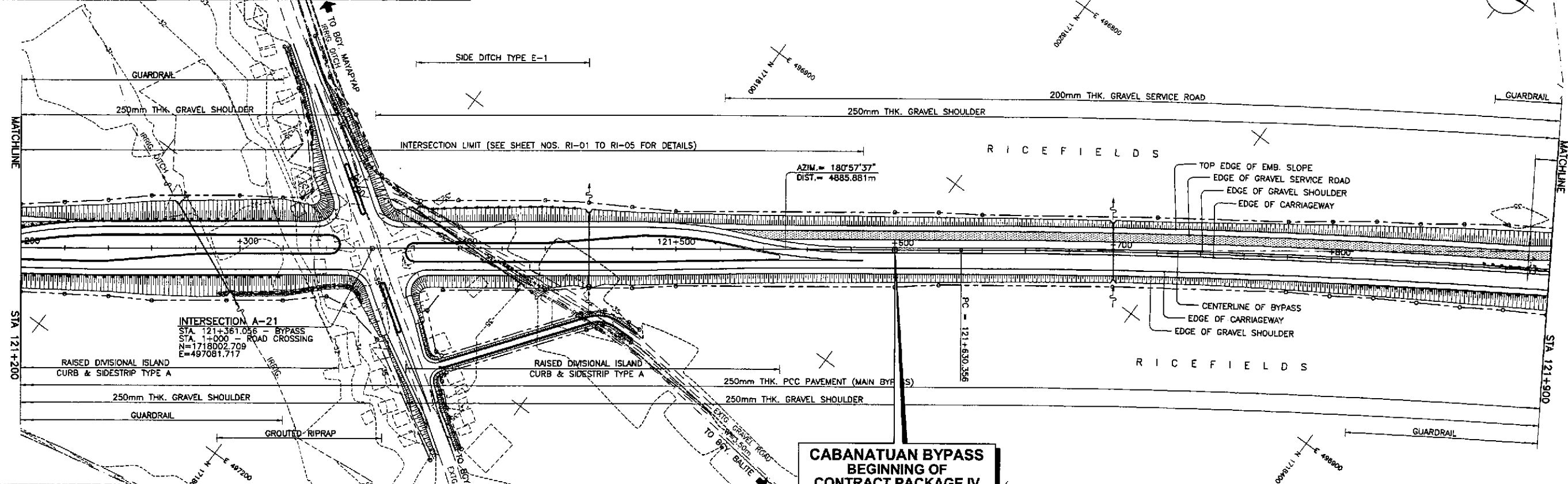
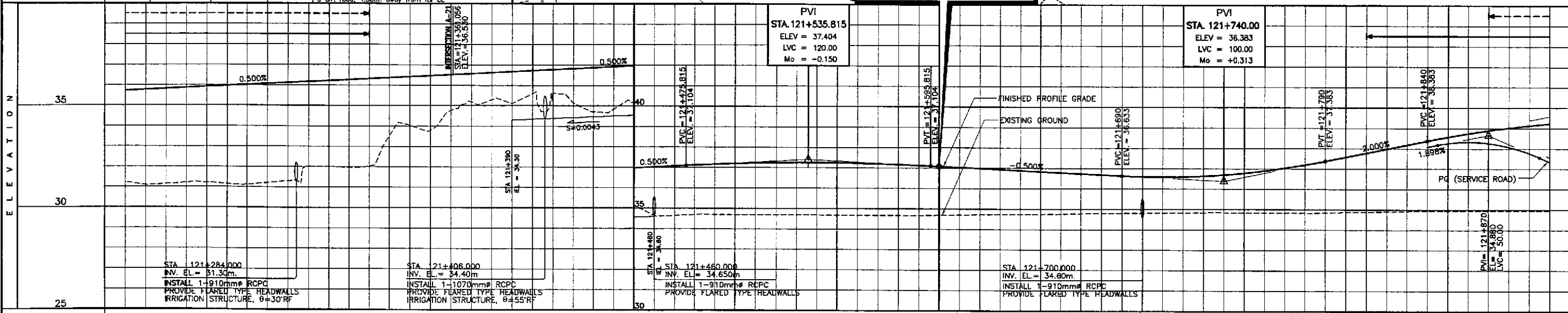


ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-08	122+487.349	1,718,911.622	496,416.576	24°11'07"	4,000.00	856.992	1,688.459	90.774	-	-	80



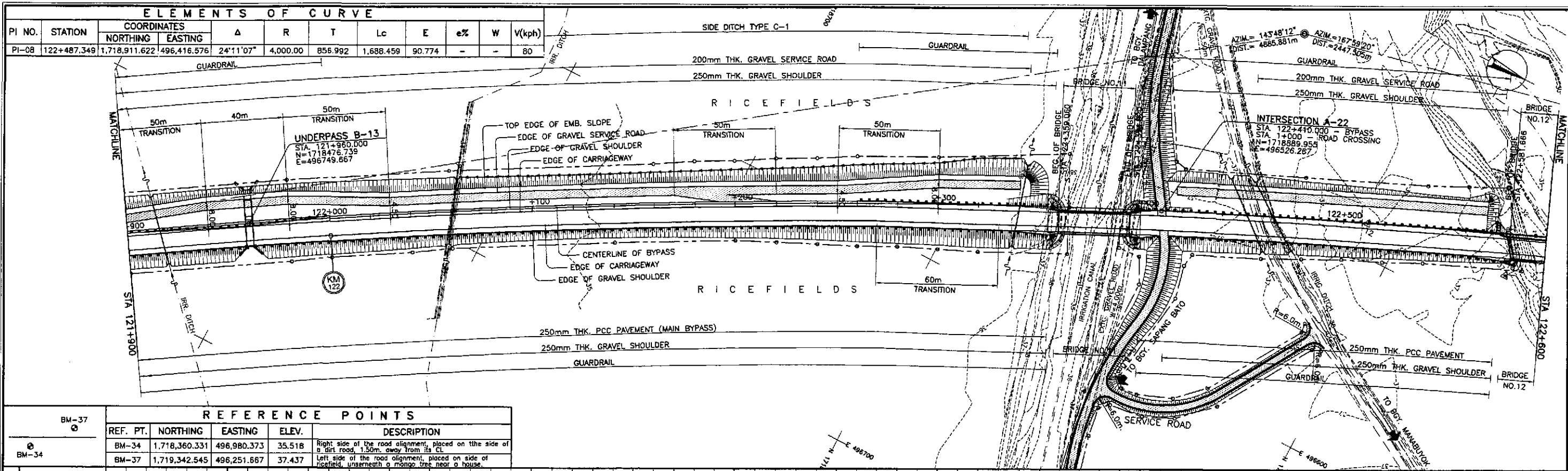
**CABANATUAN BYPASS
BEGINNING OF
CONTRACT PACKAGE IV
END OF CONTRACT PACKAGE III**
 STA. 121+600.00
 ELEV. = 37.083m
 N = 1,653,710.915
 E = 492,151.596

REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-30	1,718,304.852	498,373.638	32.793	Right side of the road alignment, placed on the uppermost top bank of a canal of the side of a nipa hut.
BM-34	1,718,360.331	496,980.373	35.518	Right side of the road alignment, placed on the side of a dirt road, 1.50m. away from its CL.

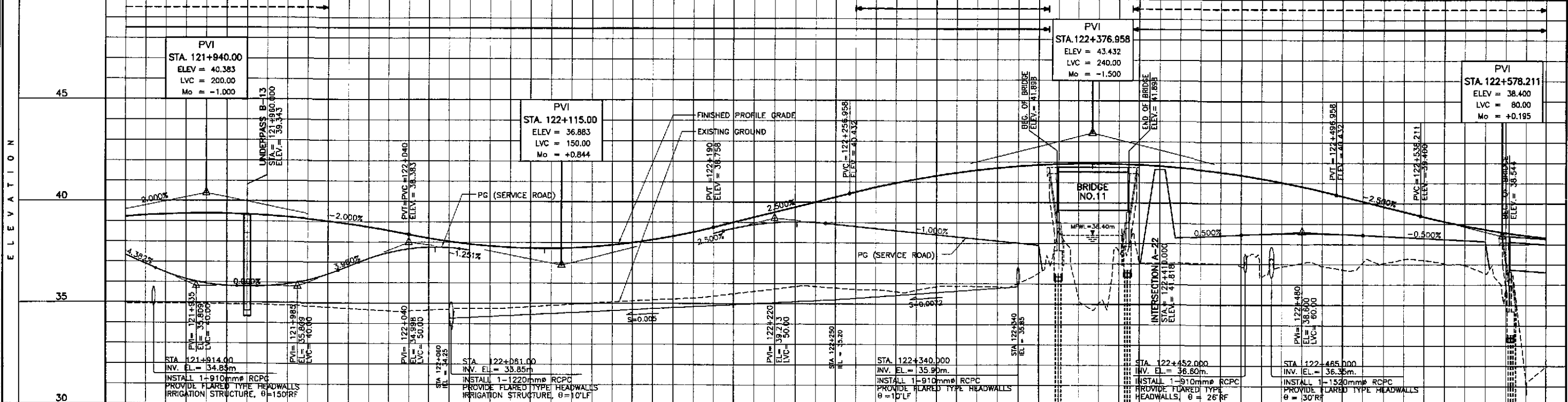


STATION	+200	+300	+400	121+500	+600	+700	+800	+900
FINISHED PROFILE GRADE	35.725	35.825	36.125	37.225	37.883	36.595	37.195	38.223
BYPASS SERVICE ROAD	35.725	35.825	36.125	37.225	37.883	36.595	37.195	38.223
EXISTING GROUND	31.235	31.137	31.216	32.015	32.033	34.044	34.764	35.288
	31.137	31.117	31.301	32.015	32.033	34.044	34.764	35.288
	31.216	31.117	31.301	32.015	32.033	34.044	34.764	35.288
	31.117	31.117	31.301	32.015	32.033	34.044	34.764	35.288
	31.301	31.117	31.301	32.015	32.033	34.044	34.764	35.288
	32.015	32.015	32.015	32.015	32.033	34.044	34.764	35.288
	32.033	32.033	32.033	32.033	32.033	34.044	34.764	35.288
	34.044	34.044	34.044	34.044	34.044	34.044	34.764	35.288
	34.764	34.764	34.764	34.764	34.764	34.764	34.764	35.288
	35.288	35.288	35.288	35.288	35.288	35.288	35.288	35.288
	35.597	35.597	35.597	35.597	35.597	35.597	35.597	35.597
	35.137	35.137	35.137	35.137	35.137	35.137	35.137	35.137
	34.842	34.842	34.842	34.842	34.842	34.842	34.842	34.842
	34.645	34.645	34.645	34.645	34.645	34.645	34.645	34.645
	34.688	34.688	34.688	34.688	34.688	34.688	34.688	34.688
	34.690	34.690	34.690	34.690	34.690	34.690	34.690	34.690
	34.684	34.684	34.684	34.684	34.684	34.684	34.684	34.684
	34.675	34.675	34.675	34.675	34.675	34.675	34.675	34.675
	34.671	34.671	34.671	34.671	34.671	34.671	34.671	34.671
	34.689	34.689	34.689	34.689	34.689	34.689	34.689	34.689
	34.713	34.713	34.713	34.713	34.713	34.713	34.713	34.713
	34.738	34.738	34.738	34.738	34.738	34.738	34.738	34.738
	34.766	34.766	34.766	34.766	34.766	34.766	34.766	34.766
	34.794	34.794	34.794	34.794	34.794	34.794	34.794	34.794
	34.813	34.813	34.813	34.813	34.813	34.813	34.813	34.813
	34.829	34.829	34.829	34.829	34.829	34.829	34.829	34.829
	34.840	34.840	34.840	34.840	34.840	34.840	34.840	34.840
	34.835	34.835	34.835	34.835	34.835	34.835	34.835	34.835
	34.831	34.831	34.831	34.831	34.831	34.831	34.831	34.831
	34.852	34.852	34.852	34.852	34.852	34.852	34.852	34.852
	34.902	34.902	34.902	34.902	34.902	34.902	34.902	34.902
	34.932	34.932	34.932	34.932	34.932	34.932	34.932	34.932
	34.941	34.941	34.941	34.941	34.941	34.941	34.941	34.941
	34.949	34.949	34.949	34.949	34.949	34.949	34.949	34.949
	34.947	34.947	34.947	34.947	34.947	34.947	34.947	34.947

	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 IV	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PI. ANF PROFILE ALONG BYPASS (INITIAL STAGE) STA. 121+600 - STA. 121+900	SHEET NO. : RP-01
	CHECKED	10/19/02	<i>S. Gose</i>		BUREAU OF DESIGN							
	SUBMITTED	10/21/02	<i>M. Rando</i>		DANILLO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OC, Director IV	MANUEL M. BONGAN Undersecretary				

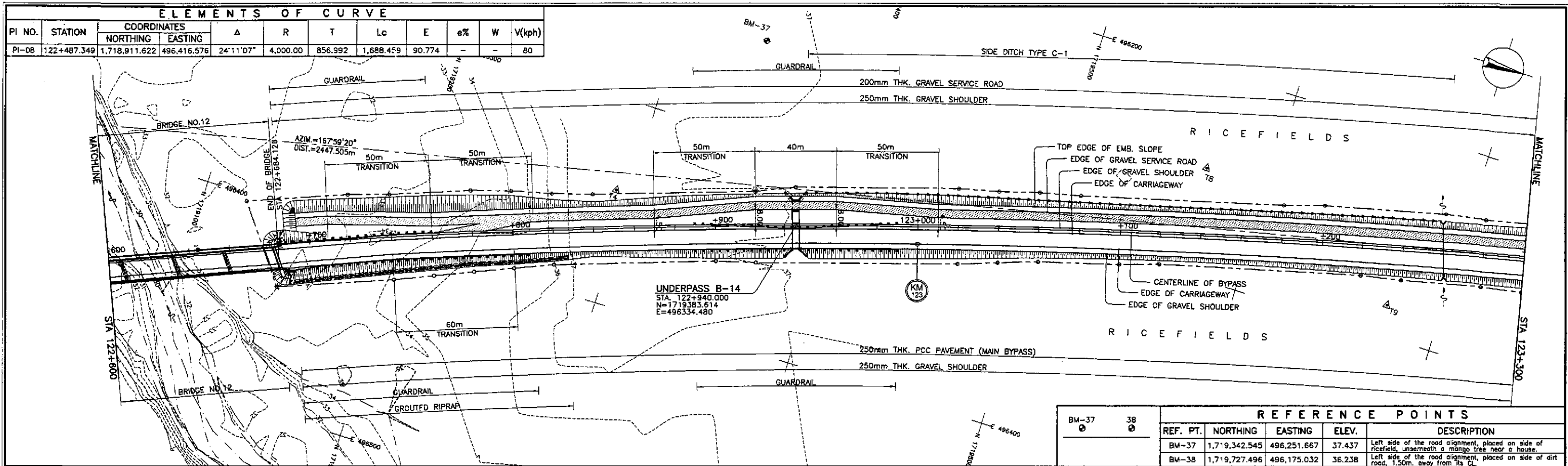


REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-34	1,718,360.331	496,980.373	35.518	Right side of the road alignment, placed on the side of a dirt road, 1.50m. away from its CL
BM-37	1,719,342.545	496,251.687	37.437	Left side of the road alignment, placed on side of ricefield, underneath a mango tree near a house.

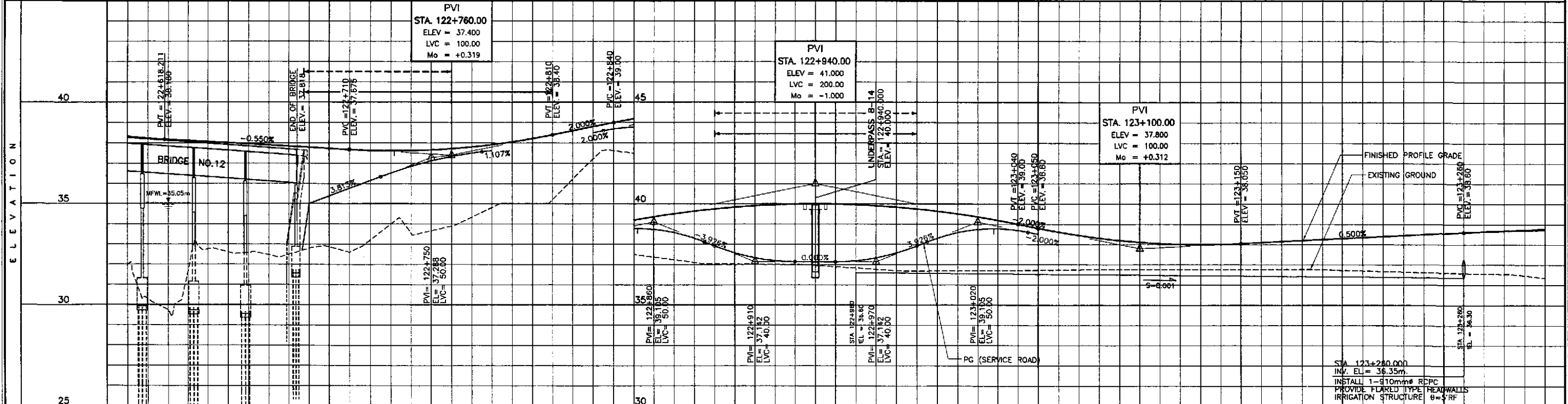


STATION	+900										+100										+200										+300										+400										122+500										+600																																						
	FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	34.947	39.223	37.343	34.943	39.343	36.480	34.932	39.383	35.932	34.904	39.343	35.809	34.878	39.223	35.821	34.782	39.023	36.418	34.670	38.743	37.185	34.617	38.383	37.071	34.710	38.043	37.735	34.742	37.823	34.838	37.723	34.982	37.743	35.079	37.883	38.143	35.179	38.143	35.279	38.523	35.486	39.008	38.704	35.792	39.508	38.994	35.846	40.008	39.004	35.715	40.507	38.613	35.599	40.952	38.613	35.850	41.315	38.415	35.871	41.594	38.213	36.015	41.789	38.013	38.506	41.802	35.043	41.931	37.037	41.876	37.086	41.739	36.500	37.023	41.518	36.400	36.359	41.213	36.492	37.083	40.826	36.525	38.744	40.356	36.492	37.081	39.856	38.400	37.215	39.356	36.300	36.975	38.914	38.200	35.849	38.568	36.321	31.980
EXISTING GROUND BYPASS	34.947	39.223	37.343	34.943	39.343	36.480	34.932	39.383	35.932	34.904	39.343	35.809	34.878	39.223	35.821	34.782	39.023	36.418	34.670	38.743	37.185	34.617	38.383	37.071	34.710	38.043	37.735	34.742	37.823	34.838	37.723	34.982	37.743	35.079	37.883	38.143	35.179	38.143	35.279	38.523	35.486	39.008	38.704	35.792	39.508	38.994	35.846	40.008	39.004	35.715	40.507	38.613	35.599	40.952	38.613	35.850	41.315	38.415	35.871	41.594	38.213	36.015	41.789	38.013	38.506	41.802	35.043	41.931	37.037	41.876	37.086	41.739	36.500	37.023	41.518	36.400	36.359	41.213	36.492	37.083	40.826	36.525	38.744	40.356	36.492	37.081	39.856	38.400	37.215	39.356	36.300	36.975	38.914	38.200	35.849	38.568	36.321	31.980	38.321
HORIZONTAL CURVATURE	R=4000																																																																																																		
VERTICAL CURVATURE	L=200, Mo=-1.000, g=-2.000%										L=150, Mo=+0.844, g=2.500%										L=240, Mo=-1.500, g=-2.500%										L=80, Mo=+0.195																																																																				
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 IV	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 121+900 - STA. 122+600	SHEET NO. : RP-02
	CHECKED	10/19/02	<i>S. Gose</i>		BUREAU OF DESIGN							
	SUBMITTED	10/21/02	<i>M. Kuroki</i>		OFFICE OF THE SECRETARY							
			P.J.H. - PMO	BUREAU OF DESIGN				OFFICE OF THE SECRETARY				
			Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:					
			DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES DC, Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary					



REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-37	1,719,342.545	496,251.667	37.437	Left side of the road alignment, placed on side of ricefield, underneath a mango tree near a house.
BM-38	1,719,727.496	496,175.032	36.238	Left side of the road alignment, placed on side of dirt road, 1.50m. away from its CL.

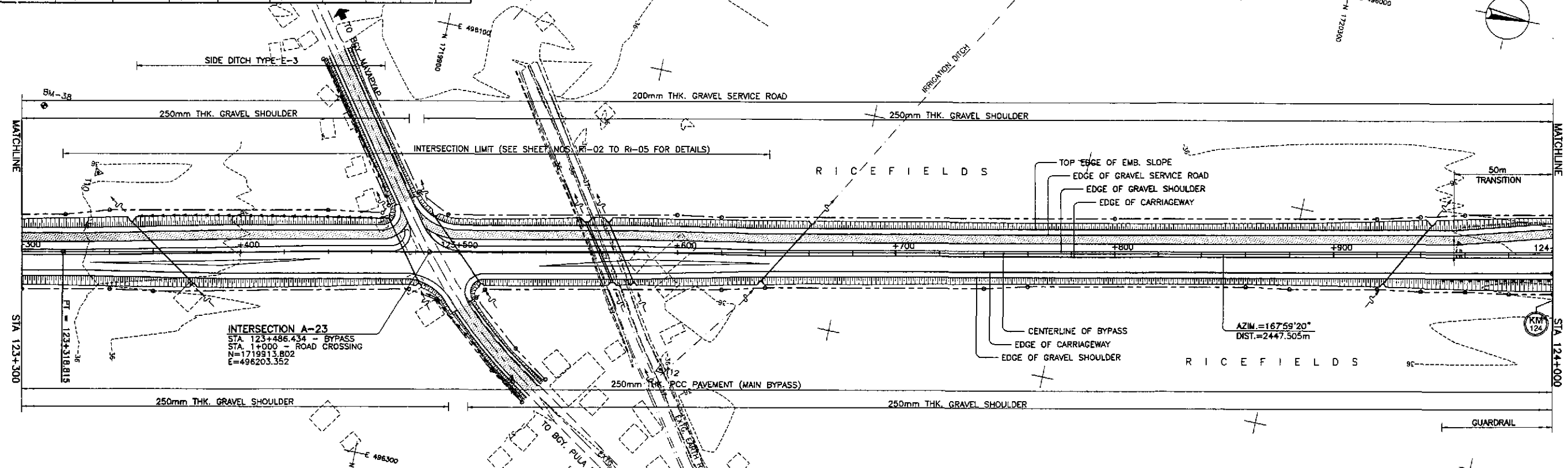


STATION	+600	+700	+800	+900	123+000	+100	+200	+300
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	31.980	38.321	38.170	37.950	37.840	37.730	37.620	37.510
EXISTING GROUND BYPASS	29.752	32.763	32.950	32.874	32.819	32.730	32.640	32.550
HORIZONTAL CURVATURE	R=4000							
VERTICAL CURVATURE	g=-0.550%		L=100 Mo=+0.319		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 : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, 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. 122+600 - STA. 123+300	SHEET NO. : RP-03
	CHECKED	10/17/02			BUREAU OF DESIGN		OFFICE OF THE SECRETARY					
	SUBMITTED	10/21/02			Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES Dir. Director IV	Recommended By: MANUEL M. BONDAN Undersecretary				

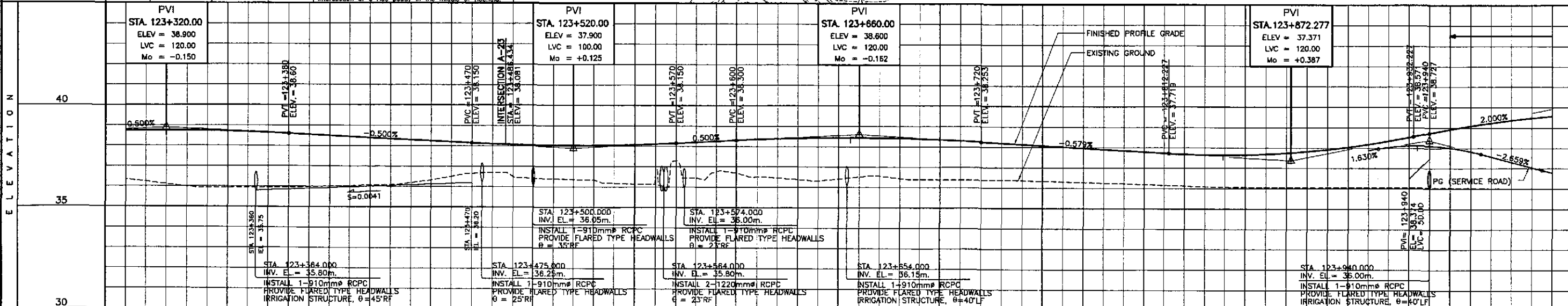
ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-08	122+487.349	1,718,911.622	496,416.576	24°11'07"	4,000.00	856.992	1,688.459	90.774	-	-	80



REFERENCE POINTS

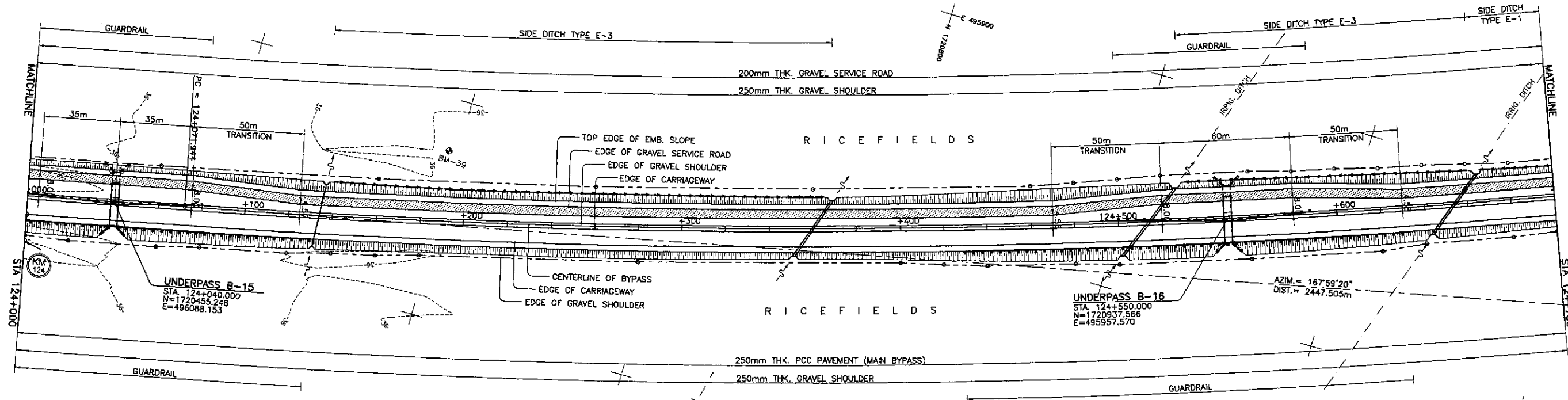
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-37	1,719,342.545	496,251.657	37.437	Left side of the road alignment, placed on side of ricefield, underneath a mango tree near a house.
BM-38	1,719,727.496	496,175.032	36.238	Left side of the road alignment, placed on side of dirt road, 1.50m. away from CL.
BM-39	1,720,595.956	496,023.421	36.396	Left side of the road alignment, placed on the intersection of a rice paddy in the middle of ricefield.



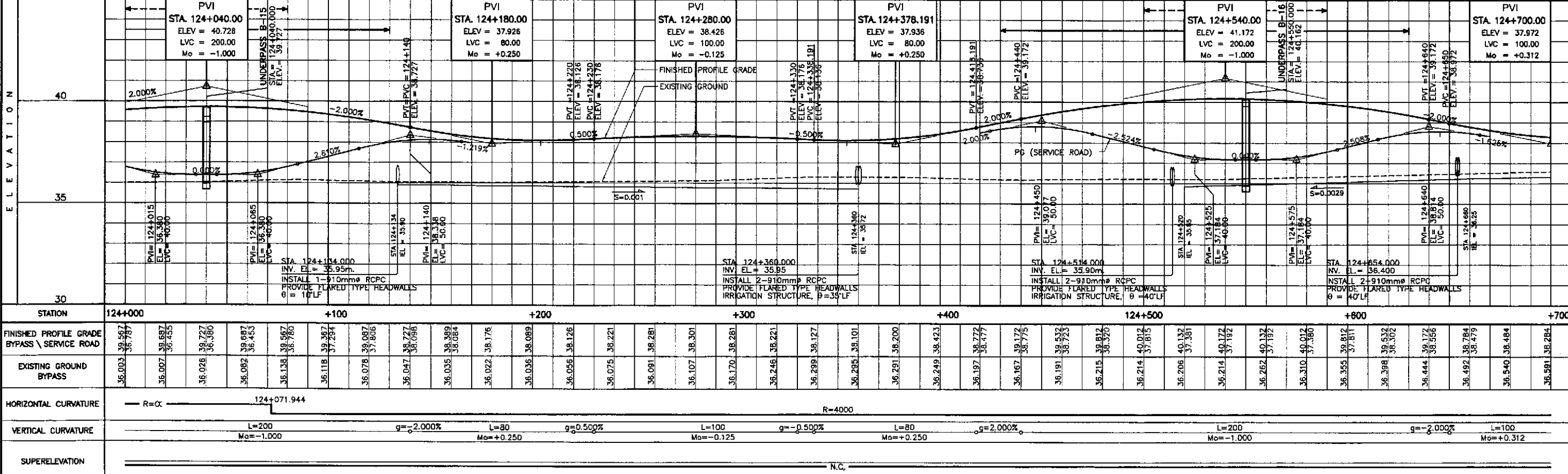
STATION	+300	+400				123+500				+600				+700				+800				+900				124+000
FINISHED PROFILE GRADE	36.344	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733	36.733			
EXISTING GROUND	36.344	36.108	36.750	36.733	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683	36.683			
HORIZONTAL CURVATURE	R=∞																									
VERTICAL CURVATURE	L=120, Mo=-0.150, g=-0.500%, L=100, Mo=+0.125, g=0.500%, L=120, Mo=-0.162, g=-0.579%, L=120, Mo=+0.367, 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 : 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 IV	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 123+300 - STA. 124+000	SHEET NO. : RP-04
	CHECKED	10/19/02	S. Reyes		BUREAU OF DESIGN							
	SUBMITTED	10/21/02	M. K. Kusi		PUHL - PMO 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. BONDAN Undersecretary				

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-09	124+909.328	1,721,305.544	495,907.244	23°38'52"R	4,000.00	837.385	1,650.927	86.712	-	-	80



REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-38	1,719,727.498	496,175.032	36.238	Left side of the road alignment, placed on side of dirt road, 1.50m. away from its CL.
BM-39	1,720,595.956	496,023.421	36.396	Left side of the road alignment, placed on the intersection of a rice paddy in the middle of ricefield.
BM-40	1,721,353.720	495,998.525	36.993	Right side of the road alignment, placed underneath a group of coconut tree in the middle of ricefield.



STATION	124+000	+100	+200	+300	+400	124+500	+600	+700																												
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	36.567 36.787	36.007 36.455	36.026 36.727 36.380	36.082 36.987 36.453	36.138 36.567 36.780	36.118 36.387 37.284	36.078 36.087 37.806	36.047 36.727 36.090	36.035 36.389 36.084	36.022 36.176	36.036 36.089	36.056 36.126	36.075 36.221	36.091 36.281	36.107 36.301	36.170 36.281	36.246 36.221	36.299 36.127	36.295 36.101	36.291 36.200	36.249 36.423	36.197 36.772 36.477	36.167 36.172 36.775	36.191 36.532 36.723	36.215 36.812 36.920	36.214 40.012 37.815	36.206 40.132 37.381	36.214 40.172 37.192	36.262 40.132 37.192	36.310 40.012 37.380	36.355 39.812 37.811	36.398 39.532 36.302	36.444 39.172 38.566	36.492 38.784 36.479	36.540 38.484	36.591 38.284
HORIZONTAL CURVATURE	R=∞										R=4000																									
VERTICAL CURVATURE	L=200 Mo=-1.000		g=-2.000%		L=80 Mo=+0.250		g=0.500%		L=100 Mo=-0.125		g=-0.500%		L=80 Mo=+0.250		g=2.000%		L=200 Mo=-1.000		g=-2.000%		L=100 Mo=+0.312															
SUPERELEVATION	N.C.																																			

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL
YEC YACHIYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

BUREAU OF DESIGN

OFFICE OF THE SECRETARY

DESIGNED: 10/12/02
CHECKED: 10/19/02
SUBMITTED: 10/21/02

DATE: 10/12/02

SIGNATURE: [Signature]

PROJECT DIRECTOR: DANILLO C. TRAJANO

CHIEF, HIGHWAYS DIVISION: JOSEFINA M. ALACAR

DIC, DIRECTOR IV: GILBERTO S. REYES

UNDERSECRETARY: MANUEL M. BORDAN

SECRETARY: SIMEON A. DATUMANONG

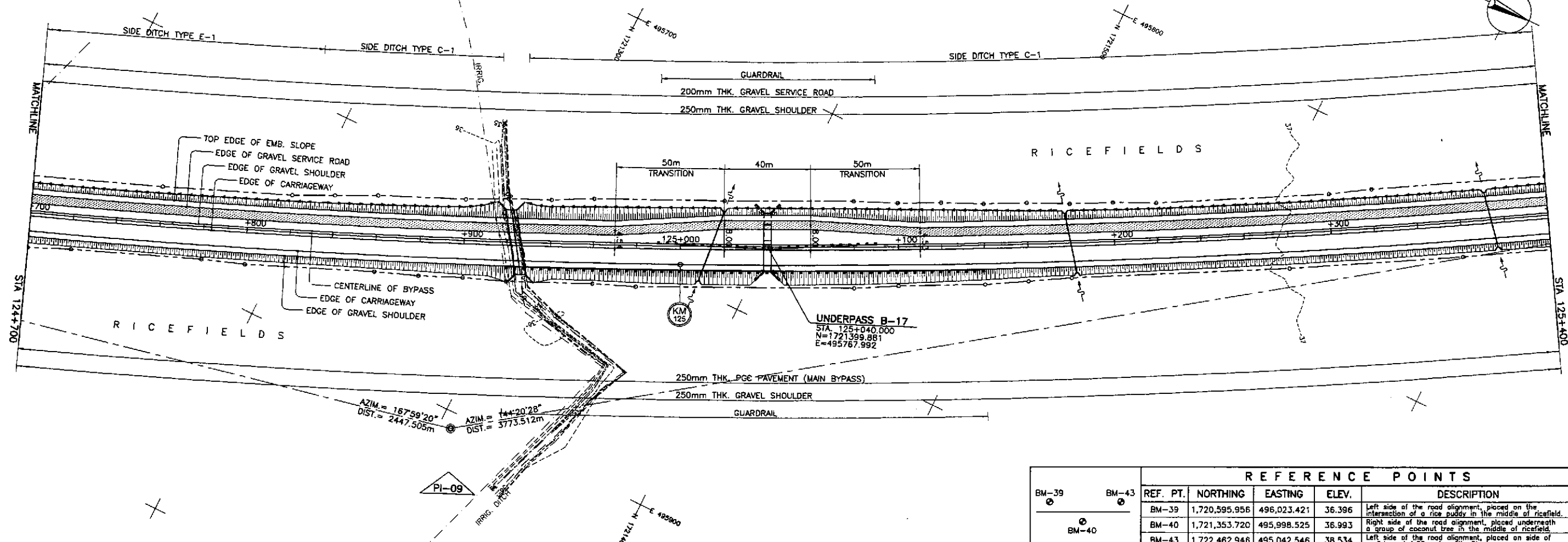
PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)

SCALE: HORIZONTAL 1:1000, VERTICAL 1:100, FULL SIZE A1

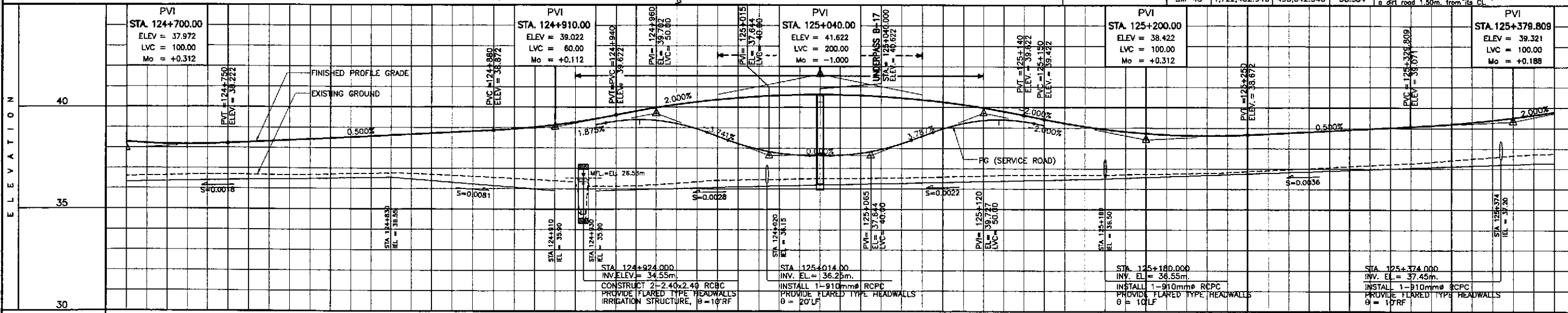
SHEET CONTENTS: PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 124+000 - STA. 124+700

SHEET NO.: RP-05

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-09	124+909.328	1,721,305.544	495,907.244	23°38'52"R	4,000.00	837.385	1,650.927	86.712	-	-	80



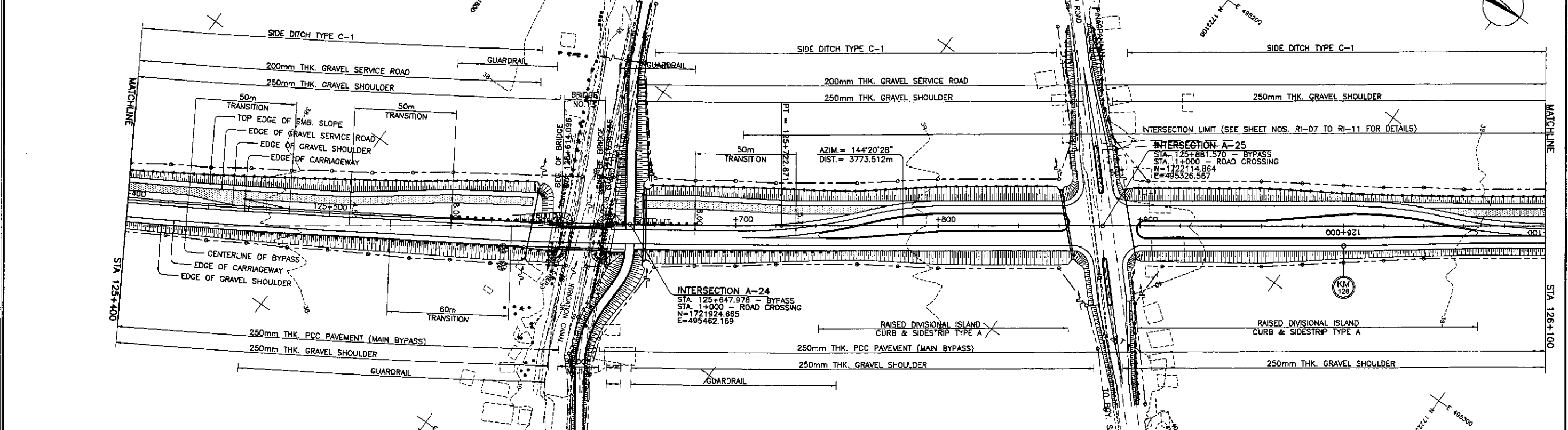
REFERENCE POINTS				DESCRIPTION
REF. PT.	NORTHING	EASTING	ELEV.	
BM-39	1,720,595.956	496,023.421	36.396	Left side of the road alignment, placed on the intersection of a rice paddy in the middle of ricefield.
BM-40	1,721,353.720	495,998.525	36.993	Right side of the road alignment, placed underneath a group of coconut tree in the middle of ricefield.
BM-43	1,722,462.946	495,042.546	38.534	Left side of the road alignment, placed on side of a dirt road 1.50m from its CL.



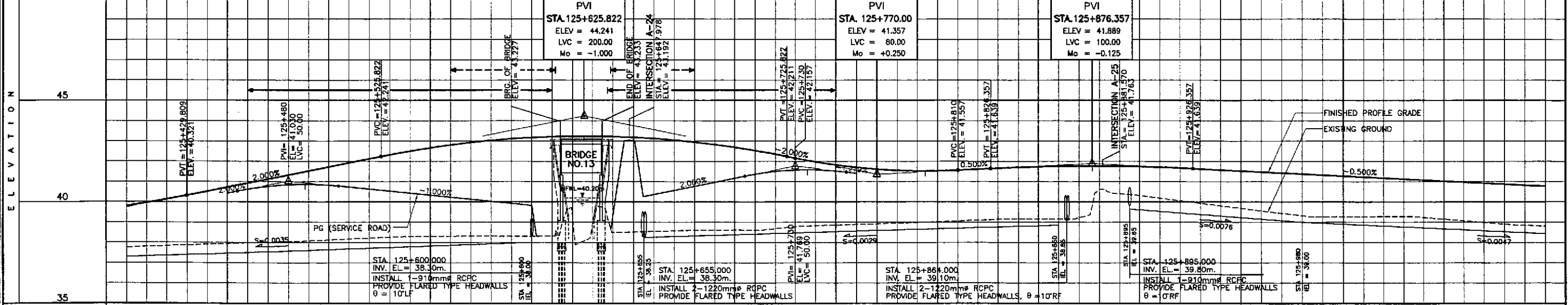
STATION	+700	+800	+900	125+000	+100	+200	+300	+400
FINISHED PROFILE GRADE	36.591, 36.284	36.643, 36.184	36.679, 36.184	36.675, 36.272	36.671, 36.372	36.702, 36.472	36.742, 36.572	36.742, 36.672
EXISTING GROUND	36.591, 36.284	36.643, 36.184	36.679, 36.184	36.675, 36.272	36.671, 36.372	36.702, 36.472	36.742, 36.572	36.742, 36.672
HORIZONTAL CURVATURE	R=4000							
VERTICAL CURVATURE	L=100, Mo=+0.312, g=0.500%		L=60, Mo=+0.112, g=2.000%		L=200, Mo=-1.000, g=-2.000%		L=100, Mo=+0.312, g=+0.500%	
SUPERELEVATION	N.C.							

	DESIGNED	10/12/02			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/19/02	BUREAU OF DESIGN Submitted By: DANILLO C. TRAJANO Reviewed By: JOSEFINA M. ALAGAR Recommended By: GILBERTO S. REYES Recommended By: MANUEL M. BONDAN Approved By: SIMEON A. DATUMANGONG		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pariidel, Cabanatuan and San Jose Bypasses)	HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	PLAN ANF PROFILE ALONG BYPASS (INITIAL STAGE) STA. 124+700 - STA. 125+400	RP-06
	SUBMITTED	10/21/02	OFFICE OF THE SECRETARY (See cover sheet for Signature/Approval)		CABANATUAN BYPASS - CONTRACT PACKAGE IV			

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-09	124+909.328	1,721,305.544	495,907.244	23°38'52"R	4,000.00	837.385	1,650.927	86.712	-	-	80

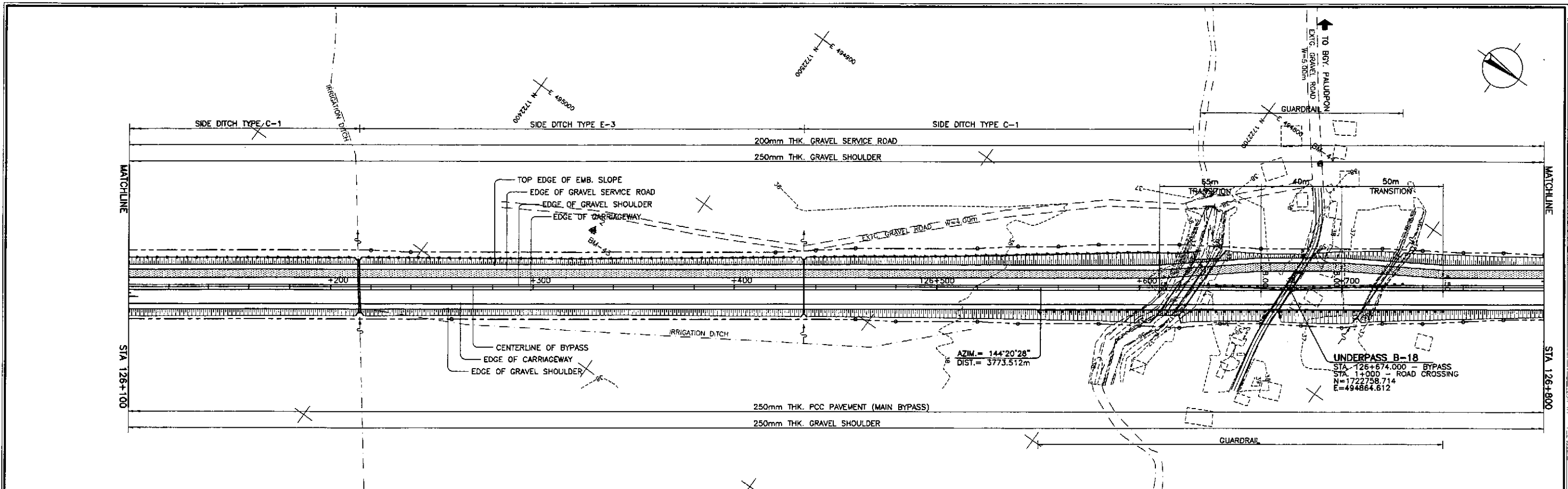


REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-40	1,721,353.720	495,998.525	36.993	Right side of the road alignment, placed underneath a group of coconut tree in the middle of ricefield.
BM-43	1,722,462.946	495,042.546	38.534	Left side of the road alignment, placed on side of a dirt road 1.50m. from its CL.
BM-44	1,722,735.654	494,806.172	38.406	Left side of the road alignment, placed on side of dirt road intersecting 1.50m. away from its CL.

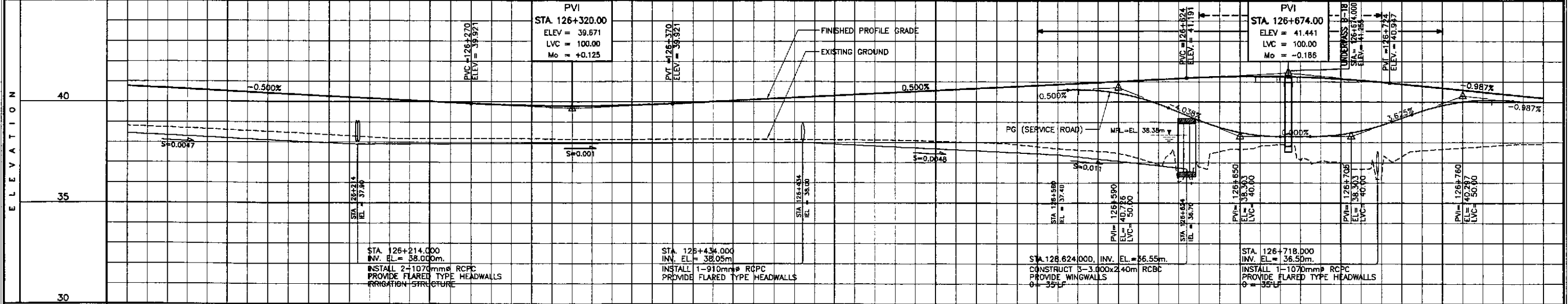


STATION	+400	125+500				+600	+700				+800				+900				126+000				+1000																																																															
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	37.793	39.791	37.833	40.132	37.908	40.525	37.972	40.925	40.622	38.036	41.325	40.642	38.122	41.725	40.822	38.214	42.125	40.630	38.292	42.504	40.430	38.314	42.808	40.230	38.326	43.031	40.030	38.315	43.174	39.830	39.212	43.238	38.489	43.221	38.548	43.124	40.368	38.607	42.947	40.785	38.622	42.891	41.169	38.684	42.354	41.496	38.827	41.923	41.574	38.887	41.698	41.403	38.947	41.548	38.023	41.523	39.103	41.607	39.161	41.698	39.165	41.751	40.598	41.754	40.314	41.738	40.060	41.669	39.809	41.571	39.561	41.471	39.313	41.371	39.266	41.271	39.274	41.171	39.233	41.071	39.069	40.971	38.905	40.871	36.810	40.271
EXISTING GROUND BYPASS	37.793	39.791	37.833	40.132	37.908	40.525	37.972	40.925	40.622	38.036	41.325	40.642	38.122	41.725	40.822	38.214	42.125	40.630	38.292	42.504	40.430	38.314	42.808	40.230	38.326	43.031	40.030	38.315	43.174	39.830	39.212	43.238	38.489	43.221	38.548	43.124	40.368	38.607	42.947	40.785	38.622	42.891	41.169	38.684	42.354	41.496	38.827	41.923	41.574	38.887	41.698	41.403	38.947	41.548	38.023	41.523	39.103	41.607	39.161	41.698	39.165	41.751	40.598	41.754	40.314	41.738	40.060	41.669	39.809	41.571	39.561	41.471	39.313	41.371	39.266	41.271	39.274	41.171	39.233	41.071	39.069	40.971	38.905	40.871	36.810	40.271
HORIZONTAL CURVATURE	R=4000																125+722.871				R=0																																																																	
VERTICAL CURVATURE	L=100 Mo=+0.188				q=2.000%				L=240 Mo=-1.000				q=-2.000%				L=80 Mo=+0.250				q=0.500%				L=100 Mo=-0.125				q=-0.500%																																																									
SUPERELEVATION	N.C.																																																																																					

	DESIGNED	10/12/02	<i>[Signature]</i>		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :				SCALE :	SHEET CONTENTS :		SHEET NO. :	
	CHECKED	10/19/02	<i>[Signature]</i>		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pardel, Cabanatuan and San Jose Bypasses)				HORIZONTAL 1:1000	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 125+400 - STA.126+100		RP-07	
	SUBMITTED	10/21/02	<i>[Signature]</i>		OFFICE OF THE SECRETARY				CABANATUAN BYPASS - CONTRACT PACKAGE IV				VERTICAL 1:100				
			Submitted By: DANILO C. TRAJANO Project Director				Reviewed By: JOSEFINA M. ALACAR Chief, Highways Division				Approved By: MANUEL M. BONANAN Undersecretary				FULL SIZE A1		



REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-43	1,722,482.946	495,042.546	38.534	Left side of the road alignment, placed on side of a dirt road 1.50m. from its CL.
BM-44	1,722,735.654	494,806.172	38.406	Left side of the road alignment, placed on side of dirt road intersecting 1.50m. away from its CL.
BM-45	1,723,356.627	494,554.149	40.327	Right side of the road alignment, placed on side of dirt road 1.50m. away from its CL. beside a nipa hut.



STATION	+100	+200	+300	+400	126+500	+600	+700	+800
FINISHED PROFILE GRADE	40.771	40.671	40.571	40.471	40.371	40.271	40.171	40.071
BYPASS \ SERVICE ROAD	38.810	38.734	38.655	38.567	38.479	38.369	38.253	38.172
EXISTING GROUND	38.810	38.734	38.655	38.567	38.479	38.369	38.253	38.172
HORIZONTAL CURVATURE	R=∞							
VERTICAL CURVATURE	g=-0.500%		L=100 Mo=+0.125		g=0.500%		L=100 Mo=-0.186	
SUPERELEVATION	N.C.							

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

KAI KATAHIRA & ENGINEERS INTERNATIONAL
YEO YACHIYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

BUREAU OF DESIGN
OFFICE OF THE SECRETARY

Submitted By: DANILLO 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
SIMEON A. DATUMANONG, Secretary

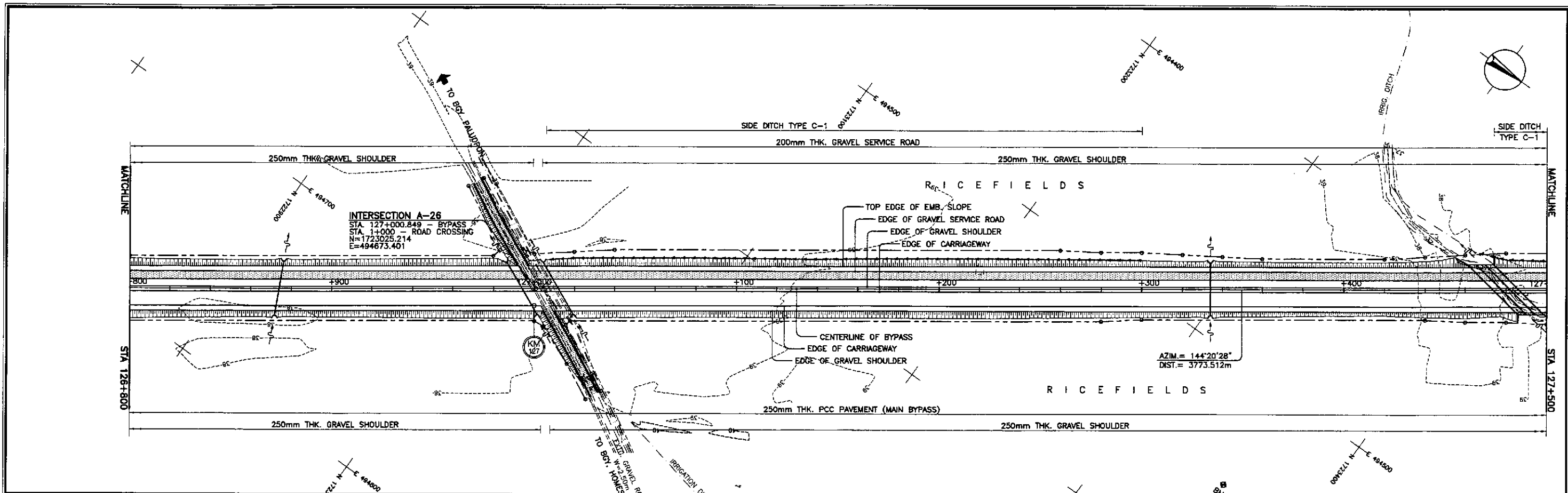
PROJECT AND LOCATION :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)

CABANATUAN BYPASS - CONTRACT PACKAGE IV

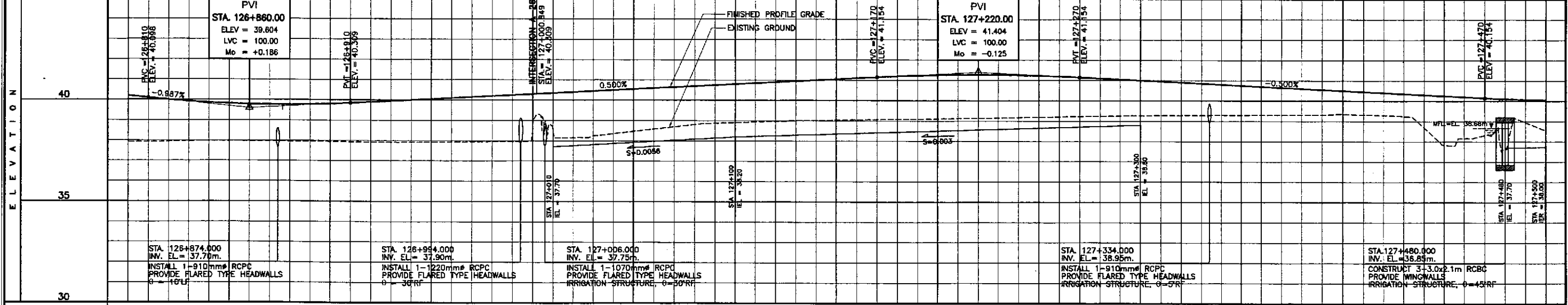
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 126+100 - STA. 126+800

SHEET NO. :
RP-08



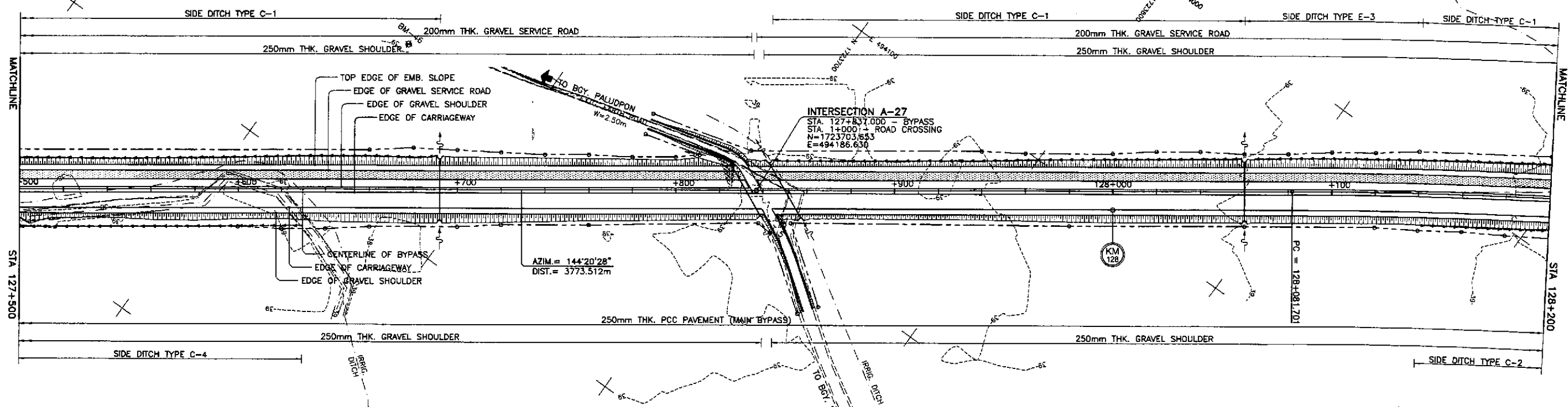
REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-44	1,722,735.654	494,806.172	38.406	Left side of the road alignment, placed on side of dirt road intersection, 1.50m. away from its CL.
BM-45	1,723,356.627	494,554.149	40.327	Right side of the road alignment, placed on side of dirt road, 1.50m. away from its CL. beside a pipe hut.
BM-46	1,723,535.448	494,225.815	39.229	Left side of the road alignment, placed on side of the road 2m. away from its CL. beside a camachile tree.



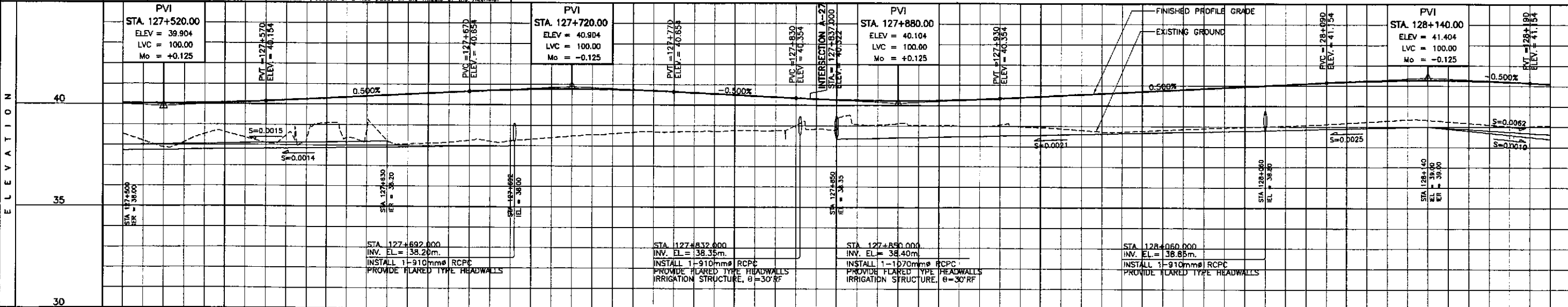
STATION	+800	+900	127+000	+100	+200	+300	+400	127+500
FINISHED PROFILE GRADE BYPASS	37.922	37.950	37.959	37.965	37.970	37.981	37.981	37.981
EXISTING GROUND BYPASS	37.922	37.950	37.959	37.965	37.970	37.981	37.981	37.981
HORIZONTAL CURVATURE	R=∞							
VERTICAL CURVATURE	L=100, Mo=+0.186		g=0.500%			L=100, Mo=-0.125		g=-0.500%
SUPERELEVATION	N.C.							

	DESIGNED	10/12/02				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :		
	CHECKED	10/19/02	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS 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 VERTICAL 1:100 FULL SIZE A1			PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 126+800 - STA. 127+500	RP-09
	SUBMITTED	10/21/02	OFFICE OF THE SECRETARY Recommended By: MANUEL M. BONDAN, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary			CABANATUAN BYPASS - CONTRACT PACKAGE IV					

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(iph)
		NORTHING	EASTING								
PI-10	128+658.998	1,724,371.527	493,707.438	26°00'20"	2,500.00	577.297	1,134.704	65.789	2.0	-	80



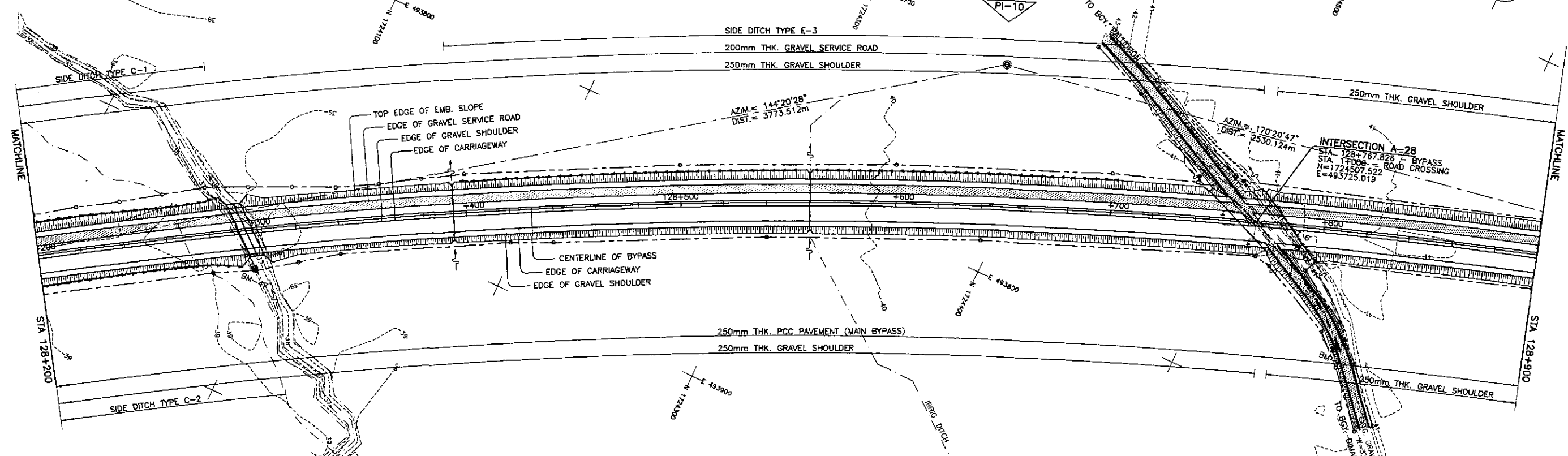
REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-45	1,723,356.627	494,554.149	40.327	Right side of the road alignment, placed on side of dirt road, 1.50m. away from its CL, beside a pipe but
BM-46	1,723,535.448	494,225.815	39.229	Left side of the road alignment, placed on side of the road, 2m. away from its CL, beside a camachile tree.
BM-47	1,724,094.093	493,940.197	39.500	Right side of the road alignment, placed on the intersection of a rice gully in the middle of the ricefield.



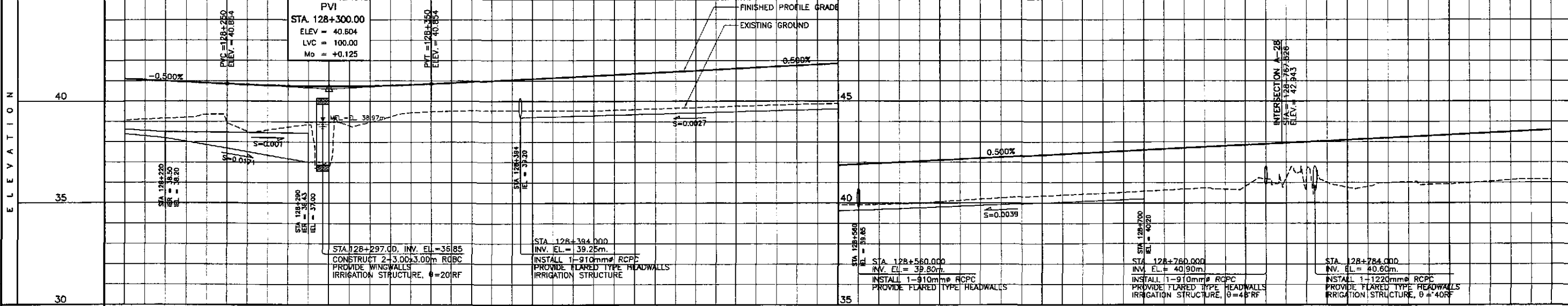
STATION	127+500	+600						+700						+800						+900						128+000						+100						+200
FINISHED PROFILE GRADE BYPASS	40.049	40.049	40.029	40.049	40.109	40.204	40.304	40.404	40.504	40.604	40.699	40.779	40.759	40.604	40.504	40.404	40.299	40.249	40.204	40.104	40.004	40.004	41.104	41.199	41.299	41.399	41.499	41.599	41.604									
EXISTING GROUND BYPASS	38.548	37.888	36.542	38.368	38.482	38.084	38.712	38.087	38.147	38.213	38.320	38.476	38.593	38.700	38.757	38.753	38.841	38.080	39.114	39.019	38.985	38.975	38.890	38.732	38.768	38.857	38.938	39.002	39.056	39.172	39.288	39.327	39.180	39.032	39.072			
HORIZONTAL CURVATURE	R=∞																								R=2500													
VERTICAL CURVATURE	L=100 Mo=+0.125		g=0.500%						L=100 Mo=-0.125						L=100 Mo=+0.125						g=0.500%						L=100 Mo=-0.125											
SUPERELEVATION	N.C.																								128+091.701 e=-2%	128+031.701 128+051.701 e=-2%												

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :		SHEET NO. :
	CHECKED	10/19/02	S. GORRE		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. 127+500 - STA. 128+200		RP-10
	SUBMITTED	10/21/02	M. BONDAN		OFFICE OF THE SECRETARY				CABANATUAN BYPASS - CONTRACT PACKAGE IV		VERTICAL 1:100			
				PUBL. - PMO Submitted By: DANILO C. TRAJANO, Project Director Reviewed By: JOSEFINA M. ALAGAR, Chief, Highways Division Recommended By: GILBERTO S. REYES, OIC, Director IV Recommended By: MANUEL M. BONDAN, Undersecretary Approved By: SIMON A. DATUMANG, Secretary						FULL SIZE A1				

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-10	128+658.998	1,724,371.527	493,707.438	26°00'29"	2,500.00	577.297	1,134.704	55.789	2.00	-	80



REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-46	1,723,535.448	494,225.815	39.229	Left side of the road alignment, placed on side of the road 2m. away from its CL, beside a cornachie tree.
BM-47	1,724,094.093	493,940.197	39.500	Right side of the road alignment, placed on the intersection of a rice paddy in the middle of the ricefield.
BM-48	1,724,565.998	493,762.388	42.048	Right side of the road alignment, placed on side of dirt road 2m. away from its CL.

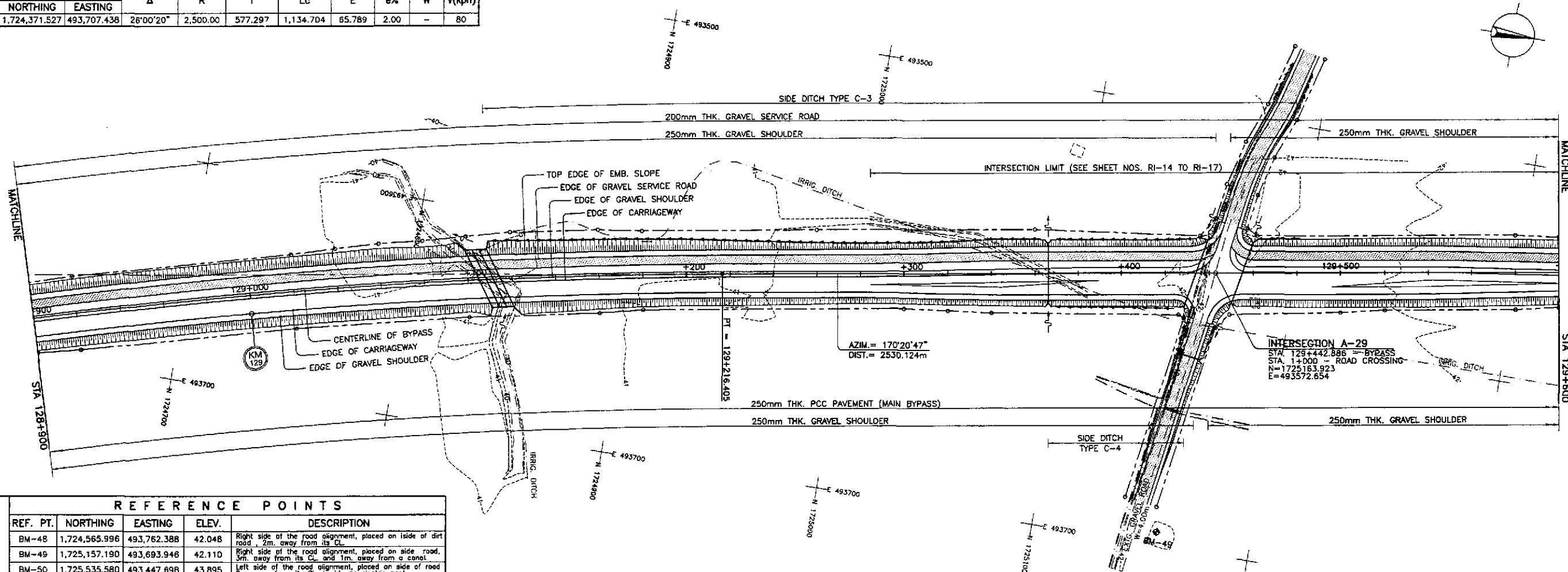


STATION	+200	+300								+400								128+500								+600								+700								+800								+900
FINISHED PROFILE GRADE BYPASS	41.104	41.004	40.904	40.809	40.749	40.729	40.749	40.809	40.904	41.004	41.104	41.204	41.304	41.404	41.504	41.604	41.704	41.804	41.904	42.004	42.104	42.204	42.304	42.404	42.504	42.604	42.704	42.804	42.904	43.004	43.104	43.204	43.304	43.404	43.504	43.604														
EXISTING GROUND BYPASS	39.072	39.165	39.348	38.512	38.728	38.853	38.988	39.439	39.520	39.537	39.543	39.547	39.569	39.632	39.697	39.757	39.817	39.873	39.917	39.961	40.068	40.192	40.304	40.388	40.472	40.573	40.679	40.666	41.185	41.605	40.763	40.992	40.908	40.987	41.129	41.163														
HORIZONTAL CURVATURE	R=2500																																																	
VERTICAL CURVATURE	g=-0.500%												L=100 M=+0.125												g=0.500%																									
SUPERELEVATION	e=+2% e=-2%																																																	

	DESIGNED	10/21/02	ACACIO		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)				SCALE :	SHEET CONTENTS :		SHEET NO. :
	CHECKED	10/19/02	EDSE		BUREAU OF DESIGN				OFFICE OF THE SECRETARY				HORIZONTAL	PLAN AND PROFILE		RP-11
	SUBMITTED	10/21/02	Mr. Rinda		Submitted By: DANILO C. TRAJANO Project Director				Recommended By: JOSEFINA M. ALAGAR Chief, Highways Division				VERTICAL	ALONG BYPASS (INITIAL STAGE)		
												FULL SIZE A1	STA. 128+200 - STA. 128+900			

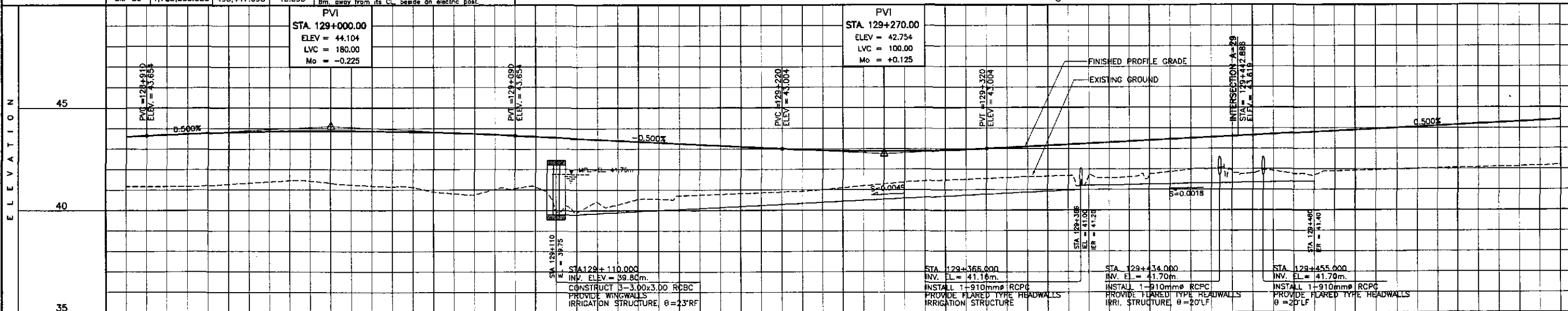
ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-10	128+656.998	1,724,371.527	493,707.438	26°00'20"	2,500.00	577.297	1,134.704	65.789	2.00	-	80



REFERENCE POINTS

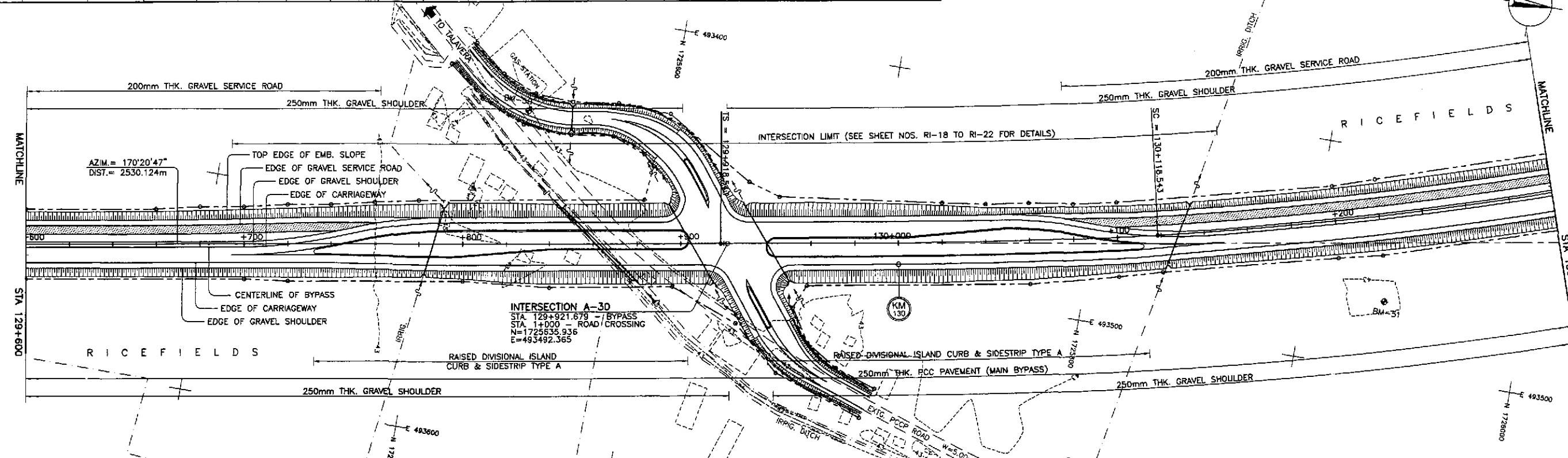
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-48	1,724,565.996	493,762.388	42.048	Right side of the road alignment, placed on inside of dirt road, 2m. away from its CL.
BM-49	1,725,157.190	493,693.946	42.110	Right side of the road alignment, placed on side road, 3m. away from its CL, and 1m. away from a canal.
BM-50	1,725,535.580	493,447.898	43.895	Left side of the road alignment, placed on side of road 8m. away from its CL, beside an electric post.



STATION	+900	129+000										+100	+200										+300	+400										129+500	+600																																					
FINISHED PROFILE GRADE BYPASS	41.163	43.604	41.167	43.702	41.206	43.779	41.330	43.835	41.454	43.888	41.534	43.879	41.196	43.888	41.126	43.835	40.817	43.779	41.024	43.702	41.141	43.604	39.896	43.504	40.280	43.404	40.548	43.304	40.745	43.204	40.820	43.104	40.896	43.004	41.003	42.924	41.187	42.894	41.371	42.884	41.470	42.924	41.546	43.004	41.627	43.104	41.688	43.204	41.882	43.304	41.747	43.404	41.974	43.504	41.912	43.604	41.912	43.704	41.704	43.804	41.824	43.904	41.990	44.004	42.034	44.104	42.082	44.204	42.130	44.304	42.200	44.504
EXISTING GROUND BYPASS	41.163	43.604	41.167	43.702	41.206	43.779	41.330	43.835	41.454	43.888	41.534	43.879	41.196	43.888	41.126	43.835	40.817	43.779	41.024	43.702	41.141	43.604	39.896	43.504	40.280	43.404	40.548	43.304	40.745	43.204	40.820	43.104	40.896	43.004	41.003	42.924	41.187	42.894	41.371	42.884	41.470	42.924	41.546	43.004	41.627	43.104	41.688	43.204	41.882	43.304	41.747	43.404	41.974	43.504	41.912	43.604	41.912	43.704	41.704	43.804	41.824	43.904	41.990	44.004	42.034	44.104	42.082	44.204	42.130	44.304	42.200	44.504
HORIZONTAL CURVATURE	R=2500										129+216.405										R=∞																																																			
VERTICAL CURVATURE	L=180, Mo=-0.225										g=-0.500%										L=100, Mo=+0.125										g=0.500%																																									
SUPERELEVATION	e=+2%										129+206.405										e=-2%										N.C.																																									

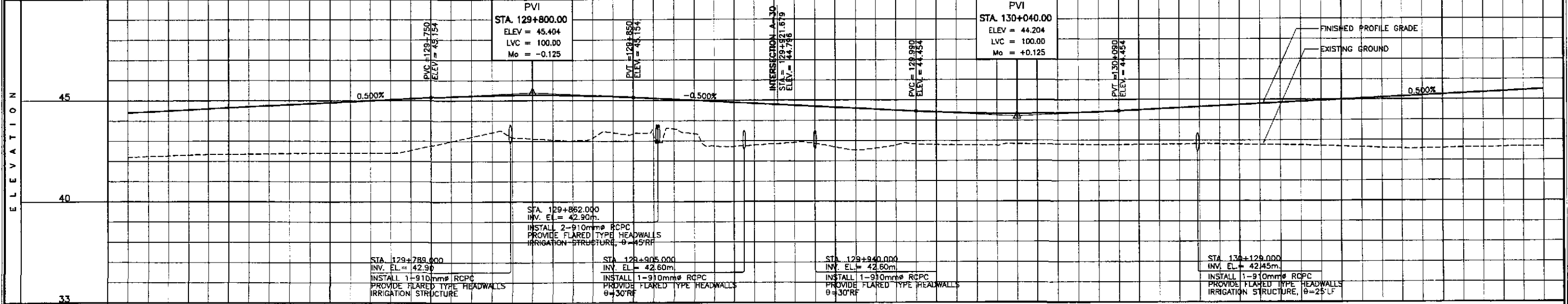
	DESIGNED	10/12/02	DATE	10/12/02	SIGNATURE	A. ACACIO	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)		SCALE :	HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS :	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 128+900 - STA. 129+600	SHEET NO. :	RP-12
	CHECKED	10/19/02	DATE	10/19/02	SIGNATURE	S. ROSE		BUREAU OF DESIGN	OFFICE OF THE SECRETARY	CABANATUAN BYPASS - CONTRACT PACKAGE IV						
	SUBMITTED	10/21/02	DATE	10/21/02	SIGNATURE	MANUEL M. BONOAN		Project Director	Chief, Highways Division							

ELEMENTS OF CURVE																						
PI NO.	STATION	COORDINATES		Δ	A	R	T	Lc	E	Ls	θ _s	x	y	Δ _m	X _m	T _L	T _R	T _S	Δ _c	e%	W	V(kph)
		NORTHING	EASTING																			
PI-11	131+169.232	1,726,855.824	493,283.164	65°09'11"	600	1,800.00	1150.70	1,846.841	337.167	200.000	3°10'59"	199.938	3.703	0.926	99.99	133.355	66.686	1,250.688	58°47'12"	2.00	-	80



REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-49	1,725,157.190	493,693.946	42.110	Right side of the road alignment, placed on side road, 3m. away from its CL and 1m. away from a canal.
BM-50	1,725,535.580	493,447.698	43.895	Left side of the road alignment, placed on side of road 8m. away from its CL beside an electric post.
BM-51	1,725,936.648	493,468.459	43.274	Right side of the road alignment, placed on intersection of a rice paddy in middle of ricefield, 150m from CL.

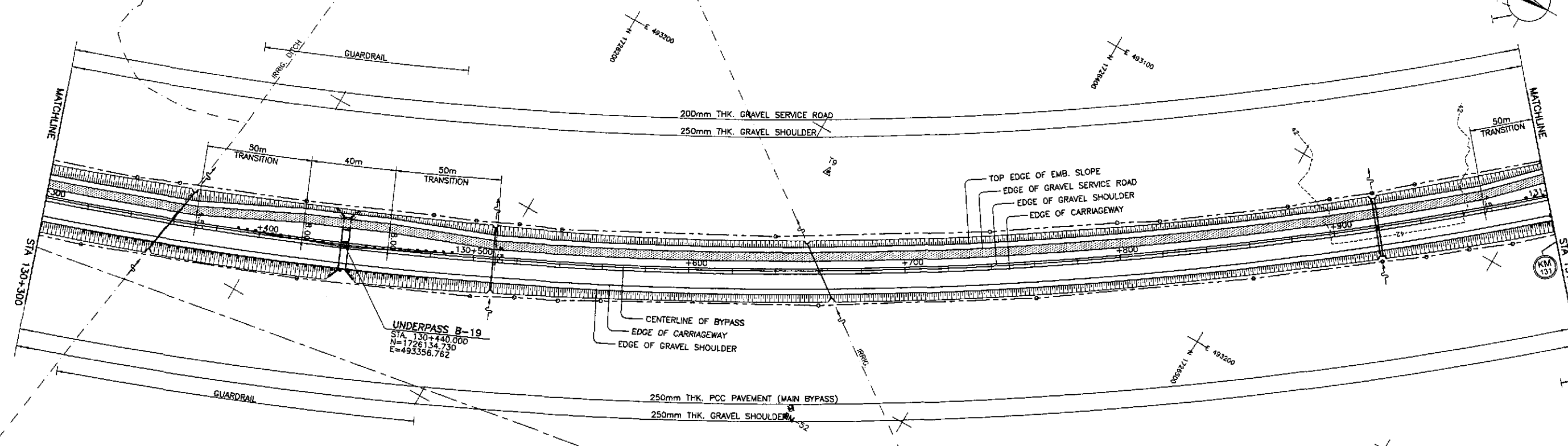


STATION	+600	+700	+800	+900	130+000	+100	+200	+300		
FINISHED PROFILE GRADE BYPASS	44.404	44.504	44.604	44.704	44.804	44.904	45.004	45.104		
EXISTING GROUND BYPASS	42.200	42.276	42.337	42.361	42.385	42.399	42.411	42.547		
HORIZONTAL CURVATURE	R=∞		129+918.543			A=600		130+118.543		R=1800
VERTICAL CURVATURE	g=0.500%		L=100, Mo=-0.125			g=-0.500%		L=100, Mo=+0.125		g=0.500%
SUPERELEVATION	N.C.						130+118.543		e=+2% e=-2%	

	DESIGNED	10/12/02	<i>[Signature]</i> A. ACACIO		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. 129+600 - STA. 130+300	SHEET NO. : RP-13
	CHECKED	10/19/02	<i>[Signature]</i> G. COSE		BUREAU OF DESIGN							
	SUBMITTED	10/21/02	<i>[Signature]</i> M. BONDAN		OFFICE OF THE SECRETARY							
			Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:					
			DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary					

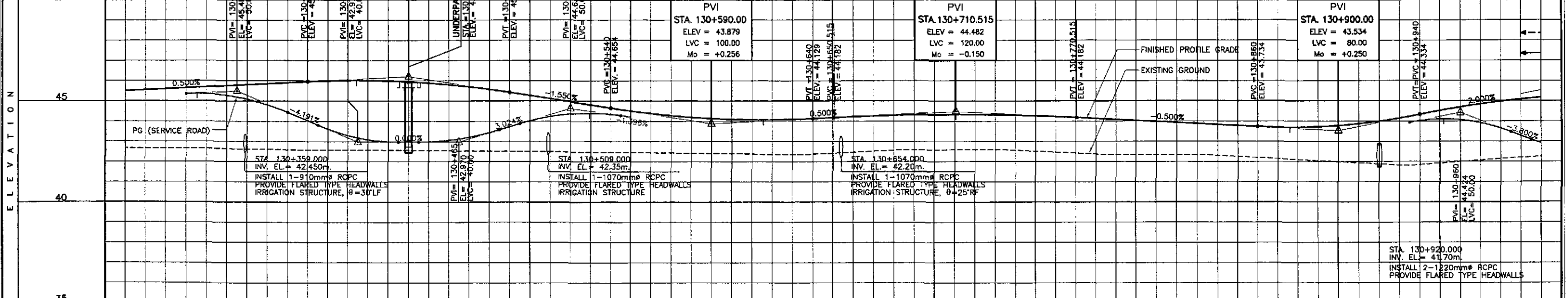
ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES		Δ	A	R	T	Lc	E	Ls	θa	x	y	ΔR	Xm	Tl	Tr	Ts	Δc	e%	W	V(kph)
		NORTHING	EASTING																			
PI-11	131+169.232	1,726,865.824	493,283.184	65°09'11"	800	1,800.00	1150.70	1,846.841	337.167	200.000	3°10'59"	199.938	3.703	0.926	99.99	133.355	66.686	1,250.889	58°47'12"	2.00	-	80

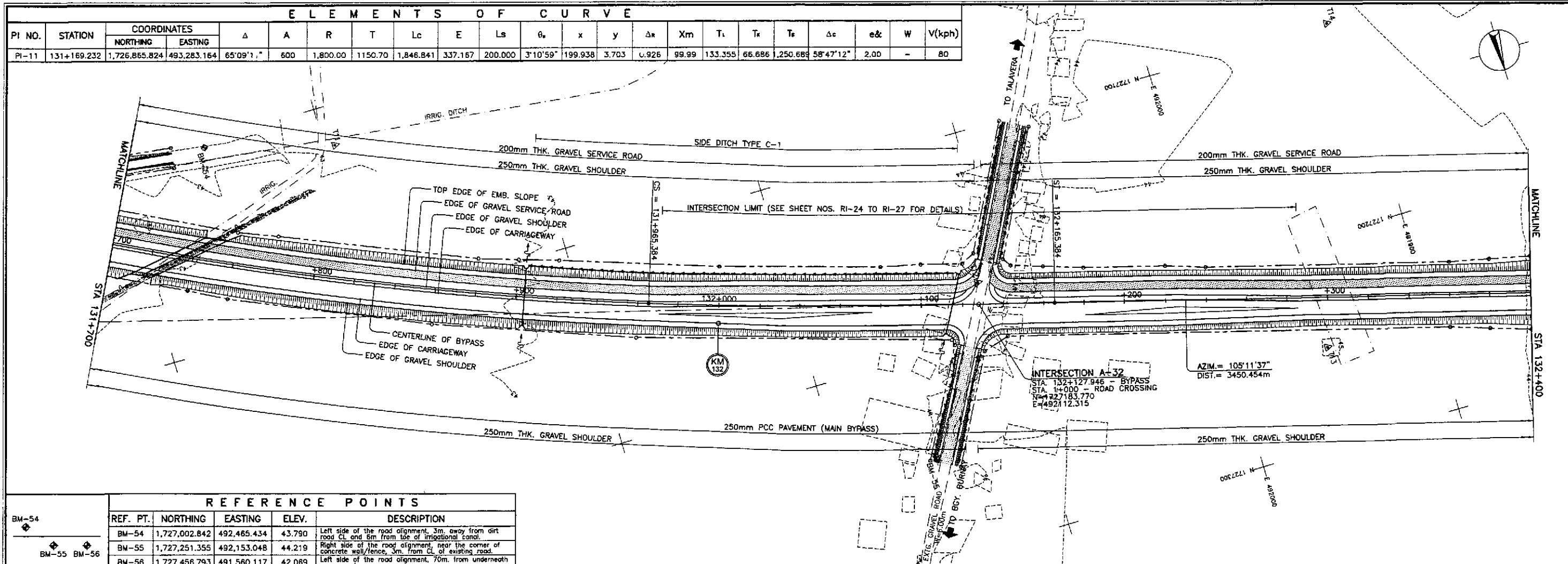


REFERENCE POINTS

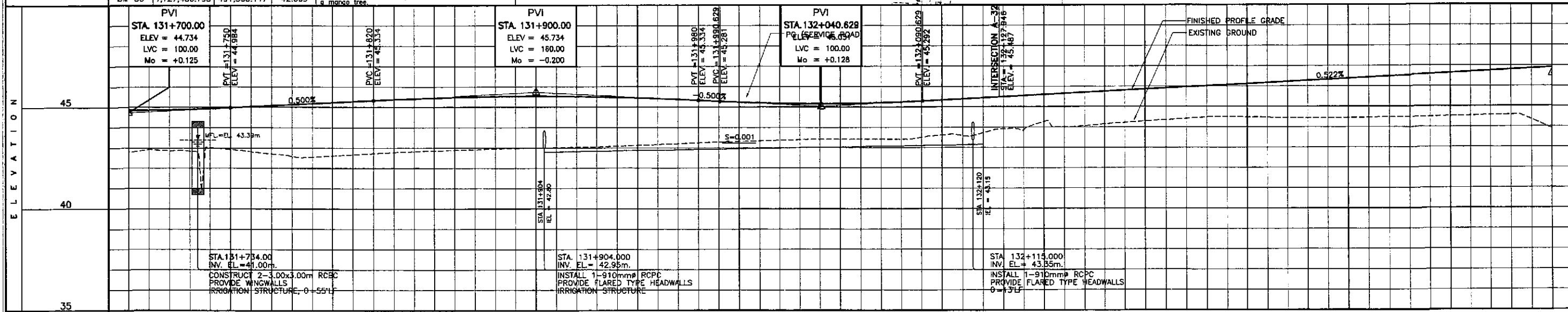
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-51	1,725,936.648	493,468.459	43.274	Right side of the road alignment, placed on intersection of a rice paddy in middle of ricefield, 150m. from CL.
BM-52	1,726,352.052	493,319.807	43.317	Right side of the road alignment, placed on side of a dirt road, 150m. away from the CL of the dirt road.
BM-53	1,726,804.440	492,931.296	42.900	Right side of the road alignment, in middle of ricefield, at side of well placed in the rice paddy.



STATION	+300	+400										130+500										+600										+700										+800										+900										131+000																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	42.667	45.504	42.663	45.604	42.651	45.704	42.662	45.804	42.687	45.904	42.712	46.012	42.737	46.112	42.762	46.212	42.787	46.312	42.812	46.412	42.837	46.512	42.862	46.612	42.887	46.712	42.912	46.812	42.937	46.912	42.962	47.012	42.987	47.112	43.012	47.212	43.037	47.312	43.062	47.412	43.087	47.512	43.112	47.612	43.137	47.712	43.162	47.812	43.187	47.912	43.212	48.012	43.237	48.112	43.262	48.212	43.287	48.312	43.312	48.412	43.337	48.512	43.362	48.612	43.387	48.712	43.412	48.812	43.437	48.912	43.462	49.012	43.487	49.112	43.512	49.212	43.537	49.312	43.562	49.412	43.587	49.512	43.612	49.612	43.637	49.712	43.662	49.812	43.687	49.912	43.712	50.012	43.737	50.112	43.762	50.212	43.787	50.312	43.812	50.412	43.837	50.512	43.862	50.612	43.887	50.712	43.912	50.812	43.937	50.912	43.962	51.012	43.987	51.112	44.012	51.212	44.037	51.312	44.062	51.412	44.087	51.512	44.112	51.612	44.137	51.712	44.162	51.812	44.187	51.912	44.212	52.012	44.237	52.112	44.262	52.212	44.287	52.312	44.312	52.412	44.337	52.512	44.362	52.612	44.387	52.712	44.412	52.812	44.437	52.912	44.462	53.012	44.487	53.112	44.512	53.212	44.537	53.312	44.562	53.412	44.587	53.512	44.612	53.612	44.637	53.712	44.662	53.812	44.687	53.912	44.712	54.012	44.737	54.112	44.762	54.212	44.787	54.312	44.812	54.412	44.837	54.512	44.862	54.612	44.887	54.712	44.912	54.812	44.937	54.912	44.962	55.012	44.987	55.112	45.012	55.212	45.037	55.312	45.062	55.412	45.087	55.512	45.112	55.612	45.137	55.712	45.162	55.812	45.187	55.912	45.212	56.012	45.237	56.112	45.262	56.212	45.287	56.312	45.312	56.412	45.337	56.512	45.362	56.612	45.387	56.712	45.412	56.812	45.437	56.912	45.462	57.012	45.487	57.112	45.512	57.212	45.537	57.312	45.562	57.412	45.587	57.512	45.612	57.612	45.637	57.712	45.662	57.812	45.687	57.912	45.712	58.012	45.737	58.112	45.762	58.212	45.787	58.312	45.812	58.412	45.837	58.512	45.862	58.612	45.887	58.712	45.912	58.812	45.937	58.912	45.962	59.012	45.987	59.112	46.012	59.212	46.037	59.312	46.062	59.412	46.087	59.512	46.112	59.612	46.137	59.712	46.162	59.812	46.187	59.912	46.212	60.012	46.237	60.112	46.262	60.212	46.287	60.312	46.312	60.412	46.337	60.512	46.362	60.612	46.387	60.712	46.412	60.812	46.437	60.912	46.462	61.012	46.487	61.112	46.512	61.212	46.537	61.312	46.562	61.412	46.587	61.512	46.612	61.612	46.637	61.712	46.662	61.812	46.687	61.912	46.712	62.012	46.737	62.112	46.762	62.212	46.787	62.312	46.812	62.412	46.837	62.512	46.862	62.612	46.887	62.712	46.912	62.812	46.937	62.912	46.962	63.012	46.987	63.112	47.012	63.212	47.037	63.312	47.062	63.412	47.087	63.512	47.112	63.612	47.137	63.712	47.162	63.812	47.187	63.912	47.212	64.012	47.237	64.112	47.262	64.212	47.287	64.312	47.312	64.412	47.337	64.512	47.362	64.612	47.387	64.712	47.412	64.812	47.437	64.912	47.462	65.012	47.487	65.112	47.512	65.212	47.537	65.312	47.562	65.412	47.587	65.512	47.612	65.612	47.637	65.712	47.662	65.812	47.687	65.912	47.712	66.012	47.737	66.112	47.762	66.212	47.787	66.312	47.812	66.412	47.837	66.512	47.862	66.612	47.887	66.712	47.912	66.812	47.937	66.912	47.962	67.012	47.987	67.112	48.012	67.212	48.037	67.312	48.062	67.412	48.087	67.512	48.112	67.612	48.137	67.712	48.162	67.812	48.187	67.912	48.212	68.012	48.237	68.112	48.262	68.212	48.287	68.312	48.312	68.412	48.337	68.512	48.362	68.612	48.387	68.712	48.412	68.812	48.437	68.912	48.462	69.012	48.487	69.112	48.512	69.212	48.537	69.312	48.562	69.412	48.587	69.512	48.612	69.612	48.637	69.712	48.662	69.812	48.687	69.912	48.712	70.012	48.737	70.112	48.762	70.212	48.787	70.312	48.812	70.412	48.837	70.512	48.862	70.612	48.887	70.712	48.912	70.812	48.937	70.912	48.962	71.012	48.987	71.112	49.012	71.212	49.037	71.312	49.062	71.412	49.087	71.512	49.112	71.612	49.137	71.712	49.162	71.812	49.187	71.912	49.212	72.012	49.237	72.112	49.262	72.212	49.287	72.312	49.312	72.412	49.337	72.512	49.362	72.612	49.387	72.712	49.412	72.812	49.437	72.912	49.462	73.012	49.487	73.112	49.512	73.212	49.537	73.312	49.562	73.412	49.587	73.512	49.612	73.612	49.637	73.712	49.662	73.812	49.687	73.912	49.712	74.012	49.737	74.112	49.762	74.212	49.787	74.312	49.812	74.412	49.837	74.512	49.862	74.612	49.887	74.712	49.912	74.812	49.937	74.912	49.962	75.012	49.987	75.112	50.012
EXISTING GROUND BYPASS	42.667	45.504	42.663	45.604	42.651	45.704	42.662	45.804	42.687	45.904	42.712	46.012	42.737	46.112	42.762	46.212	42.787	46.312	42.812	46.412	42.837	46.512	42.862	46.612	42.887	46.712	42.912	46.812	42.937	46.912	42.962	47.012	42.987	47.112	43.012	47.212	43.037	47.312	43.062	47.412	43.087	47.512	43.112	47.612	43.137	47.712	43.162	47.812	43.187	47.912	43.212	48.012	43.237	48.112	43.262	48.212	43.287	48.312	43.312	48.412	43.337	48.512	43.362	48.612	43.387	48.712	43.412	48.812	43.437	48.912	43.462	49.012	43.487	49.112	43.512	49.212	43.537	49.312	43.562	49.412	43.587	49.512	43.612	49.612	43.637	49.712	43.662	49.812	43.687	49.912	43.712	50.012	43.737	50.112	43.762	50.212	43.787	50.312	43.812	50.412	43.837	50.512	43.862	50.612	43.887	50.712	43.912	50.812	43.937	50.912	43.962	51.012	43.987	51.112	44.012	51.212	44.037	51.312	44.062	51.412	44.087	51.512	44.112	51.612	44.137	51.712	44.162	51.812	44.187	51.912	44.212	52.012	44.237	52.112	44.262	52.212	44.287	52.312	44.312	52.412	44.337	52.512	44.362	52.612	44.387	52.712	44.412	52.812	44.437	52.912	44.462	53.012	44.487	53.112	44.512	53.212	44.537	53.312	44.562	53.412	44.587	53.512	44.612	53.612	44.637	53.712	44.662	53.812	44.687	53.912	44.712	54.012	44.737	54.112	44.762	54.212	44.787	54.312	44.812	54.412	44.837	54.512	44.862	54.612	44.887	54.712	44.912	54.812	44.937	54.912	44.962	55.012	44.987	55.112	45.012	55.212	45.037	55.312	45.062	55.412	45.087	55.512	45.112	55.612	45.137	55.712	45.162	55.812	45.187	55.912	45.212	56.012	45.237	56.112	45.262	56.212	45.287	56.312	45.312	56.412	45.337	56.512	45.362	56.612	45.387	56.712	45.412	56.812	45.437	56.912	45.462	57.012	45.487	57.112	45.512	57.212	45.537	57.312	45.562	57.412	45.587	57.512	45.612	57.612	45.637	57.712	45.662	57.812	45.687	57.912	45.712	58.012	45.737	58.112	45.762	58.212	45.787	58.312	45.812	58.412	45.837	58.512	45.862	58.612	45.887	58.712	45.912	58.812	45.937	58.912	45.962	59.012	45.987	59.112	46.012	59.212	46.037	59.312	46.062	59.412	46.087	59.512	46.112	59.612	46.137	59.712	46.162	59.812	46.187	59.912</																																																																																																																																																																																																																																																																																																																	

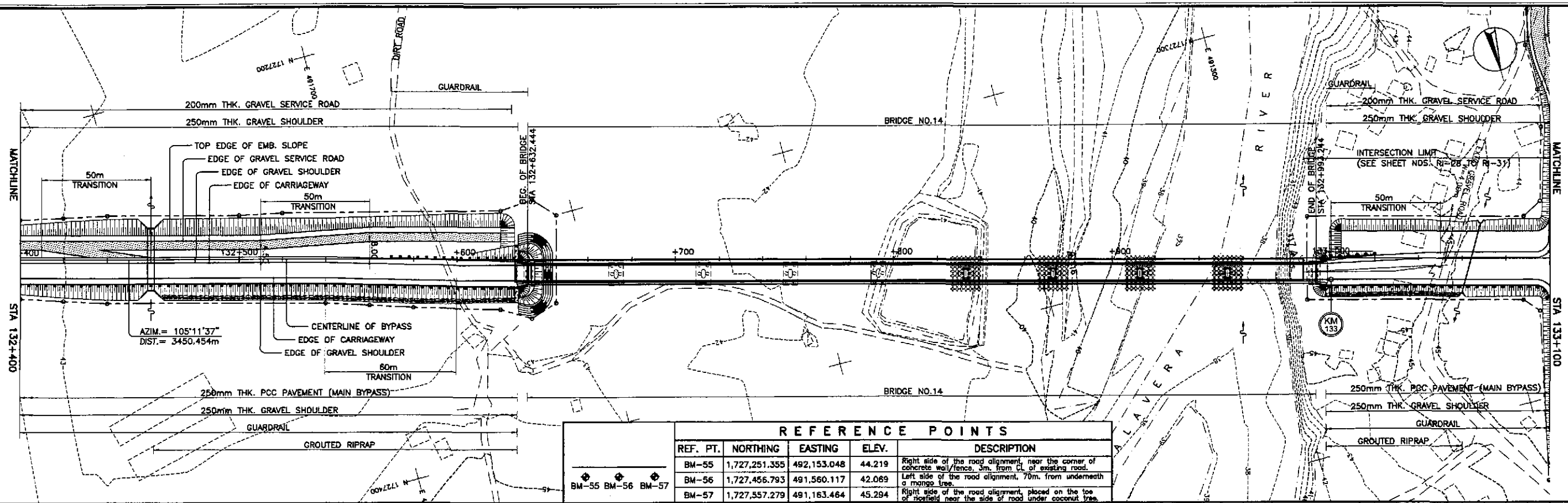


REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-54	1,727,002.842	492,465.434	43.790	Left side of the road alignment, 3m. away from girt road CL and 6m from toe of irrigation canal.
BM-55	1,727,251.355	492,153.048	44.219	Right side of the road alignment, near the corner of concrete wall/fence, 3m. from CL of existing road.
BM-56	1,727,456.793	491,560.117	42.089	Left side of the road alignment, 70m. from underneath a mango tree.

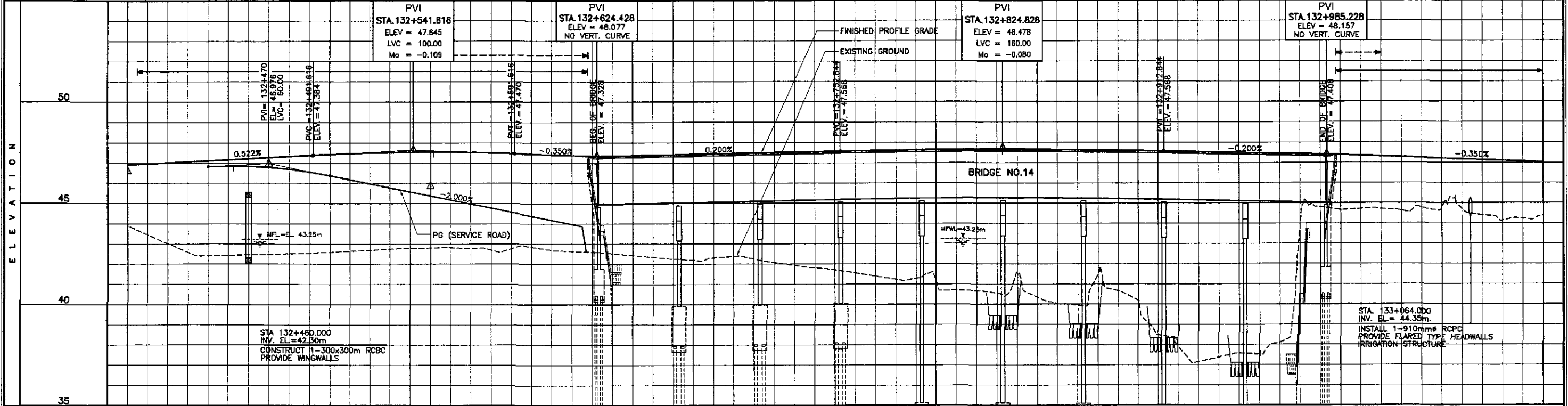


STATION	+700	+800	+900	132+000	+100	+200	+300	+400	
FINISHED PROFILE GRADE BYPASS	42.808	44.859	44.939	45.534	45.445	45.550	46.654	46.906	
EXISTING GROUND BYPASS	42.808	44.879	45.034	45.522	45.541	45.758	46.280	46.902	
HORIZONTAL CURVATURE	R=1800		131+965.384		A=600		132+165.384		R=∞
VERTICAL CURVATURE	L=100, Mo=+0.125, g=0.500%		L=160, Mo=-0.200, g=-0.500%		L=100, Mo=+0.128		g=0.522%		
SUPERELEVATION	e=+2%		131+965.384		131+995.384		132+025.384		

	DESIGNED	10/12/02	 R. ADACIO P.J.M. - PMD		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	10/19/02	 S. G. REYES Project Director			OFFICE OF THE SECRETARY	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. 131+700 - 132+400	RP-16
	SUBMITTED	10/21/02	 DANLO C. TRAJANO Project Director			Recommended By: JOSEFINA M. ALAGAR Chief, Highways Division	Cabanatuan Bypass - Contract Package IV	VERTICAL 1:100 FULL SIZE A1		



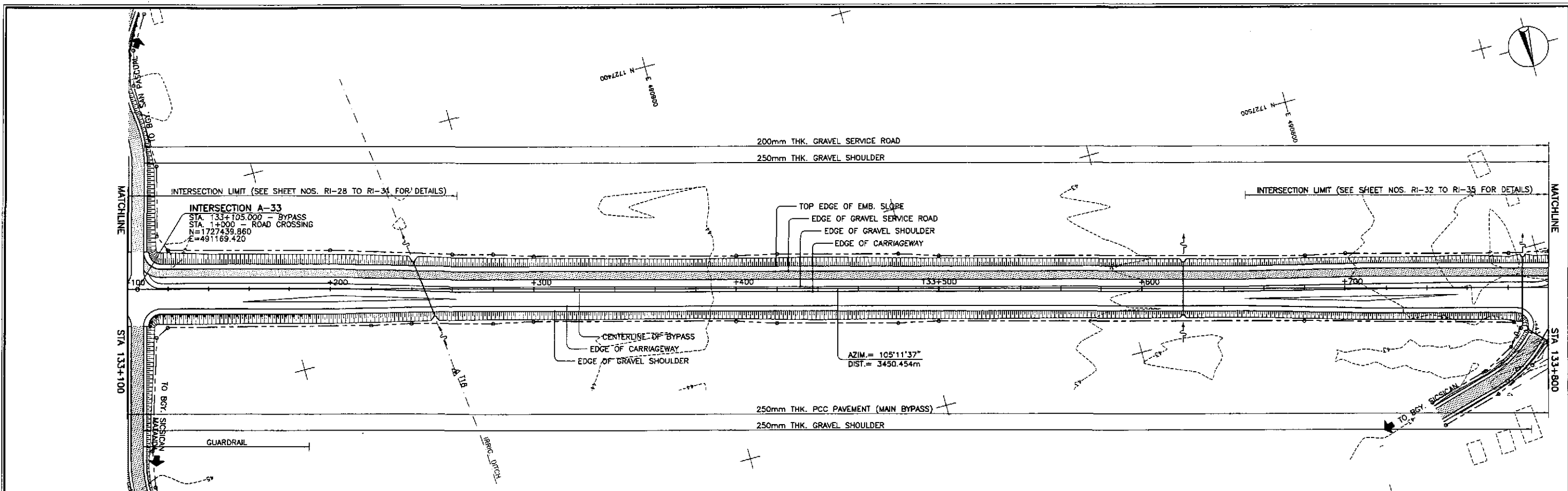
REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-55	1,727,251.355	492,153.048	44.219	Right side of the road alignment, near the corner of concrete wall/fence, 3m. from CL of existing road.
BM-56	1,727,456.793	491,560.117	42.089	Left side of the road alignment, 70m. from underneath a mango tree.
BM-57	1,727,557.279	491,163.464	45.294	Right side of the road alignment, placed on the toe of riprap near the side of road under coconut tree.



STATION	+400	132+500						+600						+700						+800						+900						133+000						+100																																				
FINISHED PROFILE GRADE BYPASS \ SERVICE ROAD	43.907	46.906	43.027	47.011	42.414	47.115	46.820	42.462	47.219	46.840	42.510	47.324	46.692	42.599	47.432	46.376	42.699	47.497	45.976	42.781	47.535	45.376	42.819	47.537	45.176	42.701	47.505	44.776	42.850	47.441	44.376	42.636	47.371	43.976	42.527	47.342	42.344	47.382	42.181	47.422	42.388	47.462	41.144	47.634	40.664	47.648	41.536	47.647	40.030	47.639	41.496	47.620	40.184	47.592	37.921	47.554	37.383	47.514	37.576	47.474	43.667	47.434	44.660	47.383	44.708	47.313	44.781	47.243	44.710	47.173	44.138	47.103	44.390	47.033
EXISTING GROUND BYPASS	43.907	46.906	43.027	47.011	42.414	47.115	46.820	42.462	47.219	46.840	42.510	47.324	46.692	42.599	47.432	46.376	42.699	47.497	45.976	42.781	47.535	45.376	42.819	47.537	45.176	42.701	47.505	44.776	42.850	47.441	44.376	42.636	47.371	43.976	42.527	47.342	42.344	47.382	42.181	47.422	42.388	47.462	41.144	47.634	40.664	47.648	41.536	47.647	40.030	47.639	41.496	47.620	40.184	47.592	37.921	47.554	37.383	47.514	37.576	47.474	43.667	47.434	44.660	47.383	44.708	47.313	44.781	47.243	44.710	47.173	44.138	47.103	44.390	47.033

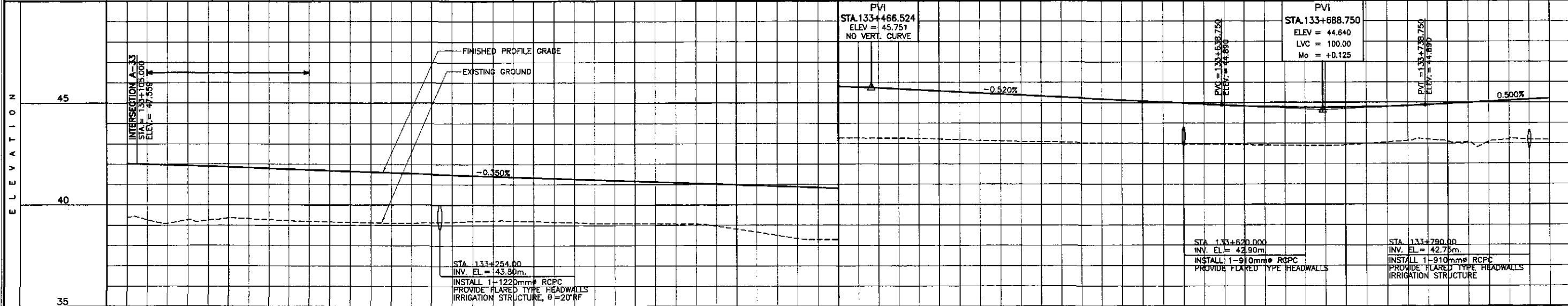
HORIZONTAL CURVATURE	R=C																																															
VERTICAL CURVATURE	g=0.522%						L=100 Mo=-0.109						NO VERTICAL CURVE g=0.350%						q=0.200%						L=160 Mo=-0.080						g=-0.200%						NO VERTICAL CURVE						g=-0.350%					
SUPERELEVATION	N.C.																																															

	DESIGNED	10/12/02			REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :				SCALE :		SHEET CONTENTS :		SHEET NO. :				
	CHECKED	10/19/02			BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Irradi, Cabanatuan and San Jose Bypasses)				HORIZONTAL 1:1000		PLAN AND PROFILE ALONG BY-PASS (INITIAL STAGE)		RP-17				
	SUBMITTED	10/21/02			OFFICE OF THE SECRETARY				CABANATUAN BYPASS - CONTRACT PACKAGE IV				VERTICAL 1:100		STA. 132+400 - STA. 133+100						
				Submitted By: DANILO C. TRAJANO Project Director				Recommended 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													



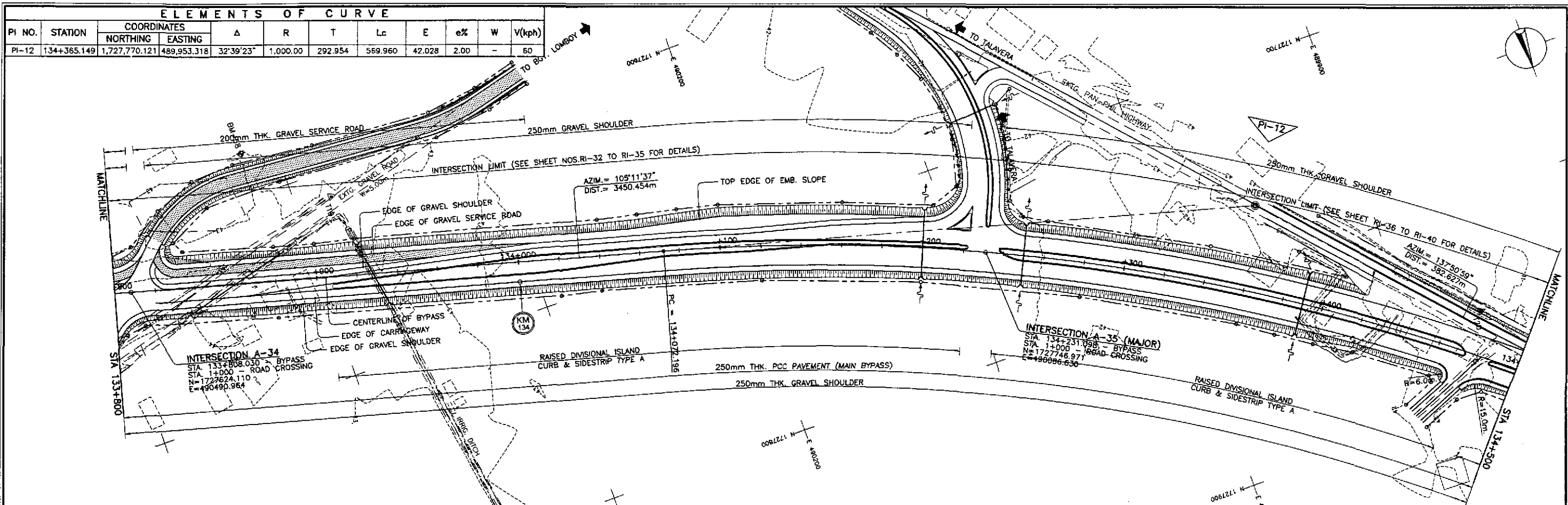
REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-56	1,727,456.793	491,560.117	42.069	Left side of the road alignment, 70m. from underneath a mango tree.
BM-57	1,727,557.279	491,163.464	45.294	Right side of the road alignment, placed on the toe of ricefield near the side of road under coconut tree.
BM-58	1,727,578.123	490,416.550	43.530	Right side of the road alignment, placed on side of a ricefield under a row of coconut trees.

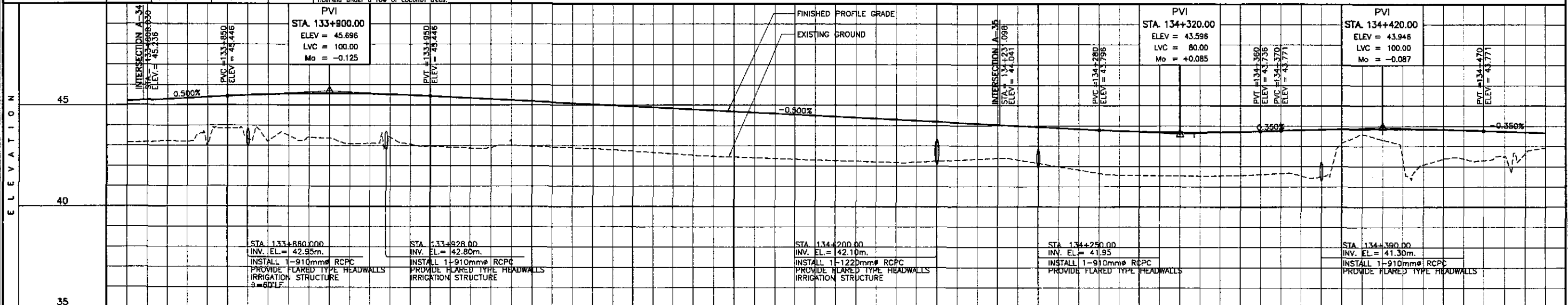


STATION	+100	+200	+300	+400	133+500	+600	+700	+800																																																								
FINISHED PROFILE GRADE BYPASS	44.390	44.093	44.247	44.320	44.230	44.172	44.124	44.107	44.167	44.227	44.193	44.133	44.085	44.069	44.053	43.807	43.275	43.271	43.223	43.163	43.108	43.068	43.028	43.001	42.977	42.951	42.919	42.887	42.919	43.059	43.200	43.071	43.215	43.159																														
EXISTING GROUND BYPASS	44.390	44.093	44.247	44.320	44.230	44.172	44.124	44.107	44.167	44.227	44.193	44.133	44.085	44.069	44.053	43.807	43.275	43.271	43.223	43.163	43.108	43.068	43.028	43.001	42.977	42.951	42.919	42.887	42.919	43.059	43.200	43.071	43.215	43.159																														
HORIZONTAL CURVATURE	R-C																R-C																																															
VERTICAL CURVATURE	g = -0.350%																NO VERTICAL CURVE												g = -0.500%												L=100 Mo = +0.125												g = 0.500%											
SUPERELEVATION	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) CABANATUAN BYPASS - CONTRACT PACKAGE IV				SCALE :	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 133+100 - STA. 133+800		SHEET NO. : RP-18		
	CHECKED	DATE	SIGNATURE									BUREAU OF DESIGN 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. BONDAN, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary				HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	
	SUBMITTED	DATE	SIGNATURE									OFFICE OF THE SECRETARY				SHEET NO. : RP-18	



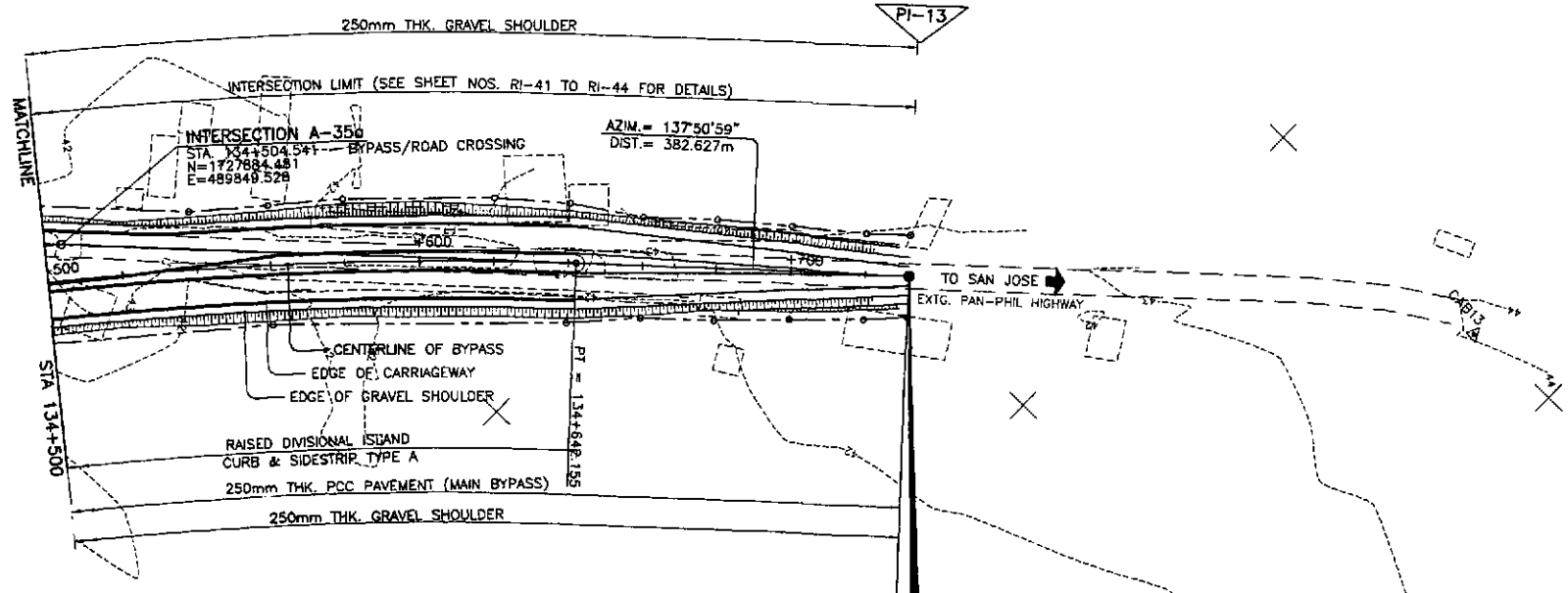
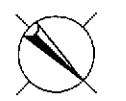
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-57	1,727,557.279	491,163.464	45.294	Right side of the road alignment, placed on the top of ricefield near the side of road under coconut tree.
BM-58	1,727,578.123	490,416.550	43.530	Right side of the road alignment, placed on side of a ricefield under a row of coconut trees.



STATION	+800	+900	134+000	+100	+200	+300	+400	134+500																											
FINISHED PROFILE GRADE BYPASS	43.159	43.239	43.008	43.346	43.498	43.365	43.107	43.062	42.925	42.913	42.970	42.894	42.802	42.670	42.538	42.450	42.374	42.303	42.243	42.182	42.251	42.353	41.986	41.649	41.558	41.534	41.531	41.599	41.534	41.164	41.319	42.101	42.387	42.503	42.936
EXISTING GROUND BYPASS	43.159	43.239	43.008	43.346	43.498	43.365	43.107	43.062	42.925	42.913	42.970	42.894	42.802	42.670	42.538	42.450	42.374	42.303	42.243	42.182	42.251	42.353	41.986	41.649	41.558	41.534	41.531	41.599	41.534	41.164	41.319	42.101	42.387	42.503	42.936

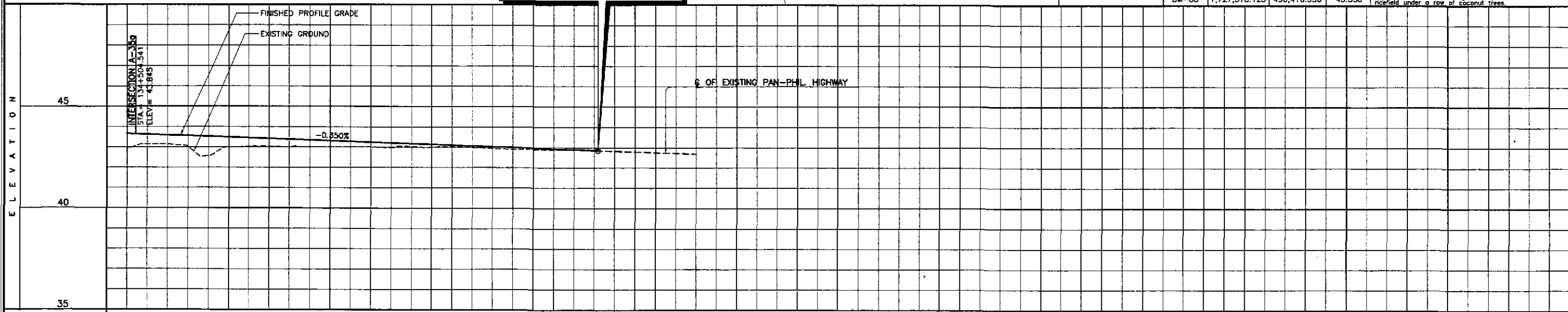
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridul, Cabanatuan and San Jose Bypasses)	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 133+800 - STA. 134+500	SHEET NO. : RP-19	
	CHECKED	10/19/02	S. Gao		BUREAU OF DESIGN								PROJECT DIRECTOR
	SUBMITTED	10/21/02	Man. Rando		DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONOAN Undersecretary					SIMEON A. DATUMANONG Secretary

ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-12	134+365.149	1,727,770.121	489,953.318	32°39'23"	1,000.00	292.954	569.960	42.028	2.00	-	60



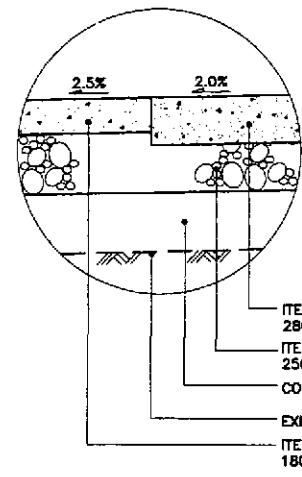
**CABANATUAN BYPASS
END OF
CONTRACT PACKAGE IV**
 STA. 134+731.828
 ELEV. = 42.855
 N = 1,728,053.796
 E = 489,696.546

REF. PT.	REFERENCE POINTS			DESCRIPTION
	NORTHING	EASTING	ELEV.	
BM-57	1,727,557.279	491,163.464	45.294	Right side of the road alignment, placed on the toe of ricefield near the side of road under coconut tree.
BM-58	1,727,578.123	490,416.550	43.530	Right side of the road alignment, placed on side of a ricefield under a row of coconut trees.

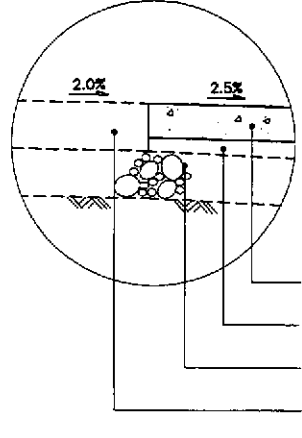


STATION	134+500	+600	+700	+800	+900	135+000	+100
FINISHED PROFILE GRADE BYPASS	42.936	43.665	43.526	43.316	43.176	42.903	42.855
EXISTING GROUND BYPASS	42.936	43.147	43.596	43.032	43.458	43.008	43.386
HORIZONTAL CURVATURE	R=1000						
VERTICAL CURVATURE	g=-0.350%						
SUPERELEVATION	e=+2% e=-2%						

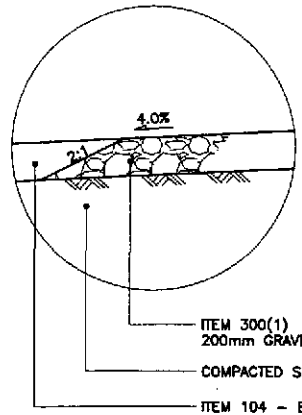
	DESIGNED	10/12/02			REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 134+500 - STA.0134+731.828	SHEET NO. : RP-20	
	CHECKED	10/19/02				OFFICE OF THE SECRETARY	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)			HORIZONTAL 1:1000
	SUBMITTED	10/21/02				Recommended By: (See cover sheet for Signature/Approval) Approved By: (See cover sheet for Signature/Approval)	CABANATUAN BYPASS - CONTRACT PACKAGE IV			VERTICAL 1:100 FULL SIZE A1



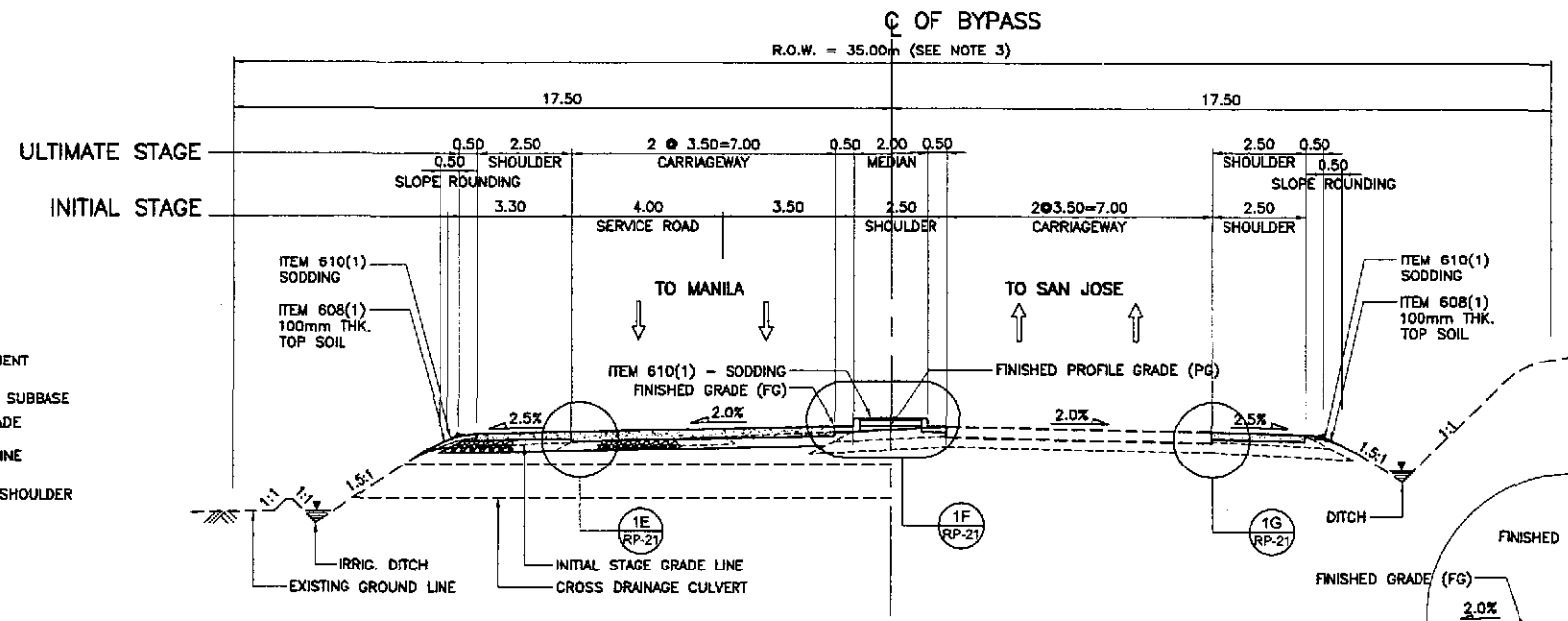
1E DETAIL
RP-21 SCALE 1:20



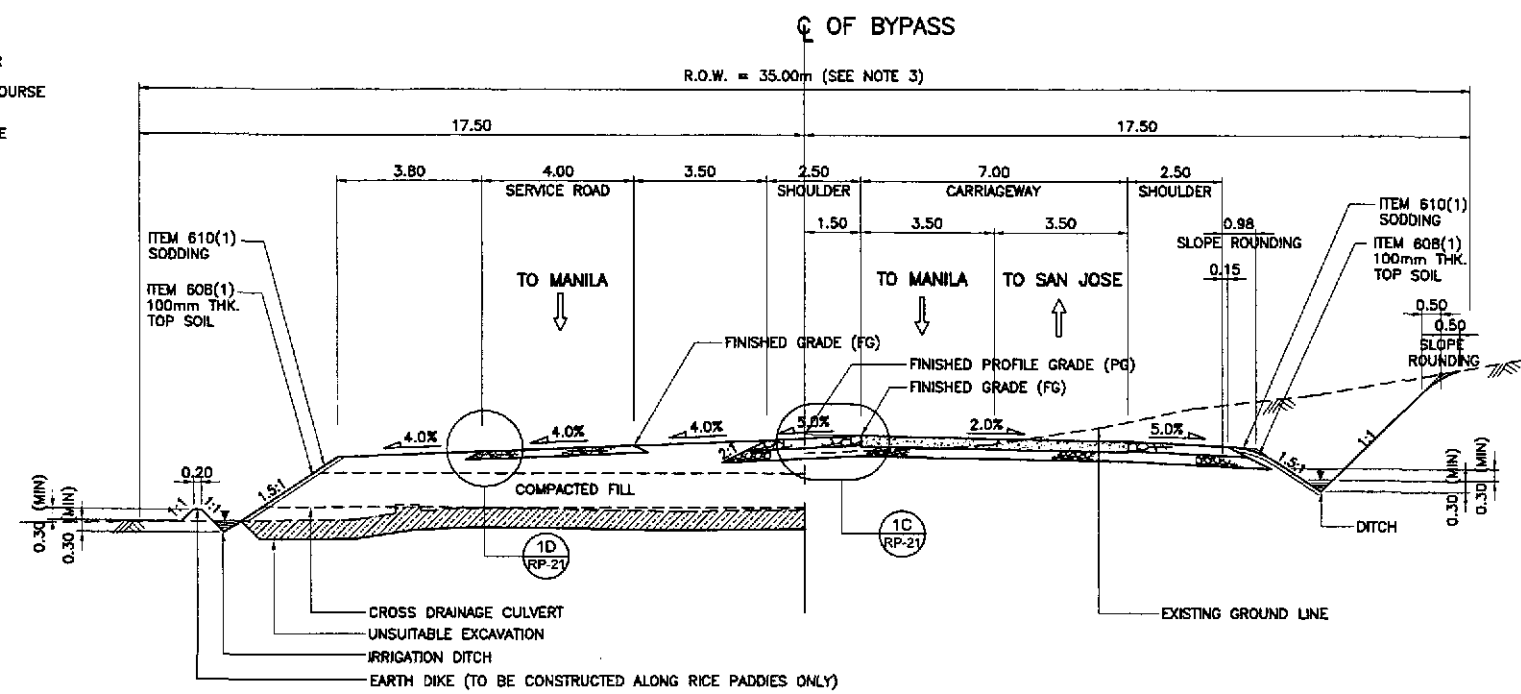
1G DETAIL
RP-21 SCALE 1:20



1D DETAIL
RP-21 SCALE 1:20

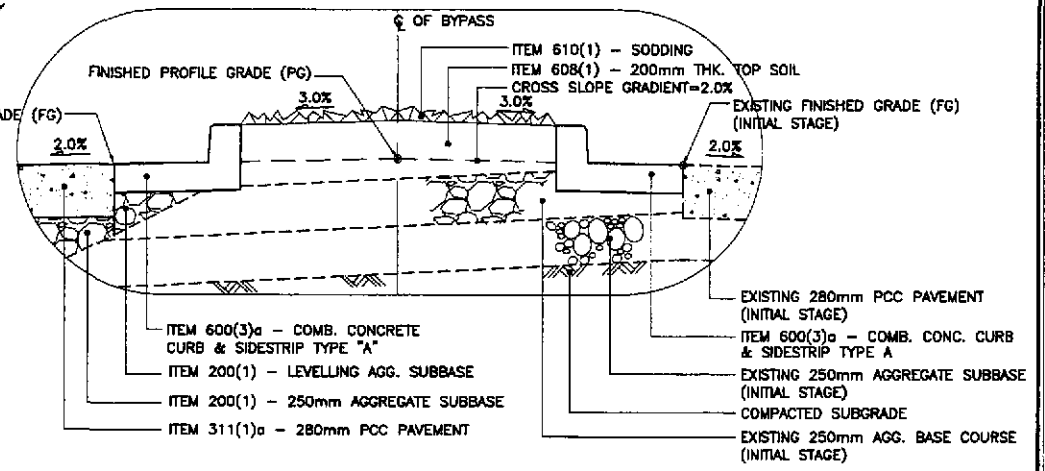


1B NORMAL SECTION - ULTIMATE STAGE
RP-21 SCALE 1:100

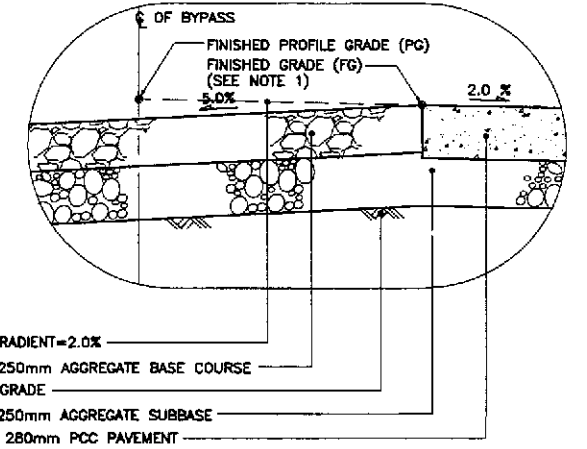


1A NORMAL SECTION - INITIAL STAGE
RP-21 SCALE 1:100

1 TYPICAL ROADWAY SECTIONS - WITHOUT FRONTAGE ROAD
RP-21 SCALE 1:100



1F DETAIL
RP-21 SCALE 1:20



1C DETAIL
RP-21 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 1:1.5 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.

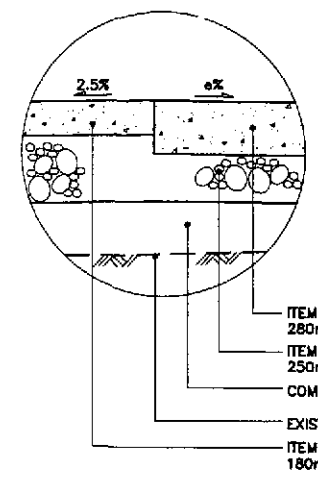
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KATAHIRA & ENGINEERS
INTERNATIONAL

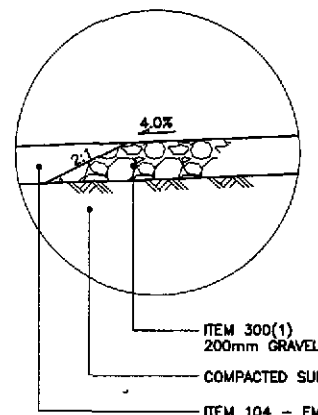
yeo YACHIYO ENGINEERING CO., LTD.

DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				
10/12/02		<i>[Signature]</i>	BUREAU OF DESIGN				
10/19/02		<i>[Signature]</i>	OFFICE OF THE SECRETARY				
10/21/02		<i>[Signature]</i>					
			Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:
			DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES D.C. Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary

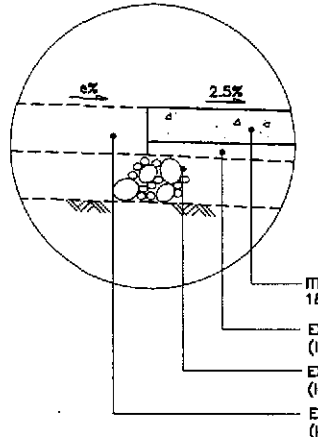
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pilaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	TYPICAL ROADWAY SECTIONS NORMAL SECTIONS WITHOUT FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE) (1 of 2)	RP-21
CABANATUAN BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		



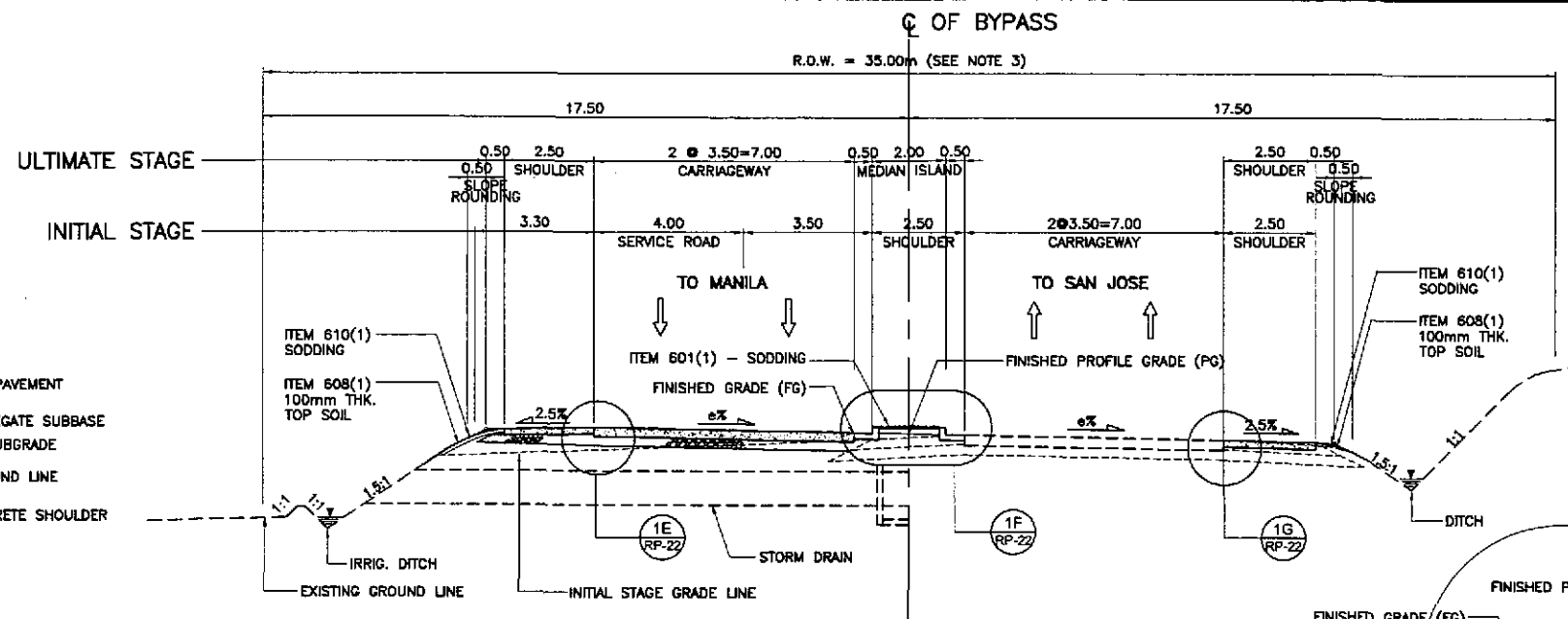
1E DETAIL
SCALE 1:20



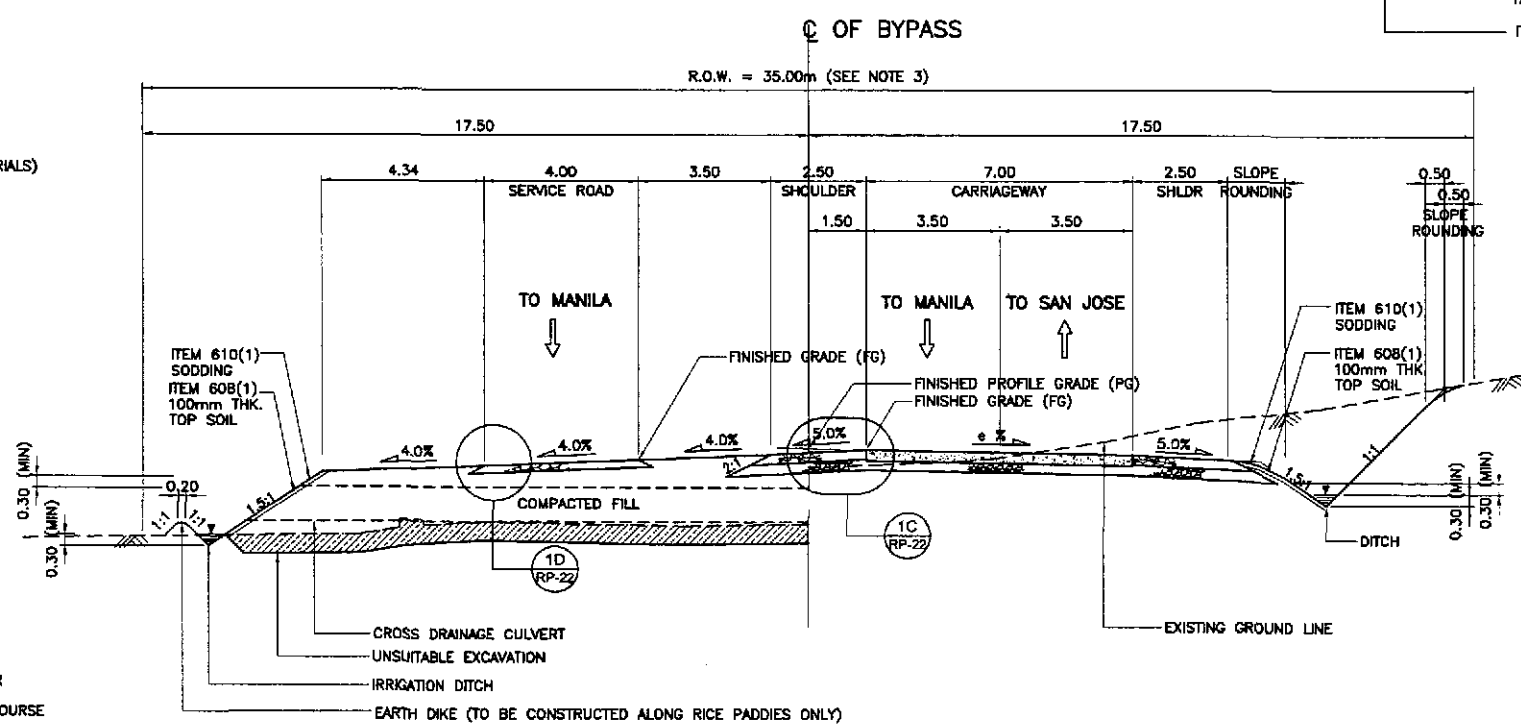
1D DETAIL
SCALE 1:20



1G DETAIL
SCALE 1:20



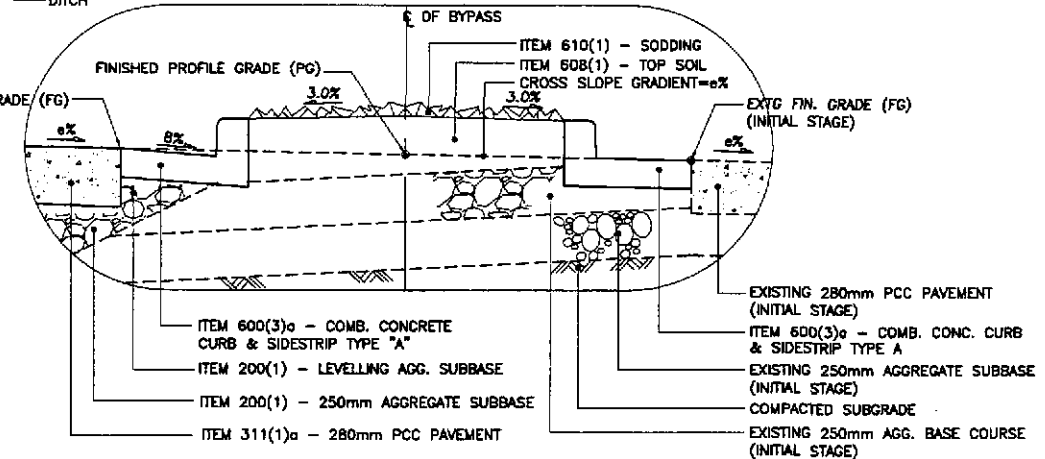
1B SUPERELEVATED SECTION - ULTIMATE STAGE
SCALE 1:100



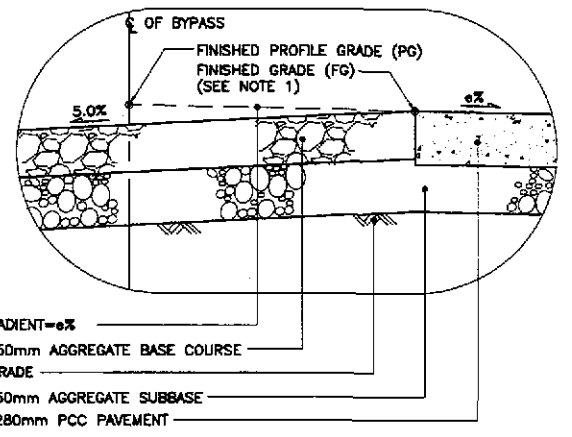
1A SUPERELEVATED SECTION - INITIAL STAGE
SCALE 1:100

1 TYPICAL ROADWAY SECTIONS - WITHOUT FRONTAGE ROAD
SCALE

PAVEMENT DESIGN PARAMETERS	
	AFTER PAMPANGA BRIDGE
1. TRAFFIC (FOR 25 YEARS DESIGN LIFE) DESIGN ESAL	1.70 x 10 ⁶
2. DESIGN CBR SUBGRADE CBR	5.00 %
3. ROADBED RESILIENT MODULUS M _R E _{SB} E _{SB}	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 _o	50 % 0.35
6. DRAINAGE COEFFICIENT RIGID	1
7. LAYER COEFFICIENT a ₁ (FOR AC) a ₂ (FOR BASE) a ₃ (FOR SUBBASE)	0.39 0.105 0.095
8. PAVEMENT CONSTRUCTION THICKNESS PCCP SUBBASE	280mm THK 250mm THK



1F DETAIL
SCALE 1:20



1C 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 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.

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

DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				
10/12/02		<i>[Signature]</i>	BUREAU OF DESIGN				
10/19/02		<i>[Signature]</i>	OFFICE OF THE SECRETARY				
10/31/02		<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

PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pinaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	TYPICAL ROADWAY SECTIONS SUPERELEVATED SECTIONS WITHOUT FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE) (2 of 2)	RP-22
CABANATUAN BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		