

**REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)**

**PREPARATORY SURVEY
FOR EXPRESSWAY PROJECTS
IN
MEGA MANILA REGION**

CAVITE LAGUNA EXPRESSWAY PROJECT (Laguna Section)

**FINAL REPORT
APPENDIX DRAWINGS**

NOVEMBER 2012

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

CTI ENGINEERING INTERNATIONAL CO., LTD

MITSUBISHI RESEARCH INSTITUTE, INC.

ORIENTAL CONSULTANTS CO., LTD

METROPOLITAN EXPRESSWAY CO., LTD

EI
CR(3)
12-146(2)

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TITLE	DRAWING NO.
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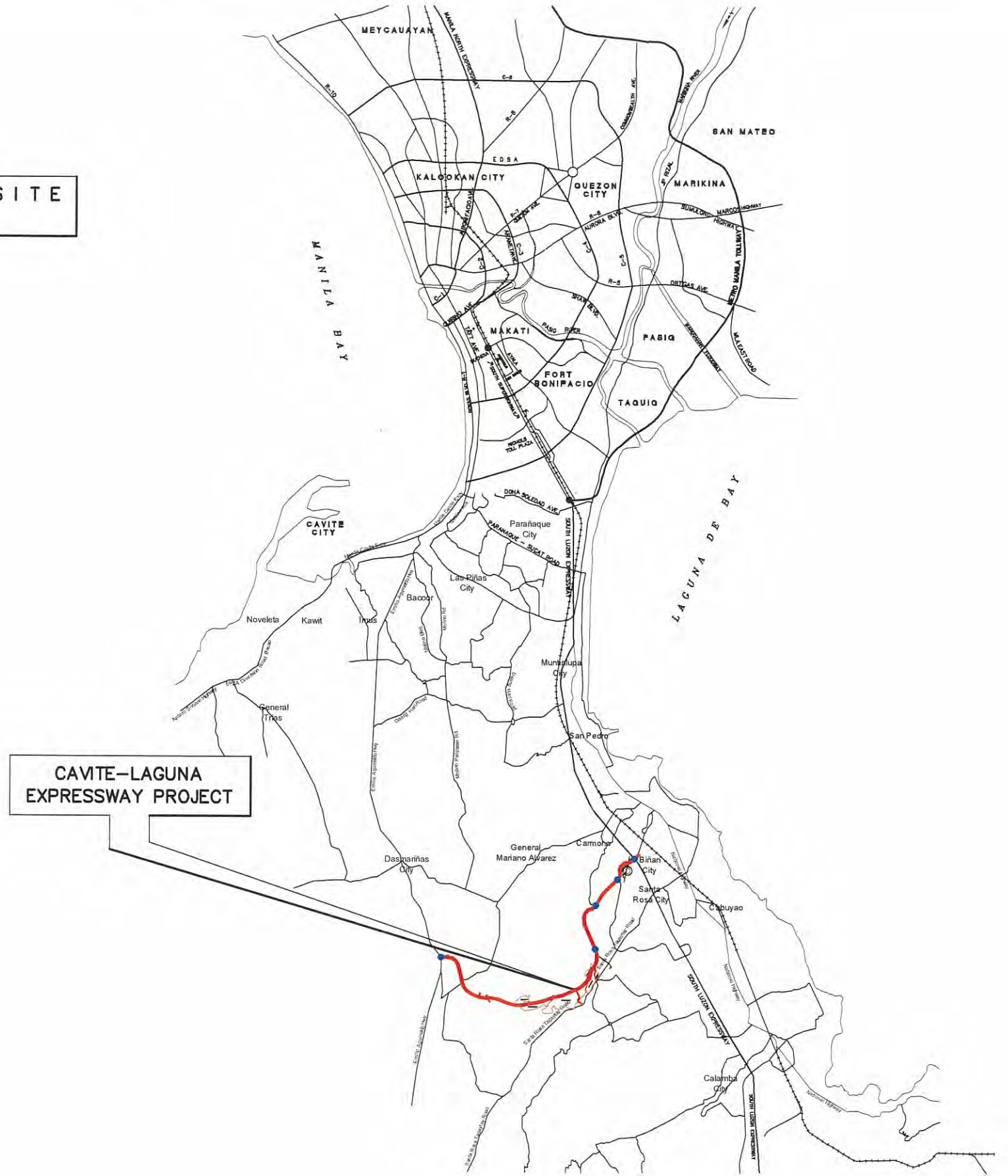
PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	AS SHOWN	GENERAL INDEX (1/2)	A - 01
			SHEET NO.
			- OF -

B. ESTIMATED QUANTITIES

C. GENERAL ROUTE PLAN

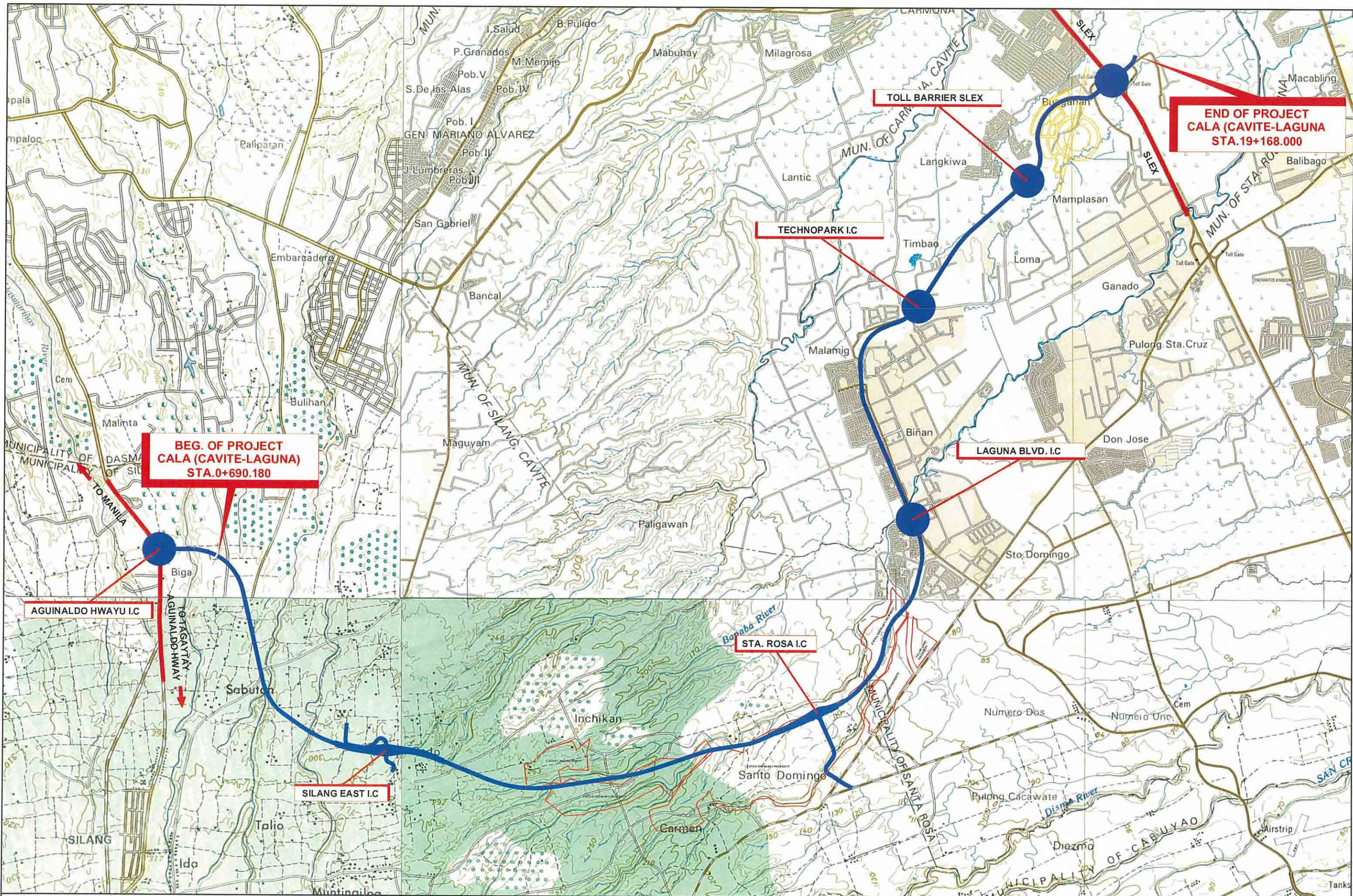


LOCATION PLAN



VICINITY MAP

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	NTS	VICINITY MAP	C-01
			SHEET NO.
			1 OF 1

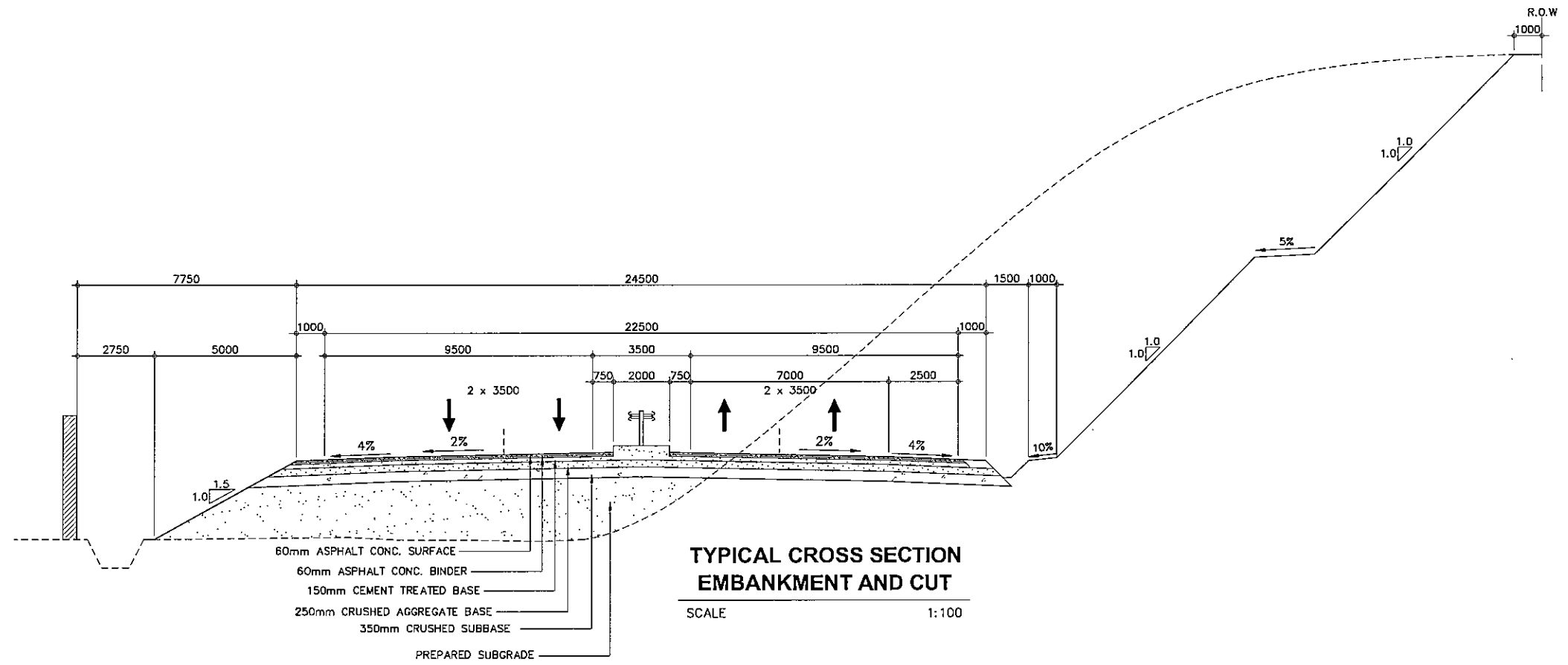


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			SHEET NO.
			OF

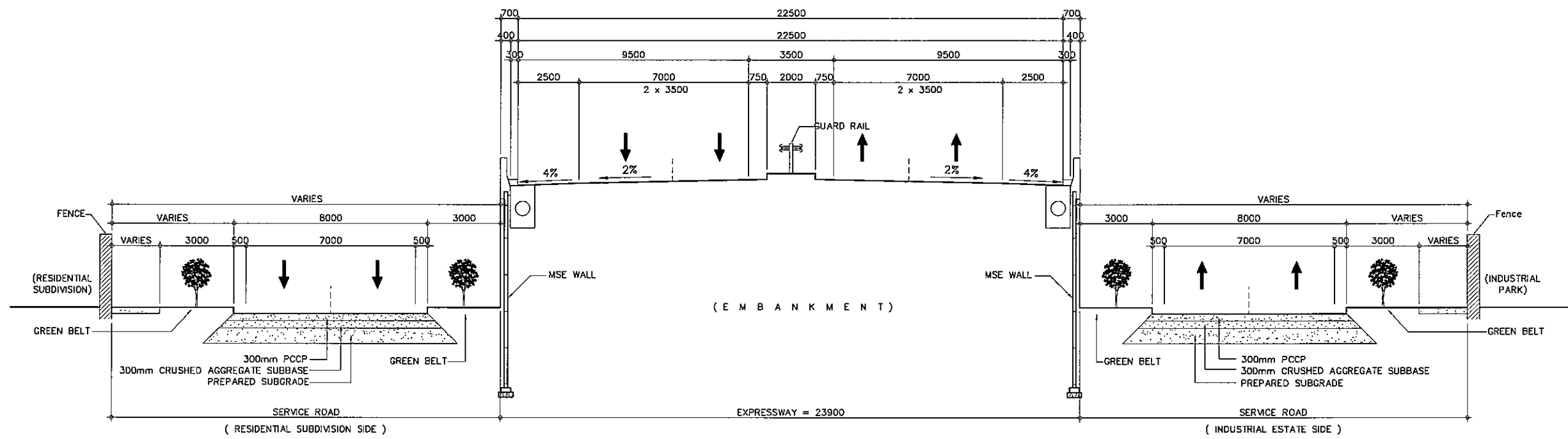


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Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)		GENERAL PLAN LAYOUT	C - 03 SHEET NO. - OF -

D. TYPICAL CROSS SECTION



PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	AS SHOWN	TYPICAL CROSS SECTION (1/8)	D-01
			SHEET NO.
			1 OF 8

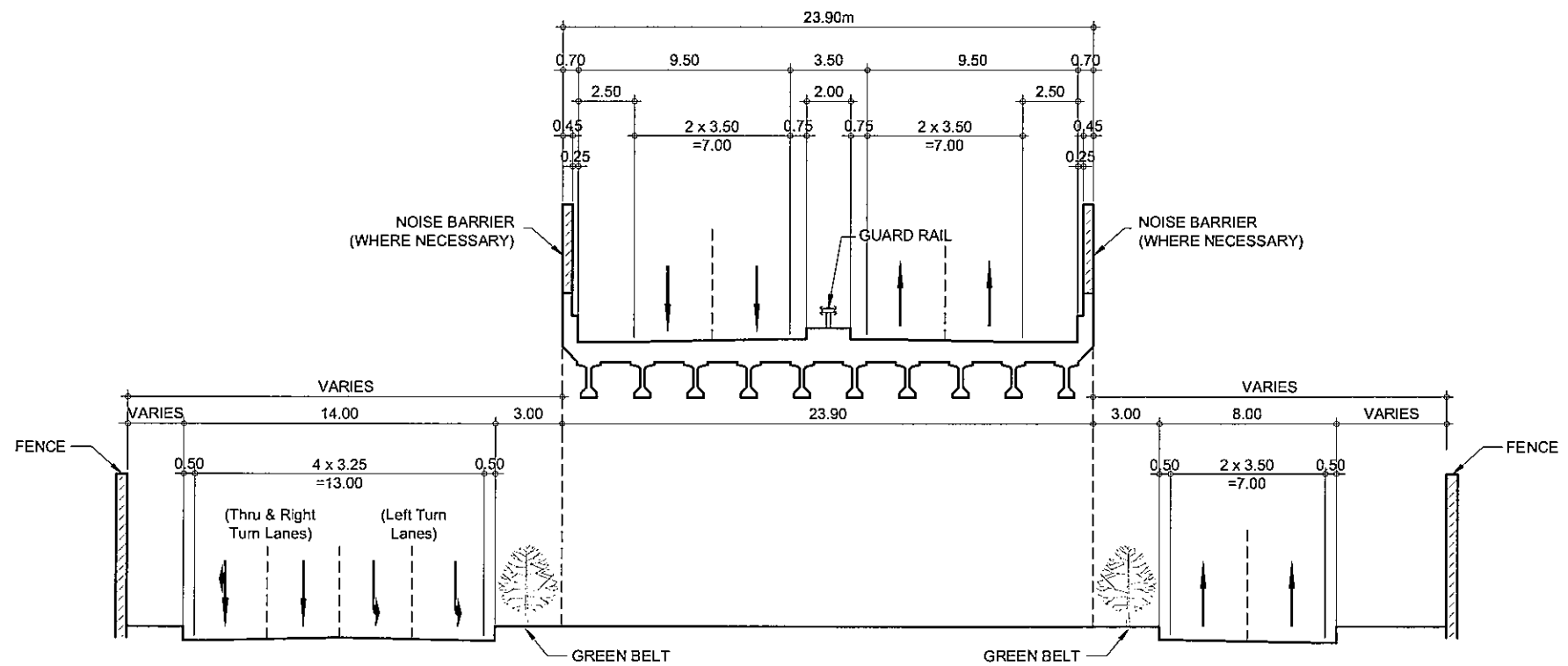
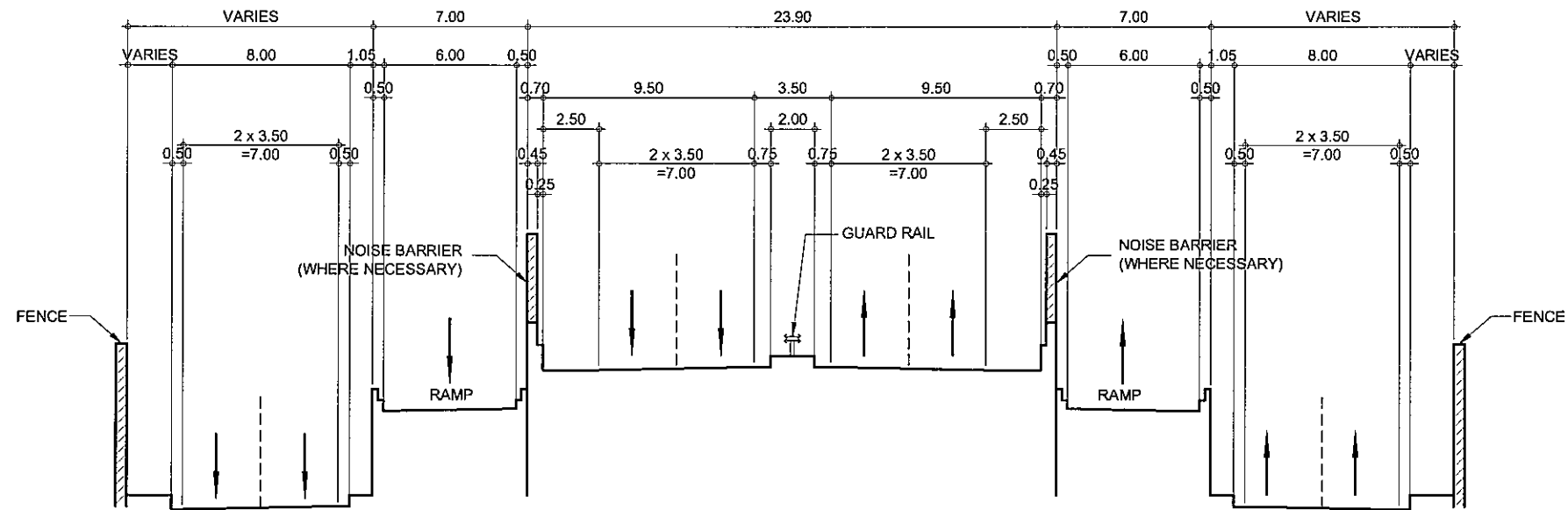


TYPICAL CROSS SECTION (MSE WALL SECTION)

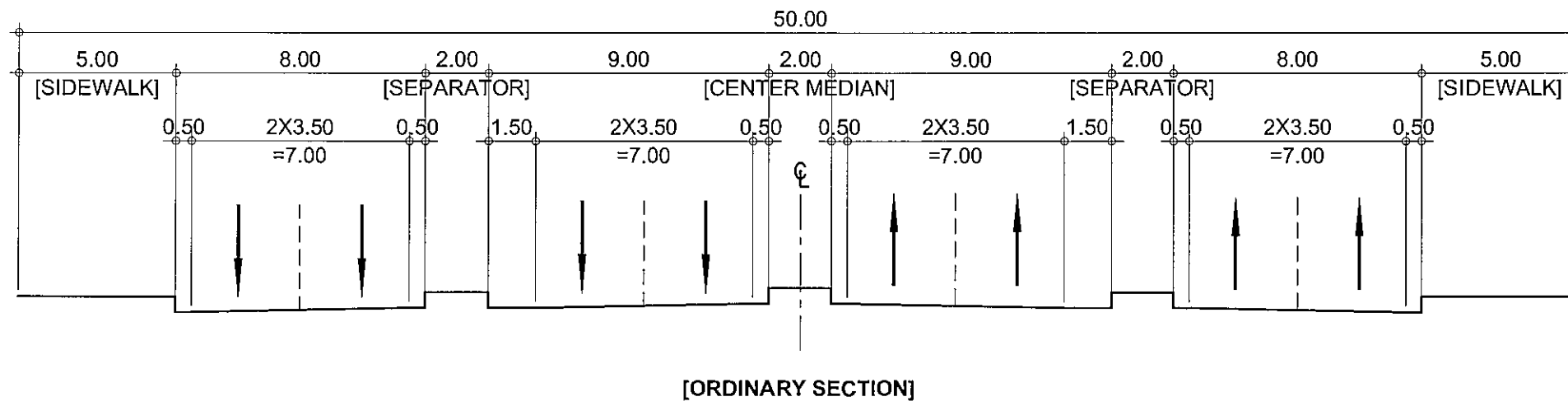
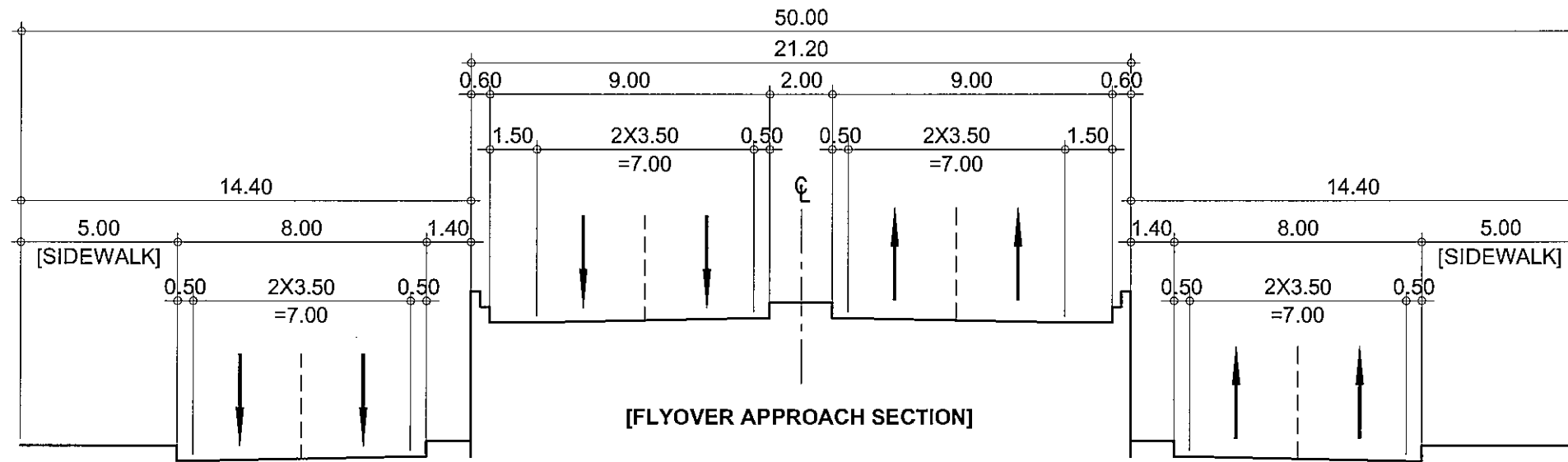
SCALE

1:100

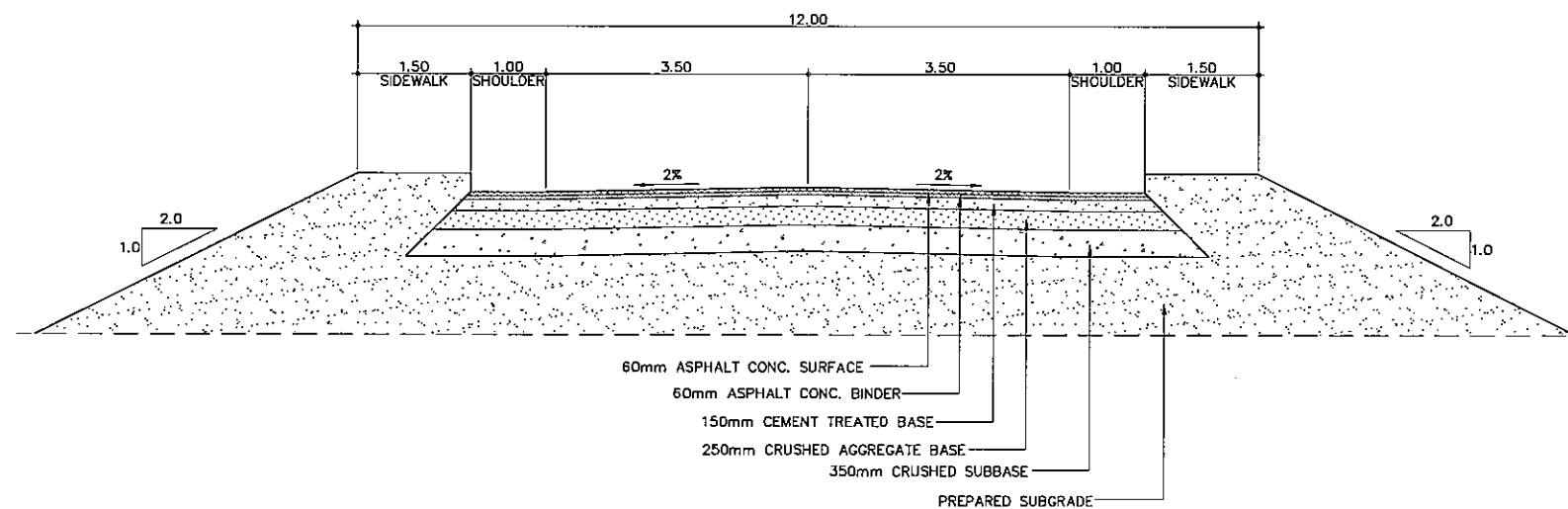
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Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	AS SHOWN	TYPICAL CROSS SECTION (2/8)	D-02
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PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	AS SHOWN	TYPICAL CROSS SECTION (3/8)	D-03
			SHEET NO.
			3 OF 8

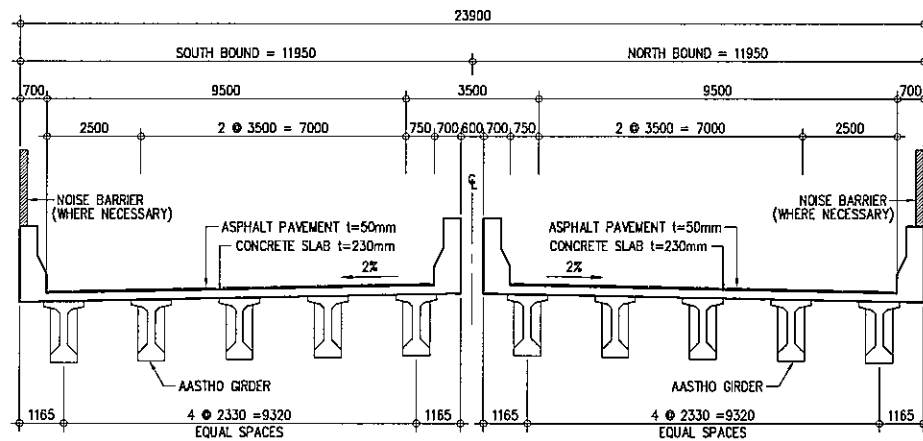


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			SHEET NO.
			4 OF 8

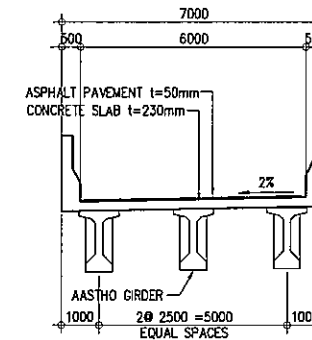


**EXTRA ORDINARY (TAGAYTAY) ACCESS
TYPICAL CROSS SECTION**

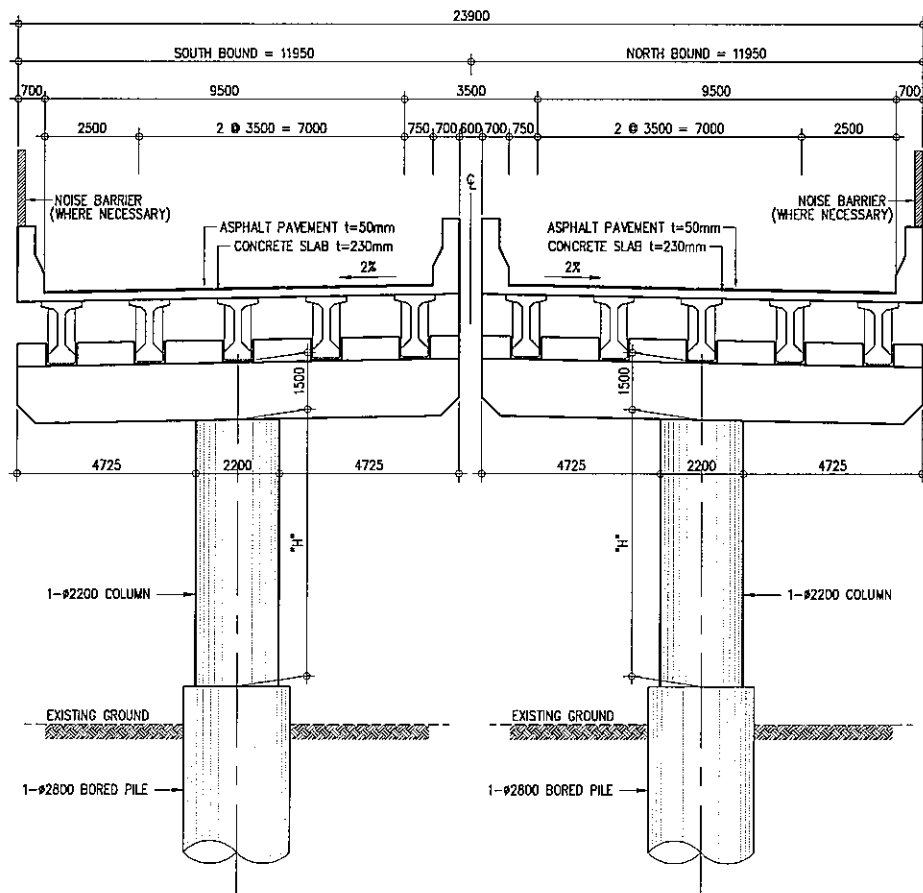
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Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	AS SHOWN	TYPICAL CROSS SECTION (5/8)	D-05
			SHEET NO.
			5 OF 8



A SUPER STRUCTURE (AASHTO GIRDER)
SCALE 1:200

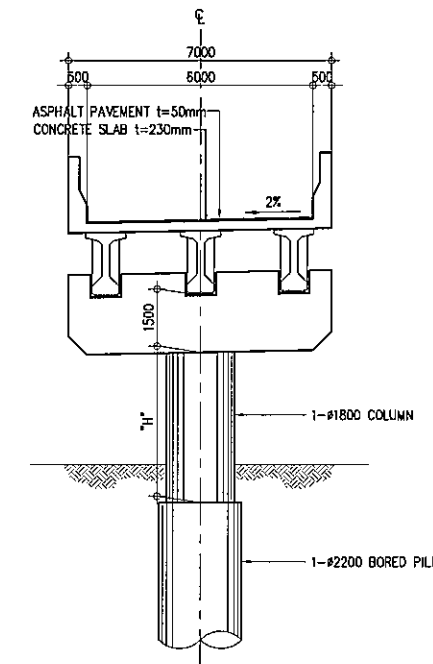


A SUPER STRUCTURE
SCALE 1:100



C CROSS SECTION - PIER
SCALE 1:200

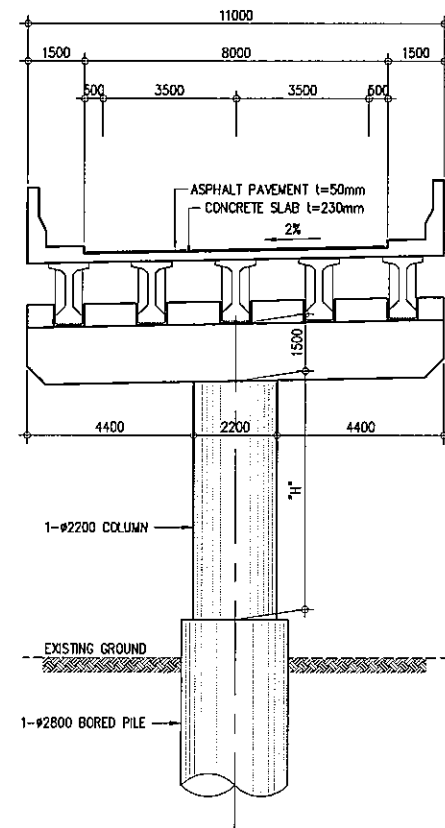
MAIN ROAD TYPICAL CROSS SECTION



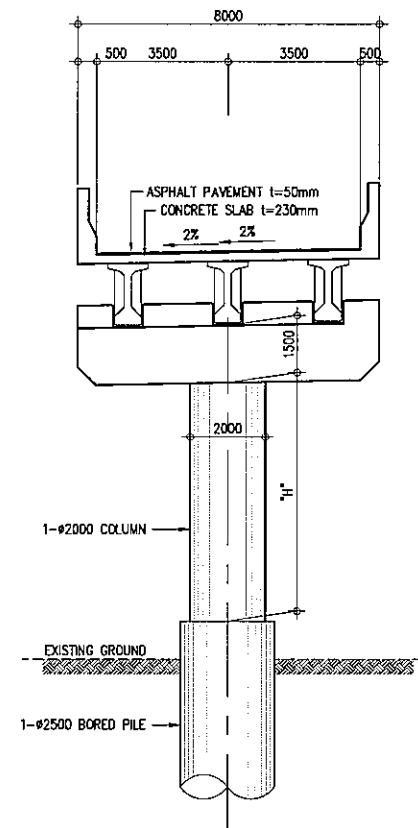
B CROSS SECTION - PIER
SCALE 1:100

RAMPS TYPICAL CROSS SECTION

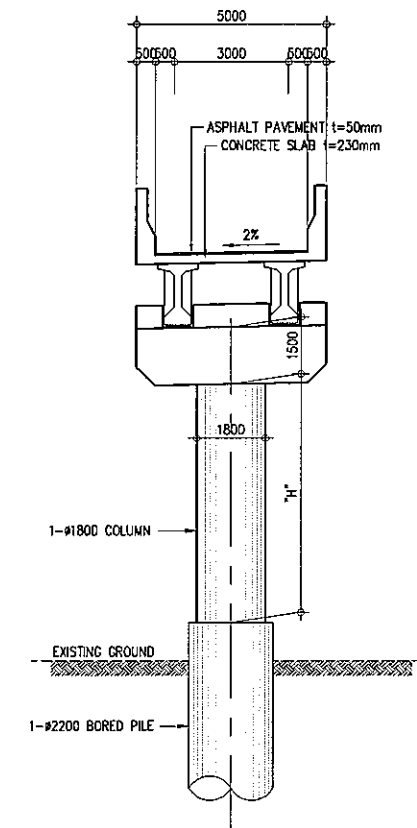
PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	AS SHOWN	BRIDGE TYPICAL CROSS SECTION (7/8)	D-07
			SHEET NO.
			7 OF 8



A EXTRA ORDINARY ACCESS ROAD
SCALE 1:200



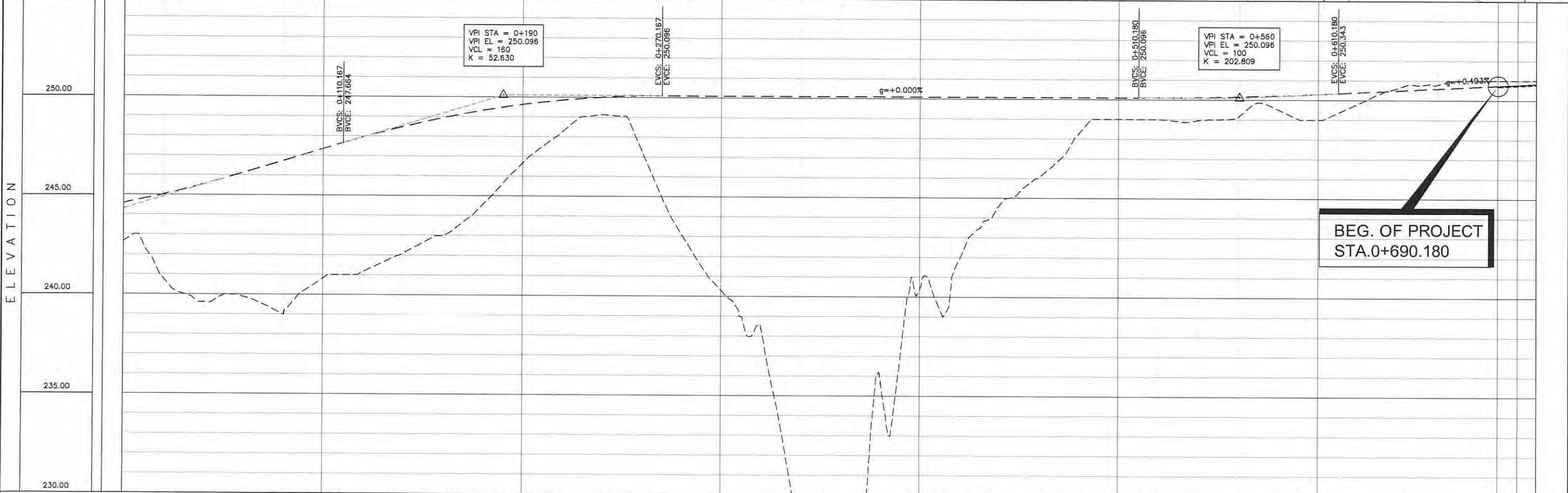
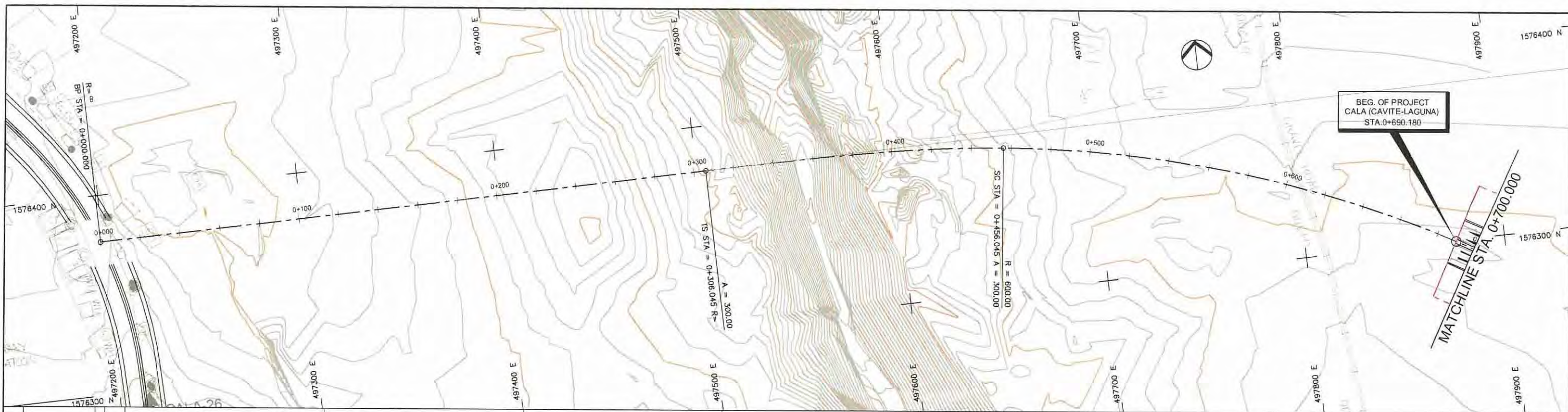
B MUNICIPAL ROAD
SCALE 1:200



C FARM ROAD
SCALE 1:200

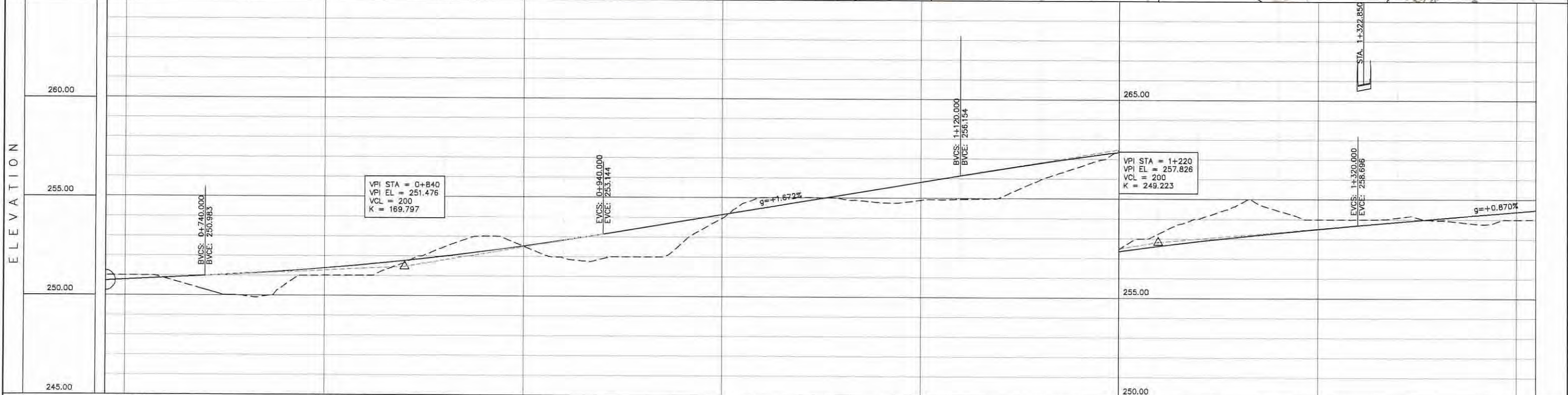
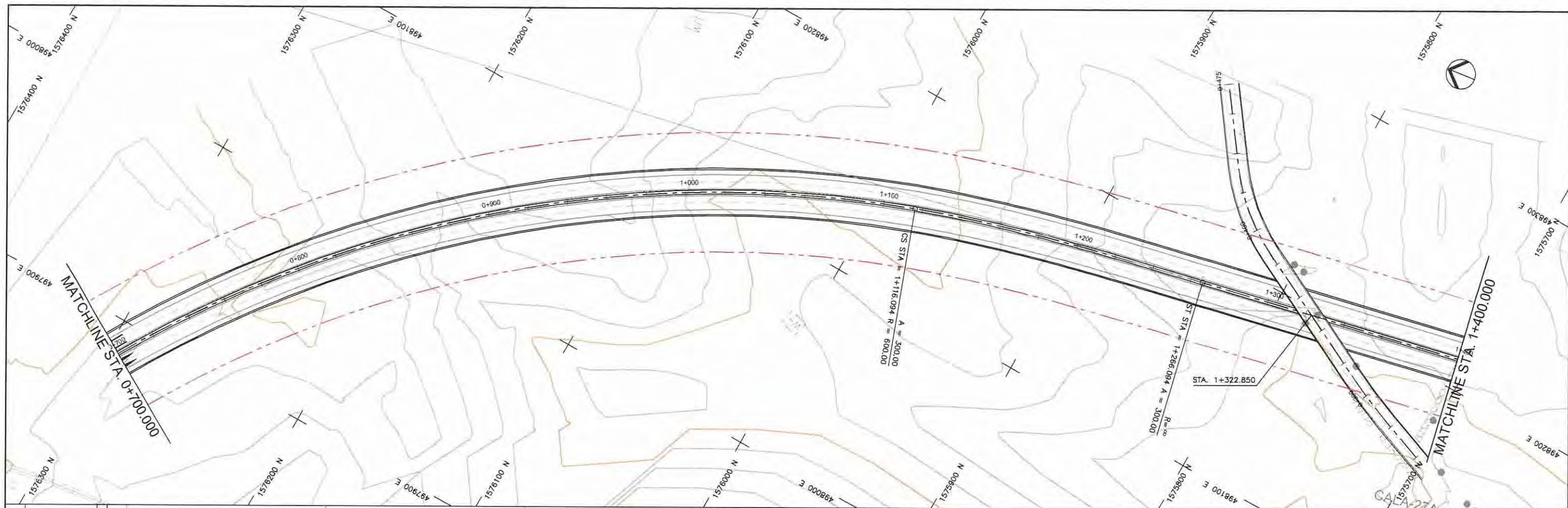
PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	AS SHOWN	ROAD CROSSING CROSS SECTION (8/8)	D-08
			SHEET NO.
			8 OF 8

**E. PLAN AND PROFILE
(MAIN ALIGNMENT)**



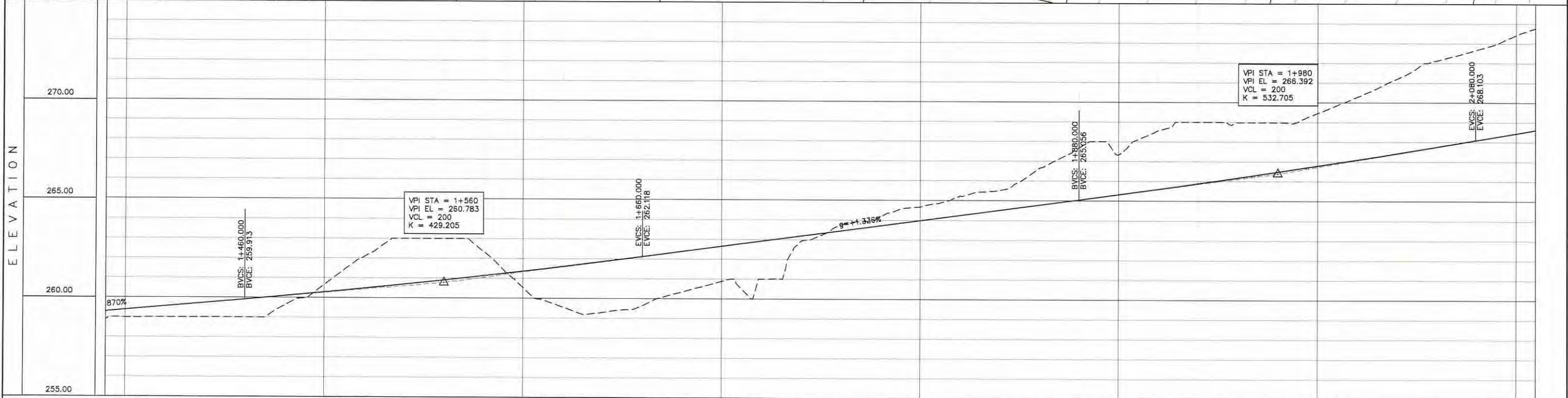
STATION	0+100	0+200	0+300	0+400	0+500	0+600	0+700
FINISHED GRADE ELEVATION	244.591	245.022	245.530	250.096	254.409	254.422	253.694
EXISTING GROUND ELEVATION	242.856	240.827	239.805	239.886	240.000	241.144	242.087
VERTICAL CURVATURE	SC 0+456.045						
HORIZONTAL CURVATURE	A=300 L=150.000m						

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 0+000.000 - STA. 0+700.000	E - 01
			SHEET NO.
			1 OF 28



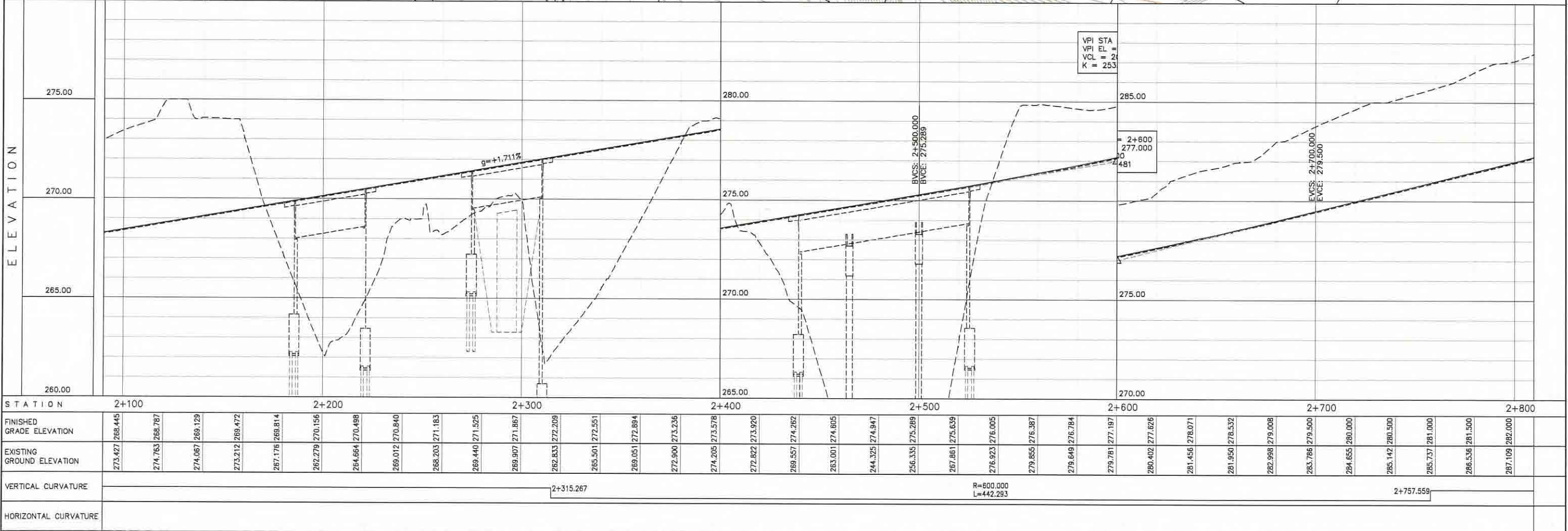
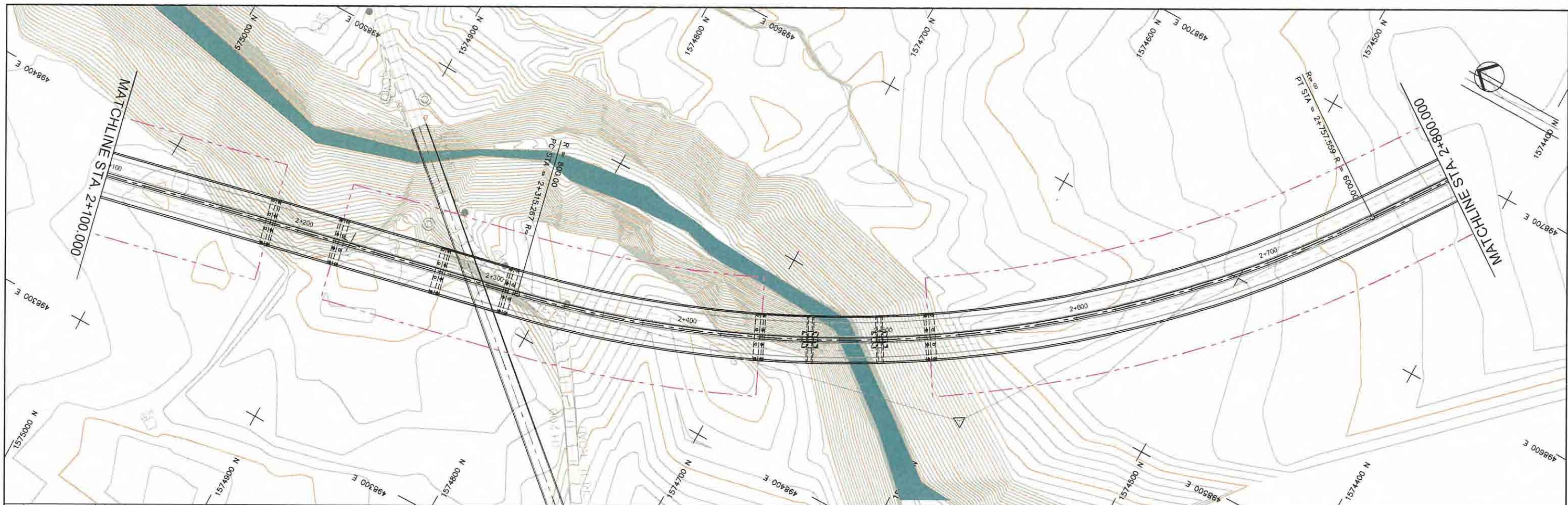
STATION	0+700	0+800	0+900	1+000	1+100	1+200	1+300	1+400
FINISHED GRADE ELEVATION	253.694	253.396	253.076	252.788	252.565	252.408	252.317	252.291
EXISTING GROUND ELEVATION	251.002	250.854	250.788	250.788	250.836	250.983	251.008	251.063
VERTICAL CURVATURE	R=600.000 L=660.050							
HORIZONTAL CURVATURE	1+116.094 CS A=300 L=150.000m							

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 0+700.000 - STA. 1+400.000	E - 02
			SHEET NO.
			2 OF 28

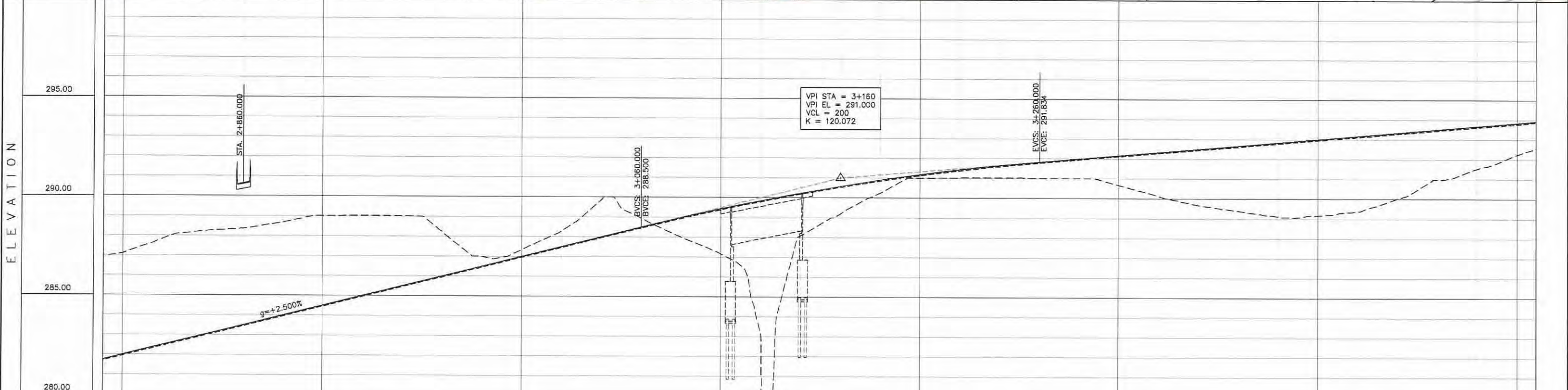
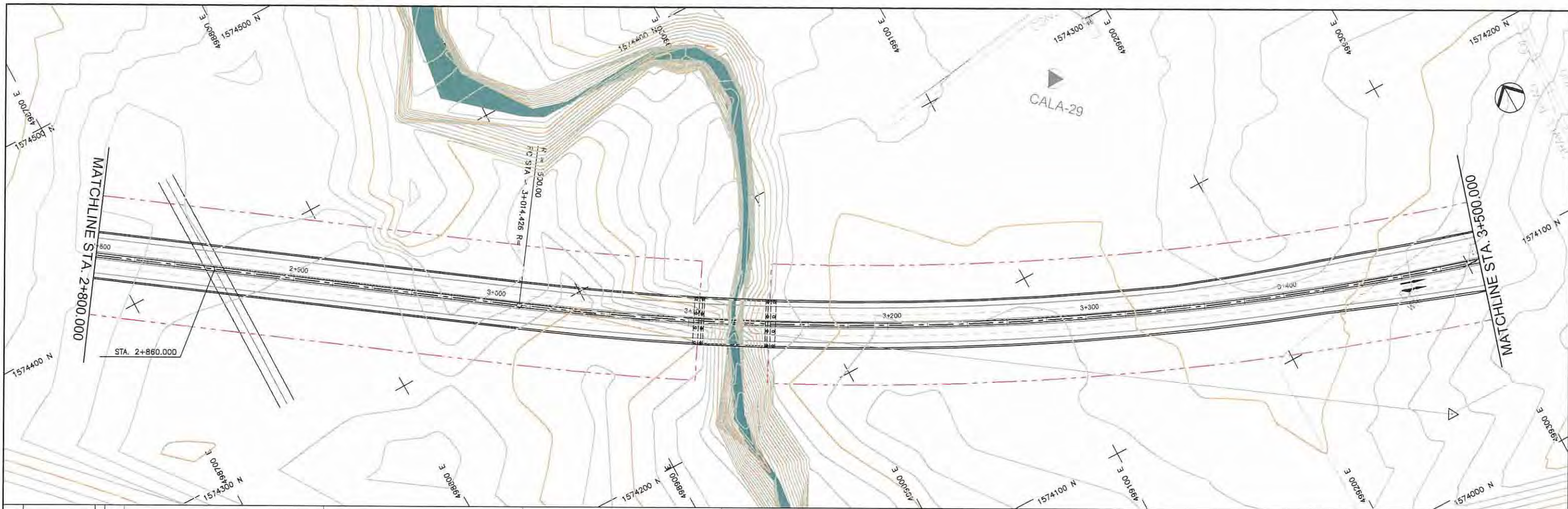


STATION	1+400	1+500	1+600	1+700	1+800	1+900	2+000	2+100
FINISHED GRADE ELEVATION	258.993	259.391	258.995	259.565	258.995	259.739	258.998	259.913
EXISTING GROUND ELEVATION	258.993	259.739	258.995	259.565	258.995	259.739	258.998	259.913
VERTICAL CURVATURE								
HORIZONTAL CURVATURE								

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 1+400.000 - STA. 2+100.000	E - 03
			SHEET NO.
			3 OF 28

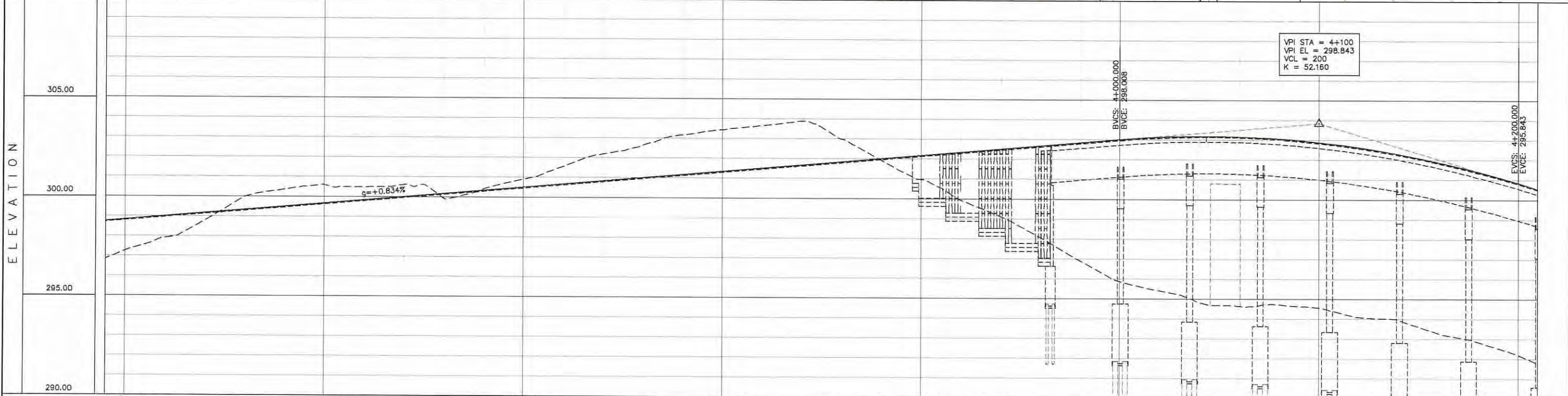
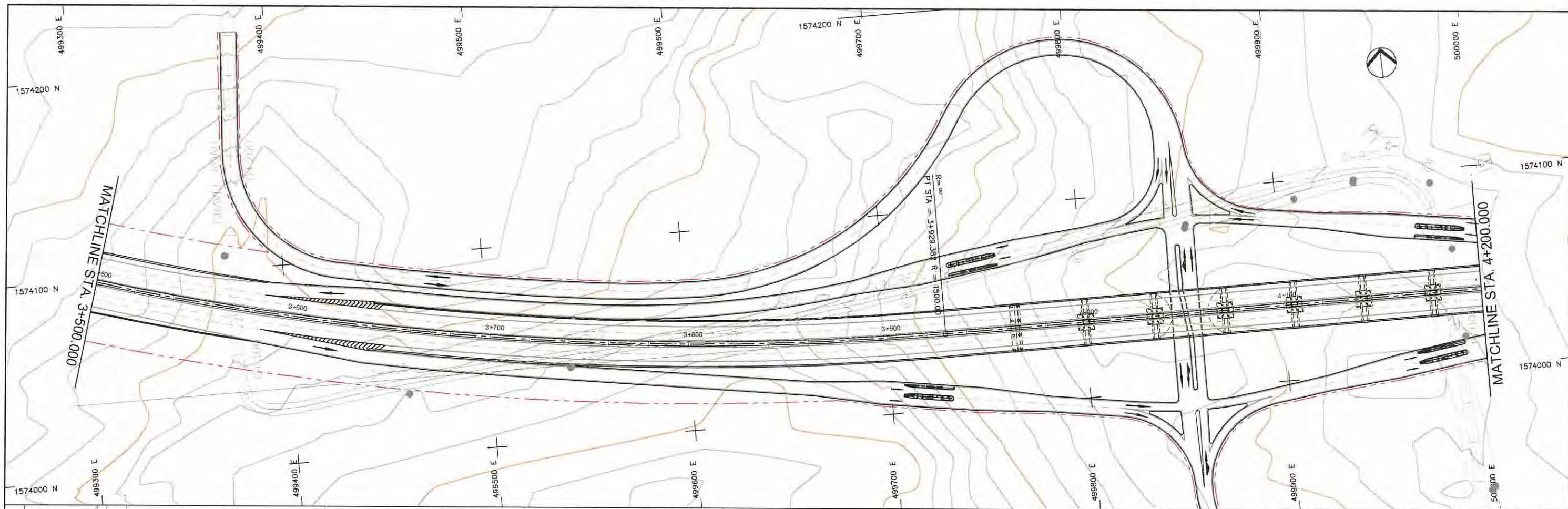


PROJECT TITLE Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	SCALE V = 200 H = 2000	SHEET CONTENT PLAN AND PROFILE STA. 2+100.000 - STA. 2+800.000	DRAWING NO. E - 04
			SHEET NO. 4 OF 28



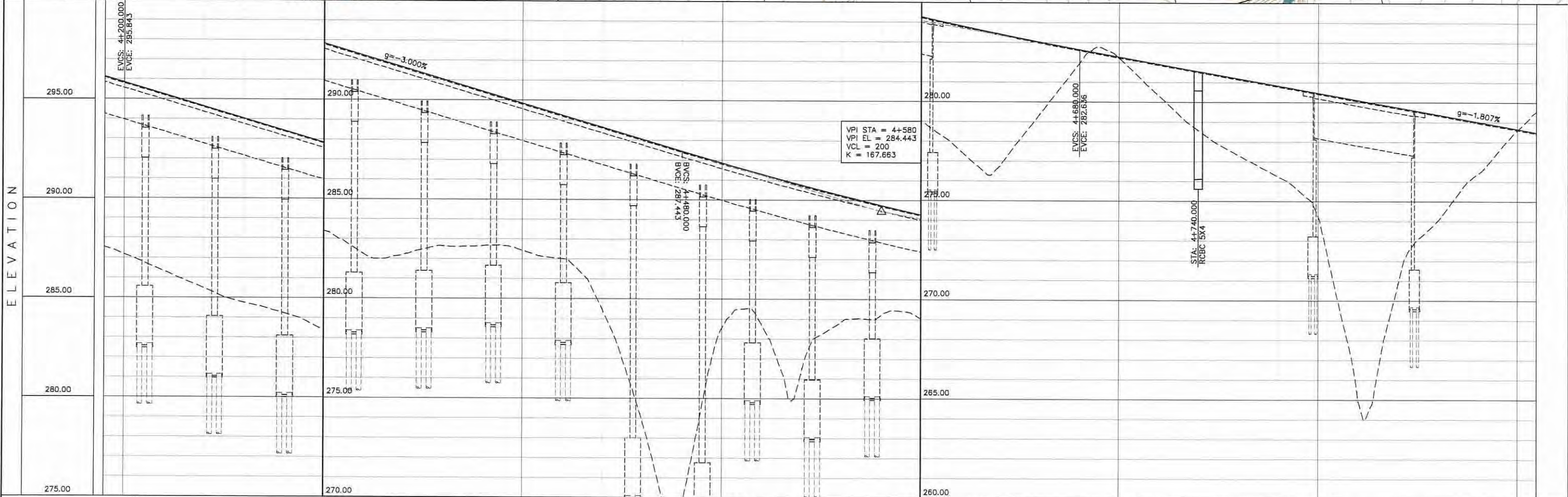
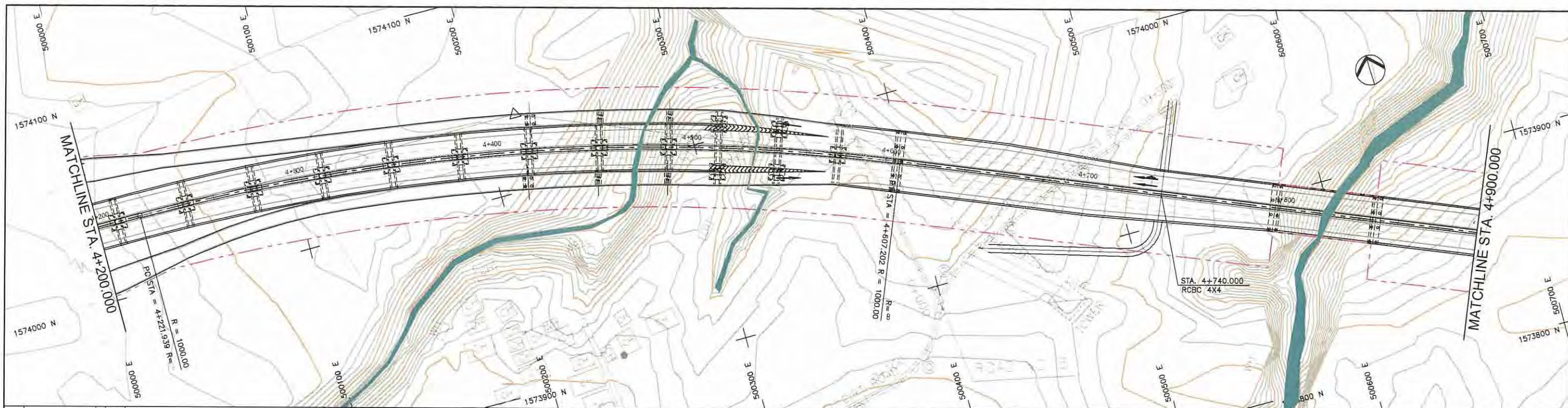
STATION	2+800	2+900	3+000	3+100	3+200	3+300	3+400	3+500
FINISHED GRADE ELEVATION	287.109	287.834	288.500	289.184	290.000	290.834	291.684	292.550
EXISTING GROUND ELEVATION	287.109	287.834	288.500	289.184	290.000	290.834	291.684	292.550
VERTICAL CURVATURE	3+014.426							
HORIZONTAL CURVATURE	R=1500.000 L=914.956							

PROJECT TITLE Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	SCALE V = 200 H = 2000	SHEET CONTENT PLAN AND PROFILE STA. 2+800.000 - STA. 3+500.000	DRAWING NO. E - 05
			SHEET NO. 5 OF 28



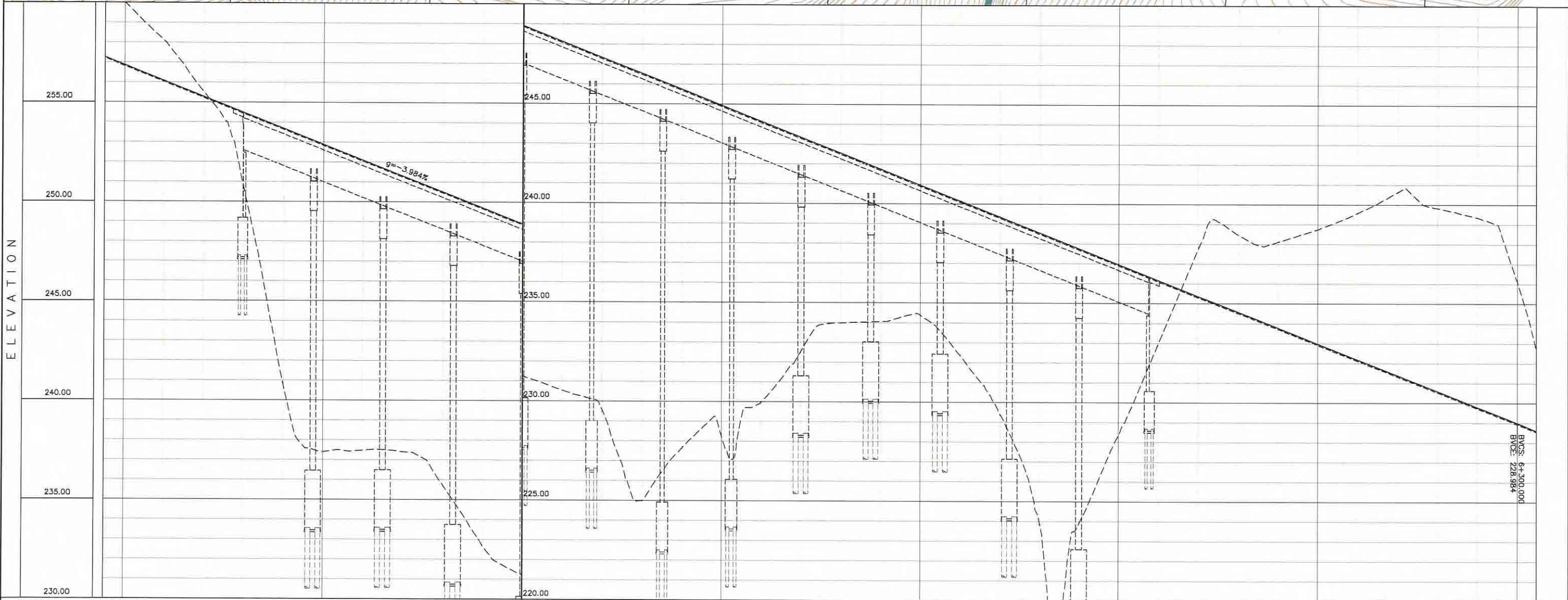
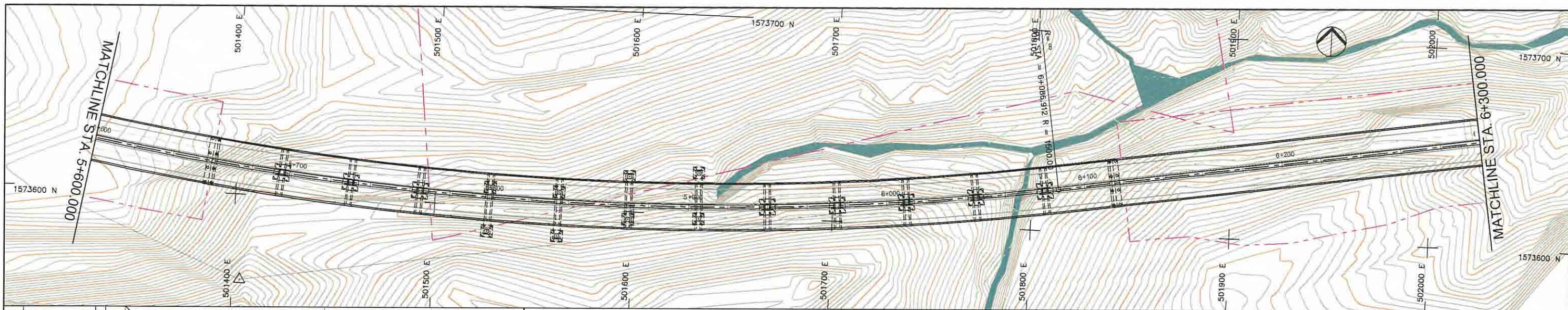
STATION	3+500	3+600	3+700	3+800	3+900	4+000	4+100	4+200
FINISHED GRADE ELEVATION	292.254	293.837	294.004	294.170	294.337	294.504	294.671	294.838
EXISTING GROUND ELEVATION	292.254	292.509	293.759	294.170	294.993	294.337	295.558	294.504
VERTICAL CURVATURE	3+929.382							
HORIZONTAL CURVATURE								

Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
	V = 200 H = 2000	PLAN AND PROFILE STA. 3+500.000 - STA. 4+200.000	E - 06	SHEET NO.
				6 OF 28



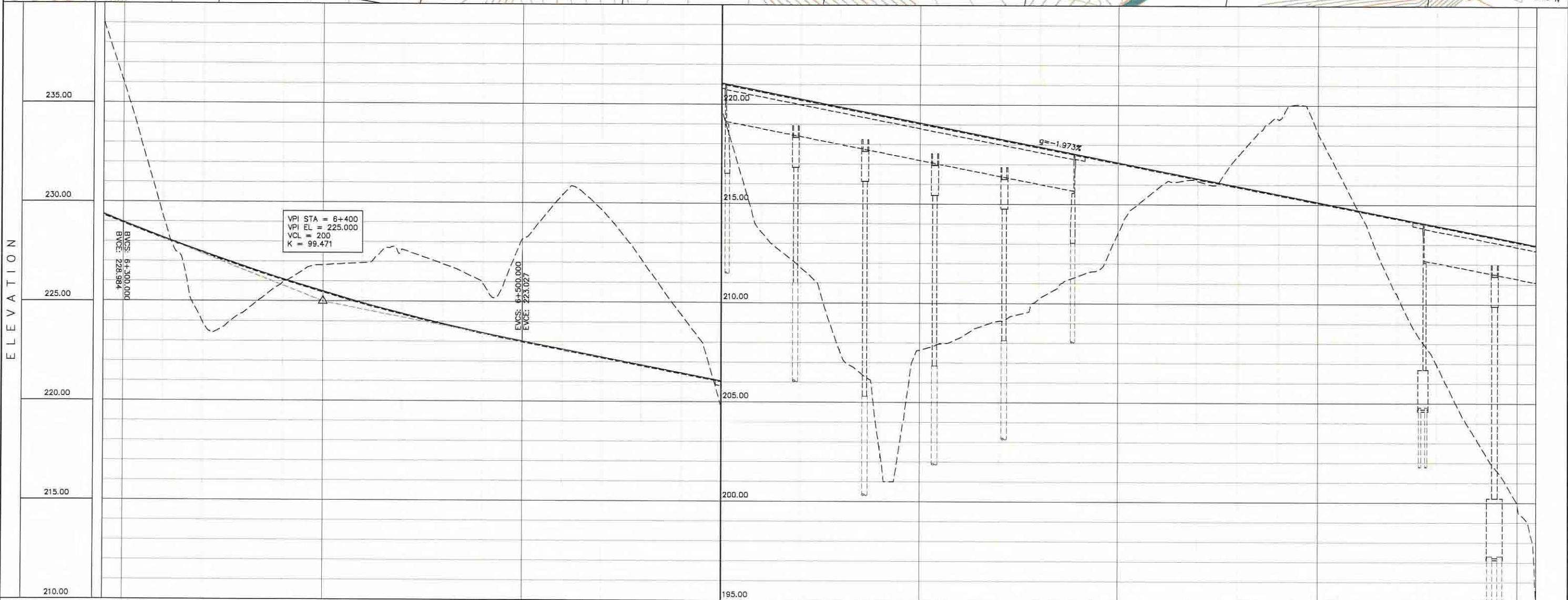
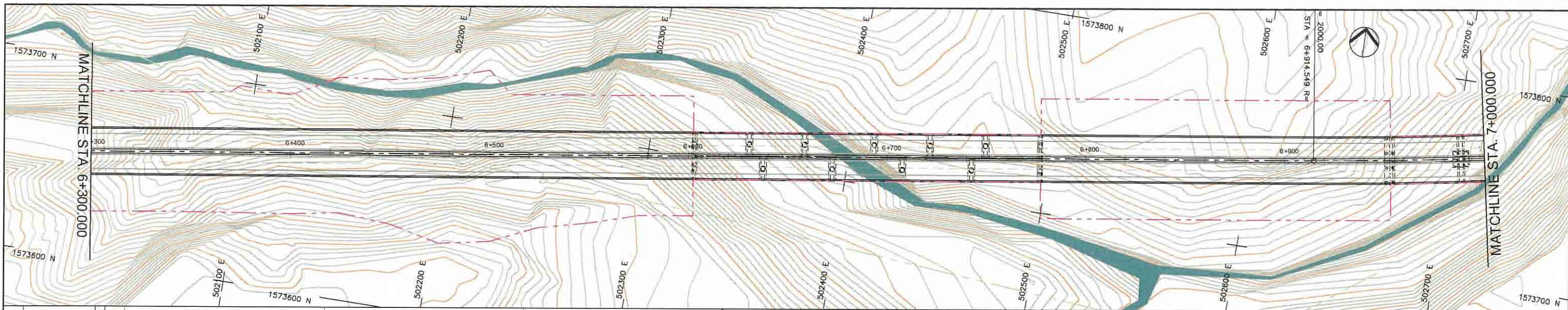
STATION	4+200	4+300	4+400	4+500	4+600	4+700	4+800	4+900
FINISHED GRADE ELEVATION	295.843	292.843	289.843	286.855	283.827	280.829	277.844	274.860
EXISTING GROUND ELEVATION	287.188	286.324	285.481	284.759	284.230	283.443	282.555	281.643
VERTICAL CURVATURE	4+221.939		R=1000.000 L=385.262			4+607.202		
HORIZONTAL CURVATURE								

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 4+200.000 - STA. 4+900.000	E - 07
			SHEET NO.
			7 OF 28



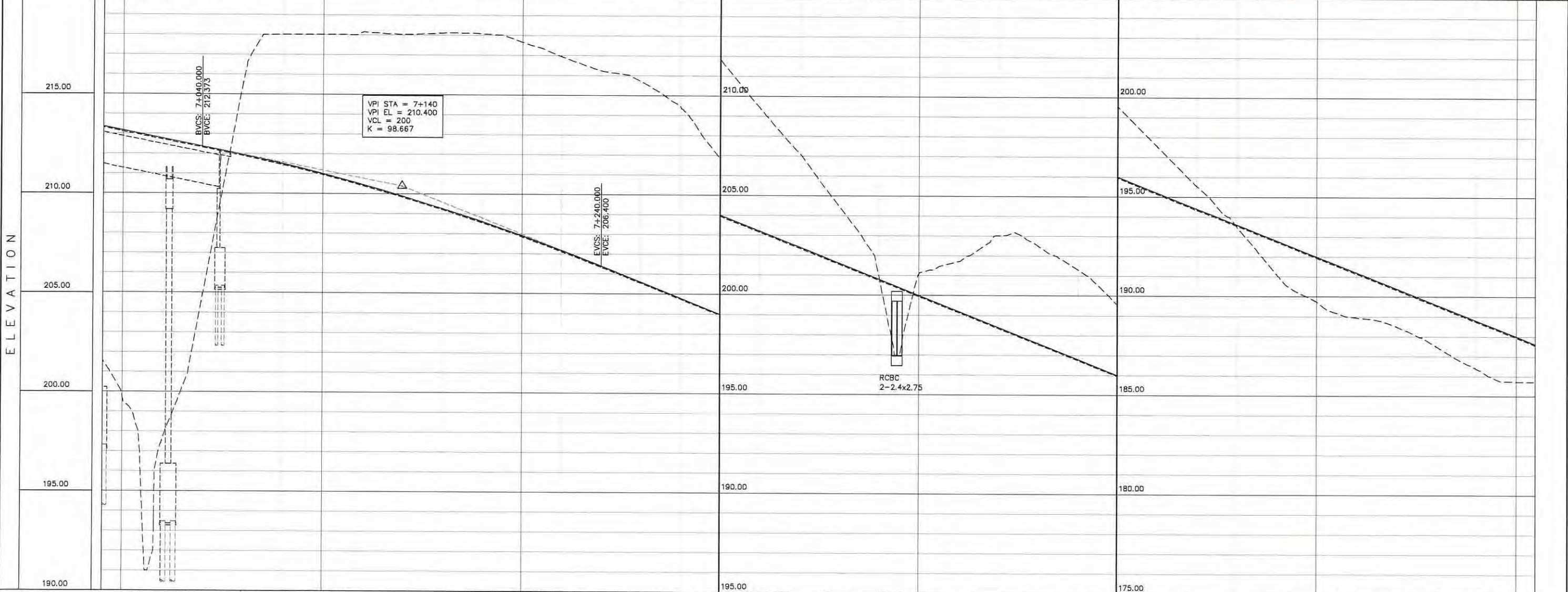
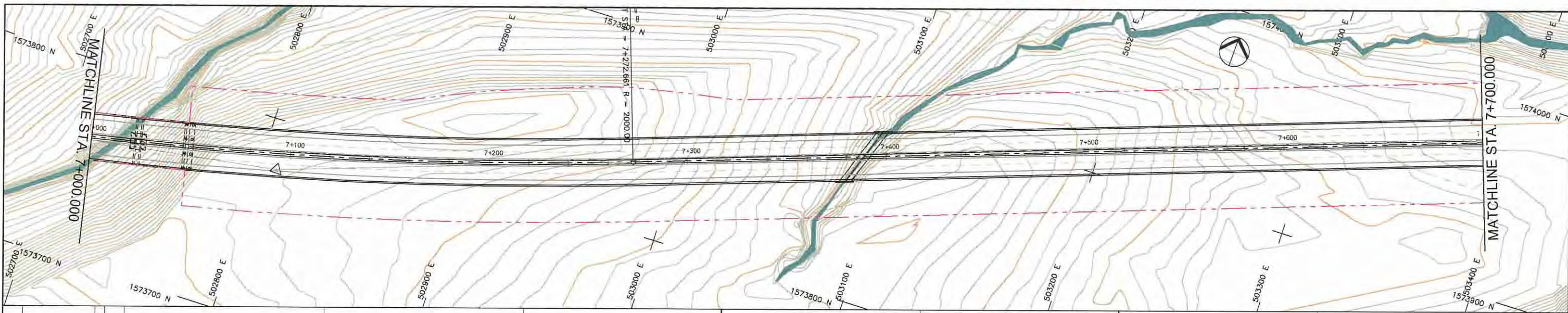
STATION	5+600	5+700				5+800				5+900				6+000				6+100				6+200				6+300																																																
FINISHED GRADE ELEVATION	260.055	256.869	258.090	255.072	255.490	255.275	250.857	254.479	240.710	253.682	237.399	252.865	237.483	252.089	237.402	251.292	235.710	250.495	232.668	249.698	231.240	248.902	230.547	248.105	229.602	247.308	224.995	246.511	227.672	245.715	228.740	244.918	229.970	244.121	232.556	243.325	233.966	242.528	234.062	241.731	234.380	240.934	232.348	240.138	229.412	239.341	224.030	238.544	223.885	237.748	228.374	236.951	232.980	236.154	237.732	235.357	236.463	234.561	238.122	233.764	238.757	232.967	239.583	232.170	240.649	231.374	239.830	230.577	239.361	229.780	236.076	228.984		
EXISTING GROUND ELEVATION	260.055	256.869	258.090	255.072	255.490	255.275	250.857	254.479	240.710	253.682	237.399	252.865	237.483	252.089	237.402	251.292	235.710	250.495	232.668	249.698	231.240	248.902	230.547	248.105	229.602	247.308	224.995	246.511	227.672	245.715	228.740	244.918	229.970	244.121	232.556	243.325	233.966	242.528	234.062	241.731	234.380	240.934	232.348	240.138	229.412	239.341	224.030	238.544	223.885	237.748	228.374	236.951	232.980	236.154	237.732	235.357	236.463	234.561	238.122	233.764	238.757	232.967	239.583	232.170	240.649	231.374	239.830	230.577	239.361	229.780	236.076	228.984		
VERTICAL CURVATURE	R = 1500.000 L = 808.623																								6+086.912																																																	
HORIZONTAL CURVATURE																																																																										

PROJECT TITLE Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	SCALE V = 200 H = 2000	SHEET CONTENT PLAN AND PROFILE STA. 5+600.000 - STA. 6+300.000	DRAWING NO.
			E - 09
			SHEET NO.
			9 OF 28



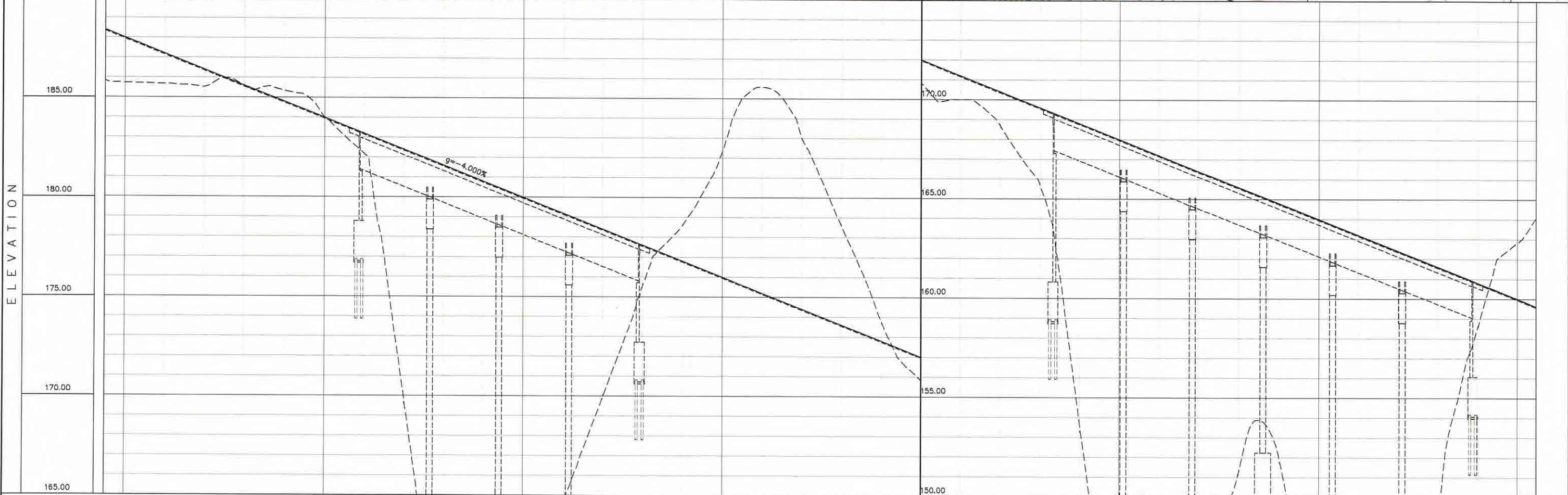
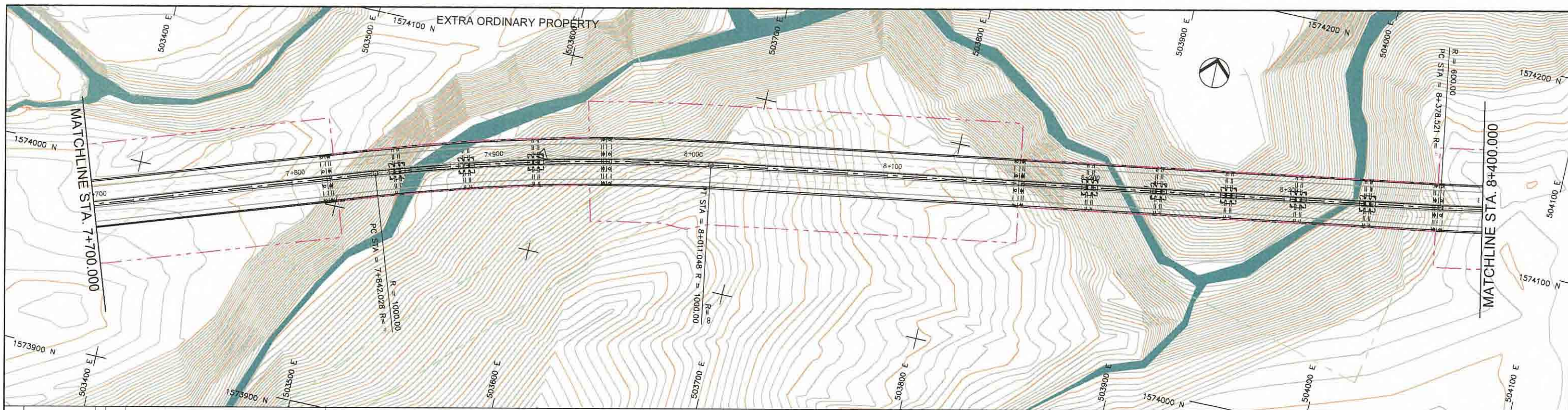
STATION	6+300	6+400	6+500	6+600	6+700	6+800	6+900	7+000
FINISHED GRADE ELEVATION	228.984	227.471	223.027	221.054	219.081	217.108	215.530	213.162
EXISTING GROUND ELEVATION	236.078	229.352	223.897	219.766	213.587	211.390	210.302	203.115
VERTICAL CURVATURE							6+914.549	
HORIZONTAL CURVATURE								

PROJECT TITLE Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	SCALE V = 200 H = 2000	SHEET CONTENT PLAN AND PROFILE STA. 6+300.000 - STA. 7+000.000	DRAWING NO. E - 10
			SHEET NO. 10 OF 28



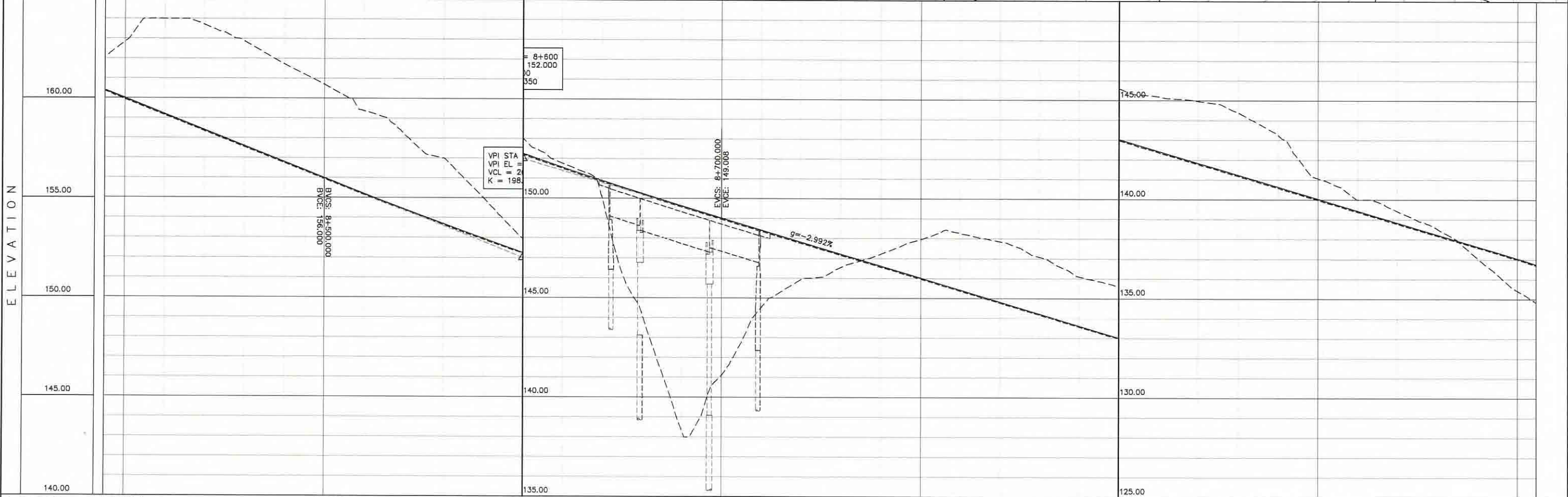
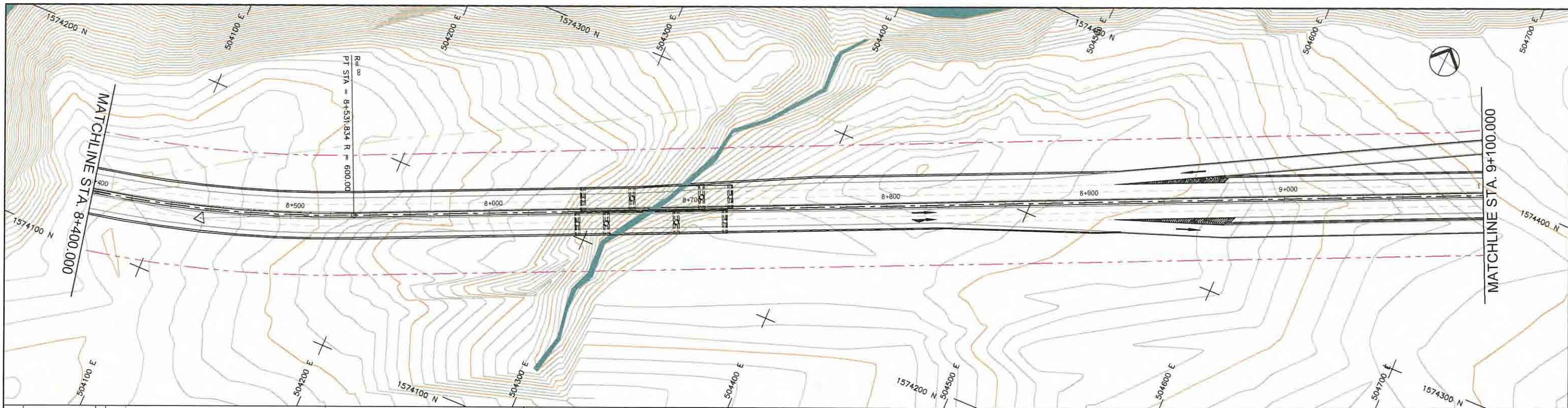
STATION	7+000	7+100	7+200	7+300	7+400	7+500	7+600	7+700
FINISHED GRADE ELEVATION	213.162	212.373	211.007	206.400	200.000	196.000	191.200	186.000
EXISTING GROUND ELEVATION	199.831	212.768	211.958	209.693	204.800	198.800	193.000	188.000
VERTICAL CURVATURE	R=2000.000 L=358.112 7+272.661							
HORIZONTAL CURVATURE								

Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
		V = 200 H = 2000	PLAN AND PROFILE STA. 7+000.000 - STA. 7+700.000	E - 11
				SHEET NO. 11 OF 28



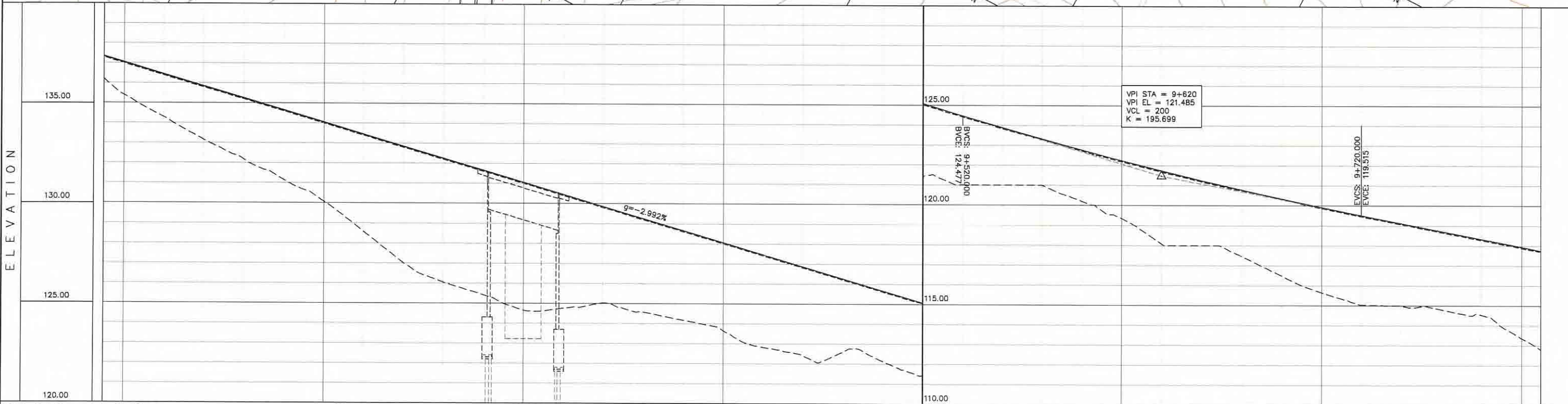
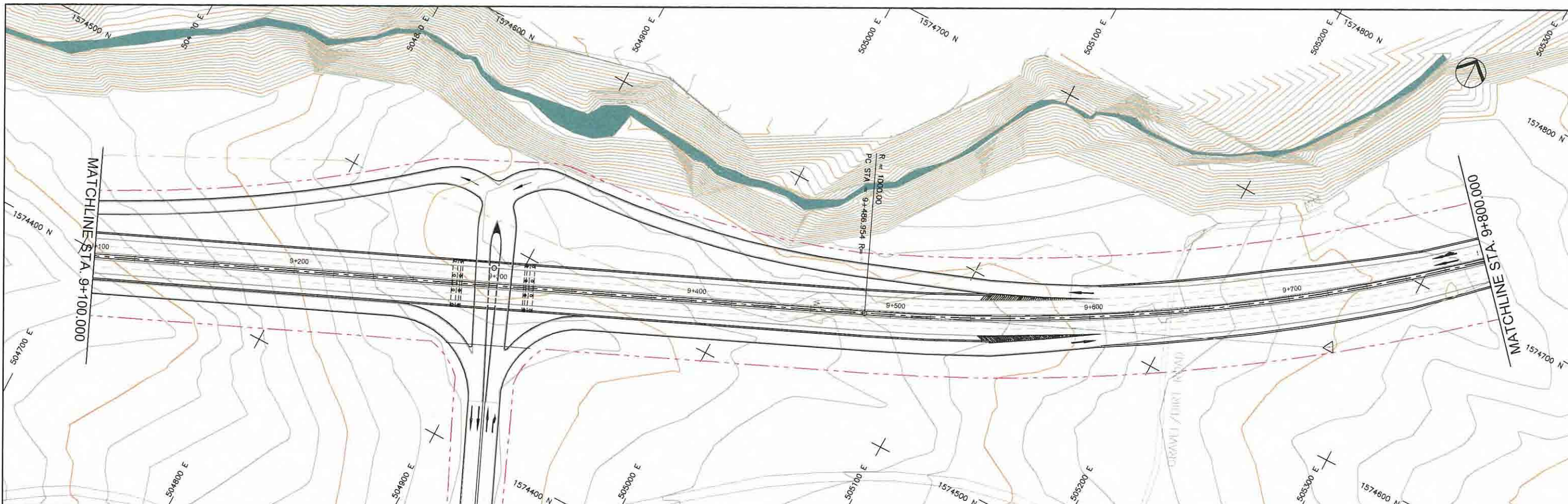
STATION	7+700	7+800	7+900	8+000	8+100	8+200	8+300	8+400
FINISHED GRADE ELEVATION	185.731	185.678	185.521	185.398	182.196	169.568	154.035	155.260
EXISTING GROUND ELEVATION	185.731	185.678	185.521	185.398	182.196	169.568	154.035	155.260
VERTICAL CURVATURE	7+842.028		R=1000.000 L=169.019		8+011.048		8+378.521	
HORIZONTAL CURVATURE								

Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
		V = 200 H = 2000	PLAN AND PROFILE STA. 7+700.000 - STA. 8+400.000	E - 12
				SHEET NO. 12 OF 28



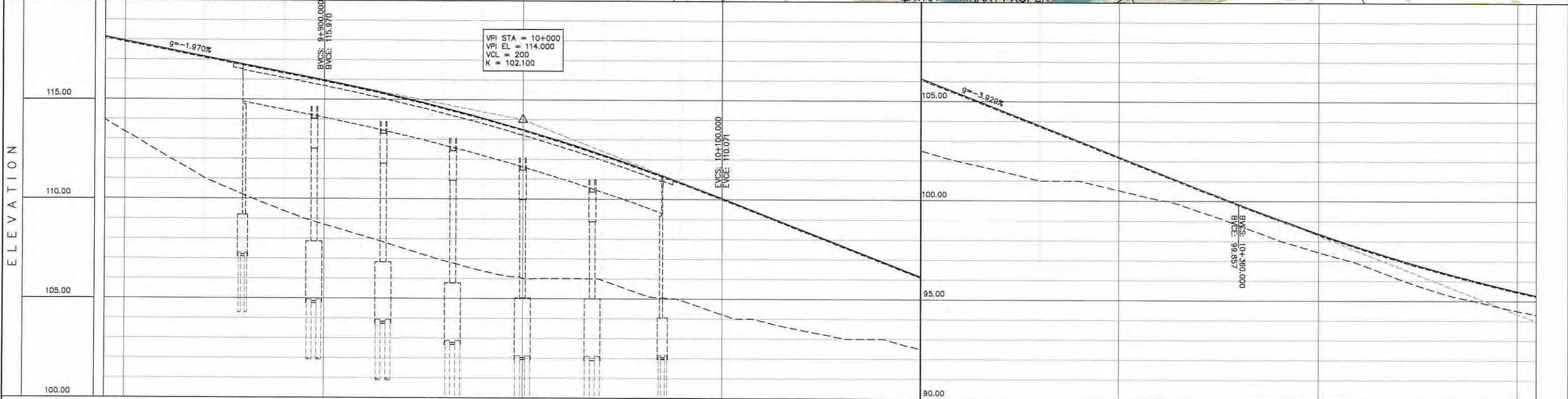
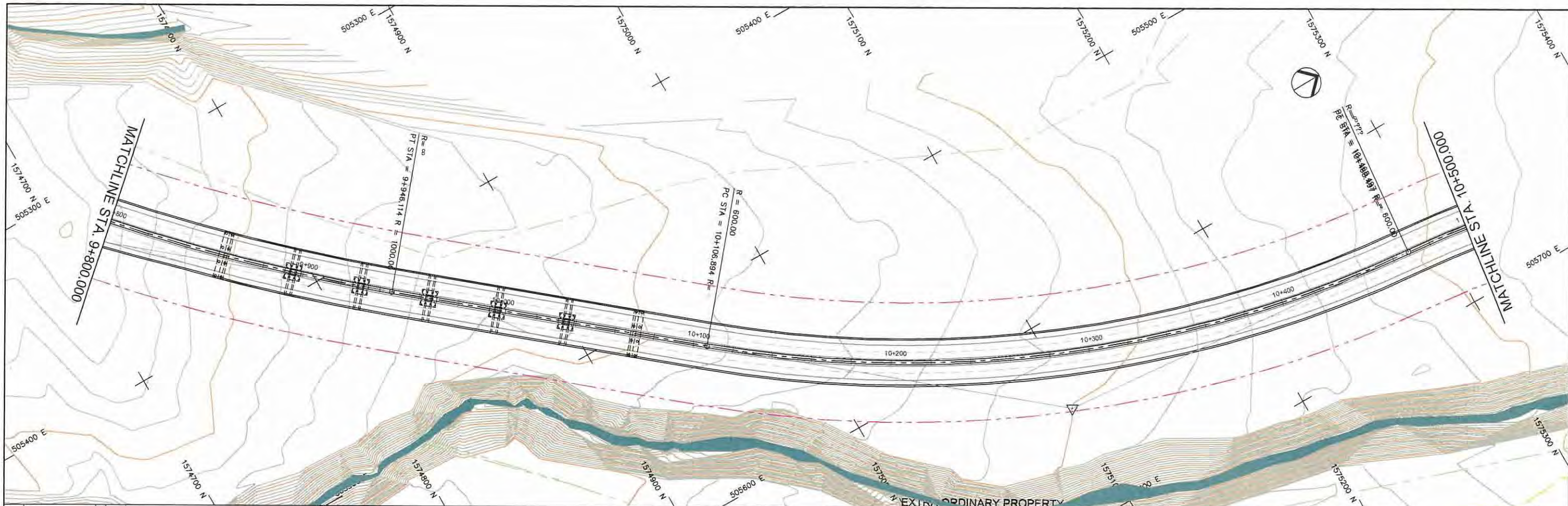
STATION	8+400	8+500	8+600	8+700	8+800	8+900	9+000	9+100
FINISHED GRADE ELEVATION	160.000	155.000	152.000	148.000	144.000	140.000	136.000	132.000
EXISTING GROUND ELEVATION	162.836	163.999	163.703	162.883	161.719	160.700	159.379	158.245
VERTICAL CURVATURE	S21		R=600.000 L=153.313		8+531.834			
HORIZONTAL CURVATURE								

Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
	V = 200 H = 2000	PLAN AND PROFILE STA. 8+400.000 - STA. 9+100.000	E - 13	
				SHEET NO. 13 OF 28



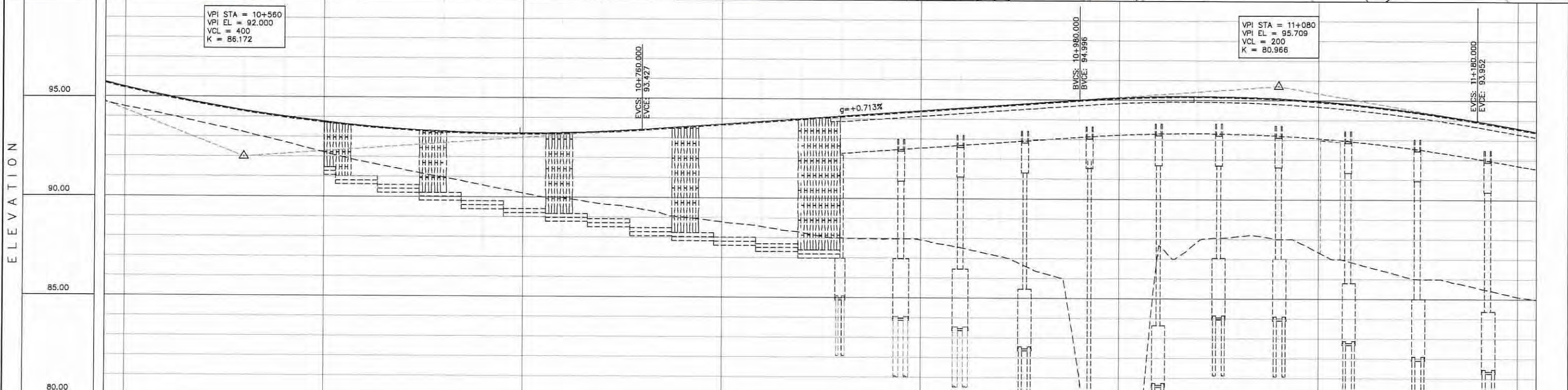
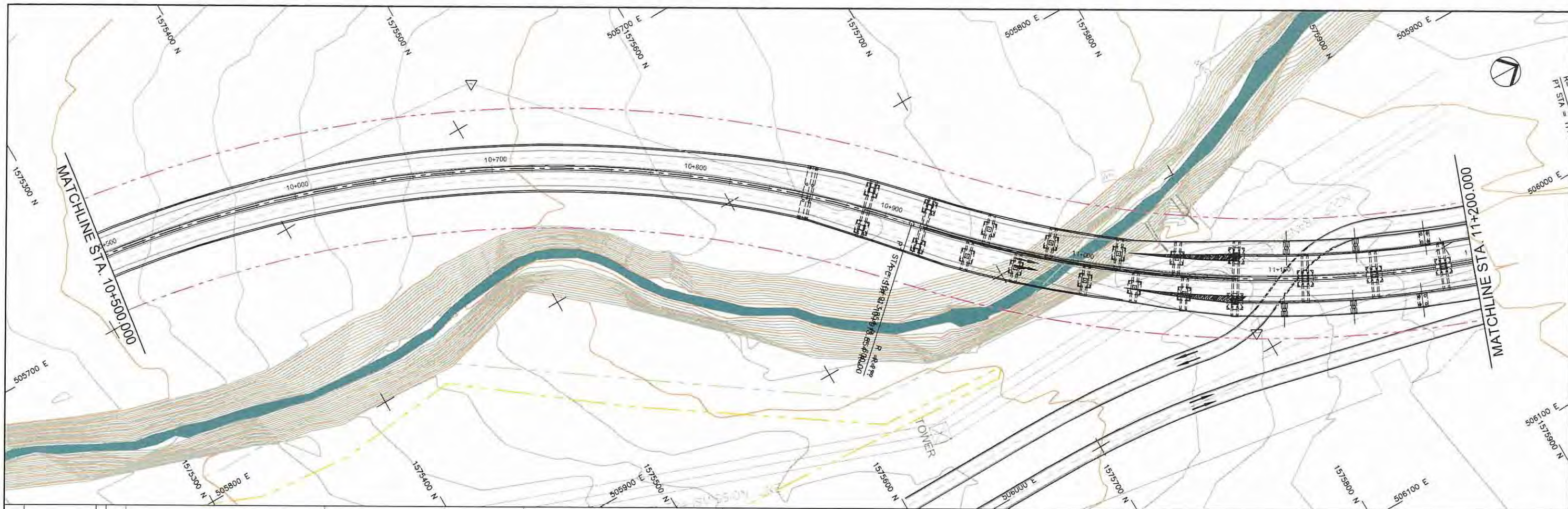
STATION	9+100	9+200	9+300	9+400	9+500	9+600	9+700	9+800
FINISHED GRADE ELEVATION	135.407	134.307	133.180	132.053	120.989	119.346	117.459	115.375
EXISTING GROUND ELEVATION	137.042	136.443	135.845	135.247	124.477	122.247	120.789	118.333
VERTICAL CURVATURE					g = -2.992%		R = 1000.000 L = 459.161	
HORIZONTAL CURVATURE								

PROJECT TITLE Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	SCALE V = 200 H = 2000	SHEET CONTENT PLAN AND PROFILE STA. 9+100.000 - STA. 9+800.000	DRAWING NO. E - 14
			SHEET NO. 14 OF 28



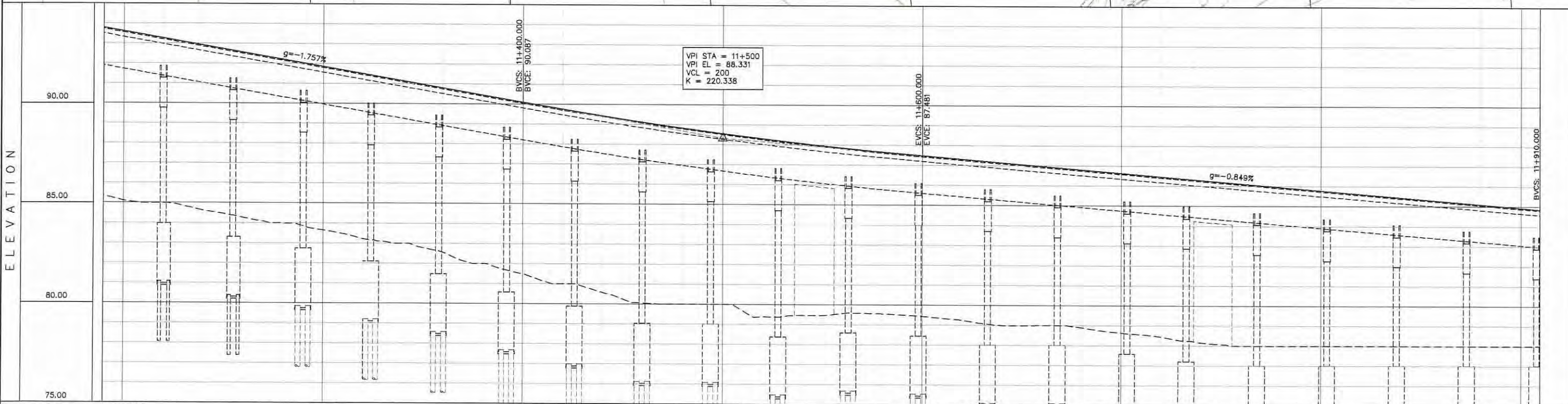
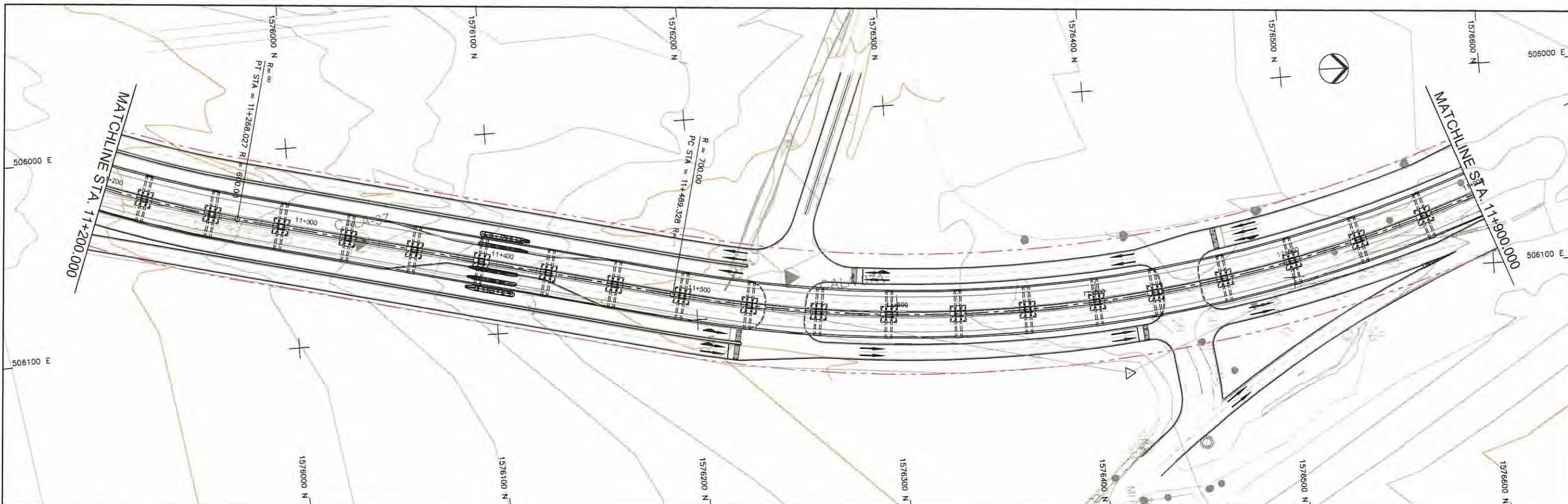
STATION	9+800	9+900	10+000	10+100	10+200	10+300	10+400	10+500
FINISHED GRADE ELEVATION	113.375	117.939	117.545	117.152	116.758	116.364	115.970	115.576
EXISTING GROUND ELEVATION	113.375	112.192	117.545	111.057	117.152	110.192	116.758	109.391
VERTICAL CURVATURE	9+946.114		10+106.894		R=600.000 L=361.603		10+468.497	
HORIZONTAL CURVATURE								

PROJECT TITLE Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	SCALE V = 200 H = 2000.	SHEET CONTENT PLAN AND PROFILE STA. 9+800.000 - STA. 10+500.000	DRAWING NO.
			E - 15
			SHEET NO.
			15 OF 28



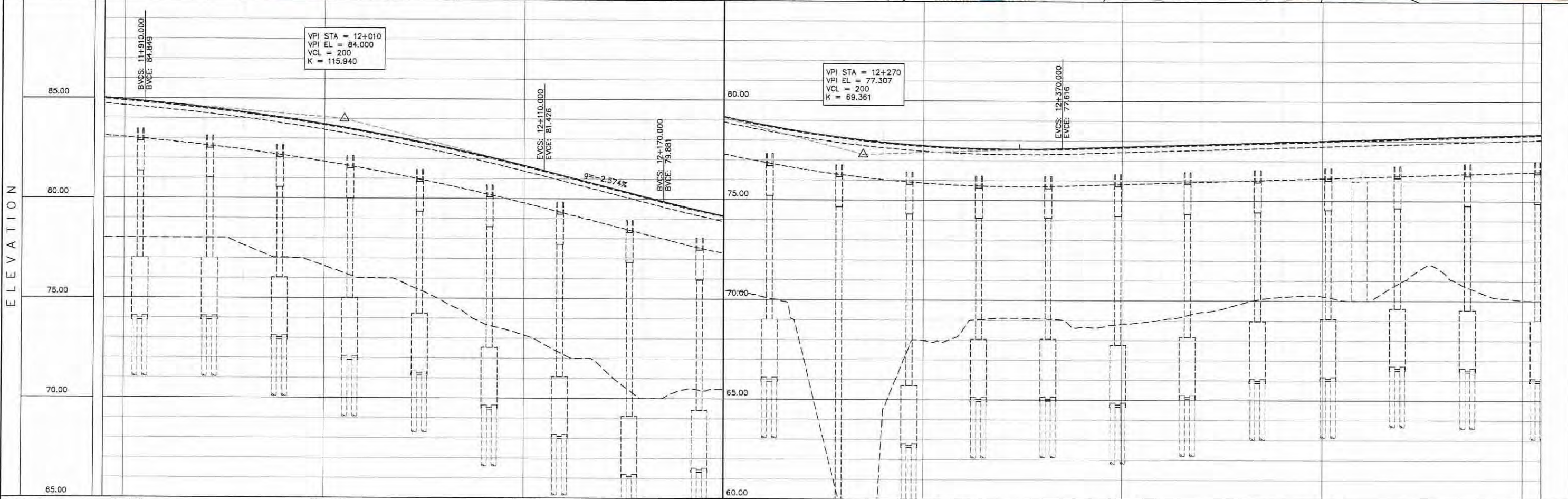
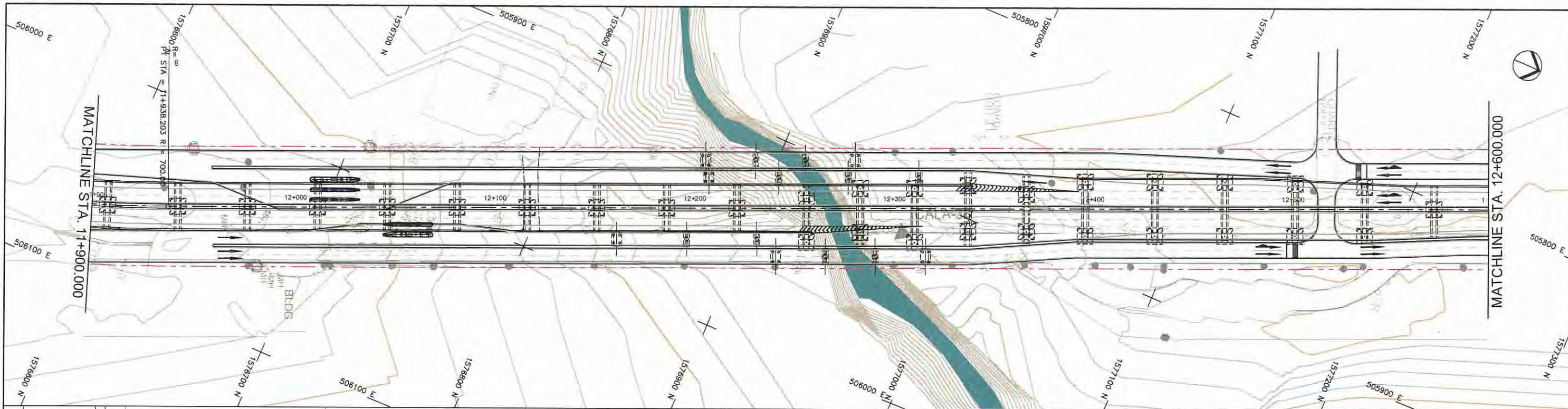
STATION	10+500	10+600	10+700	10+800	10+900	11+000	11+100	11+200
FINISHED GRADE ELEVATION	94.494	95.057	94.666	94.321	94.023	93.771	93.565	93.406
EXISTING GROUND ELEVATION	94.501	94.104	93.667	93.222	92.739	92.221	91.747	91.355
VERTICAL CURVATURE	R=600.000 L=445.357			R=600.000 L=445.357			R=600.000 L=354.173	
HORIZONTAL CURVATURE								

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 10+500.000 - STA. 11+200.000	E - 16
			SHEET NO.
			16 OF 28



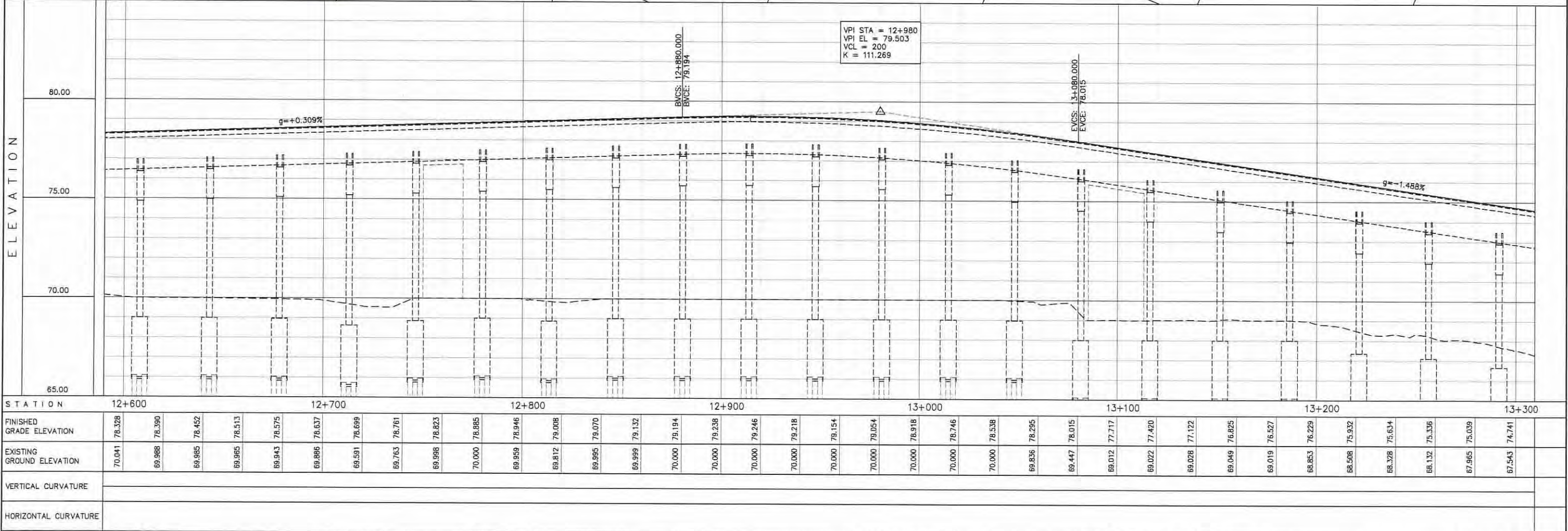
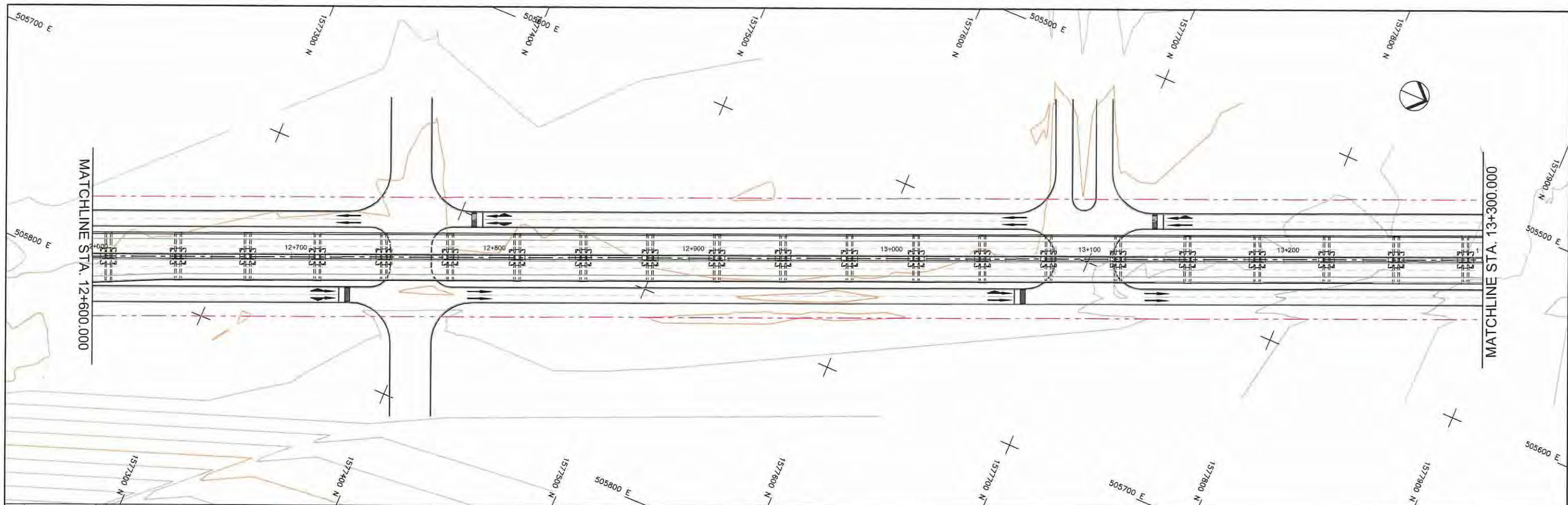
STATION	11+200	11+300	11+400	11+500	11+600	11+700	11+800	11+900
FINISHED GRADE ELEVATION	83.601	83.250	82.898	82.547	82.196	81.844	81.493	81.142
EXISTING GROUND ELEVATION	85.115	84.987	84.829	84.275	83.985	83.650	83.213	82.995
VERTICAL CURVATURE	11+268.027		11+489.328			R=700.000 L=448.875		
HORIZONTAL CURVATURE								

PROJECT TITLE Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	SCALE V = 200 H = 2000	SHEET CONTENT PLAN AND PROFILE STA. 11+200.000 - STA. 11+900.000	DRAWING NO. E - 17
			SHEET NO. 17 OF 28



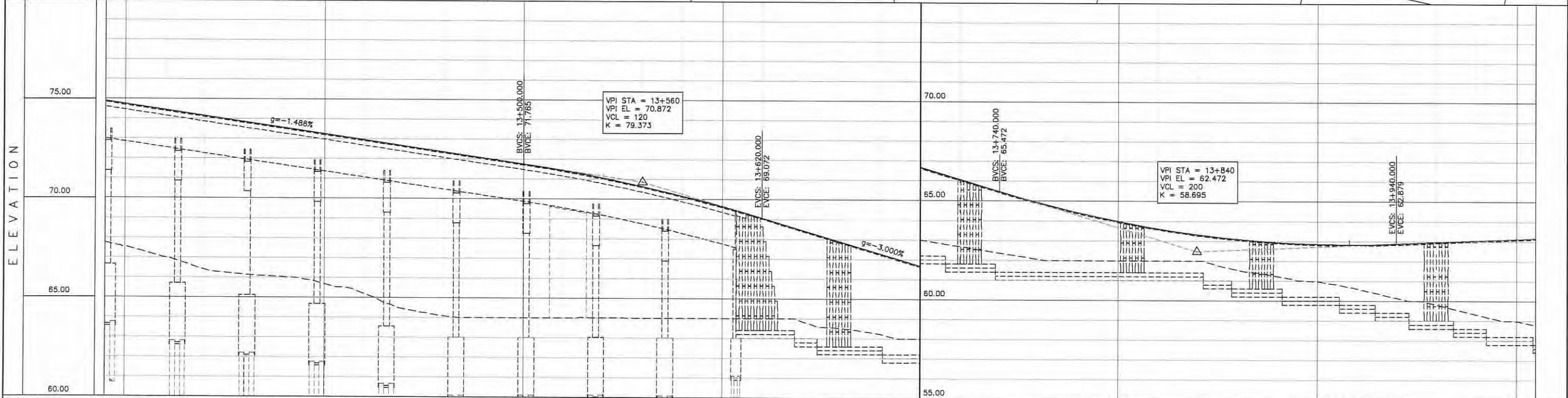
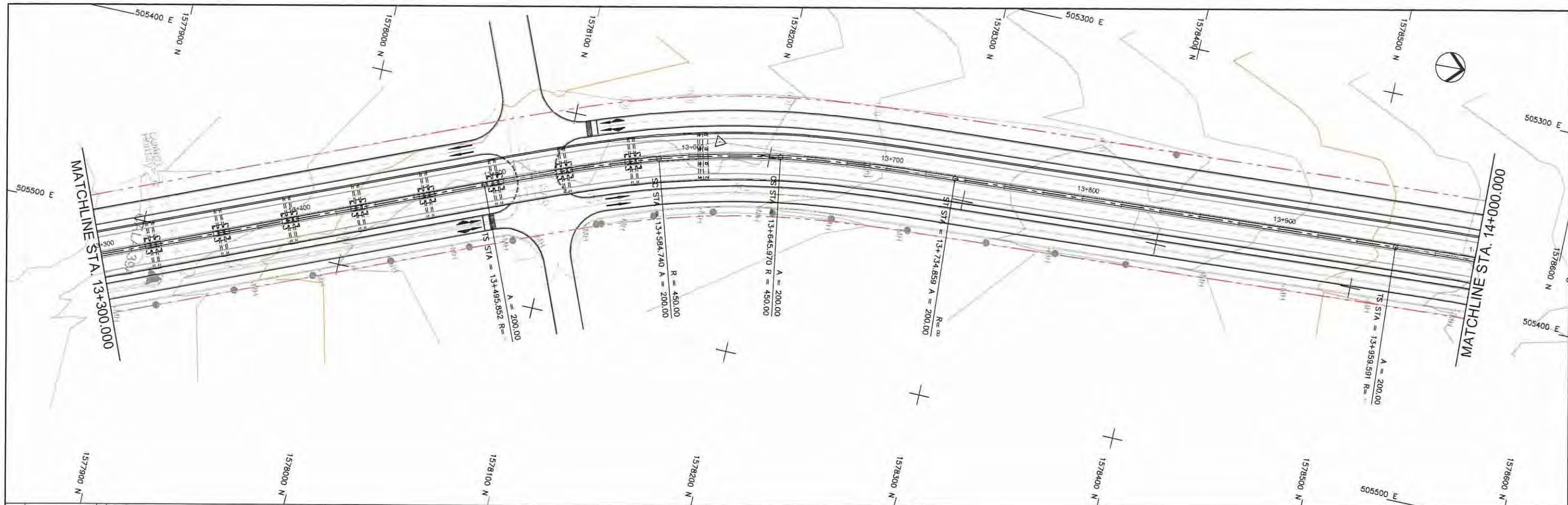
STATION	11+900	12+000	12+100	12+200	12+300	12+400	12+500	12+600
FINISHED GRADE ELEVATION	84.934	84.760	84.556	84.317	84.043	83.736	83.393	83.016
EXISTING GROUND ELEVATION	78.000	78.000	78.000	77.546	74.043	76.620	76.004	75.776
VERTICAL CURVATURE	11+936.203							
HORIZONTAL CURVATURE								

PROJECT TITLE Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	SCALE V = 200 H = 2000	SHEET CONTENT PLAN AND PROFILE STA. 11+900.000 - STA. 12+600.000	DRAWING NO.
			E - 18
			SHEET NO.
			18 OF 28



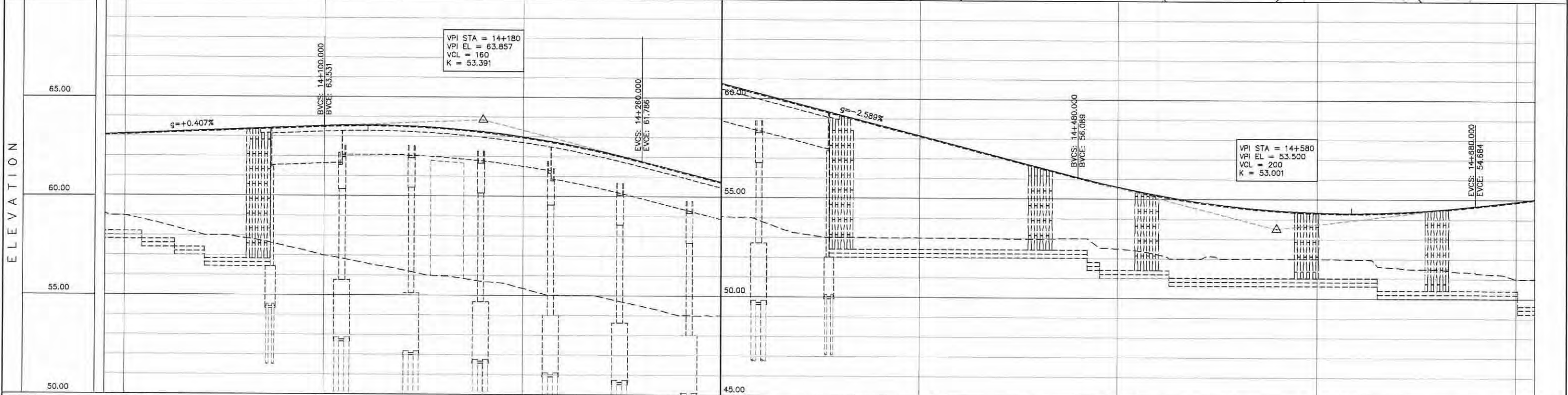
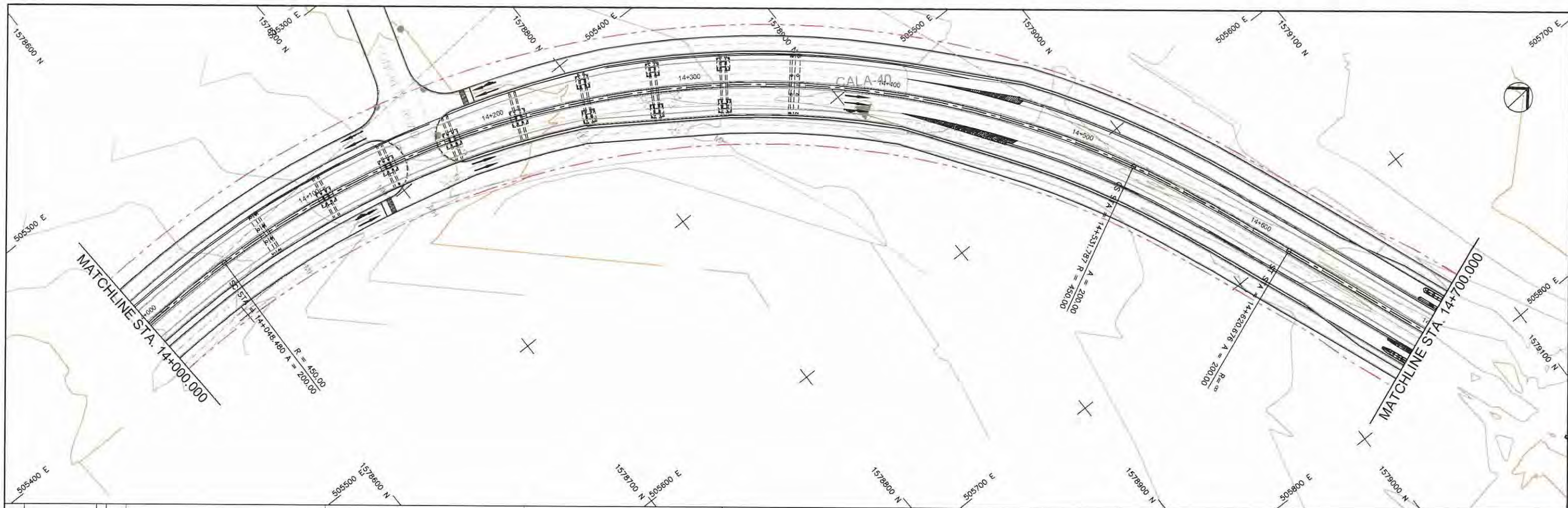
STATION	12+600	12+700	12+800	12+900	13+000	13+100	13+200	13+300
FINISHED GRADE ELEVATION	78.328	78.390	78.452	78.513	78.575	78.637	78.699	78.761
EXISTING GROUND ELEVATION	70.041	69.988	69.985	69.985	69.943	69.866	69.591	69.263
VERTICAL CURVATURE								
HORIZONTAL CURVATURE								

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 12+600.000 - STA. 13+300.000	E - 19
			SHEET NO.
			19 OF 28



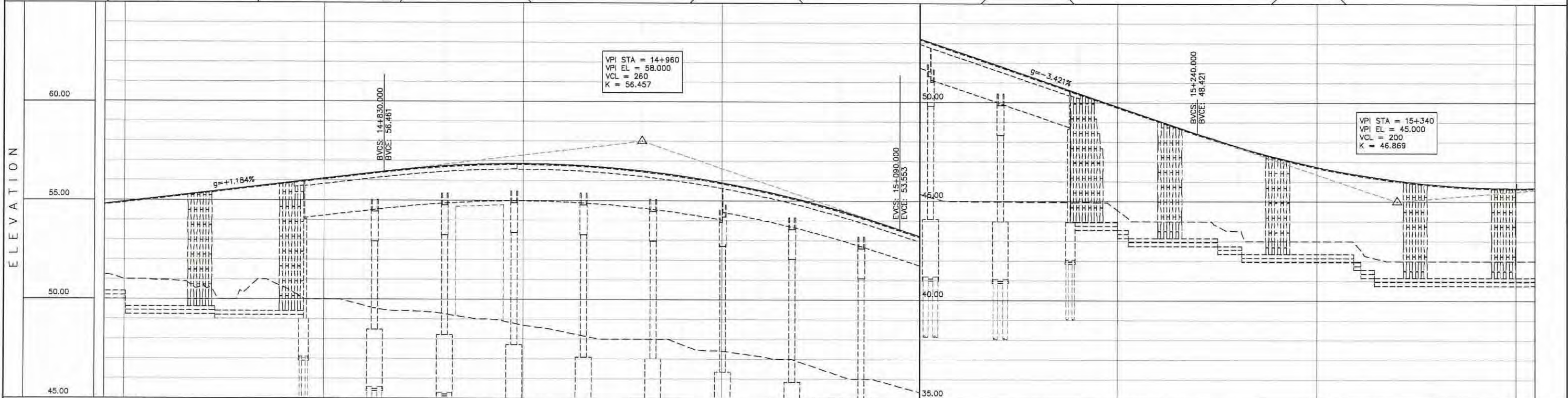
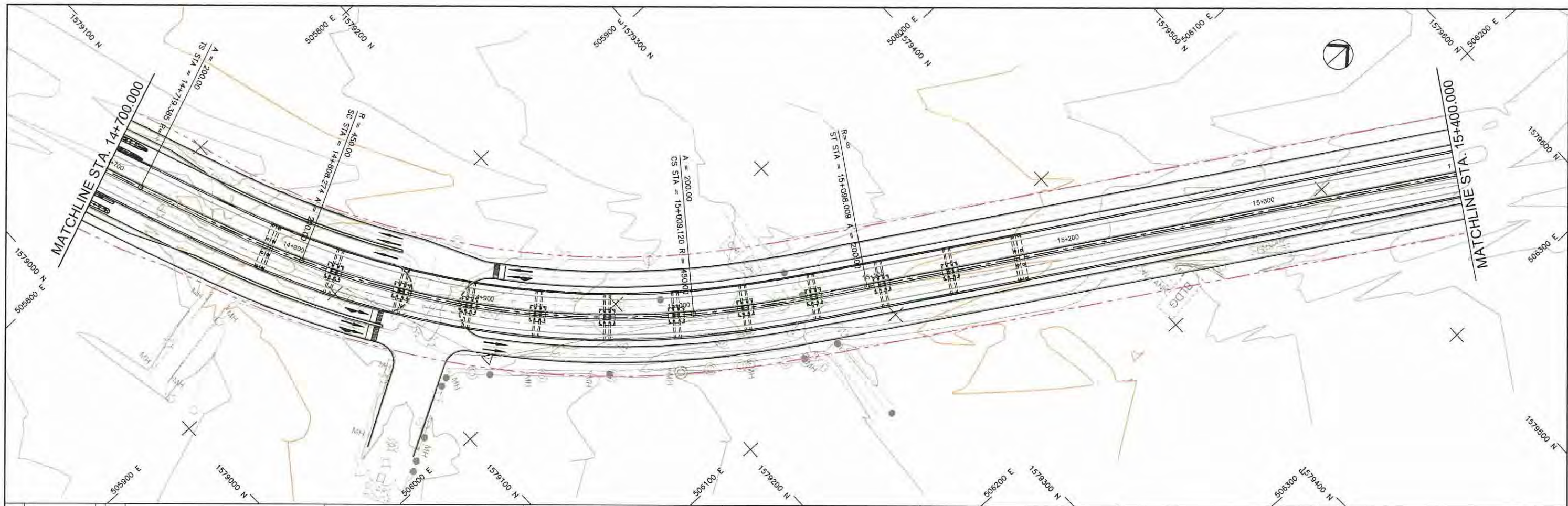
STATION	13+300	13+400	13+500	13+600	13+700	13+800	13+900	14+000
FINISHED GRADE ELEVATION	74.741	74.444	74.146	73.848	73.551	73.253	72.955	72.658
EXISTING GROUND ELEVATION	67.543	67.011	66.407	66.150	66.031	65.889	65.202	64.440
VERTICAL CURVATURE	$A=200$ $L=88.889m$ PS $13+584.740$ $R=450.000$ CS $13+645.970$ $R=450.000$ ST $13+734.859$ $R=200.000$ TS $13+939.591$ $R=200.000$ $A=200$ $L=88.889m$							
HORIZONTAL CURVATURE								

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 13+300.000 - STA. 14+000.000	E - 20
			SHEET NO.
			20 OF 28



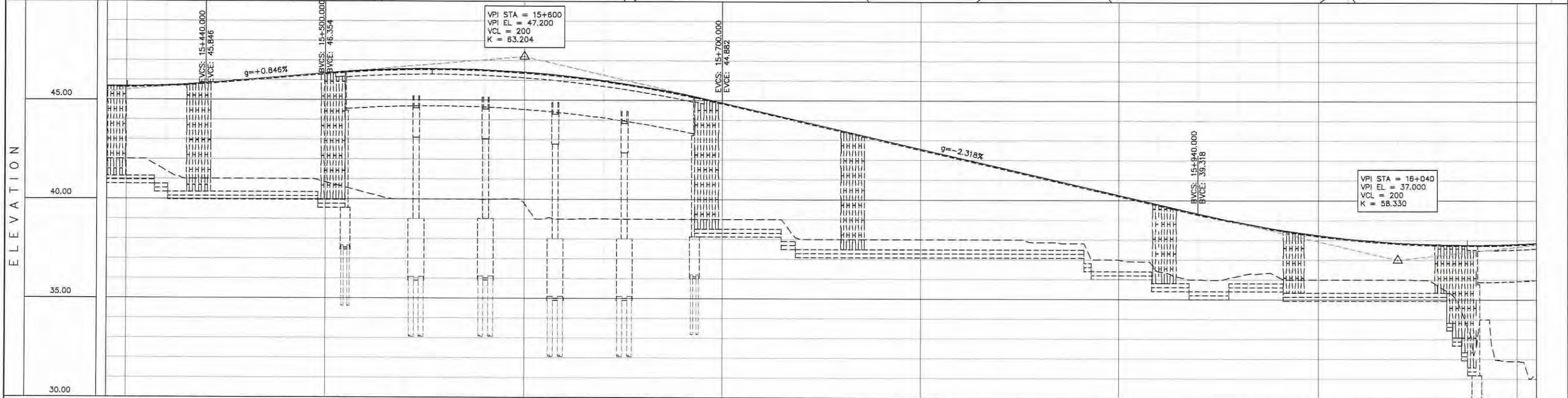
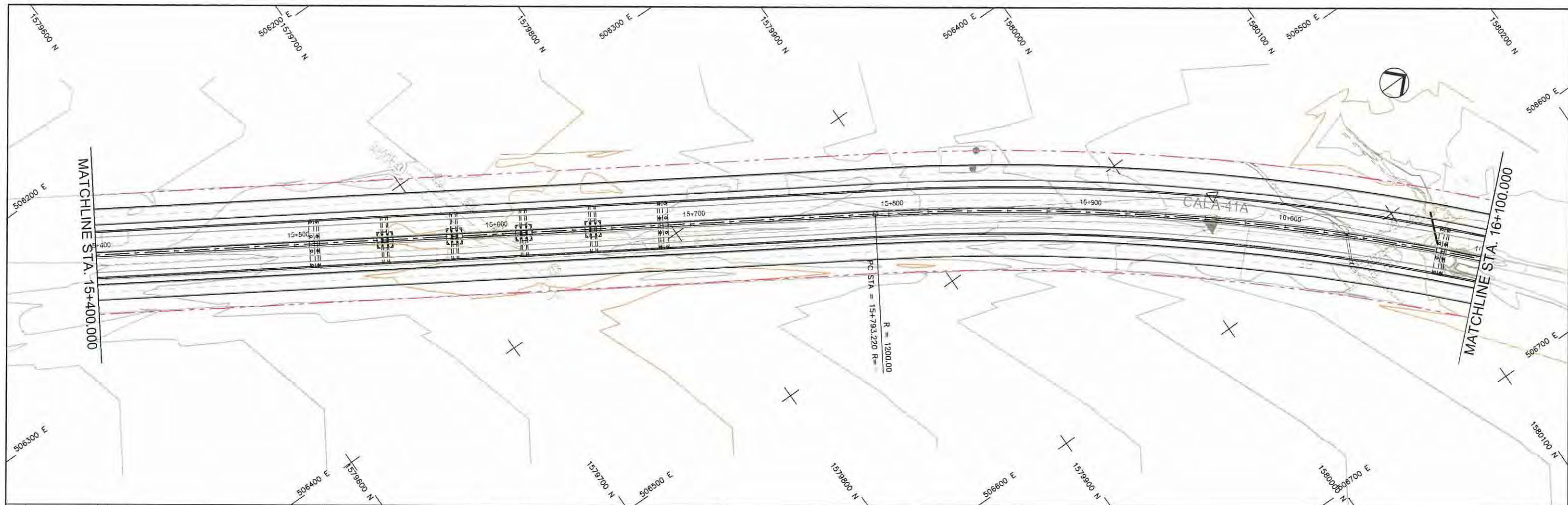
STATION	14+000	14+100	14+200	14+300	14+400	14+500	14+600	14+700
FINISHED GRADE ELEVATION	63.124	63.205	63.287	63.368	63.450	63.531	63.575	63.545
EXISTING GROUND ELEVATION	58.982	58.539	58.287	57.866	57.484	56.996	56.624	56.263
VERTICAL CURVATURE	200 L=88.889m		14+048.480 SC		R=450.000 L=483.308		14+531.787 CS	
HORIZONTAL CURVATURE								

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 14+000.000 - STA. 14+700.000	E - 21
			SHEET NO.
			21 OF 28



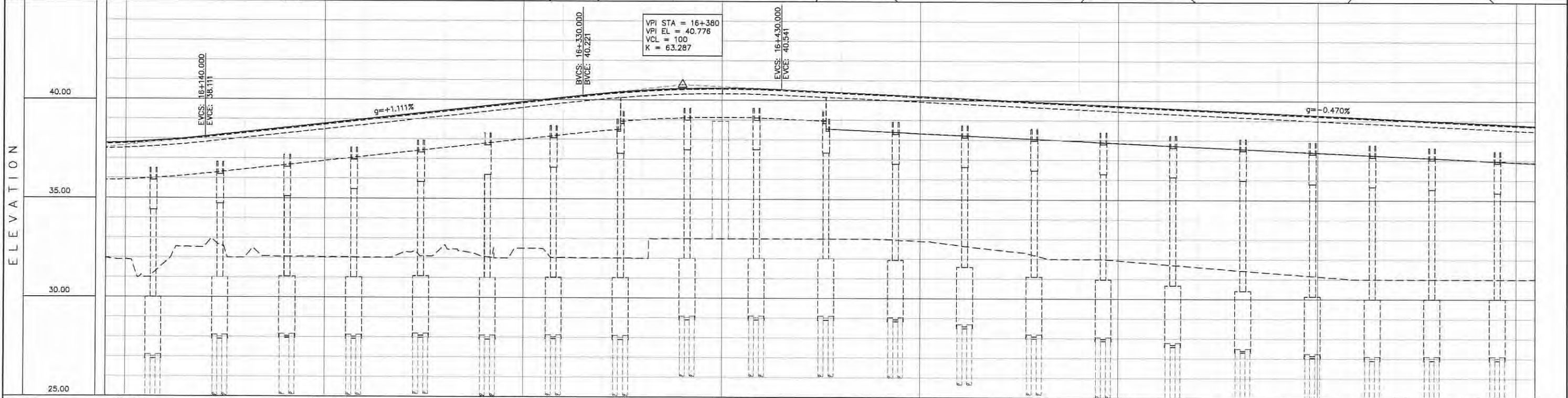
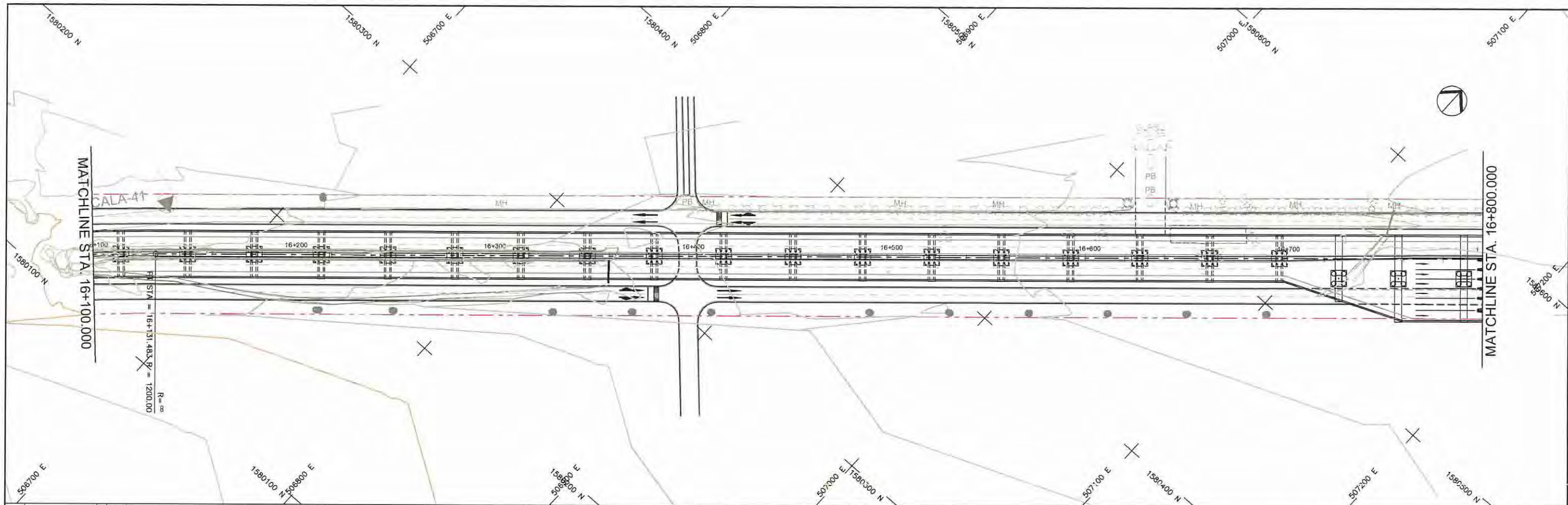
STATION	14+700	14+800	14+900	15+000	15+100	15+200	15+300	15+400
FINISHED GRADE ELEVATION	54.921	55.158	55.395	55.632	55.868	56.105	56.342	56.570
EXISTING GROUND ELEVATION	51.013	50.958	50.895	50.832	50.768	50.705	50.642	50.570
VERTICAL CURVATURE	CS A=200 L=88.889m		SC R=450.000 L=200.846	CS A=200 L=88.889m				
HORIZONTAL CURVATURE								

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 14+700.000 - STA. 15+400.000	E - 22
			SHEET NO.
			22 OF 28



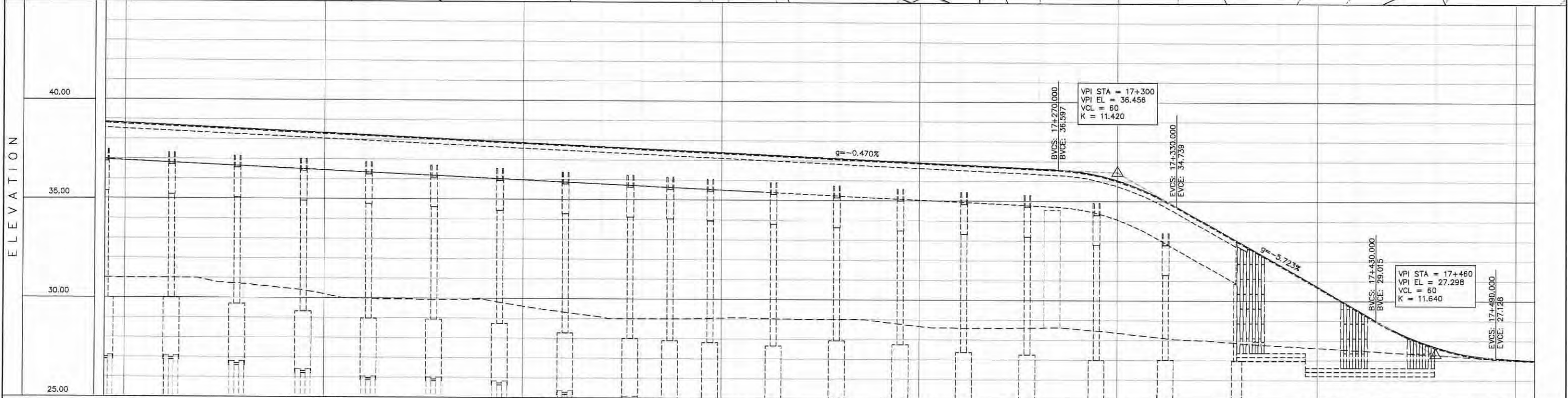
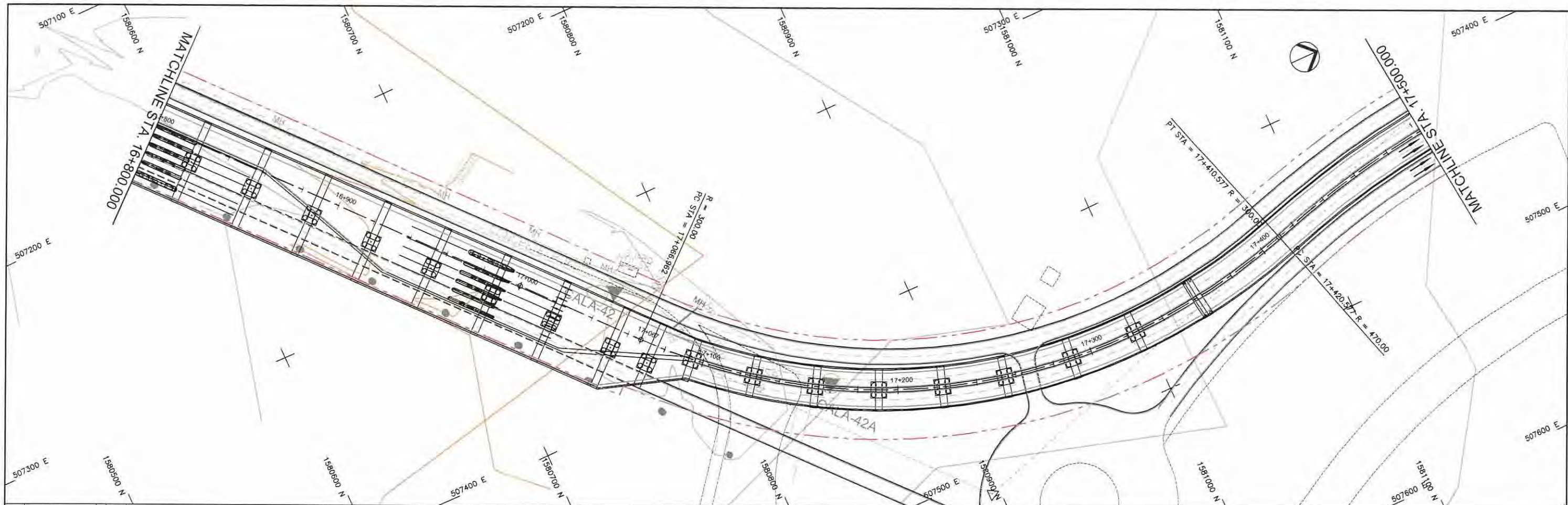
STATION	15+400	15+500	15+600	15+700	15+800	15+900	16+000	16+100
FINISHED GRADE ELEVATION	45.678	45.720	45.846	46.015	46.185	46.354	46.491	46.566
EXISTING GROUND ELEVATION	42.000	41.418	41.000	41.000	41.000	40.850	40.327	39.999
VERTICAL CURVATURE	R=1200.000 L=338.263							
HORIZONTAL CURVATURE	R=1200.000 L=338.263							

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 15+400.000 - STA. 16+100.000	E - 23
			SHEET NO.
			23 OF 28



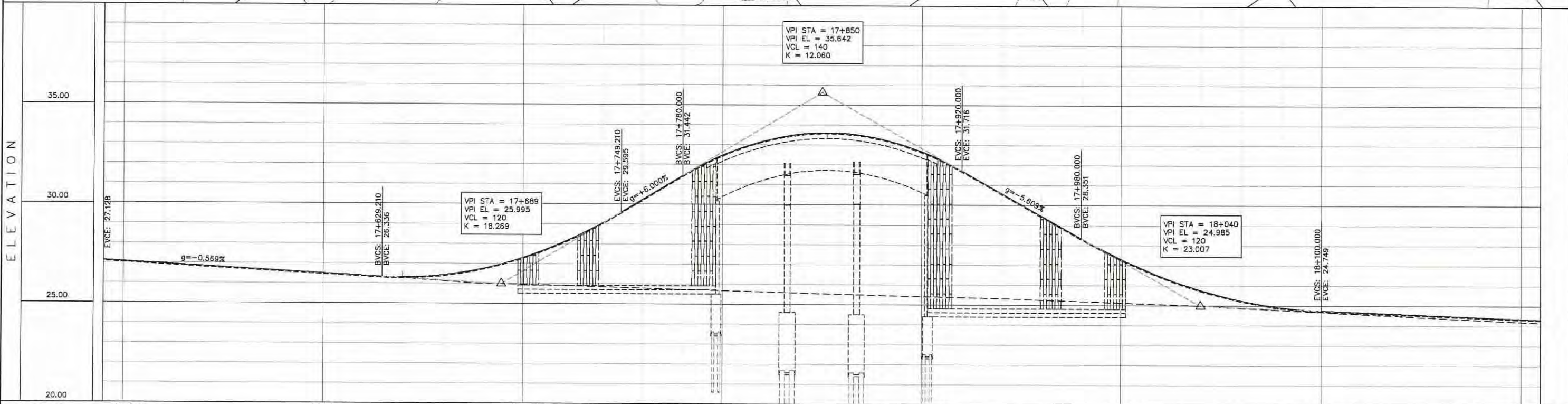
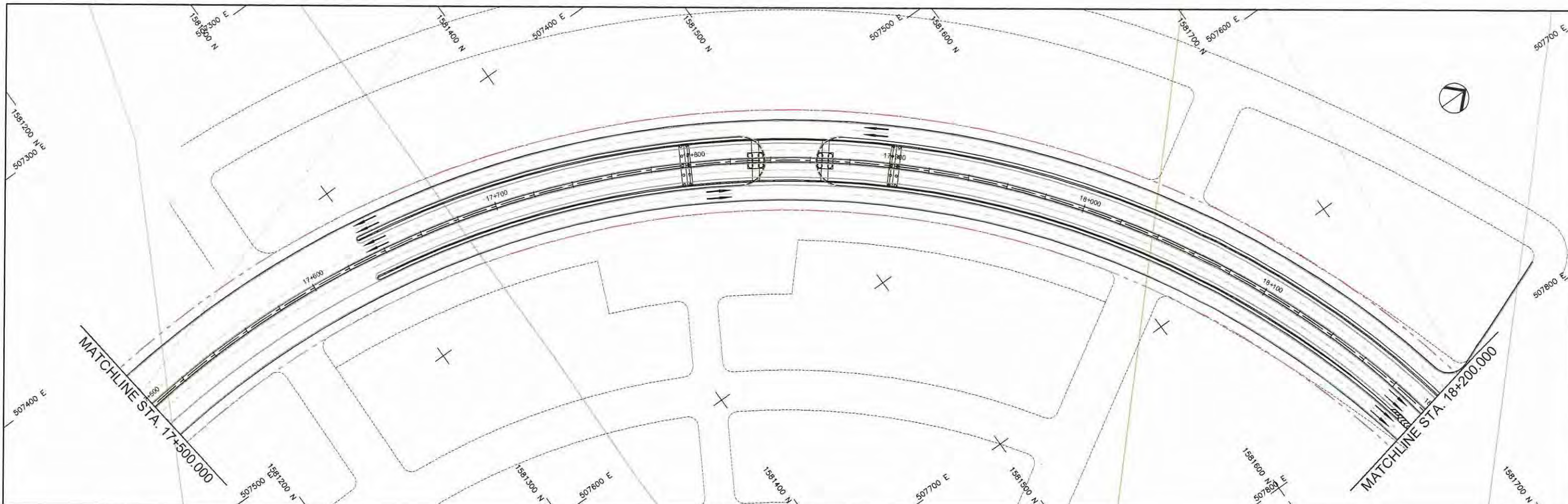
STATION	16+100	16+200	16+300	16+400	16+500	16+600	16+700	16+800
FINISHED GRADE ELEVATION	37.803	37.923	38.111	38.333	38.555	38.777	38.999	39.221
EXISTING GROUND ELEVATION	31.908	31.745	32.588	32.006	32.052	32.036	32.019	32.294
VERTICAL CURVATURE	16+131.483							
HORIZONTAL CURVATURE								

PROJECT TITLE Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	SCALE V = 200 H = 2000	SHEET CONTENT PLAN AND PROFILE STA. 16+100.000 - STA. 16+800.000	DRAWING NO.
			E - 24
			SHEET NO.
			24 OF 28



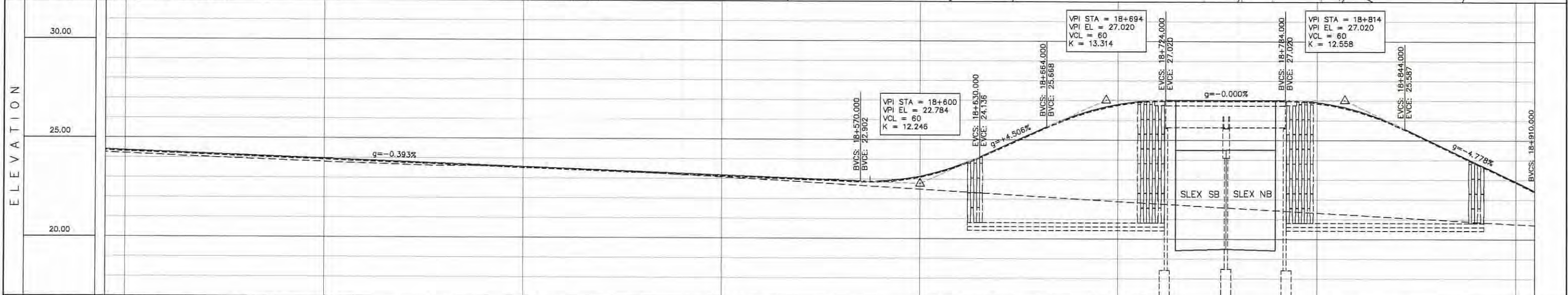
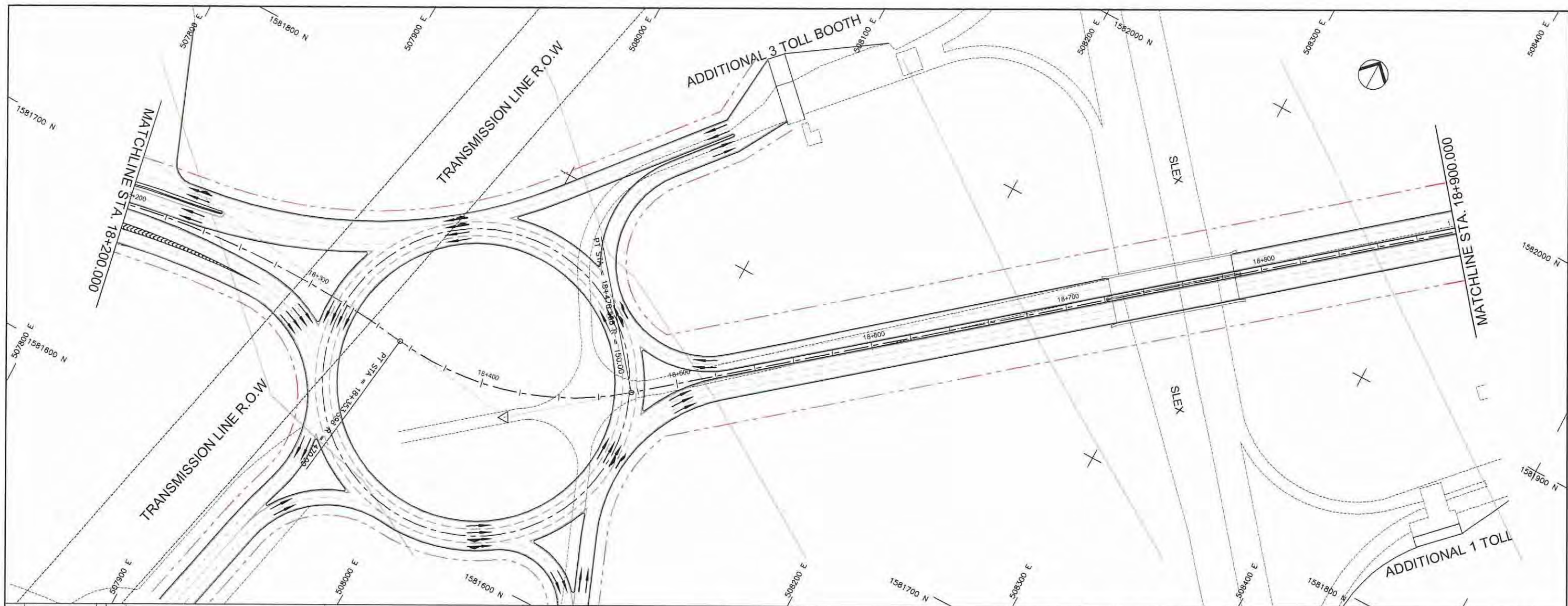
STATION	16+800	16+900	17+000	17+100	17+200	17+300	17+400	17+500
FINISHED GRADE ELEVATION	38.804	38.710	38.616	38.522	38.428	38.334	38.240	38.147
EXISTING GROUND ELEVATION	31.000	30.999	30.918	30.898	30.822	30.701	29.983	29.947
VERTICAL CURVATURE	17+046.332				17+066.963		17+410.577	
HORIZONTAL CURVATURE					R=299.999 L=343.614			

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 16+800.000 - STA. 17+500.00	E - 25
			SHEET NO.
			25 OF 28



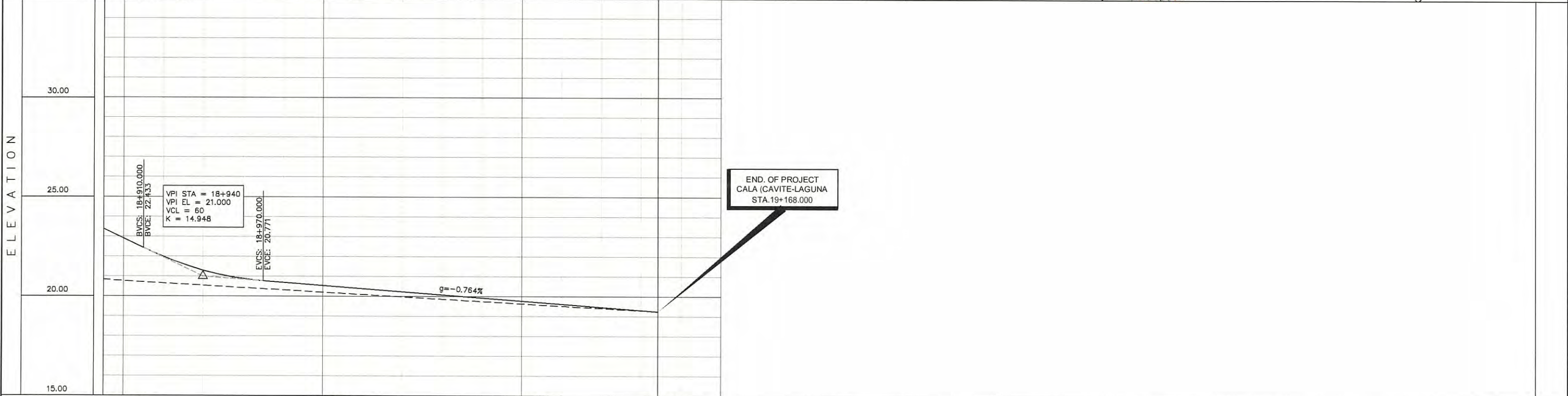
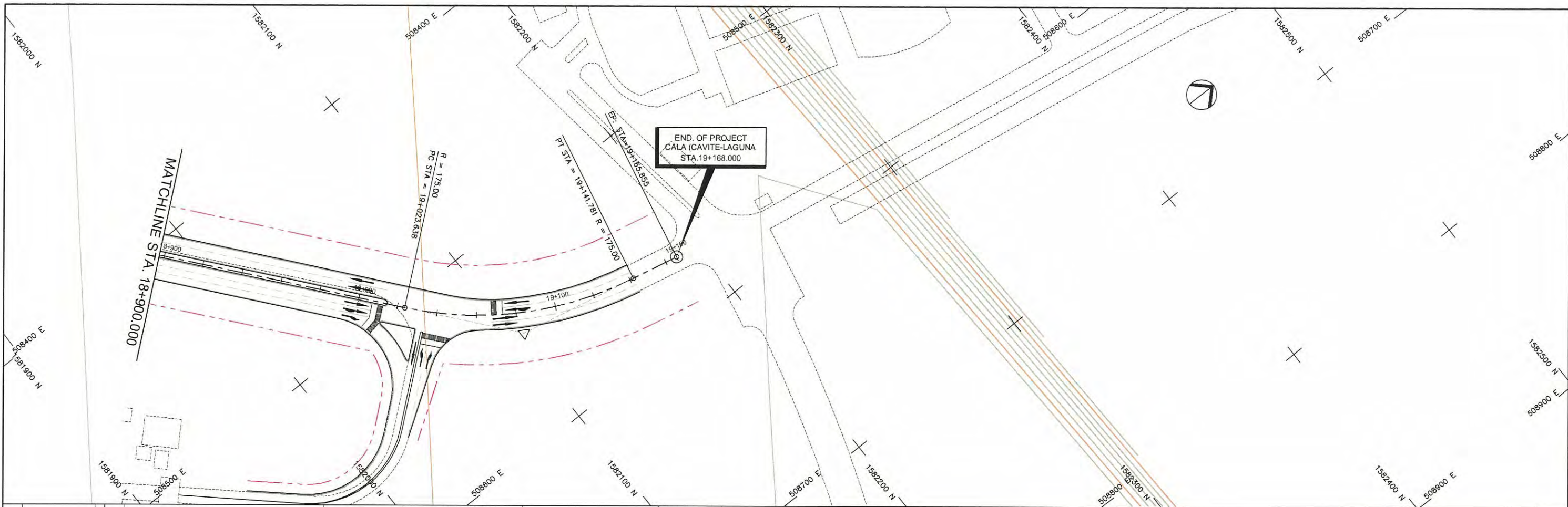
STATION	17+500	17+600	17+700	17+800	17+900	18+000	18+100	18+200
FINISHED GRADE ELEVATION	27.071	26.957	26.843	26.730	26.616	26.502	26.387	26.273
EXISTING GROUND ELEVATION	27.055	26.947	26.839	26.730	26.618	26.503	26.387	26.273
VERTICAL CURVATURE	R=470.000 L=960.629							
HORIZONTAL CURVATURE								

Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
	V = 200 H = 2000	PLAN AND PROFILE	STA. 17+500.000 - STA. 18+200.00	E - 26
				SHEET NO. 26 OF 28



STATION	18+200	18+300	18+400	18+500	18+600	18+700	18+800	18+900					
FINISHED GRADE ELEVATION	24.356 24.120 24.199 23.954 24.120 23.876 24.042	23.963 23.885 23.806 23.614 23.727 23.601 23.649	23.570 23.487 23.405 23.330 23.334 23.192 23.256 23.084 23.177 22.975 23.088 22.862 23.020 22.741 22.941 22.619 22.903 22.498 23.151 22.377 23.726 22.256 24.586 22.134 25.488 22.013 26.293 21.889 26.804 21.786 27.014 21.673 27.020 21.580 27.020 21.447 27.020 21.335 26.918 21.222 26.504 21.108 25.771 20.996 24.822 20.883 23.867 20.770 22.911 20.657 21.969	EXISTING GROUND ELEVATION	VERTICAL CURVATURE	18+371.206							
HORIZONTAL CURVATURE													

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	V = 200 H = 2000	PLAN AND PROFILE STA. 18+200.000 - STA. 18+900.000	E - 27
			SHEET NO.
			27 OF 28



STATION	18+900	18+910	18+920	18+930	18+940	18+950	18+960	18+970	18+980	18+990	19+000	19+010	19+020	19+030	19+040	19+050	19+060	19+070	19+080	19+090	19+100	19+110	19+120	19+130	19+140	19+150	19+160	19+168	
FINISHED GRADE ELEVATION																													
EXISTING GROUND ELEVATION	22.911	21.989	21.301	20.881	20.684	20.542	20.389	20.236	20.083	19.930	19.778	19.625	19.472	19.319	19.254														
VERTICAL CURVATURE	20.770	20.657	20.544	20.431	20.318	20.205	20.092	19.979	19.863	19.746	19.630	19.517	19.407	19.300	19.254														
HORIZONTAL CURVATURE											19+026.278																		
											R=175.000 L=118.143																		

PROJECT TITLE Preparatory survey for expressway project in Mega Manila Region CALA (CAVITE - LAGUNA)	SCALE V = 200 H = 2000	SHEET CONTENT PLAN AND PROFILE STA. 18+900.000 - STA. 19+168.000	DRAWING NO. E - 28
			SHEET NO. 28 OF 28