

W
498

WILKINS
TRAVEL LOG

No. 427

EUGENE DIETZGEN CO.

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

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

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

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

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

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498

90+

El Cap Res. road survey W. side 1-37

Estimates on Tentative Road
Location From East End of Spillway
Around North And West Side of Reservoir.
Elev. 770.

May-15-1935.
Hill - Simpson
Soper - Remmen

1.

25+60 18" culvert.

25+04 slope = 30°

21+51 slope = 30°

21+00 18" culvert.

20+26 slope = 30°

19+20 18" culvert.

18+95 slope = 30°

18+16 = Top of cut At East End of spillway
Slope = 30°

0+00 = intersection of Dam Axis and ϕ of 6.4% Rd. to Top of Dam on South Side of River

Heavy Boulder Formation

38+30 slope = 19°

36+90 slope = 19°

35+90 slope = 19°

35+10 slope = 15°

34+25 slope = 25°

33+25 slope = 30°

31+85 slope = 30°

30+30 slope = 30°

28+90 slope = 25° - 18" culvert

27+50 slope = 25°

26+65 slope = 30°

26+10 slope = 30°

Heavy Boulder Formation

Cont'd. From Page 2.

3.

50+90 Slope = 25°

50+20 Slope = 27°

49+20 Slope = 27°

47+25 Slope = 30°

46+05 Slope = 30°

45+00 Slope = 20° - 18" Culvert.

43+90 Slope = 20°

42+80 Slope = 20° Rocky Ravine

42+05 Slope = 25°

40+55 Slope = 25°

39+60 Slope = 19°

38+50 18" culvert.

Heavy Boulder Formation

60+75 slope = 30°

59+00 slope = 30°

58+10 slope = 25°

56+80 slope = 23° - 18° culvert.

55+95 slope = 20°

55+20 slope = 20°

53+95 slope = 20°

53+00 slope = 25°

52+00 18° culvert

51+70 slope = 20°

Heavy Boulder Formation

74+10 slope = 21°

73+10 18" culvert

72+90 slope = 25°

72+00 18" culvert.

71+65 slope = 25°

70+65 slope = 25°

69+80 18" culvert

69+50 slope = 20°

67+90 slope = 27°

65+70 slope = 24°

64+40 slope = 24°

62+40 slope = 24°

↑
Fairly Easy Construction
Boulder Formation
Scattered

83+05 slope = 18°

82+00 Slope = 18°

81+80 18" culvert

81+20 slope = 16°

79+80 slope = 10° Scattered Boulder Formation

78+60 slope = 20°

77+90 18" culvert.

77+00 slope = 25°

76+35 slope = 25°

75+50 slope = 20°

75+50 30" culvert

74+65 slope = 21°

Heavy Boulder Formation

↓

↓

↓

↓

↓

↓

↓

↓

94+60 slope = 20°

93+70 slope = 18°

92+85 slope = 18°

91+80 18" culvert

90+70 slope = 18°

90+30 24" culvert

89+40 slope = 12°

89+00 30" culvert

88+50 slope = 15°

87+40 slope = 15°

86+25 slope = 15°

85+26 = 4' Deep Ravine - Rock Fill Crossing

Elev. 770

Scattered Boulder Formation

Free of Boulders
D.G. Formation

Heavy Boulder Formation

105+40 slope = 18°

103+60 18" culvert

103+00 slope = 10° 101+80 slope = 14°

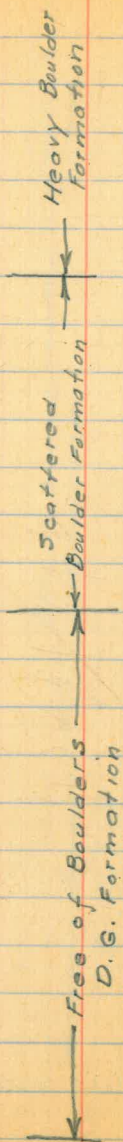
100+95 24" culvert

100+10 slope = 20°

99+45 18" culvert.

98+85 slope 20° 97+50 slope = 20° 96+30 slope = 20°

Elev. 770



117+10 18" culvert. - Slope = 10°

116+70 Slope 10°

114+37 slope = 14°

114+00 24" culvert.

112+25 slope = 20°

111+05 slope = 20°

110+70 30" Culvert

109+20 18" culvert

108+60 slope = 20°

107+70 slope = 20°

106+65 slope = 20°

Heavy Boulder
Formation

= Elev. 770 = start of Grade up to saddle North
of Dam-site #3

Elev. 770.

Scattered Boulders
D.G. Formation

129+60 30" culvert

129+35 slope = 18°

128+50 18" culvert

128+35 slope = 20°

127+35 slope = 20°

125+50 slope = 16°

125+30 18" culvert

124+35 slope = 20°

122+85 slope = 15°

121+85 slope = 15°

120+80 slope = 5°

119+10 slope = 12°

Heavy Boulder
FormationFree of Boulders
D.G. FormationHeavy Boulder
Formation

Cont'd. From Page 10,

11.

142+10 Slope = 22°

141+10 Slope = 25°

139+80 Slope = 25°

139+30 18" culvert.

130+50 Slope = 25°

137+50 Slope = 25°

136+50 Slope = 22°

135+70 Slope = 12° = 17

134+65 Slope = 20°

132+70 Slope = 22°

131+00 Slope = 20°

130+05 Slope = 28°



Saddle North of Dam site #3. Elev. 826±

154+20 Slope = 15°

152+80 Slope = 22°

151+55 Slope = 22°

150+35 Slope = 22°

149+60 Slope = 20°

148+00 Slope = 20°

147+80 18" culvert

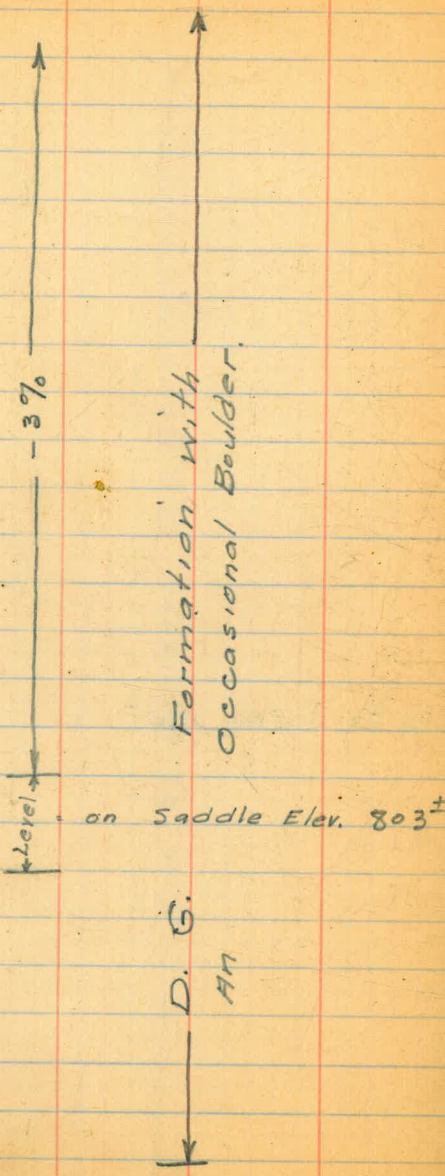
146+95 Slope = 15°

146+45 Slope = 12°

145+05 18" culvert

144+95 Slope = 22°

143+15 Slope = 22°



Formation with Occasional Boulder.

D. G.
AN

Level

on Saddle Elev. 803±

3%

166+01 = Ravine

164+34 Slope = 14°

163+50 Slope = 18°

162+68 Slope = 25°

161+49 Slope = 15°

Start of 8.0% Grade Down to River Crossing.

Elev. 770

160+30 Slope = 12° = End of

Grade Down From Saddle North of Damsite #3

Note: 770 Road
Continued on
Page 16.

159+05 Slope = 12°

158+80 18" Culvert

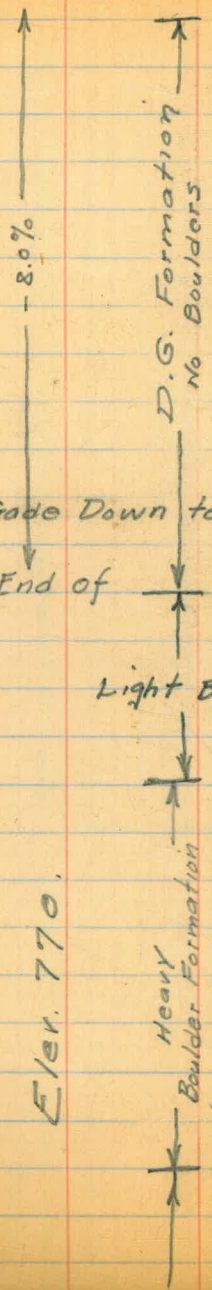
157+65 Slope = 12°

157+10 24" Culvert

156+05 Slope = 15°

155+20 18" Culvert

Elev. 770.



use Old Road Along West Side For about $\frac{1}{2}$ Mi. to River
 177+40 = on Flat Bench about Elev. 643.

Crossing; or Old Road Crossing about .9 Mi. above
 the end of the 870 Road down
 from the 770 Contour.

176+16 slope = 15°

174+91 slope = 10°

173+80 slope = 12°

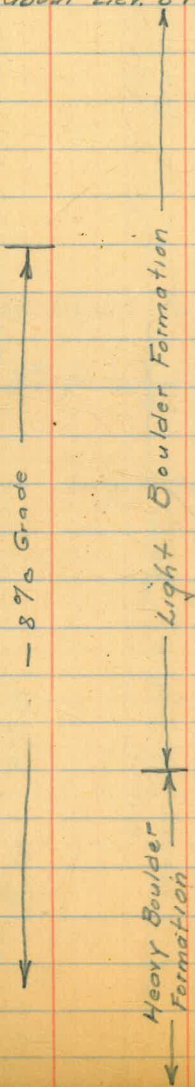
172+78 slope = 9°

171+34 slope = 7°

169+71 slope = 10°

168+56 slope = 10°

167+34 slope = 15°



Elev. For Tentative Rd. Location on West
Side of River.

15

Water Surface of Lake 626.15

12.98 639.13

2.39 636.74

8.16 644.90

7.87 637.03

8.35 645.38

1.28 644.10

3.96 648.06

B.M.

4.62 643.44

Set Nail in 30" willow stump on
west side of River.

Estimates on Tentative Road Location on
770 contour.

Cont'd. From Page 13.

May-16-1935.

16

170+60 slope = 25°

170+35 18" culvert.

170+20 slope = 10°

169+20 slope = 14°

168+00

167+40 slope = 14°

166+50 slope = 10°

165+10 24" culvert.

164+55 slope = 10°

163+35 slope = 10°

162+60 18" culvert

161+48 slope = 15°

160+30

Elev. 770.

Scattered Boulder
Formation



Heavy Boulder
Formation



D.G. Formation
No Boulders



181+60 slope = 32°

181+25 18" culvert,

179+00

178+70 18" culvert

177+73 slope = 20°

176+60

176+33 slope 34°

175+00 24" culvert

174+77 slope = 25°

174+00

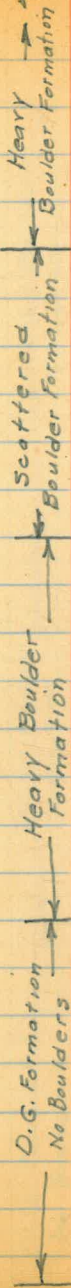
173+50 slope = 30°

173+10 18" culvert

172+35 slope = 18°

170+60

Elev. 770



194+45 Slope = 30°

193+80 18" culvert

192+70 18" culvert

192+12 Slope = 30°

191+30 18" culvert,

191+05 Slope = 30°

189+70 Slope = 30°

188+80 Slope = 30°

188+75 18" culvert

187+96 Slope = 30°

186+60 Slope = 30°

186+10 18" culvert

183+26 Slope = 30°

Elev. 770,



207+75 slope = 25°

206+98 slope = 25°

205+04 slope = 25°

204+30 18" culvert

204+10

203+70 slope = 25°

202+15 slope 30°

200+30 slope = 30°

198+60 slope = 25°

198+00 18" culvert

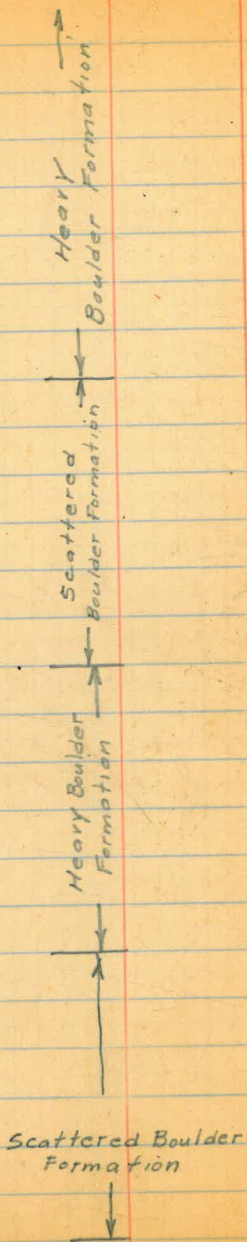
197+60

197+00 slope = 30°

195+86 slope = 30°

194+45

Elev. 770



220+10 slope = 25°

218+75 18" Culvert

218+25 slope = 25°

217+35 slope = 25°

215+85 slope = 15°

214+56 slope = 25°

213+87 slope = 25°

213+00 slope = 25°

212+34 slope = 35°

212+00 † Deep Ravine - use Rock Fill or Bridge Crossing
Mile 5

210+92 slope = 35°

209+75 slope = 30°

208+75 18" culvert

Elev. 770

Boulder Formation

Heavy

231+80 slope = 25°

231+40 18" culvert

230+10 slope = 25°

228+90 slope = 25°

228+00 24" culvert

227+00 slope = 25°

226+50 18" culvert

225+50 30" culvert

224+90 slope = 30°

224+10 18" culvert

222+10 18" culvert

221+95 slope = 25°

221+50 18" culvert

Elev. 770.

Formation

Boulder

Heavy

241+0.5 slope = 22°

240+15 slope = 22°

239+0.5 slope = 30°

238+75 30" culvert.

238+00 slope = 25°

237+10 18" culvert

236+78 slope = 35°

235+80 slope = 20°

234+90 18" culvert

234+60 slope = 20°

234+30 18" culvert

233+80 slope = 20°

233+40 24" culvert

Elev. 770.

Scattered
Boulder FormationHeavy
Boulder Formation

249+35 Slope = 16°

248+30 24" culvert

247+90 Slope = 25°

247+50 18" culvert

247+20 Slope = 25° 246+00 Slope = 18° 245+15 Slope = 22°

244+70 24" culvert

243+78 Slope = 20°

243+60 18" culvert

242+55 Slope = 20°

242+20 18" culvert

241+75 Slope = 25°

Elev. 770

Scattered Boulders
in D.G. Formation

in D.G. Formation

Heavy Boulder Formation

Scattered Boulder Formation

262+05 Slope = 20°

261+00 18" culvert.

260+75 Slope = 15° 260+05 Slope = 12°

259+10 18" culvert.

258+85 Slope = 25° 256+35 Slope = 25° 253+95 Slope = 25° 252+75 Slope = 25° 251+65 Slope = 30° 250+25 Slope = 30°

250+00 18" culvert

Elev. 770.

Heavy Boulder Formation

273+53 slope = 10° & Large Ravine - Heavy Boulder Formation.

Recommendation: Drop Down about 10' in Elev. And Use Pile Trestle Bridge.
Channel Forks about 150' above crossing.

272+50 18" culvert

271+85 slope = 15°

269+75 slope = 20°

268+60 slope = 15°

267+30 slope = 15°

266+50 18" culvert

266+35 slope = 20°

265+50 slope = 20°

Mile 6

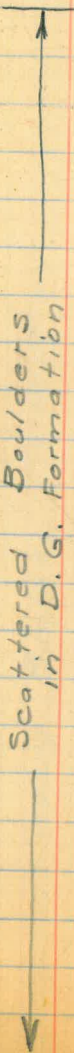
264+35 slope = 20°

263+60 18" culvert

263+20 slope 20°

Elev. 770

Scattered Boulders
in D.G. Formation



285+85 Slope = 15°

285+10 Slope = 6°

284+10 18" culvert

283+85 Slope = 20°

282+50 18" culvert

282+20 Slope 20°

281+25 18" culvert.

280+95 Slope = 20°

280+05 Slope = 20°

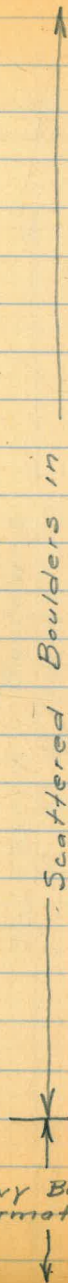
279+75 18" culvert

277+25 Slope = 25°

276+20 18" culvert.

274+75 Slope = 15°

Elev. 770

Scattered Boulders in
D.G. FormationHeavy Boulder
Formation

Cont'd. From Page 26.

27

300+45 Slope = 20°

300+00 18" Culvert

297+85 Slope = 35°

296+40 Slope = 30°

295+60 Slope = 22°

294+50 Slope = 25°

292+53 Slope = 20°

292+00 18" Culvert

290+30 18" culvert

289+65 Slope = 20°

287+75 Slope = 20°

287+50 24" Culvert

286+92 Slope = 15°

Heavy Boulder
Formation

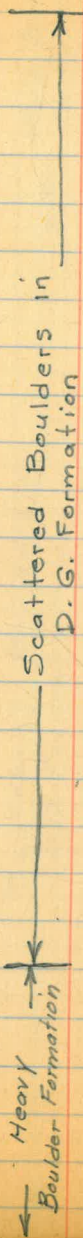


Scattered Boulders in
D.G. Formation

Elev. 770



316+00 18" culvert,
 315+40 slope = 15°
 314+10 18" culvert,
 313+85 slope = 10°
 312+00 slope = 18°
 310+60 18" culvert.
 310+42 slope = 15°
 308+85 slope = 20°
 307+45 slope = 20°
 305+70 slope = 15°
 303+65 slope = 10°
 301+50 slope = 15°
 301+00 ϕ Deep Ravine
 Large Drainage Area



Use Rock Fill or Small Bridge For Crossing

328+08 Slope = 25°

328+00 18" Culvert

327+08 Slope = 22°

325+90 Slope = 30°

324+05 Slope = 20°

322+30 Slope = 25°

322+00 30" Culvert

320+75 18" Culvert.

320+40 Slope = 25°

318+70 Slope = 25°

317+50 & Deep Ravine - use

Rock Fill or Small Bridge

317+10 Slope = 15°

Mile 7

316+25 Slope = 20°

↑
Heavy Boulder Formation
↓

340+70 slope=20°

339+45 slope=20°

338+10 slope=20°

337+80 4 Deep Ravine - use *Formation* Small Bridge or Rock Fill Crossing.

336+40 slope=25°

335+58 slope=25°

334+10 18" culvert

334+00 slope=20

333+50 18" culvert

332+00 slope=25°

331+25 24" culvert

330+62 slope=10°

328+85 slope=18°

↑
Formation
 ↓
Boulder
 ↓
Heavy
 ↓

353+20 18" culvert

351+80 18" culvert

351+50 Slope = 25°

350+60 Slope = 25°

350+00 18" culvert

349+10 Slope = 30°

349+00 18" culvert

347+75 Slope = 35°

346+55 Slope = 25°

346+00 18" culvert

344+40 Slope = 30°

342+80 Slope = 25°

342+75 18" culvert

Formation
Boulder
Heavy

364+25 18" culvert

362+80 slope = 25°

362+70 24" culvert

361+55 slope = 20°

360+75

360+25 slope = 12°

358+70 slope = 10°

357+90 18" culvert.

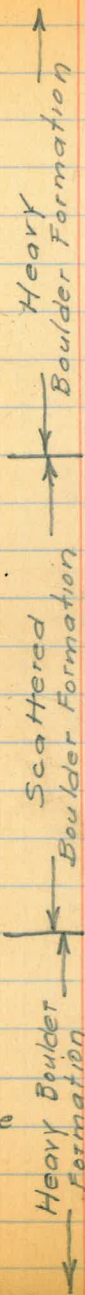
357+00 18" culvert.

356+70 slope = 15°

355+25 slope = 15°

354+80 ≠ Deep Ravine — use Rock Fill or Small Bridge Crossing.

354+10 slope = 15°



376+60 Slope = 15°

374+88 Slope = 10°

373+60 18" Culvert

372+60 Slope = 10°

372+00 18" Culvert

371+70 Slope = 10°

Mile 8

369+70 Slope = 10°

368+67 Slope = 10°

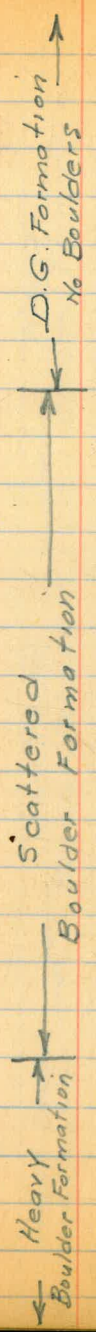
368+00 18" Culvert

366+95 Slope = 15°

366+50

365+65 18" Culvert

365+50 Slope = 25°



390+75 Slope = 8°

389+22 Slope = 4°

388+90 18" Culvert

387+22 Slope = 4°

386+20 24" Culvert

385+22 Slope = 8°

383+22 Slope = 8°

381+22 Slope = 8°

380+03 Slope = 20°

379+65 18" culvert

379+42 Slope = 20°

378+40 Slope = 15°

378+00 18" culvert

D.G. Formation
No Boulders on Surface

410+30 slope = 5°

408+60 18" culvert

408+30 slope = 5°

406+30 slope = 5°

405+80 18" culvert

403+65 slope = 12°

401+65 slope = 12°

398+80 slope = 12°

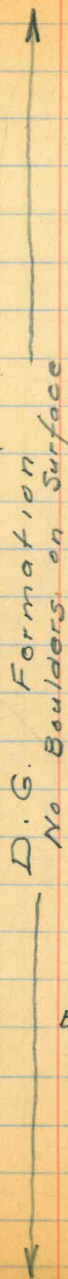
397+95 slope = 8°

395+55 slope = 10°

395+10 ♀ Ravine use small

394+65 slope = 8°

393+35 slope = 8°



430+00 Slope = $1^{\circ}30'$

429+00 18" culvert

428+00 Slope = $1^{\circ}30'$ 425+68 Slope = $1^{\circ}30'$ 423+68 Slope = $1^{\circ}30'$

Mile 9

422+10 E Ravine - use Rock Fill or Small Bridge

421+68 Slope = 3° 418+85 Slope = 3°

417+20 24" culvert

416+85 Slope = 5°

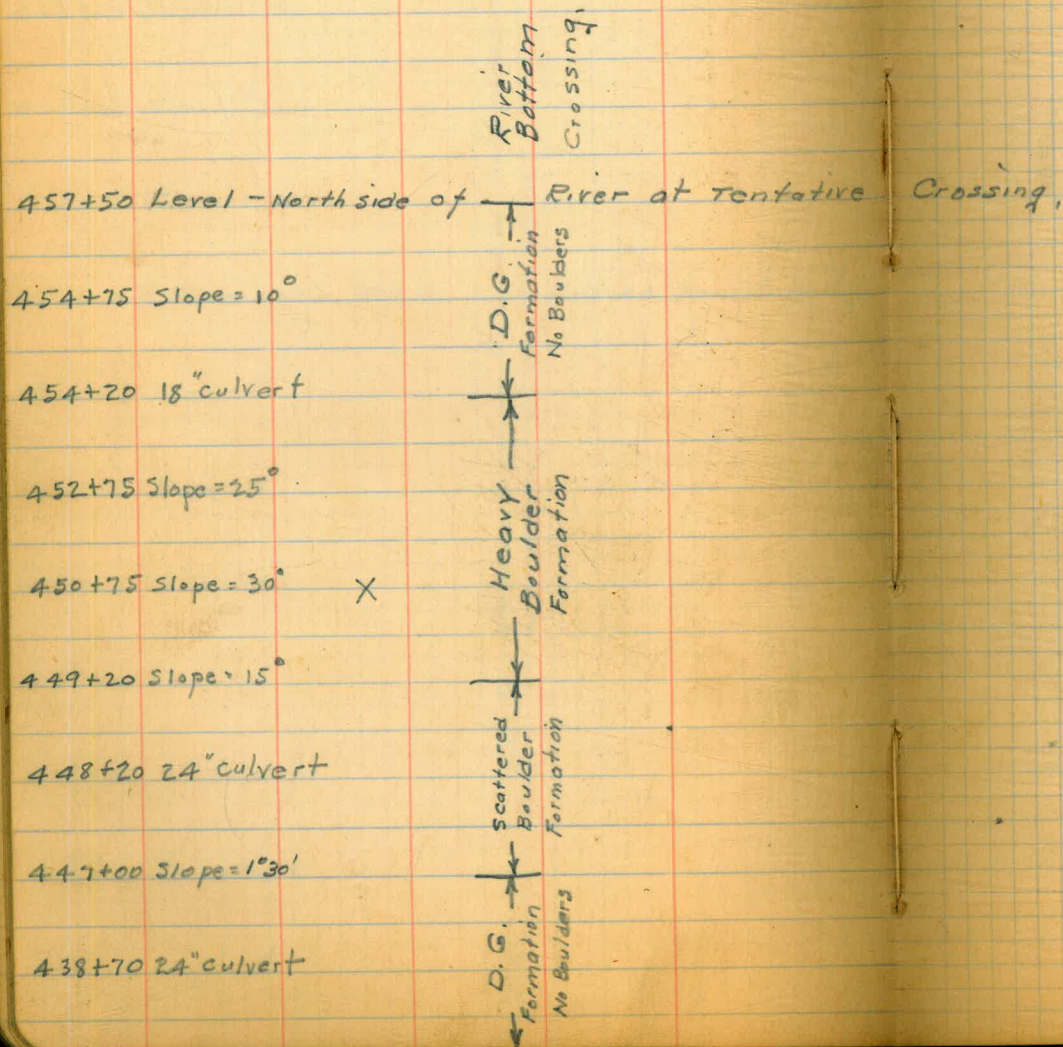
415+50 24" Culvert.

413+00 30" culvert

412+65 Slope = 5°

D. G. Formation - Thru Old Cultivated Fields
 No Boulders on Surface

461+50 = South Side of River; Connection to present Traveled Rd.



DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder stake for any width roadway, slope 1 1/2 to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance.

level contains the difference in elevation between

**IMPROVED TABLES
AND
INFORMATION**

TABLE No. 2.

To find tangent and external for curve of any other degree, divide by degree of curve and add correction found in column of correction. Degree of curve with a given L may be found by dividing tangent (or external), opposite L by given tangent (or external). The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

