

91-E

ENGINEERS'  
LEVEL BOOK

Nº410

F.B. 588

DEIZEN  
NEW YORK

# 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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CITY Hall  
CITY OF EAST SAN DIEGO  
Calif

of per mile  
of bank

BM

El.

NY Univ + Each of Mon (Conc) 340 G3 ✓



Euclid to Radio Road  
Bench Levels University Ave Extension <sup>3</sup>

1/11/23  
A.E. Franklin  
J.E. Ellis

R1 =  $\pi$  + Rod

340.630 8854 349.484 8854  
335.759 9725 341.607 1848  
329.649 11958 331.188 1.539  
318.707 12481 318.833 0.126

BP N Y Cor Univ + Euclid  
TP Sta 2+0 No Side  
Curb SW Cor Acacia Drive

10.65 308.18 Top pipe so side fill } for X sectioning  
12.103 306.73 " rock No " }

317.775 1.058 329.778 12003  
329.638 0.140 332.716 10078

328.934 10.782 329.796 0.862 6.124

333.595 BM F.C. 3146.61

TBM 318.074 11.722 319.362 1.288

6150 RT

306.698 12.667 307.692 0.994

294.750 12.933 295.797 1.038

283.178 12.619 292.246 9.068

BM 10.770 281.476

SW Cor Concr Covered Culvert

291.800 0.446 309.450 12.650

304.404 0.044 315.888 11.482

10.981  
11.01  
11.04

315.746 0.142 321.885 6.139

TBM 2.850 319.035 14150 40' Lt lath peg

309.434 12.451 309.860 0.426

109.165  
2.765

78.395  
3.678

\*  
109.165  
78.395  
30.770  
09.86  
340.634

E1 - 309.860 ✓ +

Rod Bench Lerdy Univ. Ave Extension

TBM

6.570 303.230 17+0 30' Lt Hub

309.877 0.283 322.261 12.684

TBM 321.861 0.400 334.612 12.751

21+10 1st Rf 1st peg

334.067 0.545 340.657 6.590

4.285 336.372 23+50 30' Lt hub

32.586

24.251

8.335

9.861

18.195

10.000

328.737 11.920 329.298 0.561

B.M. ✓ 318.195 11.103

Nail in Power Pole N. Y. Cox Radio Road

24.251 ✓

32.586

X

Check Back

318.195 329.278 11.083

328.736 0.542 340.281 11.545

327.878 12.403 328.088 0.210

3.914 336.367 22+50

6.235 321.853 21+10 1st peg

315.527 12.561 316.837 1.310

306.079 10.758 315.249 9.170

11.967 303.282

313.798 1.451 320.720 6.922

308.059 12.661 308.474 0.415

296.411 12.063 296.515 ✓ 0.104

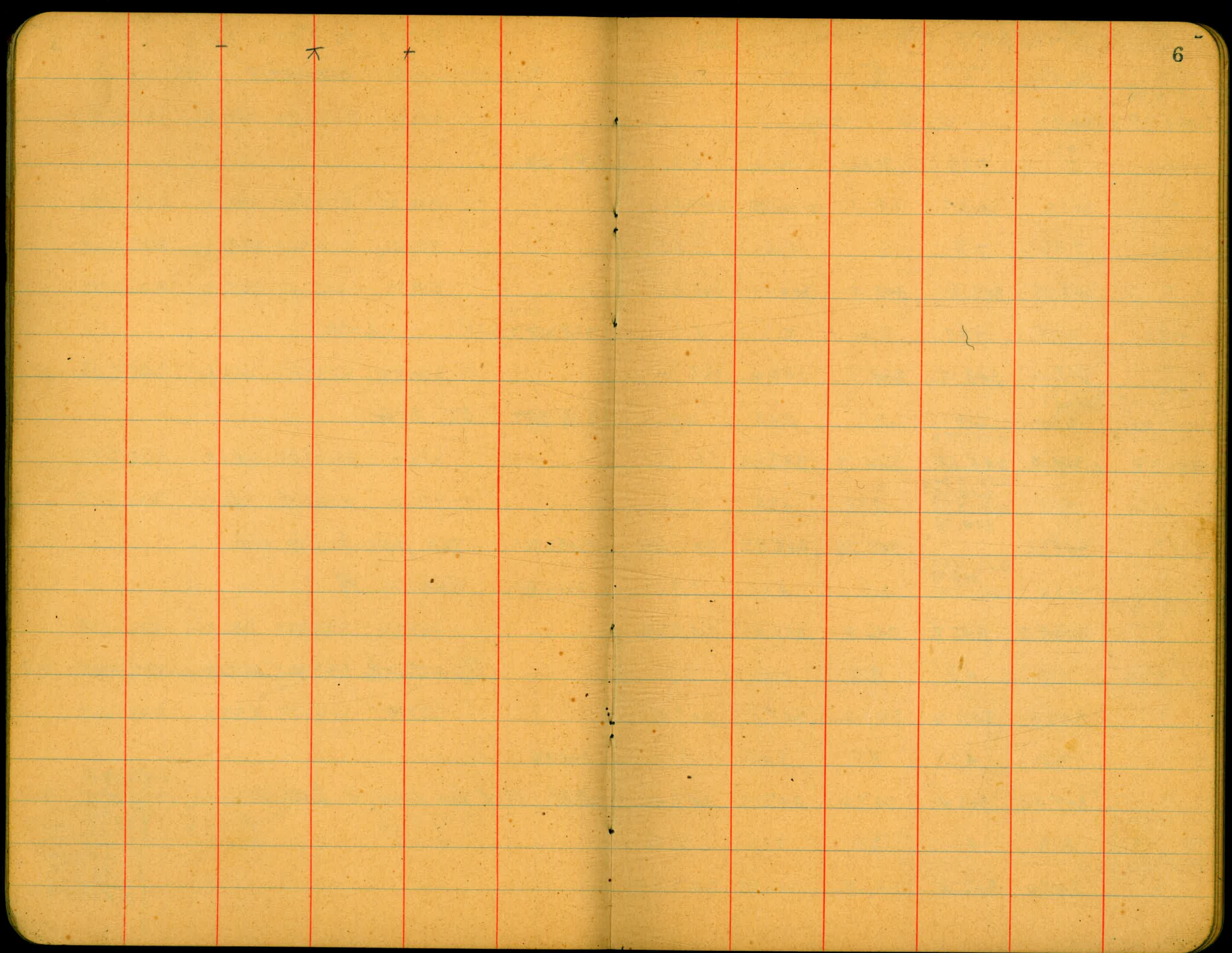
4.705 291.810 former TP

62.439  
1.331

40.750  
2.1

62.430  
40.750  
21.680  
96.815  
218.195







UNIVERSITY AVE EXT

EUCLIO TO RADIO ROAD X Sect 5

BM N.Y. Cor	So. PL	Curb S	+	+	Curb N	No. PL
Euclid B.P. Curb	340.63	350.50			9870	
0+00	9.2 9	2.65		9.40	10.0	8.3
"	341.3	340.85		341.1	340.51	342.2
0+15	7.45	7.7		8.1	6.4	5.85
"	343.05	342.8		342.4	344.1	347.65
+50	6.85	7.35		6.4	6.1	5.3
"	PL 347.65	343.15		344.1	344.4	345.2
+20	6.16					
1+00	6.20	6.4		5.6	5.45	4.9
1+15		curb 582				
Walk = 152'	344.3	344.68		344.9	345.05	345.6
+50	5.15	curb 534.1 345.16		4.75	4.95	4.05
"	345.35	344.75		345.75	345.55	346.45
2	4.10	curb 451 345.99		3.9	4.1	3.30
Curv bend 2+12		surf 5.0				
"	346.40	345.5		346.6	346.4	347.20
+50	3.7	4.5		3.3	3.4	2.7
"	346.8	346.0		347.2	347.1	347.8
3	3.45	4.1		3.5	3.45	3.10
"	347.05	346.4		347.0	347.05	347.40
E. PL of Albin						
3 +30	3.5	4.1		3.5	3.75	2.85
0+00						
"	347.0	346.4		347.0	346.75	347.65

Conce 341.09 p 29

UNIV. AVE EXT

Sta	SPL Rod Elev	350 <sup>x</sup> 50 <sup>w</sup>	4	11	NPL Rod Elev
0+50	360	440	370	490	39
	346.9	346.1	346.8	345.6	346.6
1	4.45	5.5	5.25	6.5	5.6
	346.05	345.0	345.25	344.0	344.9
+50	7.10	8.0	7.7	9.1	8.8
	343.40	342.7	342.8	341.4	341.7
TP.	339.27	11.230	341.265	1.995	
2	10	1.8	1.6	3.0	2.3
	340.3	339.5	339.7	338.3	339.0
+50	4.3	5.2	5.1	6.3	5.1
	337.0	336.1	336.2	335.0	336.2
W.P.L. Estrella ST 2 +70	6.0	6.8	6.8	8.3	8.1
	335.3	334.5	334.5	333.0	333.2
E Estrella 3	8.4	9.8	9.3	10.5	10.35
E.P.L. Estrella + 30	332.9 (13 on Concr Walk 11.48)	331.5	332.0	331.10	330.91
	12.55	11.7	12.15	10.6	
	329.79	328.71	329.6	329.10	330.7
BM + End of Curb Acacia Drive	329.620	11.645			

Estrela EPL 30 P1 Cur-b  $\Phi$  Cur-b N.P.L

UNIV. AVE EXT

0+00 329.649 330.720 1080

0+50 4.2 6.05 6.15 6.0 5.1

" 326.5 324.88 324.58 324.7 325.6

+60 5.5 6.7 7.15 6.9 7.5

" 325.58 324.0 323.58 323.8 323.7

+80 7.9 8.15 9.0 9.5 11.7 12.6

" 322.8 322.58 321.7 319.0 318.1

1+00 13.3 14.3 14.8 12.1 11.8 11.4 12.9 18.8

" 317.4 316.4 315.4 315.9 318.6 318.9 319.3 313.8 311.9

T.P. 317.8/12018 318.521 6710

1+50 17.0 20.8 19.5 5.4 5.15 5.1 17.3 20.0 20.8 45.4 21.5

" 301.5 297.7 299.0 313.37 301.2 297.7 297.0

2 29.3 28.0 9.25 9.2 23.9 23.7

So Invert El/ 291.3 No Invert = El/ 293.1

" 290.5 309.1 309.3 309.3 293.1 294.6 294.8

So Invert El. = 296.0

2+50 28.0 17.8 18.2 18.5 11.0 10.6 10.9 17.8 18.0 16.9 15.2

" 390.5 300.7 300.3 300.0 307.5 307.9 300.5 301.6 303.3

+75 13.5 13.8 14.7 10.5 10.0 10.3 19.1 14.3 10.7

2+35 22.5

" 305.0 304.7 303.8 308.0 308.5 308.0 303.4 304.2 308.1

$\Phi$  Cerros } 3+0 10.6 10.0 8.8 8.7 8.7

" 307.9 308.5 309.7 309.8 309.8

Sta SPL Curb  $\phi$  Curb NPL

UNIV. AVE EXT

318.521

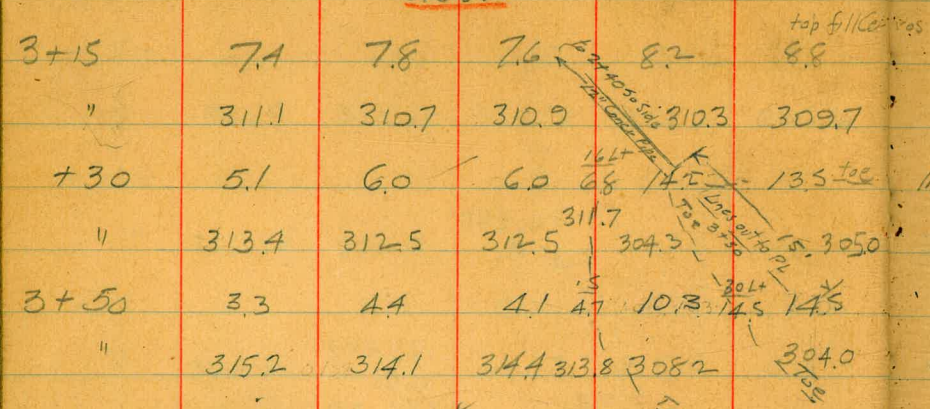
3+15	7.1	7.8	7.6	8.2	8.8	top fill Cerros
"	311.1	310.7	310.9	310.3	309.7	
+30	5.1	6.0	6.0	6.8	13.5	Invert 17.0 El = 301.52
"	313.4	312.5	312.5	304.3	305.0	
3+50	3.3	4.4	4.1	4.7	10.3	14.5
"	315.2	314.1	314.4	313.8	308.2	304.0

TP	318329	0192	<u>329.297</u>	10968	Top	
4+0	9.8	10.5	9.4	10.5	10.4	15.5
	319.5	318.8	319.9	318.8	313.8	325.8
+50	4.5	5.7	5.4	6.5	6.4	6.9
	324.8	323.6	323.9	322.8	322.9	322.4

5	0	1.5	0.7	1.0	1.5	
TP					HK above	
Top 5+0 NPL	328.133	1164	<u>338.581</u>	10448		

5	329.3	327.8	328.6	327.4	327.8	
5+50	6.5	7.1	6.9	7.8	7.1	
	332.43	331.5	331.7	330.8	331.5	
W.P.L. Winoka	4.0				4.0	
6+0	5.2	6.0	5.3	5.7	5.2	
0+00	333.4	332.9	333.3	332.9	333.4	
EPL Winong	3.0				3.0	
+60	4.2	4.3	4.1	4.75	4.85	
	334.4	334.3	334.5	333.93	333.73	

60' EAST  
80' WEST



4998

338,581

Sta	SPL	Curb	±	Curb	NPL
1+00	4.4	4.75	4.9	4.6	4.5
	334.2	333.83	333.7	334.0	334.1
+50	4.0	4.0	3.7	2.8	2.5
	334.6	334.6	334.9	335.8	336.43
2	3.65	3.0	2.95	2.8	2.3
	334.93	335.6	335.63	335.8	336.3
+50	3.8	3.5	3.4	2.8	2.4
	334.8	335.1	335.2	335.8	336.2
3	4.0	4.0	4.45	4.55	4.05
	334.6	334.6	334.13	334.03	334.53
+466	5.0	5.2 <sup>14'</sup> <sub>54</sub>	6.2 <sup>13'</sup> <sub>67</sub>	6.0	5.5
	333.6	333.6 <sup>333.2</sup>	332.4 <sup>331.9</sup>	332.6	333.1
EC 3+46.61					
B.M	<u>333,583</u>	<u>4,998</u>			
11	333.595		<u>334,507</u>	0.912	
+59.6	1.45				
MANLANITA	331.25				
4+0	4.2	4.6	4.9	2.6	0.9
	330.3	329.9	329.6	331.9	333.6
+10	6.75	5.5	4.8	2.0	0.5
	327.8	329.0 <sup>325.9</sup>	329.7 <sup>327.0</sup>	332.5	334.0

Sta B.P.L Curb  $\Phi$  Curb N.P.L

334.507

4+50 85 <sup>24.8</sup> 6.3 <sup>8.4</sup> 6.7 2.9 2.4 1.3 0.4  
<sub>328.2</sub> <sub>327.8</sub> <sub>331.2</sub>  
 326.0 328.2 332.1 333.2 334.1

BM EC 3+46 333.59 334.85 1.305

5 <sup>45.8</sup> 19.1 9.7 9.8 <sup>5.8</sup> 6.4 3.1 1.6  
<sub>315.8</sub> <sub>325.2</sub> <sub>325.1</sub> <sub>328.5</sub> <sub>331.8</sub> <sub>333.3</sub>

+30 <sup>5.5</sup> <sup>3.3</sup> 11.3 11.4 <sup>5.1</sup> 7.1 4.1 2.8  
<sub>310.7</sub> <sub>323.5</sub> <sub>322.5</sub> <sub>327.8</sub> <sub>330.8</sub> <sub>332.1</sub>

+50 <sup>1.6</sup> <sup>3.5</sup> 12.4 12.2 12.5 <sup>2.8</sup> 4.6 3.4  
<sub>307.9</sub> <sub>322.4</sub> <sub>322.5</sub> <sub>322.7</sub> <sub>322.4</sub> <sub>330.3</sub> <sub>331.5</sub>

6 14.2 14.5 <sup>8.5</sup> 8.0 <sup>3.0</sup> 10.6 <sup>2.2</sup> 5.7  
<sub>320.7</sub> <sub>320.4</sub> <sub>326.9</sub> <sub>324.3</sub> <sub>329.2</sub>

TP 321.81/1308 325.038 3228

6+50 7.2 7.1 <sup>1.2</sup> 0.6 0.0 +1.0 +2.0  
<sub>317.8</sub> <sub>317.9</sub> <sub>325.0</sub> <sub>326.0</sub> <sub>327.0</sub>

7+0 11.6 11.6 <sup>1.4</sup> 5.5 4.4 2.9 1.7  
<sub>313.4</sub> <sub>313.4</sub> <sub>320.6</sub> <sub>322.1</sub> <sub>323.3</sub>

TP 312.290 12749 319.1156 825

+50 10.1 9.7 <sup>1.8</sup> 5.0 5.0 2.4 0.9  
<sub>309.0</sub> <sub>309.4</sub> <sub>314.1</sub> <sub>316.7</sub> <sub>318.2</sub>

Univ Ave Ext

Sta S.P.L. Gurb ♀ Gurb NPL

Univ Avg Ext

319.115  
 130 108  
 16.3 16.2 16.0 12.7 11.4 7.7 5.0  
 303 306.4  
 302.8 302.9 307.7 311.4 314.1

BM TP 306.685 12.130 308.299 1.599

53+50 4.8 4.8 15 5 6.2 11.1 11.8  
 11.2 8.0  
 297.1 301.4  
 303.5 303.5 302.1 297.2 296.5

+63.25C 13.7 13.0 12.8 9.4 8.9 9.3  
 298.6 295.3 298.5 298.9 299.4 299.0

+75 4.0 3.7 2.1 0.0 Cut  
 304.3 304.6 305.2 " Fill

TP 226.024 12.255 296.691 0.667

910 12.7 7.0 6.9 10.1 10.4 9.8 9.0 4.5  
 100 Cut 280.6 8.1

284.0 289.7 289.8 286.3 286.9 297.7

18.1 16.5 12.8 12.4 12.3 12.3 15.1 15.3 14.8 5.5  
 284.4 13.5

286.6 280.2 284.3 284.4 281.6 281.4 281.9

TP 9+50 RT 284.286 12.405 288.804 4.528

7.10 8.1 6.5 6.6 7.3 8.4 8.2 8.2 7.0  
 7.0  
 13M C/W 73.2  
 281.45  
 280.7 282.3 280.4 280.6 280.6 281.0  
 282.805

Conca Box Culvert  
 So=RT top EI = 281.45 No or Lt. End Top 281.8  
 Inv = 277.74 Inv 278.36  
 286.604  
 2312  
 281.452

5.8 5.5 9.0 7.7 7.8 7.0  
 7.2  
 283.0 283.3 279.8 281.1 281.0 281.6

10+50 7.1 4.1 5.7 5.8 5.3 7.0 10.5 9.9 9.5 8.0 7.0  
 276.7 80.6 283.0 283.5 281.8 278.3 278.9 279.3 280.8 281.8  
 78.8 10.2 278.6

Sta SPL Curb  $\Phi$  Curb NPL

Univ. Ave Ext

Sta	SPL	Curb	$\Phi$	Curb	NPL	
10+60	8.1	52	50	76	8.0	7.8
	280.7	281.1	283.8	280.8	281.0	280.4
11	2.1	1.9	7.8	6.6	6.5	7.0
	286.9	286.7	281.0	282.2	282.5	283.0
TP	287.956	0.858	299.662	11706		
11+50	6.4	6.6	13.0	15.3	15.9	7.0
	297.7	293.3	293.1	286.7	284.4	283.8
11+70	+1.7	2.0	5.2	10.5	13.0	7.0
	298.0	297.7	294.5	289.2	286.7	283.3
TP	299.526	0.136	311.433	11907		
12	4.8	8.4	10.2	12.6	15.2	5.0
	296.6	293.0	291.2	298.8	296.2	285.4
150	+4.2	+2.4	7.6	3.8	4.0	
	285.4	291.4	315.6	313.8	312.0	307.4
TP	311.353	0.070	323.053	11690		
13	+2.0	+0.8	1.9	6.0	10.3	4.0
	325.0	323.8	321.1	317.0	312.7	
150	+6.8	+5.7	+3.2	7.4	6.0	5.7
	322.8	328.7	326.2	321.0	317.0	317.3

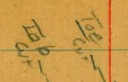
281.43  
+ 7.402  
288.842  
- 0.947  
287.895  
+ 12.733  
300.628  
- 1.164  
299.464  
+ 12.077  
311.541  
- 6.235  
311.306  
+ 1.87  
313.183  
- 0.743  
312.440  
TBM 310.036



Slo SPL Curb  $\Phi$  Curb NPL

Univ Ave Ext  
X

323 053



14 +8.4 +7.0 +4.8 +2.0 <sup>24</sup>/<sub>3.1</sub> 3.15 <sup>15</sup>/<sub>2.3</sub>  
 331.4 330.0 327.8 325.0 <sup>319.9</sup> 319.9 326.7

TBM Lath Pcy  
 14+50 } 319.050 4003 X

Jan 15/23

TBM 14+50 319.035 320 005 1.87

14+50 7.0 +6.3 <sup>14.4</sup> 14.0 <sup>14.4</sup> 14.0 <sup>0.8</sup> 0.8  
 327.9 327.2 <sup>324.3</sup> 324.9 <sup>320.2</sup> 320.1

15 +1.4 +0.4 <sup>10.8</sup> 10.8 <sup>7.8</sup> 7.8 <sup>16.1</sup> 16.1 <sup>6.2</sup> 6.2 <sup>hub</sup> 8.42 312.485  
 322.3 321.3 317.2 314.7 312.5

150 <sup>hub</sup> 5.05 <sup>26.9</sup> 26.9 <sup>7.7</sup> 7.7 <sup>9.3</sup> 9.3 <sup>18.1</sup> 18.1 <sup>15.4</sup> 15.4 <sup>5.1</sup> 5.1 315.855  
 313.2 311.6 307.8 305.5 296.7

T.P. 308.295 12610 309.385 1.090

TBM 303.29 303.285 6.100

16 1.1 0.9 4.0 7.3 9.2 <sup>70.6</sup> 70.6 <sup>14.3</sup> 14.3 <sup>tot Wash</sup>  
 308.1 308.5 305.4 302.1 300.2 295.1

150 <sup>15.2</sup> 15.2 <sup>32</sup> 32 <sup>4.9</sup> 4.9 <sup>6.5</sup> 6.5 <sup>8.9</sup> 8.9 <sup>10.9</sup> 10.9 <sup>12.0</sup> 12.0 <sup>35.1</sup> 35.1 <sup>52.4</sup> 52.4  
 305.1 304.2 304.5 302.9 300.5 298.5 297.4 296.2 300.1

E Gross Wash +90 { <sup>70</sup> 70 <sup>42</sup> 42 <sup>40</sup> 40 <sup>7.8</sup> 7.8 <sup>25.1</sup> 25.1 <sup>11.3</sup> 11.3 <sup>9.5</sup> 9.5 <sup>7.9</sup> 7.9 <sup>6.2</sup> 6.2 <sup>45.4</sup> 45.4 <sup>5.7</sup> 5.7  
 299.19 <sup>invar</sup> 302.5

301.0 <sup>302.00 invar</sup> 301.6 298.1 299.9 301.5 302.5 303.7

Sta S.P.L. Curb  $\Phi$  Curb N.P.L

Univ Ave Ext

300.385

17  $\frac{70'9''}{65}$   $\frac{42'}{76}$  8.0  $\frac{28'}{88}$  9.0 8.3 6.7 6.1  $\frac{45'11''}{54}$

302.9 301.8 301.4  $\frac{28'}{88}$  300.4 301.1 302.7 303.3 304.0

B +50  $\frac{20'5''}{31}$   $\frac{44'23''}{57}$   $\frac{64'}{65}$   $\frac{20'}{86}$  8.0 5.0 4.0 3.3  $\frac{40'}{29}$

306.3 304.2  $\frac{302.9}{303.0}$  300.8  $\frac{301.4}{304.4}$  304.4 305.4 306.1 306.5

+75  $\frac{21'}{34}$   $\frac{22'}{50}$  4.8 5.6  $\frac{60'}{60}$  4.8 2.9 2.4  $\frac{40'}{20}$

306.0 304.4 304.6 303.8  $\frac{302.5}{304.6}$  304.6 306.5 307.0 307.4

18  $\frac{14'}{23}$   $\frac{12'}{40}$   $\frac{9'}{31}$  3.4 4.3 5.9  $\frac{11'}{27}$  2.4 1.8  $\frac{40'}{11}$

+307.1 305.4 306.3 306.0 305.1 303.5  $\frac{305.0}{307.0}$  307.6 308.3

T.P. Top 18 to 30' Lt 307.569 1.816 320.094 12.525

+50  $\frac{25'}{29}$   $\frac{36'}{12}$   $\frac{35'}{11.2}$  11.1 11.7 13.2 13.7 11.9  $\frac{40'}{10.7}$

310.2 308.1 308.9 309.0 308.4 306.9 306.4 308.2 309.4

19  $\frac{25'10''}{78}$   $\frac{36'}{88}$   $\frac{35'}{80}$  8.1 7.8 8.8 10.8 11.9  $\frac{55'6''}{8.8}$

312.3 311.3 312.1 312.0 312.3 311.3 309.3 308.2 311.3

+50  $\frac{40'}{3.2}$  4.6 4.5  $\frac{5'21''}{53}$   $\frac{70'}{70}$  6.1 7.3 7.8  $\frac{65'}{9.2}$

316.9 315.5 315.6  $\frac{314.8}{313.1}$  314.0 312.8 312.3 310.9

20  $\frac{40'}{2.0}$  3.4 3.5  $\frac{5'}{40}$  4.9  $\frac{2'4''}{4.1}$  4.8 5.4  $\frac{45'}{6.8}$   $\frac{55'}{7.3}$

318.1 316.7 316.6  $\frac{316.1}{316.0}$  315.2 315.3 314.7 313.3 312.8

+50  $\frac{40'}{1.4}$  2.4 2.4 2.9 3.8 4.2  $\frac{40'}{4.4}$

T.P. 318.7 317.7 317.7 317.2 316.3 315.9 315.7

21 to 30' Lt 319.1024 / 000 332.074 12.980

STG S.P.L. Curb  $\Phi$  Curb N.P.L.

Univ Ave EXT

E1 - 332.074 +

21 <sup>40' R</sup> 11.0 11.8 11.6 12.2 12.8 13.0 <sup>40' L</sup> 13.2  
 321.1 320.3 320.5 319.9 319.3 319.1 318.9

TBM - Rod 10.23 = 321.84  
 (2140 lath peg 45' R+ 321.84 p 4

TBM V 321.84 10.23

+50 <sup>40' R</sup> 6.7 <sup>33'</sup> 6.8 7.8 7.4 <sup>31' R</sup> 7.2 8.4 9.7 10.2 <sup>40' L</sup> 10.7  
<sup>3253</sup> 325.4 <sup>324.9</sup> 324.3 324.7 323.7 322.4 321.9 321.4

22 16 <sup>27'</sup> 3.1 2.6 <sup>9'</sup> 2.5 <sup>6'</sup> 3.5 4.1 6.0 6.5 <sup>40'</sup> 7.4  
<sup>329.0</sup> 330.5 <sup>329.6</sup> 329.5 <sup>328.6</sup> 328.0 326.1 325.6 324.7

T.P. T.P. Top 2240 30' R+ 330.076 1598 343.066 12590

+50 6.3 <sup>22'</sup> 3.6 9.4 <sup>7'</sup> 3.2 11.3 13.4 13.9 <sup>45' L</sup> 15.5  
<sup>333.5</sup> 336.8 <sup>333.9</sup> 333.7 331.8 329.7 329.2 327.6

23 4.5 <sup>7'</sup> 6.8 6.8 <sup>5'</sup> 7.0 7.8 9.7 10.7 <sup>40'</sup> 11.0  
<sup>336.3</sup> 338.6 <sup>336.1</sup> 336.3 335.3 333.4 332.4 342.1

+50 3.4 <sup>22'</sup> 4.6 4.5 4.7 5.8 6.7 <sup>40'</sup> 7.6  
<sup>338.5</sup> 339.7 338.6 338.4 337.3 336.4 335.5

+75 2.0 <sup>21'</sup> 3.7 3.6 3.3 6.1 7.2  
<sup>339.4</sup> 341.1 339.5 339.8 337.0 335.9

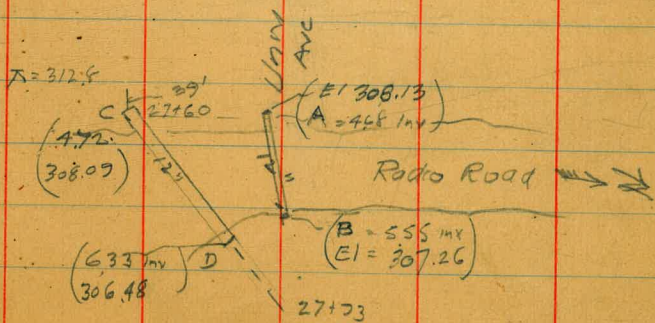
24 1.4 <sup>25'</sup> 2.0 <sup>30'</sup> 4.6 4.6 5.2 7.5 8.9 <sup>40'</sup> 10.3  
<sup>341.1</sup> 341.7 <sup>338.5</sup> 338.5 337.9 335.6 334.2 332.8

T.P. T.P. 24 30' L+  $\odot$  334.196 8,870 335.662 1466

Sta SPL Curb  $\Phi$  Curb NPL

Univ Ave Ext

Sta	SPL	Curb	$\Phi$	Curb	NPL	
			<u>335.662</u>			
24+50	14.18 <sup>29 21</sup> / <sub>34</sub>	83	87	5.6	6.8	<sup>45' 4"</sup> / <sub>8.0</sub>
	341.3 339.7	339.8	339.4	337.5	336.3	335.1
25 <sup>40</sup> / <sub>7.2</sub>	7.5 <sup>30 24</sup> / <sub>8.0 9.2</sub>	86	9.4	10.9	11.5	<sup>40' 4"</sup> / <sub>11.7</sub>
	335.1 333.7	335.1	333.7	342.2	331.6	331.4
450 <sup>40</sup> / <sub>10.3</sub>	11.6	12.1 11.8	13.6	14.0	14.2	<sup>40' 4"</sup> / <sub>14.4</sub>
	332.8	331.5	331.0	329.5	329.1	328.9
T.P.	322.615	13.047	<u>324.405</u>	1.790		
26 <sup>45'</sup> / <sub>323.2</sub>	2.7	35 <sup>10</sup> / <sub>34</sub>	4.8	5.1	5.4	<sup>45'</sup> / <sub>4.9</sub>
	323.2	321.7	320.7	319.6	319.3	319.0
26+50 <sup>45' 32</sup> / <sub>4.0 5.6</sub>	6.7	7.0	8.5	8.8	8.3	<sup>45</sup> / <sub>6.8</sub>
	318.8	320.4	317.7	317.4	315.9	315.6
27 <sup>45' 33</sup> / <sub>9.3 10.3</sub>	11.4	11.3	11.9	13.5	12.2	11.2
	314.1	315.1	313.0	313.1	312.5	312.2
BM Pdc 318.195	318.177	6.228				
T.P.	311.970	12.435	<u>312.813</u>	0.843		
27+50 <sup>40</sup> / <sub>14</sub>	3.1	2.6 <sup>2.8</sup> / <sub>4.8</sub>	3.4	2.2	1.6	<sup>45</sup> / <sub>0.8</sub>
	311.7	309.7	310.2	309.4	310.6	311.2
470 <sup>40</sup> / <sub>3.5</sub>	3.5	3.0	5.5	4.1	2.4	
	309.3	309.3	309.2	307.3	308.7	310.4



At Cor Univ + Radio Rd  
BM Pdc  
318.195

SPL Curb  $\pi$   $\Phi$  Curb NPL

Univ Ave Ext

19

312813

2810  $\frac{40}{70}$  7.3 8.2 8.0 5.7 4.5

305.8 305.5 304.6 304.8 307.1 308.3  
From Radio Road East Stas prolonged

28+87 Twin Curb 12 Curb Inv.  $\frac{304}{11.34}$   
North Inv = 301.47

29 301.4 11.4

30 303.3 9.5

31 299.8 13.9

T.P. 300.933 11880 301.833 0900

32 297.0 4.8

33 296.1 5.7

34 294.1 7.7

35 291.0 10.8

36 287.1 14.7

END

# Radio Road

Univ Ave North Approx Profile levels in roadway

Page 20-29 Incl

Side Roads Univ Ave Radio Rd

XNY Cor Univ  
 + Radio Road  
 BM Pole 2  
 27+55+Univ  
 0+0 Radio

El	Rod	+
318.195		320.348 2.153

+50	312.7	7.6
-----	-------	-----

1-	TP	319.57	078	332.4	12.87
+50		323.2	9.2		

2		329.1	3.3		
---	--	-------	-----	--	--

+50	TP	332.16	0.28	344.81	12.65
3		332.7	12.1		

+50		338.5	6.3		
4			1.5		
5			1.5		

BM 318.195 South 320.348 2.153

0+0		309.8	10.5		
1		310.6	9.7		

2		312.0	8.3		
3		314.1	6.2		

4	TP	320.14	0.21	322.89	2.75
5		321.7	1.2		

6		321.4	1.5		
7		313.1	9.8		

8		304.1	18.8		
---	--	-------	------	--	--

MOLINO Ave Univ North

CIV Conch ✓  
BM <sup>500</sup> 281.476      291.921      10.445

10+88 Univ Ave }  
0+00 } 281.4    10.5  
1        282.7    9.2  
2        282.4    9.5  
3        282.3    8.6

Curves Thence  
Location R

OAKCREST DRIVE Univ Ave North  
 Approx Stas for side Profile

TBM GTSO 1st ✓

Page 3 } 318.07 ✓ 330.21 1284

5+70 Univ Ave

0+50 } 322.5 8.4

+50 } 324.7 6.0

1 } 327.6 3.3

+50 } 328.7 2.2

2 } 330.9 0.0

TP 330.76 0.15 343.03 1227

+50 334.1 8.9

3 337.5 5.5



MANZANITA AVE

UNIV AVE SOUTH

B.M. EC } 333.59  
 3+66 }  
 page 3 } 334.35 0.76

3+6.64 Univ Ave

0+0	331.5	2.8
1	329.4	4.9
2	324.9	9.4
3	318.7	15.6

x  $\phi$  x  
 Manzanita North

Same B.M. 333.59 345.82 12.23

0+0	331.4	14.47
+50	333.8	12.0
1	336.4	9.2
+5	339.1	6.7
2	341.0	4.8
3	343.9	1.9
4	345.8	0.0

for Approx Side Profiles

WINONA AVE Univ Ave South

	EL	RL	Red T	+
BM. 3+61.6 RT	333.50 ✓		336.01 ✓	2.42
6+30 Univ Ave				
0+0	339.1	1.9		1
1	339.3	1.7		
2	333.3	2.7		
3	331.7	4.3		
4	329.5	6.5		
5	325.8	10.2		
6	320.9	15.1		

Winona Univ Ave North

	EL	RL	Red T	+
6+30 Univ Ave			336.01	
0+0	334.1	1.9		
1	332.5	3.5		
2	333.0	3.0		
3	334.1	1.9		
TP.	335.84 ✓	0.17	348.51 ✓	12.67
4	336.9	11.6		
5	341.5	7.0		
6	345.1	3.4		
+40 ft	347.7	0.8 ✓		
TP.	348.14 ✓	0.37	353.55	5.41
7	348.4	5.2		
+90	350.1	3.5		

Approx Profile

VINE COURT UNIV AV SOUTH

Sta	Elev	Rod X	+
BM	329.65	329.81	0.16
64+50			
0+00	323.8	6.0	
Univ Ave			
4+50	324.9	4.9	
1	327.0	2.8	
2	326.9	2.9	
+50	325.6	1.2	
3	323.4	6.4	
+50	317.1	12.7	
4	323.3	16.5	

Approx of Side Profile

CERROS AVE UNIV AVE NORTH

Sta	Elev	Rod X	+
BM	308.18	310.50	11.32
3+00			
0+00	302.7	9.8	
+40	302.9	9.6	
+50		9.3	
1		5.3	
+50		0.5	
TP	319.16	0.36	331.36 12.20
2	322.4	9.0	
+50	325.7	5.7	
3	328.5	2.9	
+50		1.3	
4		0.8	
T.P.	331.00	0.36	332.42 8.42

(over)

Cont'd

CERROS AVE

339.42 ✓

7+50 331.4 8.0

5 332.6 6.8

+50 333.5 5.9

6 334.7 4.7

+65 }  
Intsec. with  
ANNA ST. } 335.9 3.5

X  
ACACIA DRIVE Univ AVE SO

SWI Cor Curb  
BM # 329.65 335.44 5.79  
0+14.3 UNIV AVE Interscd @ S

0+00 } 328.1 7.3 }

0+00 Univ Av 329.50 5.85 0+40 Curb ?

1 329.39 6.05

2 329.81 5.63

2+50 330.59 4.85

Elevs on W Curb  
which is placed  
Vert Curve there

ESTRELLA AVE UNIV. AVE. No

	EI	- Rod	T	+
SW Curb Univ. - Acad. BM #3	329.65		333.20	3.64
3+00 Univ				
0+00	331.99	1.30		
+50	330.6	2.7		
1	328.3	5.0		
+50	326.5	6.8		
2	321.3	12.0		
TR	320.53	12.76	321.28	0.75
+50	316.3	5.0		
3	313.6	7.7		
+50	316.6	4.7		
4	320.3	1.0		
+50	319.6	1.7		
5	316.7	4.6		
+50	315.5	5.8		
6	317.7	3.6		
+65 Intersect # ANNA ST	322.6	+1.3		

Approx. Elev. for Side Profiles

ALPINE AVE Univ Ave North

	EI	-	+	-
NW Cor Eucly + Univ				
BM B.P. 34063		351.55		1092
3+100 Univ				
0+00	347.03	4.52		
+40 NPL	347.3	4.2		
1	347.3	4.2		
+50	345.0	6.5		
2	342.0	9.6		
TP	338.83	12.72	340.06	123
+50	336.4	3.7		
3	330.5	9.6		
+50	325.8	14.3		
4	324.5	15.6		
+50	326.6	13.5		
5	332.1	8.0		
+50	337.7	2.4		
6	342.3	+ 2.3		
ANNA #				
6+60#	345.2	+ 5.2		

Profiles  
 for Side  
 Approx

See p 30

ACACIA DRIVE Univ South

Curb on North Side only

	340.63	348.57	794
0+00 Univ Art E side Euclid paving			
0+70	341.03	7.48	
+50	343.5	5.1	
1 Surf	343.6	5.0	
1 (North Curb) curves	344.02	4.54	
2 "	344.25	4.32	
3 "	344.45	4.12	
4 "	345.31	3.26	
5 "	345.33	3.24	

Side Roads Univ Ave see p 20

43	
4.363	3.245
<u>4.947</u>	<u>6.065</u>
9.310	9.310

END  
X

X Sects ALPINE AVE  
 E/EPL - Curb X E + Curb W.P.L.

Sta	E/EPL	Curb	E	+ Curb	W.P.L.
0+00	4.8	4.8	4.9	4.8	4.57
	347.7	347.7	347.6	347.7	347.88
+50	4.1	4.0	<sup>3.9</sup> <sub>4.0</sub> <sup>4.5</sup> <sub>4.4</sub> 4.9	5.3	<sup>3.0</sup> <sub>2.1</sub> 3.5
	348.4	348.5	347.6	347.2	349.0
1	5.1	<sup>5.0</sup> <sub>5.5</sub> 5.0	<sup>7.6</sup> <sub>7.1</sub> 6.8	<sup>7.8</sup> <sub>7.4</sub> 5.3	<sup>4.4</sup> <sub>4.0</sub> 4.2
	347.4	347.5	345.7	347.2	348.3
+50	7.6	7.9	<sup>9.8</sup> <sub>9.7</sub> 9.9	<sup>9.1</sup> <sub>8.8</sub> 7.8	<sup>5.9</sup> <sub>5.6</sub> 5.3
	344.9	344.6	342.6	344.7	347.2

TR	340.146	12.304	<u>340.944</u>	0.798	
+50	<sup>13.3</sup> <sub>4.5</sub> 12.0	11.3	9.4	8.8	9.3 <sup>9.0</sup> <sub>4.0</sub> Eng Cut
	337.7	328.1	329.7	331.6	332.7 <sup>331.1</sup>

TR 5+0 W 40' 3336.29 2.315  
 X  
329.47

3	<sup>14.2</sup> <sub>6.0</sub> 11.3	8.3	<sup>4.0</sup> <sub>3.5</sub> 3.0	5.2	5.94	5.6
	315.3	318.2	321.2	326.5	324.3	323.6
+15	<sup>18.6</sup> <sub>6.5</sub> <sup>16.74</sup> <sub>3.0</sub> 16.6	9.7	<sup>4.5</sup> <sub>4.0</sub> 4.0	4.5	8.9	<sup>8.2</sup> <sub>6.0</sub>
	310.9	312.9	319.8	325.5	325.0	320.6
						321.3

ALPINE AVE  
 Univ To El Cajon

30  
 2/6/23  
 A E Frankin  
 J E Ely

on	12
	65
	1210
	664
	1874
	340.94
	13
	327.94
	+ 1.53
X	<u>329.47</u>

+ 12618  
 - 14619  
 2.001  
 338.629  
 340.630



Sta EPL Curb  $\ominus$  Curb W.P.L.

3+15 329.71 ✓ + outlet invert 31.03

12" Cast. Pipe City  
 3+50  $\frac{109}{50}$   $\frac{101}{23}$   $\frac{55}{10}$   $\frac{55}{12}$   $\frac{12.9}{12.9}$   $\frac{12.6}{12.6}$   
 319.5 319.4 324.0 323.7 316.8 316.9  
 319.6 320.4 324.5 319.8 316.6 316.9  
 Inlet = 316.84

4  $\frac{38}{45}$  3.5 3.8 3.6 3.2 3.2  
 325.7 326.0 325.7 325.9 326.3 326.3

TP5+0 WPL 338.629 345.557 6928

4+50 12.3 13.8  $\frac{150}{15}$  14.8 15.8  $\frac{14.3}{20}$  14.0  
 333.3 331.8 330.6 330.8 329.8 331.3 331.6

5+0 6.9 7.5  $\frac{28}{16}$  9.2 9.4  $\frac{7.4}{15}$  7.4  
 338.7 338.1 335.8 336.4 336.2 339.2 338.2

+50 2.95 3.1  $\frac{45}{15}$  4.2  $\frac{43.32}{15}$  2.9 3.0  
 341.6 342.5 341.1 342.4 342.7 342.6

5PL ANNA } 1.74 1.4 1.3  $\frac{1.8}{1.8}$  0.8 0.6  
 5+89.2 } 343.81 344.7 344.3 344.8 345.0 ANNA

NPL ANNA } 0.71 0.5  $\frac{1.0}{1.5}$  0.5 0.1 +0.3  
 6+29.2 } 344.827 344.6 344.9 345.1 345.1 345.5 345.9  
 = 0

+50 1.0 0.7  $\frac{1.5}{1.5}$  0.9  $\frac{1.5}{1.6}$  0.4 70.2  
 344.6 344.9 344.1 344.7 345.2 345.8

1 3.5 3.1  $\frac{3.1}{3.1}$  4.0 3.1  $\frac{3.3}{1.5}$  2.0 1.6  
 341.1 341.5 341.6 342.3 342.6 344.0  
 342.5 341.5

39 EPL Curb  $\frac{65}{15}$  Curb W/DL

ALPINE AVE

345.557 +

+50 8.8 8.2  $\frac{65}{15}$  7.7  $\frac{78}{15}$  6.8 6.0  
 336.8 337.4 337.9 338.8 339.6

TP table saw 339.627 5.930 344.945 5.918  $\frac{82}{15}$

2  $\frac{121}{70}$  11.4 10.8  $\frac{97}{15}$  9.2 8.0 8.5  
 339.8 333.5 334.1 335.7 336.0 336.4

+20  $\frac{154}{55}$  14.7  $\frac{92}{15}$  11.0 9.4  $\frac{94}{15}$  10.4 9.2  $\frac{88}{15}$   
 329.5 330.8 333.0 335.5 335.5 334.5 335.7 336.1

Drain at lower invert 331.35 Curb 2+20

Stubs 332.20

76

+50 11.6 11.4 9.7  $\frac{98}{15}$  10.8 10.4  $\frac{96}{15}$   
 333.3 333.5 335.2 334.1 334.5 335.3

Upper Invert 332.55 2+58

3 9.0 8.8  $\frac{99}{15}$  8.5  $\frac{93}{15}$  8.1 7.8  
 335.9 336.1 336.4 336.8 337.1

+50 7.3 7.8 7.4  $\frac{78}{15}$  6.4 6.2  
 337.6 337.1 337.5 338.5 338.7

4 5.3 5.5  $\frac{65}{15}$  5.3  $\frac{56}{15}$  4.0 3.3  
 339.6 339.4 339.6 340.9 331.6

+50 4.0 3.7  $\frac{50}{15}$  3.4  $\frac{35}{15}$  2.3 1.21  
 340.9 331.7 341.5 341.4 341.6 343.7

5 3.6 3.4 3.1  $\frac{32}{15}$  2.1 1.4  
 341.3 341.5 341.8 341.7 342.8 333.5

Sta EPL Curb  $\bar{E}$  Curb W.D., L

ALPINE AVE

344.945

+50	2.3	2.6	2.3 $\frac{2.0}{1.4}$	1.5	1.8
SPL Orange	342.6	342.3	342.6	343.4	343.1
+7726	2.3	2.4	2.2	2.2	1.9
N.D.L. Orange	342.6	342.5	342.7	342.7	343.0
G+5726 =0+0	1.0	1.5	1.6	1.6	1.5
N.F. Gr Ordng PL Conc. Wall T.B.M.	343.9	343.4	343.3	343.3	343.4

343.960 0985 350.540 6580

+50	5.9	6.4 $\frac{7.4}{1.5}$	6.2	6.6	6.2
	344.6	344.1	344.3	343.9	344.3

/	5.4	5.6 $\frac{6.2}{1.5}$	5.4 $\frac{6.8}{1.5}$	5.9	5.3
	345.1	344.9	345.1	344.6	345.2

+50	3.6	3.8 $\frac{4.9}{1.5}$	4.0 $\frac{5.2}{1.5}$	4.5	4.7
	346.9	346.7	345.5	346.0	345.8

2	2.4	2.5 $\frac{3.8}{1.5}$	2.5 $\frac{3.6}{1.5}$	2.9	2.9
	348.1	348.0	348.0	347.4	347.4

+50	1.7	2.4 $\frac{3.3}{1.5}$	2.3	2.9	2.3
	348.8	347.1	348.2	347.4	348.2

3	1.8	2.7 $\frac{3.6}{1.5}$	2.7 $\frac{4.1}{1.5}$	3.3	2.6
	348.7	347.8	347.8	347.2	347.9

Sta E.P.L. Curb  $\Phi$  Curb W.P.L.

ALPINE AVE

34

350.540

+50 24 3.7  $\frac{47}{13}$  3.9  $\frac{54}{13}$  4.8 3.40  
 348.1 346.8 346.6 345.7 347.1

1265  
 116  
 1445  
 1380  
 16

4 120 8.3  $\frac{78}{15}$  6.3  $\frac{72}{15}$  6.5 5.4 137  
 338.5 342.2 344.2 344.0 345.1 336.8

4710 TSM  
 Stone  
 W. Curb 5,325

+50  $\frac{186}{55}$  15.8 13.8  $\frac{88}{9}$  8.3  $\frac{88}{15}$  8.1 6.3  
 331.9 334.7 336.7 342.2 342.4 344.2

345,235

5  $\frac{158}{55}$  15.8 16.0  $\frac{123}{10}$  9.6 10.6 10.6  
 334.9 334.7 334.5 340.9 339.9 339.9

+20 +  $\Phi$  14.0 15.7 14.7 13.8 55  
 333.24 339.8 339.6 336.3 336.7

+50  $\frac{140}{45}$  12.8 10.0  $\frac{86}{15}$  9.6 10.7 11.2 11.3  
 336.5 337.7 340.5 340.9 340.3 338.3 331.2

SPL Florence } 8.6 8.6 8.2 9.0 8.45 342.07  
 6+00<sup>21</sup>

N.P.L. Florence } 341.9 341.7 342.3 341.5 342.1

6+60<sup>21</sup> } 6.1 5.88  $\frac{68}{17}$  6.8 7.8  $\frac{78}{17}$  6.87 7.2  
 0<sup>21</sup> } 344.4 344.6 343.7 343.6 343.3

TP on Curb 345.135 5405 353.060 7925

+50 6.3 7.08  $\frac{72}{17}$  7.8  $\frac{86}{17}$  8.05 8.2  
 346.7 345.2 345.2 344.4 344.5 344.8

Sta ECL Curb  $\phi$  Curb WPL

ALPINE AVE

35

- 353060 +

1 53 5.95 <sup>70</sup>/<sub>17</sub> 63 <sup>74</sup>/<sub>17</sub> 666 63  
 347.7 347.11 <sup>345.3</sup> 346.7 <sup>345.6</sup> 346.40 346.7

+50 43 <sup>62</sup>/<sub>17</sub> 518 54 <sup>61</sup>/<sub>17</sub> 518 48  
 348.7 <sup>342.8</sup> 347.88 347.6 <sup>342.9</sup> 347.88 348.2

2 43 4.66 <sup>55</sup>/<sub>17</sub> 49 57 <sup>57</sup>/<sub>17</sub> 474 41  
 348.7 348.40 <sup>347.5</sup> 348.1 <sup>347.3</sup> 348.32 348.9

+50 40 4.00 <sup>49</sup>/<sub>17</sub> 43 52 <sup>52</sup>/<sub>17</sub> 443 41  
 349.0 349.00 <sup>348.2</sup> 348.7 <sup>347.8</sup> 348.63 348.9

3 37 3.50 <sup>43</sup>/<sub>17</sub> 39 50 <sup>50</sup>/<sub>17</sub> 407 39  
 349.3 349.56 <sup>348.7</sup> 349.1 <sup>347.0</sup> 348.99 349.3

+50 29 3.00 <sup>40</sup>/<sub>17</sub> 36 46 <sup>46</sup>/<sub>17</sub> 381 39  
 350.1 350.06 <sup>349.0</sup> 349.4 <sup>348.5</sup> 349.25 349.1

S PL. El Cajon  
 on 2 } 3+85.74  $\phi$  } 3.2 2.60 <sup>37</sup>/<sub>17</sub> 32 43 <sup>43</sup>/<sub>17</sub> 357 36  
 349.8 350.40 <sup>348.3</sup> 349.8 <sup>348.7</sup> 349.49 349.4

NW Cor El Cajon  
 BM Curb } 350270 279  
 El Cajon }  
 $\phi$  Paving } 263  
 351.43

END

ALPINE

El

Cajon

BM on Curb  
 N  
 D  
 Tol  
 Rate

↓  
 N

STA	EPL	Curb	±	Curb	WPL
BM El Cajon	350.270	353.060	270		
T.B.M. NE Orange Curb on Pl	345.21785	348.46	325		
	343.95	451			
T.P. SE Gr Anna	335.711275	346.62	1091		
	343.77	285			
	341.13	549	352.07	1094	
NW Gr Univ 340.63	347.85	422			
BM Univ NW/or	340.58	1147			
	37.58 ✓		27.80 ✓		

El Cajon to Check Levels Univ Ave

36 -

Floreside

W Curb 9.50 43.56

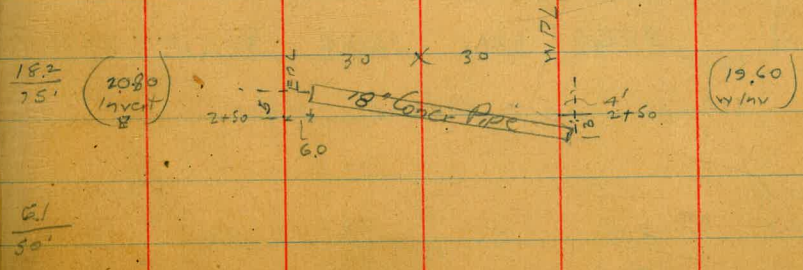
E Curb 8.41 44.65

- 37.58
+ 27.80
- 3.69
340.58
350.27 ✓

Sta	E.P.L	Curb	T	℄	+ Curb	W.P.L
						2955
Curb Access Drive						2955
B.M. 18	322.620	<u>332.575</u>				2955
0+0	1.87	1.8	1.7	0.4		+1.4
	330.91	330.8	330.9	332.2		331.2
+50	3.3	3.1	3.2	3.8		0.7
	329.3	329.5	328.7	328.8		331.9
1	4.2	5.3	5.8	5.4		4.7
	328.4	327.3	326.8	327.2		327.9
+15	5.9	5.8	6.4	6.1		4.4
	326.7	326.8	326.2	326.5		328.2
+50	10.5	9.0	10.1	9.3		7.1
	322.1	323.6	322.5	323.3		325.5
T.P. 18	320.271	12304	<u>322.024</u>			1753
+75	$\frac{10.7}{15}$ 7.1	4.2	$\frac{22}{10}$ 1.7	2.1		0.0
	314.9	317.8	320.3	319.9		322.0
2	$\frac{19.6}{70}$ 16.0	13.0	$\frac{51}{3}$ 4.8	5.0		8.2 $\frac{5.5}{30}$
	306.0	309.0	317.2	317.0		313.8
+50	$\frac{21.1}{75}$ 17.0	16.4	$\frac{88}{30}$ 8.5	$\frac{88}{16}$ 9.6		17.7
	305.0	305.6	313.5	312.4		304.3
3+0	$\frac{14.7}{65}$ 8.5	6.5	6.6	5.9		5.6
	313.5	315.5	315.4	316.1		316.4

Estrella Ave

2/19/23  
 AE Franklin  
 JEB/MS  
 LB Stewart



Sta	E PL	Curb	‡	Curb	W. PL
3+50	5.4	4.1	<u>322.024</u> 23 <sup>26</sup> / <sub>14</sub>	1.1	+0.5
	316.6	317.9	319.7	320.9	321.5
4	<sup>11.9</sup> / <sub>50</sub> 7.3	4.3	<sup>28</sup> / <sub>9</sub> 2.2	<sup>25</sup> / <sub>13</sub> 1.8	<sup>15</sup> / <sub>27</sub> +1.5
	314.7	317.7	319.8	320.2	320.5

TP	320.160	1.864	<u>322.956</u>	2.796	
+50	<sup>17.5</sup> / <sub>60</sub> 11.4	8.7	<sup>70</sup> / <sub>15</sub> 5.8	<sup>60</sup> / <sub>15</sub> 5.0	<sup>42</sup> / <sub>27</sub> 1.7
	310.6	313.3	316.2	317.0	320.3
+80	16.3	12.9	<sup>8.3</sup> / <sub>8</sub> 7.3	<sup>73</sup> / <sub>13</sub> 6.5	<sup>50</sup> / <sub>26</sub> 2.9
TP	305.7	309.1	314.7	315.5	319.1

Top S WPL

TP	318.911	4.045	<u>322.956</u>	4.910	
5	<sup>97</sup> / <sub>45</sub> 11.5	<sup>14.1</sup> / <sub>24</sub> 12.6	8.5	8.0	<sup>75</sup> / <sub>26</sub> 4.9
	312.3	311.2	315.3	315.0	318.9
+50	5.2	6.9	6.9	6.7	6.4
	318.6	316.9	316.9	317.1	317.4

S PL ANNA	}	14.5	<sup>2.9</sup> / <sub>26</sub> 2.7	3.2	3.4	3.3
5+99 <sup>12</sup> / <sub>40</sub>		322.4	321.1	320.6	320.4	320.2

SE Cor ANNA BIKAN

TP	322.404	1.417	<u>330.824</u>	8.420	
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0+00	5.1	6.6	<sup>7.8</sup> / <sub>12</sub> 7.5	8.6	12.0
	325.7	324.2	323.3	322.7	316.8

175 E Inv

Inv 3/3.22



Sta	EPL	Curb	$\frac{1}{2}$	Curb	W.P.L
0+50	<sup>15.1</sup> 57	41	<u>330.824</u> 39	$\frac{50}{15}$ 30	2.2
	325.1	326.7	326.9	327.8	328.6
1	$\frac{4.1}{45}$ 1.5	1.5	1.2	1.8	0.2
	329.3	329.3	329.6	329.0	330.6
T.P.	330.471	0.353	<u>342.113</u>	11.642	
+50	8.0	9.3	2.5	10.0	8.9
	334.1	332.8	332.6	332.1	332.2
2	4.8	5.7	$\frac{76}{16}$ 6.5	7.7	7.9
	337.3	336.4	335.6	334.4	334.2
+50	3.0	3.6	$\frac{49}{15}$ 4.6	6.2	6.3
	339.1	338.5	337.5	335.9	335.8
3	2.0	2.3	$\frac{33}{16}$ 3.4	4.7	5.0
	340.1	339.8	338.7	337.4	337.1
+50	0.8	0.9	$\frac{20}{15}$ 1.7	2.8	3.7
	341.3	341.2	340.4	339.3	338.4
4	+0.5	+0.4	$\frac{07}{15}$ 0.2	1.3	1.7
	341.6	341.7	341.9	340.8	340.4
T.P.	341.692	0.421	<u>342.807</u>	8.115	
+50	5.3	5.8	$\frac{66}{16}$ 6.5	7.8	8.5
+50	344.5	344.0	343.3	342.0	341.3

Sta	EPL	Curb $\pi$ / $\epsilon$ $\pi$		Curb	W.P.L
		<u>349807</u>			
5	4.3	4.5	4.8	5.7	6.0
	345.5	345.3	345.0	344.1	343.8
+50	3.3	3.0	3.2	4.2	4.3
1	346.5	346.8	346.6	345.6	345.5
SPL ORANGE	SE Cor O				SH Cor O
+77 <sup>25</sup>	<u>3.060</u>	3.2	2.9	3.5	<u>3.580</u>
	346.8	346.6	346.9	346.3	346.2
0+0	2.8	2.9 $\frac{40}{14}$	4.0 $\frac{41}{15}$	2.8 $\frac{16}{27}$	1.4
	347.0	346.9	345.8	347.0	348.4
+50	3.3	3.6 $\frac{5.4}{11}$	5.4	6.1 $\frac{50}{27}$	2.1
	346.5	346.2	344.4	343.7	347.7
1	3.0 $\frac{7.3}{26}$	7.9	7.4 $\frac{7.52}{9.13}$	5.6	7.0
	346.8	341.9	342.4	344.2	342.8
+25	10.8	9.0 $\frac{8.3}{7.3}$ $\frac{2.5}{9}$	9.8	8.8	6.9
	339.0	340.8	340.0	341.0	342.9
T.P.	337.240	12567	<u>343.728</u>	6488	
+50	$\frac{17.6}{6.5}$ 11.6	8.8	$\frac{5.8}{9}$ 5.9	$\frac{5.6}{14}$ 2.8	1.0
	332.1	334.9	337.8	340.9	342.7
2	$\frac{14.5}{5.5}$ 18.0	18.1	$\frac{11.0}{10}$ 10.4	9.9	7.2
	325.7	325.6	333.3	333.8	336.5

Sta	EPL	Curb	W	Curb	WIDL
		<u>343.725</u>			
+17 Culvert gone	$\frac{17.0}{45}$ 17.4	17.3	17.0	$\frac{16.0}{4}$ 11.2	13.8
	326.3	325.4	326.7	332.5	329.9
+50	6.1	8.1	7.8	$\frac{8.2}{11}$ 10.5	17.0
	337.6	335.6	335.9	333.2	326.7
Z	1.1	<u>Curb in</u> 1.94	$\frac{3.0}{17}$ 3.6	$\frac{4.2}{15}$ 4.8	10.6
	342.6	341.8	340.1	338.9	333.1
+50	+0.5	0.02	$\frac{0.8}{17}$ 1.0	1.7	1.3
	343.2	343.7	342.7	342.0	342.4
T.P.	342.518	1.210	<u>351.883</u>	9.365	
A	5.4	6.1	$\frac{6.0}{17}$ 7.0	$\frac{8.0}{102}$ 6.94	7.7
	346.5	345.7	344.9	343.9	344.2
+50	4.3	4.2	$\frac{4.5}{17}$ 4.9	$\frac{6.2}{17}$ 5.4	6.0
	347.6	347.6	347.0	346.5	345.9
Ju	3.2	3.4	$\frac{4.5}{17}$ 3.9	$\frac{4.6}{17}$ 3.81	4.2
	348.7	348.4	348.0	348.1	347.7
+50	3.0	3.4	$\frac{4.3}{17}$ 3.6	$\frac{4.7}{17}$ 3.73	3.2
SPL Florence	348.9	338.5	348.3	348.2	349.7
	3.7	3.7	$\frac{4.7}{17}$ 4.3	$\frac{4.6}{17}$ 3.73	4.1
	348.2	348.1	347.6	348.2	347.8

Curb in 4402

Sta	EPL NE Cor 0	In Curb	♀	In Curb	W.P.L NW Cor 0
0+00	4.675	4.78 $\frac{53}{17}$	5.4 $\frac{58}{17}$	5.41	5.863
	347.208	347.1	346.5	346.5	346.020
+50	4.6	4.60 $\frac{52}{17}$	5.0 $\frac{56}{17}$	4.98	5.4
	347.3	347.3	346.9	346.9	346.5
1	4.2	4.25 $\frac{51}{17}$	4.4 $\frac{52}{17}$	4.51	4.3
	346.7	347.6	347.5	347.4	347.6
T.P.	347.580	4.303	<u>353.560</u>	5.080	
+50	5.3	5.52 $\frac{56}{17}$	5.5 $\frac{47}{17}$	5.79	5.2
	348.3	348.0	348.1	347.77	348.4
2+00	4.8	5.20 $\frac{41}{17}$	5.2 $\frac{42}{17}$	5.47	5.0
	348.8	348.4	348.4	348.1	348.6
2+50	4.9	4.86 $\frac{58}{17}$	5.0 $\frac{55}{17}$	5.08	4.5
	348.7	348.7	348.6	348.5	349.1
3+00	4.7	4.43 $\frac{52}{17}$	4.5 $\frac{51}{17}$	4.53	4.5
	348.9	349.13	349.1	349.03	349.06
3+50	4.3	4.11 $\frac{48}{17}$	4.3 $\frac{42}{17}$	4.11	4.0
	349.3	349.45	349.3	349.45	349.6
4+00	4.0	3.76 $\frac{41}{17}$	3.7 $\frac{42}{17}$	3.75	4.0
	349.6	349.80	349.9	349.8	349.6

ESTRELLA

42

351.883  
 5.563  
 346.020

353.560

S.P.L. El Cajon	F.P.L	Curb	±	Curb	W.P.L
4+33.03	3.1	3.27	$\frac{37}{17}$	3.3	$\frac{35}{17}$
				3.35	3.9

350.5	350.29	350.3	350.21	349.7
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El Cajon & of Pa - 2.28

S.E. Con. Culvert  
 intake. So side Hwy ✓  
 B.M. 351.390 2.170

END

ESTRELLA

43

62.424
40.654
21.770
329.620
351.390

Sta	S.P.L	W.C.b	⊕	W.C.b	N.P.L
Round Stone #110					
TBM p. 34 Paving & Int.	345.235	347.775 <sup>v</sup>	2540		
ERL EVCHD 0+00	472 SE cov 0 4.745	4.6	4.8	5.2	4.6
+50	4.8	5.8	5.4	6.1	5.2
1	5.8	6.1	5.6	6.5	5.7
+50	6.7	6.3	6.0 <sup>64</sup> / <sub>17</sub>	<sup>In</sup> 5.66	5.5
2	6.3	6.3	5.9 <sup>61</sup> / <sub>17</sub>	5.28	5.5
+50	5.9	6.3	6.0	4.77	4.4
W.P.L ALPINE 2+70 <sup>12</sup> / <sub>12</sub>	5.675	6.2	5.6 <sup>54</sup> / <sub>17</sub>	4.59	4.475
0+00	5.6	5.6	5.2	<sup>out</sup> 4.7	Gas Pipe NE cov <u>3.34</u>
0+50	5.2	5.2	5.4	5.2	9.7

5.675  
342.09  
347.765

S.P.L. Carb  $\frac{1}{17}$  Carb N.P.L.  
 $\frac{30}{29}$   $\frac{44}{17}$   $\frac{37}{17}$   
347.775

1+00 8.4 4.5 4.3 4.5 4.7

1+50 1.3  $\frac{30}{29}$  Carb + no Return  $\frac{44}{17}$  3.2  $\frac{37}{17}$  Carb + Return 2.79 2.9

T.P. 345.215 2.560 353.397 8.182

2+00 7.1 7.68  $\frac{82}{17}$  8.3  $\frac{82}{17}$  7.78 8.0

2+50 Hub 5.44 6.37  $\frac{72}{17}$  7.3  $\frac{72}{17}$  7.14 Hub 7.18

W.R.L. Estrella Hub 5.56 5.88  $\frac{68}{17}$  6.8  $\frac{76}{17}$  6.85 Hub 7.36

E.P.L. Estrella 347.837 Hub 5.23 5.46  $\frac{64}{17}$  6.0  $\frac{68}{17}$  6.32 Hub 6.16

0+50 4.7 5.20  $\frac{63}{17}$  5.8  $\frac{63}{17}$  5.74 6.0

1+00 4.5 4.85  $\frac{52}{17}$  5.0  $\frac{59}{17}$  5.15 5.3

1+50 4.0 4.17  $\frac{50}{17}$  4.3  $\frac{51}{17}$  4.33 4.5

53.397  
 556  
347.837  
 246.02  
 1.81  
 97.23

	S.P.L	Curb	$\frac{38}{17}$	$\frac{43}{17}$	Curb	N.P.L
2+00	2.6	3.07	3.0	3.0	3.15	3.3
2+50	1.2	2.00	2.1	2.1	2.11	1.8
W.P.L Cerros	Hub BIX Cor					Hub BIX Cor
2+70	1.305	1.53	1.7	1.7	1.57	1.75

352.072

T.P. 352807.2 0.590 362329 7.522

	E.P.L Cerros		$\frac{98}{17}$	$\frac{94}{17}$		
0+00	9.5	8.98	9.2	9.2	8.94	9.24
0+50	6.8	7.45	7.6	7.6	7.48	7.8
1+00	5.3	5.99	6.1	6.1	5.79	6.5
1+50	3.5	4.44	4.3	4.3	4.21	4.0
2+00	1.6	1.86	2.1	2.1	2.07	2.0

3.50



Florence

47

S.P.L.	Curlo	⌘	⊕	Curlo	N.P.L.
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T.P.	361.186	1.143	370.242	9056	
2+50	6.4	7.12	$\frac{83}{17}$ 7.8	$\frac{89}{17}$ 8.12	8.0

W.P.L. W. Nova ST	Hub		$\frac{22}{17}$	$\frac{88}{17}$	Hub
2+69 <sup>23</sup>	5.81	6.20	7.1	7.30	7.71

	S.P.L	South Curb	8.12 N.P.L.	North Curb	8.12
B.M. N.E. Co.	343.96	352.08	8.12		
Cent. Pak Euclid		1.63			
0+00	2.9	3.5	3.2	3.1	P.L. curb 2.06
0+50	5.9	5.3	4.3	4.0	P.L. curb - 2.94
1+00	7.3	6.6	6.0	6.1	5.3
1+50	7.4	7.6	6.6	6.9	6.8
2+00	7.3	7.6	7.2	8.2	7.4
2+50	8.3	8.7	7.9	8.9	8.4
2+70	8.63	8.8	8.5	8.9	8.1

H&B NW Cor.  
Orange & 191st

Orange St

48

	S.P.L.	South Curb	π C	North Curb	N.P.L.
BM. N.E. Cor. Prop. Curb Cor. Orange & Alpin	343.960		<u>351.250</u>	7290	
0+00	8.6	8.5	7.9	8.2	7.29
0+50	8.1	7.9	7.0	7.7	6.6
1+00	7.0	7.6	6.1	6.6	5.6
1+50	6.3	6.0	4.9	5.1	4.2
2+00	6.0	5.7	4.3	3.6	3.2
2+50	4.9	5.1	4.3	3.9	3.6
W.P.L. Estrella 2+70 <sup>05</sup>	14016 SW Cor Orange & Estrella 4.97	4.7	4.1	4.2	4.84 NW Cor Orange & Estrella
E.P.L. Estrella 0+00	4.4	4.2	4.6	5.0	4.2
0+50	2.8	3.3 <sup>51</sup> <sub>15</sub>	2.7 <sup>27</sup> <sub>10</sub>	4.5	4.9

Sta	SPL	Wrb	‡	Curb	NPL
		351250			
1	2.9	33 $\frac{62}{100}$	52	4.9	5.5

2.3  
1.3

+50	3.6	47 $\frac{83}{75}$	69	7.2	9.2
-----	-----	--------------------	----	-----	-----

$\frac{11.0}{50}$

T.P. 342.627 8.623 345.318 2.691

2	+1.8	$\frac{20}{38}$ $\frac{43}{33}$	36	3.8	7.3	11.1
---	------	---------------------------------	----	-----	-----	------

$\frac{15.1}{6.0}$

+50	1.8	$\frac{44}{26}$	5.3 $\frac{62}{18}$	8.1 $\frac{85}{5}$	14.7	21.2
-----	-----	-----------------	---------------------	--------------------	------	------

$\frac{25.3}{80}$

Carros SW Cor □

+70.0	3.39	$\frac{56}{27}$ $\frac{60}{27}$	7.9 $\frac{96}{18}$	9.6 $\frac{97}{7}$	18.9	24.3
-------	------	---------------------------------	---------------------	--------------------	------	------

60'ST

$\frac{25.8}{50}$

T.P. 333.324 11.994 333.824 0.500

0+0	+4.7	2.2 $\frac{22}{20}$ $\frac{22}{40}$	4.0	9.3	12.5
-----	------	-------------------------------------	-----	-----	------

+50	1.6	$\frac{70}{30}$	8.5	7.5 $\frac{14.2}{12}$	15.7	16.0
-----	-----	-----------------	-----	-----------------------	------	------

$\frac{16.2}{70}$

T.P. 322.013 11.811 323.646 1.633

1	$\frac{10.9}{30}$	2.3	33 $\frac{35}{12}$	6.6	7.4	6.4
---	-------------------	-----	--------------------	-----	-----	-----

$\frac{1.7}{30}$

S.P.L Curb  $\phi$  - Curb N.P.L

ORANGE ST

51

Sta

+50  $\frac{35}{55}$  6.0  $\frac{320.646}{61}$  6.1 9.4 3.3 +0.6

2  $\frac{60}{85}$  6.5  $\frac{106}{29}$  6.7  $\frac{6490}{759}$  9.7 9.1 4.5  $\frac{01}{50}$

+50  $\frac{129}{65}$  11.5  $\frac{54}{15}$  5.3  $\frac{18''}{12.3}$  2.6 1.8 +3.0  
~~18" Conc. City Pipe 2+42 2'~~

WPL WINONA  $\frac{12}{65}$  11.5 3.7 4.5 +4.2 +9.3

No. side E. Lt Pole  
So side fill WPL  
BM  
WINONA AIR } 319.946 3700

2+42

2+07

SPL

Curb

¢

Curb

NPL

ANNYA ST

52

P31)  
SE Cor of ANNYA  
EPL EUCLID  
0+00

343.817

353.007

2.190

3.15

3.0  $\frac{5.7}{7}$ 5.7  $\frac{5.7}{7.2}$ 3.8  $\frac{1.8}{7.6}$ 

1.8

Paving of Euclid

7.88

+50

2.3

1.4

1.8

2.1

1.7

1

3.2

3.4

2.7

3.2

2.9

+50

5.3

5.7

5.0

5.4

5.0

2

7.2

7.5

6.6

6.7

6.2

+50

8.0

8.1

7.2

7.3

6.8

ALPINE WPL

2+6923

8.1

8.3

7.6

7.7

7.2

344.847

7.19

352.037

8.155

353.002

P 31	-	✓	+
ALPINE			
IBM NE Cor	344,847	345,487	0640
SE	343,817	<u>345,48</u>	167

E PL ALPINE

0+0		2.1	1.6	1.5
-----	--	-----	-----	-----

0+60	2.3	3.7	3.3	3.6	2.0
------	-----	-----	-----	-----	-----

1	4.2	$\frac{4.7}{16}$	6.6	9.2	10.4	$\frac{9.360}{1678}$	5.9
---	-----	------------------	-----	-----	------	----------------------	-----

T.P.	333,907	11,580	<u>334,307</u>	0400
------	---------	--------	----------------	------

+50	1.0	$\frac{1.4}{16}$	3.7	4.7	4.6	$\frac{5.0}{16}$	2.9
-----	-----	------------------	-----	-----	-----	------------------	-----

2	8.2	8.5	$\frac{9.6}{11}$	9.6	9.6	9.1
---	-----	-----	------------------	-----	-----	-----

+25	10.8	11.2	11.5	11.6	12.0	$\frac{12.5}{30}$
-----	------	------	------	------	------	-------------------

+50	12.8	13.0	12.7	$\frac{13.0}{9}$	15.0	19.1
-----	------	------	------	------------------	------	------

Inv 12° GN 2748  
 $\frac{12.75}{20}$   $\frac{196}{85}$   
 313.56

T.P.	321,667	12,640	<u>331,817</u>	10150
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SW Cor Estrella 90

+70 <sup>25</sup>	320,452	11,365	11.0	10.4	$\frac{10.0}{11}$	10.5	13	$\frac{10.3}{45}$
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ESTRELLA

WDL

Sta	SPL	Curb	4	Curb	N.P.L	ANNA	ST
EPL ESTRELLA SE Cor ①							
0+00	<u>936</u>	103	8.2	8.0	$\frac{68}{5}$	6.0	
	32246						
+50	60	66	6.1	6.1	$\frac{43}{5}$	3.9	
1.	38	47	4.1	4.8		2.9	
+50	32	35	2.4	3.0		0.9	
TP	330.163	1.654	<u>340.843</u>	10680			
2	95	103	9.9	10.8		10.3	
+50	74	7.9	8.2	9.2		9.2	
CERROS WDL SW Cor ①							
2+79.98	<u>793</u>	8.1	7.1	7.1		<u>6.315</u>	
	332.913						
CERROS EPL SE Cor ①							
0+00	<u>376</u>	4.1	3.4	3.1		<u>2.885</u>	
TP	340.636	0.207	<u>349.886</u>	9.250			



ANNA ST

	GPL	Curb	¢	Curb	N. PL
579			<u>349 868</u>		
+50	98	10.1	73	91	85
1	73	7.5	68	71	65
+50	66	6.6	55	57	46
2	59	6.0	50	5.0	45
+50	46	4.6	36	33	28
WIPLEXINONA					NW Cor O:
<u>2707</u>	3.9	3.7	3.1	3.0	<u>2395</u>

END  
X

Sta	EPL	Curb	±	Curb	W.P.L
Top Pipe So Side Fill Univ Ave W of Cerros P 3	308.180	<u>316.130</u>	✓	8010	
NPL Univ	NE Cor 0				NW Cor 0
0+00	<u>12.6</u>	25 <sup>64</sup> / <sub>13</sub>	64 <sup>74</sup> / <sub>14</sub>	105	<u>12.67</u> <sup>14.8</sup> / <sub>50</sub>
	304.0	306.7	309.8	305.7	303.5
+50	0.6 <sup>27</sup> / <sub>24</sub>	25	3.1	4.4	6.0 <sup>7.7</sup> / <sub>45</sub>
	307.6	313.7	313.1	311.8	310.2
Top 1+00 NPL TP	315.120	1070	<u>326365</u>	11245	
1	70	86	84	98	112
	309.2	307.6	317.8	306.4	315.2
+50	45	55	48	58	67
	321.9	320.9	321.6	320.6	319.5
2	07 <sup>17</sup> / <sub>20</sub>	36	14	17	32
	325.7	322.8	325.0	324.7	323.2
Top 2 W Stake EPL TP	326.245	0120	<u>338495</u>	12250	
+50	7.7 <sup>28</sup> / <sub>27</sub> <sup>106</sup> / <sub>20</sub>	130	105	119	127
	330.8	325.5	328.0	326.6	325.8
3	67	86	86	10.4	15.2
	331.6	329.9	329.9	328.1	327.3
+50	60	73 <sup>85</sup> / <sub>13</sub>	81	9.7	10.5
	332.5	331.2	330.4	328.8	328.0

Sta	EPL	Curb	☐	Curb	HPL
			<del>338.425</del>		
4	4.6	6.0 $\frac{73}{15}$	7.3	8.7	9.3
	333.9	332.5	331.2	329.8	329.2
+50	4.2	5.0 $\frac{67}{15}$	6.1	7.0	7.4
	334.3	333.5	332.4	331.5	331.1
5	3.0	4.5	5.2	6.7	7.6
	335.5	334.0	333.3	331.8	330.9
+50	2.4	3.4	4.0	6.1	6.6
	336.1	335.1	334.5	332.4	331.9
SPL ANIXA ST 599 <sup>21</sup>	1.4	2.5	3.2	4.5	5.8
	337.1	336.0	335.3	334.0	332.91
					SW Cor. ☉
0+00	0.5	1.4	1.9	2.9	3.7
	338.0	337.1	336.6	335.6	334.52
					NY Cor. ☉
T.P.	338.294	0.201	351.178	12.884	
+50	10.5	11.3	12.6	13.8	14.0
	340.7	339.9	338.6	337.4	337.2
1	7.7	8.1	9.4	10.8	11.3
	343.5	343.1	341.8	340.4	339.9
+50	6.4	6.8	7.0	7.9	8.3
	344.8	344.4	344.2	343.3	342.9

Sta	EPL	Corb	Corb	WPL
		<u>351.178</u>		
2	4.7	5.0	5.0	5.8
	346.5	346.2	346.2	345.4
+50	3.0	3.5	3.2	3.8
	348.2	347.7	348.0	347.4
3	1.8	2.2	1.7	2.7
	349.4	349.0	349.5	348.5
+50	0.5	1.0	0.5	1.2
	350.7	350.2	350.7	350.0
T.P.	350.803	0.375	<u>350.900</u>	2.187
4	1.6	2.2	2.9	4.4 $\frac{47}{28}$
	351.4	350.8	350.1	348.6
+50	2.3 $\frac{24}{21}$	4.5	4.5	5.6 $\frac{51}{29}$
	350.7	348.5	348.5	347.4
5	4.2 $\frac{43}{24}$	7.8	8.0 $\frac{75}{8}$	5.3
	348.8	345.2	345.0	347.7
+50	10.2	10.6 $\frac{134}{75}$	13.1 $\frac{123}{8}$	8.7 $\frac{88}{26}$
	347.8	347.4	339.9	344.3
T.P.	340.258	12.732	<u>340.869</u>	0.611

Sta	EPL	Curb	ft	Curb	N.P.L.
6+ <sup>35</sup>	2.4	35	3.9	1.0	+1.0
P60 333.324	338.5	337.4	337.0	339.9	339.9
TP Orange 333.333	7536				339.9
TP 7+75	337.217*	3652			
329.30	11.57	334.63	533		

-3

334.63  
W 12/16.05  
E1 318.58

NPL ORANGE						
0+00	13.0	5.1	4.0	12.7	13.6	
	321.6	329.5	330.6	321.9	321.0	
+25	13.0	5.8	5.1	15.4	14.9	18.4
	321.6	328.8	329.5	319.2	319.7	55

334.63  
E 12/17.55 18"  
E1=317.08

+50	12.2	11.4	9.0	13.1	16.8	17.0
	322.4	323.2	325.6	321.5	317.8	65'
175	5.0	2.1	2.8	4.2	5.8	10.3'
	329.6	332.5	331.8	329.4	328.8	55

Crash

TP @ 1+75 *	337.217	350.119	12.901		
+50	15.0	14.6	14.7	14.8	13.6
	335.1	337.5	335.4	337.7	336.5
2	8.6	8.91	10.0	11	9.8
	341.5	341.2	340.1	339.6	340.3

Sta	EPL	Curb In	4	Curb In	W.P.L.
		350.118			
2+50	5.4	552 $\frac{42}{17}$	6.0	$\frac{68}{17}$ 6.37	6.5
	344.7	344.6	344.1	343.7	343.6
3	2.5	315 $\frac{38}{17}$	3.3	$\frac{44}{17}$ 3.51	4.7
	347.6	346.9	346.8	346.6	345.9
+50	+0.3	124 $\frac{24}{17}$	1.5	$\frac{25}{17}$ 1.75	2.4
	349.8	348.9	348.6	348.3	347.7
T.P	349.958	0160	357.083	7125	
4	6.3	666 $\frac{77}{17}$	7.1	$\frac{80}{17}$ 7.31	8.5
	350.8	350.4	350.0	349.8	348.6
+50	5.6	612 $\frac{68}{17}$	6.7	$\frac{76}{17}$ 6.64	7.1
	351.5	351.0	350.4	350.5	349.7
5	4.8	556 $\frac{65}{17}$	5.6	$\frac{67}{17}$ 5.93	6.6
	352.3	351.5	351.5	351.2	350.5
+50	4.4	494 $\frac{58}{17}$	4.8	$\frac{61}{17}$ 5.29	5.6
	352.7	352.2	352.3	351.8	351.5
SPL FLORENCE	SE Cor @				SW Cor @
G +00 35	4.31	433 $\frac{48}{17}$	4.6	$\frac{52}{17}$ 4.57	4.95
	352.77	352.8	352.5	352.5	(pt) 352.09
NDL Florence	NE Cor @				SW Cor @
0+00	3.955	410 $\frac{47}{17}$	4.6	$\frac{52}{17}$ 5.21	5.403
	353.2	353.0	352.5	351.9	351.7

CERROS

60

Sta	EDL	Curb	↓	WPL		
			<u>357.083</u>			
0+50	3.8	4.02 $\frac{50}{17}$	4.2	$\frac{57}{17}$ 4.26	5.2	
	353.3	353.1	352.9	352.1	351.9	
1	3.3	3.86 $\frac{48}{17}$	4.1	$\frac{53}{17}$ 4.66	3.7	
	353.8	353.2	353.0	352.4	353.4	
+50	2.5	3.66 $\frac{45}{17}$	3.9	$\frac{50}{17}$ 4.42	3.0	
	354.6	353.4	353.2	352.7	354.1	
2	2.4	3.41 $\frac{41}{17}$	4.0	$\frac{50}{17}$ 4.10	3.8	
	354.7	353.7	353.1	353.0	353.3	
+50	3.1	3.17 $\frac{38}{17}$	3.7	$\frac{48}{17}$ 4.03	4.0	
	354.1	353.9	353.4	353.1	353.1	
TR	353.200	3883	<u>357.640</u>	4440		
3	3.9	3.51 $\frac{48}{17}$	4.1	$\frac{53}{17}$ 4.29	4.6	
	353.7	354.1	353.5	353.3	353.0	
+50	2.7	3.31 $\frac{43}{17}$	3.6	$\frac{48}{17}$ 3.82	3.7	
	354.9	354.3	354.0	353.8	353.9	
4	2.8	2.86 $\frac{37}{17}$	3.3	$\frac{40}{17}$ 3.16	4.0	
	354.8	354.7	354.3	354.4	353.6	
+50	2.4	1.76 $\frac{27}{17}$	2.5	$\frac{35}{17}$ 2.70	2.7	
	355.2	355.8	355.1	354.9	354.9	

CERROS ST.

Sta	EPL	Curb	±	Curb	WPL
			357.640		
SPL Cajon					
490 <sup>20</sup>	08	066 <sup>16</sup> <sub>17</sub>	1.8 <sup>28</sup> <sub>17</sub>	231	2.5
E/Cajon	356.8	356.9	355.8	355.3	355.1
± Paving		0.75			
Highway					
BM Henry	351.465	6.175			
City Abut @					
Estrella Cajon					
351.390					
page 43					

END  
X

CERROS

62

351.390  
43



Levels on Acacia Drive <sup>Moore</sup> <sup>walk 50' wide</sup>  
 S of UNIV. <sup>Protest</sup> 1/9/25

339.09

63

on O.P. SW Univ.  
+ ACACIA

+ 938

339.09

329.71

EL

8.0

331.1

0700 ST UNIV - E End of Acacia Drive

300'S

w of (cent)

9.26

329.73

EL

6.1

333.0

C

10.8

328.3

C

6.0

333.1

EL

12.1

327.0

w of (cent)

5.14

334.0

100'S on EL

328.7'S = PC

EL

12.0

327.1

w of cent

3.71

335.4

C

10.1

329.0

C

4.5

334.6

w of Cent = 107'S. 1st of Univ

9.58

329.5

E of

5.0

334.1

200'S

Note - Sidewalk + et in on W side

w of Cent

8.55

331.5

C

8.9

330.2

EL

10.2

328.9

225'S

EL

8.6

330.5

C

8.1

331.0

w of cent

8.01

331.1

255'S

w of (cent)

7.26

332.8

C

7.5

331.6

Moore  
Walker  
Preston

Levelson Vine Court 50' wide  
S of Univ. Ave 1/9/25

WINDY AVE  
ON BM Iron Pipe

+0.40 334.00 333.60

3L of Univ

EL 6.1 327.9

C 9.2 324.8

WL 11.4 322.6

10' S

WL 9.3 324.7

C 8.2 325.8

EL 5.8 328.2

50' S

EL 5.4 328.6

C 7.2 326.8

WL 8.5 325.5

100' S

WL 9.4 324.6

C 7.2 326.8

EL 5.7 328.3

150' S

EL 6.5 327.5

334.00 HI

64

C 8.2 325.8

WL 10.4 323.6

200' S

WL 12.7 321.3

C 10.2 323.8

EL 8.8 325.2

250' S

EL 12.1 321.9

C 13.0 321.0

WL 15.9 318.1

300' S

WL 19.5 314.5

C 17.0 317.0

EL 16.1 317.9

375' S = PC

EL 20.8 313.2

C 22.5 311.5

WL 26.0 308.0

400' S on P.C. of Curve

25.5 308.5

Levels on Winona Ave 60' wide  
S of Univ.

NW Univ. +  
Winona

on Iron Pipe

AS. HT. FS. Elev  
+1.83 335.43 333.60

SL UNIV ON E

E 1.2 334.23

10' S = SL UNIV ON W

EV 1.2 334.23

C 1.2 334.23

WL 0.7 334.73

50' S from Univ ON E

WL 0.8 334.63

C 1.3 334.1

EV 1.5 333.9

100' S

EV 2.4 333.0

C 1.4 334.0

WL 0.7 334.7

150' S

WL 2.3 333.1

C 2.2 333.2

EV 2.2 333.2

335.43

200' S

2.9 332.5

2.6 332.8

3.0 332.4

250' S

WL 1.1 331.3

C 3.4 332.0

EV 3.5 331.9

300' S

EV 4.0 331.4

C 4.4 331.0

WL 5.2 330.2

350' S

WL 6.8 328.6

C 5.5 329.9

EV 5.0 330.4

400' S

EV 6.2 329.2

C 6.7 328.7

WL 9.4 326.2

65

33543

450' S

WL		11.9	323.5
C		8.5	326.9
EL		7.2	328.2

500' S

EL		8.6	326.8
C		10.9	324.5
WL		13.9	321.5

550' S

WL		17.0	318.4
C		13.3	322.1
EL		10.7	325.3

600' S

EL		12.5	322.9	
T.P	0.75	323.38	12.80	322.63
C		5.2	318.2	
WL		9.1	314.3	

650' S

WL		14.7	308.7
C		9.6	313.8

323.38

Winona S of Univ. 66

5.0 318.4

689.26' S - P.C.

EL		8.8	314.6
C		13.0	310.4
WL		18.7	304.7

SW Univ. +  
Manzanita  
on iron pipe

Levels on Manzanita Ave  
S of Univ

60' wide

335

07

+1.40 325.03 322.63

c 14.0 321.0

SL of Univ on W = 0.00

EL 12.2 322.8

WL 1.4 333.6

T.P. 040 322.69 12.74 322.29

c 1.1 330.9

r 286.74 S

EL sl of Univ = PC 8.9 326.1

EL 3.9 318.8

EL Manzanita Center of Curve 14.7 320.3

c 5.0 317.7

107.45 S of Univ on W

WL 4.6 318.1

EL = EC 9.5 325.5

336.74 S

c 6.1 328.9

WL 10.7 312.0

WL 5.3 329.7

c 9.2 313.5

136.74 S

EL 6.4 316.3

WL 6.8 328.2

386.74 S

c 7.4 327.6

EL 11.2 311.5

EL 7.7 327.3

c 14.2 308.5

186.74 S

WL 13.9 308.8

EL 9.6 325.4

T.P. 1:71 311.52 12.88 309.81

c 10.1 324.9

436.74 S

WL 9.4 325.6

WL 0.6 310.9

WL 12.6 321.4

+3 4.6 306.9

c 6.5 305.0

311.52

14.7 296.8

460'S

EL 19.0 292.5

C 7.9 303.6

+26 4.9 306.6

WL 0.7 310.8

486.7'S

W 0.4 311.1

+5 5.2 306.3

C 8.6 302.9

EL 15.1 296.4

536.7'S

EL 12.5 298.0

C 9.0 302.5

+25 7.0 304.5

WL 1.5 310.0

586.7'S

WL 6.0 305.5

+5 9.3 302.2

C 12.1 299.1

311.52

MANZANITO S of UHIV

88

15.0 296.5

611.67'S = PC

EL 18.8 292.7

C 15.7 295.8

+25 11.1 300.4

WL 8.8 302.7

NW Univ. &  
Winona Ave  
on Iron Pipe

Levels on Winona N of Univ. 60' wide

+585 339.45 333.60

0+00 = NL of Univ on East

EL = NE 60' on Winona + Univ 5.7 333.8

10' N

EL 5.5 334.0

C 6.2 333.3

WL 5.8 333.7

50' N

WL 8.4 331.1

C 7.2 332.3

EL 6.3 333.2

100' N

EL 5.3 334.2

C 6.7 332.8

WL 8.5 331.0

150' N

WL 8.9 330.6

C 6.5 333.0

EL 5.1 334.4

200' N

EL 4.6 334.9

339.45

C

6.3 333.2

WL

12.0 327.5

250' N

WL

13.3 326.2

C

5.6 333.9

FL

4.3 335.2

300' N

EL

3.8 335.7

C

4.8 334.7

WL

4.6 334.9

350' N

WL

1.3 338.2

C

3.4 336.1

EL

1.8 337.7

TP

10.60 329.65 0.40 339.05

400' N

EL

9.7 340.0

C

11.4 338.3

WL

10.7 339.0

450' N

WL

9.4 340.3

349.65

70

c 9.3 340.4

EL 7.2 342.5

500 N

EL 5.8 343.9

c 7.0 342.7

WL 8.0 341.7

550 N

WL 6.4 343.3

c 5.5 344.2

EL 4.0 345.7

612.8 N = SL of Oak Crest Drive

EL 2.0 347.7

c 2.7 347.0

WL 3.4 346.3

T.P. Archib. PG Lot 21420  
325 346.40

Bik (A)



Levels on Manzanita N of Univ 60' wide  
 on Hub w L + H.I. Rod. - ELV  
 Pl. Lot 20 + 21 BIK (A) 2.30 348.70 325 346.40

348.7

71

00 = Pl. Lot 20 + 21 BIK (A) Oak Park

w L 2.30 346.4

C on angle to EE side Oak Crest Drive 2.1 346.6

EE side of Oak Crest Drive - el 2.3 346.4

7678 S - PC on EL

EL 2.7 346.0

C 3.0 345.7

w L 3.6 345.1

150 S

w L 4.9 343.8

C 4.5 344.2

EL 4.3 344.4

200 S

EL 5.0 343.7

C 5.2 343.5

w L 6.2 342.5

250 S

w L 7.4 341.3

C 6.7 342.0

EL 6.1 342.6

EL

7.5 341.2

C

8.7 340.0

w L

10.2 338.5

350 S

w L

12.5 336.2

C

11.0 337.7

EL

9.4 339.3

372 S = EC on West

EL

10.2 338.5

C

12.1 336.6

w L

12.9 335.8

EL = PC NE of Univ

13.7 335.0

EL = PC of Lot 7 BIK (B)

13.6 335.1

1/12/5 More Levels on Oak Crest Drive

350.59

75

on iron pipe	12.96	295.53		282.57	NE Univ + Malino
T.P.	12.76	309.00	0.29	295.24	
EL Oak Crest Drive + NE Univ. = 00 = PC			9.1	298.9	
T.P.	13.32	321.25	0.07	307.93	
+ 34.55			9.5	311.8	
+ 69.10			2.6	318.7	
T.P.	12.82	333.22	0.85	320.40	
+ 103.65			7.8	325.4	
+ 38.20 = PRC			5.1	328.1	
+ 146.45			2.3	330.9	
943	342.23	0.12	332.80		
254.70		5.1	335.8		
+ 315.49					
312.95 = EC on EL		2.1	340.1		
WL Oak Crest Drive + NE Univ. = 00 = PC		9.8	332.4		
+ 53		10.9	331.3		
106		10.9	331.3		
159		10.5	331.7		
212		7.5	334.7		
+ 65		4.1	338.1		
(322.07)					
31.8 = EC on WL		1.1	340.8		
T.P.	9.99	350.59	1.63	340.60	

on EC	1.8	348.8
EL	9.0	341.6
C	8.2	342.4
WL	8.2	342.4
WL	7.7	342.9
C	7.2	343.4
EL	7.0	343.6
EL	6.7	343.9
C	6.4	344.2
WL	6.7	343.9
WL	6.4	344.2
C	5.8	344.8
EL	6.4	344.2
EL	5.8	344.8
C	5.3	345.3

EC = 0+00  
46.35 N

96.35 N

146.35 N

196.35 N

246.35 N

350.59

73 E

WL 5.6 345.0

296.35 N

WL 5.3 345.3

C 4.8 345.8

EL 5.8 344.8

346.35 N

EL 5.8 344.8

C 4.5 346.1

WL 4.9 345.7

(394.2)

→ 346.35 N = EL on SL.

WL 4.1 346.5

C 4.0 346.6

EL 5.~ 345.4

Moore Levels on Fire Sta. Lot.  
 Hazard W. Pt. Loma Blvd + Ingraham  
 3-24-40. See G.P. 179-76

Indexed  
 c.s.K

BASE LINE →

64

1 + 75

approx.  
 S.L. Blvd →

$\frac{3.5}{12.1}$   $\frac{3.4}{12.2}$   $\frac{3.3}{12.3}$   $\frac{3.2}{12.4}$   $\frac{2.9}{12.7}$

1 + 50

$\frac{3.8}{11.8}$   $\frac{3.9}{11.7}$   $\frac{3.5}{12.1}$   $\frac{3.0}{12.6}$   $\frac{3.0}{12.6}$   $\frac{3.2}{12.2}$

1 + 25

N.W. Cor.  
 S.L. Blvd.  $\frac{3.8}{11.8}$

$\frac{4.1}{11.5}$   $\frac{4.1}{11.5}$   $\frac{2.7}{11.9}$   $\frac{3.2}{12.2}$   $\frac{3.2}{12.4}$   $\frac{2.7}{12.9}$

1 + 00

$\frac{4.4}{11.5}$

$\frac{4.3}{11.3}$   $\frac{4.3}{11.3}$   $\frac{4.0}{11.6}$   $\frac{4.0}{11.6}$   $\frac{3.5}{12.0}$   $\frac{3.1}{12.5}$

0 + 75

$\frac{4.1}{11.5}$

$\frac{4.2}{11.4}$   $\frac{4.3}{11.3}$   $\frac{4.3}{11.3}$   $\frac{4.1}{11.5}$   $\frac{4.0}{11.6}$   $\frac{3.3}{12.3}$

0 + 50

$\frac{4.3}{11.3}$

$\frac{4.3}{11.3}$   $\frac{4.3}{11.3}$   $\frac{4.3}{11.3}$   $\frac{4.1}{11.5}$   $\frac{3.8}{11.8}$   $\frac{3.4}{12.2}$

0 + 25

9.11C  
 6.14  
 7.97C = City datum  
 of B.M.

$\frac{4.6}{11.0}$

$\frac{4.2}{11.4}$   $\frac{4.3}{11.3}$   $\frac{4.2}{11.4}$   $\frac{4.1}{11.5}$   $\frac{3.8}{11.8}$   $\frac{3.4}{12.2}$

0 + 00

$\frac{4.2}{11.4}$

$\frac{4.0}{12.5}$   $\frac{4.1}{10.0}$   $\frac{4.1}{7.5}$   $\frac{3.9}{5.0}$   $\frac{3.5}{5.5}$   $\frac{12.22}{3.1}$

S.W. Cor Lot

S.E. Cor  
 Lot

B.M.B.P.  
 colv.  
 hd. wall

6.50 15.61C

9.11C

U.S.G.S.  
 DATUM

Levels on Fire STA. Lot

Baseline 60

11 + 64.91

12 + 50

13 + 25

14 + 00

150

125

100

35

75

12.1

3.4

12.2

35

50

12.1

36

12.0

3.4

12.4

37

11.9

35

12.1

3.3

25

12.3

31

12.5

SL Blvd.

↙

37

11.9

35

12.1

3.4

12.4

3.3

25

12.3

31

12.5

NE Cor.  
LOT

approx. SL Blvd.



15.616  
USGS

Ground Levels for Fire Sta. Bldg.  
see C.P. 179-75

Left

Baseline  
2

76 F1

0 + 70	$\frac{4.0}{11.6}$	$\frac{4.1}{11.5}$	$\frac{4.3}{11.3}$	$\frac{4.1}{11.5}$	$\frac{4.1}{11.5}$	$\frac{4.0}{11.6}$	$\frac{3.7}{11.9}$
0 + 60	$\frac{4.1}{11.5}$	$\frac{4.0}{11.6}$	$\frac{4.0}{11.6}$	$\frac{4.1}{11.5}$	$\frac{4.0}{11.6}$	$\frac{3.8}{11.8}$	$\frac{3.5}{12.1}$
0 + 50	$\frac{4.2}{11.4}$	$\frac{4.1}{11.5}$	$\frac{4.2}{11.4}$	$\frac{4.2}{11.4}$	$\frac{4.0}{11.6}$	$\frac{3.9}{11.7}$	$\frac{3.7}{11.9}$
0 + 40	$\frac{4.2}{11.4}$	$\frac{4.3}{11.3}$	$\frac{4.3}{11.3}$	$\frac{4.2}{11.4}$	$\frac{3.9}{11.7}$	$\frac{3.8}{11.8}$	$\frac{3.5}{12.1}$
0 + 30	$\frac{4.5}{11.1}$	$\frac{4.4}{11.4}$	$\frac{4.2}{11.4}$	$\frac{4.1}{11.5}$	$\frac{3.9}{11.7}$	$\frac{3.7}{11.9}$	$\frac{3.8}{11.8}$
0 + 20	$\frac{4.5}{11.1}$	$\frac{4.2}{11.4}$	$\frac{4.1}{11.5}$	$\frac{4.1}{11.5}$	$\frac{4.0}{11.6}$	$\frac{4.1}{11.5}$	$\frac{4.0}{11.6}$
0 + 10	$\frac{4.4}{11.2}$	$\frac{4.6}{11.0}$	$\frac{4.6}{11.0}$	$\frac{4.5}{11.1}$	$\frac{4.0}{11.6}$	$\frac{4.1}{11.5}$	$\frac{4.0}{11.6}$
0 + 04	$\frac{4.2}{11.4}$	$\frac{4.2}{11.4}$	$\frac{4.4}{11.2}$	$\frac{4.2}{11.4}$	$\frac{4.0}{11.6}$	$\frac{4.2}{11.4}$	$\frac{4.0}{11.6}$
0 + 00	$\frac{4.2}{60}$ $\frac{60}{11.4}$	$\frac{4.3}{50}$ $\frac{50}{11.3}$	$\frac{4.6}{40}$ $\frac{40}{11.0}$	$\frac{4.2}{30}$ $\frac{30}{11.4}$	$\frac{4.2}{20}$ $\frac{20}{11.4}$	$\frac{4.2}{10}$ $\frac{10}{11.4}$	$\frac{4.1}{10.5}$

15.616  
USGS

SE. Cor. Bldg.

B.C.

0 + 90

$\frac{4.1}{11.5}$	$\frac{4.0}{11.6}$	$\frac{4.1}{11.5}$	$\frac{4.0}{11.6}$	$\frac{4.0}{11.6}$	$\frac{3.9}{11.7}$	$\frac{3.8}{11.8}$
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0 + 87.7

$\frac{4.1}{11.5}$	$\frac{4.2}{11.4}$	$\frac{4.2}{11.4}$	$\frac{4.1}{11.5}$	$\frac{4.1}{11.5}$	$\frac{4.1}{11.5}$	$\frac{3.9}{11.7}$
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0 + 80

$\frac{4.0}{60}$	$\frac{4.2}{50}$	$\frac{4.2}{40}$	$\frac{4.1}{30}$	$\frac{4.1}{20}$	$\frac{4.1}{10}$	$\frac{4.0}{11.6}$
$\frac{11.6}{11.6}$	$\frac{11.4}{11.4}$	$\frac{11.4}{11.4}$	$\frac{11.5}{11.5}$	$\frac{11.5}{11.5}$	$\frac{11.5}{11.5}$	

15.616  
USGS







S

340.5  
340.5

S

340.0

340.6

Unit + Euclid

80 F

574.92  
36.74  
611.67  
612.50

150  
7322  
76.78

CALCULATION OF EARTHWORK.

Width	HEIGHT														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	.02	.04	.06	.07	.09	.11	.13	.15	.17	.18	.20	.22	.24	.26	.28
2	.04	.07	.11	.15	.18	.22	.26	.30	.33	.37	.41	.44	.48	.52	.56
3	.06	.11	.17	.22	.28	.33	.39	.44	.50	.56	.61	.67	.72	.78	.83
4	.07	.15	.22	.30	.37	.44	.52	.59	.67	.74	.81	.89	.96	1.04	1.11
5	.09	.19	.28	.37	.46	.56	.65	.74	.83	.93	1.02	1.11	1.20	1.30	1.39
6	.11	.22	.33	.44	.56	.67	.78	.89	1.00	1.11	1.22	1.33	1.44	1.55	1.67
7	.13	.26	.39	.52	.65	.78	.91	1.04	1.16	1.30	1.42	1.55	1.68	1.81	1.94
8	.15	.30	.44	.59	.74	.89	1.04	1.19	1.33	1.48	1.63	1.78	1.92	2.08	2.22
9	.17	.33	.50	.67	.83	1.00	1.17	1.33	1.50	1.67	1.83	2.00	2.17	2.33	2.50
10	.18	.37	.56	.74	.93	1.11	1.30	1.48	1.67	1.85	2.04	2.22	2.41	2.59	2.78
11	.20	.41	.61	.82	1.02	1.22	1.43	1.63	1.83	2.04	2.24	2.44	2.65	2.85	3.06
12	.22	.44	.67	.89	1.11	1.33	1.56	1.78	2.00	2.22	2.44	2.67	2.89	3.11	3.33
13	.24	.48	.72	.96	1.20	1.44	1.68	1.92	2.16	2.41	2.65	2.89	3.13	3.37	3.61
14	.26	.52	.78	1.04	1.30	1.55	1.81	2.08	2.33	2.59	2.85	3.11	3.37	3.63	3.89
15	.28	.56	.83	1.11	1.39	1.67	1.94	2.22	2.50	2.78	3.06	3.33	3.61	3.89	4.17
16	.30	.59	.89	1.18	1.48	1.78	2.07	2.37	2.67	2.96	3.26	3.56	3.85	4.15	4.44
17	.31	.63	.94	1.26	1.57	1.89	2.20	2.52	2.83	3.15	3.46	3.78	4.09	4.41	4.72
18	.33	.67	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33	3.67	4.00	4.33	4.67	5.00
19	.35	.70	1.06	1.41	1.76	2.11	2.46	2.82	3.17	3.52	3.87	4.22	4.57	4.92	5.28
20	.37	.74	1.11	1.48	1.85	2.22	2.59	2.96	3.33	3.70	4.07	4.44	4.81	5.18	5.56
21	.39	.78	1.17	1.55	1.94	2.33	2.72	3.11	3.50	3.89	4.28	4.67	5.06	5.44	5.83
22	.41	.81	1.22	1.63	2.04	2.44	2.85	3.26	3.67	4.07	4.48	4.89	5.30	5.70	6.11
23	.43	.85	1.28	1.70	2.13	2.56	2.98	3.41	3.83	4.26	4.68	5.11	5.54	5.96	6.39
24	.44	.89	1.33	1.78	2.22	2.67	3.11	3.56	4.00	4.44	4.89	5.33	5.78	6.22	6.67
25	.46	.92	1.39	1.85	2.31	2.78	3.24	3.70	4.17	4.63	5.09	5.56	6.02	6.48	6.94
26	.48	.96	1.44	1.92	2.41	2.89	3.37	3.85	4.33	4.82	5.30	5.78	6.26	6.74	7.24
27	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	7.50
28	.52	1.04	1.55	2.07	2.59	3.11	3.63	4.15	4.67	5.18	5.70	6.22	6.74	7.26	7.78
29	.54	1.07	1.61	2.15	2.68	3.22	3.76	4.30	4.83	5.37	5.91	6.44	6.98	7.52	8.06
30	.56	1.11	1.67	2.22	2.78	3.33	3.89	4.44	5.00	5.55	6.11	6.67	7.22	7.78	8.33
31	.57	1.15	1.72	2.30	2.87	3.44	4.02	4.59	5.17	5.74	6.32	6.89	7.46	8.04	8.61
32	.59	1.18	1.78	2.37	2.96	3.56	4.15	4.74	5.33	5.92	6.52	7.11	7.70	8.29	8.89
33	.61	1.22	1.83	2.44	3.05	3.67	4.28	4.89	5.50	6.11	6.72	7.33	7.94	8.55	9.17
34	.63	1.26	1.89	2.52	3.15	3.78	4.40	5.04	5.67	6.29	6.93	7.56	8.18	8.81	9.44
35	.65	1.30	1.94	2.59	3.24	3.89	4.53	5.18	5.83	6.48	7.13	7.78	8.42	9.08	9.72
36	.67	1.33	2.00	2.67	3.33	4.00	4.66	5.33	6.00	6.67	7.33	8.00	8.67	9.33	10.00
37	.68	1.37	2.06	2.74	3.42	4.11	4.79	5.48	6.17	6.85	7.54	8.22	8.91	9.59	10.28
38	.70	1.41	2.11	2.82	3.52	4.22	4.92	5.63	6.33	7.03	7.74	8.44	9.15	9.85	10.56
39	.72	1.44	2.17	2.89	3.61	4.33	5.05	5.78	6.50	7.22	7.95	8.67	9.39	10.11	10.83
40	.74	1.48	2.22	2.96	3.70	4.44	5.18	5.92	6.67	7.41	8.15	8.89	9.63	10.37	11.11

Table gives cu. yds. in 1 ft. of a triangle of given width and height. Corrections for tenths of width are one tenth the values found under each height considering the widths from 1 to 9 as tenths and similarly the corrections for tenths of height are one tenth the figures opposite width considering the heights from 1 to 9 as tenths. Thus if  $w = 16.2$  and  $h = 5.3$ , cu. yds. =  $1.48 + .023 + .089 = 1.597$  cu. yds. or practically 160 cu. yds. per 100 ft. If  $w$  exceeds 40 ft., use one half and multiply result by 2, if both  $w$  and  $h$  are large use one half of each and multiply result by 4. Any cross-section may be divided into triangles by the following rule. To the triangle of the sum of the outside cuts (or fills) =  $h$ , and  $\frac{1}{2}$  the roadbed =  $w$ , add the triangles formed by taking the distance out to each break in turn (=  $w$ 's) by the difference between the cuts (or fills) on each side of it (=  $h$ 's) always subtracting the outer from the inner.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1 1/2.  
For Single Track Embankment.

136.7  
2931  
107.43

9.11  
6.50  
15.61

II	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	II
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  $41.9 + (20 - 16) \cdot 2$  or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.