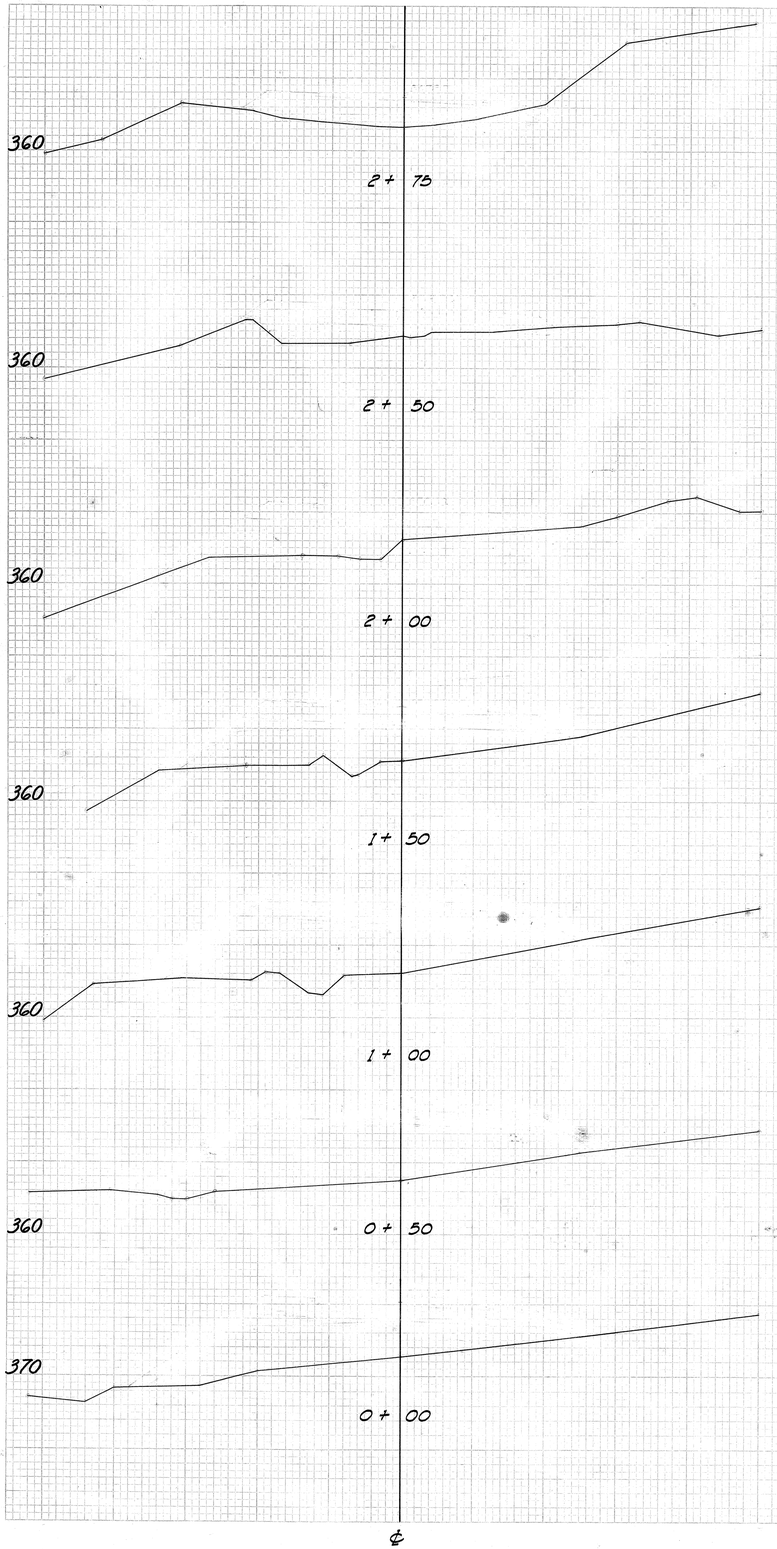
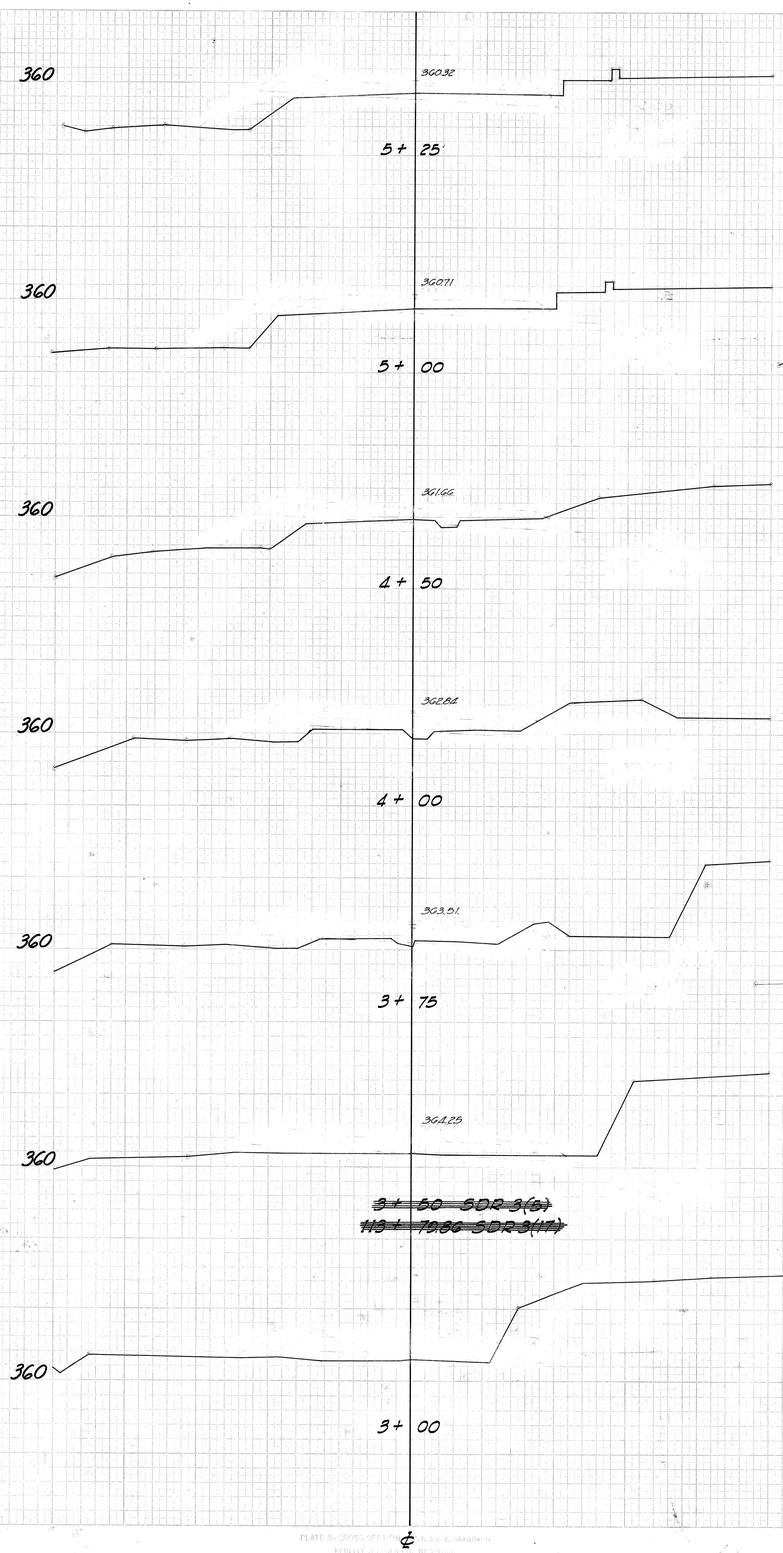
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	F-019-2(3)	1956	40	45

FINAL SURVEY — SURVEYED: PLOTTED: TEMPLATE: AREAS: AREAS CHECKED: NOTE BOOK NO. — BY — DATE

ORIGINAL SURVEY — SURVEYED: PLOTTED: TEMPLATE: AREAS: AREAS CHECKED: NOTE BOOK NO. — BY — DATE — 11/30





Exc = 196.4
Emb = 0
SM = 155.6

Exc = 237.1
Emb = 0
SM = 214.2

Exc = 107.6
Emb = 0.6
SM = 118.6

Exc = 120.8
Emb = 4.7
SM = 166.1

Exc =
Emb =

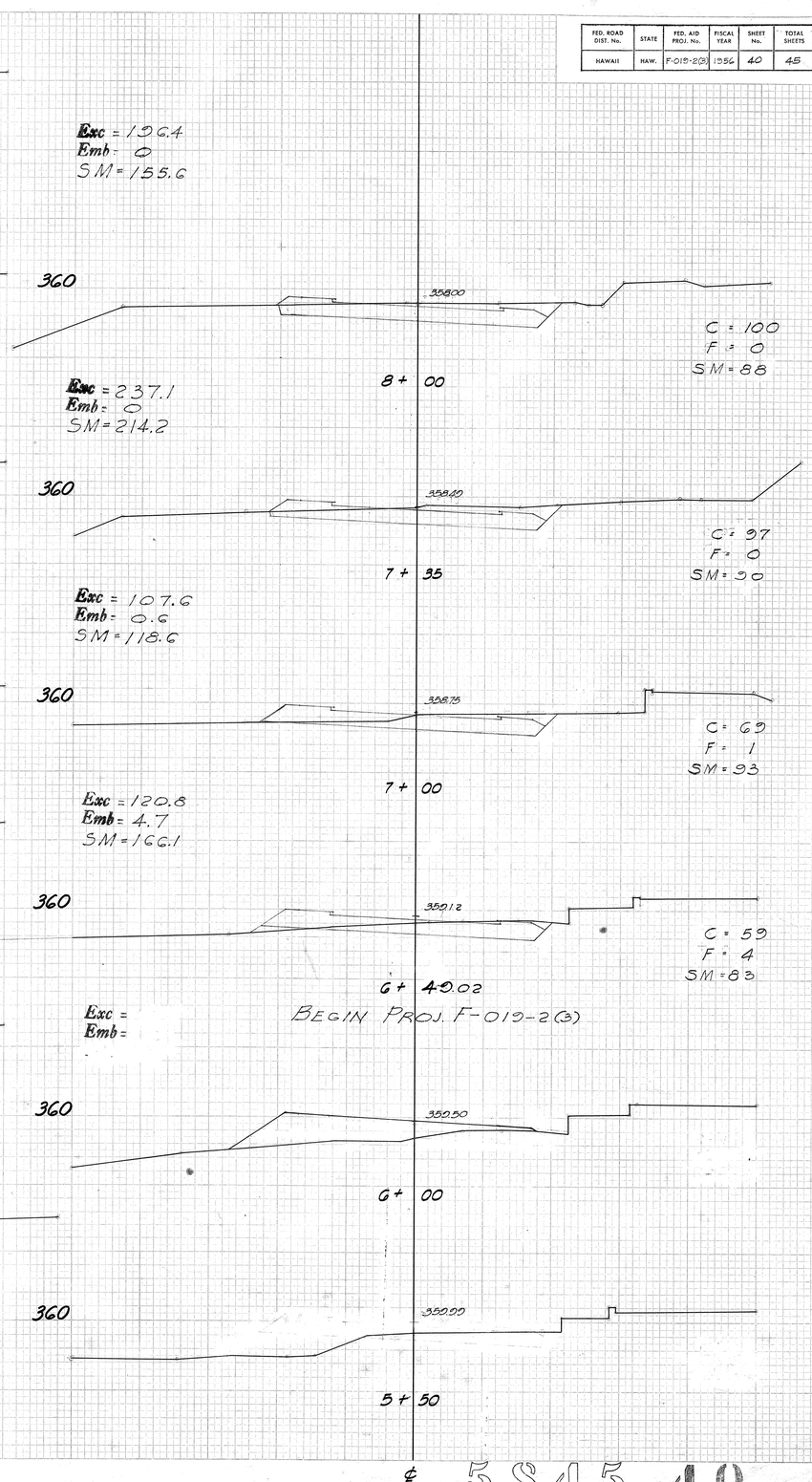


PLATE 3 - CROSS SECTIONS

K & E CO. No. 345-3 MADE IN U.S.A.

58545.40

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	F-019-2(3)	1956	41	45

FINAL SURVEY — SURVEYED, PLOTTED, TRACED, AREAS, AREAS CHECKED — NOTE BOOK — NO.

ORIGINAL SURVEY — SURVEYED, PLOTTED, TRACED, AREAS, AREAS CHECKED — NOTE BOOK — NO.

DATE / BY

11/30/55 HC & Co
12/2/55 HC & Co
12/5/55 HC & Co

Exc = 726.0
Emb = 0
SM = 157.4

350
356.13
10+50
C = 300
F = 0
SM = 83

Exc = 310.8
Emb = 0
SM = 36.8

350
356.56
10+18.22
C = 230
F = 0
SM = 82

Exc = 144.6
Emb = 0
SM = 55.7

360
356.30
10+00
C = 196
F = 0
SM = 82

Exc = 340.8
Emb = 0
SM = 156.4

360
356.80
9+50
C = 172
F = 0
SM = 87

Exc = 285.2
Emb = 0
SM = 163.8

360
357.25
9+00
C = 136
F = 0
SM = 90

Exc = 229.6
Emb = 0
SM = 157.4

360
357.63
8+50
C = 112
F = 0
SM = 80

Exc = 61.8
Emb = 20.5
SM = 57.2

370
352.38
12+83.2
C = 743
F = 0
SM = 90

Exc = 1,012.6
Emb = 0
SM = 109.2

370
352.43
12+50
C = 838
F = 0
SM = 87

Exc = 1,538.2
Emb = 0
SM = 163.9

370
355.00
12+00
C = 828
F = 0
SM = 90

Exc = 1,366.6
Emb = 0
SM = 171.2

370
355.38
11+50
C = 649
F = 0
SM = 95

Exc = 1,048.2
Emb = 0
SM = 168.6

360
355.75
11+00
C = 483
F = 0
SM = 87

Exc = ~~938.9~~ 899.4
Emb = 28.9
SM = ~~162.2~~ 72.2

360
352.38
15+50
C = 624
F = 20
SM = 95

Exc = 118.7
Emb = 4.1
SM = 20.2

360
352.42
15+43.22
C = 443
F = 17
SM = 86

Exc = 88.0
Emb = 82.0
SM = 36.9

340
352.51
15+33.25
END MANOWAIOPAE BRIDGE
C = 0
F = 395
SM = 99

360
352.26
12+98.87
BEG. MANOWAIOPAE BRIDGE
C = 71
F = 67
SM = 107

PLATE 3 - CROSS SECTION ©, P.R. & R.E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.
K & E CO. No. 345-3 MADE IN U. S. A.

5S45.41

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	F-013-2(3)	1956	42	45

FINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / FIELD BOOK / NO. / AREAS CHECKED / BY / DATE

ORIGINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / FIELD BOOK / NO. / AREAS CHECKED / BY / DATE

Exc = 2143.5 ~~2242.6~~
Emb = 99.0
SM = ~~1641.8~~ 64.8
380
351.25
17+00
C = 1177 ~~1231~~
F = 50
SM = ~~26~~ 42

Exc = 2142.6 ~~2242.6~~
Emb = 143.6
SM = ~~1674~~ 57.4
370
352.75
19+00
C = 1143 ~~1197~~
F = 77
SM = ~~58~~ 23

Exc = 961.1 ~~1061.2~~
Emb = 240
SM = ~~1598~~ 593
360
352.25
21+00
C = 599 ~~653~~
F = 128
SM = ~~87~~ 33

Exc = 2132.4 ~~2,231.4~~
Emb = 81.4
SM = ~~1656~~ 68.5
380
351.63
16+50
C = 1125 ~~1179~~
F = 38
SM = ~~30~~ 32

Exc = 2200.9 ~~2301.8~~
Emb = 139.8
SM = ~~1538~~ 52.8
370
350.13
18+50
C = 1234 ~~1288~~
F = 74
SM = ~~58~~ 34

Exc = 1377.8 ~~1477.5~~
Emb = 229.6
SM = ~~1530~~ 60.2
370
352.63
20+50
C = 889 ~~943~~
F = 120
SM = ~~86~~ 32

Exc = 2028.7 ~~2128.6~~
Emb = 61.2
SM = ~~1529~~ 59.3
370
352.00
16+00
C = 1066 ~~1120~~
F = 28
SM = ~~86~~ 32

Exc = 2300.9 ~~2,400.8~~
Emb = 127.8
SM = ~~1685~~ 67.6
370
350.50
18+00
C = 1251 ~~1305~~
F = 64
SM = ~~25~~ 39

Exc = 1881.5 ~~1981.4~~
Emb = 213.0
SM = ~~1547~~ 54.6
370
349.00
20+00
C = 1143 ~~1197~~
F = 110
SM = ~~84~~ 27

Exc = 763.3 ~~863.7~~
Emb = 21.3
SM = ~~643~~ 24.8
370
352.15
15+80
C = 995 ~~1049~~
F = 31
SM = ~~85~~ 35

Exc = 2212.0 ~~2312.4~~
Emb = 131.4
SM = ~~1638~~ 62.0
370
350.88
17+50
C = 1138 ~~1192~~
F = 57
SM = ~~86~~ 28

Exc = 2142.6 ~~2242.6~~
Emb = 183.4
SM = ~~1671~~ 61.1
370
349.38
19+50
C = 1171 ~~1225~~
F = 88
SM = ~~92~~ 39

PLATE 3 - CROSS SECTION O. P. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.
K & E CO. No. 345-3 MADE IN U. S. A.

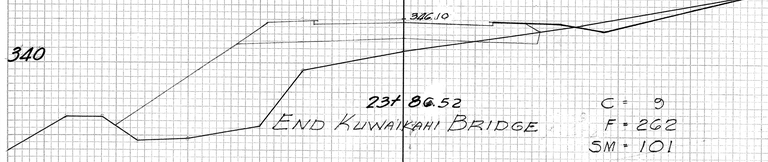
5S45.42

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	F-013-2(2)	1956	43	45

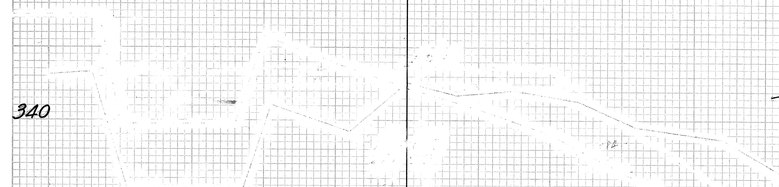
FINAL SURVEY — SURVEYED: DRAWN: TRACED: TEMPLATE: AREAS: AREAS CHECKED: NOTE BOOK: NO.: DATE: BY:

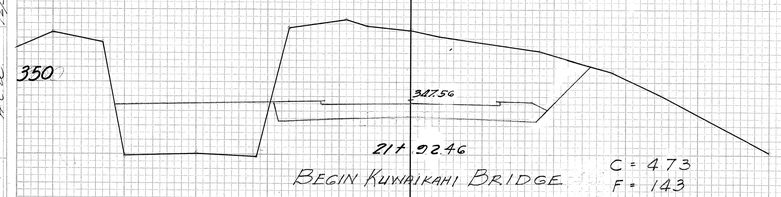
ORIGINAL SURVEY — SURVEYED: DRAWN: TRACED: TEMPLATE: AREAS: CROSS CHECKED: NOTE BOOK: NO.: DATE: BY:

Exc = 6.5
Emb = 55.0
SM = 51.0



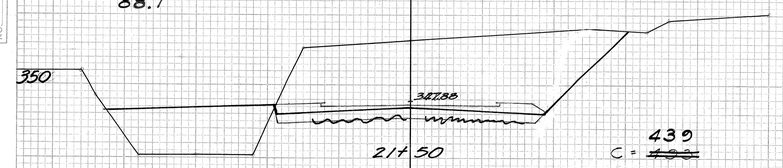
C = 9
F = 262
SM = 101





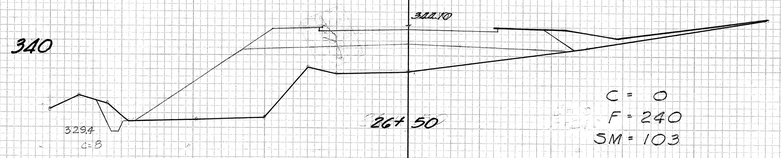
C = 473
F = 143
SM = 81

Exc = ~~717.8~~
Emb = 214.1
SM = ~~730.0~~ 88.1



C = ~~439~~
F = 131
SM = ~~88~~ 3.1

Exc = 25.0
Emb = 431.4
SM = 190.8

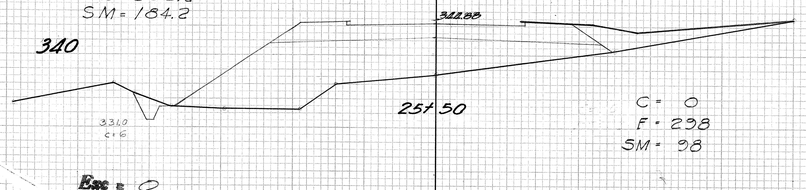


C = 0
F = 240
SM = 103

Exc = 0
Emb = 455.6
SM = 184.2

C = 0
F = 251
SM = 101

Exc = 0
Emb = 509.2
SM = 184.2



C = 0
F = 238
SM = 98

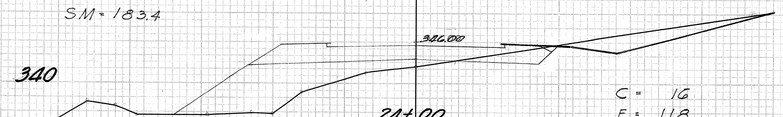
Exc = 0
Emb = 438.8
SM = 188.8

C = 0
F = 176
SM = 106

Exc = 35.2
Emb = 222.2
SM = 187.0

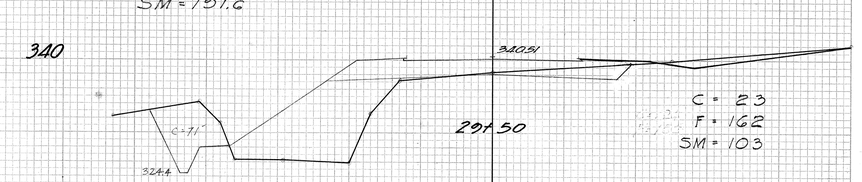
C = 38
F = 63
SM = 95

Exc = 50.0
Emb = 168.6
SM = 183.4



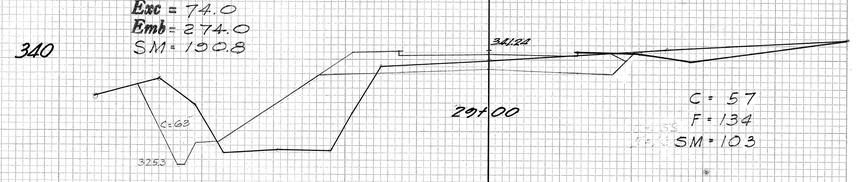
C = 16
F = 118
SM = 103

Exc = 21.4
Emb = 360.6
SM = 191.6



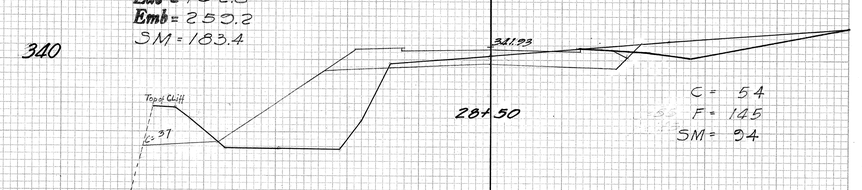
C = 23
F = 162
SM = 103

Exc = 74.0
Emb = 274.0
SM = 190.8



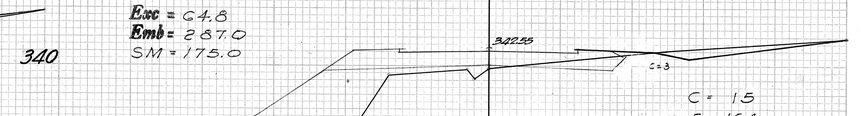
C = 57
F = 134
SM = 103

Exc = 102.8
Emb = 250.2
SM = 183.4



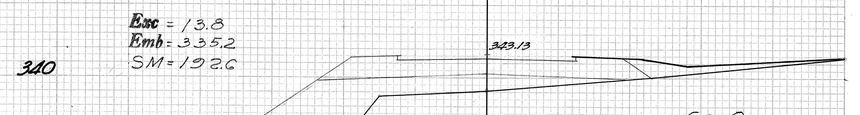
C = 54
F = 145
SM = 94

Exc = 64.8
Emb = 287.0
SM = 175.0



C = 15
F = 164
SM = 95

Exc = 13.8
Emb = 335.2
SM = 192.6



C = 0
F = 198
SM = 113

Exc = 25.0
Emb = 332.6
SM = 200.0

C = 27
F = 226
SM = 103

PLATE 3 - CROSS SECTION O.D.P.R. & H.E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.
K & E CO. No. 345-3 MADE IN U. S. A.

All the

5S45.43

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	F-015-2(3)	1956	44	45

FINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

Exc = 211.2
Emb = 31C.C
SM = 161.2

340
325.78
Top of Cliff
32+00
C = 137
F = 150
SM = 96

Exc = 157.1
Emb = 135.5
SM = 110.1

340
332.67
C=30
322.7
31+66.32
C = 117
F = 166
SM = 82

Exc = 65.8
Emb = 105.2
SM = 50.4

340
337.00
C=48
322.8
31+50
C = 97
F = 175
SM = 82

Exc = 157.4
Emb = 319.4
SM = 150.2

340
337.96
C=52
323.1
31+00
C = 73
F = 170
SM = 89

Exc = 76.0
Emb = 357.4
SM = 162.0

340
338.86
C=32
323.5
30+50
C = 9
F = 215
SM = 86

Exc = 8.4
Emb = 416.6
SM = 176.0

330
332.71
C=35
323.7
30+00
C = 0
F = 234
SM = 104

Exc = 183.4
Emb = 392.6
SM = 155.6

330
328.70
35+00
C = 102
F = 222
SM = 85

Exc = 176.0
Emb = 412.0
SM = 161.2

330
330.06
34+50
C = 88
F = 223
SM = 89

Exc = 183.4
Emb = 387.0
SM = 163.8

330
331.35
Top of Cliff
34+00
C = 110
F = 194
SM = 88

Exc = 161.2
Emb = 338.8
SM = 159.2

330
332.59
Top of Cliff
33+50
C = 64
F = 172
SM = 84

Exc = 129.6
Emb = 307.4
SM = 150.0

330
333.78
Top of Cliff
33+00
C = 76
F = 160
SM = 78

Exc = 153.8
Emb = 305.6
SM = 143.6

330
334.91
Top of Cliff
32+50
C = 90
F = 170
SM = 77

Exc = 72.2
Emb = 207.4
SM = 163.8

310
312.43
38+00
C = 64
F = 106
SM = 89

Exc = 122.2
Emb = 216.C
SM = 165.8

310
312.11
37+50
C = 68
F = 127
SM = 90

Exc = 151.8
Emb = 238.8
SM = 161.2

310
312.76
37+00
C = 96
F = 131
SM = 84

Exc = 173.2
Emb = 261.2
SM = 164.8

310
312.32
36+50
C = 91
F = 150
SM = 94

Exc = 157.4
Emb = 311.2
SM = 172.2

320
325.84
36+00
C = 78
F = 186
SM = 92

Exc = 161.2
Emb = 359.2
SM = 163.0

320
327.80
35+50
C = 96
F = 201
SM = 83

PLATE 3 - CROSS SECTION U.S.P.R.&R.E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.
K & E CO. No. 345-3 MADE IN U. S. A.

5S45.44

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	F-019-2(3)	1956	45	45

FINAL SURVEY — SURVEYED — PLOTTED — TRACED — AREAS — AREAS CHECKED — NOTE BOOK — NO. — DATE — BY

ORIGINAL SURVEY — SURVEYED — PLOTTED — TRACED — AREAS — AREAS CHECKED — NOTE BOOK — NO. — DATE — BY

Exc = 276.0
Emb = 8.4
SM = 172.2

310 — 307.52 — 300

41+50

C = 126
F = 9
SM = 97

Exc = 194.4
Emb = 42.1
SM = 176.8

310 — 302.12 — 300

41+00

C = 83
F = 37
SM = 94

Exc = 111.2
Emb = 6.4
SM = 176.8

310 — 310.86 — 300

40+50

C = 37
F = 38
SM = 97

Exc = 40.8
Emb = 98.2
SM = 178.8

310 — 312.57 — 300

40+00

C = 6
F = 67
SM = 96

Exc = 31.4
Emb = 133.4
SM = 180.6

310 — 314.29 — 300

39+50

C = 27
F = 76
SM = 99

Exc = 33.4
Emb = 207.4
SM = 178.8

310 — 316.00 — 300

39+00

C = 9
F = 148
SM = 94

Exc = 22.4
Emb = 246.4
SM = 168.6

310 — 317.71 — 300

38+50

C = 14
F = 118
SM = 88

Exc = 143.1
Emb = 78.7
SM = 183.3

300 — 301.04 — 310

45+10

END PROJ. F-019-2(3)

C = 50
F = 72
SM = 104

Exc = 149.1
Emb = 78.7
SM = 183.3

300 — 301.39 — 310

44+50

C = 111
F = 13
SM = 94

Exc = 242.6
Emb = 20.4
SM = 170.4

300 — 302.06 — 310

44+00

C = 150
F = 9
SM = 90

Exc = 231.4
Emb = 25.0
SM = 163.8

300 — 302.79 — 310

43+50

C = 100
F = 18
SM = 87

Exc = 196.4
Emb = 55.6
SM = 168.6

300 — 303.71 — 310

43+00

C = 111
F = 41
SM = 94

Exc = 224.0
Emb = 38.0
SM = 168.6

300 — 304.80 — 310

42+50

C = 130
F = 0
SM = 88

Exc = 279.6
Emb = 0
SM = 163.8

300 — 306.06 — 310

42+00

C = 171
F = 0
SM = 89

300 — 297.83 — 310

50+50

C = 19
F = 0
SM = 84

300 — 298.13 — 310

50+00

C = 45
F = 0
SM = 96

300 — 298.43 — 310

49+50

C = 53
F = 3
SM = 97

300 — 298.72 — 310

49+00

C = 25
F = 1
SM = 84

300 — 299.79 — 310

48+88

C = 30
F = 0
SM = 102

300 — 299.93 — 310

48+66.2

C = 27
F = 12
SM = 91

PLATE 3 - CROSS SECTION U.S.P.R.R.E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.
K. & E. CO. No. 345-3 MADE IN U. S. A.

55 45.45