

1766



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CHICAGO

INDEXED

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W. L. Allen
 W. L. Ker
 Hendricks
 Becker
 Miramar Airport
 Ties

3-17-47
 Stations on
 offset line
 105 + 27.14 4" Pipe 10' dist of offset line

INDEXED
 W. L. K.
 SEP 19 1949

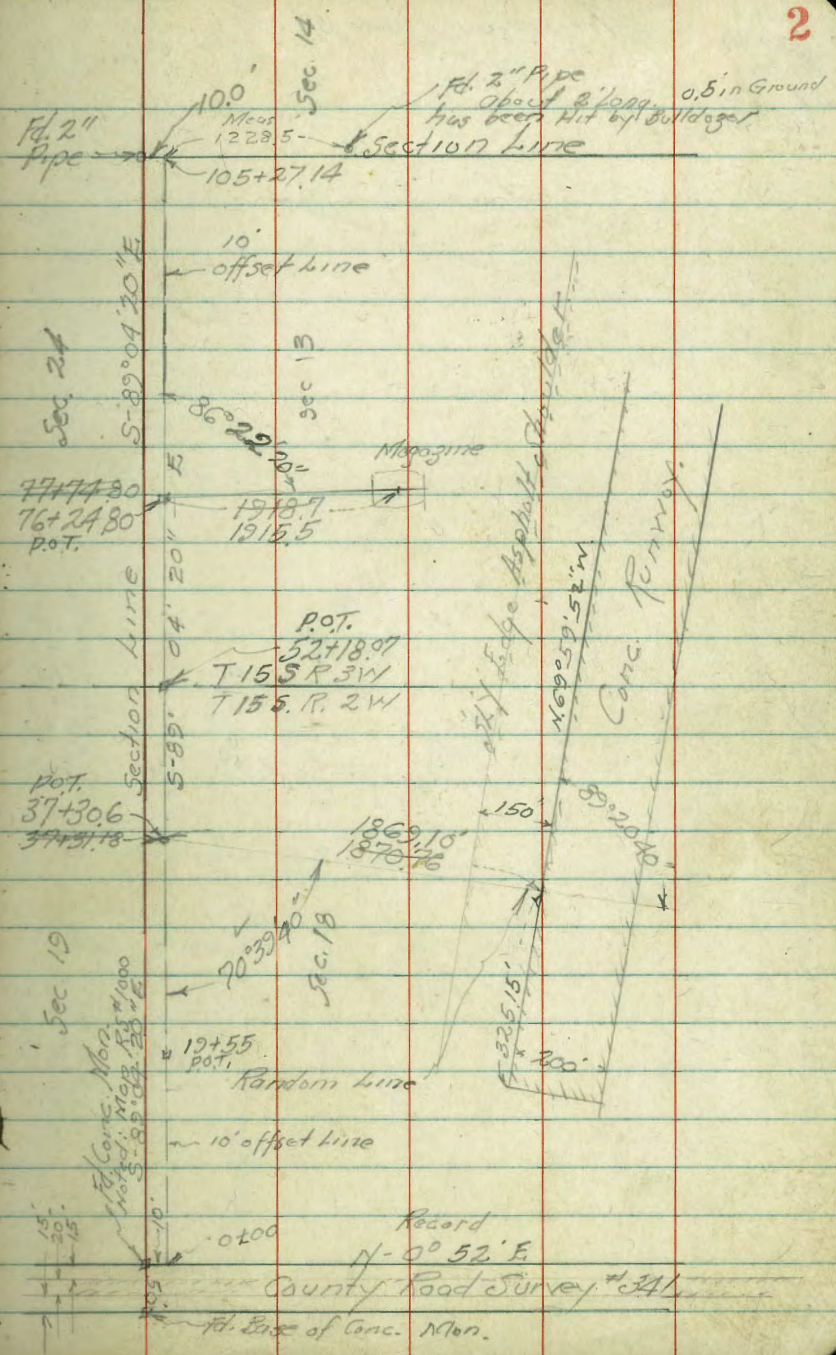
76 + 24.80 = P.O.T. Set Hub + Disk on offset line

52 + 18.07 = P.O.T. Set Hub + Disk on offset line

37 + 30.6 = P.O.T. Set Hub + Disk " " "

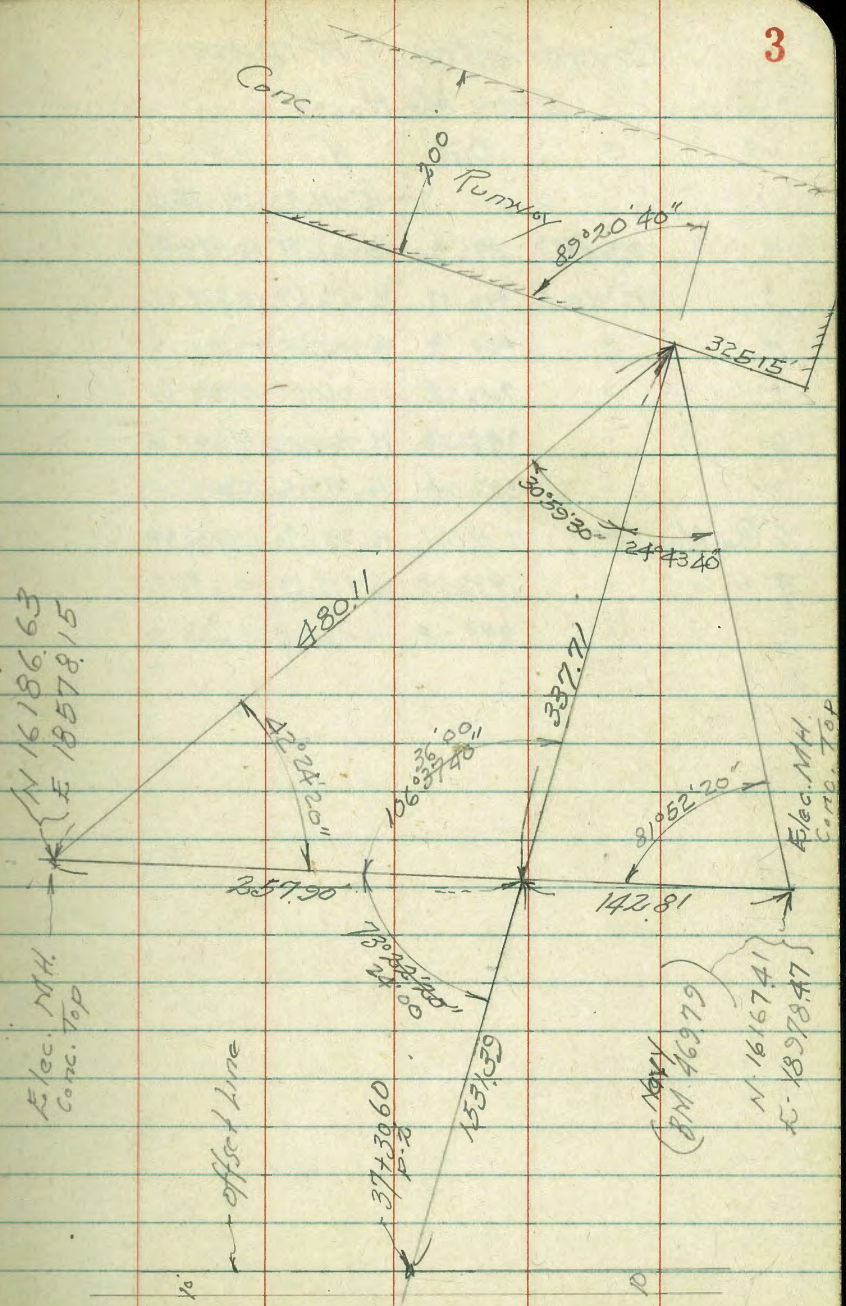
19 + 55 = P.O.T. Set Hub + Disk " " "

0 + 00 4" Conc. Mon 10' dist. of offset line



Walker
Hendricks
Becker
Johnson
3-20-47

Miramar Airport Ties



Co-ordinates - Miramar
Elec. M-H.

N ^o	C.	Dist.	N	E
1			16,144.97	19,374.15
2	S86°45'N E	396.30	16,167.41	18,978.47
3	S87°N W E	400.78	16,186.63	18,578.15
4	"	400.49	16,205.84	18,178.12
5	"	742.67	16,241.45	17,436.30
6	"	395.56	16,260.42	17,041.20
7	"	397.04	16,279.46	16,644.61
8	Con. Mon	1114.51	16,332.90	15,531.39
9	" "	933.55	16,377.67	14,598.91
10	" "	999.28	16,425.59	13,600.78

STADIA Survey 4
Possible Route from US 395 to Gibbs Airport

Starting Point Hwy 395
and Canyon leading to Gibbs Airport

June 19-1947

Patterson ✓

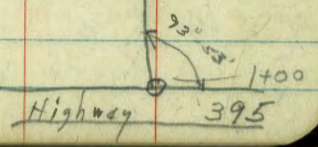
Berrayan X

Sherrill Rod

Standley Ave

Sta	Stadia Dist	Vert Angle	Horiz Angle	Magnetic Bearing	Corrected Horiz Dist	Elev.	Diff in Elev	+S	-
0+00 Δ			93°53'00"	S-56°00'W		77.8		4.63	
0+32	12					76.5			5.9
0+58	32					69.4			13.0
	200					70.9			11.5
	390	-3°18'			388.7		22.5		
	585	0°38'							
$\angle 1 \Delta$	585'	-0°38'	R 31°23'30"	S W #87.30	585	71.1	6.6	5.20	11.80
	15'					64.6			11.80
	187'					71.2			5.20
	328					75.0			1.4
#2 \rightarrow \odot POT	435'	+1°09'			434.8	79.7	8.52	5.3	
#2 \rightarrow \odot POT									
Right Side	33'	-1°30'			33	79	.8		Slope up 60°
Left Side	92'	+2°04'			91.8	83.0	3.3		Slope up 30°
	186	+4°02'			185.1	92.8	13.1		
	331	+4°58'			328.5	109.2	29.5		
3. \odot POT	385	+5°0'			382	113.2	33.5	5.8	
Right side	55'	-2°55'			52.2	110.4	28		Slope up 60° to 12'
Left Side	57'	+8°00'			55.9	121.0	78		Slope up 35°
\pm	164	+1°55'			163.9	113	5.5		

11/60



Sta	Stadia Dist	Vert ✓	Horiz ✓	Magnet Bear	Correc Hor Dist	Elev	Diff in Elev	+S	-S
Δ Angle 8	264 ⁵	+3°-51'	16°-59' R	N-74°-30' W	262.4	222.5	10.62	5.2	
Right S	27'	-43°-39'							5.4
Left S	18'	+29°-14'							
	79'	+1°-55'				225.1	2.6		
	85'	-0°-33'				221.7	0.8		
	89'	-0°-40'				221.5	1.0		
	96'	+2°-53'				227.3	4.8		
	135'	+5°-5'				234.4	11.9		
Δ Angle 9	234 ¹²	+7°-10'	18°-32' R		230.4	251.5	29.0	4.5	
Right	43'	-24°-07'				235.5	16		7.6
Left	22'	+28°-26'				260.7	9.2		
	77'	+5°-43'				259.1	7.6		
	146'	+5°-46'				266.1	14.6		
	199'	+5°-38'				270.9	19.4		
	240'	+6°-03'				276.8	25.3		
Δ ¹⁰ Angle	324 ⁸	+5°-49'	10°-54' L	N-66°-45' W	320.7	284.0	32.5	5.2	
Right	{ 26' 61'	{ -20°-39' -30°-30'							5.2
Left	40'	+19°-09'							
	67	+5°-30'							
	131	+4°-25'							
	215	+4°-10'							
	274	+5°-05'							
	313	+5°-31'							
11 (10) 10	264	+5°-49'			360.3	318.5	34.5		

Creek - Bot

Sta	Stadia Dist	Vert \angle	Horiz \angle	Corrected Horiz Dist	Elev	Diff in Elev	+S	-S	
	230'	+0°-20'							
	271'	+1°-51'							Top of Canyon
⊙ POT 19	325	+2°-05'		325	379.6	11.8	5.1		
Right	19'	0°						8.8	
"	53'	0°						13.0	Bottom dry wash
Left	84'	0°						6.2	
⊙ POT 20	401	0°		401	383.2		5.0	1.4	
Right	86	0°						4.6	
Left	103	0°						5.2	
	109'	+2°-19'							
	213'	+3°-0'							
	300'	+3°-0'							
⊙ POT 21	363	+2°-48'		363	401.0	17.8	5.1		
Right	93'	+2°-13'							
Left	90'	0°						10.9	
	231	+0°-45'							
	249	+0°-27'							
⊙ POT 22	363	-0°-02'		363	400.8	0.2	5.0		Canyon 300' to left
Right	70'	+2°-57'							
Left	50'	0°						12.5	
	104'	-3°-24'							
	209'	-3°-09'							
⊙ POT 23	342	-1°-36'			391.3	9.5	+5.0		
Right	24'	+9°-25'							
"	55'	+8°-27'							

Sta	Stadia Dist	Vert L	Horiz L	Corrected Horiz Dist	Elev.	Diff. in Elev.	#I +	- S	
Left	64'	-7°-21'							
	144'	-1°-30'							
⊙ P.O.T. 24	265'	-0°-28'		265	389.1	2.2	5.2		
Right	27'	0°						2.7	
Right	69'	+7°-0'							
Left	70'	-6°-14'							
	52'	-6°-14'							
	98'	-7°-37'							X Canyon
	140'	-8°-35'							Bottom Canyon
	166'	-4°-58'							
	226'	-3°-06'							
	275'	-4°-30'							
	340	-2°-55'							
	370	-1°-44'							
⊙ P.O.T. 25	442'	-0°-31'		442	385.1	4.0	+5.2		
Right	25'	+9°-16'							
"	68'	+6°-57'							
Left	19'	0°						8.8	
"	51'	-12°-35'							Bottom was 4
"	96'	-6°-37'							
	18'							7.2	
	58'	-6°-47'							
	129'	-0°-55'							
	170'	+1°-0'							
	265	+0°-57'							

Sta	Stadia Dist	Vert ✓	Horiz ✓	Corrected Horiz Dist	Elev	Diff in Elev	+S	-S	
⊙ 26 POT #26	320	+0°-39'		320	388.7	3.6	5.1		
Right	52'							1.3	
Left	27							11.3	
Left	37'	-14°-31'							Bottom Dry wash
Left	70	-5°-53'							
	26							8.5	
	55'	-8°-44'							
	170'	-1°-18'							
	282'	+0°-20'							
⊙ #27	390'	+1°-54'		390	399.0	10.3			Yellow Panel on Ground 2x2'

Stadia line location

Proposed Road - Gibbs Airport

Azimuths Clockwise from True North

Station	Stadia	Azimuth	Dist. Horiz.	Diff. Elev.	True Elev.
---------	--------	---------	--------------	-------------	------------

on control	Reading from	2.8	Elev. 391.9	HI = 5.4	
------------	--------------	-----	-------------	----------	--

2000 N	481	+1° 01'			
1800 E. F.B. 1750-13		0° 00'			

2.6	on top of stake		Rod 86		388.7
-----	-----------------	--	--------	--	-------

This Area Contained. See Topog. Sheet

INDEXED

W. K.

SEP 19 1949

29	676	268° 51' 45"	+1° 26'	675.8	+1.8	408.8
----	-----	--------------	---------	-------	------	-------

Reading from 29 Elev. 410.0 HI = 5.4

28	675	88° 51' 45"	-1° 28'	674.8		409.2
----	-----	-------------	---------	-------	--	-------

30	712	268° 51' 45"	0° 00'	on Rod 50	+0.4	410.4
----	-----	--------------	--------	-----------	------	-------

Reading from 30 Elev. 410.4 HI = 5.5

29	715		-5.7			409.0
----	-----	--	------	--	--	-------

29	715	88° 51' 45"	0° 00'	on 5.7	-0.2	409.2
----	-----	-------------	--------	--------	------	-------

31	1025	268° 51' 45"	0° 00'	on Pl. 91	-3.6	405.6
----	------	--------------	--------	-----------	------	-------

Reading from 31 Elev. 405.6 HI = 5.4

30	1028	88° 51' 45"	0° 00'	on 2.1		405.8
----	------	-------------	--------	--------	--	-------

1700 N	32243 W	97	287° 31'	5.2	+0.2	405.82 on Hub
--------	---------	----	----------	-----	------	---------------

32	1064	268° 51' 45"	14.2		-8.8	396.8
----	------	--------------	------	--	------	-------

Reading from 32 Elev. 396.8 HI = 5.4

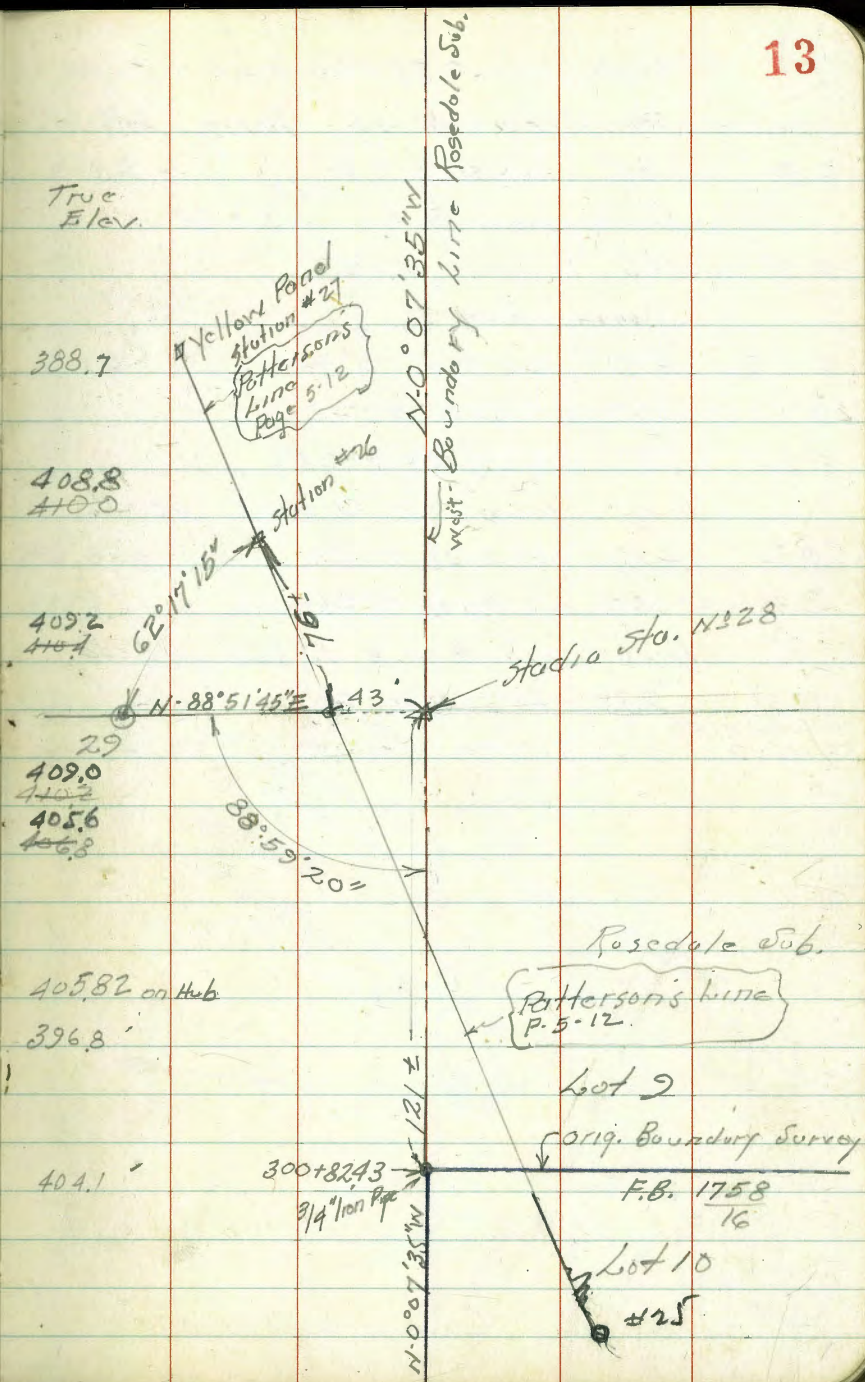
31	1070	88° 51' 45"	+0° 28'			
----	------	-------------	---------	--	--	--

33	930	268° 51' 45"	+0° 27'		+7.3	404.1
----	-----	--------------	---------	--	------	-------

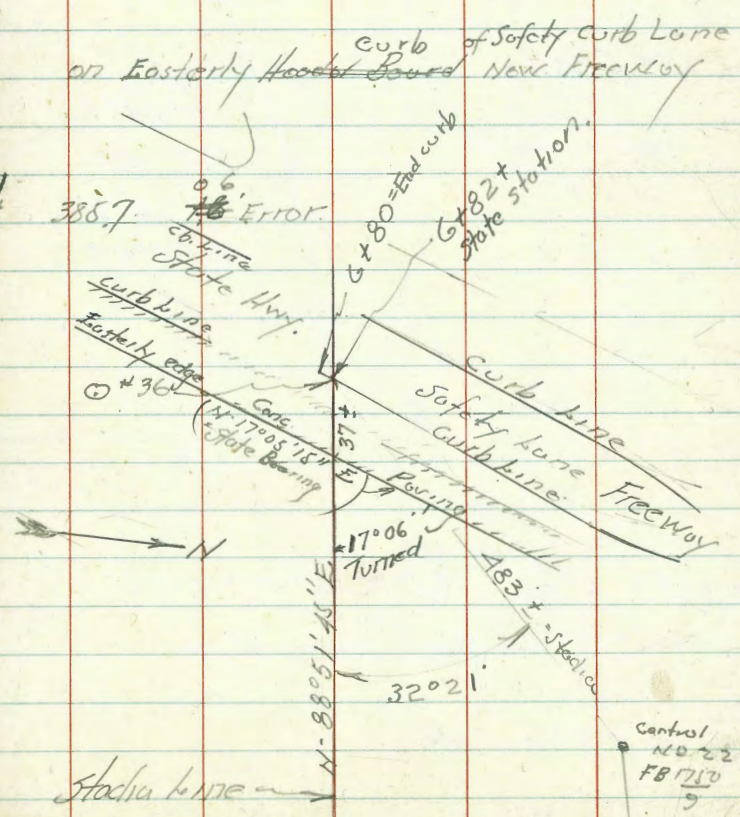
Readings from 33 Hl. = 404.1 HI = 5.4

32	930	88° 51' 45"	+0° 29'			
----	-----	-------------	---------	--	--	--

Cont. P-14



Station	Stadia	Pyram. V.A.	Horiz	Diff	True Elev.
Reading from © 33 Elev 404.1 HI = 5.4					
© 34	185	268°51'45"	7.2	-2.8	401.3
Reading from © 34 El. = 401.3 HI = 5.4					
© 33	185		+0°33'		
Readings from © R 7.0					
© 35	495	268°51'45"	-0°36'	-6.8	394.5
© 34	497	88°51'45"	+0°48'		
© 36	935	268°51'45"	-0°21'		
Reading from © 35 El. 394.5 HI = 5.4					
© 34	497	88°51'45"	+0°48'	+6.9	401.4
© 36	935	268°51'45"	-0°21'	-5.7	388.8
READING FROM © 36 El. 388.8 HI = 4.4					
© 38	935	88°51'45"	+0°20'		
on Central H 222			00°00'		
FB 1750-9	483	56°30'	on 91	3.7	385.1
				4.7	384.1



Gibbs Airport
 Location Proposed
 8" Water Main

(Levels P-17-20)

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 W.K.
 SEP 19 1949

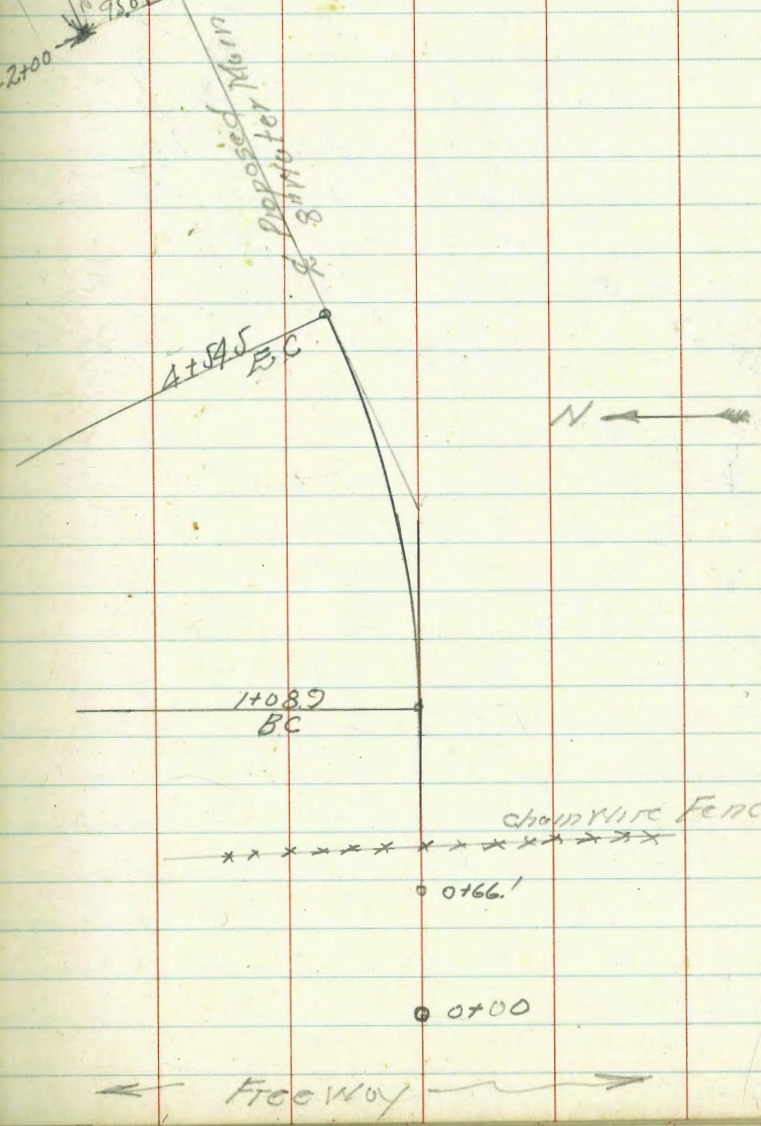
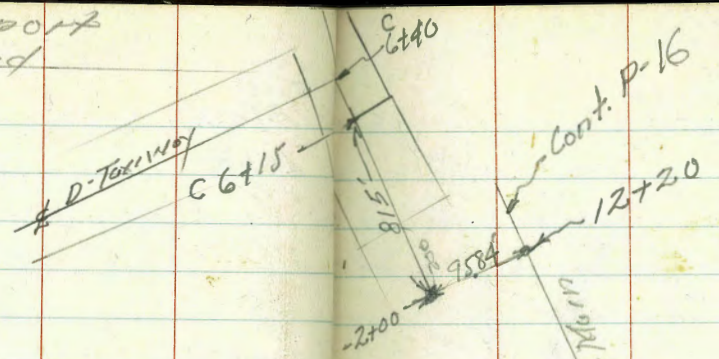
4+54.5 = E.C.

$\Delta = 44^\circ$
 $EP = 450$
 $T = 1818$
 $L = 359.6$

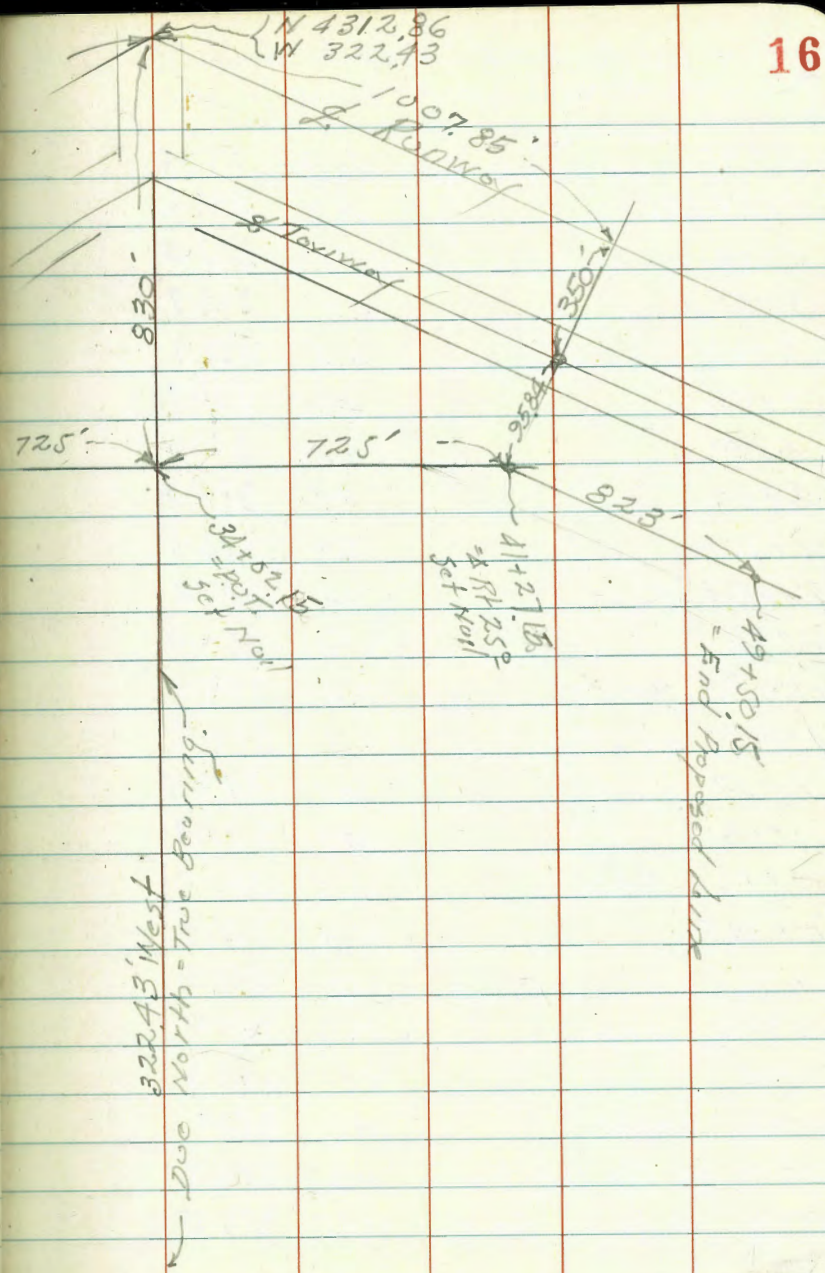
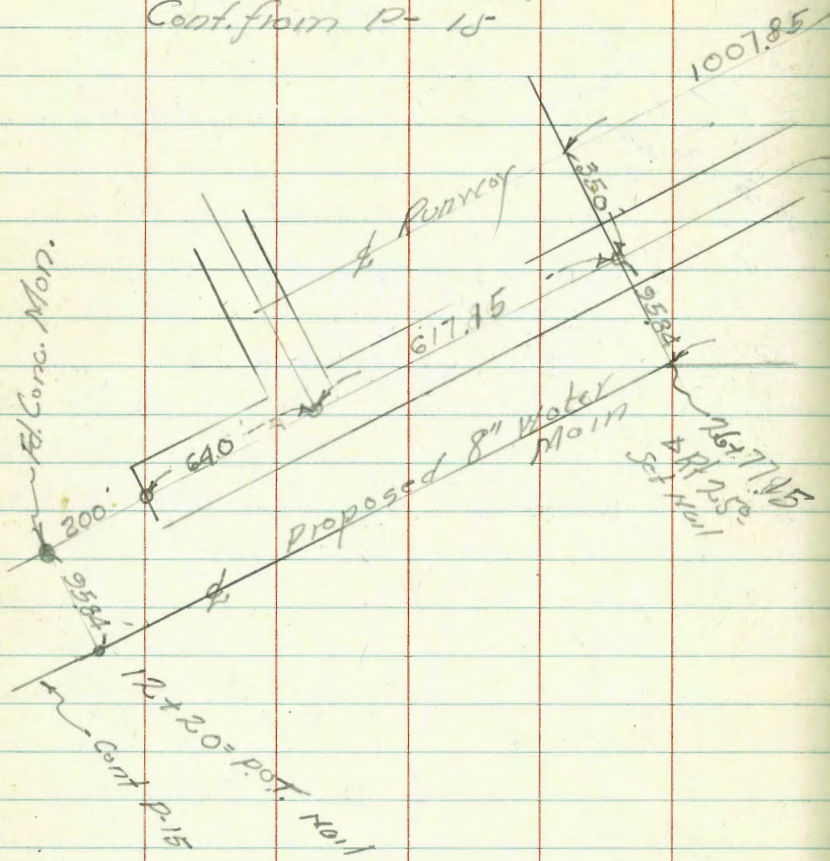
1+08.9 = B.C.

- 0+69 = 6' Chain Wire Fence
- 0+66.1 = 2" Vert. Riser Water Pipe
- 0+00 = 2" Fire Hydr.

Walker
 Johnson
 7-31-48 15



Location Proposed
 8" Water Main
 Cont. from P-15



32243 West
 Due North - True Bearing.

49150.15
 End Proposed Line

Gibbs Airport - Profile Levels
for Proposed 8" Water Main

Walker
Johnson
7-31-48

17

Station	cont P-18		
5+00		2.6	394.0
4+54.5 EC		3.0	393.6
4+00		3.1	393.5
3+50		2.9	392.7
3+00		4.3	392.3
2+82		4.9	391.7
2+50		6.0	390.6
2+00		8.3	388.3
1+50		9.8	386.8
1+08.9 BC It.		9.4	387.2
0+76		10.6	386.0
0+67	ground	12.6	384.0
0+66.2	on 2" Riser	12.1	384.5
0+37		14.1	382.5
0+18		15.3	381.3
0+16	Ditch	16.6	380.0
0+14.5		15.2	381.4
0+9.5		15.1	381.5
0+06	Ditch	16.6	380.0
0+04		14.3	382.3
0+00	ground	14.6	382.0
0+00	on Top Fire Hyd.	11.9	384.7
0+00	on Flange Fire Hyd.	14.45	382.15
		15.75	396.60
			380.85

Note: Distances by Stadia

State B.M. #3 Chiscol Sp. in North Hd. Wall
FB 1720-1

Gibbs Airport
 Profile Levels Proposed 8' Water Main

Station

25+00		6.0	403.7
24+00		6.4	403.3
23+00		5.8	403.9
22+00		4.8	404.9
21+00		4.2	405.5
T.P. 20+00	364	409.67	2.75 406.03
19+00		1.9	406.9
18+00		2.1	406.7
17+00		0.8	408.0
16+75		1.2	407.6
16+00		4.1	404.7
15+00		3.1	405.7
chk & H.P. 14+50	FB 1750-69	1.60	407.21 407.18
14+00		1.0	407.8
13+00		4.4	404.4
12+00		5.2	403.6
11+00		5.8	403.0
10+00		8.6	400.2
9+00		11.0	397.8
8+00		12.1	396.7
7+00		12.4	396.4
T.P. 6+00	12.83	408.78	0.65 395.95
Cont. from P-17		396.60	

Station	Cont. on P-20		
TP 5.45	420.14	3.25	414.69
45+00		2.2	414.7
44+00		4.2	413.7
43+00		4.8	413.1
41+27.15 ^Δ P 25°		5.2	412.7
41+00		5.4	412.5
40+00		6.0	411.9
39+00		7.2	410.7
38+00		7.2	410.7
37+00		8.1	409.8
36+00		2.1	408.8
35+00		9.8	408.1
TP 10.80	417.94	2.53	407.14
34+02.15 ^Δ Axis 32243 West		2.53	407.14
33+00		2.3	407.4
32+00		2.6	407.1
31+00		3.3	406.4
30+00		4.1	405.6
29+00		4.2	405.5
28+00		4.5	405.2
27+00		5.1	404.6
26+77.15 ^Δ P 25°		5.20	404.47
26+00		5.6	404.1
Cont. from P-18	409.67		

Gibbs Airport

Profile levels for
Proposed 8" Water Main

20

FB. 1750-69		414.22
chk & stub 34+00	640	413.74

50+00	102	409.9
49+50.15 = End Proposed Pipe	63	413.8
49+30	32	416.2
49+00	39	416.2
48+18	24	417.7
48+05	37	416.4
48+00	36	416.5
47+00	29	417.2
46+85	30	417.1
46+70	48	415.3
46+00	48	415.3

Cont from P. 19 430.14

X-sec. for grade Est.
 Pidgeon St.
 Foster to Lisbon.

Run north to south so as to
 show mon. (Foster + Pidgeon) as
 definite point for 0+00,
 Mon. & Lisbon + Pidgeon is out.

Sommermayor
 McCoy
 Allen
 Rorer
 7-16-49

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 W.K.
SEP 19 1949

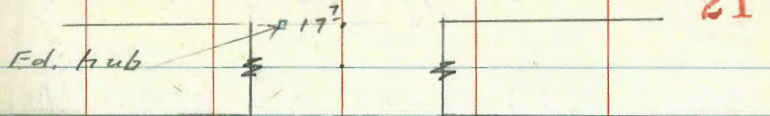
Ref.
 T.P. sheet 3240
 F.B. 1709-P. 21

W.O. 25010

15' wide ~~padding~~ oil coating
 along Pidgeon. very thin
 Not to be considered for
 grade so not shown.

Jamacha Rd.

21



G.R.P. to
 sewer M.H.
 Should be on
 + Pidgeon
 + so, 19' line Lisbon

Lisbon St.
 sewer M.H.

Fd pipe
 L.S. 2317

25'

25'
 Pidgeon

20' 00"

Foster St.

0+50

Fcl. Mon.



Pidgeon St.
Foster to Lisbon

±

22

T.P. 8.44 307.99 1.42 299.55

1+12^E 15^E Rt. = E. Line Conc. Drive

1+00^E 15^E Rt. = N.E. Cor. CONC. Drive

1+00

0+60 27' Lt. = £ 4' wide conc. walk.

0+50

0+00 = Sly. line Foster

0-25 = £ Foster

0-50 = Nly. line Foster

Mon. Pidgeon
N.L. Foster 8.54 300.97 — 292.43 FB 1709
24

297.07
295.62 294.69
 $\frac{3.90}{15.5}$ $\frac{5.35}{25}$ $\frac{6.28}{30}$

292.62
295.27 294.67
 $\frac{4.35}{15.5}$ $\frac{5.70}{25}$ $\frac{6.30}{30}$

307.67
301.47 299.7 298.7 295.3 291.5
 $\frac{+6.7}{50}$ $\frac{+0.5}{25}$ $\frac{1.3}{15}$ 2.3 $\frac{5.7}{25}$ $\frac{7.5}{50}$

302.87 300.91
 $\frac{+1.9}{37}$ $\frac{0.06}{27}$
walk walk

300.1 295.8 291.5
 $\frac{0.9}{25}$ 5.2 $\frac{7.5}{25}$

298.1 293.0 388.3
 $\frac{2.9}{25}$ 8.0 $\frac{12.7}{25}$

301.0 296.0 291.9 288.0 284.0
 $\frac{0.0}{50}$ $\frac{5.0}{25}$ 9.1 $\frac{13.0}{25}$ $\frac{17.0}{50}$

297.6 292.3 287.5
 $\frac{3.4}{25}$ 8.7 $\frac{13.5}{25}$

300.97

Reduced
road
width
J. Barrett

£

T.P. 2.41 301.04 9.36 298.63

3+00

2+96 20' Rt. = £ 2' wide Conc. walk.

2+60⁵ 23' Rt. = S.E. Cor. double

2+53 23' Rt. N.E. Cor. double conc. ribbon pr.

2+50

2+01⁵ 15' Rt. = £ 3' wide Conc. walk

2+00

1+50

307.99

308.6
 $\frac{10.6}{50}$ $\frac{2.5}{25}$ $\frac{4.3}{9}$ $\frac{6.2}{6}$ 6.1 $\frac{6.6}{15}$ 299.5
 305.5
 303.7
 301.8
 301.9
 301.1^A

299.50
 $\frac{8.49}{204}$ $\frac{8.67}{25}$ $\frac{8.70}{325}$
 299.30
 299.29
 At House

300.06
 $\frac{7.93}{282}$ $\frac{8.21}{25}$ $\frac{8.80}{30}$
 299.78
 299.19

300.05
 $\frac{7.99}{281}$ $\frac{8.18}{25}$ $\frac{8.79}{30}$
 299.81
 299.20

307.0
 $\frac{1.0}{25}$ $\frac{3.1}{11}$ $\frac{4.9}{8}$ 5.2 300.2
 304.9
 303.1
 302.8
 300.0

300.91
 $\frac{7.08}{155}$ $\frac{0.30}{25}$
 307.69

311.8
 $\frac{13.8}{50}$ $\frac{0.9}{25}$ $\frac{2.8}{13}$ $\frac{4.6}{11}$ 5.4 300.9
 307.1
 305.2
 303.4
 302.16
 307.7
 297.5

306.9
 $\frac{4.1}{25}$ $\frac{4.6}{13}$ $\frac{5.9}{12}$ 6.8 300.2
 303.4
 302.1
 301.2
 300.2
 298.5
 298.0

307.99

S.W. 2" Pipe. 69 th + Imperial = 7.67	253.46	<u>253.44</u>
T.P.	2.13	261.13
T.P.	0.99	270.58
T.P.	1.02	282.34

4+24⁶ = ~~4~~ Lisbon

5+11 = Nly Edge A.C. Paving (Lisbon St.)

4+99 ⁶ = N. line Lisbon		
T.P.	6.21	<u>294.37</u>
	12.88	288.16

4+50

4+00

2+86 25th RT. = ~~4~~ 3' walk (Cen.c.)

3+50

301.04

289.3
 $\frac{5.1}{50}$ $\frac{5.8}{25}$ 6.8 $\frac{7.9}{25}$ $\frac{9.0}{50}$
 288.6 287.6 286.5 285.4

288.4 287.7 286.7
 $\frac{6.0}{25}$ 6.7 $\frac{7.7}{25}$

292.1 291.4 291.5 288.3 288.2 287.4 288.5 287.7
 $\frac{2.7}{50}$ $\frac{3.0}{25}$ $\frac{2.9}{16}$ $\frac{6.1}{5}$ $\frac{6.2}{294.37}$ $\frac{7.0}{17}$ $\frac{5.7}{20}$ $\frac{6.7}{25}$

293.7 293.2 291.6 291.3 292.0 291.9
 $\frac{7.3}{25}$ $\frac{7.8}{11}$ 9.4 $\frac{9.7}{15}$ $\frac{9.0}{18}$ $\frac{9.1}{25}$

299.1 296.5 297.5 296.0 296.0 295.8 294.0
 $\frac{1.9}{50}$ $\frac{2.5}{25}$ $\frac{3.5}{8}$ $\frac{5.0}{5}$ 5.0 $\frac{5.2}{25}$ $\frac{7.0}{50}$

296.54 296.47
 $\frac{4.50}{25}$ $\frac{4.57}{30}$

302.3 301.3 299.5 299.4 298.4
 $\frac{1.3}{25}$ $\frac{1.3}{10}$ $\frac{1.5}{5}$ 1.6 $\frac{2.6}{25}$

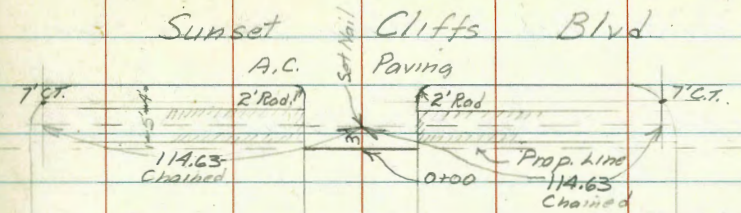
301.04

Alley Blk 3 Ocean Beach Park
Cross Sections
- 15' Alley -

E.F. Gregory
G. Pope
R. Sisson

1/13/49
W.O. 3140A

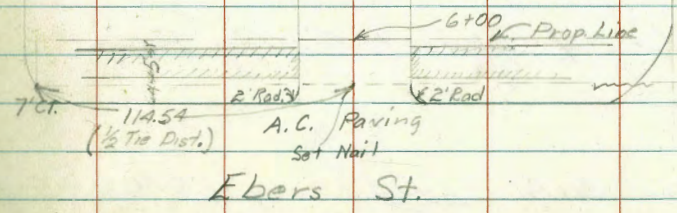
INDEXED
W.K.
JAN 17 1950
STEVENS



← 7.6 × 7.6 →

Brighton

Long Branch



Cross Sections

Alley Blk 3 Ocean Beach Park

Lt.

℄

Rt.

26

0+50 - Power Pole #PA4790 6.7' Rt.

^{28°} 3.0
12
^{27°} 3.1
7.5
^{27°} 3.1
7.5
^{28°} 3.0
7.5
^{28°} 3.0
12

0+35

^{27°} 3.4
7.5
^{27°} 3.2
7.5
^{27°} 3.2
7.5
^{28°} 2.8
12

0+30 ℄ Single Garage 12' Rt.

^{28°} 2.88
12
on Conc. Floor
of garage

0+20 End 6" Rock wall 7.7 Lt.

^{27°} 3.20
7.7
on Wall

0+01 End Curb 7.5' Rt

^{28°} 4.65
7.5
Curb

0+00.A End P.C. Paving

Same as 0+00

0+00 Prop. Line - Begin 6" Rock wall 7.5 Lt.

^{27°} 3.2
7.5
on Wall
^{27°} 4.66
7.5
Curb
^{28°} 4.85
7.5
Gutter
5.18
7.5
Gutter
^{20°} 4.83
7.5
Gutter
^{26°} 4.66
7.5
Curb

0-10 Curb Line Sunset Cliffs

^{26°} 4.72
2.5
Curb
^{25°} 5.43
2.5
Gutter
^{26°} 4.85
9.6
B.C.
Curb
^{25°} 5.48
9.6
B.C.
Gutter
^{25°} 5.58
2.5
B.C.
M.H.
^{25°} 5.59
9.6
B.C.
Curb
^{26°} 4.85
9.6
B.C.
Curb
^{25°} 5.70
2.5
Gutter
^{26°} 4.99
2.5
Curb

0-30 ℄ Sunset Cliffs Blvd.

^{26°} 5.03
50
^{25°} 5.16
25
^{25°} 5.19
Em. M.H.
^{25°} 5.42
25
^{25°} 5.58
50

B.M. 5.12 31.03

25.91

S.W. 7' CT

31.03
Langbranch & Sunset Cliffs FB 1501-65

Cross Sections

Alley Blk 3 - Ocean Beach Park

1+96 ♀ Single garage 13.0' Lt. ^{dirt} floor

Lt.

♀

Rt.

^{25 31}
4.8
13.0
on dirt
floor

1+75.5 Power Pole # DP4770 6.0' Rt

1+50 { also ♀ Single garage 14.3' Lt. ^{dirt} floor
End 4' Wooden Fence 7.2' Rt.

^{25 5} 5.0 ^{28 7} 4.9 ^{6 1} 5.1 ^{28 6} 5.0 ^{28 2} 4.7
^{14.3} on dirt floor 7.5 7.5 12.5

1+29 Begin 4' Wooden Fence 7.4' Rt

1+23 ♀ Single garage ^{7.2' Rt broken ramp} 9.2' Rt ^{floor (conc)}

^{25 20} 4.73 ^{28 6} 4.97 ^{28 12} 4.71
17.7 on Conc. floor 7.2 on ramp (broken) 9.2 on Conc. floor

1+19 End Double garage 17.7' Lt

1+01 Begin Double garage 17.7' Lt.

^{28 27} 4.74
17.7 on Conc. floor garage

T.P. 4.92 33.63 2.32 28.71

1+00

^{25 5} 2.2 ^{28 6} 2.4 ^{28 24} 2.6 ^{25 6} 2.4 ^{28 2} 2.1
12.5 7.5 7.5 12.5

0+91 End Garage & Ramp ^{7.5' Rt Ramp} 9.7' Rt. Garage

0+81 Begin Garage & Ramp ^{7.5' Rt Ramp} 9.7' Rt. Garage

^{28 10} 2.55 ^{28 01} 2.01
^{7.5} on ramp 9.7 on floor
^{28 24} 2.59 ^{28 2} 2.02
^{7.5} on ramp 9.7 on floor

31.03

31.03

Cross Sections

Alley Bk 3 - Ocean Beach Park

3+75 End 5' Lath Fence 6.8' Rt.

3+50

Lt.	Q	Rt.
5.6 12.5	5.6 7.5	5.8 7.5

3+01 { Q Sewer Manhole
Power Pole # PA 4750 6.2' Rt.

Lt.	Q	Rt.
5.7 7.5	5.84 on Rim of M.H.	5.9 7.5

{ Begin 5' Lath Fence 6.8' Rt.

3+00 { End 4' Board Fence 6.8' Rt.

2+87 Begin 4' Board Fence 6.5' Rt

2+81 Q 12' Single garage 15.5' Rt. ^{Conc.} floor

Lt.	Q	Rt.
		5.75 13.5 on Conc. floor

T.P. 6.00 35.19 4.44 29.19

35.19

2+67 End 4' Board Fence 7.35' Rt

2+51.5 Begin 4' Board Fence 6.65' Rt.

2+50

Lt.	Q	Rt.
4.4 12.5	4.3 7.5	4.5 7.5

2+00

Lt.	Q	Rt.
4.8 12.5	4.8 7.5	4.7 7.5

33.63

33.63

Cross Sections

Riley Blk 3 - Ocean Beach Park

5+00 Begin 5' Wooden Fence 7.3' Rt.

4+91 ♀ 4' Conc walk 6.0 to Ramp Rt.
7.7 to Walk Rt.

4+67 outside
7.3 Rt 4" Cleanout

4+65.5 outside
7.3 Rt. 4" Soil Pipe

4+63.5 outside
7.3 Rt. 2" Soil Pipe from NE Cor cabin

4+58 ♀ 12' Single Garage 8.2 to ramp
9.7 to conc. floor

4+40

4+32 12' Single Garage 13.0' Lt. Conc Floor

4+19 8' Single Garage 13.2 Lt. Conc. floor

4+06 10' Single Garage 12' Rt. DIRT Floor

4+00 T.P.
T.P. 4.19 35.27 4.11 31.08

4+00 Power Pole # PA473A 6.3' Rt.

35.19

Lt.

♀

Rt.

3.6
1.5

3.8
1.5

4.0

3.7
1.5

3.5
1.5

3.91
6.0
ramp

3.7
7.7
ramp

3.73
7.7
walk

4.9
4.3

5.3
1.5

4.8
1.5

5.1

4.43
8.2
ramp

4.33
9.7
ramp

4.6
2.0

4.9A
13.0
floor

5.26
13.2
floor

5.5
1.2
dirt floor

5.4
1.5

5.4
1.5

35.27
2.12

5.1
1.5

5.2
1.5

35.19

Cross Sections

Alley Blk 3 Ocean Beach Park

6+10 Curb Line - Ebers St.

6+00 { Edge of P.C. Paving
End 3' Picket Fence 7.5' Rt.
Prop. Line on Ebers St.

5+82 Begin 3' Picket Fence 7.2' Rt.

5+64 & 6' Conc. Floor 14.2' Lt.

5+60.5 Center of 2'x2' Conc. Block 6.7' Lt. ^{Rt. Edge}

5+60 End 2' Wide Conc. Wall 7.9' Rt. ^{To Edge}

T.P. 4.31 38.66 0.92 34.35

5+50 { Begin 2' Wide conc. Wall 7.8' Rt. ^{To Edge}
End 5' Wooden Fence 7.0' Rt.

5+43 Clump of 30" Acacia Trees 6.8' Rt.

5+07 & 3' Conc. Walk 8.9' Lt.

5+01 Power Pole # PA-4718 5.9' Rt.

35.27

Lt. & Rt.

5.27 25	5.97 26	5.23 9.5	5.79 9.5	5.72 9.5	5.56 9.5	5.03 9.5	5.46 23	4.87 25
Curb	Gutter	Curb	Gutter	Gutter	Gutter	Curb	Gutter	Curb
		8.58	8.6	8.99	8.6	8.6	8.6	8.6
		5.13 7.5	5.33 7.5	5.67 7.5	5.31 7.5	4.93 7.5		
		Curb	Gutter		Gutter	Curb		

4.7 15	4.6 7.6	5.1 7.5	4.9	4.2 7.5
5.14 14.20				
Floor				
				0.92
				6.7 on Edge of Conc. Block
				3.95
				7.9 on Wall

2.1 12.5	2.4 7.5	2.4	1.8 7.5	1.2 20

3.45 30	3.63 30
Walk	Walk

35.27

Cross Sections

Alley Bk3 - Ocean Beach Park

Lt.

¢

Rt.

0.03 error

25.91

7.50

25.9A

S.W. 7' CI

BM See Pg. 26

T.P. 1.75

33.44

6.97

31.69

~~33.94~~

33.01

33.50

33.69

33.92

34

6+30

¢ Ebers St.

5.62
50

5.26
25

4.97
Rim
M.H.

4.74
25

4.51
50

38.66

38.66

Curb
Grades in Grade $\frac{265}{10-16}$

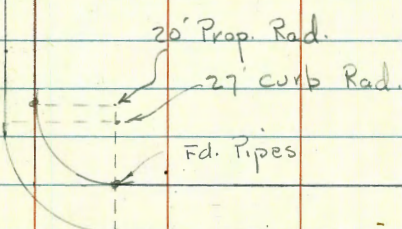
2+35

curb

Aud.

10' n.p.d.s

0+10
0+15
0+20



Knoxville St

Levels on New Curb on N. side
of Tonapah - from Knoxville - W.

#

INDEXED

W.O. W.K. 2-17-50 - 70.

Sketch - P. 3 MAR 17 1950

17.24 - See Below.

45 N. of PC. on Knoxville	4.58	12 ⁵⁰	Top cb.
N. PC. of 27 Rad Ret.	4.84	12 ⁴⁰	
1/4 } 42.5 around	4.86	12 ³⁸	
1/2 } 10.6 each	5.00	12 ²⁴	
3/4 } = 0+15	5.13	12 ¹¹	
E.C. = on Tonapah	5.24	12 ⁰⁰	
0+50	5.56	11 ⁶⁸	
1+00	6.07	11 ¹²	
+50	6.55	10 ⁶⁹	
2+00	7.02	10 ²²	
2+35 = end = in Drive	7.70	9 ⁵⁴	

17.24

Set B.M.	5.22	12.02	
	4.79	17.24	2.37
B.M.	4.78	14.82	10.04

= N.W. BP - Knoxville + Tonapah.

= B.P. on Headwalk - Tecolote + Moreno

X- Sect. 20' Alley in Block 246
Pacific Beach

4768

W.O. 25020

10-16-50

INDEXED

OCT 17 1950

Osborne
Hardin
Hatch
Rimmer

Reduced by

C.B. Lockheed

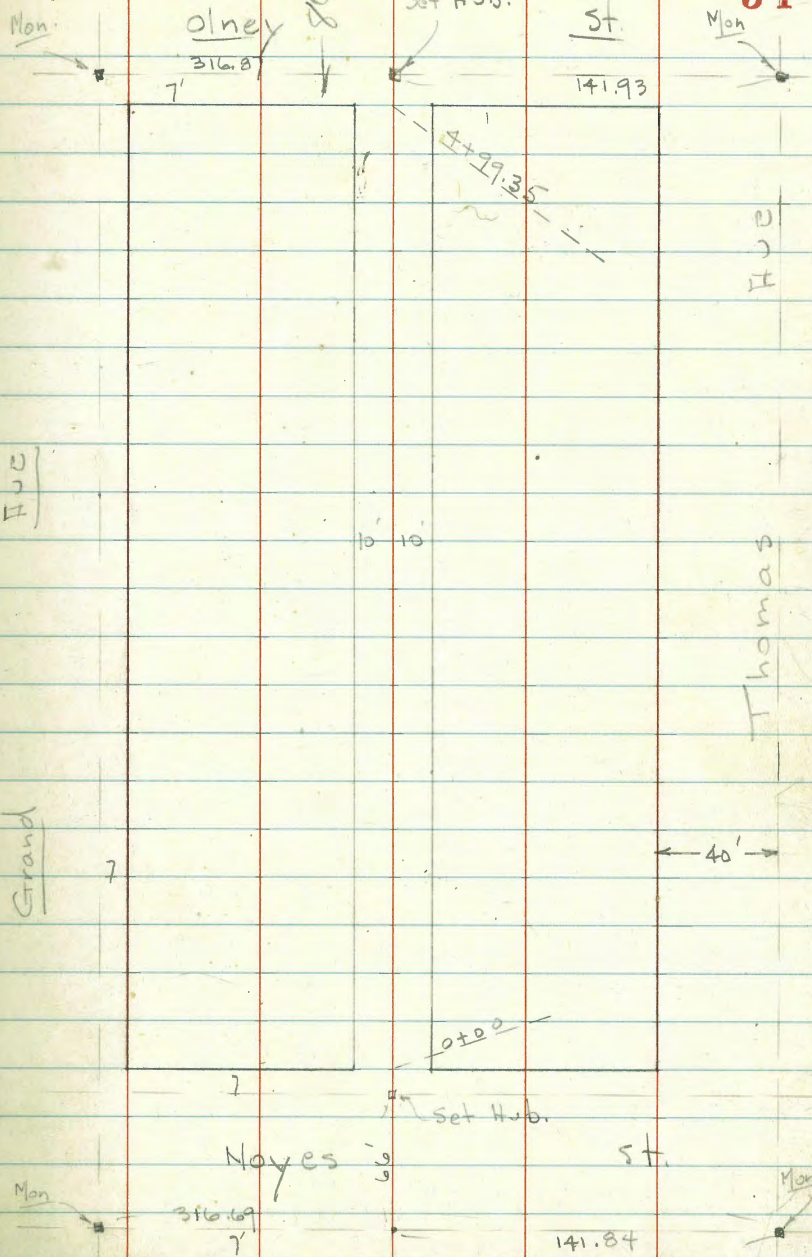
Ch 16 SW Cor Olney + Thomas
19.89

TBM on Ob EC Olney
+ Alley S of Grand Sly Side
Alley 23.51

Grand

HUB

Thomas



X-Sept Alley - Blk. 246 - P.B.

Lt.

±

Rt.

35

1+00

30.7	21.6	21.7	21.7	21.7
1.3	1.9	2.2	2.3	2.3
20	10		10	20

0+50

35.8	35.8	35.8	35.8	35.8
3.7	4.1	4.1	4.1	4.1
10		10		10

0+49.5 - 10 Rt. end apron

4.10	4.10	4.10	4.10	4.10
10	10	10	10	10
apron	apron	apron	apron	apron

0+32 - 10.1 Rt. = Beg. Conc apron to Doub. Gar.

4.38	4.38	4.38	4.38	4.38
10.1	10.1	10.1	10.1	10.1
apron	apron	apron	apron	apron

0+29 - 10.2 Rt. = end apron

4.58	4.58	4.58	4.58	4.58
10.2	10.2	10.2	10.2	10.2
apron	apron	apron	apron	apron

0+10 - 12.2 Rt. = Beg. Conc. apron to Doub. Gar.

4.80	4.80	4.80	4.80	4.80
12.2	12.2	12.2	12.2	12.2
apron	apron	apron	apron	apron

0+00

34.3	33.8	33.6	33.6	33.8
5.2	5.7	5.9	5.9	5.7
58	10		10	50

0-20

37.4	37.8	37.9	37.9	37.8
7.1	6.7	6.6	6.5	6.5
50	10		10	50

B.M. 8.90 39.47 9.36 30.57
3.73 39.93 36.50

39.47 ✓

N.W. Pipe Morrell + Thomas

3+80.5 - 11.5 Lt. = Cor. apron
 3+75.5 - 11.4 Lt. = Conc. apron at Gar. - opens to E.
 3+61 - 17.9 Rt. = £ Doub. Gar + apron
 3+53 - 10.9 Lt. = £ 4 Conc walk Back of Gar.
 3+50 - 10' Lt. = end wall - High wall to N.
 3+00 - 8.5 Lt. = sly. + £ of 2' Conc. slab to fence
 wall = base for Picket fence.
 2+87 - 9.9 Lt. = Cor. Gar. + 10.1 Lt. = Req. 6" Conc
 2+65 - 7' Lt. = sly. of Rough conc apron to Doub. Gar.
 2+50
 T.P. 2.08 37.67 3.88 35.59 Nail in Pole - 3100
 2+00
 1+50

Lt.	#	Rt.
4.63 19.4 Cor. apron	4.63 11.5 apron	4.82 17.9 = apron
4.13 20 walk	4.28 10.9 = walk	4.6 5.0
1.4 20 Top wall	1.37 10 Top wall	2.6 20
0.83 10 floor.	0.97 7 apron	1.4 10
	1.14 10.1 Top wall	1.9 9.9 = ground
	0.9 10 along Gar.	1.3
	1.8 20	2.7 10
	1.7 10	2.4 10
		39.47

T.P. 3.43 27.66 6.90 20.76 20.76
 40 E. = ± Olney + ± of 24' strip (Dip Sect.)
 28' E. = Wly. of H.C. Pavc Strip in Olney.
 4+99 = 35' = w.L. Olney
 T.P. 7.02 32.03 12.66 25.01

4+50
 4+30 - 10.3 Lt. = end wall
 4+02 - 10' Lt. = ± 3' walk thru wall
 4+00 - 10' Lt. = Beg. 6' Conc. wall

= Const. P.M. = 11. in Walk N.E. Noyes + Reed.
 24.41 20.50 23.21 22.82 22.81
 7.52 8.53 8.72 9.10 10.02
 50 50 50 50 50
 6.98 7.98 8.24 8.48 9.42
 50 50 50 50 50
 4.4 5.5 6.1 6.2 6.0
 50 10 10 10 50
 32.03
 9.28 9.11 8.89
 10 10 10
 3.71 7.7 3.71 3.10 3.12
 10.5 10.3 10.3 10.3
 Top wall ground
 3.71 6.0 6.5 8.7 6.5
 10 10 10 10 20
 Top wall 37.67

1+50

0² 0¹ -0² -0² -0⁵ -0⁵ -0⁷ -0⁹ -0⁴ 0²
 50 35 17 14 8 7 12 15 35

1+00

0⁶ 0⁵ 0² -0⁴ -0⁵ -0⁵ -0⁵ 0² -0⁴
 50 35 17 13 7 13 17 35

0+87 End Cb on Lt.

126 124 0⁵
 22 17 17
 SW CB

0+85 End Conc. Dr on Lt.

129 124 0⁶⁷
 22 19.5 17

0+50

0⁵⁴ 0¹ -0² -0⁷ -0³ 0² 0³
 17 11 14 17 35 29
 Dr.

0+45 Beg Conc. Dr on Lt.

116 117 0⁵²
 22 19.5 17

0+25 EC. Cb Ret.

109 0¹ -0¹ -0⁶ -0¹ 0² 0³
 17 17 12 20 35 50
 Cb 6

0+00 wly line Jarvis

0.90

4.66

B17.

334

0² 0² 0² -0² 0² 0² 0²
 24 12 11 10 35 30

L&T 0125 20' Lt. 0+25 on Jarvis

N wly 7x5 City Eng. L&DISC Rosecrans & Jarvis

SW 7x5 L&DISC Rosecrans & Ingelov

1+00

15 ¹	08 ⁷	09 ⁵	1 ²	1 ³	2 ³
17	17	14.5		17	17
		G		G	Cb

0+50

10 ⁸	04 ⁴	05 ⁴	0 ⁷	0 ⁷	15 ³
17	17	14.5		17	17
Cb	G	G			Cb

0+25

B.C

05 ⁸	02 ⁹	03 ⁵	0 ⁶	0 ⁵	12 ⁰
17	17	14.5		17	17
Cb	G	G		G	Cb

0+00 Hwy line Scott St.

0 ¹⁶	0 ⁶	0 ⁵	0 ⁴	0 ²
22 ³	10		12	25

rip
Gutter

Hwy Cb Ret Jarvis & Scott L=68.2 4 parts

BC on Scott

0 ¹	10 ⁴	0 ¹	1 ²	2 ¹	9 ⁷	0 ⁴	1 ²	0 ⁵	1 ³⁰
G	Cb	G	Cb	G	Cb	G	Cb	G	Cb
	BC								EC Jarvis
	Scott								

Hwy Cb Ret Jarvis & Scott (L=67.5 4 parts)

BC on Jarvis

0 ¹	10 ⁴	0 ¹	1 ²	2 ¹	9 ⁷	0 ⁴	1 ²	0 ⁵	1 ³⁰
G	Cb	G	Cb	G	Cb	G	Cb	G	Cb
	BC								EC Jarvis
	Scott								

25' West on Scott

0+35 & Scott St

0 ²³	0 ⁴	0 ⁵	0 ⁶	0 ⁴	0 ²
85	35	17		17	35

0-70 Hwy line Scott

12 ¹	1 ²	0 ⁸	0 ²	0 ⁹	0 ³	0 ¹
50	35		13	18	35	50
14	12	0 ⁸	0 ⁴	0 ⁸	0 ⁵	0 ⁴
40	35		12	16	35	50

-100'

2+73.19 Beg. Asph. Paving. Beg. Cbs. on Lt.

4⁵⁸ 4⁴⁹ 3⁹² 4⁰⁰ 4³⁷ 4²² 4²⁴ 4⁸⁵
 22 17 17 14 14.0 17 17
 SW Cb G G G G Cb

2+53 Anchor Pole 18.6 Lt. (# 523678H)

2+51.4 Beg. 8" Block Wall (latered) 24.6'
 End. Asph. Parking Area 18 Lt.

4⁷⁹ 3⁴⁷ 4¹⁴ 3¹² 2⁹⁷
 35 35 24.6 24.6 18
 Wall Pav Wall Pav Pav

2+35

3⁵⁰ 3²⁵ 2⁵² 2⁴ 2⁸ 2⁹ 3⁰ 3⁰ 3⁹²
 40 35 18 17 9 9 17 17
 Asph Pav Cb Cb

2+00 Beg. Asph. Parking Area on Lt.
 End Cb on Lt.

2⁸ 2³³ 2²⁵ 1⁶⁵ 1⁷² 2¹ 2³ 3²⁹
 30 22 17 17 14.5 17 17
 SW Cb G G Cb Cb

1+72 Sewer in Head

18⁵
 Rim

1+55 30' Conc Dr. on Rt.

2⁰⁹ 2²⁷
 17 30
 Drive

1+50

1⁸⁷ 1²² 1³³ 1⁶ 1⁷ 2⁰³
 17 17 14.5 9 17
 Cb G G Drive

The image shows an open notebook with two facing pages. Both pages are cream-colored and feature light blue horizontal ruling. Vertical red lines create margins on both sides of each page. The right page has the number '47' printed in red in the top right corner. The notebook is bound in the center, and the pages are otherwise blank.

Smith
Pope
R. Sisson
1-5-51

X-section Borrow Pit #2
Laurel Canyon Road

Note: all slopes set at $\frac{3}{4}$ to 1
Note: is the same elevation as southerly edge rdway
and 65' off base line and 11 to it.

75

Top slope stake

2+00 El. 112	INDEXED JAN 22 1951	17.0 $\frac{0.0}{20}$ nd.	15.7 $-\frac{1.3}{28}$ nd.	40.2 $+23.2$ 45	52.4 $+35.4$ 66	68.0 $+51.0$ 104	80.2 $+63.2$ 154	67.9 $\frac{58.2}{103.2}$
1+75 El. 152		15.2 $\frac{0.0}{20}$ nd.	14.1 $-\frac{1.1}{26}$ nd.	41.4 $+26.2$ 48	49.9 $+34.7$ 60	64.7 $+49.5$ 99	75.4 $+60.2$ 150	67.2 $\frac{52.5}{104}$
1+50 El. 138		13.6 $-\frac{0.2}{28}$ nd.	12.6 $-\frac{1.2}{28}$ nd.	41.3 $+27.5$ 50	48.1 $+34.3$ 66	61.3 $+47.5$ 101	69.9 $+56.1$ 135	63.7 $\frac{49.2}{101}$
1+25 El. 126		11.9 $-\frac{0.7}{2}$ nd.	10.6 $-\frac{2.2}{31}$ nd.	40.0 $+27.4$ 51	50.1 $+37.5$ 76	57.1 $+44.5$ 101	63.1 $+50.5$ 140	56.2 $\frac{43.6}{97.7}$
1+00 El. 115		10.1 $-\frac{1.4}{6}$ nd.	08.9 $-\frac{2.6}{32}$ nd.	37.1 $+25.6$ 52	47.2 $+35.7$ 78	53.0 $+41.5$ 113	56.0 $+44.5$ 148	52.7 $\frac{41.2}{95.2}$
0+75 El. 99		8.8 $-\frac{1.1}{6}$ nd.	07.3 $-\frac{2.6}{35}$ nd.	31.2 $+21.3$ 51	38.2 $+28.3$ 66	41.2 $+31.3$ 96	42.4 $+32.5$ 120	43.6 $+34.0$ 140
0+50 El. 82		7.0 $-\frac{1.2}{9}$ nd.	05.4 $-\frac{2.8}{38}$ nd.	24.8 $+16.6$ 50	27.2 $+19.0$ 86	26.6 $+18.4$ 115	26.5 $+18.3$ 145	30.2 $\frac{22.8}{81.5}$
0+25 El. 46		6.3 $+\frac{1.7}{7}$	5.2 $+\frac{0.6}{12}$ nd.	03.6 $-\frac{1.0}{40}$ nd.	15.2 $+\frac{10.6}{48}$	16.1 $+\frac{11.5}{95}$	20.3 $+\frac{15.7}{140}$	16.8 $\frac{12.8}{74}$
0+0 Elev. 0.0 955.0 m. El.	on stake	$+\frac{4.5}{11}$	$+\frac{3.4}{16}$ nd.	$+\frac{1.8}{45}$ nd.	$+\frac{3.2}{48}$	$+\frac{3.4}{64}$	$+\frac{3.5}{76}$	$+\frac{7.4}{113}$ $+\frac{17.5}{152}$ ($\frac{11.2-1.4}{out 66}$)

3+50 El. 27.2	26.3 - 0.9 9 rd.	26.4 - 0.8 36 rd.	26.3 - 0.9 41	37.4 + 10.2 106			Top of ship 33.9 Stokes <u>62</u> 70
3+25 El. 25.7	24.9 - 0.8 7 rd.	25.1 - 0.6 33 rd.	25.7 0.0 39	45.5 + 19.8 105			37.2 <u>115</u> 73.2
3+00 El. 24.2	23.1 - 1.1 4 rd.	23.1 - 1.1 30 rd.	29.4 + 5.2 37	55.3 + 31.1 96	62.8 + 38.2 121		41.2 <u>170</u> 77.8
2+75 El. 22.4	21.9 - 0.6 3 rd.	21.4 - 1.0 27 rd.	45.7 + 23.3 52	63.9 + 41.5 93	75.7 + 53.3 127		64.6 <u>42.2</u> 96.6
2+50 El. 20.6	20.4 - 0.2 2 rd.	19.4 - 1.2 25 rd.	50.2 + 29.6 59	65.0 + 44.4 93	80.8 + 60.2 137		68.6 <u>48.0</u> 101
2+25 El. 18.5	0.0 0 rd.	17.7 - 0.8 28 rd.	38.1 + 19.6 47	52.5 + 34.0 63	65.7 + 47.2 97	78.5 + 60.0 140	68.5 <u>30.0</u> 102.5

Bldg 143 High Ceiling former ^{40x85} Porter House
12x12 Red, Adj.

Bldg 258 & 259 Vehicle sheds, 42x100

Bldg 146 Former Pub Works off 20x30

Bldg 6A Former Post office 60x100 10x10 long porch

Bldg 82 - Former Ship's house, 40x93
24x46

Bldg ~~76~~ Igneite shop 20x46

Commandant 11th Naval District
attention Pub Works Off.

Gaffee
Add off.
22 2369

420.14
236
41264

IMPROVED TABLES AND INFORMATION

HORIZONTAL STADIA CORRECTIONS					
2°-00'	—	0.1	21°-00'	—	12.8
3°-00'	—	0.3	21°-30'	—	13.4
4°-00'	—	0.5	22°-00'	—	14.0
5°-00'	—	0.8	22°-30'	—	14.7
6°-00'	—	1.1	23°-00'	—	15.3
7°-00'	—	1.5	23°-30'	—	15.9
8°-00'	—	1.9	24°-00'	—	16.5
9°-00'	—	2.5	24°-30'	—	17.2
10°-00'	—	3.0	25°-00'	—	17.9
10°-30'	—	3.3	25°-30'	—	18.6
11°-00'	—	3.6	26°-00'	—	19.2
11°-30'	—	4.0	26°-30'	—	19.9
12°-00'	—	4.3	27°-00'	—	20.6
12°-30'	—	4.7	27°-30'	—	21.3
13°-00'	—	5.1	28°-00'	—	22.0
13°-30'	—	5.5	28°-30'	—	22.8
14°-00'	—	5.9	29°-00'	—	23.5
14°-30'	—	6.3	29°-30'	—	24.3
15°-00'	—	6.7	30°-00'	—	25.0
15°-30'	—	7.2	30°-15'	—	25.4
16°-00'	—	7.6	30°-30'	—	25.8
16°-30'	—	8.1	30°-45'	—	26.2
17°-00'	—	8.5	31°-00'	—	26.5
17°-30'	—	9.0	31°-15'	—	26.9
18°-00'	—	9.5	31°-30'	—	27.3
18°-30'	—	10.1	31°-45'	—	27.7
19°-00'	—	10.6	32°-00'	—	28.1
19°-30'	—	11.2	32°-15'	—	28.5
20°-00'	—	11.7	32°-30'	—	28.9
20°-30'	—	12.3	32°-45'	—	29.3
33°-00'	—	29.7			
33°-15'	—	30.1			
33°-30'	—	30.5			
33°-45'	—	30.9			
34°-00'	—	31.3			
34°-15'	—	31.7			
34°-30'	—	32.1			
34°-45'	—	32.5			
35°-00'	—	32.9			
35°-15'	—	33.3			
35°-30'	—	33.7			
35°-45'	—	34.1			
36°-00'	—	34.6			
36°-15'	—	35.0			
36°-30'	—	35.4			
36°-45'	—	35.8			
37°-00'	—	36.2			
37°-15'	—	36.6			
37°-30'	—	37.1			
37°-45'	—	37.5			
38°-00'	—	37.9			
38°-15'	—	38.3			
38°-30'	—	38.7			
38°-45'	—	39.1			
39°-00'	—	39.6			
39°-15'	—	40.0			
39°-30'	—	40.5			

Chains to Feet	
1	66
2	132
3	198
4	264
5	330
6	396
7	462
8	528
9	594
10	660

Feet to Chains	
100	1.515
200	3.030
300	4.545
400	6.060
500	7.575
600	9.090
700	10.606
800	12.121
900	13.636
1,000	15.151

TABLE II—Continued
TRIGONOMETRIC FORMULAE (continued)

In any triangle:

Given a, b, C; to find c, B, A.

Use Law of Lines.

Given A, B, c; to find a, b, C.

Use Law of Lines.

Given a, b, c; to find A, B, C.

$$\text{Let } \frac{a+b+c}{2} = s, \sqrt{\frac{(s-a)(s-b)(s-c)}{s}} = r$$

$$\cos \frac{1}{2} A = \sqrt{\frac{s(s-a)}{bc}}$$

$$\tan \frac{1}{2} A = \frac{r}{s-a}$$

$$\tan \frac{1}{2} B = \frac{r}{s-b}$$

$$\tan \frac{1}{2} C = \frac{r}{s-c}$$

4555
1818
272.7
600
327.3

Area of a triangle:

$$\text{Area} = \frac{1}{2} ab \sin C$$

$$\text{Area} = \sqrt{s(s-a)(s-b)(s-c)}$$

PRISMOIDAL FORMULA.

$$\text{Vol.} = \frac{h}{6} (B+b+4M)$$

h = altitude; b, B = bases; M = midsection

TABLE III
INCHES AND FRACTIONS OF AN INCH IN DECIMALS OF A FOOT

	0	1	2	3	4	5	6	7	8	9	10	11
$\frac{1}{16}$	.0052	.0885	.1719	.2552	.3385	.4219	.5052	.5885	.6719	.7552	.8385	.9219
$\frac{1}{8}$	.0104	.0938	.1771	.2604	.3438	.4271	.5104	.5938	.6771	.7604	.8438	.9271
$\frac{3}{16}$	.0156	.0990	.1823	.2656	.3490	.4323	.5156	.5990	.6823	.7656	.8490	.9323
$\frac{1}{4}$	.0208	.1042	.1875	.2708	.3542	.4375	.5208	.6042	.6875	.7708	.8542	.9375
$\frac{5}{16}$	.0260	.1094	.1927	.2760	.3594	.4427	.5260	.6094	.6927	.7760	.8594	.9427
$\frac{3}{8}$	.0313	.1146	.1979	.2813	.3646	.4479	.5313	.6146	.6979	.7813	.8646	.9479
$\frac{7}{16}$	.0365	.1198	.2031	.2865	.3698	.4531	.5365	.6198	.7031	.7865	.8698	.9531
$\frac{1}{2}$	.0417	.1250	.2083	.2917	.3750	.4583	.5417	.6250	.7083	.7917	.8750	.9583
$\frac{9}{16}$	.0469	.1302	.2135	.2969	.3803	.4635	.5469	.6302	.7135	.7969	.8802	.9635
$\frac{5}{8}$	.0521	.1354	.2188	.3021	.3854	.4688	.5521	.6354	.7188	.8021	.8854	.9688
$\frac{11}{16}$	.0573	.1406	.2240	.3073	.3906	.4740	.5573	.6406	.7240	.8073	.8906	.9740
$\frac{3}{4}$	.0625	.1458	.2292	.3125	.3958	.4792	.5625	.6458	.7292	.8125	.8958	.9792
$\frac{7}{8}$	.0677	.1510	.2344	.3177	.4010	.4844	.5677	.6510	.7344	.8177	.9010	.9844
$\frac{15}{16}$	.0729	.1563	.2396	.3229	.4063	.4896	.5729	.6563	.7396	.8229	.9063	.9896
$\frac{1}{1}$	.0781	.1615	.2448	.3281	.4115	.4948	.5781	.6615	.7448	.8281	.9115	.9948
	.0833	.1667	.2500	.3333	.4167	.5000	.5833	.6667	.7500	.8333	.9167	1.000
	0	1	2	3	4	5	6	7	8	9	10	11

TABLE IV
USEFUL RELATIONS.

Lineal feet	×.00019	= miles
Lineal yards	×.0006	= miles
Square inches	×.007	= square feet
Square feet	×.111	= square yards
Square yards	×.0002067	= acres
Acres	×4840	= square yards
Cubic inches	×.00058	= cubic feet
Cubic feet	×.03704	= cubic yards
Links	×.22	= yards
Links	×.66	= feet
Feet	×1.5	= links
360°	= 21600'	= 1296000"
Radius	= arc of 57.2957790°	
Arc of 1° (radius = 1)	= .017453292	
Arc of 1' (radius = 1)	= .000290888	
Arc of 1" (radius = 1)	= .000004848	

π	= 3.141592654	$\sqrt{\frac{1}{\pi}}$	= 0.564190
$\frac{\pi}{4}$	= 0.785398163	$\sqrt[3]{\frac{6}{\pi}}$	= 1.240700982
$\frac{\pi}{6}$	= 0.523598776	π^2	= 9.869604401
$\sqrt{\frac{4}{\pi}}$	= 1.128379167	$\frac{1}{\pi^2}$	= 0.101321184
$\frac{\pi}{6}$	= 0.523598776	$\sqrt{\pi}$	= 1.772453851
$\frac{4\pi}{3}$	= 4.188790205	$\frac{1}{\pi}$	= 0.3183099

Curvature of Earth's surface = about 0.7 feet in 1 mile
Curvature in feet = 0.667 (Dist. in miles)²
Difference between arc and chord length, 0.05 feet in 11 1/2 miles

Probable error of a single observation = 0.6754 $\sqrt{\frac{Mv^2}{n-1}}$

Error in chaining of 0.01 feet in 100 feet:

Due to—

1. Length of tape error of 0.01 feet
2. Alignment. One end 1.4 feet out of line
3. Sag of tape at centre of 0.61 feet.
4. Temperature difference of 15°
5. Difference of pull of 15 lbs.

STADIA REDUCTION FORMULAE.

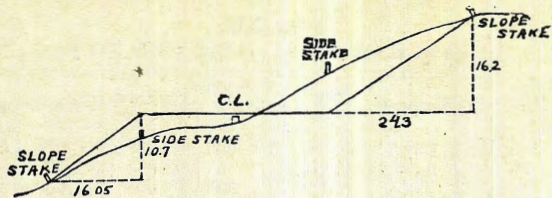
Horizontal Distance = R - R sin² a + C cos a

Vertical Distance = R 1/2 sin 2 a + C sin a

R = Reading × $\frac{\text{distance from Object glass to cross hairs}}{\text{distance between cross hairs}}$

C = distance from Object glass to cross hairs + distance from Object glass to center of instrument.

a = angle of elevation for mid Reading



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

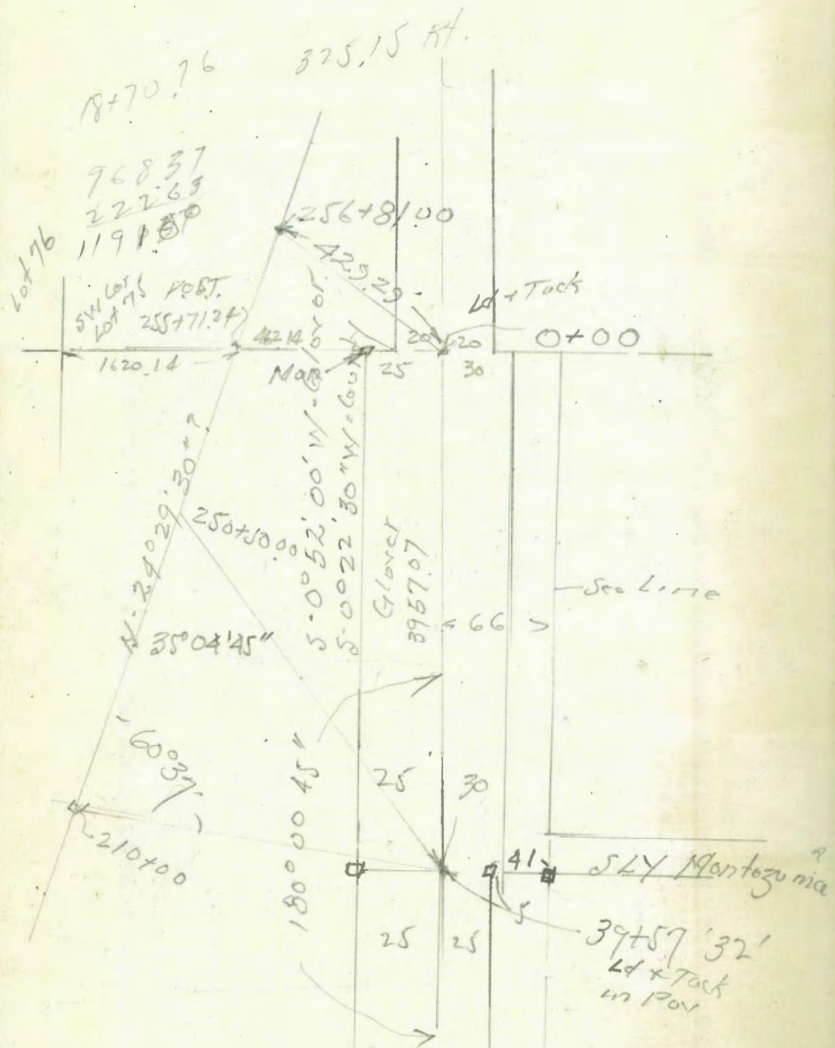
SLOPE 1 1/4 TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0 00	0 15	0 30	0 45	0 60	0 75	0 90	1 05	1 20	1 35	0
1	1 50	1 65	1 80	1 95	2 10	2 25	2 40	2 55	2 70	2 85	1
2	3 00	3 15	3 30	3 45	3 60	3 75	3 90	4 05	4 20	4 35	2
3	4 50	4 65	4 80	4 95	5 10	5 25	5 40	5 55	5 70	5 85	3
4	6 00	6 15	6 30	6 45	6 60	6 75	6 90	7 05	7 20	7 35	4
5	7 50	7 65	7 80	7 95	8 10	8 25	8 40	8 55	8 70	8 85	5
6	9 00	9 15	9 30	9 45	9 60	9 75	9 90	10 05	10 20	10 35	6
7	10 50	10 65	10 80	10 95	11 10	11 25	11 40	11 55	11 70	11 85	7
8	12 00	12 15	12 30	12 45	12 60	12 75	12 90	13 05	13 20	13 35	8
9	13 50	13 65	13 80	13 95	14 10	14 25	14 40	14 55	14 70	14 85	9
10	15 00	15 15	15 30	15 45	15 60	15 75	15 90	16 05	16 20	16 35	10
11	16 50	16 65	16 80	16 95	17 10	17 25	17 40	17 55	17 70	17 85	11
12	18 00	18 15	18 30	18 45	18 60	18 75	18 90	19 05	19 20	19 35	12
13	19 50	19 65	19 80	19 95	20 10	20 25	20 40	20 55	20 70	20 85	13
14	21 00	21 15	21 30	21 45	21 60	21 75	21 90	22 05	22 20	22 35	14
15	22 50	22 65	22 80	22 95	23 10	23 25	23 40	23 55	23 70	23 85	15
16	24 00	24 15	24 30	24 45	24 60	24 75	24 90	25 05	25 20	25 35	16
17	25 50	25 65	25 80	25 95	26 10	26 25	26 40	26 55	26 70	26 85	17
18	27 00	27 15	27 30	27 45	27 60	27 75	27 90	28 05	28 20	28 35	18
19	28 50	28 65	28 80	28 95	29 10	29 25	29 40	29 55	29 70	29 85	19
20	30 00	30 15	30 30	30 45	30 60	30 75	30 90	31 05	31 20	31 35	20
21	31 50	31 65	31 80	31 95	32 10	32 25	32 40	32 55	32 70	32 85	21
22	33 00	33 15	33 30	33 45	33 60	33 75	33 90	34 05	34 20	34 35	22
23	34 50	34 65	34 80	34 95	35 10	35 25	35 40	35 55	35 70	35 85	23
24	36 00	36 15	36 30	36 45	36 60	36 75	36 90	37 05	37 20	37 35	24
25	37 50	37 65	37 80	37 95	38 10	38 25	38 40	38 55	38 70	38 85	25
26	39 00	39 15	39 30	39 45	39 60	39 75	39 90	40 05	40 20	40 35	26
27	40 50	40 65	40 80	40 95	41 10	41 25	41 40	41 55	41 70	41 85	27
28	42 00	42 15	42 30	42 45	42 60	42 75	42 90	43 05	43 20	43 35	28
29	43 50	43 65	43 80	43 95	44 10	44 25	44 40	44 55	44 70	44 85	29
30	45 00	45 15	45 30	45 45	45 60	45 75	45 90	46 05	46 20	46 35	30
31	46 50	46 65	46 80	46 95	47 10	47 25	47 40	47 55	47 70	47 85	31
32	48 00	48 15	48 30	48 45	48 60	48 75	48 90	49 05	49 20	49 35	32
33	49 50	49 65	49 80	49 95	50 10	50 25	50 40	50 55	50 70	50 85	33
34	51 00	51 15	51 30	51 45	51 60	51 75	51 90	52 05	52 20	52 35	34
35	52 50	52 65	52 80	52 95	53 10	53 25	53 40	53 55	53 70	53 85	35
36	54 00	54 15	54 30	54 45	54 60	54 75	54 90	55 05	55 20	55 35	36
37	55 50	55 65	55 80	55 95	56 10	56 25	56 40	56 55	56 70	56 85	37
38	57 00	57 15	57 30	57 45	57 60	57 75	57 90	58 05	58 20	58 35	38
39	58 50	58 65	58 80	58 95	59 10	59 25	59 40	59 55	59 70	59 85	39
40	60 00	60 15	60 30	60 45	60 60	60 75	60 90	61 05	61 20	61 35	40
41	61 50	61 65	61 80	61 95	62 10	62 25	62 40	62 55	62 70	62 85	41
42	63 00	63 15	63 30	63 45	63 60	63 75	63 90	64 05	64 20	64 35	42
43	64 50	64 65	64 80	64 95	65 10	65 25	65 40	65 55	65 70	65 85	43
44	66 00	66 15	66 30	66 45	66 60	66 75	66 90	67 05	67 20	67 35	44
45	67 50	67 65	67 80	67 95	68 10	68 25	68 40	68 55	68 70	68 85	45
46	69 00	69 15	69 30	69 45	69 60	69 75	69 90	70 05	70 20	70 35	46
47	70 50	70 65	70 80	70 95	71 10	71 25	71 40	71 55	71 70	71 85	47
48	72 00	72 15	72 30	72 45	72 60	72 75	72 90	73 05	73 20	73 35	48
49	73 50	73 65	73 80	73 95	74 10	74 25	74 40	74 55	74 70	74 85	49
50	75 00	75 15	75 30	75 45	75 60	75 75	75 90	76 05	76 20	76 35	50

Computed by L. Leland Locke.

2602 Chesterboro

3200.19
3116
43
73



4058.2
52
401.0
34
405.6

33.44

38.66
6.97
31.69
1.76
33.44
7.98
25.96

2092.00
1620.14
461.86