

W

543

ENGINEER'S
LEVEL BOOK

No. 410

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS
Chicago New York San Francisco New Orleans Pittsburg Toronto

543

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 $1\frac{1}{2}$ see inside of back cover.

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This Field Book is manufactured
of a high grade 50% Rag Paper
having a WATER RESISTING surface.

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to determine economical site for
future filter plant.

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Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Dif. Elev.
(4.9) K 58+00					
1	29°-30'	-2°-15'	152		-6
2	28°-40'	-3°-0'	250		-13
3	76°-30'	-2°-28'	205		-13
4	82°-30'	-1°-45'	150		-8
5	118°-50'	-2°-0'	180		-6
6	114°-0'	-2°-14'	295		-15
7	134°-0'	-1°-10'	320		-8
8	128°-0'	-1°-30'	455		-20
9	132°-0'	-1°-16'	570		-17
10	142°-35'	-0°-14'	580		-10
11	148°-10'	-0°-8'	450		-8
12	165°-40'	-0°-2'	455		-2
13	162°-35'	+0°-14'	315		-2
14	149°-40'	-0°-12'	195		-1
15	196°-10'	+1°-4'	230		+4
16	195°-20'	+1°-32'	390		+9
17	217°-40'	+1°-38'	415		+12
18	228°-10'	+2°-12'	275		+11

		Converse Soper Remmen Isbell. March 4, 1937
Elev.		
467.7		Angles to right from back tangent
461		
454		Station 58+00 on pipe line
454	8.9	Location from Murray Dam to
459	7.9	El Capitan Pipe Line.
461		
452	7.9	
459	6.9	
447	12.9	
450	8.9	
457	12.9	
459	11.9	
465	6.9	
465	7.9	
466		
471		
476	5.9	
479		
478		

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
19	242°-50'	+2°-56'	435		+20
20	250°-20'	+3°-54'	405		+25
21	259°-40'	+3°-32'	505		+27
22	268°-20'	+3°-06'	460		+25
23	273°-20'	+2°-42'	595		+25
24	280°-50'	+2°-30'	760		+32
25	288°-40'	+2°-24'	870		+34
26	298°-0'	+2°-22'	960		+38
27	301°-30'	+1°-54'	880		+27
28	307°-0'	+1°-34'	835		+18
29	307°-5'	-1°-30'	700		+12
30	295°-0'	+1°-50'	755		+22
31	286°-20'	+2°-0'	630		+21
32	295°-20'	+1°-38'	555		+15
33	307°-0'	+1°-28'	535		+12
34	317°-46'	+0°-46'	495		+4
35	330°-40'	-0°-12'	420		0
36	317°-50'	+0°-48'	375		+5
37	300°-50'	+1°-24'	325		+8

467

Elev.	
487	6.9
492	6.9
494	8.9
492	
492	7.9
499	5.9
501	6.9
505	6.9
494	6.9
485	9.9
479	10.9
489	6.9
488	5.9
482	5.9
479	6.9
471	7.9
467	6.9
472	
475	

2

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
38	287°-0'	+2°-0'	350		+11
39	273°-0'	+2°-40'	405		+19
40	252°-20'	+3°-10'	305		+17
41	252°-20'	+2°-36'	215		+10
42	285°-40'	+2°-0'	180		+6
43	317°-40'	+0°-44'	210		+3
44	334°-40'	-0°-10'	300		-10
45	326°-40'	+0°-28'	113		+1
46	250°-20'	+2°-36'	85		+4
47	217°-30'	+1°-42'	175		+5
48	43°-30'	-1°-40'	205		-15
49	66°-40'	-1°-46'	275		-17
50	90°-40'	-2°-10'	232		-19
51	253°-20'	+3°-50'	360		+24
52	243°-0'	+2°-52'	410		+19
53	235°-20'	+2°-30'	405		+12

467

Elev.

478	5.9
486	
484	
477	
473	
470	
457	5.9
468	
471	
472	
452	10.9
450	13.9
448	14.9
491	
486	5.9
479	6.9

Station (51)	Hor. L.	Vert. L.	Stadia Dist.	Hor. Dist.	Diff. Elev.
π 63+00					
1	230°-0'	+1°-50'	145		+5
2	65°-40'	-2°-26'	195		-8
3	53°-0'	-2°-0'	280		-11
4	41°-0'	-2°-6'	375		-15
5	32°-40'	-2°-4'	485		-19
6	32°-20'	-1°-28'	605		-23
7	37°-40'	-1°-40'	680		-25
8	41°-0'	-1°-54'	600		-27
9	52°-40'	-2°-0'	590		-29
10	61°-20'	-1°-36'	555		-24
11	57°-30'	-1°-52'	460		-17
12	47°-10'	-1°-34'	440		-20
13	60°-40'	-1°-56'	365		-12
14	67°-20'	-1°-20'	380		-12
15	76°-30'	-1°-56'	480		-21
16	88°-20'	-1°-10'	380		-16
17	95°-0'	-1°-18'	260		-9
18	120°-40'	-0°-46'	215		-3

Elev.				
474				
479				
466				
463	6.1			
459	6.1			
455	7.1			
451	13.1			
449	10.1			
447	12.1			
445	13.1			
450	13.1			
457	7.1			
454	13.1			
462				
462	8.1			
453	10.1			
458	13.1			
465	8.1			
471				

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
19	151°-40'	-0°-32'	180		-2
20	134°-0'	-1°-34'	95		-3
21	202°-0'	+1°-0'	233		+1
22	217°-30'	+1°-28'	315		+4
23	226°-10'	+1°-34'	410		+9
24	231°-40'	+2°-6'	520		+14
25	235°-20'	+1°-54'	630		+19
26	238°-0'	+2°-28'	760		+25
27	239°-50'	+2°-20'	870		+30
28	241°-10'	+2°-20'	980		+36
29	242°-10'	+2°-26'	1085		+44
30	234°-10'	+2°-44'	1110		+50
31	232°-30'	+2°-26'	1010		+42
32	230°-30'	+2°-10'	900		+33
33	228°-0'	+1°-50'	805		+26
34	224°-40'	+1°-40'	705		+21
35	220°-10'	+1°-22'	600		+14
36	215°-0'	+1°-8'	505		+10
37	207°-50'	+0°-54'	420		+11

274

Elev.

472

471

475 8.1

478 9.1

483 7.1

488 10.1

493 7.1

499 13.1

504 10.1

510 9.1

518 7.1

524 8.1

516 6.1

507 6.1

500

495

488

484

485

5

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.		
38	195°-0'	+0°-10'	355		+1	475		
(5.1)	Intersection alternate line and section line.						467	
1	128°-30'	-1°-24'	195		-12	455	12.1	
2	122°-20'	-2°-52'	290		-18	449	9.1	
3	114°-20'	-2°-8'	405		-24	443	14.1	
4	133°-20'	-3°-42'	440		-29	438	6.1	
5	143°-50'	-3°-44'	360		-23	444		
6	149°-0'	-2°-56'	470		-24	443		
7	140°-50'	-3°-0'	555		-29	438		
8	148°-0'	-2°-40'	645		-30	437		
9	156°-40'	-2°-30'	685		-30	437		
10	167°-40'	-2°-14'	680		-27	440		
11	176°-40'	-2°-10'	670		-25	442		
12	184°-40'	-2°-22'	690		-28	439		
13	187°-0'	-2°-48'	600		-29	438		
14	182°-40'	-2°-28'	570		-25	442		
15	170°-10'	-2°-8'	525		-20	447		
16	159°-30'	-2°-20'	505		-21	446		
17	155°-0'	-3°-6'	410		-22	445		

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.
18	171°-0'	-2°-38'	395		-18	449
19	186°-20'	-2°-54'	430		-22	445
20	193°-46'	-2°-24'	490		-25	442 10.1
21	203°-46'	-2°-40'	435		-21	446 6.1
22	189°-10'	-2°-44'	380		-18	449
23	169°-20'	-3°-42'	320		-21	446
24	150°-30'	-3°-54'	222		-15	452
25	203°-20'	-2°-24'	255		-11	456
26	226°-30'	-0°-14'	285		-9	458 13.1
27	243°-0'	-0°-52'	300		-5	462
28	242°-20'	-0°-36'	165		-2	465
29	242°-30'	+0°-24'	85		+1	468
30	207°-0'	-2°-58'	135		-7	460
31	149°-20'	-4°-8'	154		-11	456
32	275°-40'	+2°-4'	182		+5	472 7.1
33	261°-20'	+2°-18'	315		+4	471 14.1

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.			
5.2 K 68+00	(First line)					473			
1	62°-0'	-2°-54'	120		-6	467			
2	78°-40'	-3°-16'	221		-13	460			
3	86°-20'	-3°-44'	335		-22	451			
4	90°-40'	-3°-30'	465		-28	445			
5	92°-0'	-3°-38'	565		-38	435	7.2		
6	95°-40'	-3°-36'	545		-36	437	7.2		
7	98°-30'	-3°-28'	605		-39	434	7.2		
8	108°-40'	-3°-24'	640		-40	433	7.2		
9	113°-30'	-3°-54'	555		-38	435			
10	108°-50'	-3°-24'	550		-33	440			
11	101°-10'	-3°-34'	465		-29	444			
12	115°-20'	-3°-46'	460		-30	443			
13	127°-20'	-3°-40'	480		-38	435	12.2		
14	134°-50'	-3°-0'	385		-25	448	10.2		
15	118°-20'	-3°-32'	370		-23	450			
16	102°-0'	-3°-42'	330		-21	452			
17	103°-30'	-3°-32'	225		-14	459			
18	127°-20'	-3°-28'	270		-16	457			

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
19	147°-0'	-3°-22'	320		-19
20	166°-30'	-1°-54'	285		-13
21	150°-50'	-2°-32'	185		-8
22	106°-30'	-3°-16'	108		-6
23	263°-0'	+3°-0'	115		+6
24	260°-0'	+2°-34'	225		+10
25	259°-40'	+2°-36'	340		+15
26	259°-10'	+2°-30'	450		+20
27	259°-10'	+2°-36'	555		+25
28	257°-40'	+2°-38'	670		+31
29	257°-20'	+2°-54'	790		+40
30	252°-40'	+2°-22'	730		+30
A	244°-53'	+2°-42'	1015	1013	+45
31	250°-0'	+2°-12'	590		+23
32	248°-0'	+2°-16'	465		+18
33	245°-0'	+2°-8'	355		+13
34	239°-50'	+2°-32'	255		+11
35	231°-40'	+2°-34'	150		+7
36	210°-20'	+1°-20'	230		+5

473

Elev.

454

460

9.2

465

467

479

483

488

493

498

504

513

503

518

7.2

496

491

486

484

480

478

March 5, 1937.

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Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.
37	227°-0'	+1°-46'	295		+9	482
(4.8) Ket. "A"	Oriented at 68+00 (First Line)					518
1	27°-20'	-4°-44'	1170		-96	422 4.8
2	28°-40'	-5°-0'	1055		-92	426
3	26°-50'	-5°-02'	940		-83	435
4	31°-0'	-5°-38'	770		-75	443
5	21°-20'	-5°-34'	640		-62	456
6	23°-40'	-6°-30'	495		-56	462
7	19°-0'	-6°-34'	385		-44	474
8	26°-50'	-8°-56'	244		-37	481
9	13°-20'	-8°-44'	159		-24	494
10	310°-30'	-1°-12'	106		-2	516
11	256°-30'	+4°-0'	103		+7	525
12	270°-0'	+5°-50'	175		+18	536
13	306°-50'	+0°-14'	154		+1	519
14	342°-30'	-4°-28'	200		-16	502
15	7°-20'	-5°-52'	300		-31	487
16	12°-40'	-4°-56'	435		-37	481
17	14°-20'	-4°-40'	595		-48	470

π (4.8)

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
18	20°-0'	-4°-26'	745		-57
19	22°-20'	-5°-58'	1065		-73
68+00 (First Line)					
	0°-0'	-2°-34'	1013		-45
20	35°-0'	-5°-04'	930		-82
21	40°-10'	-4°-32'	790		-62
22	40°-20'	-5°-26'	680		-64
23	31°-20'	-6°-26'	605		-67
24	27°-20'	-7°-12'	655		-87
25	30°-0'	-8°-24'	510		-77
26	28°-40'	-8°-26'	360		-63
27	35°-0'	-10°-26'	325		-60
28	39°-40'	-9°-08'	155		-24
29	23°-40'	-14°-30'	130		-32
30	321°-50'	-15°-28'	65		-17
31	79°-40'	-4°-14'	115		-8
32	71°-0'	-6°-44'	200		-31
33	60°-30'	-6°-46'	220		-26
34	44°-0'	-4°-46'	375		-31

518

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455

458

494

486

501

510

487

492

487

Bottom of cañon 30' Lower

10.8 Bottom of Cañon

7.8

15.8

7.8

12.8

Bottom of Cañon To North

(4.8)							518	1
Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.	Rod	
35	55°-20'	-2°-46'	385		-19	499		
36	71°-40'	-0°-14'	415		-2	516		
"B"	76°-35'	+0°-26'	495		+2	520	6.8	
(5.1) Run "B" Oriented at "A"							520	
1	206°-30'	+1°-50'	105		+3	523		
2	192°-40'	±0°-0'	265			523		
3	171°-20'	-2°-32'	300		-13	507		
4	171°-40'	-3°-52'	225		-15	505		
5	172°-0'	-5°-14'	200		-23	497	10.1	
6	170°-20'	-4°-36'	170		-14	506		
7	156°-40'	-11°-26'	90		-17	503		
8	86°-40'	-7°-44'	97		-17	503	9.1	
9	75°-20'	-7°-48'	195		-32	488	11.1	
10	101°-0'	-11°-0'	186		-35	485		
11	127°-0'	-12°-04'	196		-40	480		
12	146°-26'	-9°-08'	243		-40	480	7.1	
13	121°-10'	-7°-0'	310		-38	482		
14	114°-10'	-5°-38'	430		-42	478		
15	120°-0'	-5°-12'	500		-45	475		

(5.1)

Station	Hor. \angle	Vert. \angle	Stadia Dist.	Hor. Dist.	Diff. Elev.
16	109°-50'	-6°-26'	510		-61
17	102°-40'	-7°-34'	410		-56
18	103°-20'	-10°-56'	300		-62
19	85°-50'	-8°-30'	250		-46
20	76°-0'	-8°-04'	360		-57
21	358°-10'	-	76		+2
22	0°-0'	-1°-22'	230		-11

(5.1)
 Sta 77+00 (First Line) Oriented Back along Line

1	338°-20'	-1°-28'	280		-17
2	24°-0'	-6°-46'	265		-33
3	40°-40'	-6°-46'	350		-43
4	52°-0'	-6°-02'	435		-47
5	65°-50'	-5°-52'	470		-50
6	71°-20'	-5°-10'	605		-54
7	82°-10'	-5°-12'	620		-60
8	81°-0'	-4°-58'	575		-49
9	78°-20'	-5°-14'	470		-43
10	73°-10'	-5°-42'	373		-37
11	65°-40'	-6°-02'	275		-29

520		
Elev.	Rod	
459	9.1	
464		
458	11.1	Bottom of Cañon
474	14.1	
463	12.1	
522	3.2	
509	11.1	
472		
455	15.1	
439	7.1	
429	7.1	
425	7.1	
422	7.1	
418		
412	9.1	
423		
429		
435		
443		

(5.1)

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
12	49°-0'	-5°-54'	199		-20
13	18°-10'	-5°-48'	160		-16
14	48°-0'	-5°-34'	80		-8
15	77°-46'	-5°-26'	170		-16
16	86°-40'	-5°-18'	270		-25
17	89°-20'	-5°-10'	375		-34
18	90°-50'	-5°-0'	470		-42 -33
19	91°-40'	-4°-56'	560		-48
20	92°-10'	-5°-10'	690		-69
21	102°-20'	-5°-06'	595		-58
22	103°-40'	-5°-04'	515		-46
23	104°-40'	-5°-04'	405		-36
24	107°-20'	-4°-34'	305		-24
25	111°-20'	-4°-38'	196		-16
26	118°-20'	-3°-36'	100		-6
27	173°-20'	-0°-38'	235		-3
28	154°-10'	-2°-22'	285		-12
29	139°-20'	-3°-28'	365		-22
30	133°-40'	-2°-58'	415		-28

Elev.	Rod
472	
452	
456	
464	
456	
447	
438	
430	
424	
403	12.1
414	10.1
426	6.1
436	
448	
456	
466	
469	
460	
450	
444	12.1

(5.1)

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
31	126°-40'	-4°-28'	490		-40
32	129°-0'	-4°-14'	580		-43
33	138°-0'	-3°-48'	515		-34
34	145°-50'	-3°-06'	440		-24
35	157°-10'	-2°-24'	370		-15
36	173°-20'	-0°-38'	330		-6
37	207°-0'	+3°-20'	330		+15
38	223°-20'	+3°-50'	360		+24
39	236°-0'	+4°-46'	420		+35
40	245°-50'	+5°-28'	490		+47
41	248°-50'	+5°-08'	445		+40
42	241°-0'	+4°-56'	355		+28
43	227°-20'	+4°-02'	285		+20
44	241°-0'	+5°-04'	200		+18
45	249°-20'	+5°-12'	245		+22
46	260°-0'	+5°-28'	335		+25
47	274°-20'	+5°-32'	275		+21
48	274°-40'	+5°-34'	220		+21
49	274-40	+6°-24'	115		+13

472

Elev.

432	7.1
429	
438	
448	
457	
466	7.1
487	9.1
496	
507	
519	
512	
500	7.1
492	
490	
494	
497	12.1
493	10.1
493	
485	

(5.1)

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
50	313°-20'	+3°-32'	157		+10
51	306°-50'	+3°-38'	245		+14
52	324°-46'	+1°-26'	245		+1
53	342°-30'		170		-6

(5.0)

Stat. 74+00 (First Line) Oriented Back along Line

1	275°-20'		98		-6
2	281°-0'		235		+1
3	288°-40'	-2°-04'	243		-15
4	287°-0'	+1°-0'	285		+5
5	288°-30'	+1°-56'	367		+12
6	294°-30'	+1°-04'	390		+7
7	299°-50'	+3°-06'	405		+22
8	307°-0'	+2°-34'	340		+15
9	293°-40'	+0°-50'	310		+4
10	77°-20'	-10°-58'	200		-39
11	81°-0'	-9°-46'	300		-52
12	84°-40'	-6°-42'	680		-81
13	74°-40'	-4°-54'	540		-48
14	73°-20'	-4°-46'	410		-36

472

Elev. Rod

482

486 7.1

473 10.1

466 10.8

439 ✓

433 10.8

440 4.1

484 11.0

Bottom of Cañon

444

451

446

461

454

Bottom of Cañon to South

443

400 7.0

387 7.0

Bottom of Cañon

358 7.0

391 7.0

403 7.0

March 8, 1937.

(5.0)					
Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
15	58°-40'	-1°-38'	410		-12
16	59°-10'	-1°-50'	540		-17
(5.0)					
⌈ 83+00 (First line)					
1	18°-20'	-2°-38'	240		-11
2	35°-0'	-3°-54'	320		-22
3	44°-0'	-4°-16'	410		-30
4	50°-0'	-4°-18'	510		-38
5	53°-40'	-4°-10'	605		-44
6	56°-40'	-3°-16'	720		-48
7	57°-30'	-2°-42'	820		-49
8	62°-30'	-3°-16'	805		-46
9	66°-30'	-3°-26'	805		-48
10	74°-0'	-3°-34'	805		-50
11	82°-0'	-3°-38'	810		-51
12	89°-40'	-3°-48'	815		-54
13	96°-40'	-3°-54'	830		-56
14	104°-0'	-3°-52'	860		-58
15	111°-0'	-4°-04'	915		-65
16	114°-20'	-4°-32'	795		-62

439

Elev. Rod

427

422

474

463

452

444

436

430

426 12.0

425 15.0

428

426

424

423

420

418

416

409

412

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist	Diff. Elev.
17	106°-20'	-4°-40'	725		-59
18	99°-0'	-4°-42'	680		-56
19	90°-0'	-4°-36'	645		-52
20	80°-0'	-4°-34'	620		-49
21	70°-30'	-4°-06'	655		-46
22	63°-0'	-3°-54'	670		-45
23	62°-30'	-3°-18'	550		-32
24	72°-40'	-4°-42'	540		-44
25	84°-20'	-5°-0'	555		-48
26	95°-0'	-5°-12'	580		-52
27	104°-40'	-5°-22'	630		-59
28	112°-20'	-5°-06'	695		-62
29	119°-0'	-5°-26'	725		-68
30	121°-40'	-6°-44'	660		-77
31	123°-50'	-6°-46'	615		-72
32	114°-40'	-6°-02'	570		-60
33	105°-20'	-5°-58'	515		-53
34	95°-40'	-5°-58'	475		-49
35	79°-20'	-5°-28'	463		-44

474

Elev.

415

418

422

425

428

429

442 13.0

430

426

422

415

412

406

397

402

414

421

425

430

474

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.
36	66°-30'	-4°-56'	455		-40	434 6.0
37	56°-40'	-3°-06'	470		-25	449 15.0
38	52°-40'	-3°-58'	364		-30	444 10.0
39	70°-20'	-5°-26'	345		-32	442
40	85°-20'	-5°-52'	350		-36	438
41	101°-40'	-6°-42'	385		-45	429
42	113°-40'	-6°-42'	455		-53	421
43	120°-10'	-6°-28'	500		-56	418
44	129°-0'	-6°-38'	580		-67	407
45	138°-40'	-6°-46'	510		-60	414
46	131°-10'	-6°-28'	420		-47	427
47	120°-0'	-6°-46'	330		-39	435
48	102°-0'	-6°-34'	260		-30	444
49	76°-10'	-6°-18'	232		-25	449
50	48°-20'	-5°-04'	250		-22	452
51	30°-20'	-3°-52'	154		-10	464
52	77°-40'	-7°-12'	108		-13	461
53	113°-20'	-7°-14'	154		-19	455
54	132°-30'	-7°-02'	240		-29	445

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
55	140°-10'	-6°-46'	335		-39
56	143°-40'	-6°-18'	435		-51
57	154°-40'	-5°-40'	365		-40
58	154°-0'	-6°-02'	325		-34
59	153°-20'	-6°-12'	270		-33
60	152°-0'	-6°-26'	220		-25
61	147°-10'	-6°-0'	104		-11
62	320°-0'	+4°-48'	112		+9
63	292°-20'	+6°-50'	172		+19
64	279°-40'	+6°-48'	240		+27
65	273°-40'	+6°-56'	314		+38
66	252°-20'	+7°-08'	295		+36
67	235°-40'	+6°-18'	340		+37
68	222°-10'	+5°-12'	402		+36
69	213°-20'	+4°-12'	480		+35
70	207°-20'	+3°-26'	580		+35
71	205°-20'	+3°-06'	695		+38
72	200°-40'	+2°-06'	655		+24
73	201°-10'	+2°-08'	565		+21

Elev.			
474			
435			
423	9.0	In bottom draw at fork	
434	9.0	" " "	
440			
441	9.0	In draw	
449			
463			
483			
493	6.0		
501	6.0		
512			
510			
511			
510			
509			
509			
512			
498			
495			

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.			
74	206°-30'	+2°-42'	470		+22	496			
75	213°-40'	+3°-20'	375		+22	496			
76	225°-40'	+4°-10'	295		+21	495			
77	246°-0'	+5°-56'	220		+23	497			
78	265°-20'	+6°-56'	205		+24	498			
79	269°-40'	+7°-22'	128		+16	490			
80	225°-20'	+3°-10'	185		+10	484			
81	214°-50'	+2°-0'	282		+10	484			
82	204°-0'	+1°-18'	370		+9	483			
83	197°-20'	+1°-04'	475		+9	483			
84	194°-40'	+0°-56'	580		+9	483			
85	194°-40'	+0°-52'	660		+10	484			
86	188°-40'	0	640		-2	472	7.3		
87	188°-20'	0	530		-3	471	8.0		
88	191°-40'	0	425		-3	471	8.0		
89	194°-50'	0	330		-5	469	10.0		
90	201°-0'	0	242		-6	468	11.0	In draw	
91	214°-20'	+0°-58'	165		+3	477			
92	268°-0'	+8°-30'	65		+9	483			

474

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.	
93	170°-10'	-4°-40'	285		-23	451	
94	169°-10'	-4°-26'	370		-28	446	
95	168°-50'	-3°-52'	395		-26	448	
96	168°-10'	-3°-06'	505		-27	447	
97	167°-20'	-2°-30'	620		-27	447	75' more, 25' lower to bottom canyon.
98	167°-0'	-2°-04'	800		-29	445	
99	174°-40'	-1°-42'	805		-24	450	55' closer, 20' lower to bottom canyon.
100	175°-0'	-1°-54'	665		-23	451	
101	175°-0'	-1°-48'	595		-19	455	
102	157°-20'	-4°-32'	495		-39	435	
103	157°-0'	-4°-18'	600		-45	429	50' more, 16' lower to bottom canyon.
104	155°-40'	-3°-42'	705		-45	429	
105	156°-20'	-2°-22'	792		-32	442	
106	148°-30'	-3°-10'	815		-45	429	
107	146°-20'	-4°-0'	723		-50	424	
108	142°-10'	-6°-10'	640		-68	406	20' closer, 5' lower to bottom canyon
109	141°-50'	-6°-14'	580		-63	411	
110	134°-40'	-6°-36'	653		-74	400	9.0 25' more, 8' lower to bottom canyon
111	136°-40'	-6°-20'	700		-77	397	

474

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.			
112	140°-40'	-4°-26'	830		-64	410			
113	143°-0'	-3°-30'	920		-56	418			
114	137°-10'	-3°-44'	970		-63	411			
115	134°-0'	-3°-16'	1090		-62	412	10.0		
116	128°-0'	-5°-28'	1090		-103	371			
117	120°-20'	-4°-54'	920		-78	396			
118	115°-0'	-4°-12'	890		-65	409			
119	118°-0'	-4°-50'	780		-65	409			
120	124°-40'	-5°-56'	790		-81	393			
121	126°-20'	-6°-48'	740		-87	387	7.0	32' to right, 7' lower = int. two canyons	
122	146°-0'	-5°-42'	505		-50	424			
123	147°-20'	-5°-36'	575		-56	418			
124	146°-50'	-4°-52'	670		-57	417		50' closer, 13' lower to bottom canyon	
A	166°-34'	-1°-10'	980		-20	454			
(5.1) A	On section line.					454			Angles to right from sight south along section line.
1	1°-20'	0	76		-1	453	6.3		
2	310°-50'	+1°-52'	146		+5	459			
3	296°-10'	+3°-02'	330		+17	471			
4	309°-20'	+1°-54'	385		+13	467		38' closer, 11' lower to bottom	

474

Elev.

410

418

411

412

371

396

409

409

393

387

424

418

417

454

454

453

459

471

467

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.		
						454		
5	299°-40'	+3°-34'	475		+29	483		
6	290°-40'	+3°-30'	450		+27	481		30' south, 10' deeper
7	283°-30'	+4°-38'	440		+35	489		
8	279°-50'	+5°-32'	510		+49	503		
9	286°-20'	+4°-44'	535		+44	498		
10	288°-50'	+4°-16'	550		+36	490	10.1	In draw
11	293°-0'	+5°-0'	575		+45	499	10.1	
12	289°-40'	+5°-04'	635		+56	510		
13	287°-30'	+4°-32'	630		+50	504		In draw
14	284°-20'	+5°-30'	570		+54	508		
15	276°-30'	+6°-02'	530		+55	509		
16	265°-40'	+5°-36'	540		+52	506		
17	260°-0'	+6°-12'	502		+54	508		
18	247°-40'	+5°-40'	545		+53	507		
19	242°-0'	+5°-24'	555		+52	506		
20	231°-20'	+4°-50'	585		+49	503		
21	223°-20'	+4°-38'	655		+53	507		
22	218°-40'	+4°-10'	745		+54	508		
23	214°-0'	+3°-14'	710		+40	494		

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.
						454
24	220°-10'	+3°-54'	620		+42	496
25	228°-40'	+4°-10'	560		+41	495
26	240°-0'	+4°-26'	520		+40	494
27	244°-40'	+4°-34'	530		+42	496
28	253°-20'	+5°-12'	440		+40	494
29	265°-0'	+5°-08'	455		+41	495
30	279°-20'	+4°-26'	380		+29	483
31	262°-40'	+4°-56'	342		+29	483
32	247°-40'	+4°-26'	370		+26	480 7.1
33	237°-20'	+2°-30'	410		+18	472
34	229°-10'	+2°-34'	455		+20	474
35	218°-50'	+2°-40'	530		+25	479
36	213°-10'	+2°-52'	620		+31	485
37	210°-0'	+2°-26'	710		+30	484
38	200°-0'	+0°-38'	678		+7	461
39	203°-20'	+0°-42'	570		+7	461
40	208°-10'	+0°-28'	470		+4'	458
41	214°-10'	+0°-40'	385		+4	458
42	219°-30'	+1°-0'	325		+2	456 9.1

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
43	231°-50'	+2°-28'	240		+10
44	256°-20'	+4°-06'	170		+12
45	284°-10'	+3°-32'	170		+10
46	262°-40'	+4°-48'	72		+6
47	213°-40'	+1°-56'	140		+5
48	200°-40'	0	240		-2
49	196°-30'	0	330		-10
50	194°-20'	0	455		-10
51	192°-30'	0	560		-7
52	191°-0'	0	685		-5
53	191°-10'	0	790		-5
54	183°-50'	-1°-08'	800		-16
55	183°-40'	-1°-06'	690		-13
56	183°-0'	-1°-22'	580		-14
57	182°-10'	-2°-0'	470		-16
58	181°-0'	-1°-58'	370		-18
59	179°-0'	-1°-54'	260		-9
60	175°-20'	-1°-16'	143		-3
61	138°-0'	0	40		-1

454

Elev.

464

466

464

460

459

452 7.0

444 15.0

444 15.0

447 12.0

449 10.0

449 10.0

438

441

440

438

436 10.1 In draw

445

451

453 6.5

Mar. 9 - 1937

27

March 9, 1937.

Station	Hor. \angle	Vert. \angle	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.	Rod
(5.2)							
62	28°-10'		150		-6	454	
63	60°-0'		191		-11	448	11.2
64	95°-20'		136.		-11	443	16.2
65	136°-10'	-4°-14'	160		-12	442	
66	160°-50'	-2°-54'	235		-12	442	
67	168°-20'	-2°-40'	302		-14	440	
68	175°-20'	-2°-16'	405		-21	433	10.2
69	179°-0'	-1°-54'	515		-17	437	
70	181°-20'	-1°-24'	625		-15	439	
71	184°-0'	-1°-04'	740		-14	440	
72	185°-20'	-0°-58'	850		-14	440	
73	178°-30'	-1°-38'	885		-25	429	
74	177°-20'	-1°-36'	785		-22	432	
75	176°-0'	-1°-48'	680		-21	433	
76	173°-20'	-1°-56'	570		-22	432	8.2
77	168°-0'	-2°-54'	445		-25	429	8.2
78	161°-10'	-3°-08'	345		-19	435	
79	150°-20'	-3°-18'	258		-15	439	

(5.2)

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
99	96°-40'	-4°-12'	615		-45
100	162°-20'	-2°-44'	650		-34 -31
101	166°-40'	-2°-26'	760		-32
102	170°-20'	-2°-10'	885		-34
103	173°-0'	-2°-02'	1005		-36

(5.2)

⌈ 105+100 (First Line) Oriented at 101+40³⁰

1	17°-0'	+4°-56'	215		+18
2	28°-20'	+4°-06'	145		+10
3	77°-30'		76		-1
4	140°-0'		136		-9
5	159°-20'	-4°-02'	260		-18
6	164°-20'	-3°-50'	370		-25
7	165°-30'	-3°-44'	457		-30
8	167°-40'	-3°-40'	582		-42
9	167°-20'	-2°-34'	690		-31
10	190°-0'	-1°-44'	680		-20
11	192°-0'	-2°-30'	552		-24
12	196°-20'	-2°-54'	425		-21
13	206°-40'	-2°-02'	535		-19

Elev.	Red.
454	
409	
420	
423	8.2
422	
420	
418	
427	
445	
437	
426	6.2
418	14.2
409	
402	
397	
385	10.2 in Draw
396	
407	
403	
406	
408	

(5.2)

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.
14	219°-50'	-1°-34'	470		-13
15	213°-40'	-1°-56'	355		-12
16	207°-10'	-2°-48'	285		-14
17	197°-0'	-4°-52'	219		-19
18	222°-0'		105		-6
19	230°-40'	-3°-36'	191		-11
20	234°-40'		285		-6
21	235°-50'		410		-2
22	253°-40'	+1°-48'	430		+14
23	260°-20'	+1°-22'	330		+8
24	269°-20'	+1°-02'	235		+2
25	292°-0'	+3°-56'	148		+10
26	332°-50'	+4°-48'	110		+9
27	339°-0'	+5°-54'	250		+26
28	315°-20'	+6°-12'	255		+27
29	283°-20'	+2°-18'	340		+14
30	271°-20'	+3°-18'	445		+26
31	265°-20'	+3°-14'	542		+31
32	276°-40'	+4°-50'	620		+52

Elev.	Red.
427	
414	
415	
413	
408	
421	11.2
416	in Draw
421	11.2
425	7.2
441	
435	
429	7.2
437	
436	
453	
454	
441	
453	
458	
479	

Station	Hor. L	Vert. L	Stadia		Diff. Elev.	427	Rod
			Dist.	Hor. Dist.		Elev.	
33	284°-0'	+4°-58'	540		+47	479	
34	289°-50'	+4°-56'	500		+43	470	
35	299°-20'	+5°-56'	450		+46	473	
36	312°-50'	+5°-58'	405		+42	469	
37	328°-30'	+7°-14'	388		+48	475	
38	340°-20'	+6°-58'	402		+48	475	in Draw
39	354°-20'	+8°-20'	450		+65	492	
40	3°-30'	+7°-48'	500		+67	494	
41	359°-30'	+8°-32'	610		+89	516	
42	348°-0'	+9°-28'	555		+90	517	
43	338°-20'	+8°-28'	545		+79	506	in Draw
44	328°-30'	+9°-26'	545		+88	515	
45	315°-0'	+8°-46'	580		+87	514	
46	301°-30'	+7°-22'	630		+80	507	
47	152°-10'	-3°-36'	281 270		-18	409	
48	151°-20'	-3°-42'	405		-26	401	
49	150°-40'	-3°-44'	510		-33	394	
50							

(5.2)

Station	Hor. L	Vert. L	Stadia Dist.	Hor. Dist.	Diff. Elev.	Elev.	Rod
---------	--------	---------	--------------	------------	-------------	-------	-----

18	159°-40'		865		-10.4	440.4	
----	----------	--	-----	--	-------	-------	--

(5.2)

Sighted Back Along Section Line
 at 65+02th Intersection Section Line & Alternate Line

1	0°-09'	-1°-20'	700			430	15.6
---	--------	---------	-----	--	--	-----	------

2	0°-00'	-1°-18'	815		-26	441	12.2
---	--------	---------	-----	--	-----	-----	------

(5.2)

at 2 oriented at 1/4 cor. on Sec. Line

3	75°-20'		205		-11	441	
---	---------	--	-----	--	-----	-----	--

4	0°-30'		126		-11	430	16.2
---	--------	--	-----	--	-----	-----	------

5	120°-30'	+1°-14'	124		+3	444	
---	----------	---------	-----	--	----	-----	--

6	120°-20'	+1°-00'	235			441	9.2
---	----------	---------	-----	--	--	-----	-----

7	264°-10'		210		-11	430	16.2
---	----------	--	-----	--	-----	-----	------

8	240°-00'		345		-11	430	16.2
---	----------	--	-----	--	-----	-----	------

9	247°-00'		450 550		-11	430	16.2
---	----------	--	------------	--	-----	-----	------

10	241°-20'		460		-1	440	6.2
----	----------	--	-----	--	----	-----	-----

11	226°-50'	+1°-16'	385			441	13.2
----	----------	---------	-----	--	--	-----	------

12	240°-30'		178		-1	440	6.2
----	----------	--	-----	--	----	-----	-----

13	179°-30'		72		+4	445	1.2
----	----------	--	----	--	----	-----	-----

Profile
PIPE LINE CUTOFF
(G' R/w)

67th + Amherst to
El Cajon + Amherst.

6/9/37

N. Coote Δ Notes
P. Beerman Rod

Alignment on Pg. 38 -

	+	HI	-	El.
D ^W				453.70
	3.15	456.85		
			8.69	448.16
	3.03	451.19		
0-22 ^s			8.20	442.99
0+00			6.7	44.5
+30			4.5	46.7
+50			4.3	46.9
1+00			3.2	48.0
+50			2.2	49.0
			2.27	448.92
	2.70	451.62		
+75			2.9	48.7
2+00			3.3	48.3
+27			4.0	47.6
3+00			10.0	41.6
			10.29	441.33
	2.34	443.67		
3+34			6.2	37.5

35

Brass Plug in @ curb SW @ corner
El @ jaw + 67th Sts.

On Edge Pavement
Intersection PL R/w + Prop. Line -

	+	H	-	Σl.
3+88 ³		443.67	12.0	31.7
			11.46	432.21
	1.20	433.41		
4+26			6.2	27.2
			11.90	421.51
	1.55	423.06		
+76			3.1	20.0
5+00			5.2	17.5
+30			8.3	14.8
			2.07	420.99
	3.95	424.94		
+67			12.0	12.9
+90			8.5	16.4
6+25			5.4	19.5
			1.16	423.78
	11.53	435.31		
+55			9.8	25.5
7+00			1.86	433.45
	12.41	445.86		

Top Iron Pipe 3+88³

Fence Corner

Slough

In Pipe Trench

445.86

7+34

3.3 42.6

+55

1.98 443.88

37

On Curb Return Amherst + El Cajon.

Survey of
Six Foot R/w
From 67th + Amherst to
El Cajon & Amherst-

6/9/37 P. Beermann
N. Coote.

Profile on Pg. 34 -

Amherst

El Cajon Ave.

41.47' Lt.
40.09' Rt.

Slough

4+90 x 20" Pipe
3+88.13 Found 1" Pipe
6" Pipe

2+27

2+00

1+75

6'

Found 6"x6" Conc Mon

119.9

78° 4' 30"

0+00 Set 1/2" Pipe
75'

Found Decayed 3"x3 Stk

67th St.

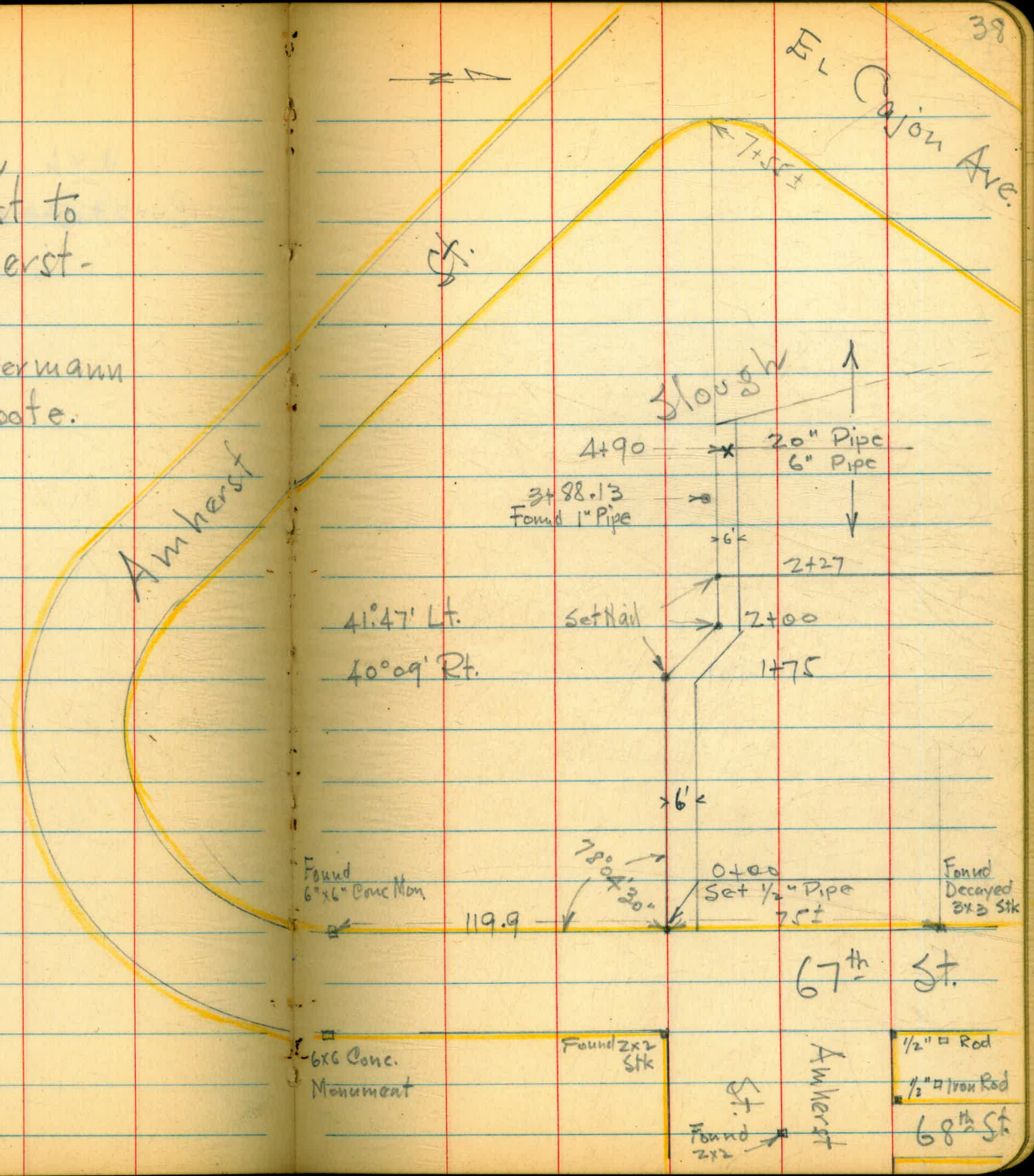
6"x6 Conc. Monument

Found 2"x2 Stk

Found 2"x2 St.

Amherst

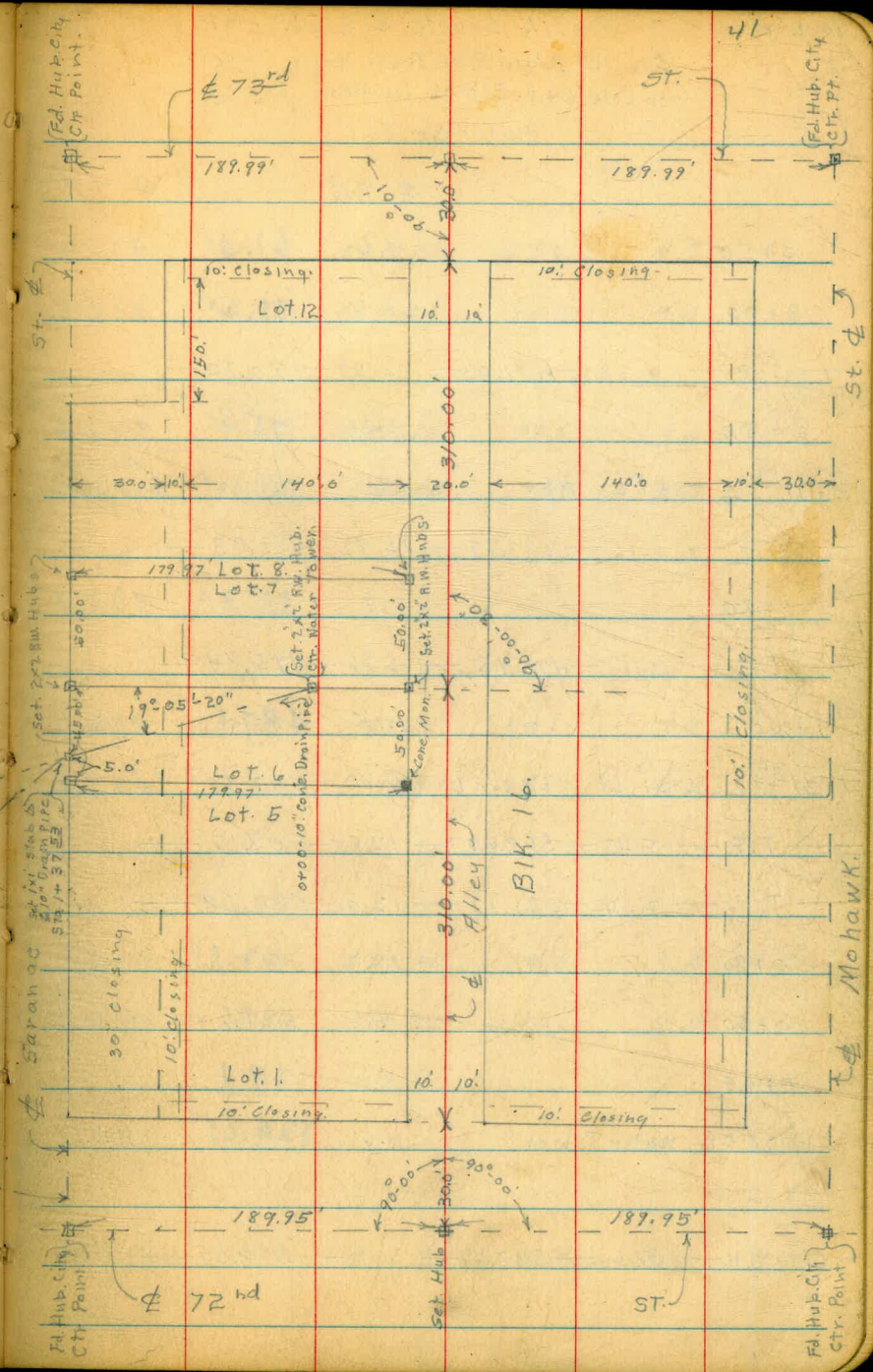
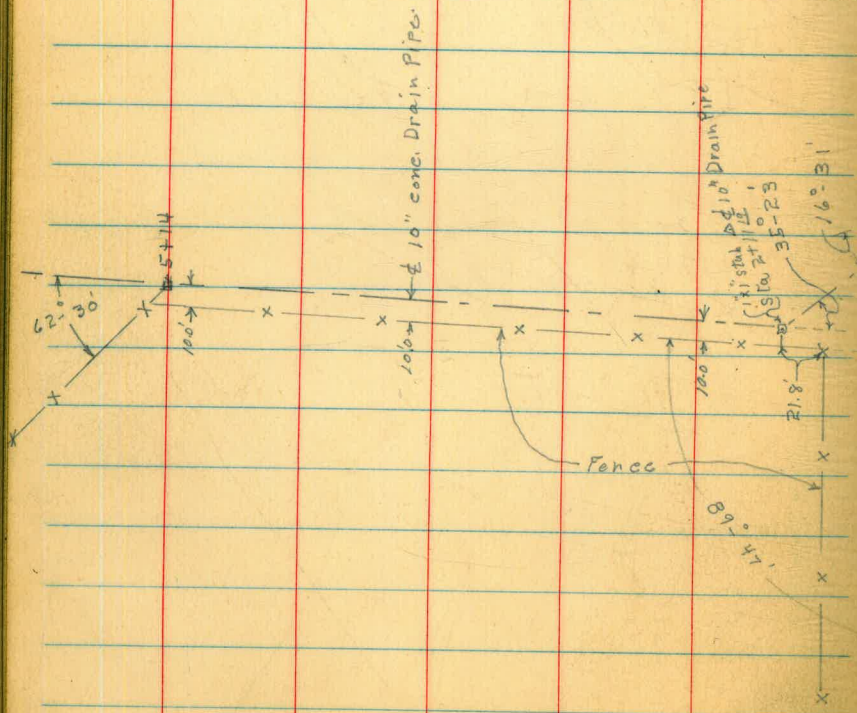
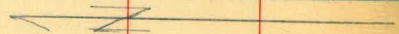
1/2" Rod
1/2" Iron Rod
68th St.



10-1-37

Miller
Walker
Bliss

Survey of Lots 647 BIK. 16 La Mesa Colony



41

offset stake
5.0 Lt of £.

Grade

cut

6+50		7.1	91.3 ✓		6.85	391.51			
6+30		6.5	91.9 ✓						
6+17	Bottom Wash	7.7	390.7 ✓						
6+07		4.9	93.5 ✓						
6+00		4.5	93.9 ✓		4.28	394.08			
5+50		5.2	93.2 ✓		5.14	393.22			
<hr/>									
T.P.	1.11	398.36	10.96	397.25					
5+14		12.02	396.2 ✓		10.96	397.25			
5+00		3.8	404.4 ✓	401.4	3.90	404.31	401.4	2.9	
<hr/>									
T.P.	0.24	408.21	12.92	407.97					
4+80		6.0	14.9 ✓	412.0					
<hr/>									
T.P.	0.01	420.89	13.09	420.88					
4+50		2.84	31.13 ✓	428.0	4.20	429.77	28.0	1.8	
<hr/>									
T.P.	0.07	433.97	13.00	433.90					
4+12		0.5	46.4 ✓	443.4					
<hr/>									
T.P.	0.52	446.90	12.71	446.38					
4+00		9.9	49.2 ✓	447.0	10.45	48.04			
<hr/>									
T.P.	0.52	459.09	12.46	458.57					
3+71.87	P.O.T.	12.46	458.57 ✓	455.6	12.84	458.19	55.6	2.6	
<hr/>									
T 471.03									

chk. Levels by Vert. L. 8⁰-08

Sta 371.87	El 358.57		
Sta 211.19	El 481.43		
	Dif. El. 22.86		
			22.89258

Tan 8⁰ 21.429
16.02
28.58
8.574
14.29

chk. Levels by Vert. L. 11-17

Sta 6+95	El 394.08		
Sta 3+71.97	El 458.57		
	Dif. El. 64.49		
			64.564185

Tan 11-17 = 19.95
323.63
161.815
291.267
323.63

100' Lt. of 6+17 9.6 388.8 bottom Wash.

7+29² Fence. N. Line Road.

7+10	4.0	94.4
6+95	4.28	394.08
6+80	4.7	93.7
6+68	7.5	390.9

398.36

chk. Levels by Vert. L. 16-10

Sta 211.19	El 481.43		
Sta 137.53	El 502.43		
	Dif. El. 21.37		
			21.354034

44
Tan 16-10 = 28.99
73.66
66.294
16.294
58.928
14.732

chk. Levels By Vert. L. 15-47

Sta 1+37.53	El 502.80		
Sta 0+50.	El 527.6		
	Dif. El. 24.4		
			24.73625

28.27
87.5
141.35
197.89
22.616

Length of 10" concrete pipe on slope 48.5 - Used 485' for payment.
Trench 0+50 to 5+14 = 464'
6' cross trench for tile - 6'
total 470 lin. ft.

Grade for Pier Excav.

BM.	5.30	533.30	528.00
-----	------	--------	--------

	523.9	9.4	
--	-------	-----	--

1/28/38 Hill
Huff
Osborne

Levels over city lot boundaries

BM	522	533.22	528.00
0		5.2	528.0
10 N		4.5	28.7
20 "		4.1	29.1
30 "		3.6	29.6
40 "		3.6	29.6
50 "		3.6	29.6
60 "		3.6	29.6
70 "		3.8	29.4
80 "		3.9	29.3
90 "		4.6	28.6
100 "		5.5	27.7
110 "		6.8	26.4
120 "		9.4	23.8
130 "		12.0	21.2
0			
10 E		4.9	28.3
20 "		4.9	28.3
30 "		4.6	28.6
40 "		4.7	28.5

16

College Reservoir

Mon. S.W. cor. city prop.
S.W. cor. city prop.

S.W. cor. city prop.

	533.22		
50 E	4.6	28.6	
60 "	4.5	28.7	
70 "	4.8	28.9	
80 "	5.1	27.8	
90 "	7.2	26.0	
100 E	9.2	24.0	
10 N	9.0	24.2	
20 "	10.1	23.1	
30 "	10.5	22.7	
40 "	11.1	22.1	
50 "	11.7	21.5	
60 "	11.8	21.4	
70 "	11.8	21.4	
80 "	12.6	20.6	
T.P.	12.55	520.67	
	0.69	521.36	
90 N	2.2	19.2	
100 "	3.3	18.1	
110 "	4.5	16.9	
120 "	5.9	15.5	

S.E. car city prop.

52136

130 N.	2.6	513.8
140 "	9.1	12.3
150 "	10.5	10.9
160 "	12.6	08.8
170 "	14.8	06.6
180 "	17.3	04.1
190 N. White	4.5	16.9
150 "	8.6	12.8
160 "	12.5	08.9
170 "	16.0	05.4
180 "	19.0	02.4
10 E	17.7	03.7
20 "	16.2	05.2
30 "	13.9	07.5
40 "	12.4	09.0
50 "	11.8	09.6
60 "	12.1	09.3
70 "	12.7	08.7
80 "	13.7	07.7
90 "	15.1	06.3

N. E. cor. city prop.

Continuing North on W. line

N. W. cor. city prop.

From N. W. cor.

521.36

T.P.

0.76 520.60

11.37 531.97

B.M.

3.95 528.02

Check on B.M.

Profile of "L" & "L²" line Murray P.L. Loc.

Cont'd From Book 544 page 77

B.M. 0.59 449.77 ✓ 449.18

17+00 9.9 39.9 ✓ 432.3

TP 0.32 437.51 12.58 437.19 ✓

17+50 8.9 28.6 ✓ 421.2

TP 2.79 427.27 13.03 424.48 ✓

17+85 6.0 21.3 ✓

18 8.2 19.1 410.9

+09 9.1 18.2 ✓

+16" E.C. 12.1 15.2 ✓

Set B.M. 12.71 414.56 ✓

18+50 17.8 09.5 ✓ 401.1

50.

Stake in ground 31' Rt, 16+50

7.6

7.4

8.2

Stake in ground, 18' Lt - 18+16

8.4

427.27

18+64		20.3	407.0	✓	
+80		25.5	01.8	-396.3	6.5
+85		24.3	03.0	✓	
594		23.2	04.1	✓	
19+00		20.4	06.9	399.7	7.2
+11		16.9	10.4	✓	
+22		15.3	12.0	✓	
+50		9.4	17.9	410.6	7.3
A	12.62	439.69	0.20	427.07	✓
20		9.7	30.0	-421.6	8.4
+18		5.5	34.2	✓	
+32		4.1	35.6	✓	

439.69

20+50 0.6 439.1 -431.4 7.7

TP 12.80 452.46 0.03 439.66 ✓

21 4.7 47.8 ✓ 439.8 8.0

TP 13.04 465.08 0.42 452.04 ✓

21+37 10.8 54.3 ✓ 440.5

+50 9.5 55.6 -446.3 9.3

22 6.1 59.0 -450.8 8.2

+50 4.3 60.8 ✓ 453.3 7.5

23 2.8 62.3 ✓ 454.5 7.8

TP 7.59 470.13 2.54 462.54 ✓

23+50 6.6 63.5 ✓ 455.8 7.7

461.03

31+00			13.2	447.8	439.9
+50			13.1	47.9	440.0
32			13.7	47.3	440.1
+50			13.4	47.6	440.2
33			12.3	48.7	441.3
+50			9.5	51.5	443.5
34			8.2	52.8	444.9
+50			8.2	52.8	445.3
TP	2.71	456.39	7.35	453.68	
35			3.6	52.8	445.7
+50			2.8	53.6	446.1
36			2.9	53.5	446.1
+50			3.6	52.8	445.2
37			4.5	51.9	444.3
+50			6.1	50.3	442.6
38			8.3	48.1	440.9
+50			9.8	46.6	439.3
39			10.5	45.9	437.6
TP					
Set B.M.	0.42	444.18	12.63	443.76	
39+50			1.4	42.8	435.0

7.9
7.9
7.2
7.4
7.4
8.0
7.9
7.5
7.1
7.5
7.4
7.6
7.6
7.7
7.2
7.3
8.3
Stake in ground 28 ft 39+83
7.8

444.18

40+00		44	439.8	✓ 432.9	7.4
+50		7.8	36.4	✓ 429.8	6.6
+85		7.1	37.1	✓	
41		8.4	35.8	✓ 427.2	8.6
+14		8.9	35.3	✓	
+50		11.8	34.4 32.4	✓ 424.2	8.2
TP	0.14	431.31	13.01	431.17 ✓	
42		9.7	27.6	✓ 419.3	8.3
+20		5.4	25.9	✓	
+50		10.8	20.5	✓ 412.8	7.7
43+00		16.9	14.4	✓ 407.3	7.1
+09		18.2	13.1	✓	
+13		19.5	11.8	✓	
+16		18.3	13.0	✓	
+33		17.6	13.7	✓	
+37		18.7	12.6	✓	
+40		17.5	13.8	✓ 406.3	7.5
+50		16.8	14.5	✓ 407.2	7.3
44+00		7.4	23.9	✓ 416.4	7.5
+21		2.8	28.5	✓	

		431.31			
TR	12.85	443.43	0.73	430.58	✓
44135			12.5	30.9	✓
+40			10.0	33.4	✓
+50			8.0	35.4	425.1
+57			6.4	37.0	✓
45			2.8	40.6	432.7
TR	12.51	455.90	0.04	443.39	✓
+50			10.0	45.9	458.2
46			4.4	51.5	442.8
+50			2.8	53.1	445.6
47			2.4	53.5	446.5
+50			2.9	53.0	445.4
+85			4.5	51.4	✓
48			6.1	49.8	442.3
TR Set B.M.			5.70	450.20	✓
	0.32	450.52			
48150			5.3	45.2	437.6
49			11.7	38.8	431.4
TR	0.43	438.04	12.91	437.61	✓

10.3

7.9

7.7

8.7

7.5

7.0

7.6

7.5

Nail in 2x2 hub, 34 RT 48+00

7.6

7.9

438.04

49+50 7.0 431.0 423.3

7.7

+88 13.5 24.5 ✓

TT 0.10 425.22 12.92 425.12 ✓

50 3.8 21.4 ✓ 413.3

8.1

+22 10.2 15.0 ✓

+25 14.9 407.8

7.1

450 11.3 13.9 ✓ 407.8

6.1

+78 9.3 15.9 ✓

51 6.6 18.6 ✓ 407.8

10.8

+17 8.2 17.0 ✓

+22 11.7 13.5 407.8

5.7

+32 7.7 17.5 ✓

+50 3.3 21.9 ✓ 413.0

8.9

		425.22			
TP	12.83	437.45	0.60	424.62	✓
52			7.6	29.9	422.3
TP	12.94	450.37	0.02	437.43	✓
52+50			11.9	38.5	431.1
53			4.2	46.2	438.8
TP	12.59	462.75	0.21	450.16	
53+50			10.3	52.5	444.7
54			5.8	57.0	449.2
+1990 F.C.			4.6	58.2	✓
+23.50			4.4	58.4	✓
+50			2.7	60.1	452.8
TP					
Set B.M.	11.37	473.77	0.35	462.40	
55+00			10.3	63.5	455.7
+50			8.6	65.2	457.7
56			7.4	66.4	459.0
+50			6.4	67.4	459.7
57			6.0	67.8	460.3
+50			5.3	68.5	461.0
58			4.6	69.2	460.9

7.6

7.4

7.4

7.8

7.8

7.3

Nail in 1x1" - 41' Lt. 55+11

7.8

7.6

7.4

7.7

7.5

7.5

8.3

473.77

58+50		5.6	468.2	460.8	7.4
59		5.7	68.1	460.7	7.4
+50		4.4	69.4	460.6	8.8
+75		3.8	70.0		
60		5.0	68.8	460.2	8.6
+50		6.3	67.5	459.8	7.7
61		7.0	66.8	459.4	7.4
+50		7.3	66.5	459.0	7.5
62		7.4	66.4	458.6	7.8
TR	1.46	468. ¹⁹ 20	7.04	466. ³ 74	
62+50		2.4	65.8	458.2	7.6
63		2.9	65.3	457.8	7.5
+50		2.8	65.4	457.4	8.0
64		3.7	64.5	457.0	7.5
+25		3.7	64.5		
+50		4.8	63.4	456.0	7.4
65		6.2	62.0	454.6	7.4
+50		8.2	60.0	452.3	7.7
66		11.6	56.6	449.1	7.5
TR	3.46	458. ⁷⁷ 78	12.88	455. ³¹ 32	

458.77 ✓
~~457.78~~

66450 6.0 452.8 ✓ 445.0

67 9.8 49.0 ✓ 440.8

+33⁵⁰ 12.34 ~~445.44~~ 439.0

IP 12.55 ^{471.05} ~~470.06~~ 0.27 ^{458.50} ~~457.51~~

IP 4.33 ^{474.20} ~~473.21~~ 1.18 ^{469.87} ~~468.88~~

1.56 ^{472.64} ~~471.65~~ Rec. 472.59

7.8

8.2

7.4

On high point of 2x2 hub (focal point)

Nail in power pole #

125' Lt 64+40 - "A" line

For xsecs 0738 to 1468 see P. 71.

12/30/41

Super
Hodgeson
Davis

€

X-sections - Sta. 2400 to 12+50

B.N. 8.66 443.10 434.50 ✓

1468 9.9 433.2 ✓

2400 4.2 438.9 ✓

+15 2.7 440.4 ✓

+23 0.0 443.1 ✓

TP 12.98 455.91 0.17 442.93 ✓

2429 11.8 444.1 ✓

+39 7.3 486 ✓

Lt.

Rt.

Nail in hd plug - SW. Cor. Buttress

Page 71

Note: From sta. 2400 back to Dam is covered with
from 5 to 20 feet of brush piles. Will have to be
x-sectioned later.

^{427.2} 431.40	^{427.2} 431.40	^{451.4} 455.60	^{464.9} 469.10	^{472.7} 476.90
-11.7 41	-11.7 17	+12.5 19	+26.0 33	+33.8 53

^{427.2} 429.9	^{427.3} 430.0	^{446.4} 447.10	^{462.7} 467.0	^{469.10} 474.0	^{476.70} 481.0	^{477.8} 482.0	^{477.8} 482.0
-13.3 45	-13.1 24	+6.0 6	+19.6 20	+26.0 33	+33.5 46	+34.7 55	

Ok. ^{426.7} -16.2 50	^{427.1} -16.0 28	^{448.4} +5.3 7	^{460.1} +17.0 8	^{461.1} +18.0 22	^{461.1} +22.0 34	^{461.1} +28.0 37	^{474.0} +30.0 47.156	^{477.8} +32.0 60
-------------------------------------	---------------------------------	-------------------------------	--------------------------------	---------------------------------	---------------------------------	---------------------------------	-------------------------------------	---------------------------------

^{438.9} -17.0 50	^{439.10} -16.2 29	^{445.9} -10.0 26	^{464.9} +19.0 6	^{468.9} +13.0 12	^{476.9} +21.0 32	^{484.9} +27.0 36	^{488.9} +31.0 60
^{438.9} -15.0 29	^{440.0} -10.0 18	^{445.0} -9.0 9	^{461.4} +5.5 9	^{468.4} +12.5 36	^{477.3} +23.4 48	^{484.4} +27.0 36	^{488.4} +31.0 60

455.91

2150 7.1 448.8 ✓

+62 8.9 47.0 ✓

+80 1.4 54.5 ✓

+92 0.9 55.0 ✓

TP 10.22 465.91 0.22 455.69 ✓

3+00 5.6 60.3 ✓

+13 60.7

+25²⁷-4 4.7 61.2 ✓

+41 6.5 59.4 ✓

+48 14.3 51.6 ✓

+56 10.8 55.1 ✓

62

$\frac{438.8}{-21.4}$ $\frac{439.9}{-21.8}$ $\frac{440.9}{-15.0}$ $\frac{441.9}{-7.5}$ $\frac{442.9}{-7.8}$ $\frac{443.9}{-1.0}$ $\frac{444.9}{+2.5}$ $\frac{445.9}{+3.0}$ $\frac{446.9}{+17.2}$ $\frac{447.9}{+20.4}$ $\frac{448.9}{+22.0}$

$\frac{449.9}{-11.3}$ $\frac{450.9}{-6.0}$ $\frac{451.9}{-0.1}$ $\frac{452.9}{+1.2}$ $\frac{453.9}{+1.4}$ $\frac{454.9}{+1.9}$ $\frac{455.9}{+2.1}$ $\frac{456.9}{+2.4}$ $\frac{457.9}{+2.7}$ $\frac{458.9}{+3.5}$ $\frac{459.9}{+3.4}$

$\frac{460.9}{-3.1}$ $\frac{461.9}{-1.5}$ $\frac{462.9}{-1.5}$ $\frac{463.9}{-1.6}$ $\frac{464.9}{-1.5}$ $\frac{465.9}{+2.0}$ $\frac{466.9}{+2.3}$ $\frac{467.9}{+1.0}$ $\frac{468.9}{+1.0}$ $\frac{469.9}{+1.0}$ $\frac{470.9}{+1.0}$

$\frac{471.9}{-3.1}$ $\frac{472.9}{-1.5}$ $\frac{473.9}{-1.5}$ $\frac{474.9}{-1.6}$ $\frac{475.9}{-1.5}$ $\frac{476.9}{+2.0}$ $\frac{477.9}{+2.3}$ $\frac{478.9}{+1.0}$ $\frac{479.9}{+1.0}$ $\frac{480.9}{+1.0}$ $\frac{481.9}{+1.0}$

$\frac{482.9}{-2.2}$ $\frac{483.9}{-1.0}$ $\frac{484.9}{-3.2}$ $\frac{485.9}{-3.2}$ $\frac{486.9}{+3.0}$ $\frac{487.9}{+4.0}$ $\frac{488.9}{+7.3}$ $\frac{489.9}{+10.2}$

vert. drop
 $\frac{490.9}{-20.0}$ $\frac{491.9}{-11.0}$ $\frac{492.9}{-7.0}$ $\frac{493.9}{-1.5}$ $\frac{494.9}{-9.5}$ $\frac{495.9}{-7.0}$ $\frac{496.9}{-1.2}$ $\frac{497.9}{+2.4}$ $\frac{498.9}{+2.0}$ $\frac{499.9}{+5.4}$ $\frac{500.9}{+10.4}$

(X-sections taken at R angle to tangent ahead).
 $\frac{501.9}{-24.1}$ $\frac{502.9}{-18.3}$ $\frac{503.9}{-19.0}$ $\frac{504.9}{-13.0}$ $\frac{505.9}{-4.4}$ $\frac{506.9}{-6.2}$ $\frac{507.9}{-0.3}$ $\frac{508.9}{+4.1}$ $\frac{509.9}{+7.8}$ $\frac{510.9}{+7.6}$ $\frac{511.9}{+11.3}$

E1.
 $\frac{512.9}{-19.5}$ $\frac{513.9}{-1.8}$ $\frac{514.9}{-11.8}$ $\frac{515.9}{+3.5}$ $\frac{516.9}{+7.2}$ $\frac{517.9}{+17.0}$ $\frac{518.9}{+19.2}$

$\frac{519.9}{-19.3}$ $\frac{520.9}{-17.0}$ $\frac{521.9}{-13.0}$ $\frac{522.9}{-3.7}$ $\frac{523.9}{+8.3}$ $\frac{524.9}{+15.0}$

	465.91			
3475		99	456.0	✓
4400		11.3	54.6	✓
TR	4.33	458.19	12.05	453.86 ✓
4450		7.1	51.1	✓
+70		8.8	49.4	✓
+77		10.5	47.7	✓
484		7.0	51.2	✓
5400		5.2	53.0	✓
+10		5.3	52.9	✓
140		5.7	52.5	✓

	Lt	C	Rt
	$\frac{445.7}{435.9}$ $\frac{-20.2}{50}$	$\frac{454.0}{444.1}$ $\frac{-11.9}{30}$	$\frac{459.3}{449.4}$ $\frac{-6.5}{28}$
	$\frac{472.7}{463.0}$ $\frac{+7.0}{25}$	$\frac{476.4}{466.5}$ $\frac{+10.5}{35}$	
	$\frac{457.7}{446.4}$ $\frac{-9.2}{25}$	$\frac{474.3}{463.0}$ $\frac{+8.3}{25}$	
	$\frac{449.5}{442.4}$ $\frac{-7.1}{35}$	$\frac{465.2}{458.1}$ $\frac{+7.2}{14}$	$\frac{469.7}{462.6}$ $\frac{+7.1}{25}$
	$\frac{448.9}{440.1}$ $\frac{-8.8}{25}$	$\frac{452.3}{443.5}$ $\frac{-8.8}{12}$	$\frac{465.7}{456.9}$ $\frac{+8.8}{16}$
	$\frac{469.4}{460.6}$ $\frac{+8.8}{25}$	$\frac{469.4}{460.6}$ $\frac{+8.8}{25}$	
	$\frac{448.9}{438.4}$ $\frac{-10.5}{30}$	$\frac{450.8}{440.3}$ $\frac{-10.5}{20}$	$\frac{464.5}{454.0}$ $\frac{+10.5}{16}$
	$\frac{469.2}{458.7}$ $\frac{+10.5}{25}$		
	$\frac{449.5}{442.3}$ $\frac{-7.2}{25}$	$\frac{469.2}{462.3}$ $\frac{+6.9}{25}$	
	$\frac{445.4}{440.6}$ $\frac{-4.8}{25}$	$\frac{465.6}{460.3}$ $\frac{+5.3}{19}$	$\frac{469.3}{464.0}$ $\frac{+5.3}{21}$
	$\frac{466.2}{460.5}$ $\frac{-5.7}{25}$	$\frac{469.2}{464.2}$ $\frac{+5.0}{27}$	$\frac{474.2}{465.9}$ $\frac{+8.3}{28}$

458.19

5.53

6.8 451.4 ✓

+78

9.2 49.0 ✓

185

2.5 55.7 ✓

197¹⁸ 86.

2.8 55.4 ✓

6000

2.8 55.4 ✓

+10

1.3 56.9 ✓

+20

2.2 56.0 ✓

+28

0.8 57.4 ✓

TP

6.56 460.90 3.85 454.34 ✓

64.

LX.

E

RY.

$$\begin{array}{r} 446.1 \\ 459.3 \\ -12.5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 464.3 \\ 457.5 \\ +6.1 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 467.9 \\ 461.1 \\ +9.7 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 472.6 \\ 466.8 \\ +15.4 \\ \hline 27 \end{array}$$

$$\begin{array}{r} 479.0 \\ 472.2 \\ +30.8 \\ \hline 34 \end{array}$$

$$\begin{array}{r} 445.7 \\ 436.5 \\ -12.5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 466.2 \\ 457.0 \\ +8.0 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 468.2 \\ 459.0 \\ +10.0 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 474.7 \\ 465.5 \\ +16.5 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 480.6 \\ 471.4 \\ +22.4 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 482.2 \\ 473.0 \\ +26.0 \\ \hline 34 \end{array}$$

$$\begin{array}{r} 434.8 \\ 424.4 \\ -23.3 \\ \hline 33 \end{array}$$

$$\begin{array}{r} 441.6 \\ 431.1 \\ -16.5 \\ \hline 17 \end{array}$$

$$\begin{array}{r} 450.8 \\ 441.7 \\ -8.0 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 470.7 \\ 461.7 \\ +12.0 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 481.9 \\ 472.9 \\ +23.2 \\ \hline 37 \end{array}$$

$$\begin{array}{r} 482.2 \\ 473.2 \\ +24.0 \\ \hline 47 \end{array}$$

$$\begin{array}{r} 485.7 \\ 476.7 \\ +27.5 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 424.5 \\ 417.7 \\ -33.2 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 438.1 \\ 435.3 \\ -20.1 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 447.0 \\ 440.2 \\ -15.2 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 452.2 \\ 444.9 \\ -6.0 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 456.1 \\ 453.3 \\ -2.1 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 460.5 \\ 457.4 \\ +2.3 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 472.2 \\ 464.4 \\ +14.3 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 478.2 \\ 468.5 \\ +20.0 \\ \hline 27 \end{array}$$

$$\begin{array}{r} 482.2 \\ 473.4 \\ +24.0 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 482.2 \\ 473.4 \\ +24.0 \\ \hline 45 \end{array}$$

$$\begin{array}{r} 485.0 \\ 476.2 \\ +27.5 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 425.4 \\ 424.0 \\ -32.8 \\ \hline 45 \end{array}$$

$$\begin{array}{r} 446.0 \\ 445.2 \\ -12.2 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 475.4 \\ 474.9 \\ +17.5 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 479.7 \\ 478.9 \\ +21.5 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 479.7 \\ 478.9 \\ +21.5 \\ \hline 41 \end{array}$$

$$\begin{array}{r} 482.2 \\ 481.4 \\ +24.0 \\ \hline 43 \end{array}$$

	460.90		
6+40	0.7	460.2	✓
550	6.7	54.2	✓
570	10.5	50.4	✓
590	12.9	48.0	✓
+90	14.3	46.6	✓
7+00	12.7	48.2	✓
415	10.8	50.1	✓
525	8.7	52.2	✓
535	6.8	54.1	✓
555	9.2	51.7	✓

$\begin{array}{r} 427.10 \\ 426.4 \\ -33.8 \\ \hline 40 \end{array}$
 $\begin{array}{r} 441.6 \\ 439.9 \\ -16.3 \\ \hline 12 \end{array}$
 $\begin{array}{r} 471.8 \\ 472.5 \\ +11.6 \\ \hline 17 \end{array}$
 $\begin{array}{r} 478.9 \\ 478.2 \\ +18.0 \\ \hline 29 \end{array}$
 $\begin{array}{r} 478.9 \\ 478.2 \\ +18.0 \\ \hline 40 \end{array}$
 $\begin{array}{r} 482.6 \\ 481.9 \\ +21.2 \\ \hline 44 \end{array}$

old road

$\begin{array}{r} 436.9 \\ 424.0 \\ -24.0 \\ \hline 40 \end{array}$
 $\begin{array}{r} 449.9 \\ 461.0 \\ +19.0 \\ \hline 29 \end{array}$
 $\begin{array}{r} 481.9 \\ 478.2 \\ +28.4 \\ \hline 36 \end{array}$
 $\begin{array}{r} 481.9 \\ 478.2 \\ +28.5 \\ \hline 45 \end{array}$
 $\begin{array}{r} 494.0 \\ 481.1 \\ +33.0 \\ \hline 48 \end{array}$

old road

$\begin{array}{r} 435.2 \\ 423.4 \\ -26.0 \\ \hline 40 \end{array}$
 $\begin{array}{r} 441.4 \\ 430.6 \\ -19.5 \\ \hline 31 \end{array}$
 $\begin{array}{r} 447.9 \\ 437.1 \\ -13.0 \\ \hline 19 \end{array}$
 $\begin{array}{r} 468.2 \\ 457.4 \\ +7.3 \\ \hline 11 \end{array}$
 $\begin{array}{r} 484.4 \\ 473.6 \\ +23.3 \\ \hline 33 \end{array}$
 $\begin{array}{r} 484.4 \\ 474.1 \\ +24.0 \\ \hline 40 \end{array}$
 $\begin{array}{r} 490.9 \\ 480.1 \\ +30.0 \\ \hline 44 \end{array}$

old road

$\begin{array}{r} 435.2 \\ 428.4 \\ -25.7 \\ \hline 35 \end{array}$
 $\begin{array}{r} 457.4 \\ 446.5 \\ -7.6 \\ \hline 6 \end{array}$
 $\begin{array}{r} 472.10 \\ 463.5 \\ +11.2 \\ \hline 15 \end{array}$
 $\begin{array}{r} 479.9 \\ 470.1 \\ +19.0 \\ \hline 27 \end{array}$
 $\begin{array}{r} 479.9 \\ 470.1 \\ +19.0 \\ \hline 36 \end{array}$
 $\begin{array}{r} 484.7 \\ 477.9 \\ +23.8 \\ \hline 39 \end{array}$

old road

460.90

7+65

8.2 452.7 ✓

+80

6.6 54.3 ✓

+90

6.7 54.2 ✓

8+00

6.5 54.4 ✓

+45

3.9 57.0 ✓

+50

4.8 56.1 ✓

+68⁵⁰ EC.

4.5 56.4 ✓

+90

6.8 54.1 ✓

9+00

8.8 52.1 ✓

+10

10.1 50.8 ✓

66.

LH

E

RH

~~434.7~~
428.3
~~438.2~~
431.7
~~447.9~~
441.5
~~471.9~~
465.3
~~475.9~~
469.3
~~476.2~~
469.6
~~479.9~~
473.3
~~483.7~~
477.1
 -26° / 41 -22° / 32 -19° / 19 +11° / 15 +15° / 21 +15° / 29 +19° / 32 +22° / 40
 old road

~~440.2~~
433.7
~~454.7~~
448.4
~~467.9~~
461.4
~~471.9~~
465.9
~~477.9~~
471.4
~~481.6~~
475.1
 -20° / 42 -16° / 24 +17° / 16 +13° / 22 +14° / 34 +17° / 36 +20° / 50
~~452.8~~
446.1
~~461.3~~
455.2
~~467.9~~
461.4
~~468.7~~
462.1
 -89° / 25 +43° / 13 +73° / 17 +78° / 30
 old road

~~451.3~~
446.8
~~456.7~~
452.2
~~464.4~~
459.9
~~467.5~~
463.0
~~467.4~~
462.9
 -96° / 25 -42° / 14 +35° / 11 +66° / 13 +65° / 27
~~452.4~~
446.6
~~455.7~~
448.4
~~459.1~~
452.3
~~468.9~~
462.1
~~468.7~~
462.1
 -85° / 25 -57° / 16 -18° / 8 +82° / 17 +82° / 30
 old road

460.90

9120		11.4	449.5	✓	
TT	9.87	458.06	1269	448.21	✓
9140		16.0	42.1	✓	
150		18.0	40.1	✓	
154		19.5	38.6	✓	
162		15.6	42.5	✓	
+87		14.4	43.7	✓	
10100		13.7	44.4	✓	
+15		10.8	47.3	✓	
+27		9.5	48.5	✓	

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Super
Moodys
Davis

LT.	Σ	Rt.
454.9 442.9	457.9 446.5	466.5 455.1
-66 25	-30 7	+56 31
		+100 41
		+102 54

451.0 435.0	460.4 444.3	462.10 446.11	470.4 459.5	477.10 459.7
-71 25	+22 12	+40 26	+155 42	+160 53

450.10 430.6	461.10 441.6	469.0 449.5	474.3 459.8	476.10 456.6	476.8 457.0
-80 29	+30 11	+109 22	+152 34	+180 35	+184 48
450.3 430.3	450.7 434.6	465.10 449.5	469.10 453.5	472.10 450.4	473.7 456.7
-122 25	-79 11	+70 20	+110 29	+139 30	+142 42

445.4 431.0	464.10 449.7	469.10 454.7	469.5 455.1
-127 25	+60 11	+110 13	+114 25

444.10 433.3	463.10 452.3	463.7 452.9	468.6 451.8	482.10 471.3
-140 25	+50 8	+55 17	+105 20	+240 42

	468.82		
11+80			463.9
12+00		5.0	463.8 ✓
+10 ² E.L.		4.2	64.6 ✓
+50		4.6	64.2 ✓
+87 ⁵⁰ B.C.		7.3	61.5 ✓
13+00		7.4	61.4 ✓
+50		8.2	60.6 ✓
TR	5.44	461.57	12.69 456.13 ✓
14+00		6.4	55.2 ✓
+33		9.9	51.7 ✓

495 444.6	449 441.9	477 452.2	470 465.9	490 485.4	491 486.9
-19 ³ 38	-19 ⁰ 30	-11 ² 24	+2 ⁰ 6	+21 ⁵ 17	+23 ⁰ 40
457 452.0	461 456.4	477 472.8	486 481.9	492 487.5	
-14 ⁸ 33	-7 ⁴ 18	+9 ⁰ 14	+18 ⁰ 19	+23 ⁷ 50	
458 451.6	461 457.0	477 473.6	487 481.6	492 489.6	492 488.1
-13 ⁰ 35	-7 ⁵ 17	+9 ⁰ 16	+13 ⁰ 25	+20 ⁰ 33	+23 ⁵ 50
457 453.0		479 474.9			
-11 ² 25		+10 ⁷ 25			

Note: side slopes uniform from here on.

461.57

14450 8.3 453.3 ✓

15400 3.4 58.2 ✓

150 1.3 60.3 ✓

16400 4.1 57.5 ✓

B.M. 12.42 449.15 ✓

ck on B.M. - stake in ground 31 Rt, 16150. El. 449.18

438.65

1+02

6.2 432.4 ✓

1+19

8.5 430.1 ✓

1+30

7.8 430.8 ✓

1+42

4.3 434.3 ✓

1+50

3.9 434.7 ✓

1+68

5.4 433.2 ✓

72

LT

454.4	447.4	442.4	441.9	431.4	433.4	428.6	433.8	439.4	451.4	452.4
+22°	+15°	+10°	+9°	-10	+10	-38	+14	+70	+198	+200
68	47	43	36	11	6	7	25	38	54	60

Pl. bench

444.9	444.9	442.6	428.9	427.3	433.1	435.1	435.1	453.1	462.1
+142	+142	+125	-12	-28	+30	+53	+50	+230	+320
63	52	43	26	16	7	14	24	47	66

Pl. bench

446.2	444.9	432.8	426.8	426.5	434.8	434.6	439.0	444.8	456.8
+152	+142	+20	-40	-43	+40	+38	+82	+140	+260
73	64	31	24	15	9	16	26	38	50

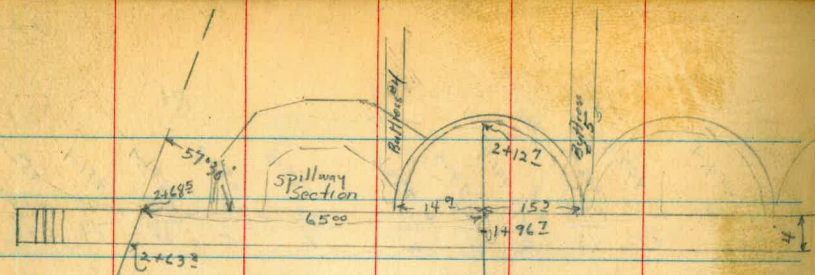
437.7	426.5	426.7	434.5	466.7
+32	-82	-80	-0.2	+320
67	34	14	4	70

436.2	434.7	427.0	427.2	439.6	455.6	466.2	469.2
+30	+18	-63	-60	+64	+224	+330	+360
73	65	50	10	12	46	50	65

Feed
Booster lines - from Murray P.K. location
to Murray Dam

10/16/42
Hill
Soper
King
Davis

73



Murray Dam Axis →

2+37²³ Δ
53°24'24"

1+43⁷⁹ Δ
23°50'00" Rt

67°00'

2+80
0+00

60°36'

3+25²⁸ Δ

3+65
0+00

Murray P.K. location

"F" line

10/17/42
Soper
King
Davis

77

Profile "A" line

B.M. 5.90 467.74 ✓ 461.84

0+00 11.8 435.9

0+30 5.4 462.3

TP 9.59 477.08 ✓ 0.25 467.49 ✓

0+50 9.1 468.0

0+60 5.3 471.8

TP 12.44 489.30 ✓ 0.22 476.86 ✓

0+91 8.5 480.80

1+00 8.0 481.30

1+25 1.0 488.3

TP 13.06 502.16 ✓ 0.20 489.10 ✓

1+50 4.2 498.0

TP 13.23 514.12 ✓ 0.27 501.89 ✓

2+00 2.0 513.9

TP 12.95 526.30 ✓ 0.77 513.35 ✓

2+10 10.6 515.7

2+27 0.7 525.6

(cont.)

526.30 ✓

11.77 537.72 ✓ 0.35 525.95 ✓

2437⁰³A 94 528.3

2950 5.5 532.2

2459 2.8 534.9

2463⁸ 2.26 535.46 ✓

2468⁵ 1.30 536.4

75

Conc. walkway

Top of curbing

11/17/42
Soper
King
Davis

76

Profile - "B" line

B.M. 5.96 467.74 461.84

0+00 12.8 459.9

0+12 7.1 460.6

0+28 5.3 462.4

0+50 0.6 467.1

TP 9.59 477.08 ✓ 0.25 467.49 ✓

0+70 2.6 474.5

TP 12.44 489.30 ✓ 0.22 476.86 ✓

1+00 8.9 ~~476.86~~
480.9

1+10 3.6 485.7

TP 13.06 502.16 ✓ 0.20 489.10 ✓

1+33 10.8 491.4

1+43.79_A 6.4 495.8

TP 12.23 514.12 ✓ 0.27 501.89 ✓

1+60 7.9 509.2

1+84 8.1 506.0

2+00 1.4 512.7

2+12.7 7.05 514.6

2+12.7 7.9 522.0

MING
OTTEN
HYMEL
1-26-43

Pratic 10' offset - Murray RV

B.M.	466.470			439.94	
⁶⁷⁺²⁵ T.D.	12.25	447.19	0.17	447.02	
67+25	11.54	458.56	11.5	47.1	439.7
67			9.3	49.7	441.5
66+50			6.0	52.6	445.7
66			1.4	57.2	449.8
T.P.	11.00	469.25	0.31	458.25	
65+50			9.0	60.3	453.0
65			7.0	62.3	455.3
64+75			6.3	63.0	456.0
64+50			5.9	63.9	456.7
64			5.0	64.3	457.7
63+50			3.9	65.4	458.1
63			4.6	64.7	458.5
62+50			4.0	65.3	458.9
62			3.6	65.7	459.3
61+50			3.5	65.8	459.7
61+00			3.1	66.2	460.1
⁶²⁺⁰⁰ L+62+40 8.17			6.23	63.02	
67+33				46.3	439.0

Not correct

10' offset grades

77

cut

7.4

7.8

6.9

7.4

7.3

7.0

7.0

6.7

6.6

7.3

6.2

6.4

6.4

6.1

6.1

7.3

King
Otter
2-15-43

78

B.m. 62+90			62.99			
60+50	11.06	74.05	67.3	459.8		7.5
60			5.5	68.6	460.2	8.4
+50			4.8	69.2	460.6	8.6
59			out	67.6	460.7	6.9
+50			6.1	68.0	460.8	7.2
58			5.7	68.4	460.9	7.5
+50			6.1	68.0	461.0	7.0
57			6.5	67.6	460.3	7.3
+50			7.0	67.1	459.9	7.4
56			8.3	65.8	459.0	6.8
T.P.	0.43	66.15	8.33	65.72		
+50			1.1	65.1	457.7	7.4
55			3.0	63.2	455.7	7.5
+50			6.8	59.4	452.8	6.6
B.C. +19.80			8.4	57.8	450.6	7.2
54			9.6	56.6	449.2	7.4
T.P.	0.38	54.57	11.96	54.19		
+50			2.9	51.7	444.7	7.0
+25			6.0	48.6	42.0	6.6
53			9.6	45.0	38.8	6.2
T.P.			12.17		42.40	

See Book 378 Page 63

5+90 -8.5
5+57 12.0

449.25
6.12
443.13

53 53
22 38
36 33
112 37
127 161

434.50

Nail on road 25' 22 226.0 461.84

434.50 Plug in both

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
Roadway 16 feet wide. Side Slopes 1 on 1 1/2
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 $41.9 + (20 - 16) \div 2$ or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.