W
394

ENGINEER'S
MINING
TRANSIT BOOK
No. 422 F

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center Line 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)÷2 or 2 ft. added to 30.6 =32.6. **For slopes of 1 on 1½ see inside of back cover.**

Elevations of ground below puddle core before forming final base of hyd. fill 35-69

Oct 26 - 1932

N 3880

B. M.	3.21	578.26		575.05 O.G
E 4510				
500			0.3	78.0
490			1.2	77.1
80			0.9	77.4
70			0.7	77.6
60			0.4	77.9
50			0.0	78.3
40			+0.9	79.2 O.G
30				

plotted

N 3870

				O.G
4530				
4520			2.1	76.2
10			2.1	76.2
500			1.7	76.6
490			1.4	76.9
80			1.1	77.2
70			0.8	77.5
60			0.5	77.8
50			1.4	76.9 O.G
40				

plotted

Ch. Plotting of all Elevations 9-21-32

Elliott Note
Simpson ↑
Soper Rod
Remmen Ch.

N3860

578.26

		O.G ✓
4530		
520	2.5	75.8 ✓ ✓
510	2.2	76.1 ✓ ✓
500	1.8	76.5 ✓
490	1.6	76.7 ✓
480	1.1	77.2 ✓
470	1.4	76.9 ✓
460	1.0	77.3 ✓
		O.G ✓
450		

plotted

N3850

4490	2.0	76.3 ✓
480	7.4	70.9 ✓ ✓
470	9.9	68.4 ✓ ✓
		O.G
460		

plotted

N3840

4485	13.1	65.2 ✓
80	14.5	63.8 ✓ ✓
70	14.5	63.8 ✓ ✓
60	12.8	65.5 ✓ ✓
50	10.4	67.9 ✓ ✓
40	10.8	67.5 ✓ ✓
30	11.5	66.8 ✓ ✓ ✓
		O.G ✓
20		

plotted

All plotting eff. 9-21-34 C.B.H.

N3830

578.26

T. P.			12.76	565.50	
	0.40	565.90			
4470			6.1	59.8	
60			5.6	60.3	
50			6.8	59.1	
40			9.6	56.3	
30			9.4	56.5	
20			8.4	57.5	
10			6.9	59.0	
400			1.2	64.7	
390			1.3	64.6	
380			6.7	59.2	
70			7.7	58.2	
60			9.3	56.6	
50			9.3	56.6	
40			8.6	57.3	
30			8.4	57.5	✓
20				0.6	

N 3820

565.90

				0.G	1
4320					
30			9.2	5°6.7'	1
40			10.2	5°5.7'	1
50			10.5	5°5.4'	1
60			10.1	5°5.8'	1
70			11.0	5°4.9'	1
80			11.3	5°4.6'	1
90			11.8	5°4.1'	1
400			11.9	5°4.0'	1
10			12.5	5°3.4'	1
20			14.1	5°1.8'	1
30			13.5	5°2.4'	1
40			13.0	5°2.9'	1
52			13.4	5°2.5'	1
T.P.	5.33	558.86	12.37	5 53.53	

plotted

N 3810

4460			7.7	5°1.2'	1
50			8.0	5°0.9'	1
40			8.4	5°0.5'	1
30			8.2	5°0.7'	1
20			7.9	5°1.0'	1
10			8.5	5°0.4'	1
400			6.2	5°2.7'	1 ✓

plotted

N3810

558.86

4390	5.4	53.5	(
80	4.8	54.1	(
70	4.2	54.7	(
60	4.2	54.7	(
50	5.5	53.4	(
40	5.1	53.8	(
30	2.5	56.4	(
20		O.G	(

plotted

N3800

		O.G	(
4320			
30	2.3	56.6	(
40	4.7	54.2	(
50	7.3	51.6	(
60	6.6	52.3	(
70	4.0	54.9	(
80	5.7	53.2	(
90	5.8	53.1	(
400	10.0	48.9	(
410	10.0	48.9	(
20	9.4	49.5	(
30	8.8	50.1	(
40	9.2	49.7	(
50	8.7	50.2	(
60	8.3	50.6	(
65	7.6	51.3	(

plotted

N3790

558.86

4468		8.4	50.5 ✓
460	plotted	9.2	49.7 ✓
450		8.6	50.3 ✓ ✓
		12.9	546.0 ✓

End Oct 26 - 1932

Check on Staff Gage

Elliott
Simpson
Soper
Remmen

Steves Notes For Contractor

N3810

	2.25	577.30		575.05	
4548			2.9	574.4	Not Sta.
540			9.4	567.9	✓
530			11.0	566.3	✓
520			12.7	564.6	✓
510			14.9	562.4	✓

Plotted

N 3820

4530			2.2	575.1	Not Sta.
520			10.1	567.2	✓
510			10.1	567.2	✓

N3830

4510			2.2	575.1	Not sta.
4490			5.3	572.0	

N3800

577.30

4570	4.2	573.1	Not str.
560	11.2	566.1	✓
550	12.2	565.1	✓
540	12.1	565.2	✓
530	11.6	565.7	✓
520	12.5	564.8	✓
510	17.3	560.0	✓

Plotted

N3790

4600	4.8	572.5	Not str.
590	11.9	565.4	✓
580	13.9	563.4	✓
570	14.5	562.8	✓
560	14.6	562.7	✓
550	16.1	561.2	✓
540	17.3	560.0	✓
530	16.4	560.9	✓
520	18.1	559.2	✓

N3780

577.30

				572.2
4615			5.1	Not Stripped
610			11.2	566.1
600			14.9	562.4
T.P.	1.27	566.18	12.39	564.91
590			5.5	560.7
580			6.0	560.2
570			4.2	562.0
560			5.8	560.4
550			8.8	557.4
540			10.2	556.0
		3770		
4580			10.5	555.7
590			10.3	555.9
600			7.9	558.3
610			3.9	562.3
620			0.3	565.9
625			+4.7	Not Str.

Plotted

N3760

566.18

4610		9.1	557.1	✓
620		8.0	558.2	✓
630		4.8	561.4	✓
640		1.5	564.7	
645		+2.3		Not Str.

Plotted

All Elev. OK for Plotting 6.8.32

N3750

4640		12.0	554.2	✓
650		2.5	563.7	
660		+0.3		Not Str.

N3740

4650		11.3	554.9	✓
660		5.1	561.1	
670		1.2	565.0	

N3730

4660		11.8	554.4	✓
670		10.3	555.9	✓
680		2.9	563.3	Not Str.

End Oct 31 - 1932

S

Final X Sections

N3730

B.M.	5.10	565.10		560.00
4690			2.2	62.9
4700			3.0	62.1
710			3.9	61.2
720			4.7	60.4

plotted

N3720

4670	13.6	51.5
80	12.5	52.6
90	5.5	59.6
700	4.0	61.1
10	4.1	61.0
20	4.6	60.5

plotted

N3710

4680	16.3	48.8
90	14.0	51.1
700	5.2	59.9
710	4.7	60.4
720	4.6	60.5
730	5.1	60.0

plotted

Yellow Line

yellow line

All El. ck for Plotting

ck 9-20-34 [illegible]

Elliott
Simpson
Soper
Remmen

N3700

565.10

E 4670	17.4	47.7	✓
80	17.4	47.7	✓
90	17.3	47.8	✓
4700	15.7	49.4	✓
10	7.7	57.4	yellow line
20	7.4	57.7	
30	5.0	60.1	

plotted

N3690

4670	19.3	45.8	✓
80	19.2	45.9	✓
90	19.4	45.7	✓
4700	19.3	45.8	✓
10	19.1	46.0	✓
20	14.3	50.8	
30	5.6	59.5	
40	5.5	59.6	
50	5.8	59.3	✓
T.P. 4.57	12.80		

plotted

12.80

Cont on page 66

10.03
2.75
7.28

N3540

B.M.	0.65	560.65		560.00
4730			9.6	51.1
20			9.3	51.4
10			10.2	50.5
4700			9.7	51.0
4690			13.4	47.3
80			13.5	47.2
70			15.4	45.3
60			15.1	45.6
50			16.3	44.4
40			13.0	47.7
30			14.3	46.4
20			14.9	45.8
10			15.7	45.0
4600			17.5	43.2
4590			18.6	42.1
80			18.5	42.2
70			19.7	41.0
60			20.5	40.2
50			21.2	39.5
40			21.9	38.8
30			21.6	39.1
20			21.5	39.2
10			22.8	37.9

Marked Hard

Plotting ck 9-20-34 EBH

End Nov 7 - 1932

Nov 8 - 1932
Elliott
Simpson
Soper
Ramman

N3530

B.M.	0.84	560.84		560.00	
4730			7.3	553.5	Page 47
20			6.5	554.3	
10			6.2	554.6	
700			7.5	553.3	
690			8.9	551.9	
680			11.6	549.2	
670			14.2	546.6	
660			13.9	546.9	
650			10.3	550.5	
640			7.8	553.0	
630			8.7	552.1	
620			6.9	553.9	
610			7.8	553.0	
600			5.9	554.9	
590			8.7	552.1	
580			7.4	553.4	
570			8.7	552.1	
T.P	1.97	550.50	12.31	548.53	
560			5.3	545.2	
550			8.4	542.1	
540			10.0	540.5	
530			9.4	541.1	
520			10.7	539.8	
510			11.7	538.8	

Pole Wed

N3520

		550.50		
4510			12.3	38.2
520			11.6	38.9
530			8.8	41.7
540			6.2	44.3
550			2.3	48.2
T.P.	12.31	560.84	1.97	548.53
560			8.4	52.4
570			7.5	53.3
580			5.8	55.0
590			4.6	56.2
600			4.1	56.7
610			4.1	56.7
620			4.3	56.5
630			3.4	57.4
640			5.0	55.8
650			5.9	54.9
660			9.3	51.5
670			8.9	51.9
680			7.1	53.7
690			5.8	55.0
700			6.7	54.1
710			6.6	54.2
720			6.7	54.1
730			6.6	54.2

plotted

also checked Plotting C.B.H.

Cont on page 45

.N3510

560.84

4730			6.9	539
720			6.6	54.2
710			6.5	54.3
700			6.7	54.1
690			4.3	56.5
80			5.6	55.2
70			4.6	56.2
60			5.2	55.6
50			5.7	55.1
40			5.7	55.1
30			4.5	56.3
20			0.0	60.8
10			1.7	59.1
600			1.5	59.3
590			0.9	59.9
80			1.9	58.9
70			3.0	57.8
60			5.8	55.0
T.P.	1.97	550.50	12.31	548.53
50			2.9	47.6
40			6.2	44.3
30			10.7	39.8
20			12.2	38.3
4510			12.5	38.0
4500			13.2	37.3

Rebuilt Head

Cont. on page 45

N3500

550.50

4500			12.6	37.9
510			12.7	37.8
20			12.0	38.5
30			9.4	41.1
40			7.3	43.2
50			6.2	44.3
T.P.	12.31	560.84	1.97	548.53
60			11.4	49.4

Elev. of other elevations

B.M.	10.66	570.66	0.84	560.00
570			10.3	60.4
580			9.2	61.5
590			6.7	64.0
600			6.0	64.7
610			7.2	63.5
620			7.6	63.1
630			15.0	55.7
640			15.4	55.3
650			15.4	55.3
660			15.1	55.6
670			15.1	55.6
680			14.8	55.9
690			14.8	55.9
700			15.6	55.1
710			16.0	54.7
720			16.3	54.4
730			16.8	53.9

Also

Plotted

Cont on page 42

		N3490		
		570.66		
4730			16.0	54.7
20			15.4	55.3
10			15.4	55.3
700			15.2	55.5
690			15.0	55.7
80			14.5	56.2
70			14.1	56.6
60			15.3	55.4
50			15.5	55.2
40			15.4	55.3
30			13.5	57.2
20			2.5	68.2
10			0.5	70.2
600			2.7	68.0
590			3.8	66.9
580			2.8	67.9
570			5.4	65.3
B.M.	1.97	550.50		548.53
60		0.11 6.39	2.6	47.9
50			6.3	44.2
40			7.5	43.0
30			7.2	43.3
20			7.0	43.5
10			9.4	41.1
4500			11.8	38.7
4493			11.8	38.7

plotted

also checked other elevations 9-20-34 CBH

N3480

550.50

			Toe wall	
4489			8.5	42.0
4500			7.2	43.3
10			6.5	44.0
20			6.7	43.8
30			7.0	43.5
40			6.7	43.8
50			6.3	44.2
60			1.3	49.2
B.M.	10.66	570.66		560.00
70			-0.7	70.0
80			+0.6	71.3
90			+3.5	74.2
4600			+2.6	73.3
10			+1.3	72.0
20			+3.4	74.1
30			+0.8	71.5
40			-11.0	59.7
50			11.4	59.3
60			3.0	67.7
70			9.8	60.9
80			4.9	65.8
90			12.3	58.4
4700			13.8	56.9
10			13.8	56.9
20			14.8	55.9
30			14.6	56.1

plotted

Cont. on Page 40

N3470

B.M.	10.66	570.66		560.00
T.P.	10.30	579.95	1.01	569.65
4730			22.6	57.3 ✓
20			19.9	60.0 ✓
10	plotted		16.5	63.4 ✓
700			14.0	65.9 ✓
4690			O.G.	✓

B.M.	4.24	550.63		546.39
560			O.G	✓
Vertical				
560			+3.3	53.9 ✓
550			4.0	46.6 ✓
540			5.9	44.7 ✓
530	plotted		6.1	44.5 ✓
520			6.0	44.6 ✓
510			6.0	44.6 ✓
500			6.4	44.2 ✓
490			8.1	42.5 ✓
4486			8.5	42.1 ✓ ✓

560.0
2.73
562.73

N 3460

Cont on page 29

N3460

579.95

4730			20.4	59.5
20			16.7	63.2
10			11.0	68.9 − 0.6
700			0.6	
B.M.	4.24	550.63		546.39
			0.6	
565			+24.7	75.3
60			+20.7	71.3
50			+5.5	56.1
40			1.2	49.4
30			3.4	47.2
20			4.8	45.8
15			4.9	45.7
10			5.3	45.3
500			5.7	44.9
490			7.7	42.9
481			8.5	42.1

plotted

plotted

Get on page 37

Rock

Art from Page 33

569.65
12.30
581.95
50.63
31.3

1059
3
3767

3450
550.67

4477			7.6	43.1
80			6.9	43.8
90			6.5	44.2
500			5.6	45.1
510			3.3	47.4
514			+0.1	508
520			+2.2	52.9
B.M.	3.68	550.07		546.39
530			+10.3	60.4
B.M.	3.73	550.12		546.39
540			+15.8	65.9
550			+20.3	70.4
560			0.6	

plotted

From page 33

Rock

Rock

End Nov 8 - 1932

Start Nov 9 - 1932
Same Crew

N3440

B.M.	3.73	550.12		546.39
4480			8.6	41.5
490			5.6	44.5
500			3.5	46.6
510			+4.8	54.9
Vertical 510			+16.3	66.4
B.M.	12.30	581.95		569.65
520			11.9	70.0
			O.G	
525			4.8	77.1

plotted

81.95

At Portal Structure Footing

Rock

N3430

B.M.	3.73	550.12		546.39
4491			8.2	419
500			4.0	461
508	plotted		+7.6	577
510			+17.6	677
B.M.	12.30	581.95		569.65
			0.6	
515			4.4	77.5

81.95

At Portal Structure

Rock

B.M	3.73	550.12		546.39
4502	plotted		8.1	42.0 ✓ 1
4506.5			+10.5	60.6 ✓ 1 ←
B.M.	12.30	581.95		569.65 ✓ 1
4510			0.G 2.7	79.2 ✓

At Portal Structure
Rock

N3530

B.M.	1.65	550.97		549.32
T.P.	1.06	544.18	7.85	543.12
E4410			10.9	33.3 ✓
400			11.6	32.6 ✓
390			6.9	37.3 ✓
385			1.2	43.0 ✓
380			+5.2	49.4 ✓
370	plotted		+5.2	49.4 ✓
360			+4.8	49.0 ✓
350			+4.8	49.0 ✓
340			+5.3	49.5 ✓

N3520

4410		5.8	38.4 ✓
405		10.5	33.7 ✓
400		11.8	32.4 ✓
390		9.0	35.2 ✓
385		1.0	43.2 ✓
378		+3.6	47.8 ✓
370	plotted	+4.5	48.7 ✓
360		+3.3	47.5 ✓
350		+3.6	47.8 ✓
340		+5.2	49.4 ✓
330		+7.1	51.3 ✓

All Elev. ck for plotting Nov. 34 EAM

Nov 14 - 1932 A.M.
Elliott
Soper
Osborne

8.2
6.8

Toe trench

Bottom of stripping + tunnel spoil
Tunnel spoil
" "
" "

Cont'd in 390-70
Toe trench

Bottom of stripping + tunnel spoil
Tunnel spoil
" "

Nov 14-1932 P.M.
Elliott
Soper
Osborne

Clavert Notes for Contractors

N3510

B.M.	1.12	544.24		543.12
4410			4.2	40.0
400			10.7	33.5
390			10.3	33.9
386			3.0	41.2
384			2.4	41.8
376			+1.9	46.1
370			+2.2	46.4
360			+2.2	46.4
350			+3.0	47.2
340			+2.3	46.5
330			+8.2	52.4
325			+10.1	54.3

plotted

N3500

4410		4.6	39.6
4407		4.8	39.4
4403		10.2	33.5
95		10.2	34.0
85		11.7	32.5
4380		3.7	40.5
377		+1.9	46.1
370		+1.8	46.0
360		+1.7	45.9
350		+1.2	45.4
340		+2.1	46.3 Tunnel Cut

plotted

Trench

B.M. 549.32
1.86
51.18
44.00
6.9

Nov. 15 - 1932

Trench

Nov. 15

N 3490

544.24

4426	3.8	404	
420	5.8	38.4	
415	9.1	35.1	
410	10.8	33.4	
400	12.4	31.8	
390	10.7	33.5	
385	9.2	35.0	
377	+1.1	45.3	
370	+0.7	44.9	
360	+0.2	44.4	Tunnel cut

plotted

Cont. on page 11 Book 390

Toe trench

Nov. 15-1932

N3480

544.24

4443	2.7	41.5	1
35	8.5	35.7	1
30	10.1	34.1	1
20	10.5	33.7	1
10	11.1	33.1	1
4400	12.0	32.2	1
395	10.4	33.8	1
390	6.7	37.5	1
380	+0.2	44.4 Tunnel cut	1

plotted

Trench

No 15

N 3470

544.24

4460	2.0	42.2'	1
450	7.5	36.7'	1
440	9.7	34.5'	1
430	9.2	35.0'	1
420	10.6	33.6'	1
4410	11.2	33.0'	1
400	2.2	42.0' Tunnel Cut	1

plotted

Trench

Nov 15

N3460

544.24

463		2.2	542.0 ✓	✓
4460	plotted	8.9	353 ✓	✓
450		8.4	35.8 ✓	✓
440		8.8	35.4 ✓	✓
430		9.4	34.8 ✓	✓
419		2.2	42.0	Tunnel Cut ✓

N3450

55		2.2	42.0 ✓	✓
55	plotted	8.7	35.5 ✓	✓
50		8.9	35.3 ✓	✓
4440		7.9	36.3 ✓	✓
	8.83 551.95	1.12	543.12	
B.M.		2.63	549.32 ✓	
4439		10.0	42.0 ✓	Tunnel Cut ✓

N3440

E4455	plotted		542.0 ✓	Toe Wall + Tunnel Cut

Cont on page 23

Tr.

Nov. 15

on page 24

Check End of day Nov 14-1932

Nov 15

B.M.	12.78	552.17		539.39
Tr.	11.75	562.90	1.02	551.15
Level B.M.	6.27	545.68		539.39
Level B.M.	3.73	543.12		539.39
Tr.	7.41	558.56		551.15

N3440

B.M.	11.75	562.90		551.15
4800			1.2	61.7
10			3.1	59.8
20			3.1	59.8
30			2.7	60.2
40			2.7	60.2
50			3.0	59.9
60			3.3	59.6
70			3.7	59.2
80			4.0	58.9
90			4.1	58.8
4900			5.7	57.2
10			6.6	56.3
20			11.0	51.9
-		545.68		
30			+3.0	48.7
40			+1.9	47.6
50			+1.0	46.7
60			+0.7	46.4
70			+0.3	46.0
80			-0.5	45.2
90			0.3	45.4
4997			+0.3	46.0

yellow line = adj Elevs ch for plotting

higher than orig ground

X

Dec 28 - 32

Elevations under hyd fill below puddle core before forming final base of hyd fill 35-69

		N3450		
		545.68		
4997			7.9	37.8
90			7.8	37.9
80			4.6	41.1
70			2.2	43.5
60			2.2	43.5
50			1.6	44.1
40			0.4	45.3
30			0.4	45.3
20			+4.6	50.3
B.M.	11.75	562.90		551.15
10			8.3	54.6
4900			6.1	56.8
4890			7.3	55.6
80			7.3	55.6
70			5.5	57.4
60			3.1	59.8
50			2.9	60.0
40			2.9	60.0
30			3.0	59.9
20			3.3	59.6
10			3.4	59.5 X

Rec 4-21-34

Also at yellow line, 9-20-34 [illegible]

N3450

562.90

4800	4.2	58.7 ✓ ✓
4790	6.0	56.9 ✓ ✓
4780	5.8	57.1 ✓ ✓
70	+1.1	64.0 ✓ ✓
60	+0.3	63.2 ✓ ✓
50	−0.8	62.1 ✓ ✓
40	+0.6	63.5 ✓ ✓ X

N 3460

4740	3.6	59.3 ✓ ✓
50	3.0	59.9 ✓ ✓
60	1.2	61.7 ✓ ✓
70	6.5	56.4 ✓ ✓
80	8.4	54.5 ✓ ✓
90	6.6	56.3 ✓ ✓
4800	5.3	57.6 ✓ ✓
10	3.7	59.2 ✓ ✓
20	3.4	59.5 ✓ ✓
30	5.8	57.1 ✓ ✓
40	6.5	56.4 ✓ ✓
50	3.4	59.5 ✓
60	2.8	60.1 ✓
70	3.2	59.7 ✓
80	3.1	59.8 ✓ X

Stem page 23

3460

562.90

4890	2.8	60.1
4900	5.7	57.2
10	11.3	51.6
20	15.5	47.4

545.68

30	2.6	43.1
40	5.3	40.4
50	5.0	40.7
60	4.9	40.8
70	5.6	40.1
80	13.3	32.4
90	13.3	32.4
97	16.5	29.2

N3470

4997	16.5	29.2
90	15.6	30.1
80	15.6	30.1
70	11.2	34.5
67	7.7	38.0
60	7.6	38.1

Superceded by notes Louvre Book 421/35

N3470

545,68

4950	8.3	37.4
40	8.0	37.7
30	6.5	39.2
20	+2.6	48.3
10	+5.9	51.6

562,90

4900	4.3	58.6
4890	1.8	61.1
80	2.5	60.4
70	2.6	60.3
60	2.8	60.1
50	2.7	60.2
40	2.7	60.2
30	2.8	60.1
20	3.6	59.3
10	3.7	59.2
4800	5.4	57.5
4790	7.2	55.7
80	8.7	54.2
70	8.7	54.2
60	6.3	56.6
50	4.6	58.3
40	5.0	57.9 X

Jim Sage 2-2

N3480

562,90

E 4740	6.8	56.1
50	7.6	55.3
60	8.9	54.0
70	8.7	54.2
80	9.1	53.8
90	8.1	54.8
4800	5.4	57.5
10	3.5	59.4
20	2.6	60.3
30	2.2	60.7
40	2.0	60.9
50	2.7	60.2
60	3.1	59.8
70	3.0	59.9
80	2.1	60.8
90	1.3	61.6
4900	3.7	59.2
10	9.7	53.2
20	16.4	46.5

545.68

30	7.3	38.4
40	9.4	36.3
50	9.7	36.0

from page 21

	N3480			
	545.68			
4960		9.6	36.1	↓
670		9.3	36.4	↓
70		15.4	30.3	↓ x
	N3490			
71		15.0	30.7	
67		11.3	34.4	
60		10.2	35.5	↓
50		9.9	35.8	↓
40		9.0	36.7	↓
30		6.6	39.1	↓
20		+4.1	49.8	
	562.90			
10		9.4	53.5	
4900		3.4	59.5	
4890		1.0	61.9	
4880		2.0	60.9	

x also ck yellow line

Ck'd

Book 421-36

See 421-36

12.8
8.?

N3490

562.90

4870	2.5	60.4
60	3.2	59.7
50	3.0	59.9
40	2.0	60.9
30	2.0	60.9
20	2.1	60.8
10	3.1	59.8
4800	3.1	59.8
4790	7.2	55.7
80	8.6	54.3
70	9.0	53.9
60	9.1	53.8
50	9.0	53.9
40	8.9	54.0

N3500

4740	9.4	53.5
50	9.2	53.7
60	9.1	53.8
70	7.5	55.4
80	9.1	53.8
90	8.9	54.0
4800	3.7	59.2

Cont from Page 19

N3500

562.90

4810	3.0	59.9
20	2.0	60.9
30	2.1	60.8
40	2.4	60.5
50	3.5	59.4
60	3.1	59.8
70	6.0	56.9
80	7.1	55.8
90	5.4	57.5
4900	2.9	60.0
10	8.6	54.3
20	13.9	49.0
	545.68	
30	5.8	39.9
40	9.0	36.7
50	9.7	36.0
60	10.6	35.1
68	12.3	33.4
73	15.6	30.1
80		
90		
97		

also off yellow line 68 ft

X

N 3510

545,68

4975		15.6	30.1
67		10.0	35.7
60		9.7	36.0
50		8.3	37.4
40		9.3	36.4
30		6.6	39.1
20		1.4	47.1
	562.90		
10		9.5	53.4
4900		5.7	57.2
4890		7.5	55.4
80		7.9	55.0
70		7.0	55.9
60		2.5	60.4
50		3.8	59.1
40		3.4	59.5
30		2.2	60.7
20		2.5	60.4
10		3.1	59.8

CBH

9-20-34

Alto ck. yellow Loam

X

N3510

562.90

4800	4.6	58.3
4790	10.1	52.8
80	10.6	52.3
70	6.8	56.1
60	9.7	53.2
50	9.6	53.3
40	9.1	53.8 x

N3520

4740	9.2	53.7
50	10.1	52.8
60	10.6	52.3
70	10.0	52.9
80	11.2	51.7
90	10.6	52.3
4800	10.4	52.5
10	5.5	57.4
20	3.1	59.8
30	2.4	60.5
40	4.5	58.4
50	4.3	58.6
60	5.8	57.1
70	7.4	55.5
80	7.9	55.0
90	7.5	55.4

yellow line

X

Cont from page 18

Cont from page 17

	3520		
	562.90		
4900		7.1	55.8
10		8.7	54.2
20		15.3	47.6
	545.68		
30		4.8	40.9
40		8.0	37.7
50		9.0	36.7
60		9.2	36.5
67		9.6	36.1
73		15.2	30.5
	N3530		
4972		15.7	30.0
66		10.0	35.7
60		9.7	36.0

Cube 4/21/39

13.1

N3530

545.68

4950	9.4	36.3
40	8.7	37.0
30	5.7	40.0
20	+1.3	47.0
	562.90	
10	7.8	55.1
4900	7.8	55.1
4890	7.9	55.0
80	7.8	55.1
70	7.5	55.4
60	6.9	56.0
50	5.3	57.6
40	5.5	57.4
30	3.5	59.4
20	7.9	55.0
10	10.0	52.9
4800	10.6	52.3
4790	10.9	52.0
80	10.5	52.4
70	10.4	52.5
60	11.3	51.6
50	10.5	52.4
40	10.0	52.9

X

From Page 16

N3540

562.90

4740	11.4	51.5
50	11.7	51.2
60	11.9	51.0
70	11.3	51.6
80	10.4	52.5
90	10.6	52.3
4800	10.4	52.5
10	9.8	53.1
20	8.8	54.1
30	5.6	57.3
40	6.4	56.5
50	6.1	56.8
60	7.5	55.4
70	7.6	55.3
80	8.2	54.7
90	7.7	55.2
4900	8.2	54.7
10	6.9	56.0
20	14.3	48.6

545.68

30	5.9	39.8
40	9.5	36.2
50	10.0	35.7

X

		N3540		
		545.68		
4960			10.4	35.3
63			10.4	35.3
68			14.0	31.7
		N3550		
B.M.	3.73	543.12		539.39
4970			11.0	32.1
60			8.9	34.2
50			7.7	35.4
40			6.7	36.4
30			3.0	40.1
20			+5.2	48.3
B.M.	7.41	558.56		551.15
10			4.5	54.1
4900			4.6	54.0
4890			3.9	54.7
4880			3.8	54.8

+ also of yellow line 9-20-34 C.B.H.

3550

558.56

4870	3.4	55.2
60	3.6	55.0
50	2.8	55.8
40	2.9	55.7
30	3.1	55.5
20	4.5	54.1
10	5.5	53.1
4800	6.1	52.5
4790	6.3	52.3
80	6.3	52.3
70	6.8	51.8
60	7.7	50.9 X

N 3560

4760	8.7	49.9
70	8.5	50.1
80	6.5	52.1
90	6.4	52.2
4800	6.3	52.3
10	6.0	52.6
20	4.5	54.1
30	3.8	54.8
40	3.7	54.9
50	3.9	54.7 X

N3560

558.56

4860		3.7	54.9 ✓ ↓
70		3.8	54.8 ✓
80		3.8	54.8 ✓
90		4.3	54.3 ✓
4900		4.7	53.9 ✓
10		1.6	57.0 ✓
20		8.5	50.1 ✓
30		16.2	42.4 ✓ ↓
	543.12		
40		6.5	36.6 ✓ ↓
50		7.5	35.6 ✓
60		8.6	34.5 ✓
70		10.6	32.5 ✓ X

Also oil yellow line for pile string

3570

4976		12.4	30.7 ✓ ↓ X

3570

543.12

4970	10.1	33.0 ✓
60	7.5	35.6 ✓
50	6.5	36.6 ✓
40	5.0	38.1 ✓
30	0.1	43.0

558.56

20	8.0	50.6
10	1.6	57.0
4900	1.9	56.7
4890	3.5	55.1
80	3.5	55.1
70	4.5	54.1 ✓
60	5.3	53.3 ✓
50	4.8	53.8 ✓
40	4.5	54.1
30	4.5	54.1
20	4.9	53.7 ✓
10	5.5	53.1 ✓
4800	5.9	52.7 ✓
4790	6.5	52.1 ✓
780	7.8	50.8 ✓
70	8.3	50.3 ✓
60	8.7	49.9 ✓ X

N3580

	558.56			
4760		6.5	52.1	
70		6.4	52.2	
80		6.3	52.3	
90		6.2	52.4	
800		6.6	52.0	
10		6.0	52.6	
20		5.2	53.4	
30		5.2	53.4	
40		5.5	53.1	
50		5.7	52.9	
60		6.1	52.5	
70		5.3	53.3	
80		4.3	54.3	
90		4.2	54.4	
4900		3.5	55.1	
10		2.8	55.8	
20		7.6	51.0	
30		15.3	43.3	
	543.12			
40		4.7	38.4	
50		5.7	37.4	X

also yellow line plotting checked

N3580

543.12

4960	6.1	37.0	
70	5.9	37.2	
74	11.4	31.7	X

N3590

4974	11.4	31.7	
67	5.6	37.5	↓
60	5.5	37.6	↓
50	5.3	37.8	↓
40	4.8	38.3	↓
30	0.0	43.1	

558.56

20	8.3	50.3	
10	4.9	53.7	
4900	5.8	52.8	X

also yellow line off Cliff

3590

558,56

4890		6.0	52.6
80		4.8	53.8
70		5.5	53.1
60		6.4	52.2
50		6.2	52.4
40		6.0	52.6
30		5.7	52.9
20		5.7	52.9
10		6.4	52.2
4800		6.5	52.1
4790		6.2	52.4
80		6.3	52.3
70		6.2	52.4
60		6.5	52.1 X
	N 3600		
4760		6.6	52.0
70		6.2	52.4
80		6.0	52.6
90		6.3	52.3
4800		6.4	52.2
10		6.4	52.2
20		6.0	52.6
30		5.9	52.7 X

N3600

558.56

4840		6.3	52.3 ✓
50		6.5	52.1 ✓
60		6.8	51.8 ✓
70		6.3	52.3 ✓
80		5.5	53.1 ✓
90		6.3	52.3
4900		7.6	51.0
10		5.3	53.3
20		11.8	46.8
	543.12		
30		0.4	42.7 43.3 ✓
40		4.3	38.8 ✓
50		4.6	38.5 ✓
60		4.6	38.5 ✓
67		4.8	38.3
73		11.5	31.6 X

also yellow clay

N3610

543.12

4974	11.9	31.2	yellow line
66	3.9	39.2	
60	4.2	38.9	
50	4.4	38.7	
40	4.3	38.8	
30	0.0	43.1	
	558.56		
20	12.3	46.3	
10	10.7	47.9	
4900	9.4	49.2	
4890	7.7	50.9	
80	6.9	51.7	
70	7.1	51.5	
60	6.8	51.8	
50	6.5	52.1	
40	6.2	52.4	
30	5.9	52.7	
20	6.2	52.4	
10	6.4	52.2	X

3610

558.56

4800		6.1	52.5 ✓
790		6.2	52.4 ✓
80		6.3	52.3 ✓
70		6.5	52.1 ✓
4760		6.4	52.2 ✓ ×
	N3620		
4760		6.7	51.9 ✓
70		6.4	52.2 ✓
80		6.5	52.1 ✓
90		6.4	52.2 ✓
4800		6.0	52.6 ✓
10		6.4	52.2 ✓
20		6.0	52.6 ✓
30		5.8	52.8 ✓
40		6.0	52.6 ✓
50		6.4	52.2 ✓
60		6.7	51.9 ✓
70		7.2	51.4 ✓
80		7.8	50.8 ✓
90		8.6	50.0 ✓
4900		9.6	49.0 ✓
10		10.8	47.8 ✓
20		11.7	46.9 ✓ ×

N3620

543.12

4930	0.7	42.4 ✓	
40	3.7	39.4 ✓	
50	3.8	39.3 ✓	
60	4.2	38.9 ✓	
67	3.5	39.6 ✓	
72	13.2	29.9 ✓	X
/			
/			
/			
/			

N3630

/			
/			
/			
/			
76	13.3	29.8 ✓	
66	3.6	39.5 ✓	
60	3.7	39.4 ✓	✓
50	3.6	39.5 ✓	/
40	3.0	40.1 ✓	/
30	1.4	41.7 ✓	✓
20	0.1	43.0 ✓	/ X

Yellow Line Plotting Ch 9-30-34

58.56
43.12
15.44

/

		3630			
		558.56			
4910			12.7	45.9	
900			8.6	50.0	
890			7.7	50.9	
80			7.2	51.4	
70			6.7	51.9	
60			6.4	52.2	
50			6.0	52.6	
40			5.7	52.9	
30			5.8	52.8	
20			5.9	52.7	
10			6.1	52.5	
4800			6.0	52.6	
4790			6.4	52.2	
80			6.7	51.9	
70			7.2	51.4	
60			8.1	50.5	X
		N3640			
	4.90	544.29		539.39	
/					
/					
/					
. /					
4975			14.6	29.7	See Book 422/5 2-8-33
66			4.0	40.3	
4960			4.2	40.1	X

	N3640		
	544.29		
4950		4.2	40.1
4940		3.7	40.6
30		2.5	41.8
20		1.0	43.3
10		+0.8	45.1
4900		+2.2	46.5
90		+3.6	47.9
80		+4.0	48.3
	562.46		
4870		12.0	50.5
60		10.9	51.6
50		10.1	52.4
40		9.6	52.9
30		9.3	53.2
20		9.2	53.3
10		9.4	53.1
4800		9.7	52.8
4790		10.0	52.5
80		10.6	51.9
70		11.0	51.5
60		11.3	51.2 X
	N3650		
4760		10.3	52.2
70		10.2	52.3
80		9.6	52.9 X

T.P. 551.15
11.21
562.46

	N36.50		
4790	562.46	9.9	52.6
4800		9.2	53.3
10		8.8	53.7
20		8.7	53.8
30		8.8	53.7
40		9.4	53.1
50		9.9	52.6
60		10.5	52.0
70		11.0	51.5
80		12.0	50.5
90		11.8	50.7
4900		12.3	50.2
10		13.2	49.3
20		13.8	48.7
4930		16.3	46.2
	544.29		
40		3.1	41.2
50		3.6	40.7
60		3.6	40.7
67		3.0	41.3
76		14.4	29.9
/			
/			
/			
/			

yellow brown clay 7-20-34 CBR

N3660

544.29

4978	14.1	30.2
66	1.9	42.4
60	2.5	41.8
50	2.9	41.4
40	1.9	46.2

562.46

4930	12.3	50.2
20	10.1	52.4
10	9.5	53.0
4900	9.7	52.8
4890	9.4	53.1
80	8.9	53.6
70	8.9	53.6
60	9.2	53.3
50	8.6	53.9
40	9.0	53.5
30	8.8	53.7
20	8.4	54.1
10	8.0	54.5
4800	8.2	54.3
4790	8.1	54.4

yellow line ok

X

N3660

56246

4780	8.6	53.9 ✓	✓
70	8.9	53.6 ✓	✓
60	8.0	~~53.5~~ 54.5 ✓	✓ X
	N3670		
4760	6.5	56.0 ✓	
70	5.9	56.6 ✓	
80	6.6	55.9 ✓	
90	7.1	55.4 ✓	
4800	7.1	55.4 ✓	✓
10	7.7	54.8 ✓	✓
20	8.4	54.1 ✓	✓
30	8.8	53.7 ✓	✓
40	9.0	53.5 ✓	✓
50	9.0	53.5 ✓	✓
60	8.8	53.7 ✓	✓
70	8.8	53.7 ✓	✓
80	9.0	53.5 ✓	✓
90	8.4	54.1 ✓	✓
4900	8.8	53.7 ✓	
10	9.3	53.2 ✓	
20	9.8	52.7 ✓	
30	9.9	52.6 ✓	
4940	17.3	45.2 ✓	✓ X

SBM
Galvanized Casing

N3670

544.29

4950		1.3	43.0 ✓
60		1.5	42.8 ✓
66		0.8	43.5 ✓
76		13.0	31.3 ✓

Yellow clay

N3680

4976		11.9	32.4 ✓
65		+0.3	44.6 ✓
60		0.0	44.3 ✓
50		+0.6	44.9 ✓
40		+2.5	46.8 ✓

Yellow clay

562.46

4930		10.8	51.7 ✓
20		8.9	53.6 ✓
10		9.1	53.4 ✓
4900		9.0	53.5 ✓
4890		8.9	53.6 ✓
80		8.5	54.0 ✓
70		8.7	53.8 ✓
60		8.9	53.6 ✓
50		9.0	53.5 ✓

N3680

562.46

4840	9.4	53.1	
30	7.0	55.5	Boulder
20	8.7	53.8	
10	8.0	54.5	
4800	7.1	55.4	
4790	6.4	56.1	Yellow Clay
80	5.7	56.8	
70	4.9	57.6	
60	4.3	58.2	X

N3690

4760	3.5	59.0	
70	4.4	58.1	
80	4.9	57.6	
90	5.2	57.3	
4800	5.7	56.8	
10	5.9	56.6	
20	4.9	57.6	
30	5.5	57.0	Boulder
40	9.7	52.8	
50	9.1	53.4	
60	8.7	53.8	
70	8.9	53.6	
80	8.4	54.1	
90	8.5	54.0	
4900	8.9	53.6	X

Stompage 1A

	N3690			
	562.46			
4910		9.1	53.4 ✓	
20		9.4	53.1 ✓	
30		9.6	52.9 ✓	
40		10.9	51.6 ✓	
50		13.6	48.9 ✓	
60		14.5	48.0 ✓	yellow line cked
	544.29			
64		+2.1	46.4 ✓	
75		10.8	33.5 ✓	X
	N3700			
4975		8.9	35.4 ✓	
64		+3.8	48.1 ✓	
	562.46			
4900		13.8	48.7 ✓	
50		12.7	50.3 ✓	
40		11.2	51.3 ✓	
30		9.8	52.7 ✓	d/s yellow line
				X

	N3700			
	562.4C			
4920		9.3	53.2	
10		9.0	53.5	
4900		8.9	53.6	
4890		8.0	54.5	
80		8.0	54.5	
70		8.8	53.7	
60		8.1	54.4	
50		7.6	54.9	
40		7.1	55.4	
30		5.5	57.0	
20		4.4	58.1	
10		3.9	58.6	
4800		3.6	58.9	
4790		3.5	59.0	
80		3.4	59.1	
70		3.5	59.0	
60		3.5	59.0	
	~~N3710~~			
4750		2.9	59.6	
40		2.5	60.0	X
	N3710			
4740		2.6	59.9	
50		2.8	59.7	
60		2.4	60.1	
70		2.7	59.8	X

yellow clay over blue clay

N 3710

562.46

4780		3.1	59.4	✓
90		3.2	59.3	✓
4800		3.1	59.4	✓
10		3.5	59.0	✓
20		4.2	58.3	✓
30		4.0	58.5	✓
40		2.8	59.7	✓
50		2.1	60.4	✓
60		3.1	59.4	✓
70		5.8	56.7	✓
80		7.3	55.2	✓
90		8.3	54.2	✓
4900		8.7	53.8	✓
10		8.8	53.7	✓
20		9.1	53.4	✓
30		9.5	53.0	✓
40		10.3	52.2	✓
50		12.1	50.4	✓
60		12.5	50.0	✓
65		13.6	48.9	✓
75	544.29	8.2	36.1	✓ X

Bottom Line Plotting abandoned 7-20-34

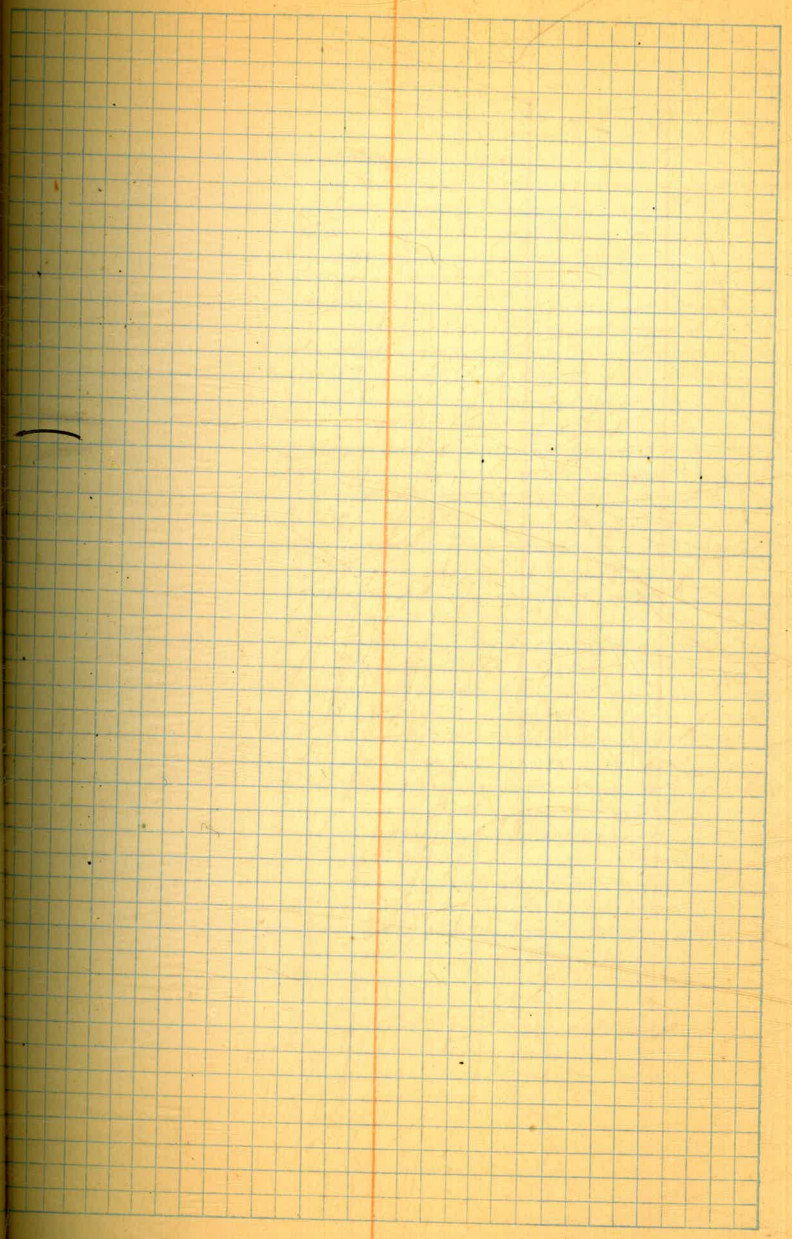
Continued on page 1 Book 395

N3720

544.29

4975 7.7 536.6 ✓ Yellow X Line

1



Final X Sections Toe Trench
To Supecede Previous Finals

N3540

B.M.	1.12	544.24		543.12
4390			6.7	37.5
94			10.8	33.4
4405		plotted	12.4	31.8
4410			11.2	33.0
4415			6.5	37.7

N3550

4420			6.3	37.9
15			9.0	35.2
10		plotted	12.2	32.0
400			11.7	32.5
395			11.4	32.8
390			4.8	39.4

3560

4394			3.7	40.5
4397			11.5	32.7
4405		plotted	12.8	31.4
4415			11.0	33.2
4420			7.6	36.6

Nov 14-1932
Elliott π - Notes
Soper Rod
Osborne Tape

Clavert
Notes for Contr.

77

N3570

544.24

4420		7.2	37.0
415	plotted	11.4	32.8
405		12.5	31.7
4400		10.7	33.5

N3580

4400		10.5	33.7
10	plotted	12.5	31.7
15		12.0	32.2
4420		7.8	36.4

N3590

4400		12.0	32.2
410	plotted	13.0	31.2
420		10.6	33.6
430		6.9	37.3

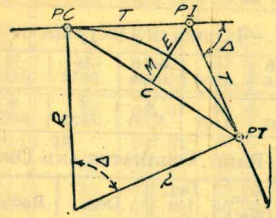
checked 9-21-24 GBM

Cont from Book $\frac{390}{66}$

Cont from $\frac{390}{66}$

Cont'd in $\frac{390}{66}$

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES



CURVE FORMULAS

Radius=R=$\frac{50}{\text{sin. } D/2}$ (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. $\frac{\Delta}{2}$) (5) =R vers $\frac{\Delta}{2}$ (6)

External=E=T tan $\frac{\Delta}{4}$ (7) =R ÷ cos. $\frac{\Delta}{2}$ —R (8)=R 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 ÷8⅓=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 ÷ 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 ÷ (2 x 688.26)=2.16 ft.

Deflections.—Deflection angle=½ D for 100 ft., ¼ D for 50 ft., etc. For c ft.=(in minutes) .3 x C x D° or=defl. for 1 ft. from Table III x C. For Sta. 158 of above curve=.3 x 54.5 x 8⅓=136.2′ or 2° 16.2′, or=2.50 x 54.5=136.2′ from Table III. For Sta. 159 deflection angle=2° 16.2′ +8° 20′ ÷2=6° 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 ÷ 8⅓=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 ÷42=5.5 or D=5° 30′.

4420
30

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½.

For Single Track Embankment.

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

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

For slopes of 1 on 1 see inside of front cover.

Made in Germany.