

1657



ENGINEERS
LEVEL BOOK
No. 410F

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning
Roadway 16 feet wide. Side Slopes 1 on 1.
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be $30.6 + (20 - 16) \div 2$ or 2 ft. added to 30.6 = 32.6. For slopes of 1 on 1½ see inside of back cover.

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1657

CITY ENGINEER'S OFFICE

The paper stock of this book is made of a high grade 50% rag paper having a water resisting surface. This book is sewed with Bing Special Enamel Waterproof Thread.

Made in U. S. A.

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✓ 15	✓ 57-17		9-10
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✓ 23			12-18
✓ 25			19-20
✓ 26			20-24
✓ 27			24-33
✓ 28			33-34
✓ 29			34-
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Indexed
C.S.K.

Wabash Canyon Road,
Topog. Survey

Walker
Osborne 2
Hugford
6-1943

New M. Book 1652 P. 45

B.M. N.W. DP Federal +35th 51.97

N.W. Fed. 6.18 58.15

E.C. Hub. = #1 6.51 51.64 #1

17+32.60 Hub. = #2 2.13 56.02 #2

T.P. 8.44 63.98 2.61 55.54

21+92.57 Hub. = #4 2.32 61.66 #4

12.10 70.79 5.79 58.69

24+75.80 Hub. = #5 4.83 65.96 #5

12.95 83.23 0.51 70.28

B.C.

26+61.77 Hub. 8.82 74.41

P.O.T

28+13.53 Hub. 3.70 79.53

on Hub.

T.P. 30+13.71 12.41 93.77 1.87 81.36

P.I.

30+39.17 Hub. 9.76 84.01

E.C.

34+08.27 Hub. 5.36 88.41

T.P. 12.13 103.76 2.14 91.63

T.P. 12.18 115.72 0.22 103.54

T.P. on rock 36+04^{10.24} 124.43 1.53 114.19

37+33.14 on Hub. 5.22 119.21

#10 1.33 116.48
T.P. 40+30.86 on Hub. 9.23 115.15 #10

T.P. 5.09 109.24 12.33 104.15

Cont P-3

T.P.	4.90	101.79	12.35	96.89		
#11		P.O.T. Base line			#11	
	= 43 + 24.22 =	on Hub.	10.65	91.14		
					on Rock	
T.P.	12.09	112.15	1.73	100.06	47+00	
T.P.	5.68	116.57	1.26	110.89		
T.P.	9.56	121.34	4.79	111.78	on P.T. Hub	
					52+98.52 #	
					#13	13
	55+91.88 = P.O.T. Base line Hub	2.04	112.30			
	6.77					
T.P.	57+25	126.97	1.14	120.20	on Hub. #16	= □ 16
	61+00 on P.O.T. Hub.	9.95	117.02		#17	= □ 17
T.P.	12.16	131.96	7.17	119.80		
T.P.	11.16	138.91	4.21	127.75	#18	on Hub 67+40 = □ 18
			4.45	134.46	#20	" " 71+70 = □ 20
			4.63	134.28		" " 72+73.26
T.P.	10.47	146.87	2.51	136.40		
			7.54	139.33		on stub 75+40
			3.42	143.45	#22	on Paving stub 78+74.10 = □ 22
T.P.	13.07	157.64	2.30	144.57		
			10.79	146.85		
			4.30	153.34	#24	" " " 80+49.77
			3.60	154.04		" " " 82+60.08 = □ 24
T.P.	11.18	166.65	2.17	155.47		chk. on ST. Ld. Pge. Run N.H. FR. 1512-39
						on Hub. 84+70.39
□ 26 = 30' Lt. of Base line		3.12	163.53		#26	on Conc. Mon 30' H. 87+76.40 = F. Lexington

166.65

T.P.	11.80	178.18	0.27	166.38	
			4.10	124.08	
T.P.	10.63	185.45	3.36	174.82	
			8.38	177.07	#A
			8.17	177.28	
T.P.	12.45	195.42	2.48	182.97	#C
T.P.	11.94	206.90	0.46	194.96	
T.P.	12.87	219.72	0.05	206.85	
T.P.	13.34	232.81	0.25	219.47	
T.P.	12.89	245.68	0.02	232.79	
T.P.	12.95	258.51	0.12	245.56	
T.P.	11.87	270.13	0.25	258.26	
			10.28	259.85	#37
T.P.	13.36	283.35	0.14	269.99	
T.P.	12.99	295.60	0.74	282.61	
			8.24	287.36	#29
T.P.	9.86	302.61	2.85	292.75	#32
T.P.	5.93	307.41	1.18	301.48	
			7.77	299.64	
			5.52	301.89	
			4.43	302.98	
			302.97	= B.N.	
			0.01	= Error	

on Conc. Mon 91+4793

on Conc. Mon. 30' Lt. Station 92+9886

" Hub- 92+9886 ± Base line

" " 94+84.95 - POT "

on Hub. 97+6556 □ 27

" " 99+59.39

" " 101+02.69

" " 106+53.35

" " 107+27.35 - South 7' line Redwood

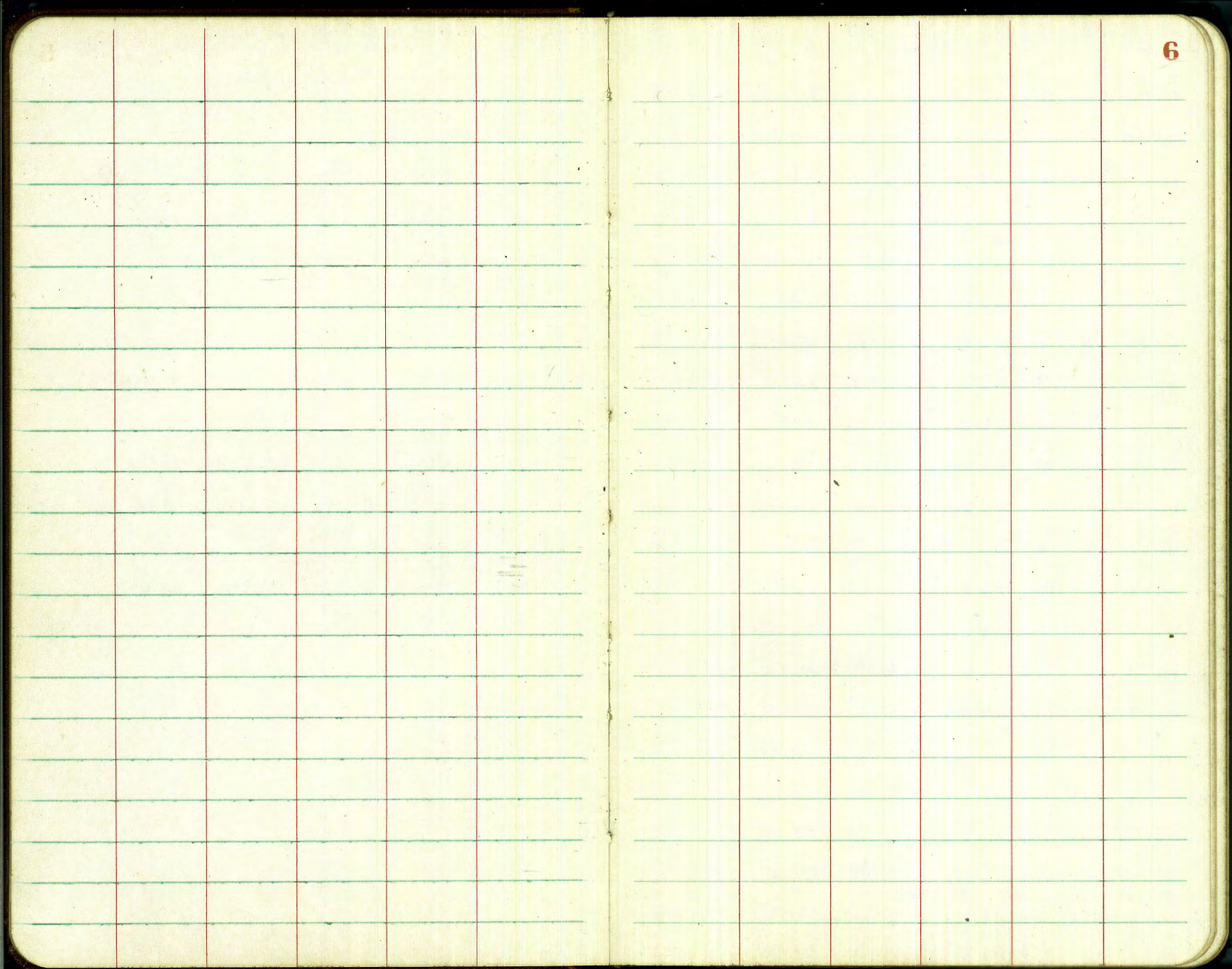
chk. NW B.P. Redwood & 40th

Elev. on Additional Study Stations

	*		Elev. Hub
421	65.87	6166	21+9257
21+3957	on Nail = 23	5.3	60.57 [#] ₃
1144	95.45	8401	Elev. B.C. Hub 30+1371 P-2
31+2212 = 27	FB16567	496	90.47 on spike
1097	102.60	9163	T.P.P. 2
34+50 = 28		507	97.53 [#] ₄
465	118.84	11419	on Rock Peg 2 36+104
Station 29		828	110.56 [#] ₅
1223	299.59	28736	29+5939 P-4
230		54	294.2 [#] ₃₀

Wabash Canyon
Topog. Survey.

5



Wobush Canyon Topog. Survey
Cont. F.B. 1656

Station	Azimuth	Stadia	Vert. Horiz. Dist	Diff. Elev
53+50	Readings from Sta 11 - Elev. = 113.6	HT = 5.0		
	111° 07'	81	-4° 01'	80.5 - 5.6
	108° 01'	90	-1° 25'	89.2 - 10.4
	"	92	4.4 Higher	91.2 - 6.0
	100° 51'	94	-1° 15'	93.2 - 10.2
	112° 42'	13	0° 00'	12.0 00
	333° 20'	14	+4° 50'	12.8 + 1.2
	2 SW ↑	11	2' Higher	13.8 + 3.2
	113° 08'	27	-5° 06'	27.7 - 2.3
	4° 15'	30	0° 00'	50.0 00
	2 SW ↑	"	2' Higher	50.0 + 2
	2° 56'	48	0° 00'	48.0 00
	"	50	2.5 Lower	-2.5
	347° 48'	132	+3° 10'	132.0 + 2.2
	4° 51'	130	-0° 15'	130.0 - 0.6
	"	134	2.5 High	134.0 + 1.9
	54° 13'	97	-4° 02'	91.2 - 6.3
	"	93	3' Higher	96.2 - 3.3
	31° 08'	138	-1° 28'	122.6 - 3.5
	2 SW ↑	138	2.5 Higher	127.6 - 1.0

No. 1. Hardcopy #14 to page 10
#15 7

Elev.

Elev from FB 1656 - 56

108.0 ✓

103.2 ↓

107.2 ✓

107.4 ✓

113.6

Paper Pale duplicate ✓

114.8 ✓

116.8 ✓

111.3

angle Exposed Top C" Gas duplicate ✓

113.6 ✓

115.6

Duplicate

113.6 ✓

111.1 ✓

120.8 ✓

error = 118.8

113.0 ✓

115.5 ✓

107.3 ✓

110.3 ✓

110.1 ✓

error 109.1

112.6 ✓

Wabash Canyon

Stations	Azimuth	Stadia	Vert. A	Horizontal	Dist.	Diff. Elev.
53 + 50	Reading from	14	Elev. 112.1	41.50		
	12° 10'	142'	0° 00'	1420	00	
	2° W ↗	142'	40' High	1420		
	39° 35'	182'	-1° 37'	181.1	-51	
	0° 18'	205'	+3° 05'	203.2	+10.8	
	0° 42'	253'	+3° 20'	251.9	+14.5	
	13° 35'	245'	+0° 12'	245.0	+0.9	
	20° 27'	260'	+0° 35'	260.0	+2.6	
	"	257'	3' lower	257.0	-0.4	
	32° 52'	288'	-0° 41'	282.1	-3.4	
	22° 42'	260'	-0° 09'	260.0	-0.7	
	314° 48'	155'	+12° 00'	147.9	+32.3	
	309° 17'	230'	+13° 29'	217.8	+52.2	
	320° 27'	213'	+15° 16'	198.4	+54.1	
	335° 31'	230'	+13° 15'	213.2	+52.0	
	339° 51'	190'	+9° 52'	184.5	+32.1	
	352° 53'	267'	+6° 58'	263.2	+32.1	
	348° 10'	300'	+9° 51'	291.2	+50.6	
	357° 23'		+7° 30'			
	4° 37'	374'	+7° 30'	362.7	+48.4	
	2° 37'					
	2° 30'	372'	+5° 20'	368.8	+34.4	

checked
9-23-43

checked
9-23-43

Elev

113.6 ✓

117.6 ✓

108.8 ✓

124.4 ✓

128.1 ↓

114.5 ✓

116.2 ✓

113.2 ✓

110.2 ✓

112.9 ✓

145.9 ✓

165.8 ✓

162.7 ✓

166.3 ↓

145.7 ✓

145.7 ↓

164.2 ↓

162.0 ↓

148.0 ✓

+11.0 - 4
error = 120.6

+4.4
-2.0
error 160.0

+34.4
-5.0
error 143.0

Wobush Canyon

Station	Azimuth	Stadia	Vert. A	Horiz. Dist	Diff Elev	Elev		
57+17	Reading from	#15	Elev. 120.5	Ht. 50				
	296°42'	117'	+7°42'	113.0	+15.5	1133.6	✓	
	281°04'	171	+16°53' 10.0	1566	+47.5	1621.6	✓	error 120.5 47.5 1676 162.6
	295°14'	198	+12°37'	1887	+42.2	1623	✓	
	304°24'	165	+8°31'	1614	+24.2	144.3	✓	
	314°54'	210	+8°28' 10.0	2056	+30.6	-5.0	145.7	✓
	307°31'	233	+12°09' 11.0	2229	+47.9	-6.0	162.0	✓ OK
	316°06'	270	+7°41' 10.0	265.2	+36.2	-5.8	151.3	✓
	312°04'	286	+11°16' 17.0	275.3	+54.8	-12.0	162.9	✓
	320°10'	230	+6°52' 7.0	226.7	+27.3	-2.0	145.4	✓
	325°13'	337	+4°46' 7.0	334.8	+27.9	-2.0	146.0	✓
	328°47'	327	+3°25' 8.0	325.1	+19.3	-3.0	136.4	✓
	334°49'	307	+2°50' 8.0	305.2	+14.8	-3.0	131.9	✓
	328°37'	266	+2°18'	264.8	+10.7		130.8	✓
	333°54'	280	+3°45' 13.0	278.2	+18.2	-8.0	130.3	✓
	327°38'	253	+3°34' 11.0	251.4	+15.5	-6.0	129.6	✓
		253	only 2.5 lower	251.4	+6.0		126.1	
		253	some 10' only 2.5	251.4	+9.5		129.6	
	188°10'	58	-1°38'	57.9	-1.6		118.5	✓
	167°22'	64	-2°19'	63.8	-2.0		117.4	✓

Bot. Ravine

" "

" "

Toe of Sly Slope

Bot. Ravine

Toe of Nly Slope

Power pole

Wabash Canyon

STATION	Hz	Stadia	Vert. A	Horiz. dist	diff. Elev
57+17	Reading	from	□ #15	1122.05	HI 5.0
	154°46'	68'	-7°19'	662	- 8.5
	160°45'	48'	-3°45'	482	- 3.1
	156°42'	44'	-7°18'	422	- 5.6 -20
	149°50'	36'	-5°21'	348	- 3.3

Elev.
1116 ✓
117.0 ✓
112.8 ✓
116.8
End 6-25-43. 4:36 PM

S. Top Wash
Bot
N. Top

Walker & Roe,

Osborne Rd Topog. Wabash Canyon Road

Hoguel Rd.

Cont. from F.B. 1656 - Page 79

Station	Azimuth	Stadia	Vert. A	Horiz. Dist	Diff. Elev
Readings	From	□ 22	Elev. = 143.45	HI = 5.0	
	303°35'	276'	+7°36'	271.3	+ 36.2
	312°35'	287'	+7°24'	282.3	+ 36.7
	315°0'	437'	+10°22'	422.9	+ 77.3 -10
	319°06'	370'	+8°08'	362.8	+ 51.8 -50
	30°36'	148'	+1°47'	147.6	+ 4.5
	47°50'	282'	+2°06'	281.1	+ 10.4
	24°09'	217'	+2°25'	215.8	+ 19.1
	52°05'	314'	+2°55'	313.3	+ 16.1
	23°30'	311'	+2°32'	310.4	+ 13.8
	42°10'	320'	+2°14'	318.5	+ 12.5

Elev.
179.7 ✓
180.2 ✓
219.4 ✓
190.3 ✓
148.0 ✓
153.9 ✓
152.6 ✓
159.6 ✓
157.3 ✓
156.0 ✓

chk A3. 2.45 PM
6-25-43

Wobush Canyon

Station	Azimuth	Stadia	Vert. D	Horiz. Dist.	Diff. Elev.	Elev.
	Readings from	22	Elev = 14345	HI = 5.0		
	3° 26'	218'	+1° 41'	2158	+ 6.5	150.0 ✓
	31° 16'	355'	+2° 29'	354.4	+ 15.4	158.9 ✓
	32° 44'	395'	+3° 31'	393.5	+ 24.2	167.7 ✓
	4° 33'	304'	+1° 37'	3038	+ 8.5	152.0 ✓
	40° 09'	352'	+2° 48' 6.0	351.2	+ 17.2 -1.0	159.7 ✓
	48° 0'	380'	+4° 52'	3773	+ 32.1	175.6 ✓
	54° 53'	354'	+4° 51'	351.5	+ 29.8	173.3 ✓
	60° 31'	392'	+7° 04'	386.2	+ 48.0	191.5 ✓
	65° 55'	432'	+8° 27'	4229	+ 62.8	206.3 ✓
	58° 26'	470'	+7° 42'	461.6	+ 62.4	205.9 ✓
	54° 17'	500'	+7° 24'	491.9	+ 63.8	207.4 ✓
	51° 37'	530'	+6° 54'	522.5	+ 63.2	206.7 ✓
	46° 48'	480'	+6° 16'	474.5	+ 52.1	195.6 ✓
	42° 33'	437'	+5° 29'	433.2	+ 41.6	185.1 ✓
NW Hd. Small Draw	42° 06'	417'	+5° 04'	413.8	+ 36.2	180.2 ✓
	41° 54'	403'	+5° 10'	399.7	+ 36.1	179.6 ✓
Int. Draw	36° 50'	405'	+4° 28'	402.7	+ 31.5	175.0
SW	38° 33'	397'	+4° 15'	394.9	+ 21.3	164.8 ✓
	28° 28'	369'	+2° 30'	368.3	+ 16.1	159.6 ✓

chk R3 2.45 6-25-23

Wobush Canyon

Station	Azimuth	Stadia	Vert. A	Horiz. Dist	Diff. Elev.
		From □ 22	Elev. 143.45	H.I. = 5.0	
			+ 3° 34'		
	35° 51'	342'	11.0	340.7	+ 26.2
					+ 30.36
□ 23	27° 57'	480'	+ 3° 38'	478.2	30.44
				173.62	- 18
		Readings From □ 23	Elev. 173.89	H.I. = 5.0	
			- 3° 39'		30.37
□ 22	207° 57'	478	- 3° 40'	476.1	- 30.50
chk stab. = □ 24					
82460.98	258° 26'	185	- 6° 21'	182.7	- 20.34
	45° 55'	77'	+ 8° 49'	75.4	+ 11.2
	184° 41'	55'	- 14° 17'	51.7	- 13.2
	109° 0'	88'	- 6° 41'	86.8	- 10.2
	47° 23'	203'	+ 10° 17'	196.7	+ 35.7
	62° 16'	225'	+ 9° 24'	219.1	+ 36.3
	94° 0'	166'	- 1° 07'	165.9	- 3.4
			0°		
	90° 40'	243'	4.6	243.0	- 0.4
			+ 7° 19'		
	70° 0'	316'	10.0	311.1	+ 39.9 - 5.0
	88° 33'	323'	+ 0° 50'	323.9	+ 5.1
			+ 6° 25'		
	100° 43'	325'	8.0	321.0	+ 36.1 - 3.0
	81° 29'	403'	+ 3° 43'	401.4	+ 26.1
			+ 1° 21'		
	88° 35'	404'	8.0	403.8	+ 9.5 - 3.6
	110° 20'	350'	+ 10° 06'	339.4	+ 60.4
			+ 2° 22'		
	91° 20'	370'	13.0	369.4	+ 15.3 - 8.0

Elev.

164.2 ✓

173.89

143.29

143.1

153.32

184.9 ✓

160.5 ✓

763.8 ✓

209.4 ✓

210.0 ✓

170.3 ✓

173.3 ✓

205.6 ✓

178.8 ✓

206.8 ✓

199.8 ✓

180.2 ✓

234.1 ✓

181.0 ✓

Use Elev. 179.09

See Page 18 for closer Elev.

reason

shorter sight.

2143.45 off B

= 1153.34 Page 3

Wabush Canyon

Station	Azimuth	Stadia	Vert. Δ	Horiz. Dist.	Diff. Elev
	Readings	From	23 Elev	173.66 173.89	HI. 50
	111°05'	279'	+9°20'	271.6	+44.7
	79°25'	320'	+2°17'	319.5	+12.7
	115°20'	211'	+8°40'	206.2	+31.4 - 2.0
	123°40'	150'	+7°42'	147.3	+19.9
	76°28'	219'	+4°11'	215.7	+26.5 - 2.0
	131°0'	109'	+4°25'	108.4	+8.4
	150°26'	96'	+2°06'	95.9	+3.5
	174°10'	90'	0° 7.0		-2.0
	70°30'	147'	+2°28'	146.8	+6.3
	58°37'	129'	+7°52'	126.6	+17.5
	203°00'	89'	-8°23'	87.1	-12.8
	31°40'	89'	+4°18'	88.5	+6.5
	13°0'	32'	0° 6.8	32.0	-1.8
	354°45'	61'	-6°48'	60.2	-7.2
	208°00'	49'	-15°42'	45.4	-12.8
	236°40'	47'	-15°42'	43.6	-12.2
	276°30'	48'	-19°34'	45.0	-11.7 - 2.0
	307°10'	58'	-12°51'	55.1	-12.6 - 3.0
E. Decker	239°15'	104'	-8°41'	101.6	-15.4

Elev.

215.4	✓		
186.4		= 179.4	✓
198.1		= 205.1	✓
193.6	✓		
198.2		$\frac{173.7}{16.5}$ <u>190.2</u>	188.2 ✓
182.1	✓		
177.2	✓		
171.7	✓		
180.0	✓		
191.2	✓		
160.9	✓		
180.2	✓		
171.9	✓		
166.5		= 162.5	✓
160.9	✓		
161.5	✓		
160.0	✓		
158.1	✓		
158.3	✓		

Flabush Canyon

Station	Azimuth	Stadia	Vert. Δ	Horiz. Dist.	Diff. Elev.
	Readings	From	23 Elev	173.66	HI = 5.0
Elev. Pole	250°31'	150'	-6°56'	147.9	-18.0
	313°27'	123'	-9°48'	119.5	-20.7
	348°20'	208'	-3°39'	207.2	-13.7 + 5.0
	340°50'	281'	-3°20'	280.1	-16.8
	342°43'	226'	-1°32'	225.8	-6.3 - 8.0
Evidently wrong	351°36'	380'	-0°45'	379.7	-5.0 - 8.0
	1°46'	372'	-1°43'	374.7	-14.7
Rim E.M.H.	261°44'	200'	-5°25'	198.3	-18.8
	272°30'	178'	-6°33'	170.8	-20.2
	288°27'	206'	-6°03'	203.8	-21.6
	291°20'	215'	-6°19'	212.5	-23.5
	294°50'	225'	-5°30'	222.9	-21.5
	202°36'	96'	-7°34'	94.3	-12.5
	210°20'	83'	-10°34'	80.2	-15.0
	224°50'	78'	-10°06'	75.7	-13.5
	234°17'	117'	-7°41'	115.0	-15.5
	225°10'	116'	-8°40'	116.0	-15
	219°48'	123'	-7°36'	124.0	-16.1
	226°50'	165'	-6°46'	162.8	-19.3

Elev.

155.7 ✓ = Δ in Pole Line

153.0 ✓ E. creek 10' wide Banks 2' Higher

155.0 ✓ " " " " " " "

156.9 ✓ " " " " " 1' "

162.4 ✓ Toe Slope

160.7 ✓ E. creek 10' " " " " X

162.0 ✓ " " " " " " "

154.9 ✓ Ground 1.6 lower

153.5 ✓

152.1 ✓ ch. Az.

150.2 ✓ E. creek 10' wide Bank 2' Higher

152.2 ✓ ch. Az. 4.25 Pm 16-25-43

161.2 ✓ " " 9 am 6-26-43 same HI = 5.0

158.7 ✓ E. Channel to Poplarst 10' wide

160.2 ✓

158.2 ✓

172.2 ✓ 156.3 ✓ " " " " 5' wide

157.6 ✓

154.4 ✓ " " " " " "

Station	Azimuth	Stadia	Vert. A	Horiz. Dist.	Diff. Elev.	Elev.
				173.61		
	Readings From	12.23		Elev 173.89	HT = 5.0	
	236°07'	164'	-6°20'	162.1	-18.0	155.7 ✓
	236°40'	212'	-5°21'	210.2	-19.7	154.0 ✓
	234°31'	204'	-5°26'	202.2	-19.2	154.5 ✓
	230°10'	230'	-5°04'	228.3	-10.2	163.5 = 153.5 ✓
	234°34'	295'	-4°43'	293.0	-24.2	149.5 ✓
	234°22'	338'	-5°0'	335.5	-29.4	144.3 ✓ = Int. East Side Wubush Channel
	235°08'	332'	-4°24'	330.1	-25.4	148.3 ✓ Top Bank NE. Int. " " + Poplar Channel
	248°55'	345'	-4°28'	343.0	-26.8	146.9 ↓ E. Bank Wubush Ch. edge = 2' Lower, Duplicate
	255°54'	297'	-4°52'	294.9	-25.1	148.6 ↓ " " " " " " ✓
	259°30'	233'	-5°41'	230.7	-23.0	150.7 ↓ " " " " " 3' ✓ ↓
	282°49'	225'	-5°39'	222.9	-22.0	151.7 ↓ " " " " " 2' " ✓ ↓
	284°12'	231'	-6°18'	228.3	-25.2	148.5 ✓ Int. E Lexington Ch. with E edge Wubush Ch.
	287°23'	241'	-5°17'	239.1	-22.1	151.6 ✓ E. Bank Wubush Ch. edge 3' Lower. ✓
9:35 am chk. sig.	301°15'	302'	-4°01'	300.5	-21.1	152.6 ↓ " " " " " " ✓
	299°41'	432'	-2°46'	436.1	-20.8	145.2 = 152.8 ✓ 14 " " " " " " ✓
	284°04'	462'	-3°02'	460.7	-24.4	149.3 ↓ West edge " " Bank = 3' Higher.
	276°51'	470'	-2°31'	469.1	-20.6 - 5.0	148.1 ↓ " " " " " = 6' ✓
	267°37'	460'	-3°21'	458.4	-26.8	146.9 ↓ " " " " " = 7' ✓
	257°55'	415'	-3°47'	413.3	-27.3	146.4 ↓ " " " " " = 5' ✓

Station	Azimuth	Stadia	Vert. A	Horiz. Dist	Diff. Elev	Elev.
	Readings From	23		173.68 Elev. = 1738.9	HI = 5.0	
	247°52'	395'	-4°04'	393.1	-27.9	1457.8 ↓ 14 Bank, Wobush Ch. edge = 3' Lower
	236°35'	415'	-3°53'	413.1	-28.0	1457.7 Duplicate " " " " " "
chk Az. 1095	238°20'	432'	-3°29'	430.5	-26.0	1477.7 Duplicate Note: Plot Island 75' at 3' Above stream in wide Part of this channel
Toe slope	249°12'	415'	-3°40'	413.3	-26.5	1477.2 Duplicate
	260°10'	435'	-3°11'	433.7	-24.1	1499.6 ✓
chk Az.	273°0'	485'	-2°04'	484.4	-17.5	1562 ✓
	275°27'	507'	-1°02'	506.8	-9.1	164.6 ✓
	265°10'	590	+4°44' 10.0	586.1	+48.5 - 5.0	217.2 ✓
	283°03'	555'	-0°45'	554.9	-7.3	1664 ✓
	281°11'	589'	+0°30'	588.0	+5.1	1789 ✓
	277°55'	580'	+0°55'	579.9	+9.3	183.0 ✓
	269°30'	593'	+3°25'	591.0	+35.3	2090 ✓
	275°16'	575'	+2°0'	574.3	+20.1	1938 ✓
	269°06'	557'	+2°0'	556.3	+19.5	1932 ✓
	278°0'	641'	+3°40'	640.4	+40.9	214.6 ✓
	266°05'	540'	+1°35'	539.6	+14.9	180.6 ✓
chk Az	279°30'	620'	+2°04'	619.2	+22.3	196.0 ✓
1030	263°29'	515'	+1°34'	514.6	+14.1	187.8 ✓
	284°45'	575'	+0°30'	575.0	-5.0	168.7 ↓

Wabush Canyon

Stadia	Azimuth	Stadia	Vert A	Horiz Dist	Diff. Elev	
	Readings	From	23	Elev. = ^{173.6'} 173.89	HI = 5.0	
	258°51'	495	+2°16'	494.3	+19.6	193.3 ✓
	253°00'	480	+1°40'	479.6	+14.0	187.7 ✓
	288°03'	543'	-1°31'	542.6	-14.4	159.3 ✓
	293°33'	530	-1°58'	529.5	-18.2	155.5 ✓
in Wash.	299°40'	516	-1°51' 9.0	515.5	-16.7 - 4.0	153.0 ✓
	304°05'	241'	-4°02'	238.8	-16.9	156.8 ✓
	317°31'	227'	-1°20'	226.9	-5.3	168.4 ✓
	318°10'	197'	-4°46'	195.7	-16.3	152.4 ✓
	324°44'	204'	-4°07'	203.0	-14.6	159.1 ✓
	333°35'	275'	+0°35'	275.0	+2.8	176.5 ✓
	335°38'	232'	-3°33'	231.1	-14.1	159.6 ✓
	338°10'	355'	+1°24'	354.8	+8.7	182.4 ✓
	342°12'	333'	-1°01' 9.0	332.9	-5.9 - 4.0	163.8 ✓
11 am	347°22'	439'	+1°54'	438.5	+14.6	188.3 ✓
chk Az	346°40'	369'	-0°47'	368.9	-5.0	168.7 ✓
	348°0'	378'	0°	378.0	00	173.7 ✓
	350°56'	398'	0°	398.0	00	173.7 ✓
	356°05'	480	+2°05'	479.4	+12.4	191.1 ✓
	355°0'	400	-6°23'	395.1	+44.2	129.5 ?

Mabash Canyon

Station	Hz.	Stadia	∠	Horiz Dist.	Diff Elev	Elev.
		Readings From	□ 23	Elev. ^{173.66} 173.89	HI = 5.0	
	356°54'	425'	-1°05'	424.9	-8.0	165.7 ✓
	1°25'	457'	-0°19'	457.0	-2.5 -40	162.2 ✓
	0°49'	600'	+3°10'	598.2	+33.1	206.5 ✓
	5°48'	477'	+0°32'	477.0	+4.5	178.2 ✓
	357°11'	630'	+3°49'	627.4	+41.8	215.5 ✓
	352°05'	640'	+3°42'	637.4	+41.7	214.9 ✓
	3°0'	508'	+0°49'	507.9	+7.2	180.9 ✓
	349°0'	560'	+2°47'	558.8	+27.2	200.9 ✓
	351°45'	510'	+2°33'	509.0	+22.7	196.4 ✓
	341°09'	459'	+1°45'	458.6	+14.0	187.2 ✓
	356°0'	475'	+2°0'	474.3	+18.0	191.7 ✓
	335°18'	365'	+1°14'	364.8	+7.9	181.6 ✓
ok.	326°0'	296'	0° 4.1	296.0	+0.9	174.6 ✓
	304°25'	245'	-3°48'	244.0	-16.2	157.8 ✓

82+60.08

= □ 24 Readings From □ 24 Elev. ^{153.34}
153.82 HI = 5.2

□ 22	186°25'	386'	-0°53'	385.9	-5.9	2025 20.25' Mo
□ 23	78°26' 185	185'	+6°20'	182.7	+20.27	
□ 25	341°37'	482'	0° 1.6	482.0	+3.6 1.6	

Cont Page 19

173.66
174.09 Use this instead 173.89 (reason of short sight)
156.94
157.44 AI = 156.99 *EB*

chk Ag 11.23 Am 6-26-43

9 am 6-28-43

6-28-43

Wobush Canyon

19

Station	Az.	Stadia	Vert Δ	Horiz Dist	Diff. Elev	Elev	
	Readings	From	25 Elev	Elev 156.94	HI = 50		
□ 24	161°37'	482'	8.7	487.0	-3.7	153.24	-153.37
✓ Eloc Pk.	157°33'	295'	7.4	235.0	-2.4	154.6	✓ 1st Pole North of Δ in Pole 61120
	154°08'	266'	11.0	266.0	-6.0	151.0	✓
	158°06'	180	10.4	180.0	-5.4	151.6	✓ E Edge Wobush channel, Bank 2' higher
	149°45'	159	10.0	159.0	-5.0	152.0	✓ " " " " " "
	145°18'	158	12.0	158.0	+5.5 = 20	155.5	✓
	122°29'	93'	6.8	93.0	-1.8	155.2	✓ " " " " " "
	99°04'	58'	6.3	58.0	-1.3	155.2	✓ " " " " " Bank same
	79°40'	45'	6.2	45.0	-1.2	155.8	✓ " " " " " "
	120°35'	129	7.0	126.5	+18.0 = 20	173.0	✓ " " " " " " " " " " " "
	57°50'	53'	4.3	43.0	-7.0	157.7	✓ E. Bank ch. edge = 2' lower
	81°20'	103'	11.3	97.4	+23.5	170.5	✓
	38°40'	95'	1.5	95.0	+3.5	160.8	✓ " " " " " " " " " " " "
	18°52'	127	3.0	122.0	+1.6 + 2.0	160.6	✓ " " " " " " " " " " " "
	359°42'	149'	10.0	149.0	+1.7	158.2	✓ " E edge " " " Bank same
	11°42'	175'	7.5	174.8	+5.9 = 20	160.9	✓ Too steep
	35°05'	190'	19.5	184.5	+32.2	185.2 = 189.2	✓
	26°18'	161'	15.4	159.4	+16.0	173.0	✓
	313°26'	155'	15.5	155.0	+2.5	155.5 = 159.5	✓ W edge ch. " "

6-28-43

Wabash Canyon

20

Station	Azimuth	Stadia	Vert Δ	Hang Dist	Diff. Elev	Elev	
Readings From # 25 Elev 156.94 Ht = 3.0							
			0°				
	292°42'	108'	3.8	108.0	+1.2	158.2 ✓	W Bank ch. Edge = 1' corner
			0°				
Elec. Pole	338°45'	69'	3.4	69.0	+1.6	158.6	
			0°				
	242°44'	61'	4.2	61.0	+0.8	157.8 ✓	" " " " = 2' "
			0°				
	193°03'	110'	5.7	110.0	-0.7	156.3 ✓	
			0°				
	175°20'	100'	7.1	100.0	-2.1	154.9 ✓	W edge ch. Bank same
			0°				
L.M.H.	167°35'	86'	5.5	86.0	-0.5	156.5 ✓	
			0°				
	250°05'	285'	7.2°03'	284.7	10.2	167.2 ✓	Toe slope
			0°				
	178°46'	132'	7.8	132.0	-1.8	158.8 ✓	W edge ch.
			+0°21'				
	191°53'	220'	11.0	220.0	+1.3 -6.0	152.3 Duplicate	" " "
			0°				
1045 am chk. Az 30' ht. of	253°46'	341'	+5°18'	338.2	+31.4	188.4 ✓	Side Hill
Readings From # 26 Elev 163.53 Ht = 5.3							
87+76.40 = 163.26 on Mon 30' ht. of 84+61.25			0°				
	214°25'	315'	13.1	315.0	-8.1	155.4 = 155.7 ✓	
			0°				
	197°48'	352'	11.0	352.0	-6.0	157.5 = 157.8 ✓	
			+0°32'				
	193°18'	315'	9.0	315.0	+2.9 -6.0	160.4 = 162.7 ✓	
			0°				
	202°10'	275'	10.9	275.0	-5.9	157.6 = 157.9 ✓	
			0°				
	184°06'	337'	+4°22'	335.1	+26.3	189.8	to far away
			0°				
	191°50'	239'	+0°48'	239.0	+3.3	166.8 ✓	
			+8°12'				
	176°20'	276'	8.3	276.5	+39.0 -2.3	200.2 = 199.5 ✓	
			0°				
	198°30'	193'	8.5	193.0	-3.5	160.0 = 160.3 ✓	chk. A3 11.42 6-28-43

Wabash Canyon

Station	Azimuth	Stadia	Vert. Δ	Horiz. Dist	Diff. Elev	
	Readings	From	to	26 = Elev	163.53	142 - 5.3
156°46'	253'	+14°06'	238.2	+59.8		
		+2°21'				
185°32'	184'	8.3	183.7	+7.5		
141°40'	257'	+17°49'	224.3	+71.9		
		+3°37'				
176°56'	156'	6.3	155.4	+9.8		
124°15'	237'	+22°09'	203.7	+82.8		
		0°				
196°54'	145'	7.5	145.0	-1.2		
		0°				
189°07'	93'	6.7	93.0	-1.4		
175°10'	110'	+2°28'	109.8	+4.7		
155°05'	70'	+5°36'	68.4	+6.8		
		+20°44'				
100°03'	264'	6.3	231.1	+77.4 -10		
106°17'	54'	+10°01'	52.4	+9.3		
		+17°35'				
77°49'	263'	6.3	239.2	+65.7 -10		
		0°				
30°12'	85'	2.0	85.0	+3.3		
48°05'	85'	+5°17'	84.3	+7.8		
35°26'	154'	+2°19'	153.8	+6.2		
		+15°34'				
69°0'	241'	7.3	223.7	+62.3 -20		
75°50'	187'	+17°13'	170.7	+52.9		
87°16'	132'	+17°41'	119.8	+38.2		
		+16°20'				
96°15'	100'	7.3	92.1	+27.0		

Elev

223.3 ✓
174.0 = 168.0 ✓
235.4 ✓
173.3 = 172.3 ✓
246.3 ✓
162.3 ✓
162.1 ✓
165.2 ✓
170.3 ✓
239.9 ✓
172.8 ✓
228.2 ✓
166.9 ✓
171.3 ✓
169.7 ✓
223.8 ✓
216.4 ✓
201.2 ✓
190.5 = 188.5 ✓

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Wabash Canyon

Station	Azimuth	Stadia	Vert. Δ	Horiz. Dist.	Diff. Elev
Readings from	26	Elev = 163.53	HI = 5.3		
			+16° 31'		
118° 42'	88'	8.3	81.0	+24.0	-30
155° 0'	103'	+8° 40'	100.7	+15.0	
163° 30'	247'	+12° 23'	236.0	+51.7	
		+14° 05'			
155° 15'	229'	7.3	215.6	+54.0	-2.0
		+2° 31'			
321° 27'	96'	8.3	95.6	+4.2	-30
		+16° 15'			
148° 20'	213'	11.3	196.5	+57.4	-60
132° 24'	193'	+20° 25'	169.6	+63.1	
107° 42'	180'	+20° 34'	157.9	+39.2	
84° 55'	205'	+18° 50'	174.7	+59.6	
		+15° 45'			
70° 46'	240'	6.3	222.5	+62.8	-1.0
		+2° 10'			
6° 50'	124'	8.3	123.8	+4.7	-3.0
		+11° 52'			
58° 13'	222'	11.3	212.7	+44.7	=60
3° 37'	153'	+2° 17'	152.8	+6.1	
		+12° 30'			
60° 22'	152'	10.3	144.9	+32.1	-50
27° 20'	170'	+1° 01'	169.9	+3.0	
85° 31'	161'	+13° 26'	152.5	+36.4	483
104° 33'	159'	+19° 56'	140.2	+51.0	✓
		+4° 11'			
15° 40'	183'	14.3	182.0	+13.3	-90
		+3° 15'			
19° 20'	230'	12.3	229.3	+13.6	-70

Elev

184.5 ✓

178.5 ✓

215.2 ✓

215.5 ✓

164.2 ✓

214.9 ✓

226.6 ✓

222.7 ✓

223.1 ✓

225.3 ✓

165.2 ✓

202.2 ✓

165.6 = 169.6 ✓

190.6 ✓

166.5 ✓

199.9 = 211.8 ✓

214.5 ✓

167.8 ✓

169.5 ✓

22

chk Az 1200 6-28-43

L 10' channel. Bank 1' higher

? page vi

L 10' ch.

Bank 2' higher

chk Az 1200

L 8' ch.

" 1' "

Wabash Canyon

Station	Azimuth	Stadia	Vert. A	Horizontal Dist	Diff. Elev
Readings	From	26	Elev. = 169.53	H.T. = 5.3	
			+2°44'		
30°26'	235	9.3	234.5	+11.2	-40
117°36'	148'	+19°07'	132.3	+45.8	
135°48'	153'	+18°05'	138.5	+45.2	
148°28'	158'	+15°43'	6.3	146.5	+41.2 -10
4°18'	217'	+6°47'	214.1	+25.5	
167°12'	188'	+8°28'	6.3	184.1	+27.2
354°12'	192'	+8°43'	9.3	187.7	+28.8
5°41'	266'	+8°03'	260.9	+36.9	
175°0'	211'	+7°04'	202.9	+25.8	
174°42'	246'	+8°46'	240.7	+37.1	
179°44'	295'	+6°32'	291.2	+33.4	
9°15'	342	+7°22'	10.3	336.5	+43.5 -50
15°43'	382'	+6°54'	376.6	+45.6	
19°45'	417'	+6°30'	411.7	+46.9	
344°44'	285'	+11°33'	273.2	+55.9	
26°56'	393'	+4°07'	396.1	+28.1	
30°47'	367	+2°11'	8.3	366.5	+13.9 -30
30°17'	310	+2°44'	10.3	309.3	+14.8 -5.0
352°52'	352	+11°06'	339.2	+66.5	

Elev	
170.7 ✓	chk Az.
209.3 ✓	
208.7 ✓	
203.7 ✓	
189.0 ✓	
190.7 ✓	East slope
192.3 ✓	West slope
200.4 ✓	" "
189.3 ✓	E "
200.6 ✓	" "
196.9 ✓	chk Az. 150
202.0 ✓	in Draw
209.1 ✓	
210.4 ✓	
219.4 ✓	
194.6 ✓	
174.4 ✓	
173.3 ✓	
230.0 ✓	

Station	Azimuth	Stadia	Vert. & Horiz. Dist.	Diff. Elev.
	Readings From	26	Elev. = 16353	HI = 53
			710' 46'	
356° 41'	402	6.3	388.1	+73.8 - 1.0
			+2° 59'	
22° 53'	281	8.3	280.3	+14.7 - 3.0
359° 57'	507	+10° 03'	491.8	+82.1
3° 33'	497	+9° 51'	482.6	+83.8
7° 12'	437	+9° 45'	424.7	+72.9
11° 17'	393	+8° 12'	385.0	+55.5
			+10° 03'	
0° 40'	345	7.3	334.7	+59.3 - 2.0
			+8° 48'	
4° 50'	381	8.3	322.7	+57.6 - 3.0
			+10° 04'	
0° 40'	430	10.3	417.1	+74.6 - 4.0
356° 20'	365	+10° 51'	352.0	+67.5
354° 50'	307	+10° 38'	296.8	+55.7
347° 0'	253	+10° 14'	245.2	+44.2
			+12° 14'	
336° 0'	215	6.3	205.4	+44.5 - 1.0
			+12° 26'	
324° 0'	182	7.3	173.6	+38.3 - 2.0
77+65.56 = 27	Readings From	27	Elev. 259.85	HI = 52
204° 48'	732	-7° 18'	720.5	-92.2
202° 52'	720	-6° 26'	711.2	-80.2
199° 23'	717	-5° 18'	711.2	-66.0
203° 0'	700	-7° 28'	688.6	-90.2

Elev.
236.3 ✓
175.2 ✓
250.6 ✓
247.3 ✓
236.4 ✓
219.0 ✓
220.9 ✓
218.1 ✓
233.5 ✓
231.0 ✓
219.2 ✓
207.7 ✓
207.0 ✓
199.8 ✓
162.9 ✓
179.7 ✓
193.9 ✓
169.7 ✓

17 Draw
 17
 Chk. Az. 24° C-28-A3
 8' Ch. Bank 1' higher
 Toe slope

Station	Azimuth	Stadia	Vert. Δ	Horiz. Dist.	Diff. Elev.
Readings from 27 Elev. 259.85 HI = 5.2					
205°53'	667	-7°49'	655.1	-89.9	
196°55'	720	-4°08'	716.5	-51.8	
203°06'	640	-8°09'	627.6	-89.8	
194°06'	750	-1°59'	749.2	-25.9	
201°30'	653	-7°43'	641.3	-86.9	
202°46'	600	-8°38'	586.9	-89.0	
191°58'	712	-2°05'	711.1	-26.1	
187°55'	657	-2°21'	655.9	-26.8	
196°07'	595	-8°09'	583.5	-83.5	
184°12'	610	-2°58'	608.5	-31.5	
206°26'	522	-9°37'	507.7	-86.0	
199°35'	490	-10°14'	474.7	-85.7	
179°36'	552	-2°21'	551.1	-22.6	
195°34'	540	-8°50'	527.3	-81.9	
190°42'	510	-8°15'	499.7	-72.4	
194°0'	460	-10°29'	445.2	-82.3	
181°06'	545	-3°31'	543.0	-33.4 - 2.0	
199°45'	425	-11°32'	408.1	-83.3	
184°47'	599	+3°45'	596.5	+39.2	

Elev.			
170.0 ✓	± 10' ch.	Bank 1' Higher	
208.1 ✓			
170.1 ✓	± 8' "	" " "	
234.0 ✓			
173.0 ✓			
170.9 ✓	± 8' ch.	Bank 2' Higher	
233.8 ✓			
233.1 ✓			
176.4 ✓			
228.4 ✓			
173.9 ✓	± 10' ch.	Bank 1' Higher	
124.2 ✓	" " "	" " "	
237.3 ✓			
178.0 ✓			
182.5 ✓			
177.6 ✓			
228.5 = 224.4			
176.6 ✓	± 10' ch.	Bank 1' Higher	
299.0			

Station	Azimuth	Stadia	Vert	Height	Dist	Diff. Elev	Elev
Readings From \square 27 Elev. = 259.85 HI. = 5.2							
189°0'	632'	+3°44'	629.4	+41.1			301.0
192°20'	665'	-3°48'	662.3	-44.0			215.9 ✓
205°40'	458'	-10°20'	443.1	-80.8			179.1 ✓
211°20'	490'	13.2	480.5	-68.2	-8.0		183.7 ✓
194°18'	677'	-4°09'	623.7	48.9			211.0 ✓
205°48'	419'	-11°03'	403.7	-79.8			180.1 ✓
202°35'	375'	-12°06'	358.7	-76.7			183.0 ✓
202°00'	329'	-13°32'	311.1	-74.8			185.1 ✓
191°32'	633'	-4°35'	629.1	-50.4			209.5 ✓
188°02'	590'	-4°53'	585.8	-50.0			209.9 ✓
185°56'	576'	6.2	571.9	-49.9			210.0 ✓
183°37'	525'	-5°09'	521.0	-46.9			213.0 ✓
195°56'	397'	-12°16'	379.4	-82.4			177.5 ✓
186°50'	498'	-7°23'	489.9	-63.5			196.4 ✓
186°57'	430	10.2	416.1	-76.0	-5.0		178.9 ✓
188°27'	525	8.2	517.9	-66.1	-3.0		195.8 ✓
190°33'	555	10.7	547.9	-63.1	-5.0		191.8 ✓
Readings From \square 27 Elev. = 259.85 HI. = 5.4							
\square 28	239°39'	573	3.53	573	+ 1.9		261.7 ✓

Top Small Draw

8' ch. Bank 2' Higher

SW cor chicken shed #1 ✓

-9 am 6-29-13

Station	Azimuth	Stadia	Vert. Δ	Horiz. Dist.	Diff. Elev.	Elev.		
	Readings	From	27 Elev.	259.85	HI = 5.9			
	226°19'	443'	-2°25'	442.3	-18.7	241.2	✓	
	193°40'	600'	-6°49'	591.9	-70.7	189.2	✓	
	197°17'	647'	-6°38'	638.7	-74.2	185.7	✓	
	199°06'	669'	-6°15'	666.3	-72.4	187.5	✓	
	185°41'	443'	-9°17'	431.7	-70.5	189.4	✓	
	182°58'	465'	-7°47'	456.7	-62.4	199.5	✓	NE Cor Chicken shed #1 ✓ 10' wide.
	177°32'	469'	-6°03'	463.9	-49.2	210.7	✓	
	182°32'	379'	-12°36'	361.2	-80.7	179.2	✓	E. 8' ch. Bank 2' higher.
	182°23'	405'	-11°23'	389.4	-78.4	181.5	✓	
	175°54'	505'	-3°42'	502.9	-32.5	229.6	✓	
	178°20'	361'	-13°15'	342.2	-80.5	179.4	✓	
	176°20'	518'	-2°21'	517.1	-26.2	238.7	✓	
	171°32'	504'	-2°25'	503.2	-21.2	238.7	✓	
	166°38'	479'	-0°50'	478.9	-7.0	252.9	✓	
	161°42'	458'	-0°26'	458.0	-3.5	256.4	✓	
	156°40'	465'	0°	465.0	-0.7	259.2	✓	
	175°38'	333'	-14°22'	310.4	-80.0	179.9	✓	E. 8' ch. Bank 2' higher.
	154°05'	450'	-1°17'	449.8	-10.1	249.8	✓	
	169°31'	298'	-15°46'	276.2	-77.9	182.0	✓	

Station	Azimuth	Stadia	Vert. Δ	Horiz. Dist.	Diff. Elev	Elev	
Readings from Sta 27 Elev: 259.85 HI = 5.4							
146°45'	439'	+0°06'	439.0	+0.8	260.7	✓	
141°32'	445	+0°01'	445.0	+0.1	260.0	✓	
157°49'	330'	-12°06'	315.7	-62.6	192.0	✓	
131°12'	462	-4°37' 7.4	459.2	-37.2	222.7	✓	Bottom Draw
152°10'	348'	-9°23'	338.9	-56.0	203.9	✓	
124°30'	452'	-2°30'	451.1	-19.7	240.2	✓	
147°20'	317'	-13°07'	300.9	-70.1	189.8	✓	
138°40'	316'	-12°31'	301.1	-66.9	193.0	✓	
120°20'	467'	-0°46'	466.9	-6.3	253.6	✓	
142°22'	370'	-7°0'	364.5	-44.8	215.1	✓	
136°35'	389'	-4°58'	386.2	-33.5	226.4	✓	chk Az. 10.25 6-29-03
132°42'	407'	-5°31'	403.3	-39.0	220.9	✓	
114°0'	477'	-0°07'	477.0	-1.0	258.9	✓	
129°26'	406	-6°12' 10.4	401.3	-43.6	211.3	✓	
107°27'	488'	-0°15'	488.0	-2.1	257.8	✓	
122°05'	363'	-8°37' 7.4	355.1	-50.7	209.2	✓	✓
102°29'	523'	-0°03'	523.0	-0.5	259.4	✓	
100°30'	500'	-1°46'	499.6	-15.4	244.5	✓	
129°40'	307'	-12°08'	293.7	-63.1	196.8	✓	✓

Station	Azimuth	Stadia	Vert. Δ	Horiz. Dist.	Diff. Elev.	Elev.	
	Readings From	27	Elev	25985	HT. = 54		
	120°44'	337'	-10°50'	324.1	-62.2	192.7	✓
	115°31'	350'	-10°36'	338.3	-63.3	196.6	✓
	105°0'	457'	-2°40'	456.0	-21.2	238.7	✓
	108°37'	375'	-9°14'	365.5	-59.4	200.5	✓
	104°43'	357'	-10°14'	345.9	-62.4	192.5	✓
	112°43'	437'	-3°31'	435.4	-26.8	233.1	✓
chk. Apr. 10.50 am	141°11'	284'	-14°39'	266.2	-69.5	190.4	✓
	119°44'	420'	-3°52'	418.1	-28.3	231.6	✓
	99°21'	490'	-9°15'	422.6	-72.7	182.2	
	121°44'	423'	-4°21'	420.6	-32.0	222.9	✓ ✓
	92°38'	443'	-7°36'	435.5	-58.1	201.8	✓ ✓
	124°08'	445'	-2°44'	444.0	-21.2	238.2	✓ ✓
	102°37'	425'	-5°33'	421.1	-40.9	219.0	✓ ✓
	111°06'	425'	-4°28'	422.6	-33.0	226.9	✓ ✓
	204°45'	150'	-15°47'	139.7	-39.3	220.6	✓
	189°08'	172'	-19°58'	74	152.2 - 55.2 - 29	202.7	✓
	185°25'	160'	-20°16'	124	141.0 - 52.0 - 70	200.9	✓
	201°54'	130'	-21°35'	124	112.6 - 44.5 - 20	207.4	✓
	135°25'	520'	-2°10'	144	519.3 - 19.7 - 9.0	231.2	✓
							Bottom Drory, Continuous South 150'

✓
B 15" Luc. Tree

✓
E Bank Ch. Edge - 2' Lowet.

✓
12" Wash.

✓
Bottom Drory, Continuous South 150'

Station	Azimuth	Stadia	Vert. & Horiz. Dist.	Diff. Elev.	Elev.	
Readings	From 27		Elev = 259.85	H.I. = 5.4		
			-16°16'			
245°55'	108'	11.4	99.6	-29.0	-6.0	224.9 ✓ Bottom Draw
			-8°13'			
269°05'	120	12.4	117.6	-12.0	-2.0	235.9 ✓ " "
120°44'	417'		-2°47'	415.3	-27.5	232.4
			+1°24'			
289°46'	153'	17.4	152.9	+3.7	-12.0	251.6 ✓ " ✓ " ✓
300°0'	194'		+4°11'	193.0	+14.1	274.0 ✓ Mouth " on Top
283°45'	187'		+3°20'	186.4	+10.9	290.8 ✓
258°26'	150'		-0°25'	150.0	-1.1	258.8 ✓
136°56'	435'		-2°35'	434.2	-19.6	240.3 ✓
293°22'	100'		+3°16'	99.7	+5.7	265.6 ✓
284°30'	53'		-0°26'	53.0	-0.4	259.5 ✓
258°46'	49'		-8°16'	48.0	-7.0	252.9 ✓
173°03'	44'		-18°08'	39.8	-13.0	246.9 ✓
161°51'	97'		-15°43'	89.9	-25.3	224.6 ✓
140°05'	411'		-2°32'	410.2	-18.1	241.8 ✓
120°30'	104'		-11°30'	99.8	-20.3	239.6 ✓
146°35'	405'		-2°25'	404.3	-17.1	242.8 ✓
151°28'	407'		-3°11'	405.8	-22.6	232.3 ✓
150°10'	360'		-8°04'	353.0	-50.0	209.9 ✓
155°32'	417'		-3°34'	415.5	-25.9	234.0 ✓

Station	Angle to Station	Vertical	Horizontal Dist	Diff. Elev	Elev	
	Readings From	27 Elev	259.85	41-5.4		
✓	161°56'	417'	-3°23'	415.5	-24.9	225.2 ✓
□ B	147°55'	289'	-15°18'	269.2	-73.55	186.30
	157°21'	357'	-9°31'	247.2	-58.2	201.7 ✓
	166°38'	419'	-3°44'	412.3	-27.2	232.7 ✓
	125°18'	136'	8.4	1280	-29.8-3.0	227.1 ✓
	172°17'	452'	-4°17'	449.5	-33.7	226.2 ✓
	111°06'	156'	10.4	151.1	-27.2-5.0	227.7 ✓
	173°44'	395'	-8°09'	387.3	-55.4	204.5 ✓
	174°56'	455'	-5°45'	450.6	-44.7	215.2 ✓
	95°15'	121'	7.4	118.9	-16.0-2.0	241.9 ✓
	60°30'	106'	+0°03'	106	7.0	260.0 ✓
	30°21'	113'	+2°06'	112.9	+4.1	264.0 ✓
	26°43'	118'	+5°34'	116.9	+11.4	271.3 ✓
	178°54'	421'	-8°30'	411.8	-61.5	198.4
	6°30'	149'	+7°28'	146.6	+19.3	279.2 ✓
	183°35'	430'	-9°06'	419.5	-66.4	193.5 ✓
	27°15'	213'	+5°24'	210.2	+19.9	279.8 ✓
	34°17'	214'	+4°37'	212.7	+17.2	277.1 ✓
	41°20'	212'	+1°30'	210.9	+5.5	265.4 ✓

chk Az.

see his
notes.

Correction Made at this station by Macie for Elev.

Too old RR cut.

Station	Azimuth	Stadia	Vert. Δ	Horiz. Dist.	Diff. Elev.	Elev.	
Readings	From	27	Elev. = 259.85	HI = 5.4			
45°27'	199	+1°37'	198.9	+5.6		265.5 ✓	↳ 16" Fine Tree.
54°51'	208	+1°10'	207.9	+4.2		264.1 ✓	
67°48'	223	-1°39'	221.8	-6.4		253.5 ✓	
78°56'	230	-3°50'	229.0	-15.3	-13.6	231.0 ✓	chk Az. 135
237°00'	470	-0°28'	470.0	-3.8		256.1 ✓	
234°45'	450	-0°49'	449.9	-5.2		254.7 ✓	
236°08'	445	-1°31'	444.7	-1.6		248.3 ✓	↳ 15' old RR Bed. = Level
245°04'	425						
52°0'	319	+0°58'	318.9	+5.4		265.3 ✓	
60°25'	326	-0°06'	326.0	-0.6	-7.0	252.3 ✓	
47°20'	313	+1°25'	312.8	+7.3		267.2 ✓	
44°55'	307	+0°35'	307.0	+3.1		263.0 ✓	↳ 10' " " "
42°10'	312	+2°06'	311.6	+11.4		271.3 ✓	
36°25'	318	+3°37'	316.8	+20.0	-8.0	271.9 ✓	
238°30'	438	-0°30'	438.0	-3.8		256.1 ✓	chk Az.
248°21'	334	+0°36'	334.0	+3.5		263.4 ✓	
232°43'	333	-1°23'	332.8	-8.1		251.8 ✓	
235°0'	333	-2°02'	332.6	-11.9		248.0 ✓	↳ 15' RR Bed.
237°15'	341	-0°37'	341.0	-3.7		256.7 ✓	

Station	Azimuth	Stadia	Vert	Horiz Dist	Diff Elev
Readings From 27 Elev = 259.85 HI = 5.4					
	255°35'	249'	+0°54'	248.7	+3.9
	257°25'	181'	+0°36'	181.0	+1.9
	234°06'	242'	-1°58'	241.5	-8.3
	236°40'	241'	-2°29'	240.6	-10.4
	239°50'	247'	-1°21'	246.9	-5.8
	275°42'	191'	+2°34'	190.6	+8.5
	274°40'	256'	+2°49'	255.4	+12.6
	266°0'	321'	+1°19'	320.9	+7.4
Readings From 28 Elev = 261.7 HI = 4.8					
27	59°59'	573'	0° 6.7	573.0	-1.9
	38°49'	447'	+1°38'	446.7	+7.7
	26°52'	372'	+1°34'	376.7	+10.2
	32°0'	270'	+1°19'	269.9	+3.5
	20°27'	226'	+1°03'	225.9	+4.1
	354°25'	289'	-0°03' 5.8	289	-0.3 - 0.4
	24°42'	148'	+0°26'	148.0	+1.1
	353°24'	149'	0° 5.2	149.0	+0.2
	349°33'	172'	0° 11.7	172.0	-5.3
	39°	60'	0° 7.3	60.0	-3.9

Elev			
263.8	✓		
258.0	= 261.8	✓	
251.6	✓		
249.5	✓	15' RR Bed = Level	
254.1	✓		
268.4	↓		
272.5	↓		
267.3	✓	chk Az. 205	6-29-43
259.8	↓	259.85	chk. Nag. Page 4
274.4	✓		
274.9	✓		
267.2	✓		
265.8	✓	S.E. Cor Fence.	
261.0	✓		
262.8	✓		
261.9	↓		
256.4	✓		
257.8	✓		

Station	Azimuth	Stadia	Vert. A	Horiz Dist.	Diff. Elev.
	Readings	From $\square 28$	Elev	261.7	HI = 4.8
			-13°12'		
	50°53	49'	6.8	46.3	-10.9
			-10°20'		
	303°27'	73'	8.8	70.7	-12.9 - 4.0
	314°55'	81'	-7°46'	79.4	-10.9
			00		
	348°42'	48'	7.8	48.0	-3.0
	265°42'	82'	-12°26'	78.3	-12.2
	78°35'	53'	-7°25'	52.1	-6.2
			00		
	345°16'	15'	8.9	15.0	-4.1
	208°44'	113'	-11°07'	108.9	-21.7
	202°40'	229'	-9°0'	223.4	-35.5
	45°26'	152'	+0°08'	152.0	+0.4
	153°0'	38'	-15°18'	36.4	-9.9
	92°0'	106'	-3°09'	105.2	-5.8
99+59.39					
$\square 29$	Readings	From $\square 29$	Elev = 287.36	HI = 5.04	
100+30.4	FD 1656-19				
$\square 30$	359°54'30"	71'	7.5°32'	70.4	+6.81
	Readings	From $\square 30$	Elev 294.2	HI = 5.4	
$\square 29$	179°54'30"	71'	-5°32'	70.4	-6.8
	231°26'	254'	-3°51'	252.9	-17.0
	234°16'	275'	-3°24'	274.1	-16.3
	246°12'	327'	-2°30'	225.9	-18.9

Elev.

250.9 ✓

E R.R. Bed 15' wide ✓

244.8 ✓

250.8 ✓

258.2 ✓

244.5 ✓

255.0 ✓

257.6 ✓

240.3 ✓

226.2 ✓

262.1 ✓

251.8 ✓

Toe Slope R.R. Fill

255.9 ✓

chk Ag. 3 PM 6-29-43

294.17

Elev. from Page 5 checked by Laurel

287.4

272.2 ✓

Adobe 11' Side Parallel to 39th St
NE Cor. 6 x 11' Street

277.9 ✓

" " 9 x 11 " Adobe 11' side " " "

274.3 ✓

Station	Azimuth	Stadia	Vert. Δ	Horiz Dist.	Diff. Elev
Readings from \square 30 Elev = 2942 HI = 5.4					
254°05'	282'	-1°59'	281.7	-9.7	
275°28'	230'	-1°0'	2299	-4.0	
296°53'	222'	-0°22'	222.0	-1.4	
316°31'	255'	+0°11'	255.0	+0.8	
145°15'	73'	-5°02'	72.4	-6.4	
139°31'	64'	-5°33'	63.4	-6.2	
126°21'	81'	-4°28'	80.5	-6.3	
	52'	-3°27'			
122°04'	53'	6.4	52.5	-3.2 - 1.0	
75°50'	43'	-1°45'	43.0	-1.2	
327°18'	305'	+0°26'	305.0	+2.3	
339°06'	378'	+0°16'	378.0	+1.8	
51°0'	26'	-1°19'	26.0	-0.4	
66°30'	49'	-3°23'	48.8	-2.8	
19°20'	63'	0°	63.0	-3.0	
336°10'	264'	+0°20'	264	+1.5	
11°10'	107'	-2°53'	106.7	-5.4	
322°33'	49'	0°	49.0	+1.2	
337°05'	164'	0°	164.0	+0.8	
346°10'	102'	0°	102.0	0	

Webash Canyon

35

Elev.			
284.5 ✓			
290.2 ✓			
292.8 ✓			
295.0 ✓			
287.8 ✓	SW Cor House #1		
288.0 ✓	NW " " "		
282.0 ✓	NE " " "		
290.0	SW Cor " #2	25' wide Along Quince St	
292.0	NW " " " 2	?	
296.5 ✓			
296.0 ✓			
293.6 ✓	10" Euc. Trac.		
291.4 ✓	12" Pepper "		
291.2 ✓			
295.7 ✓			
288.8 ✓			
295.4 ✓			
295.0 ✓			
294.2 ✓			

Station	Azimuth	Stadia	Vert. Δ	Horiz. Dist.	Diff. Elev.
Readings From $\square 30$ Elev = 294.2 HI = 5.4					
			0°		
351°27'	186	10.5	196.0	-5.1	
			0°		
311°32'	198'	5.1	198.0	+0.3	
			-1°05'		
353°40'	297'	10.4	246.9	-4.7	-5.0
			-3°03'		
2°18'	254'	11.4	253.3	-13.6	-6.0
			0°		
284°40'	193'	7.9	193.0	-2.5	
			0°		
252°53'	161'	11.3	161.0	-5.9	
			0°		
272°10'	95'	7.0	95.0	-1.6	
			-4°22'		
11°34'	220	10.4	218.7	-16.7	-5.0
			0°		
223°00'	52'	7.3	52.0	-1.9	
			0°		
11°44'	174'	-4°54'	172.8	-14.8	
106+53,30					
= $\square 31$ Readings From $\square 31$ Elev = 299.6 HI = 5.4					
			0°		
14°15'	112	3.0	112.0	+2.4	
			0°		
51°10'	173'	0.5	123.0	+4.9	
			0°		
40°50'	105	1.9	105.0	+3.5	
			0°		
44°07'	83'	2.3	83.0	+3.1	
			0°		
42°47'	64'	3.2	64.0	+2.2	
			0°		
Cor A	51°55'	77'	3.0	72.0	+2.4
			0°		
Cor B	69°17'	64'	4.1	64.0	+6.3
			0°		
	83°25'	41'	5.7	41.0	+0.3

Elev.

289.1 ✓
294.5 ✓
284.5 ✓
274.6 ✓
291.7 ✓
288.3 ✓
292.6 ✓
272.5 ✓
292.3 ✓
279.4 ✓
302.0 ✓
304.5 ✓
303.1 ✓
302.7 ✓
301.8 ✓
302.0 ✓
300.9 ✓
299.9 ✓ = 299.3

chk. Az. 4.15 Pm 6-29-43

9 am 6-30-43

17 Redwood St.

" " "

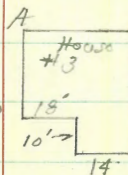
g. Elec. Pole

L 30" Date Palitz.

L 24" " "

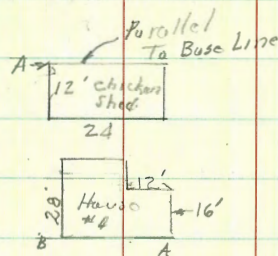
NW. Cor House #3 A

SW " " #3 B



Station	Azimuth	Stadia	Vert. A	Horiz. Dist.	Diff. Elev
	Readings From	11.31	Elev.	299.64 =	H.I. 5.4
Cor. A	110° 0'	81'	0° 6.3	81.0	-0.9
Check on Sd. of A	124° 20'	117'	0° 7.4	112.0	-2.0
Cor. House #1 of B	110° 1'	212'	0° 2.6	212.0	+2.8
Cor. House #4	99° 10'	201'	0° 2.0	201.0	+3.4
2 Elev. Pole	99° 55'	185'	2.1	185.0	+3.3
	148° 05'	213'	-2° 23' 6.4	212.7	-8.8 -14
	164° 10'	191'	-6° 11'	188.8	-20.4
	164° 50'	200'	-5° 15'	198.4	-18.2
	169°	166'	-7° 51'	162.9	-22.4
	158° 05'	102'	-7° 37'	100.3	-13.4
	136° 40'	55'	-10° 35'	53.1	-7.9
	131°	39'	-10° 49'	37.2	-7.2
	150°	10'	0° 0.0	10.0	0.0
	258° 20'	30'	0° 6.3	30.0	-0.9
	287° 30'	86'	0° 6.6	86.0	-1.4
	290° 30'	155'	+0° 44' 7.4	155.0	+2.0
	300° 50'	187'	0° 47' 6.4	182.0	+2.6
	299° 13'	213'	+0° 48' 7.4	218.0	+3.0

Elev.	
298.7 ✓	
297.6 ✓	
302.4 ✓	SW Cor. House #1
303.0 ✓	NW " " #4
302.9 ✓	This Pole Also used by Telephone Co.
289.4 ✓	
279.2 ✓	
281.4 ✓	
277.2 ✓	
286.2 ✓	
289.7 ✓	2 16" Euc. Tree
292.4 ✓	" " " "
292.6 ✓	Boxed Canyon
298.7 ✓	" " "
298.2 ✓	" " "
301.6 = 299.6 ✓	ch. Ag.
302.2 = 301.2 ✓	
302.6 = 300.6 ✓	2. Rim MH in Redwood



Station	Bearing	Stadia	Vert. A	Horiz. Dist.	Diff. Elev
	Readings	From 131	Elev.	299.64	H.I. = 5.4
	287°	242'	+0°11'	242.0	+0.8
	273°50	211'	0°	211.0	-0.3
	261°	201'	+1°30'	200.9	+5.3
	254°	168	0°	168.0	-3.0
	248°50	147	-3°25'	146.5	-9.2
	248°40	127'	-6°22'	125.4	-14.0
	219°10'	125	-8°45'	122.2	-18.8
	202°	167'	-6°58'	164.6	-20.1
	191°55'	225'	-6°41'	222.0	-26.0
	211°0'	232'	-1°45'	231.8	-7.1
	228°20'	174'	0°	174.0	-9.9
	238°56	284'	5.0	234.0	+0.4
	247°45'	215	+0°06'	215.0	+0.4
	216°44'	260'	0°	260.0	-2.1
chk. by	218°15'	252'	0°	252.0	-3.1
	193°0'	37'	-15°05'	34.5	-8.3
	225°	54'	-18°31'	51.1	-12.3 -12.0
	197°03'	80	-12°10'	76.4	-16.4 -3.0
	176°50'	95'	-11°21'	91.3	-18.3 -9.0

Elev.	
300.4 ✓	
299.3 ✓	E Hd of Canyon on Brow
304.9 = 299.9 ✓	1/2 of Elec Pole
296.6 ✓	shade ✓ E. 12" Tree
290.4 ✓	
285.6 ✓	
280.8 ✓	
279.8 ✓	
273.6 ✓	
292.5 ✓	
294.7 ✓	
300.0 ✓	SE. Cor House #5 38' wide of Rts T. Base 41110
300.0 ✓	NE " " #5
292.5 ✓	SE. Cor Garage 20' Long. at Rt to Base Line
296.5 = 297.5 ✓	NE " "
291.3 ✓	
275.3 = 285.3	
280.2 ✓	
272.3 ✓	

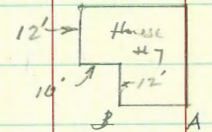
Station	Azimuth	Radius	Vert. a	Horiz. Dist	Diff. Elev
Readings From	□ 31	Elev	299.64	HI = 5.4	
161°	87'	84'	84.2	-14.9	
on Ground	229°46'	53'	10.3	51.6	-8.6
" "	217°30'	69'	9.4	67.0	-11.7
	292°19'	224'	16.4	224.0	+3.5
	302°49'	217'	10.49'	212.0	+3.1
	314°27'	161'	11°06'	161.0	+3.1
	346°42'	116'	11°43'	115.9	+3.5
101 + 0.269					
□ 32	Readings From	□ 32	Elev = 292.75	HI = 5.25	
□ 33	24°36'	274'	-4°40'	272.2	-22.22
	Readings From	□ 33	Elev = 270.53	HI = 5.1	
□ 32	204°36'	274'	+4°40'	272.2	+22.22
	201°20'	215'	+3°55'	214.0	+14.7
	195°	197'	+3°13'	196.7	+11.0
	188°36'	191'	+1°20'	190.9	+4.5
	192°46'	149'	0°	149	+0.9
FB 1658-7					
□ 32	129°17'	313'	-2°48'	312.3	-15.2
	185°10'	300'	+3°56'	299.2	+16.2 - 1.7
	180°09'	299'	+2°06'	298.6	+11.0
	175°16'	299'	+1°57'	298.7	+10.3

Elev			
284.7 = 281.7			
291.0 = 286.1	(This is an Abandoned Shed)	Average 7' high	
282.9 = 288.9	NE Cor Concrete shed	12" side RTA to Base	line
	SE "	6" Wall	
303.1 = 291.7			
302.7			
302.7			
303.1			
270.53			
292.75	dh. Mag.		
285.2	10" Poplar Tree		
281.5	NW Cor House #6		
225.0	NE " " "	25' side Parallel to Base	
271.4			
255.3	255.87 Moore		
285.0 = 284.8	14" Poplar Tree		
281.5	12" " "		
280.8 = 278.7			

Station	Azimuth	Stadia	Via	Horiz. Dist.	Diff. Elev.	Elev.
	Readings	Form	32	Elev.	270.53	41-5.1
	170°	302	+1°22'	9.1	301.8	+7.2
	151°26'	171'	-13°34'	167.7	-39.0	277.7 = 273.7 ✓
	160°26'	105	-19°34'	93.3	-33.1-6.0	231.5 ✓ L Rim Mt. in Alley. = Bottom Canyon
	197°09'	70	-23°21'	59.0	-25.5-6.0	226.4 ✓ in Bottom of Canyon. L
	263°28'	66'	on 11.1'	54.1	-25.4	239.0 ✓ " " " " "
	292°50'	77	-25°17'	73.9	-15.2-6.0	245.1 ✓ " " " " "
	186°13'	259'	-11°36'	258.6	+11.3	249.3 = 248.3 ✓ " " " " "
	309°24'	145'	-2°36'	144.7	-6.6-10.0	281.8 ✓
	316°04'	182'	-1°35'	181.9	-5.0	253.9 ✓ L Bottom Canyon.
	320°15'	205'	-0°19'	205.0	-1.1	265.5 = 256.5 ✓ " " "
	323°0'	280	+1°46'	279.8	+8.6	269.4 = 258.4 ✓ " " "
	272°40'	116'	17.1	116.0	+1.5	279.1 = 267.1 " " "
	248°42'	111'	+0°43'	111.0	+2.0	272.0 ✓
	209°22'	125'	+1°0'	125.0	+2.4	272.5 ✓
CHK Adj.	190°11'	133'	+0°11'	133.0	+0.4	270.9 ✓
	320°20'	405'	0°	404.3	+16.5-2.0	270.5 ✓
	178°55'	197'	+2°20'	196.8	-6.5	280.0 ✓ L Bottom Canyon.
	319°16'	474'	-1°54'	472.4	+25.2-10.0	264.0 ✓
	168°20'	175	+3°25'	173.5	-16.4-2.0	288.7 ✓
			-5°24'			252.1 ✓

Station	Bearing	Stadia	Vert. A	Horiz. Dist.	Diff. Elev	Elev
Readings from 33 Elev. 270.53 HI=5.1						
	180°55'	135	-3°57'	134.4	-9.3	261.2 = 260.2 ✓
	264°	185	+5°25'	183.4	+12.4	287.9 ✓
	291°54'	227	+4°36'	225.6	+18.1	288.6 ✓
	202°50'	102	-5°17'	101.2	-9.4	261.1 ✓
	270°40'	97	-3°56'	96.6	-6.6	263.9 ✓
	228°54'	99	-5°20'	98.1	-9.2	264.3 ✓
	316°46'	56	-6°06'	55.4	-5.9	264.6 ✓
	333°	73	+0°32'	73.0	+0.7	272.5 ✓
	342°20'	71	+6°19'	70.2	+7.8	278.3 ✓
	25°-0'	80	+12°31'	76.2	+16.9	287.4 ✓
Cor House at A	34°	120	+13°38'	113.5	+27.5 - 2.0	296.0 ✓
Cor House at B	21°53'	107	+12°25'	102.1	+22.5 - 2.0	291.0 ✓
	142°09'	123	-9°09'	120.0	-19.3 - 6.0	245.2 ✓
	217°27'	29	-24°46'	24.0	-16.0	259.5 ✓
	153°45'	75	-17°41'	68.1	-21.7 - 4.0	244.8 ✓
	127°10'	49	-5°03'	48.6	-4.3	266.2 ✓
	44°	98	+14°11'	92.1	+23.3	293.8 ✓
	70°37'	75	+11°09'	72.3	+14.2	284.7 = 283.7 ✓
	55°16'	45	+14°33'	42.2	+11.0	259.5 ✓

SE. Cor House # 7
 SW " " " # 7
 18" Euc Tree
 Tol Pole
 ? must be wrong = 281.5 ✓



Station	Azimuth	Stadia	V. Δ	Horiz Dist	Diff. Elev	Elev.
---------	---------	--------	------	------------	------------	-------

Readings From 1933 Elev = 270.53 HI = 5.1

54° 0' 22' 3.3

101° 50' 60' +2° 49' 59.9 +2.9

69° 84' +10° 10' 81.4 +14.6

273.4 ✓

285.1 ✓ L. Rim M.H. in Alley.

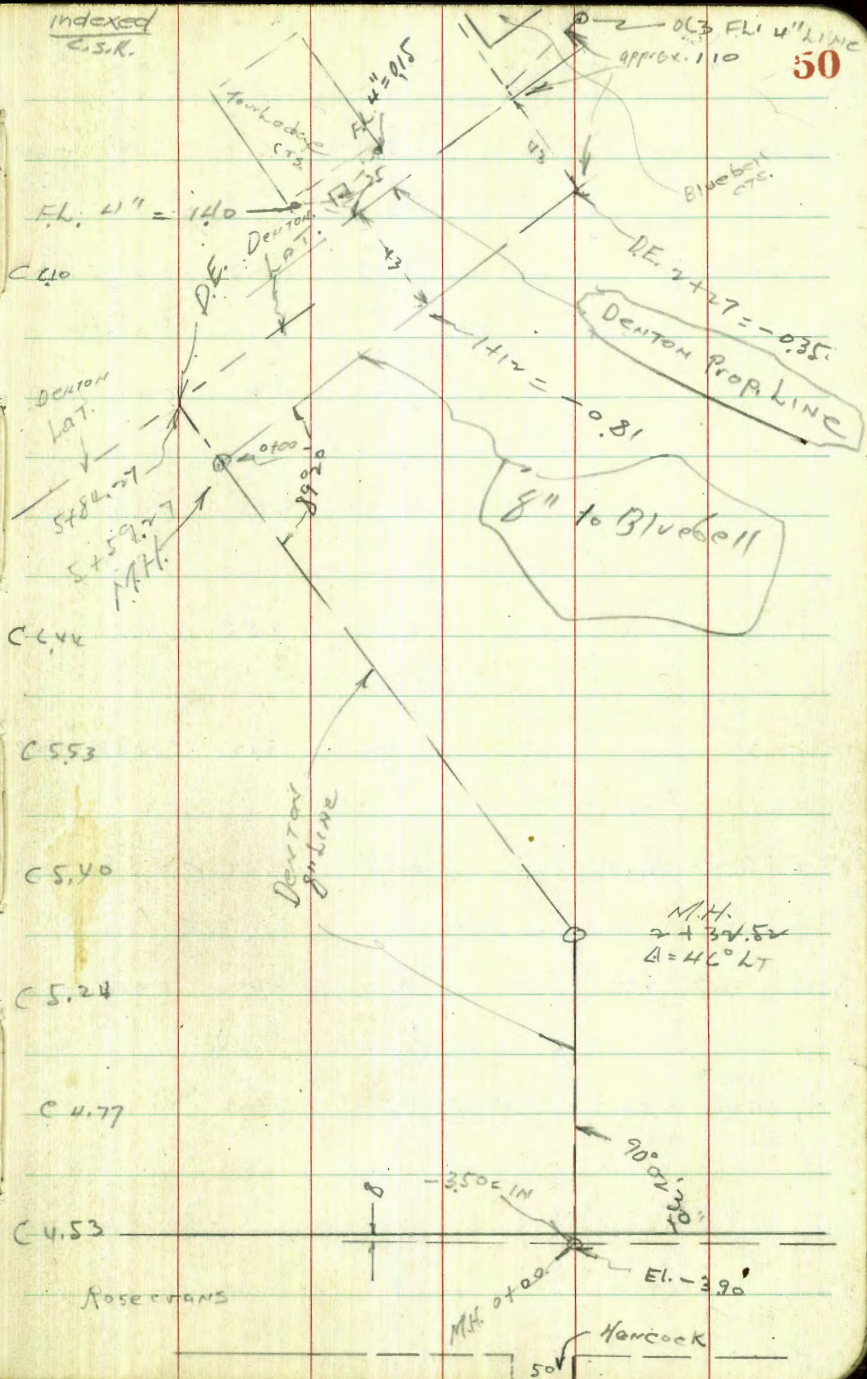
chk. Ag. 235 6-30-43 Finished

Revised by R.E.B. July 20-43

85m. Sewer CONST.

DENTON FULTON CT. EL.		FL.		
Q.M. 900'S.	3.63	7.94	4.31	8'57069
Pa. & Rose	5.90	8.03	5.81	2.13
W.C.B.P.				F.6
				Main Line = -3.90
				Note! M.H. Excav.
+100				Cored in & full water
				Brick & MUD.
				CC. 23
+13		5.25	2.78	-3.45
				CC. 21
+150		5.12	2.91	-3.30
		4.69	3.34	-3.10
+20		5.52	2.57	-3.02
+70		5.45	2.58	-2.84
IP	4.69	<u>4.84</u>	5.90	2.13
✓			4.28	2.54
				M.H. Δ 46° LT.
✓ +32.54			4.62	2.20
+78		4.68	2.14	-2.39

Indexed
C.S.R.



4.84

El. Stubs CUTS F.L.

3 + 20	4.56	2.26	C448	-2.22
+ 10	4.55	2.27	C433	-2.04
4	4.51	2.31	C421	-1.90
+ 50	4.19	2.53	C433	-1.70
5	3.95	2.87	C437	-1.50
+ 30	3.74	3.10	C448	-1.38
5 + 59.27 MH.	3.53	3.29	C455	-1.25
5 + 84.27 DE	3.10	3.24	C488	-1.26
10 MH. STUB	4.64	3.53	3.29	

7.93

Towledge and Bluebell CUTS F.L.

7.93

10 + 100 = 5459.27 MH.	4.64	3.29	-1.26	C455
+ 50	4.40	3.53	-1.06	C459
1	4.61	3.34	-0.86	C418
+ 10	4.54	3.41	-0.81	C412
+ 50	4.64	3.29	-0.66	C395
	4.60	3.33	-0.46	C379
+ 27 DE	4.86	3.07	-0.35	C302
Blue Bell CT.	5.76	8.83	4.86	3.07
For Towledge	4.45	8.55	2.83	4.10
N/y Seaman in Rec CT	6.77	1.78 = 7.93	1.40	FL
Sly			0.54	0.15 FL

El.

STUBS

F.L.

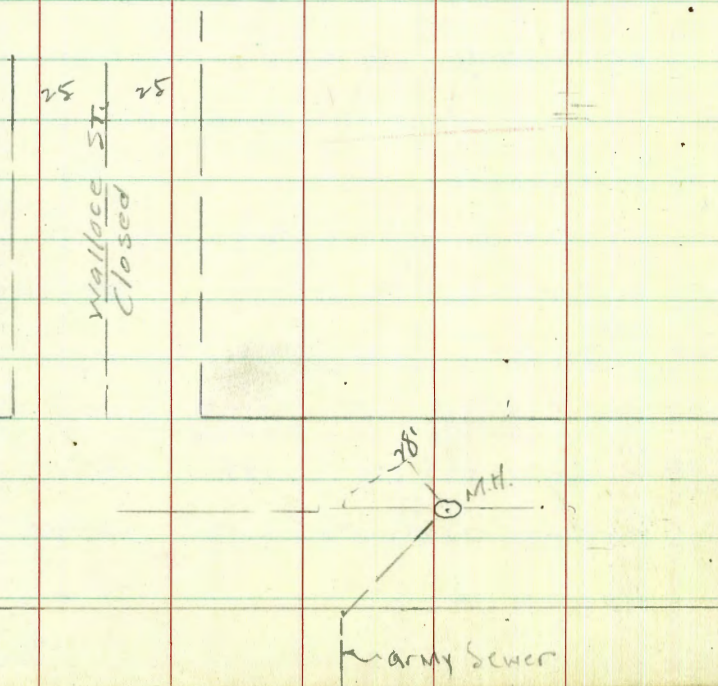
CUTS

F.L.

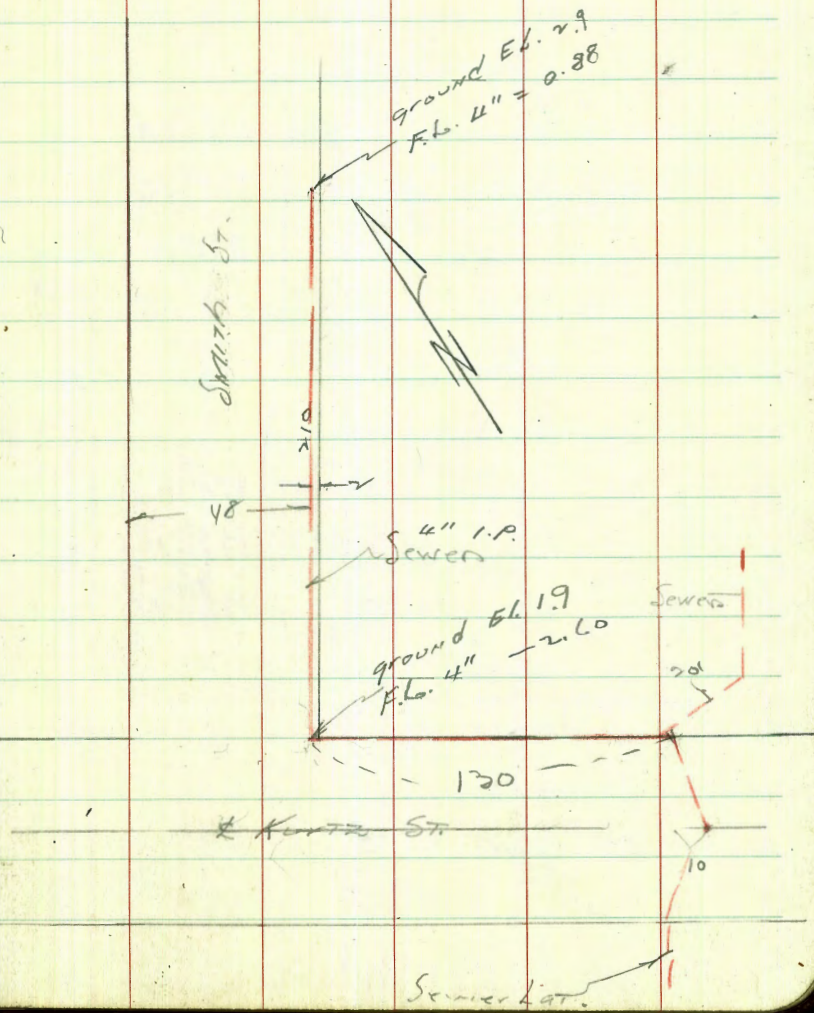
C. Moore
 5th Army Proposed Sewer to serve
 W.P.M.
 E.B.
 3-16-54 Blue-belt Auto Camp.

Location of New Sewers and
 Laterals on Kurtz Hwy from
 Pac. Hwy.

185 NWly of E Wallace
 to Sewer Lat. of Auto Camp.



Indexed
 C.S.K.



Cross Section Alley Block 37 Re Subdivision
 of Blocks H & I Teralta
 Bct. Swift + 3545 - Orange to El Cajon

BM: 5.47 381.40 375.93
 N.Y. & P. Orange & Swift

0-14 = N.C. line Orange

H 07 Pav. 1.29 4.67 376.73

L " " 4.69 376.71

F " " 4.62 376.78

0+0 = H-1.01079

F Top Cb Return 4.02 377.38

F 07 Pav. + 7.5' M Cypress Hedge 4.18 377.22

L " " 4.10 377.00

H " " 4.02 377.38

H Top Cb Return 3.70 377.70

0+10

H 3.3 378.1

L 3.7 377.7

F 3.5 375.9

Notes Reduced 5.5K.
 Plotted 20H.

0+20

F -11.4 2.1' Cypress Hedge
 - 5.1' Lot's Fence

0+47

H +0.7 = 11.4' Porter Pole

F -0.5 = 11.4' Lot's Fence

F -1.5 = 5.1' Picket Fence

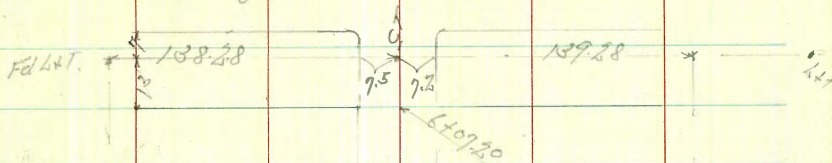
Indexed
 C.S.K.

April 11-44
 S. S. S. S.
 B. S. S.
 B. S. S.

53

El Cajon

H-10



FB 2296

P-24

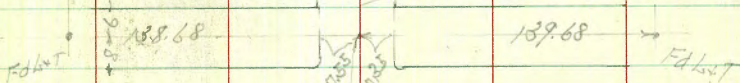
Note
 New levels

75.95

Swift Hill

55454

0+00



Orange

H-10

Set 447 200

38440

0+50

E	5.1	378.3
$\frac{1}{2}$	3.4	378.0
H	0.3	378.1

0+56

E -1.4 = Sly House ✓

0+82

E -1.1 = Hly House + Sly Fence

0+85

H -1.0 = Sly Picket Fence ✓

1+0

-10	3.1	378.3
H	2.8	378.6
$\frac{1}{2}$	2.9	378.5
F	2.8	378.6

+1.1 = Hly Picket Fence + Sly Wire Fence ✓

+1.0 2.8 378.6

1+40

H -0.1 = Hly Shed + Sly Fence ↓

5.50 38461 2.29 379.11

38461

1+50

-10	5.5	379.1
-1.0 = Wire Fence ✓	5.3	379.3
E	5.4	379.2
$\frac{1}{2}$	5.1	379.5
H	5.1	379.5
+1.5	5.9	378.7

1+59

H +0.3 = Hly Porch Pole ✓

H -0.7 = Hly Wire + Sly Board Fence ↓

1+79

E -1.4 = Sly Shed + Hly Wire Fence

1+92

E -1.4 = Hly Shed ✓

2+0

-1.5 5.6 379.0

-0.4 = Hly Board Fence ✓

H 5.3 379.3

 $\frac{1}{2}$ 5.1 379.2

E 5.1 379.5

38461

	2104		
F-2.8	= 1/2 Garage Concrete Floor	5.03	379.58 ✓
	2150		
-15		5.0	379.6
F		5.2	379.4
1/2		5.1	379.5
W		5.5	379.1
+15		5.6	379.0
	2199		
W	= Wly Power Pole		✓
	210		
-15		5.6	379.0
W		5.4	379.2
1/2		5.3	379.3
F		5.1	379.5
+15		5.2	379.3
	2150		
-15		4.8	379.8
F		5.0	379.6
1/2		5.2	379.3

55

38461

W		5.2	379.4
+0.4	= Sly Lath Fence		✓
+15		5.8	378.8
	2178		
F-5.1	= S + Wly Concrete Walk	4.31	380.30 ✓
	410		
-15		4.9	379.7
W	= Wly Lath Fence	5.0	379.6 ✓
+0.2	= Sly Wire Fence = Wly Power Pole		✓
1/2		5.2	379.4
F		4.9	379.7
+5	= Wly House	4.4	380.2 ✓
	4109		
F-1.5	= Wly 18" Cypress Hedge		✓
	4112		
W	= 6.15 Top of Red Concrete Step	4.58	380.03 ✓
	↳ Landing		
	4113		
F-0.8	= N + Wly 18" Cypress Hedge		✓
	4150		
-15		4.8	379.8
F		4.8	379.8

	384.61		
±	4.9	379.7	
± 7.3 = Wly Wire v Shy Picket Fence ✓			
W	4.8	379.8	
± 7.71			
W ± 0.2 = Conc Walks	4.50	380.11	✓
± 1.0			
W	4.3	380.3	
± 0.16 = Wly Picket Fence · Wly Power Pole ✓			
±	4.6	380.0	
F	4.5	380.1	
TP	4.72	384.97	4.36 380.25
± 1.01			
W = SFly Conc Post to W	4.87	380.10	✓
± 1.25			
W = Fly Conc Post to W	4.77	380.20	✓
± 1.37			
W = 209V Gutter to West	4.86	380.11	✓
± 1.47			
W - 0.16 = Wly Conc Post to W = Wly Bldg	4.65	380.32	✓

	384.97		
	5.50		
F	4.8	380.2	
±	4.7	380.3	
W = Fly Bldg	4.6	380.4	✓
± 1.67			
F ± 0.16 = Shy Bldg	4.5	380.5	✓
± 1.85			
W = Fly Bldg	4.3	380.7	
±	4.6	380.4	
F = Wly Bldg	4.6	380.4	
± 2.05			
W = Wly Power Pole			
± 0.20 = 5.2 F/Coiler			
F Tap Cb Return	4.61	380.36	
F 0.2 Pav 1/2	4.87	380.10	
± 1.00			
W " "	4.94	380.03	
W Tap Cb Return	4.75	380.22	
± 1.17			
W Tap Cb	4.58	380.39	

384.97

M of paving 4.79 380.18

T " " 5.07 379.90

F " " 5.00 379.97

F Top Cb 4.63 380.34

6+272.5 Cb line F1 Cojoz

F of paving 5.07 379.90

T " " 5.08 379.89

M 5.08 379.89

BM 4.01 380.96

S.M. BP
F1 Cojoz
+ 380.82
380.82

BM 271 382.10 5.61 379.36

S.M. BP
F1 Cojoz x
382.81
379.27

BM 6.17 375.93

H.M. BP
original SWH
375.93

Notes of tonight
with @ Cajon BM

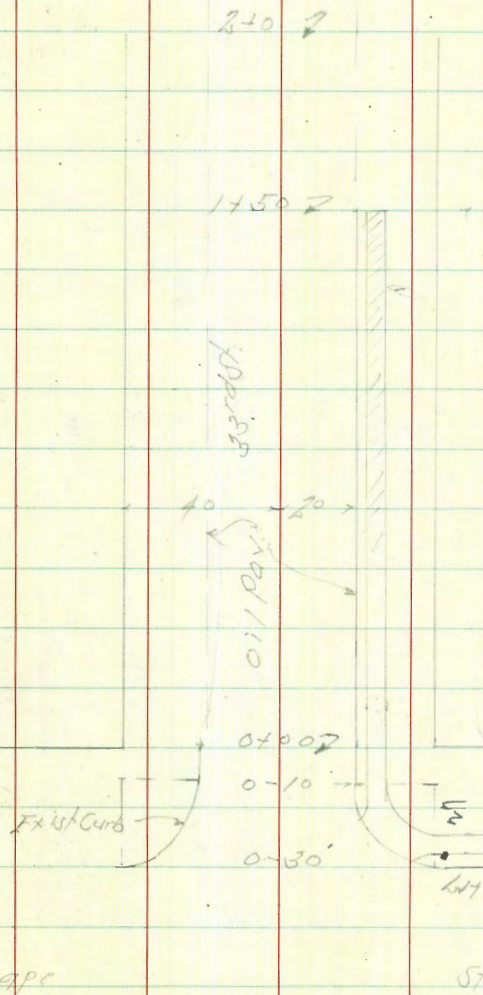
Cross Sect 104 33rd St.
South Line Grape to 200 South
Levels Next Page

Indexed
O.S.R.

13 Hub # 27
Fig. 54

May 9-44
Sisson
Bliss
Osborn

58



TP 2.00 269.66 4.65 266.66

0+20

0+0 S. L. Grape

Profile 1621

0-10 - C6 F.C.

0-30 - S Carb Line Grape St.

TP 1.83 271.31 9.53 269.48

BM 2.05 279.01 276.96 SW.BP Grape + 32nd

265.1 265 266.13 266.66 267.93
6.2 6.2 5.18 4.65 3.98
10 20 20 20 20
20-Gutter

264.9 265.19 264.57 265.72 265.83 266.61
4.4 4.4 4.74 5.59 5.48 4.70
10 20-C6 End 20-Gutter 20 20

263.5 264.80 264.22 265.29 265.47 266.25
7.8 6.51 7.09 6.02 5.81 5.06
10 20-C6 20-Gutter 20 20-Gutter 20-C6

263.02 262.71 263.53 264.26 264.92 265.40 266.11
8.29 8.60 7.78 7.05 6.39 5.91 5.30
10-C6 20-Gutter 20 20 20 20-Gutter 20-C6

271.31

0+80

0+72

0+60

0+52

0+40

269.66

Lt. 5

2

Rt. = W

266.5

266.4

265.8

265.70

266.76

267.64

268.36

3.22

3.23

3.29

3.96

2.90

2.02

1.820

10

28

20

19.5

20

20

20-0.3

266.36

3.30

30.9 = 11.2
Conc. 10k

266.4

266.1

265.86

266.90

267.74

268.95

3.23

3.26

3.80

2.76

1.98

1.821

10

20

19.5

20

20

20

266.51

3.15

31.4 = 11.2
Conc. 10k

265.8

266.1

266.76

266.68

267.36

268.14

3.29

3.21

4.1

2.98

2.30

1.82

10

25

19.5

20

20

20-0.3

269.66

1750 = 5' by Curb + Walk on Rt

1740

1720

170

0496

269.66

263.7	263.9	263.1	262.87	264.22	264.83	265.65
60 40	5.8 24	66 20	6.79 18.5-11/101	5.44	4.83 10=9	4.01 20=5/100

264.1	264.3	263.6	263.3	264.8	265.53	266.26
5.6 40	5.4 24	6.1 20	6.4 18.5-11/101	4.9	4/3 20	5.40 20

265.3	265.2	264.7	264.28	265.77	266.42	267.24
4.4 20	4.5 23	5.0 20	5.38 17.2-1/101	5.89	5.24 20	2.48 20

266.1	266.0	265.5	265.3	266.42	267.29	267.36
5.6 20	5.7 25	4.3 20	4.4 17.5-11/101	3.24	2.67 10=90-10	2.80 10=100-10

266.27

2.59
300 = 24.125
Condition

269.66

Check Levels Grapes St.

BM	8.54	277.09		268.55	N. F. B.P. Grapes St. 1st
TP	4.70	280.44	1.35	275.74	
BM			3.53	276.91	S.W. B.P. Grapes St. 32nd 276.91
TP	4.26	273.91	10.79	269.65	
BM			8.80	265.11	S.E. Cor. B.P. S.W. End Grapes St. 33rd

BM Set 4.47 265.19 S.E. Cor. B.P.
S.W. End
Grapes St. 33rd
Inside Edge

240

1782

1475

269.66

Lt.

S

Rt.

62

BM	4.41	269.50		265.19	S.E. B.P. S.W. End Grapes St. 33rd
TP	1.86	263.91	7.55	262.05	
BM			12.92	250.99	N.E. 7th St Hawthorn V. Field 251.02

2598 2598 259.1 258.70 2598 260.96 2609 2619

99 99 106 1096 9.26 970 88 78
40 25 20 18-E/10/1 18-N/10/1 20 27

264.09

587
286
S.E. Cor. B.P.
S.W. End
Grapes St. 33rd

2620 2622 2612 26081 262.22 26271 263.5 2640

77 75 85 885 7.44 695 64 57
40 20 20 18-E/10/1 20-N/10/1 20 27

269.66

X-Sec. Alley Blk. 16 Sunset Cliffs

indexed
C.S.K.

Sommermeier
Osborn
4 Moore
Beag

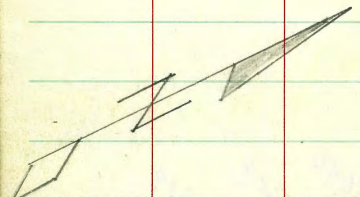
Fronde
5' Curbs
29' Roadway

AC paving

14.86

Edge pav = 620.6
R.L. = 620.25

20' curb Rad.
50' comb walk
Curb



Reduced 8-7-1944
Plotted

S. Line Alley

N. Line Alley

Alhambra

5.0000
5.0000
0.0000
0.0000

oil & Rock
Paving

7.57

7.57

5.0 comb walk & curb
2' curb Rad.

AC paving

Set nail on split of curbs

5.5' Curbs QUIZOT
29' Roadway

Blk. 16 Sunset Cliffs
IMPROVEMENTS

8/1/44 63

Along Alley

To Left (South)

To Right (North)

0+00 Edge Conc Drive	-0.8	0+00 Start oil & Rock Paving	L 170
↳ Entrance on Quizot		1+30 End " " "	Line
↳ Start oil & Rock Paving Line		Start back end	
0+20 Start Side of Garage	-0.7	3+51.5 Gar. Conc. floor No Bldg.	-20.8
0+49 End " " "	-0.5	4+9.5 End same	-20.8
↳ Start Stucco Wall	-0.5	Start back end of Conc. Garage	-16.1
		4+31 floor. No Bldg.	
0+50 Water Meter	+4.1	4+2.5 End Same	-16.1
0+79 Gate in wall	-0.4	4+60 Water Meter	+3.2
1+30 P.P. ctr. pole	+1.0	6+19.5 Fire Hydr. ctr.	-0.7
↳ L in stucco wall	-0.3	- = out of Alley	
		+ = in Alley	
↳ Start Conc. Apron	-0.3		
↳ End Alley Paving	+0.3		
1+33.5 Water Meter	ctr. Box		
1+34.5 Start Stucco Garage	-4.3		
1+36 " Entrance "	-4.3		
1+51 End " "	-4.3		
1+53 " Stucco Garage	-4.3		
↳ Start " Wall	-4.3		
1+57 L " "	-0.3		
1+57 End Conc. Apron	-0.3		
1+90 End Stucco Wall	-0.3		
2+51 P. Pole	+0.5		

X-sec. Alley - BIK 16 in

Improvements Along Alley

Teleft (south)	
3+43 - ctr. Water Meter	+0.5
Conc.	
3+46.5 Start Garage Floor	-10.3
(or building)	
4+7.5 Start Conc. Apron	-0.7
3+63 End " "	-0.7
3+64 End garage floor	-10.3
3+68 - End 4" Drain	-3.4
3+70 ctr. P. Pole	+1.0
ctr. box	
4+01 Water Meter	+1.0
Start garage Conc.	
4+06 Floor, No Bldg.	-10.3
4+07 Start Conc. Apron	-0.3
4+23 End " "	-0.3
4+24 End Gar. Floor	-10.3
4+60.5 Water Meter	+0.6
Start con. Garage	
4+60.5 Floor, No Bldg.	-10.0
4+67.5 Start Conc. Apron	Line
4+84 End " "	-0.1
End Conc Gar.	
4+85 Floor, No Bldg.	-10.0
4+90.5 ctr. P. Pole	+0.6

Sunset Cliffs.

8-4-44 64

B.M. = SEBR Pt. Loma + Quizot	0.02	120.19	-	120.17
T.P.	0.07	109.27	10.99	109.20
T.P.	12.91	116.97	5.21	104.06
T.P.	2.13	118.56	0.54	116.43
Set SEBR Asprey + Quizot			2.22	116.34
X-sec. - 0+00 = Alley West Line Quizot.				
118.56				
0+00 - 5.5 = W. curb line Quizot				
S-10			4.74	113 82
S			4.67	113 89
Q			4.74	113 82
N			4.59	113 97
N+10			4.54	114 02
0+00				
N top Curb			3.91	114 65
N. Pav Pav			4.34	114 22
Q			4.66	113 90
S. Pav			4.73	114 23
S- top curb			3.97	114 59
S+0.8 Conc Drive			3.97	114 59

118.56

0 + 20

S-07 top drive

3.80 114.76

S-06 par

4.94 113.62

S 5.04 113.52

Φ 5.26 113.30

N Edge paving 5.05 113.51

N+5 3.9 114.7

0 + 50

N-10 5.4 113.2

N 6.05 112.51

Φ 6.14 112.42

S 6.06 112.50

S+0.5 6.01 112.55

0 + 98

S-.0A ctr. Gate 7.44 111.12

1 + 00

S-0A 7.42 111.14

S 7.47 111.09

Φ 7.72 110.84

1400 cont.

N 118.56 7.54 111.02

N+10 7.4 111.2

1 + 10

N 7.70 110.86

Φ 7.96 110.60

S 7.66 110.90

1 + 30

S-0.3 Edge Apron 8.06 110.50

v End. paving 7.91 110.65

S 7.90 110.66

Φ 8.22 110.34

N 7.91 110.65

N+10 7.3 111.3

1 + 36

S-4.3 Garage start door 7.86 110.70

1 + 51

S-4.3 End garage door 7.86 110.70

1 + 57

over

Alley Bk. 16

		1+57		
S-0.3	End April	118.56	8.13	110.43
S			8.1	110.5
Φ			8.3	110.3
N			7.9	110.7
N+10			7.3	111.3
N+25			7.0	111.6
		1+80		
N-25			8.5	110.1
N			9.0	109.6
Φ			8.8	109.8
S			8.9	109.7
		2+00		
S-25			9.4	109.2
S			9.9	108.7
Φ			10.2	108.4
N			10.1	108.5
N+10			9.4	109.2
N+40			10.3	108.3
T.P.	0.53	106.28	12.81	105.75

Sunset Cliffs

66

		π		
		106.28		
		2+25		
N-40		0.5		105.8
N-10		+0.4		106.7
N		+0.2		106.5
Φ		0.4		105.9
S		+0.8		107.1
S+25		+1.0		107.3
		2+50		
S-25		2.1		104.2
S		1.8		104.5
Φ		2.8		103.5
N		1.8		104.5
N+2		1.2		105.1
N+30		3.0		103.3
		2+75		
N-30		7.0		99.3
N-13		4.5		101.8
N		4.5		101.8
N+2		5.0		101.3

X-Sec.

Alley BIK. 16

	2+75		
	π		
Φ	106.28	5.3	101.0
S		4.2	102.1
S+25		4.5	101.8

3+00

S-25		7.1	99.2
S		7.1	99.2
Φ		7.7	98.6
N		7.5	98.8
N+25		9.9	96.4

3+25

N-25		12.4	93.9
N		10.0	96.3
Φ		10.0	96.3
S		9.3	97.0
S+7		11.7	94.6
S+25		11.7	94.6

3+47.5

S-10.3	Car. floor. conc.	11.67	94.61
S-0.7	Edge Apron	11.72	94.36

Sunset Cliffs

67

3+47.5 Cont.

	π		
S	106.28	11.9	94.4
Φ		11.9	94.4
N		11.6	94.7
N+25		13.4	92.9

3+51.5

N-20.8		13.6	92.7
--------	--	------	------

3+63

S-0.7	Edge Apron	12.70	93.58
S-10.3		11.68	94.60

3+68

S-3.4	End 4" O.I. Pipe drain. for yard.	13.78	92.50
-------	--------------------------------------	-------	-------

106.28

T.P.	1.67	94.86	12.09	93.19
------	------	-------	-------	-------

3+80

S-25		5.4	89.5
S-2		3.9	91.0
S		2.6	92.3
Φ		3.2	91.7
N		2.8	92.1
N+25		3.1	91.8

X-Sec. Alley Bk 16

Sunset Cliffs

68

A+07

N-25	(94.86)	4.7	90.2
N		5.2	89.7
E		5.4	89.5
S		5.2	89.7
S+0.3	Edge Apron	5.22	89.64
S+10.3	Garage Floor	4.59	90.27
	A+23		
S-10.3	Garage Floor	4.64	90.22
S-0.3	Edge Apron	5.73	88.93
	A+31		
S-25		8.0	86.9
S		6.9	88.0
E		7.6	87.3
N		7.7	87.2
N+16		8.5	86.4
	A+67.5		
N-30		10.2	84.7
N		10.4	84.5
E		10.6	84.3

A+67.5 cont.

S	(94.86)	10.8	84.1
S	Edge Apron	10.77	84.09
S+10	Gar. Floor	10.17	84.69
	A+84		
S-10	Gar floor	10.23	84.63
S-0.1	Edge Apron	11.29	83.57
	(94.86)	12.63	
T.P.	0.55	82.78	12.63 82.23
	S+00		
S-25		1.9	80.9
S		1.2	81.6
E		1.6	81.2
N		1.2	81.6
N+25		1.7	81.1
	S+25		
N-25		4.1	78.7
N		3.9	78.9
E		4.1	78.7
S		4.0	78.8
S+25		5.5	77.3

X-Soc. Alley Bk. 16-

5+50

 π
82.78

S-25	7.6	75.2
S	6.8	76.0
Φ	7.6	75.2
N	6.8	76.0
N+30	6.2	76.6

5+75

N-30	9.1	73.7
N-9	9.0	73.8
N-8	9.8	73.0
N	10.8	72.6
Φ	11.3	71.5
$\Phi+4$	11.1	71.7
S	10.5	72.3
S+9	9.4	73.4
S+30	10.3	72.5

82.78

T.P. 0.28 70.64 12.42 70.36

Sunset Cliffs

8-4-44

69

5+85

 π
70.64

S-30	0.0	70.6
S-3	+0.7	71.3
S	+0.2	70.8
S+3	1.0	69.6
Φ	1.2	69.4
N	0.6	70.0
N+8	+1.0	71.6
N+14	+1.5	72.1
N+30	+1.2	71.8

6+00

N-30	0.5	70.1
N-10	0.4	70.2
N-1	1.8	69.8
N	3.0	67.6
N+1	4.2	66.4
Φ	4.9	65.7
$\Phi+6$	4.6	66.0
S	2.3	68.3
S+9	0.8	69.8
S+25	1.1	69.5

X-Sea Alley BIK. 16

G + 11

S-25	70.64	2.0	68.6
S-11		2.4	68.2
S		4.7	65.9
S+3		6.5	64.1
Φ		6.3	64.3
Φ+5		6.7	63.9
N		5.2	65.4
N+14		3.0	67.6
N+25		2.5	68.1

G + 20.25

N-30		10.2	60.4
N. Top Curb		8.50	62.14
N Ground		8.4	62.2
Φ "		8.2	62.4
S "		8.1	62.5
S top curb		7.92	62.72
S+25		7.7	62.9

Sunset Cliffs

8-4-44

70

G + 20.6 - Edge Paving

S top curb	70.64	7.93	62.71
S Gutter		8.34	62.30
Φ pav		8.85	61.79
N. Gutter		8.84	61.80
N. top curb		8.51	62.13

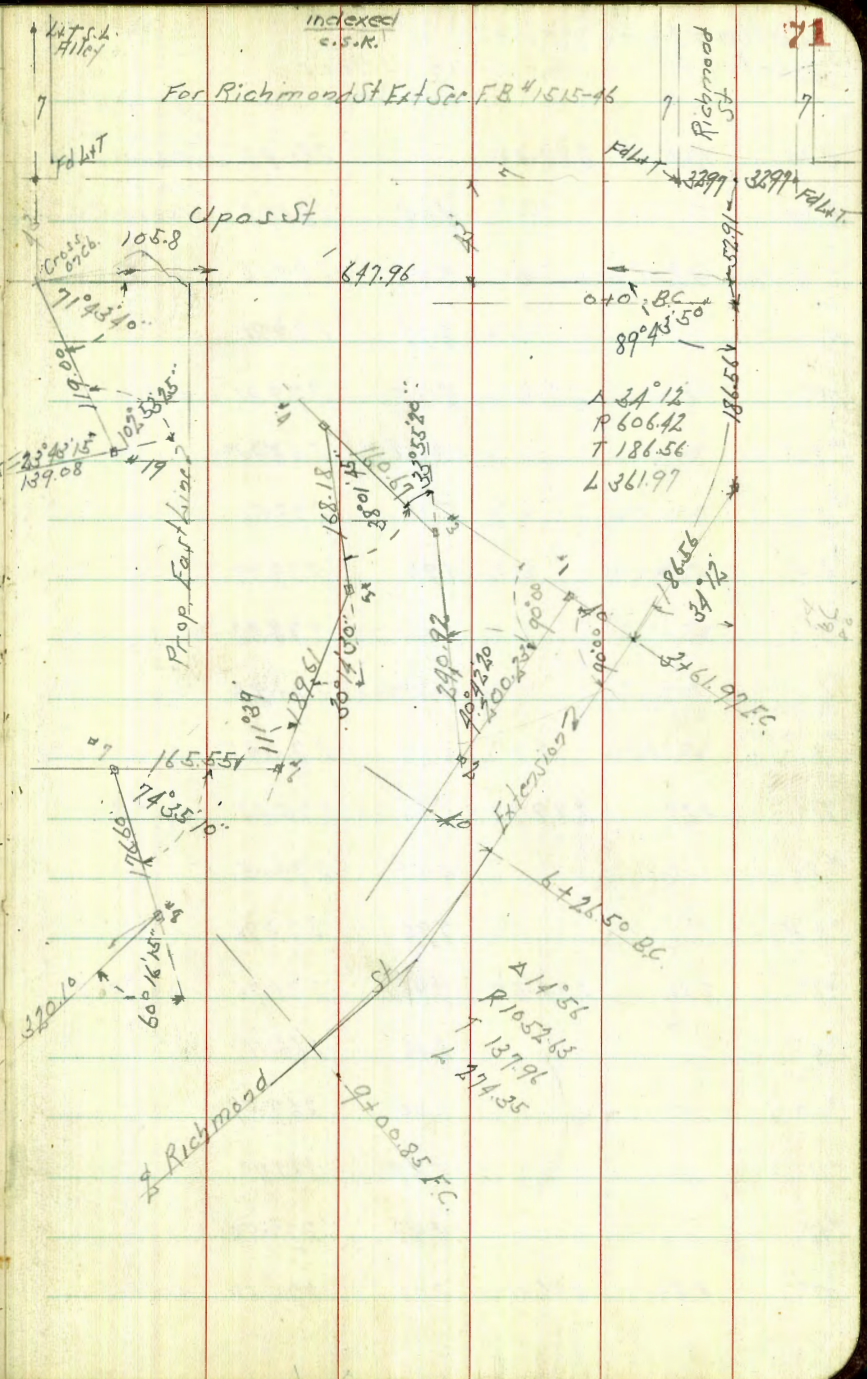
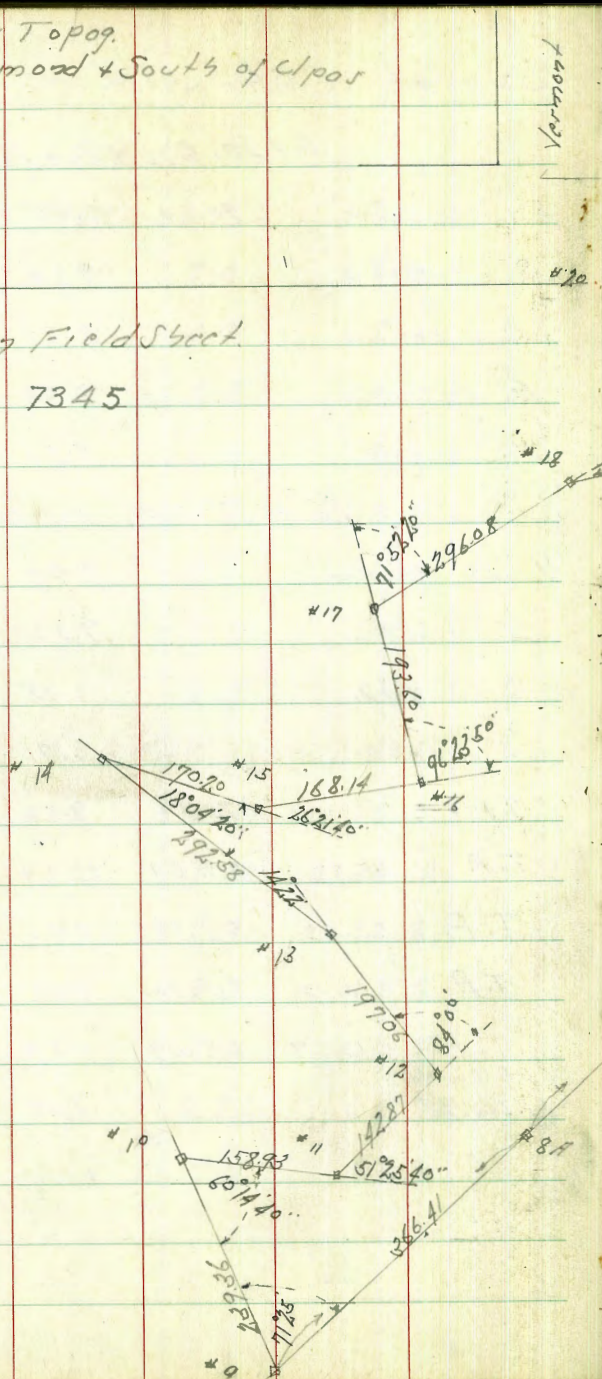
G + 25.75 - East Curb line Froude

N-15 Gutter		9.99	60.65
N "		9.22	61.42
Φ pav.		8.95	61.69
S Gutter		8.71	61.93
S+15 "	70.64	8.52	62.12
T.P.	0.86	59.21	12.29 58.35
T.P.	2.08	53.83	7.46 51.75
T.P.	10.16	56.30	7.67 46.14
T.P.	12.27	68.07	0.50 55.80
SE.B.P. Froude			
* Pt. Lem. Ave			1.49 66.58
		S.B.	66.51
		Error	0.04

Balboa Park Topog.
West of Richmond + South of Upar

Feb 23-95
Sisson
Blist
Osborne

Topog. of Field Sheet
See Roll 7345



Balboa Park Level
West of Richmond South of Upar

B.M	161	288.58	286.97	N.W. B.P. Upar + Hilbert
B.M		4.65	282.93	N.W. B.P. Upar + Richmond
S.L. Upar + Richmond		5.42	283.16	02 Pav.
#1		8.77	279.81	
TP	1.87	281.68	8.77	279.81 02 #1 Hub
#2		12.73	268.95	
#3		2.17	279.51	
#4		1.90	279.78	
#5		3.46	278.22	
#6		7.70	273.98	
#7		6.23	275.45	
TP	4.27	279.72	6.23	275.45 02 #7
#8		5.57	274.15	
#8 H		7.96	271.76	
TP	2.81	274.57	7.96	271.76 02 #8 H
#9		8.46	266.11	
#10		7.00	267.57	
#11		5.87	268.70	
#12		2.07	271.50	
TP	4.88	276.58	2.07	271.50 02 #12

276.38

#12		6.64	269.74	
#14		9.58	266.80	
#15		7.95	268.43	
#16		5.22	271.16	
#17		5.19	271.19	
TP	9.40	280.59	5.19	271.19 02 #17
#18		4.61	275.98	
#19		6.35	274.24	
#20	= 566.4 par	3.61	276.98	
TP	9.21	286.53	3.27	277.32
B.M		2.57	283.96	N.W. B.P. Upar + Richmond 283.93

Re Cross Section 42nd St.
Market to F St.
Original #1602-27

Indexed
c.s.k
50' wide

April 30, 45
Sisson T
8155
at Garret Road.

Lt = M

±

Rt = F

73

1+73 = 2 7' Solid Conc Dr on Rt

128.40 128.20 128.39
4.42 3.64 2.45 ✓
15.4' H/L Conc Dr

1+50

126.5 127.8 128.4 128.2 128.7
6.58 4.9 4.8 4.6 4.1
2.5 1.5 1.5 1.5 2.5

1+11.3 = 2 7' Solid Conc Dr on Rt

128.04 128.61 128.72
4.80 4.23 4.12 ✓
15.5' H/L Conc Dr

1+0

Reduced AEB
& Plotted
Profile 2873-5-11-45

125.5 127.6 127.8 127.8 128.1
7.3 5.9 4.9 5.0 4.4
2.5 1.5 1.5 1.5 2.5

0+50

126.4 127.1 127.9 128.1 128.7
6.4 5.7 4.9 4.7 4.1
2.5 1.5 1.5 1.5 2.5

0+0 = H.L. Market

129.2 129.23 129.66 129.19 129.26 129.29 128.8
3.6 3.61 4.18 3.65 3.58 3.05 3.0
2.5 15-C6 13-50 H/L 13-50 H/L 15-C6 2.5

B.M. 4.08 132.84

128.76

S.W. B.P.
Market 4920

132.84

2+34.5 = Sly new conc. Walk on Rk

2+30.9 = $\frac{1}{2}$ 7' Conc Drive Solid on Rk

3+0

2+78.8 = $\frac{1}{2}$ 7' Solid Conc Dr. on Rk

2+50

+34.5 = Sly Conc Walk under construction

2+31 = $\frac{1}{2}$ 7' Solid Conc Dr. on Rk

2+0

132.84

Lt.

L

Rk

74

?

129.26	129.64	129.76	✓
3.86	3.20	3.08	
15.1	20	25	

15.1-7 1/2 Conc Dr.

128.1	128.1	128.2	128.9	129.1
4.7	4.7	4.1	3.9	3.7
2.5	1.5		1.5	2.5 ground

129.00	129.22	129.30	✓
3.84	3.62	3.54	
15.2	19.7	25	

15.2-7 1/2 Conc Dr.

127.8	128.4	128.6	128.2	128.32	129.0	✓
5.0	4.4	4.2	4.1	3.52	3.8	
2.5	1.5		1.5	20.7	2.5 ground	

20.7-Head

128.2	129.37	129.47	✓
3.92	3.47	3.27	
15.6	20.8	25	

15.6-7 1/2 Conc Dr.

127.0	127.2	128.3	128.1	128.2	128.9
5.1	4.6	4.5	4.7	4.1	3.8
2.5	1.5		1.5	1.6	2.5

132.84

4+80.8 = 2 7' Conc Dr. on Rt

131.13	131.20	131.24
7.75	7.61	7.51 ✓
130.38	20	25
D = 1/2 Conc		

4+50

120.0	129.9	129.5	129.7	131.04	131.13
8.9	9.0	8.4	8.0	7.84	7.75
25	15		15	20 = 1/2 Conc	25 = 1/2 Conc
Walt					

429 = 2 7' Solid Conc Dr. on Rt

130.59	130.85	130.75 ✓
8.29	8.00	7.92
15.5 = 1/2 Conc	20	25
D = 1/2 Conc		

4+0

129.2	129.7	129.8	130.1	130.51	130.56
9.2	9.2	9.1	8.8	8.87	8.32
25	15		15	20 = 1/2 Conc	25 = 1/2 Conc
Walt					

3+81 = 2 7' Solid Conc Dr. on Rt

120.04	120.24	120.46 ✓
8.84	8.54	8.42
15.5 = 1/2 Conc	20	25
D = 1/2 Conc		

IP 9.58 138.88 3.54 129.20

138.88

3+50

128.7	128.6	129.0	129.2	129.86	129.89 ✓
4.6	4.7	3.8	3.6	2.98	2.85
25	15		15	20 = 1/2 Conc	25 = 1/2 Conc
Walt					

132.84

132.84

BM

475

128.75

SHBP
Market +
42nd St
128.76

IF

385

133.50

923

129.65

6740.59 = SL FST

5486.8 = NY Conc Walk on Rt

5450

5729.3 = 7' Solid Conc Dr on Rt

540

138.88

Lt

R

Rt

76

136.6
2.3
2.5

136.9
2.0
1.5

136.8
2.1

137.3
1.6
1.5

132.8
1.1
2.5

133.5
5.4
2.5

134.2
4.7
1.5

134.3
4.6

134.5
4.4
1.5

134.21
4.7
19.7 = NY Conc

134.78
4.10
24.6 = NY Conc

132.0
6.9
2.5

132.2
6.2
1.5

133.0
5.9

133.0
5.9
1.5

133.40
5.28
19.7 = NY Conc

133.43
5.45
24.5 = NY Conc

132.50
6.38
14.7 = NY Conc

132.87
6.07
19.7 = NY Conc

132.86
5.99
24.7

131.1
7.8
2.5

131.2
7.7
1.5

131.6
7.3

131.6
7.3
1.5

131.88
7.00
19.8 = NY Conc

131.93
6.95
24.6 = NY Conc

138.88

Check of Hiermeier Tract

Surveyed by
John F. Covert
RF # 2718

June 9-1945
S. 1505
8155
Osborne
8899

○ = Lead + Tack Found
○ = 3/4" Pipe " "
○ = 1/2" " " "

Fd 3/4" Pipe
+ Lead + Tack

424.39

422.65

54.59

35.00

55.01

55.03

50.02

55.00

50.01

49.99

50.03

50.01

50.00

50.01

54.69

55.02

55.01

37.97

80.00

40.53

19.99

50.00

50.00

50.00

50.02

50.01

Fd 1/2" Pipe
+ 230'

Indexed
C.S.R.

Hilltop Drive

Fd 1/2" T.

200.10

14

13

12

Fd 3/4" Pipe
+ Conc.

14395

14001

14003

Fd 3/4" Pipe + Conc
+ T.

100.1

143.11

14004

14002

14007

14008

14009

14010

14011

14012

14013

14014

14015

Market St

indexed
c.s.K.

For Prall

Sewer Const. Lot 36, Hanton's Prop.

W. of 41st St. S. of Market

Market

NW 1/4 7.28 132.67 125.39 + 41st St.

0+00 S.L. Market

ground Rods Stub Pts
5.7, 26.8

0+55 5.6, 27.1 5.68

1+10 Δ 90° Rt. 4.1, 28.6 4.05

1+50 2.5, 30.2 1.76

2 1.7, 31.0 1.70

2+55 DE 1.8, 30.9 1.38

Clarkson
4027 Market

2+55
D.E.

Moore
Sommer Meyer
W. F. M.
10-30-45,

132.67
8.90

178

123.77 = Fl. Sewer
Stub
S.L. Market

132.67
4.17
128.50 Bot.
ditch
at D.E.

Stub EL, Fl. Grade CUTS

123.77

126.99 124.79 2.20

CUT STUBS

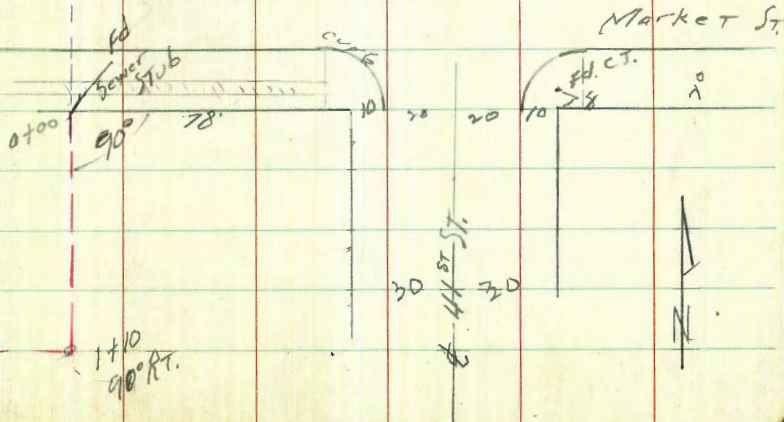
Set 4' LT.

128.62 125.81 2.81

131.41 124.55 4.86

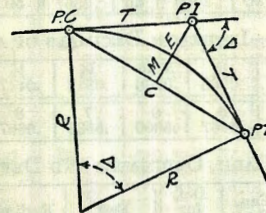
130.97 127.48 3.49

131.29 128.50 2.79



DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

Copyright, 1914, by Eugene Dietzgen Co., New York City



CURVE FORMULAS

Radius= $R = \frac{50}{\sin \frac{D}{2}}$ (1) Degree of Curve= D and $\sin \frac{D}{2} = \frac{50}{R}$ (2)

Tangent= $T = R \tan \frac{\Delta}{2}$ (3) Length of Curve= $L = 100 \frac{\Delta}{D}$ (4)

Middle ordinate= $M = R(1 - \cos \frac{\Delta}{2}) = R \text{vers} \frac{\Delta}{2}$ (6)

External= $E = T \tan \frac{\Delta}{4}$ (7) $= R \div \cos \frac{\Delta}{2} - R$ (8) $= R \text{exsec} \frac{\Delta}{2}$ (9)

Long Chord= $C = 2 R \sin \frac{\Delta}{2}$ (10) $\Delta =$ Central Angle

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.=Sta. 161+60.35 to find Sta. of P. C. and P. T. $\Delta=62^\circ 10'$ $D=8^\circ 20'$. From Table IV for 1° curve $T=3454.1$ and $+8\frac{1}{3}=414.49$ ft. From Table V correction=.36 or $T=414.85$ ft. P. C.=Sta. P.I.— $T=157+45.50$. Also from (4) $L=746.00$ and P. T.=Sta. P. C. + $L=164+91.50$.

Offsets.—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft.=7.27 ft. Distance=158—Sta. P. C.=54.50, hence offset=7.27 $(54.50 \div 100)^2=2.16$ ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2 \div (2 \times 688.26)=2.16$ ft.

Deflections.—Deflection angle= $\frac{1}{2} D$ for 100 ft., $\frac{1}{4} D$ for 50 ft., etc. For c ft.=(in minutes) $.3 \times C \times D^\circ$ or=defl. for 1 ft. from Table III $\times C$. For Sta. 158 of above curve=.3 $\times 54.5 \times 8\frac{1}{3}=136.2'$ or $2^\circ 16.2'$, or=2.50 $\times 54.5=136.2'$ from Table III. For Sta. 159 deflection angle= $2^\circ 16.2' + 8^\circ 20' \div 2=6^\circ 26.2'$, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 91.37. For from Table IV for 1° curve $E=960.6$ for $8^\circ 20'=960.6 \div 8\frac{1}{3}=91.27$ and from Table V correction=.10 or $E=91.37$ ft. Or suppose $\Delta=32^\circ$ and E is measured and found to be 42 ft. What is D ? From Table IV $E=230.9$ and $+42=5.5$ or $D=5^\circ 30'$.

TABLE I.—MINUTES IN DECIMALS OF A DEGREE.

Table with 10 columns and 10 rows of minute values in decimals of a degree.

TABLE II.—INCHES IN DECIMALS OF A FOOT.

Table with 11 columns and 2 rows of inch values in decimals of a foot.

TABLE III.—RADIUS, ORDINATES AND DEFLECTIONS.

Large table with 10 columns and 30 rows of radius, ordinates, and deflections.

Note. Chord Deflection=2 times tangent deflection.

TABLE IV.—TANGENTS AND EXTERNALS TO A 1° CURVE.

Table with 9 columns and 30 rows of tangent and external values for a 1-degree curve.

847034
 -916
 847625
 31513
 877640

120.19
 1099
 109.20

341037
 -180
 16137

55927 = 7174

1 + 12

2 + 27

360
 42020
 6 + 20.20

111.8
 1.3
 113.6
 37
 FEB July 6th 43

DISTANCES FROM CENTER OF ROADWAY FOR
 CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½
 For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	26.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be 41.9 + (20 - 16) ÷ 2 or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.