FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
5	NEB.	88-C	1922	1	23-PRELIM. 32-FINAL

INDEX OF SHEETS

PRELIMINARY

SHEET No. 1. TITLE PAGE.
" " 2. TYPICAL CROSS-SECTION OF IMPROVEMENT SECTION A & C
" " 3 PLAN AND PROFILE STA. -1+00-A TO STA. 30+00-A
" " 4 " " " " 30+00-A " " 60+00-A
" " 5 " " " " 60+00-A " " 85+00
" " 6 " " " " 85+00 " " 95+00
" " 7 " " " " 95+00 " " 102+90
" " 8-21 CROSS SECTIONS
" " 21-23 OVERHAUL
" " 24 DETAILS OF STANDARD PIPE CULVERTS 414-B
" " 25 DITCH CROSSINGS AND HIGHWAY INTERSECTIONS 415-A
" " 26 MISCELANEOUS STRUCTURES 416-B
" " 27 DETAILS OF CONCRETE BOX CULVERTS 1801
" " 28 " " " " 1801
" " 29 " " " " 1800

FINAL

" " 1 TITLE PAGE
" " 2 TYPICAL CROSS-SECTION OF IMPROVEMENT SECTION A & C
" " 3 PLAN AND PROFILE STA. -1+00-A TO STA. 30+00-A
" " 4 " " " " 30+00-A " " 60+00-A
" " 5 " " " " 60+00-A " " 85+00
" " 6 " " " " 85+00 " " 95+00
" " 7 " " " " 95+00 " " 102+90
" " 8-30 CROSS SECTIONS
" " 31-32 OVERHAUL

STATE OF NEBRASKA
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ROADS AND BRIDGES

PLAN AND PROFILE OF PROPOSED

STATE HIGHWAY

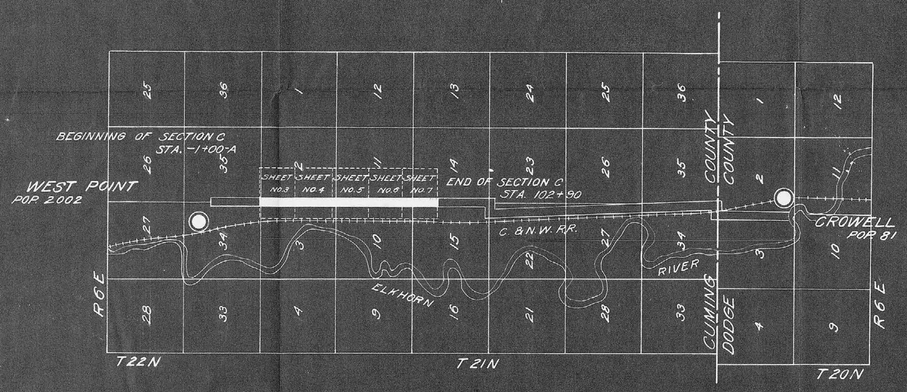
FEDERAL AID PROJECT

WEST POINT — CROWELL

CUMING COUNTY

SCALES (PLAN 1 IN. = 100 FT.
(PROFILE HOR. 1 IN. = 400 FT., VERT. = 1 IN. = 10 FT.

SECTION — C



CONVENTIONAL SIGNS

STATE AND NATIONAL LINE
COUNTY LINE
CITY OR VILLAGE
TOWNSHIP LINE
SECTION LINE
GRANT LINE
FENCE LINE
GUARD RAIL
UNFENCED PROPERTY
RIGHT OF WAY LINE
TRAVELED WAY
RAILROADS
RETAINING WALL
BASE OR SURVEY LINE

LEVEE
CULVERTS
DROP INLET
TROLLEY POLE
POWER POLE
TELEPHONE OR TELEGRAPH POLE
MARSH
HEDGE
GROUND ELEVATION ... DATUM ... FINE
GRADE ELEVATION ... DATUM ... FINE
TREES

LAYOUT SCALE 1 INCH = 1 MILE

EXCEPTIONS

FROM STA.	TO STA.	INCLUDED IN THIS LAYOUT.

EQUATIONS
STA. 20+18-A = STA. 20+00-A
STA. 60+20.7-A = STA. 35+99.8

TOTAL LENGTH OF EXCEPTIONS FEET
TOTAL NET LENGTH OF SECTION C = 12788.9 FEET 2.422 MILES

APPROVED Feb. 15, 1922
Leo Johnson
STATE ENGINEER

RECOMMENDED FOR APPROVAL ____ 192
DISTRICT ENGINEER DISTRICT NO. 5

RECOMMENDED FOR APPROVAL ____ 192
CHIEF ENGINEER BUREAU OF PUBLIC ROADS

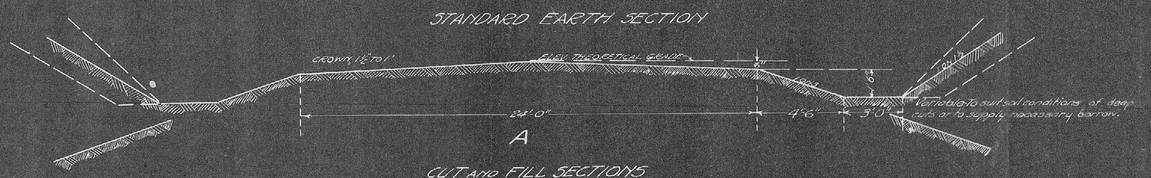
APPROVED
DIRECTOR BUREAU OF PUBLIC ROADS

IMPERIAL" TRACING CLOTH
K & E CO., N. Y.

PROJECT NUMBER	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
S	NEB.	88C	42	2	29

TYPICAL CROSS SECTIONS OF IMPROVEMENT

STANDARD EARTH SECTION



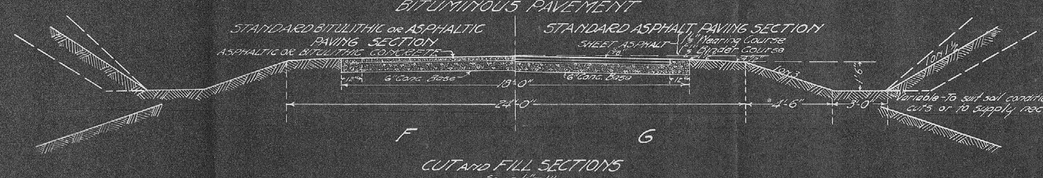
A

CUT AND FILL SECTIONS
SCALE 1/8"=1'

BITUMINOUS PAVEMENT

STANDARD BITULITHIC or ASPHALTIC PAVING SECTION

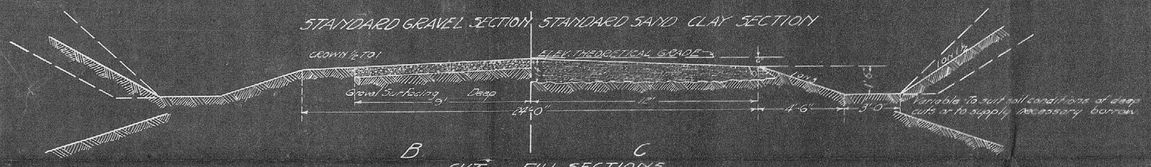
STANDARD ASPHALT PAVING SECTION



F G

CUT AND FILL SECTIONS
SCALE 1/8"=1'

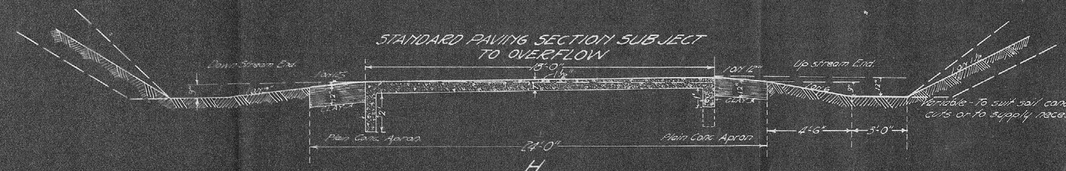
STANDARD GRAVEL SECTION, STANDARD SAND CLAY SECTION



B C

CUT AND FILL SECTIONS.
SCALE 1/8"=1'

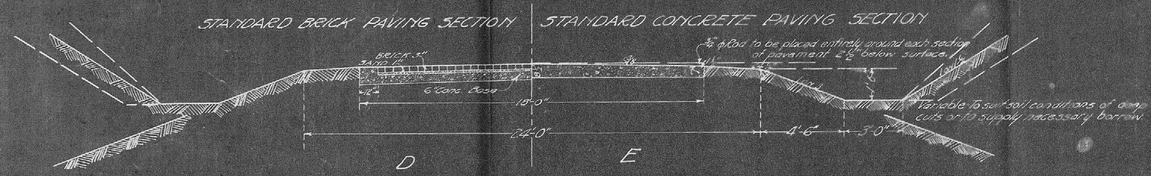
STANDARD PAVING SECTION SUBJECT TO OVERFLOW



H

CUT AND FILL SECTIONS
SCALE 1/8"=1'

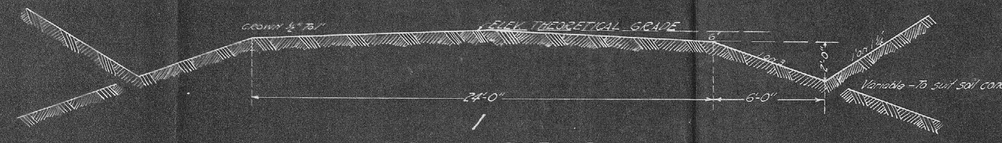
STANDARD BRICK PAVING SECTION | STANDARD CONCRETE PAVING SECTION



D E

CUT AND FILL SECTIONS
SCALE 1/8"=1'

STANDARD MAINTAINANCE SECTION

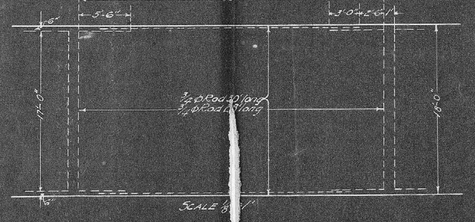


I

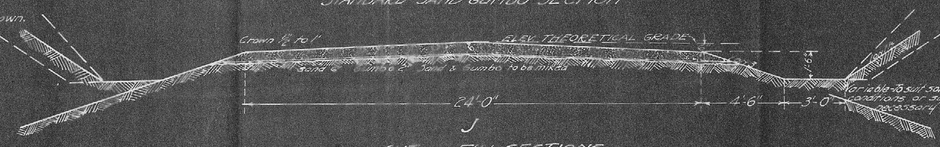
CUT AND FILL SECTIONS
SCALE 1/8"=1'

PLAN OF CONCRETE PAVEMENT

Note-No Expansion Joints are provided. Entire pavement to be reinforced as shown.



STANDARD SAND GUMBO SECTION



J

CUT AND FILL SECTIONS
SCALE 1/8"=1'

STATE OF NEBRASKA
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ROADS AND BRIDGES

PLAN OF

STANDARD CROSS SECTIONS

APPROVED BY _____

OFFICE ENGINEER.

STATE ENGINEER.

2

5 88-C 1922 3 29

PLAN	BY	DATE
SURVEYED	A.L.O.	
PLOTTED	A.L.O.	
NOTE BOOK ALIGNMENT CHECKED	A.L.O.	
PT. OF MAY CHECKED	A.L.O.	
NO.	A.L.O.	

Sec. 35-T21N-R6E

Sec. 2

Cemetery

-1+00 A

+86 Cor. F.B.&L. 0+00 A

0+21.7 A Sec. Cor.

+33 Iron Fence

Iron Fence

±20

5 A

+70 Priv. Road

+00 Build Std. 18"X28' Conc. Pipe Plan 414-B

10 A

House

13+03 A 0°20' Deft.

F.P.# 3128

Build +00 20 Ton Conc. Box Cul. 6'X3'X24' Plan 1801

Channel

15 A

20 A

+25 Build Std. 24"X24' Conc. Pipe Plan 414-B

18"X18' Corr. iron pipe-Remove

25 A

F.P.&L. 25+30.3 A Sec. Cor. 0°30' L Deft.

T.P.# 3115

30 A

Mag. S. 9°30' E

41.0

9°24'

9°18'

9°14'

3.9°30' E

C'ty Limits of West Point 0+38 6" Tree 6" Iron pipe

Sec. 34

Sec. 3-T21N-R6E

18"X18" Corr. iron pipe-Remove

+00 8'X3' Wooden Box Culvert-Remove

F.P.&L. Pole

1+22 F.P.&L.

+70 Priv. Road

House

100'

+30

1808
1819

1.12

57
715

801

109
1045

1145

1743
1466

1.19

B.M. Elev. = 2551.37 Spike in T.P. Snub Pole R. Sta. 0+30 A

B.M. Elev. = 2528.43 Spike in T.P. # 3110 L. Sta. 25+15

V.C. 200'
Elev. = 2550.91

+1.31%

-3.34%

V.C. 200'
Elev. = 2525.3

0.0%

+1.0%

V.C. 100'
Elev. = 2530.9

-1.4%

0.0%

+1.0%

V.C. 200'
Elev. = 2529.2

+5.0%

Equation Sta. 26+42.41 = Sta. 26+00 A

PROFILE	BY	DATE
SURVEYED	A.L.O.	
PLOTTED	A.L.O.	
NOTE BOOK GRADES CHECKED	A.L.O.	
PAGE PT. OF MAY CHECKED	A.L.O.	
NO. STRUCTURE NO. & TAB CHKD.	A.L.O.	

Datum Elev. = 2490

-1+00 A 0 A 1 A 2 A 3 A 4 A 5 A 6 A +40 +80 7 A +32 8 A +10 9 A 10 A 11 A 12 A 13 A +55 +80 +80 14 A +40 15 A 16 A 17 A 18 A 19 A 20 A 21 A 22 A 23 A 24 A 25 A 26 A +18 27 A 28 A +29 A 30 A

EUGENE DIETZGEN CO. CHGO - N.Y.

PLATE I-PLAN-PROFILE B. P. R. STANDARD

West Point - Crowell
Cuming County

PLAN — DRAFTED A.L.O. — PLOTTED A.L.O. — NOTE BOOK — No. — ALIGNMENT CHECKED A.L.O. — RT. OF WAY CHECKED A.L.O.

PROFILE — DRAFTED A.L.O. — PLOTTED A.L.O. — NOTE BOOK — No. — GRADES CHECKED A.L.O. — B.M.'s NOTED A.L.O. — STRUCTURE LOCATIONS CHECKED A.L.O.

N

30+A 35+A 40+A 45+A 50+A 55+A 60+A

S 9°56' E — 402 — 125 Build Std. 30"X 50' Conc. Pipe Plan 414-B — 100 Build Std. 20 Ton Con. Box Culv. 4'X5'X129' Plan 1801 — 100 Build Std. 24"X132' Conc. Pipe Plan 414-B

Sec. 2-21-6 — Sec. 11-21-6 — Sec. 3-21-6 — Sec. 10-21-6

Sec. Line Iron Pin 1329.4 — 52+32.4 — 1801 Defl. — Nail in root of large cottonwood tree. — Nail in root of tree stump — Nail in root of tree stump — 100 Build Std. 24"X40' Conc. Pipe Plan 414-B

S 11°36' E

EXCAVATION 5754 CU. YDS.
EMBANKMENT 5015 CU. YDS.
WASTE ..... CU. YDS.
BORROW ..... CU. YDS.
BALANCE 1.15

EXCAVATION 1991
EMBANKMENT 2351
BALANCE 1.10

EXCAVATION 2477
EMBANKMENT 1599
BALANCE 1.18

B.M. Elev. = 2557.52 Nail Top Hub L. Sta. 32+

B.M. Elev. = 2541.89 Nail in Root of Tree L. Sta. 46+00

B.M. Elev. = 2551.06 Nail Top Hub on Fence Line L. Sta. 58+15

V.C. 300'
Elev. = 2559.2

+5.0%

-3.6%

V.C. 200'
Elev. = 2524.2

-0.63%

V.C. 400'
Elev. = 2520.4

+4.8%

V.C. 200'
Elev. = 2554.0

-0.4%

DATUM ELEV. = 2490

| | | |

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5		88-C	1922	5	29

PLAN
DRAWN BY A.L.O
PLOTTED A.L.O
NOTE BOOK ALIGNMENT CHECKED A.L.O
No. RT. OF WAY CHECKED A.L.O
DATE

PROFILE
DRAWN BY A.L.O
PLOTTED A.L.O
NOTE BOOK GRADES CHECKED A.L.O
No. B.M.'s NOTED A.L.O
DATE

60-A | 60+20.7-A

35+33.8

40 | +32

+51 Build Std. 24" X 48" Conc. Pipe Plan 414-B

45

50

Cor. F.P. Blazed -0.9 Deft.

S11°30'E

+00 Priv. Rd.

House

100'

+20

18" X 18' Corr. iron pipe - Remove

+28 +08

Nail in blazed cottonwood tree

55

+88 Build Std. 30" X 24" Conc. Pipe Plan 414-B

60

65

S11°30'E

24" X 18' Corr. iron pipe - Remove

EXCAVATION 899 CU. YDS.
EMBANKMENT 816 CU. YDS.
WASTE CU. YDS.
BORROW CU. YDS.
BALANCE 1.13

372
846
1.14

38
3098
3682

1089
948
1.15

B.M. Elev. = 2542.45 Spike in X-Fence Post L. Sta. 40+75

B.M. Elev. = 2529.71 Spike in T.P. # 3085 R. Sta. 62+95

V.C. 200'
Elev. = 2549.4

V.C. 200'
Elev. = 2535.5

V.C. 300'
Elev. = 2522.1

-0.4%

-2.4%

-0.28%

-2.0%

+2.3%

Equation Sta. 00+20.7-A = Sta. 81+39.8

Datum Elev. = 2490

2553.7 | 30.5 | 30.42 | 5.37 | 30.42 | 5.14 | 30.38 | 4.28 | 30.38 | 3.89 | 3.71 | 3.98 | 4.02 | 4.63 | 4.34 | 4.39 | 4.05 | 4.15 | 3.93 | 4.09 | 3.75 | 3.31 | 3.61 | 3.79 | 3.50 | 3.623 | 3.40 | 3.603 | 3.29 | 3.449 | 3.25 | 3.375 | 3.22 | 3.079 | 3.21 | 3.508 | 3.27 | 3.480 | 3.38 | 34.05 | 3.42 | 3.39 | 3.435 | 3.18 | 3.445 | 3.32 | 3.445 | 3.20 | 3.424 | 3.16 | 33.96 | 3.07 | 33.68 | 3.02 | 33.90 | 3.08 | 3.312 | 3.03 | 32.84 | 3.09 | 32.58 | 3.45 | 3.469 | 3.42 | 3.422 | 3.33 | 31.14 | 3.21 | 30.14 | 2.87 | 29.14 | 2.62 | 27.14 | 2.32 | 25.14 | 2.31 | 23.13 | 2.30 | 23.99 | 2.41 | 25.55 | 2.57 | 27.85 | 2.58 | 30.15 | 30.2 | 3.25 | 32.15 | 2538.4 | 34.35

60-A | +20.7 | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 1 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 2 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 3 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 4 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 5 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 6 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 7 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 8 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 9 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 50 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 1 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 2 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 3 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 4 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 5 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 6 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 7 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 8 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 9 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 60 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 1 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 2 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 3 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 4 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 65

West Point - Crowell
Cuming County

PLATE 1—PLAN-PROFILE U. P. R. R. Y. STANDARD
THE C. P. PRAGE COMPANY CHICAGO

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	88-C	1922	6	29

PLAN
SURVEYED: BY
PLOTTED: A.L.O.
NOTE BOOK ALIGNMENT CHECKED: A.L.O.
BK. OF WAY CHECKED: A.L.O.
No.

Z

Ditch
Elev. 4154

Sec. 11-21-6

Sec. 14-21-6

Sec. 10-21-6

Sec. 15-21-6

65'

T.23 Lane

+30 Nail in blazed cor. fence post

110 POT

5°-0'

S11°36'E

33.96

33.30

Nail in base of T.P. # 3006

Hub

Nail in base of T.P. # 3005

Hub

75 POT

Nail in base of blazed stump

S9°28'E

33.39

80'

±Nail in Bl. cor. F.P. +34

80-100

Build 36" Std. 18"x40' Conc. Pipe

+00 Nail in Bl. Fence Crossing Plan

12.85

+23

+47

Steel I-Beam Bridge 24' Span, 16' Roadway, County to build Conc. Wings and Abutments Plan 1808

85

+10 Build Std. 18"x24' Conc. Pipe Plan 414-B

30

T.30 Drive

35

+41

90'

40'

School

Sec. Line

Hub

Channel

Plum thicket

+10 18"x24' Conc. Pipe - Remove

+27

+00 Drive

2°08' R. Dev.

EXCAVATION 445
EMBANKMENT 385
WASTE
BORROW
BALANCE 1.15

EXCAVATION 289
EMBANKMENT 254
WASTE
BORROW
BALANCE 1.15

EXCAVATION 1120
EMBANKMENT 984
WASTE
BORROW
BALANCE 1.15

EXCAVATION 113
EMBANKMENT 857
WASTE
BORROW 915
BALANCE

EXCAVATION 917
EMBANKMENT 779
WASTE
BORROW
BALANCE 1.17

B.M. Elev. = 2591.08 Nail in X Fence Post R. Sta. 67+90

B.M. Elev. = 2532.15 N.W. Cor. of Bk. Floor Sta. 82+25

V.C. 200'
Elev. = 2543.38

+2.3%

-0.64%

-1.9%

0.0%

-1.4%

0.0%

+3.05%

V.C. 200'
Elev. = 2525.4

| | | |

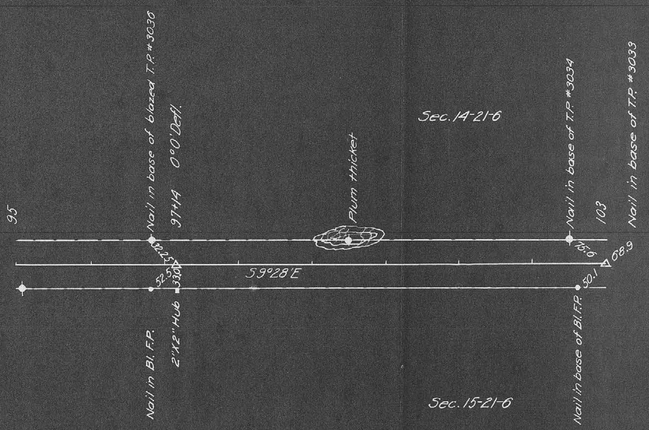
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	88-C	1922	7	29

PLAN

NOTE BOOK

NO.

SURVEYED A.L.D.
PLOTTED A.L.D.
ALIGNMENT CHECKED A.L.D.
ET. OF WAY CHECKED A.L.D.
BY
DATE



EXC. 1325
EMBANK. 1106
WASTE
BORROW
BALANCE 1.19

B.M. Elev = 2544.68 Spike in T.P. #3033 L. Sta. 103+62

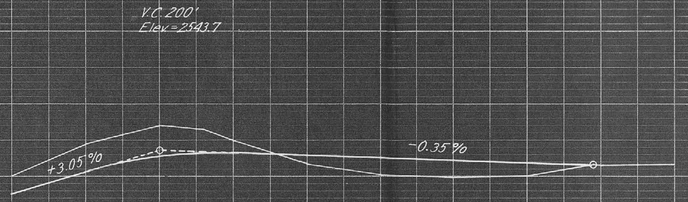
PROFILE

SURVEYED
PLOTTED
GRADES CHECKED
B.M.'S NOTED
STRUCTURE DIMENSIONS CHECKED

NOTE BOOK

NO.

BY
DATE
A.L.D.
A.L.D.
A.L.D.
A.L.D.
A.L.D.



2540.0	1444	1770	1934	2250	2418	2701	3328	3400	3417	3417	
2536	1907	1305	1931	4335	4330	4265	4213	4195	4116	4117	
DATUM ELEV = 2490											
35	6	7	00	8	9	100	1	2	93	104	

PLATE 1—PLAN-PROFILE C. P. R. R. E. STANDARD
THE C. E. PEASE COMPANY, CHICAGO

West Point - Crowell
Cuming County

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	BSC 1912		8	29

FINAL SURVEY	SURVEYED	BY	DATE
	PLOTTED	A.L.O.	
NOTE BOOK	TEMPLATE	A.L.O.	
	FIELD AREAS CHECKED	A.L.O.	
NO.		A.L.O.	

ORIGINAL SURVEY	SURVEYED	BY	DATE
	PLOTTED	A.L.O.	
NOTE BOOK	TEMPLATE	A.L.O.	
	FIELD AREAS CHECKED	A.L.O.	
NO.		A.L.O.	

26.2
2525.2
0+40-A
C=0
F=3.8

27.57
2525.8
0-A
C=0
F=3.8

31.21
2526.1
5-A
C=0
F=1.22

35.16
2531.5
4-A
C=0
F=1.87

39.02
2537.0
3-A
C=0
F=3.41

43.32
2544.1
2-A
C=2.42
F=2.1

1.50
2547.7
1+50-A
C=4.1
F=2.1

45.27
2550.6
1-A
C=2.42
F=2.1

48.91
2551.3
0+50-A
C=1.42
F=2.1

49.15
2550.7
0+00-A
C=3.25
F=2.1

49.0
2549.6
-1+00-A
C=3.4
F=2.1

2525.0
10-A
C=10
F=2.7

2524.2
9-A
C=2
F=2.25

2524.1
8+70-A
C=2
F=2.25

2524.0
8-A
C=2
F=3.0

2524.2
7+25-A
C=2
F=2.41

2524.4
7-A
C=2
F=4.0

2524.7
6+80-A
C=3
F=3.0

West Point - Crowell
Cuming County

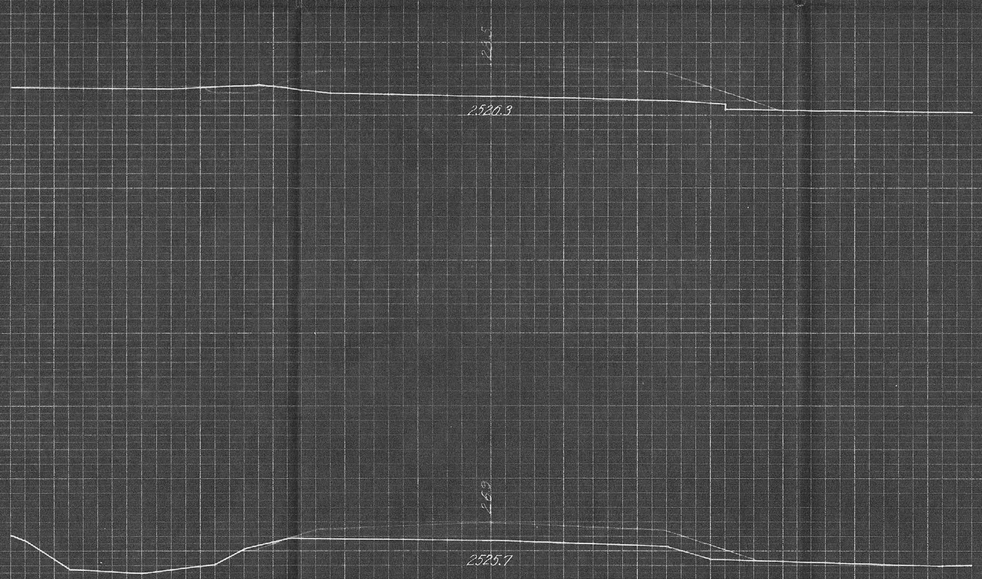
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	88-C	1972	3	29

FINAL SURVEY
NOTE BOOK
NO.

	BY	DATE
CHECKED	ALO	
PLOTTED	ALO	
TEMPLATE	ALO	
RIM CHECKED	ALO	
LINES CHECKED	ALO	

ORIGINAL SURVEY
NOTE BOOK
NO.

	BY	DATE
INVERTED	ALO	
PLOTTED	ALO	
TEMPLATE	ALO	
RIM	ALO	
LINES CHECKED	ALO	



12-A
C-3
F-46

11-A
C-1
F-27

West Point - Crowell
Cuming County

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	88-C	1922	10	29

FINAL SURVEY	BY	DATE
SURVEYED	A.L.O.	
PLOTTED	A.L.O.	
NOTE BOOK	A.L.O.	
TEMPLATE	A.L.O.	
AREAS CHECKED	A.L.O.	
NO.		

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

West Point - Crowell
Cuming County

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	85-D	1922	11	29

FINAL SURVEY		BY	DATE
NO.			
NOTE BOOK			
TEMP. ATT.	A.L.D.		
AREAS	A.L.D.		
AREAS CHECKED	A.L.D.		

ORIGINAL SURVEY		BY	DATE
NO.			
NOTE BOOK			
SURVEYED	A.L.D.		
PLOTTED	A.L.D.		
TEMP. ATT.	A.L.D.		
AREAS	A.L.D.		
AREAS CHECKED	A.L.D.		

2540.5

29+50-A
C=23
F=0

2540.5

29-A
C=0
F=1.7

2537.3

28+80-A
C=0
F=1.2

2534.7

28-A
C=0
F=1.6

2533.0

27+50-A
C=0
F=1.2.1

2531.5

27-A
C=0
F=1.1

Equation
28+18-A = 26+00
C=1
F=1.8

2529.3

26-A
C=1
F=1

2527.0

25-A
C=1
F=0

2550.7

35-A
C=1.65
F=0

2559.9

34+50-A
C=1.33
F=0

2558.0

34-A
C=1.35
F=0

2559.8

33-A
C=1.304
F=0

2560.1

32-A
C=1.30
F=0

2558.5

31+50-A
C=2.10
F=0

2557.0

31-A
C=1.95
F=0

2554.4

30+50-A
C=2.20
F=0

2550.7

30-A
C=1.17
F=0

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	88-C	1952	12	29

FINAL SURVEY	BY	DATE
SURVEYED	A.L.G.	
PLOTTED	A.L.G.	
TEMPLATE	A.L.G.	
NOTE BOOK	A.L.G.	
AREAS CHECKED	A.L.G.	
NO.		

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

2519.4
40-A
C=0
F=110

2519.1
39-A
C=0
F=42

2519.2
38-A
C=0
F=60

2519.3
37+70-A
C=0
F=14

2518.6
37+25-A
C=0
F=41

2519.4
37-A
C=0
F=33

2524.1
36+50-A
C=0
F=42

2533.1
36-A
C=0
F=18

2543.6
35+50-A
C=0
F=0

2529.1
46-A
C=10
F=F

2525.1
45+55-A
C=32
F=14

2516.4
45-A
C=0
F=129

2516.2
44+40-A
C=0
F=208

2516.3
44-A
C=0
F=213

2517.5
43-A
C=0
F=191

2518.1
42-A
C=0
F=122

2518.5
41-A
C=0
F=18

West Point - Crowell
Cuming County

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	88C	1923	13	20

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

BY	
A.L.O.	
A.L.O.	
A.L.O.	
A.L.O.	
A.L.O.	

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

BY	
A.L.O.	
A.L.O.	
A.L.O.	
A.L.O.	
A.L.O.	

42.0

2540.4

48+75-A
C = 20
F = 22

53.2

2542.1

48+30-A
C = 10.2
F = 0

38.2

2542.1

48-A
C = 3.2
F = 0

35.4

2541.2

47+60-A
C = 33.1
F = 2

33.6

2536.0

47-A
C = 17.0
F = 0

31.2

2532.5

46+50-A
C = 1.2
F = 2

53.5

2553.8

52+50-A
C = 5.2
F = 0

53.2

2554.0

52-A
C = 4.5
F = 0

42.1

2553.8

51-A
C = 10.1
F = 0

41.1

2551.0

50-A
C = 2.1.0
F = 0

41.6

2548.0

49+50-A
C = 16.0
F = 0

44.1

2545.0

49+25-A
C = 7.1
F = 0

43.1

2542.0

49-A
C = 2.1.7
F = 2.1.7

West Point - Crowell
Cuming County

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	BRO	1972	14	29

FINAL SURVEY	BY	DATE
SURVEYED	M.L.O.	
PLOTTED	M.L.O.	
NOTE BOOK TEMP. ATT.	M.L.O.	
NO. AREAS CHECKED	M.L.O.	

ORIGINAL SURVEY	BY	DATE
SURVEYED	M.L.O.	
PLOTTED	M.L.O.	
NOTE BOOK TEMP. ATT.	M.L.O.	
NO. AREAS CHECKED	M.L.O.	

5.16
2548.9
58+35A
C=1
F=0.8

5.18
2548.9
58+A
C=1
F=0.1

5.52
2548.3
57+80A
C=0
F=1.2

5.7
2545.4
57+A
C=0
F=2.2.0

5.2
2548.7
56+A
C=0
F=3.0

5.23
2552.0
55+A
C=2.6
F=1.4

5.23
2552.4
54+A
C=2.2
F=1.1

5.6
2553.1
53+A
C=2.5
F=1.4

4.14
2548.2
37
C=1.8
F=0.5

4.13
2551.2
36
C=1.2.0
F=1.1

5.2.1
2553.7
Equation
60+20.7A=
35+39.8
C=1.7.2
F=1.0

2553.7
60+A
C=1.8.0
F=1.0

5.2.8
2552.5
59+30+A
C=1.0.9
F=1.0

5.0.2
2550.4
59+A
C=2.7
F=1.1

5.1.1
2548.5
58+50+A
C=1
F=1.2

West Point - Crowell
Cuming County

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	NEB.	85-C	1929	15	23

FINAL SURVEY	BY	DATE
SURVEYED	A.L.Q.	
PLOTTED	A.L.Q.	
TEX-LITE	A.L.Q.	
NOTE BOOK	A.L.Q.	
AREAS CHECKED	A.L.Q.	
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED	A.L.Q.	
PLOTTED	A.L.Q.	
TEX-LITE	A.L.Q.	
NOTE BOOK	A.L.Q.	
AREAS CHECKED	A.L.Q.	
NO.		

2537.5
41
C=5
F=18

2538.9
10+50
C=3
F=36

2539.3
10+10
C=3
F=26

2540.5
40
C=15
F=19

2543.4
39
C=12
F=12

2545.6
38
C=16
F=20

2548.5
37+70
C=17
F=8

2549.9
37+33
C=24
F=8

2532.4
43+00
C=0
F=12

2532.4
43+50
C=0
F=154

2532.5
43+45
C=0
F=181

2532.9
43
C=0
F=105

2534.0
42+50
C=0
F=70

2535.0
42
C=0
F=34

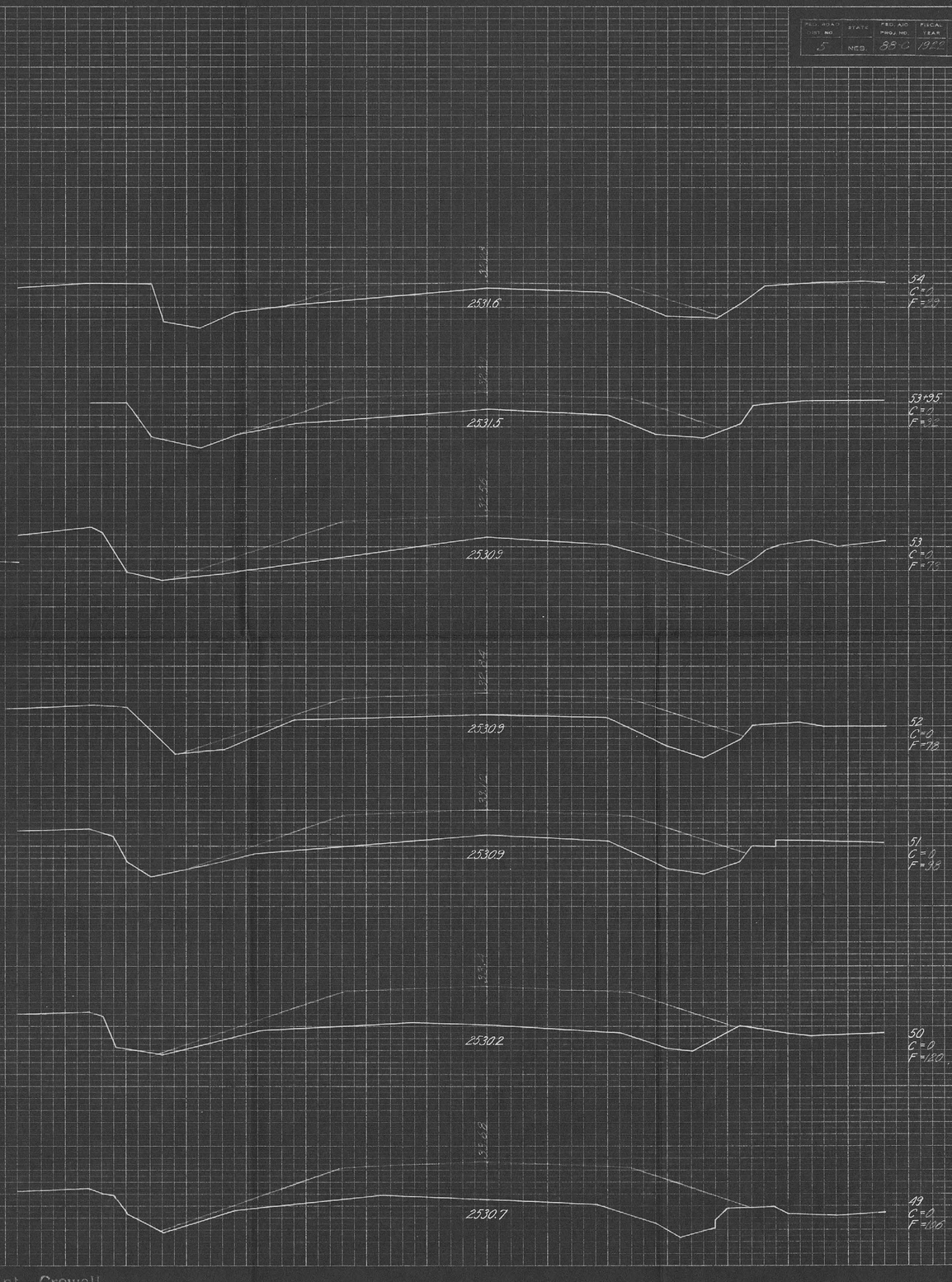
2536.1
41+50
C=7
F=47

West Point - Crowell
Cuming County

PROJECT DIST NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	88 C	1972	16	29

ORIGINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS CHECKED		
		41.0	
		41.0	
		41.0	
		41.0	
		41.0	

FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS CHECKED		
		A.L.O.	
		A.L.O.	
		A.L.O.	
		A.L.O.	
		A.L.O.	

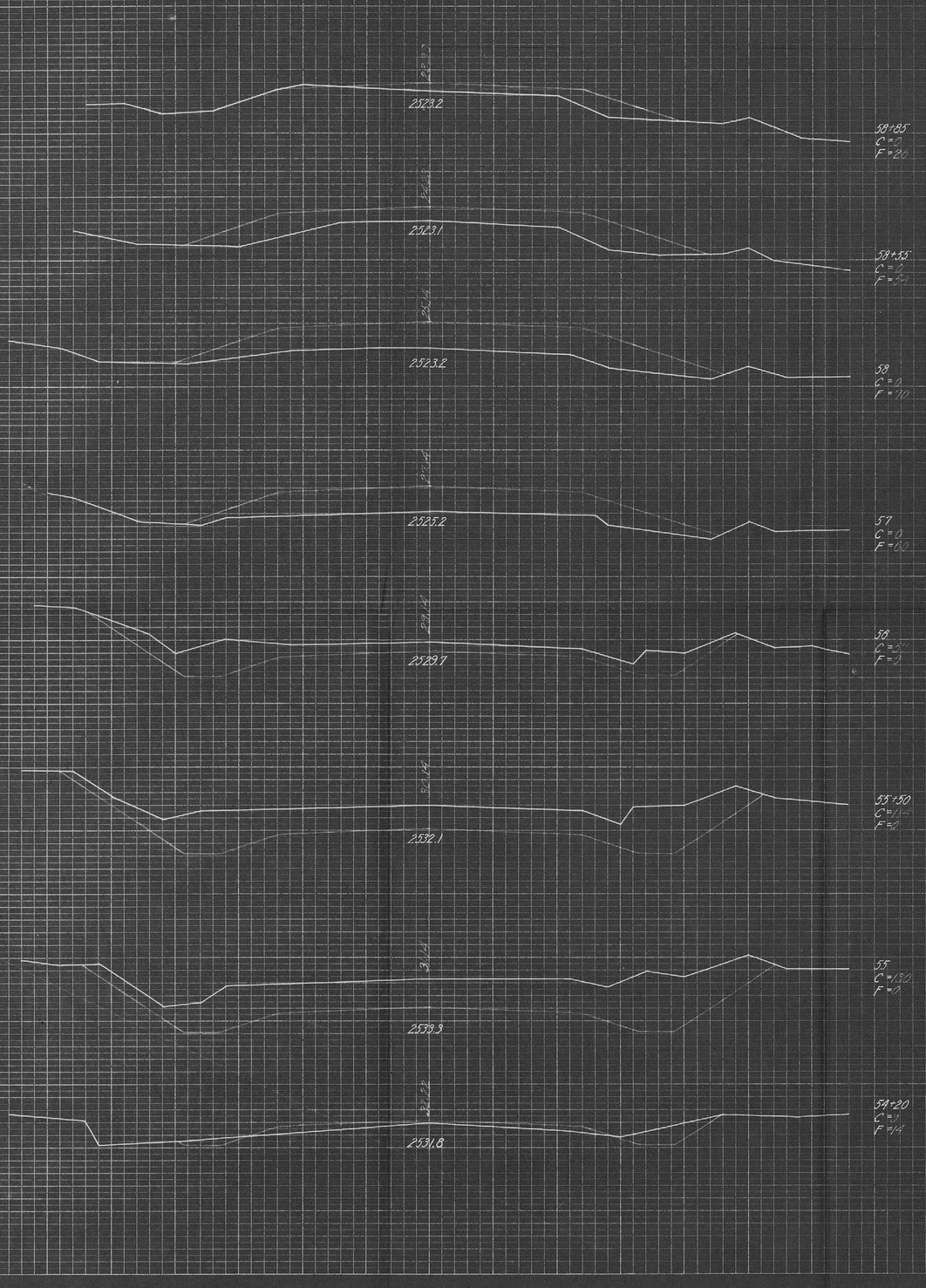


West Point - Crowell
Cuming County

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	S-S-3	1922	17	29

FINAL SURVEY		BY	DATE
	SURVEYED	A.L.O.	
	PLOTTED	A.L.O.	
NOTE BOOK	TEMPLATE	A.L.O.	
	AREAS	A.L.O.	
NO.	AREAS CHECKED	A.L.O.	

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

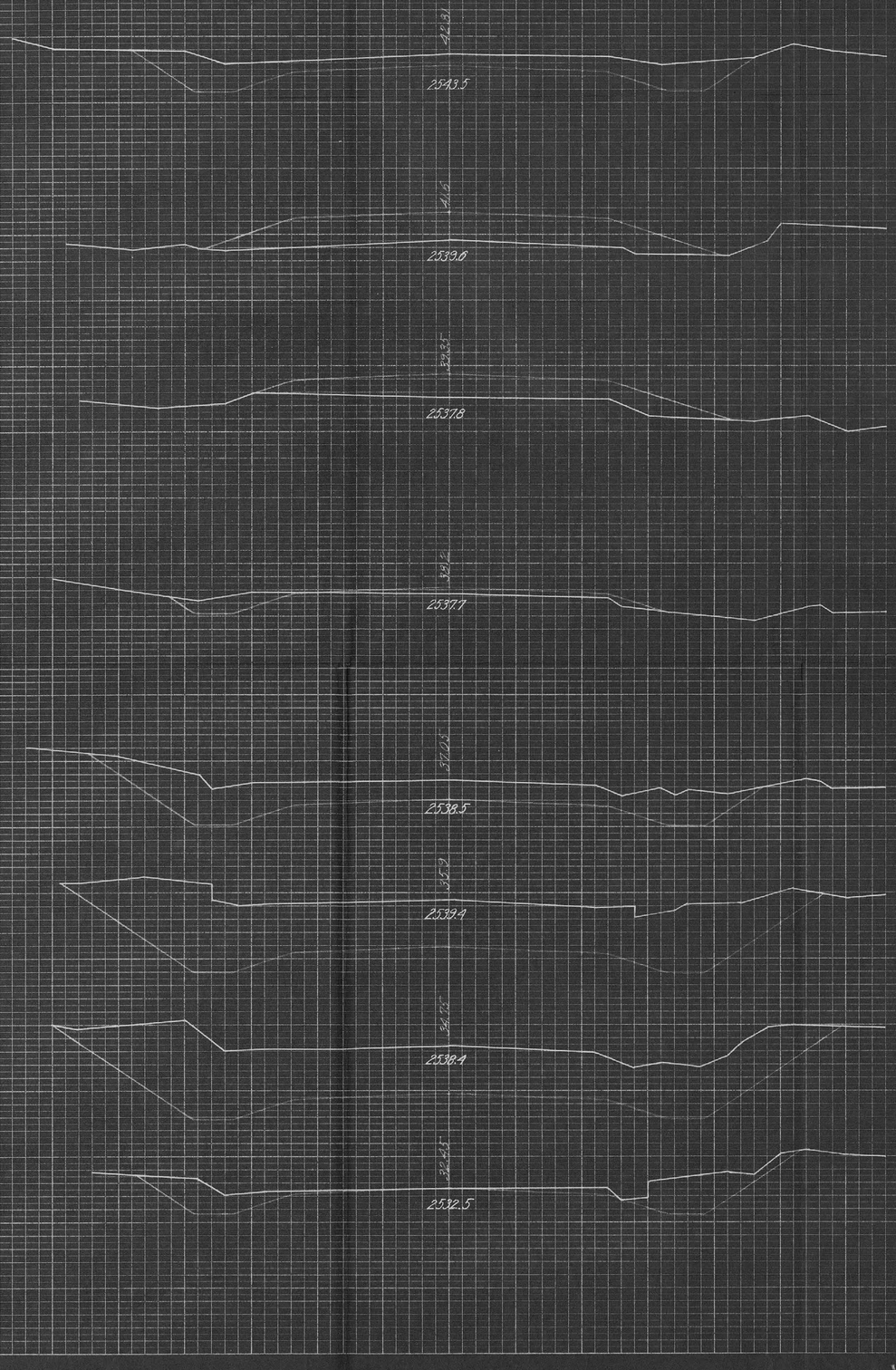


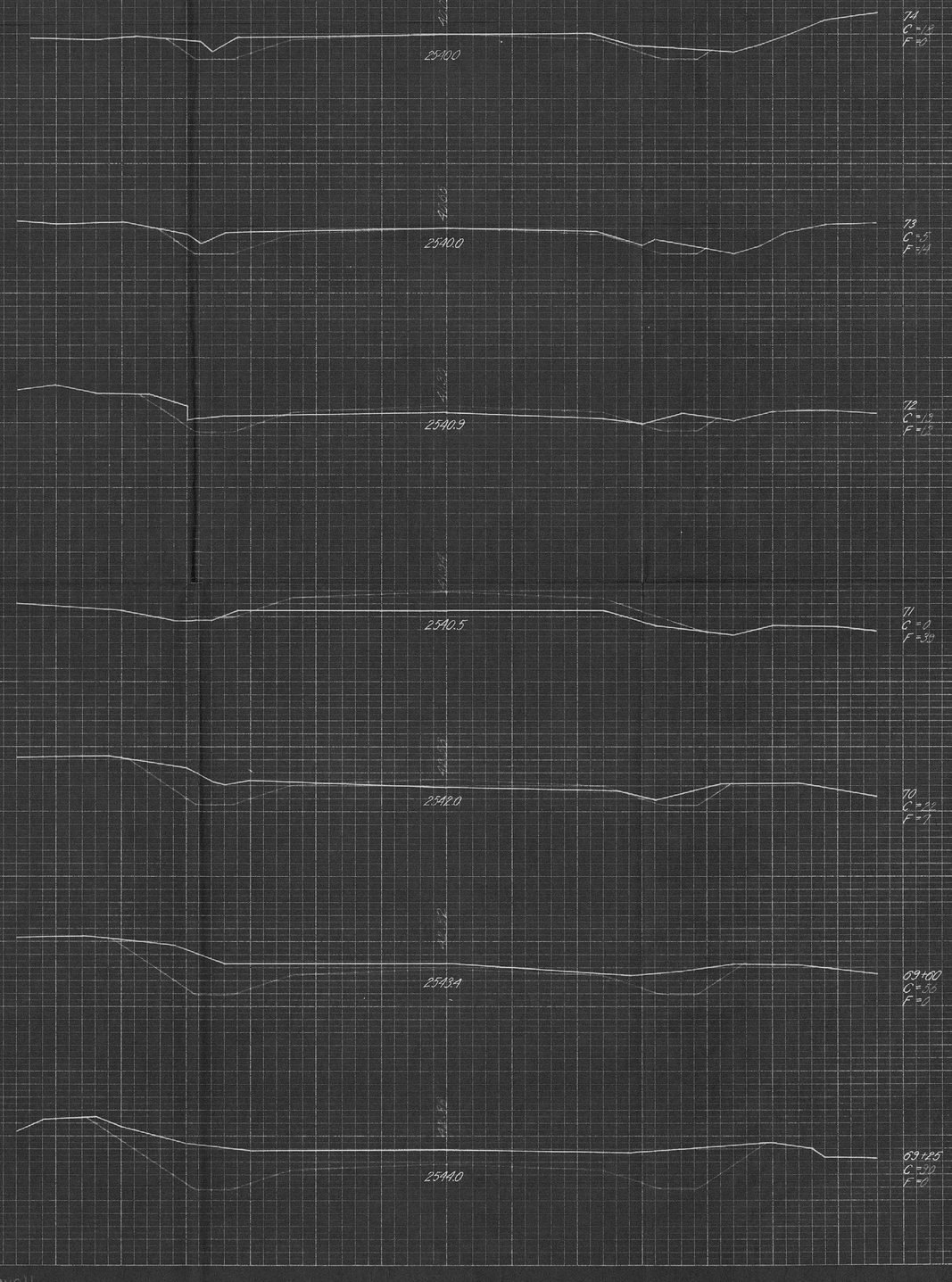
West Point - Crowell

PROJ. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	BR-C 1952		13	29

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED	A.L.O.	
	PLOTTED	A.L.O.	
	TEMPLATE	A.L.O.	
	AREAS	A.L.O.	
NO.	AREAS CHECKED	A.L.O.	

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

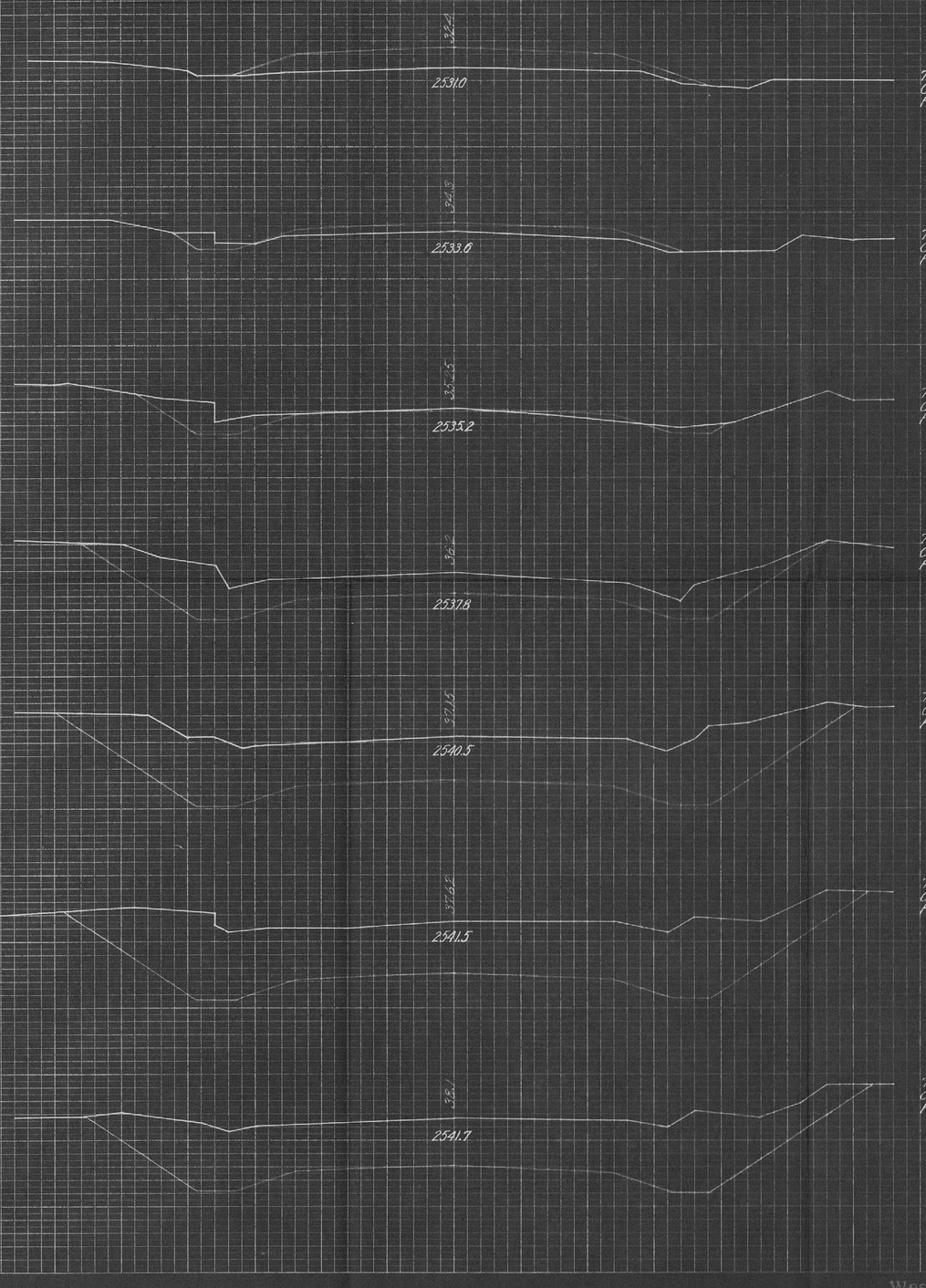


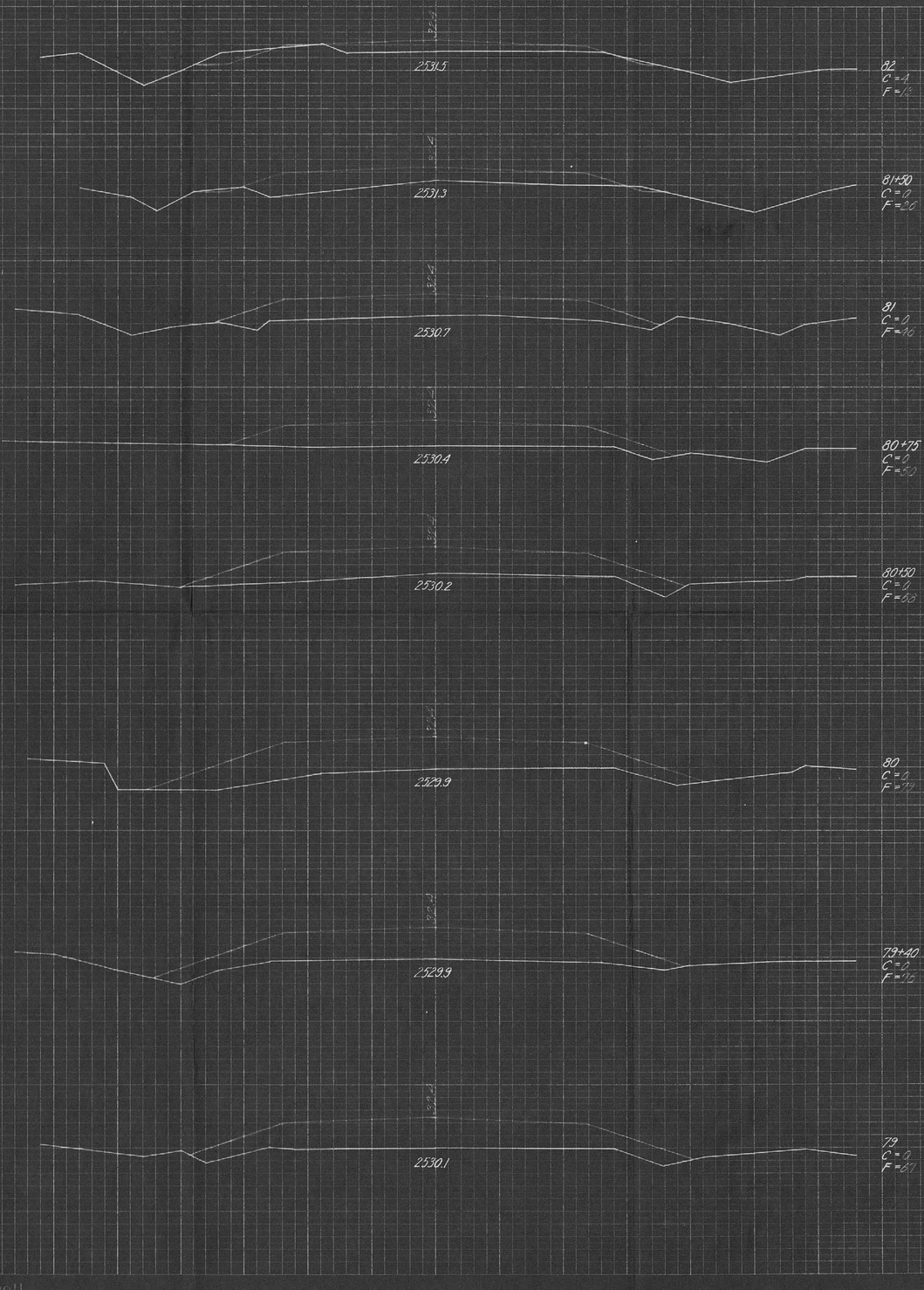


PROJ. ROAD DIST. NO.	STATE	PROJ. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	58-0	1952	19	20

FINAL SURVEY	BY	DATE
SURVEYED	A.L.O.	
PLOTTED	A.L.O.	
TEMPLATE	A.L.O.	
NOTE BOOK	A.L.O.	
NO.	A.L.O.	
AREAS CHECKED		

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





West Point - Crowell
Cuming County

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	89-2	1992	20	29

20

FINAL SURVEY
NOTE BOOK NO.

	BY	DATE
SURVEYED	A.L.O.	
PLOTTED	A.L.O.	
TEMPLATE	A.L.O.	
AREAS	A.L.O.	
AREAS CHECKED	A.L.O.	

ORIGINAL SURVEY
NOTE BOOK NO.

	BY	DATE
SURVEYED	A.L.O.	
PLOTTED	A.L.O.	
TEMPLATE	A.L.O.	
AREAS	A.L.O.	
AREAS CHECKED	A.L.O.	

32.3
2528.4
84
C=0
F=52

32.05
2529.1
83+65
C=0
F=42

31.4
2529.1
83+50
C=0
F=?

31.7
2530.2
83
C=0
F=42

32.05
2531.3
82+75
C=2
F=?5

31.4
2532.2
82+50
C=4
F=37

32.4
2532.0
82+23
C=2
F=?1

27.4
2523.7
89
C=0
F=46

27.4
2524.3
88
C=4
F=49

26.1
2520.1
87
C=19
F=1

26.05
2520.8
86+60
C=12
F=3

27.5
2520.6
86
C=7
F=16

25.05
2520.0
85+60
C=0
F=42

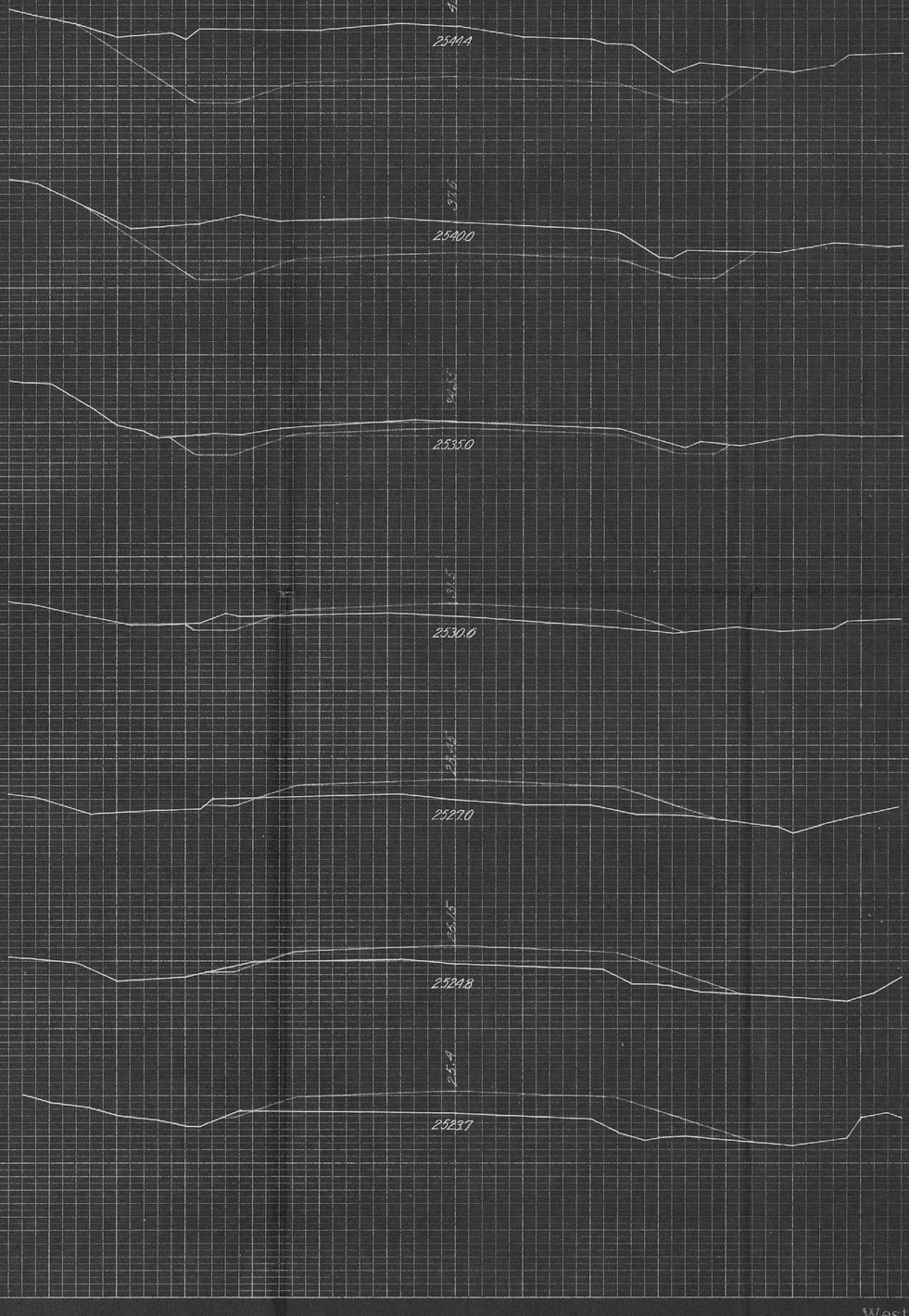
28.2
2520.8
85
C=0
F=56

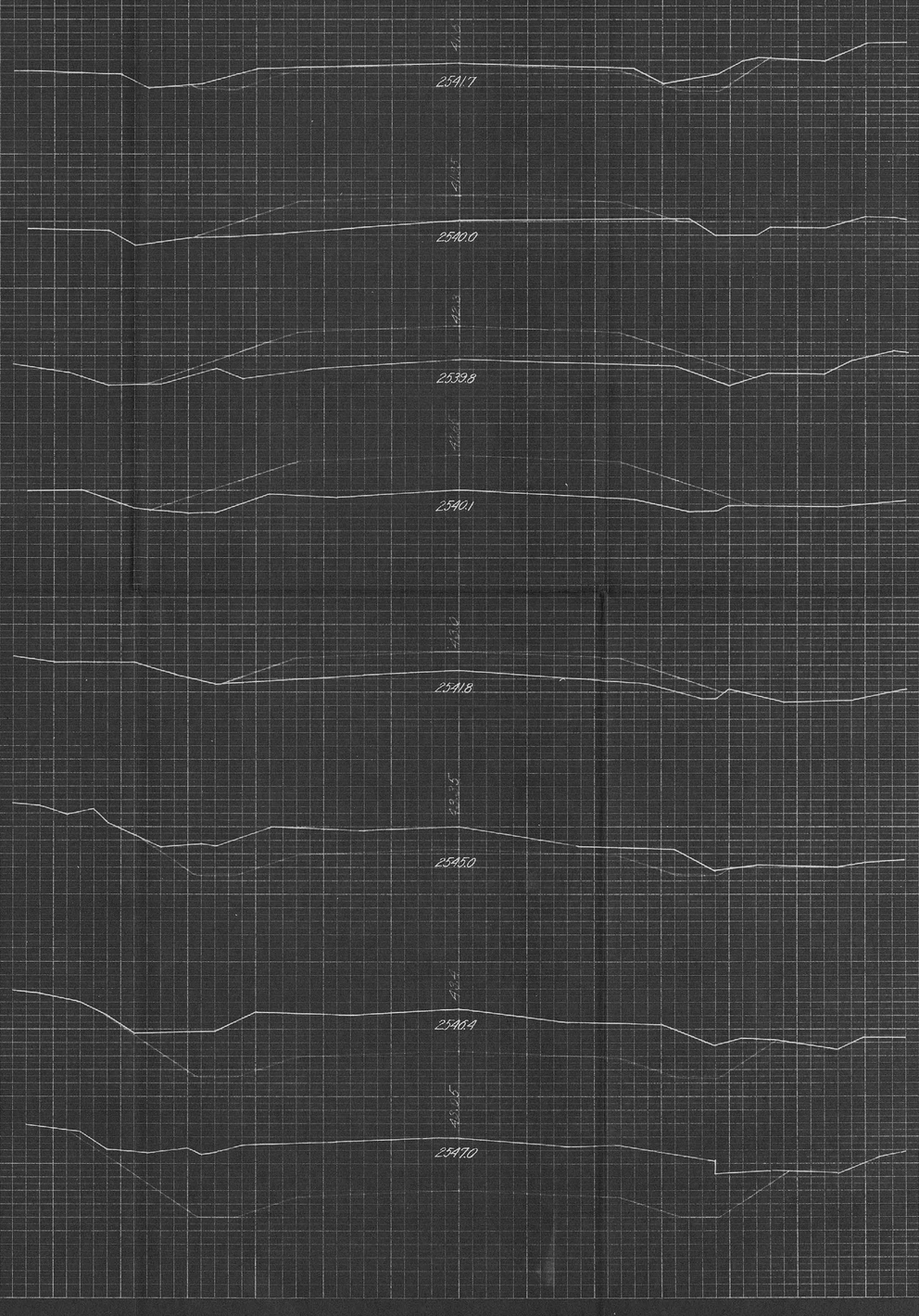
West Point - Crowell
Cuming County

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	85-C	1955	21	23

• FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED	A.L.O.	
	PLOTTED	A.L.O.	
	TEMPLATE	A.L.O.	
	RECK	A.L.O.	
NO.	AREAS CHECKED	A.L.O.	

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED	A.L.O.	
	PLOTTED	A.L.O.	
	TEMPLATE	A.L.O.	
	RECK	A.L.O.	
NO.	AREAS CHECKED	A.L.O.	



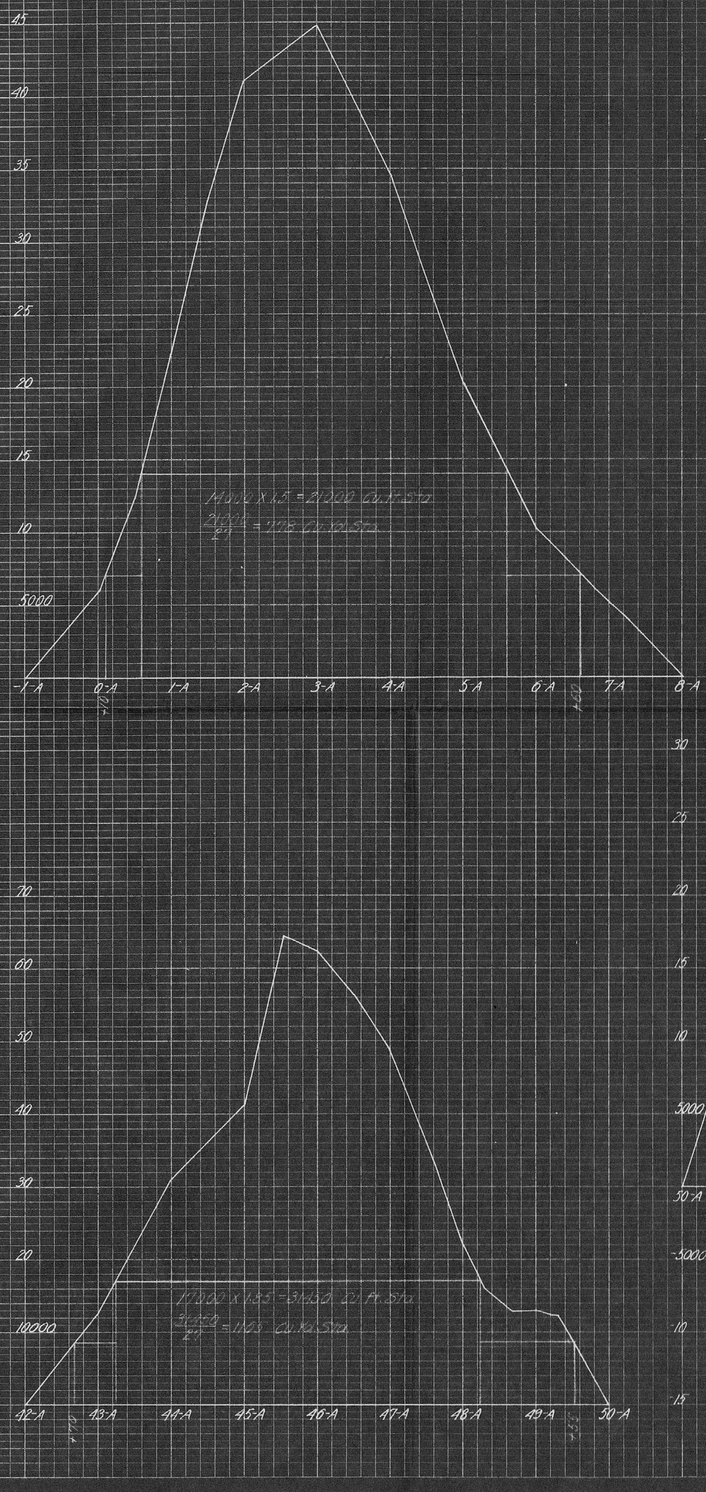


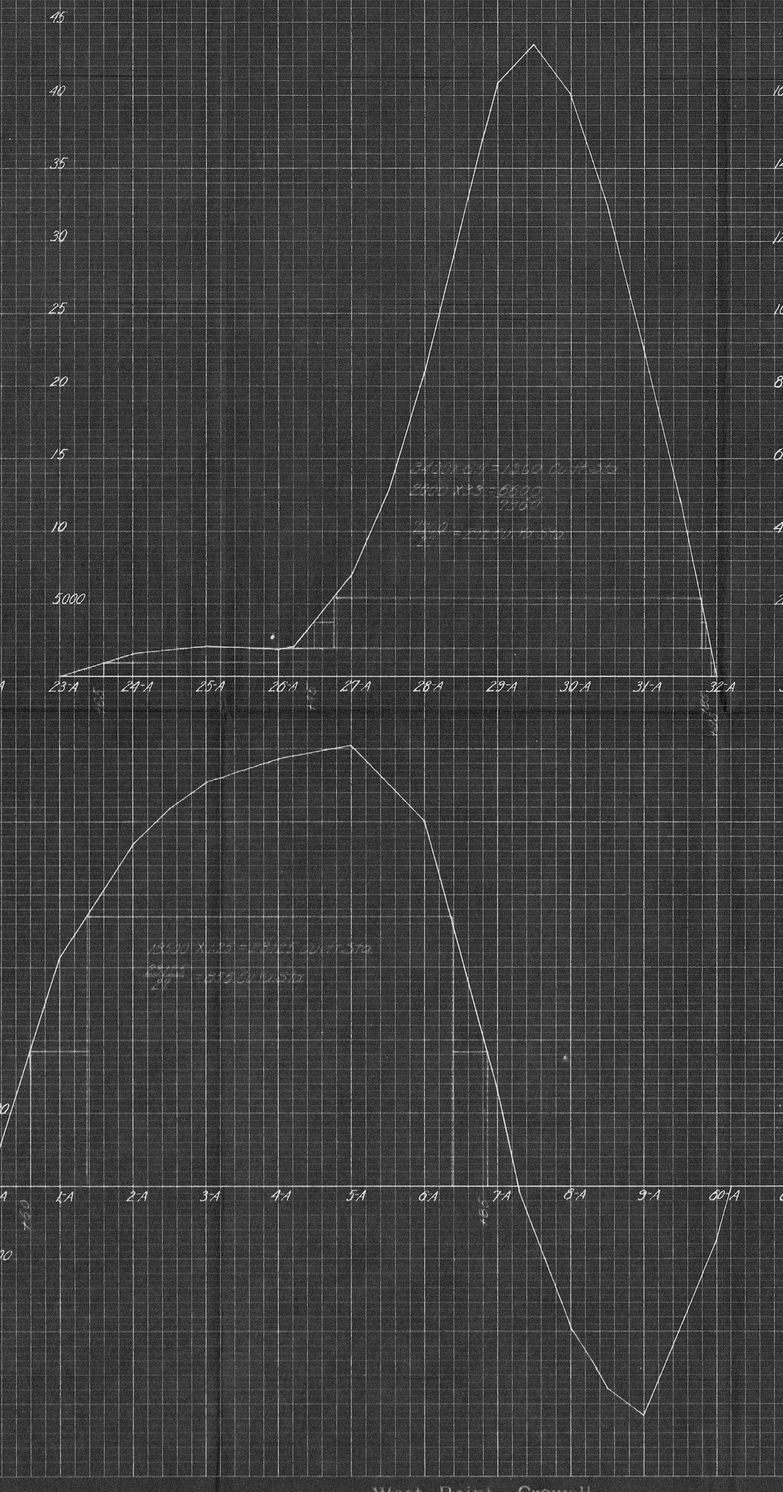
West Point - Crowell
Cuming County

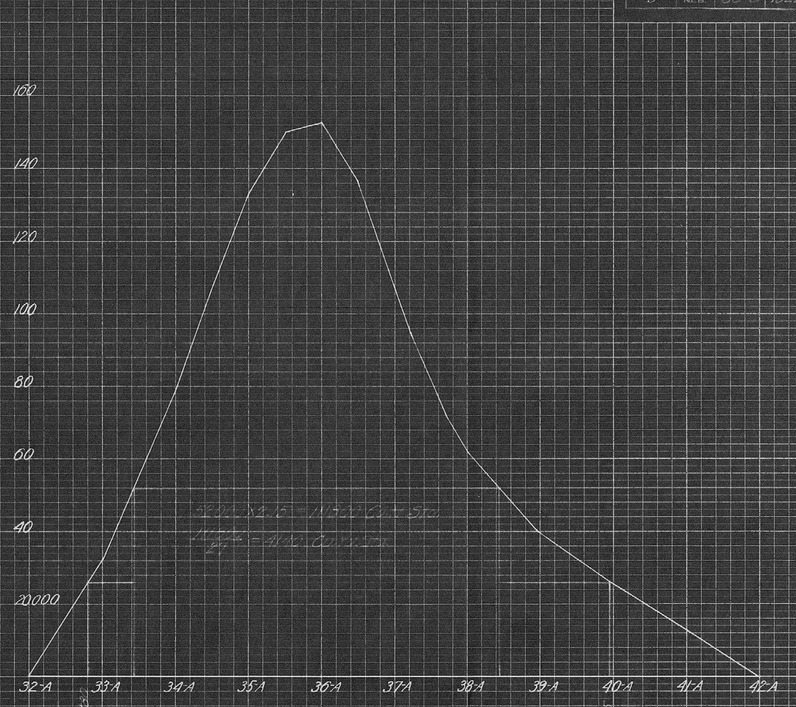
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	88-C	1957	22	29

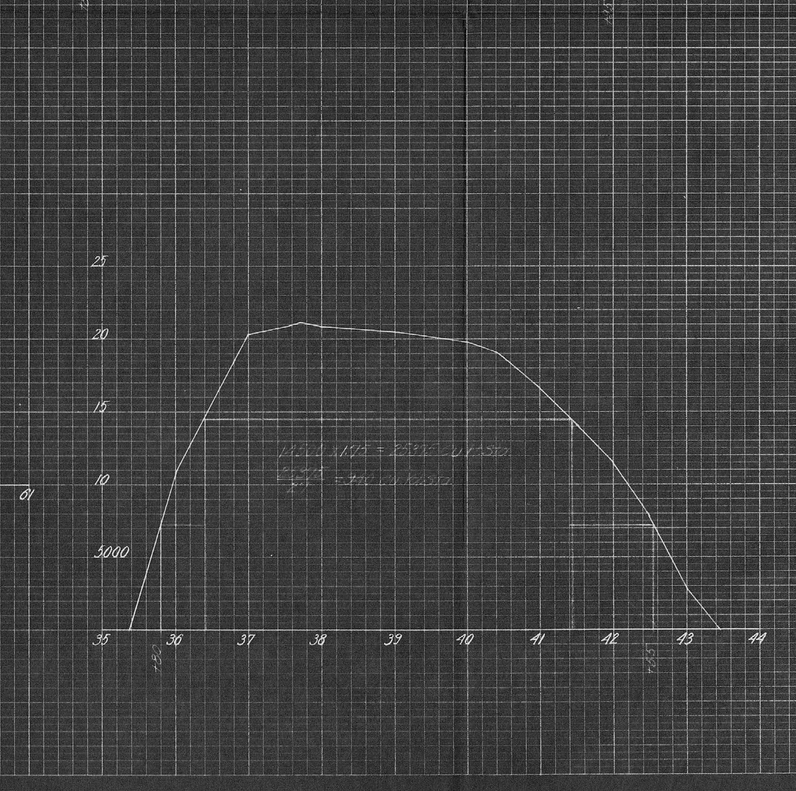
ORIGINAL SURVEY	SURVEYED	BY	DATE
	PLOTTED	AJO	
NOTE BOOK	TEMPLATE	AJO	
No.	AREAS	AJO	
	AREAS CHECKED	AJO	

FINAL SURVEY	SURVEYED	BY	DATE
	PLOTTED	AJO	
NOTE BOOK	TEMPLATE	AJO	
No.	AREAS	AJO	
	AREAS CHECKED	AJO	



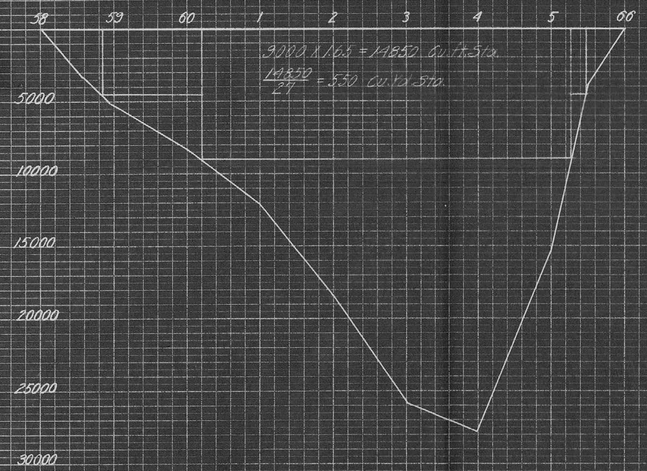


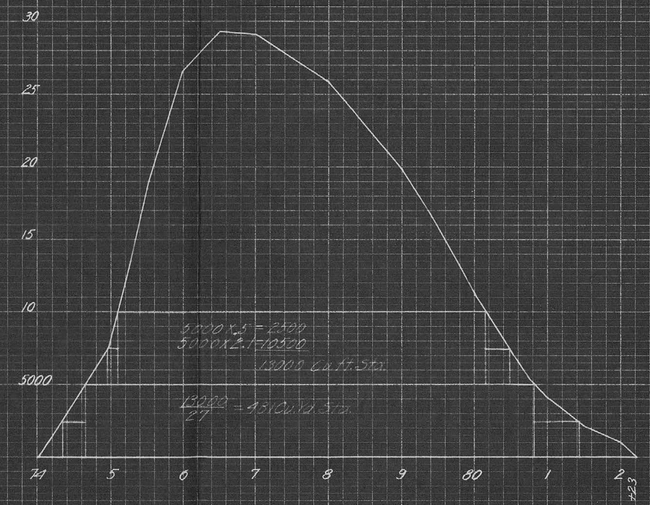




West Point - Crowell

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	88-C	1922	23	29





FINAL SURVEY

	BY	DATE
SURVEYED	A.L.O.	
PLOTTED	A.L.O.	
TEMPLATE	A.L.O.	
PROFILE	A.L.O.	
AREAS CHECKED	A.L.O.	

NOTE BOOK
NO.

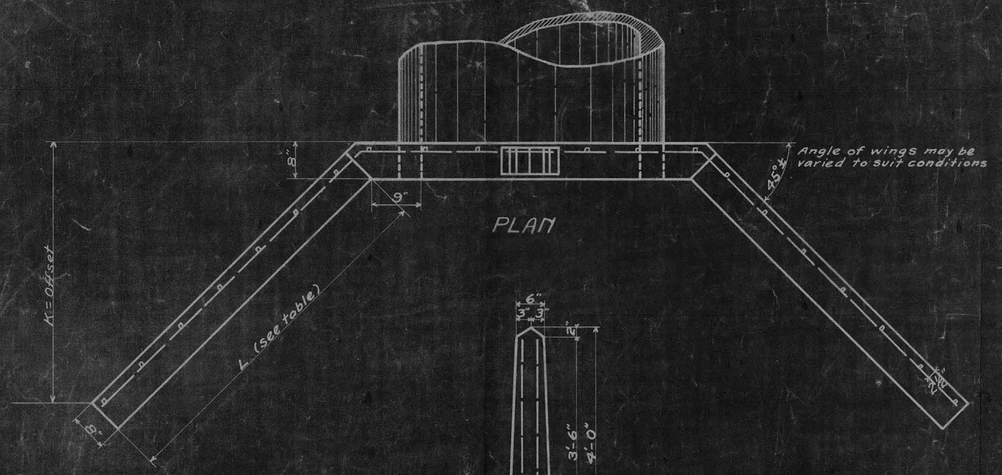
ORIGINAL SURVEY

	BY	DATE
SURVEYED	A.L.O.	
PLOTTED	A.L.O.	
TEMPLATE	A.L.O.	
PROFILE	A.L.O.	
AREAS CHECKED	A.L.O.	

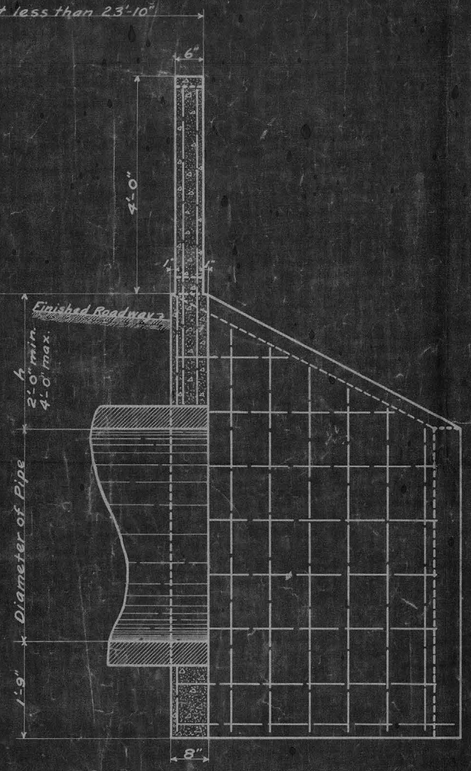
NOTE BOOK
NO.

West Point - Crowell

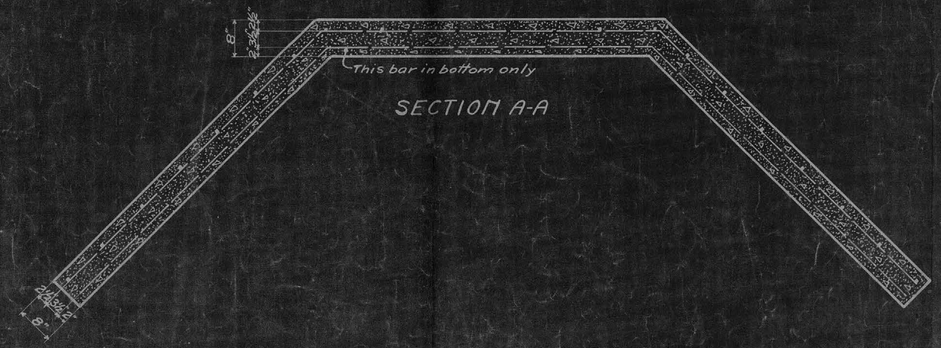
PROJ. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	NEB.	88-C	1922	24	29



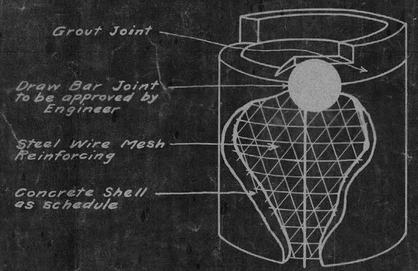
ELEVATION



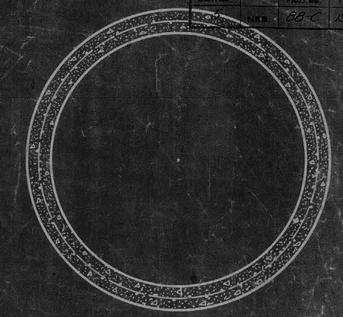
CROSS SECTION



SECTION A-A



CUT SHOWING CONSTRUCTION OF CONCRETE PIPE



SECTION OF PIPE

CONCRETE PIPE

Inside Diameter of Pipe in inches	Thickness of Shell in inches	Length of Section in feet	Draw Bars No.	Draw Bars Area of Bars in sq in	Weight in lbs. of Mesh per sq. ft. of Pipe	Weight per lin. ft. of Pipe in lbs.	Cu. Yds. of Concrete for 2 Walls Min. Height	Weight in lbs. of Reinf. Steel for 2 Walls Min. Height
18	2½	4	2	.049	.22	150	2.57	226
24	2¾	4	4	.110	.28	225	2.91	251
30	3	4	4	.110	.40	300	3.25	275
36	3¼	4	4	.110	.50	400	3.81	316
48	4	4	4	.150	.60	600	5.30	426
60	5	4	6	.150	.70	1000	6.99	549

CORRUGATED PIPE

Inside Diameter of Pipe in inches	Thickness of Pipe in Decimals of an Inch	Weight per lin. ft. of Pipe in lbs.	Cu. Yds. of Concrete for 2 Walls Min. Height	Weight in lbs. of Reinf. Steel for 2 Walls Min. Height
18	.065	16	2.62	226
24	.065	22	2.99	251
30	.083	32	3.35	275
36	.083	38	3.94	316
48	.083	51	5.52	426
60				

CAST IRON PIPE

Inside Diameter of Pipe in inches	Thickness of Pipe in Decimals of an Inch	Weight per lin. ft. of Pipe in lbs.	Cu. Yds. of Concrete for 2 Walls Min. Height	Weight in lbs. of Reinf. Steel for 2 Walls Min. Height
18	.64	129.2	2.61	226
24	.76	204.2	2.97	251
30	.88	291.7	3.33	275
36	.99	391.7	3.91	316
48	1.26	666.7	5.46	426
60	1.39	916.7	7.25	549

TABLE OF WING LENGTHS

Diameter of Pipe	L when h=2'-0"	L when h=3'-0"	L when h=4'-0"
18"	4'-0"	4'-0"	4'-3"
24"	4'-0"	4'-0"	5'-0"
30"	4'-0"	4'-9"	5'-9"
36"	4'-6"	5'-6"	6'-6"
48"	6'-0"	7'-0"	8'-0"
60"	7'-6"	8'-6"	9'-6"

Wing Length Formula – L = 1.5 D + (h - 2'-0")
Minimum Wing Length = 4'-0".

NOTE - Quantities of Headwalls are figured for a 45° angle of wings and h = 2'-0".
All Concrete shall be Class A, 1:2:4 mix.
Chamfer all exposed edges of Concrete.
All reinforcing bars shall be deformed with effective section equivalent to a square with sides equal to size specified.
All bars must be placed not less than 1½" nor more than 2½" from face of concrete. Ends of bars must not be more than 3" from edge of concrete.

This plan revised Nov. 1928 and supersedes all similar plans of previous date.

STATE OF NEBRASKA
STANDARD DESIGN

STANDARD PIPE CULVERTS

18 INCH TO 60 INCH DIAMETERS
CONCRETE, CORRUGATED & CAST IRON PIPES
DEPARTMENT OF PUBLIC WORKS - LINCOLN NEBR.
DEC. 2, 1921

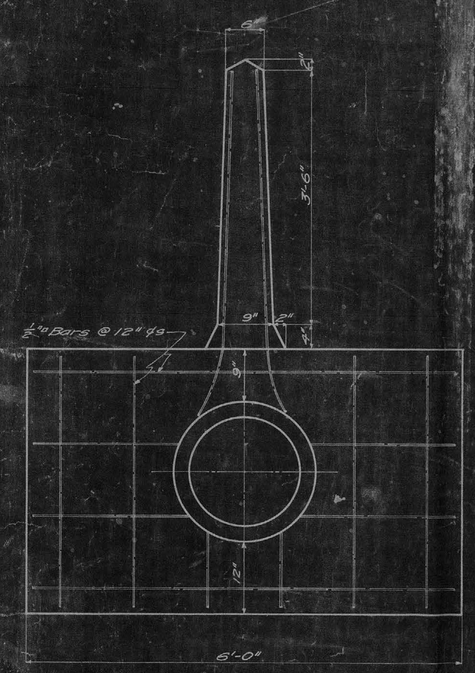
J. P. Sorensen, Office Engineer
Geo. Johnson, State Engineer

414-B

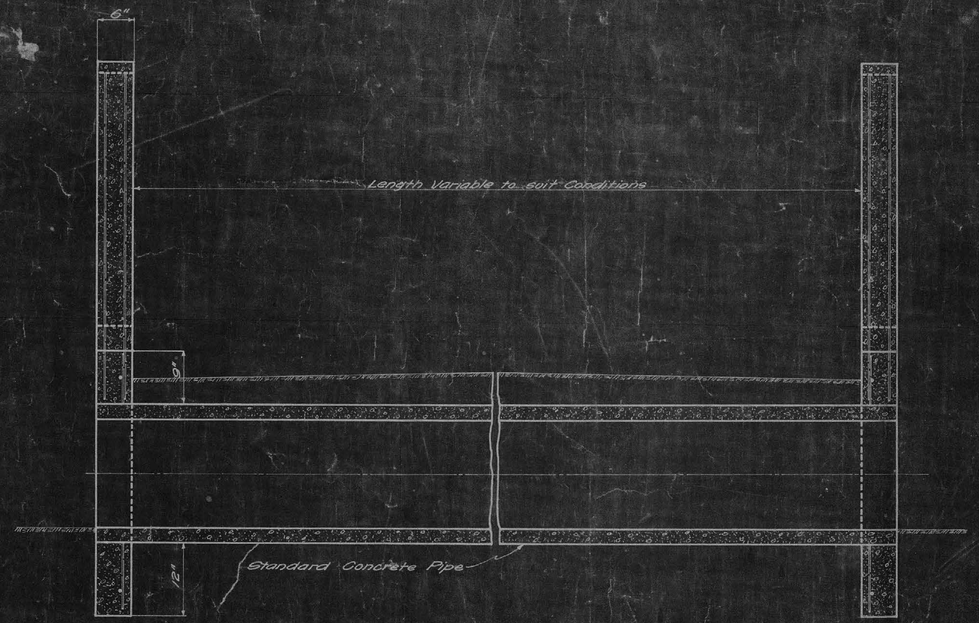
Designed By R.R.D.
Traced By R.R.D.
Checked By

This Plan supersedes Plan No. 414-A. U.S. Approved 1/5

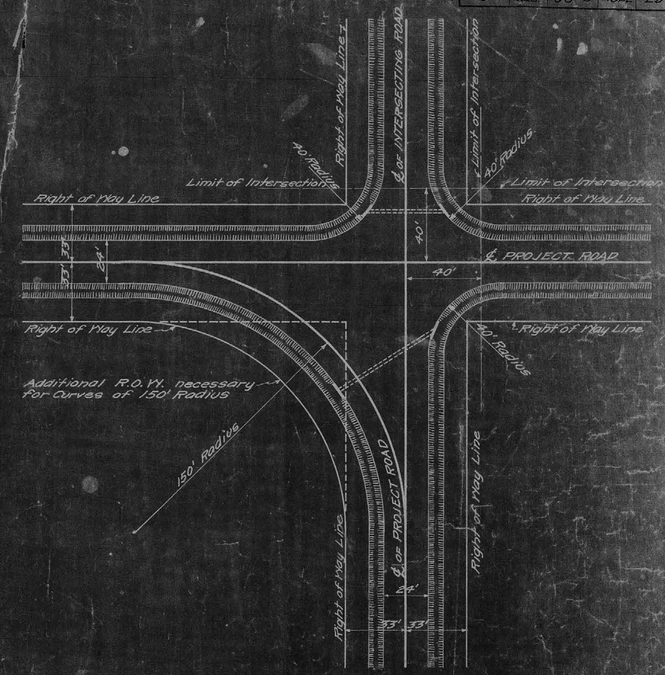
PROJ. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	88-C	1932	25	29



ELEVATION



LONGITUDINAL SECTION



4 WAY INTERSECTION
Scale 1"=40'-0"

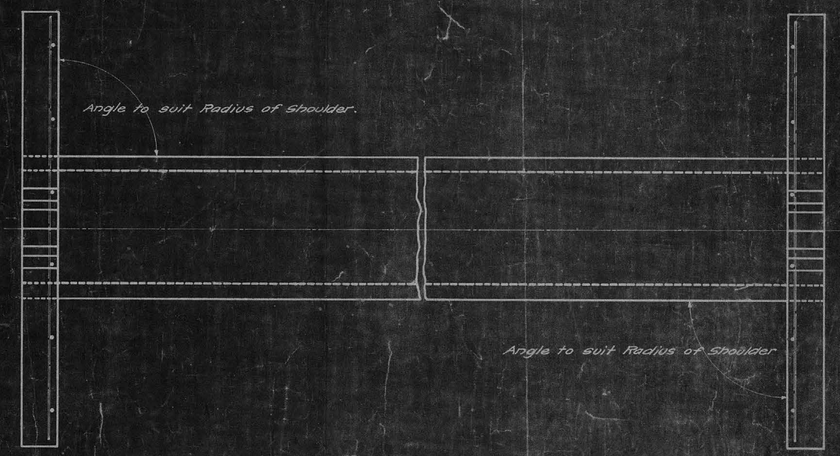
CONCRETE PIPE
QUANTITIES FOR TWO HEADWALLS

DIAMETER OF PIPE	CUBIC YARDS OF CONCRETE
12 INCHES	.733
18 INCHES	.802
24 INCHES	.853
30 INCHES	.887
36 INCHES	.905

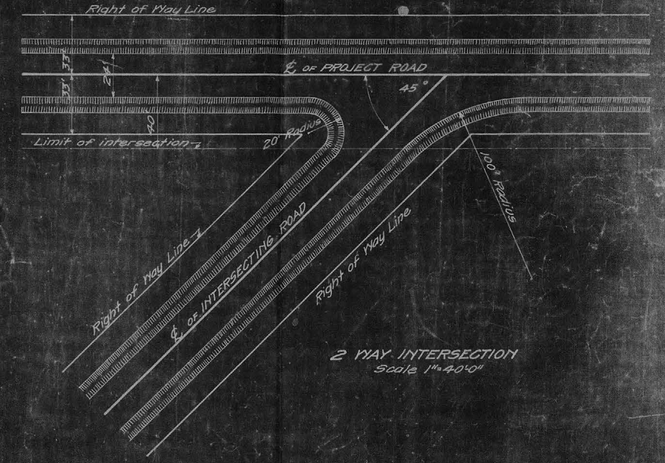
CORRUGATED PIPE

12 INCHES	.678
18 INCHES	.752
24 INCHES	.812
30 INCHES	.857
36 INCHES	.888

All reinforcing bars to be placed not less than 1½" nor more than 2½" from face of concrete as shown. Ends of bars must not be more than 3" from surface of concrete.



PLAN
Scale 1"=1'-0"



2 WAY INTERSECTION
Scale 1"=40'-0"

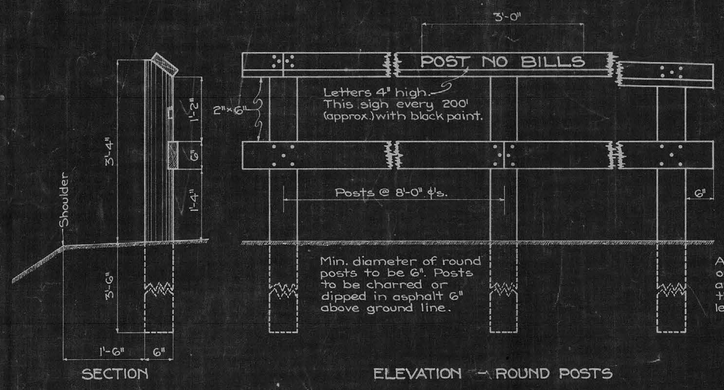
STATE OF NEBRASKA
STANDARD DESIGN
DITCH CROSSINGS AND HIGHWAY INTERSECTIONS
DEPARTMENT OF PUBLIC WORKS - LINCOLN NEBR.
OCT. 5, 1920

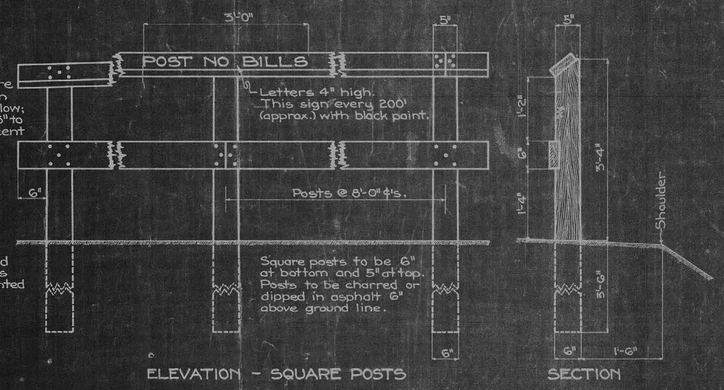
W. J. Hola, Office Engineer
Geo. Johnson, State Engineer

415-A
DESIGNED BY
DRAWN BY
CHECKED BY

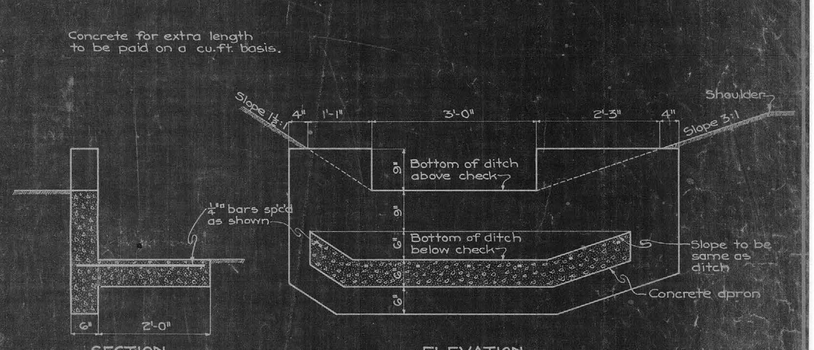
This Plan supersedes Plan No. 415

FED. ROAD CONT. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
-3	NEB.	83-C	1922	26	29

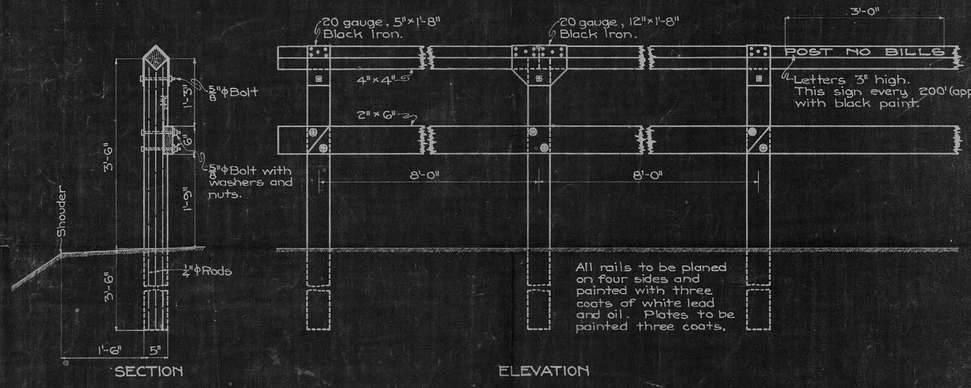




WOODEN GUARD RAILING

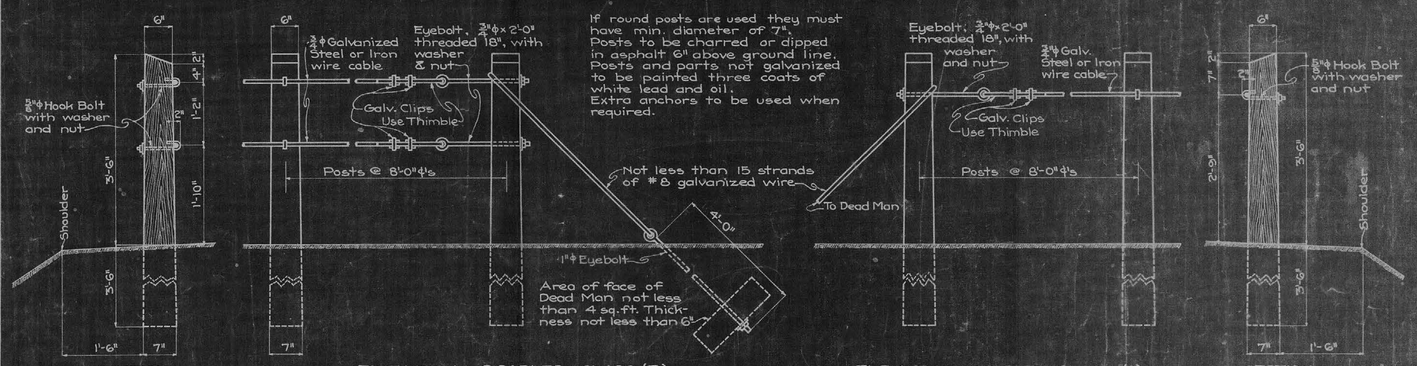


CAST IN PLACE - CLASS 'B' - CONCRETE DITCH CHECK

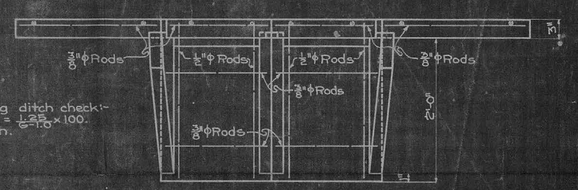


CROSS SECTION OF POST

COMBINATION GUARD RAILING
WOODEN RAILS - CONCRETE POSTS

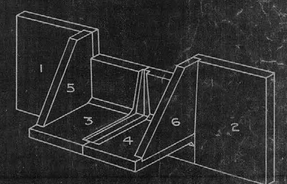


CABLE GUARD RAILING

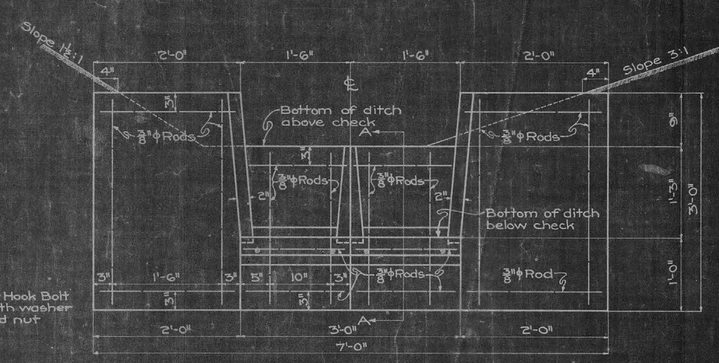


PLAN

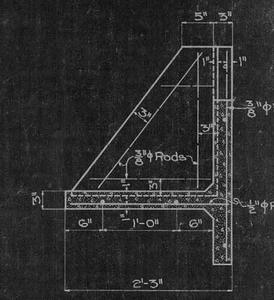
Rule for spacing ditch check:-
Distance c. to c. = $\frac{1.25}{G-1.0} \times 100$.
G = Grade of ditch.



PERSPECTIVE VIEW



ELEVATION
ADDITIONAL CENTER SECTIONS TO BE USED WHEN REQUIRED



SECTION A-A

PRECAST - CLASS 'A' - CONCRETE DITCH CHECK

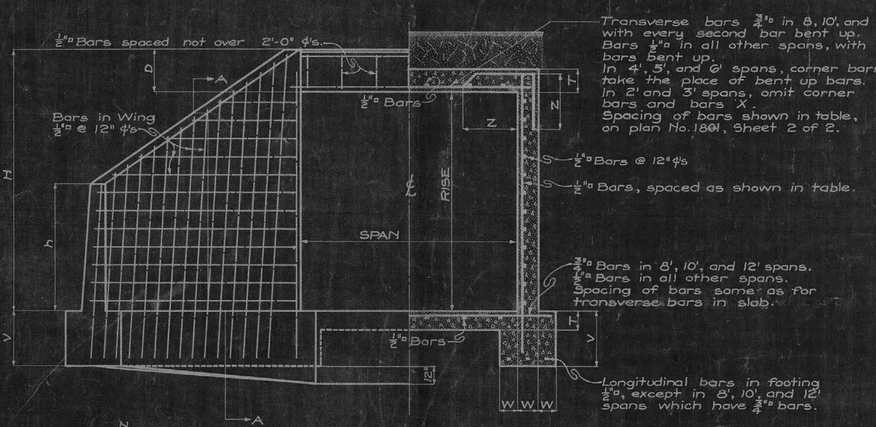
STATE OF NEBRASKA
STANDARD DESIGN
GUARD RAIL AND DITCH CHECKS
DEPARTMENT OF PUBLIC WORKS - LINCOLN, NEBR.
FEBR. 6, 1922

John R. Cunningham, Office Engineer
Geo. Johnson, State Engineer

416-B
Designed by
Traced by RD
Checked by

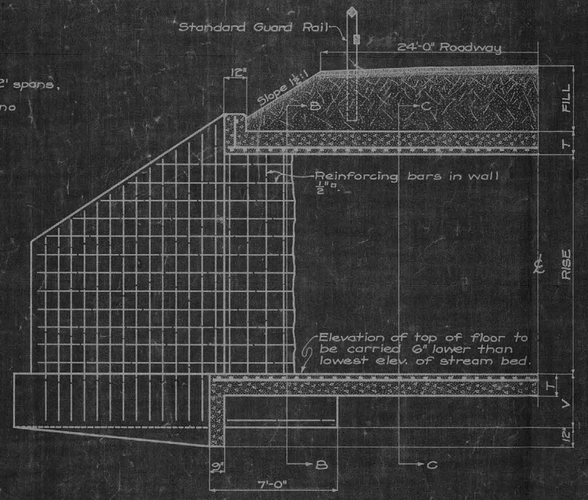
This Plan Supersedes Plan No. 416-A
U.S. Approved

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	32-C	1922	27	29

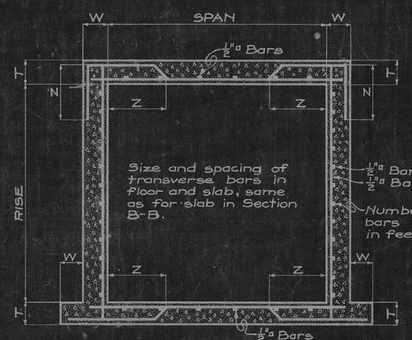


ELEVATION

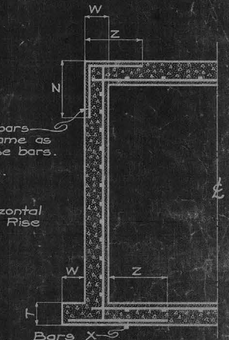
SECTION B-B



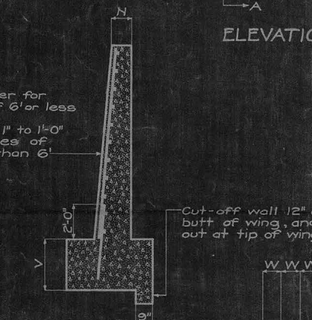
LONGITUDINAL SECTION



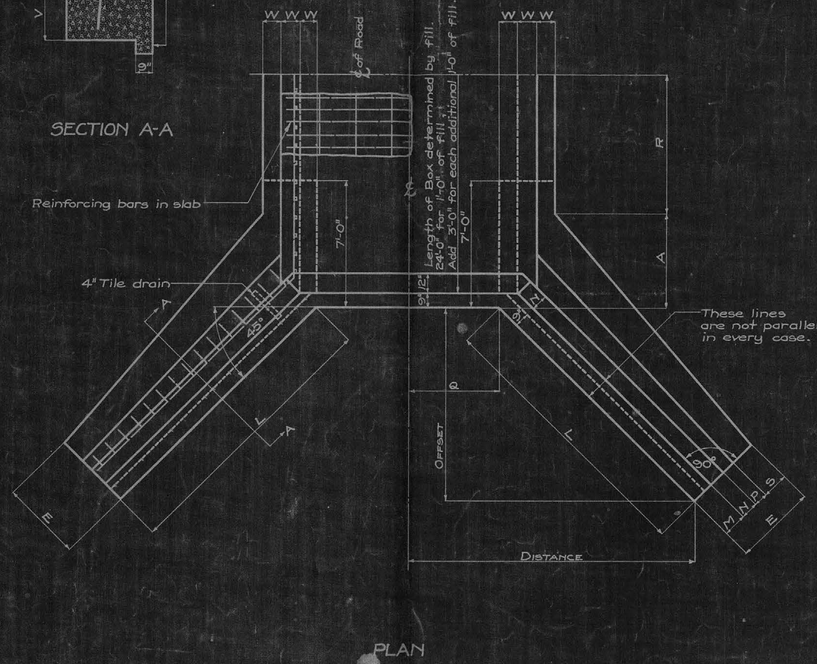
SECTION C-C
SHOWING ARRANGEMENT OF BARS FOR 8', 10' AND 12' SPANS



SECTION C-C
SHOWING ARRANGEMENT OF BARS FOR 4', 5', AND 6' SPANS



SECTION A-A



PLAN

FILL	SPAN	RISE	Wing: Distance	Wing: Offset	Wing: L	Wing: H	Wing: h	Wing: M	Wing: N'	Wing: P	Wing: S	Barrel: T	Barrel: W	Barrel: Z	Footing: E	Footing: V	Footing: Q	Footing: R	D Parapet	Bars in Slab: No. Long Bars	Bars in Slab: Spacing Trans.	Bars in Floor: No. Long Bars	Bars in Floor: Spacing Trans.	No. of Long Bars in Footings	Cu. Yds. Concrete: Box	Cu. Yds. Concrete: 1' Add.	Pounds Steel ½"ø: Box	Pounds Steel ½"ø: 1' Add.	Pounds Steel ¾"ø: Box	Pounds Steel ¾"ø: 1' Add.
	2'	2'	3'-2"	2'-8"	3'-9"	3'-6"	1'-9"	4"	7"	0	4"		6"	0	1'-3"	1'-0"	6"		1'-6"	2		2		8							
	3'	2'	3'-8"	2'-8"	3'-9"	3½-6"	1'-9"	4"	7"	0	4"		6"	0	1'-3"	1'-0"	1'-0"		1'-6"	2		2		8							
	4'	2'	4'-2"	2'-8"	3'-9"	3'-6"	1'-9"	4"	7"	0	4"		6"	1'-3"	1'-3"	1'-0"	1'-6"		1'-6"	3		3		8							
	5'	2'	4'-9"	2'-9"	3'-10"	3'-7"	1'-10"	4"	7"	0	4"		6"	1'-6"	1'-3"	1'-1"	2'-0"		1'-7"	4		4		8							
	6'	2'	5'-3"	2'-9"	3'-11"	3'-8"	1'-10"	4"	7"	0	4"		6"	1'-9"	1'-3"	1'-2"	2'-6"		1'-8"	4		4		12							
	8'	2'	6'-4"	2'-10"	4'-0"	3'-8"	1'-11"	5"	7"	0	4"		6"	2'-0"	1'-4"	1'-3"	3'-6"		1'-9"	4		4		8							
	10'	2'	7'-5"	2'-11"	4'-2"	3'-11"	2'-0"	5"	7"	0	4"		6"	2'-6"	1'-4"	1'-3"	4'-6"		1'-11"	5		5		12							
	12'	2'	8'-7"	3'-1"	4'-4"	4'-1"	2'-0"	5"	7"	0	4"		6"	3'-0"	1'-4"	1'-5"	5'-6"		2'-1"	6		6		12							
	3'	3'	4'-4"	3'-4"	4'-9"	4'-6"	2'-3"	5"	8"	0	4"		6"	0	1'-5"	1'-6"	1'-0"		1'-6"	2		2		8							
	4'	3'	4'-10"	3'-4"	4'-9"	4'-6"	2'-3"	5"	8"	0	4"		6"	1'-3"	1'-5"	1'-6"	1'-6"		1'-6"	3		3		8							
	5'	3'	5'-5"	3'-5"	4'-10"	4'-7"	2'-4"	6"	8"	0	4"		6"	1'-6"	1'-6"	1'-7"	2'-0"		1'-7"	4		4		8							
	6'	3'	6'-0"	3'-6"	4'-11"	4'-8"	2'-4"	6"	8"	0	4"		6"	1'-9"	1'-6"	1'-7"	2'-6"		1'-8"	4		4		12							
	8'	3'	7'-1"	3'-7"	5'-1"	4'-9"	2'-5"	6"	8"	0	4"		6"	2'-0"	1'-6"	1'-8"	3'-6"		1'-9"	4		4		8							
	10'	3'	8'-3"	3'-9"	5'-3"	4'-11"	2'-6"	6"	8"	0	4"		6"	2'-6"	1'-6"	1'-8"	4'-6"		1'-11"	5		5		12							
	12'	3'	9'-4"	3'-10"	5'-5"	5'-1"	2'-6"	6"	8"	0	4"		6"	3'-0"	1'-6"	1'-9"	5'-6"		2'-1"	6		6		12							
	4'	4'	5'-8"	4'-2"	5'-10"	5'-6"	2'-9"	7"	9"	0	4"		6"	1'-3"	1'-8"	1'-9"	1'-6"		1'-6"	3		3		8							
	5'	4'	6'-1"	4'-2"	5'-11"	5'-7"	2'-10"	7"	9"	0	4"		7"	1'-7"	1'-8"	1'-10"	1'-11"		1'-7"	4		4		8							
	6'	4'	6'-8"	4'-3"	6'-0"	5'-8"	2'-10"	7"	9"	0	4"		7"	1'-10"	1'-8"	1'-10"	2'-5"		1'-8"	4		4		12							
	8'	4'	7'-9"	4'-4"	6'-1"	5'-9"	2'-11"	7"	9"	0	4"		7"	2'-0"	1'-8"	1'-11"	3'-5"		1'-9"	4		4		8							
	10'	4'	8'-10"	4'-5"	6'-3"	5'-11"	3'-0"	7"	9"	0	5"		7"	2'-6"	1'-9"	1'-11"	4'-5"		1'-11"	5		5		12							
	12'	4'	9'-11"	4'-6"	6'-5"	6'-1"	3'-0"	7"	9"	0	5"		7"	3'-0"	1'-9"	2'-0"	5'-5"		2'-1"	6		6		12							
	5'	5'	6'-10"	4'-11"	7'-0"	6'-7"	3'-4"	8"	10"	0	5"		7"	1'-7"	1'-11"	2'-0"	1'-11"		1'-7"	4		4		8							
	6'	5'	7'-4"	5'-0"	7'-1"	6'-8"	3'-4"	8"	10"	0	5"		8"	1'-11"	1'-11"	2'-1"	2'-4"		1'-8"	4		4		12							
	8'	5'	8'-5"	5'-1"	7'-2"	6'-9"	3'-5"	8"	10"	0	6"		8"	2'-0"	2'-0"	2'-1"	3'-4"		1'-9"	4		4		8							
	10'	5'	9'-6"	5'-2"	7'-4"	6'-11"	3'-6"	8"	10"	0	6"		8"	2'-6"	2'-0"	2'-2"	4'-4"		1'-11"	5		5		12							
	12'	5'	10'-8"	5'-4"	7'-6"	7'-1"	3'-6"	8"	10"	0	6"		8"	3'-0"	2'-0"	2'-2"	5'-4"		2'-1"	6		6		12							
	6'	6'	8'-1"	5'-9"	8'-2"	7'-8"	3'-10"	9"	11"	0	8"		8"	1'-11"	2'-4"	2'-3"	2'-4"		1'-8"	4		4		12							
	8'	6'	9'-1"	5'-10"	8'-3"	7'-9"	3'-11"	9"	11"	0	8"		9"	2'-0"	2'-4"	2'-3"	3'-3"		1'-9"	4		4		8							
	10'	6'	10'-2"	5'-11"	8'-5"	7'-11"	4'-0"	10"	11"	0	8"		9"	2'-6"	2'-5"	2'-4"	4'-3"		1'-11"	5		5		12							
	12'	6'	11'-4"	6'-1"	8'-7"	8'-1"	4'-0"	10"	11"	0	8"		9"	3'-0"	2'-5"	2'-5"	5'-3"		2'-1"	6		6		12							
	8'	8'	10'-7"	7'-4"	10'-4"	9'-9"	4'-11"	12"	12"	5"	6"		9"	2'-0"	2'-11"	2'-6"	3'-3"		1'-9"	4		4		8							
	10'	8'	11'-7"	7'-5"	10'-6"	9'-11"	5'-0"	12"	12"	5"	7"		10"	2'-6"	3'-0"	2'-8"	4'-2"		1'-11"	5		5		12							
	12'	8'	12'-9"	7'-7"	10'-8"	10'-1"	5'-0"	12"	12"	5"	7"		10"	3'-0"	3'-0"	2'-10"	5'-2"		2'-1"	6		6		12							
	10'	10'	13'-1"	9'-0"	12'-8"	11'-11"	6'-0"	14"	12"	6"	11"		11"	2'-6"	3'-7"	3'-0"	4'-1"		1'-11"	5		5		12							
	12'	10'	14'-2"	9'-1"	12'-10"	12'-1"	6'-0"	14"	12"	6"	11"		11"	3'-0"	3'-7"	3'-0"	5'-1"		2'-1"	6		6		12							
	12'	12'	15'-7"	10'-7"	14'-1"	14'-1"	7'-1"	15"	12"	7"	17"		12"	3'-0"	4'-3"	3'-0"	5'-0"		2'-1"	6		6		8							

Foundation to be carried deeper if necessary to secure suitable bearing.
Central Section C-C may be constructed same as end Sections B-B, when conditions require.
One 4" Tile drain through each wing as shown.
Fill not to exceed 13'-0".
All reinforcing bars shall be deformed with effective section equivalent to a square with sides equal to size specified.
No splicing of horizontal bars near junction of wing and barrel.
Splice ½" bars with a 2'-0" lap; and ¾" bars with a 3'-0" lap.
All vertical bars longer than 6'-0" should be provided with stubs in wing footing
Place ½" bars 1½, and ¾" bars 2½, from surface of concrete.
Chamfer all exposed edges of concrete 1".

COUNTY	PROJ.	STA.	FILL	SPAN	RISE

STATE OF NEBRASKA
STANDARD DESIGN
CLASS T-20-HIGH FILL
CONCRETE BOX CULVERTS
2' TO 12' SPANS - 2' TO 12' RISES
24' ROADWAY
DEPARTMENT OF PUBLIC WORKS - LINCOLN NEBR.
AUG. 4, 1921

J. K. Cunningham, Office Engineer — Geo. Johnson, State Engineer

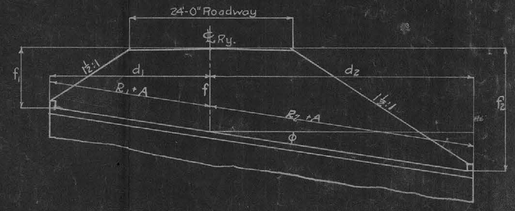
This plan revised Nov. 1, 1922 and supersedes all similar plans of previous date.

Sheet 1 of 2
1801
Designed by H. T.
Traced by
Checked by

U.S. Approved 12/

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB	BB-C	1922	28	29

SPAN	RISE	T or THICKNESS OF SLAB AND FLOOR. 1/FILL	3/FILL	5/FILL	7/FILL	9/FILL	11/FILL	13/FILL	SIZE OF BARS	SPACING OF TRANSVERSE BARS. IN SLAB AND FLOOR SECTION B-B & SECTION C-C 1/FILL	3/FILL	5/FILL	7/FILL	9/FILL	11/FILL	13/FILL	SPACING OF VERTICAL ⅝" BARS IN SIDEWALLS. 7/FILL	9/FILL	11/FILL	13/FILL	R 1/FILL	3/FILL	5/FILL	7/FILL	9/FILL	11/FILL	13/FILL	A.	CU. YDS. CONCRETE FOR 1 FOOT LENGTH OF BOX. 1/FILL	3/FILL	5/FILL	7/FILL	9/FILL	11/FILL	13/FILL	CU. YDS. CONCRETE FOR 4 WINGS	TOTAL POUNDS STEEL FOR 1 FOOT LENGTH OF BOX. 1/FILL	3/FILL	5/FILL	7/FILL	9/FILL	11/FILL	13/FILL	POUNDS ⅝" BARS FOR 1 FOOT LENGTH OF BOX. 1/FILL	3/FILL	5/FILL	7/FILL	9/FILL	11/FILL	13/FILL	POUNDS ¾" BARS FOR 1 FOOT LENGTH OF BOX. 1/FILL	3/FILL	5/FILL	7/FILL	9/FILL	11/FILL	13/FILL	POUNDS STEEL FOR 4 WINGS
2'	2'	6"	6"	6"	6"	6"	6"	6"	⅜"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.244	.204	.204	.204	.204	.204	.204	3.12	16.16	16.16	16.16	16.16	16.16	16.16	16.16	16.16	16.16	16.16	16.16	16.16	16.16	16.16	16.16	0	0	0	0	0	0	0	161
3'	2'	6"	6"	6"	6"	6"	6"	6"	⅜"	11"	11"	11"	11"	11"	11"	11"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.241	.241	.241	.241	.241	.241	.241	3.34	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	0	0	0	0	0	0	0	164
4'	2'	6"	6"	6"	6"	6"	6"	6"	⅜"	8"	8"	8"	8"	8"	8"	8"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.278	.278	.278	.278	.278	.278	.278	3.50	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	36.45	0	0	0	0	0	0	0	170
5'	2'	7"	7"	7"	7"	7"	7"	7"	⅜"	7.0"	5.5"	5.5"	5.5"	5.5"	5.5"	5.5"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.355	.355	.355	.355	.355	.355	.355	3.87	46.89	55.48	55.48	55.48	55.48	55.48	55.48	46.89	55.48	55.48	55.48	55.48	55.48	55.48	55.48	0	0	0	0	0	0	0	180
6'	2'	8"	8"	8"	9"	9"	9"	9"	⅜"	6.0"	4.5"	4.5"	4.0"	4.0"	4.0"	4.0"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.445	.445	.445	.491	.491	.491	.491	4.10	58.37	72.67	72.67	80.13	80.13	80.13	80.13	58.37	72.67	72.67	80.13	80.13	80.13	80.13	0	0	0	0	0	0	0	188
8'	2'	9"	10"	11"	12"	13"	13"	13"	⅜"	10"	9.5"	8.5"	7.5"	6.5"	6.5"	6.5"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.602	.660	.719	.778	.836	.836	.836	4.52	62.10	65.34	71.66	79.58	89.55	89.55	89.55	35.81	46.01	46.29	46.53	46.53	46.53	46.53	26.39	19.33	55.37	63.00	72.69	72.69	72.69	309
10'	2'	11"	12"	13"	14"	15"	16"	16"	⅜"	8.0"	7.5"	6.5"	6.0"	5.5"	5.0"	5.0"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.955	.926	.997	1.068	1.139	1.210	1.210	4.91	89.73	95.04	107.14	114.80	124.11	135.35	135.35	49.83	18.27	18.56	18.84	19.11	19.41	19.41	40.90	76.77	88.58	95.96	105.05	105.94	105.94	330
12'	2'	13"	14"	15"	17"	18"	19"	20"	⅜"	7.0"	6.0"	5.5"	5.0"	4.5"	4.0"	4.0"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	1.157	1.241	1.324	1.491	1.574	1.657	1.741	5.30	117.25	93.72	144.61	158.37	174.29	191.14	194.44	62.05	20.54	20.83	21.39	21.68	21.96	22.26	55.20	13.18	123.84	136.98	152.61	177.18	177.18	354
3'	3'	6"	6"	6"	6"	6"	6"	6"	⅜"	11"	11"	11"	11"	11"	11"	11"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.278	.278	.278	.278	.278	.278	.278	5.87	21.84	21.84	21.84	21.84	21.84	21.84	21.84	21.84	21.84	21.84	21.84	21.84	21.84	21.84	21.84	0	0	0	0	0	0	0	214
4'	3'	6"	6"	6"	6"	6"	6"	6"	⅜"	8"	8"	8"	8"	8"	8"	8"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.315	.315	.315	.315	.315	.315	.315	6.08	39.85	39.85	39.85	39.85	39.85	39.85	39.85	39.85	39.85	39.85	39.85	39.85	39.85	39.85	39.85	0	0	0	0	0	0	0	220
5'	3'	7"	7"	7"	7"	7"	7"	7"	⅜"	7.0"	5.5"	5.5"	5.5"	5.5"	5.5"	5.5"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.392	.392	.392	.392	.392	.392	.392	6.53	58.86	58.89	58.89	58.89	58.89	58.89	58.89	58.89	58.89	58.89	58.89	58.89	58.89	58.89	58.89	0	0	0	0	0	0	0	235
6'	3'	8"	8"	8"	9"	9"	9"	9"	⅜"	6.0"	4.5"	4.5"	4.0"	4.0"	4.0"	4.0"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.482	.482	.482	.528	.528	.528	.528	6.69	61.76	76.07	76.07	83.51	83.51	83.51	83.51	61.76	76.07	76.07	83.51	83.51	83.51	83.51	0	0	0	0	0	0	0	241
8'	3'	9"	10"	11"	12"	13"	13"	13"	⅜"	10"	9.5"	8.5"	7.5"	6.5"	6.5"	6.5"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.639	.697	.756	.815	.873	.873	.873	7.19	65.80	68.74	75.06	82.98	92.95	92.95	92.95	39.21	19.41	19.69	19.98	20.26	20.26	20.26	26.59	49.33	55.37	63.00	72.69	72.69	72.69	366
10'	3'	11"	12"	13"	14"	15"	16"	16"	⅜"	8.0"	7.5"	6.5"	6.0"	5.5"	5.0"	5.0"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.892	.963	1.034	1.105	1.176	1.247	1.247	7.57	93.13	93.98	110.54	118.20	127.57	138.15	138.15	52.23	21.67	21.96	22.24	22.52	22.81	22.81	40.90	78.31	88.58	95.96	105.05	105.94	105.94	388
12'	3'	13"	14"	15"	17"	18"	19"	20"	⅜"	7.0"	6.0"	5.5"	5.0"	4.5"	4.0"	4.0"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	1.194	1.278	1.361	1.528	1.611	1.694	1.778	7.99	69.65	93.72	148.01	161.77	177.69	197.54	197.82	65.45	23.94	24.23	24.79	25.08	25.36	25.64	55.20	13.18	123.84	136.98	152.61	177.18	177.18	447
4'	4'	6"	6"	6"	6"	6"	6"	6"	⅜"	5"	8"	8"	8"	8"	8"	8"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	25'-0"	26'-0"	29'-0"	1'-9"	.352	.352	.352	.352	.352	.352	.352	8.66	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	43.24	0	0	0	0	0	0	0	282
5'	4'	7"	7"	7"	7"	7"	7"	7"	⅜"	7.0"	5.5"	5.5"	5.5"	5.5"	5.5"	5.5"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.464	.464	.464	.464	.464	.464	.464	9.43	55.36	64.48	64.48	64.48	64.48	64.48	64.48	55.36	64.48	64.48	64.48	64.48	64.48	64.48	64.48	0	0	0	0	0	0	0	299
6'	4'	8"	8"	8"	9"	9"	9"	9"	⅜"	6.0"	4.5"	4.5"	4.0"	4.0"	4.0"	4.0"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.576	.536	.556	.603	.603	.603	.603	9.60	67.74	82.12	82.12	89.90	89.90	89.90	89.90	67.74	82.12	82.12	89.90	89.90	89.90	89.90	0	0	0	0	0	0	0	308
8'	4'	9"	10"	11"	12"	13"	13"	13"	⅜"	10"	9.5"	8.5"	7.5"	6.5"	6.5"	6.5"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.715	.773	.835	.895	.953	.955	.955	10.18	70.16	73.17	79.60	87.67	97.86	97.94	97.94	40.33	20.91	21.09	23.38	23.66	23.66	23.66	27.17	50.36	56.51	64.29	74.18	74.18	74.18	451
10'	4'	11"	12"	13"	14"	15"	16"	16"	⅜"	8.0"	7.5"	6.5"	6.0"	5.5"	5.0"	5.0"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.971	1.043	1.115	1.188	1.261	1.333	1.333	10.61	92.79	93.13	154.43	162.30	172.07	184.07	184.37	56.11	25.07	25.36	26.64	26.92	27.21	27.21	41.60	78.06	90.07	97.57	106.80	117.96	117.96	454
12'	4'	13"	14"	15"	17"	18"	19"	20"	⅜"	7.0"	6.0"	5.5"	5.0"	4.5"	4.0"	4.0"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	1.276	1.361	1.446	1.616	1.701	1.785	1.870	11.10	125.44	142.78	153.20	167.10	183.23	203.34	203.62	69.92	27.34	27.63	28.19	28.48	28.76	29.04	56.01	14.80	155.57	188.91	154.25	174.58	174.58	492
5'	5'	7"	7"	7"	7"	7"	7"	7"	⅜"	7.0"	5.5"	5.5"	5.5"	5.5"	5.5"	5.5"	12"	12"	12"	12"	10'-9"	13'-3"	15'-9"	18'-9"	21'-9"	24'-9"	28'-9"	2'-0"	.507	.507	.507	.507	.507	.507	.507	12.75	58.76	67.88	67.88	67.88	67.88	67.88	67.88	58.76	67.88	67.88	67.88	67.88	67.88	67.88	67.88	0	0	0	0	0	0	0	376
6'	5'	8"	8"	8"	9"	9"	9"	9"	⅜"	6.0"	4.5"	4.5"	4.0"	4.0"	4.0"	4.0"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.642	.642	.642	.691	.691	.691	.691	9.70	72.53	88.16	88.16	96.24	96.24	96.24	96.24	72.53	88.16	88.16	96.24	96.24	96.24	96.24	0	0	0	0	0	0	0	387
8'	5'	9"	10"	11"	12"	13"	13"	13"	⅜"	10"	9.5"	8.5"	7.5"	6.5"	6.5"	6.5"	12"	12"	12"	12"	11'-0"	14'-0"	17'-0"	20'-0"	23'-0"	26'-0"	29'-0"	1'-9"	.803	.864	.926	.988	1.049	1.049	1.049	13.77	74.57	77.55	84.03	92.33	102.67	102.67	102.67	46.76	26.81	26.49	27.06	27.06	27.06	27.06	27.74	51.34	57.60	65.55	75.61	75.61	75.61	511
10'	5'	11"	12"	13"	14"	15"	16"	16"	⅜"	8.0"	7.5"	6.5"	6.0"	5.5"	5.0"	5.0"	12"	12"	12"	12"	10'-10"	13'-10"	16'-10"	19'-10"	22'-10"	25'-10"	28'-10"	2'-1"	1.062	1.136	1.210	1.284	1.358	1.432	1.432	14.72	102.29	107.80	120.29	128.03	137.82	149.36	149.36	59.97	28.47	28.76	29.04	29.32	29.61	29.61	41.32	79.33	91.53	99.15	109.50	119.24	119.24	537
12'	5'	13"	14"	15"	17"	18"	19"	20"	⅜"	7.0"	6.0"	5.5"	5.0"	4.5"	4.0"	4.0"	12"	12"	12"	12"	10'-9"	13'-9"	16'-9"	19'-9"	22'-9"	25'-9"	28'-9"	2'-0"	1.370	1.457	1.543	1.716	1.803	1.889	1.975	15.07	130.19	147.10	158.33	172.38	188.72	209.08	209.37	73.94	30.74	31.03	31.59	31.88	32.16	32.44	56.85	116.36	127.90	140.75	156.84	176.93	176.93	564
6'	6'	8"	8"	8"	9"	9"	9"	9"	⅜"	6.0"	4.5"	4.5"	4.0"	4.0"	4.0"	4.0"	12"	12"	12"	12"	10'-4"	13'-4"	16'-4"	19'-4"	22'-4"	25'-4"	28'-4"	2'-2"	.691	.632	.692	.741	.741	.741	.741	11.31	75.93	91.56	91.56	99.64	99.64	99.64	99.64	75.93	91.56	91.56	99.64	99.64	99.64	99.64	0	0	0	0	0	0	0	477
8'	6'	9"	10"	11"	12"	13"	13"	13"	⅜"	10"	9.5"	8.5"	7.5"	6.5"	6.5"	6.5"	12"	12"	12"	12"	10'-7"	13'-7"	16'-7"	19'-7"	22'-7"	25'-7"	28'-7"	2'-2"	.903	.966	1.029	1.093	1.156	1.156	1.156	13.73	78.86	91.97	98.63	107.01	117.46	131.66	131.66	50.55	29.93	30.23	30.82	31.12	30.46	30.46	28.34	52.36	58.74	66.83	77.10	77.10	77.10	601
10'	6'	11"	12"	13"	14"	15"	16"	16"	⅜"	8.0"	7.5"	6.5"	6.0"	5.5"	5.0"	5.0"	12"	12"	12"	12"	10'-6"	13'-6"	16'-6"	19'-6"	22'-6"	25'-6"	28'-6"	2'-3"	1.165	1.241	1.316	1.392	1.468	1.543	1.543	19.76	86.91	116.48	125.16	133.19	142.28	154.62	154.62	63.87	31.87	32.16	32.44	32.72	33.01	33.01	83.04	80.61	93.00	100.75	110.26	116.81	116.81	629
12'	6'	13"	14"	15"	17"	18"	19"	20"	⅜"	7.0"	6.0"	5.5"	5.0"	4.5"	4.0"	4.0"	12"	12"	12"	12"	10'-6"	13'-6"	16'-6"	19'-6"	22'-6"	25'-6"	28'-6"	2'-3"	1.277	1.565	1.633	1.829	1.917	2.004	2.093	20.76	94.98	116.48	125.16	133.19	142.28	154.62	154.62	63.87	31.87	32.16	32.44	32.72	33.01	33.01	83.04	80.61	93.00	100.75	110.26	116.81	116.81	660
8'	8'	9"	10"	11"	12"	13"	13"	13"	⅜"	10"	9.5"	8.5"	7.5"	6.5"	6.5"	6.5"	12"	12"	12"	12"	10'-4"	13'-4"	16'-4"	19'-4"	22'-4"	25'-4"	28'-4"	2'-5"	1.014	1.077	1.141	1.204	1.267	1.267	1.267	23.39	85.67	98.77	95.43	103.81	114.36	115.09	119.97	52.36	36.41	36.69	36.98	37.26	38.79	41.87	28.34	52.36	58.74	66.83	77.10	77.10	77.10	903
10'	8'	11"	12"	13"	14"	15"	16"	16"	⅜"	8.0"	7.5"	6.5"	6.0"	5.5"	5.0"	5.0"	12"	12"	12"	12"	10'-2"	13'-2"	16'-2"	19'-2"	22'-2"	25'-2"	28'-2"	2'-6"	1.165	1.241	1.316	1.392	1.468	1.543	1.543	26.02	86.91	116.48	125.16	133.19	142.28	154.62	154.62	63.87	31.87	32.16	32.44	32.72	33.01	33.01	83.04	80.61	93.00	100.75	110.26	116.81	116.81	660
12'	8'	13"	14"	15"	17"	18"	19"	20"	⅜"	7.0"	6.0"	5.5"	5.0"	4.5"	4.0"	4.0"	12"	12"	12"	12"	10'-2"	13'-2"	16'-2"	19'-2"	22'-2"	25'-2"	28'-2"	2'-6"	1.277	1.565	1.633	1.829	1.917	2.004	2.093	27.02	94.98	116.48	125.16	133.19	142.28	154.62	154.62	63.87	31.87	32.16	32.44	32.72	33.01	33.01	83.04	80.61	93.00	100.75	110.26	116.81	116.81	660
8'	8'	9"	10"	11"	12"	13"	13"	13"	⅜"	10"	9.5"	8.5"	7.5"	6.5"	6.5"	6.5"	12"	12"	12"	12"	11"	9"	9'-4"	12'-4"	15'-4"	18'-4"	21'-4"	24'-4"	27'-4"	3'-5"	1.014	1.077	1.141	1.204	1.267	1.267	1.267	33.39	85.67	98.77	95.43	103.81	114.36	115.09	119.97	52.36	36.41	36.69	36.98	37.26	38.79	41.87	28.34	52.36	58.74	66.83	77.10	77.10	77.10	903
10'	8'	11"	12"	13"	14"	15"	16"	16"	⅜"	8.0"	7.5"	6.5"	6.0"	5.5"	5.0"	5.0"	12"	12"	12"	12"	11"	9"	9'-6"	12'-6"	15'-6"	18'-6"	21'-6"	24'-6"	27'-6"	3'-3"	1.165	1.241	1.316	1.392	1.468	1.543	1.543	35.52	86.91	116.48	125.16	133.19	142.28	154.62	154.62	63.87	31.87	32.16	32.44	32.72	33.01	33.01	83.04	80.61	93.00	100.75	110.26	116.81	116.81	660
12'	8'	13"	14"	15"	17"	18"	19"	20"	⅜"	7.0"	6.0"	5.5"	5.0"	4.5"	4.0"	4.0"	12"	12"	12"	12"	11"	9"	9'-6"	12'-6"	15'-6"	18'-6"	21'-6"	24'-6"	27'-6"	3'-3"	1.657	1.741	1.826	2.016	2.105	2.194	2.284	37.50	102.44	160.38	178.23	186.44	203.21	227.51	230.63	84.66	40.94	41.29	41.79	42.08	44.05	48.33	28.48	139.57	150.80	166.65	181.76	181.76	181.76	906
10'	10'	11"	12"	13"	14"	15"	16"	16"	⅜"	8.0"	7.5"	6.5"	6.0"	5.5"	5.0"	5.0"	12"	12"	12"	12"	11"	9"	8"	7"	8'-9"	11'-9"	14'-9"	17'-9"	20'-8"	23'-8"	26'-8"	4'-1"	1.545	1.625	1.702	1.781	1.860	1.938	1.938	53.46	122.09	126.16	141.69	151.82	166.79	182.63	187.15	70.41	45.47	45.76	47.90	51.26	57.16	61.60	44.49	83.44	95.93	103.92	113.73	125.47	125.47	1113
12'	10'	13"	14"	15"	17"	18"	19"	20"	⅜"	7.0"	6.0"	5.5"	5.0"	4.5"	4.0"	4.0"	12"	12"	12"	12"	11"	9"	8"	7"	8'-6"	11'-6"	14'-6"	17'-6"	20'-6"	23'-6"	26'-6"	4'-3"	1.961	1.958	2.045	2.227	2.318	2.409	2.500	54.61	51.29	68.89	80.38	97.05	119.34	124.26	129.14	59.08	47.74	48.03	50.56	56.11	60.15	65.33	53.31	121.15	132.50	146.51	163.12	184.11	184.11	1160
12'	12'	13"	14"	15"	17"	18"	19"	20"	⅜"	7.0"	6.0"	5.5"	5.0"	4.5"	4.0"	4.0"	8"	8"	8"	7"	6"	5"	5"	7'-6"	10'-6"	13'-6"	16'-6"	19'-6"	22'-6"	25'-6"	5'-3"	2.202	2.185	2.278	2.463	2.556	2.648	2.741	73.56	77.30	89.27	70.02	72.54	76.13	77.79	78.67	111.18	66.52	66.95	73.10	80.77	91.47	92.15	60.12	127.75	134.27	148.44	165.36	186.54	186.54	1445



When Culverts are on a grade the fill shall be determined at each end as shown in above diagram instead of the fill at center of culvert.

$d_1 = 12' + 1.5'(f_1 - 1')$

$d_2 = 12' + 1.5'(f_2 - 1')$

$d_1 \sec \phi = R_1 + A.$

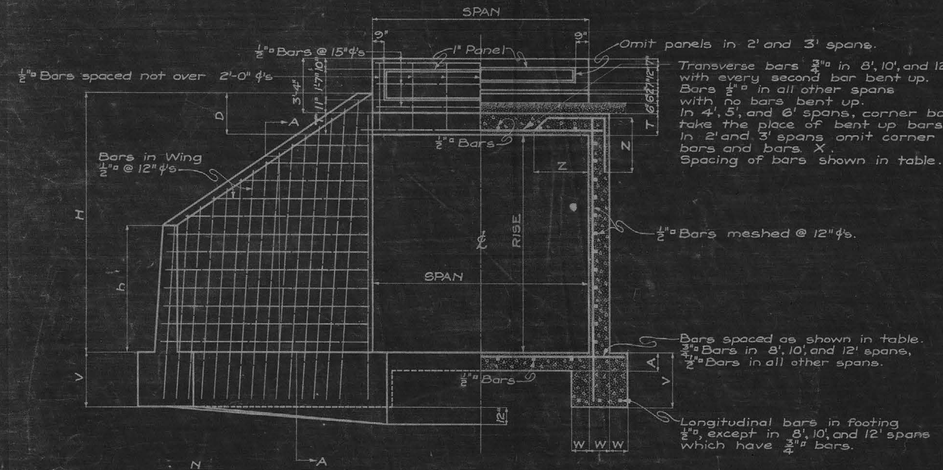
STATE OF NEBRASKA
STANDARD DESIGN
CLASS T-20 HIGH FILL
CONCRETE BOX CULVERTS.
2' TO 12' SPANS 2' TO 12' RISES
24' ROADWAY
DEPARTMENT OF PUBLIC WORKS LINCOLN NEBR.
MAR. 9, 1921.

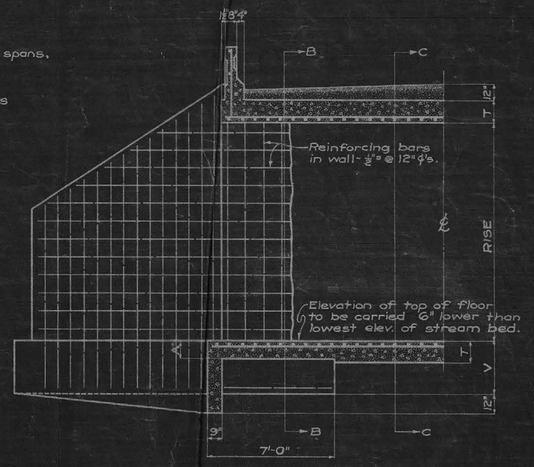
J. K. Comahan — OFFICE ENGINEER
Leo Johnson — STATE ENGINEER

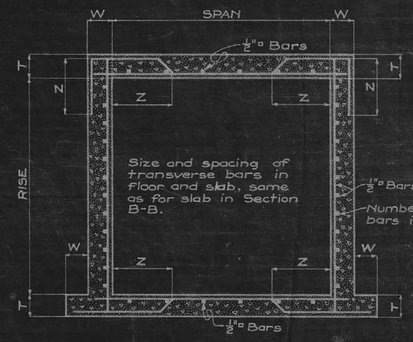
This plan revised Nov. 1 1922 and supersedes all similar plans of previous date.

SHEET 1 OF 2
1801
DESIGNED BY T.E.
DRAWN BY
CHECKED BY

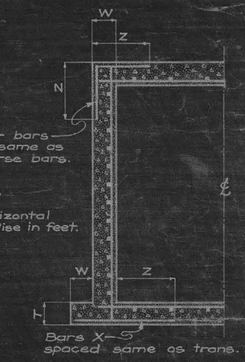
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	NEB.	38C	1922	29	29



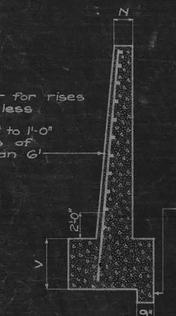




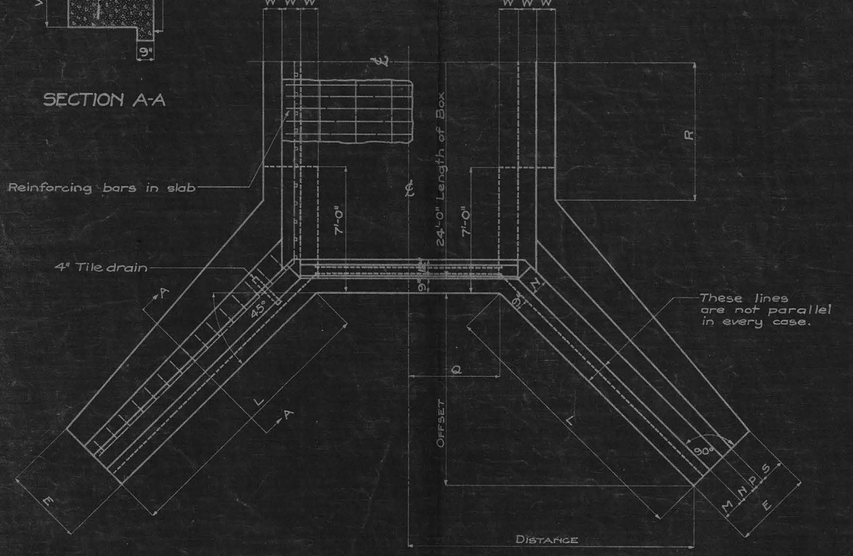
SECTION C-C
SHOWING ARRANGEMENT OF BARS FOR 8', 10', AND 12' SPANS



SECTION C-C
SHOWING ARRANGEMENT OF BARS FOR 4', 5', AND 6' SPANS



SECTION A-A



PLAN

SPAN	RISE	WING: Distance	Offset	L	H	h	M	N	P	S	BARREL: T	W	A	N	FOOTING: E	V	G	R	D Parapet	BARS IN SLAB: No. Long. Bars	Spacing Trans.	BARS IN FLOOR: No. Long. Bars	Spac. Trans. Sec. B-B	Spac. Trans. Sec. C-C	No. of Long Bars in Footings	CU. YDS. CONCRETE: 24' Box	1" Add.	POUNDS STEEL ½"ø: 24' Box	1" Add.	¾"ø: 24' Box	1" Add.
2'	2'	3'-2"	2'-8"	3'-9"	3'-6"	1'-9"	4"	7"	0	4"	6"	6"	6"	0	1'-3"	1'-0"	6"	11'-0"	1'-6"	2	12"	2	12"	12"	8	8.20	.204	550	16.2	0	0
3'	2'	3'-8"	2'-8"	3'-9"	3'-6"	1'-9"	4"	7"	0	4"	6"	6"	6"	0	1'-3"	1'-0"	1'-0"	11'-0"	1'-6"	2	11"	2	12"	11"	8	9.40	.241	614	18.4	0	0
4'	2'	4'-2"	2'-8"	3'-9"	3'-6"	1'-9"	4"	7"	0	4"	6"	6"	6"	1'-3"	1'-3"	1'-0"	1'-6"	11'-0"	1'-6"	3	8"	3	11"	8"	8	10.50	.278	970	36.5	0	0
5'	2'	4'-9"	2'-9"	3'-10"	3'-7"	1'-10"	4"	7"	0	4"	7"	6"	6"	1'-6"	1'-3"	1'-1"	2'-0"	11'-0"	1'-7"	4	7"	4	8"	7"	8	12.65	.354	1229	46.9	0	0
6'	2'	5'-3"	2'-9"	3'-11"	3'-8"	1'-10"	4"	7"	0	4"	8"	6"	7"	1'-9"	1'-3"	1'-2"	2'-6"	11'-0"	1'-8"	4	6"	4	7"	6"	12	15.14	.444	1507	58.4	0	0
8'	2'	6'-4"	2'-10"	4'-0"	3'-9"	1'-11"	5"	7"	0	4"	9"	6"	9"	2'-0"	1'-4"	1'-3"	3'-6"	11'-0"	1'-9"	4	10"	4	11"	10"	8	19.95	.602	554	15.7	1284	49.4
10'	2'	7'-5"	2'-11"	4'-2"	3'-11"	2'-0"	5"	7"	0	4"	11"	6"	10"	2'-6"	1'-4"	1'-4"	4'-6"	11'-0"	1'-11"	5	8"	5	9"	8"	12	26.34	.855	628	18.0	1941	75.5
12'	2'	8'-7"	3'-1"	4'-4"	4'-1"	2'-0"	5"	7"	0	4"	13"	6"	12"	3'-0"	1'-4"	1'-5"	5'-6"	11'-0"	2'-1"	6	7"	6	7"	7"	12	34.28	1.157	706	20.2	2624	102.2
3'	3'	4'-4"	3'-4"	4'-9"	4'-6"	2'-3"	5"	8"	0	4"	6"	6"	6"	0	1'-5"	1'-6"	1'-0"	11'-0"	1'-6"	2	11"	2	12"	11"	8	12.81	.278	760	21.8	0	0
4'	3'	4'-10"	3'-4"	4'-9"	4'-6"	2'-3"	5"	8"	0	4"	6"	6"	6"	1'-3"	1'-5"	1'-6"	1'-6"	11'-0"	1'-6"	3	8"	3	11"	8"	8	13.97	.315	1117	33.8	0	0
5'	3'	5'-5"	3'-5"	4'-10"	4'-7"	2'-4"	6"	8"	0	4"	7"	6"	8"	1'-6"	1'-6"	1'-7"	2'-0"	11'-0"	1'-7"	4	7"	4	8"	7"	8	16.22	.392	1377	50.3	0	0
6'	3'	6'-0"	3'-6"	4'-11"	4'-8"	2'-4"	6"	8"	0	4"	8"	6"	7"	1'-9"	1'-6"	1'-7"	2'-6"	11'-0"	1'-8"	4	6"	4	7"	6"	12	18.63	.481	1653	61.8	0	0
8'	3'	7'-1"	3'-7"	5'-1"	4'-9"	2'-5"	6"	8"	0	4"	9"	6"	9"	2'-0"	1'-6"	1'-8"	3'-6"	11'-0"	1'-9"	4	10"	4	11"	10"	8	23.51	.639	705	19.1	1284	49.4
10'	3'	8'-3"	3'-8"	5'-3"	4'-11"	2'-6"	6"	8"	0	4"	11"	6"	10"	2'-6"	1'-6"	1'-8"	4'-6"	11'-0"	1'-11"	5	8"	5	9"	8"	12	29.88	.892	777	21.4	1941	75.5
12'	3'	9'-4"	3'-10"	5'-5"	5'-1"	2'-6"	6"	8"	0	4"	13"	6"	12"	3'-0"	1'-6"	1'-9"	5'-6"	11'-0"	2'-1"	6	7"	6	7"	7"	12	37.86	1.194	854	23.7	2626	102.2
4'	4'	5'-8"	4'-2"	5'-10"	5'-6"	2'-9"	7"	9"	0	4"	6"	6"	6"	1'-3"	1'-8"	1'-9"	1'-6"	11'-0"	1'-6"	3	8"	3	11"	8"	8	17.44	.352	1270	43.2	0	0
5'	4'	6'-1"	4'-2"	5'-11"	5'-7"	2'-10"	7"	9"	0	4"	7"	7"	6"	1'-7"	1'-8"	1'-10"	1'-1"	11'-0"	1'-7"	4	7"	4	8"	7"	8	20.84	.464	1551	54.6	0	0
6'	4'	6'-8"	4'-3"	6'-0"	5'-8"	2'-10"	7"	9"	0	4"	8"	7"	7"	1'-10"	1'-8"	1'-10"	2'-3"	11'-0"	1'-8"	4	6"	4	7"	6"	12	23.32	.555	1850	66.3	0	0
8'	4'	7'-9"	4'-4"	6'-1"	5'-9"	2'-11"	7"	9"	0	4"	9"	7"	9"	2'-0"	1'-8"	1'-11"	3'-5"	11'-0"	1'-9"	4	10"	4	11"	10"	8	28.34	.714	862	22.5	1311	50.3
10'	4'	8'-10"	4'-5"	6'-3"	5'-11"	3'-0"	7"	9"	0	5"	11"	7"	10"	2'-6"	1'-9"	1'-11"	4'-5"	11'-0"	1'-11"	5	8"	5	9"	8"	12	34.87	.971	939	24.9	1970	76.6
12'	4'	9'-11"	4'-6"	6'-5"	6'-1"	3'-0"	7"	9"	0	5"	13"	7"	12"	3'-0"	1'-9"	2'-0"	5'-5"	11'-0"	2'-1"	6	7"	6	7"	7"	12	43.00	1.276	1015	27.1	2663	103.5
5'	5'	6'-10"	4'-11"	7'-0"	6'-7"	3'-4"	8"	10"	0	5"	7"	7"	6"	1'-7"	1'-11"	2'-0"	1'-1"	10'-9"	1'-7"	4	7"	4	8"	7"	8	25.19	.507	1738	58.0	0	0
6'	5'	7'-4"	5'-0"	7'-1"	6'-9"	3'-4"	8"	10"	0	5"	8"	8"	7"	1'-11"	1'-11"	2'-1"	2'-4"	11'-0"	1'-8"	4	6"	4	7"	6"	12	29.23	.642	2045	70.8	0	0
8'	5'	8'-5"	5'-1"	7'-2"	6'-9"	3'-5"	8"	10"	0	6"	9"	8"	9"	2'-0"	2'-0"	2'-1"	3'-4"	11'-0"	1'-9"	4	10"	4	11"	10"	8	34.09	.802	1030	26.0	1337	51.2
10'	5'	9'-6"	5'-2"	7'-4"	6'-11"	3'-6"	8"	10"	0	6"	11"	8"	10"	2'-6"	2'-0"	2'-2"	4'-4"	10'-10"	1'-11"	5	8"	5	9"	8"	12	41.22	1.062	1110	28.2	2004	77.9
12'	5'	10'-8"	5'-4"	7'-6"	7'-1"	3'-6"	8"	10"	0	6"	13"	8"	12"	3'-0"	2'-0"	2'-2"	5'-4"	10'-9"	2'-1"	6	7"	6	7"	7"	12	49.31	1.370	1185	30.5	2701	104.9
6'	6'	8'-1"	5'-9"	8'-2"	7'-8"	3'-10"	9"	11"	0	8"	8"	8"	7"	1'-11"	2'-4"	2'-3"	2'-4"	10'-4"	1'-8"	4	6"	4	7"	6"	12	35.32	.691	2208	74.2	0	0
8'	6'	9'-1"	5'-10"	8'-3"	7'-9"	3'-11"	9"	11"	0	8"	9"	9"	9"	2'-0"	2'-4"	2'-3"	3'-3"	10'-7"	1'-9"	4	10"	4	11"	10"	8	41.49	.903	1205	29.3	1351	52.2
10'	6'	10'-2"	5'-11"	8'-5"	7'-11"	4'-0"	10"	11"	0	8"	11"	9"	10"	2'-6"	2'-5"	2'-4"	4'-3"	10'-6"	1'-11"	5	8"	5	9"	8"	12	48.80	1.165	1274	31.6	2036	79.1
12'	6'	11'-4"	6'-1"	8'-7"	8'-1"	4'-0"	10"	11"	0	8"	13"	9"	12"	3'-0"	2'-5"	2'-5"	5'-3"	10'-4"	2'-1"	6	7"	6	7"	7"	12	57.62	1.477	1355	34.0	2738	106.2
8'	8'	10'-7"	7'-4"	10'-4"	9'-9"	4'-11"	12"	12"	5"	6"	9"	9"	9"	2'-0"	2'-11"	2'-6"	3'-3"	9'-4"	1'-9"	4	10"	4	11"	10"	8	58.82	1.014	1593	36.2	1361	52.2
10'	8'	11'-7"	7'-5"	10'-6"	9'-11"	5'-0"	12"	12"	5"	7"	11"	10"	10"	2'-6"	3'-0"	2'-8"	4'-2"	9'-6"	2'-1"	5	8"	5	10"	8"	12	68.87	1.343	1660	37.5	2024	80.4
12'	8'	12'-9"	7'-7"	10'-8"	10'-1"	5'-0"	12"	12"	5"	7"	13"	10"	12"	3'-0"	3'-0"	2'-10"	5'-2"	9'-6"	2'-1"	6	7"	6	8"	7"	12	78.77	1.656	1759	40.7	2695	107.6
10'	10'	13'-1"	9'-0"	12'-8"	11'-1"	6'-0"	14"	12"	6"	11"	11"	11"	10"	2'-6"	3'-7"	3'-0"	4'-1"	8'-8"	1'-11"	5	8"	5	10"	8"	12	91.73	1.545	2091	45.2	2054	81.5
12'	10'	14'-2"	9'-1"	12'-10"	12'-1"	6'-0"	14"	12"	6"	11"	13"	11"	12"	3'-0"	3'-7"	3'-0"	5'-1"	8'-6"	2'-1"	6	7"	6	8"	7"	12	101.22	1.863	2170	47.5	2732	109.0
12'	12'	15'-7"	10'-7"	14'-11"	14'-1"	7'-1"	15"	12"	7"	17"	13"	12"	12"	3'-0"	4'-3"	3'-0"	5'-0"	7'-6"	2'-1"	6	7"	6	8"	7"	12	125.43	2.092	2627	52.7	2770	110.3

Foundation to be carried deeper if necessary to secure suitable bearing.
Central Section C-C may be constructed same as end Sections B-B, when conditions require.
One 4" tile drain through each wing as shown.
Fill not to exceed 1'-0".
All reinforcing bars shall be deformed with effective section equivalent to a square with sides equal to size specified.
No splicing of horizontal bars near junction of wing and barrel.
Splice ½"ø bars with a 2'-0" lap; and ¾"ø bars with a 3'-0" lap.
Chamfer all exposed edges of concrete 1".
Place ½"ø bars 1½" and ¾"ø bars 2½" from surface of concrete.

This plan revised Nov. 1, 1922 and supersedes all similar plans of previous date.

STATE OF NEBRASKA
STANDARD DESIGN
CLASS T-20 LOW FILL
CONCRETE BOX CULVERTS
2' TO 12' SPANS 2' TO 12' RISES
24' ROADWAY
DEPARTMENT OF PUBLIC WORKS — LINCOLN NEBR.
JULY 30, 1921

John R. Cownahan, OFFICE ENGINEER
Geo. Johnson, STATE ENGINEER

1800
DESIGNED BY
TRACED BY
CHECKED BY

This plan supersedes plan No. 400. U5