

EL CAPITAN
Pipe Line Survey
Transit — N-6

PASTIS

W193

3 342 01 1024 + 76.06

114 00

180 00

114 00

66 00

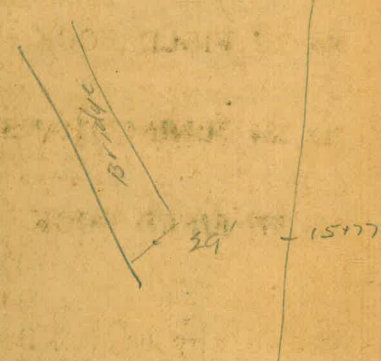
360 00

171 59

3	377	59	150
	5	59	126
			50

179	59	60
125	59	90
74	00	20

MICROFILMED
JAN 11 1965



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THE FREDERICK POST CO.
ENGINEERING and DRAFTING SUPPLIES

MICROFILMED STATION
CHICAGO, ILL.

JAN 9 1965

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El Capitan Pipe Line Survey,
Station 1212+11² to 996+50¹³
Apr. 9 to Apr. 22 Pages 1 to 9
Survey by McCarty

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at Co. Road Xing on Fairmount-11 & 12

Profile & x-section of transit line from Mission Gorge
Road, to Mission Dam site #3, for location of road
and pipeline 13-20

PROFILE OF TOP OF PIPE & NATURAL GROUND
STA. 1144+69 TO STA. 1123+50

EL CAPITAN PIPE LINE 10/27/49 ✓ 22-25
M.P.V.

TIES, ELEV. & of EL CAPITAN PIPELINE 26-28
To Property Cor. 5 ALVARADO SUB-DIV. Alice ✓

El Capitan pipeline Elev. & Top of pipe
Fairmount & Montezuma 29
Alice ✓

1204+77^B BC

N. 33° 57' E

April 9

McCarty
Soper
Anderson
Osborne

1205+29^Z 43° 20' R

E=10.9
T=56.9
R=143.24
D=40°
L=108.3

1205+86^L E.C.

N. 9° 23' W
~~N. 9° 41' W~~ 15.9

1206+02^B BC

E=13.5
T=55.2
R=106.70
D=54°
L=101.9

1206+57^Z 55° 00' L

1207+03^Z E.C.

N. 45° 37' E 130.0
~~N. 45° 19' E~~

1208+33^Z BC

E=2.2
T=50.1
R=572.96
D=10°
L=100.0

1208+84.0 10° 00' R

Apr. 10

1209+33^Z E.C.

N. 35° 37' E
~~N. 35° 17' E~~ 4.1

1209+38^B BC

E=36°
T=148°
R=286.48
D=20°
L=273.2

1210+86° 54° 39' L

1212+11^Z E.C.

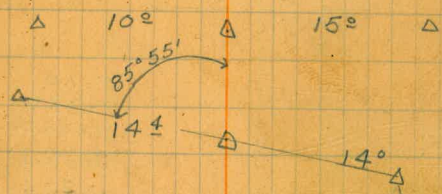
S. 89° 44' E
~~N. 89° 58' E~~

Apr. 9

△ 16° △ 9° △

All R.P.'s at right angles unless otherwise noted

P.I.'s referenced at right angles to forward tangent as the line runs.



△ 41° △ 20° △

△ 13° △ 15° △

△ 92° △ 27° △

△ 98° △ 26° △

△ 38° △ 32° △

398
173
571

269.71

N. 51° 15' E

G. W. Converse - chief of party

McCarty - Instrument
Saper - head-chain
Anderson - rear-chain
Osborne - rear-chain, axe

82
17.0
89.3

12

1187+10² EC

82.0

1187+92² BC

E=1.0
T=38.7
R=716.20
D=8° 00'
L=77.3

Apr. 13

1188+30⁹ 6° 11' R

Δ 20° Δ 8° Δ
Δ 125° Approx Δ 1692 Δ
Old hub 1^{1/2} back Δ 11.15
577

1188+69⁵ EC

N. 45° 04' E
N 44° 46' E 106.3

1189+75⁸ 5° 28' R

N. 39° 36' E
N 37° 18' E 270.0

Δ 18° Δ 8° Δ
Δ 115° Approx Δ 2000 V Δ 85° 02' Δ 1536 Δ
20° V Δ 10° Δ

1192+45⁸ 4° 44' L

N. 44° 20' E
N 44° 02' E 216.4

Δ 110° Approx Δ 18° Δ Reset 9° Δ 1.39 1/100

1194+62² BC

E=1.0
T=28.6
R=409.26
D=14° 00'
L=57.4

1194+90⁸ 8° 00' R

Δ 18° Δ Reset 10° Δ
Δ 135° Approx Δ 1642 Δ

1195+19³ EC

N. 36° 20' E 539.4
~~N 36° 02' E~~

Δ 20° Δ Reset 9° Δ

1200+58² 2° 23' R

N. 33° 57' E 419.1
~~N 33° 39' E~~

Apr. 12

Approx. 75° Δ 17° Δ 156 Δ
10° Δ

1204+77⁸ BC

1178+42⁸ BC

1178+69³ 8° 27' R

1178+95⁶ EC

1181+46⁴ BC

1182+52¹ 12° 38' L

1183+57⁰ E.C

1184+65⁵ BC

1185+17³ 61° 40' L

1185+58² EC

1186+75⁰ BC

1186+93¹ 14° 28' R

1187+10² EC

N. 0° 08' W 62.2

N. 8° 35' W
N. 8° 53' W 250.8

N. 4° 03' E
N. 3° 45' E 108.5

N. 65° 43' E 116.9
N. 65° 25' E

N. 51° 15' E

E=1.0
T=26.5
R=358.10
D=16°
L=52.8

E=5.8
T=105.7
R=954.93
D=6° 00'
L=210.6

E=14.3
T=51.8
R=86.81
D=66°
L=93.4

E=1.1
T=17.3
R=136.42
D=42°
L=34.4

Apr. 14

McCarty
Soper
Anderson
Osborne

in red

P.I.s referenced at rt. L to
back tangent as line runs unless
otherwise noted.

Δ 18° Δ 8°

Δ 21° Δ 9° Δ

old hub 1¹³ left

Δ 18° Δ 16° Δ

Δ 22° Δ 9° Δ

old hub 1¹³ back

Δ 21° Δ 6° Δ

Δ 150° 18° Δ 189° 10' 16° Δ
Approx.

16° 89°

3

Reset

Reset

Reset

Reset

16.07
10.29
5.78

N13°12'W
N13°32'W 117.1

1166+00 BC.

1166+55.3 34°19' L

E=8.3
T=55.3
R=179.05
D=32°
L=107.2

1167+07.2 EC.

N21°07'E
N20°47'E 452.1

1171+59.3 B.C.

1172+14.9 6°40' L

E=1.6
T=55.6
R=954.93
D=6°
L=111.1

1172+70.4 EC.

N27°47'E
N27°27'E 121.8

1173+92.2 BC

1174+10.8 17°42' R

E=1.4
T=18.6
R=119.37
D=48°
L=36.9

1174+29.1 EC.

N10°05'E
N9°47'E 305.1

1177+34.2 BC

1177+57.5 10°13' R

E=1.0
T=23.3
R=260.44
D=22°
L=46.4

1177+80.6 EC

N0°08'W
N0°26'W

110.9
452.1
563.0

55.3
57.6
110.9
0.6

4

Δ 18° Δ 31° Δ

Old hub 0.87 back and left

Not at
right angle



Δ 18° Δ 6° Δ

Δ 10° Δ

Δ 20° Δ 8° Δ

Reset

Stadia
172°

RPA 18°
old hub 0.02 left Δ 6° Δ

Δ 18° Δ 14° Δ

1152+75° BC

N.4°24'E 411.8

1153+48° 8°50' R

E=2.8
T=73.8
R=954.93
D=6°
L=147.2

1154+22.2 EC

N.4°26'W 126.2
~~N.4°44'W~~

1155+48° 1°06' R

N.5°32'W
~~N.5°50'W~~ 353.9

1159+02° BC

E=3.5
T=40.8
R=238.73
D=24°
L=80.9

1159+43° 19°25' R

1159+83° EC

N.24°57'W
~~N.25°15'W~~ 233.9

1162+17° BC

E=4.1
T=39.6
R=190.99
D=30°
L=78.1

1162+56° 23°25' L

Apr. 15

1162+95° EC

N.1°32'W
~~N.1°50'W~~ 114.8

1164+10° BC

E=1.9
T=36.6
R=358.10
D=16°
L=72.9

1164+46° 11°40' R

1164+82° EC

N.13°12'W
~~N.13°30'W~~

Δ 17° Δ Reset 7° Δ

Δ 19° Δ 6° Δ

Δ 18° Δ 9° Δ

Δ 17° Δ 6° Δ

Reset

Nail 0° left and back Δ

Δ 22° Δ 8° Δ

Reset

Δ 19° Δ 18° Δ

old hub 0° left and back Δ

Δ 22° Δ 9° Δ

Δ 18° Δ 31° Δ

Δ 21° Δ 12° Δ

1118+26.4 B.C.

N. 12° 28' E
N 12° 10' E 371.0

N 12° 10' E

E=17.4
T=142.3
R=572.96
D=10°
L=279.0

1119+68.7 27° 54' L

E=17.4
T=142.3
R=572.96
D=10°
L=279.0

Apr. 19

1121+05.7 EC

1123+35.5 P.O.T.

1125+25.5 P.O.T.

1131+00 POT

1136+09.6 P.O.T.

N. 40° 22' E
N 40° 04' E 1564.2

Apr. 17

1136+69.6 B.C.

E=25.7
T=124.1
R=286.48
D=20°
L=234.2

1137+93.7 46° 50' R

1139+03.8 EC

N. 6° 28' W
N 6° 16' W 68.9

1139+72.7 5° 00' R

Equation: $1139+72.7 = 1139+52.7$

1143+90 P.O.T.

1146+50.0 POT

N. 11° 28' W
N 11° 46' W 751.8

1147+04.5 B.C.

E=5.5
T=79.8
R=572.96
D=10°
L=158.7

Apr. 16

1147+84.3 15° 52' L

RIGHT
(DEATH)
7/18/51

1148+63.3 EC

N. 4° 24' E
N 4° 06' E

1117+00 POT

Δ 20° Δ 19° Δ

Δ 24° Δ 17° Δ

Δ...Δ Old hub 17° right

Δ 18° Δ 16° Δ

Δ 20° Δ 23° Δ

Δ 18° Δ 25° Δ

Δ 25° Δ 28° Δ

Δ 12° Δ 16° Δ

Δ 10° Δ 10° Δ

old hub 15° back and right

Δ 13° Δ 13° Δ

old hub
15 1/4° back and right

12° Δ 10° Δ

Δ 10° Δ 13° Δ

Δ 16° Δ 11° Δ

Δ 15° Δ 14° Δ

Δ...Δ Old hub 12° right and back

67° → Δ
Δ 27° → Δ

SET
OP
Hub & Geo

SET
RP
Hub & Geo

Reset

NOTE:-
E.C. RESET &
REF JULY 20 1951
SEE Page 28.

1172.80
1196.50
18°
17°
13°
6

1116

1119+

1121-

1123 1076+345 B.C.

1123+

113 1076+99.8 13°00' L

1136

1136- 1077+64.5 E.C.

1137+

1099+72.6 B.C.

1139+

1101+81.1 40°00' L

1139+

1143

1146

1147+

1111+05.4 B.C.

1147+

1113 +06.0 70°00' R

1148+

1148+

N.29°28'E
~~N.29°10'E~~ 533.6

E=3.7
T=65.3
R=572.96
D=10°
L=130.0

Apr. 21

Δ 19° Δ 25° Δ

old hub 8° back

Δ 16° Δ 23° Δ

N.42°28'E
~~N.42°10'E~~ 2208.1

E=36.8
T=208.5
R=572.96
D=10°
L=400.0

Apr. 20

Δ 16° Δ 19° Δ

Δ 18° Δ 18° Δ

N.82°28'E
~~N.82°10'E~~ 732.8

E=63.2
T=200.6
R=286.48
D=20°
L=350.0

Δ 20° Δ 17° Δ

old hub 5° back

Δ 17° Δ 26° Δ

N.12°28'E
~~N.12°10'E~~

1024+76⁰⁶ P.O.T.

N 46° 28' E

N 46° 10' E 1442.8 ✓

1030+31.2 B.C.

E=1.7
T=50.1
R=716.20
D=8°
L=100.0

1030+81.3 8°00' R

1031+31.2 E.C.

1032+41.9 P.O.T.

1038+35⁰⁶ P.O.T.

Apr. 22

N 38° 28' E

N 38° 10' E 1249.9

1043+8.1 2°00' L

1055+00 P.O.T.

1058+55 P.O.T.

N 40° 28' E

N 40° 10' E 2609.8

1069+90.9 B.C.

E=2.7
T=55.2
R=572.96
D=10°
L=110.0

1070+46.1 11°00' R

1071+00.9 E.C.

N 29° 28' E

N 29° 10' E

Δ 33° Δ 30° Δ

Δ 23° Δ 21° Δ

Δ 22° Δ 22° Δ

Δ 26° Δ 24° Δ

Δ 31° Δ 26° Δ

Old hub 13³ back Δ 20° Δ 21° Δ

Δ 22° Δ 25° Δ

Δ 24° Δ 29° Δ

Δ 22° Δ 22° Δ

Old hub 9²⁰ back Δ

Δ 27° Δ 25° Δ

Here 4:45 Apr. 22

996+50.13 (Straddle Hub)

996+59.20 54°00' R

996+64.70 (Straddle Hub)

998+05⁰⁰ E.C.

1002+86⁸⁸ P.O.T

N 7° 45' W
~~N 8° 03' W~~ 777.8 ✓

1005+82.8 B.C.

E=20.2
T=153.5
R=572.96
D=10°
L=300.0

1007+36.3 30°00' L

1008+82.8 E.C.

N 22° 15' E
~~N 21° 57' E~~ 7.7 ✓

1008+90.5 BC

E=10.0
T=107.3
R=572.96
D=10°
L=212.2

1009+97.8 21°13' L

1011+02.7 E.C.

N 43° 28' E
~~N 43° 10' E~~ 485.7 ✓

1015+80⁸⁴ 3°00' L

N 46° 28' E
~~N 46° 10' E~~

McCarty
Soper
Anderson
Osborne

Continued in Book # 5.
Page # 29.

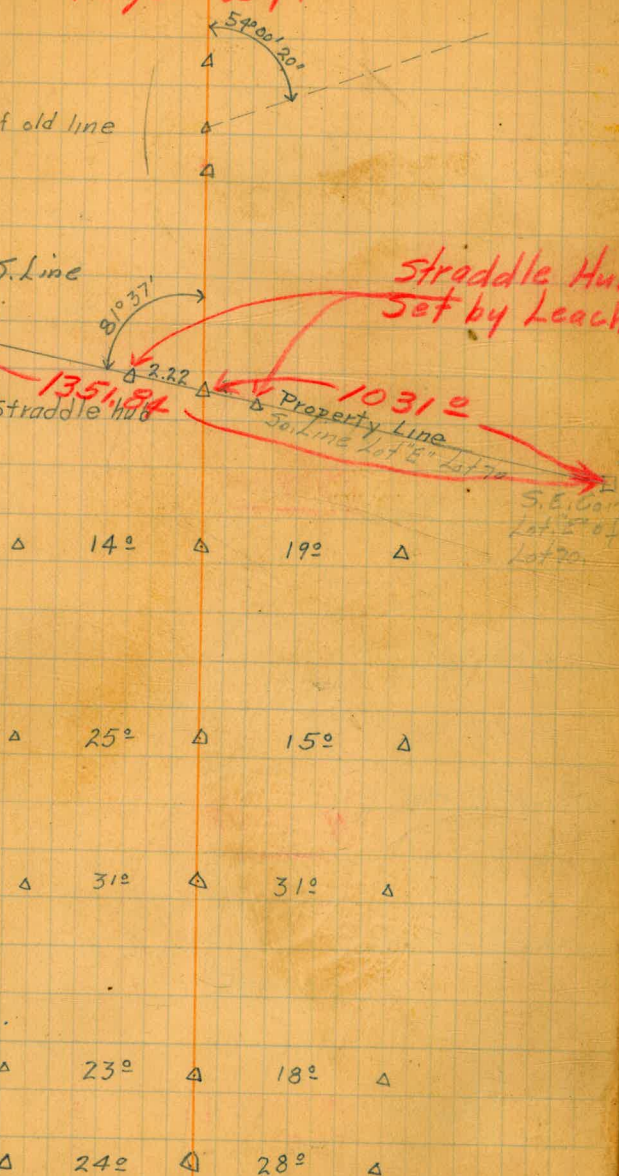
9

Intersection of old line

3x4 Hub on J. Line
Lot 70.

2.22 from W. Straddle hub

Straddle Hub
Set by Leach.



Aug. 24, 1926 Peirce T

Osborne Ch.

Maaltre Ch.

1308+09.27
1308+50 E.C.

1307+95² P.I.

1307+70.03
1307+34² B.C.

1285+55² Δ 17° 06' L

1284+72² Δ 16° 22' R

1257+04⁹² Δ 1° 46' R

1255+42³³ Δ 1° 46' L

S 89° 44' E

1212+13² Eg. E.C.
1212+11²

~~Δ 89° 55'~~ Δ = 89° 5'

~~T = 40.8~~ 24.97

~~R = 4.00~~ 25.0

~~L.C. 35.8~~ 39.24

D = ?

Loc. of Co. Road Xing of
El Capitan Pipe Line on
Fairmount Ave.

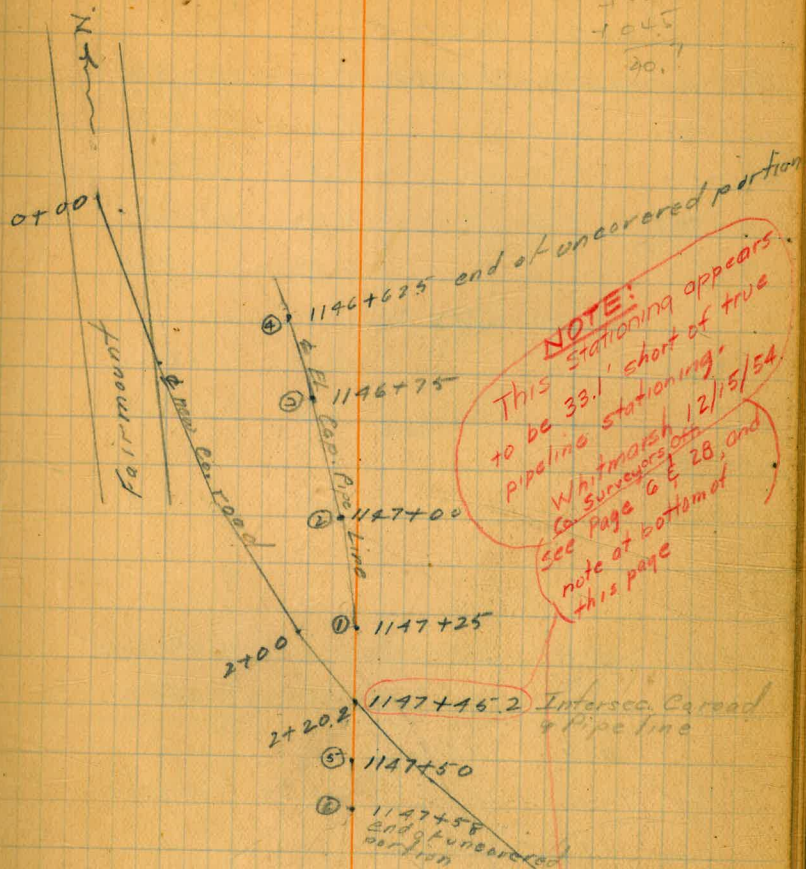
- ⑥ 130° 11' AL
- ⑤ 130° 11' AL
- ④ 45° 50' AR
- ③ 46° 18' AR
- ② 47° 18' AR
- ① 48° 46' AR

Transit on intersec. foresight sta. 2+00 Co. road
2+20.2
1147+45.2 Intersec. Co. road & Pipe Line

Hill
Simpson

4/11/58 clear & warm

11



Note stationing taken from gate
valve box = 1148+83.2 (T.V. Huff)
Gate is shown on profile sheet as
1149+00.

(This B.M. Apparently Based On City Datum. County Surveyors Notes (on R.S. 702 F.B. R702 Page 20) Show the Elev. Here To Be 122.2

1/11/38

(These Datum References Are Apparently Reversed. U.S.G.S. "Zero" is 6.12 Below City "Zero". Whitmarsh 12/15/54

Levels over Pipeline at road Xing

B.M.	11.5-0	133.80	122.30 Co. Datum	City Datum
1147+58		6.1	128.7	134.6
1147+50		3.8	130.0	135.9
1147+45.2		3.0	130.8	136.7
T.P.		1.14	132.66	
	12.30	141.96		
1147+25		10.9	139.1	140.0
1147		6.6	138.4	144.3
1146+25		1.9	143.1	149.0
1146+22.5		+0.3	145.3	151.2

Red head in parc. & Fairment = 0100 for near road

Note: all readings on top of pipe

B.M.	2.5-0	176.74	174.24
T.P.		12.73	164.91
	017	164.18	
T.P.		12.84	151.34
	191	153.25	
1147+01		8.98	144.27
		9.86	143.32
		Add. elevs. on pipe	1/11/38
	0.0	134.1	134.1
1147+78		8.1	126.0
	0.0	130.8	130.8
		13.5	117.3

1146+40?
CCW 12-15-54

Hub 15' L. Sta. 1146+00 El Cap. Pipe Line
Evidently a ret. point

Sta. on El Cap. pipe line.
Red hd. sta. 2100 Co. road loc.

Bot. valve box at 1148+83.2

Profile and x-section of transit line from
Mission Gorge road to Mission Dam site "3"
Transit notes in Book # 308

B.M.	8.90	516.43		507.53	Assumed Elevation
0+00			10.7	305.7	
1+00			7.1	509.3	
1+63			5.1	511.3	
1+77			5.9	510.5	
2+00			5.1	511.3	
2+45			4.2	512.2	
3+00			5.2	511.2	
4+00			2.9	513.5	
4+70	12.71	529.11	0.03	516.40	
5+00			11.8	17.3	

4/7/42
Soper
Dowlin
Davis

13

Trans. 30' Rt 173+54.62 Co. Road station. Elevation
by County is assumed.

Lt.

¢

All rods are + or - from ground elev.

$$\frac{+0.8}{30}$$

$$\frac{+0.3}{34}$$

$$\frac{-3.4}{75}$$

$$\frac{-6.5}{175}$$

$$\frac{-2.0}{60}$$

$$\frac{-5.0}{120}$$

$$\frac{-0.5}{20}$$

$$\frac{-1.2}{50}$$

$$\frac{-0.2}{53}$$

$$\frac{-1.2}{16}$$

$$\frac{+1.0}{18}$$

$$\frac{+1.2}{30}$$

$$\frac{-1.4}{19}$$

$$\frac{+2.2}{11}$$

$$\frac{+0.4}{36}$$

$$\frac{+1.0}{20}$$

$$\frac{+6.0}{28}$$

$$\frac{+5.2}{36}$$

$$\frac{+4.0}{60}$$

$$\frac{+2.5}{57}$$

$$\frac{+8.4}{62}$$

$$\frac{+7.0}{72}$$

$$\frac{+8.0}{90}$$

$$\frac{-0.3}{18}$$

$$\frac{+3.0}{25}$$

$$\frac{+7.3}{80}$$

$$\frac{+4.2}{94}$$

$$\frac{0.0}{22}$$

$$\frac{+4.3}{27}$$

$$\frac{+11.5}{107}$$

$$\frac{507.9}{-3.4}$$

$$\frac{509.9}{-1.4}$$

$$\frac{504.6}{-6.5}$$

$$\frac{509.2}{-2.0}$$

$$\frac{508.5}{-5.0}$$

$$\frac{513.0}{-0.5}$$

$$\frac{506.3}{-1.2}$$

$$\frac{517.1}{-0.2}$$

$$\frac{514.0}{+2.2}$$

$$\frac{516.7}{+0.4}$$

$$\frac{512.2}{+1.0}$$

$$\frac{517.2}{+6.0}$$

$$\frac{516.9}{+5.2}$$

$$\frac{515.2}{+4.0}$$

$$\frac{516.9}{+2.5}$$

$$\frac{521.9}{+8.4}$$

$$\frac{522.5}{+7.0}$$

$$\frac{521.5}{+8.0}$$

$$\frac{516.3}{-0.3}$$

$$\frac{519.5}{+3.0}$$

$$\frac{523.8}{+7.3}$$

$$\frac{528.2}{+4.2}$$

$$\frac{517.3}{0.0}$$

$$\frac{521.6}{+4.3}$$

$$\frac{531.8}{+11.5}$$

528.2
slope of road fill

	529.11	
5+75		519.6
6+00	8.9	520.2 ✓
6+08	9.3	519.8
+24	12.8	516.3
+31		514.8
+40	15.3	513.8
+61	7.2	521.9
+87	6.4	522.7
7+00	5.7	523.4
+75	4.6	524.5
8+00	5.3	523.8
+82	9.6	519.5

14

$$\begin{array}{r} 508.6 \\ -110 \\ \hline 100 \end{array}$$

$$\begin{array}{r} 516.4 \\ -32 \\ \hline 70 \end{array}$$

$$\begin{array}{r} 518.6 \\ -10 \\ \hline 15 \end{array}$$

$$\begin{array}{r} 519.9 \\ +0.3 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 532.4 \\ +12.8 \\ \hline 57 \end{array}$$

$$\begin{array}{r} 536.3 \\ +14.7 \\ \hline 136 \end{array}$$

$$\begin{array}{r} 510.2 \\ -100 \\ \hline 75 \end{array}$$

$$\begin{array}{r} 511.2 \\ -90 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 519.2 \\ -12 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 520.2 \\ 0.0 \\ \hline 44 \end{array}$$

$$\begin{array}{r} 522.7 \\ +2.5 \\ \hline 58 \end{array}$$

$$\begin{array}{r} 532.2 \\ +12.8 \\ \hline 64 \end{array}$$

$$\begin{array}{r} 538.7 \\ +18.5 \\ \hline 146 \end{array}$$

$$\begin{array}{r} 518.8 \\ +40 \\ \hline 65 \end{array}$$

$$\begin{array}{r} 516.8 \\ +20 \\ \hline 53 \end{array}$$

$$\begin{array}{r} 520.8 \\ +60 \\ \hline 38 \end{array}$$

$$\begin{array}{r} 520.3 \\ +55 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 516.1 \\ +13 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 522.1 \\ +7.3 \\ \hline 38 \end{array}$$

$$\begin{array}{r} 522.2 \\ +7.4 \\ \hline 71 \end{array}$$

$$\begin{array}{r} 532.8 \\ +180 \\ \hline 93 \end{array}$$

$$\begin{array}{r} 537.8 \\ +230 \\ \hline 122 \end{array}$$

same slope 30' further

$$\begin{array}{r} 520.7 \\ -12 \\ \hline 75 \end{array}$$

$$\begin{array}{r} 521.9 \\ 0.0 \\ \hline 37 \end{array}$$

$$\begin{array}{r} 514.3 \\ -76 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 517.6 \\ -43 \\ \hline 63 \end{array}$$

$$\begin{array}{r} 524.9 \\ +30 \\ \hline 76 \end{array}$$

$$\begin{array}{r} 524.9 \\ +30 \\ \hline 107 \end{array}$$

$$\begin{array}{r} 539.9 \\ +180 \\ \hline 154 \end{array}$$

on bisection of angle

$$\begin{array}{r} 521.0 \\ -12 \\ \hline 78 \end{array}$$

$$\begin{array}{r} 522.4 \\ -0.3 \\ \hline 37 \end{array}$$

$$\begin{array}{r} 522.9 \\ +0.2 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 518.1 \\ -46 \\ \hline 44 \end{array}$$

$$\begin{array}{r} 520.7 \\ -20 \\ \hline 74 \end{array}$$

$$\begin{array}{r} 522.4 \\ -0.3 \\ \hline 161 \end{array}$$

$$\begin{array}{r} 532.2 \\ +95 \\ \hline 200 \end{array}$$

$$\begin{array}{r} 524.9 \\ +15 \\ \hline 42 \end{array}$$

$$\begin{array}{r} 531.6 \\ +82 \\ \hline 114 \end{array}$$

+3% for 200' further

$$\begin{array}{r} 519.8 \\ -40 \\ \hline 72 \end{array}$$

$$\begin{array}{r} 522.8 \\ -10 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 523.8 \\ 0.0 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 530.0 \\ +62 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 542.8 \\ +190 \\ \hline 115 \end{array}$$

$$\begin{array}{r} 548.5 \\ +242 \\ \hline 158 \end{array}$$

+7% - 200' further

$$\begin{array}{r} 515.5 \\ -40 \\ \hline 67 \end{array}$$

$$\begin{array}{r} 517.5 \\ -20 \\ \hline 52 \end{array}$$

$$\begin{array}{r} 519.1 \\ -0.4 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 520.9 \\ +14 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 530.8 \\ +133 \\ \hline 37 \end{array}$$

$$\begin{array}{r} 539.1 \\ +195 \\ \hline 85 \end{array}$$

+17% - 70' further

+7% - 150' further

529.11

9+00 11.3 517.8 +

P 0.93 517.69 12.35 516.76

10+00 3.9 513.8

11+00 8.7 509.0

12+00 12.7 505.0

P 0.42 505.33 / 515.33 12.78 504.91 / 514.91

13+00 4.6 500.7

+58 197.6

14+00 7.9 195.40 / 505.4

P 2.00 494.75 504.75 12.58 492.75 / 502.75

L+

E

R+

15

511.3
-25
63513.5
-0.3
27525.3
+11
19

+24% - 110' further

+16% - 150' further

507.8
-12
72508.8
-0.2
24509.5
+0.5
16519.0
+100
24

+23% 150' further

+14% - 100' further

502.0
-30
35504.7
-0.3
18505.5
+0.5
45521.0
+160
52

+20% - 250' further

500.3
-0.4
17501.7
+10
16512.9
+123
45

+24% - 125' further

+17% - 200' further

0.0
18
-0 = 995.2
20

draw

+10
13+58
18

+18% - 400' further

+24% - 300' further

494.75
~~504.75~~

15+00

2.8 492.05

15+42

4.4 490.4

16+00

2.9 494.9

16+15

0.0 494.8

16+40

0.8 494.0

17

5.81

493.74
~~503.74~~

6.82

487.93
~~497.93~~

16+75

13.3 480.4

17+00

12.7

481.0
~~491.0~~

+30

12.6

481.1

LT

492.0
~~0.0~~
25

E

503.8
~~+11.8~~
13

Rt

+42% - 50' further
+20% - 80' further
x 27% - 100' further

16

481.1

Edge of stream
481.1

~~-10.8~~
75

~~-10.8~~
35

~~-0.8~~
19

491.4

491.9
~~0.0~~
7

501.3
~~+9.4~~
14

510.9
~~+19.0~~
47

+43% - 55' further
+25% - 150' further

493.74
~~503.74~~

17+71		11.0	482.7
18+00		11.5	482.2 492.2
+28		12.7	481.0
19+00		12.6	481.1 491.1
20+00		12.5	481.2 491.2 (on ground)
21		12.6	481.7 491.7
21+15		11.8	481.9
TP	9.15	491.04 501.04	481.89 491.89

491.04
~~501.64~~

22+00

9.3

481.7
~~491.7~~

23+00

8.6

482.4
~~492.4~~

24+00

8.6

482.4
~~492.4~~

24+10

8.6

482.4

+83

8.8

482.2

25+83

9.5

481.5

491.04
~~501.04~~

26483 9.0 482.0

TP 5.57 490.64
~~500.64~~ 5.97 485.07
~~495.07~~

28400 7.4 483.2

29400 5.4 485.2 on ground

30400 7.3 483.3

31400 7.3 483.3

495.64
~~500.64~~

20

32+00

7.3 483.3

32+68

7.3 483.3

33+50

6.0 484.6

33+86

4.1 486.5

Set B.M.

3.67 486.97
~~476.97~~

P.O.R. on line 33+83

OCT. 27 1949
 BEATTY &
 ROGERS TO
 FINNEY &

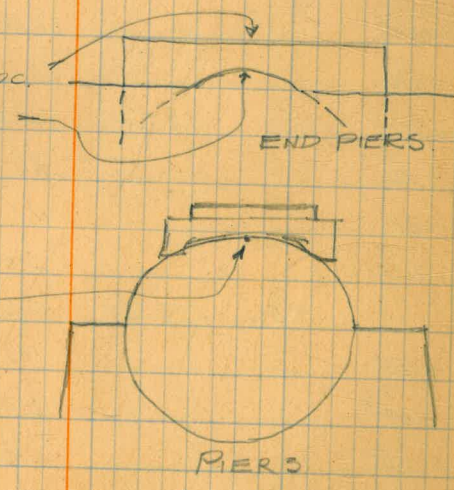
PROFILE OF TOP OF PIPE &
 NATURAL GROUND LINE
 EL CAPITAN PIPELINE

BM	0.32	287.25		286.93
HP	0.24	272.39	13.10	274.15
HP	0.23	261.63	12.99	261.20
HP	0.52	249.23	12.92	248.71
HP	0.58	237.12	12.69	236.52
HP	0.20	224.70	12.62	224.50
HP	0.11	211.73	13.08	211.62
HP	0.01	198.80	12.94	198.79
1144+69			26.0	172.8
+25			20.4	178.4
1144+00			14.1	184.7
+84			12.9	185.9
+74°			14.5	184.3
+74°			14.9	183.9
+57°			14.7	184.1
+26.8			14.3	184.5
+24			22.8	154.0
+10			44.8	154.0
1143+97°			13.7	185.1
+67°			13.1	185.7
+49°			12.7	186.1
HP	13.10	211.89	0.01	198.79
1142+00			7.2	204.7
+50			4.0	207.9
HP	12.29	223.90	0.28	211.61
1141+00			12.7	211.2

NAIL IN HUB
 30' LT 1136+50

Revised
 10/28/49 W.H.

C of End pier Top of CONC.
 Top of pipe
 C pier - Top pipe
 C pier - " "
 N.GRD } C CHANNEL
 N.GRD }
 C pier Top pipe
 C pier Top pipe
 Top pipe at ground.



OCT. 27 1949

23

PROFILE - TOP OF PIPE & NAT. GRD. (Cont'd)

223.90 ✓

1140+50		9.3	219.6	
1140+00		4.8	219.1	
1139+52.7 BK				
1139+72.3 BK		0.8	223.1	
IP	11.64	235.35 ✓	0.19	223.71 ✓
1139+00		7.5	227.9	
+50		3.1	232.3	
IP	12.91	248.05 ✓	0.21	235.14 ✓
1138+00		8.7	239.4	
IP	13.00	260.88 ✓	0.17	247.88 ✓
+50		9.2	251.7	
IP	13.37	274.22 ✓	0.03	260.85 ✓
1137+00		12.2	261.8	
+50		1.1	273.1	
IP & 2nd IP	13.33	287.48 ✓	0.05	274.17 ✓ = 274.15 ✓
+20		8.3	279.2	
+20		11.1	276.4	
1136+00		5.6	281.9	
IP	9.56	296.54 ✓	0.50	286.98 ✓
+50		9.1	287.4	
+14°		8.0	288.5	
+12°		8.4	288.1	
1134+45°		6.0	290.5	
+15°		5.9	290.6	
1134+00		13.1	283.4	
1133+85		5.4	291.1	

By Test Hole

Top of pipe

a pier (top conc)

Top of pipe

o pier top pipe

o pier top pipe

N.G.

Top of Pipe (M.N)

Oct. 27, 1949

24

PROFILE - Top of Pipe & NAT GRD (Cont'd)

1133+55		296.52	4.9	291.6
+42			10.3	286.2
+25			4.4	292.1
1132+90			2.2	293.3
+90			3.6	292.9
+84			3.5	293.0
11	13.00	309.34	0.20	296.34
+50			7.8	301.5
+25			2.0	307.3
11	12.73	322.07	0.00	309.34
1132+00			7.1	315.0
+92			4.6	317.5
+92			7.1	315.0
11	12.30	335.31	0.06	322.01
+50			6.0	329.3
11	9.13	343.74	0.70	334.61
+37			11.0	332.7
+29			7.1	336.6
1131+00			6.4	337.3
+75			8.35	335.4
+40	Shldr		3.6	340.1
+27	T/S		10.2	333.5
+18			10.9	332.8
+18			12.0	331.7
11	0.48	332.72	12.50	331.24
1130+00			0.7	332.0

? Top of Pipe w. 114.

N.G.

a pier top of pipe

Top of conc a pier

Top of pipe

Top of pipe at ground

By Test Hole

Top pipe

Top of pipe at A.V.A # Box

By Test Hole

Top of pipe

Oct. 27 1949

PROFILE - TOP OF PIPE & NAT. GRD (Cont'd)

25

1129+50	332.72 ✓	6.5	326.2
1129+00		12.1	319.6
+99°		12.0	319.7
+99		13.4	319.3
+50		16.2	316.3
+31°		16.6	316.1
1128+01.2		17.0	315.7
+95		31.0	301.7
+71°		17.5	315.2
		17.6	315.1
+21		16.5	316.2
1127+00		13.3	319.4
+50		6.3	326.4
+17		1.3	331.4
+17		3.2	329.5
P	12.40 344.84 ✓	0.28	332.44 ✓
1126+00		11.2	333.6
+50		6.9	337.9
1125+00		4.0	340.8
+50		2.1	342.7
1124+00		2.0	342.8
1123+50		4.50	340.34 ✓
P Rock		4.33	340.51 ✓

Top CONC. C. pier

Top pipe

Top pipe

C. pier top pipe

C. pier top pier

NAT. GRD

Top pipe C. pier

C. of B.O. Box 55 LT. 1127+25

top of pipe at ground

By Test hole

Top pipe

Top of pipe at VAL. IN VAL. Box

TIES FROM EL CAPITAN PIPELINE
TO PROPERTY OF ALVARADO SUB-DIV.
COR'S.

1120+41⁴ Int. Bdry of Sub-Div.

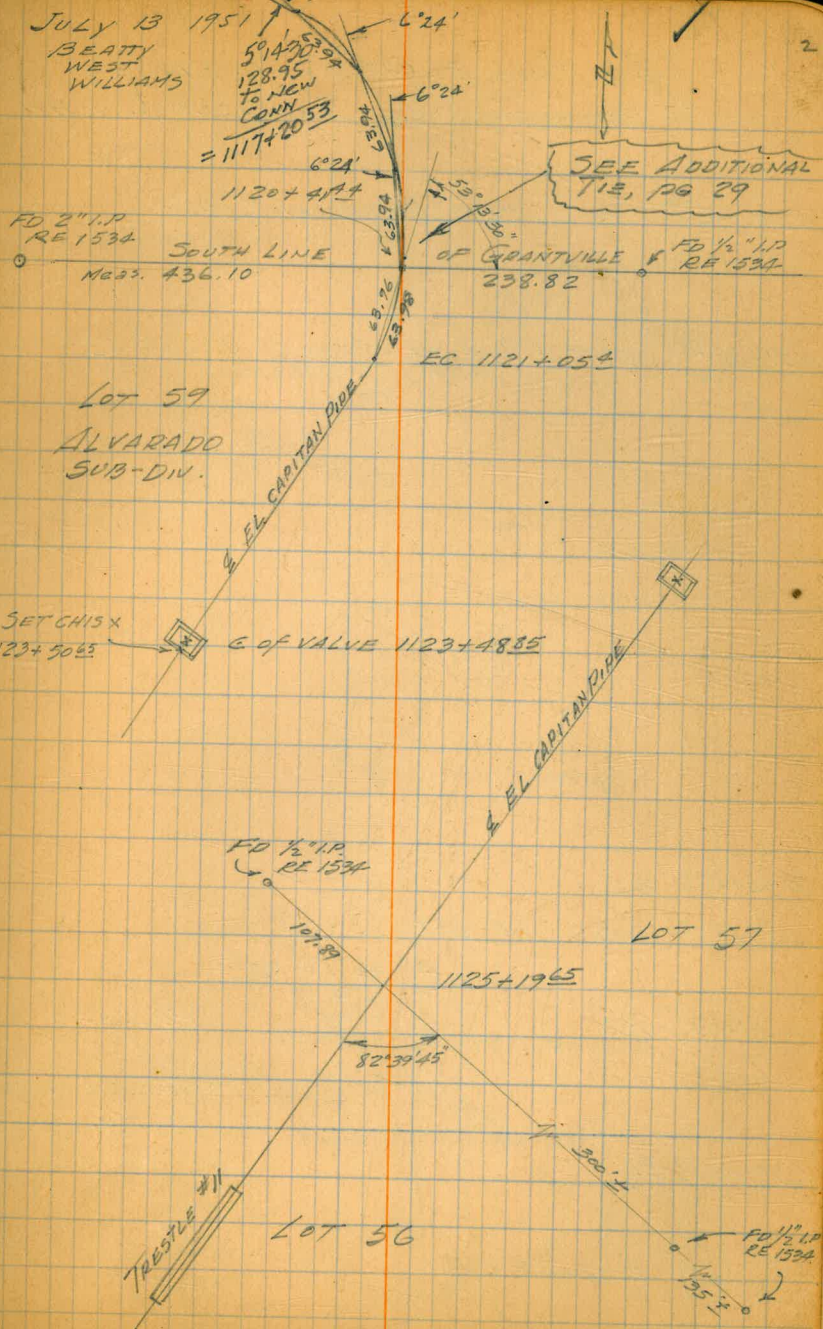
$\Delta = 6^{\circ}23'46''$
 $D = 10'$
 $R = 572.96$ — (from pg. 6)

1121+05⁴ E.C.

1123+48⁸⁵ POT. C of GN.

1123+50⁶⁵ POT. SET CHIS X on Conc. Chamber

1125+19⁶⁵ POT Int. of LOT LINE 56-57



TIES FROM EL CAPITAN PIPELINE
TO PROPERTY COR.'S ALVARADO SUB-DIV.

1130+46⁶⁸ POT SET CHISX ON CURB

1131+38¹⁵ POT Int of STREET & LOT 73

1136+69⁶ BC.

1137+81¹⁵ P.O.S.T Int. Lot 75-93

1137+93⁷ P.I.

A = 46°50' RT
T 124.10
D 20°
R 286.48

FD 2x2 HUB
& TACK

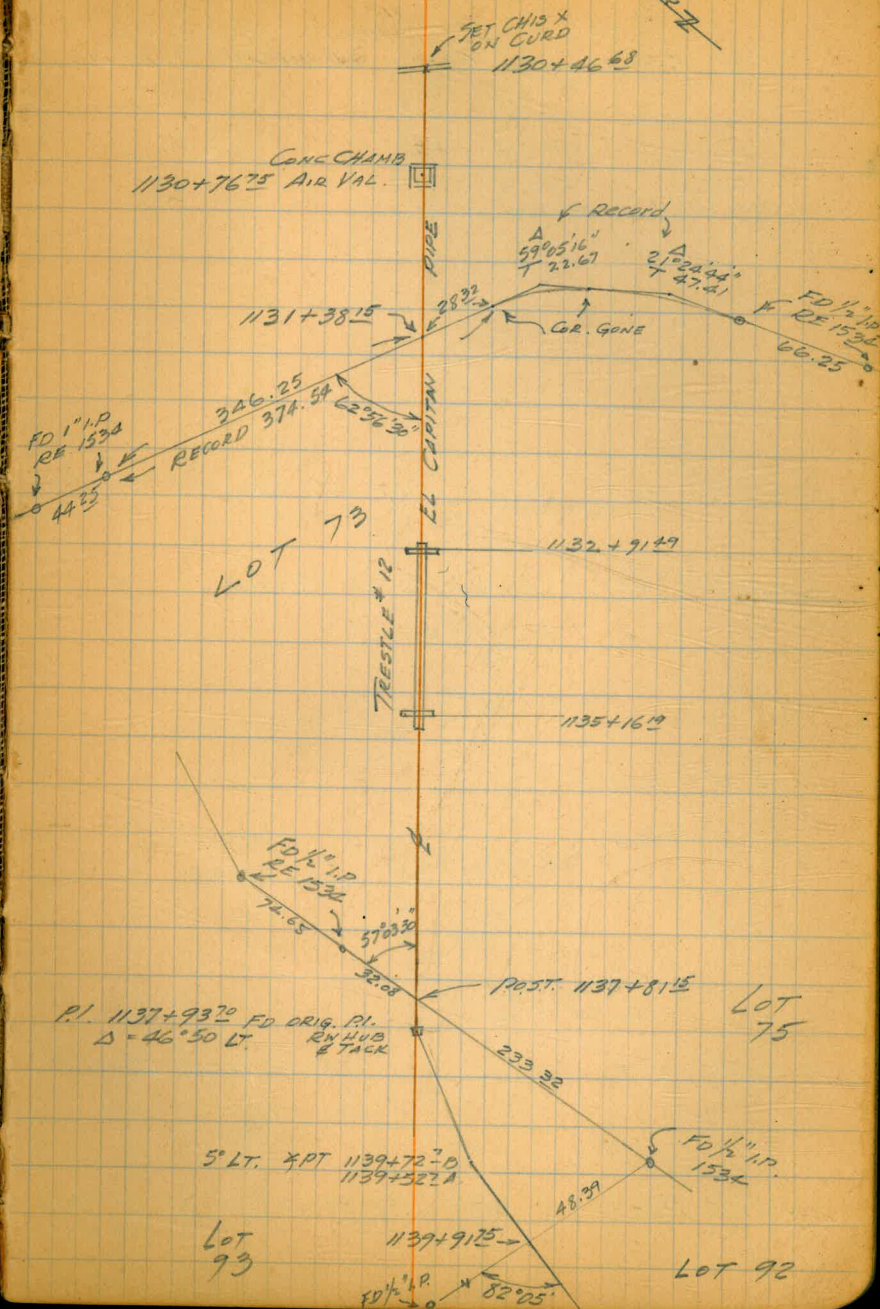
NOTE: All stations
based on
this point.

1139+03⁸ EC

1139+72⁷ B. EQUA X-PT 5°00' LT
1139+52⁷ A.

1139+91¹⁵ POT Int. Lot 92 & 93

July 13 1951



TIES FROM EL CAPITAN PIPELINE
TO PROPERTY GR.'S ALVARADO SUB-DIV.

JULY 18, 1951 HOT. 1
BEATTY
LEONARD

28

1144+20²⁰ POT Inter LOT. 67 Rancho Mission

1146+45⁹⁰ POT Inter Lots 89-90

1147+59¹⁶ P.O.S.T

$\Delta 15^{\circ}52' RT$

1147+84³

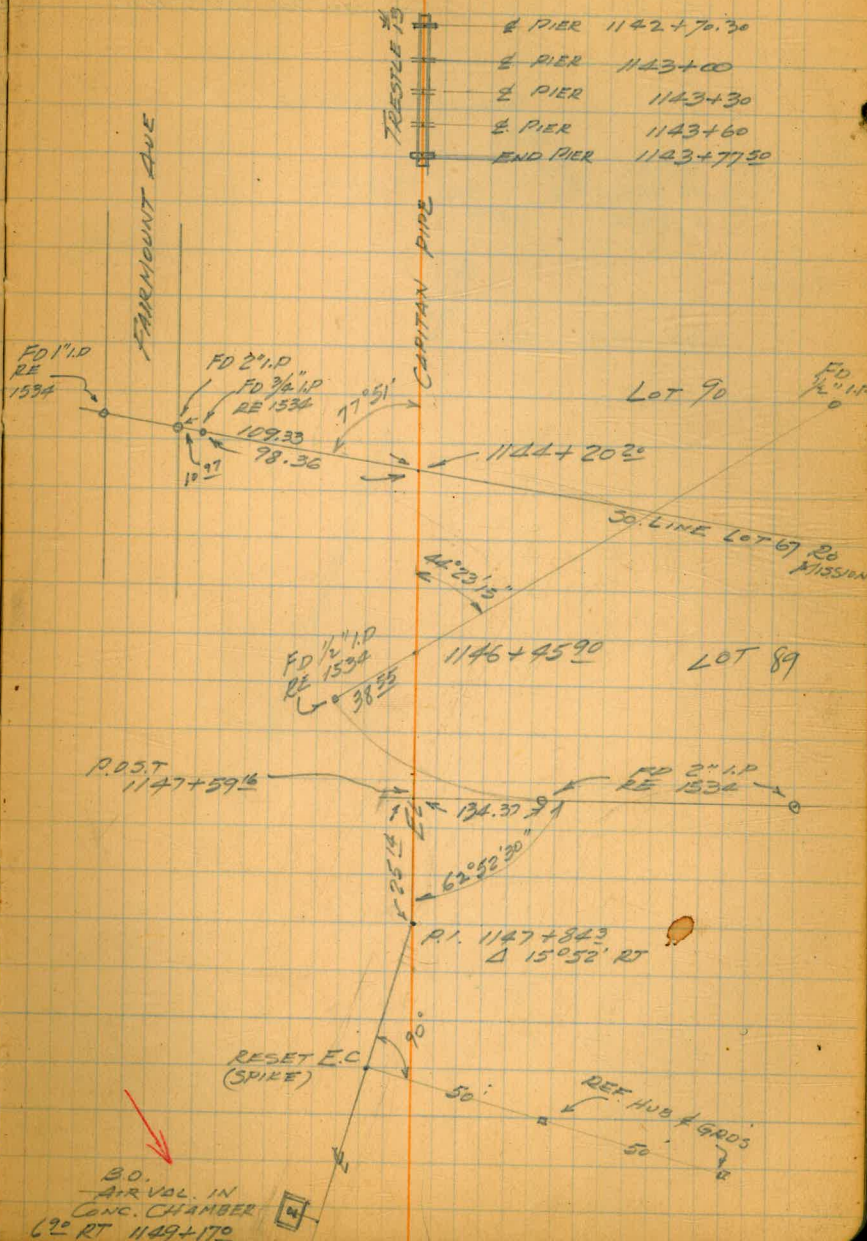
1148+69² E.C.

(REF. 50'100' LT @ 90°)

1149+17⁰ POT.

62° RT. To E.G.V. of 4" BD.
in Chamber

SEE Note Pg. 11 -

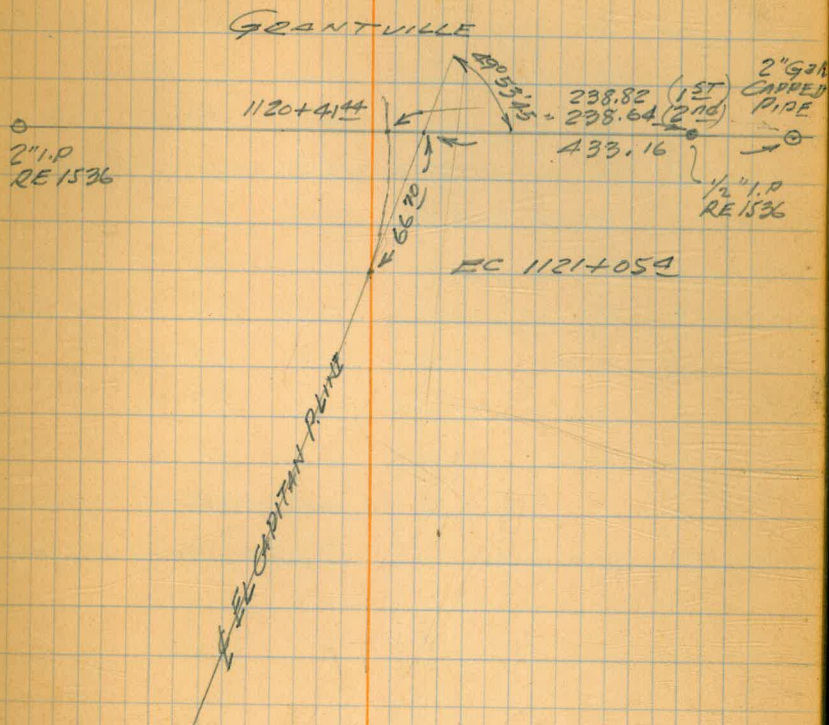


TIES FROM EL CAPITAN P.L.
To Prop Cor. 5 ALVARADO SUB-DIV

AUG. 21, 1951
BEATTY
LEONARD
SEAVELLO

HP

29



EL CAPITAN PIPELINE
ELEVATIONS Top of PIPE
MONTEZUMA & FAIRMOUNT

BM			CITY DATUM 128.99	USGS Datum 127.93
	7.38	136.37		
1149+14 ⁵	Top of pipe	14.56	121.81	127.93
	Top 100 Chains	7.04	129.33	
1147+82 ²	Top of pipe	6.31	130.06	136.18
1147+78 ³	Top of pipe	5.67	130.70	136.82
IP	12.75	148.51	0.61	135.76
1147+47 ⁰	Top of pipe	12.74	135.77	141.89
1147+16 ⁰	Top of pipe	7.14	141.37	147.49
ID	11.56	159.86	0.21	148.30
IP	13.16	171.92	1.10	158.76
ID	11.32	182.99	0.25	171.67
			4.60	178.39 = 184.51
1142+67	Top of pipe	3.25	179.74	= 185.86

JAN. 12 1955

BETTY
SWEET
MARTELL
ALEXANDER

30.

Chris NW Cor Dbb1 Box Culvert Hdw.

8.48
237 6.08
12.56

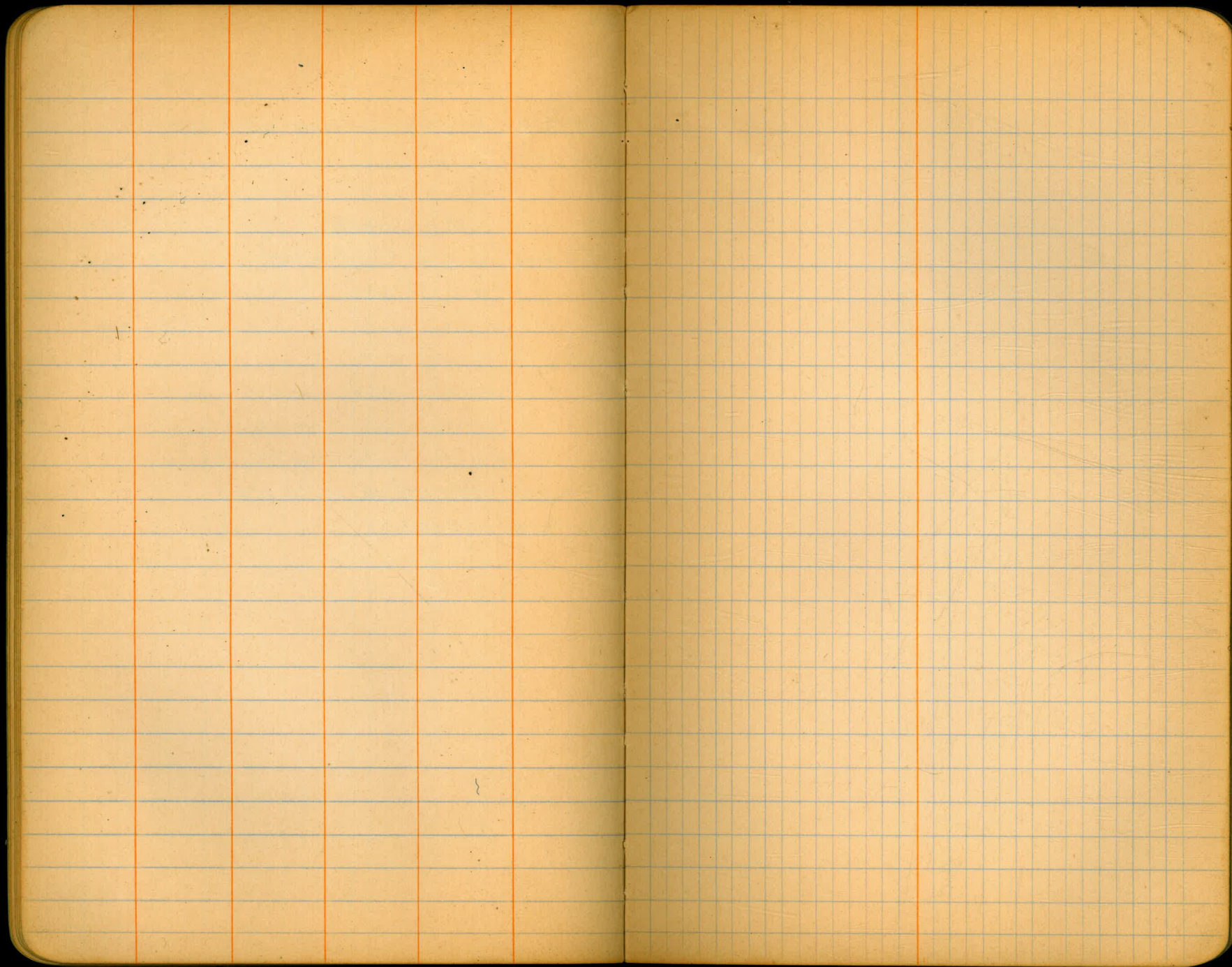
"P" Line W.N.

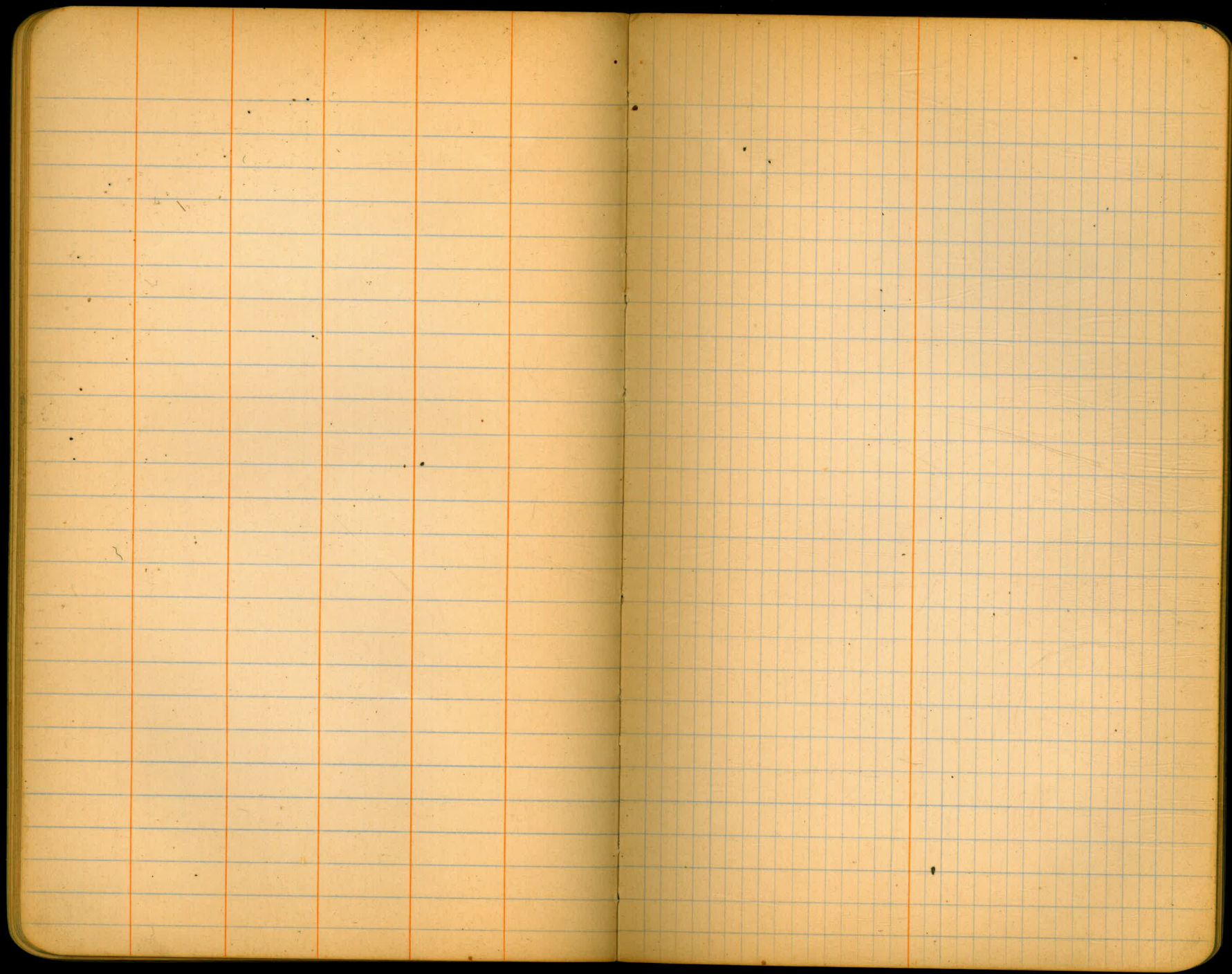
(= 5105 "C" Line County survey)

?

Top of pier 1143+775 (see pg. 22 & 28)

Top of pipe 1142+703 (" " " ")





1112+55.4
 $\frac{44}{11.2}$

T=200.6
R=286.48
D=20°

1114+55.4

B.C. 1111+05.4

Cords	✓ 1111+19	-1°21'.6	} Supports.
	✓ +44	-3°51'.6	
	✓ +68	6°21'.6	
	✓ +94	8°51'.6	
	✓ 1112+19	11°21'.6	
	+44	13°51'.6	

$\frac{104.92}{11.27}$

116.19 H.I.

	Elev.	} Neat Line Elev.
1111+25	= 103.3	
1111+50	= 104.2	
1111+75	= 105.4	
1112+00	= 105.0	
1112+25	113.4	

1375
112.35
 $\frac{113.73}{8.19}$

115.03

121.72 H.I.

1112+50 = 120.4

1112+45 = 119.7

1112+40 = 118.4

1111+00 = 102. $\frac{11.6}{119.4}$

1113+50 = 131

1112+45 Joint

1112+20 Joint

1112+40 = Grade + Surface Elev.

1111+10 " " " "

104.92

$\frac{3.45}{108.37}$ H.I.

108.37 H.I.

19.0

05.4

13.6

1021'36"

Support.

Neat Line Elev.

1112+25

113.4

1112+00

105.0

1111+75

105.4

1111+50

104.2

1111+25

103.3

16°19.5

3-5/8"

1210+48

89

10 15

1209+98

5°

2.14

18 70

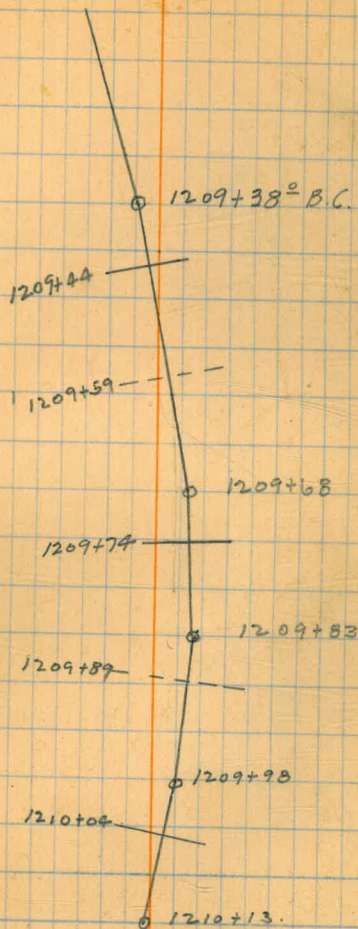
1209+83

6°30'

71.14

1.50

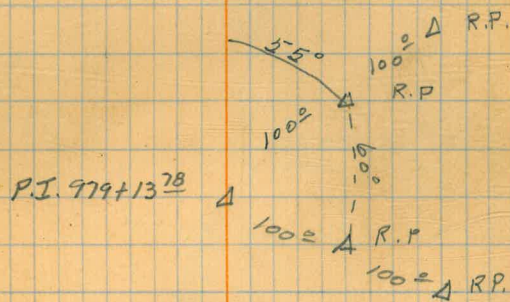
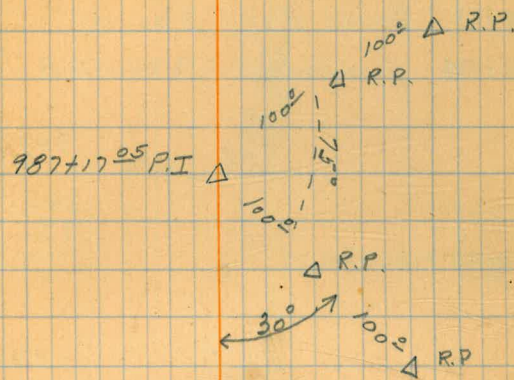
58
91.14
2.86 ✓
4.28
11.14 ✓



Cut stakes 975+00 to 987+50

1209+34.5

1057
115
155
160



35-37
3 14
38 51

7.2 7.2
.89 .84
6.48 2.88
5.76 5.76
35°37'E 6.408 6.048

1050
37 27

1208+00 Grade Elev. = 330.00

1208+84 Grade Elev. = 336.048

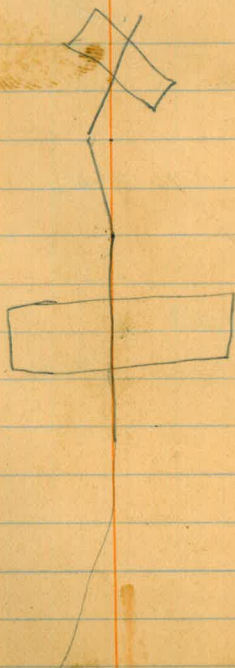
1209+33.9

6
1209+30.5

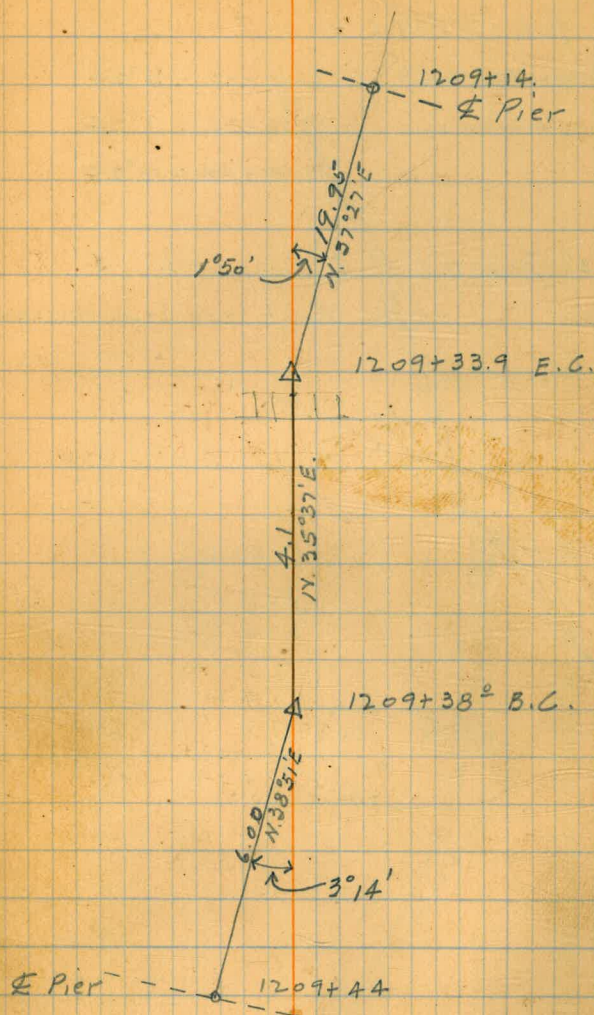
342.301 345.5
3.205 9.6
345.506 335.9
336.41
9.10

336.5
5.6
1208+84 330.9

345.506
11.588
333.918 332.8
2.577
336.495
4.867
331.628



1208+89



44

$$R = 286.48$$

$$\Delta = 54^{\circ}39'$$

$$\frac{1}{2}\Delta = 27^{\circ}19.5'$$

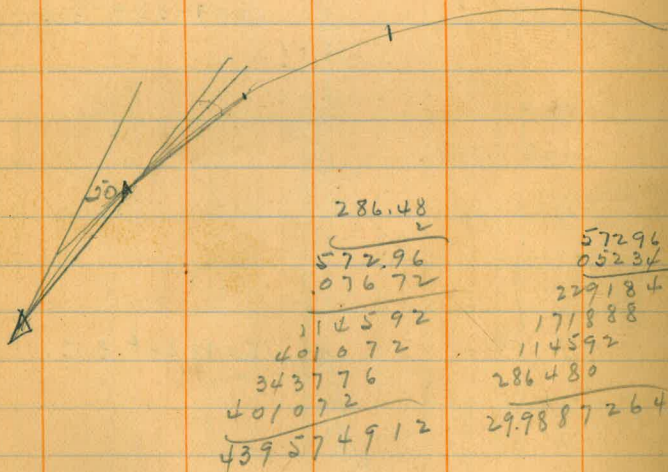
$$\text{Def. from } 1210+48 \text{ to } 1210+04 = 4^{\circ}24' \quad 43.96$$

$$1209+74 = 7^{\circ}24' \quad 29.99$$

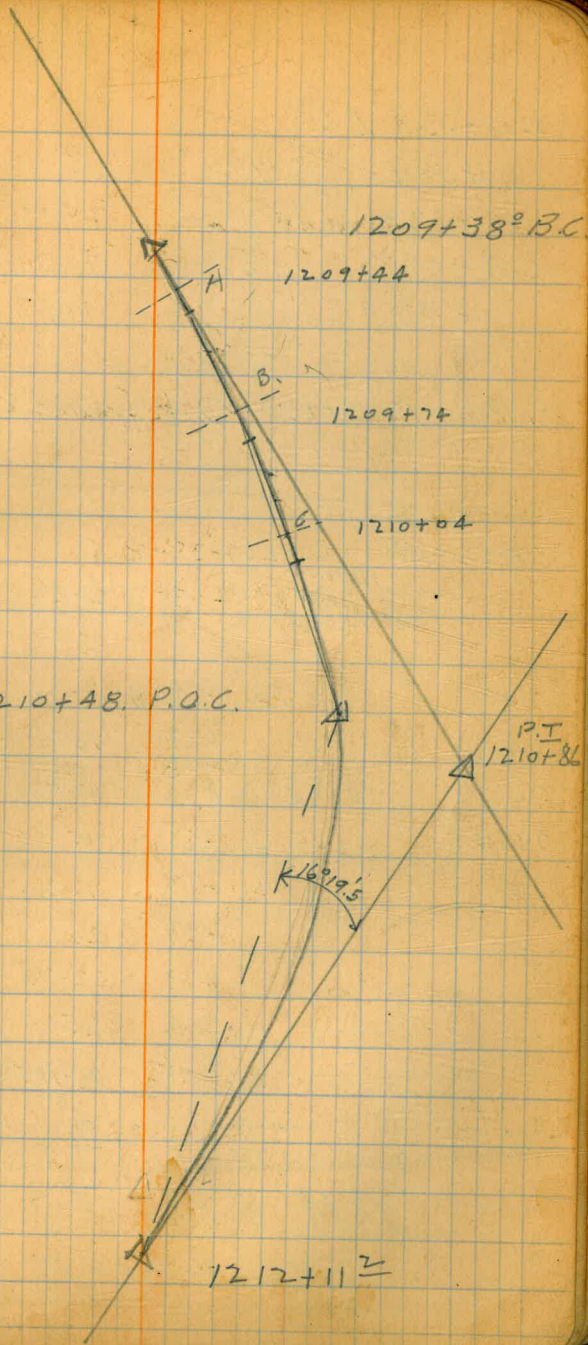
$$1209+44 = 10^{\circ}24'$$

3°14' from B.C. to $\frac{1}{2}$ Support A.

1°17' " " to Point set from 1210+48



1210+48 P.O.C.



54-39
27-19.30

1208+33.9 B.C.		
+58.9	1°15'	25
+83.9	2°30	24.79
1209+08.9	3°45	74.94
+33.9 E.C.	5°	99.88

Picr at 1209+13.9 Def. from B.C. 4°05'

E.C. 1212+11 ^z	1209+38° B.C.	27-19.5	
1209+14	+63 ^e	2-30	24-49.5
+24	+88 ^e	5	22-19.5
+74			
+04			
24.99	1210+13 ^e	7-30	19-49.5
49.94	+38	10	17-19.5
74.79	+48		16-19.5 P.O.C.
99.49	+63	12-30	14-49.5
	+88	15	12-19.5 ✓
	1211+13	17-30	9-49.5 ✓
	+38	20	7-19.5 ✓
	+63	22-30	4-49.5 ✓
	+88	25	2-19.5 ✓
	1212+11 ^z	27-19.5	

B.M. assumed R.P. pin 30' Rot
B.C. 173+54.67 507.53

1257+04.92
1255+42.33 4.1
~~148.0~~
50.1
1+62'
202.2

IMPROVED TABLES AND INFORMATION

4 Bell Holes Wrong.

Cut 2.53 off E. End 1393 = 519, 1206+74.8
1392
1391
1390 - W. End = 1206+74.8
Supposed to have been cut off this

DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder stake for any width roadway, slope $1\frac{1}{2}$ 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.

TABLE No. 9.

To find Tangent and External for curve of any other degree, divide by degree of curve and add correction found in column of corrections.

Degree of curve with a given I may be found by dividing tangent, (or external), opposite I by given tangent, (or external).

The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

1187+10 back

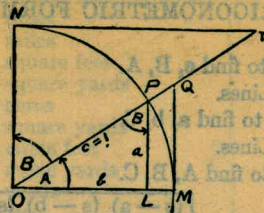
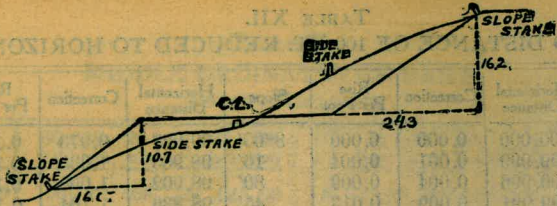


TABLE II
TRIGONOMETRIC FORMULÆ.

$$\begin{aligned}\angle A &= \angle MOP & \angle B &= \angle PON = \angle OPL \\ R &= OB = c = 1 \\ \sin A &= \frac{a}{c} = \frac{a}{1} = a = \cos B = LP \\ \cos A &= \frac{b}{c} = \frac{b}{1} = b = \sin B = OL \\ \tan A &= \frac{a}{b} = \frac{MQ}{OM} = \frac{MQ}{1} = MQ = \cot B = MQ \\ \cot A &= \frac{NT}{ON} = \frac{NT}{1} = NT = \tan B = NT \\ \sec A &= \frac{OQ}{OM} = \frac{OQ}{1} = OQ = \csc B = OQ \\ \csc A &= \frac{OT}{ON} = \frac{OT}{1} = OT = \sec B = OT \\ \text{vers } A &= \frac{LM}{OP} = LM = \text{covers } B \# \\ \text{covers } A &= \frac{OP - LP}{OP} = OP - LP = \text{vers } B \\ \text{exsec } A &= PQ = \text{coexsec } B \\ \text{coexsec } A &= PT = \text{exsec } B \\ \sin \frac{1}{2} A &= \sqrt{\frac{1 - \cos A}{2}} & \cos \frac{1}{2} A &= \sqrt{\frac{1 + \cos A}{2}} \\ \sin 2A &= 2 \sin A \cos A & \cos 2A &= \cos^2 A - \sin^2 A \\ \text{Law of Lines} & \frac{\sin A}{a} = \frac{\sin B}{B} = \frac{\sin C}{C} \\ \text{Law of Cosines} & c^2 = a^2 + b^2 - 2ab \cos C \\ \text{Law of Tangents} & \frac{a+b}{a-b} = \frac{\tan \frac{1}{2}(A+B)}{\tan \frac{1}{2}(A-B)}\end{aligned}$$



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1 1/2 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 25	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

Computed by L. Leland Locke.

45.16
 54.84
 1149 02.71
 1144 00.43

 2.28
 29.94

 32.22

1147 04.5
 1144 00.43

 304.07
 1145 100.43

E.C. 1183+57° Bell Hole 1183+56°
 E.C. 1178+95° Bell Hole 1178+94.6
 B.C. 1171+59° Bell Hole 1171+58.5

Wilson 10' off

4191
56.9
476.0

Wilson
Swift 15'

58.7
16.3
3.0

R
R+15
2.5
100
X

269.71

Idaho 15'

896.0
2 23
87 37

Idaho & OK

539.4
28.6
568.0

8.5
1.5
7.0
130.8
137.8
125.1
12.7

19.1

17.1
132° 50
66° 67.3
6.6

0.5
100
500

132
105

130.8
6.0
136.8
139.2
127.6
125.1
5

4191
56.9
476.0

6° 36'

132) 6.60
660

132) 13.2

56.9
15.9
72.8
55.2
128.0

1212 + 94.35

130.8

1144 02.71
1143 72.93
29.78

50
193
30.7

1209 + 13.9
1208 + 33.9
80.0

90
56
16
162

1307 + 95
2497

1307 + 70.03
3726

1308 + 0
972.7
731.8

202.2
162.0
46.2

0
0
0

0
0
0

1186
1185

931
589

1099 + 72.6
208.5
1101 + 81.1

19.95
4.1
6.01
30.06

4191
56.9
476.0

134.2
51.8
186.0

1143 + 90.0
1139 + 72.7
4 + 17.3

25
59.2
84.3
23
109.7