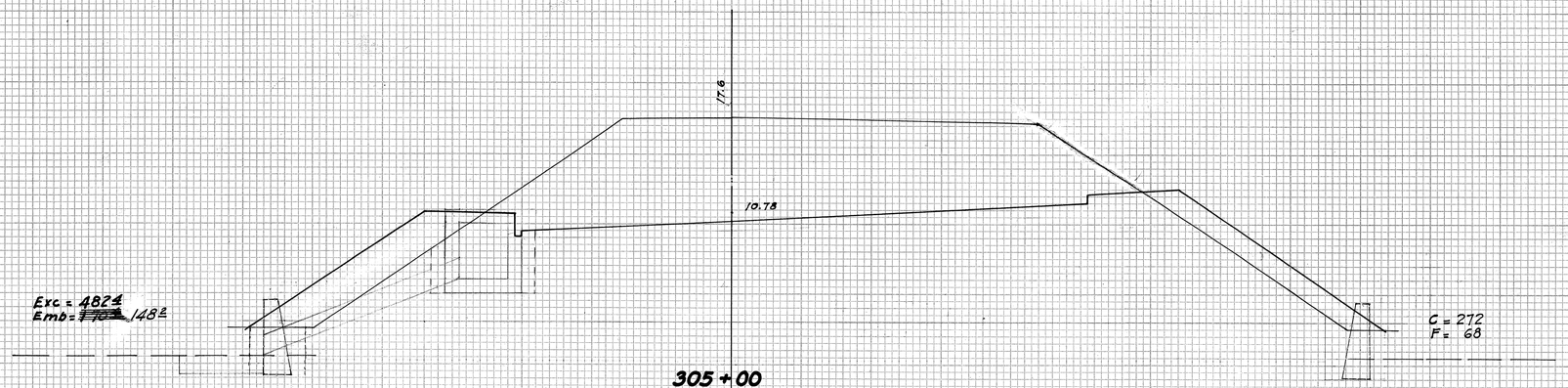
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	NRH-9C	35	42	72



FINAL SURVEY
SURVEYED
PLOTTED
NOTE BOOK
NO.
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE
W.C.H.-W.
W.-H.-W.
A.K.
A.K.
F.E.
11/35
11/35
11/35
11/35

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

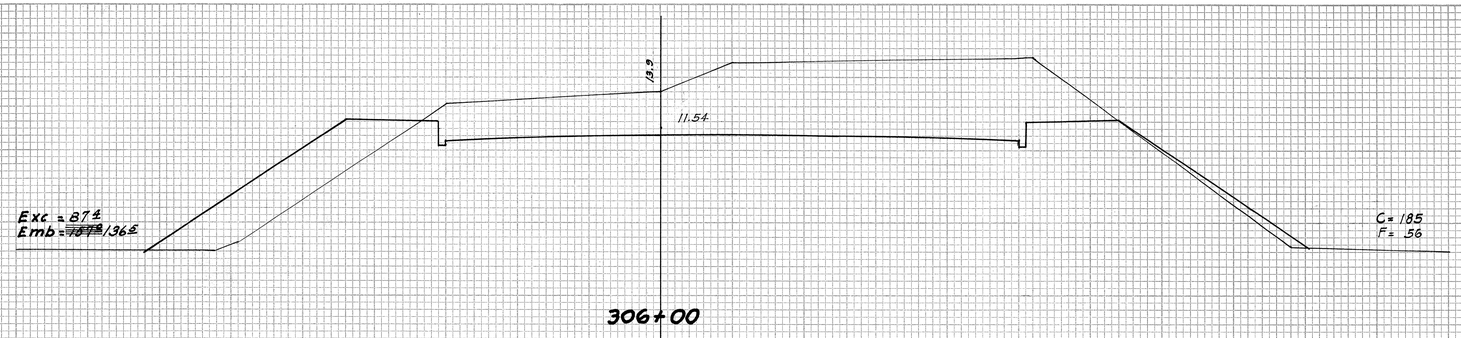
PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4325.42

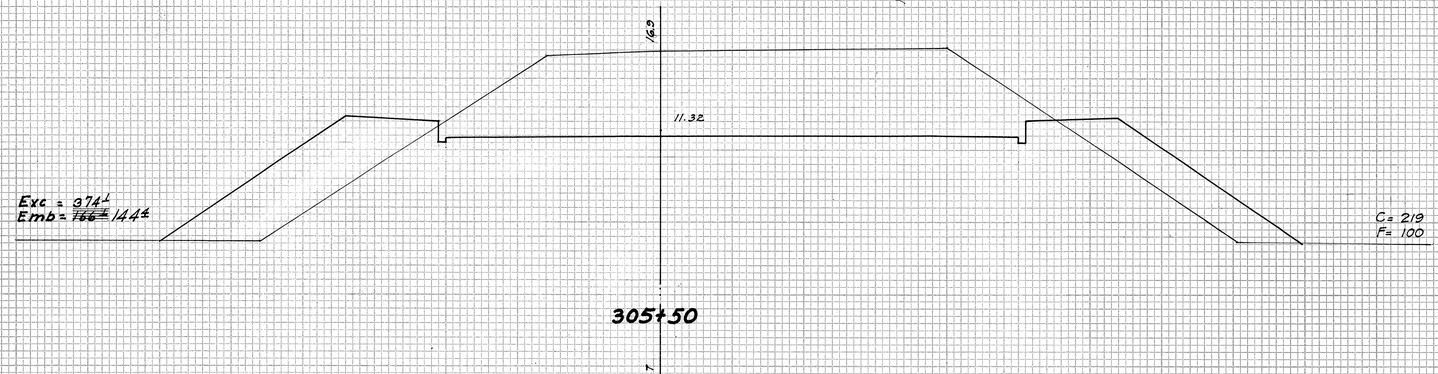
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	
H.A.W.	HAW.	NRH-9c	35	43	72

FINAL SURVEY — SURVEYED — PLOTTED — TRIANGULATE — AREAS — AREAS CHECKED — NOTE BOOK — NO.

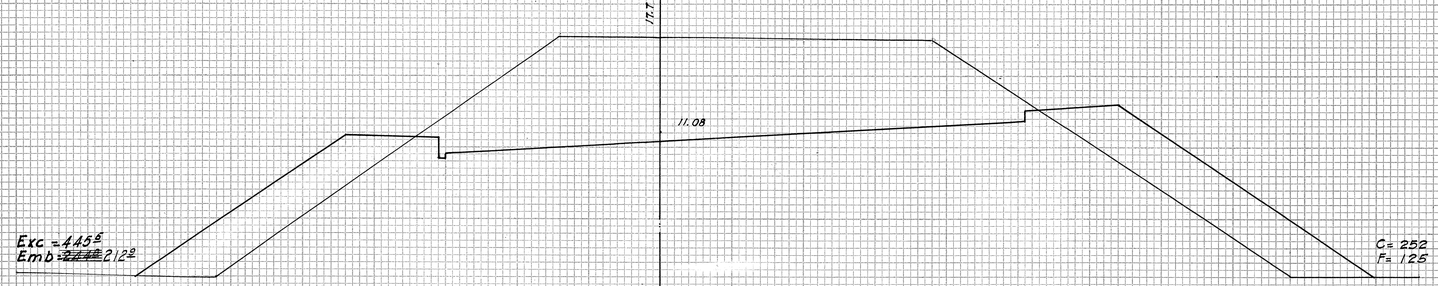
BY	DATE
W. H. W.	2-3
W. H. W.	2-3
H. W.	1-31
A. W.	1-31
F. C.	1-31



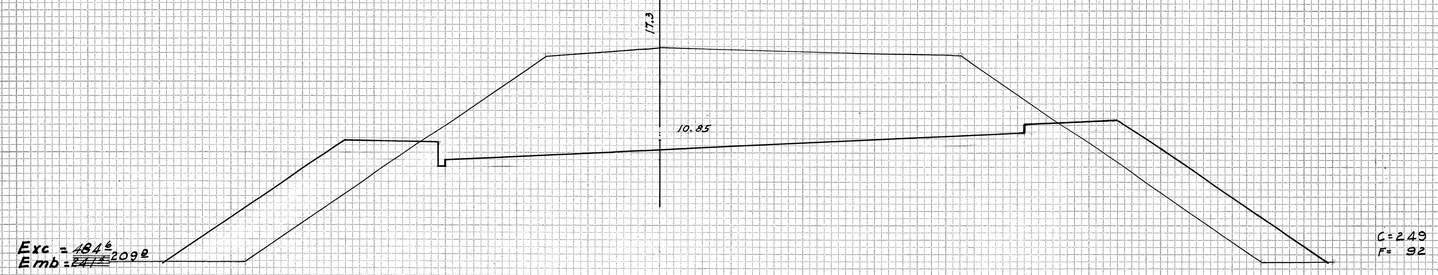
306+00



305+50



306+02.23 = 304+98.92



305+50

PLATE 8—CROSS SECTION. U. P. R. & H. R. STANDARD.
KEUFFEL & ESSER CO., NEW YORK.

4325.43

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	NPH-9C	35	44	72

DATE	BY	
39		W.H.W.
39		W.H.W.
4-35		A.N.
4-35		F.C.

FINAL SURVEY
SURVEYED
PLOTTED
TEMPLATE
NOTE BOOK TRACED
AREAS CHECKED
NO.

DATE	BY	

ORIGINAL SURVEY
SURVEYED
PLOTTED
TEMPLATE
NOTE BOOK TRACED
AREAS CHECKED
NO.

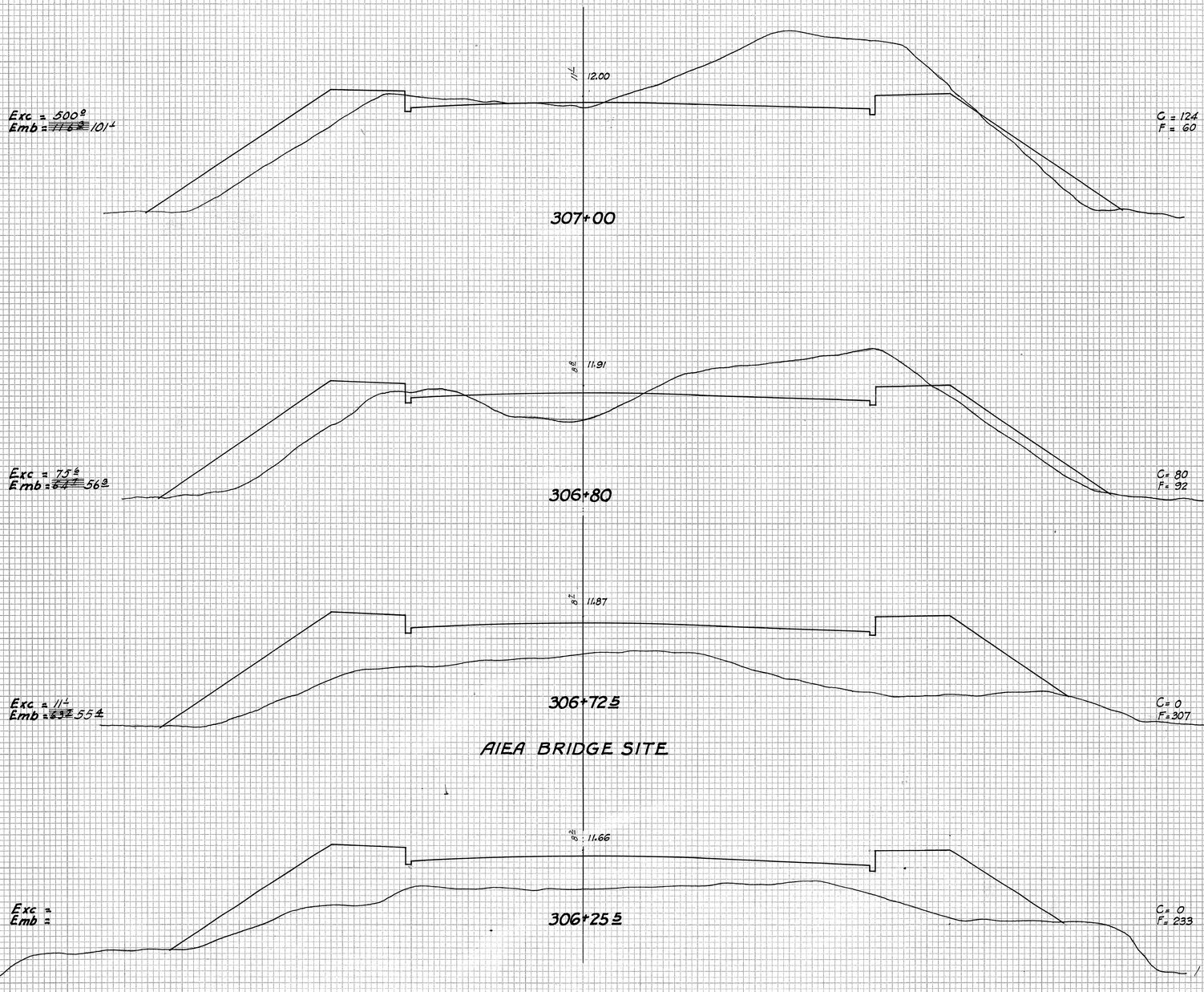


PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4325.44

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	N.R.H.-9C	35	45	72

ORIGINAL SURVEY	BY	DATE
SURVEYED	W. H. W.	3-9
PLOTTED	W. H. W.	3-9
TRIANGULATE	K. K. W.	4-25
AREAS	R. W.	4-25
AREAS CHECKED	F. C.	4-25

NOTE BOOK
NO.

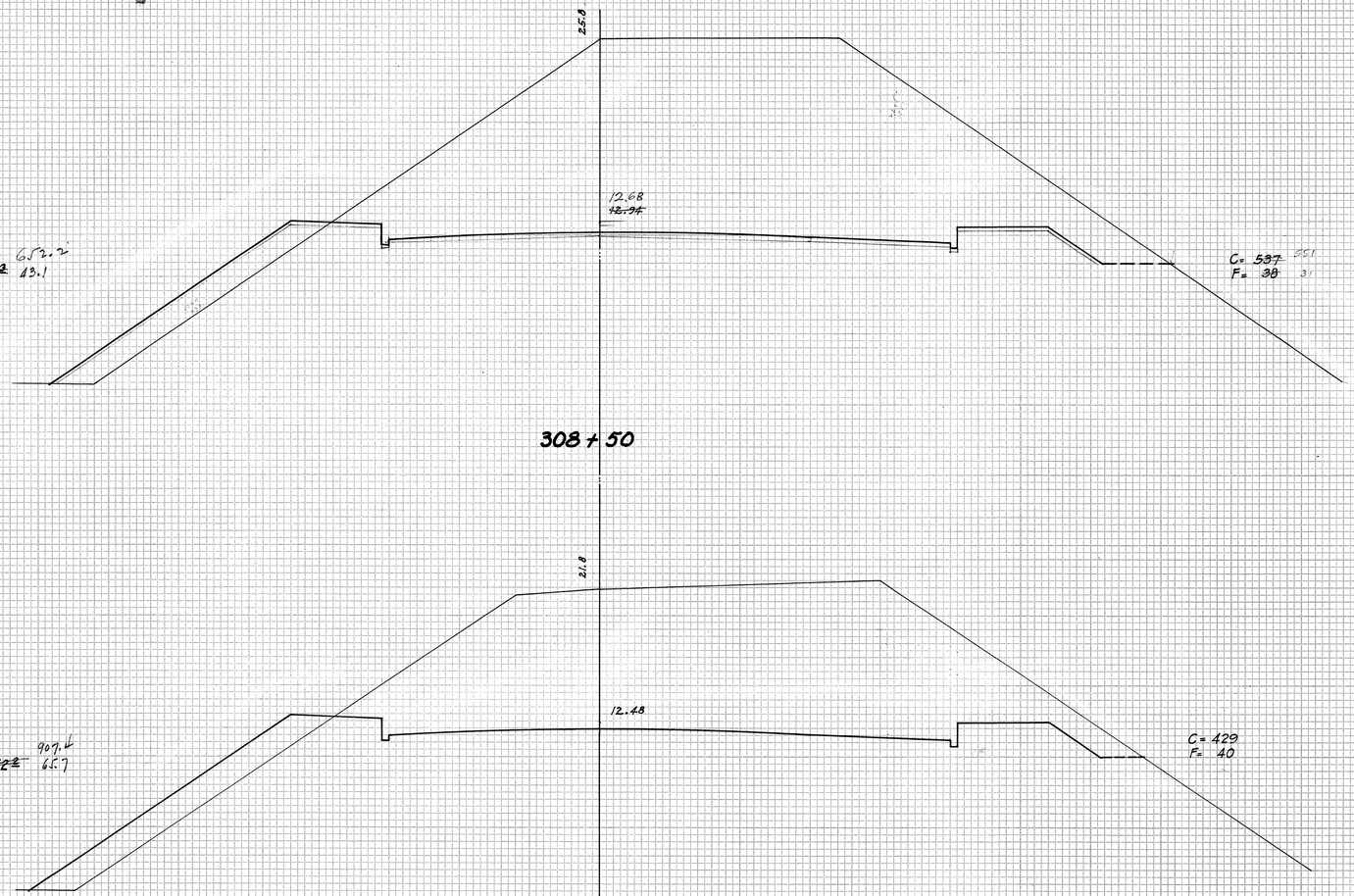


PLATE 5—CROSS SECTION O. P. R. & R. E. STANDARD.
KEUFFEL & ESSER CO., NEW YORK.

4325.45

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	NRH-9C	65	46	72

ORIGINAL SURVEY	BY	DATE
SURVEYED	W. H. W.	9-65
PLOTTED	W. H. W.	9-65
CHECKED	K. U.	11-65
AREAS	E. U.	11-65
NOTE BOOK NO.	F. C.	11-65
AREAS CHECKED		

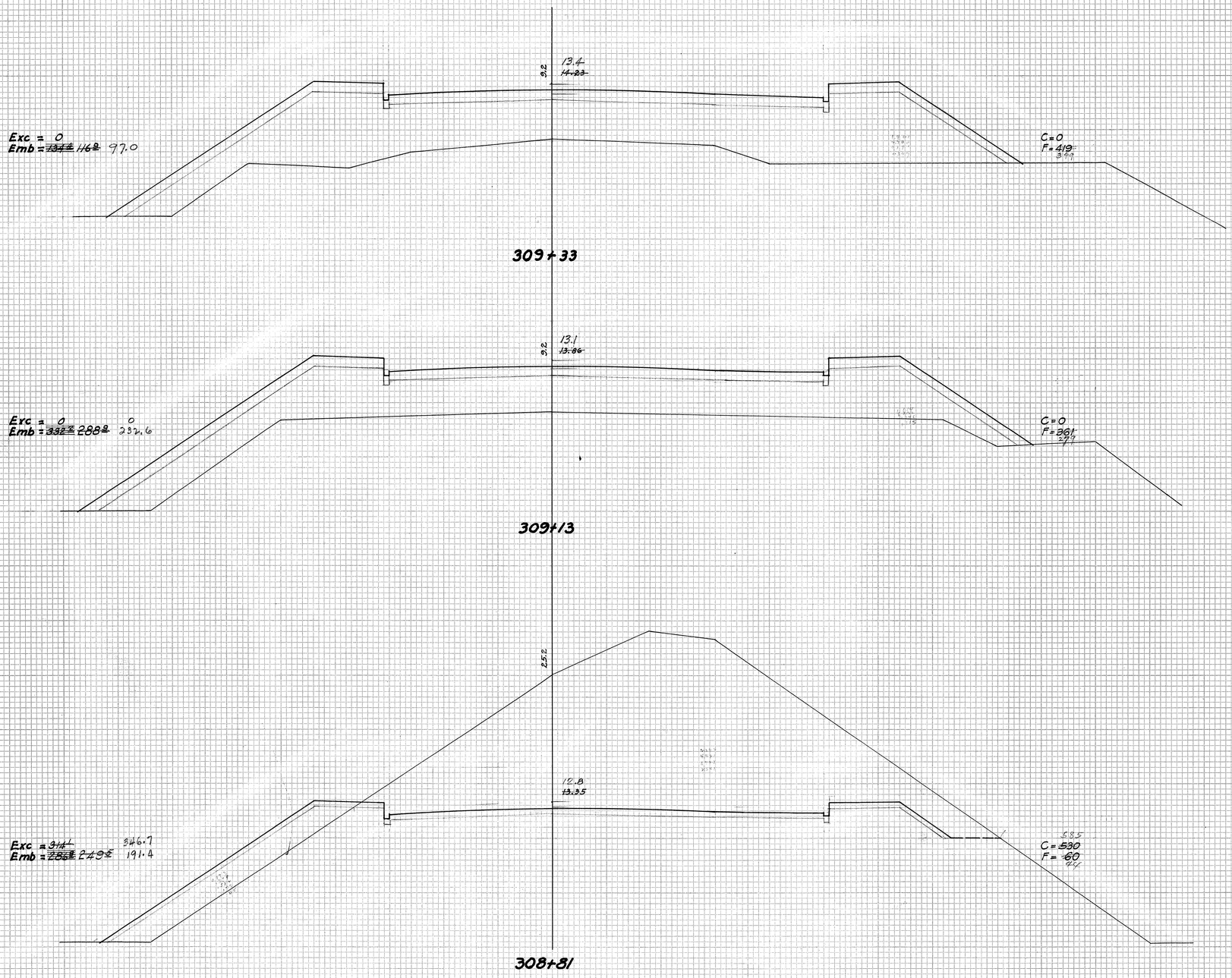


PLATE 2—CROSS SECTION (U. S. B. P. R. STANDARD)
KEUFFEL & ESSER CO., NEW YORK.

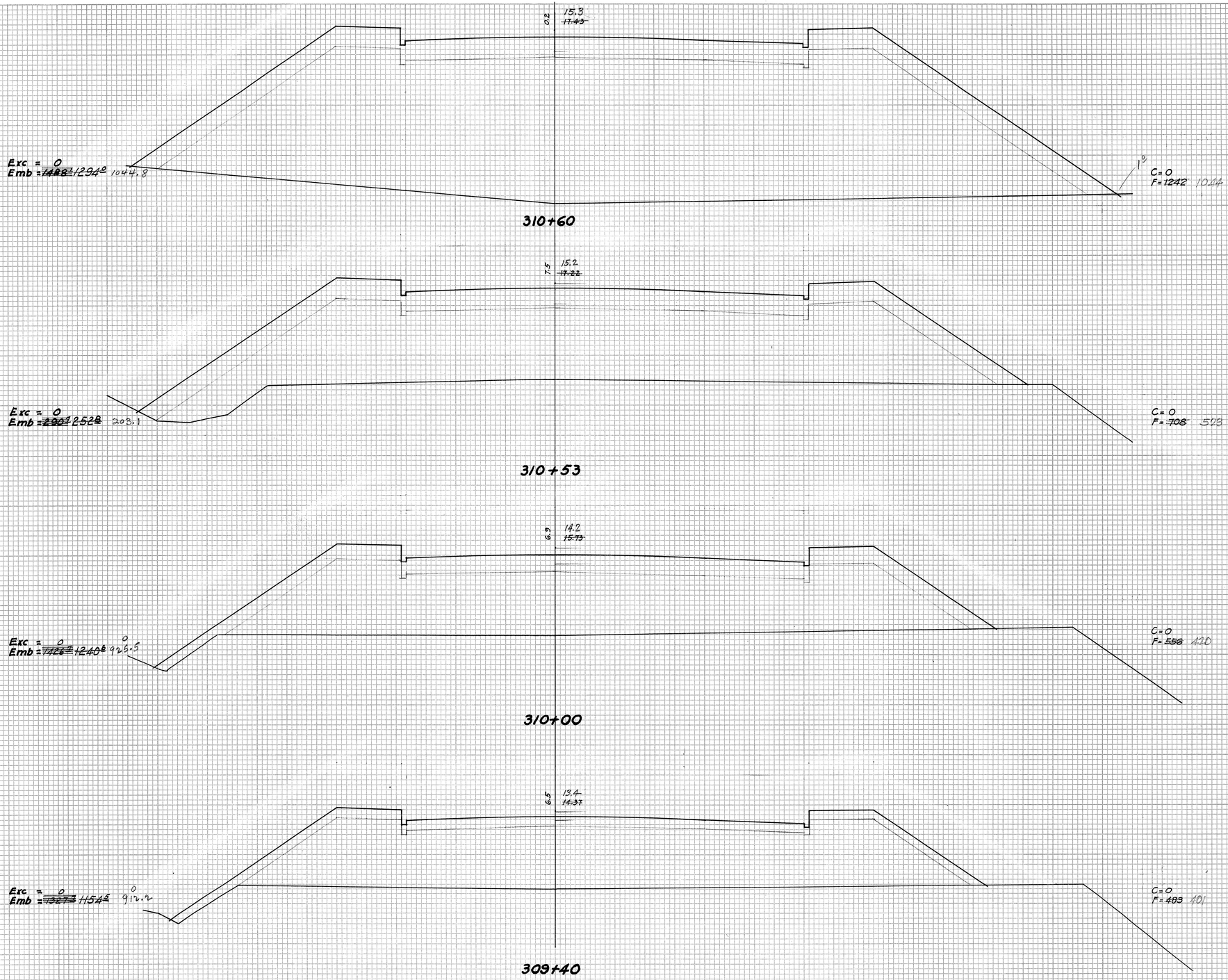
4325.46

8-C

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	NRH-9<	55	47	72

FINAL SURVEY
SURVEYED
PLOTTED
TRACED
NOTE BOOK
NO.
AREAS COMPUTED
AREAS CHECKED

BY	DATE
W. H. W.	55
W. H. W.	55
K. W.	4/55
F. C.	4/55



ORIGINAL SURVEY
SURVEYED
PLOTTED
TRACED
NOTE BOOK
NO.
AREAS COMPUTED
AREAS CHECKED

BY	DATE

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

4325.47

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	NRH-9(4)	35	48	72

FINAL SURVEY — SURVEYED BY W. K. W. / PLOTTED BY W. K. W. / NOTE BOOK: TEMPLATE A.K.R. W. / AREAS C.O.H. / AREAS CHECKED R.M. / NO. — DATE 3-3 / 3-13-35 / 4-1-35 / 4-2-35

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

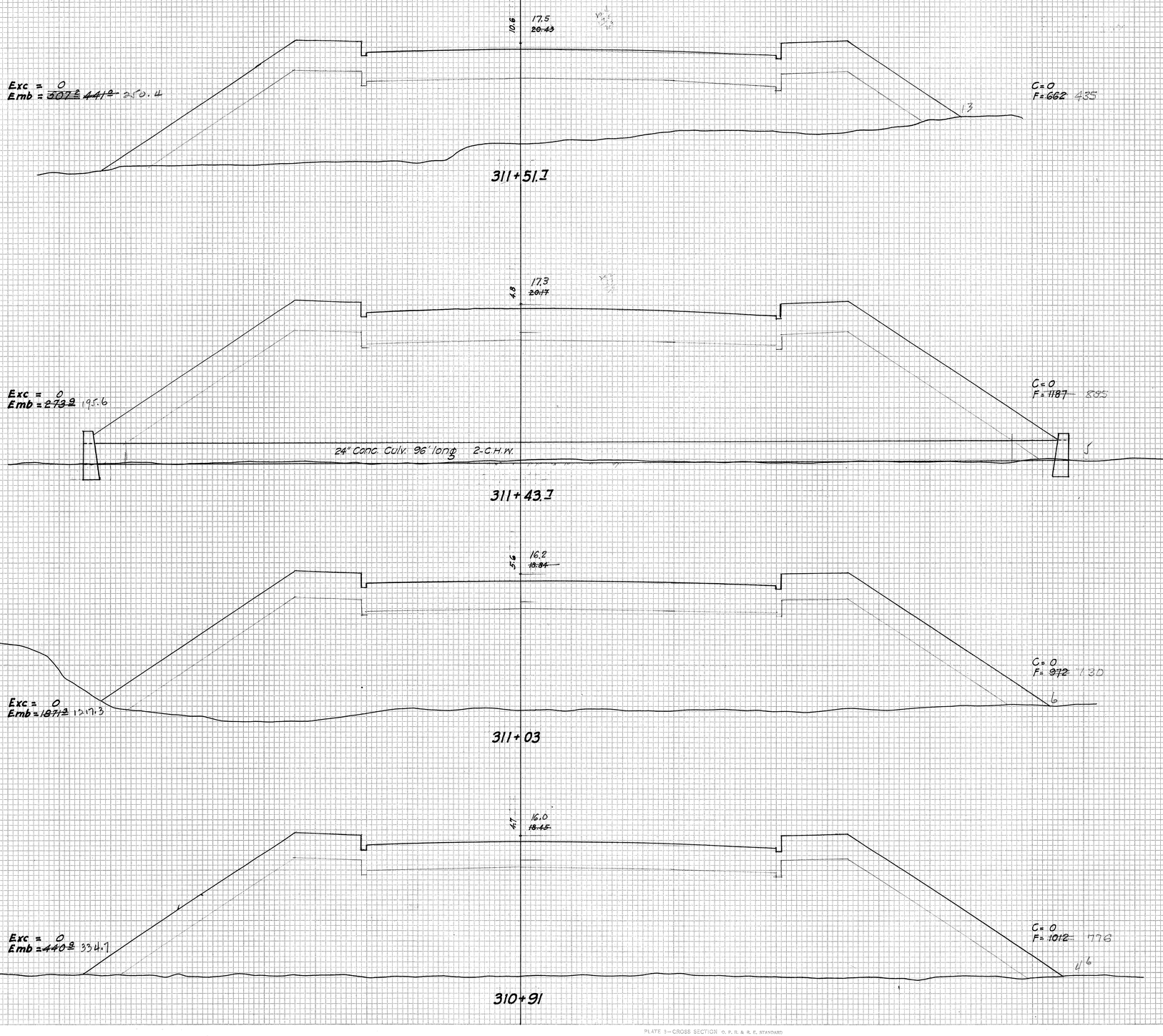


PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
KRUPPEL & ESELL CO., NEW YORK.

4325.48

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	NRH-9C	65	49	72

FINAL SURVEY	SURVEYED	BY	DATE
	PLOTTED	W. H. W	3-3
	COMPUTED	W. H. W	3-15
	TEMPLATE	W. H. W	3-15
NOTE BOOK	AREAS	R. W	3-16
NO.	AREAS CHECKED	R. W	

Exc = 2366 ± 3859.0
Emb = 0

12.0

1079
C = 862
F = 0

Exc = 1854 242.6
Emb = 0 0

19.9
23.21

312+36

31.4

650
C = 455
F = 0

19.6
22.96

312+29

23.6

19.0
22.21

315
C = 122
F = 6
0

Exc = 2458 411.1
Emb = 2 0

312+06

155

18.4
21.20

179.1
78.5

Exc = 692
Emb = 2308

C = 0
F = 947
738

311+75

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

PLATE 3—CROSS SECTION U. S. P. R. & R. E. STANDARD
KRUPPEL & KOSLER CO., NEW YORK.

4325.49

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEARS	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	NR11-9C	35	50	72

FINAL SURVEY
NOTE BOOK NO.
SURVEYED W.H.W
PLOTTED W.H.W
TEMPLATE M.K.H.
AREAS C.G.H.
AREAS CHECKED R.W.L.
DATE 33 11-3-34 11-23-34
BY

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

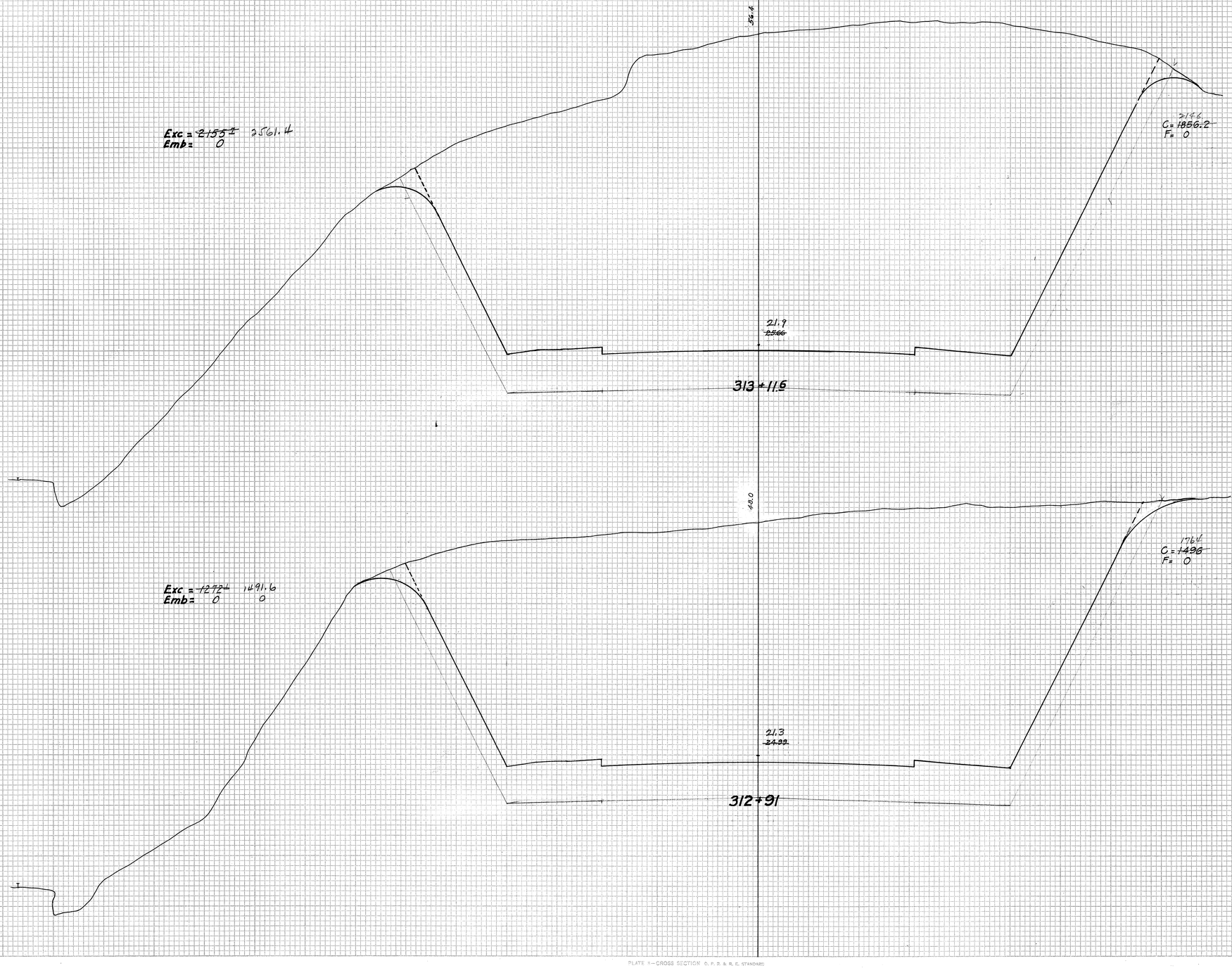


PLATE X—CROSS SECTION C. P. R. & R. E. STANDARD
KRUPPEL & SEEGER CO., NEW YORK.

4325.50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW	NRH-9C	55	51	72

DATE	BY
55	W. H.W.
5-3-55	W. H.W.
5-13-55	R. W.
4-13-55	R. E.

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

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

314+25

Exc = ~~5284~~ 7148.1
Emb = ~~254~~ 1.3

25.0
~~29.37~~

152.2

C = ~~445~~ 675
F = ~~60~~ 3

C = ~~2032~~ 3175
F = ~~70~~ 0

314+00

Exc = ~~3002~~ 495.8
Emb = ~~602~~ 1.4

24.3
~~28.55~~

28.8

C = ~~917~~ 1183
F = 0

313+61

Exc = ~~7948~~ 1120.7
Emb = ~~492~~ 0

23.2
~~27.30~~

44.3

C = 1184 1456
F = 0

313+50

Exc = ~~4552~~ 572.2
Emb = 0 0

23.0
~~26.32~~

46.5

PLATE 3—CROSS SECTION C. E. R. & P. E. STANDARD.
KRUPPEL & FEIST CO., NEW YORK.

4325.51

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	NRH-8C	55	52	72

FINAL SURVEY — ORIGINAL SURVEY

	DATE	BY
SURVEYED	2-9	W. H. W.
PLOTTED	3-9-55	W. H. W.
REVISED	3-25-55	R. W. C.
NOTE BOOK		
AREAS		
AREAS CHECKED		
NO.		

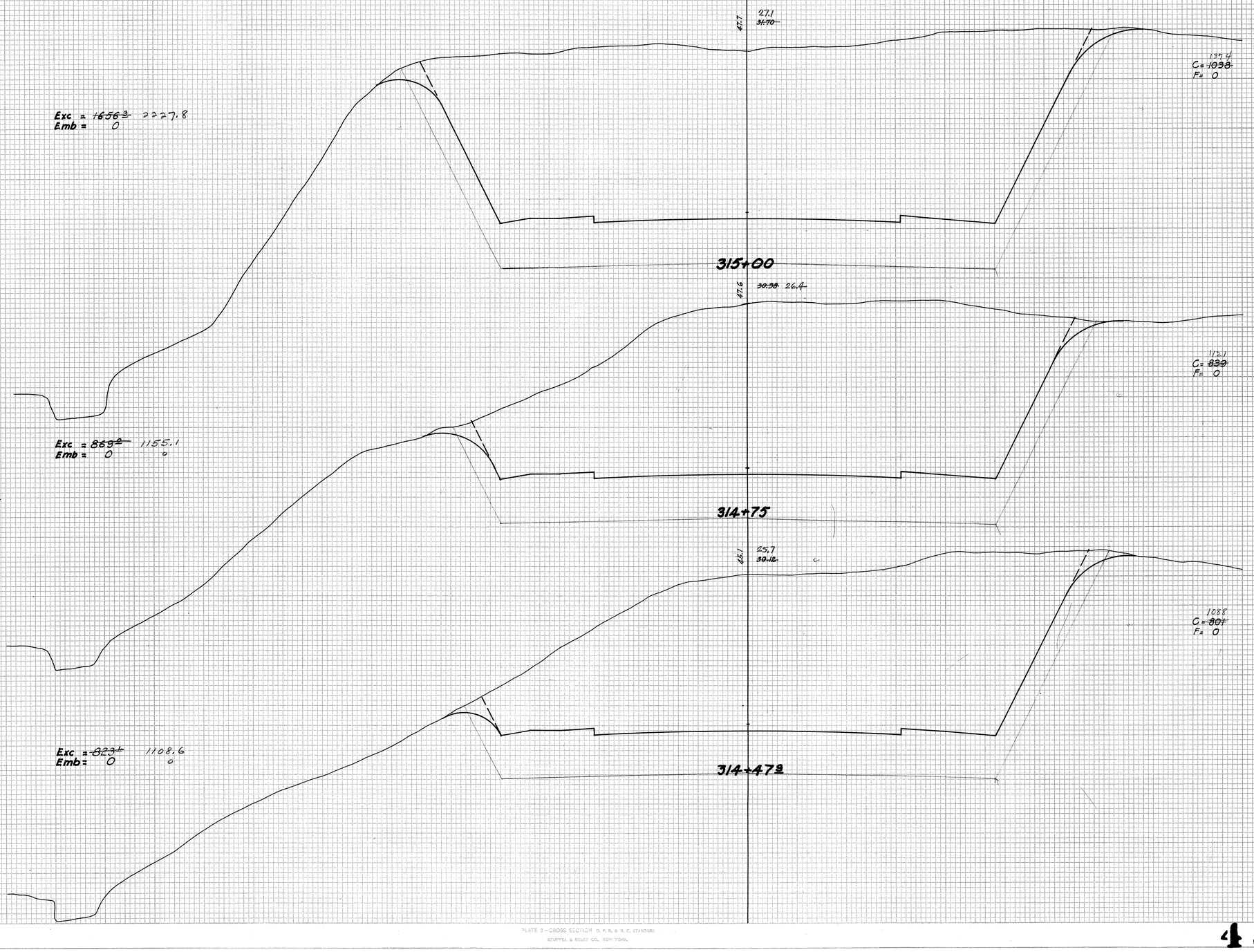


PLATE 3 — CROSS SECTION O. P. R. & R. C. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4325.52

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.H.W.	HAW.	NRH-9C	35	53	72

BY	DATE
W. H. W.	3-9
W. H. W.	3-9
R. W.	3-30-35
F. C.	4-13-35

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

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

Exc = ~~6324~~ 1033.4
Emb = 0

40.9
32.0
~~35.33~~

C = ~~236~~ 422
F = 0

316+88 13

41.5
31.0
~~34.87~~

Exc = ~~3644~~ 651.0
Emb = 0

C = 280 500
F = 0

316+50

42.7
29.8
~~34.05~~

Exc = ~~6149~~ 1035.2
Emb = 0 0

C = 383.5 618
F = 0

316+00

45.6
28.4
~~32.93~~

Exc = ~~1050~~ 1527.9
Emb = 0

C = ~~754~~ 1030
F = 0

315+50

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

4325.53

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAWAII	NRH-9C	55	54	72

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

FINAL SURVEY		BY	DATE
SURVEYED	W.H.W.		3-3
PLOTTED	W.H.W.		3-3
NOTE BOOK	R.W.		8/33
NO.	R.W.		8/33
	R.W. - F.C.		4/35

Exc = ~~215~~ 357.4
Emb = 0

370 34.0 ~~35.47~~

C = ~~157~~ 245
F = 0

319+00

Exc = ~~342~~ 538.9
Emb = 0

15.82

350 33.9 ~~35.82~~

C = ~~213~~ 337
F = 0

318+50

Exc = ~~436~~ 683.3
Emb = 0

15.54

353 33.6 ~~35.93~~

C = ~~258~~ 401
F = 0

318+00

Exc = ~~534~~ 815.7
Emb = 0

15.51

340 33.1 ~~35.81~~

C = ~~316~~ 489
F = 0

317+50

15.24

PLATE 3—CROSS SECTION C. P. R. & R. E. STANDARD
KRUPPEL & KISER CO., NEW YORK.

4325.54

(13)

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	NRH-9(4)	55	55	72

DES	
W.H.W.	3
W.H.W.	3-10-55
R. W.	3-11-55
R. W.	3-14-55

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

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

BY | DATE

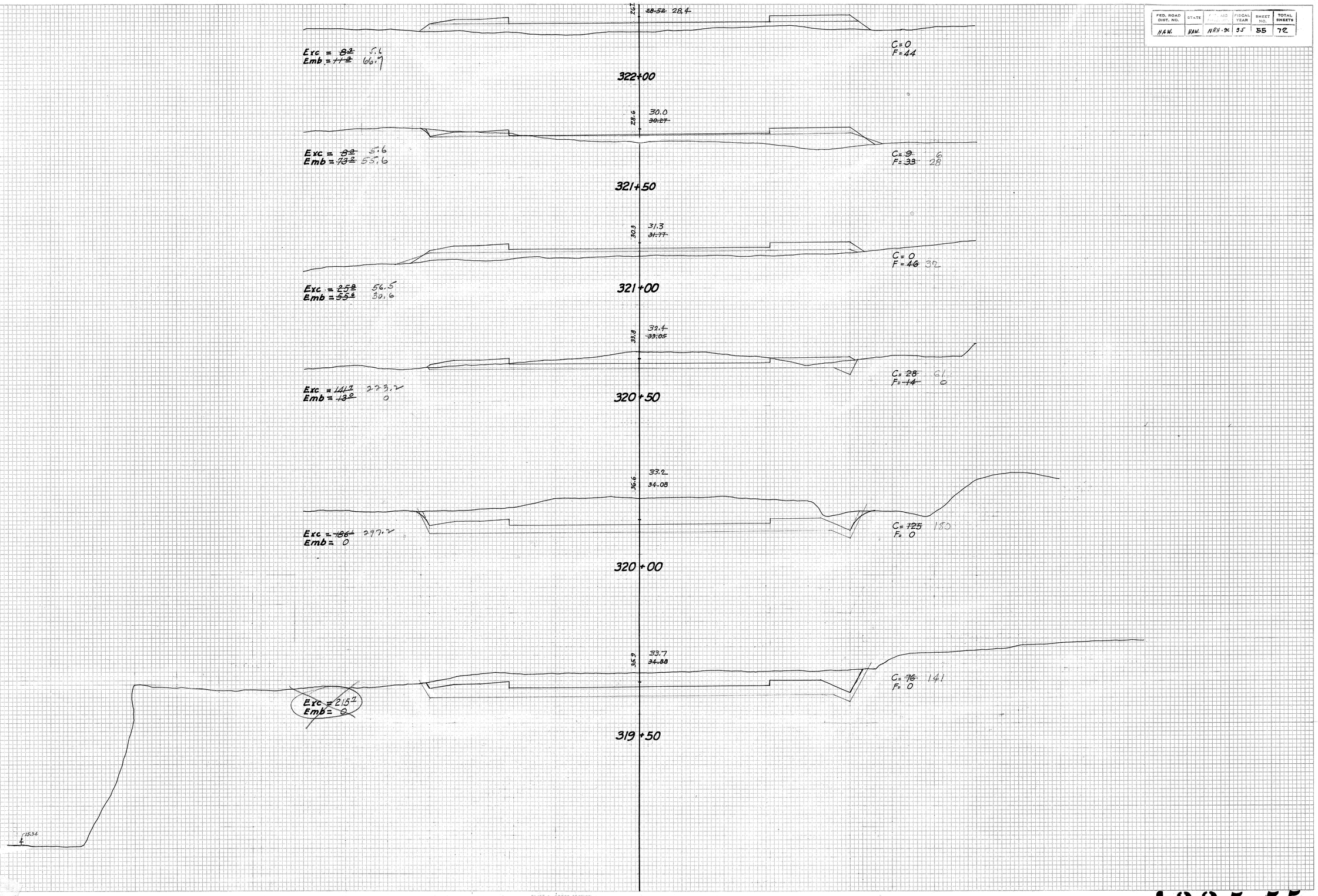


PLATE 3—CROSS SECTION O. P. R. & R. E. STANDARD
KRUPPEL & ESSER CO., NEW YORK.

4325.55

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	NRH-9C	35	56	72

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

W. H. W.
W. K. W.
A. W.
W. C. V.

3-9
3-25
4-15
4-25

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

15.87
17.41
3.0

Exc = 0
Emb = ~~760~~ 598.7

C = 0
F = ~~421~~ 332

326 + 00

16.85
18.12
10.8

Exc = 0
Emb = ~~563~~ 451.2

C = 0
F = ~~430~~ 314

325 + 50

18.05
19.03
14.2

Exc = ~~0~~ 0.9
Emb = ~~359~~ 274.1

C = 0
F = ~~209~~ 156

325 + 00

20.17 19.47
16.3

Exc = ~~0~~ 2.8
Emb = ~~113~~ 93.2

C = ~~0~~ 1
F = ~~173~~ 140

324 + 50

20.08
20.65
17.0

Exc = ~~12~~ 6.7
Emb = ~~113~~ 85.3

C = ~~7~~ 7
F = ~~145~~ 122

324 + 30

21.18
21.56
13.7

Exc = ~~118~~ 114.5
Emb = ~~36~~ 16.0

C = ~~7~~ 4
F = ~~44~~ 18

323 + 97

23.04
24.2

Exc = ~~150~~ 149.1
Emb = 0 0

C = 125
F = 0

323 + 50

24.80
24.8

Exc = ~~46~~ 41.7
Emb = ~~0~~ 6.5

C = ~~97~~ 36
F = 0

323 + 00

26.66
25.7

Exc = ~~12~~ 8.3
Emb = ~~41~~ 47.2

C = ~~132~~ 9
F = ~~7~~ 7

322 + 50

15.85 13.83
5.5

Exc = 0
Emb = ~~1058~~ 778.7

C = 0
F = ~~588~~ 441

329 + 00

18.02 13.94
6.2

Exc = 0
Emb = ~~1019~~ 734.3

C = 0
F = ~~555~~ 400

328 + 50

16.23 14.06
6.1

Exc = 0
Emb = ~~955~~ 671.3

C = 0
F = ~~546~~ 393

328 + 00

14.22
16.42
7.6

Exc = 0
Emb = ~~913~~ 638.0

C = 0
F = ~~486~~ 331

327 + 50

14.56
16.61
7.4

Exc = 0
Emb = ~~841~~ 598.2

C = 0
F = ~~500~~ 358

327 + 00

15.09
16.80
9.0

Exc = 0
Emb = ~~818~~ 699.2

C = 0
F = ~~409~~ 288

326 + 50

15.78
17.31
7.5

Exc = 0
Emb = ~~91~~ 72.4

C = 0
F = ~~563~~ 451

326 + 05

PLATE 2—CROSS SECTION U. P. R. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4325.56

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	NRH-9(4)	35	57	72

DATE	BY	FINAL SURVEY
33	W. H. W.	SURVEYED
1935	W. H. W.	PLOTTED
1935	R. W.	COMPUTED
1935	W. C. V.	NOTE BOOK
		NO.

AREAS
AREAS CHECKED

DATE	BY	ORIGINAL SURVEY
		SURVEYED
		PLOTTED
		COMPUTED
		NOTE BOOK
		NO.

AREAS
AREAS CHECKED

332 + 50
C = 0
F = ~~562~~ 464
Exc = ~~110~~ 0
Emb = ~~1142~~ 897.2
14.51 13.02

332 + 00
C = 0
F = ~~642~~ 505
Exc = 0
Emb = ~~980~~ 804.4
13.13 14.70

331 + 63 BRIDGE NO 6
C = 0
F = ~~789~~ 669
Exc =
Emb =
14.85 13.22

331 + 06
C = 0
F = ~~788~~ 660
Exc = 0
Emb = ~~1422~~ 1145.9
13.35 12.06

330 + 50
C = 0
F = ~~584~~ 445
Exc = 0
Emb = ~~1013~~ 764.8
13.48 15.28

330 + 00
C = 0
F = ~~510~~ 381
Exc = 0
Emb = ~~971~~ 719.5
13.60 15.47

329 + 50
C = 0
F = ~~539~~ 395
Exc = 0
Emb = ~~1043~~ 774.1
13.71 15.66

335 + 50
C = 0
F = ~~648~~ 561
Exc = 0
Emb = ~~1165~~ 1019.4
13.37 12.32

335 + 00
C = 0
F = ~~663~~ 571
Exc = 0
Emb = ~~1213~~ 1048.2
13.56 12.44

334 + 50
C = 0
F = ~~658~~ 565
Exc = 0
Emb = ~~1223~~ 1051.9
13.75 12.55

334 + 00
C = 0
F = ~~587~~ 488
Exc = 0
Emb = ~~1452~~ 975.0
13.94 12.67

333 + 50
C = 0
F = ~~635~~ 528
Exc = 0
Emb = ~~1431~~ 940.7
14.13 12.78

333 + 00
C = 0
F = ~~500~~ 390
Exc = 0
Emb = ~~1050~~ 850.0
14.32 12.90

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

4325.57

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	IIRH-9C	35	58	72

DATE	BY	
33	W.H.W.	
7-35	W.H.W.	
4-35	R.E.W.	
	W.C.V.	

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

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

339 + 00

Exc = 0
Emb = ~~1027~~ 953.7

2.3 ~~12.04~~ 11.51 2.3

C = 0
F = ~~577~~ 530

338 + 50

Exc = 0
Emb = ~~1084~~ 1000.0

2.0 ~~12.23~~ 11.63

C = 0
F = ~~600~~ 550

338 + 50

Exc = 0
Emb = ~~1132~~ 1013.0

2.0 ~~12.62~~ 11.74

C = 0
F = ~~602~~ 544

338 + 00

Exc = 0
Emb = ~~1104~~ 989.8

2.5 ~~12.61~~ 11.86

C = 0
F = ~~591~~ 525

337 + 50

Exc = 0
Emb = ~~1079~~ 958.3

3.0 ~~12.80~~ 11.97

C = 0
F = ~~575~~ 510

337 + 00

Exc = 0
Emb = ~~1104~~ 979.6

2.9 ~~12.97~~ 12.09

C = 0
F = ~~618~~ 548

336 + 50

Exc = 0
Emb = ~~1138~~ 1007.4

2.6 ~~13.18~~ 12.21

C = 0
F = ~~611~~ 540

336 + 00

342 + 50

Exc = 0
Emb = ~~1657~~ 688.0

3.6 ~~10.71~~ 10.70

C = 0
F = ~~377~~ 395

342 + 00

Exc = 0
Emb = ~~1762~~ 183.3

4.0 ~~10.76~~ 10.73

C = 0
F = ~~347~~ 352

342 + 36.75 BRIDGE SITE KALAUAO SPRINGS

Exc =
Emb =

3.4 ~~10.33~~ 10.83

C = 0
F = ~~403~~ 401

341 + 91.75

Exc = 0
Emb = ~~1671~~ 665.7

2.9 ~~11.09~~ 12.93

C = 0
F = ~~464~~ 460

341 + 50

Exc = ~~2550~~ 0
Emb = ~~2602~~ 846.3

3.1 ~~11.28~~ 11.05

C = 0
F = ~~465~~ 454

341 + 00

Exc = 0
Emb = ~~2332~~ 878.7

2.5 ~~11.41~~ 1117

C = 0
F = ~~500~~ 495

340 + 50

Exc = 0
Emb = ~~1940~~ 907.4

2.6 ~~11.66~~ 11.28

C = 0
F = 516 485

340 + 00

Exc = 0
Emb = ~~1976~~ 912.0

2.5 ~~11.85~~ 11.39

C = 0
F = ~~539~~ 500

339 + 50

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

4325.58

9C-17 Rev

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.W.	HAW.	NRH-9C	35	59	72

ORIGINAL SURVEY	DATE	BY
SURVEYED	33	W. H. W.
PLOTTED	8-35	M. K. W.
NOTE BOOK	9-35	R. W.
AREAS	11-35	W. C. V.
NO. AREAS CHECKED		

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

Exc = 0
Emb = ~~580~~ 648.2

9.31 10.53

C = 0
F = ~~246~~ 325

346 + 00

Exc = 0
Emb = ~~463~~ 593.5

9.96 10.45

C = 0
F = ~~234~~ 316

345 + 50

Exc = 0
Emb = ~~464~~ 556.5

9.75 10.41

C = 0
F = ~~218~~ 285

345 + 00

Exc = 0
Emb = ~~492~~ 547.2

9.94 10.37

C = 0
F = ~~284~~ 306

344 + 50

Exc = 0
Emb = ~~530~~ 566.7

10.13 10.41

C = 0
F = ~~289~~ 306

344 + 00

Exc = 0
Emb = ~~554~~ 585.2

10.32 10.48

C = 0
F = ~~310~~ 326

343 + 50

Exc = 0
Emb = ~~600~~ 624.1

10.51 10.58

C = 0
F = ~~339~~ 348

343 + 00

Exc = 0
Emb = ~~358~~ 775.9

8.14 11.65

C = 0
F = ~~169~~ 392

349 + 50

Exc = 0
Emb = ~~315~~ 706.5

8.83 11.48

C = 0
F = ~~172~~ 371

349 + 00

Exc = 0
Emb = ~~326~~ 675.9

8.42 11.31

C = 0
F = ~~181~~ 359

348 + 50

Exc = 0
Emb = ~~364~~ 682.4

8.61 11.14

C = 0
F = ~~213~~ 378

348 + 00

Exc = 0
Emb = ~~488~~ 774.1

8.80 10.97

C = 0
F = ~~315~~ 458

347 + 50

Exc = 0
Emb = ~~525~~ 763.9

8.99 10.80

C = 0
F = ~~252~~ 366

347 + 00

Exc = 0
Emb = ~~586~~ 686.1

9.18 10.65

C = 0
F = ~~301~~ 375
~~280~~

346 + 50

PLATE 5—CROSS SECTION U. P. R. & R. R. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4325.59

72-18 BV

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	NRH-9C	35	60	72

FINAL SURVEY — ORIGINAL SURVEY

DATE: 33 / 4135 / 4135

BY: W.H.W. / W.H.K. / R.W. / W.C.V.

SURVEYED / COMPUTED / TEMPLATE / AREAS / AREAS CHECKED

NOTE BOOK / NO.

---

353 + 34.6

Exc = 605.5 ~~905.2~~
Emb = ~~42~~ 0

179 — ~~14.90~~ 12.96

C = ~~207~~ ~~162~~
F = ~~1~~ 0

---

353 + 00

Exc = 151.8 ~~193.8~~
Emb = ~~93.2~~ 78.4

10.0 — ~~19.29~~ 12.86

C = 0
F = ~~145~~ 116

---

352 + 50

Exc = 0
Emb = ~~448.2~~ 469.5

5.4 — ~~11.98~~ 12.67

C = 0
F = ~~339~~ 391

---

352 + 00

Exc = 0
Emb = ~~625.8~~ 782.4

4.4 — ~~10.79~~ 12.50

C = 0
F = ~~337~~ 454

---

351 + 50

Exc = 0
Emb = ~~568.2~~ 829.6

4.2 — ~~9.85~~ 12.33

C = 0
F = ~~277~~ 442

---

351 + 00

Exc = 0
Emb = ~~464.8~~ 820.4

4.3 — ~~9.44~~ 12.16

C = 0
F = ~~225~~ 444

---

350 + 50

Exc = 0
Emb = ~~380.6~~ 784.4

4.4 — ~~8.58~~ 11.99

C = 0
F = ~~186~~ 407

---

350 + 00

Exc = 0
Emb = ~~334~~ 785.1

4.3 — ~~8.26~~ 11.80

C = 0
F = ~~197~~ 444

---

355 + 26.1

Exc = 415.6 ~~178.2~~
Emb = 0

2.9 — ~~18.27~~ 13.61

491
C = ~~223~~
F = 0

---

355 + 00

Exc = 441.8 ~~193.8~~
Emb = 0

2.0.2 — ~~17.28~~ 13.52

423
C = ~~178~~
F = 0

---

354 + 56.4

Exc = 578.9 ~~213.2~~
Emb = 0

1.8.0 — ~~17.26~~ 13.37

294
C = ~~86~~
F = 0

---

354 + 00

Exc = 477.3 ~~183.8~~
Emb = 0

17.2 — ~~16.07~~ 13.18

263
C = ~~98~~
F = 0

PLATE 9 - CROSS SECTION D. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4325.60

96-19 Revs

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	NRH-9C	35	61	72

FINAL SURVEY	DATE	BY
SURVEYED	33	W. H. W.
PLOTTED	33	W. H. W.
COMPUTATE	3/33	A. W.
NOTE BOOK	3/33	A. W.
AREAS	3/33	F. C.
AREAS CHECKED		
NO.		

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

Exc = 0
Emb = ~~456~~ 277

8.7 17.26 14.56

358+20

C=0
F= ~~489~~ 279

Exc = 0
Emb = ~~274~~ 141.7

12.7 17.51 14.52

358+00

C=0
F= ~~282~~ 102

Exc = 0
Emb = ~~557.4~~ 177.8

11.8 18.12 14.37

357+50

C=0
F= ~~920~~ 90

63.9
Exc = ~~0~~
Emb = ~~46.4~~ 83.4

14.6 18.63 14.20

C= ~~0~~ 69
F= ~~778~~ 0

357+00

29.72
Exc = 0
Emb = ~~186~~ 0

18.4 18.83 14.03

C= ~~83~~ 252
F= ~~23~~

356+50

537.1
Exc = ~~76.3~~
Emb = ~~21.3~~ 0

15.4 18.00 13.86

C= ~~58~~ 328
F= 0

356+00

718.5
Exc = ~~220.4~~
Emb = 0

21.2 18.49 13.69

C= ~~180~~ 448
F= 0

355+50

25.8
Exc = ~~34.5~~
Emb = ~~96.3~~ 97.2

15.8 13.88 14.23

C=0
F= ~~489~~ 279

361+00

172.1
Exc = ~~183.2~~
Emb = ~~0.5~~ 7.0

18.5 14.19 14.33

C= 12
~~56~~ 7.90
F= ~~4~~ 4
C= ~~297~~
F= 0

360+72

476.4
Exc = ~~467.4~~
Emb = 0.7

22.2 14.69 14.45

C= ~~0~~ 69
F= ~~778~~ 0

478
C= ~~456~~
F= 0

360+38.5

5639
Exc = ~~529.3~~
Emb = 0

19.6 15.06 14.52

313
C= ~~287~~
F= 0

360+00

291.7
Exc = ~~265.1~~
Emb = ~~68.1~~ 111

14.2 15.61 14.62

C= 12
0
F= ~~71~~ 12

359+50

19
Exc = ~~0~~
Emb = ~~208.2~~ 239.8

17 16.28 14.64

C=0
F= ~~359~~ 247

359+00

Exc = 0
Emb = ~~667.6~~ 434.1

2.8 14.61 16.88

C=0
F= ~~362~~ 211

358+50

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

4325.61

20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	NPH-9C	38	62	72

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	9-F	1935	24	42

Revised June 1936

NOTE to Res. Engineer:
The finished grades as shown on the cross-sections between Sta. 361+50 and 372+65, and between Sta. 381+35 & 469+89.2 are to be lowered by 0.08'.
The finished grade between Sta 372+65 & Sta. 381+35 have been revised. For the corrected grades, see computation book #93 Page 74.

364+00 — 11.90 12.66 — 12.05 12.73 — Exc = — Emb = 1495.3 — C = 0 — F = 717

363+50 — 12.28 13.19 — Exc = — Emb = 1523.1 — C = 0 — F = 786

363+00 — 12.45 13.36 — Exc = — Emb = 889.4 — C = 0 — F = 762

362+68.1 — 12.96 13.72 — Exc = — Emb = 1476.9 — C = 0 — F = 551

362+00 — 13.72 13.26 — Exc = — Emb = 1233.6 — C = 0 — F = 490

361+62.5 — 13.53 — Exc = 0 — Emb = 1882 — C = 0 — F = 451

361+33.2 — C = 0 — F = 154

367+00 — 11.58 — Exc = — Emb = — C = 0 — F = 620

366+50 — 11.67 11.59 — Exc = — Emb = — C = 0 — F = 708

366+00 — 11.72 11.86 — Exc = — Emb = — C = 0 — F = 718

365+50 — 11.77 12.13 — Exc = — Emb = 1350.9 — C = 0 — F = 719

365+00 — 11.82 12.39 — Exc = — Emb = 1389.9 — C = 0 — F = 721

364+50 — Exc = — Emb = 1444.0 — C = 0 — F = 728

Grades Changed

PLATE 3--CROSS SECTION A.R.R.&R.E. STANDARD
KRUPPEL & DOLIT CO., NEW YORK.

4338.24 4325.62

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	NRH-9C	1935	63	72

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

1/35 A.W.
2/35 R.W.
3/35 R.W.
4/35 F.C.

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

Exc = 250 ± 307.8
Emb = 0



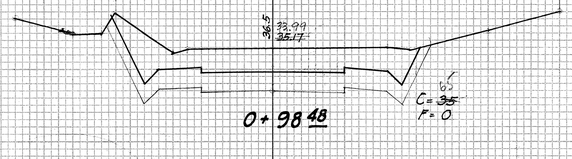
1 + 48 16

Exc = 79 ± 164.7
Emb = 0



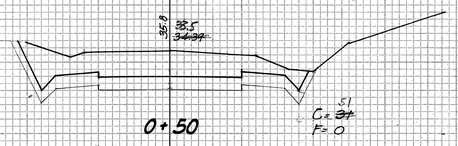
1 + 25

Exc = 54 ± 86.9
Emb = 0



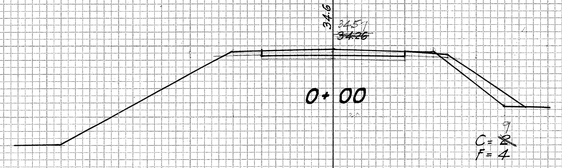
0 + 98 48

Exc = (9-C Roiwy)
Emb = (Prism)



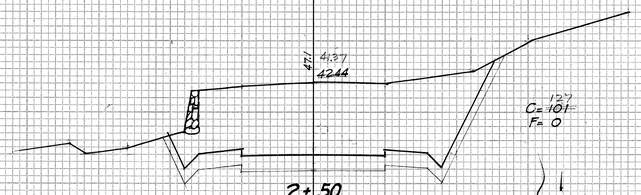
0 + 50

Exc = 30 ± 46.3
Emb = 37 ± 3.2



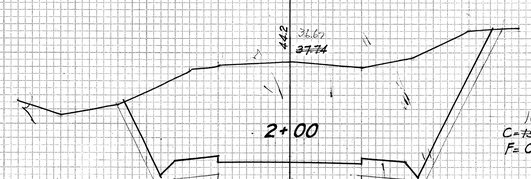
0 + 00

Exc = 1443 ± 193.4
Emb = 0



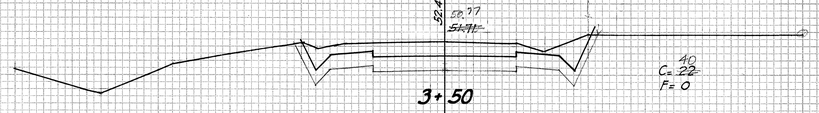
2 + 50

Exc = 2332 ± 287.9
Emb = 0

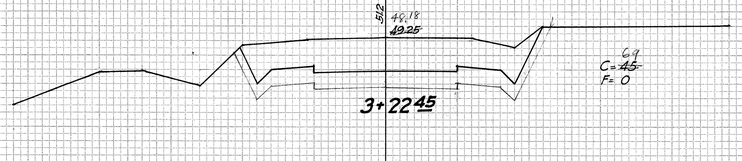


2 + 00

Exc = 344 ± 555.5
Emb = 0

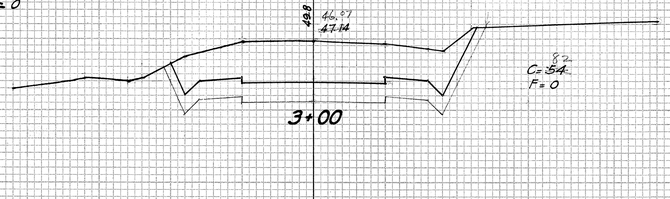


3 + 50



3 + 22 45

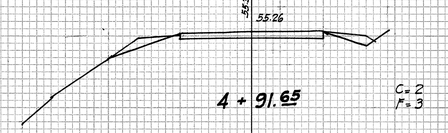
Exc = 412 ± 63.9
Emb = 0



3 + 00

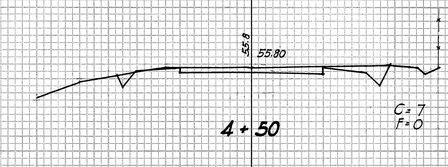
2 + 50

2 + 00



4 + 91.65

Exc = 7 ⅔
Emb = 2 ⅓
C= 2
F= 3



4 + 50

C= 7
F= 0

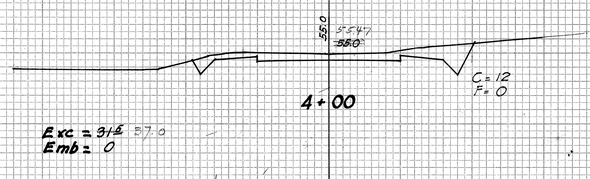
Exc = 8 ⅔
Emb = 0



4 + 16.1

C= 11
F= 0

Exc = 8 ⅔ 6.0
Emb = 0



4 + 00

C= 12
F= 0

Exc = 31 ± 37.0
Emb = 0

COOPER ROAD X SECTIONS

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

4325.63

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW	HAW	NRH 9C	1935	64	72

DATE	BY
11-04	A.K.
6-05	K.W.
4-35	K.W.
4-35	K.C.
4-35	

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

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

DATE
BY

29.60
2+60 ℄

10.10
1+68

25.78
2+25

23.73
2+00

3.70
1+49

22.72
1+75

Exc = 4 ☐
Emb = 0

21.29
21.29
1+07
C = 12
F = 0

Exc = 54 ☐
Emb = 0

19.28
17.89
0+50
C = 40
F = 0

Exc = 46 ☐
Emb = 0

8.69
16.44
0+25
C = 60
F = 0

Right 9-C ℄

5.02
1+35

16.17
1+00

Exc = 11 ☐
Emb = 2 ☐

17.27
17.27
0+50
C = 12
F = 3

Exc = 25 ☐
Emb = 1 ☐

17.67
16.14
0+25
C = 44
F = 0

Left 9-C ℄

KALAUAO DEPOT RD. (9-C)

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

4325.64

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW	NRH-9C	1935	65	72

FINAL SURVEY — SURVEYED, PLOTTED, TRACED, NOTE BOOK, AREAS, AREAS CHECKED, NO. — DATE — BY M.A.T. A.W. " "

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

(from 0+25 to 0+35 Rt)
Exc = 89 c.y.
Emb = 0

24.6
13.33
C = 316
F = 0
0+35
Right of 9-C ℄

(From 0+25 to 0+50 Lt)
Exc = 207 c.y.
Emb = 0

20.7
13.50
C = 245
F = 0
0+50 (Lt)

Exc = 300 c.y.
Emb = 0

16.83
14.55
C = 80
F = 0
1+00

(From 1+00 to 1+20 Lt)
Exc = 29 c.y.
Emb = 0

12.17
1+50

Left of ℄ 9-C

27.3
25.13
C = 68
F = 0
2+31.66 (Rt)

Exc = 92 c.y.
Emb = 0

25.5
23.23
C = 89
F = 0
2+00

Exc = 221 c.y.
Emb = 0

24.8
20.23
C = 150
F = 0
1+50

Exc = 345 c.y.
Emb = 0

24.3
17.23
C = 223
F = 0
1+00

Exc = 487 c.y.
Emb = 0

23.4
14.23
C = 303
F = 0
0+50 (Rt)

Exc = 171 c.y.
Emb = 0

(To 4+65)
Exc = 6 c.y.
Emb = 0

34.2
34.03
C = 19
F = 0
4+45.29 (Rt)

Exc = 33 c.y.
Emb = 0

34.2
34.05
C = 21
F = 1
4+00

Exc = 33 c.y.
Emb = 0

31.9
32.13
C = 15
F = 0
3+50

Exc = 38 c.y.
Emb = 0

29.7
29.23
C = 27
F = 0
3+00

Exc = 82 c.y.
Emb = 0

28.2
26.23
C = 62
F = 0
2+50 (Rt)

Exc = 44 c.y.
Emb = 0

X-SECTIONS Mc CANDLESS ROAD -(9-C)

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

4325 65

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW	NRH-9C	1935	66	72

DATE	BY
2/35	A.K.
4/35	R.W.
4/35	R.W.
4/35	F.C.
4/35	

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

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

Exc = 563 sq
Emb = 0

10' offset Rt of ℄ 9-C 2

320

23.35

C = 1623

312+41

Exc = 2208 sq
Emb = 0

270

22.01

C = 1286

312+00

Exc = 858 sq
Emb = 0

25.1

21.35

C = 1033

311+80

Exc = 382 sq
Emb = 0

BORROW PIT X-SECTIONS

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

4325.66

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
14 W.	HAW	NRH 9C	1926	67	72

FINAL SURVEY	BY	DATE
SURVEYED	A.W.	2/25
PLOTTED	A.W.	4/25
TEMPLATE	A.W.	4/25
AREAS	A.W.	4/25
NOTE BOOK	C.C.	4/25
AREAS CHECKED		
NO.		

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

514 to Offset Rt of ℄ 3-C

C = 3205

2566

Exc. = 1278 ☐
Emb = 0

313+11 63

416

C = 2732

2528

313+00

Exc. = 4154 ☐
Emb = 0

363

C = 1755

2364

312+50

BORROW PIT X SECTIONS

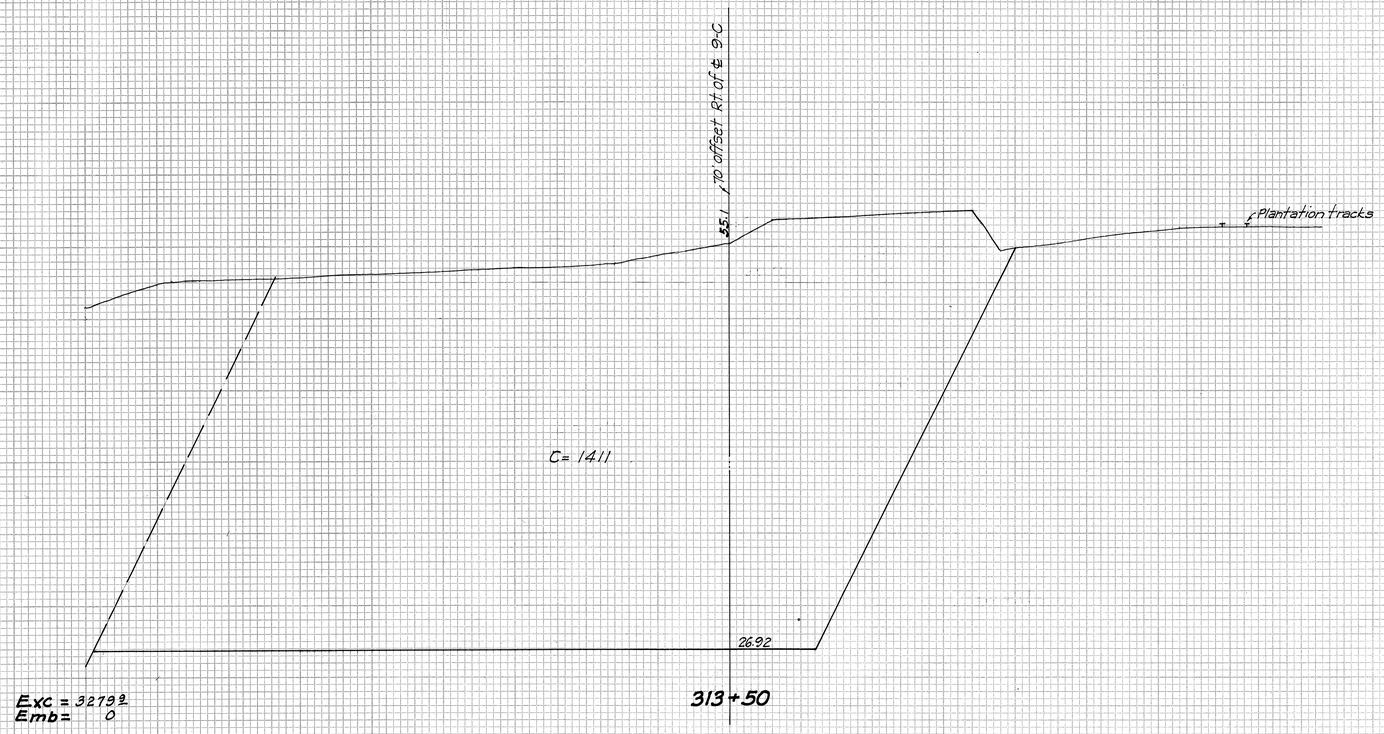
PLATE 3—CROSS SECTION C. P. R. & R. R. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4325.67

FEDERAL DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
H.A.W.	HAW.	NRH 8C	1935	68	72

ORIGINAL SURVEY		BY	DATE
SURVEYED		A. K.	6/35
PLOTTED		A.L.	6/35
TEMPLATE		A.W.	6/35
AREAS		A.W.	6/35
AREAS CHECKED		F.C.	6/35
NOTE BOOK			
NO.			

FINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
AREAS CHECKED	
NOTE BOOK	
NO.	



BORROW PIT X-SECTIONS

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

4325.68

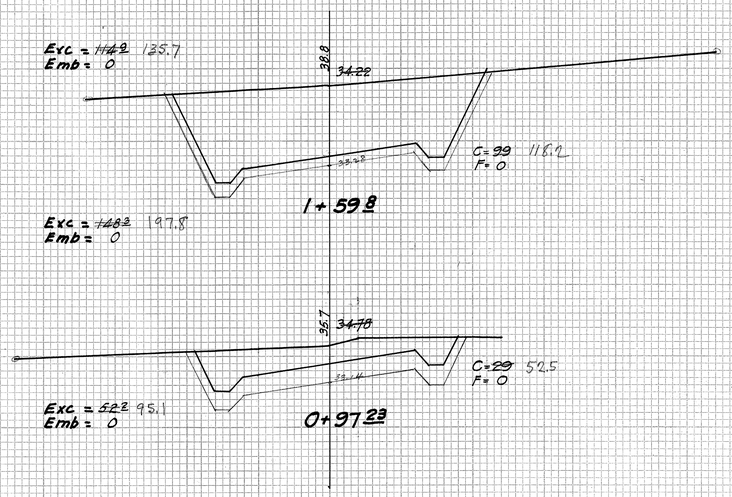
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	NHP-8C	1935	69	72

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

BY	DATE
A.K.	1-25-35
A.W.	2-25-35
A.W.	4-1-35
A.W.	4-1-35
F.E.	4-15-35

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

BY	DATE



R.R. SPUR LINE
FROM
TRESTLE TO MAIN LINE

PLATE 3—CROSS SECTION U. P. R. & R. F. STANDARD
KRUPPEL & ESSER CO., NEW YORK.

4325.69

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	NRH 9C	1935	70	72

ORIGINAL SURVEY — SURVEYED A.K. — PLOTTED F.C.R.W. — TRACED K.W. — NOTE BOOK F.C. — AREAS — AREAS CHECKED — NO. — DATE 2/35 5/35 6/35 9/35 4/36

1+25

25.1 — 24.57 / 26.93

Exc = 16² 22.4
Emb = 1² .05

C = 22 32
F = 0

1+00

26.6 — 25.89 / 26.78

Exc = 10² 13.25
Emb = 3² 0.5

C = 13 20.7
F = 2² 1.0

0+75

25.1 — 25.21 / 25.43

Exc = 8² 16.75
Emb = 3² 0

C = 10 18.7
F = 4 0

0+50

24.6 — 24.53 / 24.80

Exc = 8² 12.8
Emb = 3² 1.8

C = 9 17.5
F = 3 0

0+25

23.7 — 23.93 / 23.86

Exc = 5² .
Emb = 5² .

C = 9
F = 4

P.C. 0+00

23.1 — 23.18

C = 3
F = 7

4+00

32.8 — 34.02 / 34.98

Exc = 13.8² 18.43
Emb = 0

C = 8.4 10.9
F = 0

3+50

36.9 — 32.66 / 33.55

Exc = 7.4² 11.87
Emb = 0

C = 6.5 9.0
F = 0

3+00

32.4 — 31.31 / 32.11

Exc = 2.3² 5.87
Emb = 0

C = 1.5 3.85
F = 0

2+50

30.6 — 29.95 / 30.65

Exc = 2.5² 5.37
Emb = 0

C = 1.0 2.5
F = 0

2+00

29.6 — 28.60 / 29.17

Exc = 2.6² 5.37
Emb = 0

C = 1.8 3.30
F = 0

1+50

27.8 — 27.14 / 27.68

Exc = 3.2 6.9
Emb = 0

C = 1.1 2.5
F = 0

P.T. 1+42.83

27.7 — 27.05 / 27.46

Exc = 1.1² 1.45
Emb = 0

C = 1.4 2.7
F = 0

5+86

56.4 — 39.05 / 40.31

Exc = 4.56² 5.23.9
Emb = 0

C = 3.75 4.18
F = 0

5+50

52.30 — 38.05 / 39.29

Exc = 5.08² 5.71.6
Emb = 0

C = 3.24 3.68
F = 0

5+00

47.4 — 36.73 / 37.86

Exc = 1.64² 1.91.7
Emb = 0

C = 2.25 2.58
F = 0

4+78

45.4 — 36.13 / 37.22

Exc = 4.9² 6.0.5
Emb = 0

C = 7.78 9.15
F = 0

4+69

42.4 — 35.89 / 36.96

Exc = 2.5² .32.1
Emb = 0

C = 1.16 1.48
F = 0

4+63.35

42.7 — 35.73 / 36.80

Exc = 5.0² .66.2
Emb = 0

C = 1.26 1.58
F = 0

4+50

40.1 — 35.37 / 36.42

Exc = 1.50² 2.00.8
Emb = 0

C = 7.8 11.0
F = 0 0

RAILROAD X-SECTIONS

PLATE 5—CROSS SECTION U. P. R. & R. H. STANDARD
KRIPPEL & ESSER CO., NEW YORK.

4325.70

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW	HAW.	NPH 98	1935	71	72

FINAL SURVEY — ORIGINAL SURVEY

	BY	DATE
SURVEYED	A.K. - F.C.	2/35
PLOTTED	R.W.	2/35
TOPOGRAPHY	R.W.	3/35
RE-PLOTTED	F.C.	4/35
NOTE BOOK		
AREAS CHECKED		
NO.		

7+30 13

Channel Exc.

18" Conc. Pipe = 25'

40.5 — 42.96 — ~~44.16~~

Exc = 0
Emb = ~~68.5~~ 33.7

C=0
F= ~~56~~ 27

6+81

41.5 — 41.63 — ~~42.99~~

Exc = ~~3.5~~ 7.0
Emb = ~~2.5~~ 1.8

C=0
F= ~~16~~ 10

6+74

45.2 — 41.44 — ~~42.71~~

Exc = ~~27.5~~ 52.4
Emb = 0

C= ~~28~~ 38
F= 0

6+50

43.5 — 40.79 — ~~42.07~~

Exc = ~~322.2~~ 405.5
Emb = 0

C= ~~34~~ 64
F= 0

5+90

51.9 — 39.16 — ~~40.43~~

Exc = ~~40.4~~ 47.5
Emb = 0

C= ~~257~~ 301
F= 0

5+86

53.1 — 39.05 — ~~40.31~~

C= ~~289~~ 339
F= 0

8+50

51.5 — 40.21 — ~~41.16~~

Exc = ~~35.2~~ 47.7
Emb = ~~3.2~~ 0.2

C= ~~99~~ 178
F= ~~8~~ 0

8+36

47.3 — 45.83 — ~~46.81~~

Exc = ~~63.4~~ 86.4
Emb = ~~5.6~~ 0.9

C= ~~37~~ 56
F= ~~18~~ 2

8+11

52.4 — 45.15 — ~~46.18~~

Exc = ~~25.8~~ 35.9
Emb = 0

C= 100 130
F= 0

8+00

46.7 — 44.85 — ~~45.91~~

Exc = ~~7~~ 13.6
Emb = ~~20.4~~ 12.4

C= ~~24~~ 46
F= 0

7+84

41.3 — 44.44 — ~~45.51~~

Exc = 0
Emb = ~~88.2~~ 50.4

C= 0
F= ~~69~~ 42

7+50

40.21 — 43.50 — ~~44.66~~

Exc = 0
Emb = ~~46.2~~ 23.8

C= 0
F= ~~71~~ 38

9+11

63.2 — 47.86 — ~~45.60~~

Exc = ~~124.2~~ 140.5
Emb = 0

C= ~~388~~ 397
F= 0

9+00

58.4 — 47.56 — ~~48.41~~

Exc = ~~226.2~~ 261.1
Emb = 0

C= ~~264~~ 297
F= 0

8+75

55.9 — 46.88 — ~~47.78~~

Exc = ~~97.8~~ 105.6
Emb = 0

C= ~~226~~ 267
F= 0

8+63.96

54.9 — 46.58 — ~~47.51~~

Exc = ~~83.2~~ 98.0
Emb = ~~0.2~~ 0

C= ~~223~~ 251
F= 0

RAILROAD X-SECTIONS

PLATE 9—CROSS SECTION O. P. R. & R. E. STANDARD
KEUFFEL & ESSER CO., NEW YORK.

4325.71

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	HAW.	NR(19C	1935	72	72

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

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

10+00
Exc = 114.8 ~~96.2~~
Emb = 0
552 — 50.27 ~~50.21~~
C = 142 ~~121~~
F = 0

9+75
Exc = 103.1 ~~85.2~~
Emb = 0
552.5 — 49.59 ~~50.28~~
C = 106 ~~87~~
F = 0

9+50
Exc = 152.8 ~~133.8~~
Emb = 0
529 — 48.92 ~~49.66~~
C = 118 ~~97~~
F = 0

9+25
Exc = 156.6 ~~142.6~~
Emb = 0
552.9 — 48.24 ~~49.03~~
C = 212 ~~192~~
F = 0

11+50
Exc = 513.4 ~~491.2~~
Emb = 0
54.33 ~~54.66~~
C = 369 ~~352~~
F = 0

11+14.50
Exc = 639.2 ~~607.6~~
Emb = 0
53.37 ~~53.77~~
C = 412 ~~396~~
F = 0

10+75
Exc = 412.5 ~~385.7~~
Emb = 0
52.30 ~~52.78~~
C = 662 ~~634~~
F = 0

10+50
Exc = 338.0 ~~313.8~~
Emb = 0
51.62 ~~52.16~~
C = 419 ~~399~~
F = 0

10+25
Exc = 705.6 ~~685.8~~
Emb = 0
50.95 ~~51.53~~
C = 307 ~~279~~
F = 0

P.T. 13+02.34
Exc = 9.6 ~~7.6~~
Emb = ~~5.6~~ 4.1
552 — 58.46
C = 10
F = 6

12+75
Exc = 4.7 ~~2.4~~
Emb = ~~2.2~~ 1.9
557.5 — 57.72 ~~57.78~~
C = ~~5~~ 9
F = ~~4~~ 7

12+50
Exc = 0
Emb = ~~1.2~~ 13.4
557 — 57.04 ~~57.16~~
C = 0
F = 15

12+25
Exc = 51 ~~3.5~~
Emb = ~~14.5~~ 18
550 — 56.37 ~~56.55~~
C = 0
F = ~~26~~ 19

12+00
Exc = 44.0 ~~38.2~~
Emb = ~~2.5~~ 1.8
556.4 — 55.69 ~~55.91~~
C = ~~8~~ 11
F = ~~5~~ 1

11+75
Exc = 209.7 ~~189.2~~
Emb = 0
557.6 — 55.01 ~~55.28~~
C = ~~76~~ 84
F = 0

RAILROAD X-SECTIONS

PLATE 1—CROSS SECTION O. P.R. & R. A. STANDARD
KRUPPEL & ESSLER CO., NEW YORK.

4325.72