

KEUFFEL & ESSER CO.

DRAWING MATERIALS

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SURVEYING INSTRUMENTS.

NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

Tables for Excavations and Embankments.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.

FOR SINGLE TRACK EXCAVATION.

"Copyright, 1895, by Keuffel & Esser Co."

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

Calculated by Julien A. Hall, M. Am. Soc. C. E.

FOR KEITH'S RAILROAD CURVE TABLES SEE END OF BOOK.

298.9
298.3
6

267 13
189 13
87

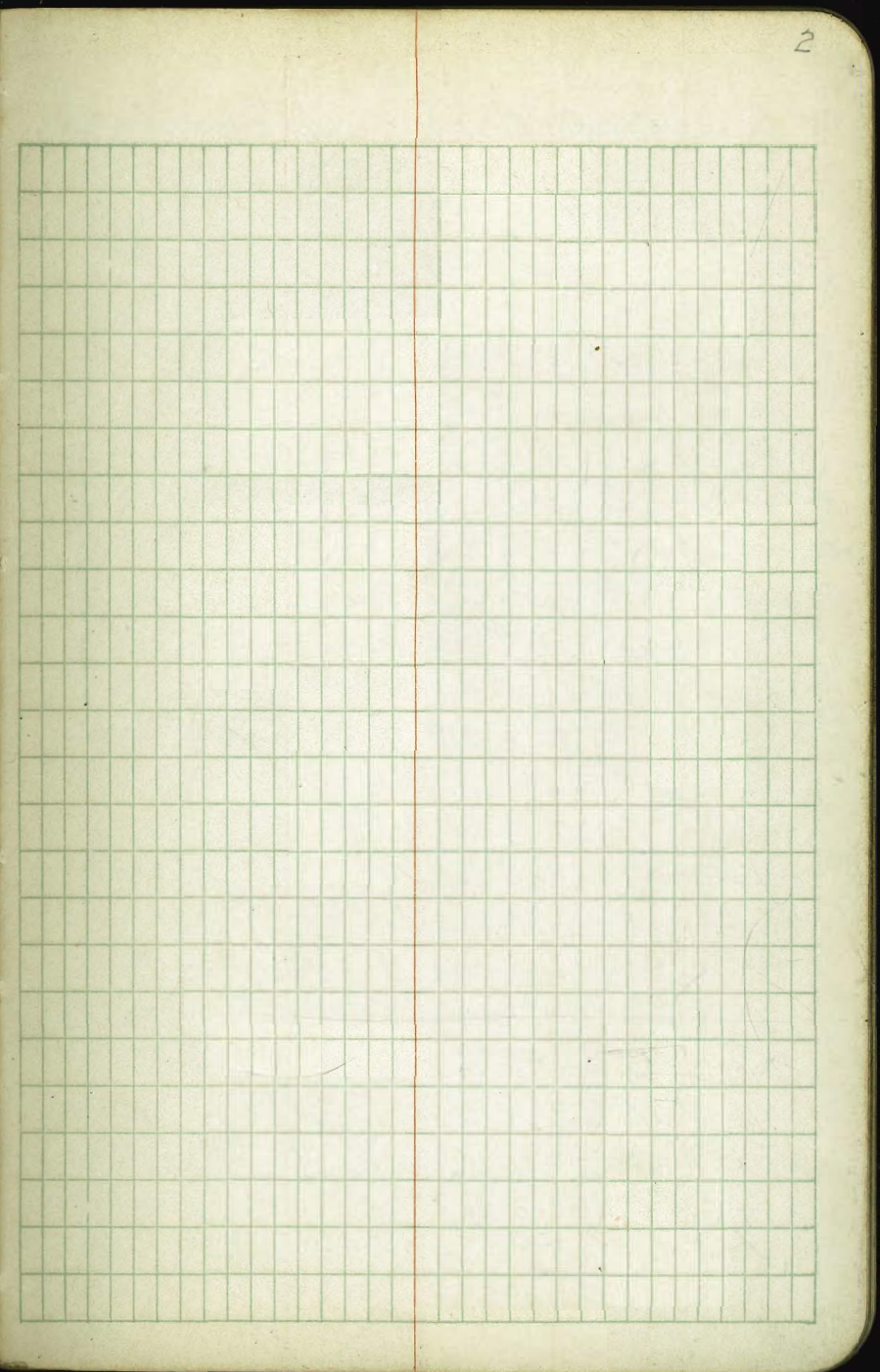
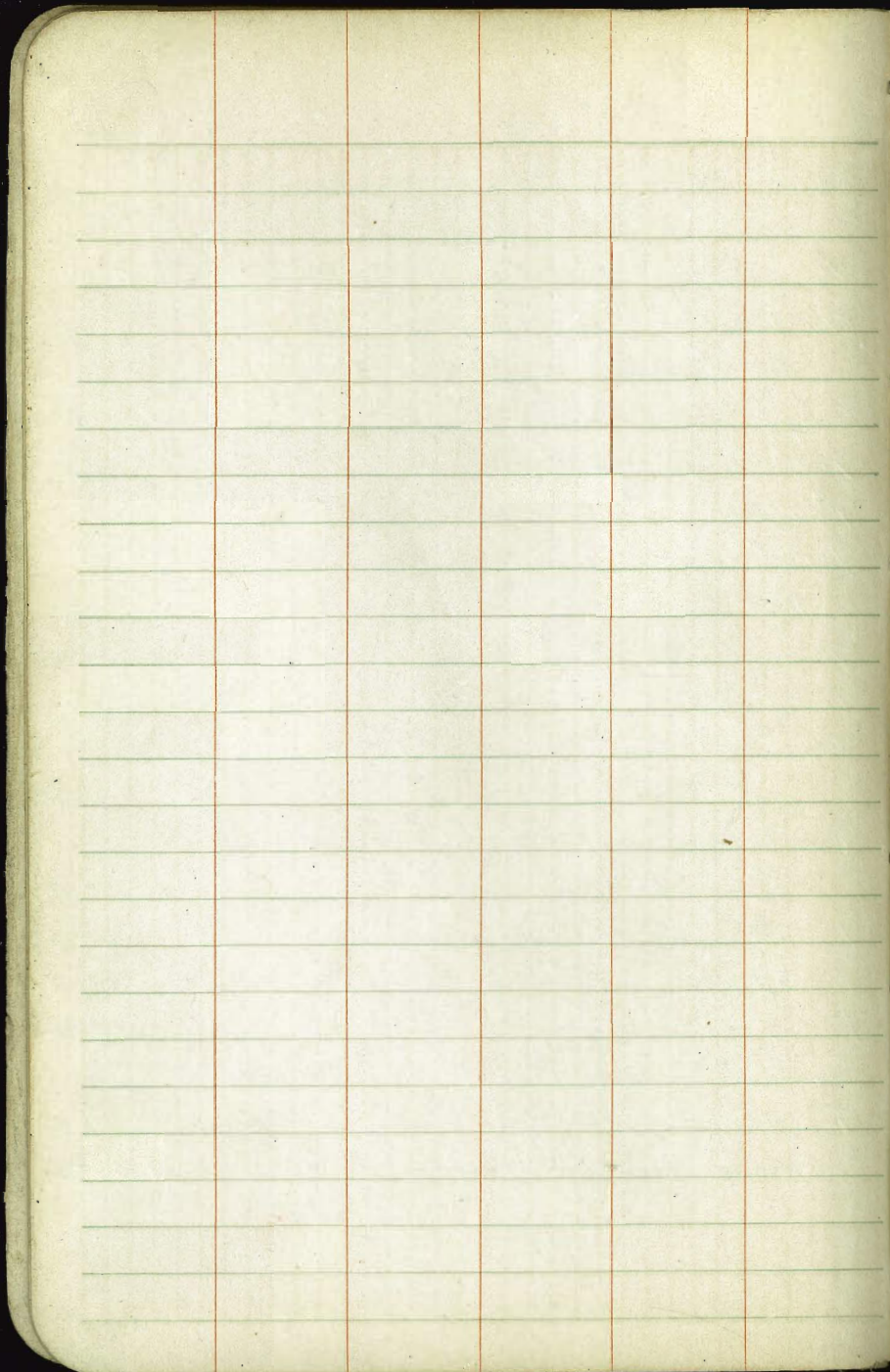
70 19
84 41
50 80
158 80
250

70° 19'
56 11
126 30
530 30

84 41
56 19
141 00
39°

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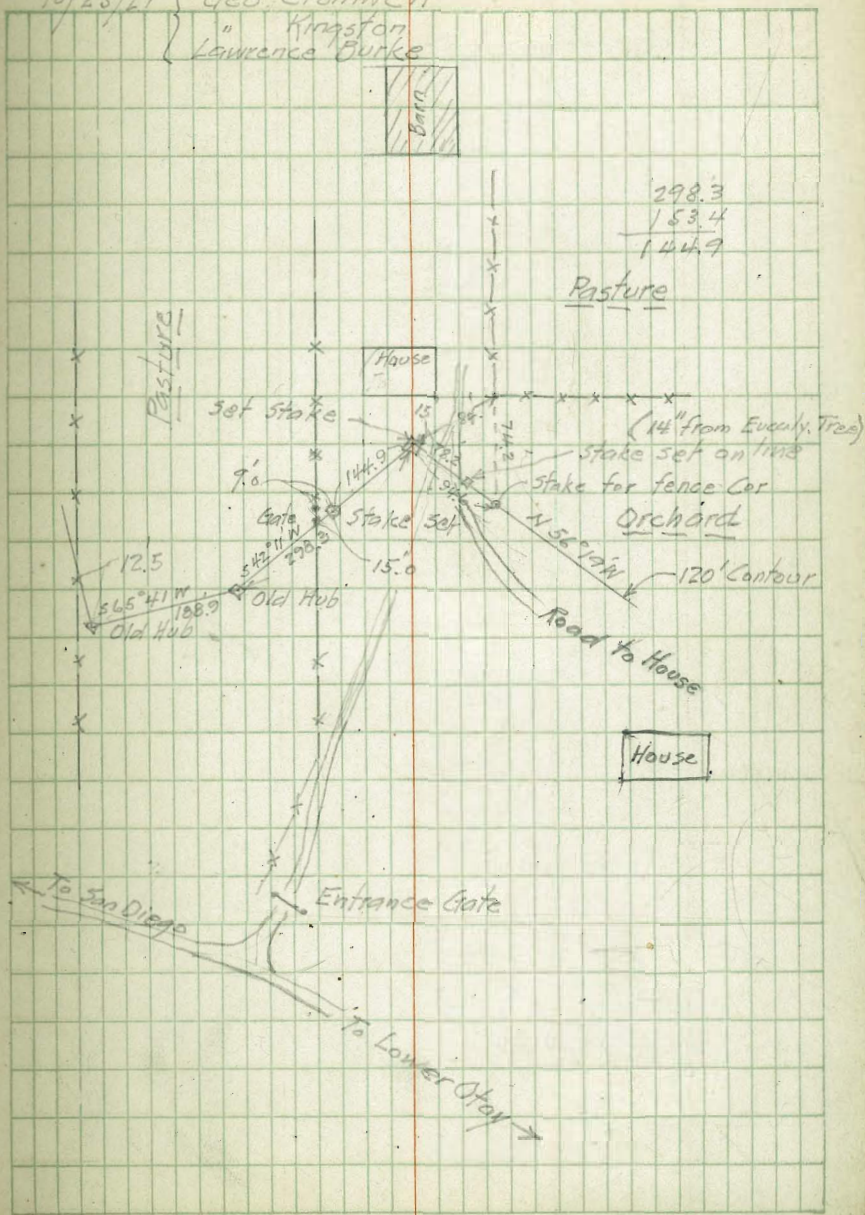
UPPER OTAY 120' CONTOUR

10/25/21 { Geo. Cromwell
" Kingston
Lawrence Burke

153.4

22

3

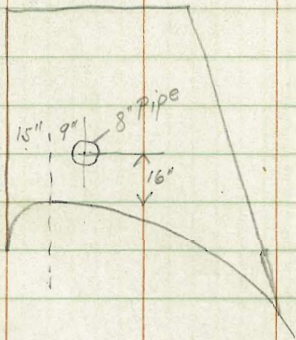


Lower Otay

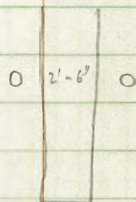
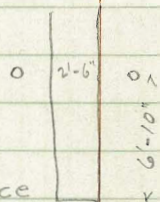
G.R.H. 8-30-22

4.

Independent Spillway



Upstream Face



Classification Survey of Excav.
Lower Otay to Bonita Wye Pipe Line

0 to 1/4 Mi. Adobe few cobbles. say 5%
 1/4 to 1/2 " " " " 5%
 1/2 to 1 " " " " 5%
 1 to 1/4 " " Very few rocks
 1/4 to 2 " " " " "

Sta 108 to 117+00 White Marl

Mile 2 to 4 Adobe with strata of White Marl

Mile 4 to 5 " " " " "
 5 to 6 " " " " "

6 to 6 1/4 White Marl with few cobbles

Sta 332+00 to 334+00 Hard Pan & Wh. Marl (shooting)

" 336 to 339 Hard Pan shooting

" 339 to 349 Hard White Marl (shooting)

" 349 to 369 " " " "

" 369 to 394 Hard Pan & Cobbles (shoot?)

" 394 to 403 Adobe and few sm cobbles

" 403 to 413 Hard Wh. Marl. Vert Slopes shooting

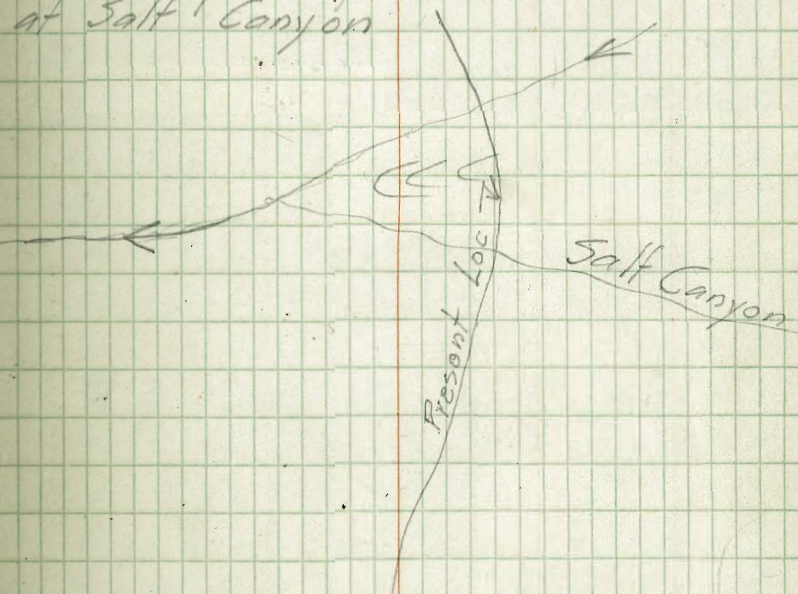
" 413 to 431+82 Bonita Wye Hard Pan, Adobe
 and 25% Cobbles

9/19/22 ⁵

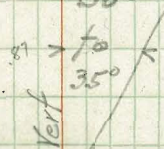
Geo. Cromwell

Note 1. Started from Lower Otay Filter
 Plant at 9.50 A.M.

Note 2. Looks as if location could be
 bettered by going South across elbow
 of Salt Canyon



Note 3. Side slopes in cut stand at 55 to
 60° from Horiz 30° about Sta 76+50

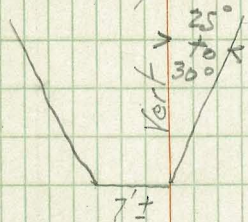


9/19/22

Geo. Cromwell

Note #4 Leak at point 100' W. Trestle #11

Note #5. 25'± Cut Slopes 60° to 65° to Horiz.



Note #6 Sta 191 to 206 Bef. Tunnels #2 and 3

Pipe seems to be in very good condition
Known as Wolff Canyon.

Note #7 Trestles #20 & 21 Bands pretty near
gone about 50%, seem to be entirely gone.

Note #8

Trestle Bents 16' centers (?) (15')

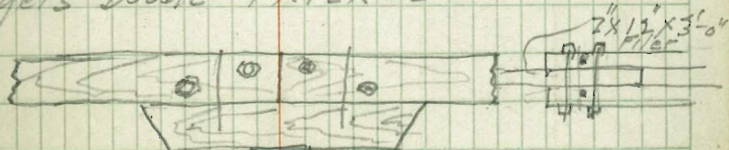
3 Post Bents Cen. Post Vert Side Posts Batter
about 1 in 6.

Posts 8x8 Sway Braces 2x6 & 2x8

High Bents Long Braces Horiz 2x8
about 10' lift per deck

Ties 4x6 x 8'-0" about 3'-10" Centers.

Stringers Double 4x12 x 32'-0"



2x12" Running Board
on Each Side

6x6" x 6'-0" Cap and
Sills.

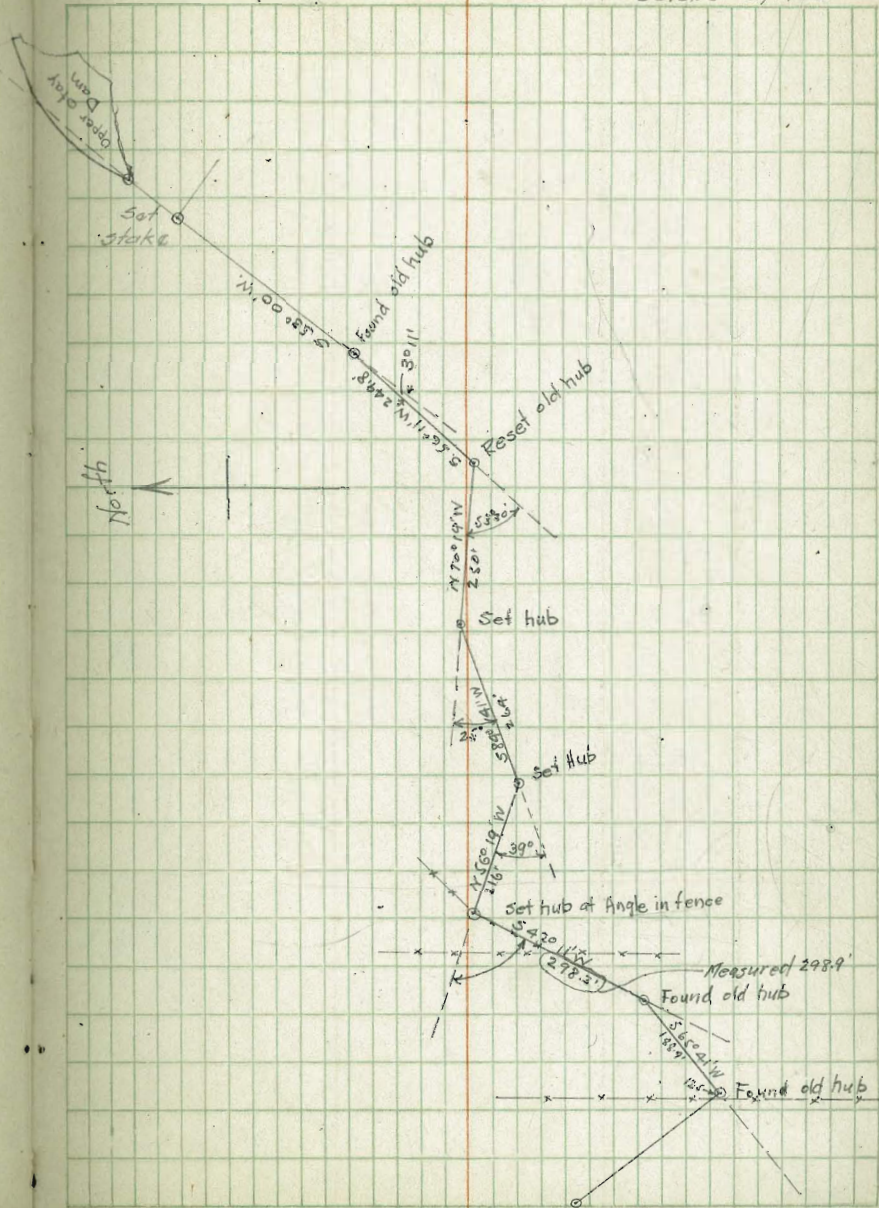
Note #9 Trestle #24 needs new bands badly.

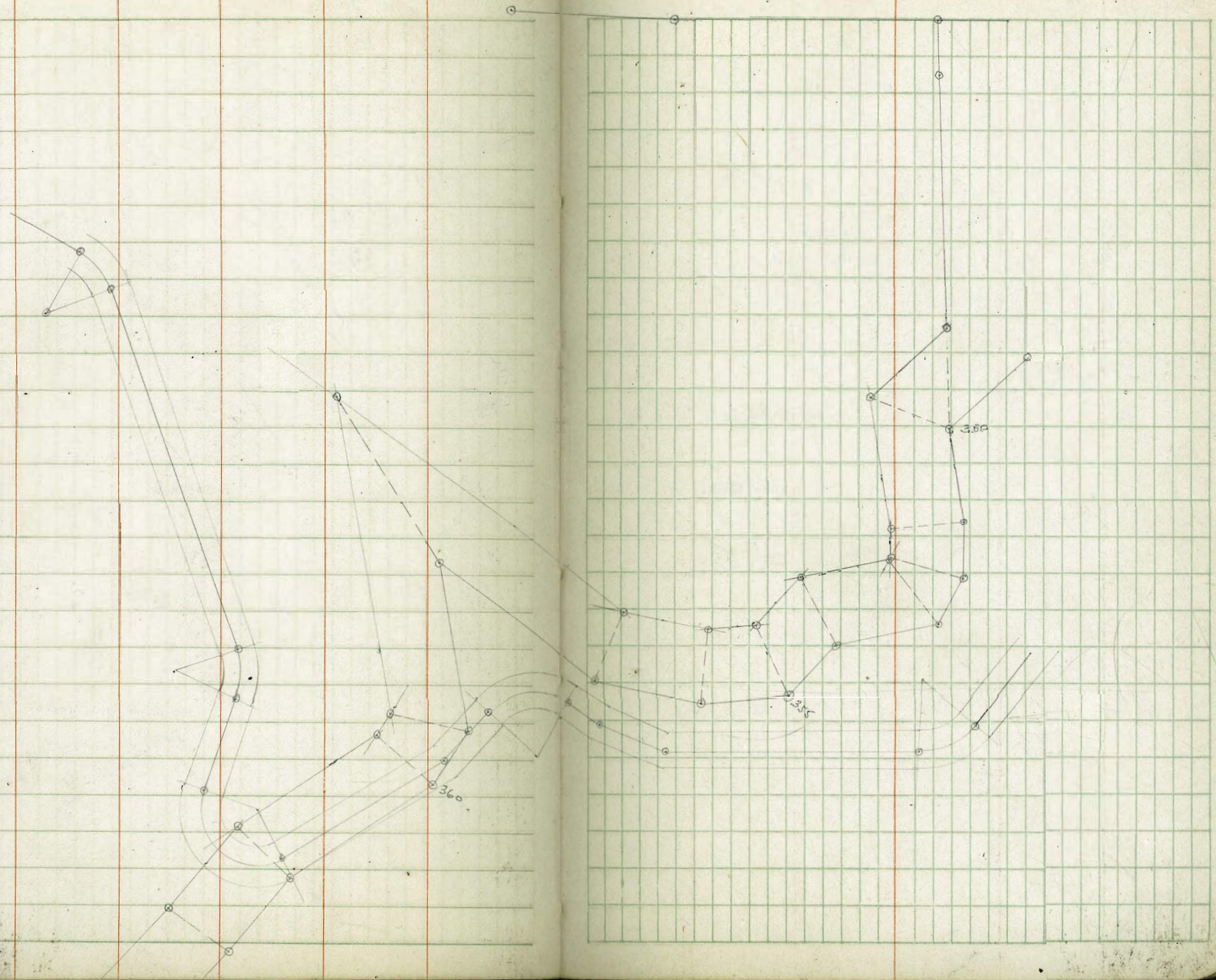
Hayler
Burk

8

Survey of Line between City Property and
Property of Upper Olay Association.

October 3, 1922





Retrace - 60' wide R of W. Tract A to Co. Road

Lt. Rt.

		Lt.	Rt.
A	9		
		183.0	
A	8		1830 582-30W
		306.25	
A	7	18-30	564-00W
		257	
A	6		39-30 582-30W
		142.0	
A	5		57-00 543-00W
		142.8	
A	4	24-30	514-00E
		238.7	
A	3		2-30 510-30W
		110.0	
A	2		46-30 58-00W
		78.5	
A	1		88-30 538-30E N53-00E

10-10-22
R.C. Wueste
E.A. White

10.

Near pepper tree on fence line

0.5' from old hub

0.5' from old hub

0.3' from old hub

NW Corn. Tract A

Meander Present Travelled Road
 N.V. Cor Tract "A" to County Road
 Lt Rt MagGo Stadio

10-10-22
 R.C. WUGSTO
 E.A. Witte.

A	13	315.1			
A	12	62.85	23-49 $\frac{1}{2}$	50-20W 3.18	True S 8-15-26W
A	11	161.4	45-58 $\frac{1}{2}$	529-50E 0.62	True S 8-13 $\frac{1}{2}$ E
D	10	62.3	71-22 $\frac{1}{2}$	369-50E 1.62	True S 54-2E
A	5		31-10 $\frac{1}{2}$	51-50W 0.61	True S 57-10W
A	4		71-22 $\frac{1}{2}$	529-40E	
			100-58 $\frac{1}{2}$		

In County Road
 sta 356 on 100' offset line
 (-6°40')

sta 357 on 100' offset line
 5°54 $\frac{1}{2}$ '
 125.0
 51.8
 125.0

(-7°13')

See page 10 (Alignment present travelled road from N.V. Cor Tract "A" to 45 same as shown on page 10)

Meander Present Travelled Road
 NW Cor Tract "A" to County Road
 Lt Rt MagCo Stadia

10-10-22
 R.C. Wulsto
 E.A. Witte.

11

A	13	315.1		
A	12	62.85	23-49 $\frac{1}{2}$	50-20W 3.18 <small>True S 15-26W</small>
A	11	161.4	45-58 $\frac{1}{2}$	523-50E 0.62 <small>True S 8-13$\frac{1}{2}$E</small>
D	10	62.3	71-22 $\frac{1}{2}$	369-50E 1.62 <small>True S 54-2E</small>
A	5		31-10 $\frac{1}{2}$	51-50W 0.61 <small>True S 17-10$\frac{1}{2}$W</small> 529-40E
A	4		71-22 $\frac{1}{2}$	100-58 $\frac{1}{2}$

In County Road
 sta 356 on 100' offset line
 (-6°40')

(-7°13')

See page 10 (Alignment present travelled
 road from NW cor tract "A" to Δ 5 same
 as shown on page 10)

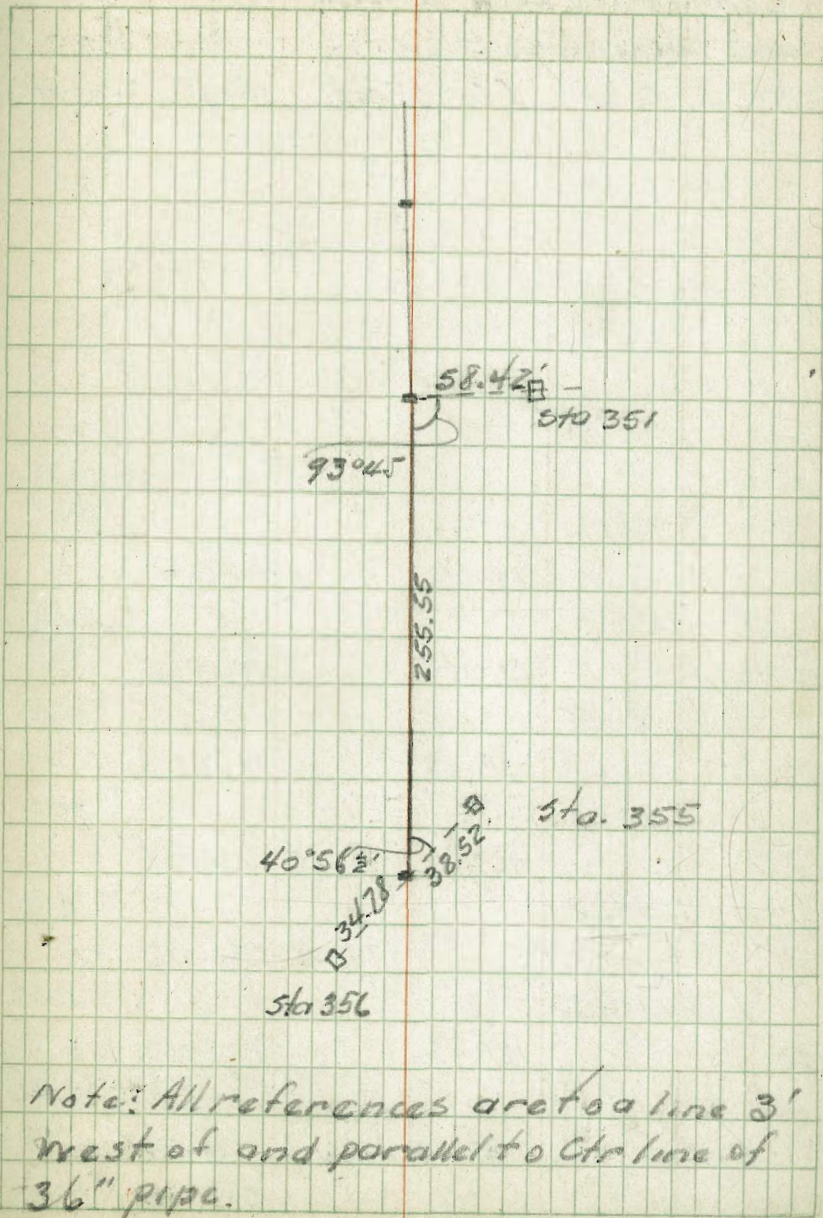
Location of Upper Stay Pipe-line
Over W.E. Gird Property near Tract "A"

Lt Rt

3-12 86-15

40-56

10-10-22 12
R.C. Wueste
E.A. Vihle



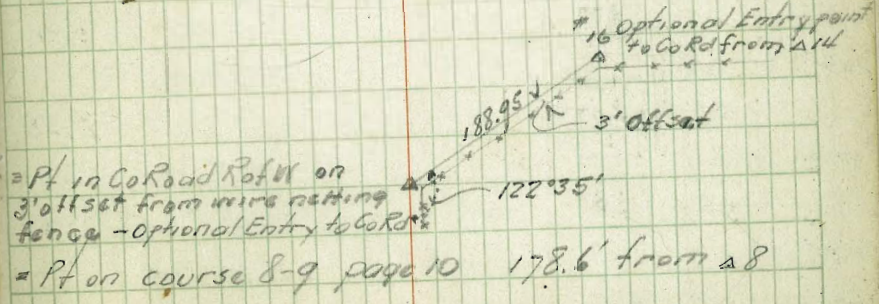
Note: All references are to a line 3'
west of and parallel to Ctr line of
36" pipe.

10-13-22
R.C. Wueste
E.A. Wite.

Connection betw. 60' wide RofW to Tract A
and present Co Road

Sta	Dist.	Lt.	Rt.	Mag Co.	Stadia
Δ 13	136.2				1.36
Δ 21	314.9	19-35		N 9-25 W	3.16
Δ 20	86.55	51-41½		N 10-25 E	0.86
Δ 19	249.3	84-48		N 62-20 E	2.49
Δ 18	588.2	38-45		S 33-00 E	5.87
Δ 17	104.25	29-48		S 72-05 E	1.03
Δ 15	114.9	121-43		N 78-55 E	1.14
Δ 14	47.04			S 19-55 W	
				(True) S 82-30 W	

See page 11



Buff Transit #1248 Constant 1.27

10-17-22
R.C. Wueste
E.A. Witte

14

Traverse Road - Jones Xing to L.O. Dam

Left side L.O. Reservoir

Sta	Stadia	Vert V	Dist	Deflection	Az
Λ @ Δ1					
to Ro Jamul Cor				306-47	
to Bm	0.17	0-00		221-26	
to Sign Post	243	0-00		192-26	
to Δ2	356	0-00		185-44	
BS on Δ1	357				
to Δ3	324	0-00		201-17	
BS on Δ2	324	0-00			
to gate post	0.31	0-00		7-15	
to gate post	0.26	0-00		29-14	
to angle inference	120	0-00		179-50	
to iron pin on fence	5250 (chain)			179-50	
to Δ4	250	0-00		204-38	
BS on Δ3	250				
to Δ5	220	0-00		195-18	
BS on Δ4	220				
to Δ6	373	0-00		191-43	
BS on Δ5	372				
to Δ7	507	0-00		221-55	
BS on Δ6	507				
to Δ8	387	0-00		259-45½	
BS on Δ7	387				
to Δ9	456	0-00		269-47	

= Cor. No. 1 Ro Jamul (3x4 R.V. post in rock pile)
= Stake on Survey line Ro Jamul (N53° 13' W) mag. 109-40 W
= USGS Bm 514
= Auto Club Sign Post at Road Junction
Mag Co. S 10-30 E
Mag Co S 4-45 W
Mag Co S 16-30 E
58-10 W
58-15 W
50-45 E
51-05 E
54-40 E
54-50 E
525-30 W
525-40 W
563-25 W
563-25 W
575-25 W

7/8" iron pin in rock pile (Divide fence
bet. City & Woodworth)

Sta	Stadia	Vert	Dist	Az	Mag Co
π @ Δ16					
B.S. on Δ15	2.36				S23-00W
+ fence cor	0.53 ✓			69-55	
+ fence cor	0.13 ✓			102-15	
+ fence cor	0.20 ✓			2-02	
+ post	0.51 ✓			292-29	
+ gate ctr	2.47 ✓			272-39	
+ Δ17	940? ✓	0-00 ✓		270-49	S74-40W
π @ Δ17					
B.S. on Δ16	928(?)				S74-35W
+ post	2.19 ✓			84-42	
+ fence	0.25 ✓			0-00	N16-15W
+ Δ18	359 ✓	0-00 ✓		183-01	S13-15E
π @ Δ18					
B.S. on Δ17	360				S13-20E
+ Δ19	177 ✓	0-00 ✓		165-20½	S30-55E
π @ Δ19					
B.S. on Δ18	177				S31-00E
+ C.P. on Road	3.74 ✓			153-48	
+ C.P. on Road	3.80 ✓			161-48	
+ C.P. on Road	2.85 ✓			272-09	
+ Δ20	4.87 ✓			298-20	N78-00W
π @ Δ20					
B.S. on Δ19	4.87				N77-50W
+ Barrett hse				95-56	N79-40E
+ Barrett Wall				133-43	

= 2½" x 2½" 1ft south of fence running E-W
 = W end 25' wide line lying S of city fence
 937 by chain

 = 2½" x 2½" 1ft south of fence running E-W

Sta	Stadia	Vert	Dist	Az	Mag. Co.
T @ Δ 20		✓			
to Δ 21	104	✓ 0-00 ✓		284-19 $\frac{1}{2}$	S88-00W
T @ Δ 21					
B.S. on Δ 20	104	✓			S88-00W
to Δ 22	790	✓ 0-00 ✓		262-00 $\frac{1}{2}$	S65-50W
T @ Δ 22					
B.S. on Δ 21	792	✓			S65.55W
to phone pole	0.13	✓		295-56	
to Δ 23	361	✓ 0-00 ✓		213-37 $\frac{1}{2}$	S17-25W
T @ Δ 23					
B.S. on Δ 22	360	✓			S17-25W
to Δ 24	367	✓ 0-00 ✓		209-11	S13-10W
T @ Δ 24					
B.S. on Δ 23	365	✓			S13-00W
to phone pole		✓		230-30	
to fence corner	410	✓ +5-00 ✓		129-44 $\frac{1}{2}$	
to Δ 25	377	✓ 0-00 ✓		228-01	S31-50W
T @ Δ 25					
B.S. on Δ 24	377	✓			S31-50W
to post	299	✓		333-35	
to Δ 26	303	✓ 0-00 ✓		295-17	N80-55W
T @ Δ 26					
B.S. on Δ 25	302	✓			N80-55W
to Δ 27	104	✓ 0-00 ✓		237-34	S41-30W
T @ Δ 27					
B.S. on Δ 26	104	✓			S41-25W
to Δ 28	166	✓ +4-45 ✓		186-32	S9-25E

Angle point in phone line

RC Wueste } 10-20-22
EA White }

Angle point in phone line

fences run S and W from here

on fence line described above bears 90-38

= 2" x 4" post 5" high (?)

Sta	Stadia	Vert	Dist	Az	Mag	Co.
π @ 428						
BS on A27	1.66				59-35E	
to A29	2.27	✓ +4-00		176-16 $\frac{1}{2}$	519-50E	
π @ A29						
BS on A28	2.27				519-50E	
to fence corner	0.18			105-23		Fence runs Wly from here
to phone pole				42-29		Angle pt in phone line
to A30	3.90	✓ 0-00		256-31	360-30W	
π @ A30						About 15 ft N of road; about 6' N of phone line tangent
BS on A29	3.88				360-25W	
to A31	6.24	✓ 0-00		242-05	546-10W	
π @ A31						
BS on A30	6.25				546-05W	About 9 ft S of road; about 15 ft S of phone line
to A32	12.32	✓ 0-00		244-49 $\frac{1}{2}$	548-45W	About 4' S of phone line tangent
π @ A32						this pt. 3' E of Ely line R ² Janal; fence bears approx. 0-43
BS on A31	12.28				548-50W	
to A33	4.02	✓ 0-00		235-25	539-20W	
π @ A33						
BS on A32	4.00				542-50W	(Affected by automobile)
to phone pole				256-01		Angle point in phone line
to A34	5.04	✓ 0-00		239-45 $\frac{1}{2}$	547-10W	
π @ A34						External distance 40' to curve of road
BS on A33	5.00				543-50W	
to phone pole				38-00		Angle point in phone line
to sta 32	4.20	0-00		244-04		Pt on 100' offset line to 150' cant over
to sta 31	4.46	0-00	✓	184-30 $\frac{1}{2}$		do do do

Fence runs Wly from here
Angle pt in phone line

About 15 ft N of road; about 6' N of phone line tangent

About 9 ft S of road; about 15 ft S of phone line

About 4' S of phone line tangent

this pt. 3' E of Ely line R² Janal; fence bears approx. 0-43

(Affected by automobile)

Angle point in phone line

External distance 40' to curve of road

Angle point in phone line

Pt on 100' offset line to 150' cant over

do do do

Sta	Stadio	Vert	Dist	Az	Mag Co
π@ Δ 34					
to Δ 35	6.80	0-00		173-22	S22-30E
π@ Δ 35					
BS on Δ 34	6.80				S22-35E
to Δ 36	3.05	0-00		177-19	S18-45E
π@ Δ 36					
BS on Δ 35	3.05				S18-38E
to fence Corr	0.47	-7-00		344-07	
to Δ 37	3.52	0-00		239-02	S43-10W
π@ Δ 37					
BS on Δ 36	3.50				S43-05W
to Δ 38	1.69	0-00		212-13	S16-15W
π@ Δ 38					
BS on Δ 37	1.69				S16-20W
to Δ 39	1.19	0-00		183-09	S12-50E
π@ Δ 39					
BS on Δ 38	1.19				S13-00E
to Δ 40	1.49	0-00		285-25	S89-15W
π@ Δ 40					
BS on Δ 39	1.48				S89-25W
to Sta 24	1.15	0-00		255-10	S59-10W
π@ Sta 24					
BS on Δ 40	1.14				S59-15W
to C.P. on Road	1.80	-5-00		251-33	
to C.P. on Road	2.73	0-00		268-35	
to Δ 41	4.07	0-00		266-06	S70-10W

= pt on 150' Cont. Resr. fence Lt side Bushloush Cr.

= Angle pt on 100' Offset line to 150' Contour

Sta	Stadia	Vert V	Dist	Az	Mag. Co.
π @ Δ 41					
BS on Sta 24	4.05				570-15 W
to Δ 42	3.42	✓ 0-00		234-37	538-30 W
π @ Δ 42					
BS on Δ 41	3.41				538-35 W
to C.P. on Road	2.56			55-15	
to C.P. on Road	1.71			64-36	
to C.P. on Road	0.98			109-18	
Sta 22	0.54			119-14	
to phone pole	1.08	+18-30 ✓		187-45	
to Δ 43	2.06	✓ +4-15 ✓		268-56	573-00 W
π @ Δ 43					
BS on Δ 42	2.05				573-00 W
to C.P. on Road	0.90			240-36	
to Δ 44	1.71	✓ 0-00 ✓		257-24 ¹ / ₂	561-35 W
π @ Δ 44					
BS on Δ 43	1.71				561-35 W
to Δ 45	2.17	✓ 0-00 ✓		238-22	542-35 W
π @ Δ 45					
BS on Δ 44	2.17				542-35 W
to phone pole				120-45	
to Sta 19	1.47	0-00		228-48 ¹ / ₂	
to Δ 46	3.17	✓ 0-00 ✓		196-18	50-25 W
π on Δ 46					
BS on Δ 45	3.17	-4-00 ✓			50-25 W
to phone pole				56-40	

= Pt on 5' offset to Sta to 100' offset line to 150' cont.

= Angle point in telephone line

RC. Wueste } 10-21-22.
E.A. Witte }

= Angle pt in phone line

= Pt on 100' offset line to 150' cont.

= Angle pt in phone line

Sta	Stadia	Vert	Dist	Az	Mag. Co.
π@ Δ46					
to G.P. in road	2.04			161-03	
to C.P. in road	2.95			178-09	
to Δ47	4.30	0-00		220-41	524-35W
π@ Δ47					
B.S. on Δ46	428				525-00W
to Δ48	2.82	0-00		296-35 ¹ / ₂	560-40W
π@ Δ48					
B.S. on Δ47	2.82				560-50W
to Δ49	7.24	0-00		276-46	531-00W
π@ Δ49					
B.S. on Δ48	7.26				531-00W
to Sta?	1.84			359-40	N16-15W
to phone pole				188-32	
to G.P. in road	1.87			182-22	
to Δ50	4.00	0-00		198-57	53-15W
π@ Δ50					
B.S. on Δ49	3.99				53-20W
to phone pole				142-16	
to Δ51	2.60	0-00		201-05	55-20W
π@ Δ51					
B.S. on Δ50	2.59				55-00W
to Sta 2	1.06	-9-20		261-30	
to Sta 2?	0.22	0-00		118-43 ¹ / ₂	
C.P. on Road	1.78	0-00		159-20	
C.P. on Road	1.95	0-00		167-15	

= Pt on 100' offset line to 150' cont. L.O. Res?

= Angle pt in phone line

= Angle pt in phone line

= Sta 2 on 150' cont fence line

Probably Sta 2 on 100' offset to 150' cont

= C.P. gate across road

Sta	Stada	Vert	Dist	Az	Mag Co.
TA @ Δ 51					
to Δ 52	4.32	✓ 0-00	✓	205-06	Sq-15W
TA @ Δ 52					
BS on Δ 51	4.32		✓		Sq-20W
to SE Cor.	0.74		✓	330-35	
to NE Cor.	1.33		✓	330-33	
to NW Cor.	1.34		✓	285-57	
to SW Cor.	0.96		✓	250-07	
to Δ 53	0.88	✓ 0-00		237-49	542-00W

4' back from spillway channel cut
} H.O. Spillway catch basins pts chosen on railing

Lower Otay Reservoir

Ownerships in Vicinity of

Lands East Sec 4 1851E Lot 4 E 1/2 of NE 1/4
 Lot 3 SW 1/2 of NE 1/4
 Lot 1 NW 1/4 of NW 1/4
 (inc Lot 2) S 1/2 of NW 1/4
 N 1/2 of SW 1/4
 S 1/2 of SW 1/4
 E 1/2 of SE 1/4
 N 23.75A of NW 1/4
 of SE 1/4
 S 16.25A of NW 1/4
 of SE 1/4
 SW 1/4 of SE 1/4
 Sec 5 1851E NE 1/4
 (Lot 4) NW 1/4 of NW 1/4
 S 1/2 of NW 1/4 & Lot 3
 (NE 1/2 of NW 1/4)
 N 1/2 of SW 1/4 (SE)
 S 1/2 of SW 1/4
 NE 1/4 of SE 1/4
 NW 1/4 of SE 1/4
 1 1/2 Ac in S 1/2
 of SE 1/4
 S 1/2 of SE 1/4
 (Ex 1 1/2 Ac)

Aubrey C. Sears	40.04
Chas. S. Judson	32.51
City of San Diego	30.06
do do	72.38
do do	80
Jerry Barrett	80
Aubrey C. Sears	80
Chas. S. Judson	23.75
Mary J. Frown	16.25
do do	40
City of San Diego	160.27
Annie E. Albright	39.77
City of San Diego	119.92
do do	80
do do	80
do do	40
do do	40
do do Co's deed 38	1.54
Jerry Barrett	78.46

S606 1831E Lots 182 $\langle E\frac{1}{2}$ of $NE\frac{1}{4}$ \rangle

Lots 384 $\langle E\frac{1}{2}$ of $SE\frac{1}{4}$ \rangle

S607 1831E Lots 182 $\langle E\frac{1}{2}$ of $NE\frac{1}{4}$ \rangle

Lots 384 $\langle E\frac{1}{2}$ of $SE\frac{1}{4}$ \rangle

S608 1851E $SE\frac{1}{4}$ of $NE\frac{1}{4}$

$NE\frac{1}{4}$ of $NE\frac{1}{4}$

$NW\frac{1}{4}$ of $NE\frac{1}{4}$

$NW\frac{1}{4}$ of $NW\frac{1}{4}$

$E\frac{1}{2}$ of $NW\frac{1}{4}$

$SW\frac{1}{4}$ of $NW\frac{1}{4}$

$NW\frac{1}{4}$ of $SW\frac{1}{4}$

$E\frac{1}{2}$ of $SW\frac{1}{4}$

$SW\frac{1}{4}$ of $SW\frac{1}{4}$

S609 1851E $NE\frac{1}{4}$ of $NE\frac{1}{4}$

$W\frac{1}{2}$ of $E\frac{1}{2}$

$W\frac{1}{2}$ of $NW\frac{1}{4}$

$E\frac{1}{2}$ of $W\frac{1}{2}$

S6032 1751E $N\frac{1}{2}$ of $NE\frac{1}{4}$

$SE\frac{1}{2}$ of $NE\frac{1}{4}$

$SW\frac{1}{4}$ of $NE\frac{1}{4}$

$SE\frac{1}{4}$ of $NW\frac{1}{4}$

$NE\frac{1}{4}$ of $SW\frac{1}{4}$

$W\frac{1}{2}$ of $SW\frac{1}{4}$

$SE\frac{1}{4}$ of $SW\frac{1}{4}$

$NE\frac{1}{4}$ of $SE\frac{1}{4}$

$S\frac{1}{2}$ of $SE\frac{1}{4}$

$NW\frac{1}{4}$ of $SE\frac{1}{4}$

City of San Diego

do do

do do

Fredk W. Koeppe

Mary L. Young

do do

Serry Barrett

City of San Diego

Aubrey Sears

do do

do do

Estella K Meyers

Roxmond C Bell

Aubrey Sears

L.A. Schulze

Mary L. Young

Serry Barrett

Thos. D. Johnson

do do

G.M. Buck

do do

Arnold Smith

Annie E. Albright

E.C. Hickman

T.D. Johnson

do do

do do

31.49

32.27

32.60

32.60

40

40

40

40

80

40

40

80

40

40

160

80

160

80

40

40

40

40

80

40

40

80

40

Soc 33 17S1E	NE $\frac{1}{4}$ of NE $\frac{1}{4}$
Lands East Soc 18 18S1E	Lot 4 (NW $\frac{1}{4}$ of NW $\frac{1}{4}$)
	Lot 5 (SW $\frac{1}{4}$ of NW $\frac{1}{4}$)
	Lot 6 (NW $\frac{1}{4}$ of SW $\frac{1}{4}$)
Soc 31 17S1E	Lots 3 & 4 (fractional $\frac{1}{2}$ of SE $\frac{1}{4}$)

Aobrey Sears	40
City of San Diego	40.76
do do	41.28
do do	41.32
Annie E. Albright	30.06

Otay-San Diego Pipe Line - Preliminary Location

Station	Azimuth	Rod	Vert L	Dist	Elev.
T @ 0+00					
B.S.	0°00'				
to 0+35.9	186°35'		Measured → 35.9'		398.56
to 0+61.01 Δ	186°35'		" → 61.01'		
T @ 0+61.01					
B.S. on 0+00	6°35'				
to 1+59.21 Δ	212°12'		Measured 98.20'		399.64
T @ 1+59.21					
B.S. on 0+61.01	33°12'				
to 2+97.40 Δ	225°01'		" 138.19'		399.24
T @ 2+97.40		4.68			
B.S. on 1+59.21	45°01'				
	53°41'	0.52	53'		401.3
	"	1.22	+5°00'	122	+10.7 409.9
	"	1.65	+4°44'	165	+13.6 412.9
	"	1.92	+5°16'	191	+17.6 416.9
	"	2.68	+5°14'	267	+24.4 423.7
to 6+16 Δ	53°41'	3.18	+5°36'	316	+29.0 428.2
T @ 6+16		4.85			
B.S. on 2+97.40	233°41'	3.18	-5°36'		
	0°00'	1.22	+0°24'	123	+0.9 429.1
		2.34	+4°58'	233	+20.3 448.5

of Tunnels. Tunnel #1

Hayler - Wueste

11-3-22

0+00 = Sta 146+68.4 E.C. of old pipe line in tunnel #1
 Back Sight on Δ of North Portal
 405.26 630 South Portal of Tunnel #1 (Assuming outside diam of pipe 39")
 Elev. Top of Pipe from Profile

5.62 Top of Stake

403.92 428

2+97.4 = Sta 145+12 B.C. of old pipe line

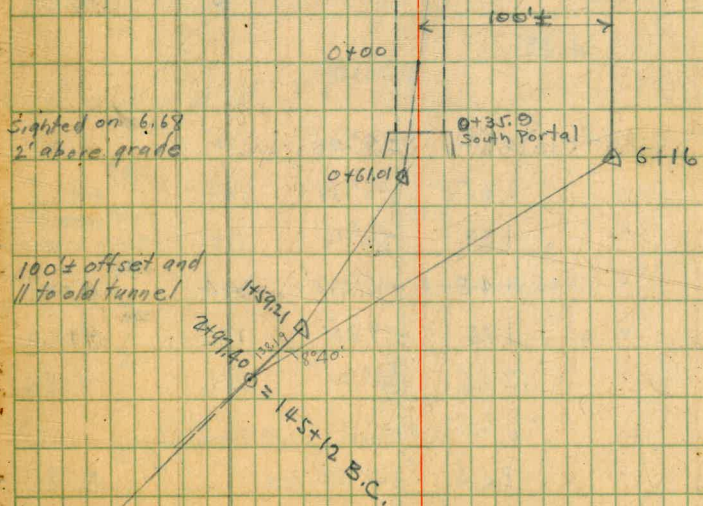
4.68

403.92 468

2.6

Bottom of Slope of Excav.

Top of Slope " "



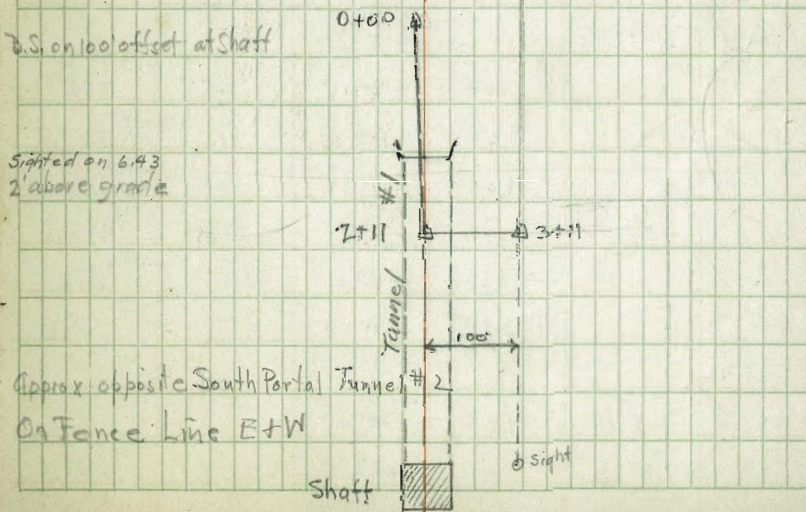
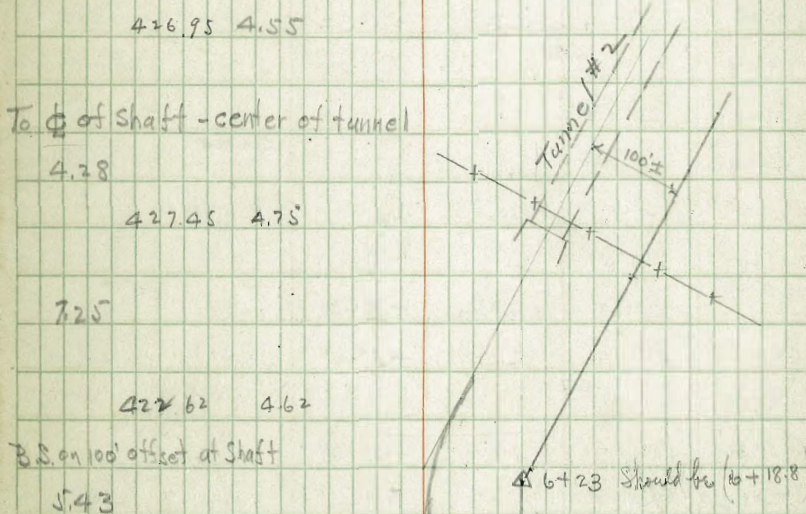
Otay-San Diego Pipe Line (continued)

Sta.	Azi	Rod	Vert L	Dist.	Elev.
T@ 0+00					398.15
F.S. on 136°	179°24'	1.35	0°00'	136	397.95
to 2+09 Δ		2.11	+6°37'	209	422.4
T@ 2+09	4.55				
D.S. on 0+00	359°24'	2.12	-6°35'		
to center of shaft	180°00'				
to 3+09.0 Δ	30°00'		0°00'	Chained 100.00	422.7
T@ 3+09.0	4.75				
BS on 2+09	270°00'				
to	0°00'	2.25		226	420.2
to 6+07 Δ	0°00'	2.97	-0°54'	298	418.0
T@ 6+07 Δ	4.62				
BS on 3+09	180°00'			Chained 16'	
to 6+23 Δ	0°00'				417.2
T@ 6+23	4.43				
BS on 3+09					
to	26°59'	0.62	-4°00'	63	412.8
"	"	1.35	-6°14'	134	402.5
"	"	1.39	-6°16'	138	400.0
"	"	1.45	-5°43'	144	402.7
"	"	1.75	-1°30'	175	412.6
"	"	2.05	-0°26'	206	415.6
"	"	2.40	Stake		
"	"	2.55	+0°20'		418.7

North Portal of Tunnel #1 and South Portal of Tunnel #2

Hayler
Vueste 11-3-22 ²⁷

4.55
Center of Pipe 136' N of North Portal Tunnel #1
Fore sight on center of Pipe at " " " ^{Elev Top of Pipe from Profile +39"}
422.65 4.70



Otay-San Diego Pipe Line North Portal-Tunnel #2

Hayler
Wueste

28

Sta.	Azimuth	Rod	Vert L	Dist	Elev.
T @ 0+00	2.65				397.35
FS on 172+43.5	206° 50'				
to 0+30	206° 59'	0.29		30	397.21
to 1+09 Δ		1.25	+21° 34'	109	+43.1 440.5
T @ 1+09	4.54				
BS on 0+00	26° 59'				
to 2+09 Δ	116° 59'			Chained 100.00	438.75
T @ 2+09	4.37				
BS on 1+09	296° 59'				
	26° 59'	1.95	-5° 06'	194	-17.4 421.4
to 4+58 Δ	26° 59'	2.50	-5° 12'	249	-22.7 416.0
T @ 4+58	4.70				
B.S. on 2+09	206° 59'	2.50	+5° 12'		
to 5+62 Δ	26° 59'	1.07	-10° 46'	104	-19.8 396.2
T @ 5+62	4.55				
BS on 4+58	206° 59'	1.04	+10° 47'		
	30° 38'	0.48	-16° 11'	45	-13.1 383.1
		1.27	-18° 36'	115	-38.7 357.5
		1.46	-17° 28'	134	-42.1 354.1
		2.80	-8° 38'	275	-41.7 354.5
		3.40	-4° 24'	339	-26.1 370.1
to 10+13 Δ	30° 24'	4.50	-1° 59'	451	-15.6 380.6
T @ 5+62					
BS on 4+58	206° 59'	1.04	+10° 47'		
to 7+69	113° 28'	2.07	+10° 11'	207	+4.3 400.5

11-4-22

2.65	4.1				0+00 = Sta
					☉ of Tunnel Portals
400.0	2.8				Elev. from Profile +39" N. Portal Tunnel #2
					Point on hill over tunnel
445.04	4.54				
6.29					
	4.37				
					At Fence Line E+W
					Toe of hill
					" " "
					10'E of fence

Sta	Azi	Rod	Vert L	Dist	Elev
T @ 7+69		4.40			400.50
BS on 5+62	293°28'	2.07	0°00'		
	20°13'	0.80	-14°02'	76	-19.1 381.4
	87°27'	0.70	-13°52'	67	-16.5 384.0
To 9+15	166°23'	1.45	+3°05'	146	+7.9 408.4
T @ 9+15		4.31			
BS on 7+69	346°23'	1.45	-3°04'		
	180°00'	1.12	+3°16'	113	+6.4 414.8
"		3.22	+3°00'	322	+16.9 425.3
"		4.82	+3°13'	481	+27.0 435.4
	177°32'	4.40	+2°41'	440	+20.6 429.0
	168°12'	2.56	-1°12'	257	-5.4 403.0
	124°42'	1.07	-14°14'	102	-25.8 382.6
	36°30'	1.82	-13°24'	173	-4.3 367.1
	23°21'	3.26	-8°44'	319	-49.1 359.3

370

on slope

In Road

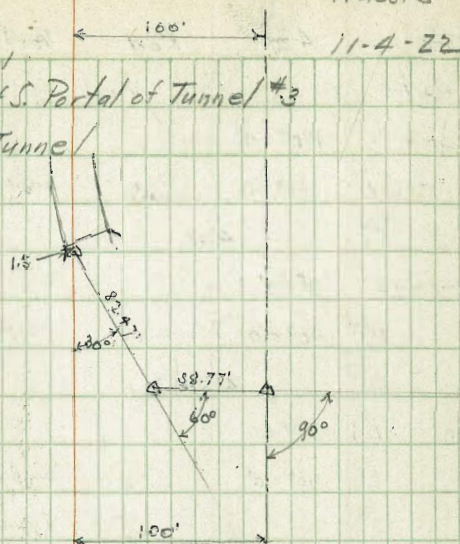
Intersection of Roads

San Diego - Otay Pipe Line - Preliminary Location of New Tunnel/Lines - South End Tunnel #3 Hayler Wueste 30

Sta.	Azi.	Rod	Vert. L	Dist	Elev.
T@ 0+00		2.1			396.76
B.S. on 224+28.4	34° 41'				
to 0+82.47	184° 41'	.83	+8° 06'	Chained 82.47	+11.73 408.5
T@ 0+82.47		4.15			
B.S. on 0+00	4° 41'				
to 1+41.24	124° 41'	.60	+12° 24'	Chained 58.77	+12.8 421.3
T@ 1+41.24		4.72			
B.S. on 0+82.47					
	214° 41'	.23	-3° 50'	24	-1.6 419.7
		1.25	-11° 47'	121	-25.2 396.1
		2.50	-7° 00'	247	-30.4 391.0
T@ 0+00		2.45			396.55
B.S. on ϕ Tunnel	180° 00'				
	" "	0.28	0° 00'	29	396.25
to $\Delta^{\#1}$	0° 00'	0.72	+5° 02'	72	+6.4 403.0
T@ $\Delta^{\#1}$		4.13			
B.S. on ϕ Tunnel	180° 00'				
to $\Delta^{\#2}$	90° 00'	0.53	+5° 41'	Chained 53.82	+5.3 408.3
T@		4.46			
B.S. on $\Delta^{\#1}$	270° 00'	0.53	-5° 40'		
to $\Delta^{\#3}$	90° 00'	0.45	-7° 40'	Chained 46.18	-6.1 402.2
T@ $\Delta^{\#3}$		4.39			
B.S. on $\Delta^{\#2}$	270° 00'	0.45	+7° 41'		
	180° 00'	0.65	+9° 06'	64	+10.3 415.5
	180° 00'	1.60	+9° 28'	157	+26.1 428.3
	297° 52'	1.15	-3° 36'	116	-3.2 395.0
" "	" "	2.15	-1° 28'	216	-5.4 396.8

Elev. Top of Pipe at Portal
0+00 = Sta 206+32.9 + 15' S. of S. Portal of Tunnel #3

B.S. on North Portal of Tunnel



on Pipe (?)

399.00 2.75 On ϕ Tunnel produced North

North Portal Tunnel #3 Elev. Top of Pipe from Profile +39"

Creek Bottom
At Air Valve on Pipe Line

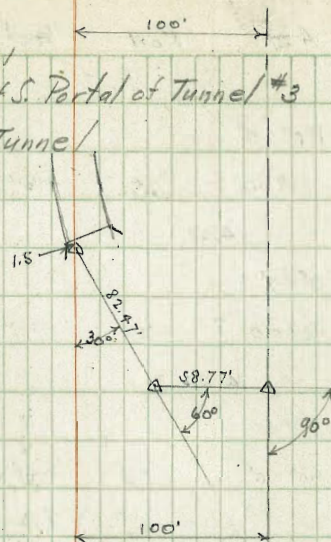
San Diego - Otay Pipe Line - Preliminary Location of New Tunnel/Lines - South End Tunnel #3.

Hayler ³⁰
Wueste

Sta.	Azi.	Rod	Vert. L	Dist.	Elev.
T@ 0+00		2.1			396.76
B.S. on 24+28.4	34° 41'				
to 0+82.47	184° 41'	.83	+8° 06'	Chained 82.47	+11.73 408.5
T@ 0+82.47	4.15				
B.S. on 0+00	4° 41'				
to 1+41.24	124° 41'	.60	+12° 24'	Chained 58.77	+12.18 421.3
T@ 1+41.24	4.72				
B.S. on 0+82.47					
	214° 41'	.23	-3° 50'	24	-1.6 419.7
		1.25	-11° 47'	121	-25.2 396.1
		2.50	-7° 00'	247	-30.4 391.0
T@ 0+00		2.45			396.55
B.S. on ϕ Tunnel	180° 00'				
	" "	0.28	0° 00'	29	396.25
to $\Delta^{\#1}$	0° 00'	0.72	+5° 02'	72	+6.4 403.0
T@ $\Delta^{\#1}$	4.13				
B.S. on ϕ Tunnel	180° 00'				
to $\Delta^{\#2}$	90° 00'	0.53	+5° 41'	Chained 53.82	+5.3 408.3
T@	4.46				
B.S. on $\Delta^{\#1}$	270° 00'	0.53	-5° 40'		
to $\Delta^{\#3}$	90° 00'	0.45	-7° 40'	Chained 46.18	-6.1 402.2
T@ $\Delta^{\#3}$	4.39				
B.S. on $\Delta^{\#2}$	270° 00'	0.45	+7° 41'		
	180° 00'	0.65	+9° 06'	64	+10.3 415.5
	180° 00'	1.60	+9° 28'	157	+26.1 428.3
	297° 52'	1.15	-3° 36'	116	-7.2 395.0
	" "	2.13	-1° 26'	216	-5.4 396.8

Elev. Top of Pipe at Portal
0+00 = Sta 206+92.9 = 1.5' S. of S. Portal of Tunnel #3

B.S. on North Portal of Tunnel



on Pipe (?)

399.00 2.75 On ϕ Tunnel produced North

North Portal Tunnel #3 Elev. Top of Pipe from Profile +39'

Creek Bottom
At Air Valve on Pipe Line

South End of Tunnel #4

Hayler
Wuete

11-10-22 31

Sta	Azi	Rod	Vert. k	Dist	Elev
T@ 0+00		2.23			
to	180°00'			7.5'	394.35
to	Δ ^{#1} 180°00'	1.29	+2°35'	130	+5.8 388.5
T@	Δ ^{#1}	4.28			
BS on 0+00	0°00'				
to	Δ ^{#2} 90°00'	0.30	+28°21'	Chained 25.3	+ 406.0
T@	Δ ^{#2}	4.52			
BS on	Δ ^{#1} 270°00'				
to	Δ ^{#3} 90°00'	0.76	+8°40'	Chained 74.3	+11.5 417.5
T@	Δ ^{#3}	4.50			
BS on	Δ ^{#2} 270°00'	0.76	-8°40'		
	180°00'	0.30	-12°30'	30 ✓	-6.5 411.0
	"	0.50	-16°04'	47 ✓	-13.5 399.0
	232°10'	1.07	-16°08'	100 ✓	-28.8 388.7
	232°25'	1.56	-11°10'	151	-29.8 387.7
	226°28'	1.80	-9°36'	176	-29.5 388.0
	219°28'	1.54	-6°16'	153	-16.8 400.7
	212°28'	2.07	-4°32'	207	-16.4 401.1
	213°45'	1.00	-7°42'	99	-13.4 404.1
	180°00'	0.70	-4°56'	70 ✓	-6.1 411.4

On E Tunnel 7.5' N. of S. Portal.
South Portal Tunnel #4

Elev. = H.I. + 9.44
27' for 20°28'

S' above ground

Otay-San Diego Pipe Line
North End of Tunnel #4

T@ 0+00	2.40					
BS on Portal #	180°00'	0.73'	0°00'	74'	304.0	
to 0+83 Δ#1	90°00'	0.82	+2°35'	83'	+3.7 305.7	
T@ 0+83 Δ#1	4.85					
BS on 0+00	270°00'					
to 1+00 Δ#2	90°00'	0.16	0°00'	17'	304.0	
T@ 1+00 Δ#2	4.38					
BS on 0+00	270°00'					
	180°00'	0.90	+11°00'	88	+17.1 411.1	
	"	1.65	+13°12'	157	+36.9 430.9	
	0°00'	0.50	-7°22'	50	-6.5 387.5	
	"	0.90	-10°14'	88	-15.9 378.1	
	"	1.04	-4°32'	104	-8.3 385.7	
	"	1.44	-1°48'	145	-4.6 389.4	
	"	1.84	-3°20'	184	-10.7 383.3	
	"	3.08	-0°32'	309	-2.9 391.1	
	"	4.25	+0°01'	426	+0.1 394.1	
	130°15'	2.35		236	398.8	
to 3+64 Δ#3	130°15'	2.63	+1°24'	264	+6.5 400.5	
T@ 3+64 Δ#3	4.40					
BS on Hood #	310°15'	2.63	-1°24'			
to 5+19 Δ#4	156°59'	1.55	+4°49'	155	+13.1 413.6	
T@ 5+19 Δ#4	4.54					
BS on 3+64 Δ#3	336°59'	1.57	-4°49'			
	180°00'	1.20	+5°12'	120	+10.9 424.5	
		2.80	+5°25'	278	+26.4 440.0	
		4.05	+6°16'	401	+44.0 457.6	

Hayler
Wueste

11-10-22 32

306.4

Top of Pipe at Portal
To N. Portal of Tunnel #4
2' above ground

6.58 400.55

1.80

Upper to Lower Otay - 36" W. S. Pipe

Measurement of salvaged pipe

Section #1

Stake at South end of gap = 0+00

0+13 = Water's edge

T @ 0+00 Stadia reading 4.52

4+35 Water's edge

4+53 Stake at North end of gap.

Section #2

0+00 Stake at S end of gap also at water's edge

4+42 North end of gap Stadia reading 2.40

North water's edge

T @ 6.83 → North end of partially submerged pipe

Stadia reading 6.82 on 0+00

Section #2A No pipe removed (Only partially submerged)

Set stake at each end (Chained 96' between stakes)

Section #3

0+00 Stake at S. End of gap also at water's edge

6+79 North end of gap (61' back chained)

7+46 Inst. at Stake

9+44 North water's edge Stake

(?) 12+40 = 0+00 of Section #3A Stake

0+00 = South water's edge (No pipe removed) Stake

1+98 = North " " Stake

Hayler
Lauterbach

33

1-4-23

Partially submerged

$\frac{2+20 = 40}{1+20 = 20}$
 $\frac{1+12 = 12}{1+12 = 12}$

72'

Partially submerged
pipe non salvaged.

$\frac{1-12}{1-20}$
 $\frac{1-16}{1-16}$

48'

Partially submerged pipe.

$\frac{1-16}{1-18} = 34'$

$\frac{1-12}{1-12} = 12'$ 46'

Upper to Lower Otay -

Measurement of salvaged pipe

Section #4

- 0+00 Stake at South End of gap also at water's edge
- 5+48 Beginning of partially submerged on North
- 5+78 Stake at water's edge (break in staves)
- Inst @ 5+78 Stadia reading on 0+00 = 5.79

Section #5

No pipe salvaged yet

- 0+00 Inst at stake at South water edge
- 0+91 S. end of totally submerged pipe Stadia 0.90
- 2+61 N. " " " " " 2.60
- 3+22 Stake at North water's edge 3.21

Section #6

No pipe salvaged yet

- 0+00 Stake at water's edge South side
- 0+63 South end of totally submerged pipe 0.62
- 2+01 North " " " " " 2.00
- 2+53 Stake at water's edge North side 2.52

Section #7

- 0+00 Stake at South water's edge
- 0+43 S. End of totally submerged pipe, chained
- 8+79 (chained 31')
- 9+10 9.05

Section #1 on Upper Otay to Harvey Diverting Dam

West end - Water's edge 26' partially submerged

Hayler
Lauterbach

1-4-23

edge Partially submerged $\left\{ \begin{array}{l} 1-12 = 12' \\ 2-16 = 32' \\ 28' = \frac{28}{72} \text{ chained} \end{array} \right.$

North end of gap is 5+48 (1-12-23)
No partially submerged pipe salvaged on North end

43
26

0+54 S. End of Gap } 1-12-23
2+60 N. End of Gap }

0+54 S. End of Gap } 1-12-23
2+35 N. End of Gap }

181

0+00 S. End of Gap }
1+10 N. End of Gap } 1-12-23

Upper Otay to Harvey Line
Measurement of salvaged pipe
Section # 8

- 0+00 Stake at W. Water's edge - also W. End of Gap no' meas.
0+26 W End of totally submerged pipe
10+58 E " " " " " 15' meas.
10+76 Stake at water's edge.

Upper Otay to Harvey Line
Section # 9

- 0+00 = W. Water's edge - W End of Gap.
0+50 = W. End of totally submerged pipe
19+80 = E End " " " " (End of gap)
20+60 = Inst. (Stadia reading $10.3 \times 200 = 2060'$)
20+80 = Stake on bank North of Line.
27+64 = E End of partially submerged pipe at 137.15' gage.
(Measured with tape 784 lin. ft. partially submerged pipe (not yet salvaged 1-27-23))

Hayler
Lauterback

35

1-12-23

They have approx 100' of pipe up in this section.

1-20-23

Note - All pipe salvaged between stakes as shown
above 0+00 to 10+76 G.R.H.

1-27-23.

G.R.H.

Upper to Lower Otag - 36" W.S. Pipe Salvaged
Reservoir Gauge 8:00 AM 140.93

SECTION #1

- 0+00 = S End of partially submerged pipe at 137.5
-0+78' = Air Valve
-1+50 = Waters edge about 20' from taper joint
-1+84 = Beg of 24" C.S. Pipe from Summers notes
North end
4+53 = N End of partially submerged pipe at 137.5
5+64 = " " " " " " " 143.5 Stake
1-4 { 7+06 = S " " " " " " " 143.5 "
8+13 = N " " " " " " " 143.5 "

SECTION #2

- 0+50 ^(Stake) S End of partially submerged pipe at 143.5
0+00 " " " " " " " 137.5
6+83 N End of gap this date (2-5-23)
7+74 ^{9" measured} N End of partially submerged pipe at 143.5 Stake

SECTION 2A

- 0+71 Stake at S End of partially submerged pipe at 143.5
0+00 " " S End of gap this date 2-5-23
0+95 " " N " " " " " "
2+00 " " N " of partially submerged pipe at 143.5

2-5-23 36
Hayler
Burke

Stadia 7.73

270

Upper to Lower Otay - 36" W.S. Pipe Salvaged.
Reservoir Gauge 140.93

SECTION # 3 + 3A

-0+83 S. End of partially submerged pipe at 143.5 (Stake)

0+00 S End of gap " " " 137.5

K @ 7.93 on shore 20' off line stadia 7.90

16+71 North end of gap this date. - " 8.80
16.70

SECTIONS 4, 5 & 6

-1+54 S End of Gap this date 2-5-23

K 6+42 stadia 7.95

14+38 N End of Gap this date 2-6-23 7.91

15+21 N End of partially submerged pipe at 143.5
15.23

SECTION # 7

48' to salvage on S End of 0400 to 143.5

63' " " " N " " section

Section # 8 19' to salvage on W End.

2-5-23

37

Hayler
Burke

679 submerged ✓
265 partly sub ✓
365 dry
260 partly sub ✓
162 dry
16.71

Reservoir Gauge 140.97

2-6-23

Section #9

-1+00 = W End partially submerged pipe at 143.5
 0+00 = " " " " " " 137.5 also
 W " of present gap.

27+64 = E End of gap + partly submerged pipe at 137.5
 43+74 = " " " partly submerged pipe at 143.5

Section #10

0+00 = W End partly submerged pipe at 143.5
 0+97 = " " " " " at 137.5
 2+57 = E " " " " " 137.5
 5+62 = E " " " " " 143.5
 No pipe salvaged yet.

Section #11

0+00 = W End partly submerged pipe at 143.5
 0+32 = X
 4+74 = E End partly submerged pipe at 143.5
 No pipe salvaged yet

3-5-23

Hayler
Burke

	Stadia	Vert L	Dist	Az	Mag. Bear.
T@0+00	4.5				
to Fence Cor.	0.89	-17°22'	87	270°00'	S 74°30' W
to 6+37° Δ	6.10	-40°27'	637	0°00'	N 15° 30' W
T@6+37°	BS on 0+00				
To 10+09 Δ	3.72	-3°36'	372	00°00'	N 15° 30' W
T@10+09					
to hub Cor #19	1.44	-6°52'	143		N 15° 20' W

1 1/2" Pipe in mound of rocks

Fence West and South. F.S. on flag on fence 1/4 mile ± West.

3-13-23

Lower Otay Reservoir - Survey of Flooded Property

belonging to Jerry Barrett.

Sta.	Azi.	Rod	Vert L	Dist.	Mag. Bear.
T@ 0+00 ✓					
to Sec. Cor.	180° 00'	13.35	+6° 40'	1318'	S 13° 55' E
to Δ #16 ✓	267° 13'	4.80			
to Δ #1 ✓	269° 27'	12.00	-1° 52'	1200	S 75° 30' W
T@ Δ #1	B.S.				
to Δ #2 ✓	269° 27'	2.63	- ?	263	S 75° 30' W
T@ Δ #2	B.S.				
to Δ #3 ✓	269° 27'	1.09	-8° 28'	107.5	S 75° 30' W
T@ Δ #3	F.S.				
to Δ #4 ✓ Cor #1	269° 27'	0.78	-19° 15'	70.5	S 75° 30' W
T@ Cor #1	F.S.				
to Cor #2	166° 52'	1.54	0° 00'	155	S 27° 25' E
T@ Cor #2	B.S.				
to Cor #3	159° 15'	1.18	0° 00'	119	S 35° 15' E
T@ Cor #3	B.S. on Δ #5				
to Cor #4 ✓	182° 43'	0.80	0-00	81	S 11° 56' E
T@ Cor #4	B.S. on Δ #6				
to Cor #5 ✓	164° 12'	1.31	0-00	132	S 30° 15' E
T@ Cor #5	B.S. on Δ #7				
to Cor #6 ✓	138° 49'	3.29	0-00	330	S 55° 45' E
T@ Cor #6					
to Cor #7 ✓	158° 00'	1.52	0-00	153	S 36° 30' E
	153° 23'	2.13		214	S 41° 10' E
	167° 46'	1.73		174	S 27° 05' E
	234° 56'	1.04		105	S 40° 15' W

Hayler
Gromwell

3-8-22

Iron Pin in Mound of Rocks 1' South of E. & W. Fence
20± W of Fence running North.

Old 2" x 3" Stake in Mound of Rocks S.E. Cor. Sec 5.

Wacsto's Road Survey Δ #16

3x3 Post 1' South of Fence

Stake 1' South of Fence 6' E of Water's edge.

5' E of Water's edge.

15' E of Water's edge.

10' E of Water's edge.

7' E of Water's edge.

10' E of creek

Ctr Road at head of draw

" "

" "

Barrett Property Survey (continued)

	297° 20'	4.23		424	N 77° 15' W
	307° 44'	6.29		630	N 67° 00' W
	143° 42'	1.82		183	S 51° 00' E
	75° 13'	0.50	+ 15° 16'	48	N 60° 45' E
?	338° 38'	2.32	+ 5° 34'	221	N 35° 50' W
?	339° 29'	1.80	+ 6° 20'	178	N 35° 00' W
T@ Cor #7					
BS on Cor #6					
to Cor #8	306° 27'	0.67	0° 00'		N 68° 00' W
T@ #8 BS on #7					
to Cor #9	326° 36'	1.62	00 00		N 48° 00' W
T@ #9 BS on #8					
to Cor #10	304° 46'	1.12	00 00		N 69° 50' W
T@ #10 BS on 9					
to Cor #11	307° 14'	1.12	00 00		N 67° 20' W
T@ #11 BS on 10					
to Nail	321° 05'	0.38			N 53° 36' W
to Cor #12	316° 26'	0.72			N 58° 00' W
T@ Cor #12 BS on #11					
to Cor #13	330° 23'	1.14			N 44° 10' W
T@ #13					
to Cor #14	341° 40'	1.31			N 32 50 W
T@ #14					
to Cor #15	339° 00'	1.00			N 35° 35' W

ctr. of Road
Δ #20 Wuester's Road Survey
ctr. of Road
" " "
" " "
Δ #19 Wuester's Road Survey
3-13-23
15' W of ϕ creek
10' W of water's edge
20' W of water's edge
18' W of water's edge
Nail in mound of rocks
20' W of water's edge
20' W of water's edge
20' W of water's edge
20' SW of water's edge

Sta	Azi	Rod	Vert	Dist	Mag. Bearing
T@15	BS. on 14				
to Cor#16	312°17'	0.86'			N 62°10' W
to Cor#1	35°39'±				
T@#16	BS on 15				
to Cor#1	58°10'				
to Cor#17	291°59'	1.45'			N 82°25' W
T@Cor#17	BS on 16				
to Cor#18	256°25'	4.28			S 62°00' W
T@#18	BS on 17				
to Cor#19	267°06'	2.84'			S 72°45' W
T@#19					
to 10+09	199°06'				S 73°10' W

35' or 40' SW of water's edge

65' from water's edge

OTAY - SAN DIEGO PIPE LINE
Survey of Pasture lot - Telegraph Canyon

	Azi	Rod	Vert X	Dist
T@C ^{#1}				
to 1/4 Sec Cor	341°00'	6.69 ✓	+4°34'	⁶⁶⁶ (670.64) ✓
to Δ A	161°00'	1.02 ✓	+10°47'	99.4 ✓
T@Δ A	H.I. 4.70	BS on	Cor #1	
BS Cor #1	341°00'	1.02	-10°47'	
to hub	"	.66	-9°00'	64.4
to Δ B	161°00'	1.07	+4°36'	107.3 ✓
to Δ C	"	2.85	+6°04'	282.8 ✓
to Δ D	"	4.06	+5°48'	402.9 ✓
T@ B	H.I. 4.55			
BS on A	341°00'			
to fence cor	270°29'	2.65	-4°47'	264 ✓
to Δ E	206°07'	2.08	+6°06'	206.6
	34°30'	2.55	-7°20'	252 ✓
	47°29'	2.57	-6°30'	250 ✓
	48°34'	3.35	-5°00'	333 ✓
	57°41'	2.32	-6°20'	230 ✓
to hub,	93°16'	1.91	-5°16'	190.4 ✓
	106°39'	1.92	-4°48'	192 ✓
	113°37'	2.25	-3°19'	225 ✓
	125°17'	2.97	-1°52'	298 ✓
	110°11'	1.70	-6°15'	169 ✓
	92°12'	1.52	-9°04'	149 ✓
	54°32'	1.65	-10°20'	161 ✓
	36°56'	2.45	-7°50'	241 ✓

Hayler
Burke

3-21-23
43

Mag Bearing

2 1/2" Pipe with tack set in concrete Cor #1 Tel. Can. Property
N 32° 50' W 2 1/2 x 2 1/2 Post marked ^{64 63}_{41 42} NE Cor. 64.

9" West of Muesle's hub on line
3 1/2" East of 2 1/2" Pipe with tack Cor #2 Tel. Can. Property

N 33° 25' W
To fence cor N.W. cor Pasture lot.

S 100° 20' W

⊕ Int. Main road and Tunnel road on Curve BC

⊕ Tunnel road on Curve

⊕ Main road

⊕ Tunnel road PT

Muesle's old hub on pasture lot

⊕ Tunnel road PC

" " PT

" " L in road

⊕ above ground in Creek Bot.

Creek Bottom

" "

" "

	Azi	Rod	Vert X	Dist
T@ E				
BS on B	26°07'			
	192°09'	2.20	+0°28'	221 ✓
	220°53'	2.92	-6°50'	289 ✓
	306°06'	1.97	-14°06'	186 ✓
	304°15'	2.07	-13°02'	197 ✓
	317°52'	2.66	-9°56'	259 ✓
	307°57'	3.13'	-5°52'	310.7 ✓
	336°31'	2.15	-12°20'	206 ✓
	320°43'	1.46	-16°52'	136 ✓
	304°21'	1.07	-18°00'	98 ✓
	206°07'	.19	00	20 ✓
T@ D				
BS on A	341°00'			
to Δ F	161°00'	1.87	+4°30'	186.8 ✓
T@ F				
BS on D	341°00'			
to Δ G	161°00'	0.86	-1°06'	57 ✓
	313°21'	1.76	-0°46'	177 ✓
	112°18'	2.11	-11°04'	204 ✓
	57°31'	1.65	-18°40'	149 ✓
	10°22'	3.25	-11°20'	313 ✓
	0°06'	4.05	-9°52'	394 ✓
	34°08'	2.18	-13°50'	206.5 ✓
	74°22'	1.81	-13°30'	172 ✓

SE Cor of Pasture fence
 SW " " " " "
 Jog in west " " at divide fence E+W
 " " " " " " " " " "
 NW Cor of Pasture lot
 Cor #3 of Tel. Can. Property 2 1/2" Pipe with tack
 NE Cor of Pasture lot
 E End of divide fence
 4" Pipe at E Pasture fence
 4" Conduit
 S 34°30' E
 S 34°25' E
 Intersection with 4" Conduit
 Air Valve on Conduit.
 4" Creek
 " "
 " "
 " "
 Hub-Wueste's cor of pasture lot
 4" Tunnel road angle point BC

	Azi	Rod	Vert x	Dist
T@F	117°38'	2.70	-6°50'	267 ✓
	121°38'	3.11	-5°28'	309 ✓
	124°55'	3.72	-3°44'	371 ✓
	125°00'	4.77	-1°40'	478 ✓
	123°42'	5.26	-1°01'	527 ✓
	125°17'	5.83	-0°45'	584 ✓

T@G

	Azi	Rod	Vert x	Dist
BS on F and NE Cor 64	341°00'			
to	140°23'	1.02		103 ✓ P ² / ₄ "
	141°06'	2.10		211 ✓ 25/14
	319°56'	-		
to Δ#2	131°53'	4.87 ✓	-0°02'	488

T@Δ#2

BS on G

to Δ#1	220°47'	0.16		17'
to Δ#3	81°05'	2.64 ✓		265'

3-26-23

T@F ^{341°00'} BS on NE Cor of 1/4 Sec 64.

to Δ H 161°00' 3.42 +4°46' 340.6 ✓

T@H BS on NE Cor of 64

to Δ I 161°00' 9.42 +3°56' 938.6 ✓

T@I BS on NE Cor of 64

to Δ J 161°00' 1.77 +4°52' 176.7

T@J BS on NE Cor of 64

to K 161°00' 2.45 246

60°17' 3.10

⊕ Tunnel Road Men Curve
 " " " - P.T.
 " " " P.C.L
 " " " P.T.
 " " " P.C.R.
 " " " Intersection with other road Creek ends here

⊕ Conduit

" " " At air valve
 Hub Δ#2 of Tunnel #4 Survey

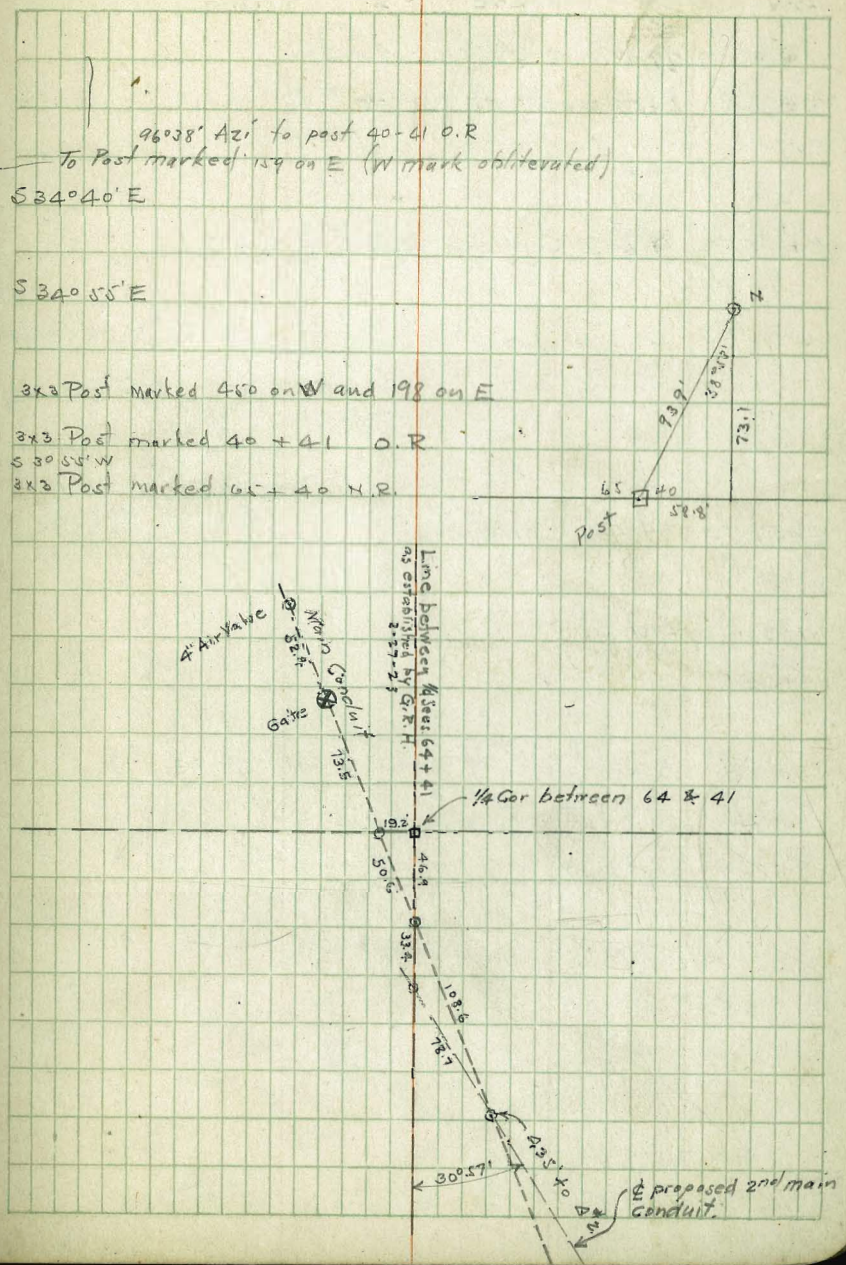
S 34°30' E

S 34°30' E

Post marked 162 on N 500 on S

Sta	Azi	Rod	Vert &	Dist
T@K	BS on			
to Δ L	161°00'	4.31	—	432 ✓
3-27-23 T@L	BS on K 171°47'	1.57		
to Δ M	161°00'	3.21 ✓	-3°21'	321 ✓
T@M	BS on			
to Δ N	161°00'	3.21 ✓	-7°24'	316.7 ✓
T@N	BS on M.			
to Post	170°36'	.30	0°-00'	31
to Post	74°20'	—		
to Post	199°53'	.99	-14°20'	93.9 ✓

Note, Established straight line between N.E. Cor of 1/4 Sec. 64 and S.E. Cor 1/4 Sec 65 and set 1/4 Cor on this line 1320' South of NE Cor 64. Measurements by Stadia. G.R.H. 3-27-23



G.R. Hayler
L. Burke

4-5-23
4-6-23
4-9-23

Lower Otay - San Diego - 2nd Main Conduit.

(Stationing along existing conduit)

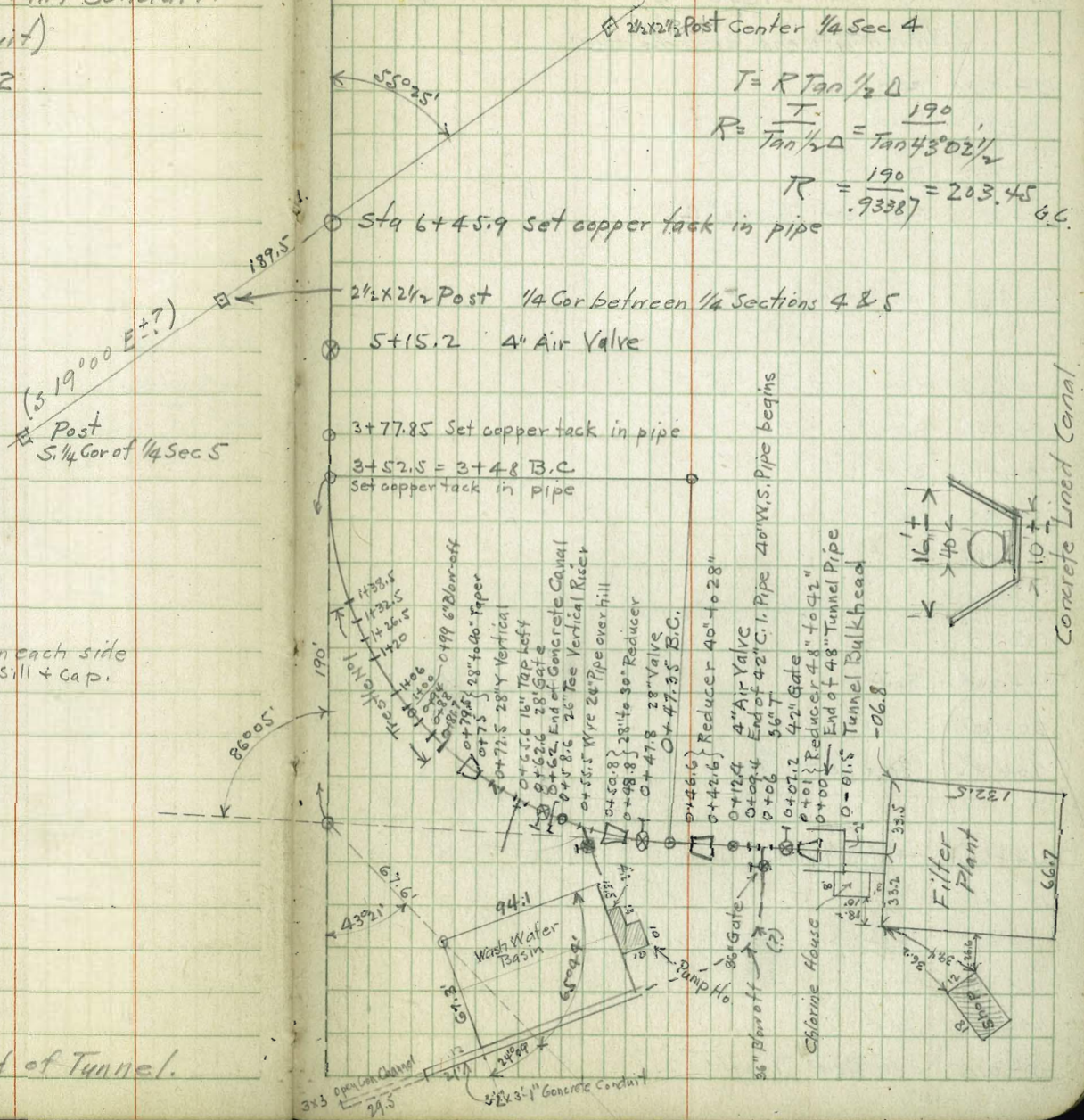
10+01.5 East bent of trestle # 2

6+45.9 N. & S. Gen. Line 1/4 Sec # 4

3+52.5 = 3+48 Equation

Trestle No	Station	Description	Notes
	1+38.5	East Bent	} No stringers
	1+32.5	Bent	
	1+26.5	"	
	1+20.0	"	
	1+06	Bent	} 2-4x12 Stringers on each side 3-6x6 Posts - 6x6 Sill + Cap.
	1+00	"	
	0+94	"	} No Stringers
	0+88	"	
	0+81.7	First bent	

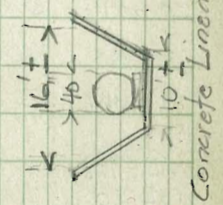
0+00 End of 48" Pipe at S End of Tunnel.



$$T = R \tan \frac{1}{2} \Delta$$

$$R = \frac{T}{\tan \frac{1}{2} \Delta} = \frac{190}{\tan 43^{\circ} 02' 1/2''}$$

$$R = \frac{190}{.93387} = 203.45 \text{ G.C.}$$



202
88
86

Lower Olay - San Diego - 2nd Main Conduit
(Stationing along existing conduit)

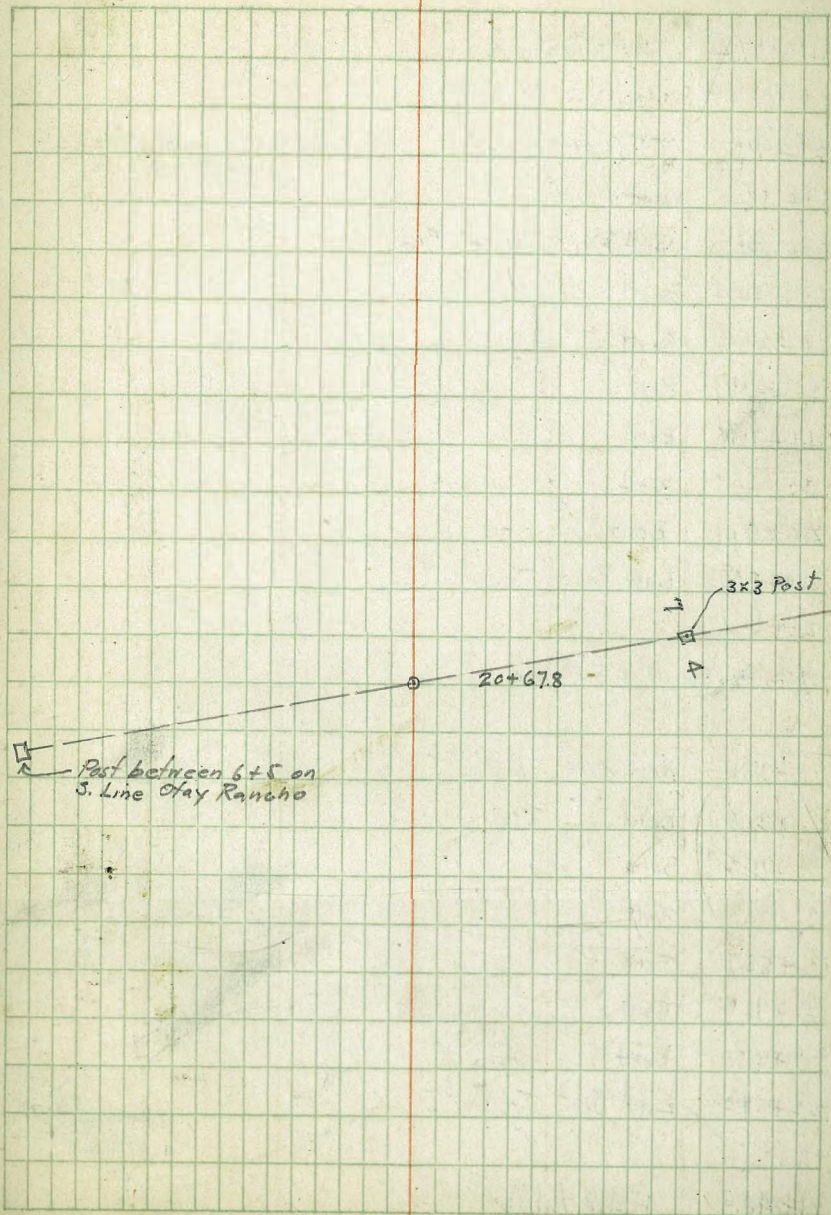
28+97.2 West Bent
 28+91.2 Bent
 28+85.2 Bent
 28+79.2 Bent
 28+73 East Bent Trestle #4

24+96.5 4" Air Valve

21+06.2 West Bent Trestle #3
 21+00.6 Bent
 20+94.6 Bent
 20+79.8 Bent
 20+64.8 Bent
 20+67.8 Sand Line
 20+57.3 6" Blow-off
 20+50 Bent
 20+34.8 Bent
 20+20.4 Bent
 20+14.4 East Bent Trestle #3

14+68.1 4" Air Valve

10+45.3 West Bent Trestle #2
 10+31.3 Bent
 10+16.3 Bent
 10+01.5 East Bent Trestle #2



48+07.4 Landline

41+99 6" Blow-off

41+56.0 West Abutment

41+50.3 West Bent Trestle #6

41+44.4 Bent

41+39.4 Bent

41+24.7 Bent

41+10.5 Bent

40+96.7 Bent

40+91.1 Bent

40+84.3 East Bent Trestle #6

34+82.8 4" Air Valve

+27.1 West Bent Trestle #5

+21.3 Bent

+15.2 Bent

33+00.8 Bent

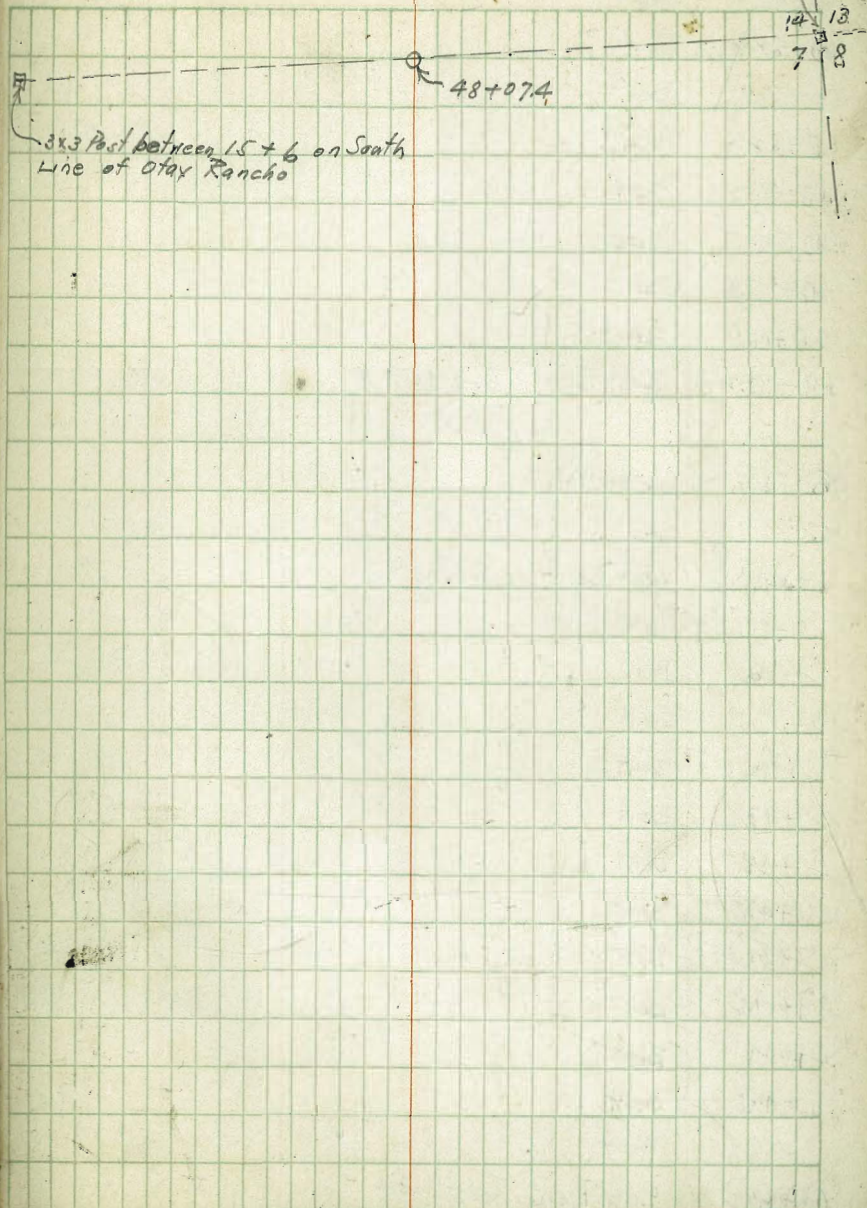
+85.7 Bent

+71.0 Bent

+65.8 Bent

32+59.2 East Bent Trestle #5

31+40.9 4" Air Valve



61+00 West Bent Trestle # 8
60+96.3 Bent
60+82.3 Bent
60+67.3 Bent
60+52.3 Bent
60+37.3 Bent
60+22.7 Bent
60+07.8 Bent
60+01.5 Bent

x 59+98.2 East Bent Trestle # 8

56+72.7 4" Air Valve

+43.5 West Bent of Trestle # 7

+37.5 Bent

+22.5 Bent

50+07.5 Bent

+92.5 Bent

+77.5 Bent

+62.5 Bent

+47.5 Bent

+32.5 Bent

49+17.5 Bent

49+09 Bent

+94.5 Bent

+88.5 Bent

48+83.2 East Bent Trestle # 7

49+13.5 old Hub under Trestle

72+46.5 West Bent Trestle #10

72+31.5 Bent

72+16.5 Bent

72+01.5 Bent

71+86.5 Bent

71+71.6 Bent

71+57.1 Bent

71+42.8 Bent

71+36 East Bent Trestle #10

70+26.3 3" Air Valve

67+87.5 West Bent Trestle #9

67+81.3 Bent

67+75.3 Bent

67+60.5 Bent

67+46 Bent

67+31 Bent

67+16 Bent

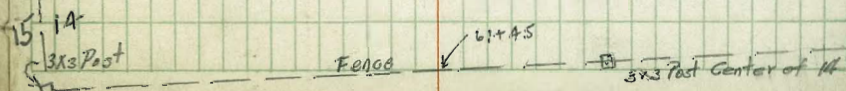
67+01 Bent

66+86.3 Bent

66+81 East Bent Trestle #9

63+77 3" Air Valve.

61+45 Fence



89+92.5

3" Air Valve

84+61.0

3" Air Valve

87+08.3

West Bent Trestle #12

87+07.5

Bent

81+86.8

Bent

81+72.0

Bent

8460 B.C

81+57.5

Bent

81+42.3

Bent

81+27.3

Bent

81+12.5

Bent

80+98

Bent

80+92

East Bent Trestle #12

78+22

West Bent Trestle #11

78+16

Bent

78+10

Bent

78+03.4

Bent

77+88.5

Bent

77+73.5

Bent

77+58.5

Bent

77+52.5

East Bent Trestle #11

77+25.3

4" Air Valve

103+83 Center of Road from Otay Valley

100+34.7 3" Air Valve

99+02.0 West Bent Trestle #14

98+87.5 Bent

98+72.8 Bent

98+57.7 Bent

98+42.7 Bent

98+28 Bent

98+22 Bent

98+16 East Bent Trestle #14

96+71 3/4" Meter

96+41.6 3" Air Valve Barn 20x32 100' Lest

93+56 West Bent Trestle #13

93+50 Bent

93+44.4 Bent

93+29.6 Bent

93+14.6 Bent

93+00 Bent

92+85.0 Bent

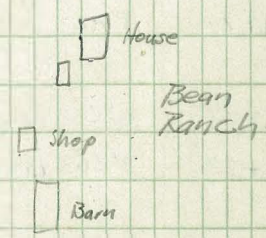
92+70.0 Bent

92+55.0 Bent

92+40.6 Bent

92+34.6 East Bent Trestle #13

97+60



128+73.2 3" Air Valve
 124+84 Road to Bean Ranch
 124+12 3/4" Meter Barn 100' Right

119+82.7 Bent West Bent Trestle #16
 119+76.5 Bent
 119+70.5 Bent
 119+56 Bent
 119+50 Bent
 119+44 East Bent Trestle #16

115+06.7 3" Air Valve
 108+33.0 3" Air Valve

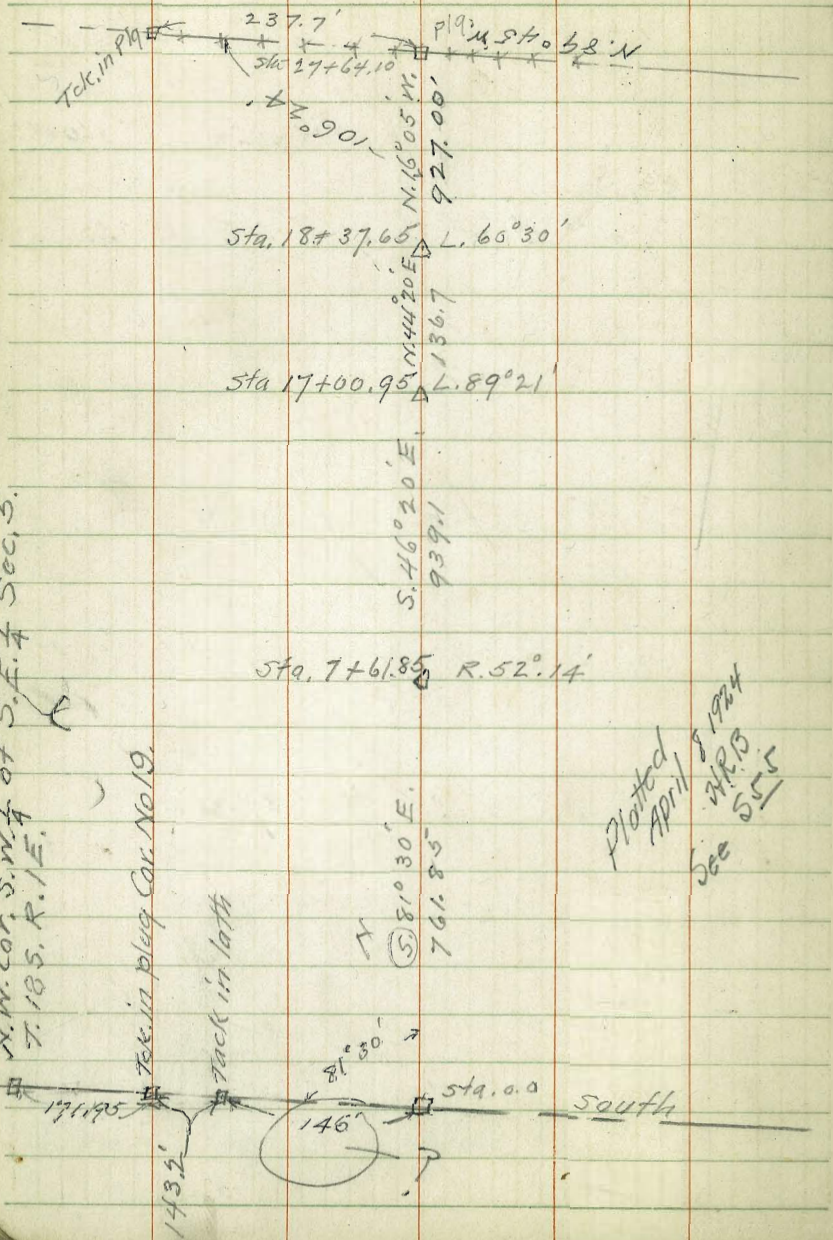
105+50 West Bent Trestle #15
 105+44.0 Bent
 105+38.0 Bent
 105+23.3 Bent
 105+08.3 Bent
 104+93.3 Bent
 104+78.3 Bent
 104+63.3 Bent
 104+48.6 Bent
 104+33.6 Bent
 104+19.6 Bent
 104+13.6 East Bent Trestle #15

Bean Ranch

135445.65 Center of T Coronado Nye

Survey of the Denari property (or Barrett)
courses magnetic.

2/3/24. $\frac{91}{25}$ 56
116



N.W. cor. S.W. 1/4 of S.F. 4 Sec. 5.
T. 185. R. 1 E.

Tak. in plug Car. No. 19.

Tack in lath

Plotted
April 5 1924
W.R.B.
See 555

Check of Denari Property Survey
4-13-24

Sta	Stadia Dist	Defl.	Mag. Co.	R.C. Wueste
A @				
Bson	295	Chain		R.B. Murphy
to	780 760 ⁸⁵	98° 30' Lt	N 81-30 E	A.M. Logan
A @				
Bson				
to	958 937 ⁹⁵	52-13 Rt	546-25 E	
A @				
Bson				
to	138 136 ³⁰	89-16 Lt	N 44-20 E	
A @				
Bson				
to	275 674 926 ⁰⁵	60-29 1/2 Lt	N 16-10 W. 700	
A @				
Bson				
to	240 * 236 ⁹⁰	73-37 Lt	N 89-30 W	
to A #19		81-13 1/2 Lt		
A @ A 19				
Bson				
to	289 ⁰⁰	82-43 Lt	LL check 24	
			98-30	52-17
			89-16	
			60-24	
			82-13 1/2	
			82-43	
			41 24 2	52-13
			52 13	
			359-59	

Var plate N15-00E

= pt on line Rancho and

Bequith 4-17-24
Wueste - Murphy
Angles 4-28-24

5876 57
Requisition No. Z

AT STA 1 $8^{\circ}50'$ RT N-4
SIGHT-0-2

AT STA 4
SIGHT #1 $0^{\circ}43\frac{1}{2}'$ LT
To 23

SIGHT #4
AT 23 $24-31\frac{1}{2}$ LT
To 24

AT 24
SIGHT 23 $84^{\circ}01\frac{1}{2}'$ LT
To 29

AT 29
SIGHT 24 $39^{\circ}20'$ LT
To 30

AT 30
SIGHT 29
in saddle.
To 34 $80^{\circ}30'$ RT

AT 34
SIGHT 30 $65^{\circ}53\frac{1}{2}'$ RT
To 35

AT 35
SIGHT 34 $2^{\circ}04'$ L.
To TEMP.

AT TEMP. $0^{\circ}42'$
SIGHT 35 $1^{\circ}42'$ L.
To 37

AT 37
SIGHT TEMP. $22^{\circ}48'$ L.
To 38

N 32 ϕ 45 W
MAG.

15 ϕ 06 $\frac{1}{2}$
RT BACK
To #3

FOR WHICH REQUIRED:

ITEMS
EXCEED
ALLOWANCE

Traverse of Road East of
L.O. Dam, from the south line
to East line of Jaral Ranch

On 6th = N. 52° 30' W. 0th = N 7° 00' 58

Sta.	Dist	Stadia	Defl.	CO	Mag.
to	FS. ON STA 2 R.R.				
1	128.45	128.40	76.16 R	16041 R	N 7-14 E (N 23.4)
to					N 23-55 E
2	221.72	222.00	8° 05' R	N 3200 E	N 32° 00'
to					
3	180.85	181.00	32° 20' L	N 9-20 W	N 0° 30'
to					
4	170.00	170.00	46° 46' R	N 46-26 E	N 46° 20'
to					
5	741.25	740.00	30° 35' R	N 77-01 E	N 77° 00'
to					
6	367.75	367.	6° 23' R	N 83-24 E	N 83° 10'
to					
7	214.40	215.	62° 04' L	N 21-20 E	N 21° 08'
to					
8	99.60	99.00	41° 48' L	N 20-28 W	N 20° 35'
to					
9	205.20	205.0	35° 41' R	N 15-13 E	N 15° 00'
to					
10	319.87	320.	43° 53' R	N 59-06 E	N 58° 50'
to					
11	212.30	212.	29-54 29° 58' R	N 89-04 E	N 89° 00'
to					
12	94.10	94.00	31° 24' L	N 57-40 E	N 57° 30'
to					
13	89.1	89.0	31° 00 36° 00' R	S 86-20 E	N 88° 30'

= pt. on S. line of Jaral
sight on Sta. 2 Ridge Road

FOR WHICH REQUIRED:

MS
XCEED
LLOWANCE

Requisition No. Z 5876

Sta.	Dist	Stadia	Def.	Co	Mag/Co
to 14	204.7	205.	16° 51' RT (75-27)	S69° 29' E	S74° 35' E
to 15	108.85	108.	75° 26' L	N35° 05' E	N30° 00' E
to 16	213.63	213.5	36° 15' RT		N66° 05' E
to 17	173.20	173.	37° 28' RT		S76° 30' E
to 18	154.40	155.	29° 31' L (3-42)		N74° 00' E
to 19	165.40	165.	3° 43' L (41-57)		N70° 10' E
to 20	99.50	99.0	41° 51' RT (96-36)		S67° 40' E
X to 21	149.70	150.	96° 54' RT L+ ✓ (15-32)		N15° 15' E
to 22	171.15	171.0	15° 33' RT		N31° 05' E
to 23	149.10	149.	26° 59' RT		N58° 00' E
to 24	354.70	355.	57° 33' L (10-02)		N0° 30' E
to 25	231.25	231.	10° 03' L		N9° 30' N
to 26	678.30	675.	47° 23' RT (21-02)		N37° 50'
to 27	201.50	200.	21° 03' RT		N58° 50'
to 28	354.0	355.	2° 45' L		N56° 00'
to 29	381.40	380.	123° 39' RT		S0° 25'

AT 1	BS. 11	131-10 ¹ / ₂	L7
BS. 0	To 27		
To 2	16° 40' R		
AT 2	BS. 1	7-33	L
BS. 1	To 4		
AT 4	BS. 2	60° 09 ¹ / ₂	R
BS. 2	To 5		
AT 5	BS. 4	61° 10'	R
BS. 4	To 6		
AT 6	BS. 5	94° 26'	L
BS. 5	To 9		
AT 9	BS. 6	29° 13'	L
BS. 6	To 10		
AT 10	BS. 9	87° 44 ¹ / ₂	RT
BS. 9	To 11		
AT 11	BS. 10	14-52	RT.
BS. 10	To 24		

AT 24
BS. 11 131-10¹/₂ L7

To 27

AT 27 116-21¹/₂ R

BS 24 2

To 28 (MAG N59° 10' E)

AT 28 5° 32' LT

BS 27 2

To 29

MAG = N56° 40' E

14
65 30 24
65 35 24

= Pt on E Line Janal Ranch

Sta.	Dist	Stadi
to 14	204.7	205.
to 15	108.85	108.
to 16	213.63	213.
to 17	173.20	173
to 18	154.40	155
to 19	165.40	16
to 20	99.50	99
X to 21	149.70	15
to 22	171.15	1
to 23	149.10	1
to 24	354.70	3
to 25	231.25	
to 26	678.30	
to 27	201.50	200.
to 28	354.0	355.
to 29	381.40	380.

N 32 40 W
 93 50

 126
 180

 54

5876
 Z

59

= Pt on E Line Janal Ranch

Initial Bearing of Traverse

Beginning page 58

Sta. Dist. Stadia Defl. Co. Mag. Co.

π @ 0 (Crawell survey)

BS on 19

530-27E

to 1 (Crawell survey)

142-26 Lt N 7-07 E N 26-0 E

to 12

190-35 Lt N 41-02 W N 21-30

to 5

203-11 Lt N 53-38 W N 34-05

to 3

211-27 Lt N 61-54 W N 42-25

to 1

not visible

π @ 0 (Crawell survey)

BS on 3 page 57

561-46 E

to 1 (Crawell survey)

111-00 Lt N 7-14 E N 26-30 E

π @ 0 (Crawell survey)

BS on 1 page 57

579-32 E

to 1 (Crawell survey)

93-14 Lt N 7-14 E

OR WHICH REQUIRED:

BY	Correction	
506 page 69		
560 page 68 (540-58 E)	+4	
560 pg 57 (553-31 E)	+7	2027
560 pg 57 (561-46 E)	+8	2031
560 pg 57 (579-32 E)		25338
		180
		533
		530.2 E
		140.31
		221.02
		150
		4106
		530.2 E
		142.31
		172.53
		17
		17-07 E
		2007
		2127
		2485
		50
		6154

Requisition No. Z 5876

60

64

SEED ALLOWANCE

Dept. No.)

Receipt

DATE.....1920

No. Z
5877

WARD RECEIPTS PROMPTLY TO PURCHASING DEPART-
MENT, WEIGHT, AMOUNT, DESCRIPTION OR MEASUREMENT.

RECEIVED UNDER REQUISITION
the Following in Good Order

For.....Dept.

FROM.....

San Diego, California

.....1920

BY.....

TO PURCHASING DEPARTMENT

UNDER PROVISIONS OF ORDINANCE NO. 5051, FURNISH
THE FOLLOWING TO DEPARTMENT OF

Otay Pipe Line and Dist. Bond

DELIVER TO

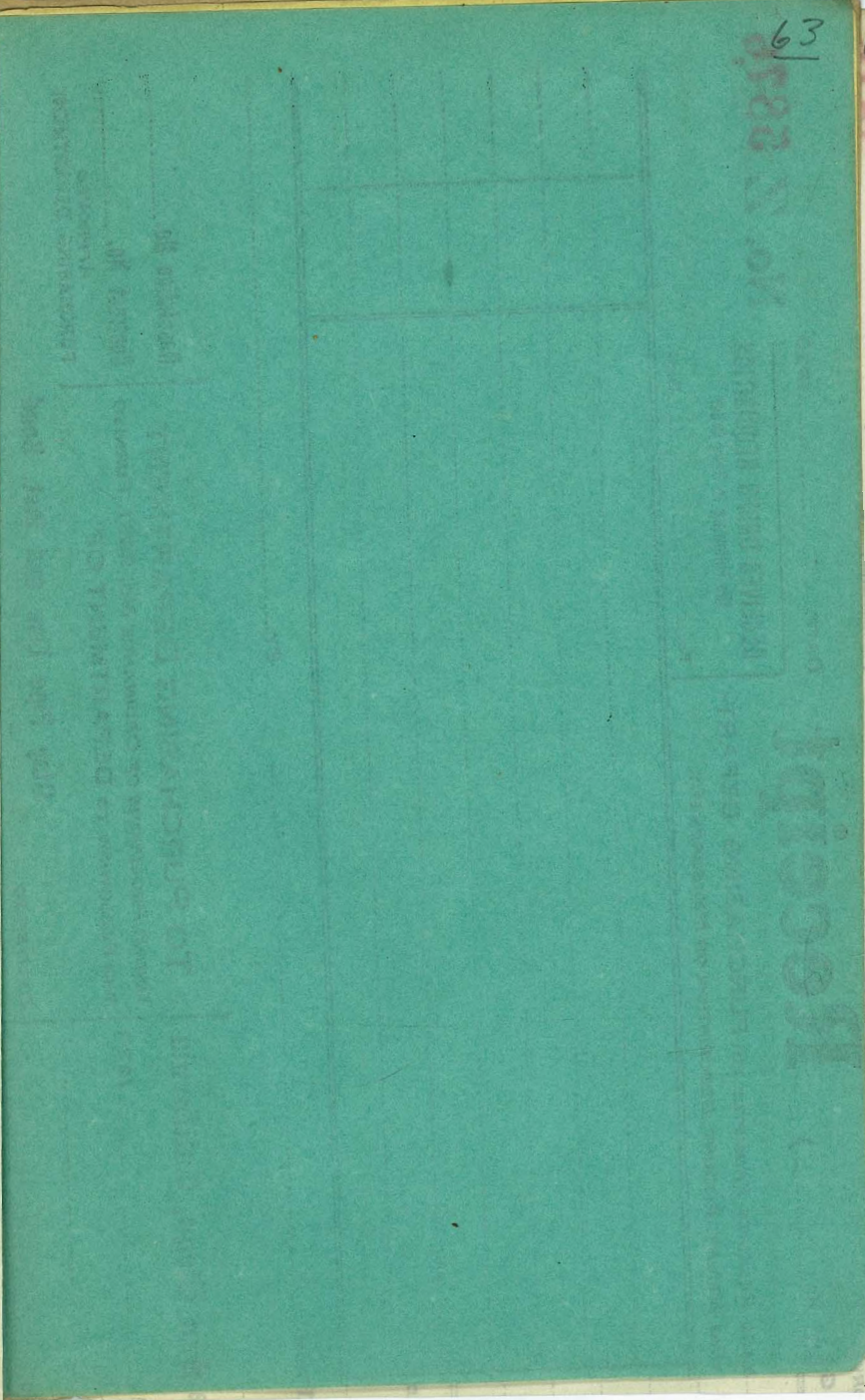
No.

By.....

Resolution No.

Contract No.

APPROVED
PURCHASING DEPARTMENT



63

66

RECEIVED UNDER REQUISITION

Receipts

Dept. No.

Receipt Receipt

DATE

DATE 1920

No. Z 5876

Receipt No.

RECEIVED UNDER REQUISITION
the Following in Good Order

WARD RECEIPTS PROMPTLY TO PURCHASING DEPART-
MENT. WEIGHT, AMOUNT, DESCRIPTION OR MEASUREMENT.

For Dept.

By

Sau Diego, California

TO PURCHASING DEPARTMENT

UNDER PROVISIONS OF ORDINANCE No. 5057, FURNISH
THE FOLLOWING TO DEPARTMENT OF

City Pipe Line and Dist. Bend

DELIVER TO

Resolution No.

Contract No.

APPROVED
PURCHASING DEPARTMENT

287610
66
64

Z 5876

Upon receipt of material ordered by you as noted on this copy of requisition sign this slip and return same to Requisition Clerk at once, carefully checking all items hereon as to weights, amounts, etc.

65

Receipt

Dept. No.)

DATE.....1920

No. Z 5876

WARD RECEIPTS PROMPTLY TO PURCHASING DEPARTMENT.
IVING WEIGHT, AMOUNT, DESCRIPTION OR MEASUREMENT.

RECEIVED UNDER REQUISITION
the Following in Good Order

For.....Dept.

FROM.....

San Diego, California

BY.....

TO PURCHASING DEPARTMENT

UNDER PROVISIONS OF ORDINANCE NO. 5051, FURNISH
THE FOLLOWING TO DEPARTMENT OF

Otay Pipe Line and Dist. Bond

DELIVER TO

No.

By.....

Resolution No.

Contract No.

APPROVED
PURCHASING DEPARTMENT

СЕРТИКАТ ДО
АНЕ ЛОТТОНИА ДО ДЕБЪЛМЕИТ ОЕ
ПРИЕД ВЪВЕДИВА ОЕ ОБЪЕКТИВЕ НА БЪЛГАРИЯ
ДО ВЪВЕДИВАНИЕ ДЕБЪЛМЕИТ

ОСТАВЪН ДО
ДЕБЪЛМЕИТ

ВЪВЕДИВАНИЕ ДЕБЪЛМЕИТ
УВЕЩАВА
СЕРТИКАТ
РЕЗЕРВЪН №

СЪМ
ПРИЕТИЕ И ВЪВЕДИ
РЕСЕРВЪН РЕДЕН РЕКОПИЛОН

№ 2818
66

РЕСЕРВЪН

Traverse of Ridge Route thru Janal Ranch

Lower Otoy to Route No 9

T@ 0 Dist stadia Defl Co. Mag. Co.
 F.S. to 1 532.15 530 N8-42W N8-40W

to R.J. #2 2535 80-44L N89-26W N89-10W

T@ 1 Note: See line change page 71

B.S. on 0
 to cattle guard 109-10R 579-32E 579-30E
 to 2 664.5 670 3-38L N12-20W N12-20W

T@ 2

B.S. on 1
 to 3 494.25 495 10-06R N2-14W N2-05W

T@ 3

B.S. on 2
 to cattle guard 120-28R 561-46E 561-40E
 to 4 2886.5 288 13-02R N10-48E N10-50E

T@ 4 N10-49½E

B.S. on 3
 to 5 342.9 342 15-58L N5-10W N5-05W

T@ 5

B.S. on 4
 to cattle guard 131-39R 553-31E 553-30E
 to 6 390.3 390 10-47L N15-57W N15-55W

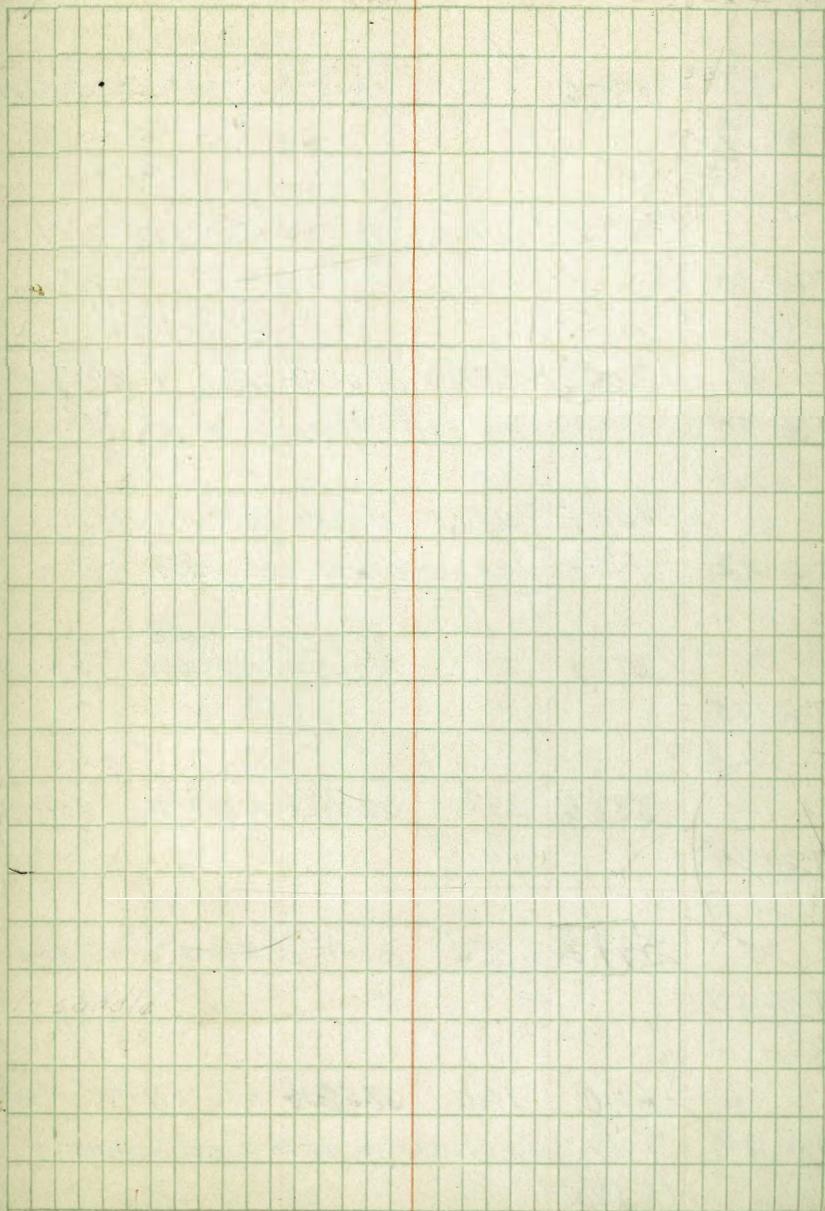
T@ 6

B.S. on 5
 to fence cor 6-20R N9-37W N9-35W
 to 7 321.7 322 30-23½L N46-20½W N46-20W

T@ 7

B.S. on 6
 to 8 474.7 474 37-59½R N13-21W N13-20W

Continued page 68



Continued from page 57.

T@ 8

Stadio Defl. Co. Mag Co

BS on 7

to fence cor.
to 9

175.6

175

115-25R 577-56E 577-50E
13-57L N27-18W N27-15W

T@ 9

BS on 8

to 10

112.2

111

10-10L N37-28W N37-25W

T@ 10

BS on 9

to 11

324.2

324

29-01R N8-27W N8-30W

T@ 11

BS on 10

to 12

407.65

405

9-37R N1-10E N1-E

T@ 12

Note: see line change page 72

BS on 11

to cattle quarry
to 13

277.2

277

137-52R 540-58E 541-E
27-16R N28-26E N28-25E

T@ 13

BS on 12

to 14

338.6

338

22-11L N6-15E N6-10E

T@ 14

BS on 13

to 15

354.2

354

36-17L N30-07W N30-W

T@ 15

BS on 14

to 16

161.0

160

14-38R N15-24W N15-20W

T@ 16

Note: No change of line advisable

BS on 15

to 17

184.75

184

34-42R N19-18E N19-15E

68

on old fence line (bears S58°40'W and N39°40'E)

Note: Investigate change of location from 12 to 15

Note: Investigate change of location from 17 to 20

T @ 17 Stadio Defl. Co. Mag. Co.

BS on 16
to 18 337.6 338.7 50-13 Rt N69-31E N69-30E

T @ 18
BS. 17
to 19 114.9 114.8 37-09 Lt N32-22E N32-20E

T @ 19
BS. on 18
to cattle guard
to 20 224.6 325 117-11 Rt 830-27E 530-30E
23-18 Lt N9-04E N9-E

T @ 20
to 21 328.2 328.0 41-29 Lt N32-25W N32-30W

T @ 21
to 22 293.3 293. 12-59 Rt N19-26W N19-30W

T @ 22 Note: No change of line advisable

to 23 223.0 223.0 46-19 Rt N26-53E N26-45E
T @ 23

550.8 550.0 43-54 1/2 Lt N17-01 1/2 W N17-05 W
T @ 24 N16-54 W

to 26 478.65 480 34-37 Lt N51-38 1/2 W N51-50 W
T @ 25

Angles to here by Waste-Murphy
Angles from here by Bell-Murphy

Note: Investigate change of location 22 to 26
30' west of RI present road tangents

Sta	Dist	Stadia	Defl	Co	Mag Co
π@26					
B.S. on 24					
To 27	360.34	362	23-59R	N27-39 ¹ / ₂ W	N27-45W
π@27					
To 28	230.20	230	34-10L	N61-49 ¹ / ₂ W	N61-50W
π@28					
To 29	343.60	344	41-24 ¹ / ₂ L	S76-46W	S76-55W
π@29					
	494.48	495	24-27R	N78-47W	N78-40W
π@30					
B.S. on 29					
to RJ#1	529.26	532	43-37L	S57-36W	S57-40W
π@RJ#1					
B.S. on 30					
to fence line	✓	✓	13-47R	S71-23W	S71-05W
π@30					
B.S. on 29				N78-47W	
To 31	298.45	300	29-40R	N49-07W	N49-05W
π@31					
B.S. on 30					
to 32	362.15	364	15-50R	N33-17W	N33-20W
π@32	(Note: See line change page 72 Raw)				
B.S. on 31					
To 33	194.75	195	31-24L	N67-41W	N67-35W

Chaining by Bell-Murphy

XXX

Note: Investigate change of location 32 to 34

KEITH'S RAILROAD CURVE TABLES.

Published by KEUFFEL & ESSER CO., New York.

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by W. Keuffel & H. Esser, in the office of the Librarian of Congress,
in Washington, D. C.

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HOW TO USE KEITH'S TABLES.

EXAMPLE.

Wanted a Curve with an Ext. of about 12 ft. Angle
of Intersection or I. P. = $23^{\circ} 20'$ to the R. at Station
542+72.

Ext. in Tab. IV opposite $23^{\circ} 20' = 120.87$
 $120.87 \div 12 = 10.07$. Say a 10° Curve.

Tan. in Tab. IV opp. $23^{\circ} 20' = 1183.1$
 $1183.1 \div 10 = 118.31$.

Tab. V correction for A. $23^{\circ} 20'$ for a 10° Cur. = 0.16
 $118.31 + 0.16 = 118.47 =$ corrected Tangent.

(If corrected Ext. is required find in same way)
Ang. $23^{\circ} 20' = 23.33^{\circ} \div 10 = 2.3333 =$ L. C.

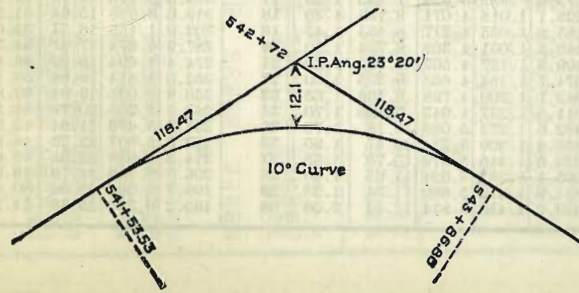
$2^{\circ} 19\frac{1}{2}' =$ def. for sta.	542	I. P. = sta.	542+72
$4^{\circ} 49\frac{1}{2}' =$ " " "	+50	Tan. =	1.18.47
$7^{\circ} 19\frac{1}{2}' =$ " " "	543	B. C. = sta.	541+53.53
$9^{\circ} 49\frac{1}{2}' =$ " " "	+50	L. C. =	2.33.33
$11^{\circ} 40' =$ " " "	543+	E. C. = Sta.	543+86.86
	86.86		

$100 - 53.53 = 46.47 \times 3' (\text{def. for 1 ft. of } 10^{\circ} \text{ Cur.}) = 139.41' =$
 $2^{\circ} 19\frac{1}{2}' =$ def. for sta. 542.

Def. for 50 ft. = $2^{\circ} 30'$ for a 10° Curve.

Def. for 36.86 ft. = $1^{\circ} 50\frac{1}{2}'$ for a 10° Curve.

(These tables are published in Field Books of
KEUFFEL & ESSER CO., New York, N. Y.)



Sta Dist station Def. Co Mag. Co.

T@ 33

B.S. on 32

to 34 424.55 425 45-04 R N22-37 W N22-45 W

T@ 34

B.S. on 33

to 35 724.15 730 17-01 1/2 R N5-35 1/2 W NS-45 W

T@ 35

B.S. on 34

to 36 664.1 662 0-43 R N4-52 1/2 W N5-05 W

T@ 36

B.S. on 35

to 37 1356.30 1355 4-15 L N9-07 1/2 W N9-20 W

T@ 37

B.S. on 36

to 38 497.80 497 23-40 L N32-47 1/2 W N33-06 W

T@ 38 (S Line Co Road)

B.S. on 37

to fence cor S Line Road 93-20 L N32-40 W 553-55 W

Line change see page 57

T@ 41

B.S. on 0

to 1 1/2 449.25 450 5-00 L N13-42 W N13-40 W

T@ 1 1/2

B.S. on 1

to 2 215.51 216 4-10 1/2 R N9-31 1/2 W N9-30 W

T@ 2

B.S. on 1 1/2

to 3 7-17 R N2-14 1/2 W N2-15 W

OR WHICH REQUIRED:

VS
KEEP
LOWANCE

Requisition No. Z 5877

21

Line Changes on Ridge Route

Road. see page 70

Sta.	Dist.	Stadia	Def.	CO	Mag. CO.
				N33-17W	
π 32 B.S. on 31 to 33a	188.15	187.	27.49 1/2 L	N61-06 1/2 W	N61 W
π 33a B.S. on 32 to 34	415.46	416	35-37 R	N.25-29 1/2 W	N25-35 W
π 34 B.S. on 33a to 35			19-54 R	N.5-35 1/2 W	N5-40 W
Crawell Murphy 5/14/24					
π 12 B.S. on 11 to 13a	560 page 68 343.15	68 345.5		N1°10'E	
π 13a B.S. 12 to 14a	305.1	305.05	8°06' R	N9°16'E	N9°15'E
B.S. 13a to 15	275.3	275.6	0-52 R	N10-08E	N10-10E
π 15 B.S. 14a to 16			35-21 L	N25-13W	N25-10-W
			9-49 R	N15-24W	N15-25W

72

1.10
8.06
9.16
0.52
9.68 = 10.08
35.27
2513
949
1524

Dept. No.)

Receipt

WARD RECEIPTS PROMPTLY TO PURCHASING DEPARTMENT
GIVING WEIGHT, AMOUNT, DESCRIPTION OR MEASUREMENT.

DATE.....1920

RECEIVED UNDER REQUISITION

the Following in Good Order

For..... Dept.

No. Z 5877

FROM.....

San Diego, California

.....1920

BY.....

TO PURCHASING DEPARTMENT

UNDER PROVISIONS OF ORDINANCE NO. 5051, FURNISH
THE FOLLOWING TO DEPARTMENT OF

Resolution No.

Contract No.

APPROVED
PURCHASING DEPARTMENT

TO.....

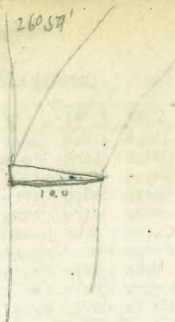
DELIVER TO

Otay Pipe Line and Dist. Bond

BY.....

Oct. mileage

8	34
10	34
13	49
15	42
16	34



13° 29 1/2'

169+34.8
- 24
169+108
166+74
236.8
76
312.8

O. L. Dotson
17th

19	57	74
12	79	81
104.5	200	21.
130.3	200	21
	200	18
	200.05	2190
	926.05	236.90

$$\begin{array}{r} 250 \quad 86 \\ 657 \quad 29.8 \\ \hline 2151 \quad 157.8 \end{array}$$

9.16
 9.52
 9.68
 34.78
 38.52
 73.30
 73.28
 255.55
 40° 50' 24"
 3° 12' 45"
 86° 15' RT
 58.72
 13
 510
 7.66
 52
 7.9
 7.14
 376
 720

$$\begin{array}{r} 926.45 \\ 155 \\ \hline 927.00 \end{array}$$

$$\begin{array}{r} 17.0095 \\ 136.7 \\ \hline 1837.65 \\ 926.45 \\ \hline 2764.10 \end{array}$$

$$\begin{array}{r} 365 \\ 30 \\ 25 \\ 17.7 \\ \hline 237.7 \end{array}$$

$$\begin{array}{r} 530 \quad 41 \\ 368 \quad 40 \\ 489 \quad 01 \\ \hline 3140 \quad 89 \end{array}$$

$$\begin{array}{r} 7.6685 \\ 939.1 \\ \hline 17.0095 \\ 1.16 \end{array}$$

$$\begin{array}{r} 16 \\ 20.7 \\ \hline 13.67 \end{array}$$

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1½ TO 1.
 FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37.0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40.0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.