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R-5311A INDEX OF CROSS-SECTIONS

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STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PROJ. REFERENCE NO.	SHEET NO.
R-5311A	X-1A

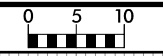
Quantities are approximate only. The Resident Engineer will recross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid.

CROSS-SECTION SUMMARY

NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT

Station	Uncl. Exc.	Embt	Station	Uncl. Exc.	Embt	Station	Uncl. Exc.	Embt	UnderCut	Station	Uncl. Exc.	Embt	UnderCut			
-EL- RT	(cu. yd.)	(cu. yd.)	-L2- RT	(cu. yd.)	(cu. yd.)	-DET1-	(cu. yd.)	(cu. yd.)	(cu. yd.)	-Y2LPB-	(cu. yd.)	(cu. yd.)	(cu. yd.)			
353+00.00	0	0	15+50.00	3	17	45+50.00	5	132	0	15+00.00	0	1188	0			
353+50.00	12	0	16+00.00	5	13	46+00.00	20	114	0	15+50.00	0	1608	0			
354+00.00	12	2	16+50.00	22	0	46+50.00	27	86	0	16+00.00	0	2039	0			
354+50.00	11	6	17+00.00	28	0	47+00.00	19	88	0	16+50.00	0	2393	0			
355+00.00	14	9	17+50.00	10	51	47+50.00	9	107	0	17+00.00	0	2777	0			
			18+00.00	2	103	48+00.00	4	131	0	17+50.00	0	3221	0			
Station	Uncl. Exc.	Embt	18+50.00	46	115	48+50.00	13	166	0	18+00.00	0	3637	0			
-L2- LT	(cu. yd.)	(cu. yd.)	19+00.00	69	119	49+00.00	23	202	0	18+50.00	0	4077	0			
19+50.00	35	81	49+50.00	31	248	19+00.00	0	4548	0	20+00.00	0	4998	0			
10+00.00	0	0	20+00.00	21	70	49+60.00	7	56	0	19+50.00	0	5380	0			
10+50.00	4	0	20+50.00	10	62	49+70.00	7	57	0	20+00.00	0	5729	0			
11+00.00	6	0	21+00.00	2	34					20+50.00	0	6355	0			
11+50.00	6	0	21+50.00	5	34	Station	Uncl. Exc.	Embt	UnderCut	21+00.00	0	5959	0			
12+00.00	4	44	22+00.00	5	33	-Y2-	(cu. yd.)	(cu. yd.)	(cu. yd.)	21+42.00	0					
12+50.00	5	94	22+50.00	2	19											
13+00.00	6	68	23+00.00	4	2	51+60.08	0	0		Station	Uncl. Exc.	Embt	UnderCut			
13+50.00	6	48	23+50.00	7	0	52+00.00	0	5487		-Y2LPD-	(cu. yd.)	(cu. yd.)	(cu. yd.)			
14+00.00	15	100	23+91.21	4	0	52+50.00	0	7347		12+45.00	0	0	0			
14+50.00	40	96				53+00.00	0	8223		12+95.00	23	748	211			
15+00.00	69	40	Station	Uncl. Exc.	Embt	UnderCut	53+50.00	0	8603	13+40.00	10	553	47			
15+50.00	64	16	-DET1-	(cu. yd.)	(cu. yd.)	(cu. yd.)	54+00.00	0	8381	14+00.00	2	743	7			
16+00.00	44	3	30+17.30	0	0	0	54+50.00	0	8237	14+50.00	0	911	0			
16+50.00	47	0	30+50.00	1	0	0	55+00.00	0	7985	15+00.00	0	1438	0			
17+00.00	35	0	30+50.00	1	0	0	55+50.00	0	7502	15+50.00	0	1988	0			
17+50.00	35	0	31+00.00	4	0	0	56+00.00	0	7119	16+00.00	0	2422	0			
18+00.00	47	0	31+50.00	5	0	0	56+50.00	0	6336	16+50.00	0	2851	0			
18+50.00	36	0	32+00.00	8	0	0	57+00.00	0	5331	17+00.00	0	3349	0			
19+00.00	22	0	32+50.00	13	0	0	57+50.00	0	4627	17+50.00	0	3885	0			
19+50.00	12	0	33+00.00	15	41	41	58+00.00	0	4069	18+00.00	0	4461	0			
20+00.00	10	0	33+50.00	16	67	61	58+50.00	0	3563	18+50.00	0	4948	0			
20+50.00	7	4	34+00.00	15	58	42	59+00.00	0	3064	19+00.00	0	5168	0			
21+00.00	5	10	34+50.00	12	56	27	59+50.00	0	2548	19+50.00	0	5102	0			
21+50.00	6	13	35+00.00	22	52	12	60+00.00	0	2113	20+00.00	0	5352	0			
22+00.00	7	10	35+50.00	36	69	22	60+50.00	0	1711	20+32.00	0	3889	0			
22+50.00	6	6	36+00.00	40	80	31	61+00.00	0	1315							
23+00.00	6	3	36+50.00	35	70	29	61+50.00	0	978							
23+50.00	11	1	37+00.00	26	74	28	62+00.00	0	713	Station	Uncl. Exc.	Embt	UnderCut			
23+91.21	6	0	37+50.00	19	92	26	62+50.00	0	518	-Y2-	(cu. yd.)	(cu. yd.)	(cu. yd.)			
			38+00.00	19	96	20	63+00.00	0	383							
Station	Uncl. Exc.	Embt	38+50.00	26	88	11	63+50.00	1	283	35+00.00	0	0	0			
-L2- RT	(cu. yd.)	(cu. yd.)	39+00.00	33	81	4	64+00.00	6	153	35+50.00	12	59	48			
39+50.00	58	74	1	64+50.00	9	54	36+00.00	4	56	36+50.00	3	62	38			
10+00.00	0	0	40+00.00	82	55	0	65+00.00	9	31	37+00.00	1	72	37			
10+50.00	19	20	40+50.00	91	28	0	65+40.00	4	8	37+50.00	0	77	35			
11+00.00	14	29	41+00.00	90	24	0				Station	Uncl. Exc.	Embt	UnderCut			
11+50.00	12	33	41+50.00	80	45	0	-Y2LPB-	(cu. yd.)	(cu. yd.)	(cu. yd.)	38+00.00	0	97	28		
12+00.00	13	40	42+00.00	63	56	0				38+50.00	0	148	13			
12+50.00	12	46	42+50.00	50	70	0				39+00.00	0	229	3			
13+00.00	11	49	43+00.00	56	85	0	12+54.18	0	0	39+50.00	0	349	1			
13+50.00	10	44	43+50.00	58	94	0	13+00.00	17	667	40+00.00	0	479	0			
14+00.00	7	34	44+00.00	55	108	0	13+52.00	18	1160	40+50.00	0	608	0			
14+50.00	9	21	44+50.00	27	119	0	14+00.00	6	861	41+00.00	0	772	0			
15+00.00	8	11	45+00.00	1	128	0	14+50.00	0	904	41+50.00	0	978	0			

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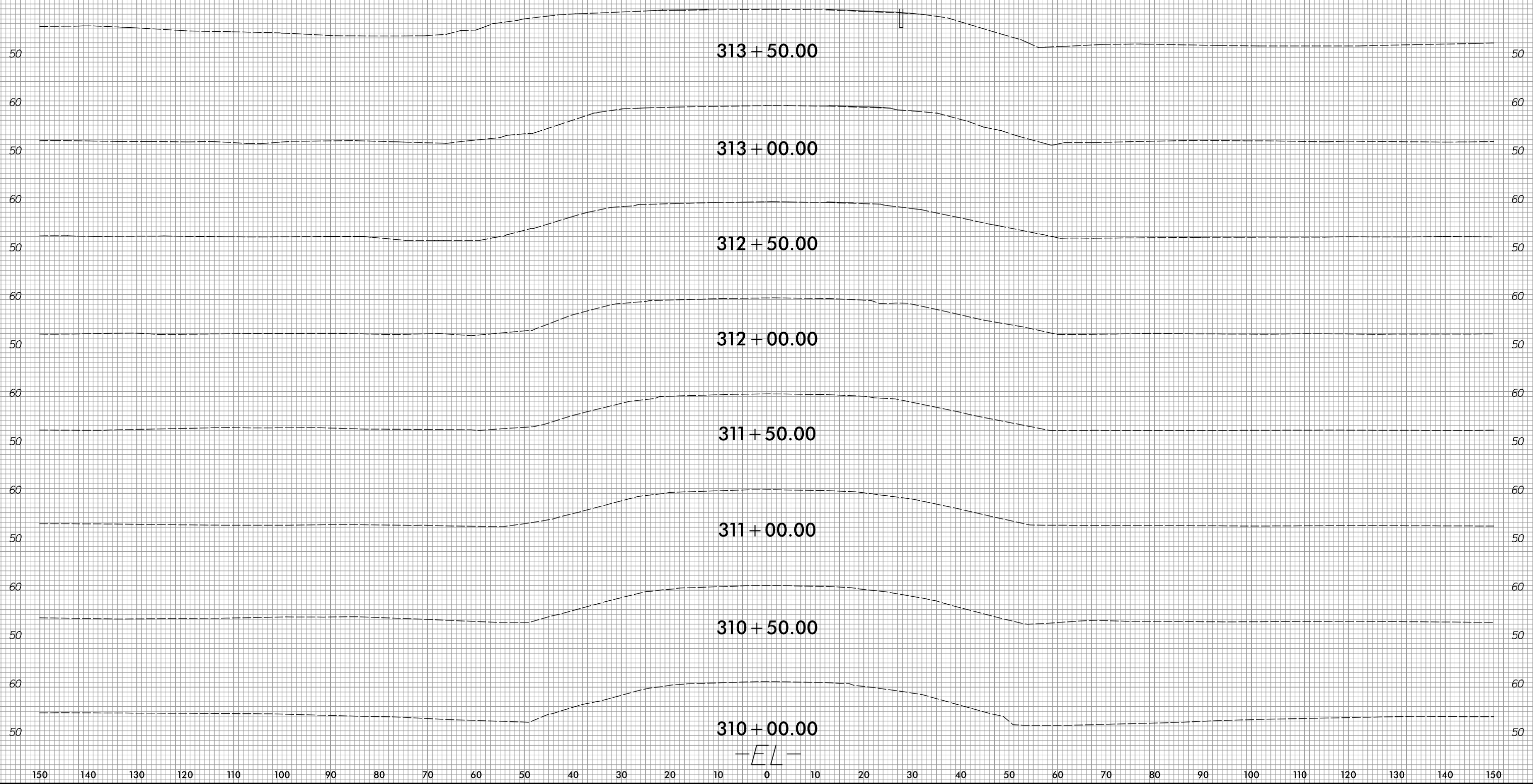


PROJ. REFERENCE NO.
R-5311A

SHEET NO.
X-2

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RESURFACE 1 1/2" BEGIN -EL- STA. 310+00.00
TO END STA. 355+00.00



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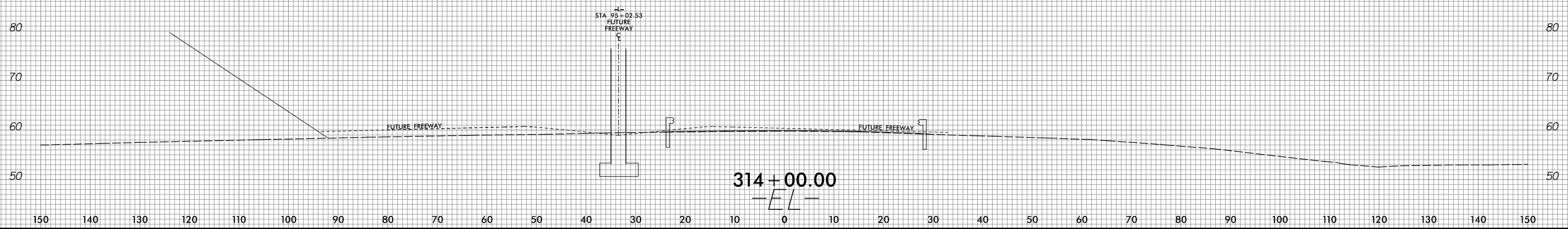
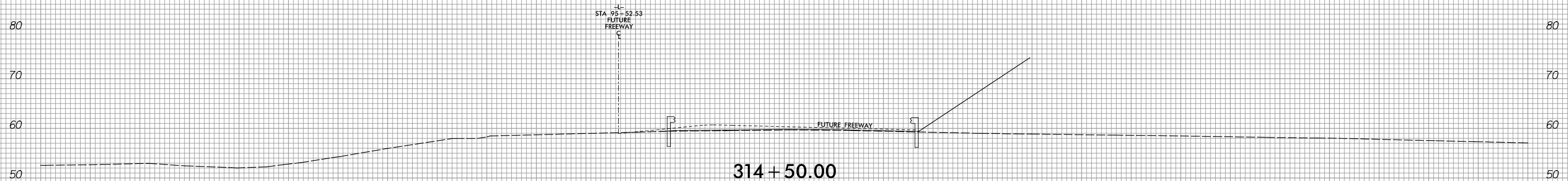
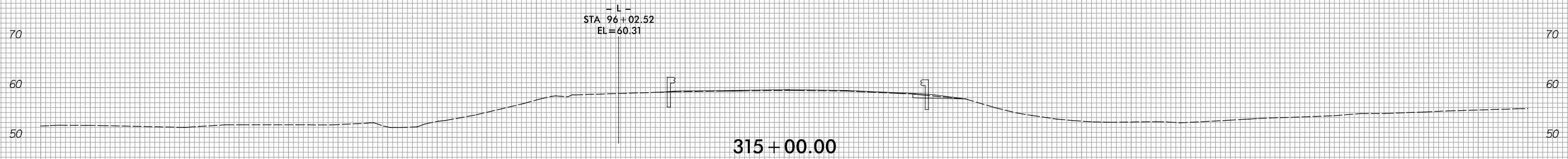
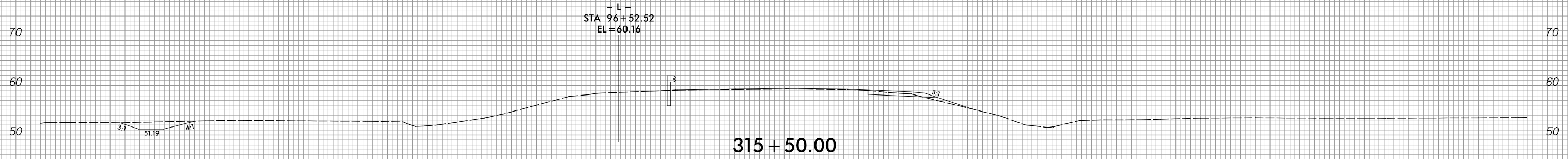


PROJ. REFERENCE NO.
R-5311A

SHEET NO.
X-3

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RESURFACE 1 1/2" BEGIN -EL- STA. 310+00.00
TO END STA. 355+00.00

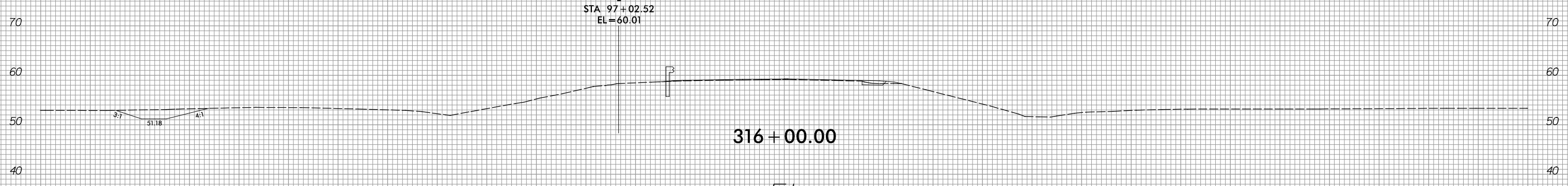
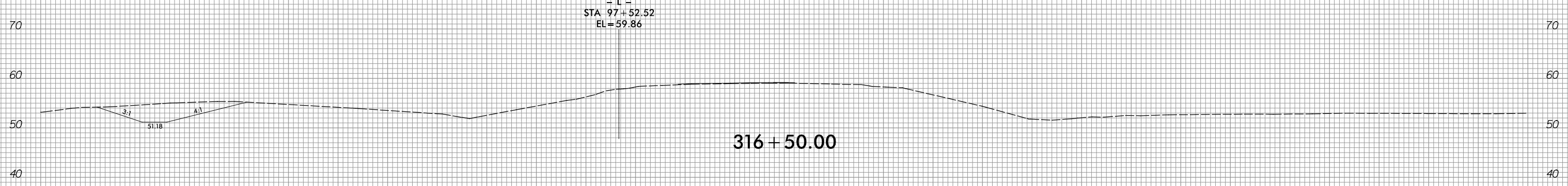
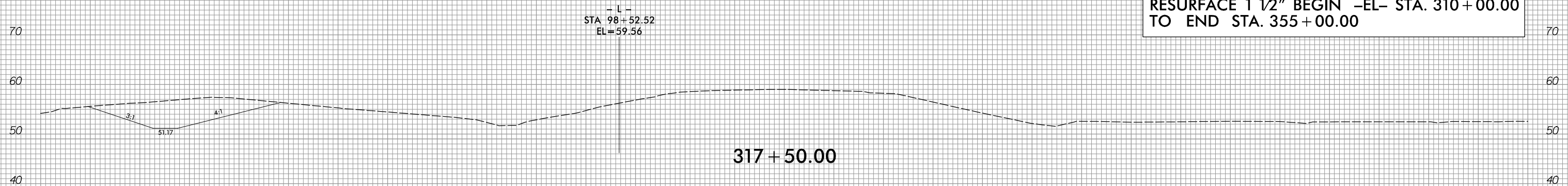


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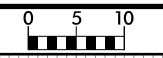
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RESURFACE 1 1/2" BEGIN -EL- STA. 310+00.00
TO END STA. 355+00.00

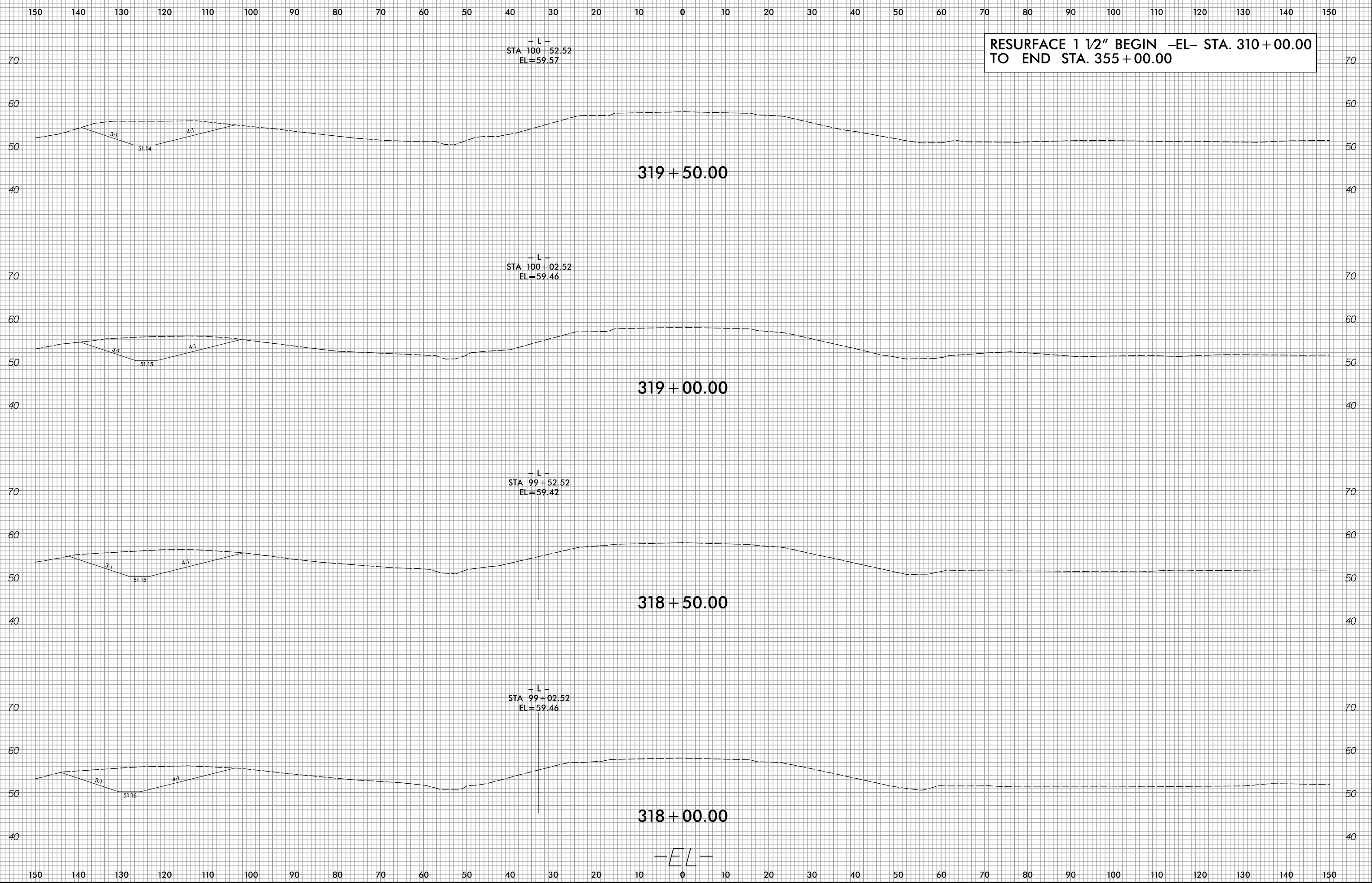


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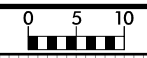


PROJ. REFERENCE NO.	SHEET NO.
R-5311A	X-5



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PROJ. REFERENCE NO.	SHEET NO.
R-5311A	X-6

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RESURFACE 1 1/2" BEGIN -EL- STA. 310 + 00.00
TO END STA. 355 + 00.00

- L -
STA 102 + 52.52
EL = 60.12

321 + 50.00

- L -
STA 102 + 02.52
EL = 59.99

321 + 00.00

- L -
STA 101 + 52.52
EL = 59.86

320 + 50.00

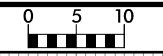
- L -
STA 101 + 02.52
EL = 59.72

320 + 00.00

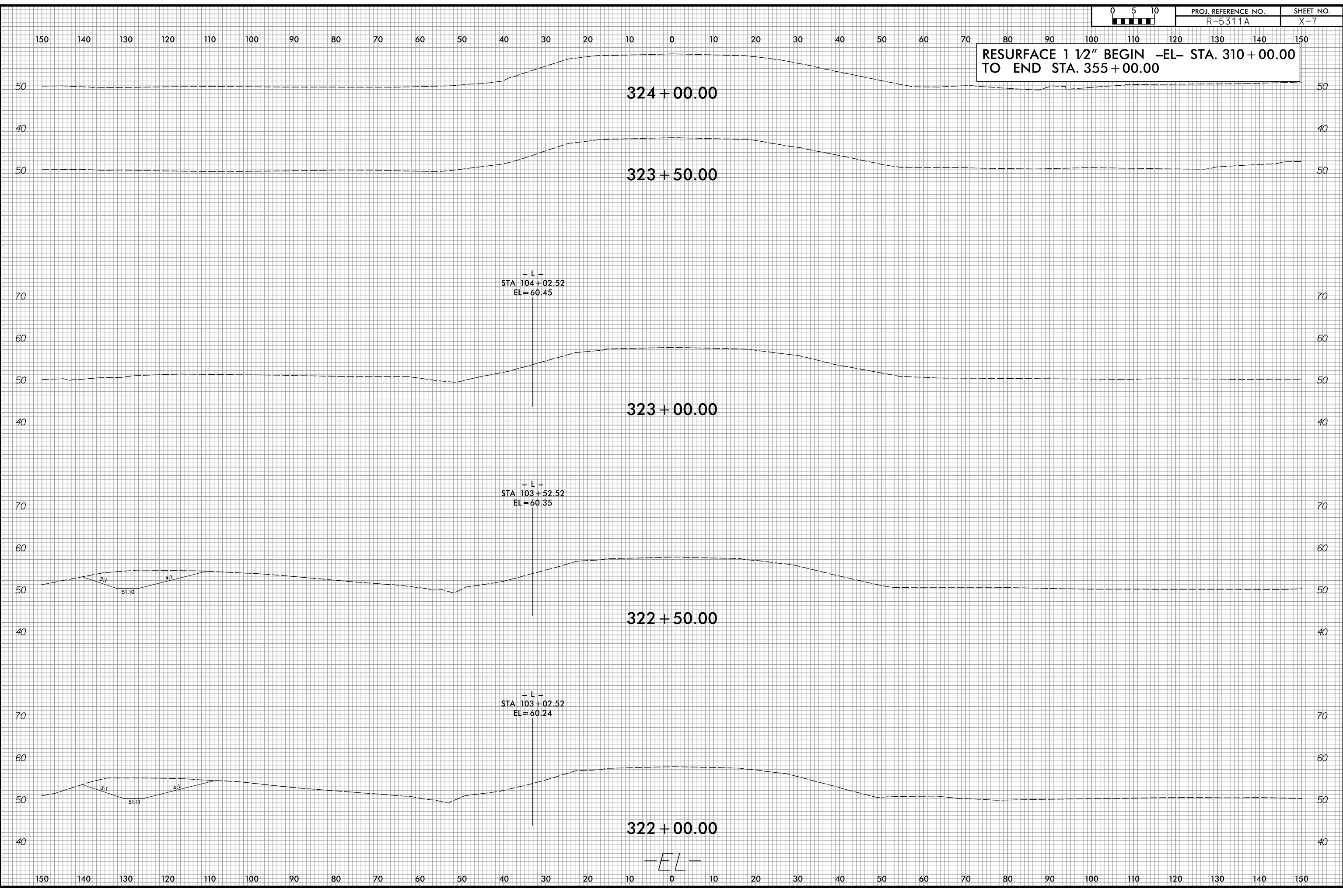
- EL -

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**RESURFACE 1 1/2" BEGIN -EL- STA. 310+00.00
TO END STA. 355+00.00**



8/23/99

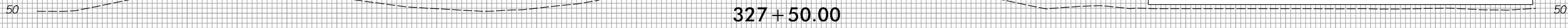


PROJ. REFERENCE NO.
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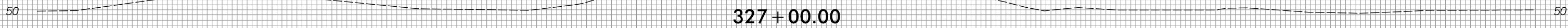
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X-8

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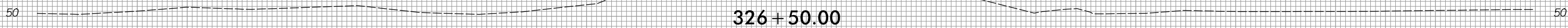
RESURFACE 1 1/2" BEGIN -EL- STA. 310+00.00
TO END STA. 355+00.00



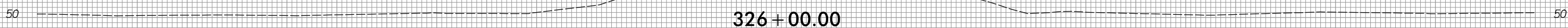
327+50.00



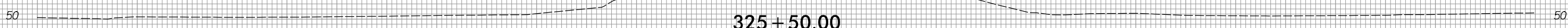
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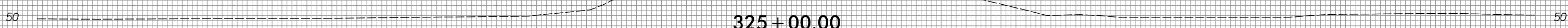
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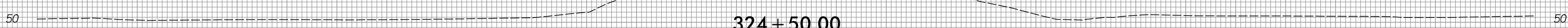
326+00.00



325+50.00



325+00.00

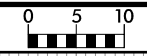


324+50.00

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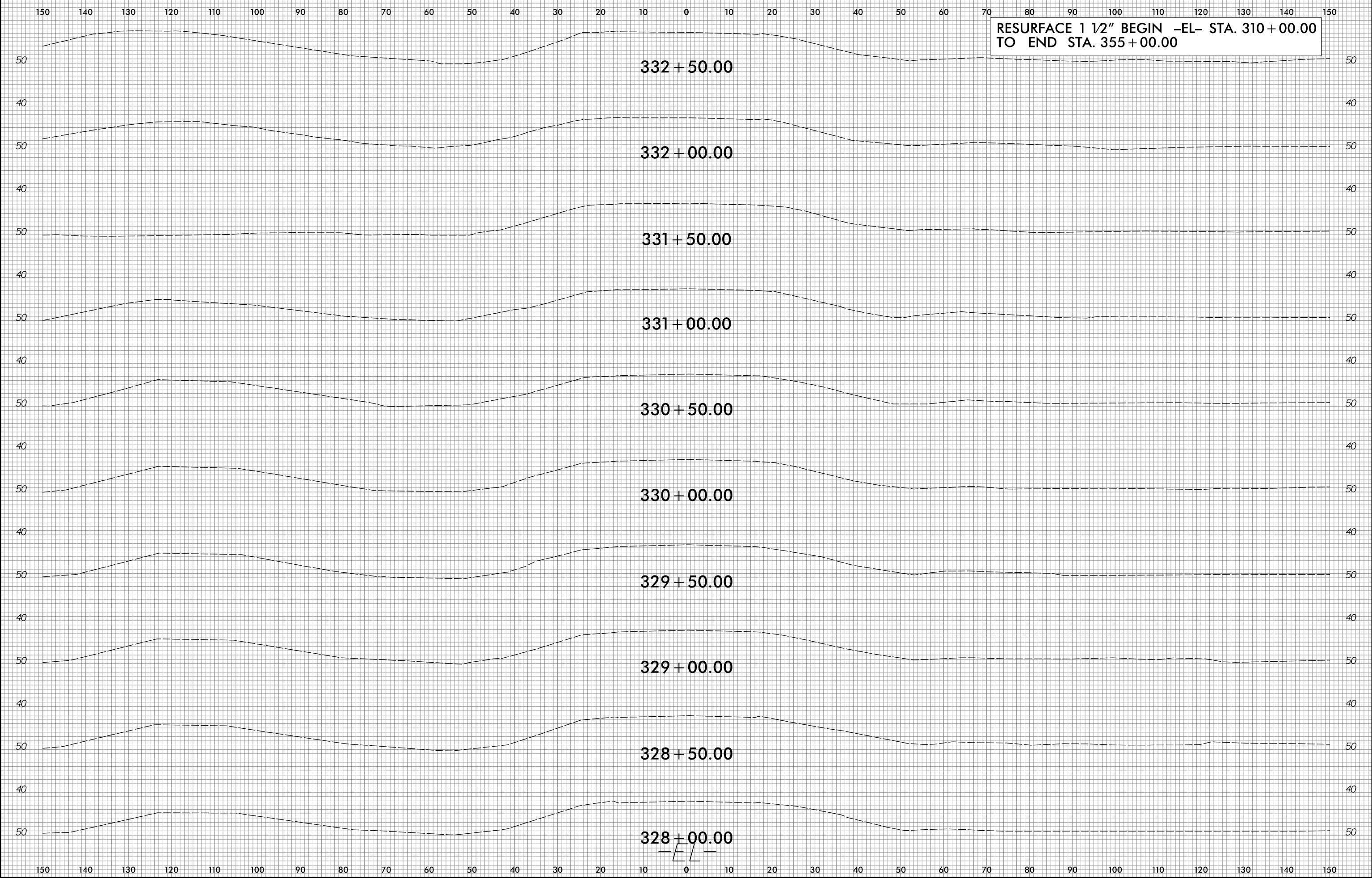
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PROJ. REFERENCE NO.
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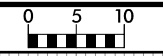
SHEET NO.
X-9

RESURFACE 1 1/2" BEGIN -EL- STA. 310+00.00
TO END STA. 355+00.00



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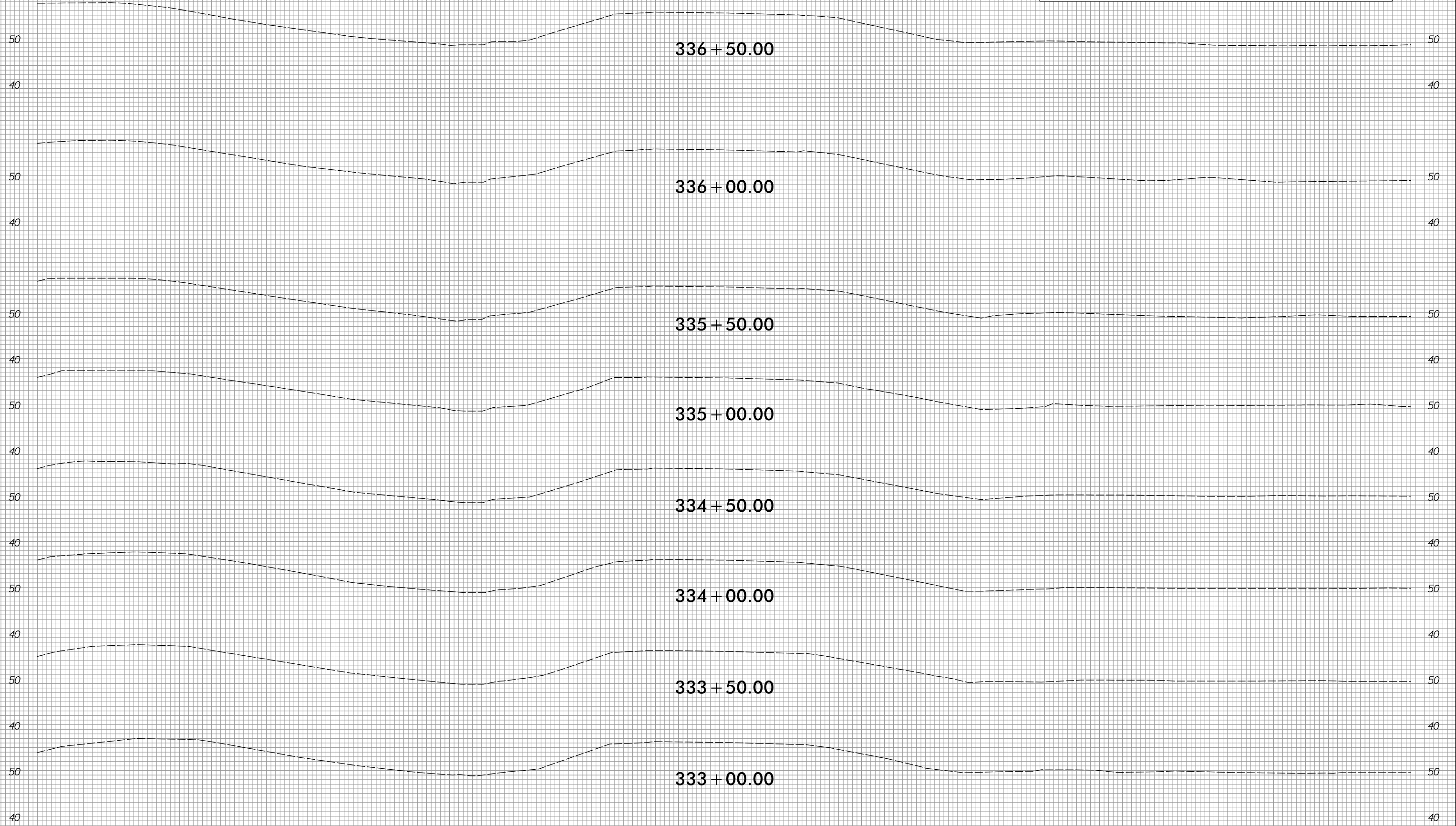
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PROJ. REFERENCE NO.	SHEET NO.
R-5311A	X-10

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RESURFACE 1 1/2" BEGIN -EL- STA. 310+00.00
TO END STA. 355+00.00



-EL-

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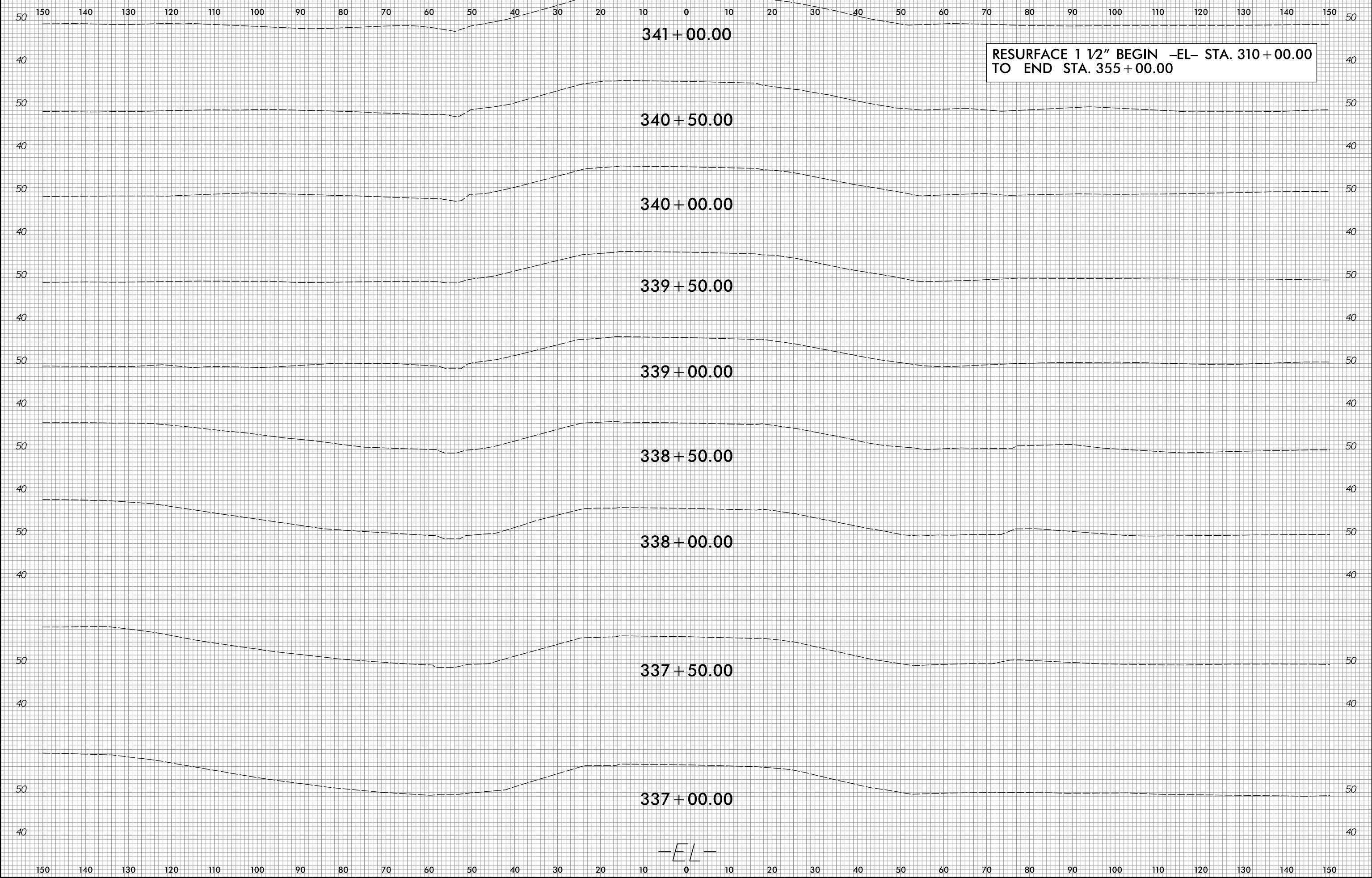
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PROJ. REFERENCE NO.
R-5311A

SHEET NO.
X-11



RESURFACE 1 1/2" BEGIN -EL- STA. 310 + 00.00
TO END STA. 355 + 00.00

341 + 00.00

340 + 50.00

340 + 00.00

339 + 50.00

339 + 00.00

338 + 50.00

338 + 00.00

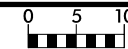
337 + 50.00

337 + 00.00

-EL-

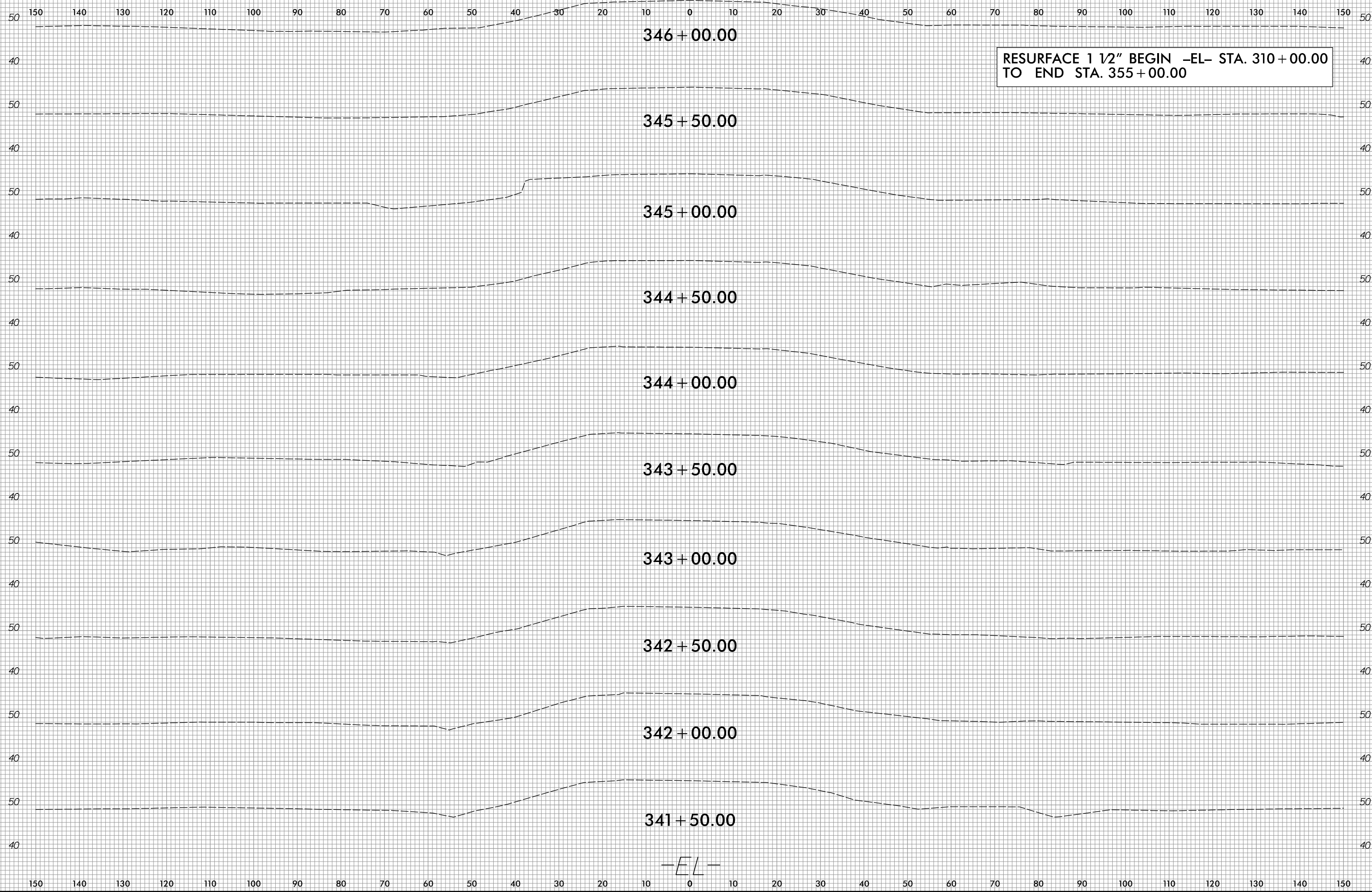
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PROJ. REFERENCE NO.
R-5311A

SHEET NO.
X-12

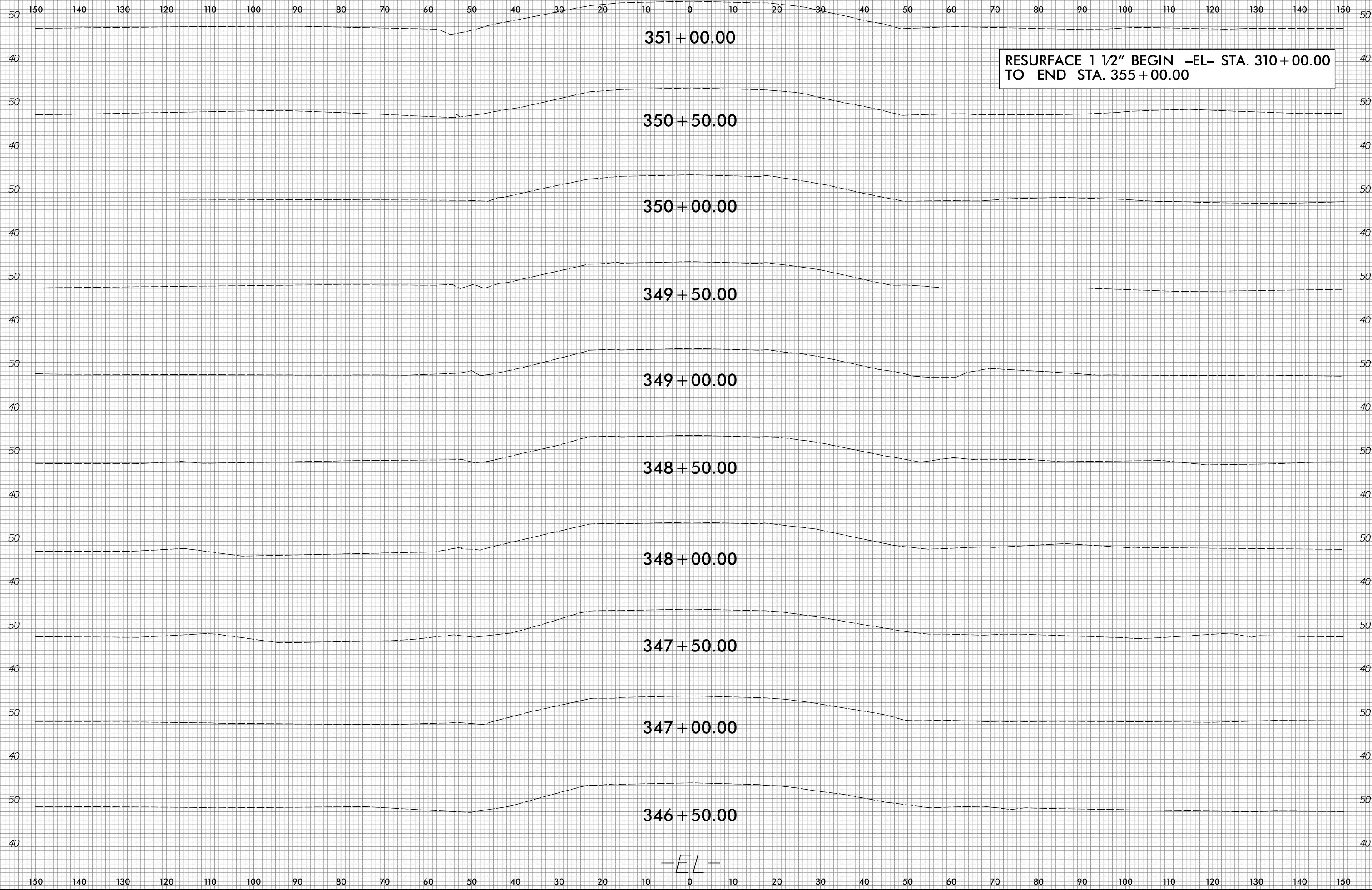


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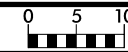


PROJ. REFERENCE NO.	SHEET NO.
R-5311A	X-13



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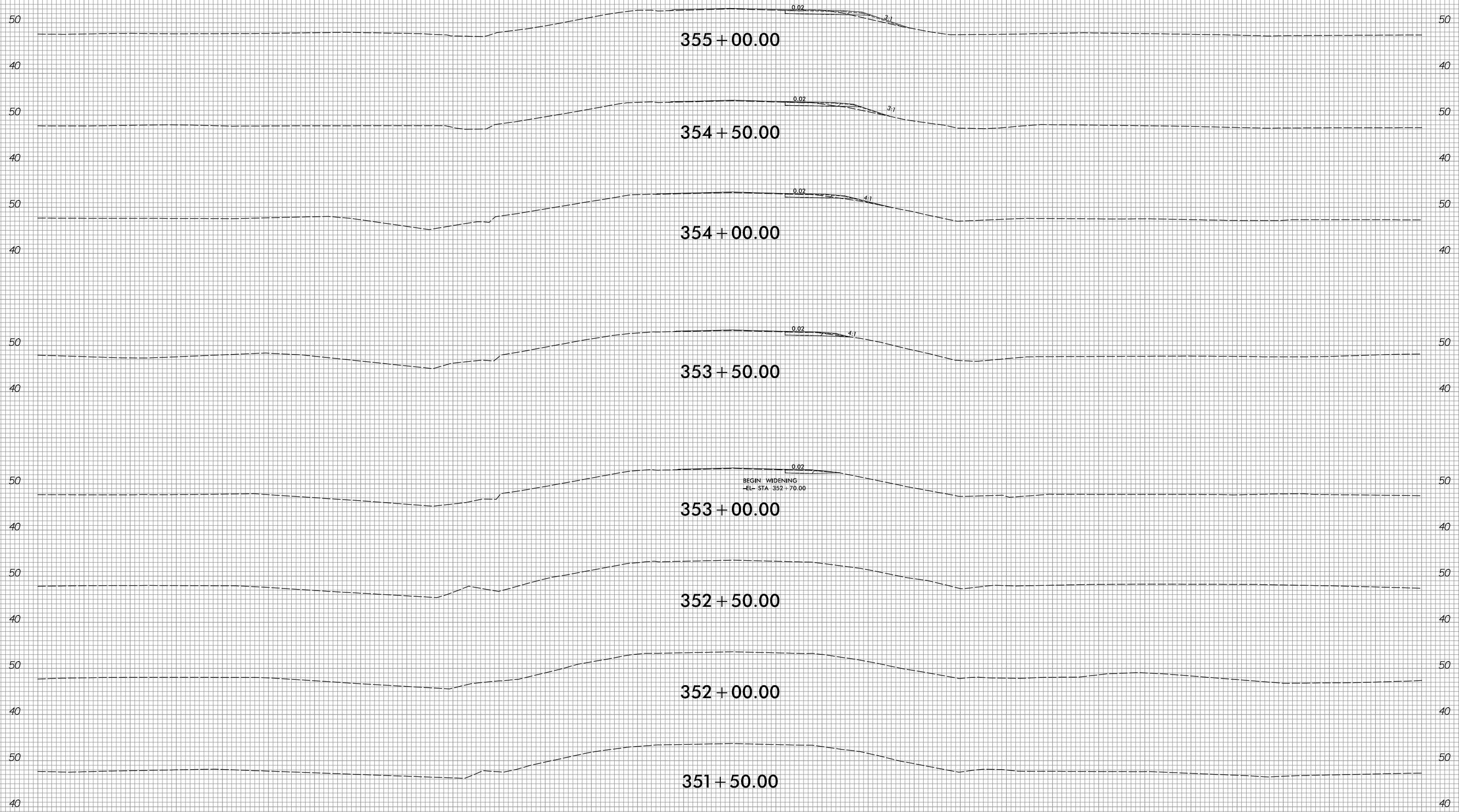


PROJ. REFERENCE NO.
R-5311A

SHEET NO.
X-14

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RESURFACE 1 1/2" BEGIN -EL- STA. 310 + 00.00
TO END STA. 355 + 00.00



355 + 00.00

354 + 50.00

354 + 00.00

353 + 50.00

353 + 00.00

352 + 50.00

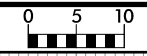
352 + 00.00

351 + 50.00

-EL-

3/30/2017
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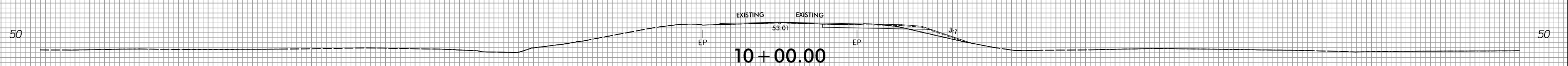
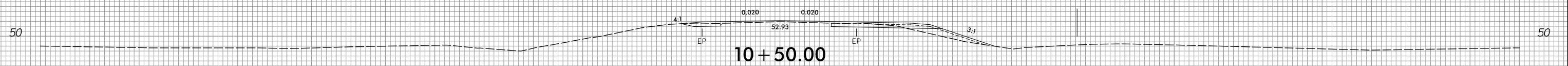
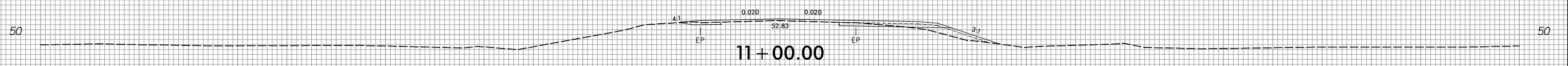
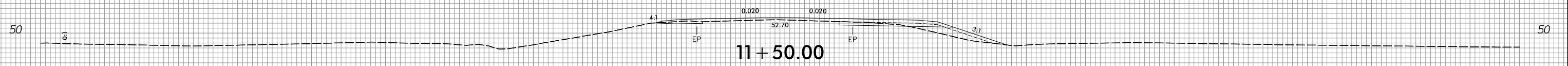
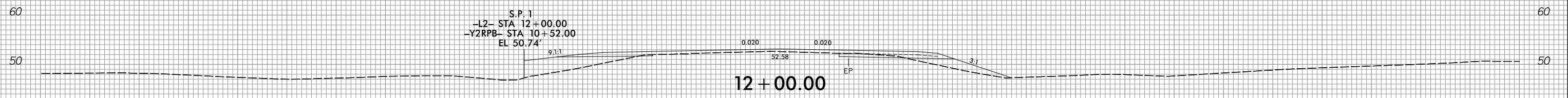
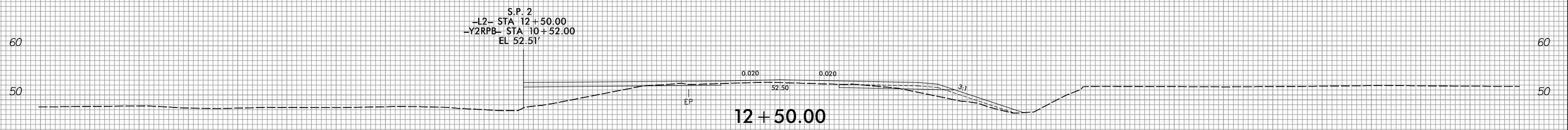
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PROJ. REFERENCE NO.
R-5311A

SHEET NO.
X-15

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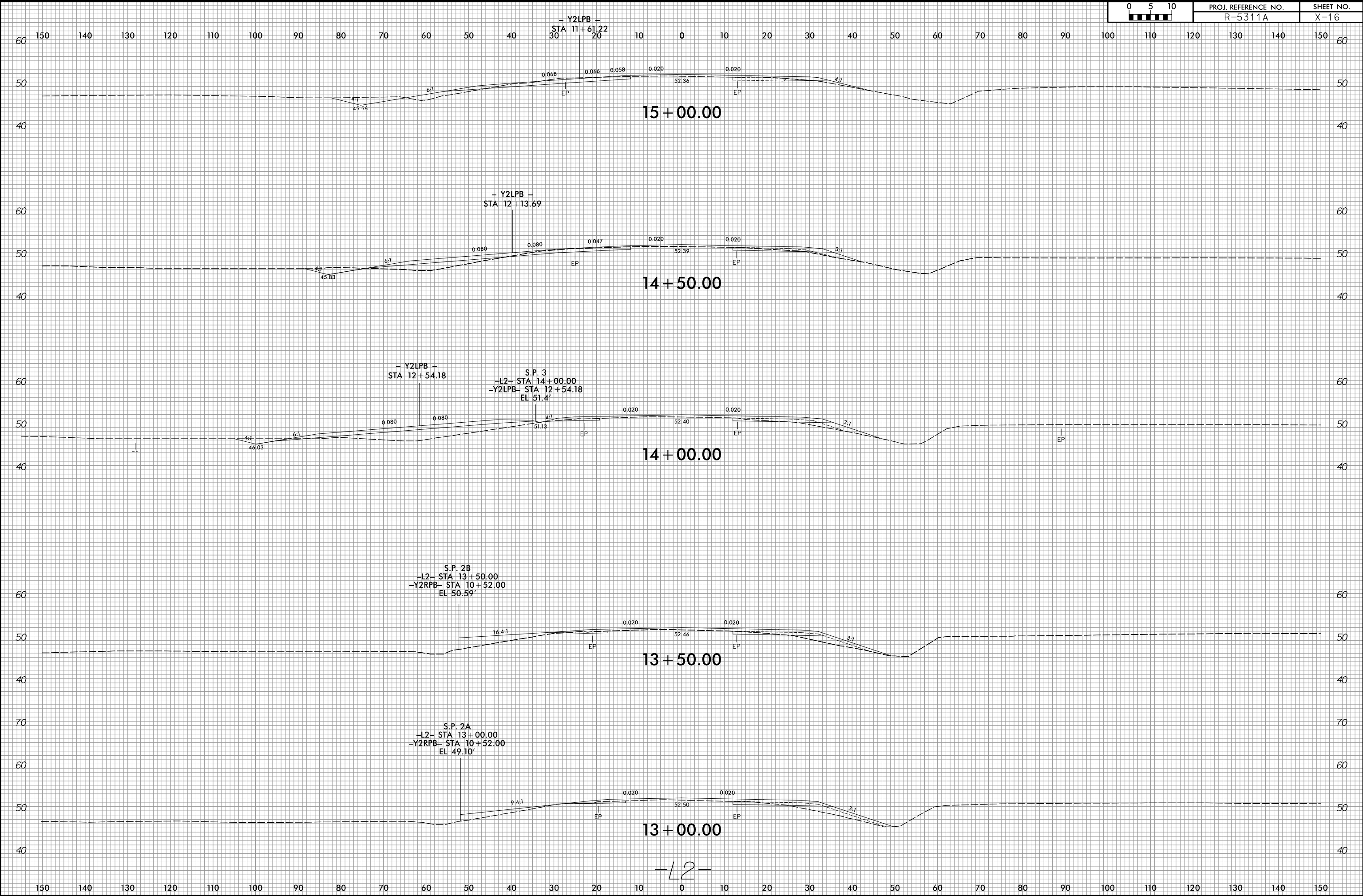


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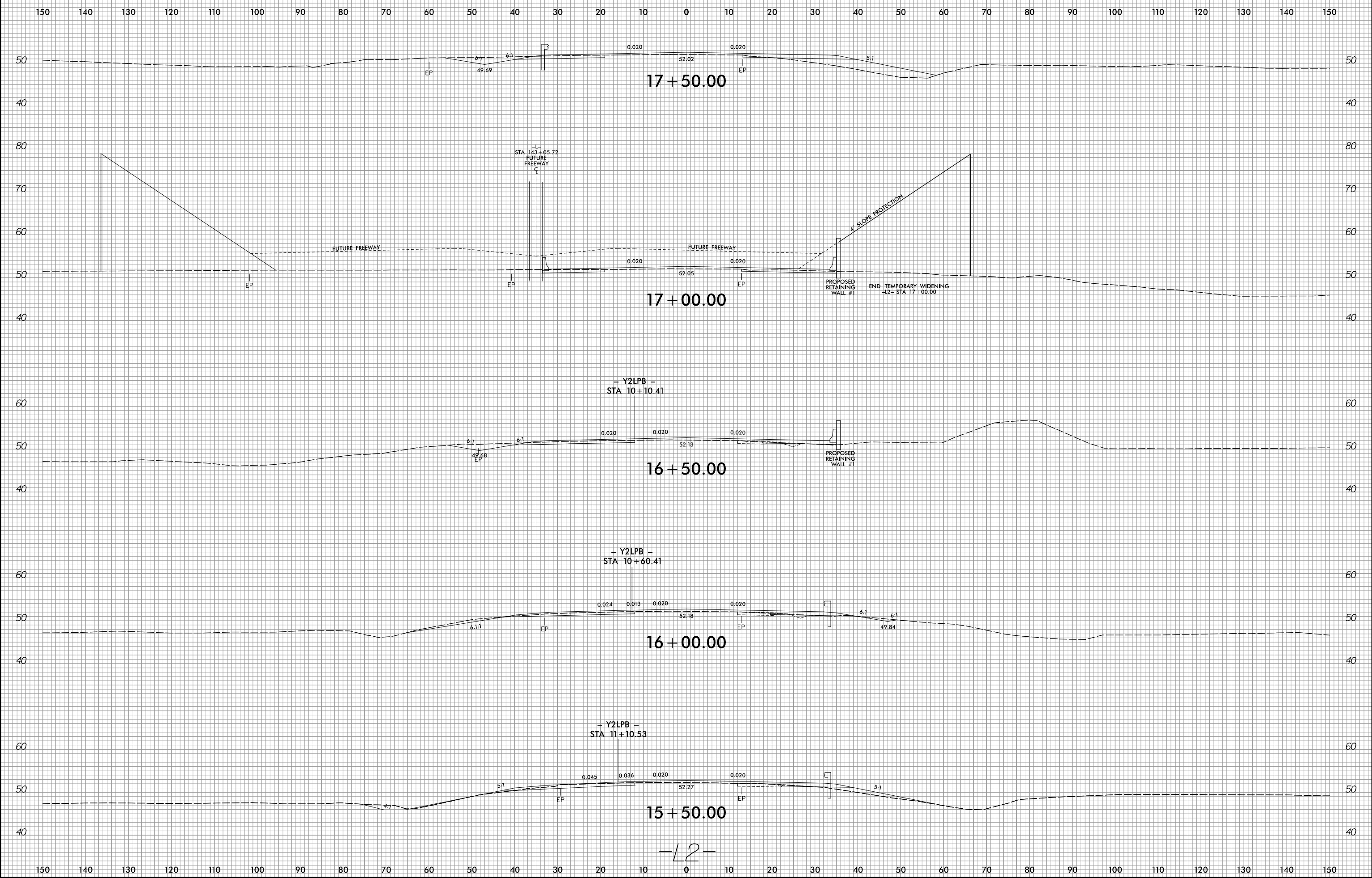
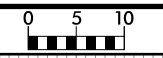
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JCA ENGINEERING, INC.

8/23/99



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8/23/99



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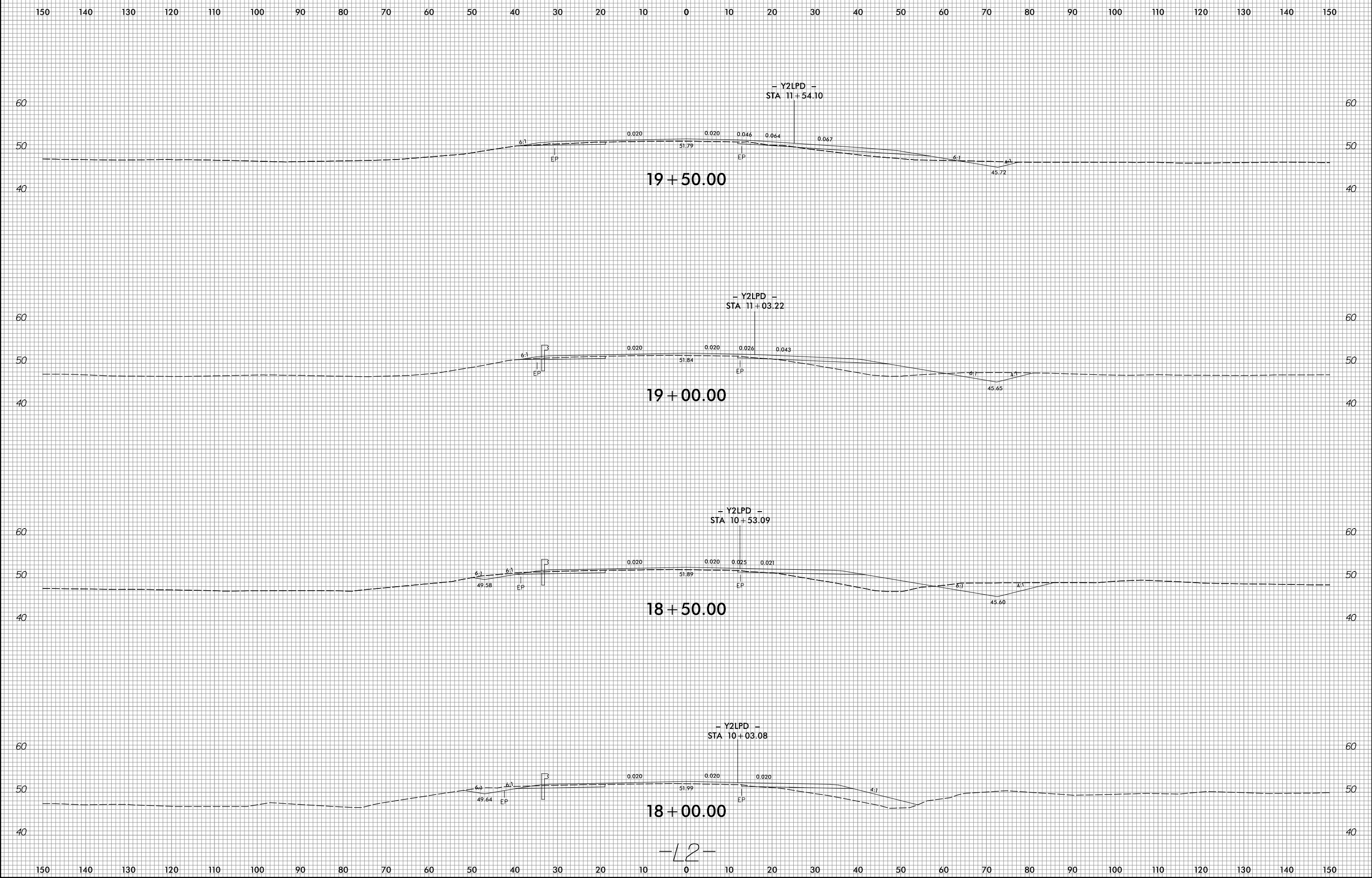
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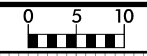
8/23/99



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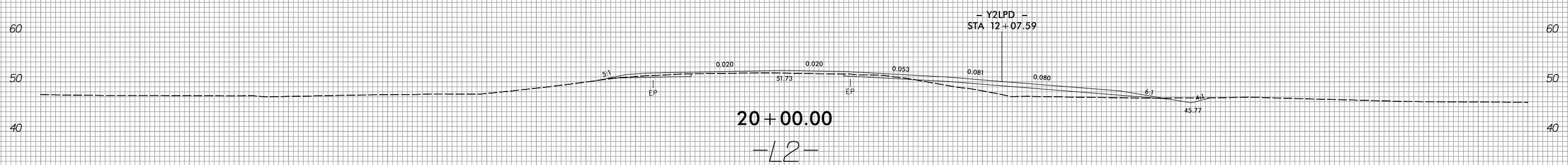
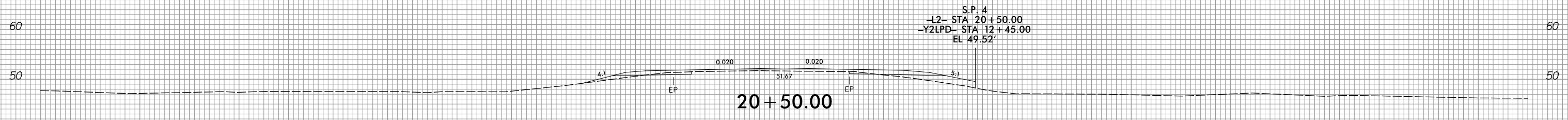
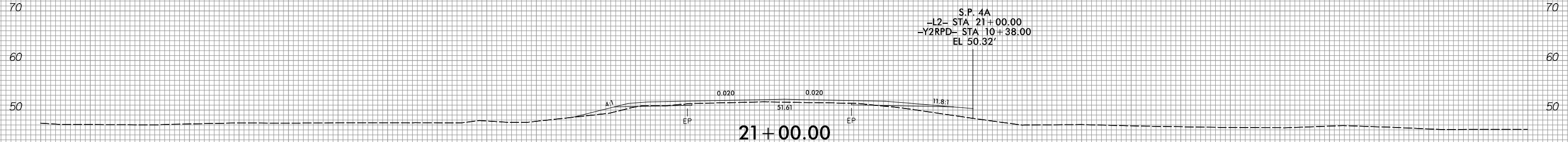
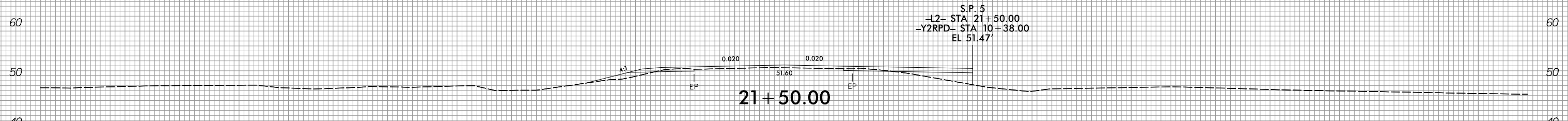
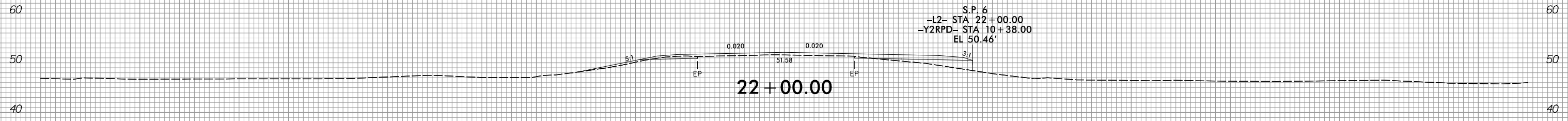
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SHEET NO.
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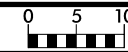
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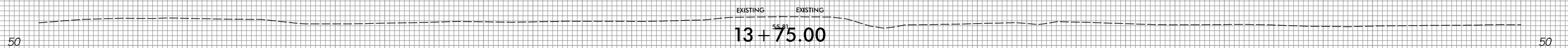
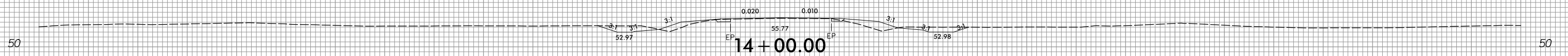
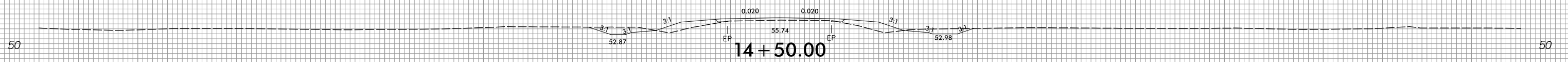
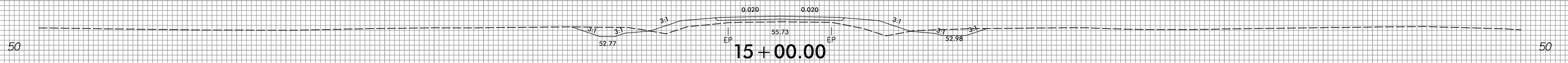
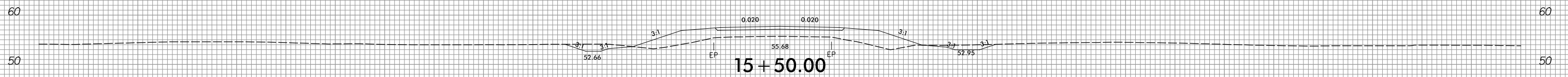
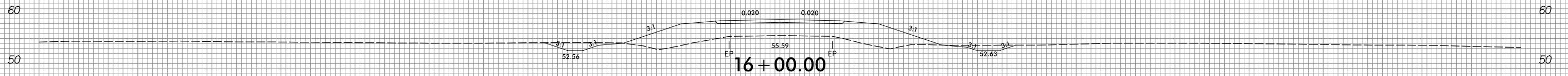
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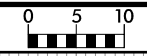
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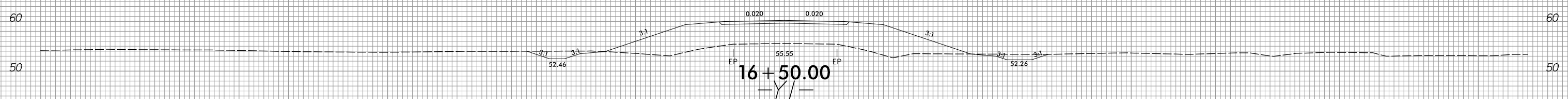
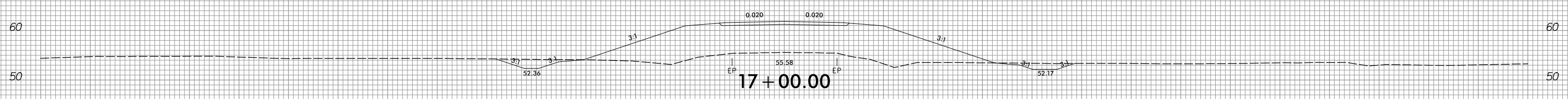
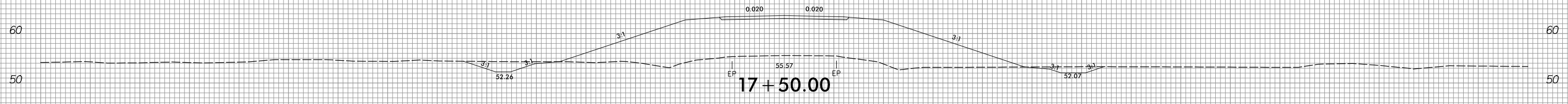
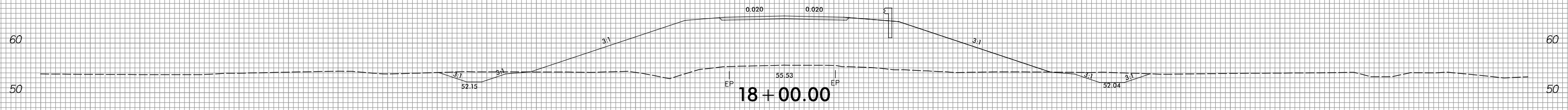
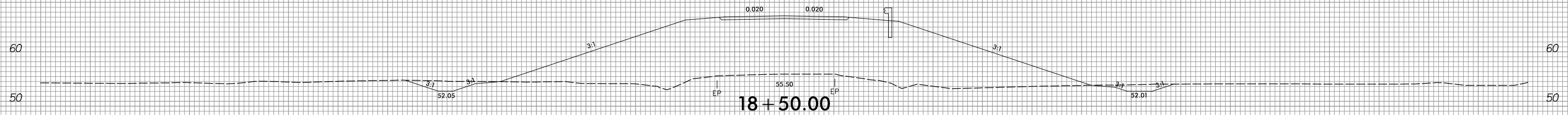
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PROJ. REFERENCE NO.
R-5311A

SHEET NO.
X-22

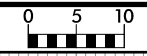
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3/30/2017
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CAE ENGINEERING, INC.

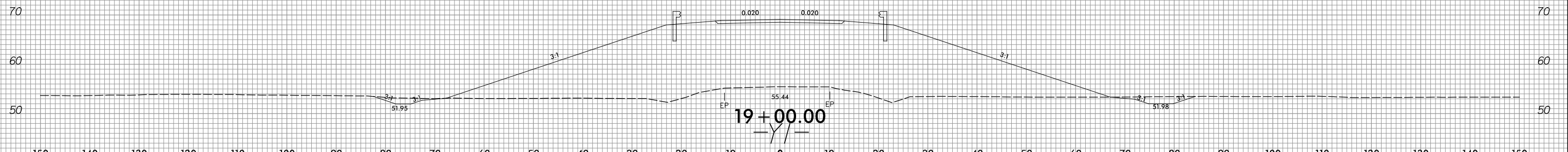
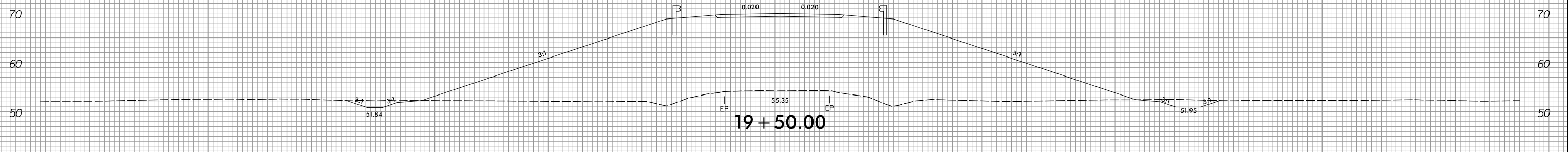
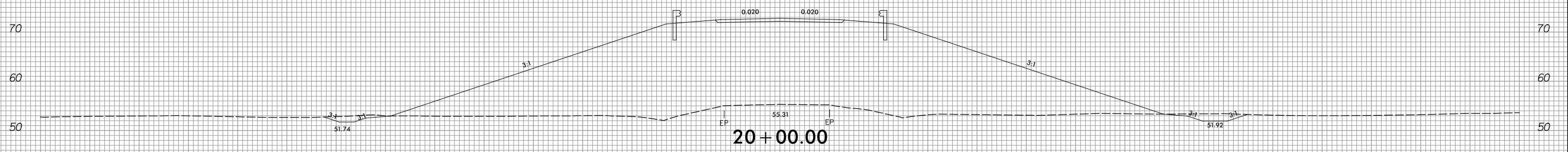
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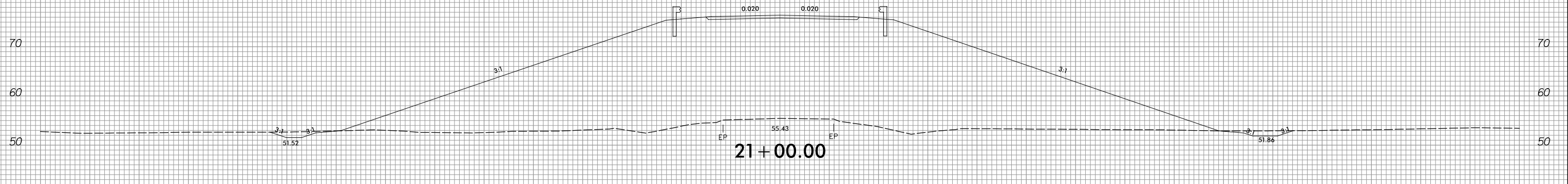
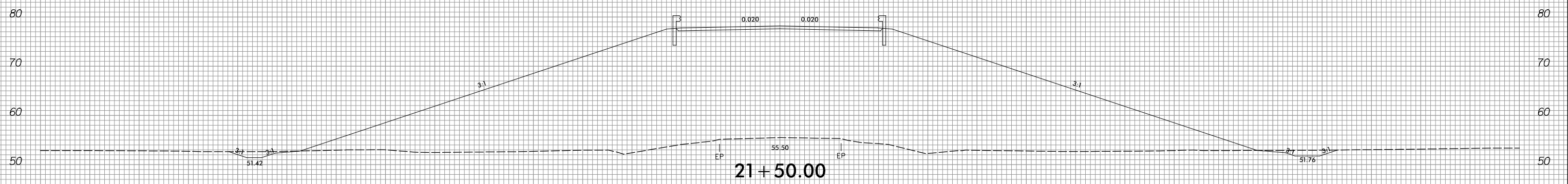
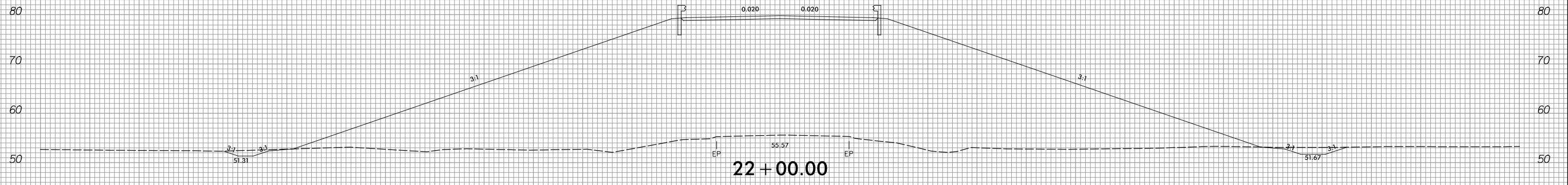
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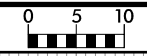


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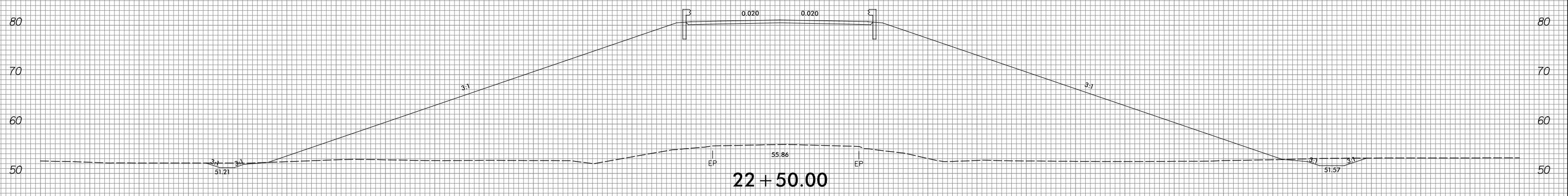
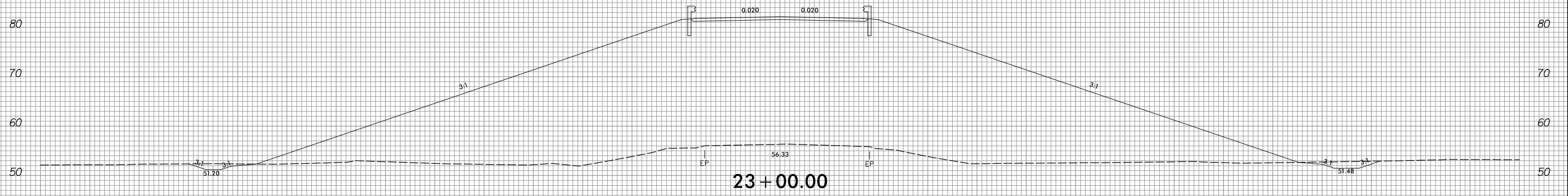
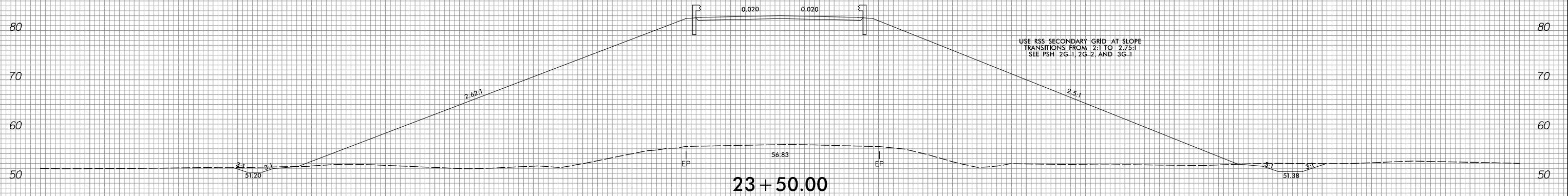
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PROJ. REFERENCE NO.
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3/30/2017
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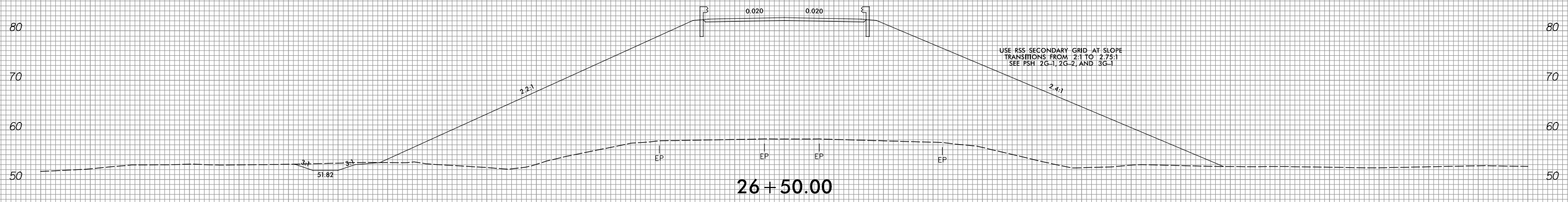
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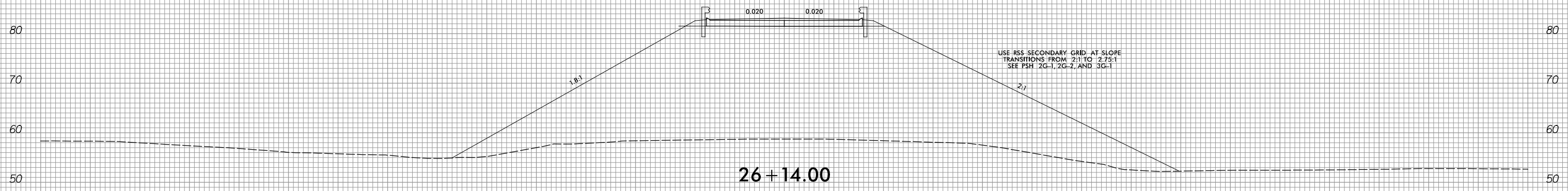
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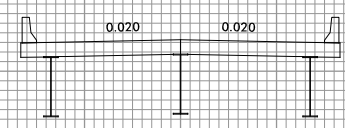
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26 + 05.00

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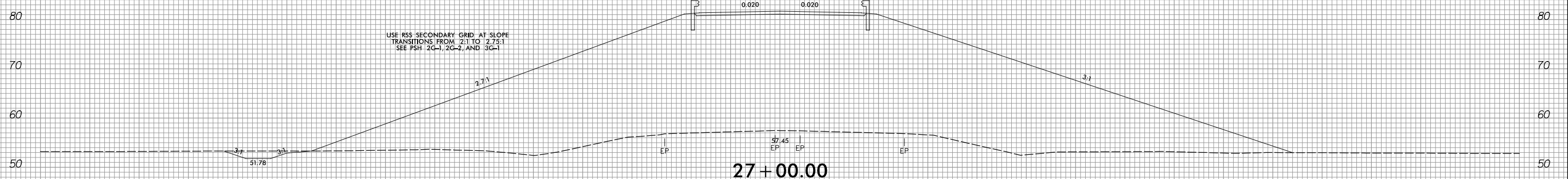
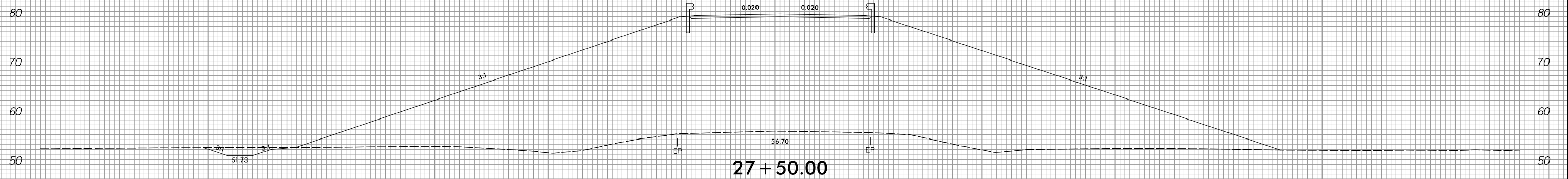
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JCA ENGINEERING, INC.

8/23/99



PROJ. REFERENCE NO.	SHEET NO.
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USE RSS SECONDARY GRID AT SLOPE
TRANSITIONS FROM 2:1 TO 2.75:1
SEE PSH 2G-1, 2G-2, AND 3G-1

-Y/-

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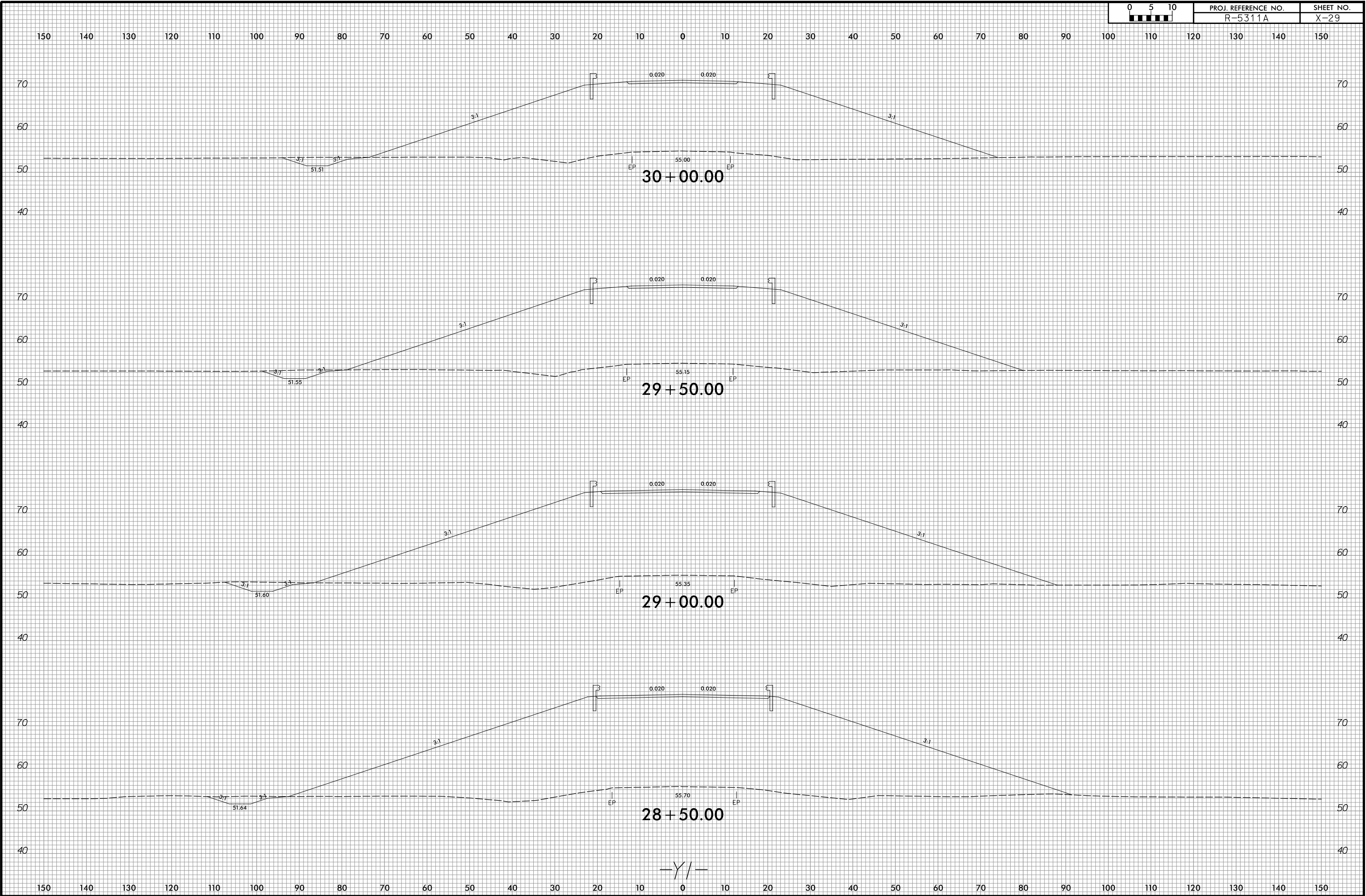
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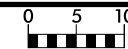
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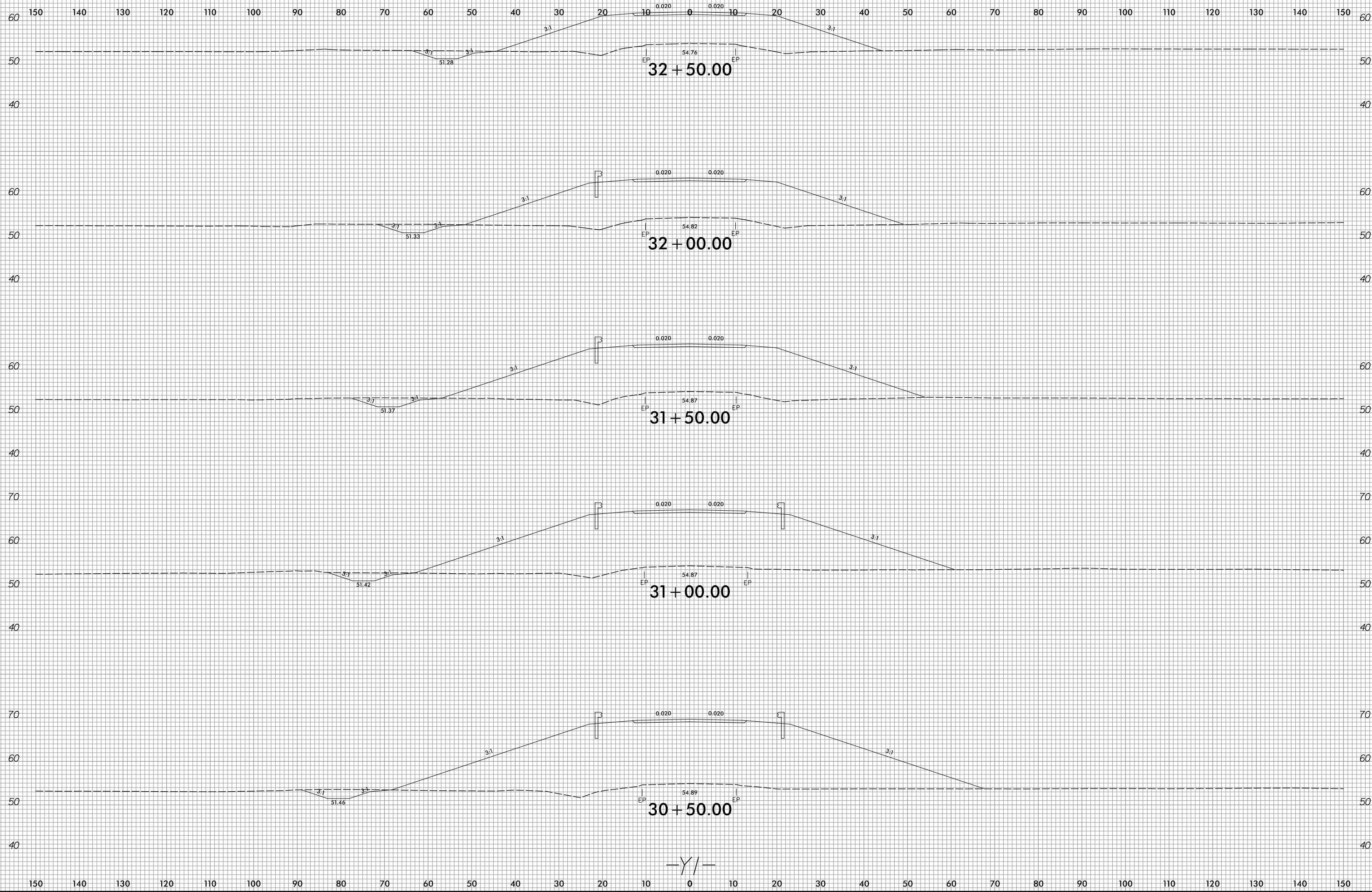
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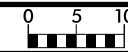
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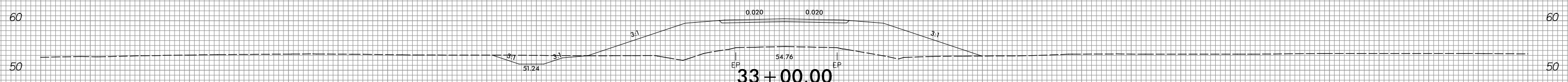
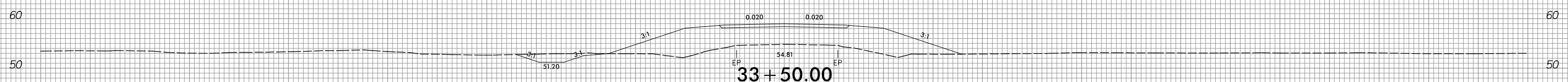
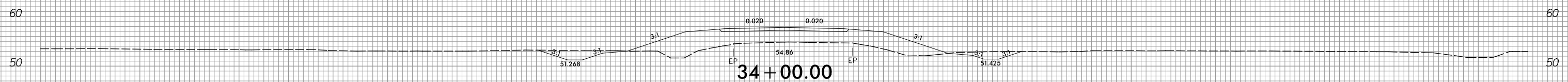
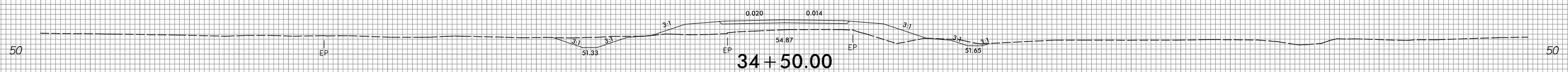
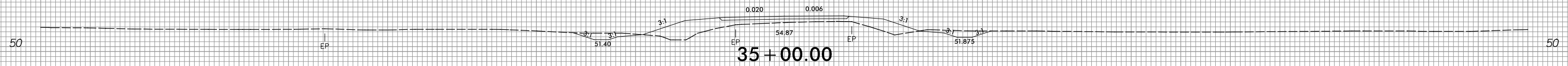
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8/23/99



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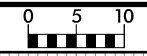


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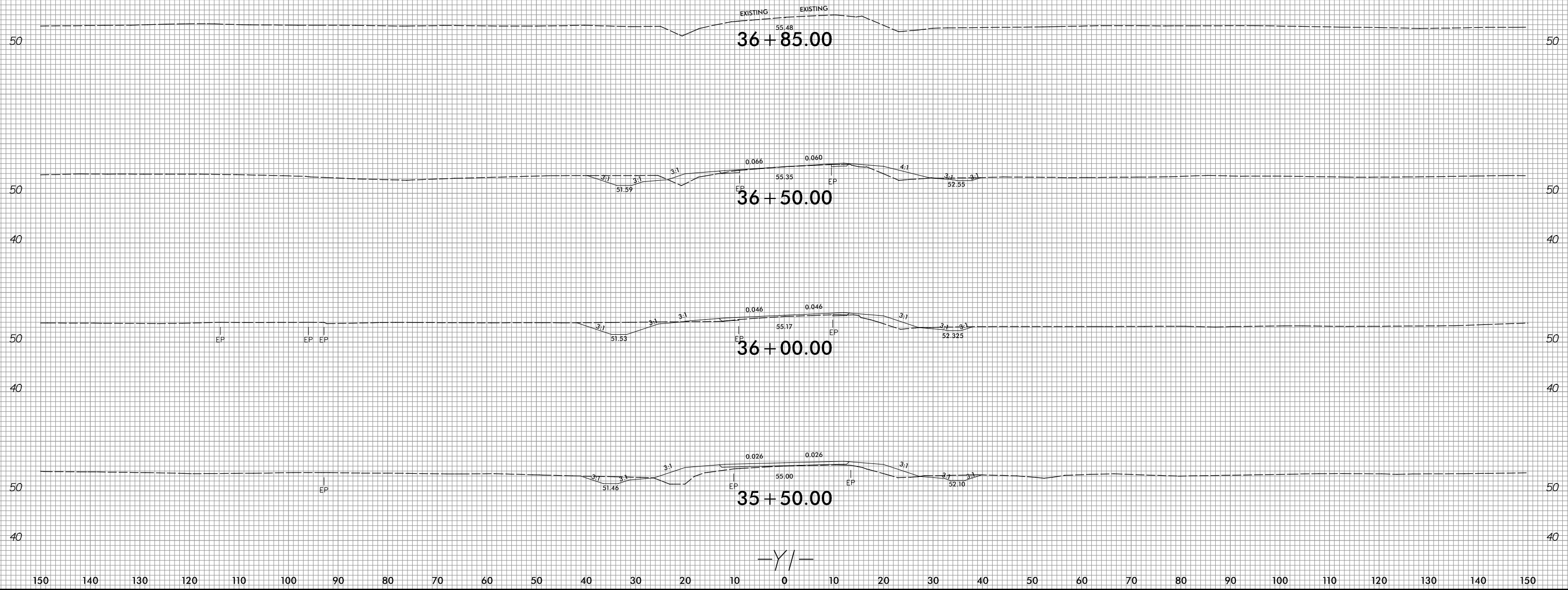
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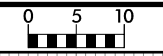
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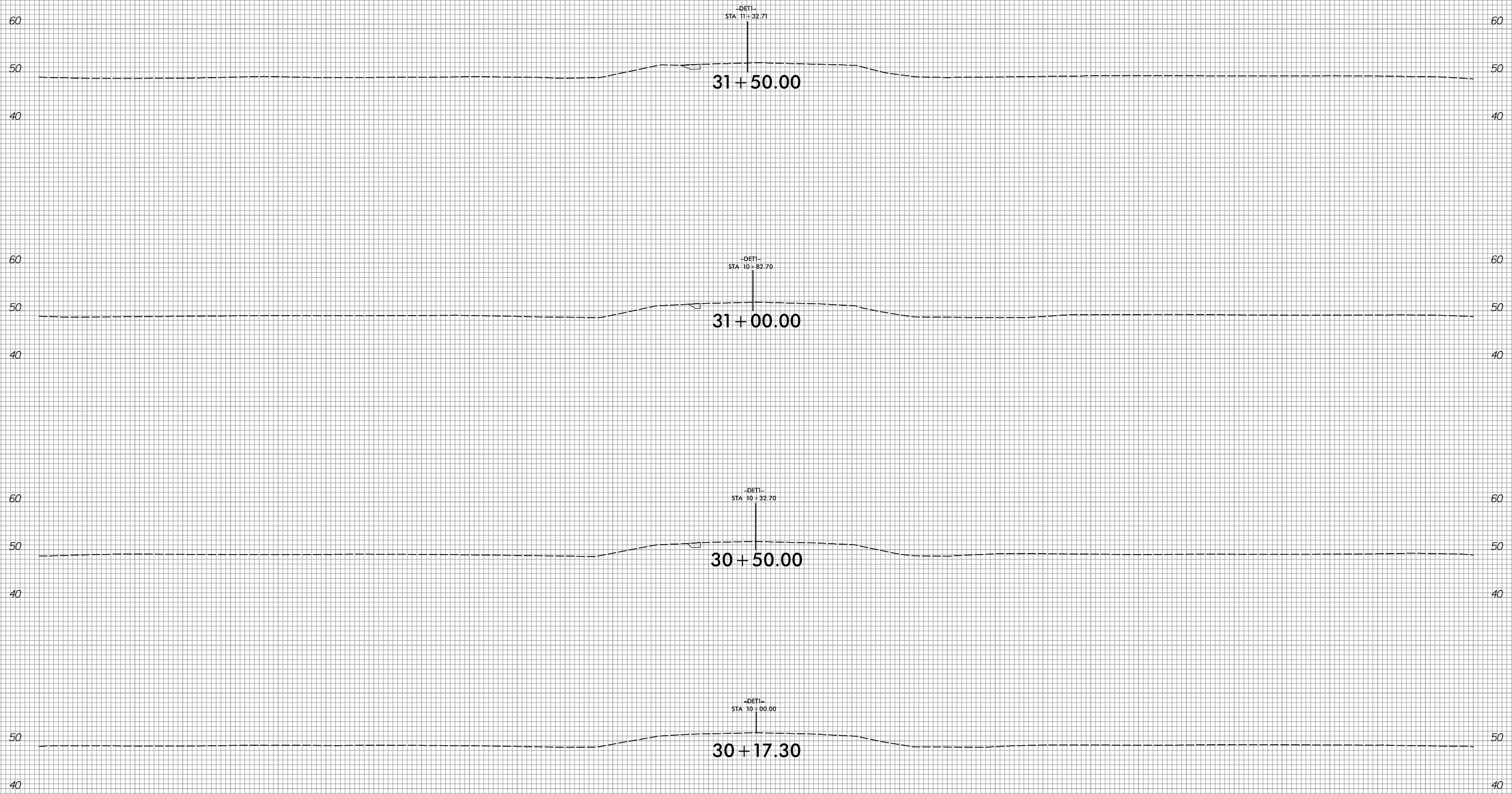
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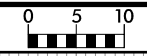


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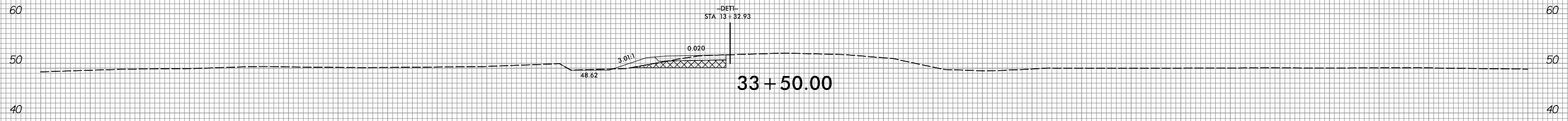
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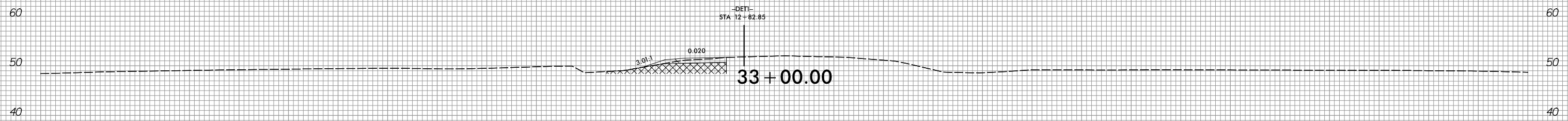
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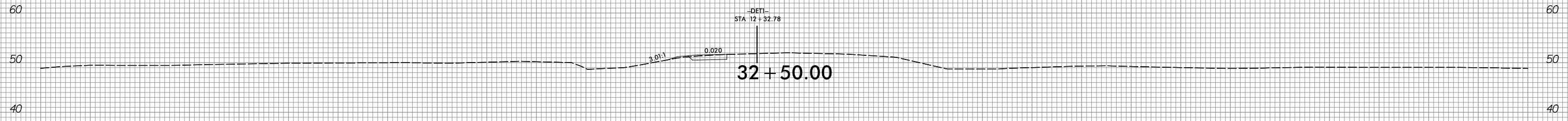
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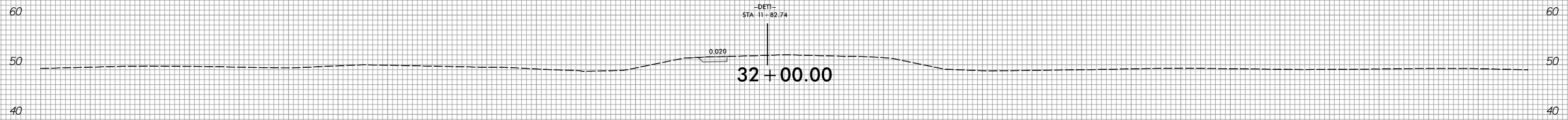
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32+50.00



32+00.00

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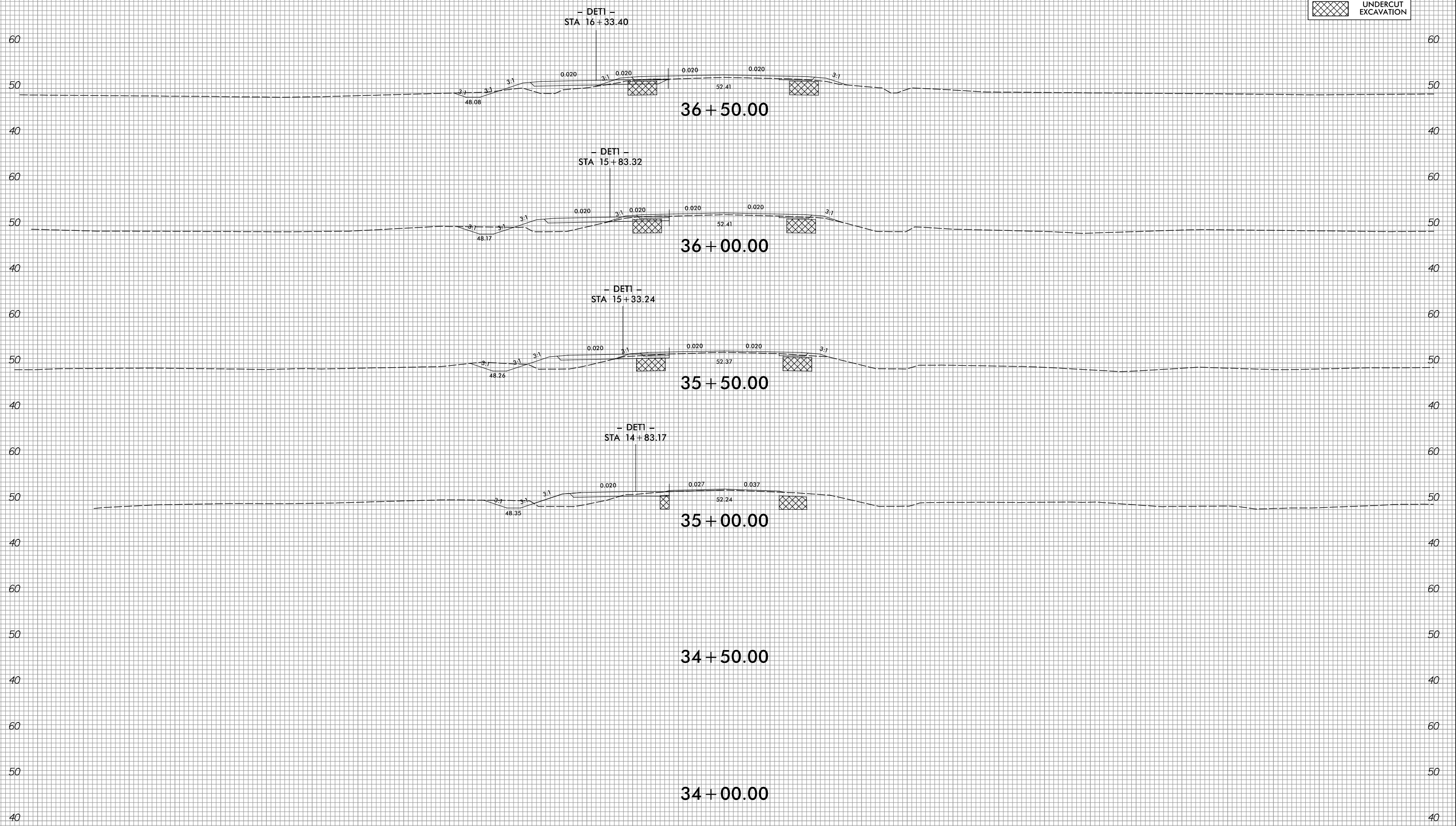
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PROJ. REFERENCE NO.	SHEET NO.
R-5311A	X-35

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UNDERCUT EXCAVATION



-Y2- w/DETOUR 1

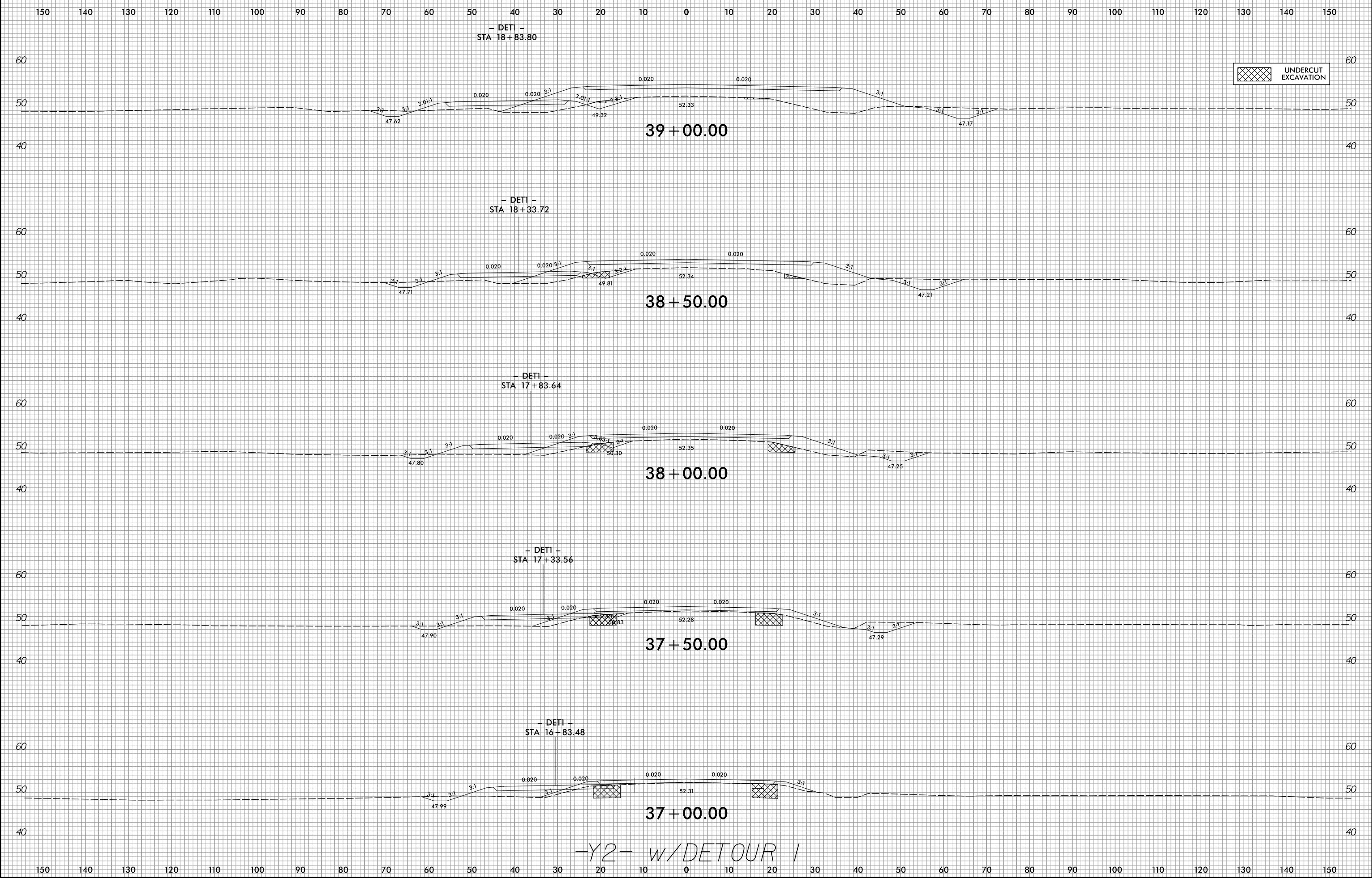
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 JCA ENGINEERING, INC.

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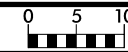
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R-5311A	X-36



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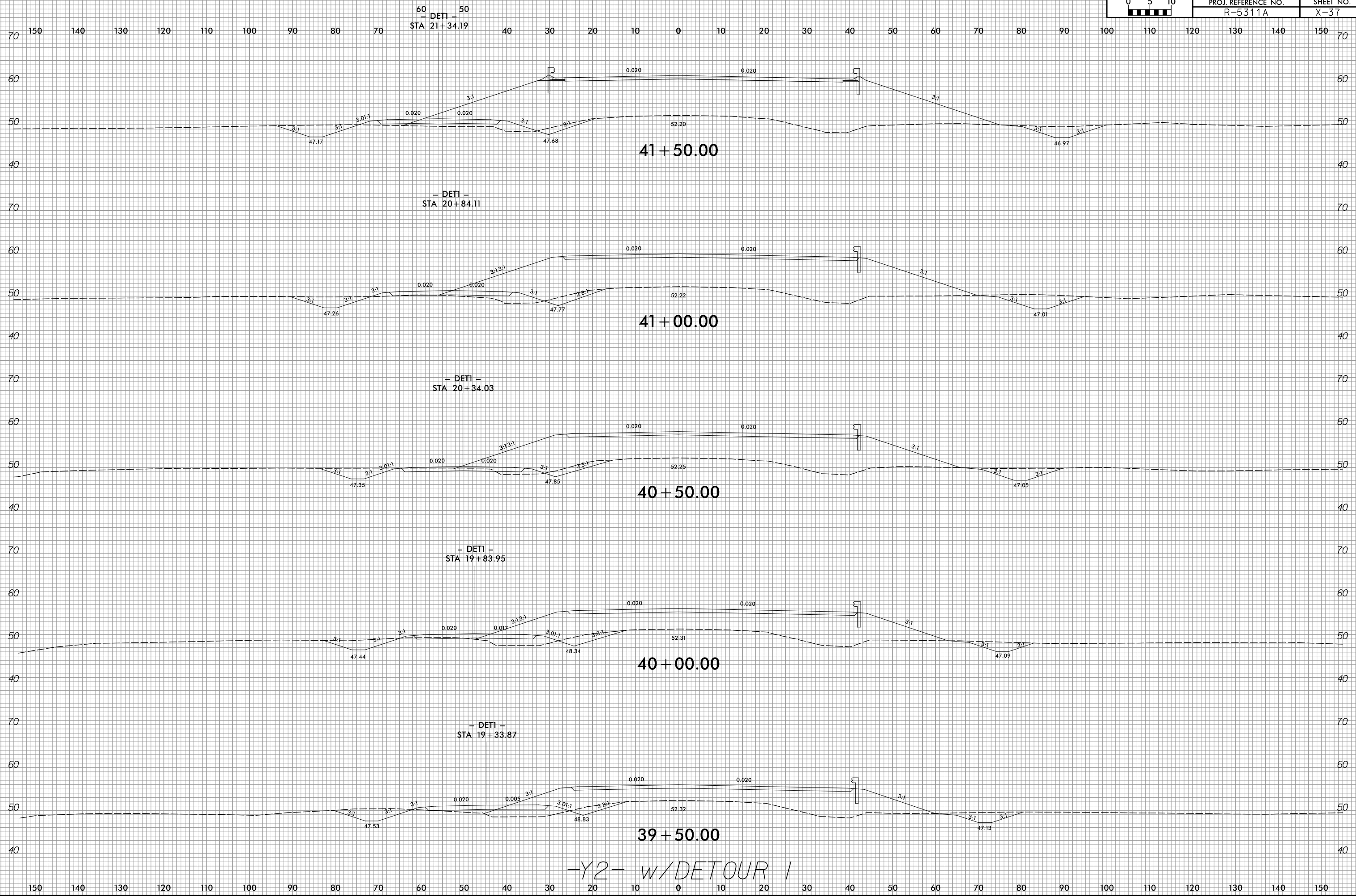
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JCA ENGINEERING, INC.

8/23/99



PROJ. REFERENCE NO.
R-5311A

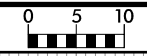
SHEET NO.
X-37



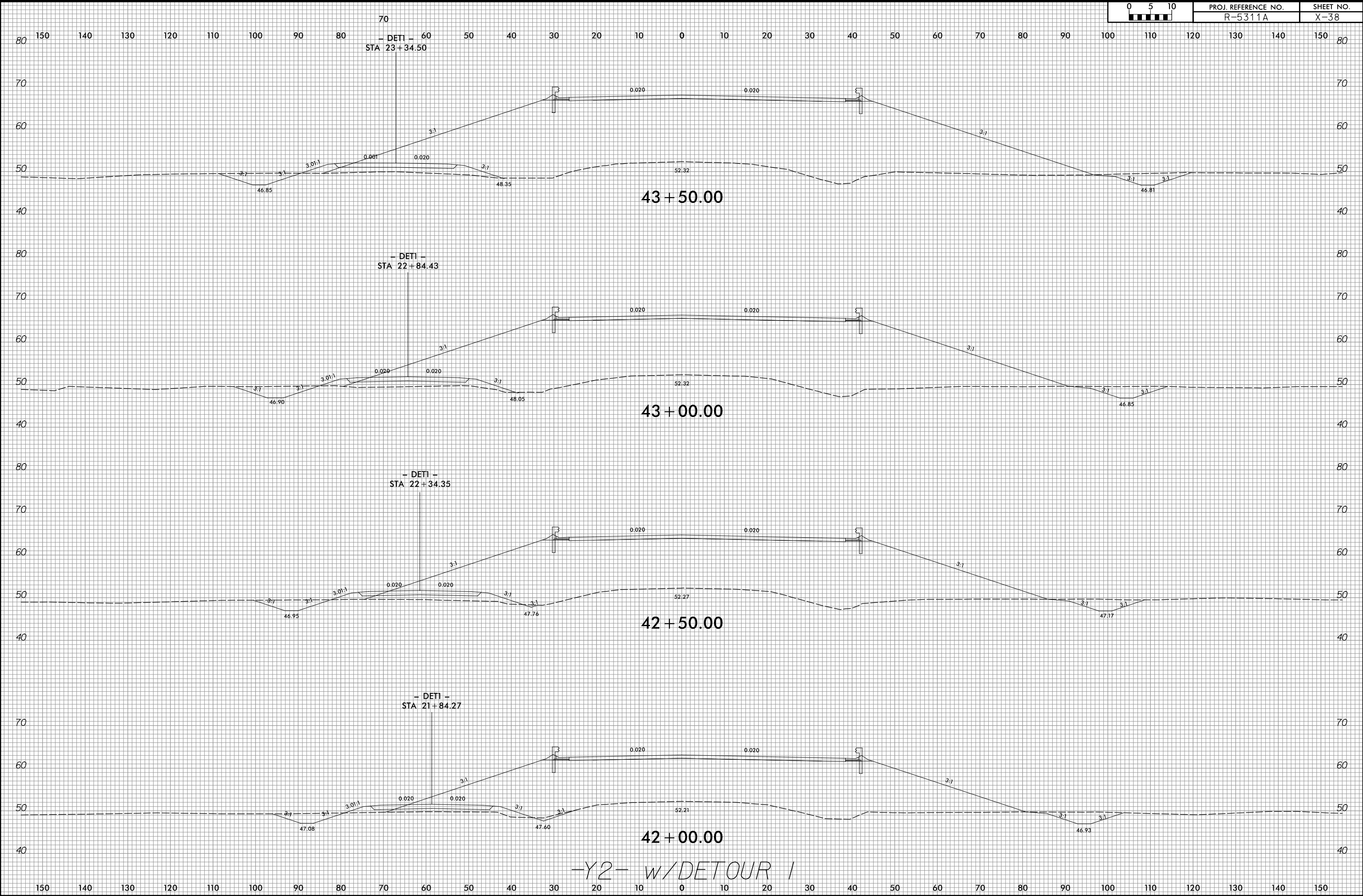
-Y2- w/DETOUR 1

3/30/2017
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JCA ENGINEERING, INC.

8/23/99



PROJ. REFERENCE NO.	SHEET NO.
R-5311A	X-38



70
- DET1 -
STA 23+34.50

70
- DET1 -
STA 22+84.43

70
- DET1 -
STA 22+34.35

70
- DET1 -
STA 21+84.27

43+50.00

43+00.00

42+50.00

42+00.00

-Y2- w/DETOUR 1

3/30/2017
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JCA ENGINEERING, INC.

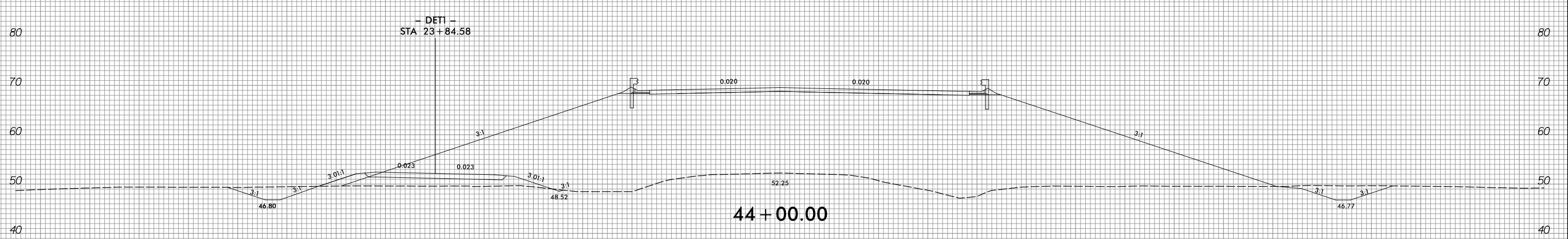
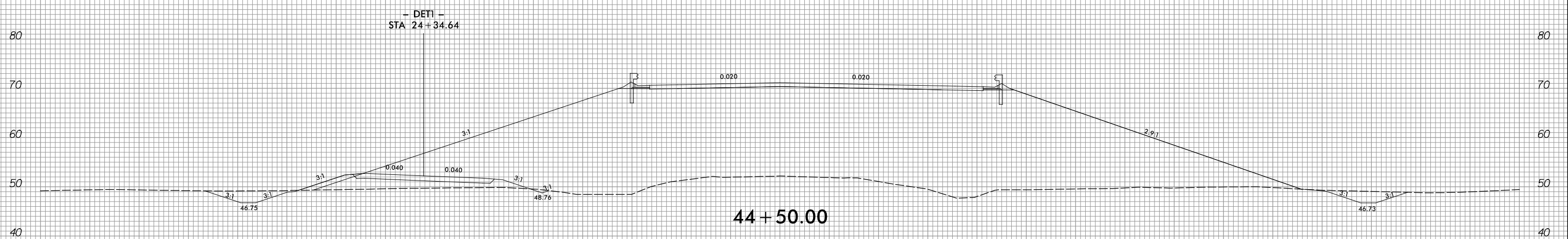
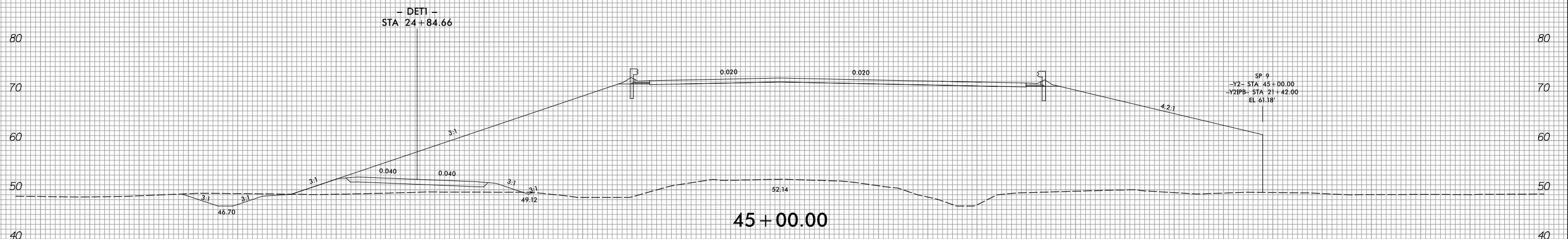
8/23/99



PROJ. REFERENCE NO.
R-5311A

SHEET NO.
X-39

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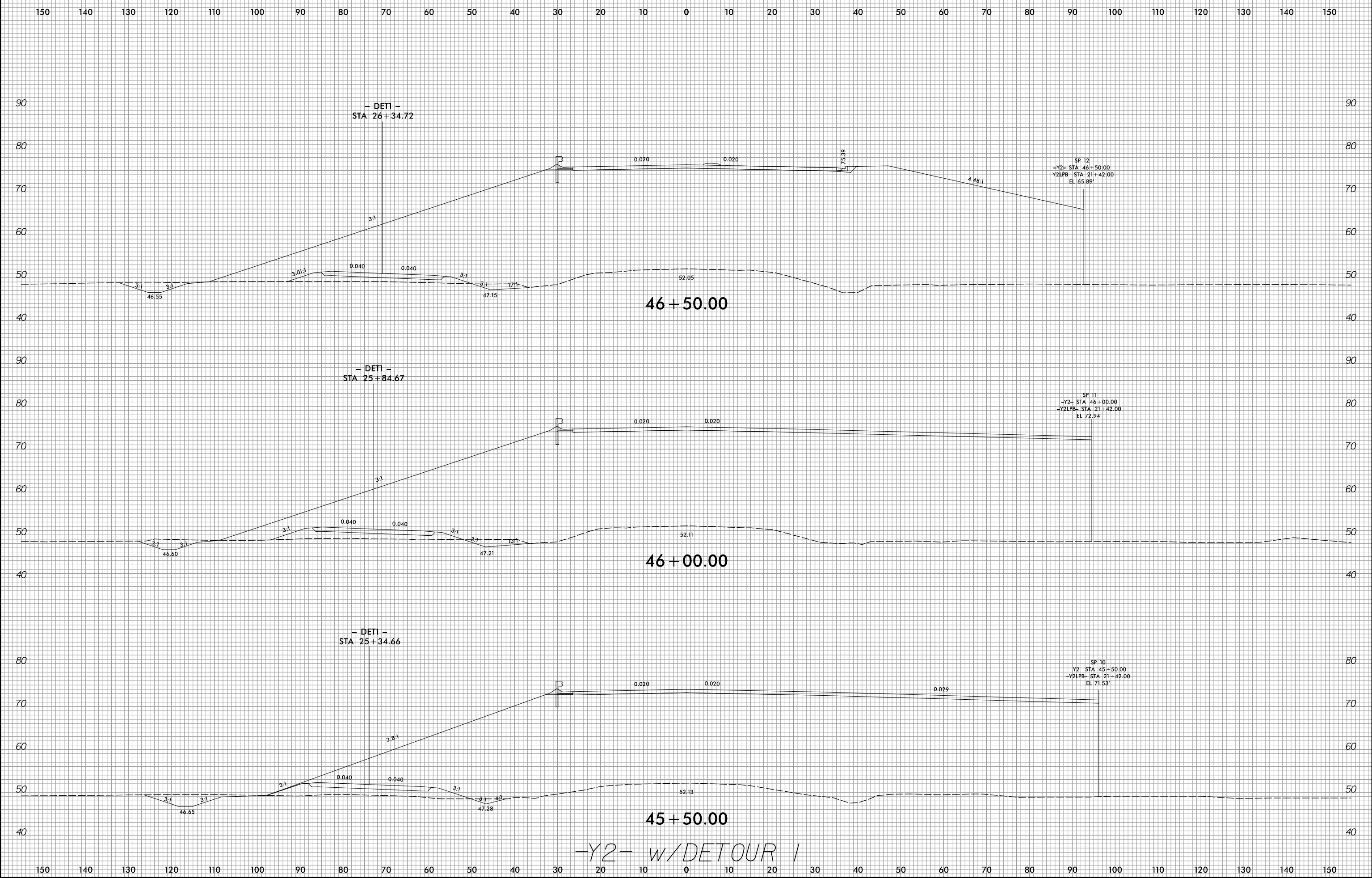


-Y2- w/DETOUR 1

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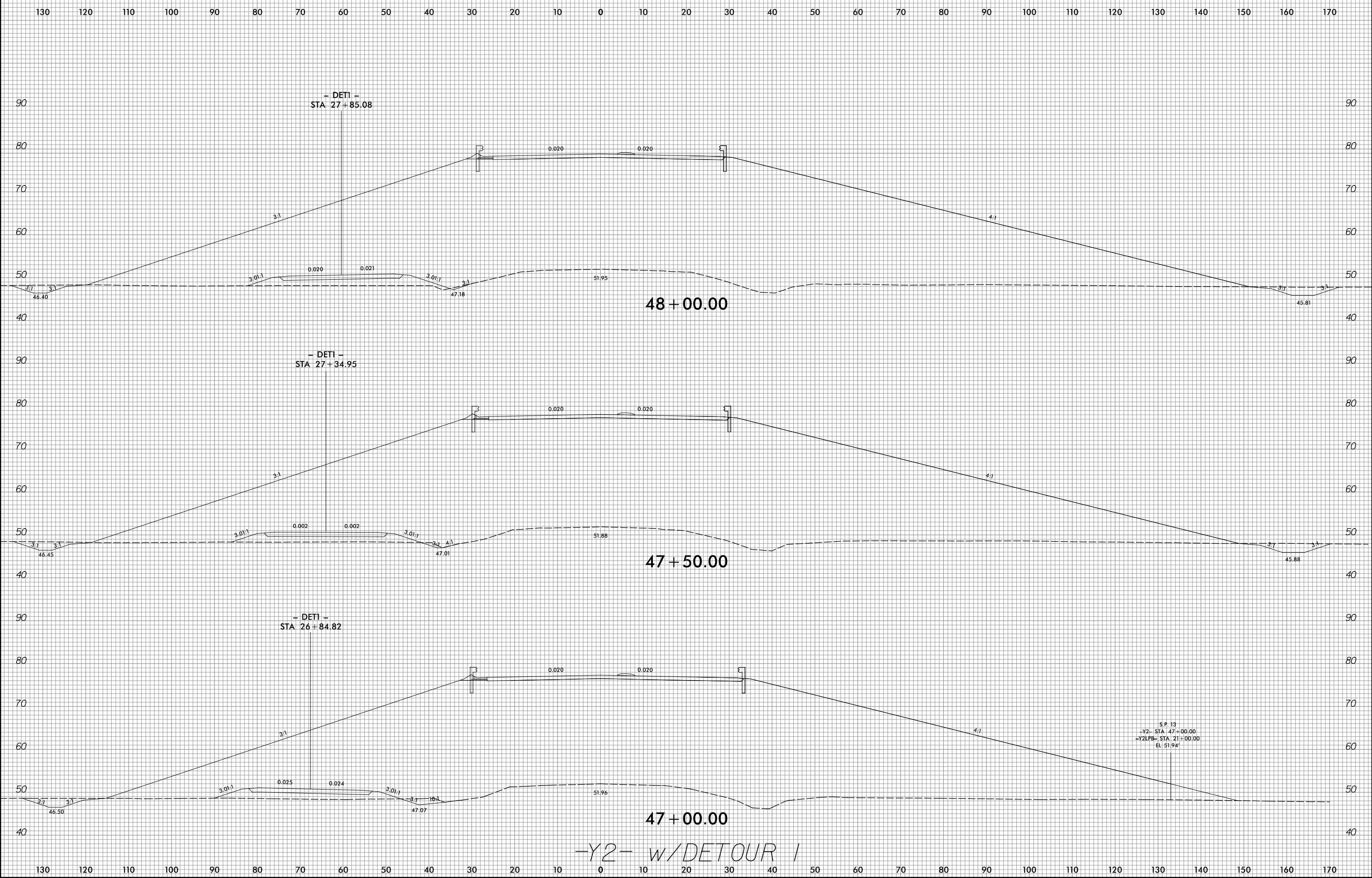
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JCA ENGINEERING, INC.

8/23/99



3/30/2017
C:\Users\jg\OneDrive\Documents\Projects\5311A_Rdy_XPL_Y2_w_DET1.dgn
JCA ENGINEERING, INC.

8/23/99



-Y2- w/DETOUR 1

3/30/2017
C:\Users\jg\OneDrive\Documents\Projects\5311A_Rdy_XPL_Y2_w_DET-1.dgn
JCA ENGINEERING, INC.

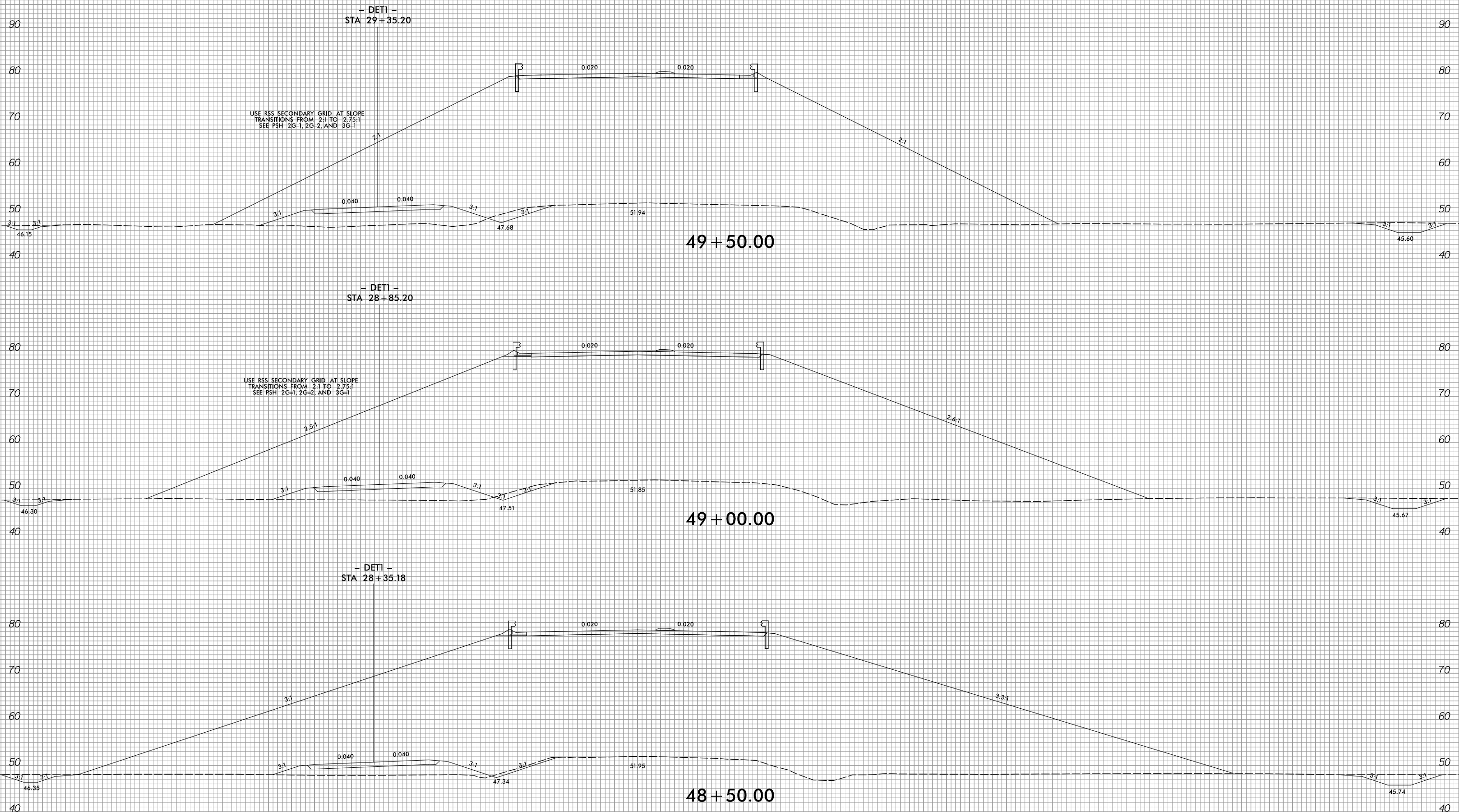
8/23/99



PROJ. REFERENCE NO.
R-5311A

SHEET NO.
X-42

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170

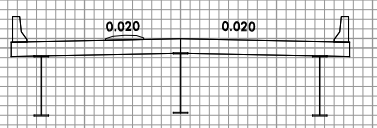


-Y2- w/DETOUR 1

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170

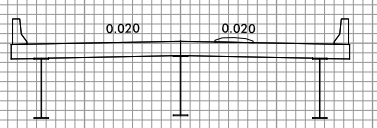
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JCA ENGINEERING, INC.

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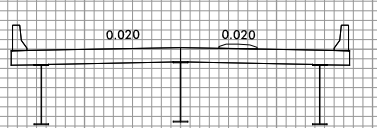
52.06
51 + 60.00

- DET1 -
STA 29 + 55.22



51.77
49 + 70.00

- DET1 -
STA 29 + 45.21



51.89
49 + 60.00

-Y2- w/DETOUR 1

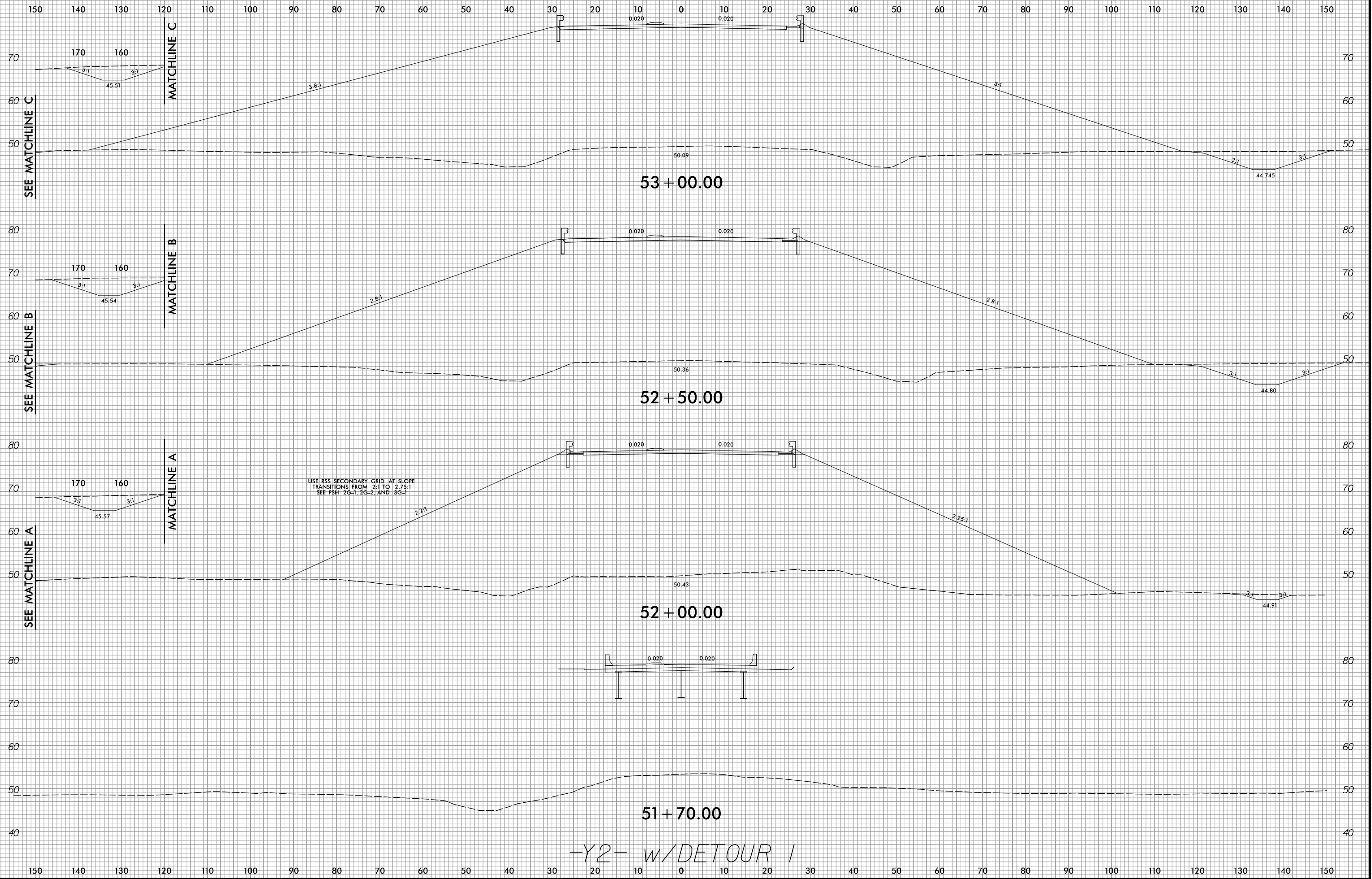
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8/23/99



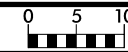
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R-5311A

SHEET NO.
X-44



3/31/2017
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CA ENGINEERING, INC.

8/23/99



PROJ. REFERENCE NO.
R-5311A

SHEET NO.
X-45

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S.P. 17
-Y2- STA 55+00.00
-Y2LPD- STA 20+32.00
EL 70.38'

9.54:1 73.33 0.020 0.020

55+00.00

S.P. 16
-Y2- STA 54+50.00
-Y2LPD- STA 20+00.00
EL 55.82'

4.66:1 50.87 0.020 0.020

54+50.00

MATCHLINE B

SEE MATCHLINE B

170 160

4:1 51.09 0.020 0.020

54+00.00

MATCHLINE A

SEE MATCHLINE A

170 160

4:1 49.90 0.020 0.020

53+50.00

-Y2- W/DETOUR 1

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

3/30/2017
C:\Users\jgibson\OneDrive\Documents\Projects\5311A_Rdy_XPL_Y2_w_DET-1.dgn
JGA ENGINEERING, INC.

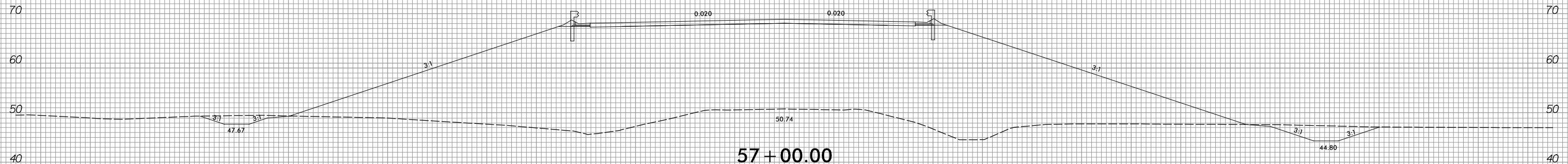
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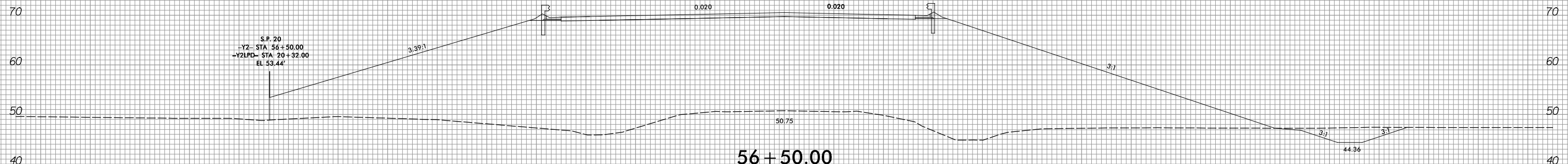
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SHEET NO.
X-46

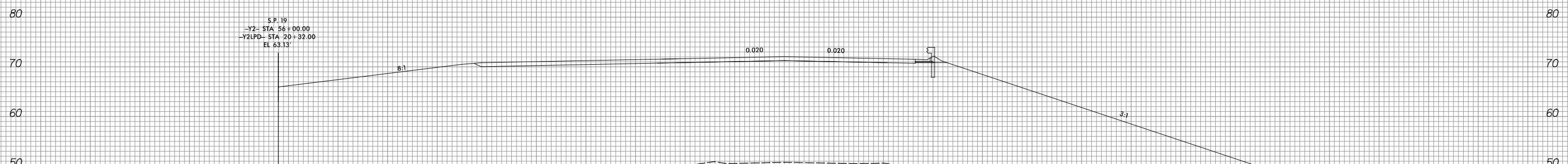
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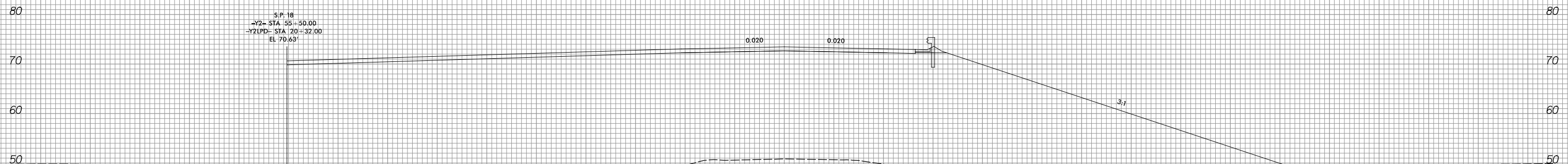
57+00.00



56+50.00



56+00.00



55+50.00

-Y2- w/DETOUR 1

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

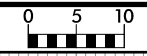
3/30/2017
C:\Users\jg\OneDrive\Documents\Projects\5311A_Rdy_XPL_Y2_w_DET-1.dgn
JCA ENGINEERING, INC.

S.P. 20
-Y2- STA 56+50.00
-Y2LPD- STA 20+32.00
EL 53.44'

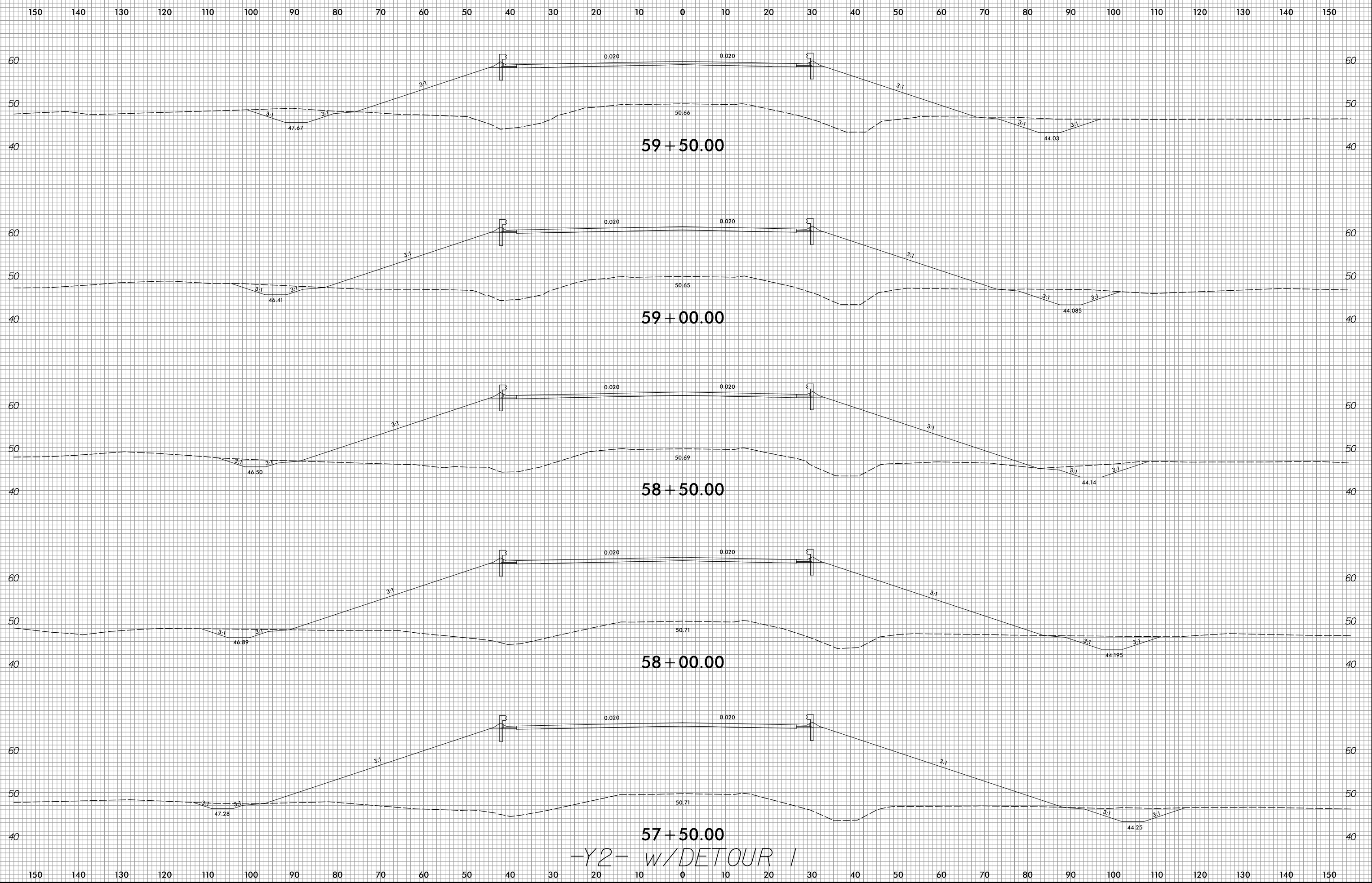
S.P. 19
-Y2- STA 56+00.00
-Y2LPD- STA 20+32.00
EL 63.13'

S.P. 18
-Y2- STA 55+50.00
-Y2LPD- STA 20+32.00
EL 70.63'

8/23/99

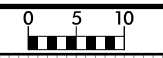


PROJ. REFERENCE NO. R-5311A	SHEET NO. X-47
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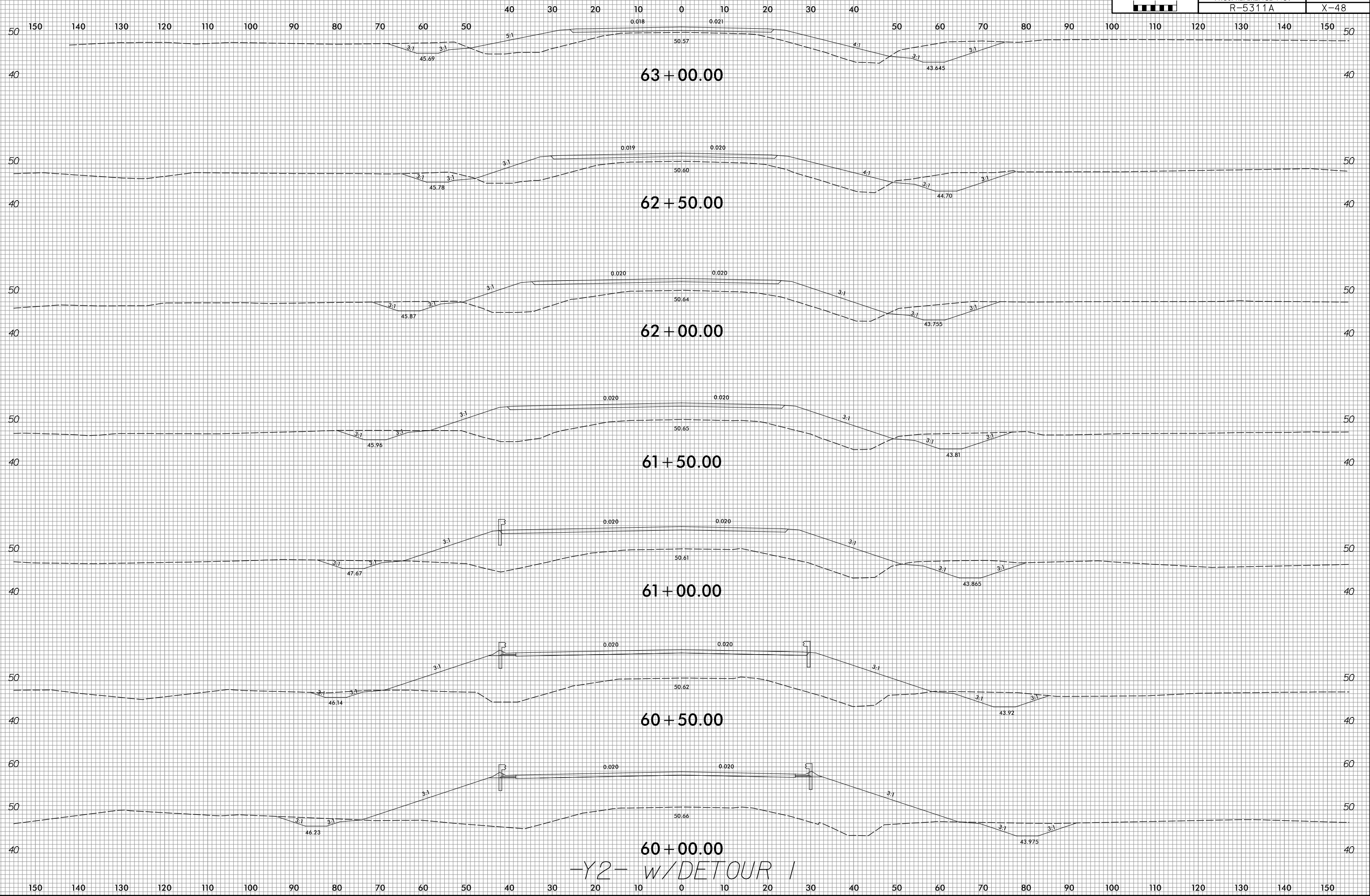


3/30/2017
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JCA ENGINEERING, INC.

8/23/99



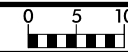
PROJ. REFERENCE NO.	SHEET NO.
R-5311A	X-48



-Y2- w/DETOUR 1

3/30/2017
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JCA ENGINEERING, INC.

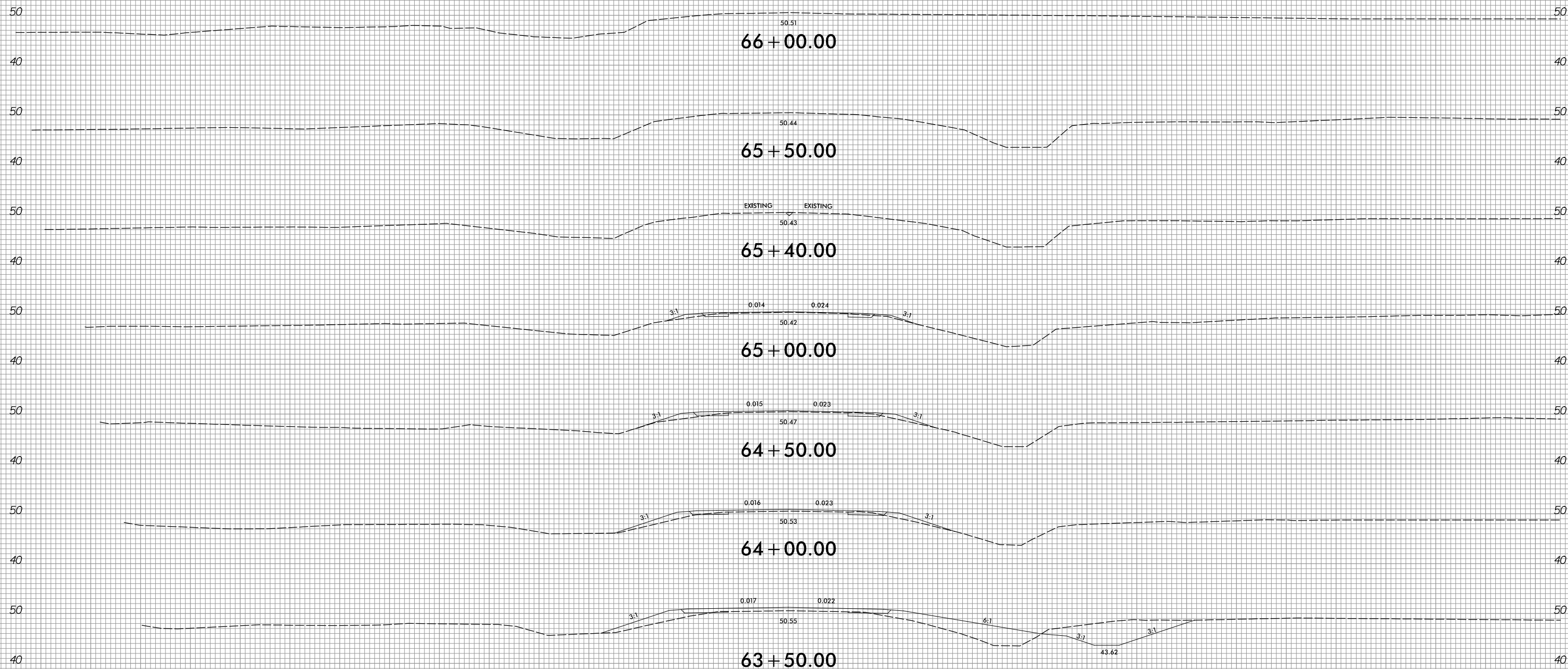
8/23/99



PROJ. REFERENCE NO.
R-5311A

SHEET NO.
X-49

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-Y2- W/DETOUR 1

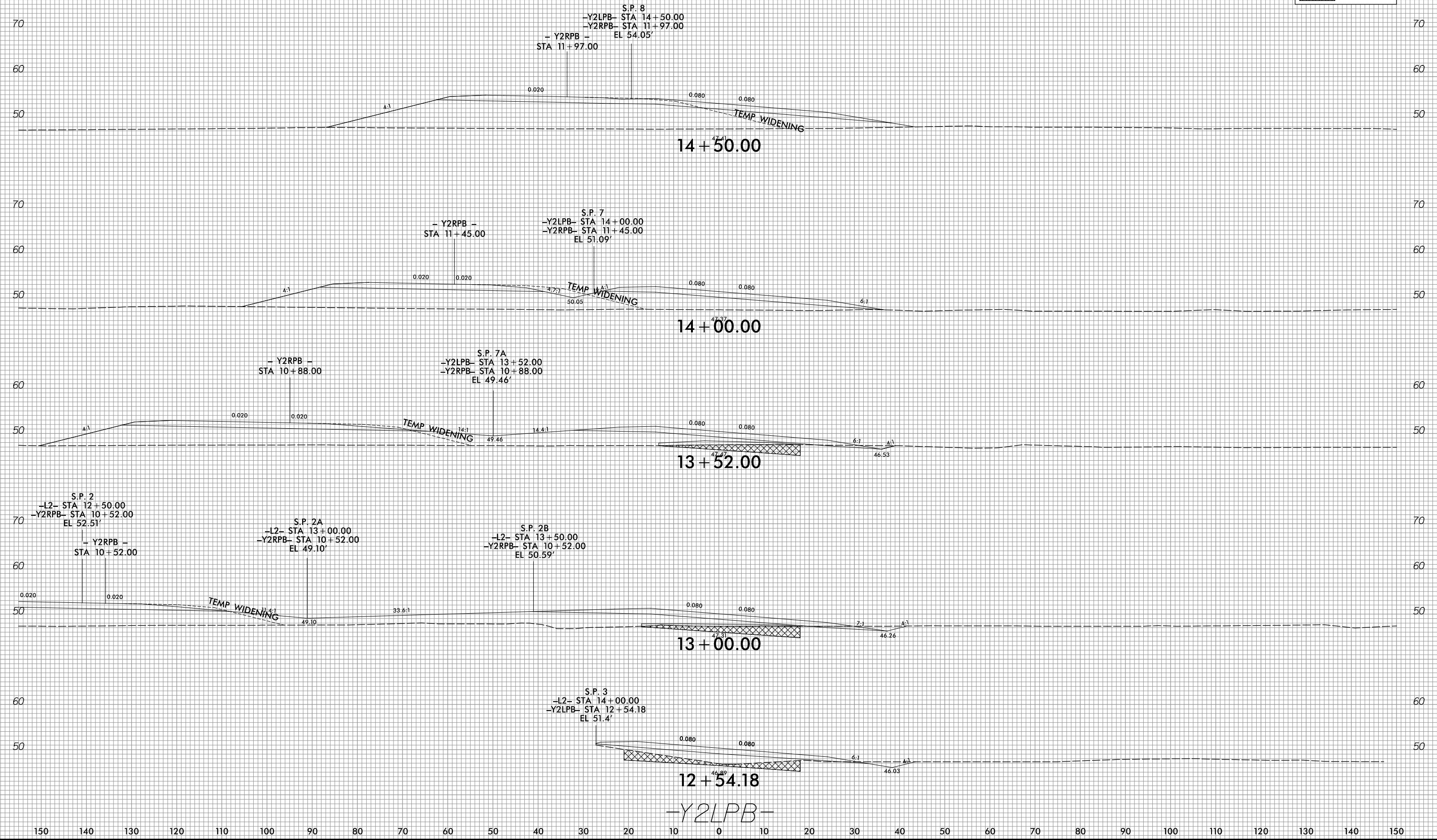
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3/30/2017
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JCA ENGINEERING, INC.

8/23/99

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

UNDERCUT EXCAVATION

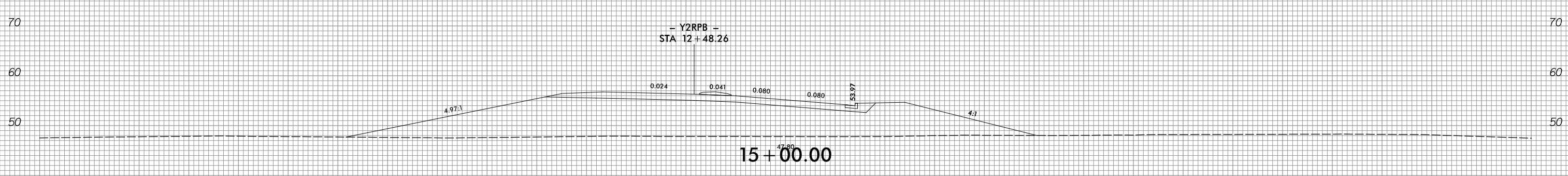
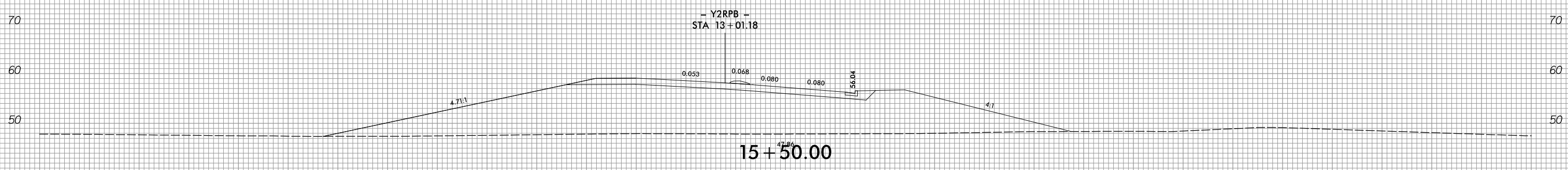
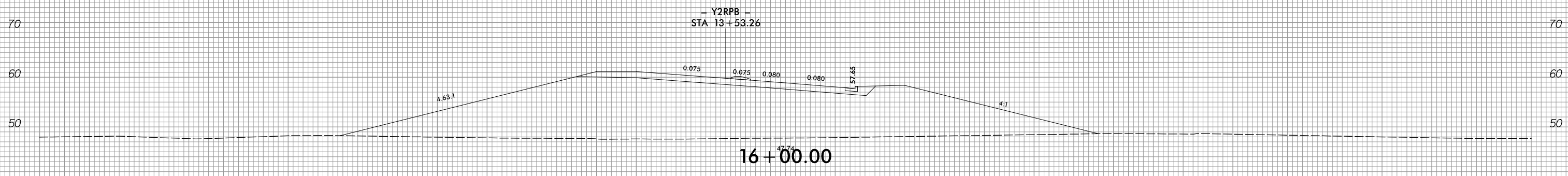
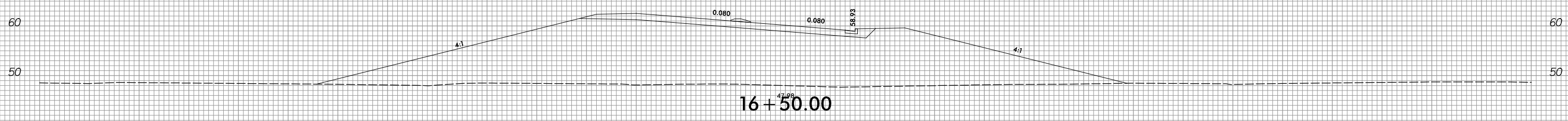
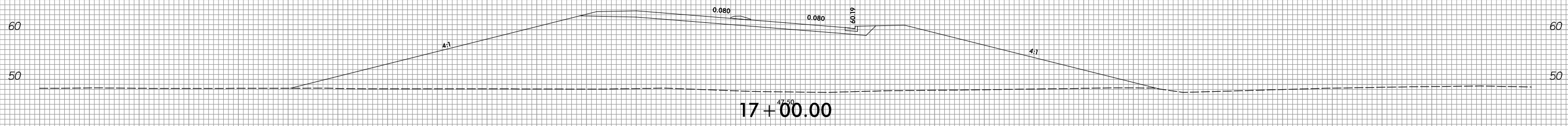


3/30/2017
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 ICA ENGINEERING, INC.

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8/23/99

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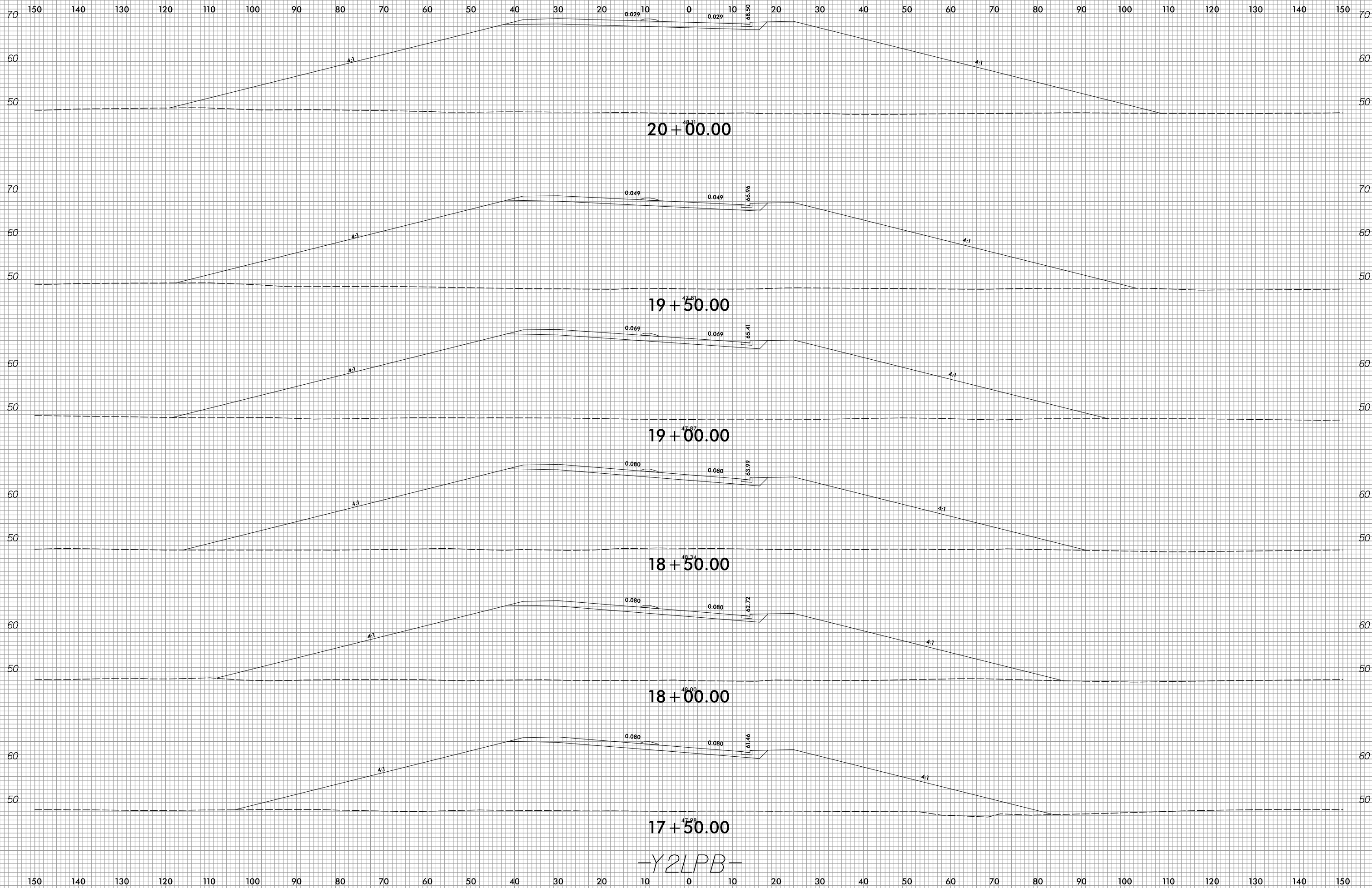


-Y2LPB-

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3/30/2017
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ICA ENGINEERING, INC.

8/23/99

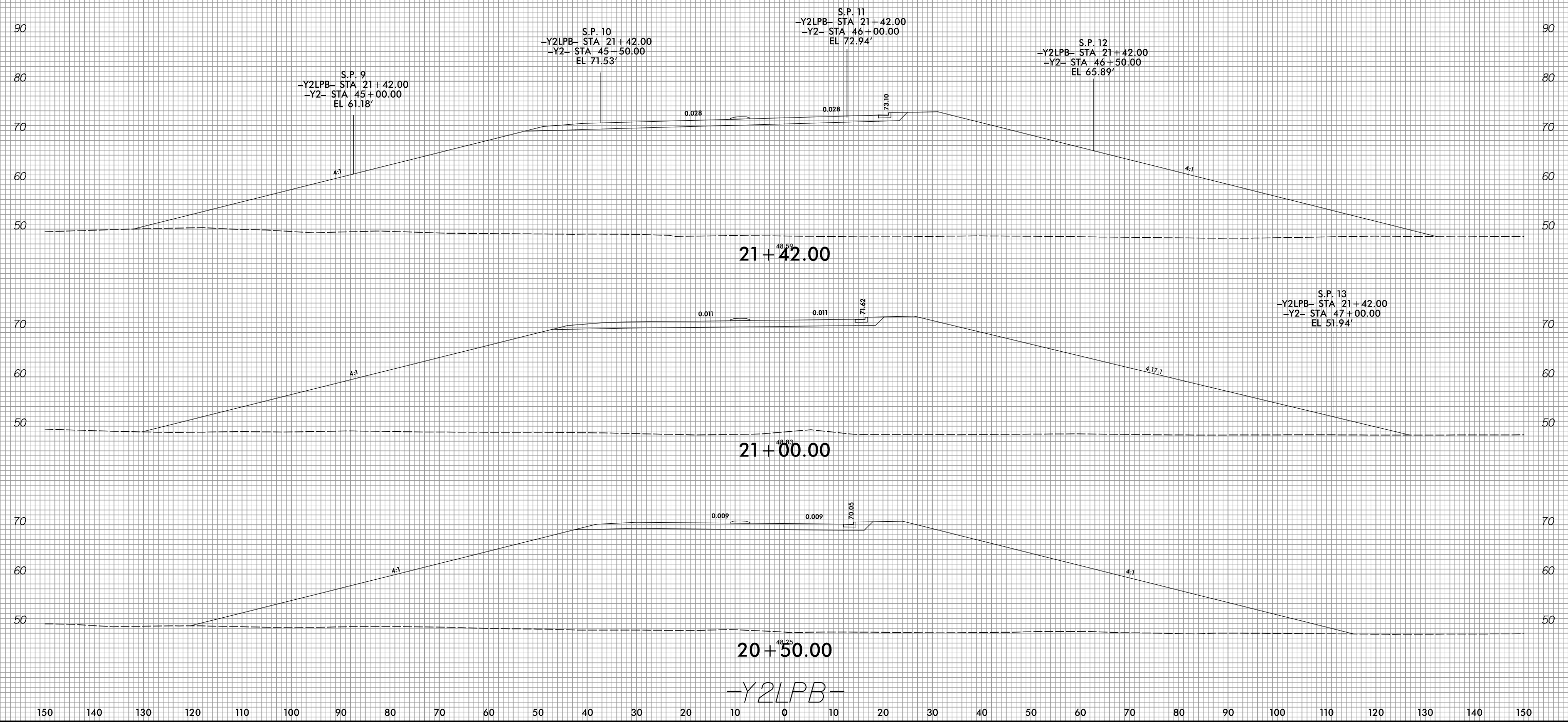


3/30/2017
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ICA ENGINEERING, INC.

-Y2LPB-

8/23/99

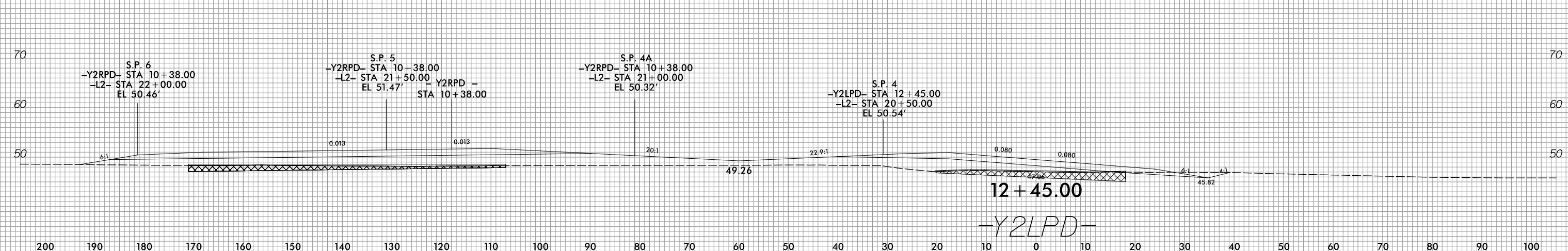
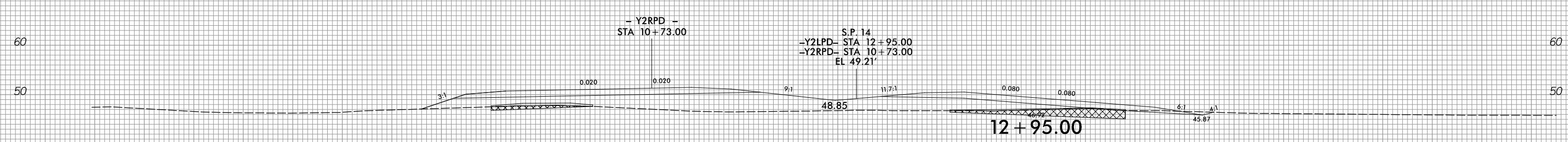
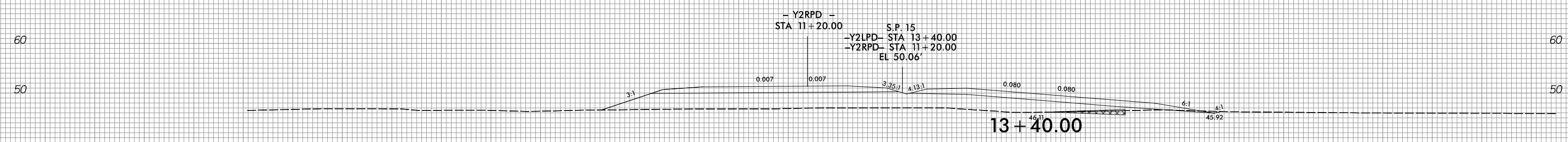
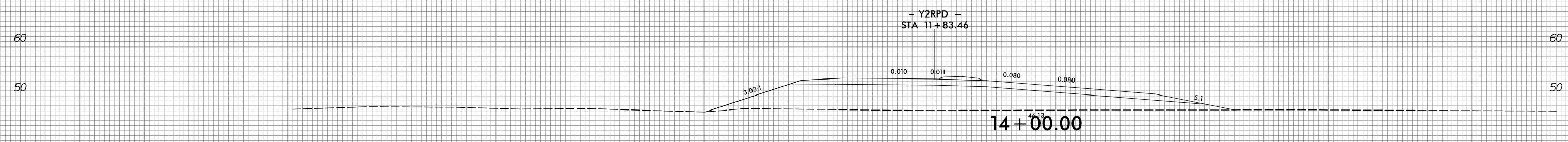
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ICA ENGINEERING, INC.

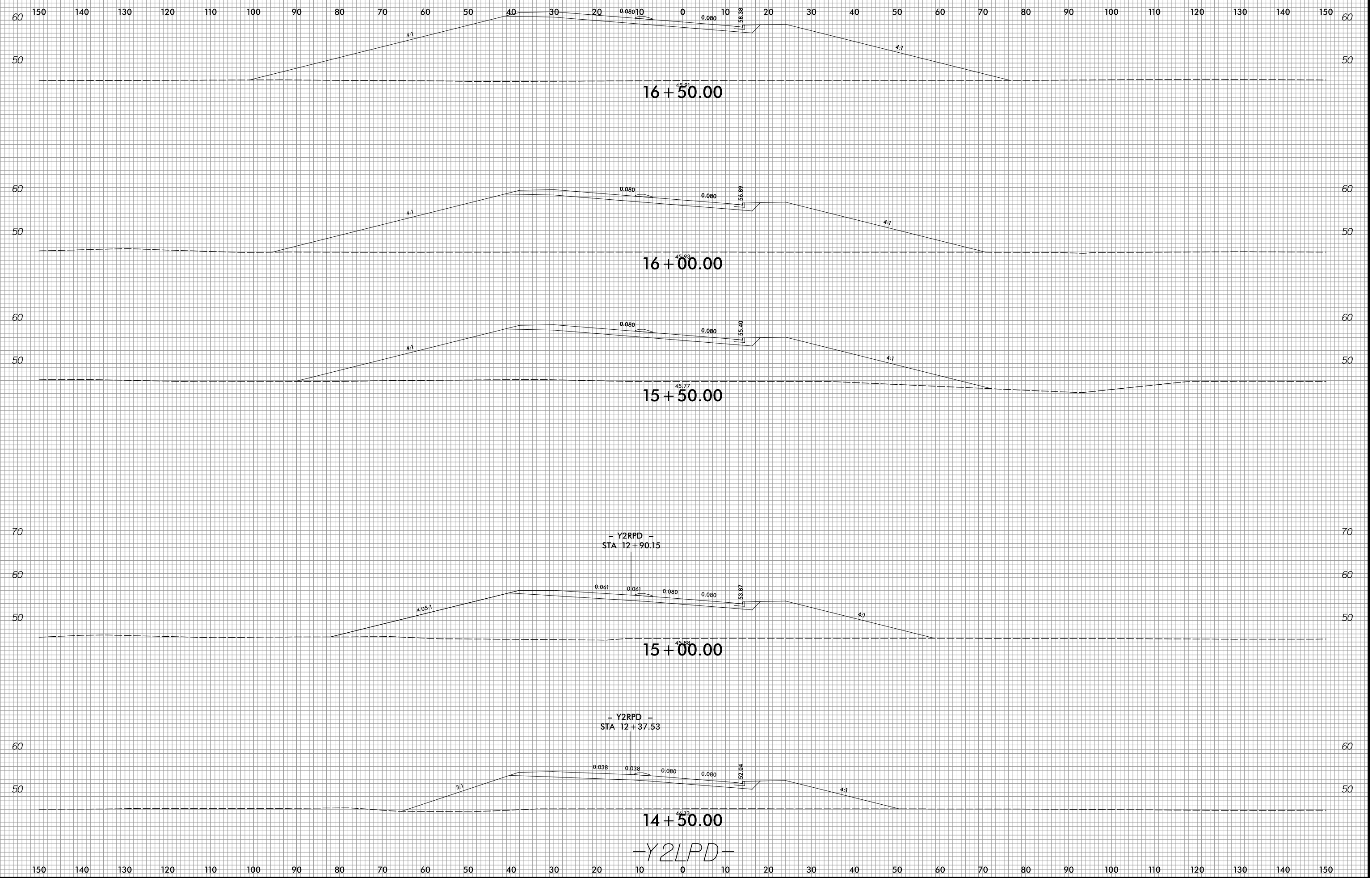
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[Cross-hatch symbol] UNDERCUT EXCAVATION



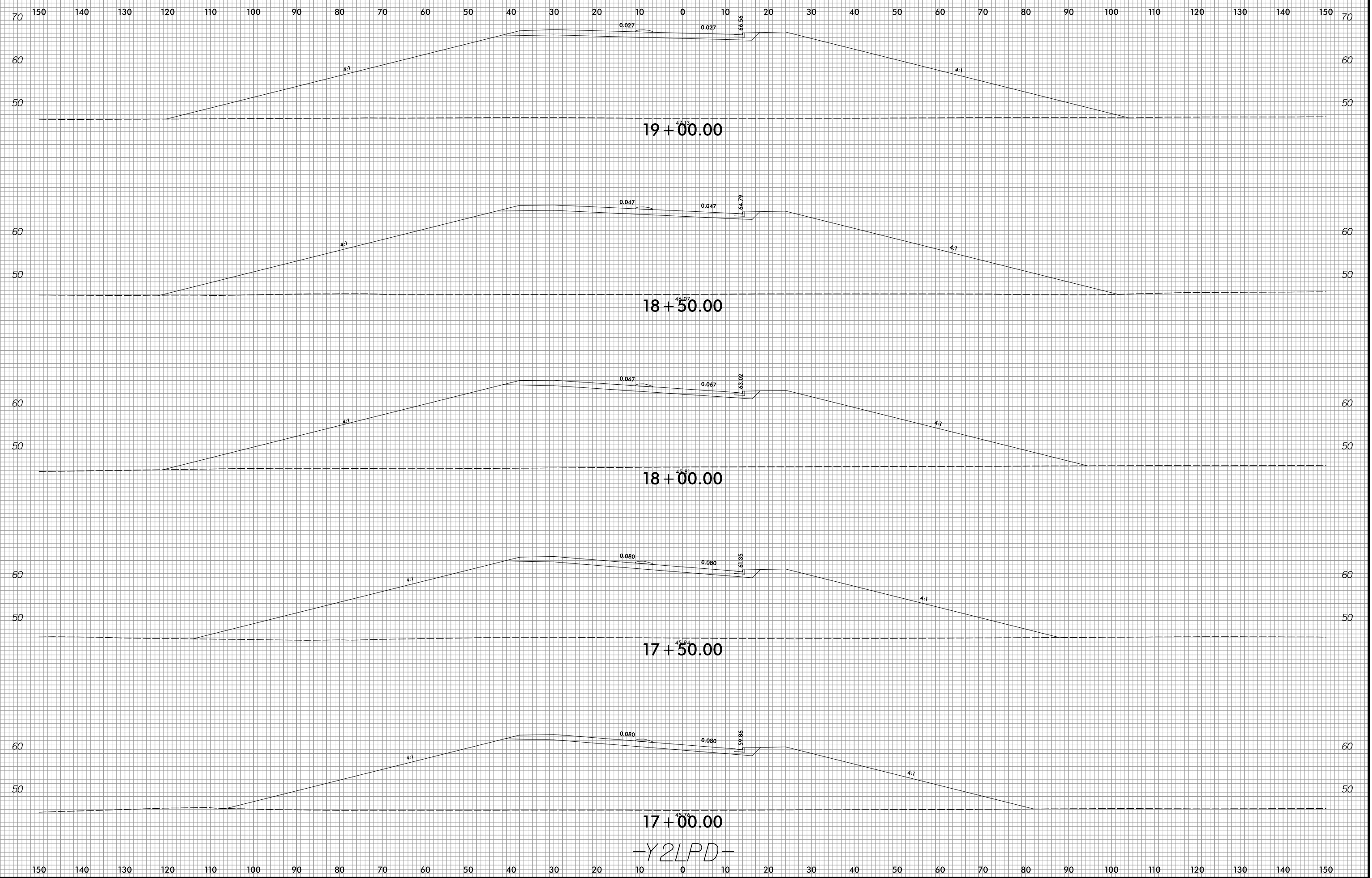
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8/23/99

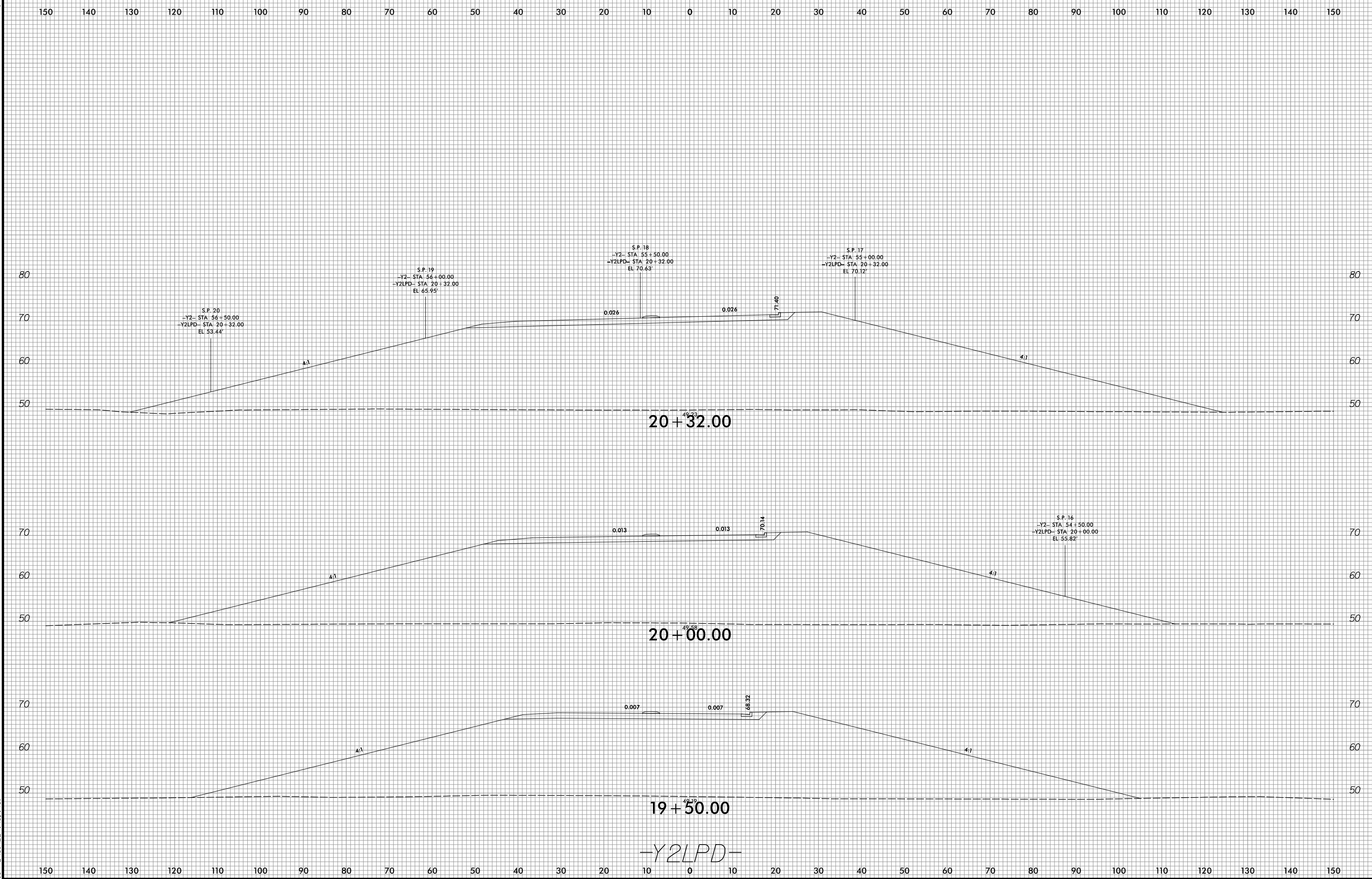


3/30/2017
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ICA ENGINEERING, INC.

8/23/99



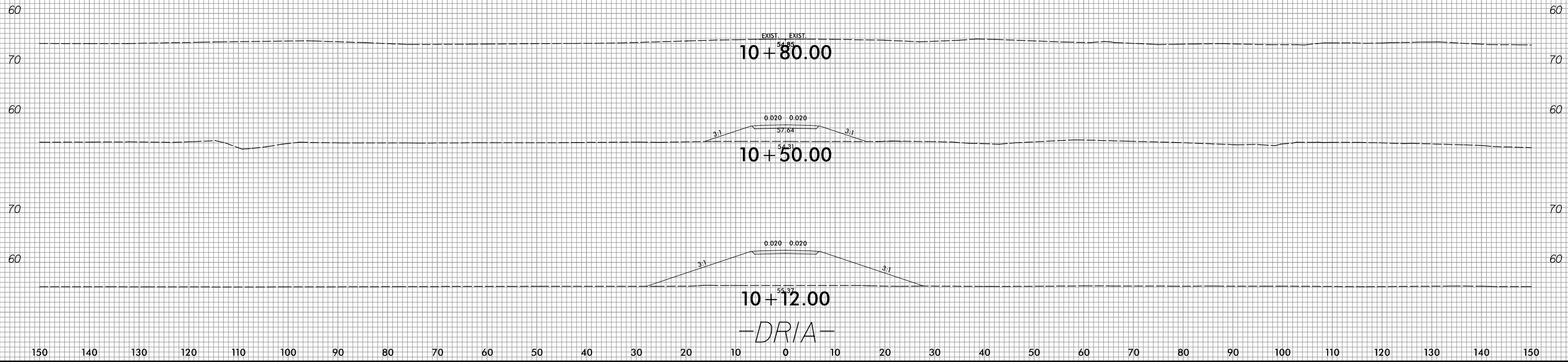
3/30/2017
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ICA ENGINEERING, INC.



8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5311A	X-58

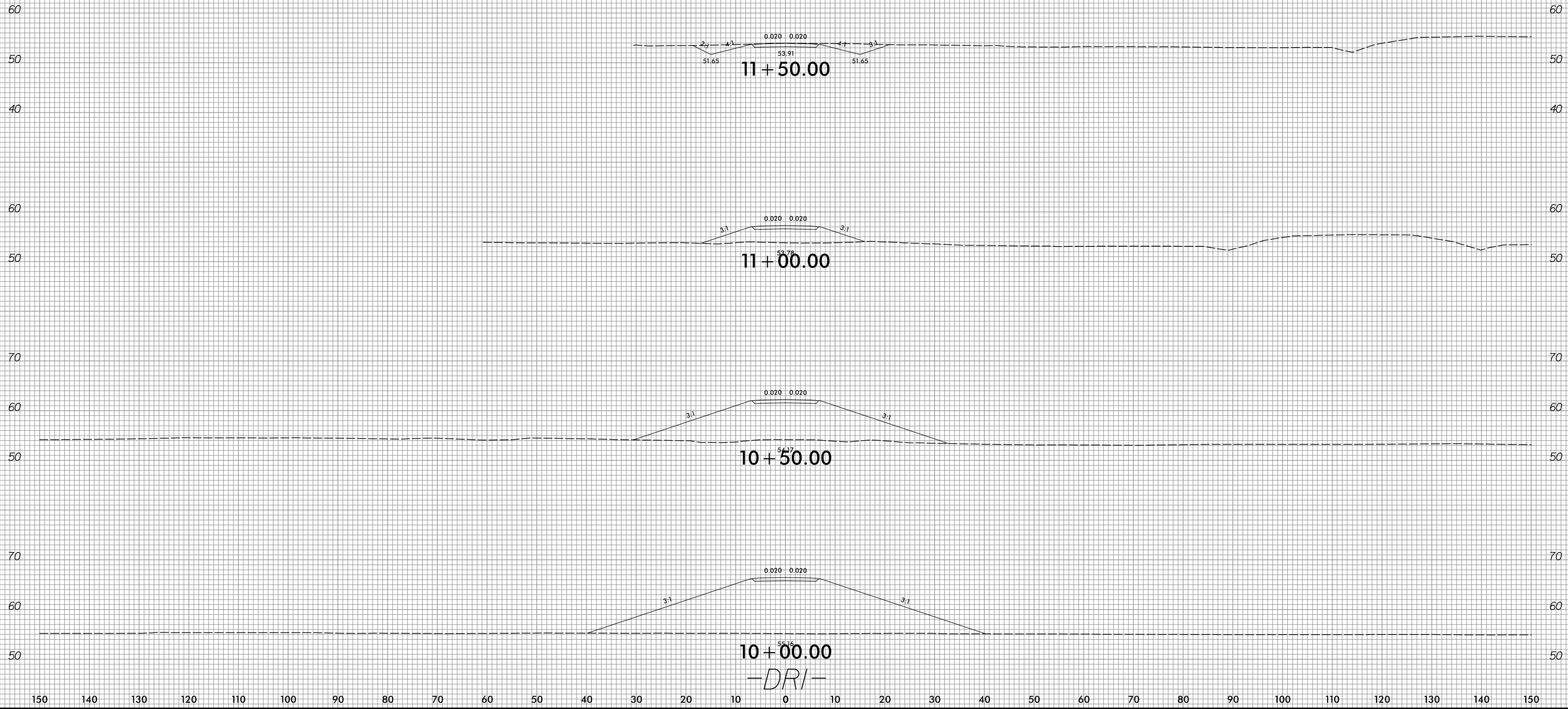
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3/30/2017
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 ICA ENGINEERING, INC.

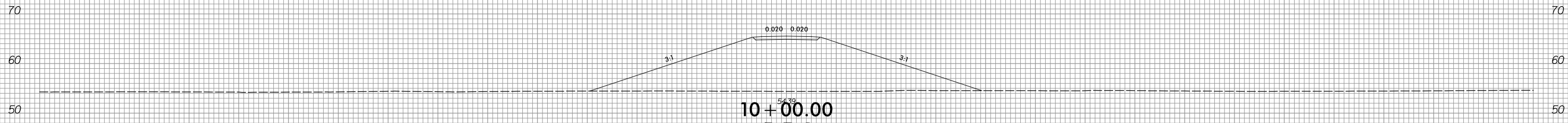
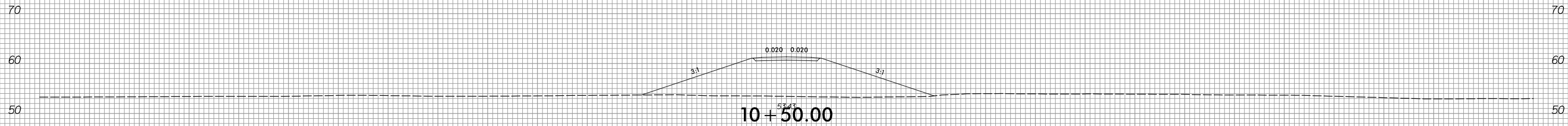
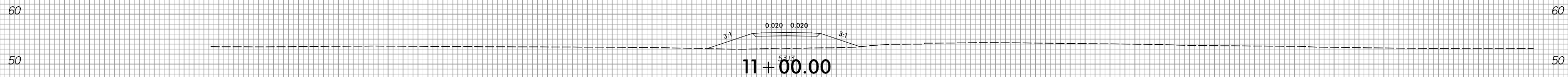
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3/30/2017
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 ICA ENGINEERING, INC.

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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

-DR2-