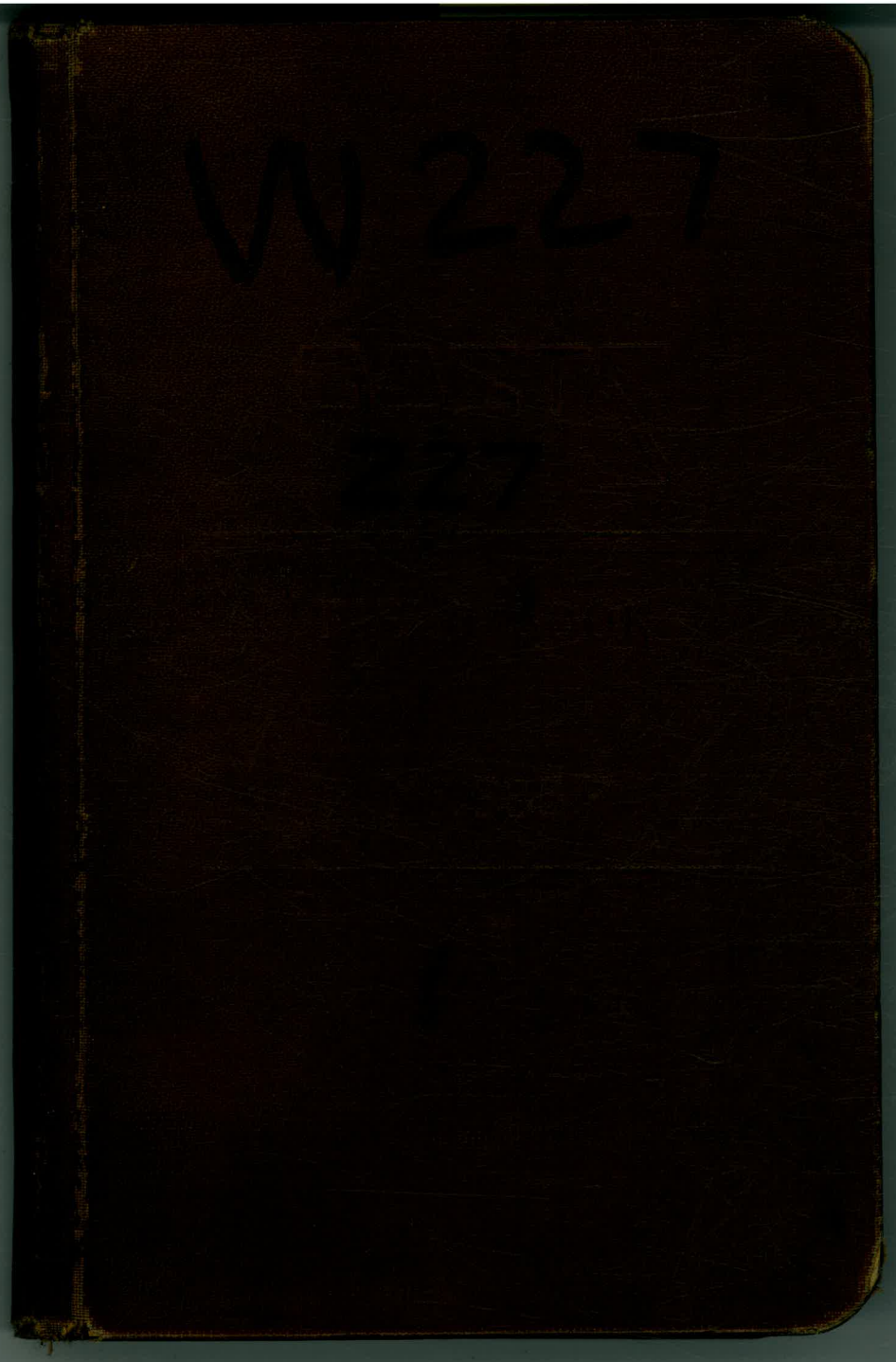
VV227

Book #227

#227

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Index

Notes of Stadia Traverse

from Topog. point #8 Sheet 142 A in S-Westerly direction to San Vincente Creek and thence down the Main Channel to Reservoir site

object: to determine most Northerly point of 750 contour in Reservoir site

all Horizontal Angles are in Azimuth to Right from Backsight

Line is called South line and Stations are marked in the field thus: A-S, -B-S, C-S, ect.

C-S to D-S

14.80
7.00
7.80
x2
15.60 = DV = 3°40 +14.8

A-z = 209°41

Elev. 1179.7
4.3
1184.0
114.3
1069.7

1553.60 ✓

B-S to C-S

12.40
4.00
8.40 = DV = 6°04 +12.4
x2
16.80
A-z = 182°12

Elev. 1349.8
+318.7
+29.0
1179.7

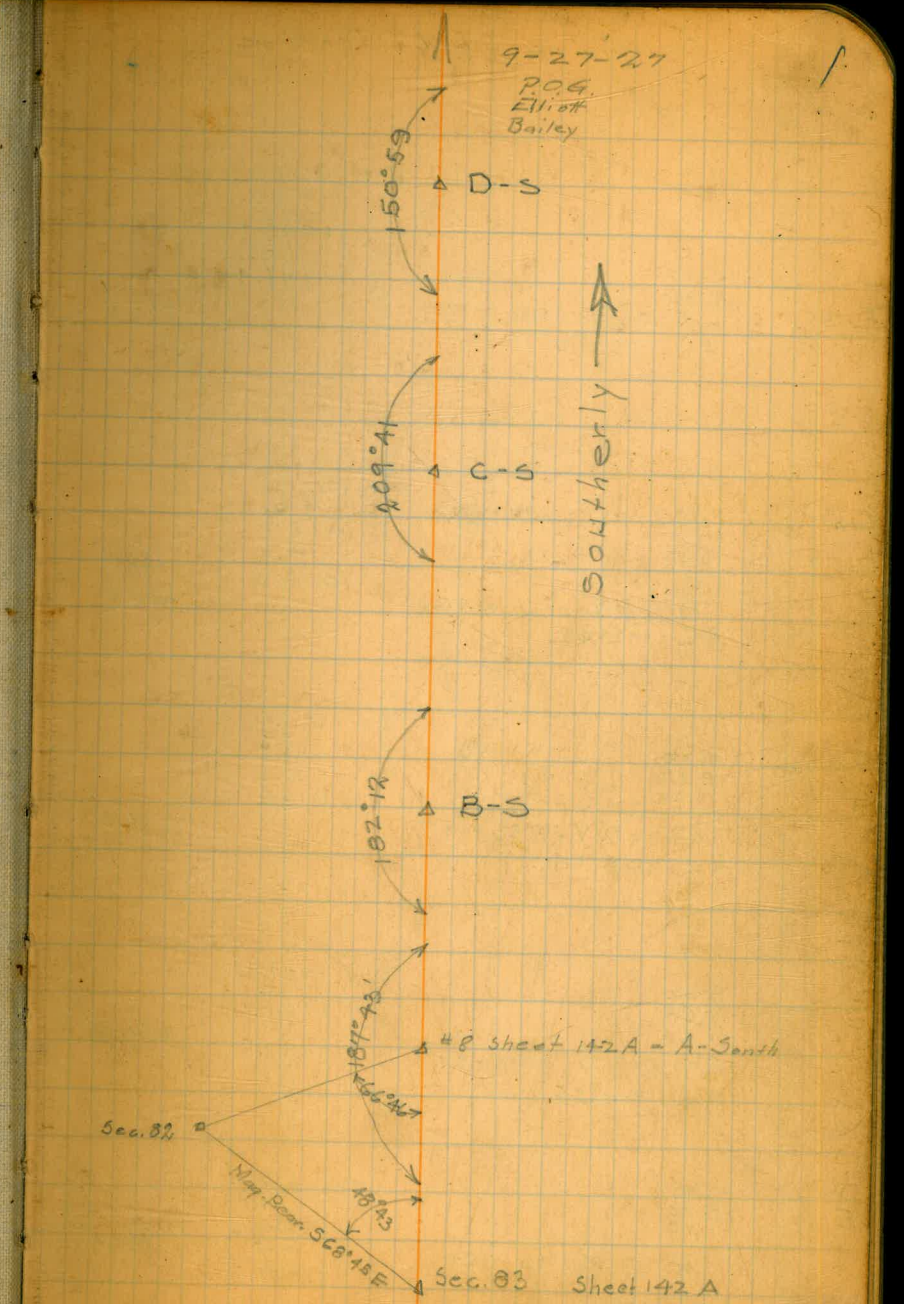
1661.2 ✓

A-S to B-S

12.36
4.00
8.35
x2
minus
16.70 = DV = 3°00 +12.3
A-z = 187°43

Elev. 1400
4.5
1464.5
99.6
1364.9

1668.5 ✓



South line Stadia Traverse

9-27-27
P.O.G.
Elliott
Bailey

Elev. 1004.2
0.5.2
1009.4
12.0
997.4

H-S to I-S
15.40
9.00
6.50 = DV = 0.00 − 12.0
Az = 160°19
650.0 ✓

Elev 1013.2
5.2
1018.4
14.2
1004.2

G-S to H-S
4.90
1.00
3.90
x2
7.80 = DV = 0°00 −14.2
Az = 172°42
780.0
650.0

Elev. 1018.5
5.0
1023.5
10.3
1013.2

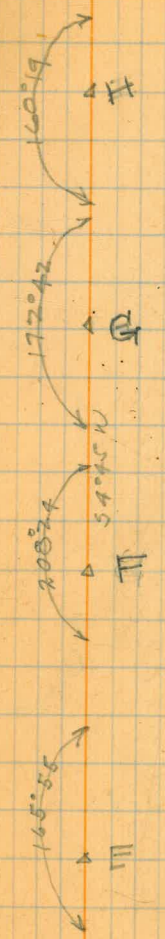
F-S to G-S
4.00
0.70
3.30
x2
6.60 = DV = 0°33 +4.0
Az = 208°24
659.9 ✓

Elev 1059.7
5.
1064.2
4.5.7
1018.5

E to F
7.00
5.68
1.32
x2
2.64 = DV = 8°50 +5.7
Az = 165°55
N51.8 ✓

Elev 1069.7
4.5
1074.2
−15
1059.2

D-S to E-S
6.70
5.00
1.70
x2
3.40 = DV 0°00 −15.0
Az = 150°59
340.0 ✓



South Stadia Traverse

9-28-'27
P.O.G.
Elliott
Bailey

3

M-S to N-S

5.20
1.00
4.20 = D V = 2°35 +3.1
A z = 158°50

965.4
5.2
970.6
22.0
948.6

419.2 ✓

L-S to M-S

9.20
5.00
4.20 = D V = 0°40 +7.1
A z = 205°14

Elev 972.2
5.2
977.4
12.0
965.4

420.0 ✓

K-S to L-S

10.45
4.00
6.45 = D V = 2°39 +7.2
A z = 186°29

1004.0
5.2
1009.2
37.0
972.2

643.6 ✓

J-S to K-S

5.34
3.00
2.34 = D V = 4°18 −1.2
A z = 180°00

Plus

Elev 985.5
5.2
990.7
13.3
1004.0

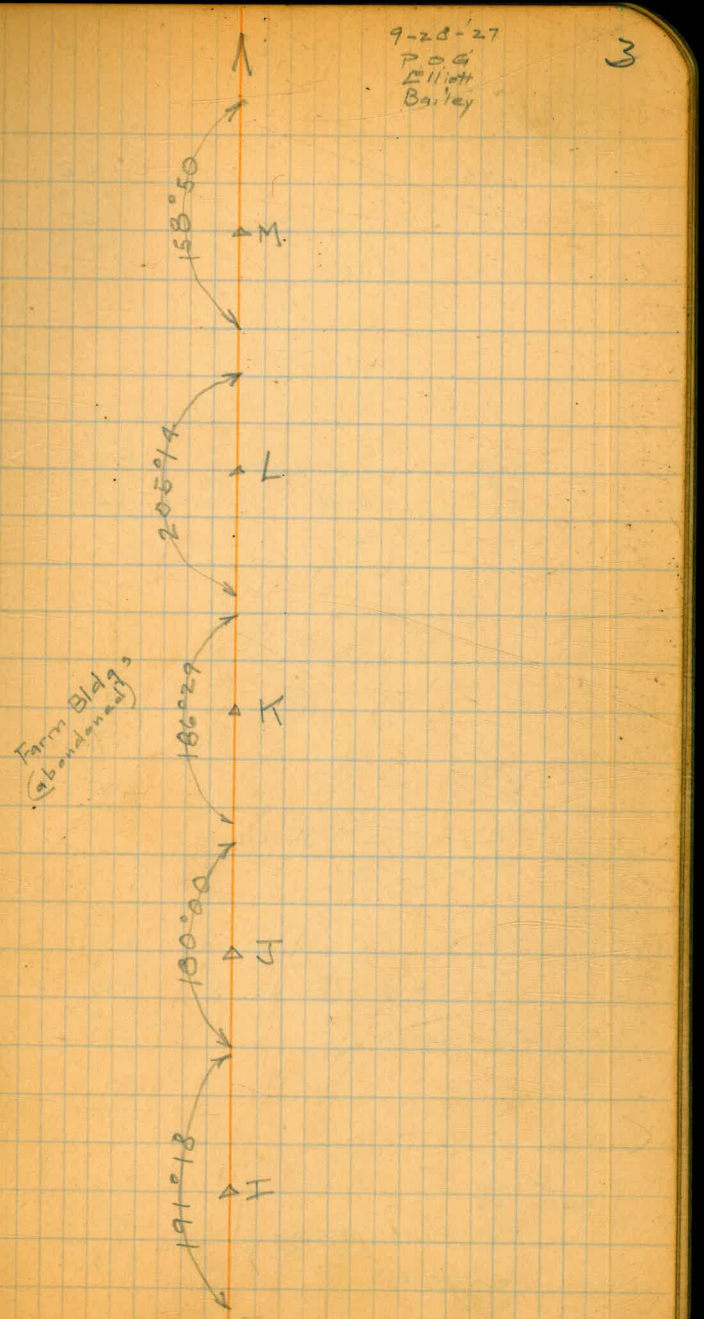
232.7 ✓

I-S to B-S

15.90
3.00
12.90 = D V 0°00 −17.1
A z = 191°18

Elev. 997.4
5.2
1002.6
17.1
985.5

1290.0 ✓



South Stadia Traverse

9-28-27
P.O.G
Elliot
Bailey

4

R-S to S-S

7.06
5.00
2.06 = D V 0°00 - 5.8

Az = 168°07

867.9
5.0
872.9
5.8
867.7

206.0 ✓

Gr-S to R-S

7.15
3.00
4.15 = D = V 0°00 - 10.7

Az = 177°18

873.6
5
878.6
10.7
867.9

415.0 ✓

P-S to Gr-S

7.10
2.00
5.10
× 2
10.20 = D V = 3°45 + 7.1

Az = 141°13

941.9
5.4
947.3
73.7
873.6

1015.7 ✓

O-S to P-S

8.80
5.00
3.80 = D V 0°00 - 6.9

Az = 199°07

944.1
4.7
948.8
6.9
941.9

380.0 ✓

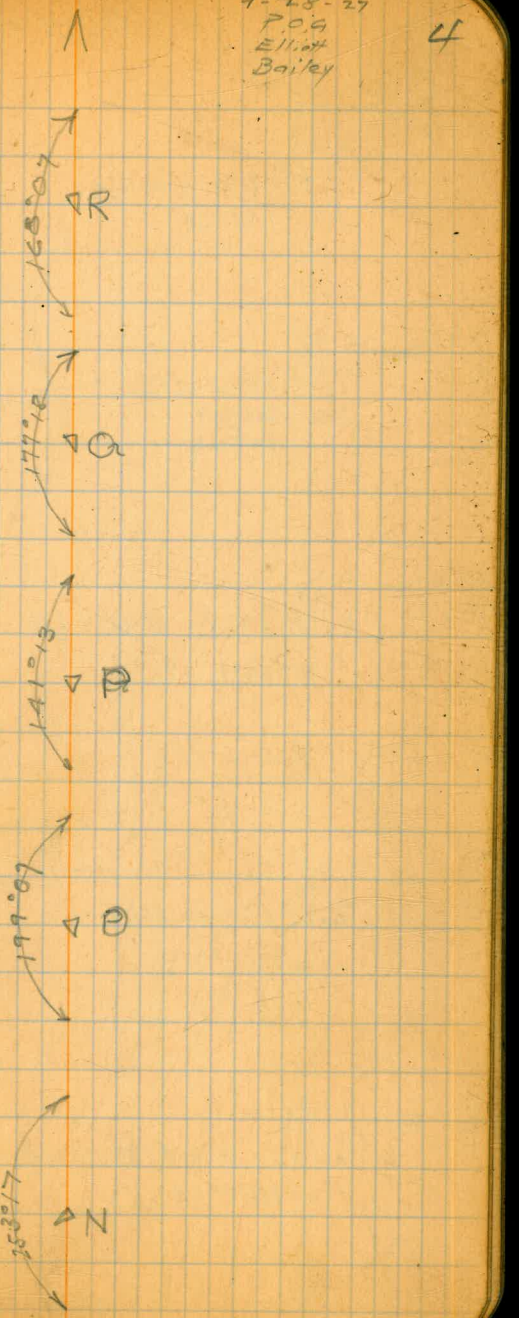
N-S to O-S

9.90
5.00
4.90 = D V = 0°00 - 9.3

Az = 253°17

948.6
4.8
953.4
9.3
944.1

490.0 ✓



South Stadia Traverse

W-S to X-S
13.85
5.00
8.85
x 2
1770 = DV = 0°00 − 14.6
Az = 198°24
779.1
5.3
784.4
14.6
769.8
1770.0 ✓

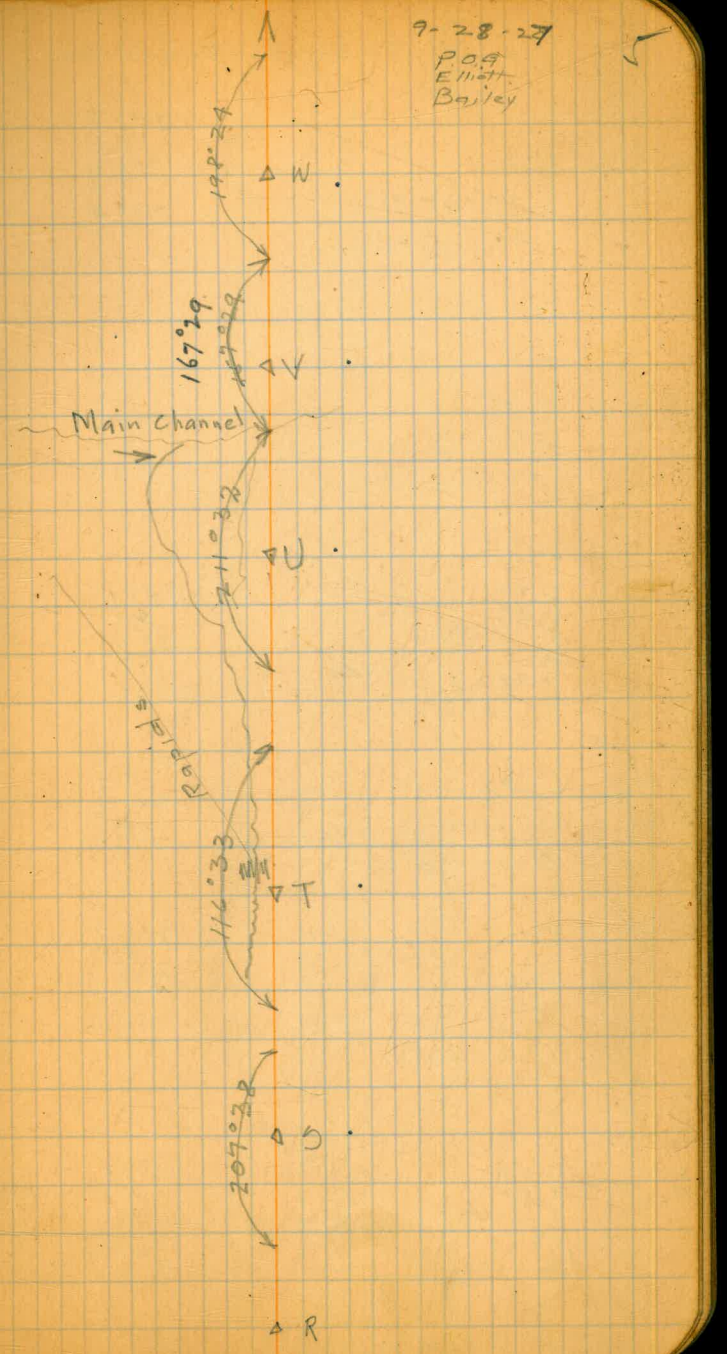
V-S to W-S
12.75
3.00
9.75 = DV = 0°00 − 11.2
Az = ~~169°29~~ 167°29
785.1
5.2
790.3
11.2
779.1
915.0 ✓

U-S to V-S
10.75
1.00
9.75 = DV = 3°45 + 5.8
Az = 211°32
849.4
5.2
854.6
69.5
785.1
970.9 ✓

T-S to U-S
9.25
3.00
6.25 = DV = 0°53 + 6.1
Az = 116°33
859.6
5.2
864.8
15.7
849.1
624.9 ✓

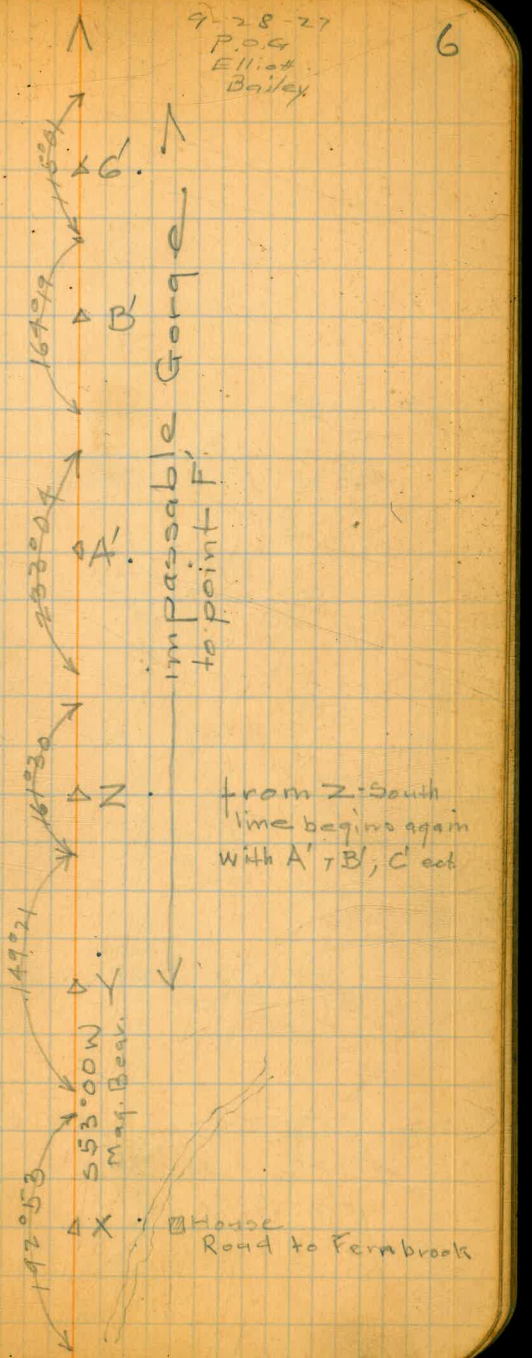
S-S to T-S
14.55
10.00
4.55 = DV = 0°00 − 12.5
Az = 207°38
867.1
5
872.1
12.5
859.6
455.0 ✓

9-28-27
P.O.9
Elliott
Bailey



South Stadia Traverse

			741.3	
			5.1	
C'-S to	11.8		746.4	
D'-S	5.0		7.4	
	6.80 = D V 0°00 − 7.4		739.0	680.0 ✓
	Az = 115°01			
			744.5	
			5.2	
B'-S to	10.35		749.7	
C'-S	5.0		8.4	
	5.35 = D V 0°00 − 8.4		741.3	535.0 ✓
	Az = 164°19			
			749.1	
			4.8	
A'-S to	7.70		753.9	
B'-S	4.00		9.4	
	3.70 = D V		744.5	740.0 ✓
	x2			
	7.40 = D V 0°00 − 9.4			
	Az = 233°04			
			756.2	
			5.2	
Z-S to	13.90		761.4	
A'-S	10.00		12.3	
	3.90 = D V 0°00 − 12.3		749.1	390.0 ✓
	Az = 16[illegible]°30			
			768.7	
			5.0	
Y-S to	12.65		773.7	
Z-S	6.00		17.5	
	6.65 = D V 0°00 − 17.5		756.2	665.0 ✓
	Az = 149°21			
			769.8	
			5.3	
X-S to	15.05		775.1	
Y-S	7.00		6.4	
	8.05 = D V 0°00 − 6.4		768.7	805.0 ✓
	Az = 192°53			



South Stadia Traverse

9-29-57
P.O.S.
Elliott
Bailey

7

F's to G's
16.00
0.00
16.00
×2
32.00 = D V = 1°01 + 16.0
A z = 229°28

739.6
+2
744.8
72.6
672.2 Elev G'

3199.0 ✓

F's to Bottom of River
14.15
1.00
13.15 = D V = 8°14 + 7.5
A z =

739.6
+2
744.8
193.8
551.0

1288.0 ✓

E's to F's
11.60
3.00
8.60
×2
17.20 = D V = 0°18 − 11.6
Plus
A z = 179°20

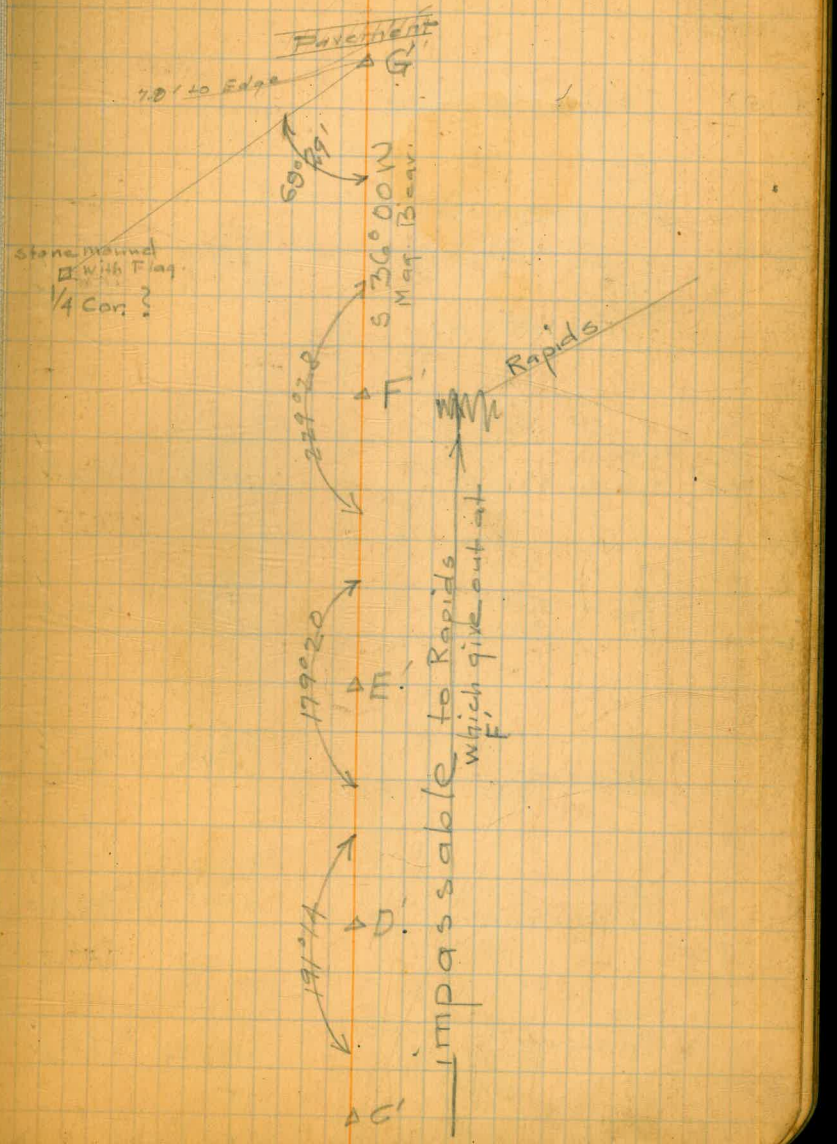
721.9
+2
727.1
18.5
739.6

1719.7 ✓

D's to E's
14.70
10.00
4.70 = D V = 1°10 + 12.3
Minus
A z = 191°14

739.0
4.8
743.8
21.9
721.9

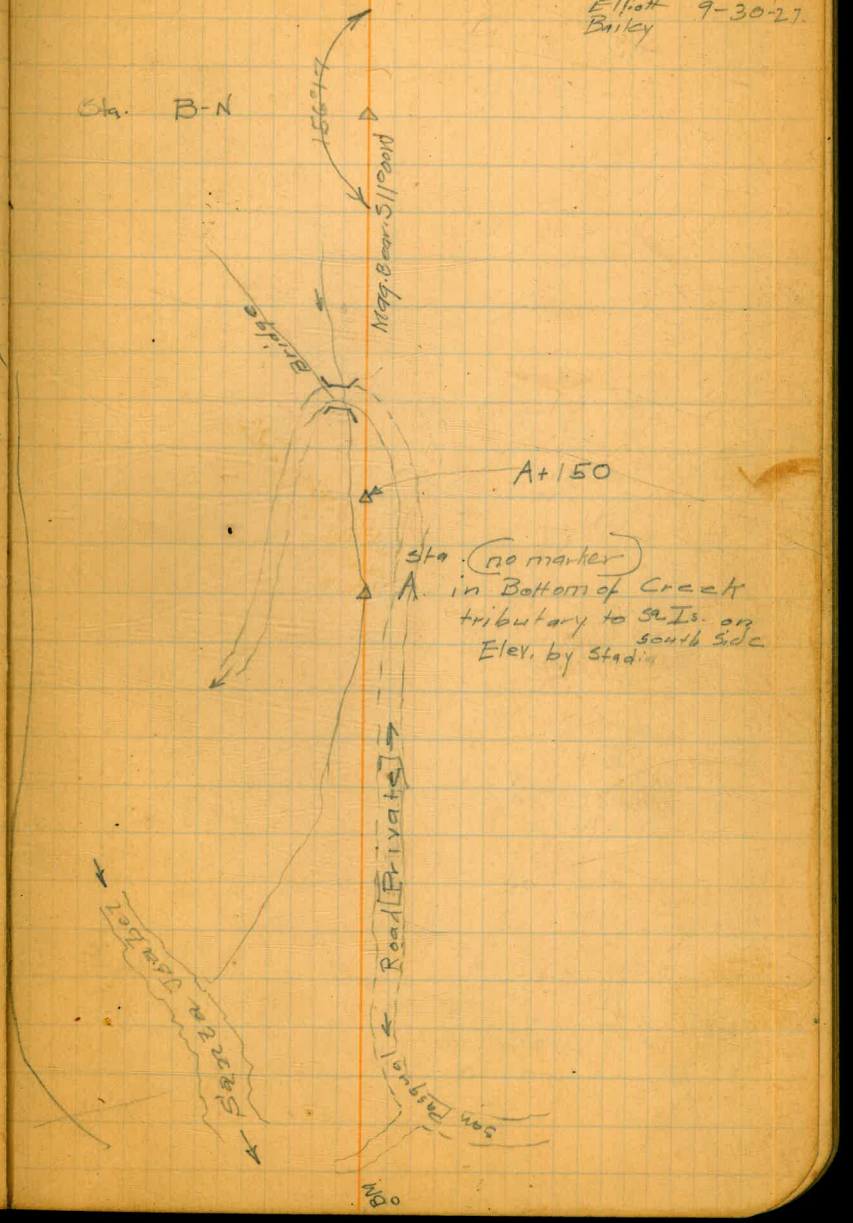
469.8 ✓



North line Stadia Traverse from 750 contour ½ mile S-W of Boden Damsite in Santa Isabel Creek

P.O.G.
Elliott
Bailey 9-30-'27.

A-	16.00 14.90 1.10 = D V = 12°02 + 15.4	to Bottom of Creek 150' 25' Longer	106.3 ✓
A+150'	5' East of Edge of Road 13.20 4.00 9.20 2 18.40 = D V = 8°40' + 13.2	1088.8 287.4 801.4	1798.2 ✓
B-N	9.35 2.00 7.35 = D V = 18°34 + 5.7	1088.8 227.6 861.2	660.5 ✓
B-North	13.45 5.00 8.45 = D V = 3°19 + 9.2	1030.8 58.0 1088.8	842.2 ✓
	14.75 7.00 7.75 = D V = 4°02 - 10.9	987.3 43.5 1030.8	771.2 ✓
	16.00 8.15 7.85 = D V = 3°52 +12.0	922.5 64.8 987.3	781.5 ✓
	8.35 6.00 2.35 = D V = 6°30 - 7.2	903.3 19.2 922.5	232.0 ✓
	12.40 7.00 5.40 = D V = 11°20 +9.70 104.05 9.70 113.75	789.6 24 113.7 903.3	519.2 ✓



Sta. (no marker) A. in Bottom of Creek tributary to Sa. Is. on south side
Elev. by Stadia

North line Stadia Traverse

9-30-27
P.O.G.
-Elliott
Bailey

9

E-N to F-N
16.00
4.95
11.55 = D = V = 3°04
H-I 5.2
+ -10.2
Az = 129-40-30
corrected dist 1157.6

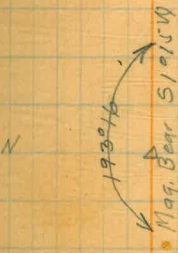
Sta E

D-N to E-N
16.00
1.80
10.20 = D V = 3°20
H.I 5.2
+ -10.9
Az = 141° 34
corrected dist 1016.5

Sta. D-N

C-N to D-N
14.05
7.00
7.05
x 2
14.10 = D V = 2°04
H I = 5.2
+ -14.0
Az = 193°16
Corr. dist. 1408.0
1408.7

Sta. C-N



B-N to C-N
14.55
7.00
7.55 = D V = 4°03
H I 5.2
+ -10.8
Az = 156°17
corrected dist = ~~751.2~~
751.3

Sta. B-N

1

North line Stadia

I-N to J-N. 13.15 / 2.00 = 11.15 = D V = 0°00 - 3.6 cond'd. 1115.0 ✓

Az = 200°30·30°

H-N to I-N 13.90 / 9.00 / 9.90 ×2. = 19.80 = D V = 0°25 -4.0 HI 5.3 c.d. 1980.0 ✓

Az = 193-58

G'-N to H-N 16.00 / 2.30 = 13.70 = D V = +10.4 -9.1 HI 5.3 c.d 1369.6 / 1368.8

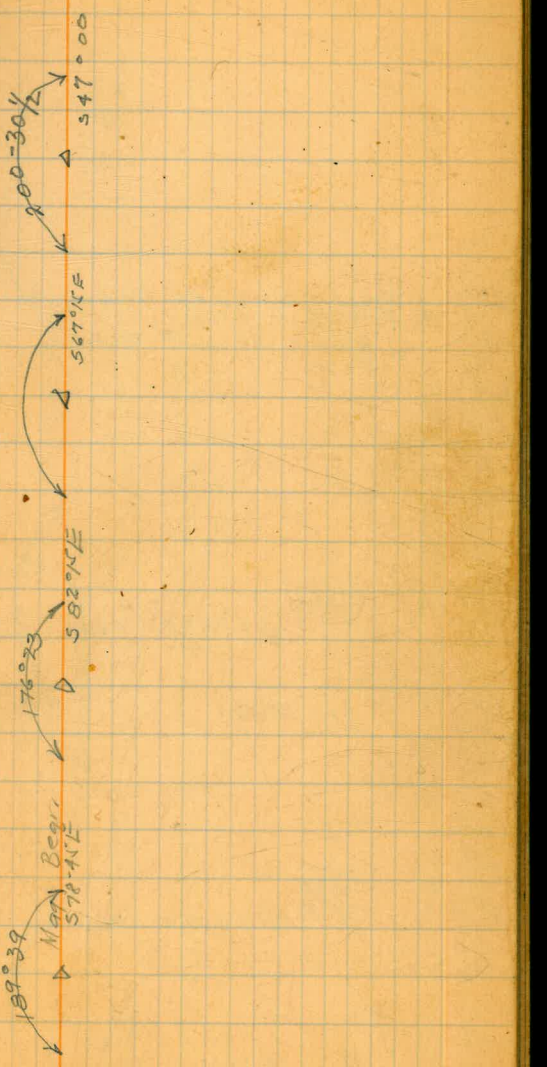
Az = 176°23

F-N to G-N 15.10 / 6.00 / 9.10 ×2 / 18.2 = D V = +4°30 -15.1 HI 5.2 Correct dist. 1808.7 ✓

Az = 189-39

9-30-27
P.O.9
Elliott
Bailey
10-3-27

10



Northline Stadia

Oct 3-'27
ROG
Elliot
Bailey

L-N = West corner of Triangle "B" Primary
= End of N-line
Az = 111-31 to "E" Primary
Az = " "B" " "

H-I 5.2

K-N 12.25
L-N to 1.00
11.25 = DV 3°25 +6.6

corr. dist 1121.1

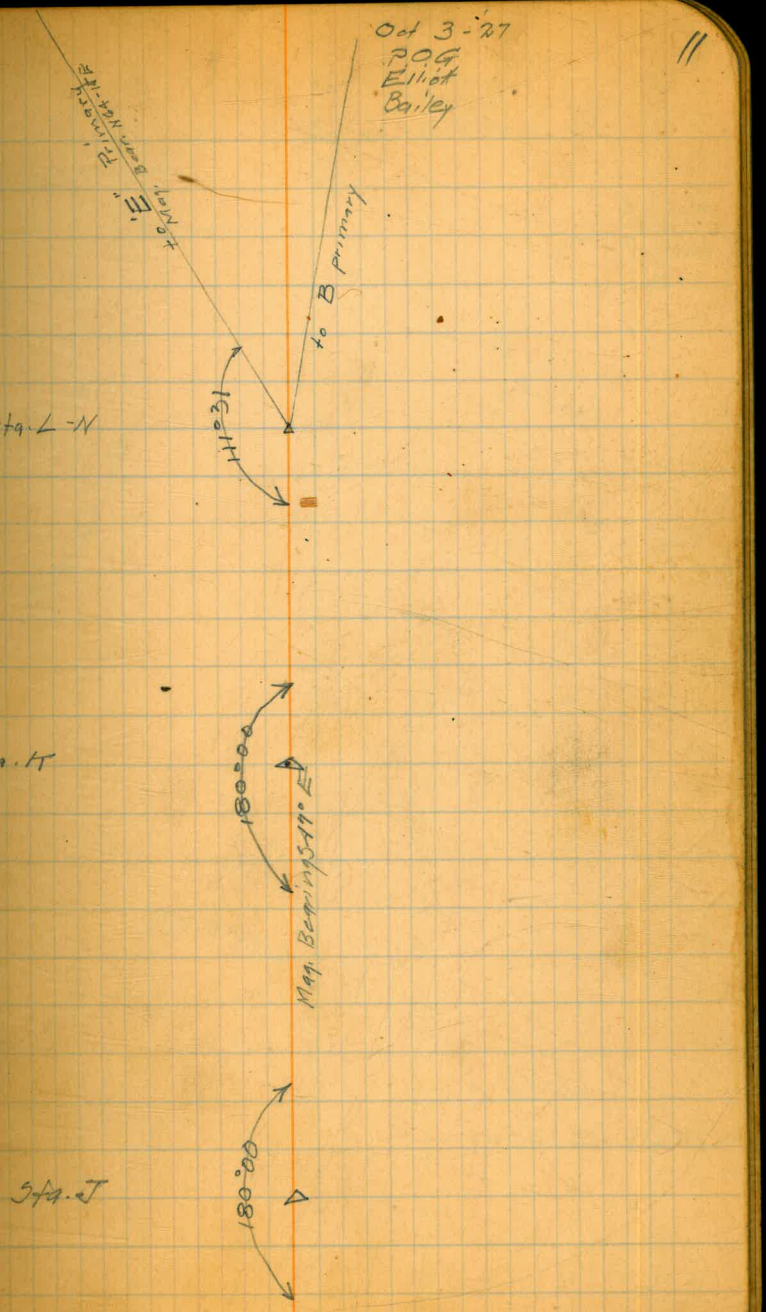
Az = 180°00

H I. 5.2

J-N 11.75
K-N to 2.00
9.75 = DV = 0°00 -1.7

corrected dist. = 9.75.00

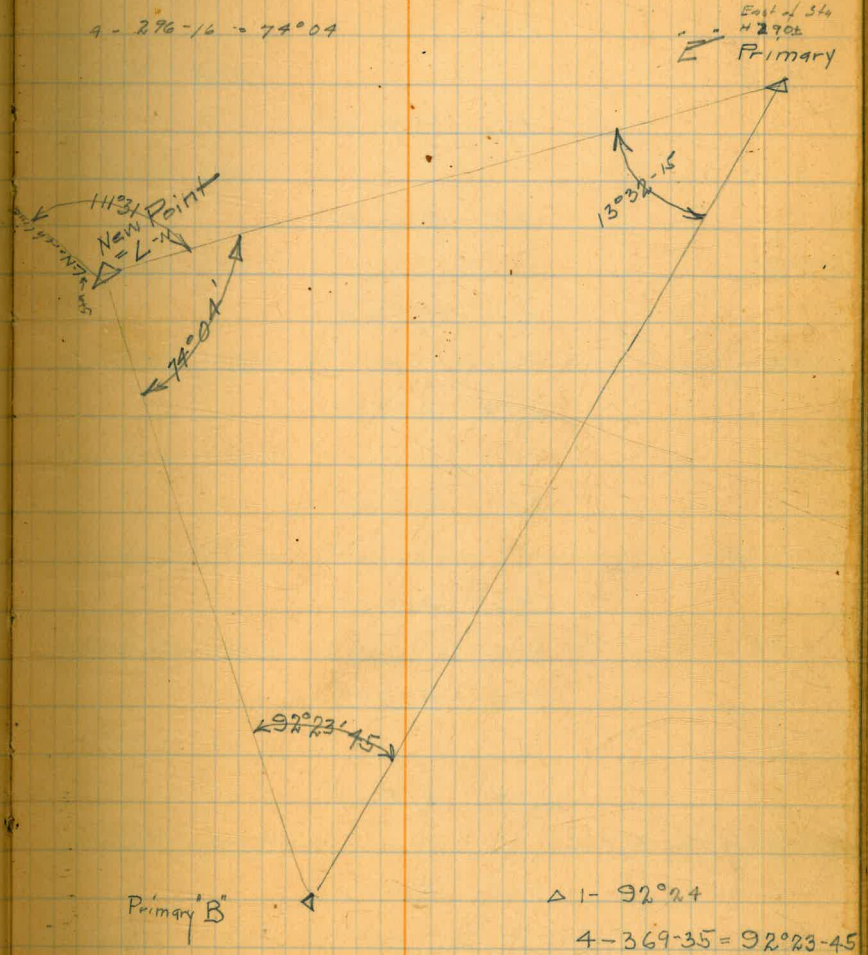
Az = 180°00



Triangulation to shorten North Stadia Traverse

Oct. 1-27 14
P.99
Elliott
Bailey

△1-74-03-30
4-296-16 = 74°04



△1-92°24
4-369-35 = 92°23-45

Line of Levels to Proposed North Portal of Pamo – San Vincente Tunnel

U.S.G.S.B.M.				789.624	Pipe & cap
	2.55	792.17			
T.P.			3.08	789.09	
	5.66	794.75			
T.P.			2.48	792.27	
	9.10	801.37			
T.P.			6.30	795.07	
	9.25	804.32			
T.P.			3.85	800.47	Outside edge of road, first turn E. of gate
	6.73	807.20			
T.P.			4.16	803.04	
	4.21	807.25			
Sta A+150			5.46	801.79	Sta A+150' on Proposed Tunnel Line
	5.46	807.25			
T.P.			4.36	802.89	Nail & Marker 3' W. of Sta A+150'
	6.83	809.72			
T.P.			2.55	807.17	
	6.48	813.65			
B.M.			12.60	801.05	Highest point on boulder 20' West of W. end Bridge
	0.00	801.05			
			10.2	790.8	El. of creek bottom at bridge.
T.P.				802.89	Nail & Marker 3' West of Sta. A+150
	3.72	806.61			
			11.50	795.11	

10-6-27
P.O.G
Elliott
Bailey

T.P.			795.11	
	4.66	799.77		
T.P			12.42	787.35
	1.07	788.42		
T.P			12.46	775.96
	0.31	776.27		
T.P			12.56	763.71
	0.62	764.33		
T.P			12.69	751.64
	5.46	757.10		
Sta A.			19.0	738.1	Bottom of creek.
B.M.			8.16	748.94	Set B.M. on rock 30' from creek on E. bank
	8.16	757.10		
T.P.			2.52	754.58
	11.71	766.29		
B.M.	by Bailey - Rod - Elliott ⁊ Leach ⁊ Baker Rod		9.79	757.50	Set B.M. on Rock E. side creek 900 N. of A
	6.80	764.30		
			12.73	751.57	" " " " " " 800 N. "
	3.77	755.34		
			13.09	742.25	pin on West side of Creek
	0.30	742.55		
			12.93	729.62

P.C.G.
Leach Notes
Bate T
Bailey

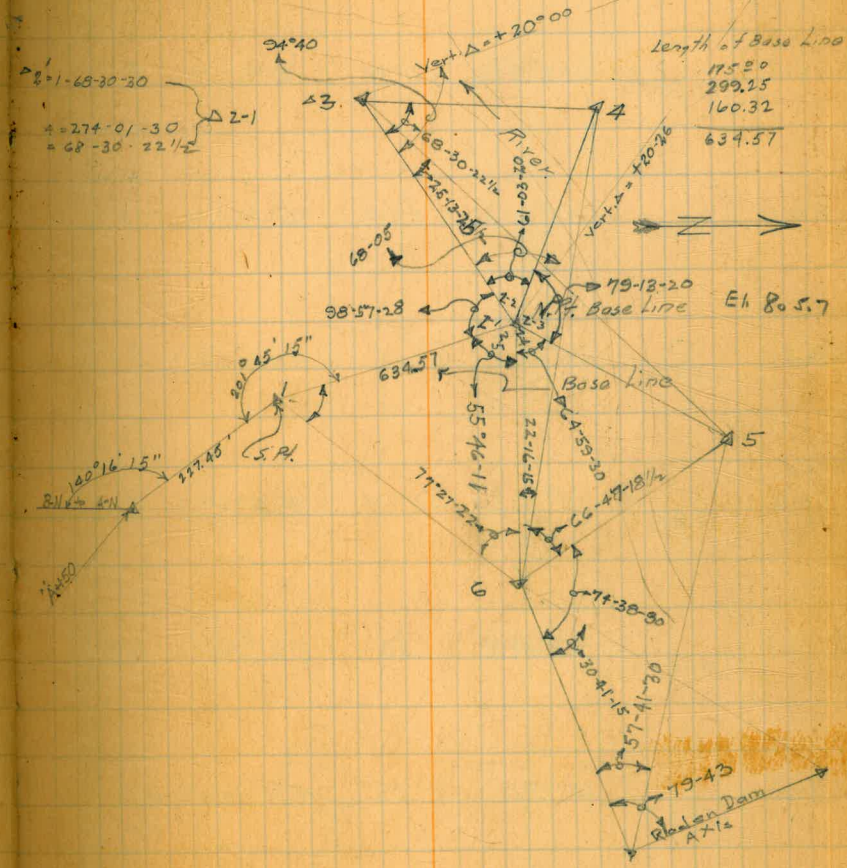
Oct. 7, '27

Sta Hor. L

10.84
10.00
.84 = DV = 8°40 + 10.4 to HI = 5.0

Boulder on Top of Ridge

Note:- Extremities of Base Line noted as S.Pt. and N. Pt.



F.S. = N. Pt. 201° 45'

T = S. Pt. 2)403° 30' 30"

F.S. = T+50 201° 45' 15"

F.S.
South Pt.
Base Line 140° 16'

T
T+150 2)280° 32' 30"

B.S.B.N. 140° 16' 15"

Δ1-2 { Δ1-2 25-13-45 ; 25-13-22½ ; 4 - 100-53-30

Δ1-2 { N-1 61-08-30 ; 61-08-20 ; 3 - 183-10-00

Δ1-3 { Δ 1-3-1 79-13-26 ; 79-13-20 ; 4) 316-53- (28, 36)

Δ1-5 { 1-5-1 65-46-00 ; 55-46-11¼ ; 4) 223-09-45

Δ2-5-6 { 1-64-59-10 ; 64-59-30 ; 4 259-58- (180, 238, 38)

Δ C-2-4 { 1-22-46-30 ; 22-16-15 ; 4-89-05

Δ-6-4-5 { 1-66-47-30 ; 66-47-18½ ; 4-267-09-15 (27, 24, 3 189, 160, 29)

Δ-6-N-Ax 5-Ax { 1-30-42 ; 30 41-15 ; 4-122-45 (166)

Clos 1-57-41-30

Δ 5-Axis { 57 41-30 ; 4-238-46 (166)

Δ 5-Axis { 1-79-43 ; 79-43 ; 4-318-52 (38, 120, 172, 52)

Δ 6 to N Ax

R Line

Sta.	Cor. dist.	Hor. ∠	Vert. ∠	H.I.	Rod	Elev.	Mag. B
7 to "D" 32		16° 37 L					N 10°30'E
6 to 7	(194)	43° 08L	- 0°34'	5.1	5.1		N 28° E
5 to 6	(211)	50° 08'L	- 0°24'	5.0	5.0		N 70°30'E
4 to 5	(400)	18°08'R	- 1°05'	5.1	5.1		S 60°30'E
3 to 4	690	5°11 L	- 1°15'	5.2	5.2		S 77°30 E
2 to 3	(415)	43°49R	- 1.58	5.2	5.2		S 72° E
1 to 2	(1260)	13°17R	- 3°35'	4.9	4.9		N 64° E
0 to 1	(44')	36°43'R	- 4°09'	4.8	4.8		N 3-1°E
0 = L 1							

"R" 7 = "D" 33

Profile Levels
P'A Line and P'B Line

Sta.	+	H.I.	−	Elev.
698+50			6.5	1391.1
699			9.7	1387.9
699+50			15.1	1382.5
700+00			22.5	1375.1
	4.85	1397.56		
T.P.			12.72	1392.71
	0.85	1405.43		
T.P.			12.77	1404.58
	0.40	1417.35		
T.P.			12.76	1416.95
	0.46	1429.71		
T.P.			12.07	1429.25
	1.26	1441.32		
T.P.			12.82	1440.06
	2.87	1452.88		
T.P.			8.97	1450.01
	12.45	1458.98		
T.P.			0.62	1446.53
	11.86	1447.15		
T.P			0.47	1435.29
	11.57	1435.76		
B.M. # P'7				1424.19

P'A Line

	+	H.I	−	Elev
693+50			9.6	1418.9
∴				
694+00			6.8	1416.2
694+50			6.6	1416.4
695+00			9.5	1418.5
695+43.5 P.I.			6.6	1416.4
695+50			7.6	1415.4
	12.96	1422.97		
T.P			0.04	1410.01
696+00			0.1	1409.9
696+50			4.5	1405.5
697+00			8.5	1401.5
697+50			12.2	1397.8
	12.76	1410.05		
T.P.			0.27	1397.29
698+00			3.6	1394.0
		1397.56		

P'A Line

Sta	+	H.I.	−	Elev.
688+50			6.6	1436.5
689+00			5.0	1438.1
689+32.86			4.7	1938.4
689+50			4.5	1438.6
690+00			5.1	1438.0
690+50			8.0	1435.1
	11.80	1443.09		
T.P.			0.34	1931.29
691+00			2.6	1429.0
691+50			6.3	1425.3
692+00			10.2	1421.9
	10.05	1931.63		
T.P.			1.30	1421.58
692+50			4.2	1418.8
693+00			3.9	1419.1
		1422.97		

		Record El.	1440.85
B.M.#		2.03	1441.06
686+30 Lt	T.P.	5.88	1437.21
686+50		5.8	1437.3
687+00		6.0	1437.1
687+50		5.4	1437.7
688+00		5.1	1438.0
	1443.09		

M' Line - South from Meridian saddle

Sta.	Cor. dist.	Hor. Δ	Vert. Δ	H.I	Rod
M'-3 to M'-8	1169.8 (1170')	P.O.T.	-1° 51'	5.1	5.1
M'-3 to M'-7	818.2 (820')	P.O.T.	-3° 20'	5.1	5.1
M'-7 to M'-6	242.7 (244')	P.O.T.	-9° 52'	5.1	14.1
M'-3 to M'-5	291.2 (295')	P.O.T.	-7° 20'	5.1	5.1
M'-3 to M'-4	167.1 (175')	P.O.T.	-13° 08'	5.1	15.1
M'-3 to M'-2	233.1 (235')	P.O.T.	-6° 28'	5.1	14.1
M'-0 to M'-1	515.8 (515')	P.O.T.	+1° 00'	5.2	9.2
M'-0 to M'-3	1420.4 (1420)	46° 24' 23° 12' R	+1° 24'	5.2	5.2

7-15-38 Clear - Hot

Hill
Osborne
Isbell
Leckey
Brooks

250

22

Elev. | Maq. B.

-37.8

8% / 150' Draw — +8% / 100' — Level / 75' — 70°

-47.7 +10% / 80' ← 70' Level — M'-7 — 200' Level →

+20% slope on right angles — N. 40° W. draw at M'-6 — +15% slope — +27° at right angles

-57.0

M'-7 — 250' — Head of draw level with M'-7

sta. 6 — -7% / 150' Draw — 90° 00' — +49% — 32° — 85° — 35' Draw — Draw — Level shot

-37.4 on ridge

+22° slope

-17% / 90' — -27% / 65' — Ridge — +24% / 125' — +28% / 68' — sta. 5 on ridge

-48.7 in draw

-15% / 100' — -25% / 80' — +29% / 150' sta. 4 in draw

+25% slope up draw (to north)

Draw — 50° — +3% / 100' — -6% / 100' sta. 3

N. 10° E = Bearing of ridge at M'-3

-35.1 profile shot in draw — +24% / 100' — +13% / 60'

+9° 32' - 100' R

-1° 15' - 70' L ← At M'-3

-14% / 150' Draw — +10% / 100' — +25% / 50' sta. 2

+5.0 profile shot — -18% / 65' — Level / 60' — M-1 — -28% / 55' — +17% / 65' — +27% / 100' sta. 1

23° 12'

+34.8 N. 85° 30' W.

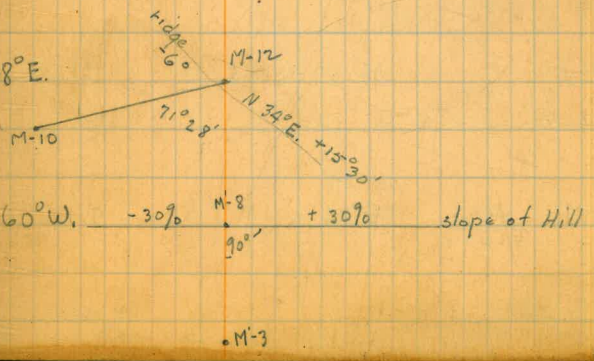
M-0 : M'-0

+11% / 100' — -2% / 30' — +6% / 100' sta. 0

179 60
103 32
71 28

23

Sta.	Cor. dist.	Hor. ∠	Vert. ∠	H.I.	Rod	Elev.	Mag. B.
M-12 to M-10		217° 03' 108° 32 L					S. 48° E.
M-8 to M-12	277.4 (290')	67 52 33° 56' L	-12° 31'	5.1	5.1	-61.5	S. 60° W.

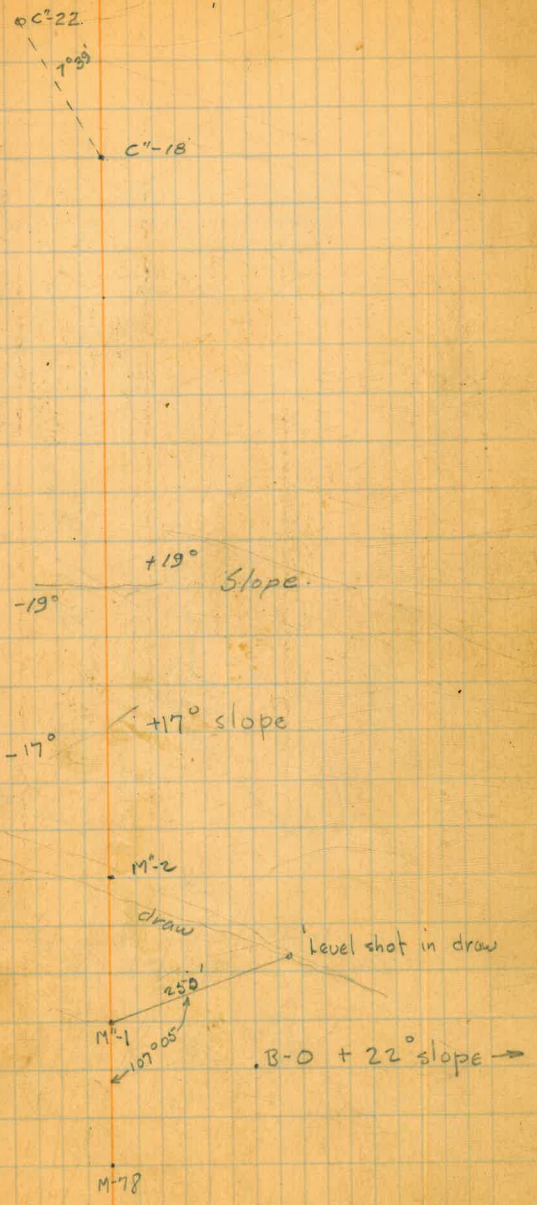


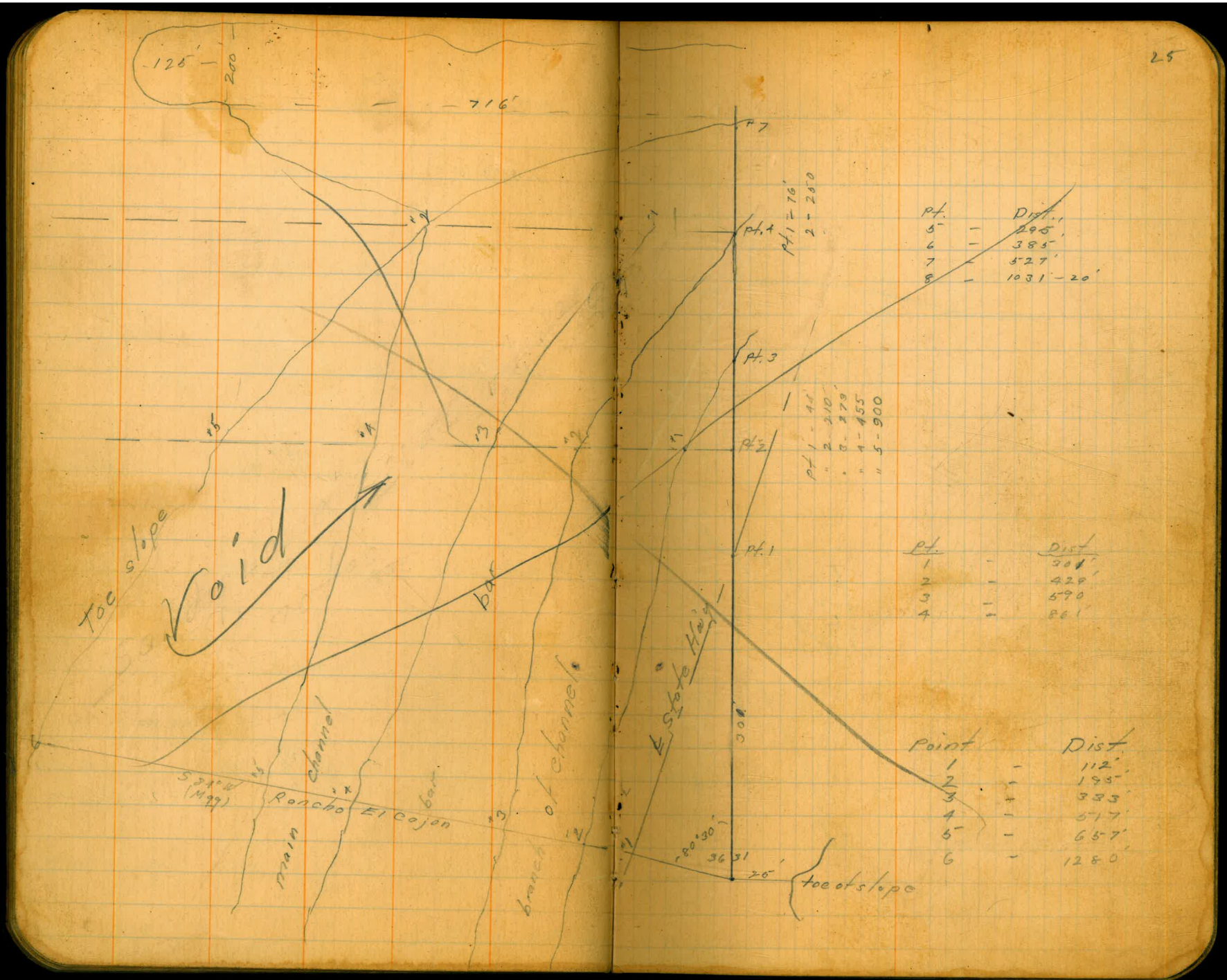
Line from "M" to "C" Thru Saddle.

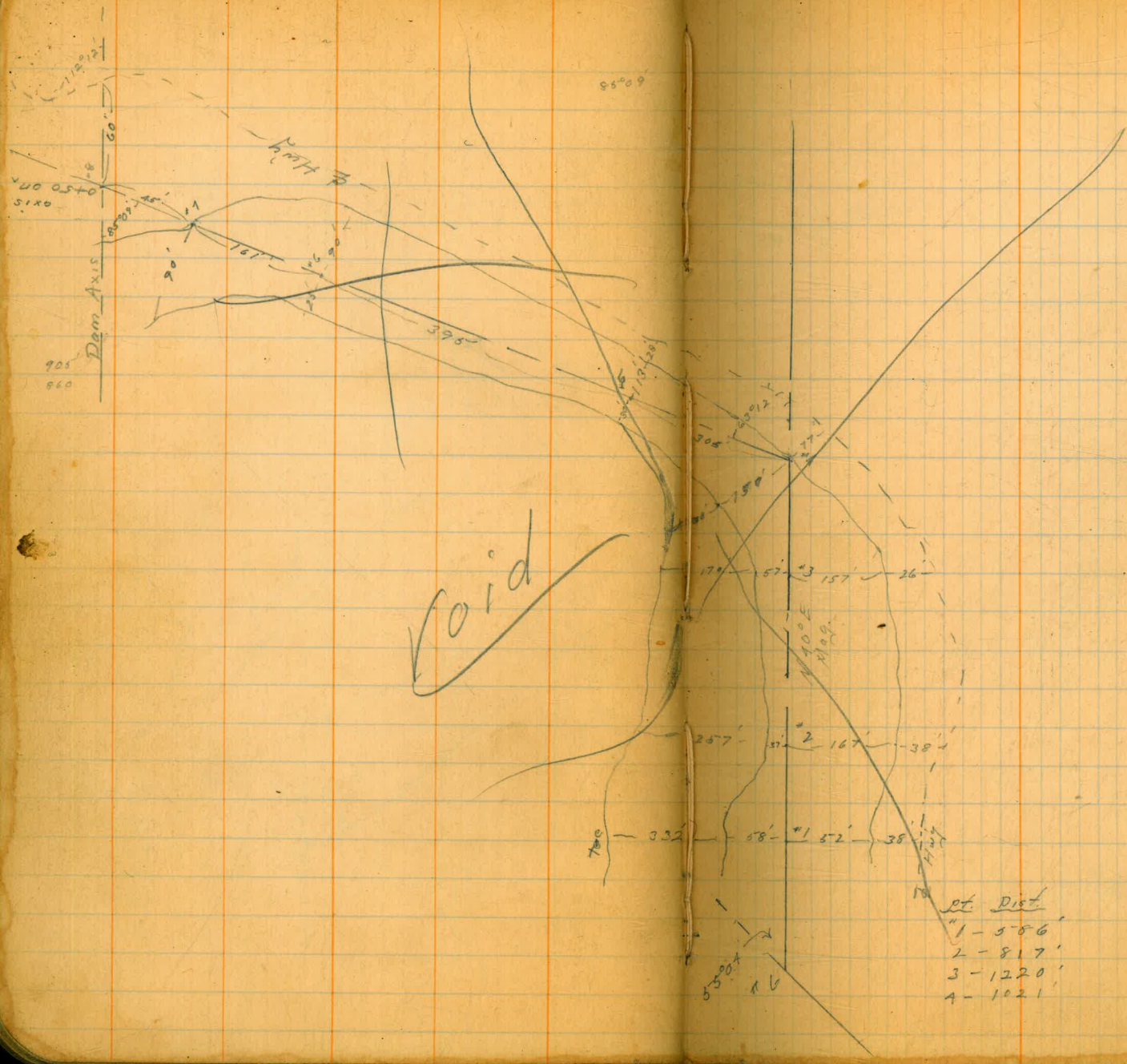
sta.	Cor. dist.	Hor. Δ	Vert. Δ	H.I.	Rod	Elev	Mag. B
C"-18 to C"-22		15° 18' 7° 39' L					S 40° 30 W
C-17 - C"-18	(38')	39° 43' L	- 13° 50	4.9	4.9		S 47° W
M"-5=C-17 M"-4 to M"-5	(565)	24° 18' 12° 09' R	- 11° 43'	5.0	11.0		S 88° W
M"-3 to M"4	(239')	17° 41' 8° 53' R	- 9° 44'	5.0	5.0		S 78° 30' W
M"-1 to M"-3	316'	68° 48' 34° 24' R	- 5° 40'	5.0	5.0		S 34° 30' W.
M"-1 to M"-2	(175')	P.O.T.	- 12° 12'	5.0	5.0	bottom of draw	
M"-1 to B-0	(60')	134° 37' R	- 5° 13'	5.0	5.0		
M-78 to M"-1	449.6 (455')	71° 08' 35° 34' R	+ 6° 54'	5.1	8.1	+54	S 32° 30 W.

M 76 to M 78

S 13° 33' W True.




125'
200'
716'
#7
#6
#5
#4
#3
#2
#1
Toe slope
Void
Rancho El Cajon
main channel
branch of channel
℄ State Hwy
Pt. 7
Pt. 6
Pt. 5
Pt. 4
Pt. 3
Pt. 2
Pt. 1
Pt 1 = 76'
2 - 280
Pt. 1 - 41'
" 2 - 210'
" 3 - 279'
" 4 - 455
" 5 - 900
Pt. Dist.
5 - 295'
6 - 385'
7 - 527'
8 - 1031' - 20'
Pt. Dist
1 - 304'
2 - 429'
3 - 590
4 - 861'
Point Dist.
1 - 112'
2 - 193'
3 - 333'
4 - 517'
5 - 657'
6 - 1280
300'
80°30'
36
31
20'
toe of slope

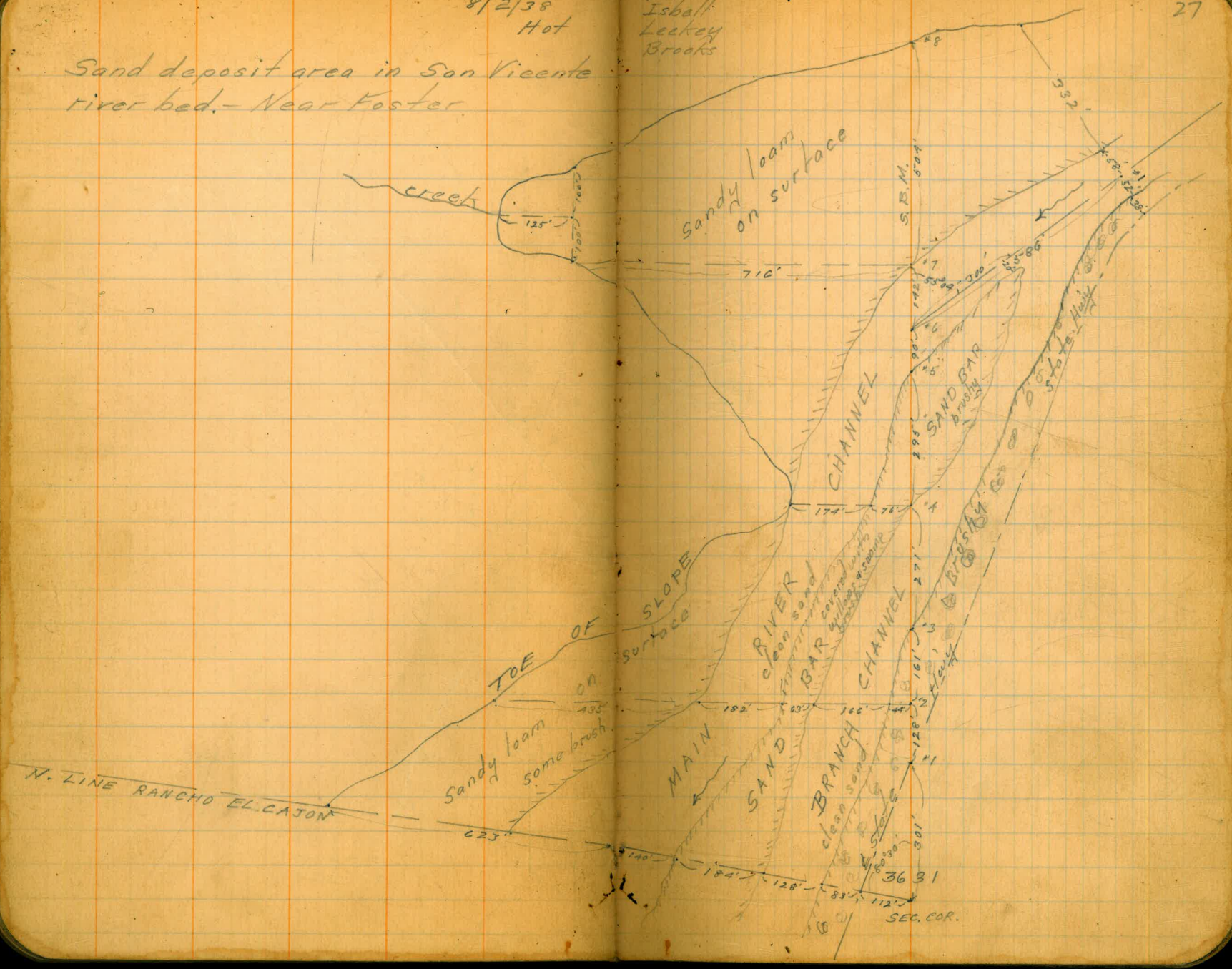

Void
Dam Axis
905
860
St. Dist
1 - 556'
2 - 817'
3 - 1220'
4 - 1021'

8/2/38
Hot

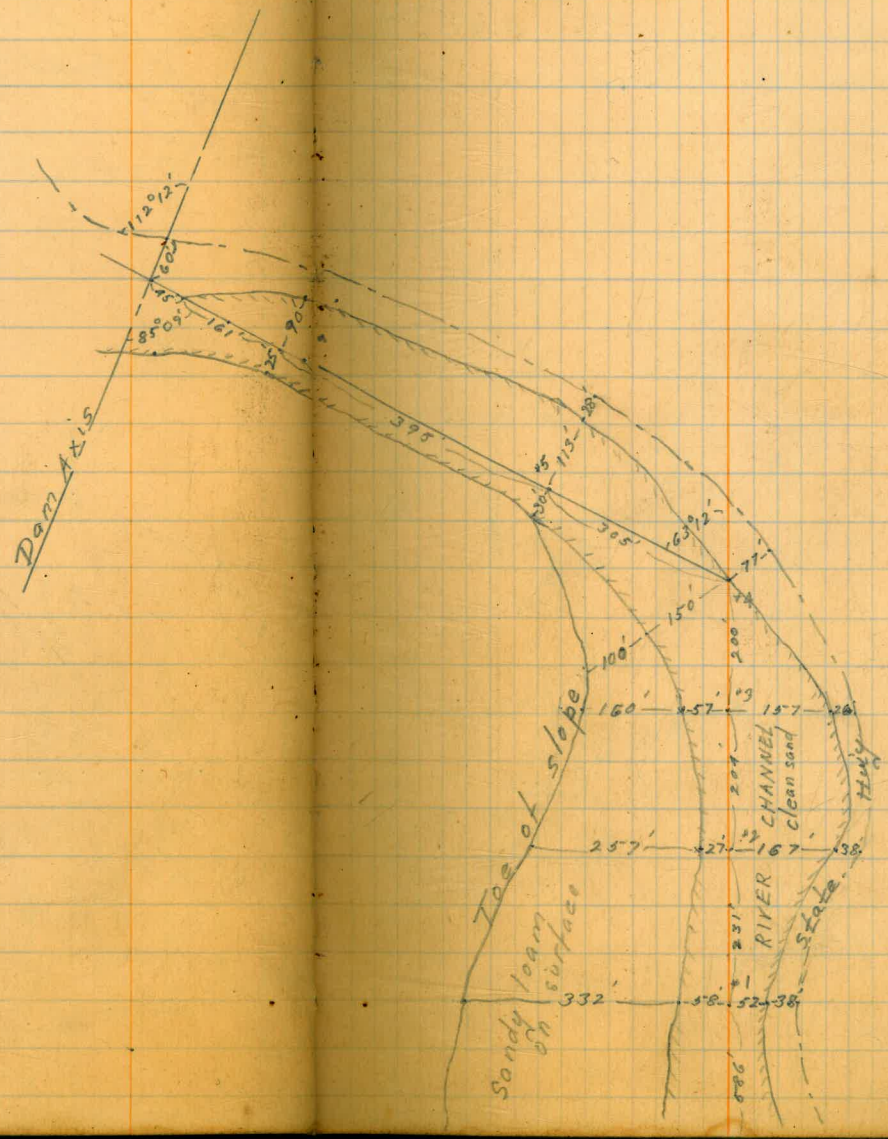
Hill
Isbell
Leakey
Brooks

27

Sand deposit area in San Vicente river bed. - Near Foster



(cont.)

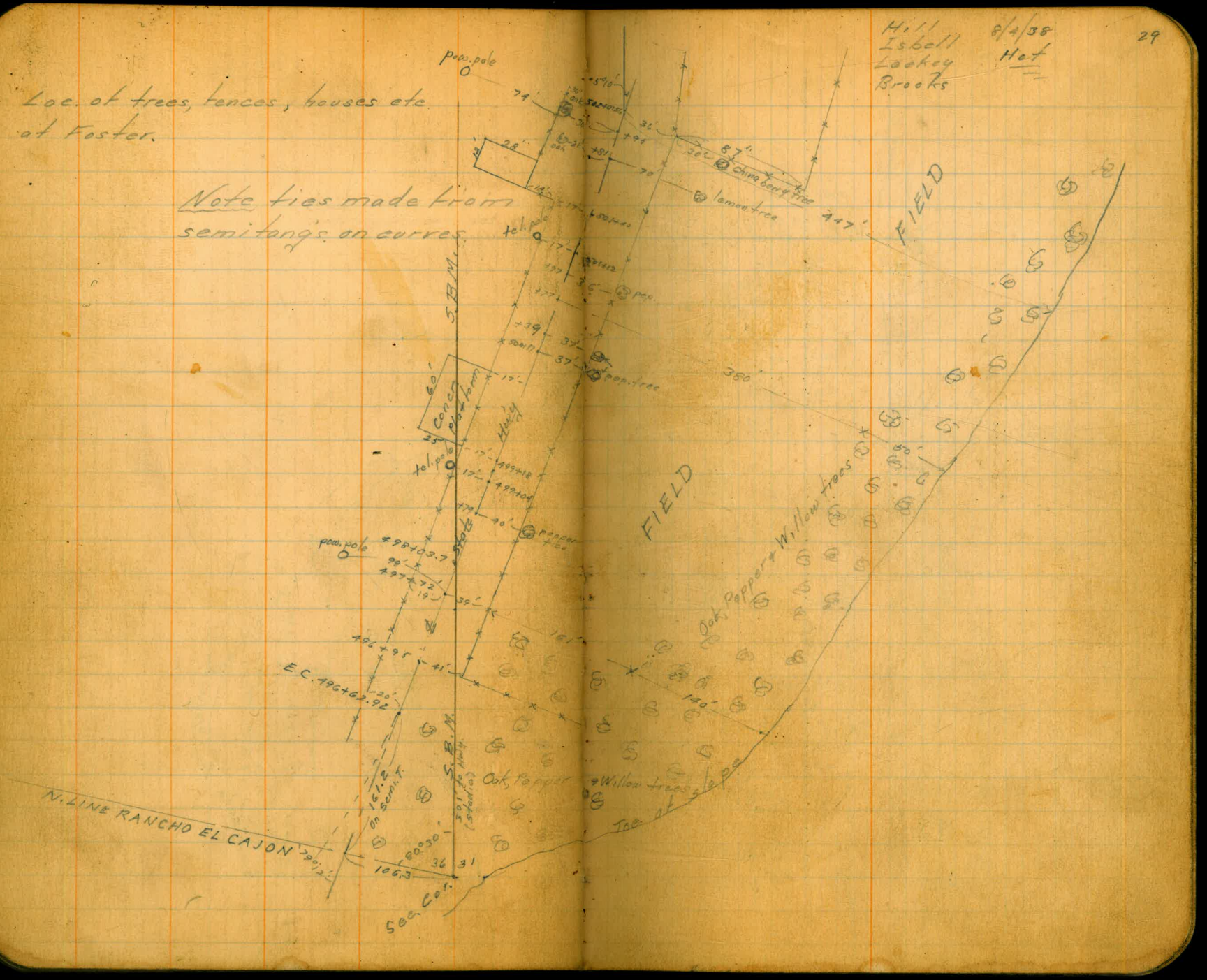

Dam Axis
112°12'
160'
45°
85°09'
161'
90°
395'
305'
63°12'
113'
38'
30'
77'
150'
100'
160'
57'
15.7'
26'
200'
Toe of slope
CHANNEL
clean sand
RIVER
Sandy loam on surface
332'
58'
52'
38'
886'

Hill
Isbell
Lackey
Brooks

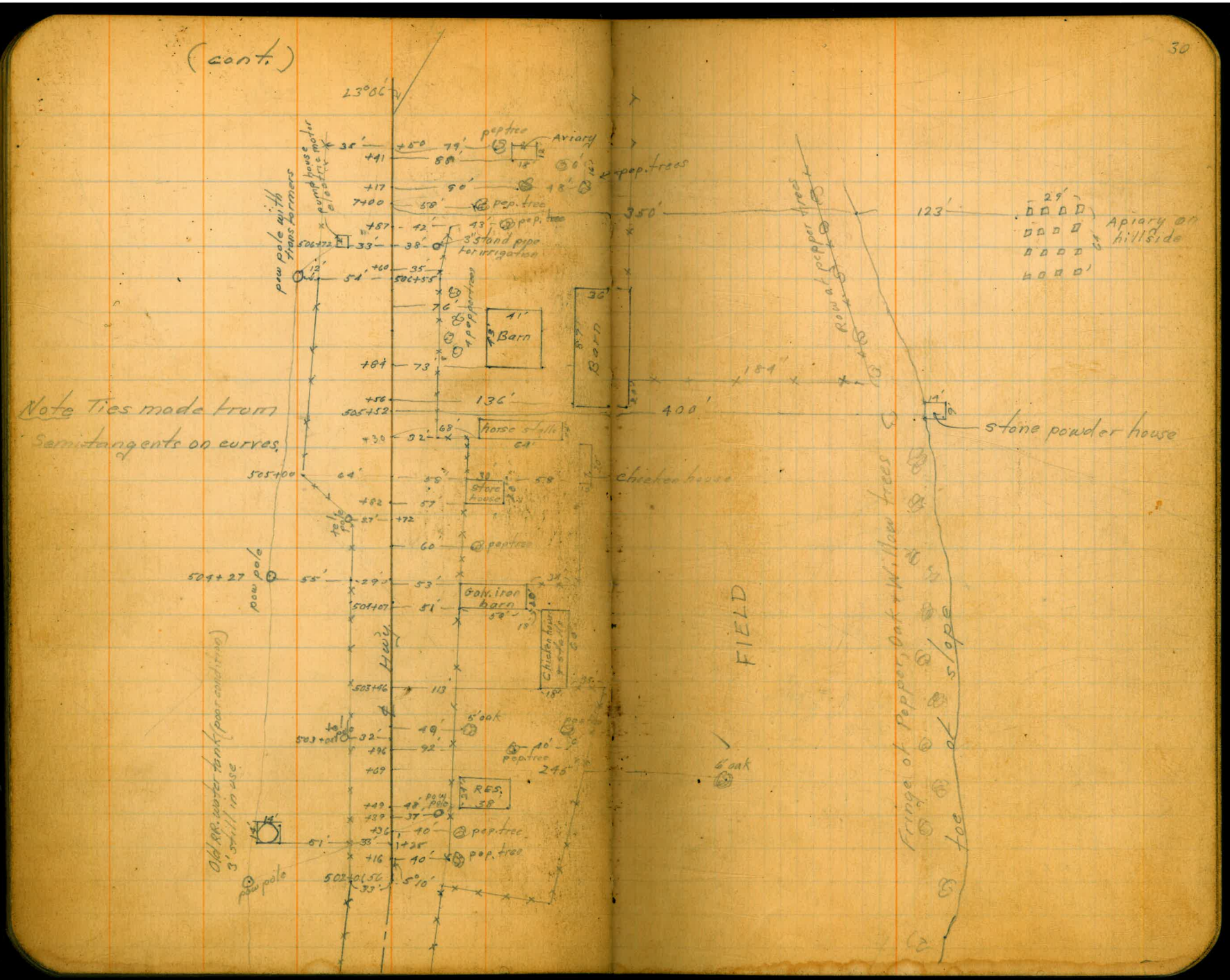
8/4/38
Hot

Loc. of trees, fences, houses etc. at Foster.

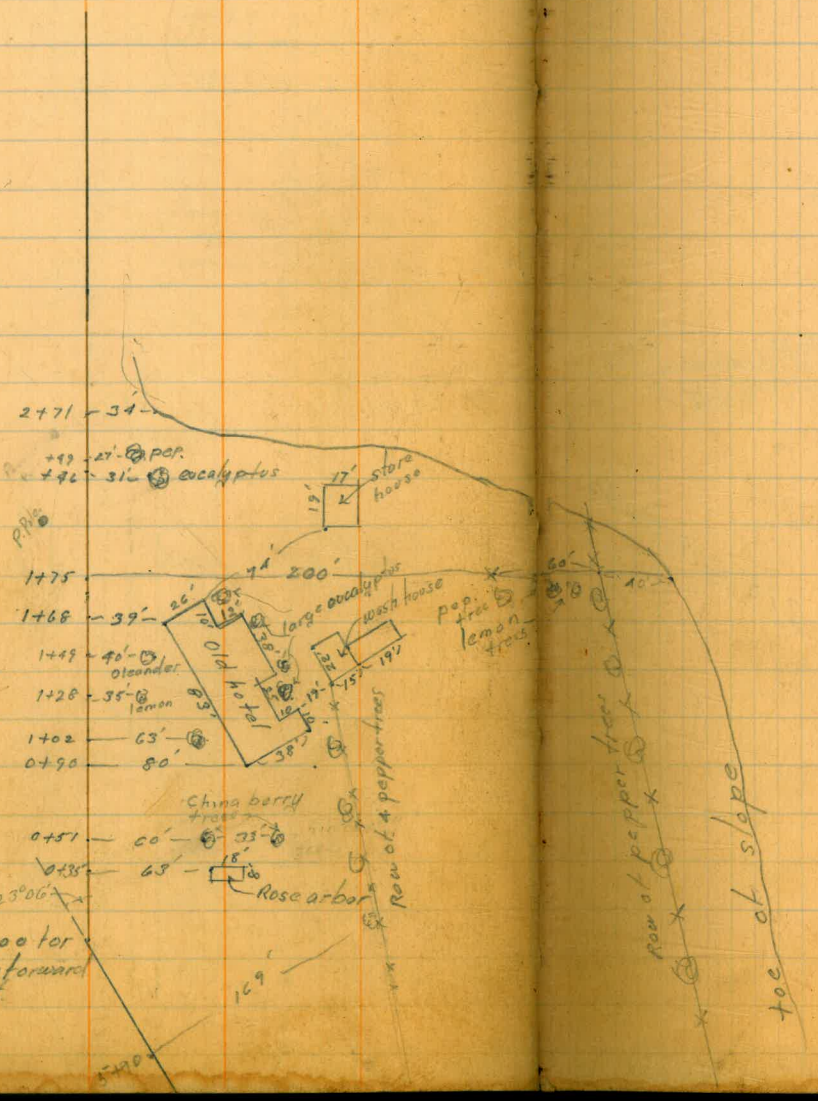
Note ties made from semitang's on curves.



(cont.)


23°06'
pop tree
Aviary
pop. trees
pump house & electric motor
pow pole with trans formers
3" stand pipe for irrigation
1 pop tree
Barn
Barn
Row of pop trees
Apiary on hillside
Note Ties made from Semitangents on curves.
stone powder house
chicken house
horse stalls
store house
pop tree
pow pole
Gal. iron barn
Chicken house
Hwy
5' oak
pop tree
RES.
pop. tree
pop. tree
Obl. str. water tank (poor condition)
3 stills in use
pow pole
FIELD
Fringe of Pepper, Oak + Willow trees
toe of slope
6 oak

(cont.)

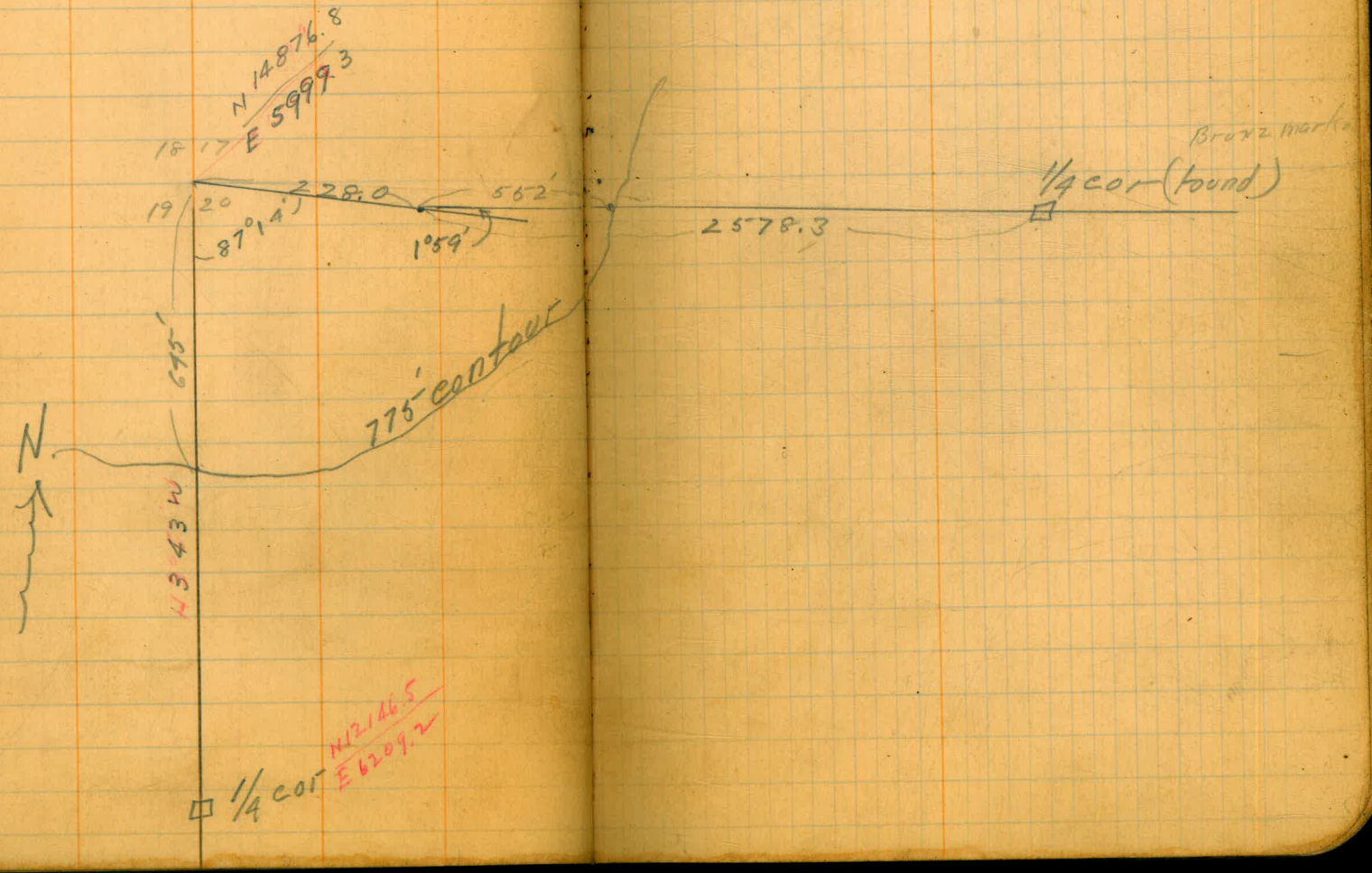

2+71 — 34'
+49 — 27' pep.
+46 — 31' eucalyptus
17' store house
19'
P.P.
1+75
200'
60'
10'
1+68 — 39'
26'
large eucalyptus
wash house
pep. tree
lemon trees
1+49 — 40' oleander
1+28 — 35' lemon
Old Hotel
63'
38'
1+02 — 63'
0+90 — 80'
China berry trees
0+51 — 60' — 33'
0+38 — 63' — 18'
Rose arbor
Row of 4 pepper trees
Row of pepper trees
toe of slope
23°06'
P.I. = 0+00 for ties from forward tangent.
169'
0+00

Hill
Isbell
Lockey
Brooks

8/C/38
Hot

32

Ties to 1/4 cor E. from N.W cor.
sec. 20 & to 775 contour



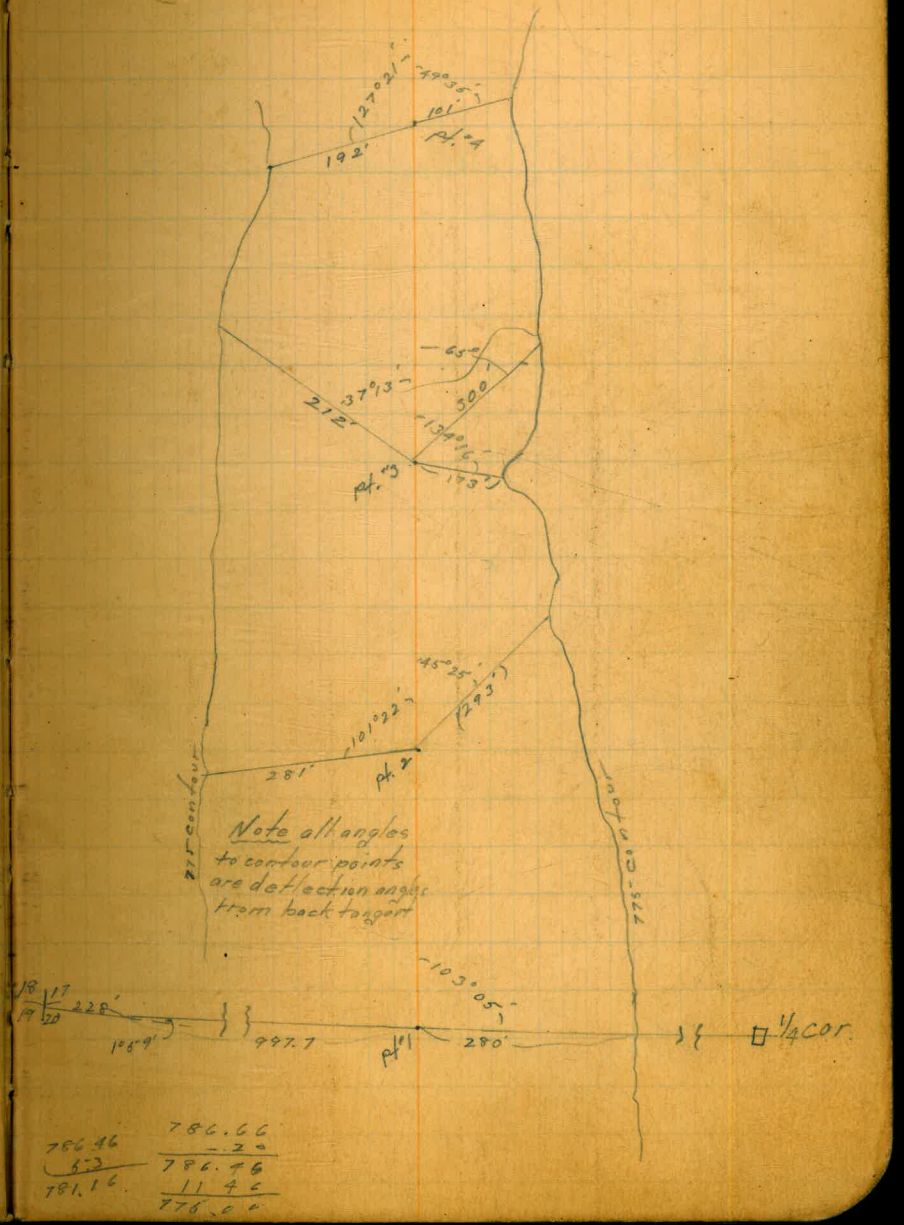
Loc. of 775 contour north of S. line of sec. 17. (Relocation)

Sta.	Dist.	Hor. ∠	Vert ∠	H.I.	Elev.
3 to 4	424.9 (424')	32°08' 16°01'30"R	+0°40'	5.3	732.5
2 to 3	573.9 (574')	P.O.T.	+2°34'	5.2	727.6
1 to 2	1321.6 (1326')	206°09' 103°05'	-3°26'	5.3	701.9
Pt. #1	997.7 (1100')		+17°57'	5.3	781.16

Hill
Isbell
Leakey
Brooks

8/22/38

33

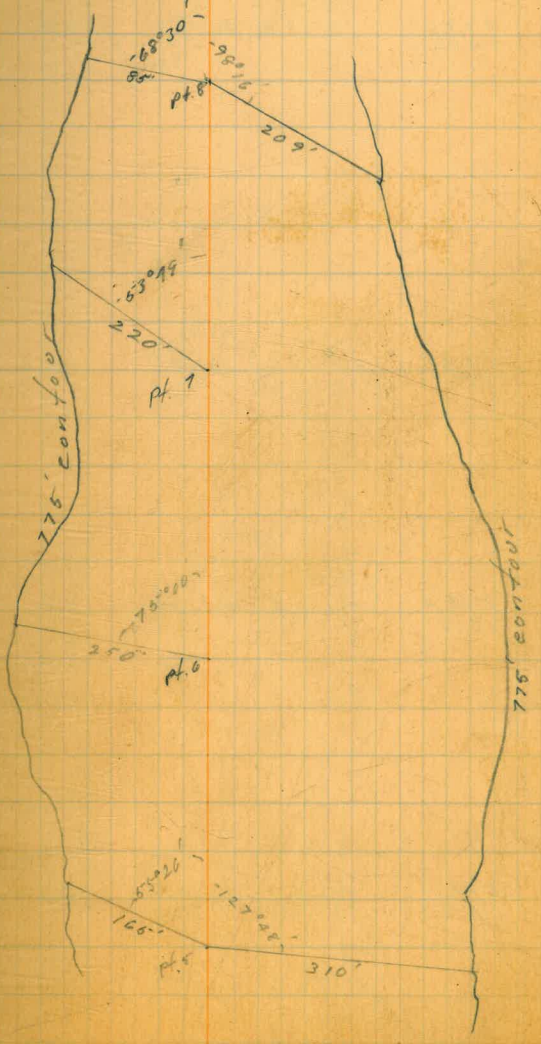


786.46
5.3
781.16

786.66
-.20
786.46
11.45
776.01

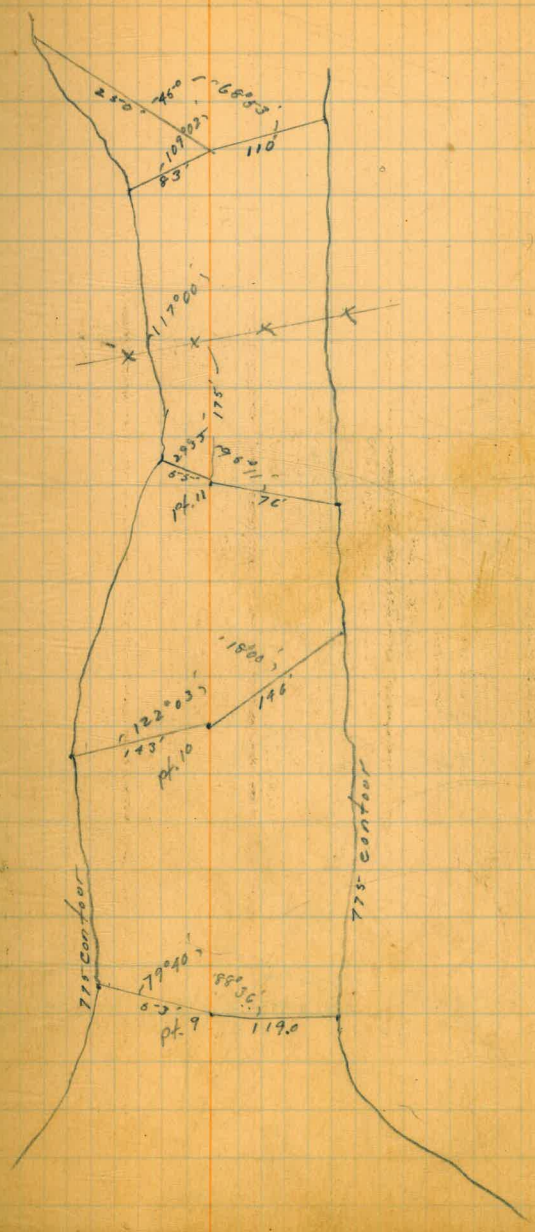
(cont.)

Sta.	Dist.	Hor. Δ	Vert. Δ	H.I.	Elev
7 to 8	403.8 (402')	12°03' 60°31'30" R	+0°12'	5.2	748.2
5 to 7	413.0 (412')	P.O.T.	+0°37'	5.0	746.7
6 to 6	201.0 (200')	5°7°10' 28°35' R	+0°28'	5.0	741.9
4 to 5	313.7 313.0	83°26' 41°43' L	+1°47'	5.3	742.3



(cont.)

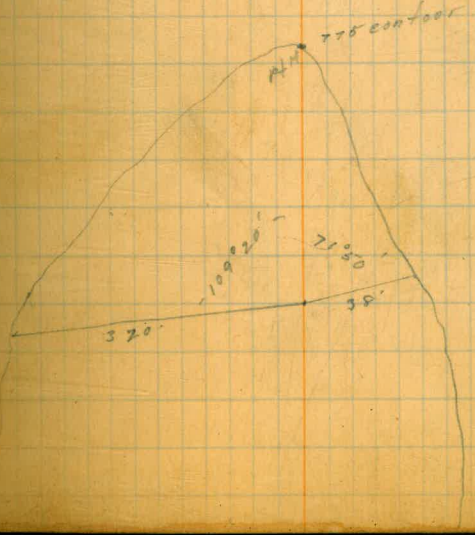
Sta	Dist	Hor. Δ	Vert Δ	H.I.	Elev.
11 to 12	473.0 (472')	36°39' 18°19' R	+0°29'	5.2	767.0
10 to 11	494.8 (494')	103°35' 51°47' L	+1°07'	5.0	763.1
9 to 10	479.0 (478')	25°14' 12°37' R	+0°20'	5.0	753.3
7 to 9	688.0 (687')	P.O.T.	+0°19'	4.7	750.5



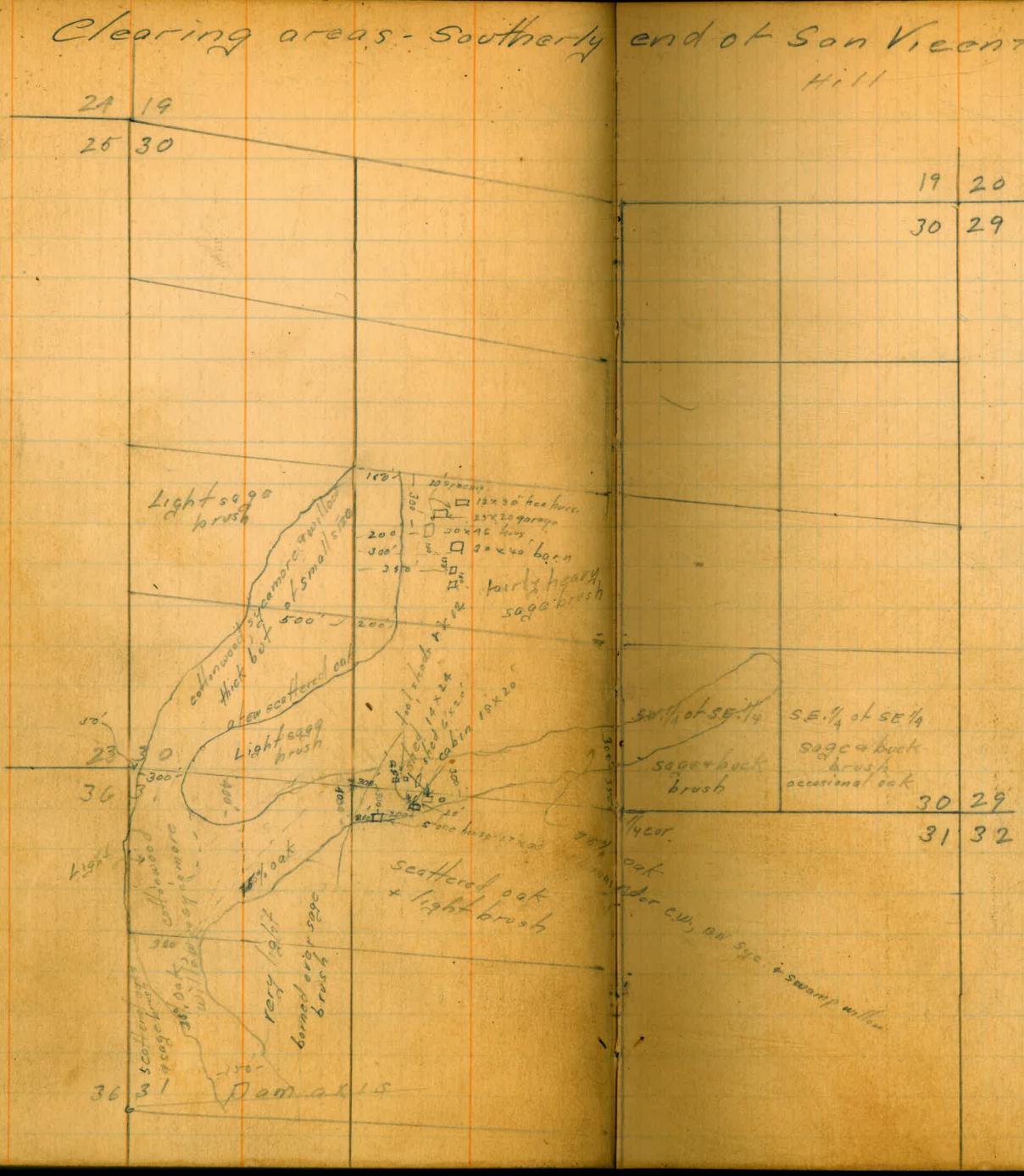
(cont.)

8/23/38 completed. crew laid off

Sta.	Dist.	Hor. ∆	Vert. ∆	H.I.	Elev
set prev. 14 to pt. in sta. 388.0		11°08' 6°34'30" R			
775 contour pinned.					
13 to 14	496.0 (495')	56°29'30" 28°14' L	+0°11'	5.7	775.1
12 to 13	711.0 (710')	59°49'30" 29°35' R	+0°30'	5.0.	775.6



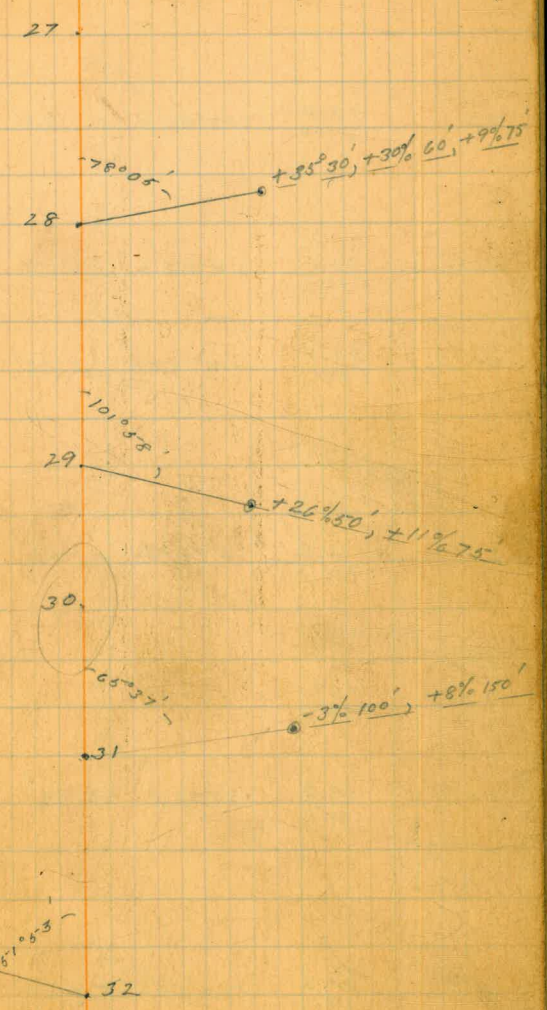
Clearing areas - Southerly end of San Vicente Res.



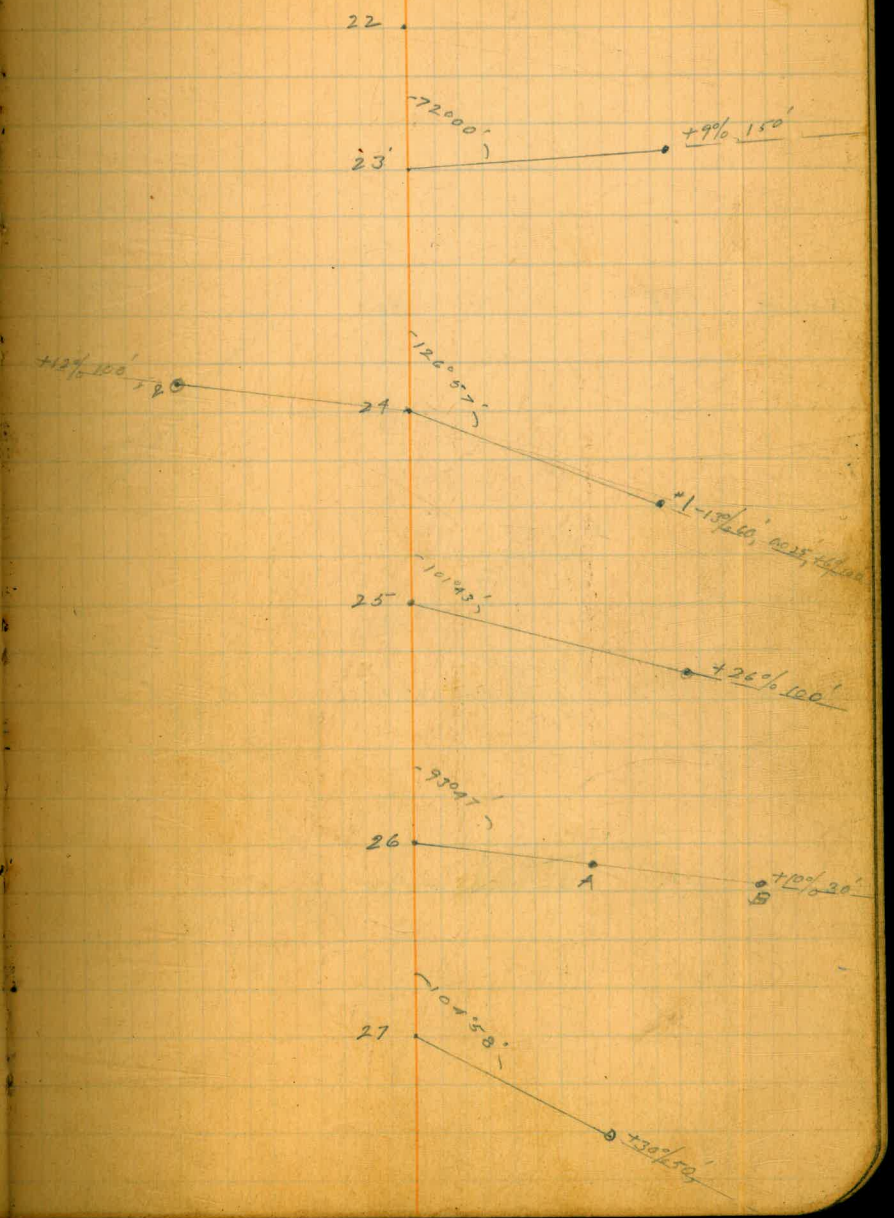
D Line revision from pt. 32 to Shady Dell

Williams
Hill
Osborne
Isbell
Leckey
Brookes

Sta.	Dist.	Hor. Δ	Vert. Δ	H.I.	Rod Elev.
27					
28	125.0 (128')	78°05'R	+10°18'	4.3	+22.0 4.3
29	26.5 (29')	101°58'R	+19°55'	5.0	+9.6 5.0
31	96.9 (96')	65°37'R	+1°35'	5.2	+2.7 5.2
32	40.1 (40')	51°53'L	+8°35'	5.0	+5.9 5.0

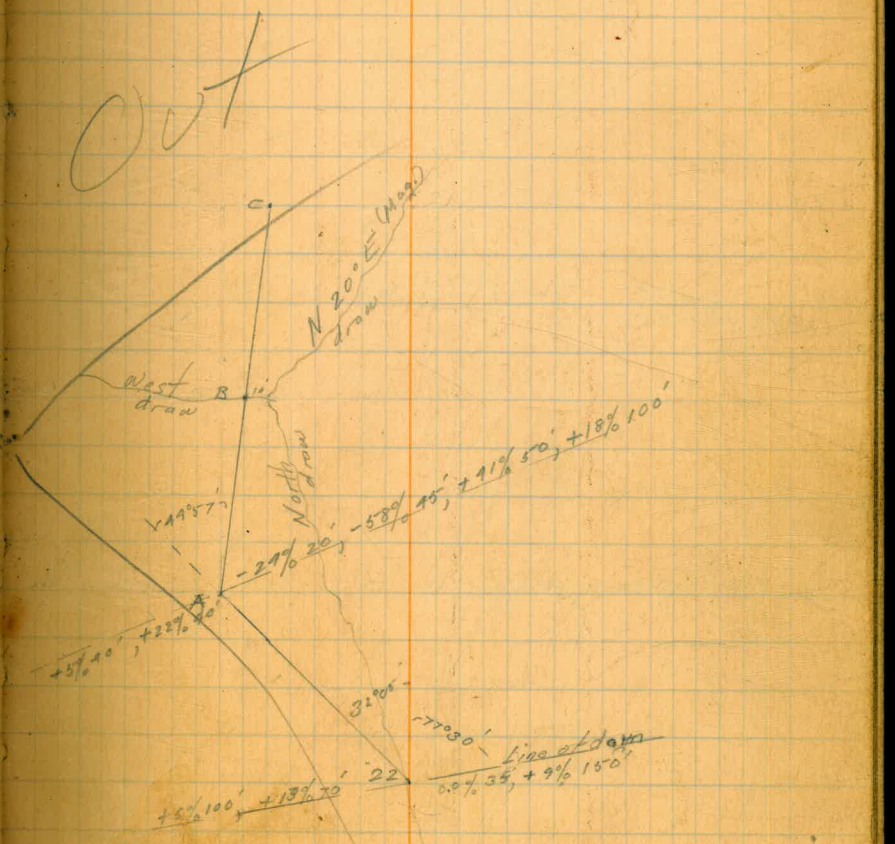


Sta.	Dist.	Hor.∠	Vert.∠	H.I.	Rod & Elev.
23	97.9 (97')	72°00'R	−1°23'	5.0	−2.1 5.0
24 to 2	75.1 (75')	59°38'L	+6°23'	5.0	+8.1 5.0
24 to 1	95.7 (95')	126°57'R	+3°13'	5.0	+5.1 5.0
25	193.9 (193')	101°43R	+1°37'	5.2	+5.4 5.2
A to B	91.6 (91')	-	+10°57'	5.0	+17.7 5.0
26 to A	60.9 (60')	93°47'R	−2°49'	5.1	−3.0 5.1
27	91.3 (93')	104°58'R	+9°55'	5.2	+16.0 5.2



Sta.	Dist.	Hor. Δ	Vert. Δ	H.I.	Rod & Elev.
A to C	518.9 (520')	—	-3°45'	5.0	-34.0 5.0
A to B	171.7 (198')	89°54' 44°57'R	-21°35'	5.0	-68.8 10.0
22 to A backsight on 23	210 (210')	64°10'30" 32°05L	+0°50'	5.2	+3.1 5.2

Out



Sta.	Dist.	Hor. ∠	Vert. ∠	H.I.	Rod or Elev.
19	37.8 (15')	92°53' R	+18°26'	5.0	+13.8 5.0
20 Tie to conc. Mon.					
21 to C	75.3 (75')	76°30' L	+5°30'	5.1	+7.2 5.1

out

18

92°53'

19 +30% 20', +18% 25', -6% 32'

conc. mon.

46°15'

69'

+13% 40' 20 -2% 70', +16% 80', +41% 110'

+18% 20'

16°30'

21

from page 40

Topography on Shady Dell Line

Sept. 27, 1938

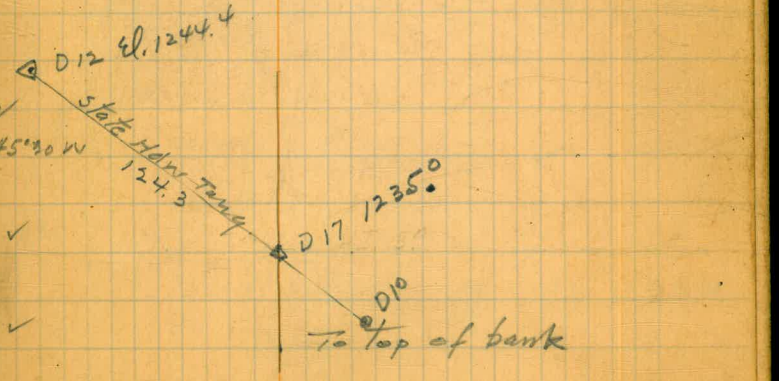
Williams
Osborn
Isbell
Leckey
Brooks

Sta.	T.	Dist	Horiz Δ	Vert Δ	H.I.	Rod Reading	Elev	
23	-2	151.0 150		+0°49'	5.0	5.0	+2.1 ✓	
23	-N	46.3 ✓ 47	79° 23 Rt	-10°48	5.0	5.0	-8.8 ✓	Bottom of Creek
23 F.S. #22	-1	70.7 ✓ 70	79° 23 Rt	-3°37	5.0	5.0	-4.5 ✓	"D" 23 A Pont on ℄
22	D	189.0 ✓ 190	86°43 Rt	+5°48	5.3	9.3	+15.1 ✓	
22	C	115.0 ✓ 115	86°43 Rt	+5°08	5.3	5.3	+10.3 ✓	
22	B	57.4 ✓ 58	86°43 Rt	+9°24'	5.3	5.3	+9.4 ✓	
22 F.S. #23	A	18.5 19.	86°43' Rt	+15°48'	5.3	5.3	+5.7	
22	6	193.7 ✓ 195	93°17 Lt	+6°53	5.3	5.3	+23.3	
22	5	145.9 ✓ 147	93°17 Lt	+6°57'	5.3	5.3	+17.6	
22	-4	86.9 ✓ 87	93°17' Lt	+6°33	5.3	5.3	+10.0	
22	-3	38. ✓ 37.	93°17 Lt	0.0	5.3	5.3	0.0	
22	-2	18.0 ✓ 17.	93°17' Lt	0.0	5.3	14.6	-9.3	
22 F.S. #23	-1	59.5 ✓ 59.	93°17 Lt	+4°56	5.3	5.3	+5.1	"D" 22 "A" Pont on ℄

F. Cobb. Sept. 27. 1938 43
J. Isbell
B. Leeky
P. Marvelle

Sta —	Dist.	Horiz Δ	Vert Δ	H.I.	Rod + Elev.	
D18A back to	105.9 ✓	P.O.T.	+23°39	5.0	5.0	+46.3 ✓ D18 "A" is in bottom of Creek
	135					
	81.0	P.O.T.	-15°14	4.9	4.9	-22.0 ✓ on rock - slower to natural ground
	86					
"D19A" ⊼	80.7	P.O.T	-3°08'	4.9	12.9	-12.9 ✓
B.S. To D21	80. back					
"D"21 to "D19A	702.8	P.O.T	-3°55'	5.1	5.1	-48.0
	705.					
	343.6 ✓	P.O.T	-4°50	5.1	14.1	-38.1
	345					
D21. ⊼	196.6 ✓	P.O.T.	-8°31'	5.1	5.1	-29.3 ✓ ℄ Road at 200' N of D 21
B.S. D21A	200					
D"21"A to D21	453.5 ✓	P.O.T.	-4°15	5.1	5.1	-33.7 ✓ Mag N 4° 30' W
	455					
	347.7 ✓	P.O.T.	-6°33	5.1	5.1	-39.3 ✓
	346					
	277.2 ✓	P.O.T.	-9°31	5.1	9.1	-50.5 ✓
	284.					
	178.7 ✓	P.O.T.	-21°24	5.1	13.1	-78.0 ✓
	205.					
"D"21 "A" ⊼	174.0	5°05 Rt	-6°42'	5.1	5.1	-16.9 ✓
B.S. D22A	145					
22A — 3	230.7 ✓	P.O.T.	-1°58	5.3	7.3	-7.9 ✓ ⊼ △ D 21 "A"
	230					
22A — 2	156.0 ✓	P.O.T	0.0	5.3	15.3	-10.0 ✓
	155.					
"22A — 1 ⊼	85.9 ✓	P.O.T.	-1°48	5.3	7.3	-4.7 ✓
B.S. D23"A"	85.					

Sta	Dist	Horiz ∠	Vert ∠	H.I.	Rod.	Elev.
D17A to D12	124.3 ✓ 1.24	43°01 Lt	+4°21	5°	5.°	+9.4 ✓ Mag N45°30 W
D18A to D17A	290.7 ✓ 2.90	R.O.T.	+1°23'	5°	5°	+7.0 ✓
	50.3 ✓ .50	R.O.T.	+6°20	5.°	5.°	+5.5 ✓
D18"A" ahead BS TO D19"A"	40.8 ✓ .40	R.O.T.	-2°23	5.°	5.°	-1.7 ✓

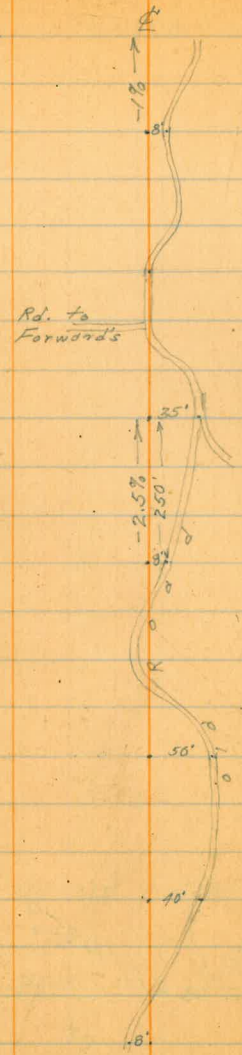


back 7' to bottom of bank level with 18
" 16' to top of bank same elev. N Bank

Topog. "D" Line
11-1-38
cloudy

Hill
Isbell
Leckey
Brooks

45



Sta.

D33 + 200'

D33 = 8-13

D34 + 250'

D34

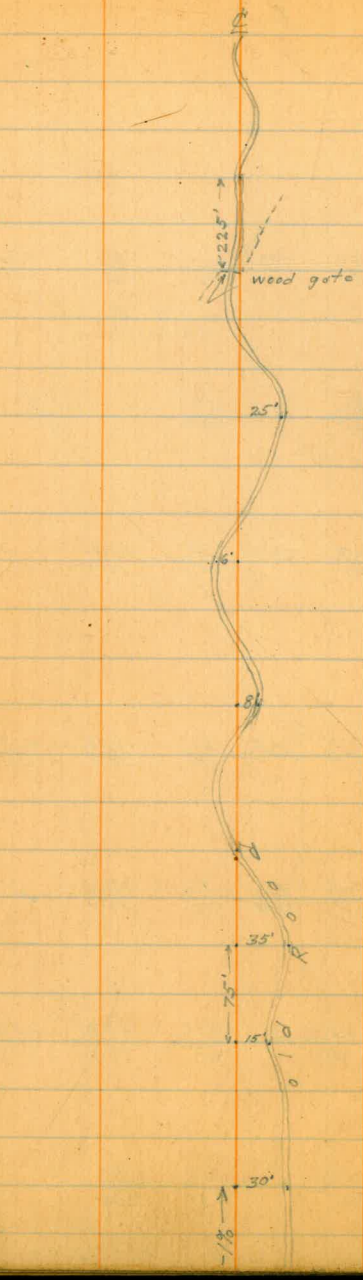
D35

C = D36

B

A

+18% / 100'	+6% / 150'	D33	Level / 85'	-5% / 125'	-1% / 200'	
+11% / 100'	+2% / 250'		-2% / 300'			✓
-1% / 150'	+4% / 150'	D34	+9% / 160'	+3% / 100'		✓
+34% / 150'	+7% / 125'	D35	+6% / 60'	+15% / 100'	+2% / 100'	✓
+11% / 150'	+16% / 80'	C D36	-7% / 170'	+2% / 100'		✓
+37% / 150'	B	-24% / 60'	-5% / 125'	+5% / 200'		✓
+12% / 100	+17% / 30	A	-11% / 65'	+3% / 200		✓



℄

+28% / 75'	+7% / 125'	-4% / 100	027	+11% / 30'	+18% / 65'	
	+13% / 150'	+5% / 150'	028	+1% / 30'	+14% / 40'	+32.7% / 65'
+9% / 150'	-6% / 125'	-27% / 40'	029	+36% / 70'	+23% / 50'	+5% / 100'
-1% / 100'	-9% / 70'	-19% / 40'	030	+16% / 65'	+6% / 50'	Level / 100'
		+6% / 200'	031	+3% / 150'	+1% / 150'	
	+15% / 150'	+14% / 65'	032	-8% / 35'	-1% / 200'	
	+1% / 200'	+2% / 100'		-2% / 125'	+7% / 150'	

Sta. ℄

D21A

" 2 15.6 from D22A

" 1 85.9 from D22A

85.9 -

D22A

D23A

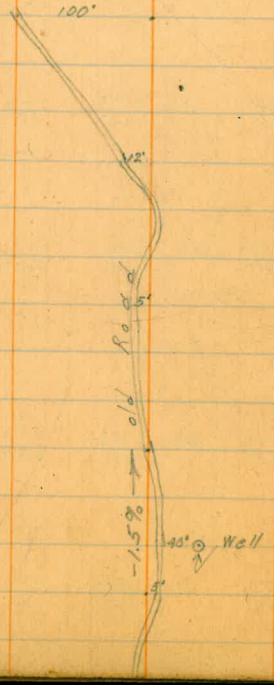
D24

D25

D26+100'

D26+30'

D26



11-1-38
11:00 A.M.
Cloudy

℄

+5% / 60' — -5.2% / 40' — -22% / 50' — -41% / 30' — +13% / 90' — +31% / 100'

+49% / 50' — -20% / 50' — -15% / 60' — PI.2 — +15" / 70 — +33% / 150

+38% / 100' — -45% / 25' — -15% / 60' — PI.1 — +15% / 60' — +5% / 70' — +33% / 150

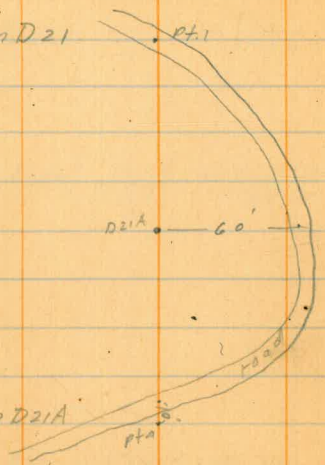
+9% / 125' — +25% / 35' — -9% / 35' — D23A — +9% / 100' — +9% / 200

+18% / 100' — +11% / 90' — D24 — +6% / 125' — +16% / 70' — +24% / 100'

+20% / 150' — +11% / 50' — D25 — -4% / 65' — +2% / 100' — +12% / 48'

+22% / 200' — +10% / 60' — -2% / 80' — +5% / 200' — +17% / 100'

+39% / 80' — +14% / 100' — D26 — -5% / 75' — +19% / 115'



#1 196.6 from D21

#4 312.7 from D21A

#3 277.2' from D21A

#2 178.7 from D21A

#1 14.4' from D21A

D21A

+4% / 125', Pt.1 +8% / 125

+36% / 150 +8% / 60' +17% / 30' D21 -22% / 40' -20% / 100'

+15% / 150 +6% / 85 Pt.4 +2% / 100' -16% / 40' -21% / 100'

+34% / 125' +6% / 60' Pt.3 +7% / 60' -26% / 150'

-60% 30° -20% -0% / 75 +15% / 100' +33% / 100 +6% / 75 Pt.2

+18% / 20 -34% / 40' -10% / 60' -60% / 40 Pt.1 +9% / 90' +35% / 100'

2 50' from D18A

1 40' from D18A

D 18A +1% 150' +16% 40' -38% 20' level 35' +26% 30' level 40'

"1 -3% 180' -19% 100' -32% 70' Pt 1. +10% 120' -11% 100'

D 19A

"1 -2% 150' -22% 130' +10% 60' -7% 100' +

D 19A 50 back towards D21 -2% 200' -21% 100' -42% 25' -32% 70' D 19A +11% 25' -18% 100' +

"2 313.6 from D21 -1% 150' -17% 80' Pt 2. +12% 60 +15% 150' on sec. line

D18A +1% 250' +2. -37% 25' level 20' +33% 20' -39% 125' +19% 10' level 205

#1.

D18A inverted +22% 30' +30% 80' -19% 45' level 100

#1.

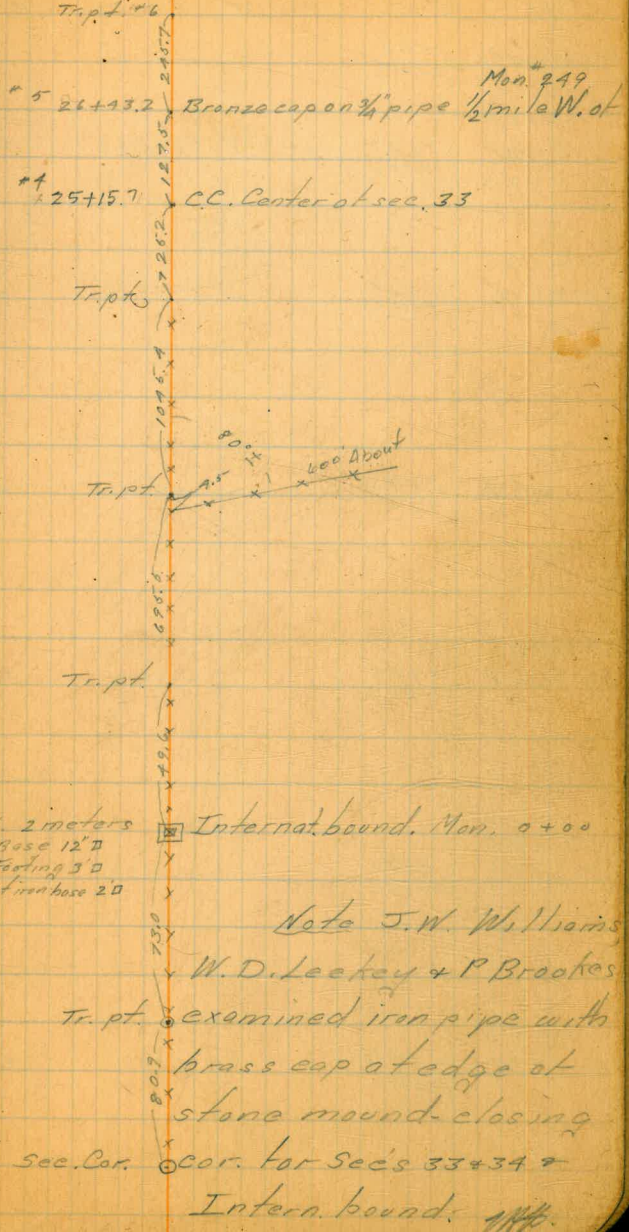
Sec. line survey - Marron Reservoir.
Stadia

Pt.	Dist.	Hor. ∠	Vert. ∠	H.I.	Elev. Rod
#6	1098.7 (1100')		-2°54'	4.8	-57.6 -62.8
#5	852.7 (854')		-3°02'	4.8	-46.2 -1.8
17+90.5 #4 Tr. pt. 3	725.2 (726)		-2°51'	4.8	-36.1 4.8
7+45.1 Tr. pt. 2	1045.1 (1045')		-6°36'	4.7	-121.2 4.7
0+19.6 Tr. pt. 1	696.5 (705')		-7°02'	4.8	-85.8 4.8
#249 = 0+00 Intern. Mon.	49.6 (0.49)		-5°23'	4.8	-4.67 from Concr. base 4.8
Tr. pt	73.0 (0.50)		+18°21		
Sec. Cor	80.9 (0.96)		124°05'		

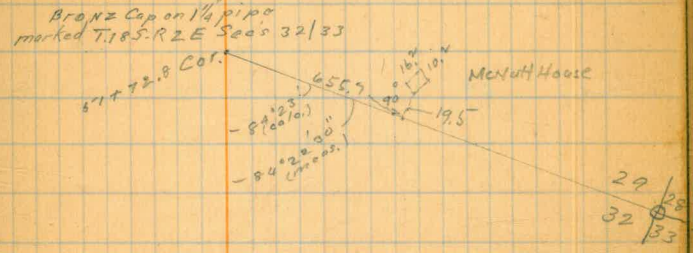
Williams
Hill
Isbell
Leekey
Brookes

1/12/39
clear + warm

50



Pt.	Dist.	Horz Δ	Vert Δ	H.I.	Red. Elev
					+36.5
Pt. opp. house	654.0 (655')		+3°12'	4.8	4.8
51+72.8					+320.6
Sec. Cor	1762.7 (1820')	96°37' R	+10°27'	4.8	9.1
43+31.8					+2.4
Tr. pt. #10	841.0 (840')		+0°10'	4.7	4.7
40+71.8					-5.9
Tr. pt. #9	257.0 (256')		-1°19'	4.7	4.7
35+81.8					-1.7
Tr. pt. #8	493.0 (492')		-0°12'	5.7	5.7
31+48.8					-8.1
Tr. pt. #7	433.0 (432')		-0°09'	4.7	11.7
28+88.7					-19.6
Tr. pt. #6	259.9 (260')		-3°49'	4.5	6.8



Stadia road loc. 5.8% Dam to Foster at San Vicente E. side

Pt. to Pt.	Dist.	Hor. ∠	Vert ∠	H.I.	Elev.
5 to 4	69. (73')	180°	+1°07'	5.0	626.5
5 to 3	112. (112')	180°	-2°26'	5.0	639.4
2 to 5*	182. (183')	13°33'L	-4°34'	H.I. 4.3 Rod 2.3	644.1
1 to 2*	43. (43')	33°07'L	-1°34'	4.0	656.6
Pt. 0 to 1*	101. (102')	11°05'L	-1°34'	4.6	660.0
0					668.1

4/23/40
Hill
Soper
Brooks
Mag. B

L ℄ R

52

Same slope 60
+20°30' 100' +19.2 87'
+37° 75' +44.2 60'

pt. 4
-22°30' 35' -13.4 32'
-39° 61' -32.0 40'
-27° 90' -40.8 80'

+27° 100± +15.3 89'
+24° 84' +34.2 77'
+7°30' 34' +4.1 34'
+36° 47' +39.0 37'

pt. 3
-19° 30' -6.5 19'
-38°30' 35' -21.8 27'
-30° 69' -34.5 60'

S 73°30' E
+25° 100' +42.8 91'
+31°30' 44' +33.0 38'
+39°30' 85' +46.9 71'

pt. 6
-11° 19' -12.8 14'
-25° 100 -42.3 91'
-21° 70' -25.4 64'

S 61° E
+21°15' 46' +16.6 43'
+41° 64' +35.5 41'

pt. 2
-31° 30' -15.5 26'
-27° 100' -45.5 89'

S 28° E
+9° 78' +11.7 74'
-10° 49' -10.4 49'
+32°30' 66' +28.0 60'
+40°30' 40' +26.0 30'

pt. 1
-25° 43' -19.0 41'
-32° 60' -31.8 51'

+5° 170' +11.8 145'
+15° 75' +19.7 74'
+7° 57' +7.0 56'
+12° 44' +9.2 43'
+22° 57' +18.4 30'
+35°45' 77' +46.9 64'

pt. 0
-26° 70' -30.6 63'

Excav. in middle of lightly 1.
Road was moved about 30 west.

(cont.)

Pt. to Pt.	Dist.	Hor. ∠	Vert. ∠	HI / Rod	Elev.
6 to 13	50.' (50')	23°15' R	0°00'	5.1	624.0
6 to 12	221.' (250')	2°30' R	+20°00'	5.1	709.'
6 to 11	169.' (185')	2°30' R	+17°05'	5.1	676.0
6 to 10	197.' (190')	19°30' L	+28°15'	5.1	703.0
6 to 9	96.' (66')	49°30' L	+33°10'	5.1	654.0
6 to 8		75°20' L		5.1	
6 to 7	135.' (200')	90° L	+34°40'	5.1	717.2
5 to 6*	226.' (228')	19°15' L	-1°34'	HI 5.0 Rod 7.0	624.0

Neg. 13

draw

draw

draw

+31° / 100' Pt. 9 46' (stadia) Pt. 6
+5.15 / 86'

Pt. 8 +30° / 141' +28° / 100' +22° / 65' +27° / 41' Pt. 6
+7.85 / 122' +4.69 / 88' +2.45 / 60' +1.86 / 37'

Pt. 6

N 85° 30' E

(cont).

Pt. to Pt.	Dist.	Hor. ∠	Vert. ∠	H.I. Rod	Elev.
12 to 21*	199.' (200.)	19°46'L	-4°34'	HI 4.8 Rod 0.8	565.6
19 to 20	61.' (63.)	19°46'L	-8°43'	4.6	572.
17 to 19*	323.' (325.)	5°38'L	-4°34'	4.6	581.6
17 to 18	95.' (98.')	5°38'L	-10°15'	4.6	590.0
6 to 17*	208.' (209.')	117°25'R	-4°34'	5.1	607.4
6 to 16	37.' (41.')	117°25'R	-17°27'	5.1	612.0
6 to 15	160.' (171.')	138°30'R	-14°20'	5.1	583.0
6 to 14	198.' (240.)	23°15'R	+25°00'	5.1	716.0

L & R

Traverse B

S.5°30'E

+21° 60' +33.0 8.5 +29° 8.5 +41.0 75' Pt. 21 -25° 50 -21.5 15' -22° 100 -37.5 93' -22° 60 -18.7 46'

150'

Samoshan 150' +14°30' 110' +26.7 96' +23° 19' +7.4 17' Pt. 20 -23° 17 -6.6 16' -40° 80' -67.4 61'

Samoshan 140' +21°30' 110 +36.5 93' Pt. 19 -16° 18 -3.0 17' -20° 75 -36.4 68'

Samoshan 140' +23°30' 100 +39.9 98' Pt. 18 -25° 120 -50.8 109'

+28° 100' +46.9 88' Pt. 17 -37°30' 105' -48.5 95'

draw +28° 150' +70.1 132' 0° 20 Pt. 16

draw

(cont)

Pt. to Pt.	Dist.	Hor. ∠	Vert. ∠	H.I. Rod	Elev	Mag. B.
28 to 29*	179' (180')	15°53'R	-1°34'	4.5	499.9	S 45°30'W
27 to 28*	115' (116')	11°22'R	-1°34'	5.2	514.6	S 28°W
26 to 27*	120' (121')	10°15'L	-1°34'	5.0	523.8	S 17°W
21 to 26*	903' (912')	31°56'R	-1°34'	4.7	533.1	S 2°30'W
21 to 26	129' (183')	31°56'R	-23°10'	4.7	511.	bot draw
21 to 24	289' (291')	31°26'R	-1°34'	4.7	543.	
21 to 23	181' (182')	16°30'R	-1°34'	4.7	551.	
21 to 22	129' (125')	32°20'L	-1°34'	4.7	556.	

L ∠ R

get topog for shots at remaining pts from map

pt 28

+16° / 46' = +12.7 / 44'

+25° / 38' = +20.0 / 31'

-31° / 78' = -31.8 / 71'

pt 27

+34° / 100' = 37.9 / 83'

-31° / 100' = -31.5 / 86'

pt 26

+32°30' / 100' = 33.7 / 84'

+30° / 50' = +25.0 / 43'

-34° / 100' = -33.9 / 83'

pt 24

+27° / 100' = +48.1 / 94'

-25° / 100' = -42.3 / 91'

pt 23

+25° / 100' = +42.3 / 91'

Bldg. 4

+31° / 100' = +57.4 / 92'

90° off Hook = 549

pt. 22

+22° / 150' = +55.2 / 139'

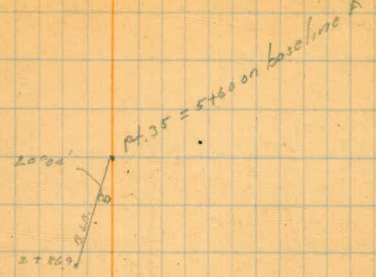
+13° / 100' = +23.5 / 97'

+11° / 30' = +10.8 / 27'

(cont.)

5-6

Pt. to Pt	Dist	Hor. ∠	Vert. ∠	H.I. Rod	Elev.	Mag. B.
34 to 35*	147. (148')	6°26'R	-5°01'	4.6	456.6	N 84°W
35 to 34*	7.2 (72')	32°26'R	-4°34'	4.7	469.5	S 88°30'W
Tie to 34 at 1 mo B topog. at pt. 32	45.5 (46')	15°12'R at back tang.	+6°06'	4.7	489.3	
32 to 33*	77' (77')	22°19'R	-4°34'	H.I. 4.7 Rod 7.7	476.3	S 6°6'W
29 to 31	116. (117')	11°08'L	-5°00'	5.0	490.	
Pt. 29 to 32*	194. (195')	11°08'L	-4°34'	5.0	481.1	S 34°30'W
Pt. 29 to 30	66. (71')	11°08'L	-14°15'	5.0	483.	



Stadia road loc. at San Vicente Dam Site - westside

Pt. to Pt.	Dist	Hor. ∠	Vert. ∠	H.I. Rod	Elev.
6 to 7	106. (107')	17°13'R	-5°11'	4.7	615.0
6 to 6*	172' (174')	19°42'R	-5°11'	H.I. 5.0 Rod 7.0	625.6
2 to 6*	90'0' (145'5")	46°22'R	-5°11'	5.0 H.I. 2.0 Rod	634.2
2 to 4	274' (285')	46°22'R	-11°10'	5.0	623.2
2 to 3	80. (86')	46°22'R	-14°22'	5.0	615.8
1 to 2*	95. (95')	22°56'R	-1°40'	4.8	677.2
0 to 1*	174 (176')	14°19'R	+5°11'	4.8 H.I. 5.8 Rod	679.7
Sta 3+50 pt. 0	91.1 (98')		+12°40'	5.1	664.8
Sta 3+50					644.5

Hill
Soper
Brooks

5/1/40

S-7

L & R

Mag. B

S72°W

-26° 100 -43.8 90	pt. 7	+20° 116' +35 14	+52° 59' +46.2 36	+25° 70' +29.4 63.5
-26°30' 100 -44.6 89.5	pt. 6	+31°30' 130 +67.7 110		

S52°W

-26° 100 -43.8 90	-39° 42 -26.1 33	pt. 5 +22° 48' +18.0 44	+35°30' 100' 43.0 90	

S52°W

-21° 100 -35.8 93	-21° 23 -9.4 21	pt. 4 +17° 23' +6.7 22	+34°30' 43' +24.4 36	+32° 100' +53.0 85	

-28°30' 100' -47.7 88	-31° 45' -23.2 39	pt. 3 +34°30' 55 +31.2 46	+17° 57' +14.2 57	+16°30' 100' +31.7 95	

S6°W

-22° 90 -34.0 84	pt. 2	+14° 42' +10.2 41	+19° 65' +21.2 61	+19° 100' +32.5 94.5

S17°15E

-43.8 90	-26° 100	pt. 1 +22° 50 +18.5 46	+20° 65	+29.0 80'

5' dip bed

-27° 100 -45.4 89

-23° 25

+23° 23

3+50

El 644.5'?

N 90°27' E

+22°30' 42 +19.2 46

+21° 100 +39.8 93

S 31°05' E

(cont.)

Pt. to Pt.	Dist.	Hor. ∠	Vert. ∠	HI / Rod	Elev.
12 to 13	174' (176')	46°00'R	-5°44'	4.7 HI. 3.7 Rod	498.7
11 to 12*	274' (276')	5°57'L	-5°44'	4.7 HI. 5.7 Rod	515.1
9 to 11*	248' (260')	28°57'L	-5°44'	5.3	543.5
9 to 10	151' (155')	28°57'L	-8°56'	5.3	544.6
8 to 9*	142' (144')	2°00'L	-5°44'	5.0	568.3
6 to 8*	425' (428')	1°23'L	-5°44'	HI 4.7 Rod 5.3	582.5

L & R

Mag. B

Pt. 13

-10° / 160' — -26.1 / 148'

+17° / 100' — 29.2 / 96'

Pt. 12

S 30° W

-20° / 100' — -34.2 / 94' ; -39° / 45' — -21.8 / 39'

+15° / 24' — +6.2 / 23' ; +5° / 30' — +2.6 / 30' ; +14° / 150' — +36.3 / 145'

Pt. 11

S 37° W

-24°30' / 80' — -33.2 / 73' ; -17° / 52' — -15.2 / 50'

+21°30' / 75' — +27.5 / 70' ; +32° / 75' — +39.6 / 64'

Pt. 10

-26° / 100' — -43.8 / 90'

+21° / 31 — +11.1 / 29' ; +17° / 100' — +29.2 / 96'

Pt. 9

S 66° W

-21° / 104 — 35.8 / 93'

+27° / 29' — +13.2 / 26' ; +22° / 53' — +19.8 / 49' ; +24° / 100 — +40.7 / 91'

Pt. 8

S. 67°30' W

-32° / 58 — -30.8 / 49' ; -23° / 32' — -13.5 / 29'

+20° / 100' — +34.2 / 94'

(cont.)

Pt. to Pt	Dist.	Hor. A	Vert. A.	H.I. Rod	Elev.
19 to 21	207. (207')	19°03'R	-0°53'	4.8	485.1
19 to 20	88. (88')	19°03'R	-1°35'	4.8	485.8
18 to 19*	131. (131')	6°44'R	-1°20'	4.8	485.2
15 to 18*	280. (283')	76°29'L	-5°44'	4.8	485.2
15 to 17	206. (207')	76°29'L	-5°44'	4.8 H.I. 10.8 Rod	489.7
15 to 16	135. (136')	76°29'L	-4°56'2"	4.8	474.7
14 to 15*	125. (126')	45°16'L	-5°44'	4.8	486.2
12 to 14*	174. (176')	0°32'L	-5°44'	4.7 H.I. 3.7 Rod	498.7

Mag. B.

S. 67°30 E

S 8°E

N 88°30 E

S 13°30 E

S 30° W

Pt. 21: 0° / 100'; +3° / 27' (+1.2 / 23'); +19° / 38' (+12.4 / 36'); +22° / 100' (+37.5 / 93')

Pt. 20: -0°30' / 100 (-0.8 / 100'); +4° / 23' (+5.1 / 23'); +15° / 38' (+12.4 / 36'); +11° / 70' (+13.4 / 69'); +8° / 38' (+5.3 / 38'); +20° / 50' (+17.1 / 47')

Pt. 19: -0°40' / 100 (-1.1 / 100'); +12° / 57' (+11.9 / 56'); +8° / 100' (+8.7 / 100'); +14° / 100' (+24.2 / 97')

Pt. 18: 0° / 100'; +3° / 47' (+2.4 / 47'); +11° / 70' (+13.4 / 69'); +9° / 70' (+10.9 / 69'); +16° / 63' (+17.9 / 61')

Pt. 17: +1°10' / 100' (+2.0 / 100'); +3° / 29' (+1.5 / 29'); +10° / 100' (+17.4 / 98'); +13° / 88' (+19.8 / 86')

Pt. 16: -4° / 100' (-6.9 / 100'); -6°30' / 52' (-5.9 / 51'); -6° / 36' (-3.7 / 36'); -4° / 40' (-2.8 / 40'); +3° / 80' (+4.2 / 80'); +5°10' / 147' (+13.8 / 146'); +25° / 50' (+21.2 / 45')

Pt. 15: -8° / 125' (-17.3 / 124'); -2° / 55' (-1.9 / 55'); -12° / 16' (-3.3 / 16'); +20° / 100' some/opp. +34°30' / 94' further; -60° +7°30' / 58' (+7.7 / 58'); +10° / 150' (+26.2 / 148')

Pt. 14: -15° / 100 (-25.8 / 97'); +15° / 92' (+23.8 / 89'); +20° / 70' (+24.0 / 86')

(cont.)

Sta.	Dist.	Hor. ∠	Vert. ∠	H.I. Rod	Elev	Mag. B.
27 to 28*	276' (276')	29°10'R	+0°12'	5.0	45-1.3	S 48° W
25 to 27*	260' (260')	R.O.T.	-1°10'	5.0	45-0.8	
25 to 26	75' (75')	R.O.T.	-4°05'	5.0	45-0.1	
24 to 25*	109' (109')	74°40'R	+2°36'	4.8	45-5.7	S 18°30' W
22 to 24*	286' (286')	10°53'R	-0°19'	4.8	45-0.8	
22 to 23	163' (163')	10°53'R	-0°37'	4.8	45-3.0	S 57°30' E
19 to 22*	360' (360')	19°03'R	-0°05'	4.8	45-4.8	

L. & R

0° / 100' Pt. 28 — 0.8 / 15' ↑ — +33°40' / 100' — 33.4 / 83'

-2.0 / 6' river bed — +0°30' / 70' ↑ — Pt. 27 — +2°0.1 / 135' ↑ — +25° / 80' — -2.0 / 6 — +0.4 / 70 — + — +5.4 / 135' — +31.0 / 73'

-1.0 / 3' further river — 0° / 68' — Pt. 26 — 0° / 10' ↑ — +30° / 50' ↑ — +20° / 50' — +25.0 / 43 — +17.1 / 47'

-10° / 34' river — -5.9 / 34' — Pt. 25 — 0° / 6' ↑ — +22°30' / 50' — +20°30' / 100' — +19.1 / 46' — +35.0 / 94

0° / 100' — Pt. 24 river bed — +13°30' / 55' ↑ — +19° / 100' — +12.8 / 53 — +32.5 / 94.3

0° / 100' — -9°30' / 10' ↑ — Pt. 23 — +27° / 6.6 ↑ — +19°30' / 50' — -1.6 / 10 — +30.0 / 59 — +16.7 / 47'

0° / 100' — Pt. 22 — 0° / 33' ↑ — +23°30' / 82' ↑ — +35° / 30' — +32.6 / 75' — +17.2 / 25

(cont.)

31 to 1+00	(55')	78°09'R	+17°16'	5.0		
31 to 32	(181')	P.O.T.	-0°25'	5.0		Road to rock quarry
17+60 road tie line						
30 to 31*	260.' (261')	17°46'L	-4°36'	4.7	446.9	S36°30'W
29 to 30*	596.' (596')	8°39'R	+1°42'	5.2	466.7	S5°5'W
28 to 29*	377.' (377')	2°06'L	-0°18'	4.7	449.4	S46°30'W

Hill 7/5/40
Sopar
Brooks

800' Contour in NE. ¼ of NW. ¼ sec 20 San Vicente Basin

7.35	788.51		781.16
12.50	800.53	0.48	788.03
11.66	810.50 (5:1 on rock)	1.69	798.84

Profile across crk. on fence line - south boundary Kimball property S.V.

786 contour					
0+00	0.1	786.1		786.0	786' contour flag W. side of crk
0+38	0.0	770.1	16.0	770.1	
0+47			7.0	763.1	
0+70			10.1	760.0	
0+79			10.1	760.0	
0+91			6.0	764.1	
1+18			4.0	766.1	
	16.0	786.1	0.0	770.1	
1+23			16.0	770.1	
1+39			9.5	776.6	
1+80			0.1	786.0	786' contour flag E. side of creek
786 contour	15.00	801.0		786.0	786. contour pt
0+00			5.5	795.5	S.E. cor. of tract to be acquired.

Pt. to Pt.	Dist.	Vert.Δ	H.I. & Rod	Elev.
0 to 1	32'	0.0	15.0 rod 5.5 H.I	786
0				795.5

11.0
14.95

E. along S. Line of sec. 30 from 1/4 cor. to triangular tract in N.E. 1/4 of N.E. 1/4 sec. 31 S.V.S.

7/18/40 Hill
Soper
Brooks

4 to 7	338' 348'	+9°48'	64°46'R	
7 to 8 = pt 300' S. of 1/16 cor.				
7 to 6	503.3 (540')	-15°22'	8°52'R	Tie to 786 contour pt. in draw
4 to 5	114.6 (135')			
1/16 cor. = 126.2 E. of 1/4 cor.				
3 to 4	43.0 (43')	0°		
2 to 3	222.0 (241')	+16°22'		
1 to 2	803.7 (860')	+14°53'		
10 to 1	78.2 (85')	+15°07'	95°39'R	

Pt. 0 = 1/4 cor. S. line sec. 30

Loc. of triangular tract in northerly portion of S.E 1/4 of N.W. 1/4 sec. 29 SV. 66

7/22/40 Hill Soper Brooks Mason

Pt. to Pt.	Dist.	Ver. ∆	Hor. ∆
#7 = 1/16 cor.	450' S. to end of triangle		
5 to 6	218.5 (226')	-10°34'	0
3 to 5	1080.7 (1146')	-13°53'	0°
E. end of triangle			
3 to 4	290.7 (314')	-15°57'	89°19' R
2 to 3	842.6 (842.)	+0°30'	0° Pt. 3 = 1/16 cor.
1 to 2	111.0 (121')	+13°44'	0°
0 to 1	368.0 (443.8')	+25°50'	89°20' L. foresight on sec. cor 19/20 | 30/29

Pt. 0 = 1/4 cor. on N. line sec. 29

6+53 -0°40'

13+2

1329.6'

Loc. of prop. to be acquired in S.W. 1/4 sec 19 SV. 7/23/40.

	Dist.	Vert Δ	Hor Δ
pt. 22724 W. of 1/4 cor.			
1 to 3 (124)	2212. (2301')	+11°27'	0°
1/4 cor to 2 (S.O.)	1790.7 (1858')	+10°25'	0°
0 to 1	48.0 (48')	0°	18°26' R

0 = 1/4 cor. on S. line sec. 19 backsight on SE. cor. sec. 19

0 to 1 (S.O.)	1632' 1700	+11°34'	84°00' R

backsight S.E. cor. sec. 19

1/16 cor.

pt. 0 = 1/4 cor. on S. line sec. 19

Loc. prop. to be acquired in S.W. 1/4 Sec 19. S.W.

at Pt.	to Pt.	Dist	Vert Δ	Hor Δ	
1,	to 2	739' (835')	+19°50'	0°	
" 3 = pt 815' N. of 1/16 cor.					
0	to 1	90' (119')	30°08'		backsight on 1/4 cor. on S. line sec. 17 0 = 1/16 cor 1632' N.
1	to 2	2019' (2052')	+7°12'	0°	
2 = pt. 744 N. of 1/16 cor.					
0	to 1	70' (73')	+11°30'	19°52' R	
0	to 2	2158' (2240')	+7°12'	0°	
3 = pt. 400' W. of 1/16 cor.					
0	to 1	1731' (1760')	+7°22'	69°12'30" L	backsight on 1/4 cor

1 = 1/16 cor

Pt. 0 = 1/16 cor. 1/4 mile N. of 1/4 cor on S. line sec. 19

1977
791
20
2788

935.8
18.0
1788.1
2741 6
18
2723
2630
88

971.91
810.3
1788.1

1/4 cor S line sec 35 to ¢ sec (2820') -6°16'

1 to 2 1788.1 (1840') +9°42'

0 to 1 935.8 (940') +1°20'

0-16= ¢ of road on center of sec

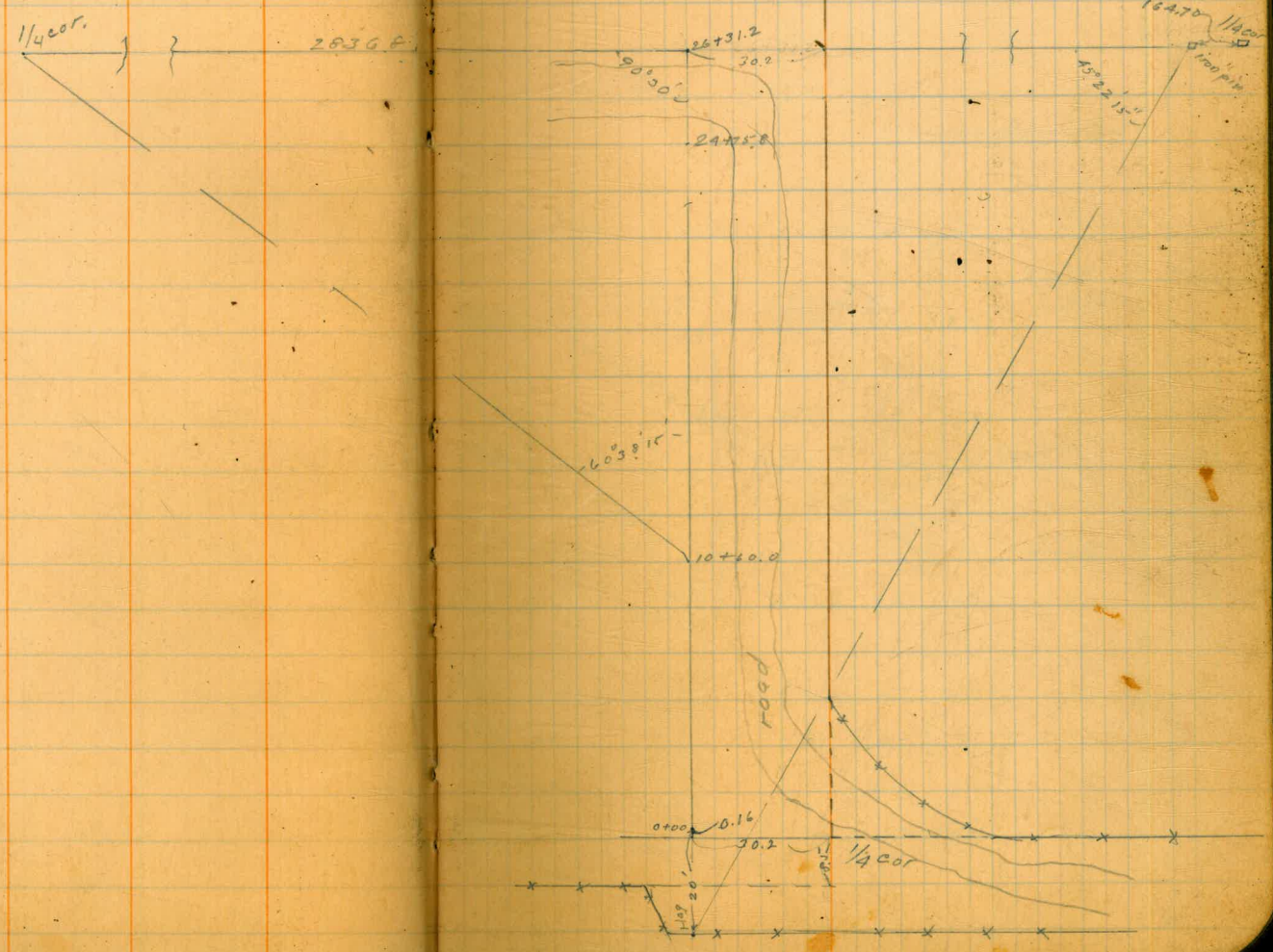
Triang. thru center of sec. 35 — San Pasqual

Hill
Soper
Brooks

8/1/40

70

3.4



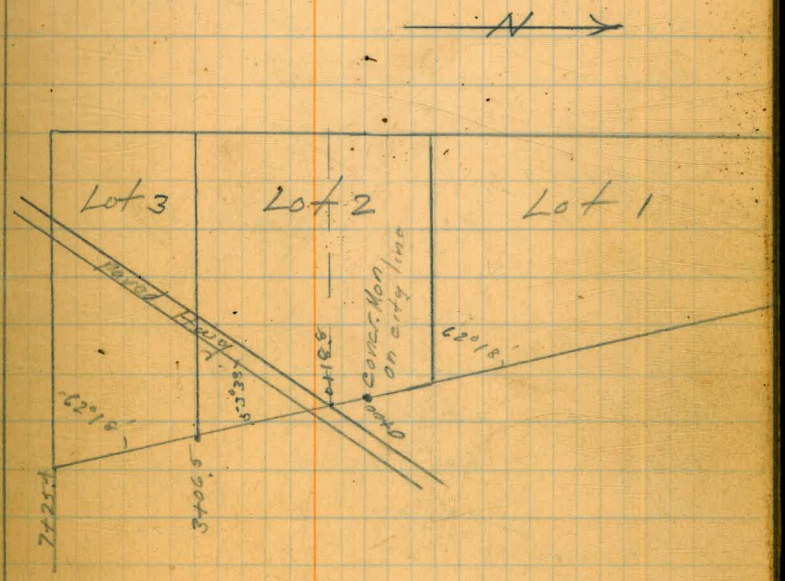
Topog. Lots 2 & 3 at city line - Kearney Mesa

12/11/40 71
M. 11
Soper
Brooks
Hodgeson

Reduced by #
12/17/40

B.M.	0.38	427.34		426.96
0+18.8 (Pave)			4.5	22.8
3+06.5			12.64	14.70
TP	3.36	420.76	9.94	417.40
4+06.5			3.86	16.9
5+06.5			7.76	13.0
7+25.4			1286	07.9

Sta.	Gr. elev. at ℄	H.I.	Rod	Hor ∠	Dist	Vert ∠	Elev.
0+18.8	422.8						
PI #1		5.2	5.2	53°38'	(492)	+20°34' +22.0	444.8
Tot #1							
PI #2		5.2	5.2	0°00'	(74)	+0°16 +0.3	423.1
PI #3		5.2	5.2	0°00'	(715)	-2°07' -28.6	394.2
0+18.8	422.8						
PI #1		5.2	13.2	62°18'	32.1 (323)	+5°55' +33.2	448.1
Tot PI #1							
PI #2		5.0	7.0	0°	(351)	-4°12' -25.2	393.1
" 3		5.0	5.0	0°	(448)	-1°06 -8.2	391.1
" 4		5.0	5.0	0°	(466')	-2°53' -23.4	399.4
PI #5		5.0	5.0	0°	(628')	-2°53' -31.6	391.2



(cont.)

Sta.	Gr. elev. of ℄	H.I.	Rod	Hor. ∠	Dist.	Vert. ∠	"V" Dist	Elev.
3+06.5	414.70							
Pt. 1		5.0	5.0	62°18′	(177′)	+6°21′	+19.6	434.3
⊼ at Pt. 1							+2.1	
Pt. 2		5.0	5.0	0°	(72′)	+1°41′	Pt. 2 at ℄ part.	416.8
Pt. 3		5.0	7.0	0°	(167′)	+3°22′	+9.8	422.5
⊼ at Pt. 3								
Pt. 4		5.0	7.0	0°	(562′)	−3°00′	−29.4	383.3
Pt. 5		5.0	5.0	0°	(611′)	−2°26′	−25.9	388.8
Pt. 6		5.0	7.0	0°	(871′)	−2°21′	−35.7	377.0
7+25.4	407.9							
Pt. 1		4.1	11.1	62°18′	478′ (481′)	+6°10′	+51.7	452.6
⊼ at Pt. 1								397.8
Pt. 2		4.9	4.9	0°	(145′)	−4°06′	−10.1 Pt. 2 at ℄ part.	
Pt. 3		4.9	6.9	0°	(262′)	−4°13′	−19.3	386.6
Pt. 4		4.9	5.9	0°	(569′)	−3°53′	−38.5	368.4
Pt. 5		4.9	4.9	0°	(605′)	−3°10′	−33.4	374.5
Pt. 6		4.9	4.9	0°	(776′)	−2°52′	−39.7	368.2

Add Topog. Lot 1. Kearney Mesa

Reduced by ##
12/17/40

Sta.	Elev. of ℄	H.I.	Rod	Hor. ∆	Dist.	Vert. ∆	"V" Dist.	Elev.
							0+00 = S.E. cor. lot 1.	
0+00.	428.7	5.4						
Pt 1-R		5.4	5.4	90°	(53')	-1°40'	- 4.3	424.4
" 2 R		5.4	5.4	"	(210')	-4°12'	- 15.4	413.3
3 R		5.4	5.4	"	(271')	-3°50'	- 18.3	410.4
1+80	433.3							
Pt. 1-L		5.0	9.0	90°	(201')	+4°51'	+ 17.0	446.3 See sketch 17
" 1-R		5.0	5.0	"	(103')	-4°52'	- 8.9	424.4
" 2-R		5.0	10.0	"	(336')	-4°01'	- 23.5	404.8
" 3-R		5.0	10.0	"	(411')	-3°55'	- 28.1 on fence line	400.2
3+20	425.6							
Pt 1-L		5.2	11.2	90°	(179')	+2°56'	+ 9.2	428.8
" 1-R		5.2	11.2	"	(163')	-0°53'	- 2.5	417.1
℄ at pt 1-R.								
Pt 2		5.2	11.2	0°	(321')	-1°45'	- 9.8 fence	409.8
3+90	426.4							
Pt. 1-L		5.0	5.0	90°	(186')	+4°05'	+ 13.2	439.6
" 1-R		5.0	5.0	"	(71')	-2°54'	- 3.6	422.8
" 2-R		5.0	11.0	"	(405')	-1°45'	- 12.4	408.0
5+00	433.3							
Pt. 1-L		5.2	10.2	90°	(133')	+4°46'	+ 11.1	439.4
" 1-R		5.2	5.2	"	(77')	-2°28'	- 3.3	430.0
" 2-R		5.2	12.2	"	(235')	-0°42'	- 2.9	423.4
℄ at 2-R								
Pt. 3-R		5.1	11.1	0°	(112')	+0°29'	+ 0.9	428.2
" 4-R		5.1	12.1	"	(141')	-0°31'	- 1.3	425.0

Sta.	Elev. at ℄	H.I.	Rod	Horz.	Dist.	Vert.	"V" Dist.	Elev.
7+10	443.8							
Pt 1-L		5.1	5.1	90°	(147')	-2°02'	- 5.2	438.6
" 1-R		5.1	5.1	"	(68')	-3°37'	- 4.3	439.5
" 2-R		5.1	7.1	"	(209')	-3°00'	-10.9	430.9
" 3-R		5.1	11.1	"	(411')	-3°16'	-23.4	414.4
8+00	443.0							
Pt. 1-L		4.8	6.8	90°	(135')	-1°02'	- 2.4	438.6
" 1-R		4.8	4.8	"	(97')	-4°36'	- 7.8	435.2
" 2-R		4.8	9.8	"	(222')	-3°09'	-12.2	425.8
" 3-R		4.8	9.8	"	(379')	-3°10'	-20.9	417.1
9+00	442.5							
Pt 1-L		5.3	8.3	90°	(194')	-1°29'	- 5.0	434.5
" 1-R		5.3	8.3	"	(173')	-3°25'	-10.3	429.2
" 2-R		5.3	9.3	"	(331')	-3°16'	-18.9	419.6
11+00	442.3							
Pt. 1-L		5.1	9.1	90°	(106')	-2°38'	- 4.8	433.5
" 2-L		5.1	8.1	"	(377')	-3°19'	-21.8 on fence line	417.5
" 1-R		5.1	5.1	"	(52')	+1°19'	+ 1.2	443.5
℄ at 1-R								
Pt. 2-R		5.1	5.1	0°	(180')	-3°08'	- 9.8	432.5
" 3-R			8.1	0°	(289')	-2°34'	-12.9	426.4
" 4-R			10.1	0°	(497')	-2°40'	-23.1	414.2
12+50	434.7							
Pt. 1-L		5.1	5.1	90°	(81')	-1°30'	- 2.1	432.6
" 2-L		5.1	9.1	"	(301')	-2°24'	-12.6 on fence line	418.1

Sta.	Elev. at ℄	HI. Rod	Hor. Δ	Dist.	Vert. Δ	"√" Dist.	Elev.
12+50 (cont)	434.7						
Pt 1-R		5.1	5.1	90°		+ 5.1	439.8
				(130')	+ 2°15'		
TV at Pt 1-R							
Pt. 2-R		5.2	7.2	0°		− 6.4	426.3
				(159')	− 2°18'		
" 3-R		5.2	5.2	0°		− 8.3	426.4
				(216')	− 2°12'		
" 4-R		5.2	7.2	0°		− 5.7	427.0
				(307')	− 1°04'		
13+50	433.3						
Pt. 1-L		5.3	5.3	90°		− 11.2	422±
				(251').	− 2°34'	on fence line	
Pt. 1-R		5.3	5.3	"		+ 7.6	440.9
				(109')	+ 4°00'		
TV at Pt 1-R							
Pt. 2-R		4.8	6.8	0°		− 3.0	428.3
				(113')	− 1°32'		
" 3-R		4.8	4.8	0°		− 2.7	430.6
				(266')	− 0°35'		
14+50	433.9						424.8
Pt. 1-L		5.0	6.0	90°		− 8.1	
				(199')	− 2°20'	on fence line	
" 1-R		5.0	5.0	"		+ 9.9	443.8
				(145')	+ 3°53'		
TV at Pt 1-R							
Pt. 2-R		4.9	4.9	0°		+ 1.9	435.8
				(176')	+ 0°38'		
" 3-R		4.9	4.9	0°		− 0.6	428.3
				(294')	− 0°07'		
16+80	431.6						
Pt 1-L		4.7	4.7	90°		− 12.2	419.4
				(201')	− 3°28'		
" 1-R		4.7	4.7	"		+ 11.0	442.6
				(180')	+ 3°30'		
TV at Pt 1-R							
Pt. 2-R		5.0	5.0	0°		− 3.6	428.0
				(176')	− 1°11'		

Survey of S.E. 1/4 of NW. 1/4 Sec 29

Sta.	Dist.	Vert. ∠	Hor. ∠	
1 to 2	109.7 (110')	+2°56'		2 to pt. 43' beyond 4/16 cor.
1/16 to 1	167.8 (503')	+15°38'		
3 to 4	373.0 (406')	-16°30'		
1/16 cor.				
2 to 3	35.0	0°		
1 to 2	298.3 (303')	+7°08'		
Pt 2 to Pt 1	1467.6 (1493')	+7°36'	0°	Pt 2 = 482' S. of N.E cor. of N.W 1/4 sec. 29

Survey of N.E. 1/4 of N.E 1/4 Sec. 31

1 to 1/16 cor.	(755')	+1°00'		
1/16 cor to Pt. 1	582.2 (586')	+4°06'	88°47' L	
1/16 cor.				
2 to 3	795.3 (796')	+1°48'	15°08' R	
1 to 2	64.5	0°00'		
0 to 1	371.5 (386')	+11°11'		Pt. 0 = 114.6 W. of 1/16 cor on N. line sec. 31

983
4846
1467.6

13246
9239
4007
38
366

368
114
482

298.3
1467.6
1765.9
842
923.9

436
467.8
109.7
5775
70

76

3673
4.6
3733
366
7

1324.4
5776
7469
790
43

14
11 397
2
799

7/6/40 - 77

Lot 1 Survey - Kearney Mesa & City Boundary

Sta.	Elev.	(Dist. & Elev. to west from Base Line - stadia)	
0+00	428.9		
+50	433.9		
1	438.6	Dist. 188' El. 432.1	
+50	443.4		
2	447.5	Dist. 102' El. 443.0	Dist. 388' El. 428.1
+50	449.0	Dist. 298' El. 436.6	Dist. 480' El. 436.4
3	445.8	Dist. 292' El. 435.7	Dist. 510' El. 442.1
+50	442.2		
4	432.8	Dist. 202' El. 429.9	Dist. 570' El. 436.4
+50	433.5		
5	426.7	Dist. 440' El. 437.4	
+50	424.6		
6	421.1	Dist. 200' El. 421.5	Dist. 560' El. 434.5
+50	419.1		
7	418.3		
+50	418.2		
+80.32	416.6	Dist. 182' El. 410.0	Dist. 660' El. 423.1
8+38	414.2		

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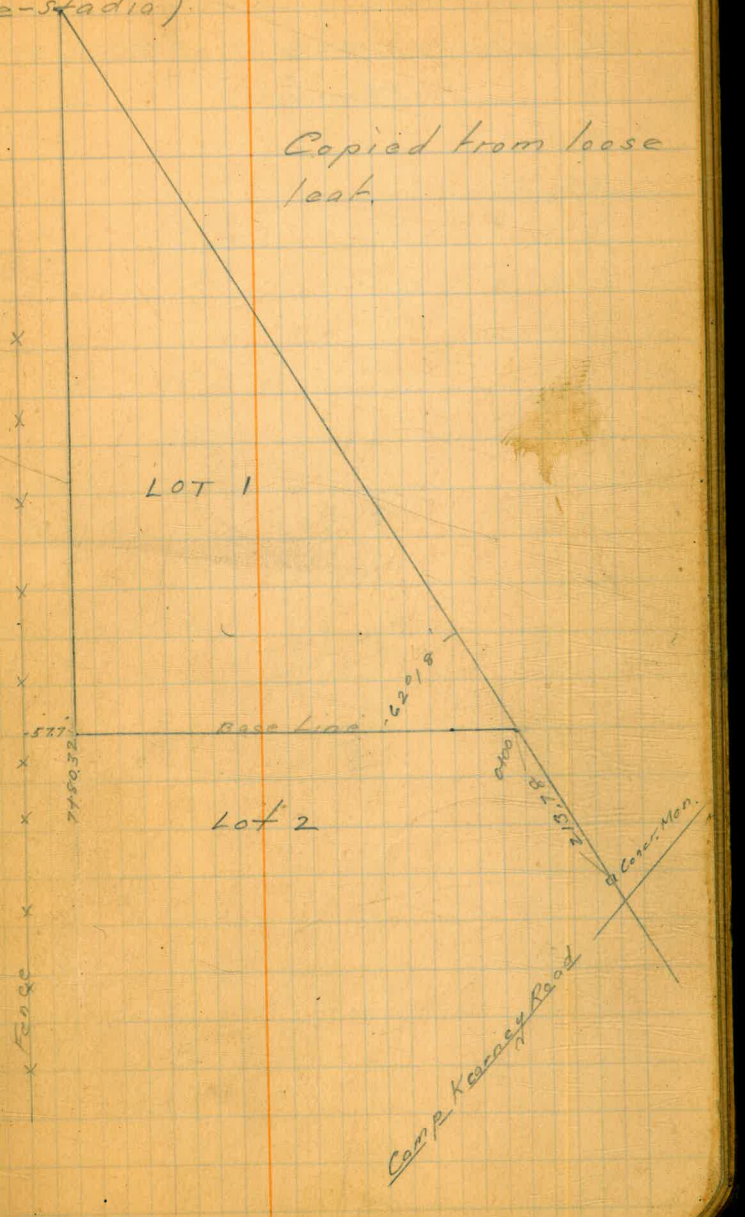


Ramona - Barona - Wildcat Canyon road

Fairly heavy 0.6 mile N. of Barona

" " 1½ miles S. " "

pt 8 R

pt 9 R

pt 9 L

pt 10 R

pt 10 L

pt 2 R.

pt. 2 Left

pt 3 L.

pt 3 R

pt 4 Rt.

pt. 4

pt 5 L

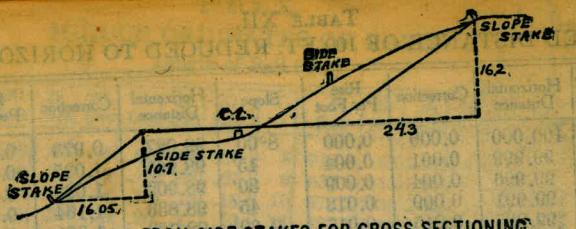
pt 5 Rt

pt 6 L

pt 6 R

5. from 1/4 cor W. line sec 29

IMPROVED TABLES
AND
INFORMATION



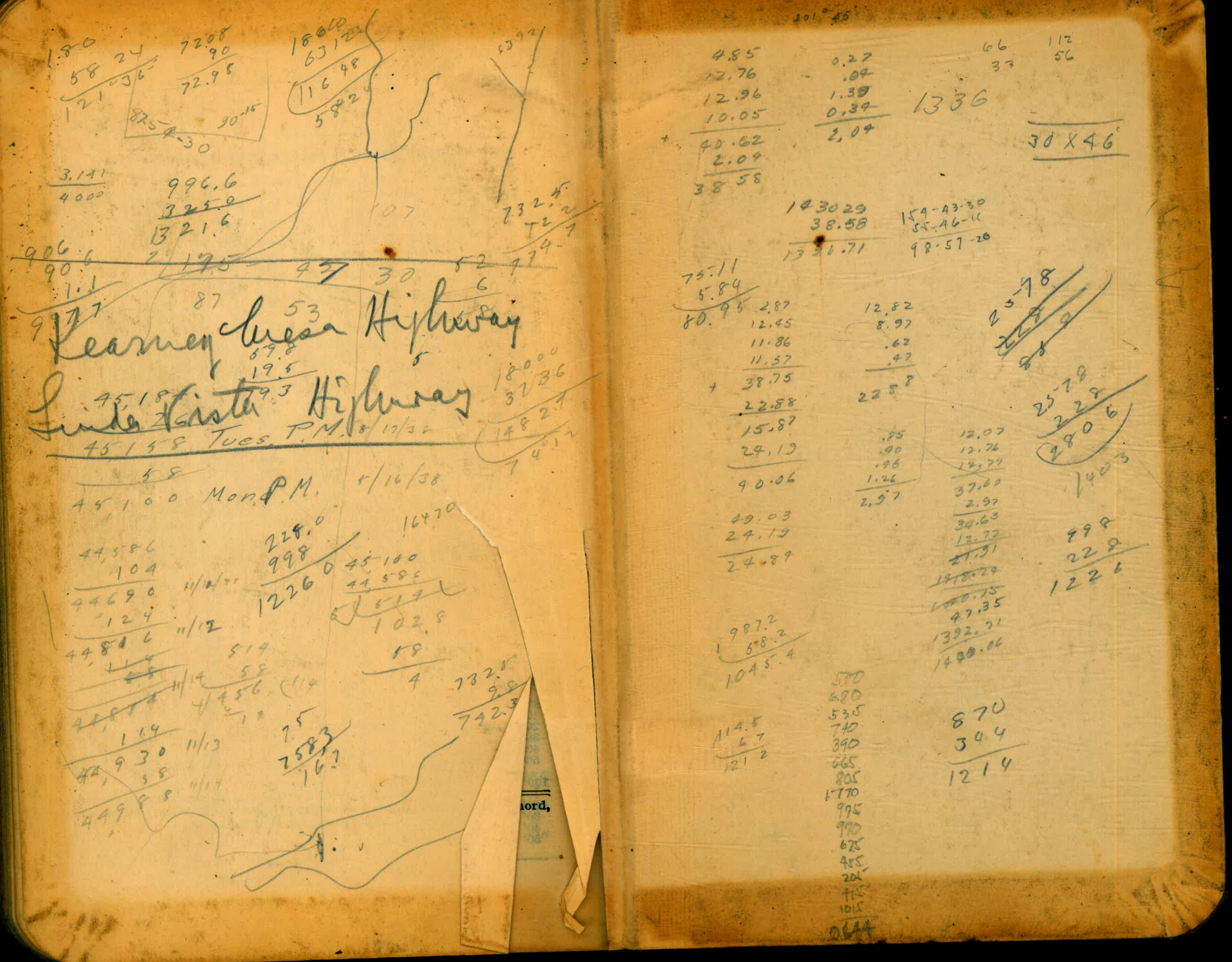
DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

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

120	20	9-34	4-47	14.3
150	20	7-39	3-49	11.5
190	25	7-32	3-46	9.15
200	25	7-10	3-35	8.6
225	25	6-25	3-12	7.7
240	25	5-58	2-59	7.2
250	25	5-44	2-52	6.9
275	25	5-12	2-36	6.2
288	50	9-58	4-59	6.0
300	50	9-32	4-46	5.7
350	50	8-12	4-06	4.9
376	50	7-40	3-50	4.6
400	50	7-10	3-35	4.3
410	50	7-00	3-30	4.2

To find length of curve divide angle from P. C. to P. T. by central angle of chord, and multiply by length of chord.


Kearney Expressway
Linde Air Products Highway
45 158 Tues. PM 8/17/37
45 100 Mon. P.M. 8/16/38
1336
30 X 46