

Book # 248

NAME \_\_\_\_\_

Class \_\_\_\_\_ Course \_\_\_\_\_ Party \_\_\_\_\_

W248

SUTHERLAND SAN VICENTE CONDUIT

TRANSIT & LEVEL NOTES.

DAM TO L. LINE.

FIELD NOTES

No. 403 P

ESPECIALLY ADAPTED

TO THE USE OF

ENGINEERING STUDENTS

EUGENE DIETZGEN Co.

MANUFACTURERS

DRAWING MATERIALS

MATHEMATICAL AND SURVEYING INSTRUMENTS

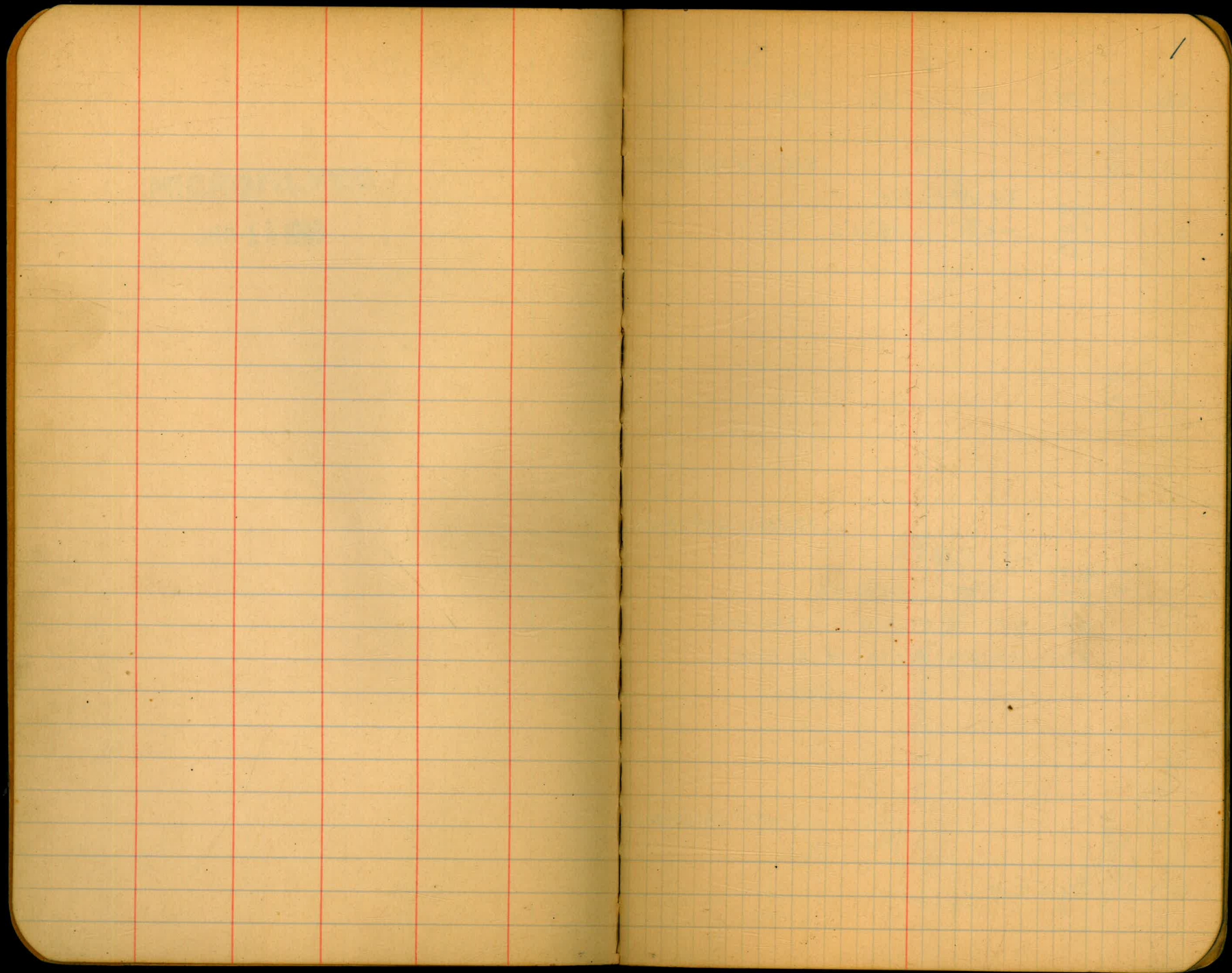
MEASURING TAPES

CHICAGO SAN FRANCISCO NEW YORK  
NEW ORLEANS PITTSBURGH

**MICROFILMED**

**JAN 11 1965**

200-2-3-100



Sutherland + San Vicente Conduit  
 Investigation along L. Line above long Tunnel.  
 BEAN

Sta D V H Mag. Calc.

128.0

S 16° 00' W S 27-05-10 W

2  
 5.98  
 4.20  
 1.28  
 6.0 = Diff. Elev.  
 -2° 41' 198° 33' L

82.0

S 34° 30' W S 45-38-10 W

1  
 HI 4.82  
 = 4.41 4.00  
 .82  
 Note: H.I. At Station 1 is the Same  
 Elev. 95 Sta 83+50 on L. Line  
 -3.08 = Diff. Elev.  
 -2° 09' 155° 42' 30" L

325.4

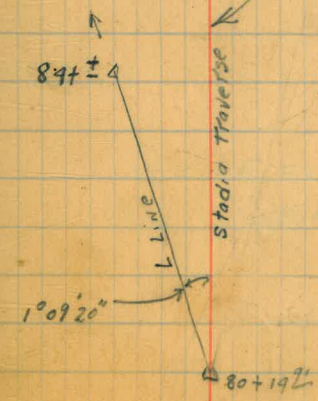
S 11° 40' W S 21-20-40 W

= 80+14 1/2 P.I. L Line

S 10-30 W Mag. Bean  
 of course  
 80+14 1/2  
 84+±

Stadia Traverse

2-8-28  
 P.O.G.  
 SIMPSON  
 LEACH



Plotted by P.O.G.  
 See paper tracing  
 2/24/28

Sta	D	V	H	Mag.	Bear	Calc.
						63.7 = Diff. Elev.
○ C	$\frac{6.27}{7.95} \times 2$ $\frac{1.32}{2.64}$	-14° 26'	160-02			top of Bank 297.6 = Hor. D
○ B	$\frac{6.16}{3.80}$ 2.36	-15° 16'	160-02			top of slope 219.6 = Hor. D
○ A	$\frac{5.64}{4.92}$ .72	-16° 02'	160-02			19.1 = Diff. Elev. 66.50 = Hor. D
from Sta A	Profile shot's on line 4-5 West side					
Side shot from Sta A	$\frac{6.26}{4.96} \times 2$ $\frac{1.30}{2}$ 2.60	7° 30'	188-28			to Bend in Country Road to show location of hauling Road onto grade
	68.20					
	S 15° 30' W					

3  $\frac{H.I. \ 5.18}{4.82 \ 4.98}$   
 $\frac{.70}{.70}$  16.1 = Diff. Elev.  
-9° 14' (2)

S 27° 05' 10" W

3 Δ Po.T.

Stadia Traverse

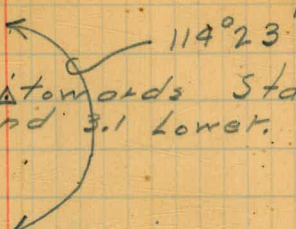
Bear

4

Sta D V H M C  
S67-19-50W

5.  $\left. \begin{array}{r} 6.11 \\ 4.48 \end{array} \right\} \times 2$  13.7 = Diff. Elev.  
 $\left. \begin{array}{r} 1.63 \\ 2 \end{array} \right\}$  2°25' 114°23'  
 3.26 = Hor. D. counter clockwise

Note: Moved Sta. 5 - 6' towards Sta. 4 and 3.1 lower.



S47-03-10W

4  $\frac{13.00}{6.20}$  -44.9 = Diff. Elev.  
 6.80 3°48' - 160-02  
 677.0 = Hor. D.

⊙ F  $\left. \begin{array}{r} 5.64 \\ 4.66 \end{array} \right\} \times 2$  16°26' 53.2 = Diff. Elev.  
 Profile shot from Sta. 5 towards Sta. 4.  
 $\frac{9.8}{1.96}$  180.3 = Hor. D.

Bottom of Gully = 50' closer to Sta. 5 and 20' lower in Elev. (than stadia shot.)

⊙ E  $\frac{6.88}{4.96}$  71.1 = Diff. Elev.  
 -10-52 Point of Ridge  
 $\frac{1.92 \times 2}{2}$  370.4 = Hor. D.  
 3.84

⊙ D  $\frac{12.54}{11.00}$  92.0 = Diff. Elev.  
 -14-19 bottom of small gully  
 $\frac{1.54 \times 2}{2}$  2892 = Hor. D 160-02  
 3.08

Profile shots from Sta. 4 on line 4-5

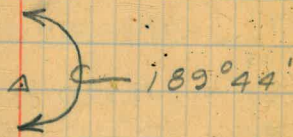
Stadia Traverse.

Sta. D V H.

9.  $\frac{5.35}{4.37} = 1.22$   
 $\frac{1.98}{1.98} = 1.00$   
 13.0 = Diff Elev  
 $+7^{\circ}43' 00''$   
 96.2 = Hor. D

571-28-10W

8.  $\frac{7.20}{6.01} \times 2 = 2.38$   
 $\frac{1.19}{2.38} = 0.50$   
 45.5 = Diff Elev.  
 $+11^{\circ}14' 189^{\circ}44'$   
 counter clockwise



○ G  $\frac{7.20}{5.22} \times 2 = 2.74$   
 $\frac{1.98}{2.74} = 0.72$   
 2.8 = Diff. Elev.  
 $+10^{\circ}48' 211^{\circ}28'$

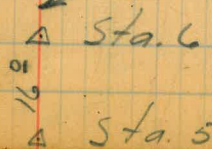
581-12-10W

Small wash. Distance from Sta. 7

7  $\frac{6.46}{1.70} = 3.79$   
 $\frac{9.76}{3.79} = 2.57$   
 $+2^{\circ}17' 211^{\circ}28'$   
 18.9 = Diff. Elev.  
 counter clockwise



6 16.0 3.5 Lower Than Sta. 5  
 $0^{\circ}00'$



567-19-50W

Sta. D V H.

12  $\begin{array}{r} 5.26 \\ 4.74 \\ \hline .52 \end{array}$  8.8 = Diff. Elev.  
 $-9^{\circ}53' 0^{\circ}00''$   
 50.5 = Hor. D

10  $\begin{array}{r} 5.36 \\ 4.89 \\ \hline .97 \\ .99 \end{array}$  }  $\times 2$  21.8 = Diff. Elev.  
 $-13^{\circ}50'$  Small Gully  
 88.6 = Hor. D

11  $\begin{array}{r} 5.94 \\ 3.86 \\ \hline 2.08 \end{array}$  18.3 = Diff. Elev.  
 $-5^{\circ}05' 0^{\circ}00''$   
 206.1 = Hor. D

Sta. 11 = 3.1  
 Higher than  
 Sta. 10.

107(21 ft.)

Sta. 107(21 ft.)  
 0.5 Higher than  
 Sta. 10.

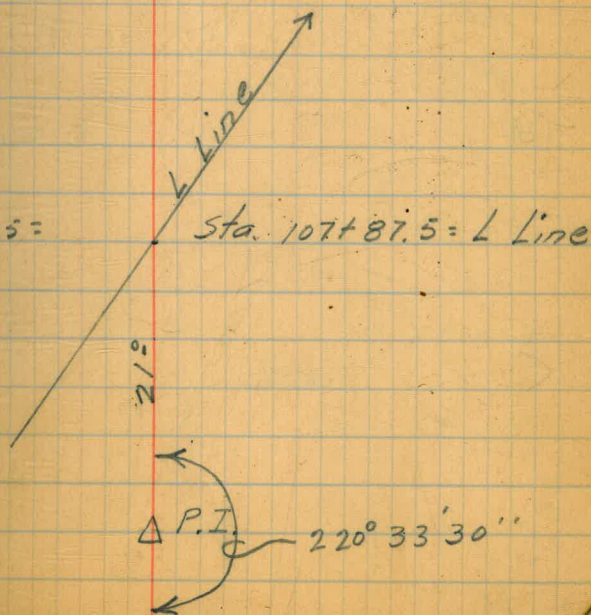
Note - Sta. 107+87.5 =  
 same El. as  
 Sta. 108+00.

10.  $\begin{array}{r} 2.05 \\ 1.54 \\ \hline .51 \end{array}$   $0^{\circ}0'$   $220^{\circ}33'30''$   
 Counter  
 Clock.

6

On Hogs Back.  $\Delta$  Sta. 12

Note: Distance measured from  
 Sta. 11.





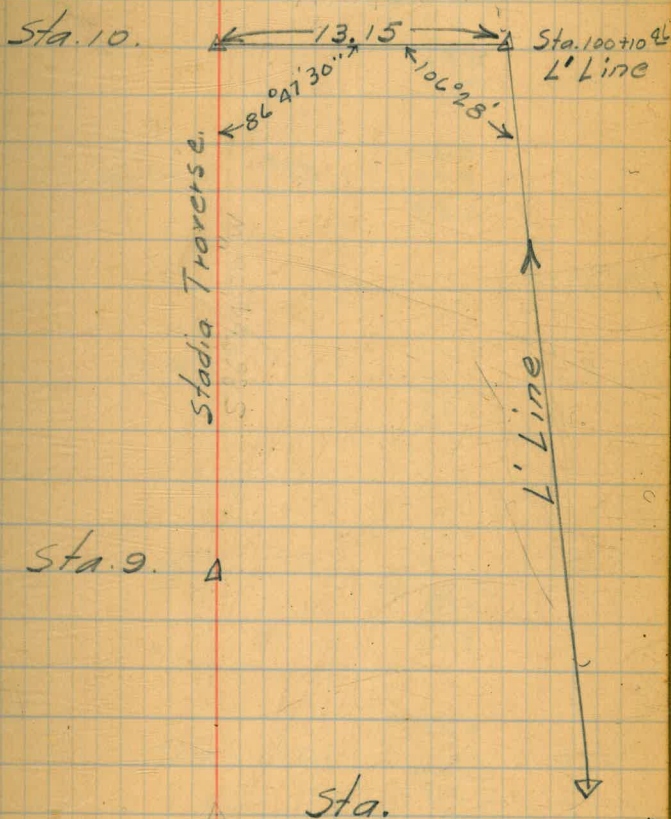
sta.

10

9

Tie to L' Line —

7



Stadia Traverse

△

Bear,

8

Sta	D	V	H	M.	C.
13-7	$\begin{array}{r} 6.91 \\ 2.10 \\ \hline 9.01 \end{array}$	0°	208-35		

13-6	$\begin{array}{r} 7.00 \\ 4.53 \\ \hline 2.97 \\ \times 2 \\ \hline 5.94 \end{array}$	0°	214-45		
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13-5	$\begin{array}{r} 6.54 \\ 2.00 \\ \hline 4.54 \end{array}$	0°	220-16		
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Gulley →

13-4	$\begin{array}{r} 6.80 \\ 3.00 \\ \hline 3.80 \end{array}$	0°	227-54		
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13-3	$\begin{array}{r} 6.09 \\ 4.53 \\ \hline 1.56 \\ \times 2 \\ \hline 3.12 \end{array}$	0°	232-53		
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13-2	$\begin{array}{r} 7.03 \\ 5.00 \\ \hline 2.03 \end{array}$	0°	237-00		
------	--	----	--------	--	--

13-1	$\begin{array}{r} 4.64 \\ 4.00 \\ \hline .64 \end{array}$	0°	235-08		
------	---	----	--------	--	--

Sta. D V H

Profile shot 5.66  
 on Line 13-14 3.00  
 $\frac{2.66 \times 2}{2}$   
 5.32

4.6 = Diff. Elev.  
 + 0°30'

Profile shot 6.57  
 on Line 13-14 2.40  
 I 9.17

11.5 = Diff. Elev.  
 - 1°35'

Profile shot 5.87  
 on Line 13-14 4.53  
 H 139  
 $\frac{139 \times 2}{2}$   
 268

89.5 = Diff. Elev.  
 - 20°58'

239.0 = Hor. D

13-10  $\frac{7.02}{3.10}$  3.92

0° 176°00'

13-9  $\frac{6.16}{2.00}$  4.16

0° 190-10

13-8  $\frac{6.32}{2.00}$  4.32

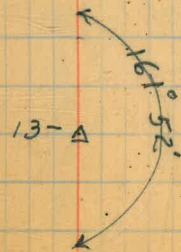
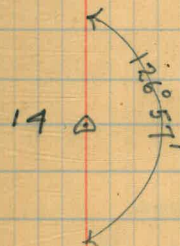
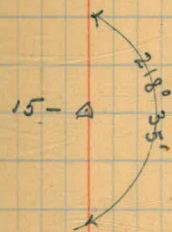
0° 201-05

Sta. D Y H

15  $\frac{6.45}{6.00}$   $\frac{0.00}{45}$  2.92 Ft. 218°35' L  
Lower than Sta. 14

14  $\frac{6.77}{4.10}$   $\frac{10.9 = \text{Diff. Elev.}}{2.67}$  +2°20' 126°57' L

13  $\frac{7.08}{0.00}$   $\frac{4.5 = \text{Diff. Elev.}}{7.08}$  +1°14' 161°52' L

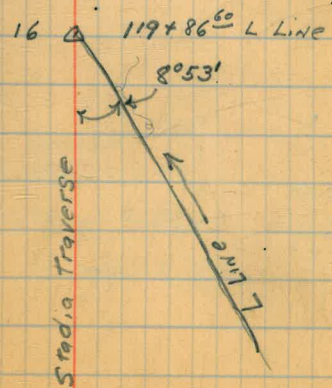


161.52

8°53'

11

16-stadia Traverse  
or 119+86<sup>60</sup> L Line

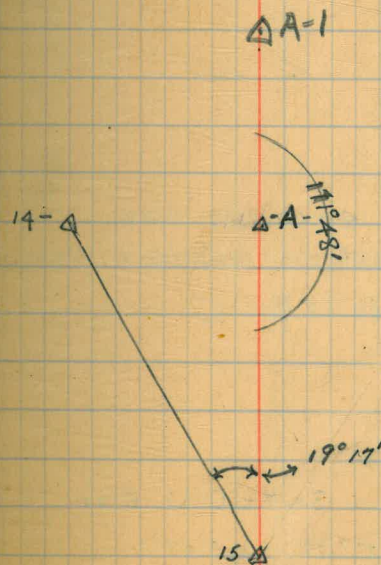


Sta.      D      V      H.

$24.6 = \text{Ditt. Elev.}$   
 A-2     $\frac{6.20}{4.00}$      $+6^{\circ}27' \quad 19^{\circ}15'$   
           $\frac{2.20}{2.20}$      $217.2 = \text{Hor. D}$   
 $\pi \text{ AT-A}$   
 B.S. = 15

$22.0 = \text{Ditt. Elev.}$   
 A-1     $\frac{6.18}{4.30}$      $+6^{\circ}46' \quad 17^{\circ}48' \text{ L}$   
           $\frac{1.88}{1.88}$   
 $\pi \text{ AT-A}$   
 B.S. = 15

$33.3 = \text{Ditt. Elev.}$   
 15-     $\frac{4.51}{2.10}$      $+8^{\circ}01' \quad 19^{\circ}17'$   
           $\frac{2.91}{2.91}$      $236.3 = \text{Hor. D.}$



Sta.      D.      V.      Δ      H.

A-4       $\frac{6.60}{3.70}$       40.1 = Diff. Elev.  
            $\frac{2.90}{}$       + 8°02' 19'21"L  
 289.3 = Hor. D  
 A-A-  
 B.S. = 15

A-3       $\frac{6.23}{3.90}$       30.7 = Diff. Elev.  
            $\frac{2.33}{}$       + 7°38' 20.5"97"L  
 228.9 = Hor. D.  
 A-A-  
 B.S. = 15

on West edge of Co. Road

1/13/28

TRAVERSE BETWEEN  
UPPER & LOWER DAM SITES





1940

1893

1/11/28

TRAVERSE FOR TUNNEL

10+4928

-137.12

9+12.16

-87.20

8+24.8

-344.15

7+80

37

0+00



10+4928

-137/2

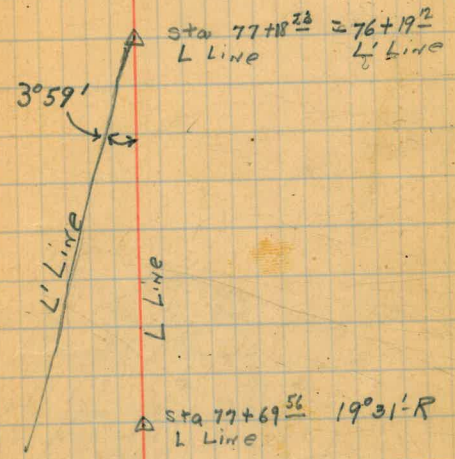
9+1216

8720

8+21

7+8

3



13°28'-R  $\Delta$  Sta 0 on Stadia traverse  
or Sta 80+44<sup>81</sup> L Line

$\Delta$  Sta 1 on Stadia traverse

TL line Tunnel line  
alternate for contour line around the hill

L<sup>+</sup> R<sup>+</sup>

$$22+81 \frac{12}{6.12} =$$

51° 22' 30"

36+01.2 L line

1893.2

Page 3 Book N-2.

$N 09^{\circ} 36' 41'' W$  Br. 26 to 27 = FS  
+  $51^{\circ} 22' 30''$

Cal Course  $N 60^{\circ} 59' 11'' W$

347.2

878.34

14+02.84 PI

15

Feb. 14-22

51-22-30

P.O.C. -

Line back  
Simpson



22+00

21+00

18+14

17+60

16+50

Rocky point  
many loose boulders

16+00

15+90

Camp Sawar

15+00

14+50

14+30

14+02.84

13+90

13+75

13+60

23

16

38'

T L line level notes

		1959.20	BM #2	
1.45	1960.65		+3.7	
13+50		1962.9		
T.P.		12.61	1948.04	
0.24	1948.28			
14+00		6.0	1942.3	
1028 <sup>th</sup> PI		8.0	1940.3	
T.P.		12.68	1935.60	
1.55	1937.15			
14+50		7.8	1929.35	
+70		8.9	1928.25	
+21		6.2	1930.95	
15+00		9.5	1927.65	
T.P.		12.84	1924.31	
0.33	1924.84			
15+25		2.3	1922.1	
+50		8.9	1915.8	
+68		9.2	1915.5	
T.P.		12.89	1912.35	
1.15	1913.50			
15+79		2.5	1910.9	
16+00		16.4	1897.0	
+10		12.4	1901.0	
+40		4.5	1908.9	
+50		3.1	1910.4	on Bldr
17+00		12.7	1900.8	
T.P.		12.95	1900.55	
0.89	1901.25			

Feb 14 - 28

16

Simpson &  
Leach

BM #2 Nail in Red-wood Hub.  
40' South of Sta 19+85.5<sup>th</sup> (P.I) Old Sta

Note

Levels Sta 0 to 2+67.

in gallery

Taken from Sutherland

Dam Site Topog. Map 85  
5000

New File No 125-3

T L line levels

Feb 14-28  
Simpson K  
Leach

	1901.74 <sup>14</sup> ✓		
		12.37	1888.77✓
0.34	1889.22 <sup>11</sup> ✓		
17+50		11.2	1878.0 <sup>7.9</sup> ✓
+60		15.8	1873.7 <sup>3</sup> ✓
+80		14.9	1874.3 <sup>2</sup> ✓
T.P.		12.71	1876.57 <sup>40</sup> ✓
	1880.44 <sup>55</sup> ✓		
4.15			
18+00		11.0	1869.7 <sup>6</sup> ✓
+14		17.2	1863.5 <sup>4</sup> ✓
+24		9.6	1871.0 <sup>1</sup> ✓
+50		1.5	1879.2 <sup>1</sup> ✓
		0.22	1880.33 <sup>33</sup> ✓
	1891.57 <sup>66</sup> ✓		
11.33			
+80.48		5.7	1886.0 <sup>0</sup> ✓
19+00		5.0	1886.7 <sup>7</sup> ✓
+50		3.7	1888.0 <sup>0</sup> ✓
+30		7.4	1884.3 <sup>2</sup> ✓
		12.89	1878.77 <sup>77</sup> ✓
	1879.77 <sup>06</sup> ✓		
0.29			
20+00		0.8	1878.3 <sup>3</sup> ✓
+15		6.0	1873.2 <sup>1</sup> ✓
+50		8.7	1870.5 <sup>4</sup> ✓
+74		7.4	1871.7 <sup>7</sup> ✓
21+00		13.4	1865.7 <sup>7</sup> ✓
+20		5.5	1873.6 <sup>6</sup> ✓
		0.68	1878.38 <sup>38</sup> ✓

TL line levels

Feb. 14-28

18

			38 ✓
			1878.49
21+30	11.75	1890.88 <sup>13</sup> ✓	1878.5 ✓
+50			9.5 ✓
			1880.7 ✓
			0.54 ✓
			1889.88 ✓
	8.96	1898.84 <sup>55</sup> ✓	
21+90 edge of Rd			0 ✓
			2.5 ✓
			1896.2 ✓
22+00			2.7 ✓
			1898.2 ✓
+50			5.8 ✓
			1892.5 ✓
28+18 = 1.36 + 0.12 <sup>06.12 ? m</sup>			5.4 ✓
			1893.3 ✓
			0.17 ✓
			1895.88 ✓
	12.67	1911.84 <sup>05</sup> ✓	
			0.28 ✓
			1910.88 ✓
	13.11	1923.88 <sup>88</sup> ✓	
			0.36 ✓
			1923.88 ✓
	12.71	1936.88 <sup>23</sup> ✓	
			0.12 ✓
			1936.88 ✓
	13.04	1949.88 <sup>14</sup> ✓	
			0.28 ✓
			1948.88 ✓

? What did they tie to.

Possibly Bm # A 1948.000





















27



29









34.





610  
328  

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282