FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	S-0360(1) Unit 1	1962	2	6

PLAN — SURVEYED, PLOTTED, NOTE BOOK, NO. — BY, DATE, HIGHWAY ENGINEER CHECKED, RT. OF WAY CHECKED

PROFILE — SURVEYED, PLOTTED, NOTE BOOK, NO. — BY, DATE, GRADES CHECKED, ST. RAY NOTED, STRUCTURE NOTATIONS CHKD.

Drainage Ditch
Exist. Conc. Pipe Culv't
Drainage Ditch
True North
Scale: 1"=50'
Exist. Wire Fence
Exist. Gate
Exist. F.A. Marker
End of Exist. Pav't.
Exist. 24" Conc. Culv't
Exist. Paved Road
Access Permitted
Homestead Road
to Pala
to Mahamoa
to Nene
Match Line
Exist. 24" Conc. Culv't
Exist. Dirt Road
Gulch
Road
Sta. 10+50
Sta. 12+00
Sta. 13+30
P.I. No. 2
P.I. No. 3
Sta. 8+00
B-1-5'
Sta. 14+00
B-2-35'
C.L. Sta. 2+50
C.L. Sta. 8+00
C.L. Sta. 12+00
C.L. Sta. 13+30
T.S. Sta. 13+72.46 = P.I. No. 1
S.C. Sta. 2+50
Sta. 0+00
B.M. - Elev. = 604.44
+ on Headwall of Exist. 24" Conc. Culvert Left of Sta. 5+00
Sta. 5+00
24" Class III R.C.R.P.
64 Lin. Ft.
Inv. I.E. = 600.50
Inv. I.E. = 600.72
Sta. 8+00
24" Class III R.C.R.P.
64 Lin. Ft.
Inv. I.E. = 606.50
Inv. I.E. = 606.72

℄ CURVE DATA
Δ = 126° 00'
D = 16° 00'
R = 358.10
Lc = 550.00
Ls = 250.00
Ts = 873.54
Es = 375.51
L.T. = 167.74
S.T. = 84.31
Xc = 244.07
Yc = 25.84
Θs = 20° 00'
S/E = 0.12

℄ CURVE DATA - ACCESS RD.
Δ = 78° 18' 30"
R = 60.00
L = 82.00
T = 48.85

℄ CURVE DATA
Δ = 32° 36'
R = 200.00
L = 113.80
T = 58.43

℄ CURVE DATA
Δ = 14° 00'
D = 5° 00'
R = 1145.92
Lc = 130.00
Ls = 150.00
Ts = 215.79
Es = 9.40
L.T. = 100.02
S.T. = 50.02
Xc = 149.94
Yc = 3.27
Θs = 3° 45'
S/E = 0.064

Profile of Exist. Ground at ℄
Profile of Finish Grade at ℄
E.V.C. Sta. 7+00
E.V.C. Sta. 10+50
E.V.C. Sta. 14+00
V.C. = 300
V.C. = 700
+4.20%
-10.0%
-4.0%
F.H.
Exc. 847 c.y.
Emb. 705 c.y.
F.H.
Exc. 2457 c.y.
Emb. 2024 c.y.

PLATE 1—PLAN-PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.
K & E Co. No. 345-10

62

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	S-036(01) Unit 1	1962	3	6

PLAN — SURVEYED, PLOTTED, NOTE BOOK, ALIGNMENT CHECKED, NO., PVT. OR PAR. CHECKED, STRUCTURE NOTATNS CH'KD., BY, DATE

PROFILE — SURVEYED, PLOTTED, NOTE BOOK, GRADES CHECKED, NO., B.M.S NOTED, STRUCTURE NOTATNS CH'KD., BY, DATE

True North
Scale: 1" = 50'

Exist. Dirt Road of Gulch

Stream

Tunnel

To Hana

Ditch

P.C.C. 20+04.07

Haiku Ditch Road

Haiku Ditch Tunnel

Gulch

Top

18" Ironwood Trees

2-Ironwood Trees

3-Ironwood Trees

4-Ironwood Trees

2-Mango Trees

Rose apple Trees

Exist. 18" Conc. Culvert

Outlet Ditch

℄ Mon.

P.I. No. 3

STA. 10+50
B-3-90

P.I. No. 4

STA. 24+00
B-4-15

T.S. 20+63.57

S.C. 23+16.37

[700.10]

63° 04' 30"

C.S. 11+96.28

S.C. 14+62.46

T.S. 15+00.46

16° 04' 30"

(524.84)

STA. 14+60

To Paia

Exist. Dirt Road of Gulch To Makawao

℄ CURVE DATA

Δ	16°
Dc	16°
R	358.10
Lc	382.50
Ls	250.00
Ts	272.57
Es	38.80
LT	167.74
ST	84.31
Xc	240.97
Yc	68.84
Θs	20°
SE	0.12

℄ CURVE DATA

Δ	78°
Dc	16°
R	358.10
Lc	382.50
Ls	250.00
Ts	412.06
Te	257.38
LT	167.74
ST	84.31
Xs	240.97
Ys	68.84
Θs	20°
SE	0.12

Profile of Exist. Ground at ℄

Profile of Finish Grade at ℄

E.V.C. Sta 14+00

E.V.C. Sta 27+00

-7.00%

Sta. 25+50
36" C.S.M. Pipe
92 Lin. Ft.
Inv. It. 512.00
Inv. Rt. 512.50

Waste
Exc. = 145,775 c.y.
Emb. = 0

F.H.
Exc. = 66,248 c.y.
Emb. = 50,319 c.y.

640 630 620 610 600 590 580 570 560 550

570 560 550 540 530 520 510 500 490 480

14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

PLATE 1 — PLAN-PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO. NEW YORK

K & E Co. No. 348-HC
IMPERIAL TRACING CLOTH
1938

33

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	S-0360(0) Unit 1	1962	4	6

PLAN	BY	DATE
SURVEYED		
PLOTTED		
NOTE BOOK ALIGNMENT CHECKED		
RT. OF WAY CHECKED		
NO.		

PROFILE	BY	DATE
SURVEYED		
PLOTTED		
NOTE BOOK GRADES CHECKED		
NO. B. M.'S NOTED		
STRUCTURE NOTATIONS CHKD.		

P.I. No. 4

(S13.17)

S 44° 04' 30" W 2 ℄

To Pa'ia

To Makawao

Detour Road

Foot Path

Exist. Parking Area

Haiku Ditch Intake Elev. 410.00'

Exist. 15" Conc. Cul't.

Outlet Ditch

P.I. No. 5

P.I. No. 6

Top of Stream Bank

B-GC-20'

137° 15' 15"

215.48'

S 67° 44' 45" W

R = 142.33

C.S. 12 337+82.82

300° 00'

Exist. C.R.M. Abutments

STA. 31+75
B-GA-45

B-GB-30'

STA. 29+25
B-5-G5

Overflow Tunnel

Exist. Conc. Bridge

Ditch Tunnel

Lowrie Ditch S.

Road

STA. 35+50
B-7-125

E CURVE DATA

Δ	44° 04' 30"
D	10° 45'
R	532.08
Lc	410.00
T	215.70
E	42.01
Sa	0.112

2 CURVE DATA

Δ	60° 00
D	16° 00
R	358.10
Lc	306.85
Ls	250.00
Ts	367.83
Tc	253.86
L.T.	167.74
S.T.	84.91
Xc	846.57
Yc	28.84
Θs	20° 00
S.E.	0.12

True North
Scale: 1" = 50'

NOTE:
SEE SHEET NO. 6, FOR PROFILE AT CENTERLINE OF BOX CULVERT.

B.V.C. Sta. 27+00
510.50

Profile of Exist. Ground at ℄

V.C. = 700'

V = 0.75%

C.L. Sta. 30+50
455.00'

Sta. 31+75
B-G-45

E.V.C. Sta. 34+00
510.50

Profile of Finish Grade at ℄

+1.00%

B.V.C. Sta. 38+14.81
548.40

E. H.
Exc. = 52,392 c.y.
Emb. = 43,578 c.y.

PLATE 1—PLAN-PROFILE O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

K & E Co. No. 348-IC

4

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	S-0360(1) Unit 1	1962	5	6

PLAN — SURVEYED, PLOTTED, NOTE BOOK, NO., DRAWN, ALIGNMENT CHECKED, RT. OF WAY CHECKED, BY, DATE

PROFILE — SURVEYED, PLOTTED, NOTE BOOK, NO., DRAWN, GRADES CHECKED, STRUCTURE NOTATIONS CHK'D., BY, DATE

Outlet Ditch

ST 36+48.32

W1-2R

W2-2L

STA. 35+50 B-7-12.5'

℄ Mon.

221° 00' (1198.80)

STA. 40+50 10' % L. B-8-10'

W2-2R

Exist. Tel. Pole

STA. 41+50 B-9-45

T.S. 41+84.40

Gulch

Top of

EMI Tel. Pole

Exist. Plantation Dirt Road

Lowrie Ditch Tunnel

Flow

Lowrie Ditch

STA. 41+50 B-9-45

10' % Left STA. 41+50 B-8-10'

Profile of Exist. Ground at ℄

Profile of Finish Grade at ℄

Unsymmetrical 700' V.C.

Waste
Exc. 58,280 c.y.
Emb. 98 c.y.

End of Exception-F-32(2)

P.I. No. 7

℄ Mon.

Shade

R=20'

R=30'

W2-2L

S.C. 43+84.40

C.S. 45+52.74

W1-2L
W15-1 (40 M.P.H.)

ST 47+32.74

Sta. 48+64.21
End of Proj. No. S-0360(1)
Sta. 219+00 F-32(2)

Fence

To Hana

True North
Scale: 1"=50'

℄ CURVE DATA
Δ = 27° 28'
Dc = 8°
R = 716.20
Lc = 168.94
Ls = 200
Ts = 288.82
Ec = 20.79
L.T. = 133.47
S.T. = 66.79
Xc = 199.61
Yc = 9° 30'
Φs = 8°
S/E = 0.084

Existing Pavt Grade

700' V.C.

End of Proj. No. S-0360(1) Unit 1 Sta. 219+00 F-32(2)

C.S. Sta. 48+64.21
P.T. Sta. 222+34.21
Elev. 540.24

Elev. 554.22+25.50 = 579.50

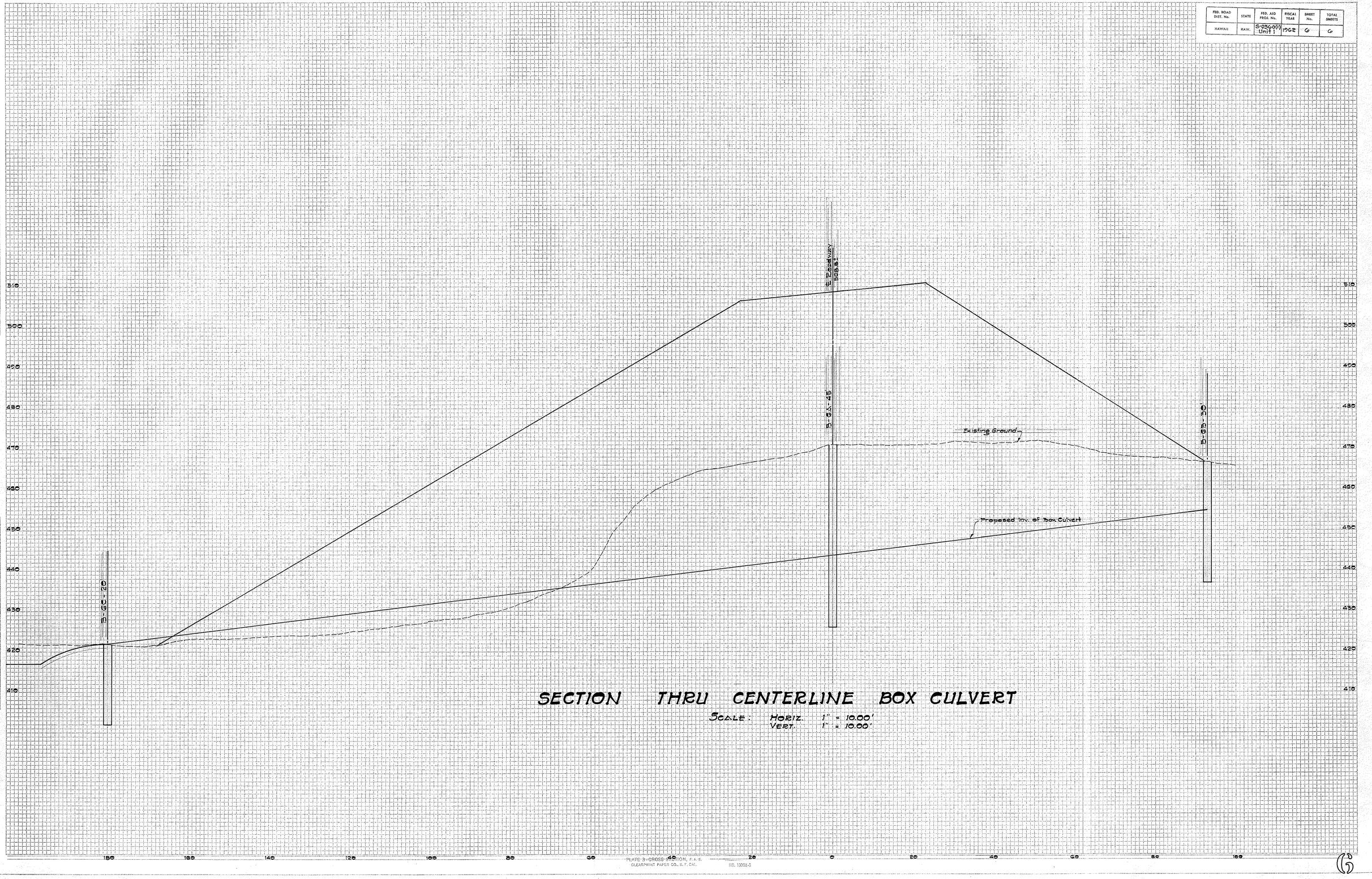
PLATE 1—PLAN-PROFILE C. P. R. & R. E. STANDARD
RIEDEL & ESSER CO., NEW YORK.

K & E Co. No. 346-HC

5

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	S-036-0(1) Unit 1	1962	6	6

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



SECTION THRU CENTERLINE BOX CULVERT

SCALE: HORIZ. 1" = 10.00'
VERT. 1" = 10.00'

PLATE 3 - CROSS SECTION, F. A. S.
CLEARPRINT PAPER CO., S. F., CAL. NO. 1000K-3