EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1.

For Single Track Embankment.

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

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

499

El Cap Res. road survey E side

June-5-1935
Hill-Simpson
Soper-Remmen.

Estimates of Yardadge And Drainage For Construction of a Road, From the Present Rd. about 1 Mile Below the divirting Dam, up to the Flume Bench and around the Lake on the Flume Bench to El Capiton Dam.

Slopes Are Approximate.

65+10 Slope = 10° Bench 16' wide

62+76 = Flume Stationing
=
9+00 = intersection with Flume
9+00 Slope = 10° on Flume Bench Width 16'

8+75 Slope = 10°

7+50 Slope = 7°

7+50 12" culvert

6+50 Slope = 4°30'

4+80 18" culvert

4+50 Slope = 4°30'

1+50 Slope = 5°

0+50 Slope = 10°

0+00 = Start of 6% Rd. up to Flume Bench
461+50 = intersection of Road Survey Around North Side of Lake and Present Traveled Rd.

+6.0%

Sandy Loam Formation

Cont'd. From Page 1

Sta.	Slope of O.G.	Bench Width	Height of inside Bank above Flume Bench.	Horiz. Dist. From toe to Top of Bank.	
79+20	= Flume Sta.				
82+30	= Intersection with Flume				
82+30	10°	17'	2.5'	3'	(on Flume Bench)
81+20	15°				
80+20	30°				
79+70	Rock Fill Crossing (Deep Ravine)				Heavy Boulder Formation
79+40	35°				
77+90	35°				
76+70	10°	12'	12'	12'	= North side of Deep Ravine (Leave Flume Bench Here to Swing up into this Ravine)
76+00	(Deep cut) 12' at Flume Grade 16' wide 4' above Flume Grade, Then 1:1 Slope				
74+00	15°	14'	3'	3'	
72+00	20°	18'	10'	9'	
70+00	15°	16'	6'	6'	Sandy Loam And D.G. Formation
67+75	10°	16'			
66+00	18" culvert				

Contd. From Page 2.

Sta.	Slope of O. G.	Bench. Width.	Height of Inside Bank above Flume Bench.	Horiz. Dist. From Toe to Top of Bank
98+00	10°	16'	5'	3'
96+50	18" culvert (Trestle #18)			
95+50	18" culvert			
94+50	18" culvert			
94+00	10°	16'	4'	3'
91+00	12°	16'	2'	3'
90+90	18" culvert			
89+10	18" culvert			
88+00	18" culvert			
86+00	5°	16'	1'	2'
82+00	10°	14'	3'	3'
80+30	12" culvert			

Sandy Loam And D.G. Formation

Note:- Add 30' to Length Between Sta. 94+00 And Sta. 98+00 For Road Around Ravine

Cont'd. From Page 3.

Sta.	Slope of O.G.	Bench Width	Height of inside Bank above Flume Bench.	Horiz. Dist. From toe to Top of Bank.
115+00				
113+40	20°			
113+10	24" culvert			
112+35	30°			
110+80	18" culvert			
110+50	20°			
109+45	18" culvert			
108+95	25°	16'	8'	8'
105+00	25°	16'	7'	7'
103+40	18" culvert (Trestle #19)			
102+00	20°	16'	3'	25'
101+60	18" culvert			
100+00	25° East	14'	9'	8'
	(west side		3'	7')

Boulders in D.G. Formation

= Start of Line over Tunnel #1 and around Sand Creek, (No Flume Bench) See Book #497.

Scattered

Sandy Loam And D.G. Formation

Contd. From Page 4.

Sta.	Slope of a. G.	
127+60	25°	= North Side of Sand Creek Crossing.
127+00	24" Culvert	
126+50	15°	
124+90	18" culvert	
124+50	10°	
123+00	18" culvert	
122+00	Level	
120+75	10°	
118+75	6°	
117+00	3°	
116+80	24" culvert	
115+10	3°	

Sandy Loam And D.G. Formation

Contd. From Page 5.

Sta.	Slope of O.G.	Bench Width.
138+50	+ 7°	
137+40	= End of Flume Bench	
137+00	Level	20'
134+50	Level	20'
134+20	= on old abandoned Flume Bench	
133+50	+ 30°	
132+15	+ 35°	
131+30	+ 35°	
130+15	+ 20°	
129+10	+ 30°	
128+13	Level	= South Side of Sand Creek.
127+80	= ℄ Sand Creek	See Book 497

old Trestle

Scattered Boulder Formation

Sandy Loam And D.G. Formation

Cont'd. From Page 6.

Sta.	Slope of O. G.	Bench Width.	Height of inside Bank above Flume Bench East Side	Horiz. Dist. From toe to Top of Bank
147+00	+ 20°	—		
146+15	Level	20'		
145+25	+15°	16'	3'	4'
144+25	18" culvert			
143+35	+ 4°			
142+60	Cut 10'			
142+00	& Deep Ravine - use Small Trestle Bridge			
141+50	Cut 10'			
140+80	Level	20'		
140+20	Level	20'		
139+60	+ 20°			
139+30	18" culvert			

And D. G. Formation

Sandy Loam

140+61

Contd. From Page 7.

Sta.	Slope of O.G.	Bench Width	Height of inside Bank above Flume Bench East side	Horiz. Dist. From Toe to Top of Bank
159+75	18" culvert			
159+50	+10°	14'	6 5/12'	6 5/12'
157+00	18" culvert			
151+00	+20°	15'	10'	10'
149+30	12" culvert			
147+00	+10°	16'	3'	5
146+00	24" culvert			
145+00	+15°	11'	4'	6'
142+81 = Flume Sta.				
152+23 =	+7°	14'	5'	9'
			From West edge of Bench	
149+75	-4° west	13'	+3 / 2	+4' / 7
147+65	18" culvert			

Sandy Loam And D.G. Formation

End of Sand Creek Syphon

Contd. From Page 8

Sta.	Slope of O.G.	Bench Width	Height of Bank above Flume Bench East side	Horiz. Dist. From Toe to Top of Bank,	
176+50	18" Culvert				
176+10	15°	14'	7'	5'	
173+90		16'	2'	10'	Boulder Formation
172+80		12' At Flume Grade And 1:1 slopes 20' on East and 15' on West			
172+00	+ 15°	13'	7'	6'	
170+00	+ 15°	17'	7'	5'	Scattered
168+00	West -	12'	4'	8'	Then - 15° Slope
167+25	℄ Deep Ravine	Small bridge ~~Use Rock Fill~~			~~Crossing~~
165+20	18" Culvert				
164+30	+ 15°	16'	6±	9'	Sandy Loam And D.G. Formation
162+75	18" Culvert				
160+25	-15° West	10	From west edge, Bench, 4	10	4' Level; -15° Slope

West side, From west edge of Bench 3' Higher 5' out then -15° Slope

Cont'd. From Page 9

Sta.	Slope of O.G.	Bench Width	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe to Top of Bank.	
188+30	15°				Heavy Boulder Formation
187+70	18" culvert				
186+80	15°				
186+50	24" culvert				
186+30	20°				
185+70	20°				
185+00	12" culvert				Boulder tion
183+48	20°	14'	4'	4'	= Start of Location over Tunnel #2 (Leave Flume Bench)
181+10	15°	16'	13'	13'	Scattered Forma-
180+00	18" culvert				
178+60	12" culvert				
178+00	12°	17'	3'	3'	

Cont'd. From Page 10

Sta.	Slope of O.G.	Bench width	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe to Top of Bank
199+00	10°	16'	3'	2'
198+20	12" culvert			
197+00	10°	16'	11'	11'
196+80	25°			
195+63 = 197+27	= = Trestle #37 - 24" culvert			
197+00	25°			
196+85	25°	14'	12'	12'
195+03	25°			
193+37	20°			
193+10	18" culvert			
192+35	20°			
190+65	Level			
189+80	18" culvert			
189+53	10°			

Boulder Formation on Flume Bench.

Scattered Formation on Flume Bench

Heavy Boulder Formation

Note: Add 100' to Length Between Sta. 196+85 and Sta. 197+00 (see Equation) For Road Around Ravine.

Bench — west side = 9' Higher at 9' from edge of Bench

Cont'd. From Page 11.

Sta.	Slope of C.G.	Bench Width	Height of Bank above Flume Bench East Side.	Horiz. Dist. From Toe to Top of Bank.
212+00	12°	14'	5'	3'
210+10	12°	12'	6'	4'
209+60	18" culvert			
209+00	10°	16'	5'	3'
208+50	18" culvert			
207+00	12°	17'	6'	6'
205+70	12" culvert			
205+00	15°	16'	10'	10'
203+60	15°	14'	11'	11'
202+90	18" culvert			
201+80	18" culvert			
201+00	20°	16'	13'	13'

Scattered Boulder Formation

2½' Higher, 4' out from west edge of Bench, Then 1:1 Slope Down.

5' Higher, 5' out from west edge of Bench, then 1:1 Slope Down.

Cont'd. From Page 12,

Sta.	Slope of O.G.	Bench Width	Height of Bank above Flume Bench East Side.	Horiz. Dist. From Toe To Top of Bank.	
224+60	15°	16'	5'	5'	
223+75	18" culvert				
222+00	30°	12'	10'	7'	
221+10	12" culvert				
220+50	30°	14'	15'	15'	
219+00	+ 30°	16'			
218+40	18" culvert				
215+80	+ 20°	16'	7'	4'	End of Trestle; on Flume Bench
215+60	25°				
215+20	24" culvert				
214+90	25°				
214+70	+15°	16'	6'	4'	Beginning of Trestle; Leave Flume Bench
213+00	+ 15°	16'	6'	4'	
212+50	18" culvert				

Scattered Boulder Formation

Note: Add 140' to Trestle Length For Road Around Ravine (25° slope)

Cont'd. From Page 13,

Sta.	Slope of O.G.	Bench Width	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe To Top of Bank
235+10	30°	16'	9'	7'
234+40	18" culvert			
232+10	25°	15'	20'	20'
231+70	12" culvert			
231+00	12" culvert			
230+20	30°	16'	7'	7'
229+20	12" culvert			
228+60	20°	13'	13'	13'
228+40	12" culvert			
228+00	30°	15'	5'	4'
227+60	12" culvert			
226+50	30°	18'	20'	18'

Boulder

Scattered Formation

15' Higher 3' out from west edge of Bench, Then Level 2', Then 1½:1 Slope Down.

4' Higher, 4' out from west edge of Bench, Then Level 4', Then 1½:1 Slope Down.

Cont'd. From Page 14.

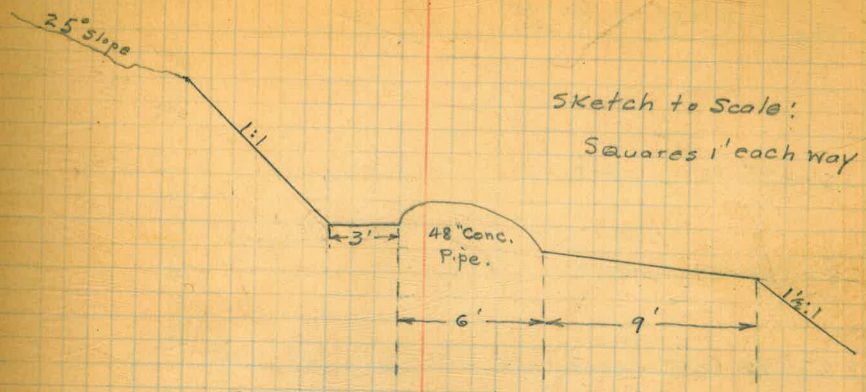
Sta.	Slope of O.G.	Bench Width	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe to Top of Bank	
247+10	12" culvert				
247+00	20°	16'	5'	5'	Boulder Formation
245+40	18" culvert				
243+00	15°	17'	6'	6'	
241+60	25°	18'	5'	3'	End of Tre- stle; on Flume Bench
241+40	20°				
241+00	18" culvert				
240+60	20°				
240+40	15°	20'	6'	4'	Beginning of #46 Trestle, Leave Flume Bench
239+60	12°	13'	12'	10'	Scattered
238+00	30°	16'	12'	10'	
237+60	18" culvert				
235+70	24" culvert				

Note: Add 50' to Trestle Length For Road Around Ravine. (20° Slope)

4' Higher 4' out from west edge of Bench, Then Level 4', Then 1½:1 Slope Down.

Cont'd. From Page 15.

Sta.	Slope of O.G.	Bench Width.	Height of Bank above Flume Bench East Side.	Horiz. Dist. From Toe to Top of Bank.		
272+75	18" culvert					
266+30	& Deep Ravine	~~Use Rock Fill Crossing.~~			Small bridge	
263+60	18" culvert.					
261+60	18" culvert.					
260+00	25°	20'	7'	7'	Boulder	Start of Concrete Pipe
257+30		14'	20'	20'		
256+10	18" culvert					
254+30	18" culvert					
252+90	12" culvert					
251+00	25°	18'	12'	10'	Scattered Formation	End of Trestle; on Flume Bench.
250+80	25°					
249+85	Use Rock Fill Crossing.					
249+50	25°					
249+35	12°	20'	6'	6'		Beginning of Trestle #48, Leave Flume Bench.



Sketch to Scale:
Squares 1' each way

Standard Section of Flume Bench
Along Portion where Flume has been
Replaced with 48" Concrete Pipe
Sta. 260+00 to Sta. 314+80

Note: Add 100' to Trestle Length
For Road Around Ravine
(25° Slope)

Sta.	Slope of Bench O.G.	Bench width:
287+75	18" culvert	
286+50	24" culvert	
285+75	18" culvert	
284+50	18" culvert	
281+47 = 281+02		
280+50	use std. Section	= South side of Ravine on Flume Bench
280+30	25°	
280+00	24" Culvert.	
279+20	25°	
279+00	use std. section	= North side of Deep Ravine
278+20	use std. Section	= South side of Ravine; on Flume Bench
278+00	30°	
277+40	℄ Ravine - ~~Use Rock Fill~~ Small bridge Crossing.	
276+80	30°	
276+60	use std. section	= North side of Deep Ravine, Leave Flume Bench

Scattered Boulder Formation

See Page 16 For standard Section

Note: Add 150' to Length Between Sta. 279+20 And Sta. 280+30, For Road Around Ravine.

Note: Add 100' to Length Between Sta. 276+80 And Sta. 278+00, For Road Around Ravine.

Cont'd. From Page 17.

Sta.	Slope of O.G.	Bench width	Height of Bank above Flume Bench East Side.	Horiz. Dist. From Toe to Top of Bank.	
316+50	25°	18'	10'	7'	on Flume Bench - End of Trestle
316+25	30°				
316+00	30° & Deep Ravine, use Small Bridge or				Rock Fill Crossing.
315+25	30°				
315+00	use Standard Section shown on Page 16;				Leave Flume Bench - Beginning of Trestle
314+80					End of Concrete Pipe
311+40	18" Culvert				
308+60 = 308+35					
307+00	12" culvert				
305+75	12" culvert				
301+40	& Deep Ravine; use Rock Fill, ~~with 30" culvert~~ Small bridge				
295+50	12" culvert				
291+30	18" culvert				
289+25	18" culvert				

Heavy Boulder Formation

Scattered Boulder Formation

Note: Add 50' to Trestle Length as shown in Notes, For Road around Ravine.

See Page 16 For Standard Section to End of 48" concrete Pipe

Cont'd. From Page 18.

Sta.	Slope of o. G.	Bench Width	Height of Bank Above Flume Bench - East Side.	Horiz. Dist. From Toe To Top of Bank.
335+00	25°	18	7'	5'
333+90	24" culvert			
333+00	25°	16'	8'	4'
332+70	& Deep Ravine use 30' Bridge			
331+00	35°	14'	8'	7'
329+25	25°	16'	6'	4'
328+00	12" culvert			
326+70	18" culvert			
324+40	25°	14'	7'	4'
322+80 Trestle "61	~~Small Bridge 20 long~~ Small bridge			
321+00	25°	16'	5'	4'
320+80	18" culvert.			

Scattered Boulder Formation

Cont'd. From Page 19

Sta.	Slope of Bench O.G.	Bench Width	Height of Bank Above Flume Bench - East Side.	Horiz. Dist. From Toe To Top of Bank	
355+10	12" culvert				
352+30	12" culvert				
351+00	25°	16'	7'	4'	Scattered Boulder Formation
349+50	12" culvert				
345+40	12" culvert				
344+75	25	16'	7'	3½'	= South end of Trestle; on Flume Bench.
344+50	30°				Heavy Boulder Formation
344+00	30" culvert				
343+85	30°				
343+60	25°	18'	5'	3'	= North end of Trestle #, Leave Flume Bench
340+10	12" culvert				
338+90	35°	14'	9'	5'	Scattered Boulder Formation 1½:1 slope on west side
338+00	18" culvert				

Note: Add 50' to Trestle Length as shown in Notes for Road around Ravine.

Cont'd: From Page 20

Sta.	Slope of O.G.	Bench Width.	Height of Bank Above Flume Bench East Side.	Horiz. Dist. From Toe To Top of Bank.	
369+40	20°	16'	11'	9'	
368+00	18" Culvert				
367+00	20°	14'	8'	6'	
366+00	18" culvert				
363+00	18" Culvert				
361+00	25°	16'	7'	5'	
360+30	18" culvert				
358+00	25°	15'	8'	6'	
357+00	25°	14'	5'	2'	
357+00	18" Culvert				
355+80 = 363+29	25°	18'	7'	35'	= North End of Present South Fork Syphon
361+20	18" Culvert				
359+10	12" culvert				
358+80	25°	16'	4'	2'	
357+40	12" culvert				
356+95	12" culvert				
356+00	12" Culvert				

Boulder Formation

Scattered

Note: use old Abandoned Flume Bench And Forest Service Rd. up South Fork on North Side, From Sta. 356 to Sta. 383+18.

Cont'd. From Page 21

Sta.	Slope of O.G.	Bench Width	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe To Top of Bank.	
388+40	30°	= South side of South Fork Crossing. (See Book #497)			
386+78	30°	= North Side of South Fork Crossing.			
385+68	35°				
385+08	20°	℄ Deep Ravine ~~-Use~~			~~Rock Fill Crossing~~.
384+28	35°				
383+18	25°	14'	7'	3'	Leave Forest Service Road to Cross South Fork.
381+25	25°	12'	6'	3'	
380+30	25°	14'	6'	3'	
379+80	18" Culvert				
376+60	25°	16'	10'	8'	
376+10	18" Culvert				
375+10	25°	15'	4'	3'	
374+40	18" Culvert				
373+10	25°	18'	7'	5'	

Heavy Boulder Formation

Scattered Boulder Formation

Cont'd. From Page 22.

June-8-1935.
Hill - Simpson
Soper - Remmen.

Sta.	Slope of O. G.	Bench Width	Height of Bank above Flume Bench East side.	Horiz. Dist. From Toe To Top of Bank.	
398+40					
397+85	18" Culvert				
396+50	30°	13'	7'	4'	End of Trestle; on Flume Bench.
396+30	30°				
396+00	30" culvert & Ravine				
395+90	30°				
395+70	30°	12'	10'	7'	Leave Flume Bench = Beginning of Trestle
394+80		12'	3'	0	Then l:l Slope up.
392+80	30°	11'	7'	5'	
392+75	18" culvert				
391+00	30°	12'	12'	5'	on Flume Bench (South Fork Feeder Line)
390+34	25°				
389+34	35°				

Heavy Boulder Formation

Scattered Boulder Formation

Heavy Boulder Formation

Note: Add 50' to Trestle Length Shown in Notes, For Road Around Ravine

Note: outside of Bench is about 1' Lower than inside edge of Bench, From Sta. 391 to Sta. 428.

Cont'd. From Page 23.

Sta.	Slope of O.G.	Bench Width	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe to Top of Bank	
414+60	25°	14'	6'	3'	End of Trestle; on Flume Bench
414+40	25°				
414+00	18" culvert				
413+20	25°				
413+00	25°	7'	5'	3'	Beg. of Trestle; Leave Flume Bench
412+00	25°	8'	7'	3½'	
411+20	25°	16'	7'	4'	
408+00	25°	16'	6'	4'	
407+20	24" culvert				
406+25	30°	16'	9'	8'	
406+05	30°				
405+55	24" culvert				
405+30	30°				
405+10	30°	16'	13'	4'	
401+35	12" culvert				
401+35	30°	16'	8'	6'	
398+40	30°	16'	7'	3½'	

Heavy Boulder Formation

D.G. Formation No Boulders.

Scattered Boulder Formation

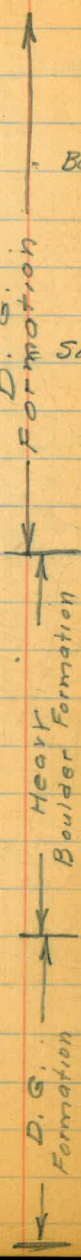
Note: Abandoned 18" steel pipe Lays along South Fork Feeder Line Bench, that may be used for culverts.

Note: Add 20' to Length from Sta. 405+30 To Sta. 406+05 (30° slope)

Contd. From Page 24.

Sta.	Slope of O.G.	Bench Width	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe to Top of Bank.	
427+00	20°				
426+75	25°	16'	6'	3'	Beg. of Trestle; Leave Flume Bench.
423+00	20°	16'	6'	3'	
421+31 = 428+11		20'			South end of South Fork Syphon
427+38	20°	16'	5'	4'	
425+20	25°	14'	10'	7'	= End of Trestle; on Flumic Bench
425+00	30°				
424+50	30" culvert; & Deep Ravine				
423+80	30°				
423+60	25°	13'	8'	5'	Beg. of Trestle; Leave Flume Bench
421+10	12" culvert				
420+55	25°	16'	7'	3½'	
418+25	12" culvert.				
417+00	25°	14'	6'	2'	
414+60					

Note: Add 100' to Trestle Length Shown in Notes, for Road Around Ravine - (30° Slope)



Cont'd. From Page 25.

Sta.	Slope of O. G.	Bench Width	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe To Top of Bank	
440+45		14'	9'	6'	= Start of 5% Grade up over Tunnel #3 (Leave Flume Bench)
439+00	20°	16'	5'	2½'	
438+00	12" culvert			-	(Drop Grade)
436+75	12" culvert				
436+25	20°	16'	9'	4'	
434+30	20°	18'	5'	3'	
434+00	18" culvert				
433+25	18" culvert				
432+80	20°	16'	6'	3'	
430+50	20°	18'	6'	4'	
428+70	20°	14'	7'	3'	End of Trestle; on Flume Bench.
428+50	20°				
428+20	20°	- 18" culvert			
427+40	18" culvert				

D. G. Formation

Heavy Boulder Formation

D. G. Formation

(Drop Grade) See Profile

Note: Add 50' to Length of Trestle For Road Around Ravine (20° Slope).

Cont'd. From Page 26.

Sta.	Slope of O.G.	Bench Width,	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe To Top of Bank	
453+40	25°	16'	8'	4'	End of Trestle ; on Flume Bench
453+20	25°				
452+90	24" culvert & Deep Ravine 25°				
452+25	25°				
452+00	25°	14'	13'	10'	Beg. of Trestle ; Leave Flume Bench
449+74 = 449+55	25°	16'	8'	6'	on Flume Bench ; End of Line over Tunnel #3.
448+75	18" culvert				
447+80	30°				
446+05	30°				
445+05	10°				
444+30	25°				
444+00	12" culvert.				
442+35	25°				

D. G. Formation

#88

Note: Add 50' to Length of Trestle for Road Around Ravine (25° slope)

Cont'd. From Page 27.

Sta.	Slope of O. G.	Bench Width	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe to Top of Bank.
483+00	25°	16'	5'	4'
480+75	12" Culvert			
479+50	12" Culvert			
476+50	18" Culvert			
475+80 Mile 9.	25°	16'	6'	3'
474+00	18" Culvert			
472+60	18" Culvert			
468+80	12" Culvert			
466+00	25°	16'	6'	3'
465+50	18" Culvert & Ravine (Drop Grade)			
465+00	25°	14'	7'	5'
462+00	25°	14'	7'	6'
458+00	25°	16'	4'	3'

Scattered Boulder Formation

D. G. Formation

Cont'd. From Page 28.

Sta.	Slope of Bench O. G.	Width.	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe To Top of Bank		
499+50	18" Culvert (Drop Grade)					
497+60	20°	16'	7'	3½'	on Flume	Bench
497+40	25°					
497+10	24" Culvert & Deep Ravine					
496+40	20°					
496+25	20°	16'	6'	3'	Leave Flume	Bench
495+80	12" culvert					
492+80	12" culvert					
492+15	25°	16'	5'	2½'		
490+15	12" culvert (Drop Grade)					
489+00	18" Culvert (Drop Grade)					
488+15	25°	14'	11'	9'		
486+10	25°	16'	5'	3'	= East	End of Chocalatta Creek Syphon.
483+30	18" Culvert (Drop Grade)					
483+25 = 483+82						

Boulder

Scattered Formation

Note: Add 50' to Length Between Sta. 496+25 And 497+60 For Road Around Ravine

Note: Using old abandoned Flume Bench around chocalatta creek to Trestle crossing.

Cont'd. From Page 29.

Sta.	Slope of O.G.	Bench Width	Height of Bank above Flume Bench East Side	Horiz. Dist From Toe To Top of Bank.		
515+10	20°	14'	9'	6'	Boulder	= End of Trestle; on Flume Bench.
514+90	25°					
514+00	24" culvert & Ravine					Note: Add 200' to Trestle Length For Road Around Ravine. (25° slope)
513+70	25°					
513+50	25°	14'	6'	4'		= Beg. of Trestle; Leave Flume Bench
512+10	12" culvert (Drop Grade)					
510+20	25°	14'	6'	4'	Scattered Formation	
507+80	18" culvert					
505+10	12" culvert					
504+15	20°	16'	5'	2½'		
502+30	20'	13'	9'	4⅝'		
500+10		14'	20'	16'		

Cont'd. From Page 30.

Sta.	Slope of O. G.	Bench Width	Height of Bank above Flume Bench East Side	Horiz. Dist. From Toe To Top of Bank,		
See Previous Survey of old Flume Trestle Crossing.					= East End	of Bridge Crossing Chocalatta Creek.
542+75	20°	14'	6'	3'	= East End	of old Chocalatta Creek Trestle
541+60		14'	13'	13'		
540+70	18" culvert					
540+50	15°	16'	3'	1⅝'	Leave	Forest Service Rd.
537+25	12" culvert					
533+00	15°	16'	5'	2⅝'		
531+00	15°	16'	3'	1⅝'		
530+40	12" culvert					
527+00	25°	13'	7'	3⅝'	= intersection	with Road made by Forest Service on Flume Bench
526+90	12" culvert					
523+25	25°	14'	8'	4'		
522+50	18" culvert (Drop Grade)					
520+10	12" culvert					

Scattered Boulder Formation

Note: Sta. 527 to 540+50 is on Road Built by Forest Service on Flume Bench.

Contd. From Page 31.

Sta.	Slope of O.G.	Bench Width	Height of Bank above Flume Bench	Horiz. Dist. From Toe To Top of Bank.	
570+00	15°	14'	3'	5'	
567+90	12" culvert				
566+00	18" culvert				
561+50	20°	16'	5'	2½'	Formation
561+00	18" Culvert				
559+70	30" culvert (Drop Grade)				
555+00	20°	14'	6'	4'	Boulder
551+95	18" culvert				
550+50	15°	16'	3'	6	
550+00	18" Culvert				
548+75	Cross Road to H.W. 80				
547+29 = 0+00 on orig. Survey of Flume Trestle crossing	5°	16'	3'	1½'	Scattered
546+30	5°				

Cont'd. From Page 32.

Sta.	Slope of O.G.	Bench Width	Height of Bank above Flume Bench	Horiz. Dist. From Toe To Top of Bank		
580+89 = 580+75	25°	16'	4'	6'	Boulder Formation	= End of Trestle; on Flume Bench.
580+60	20°					
580+00	18" Culvert					Note: Add 30' to Trestle Length For Road Around Ravine (20° slope)
579+40	20°					
579+20	25°	16'	7'	4'		= Beg. of Trestle; Leave Flume Bench
575+60	18" Culvert (Drop Grade)					
574+50	12" Culvert					
573+25 = 573+12.5						
572+10	25°	14'	3'	5'	Scattered	End of Trestle; on Flume Bench.
571+90	25°					
571+50	18" Culvert & Ravine					Note: Add 40' to Trestle Length For Road Around Ravine (25° slope)
571+00	25°					
570+80	15°	14'	3'	5'		= Beg. of Trestle; Leave Flume Bench.

Cont'd. From Page 33.

Sta.	Slope of O.G.	Bench Width	Height of Bank Above Flume Bench	Horiz. Dist. From Toe To Top of Bank		
~~512+95~~ 598+40 =	15°	16'	6'	3'		West End of Chocalatta Creek Syphon.
596+50	12" culvert					
593+80	25°	16'	8'	8'		
593+70	12" culvert					
591+00	18" culvert (Drop Grade)					
588+30	25°	16'	5'	5'		
586+90	25°	14'	6'	3'	End of	Trestle; on Flume Bench.
586+70	25°					
586+20	18" culvert					
585+80	25°					
585+60	20°	14'	6'	3'	Beg. of	Trestle; Leave Flume Bench
583+80	18" culvert & Ravine (Drop Grade)					
583+40	20°	14'	6'	3'		

Scattered Boulder Formation

Note: Add 30' to Trestle Length For Road Around Ravine (Slope = 25°)

Cont'd. From Page 34

Sta.	Slope of O.G.	Bench Width	Height of Bank Above Flume Bench	Horiz. Dist. From Toe To Top of Bank	
620+20	25°				
620+00	25°	16'	7'	4'	Beg. of Trestle; Leave Flume Bench
618+10	12" culvert				
616+40	25°	16'	7'	3½'	
615+60	18" culvert (Drop Grade)				
614+00	25°	14'	3'	2½'	
614+00	12" culvert				
612+00	12" culvert				
609+60	12" culvert				
607+40	20°	14'	6'	2'	
606+60	18" culvert (Drop Grade)				
603+50	25°	16'	7'	5'	
603+10	12" Culvert (Drop Grade)				
602+00	20°	16'	6'	5'	

Boulder Formation

Heavy

Scattered Boulder Formation

Cont'd. From Page 35.

Sta:	Slope of O. G.	Bench Width	Height of Bank Above Flume Bench	Horiz. Dist. From Toe To Top of Bank.		
637+20	30°	14'	4'	3'	End of	Trestle; on Flume Bench
637+00	30°					
636+60	24" culvert & Ravine					
636+20	30°					
636+00	30°	16'	6'	4'	Beg. of	Trestle; Leave Flume Bench
635+10	12" culvert					
632+30	12" culvert					
630+00	12" culvert					
628+20	12" culvert					
627+60	12" culvert					
626+90	30°	16'	9'	4½'		
626+50	12" culvert					
625+00	12" culvert					
623+40	25°	14'	6'	2'	End	of Trestle; on Flume Bench.
623+20	25°					
622+80	18" culvert					
621+90	18" culvert					
621+10	18" culvert					

Heavy Boulder Formation

Note: Add 50' to Length of Trestle For Road Around Ravine (30° Slope)

Cont'd. From Page 36.

Sta.	Slope of O.G.	Bench Width	Height of Bank Above Flume Bench	Horiz. Dist. From Toe To Top of Bank	
642+50±	30°	= Axis of Dam			
640+00	30°				
639+50	30°	14'	4'	3'	Heavy Boulder Formation
639+30	12" culvert				

Leave Flume Bench on +6% Grade to Top of Dam.

June-11-1935.
Hill-Simpson
Soper-Remmen.

Estimates of Slopes And Drainage on Proposed Road Location From East End of Old Flume Trestle Crossing Chocalatta Creek, Around on 770' Contour, And up to Saddle above Flume Walker's House, And Down to Dam.

Sta.	Slope
41+10	20°
41+70	15°
43+50	25°
44+20	35°
44+40	24" Culvert
44+55	35°
45+35	35°
46+15	30°
48+04 = 543+25 Flume sta.	30°

Elev. 770.0

Scattered Boulder Formation

Elev. 770 - See Book #335 - Page 39.

Cont'd. From Page 38.

Sta.	Slope	
32+90	30°	
35+20	20°	12" Culvert
37+00	30°	Elev. 770±
37+50	Level	Elev. 762±
37+85	"	Elev. 759±
38+00	"	Elev. 753±
38+15	"	Elev. 747± = Bottom of Ravine
38+25	"	Elev. 746± " " "
38+55	"	Elev. 762±
38+82	20°	Elev. 770±
39+60	20°	
39+40	12" Culvert	

Boulder Formation

Scattered

See Book 335 - P. 39
For Bridge Crossing.

Cont'd. From Page 39.

Sta.	Slope	Elev.
20+00	Level	748.0
20+15	"	738.3 = Botton Choc. Creek
20+25	"	738.3
20+40	"	740.7
20+55	"	753.8
21+43	30°	770.0
23+50	30°	
24+40	18" culvert	
27+00	30°	
29+00	30°	
30+60	25°	
31+90	25°	

Chocalatta Creek Bridge Crossing.

See Book #335 P. 39

Boulder

Scattered Formation

Contd. From Page 40

Sta.	Slope	Present Road Width	Height of Bank Above Road-inside Edge	Horiz. Dist. From Toe To Top of Bank.		
12+00	25°					
12+30	18" Culvert					
12+60	25°					
13+60	15°					
14+75	10°	14'	2'	1'	Formation	Leave Present Traveled Rd.
14+90	18" Culvert					
16+00	10°	16'	2'	1'	Boulder	Elev. 770
16+25	18" Culvert					
19+10	25°	13'	5'	2½'		on Road Elev. 766±
19+25	Level	766.0			Scattered	intersection with Present Traveled Road to H.W. 80
19+40	"	761.5				
19+70	"	760.00				
19+75	"	757.8				
19+83	"	748.5				

Cont'd. From Page 41

Sta.	Slope.
35+40	15°
35+90	18" culvert
37+30	12°
37+65	18" culvert
38+64 = 0+00	10° - Beg. of Grade up to Saddle Elev. 770
2+70	15°
4+30	25°
5+50	25°
5+65	18" culvert
5+82	25°
8+80	20°
11+00	20°

Formation

Boulder

Scattered

above Flume Walker's House

Contd From Page 42.

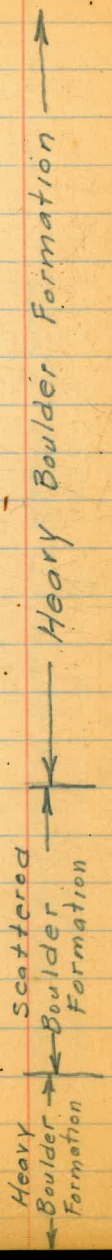
Sta.	Slope
25+00	25°
25+60	18" culvert
26+00	25°
26+90	18" culvert
27+00	25°
27+40	℄ Ravine, use Rock Fill or small Bridge
28+30	30°
29+60	18" culvert
30+00	25°
32+30	25°
33+50	25°
34+40	12" culvert

Heavy Boulder Formation

Scattered Boulder Formation

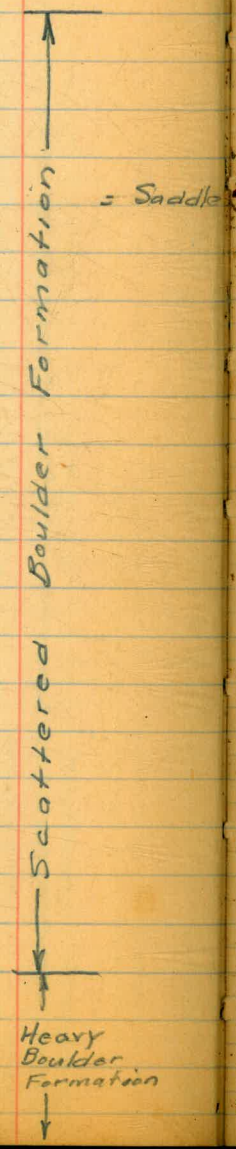
Cont'd. From Page 43.

Sta.	Slope
11+10	18" culvert
11+50	25°
13+20	12" culvert
15+80	18" culvert
16+00	25°
17+35	18" culvert
19+20	18" culvert
20+00	25°
21+00	25°
21+75	18" culvert
22+50	20°
23+70	20°



Cont'd. From Page 44

Sta.	Slope
2+50	25°
1+00	25°
0+00 = 0+00	15°
1+00	20°
1+60	12" culvert.
3+20	18" culvert
5+00	20°
6+00	20°
6+60	18" culvert
7+50	18" culvert
8+40	20°
9+00	18" culvert



= Saddle, Start of 5% Grade Down to Dam.

Contd. From Page 45,

Sta.	Slope
20+45	24" culvert
East From Dam → 21+21 ← 18+50	= 25°
15+80	18" culvert
13+50	25°
12+00	18" culvert
10+30	12" culvert
9+50	25°
9+00	12" culvert
8+50	28°
7+15	25° 12" culvert
4+30	18" culvert
4+00	25°

Heavy Boulder Formation

Sta. Slope.

0+00 25° : Dam Axis

2+70 12" Culvert
5+50 30" Culvert

6+50 25°
6+50 18" Culvert

9+00 30°

13+00 30°

13+60 25°

13+95 18" Culvert
15+50 12" Culvert

17+70 30°

Heavy Boulder Formation

770 Contour points on Chocolate Creek from 0+00 = 38+64 (Book 335 page 39), North to Flume-walkers house.

			770.00
	8.00	778.00	
T.P.		8.35	774.65
	7.59	782.24	
T.		12.18	770.06
	11.58	781.64	
T.		11.63	770.01
	7.25	777.26	
T.		7.25	770.01
	12.61	782.62	
T.		12.60	770.02
	12.64	782.66	
T.		12.65	770.01
	11.16	781.17	
T.		11.13	770.04
	9.89	779.93	
T.		9.90	770.03
	3.51	773.54	
T		12.29	761.25
	1.90	763.15	
		4.62	758.53

Dec. 1 1936
Soper
Isbell
Moore

(1"x1")
Hub on 770 contour 0+00 = 38+64 Book 335 page 39.

Dec. 2 1936
Soper
Isbell
Moore

(1"x1" hub. 100 ft south of flume-walkers house - elev. 770.00)

Flow line of flume at Chocolate Siphon outlet.

770 Contour points on Chocolate Creek from 44+38 = 48+04
(book 335 page 39), North, to East end of Chocolate Siphon.

					Rod
				770.00	
	5.39	775.39			5.4
TP			8.50	766.89	
	8.30	775.19			5.2
TP			12.26	762.93	
	8.14	771.07			1.1
TP			7.41	763.66	
	9.75	773.41			3.4
TP			9.86	763.55	
	12.37	775.92			5.9
TP			10.55	765.37	
	4.45	769.82			+0.2
TP			4.32	765.50	
	6.08	771.58			1.6
TP			5.32	766.26	
	7.77	774.03			4.0
TP			8.50	765.53	
	8.36	773.89			3.9
TP			7.00	766.89	
	12.61	779.50			9.5
TP			11.00	768.50	
	3.17	771.67			1.7

Dec. 2, 1936
Soper
Isbell
Moore

1x1 Hub, East end of old Flume Trestle Crossing

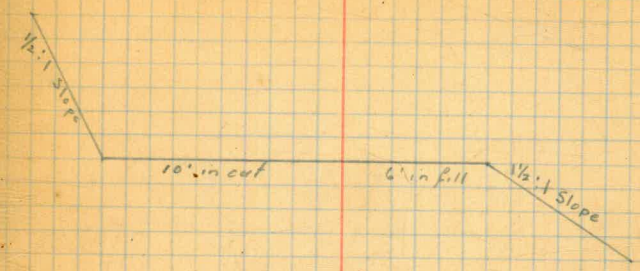
Jan. 18 1937
Soper
Isbell
Kammen

		771.67			
T.P.			3.45	618.22	Set nail in 8"×8" telephone pole at Chocolate Siphon inlet.
	5.58	773.80			
			4.97	768.83	Floor of flume at Siphon inlet.
			1.69	772.11	S.W. Corner of Siphon inlet concrete box.

Slope stakes for road on 770 Contour, West side of Chocolate Creek. 0+00 = 38+64 (Book 335 page 39)

	Lt	℄	Rt	
0+00				
+50				
1+00 – 20'x18" Culvert				
1+34	C 2.0 / 11.0	0.0	F. 0.8 / 7.2	
1+90	C 2.4 / 11.2	C 0.9	.0.0 / 6.0	16' in cut
2+24	C 2.8 / 11.4	C 1.2	.0.0 / 6.0	16' in cut
2+54	C 2.0 / 11.0	0.0	F. 0.6 / 6.9	
2+70 – 20'x18" Culvert				

Dec 5, 1936
Soper
Isbell
Moore



Sections may vary to provide fill for gully's, or to keep away from flume bench

D.G. formation

Dec. 9 1936
Soper
Isbell
Moore

	Lt	℄	Rt		
2+96	C 3.0 / 11.5	0.0		F 4.7 / 13.1	10 in cut - 5 in fill
3+33	C 4.8 / 12.7	C 1.9		0.0 / 6.0	16" in cut
3+84	C 4.2 / 12.1	C 1.7		0.0 / 6.0	16" in cut
	4+25 - 20' x 12" Culvert				
4+49	C 2.0 / 11.0	0.0		F 2.2 / 9.3	10 in cut 5 in fill
5+24	C 5.2 / 13.6	0.0	3.6 / 10.0	8.6 / 13.0 F 8.6 / 17.9	11' in cut; 5' in fill account of flume bench
5+86	C 6.6 / 14.3	0.0		F. 4.0 / 11.0	11' in cut; 5' in fill

D. G. formation

	Lt	℄	Rt	
6+56	C 8.0 / 18.0	0.0	F 1.8 / 4.7	14 in cut - 2' in fill
7+23	C 6.3 / 16.2	0.0	F 4.0 / 9.0	13' in cut - 3' in fill
8+90	C 4.9 / 12.5	0.0	F 4.2 / 12.3	10' in cut - 6 - fill
9+37	C 4.2 / 12.1	0.0	F 4.0 / 12.0	10-cut 6 fill
10+18	C 3.1 / 11.6	0.0	F 2.0 / 9.0	10-cut - 6 fill
10+35 - 20'x18" culvert				
10+63	C 3.1 / 11.5		F 2.0 / 9.0	10-cut 6 fill

Jan. 15 1937
Soper
Isbell
Remmen

D.G. formation

scattered boulder formation

	Lt	℄	Rt	
11+22	C 2.3 / 11.2	0.0	F 2.8 / 10.2	10 cut - C fill

11+50 - 2 surface boulders (100 Y^3) to be used for rock fill bridge.

11+85 - Rock fill

12+04	C 9.7 / 20.9	0.0	steeper than 1½:1 slope to Bottom of gully	16' in cut
12+79	C 3.9 / 12.0	0.0	F 1.7 / 8.6	10 cut - C fill

13+10 20'x18" Culvert

13+51	C 3.7 / 11.9	0.0	F 4.4 / 12.6	10 cut - C fill

13+85 - 20'x18" Culvert

14+41	C 2.9 / 11.5	0.0	F 2.3 / 10.0	

Scattered boulder formation

	Lt	℄	Rt	
15+03	C 3.3 / 11.6	0.0	F 2.5 / 9.8	10 cut - 6 fill
16+10	C 4.0 / 12.0	0.0	F 3.2 / 10.8	10 cut - 6 fill
16+75	C 3.4 / 11.7	0.0	F 3.5 / 11.3	10 cut - 6 fill
	17+15 - 20'x12" Culvert.			
17+42	C 2.9 / 11.5	0.0	F 2.3 / 9.5	10 cut - 6 fill
	18+42 - 20'x24" Culvert.			
18+88	C 1.5 / 10.8	0.0	F 0.6 / 6.9	10 cut - 6 fill
19+68	C 2.0 / 11.0	0.0	F 1.0 / 7.5	10 cut - 6 fill

D. G. formation

	Lt	℄	Rt	
20+17	C 3.1 / 11.6	0.0	F 1.6 / 8.4	10' cut - 6' fill
20+74	C 0.3 / 10.2	0.0	F 0.8 / 7.2	10' cut - 6' fill
	20+84 - 2 - 20' x 12" Culverts.			
21+25	C 1.6 / 10.8	0.0	F 0.5 / 6.8	10' cut - 6' fill
22+03	C 3.7 / 11.4	0.0	F 2.0 / 9.0	10' cut - 6' fill
22+84	C 2.7 / 11.4	0.0	F 1.3 / 8.0	
23+35	C 4.6 / 12.3	2.0	0.0 / 6.0	16' in cut
	23+75 - 20' x 18" Culvert			

Jan 22, 1937
Soper
Isbell
Remmen

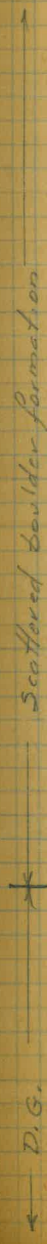
	Lt	℄	Rt	
24+25	C 8.8 / 14.4	2.7	0.0 / 6.0	16' in cut
	24+55 - 20'×18" Culvert			
24+83	C 9.4 / 14.7	2.7	0.0 / 6.0	16' in cut
25+74	C 2.5 / 11.3	0.0	F. 1.3 / 8.0	10' cut 6' fill
26+56	C 1.1 / 12.1	0.0	F 2.6 / 9.9	"
27+04	C 5.6 / 12.8	0.0	F 2.8 / 10.2	"
	27+55 - 20'×12" Culvert			
27+61	C 5.9 / 13.0	0.0	F 3.0 / 10.5	"

Scattered boulder formation

D. G.

Scattered boulder formation

	Lt	℄	Rt	
28+44	C 4.5 / 12.3	1.9	0.0 / 6.0	16' in cut
	28+85 – 20'x18" Culvert.			
29+12	C 6.2 / 18.1	0.0	F 5.8 / 14.7	16' cut - 1' fill
29+79	C 3.8 / 11.9	1.4	0.0 / 6.0	16' in cut
30+39	C 3.0 / 11.5	0.0	F. 2.6 / 9.9	
31+18	C 5.1 / 12.6	0.0	F 4.6 / 12.9	
	31+35 – 20'x12" Culvert			



	Lt	℄	Rt	
31+84	C 6.1 / 13.1	0.0	F 4.4 / 12.6	10' cut 6' fill
32+39	C 5.0 / 12.5	0.0	F 3.6 / 11.4	
33+18	C 6.1 / 13.1	1.1	0.0 / 6.0	16' in cut
	33+40 - 20' x 24" Culvert.			
33+72	C 3.2 / 11.6	0.0	F 2.0 / 9.0	10' cut - 6' fill
34+30	C 4.7 / 12.4	0.0	F 7.3 / 17.0	10' cut - 6' fill
35+09	C 3.4 / 11.7	1.5	0.0 / 6.0	16' in cut.

D. G.

Scattered boulder formation →

← D. G.

Jan. 25 1937
Soper
Isbell
Remmon

	Lt	℄	Rt	
35+49	C 5.4 / 12.7	1.3	0.0 / 6.0	16' in cut
36+05	C 4.8 / 12.4	0.0	F 3.5 / 11.3	10' cut - C/fill
36+59	C 4.6 / 12.3	1.4	0.0 / 6.0	16' in cut
37+10	C 7.9 / 14.0	2.1	0.0 / 6.0	16' in cut
37+64	C 6.5 / 13.3	0.0	F 9.4 / 20.1	
	37+85 - 20' x 12" Culvert			
38+06	C 7.1 / 13.6		F 7.6 / 17.4	

D.G.

	Lt	E	Rt	
38+91	C 5.9 / 16.0	0.0	F 3.2 / 7.8	13' in cut - 3' infill
39+53	C 8.0 / 14.0	3.0	0.0 / 6.0	16' in cut
39+80	C 9.0 / 14.5	2.7	0.0 / 6.0	16' in cut to provide sufficient fill for deep gully.
40+05 - 20' x 24" Culvert.				
40+33	C 8.6 / 14.3	3.1	0.0 / 6.0	16' in cut
41+33	C 4.7 / 14.4	0.0	F 3.8 / 7.7	12' in cut - 4' fill

Scattered boulder formation.

	LH	℄	RH	
42+31	C 5.0 / 12.5	0.0	F 7.4 / 14.1	10' cut C' fill
42+90	C 7.8 / 15.9	0.0	F 4.2 / 10.3	12 cut - 4' fill account of flume bench.
43+57	C 9.2 / 18.6	0.0	F 4.5 / 8.8	14' cut 2' fill
44+36	C 5.9 / 15.0	0.0	F 6.0 / 13.0	12 cut - 4' fill
	44+90 - 20'x 12" Culvert.			
45+04	C 6.9 / 15.3	0.0	F 7.8 / 15.7	12' cut - 4' fill
45+91	C 3.4 / 11.7	0.0	F 3.2 / 10.8	10' cut C' fill

Jan 26, 1937
Soper
16.11
Rammers

Scattered boulder formation.

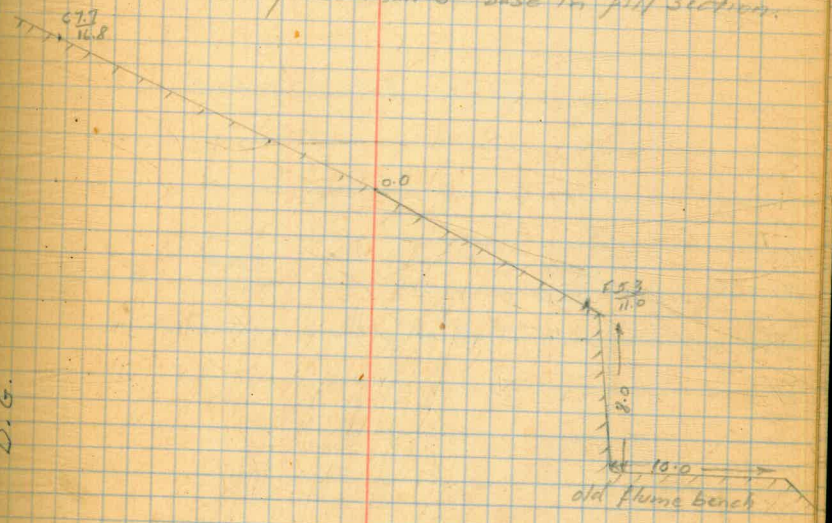
D.G.

	Lt	℄	Rt	
46+68	C 8.5 / 18.3	0.0	F 4.4 / 8.6	14' in cut 2' fill
47+54	C 7.7 / 16.8	0.0	F 5.3 / 11.0	13' cut 3' fill
	47+90 - 20' x 12" Culvert.			
48+14	C 9.2 / 20.6	2.6	0.0 / 6.0	16' in cut
48+65	C 7.5 / 16.8	0.0	F 4.6 / 9.9	13' cut 5' fill
49+24	C 6.9 / 15.5	0.0	F 3.7 / 9.6	12' cut, 4' fill

D.G.

℄

Section at sta 47+54, showing necessity of using less than 6' base in fill section.



	Lt	℄	Rt	
50+47	C 5.6 / 12.8	0.0	F 5.9 / 14.9	10' cut - 6' fill
		50+70 - 20' x 12' Culvert.		
51+56	C 3.9 / 12.0	0.0	F 3.4 / 11.1	10' cut - 6' fill

Approximately 100' South of Plume walker's house..

D.G.

IMPROVED TABLES
AND
INFORMATION

Length to Be Added
at Trestles.

Trestle # 11 — 100'

" # 18 — 30'

" # 37 — 100' around 25° slope.

~~" # 39 — 150' " " " " Sta 218+00~~

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	25.2	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.