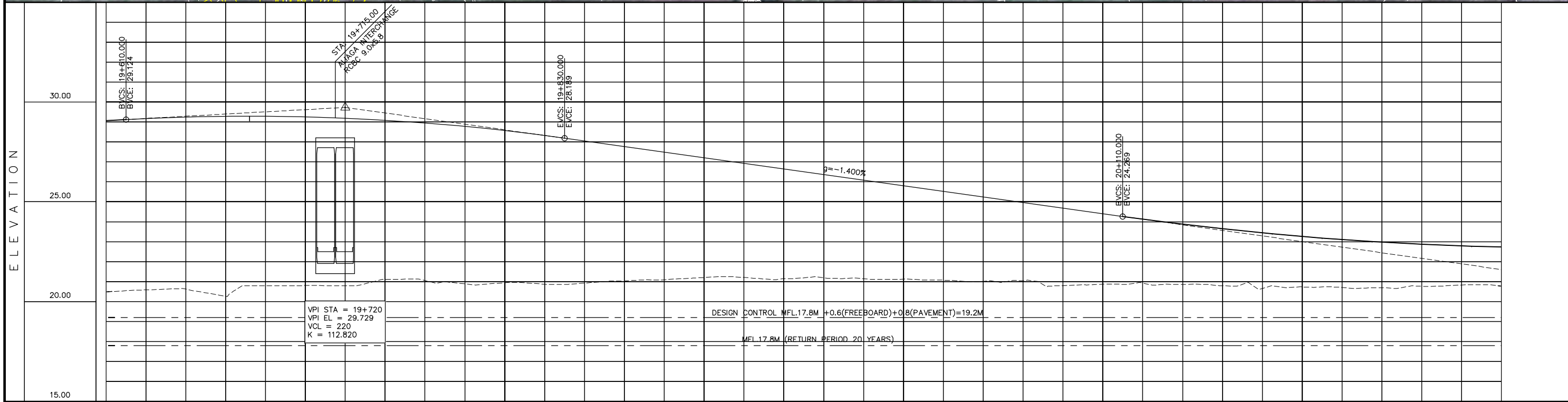


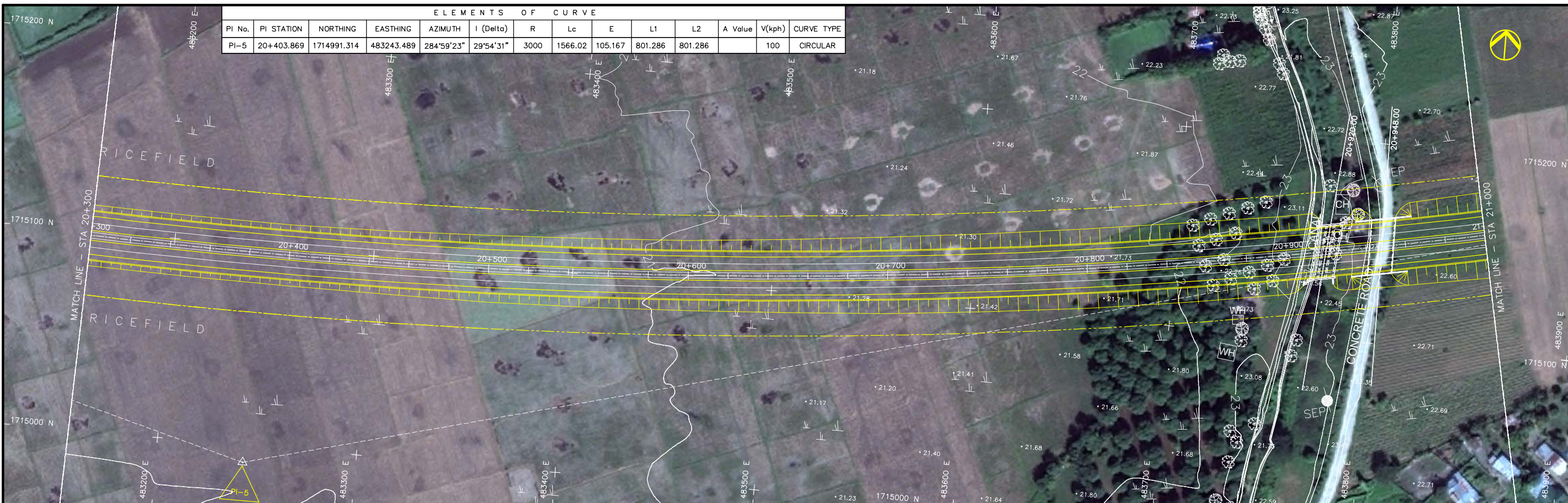
STATION	18+900	19+000	19+100	19+200	19+300	19+400	19+500	19+600																										
FINISHED GRADE ELEVATION	21.719																																	
EXISTING GROUND ELEVATION	19.582	19.677	19.709	19.749	19.778	19.816	19.858	19.930	20.011	20.002	19.997	20.046	20.092	20.112	20.078	20.101	20.258	20.300	20.426	20.519	20.502	20.599	21.160	20.165	20.284	20.311	20.349	20.171	20.063	20.334	20.325	20.274	20.441	20.495
VERTICAL CURVATURE			+1.264% L=440.000																															
HORIZONTAL CURVATURE									R=2000.000 L=2196.136																									

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region <b>CLLEX ( TARLAC - CABANATUAN )</b>	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 18+900.000-STA 19+600.000	E-28 SHEET NO. 28 OF 44

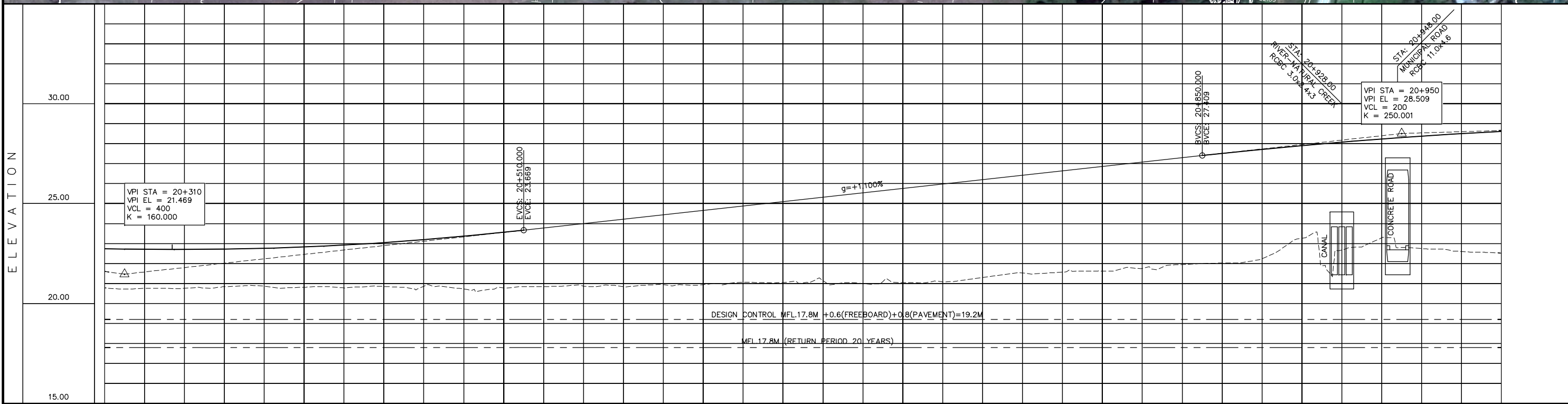


STATION	19+600	19+700	19+800	19+900	20+000	20+100	20+200	20+300
FINISHED GRADE ELEVATION	29.069	29.175	29.249	29.288	29.292	29.260	29.193	29.090
EXISTING GROUND ELEVATION	20.495	20.589	20.629	20.271	20.798	20.804	20.792	21.113
VERTICAL CURVATURE	VPI STA = 19+720 VPI EL = 29.729 VCL = 220 K = 112.820				DESIGN CONTROL MFL 17.8M + 0.6(FREEBOARD) + 0.8(PAVEMENT) = 19.2M		MFL 17.8M (RETURN PERIOD 20 YEARS)	
HORIZONTAL CURVATURE	R=3000.000 L=1566.015							

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CLLEX ( TARLAC - CABANATUAN )	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 19+600.000-STA 20+300.000	E-29 SHEET NO. 29 OF 44



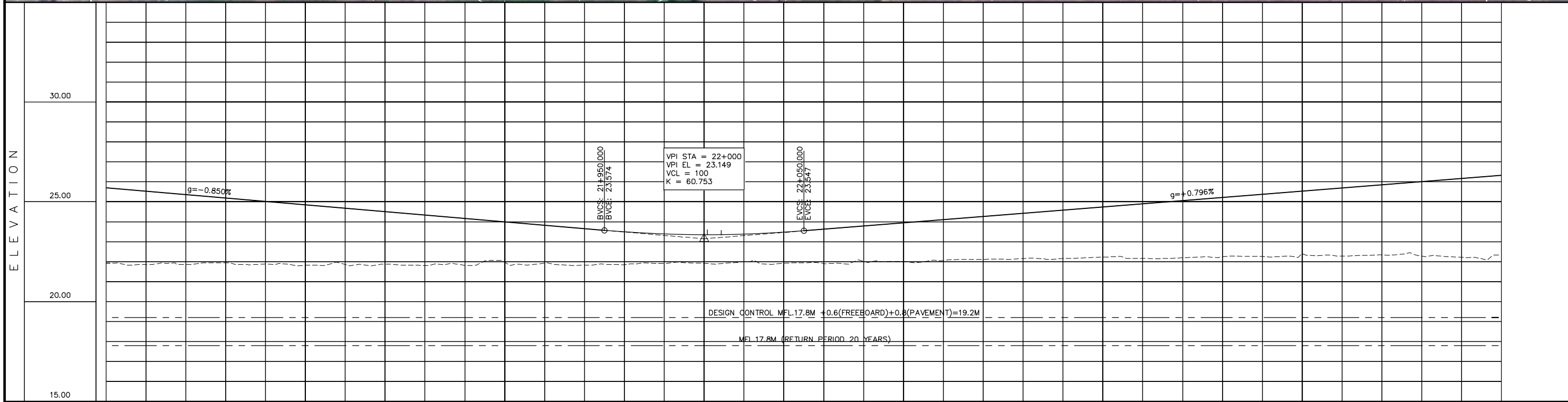
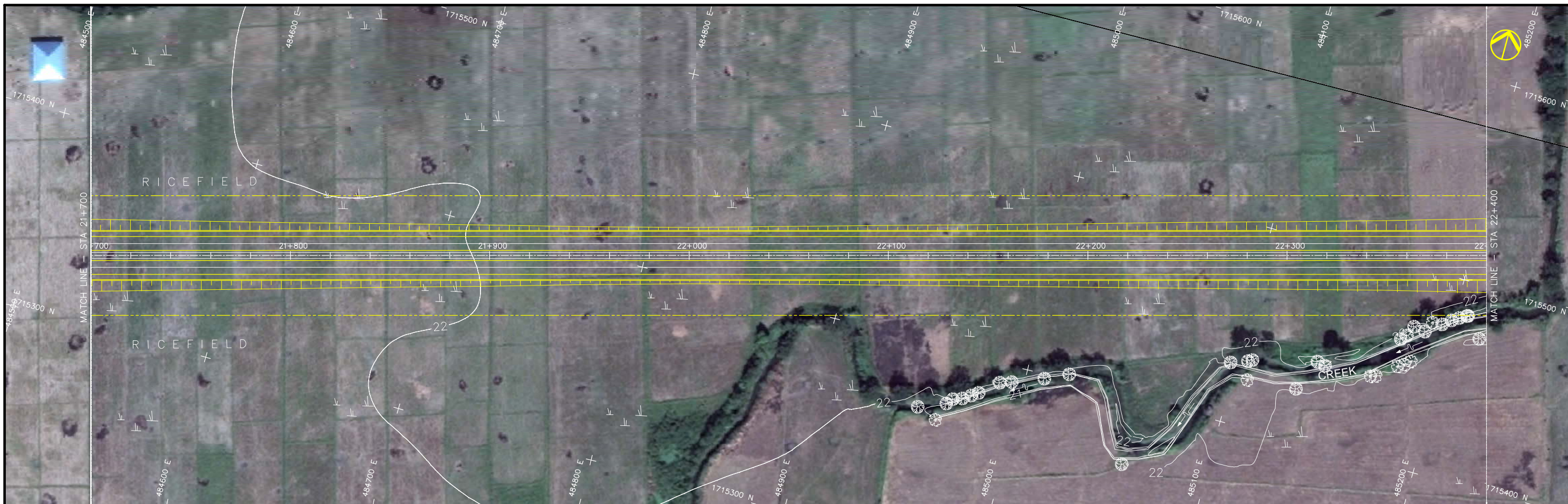
ELEMENTS OF CURVE													
PI No.	PI STATION	NORTHING	EASTING	AZIMUTH	I (Delta)	R	Lc	E	L1	L2	A Value	V(kph)	CURVE TYPE
PI-5	20+403.869	1714991.314	483243.489	284°59'23"	29°54'31"	3000	1566.02	105.167	801.286	801.286		100	CIRCULAR



STATION	20+300	20+400	20+500	20+600	20+700	20+800	20+900	21+000
FINISHED GRADE ELEVATION	22.737	22.702	22.767	22.837	22.907	22.977	23.047	23.117
EXISTING GROUND ELEVATION	20.781	20.765	20.799	20.844	20.873	20.853	20.863	20.839
VERTICAL CURVATURE	+1.469 K=160.000				+1.100 L=340.000		+1.000 L=340.000	
HORIZONTAL CURVATURE	R=3000.000 L=1566.015							

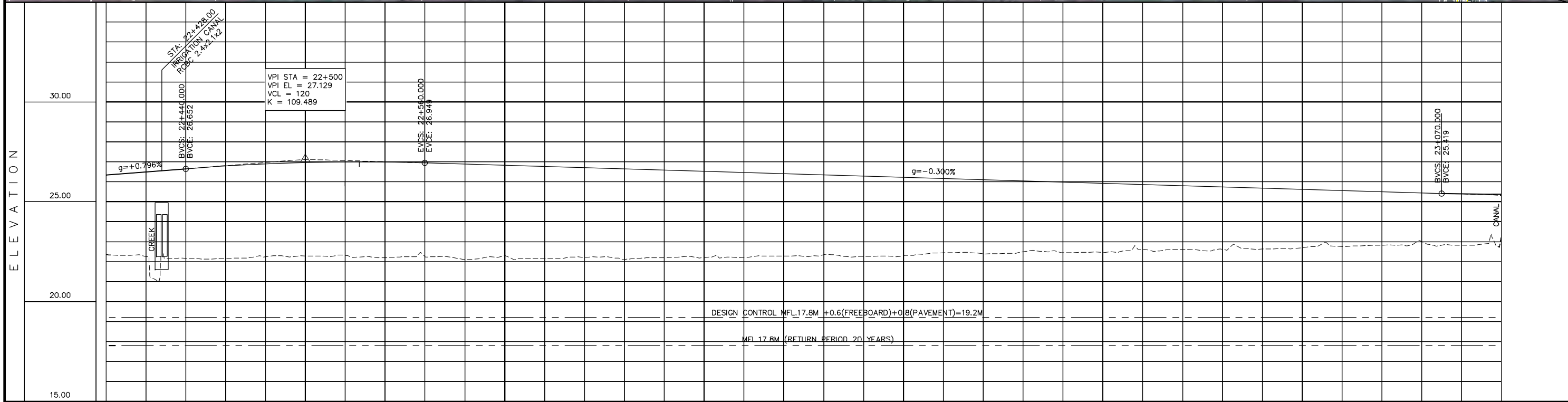
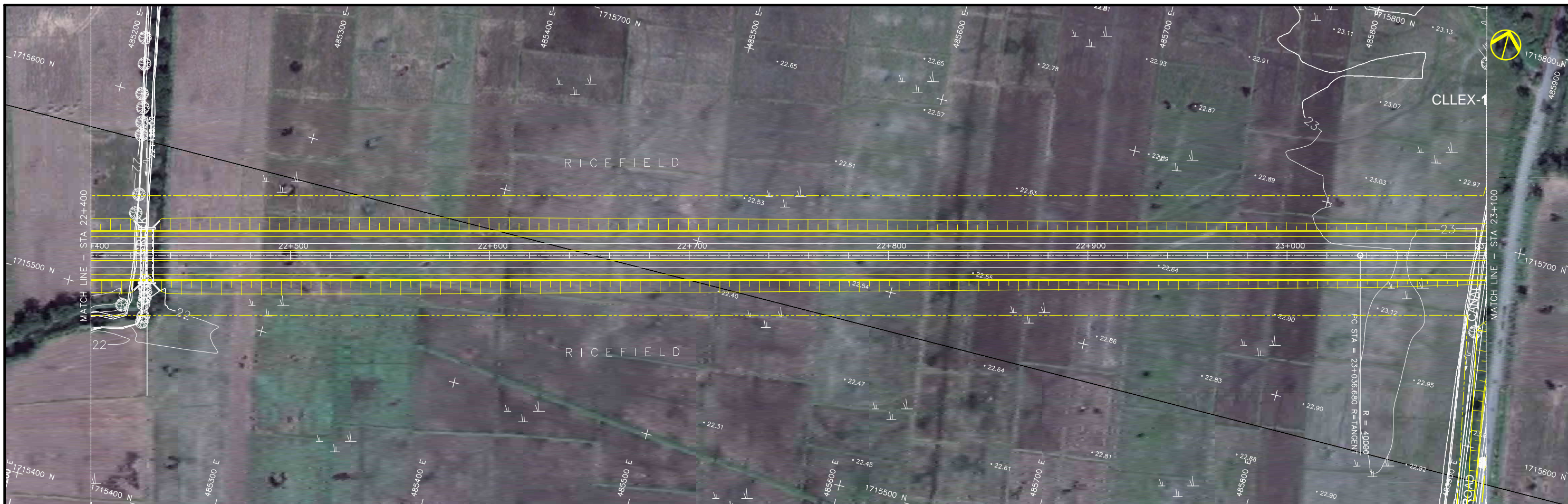
PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region <b>CLLEX ( TARLAC - CABANATUAN )</b>	V = 200 H = 2000	<b>PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE</b> STA 20+300.000-STA 21+000.000	E-30 SHEET NO. 30 OF 44





STATION	21+700	21+800	21+900	22+000	22+100	22+200	22+300	22+400																																																																
FINISHED GRADE ELEVATION	21.925	25.699	21.856	25.529	21.860	25.359	21.945	25.189	21.899	25.019	21.828	24.849	21.860	24.679	21.872	24.509	21.813	24.339	21.820	24.169	21.983	23.999	21.932	23.829	21.826	23.659	21.853	23.497	21.908	23.393	21.922	23.355	21.995	23.382	21.921	23.476	21.912	23.627	22.020	23.786	22.012	23.945	22.053	24.104	22.123	24.263	22.165	24.423	22.160	24.582	22.230	24.741	22.164	24.900	22.202	25.059	22.256	25.219	22.268	25.378	22.398	25.537	22.291	25.696	22.338	25.856	22.280	26.015	22.220	26.174	22.346	26.333
EXISTING GROUND ELEVATION	21.925	25.699	21.856	25.529	21.860	25.359	21.945	25.189	21.899	25.019	21.828	24.849	21.860	24.679	21.872	24.509	21.813	24.339	21.820	24.169	21.983	23.999	21.932	23.829	21.826	23.659	21.853	23.497	21.908	23.393	21.922	23.355	21.995	23.382	21.921	23.476	21.912	23.627	22.020	23.786	22.012	23.945	22.053	24.104	22.123	24.263	22.165	24.423	22.160	24.582	22.230	24.741	22.164	24.900	22.202	25.059	22.256	25.219	22.268	25.378	22.398	25.537	22.291	25.696	22.338	25.856	22.280	26.015	22.220	26.174	22.346	26.333
VERTICAL CURVATURE	-0.850% L=640.000		R=∞																+0.796% L=390.000																																																					
HORIZONTAL CURVATURE	R=∞																																																																							

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CLLEX ( TARLAC - CABANATUAN )	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 21+700.000-STA 22+400.000	E-32
			SHEET NO. 32 OF 44

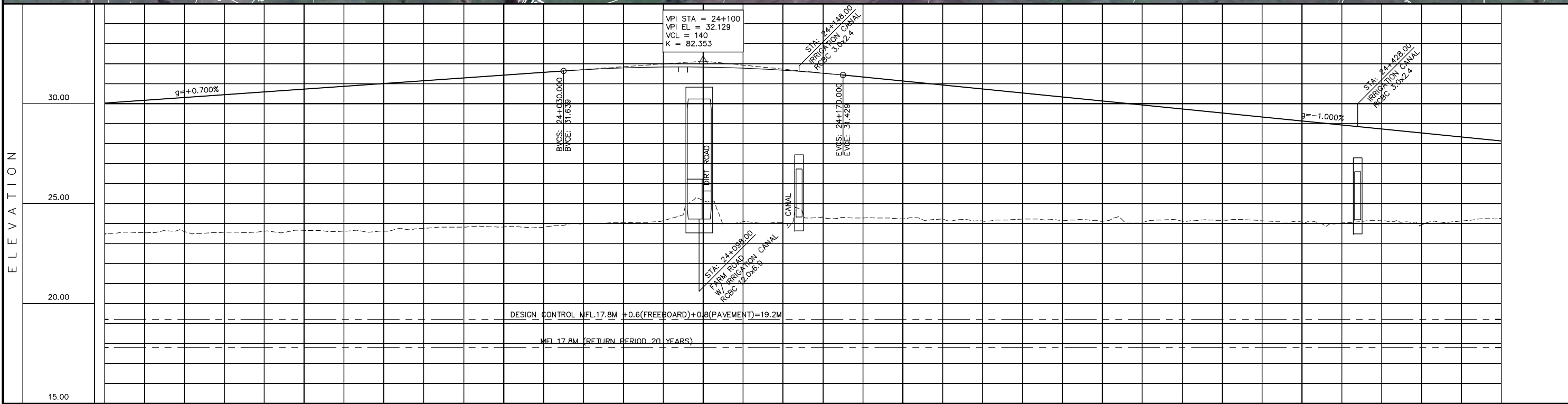


STATION	22+400	22+500	22+600	22+700	22+800	22+900	23+000	23+100
FINISHED GRADE ELEVATION	26.533	26.492	26.652	26.792	26.897	26.965	26.996	26.991
EXISTING GROUND ELEVATION	22.346	22.262	22.166	22.155	22.252	22.291	22.319	22.205
VERTICAL CURVATURE	+0.796% L=390.1961		26.149 22+500		-0.300% L=510.000			
HORIZONTAL CURVATURE	R=∞						R=40000.000 L=2192.919	

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CLLEX ( TARLAC - CABANATUAN )	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 22+400.000-STA 23+100.000	E-33 SHEET NO. 33 OF 44



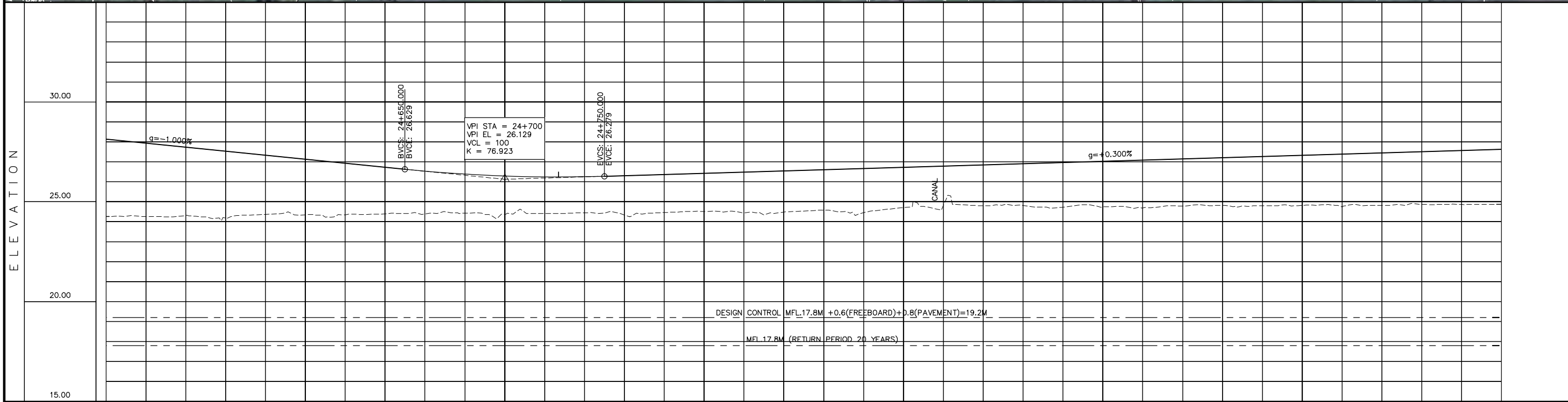
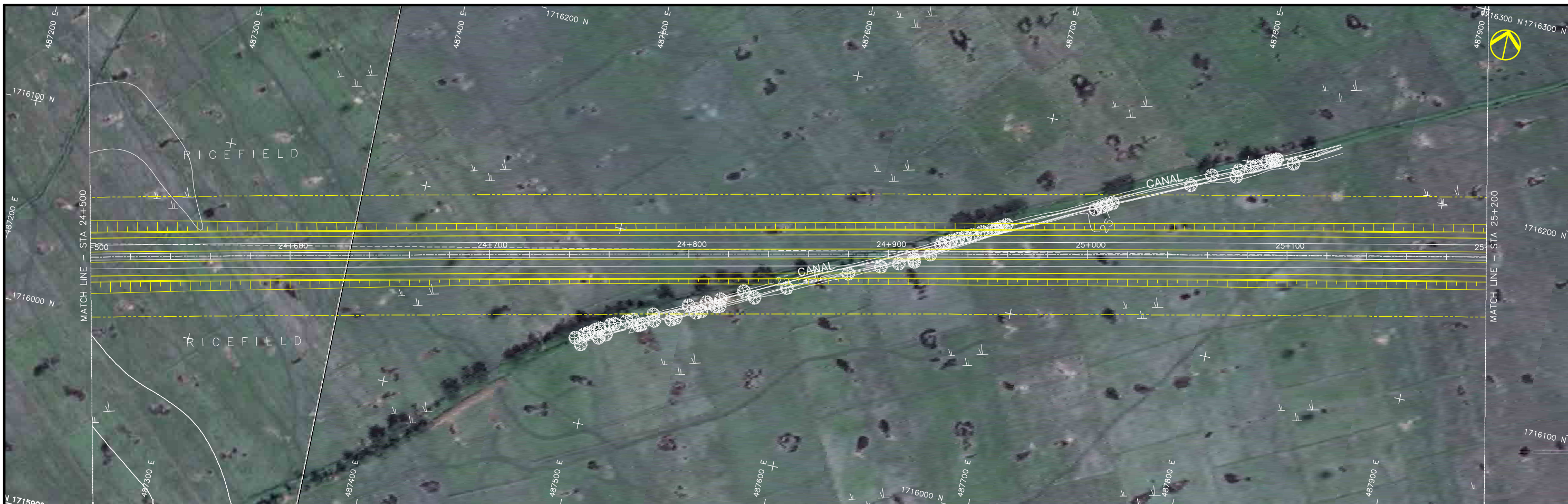
ELEMENTS OF CURVE													
PI No.	PI STATION	NORTHING	EASTING	AZIMUTH	I (Delta)	R	Lc	E	L1	L2	A Value	V(kph)	CURVE TYPE
PI-6	24+133.414	1715960.900	486882.641	255°04'52"	3°08'28"	40000	2192.92	15.033	1096.734	1096.734		100	CIRCULAR



STATION	23+800	23+900	24+000	24+100	24+200	24+300	24+400	24+500
FINISHED GRADE ELEVATION	23.476	23.544	23.598	23.564	23.621	23.663	23.610	23.529
EXISTING GROUND ELEVATION	23.029	30.169	30.309	30.449	30.589	30.729	31.009	31.149
VERTICAL CURVATURE	+0.700% L=860.000							-1.000% L=480.000
HORIZONTAL CURVATURE					R=40000.000 L=2192.919			

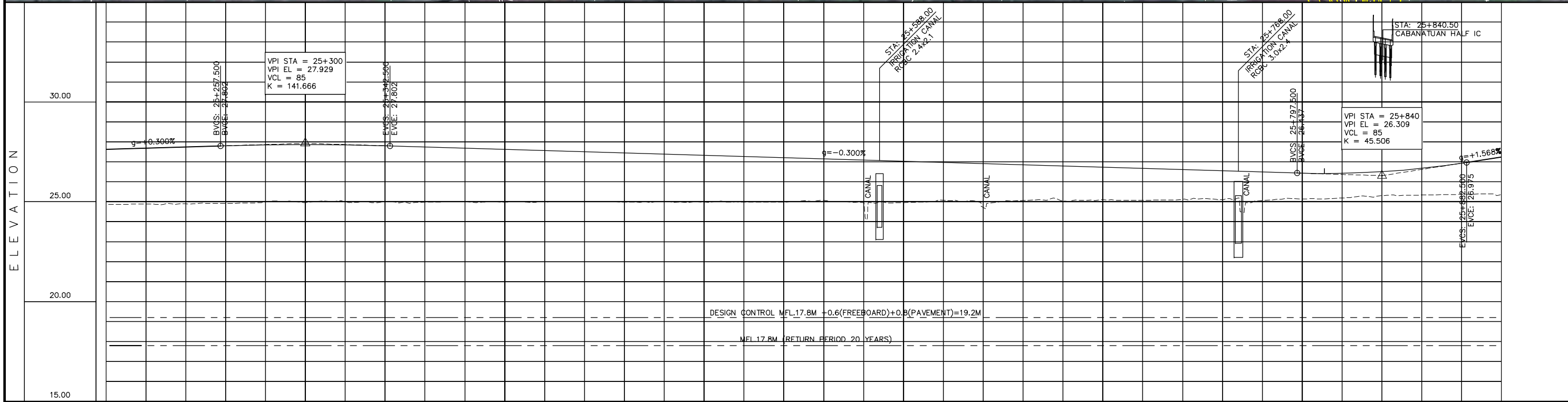
PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CLLEX ( TARLAC - CABANATUAN )	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 23+800.000-STA 24+500.000	E-35
			SHEET NO.
			35 OF 44





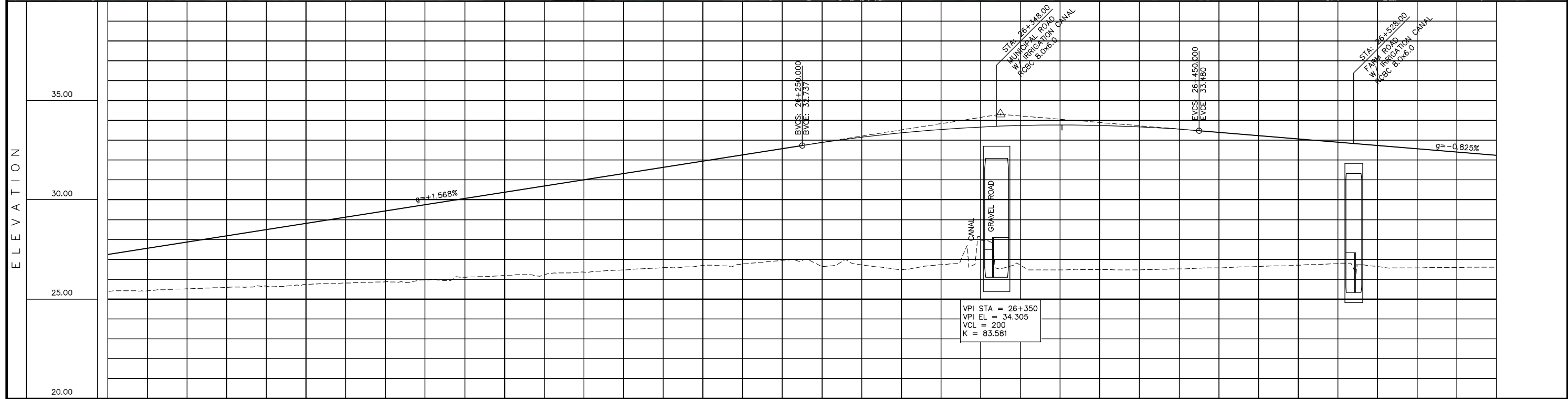
STATION	24+500	24+600	24+700	24+800	24+900	25+000	25+100	25+200																						
FINISHED GRADE ELEVATION	24.263	27.929	27.129	26.292	26.248	26.256	26.309	26.369	26.429	26.489	26.549	26.609	26.669	26.729	26.789	26.849	26.909	26.969	27.029	27.089	27.149	27.209	27.269	27.329	27.389	27.449	27.509	27.569	27.629	
EXISTING GROUND ELEVATION	24.263	24.265	24.314	24.343	24.393	24.392	24.425	24.360	24.417	24.442	24.339	24.461	24.519	24.446	24.481	24.577	24.453	24.708	24.800	24.736	24.698	24.786	24.827	24.802	24.816	24.745	24.822	24.873	24.866	24.868
VERTICAL CURVATURE	-1.000%		26.129		24+700		+0.300%		26.129		24+700		+0.300%		26.129		24+700		+0.300%		26.129		24+700		+0.300%		26.129		24+700	
HORIZONTAL CURVATURE	R=40000.000 L=2192.919																R=400 L=218													

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CLLEX ( TARLAC - CABANATUAN )	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 24+500.000-STA 25+200.000	E-36 SHEET NO. 36 OF 44



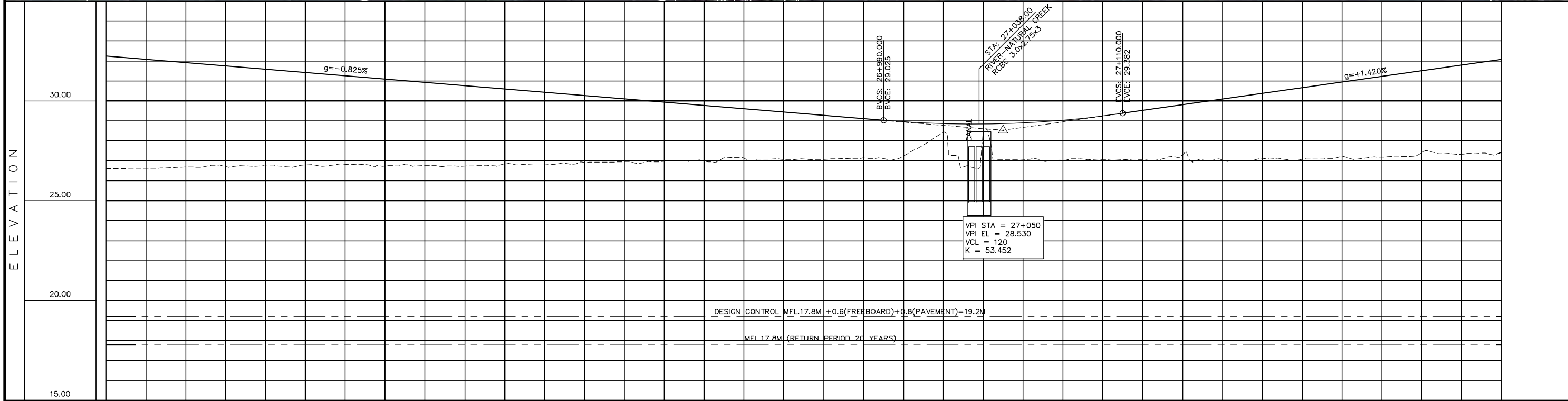
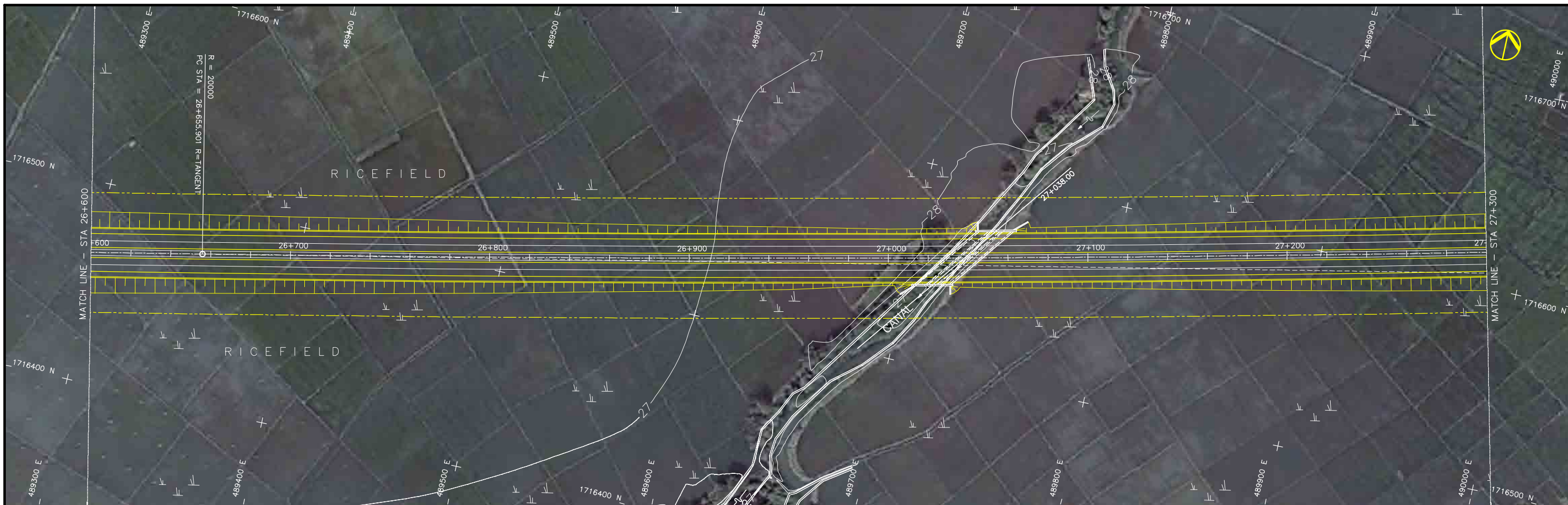
STATION	25+200	25+300	25+400	25+500	25+600	25+700	25+800	25+900
FINISHED GRADE ELEVATION	27.629							
EXISTING GROUND ELEVATION	24.869	24.887	24.901	24.920	24.939	24.953	24.960	24.975
VERTICAL CURVATURE	-0.300%		27.929		-0.300%		26.309	
HORIZONTAL CURVATURE	R=40000.000 L=2192.919		R=∞		R=∞		R=∞	

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region <b>CLLEX ( TARLAC - CABANATUAN )</b>	V = 200 H = 2000	<b>PACKAGE 2 - ULTIMATE STAGE</b> PLAN AND PROFILE STA 25+200.000-STA 25+900.000	E-37 SHEET NO. 37 OF 44



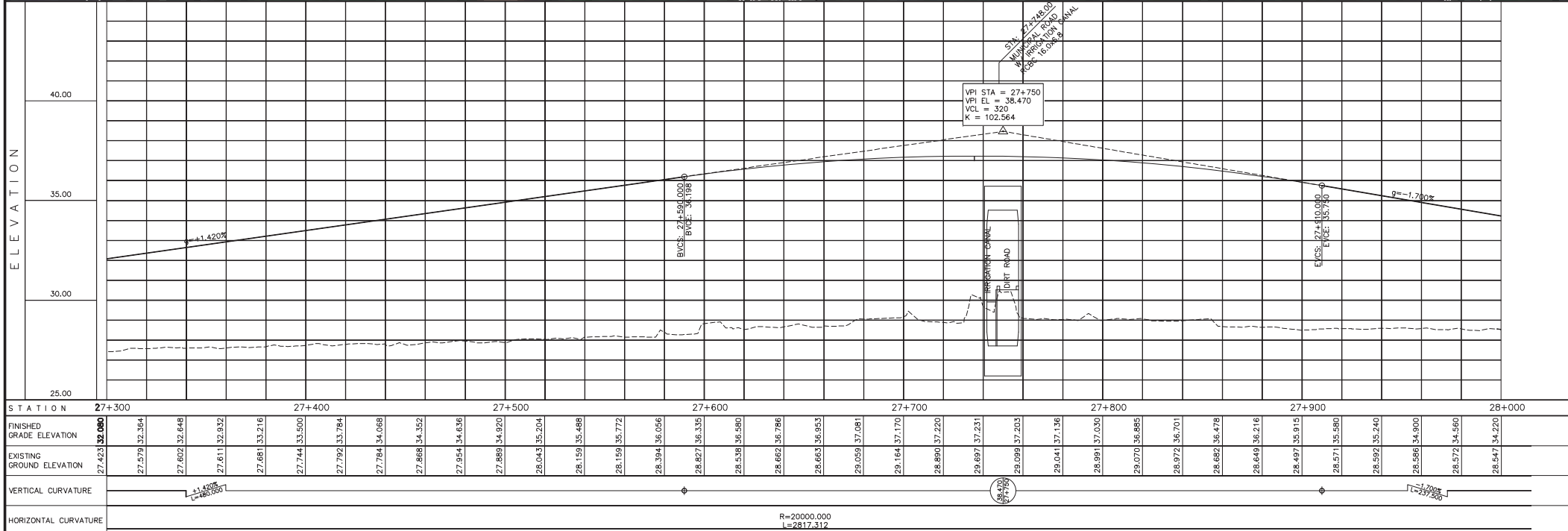
STATION	25+900	26+000	26+100	26+200	26+300	26+400	26+500	26+600
FINISHED GRADE ELEVATION	25.371	27.250						
EXISTING GROUND ELEVATION	25.371	27.563	27.877	28.191	28.504	28.818	29.131	29.445
VERTICAL CURVATURE				+1.568%				
HORIZONTAL CURVATURE				R=∞				

<b>PROJECT TITLE</b> Preparatory survey for expressway project in Mega Manila Region <b>CLLEX ( TARLAC - CABANATUAN )</b>	<b>SCALE</b> V = 200 H = 2000	<b>SHEET CONTENT</b> PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 25+900.000-STA 26+600.000	<b>DRAWING NO.</b> E-38 SHEET NO. 38 OF 44
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STATION	26+600	26+700	26+800	26+900	27+000	27+100	27+200	27+300
FINISHED GRADE ELEVATION	32.243	32.078	31.913	31.748	31.583	31.418	31.253	31.088
EXISTING GROUND ELEVATION	26.612	26.628	26.693	26.718	26.757	26.798	26.831	26.744
VERTICAL CURVATURE	$g = -0.825\%$ $L = 540.000$							
HORIZONTAL CURVATURE	$R = \infty$							

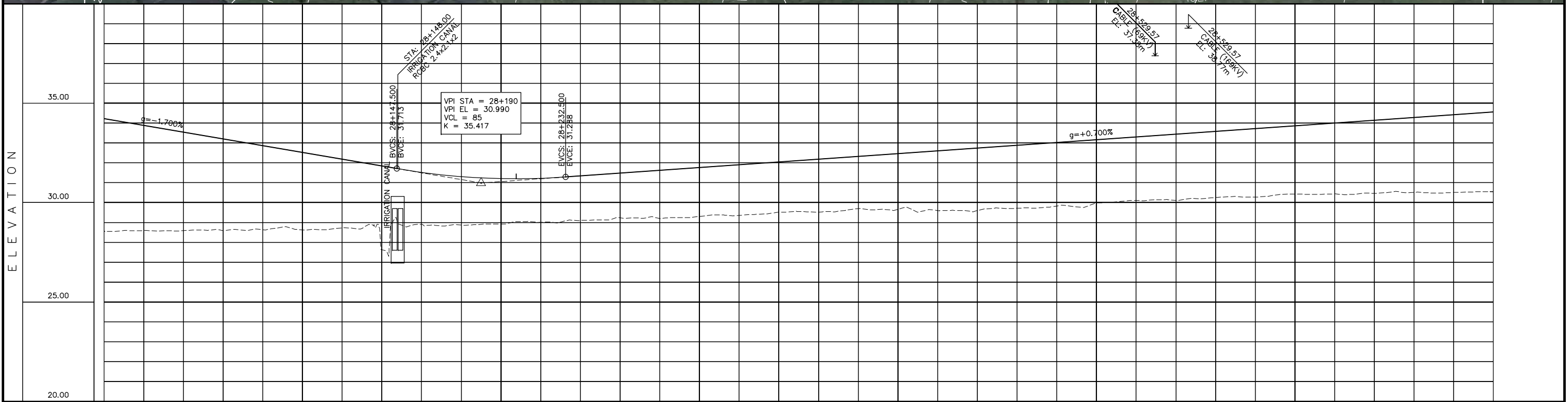
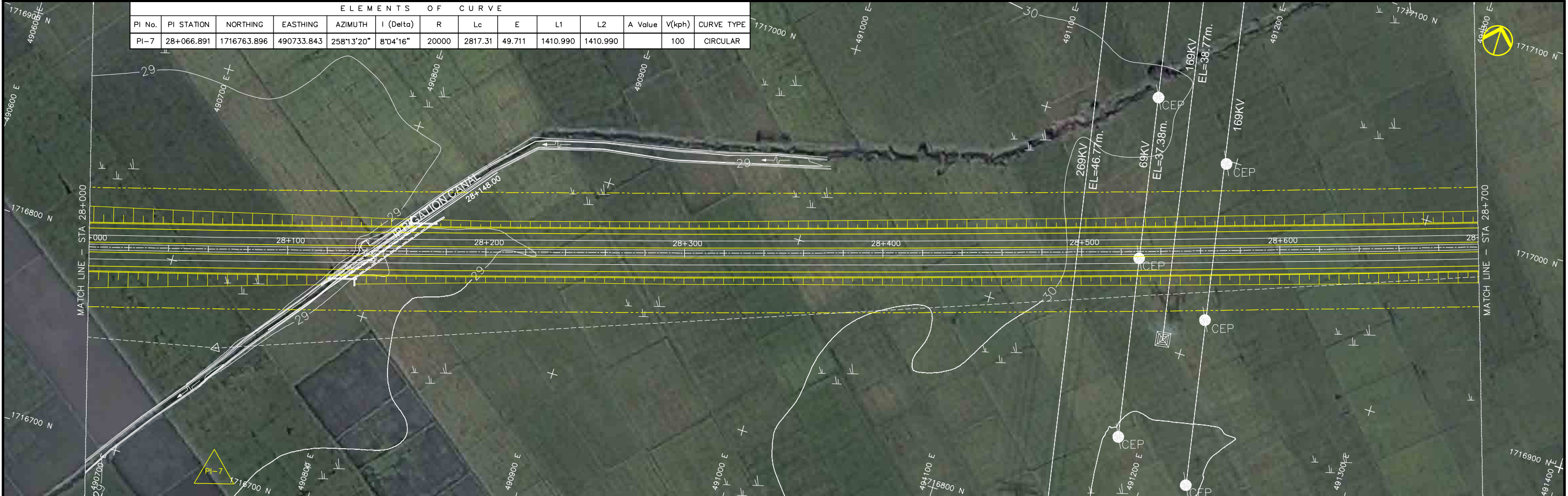
PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CLLEX ( TARLAC - CABANATUAN )	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 26+600.000-STA 27+300.000	E-39 SHEET NO. 39 OF 44



STATION	27+300	27+400	27+500	27+600	27+700	27+800	27+900	28+000
FINISHED GRADE ELEVATION	32.080							
EXISTING GROUND ELEVATION	27.423	27.579 32.364	27.602 32.646	27.611 32.832	27.681 33.216	27.744 33.500	27.792 33.784	27.784 34.068
VERTICAL CURVATURE	$\frac{+1.420\%}{L=480.000}$							
HORIZONTAL CURVATURE	$R=20000.000$ $L=2817.312$							

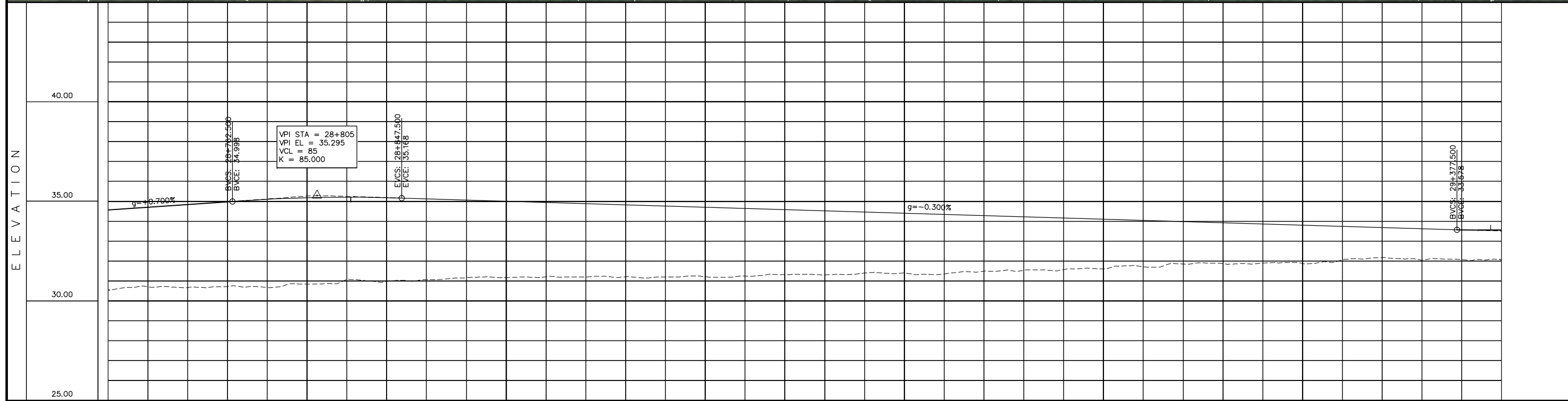
<b>PROJECT TITLE</b> Preparatory survey for expressway project in Mega Manila Region <b>CLLEX ( TARLAC - CABANATUAN )</b>	<b>SCALE</b> V = 200 H = 2000	<b>SHEET CONTENT</b> PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 27+300.000-STA 28+000.000	<b>DRAWING NO.</b>
			E-40
			<b>SHEET NO.</b>
			40 OF 44

ELEMENTS OF CURVE													
PI No.	PI STATION	NORTHING	EASTING	AZIMUTH	I (Delta)	R	Lc	E	L1	L2	A Value	V(kph)	CURVE TYPE
PI-7	28+066.891	1716763.896	490733.843	258°13'20"	8°04'16"	20000	2817.31	49.711	1410.990	1410.990		100	CIRCULAR



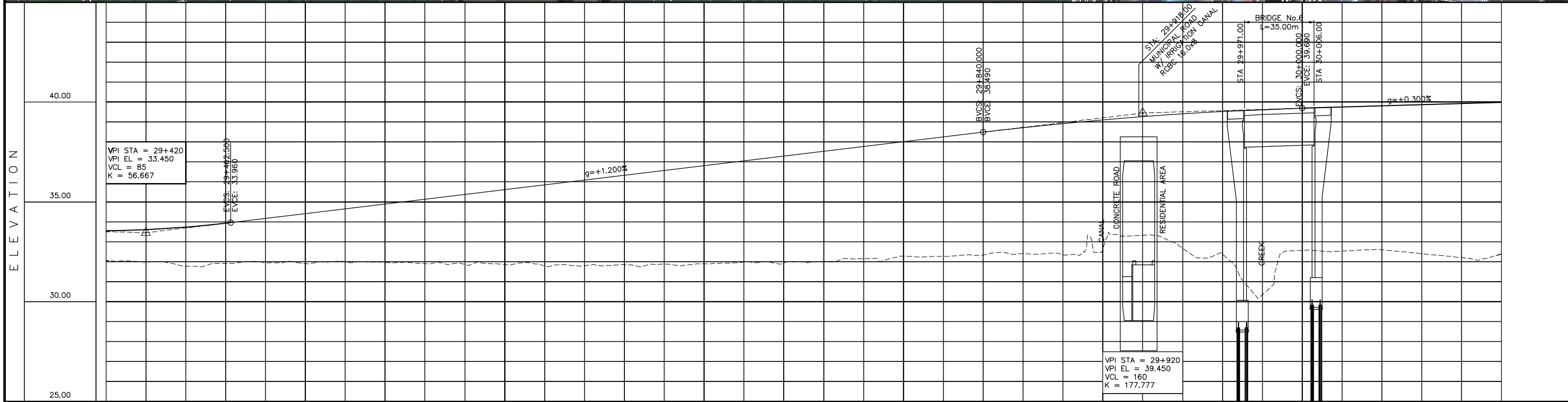
STATION	28+000	28+100	28+200	28+300	28+400	28+500	28+600	28+700
FINISHED GRADE ELEVATION	28.547	33.220	33.880	33.540	33.200	32.860	32.520	32.180
EXISTING GROUND ELEVATION	28.597	33.880	33.540	33.200	32.860	32.520	32.180	31.840
VERTICAL CURVATURE	-1.700% L=237.500		R=20000.000 L=2817.312		+0.700% L=330.000			

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CLLEX ( TARLAC - CABANATUAN )	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 28+000.000-STA 28+700.000	E-41
			SHEET NO.
			41 OF 44



STATION	28+700	28+800	28+900	29+000	29+100	29+200	29+300	29+400																														
FINISHED GRADE ELEVATION	34.560	34.700	34.840	34.980	35.102	35.178	35.206	35.187	35.130	35.070	35.010	34.950	34.890	34.830	34.770	34.710	34.650	34.590	34.530	34.470	34.410	34.350	34.290	34.230	34.170	34.110	34.050	33.990	33.930	33.870	33.810	33.750	33.690	33.630	33.571	33.555		
EXISTING GROUND ELEVATION	30.546	30.713	30.840	30.980	31.074	31.178	31.206	31.187	31.130	31.070	31.010	30.950	30.890	30.830	30.770	30.710	30.650	30.590	30.530	30.470	30.410	30.350	30.290	30.230	30.170	30.110	30.050	29.990	29.930	29.870	29.810	29.750	29.690	29.630	29.571	29.555		
VERTICAL CURVATURE	+0.700% L=530.000		35.295 28+805		-0.300% L=530.000																																	
HORIZONTAL CURVATURE	R=20000.000 L=2817.312																																					

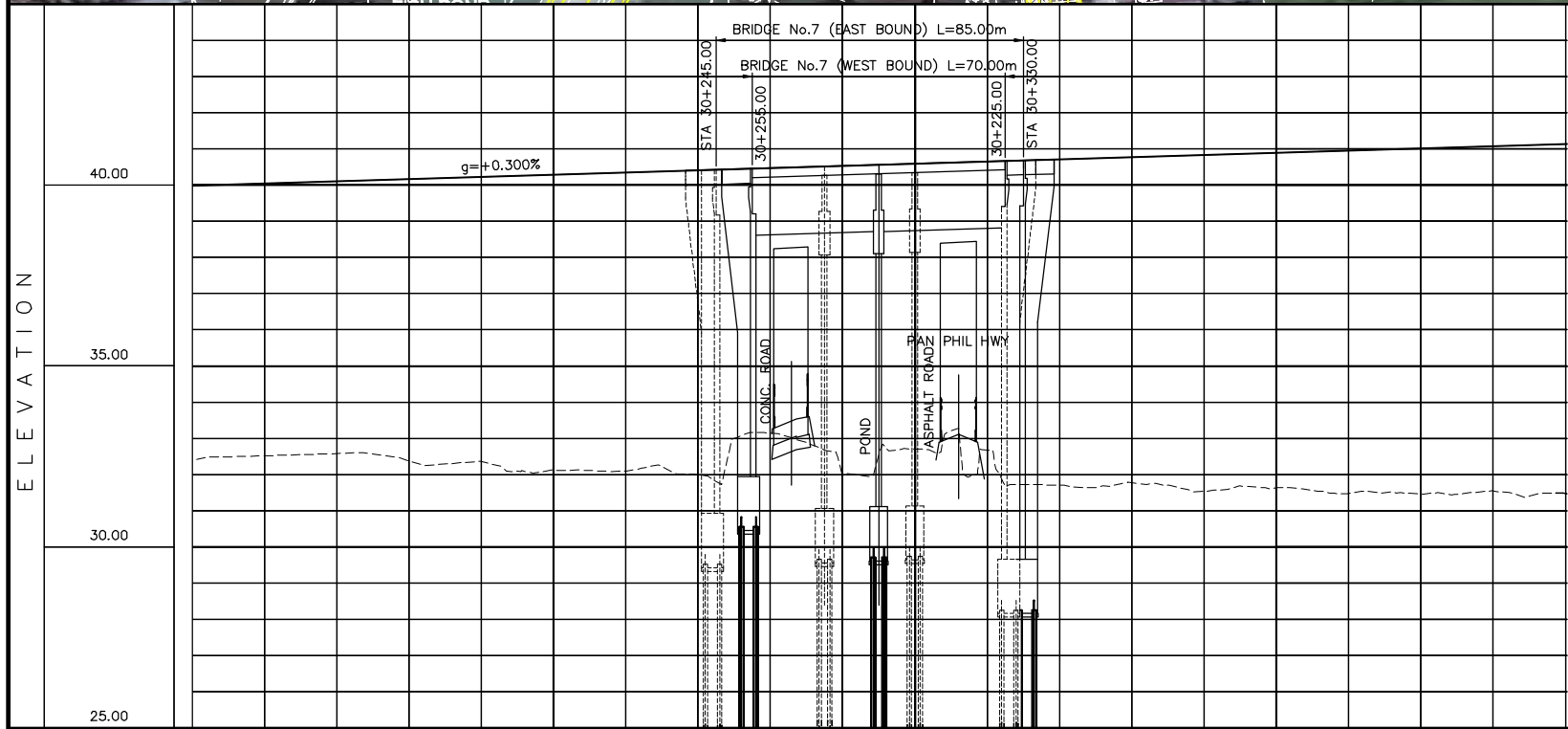
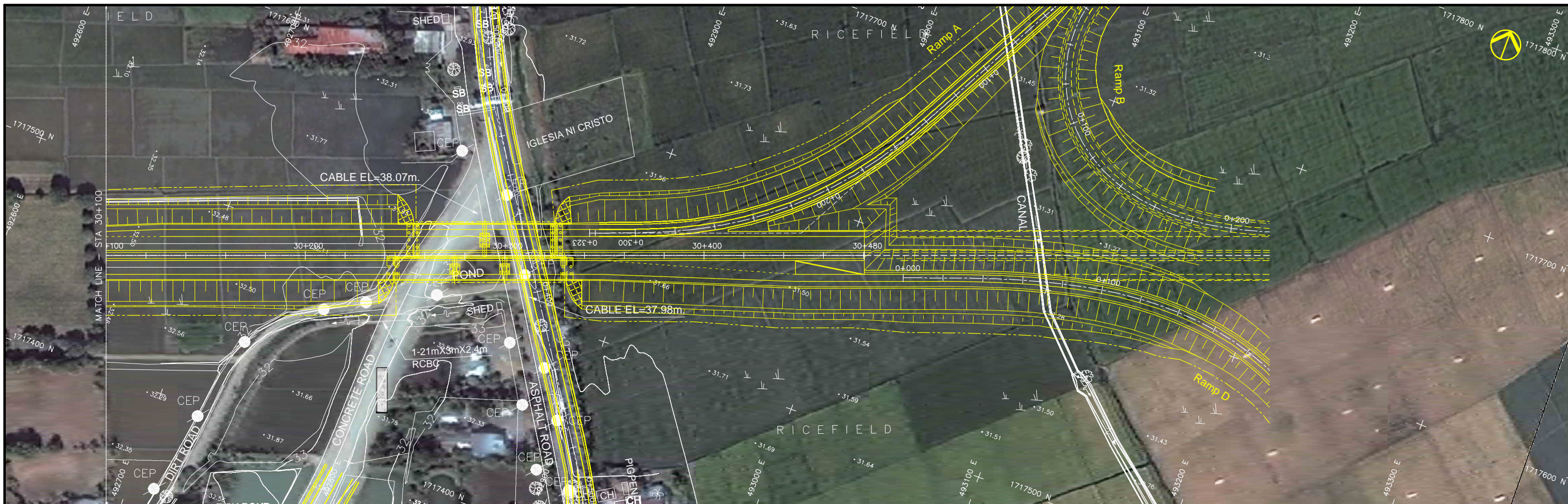
PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CLLEX ( TARLAC - CABANATUAN )	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 28+700.000-STA 29+400.000	E-42 SHEET NO. 42 OF 44



STATION	29+400	29+500	29+600	29+700	29+800	29+900	30+000	30+100
FINISHED GRADE ELEVATION	33.555	33.610	33.735	33.931	34.170	34.410	34.650	34.890
EXISTING GROUND ELEVATION	32.068	31.986	31.779	31.909	31.951	31.910	31.992	31.971
VERTICAL CURVATURE	R=20000.000 L=2817.312		+1.200% L=377.500		R=0		+1.200% L=480.974	
HORIZONTAL CURVATURE	R=20000.000 L=2817.312		R=0		R=0		R=0	

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CLLEX ( TARLAC - CABANATUAN )	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 29+400.000-STA 30+100.000	E-43 SHEET NO. 43 OF 44





ELEMENTS OF CURVE													
PI No.	PI STATION	NORTHING	EASTING	AZIMUTH	I (Delta)	R	Lc	E	L1	L2	A Value	V(kph)	CURVE TYPE
END	30+480.409	1717584.962	493008.371										

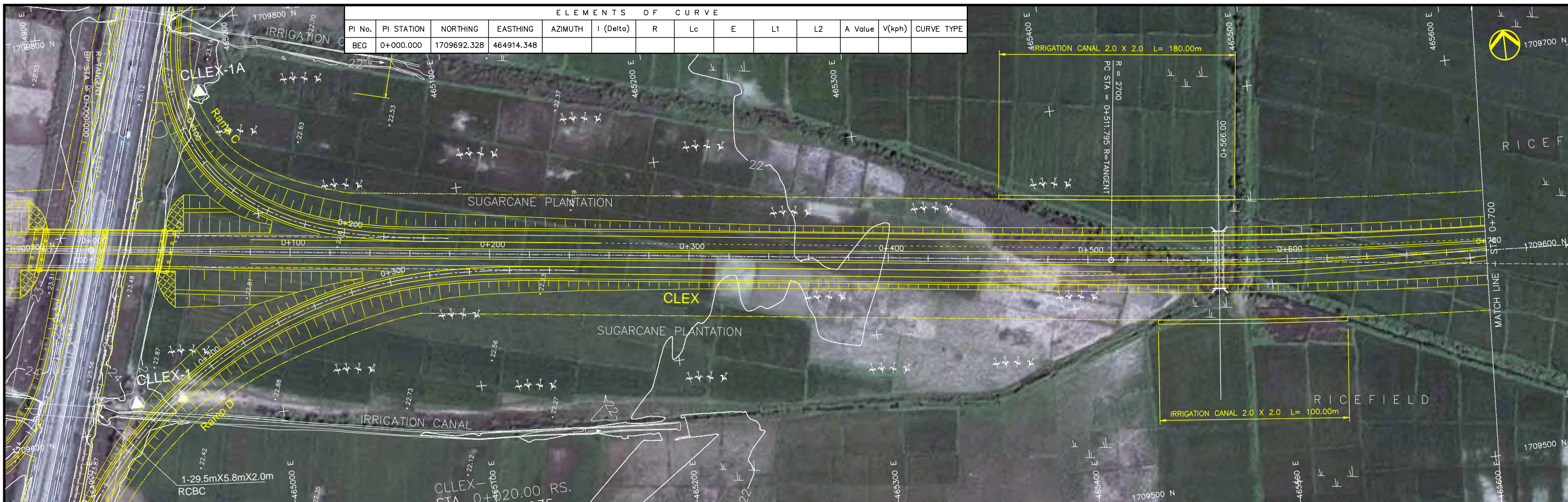
STATION	30+100	30+200	30+300	30+400	30+481															
FINISHED GRADE ELEVATION	32.990	40.050	40.110	40.170	40.230	40.290	40.350	40.410	40.470	40.530	40.590	40.650	40.710	40.770	40.830	40.890	40.950	41.010	41.070	41.130
EXISTING GROUND ELEVATION	32.382	32.518	32.582	32.379	32.361	32.128	32.094	31.997	33.146	32.050	32.709	32.677	31.710	31.773	31.535	31.637	31.480	31.461	31.542	31.484
VERTICAL CURVATURE	+0.300% L=480.876																			
HORIZONTAL CURVATURE	R=∞																			

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CLLEX ( TARLAC - CABANATUAN )	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 30+100.000-STA 30+480.409	E-44 SHEET NO. 44 OF 44

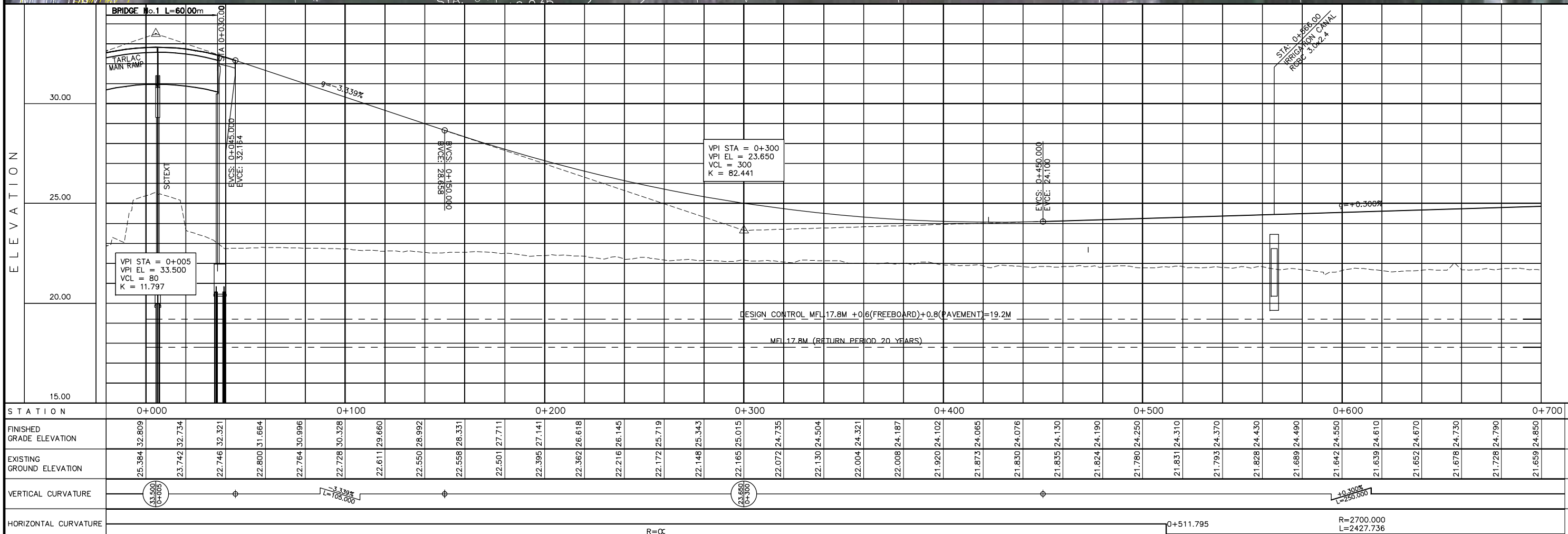
# E. PLAN AND PROFILE

## INTERIM 2 LANES

CLLEX ( TARLAC - CABANATUAN)



ELEMENTS OF CURVE													
PI No.	PI STATION	NORTHING	EASTING	AZIMUTH	I (Delta)	R	Lc	E	L1	L2	A Value	V(kph)	CURVE TYPE
BEG	0+000.000	1709692.328	464914.348										



STATION	0+000	0+100	0+200	0+300	0+400	0+500	0+600	0+700
FINISHED GRADE ELEVATION	32.809	32.734	32.321	31.864	30.996	30.328	29.660	28.992
EXISTING GROUND ELEVATION	25.384	23.742	22.748	22.800	22.764	22.728	22.611	22.550
VERTICAL CURVATURE	+0.300%		-3.339%		+0.300%		+0.300%	
HORIZONTAL CURVATURE	R=∞			R=∞				R=2700.000 L=2427.736

PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region <b>CLLEX ( TARLAC - CABANATUAN )</b>	V = 200 H = 2000	PACKAGE 1 - INTERIM 2 LANES <b>PLAN AND PROFILE</b> STA 0+000.000-STA 0+700.000	E-45 SHEET NO. 1 OF 44