FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	N.R.H. 18 A	1934	11	24

FINAL SURVEY		BY	DATE
	SURVEYED	H.N.A.	4-34
	PLOTTED	H.N.A.	4-34
NOTE BOOK	TEMPLATE	O.H.N. & H.C.	4-34
NO. 294	AREAS	C.C.H.	4-34
	AREAS CHECKED	C.C.H.	4-34

ORIGINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
NO. 294	AREAS		
	AREAS CHECKED		

17.8
12.85
C=98
F=0
1+80
Exc.=82.7
Emb.=0
17.6
13.63
C=105
F=0
1+58
Exc.=29.3
Emb.=0
17.1
13.92
~~C=93~~
~~F=0~~
C=6
F=17
1+50
Exc=5.6
Emb=54.6
~~Exc.=91.7~~
~~Emb.=3.7~~
15.9
15.69
Exc=1.1
Emb=48.3
~~Exc.=5.6~~
~~Emb.=53.7~~
1+00
~~C=6~~
~~F=4~~
C=0
F=42
15.1
17.47
Exc=1.1
Emb=31.1
~~C=0~~
~~F=54~~
C=1
F=39
0+50
~~Exc.=19.9~~
~~Emb.=25.0~~
Exc=5.6
Emb=39.8
19.8
18.35
C=43
F=0
0+25
Exc.=28.2
Emb.=0
20.2
19.24
0+00
~~C=18~~
~~F=0~~
C=5
F=4
07.1
01.37
Exc.=357.4
Emb=0
5+00
~~C=187~~
~~F=0~~
C=~~175~~ 181
F=0
~~Exc.=317.6~~
~~Emb.=0~~
08.6
03.27
Exc.=244.4
Emb=0
~~C=156~~
~~F=0~~
C=~~145~~ 162
F=0
4+50
~~Exc.=226.8~~
~~Emb.=0~~
08.4
05.04
Exc.=110.2
Emb=0
~~C=89~~
F=0
C=~~145~~ 71
F=0
4+00
~~Exc.=110.2~~
~~Emb.=0~~
08.4
06.82
Exc=29.6
Emb=17.6
C=30
F=0
C=62.28
F=0
3+50
~~Exc.=49.4~~
~~Emb.=0~~
08.6
08.59
Exc=1.5
Emb=30.4
~~C=23~~
~~F=0~~
C=4
F=19
3+00
C=0
F=50
~~Exc.=42.6~~
~~Emb.=0~~
Exc=6.3
Emb=27.7
11.8
10.37
Exc=26.1
Emb=2.9
~~C=23~~
~~F=0~~
C=14
F=7
2+50
C=50
F=0
~~Exc.=57.4~~
~~Emb.=0~~
Exc=27.5
Emb=11.9
13.4
12.14
~~C=39~~
~~F=0~~
C=3
F=23
2+00
Exc=8.3
Emb=37.0
~~Exc.=50.7~~
~~Emb.=0~~
94.4
91.11
~~C=138~~
~~F=0~~
C=130=146
F=0
Exc=100.7
Emb=0
7+00
~~Exc.=94.0~~
~~Emb.=0~~
93.8
92.61
~~C=70~~
F=0
C=142=143
F=0
Exc=156.1
Emb=0
6+75
~~Exc.=84.2~~
~~Emb.=0~~
97.8
94.06
Exc=248.7
Emb=0
~~C=112~~
~~F=0~~
C=112
F=0
6+50
~~Exc.=120.4~~
~~Emb.=0~~
01.3
95.45
~~C=148~~
~~F=0~~
6+25
~~Exc.=137.0~~
~~Emb.=0~~
Exc=162.5
Emb=0
C=252
F=0
02.7
96.76
Exc=231.1
Emb=0
~~C=148~~
~~F=0~~
C=163
F=0
6+00
~~Exc.=106.4~~
~~Emb.=0~~
06.0
97.52
~~C=23.5~~
~~F=0~~
C=254
F=0
Exc=289.6
Emb=0
5+85
~~Exc.=274.2~~
~~Emb.=0~~
05.2
99.19
Exc=369.4
Emb=0
~~C=188~~
~~F=0~~
C=170
F=0
5+50
~~Exc.=347.2~~
~~Emb.=0~~
77.81
73.0
C=0
F=106
9+00
Exc.=0
Emb.=209.3
81.17
76.9
C=0
F=119
8+50
Exc.=0
Emb.=147.2
82.1
84.52
C=0
F=40
8+00
Exc.=4.4
Emb.=13.9
84.9
85.53
C=16
F=10
7+85
Exc=14.9
Emb=9.1
87.9
87.88
C=7
F=4
7+50
Exc=44.1
Emb=1.5
~~Exc.=13.2~~
~~Emb.=1.3~~
90.1
89.0
~~C=33~~
~~F=0~~
C=112
F=0
7+33
Exc=134.5
Emb=
~~Exc.=32.5~~
~~Emb.=0~~
93.1
89.71
C=124
F=0
7+22
Exc=104.7
Emb=0
60.7
64.39
C=0
F=87
11+00
Exc.=1.2
Emb.=47.7
63.8
65.87
C=3
F=30
10+78
Exc.=1.6
Emb.=72.6
63.0
67.75
C=0
F=110
10+50
Exc.=0
Emb.=102.3
69.42
64.3
C=0
F=111
10+25
Exc.=0
Emb.=89.3
67.9
71.10
C=0
F=83
10+00
Exc.=0
Emb.=178.7
70.5
74.46
9+50
C=0
F=110
Exc=0
Emb=200

PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4317.11

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	12	24

FINAL SURVEY		BY	DATE
	SURVEYED	H.N.A.	4-34
	PLOTTED	H.N.A.	4-34
NOTE BOOK	TEMPLATE	O.H.W. & H.C.	4-34
NO. 294	AREAS	C.C.H.	4-34
	AREAS CHECKED	C.C.H.	4-34

ORIGINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
NO. 294	AREAS		
	AREAS CHECKED		

57.7
52.71
C = ~~132~~ = 100
F = 0
12+74
Exc. = 98.7
Emb = 0
56.9
54.33
C = ~~90~~ = 64
F = 0
12+50
Exc = 70.8
Emb = 0
57.1
56.00
C = ~~63~~ = 37
F = 0
12+25
Exc. = 38.0
Emb = 44.6
57.1
57.68
C = ~~19~~ = 11
F = 10
12+00
Exc. = 8.5
Emb. = 9.7
59.4
59.09
C = ~~32~~ = 0
F = 15
11+79
Exc. = 1.6
Emb. = 56.4
56.9
61.04
C = 0
F = 90
11+50
Exc. = 0
Emb. = 163.9
32.5
37.55
C = 0
F = 75
15+00
Exc. = 5.6
Emb. = 97.2
40.0
40.91
C = 6
F = 30
14+50
Exc. = 49.1
Emb. = 13.9
45.0
42.58
~~C = 100~~
~~F = 0~~
C = 17
F = 0
14+25
Exc. = 59.2
Emb. = 10.6
43.7
44.26
C = ~~28~~ = 17
F = 23
14+00
Exc. = 28.7
Emb. = 60.2
47.9
47.62
C = ~~3~~ 0
F = 42
13+50
Exc. = 39.8
Emb. = 38.9
52.1
50.97
~~C = 40~~
~~F = 0~~
C = 29
F = 0
13+00
Exc. = 82.8
Emb. = 0
23.3
24.13
C = ~~2~~ 18
F = 12
17+00
Exc. = 1.9
Emb. = 78.7
24.7
27.49
C = 0
F = 73
16+50
Exc. = 0
Emb. = 303.7
22.5
30.84
C = 0
F = 255
16+00
Exc. = 0
Emb. = 180.9
28.6
32.46
C = 0
F = 152
15+76
Exc. = 0
Emb. = 156.5
28.6
34.20
C = 0
F = 173
15+50
Exc. = 8.1
Emb. = 86.0
36.8
35.67
C = 20
F = 38
15+28
Exc. = 10.4
Emb. = 58.6
07.0
06.77
C = ~~25~~ 49
F = 0
20+00
Exc. = 35.2
Emb. = 0
10.9
07.58
C = ~~70~~ 135
F = 0
19+80
Exc. = 96.1
Emb. = 0
13.9
08.91
C = ~~103~~ 143
F = 0
19+50
Exc. = 119.4
Emb. = 0
12.0
11.40
C = ~~26~~ 70
F = 0
19+00
Exc. = 24.1
Emb. = 36.1
12.0
14.24
C = ~~0~~ = 2
F = 39
18+50
Exc. = 10.2
Emb. = 67.6
16.4
17.42
C = ~~11~~ 31
F = 34
18+00
Exc. = 13.0
Emb. = 50.0
20.2
20.78
C = ~~3~~ 44
F = 20
17+50
Exc. = 4.6
Emb. = 29.6
00.7
00.78
C = ~~10~~ 43
F = 30
22+75
Exc. = 13.9
Emb. = 20.4
1801.8
01.08
C = ~~26~~ 77
F = 14
22+50
Exc. = 18.5
Emb. = 93.5
97.6
01.66
C = ~~0~~ 19 ?
F = 87
22+00
Exc. = 13.9
Emb. = 137.0
1798.5
02.42
C = ~~15~~ 35
F = 61
21+50
Exc. = 14.2
Emb. = 19.2
03.6
02.76
C = ~~30~~ 106
F = 0
21+33
Exc. = 26.3
Emb. = 12.2
02.9
03.52
C = ~~13~~ = 31
F = 20
21+00
Exc. = 22.2
Emb. = 27.8
04.7
04.98
C = ~~11~~ 28
F = 10
20+50
Exc. = 33.4
Emb. = 9.2

PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4317.12

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	13	24

FINAL SURVEY NOTE BOOK NO. 294		BY	DATE
	SURVEYED	H.N.A.	4-34
	PLOTTED	H.N.A.	4-34
	TEMPLATE	O.H.N. & H.C.	4-34
	AREAS	C.C.H.	4-34
	AREAS CHECKED	C.C.H.	4-34

ORIGINAL SURVEY NOTE BOOK NO. 294		BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

97.5
97.52
C=~~22~~ =67
F=8
25+00
Exc.=14.5
Emb=22.2
97.0
98.19
C=~~4~~ =39
F=32
24+70
Exc.=36.7
Emb=11.9
02.0
98.58
C=~~95~~ 192
F=0
24+50
Exc.=115.7
Emb=11.1
98.8
99.32
~~C=30~~
~~F=12~~
C=78
F=12
24+00
Exc.=53.2
Emb=5.6
02.0
99.61
~~C=85~~
~~F=0~~
C=114
F=0
23+75
Exc.=60.2
Emb=0
00.2
99.91
C=45
F=0
C=102
F=0
23+50
Exc.=135.2
Emb=0
03.7
00.49
C=~~101~~ =141
F=0
23+00
Exc.=51.4
Emb=13.9
90.6
87.52
C=~~70~~ =107
F=0
27+50
Exc.=101.9
Emb=0
90.7
90.15
C=~~40~~ 93
F=0
27+00
Exc.=153.7
Emb=0
96.3
92.47
C=~~26~~ 182
F=0
26+50
Exc.=200.9
Emb=0
97.7
93.89
C=~~184~~ 191
F=0
26+15
Exc.=83.9
Emb=0
96.7
94.46
C=~~118~~ 193
F=0
26+00
Exc.=216.7
Emb=0
00.3
96.15
C=~~116~~ 167
F=0
25+50
Exc.=72.2
Emb=0.5
97.2
96.88
C=~~40~~ 120
F=1
25+25
Exc.=28.7
Emb=4.2
66.6
69.08
C=0
F=67
30+50
Exc.=0
Emb.=156.5
69.6
72.18
C=0
F=102
30+00
Exc.=0
Emb.=145.3
73.2
75.28
C=0
F=55
29+50
Exc.=23.2
Emb.=50.9
79.1
78.38
C=~~25~~ =47
F=0
29+00
Exc.=88.0
Emb.=0
83.5
81.48
C=~~70~~ 104
F=0
28+50
Exc.=101.9
Emb.=0
88.1
83.03
C=~~150~~ =190
F=0
28+25
Exc.=118.5
Emb.=0
87.2
84.58
C=~~106~~ 141
F=0
28+00
Exc.=163.0
Emb.=0
48.4
53.38
C=0
F=100
33+00
Exc.=0
Emb=189.8
52.9
56.68
C=0
F=105
32+50
Exc.=0
Emb.=186.1
55.7
59.78
C=0
F=96
32+00
Exc.=0.2
Emb.=25.7
59.1
60.40
C=1
F=43
31+90
Exc.=11.8
Emb.=46.7
62.3
62.88
C=~~15~~ =21
F=20
31+50
Exc.=6.9
Emb.=5.6
64.1
63.81
C=~~10~~ 5
F=0
31+35
Exc.=6.5
Emb.=45.4
62.9
65.98
C=0
F=70
31+00
Exc.=0
Emb.=126.8
43.1
38.83
C=~~90~~ =121
F=0
35+50
Exc.=74.1
Emb.=0
42.8
40.20
C=~~70~~ =105
F=0
35+25
Exc.=85.6
Emb.=0
45.5
41.37
C=~~115~~ 154
F=0
35+00
Exc.=154.6
Emb.=0
45.7
44.28
C=~~52~~ =68
F=0
34+50
Exc.=48.1
Emb.=24.1
46.0
47.38
C=0
F=26
34+00
Exc.=0
Emb.=91.7
48.0
50.48
C=0
F=73
33+50
Exc.=0
Emb.=160.2

PLATE 3—CROSS SECTION ⊕ P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK

4317.13

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	14	24

FINAL SURVEY

NOTE BOOK NO. 294

	BY	DATE
SURVEYED	H.N.A.	4-34
PLOTTED	H.N.A.	4-34
TEMPLATE	O.H.W. & H.C.	4-34
AREAS	C.C.H.	4-34
AREAS CHECKED	C.C.H.	4-34

ORIGINAL SURVEY

NOTE BOOK NO. 294

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

34.5
32.49
37+45
Exc.= 19.2
Emb.=77.5
C = ~~23~~ 24
F = 6
29.9
33.45
37+00
Exc.= 17.2
Emb.=66.1
C = 0
F = 87
32.6
34.25
36+70
Exc.= 15.2
Emb.= 13.7
C = ~~31~~ = 60
F = 32
35.5
34.87
36+50
Exc.= 1.9
Emb.= 16.3
C = 10
F = 5
31.8
35.20
36+40
Exc.= 3.7
Emb.= 70.4
C = 0
F = 83
35.4
36.25
36+00
Exc.= 25.2
Emb.= 8.9
C = ~~5~~ = 6
F = 12
38.6
38.36
35+60
Exc.= 22.0
Emb.= 0
C = ~~29~~ = 35
F = 0
31.2
30.68
38+50
Exc.= 35.6
Emb.= 40.9
C = ~~40~~ = 49
F = 0
29.1
31.51
38+02
Exc.= 0.4
Emb.= 16.4
C = 0
F = 46
31.54
15.6
38+00
Exc.= 5.6
Emb.= 285.7
C = ~~12~~ 19
F = 397
23.3
31.97
37+75
Exc.= 5.6
Emb.= 127.3
C = 0
F = 220
29.9
32.40
37+50
Exc.= 3.2
Emb.= 5.7
C = ~~72~~ = 14
F = 55
24.2
24.66
42+00
Exc.= 34.3
Emb.= 11.1
C = ~~7~~ 16
F = 12
26.1
25.52
41+50
Exc.= 75.0
Emb.= 0
C = ~~30~~ = 36
F = 0
27.5
26.38
41+00
Exc.= 93.5
Emb.= 0
C = ~~51~~ = 62
F = 0
28.6
27.24
40+50
Exc.= 126.0
Emb.= 0
C = ~~50~~ 53
F = 0
30.4
28.10
40+00
Exc.= 179.6
Emb.= 0
C = ~~86~~ 90
F = 0
32.0
28.96
39+50
Exc.= 230.6
Emb.= 0
C = ~~108~~ = 115
F = 0
34.2
29.82
39+00
Exc.= 167.6
Emb.= 0
C = ~~141~~ = 186
F = 0
19.0
18.64
45+50
Exc.= 57.4
Emb.= 0
C = ~~27~~ = 28
F = 0
20.0
19.50
45+00
Exc.= 32.4
Emb.= 37.0
C = ~~35~~ 36
F = 0
18.3
20.36
44+50
Exc.= 0
Emb.= 60.2
C = 0
F = 40
19.8
21.22
44+00
Exc.= 0
Emb.= 75.0
C = 0
F = 25
19.5
22.08
43+50
Exc.= 0
Emb.= 87.0
C = 0
F = 56
21.0
22.94
43+00
Exc.= 0
Emb.= 68.5
C = 0
F = 38
22.3
23.80
42+50
Exc.= 6.5
Emb.= 44.4
C = 0
F = 36
09.6
08.23
49+00
Exc.= 50.0
Emb.= 4.6
C = ~~44~~ 82
F = 0
10.1
10.42
48+50
Exc.= 13.9
Emb.= 9.3
C = ~~10~~ 54
F = 5
12.0
12.39
48+00
Exc.= 19.4
Emb.= 4.6
C = 5 ~~19~~ 24
F = 5
14.6
14.10
47+50
Exc.= 28.7
Emb.= 0
C = ~~16~~ 44
F = 0
15.9
15.57
47+00
Exc.= 59.3
Emb.= 0
C = ~~15~~ 34
F = 0
18.3
16.80
46+50
Exc.= 88.0
Emb.= 0
C = ~~49~~ 53
F = 0
19.8
17.78
46+00
Exc.= 67.6
Emb.= 0
C = ~~46~~ = 52
F = 0

PLATE 3—CROSS SECTION OF P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4317.14

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	15	24

88.0
89.05
No Overcut Allowed
52+50
C=~~1~~ = 19
F=16
Exc.=0.9
Emb=26.9
90.6
91.86
No Overcut Allowed
52+00
C=~~0~~ = 24
F=13
Exc.=8.3
Emb=13.0
94.6
94.67
No Overcut Allowed (Dirt)
51+50
C=9 = 40
F=1
Exc.=12.0
Emb=4.6
97.4
97.48
No Overcut Allowed (Dirt)
51+00
C=~~4~~ = 29
F=4
Exc.=6.5
Emb=8.3
00.1
00.29
No Overcut Allowed (Dirt)
50+50
C=~~3~~ = 40
F=5
Exc.=33.4
Emb=4.6
03.9
03.10
No Overcut Allowed (Dirt)
50+00
C=~~33~~ = 91
F=0
Exc.=60.2
Emb=0
06.7
05.79
No Overcut Allowed (Dirt)
49+50
C=~~32~~ = 61
F=0
Exc.=70.4
Emb=0
71.3
72.84
55+50
C=~~2~~ = 12
F=25
Exc.=1.9
Emb=43.5
74.8
75.30
55+00
C=~~0~~ = 8
F=22
Exc.=0
Emb=66.7
75.6
77.89
Sta. 54+50–70+30 No Overcut Allowed (Dirt Cut)
54+50
C=~~0~~ = 12
F=50
Exc.=0
Emb=56.3
79.3
80.07
54+10
C=~~0~~ = 18
F=26
Exc.=1.1
Emb=6.5
80.7
80.63
54+00
C=6 = 19
F=9
Exc.=18.5
Emb=8.3
83.6
83.44
53+50
C=~~14~~ = 53
F=0
Exc.=19.4
Emb=2.8
86.0
86.25
53+00
C=~~7~~ = 52
F=3
Exc.=7.4
Emb=17.6
62.3
62.46
58+00
C=~~3~~ = 31
F=7
Exc.=3.7
Emb=11.1
63.8
64.40
57+50
C=~~1~~ = 23
F=5
Exc.=10.2
Emb=6.5
66.5
66.35
57+00
C=~~10~~ = 30
F=2
Exc.=23.7
Emb=3.0
68.0
67.96
56+60
C=~~22~~ = 59
F=2
Exc.=5.9
Emb=4.1
66.9
68.37
56+50
C=~~10~~ = 24
F=20
Exc.=11.1
Emb=6.1
70.4
69.01
56+35
C=~~30~~ = 71
F=2
Exc.=51.9
Emb=1.3
72.0
70.54
56+00
C=~~50~~ = 95
F=0
Exc.=48.2
Emb=23.2
51.1
50.75
61+00
C=~~14~~ = 30
F=0
Exc.=14.8
Emb=4.6
52.1
52.70
60+50
C=~~2~~ = 56
F=5
Exc.=44.4
Emb=4.6
56.1
54.65
60+00
C=~~46~~ = 75
F=0
Exc.=79.6
Emb=0
57.8
56.60
59+50
C=~~40~~ = 71
F=0
Exc.=77.8
Emb=0.9
59.9
58.55
59+00
C=~~44~~ = 82
F=1
Exc.=43.5
Emb=7.4
60.2
60.50
58+50
C=~~3~~ = 32
F=7
Exc.=5.6
Emb=13.0
36.5
41.79
63+80
C=0
F=120
Exc.=0
Emb=97.8
39.7
42.40
63+50
C=0
F=56
Exc.=52.8
Emb=51.9
45.9
43.65
63+00
C=~~57~~ = 84
F=0
Exc.=215.7
Emb=0
50.7
45.04
62+50
C=~~176~~ = 207
F=0
Exc.=323.2
Emb=0
52.6
46.85
62+00
C=~~173~~ = 209
F=0
Exc.=243.5
Emb=0
51.8
48.80
61+50
C=~~98~~ = 119
F=0
Exc.=96.3
Emb=0

FINAL SURVEY		BY	DATE
	SURVEYED	H.N.A.	4-34
	PLOTTED	H.N.A.	4-34
NOTE BOOK	TEMPLATE	O.H.W. & H.C.	4-34
	AREAS	C.C.H.	4-34
NO. 294	AREAS CHECKED	C.C.H.	4-34

ORIGINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO. 294	AREAS CHECKED		

PLATE 3—CROSS SECTION G. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4317.15

⑥

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	16	24

FINAL SURVEY		BY	DATE
NOTE BOOK NO. 294	SURVEYED	H.N.A.	4-34
	PLOTTED	H.N.A.	4-34
	TEMPLATE	O.H.W. & H.C.	4-34
	AREAS	C.C.H.	4-34
	AREAS CHECKED	C.C.H.	4-34

ORIGINAL SURVEY		BY	DATE
NOTE BOOK NO. 294	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

40.0
39.42
66+50
C = ~~10~~ = 30
F = 10
Exc. = 15.0
Emb. = 16.7
40.2
39.58
66+20
C = ~~17~~ = 40
F = 20
Exc. = 10.0
Emb. = 14.8
38.2
39.69
C = ~~10~~ = 43
F = 20
66+00
Exc. = 9.3
Emb. = 64.8
37.6
39.95
C = ~~0~~ = 2
F = 50
65+50
Exc. = 0
Emb. = 143.5
36.2
40.21
C = 0
F = 105
65+00
Exc. = 0
Emb. = 251.8
35.9
40.61
C = 0
F = 167
64+50
Exc. = 0
Emb. = 339.8
33.3
41.29
C = 0
F = 200
64+00
Exc. = 0
Emb. = 118.5
37.9
37.82
C = ~~3~~ = 26
F = 4
69+50
Exc. = 7.4
Emb. = 10.2
38.1
38.11
C = ~~5~~ = 29
F = 7
69+00
Exc. = 9.3
Emb. = 13.0
38.4
38.37
C = ~~5~~ = 36
F = 7
68+50
Exc. = 6.5
Emb. = 12.0
38.6
38.63
C = ~~2~~ = 23
F = 6
68+00
Exc. = 10.2
Emb. = 6.5
39.2
38.90
C = ~~9~~ 41
F = 1
67+50
Exc. = 16.7
Emb. = 6.5
39.5
39.16
C = ~~9~~ = 34
F = 6
67+00
Exc. = 17.6
Emb. = 14.8
36.4
35.10
C = ~~38~~ = 84
F = 0
72+50
Exc. = 76.9
Emb. = 0
37.2
35.66
C = ~~45~~ = 91
F = 0
72+00
Exc. = 75.0
Emb. = 0
37.6
36.19
C = ~~36~~ = 89
F = 0
71+50
Exc. = 51.9
Emb. = 0
37.6
36.67
C = ~~20~~ = 63
F = 0
71+00
Exc. = 34.3
Emb. = 0
37.7
37.10
C = ~~17~~ = 33
F = 0
70+50
Exc. = 18.5
Emb. = 2.8
37.7
37.47
C = ~~3~~ = 25
F = 3
70+00
Exc. = 5.6
Emb. = 6.5
31.0
30.60
C = ~~30~~ = 70
F = 0
76+00
Exc. = 60.2
Emb. = 0
31.7
31.25
C = ~~35~~ 80
F = 0
75+50
Exc. = 66.7
Emb. = 0
32.3
31.89
C = ~~37~~ = 78
F = 0
75+00
Exc. = 106.5
Emb. = 0
34.3
32.54
C = ~~78~~ = 122
F = 0
74+50
Exc. = 155.5
Emb. = 0
35.6
33.18
C = ~~90~~ = 119
F = 0
74+00
Exc. = 157.4
Emb. = 0
35.9
33.83
C = ~~80~~ = 132
F = 0
73+50
Exc. = 128.7
Emb. = 0
36.2
34.47
C = ~~59~~ = 93
F = 0
Exc. = 89.8
Emb. = 0
73+00
25.2
26.09
C = ~~0~~ = 37
F = 24
79+50
Exc. = 0
Emb. = 59.3
25.5
26.73
C = ~~0~~ = 18
F = 40
79+00
Exc. = 0
Emb. = 82.4
25.9
27.38
C = ~~0~~ = 12
F = 49
78+50
Exc. = 0
Emb. = 93.5
26.6
28.02
C = ~~0~~ = 3
F = 52
78+00
Exc. = 0
Emb. = 75.0
27.7
28.67
C = ~~0~~ = 28
F = 29
77+50
Exc. = 0
Emb. = 52.8
28.7
29.31
C = ~~0~~ = 11
F = 28
77+00
Exc. = 1.9
Emb. = 38.9
29.8
29.96
C = ~~2~~ = 41
F = 14
76+50
Exc. = 29.6
Emb. = 13.0

PLATE 3—CROSS SECTION of P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	17	24

FINAL SURVEY

NOTE BOOK NO. 294

	BY	DATE
SURVEYED	H.N.A.	4-34
PLOTTED	H.N.A.	4-34
TEMPLATE	O.H.W. & H.C.	4-34
AREAS	C.C.H.	4-34
AREAS CHECKED	C.C.H.	4-34

ORIGINAL SURVEY

NOTE BOOK NO.

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

22.0
22.54
C= ~~0~~ = 23
F=50
82+25
Exc.= 1.9
Emb.= 34.3
22.7
22.86
C= ~~4~~ = 48
F= 24
82+00
Exc.= 9.3
Emb.= 25.0
23.5
23.51
C= ~~6~~ = 52
F= 3
81+50
Exc.= 14.8
Emb.= 2.8
24.1
24.15
C= ~~10~~ = 60
F= 0
81+00
Exc.= 9.3
Emb.= 18.5
24.4
24.8
C= ~~0~~ = 29
F= 20
80+50
Exc.= 0
Emb.= 41.7
24.8
25.44
C= ~~0~~ = 27
F= 25
80+00
Exc.= 0
Emb.= 45.4
19.4
18.35
C= ~~26~~ = 67
F= 0
85+50
Exc.= 51.9
Emb.= 5.6
20.0
18.99
C= ~~30~~ = 81
F= 6
85+00
Exc.= 79.6
Emb.= 5.6
20.8
19.64
C= ~~56~~ = 105
F= 0
84+50
Exc.= 88.9
Emb.= 0
21.0
20.28
C= ~~40~~ = 100
F= 0
84+00
Exc.= 55.6
Emb.= 5.6
21.4
20.93
C= ~~20~~ = 46
F= 6
83+50
Exc.= 22.2
Emb.= 40.7
21.7
21.57
C= ~~4~~ = 32
F= 38
83+00
Exc.= 3.7
Emb.= 83.3
21.9
22.22
C= ~~0~~ = 24
F= 52
82+50
Exc.= 0
Emb.= 47.2
15.8
13.61
C= ~~46~~ = 100
F= 0
88+50
Exc.= 21.5
Emb.= 0
16.1
13.8
C= ~~70~~ = 137
F= 0
88+40
Exc.= 98.5
Emb.= 0.8
16.7
14.56
C= ~~63~~ = 115
F= 1
88+00
Exc.= 97.2
Emb.= 0.9
17.3
15.46
C= ~~42~~ = 90
F= 0
87+50
Exc.= 66.7
Emb.= 0
17.8
16.28
C= ~~30~~ = 86
F= 0
87+00
Exc.= 59.3
Emb.= 0
18.2
17.03
~~C= 34~~
F= 0
C = 95
86+50
Exc.= 50.9
Emb.= 8.3
18.5
17.7
C= ~~21~~ = 47
F= 9
86+00
Exc.= 43.5
Emb.= 8.3
05.7
05.52
C= ~~12~~ = 85
F= 0
92+00
Exc.= 34.3
Emb.= 15.7
07.5
06.72
C= ~~25~~ = 43
F= 17
91+50
Exc.= 75.9
Emb.= 15.7
09.7
07.92
C= ~~57~~ = 135
F= 0
91+00
Exc.= 94.4
Emb.= 0
11.0
09.12
~~C= 45~~
F= 0
C = 114
90+50
Exc.= 72.2
Emb.= 22.2
09.7
10.32
C= ~~33~~ = 73
F= 24
90+00
Exc.= 63.0
Emb.= 25.0
12.8
11.49
C= ~~35~~ = 80
F= 3
89+50
Exc.= 86.1
Emb.= 2.8
14.3
12.58
C= ~~58~~ = 126
F= 0
89+00
Exc.= 96.3
Emb.= 0
97.3
99.52
C= ~~0~~ = 16
F= 43
94+50
Exc.= 9.3
Emb.= 41.7
00.2
00.72
C= ~~10~~ = 86
F= 2
94+00
Exc.= 8.3
Emb.= 1.8
01.8
01.06
C= ~~22~~ = 42
F= 5
93+86
Exc.= 17.3
Emb.= 6.0
01.3
01.92
C= 4
F= 4
93+50
Exc.= 1.8
Emb.= 39.8
98.3
02.52
C= 0
F= 82
93+25
Exc.= 0
Emb.= 72.2
98.7
03.12
C= ~~0~~ = 6
F= 74
93+00
Exc.= 0.9
Emb.= 71.3
03.6
04.32
C= ~~7~~ = 44
F= 3
92+50
Exc.= 12.0
Emb.= 2.8

PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO. NEW YORK

4317.17

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	NRH 18A	1934	18	24

FINAL SURVEY
NOTE BOOK NO. 294

	BY	DATE
SURVEYED	H.N.A.	4-34
PLOTTED	H.N.A.	4-34
TEMPLATE	O.H.W. & H.C.	4-34
AREAS	C.C.H.	4-34
AREAS CHECKED	C.C.H.	4-34

ORIGINAL SURVEY
NOTE BOOK NO.

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

93.9
94.0
C= ~~3~~ =89
F= 2
96+80
Exc.= 106.1
Emb= 1.1
00.9
94.72
C= ~~188~~ = 266
F= 0
96+50
Exc.= 82.6
Emb= 0
96.8
95.2
? F.G. ℄
C= ~~35~~ = 138
F= 0
96+30
Exc.= 23.9
Emb.= 10.0
94.9
95.92
C= ~~8~~ = 44
F= 18
96+00
Exc.= 7.4
Emb.= 94.4
97.12
93.8
C= ~~0~~ 10
F= 84
95+50
Exc.= 0
Emb.= 57.0
96.5
97.72
C= ~~0~~ 15
F=39
95+25
Exc.= 0
Emb.= 53.2
95.5
98.32
C= 0
F=76
95+00
Exc.= 0
Emb.= 110.2
91.2
89.92
C= ~~20~~ 87
F= 1
98+50
Exc.= 9.2
Emb.= 26.4
88.4
90.52
C= ~~0~~ = 15
F= 56
98+25
Exc.= 0
Emb.= 43.5
89.6
91.12
C= ~~0~~ = 22
F= 38
98+00
Exc.= 33.8
Emb.= 17.6
93.5
91.72
~~C= 73~~
F= 0
C= 182
97+75
Exc.= 38.4
Emb.= 0.5
92.0
92.32
C= ~~70~~ = 102
F= 1
97+50
Exc.= 16.7
Emb.= 20.8
91.1
92.92
C= ~~26~~ =89
F= 44
97+25
Exc.= 25.9
Emb.= 20.4
94.0
93.52
C= ~~30~~ = 102
F= 0
97+00
Exc.= 12.2
Emb.= 0.7
85.3
84.52
~~C= 82~~
F= 0
C= 168
100+75
Exc.= 39.4
Emb.= 14.8
83.6
85.12
C= ~~8~~ = 43
F= 32
100+50
Exc.= 91.7
Emb.= 29.6
90.5
86.32
C= ~~96~~ = 192
F= 0
100+00
Exc.= 35.9
Emb.= 16.3
86.6
86.80
C= ~~7~~ = 111
F= 44
99+80
Exc.= 2.8
Emb.= 32.8
86.7
87.52
C= ~~4~~ =48
F= 15
99+50
Exc.= 3.7
Emb.= 32.4
87.3
88.72
~~C= 0~~
F= 20
C= 58
99+00
Exc.= 53.8
Emb.= 7.4
92.3
89.56
C= ~~83~~ = 185
F= 0
98+65
Exc.= 28.6
Emb.= 0.3
77.5
79.43
C= ~~0~~ 29
F= 58
102+87
Exc.= 28.8
Emb.= 39.7
81.2
80.32
C= ~~42~~ = 104
F= 0
102+50
Exc.= 63.0
Emb.= 12.0
81.7
81.52
C= ~~28~~ = 51
F= 13
102+00
Exc.= 47.0
Emb.= 4.8
85.4
82.00
82.0
C= ~~101~~ = 156
F= 0
101+80
Exc.= 78.9
Emb.= 0
84.4
82.72
C= ~~41~~ = 124
F= 0
101+50
Exc.= 95.8
Emb.= 0
88.9
83.32
C= ~~166~~ = 223
F= 0
101+25
Exc.= 119.9
Emb.= 0
86.9
83.92
C= ~~93~~ = 177
F= 0
101+00
Exc.= 80.8
Emb.= 0
75.7
73.19
C= ~~47~~ = 126
F= 0
105+50
Exc.= 92.6
Emb.= 6.5
76.8
74.34
C= ~~53~~ = 136
F= 7
105+00
Exc.= 88.9
Emb.= 15.7
74.8
75.53
C= ~~43~~ = 84
F= 10
104+50
Exc.= 74.1
Emb.= 27.8
75.5
76.72
C= ~~37~~ = 79
F= 20
104+00
Exc.= 34.3
Emb.= 50.0
76.7
77.92
C= ~~0~~ = 11
F= 34
103+50
Exc.= 11.1
Emb.= 59.3
79.3
79.12
C= ~~72~~ = 45
F= 30
103+00
Exc.= 2.9
Emb.= 21.2

PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4317.18

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	19	24

FINAL SURVEY		BY	DATE
NOTE BOOK NO. 294	SURVEYED	H.N.A.	4-34
	PLOTTED	H.N.A.	4-34
	TEMPLATE	O.H.W. & H.C.	4-34
	AREAS	C.C.H.	4-34
	AREAS CHECKED	C.C.H.	4-34

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

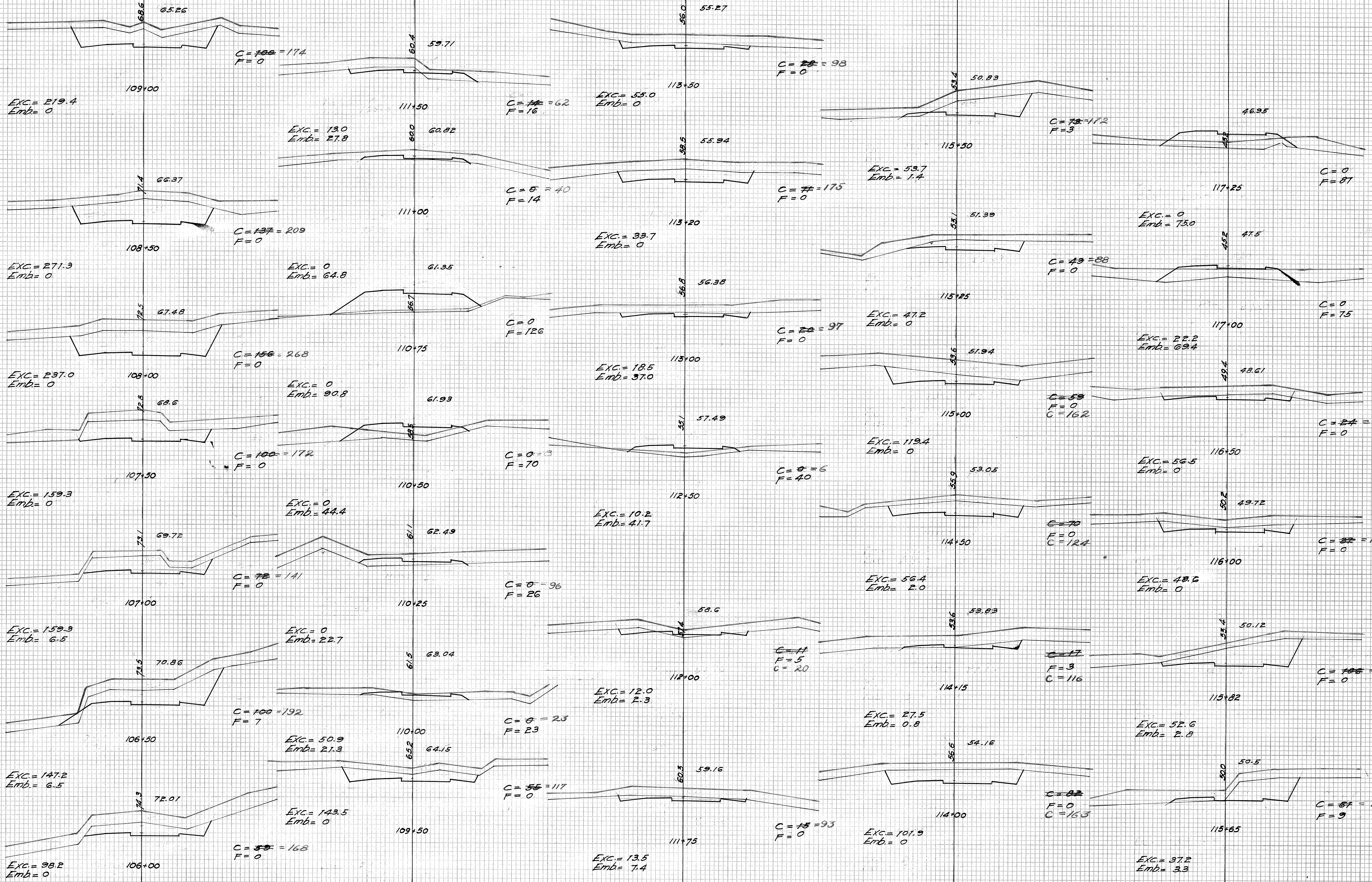
68.6
65.26
C = ~~100~~ = 174
F = 0
109+00
EXC. = 219.4
Emb. = 0
71.4
66.37
C = ~~137~~ = 209
F = 0
108+50
EXC. = 271.3
Emb. = 0
72.5
67.48
C = ~~156~~ = 268
F = 0
108+00
EXC. = 237.0
Emb. = 0
72.8
68.6
C = ~~100~~ = 172
F = 0
107+50
EXC. = 159.3
Emb. = 0
73.1
69.72
C = ~~72~~ = 141
F = 0
107+00
EXC. = 159.3
Emb. = 6.5
73.5
70.86
C = ~~100~~ = 192
F = 7
106+50
EXC. = 147.2
Emb. = 6.5
74.3
72.01
C = ~~59~~ = 168
F = 0
106+00
EXC. = 98.2
Emb. = 0
60.4
59.71
C = ~~14~~ = 62
F = 16
111+50
EXC. = 13.0
Emb. = 27.8
60.0
60.82
C = ~~0~~ = 40
F = 14
111+00
EXC. = 0
Emb. = 64.8
61.35
56.7
C = 0
F = 126
110+75
EXC. = 0
Emb. = 90.8
61.93
58.5
C = ~~0~~ = 8
F = 70
110+50
EXC. = 0
Emb. = 44.4
61.1
62.49
C = ~~0~~ = 96
F = 26
110+25
EXC. = 0
Emb. = 22.7
61.5
63.04
C = ~~0~~ = 23
F = 23
110+00
EXC. = 50.9
Emb. = 21.3
65.2
64.15
C = ~~55~~ = 117
F = 0
109+50
EXC. = 143.5
Emb. = 0
56.0
55.27
C = ~~28~~ = 98
F = 0
113+50
EXC. = 55.0
Emb. = 0
58.5
55.94
C = ~~71~~ = 175
F = 0
113+20
EXC. = 33.7
Emb. = 0
56.8
56.38
C = ~~20~~ = 97
F = 0
113+00
EXC. = 18.5
Emb. = 37.0
55.1
57.49
C = ~~0~~ = 6
F = 40
112+50
EXC. = 10.2
Emb. = 41.7
58.6
57.4
~~C = 11~~
F = 5
C = 20
112+00
EXC. = 12.0
Emb. = 2.3
60.3
59.16
C = ~~15~~ = 93
F = 0
111+75
EXC. = 13.5
Emb. = 7.4
53.4
50.83
C = ~~73~~ = 172
F = 3
115+50
EXC. = 53.7
Emb. = 1.4
53.1
51.39
C = ~~43~~ = 88
F = 0
115+25
EXC. = 47.2
Emb. = 0
53.6
51.94
~~C = 59~~
F = 0
C = 162
115+00
EXC. = 119.4
Emb. = 0
55.9
53.05
~~C = 70~~
F = 0
C = 124
114+50
EXC. = 56.4
Emb. = 2.0
53.6
53.83
~~C = 17~~
F = 3
C = 116
114+15
EXC. = 27.5
Emb. = 0.8
56.6
54.16
~~C = 82~~
F = 0
C = 163
114+00
EXC. = 101.9
Emb. = 0
46.95
45.2
C = 0
F = 87
117+25
EXC. = 0
Emb. = 75.0
45.2
47.5
C = 0
F = 75
117+00
EXC. = 22.2
Emb. = 69.4
49.4
48.61
C = ~~24~~ = 98
F = 0
116+50
EXC. = 56.5
Emb. = 0
50.2
49.72
C = ~~37~~ = 112
F = 0
116+00
EXC. = 48.6
Emb. = 0
53.4
50.12
C = ~~106~~ = 191
F = 0
115+82
EXC. = 52.6
Emb. = 2.8
50.0
50.5
C = ~~87~~ = 156
F = 9
115+65
EXC. = 37.2
Emb. = 3.3

PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

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(10)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	20	24

FINAL SURVEY
NOTE BOOK NO. 294

	BY	DATE
SURVEYED	H.N.A.	4-34
PLOTTED	H.N.A.	4-34
TEMPLATE	O.H.W. & H.C.	4-34
AREAS	C.C.H.	4-34
AREAS CHECKED	C.C.H.	4-34

ORIGINAL SURVEY
NOTE BOOK NO.

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

41.2
41.95
119+50
C = ~~8~~ = 46
F = 8
Exc. = 0.2
Emb. = 2.8
41.6
42.17
C = ~~4~~ = 57
F = 7
119+40
Exc. = 28.2
Emb. = 5.2
44.7
43.06
119+00
C = ~~37~~ = 100
F = 0
Exc. = 17.2
Emb. = 4.6
48.1
43.62
C = ~~0~~ = 72
F = 10
118+75
Exc. = 8.8
Emb. = 5.6
44.5
44.17
C = ~~19~~ = 75
F = 2
118+50
Exc. = 68.5
Emb. = 1.9
47.0
45.28
C = ~~55~~ = 137
F = 0
118+00
Exc. = 70.4
Emb. = 0
47.3
46.39
C = ~~21~~ = 99
F = 0
117+50
Exc. = 9.7
Emb. = 40.3
37.8
37.73
C = ~~12~~ = 46
F = 12
121+40
Exc. = 8.9
Emb. = 92.6
38.62
38.9
C = 0
F = 113
121+00
Exc. = 0
Emb. = 161.1
36.9
39.73
C = ~~0~~ ~~= 22~~ = 0
F = 61
120+50
Exc. = 0
Emb. = 91.1
37.9
40.62
C = ~~0~~ = 22
F = 62
120+10
Exc. = 0.2
Emb. = 15.0
41.0
40.84
C = ~~7~~ = 29
F = 19
120+00
Exc. = 0.3
Emb. = 18.9
39.2
41.17
C = 0
F = 49
Exc. = 0
Emb. = 37.0
119+85
34.2
33.07
C = ~~32~~ = 96
F = 0
123+50
Exc. = 58.5
Emb. = 0
35.0
34.20
C = ~~30~~ = 104
F = 0
122+99
Exc. = 27.2
Emb. = 10.0
34.6
35.29
C = ~~0~~ = 45
F = 11
122+50
Exc. = 0.9
Emb. = 15.7
36.3
36.40
C = ~~4~~ = 59
F = 6
122+00
Exc. = 9.7
Emb. = 11.1
36.7
36.96
~~C = 20~~
F = 18
C = 95
121+75
Exc. = 11.3
Emb. = 3.3
38.9
37.18
~~C = 41~~
F = 0
C = 100
121+65
Exc. = 11.9
Emb. = 3.6
37.2
37.51
C = ~~2~~ = 61
F = 13
121+50
Exc. = 2.6
Emb. = 4.6
25.3
24.89
C = ~~22~~ = 88
F = 1
126+60
Exc. = 8.9
Emb. = 0.2
25.8
25.35
C = ~~26~~ = 125
F = 0
126+50
Exc. = 51.9
Emb. = 1.9
27.9
27.05
C = ~~30~~ = 84
F = 2
126+00
Exc. = 107.4
Emb. = 1.9
31.6
28.51
C = ~~86~~ = 154
F = 0
125+50
Exc. = 161.1
Emb. = 0
32.6
29.74
C = ~~88~~ = 168
F = 0
125+00
Exc. = 178.7
Emb. = 0
34.1
30.85
C = ~~105~~ = 193
F = 0
124+50
Exc. = 181.5
Emb. = 0
34.3
31.96
C = ~~91~~ = 162
F = 0
124+00
Exc. = 113.9
Emb. = 0
15.7
17.54
C = ~~3~~ = 22
F = 20
128+25
Exc. = 3.3
Emb. = 10.7
18.7
18.83
C = ~~4~~ = 61
F = 3
128+00
Exc. = 54.6
Emb. = 4.6
22.2
21.24
C = ~~55~~ = 115
F = 2
127+50
Exc. = 44.0
Emb. = 3.7
22.8
22.36
C = ~~40~~ = 92
F = 6
127+25
Exc. = 40.3
Emb. = 2.8
25.1
23.41
C = ~~47~~ = 124
F = 0
127+00
Exc. = 58.8
Emb. = 0
26.7
24.41
C = ~~80~~ = 178
F = 0
126+75
Exc. = 28.3
Emb. = 0.3

PLATE 3—CROSS SECTION O. P. R. & R. S. STANDARD
KEUFFEL & ESSER CO. NEW YORK.

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	21	24

FINAL SURVEY		BY	DATE
NOTE BOOK NO. 294	SURVEYED	H.N.A.	4-34
	PLOTTED	H.N.A.	4-34
	TEMPLATE	O.H.W. & H.C.	4-34
	AREAS	C.C.H.	4-34
	AREAS CHECKED	C.C.H.	4-34

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

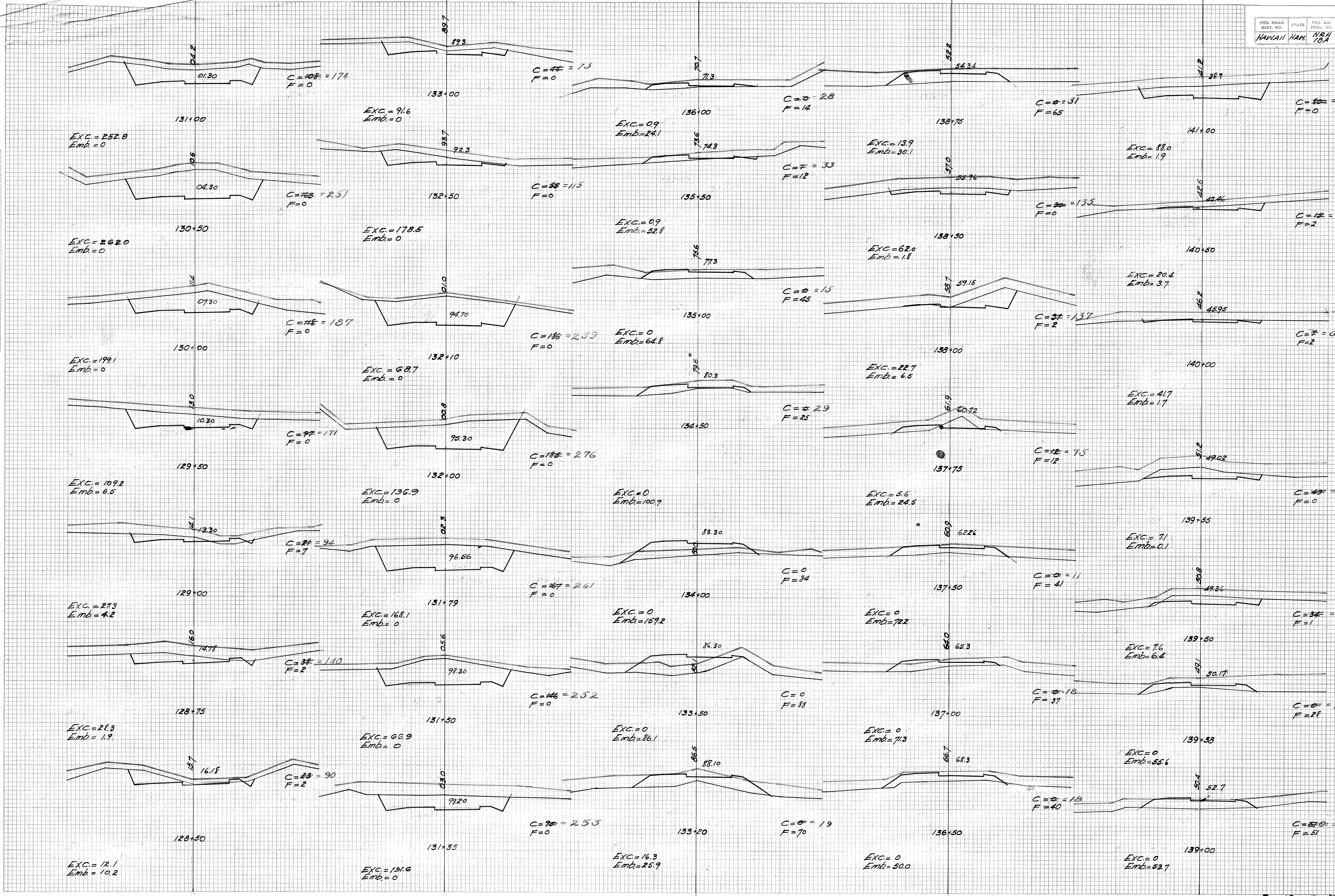
04.2
01.30
C=~~108~~=174
F=0
131+00
EXC.=252.8
Emb.=0
06
04.30
C=~~165~~=251
F=0
130+50
EXC.=262.0
Emb.=0
14
07.30
C=~~118~~=187
F=0
130+00
EXC.=199.1
Emb.=0
13.0
10.30
C=~~97~~=171
F=0
129+50
EXC.=109.2
Emb.=6.5
14.1
13.30
C=~~21~~=94
F=7
129+00
EXC.=27.3
Emb.=4.2
16.0
14.78
C=~~35~~=140
F=2
128+75
EXC.=28.3
Emb.=1.9
15.7
16.18
C=~~23~~=90
F=2
128+50
EXC.=12.1
Emb.=10.2
89.7
89.3
C=~~44~~=73
F=0
133+00
EXC.=91.6
Emb.=0
93.7
92.3
C=~~58~~=115
F=0
132+50
EXC.=178.5
Emb.=0
01.0
94.70
C=~~186~~=259
F=0
132+10
EXC.=68.7
Emb.=0
00.8
95.30
C=~~188~~=276
F=0
132+00
EXC.=136.9
Emb.=0
02.3
96.56
C=~~167~~=261
F=0
131+79
EXC.=168.1
Emb.=0
05.6
98.30
C=~~146~~=252
F=0
131+50
EXC.=66.9
Emb.=0
03.0
99.20
C=~~95~~=253
F=0
131+35
EXC.=131.6
Emb.=0
70.7
71.3
C=~~0~~=28
F=14
136+00
EXC.=0.9
Emb.=24.1
73.6
74.3
C=~~7~~=33
F=12
135+50
EXC.=0.9
Emb.=52.8
75.6
77.3
C=~~0~~=15
F=45
135+00
EXC.=0
Emb.=64.8
79.6
80.3
C=~~0~~=29
F=25
134+50
EXC.=0
Emb.=100.9
80.0
83.30
C=0
F=84
134+00
EXC.=0
Emb.=159.2
82.1
86.30
C=0
F=88
133+50
EXC.=0
Emb.=86.1
86.5
88.10
C=~~0~~=19
F=70
133+20
EXC.=16.3
Emb.=25.9
52.2
54.34
C=~~0~~=31
F=65
138+75
EXC.=13.9
Emb.=30.1
57.0
55.96
C=~~30~~=135
F=0
138+50
EXC.=62.0
Emb.=1.8
58.7
59.15
C=~~37~~=137
F=2
138+00
EXC.=22.7
Emb.=6.5
61.9
60.72
C=~~12~~=75
F=12
137+75
EXC.=5.6
Emb.=24.5
60.9
62.26
C=~~0~~=11
F=41
137+50
EXC.=0
Emb.=72.2
64.0
65.3
C=~~0~~=18
F=37
137+00
EXC.=0
Emb.=71.3
66.7
68.3
C=~~0~~=18
F=40
136+50
EXC.=0
Emb.=50.0
41.2
38.9
C=~~50~~=167
F=0
141+00
EXC.=88.0
Emb.=1.9
42.6
42.46
C=~~15~~=77
F=2
140+50
EXC.=20.4
Emb.=3.7
46.2
45.95
C=~~7~~=67
F=2
140+00
EXC.=41.7
Emb.=1.7
51.2
49.02
C=~~43~~=146
F=0
139+55
EXC.=7.1
Emb.=0.1
50.8
49.36
C=~~34~~=101
F=1
139+50
EXC.=7.6
Emb.=6.4
49.1
50.17
C=~~0~~=52
F=28
139+38
EXC.=0
Emb.=55.6
50.4
52.7
C=~~50~~=10
F=51
139+00
EXC.=0
Emb.=53.7

PLATE 3—CROSS SECTION Q. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	22	24

FINAL SURVEY		BY	DATE
NOTE BOOK NO. 294	SURVEYED	H.N.A.	4-34
	PLOTTED	H.N.A.	4-34
	TEMPLATE	O.H.W. & H.C.	4-34
	AREAS	C.C.H.	4-34
	AREAS CHECKED	C.C.H.	4-34

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

33.8
22.7
~~C=413~~
F=0
C=567
Exc.=370.3
Emb.=0
143+25
33.6
24.5
C=~~387~~=515
F=0
Exc.=119.8
Emb.=0
143+00
33.6
25.22
C=~~260~~=401
F=0
Exc.=325.9
Emb.=0
142+90
33.9
28.1
C=~~180~~=288
F=0
Exc.=287.0
Emb.=0
142+50
33.8
31.7
C=~~130~~=214
F=0
142+00
Exc.=243.5
Emb.=0
39.7
35.3
C=~~133~~=223
F=0
Exc.=197.2
Emb.=0
141+50
01.1
99.3
C=~~70~~=146
F=0
146+50
Exc.=77.8
Emb.=0
03.3
02.9
~~C=14~~
F=0
C=100
Exc.=50.0
Emb.=0
146+00
07.6
06.5
~~C=40~~
F=0
C=99
145+50
Exc.=68.5
Emb.=0
10.8
10.1
C=~~34~~=106
F=0
145+00
Exc.=233.3
Emb.=0
20.3
13.7
C=~~218~~=377
F=0
Exc.=664.8
Emb.=0
144+50
31.1
17.3
C=~~500~~=603
F=0
Exc.=939.8
Emb.=0
144+00
36.6
20.9
~~C=515~~
F=0
C=667
Exc.=429.6
Emb.=0
143+50
76.3
77.7
C=~~0~~=39
F=31
149+50
Exc.=4.6
Emb.=33.3
80.6
81.3
C=~~5~~=69
F=5
149+00
Exc.=4.6
Emb.=14.8
84.3
84.9
C=~~0~~=69
F=11
148+50
Exc.=168.5
Emb.=10.2
94.1
88.5
C=~~182~~=289
F=0
Exc.=179.2
Emb.=0
148+00
97.5
90.3
C=~~205~~=311
F=0
Exc.=202.7
Emb.=0
147+75
99.2
92.1
C=~~233~~=373
F=0
Exc.=317.6
Emb.=0
147+50
99.1
95.7
C=~~110~~=190
F=0
Exc.=166.6
Emb.=0
147+00
56.1
50.0
C=0
F=175
152+50
Exc.=0
Emb.=326.8
59.7
53.9
C=0
F=178
152+00
Exc.=0
Emb.=202.7
61.5
53.7
C=0
F=260
151+75
Exc.=0
Emb.=256.5
63.3
55.7
C=0
F=294
151+50
Exc.=0
Emb.=540.7
66.9
58.6
C=0
F=290
151+00
Exc.=0
Emb.=542.6
70.5
61.4
C=0
F=296
150+50
Exc.=0
Emb.=452.8
74.1
67.6
C=0
F=193
150+00
Exc.=0
Emb.=207.4
38.1
29.6
C=0
F=289
155+00
Exc.=0
Emb.=558.3
41.7
32.4
C=0
F=314
154+50
Exc.=0
Emb.=601.9
45.3
35.4
C=0
F=336
154+00
Exc.=0
Emb.=326.4
47.1
37.5
C=0
F=369
153+75
Exc.=0
Emb.=335.6
48.9
39.2
C=0
F=356
153+50
Exc.=0
Emb.=629.6
52.5
43.6
C=0
F=324
153+00
Exc.=0
Emb.=462.0

PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	23	24

FINAL SURVEY		BY	DATE
NOTE BOOK NO. 294	SURVEYED	H.N.A.	4-34
	PLOTTED	H.N.A.	4-34
	TEMPLATE	O.H.W. & H.C.	4-34
	AREAS	C.C.H.	4-34
	AREAS CHECKED	C.C.H.	4-34

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

24.4
17.0
157+25
Exc.= 0
Emb.= 226.8
25.54
18.0
157+00
Exc.= 0
Emb.= ~~601.9~~ = 450.9
28.12
17.2
156+50
Exc.= 0
Emb.= ~~583.3~~ ~~= 450.9~~
Emb. = 621.3
30.16
17.2
Invt.= 16.0
24" Metal pipe culvert 58' long
Str. Exc. = 4.0 Cu. Yd.
156+15
Exc.= 0
Emb.= 288.9
31.1
18.0
156+00
Exc.= 0
Emb.= ~~768.6~~ = 554.6
34.5
25.7
155+50
Exc.= 0
Emb.= 545.2
C = 0
F = 230
C = 0
F = ~~260~~ = 205
C = 0
F = ~~390~~ = 282
C = 0
F = 510
C = 0
F = 530 = 389
C = 0
F = ~~300~~ = 210
21.0
15.65
160+50
Exc.= ~~287.0~~ = 155.6
Emb.= 0
20.9
16.8
160+00
Exc.= 166.6 = 89.8
Emb.= ~~0~~ = 6.5
19.2
17.95
159+50
Exc.= ~~41.6~~ = 13.0
Emb.= ~~28.7~~ = 55.6
17.7
19.1
159+00
Exc.= 0
Emb.= ~~150.0~~ = 170.4
20.25
Invt.= 18.0
15.8
158+50
Exc.= 0
Emb.= ~~315.7~~ = 302.8
21.6
14.5
158+00
Exc.= 0
Emb.= ~~337.9~~ = 287.0
23.37
18.0
157+50
Exc.= 0
Emb.= ~~178.2~~ = 295.4
C= ~~175~~ = 85
F=0
C= ~~135~~ 83
F=0
C= ~~45~~ = 14
F= ~~0~~ = 7
C= ~~0~~ = 0
F= ~~31~~ = 53
C=0
F= 131
C=0
~~F=210~~
F=196
C=0
~~F=155~~
F=114
13.8
07.6
164+00
Exc.= ~~377.8~~ = 66.7
Emb.= 0
14.2
08.75
163+50
Exc.= 368.5 = 86.1
Emb.= 0
15.7
09.9
163+00
Exc.= 379.6 = 110.2
Emb.= 0
17.7
11.05
162+50
Exc.= ~~417.6~~ = 160.2
Emb.= 0
19.5
12.2
162+00
Exc.= ~~460.2~~ = 208.3
Emb.= 0
21.1
13.35
17.4
161+50
Exc.= ~~444.4~~ = 225.9
Emb.= 0
21.5
14.5
161+00
Exc.= ~~365.7~~ = 187.0
Emb.= 0
C= ~~206~~ = 23
F=0
C= ~~202~~ = 49
F=0
C= ~~196~~ = 44
F=0
C= ~~214~~ = 75
F=0
C= ~~237~~ = 98
F=0
C= ~~260~~ = 127
F=0
C= ~~220~~ = 117
F=0
02.3
99.85
166+50
Exc.= ~~178.7~~ = 63.9
Emb.= ~~0~~ = 8.3
03.1
01.71
166+00
Exc.= ~~60.2~~ = 73.2
Emb.= 0
04.8
02.59
165+75
Exc.= 66.2
Emb.= 0
05.3
03.42
Exc.= ~~158.3~~ = 38.0
Emb.= 0
165+50
07.7
04.98
Exc.= ~~113.4~~ = 52.8
Emb.= 0
165+00
10.1
05.7
164+75
Exc.= 139.8
Emb.= 0
10.6
06.37
164+50
Exc.= ~~329.6~~ = 56.5
Emb.= 0
C= ~~128~~ = 12
F= ~~0~~ = 9
C= ~~65~~ = 57
F=0
C= 65
F=0
C= ~~78~~ = 22
F=0
C= ~~93~~ = 19
F=0
C= 152
F=0
C= ~~150~~ = 38
F=0
87.1
83.48
170+00
Exc.= 265.7
Emb.= 0
90.1
85.92
169+50
Exc.= 287.0
Emb.= 0
92.9
88.36
169+00
Exc.= 303.7
Emb.= 0
96.0
90.8
168+50
Exc.= ~~313.0~~ = 313.0
Emb.= 0
98.5
93.24
168+00
Exc.= ~~254.6~~ = 237.0
Emb.= 0
98.4
95.6
167+50
Exc.= ~~157.4~~ = 120.4
Emb.= 0
99.6
97.8
167+00
Exc.= ~~178.7~~ = 51.9
Emb.= ~~0~~ = 8.3
C=137
F=0
C=150
F=0
C=160
F=0
C=168
F=0
C=170
F=0
C= ~~105~~ = 86
F=0
C= ~~65~~ = 4.4
F=0

PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4317.23

(14)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NRH 18A	1934	24	24

FINAL SURVEY	BY	DATE
SURVEYED	H.N.A.	4-34
PLOTTED	H.N.A.	4-34
TEMPLATE	O.H.W. & H.C.	4-34
AREAS	C.C.H.	4-34
AREAS CHECKED	C.C.H.	4-34

NOTE BOOK NO. 294

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

NOTE BOOK NO.

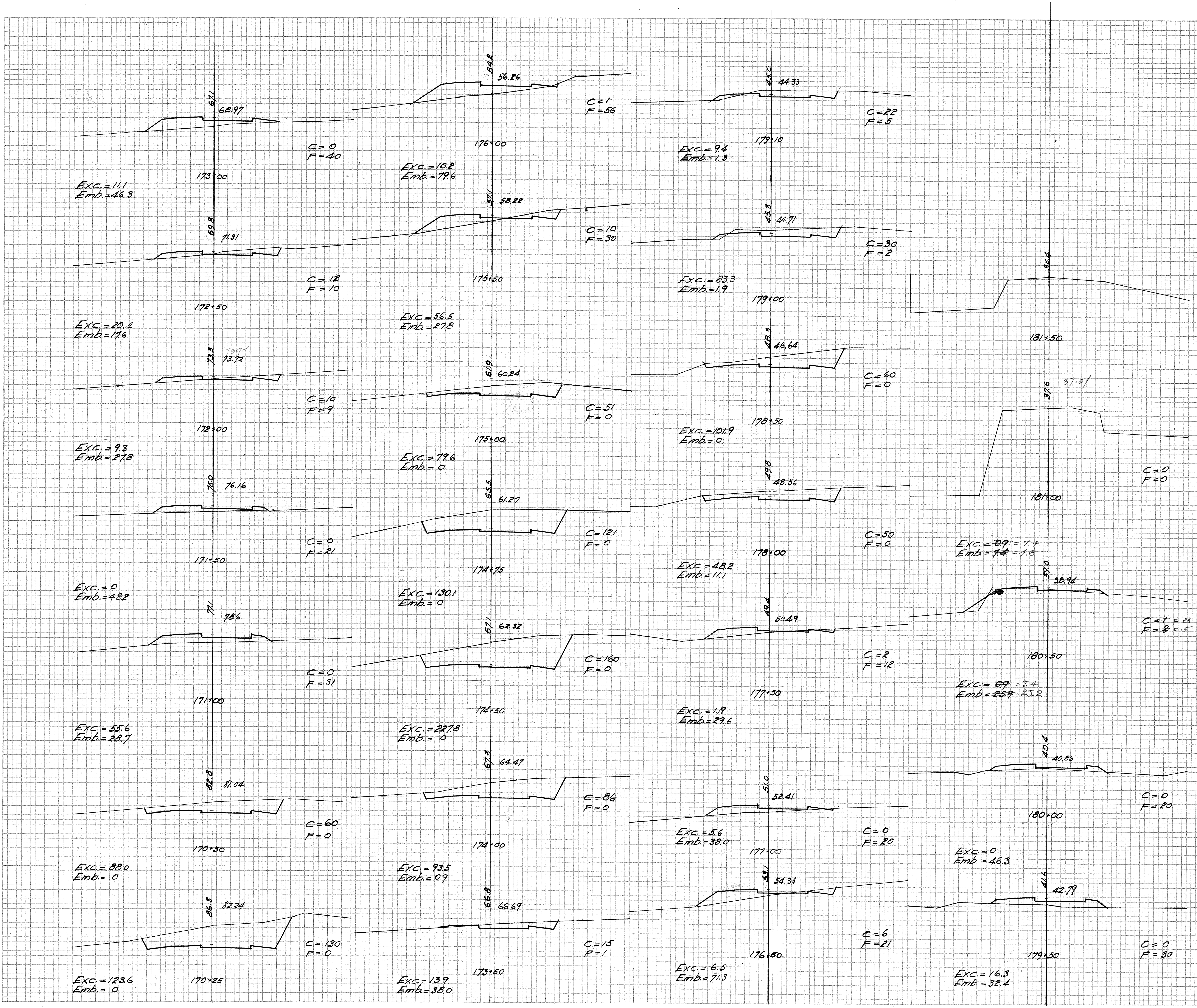
67.1
68.97
C=0
F=40
173+00
Exc.=11.1
Emb.=46.3
69.8
71.31
C=12
F=10
172+50
Exc.=20.4
Emb.=17.6
73.3
73.71
73.72
C=10
F=9
172+00
Exc.=9.3
Emb.=27.8
75.0
76.16
C=0
F=21
171+50
Exc.=0
Emb.=48.2
77.1
78.6
C=0
F=31
171+00
Exc.=55.6
Emb.=28.7
82.8
81.04
C=60
F=0
170+50
Exc.=88.0
Emb.=0
86.3
82.24
C=130
F=0
170+25
Exc.=123.6
Emb.=0
54.2
56.26
C=1
F=56
176+00
Exc.=10.2
Emb.=79.6
57.1
58.22
C=10
F=30
175+50
Exc.=56.5
Emb.=27.8
61.9
60.24
C=51
F=0
175+00
Exc.=79.6
Emb.=0
65.5
61.27
C=121
F=0
174+75
Exc.=130.1
Emb.=0
67.1
62.32
C=160
F=0
174+50
Exc.=227.8
Emb.=0
67.3
64.47
C=86
F=0
174+00
Exc.=93.5
Emb.=0.9
66.8
66.69
C=15
F=1
173+50
Exc.=13.9
Emb.=38.0
45.0
44.33
C=22
F=5
179+10
Exc.=9.4
Emb.=1.3
45.3
44.71
C=30
F=2
179+00
Exc.=83.3
Emb.=1.9
48.3
46.64
C=60
F=0
178+50
Exc.=101.9
Emb.=0
49.8
48.56
C=50
F=0
178+00
Exc.=48.2
Emb.=11.1
49.4
50.49
C=2
F=12
177+50
Exc.=1.9
Emb.=29.6
51.0
52.41
C=0
F=20
177+00
Exc.=5.6
Emb.=38.0
53.1
54.34
C=6
F=21
176+50
Exc.=6.5
Emb.=71.3
35.4
181+50
37.6
37.6
C=0
F=0
181+00
Exc.=~~0.9~~=7.4
Emb.=~~7.4~~=4.6
39.0
38.94
C=~~7~~=8
F=~~8~~=5
180+50
Exc.=~~0.9~~=7.4
Emb.=~~25.9~~=23.2
40.4
40.86
C=0
F=20
180+00
Exc.=0
Emb.=46.3
41.6
42.79
C=0
F=30
179+50
Exc.=16.3
Emb.=32.4

PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
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