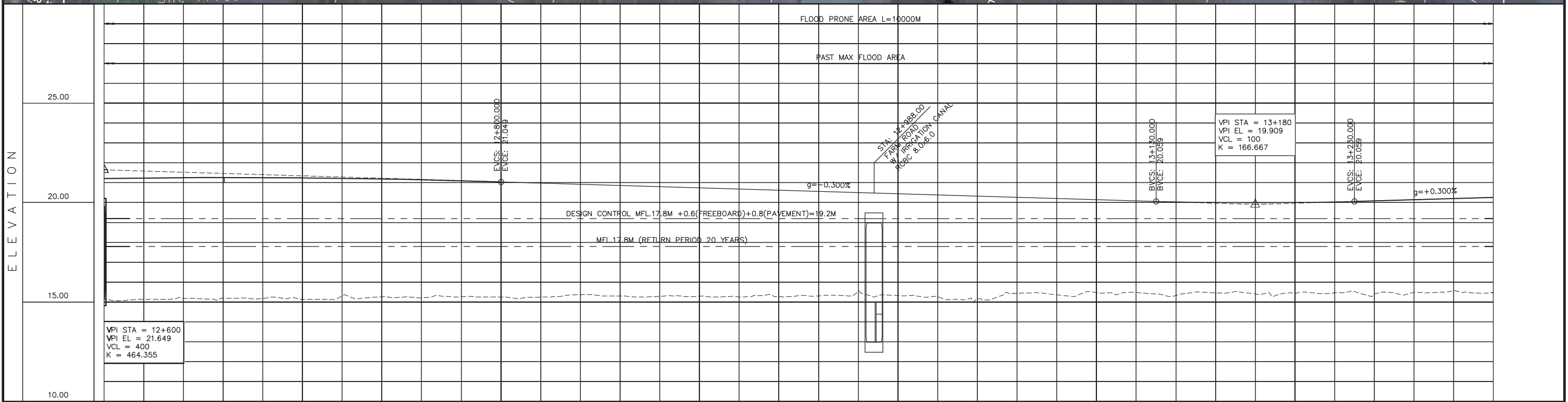


STATION	11+900	12+000	12+100	12+200	12+300	12+400	12+500	12+600																												
FINISHED GRADE ELEVATION	20.728	20.749	20.762	20.765	20.761	20.747	20.725	20.693	20.654	20.605	20.548	20.407	20.327	20.248	20.169	20.090	20.015	19.974	19.972	20.008	20.082	20.189	20.301	20.414	20.526	20.634	20.733	20.824	20.906	20.980	21.045	21.101	21.148	21.188	21.218	
EXISTING GROUND ELEVATION	14.736	14.735	16.200	14.759	14.752	14.743	14.805	14.865	14.741	14.728	14.691	14.801	14.935	14.917	14.862	14.875	14.794	14.797	14.779	14.827	14.856	14.950	14.949	14.927	14.964	14.912	14.975	14.949	14.984	15.012	15.013	15.046	15.054	15.059	15.066	15.147
VERTICAL CURVATURE	21.199 11+940		-0.396% L=90.000												19.852 12+280		21.649 12+600																			
HORIZONTAL CURVATURE	R=3500.000 L=3126.287																																			

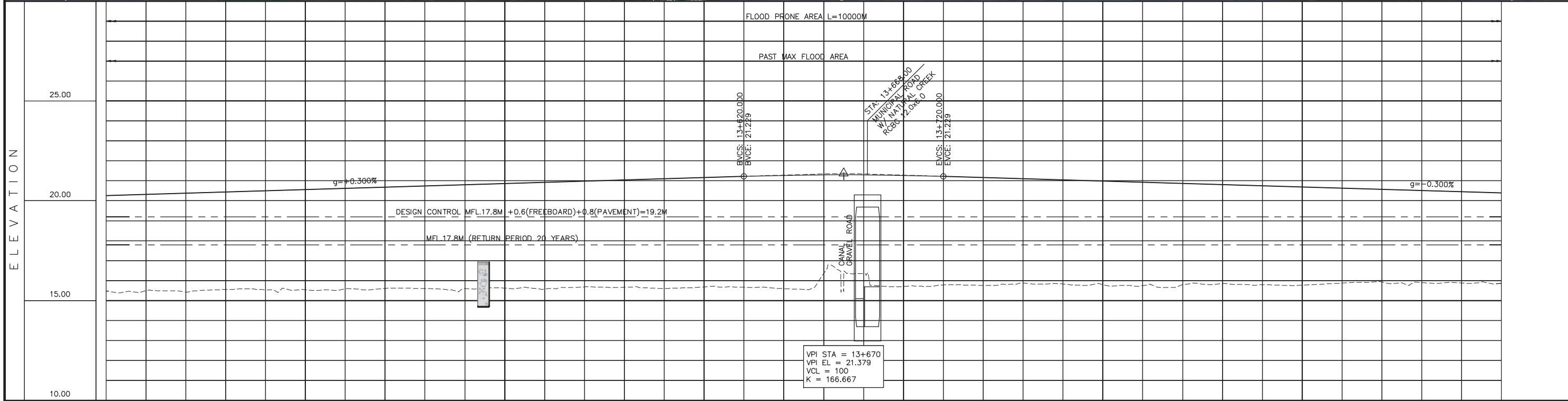
PROJECT TITLE	SCALE	SHEET CONTENT	DRAWING NO.
Preparatory survey for expressway project in Mega Manila Region CLLEX (TARLAC - CABANATUAN)	V = 200 H = 2000	PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 11+900.000-STA 12+600.000	E-18 SHEET NO. 18 OF 44

ELEMENTS OF CURVE													
PI No.	PI STATION	NORTHING	EASTING	AZIMUTH	I (Delta)	R	Lc	E	L1	L2	A Value	V(kph)	CURVE TYPE
PI-3	13+115.034	1711239.035	477567.559	270°23'18"	51°10'41"	3500	3126.29	380.630	1676.093	1676.093		100	CIRCULAR



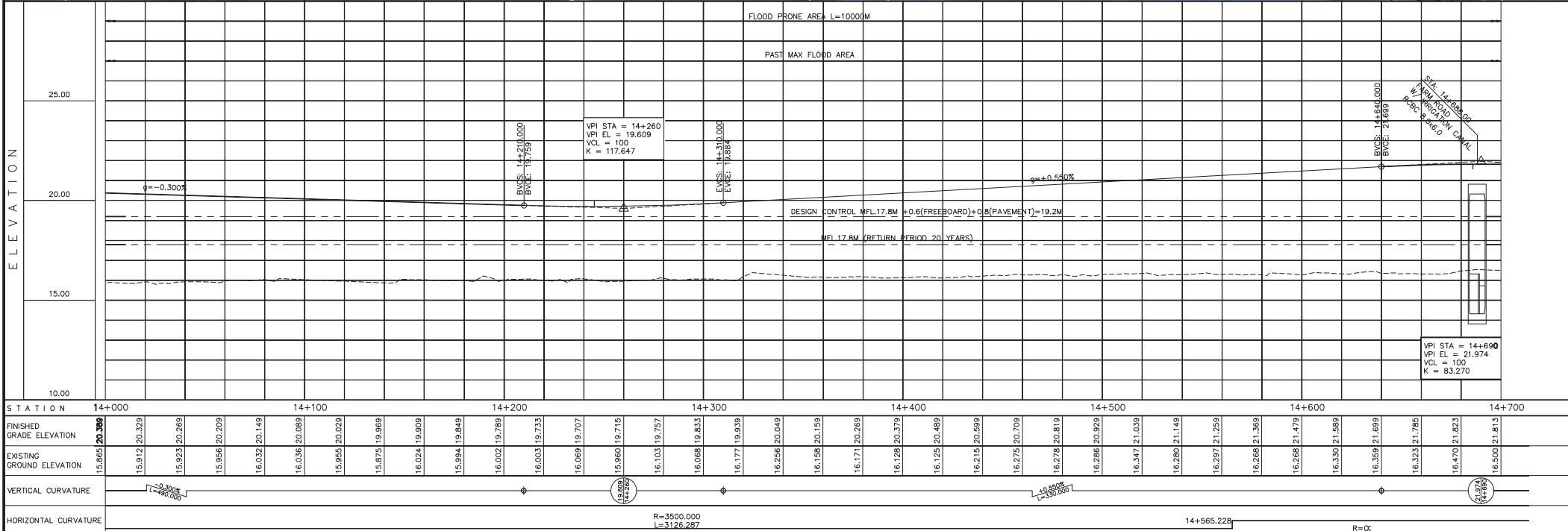
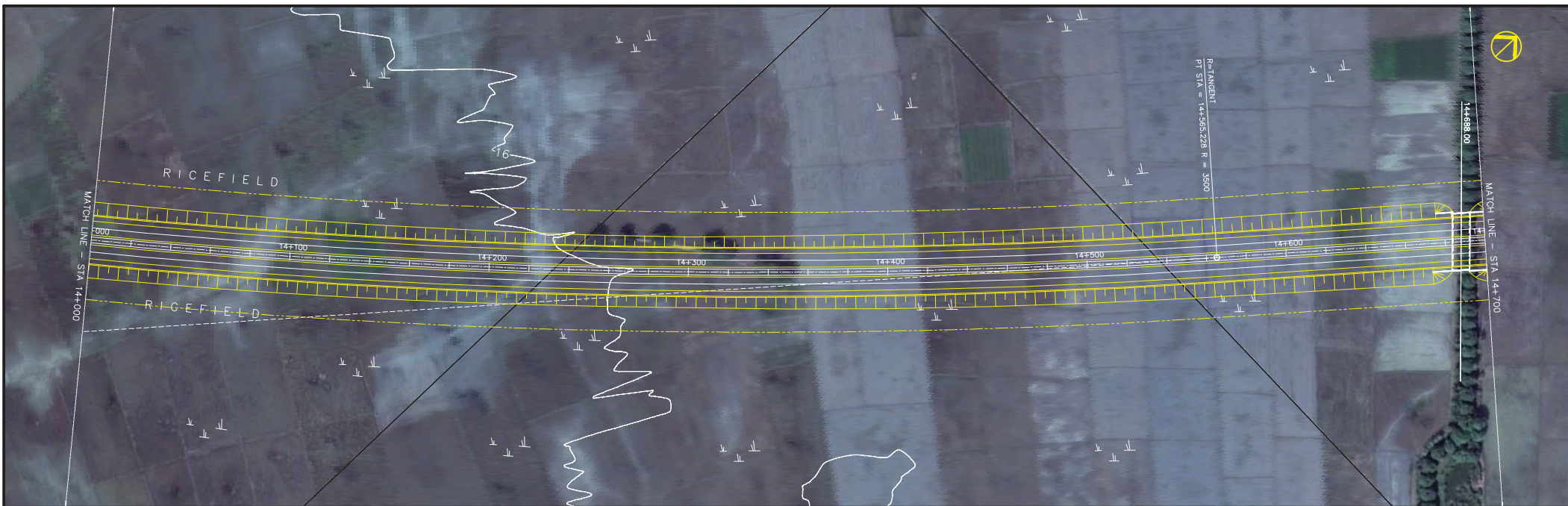
STATION	12+600	12+700	12+800	12+900	13+000	13+100	13+200	13+300																																																																
FINISHED GRADE ELEVATION	15.147	21.218	15.142	21.240	15.174	21.253	15.194	21.258	15.172	21.254	15.134	21.241	15.308	21.220	15.261	21.190	15.212	21.151	15.266	21.104	15.259	21.049	15.246	20.989	15.366	20.929	15.300	20.869	15.288	20.809	15.293	20.749	15.254	20.689	15.270	20.629	15.310	20.569	15.518	20.509	15.323	20.449	15.261	20.389	15.166	20.329	15.439	20.269	15.363	20.209	15.473	20.149	15.486	20.089	15.333	20.032	15.458	19.996	15.406	19.984	15.435	19.996	15.462	20.032	15.410	20.089	15.496	20.149	15.571	20.209	15.480	20.269
EXISTING GROUND ELEVATION	15.147	21.218	15.142	21.240	15.174	21.253	15.194	21.258	15.172	21.254	15.134	21.241	15.308	21.220	15.261	21.190	15.212	21.151	15.266	21.104	15.259	21.049	15.246	20.989	15.366	20.929	15.300	20.869	15.288	20.809	15.293	20.749	15.254	20.689	15.270	20.629	15.310	20.569	15.518	20.509	15.323	20.449	15.261	20.389	15.166	20.329	15.439	20.269	15.363	20.209	15.473	20.149	15.486	20.089	15.333	20.032	15.458	19.996	15.406	19.984	15.435	19.996	15.462	20.032	15.410	20.089	15.496	20.149	15.571	20.209	15.480	20.269
VERTICAL CURVATURE	+0.300%		-0.300%																		+0.300%																																																			
HORIZONTAL CURVATURE	R=3500.000 L=3126.287																		R=3500.000 L=3126.287																																																					

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 12+600.000-STA 13+300.000	E-19
			SHEET NO.
			19 OF 44



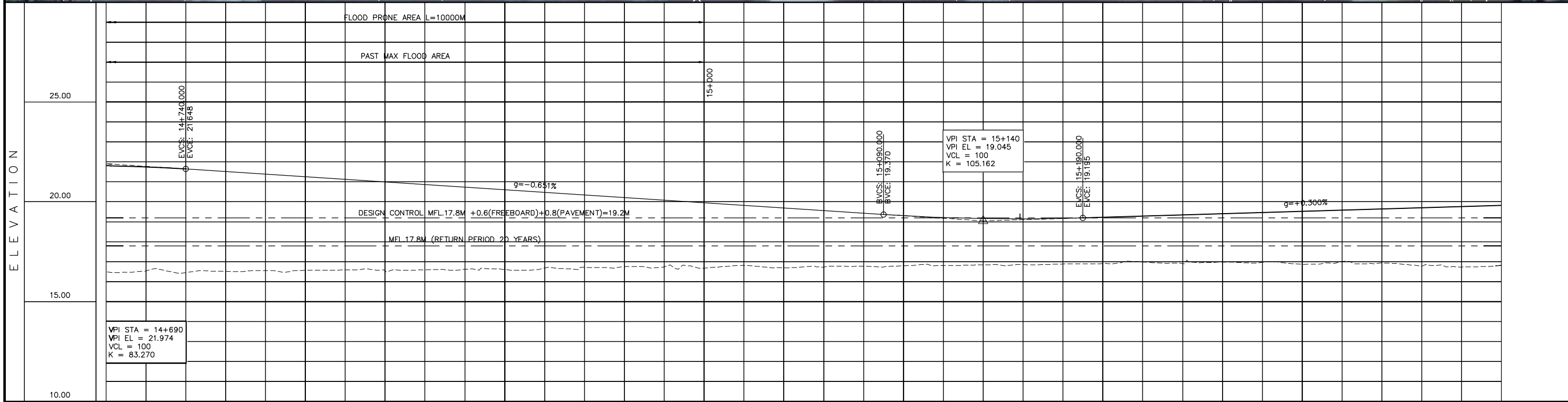
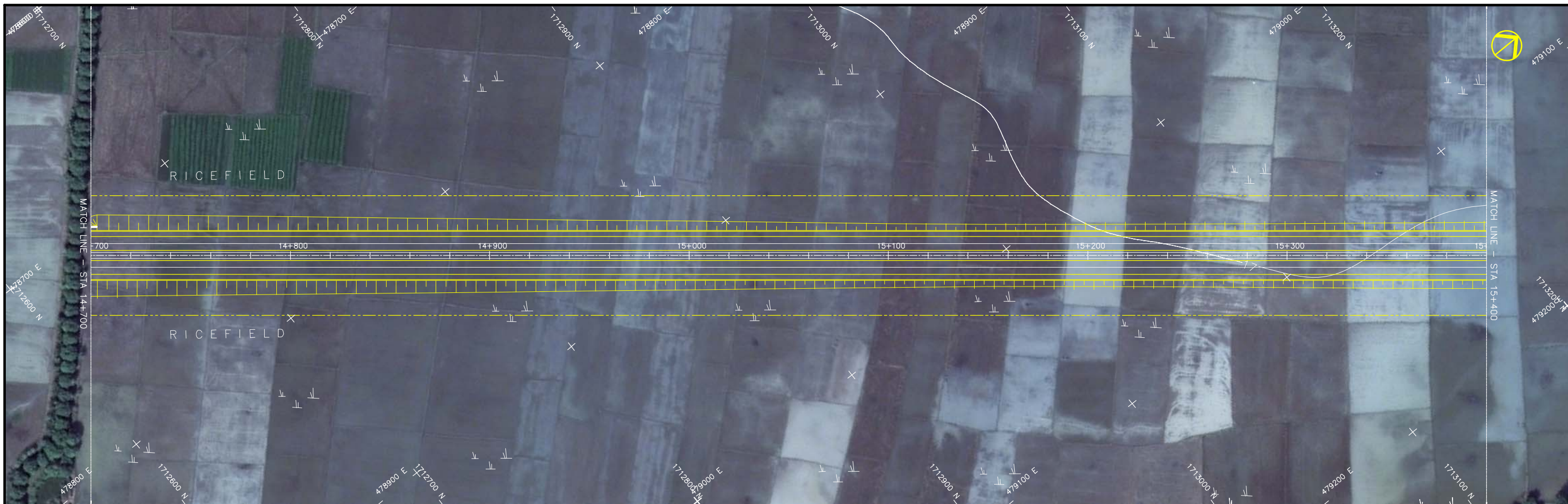
STATION	13+300	13+400	13+500	13+600	13+700	13+800	13+900	14+000
FINISHED GRADE ELEVATION	20.269	20.329	20.369	20.449	20.509	20.569	20.629	20.689
EXISTING GROUND ELEVATION	15.480	15.491	15.432	15.555	15.546	15.544	15.588	15.612
VERTICAL CURVATURE	+0.300% L=390.000		-0.300% L=390.000				-0.300% L=390.000	
HORIZONTAL CURVATURE	R=3500.000 L=3126.287							

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 13+300.000-STA 14+000.000	E-20 SHEET NO. 20 OF 44



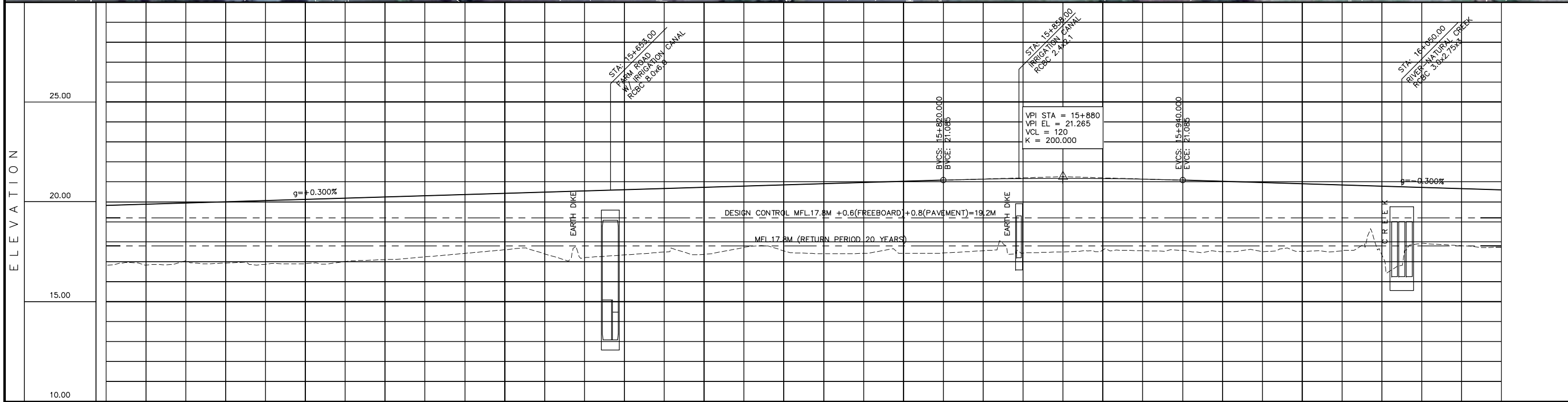
STATION	14+000	14+100	14+200	14+300	14+400	14+500	14+600	14+700
FINISHED GRADE ELEVATION	20.389							
EXISTING GROUND ELEVATION	15.865	15.912	15.923	15.956	16.032	16.036	15.953	15.875
VERTICAL CURVATURE	-0.300% L=490.000							
HORIZONTAL CURVATURE			R=3500.000 L=3126.287			R=0		

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 14+000.000-STA 14+700.000	E-21 SHEET NO. 21 OF 44



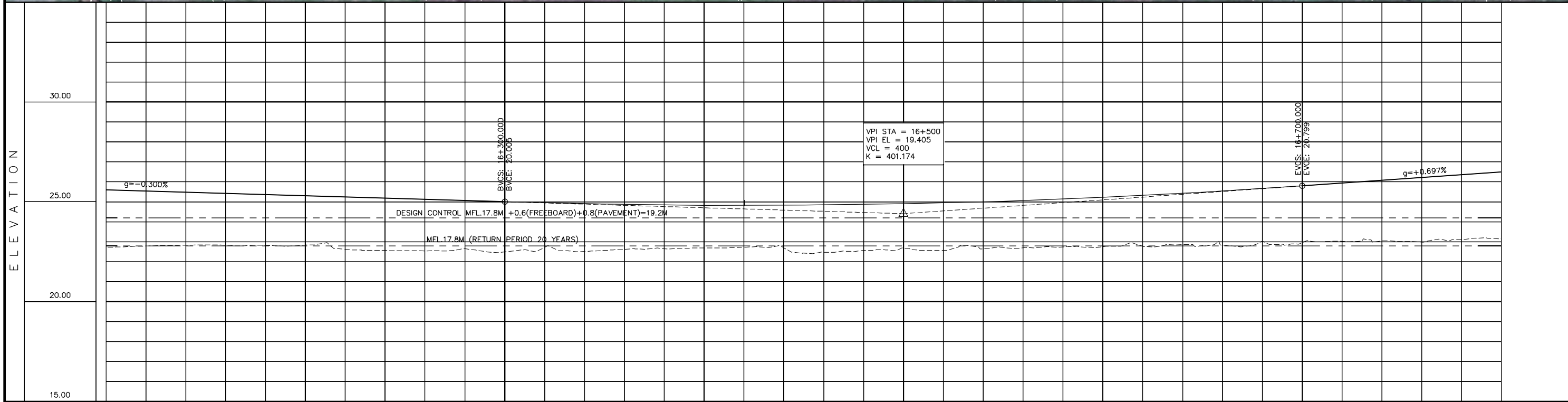
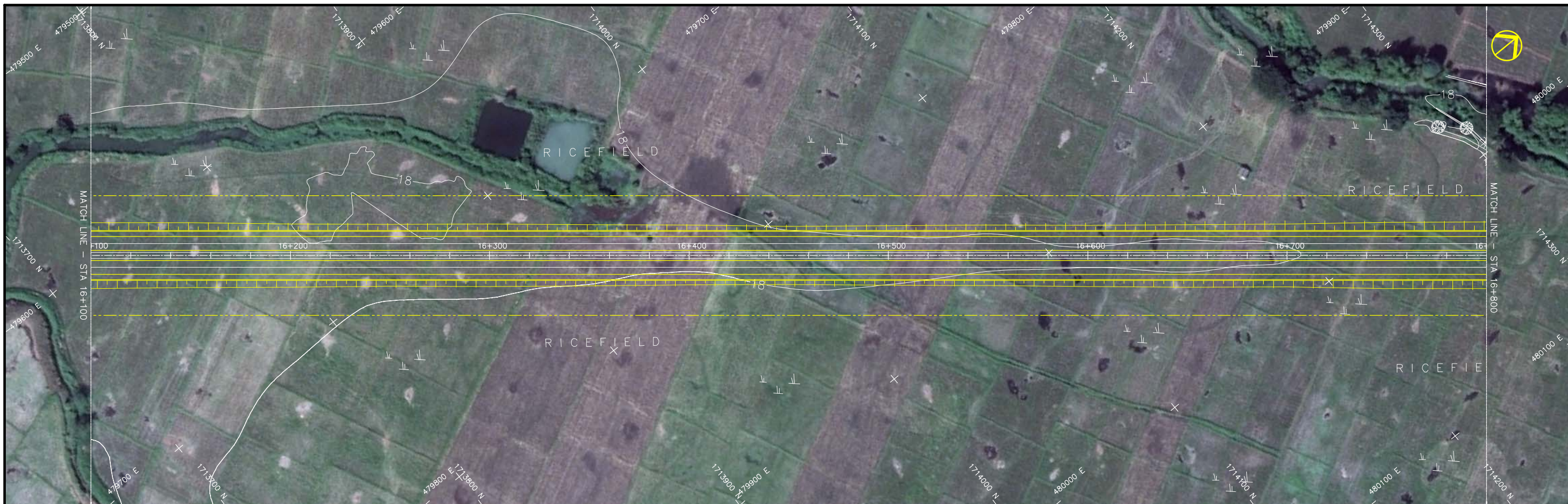
STATION	14+700	14+800	14+900	15+000	15+100	15+200	15+300	15+400
FINISHED GRADE ELEVATION	21.813	21.754	21.646	21.518	21.388	21.258	21.128	20.997
EXISTING GROUND ELEVATION	16.500	16.542	16.454	16.516	16.552	16.570	16.586	16.546
VERTICAL CURVATURE								
HORIZONTAL CURVATURE								

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 14+700.000-STA 15+400.000	E-22
			SHEET NO. 22 OF 44



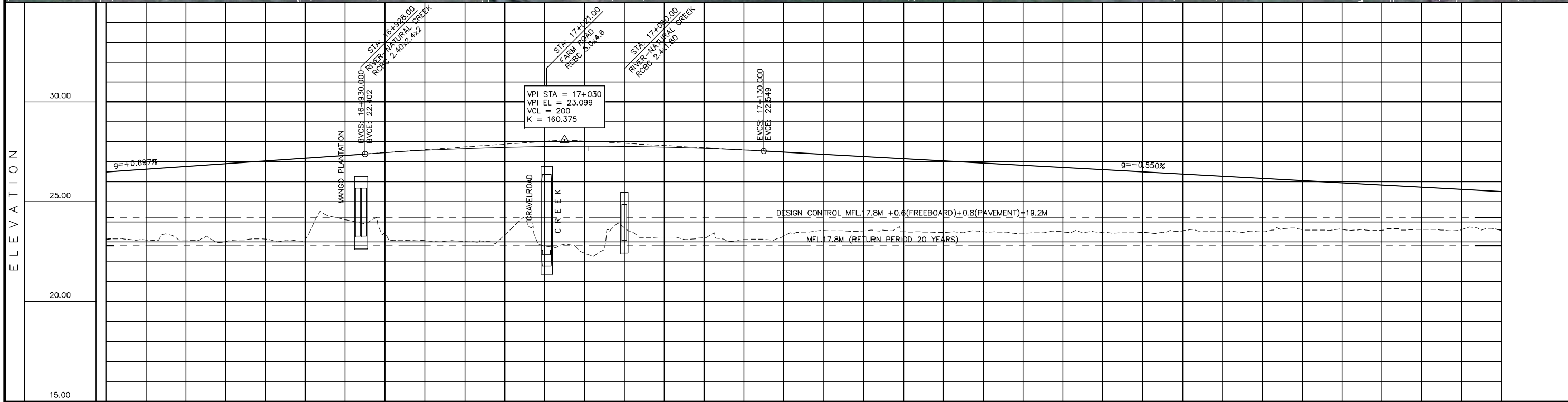
STATION	15+400	15+500	15+600	15+700	15+800	15+900	16+000	16+100
FINISHED GRADE ELEVATION	19.825	19.885	19.945	20.005	20.065	20.125	20.185	20.245
EXISTING GROUND ELEVATION	16.818	16.834	16.850	16.866	16.882	16.898	16.914	16.930
VERTICAL CURVATURE	+0.300% L=630.000							
HORIZONTAL CURVATURE	R=∞							

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 15+400.000-STA 16+100.000	E-23 SHEET NO. 23 OF 44



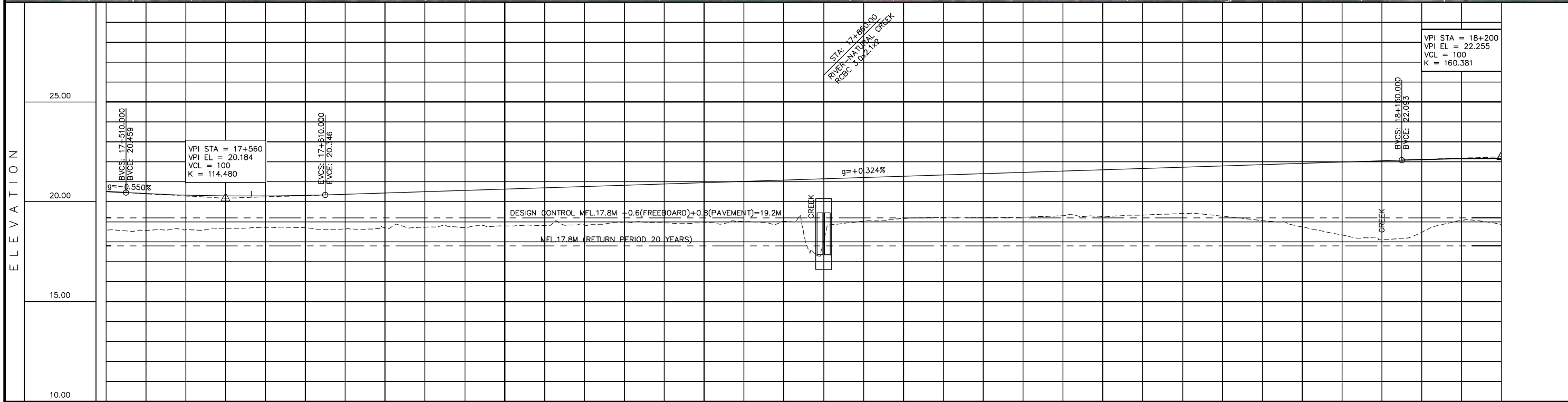
STATION	16+100	16+200	16+300	16+400	16+500	16+600	16+700	16+800
FINISHED GRADE ELEVATION	20.605	20.545	20.485	20.425	20.365	20.305	20.245	20.185
EXISTING GROUND ELEVATION	17.724	17.786	17.827	17.830	17.816	17.832	17.822	17.830
VERTICAL CURVATURE								
HORIZONTAL CURVATURE	R=∞							

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 16+100.000-STA 16+800.000	E-24 SHEET NO. 24 OF 44



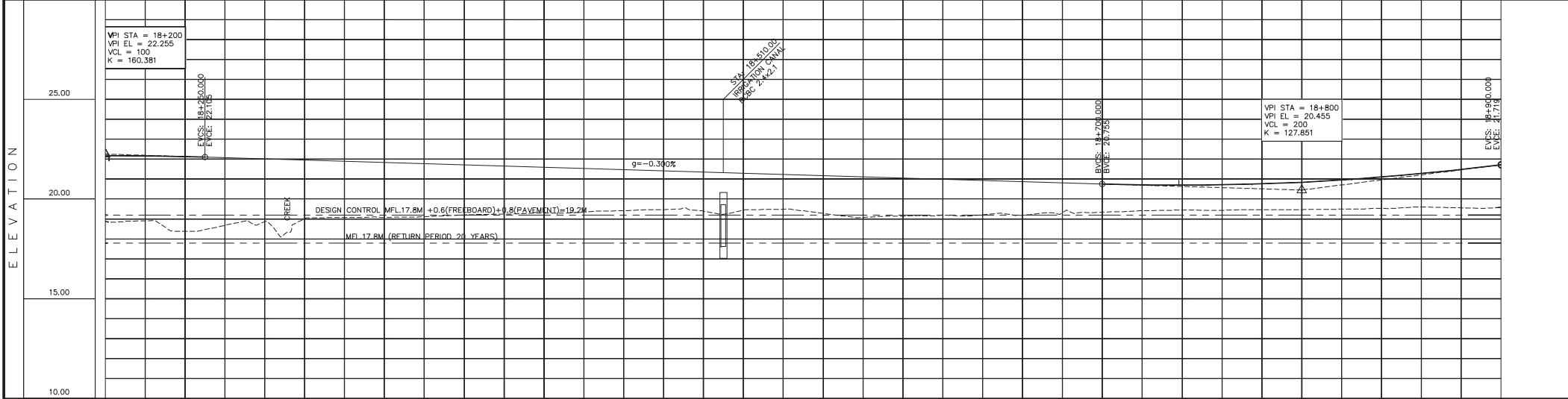
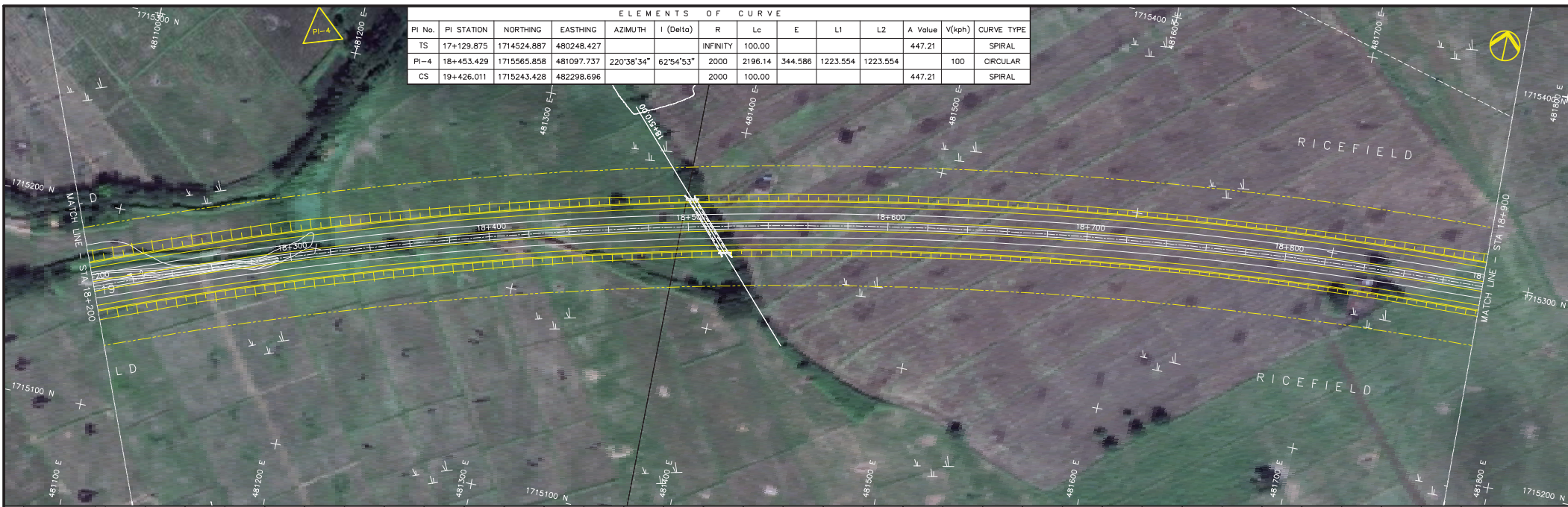
STATION	16+800	16+900	17+000	17+100	17+200	17+300	17+400	17+500
FINISHED GRADE ELEVATION	18.147	21.496	18.090	21.635	18.100	21.775	18.007	21.914
EXISTING GROUND ELEVATION	18.132	22.053	18.063	22.193	19.113	22.332	18.473	22.469
VERTICAL CURVATURE	+0.667% L=230.000		23.099 17+030		-0.550% L=380.000			
HORIZONTAL CURVATURE	R=∞		CS 17+129.875 A=447 L=100.000m		SC 17+229.875			

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 16+800.000-STA 17+500.000	E-25 SHEET NO. 25 OF 44



STATION	17+500	17+600	17+700	17+800	17+900	18+000	18+100	18+200																												
FINISHED GRADE ELEVATION	20.514	20.408	20.333	20.293	20.288	20.318	20.378	20.443	20.508	20.572	20.637	20.702	20.766	20.831	20.896	20.961	21.025	21.090	21.155	21.219	21.284	21.349	21.413	21.478	21.543	21.608	21.672	21.737	21.802	21.866	21.931	21.996	22.060	22.122	22.187	
EXISTING GROUND ELEVATION	18.594	18.575	18.595	18.672	18.727	18.701	18.645	18.704	18.728	18.710	18.797	18.815	18.842	18.940	18.948	18.951	19.014	19.023	18.027	19.032	19.164	19.221	19.221	19.229	19.303	19.256	19.340	19.413	19.281	19.059	18.743	18.332	18.098	18.472	19.075	18.879
VERTICAL CURVATURE																																				
HORIZONTAL CURVATURE	R=2000.000 L=2196.136																																			

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 17+500.000-STA 18+200.000	E-26 SHEET NO. 26 OF 44



STATION	18+200	18+300	18+400	18+500	18+600	18+700	18+800	18+900
FINISHED GRADE ELEVATION	22.177	22.167	22.151	22.075	22.015	21.955	21.895	21.835
EXISTING GROUND ELEVATION	18.879	18.908	19.377	19.077	19.084	19.113	19.203	19.245
VERTICAL CURVATURE	[Diagram showing vertical curve with R=2000.000 and L=2196.136]							
HORIZONTAL CURVATURE	[Diagram showing horizontal curve with R=2000.000 and L=2196.136]							

PROJECT TITLE Preparatory survey for expressway project in Mega Manila Region CLLEX (TARLAC - CABANATUAN)	SCALE V = 200 H = 2000	SHEET CONTENT PACKAGE 2 - ULTIMATE STAGE PLAN AND PROFILE STA 18+200.000-STA 18+900.000	DRAWING NO. E-27
			SHEET NO. 27 OF 44