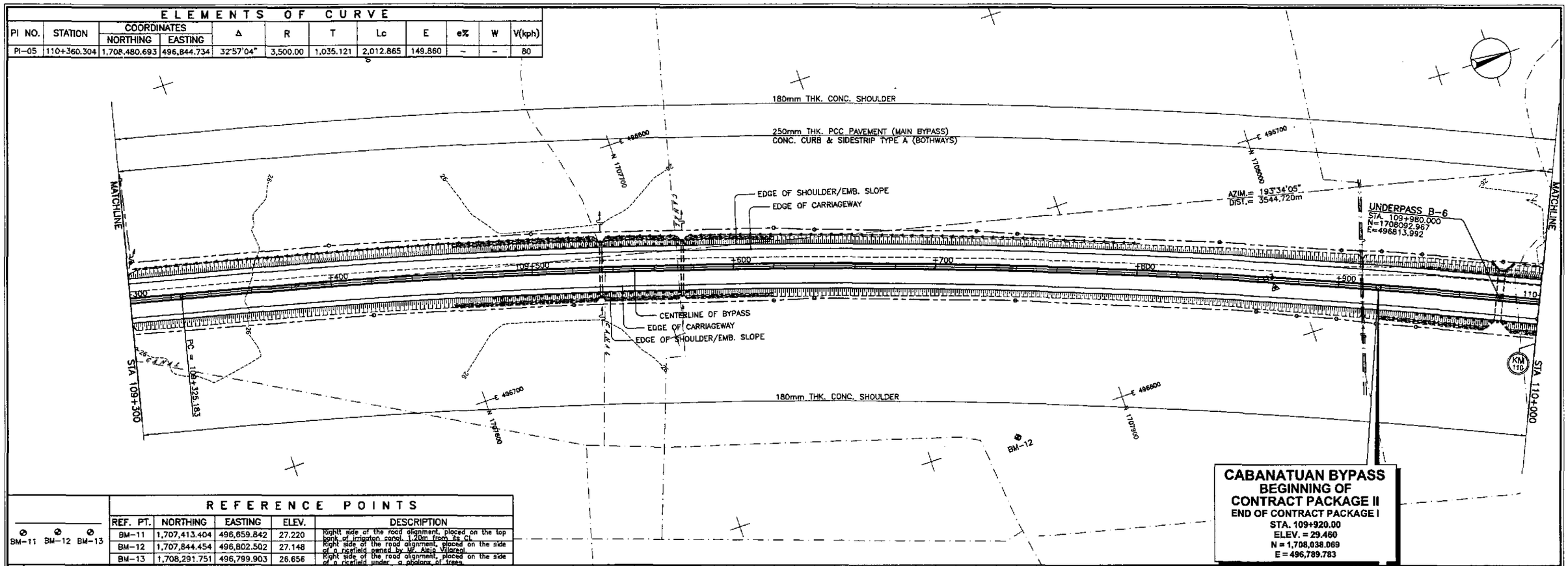
ELEMENTS OF CURVE

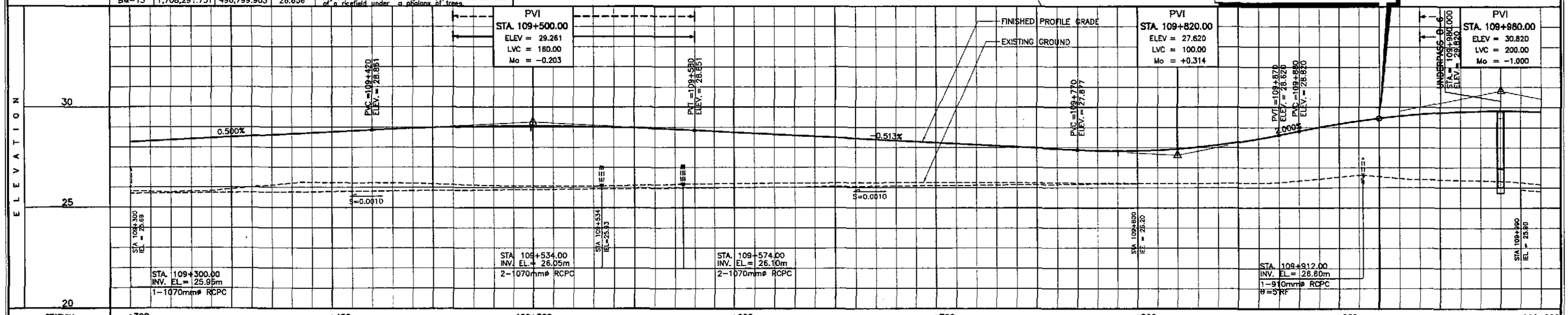
PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-05	110+360.304	1,708,480.693	496,844.734	32°57'04"	3,500.00	1,035.121	2,012.865	149.860	–	–	80



REFERENCE POINTS

BM-11 BM-12 BM-13

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 CL
BM-12	1,707,844.454	496,802.502	27.148	Right side of the road alignment, placed on the side of a ricefield owned by Mr. Alejo Villoral
BM-13	1,708,291.751	496,799.903	26.656	Right side of the road alignment, placed on the side of a ricefield under a plotong of trees



STATION	+300					+400					109+500					+600					+700					+800					+900					110+000
FINISHED PROFILE GRADE BYPASS	28.261		28.361		28.461		28.561		28.661		28.761		28.861		28.949		29.011		29.048		29.059		29.045		29.006		28.941		28.851		28.749		28.646		28.543	
EXISTING GROUND BYPASS	25.825		25.759		25.828		26.019		26.210		26.241		26.229		26.204		26.148		26.092		26.077		26.073		26.084		26.132		26.180		26.199		26.211		26.223	

STATION																																				
FINISHED PROFILE GRADE BYPASS	28.441		28.338		28.236		28.133		28.030		27.928		27.838		27.836		27.934		28.133		28.433		28.820		29.180		29.460		29.660		29.780		29.820		29.780
EXISTING GROUND BYPASS	26.235		26.247		26.247		26.243		26.238		26.230		26.222		26.217		26.213		26.217		26.235		26.345		26.533		26.561		26.416		26.368		26.320		26.159

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.

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

	DATE	SIGNATURE
DESIGNED	10/09/02	A. ACACIO
CHECKED	10/16/02	S. GOSE
SUBMITTED	10/18/02	M. KOCHI, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
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

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

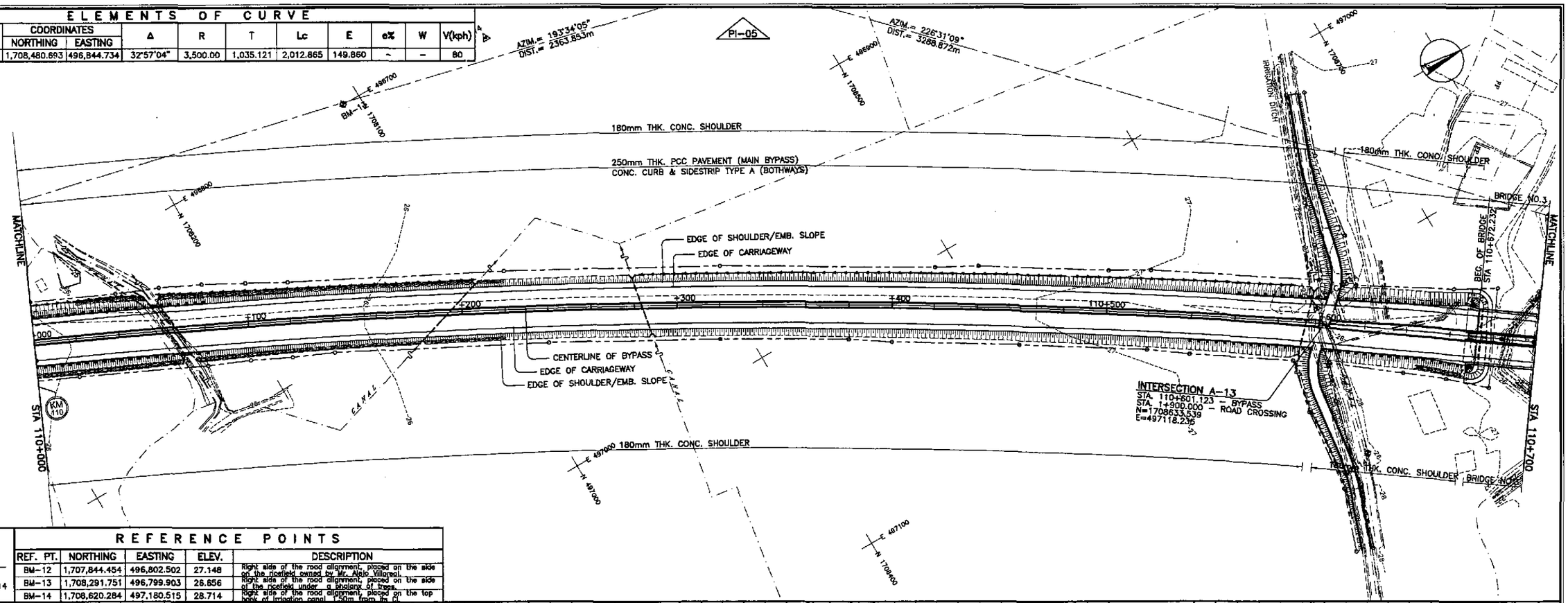
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 109+920 - STA. 110+000

SHEET NO. :
RP-01

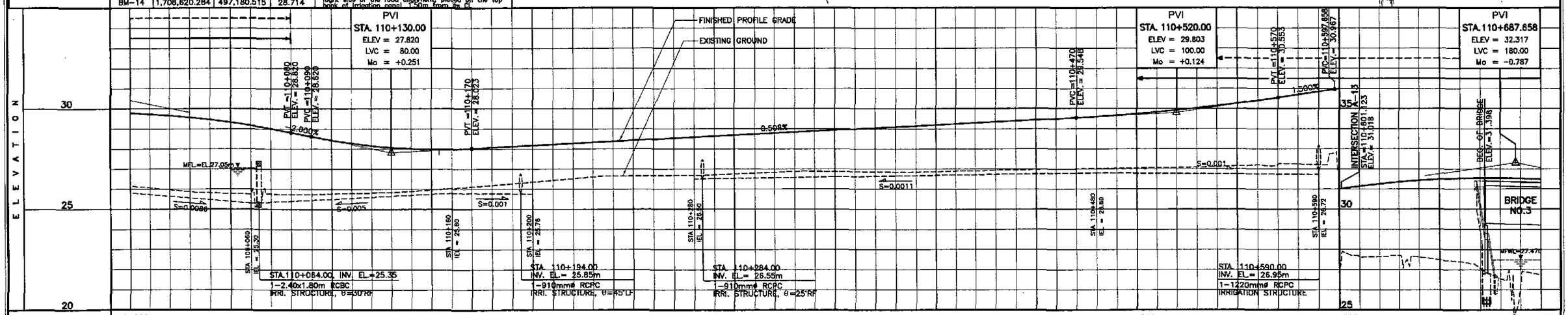
ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
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 on the ricefield owned by Mr. Alejo Villareal.
BM-13	1,708,291.751	496,799.903	26.656	Right side of the road alignment, placed on the side of the ricefield under a kholayan of trees.
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 from its PI.



STATION	110+000	+100	+200	+300	+400	110+500	+600	+700

FINISHED PROFILE GRADE BYPASS	29.780	29.660	29.460	29.180	28.820	28.436	28.161	28.012	27.988	28.074	28.176	28.278	28.379	28.481	28.583	28.684	28.786	28.888	28.989	29.091	29.193	29.294	29.396	29.498	29.604	29.746	29.927	30.147	30.408	30.703	31.002	31.254	31.428	31.525	31.543	31.484
EXISTING GROUND BYPASS	26.159	25.967	25.812	25.751	25.733	25.769	25.814	25.893	26.041	26.189	26.352	26.520	26.645	26.661	26.677	26.746	26.830	26.883	26.859	26.835	26.885	26.909	26.950	26.986	27.022	27.049	27.073	27.118	27.206	27.245	27.093	27.639	27.620	27.387	26.544	26.762

HORIZONTAL CURVATURE: R=3500

VERTICAL CURVATURE: L=200, Mo=-1.000; g=-2.000%; L=80, Mo=+0.251; g=+0.508%; L=100, Mo=+0.124; g=1.500%; L=180, Mo=-0.787

SUPERELEVATION: N.C.

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

	DATE	SIGNATURE
DESIGNED	10/09/02	A. ACACIO
CHECKED	10/16/02	S. GOSE
SUBMITTED	10/18/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

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

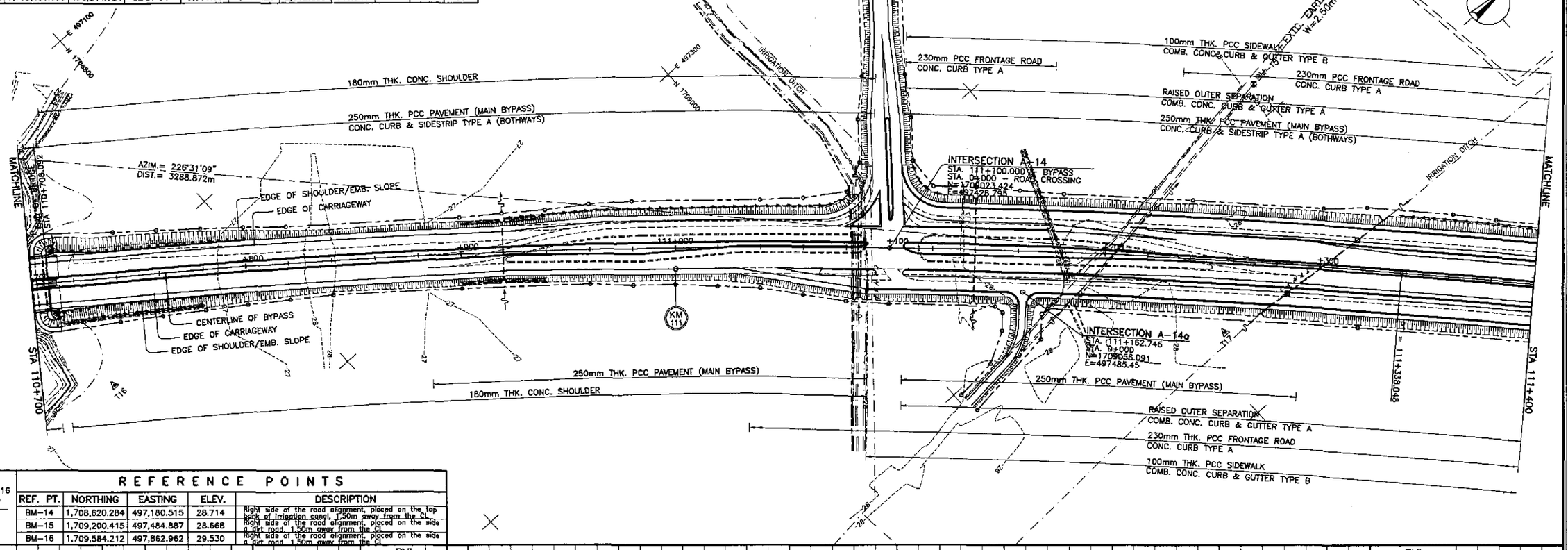
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 110+000 - STA. 110+700

SHEET NO. :
RP-02

ELEMENTS OF CURVE

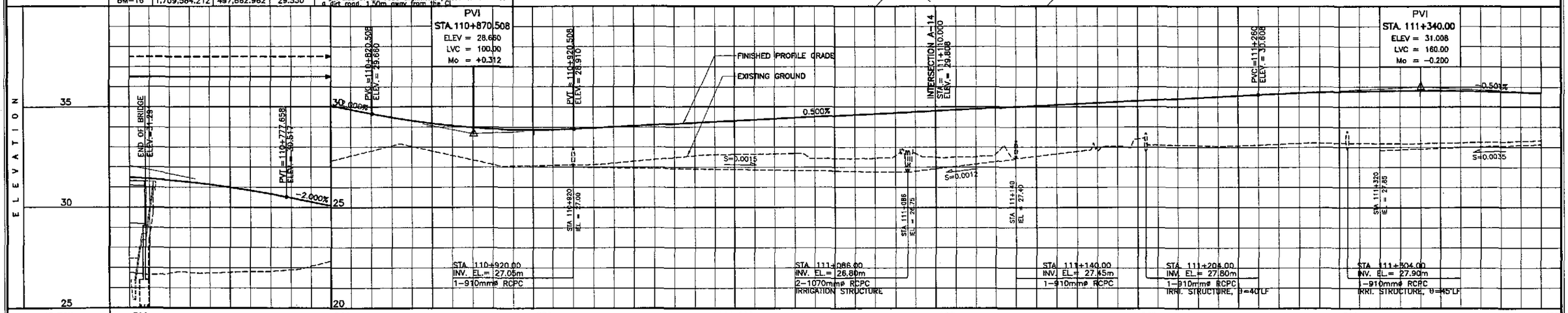
PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-05	110+360.304	1,708,480.693	496,844.734	32°57'04"	3,500.00	1,035.121	2,012.865	149.860	–	–	80



REFERENCE POINTS

BM-15 BM-16
BM-14

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	28.668	Right side of the road alignment, placed on the side 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 a dirt road, 1.50m away from the CL



STATION	+700					+800					+900					111+000					+100					+200					+300					+400
FINISHED PROFILE GRADE BYPASS	31.484	31.347	31.133	30.840	30.471	30.071	29.671	29.318	29.066	28.913	28.860	28.908	29.008	29.108	29.208	29.308	29.408	29.508	29.608	29.708	29.808	29.908	30.008	30.108	30.208	30.308	30.408	30.508	30.608	30.695	30.758	30.795	30.806	30.795	30.757	30.695
EXISTING GROUND BYPASS	26.762	26.722	26.742	26.807	26.901	27.319	27.810	28.031	27.583	27.135	27.075	27.119	27.203	27.387	27.571	27.632	27.660	27.432	27.429	27.582	27.493	27.532	27.445	27.670	27.890	28.409	28.103	28.050	28.105	28.192	28.200	28.188	28.190	28.226	28.282	28.336

HORIZONTAL CURVATURE: R=3500 — 111+338.048 — R=∞

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.

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

	DATE	SIGNATURE
DESIGNED	10/09/02	A. ACADIO
CHECKED	10/18/02	S. GOSE
SUBMITTED	10/18/02	M. KIUCHI, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

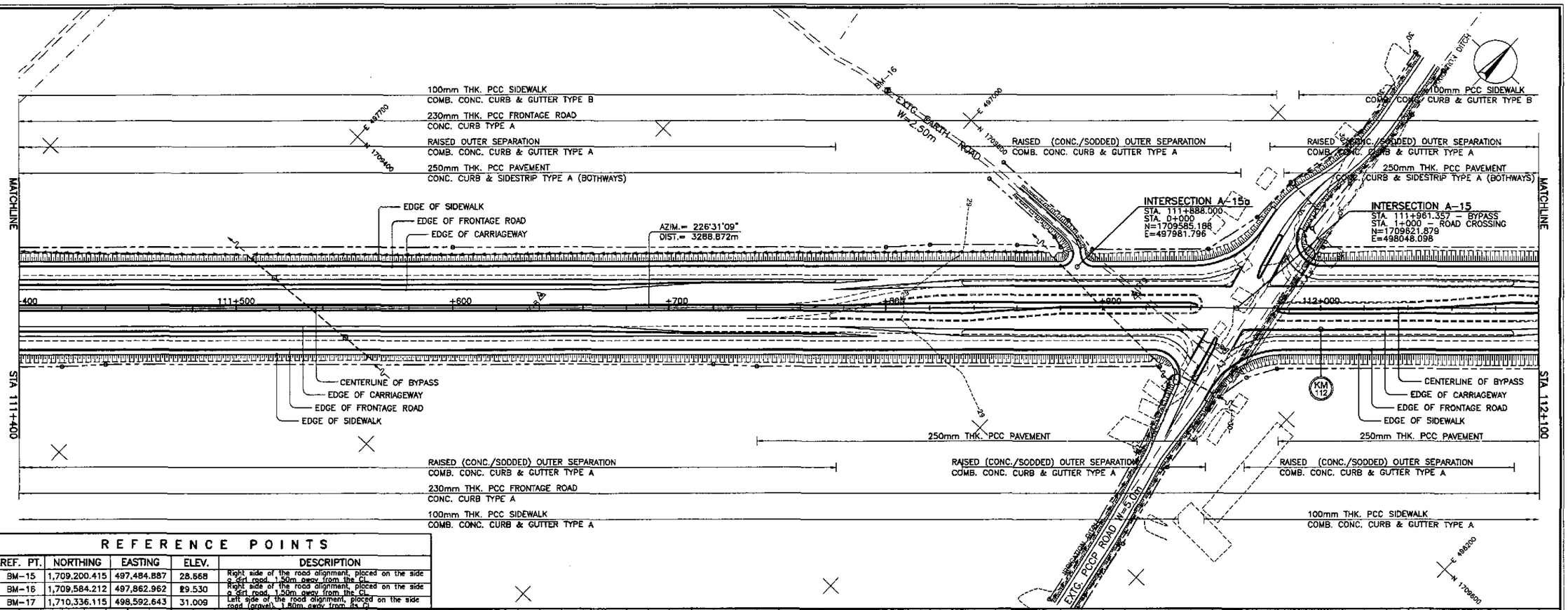
PJHL – PWD	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	JOSEFINA M. ALAGAR, Chief, Highways Division	GILBERTO S. REYES, OIC, Director IV	MANUEL M. BONDAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

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 ANF PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 110+700 - STA. 111+400

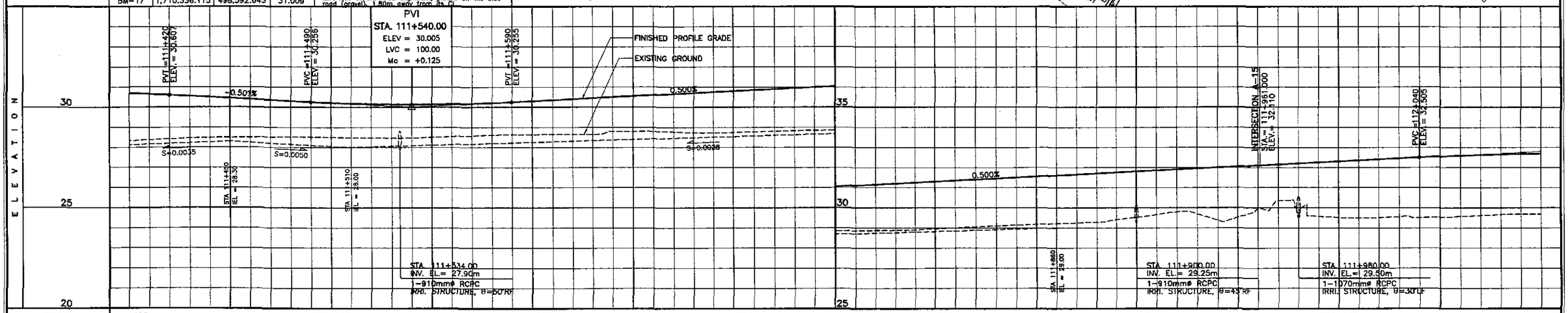
SHEET NO. :
RP-03



BM-15 BM-16 BM-17

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 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 a dirt road, 1.50m away from the CL
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



STATION	FINISHED PROFILE GRADE BYPASS	EXISTING GROUND BYPASS
+400	30.695	28.338
	30.607	28.420
	30.507	28.485
	30.406	28.501
	30.306	28.517
	30.211	28.498
	30.151	28.470
	30.131	28.471
	30.151	28.543
	30.210	28.615
	30.305	28.636
	30.405	28.644
	30.505	28.784
	30.605	28.800
	30.705	28.727
	30.805	28.751
	30.905	28.803
	31.005	28.846
	31.105	28.866
	31.205	28.886
111+500	31.305	28.983
	31.405	29.055
	31.505	29.141
	31.605	29.213
	31.705	29.285
	31.805	29.524
	31.905	29.793
	32.005	29.381
	32.105	29.978
	32.205	29.753
	32.305	28.514
	32.405	29.509
	32.505	29.510
	32.593	29.572
	32.655	29.681
+100	32.692	29.680

HORIZONTAL CURVATURE: R=∞

VERTICAL CURVATURE: g=-0.501% L=100 Mo=+0.125; g=0.500% L=180 Mo=-0.228

SUPERELEVATION: N.C.

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

	DATE	SIGNATURE
DESIGNED	10/09/02	A. ACACIO
CHECKED	10/16/02	S. GOSE
SUBMITTED	10/18/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways Division	DIC, Director IV	Undersecretary	Secretary

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

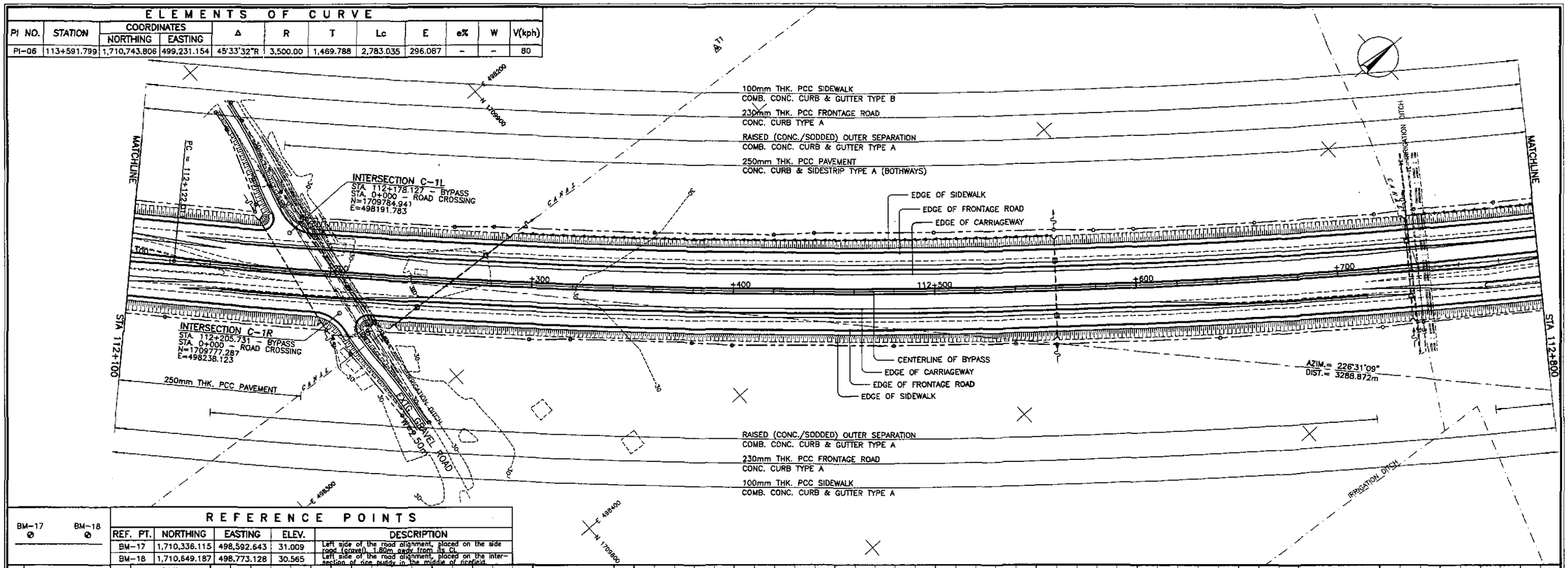
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 111+400 - STA. 112+100

SHEET NO. :
RP-04

ELEMENTS OF CURVE

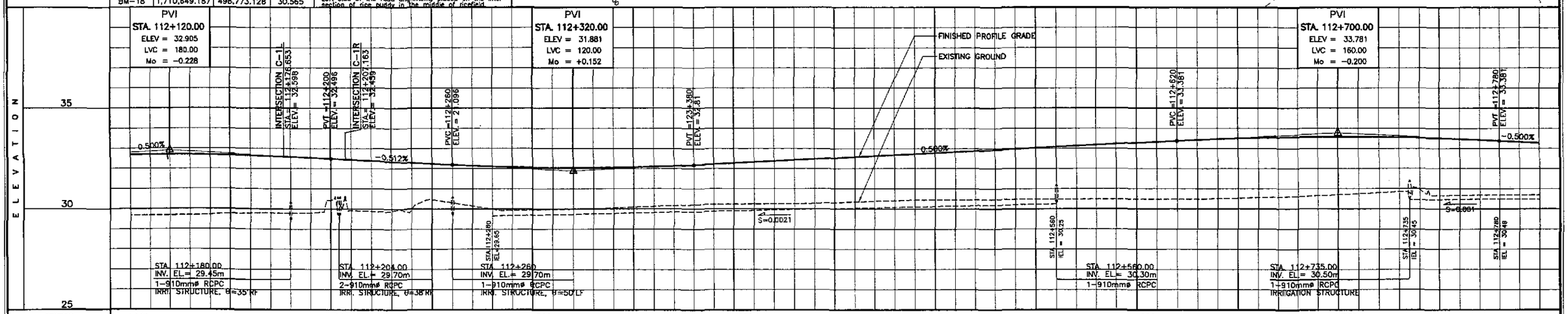
PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-06	113+591.799	1,710,743.806	499,231.154	45°33'32"R	3,500.00	1,469.788	2,783.035	296.087	–	–	80



REFERENCE POINTS

BM-17 BM-18

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	30.565	Left side of the road alignment, placed on the inter-section of rice paddy in the middle of ricefield



STATION	FINISHED PROFILE GRADE BYPASS	EXISTING GROUND BYPASS
+100	32.692	29.680
	32.703	29.680
	32.689	29.720
	32.650	29.790
	32.585	29.775
+200	32.496	30.426
	32.393	29.877
	32.291	29.981
	32.188	30.286
	32.103	29.983
+300	32.051	29.948
	32.033	29.996
	32.046	30.052
	32.088	30.128
	32.181	30.204
	32.281	30.233
	32.381	30.249
	32.481	30.280
	32.581	30.348
+400	32.681	30.416
	32.781	30.443
	32.881	30.459
	32.981	30.472
112+500	33.081	30.480
	33.181	30.488
	33.281	30.490
+600	33.381	30.490
	33.468	30.506
	33.531	30.562
	33.588	30.618
+700	33.581	30.706
	33.568	30.802
	33.531	30.979
	33.468	30.671
	33.381	30.687
+800	33.281	30.690

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% — L=160, Mo=-0.200

SUPERELEVATION: N.C.

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

	DATE	SIGNATURE
DESIGNED	10/09/02	ACACIO
CHECKED	10/16/02	GOSE
SUBMITTED	10/18/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

PROJECT AND LOCATION :
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CABANATUAN BYPASS - CONTRACT PACKAGE II

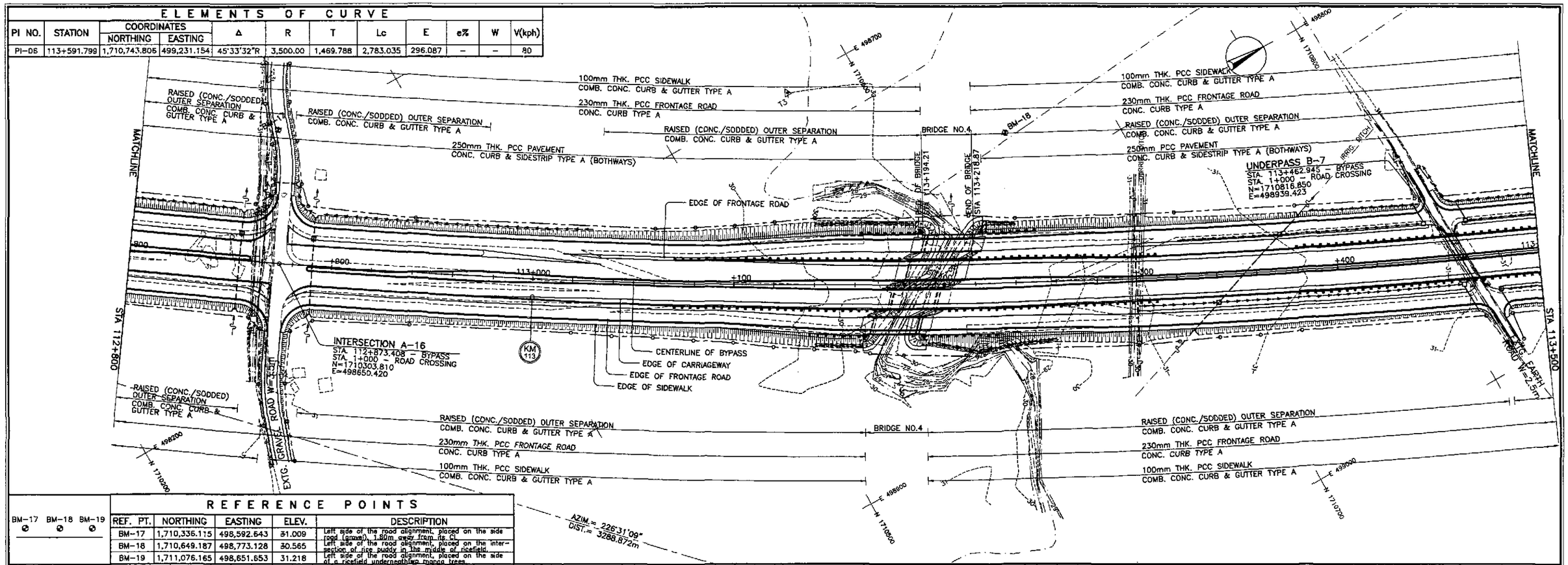
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 112+100 - STA. 112+800

SHEET NO. :
RP-05

ELEMENTS OF CURVE

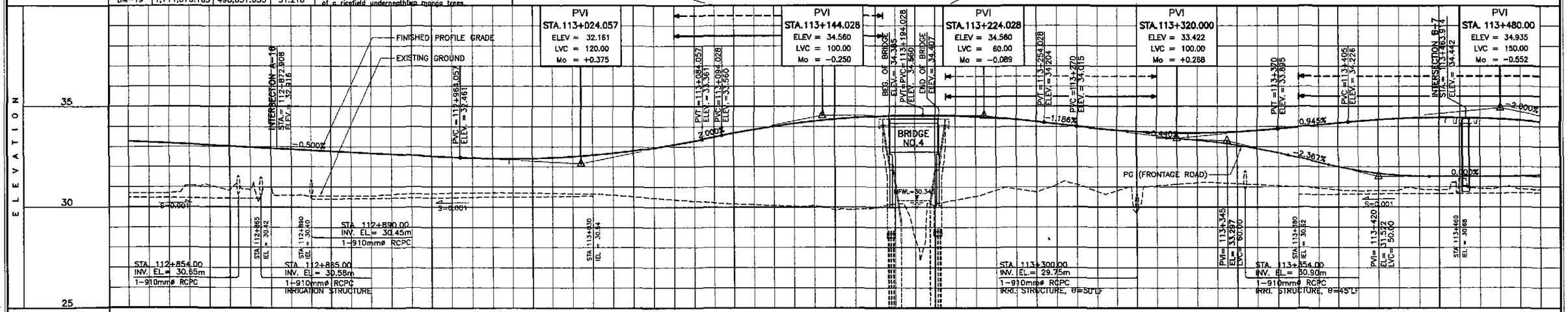
PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-06	113+591.799	1,710,743.805	499,231.154	45°33'32"R	3,500.00	1,469.788	2,783.035	296.087	–	–	80



REFERENCE POINTS

BM-17 BM-18 BM-19

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	30.565	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 underneathing mango trees.



STATION	+800					+900										113+000										+100										+200										+300										+400										113+500
FINISHED PROFILE GRADE BYPASS\FRONTAGE ROAD	33.281		33.181		33.081		32.881		32.881		32.781		32.681		32.581		32.481		32.407		32.415		32.507		32.682		32.940		33.281		33.676		34.012		34.288		34.444		34.540		34.556		34.493		34.351		34.133		33.907		33.755		33.688	33.403	33.707	33.219	33.811	32.906	33.989	32.469	34.178	32.001	34.345	31.670	34.436	31.528	34.448	31.522	34.382	31.522	34.238
EXISTING GROUND BYPASS	30.690		30.701		31.075		30.862		30.586		30.552		30.556		30.558		30.686		30.714		30.695		30.663		30.586		30.444		30.292		30.162		30.078		30.066		28.890		30.160		30.137		30.538		30.898		31.107		30.781		29.748		31.130		31.211		31.111		31.011		30.854		30.819		30.901		31.419		30.980		30.864

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=+0.266; g=0.945% L=150 Mo=−0.552

SUPERELEVATION: N.C.

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

	DATE	SIGNATURE
DESIGNED	10/09/02	ACACIO
CHECKED	10/16/02	GOSE
SUBMITTED	12/18/02	KIUCHI (TEAM LEADER)

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

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

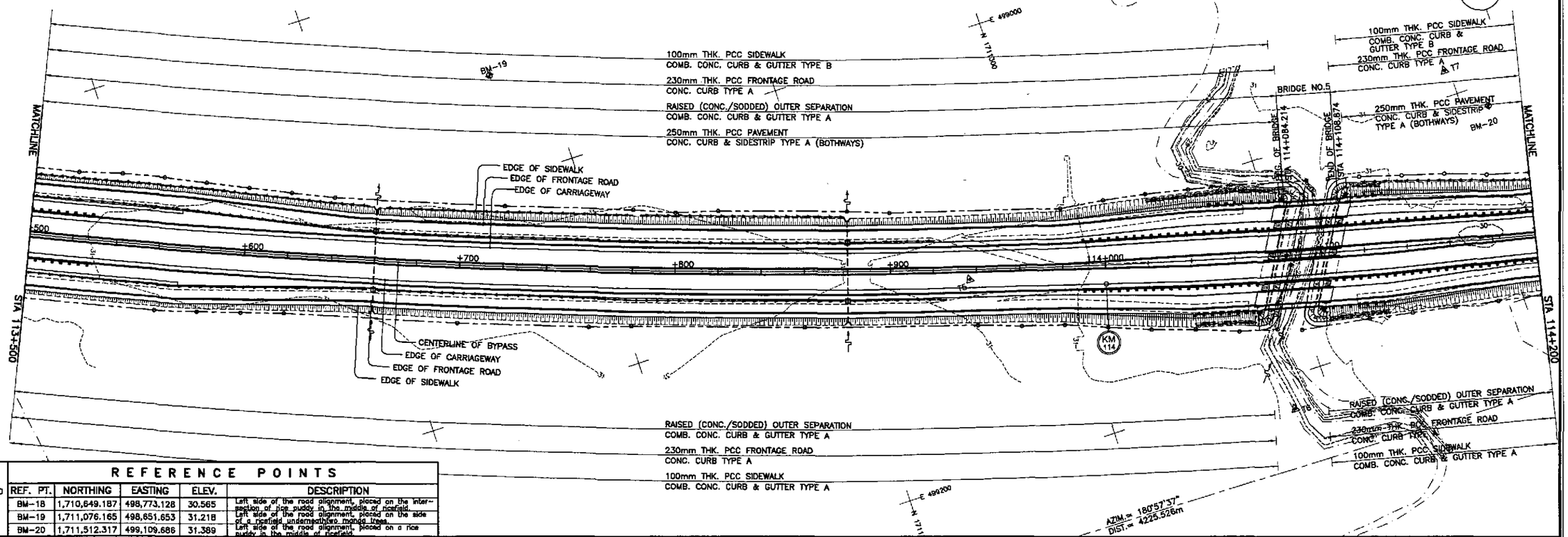
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 112+800 - STA. 113+500

SHEET NO. :
RP-06

ELEMENTS OF CURVE

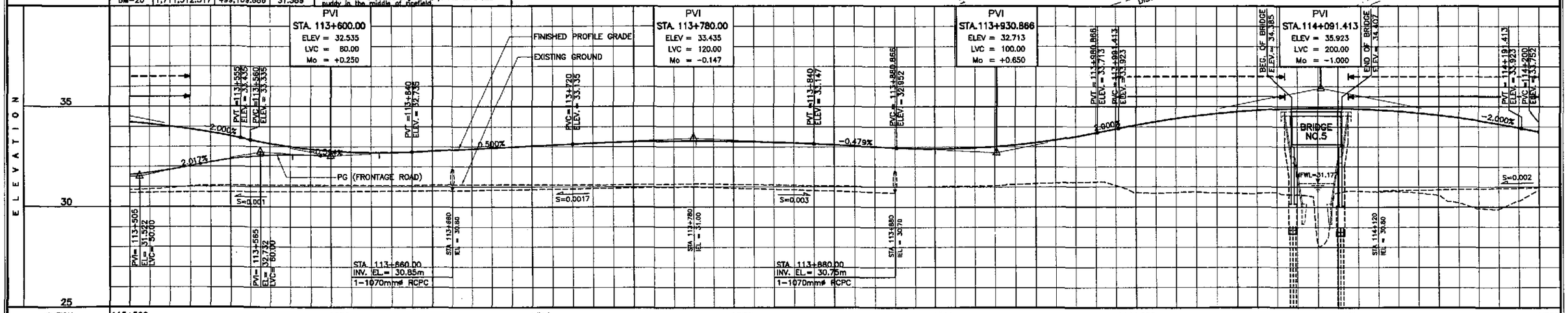
PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-06	113+591.799	1,710,743.806	499,231.154	45°33'32"R	3,500.00	1,469.788	2,783.035	296.087	–	–	80



REFERENCE POINTS

BM-18 BM-19 BM-20

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 puddy 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 underneathtwo mahogi trees.
BM-20	1,711,512.317	499,109.686	31.389	Left side of the road alignment, placed on a rice puddy in the middle of ricefield.



STATION	113+500	+600	+700	+800	+900	114+000	+100	+200

STATION	FINISHED PROFILE GRADE BYPASS\FRONTAGE ROAD	EXISTING GROUND BYPASS
113+500	34.238 / 31.603	30.864
	34.014 / 31.845	30.945
	33.712 / 32.223	31.053
	33.335 / 32.496	31.065
	32.997 / 32.594	31.077
+600	32.785 / 32.525	31.074
	32.697	31.086
	32.735	31.066
	32.835	31.086
+700	32.935	31.106
	33.035	31.104
	33.135	31.096
	33.218	31.097
	33.269	31.121
+800	33.288	31.145
	33.274	31.125
	33.227	31.093
	33.147	31.081
	33.052	31.029
+900	32.956	30.997
	32.906	31.015
	32.954	31.047
	33.102	31.133
	33.349	31.204
	33.695	31.242
114+000	34.088	30.725
	34.414	30.716
	34.659	30.705
	34.825	30.678
+100	34.910	30.609
	34.916	30.704
	34.842	30.755
	34.687	30.705
	34.453	30.217
+200	34.139	29.888
	33.752	30.816

HORIZONTAL CURVATURE: R=3500

VERTICAL CURVATURE: L=150, g=-2.000%, Mo=-0.552 | L=80, g=0.500%, Mo=+0.250 | L=120, g=-0.479%, Mo=-0.147 | L=100, g=2.000%, Mo=+0.650 | L=200, g=-2.000%, Mo=-0.100

SUPERELEVATION: N.C.

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

	DATE	SIGNATURE
DESIGNED	10/09/02	R. ACACIO
CHECKED	10/16/02	S. GOSE
SUBMITTED	10/18/02	M. KIUCHI (TEAM LEADER)

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
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 :
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

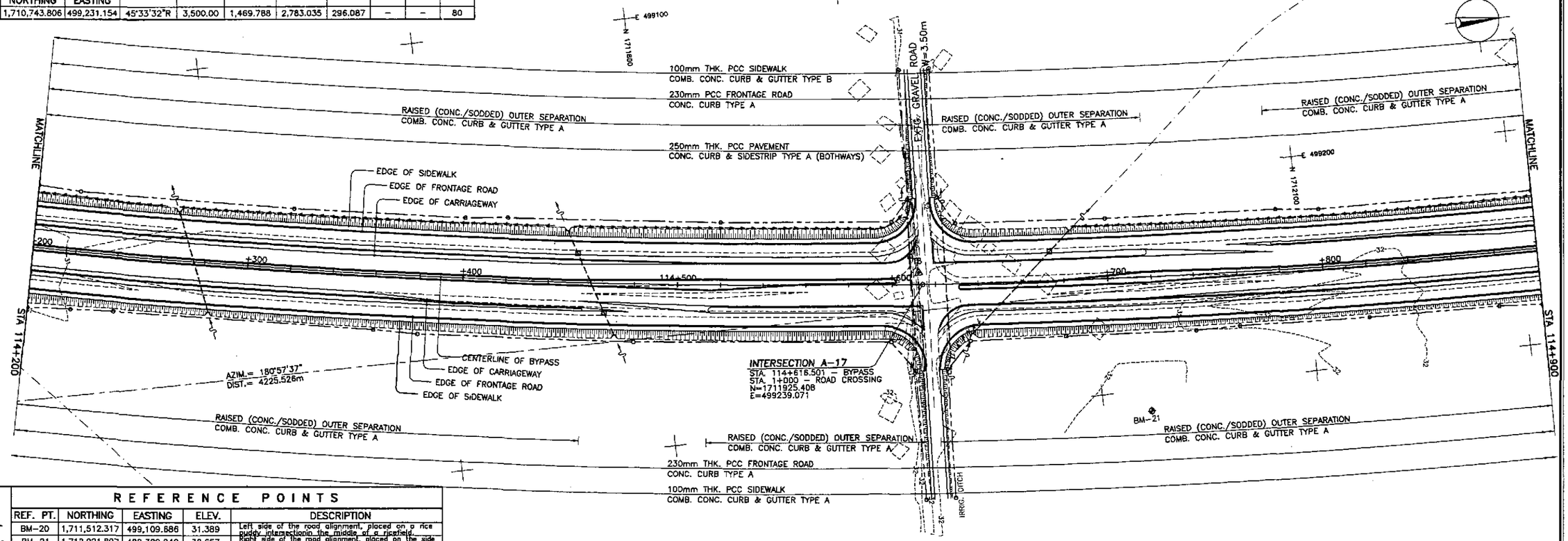
SCALE : HORIZONTAL 1:1000, VERTICAL 1:100, FULL SIZE A1

SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (ULTIMATE STAGE) STA. 113+500 - STA. 114+200

SHEET NO. : RP-07

ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-D6	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

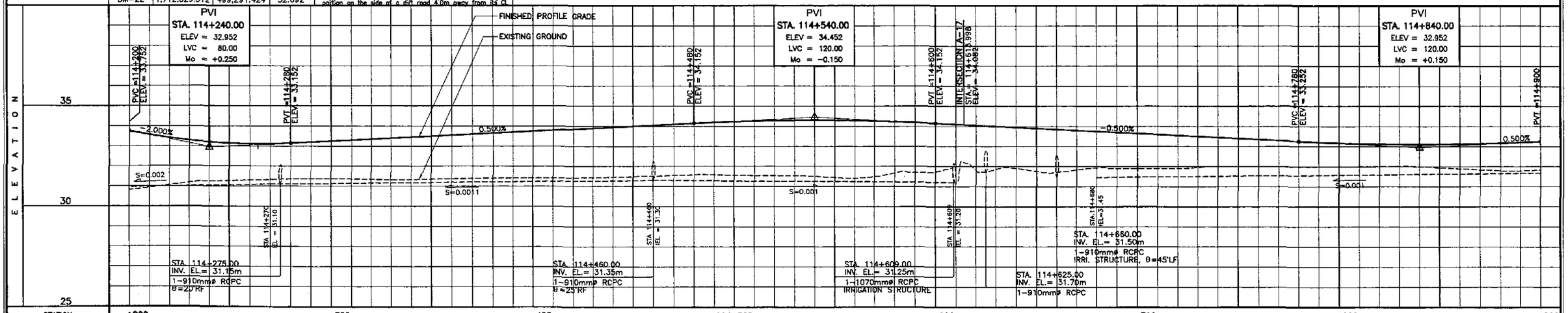


BM-20

BM-21 BM-22

REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-20	1,711,512.317	499,109.886	31.389	Left side of the road alignment, placed on a rice paddy intersection 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 1.60m 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 portion on the side of a dirt road 4.0m away from its CL



STATION	+200		+300		+400		114+500		+600		+700		+800		+900
FINISHED PROFILE GRADE BYPASS	33.752	33.414	33.202	33.114	33.152	33.252	33.352	33.452	33.552	33.652	33.752	33.852	33.952	34.052	34.152
EXISTING GROUND BYPASS	30.816	31.054	31.245	31.298	31.357	31.360	31.340	31.331	31.371	31.395	31.413	31.428	31.458	31.522	31.582

STATION	114+500		+600		+700		+800		+900
FINISHED PROFILE GRADE BYPASS	34.235	34.285	34.302	34.285	34.235	34.152	34.052	33.952	33.852
EXISTING GROUND BYPASS	31.563	31.540	31.501	31.396	31.671	31.722	31.806	31.906	31.709

STATION	+900											
FINISHED PROFILE GRADE BYPASS	33.752	33.652	33.552	33.452	33.352	33.252	33.168	33.118	33.102	33.118	33.168	33.252
EXISTING GROUND BYPASS	31.929	31.892	31.907	31.993	31.985	31.977	31.989	32.007	31.991	31.891	31.791	31.824

HORIZONTAL CURVATURE: R=3500

VERTICAL CURVATURE: L=80 Mo=+0.250; g=0.500%; L=120 Mo=-0.150; g=-0.500%; L=120 Mo=+0.150

SUPERELEVATION: N.C.

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

	DATE	SIGNATURE
DESIGNED	10/09/02	A. ACACIO
CHECKED	10/14/02	S. GOCE
SUBMITTED	10/18/02	M. KIUCHI, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

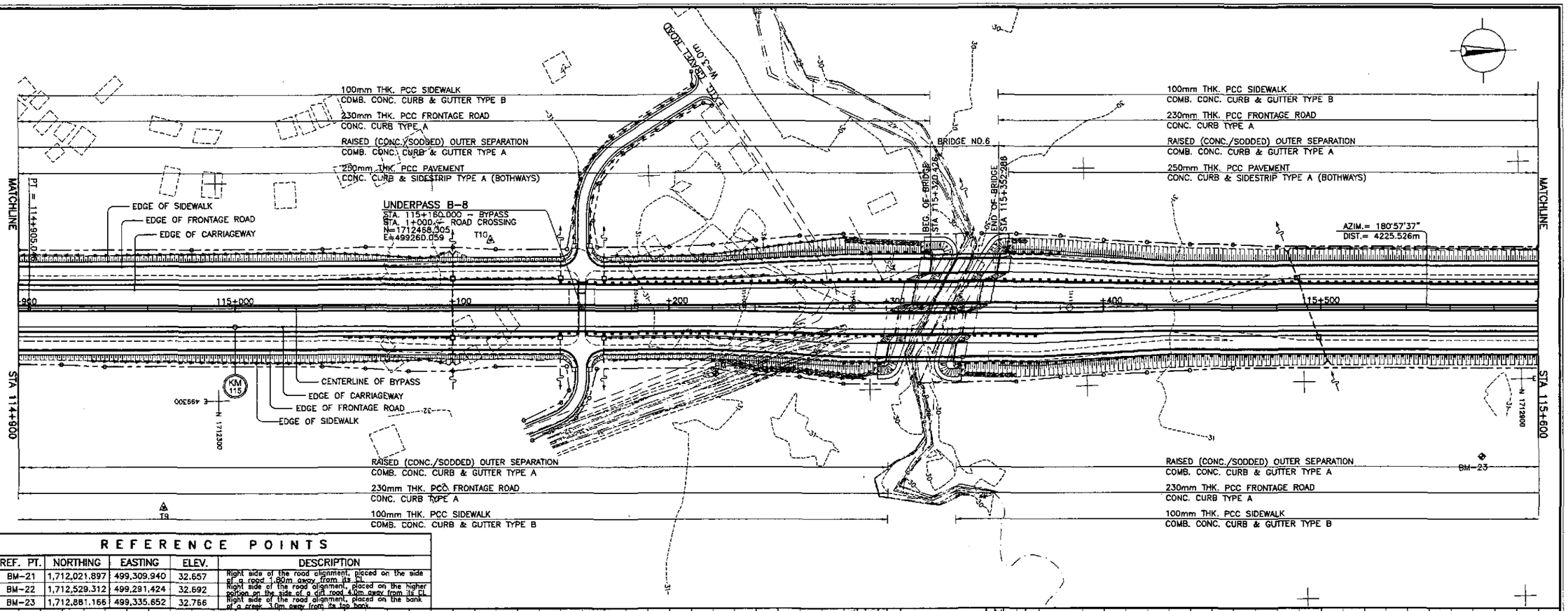
PJHL – PWO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	JOSEFINA M. ALAGAR, Chief, Highways Division	GILBERTO S. REYES, OIC, Director IV	MANUEL M. BONDAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

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 (ULTIMATE STAGE)
STA 114+200 - STA. 114+900

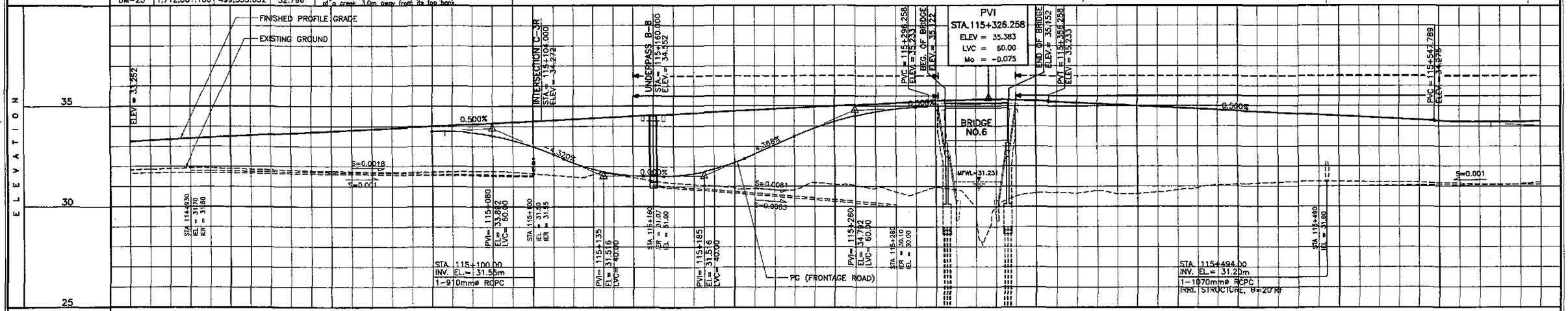
SHEET NO. :
RP-08



BM-21	BM-22	BM-23

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 1.80m 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 portion of the side of a cut 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\FRONTAGE ROAD	33.252		33.352		33.452		33.552		33.652		33.752		33.852		33.952		34.052 33.752		34.152 33.530		34.252 32.988		34.352 32.177		34.452 31.637		34.552 31.516		34.652 31.639		34.752 32.185		34.852 33.045		34.952 33.886	
EXISTING GROUND BYPASS	31.824		31.892		31.923		31.863		31.803		31.762		31.726		31.707		31.731		31.755		31.637		31.482		31.804		31.270		31.096		30.928		30.826		31.180	

STATION																																				
FINISHED PROFILE GRADE BYPASS\FRONTAGE ROAD	34.052 33.752		34.152 33.530		34.252 32.988		34.352 32.177		34.452 31.637		34.552 31.516		34.652 31.639		34.752 32.185		34.852 33.045		34.952 33.886		35.052 34.502		35.152 34.880		35.251		35.305		35.292		35.214		35.114		35.014	
EXISTING GROUND BYPASS	31.731		31.755		31.637		31.482		31.804		31.270		31.096		30.928		30.826		31.180		31.040		30.720		30.967		29.454		30.509		30.707		30.791		30.638	

STATION																																				
FINISHED PROFILE GRADE BYPASS\FRONTAGE ROAD	34.914		34.814		34.714		34.614		34.514		34.414		34.314		34.227		34.207		34.257																	
EXISTING GROUND BYPASS	30.826		31.064		31.148		31.232		31.237		31.221		31.196		31.148		31.100		31.207																	

HORIZONTAL CURVATURE: 14+905.046 — R=∞

VERTICAL CURVATURE: g=0.500% — L=60, Mo=-0.075 — g=-0.500% — L=140, Mo=+0.437

SUPERELEVATION: N.C.

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

	DATE	SIGNATURE
DESIGNED	10/09/02	A. ACACIO
CHECKED	10/16/02	S. GOSE
SUBMITTED	10/18/02	M. KIKUCHI, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

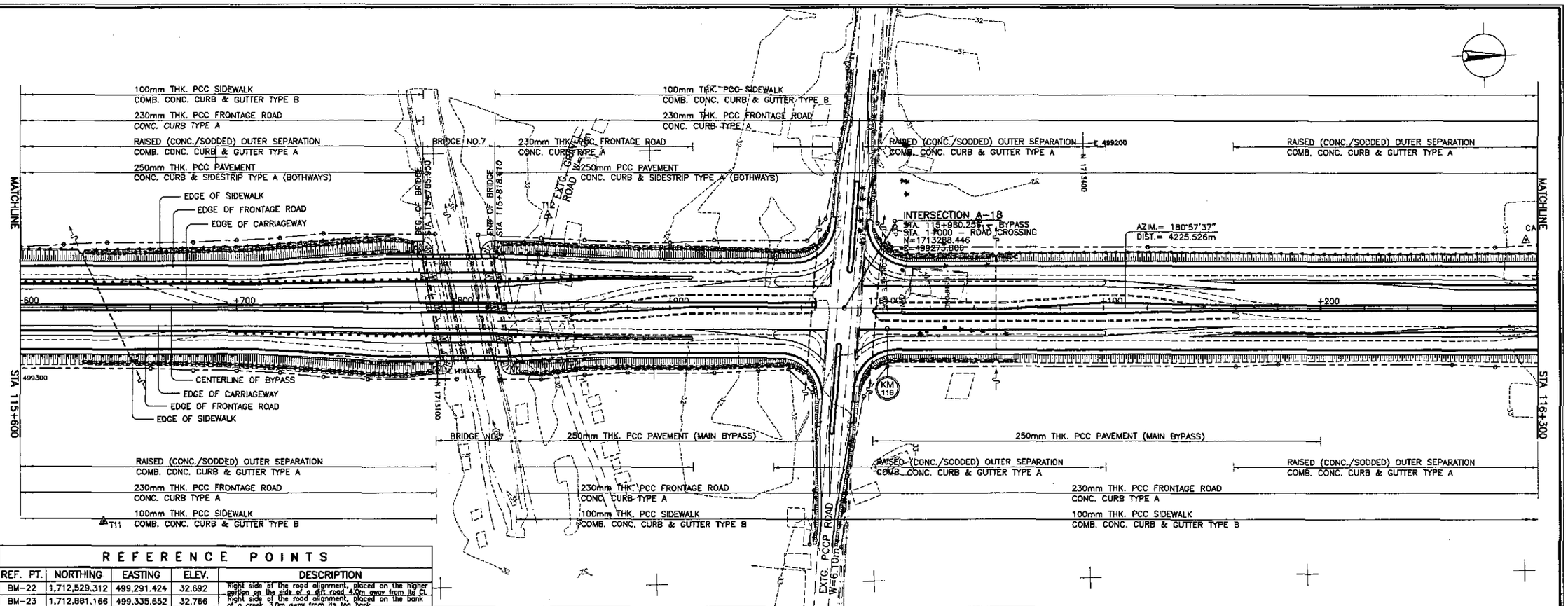
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	JOSEFINA M. ALAGAR, Chief, Highways Division	GILBERTO S. REYES, OIC, Director IV	MANUEL M. BONDAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

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

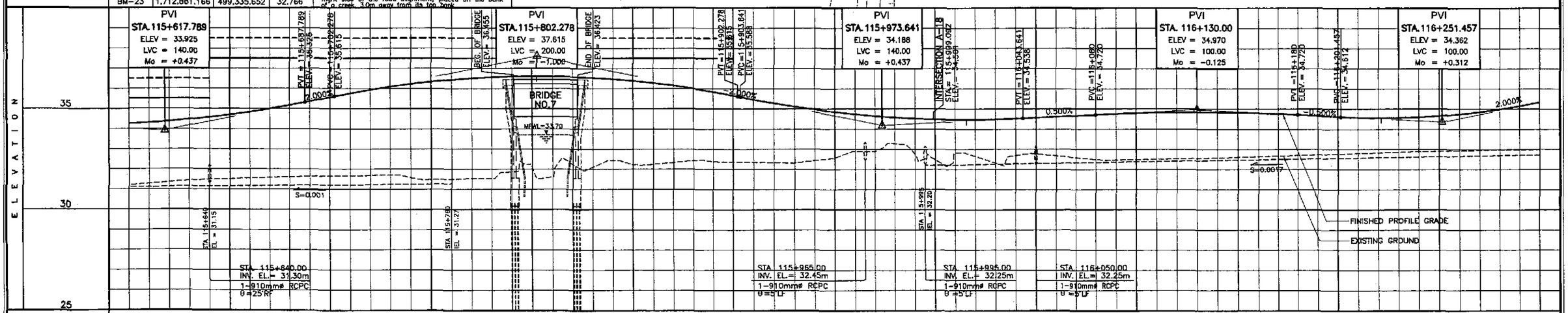
SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 114+900 - STA. 115+600

SHEET NO. :
RP-09



REFERENCE POINTS

	REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-22	BM-22	1,712,529.312	499,291.424	32.692	Right side of the road alignment, placed on the higher portion on the side of a dirt road 4.0m away from its CL
BM-23	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	+600				+700					+800					+900					116+000					+100					+200					+300
FINISHED PROFILE GRADE BYPASS	34.257	34.380	34.573	34.838	35.175	35.569	35.938	36.227	36.436	36.585	36.614	36.584	36.473	36.282	36.011	35.660	35.285	34.979	34.744	34.581	34.490	34.470	34.521	34.620	34.720	34.800	34.840	34.840	34.800	34.720	34.620	34.563	34.605	34.748	34.991	35.334
EXISTING GROUND BYPASS	31.207	31.355	31.480	31.548	31.616	31.655	31.687	31.576	31.500	31.529	32.091	32.246	32.441	32.251	32.432	32.373	32.337	32.444	32.894	33.274	32.487	32.650	32.687	32.682	32.499	32.492	32.532	32.578	32.642	32.708	32.770	32.834	32.893	32.937	32.981	32.980

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.

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

	DATE	SIGNATURE
DESIGNED	10/09/02	R. ACACIO
CHECKED	10/16/02	G. GOSE
SUBMITTED	10/18/02	M. KIUCHI (TEAM LEADER)

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
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

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

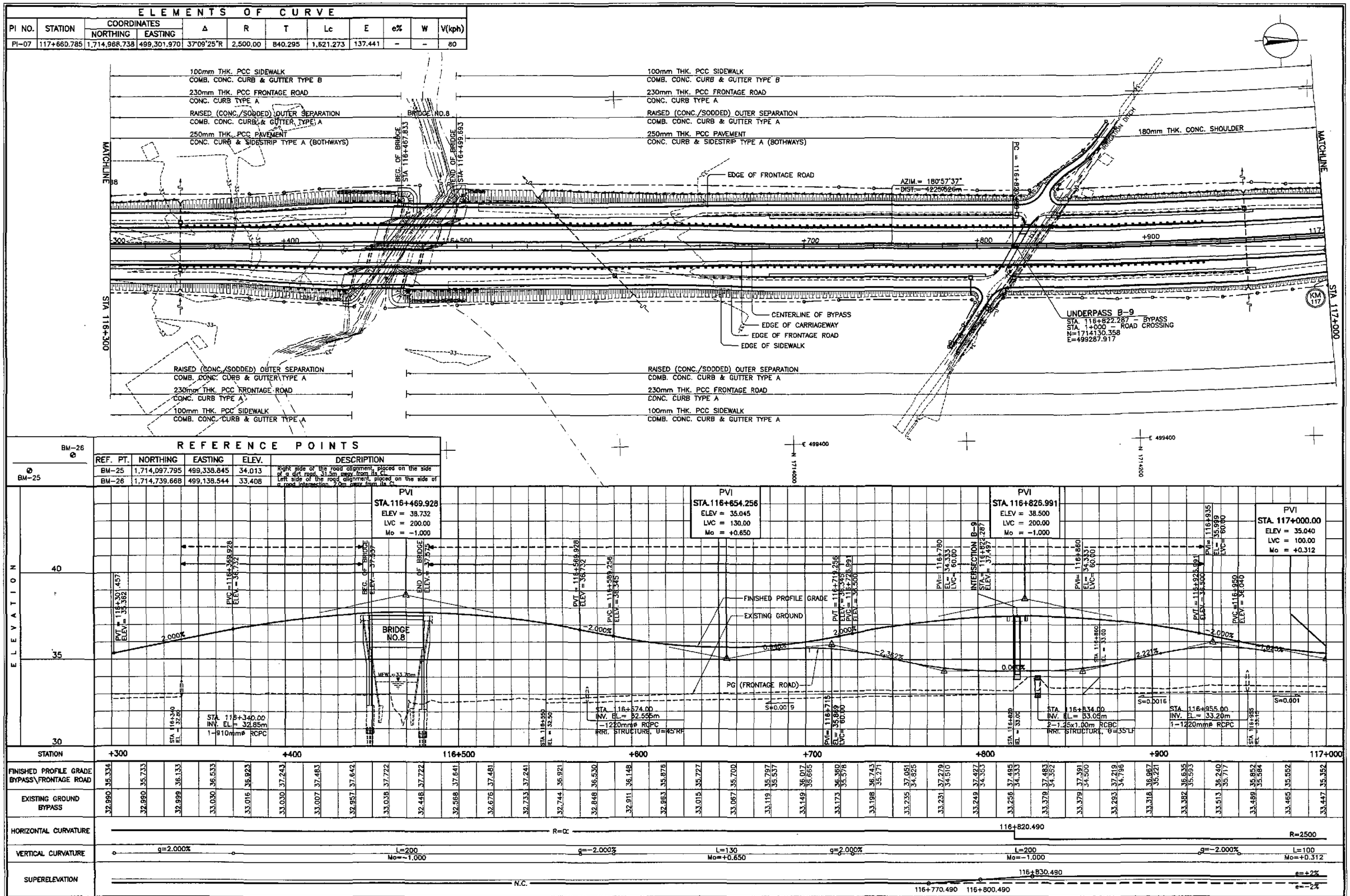
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 115+600 - STA. 116+300

SHEET NO. :
RP-10

ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-07	117+660.785	1,714,988.738	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, 21.5m away from its C.
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.

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

	DATE	SIGNATURE
DESIGNED	10/09/02	C. ACACIO
CHECKED	10/16/02	S. GOSE
SUBMITTED	10/18/02	M. INUCHI (TEAM LEADER)

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

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

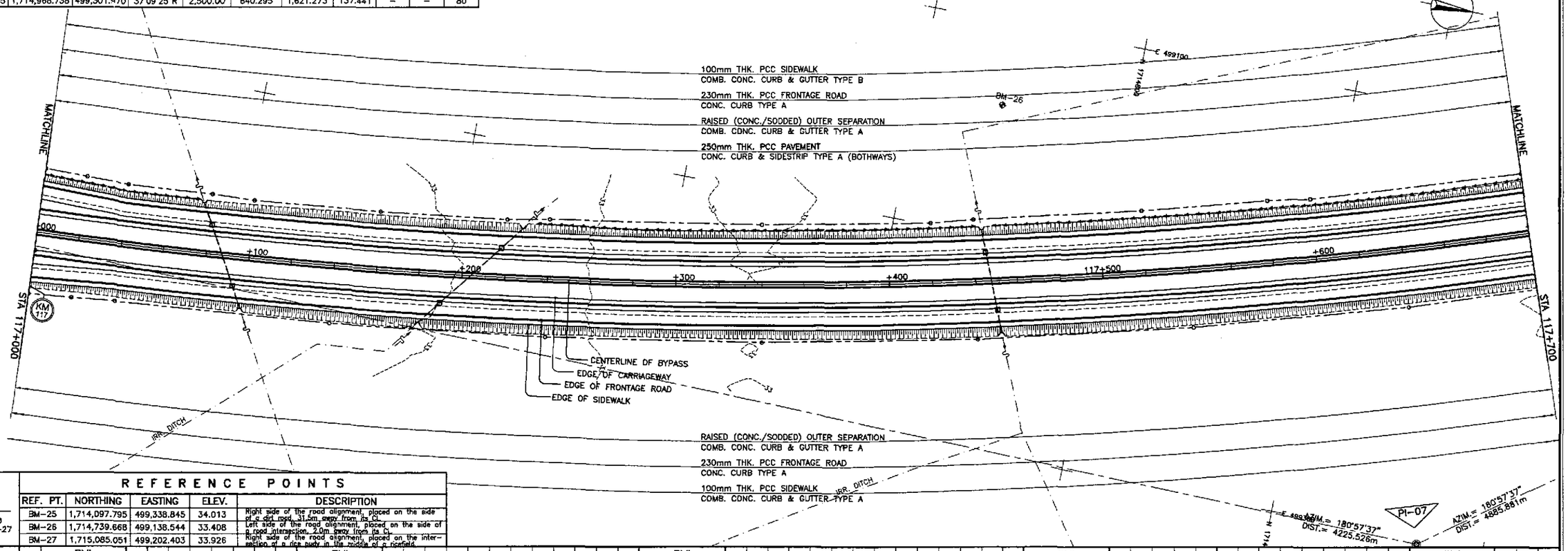
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALOMG BYPASS (ULTIMATE STAGE)
STA. 116+300 -STA. 117+000

SHEET NO. :
RP-11

ELEMENTS OF CURVE

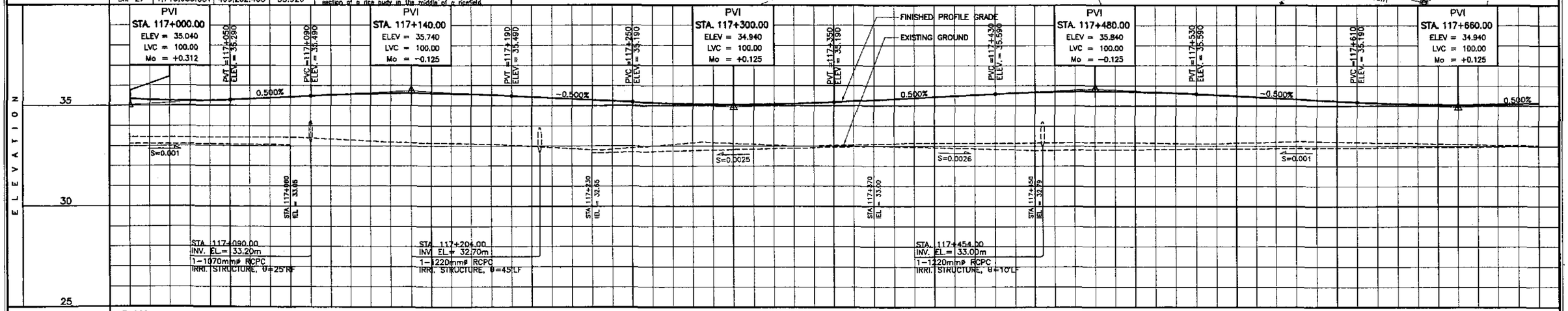
PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-07	117+660.785	1,714,968.738	499,301.970	37°09'25"R	2,500.00	840.295	1,621.273	137.441	–	–	80



REFERENCE POINTS

BM-26 ⊗ BM-25 ⊗ BM-27 ⊗

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 rice paddy in the middle of a ricefield



STATION	117+000					+100						+200						+300						+400						117+500						+600						+700
FINISHED PROFILE GRADE BYPASS	35.352		35.252		35.252		35.340		35.440		35.535		35.595		35.615		35.595		35.535		35.440		35.340		35.240		35.145		35.085		35.065		35.085		35.145		35.240		35.340		35.440
EXISTING GROUND BYPASS	33.447		33.432		33.420		33.420		33.420		33.341		33.241		33.158		33.118		33.078		32.982		32.870		32.837		32.996		33.157		33.127		33.047		33.006		33.082		33.118		33.133

STATION	117+500					+600						+700
FINISHED PROFILE GRADE BYPASS	35.540		35.635		35.695		35.715		35.695		35.635	
EXISTING GROUND BYPASS	33.138		33.146		33.166		33.186		33.165		33.133	

STATION	117+600					+700
FINISHED PROFILE GRADE BYPASS	35.540		35.440		35.340	
EXISTING GROUND BYPASS	33.125		33.177		33.229	

STATION	117+600					+700
FINISHED PROFILE GRADE BYPASS	35.240		35.145		35.085	
EXISTING GROUND BYPASS	33.212		33.176		33.138	

STATION	117+600					+700
FINISHED PROFILE GRADE BYPASS	35.065		35.085		35.145	
EXISTING GROUND BYPASS	33.098		33.058		33.041	

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% | L=100 Mo=+0.125

SUPERELEVATION: e=+2% / e=-2%

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

	DATE	SIGNATURE
DESIGNED	04/09/02	R. ACACIO
CHECKED	10/16/02	S. GOSE
SUBMITTED	10/18/02	M. KUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
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

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

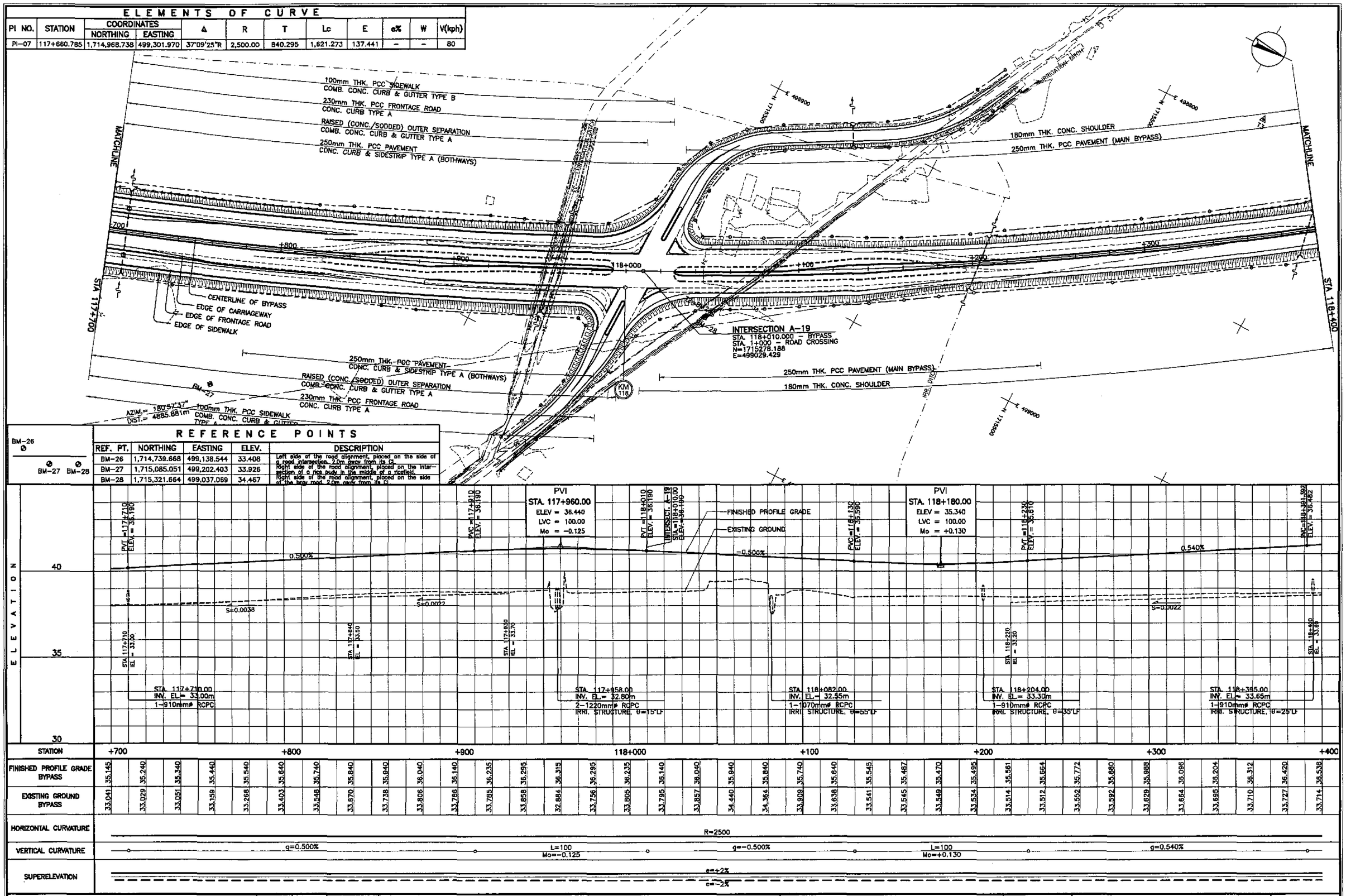
SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 117+000 - STA. 117+700

SHEET NO. : RP-12

ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
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-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 inter-section of a rice paddy in the middle of a ricefield.
BM-28	1,715,321.664	499,037.069	34.467	Right side of the road alignment, placed on the side of the bray road. 2.0m away from its CL

BM-26
BM-27 BM-28

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

	DATE	SIGNATURE
DESIGNED	10/09/02	ACACIO
CHECKED	10/16/02	S. JOSE
SUBMITTED	10/18/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

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

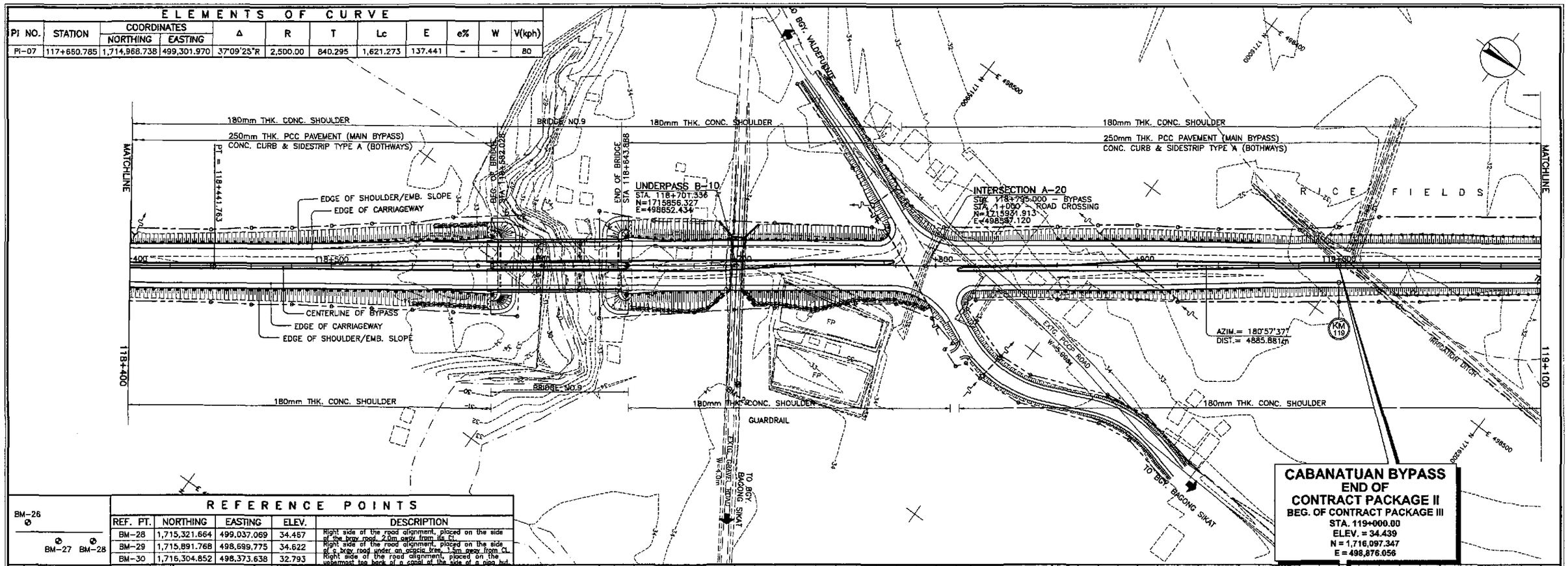
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 117+700 - STA 118+400

SHEET NO. :
RP-13

ELEMENTS OF CURVE

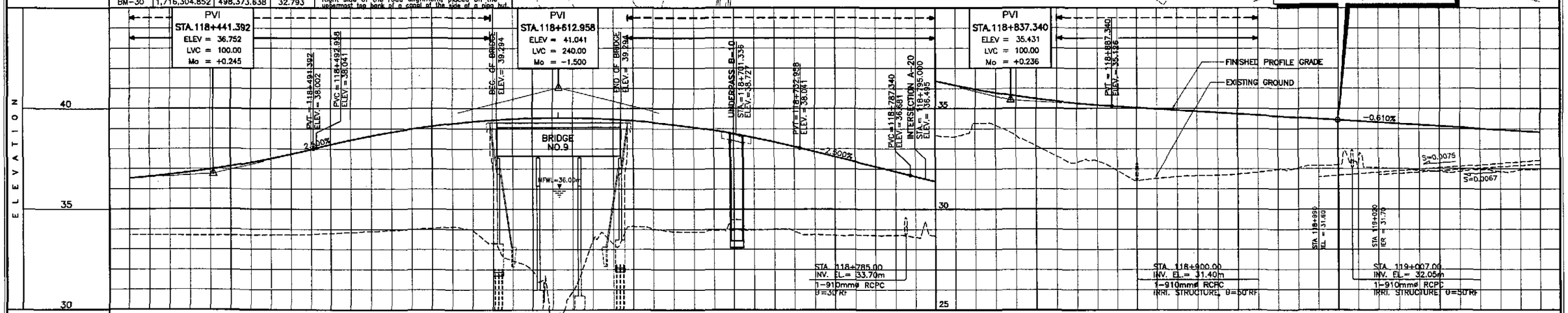
PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-07	117+650.785	1,714,968.738	499,301.970	37°09'25"R	2,500.00	840.295	1,621.273	137.441	-	-	80



REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-28	1,715,321.664	499,037.069	34.457	Right side of the road alignment, placed on the side of the bray road, 2.0m away from its Ct.
BM-29	1,715,891.768	498,699.775	34.622	Right side of the road alignment, placed on the side of a bray road under an agaria tree, 1.5m away from Ct.
BM-30	1,716,304.852	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 pipe hut.

BM-26
BM-27 BM-28



STATION	+400					118+500					+600					+700					+800					+900					119+000					+100
FINISHED PROFILE GRADE BYPASS	36.536	36.717	36.976	37.314	37.730	38.212	38.641	38.987	39.244	39.428	39.523	39.536	39.465	39.310	39.073	38.752	38.347	37.865	37.365	36.865	36.380	35.965	35.627	35.363	35.176	35.049	34.927	34.805	34.683	34.561	34.439	34.317	34.195	34.073	33.951	33.829
EXISTING GROUND BYPASS	33.714	33.695	33.685	33.701	33.717	33.796	33.892	33.996	34.121	33.315	31.920	30.955	33.279	34.022	33.880	34.487	34.009	33.743	33.705	33.697	33.670	34.759	33.682	32.643	32.395	31.408	31.610	31.684	31.828	32.056	32.211	32.043	31.913	31.865	31.866	31.939

HORIZONTAL CURVATURE: 118+441.763 — R=2500 — R=∞

VERTICAL CURVATURE: L=100, Mo=+0.245 — g=2.500% — L=240, Mo=-1.500 — g=-2.500% — L=100, Mo=+0.236 — g=-0.610%

SUPERELEVATION: 118+431.763 — 118+461.763 — 118+491.763 — N.C.

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

	DATE	SIGNATURE
DESIGNED	10/04/02	ACACIO
CHECKED	10/16/02	S. GOSE
SUBMITTED	10/18/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

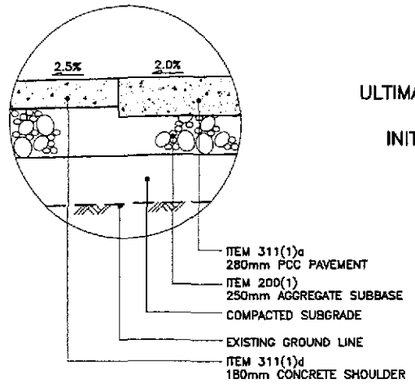
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	JOSEFINA M. ALAGAR, Chief, Highways Division	GILBERTO S. REYES, OIC, Director IV	MANUEL M. BONOAN, Undersecretary	SIMEON A. DATUMANONG, Secretary

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

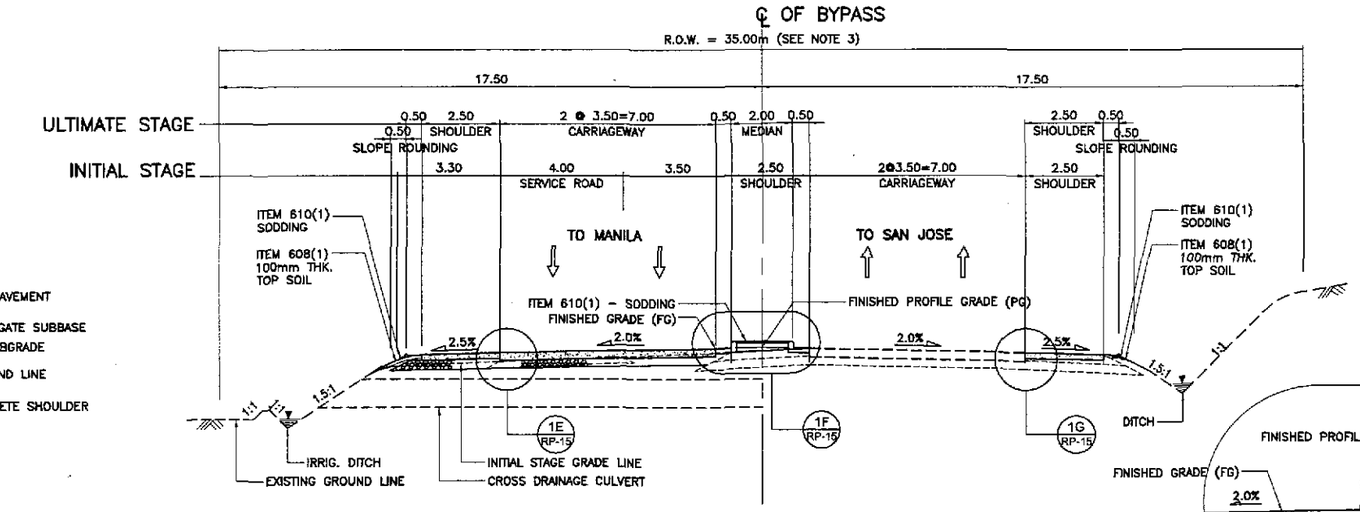
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 118+400 - STA. 119+100

SHEET NO. :
RP-14



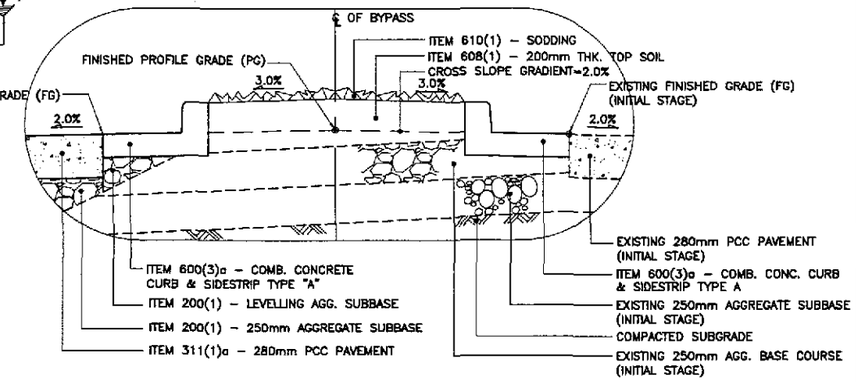
1E RP-15 DETAIL
SCALE 1:20



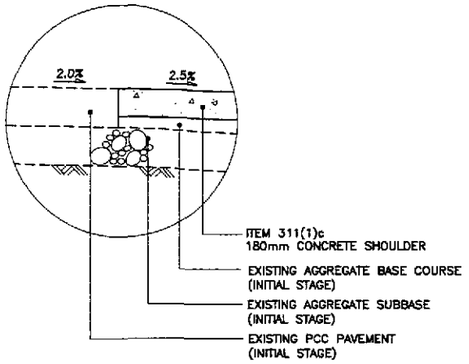
1B RP-15 NORMAL SECTION - ULTIMATE STAGE
SCALE 1:100

NOTES:

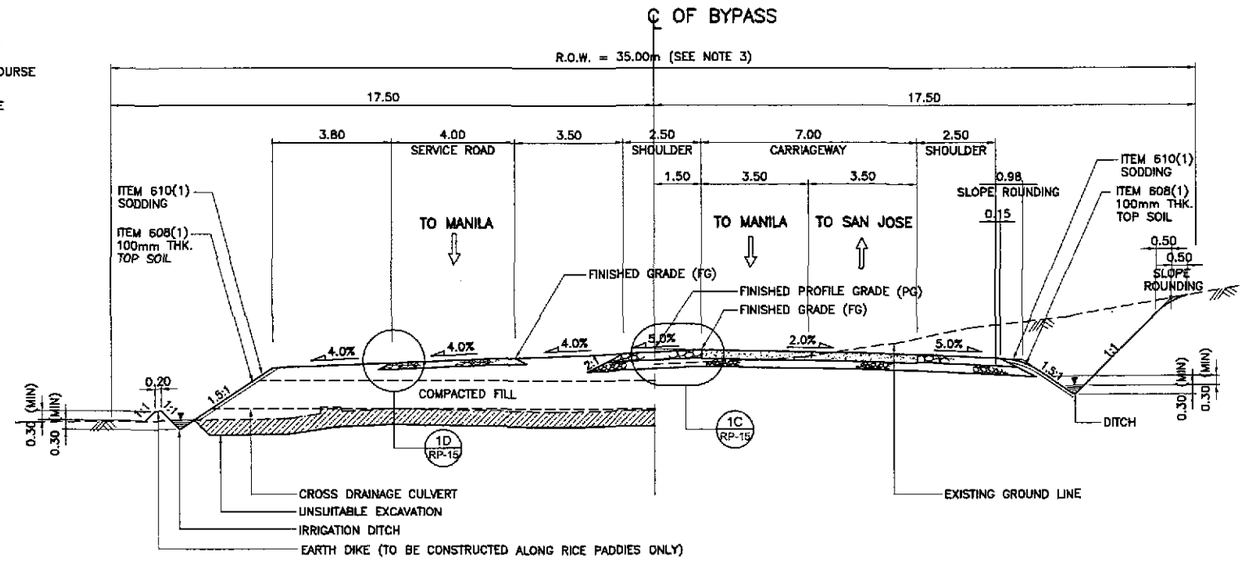
1. FINISHED PROFILE GRADE (PG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NOS. GC-11 TO GC-12.
3. ROAD RIGHT-OF-WAY (R.O.W.) WIDTH SHALL BE VARIED DUE TO HORIZONTAL TRANSITION OF SERVICE ROAD, MEDIAN\DIVISIONAL ISLANDS, OUTER SEPERATIONS 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.



1F RP-15 DETAIL
SCALE 1:20



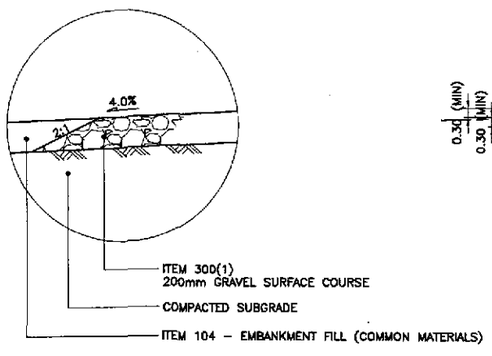
1G RP-15 DETAIL
SCALE 1:20



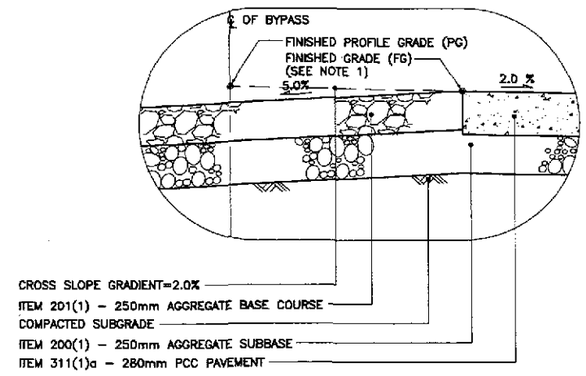
EMBANKMENT SECTION

CUT SECTION

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



1D RP-15 DETAIL
SCALE 1:20

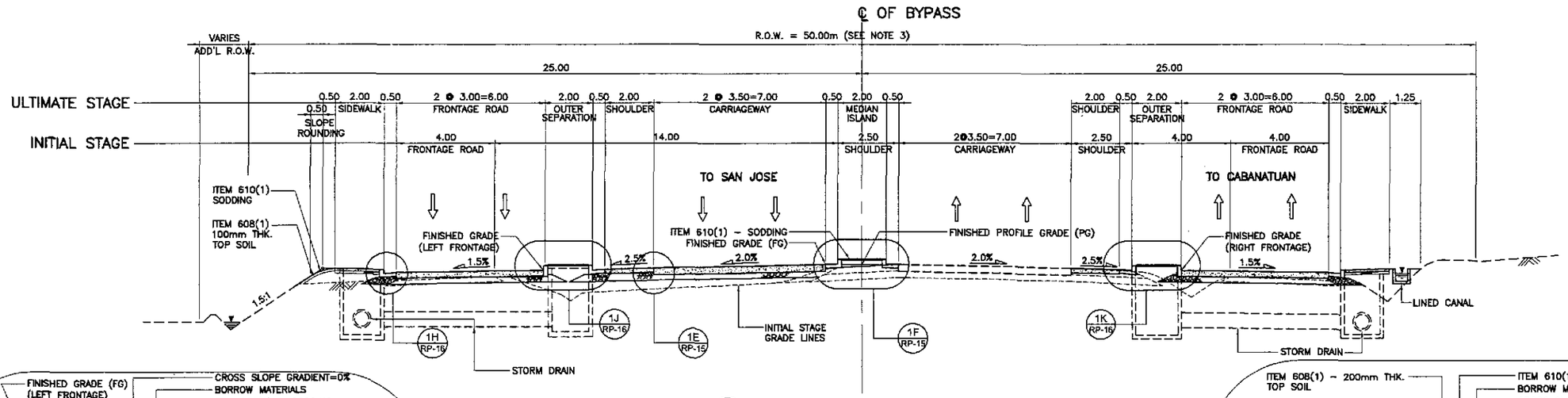


1C RP-15 DETAIL
SCALE 1:20

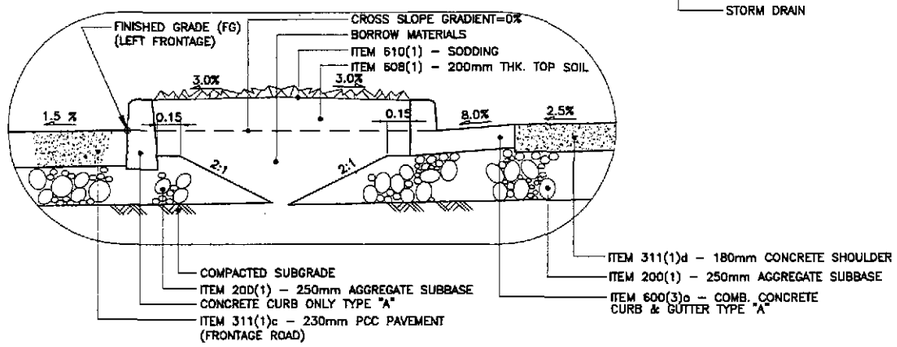
1 RP-15 TYPICAL ROADWAY SECTIONS - WITHOUT FRONTAGE ROAD
SCALE 1:100

JICA JAPAN INTERNATIONAL COOPERATION AGENCY		DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			
KEI KATAHIRA & ENGINEERS INTERNATIONAL / YEC YACHIYO ENGINEERING CO., LTD.	DESIGNED	10/09/02	A. ACACIO	PJHL - PMO	BUREAU OF DESIGN	OFFICE OF THE SECRETARY	
	CHECKED	10/15/02	S. GOSE	Submitted By:	Reviewed By: / Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
	SUBMITTED	10/18/02	TEAM LEADER	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

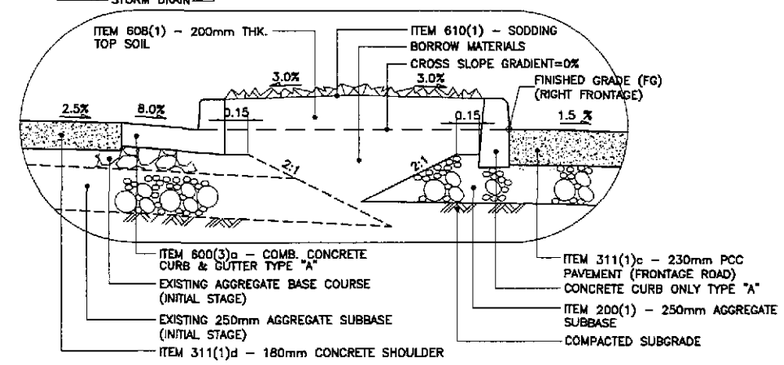
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	AS SHOWN FULL SIZE A1	TYPICAL ROADWAY SECTIONS NORMAL SECTIONS WITHOUT FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE) (1 of 4)	RP-15



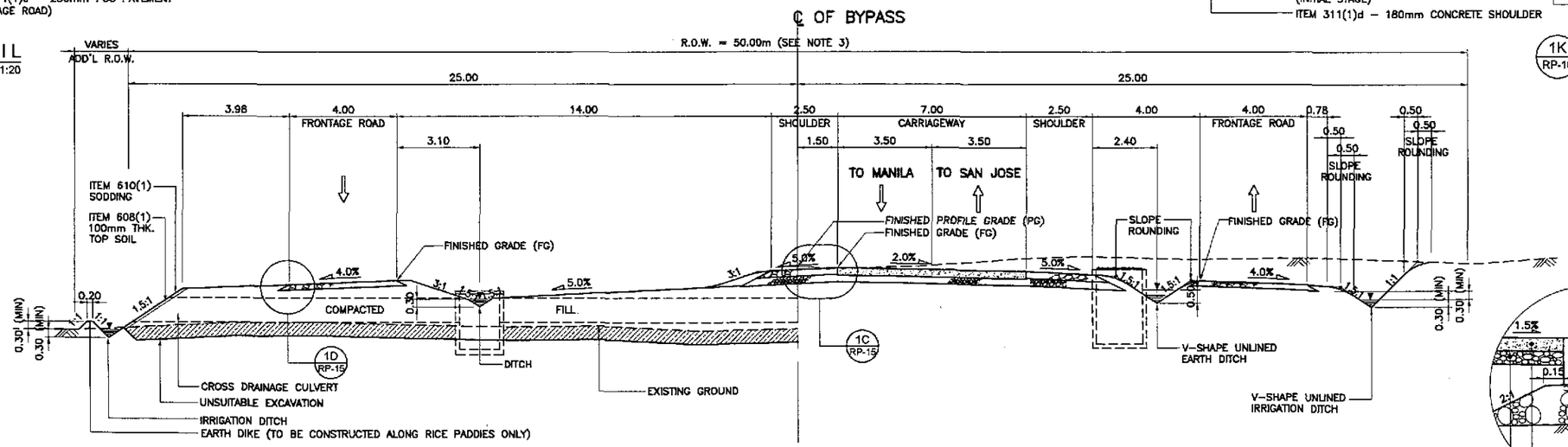
1B RP-16 NORMAL SECTION - ULTIMATE STAGE
SCALE 1:100



1J RP-16 DETAIL
SCALE 1:20



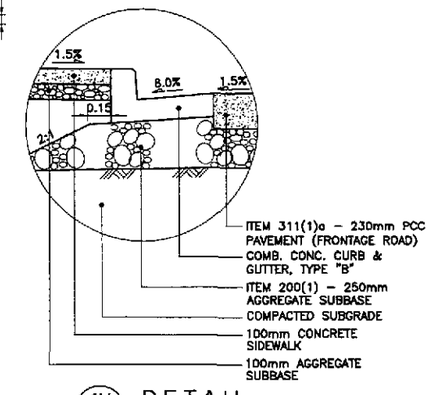
1K RP-16 DETAIL
SCALE 1:20



EMBANKMENT SECTION

CUT SECTION

1A RP-16 NORMAL SECTION - INITIAL STAGE
SCALE 1:100



1H RP-16 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 SEPERATIONS 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.

1 RP-16 TYPICAL ROADWAY SECTIONS - WITH FRONTAGE ROAD
SCALE 1:100

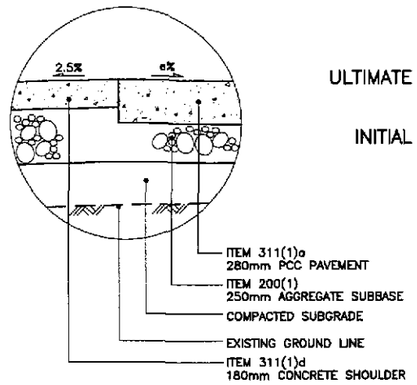
JICA
JAPAN INTERNATIONAL COOPERATION AGENCY
KEI KATAHIRA & ENGINEERS INTERNATIONAL
YEC YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	10/09/02	A. ACACIO
CHECKED	10/16/02	S. GOSE
SUBMITTED	10/18/02	M. KUCHI TEAM LEADER

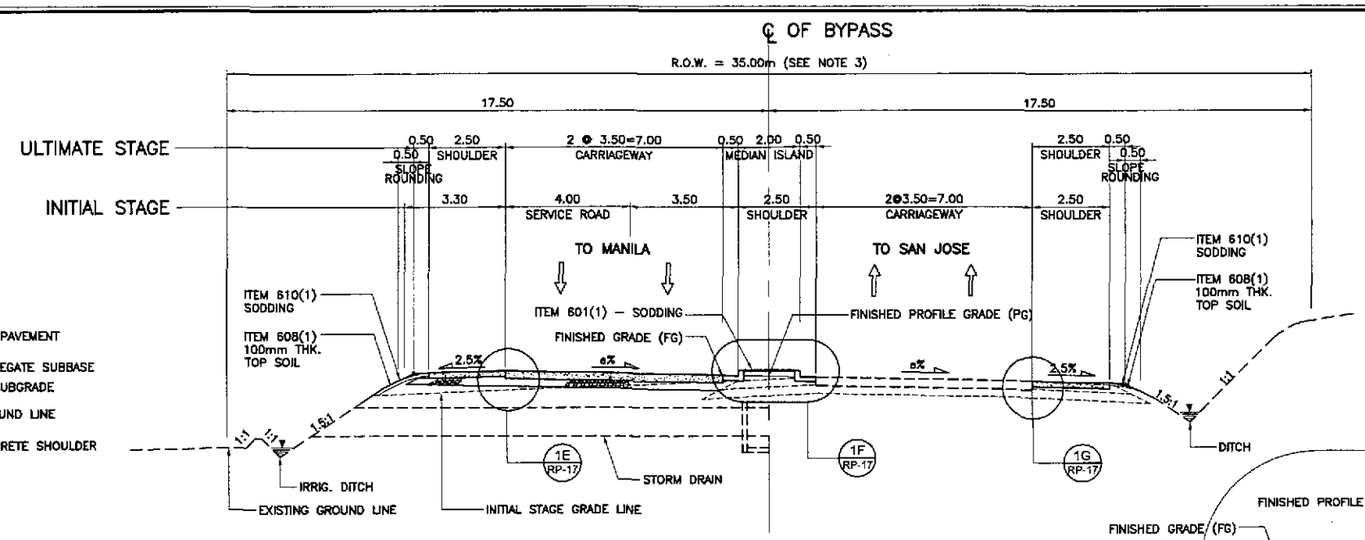
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approved)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

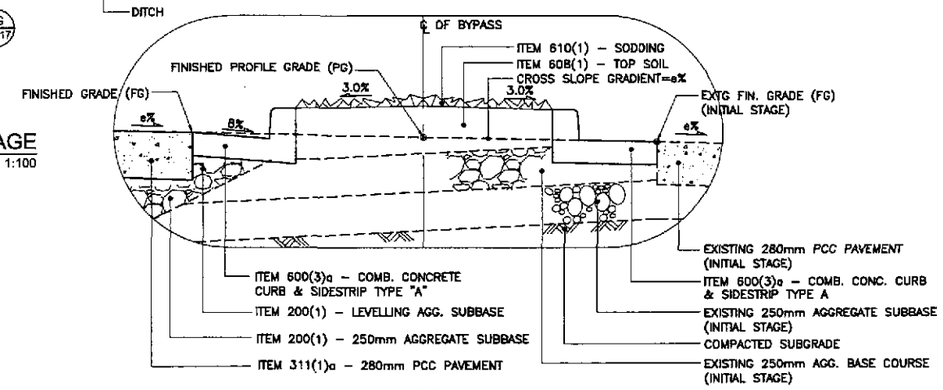
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	AS SHOWN FULL SIZE A1	TYPICAL ROADWAY SECTIONS NORMAL SECTIONS WITH FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE) (2 of 4)	RP-16



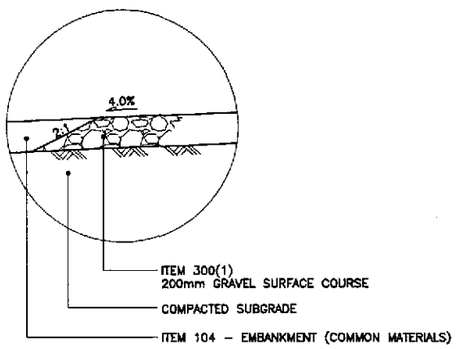
1E / RP-17 DETAIL
SCALE 1:20



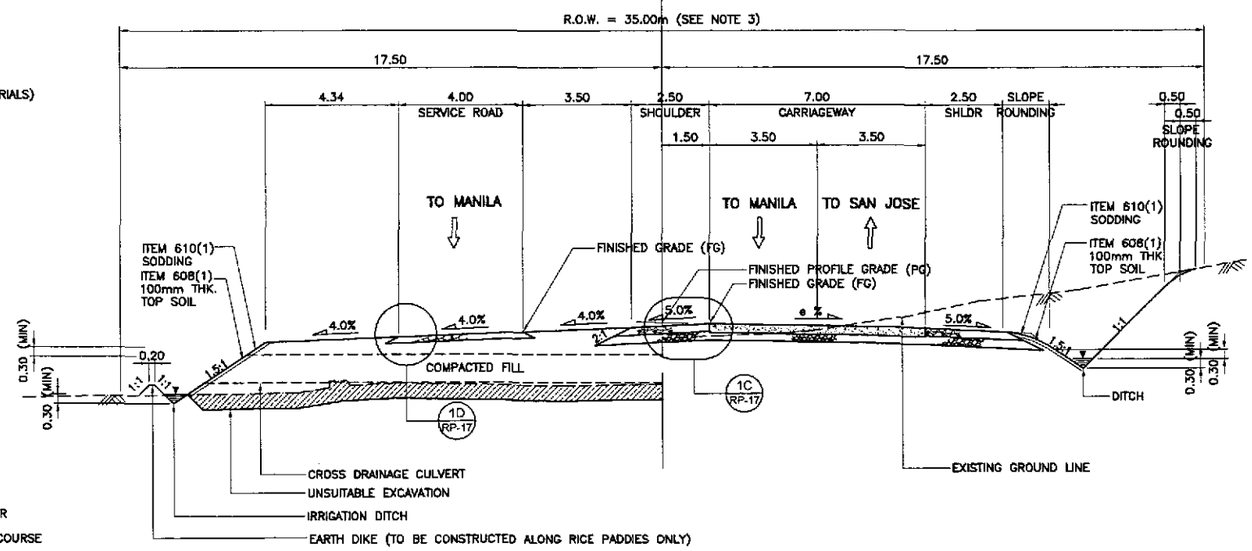
1B / RP-17 SUPERELEVATED SECTION - ULTIMATE STAGE
SCALE 1:100



1F / RP-17 DETAIL
SCALE 1:20



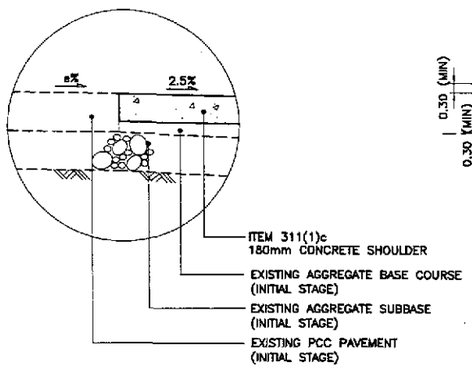
1D / RP-17 DETAIL
SCALE 1:20



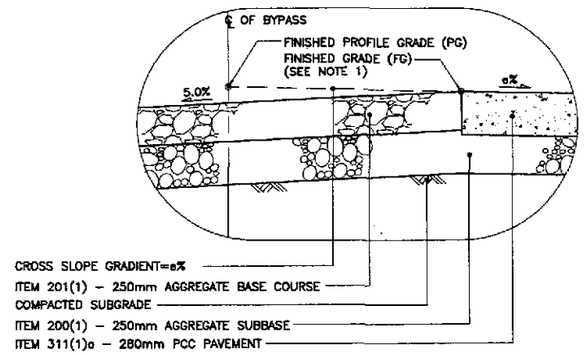
EMBANKMENT SECTION

CUT SECTION

1A / RP-17 SUPERELEVATED SECTION - INITIAL STAGE
SCALE 1:100



1G / RP-17 DETAIL
SCALE 1:20



1C / RP-17 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 SEPERATIONS 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.

1 / RP-17 TYPICAL ROADWAY SECTIONS - WITHOUT FRONTAGE ROAD
SCALE 1:100

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

	DATE	SIGNATURE
DESIGNED	10/09/02	ACACIO
CHECKED	10/16/02	S. GOSE
SUBMITTED	10/18/02	M. KIUCHI (TEAM LEADER)

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

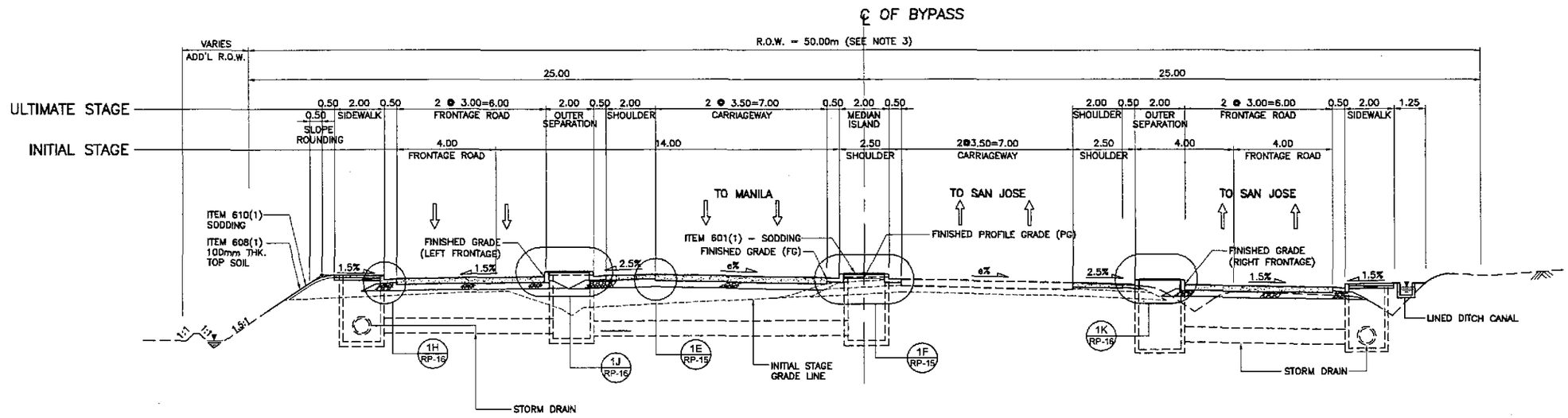
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONGAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways Division	DIC, Director IV	Undersecretary	Secretary

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

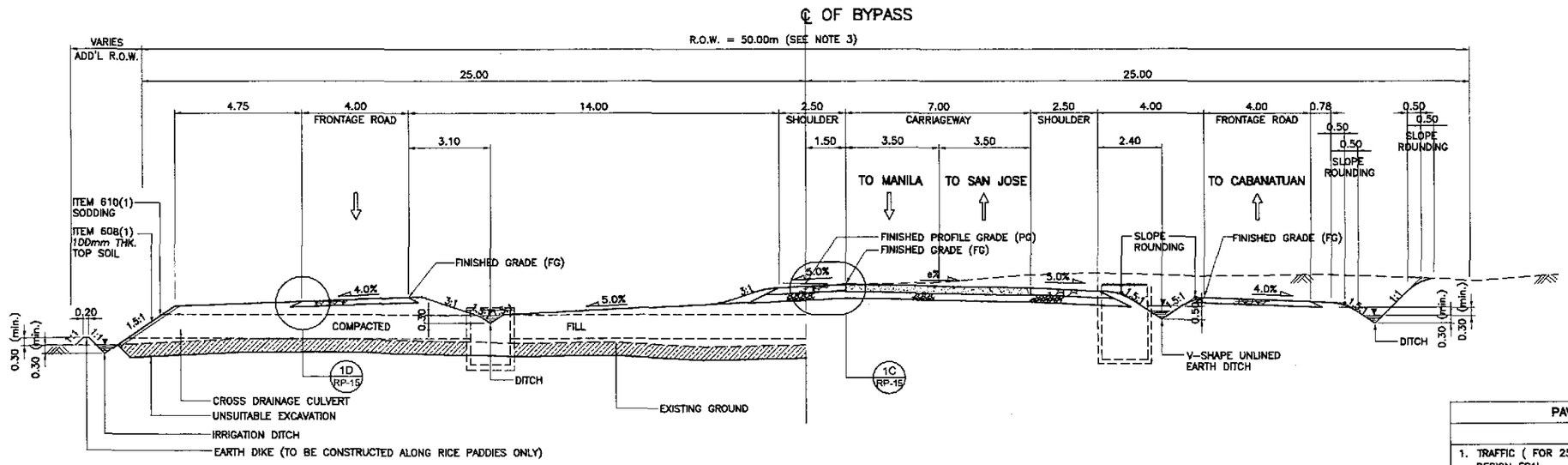
SCALE : AS SHOWN
FULL SIZE A1

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

SHEET NO. : RP-17



1B / RP-18 SUPERELEVATED SECTION - ULTIMATE STAGE
SCALE 1:100



EMBANKMENT SECTION

CUT SECTION

1A / RP-18 SUPERELEVATED SECTION - INITIAL STAGE
SCALE 1:100

1 / RP-18 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 SEPERATIONS AND DUE TO HEIGHT OF EMBANKMENT. SEE SCHEDULE OF R.O.W.; (SHTS. NOS. RG-06 TO RG-08).
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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	2.30×10^6
2. DESIGN CBR SUBGRADE CBR	5.00 %
3. ROADBED RESILIENT MODULUS M_R	5,500 psi = 37.92 MPa
E_{SB}	13,000 psi = 89.64 MPa
E_{BS}	23,000 psi = 158.58 MPa
4. PERFORAMNCE CRITERIA Δ PSI	2
5. DESIGN RELIABILITY Z_R	50 %
S_D	0.35
6. DRAINAGE COEFFICIENT RIGID	1
7. LAYER COEFFICIENT a_1 (FOR AC)	0.39
a_2 (FOR BASE)	0.105
a_3 (FOR SUBBASE)	0.095
8. PAVEMENT CONSTRUCTION THIKNESS PCCP	280mm THK
SUBBASE	250mm THK

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

	DATE	SIGNATURE
DESIGNED	10/09/02	A. ACACIO
CHECKED	10/18/02	S. BOSE
SUBMITTED	10/08/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

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CABANATUAN BYPASS - CONTRACT PACKAGE II

SCALE : AS SHOWN
FULL SIZE A1

SHEET CONTENTS :
TYPICAL ROADWAY SECTIONS
SUPERELEVATED SECTIONS WITH FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE)
(4 of 4)

SHEET NO. : RP-18

TABLE OF COORDINATES

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
1	1708855.501	497292.134	CENTER OF TWO LANE PAVEMENT TO MEET EXISTING
2	1708858.708	497289.417	INNER EDGE OF TWO LANE PAVEMENT TO MEET EXISTING
3	1708889.23	497313.42	INNER EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE
4	1708890.12	497314.16	BEG. OF TRANSITION 1.50m FROM THE CENTERLINE
5	1708887.882	497316.851	CENTER OF TWO LANE PAVEMENT TO MEET EXISTING
6	1708930.522	497359.15	OUTER EDGE OF 7.00m WIDE PAVEMENT
7	1708935.089	497353.845	BEG. OF TAPER 2.75m FROM THE CENTERLINE
8	1708970.962	497381.152	END OF TAPER 0.25m FROM THE CENTERLINE
9	1708964.081	497388.417	OUTER EDGE OF 10.00m WIDE PAVEMENT/ENTRY TO FRONTAGE ROAD
10	1709011.542	497417.574	BEG. OF MEDIAN RADIUS 18
11	1709016.411	497420.743	INTERSECTION OF MEDIAN RADIUS 18 & 0.80
12	1709017.273	497419.421	END OF MEDIAN RADIUS 0.80
13	1708978.275	497401.021	INTERSECTION OF DIVERGING LANE
14	1708993.645	497415.507	EDGE OF 10.00m WIDE PAVEMENT
15	1709011.299	497430.899	EDGE OF 10.00m WIDE PAVEMENT
16	1708991.801	497417.547	INNER EDGE OF FRONTAGE ROAD
17	1709010.032	497432.281	CENTER OF SEPARATOR RADIUS 1.375
18	1709002.595	497435.471	OUTER EDGE OF 6.00m WIDE FRONTAGE ROAD/BEG. OF SIDEWALK
19	1709022.338	497441.056	CENTER OF SEPARATOR RADIUS 1.375
20	1709021.064	497442.433	OUTER EDGE OF 7.00m WIDE PAVEMENT
21	1709050.655	497480.264	BEG. ACCESS ROAD RADIUS 6.00
22	1709050.864	497488.756	END OF ACCESS ROAD RADIUS 6.00/ LIMIT OF SIDEWALK
24	1709053.035	497490.827	END ACCESS ROAD RADIUS 6.00
25	1709061.527	497490.636	BEG. OF ACCESS ROAD RADIUS 6.00/ LIMIT OF SIDEWALK
26	1709031.199	497432.227	BEG. OF MEDIAN RADIUS 1.75
27	1709028.333	497434.007	INTERSECTION OF MEDIAN RADIUS 1.75 & 16
28	1709032.791	497441.199	END OF MEDIAN RADIUS 16
29	1709074.744	497480.796	BEG. OF TRANSITION 2.75m FROM THE CENTERLINE
30	1709069.96	497485.906	OUTER EDGE OF 7.00m WIDE PAVEMENT

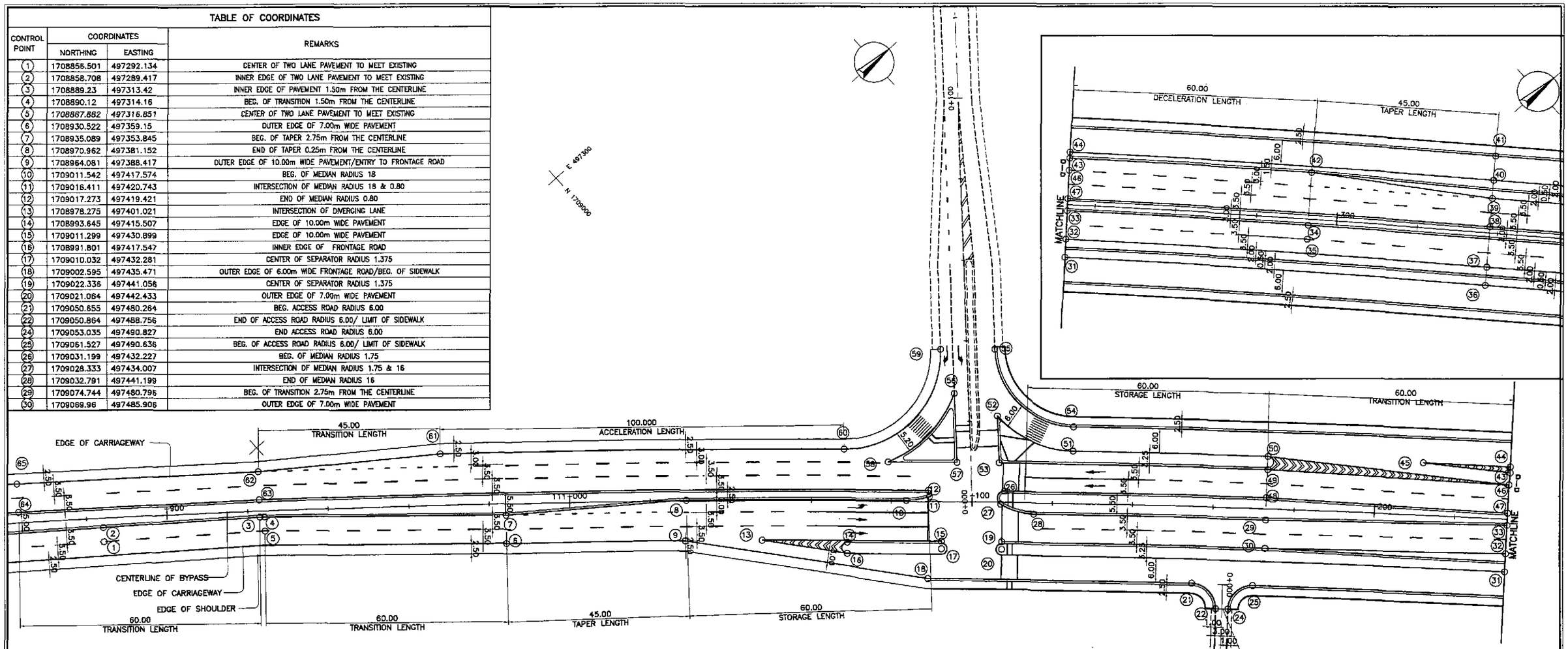

TABLE OF COORDINATES

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
51	1709050.499	497436.165	BEG. OF INNER RADIUS 26 OF FRONTAGE ROAD
52	1709042.24	497417.132	END OF INNER RADIUS 26 OF FRONTAGE ROAD
53	1709034.822	497426.043	ISLAND INTERSECTION
54	1709054.593	497431.778	BEG. OF RADIUS 20
55	1709052.858	497404.363	END OF RADIUS 20 TO MEET EXISTING
56	1709038.036	497405.77	ISLAND INTERSECTION
57	1709027.089	497418.921	ISLAND INTERSECTION
58	1709014.505	497407.423	ISLAND INTERSECTION
59	1709042.844	497395.304	BEG. OF RADIUS 24 TO MEET EXISTING EDGE OF PAVEMENT
60	1709008.309	497397.758	END OF RADIUS 24
61	1708932.887	497331.547	BEG. OF TAPER, PAVEMENT WIDTH 10.00m
62	1708896.42	497304.768	END OF TAPER, PAVEMENT WIDTH 7.00m
63	1708891.946	497310.151	INNER EDGE OF TO LANE PAVEMENT 2.75m FROM THE CENTERLINE
64	1708845.342	497272.29	END OF INNER TRANSITION 2.60m FROM THE CENTERLINE
65	1708849.722	497266.831	OUTER EDGE OF TWO LANE PAVEMENT

TABLE OF COORDINATES

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
31	1709110.422	497529.947	INNER EDGE OF 6.00m WIDE FRONTAGE ROAD
32	1709113.593	497526.754	EXISTING OUTER EDGE OF PAVEMENT
33	1709118.526	497521.787	INNER EDGE OF TWO LANE PAVEMENT 1.50m FROM THE CENTERLINE
34	1709160.717	497564.41	INNER EDGE OF TWO LANE PAVEMENT TO MEETEXISTING
35	1709158.209	497566.851	CENTER OF TWO LANE PAVEMENT TO MEET EXISTING
36	1709183.534	497604.761	INNER EDGE OF FRONTAGE ROAD
37	1709186.799	497601.665	OUTER EDGE OF TWO LANE PAVEMENT
38	1709194.062	497594.792	INNER EDGE OF TWO LANE PAVEMENT 1.50m FROM THE CENTERLINE
39	1709199.141	497589.975	BEG. OF TRANSITION, PAVEMENT WIDTH 7.00m
40	1709202.406	497586.878	INNER EDGE OF FRONTAGE ROAD
41	1709206.76	497582.749	OUTER EDGE OF TWO LANE PAVEMENT
42	1709170.034	497555.344	END OF TRANSITION, PAVEMENT WIDTH 10.00m
43	1709127.685	497512.563	OUTER EDGE OF 3.00m WIDE ENTRY LANE TO FRONTAGE ROAD
44	1709128.743	497511.498	INNER EDGE OF FRONTAGE ROAD/END OF SEPARATOR RADIUS 0.50
45	1709113.31	497496.267	INTERSECTION OF MERGING LANE
46	1709125.572	497514.692	INTERSECTION OF TWO LANE BYPASS ROAD & SINGLE LANE TO FRONTAGE ROAD
47	1709120.64	497519.658	INNER BEG. OF INNER TRANSITION 1.50m FROM THE CENTERLINE
48	1709078.552	497476.827	END OF INNER TRANSITION 2.75m FROM THE CENTERLINE
49	1709083.399	497471.777	OUTER EDGE OF 7.00m WIDE PAVEMENT
50	1709085.549	497469.432	END OF FRONTAGE ROAD TRANSITION

GEOMETRIC DESIGN LAYOUT
INTERSECTION A-14 (STA. 111+100.000)
INTERSECTION A-14a (STA. 111+162.746) - ULTIMATE STAGE

1 / RI-01 SCALE 1:500

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

	DATE	SIGNATURE
DESIGNED	10/09/02	ORONCE
CHECKED	10/16/02	S. JOSE
SUBMITTED	10/18/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

PROJECT AND LOCATION :
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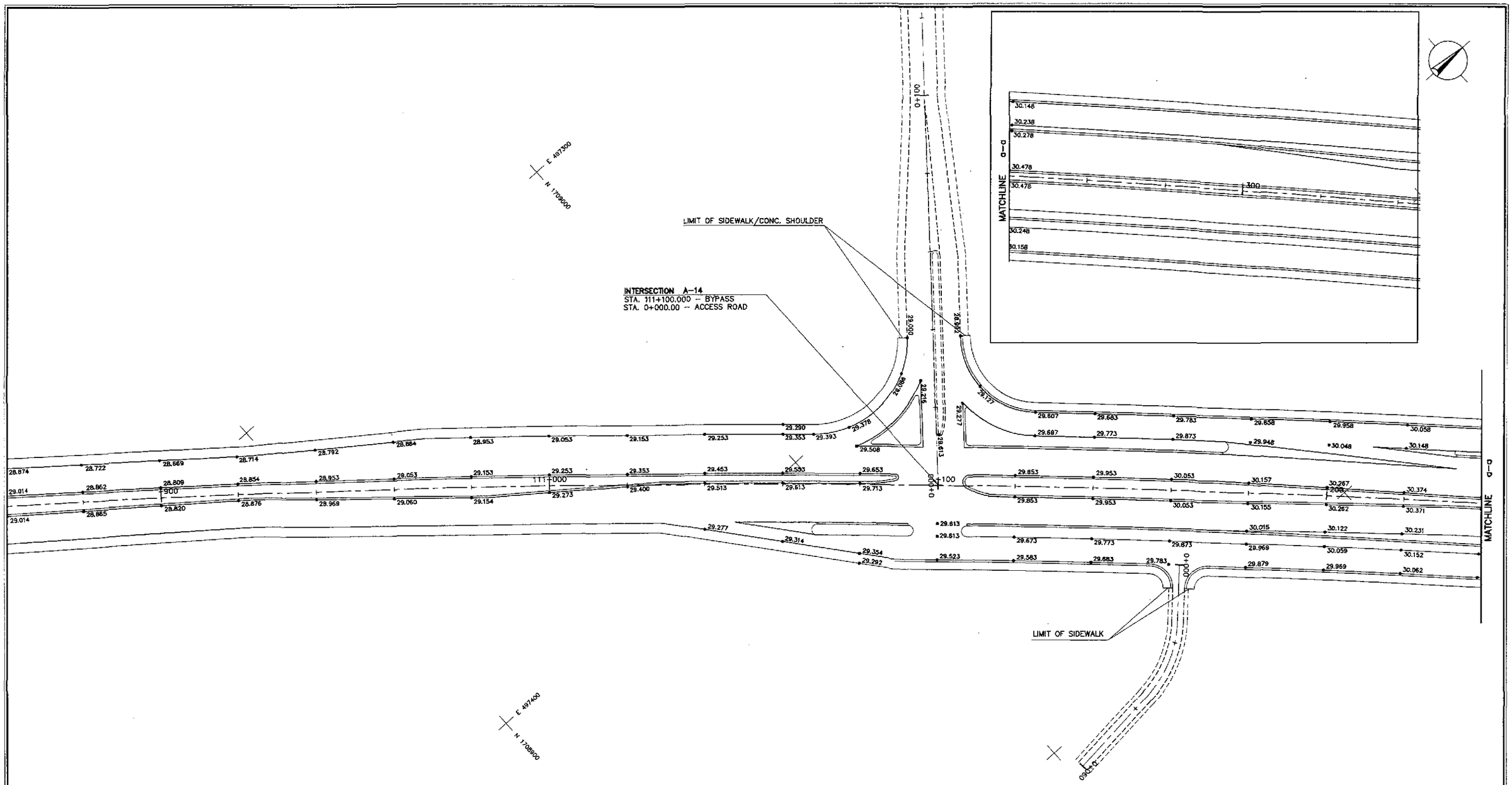
CABANATUAN BYPASS - CONTRACT PACKAGE II

SCALE : 1:500 FULL SIZE A1

SHEET CONTENTS :
INTERSECTION DETAIL
GEOMETRIC DESIGN LAYOUT
INTERSECTION A-14&A-14a (ULTIMATE STAGE)

SHEET NO. : RI-01



PAVING AND GRADING PLAN
INTERSECTION A-14 (STA. 111+100.000)
1 / RI-02 INTERSECTION A-14a (STA. 111+162.746) - ULTIMATE STAGE
SCALE 1:500

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

	DATE	SIGNATURE
DESIGNED	10/09/02	R. GO
CHECKED	10/14/02	S. GOSE
SUBMITTED	10/15/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
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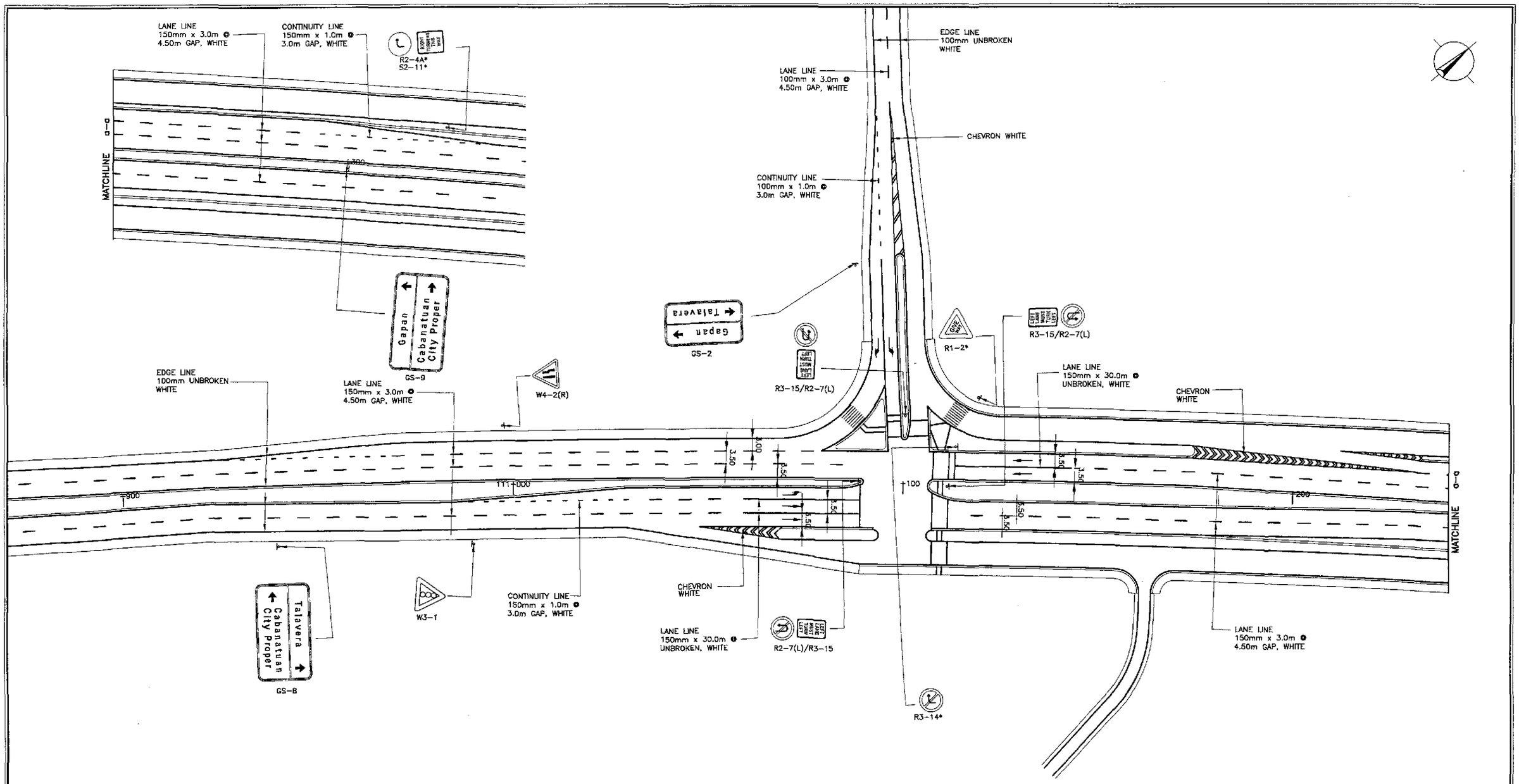
Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
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	1:500 FULL SIZE A1	INTERSECTION DETAIL PAVING AND GRADING PLAN INTERSECTION A-14&14a (ULTIMATE STAGE)	RI-02



TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT
INTERSECTION A-14 (STA. 111+100.000) - ULTIMATE STAGE

1 / RI-03 SCALE 1:500

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JAPAN INTERNATIONAL COOPERATION AGENCY

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

	DATE	SIGNATURE
DESIGNED	10/09/02	
CHECKED	10/16/02	
SUBMITTED	10/18/02	TEAM LEADER

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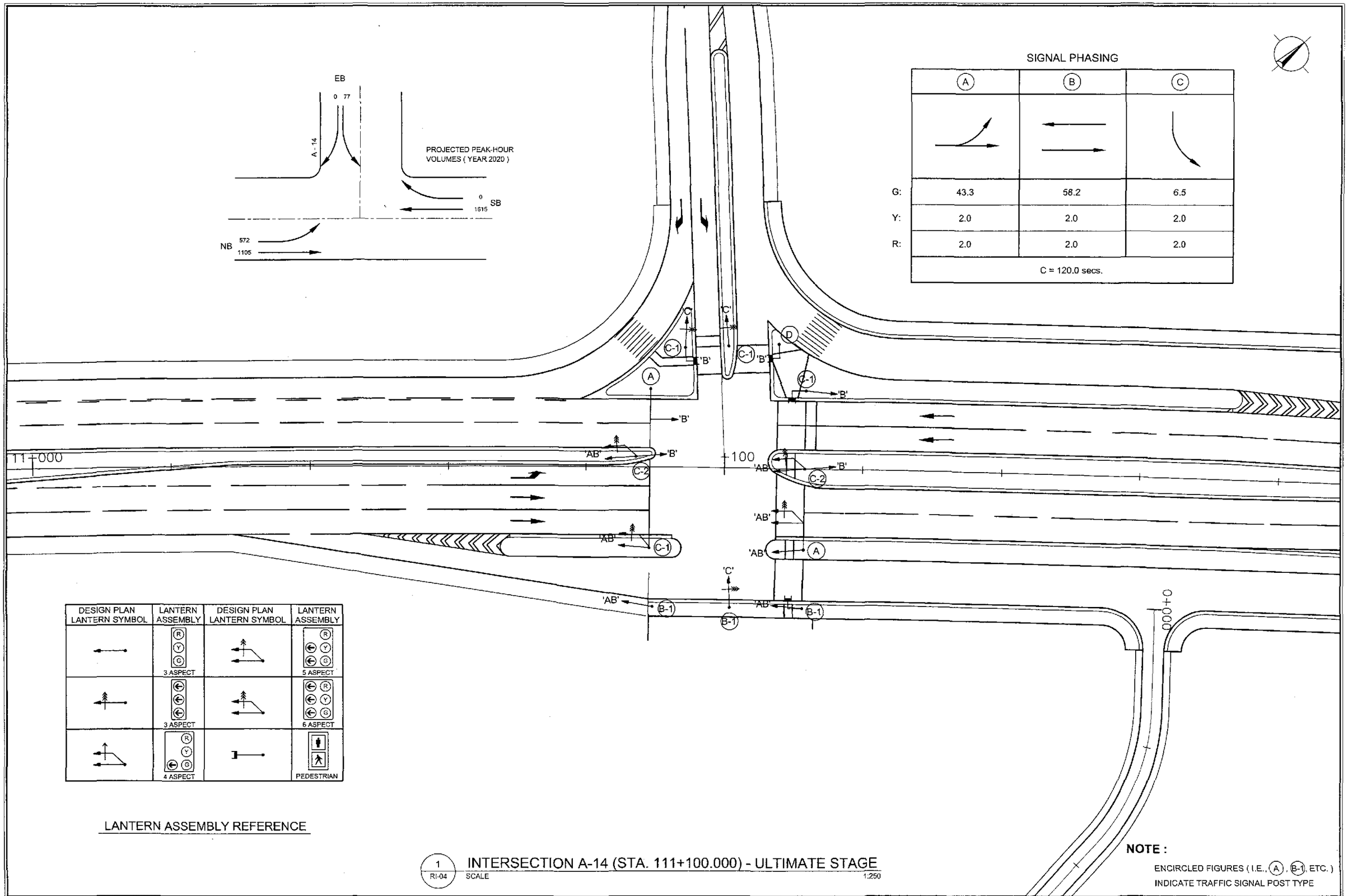
Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	1:500	TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT	RI-03
CABANATUAN BYPASS - CONTRACT PACKAGE II	FULL SIZE A1	INTERSECTION A-14 (ULTIMATE STAGE)	



1 / RI-04 INTERSECTION A-14 (STA. 111+100.000) - ULTIMATE STAGE

SCALE 1:250

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JAPAN INTERNATIONAL COOPERATION AGENCY

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

	DATE	SIGNATURE
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CHECKED	10/16/02	S. GOSE
SUBMITTED	10/18/02	M. KUCHI (TEAM LEADER)

REPUBLIC OF THE PHILIPPINES
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Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

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CABANATUAN BYPASS - CONTRACT PACKAGE II

SCALE : 1:250 FULL SIZE A1

SHEET CONTENTS :
TRAFFIC SIGNAL LIGHT LAYOUT
INTERSECTION A-14 (ULTIMATE STAGE)

SHEET NO. : RI-04