

W
390

ENGINEERS
MINING
TRANSIT BOOK
No. 422 F

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

MICROFILMED
Distances from center line to slope stake 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 20.6. 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 distances 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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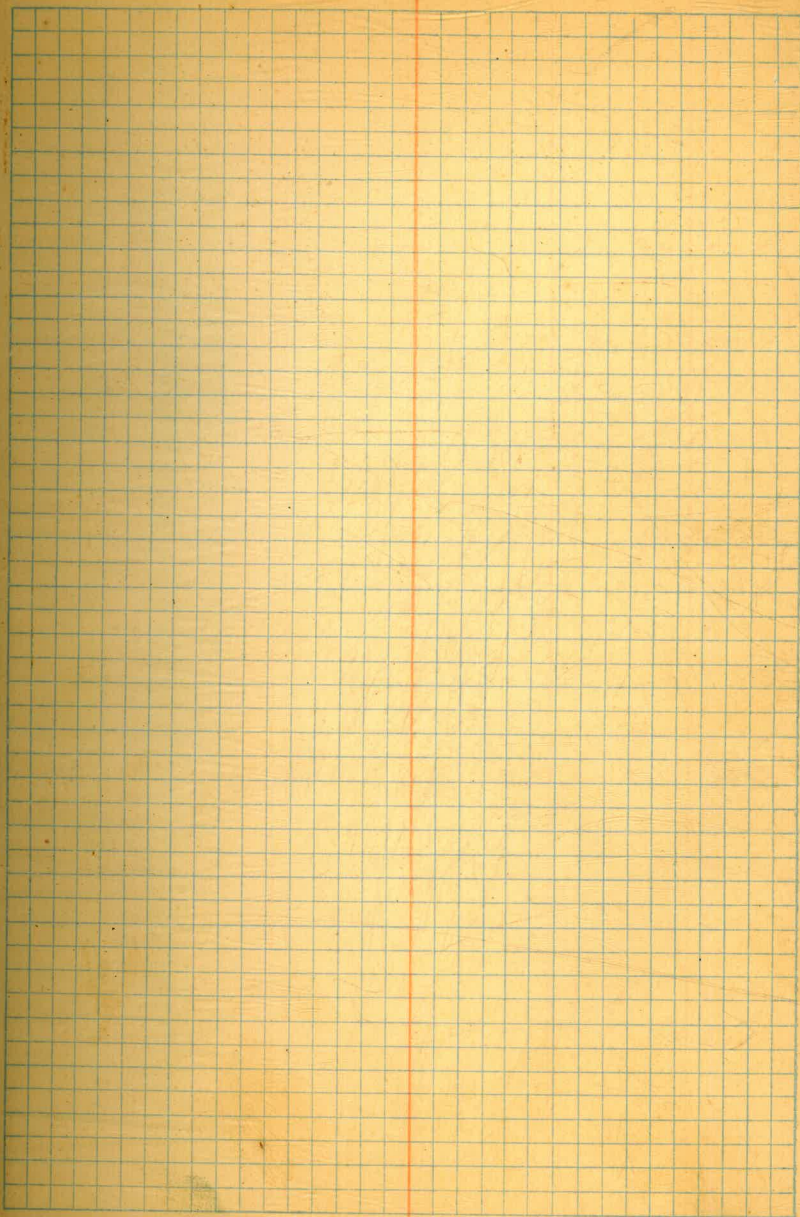
Final X Sections in Downstream
Toe Trench

1-16

18-65 Final X Sections Between Core Wall
and Upstream Toe Wall

66-72 Final X Section

N 3610 - 3840	E 5140 - 5450
N 3600 - 3790	E 4320 - 4440
3470 - 3540	4420 - 4490
3540 - 3600	4330 - 4450



Final X Sections July 27

B.M. 0.38 564.03 563.65
 12.30 551.73
 0.78 552.51
 10.42 542.09
 4.34 546.43

N 3600

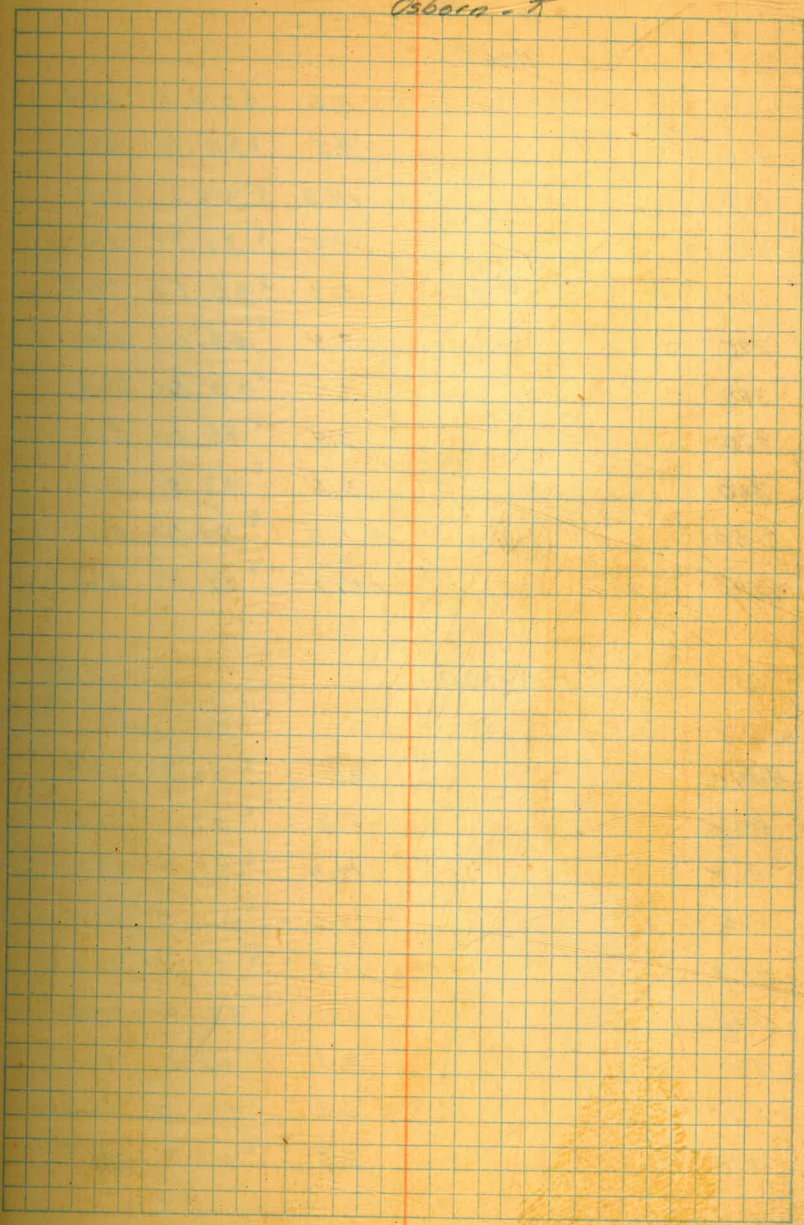
E 4440 9.3 ✓ 537.1 51.9
 4428 9.1 ✓ 37.3 52.1
 4424 13.1 ✓ 33.3 52.0
 4420 14.5 ✓ 31.9 52.0
 4405 14.7 ✓ 31.7 52.0
 4401 13.1 ✓ 33.3 51.9
 4398 3.5 ✓ 42.9 51.9
 390 3.6 ✓ 42.8 52.0
 380 3.2 ✓ 43.2 51.9
 370 3.7 ✓ 42.7 51.8
 360 2.9 ✓ 43.5 51.8
 350 +0.7 ✓ 47.1 51.8
 343 +5.2 ✓ 51.6 51.7

plotted

All Elev. Ch. for plotting

all elev
 plotted
 ✓

Elliott - Notes
 Simpson - Level
 Soper - Rod
 Hammer - Tape
 Osborn - T



546.43

N3610

E 4440	9.3	↓ 37.1	51.9
428	9.5	↓ 36.9	52.0
423	14.3	↓ 32.1	51.9
404	14.5	↓ 31.9	51.8
399	3.3	↓ 43.1	51.8
390	3.4	↓ 43.0	51.9
380	3.2	↓ 43.2	51.8
370	3.4	↓ 43.0	51.8
360	2.6	↓ 43.8	51.8
350	+1.9	↓ 42.3	51.8
343	0.6 +4.9	↓ 51.3	51.7

N3620

4440	9.6	↓ 36.8	51.8
428	9.3	↓ 37.1	51.8
425	14.4	↓ 32.0	51.7
415	14.6	↓ 31.8	51.6
403	14.8	↓ 31.8	51.6
398	3.0	↓ 43.4	51.6
390	3.1	↓ 43.3	51.5
380	2.2	↓ 44.2	51.5
370	2.6	↓ 43.8	51.6

N3620

546.43

Plotted

4360	1.2	↓ 545.2	51.6
350	+1.1 0.6	↓ 47.5	51.6
343	+5.0	↓ 51.4	51.6

N3630

546.4

Plotted

E4440	9.7	↓ 36.7	54.0
429	9.3	↓ 37.1	53.8
425	13.7	↓ 32.7	53.5
420	14.4	↓ 32.0	53.3
405	13.6	↓ 32.8	53.6
401	2.6	↓ 43.8	53.8
390	2.7	↓ 43.7	53.7
380	2.4	↓ 44.0	54.2
370	1.8	↓ 44.8	53.8
360	1.1	↓ 45.3	53.9
350	+0.8	↓ 47.2 0.6	52.9
343	+5.4	↓ 51.8	52.2

N3640

Plotted

4440	9.7	↓ 36.7	56.6
430	9.5	↓ 36.9	56.5
426	11.8	↓ 34.8 ⁶	56.3

N3640

546.43

4424		14.6	↓ 31.8	56.2
415		14.9	↓ 31.5	55.7
410		14.3	↓ 32.1	55.4
405		12.4	↓ 34.0	54.9
402		3.4	↓ 43.0	54.6
390		2.8	↓ 43.6	54.6
380		2.8	↓ 43.6	54.3
370		2.8	↓ 43.6	54.4
360		1.8	↓ 44.6	54.7
353		1.4	↓ 45.0	0.6
343		16.7	↓ 53.1	
T.P	4.33	546.42	4.34	542.09

N3650

E 4440		9.6	↓ 36.8	59.0
427		11.3	↓ 35.1	58.2
424		14.7	↓ 31.7	58.1
415		14.7	↓ 31.7	57.4
406		14.2	↓ 32.2	55.1
403		3.6	↓ 42.8	54.6
390		3.5	↓ 42.9	55.8
380		3.8	↓ 42.6	55.9
370		3.6	↓ 42.8	54.8
360		1.8	↓ 44.6	43.6
			↓ 43.6	55.4

402

39

4

N 3650

546.42

4355 0.3 46.1 ✓ |
 350 +1.6 48.0 ✓ |
 0.6 ✓ |
 343 +7.3 53.7 ✓ |

N 3660

E 4440 9.9 ↓ 36.5 ✓ 59.6
 425 11.0 ↓ 35.4 ✓ 59.8
 424 14.4 ↓ 32.0 ✓ 59.8
 415 14.3 ↓ 32.1 ✓ 58.3
 403 14.2 ↓ 32.2 ✓ 59.2
 399 4.4 ↓ 42.0 ✓ 54.8
 390 4.1 ↓ 42.3 ✓ 55.4
 380 4.3 ↓ 42.1 ✓ 55.4
 370 4.5 ↓ 41.9 ✓ 55.3
 360 2.2 ↓ 44.2 ✓ 57.2
 350 +1.5 ↓ 47.9 ✓
 340 +7.7 ↓ 54.1 ✓
 0.6 ✓ |
 332 +13.2 59.6

N3670
546.42

E4440	8.8	↓ 537.6	60.3
430	9.5	↓ 36.9	59.8
425	10.7	↓ 33.7	59.6
417	13.8	↓ 32.6	58.6
410	14.1	↓ 32.3	56.6
402	14.2	↓ 32.2	55.8
398	4.5	↓ 41.9	56.0
390	4.4	↓ 42.0	57.7
380	4.8	↓ 41.6	58.9
370	4.8	↓ 41.6	59.1
360	4.1	↓ 42.3	560.0
358	3.6	↓ 42.8	
350	+0.5	↓ 46.9	
340	+7.4	↓ 53.8	
326	+15.8	62.2	

Plotted

N3680

E4440	8.5	↓ 37.9	60.3
435	9.6	↓ 36.8	60.2
430	10.3	↓ 36.1	60.0
420	12.0	↓ 34.4	59.5
417	13.6	↓ 32.8	59.3

Cont in Book 371-67

N 3650

546.42

4355 0.3 46.1 ✓
 350 +1.6 48.0 ✓
 343 +7.3 53.7 ✓

N 3660

E 4440 9.9 ↓ 36.5 ✓ 59.6
 425 11.0 ↓ 35.4 ✓ 59.8
 424 14.4 ↓ 32.0 ✓ 59.8
 415 14.3 ↓ 32.1 ✓ 58.3
 403 14.2 ↓ 32.2 ✓ 59.2
 399 4.4 ↓ 42.0 ✓ 54.8
 390 4.1 ↓ 42.3 ✓ 55.4
 380 4.3 ↓ 42.1 ✓ 55.4
 370 4.5 ↓ 41.9 ✓ 55.3
 360 2.2 ↓ 44.2 ✓ 57.2
 350 +1.5 ↓ 47.9 ✓
 340 +7.7 ↓ 54.1 ✓
 332 +13.2 59.6

N3670
546.42

E4440	8.8	↓ 537.6	60.3
430	9.5	↓ 36.9	59.8
425	10.7	↓ 33.7	59.6
417	13.8	↓ 32.6	58.6
410	14.1	↓ 32.3	56.6
402	14.2	↓ 32.2	55.8
398	4.5	↓ 41.9	56.0
390	4.4	↓ 42.0	57.7
380	4.8	↓ 41.6	58.9
370	4.8	↓ 41.6	59.1
360	4.1	↓ 42.3	56.0
358	3.6	↓ 42.8	
350	+0.5	↓ 46.9	
340	+7.4	↓ 53.8	
326	+15.8	62.2	

Plotted

N3680

E4440	8.5	↓ 37.9	60.3
435	9.6	↓ 36.8	60.2
430	10.3	↓ 36.1	60.0
420	12.0	↓ 34.4	59.5
417	13.6	↓ 32.8	59.3

Contin Book 391-67

N3680

546.42

7

4410	13.4	↓ 533.0	59.3
400	13.6	↓ 32.8	56.3
398	4.0	↓ 42.4	56.4
390	4.3	↓ 42.1	56.9
380	4.7	↓ 41.7	60.2
370	4.9	↓ 41.5	61.4
360	3.9	↓ 42.5	61.9
352	2.5	↓ 43.9	
345	+0.6	↓ 47.0	
337	+6.6	↓ 53.0	
335	+7.2	↓ 53.6	
323	0.6 +15.7	↓ 62.1	

N3690

E4440	8.0	↓ 38.4	60.5
430	8.4	↓ 38.0	59.9
424	11.8	↓ 34.6 33.6	60.0
415	13.3	↓ 33.1	59.6
405	13.4	↓ 33.0	58.7
399	13.3	↓ 33.1	58.2
395	4.6	↓ 41.8	57.9

N 3690

546.42

4390	4.6	↓ 541.8 ✓	57.5
380	4.5	↓ 41.9 ✓	59.9
370	4.7	↓ 41.7 ✓	61.2
360	3.3	↓ 43.1 ✓ 42.4	62.4
350	3.0	↓ 43.4 ✓	
344	1.8	↓ 44.6 ✓	
340	10.7	↓ 47.1 ✓	
335	+7.6	↓ 54.0 ✓	
	0.6		
322	+15.6	62.0	

N 3700

4440	7.7	↓ 38.7 ✓	62.5	-21.8
430	7.9	↓ 38.5 ✓	60.4	-21.9
425	7.8	↓ 38.6 ✓	59.9	-21.3
419	9.6	↓ 36.8 ✓	59.3	-22.5
416	13.1	↓ 33.3 ✓	59.9	-26.6
405	13.2	↓ 33.4 ² ✓	60.1	
397	13.3	↓ 33.1 ✓	60.1	
392	4.5	↓ 41.9 ✓	60.2	
380	4.7	↓ 41.7 ✓	62.3	
370	4.7	↓ 41.7 ✓	59.0	

plotted

8

N3700

546.42

4365	4.6	↓ 541.8 ✓	59.4
360	2.6	↓ 43.8 ✓	59.9
353	1.3	↓ 45.1 ✓	
350	2.4	↓ 44.0 ✓	
340	1.1	↓ 45.3 ✓	
337	0.0	↓ 46.4 ✓	
330	+9.6	↓ 56.0	
320	0.6	↓ 62.0	
	+15.6		

N3710

4440	7.7	↓ 38.7 ✓	60.4
430	7.7	↓ 38.7 ✓	60.1
420	7.1	↓ 39.3 ✓	60.0
415	12.4	↓ 34.0 ✓	60.4
405	12.5	↓ 33.9 ✓	61.0
396	12.4	↓ 34.0 ✓	60.8
391	4.4	↓ 42.0 ✓	60.5
380	4.7	↓ 41.7 ✓	61.0
370	4.7	↓ 41.7 ✓	61.2
360	4.5	↓ 41.9 ✓	59.8
350	4.0	↓ 42.4 ✓	
340	1.9	↓ 44.5 ✓	
331	+1.3	↓ 47.7 ✓	
326	+10.8	↓ 57.2	

9

+17.6	842.5
-16.1	

diff

-21.7	2155.0
-21.4	2105.0
-20.7	1177.5
-26.4	2675.0
-27.1	2425.5
-26.8	1132.5
-18.5	2079.0
-19.3	1940.0
-19.5	1870.0
-17.9	

N3710

10

546.42

0.6

15.6

62.0

4317

N3720

C6ft

E4440	8.2	↓	38.2'	60.4	-22.2	
435	6.9	↓	39.5'	60.4	-20.9	1077.5
430	7.1	↓	39.3'	60.5	-21.2	1052.5
423	7.1	↓	39.3'	60.6	-21.3	1487.5
421	5.2	↓	41.2'	60.6	-19.4	407.0
418	5.7	↓	40.7'	60.7	-20.0	591.0
415	12.0	↓	34.4'	60.9	-26.5	697.5
410	12.0	↓	34.4'	61.2	-26.8	1332.5
400	11.9	↓	34.5'	60.9	-26.4	2660.0
394	9.6	↓	36.8'	61.2	-24.4	1524.0
392	5.9	↓	40.5'	61.2	-20.7	1353.0
388	4.5	↓	41.9'	61.3	-19.4	800.0
380	4.8	↓	41.6'	61.3	-19.7	1564.0
370	4.6	↓	41.8'	61.4	-19.6	1965.0
360	4.3	↓	42.1'	61.3	-19.2	1940.0
350	4.0	↓	42.4'			
345	3.4	↓	43.0'			
340	1.9	↓	44.5'			
330	0.0	↓	46.4'			
327	+2.7	↓	49.1'			
323	+10.8	↓	57.2			
310	0.6 +15.6	↓	62.0			

potted

546.42

N 3730

E 4440

435

430

420

417

414

405

395

387

380

370

360

350

345

340

326

321

310

306

8.4 ↓ 38.0 ✓ 60.6

6.8 ↓ 39.6 ✓ 60.6

7.0 ↓ 39.4 ✓ 60.7

6.9 ↓ 39.5 ✓ 61.0

6.2 ↓ 40.2 ✓ 61.1

11.7 ↓ 34.7 ✓ 61.2

11.6 ↓ 34.8 ✓ 61.3

11.1 ↓ 35.3 ✓ 61.3

4.8 ↓ 41.6 ✓ 61.4

5.2 ↓ 41.2 ✓ 61.4

4.2 ↓ 42.2 ✓ 61.3

3.8 ↓ 42.6 ✓ 61.3

3.3 ↓ 43.1 ✓

2.9 ↓ 43.5 ✓

1.8 ↓ 44.6 ✓

0.0 ↓ 46.4 ✓

+9.4 ↓ 55.8

+13.9 ↓ 60.3

+14.3 ↓ 60.7

Coff

-22.6

-21.0

-21.3

-21.5

-20.9

-26.5

-26.5

-26.0

-19.8

-20.2

-19.1

-18.7

1090.0

1057.5

2140.0

636.0

711.0

2385.0

2625.0

1832.0

2000.0

1965.0

1890.0

N3740

546.42

4440		7.7	✓ 538.7	61.2
435		7.7	✓ 38.7	61.1
430		6.5	✓ 39.9	61.0
420		7.3	✓ 39.1	61.2
417		6.8	✓ 39.6	61.2
413		11.4	✓ 35.0	61.2
400		11.4	✓ 36.0	61.4
386		10.7	✓ 35.7	61.5
382		3.8	✓ 42.6	61.4
370		3.6	✓ 42.8	61.5
360		3.1	✓ 43.3	61.5
350		2.6	✓ 43.8	
340		2.0	✓ 44.4	
330		0.4	✓ 46.0	
323		+4.1	✓ 50.5	
T. P.	3.98	548.97	1.43	544.99
321		549.0	+5.6	54.6
310			+11.5	60.5
			0.6	
305			+13.0	62.0

N3750

4440		8.0	✓ 41.0	61.3
435		7.1	✓ 41.9	61.3
430		7.5	✓ 41.5	61.3

12

C64

-22.5	
-22.4	1122.5
-21.1	1087.5
-22.1	2160.0
-21.6	655.5
-20.3	958.0
-26.4	3425.5
-25.8	3654.0
-18.8	892.0
-18.7	2250.0
-18.2	1845.0

C64

-20.3	
-19.4	992.5
-19.8	980.0
	612.0

N3750

548.97

4417	549.0	8.5	↓ 540.5	61.5
413		12.8	↓ 36.2	61.5
400		13.3	↓ 35.7	61.8
390		12.9	↓ 36.1	61.6
383		13.1	↓ 35.9	61.7
378		5.0	↓ 44.0	61.7
370		5.5	↓ 43.5	61.6
360		4.9	↓ 44.1	61.7
350		4.1	↓ 44.9	
340		3.8	↓ 45.2	
330		2.8	↓ 46.2	
322		15.4	↓ 54.4	
309		+13.1	62.1	

plotted

N3760

549.0

E4440	549.0	4.2	↓ 44.8	61.6
430		5.8	↓ 43.2	61.7
418		6.8	↓ 42.2	61.7
415		12.3	↓ 36.7	61.8
400		12.8	↓ 36.2	62.0
381		12.3	↓ 36.7	61.9
377		4.9	↓ 44.1	61.9
370		4.8	↓ 44.2	61.9

13

-26.0	
-25.3	326.0
-26.1	3341.0
-25.6	2580.0
-25.8	1795.5
-17.7	3262.5
-18.1	1432.0
-17.6	1785.0

C6H

-16.2	
-18.5	1765.0
-19.5	2280.0
-25.1	669.0
-25.8	3817.5
-25.2	4845.0
-17.2	860.0
-17.7	1242.5
	1745.0

N 3760

548.97

4360	4.2	↓ 44.8'	62.0
350	3.9	↓ 45.1'	
340	3.6	↓ 45.4'	
335	2.4	↓ 46.6'	
324	+6.0	↓ 55.0'	
310	+13.7	↓ 62.7	

-17.2

N 3770

plotted

E4440	2.1	↓ 46.9'	62.0
430	3.2	↓ 45.8'	61.9
421	7.8	↓ 41.2'	62.1
417	7.4	↓ 41.6'	62.1
412	11.5	↓ 37.5'	62.1
400	12.0	↓ 37.0'	62.4
390	11.9	↓ 37.1'	62.4
378	11.4	↓ 37.6'	62.3
373	4.8	↓ 44.2'	62.3
360	4.4	↓ 44.6'	62.5
350	3.8	↓ 45.2'	
340	3.4	↓ 45.6'	
320	+9.6	↓ 58.6	
312	+14.2	↓ 63.2	

cbft

+15.1	
-16.1	1560
-20.9	1665
-20.5	878
-24.7	1130
-25.4	3006
-25.3	2535
-24.7	3000
-18.1	1070
-17.9	2340

548.97

N3780

E4440	549.0	+0.4	549.4 ✓	63.1
430		0.2	48.8 ✓	62.4
418		1.8	47.2 ✓	62.5
414		9.8	39.2 ✓	62.7
404		9.6	39.4 ✓	62.8
400		3.4	45.6 ✓	62.8
390		4.5	44.5 ✓	62.8
380		4.0	45.0 ✓	62.9
370		3.7	45.3 ✓	63.0
360		3.0	46.0 ✓	62.7
350		3.4	45.6 ✓	
340		1.3	47.7 ✓	
T.P.	11,93	560.00	0.90	548.07
325			1.6	58.4
313			0.6	
			+3.0	63.0

plotted
 11,93

15

C bft

-13.7	1365
-13.6	1734
-15.3	776
-23.5	2345
-23.4	812
-17.2	1775
-18.3	1810
-17.9	1780
-17.7	1720
-16.7	

N3790

560.00

E4440			8.7	551.3'	62.5
430			8.8	51.2'	62.8
20			9.5	50.5'	63.0
10			10.2	49.8'	63.3
400			12.3	47.7'	63.5
390			12.7	47.3'	63.5
380			11.9	48.1'	63.7
370			9.7	50.3'	63.5
360			11.1	48.9'	63.2
350			11.0	49.0'	
342			10.3	49.7'	
327			1.4	58.6'	
318			+2.8	62.8'	
T.P.	8.05	567.33	0.72	559.28	
T.P.			2.51	564.82	
	2.47	567.29			
B.M.			3.59	563.70	563.65

checked to here R.E.L.

plotted

16

67.3
60.

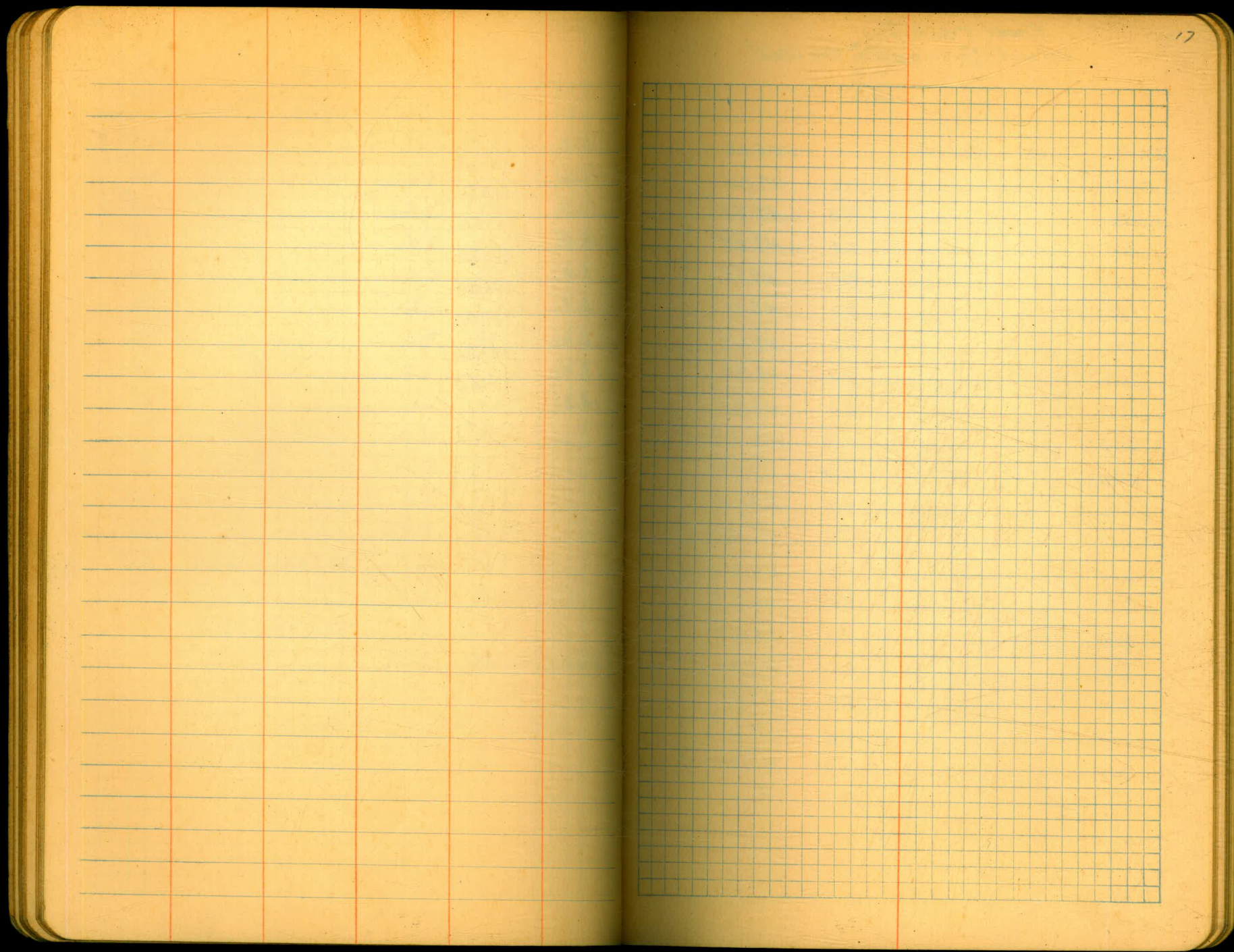
Cbst

47.3

-11.2	1140.0
-11.6	1205.0
-12.5	1300.0
-13.5	1465.0
-15.8	1580.0
-16.8	1570.0
-15.6	1440.0
-13.2	1375.0
-14.3	

67.29
48.97
18.3267.29
46.92
20.37

Check (long shot)



Final X Sections
Between Core + Upstr. Toa Wall

N3610

B.M	1.62	556.84		555.22
E 5140			7.6	49.2 ✓
150			7.3	49.5 ✓
160			7.8	49.0 ✓
170			7.9	48.9 ✓
180			8.1	48.7 ✓
190			8.2	48.6 ✓
200			8.1	48.7 ✓
210			8.0	48.8 ✓
220			7.9	48.9 ✓
230			7.9	48.9 ✓
240			7.7	49.1 ✓
250			7.6	49.2 ✓
260			7.9	48.9 ✓
270			8.0	48.8 ✓
280			8.2	48.6 ✓
290			9.1	47.7 ✓
300			8.7	48.1 ✓
310			8.2	48.6 ✓
320			7.9	48.9 ✓
				±

Plotted

July 28-1932
Elliott - Notes
Simpson - Level
Soper - Rod
Fammen - Tape
Osborn - Line

18

556.84

5330	8.2	548.6 ✓	
340	8.5	48.3 ✓	
350	8.9	47.9 ✓	
360	8.9	47.9 ✓	
370	8.5	48.3 ✓	
380	8.4	48.4 ✓	
390	8.5	48.3 ✓	
400	8.8	48.0 ✓	
410	8.6	48.2 ✓	
420	8.4	48.4 ✓	
430	7.3	49.5 ✓	
440	7.4	49.4 ✓	
450	6.4	50.4 ✓	

Plotted

2

556.84

5140	6.9	49.9 ✓	✓
150	7.3	49.5 ✓	✓
160	7.5	49.3 ✓	✓
170	7.9	48.9 ✓	✓
180	7.9	48.9 ✓	✓
190	8.1	48.7 ✓	✓
200	8.3	48.5 ✓	✓
210	7.8	49.0 ✓	✓
220	7.6	49.2 ✓	✓
230	7.7	49.1 ✓	✓
240	7.8	49.0 ✓	✓
250	7.3	49.5 ✓	✓
260	7.3	49.5 ✓	✓
270	7.9	48.9 ✓	✓
280	8.4	48.4 ✓	✓
290	9.7	47.1 ✓	✓
300	8.9	47.9 ✓	✓
310	8.7	48.1 ✓	✓
320	8.8	48.0 ✓	✓
330	8.6	48.2 ✓	✓
340	8.6	48.2 ✓	✓

Noted

556.84

5350	8.7	548.1 ✓	✓
360	8.6	48.2 ✓	✓
370	7.0	49.8 ✓	✓
380	8.8	48.0 ✓	✓
390	8.4	48.4 ✓	✓
400	8.5	48.3 ✓	✓
410	8.5	48.3 ✓	✓
420	8.6	48.2 ✓	✓
430	8.0	48.8 ✓	✓
440	8.0	48.8 ✓	✓
450	7.6	49.2 ✓	✓
		8	

Noted

556.84

E 5140	6.9	549.9 ✓
150	7.1	49.7 ✓
160	7.2	49.6 ✓
170	7.4	49.4 ✓
180	7.4	49.4 ✓
190	7.8	49.0 ✓
200	7.8	49.0 ✓
210	7.8	49.0 ✓
220	7.4	49.4 ✓
230	7.0	49.8 ✓
240	7.1	49.7 ✓
250	6.9	49.9 ✓
260	7.6	49.2 ✓
270	8.0	48.8 ✓
280	9.1	47.7 ✓
290	9.4	47.4 ✓
300	9.2	47.6 ✓
310	9.2	47.6 ✓
320	9.4	47.4 ✓
330	9.1	47.7 ✓
340	8.8	48.0 ✓

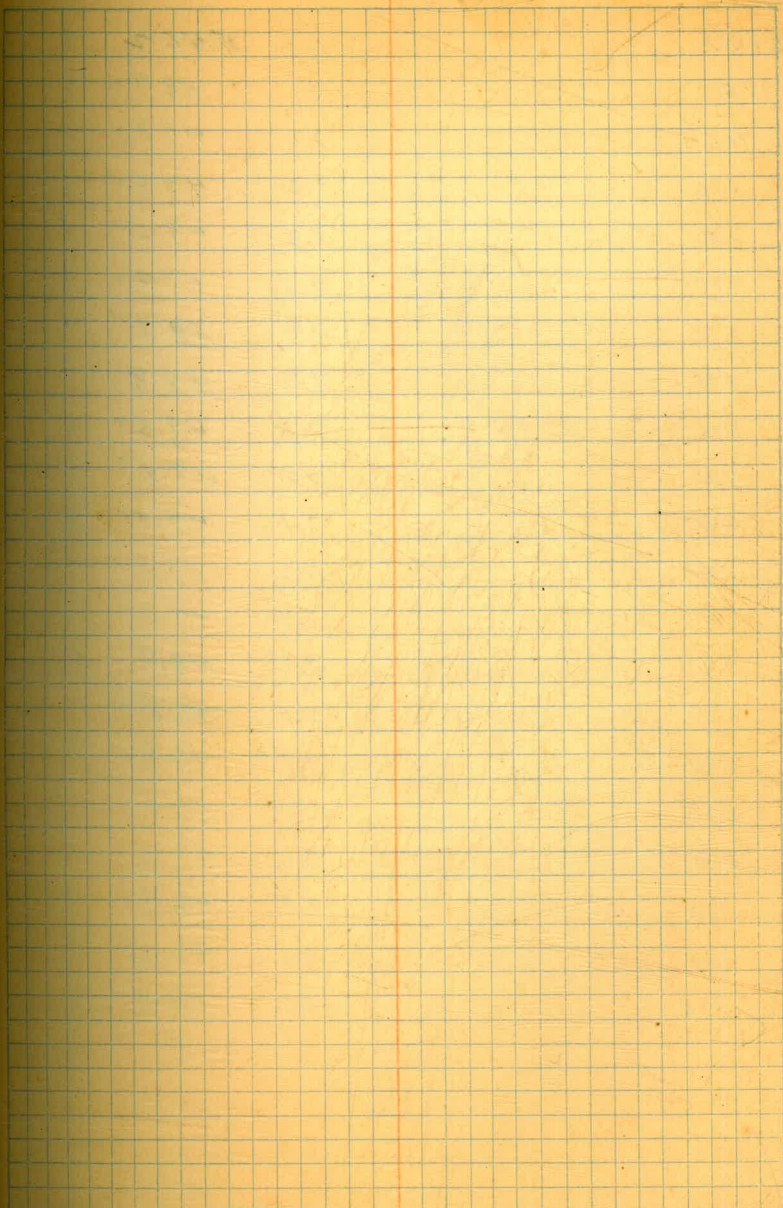
Plotted

2

556.84

5350	8.6	548.2 ✓	↓
360	8.7	48.1 ✓	↓
370	8.5	48.3 ✓	↓
380	7.7	49.1 ✓	↓
390	8.2	48.6 ✓	↓
400	7.8	49.0 ✓	↓
410	8.2	48.6 ✓	↓
420	8.2	48.5 ✓	↓
430	8.3	48.5 ✓	↓
440	8.2	48.6 ✓	↓
450	7.2	49.6 ✓	↓
		⊗	

Plotted



556.84

5140	6.6	550.2 ✓	✓
150	7.1	49.7 ✓	✓
160	7.1	49.7 ✓	✓
170	7.3	49.5 ✓	✓
180	7.2	49.6 ✓	✓
190	7.5	49.3 ✓	✓
200	7.9	48.9 ✓	✓
210	8.0	48.8 ✓	✓
220	7.6	49.2 ✓	✓
230	7.0	49.8 ✓	✓
240	7.1	49.7 ✓	✓
250	7.4	49.4 ✓	✓
260	7.8	49.0 ✓	✓
270	8.9	49.9 ✓	✓
280	10.4	46.4 ✓	✓
290	9.9	46.9 ✓	✓
300	10.0	46.8 ✓	✓
310	9.6	47.2 ✓	✓
320	9.9	46.9 ✓	✓
330	10.6	46.2 ✓	✓
340	9.0	47.8 ✓	✓

Sorted

2

N3640

556.84

5350

8.4 548.4 ✓ |

360

8.8 48.0 ✓ |

370

7.5 49.3 ✓ |

380

7.9 48.9 ✓ |

390

8.3 48.5 ✓ |

400

8.3 48.5 ✓ |

410

8.3 48.5 ✓ |

420

8.0 48.8 ✓ |

430

8.6 48.2 ✓ |

440

8.4 48.6 ✓ |

450

7.6 49.2 ✓ |

Plotted

556.84

E5140	6.6	550.2 ✓	↓
150	7.0	49.8 ✓	↓
160	7.2	49.6 ✓	↓
170	7.5	49.3 ✓	↓
180	7.4	49.4 ✓	↓
190	7.7	49.1 ✓	↓
200	8.0	48.8 ✓	↓
210	8.3	48.5 ✓	↓
220	7.8	49.0 ✓	↓
230	7.5	49.3 ✓	↓
240	7.3	49.5 ✓	↓
250	8.0	48.8 ✓	↓
260	7.8	49.0 ✓	↓
270	8.4	48.4 ✓	↓
280	9.3	49.5 ✓	↓
290	10.1	46.7 ✓	↓
300	10.0	46.8 ✓	↓
310	9.5	47.3 ✓	↓
320	9.8	47.0 ✓	↓
330	9.8	47.0 ✓	↓
340	9.5	47.3 ✓	↓

I

N3650

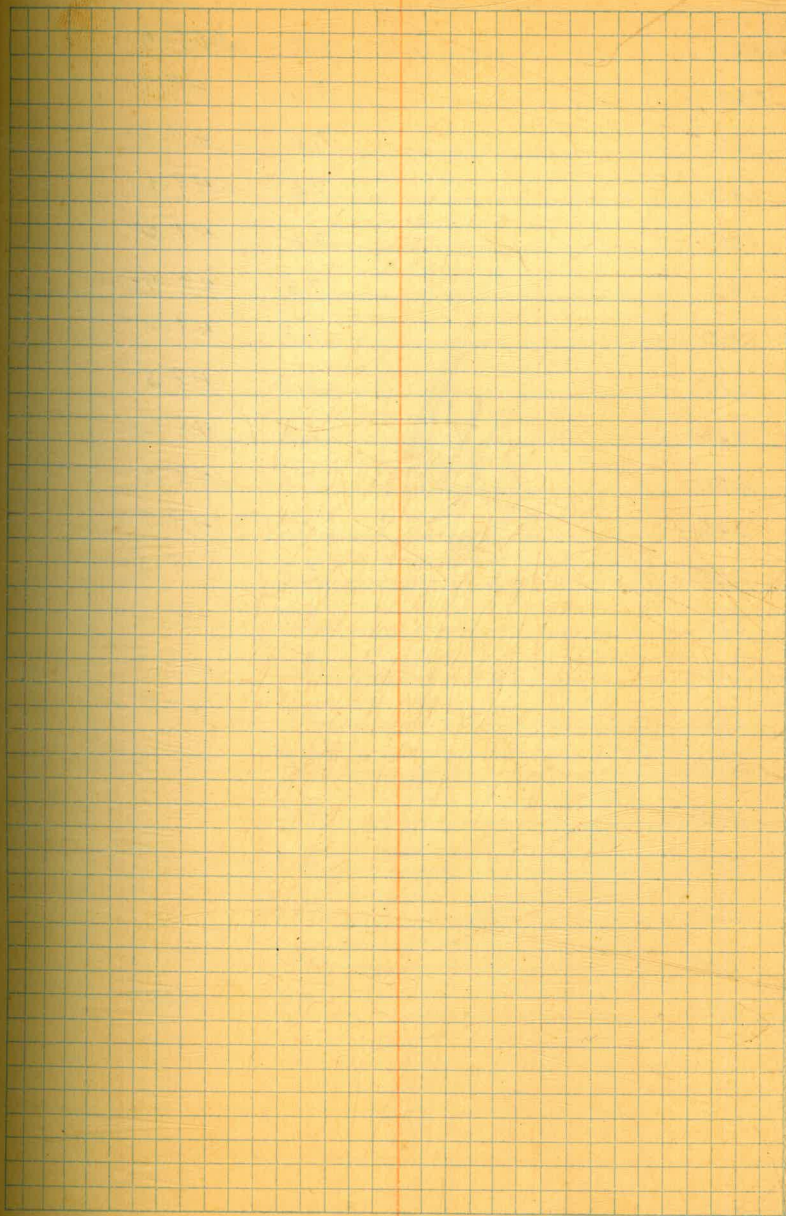
556.84

5350	9.2	547.6	✓
360	8.5	48.3	✓
370	8.1	48.7	✓
380	8.3	48.5	✓
390	7.8	49.0	✓
400	7.6	49.2	✓
410	8.2	48.6	✓
420	8.3	48.5	✓
430	8.4	48.4	✓
440	7.1	49.7	✓
450	7.0	49.8	✓

♀

July 28 - 1932

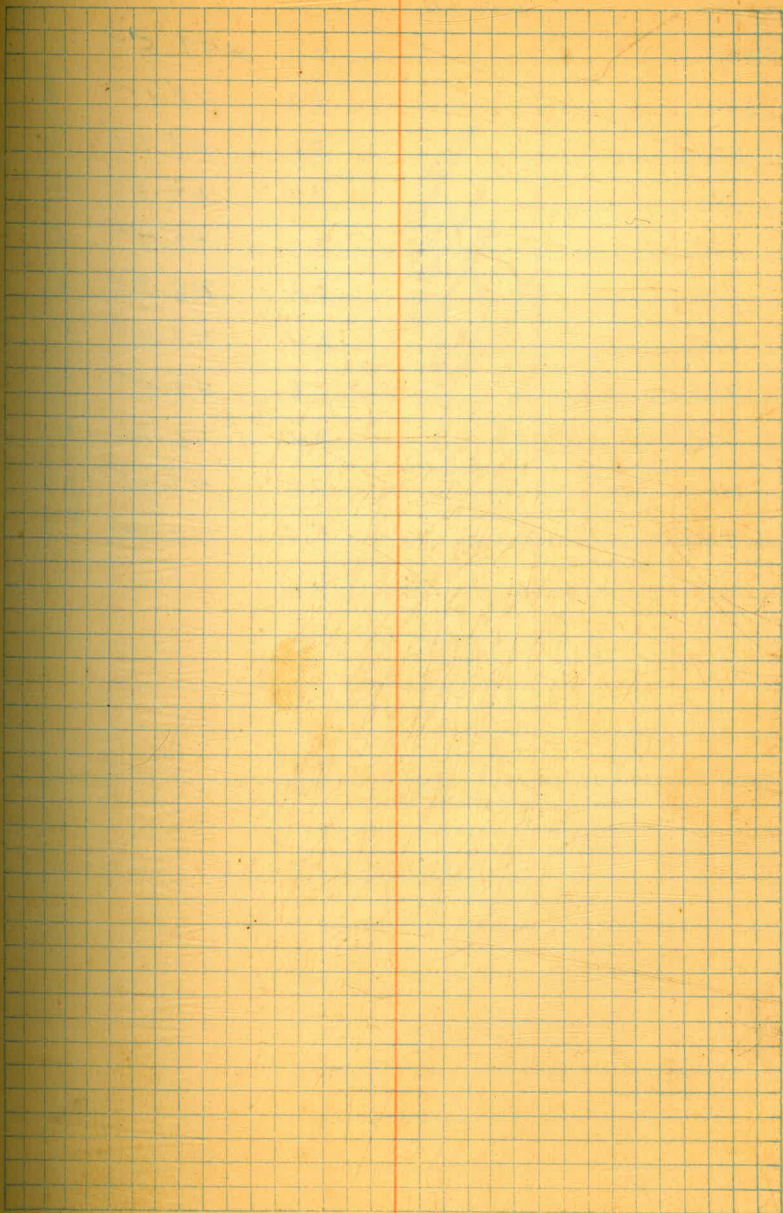
27



556.84

5140	6.8	550.0 ✓	✓
150	7.1	49.7 ✓	✓
160	7.5	49.3 ✓	✓
170	7.6	49.2 ✓	✓
180	7.6	49.2 ✓	✓
190	7.3	49.5 ✓	✓
200	7.8	49.0 ✓	✓
210	8.3	48.5 ✓	✓
220	8.2	48.6 ✓	✓
230	7.6	49.2 ✓	✓
240	7.1	49.7 ✓	✓
250	8.3	48.5 ✓	✓
260	8.3	48.5 ✓	✓
270	9.1	47.7 ✓	✓
280	9.1	47.7 ✓	✓
290	9.8	47.0 ✓	✓
300	10.3	46.5 ✓	✓
310	10.7	46.1 ✓	✓
320	10.1	46.7 ✓	✓
330	10.1	46.7 ✓	✓
340	9.9	46.9 ✓	✓
		?	

Plotted



556.84

E5350

9.3 547.5 ✓ ↓

360

8.7 48.1 ✓ ↓

370

8.8 48.0 ✓ ↓

380

8.9 47.9 ✓ ↓

390

7.1 49.7 ✓ ↓

400

7.9 48.9 ✓ ↓

410

7.4 49.4 ✓ ↓

420

7.8 49.0 ✓ ↓

430

8.1 48.7 ✓ ↓

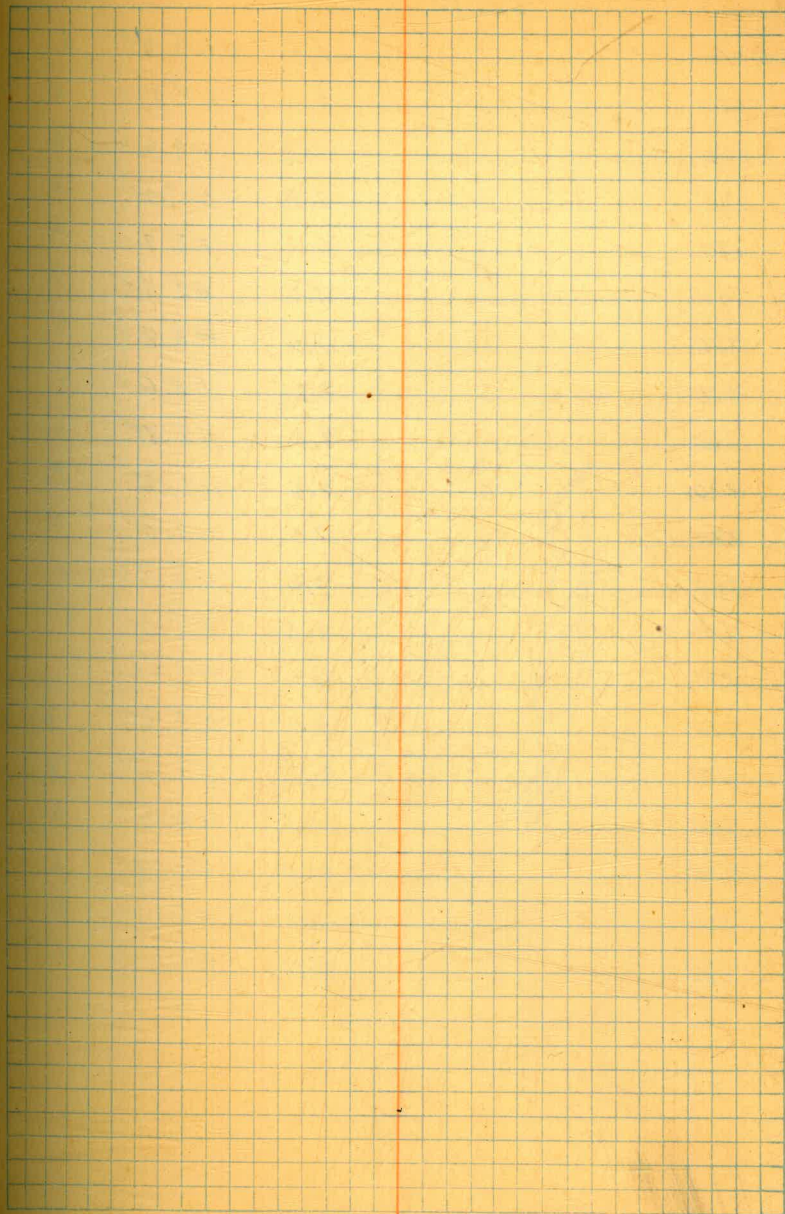
440

7.2 49.6 ✓ ↓

450

6.5 50.3 ✓ ↓

L



556.84

E5140	6.9	549.9	✓
150	7.1	49.7	✓
160	7.6	49.2	✓
170	7.8	49.0	✓
180	7.9	48.9	✓
190	8.3	48.5	✓
200	8.0	48.8	✓
210	8.2	48.6	✓
220	8.3	48.5	✓
230	7.6	49.2	✓
240	7.0	49.8	✓
250	7.7	48.9	✓
260	8.3	48.5	✓
270	8.7	48.1	✓
280	9.0	47.8	✓
290	9.5	47.3	✓
300	10.0	46.8	✓
310	10.5	46.3	✓
320	10.4	46.4	✓
330	10.4	46.4	✓

collected

2

556.84

5340	10.0	546.8
350	9.6	47.2
360	9.0	47.8
370	8.6	48.2
380	10.3	46.5
390	8.9	47.9
400	7.2	49.6
410	8.0	48.8
420	8.0	48.8
430	8.0	48.8
440	7.4	49.4
450	7.0	49.8

spotted

J

556.84

ES140	7.3	549.5	✓
150	7.5	49.3	✓
160	7.8	49.0	✓
170	7.9	48.9	✓
180	8.3	48.5	✓
190	8.4	48.4	✓
200	8.5	48.3	✓
210	8.6	48.2	✓
220	8.3	48.5	✓
230	8.2	48.6	✓
240	7.8	49.0	✓
250	8.1	48.7	✓
260	8.4	48.4	✓
270	8.8	48.0	✓
280	9.0	47.8	✓
290	9.2	47.6	✓
300	9.8	47.0	✓
310	10.1	46.7	✓
320	10.4	46.4	✓
330	9.5	47.3	✓
340	10.1	46.7	✓
		2	

556.84

5350	9.7	547.15	
360	9.4	47.4	✓
370	9.6	47.2	✓
380	9.3	47.5	✓
390	9.3	47.5	✓
400	9.9	46.9	✓
410	9.1	47.7	✓
420	8.0	48.8	✓
430	7.8	49.0	✓
440	8.2	48.6	✓
450	7.9	48.9	✓
B.M.	1.62	555.22	555.22

5350
 360
 370
 380
 390
 400
 410
 420
 430
 440
 450

Check end July 28

B.M.	1.57	556.79	555.22	
5140			7.9	548.9 ✓
150			7.9	48.9 ✓
160			7.9	48.9 ✓
170			8.3	48.5 ✓
180			8.3	48.5 ✓
190			8.6	48.2 ✓
200			8.8	48.0 ✓
210			8.8	48.0 ✓
220			8.8	48.0 ✓
230			8.4	48.4 ✓
240			8.0	48.8 ✓
250			8.4	48.4 ✓
260			8.8	48.0 ✓
270			8.9	47.9 ✓
280			9.2	47.6 ✓
290			9.1	47.7 ✓
300			9.3	47.5 ✓
310			9.5	47.3 ✓
320			9.6	47.2 ✓
330			9.0	47.8 ✓
				I

P.L.L.L.L.

556.79

5340	9.3	547.5	/
350	9.5	47.3	
360	9.5	47.3	
370	9.5	47.3	
380	9.6	47.2	
390	9.2	47.6	
400	9.2	47.6	
410	9.5	47.3	
420	8.7	48.1	
430	8.3	48.5	
440	8.1	48.7	
450	7.6	49.2	

plotted

8

556.79

5140	8.0	548.8	✓
150	8.3	48.5	✓
160	8.4	48.4	✓
170	8.7	48.1	✓
180	8.7	48.1	✓
190	8.9	47.9	✓
200	8.4	48.4	✓
210	8.8	48.0	✓
220	8.9	47.9	✓
230	8.5	48.3	✓
240	8.6	48.2	✓
250	8.6	48.2	✓
260	8.5	48.3	✓
270	9.3	47.5	✓
280	8.8	48.0	✓
290	8.8	48.0	✓
300	9.1	47.7	✓
310	9.4	47.4	✓
320	9.3	47.5	✓
330	9.7	47.1	✓
340	8.5	48.3	✓
350	9.0	47.8	✓

plotted

x

856.79

5360	9.2	547.6	
370	9.1	47.7	
380	9.2	47.6	
390	9.5	47.3	
400	9.7	47.1	
410	8.6	48.2	
420	9.4	47.4	
430	8.4	48.4	
440	8.7	48.1	
450	8.6	48.2	
		I	

plotted

556.79

5140	7.9	548.9	↓
150	8.2	48.6	↓
160	8.5	48.3	↓
170	8.7	48.1	↓
180	9.0	47.8	↓
190	9.0	47.8	↓
200	9.0	47.8	↓
210	9.1	47.7	↓
220	9.3	47.5	↓
230	9.2	47.6	↓
240	9.0	47.8	↓
250	8.8	48.0	↓
260	8.5	48.3	↓
270	9.2	47.6	↓
280	9.3	47.5	↓
290	8.2	48.6	↓
300	9.1	47.7	↓
		F	

potted

556.79

5310	9.2	547.6	✓
320	8.4	48.4	✓
330	9.0	47.8	✓
340	9.1	47.7	✓
350	9.0	47.8	✓
360	8.8	48.0	✓
370	8.9	47.9	✓
380	8.7	48.1	✓
390	9.4	47.4	✓
400	9.7	47.1	✓
410	9.7	47.1	✓
420	9.8	47.0	✓
430	9.2	47.6	✓
440	9.0	47.8	✓
450	8.0	48.8	✓

Potted

I

556.79

5140	8.1	548.7	↓
150	7.9	48.9	↓
160	8.1	48.7	↓
170	8.6	48.2	↓
180	9.2	47.6	↓
190	9.3	47.5	↓
200	9.3	47.5	↓
210	9.3	47.5	↓
220	9.4	47.4	↓
230	9.3	47.5	↓
240	9.0	47.8	↓
250	8.9	47.9	↓
260	9.2	47.6	↓
270	9.6	47.2	↓
280	9.5	47.3	↓
290	8.8	48.0	↓
300	9.7	47.1	↓

plotted

556.79

5310		8.7	548.1		
320		9.6	47.2		
330		8.9	47.9		
340		9.1	47.7		
350	plotted	9.2	47.6		
360		8.9	47.9		
370		8.7	48.1		
380		8.7	48.1		
390		9.5	47.3		
400		9.7	47.1		
410		9.8	47.0		
420		9.9	46.9		
430		9.8	47.0		
440		9.4	47.4		
450	9.3	47.5			
T. P.	5.54	555.31	7.02	549.77	±

555.31

5140

6.4

548.9 ✓

✓

150

6.5

48.8 ✓

|

160

6.8

48.5 ✓

|

170

7.4

47.9 ✓

|

180

8.0

47.3 ✓

|

190

8.0

47.3 ✓

|

200

8.1

47.2 ✓

|

210

7.9

47.4 ✓

|

220

7.5

47.8 ✓

|

230

7.2

48.1 ✓

|

240

7.5

47.8 ✓

|

250

6.8

48.5 ✓

|

260

7.5

47.8 ✓

|

270

7.8

47.5 ✓

|

280

7.8

47.5 ✓

|

290

7.8

47.5 ✓

|

300

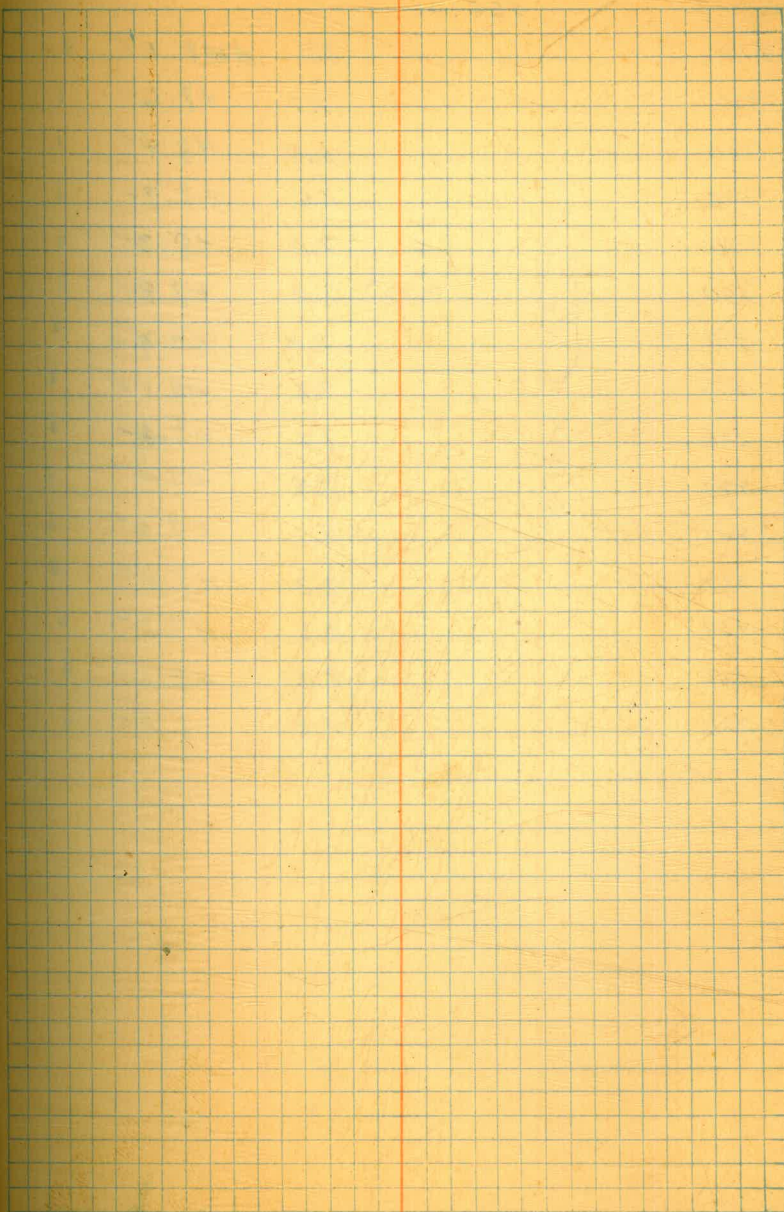
7.8

47.5 ✓

|

L

plotted



555.31

5310	8.2	547.1	✓
320	7.7	47.6	✓
330	6.9	48.4	✓
340	7.6	47.7	✓
350	7.0	48.3	✓
360	7.0	48.3	✓
370	7.4	47.9	✓
380	7.2	48.1	✓
390	7.7	47.4	✓
400	7.9	47.4	✓
410	8.1	47.2	✓
420	8.3	47.0	✓
430	8.3	47.0	✓
440	8.3	47.0	✓
450	7.8	47.5	✓

p. 10. 11. 12.

Aug 4

N3740

555.31

E5140	6.5	548.8	✓
150	6.6	48.7	✓
160	6.9	48.4	✓
170	7.4	47.9	✓
180	7.8	47.5	✓
190	8.3	47.0	✓
200	8.0	47.3	✓
210	7.6	47.7	✓
220	8.1	47.2	✓
230	8.3	47.0	✓
240	8.2	47.1	✓
250	6.9	48.4	✓
260	8.0	47.3	✓
270	8.4	46.9	✓
280	8.0	47.3	✓
290	8.2	47.1	✓
300	8.1	47.2	✓

No collected

L

44

N3740

555.31

5310	8.3	547.0	-	✓
320	7.5	47.8	-	✓
330	7.3	48.0	-	✓
340	7.0	48.3	-	✓
350	7.0	48.3	-	✓
360	7.3	48.0	-	✓
370	7.4	47.9	-	✓
380	7.6	47.7	-	✓
390	7.7	47.6	-	✓
400	7.9	47.4	-	✓
410	7.9	47.4	-	✓
420	7.9	47.4	-	✓
430	7.8	47.5	-	✓
440	7.8	47.5	-	✓
450	7.8	47.5	-	✓

potted

July 29

45

Aug 4

555.31

5140	6.3	549.0 - 1
150	6.2	49.1 - ✓
160	6.4	48.9 ✓ ✓
170	7.4	47.9 ✓ ✓
180	8.2	47.1 ✓ ✓
190	8.6	46.7 ✓ ✓
200	8.2	47.1 ✓ ✓
210	7.7	47.6 ✓ ✓
220	8.2	47.1 ✓ ✓
230	8.8	46.5 ✓ ✓
240	8.1	47.2 ✓ ✓
250	7.3	48.0 ✓ ✓
260	8.4	46.9 ✓ ✓
270	9.1	46.2 ✓ ✓
280	8.8	46.5 ✓ ✓
290	8.4	46.9 ✓ ✓
300	8.1	47.2 ✓ ✓

plotted

2

N3750

555.31

5310	8.0	547.3	↓
320	6.6	48.7	↓
330	6.0	49.3	↓
340	7.3	48.0	↓
350	7.0	48.3	↓
360	7.1	48.2	↓
370	6.8	48.5	↓
380	8.0	47.3	↓
390	6.6	48.7	↓
400	7.3	48.0	↓
410	7.8	47.5	↓
420	7.5	47.8	↓
430	7.5	47.8	↓
440	7.7	47.6	↓
450	7.1	48.2	↓

plotted

July 29

47

Aug 4

555.31.

5140	5.9	549.4	↓
150	5.9	49.4	↓
160	5.9	49.4	↓
170	6.1	49.2	↓
180	7.1	48.2	↓
190	7.9	47.4	↓
200	8.8	46.5	↓
210	8.8	46.5	↓
220	8.9	46.4	↓
230	8.5	46.8	↓
240	8.7	46.6	↓
250	8.3	47.0	↓
260	8.6	46.7	↓
270	9.1	46.2	↓
280	8.6	46.7	↓
290	7.9	47.4	↓
300	6.3	49.0	↓

plotted

2

N3760

July 29

49

555.31

5310	6.9	548.4	↓
320	6.4	48.9	↓
330	6.4	48.9	↓
340	6.9	48.4	↓
350	6.6	48.7	↓
360	7.0	48.3	↓
370	7.3	48.0	↓
380	7.8	47.5	↓
390	6.5	48.8	↓
400	6.8	48.5	↓
410	7.2	48.1	↓
420	7.3	48.0	↓
430	7.0	48.3	↓
440	7.0	48.3	↓
450	6.2	49.1	↓

plotted

Aug 4

555.31

5140	4.9	550.4 ✓
150	5.0	503 ✓
160	5.1	50.2 ✓
170	4.9	50.4 ✓
180	5.4	49.9 ✓
190	7.3	48.0 ✓
200	8.6	46.7 ✓
210	9.5	45.8 ✓
220	9.4	45.9 ✓
230	7.9	47.4 ✓
240	5.5	49.8 ✓
250	6.4	48.9 ✓
260	7.6	47.7 ✓
270	6.5	48.8 ✓
280	5.7	49.6 ✓
290	5.6	49.7 ✓
300	5.6	49.7 ✓

plotted

2

555.31

5310	5.0	550.3 ✓	↓
320	5.6	49.7 ✓	↓
330	5.8	49.5 ✓	↓
340	6.0	49.3 ✓	↓
350	6.1	49.2 ✓	↓
360	6.9	48.4 ✓	↓
370	7.5	47.8	↓
380	7.4	47.8	↓
390	7.1	48.2	↓
400	5.5	49.8	↓
410	6.5	48.8	↓
420	6.7	48.6	↓
430	6.7	48.6	↓
440	6.3	49.0	↓
450	6.0	49.3	↓

potted

July 29

AUG 4

556.31

5140	3.4	551.9	✓
150	4.3	51.0	✓
160	4.4	50.9	✓
170	4.3	51.0	✓
180	4.4	50.9	✓
190	5.0	50.3	✓
200	7.6	47.7	✓
210	8.9	46.4	✓
220	8.7	46.6	✓
230	4.4	50.9	✓
240	4.6	50.7	✓
250	5.2	50.1	✓
260	3.4	51.9	✓
270	3.7	51.6	✓
280	4.2	51.1	✓
290	5.3	50.0	✓
300	5.5	49.8	✓

Selected

All figs in this book are for plotting 9-24-34 GPH.

J

555.31

5310	5.4	549.9 ✓ ↓
320	5.4	49.9 ✓ ↓
330	5.7	49.6 ✓ ↓
340	5.8	49.5 ✓ ↓
350	6.0	49.3 ✓ ↓
360	6.9	48.4 ✓ ↓
		I
370	7.6	47.7 ✓ ↓
380	7.6	47.7 ✓ ↓
390	5.2	50.1 ✓ ↓
400	4.0	51.3 ✓ ↓
410	5.0	50.3 ✓ ↓
420	5.1	50.2 ✓ ↓
430	5.7	49.6 ✓ ↓
440	5.3	50.0 ✓ ↓
450	2.8	52.5 ✓ ↓

potted

Aug 4

555.31

5140	1.5	553.8 ✓	↓
150	3.0	52.3 ✓	↓
160	3.1	52.2 ✓	↓
170	3.1	52.2 ✓	↓
180	3.8	51.5 ✓	↓
190	4.2	51.1 ✓	↓
200	4.0	51.3 ✓	↓
210	4.7	50.6 ✓	↓
220	5.0	50.3 ✓	↓
230	4.4	50.9 ✓	↓
240	3.6	51.7 ✓	↓
250	4.0	51.3 ✓	↓
260	3.3	52.0 ✓	↓
270	3.5	51.8 ✓	↓
280	3.7	51.6 ✓	↓
290	6.1	49.2 ✓	↓
300	6.4	48.9 ✓	↓
		2	

plotted

555.31

5310			5.9	549.4	✓
320			5.8	49.5	✓
330			5.7	49.6	✓
340			5.7	49.6	✓
350			6.3	49.0	✓
360			7.0	48.3	✓
370			6.4	48.9	✓
380			6.8	48.5	✓
T.P.	4.21	559.18	0.34	559.97	
390			10.1	49.1	✓
400			7.1	52.2	✓
410			7.4	51.8	✓
420			7.6	51.6	✓
430			8.3	50.9	✓
440			8.0	51.2	✓
450			7.8	51.4	✓

plotted

Aug 4

359.18

5140	5.5	553.7 ✓ ↓
150	5.8	53.4 ✓ ↓
160	5.4	53.8 ✓ ↓
170	5.6	53.6 ✓ ↓
180	6.4	52.8 ✓ ↓
190	7.4	51.8 ✓ ↓
200	7.6	51.6 ✓ ↓
210	7.1	52.1 ✓ ↓
220	7.0	52.2 ✓ ↓
230	7.5	51.7 ✓ ↓
240	6.5	52.7 ✓ ↓
250	7.1	52.1 ✓ ↓
260	6.4	52.8 ✓ ↓
270	6.6	52.6 ✓ ↓
280	7.6	51.6 ✓ ↓
290	8.6	50.6 ✓ ↓
300	9.7	49.5 ✓ ↓

plotted

L

559.18

5310	10.0	549.2	✓
320	9.6	49.6	✓
330	9.0	50.2	✓
340	8.2	51.0	✓
350	8.9	50.3	✓
360	9.0	50.2	✓
370	9.2	50.0	✓
380	8.2	51.0	✓
		F	
390	7.1	52.1	✓
400	6.4	52.8	✓
410	7.0	52.2	✓
420	6.6	52.6	✓
430	6.7	52.5	✓
440	6.6	52.6	✓
450	6.2	53.0	✓

~~plotted~~

July 27

57

Aug 4

559.18

5140	5.2	554.0	✓
150	5.3	53.9	✓
160	5.3	53.9	✓
170	4.8	54.4	✓
180	5.6	53.6	✓
190	6.2	53.0	✓
200	6.5	52.7	✓
210	6.3	52.9	✓
220	6.3	52.9	✓
230	6.3	52.9	✓
240	6.6	52.6	✓
250	6.0	53.2	✓
260	5.9	53.3	✓
270	5.7	53.5	✓
280	7.1	52.1	✓
290	8.1	51.1	✓
300	8.5	50.7	✓

Plotted

2

July 29

58

559.18

5310	9.3	549.9 ✓
320	9.3	49.9 ✓
330	8.6	50.6 ✓
340	6.7	52.5 ✓
350	6.2	53.0 ✓
360	6.0	53.2 ✓
370	5.9	53.3 ✓
380	6.0	53.2 ✓
	3.93	555.25 555.22
		L
390	6.5	52.7 ✓
400	6.7	52.5 ✓
410	5.4	53.8 ✓
420	4.6	54.6 ✓
430	4.7	54.5 ✓
440	5.4	53.8 ✓
450	5.5	53.7 ✓

plotted

(Long Shot)
(Check) End July 29-1932

Aug 4 - 1932

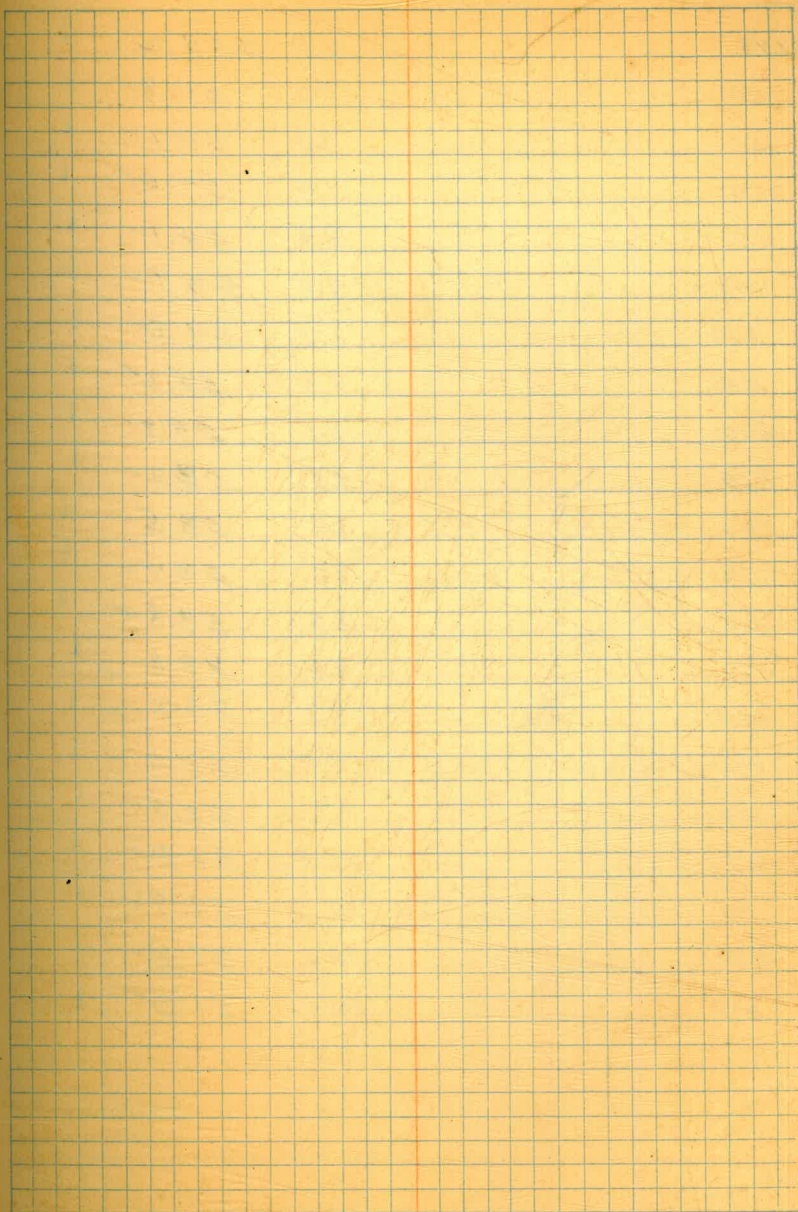
B.M.	2.50	568.97	566.47
		10.19	558.78
	3.64	562.42	
ES140		7.2	55.2 ✓
150		7.6	54.8 ✓
160		8.5	53.9 ✓
170		8.1	54.3 ✓
180		8.3	54.1 ✓
190		8.8	53.6 ✓
200		9.0	53.4 ✓
210		8.9	53.5 ✓
220		8.4	54.0 ✓
230		9.1	53.3 ✓
240		9.2	53.2 ✓
250		9.1	53.3 ✓
260		9.1	53.3 ✓
270		8.8	53.6 ✓
280		9.3	53.1 ✓
290		10.2	52.2 ✓
300		10.6	51.8 ✓
310		11.2	51.2 ✓

plotted

562.42

5320	11.4	551.0	↓
330	11.1	51.3	↓
340	10.6	51.8	↓
350	10.0	52.4	↓
360	9.6	52.8	↓
370	9.6	52.8	↓
380	9.6	52.8	↓
390	9.7	52.7	↓
400	9.0	53.4	↓
410	8.4	54.0	↓
420	7.8	54.6	↓
430	7.4	55.0	↓
440	7.8	54.6	↓
450	7.9	54.5	↓

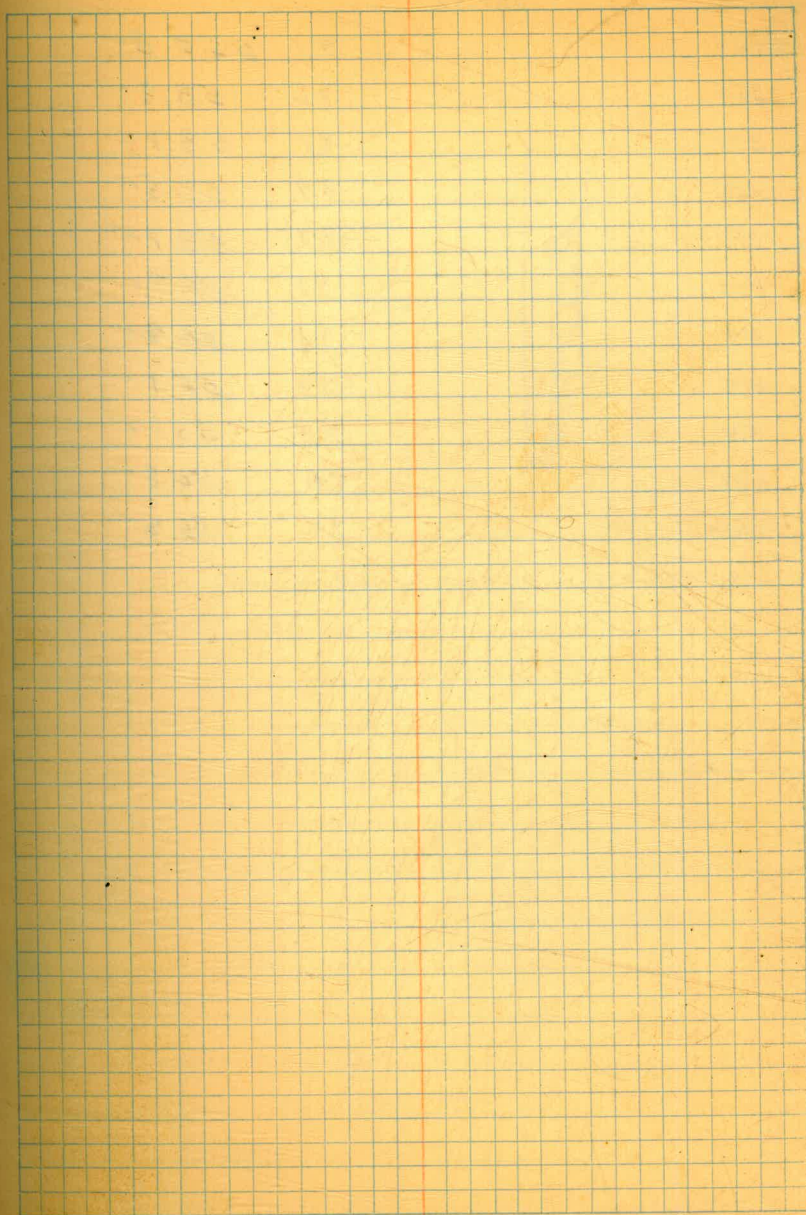
plotted



562.42

5140	6.8	555.6 ✓
150	7.6	54.8 ✓
160	8.3	54.1 ✓
170	8.4	54.0 ✓
180	8.3	54.1 ✓
190	8.5	53.9 ✓
200	8.4	54.0 ✓
210	8.2	54.2 ✓
220	8.1	54.3 ✓
230	8.6	53.8 ✓
240	8.9	53.5 ✓
250	9.0	53.4 ✓
260	8.6	53.8 ✓
270	8.6	53.8 ✓
280	8.7	53.7 ✓
290	9.4	53.0 ✓
300	9.9	52.5 ✓
310	10.4	52.0 ✓
320	10.7	51.7 ✓
330	10.6	51.8 ✓
340	10.9	51.5 ✓

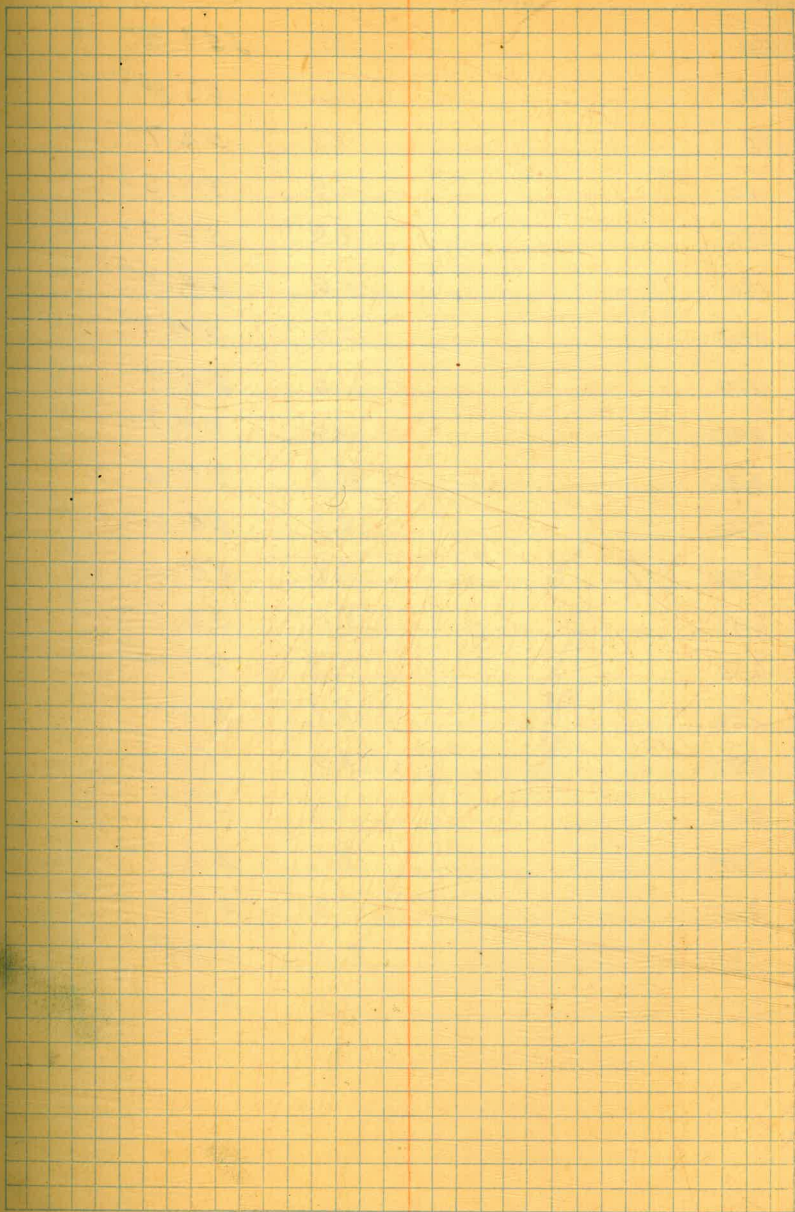
plotted



562.42

5350	9.1	553.3 ✓
360	8.6	53.8 ✓
370	8.7	53.7 ✓
380	8.9	53.5 ✓
390	8.7	53.7 ✓
400	8.7	53.7 ✓
410	8.2	54.2 ✓
420	7.3	55.1 ✓
430	7.3	55.1 ✓
440	7.6	54.8 ✓
450	7.2	55.2 ✓

plotted



562.42

5140	5.1	557.3
150	6.0	56.4
160	7.7	54.7
170	7.9	54.5
180	7.9	54.5
190	8.0	54.4
200	7.7	54.7
210	7.5	54.9
220	7.7	54.7
230	7.8	54.6
240	8.0	54.4
250	7.9	54.5
260	8.1	54.3
270	7.9	54.5
280	8.1	54.3
290	8.0	54.4
300	8.5	53.9
310	9.1	53.3
320	9.2	53.2
330	9.5	52.9
340	8.8	53.6

Plotted

562.42

5350	5.9	556.5 ✓	↓
360	5.5	56.9 ✓	↓
370	6.6	55.8 ✓	↓
380	6.9	55.5 ✓	↓
390	6.7	55.7 ✓	↓
400	6.4	56.0 ✓	↓
410	6.7	55.7 ✓	↓
420	6.9	55.5 ✓	↓
430	7.0	55.4 ✓	↓
440	6.8	55.6 ✓	↓
450	6.0	56.4 ✓	↓
	7.18	555.24	Record
		555.22	Check

plotted.

Final X Sections

N3590

B.M.	1.25	550.57	549.32
			0.6 ±
4340		+ 0.8	51.4 ✓
350		3.8	46.8 ✓ ↓
360		7.4	43.2 ✓ ↓
370		8.3	42.3 ✓ ↓
380		7.7	42.9 ✓ ↓
390		7.9	42.7 ✓ ↓
395		8.3	42.3 ✓ ↓
400		18.4	32.2 ✓ ↓
420		18.7	31.9 ✓ ↓
425		13.6	37.0 ✓ ↓
430		13.2	37.4 ✓ ↓
440		13.3	37.3 ✓ ↓

plotted

N3580

	550.6	13.3	37.3
4440		13.3	37.3 ✓ ↓
430		13.3	37.3 ✓ ↓
420		14.1	36.5 ✓ ↓
415		18.8	31.8 ✓ ↓
400		18.8	31.8 ✓ ↓
395		8.9	41.7 ✓ ↓
390		8.5	42.1 ✓ ↓
380		8.1	42.5 ✓ ↓
370		8.6	42.0 ✓ ↓

plotted

Sept 21-1932

66

Elliott
Simpson
Soper
TammenSee Book 394
78 NOV. 14-1932

N3580

550.57

4360	<u>plotted</u>	8.2	42.4 ✓	
350		7.0	43.6 ✓	
340		2.6	48.0 ✓	
			0.6 ±	
330		0.0	50.6 ✓	

N3570

4330	<u>plotted</u>	10.4	0.6 ±	551.0 ✓
340		3.8		46.8 ✓
350		8.6		42.0 ✓
360		8.8		41.8 ✓
370		9.3		41.3 ✓
380		9.5		41.1 ✓
390		9.3		41.3 ✓
395		9.4		41.2 ✓
400		18.8		31.8 ✓
410		18.6		32.0 ✓
420		13.7		36.9 ✓
430		13.4		37.2 ✓
440		13.6		37.0 ✓

See

Nov. 14-32 Book 394 page 78

N 3560

550.57

4440	13.4	537.2 ✓
430	13.1	37.5 ✓
420	13.8	36.8 ✓
410	12.9	32.7 ✓
400	18.7	31.9 ✓
395	9.3	41.3 ✓
390	9.0	41.6 ✓
380	9.2	41.4 ✓
370	9.1	41.5 ✓
360	8.4	42.2 ✓
350	8.0	42.6 ✓
340	2.6	48.0 ✓
330	0.5	50.1 ✓

plotted

N 3550

330	10.3	50.9 ✓
340	2.6	48.0 ✓
350	7.1	43.5 ✓
360	8.6	42.0 ✓
370	9.0	41.6 ✓
380	9.3	41.3 ✓
390	8.9	41.7 ✓
395	18.6	32.0 ✓
410	18.6	32.0 ✓
410	13.5	37.1 ✓

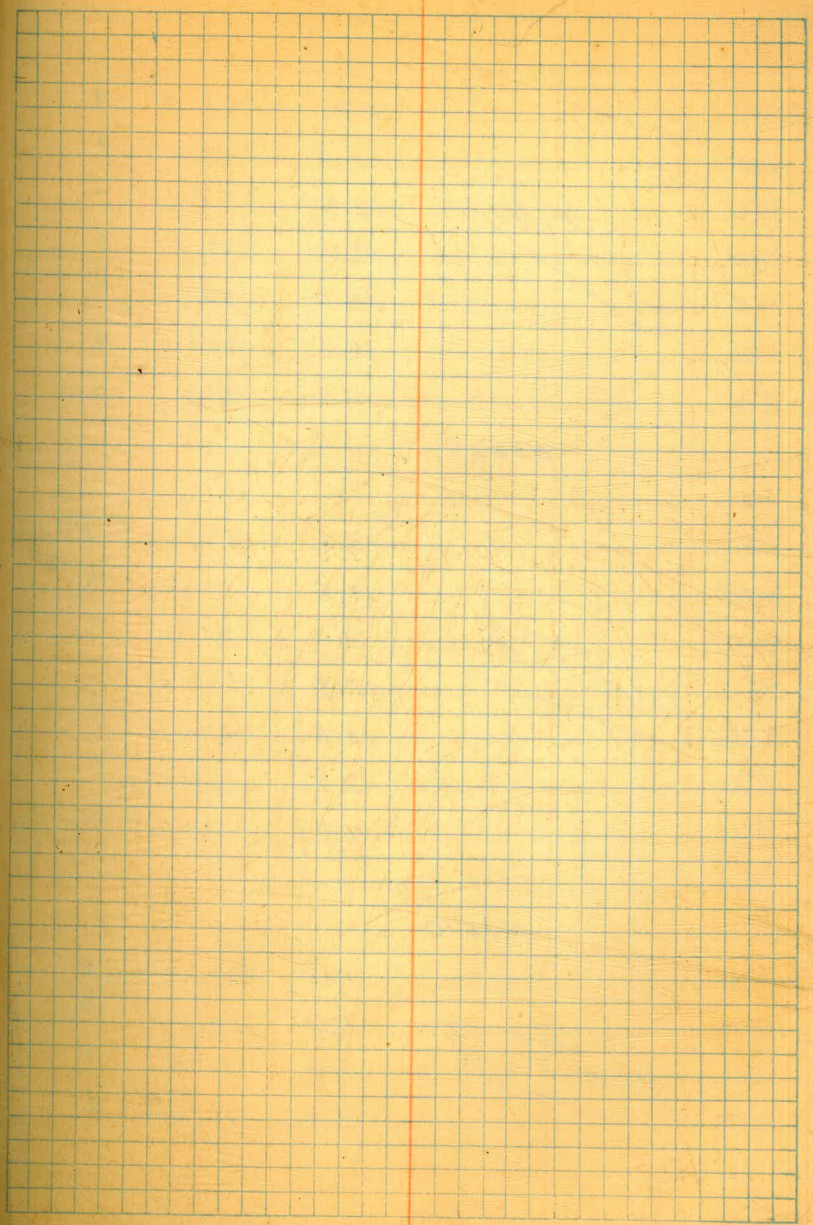
plotted

550.57 ^{N3550}

4420	<u>plotted</u>	13.1	37.5 ✓	✓
430		13.0	37.6 ✓	✓
440		13.0	37.6 ✓	✓

N3540

4490	↑ Plotted	14.7	35.9 ✓	✓	
480		14.7	35.9 ✓	✓	
470		15.0	35.6 ✓	✓	
460		15.2	35.4 ✓	✓	
450		15.5	35.1 ✓	✓	
440		550.6	12.8	37.8 ✓	✓
430			12.8	37.8 ✓	✓
420			12.7	37.9 ✓	✓
415			12.8	37.8 ✓	✓
410			18.2	32.4 ✓	✓
395		18.5	32.1 ✓	✓	
390		8.6	42.0 ✓	✓	
380		9.2	41.4 ✓	✓	
370		9.5	41.1 ✓	✓	
360		9.2	41.4 ✓	✓	
350		5.9	44.7 ✓	✓	
340	↓	0.8	0.6 ± 49.8 ✓	✓	



N3530

550.57

4420	12.2	38.4	✓
430	12.5	38.1	✓
440	12.9	37.7	✓
450	13.2	37.4	✓
460	14.7	35.9	✓
470	14.4	36.2	✓
480	14.4	36.2	✓

plotted

N3520

480	13.6	537.0	✓
470	13.5	537.1	✓
460	13.4	537.2	✓
450	13.3	537.3	✓
440	12.6	538.0	✓
430	12.2	538.4	✓
420	11.9	538.7	✓

plotted

N3510

420	11.6	539.0	✓
430	11.8	538.8	✓
440	11.8	538.8	✓
450	12.4	538.2	✓

plotted

See 394-17

See 394-28

N 3510

550.57

4460

470

480

plotted

12.6

538.0

12.9

537.7

13.1

537.5

N 3500

470

460

450

440

430

420

plotted

10.5

540.1

10.5

540.1

10.6

540.0

10.9

539.7

11.3

539.3

11.1

539.5

N 3490

420

430

440

450

460

470

plotted

10.5

40.1

10.5

40.1

10.2

40.4

10.0

40.6

9.9

40.7

9.7

40.9

from Book 394
30

End Sept 21

N3480

B.M. 1.11 550.43 549.32

4420	9.5	40.9 ✓	See 394 52
430	9.5	40.9 ✓	
440	8.9	41.5 ✓	
450	9.2	41.2 ✓	
460	9.5	40.9 ✓	
470	9.2	41.2 ✓	

plotted

N3470

460	8.1	42.3 ✓	See 394 52
450	8.2	42.2 ✓	
440	8.3	42.1 ✓	
430	8.8	41.6 ✓	
420	8.9	41.5 ✓	

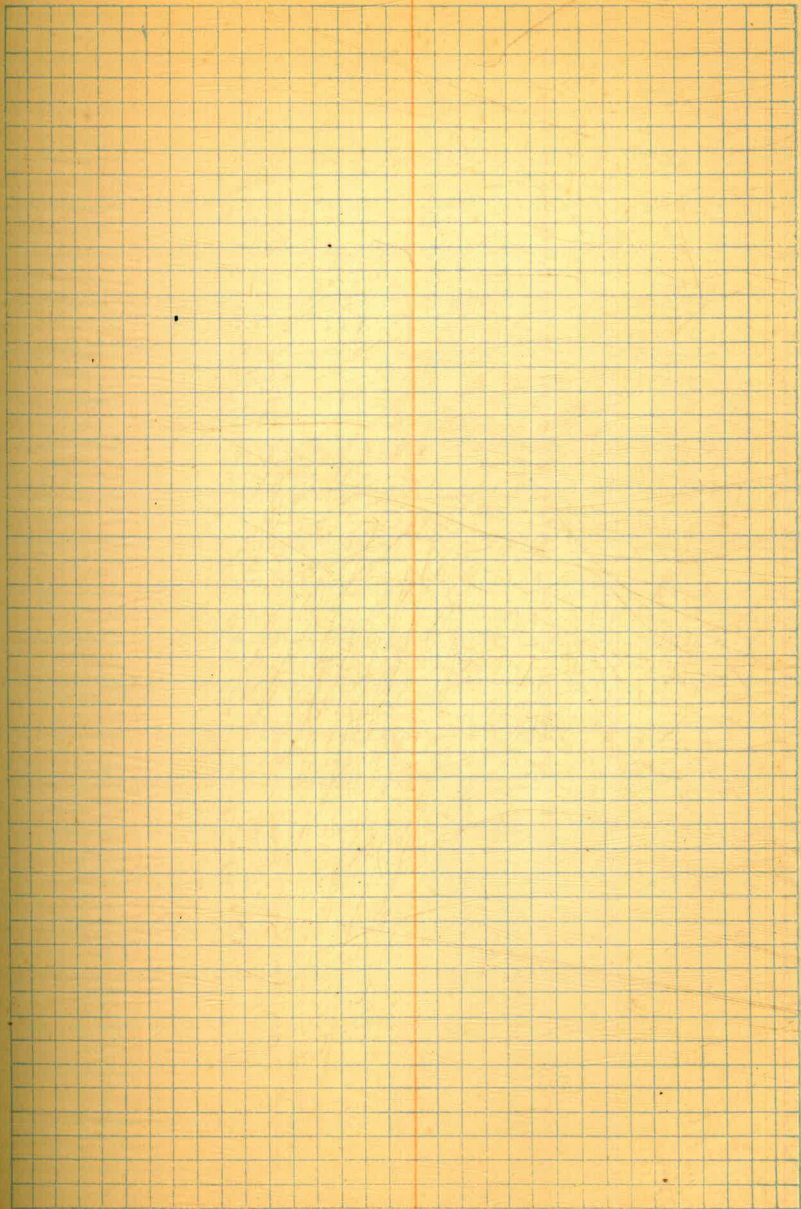
plotted

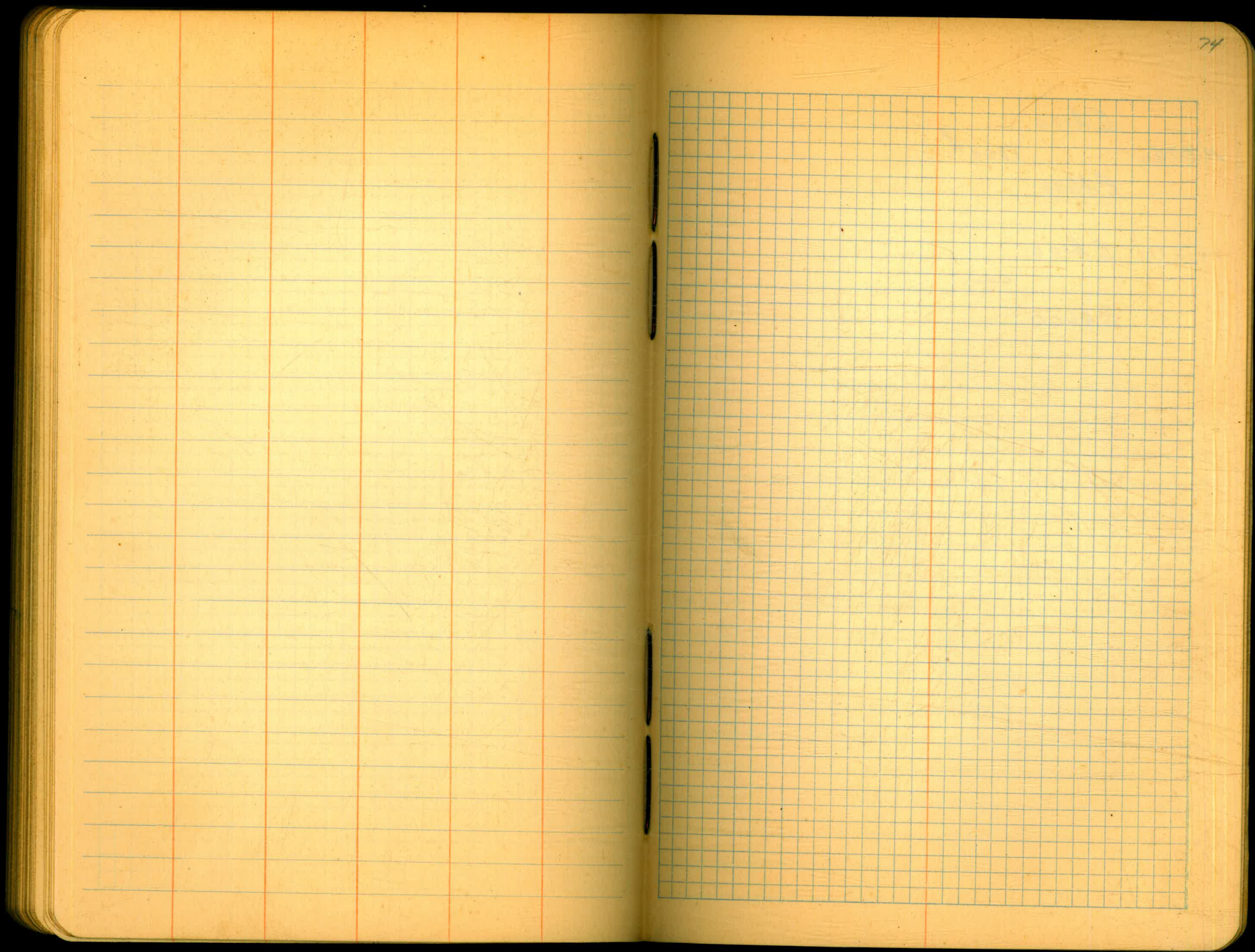
Nov. 15-32

Fill Elev. Ch for Plotting 2-24-32

Start Sept 22 - 1932

72



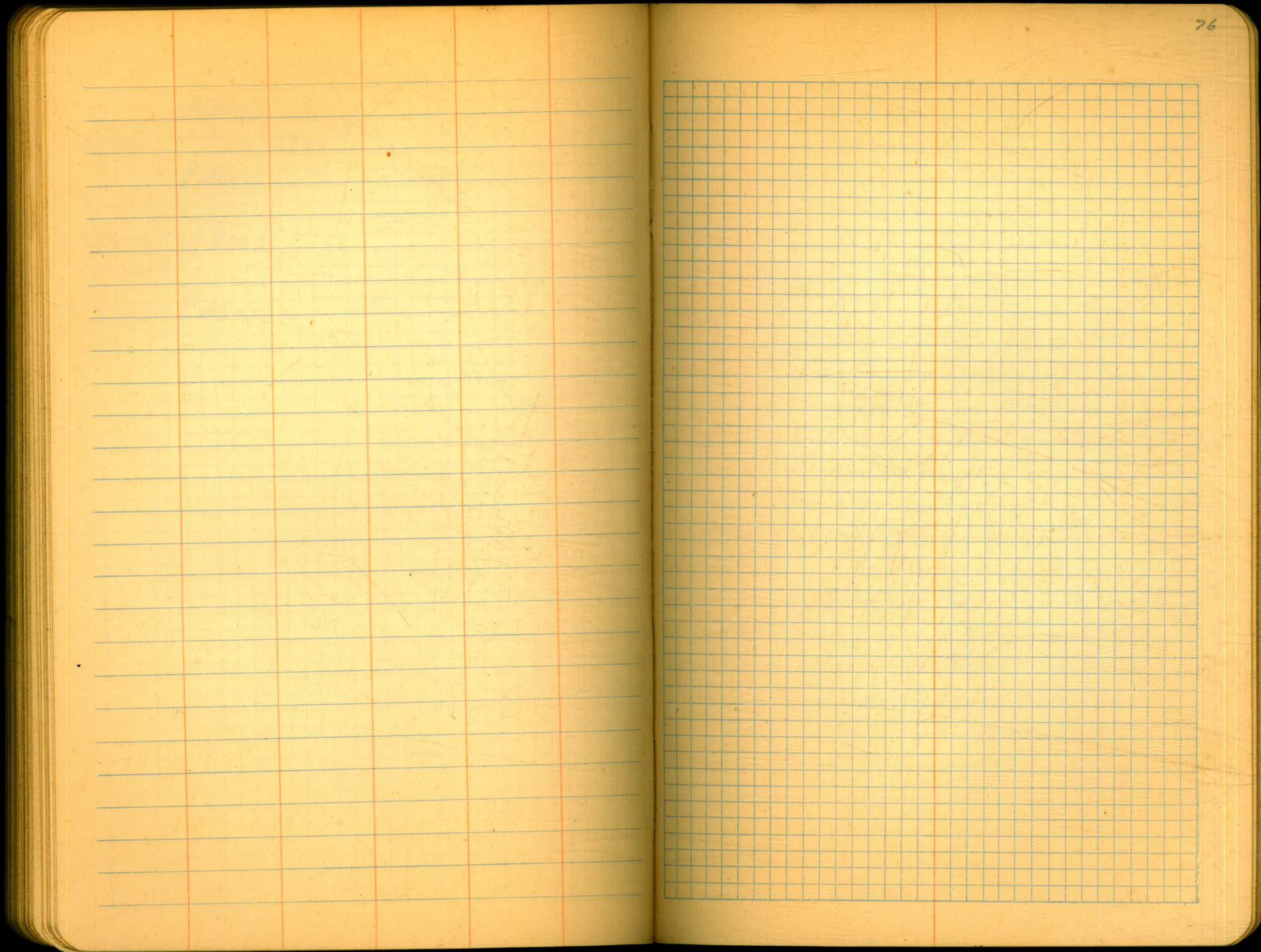


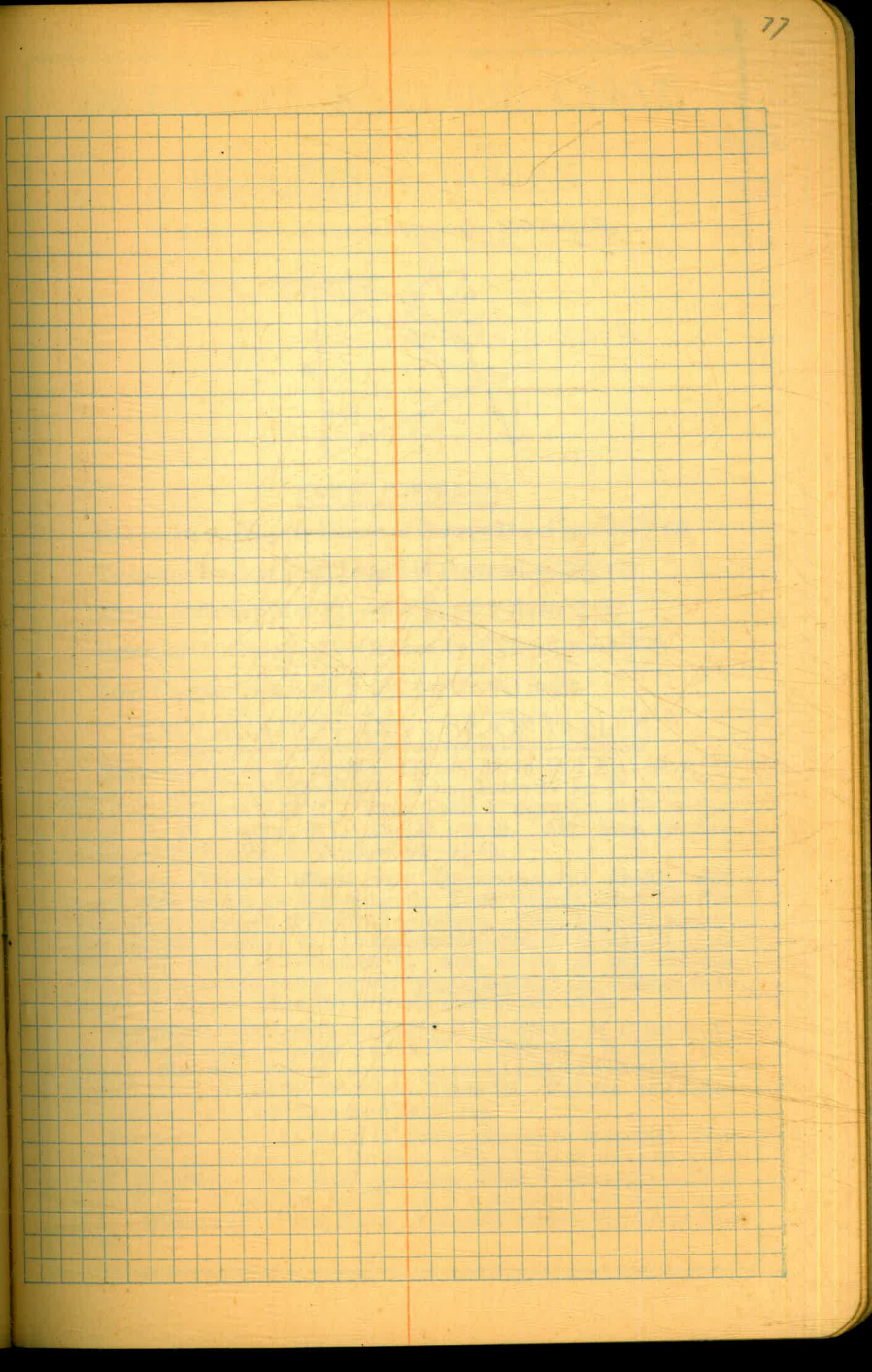
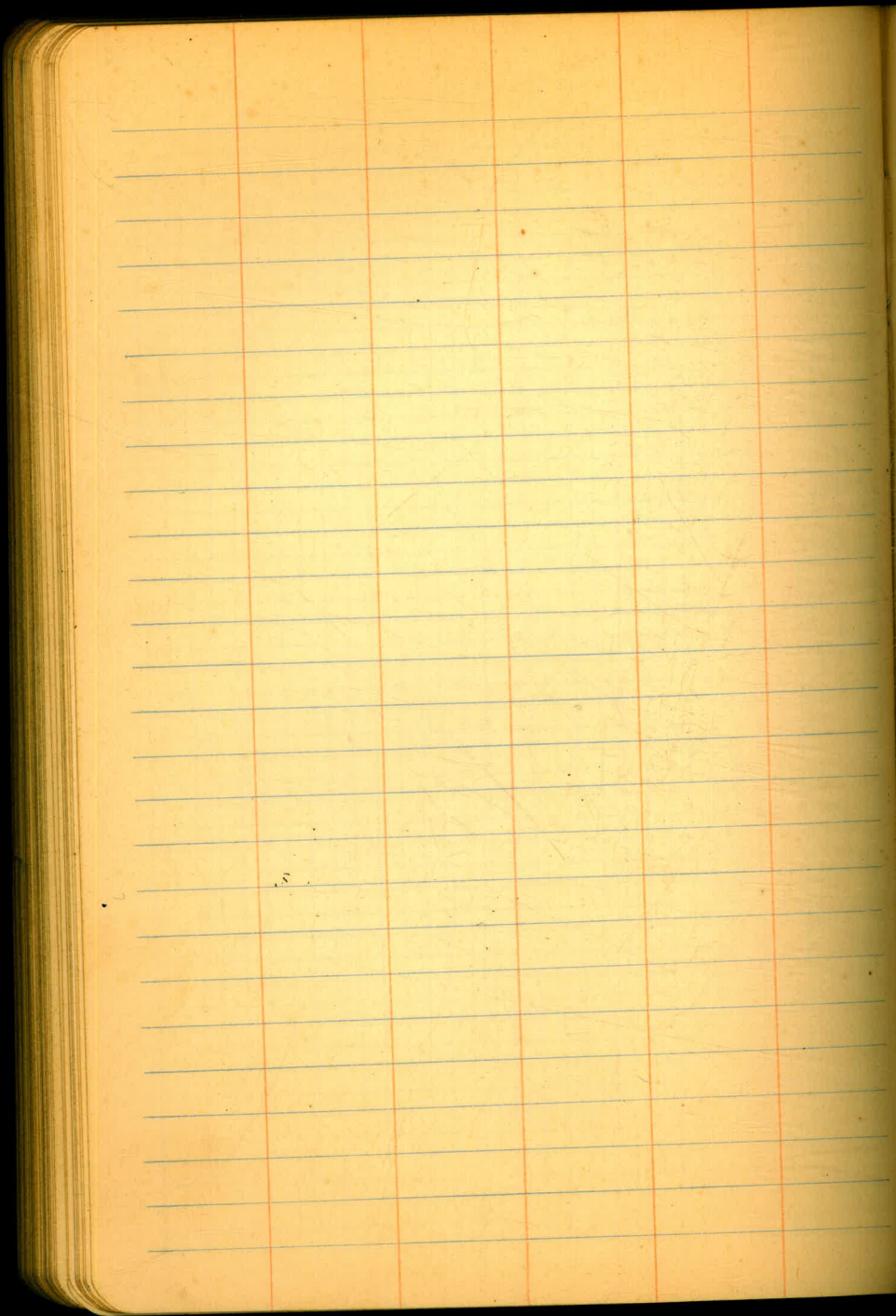
N. 3750 E 4100 7200 ft

E 4600

N. 376 E 4100

E 4600

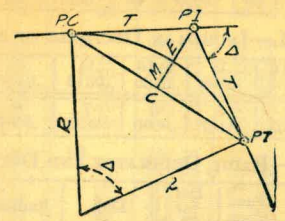




B.M.	2.50	568.97	566.47
B.M.			10.19 558.78
	0.16	558.94	
			9.24 549.70
	3.84	555.31	
		553.54	

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

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CURVE FORMULAS

- Radius = $R = \frac{50}{\sin \frac{D}{2}}$ (1) Degree of Curve = D and $\sin \frac{D}{2} = \frac{50}{R}$ (2)
- Tangent = $T = R \tan \frac{\Delta}{2}$ (3) Length of Curve = $L = 100 \frac{\Delta}{D}$ (4)
- Middle ordinate = $M = R(1 - \cos \frac{\Delta}{2}) = R \text{vers} \frac{\Delta}{2}$ (5) (6)
- External = $E = T \tan \frac{\Delta}{4} = R \div \cos \frac{\Delta}{2} - R$ (7) (8) = $R \text{exsec} \frac{\Delta}{2}$ (9)
- Long Chord = $C = 2 R \sin \frac{\Delta}{2}$ (10) Δ = Central Angle

EXPLANATION AND USE OF TABLES

Stations.—Given P. I. = Sta. 161 + 60.35 to find Sta. of P. C. and P. T. Δ = 62° 10' D = 8° 20'. From Table IV for 1° curve T = 3454.1 and $\div 8\frac{1}{2} = 414.49$ ft. From Table V correction = .36 or T = 414.85 ft. P. C. = Sta. P. I. - T = 157 + 45.50. Also from (4) L = 746.00 and P. T. = Sta. P. C. + L = 164 + 91.50.

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

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

Externals.—May be found in similar manner to tangents. Thus E for curve above is 91.37. For from Table IV for 1° curve E = 960.6 for 8° 20' = $960.6 \div 8\frac{1}{2} = 91.27$ and from Table V correction = .10 or E = 91.37 ft. Or suppose Δ = 32° and E is measured and found to be 42 ft. What is D? From Table IV E = 230.9 and $\div 42 = 5.5$ or D = 5° 30'.

58.94
 55.31
 3.6

DISTANCES FROM CENTER OF ROADWAY FOR
 CROSS-SECTIONING.

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

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

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