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I.C.H. 368 Sec. "C-1"
Columbiana County.

CAN # 65

1
11

STATE OF OHIO
DEPARTMENT OF HIGHWAYS AND PUBLIC WORKS
DIVISION OF HIGHWAYS
LISBON-CANTON-SOUTHERN ROAD
I.C.H. 368 SEC. "C-1" PET. NO. 6168
COLUMBIANA COUNTY
HANOVER TWP. JAN. 1927

INDEX

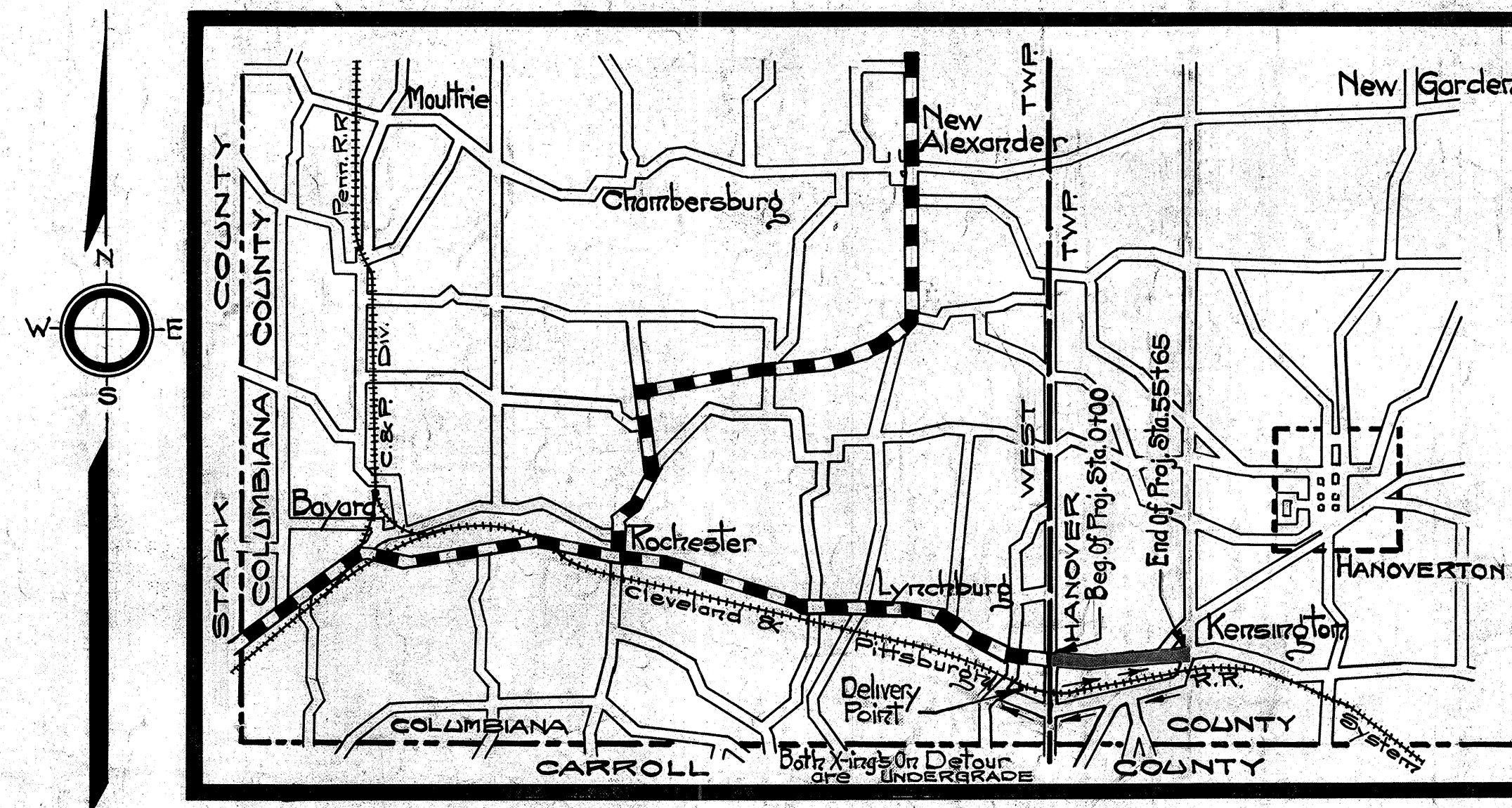
Title Page Sheet No. 1
Typical Section Sheet No. 2
Plan & Profile Sheets No. 3-4
Cross Sections Sheets No. 5-6-7-8-9-10
Summary of Quantities Sheet No. 11

CONVENTIONAL SIGNS

County Line -----
Township Line -----
Property Line Not Fenced -----
Center Line -----
City or Village Line -----
Fence -----
Telephone-Telegraph-Power Poles >>>
Steam Railroad -----
Guard Rail -----

We the Commissioners of Columbiana County hereby approve these plans and certify that the right-of-way 60 ft. and wider is available for the construction, maintenance and repair of the above highway

J. G. Kelly
Frank Dye
J. H. Sinclair
Date _____ County Commissioners.



LOCATION PLAN
SCALE OF MILES



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'

The Standard Specifications of the State of Ohio Division 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 require the closing to traffic of the highway and that detours will be provided as shown on the plans and estimates.

Approved _____
Date 7/2/1927 Resident Engineer
Approved _____
Date 7/28/1927 Resident Deputy
State Highway Commissioner

Approved _____
Date 1927 Chief Engineer
Bureau of Maintenance & Repair

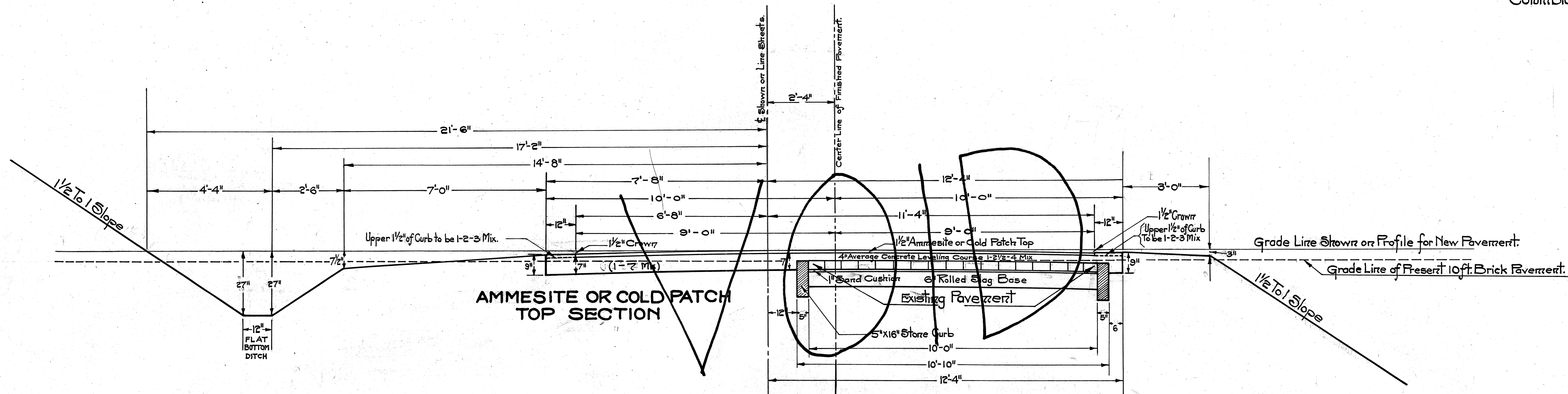
Approved _____
Date 1927 Chief Engineer
Bureau of Construction

Approved _____
Date 1927 Chief Engineer
Bureau of Bridges.

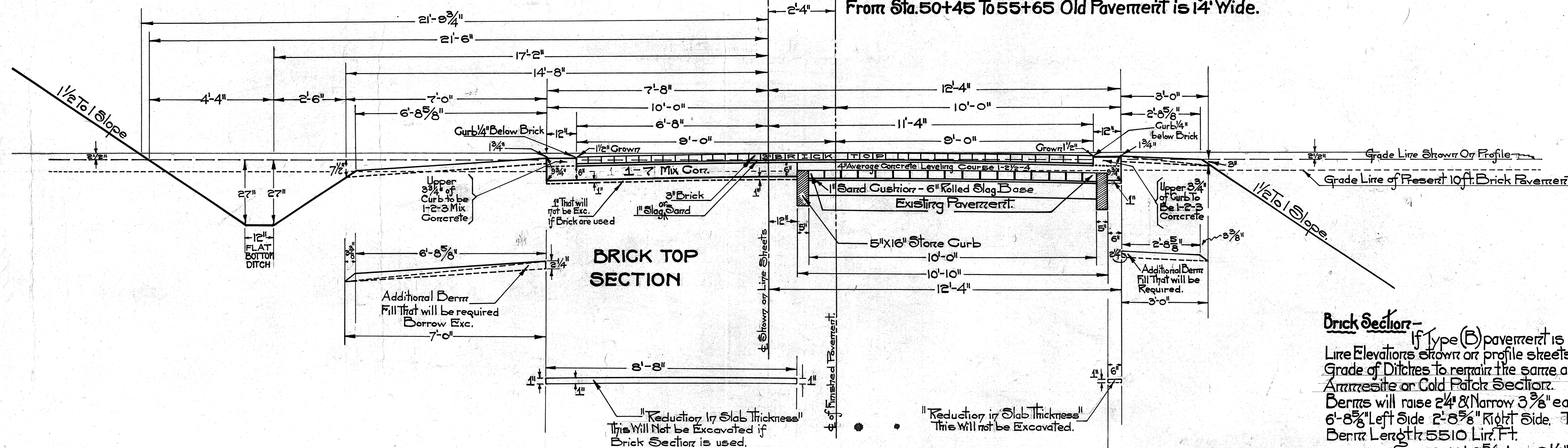
Approved _____
Date 1927 State Highway Engineer

Approved _____
Date 1927 Director of Highways
& Public Works.

CONSTRUCTION
BUREAU
NOV 14 1926
GROUND PHOTOLAB



Note: Old Brick Pavement
From Sta. 0+00 To 49+00 is 10' Wide
From Sta. 49+00 To 50+45 Old Pavement Tapers from 10' To 14' Wide.
From Sta. 50+45 To 55+65 Old Pavement is 14' Wide.



Brick Section-
If type (B) pavement is used raise Grade Line Elevations shown on profile streets 2 1/2" or 0.2084 Grade of Ditches to remain the same as calculated for Ammesite or Cold Patch Section.
Berms will raise 2 1/4" & Narrow 3 3/8" each.
6'-8 5/8" Left Side 2'-8 5/8" Right Side, Total 9'-5 1/4"
Berm Length 5510 Lin. Ft.

$$\frac{5510 \times 9'-5 \frac{1}{4}" \times 2 \frac{1}{4}"}{27} = 371 \text{ Cu. Yds. Borrow}$$

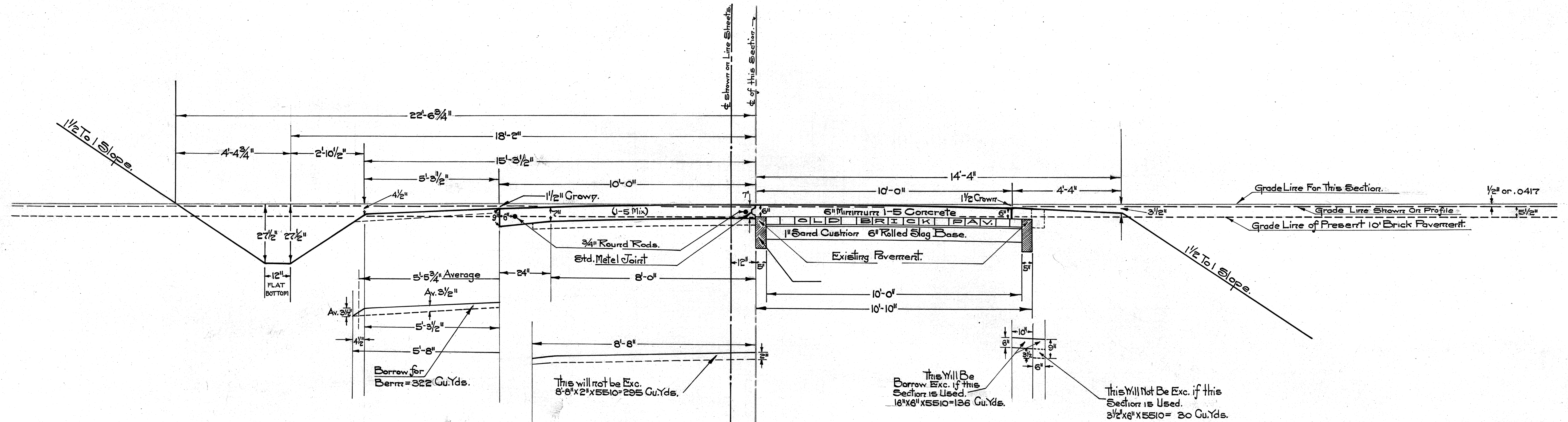
Reduction of Cor. Slab Thickness Left Side to 6" makes 1" Less Exc.

$$\frac{5510 \times 6'-8" \times 1"}{27} = 147 \text{ Cu. Yds.}$$

Reduction of Cor. Slab Thickness Rht. Side to 6" makes 1" Less Exc.

$$\frac{5510 \times 6'-8" \times 1"}{27} = 9 \text{ Cu. Yds.}$$

215 Cu. Yds. Borrow.



CONCRETE SECTION

Concrete Section.

If Type (C) pavement is used raise grade line elevations 1/2" or .0417. Grade of ditches to remain the same as calculated for Ammesite or Gold Patch Section. Berms will raise, Left side, an Average of 3 1/2" & narrow 4 1/2" Extra Berm Fill on Left Side

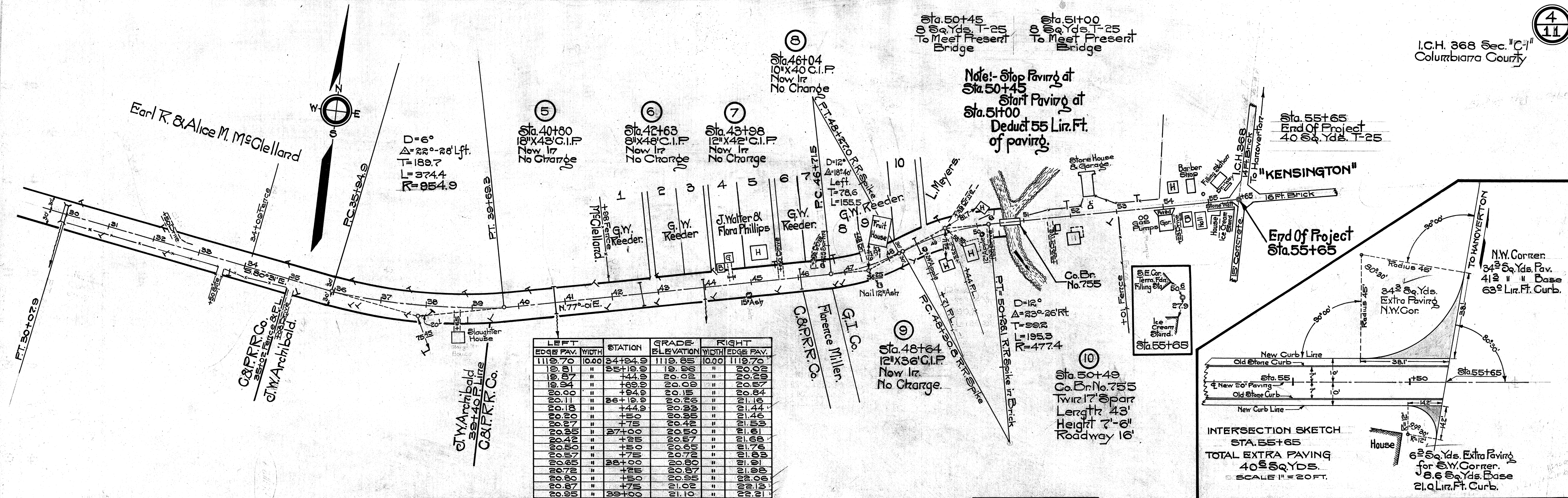
$$\frac{5'-5\frac{3}{4}" \times 3\frac{1}{2}" \times 5510}{27} = 322 \text{ Cu.Yds.}$$

$$\begin{array}{r} \text{Extra Berm Fill Rt. Side} \\ \frac{16" \times 6" \times 5510}{27} = \frac{136 \text{ Cu.Yds.}}{458 \text{ Cu.Yd. Borrow.}} \end{array}$$

Left Side under slab that will not be excavated by using this section.
 $\frac{8'-8" \times 2" \times 5510}{27} = 295 \text{ Cu.Yds.}$

Right Side at Rt. of old curb that will not be excavated by using this section = $\frac{3\frac{1}{2}" \times 6" \times 5510}{27} = \frac{30 \text{ Cu.Yds.}}{325 \text{ Cu.Yds.}}$

458 Cu.Yds. Borrow minus 325 Cu.Yds. not to be Excavated = 133 Cu.Yds. Extra Exc. To Be Borrowed if this Section is used.



LEFT			STATION	RIGHT		
EDGE PAV.	WIDTH			GRADE ELEVATION	WIDTH	EDGE PAV.
1119.70	10.00		34+94.9	1119.65	10.00	1119.70
19.17	"		35+19.9	19.12	"	20.29
19.87	"		36+44.9	20.02	"	20.69
19.94	"		369.9	20.09	"	20.57
20.00	"		384.9	20.15	"	20.64
20.11	"		38+19.9	20.26	"	21.16
20.18	"		344.9	20.33	"	21.44
20.20	"		350	20.35	"	21.46
20.27	"		375	20.42	"	21.53
20.35	"		37+00	20.50	"	21.61
20.42	"		325	20.57	"	21.69
20.50	"		350	20.65	"	21.76
20.57	"		375	20.72	"	21.83
20.65	"		38+00	20.80	"	21.91
20.72	"		350	20.87	"	21.98
20.80	"		350	20.95	"	22.06
20.87	"		375	21.02	"	22.13
20.95	"		39+00	21.10	"	22.21
21.01	"		3+93	21.16	"	22.00
21.08	"		344.3	21.23	"	21.92
21.16	"		369.3	21.31	"	21.79
21.22	"		394.3	21.38	"	21.65
21.31	"		40+19.3	21.46	"	21.52
1121.28	10.00		40+44.3	1121.53	10.00	1121.28

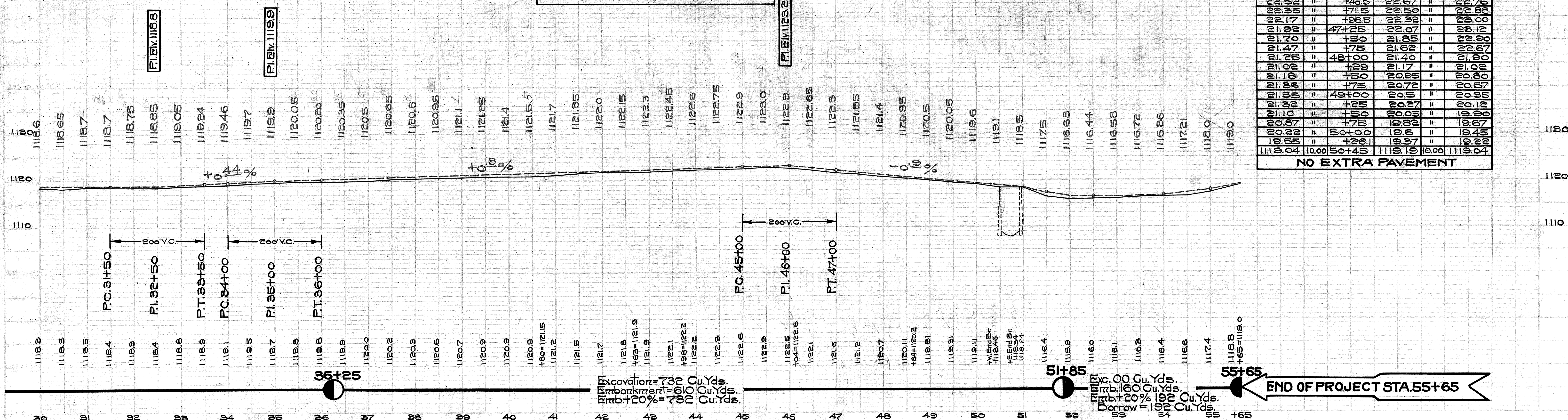
B.M. = Sta. 38+50
East End of Concrete
Door Sill Bldg. Rft.
Elev. 1117.41

B.M. 7 on N.E. Wind
of Courty Br. No. 755
Elev. 1118.69

LEFT		STATION	GRADE		RIGHT	
EDGE	PAY.		ELEVATION	WIDTH	EDGE	PAY.
1122.65	10.00	46+21.5	1122.80	10.00	1122.65	
22.52	"	+46.5	22.67	"	22.76	
22.35	"	+71.5	22.50	"	22.88	
22.17	"	+96.5	22.32	"	23.00	
21.92	"	47+25	22.07	"	23.12	
21.70	"	+50	21.85	"	23.90	
21.47	"	+75	21.62	"	22.67	
21.25	"	48+00	21.40	"	21.90	
21.02	"	+29	21.17	"	21.02	
21.18	"	+50	20.95	"	20.80	
21.36	"	+75	20.72	"	20.57	
21.55	"	49+00	20.5	"	20.35	
21.32	"	+25	20.27	"	20.12	
21.10	"	+50	20.05	"	19.90	
20.87	"	+75	19.82	"	19.67	
20.22	"	50+00	19.6	"	19.45	
19.55	"	+26.1	19.37	"	19.22	
1119.04	10.00	50+45	1119.15	10.00	1119.04	

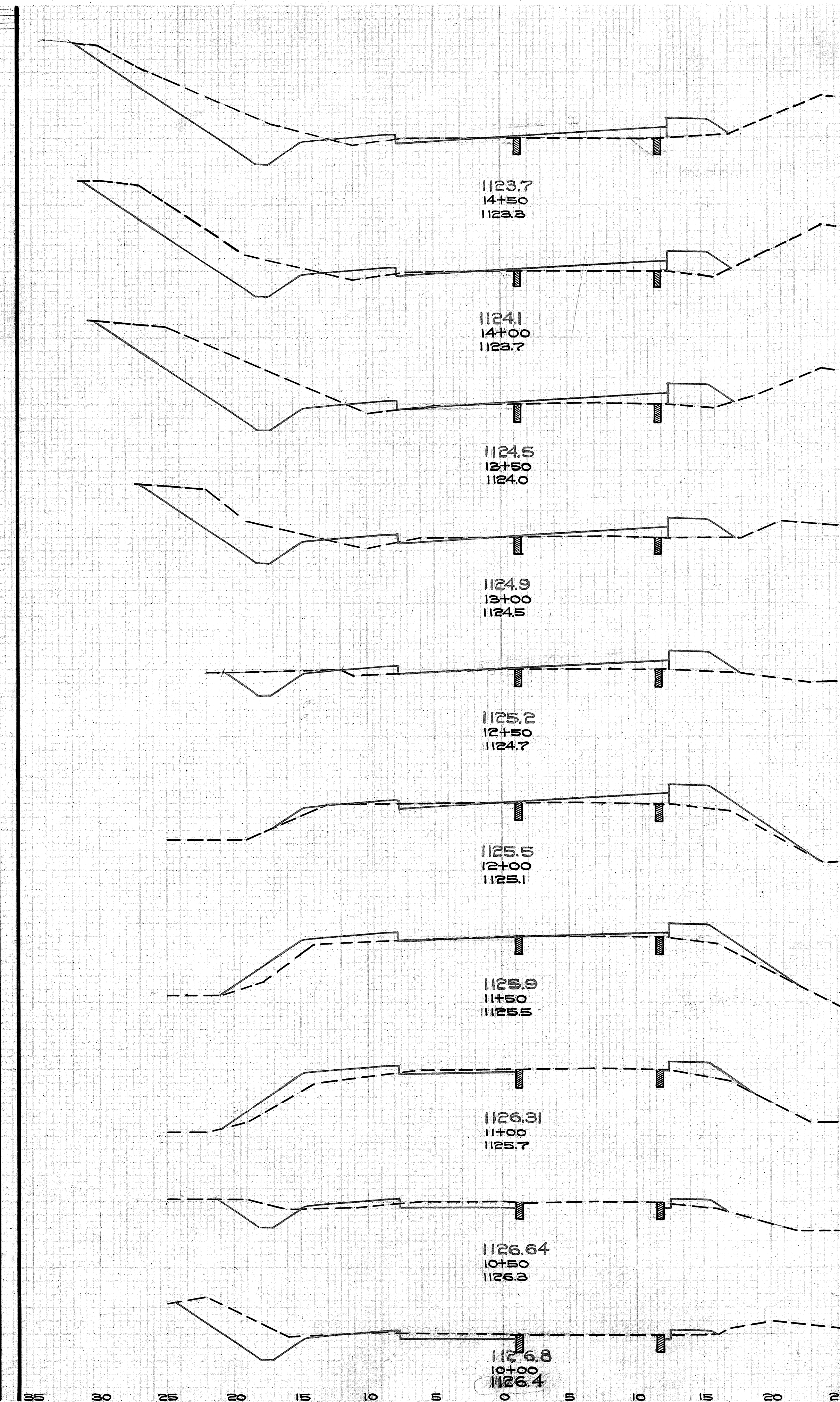
NO EXTRA PAYMENT

NO EXTRA PAVEMENT



END AREA		CU YDS.	
CUT	FILL	CUT	FILL
4	1		
		30	4
28	3		
		45	6
21	4		
		31	8
13	5		
		21	9
10	5		
		13	11
4	7		
		7	13
3	7		
		8	10
6	4		
		7	15
1	12		
		4	23
3	12		
		6	20

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
36	8		
	69	17	
38	10		
	82	17	
51	9		
	71	17	
26	9		
	30	16	
7	8		
	7	19	
1	12		
	3	27	
2	17		
	4	30	
2	15		
	11	18	
10	5		
	30	6	
22	1		
	24	2	

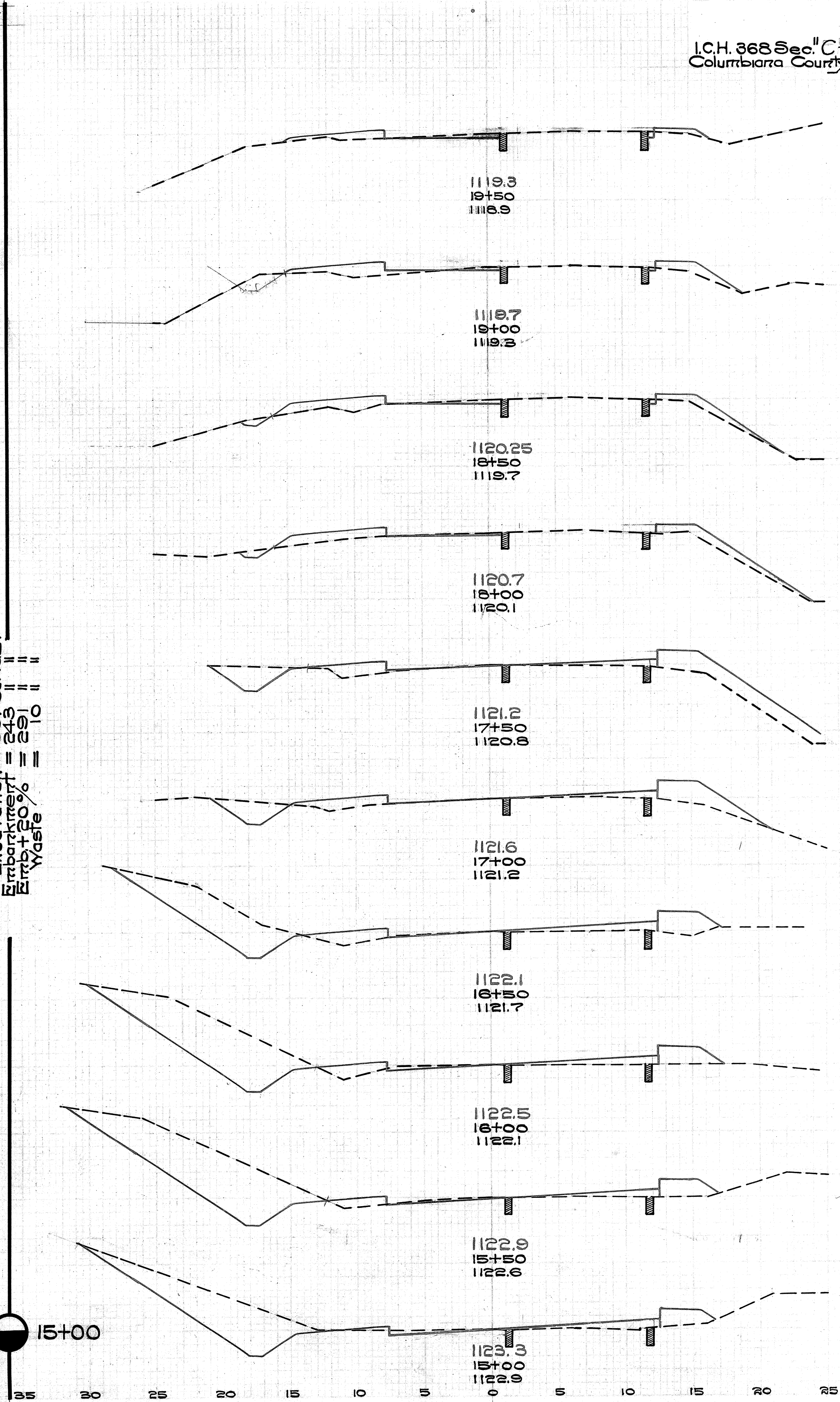


El.=1.3
 El.=1.3
 El.=1.3
 El.=1.3
 El.=1.3
 El.=1.3
 El.=0.86
 El.=0.43
 El.=0.0

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
2	6		
	3	15	
1	10		
	3	19	
2	10		
	3	20	
1	12		
	6	30	
6	21		
	11	35	
6	17		
	30	26	
27	11		
	66	19	
44	9		
	88	16	
51	8		
	79	12	
34	5		
	65	12	

Excavation = 301 Cu. Yds.
 Embankment = 243
 Net = 58 Cu. Yds.

15+00



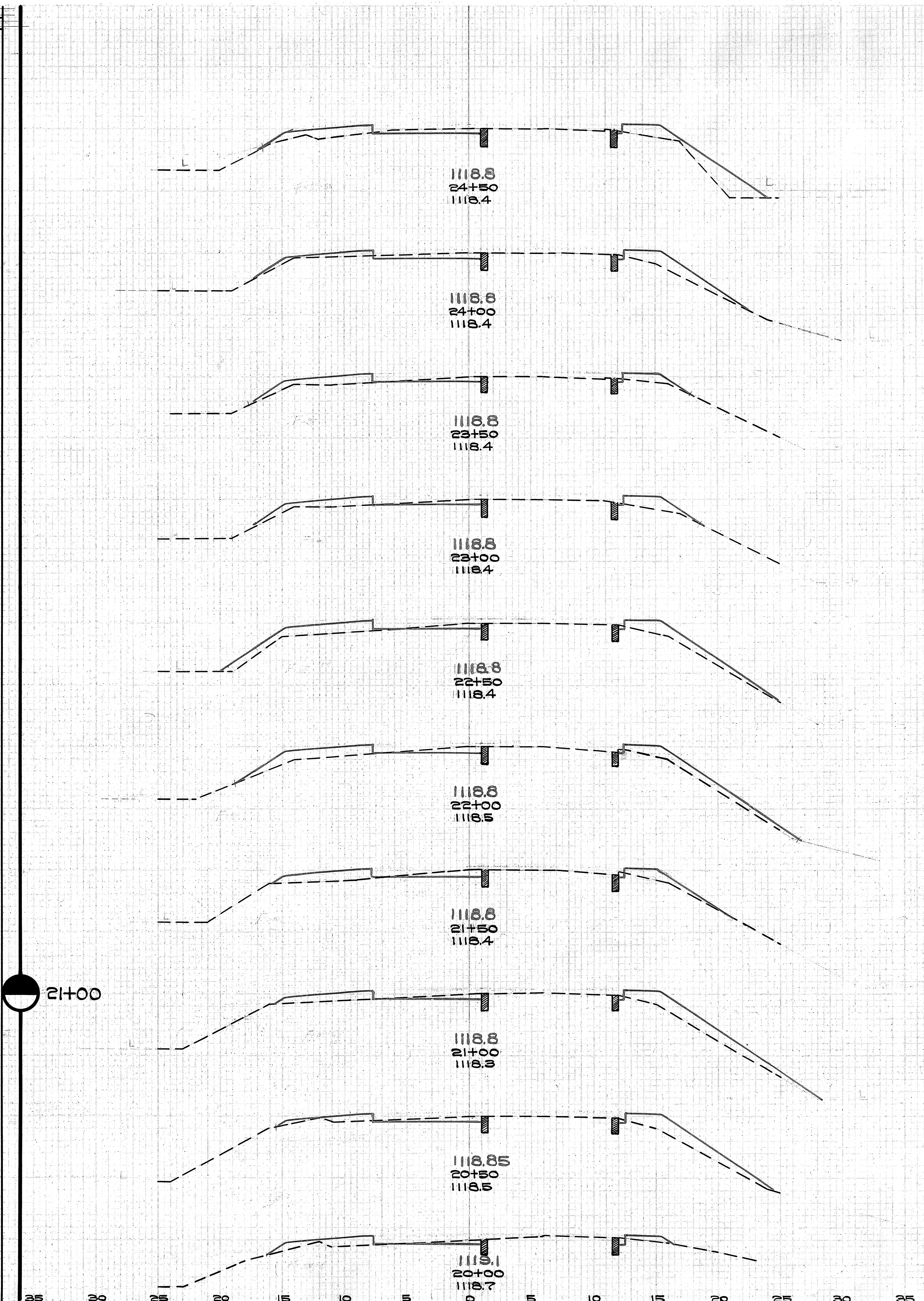
El.=0.00
 El.=0.28
 El.=0.72
 El.=1.15
 El.=1.3
 El.=1.3
 El.=1.3
 El.=1.3

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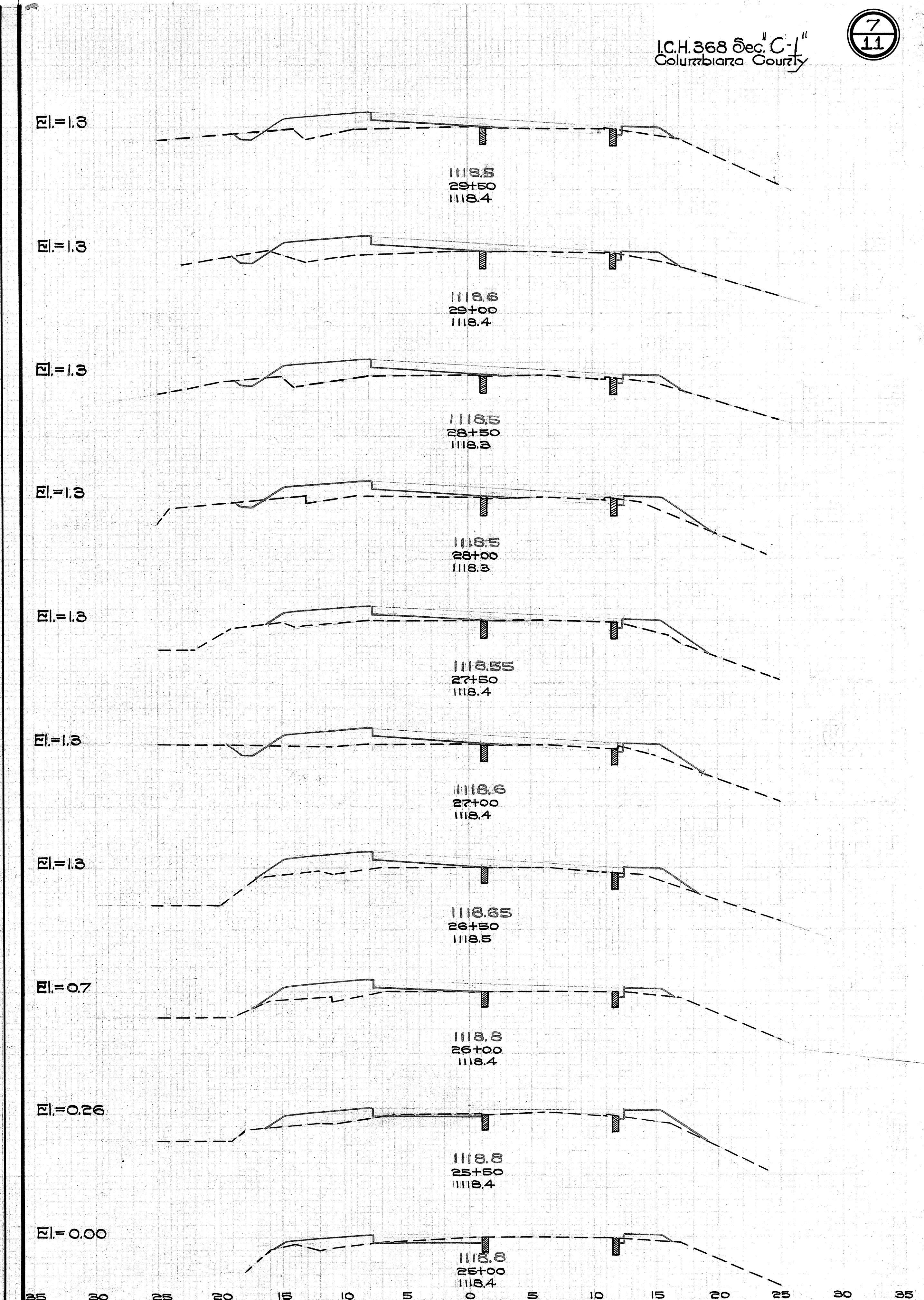
FINAL
SURVEY
NO. 1000
DATE 10/1/50

ORIGINAL
SURVEY
NO. 1000
DATE 10/1/50

END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
2	15		
	5	23	
4	10		
	5	17	
2	8		
	4	17	
2	10		
	3	24	
1	16		
	3	29	
2	15		
	4	24	
2	11		
	4	24	
2	15		
	4	24	
2	11		
	4	16	
2	6		
	4	11	



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
0	17		
	1	32	
1	17		
	2	32	
1	17		
	2	32	
1	17		
	1	30	
0	16		
	0	29	
2	15		
	2	30	
0	18		
	0	29	
0	13		
	2	22	
2	11		
	4	16	
2	6		
	4	19	

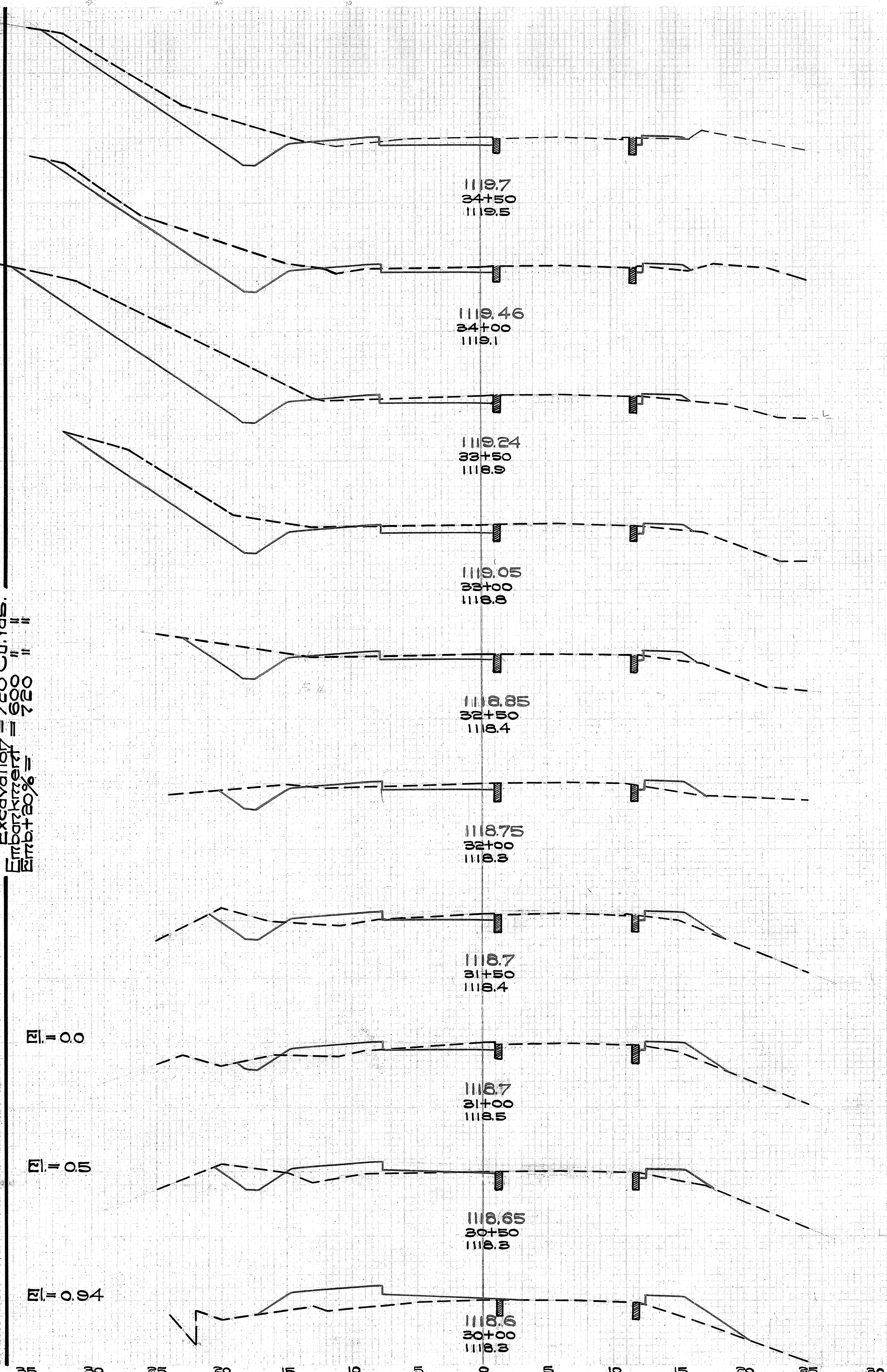


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END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
36	3		
	76	6	
41	3		
	98	4	
65	2		
	95	3	
37	1		
	49	5	
16	4		
	28	8	
9	5		
	16	11	
9	7		
	12	14	
4	8		
	9	16	
5	9		
	5	32	
0	25		
	1	39	

Excavation = 720 Cu Yds.
 Embankment = 600 " "
 Error 20% = 720

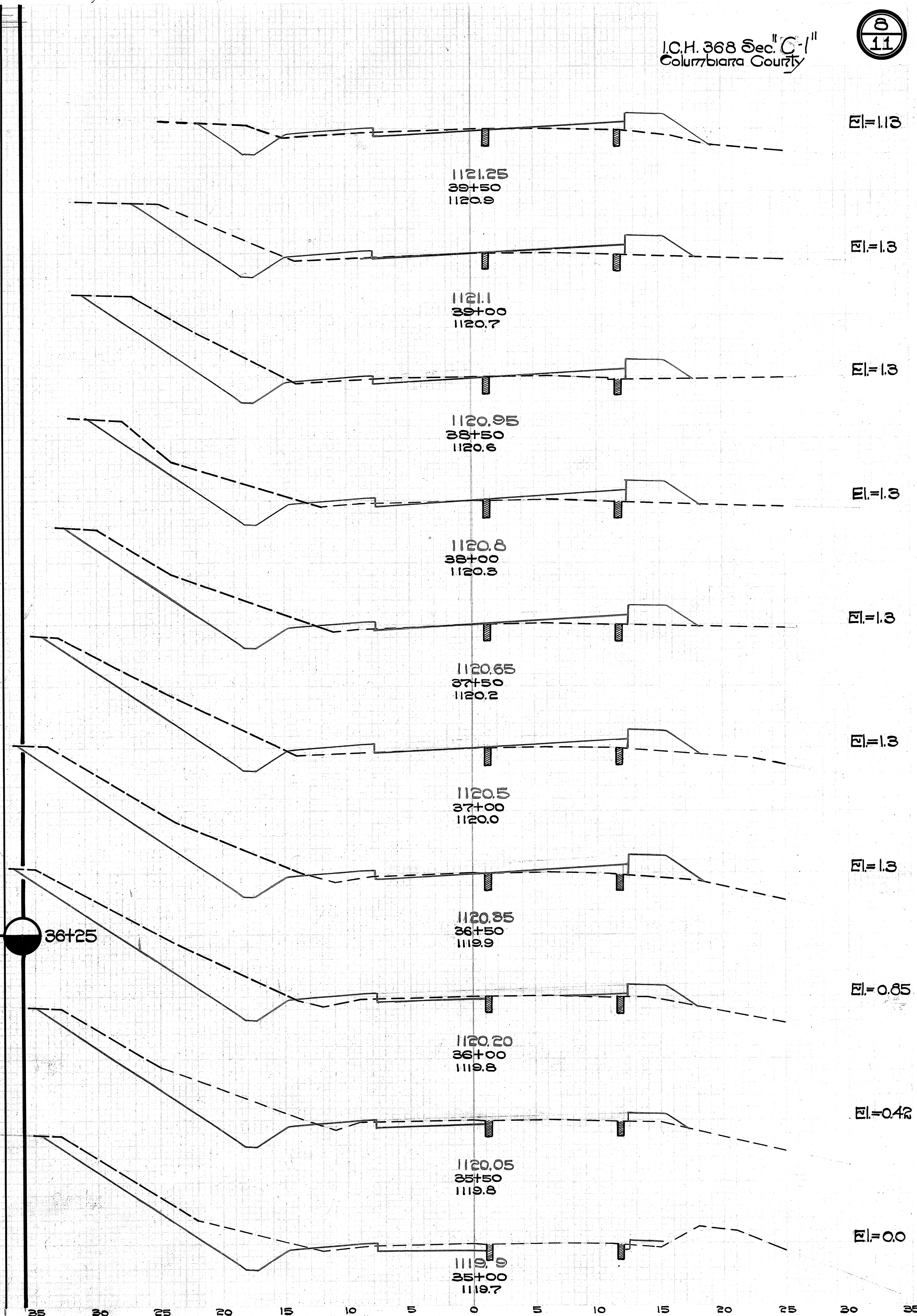
EI = 0.0
 EI = 0.5
 EI = 0.94



END AREA		CU. YDS.	
CUT	FILL	CUT	FILL
10	10		
	31	18	
24	9		
	61	16	
42	8		
	66	16	
29	10		
	64	18	
40	10		
	69	19	
35	11		
	77	20	
48	11		
	45	8	
	42	9	
46	8		
48	4		
	84	7	
42	3		
	77	6	

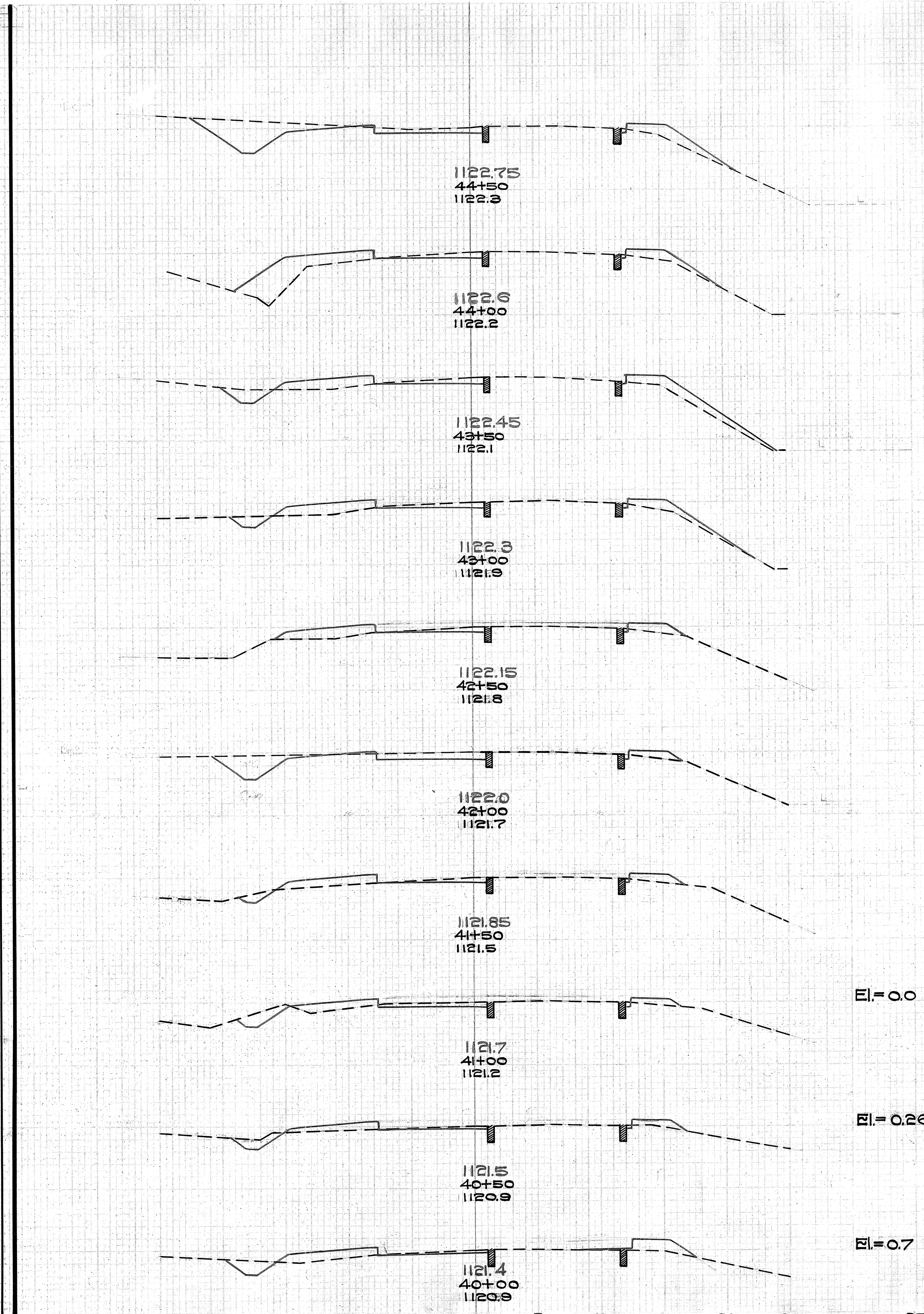
36+25

EI = 0.85
 EI = 0.42
 EI = 0.0

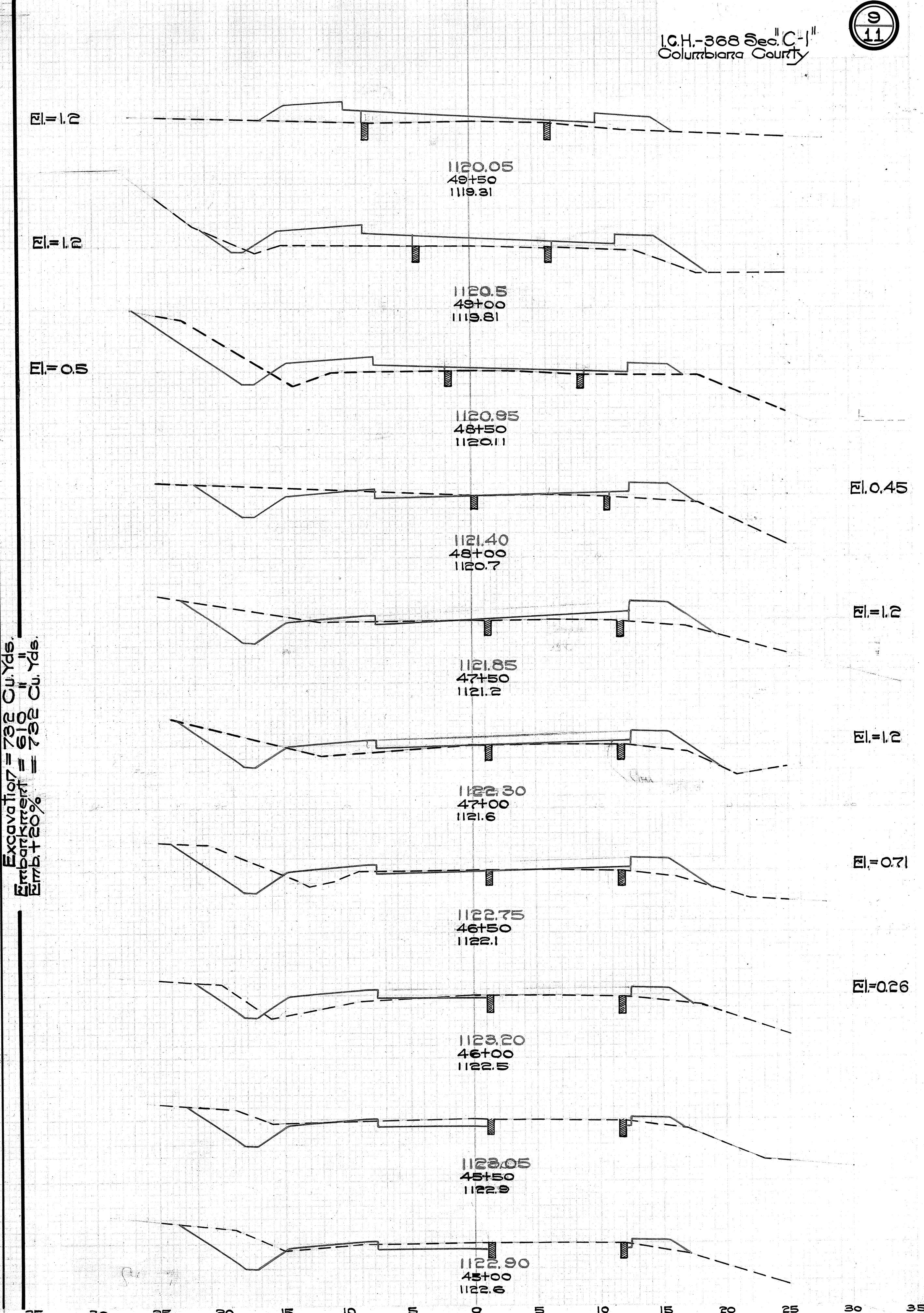


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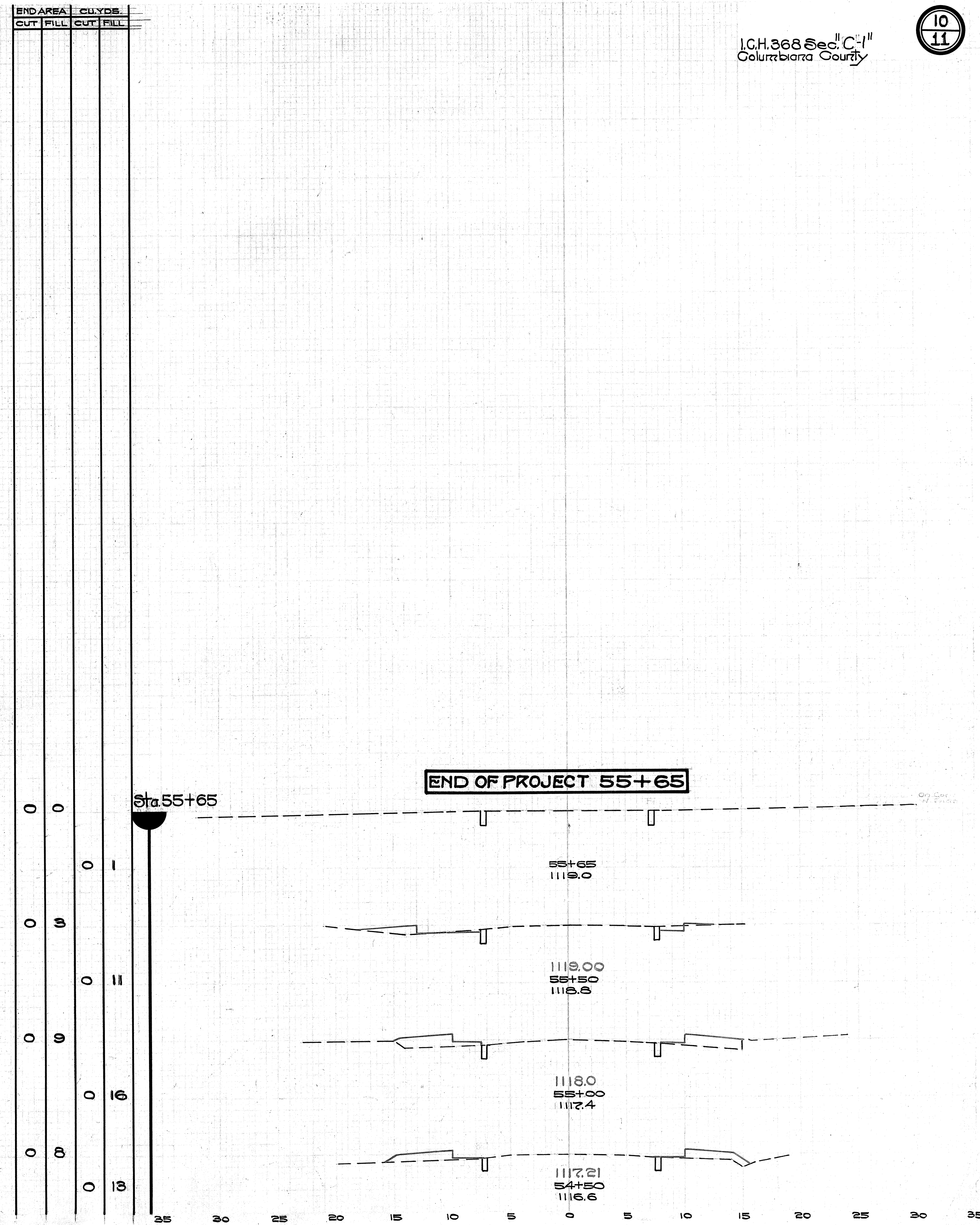
END AREA		CUYDS.	
CUT	FILL	CUT	FILL
18	6		
	19	25	
2	22		
	6	31	
4	12		
	7	19	
4	9		
	9	16	
1	8		
	12	9	
12	2		
	13	6	
2	5		
	6	8	
5	4		
	7	7	
3	4		
	5	11	
2	10		
	11	18	



END AREA		CUYDS.	
CUT	FILL	CUT	FILL
0	19		
	1	23	
1	23		
	15	22	
16	18		
	29	23	
15	7		
	26	16	
13	10		
	23	19	
12	11		
	26	22	
16	13		
	19	25	
4	14		
	19	14	
17	1		
	32	3	
17	2		
	32	7	



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SUMMARY OF QUANTITIES

SUMMARY OF EXCAVATION & EMBANKMENT

FROM STATION	TO STATION	CUBIC YARDS				
		EXC.	EMB.	EMB.+20%	WASTE	BORROW
0+00	15+00	600	491	589	11	
15+00	21+00	301	243	291	10	
21+00	36+25	720	600	720		
36+25	51+85	732	610	732		
51+85	55+65	0	160	192		192
TOTALS		2353	2104	2524	21	192

CONCRETE SECTION

T-25 (Cold Patch) for Meeting Grades.

Sta. 50+45 Bridge 8 Sq. Yds.
Sta. 51+00 " 8 Sq. Yds.
Sta. 55+65 End of Proj. 40 Sq. Yds.
56 Sq. Yds.

6" Minimum Concrete Course 1-5 Mix over old Brick.

Sta. 0+00 To 49+00 = $\frac{4900 \times 10}{9} = 5444.4$ Sq. Yds.
Sta. 49+00 To 50+45 = $\frac{145 \times 10' + 14' - 10''}{2} = 206.7$ Sq. Yds.
Sta. 51+00 To 55+65 = $\frac{465 \times 14' - 10''}{9} = \frac{766.2}{6410.7}$ Sq. Yds.

Total Concrete Pavement.

$\frac{5510 \times 20}{9} = 12244.4$ Sq. Yds.
+ 41.3 Sq. Yds. Intersection
+ 8.6 Sq. Yds. "
12294.3 Sq. Yds.
Less 6410.7 Sq. Yds.
5883.6 Sq. Yds. 7" x 9" Corr. Course.

Extra Base For Elevating Curves over old Brick 220 Cu. Yds.
Borrow Excavation 133 Cu. Yds.

AMMESITE OR COLD PATCH TOP

Ammesite or Cold Patch Top

$\frac{5510 \times 18}{9} = 11020$ Sq. Yds.
34.3 " " Intersection At End.
6.3 " " "
Total = 11060.6 Sq. Yds. Ammesite 1 1/2" Thick.

Ammesite or Cold Patch For Meeting Grades.

Sta. 50+45 Bridge 8 Sq. Yds.
Sta. 51+00 " 8 Sq. Yds.
Sta. 55+65 End of Proj. 40 Sq. Yd.
Total 56 Sq. Yds.

4" Con. Base Leveling Course 1-7 Mix.

Sta. 0+00 To 49+00 = $\frac{4900 \times 10' - 10''}{9} = 5896.3$ Sq. Yds.
Sta. 49+00 To 50+45 = $\frac{145' \times 10' - 10'' + 14' - 10''}{2} = 206.7$ " "
Sta. 51+00 To 55+65 = $\frac{465 \times 14' - 10''}{9} = \frac{766.2}{6869.2}$ Sq. Yds.
Total 6869.2 Sq. Yds.

Total Base Course

$\frac{5510 \times 20}{9} = 12244.4$ Sq. Yds.
+ 41.3 " " Intersection
+ 8.6 " " "
Total 12294.3 Sq. Yds.
Less 6869.2 " " 4" Course.
5425.1 Sq. Yds. 7" Base Course To Place

Upper 1 1/2" of Curb 1-2-3 Mix Concrete.

Rt. Side 5510 Less 14.2 (Intersection) + 21 = 5516.8 Lin. Ft.
Lt. Side 5510 " 38.1 " + 63 = 5534.9 " "
Total = 11051.7 Lin. Ft.

Extra Base Course For Elevating Curves Over Old Brick (1-7) Concrete = 225 Cu. Yds.

3" BRICK TOP

Brick Top 3"

$\frac{5510 \times 18}{9} = 11020$ Sq. Yds.
34.3 " " Intersection.
6.3 " " "
11060.6 Sq. Yds. of 3" Brick Top-To Include Asphalt Filler and Slag Sand Cushion.

Ammesite or Cold Patch For Meeting Grades.

Sta. 50+45 Bridge 8 Sq. Yds.
Sta. 51+00 " 8 " "
Sta. 55+65 End of Proj. 40 " "
Total = 56 Sq. Yds.

4" Con. Base Leveling Course 1-7 Mix.

Sta. 0+00 To 49+00 = $\frac{4900 \times 10' - 10''}{9} = 5896.3$ Sq. Yds.
Sta. 49+00 To 50+45 = $\frac{145' \times 10' - 10'' + 14' - 10''}{2} = 206.7$ " "
Sta. 51+00 To 55+65 = $\frac{465 \times 14' - 10''}{9} = \frac{766.2}{6869.2}$ Sq. Yds.
Total 6869.2 Sq. Yds.

Total Base Course.

$\frac{5510 \times 20}{9} = 12244.4$ Sq. Yds.
+ 41.3 " " Intersection
+ 8.6 " " "
Total = 12294.3 Sq. Yds.
Less 6869.2 " " 4" Course
5425.1 Sq. Yds. 6" Base Course To Place.

Upper 3 3/4" of Curb 1-2-3 Mix Concrete.

Rt. Side 5510 Less 14.2 (Intersection) + 21 = 5516.8 Lin. Ft.
Lt. " 5510 " 38.1 " + 63 = 5534.9 " "
Total = 11051.7 Lin. Ft.

Extra Base Course For Elevating Curves Over Old Brick (1-7) Concrete = 225 Cu. Yds.

Borrow Excavation To Fill Berms = 215 Cu. Yds. Extra for this Section.