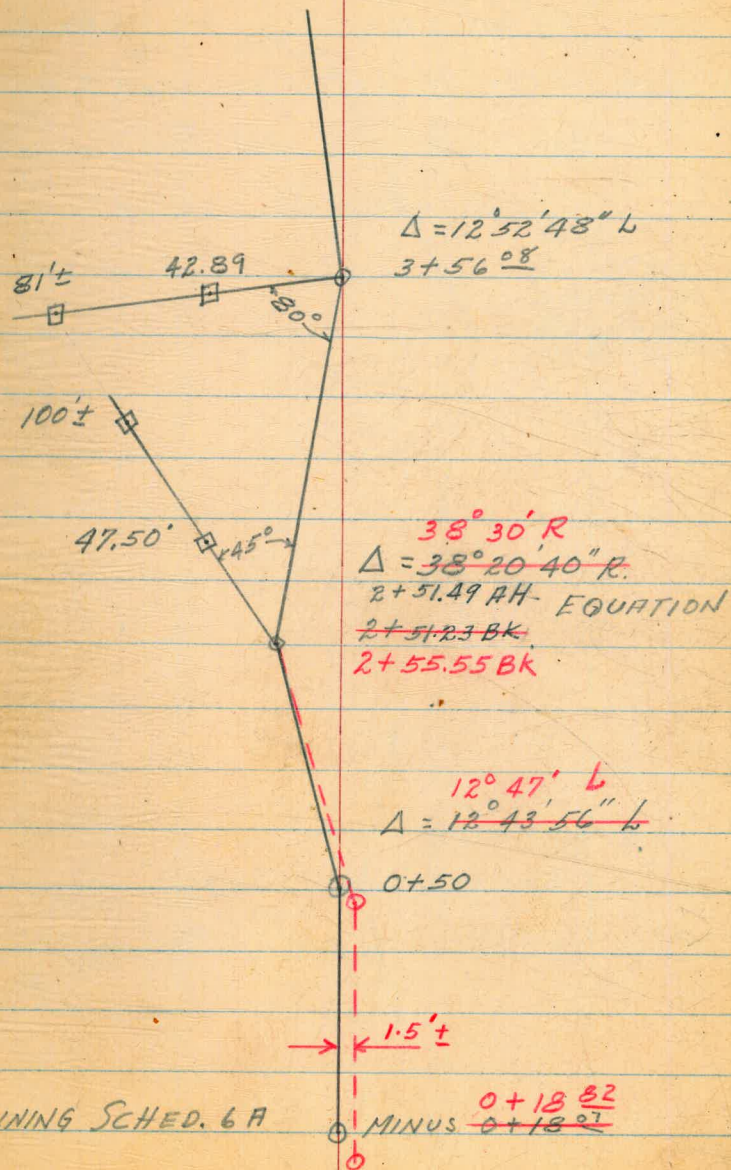
FOR EXTERNALS ADD

Central Angle	DEGREE OF CURVE													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.001	.003	.004	.006	.007	.008	.009	.011	.012	.014	.015	.017	.018	.020
15°	.003	.007	.010	.014	.018	.023	.027	.029	.032	.035	.039	.043	.047	.051
20°	.006	.011	.017	.022	.028	.034	.038	.045	.051	.057	.063	.070	.076	.083
25°	.009	.018	.027	.036	.046	.056	.065	.074	.083	.093	.106	.120	.127	.135
30°	.013	.025	.038	.051	.065	.078	.090	.103	.116	.129	.149	.170	.179	.188
35°	.018	.035	.054	.072	.086	.109	.131	.153	.175	.197	.213	.230	.247	.264
40°	.023	.046	.070	.093	.117	.141	.172	.203	.234	.265	.277	.290	.315	.341
45°	.030	.060	.093	.119	.153	.184	.216	.254	.289	.325	.351	.378	.411	.445
50°	.037	.075	.116	.151	.189	.227	.266	.305	.345	.384	.425	.467	.508	.550
55°	.046	.093	.142	.188	.236	.283	.332	.381	.420	.479	.530	.582	.641	.700
60°	.056	.112	.168	.225	.283	.340	.398	.457	.516	.575	.636	.697	.774	.851
65°	.067	.135	.204	.273	.343	.412	.483	.554	.625	.697	.711	.845	.922	1.01
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17
75°	.095	.182	.266	.353	.440	.528	.618	.707	.797	.877	1.07	1.18	1.29	1.39
80°	.110	.220	.332	.445	.558	.671	.787	.903	1.02	1.13	1.25	1.38	1.50	1.62
85°	.128	.259	.391	.524	.657	.790	.926	1.06	1.20	1.34	1.47	1.62	1.76	1.91
90°	.149	.299	.450	.603	.756	.910	1.07	1.22	1.38	1.54	1.70	1.87	2.03	2.20
95°	.174	.350	.522	.706	.885	1.06	1.25	1.43	1.62	1.80	1.99	2.18	2.38	2.58
100°	.200	.401	.604	.809	1.01	1.22	1.43	1.64	1.85	2.06	2.28	2.50	2.73	2.96
110°	.268	.536	.806	1.08	1.35	1.63	1.91	2.20	2.48	2.76	3.05	3.35	3.66	3.96
120°	.360	.721	1.08	1.45	1.82	2.19	2.57	2.95	3.33	3.72	4.11	4.50	4.91	5.32

50' 30°56'

50' 18°10'

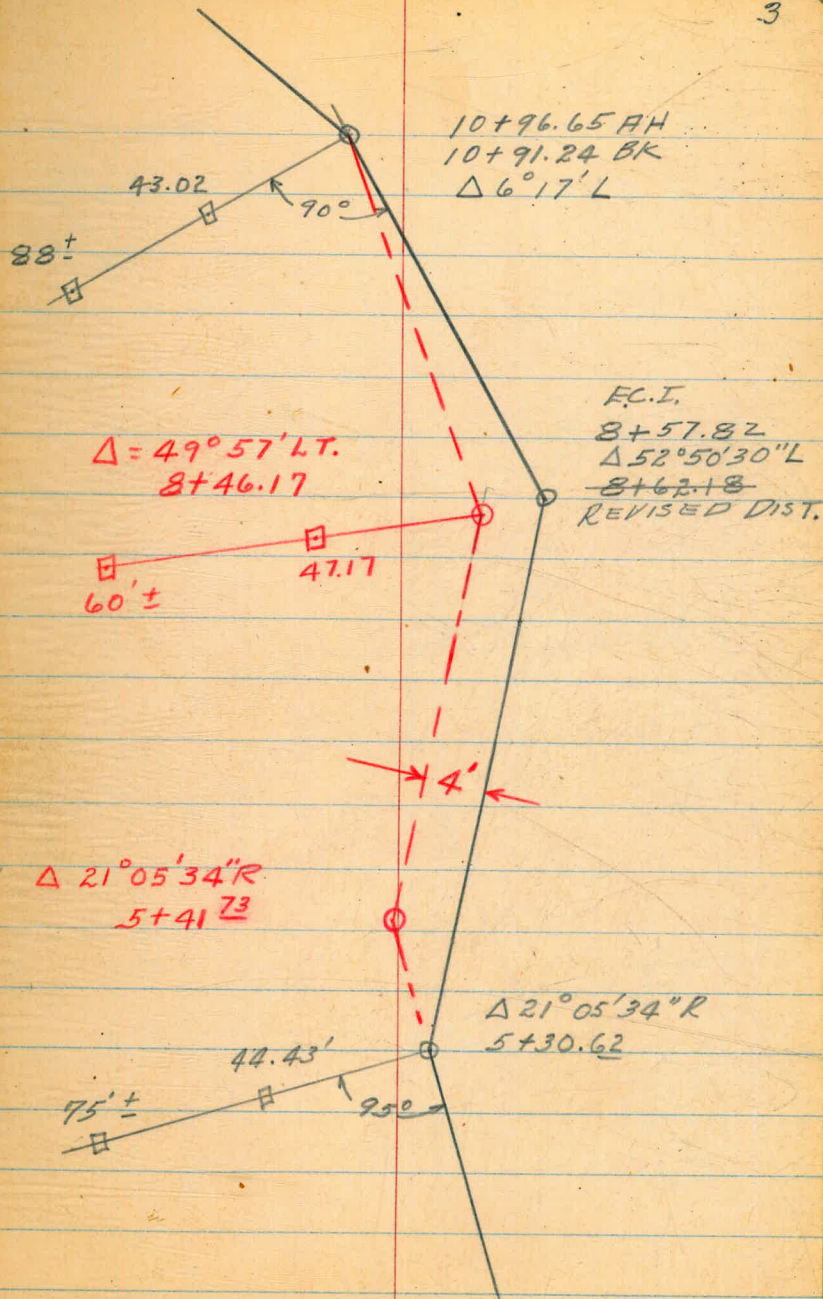
BM #6 BUTTRESS Elev. 1957.41



50' 30°39'
 □ B.M. 10+96 90'± LT ALONG OLD FENCE
 LINE PAINTED ON ROCK
 ELEV. 1985.02

52.02' 22°11'

50' 27°18'

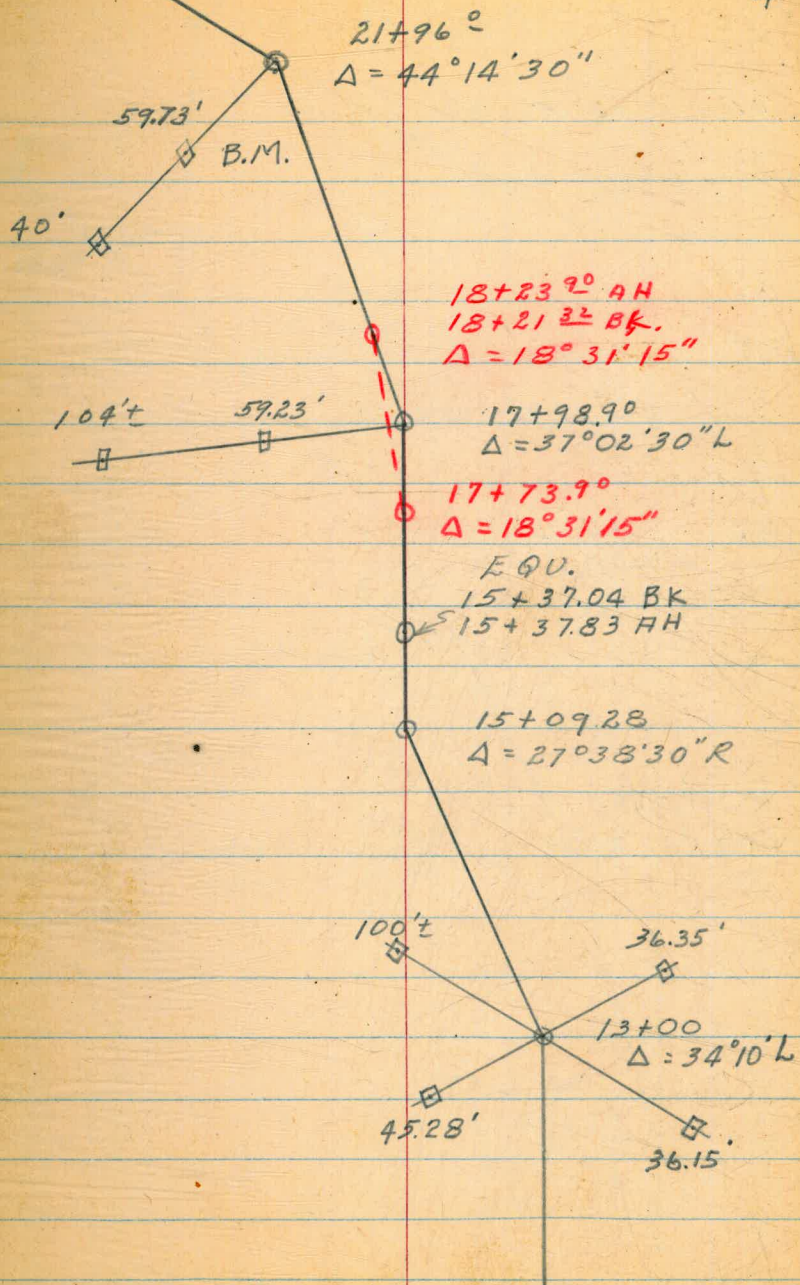


68.85' 29°50'

□ B.M. 21+96 HVB 59.73 Elev. 1960.54

62' 17°10'

NOTE CROSS REF



70' 13°15'

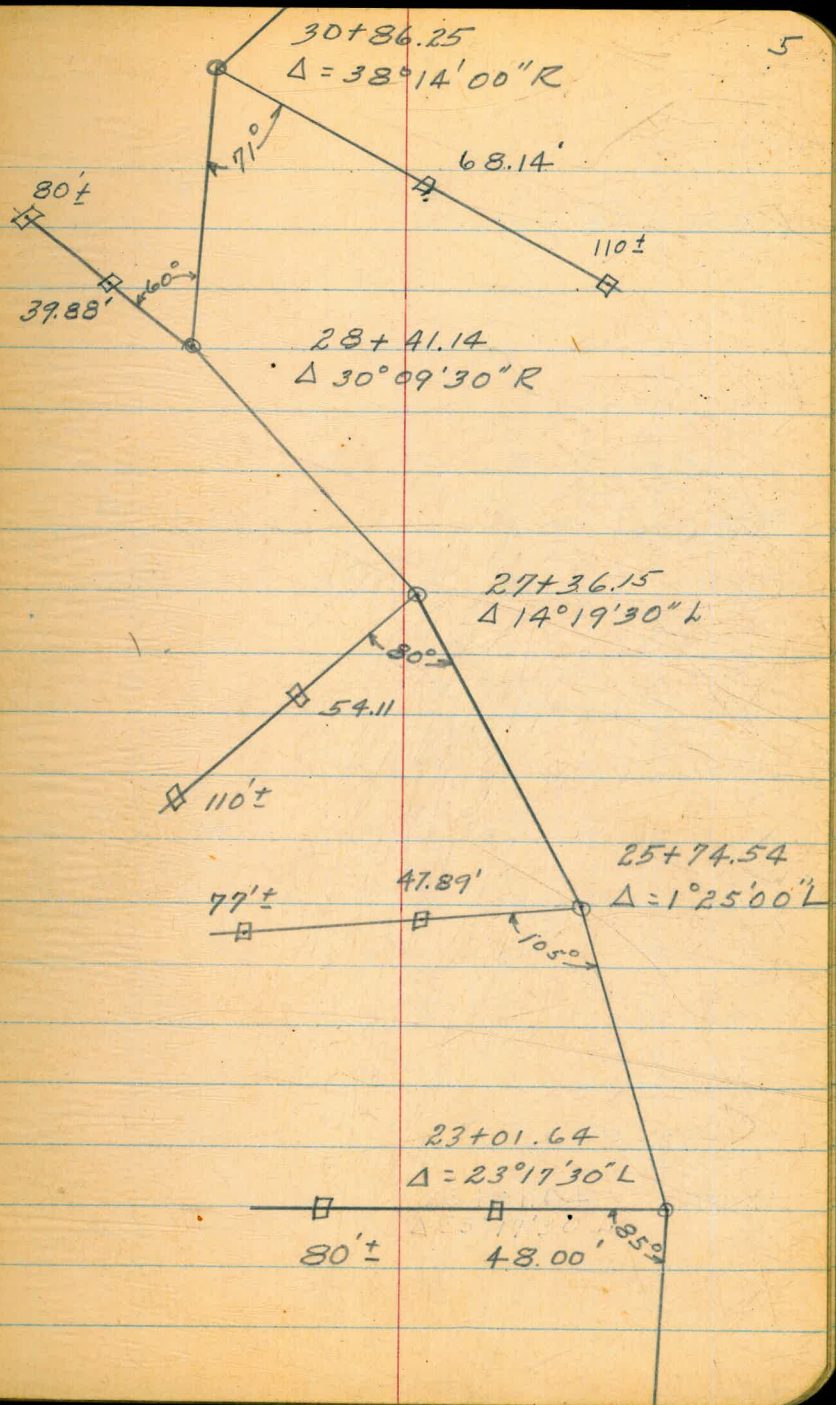
40' 4°27'

B.M. 63' L.T. 28+41 PAINTED ON ROCK
Elev. 1921.77

60' 25°36'

55' 29°27'

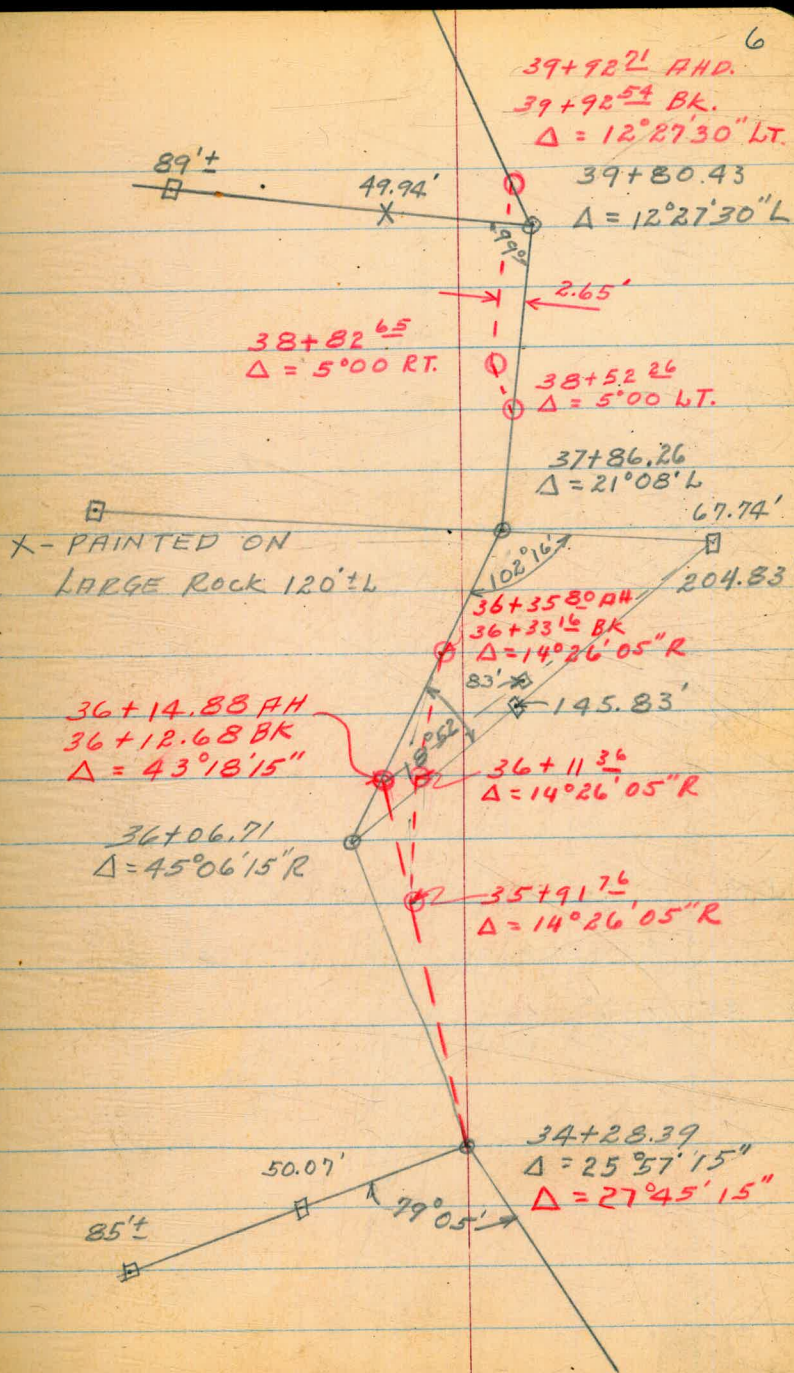
52' 22°38'



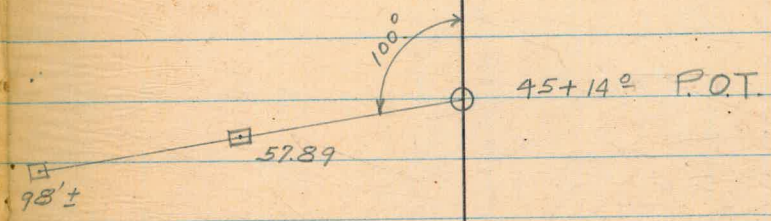
59' 32'10"

71.74 19°13'

59.70 33°00'

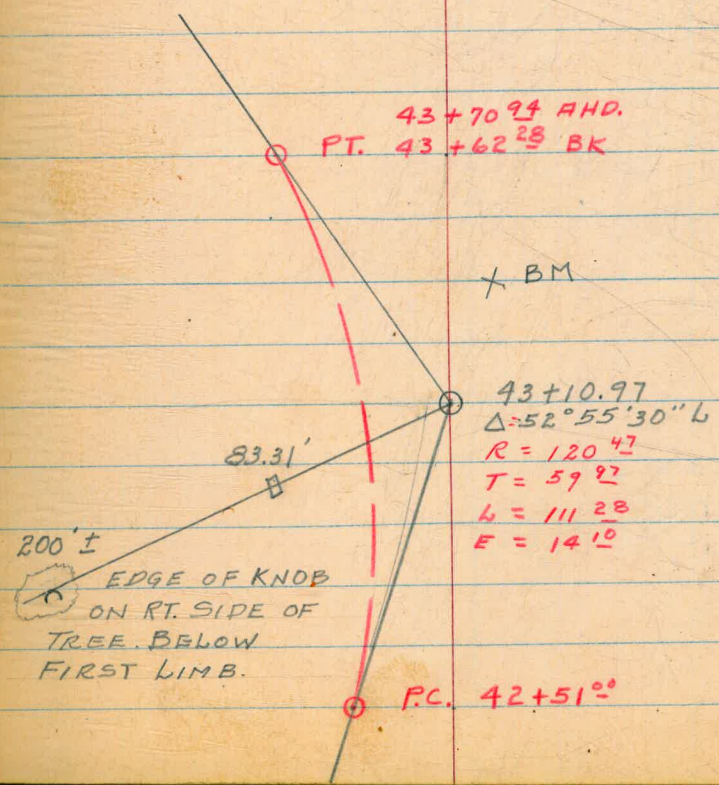


62' 20°59'



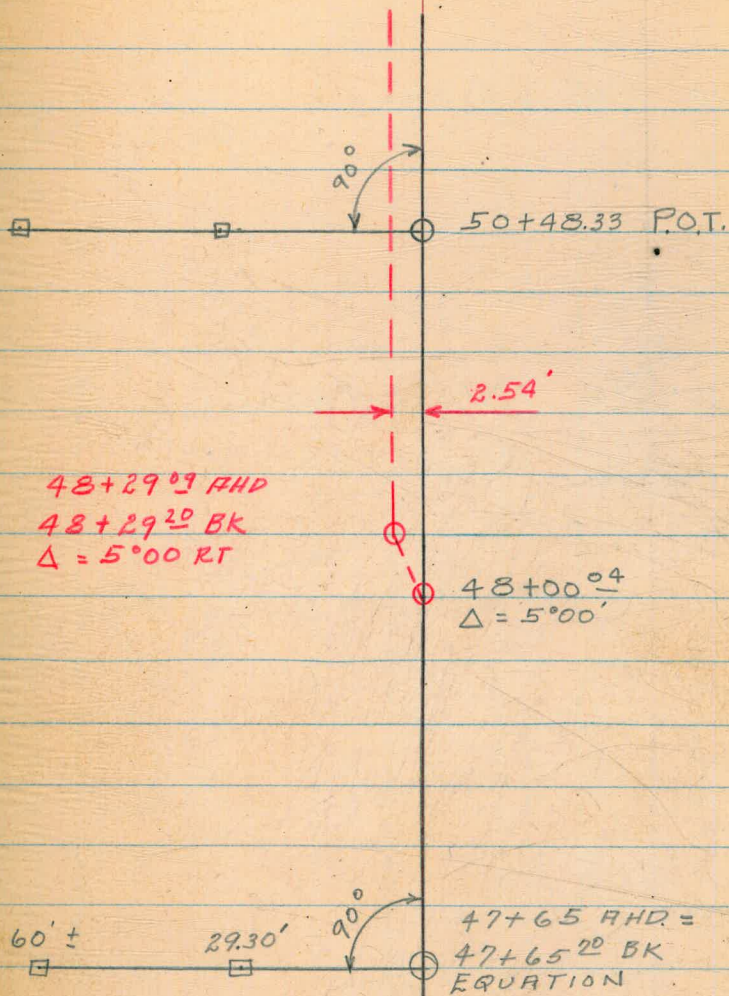
□ B.M. 40'± ALONG BACK TAN. 43+10.97
 PAINTED ON ROCK ELEV. 1910.95

84.85 10°56'



40' 25° 46'

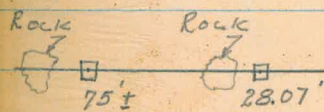
32' 23° 35'



29.20'

16°

□ B.M. #6 S.W. COR. BRIDGE
ELEV. 1718.82



2.84'

66+02.06 AHD

66+02.21 BK

$\Delta = 6^{\circ}00' RT$

65+75 P.O.T.

65+74.97

$\Delta = 6^{\circ}00' LT$

58+97.33 AHD

58+97.43 BK

$\Delta = 4^{\circ}39' LT$

58+86.43 P.O.T.

58+66.16

$\Delta = 4^{\circ}39' RT$

2.54'

P.O.T.

55+34.16 AHD =

55+34.86 BK =

CHAIN TIES

SHINER
IN OAK
TREE

24.02'

25.67'

SHINER
IN OAK
TREE

B.M. 60'± LT. 75+25 PAINTED ON ROCK

ELEV. 1943.81

33.50' 15°25' DIST. BET. 1ST & 2ND HUB.

70' 17°28' To 1st HUB.

159.1

98.06

66.77

75+22.07 P.O.T.

5.49'

73+96.77 AHD =
73+97.01 BK
 $\Delta = 5^{\circ}00'$ RT.

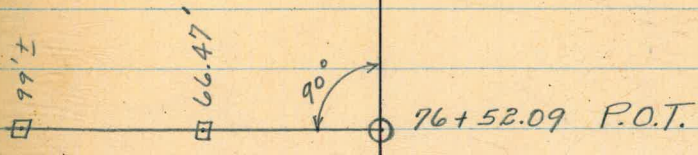
73+34.0
 $\Delta = 5^{\circ}00'$ LT.

70+42.26 AHD
70+42.38 BK.

70+11.99 BK
 $\Delta 5^{\circ}01'$ RT

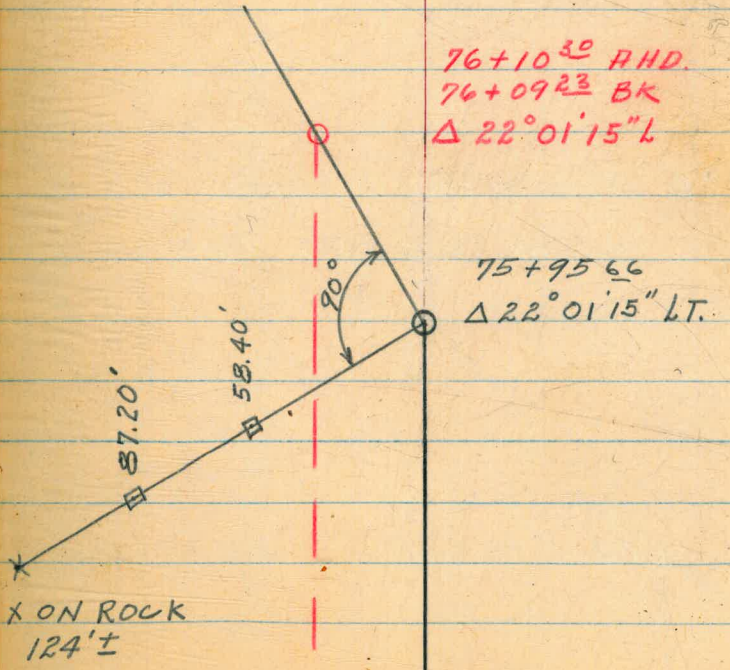
2.84'

68' 12° 11'



60' 13° 15'
30' 16° 32'

DIST. BET. HUBS.

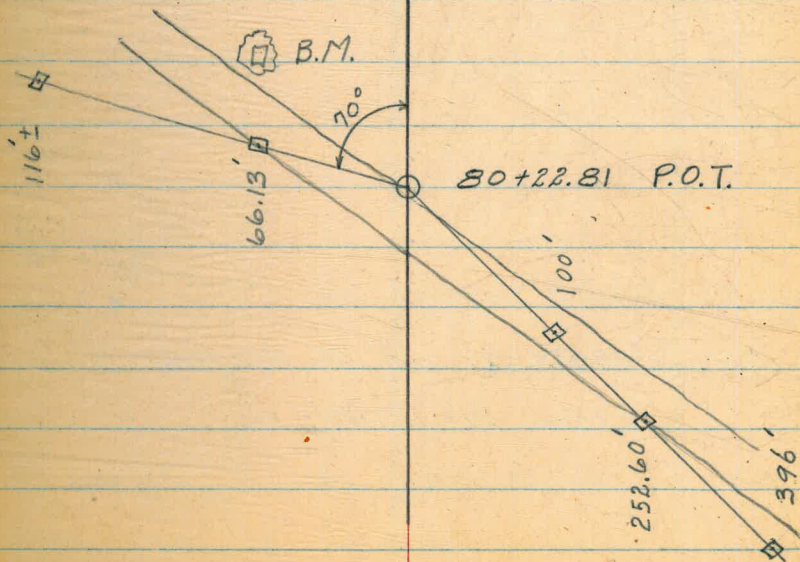
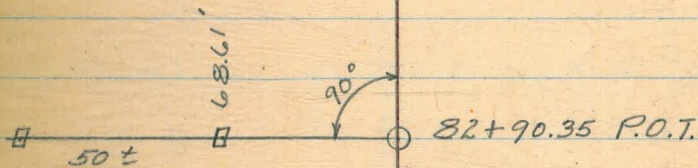
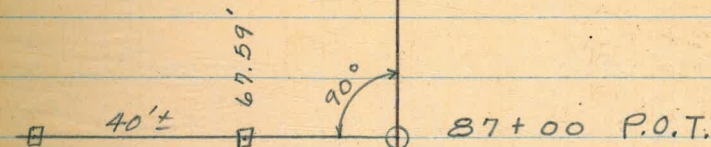


69.50' 13°27'

70.70' 13°58'

□ BM#8 STA. 80+50 - 50' LEFT SPIKE
IN OAK TREE ELEV. 1814.21

153' 4°08' BETWEEN 1ST & 2ND HUBS



65' 12°49' 2ND & 3RD HUBS

39.82' 8°00' 1ST & 2ND HUBS

□ B.M. # 10 ON SO. EDGE OF ROAD

PRINTED ON ROCK ELEV. 1923.90

52.87' 7°23' BETWEEN 1ST & 2ND HUBS

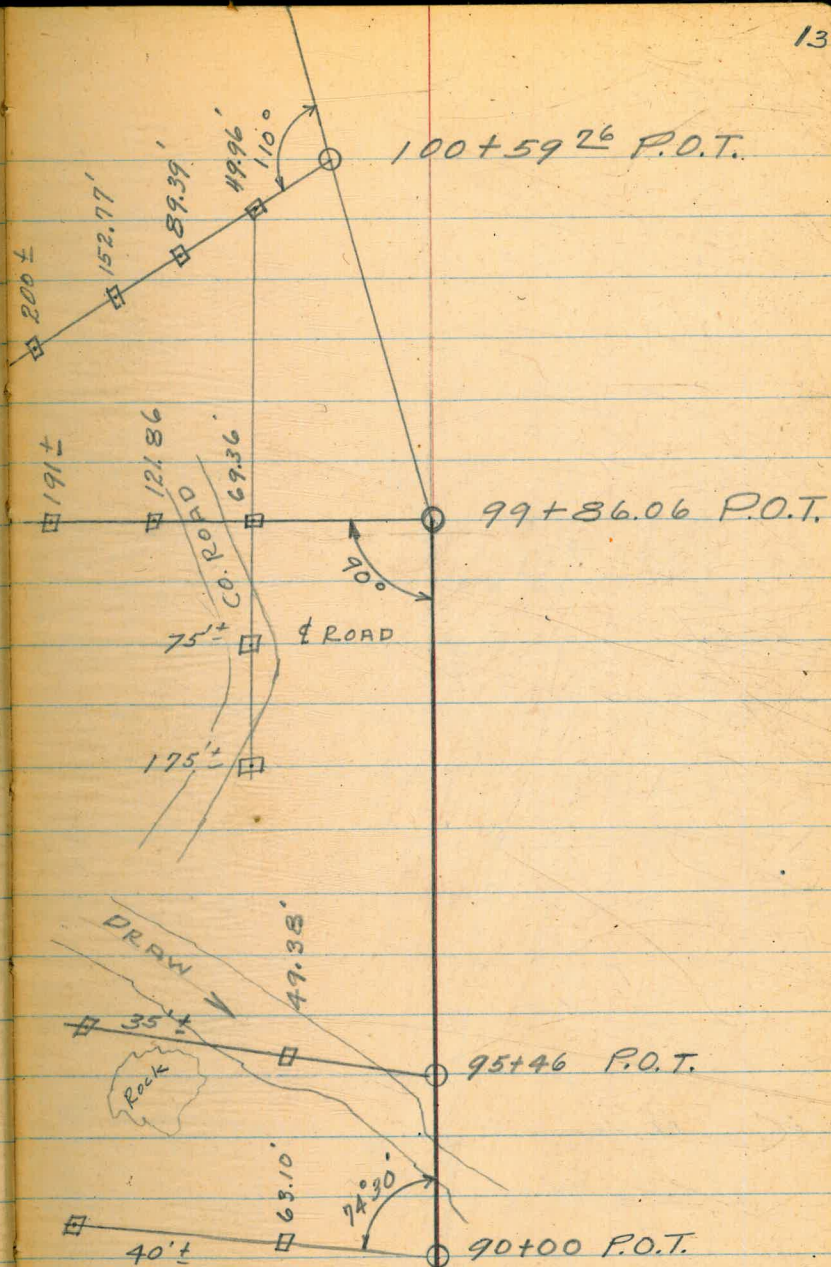
76' 7°44'

52.59' 20°07'

□ B.M. STA. 90+35± 20' LT.± PRINTED ON

Rock Elev. 1678.16

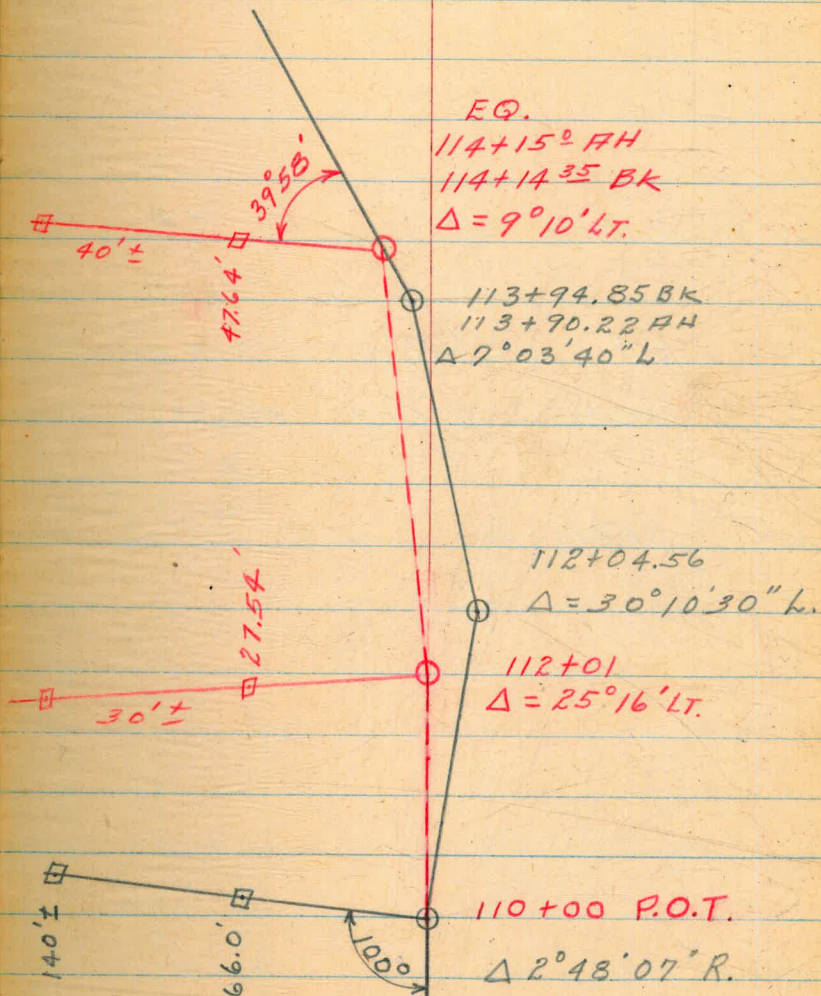
64.30' 11°05'



47.85' 5°19'

30.6' 25°51'

70' 19°26'

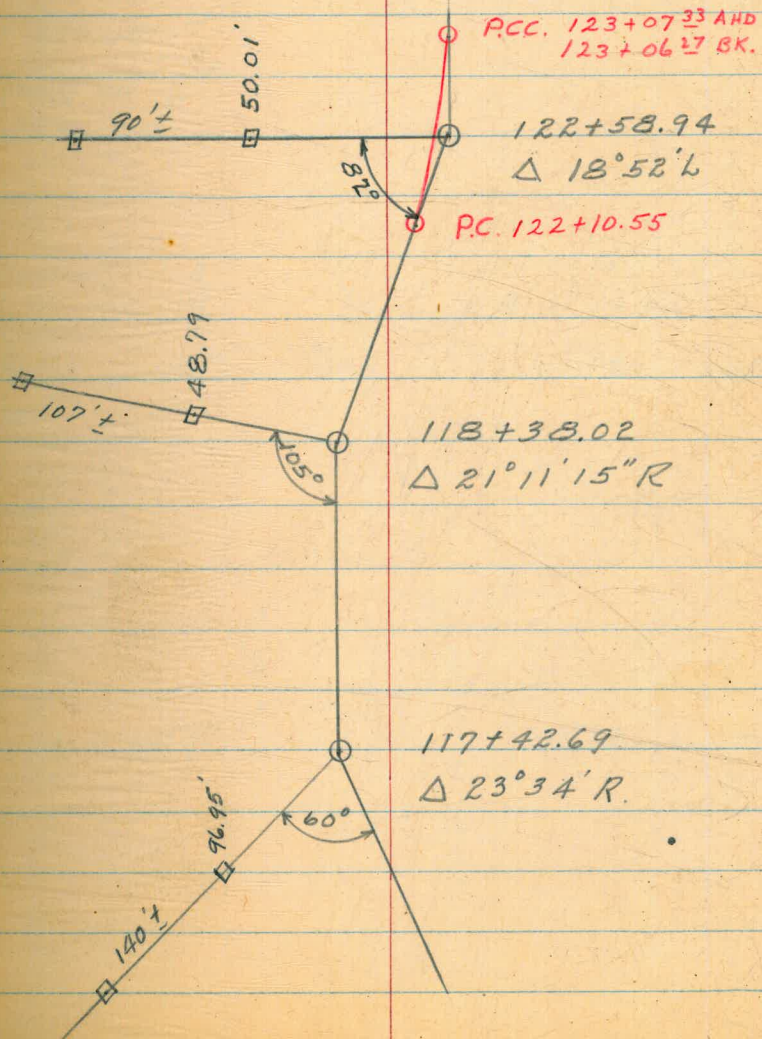


57' 28°41'

BM. 60' LT STA. 119+20 PAINTED ON
LARGE ROCK ELEV. 1903.88

55' 27°29'

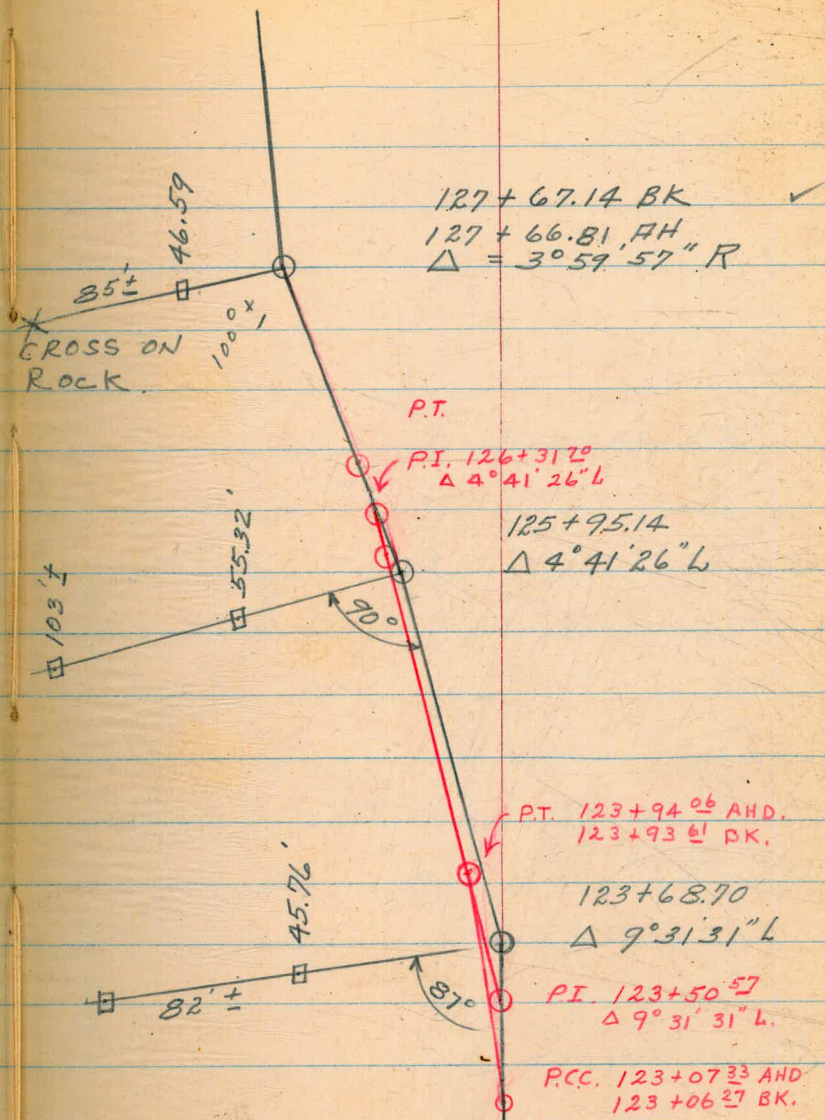
101' 16°17'



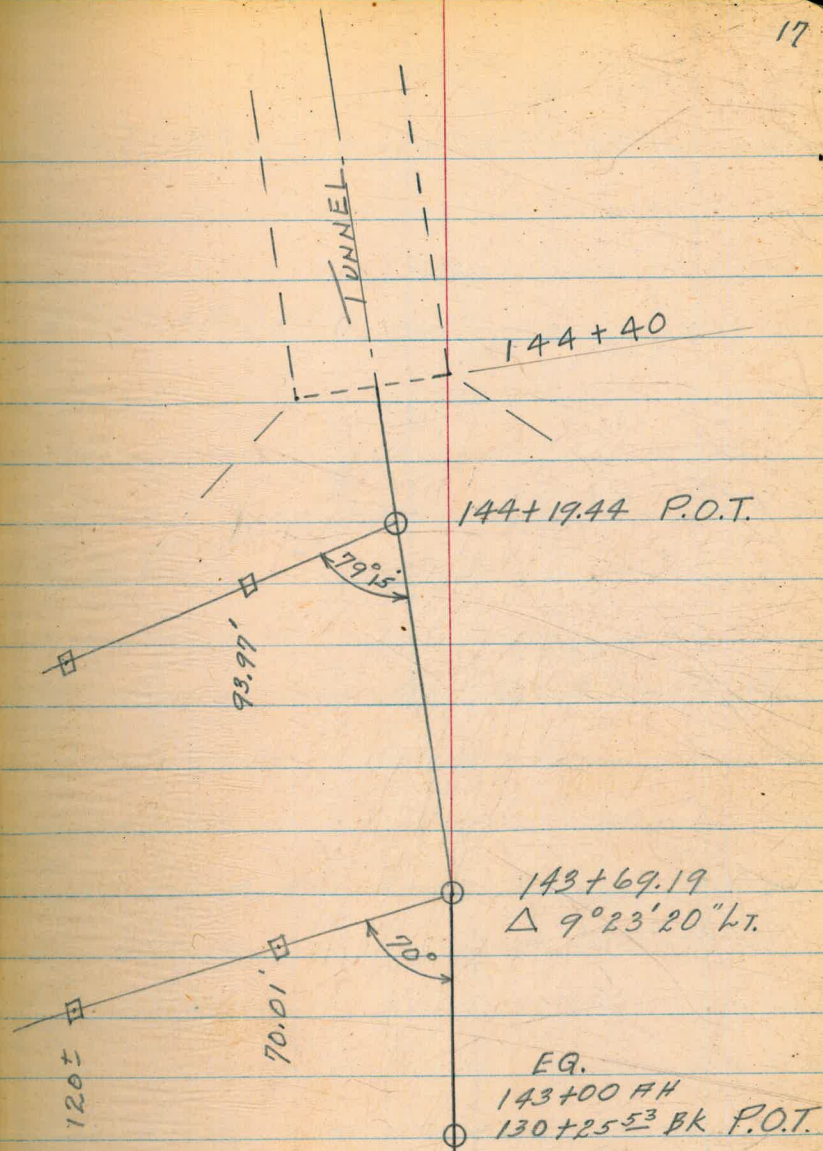
52' 26°22'

60.92' 24°06'

54' 32°04'



78' 26°10'



120±

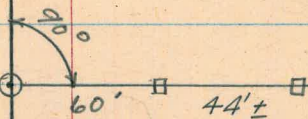
70.01'

121' 1°30'

P.O.T. 183+27.54



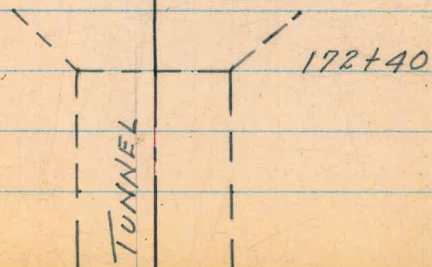
P.O.T. 180+50



178+38 P.O.T

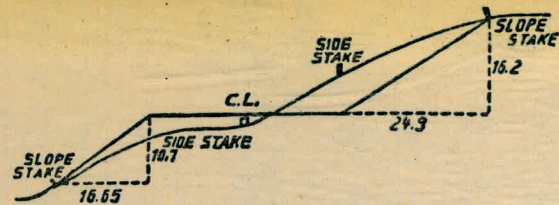
177+60
 $\Delta = 0^{\circ}04'15'' R$

172+50.5
 $\Delta 3^{\circ}42'30'' L$



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Please Return to
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 Room 903 Civic Center



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1½ TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	2
3	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	9
10	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	10
11	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	11
12	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	12
13	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	13
14	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	14
15	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	16
17	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	17
18	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	18
19	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	21
22	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	22
23	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	23
24	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	27
28	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	28
29	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	29
30	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	30
31	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	32
33	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	38
39	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	39
40	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	40
41	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	41
42	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	42
43	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	43
44	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70.80	70.95	71.10	71.20	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

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