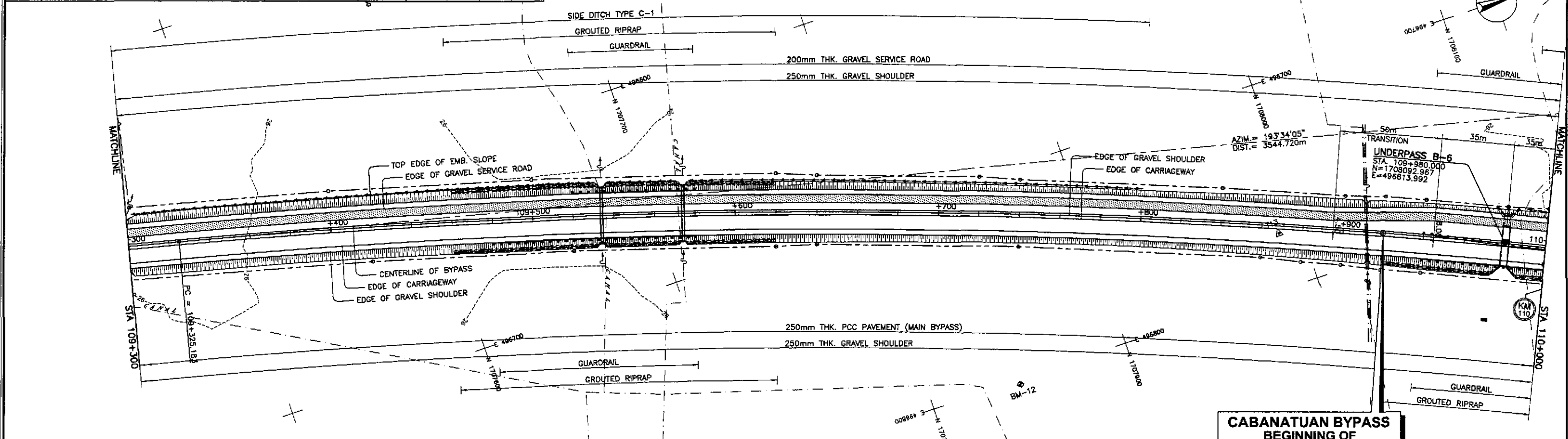
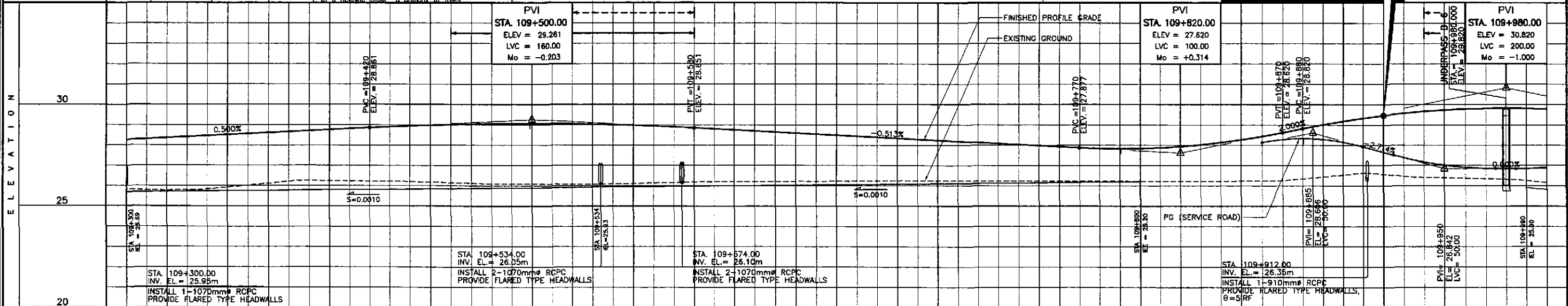


ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-05	110+360.304	1,708,480.693	496,844.734	32°57'04"	3,500.00	1,035.121	2,012.865	149.860	-	-	80



**CABANATUAN BYPASS
BEGINNING OF
CONTRACT PACKAGE II
END OF CONTRACT PACKAGE I**
 STA. 109+820.00
 ELEV. = 29.460
 N = 1,708,038.069
 E = 496,789.783

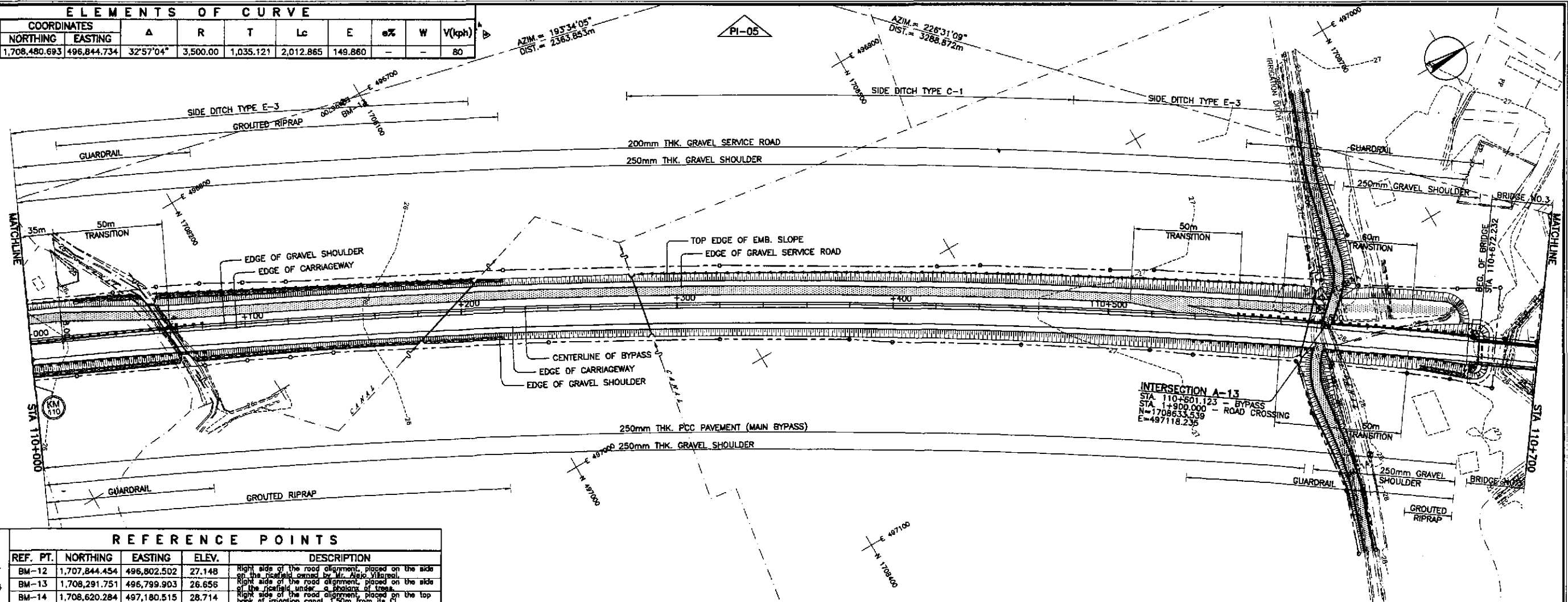
REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-11	1,707,413.404	496,659.842	27.220	Right side of the road alignment, placed on the top bank of irrigation canal, 1.20m from its C/L
BM-12	1,707,844.454	496,802.502	27.148	Right side of the road alignment, placed on the side of a field owned by Mr. Alex Viloria
BM-13	1,708,291.751	496,799.903	26.656	Right side of the road alignment, placed on the side of a field under a canopy of trees



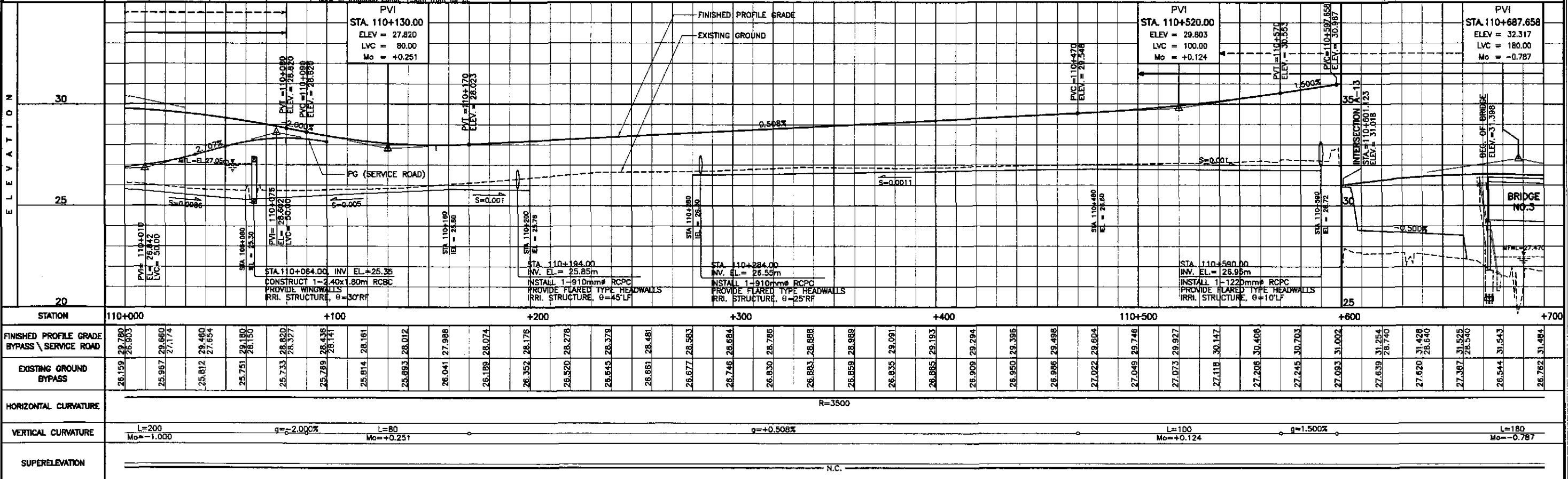
STATION	+300	+400				109+500				+600				+700				+800				+900				110+000																																										
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	25.825	28.261	25.759	28.361	25.828	28.461	26.019	28.561	26.210	28.661	26.241	28.761	26.229	28.861	26.204	28.949	26.148	29.011	26.092	29.048	26.077	29.059	26.073	29.045	26.084	29.006	26.132	28.941	26.180	28.851	26.199	28.749	26.211	28.646	26.223	28.543	26.235	28.441	26.247	28.338	26.243	28.133	26.238	28.030	26.230	27.928	26.222	27.838	26.217	27.836	26.213	27.934	26.217	28.133	26.235	28.433	26.345	28.820	26.533	29.180	26.416	29.660	26.368	29.780	26.320	29.820	26.159	29.780
EXISTING GROUND BYPASS	25.825	28.261	25.759	28.361	25.828	28.461	26.019	28.561	26.210	28.661	26.241	28.761	26.229	28.861	26.204	28.949	26.148	29.011	26.092	29.048	26.077	29.059	26.073	29.045	26.084	29.006	26.132	28.941	26.180	28.851	26.199	28.749	26.211	28.646	26.223	28.543	26.235	28.441	26.247	28.338	26.243	28.133	26.238	28.030	26.230	27.928	26.222	27.838	26.217	27.836	26.213	27.934	26.217	28.133	26.235	28.433	26.345	28.820	26.533	29.180	26.416	29.660	26.368	29.780	26.320	29.820	26.159	29.780
HORIZONTAL CURVATURE	109+325.183		R=3500																																																																	
VERTICAL CURVATURE	g=0.500%		L=160 Mo=-0.203				g=-0.513%				L=100 Mo=+0.314				g=2.000%				L=200 Mo=-1.000																																																	
SUPERELEVATION	N.C.																																																																			

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :		SHEET NO. :
	CHECKED	10/11/02	<i>[Signature]</i>		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		HORIZONTAL 1:1000	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 109+920 - STA. 110+000		RP-01
	SUBMITTED	10/18/02	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	Approved By:	CABANATUAN BYPASS - CONTRACT PACKAGE II		VERTICAL 1:100			

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-05	110+360.304	1,708,480.693	496,844.734	32°57'04"	3,500.00	1,035.121	2,012.865	149.860	-	-	80



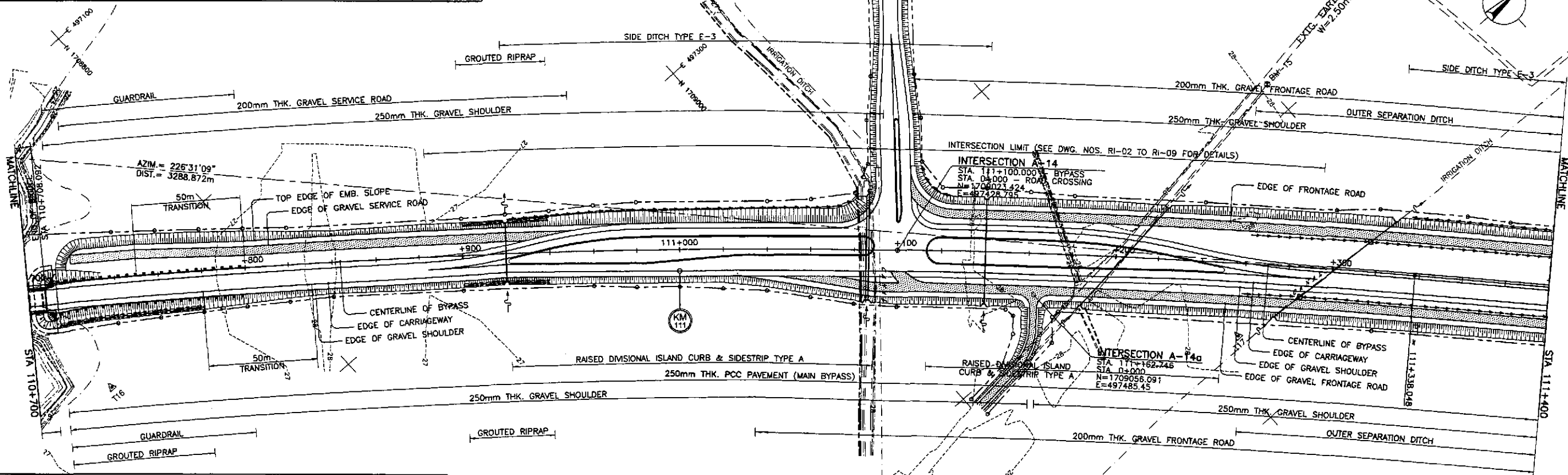
REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-12	1,707,844.454	496,802.502	27.148	Right side of the road alignment, placed on the side of the right-of-way owned by Mr. Alexis Villaluz.
BM-13	1,708,291.751	496,799.903	26.656	Right side of the road alignment, placed on the side of the right-of-way under a shadow of trees.
BM-14	1,708,620.284	497,180.515	28.714	Right side of the road alignment, placed on the top back of irrigation canal, 1.50m from its P.



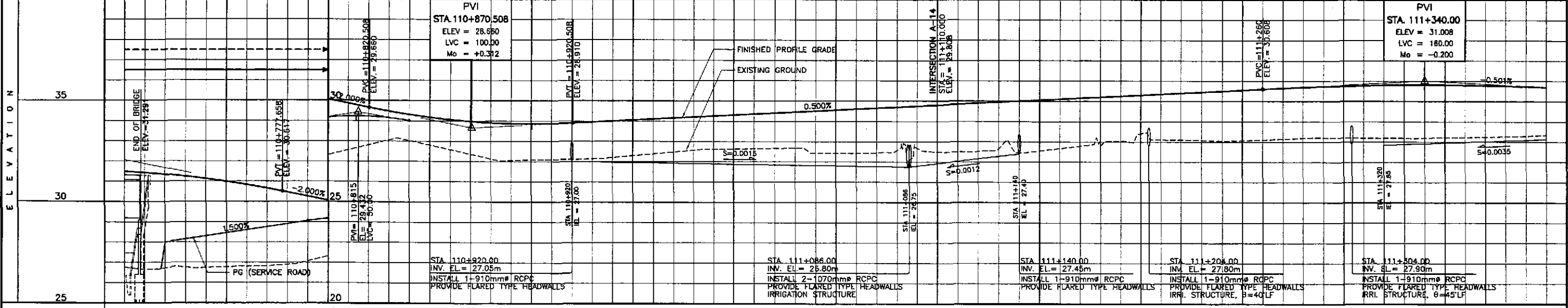
STATION	110+000	110+100	110+200	110+300	110+400	110+500	110+600	110+700
FINISHED PROFILE GRADE	26.159	25.967	25.812	25.751	25.733	25.789	25.814	26.041
EXISTING GROUND BYPASS	26.903	29.660	29.480	28.150	28.820	28.327	28.141	28.074
HORIZONTAL CURVATURE	R=3500							
VERTICAL CURVATURE	L=200 Mo=-1.000		g=-2.000%		L=80 Mo=+0.251		g=+0.508%	
SUPERELEVATION	N.C.							

	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/16/05	<i>[Signature]</i>	BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 110+000 - STA. 110+700	RP-02
	SUBMITTED	10/18/05	<i>[Signature]</i>	Submitted By:	Reviewed By:	Recommended By:				

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-05	110+360.304	1,708,480.693	496,844.734	32°57'04"	3,500.00	1,035.121	2,012.865	149.860	-	-	80

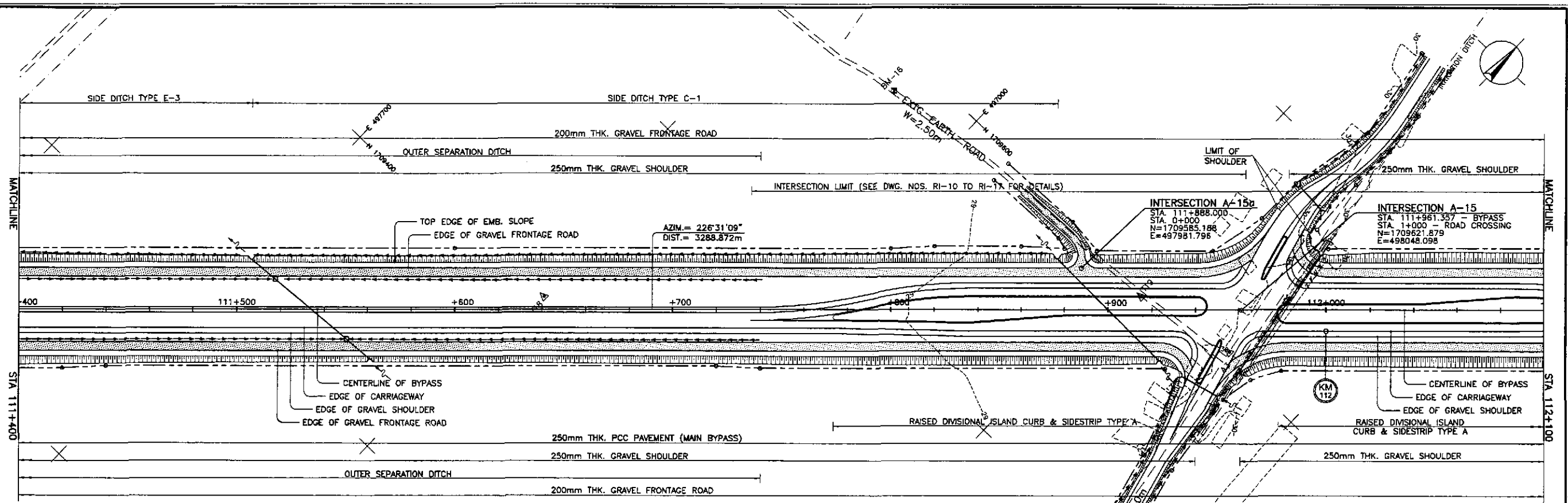


REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-14	1,708,620.284	497,180.515	28.714	Right side of the road alignment, placed on the top bank of irrigation canal, 1.50m away from the CL
BM-15	1,709,200.415	497,484.887	28.868	Right side of the road alignment, placed on the side of a dirt road, 1.50m away from the CL
BM-16	1,709,584.212	497,862.962	29.530	Right side of the road alignment, placed on the side of a dirt road, 1.50m away from the CL

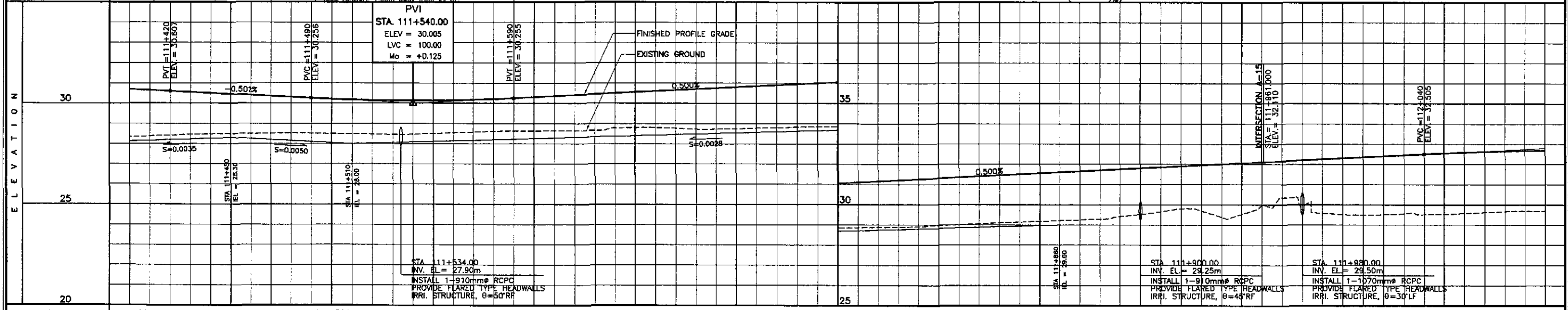


STATION	+700	+800	+900	111+000	+100	+200	+300	+400																												
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	26.782, 31.484	26.722, 31.347, 28.007	26.742, 31.133, 28.307	26.807, 30.840, 28.607	26.901, 30.471, 28.907	27.318, 30.071, 29.176	27.810, 29.671, 29.220	28.031, 29.318, 29.023	27.583, 29.056	27.075, 28.860	27.119, 28.908	27.203, 29.008	27.387, 29.108	27.571, 29.208	27.652, 29.308	27.660, 29.408	27.432, 29.508	27.429, 29.608	27.582, 29.708	27.493, 29.808	27.532, 29.908	27.445, 30.008	27.670, 30.108	27.890, 30.208	28.408, 30.308	28.103, 30.408	28.050, 30.508	28.105, 30.608	28.192, 30.695	28.200, 30.795	28.188, 30.795	28.190, 30.808	28.226, 30.795	28.282, 30.757	28.336, 30.695	
EXISTING GROUND BYPASS	26.782, 31.484	26.722, 31.347, 28.007	26.742, 31.133, 28.307	26.807, 30.840, 28.607	26.901, 30.471, 28.907	27.318, 30.071, 29.176	27.810, 29.671, 29.220	28.031, 29.318, 29.023	27.583, 29.056	27.075, 28.860	27.119, 28.908	27.203, 29.008	27.387, 29.108	27.571, 29.208	27.652, 29.308	27.660, 29.408	27.432, 29.508	27.429, 29.608	27.582, 29.708	27.493, 29.808	27.532, 29.908	27.445, 30.008	27.670, 30.108	27.890, 30.208	28.408, 30.308	28.103, 30.408	28.050, 30.508	28.105, 30.608	28.192, 30.695	28.200, 30.795	28.188, 30.795	28.190, 30.808	28.226, 30.795	28.282, 30.757	28.336, 30.695	
HORIZONTAL CURVATURE	R=3500																R=0																			
VERTICAL CURVATURE	L=180, Mo=-0.787		g=-2.000%				L=100, Mo=+0.312				g=+0.500%												L=160, Mo=-0.200													
SUPERELEVATION	N.C.																																			

	DESIGNED	DATE	SIGNATURE					PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/16/02	ALACACIO	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	HORIZONTAL 1:1000	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 110+700 - STA. 111+400	RP-03
	SUBMITTED	10/18/02	BOSE	BUREAU OF DESIGN OFFICE OF THE SECRETARY				CABANATUAN BYPASS - CONTRACT PACKAGE II	VERTICAL 1:100		



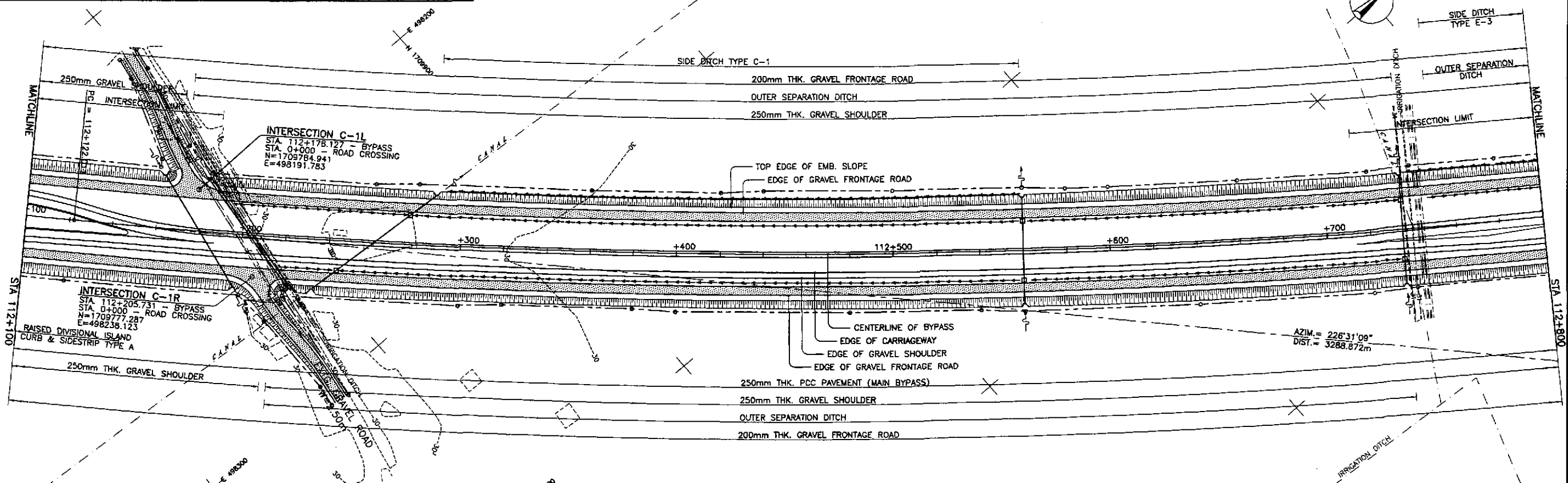
REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-15	1,709,200.415	497,484.887	28.668	Right side of the road alignment, placed on the side of dirt road, 1.50m away from the centerline.
BM-16	1,709,584.212	497,862.962	29.530	Right side of the road alignment, placed on the side of dirt road, 1.50m away from the centerline.
BM-17	1,710,336.115	498,592.643	31.009	Left side of the road alignment, placed on the side of dirt road, 1.80m away from the centerline.



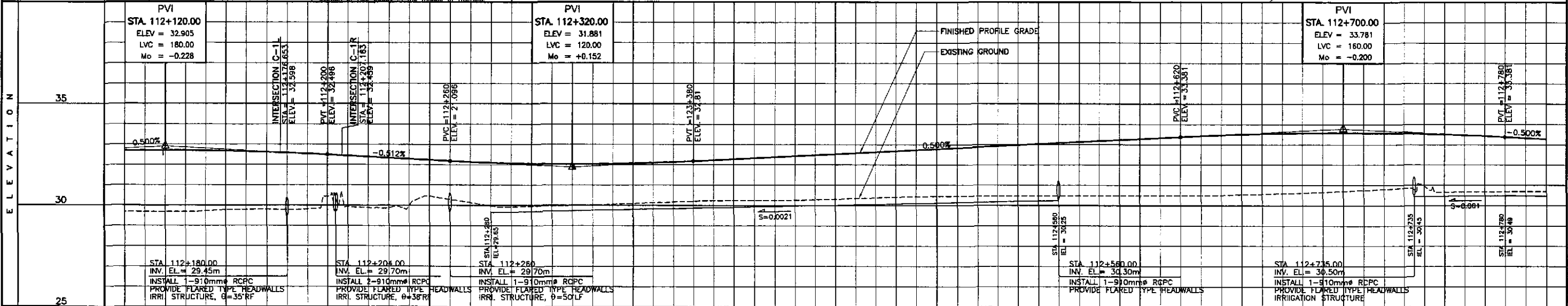
STATION	+400	111+500										+600										+700										+800										+900										112+000										+1000								
FINISHED PROFILE GRADE BYPASS	28.336	30.695	28.420	30.607	28.485	30.507	28.501	30.406	28.517	30.306	28.488	30.211	28.470	30.151	28.471	30.131	28.543	30.151	28.615	30.210	28.636	30.305	28.644	30.405	28.800	30.605	28.727	30.705	28.751	30.805	28.803	30.905	28.846	31.005	28.866	31.105	28.886	31.205	28.953	31.305	28.955	31.405	28.141	31.505	28.213	31.605	29.285	31.705	29.524	31.805	29.783	31.905	29.381	32.005	29.978	32.105	28.753	32.205	28.514	32.305	29.509	32.405	29.510	32.505	29.572	32.585	29.661	32.655	29.680	32.692
EXISTING GROUND BYPASS	28.336	30.695	28.420	30.607	28.485	30.507	28.501	30.406	28.517	30.306	28.488	30.211	28.470	30.151	28.471	30.131	28.543	30.151	28.615	30.210	28.636	30.305	28.644	30.405	28.800	30.605	28.727	30.705	28.751	30.805	28.803	30.905	28.846	31.005	28.866	31.105	28.886	31.205	28.953	31.305	28.955	31.405	28.141	31.505	28.213	31.605	29.285	31.705	29.524	31.805	29.783	31.905	29.381	32.005	29.978	32.105	28.753	32.205	28.514	32.305	29.509	32.405	29.510	32.505	29.572	32.585	29.661	32.655	29.680	32.692
HORIZONTAL CURVATURE	g = -0.501%										L=100 Mo = +0.125										g = 0.500%										L=180 Mo = -0.228										N.C.																													
VERTICAL CURVATURE	g = -0.501%										L=100 Mo = +0.125										g = 0.500%										L=180 Mo = -0.228										N.C.																													
SUPERELEVATION	N.C.										N.C.										N.C.										N.C.										N.C.																													

	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)				SCALE :	SHEET CONTENTS :		SHEET NO. : RP-04
	CHECKED	10/11/02	S. GARCIA		BUREAU OF DESIGN Submitted By: DANLO C. TRAJANO (Project Director) / JOSEFINA M. ALAGAR (Chief, Highways Division) / GILBERTO S. REYES (DIC, Director IV) / MANUEL M. BONGAN (Undersecretary) / SIMEON A. DATUMANONG (Secretary)				HORIZONTAL 1:1000	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 111+400 - STA. 112+100		
	SUBMITTED	10/13/02	M. KIRCHNER		OFFICE OF THE SECRETARY Approved By: (Signature/Approval)				VERTICAL 1:100			
CABANATUAN BYPASS - CONTRACT PACKAGE II FULL SIZE A1												

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-08	113+591.799	1,710,743.806	499,231.154	45°33'32"R	3,500.00	1,469.788	2,783.035	296.087	-	-	80



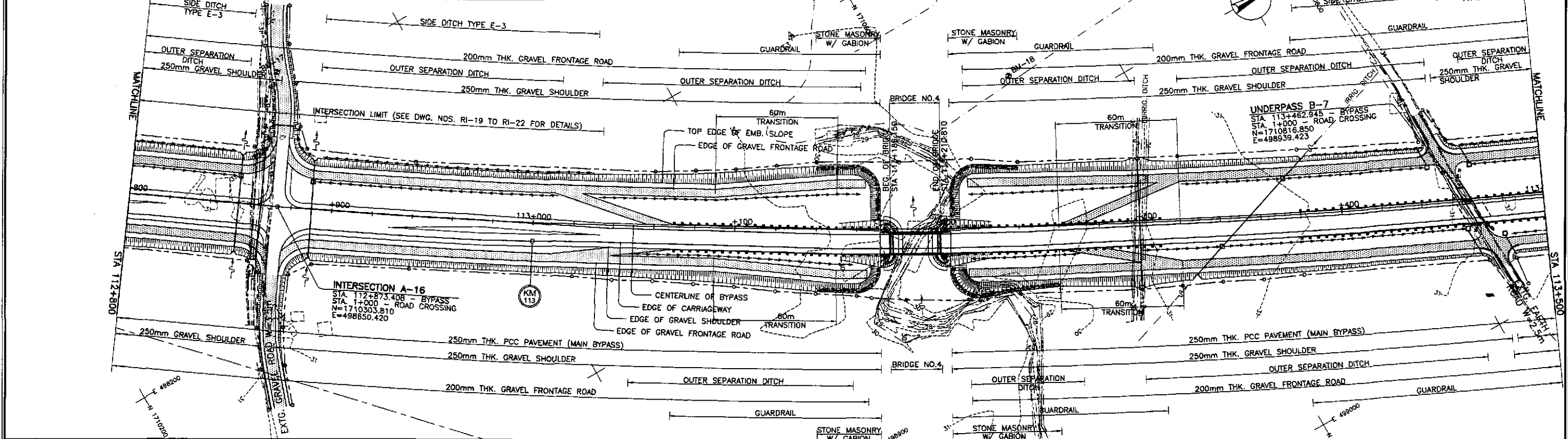
REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-17	1,710,336.115	498,592.643	31.009	Left side of the road alignment, placed on the side (right) gravel road, 1.80m away from the centerline.
BM-18	1,710,649.187	498,773.128	30.565	Left side of the road alignment, placed on the intersection of rice paddy in the middle of ricefield.



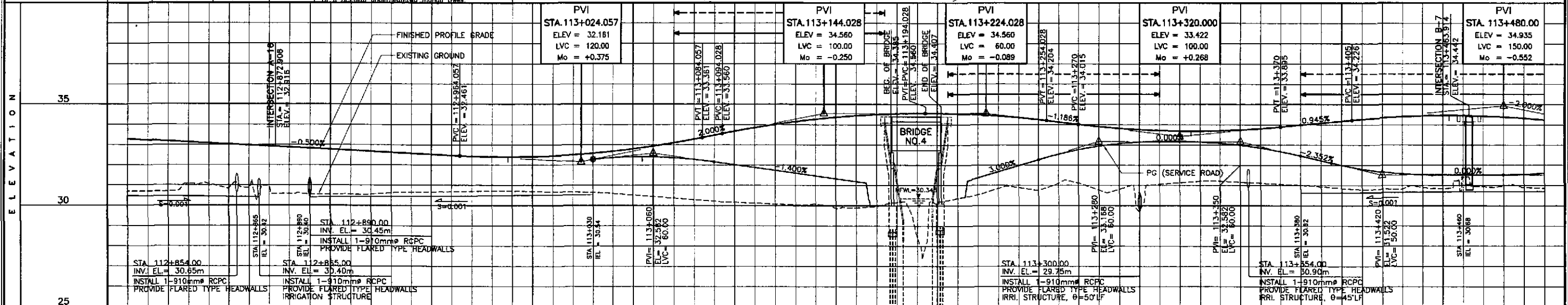
STATION	+100	+200	+300	+400	112+500	+600	+700	+800
FINISHED PROFILE GRADE BYPASS	29.690, 32.692	29.680, 32.703	29.720, 32.689	29.790, 32.650	29.775, 32.585	30.426, 32.496	29.677, 32.393	29.881, 32.291
EXISTING GROUND BYPASS	29.690, 32.692	29.680, 32.703	29.720, 32.689	29.790, 32.650	29.775, 32.585	30.426, 32.496	29.677, 32.393	29.881, 32.291
HORIZONTAL CURVATURE	112+122.011		R=3500					
VERTICAL CURVATURE	L=180, Mo=-0.228		g=-0.512%		L=120, Mo=+0.152		g=0.500%	
SUPERELEVATION	N.C.							

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 112-000 - STA. 112+800	SHEET NO. : RP-05
	CHECKED	10/16/02	S. ROSE		BUREAU OF DESIGN Reviewed By: JOSEFINA M. ALAGAR Recommended By: GILBERTO S. REYES Office of the Secretary Approved By: MANUEL M. BONDAN SIMEON A. DATUMANONG	PROJECT AND LOCATION : CABANATUAN BYPASS - CONTRACT PACKAGE II					
	SUBMITTED	10/16/02	M. R. RIVERA		DANILLO C. TRAJANO Project Director JOSEFINA M. ALAGAR Chief, Highways Division GILBERTO S. REYES QC, Director IV MANUEL M. BONDAN Undersecretary SIMEON A. DATUMANONG Secretary	PROJECT AND LOCATION : CABANATUAN BYPASS - CONTRACT PACKAGE II					

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-06	113+591.799	1,710,743.806	499,231.154	45°33'32"R	3,500.00	1,469.788	2,783.035	296.067	-	-	80



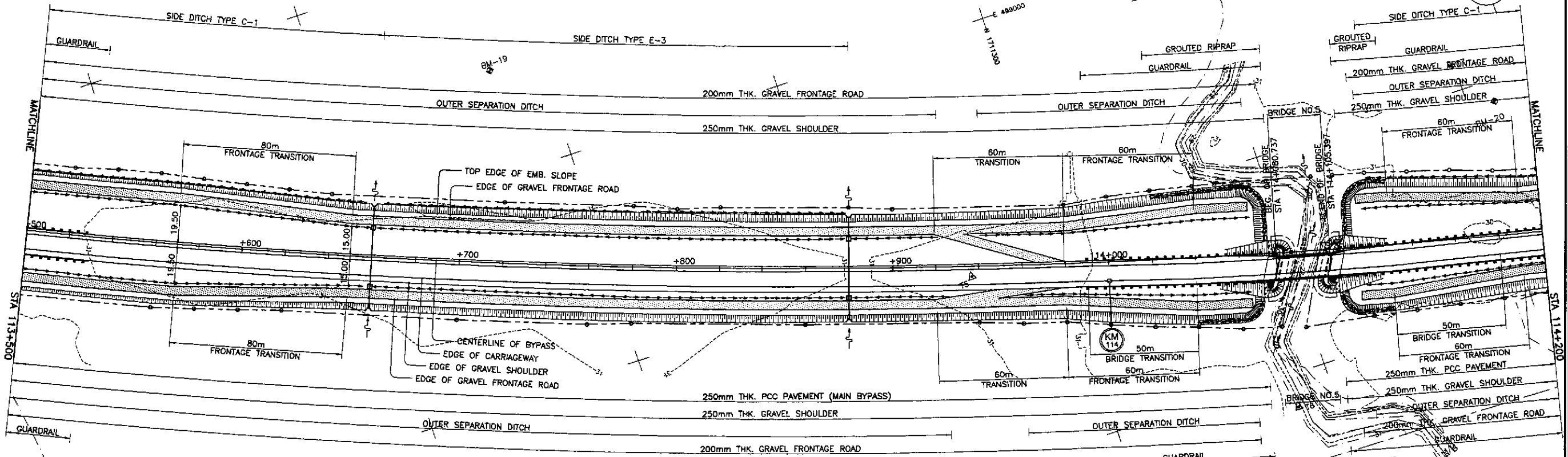
REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-17	1,710,336.115	498,592.643	31.009	Left side of the road alignment, placed on the side road (gravel), 1.80m away from its CL.
BM-18	1,710,649.187	498,773.128	30.585	Left side of the road alignment, placed on the intersection of the bypass in the middle of field.
BM-19	1,711,076.165	498,651.653	31.218	Left side of the road alignment, placed on the side of a ripfield underneath the mango trees.



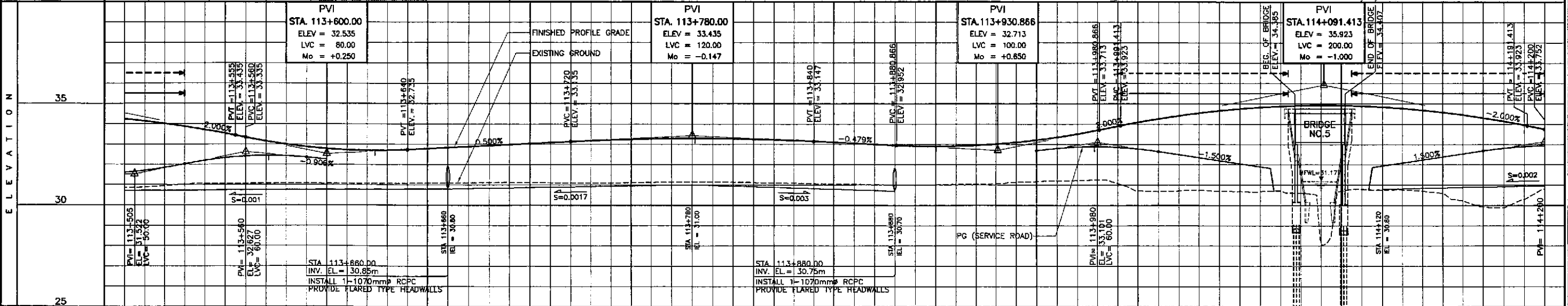
STATION	+800	+900	113+000	+100	+200	+300	+400	113+500																																																																											
FINISHED PROFILE GRADE	30.890	30.701	31.075	30.882	30.981	30.586	30.552	30.681	30.658	30.581	30.686	30.714	30.407	30.695	30.415	30.663	30.507	30.596	30.682	30.367	30.444	30.940	30.404	30.292	30.281	30.182	30.676	30.022	30.078	30.012	31.742	30.086	30.968	31.462	29.890	30.444	31.182	30.180	30.540	30.137	30.556	30.538	30.493	30.368	30.898	30.351	31.968	31.107	30.543	30.781	30.907	30.943	29.748	30.755	30.143	31.130	30.688	30.168	30.211	30.707	30.080	31.111	30.811	30.853	31.011	30.463	30.854	30.178	31.090	30.819	30.345	31.669	30.901	30.436	31.528	31.419	30.448	31.522	30.980	30.382	31.922	30.864	30.238
EXISTING GROUND BYPASS	30.890	30.701	31.075	30.882	30.981	30.586	30.552	30.681	30.658	30.581	30.686	30.714	30.407	30.695	30.415	30.663	30.507	30.596	30.682	30.367	30.444	30.940	30.404	30.292	30.281	30.182	30.676	30.022	30.078	30.012	31.742	30.086	30.968	31.462	29.890	30.444	31.182	30.180	30.540	30.137	30.556	30.538	30.493	30.368	30.898	30.351	31.968	31.107	30.543	30.781	30.907	30.943	29.748	30.755	30.143	31.130	30.688	30.168	30.211	30.707	30.080	31.111	30.811	30.853	31.011	30.463	30.854	30.178	31.090	30.819	30.345	31.669	30.901	30.436	31.528	31.419	30.448	31.522	30.980	30.382	31.922	30.864	30.238
HORIZONTAL CURVATURE	R=3500																																																																																		
VERTICAL CURVATURE	g=-0.500% L=120 Mo=+0.375 g=2.000% L=100 Mo=-0.250 g=0.000% L=60 Mo=-0.089 g=-1.186% L=100 Mo=+0.268 g=0.945% L=150 Mo=-0.552																																																																																		
SUPERELEVATION	N.C.																																																																																		

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	10/16/02	S. JOSE		BUREAU OF DESIGN Submitted By: DANILO C. TRAJANO Project Director	OFFICE OF THE SECRETARY Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES Dir., Director IV	Approved By: MANUEL M. BONOAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)	HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 112+800 - STA. 113+500	RP-06
	SUBMITTED	10/16/02	Y. B. B. B.		TEAM LEADER	CABANATUAN BYPASS - CONTRACT PACKAGE II				CABANATUAN BYPASS - CONTRACT PACKAGE II			

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-06	113+591.799	1,710,743.806	499,231.154	45°33'32"R	3,500.00	1,469.788	2,783.035	296.087	-	-	80



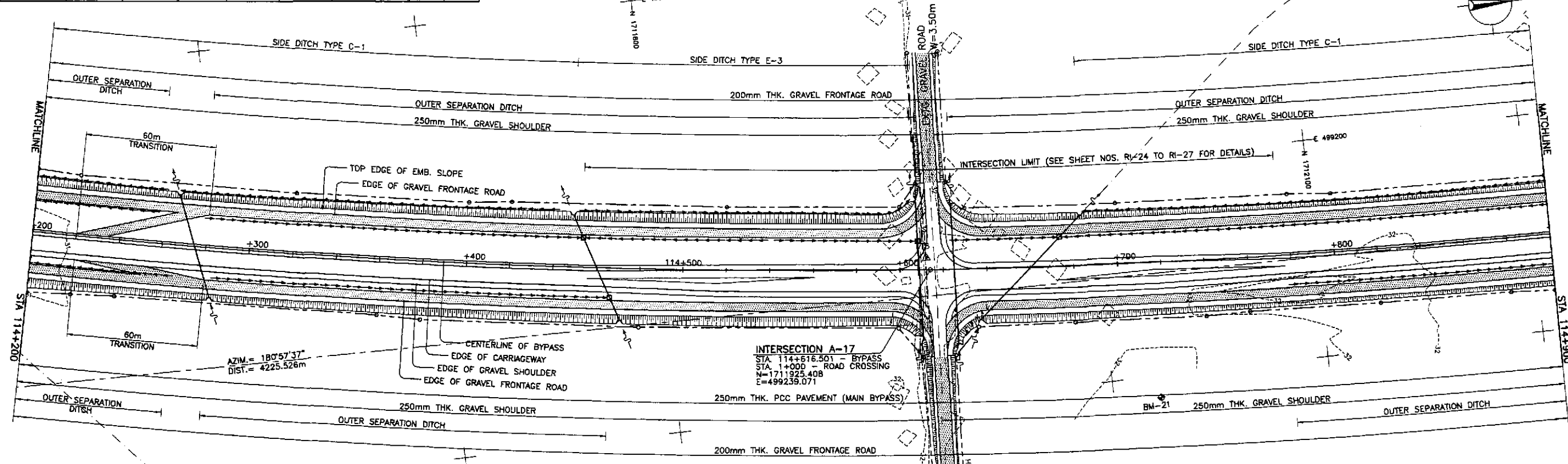
REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-18	1,710,649.187	498,773.128	30.565	Left side of the road alignment, placed on the intersection of rice paddy in the middle of ricefield.
BM-19	1,711,076.165	498,651.653	31.218	Left side of the road alignment, placed on the side of a ricefield underlying the bypass road.
BM-20	1,711,512.317	499,109.686	31.389	Left side of the road alignment, placed on a rice paddy in the middle of ricefield.



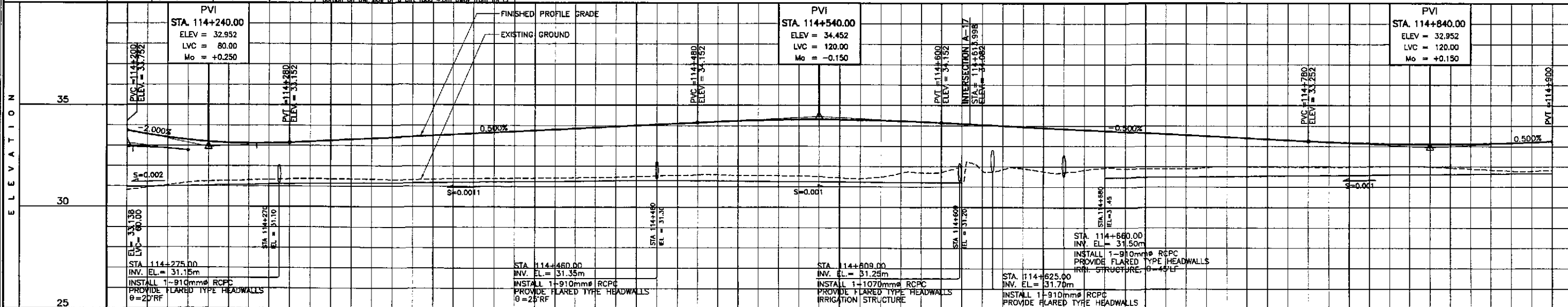
STATION	113+500	+600	+700	+800	+900	114+000	+100	+200
FINISHED PROFILE GRADE BYPASS / SERVICE ROAD	30.864, 34.230, 31.602	34.014, 31.843	33.712, 32.201	33.335, 32.408	32.997, 32.422	32.285, 32.265	32.697, 31.074	32.285, 31.066, 32.735, 31.086, 32.935, 31.104, 33.035, 31.096, 33.135, 31.097, 33.218, 31.121, 33.269, 31.145, 33.288, 31.125, 33.274, 31.093, 33.227, 31.061, 33.147, 31.028, 33.052, 30.997, 32.956, 31.015, 32.906, 31.047, 32.954, 31.133, 33.102, 31.204, 33.349, 32.805, 31.242, 33.695, 32.867, 30.725, 34.088, 32.777, 30.716, 34.414, 32.501, 30.705, 34.659, 32.201, 30.678, 34.825, 31.901, 30.609, 34.910, 30.704, 34.916, 30.755, 34.842, 31.938, 30.705, 34.687, 32.238, 30.217, 34.453, 32.538, 29.888, 34.139, 32.815, 30.816, 33.752
EXISTING GROUND BYPASS	30.864, 30.945, 31.063, 31.065, 31.077, 31.074, 31.066, 31.066, 31.086, 31.104, 31.096, 31.096, 31.097, 31.121, 31.145, 31.125, 31.093, 31.061, 31.028, 30.997, 31.015, 31.047, 31.133, 31.204, 31.242, 30.725, 30.716, 30.705, 30.678, 30.609, 30.704, 30.755, 30.705, 30.217, 29.888, 30.816							
HORIZONTAL CURVATURE	R=3500							
VERTICAL CURVATURE	L=150, Mo=-0.552	g=-2.000%, L=80, Mo=+0.250	g=0.500%	L=120, Mo=-0.147	g=-0.479%	L=100, Mo=+0.650	g=2.000%, L=200, Mo=-0.100	g=-2.000%
SUPERELEVATION	N.C.							

	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/14/02	[Signature]		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)	HORIZONTAL 1:1000	PLAN AND PROFILE	RP-07
	SUBMITTED	10/18/02	[Signature]		CABANATUAN BYPASS - CONTRACT PACKAGE II	VERTICAL 1:100	ALONG BYPASS (INITIAL STAGE)	
DANILLO C. TRAJANO, Project Director JOSEFINA M. ALAGAR, Chief, Highways Division GILBERTO S. REYES, OIC, Director IV MANUEL M. BONGAN, Undersecretary SIMEON A. DATUMANONG, Secretary				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II		SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1		SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 113+500 - STA. 114+200

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-06	113+591.799	1,710,743.806	499,231.154	45°33'32"R	3,500.00	1,469.788	2,783.035	296.087	-	-	80

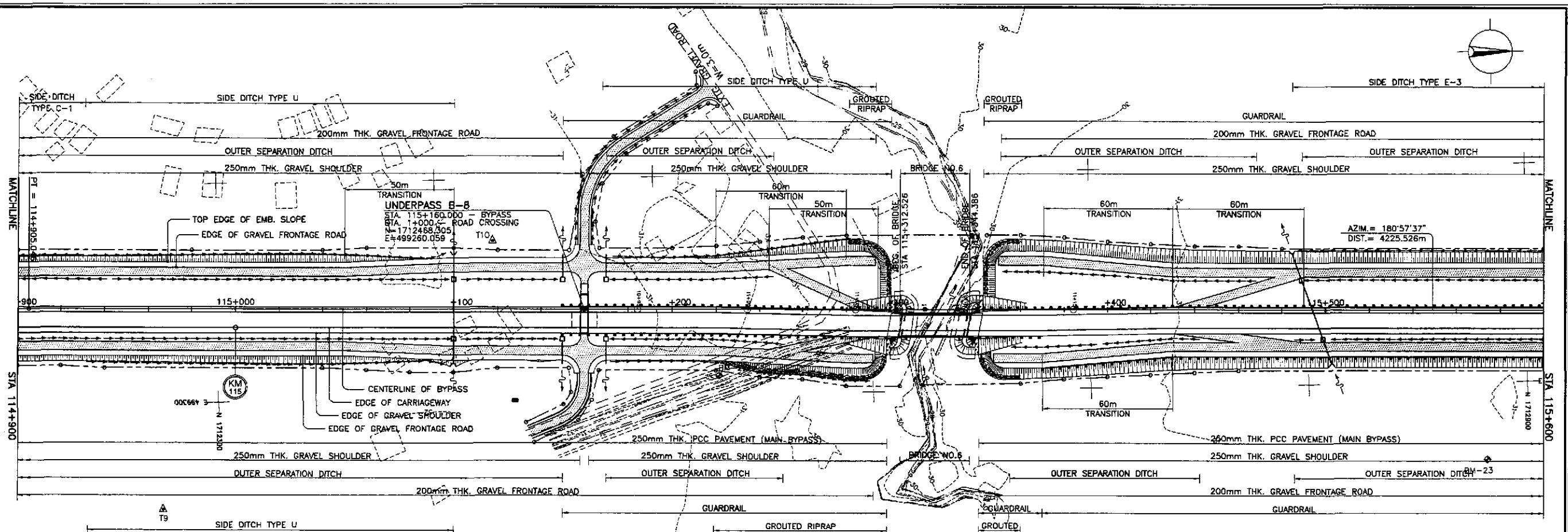


REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-20	1,711,512.317	499,109.686	31.389	Left side of the road alignment, placed on a rice paddy intersection in the middle of a ricefield.
BM-21	1,712,021.897	499,309.940	32.657	Right side of the road alignment, placed on the side of a road 1.80m away from the C.L.
BM-22	1,712,529.312	499,291.424	32.692	Right side of the road alignment, placed on the higher portion of the side of a dirt road 4.0m away from its C.L.



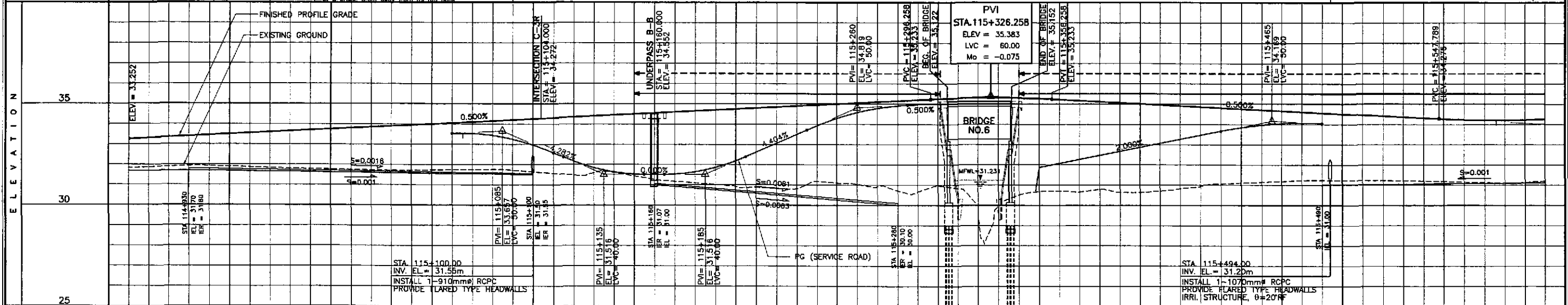
STATION	+200	+300	+400	114+500	+600	+700	+800	+900	
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	33.252	33.414	33.872	33.202	33.114	33.357	33.152	33.252	
EXISTING GROUND BYPASS	30.816	31.054	31.245	31.298	31.357	31.360	31.340	31.352	
HORIZONTAL CURVATURE	R=3500								
VERTICAL CURVATURE	L=80 Mo=+0.250		q=0.500%			L=120 Mo=-0.150		q=-0.500%	
SUPERELEVATION	N.C.								

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pariidel, Cabanatuan and San Jose Bypasses)	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA 114+200 - STA. 114+900	SHEET NO. : RP-08
	CHECKED	10/16/02	S. ACACIO		Submitted By:	BUREAU OF DESIGN	OFFICE OF THE SECRETARY				
	SUBMITTED	10/18/02	S. ACACIO		DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES D.C. Director IV				



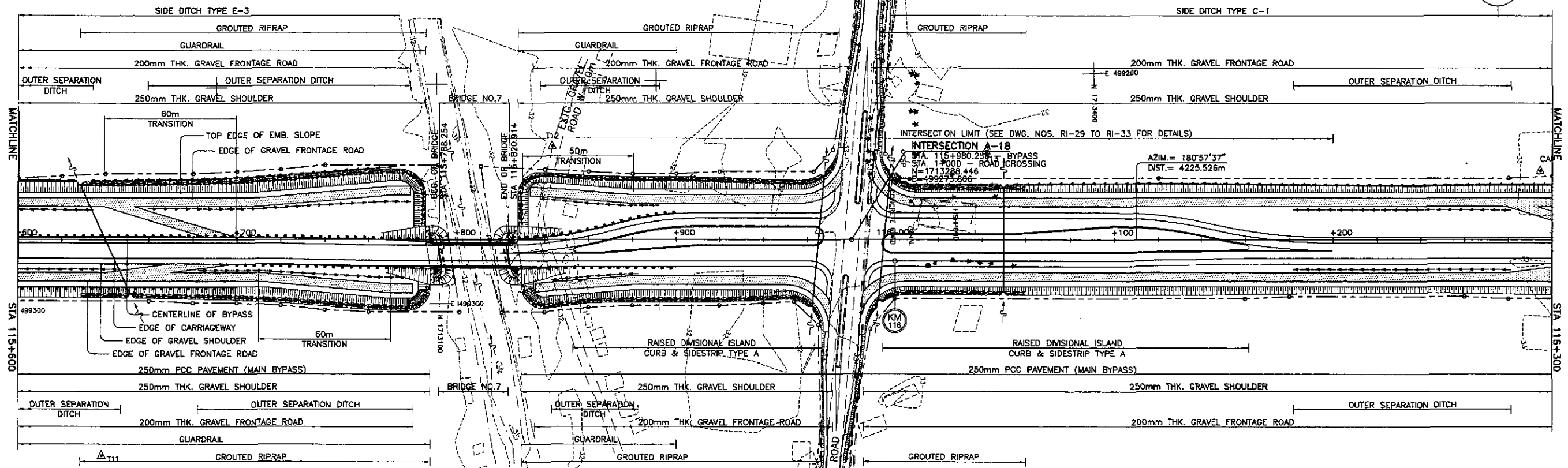
REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-21	1,712,021.897	499,309.940	32.657	Right side of the road alignment, placed on the side of a road 1.60m away from its CL
BM-22	1,712,529.312	499,291.424	32.692	Right side of the road alignment, placed on the higher point on the side of a dirt road 4.0m away from its CL
BM-23	1,712,881.166	499,335.652	32.766	Right side of the road alignment, placed on the bank of a creek 3.0m away from its top bank



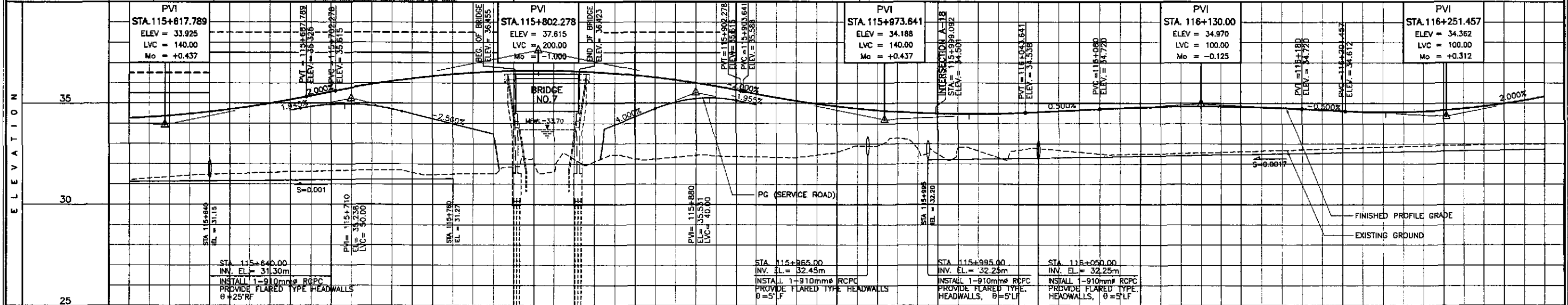
STATION	+900	115+000					+100	+200					+300	+400					115+500					+600									
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	31.824	33.252	33.352	33.452	33.552	33.652	31.762	33.752	33.852	33.952	34.052	34.152	34.252	34.352	34.452	34.552	34.652	34.752	34.852	34.952	35.052	35.152	35.252	35.352	35.452	35.552	35.652	35.752	35.852	35.952	36.052		
EXISTING GROUND BYPASS	31.824	33.252	33.352	33.452	33.552	33.652	31.762	33.752	33.852	33.952	34.052	34.152	34.252	34.352	34.452	34.552	34.652	34.752	34.852	34.952	35.052	35.152	35.252	35.352	35.452	35.552	35.652	35.752	35.852	35.952	36.052		
HORIZONTAL CURVATURE	R=∞																																
VERTICAL CURVATURE	g=0.500%															L=60 Mo=-0.075					g=-0.500%					L=140 Mo=+0.437							
SUPERELEVATION	N.C.																																

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS		PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)		SCALE :	SHEET CONTENTS :		SHEET NO. :
	CHECKED	10/16/02	S. ACACIO		BUREAU OF DESIGN DANILO C. TRAJANO Project Director	OFFICE OF THE SECRETARY JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Approved By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary	HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 114+900 - STA. 115+600	



REFERENCE POINTS

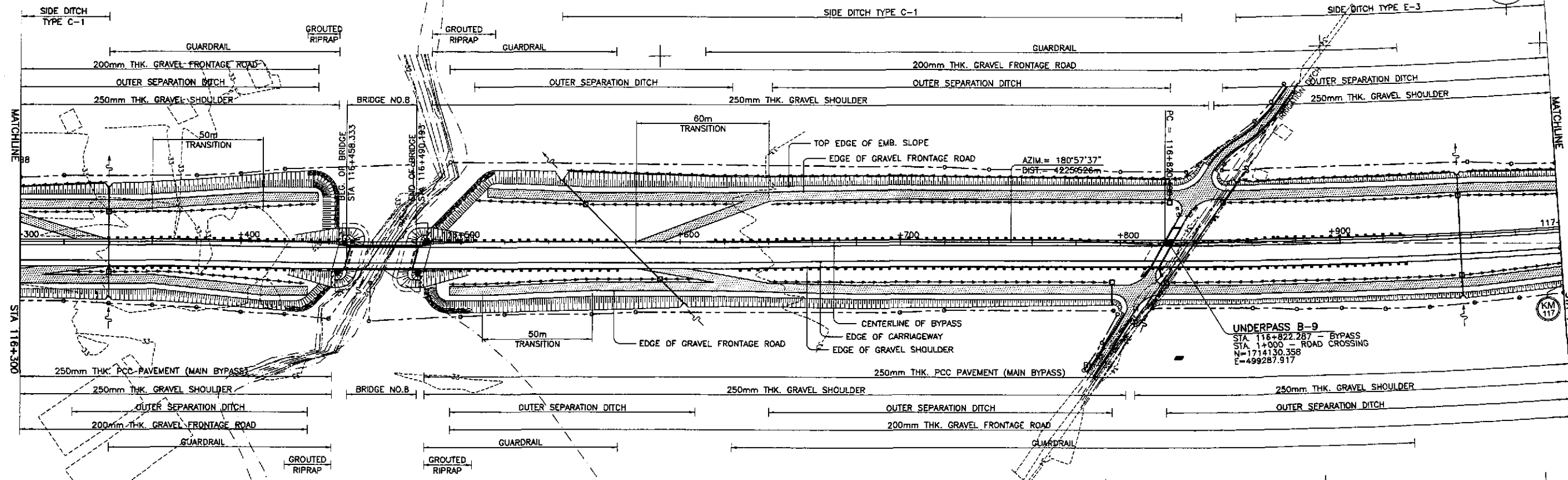
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-22	1,712,529.312	499,291.424	32.692	Right side of the road alignment, placed on the higher point on the side of a dirt road 4.1m away from it.
BM-23	1,712,881.166	499,335.652	32.786	Right side of the road alignment, placed on the bank of a creek 3.0m away from its top bank.



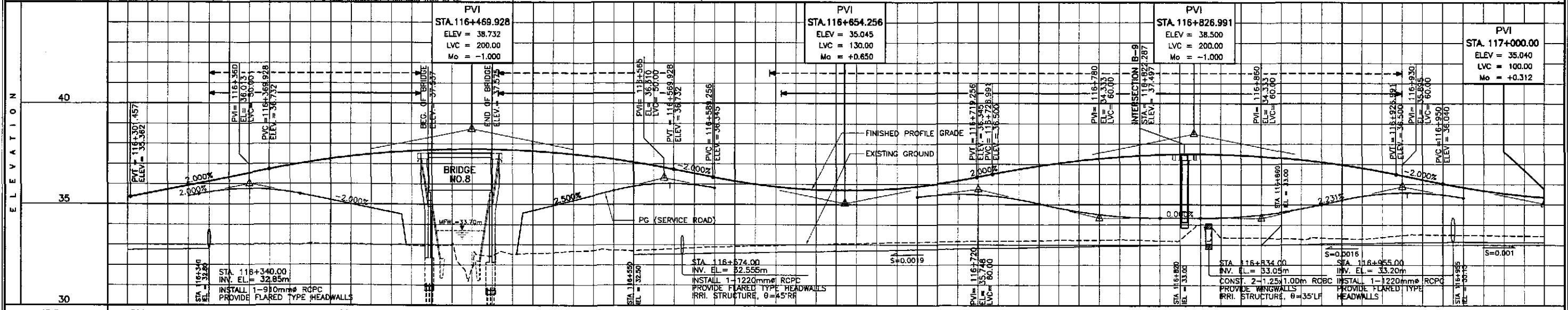
STATION	+600	+700	+800	+900	116+000	+100	+200	+300																												
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	31.207, 34.257	31.355, 34.380	31.480, 34.573	31.548, 34.838	31.616, 35.175, 34.655	31.655, 35.569, 34.944	31.687, 35.938, 34.888	31.726, 36.227, 34.488	31.500, 36.430, 33.988	31.528, 36.665, 33.488	32.091, 36.614	32.248, 36.584	32.441, 36.473, 33.931	32.251, 36.282, 34.731	32.432, 36.011, 35.233	32.373, 35.660, 35.140	32.337, 35.285	32.444, 34.979	32.884, 34.744	33.274, 34.581	32.487, 34.490	32.650, 34.470	32.687, 34.521	32.682, 34.620	32.499, 34.720	32.492, 34.800	32.532, 34.840	32.578, 34.840	32.642, 34.800	32.706, 34.720	32.770, 34.620	32.854, 34.563	32.883, 34.605	32.937, 34.748	32.981, 34.991	32.990, 35.334
EXISTING GROUND BYPASS	31.207, 34.257	31.355, 34.380	31.480, 34.573	31.548, 34.838	31.616, 35.175, 34.655	31.655, 35.569, 34.944	31.687, 35.938, 34.888	31.726, 36.227, 34.488	31.500, 36.430, 33.988	31.528, 36.665, 33.488	32.091, 36.614	32.248, 36.584	32.441, 36.473, 33.931	32.251, 36.282, 34.731	32.432, 36.011, 35.233	32.373, 35.660, 35.140	32.337, 35.285	32.444, 34.979	32.884, 34.744	33.274, 34.581	32.487, 34.490	32.650, 34.470	32.687, 34.521	32.682, 34.620	32.499, 34.720	32.492, 34.800	32.532, 34.840	32.578, 34.840	32.642, 34.800	32.706, 34.720	32.770, 34.620	32.854, 34.563	32.883, 34.605	32.937, 34.748	32.981, 34.991	32.990, 35.334
HORIZONTAL CURVATURE	R=∞																																			
VERTICAL CURVATURE	L=140, Mo=+0.437		g=2.000%				L=200, Mo=-1.000				g=-2.000%				L=140, Mo=+0.437				g=0.500%				L=100, Mo=-0.125				g=-0.500%				L=100, Mo=+0.312					
SUPERELEVATION	N.C.																																			

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 115+600 - STA. 116+300	SHEET NO. : RP-10	
	CHECKED	10/16/02	<i>S. Garcia</i>		BUREAU OF DESIGN								CABANATUAN BYPASS - CONTRACT PACKAGE II
	SUBMITTED	10/16/02	<i>Mr. Ruel</i>		P.H.L. - PMO Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES OC, Director IV	Recommended By: MANUEL M. BONDAN Undersecretary					

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-07	117+660.785	1,714,968.738	499,301.970	37°09'25"R	2,500.00	840.295	1,621.273	137.441	-	-	80



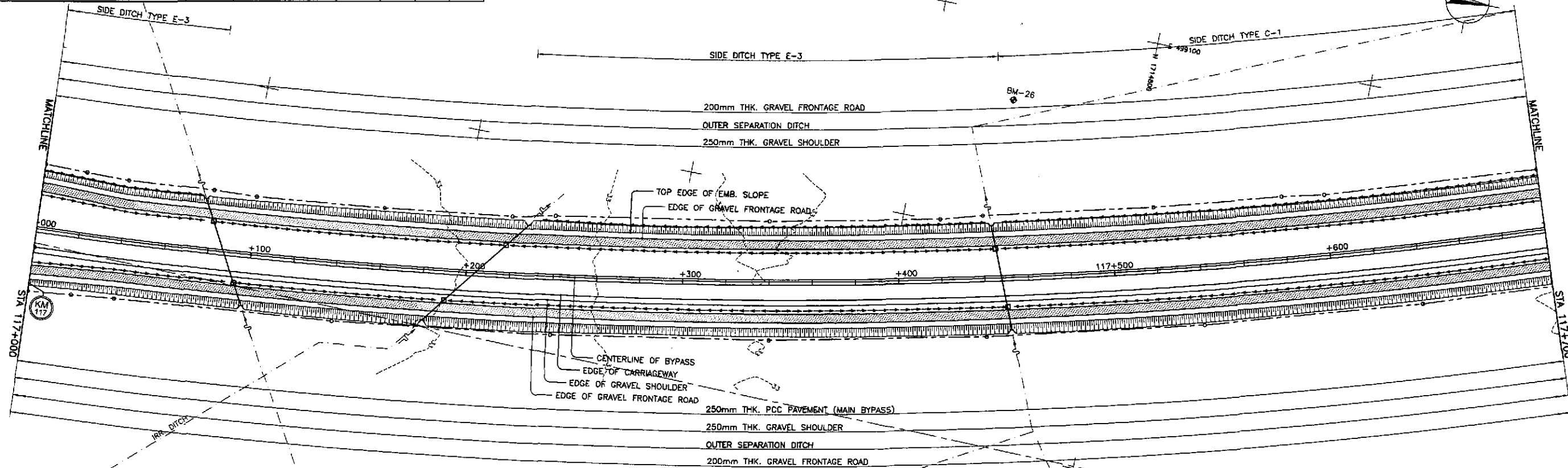
REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-25	1,714,097.795	499,338.845	34.013	Right side of the road alignment, placed on the side of a dirt road, 33.5m away from its C.L.
BM-26	1,714,739.668	499,138.544	33.408	Left side of the road alignment, placed on the side of a road intersection, 2.0m away from its C.L.



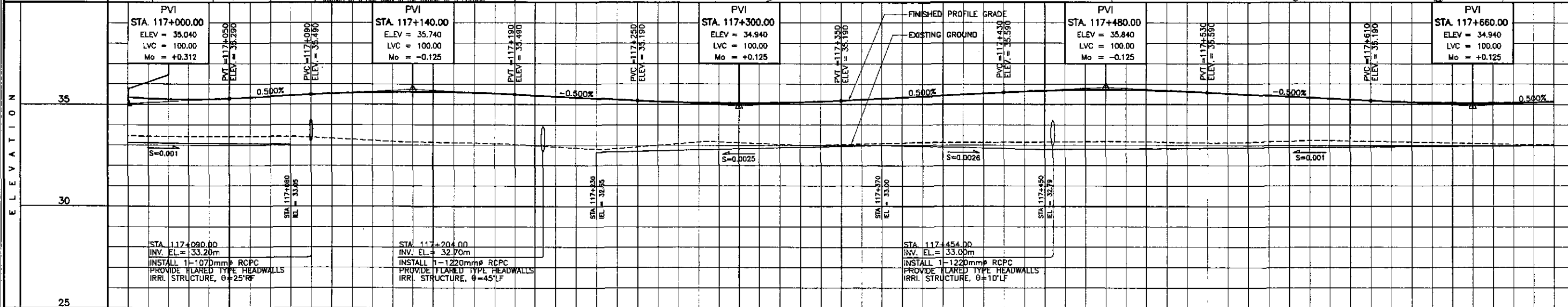
STATION	+300	+400	116+500	+600	+700	+800	+900	117+000																																																																																			
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	32.990	35.334	32.990	35.733	32.999	36.133	35.803	33.030	36.533	35.763	33.016	36.923	35.803	33.030	37.243	35.213	33.007	37.483	34.813	32.857	37.842	33.038	37.722	32.448	37.722	32.568	37.641	34.885	32.676	37.481	35.165	32.733	37.241	35.885	32.744	36.921	36.005	32.848	36.630	35.885	32.911	36.148	33.015	35.727	33.087	35.700	33.118	35.797	33.149	36.017	35.467	33.173	36.360	35.477	33.198	36.743	35.246	33.235	37.051	34.824	33.231	37.279	34.510	33.249	37.427	34.353	33.256	37.495	34.353	33.279	37.483	34.352	33.283	37.219	34.798	33.318	36.967	35.225	33.362	36.635	35.535	33.513	36.240	35.570	33.489	35.852	35.332	33.465	35.652	33.457	35.352
EXISTING GROUND BYPASS	32.990	35.334	32.990	35.733	32.999	36.133	35.803	33.030	36.533	35.763	33.016	36.923	35.803	33.030	37.243	35.213	33.007	37.483	34.813	32.857	37.842	33.038	37.722	32.448	37.722	32.568	37.641	34.885	32.676	37.481	35.165	32.733	37.241	35.885	32.744	36.921	36.005	32.848	36.630	35.885	32.911	36.148	33.015	35.727	33.087	35.700	33.118	35.797	33.149	36.017	35.467	33.173	36.360	35.477	33.198	36.743	35.246	33.235	37.051	34.824	33.231	37.279	34.510	33.249	37.427	34.353	33.256	37.495	34.353	33.279	37.483	34.352	33.283	37.219	34.798	33.318	36.967	35.225	33.362	36.635	35.535	33.513	36.240	35.570	33.489	35.852	35.332	33.465	35.652	33.457	35.352
HORIZONTAL CURVATURE	R=∞																116+820.490		R=2500																																																																								
VERTICAL CURVATURE	g=-2.000%		L=200 Mo=-1.000		g=-2.000%		L=130 Mo=+0.650		g=-2.000%		L=200 Mo=-1.000		g=-2.000%		L=100 Mo=+0.312																																																																												
SUPERELEVATION	N.C.																116+830.490		e=+2% e=-2%																																																																								

	DESIGNED	DATE	SIGNATURE		BUREAU OF DESIGN				OFFICE OF THE SECRETARY				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/16/02	R. ACACIO		Submitted By: DANILO C. TRAJANO Project Director				Recommended By: JOSEFINA M. ALAGAR Chief, Highways Division				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)	HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 116+300 - STA. 117+000	RP-11
	SUBMITTED	10/17/02	S. GONZALES		Reviewed By: GILBERTO S. REYES DCC, Director IV				Approved By: MANUEL M. BOMBOAN Undersecretary				CABANATUAN BYPASS - CONTRACT PACKAGE II			

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-07	117+860.785	1,714,968.738	499,301.970	37°09'25"R	2,500.00	840.295	1,621.273	137.441	-	-	80



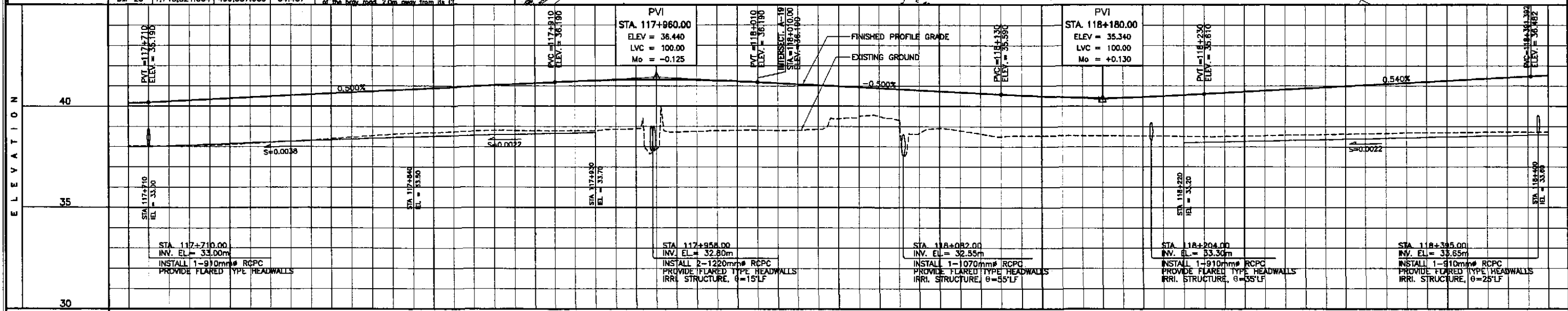
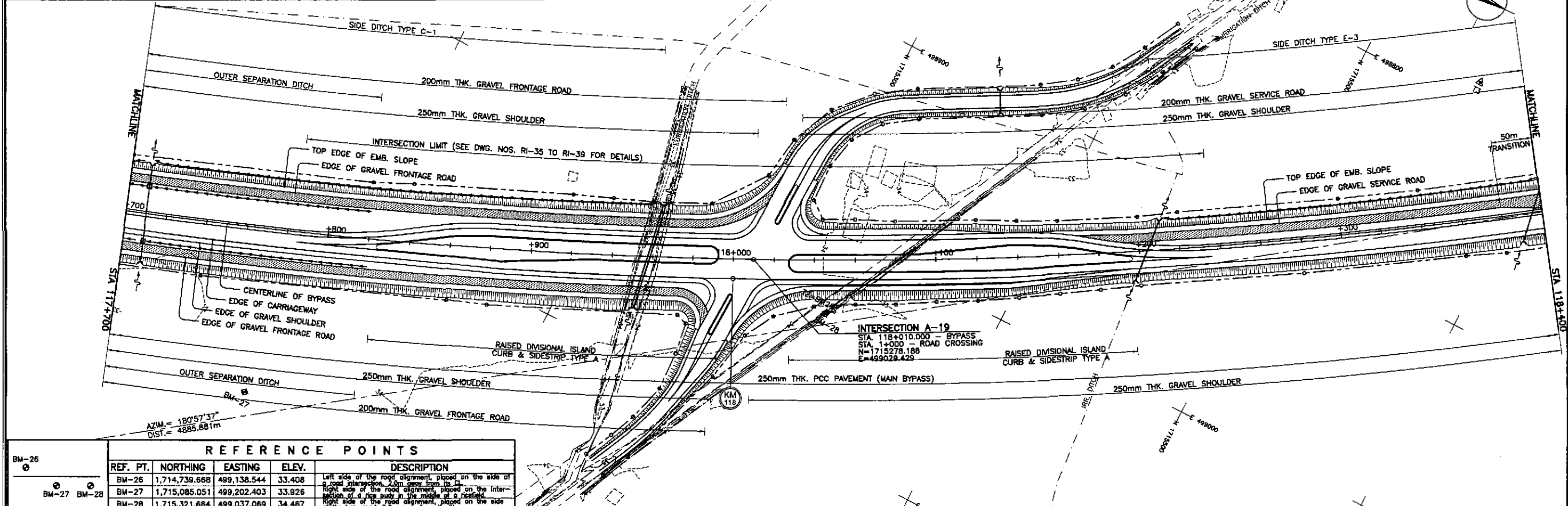
REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-25	1,714,097.795	499,338.845	34.013	Right side of the road alignment, placed on the side of a dirt road, 31.5m away from its CL
BM-26	1,714,739.668	499,138.544	33.408	Left side of the road alignment, placed on the side of a road intersection, 2.0m away from its CL
BM-27	1,715,085.051	499,202.403	33.926	Right side of the road alignment, placed on the intersection of a new curb in the middle of a street



STATION	117+000	+100	+200	+300	+400	117+500	+600	+700
FINISHED PROFILE GRADE BYPASS	33.447, 35.352	33.432, 35.252	33.420, 35.252	33.420, 35.340	33.420, 35.440	33.420, 35.535	33.421, 35.595	33.158, 35.615
EXISTING GROUND BYPASS	33.447, 35.352	33.432, 35.252	33.420, 35.252	33.420, 35.340	33.420, 35.440	33.420, 35.535	33.421, 35.595	33.158, 35.615
HORIZONTAL CURVATURE	R=2500							
VERTICAL CURVATURE	L=100, Mo=+0.312, g=-0.500%		L=100, Mo=-0.125, g=-0.500%		L=100, Mo=+0.125, g=0.500%		L=100, Mo=-0.125, g=-0.500%	
SUPERELEVATION	e=+2%, e=-2%							

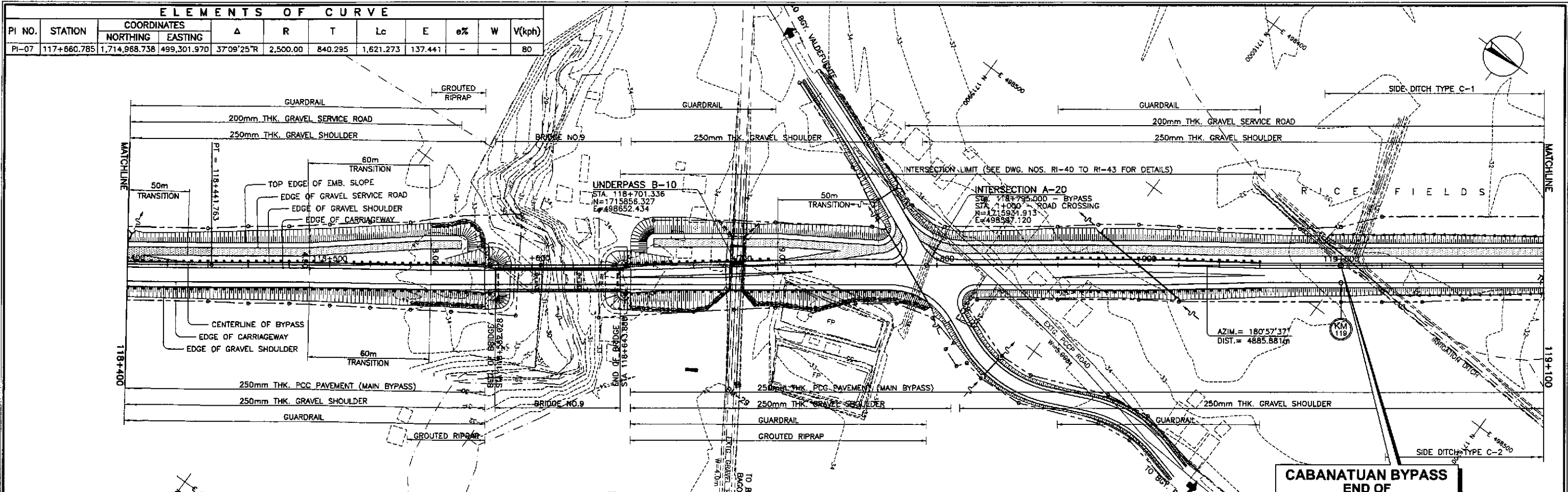
	DESIGNED	DATE	SIGNATURE		BUREAU OF DESIGN			OFFICE OF THE SECRETARY			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 117+000 - STA. 117+700	SHEET NO. : RP-12
	CHECKED	10/16/02	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	Approved By:				
	SUBMITTED	10/16/02	<i>[Signature]</i>		DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANONG Secretary	SIMEON A. DATUMANONG Secretary				

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-07	117+660.785	1,714,968.738	499,301.970	37°09'25"R	2,500.00	840.295	1,621.273	137.441	-	-	80



STATION	+700	+800	+900	118+000	+100	+200	+300	+400
FINISHED PROFILE GRADE BYPASS	33.041	33.079	33.051	33.159	33.288	33.540	33.664	33.714
EXISTING GROUND BYPASS	33.041	33.079	33.051	33.159	33.288	33.540	33.664	33.714
HORIZONTAL CURVATURE	R=2500							
VERTICAL CURVATURE	g=0.500%		L=100 Mo=-0.125		g=-0.500%		L=100 Mo=+0.130	
SUPERELEVATION	e=+2% e=-2%							

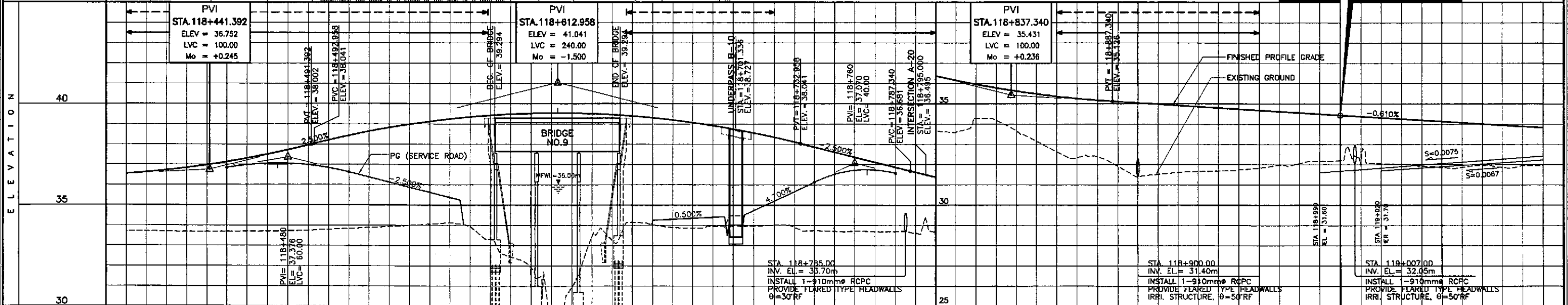
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 117+700 - STA 118+400	SHEET NO. : RP-13	
	CHECKED	10/16/02	SIGNATURE		Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Recommended By: MANUEL M. BONGAON Undersecretary					Approved By: SIMON A. DATUMANONG Secretary
	SUBMITTED	10/19/02	SIGNATURE		DANILLO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONGAON Undersecretary					SIMON A. DATUMANONG Secretary



CABANATUAN BYPASS
END OF CONTRACT PACKAGE II
 BEG. OF CONTRACT PACKAGE III
 STA. 119+000.00
 ELEV. = 34.439
 N = 1,716,097.347
 E = 498,876.056

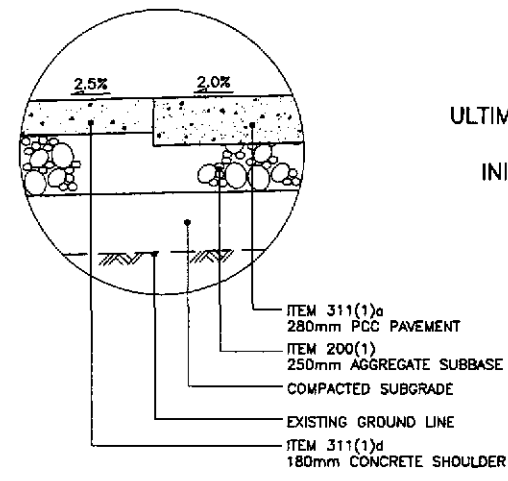
REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-28	1,715,321.664	499,037.069	34.467	Right side of the road alignment, placed on the side of the bypass road, 2.0m away from CL
BM-29	1,715,891.768	498,699.775	34.622	Right side of the road alignment, placed on the side of a large road under an existing tree, 1.5m away from CL
BM-30	1,716,304.852	498,373.638	32.793	Right side of the road alignment, placed on the upstream top bank of a canal on the side of a rice hut

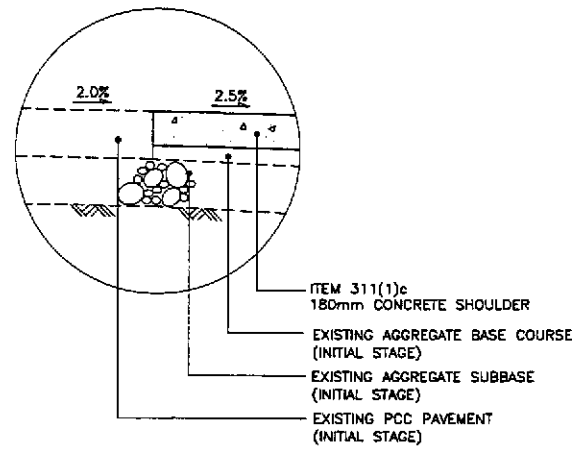


STATION	+400	118+500	+600	+700	+800	+900	119+000	+1000
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	36.536	36.717	36.976	37.314	37.055	36.883	36.641	36.376
EXISTING GROUND BYPASS	33.714	33.695	33.695	33.701	33.717	33.720	33.720	33.720
HORIZONTAL CURVATURE	R=2500		R=∞		R=∞		R=∞	
VERTICAL CURVATURE	L=100 Mo=+0.245		L=240 Mo=-1.500		L=100 Mo=+0.236		L=100 Mo=-0.610%	
SUPERELEVATION	118+431.763		N.C.		N.C.		N.C.	

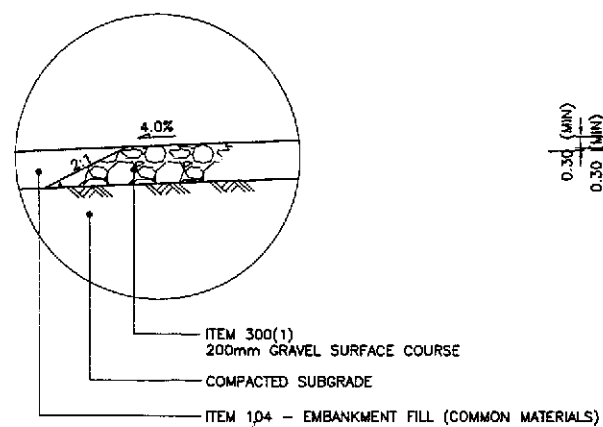
	DESIGNED	10/1/02		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 118+400 - STA. 119+000	SHEET NO. : RP-14				
	CHECKED	10/16/02		BUREAU OF DESIGN										
	SUBMITTED	10/10/02		OFFICE OF THE SECRETARY										
Submitted By:		DANILO C. TRAJANO Project Director	Reviewed By:		JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By:		GILBERTO S. REYES OIC, Director IV	Approved By:		MANUEL M. BONDAN Undersecretary	Approved By:		SIMEON A. DATUMANONG Secretary



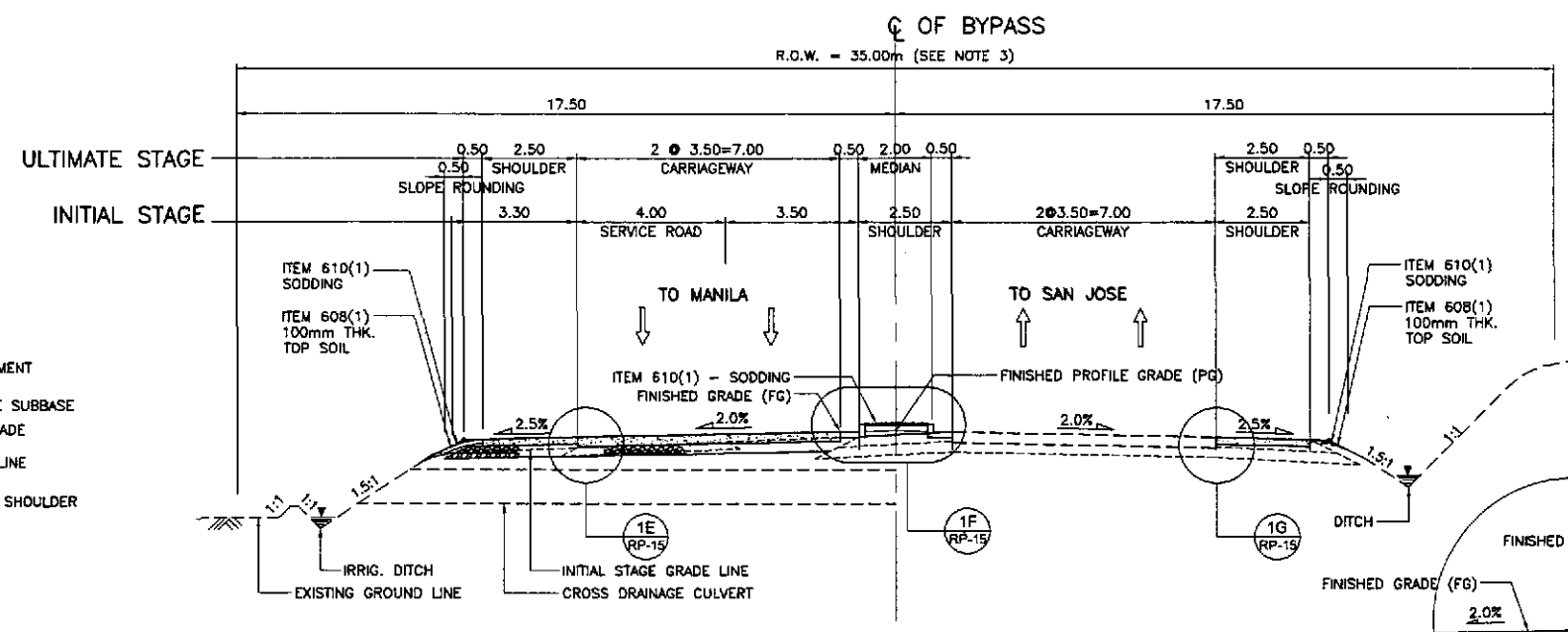
1E DETAIL
RP-15 SCALE 1:20



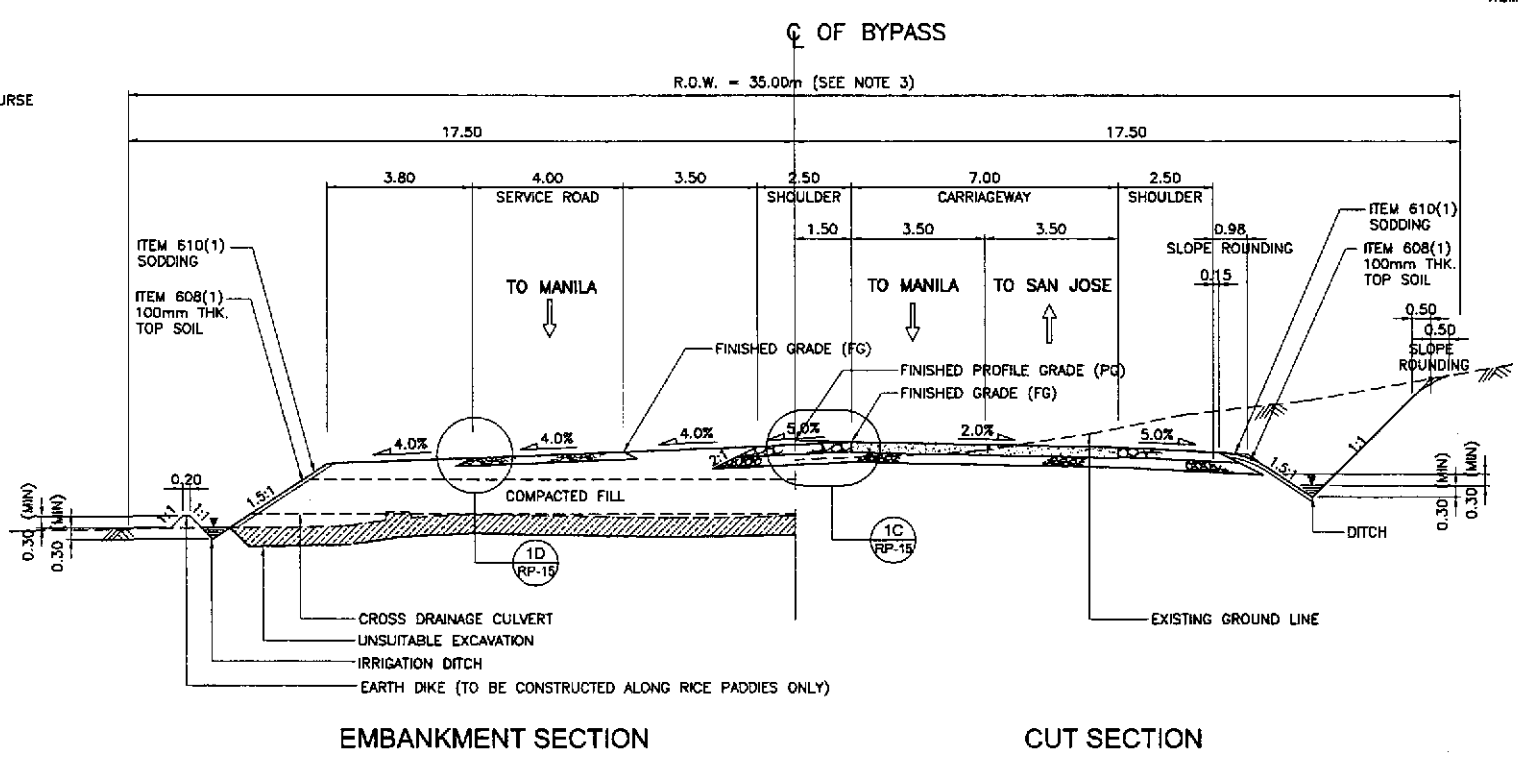
1G DETAIL
RP-15 SCALE 1:20



1D DETAIL
RP-15 SCALE 1:20



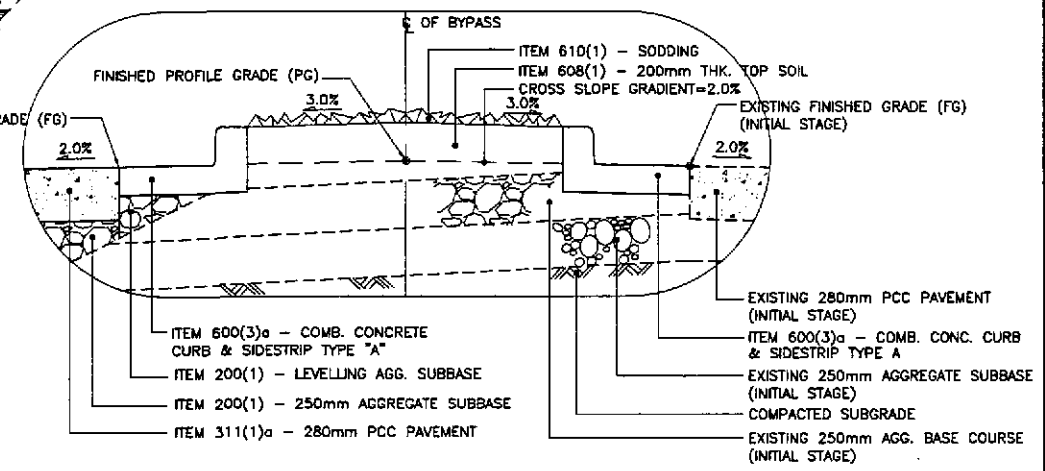
1B NORMAL SECTION - ULTIMATE STAGE
RP-15 SCALE 1:100



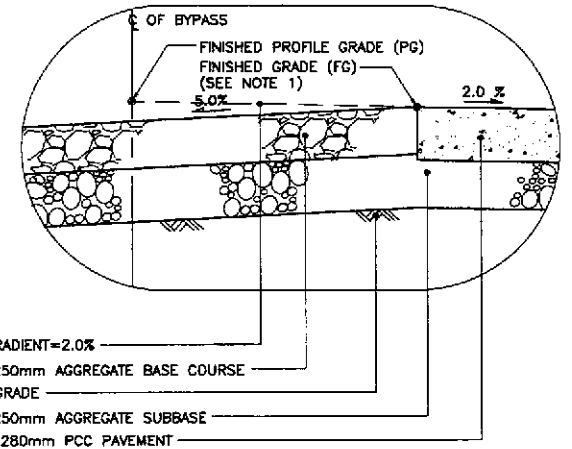
1A NORMAL SECTION - INITIAL STAGE
RP-15 SCALE 1:100

1 TYPICAL ROADWAY SECTIONS - WITHOUT FRONTAGE ROAD
RP-15 SCALE 1:100

- NOTES:
1. FINISHED PROFILE GRADE (PG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
 2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NOS. GC-11 TO GC-12.
 3. ROAD RIGHT-OF-WAY (R.O.W.) WIDTH SHALL BE VARIED DUE TO HORIZONTAL TRANSITION OF SERVICE ROAD, MEDIAN, DIVISIONAL ISLANDS, OUTER SEPARATIONS AND DUE TO HEIGHT OF EMBANKMENT. SEE SCHEDULE OF R.O.W.; (SHTS. NOS. RG-06 TO RG-08).
 4. SIDESLOPES OF 1.5:1 OR FLATTER SHALL BE PROTECTED BY SODDING. SIDESLOPES ALONG AREAS PRONE TO FLOODING SHALL BE PROTECTED BY GROUDED RIPRAP AT 300mm MINIMUM THICKNESS. SIDESLOPES ALONG BUILT-UP AREAS SHALL BE PROTECTED BY STONE MASONRY AND/OR RETAINING WALLS OR AS DIRECTED BY THE ENGINEER.
 5. SEE SHEET NO. RG-04 FOR UNSUITABLE EXCAVATION SCHEDULE.



1F DETAIL
RP-15 SCALE 1:20



1C DETAIL
RP-15 SCALE 1:20

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
YEO YACHIYO ENGINEERING CO., LTD.

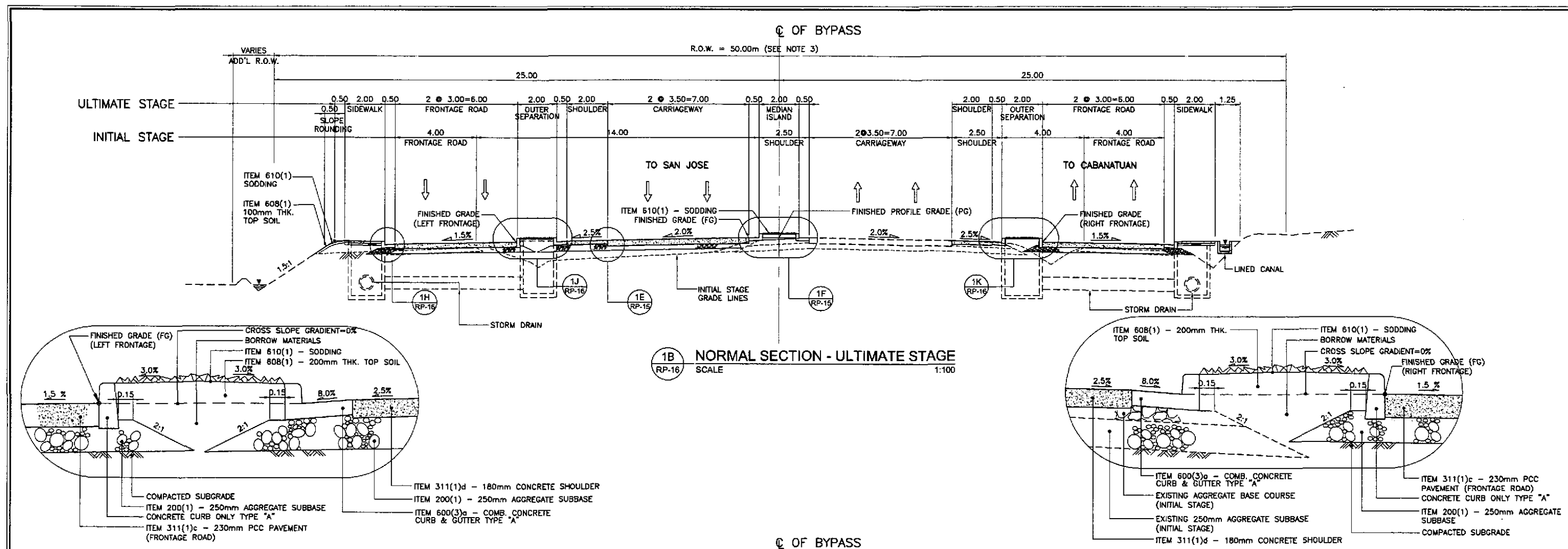
DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS		
CHECKED	10/14/02	S. JOSE	BUREAU OF DESIGN		
SUBMITTED	10/16/02	THE BUREAU	OFFICE OF THE SECRETARY		
Submitted By: DANILO C. TRAJANO Project Director			Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES DC, Director IV	Approved By: MANUEL M. BONAON Undersecretary

PROJECT AND LOCATION :
THE DETAILED DESIGN STUDY ON
UPGRADING INTER-URBAN HIGHWAY SYSTEM
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE II

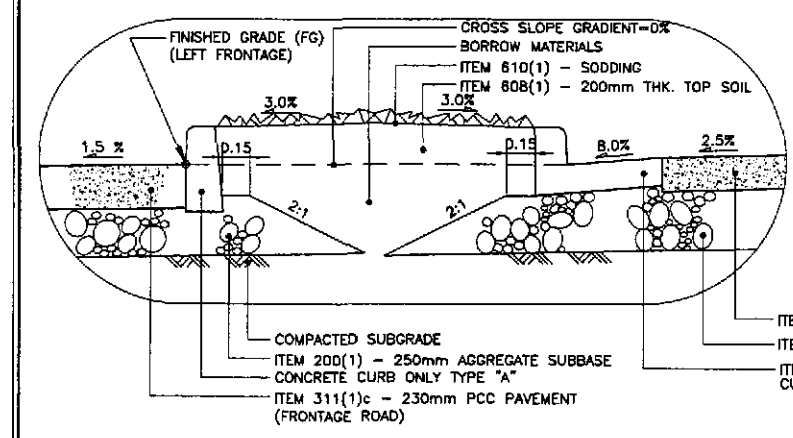
SCALE :
AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
TYPICAL ROADWAY SECTIONS
NORMAL SECTIONS
WITHOUT FRONTAGE ROAD
(INITIAL AND ULTIMATE STAGE)
(1 of 4)

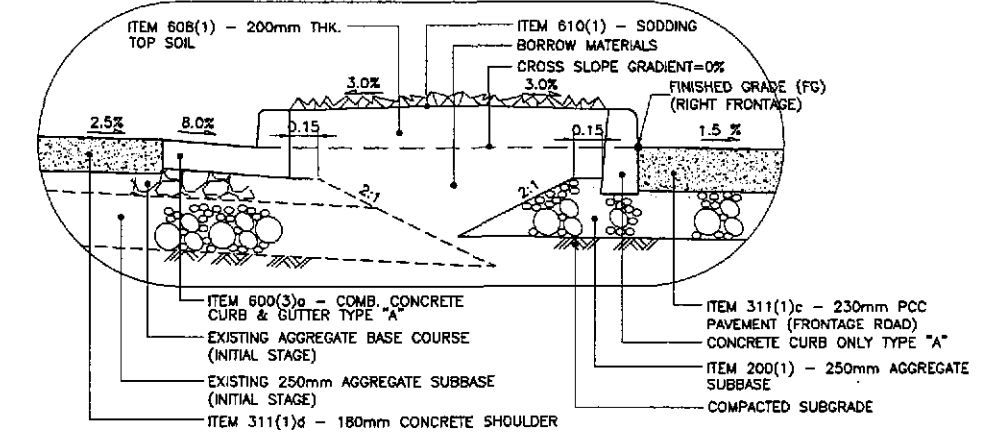
SHEET NO. :
RP-15



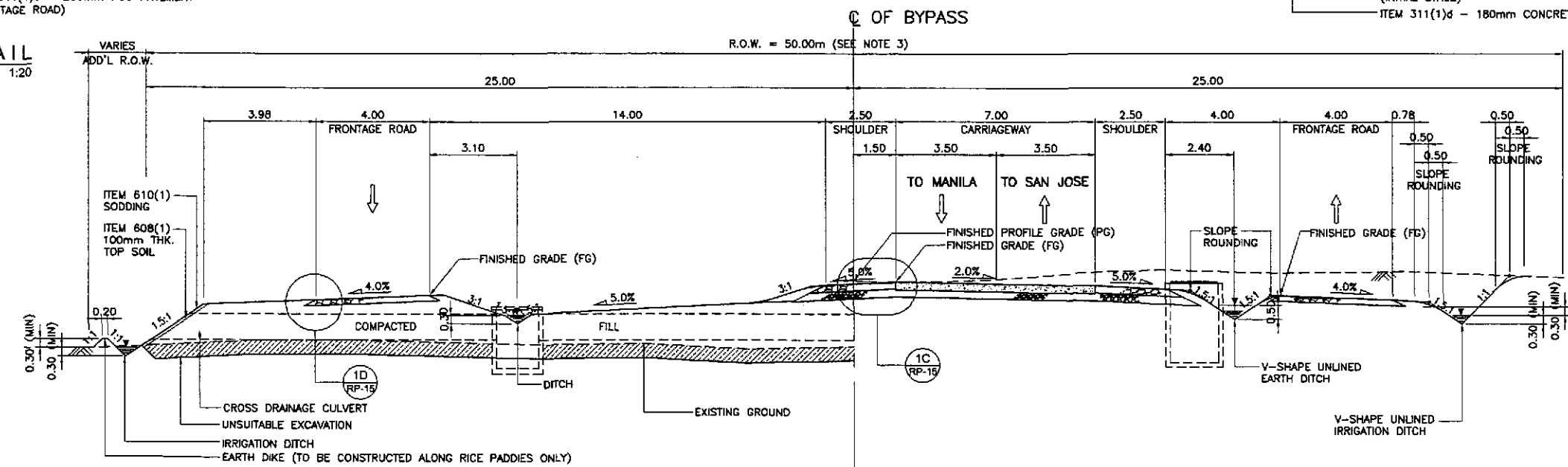
1B NORMAL SECTION - ULTIMATE STAGE
SCALE 1:100



1J DETAIL
SCALE 1:20

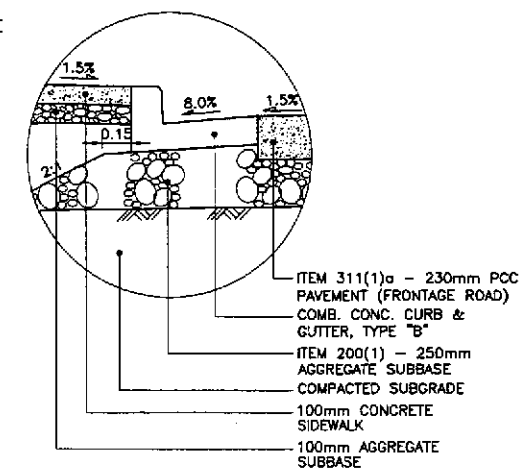


1K DETAIL
SCALE 1:20



1A NORMAL SECTION - INITIAL STAGE
SCALE 1:100

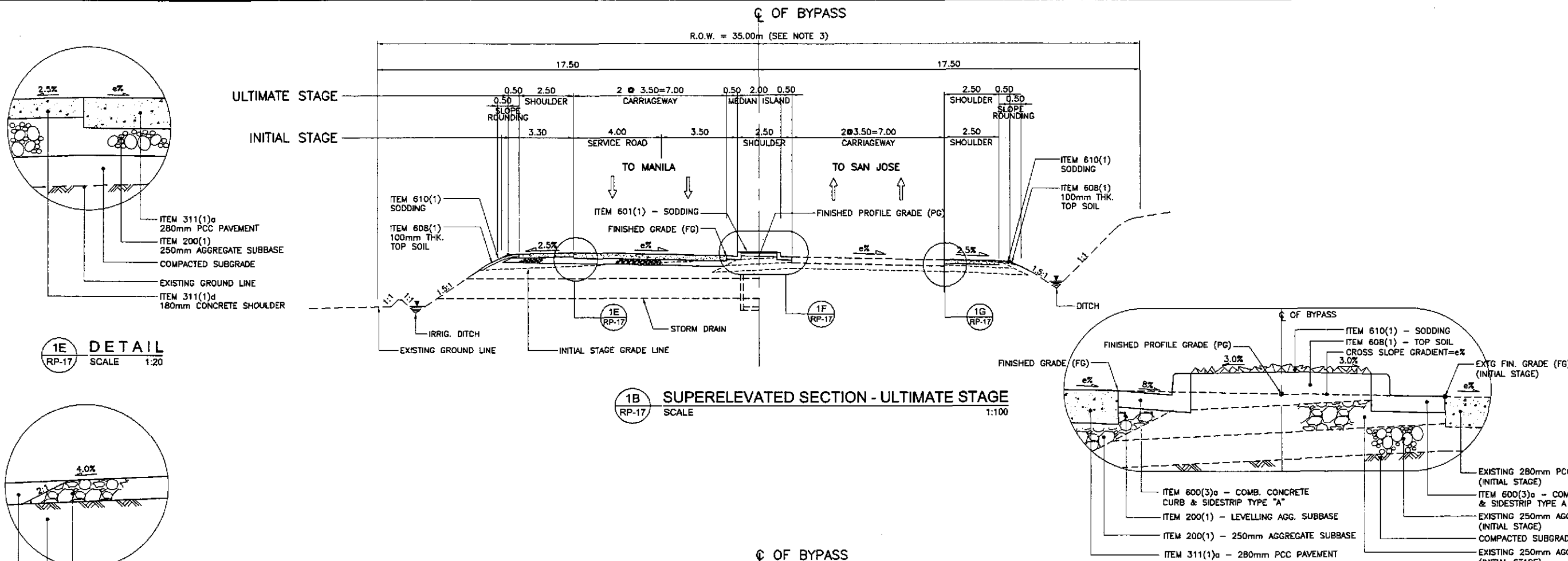
1 TYPICAL ROADWAY SECTIONS - WITH FRONTAGE ROAD
SCALE 1:100



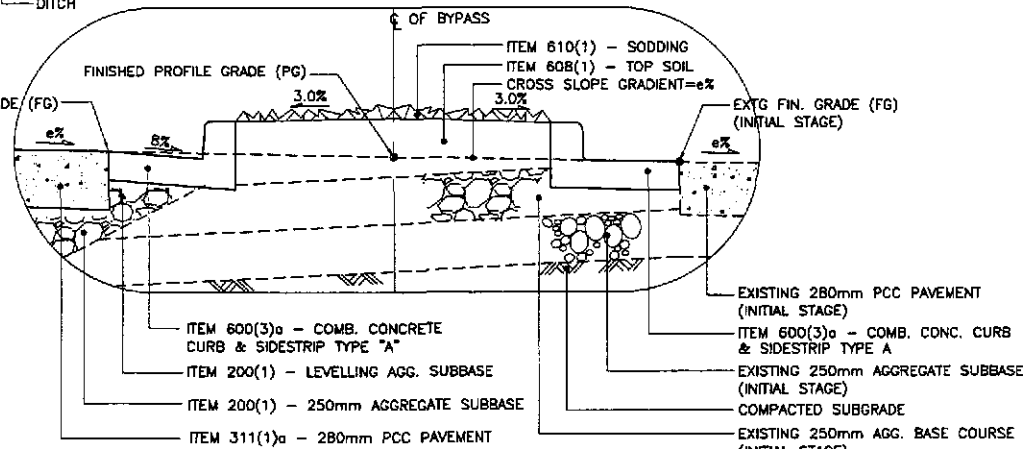
1H DETAIL
SCALE 1:20

- NOTES:
1. FINISHED PROFILE GRADE (PG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
 2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NOS. GC-11 TO GC-12.
 3. ROAD RIGHT-OF-WAY (R.O.W.) WIDTH SHALL BE VARIED DUE TO HORIZONTAL TRANSITION OF SERVICE ROAD, MEDIAN/DIVISIONAL ISLANDS, OUTER SEPARATIONS AND DUE TO HEIGHT OF EMBANKMENT. SEE SCHEDULE OF R.O.W.; (SHTS. NOS. RG-06 TO RG-08).
 4. SIDESLOPES OF 1:5:1 OR FLATTER SHALL BE PROTECTED BY SODDING. SIDESLOPES ALONG AREAS PRONE TO FLOODING SHALL BE PROTECTED BY GROUTED RIPRAP AT 300mm MINIMUM THICKNESS. SIDESLOPES ALONG BUILT-UP AREAS SHALL BE PROTECTED BY STONE MASONRY AND/OR RETAINING WALLS OR AS DIRECTED BY THE ENGINEER.
 5. SEE SHEET NO. RG-04 FOR UNSUITABLE EXCAVATION SCHEDULE.

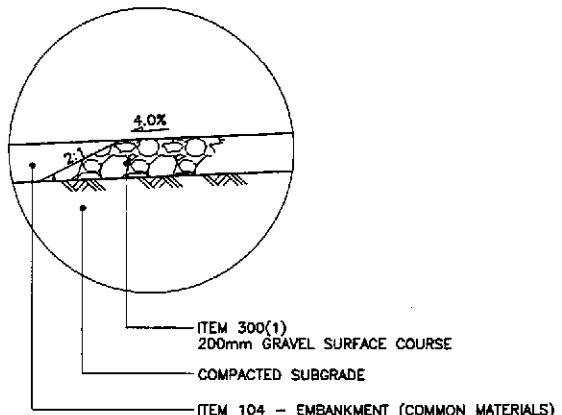
<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>		<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>				<p>PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p>		<p>SCALE : AS SHOWN FULL SIZE A1</p>		<p>SHEET CONTENTS : TYPICAL ROADWAY SECTIONS NORMAL SECTIONS WITH FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE) (2 of 4)</p>		<p>SHEET NO. : RP-16</p>	
DESIGNED	DATE	SIGNATURE	<p>PUBL - PMD</p>		<p>BUREAU OF DESIGN</p>		<p>OFFICE OF THE SECRETARY</p>						
CHECKED	10/16/02		Submitted By:	Reviewed By:	Recommended By:	Approved By:							
SUBMITTED	10/10/02		DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES Dir. Director IV	MANUEL M. BONGAON Undersecretary	SIMEDON A. DATUMANONG Secretary						



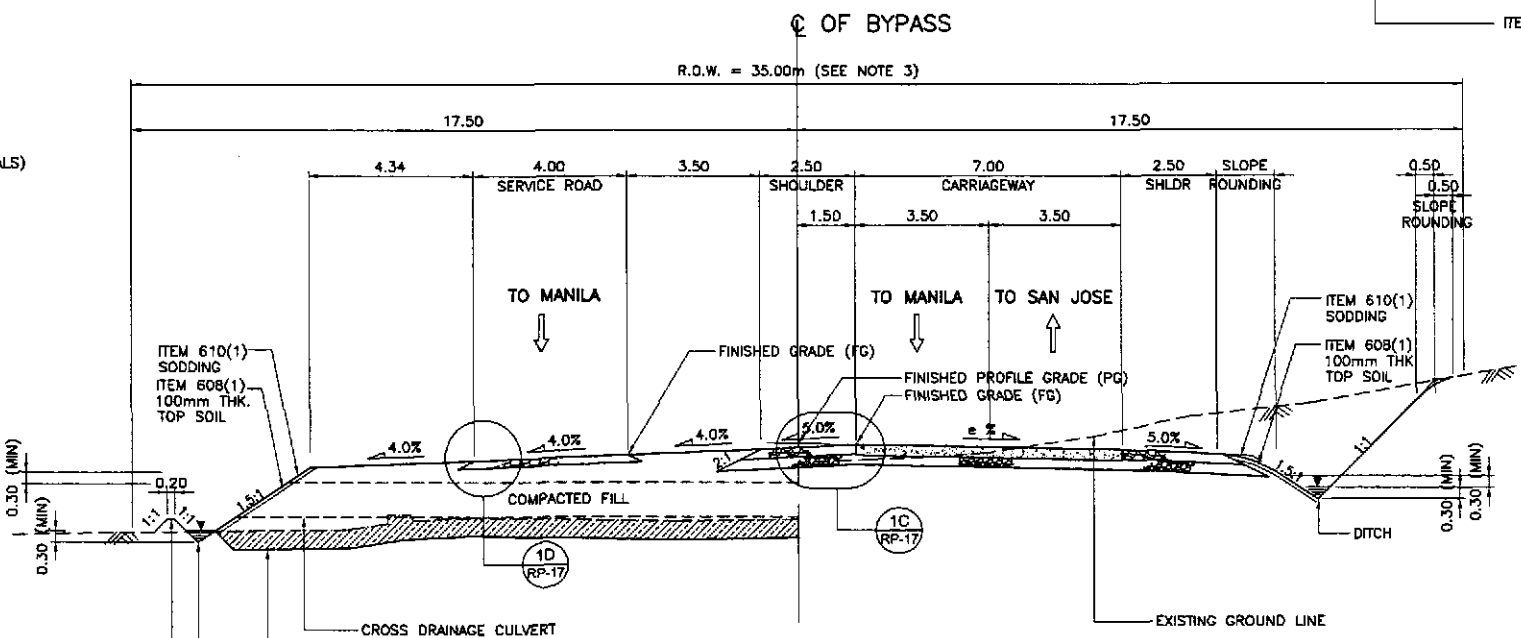
1B SUPERELEVATED SECTION - ULTIMATE STAGE
SCALE 1:100



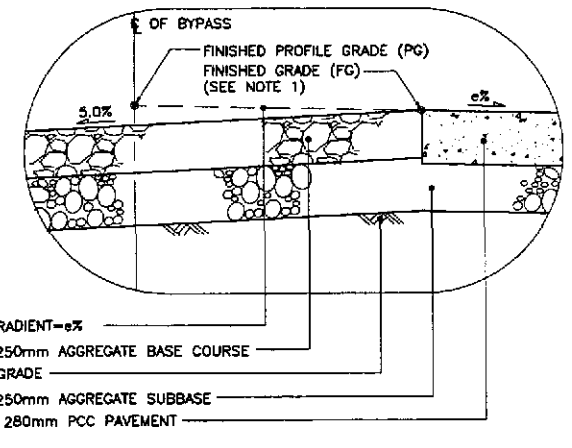
1F DETAIL
SCALE 1:20



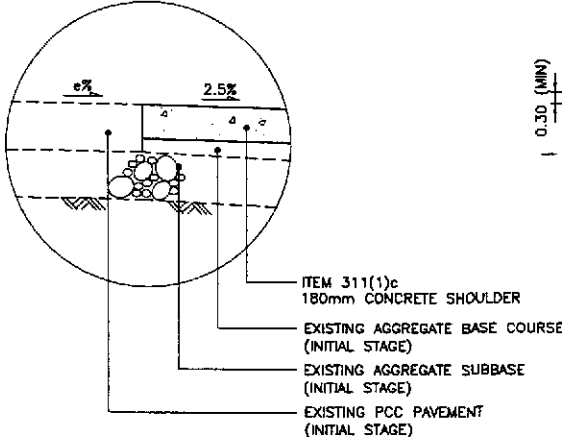
1D DETAIL
SCALE 1:20



1A SUPERELEVATED SECTION - INITIAL STAGE
SCALE 1:100



1C DETAIL
SCALE 1:20

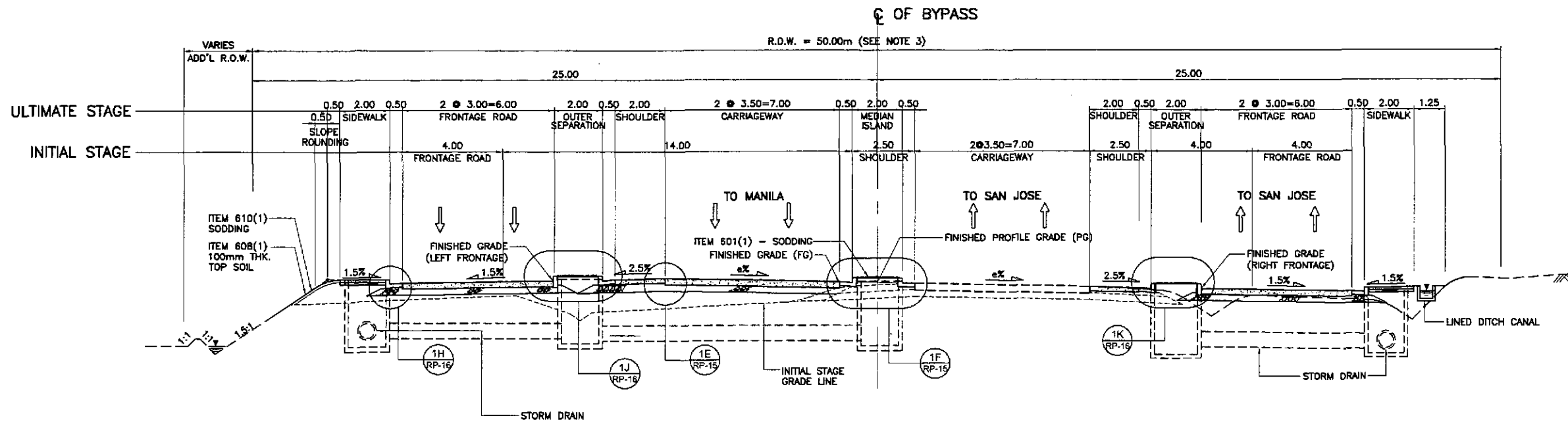


1G DETAIL
SCALE 1:20

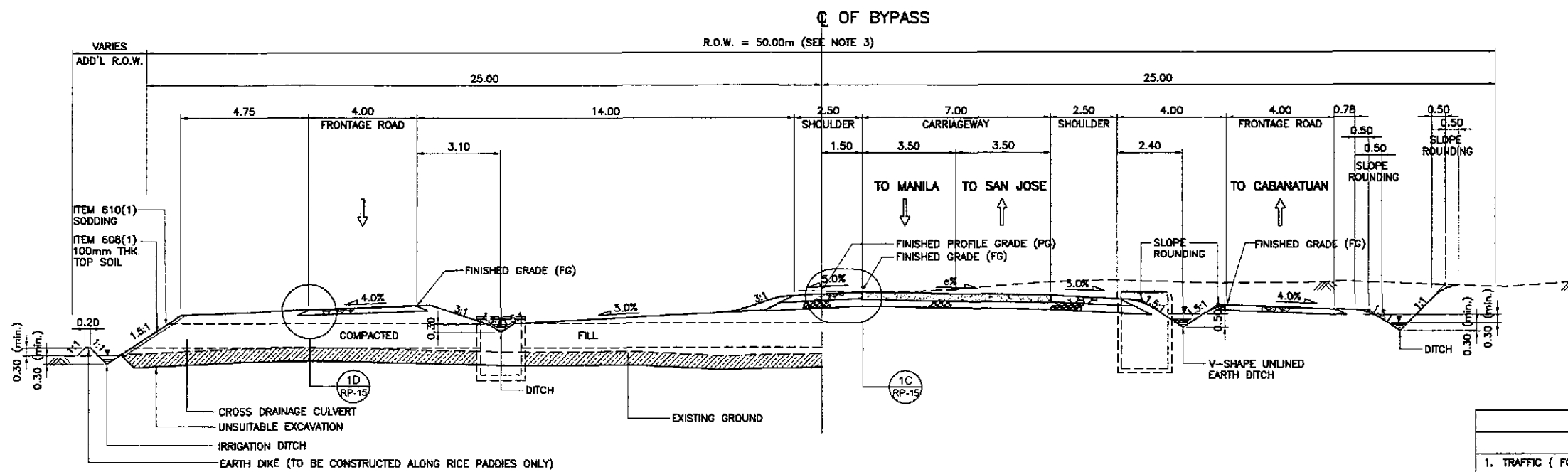
1 TYPICAL ROADWAY SECTIONS - WITHOUT FRONTAGE ROAD
SCALE 1:100

- NOTES:
1. FINISHED PROFILE GRADE (PG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
 2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NOS. GC-11 TO GC-12.
 3. ROAD RIGHT-OF-WAY (R.O.W.) WIDTH SHALL BE VARIED DUE TO HORIZONTAL TRANSITION OF SERVICE ROAD, MEDIAN/DIVISIONAL ISLANDS, OUTER SEPARATIONS AND DUE TO HEIGHT OF EMBANKMENT. SEE SCHEDULE OF R.O.W.; (SHTS. NOS. RG-06 TO RG-08).
 4. SIDESLOPES OF 1:5:1 OR FLATTER SHALL BE PROTECTED BY SODDING. SIDESLOPES ALONG AREAS PRONE TO FLOODING SHALL BE PROTECTED BY GROUTED RIPRAP AT 300mm MINIMUM THICKNESS. SIDESLOPES ALONG BUILT-UP AREAS SHALL BE PROTECTED BY STONE MASONRY AND/OR RETAINING WALLS OR AS DIRECTED BY THE ENGINEER.
 5. SEE SHEET NO. RG-04 FOR UNSUITABLE EXCAVATION SCHEDULE.

<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>		<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>				<p>PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p>		<p>SCALE : AS SHOWN</p>		<p>SHEET CONTENTS : TYPICAL ROADWAY SECTIONS WITHOUT FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE) (3 of 4)</p>		<p>SHEET NO. : RP-17</p>	
DESIGNED	DATE	SIGNATURE	BUREAU OF DESIGN		OFFICE OF THE SECRETARY		FULL SIZE A1						
CHECKED	10/16/02		Submitted By:	Reviewed By:	Recommended By:	Approved By:							
SUBMITTED	10/18/02		DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OC, Director IV	MANUEL M. BONDAN Undersecretary	SIMEDN A. DATUMANONG Secretary						



1B SUPERELEVATED SECTION - ULTIMATE STAGE
SCALE 1:100



EMBANKMENT SECTION

CUT SECTION

1A SUPERELEVATED SECTION - INITIAL STAGE
SCALE 1:100

1 TYPICAL ROADWAY SECTIONS - WITH FRONTAGE ROAD
SCALE 1:100

NOTES:

1. FINISHED PROFILE GRADE (PG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NOS. GC-11 TO GC-12.
3. ROAD RIGHT-OF-WAY (R.O.W.) WIDTH SHALL BE VARIED DUE TO HORIZONTAL TRANSITION OF SERVICE ROAD, MEDIAN/DIVISIONAL ISLANDS, OUTER SEPARATIONS AND DUE TO HEIGHT OF EMBANKMENT. SEE SCHEDULE OF R.O.W.; (SHTS. NOS. RG-08 TO RG-08).
4. SIDESLOPES OF 1:5:1 OR FLATTER SHALL BE PROTECTED BY SODDING. SIDESLOPES ALONG AREAS PRONE TO FLOODING SHALL BE PROTECTED BY GROUTED RIPRAP AT 300mm MINIMUM THICKNESS. SIDESLOPES ALONG BUILT-UP AREAS SHALL BE PROTECTED BY STONE MASONRY AND/OR RETAINING WALLS OR AS DIRECTED BY THE ENGINEER.
5. SEE SHEET NO. RG-04 FOR UNSUITABLE EXCAVATION SCHEDULE.

PAVEMENT DESIGN PARAMETERS	
	BEFORE PAMPANGA BRIDGE
1. TRAFFIC (FOR 25 YEARS DESIGN LIFE) DESIGN ESAL	2.30 x 10 ⁶
2. DESIGN CBR SUBGRADE CBR	5.00 %
3. ROADBED RESILIENT MODULUS M _R E _{SB} E _{BS}	5,500 psi = 37.92 MPa 13,000 psi = 89.64 MPa 23,000 psi = 158.58 MPa
4. PERFORMANCE CRITERIA Δ PSI	2
5. DESIGN RELIABILITY Z _R S _D	50 % 0.35
6. DRAINAGE COEFFICIENT RIGID	1
7. LAYER COEFFICIENT C ₁ (FOR AC) C ₂ (FOR BASE) C ₃ (FOR SUBBASE)	0.39 0.105 0.095
8. PAVEMENT CONSTRUCTION THICKNESS PCCP SUBBASE	280mm THK 250mm THK

	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	10/11/02	<i>[Signature]</i>	BUREAU OF DESIGN			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	AS SHOWN	TYPICAL ROADWAY SECTIONS SUPERELEVATED SECTIONS WITH FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE) (4 of 4)	RP-18
	CHECKED	10/16/02	<i>[Signature]</i>	Submitted By:	Reviewed By:	Recommended By:				
SUBMITTED	10/18/02	<i>[Signature]</i>	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONGAON Undersecretary				