

A-7

FED. AID DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	558A	1930

S. H. (I.C.H.) 332 SEC. L2
DELAWARE COUNTY

1
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STATE OF OHIO
DEPARTMENT OF HIGHWAYS
GRADE CROSSING ELIMINATION
WITH
THE C.C.C. & ST. L. RY. CO.
DELAWARE ~ MT. GILEAD ROAD
S.H. (I.C.H.) NO. 332 SEC. L2 PET. NO.
DELAWARE COUNTY
BROWN TOWNSHIP JUNE 1929

The Standard Specifications of the STATE OF OHIO, Department of Highways, in force on date of contract will govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway; and right of way will be provided

Approved: _____
Date: _____ Resident District Deputy Director

Approved: *H. H. H. H.*
Date: *Feb 3, 1930* Resident Division Deputy Director

Approved: *Robt. J. Beightan*
Date: *7/12/30* Deputy Director Bureau of Construction

Approved: _____
Date: _____ Deputy Director Bureau of Maintenance

Approved: *J. V. Burkay*
Date: *2-8-30* Deputy Director Bureau of Bridges

Approved: *Wm. H. H. H.*
Date: *2-17-30* Chief Engineer 1st. Asst. Director

Approved: _____
Date: *2-12-30* Director of Highways

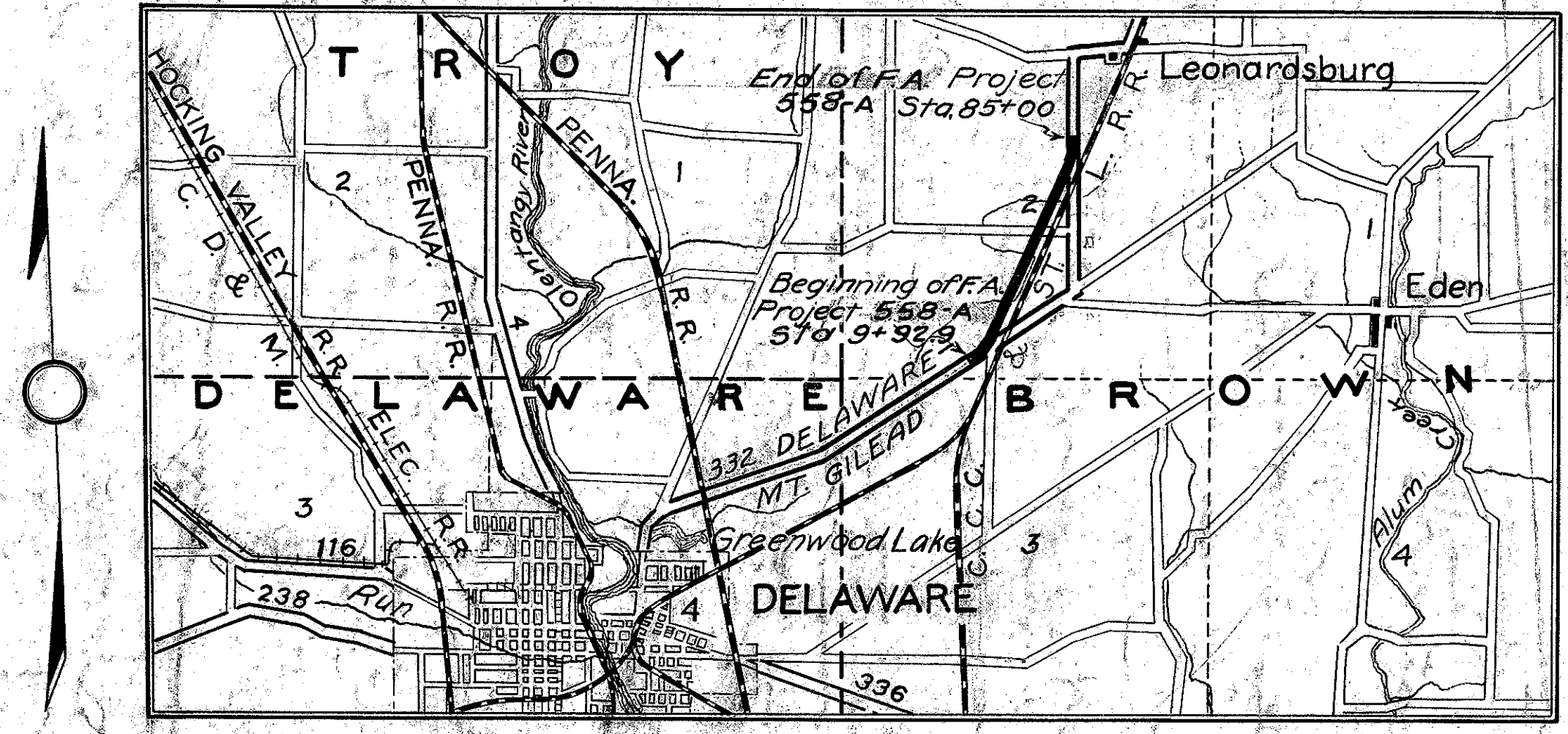
Recommended for Approval: _____
Date: _____ District Engineer Bureau of Public Roads

Recommended for Approval: _____
Date: _____ Chief Engineer Bureau of Public Roads

Approved: _____
Date: _____ Chief of Bureau

CONVENTIONAL SIGNS

State Line	-----
County Line	-----
Township Line	-----
Section Line	-----
Property Line not fenced	-----
Center Line	o-----o
City or Village Line	-----
Fence	x-----x
Telephone or Telegraph	T-----T
Steam Railroad	=====
Electric Line	-----
Guard Rail	-----
Drain Pipe - new	-----
Drain Pipe - old	-----



LOCATION PLAN
SCALE OF MILES
0 1 2 3

PORTION TO BE IMPROVED
DETOURS SHOWN THUS
IMPROVED ROADS

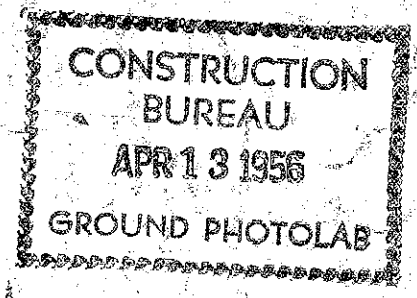
SCALES

PLAN	1" = 100'
PROFILE VERTICAL	1" = 10'
PROFILE HORIZONTAL	1" = 100'
CROSS SECTIONS	1" = 5'

INDEX OF SHEETS

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We, the Commissioners of Delaware County, hereby approve these plans.

J. H. H. H.
T. C. H. H.

Date *Feb 3 1930* County Commissioners.

SUPPLEMENTAL PRINTS OF STRUCTURAL
STANDARDS DRAWINGS NO. SC-A

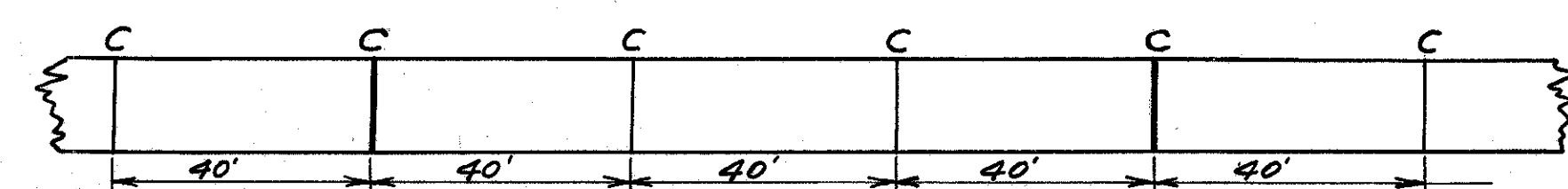
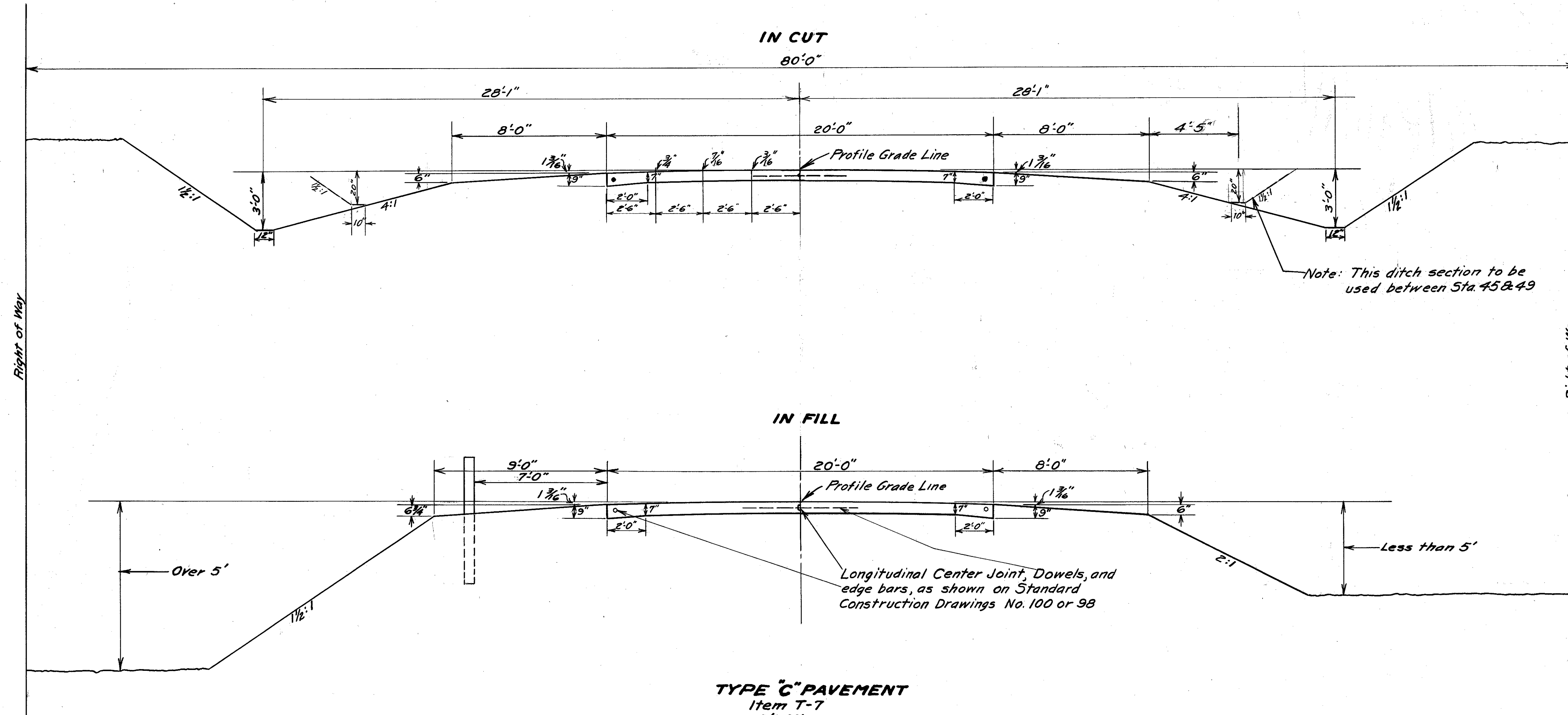
Approved for C.C.C. & St. L. Ry. Co.
By _____
Date _____ Chief Engineer

AS-2430

TYPICAL SECTIONS TYPE "C" CONCRETE

FED. AID DIST. NO 10	STATE OHIO	FED. AID PROJECT 558 A	FISCAL YEAR 1930
S.H. 332		SEC. L2 DELAWARE COUNTY	

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All joints are contraction joints placed at 40' intervals.
Construction Drawing No. 95

This section to be used between Station 9+92.9 and 18+22.7
See Sheet 3 for section to be used between Station 18+22.7 and 85+00

From Sta 9+92.9 to sta 13+00, pavement shall be built ½ at a time.
Dowel bars shall be bent so that ½ of bar will lie against form.
Before the last half is built, the dowel shall be straightened.
When one way traffic is necessary, the contractor shall furnish watchmen to maintain traffic without interruption.

NOTE: Aggregates for Concrete shall be proportioned by weight.



Hub 28+07.31
old c

All points are
tacks in stakes

Place 16' of 15" V.S.P. cement
as Engineer may direct,
between Sta's 24+24
28+22. Field entrance
on left. Place 5 tons
#46 loose stone

Sta. 24 + 31
Change stream to conform to general plan shown.

Curve Data on Sheet No. 6.

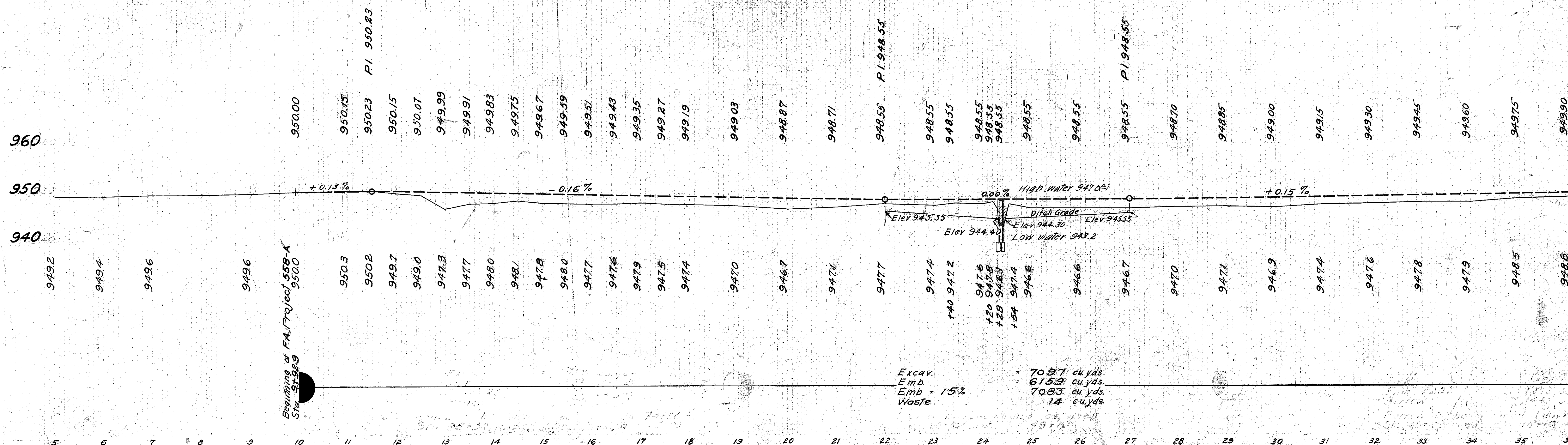
This crossing to be avoided by State Highway traffic but shall remain for the use of local traffic

B.M. Sta. 24+52
N.W. Corner of concrete
headwall 50' Rt. of E
Elev. 944.85

Extra Pavement: 44.4 Sq. Yds

Sta. 24+31. PLAN OF WIDENING

Grade line shown is crown of finished pavement for Type "C"

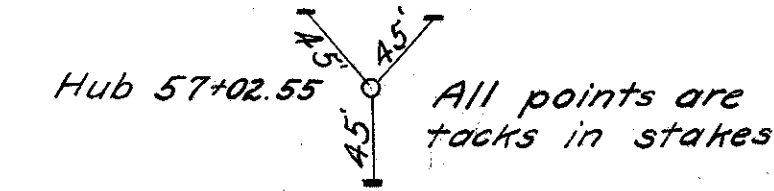
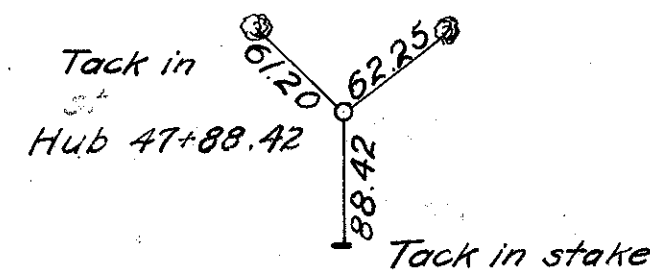
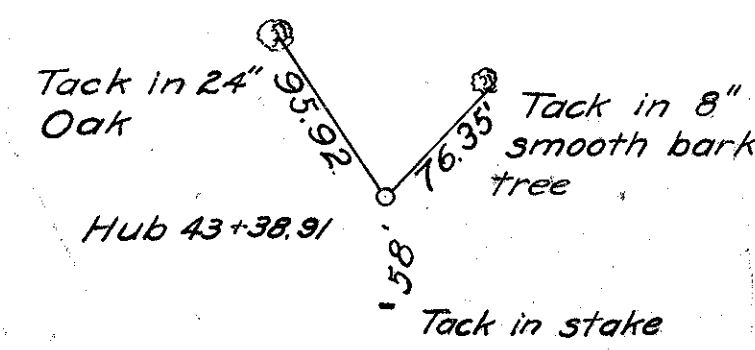
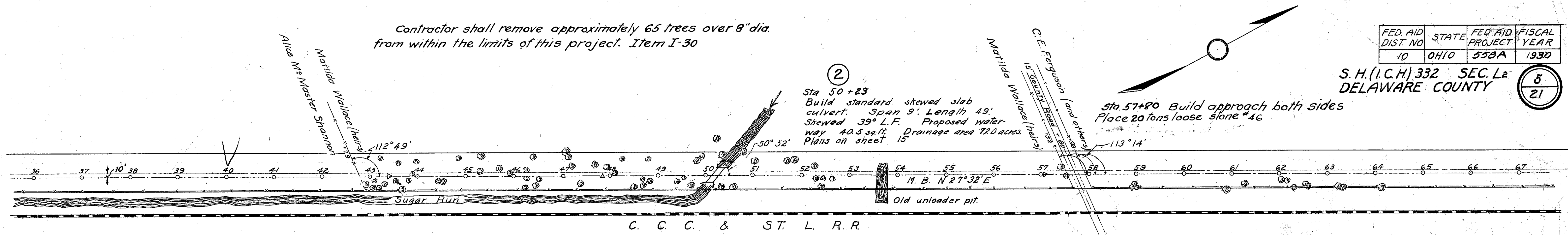


Contractor shall remove approximately 65 trees over 8" dia.
from within the limits of this project. Item I-30

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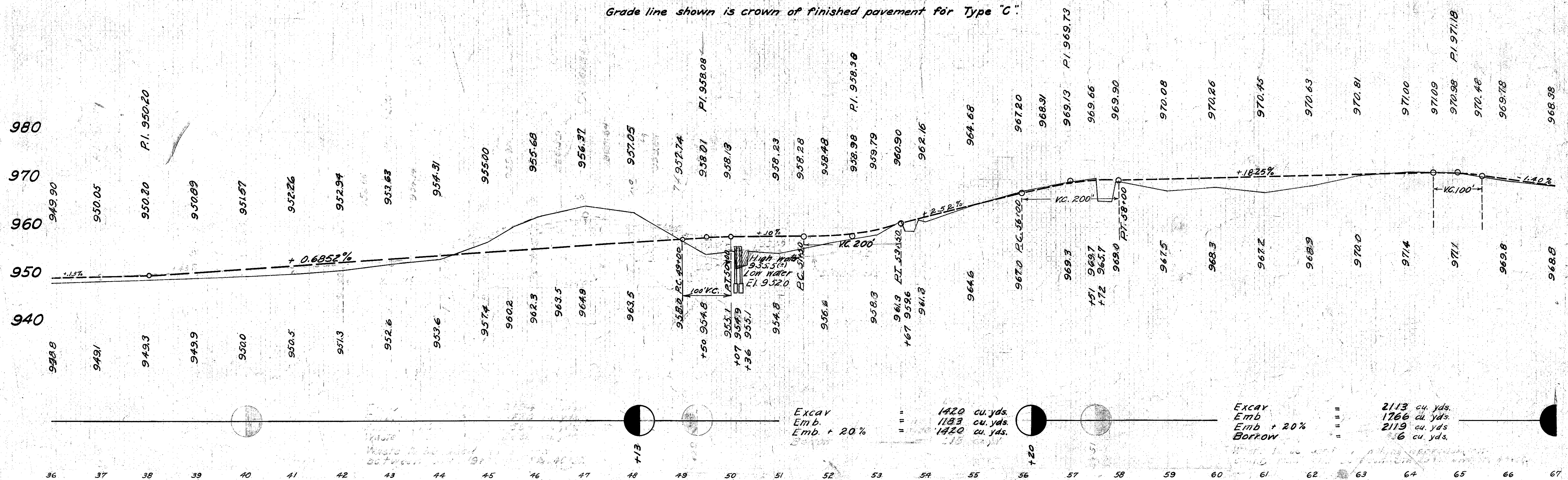
Note: All transit points are witnessed
to the old center line.

B.M. Sta. 42+44
Spike in root of twin oaks
100' Left of C
Elev. 952.15

B.M. Sta. 49+76
Spike in root of 24"
hickory 82' Left of C
Elev. 955.02

B.M. Sta. 57+04
Spike in root of 30"
oak 215' Left of C
Elev. 961.44

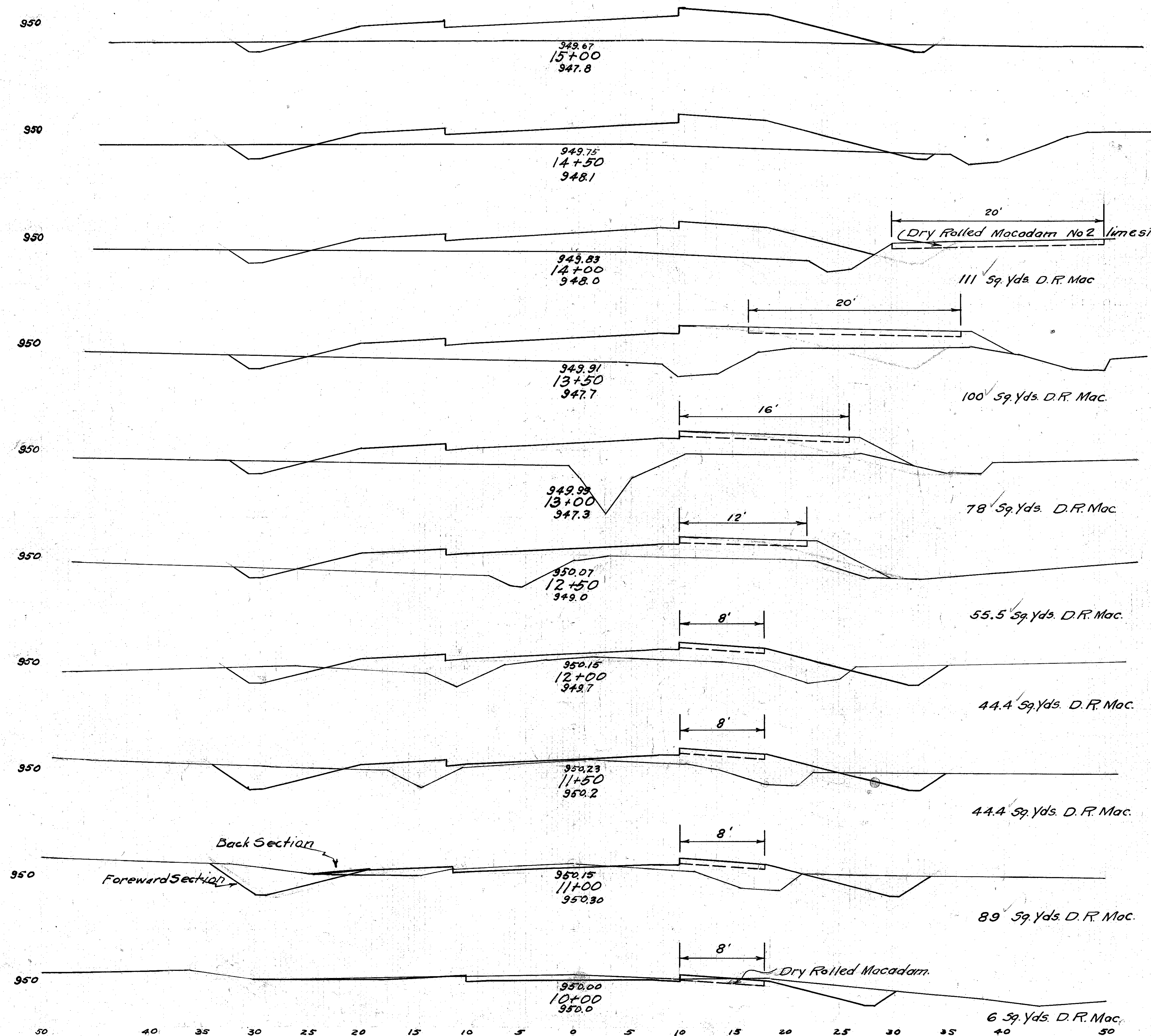
Grade line shown is crown of finished pavement for Type "C".



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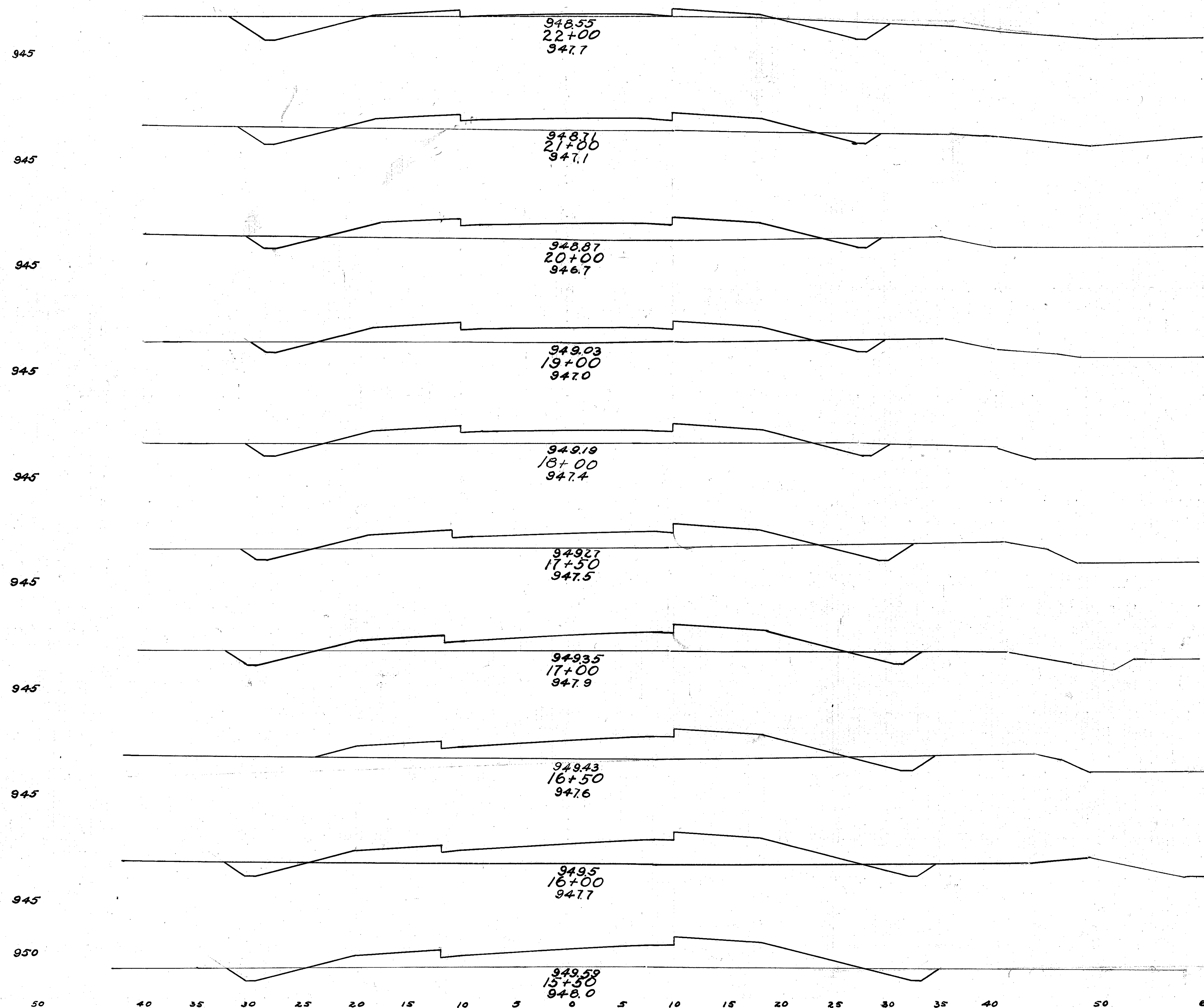
End Area	Cu. Yds.	Cut	Fill
5	99	12	172
8	87	21	175
15	102	19	209
15	124	10	212
6	105	8	179
3	88	20	136
19	59	38	93
22	41	52	59
34	23	67	44
16	24	3	0
20	0	0	0

Sta. 9+32.9 Pt. of Beginning

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End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
26	10		
		70	109
12	49		
		40	211
9	65		
		33	237
9	63		
		35	220
10	56		
		20	110
12	62		
		22	122
12	70		
		18	140
8	81		
		17	158
11	90		
		19	158
10	81		
		14	167

S. H. 332

SEC. L₂

DELAWARE

COUNTY

End Area Cu. Yds.		Cu. Yds.	
Cut	Fill	Cut	Fill
10	54		
		44	213
14	61		
		70	226
24	61		
		48	78
32	30		
		12	47
24	183		
29	33		
		14	15
66	8		
		46	10
57	18		
		124	38
55	16		
		69	25
38	18		
		118	52

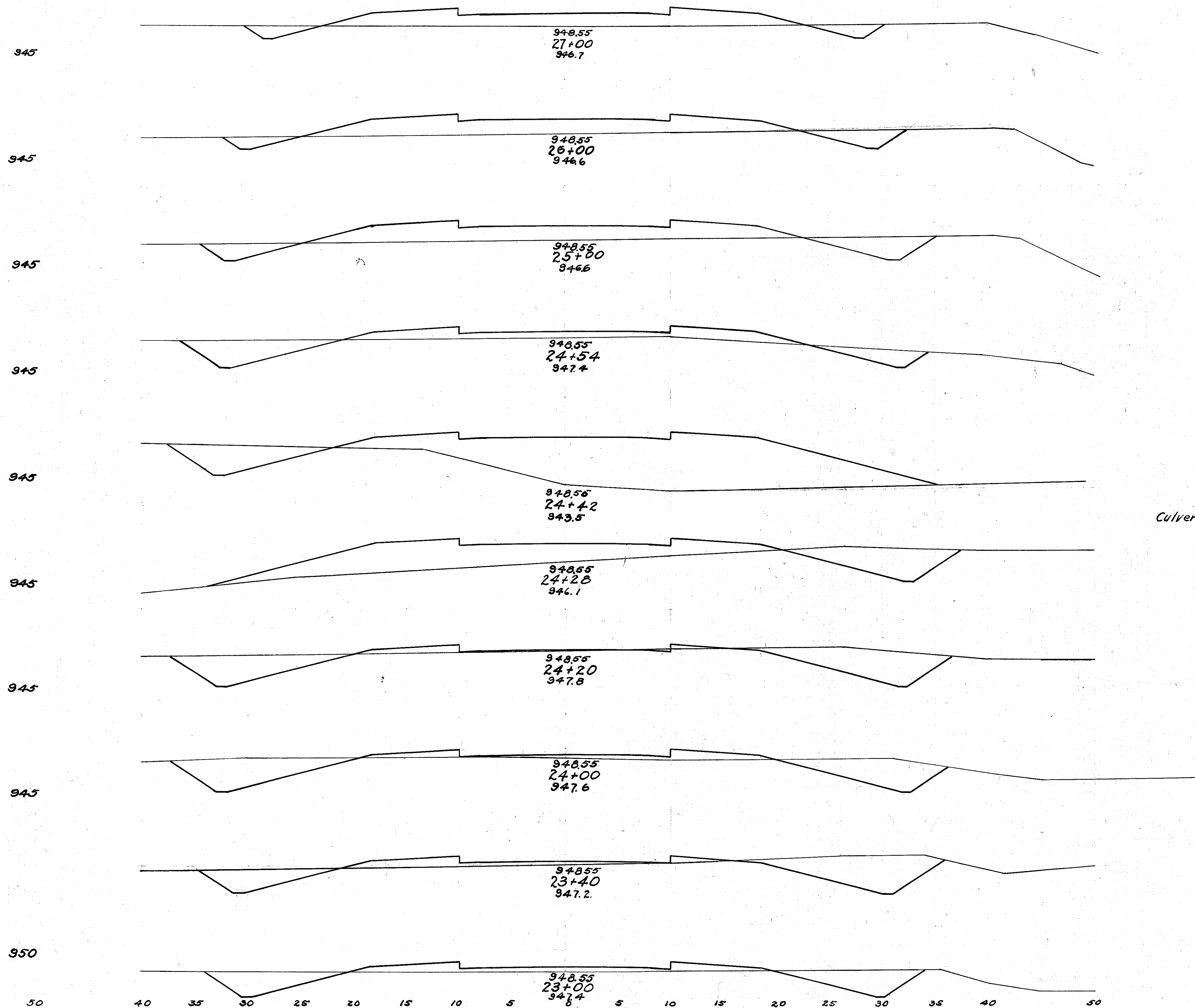
Excav. 7097 Cu. Yds.

Emb. 6159 "

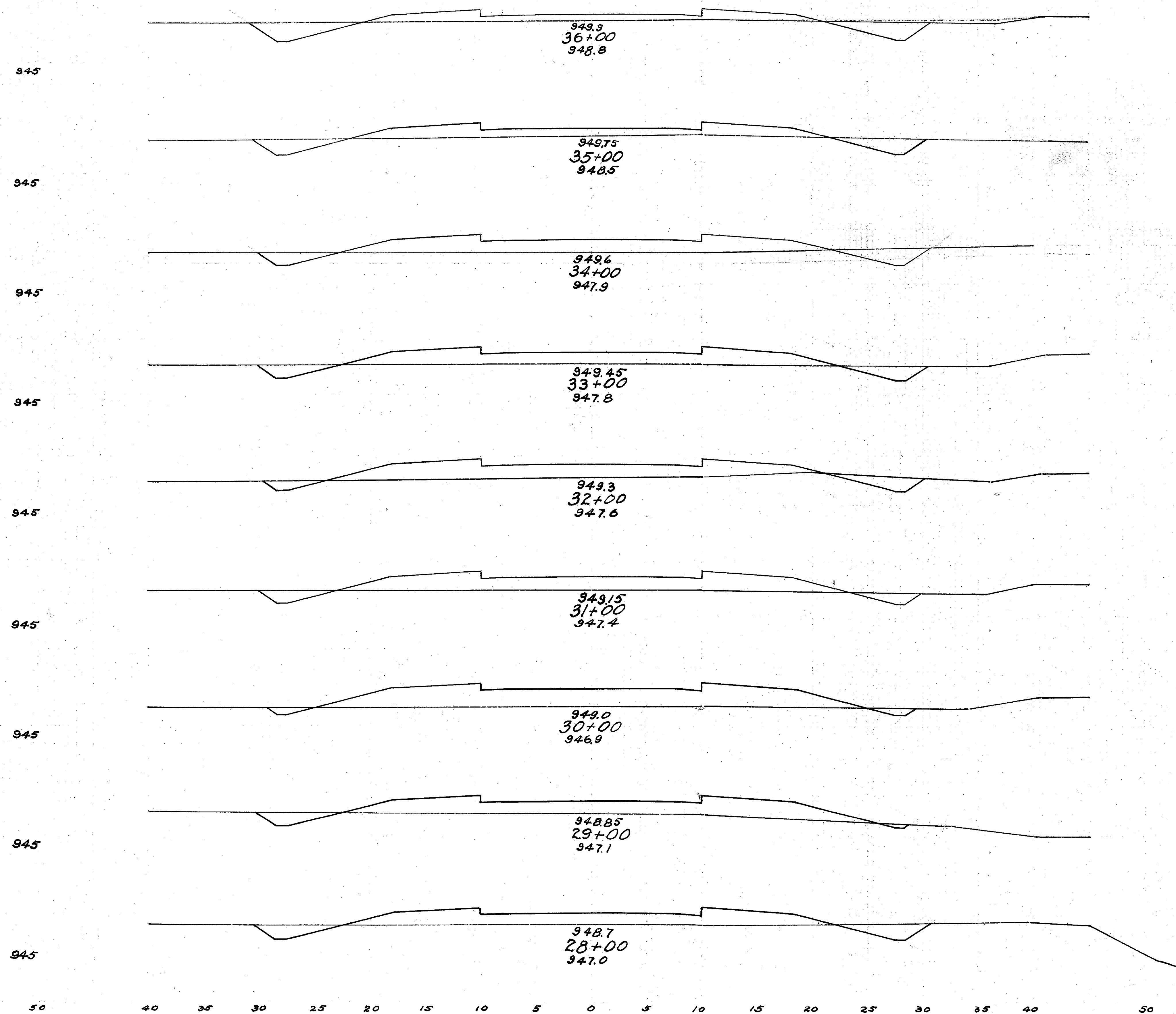
Emb. + 15% 7083 "

Waste 114 "

Culvert - No Excavation



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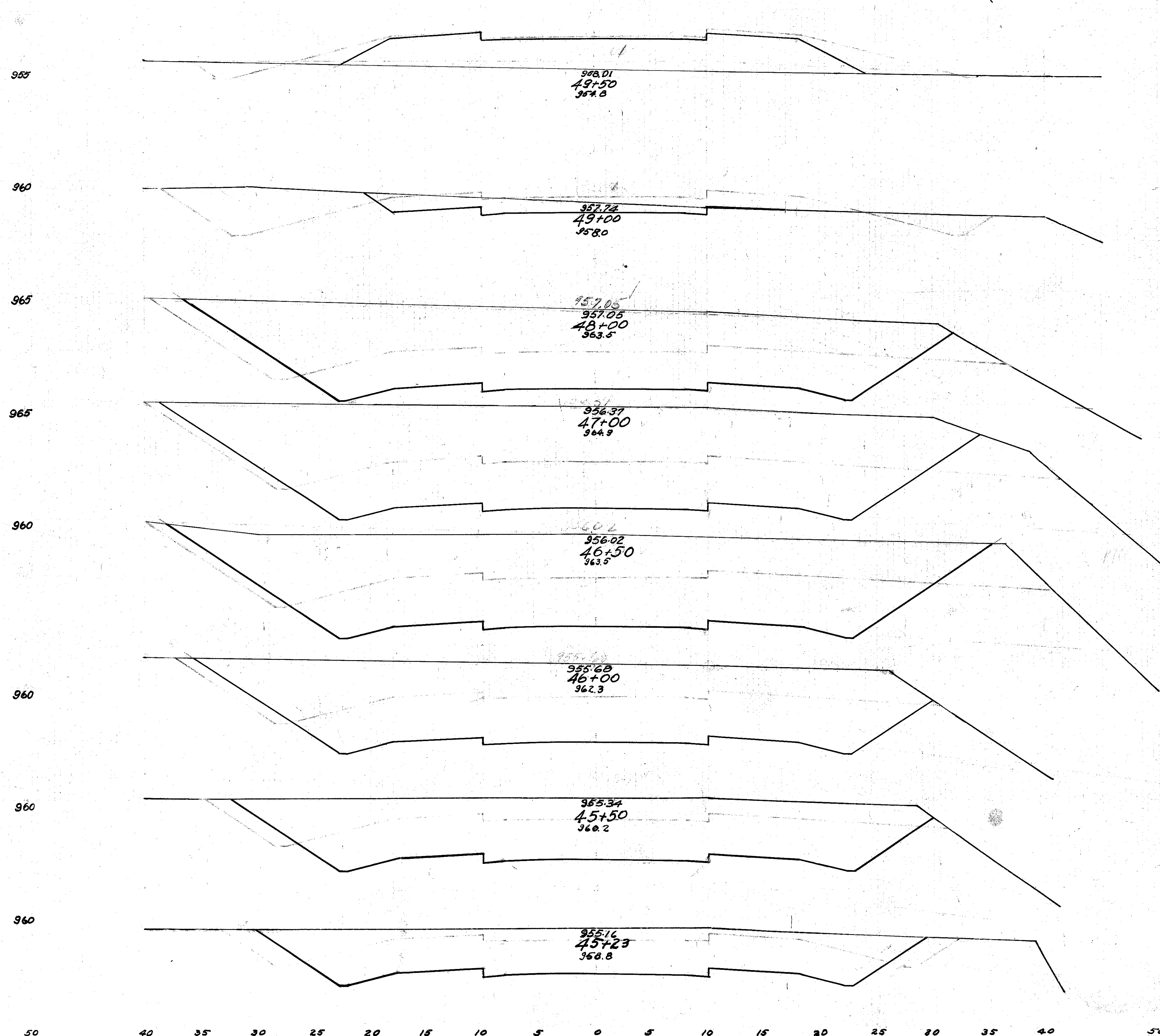


End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
18	25		
		57	107
13	33		
		46	154
12	50		
		41	178
10	46		
		37	182
10	52		
		33	196
8	54		
		22	235
4	73		
		20	237
7	55		
		37	185
13	45		
		43	183

FED. AID DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
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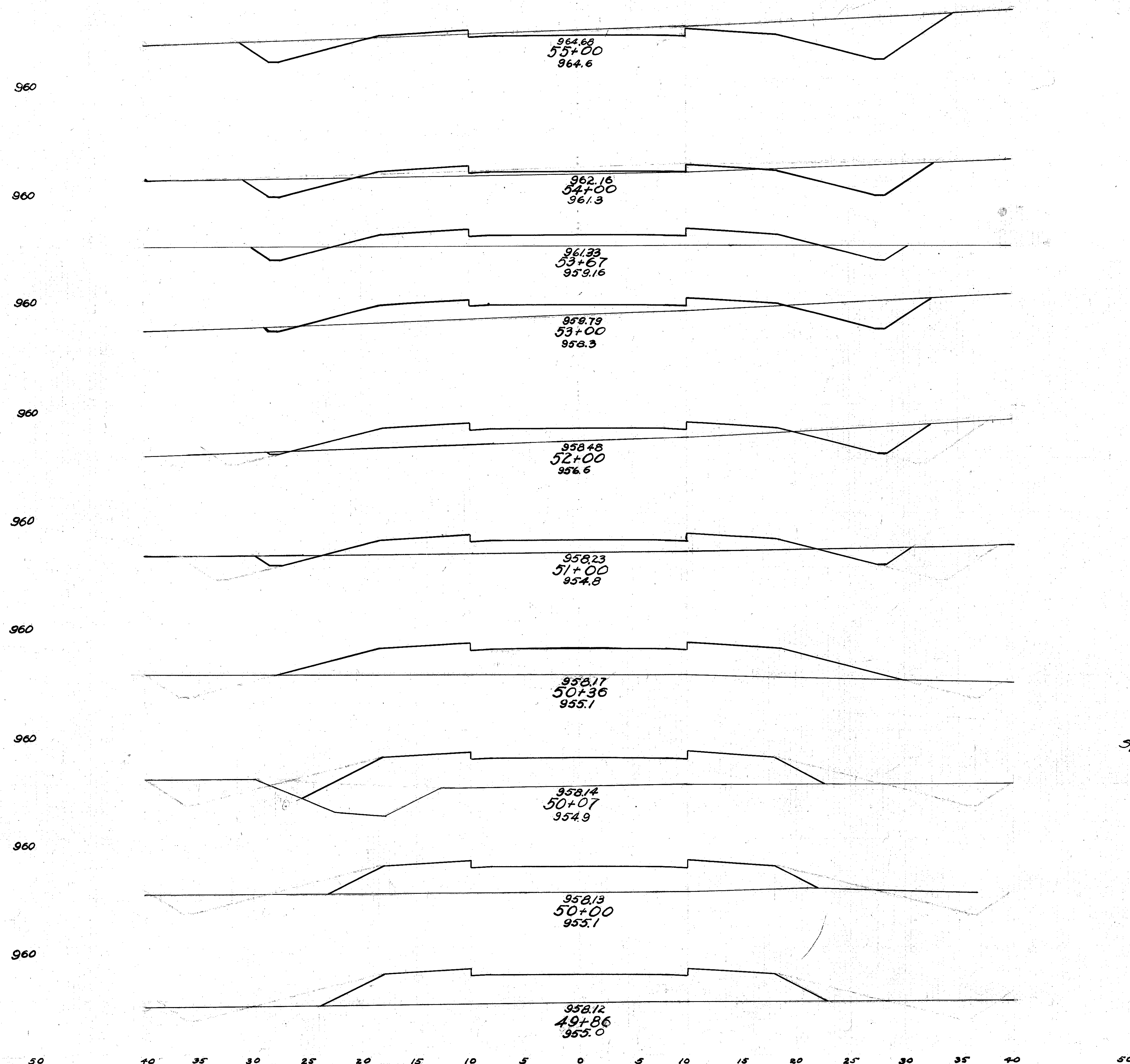
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End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
0	114		
		14	106
30	0		
		717	0
		822	0
		105	0
414	0		
		1780	0
547	0		
		859	0
488	0		
		825	
403	0		
		653	0
302	0		
		283	0
219	0		
		162	0



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End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
69	2		
		187	28
32	13	27	37
12	47		
		36	113
17	44		
		164	181
16	54		
		50	196
11	52		
		13	205
20	121		
		10	62
30	136		
		0	31
20	104		
		0	57
10	115		
		0	153

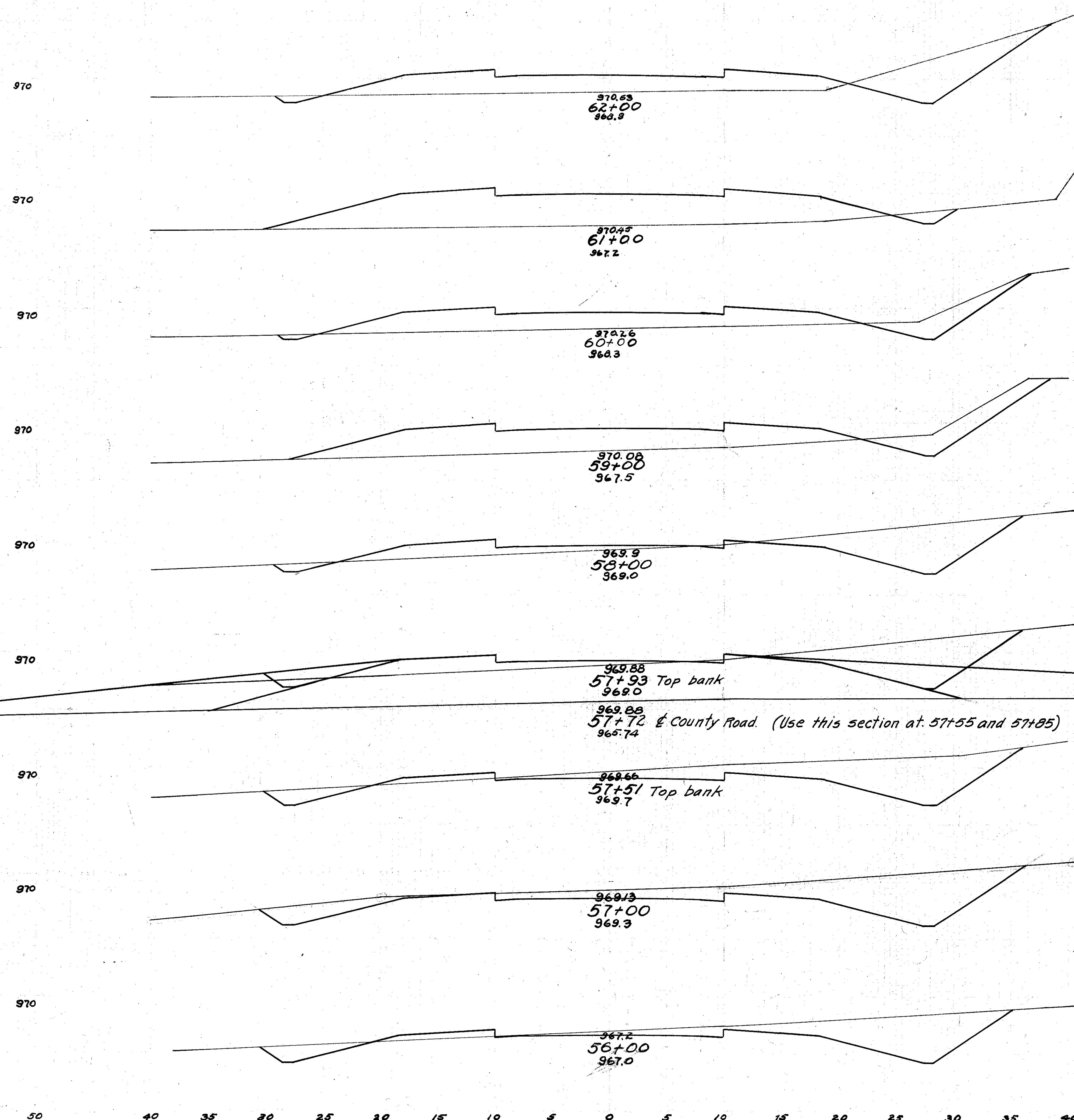
Sta. 50+07 to 50+23 No excavation
Culvert

1920 Cu. Yds.
1183
1420
Excav.
Emb.
Emb. +20%

FED. AID DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
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SEC. L2
COUNTY

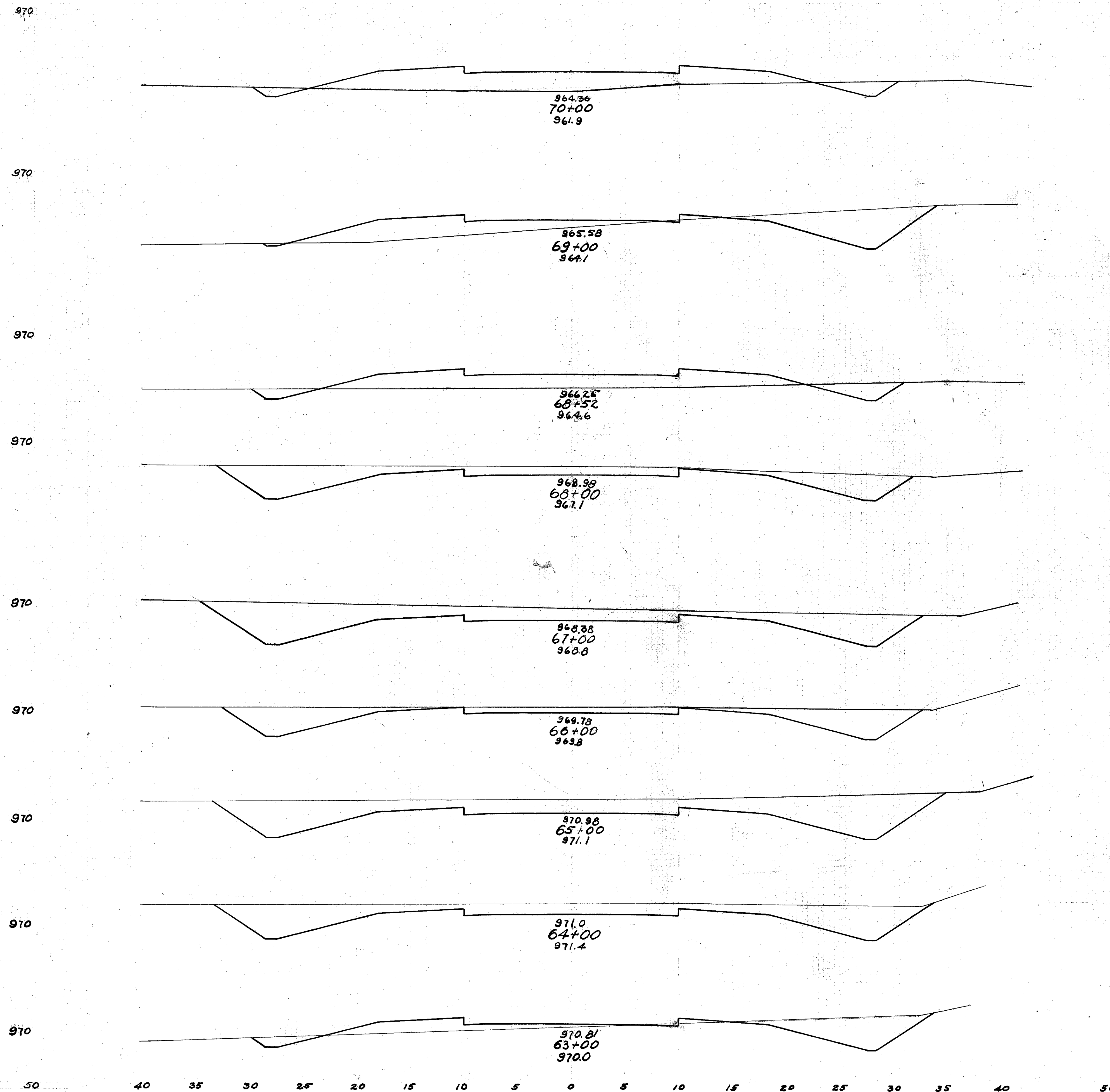


End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
36	66		
		72	35
3	126		
		37	34
17	62		
		70	21
21	84		
		132	19
50	22		
		13	6
50	24		
		7	3
de with 35 55	0	197	0
	0	197	2
	76	4	6
			15
		157	4
90	0		
		235	8
		294	9
		59	1
69	5		
		256	1

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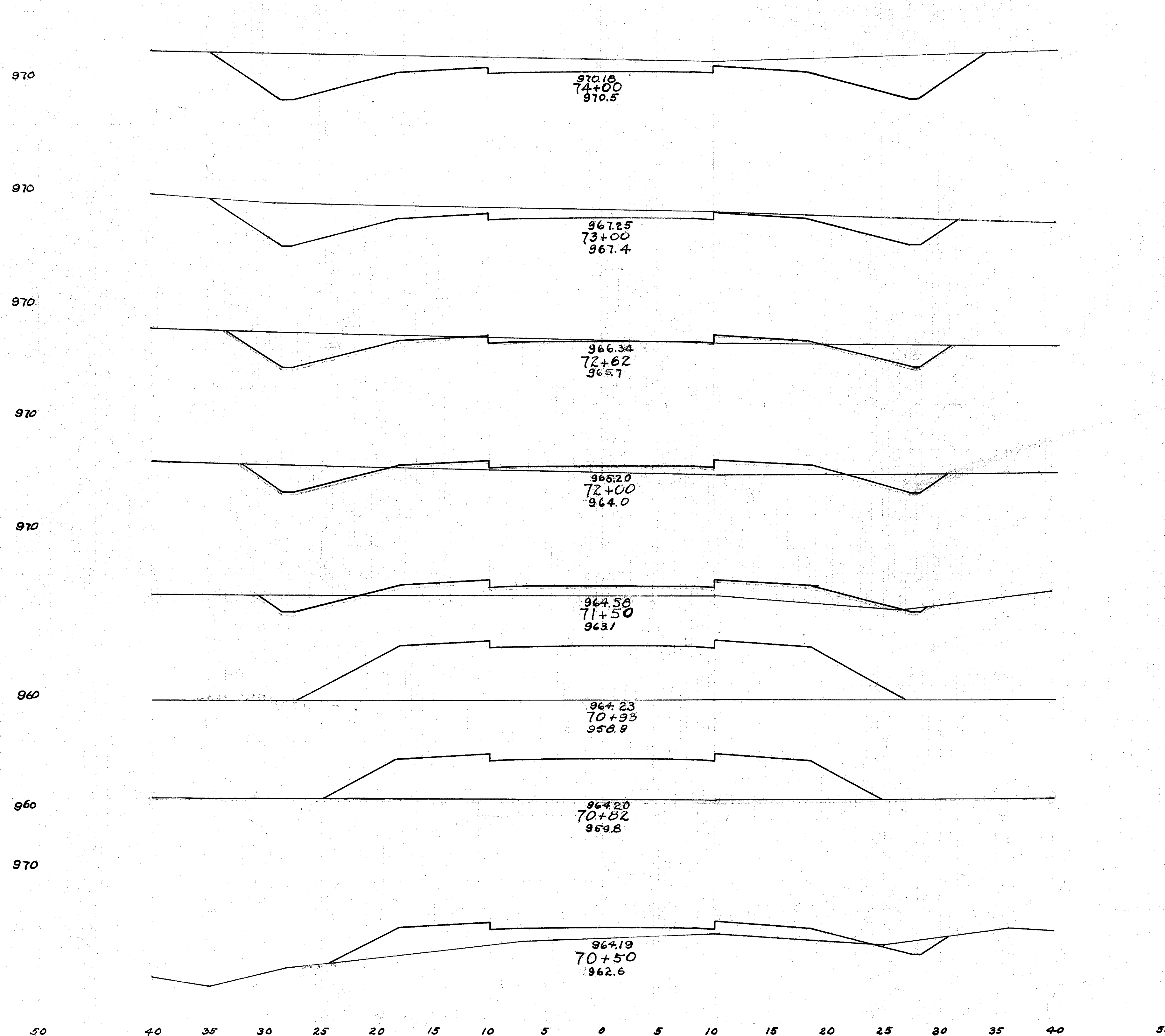
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End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
9	72		
		78	206
33	39		
		40	84
12	55		
		79	53
70	0		
		320	0
103	0		
		306	0
62	0		
		333	0
118	0		
		391	0
93	0		
		230	35
31	19		
		124	157

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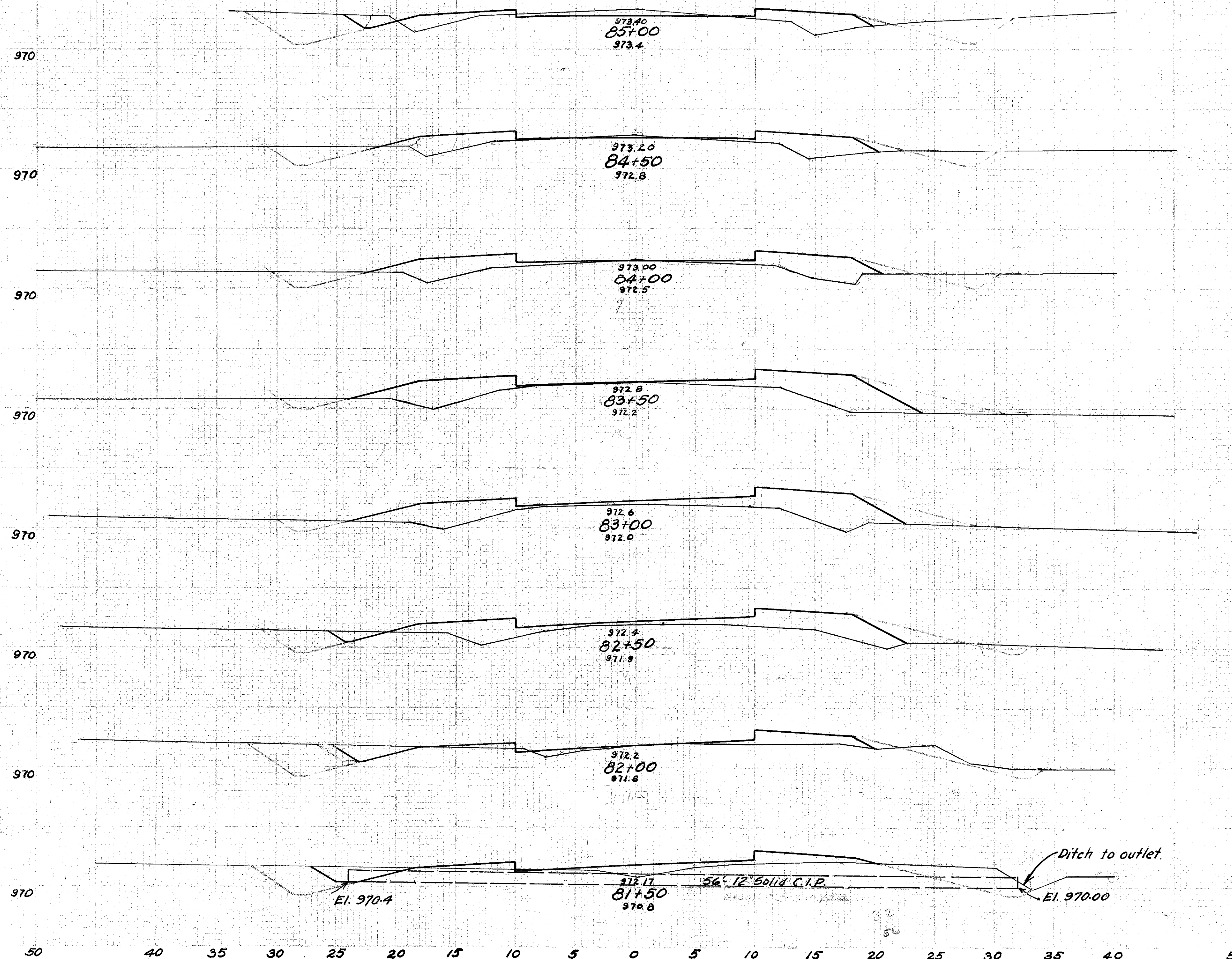
Culvert No excavation

End Elevation		Cu. Yds.		
Cut	Fill	Cut	Fill	
119	0			
		372	0	
82	0			
		90	2	
46	4			
		82	35	
26	27			
		32	66	
8	45			
		8	279	
0	220			
0	157			
		3	126	
5	56			
		13	118	

Excav. Emb. +20% Bottom

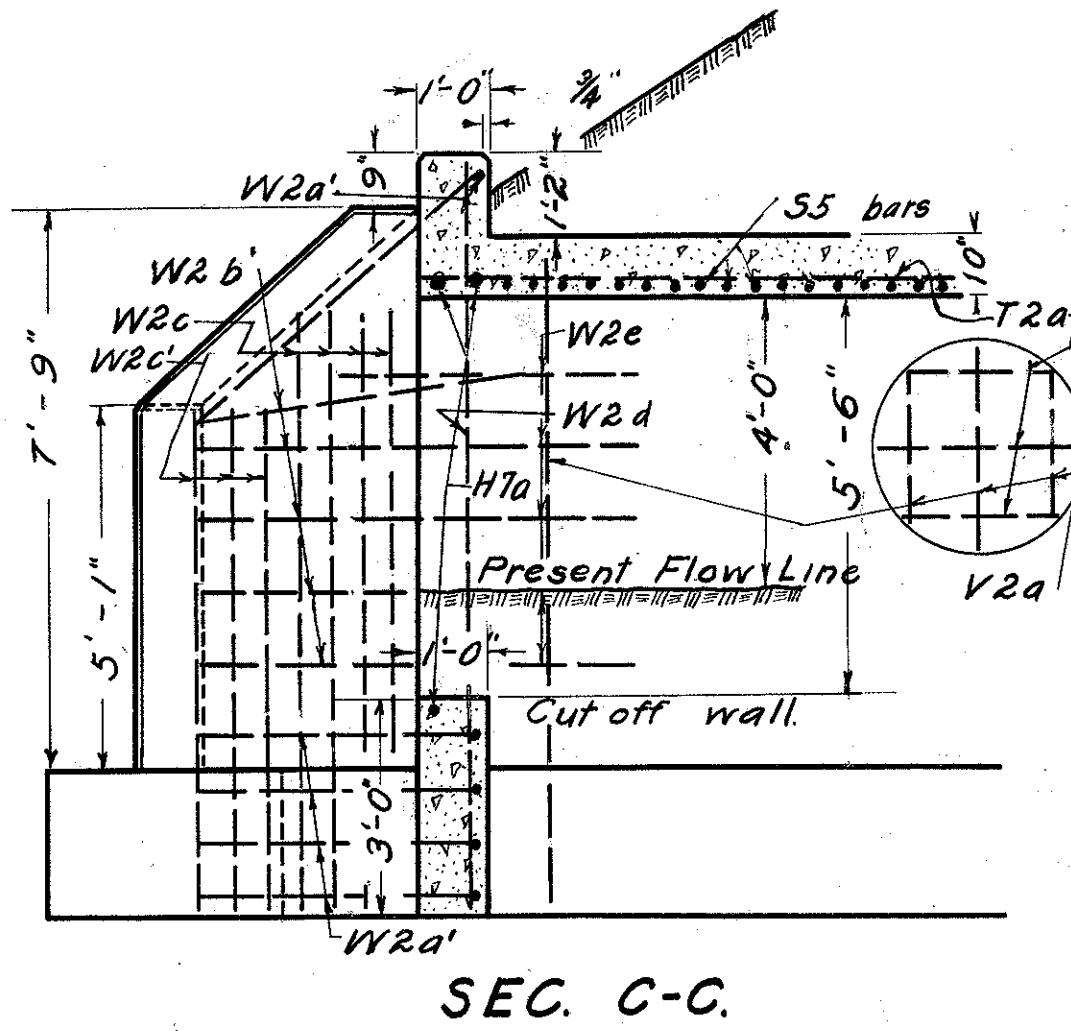
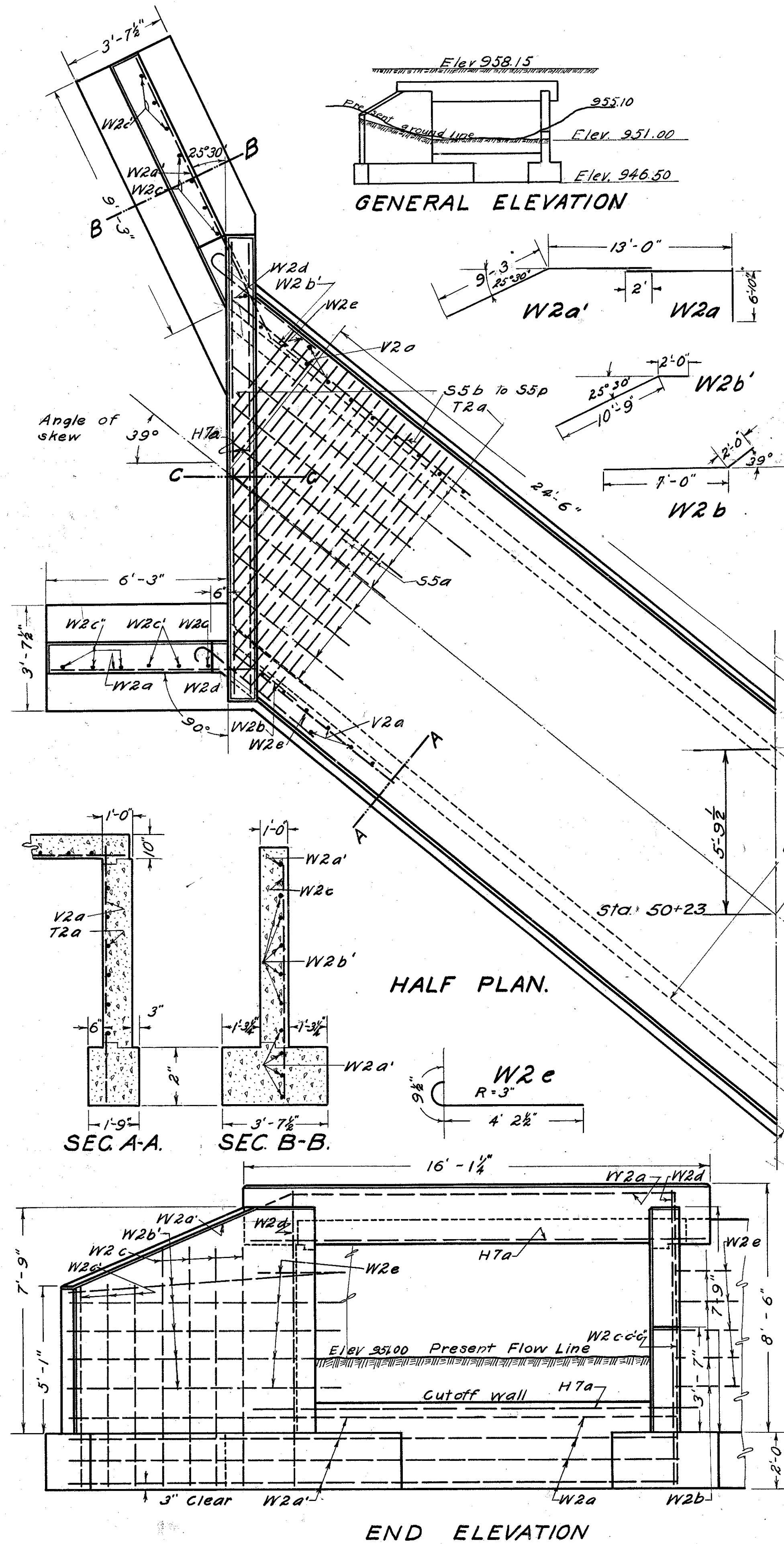
1117 Cu. Yds. 969 " " 1163 " " 46 " "

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Sta. 81+50
Build C.I.P. Culvert across road.
Excav. 5 Cu. Yds.
12" C.I.P. (solid) 56 Lin. ft.

End Area		Cu. Yds.	
Cut	Fill	Cut	Fill
3	20	8	40
10	23	10	52
10	33	10	37
0	50	0	93
0	50	12	72
12	39	9	51
8	16	15	28
8	14	25	29



ESTIMATED QUANTITIES.

Excavation (inc. backfill)	98.0 cu. yds.
1.6% Concrete in footers	21.0 cu. yds.
1.5% Concrete	48.0 cu. yds.
Reinf. steel	3,916 lbs.

Note: All bars are 1/2" clear from surface except S5a which are 1" clear.

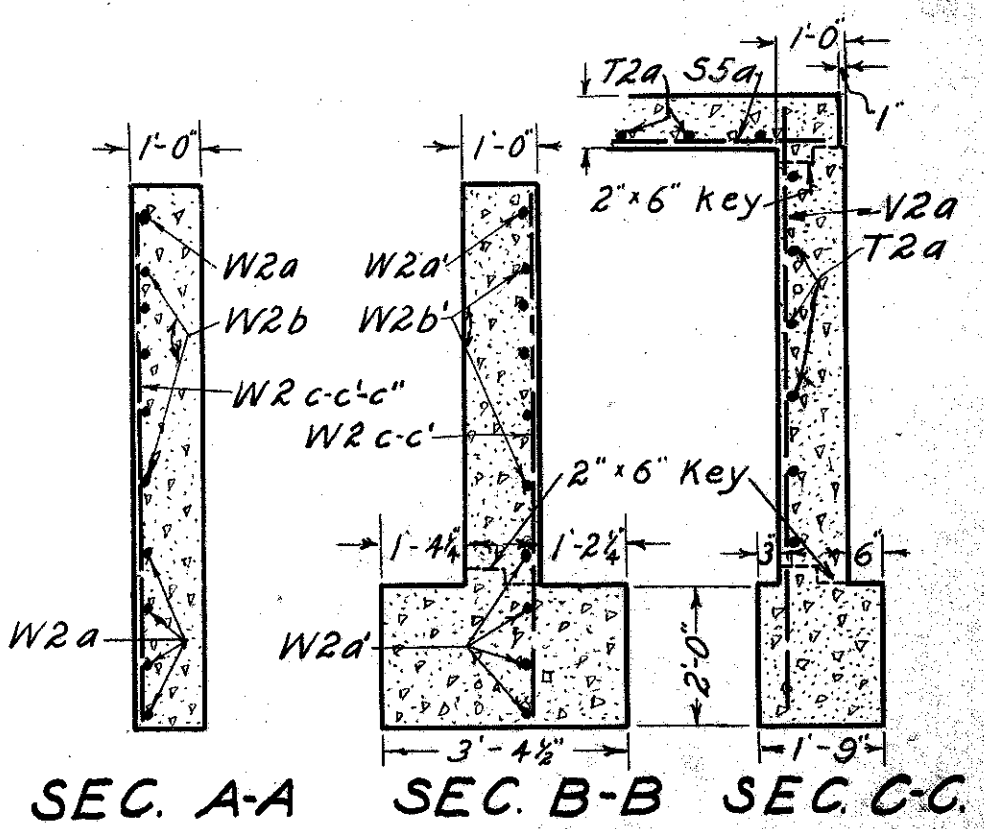
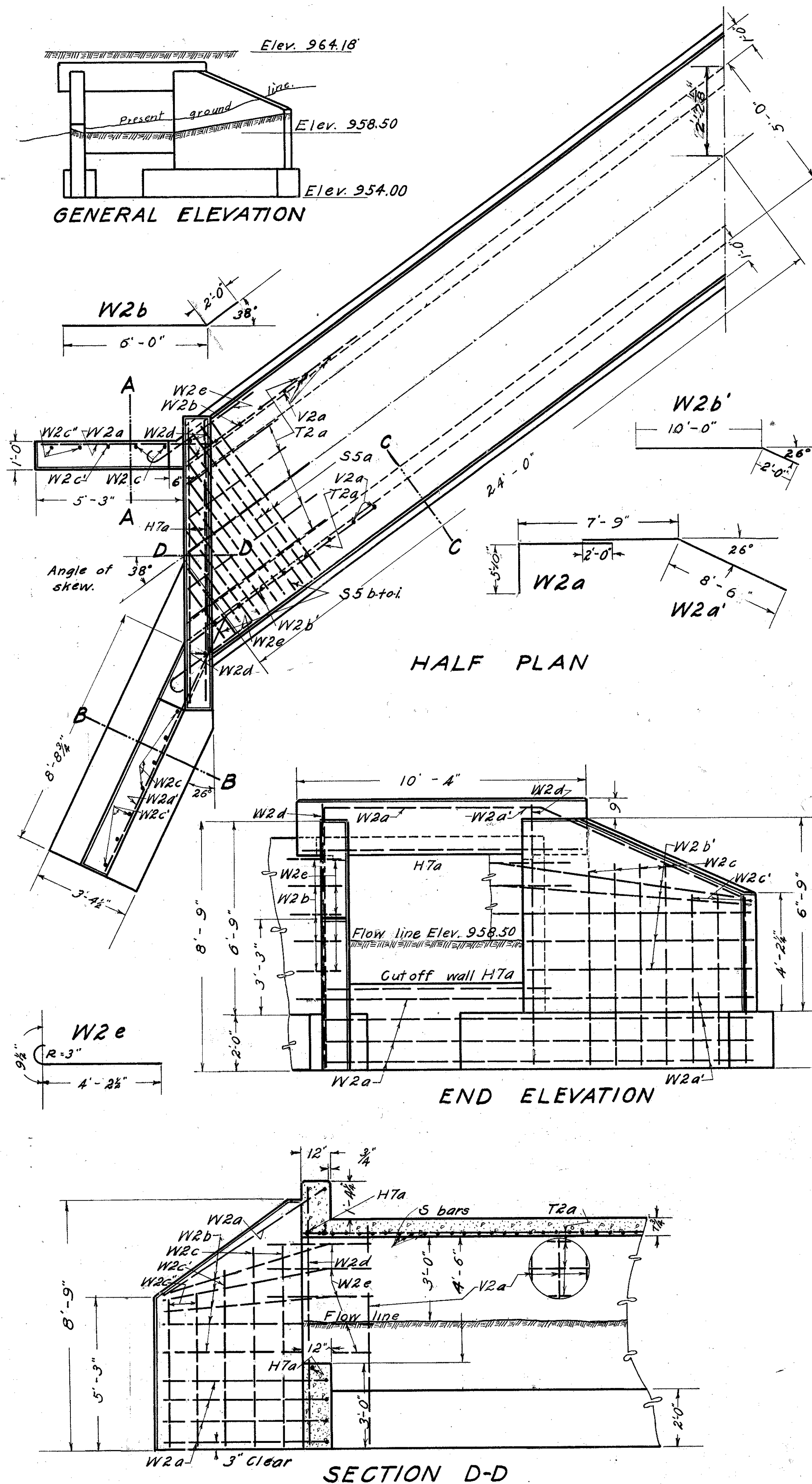
STEEL LIST							Spacing
Mark	Size	Shape	No.	Length	Weight		(ctr-ctr)
W2a	1/2"	Bent	10	14'-4"	95.9		9"
W2d	1/2"	"	10	10'-5"	69.6		9"
W2b	1/2"	"	10	9'-0"	60.1		12"
W2b'	1/2"	"	10	12'-9"	84.0		12"
W2c	1/2"	Straight	10	8'-3"	55.1		12"
W2c'	1/2"	"	10	6'-8"	44.6		12"
W2c''	1/2"	"	6	5'-3"	21.3		12"
W2d'	1/2"	"	4	10'-0"	26.7		~
W2e	1/2"	Bent	20	5'-0"	66.8		12"
V2a	1/2"	Straight	102	8'-6"	579.2		12"
T2a	1/2"	"	21	48'-6"	686.2		12"
H7a	1"	"	6	15'-6"	248.4		~
S5a	3/4"	"	100	10'-6"	1577.1		4 3/4"
S5b	"	"	2	10'-0"	30.0		"
S5c	"	"	2	9'-7"	28.8		"
S5d	"	"	2	9'-1"	27.3		"
S5e	"	"	2	8'-7"	25.9		"
S5f	"	"	2	8'-1"	24.3		"
S5g	"	"	2	7'-8"	23.0		"
S5h	"	"	2	7'-2"	21.5		"
S5i	"	"	2	6'-8"	20.1		"
S5j	"	"	2	6'-2"	18.6		"
S5k	"	"	2	5'-9"	17.2		"
S5l	"	"	2	5'-3"	15.8		"
S5m	"	"	2	4'-9"	14.3		"
S5n	"	"	2	4'-3"	12.9		"
S5o	"	"	2	3'-10"	11.5		"
S5p	"	"	2	3'-4"	10.1		"
Total Steel					3,916.3 lbs.		

See Drawing No. SC-A Standard.

**STANDARD SLAB
TOP CULVERT
STA. 50+23
SPAN 9' HT. 5'-6"**

DRAWN: Q.J.B.

CHECKED: E.L.L.



Note: All bars are 1/2" clear from surface except S5a which are 1" clear.

STEEL LIST							Spacing
Mark	Size	Shape	No.	Length	Weight		(ctr-ctr)
W2a	1/2"	Bent	10	9'-8 1/2"	65.2		9"
W2a'	1/2"	"	10	12'-4 1/2"	82.7		9"
W2b	1/2"	"	10	8'-0"	53.4		12"
W2b'	1/2"	"	10	12'-0"	80.3		12"
W2c	1/2"	Straight	12	7'-0"	66.2		12"
W2c'	1/2"	"	8	6'-0"	32.1		12"
W2c''	1/2"	"	4	5'-0"	13.4		12"
W2d	1/2"	"	4	9'-0"	24.1		~
W2e	1/2"	Bent	20	5'-0"	66.8		12"
V2a	1/2"	Straight	100	9'-0"	601.2		12"
T2a	1/2"	"	15	47'-6"	475.1		12"
H7a	1"	"	6	9'-9"	151.2		~
S5a	3/4"	"	114	6'-6"	1113.0		4 3/4"
S5b	"	"	2	6'-4"	19.1		"
S5c	"	"	2	5'-9"	17.3		"
S5d	"	"	2	5'-2"	15.5		"
S5e	"	"	2	4'-7"	13.8		"
S5f	"	"	2	4'-0"	12.1		"
S5g	"	"	2	3'-5"	10.2		"
S5h	"	"	2	2'-10"	8.6		"
S5i	"	"	2	2'-3"	6.8		"
Total Steel					2,948.1 lbs.		

ESTIMATED QUANTITIES.

Excavation (inc. backfill)	95.0 cu. yds.
1.6% Concrete in footers	16.9 cu. yds.
1.5% Concrete	34.6 cu. yds.
Reinforcing Steel	2,948 lbs.

See Standard Drawing No. SC-A

**STANDARD SLAB
TOP CULVERT
STA. 70+70
SPAN 5' HT. 4'-6"**

DRAWN: Q.J.B.

CHECKED: E.L.L.

SUMMARY OF QUANTITIES

STRUCTURES UNDER 20 FT.												
NO.	STA	TYPE	SIZE	EXCAV	STEEL	CONCRETE		APP.SLAB	WEAR.SU	LIN.FT	RIPRAP	WORK TO BE DONE
						1' 6"	1' 5"	SQ. YDS.	SQ. YDS.	12" C.I.P.	SQ. YDS. (18")	
1.	24+31	Slab Top	8'x6'9"	148 cu yd	3 132#	25.4 cu yd	50.6 cu yd	64.3	36.5	(Solid)	30	Build new slab culvert and change channel.
2.	50+23	" "	9'x5'6"	98 "	3916"	21.0 "	48.0 "					Build new slab culvert.
3.	70+70	" "	5'x4'6"	95 "	2948"	16.9 "	34.6 "				5	Build new slab culvert and place riprap as noted.
4.	81+50	Sched C.I.P.	12" x 5'6"	5 " "								Build C.I.P. culvert. No headwalls.
TOTALS				346	9996	633 cu yds	1332 cu yds	* 64.3 sq yds	* 36.5 sq yds	56	35 sq yds	

EXCAVATION					
STA	TO STA.	EXCAV.	EMB.	WASTE	BORROW
9+92.9	48+13	7097 ✓	7083 ✓	14 ✓	
48+13	56+20	1420 ✓	1420 ✓	~	~
56+20	67+00	2113 ✓	2119 ✓	~	6 ✓
67+00	74+00	1117 ✓	1163 ✓	~	46 ✓
74+00	83+00	927 ✓	966 ✓	~	39 ✓
TOTAL		12674 ✓	12751 ✓	14 ✓	91 ✓

FIELD ENT. & PVT. DRIVES.						
BET'W AT STA OR	AND STA	TYPE	SIZE	STONE	15" V.S.P.	REMARKS
11+94 ✓	24+24 ✓	Field Ent.	15 inch	5 Tons ✓	16 lin.ft. ✓	Field ent. on left - as engineer directed
24+24 ✓	28+22 ✓	" "	15 " "	5 Tons ✓	16 lin ft ✓	Field ent. on left as eng. may direct
80+13 ✓		Pvt. Dr.	15 ✓	5 Tons ✓	16 lin. ft. ✓	Pri. drive on left. "
57+80		Side Road		20 Tons ✓		Public Road
TOTAL				35 Tons ✓	48 lin. ft ✓	

PAVEMENT TYPE "C" ROADWAY

9-7-9 Conc. pave. 1-5½ mix incl. extra pave. (15102+190)=15292' Sq. Yds. ✓
Item T-7
5" W.B. mac. base course sfa 78+23-85+00 = 1505' Sq. Yds. Item B-2 ✓
4" W.B. mac. top course " " = 1505' " " T-1 ✓
6" Dry rolled mac. sfa 9+93-14+00. See sheet "7-528 Sq. Yds. - Special ✓
Finishing shoulders, slopes, & ditches - 7496 lin. ft. roadway. Item R-2 ✓
Removing trees over 6" dia. - 65 Trees. Item I-30

PAVEMENT TYPE M (B) ROADWAY

1st 5" W.B. mac. base course including base course from sta. 78+23
to 85+00 and extra base course of bridge and curve.
(15857 + 15057 + 190) = 17552 Sq. Yds. Item B-2

2nd 5" W.B. mac. base course including extra base course of bridge and
curve. (15857 + 190) = 16047 Sq. Yds. Item B-2

3" bit. mac. top course including extra paving. (15102 + 190) = 15292 Sq.
Item T-3

4" W.B. mac. top course sta. 78+23 - 85+00 = 1505 Sq. Yds. Item T-1

6" Dry rolled mac. sta. 9+93 - 14+00 See sheet 77 - 528 Sq. Yds. Special.

Finishing shoulders, slopes and ditches - 7496 lin. ft. roadway. Item R

Removing trees over 8" dia. - 65 Trees. Item I-30.

EXTRA PAVEMENT		
Station	Purpose	Sq. Yds
23+75-24+86	Br. App.	44.4
9+92-18+34	Curve	145.8
Total		190.2

*Deductions for net
length of pavement*

Point of Beginning	Sta. 9+92.9
Point of Ending	Sta. 85+00 ✓
Gross Length	7,507.1 ft. ✓
Sta. Equation - Sta. 18+3748 - Deduct	2.9 " ✓
Net Length of Project	7,504.2 " ✓
" " " Waterbound Macadam	
Sta. 78+227 to 85+00	677.3 " ✓
Bridge and approaches	30.9 " ✓
Net length of pavement	6796.0 " ✓