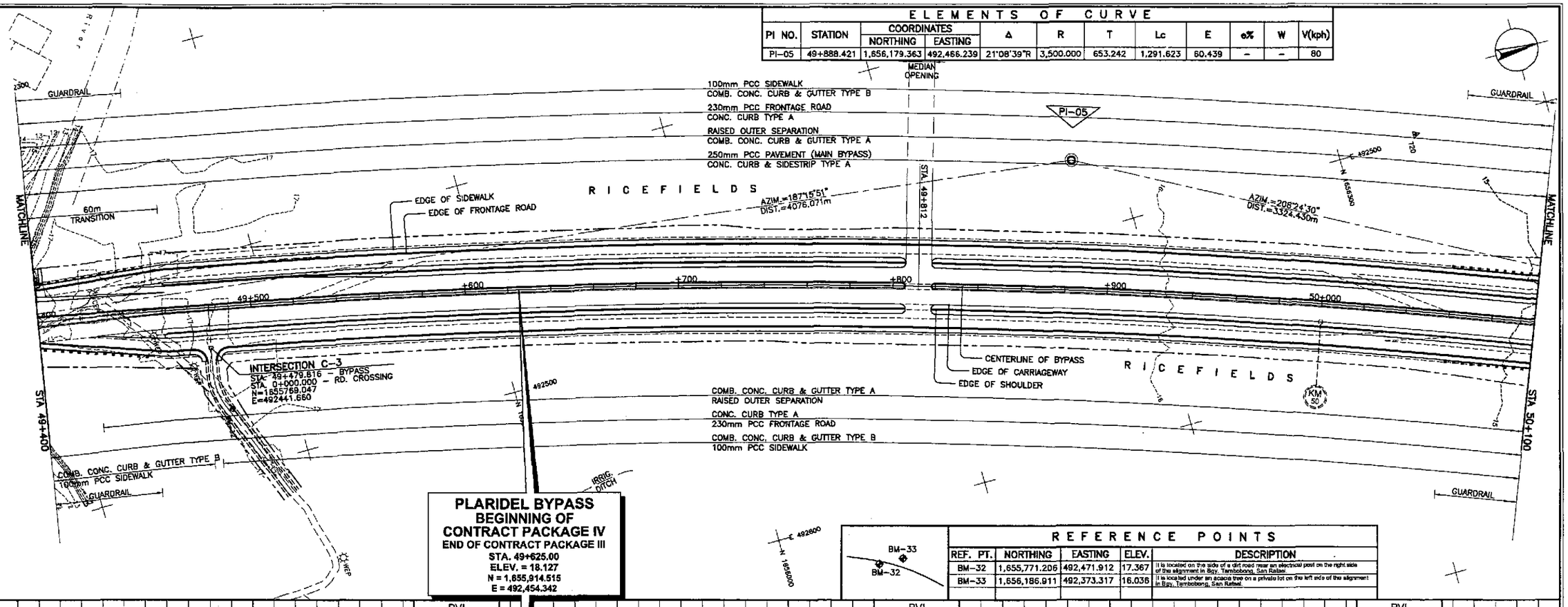
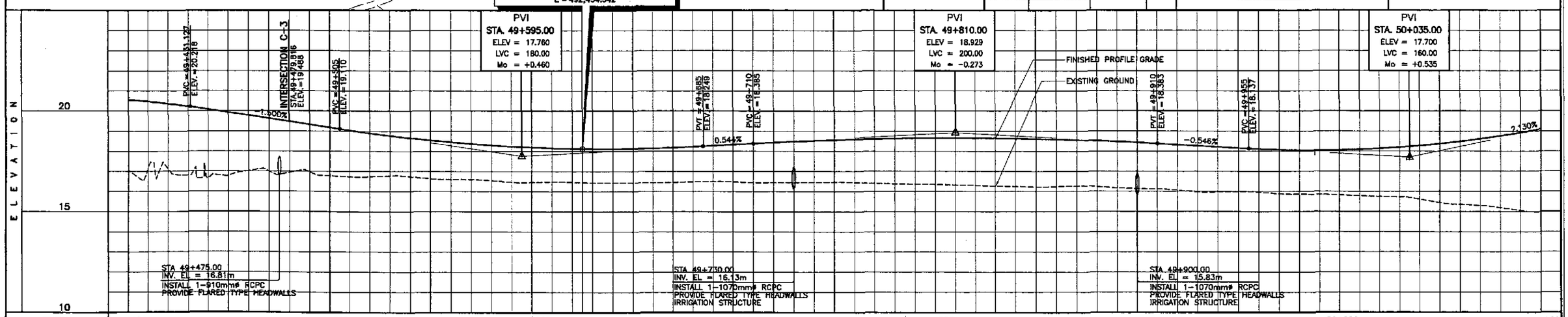
ELEMENTS OF CURVE											
PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-05	49+888.421	1,656,179.363	492,466.239	21°08'39"R	3,500.000	653.242	1,291.623	60.439	–	–	80



PLARIDEL BYPASS
BEGINNING OF
CONTRACT PACKAGE IV
END OF CONTRACT PACKAGE III
STA. 49+625.00
ELEV. = 18.127
N = 1,655,914.515
E = 492,454.342

REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-32	1,655,771.206	492,471.912	17.367	It is located on the side of a dirt road near an electrical post on the right side of the alignment in Bgy. Tambobong, San Rafael.
BM-33	1,656,186.911	492,373.317	16.036	It is located under an acacia tree on a private lot on the left side of the alignment in Bgy. Tambobong, San Rafael.



STATION	+400	49+500	+600	+700	+800	+900	50+000	+100
FINISHED PROFILE GRADE BYPASS	20.564, 20.369, 20.085, 19.785, 19.485, 19.185	18.898, 18.654, 18.457, 18.304, 18.197, 18.138, 18.127	18.119, 18.149, 18.223, 18.331, 18.437, 18.524, 18.589, 18.632	18.654, 18.654, 18.632, 18.588, 18.522, 18.435, 18.328, 18.219	18.112, 18.053, 18.061, 18.135, 18.277, 18.485, 18.781, 19.103			
EXISTING GROUND BYPASS	17.066, 17.120, 16.663, 17.023, 16.939, 16.779	16.737, 16.732, 16.597, 16.544, 18.453, 16.461, 16.446	16.422, 16.433, 16.473, 16.477, 16.432, 16.450, 16.445, 16.381	16.347, 16.301, 16.250, 16.241, 16.239, 16.139, 16.060, 15.966	15.956, 15.857, 15.821, 15.747, 15.612, 15.349, 15.192, 14.982			
HORIZONTAL CURVATURE			R = 3500					
VERTICAL CURVATURE	g=-1.500%	L=180 Mo=+0.460	g=0.544%	L=200 Mo=-0.273	g=-0.546%	L=160 Mo=+0.535		
SUPERELEVATION			NC					

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

	DATE	SIGNATURE
DESIGNED	9/28/02	A. ACACIO
CHECKED	9/30/02	S. GOSE
SUBMITTED	10/14/02	M. KINOSHITA 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 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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

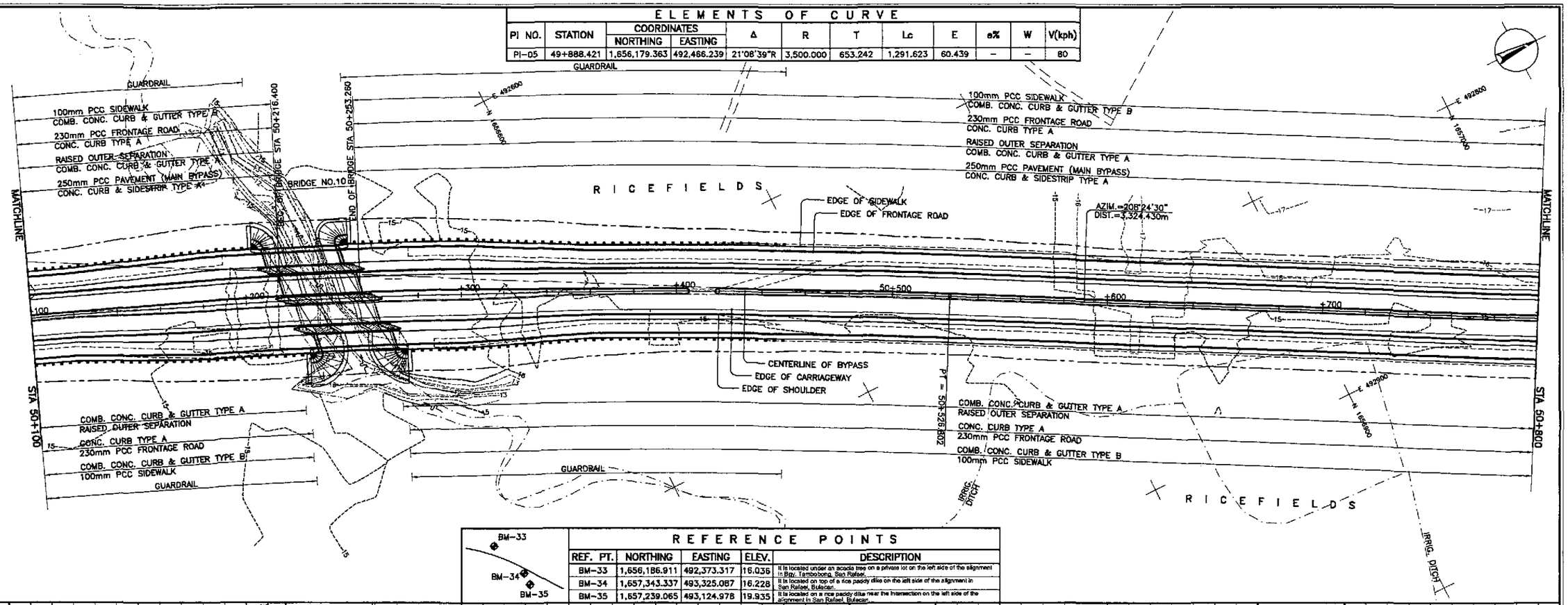
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 49+625 - STA. 50+100

SHEET NO. :
RP-01

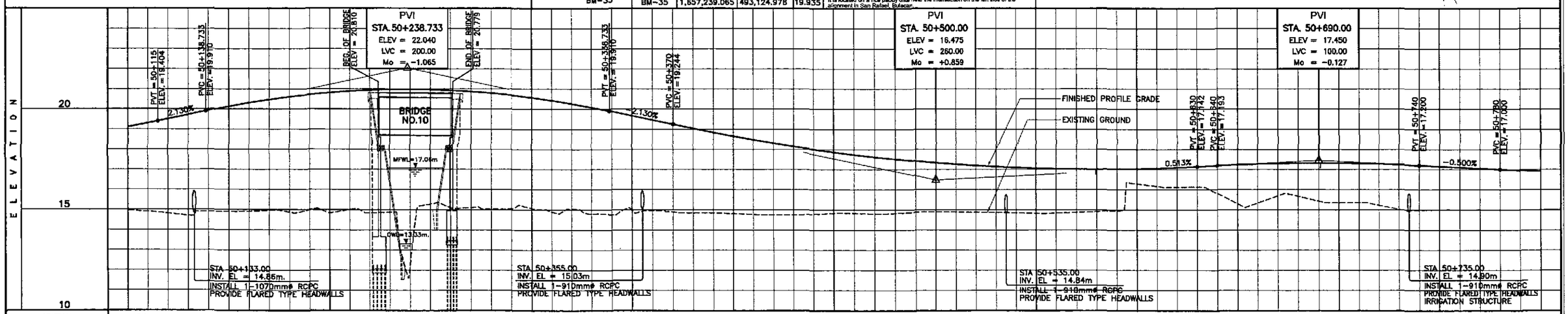
ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-05	49+888.421	1,656,179.363	492,466.239	21°08'39"R	3,500.000	653.242	1,291.623	60.439	–	–	80



REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-33	1,656,186.911	492,373.317	16.036	It is located under an acacia tree on a private lot on the left side of the alignment in Bgy. Tambobong, San Rafael.
BM-34	1,657,343.337	493,325.087	16.228	It is located on top of a rice paddy dike on the left side of the alignment in San Rafael, Bulacan.
BM-35	1,657,239.065	493,124.978	19.935	It is located on a rice paddy dike near the intersection on the left side of the alignment in San Rafael, Bulacan.



STATION	+100		+200		+300		+400		50+500		+600		+700		+800
FINISHED PROFILE GRADE BYPASS	19.103	19.510	19.936	20.314	20.607	20.815	20.937	20.974	20.926	20.793	20.575	20.271	19.883	19.457	19.036
EXISTING GROUND BYPASS	14.952	14.814	14.901	14.919	14.877	14.829	14.844	12.338	15.093	15.023	15.075	15.037	14.759	14.959	14.838

STATION	+800														
FINISHED PROFILE GRADE BYPASS	18.850	18.306	18.002	17.738	17.518	17.334	17.192	17.092	17.032	17.012	17.034	17.096	17.193	17.278	17.318
EXISTING GROUND BYPASS	14.805	14.751	14.782	14.831	14.825	14.894	14.875	14.851	14.835	14.915	16.293	16.123	15.808	15.334	15.668

STATION	+900														
FINISHED PROFILE GRADE BYPASS	17.319	17.280	17.200	17.100	17.000	16.931									
EXISTING GROUND BYPASS	15.343	15.227	14.976	15.007	14.997	15.003									

HORIZONTAL CURVATURE: R = 3500 | 50 + 526.802 | R=∞

VERTICAL CURVATURE: g=2.130% | L=200 Mo=-1.065 | g=-2.130% | L=260 Mo=+0.859 | g=0.513% | L=100 Mo=-0.127 | g=-0.500%

SUPERELEVATION: NC

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

	DATE	SIGNATURE
DESIGNED	9/20/02	R. ACACIO
CHECKED	9/30/02	S. GOSE
SUBMITTED	10/16/02	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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

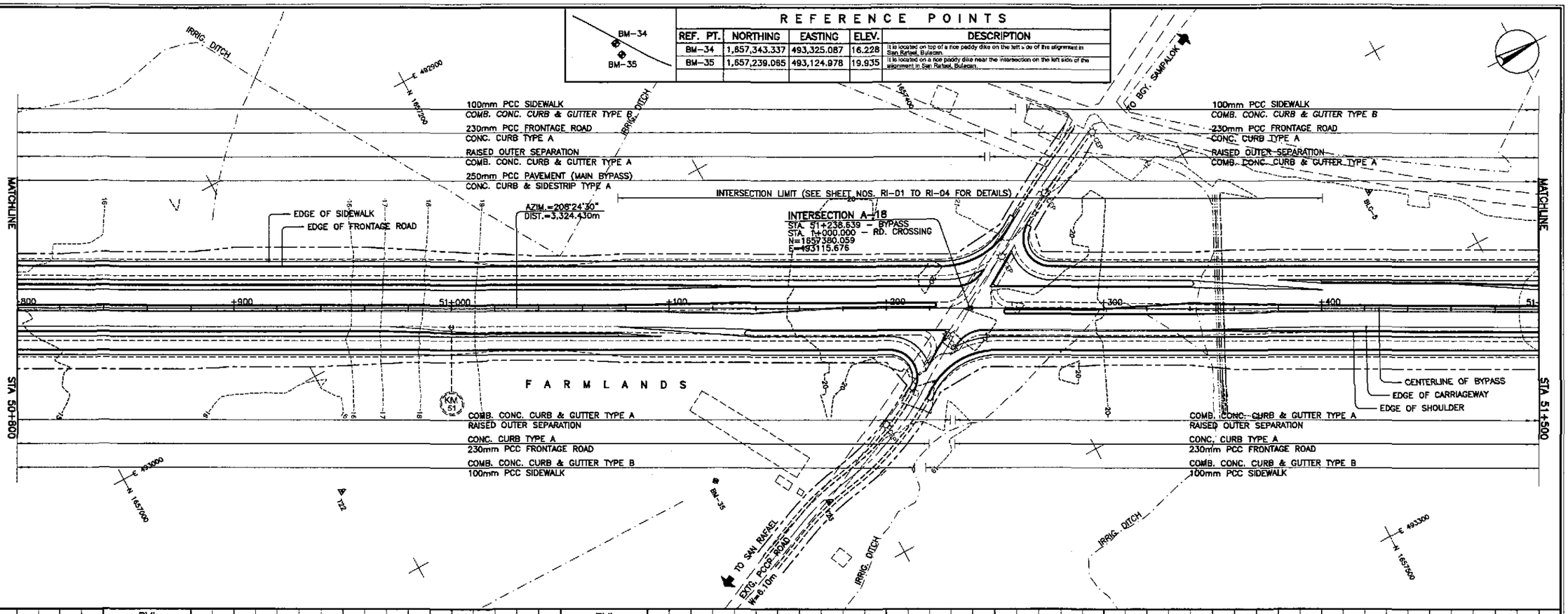
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

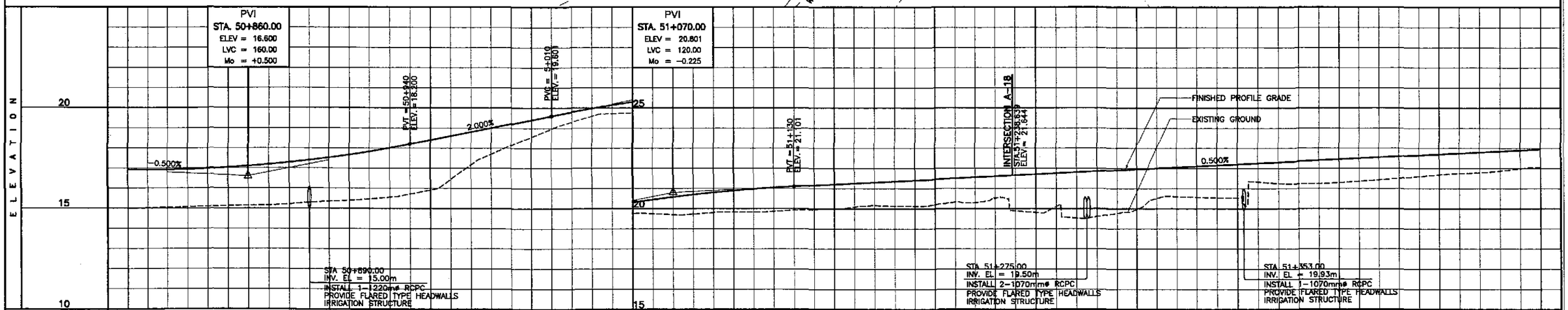
SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 50+100 - STA. 50+800

SHEET NO. :
RP-02

REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-34	1,857,343.337	493,325.087	16.228	It is located on top of a rice paddy dike on the left side of the alignment in San Rafael, Bulacan.
BM-35	1,857,239.065	493,124.978	19.935	It is located on a rice paddy dike near the intersection on the left side of the alignment in San Rafael, Bulacan.





STATION	+800					+900					51+000					+100					+200					+300					+400					51+500
FINISHED PROFILE GRADE	16.931	16.925	16.981	17.100	17.281	17.525	17.832	18.200	18.500	19.001	19.401	19.795	20.145	20.445	20.695	20.895	21.045	21.151	21.251	21.351	21.451	21.551	21.651	21.751	21.851	21.951	22.051	22.151	22.251	22.351	22.451	22.551	22.651	22.751	22.851	22.951
EXISTING GROUND BYPASS	15.003	15.046	15.098	15.143	15.217	15.352	15.474	15.716	16.442	17.698	18.556	19.296	19.722	19.742	19.727	18.830	19.865	19.956	20.089	20.131	20.192	20.287	19.886	20.104	19.604	19.969	20.598	20.543	21.324	21.229	21.291	21.431	21.594	21.738	21.873	22.055

HORIZONTAL CURVATURE: R=∞

VERTICAL CURVATURE: L=160, Mo=+0.500 ; g=2.000% ; L=120, Mo=-0.225 ; g=0.500%

SUPERELEVATION: NC

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

	DATE	SIGNATURE
DESIGNED	9/30/02	A. ACACIO
CHECKED	9/30/02	S. SOSE
SUBMITTED	10/16/02	M. MAGSAL, 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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

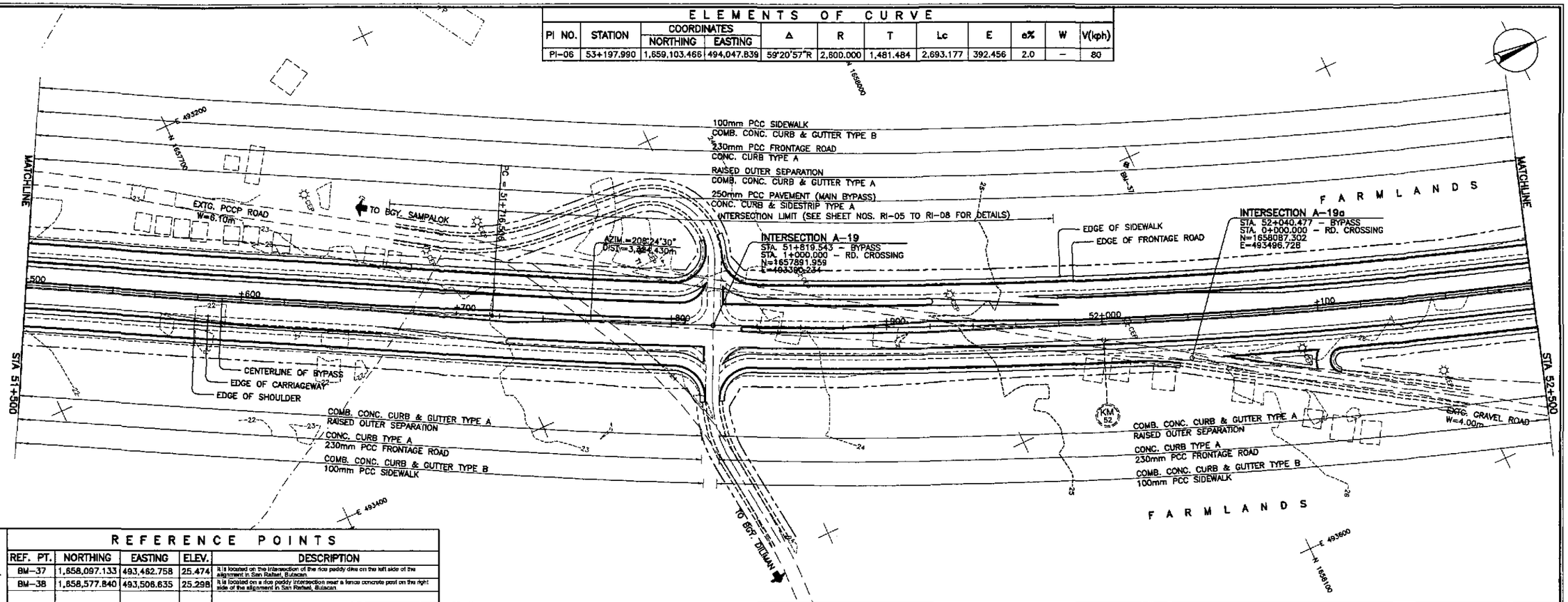
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 50+800 - STA. 51+500

SHEET NO. :
RP-03

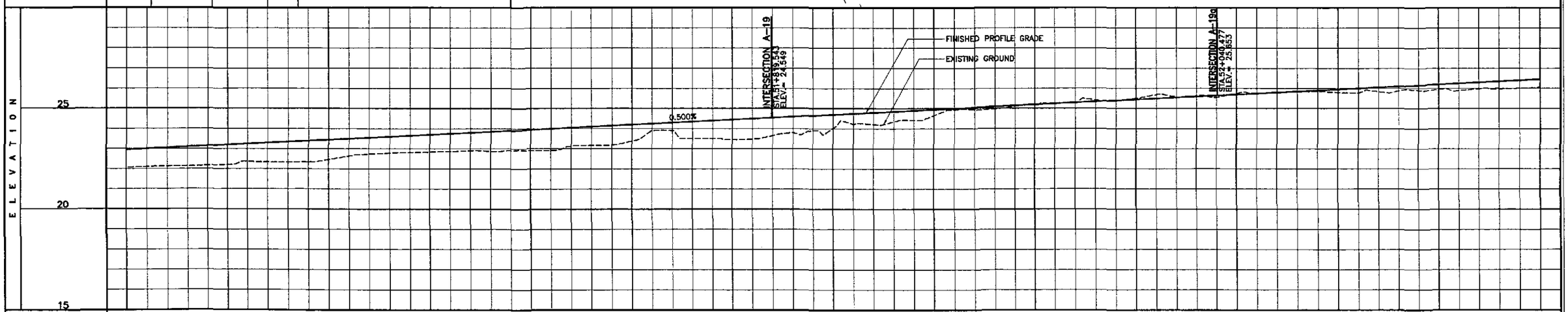
ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-06	53+197.990	1,659,103.466	494,047.839	59°20'57"R	2,800.000	1,481.484	2,693.177	392.456	2.0	–	80



REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-37	1,658,097.133	493,462.758	25.474	It is located on the intersection of the rice paddy dike on the left side of the alignment in San Rafael, Bulacan.
BM-38	1,658,577.840	493,508.635	25.298	It is located on a rice paddy intersection near a fence concrete post on the right side of the alignment in San Rafael, Bulacan.



STATION	51+500					+600					+700					+800					+900					52+000					+100					+200
FINISHED PROFILE GRADE	22.951	23.051	23.151	23.251	23.351	23.451	23.551	23.651	23.751	23.851	23.951	24.051	24.151	24.251	24.351	24.451	24.551	24.651	24.751	24.851	24.951	25.051	25.151	25.251	25.351	25.451	25.551	25.651	25.751	25.851	25.951	26.051	26.151	26.251	26.351	26.451
EXISTING GROUND BYPASS	22.055	22.119	22.162	22.355	22.333	22.454	22.732	22.816	22.869	22.875	22.915	23.129	23.182	23.898	23.508	23.447	23.655	23.915	24.231	24.343	24.660	24.944	25.109	25.239	25.417	25.506	25.575	25.556	25.742	25.835	25.792	25.840	25.904	25.894	25.966	26.058

HORIZONTAL CURVATURE: R=∞ — 51 + 716.506 — R = 2600

VERTICAL CURVATURE: g=0.500%

SUPERELEVATION: NC — 51+669.839 — S=0.005 — 51+725.839 — e=+2.0% — e=-2.0%

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

	DATE	SIGNATURE
DESIGNED	9/28/02	A. ALIANCIO
CHECKED	11/30/02	S. GOSE
SUBMITTED	10/16/02	M. M. MOGAL, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

PWHL – 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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

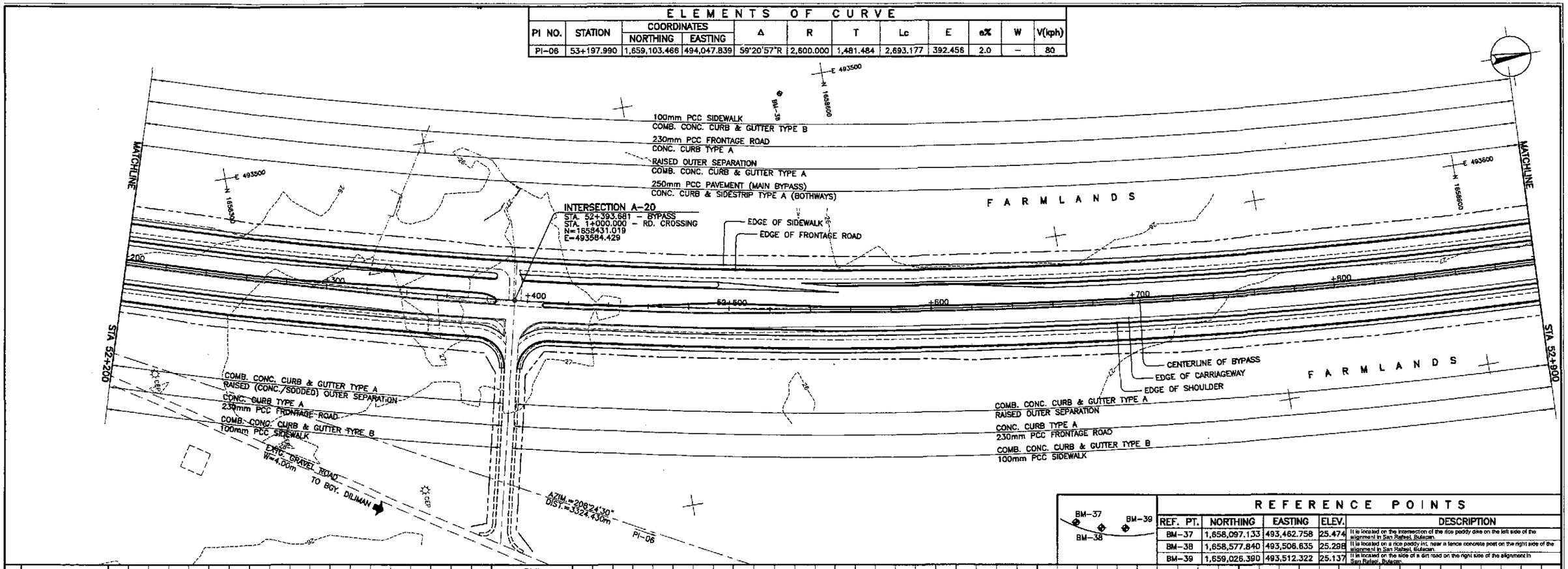
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 51+500 - 52+200

SHEET NO. :
RP-04

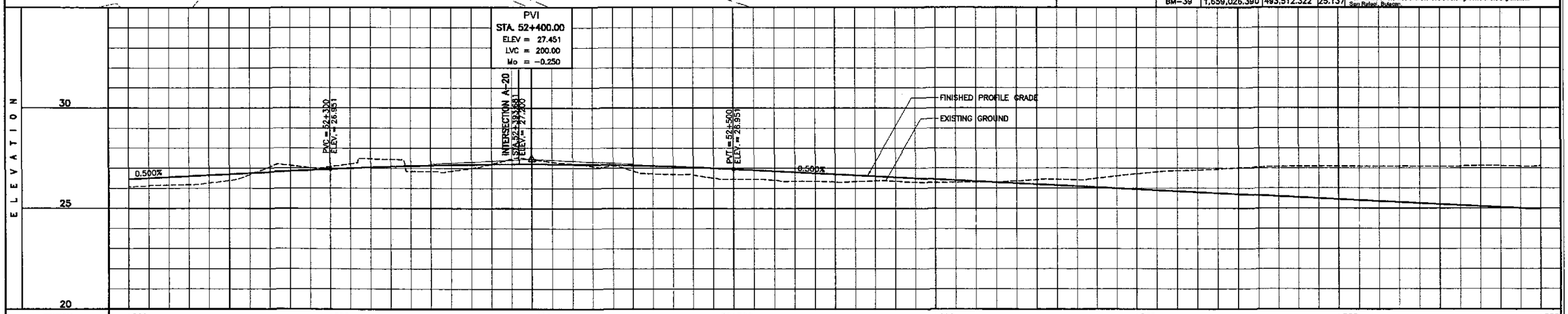
ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-06	53+197.990	1,659,103.466	494,047.839	59°20'57"R	2,600.000	1,481.484	2,693.177	392.456	2.0	–	80



REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-37	1,658,097.133	493,462.758	25.474	It is located on the intersection of the rice paddy dike on the left side of the alignment in San Rafael, Bulacan.
BM-38	1,658,577.840	493,508.635	25.298	It is located on a rice paddy int. near a fence concrete post on the right side of the alignment in San Rafael, Bulacan.
BM-39	1,659,026.390	493,512.322	25.137	It is located on the side of a dirt road on the right side of the alignment in San Rafael, Bulacan.



STATION	+200		+300		+400		52+500		+600		+700		+800		+900
FINISHED PROFILE GRADE	26.451	26.551	26.651	26.751	26.851	26.951	27.041	27.111	27.161	27.191	27.201	27.191	27.161	27.111	27.041
EXISTING GROUND BYPASS	26.058	26.160	26.259	26.678	27.129	27.089	27.464	26.839	26.851	27.204	27.433	27.219	27.124	26.718	26.660

STATION	+600																																						
FINISHED PROFILE GRADE	26.951	26.851	26.751	26.651	26.551	26.451	26.351	26.251	26.151	26.051	25.951	25.851	25.751	25.651	25.551	25.451	25.351	25.251	25.151	25.051	24.951
EXISTING GROUND BYPASS	26.450	26.410	26.346	26.335	26.353	26.282	26.301	26.386	26.440	26.495	26.718	26.869	26.949	27.054	27.093	27.095	27.089	27.086	27.094	27.113	27.105

HORIZONTAL CURVATURE: R = 2600

VERTICAL CURVATURE: L=200, Mo=–0.250, g=–0.500%

SUPERELEVATION: e=+2.0%, e=–2.0%

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

	DATE	SIGNATURE
DESIGNED	07/23/02	ACACIO
CHECKED	7/30/02	S. GOSE
SUBMITTED	10/16/02	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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

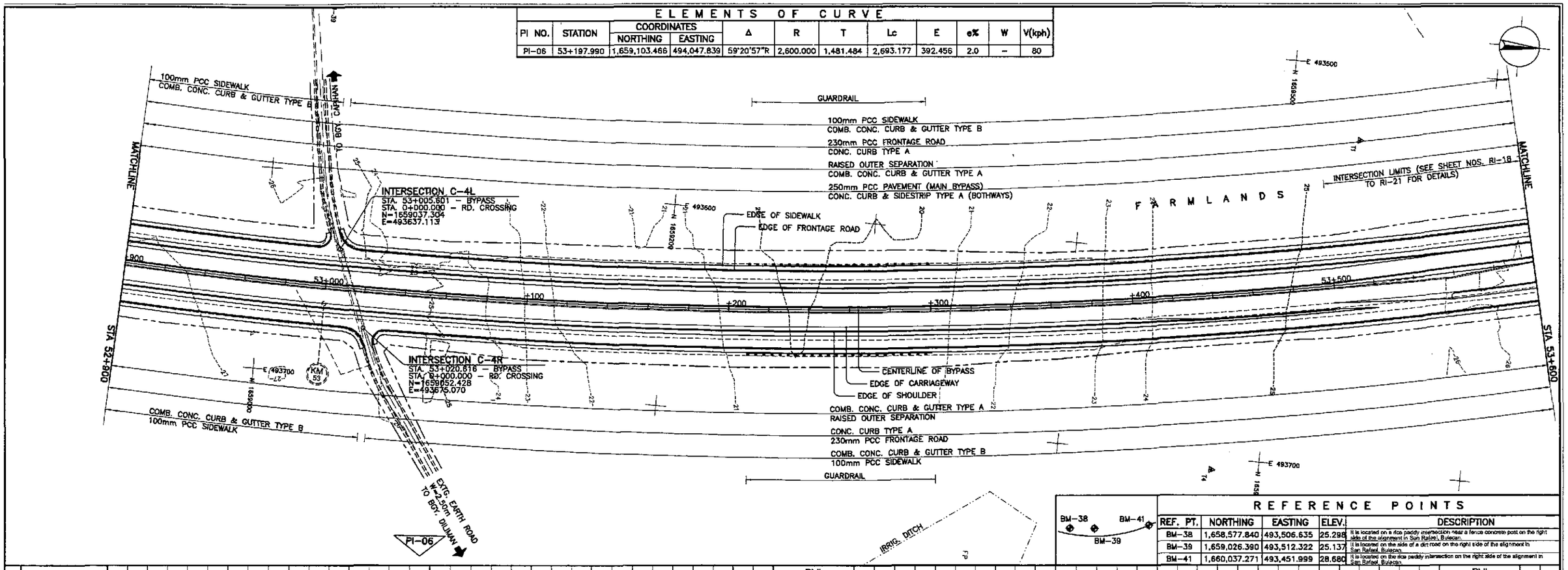
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 52+200 - STA. 52+900

SHEET NO. :
RP-05

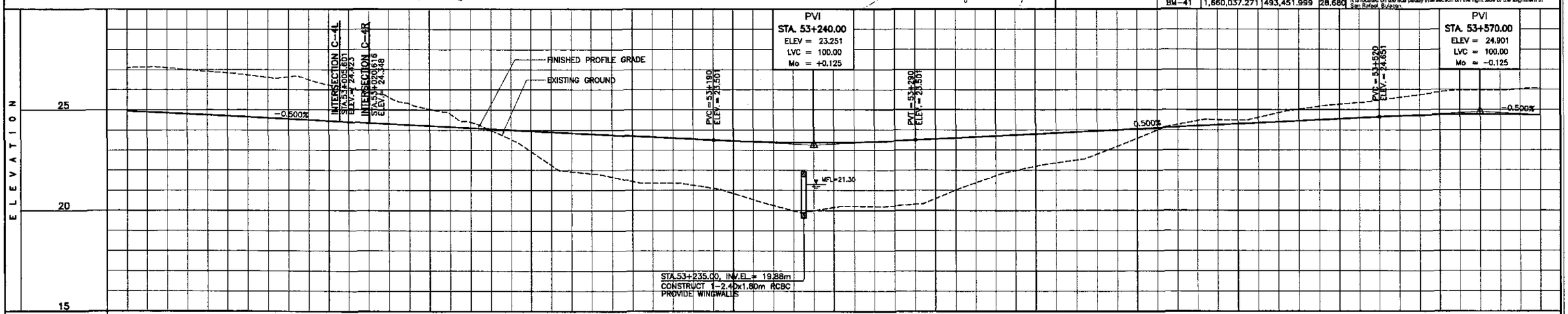
ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-06	53+197.990	1,659,103.466	494,047.839	59°20'57"R	2,600.000	1,481.484	2,693.177	392.456	2.0	–	80



REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-38	1,658,577.840	493,506.635	25.298	It is located on a rice paddy intersection near a fence concrete post on the right side of the alignment in San Rafael, Bulacan.
BM-39	1,659,026.390	493,512.322	25.137	It is located on the side of a dirt road on the right side of the alignment in San Rafael, Bulacan.
BM-41	1,660,037.271	493,451.999	28.680	It is located on the rice paddy intersection on the right side of the alignment in San Rafael, Bulacan.



STATION	+900					53+000					+100					+200					+300					+400					53+500					+600
FINISHED PROFILE GRADE	24.951	24.851	24.751	24.651	24.551	24.451	24.351	24.251	24.151	24.051	23.951	23.851	23.751	23.651	23.551	23.456	23.396	23.376	23.396	23.458	23.551	23.651	23.751	23.851	23.951	24.051	24.151	24.251	24.351	24.451	24.551	24.651	24.731	24.771	24.771	24.731
EXISTING GROUND BYPASS	27.105	27.098	26.919	26.735	26.632	26.229	25.861	25.307	24.810	23.987	22.920	21.926	21.657	21.363	21.252	20.844	20.252	19.993	20.210	20.234	20.591	21.377	21.982	22.358	22.796	23.589	24.287	24.504	24.615	25.021	25.274	25.475	25.748	25.953	25.978	26.087

HORIZONTAL CURVATURE: R = 2600

VERTICAL CURVATURE: g=-0.500% | L=100, Mo=+0.125 | g=0.500% | L=100, Mo=-0.125

SUPERELEVATION: e=+2.0% / e=-2.0%

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

	DATE	SIGNATURE
DESIGNED	9/28/02	R. ACACIO
CHECKED	9/30/02	S. SOGOSE
SUBMITTED	10/4/02	M. KUROCHI (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, Project Director	JOSEFINA M. ALAGAR, Chief, Highways Division	GILBERTO S. REYES, DIC, 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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

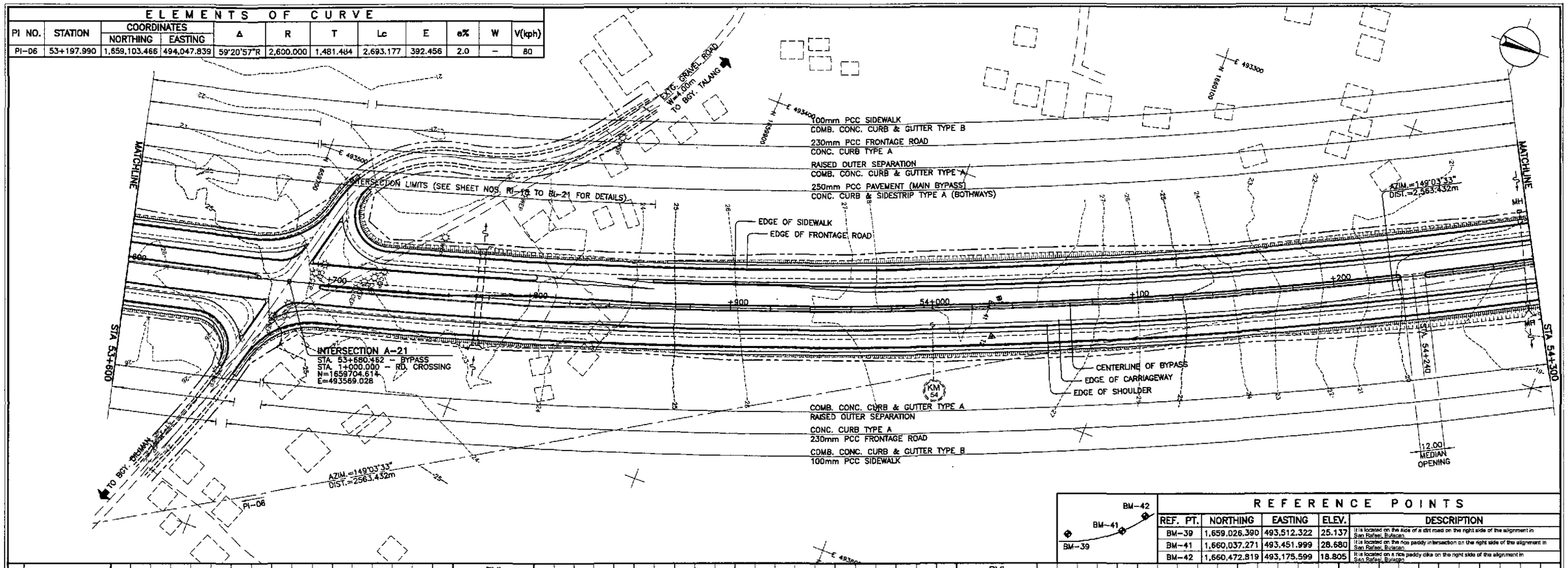
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 52+900 - STA. 53+600

SHEET NO. :
RP-06

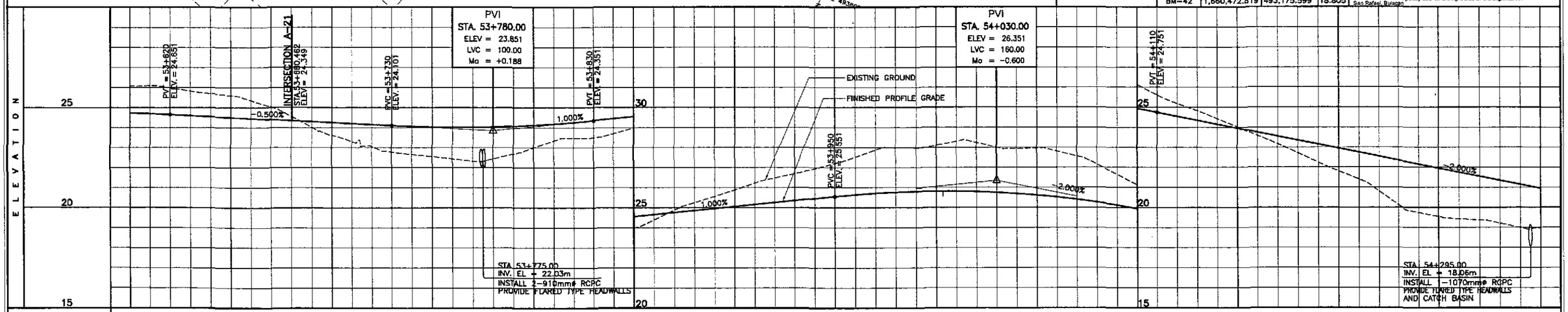
ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-06	53+197.990	1,659,103.466	494,047.839	59°20'57"R	2,600.000	1,481.484	2,693.177	392.456	2.0	–	80



REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-39	1,659,026.390	493,512.322	25.137	It is located on the side of a dirt road on the right side of the alignment in San Rafael, Bulacan
BM-41	1,660,037.271	493,451.999	28.680	It is located on the rice paddy intersection on the right side of the alignment in San Rafael, Bulacan
BM-42	1,660,472.819	493,175.599	18.805	It is located on a rice paddy dike on the right side of the alignment in San Rafael, Bulacan



STATION	+600		+700		+800		+900		54+000		+100		+200		+300
FINISHED PROFILE GRADE BYPASS	24.731	24.651	24.551	24.451	24.351	24.251	24.151	24.058	24.018	24.038	24.118	24.258	24.451	24.651	24.851
EXISTING GROUND BYPASS	26.067	25.989	25.703	25.355	24.558	23.811	23.067	22.684	22.440	22.434	22.991	23.474	23.697	24.386	25.246

STATION	25.051	25.251	25.451	25.642	25.767	25.817	25.792	25.682	25.517	25.287	24.942	24.551	24.151	23.751	23.351
FINISHED PROFILE GRADE BYPASS	25.051	25.251	25.451	25.642	25.767	25.817	25.792	25.682	25.517	25.287	24.942	24.551	24.151	23.751	23.351
EXISTING GROUND BYPASS	25.882	26.475	26.938	27.521	27.986	28.104	28.238	27.941	27.812	27.148	26.128	25.193	24.430	23.586	22.717

STATION	22.951	22.551	22.151	21.751	21.351	20.951
FINISHED PROFILE GRADE BYPASS	22.951	22.551	22.151	21.751	21.351	20.951
EXISTING GROUND BYPASS	21.892	20.810	19.736	19.430	19.213	18.988

HORIZONTAL CURVATURE: R = 2600

VERTICAL CURVATURE: g=-0.500% | L=100 Mo=+0.188 | g=1.000% | L=160 Mo=-0.600 | g=-2.000%

SUPERELEVATION: e=+2.0% | e=-2.0% | e=+2.0% | e=-2.0%

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KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/20/02	A. ACACIO
CHECKED	9/30/02	S. GOSE
SUBMITTED	10/16/02	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	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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

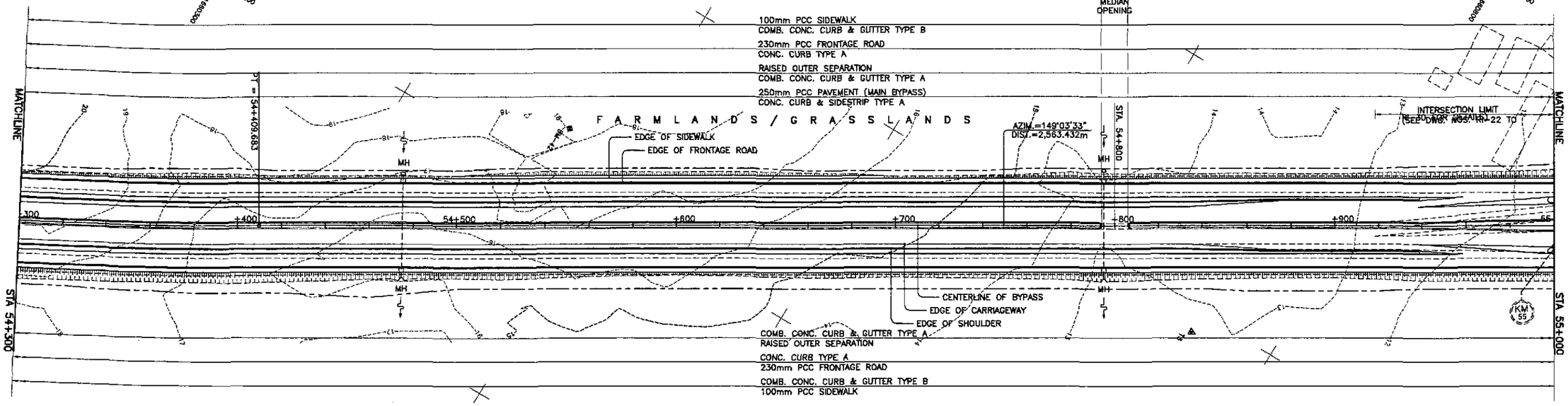
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 53+600 - 54+300

SHEET NO. :
RP-07

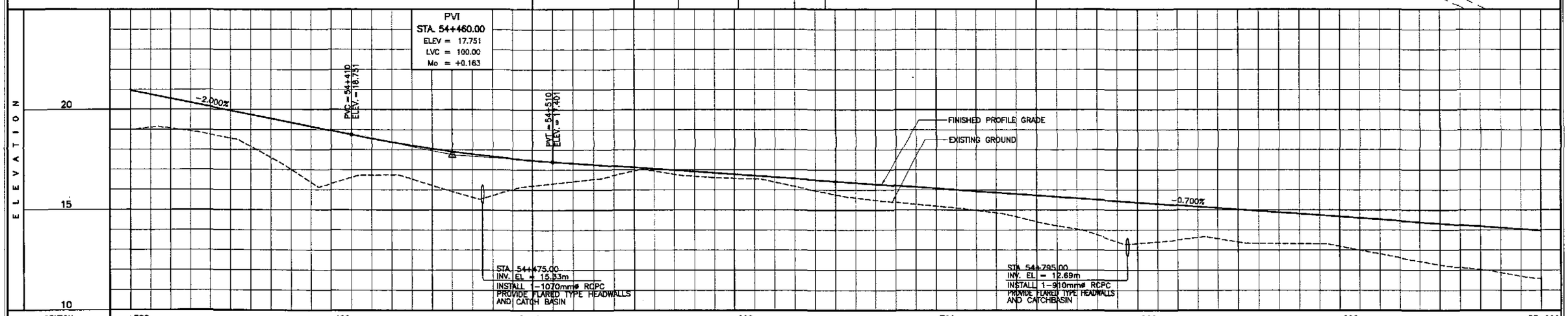
ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	W	V(kph)
PI-06	53+197.990	1,659,103.466	494,047.839	59°20'57"R	2,600.000	1,481.484	2,693.177	392.456	2.0	–	80



REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-41	1,660,037.271	493,451.999	28.680	It is located on the rice paddy intersection on the right side of the alignment in San Rafael, Bulacan.
BM-42	1,660,472.819	493,175.599	18.805	It is located on a rice paddy dike on the right side of the alignment in San Rafael, Bulacan.



STATION	+300		+400		54+500		+600		+700		+800		+900		55+000
FINISHED PROFILE GRADE BYPASS	20.951	20.551	20.151	19.751	19.351	18.951	18.557	18.209	17.913	17.669	17.477	17.331	17.191	17.051	16.911
EXISTING GROUND BYPASS	18.988	19.053	18.760	18.155	17.004	16.310	16.723	16.531	15.920	15.722	16.206	16.420	16.715	16.929	16.889

STATION	55+000														
FINISHED PROFILE GRADE BYPASS	16.771	16.631	16.491	16.351	16.211	16.071	15.931	15.791	15.651	15.511	15.371	15.231	15.091	14.951	14.811
EXISTING GROUND BYPASS	16.561	16.384	15.961	15.604	15.377	15.183	14.981	14.655	14.213	13.759	13.327	13.506	13.563	13.327	13.314

STATION	55+000														
FINISHED PROFILE GRADE BYPASS	14.671	14.531	14.391	14.251	14.111	13.971									
EXISTING GROUND BYPASS	13.183	12.810	12.440	12.134	11.878	11.573									

HORIZONTAL CURVATURE: 54 + 409.683; R = 2600; R=∞

VERTICAL CURVATURE: g=-2.000%; L=100; Mo=+0.163; g=-0.700%

SUPERELEVATION: S=0.005; 54+400.350; 54+456.350; NC

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

	DATE	SIGNATURE
DESIGNED	9/28/02	M. ACACIO
CHECKED	9/30/02	S. LOSE
SUBMITTED	10/1/02	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. BONGAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

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PLARIDEL BYPASS - CONTRACT PACKAGE IV

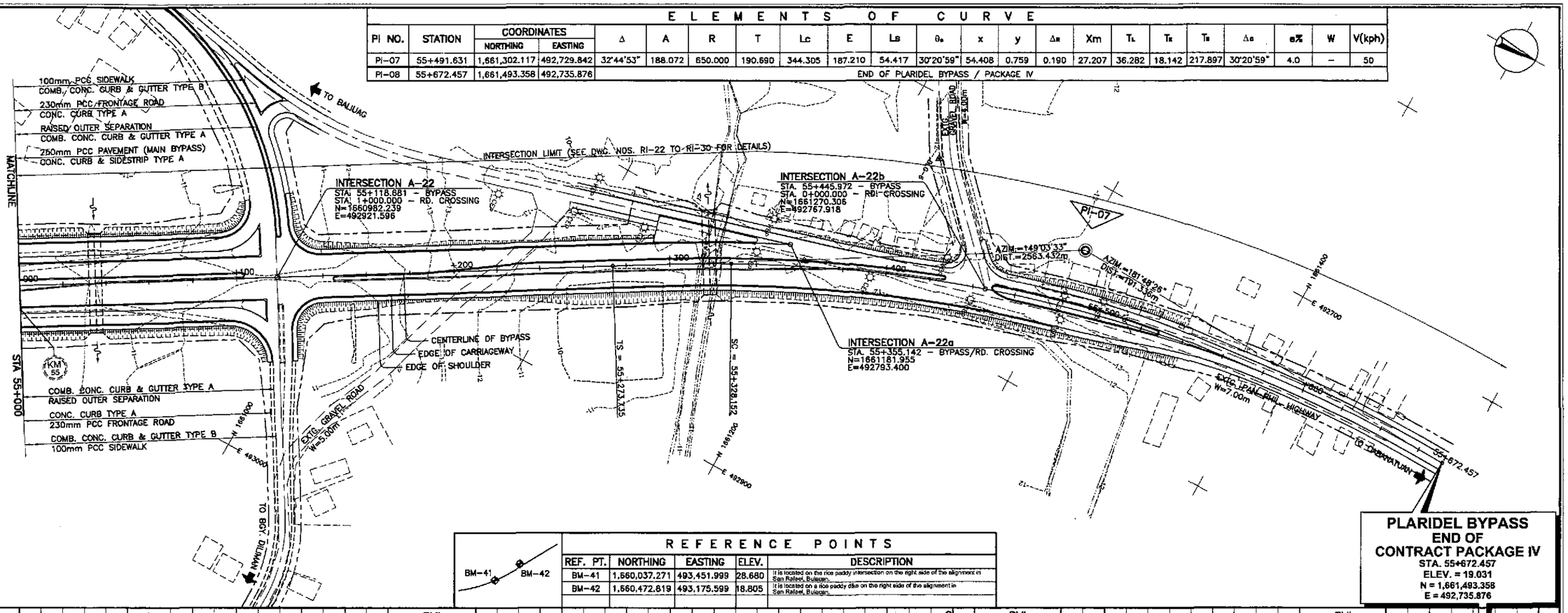
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
ALONG BYPASS (ULTIMATE STAGE)
STA. 54+300 - STA. 55+000

SHEET NO. :
RP-08

ELEMENTS OF CURVE

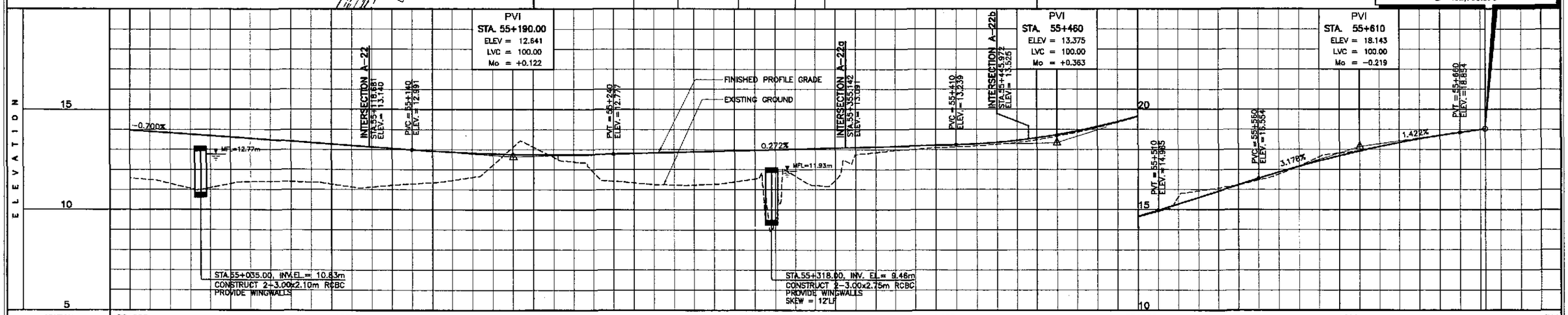
PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	A	R	T	Lc	E	Ls	θs	x	y	Δs	Xm	TL	TE	TS	Δc	e%	W	V(kph)
PI-07	55+491.631	1,661,302.117	492,729.842	32°44'53"	188.072	650.000	190.690	344.305	187.210	54.417	30°20'59"	54.408	0.759	0.190	27.207	36.282	18.142	217.897	30°20'59"	4.0	–	50
PI-08	55+672.457	1,661,493.358	492,735.876	END OF PLARIDEL BYPASS / PACKAGE IV																		



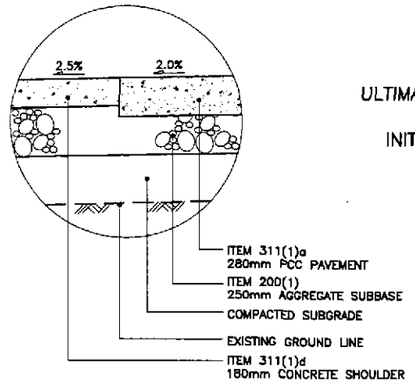
REFERENCE POINTS

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-41	1,660,037.271	493,451.999	28.680	It is located on the rice paddy intersection on the right side of the alignment in San Rafael, Bulacan.
BM-42	1,660,472.819	493,175.599	18.805	It is located on a rice paddy dike on the right side of the alignment in San Rafael, Bulacan.

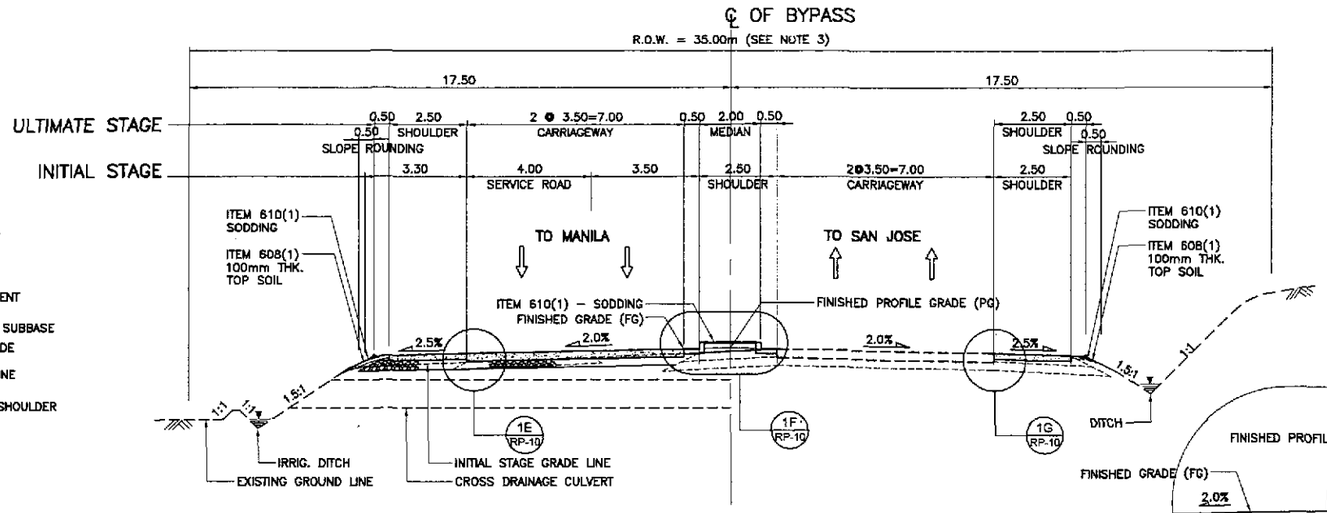
PLARIDEL BYPASS
END OF
CONTRACT PACKAGE IV
STA. 55+672.457
ELEV. = 19.031
N = 1,661,493.358
E = 492,735.876



| STATION | 55+000 | | | | | | | | | | | | | | | | | |



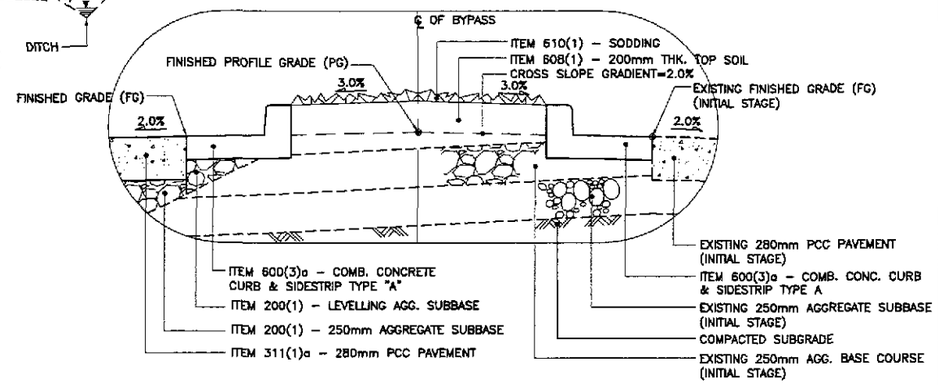
1E RP-10 DETAIL
SCALE 1:20



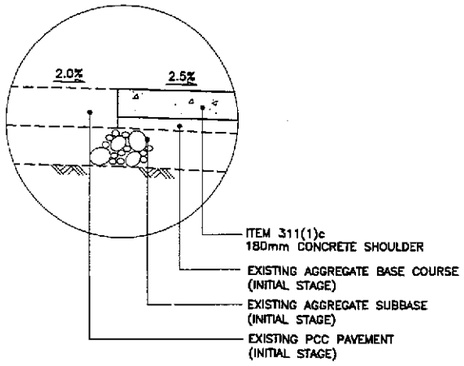
1B RP-10 NORMAL SECTION - ULTIMATE STAGE
SCALE 1:100

NOTES:

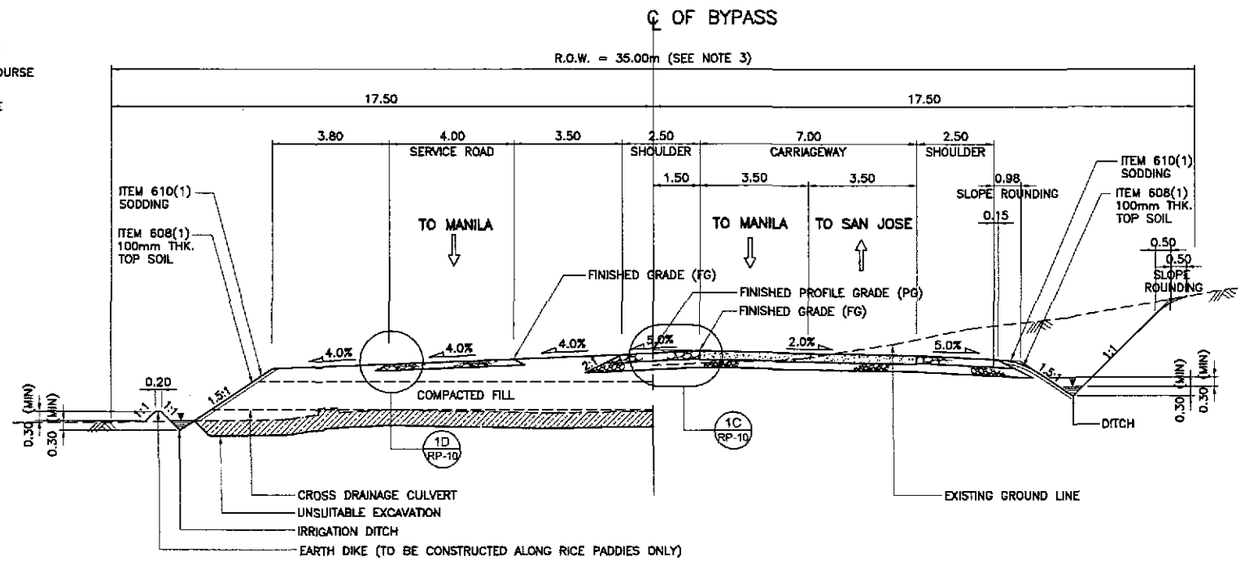
1. FINISHED PROFILE GRADE (PG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NOS. RG-04 TO RG-07.
3. ROAD RIGHT-OF-WAY (R.O.W.) WIDTH SHALL BE VARIED DUE TO HORIZONTAL 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-07.
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.

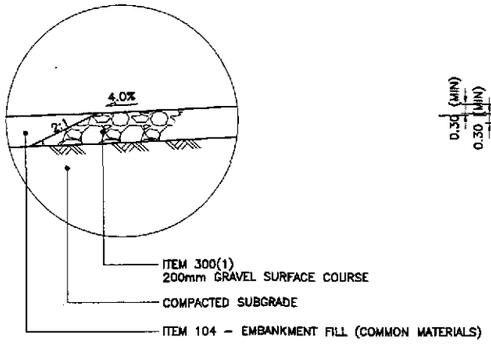


1F RP-10 DETAIL
SCALE 1:20



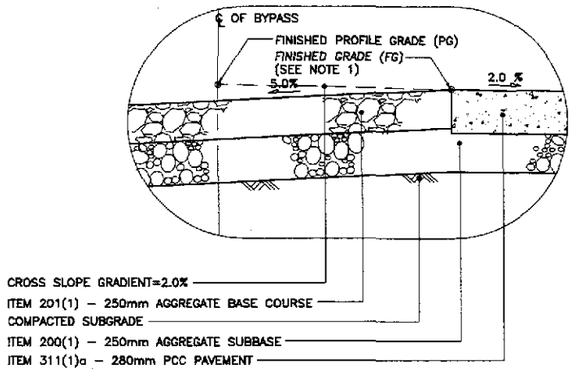
1G RP-10 DETAIL
SCALE 1:20





1D RP-10 DETAIL
SCALE 1:20

1A RP-10 NORMAL SECTION - INITIAL STAGE
SCALE 1:100



1C RP-10 DETAIL
SCALE 1:20

1 RP-10 TYPICAL ROADWAY SECTIONS - WITHOUT FRONTAGE ROAD
SCALE 1:100

		DATE	SIGNATURE
JICA JAPAN INTERNATIONAL COOPERATION AGENCY	DESIGNED	9/28/02	ACACIO
KEI KATAHIRA & ENGINEERS INTERNATIONAL / YEC YACHIYO ENGINEERING CO., LTD.	CHECKED	9/30/02	S. GOSE
	SUBMITTED	10/14/02	M. KIUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

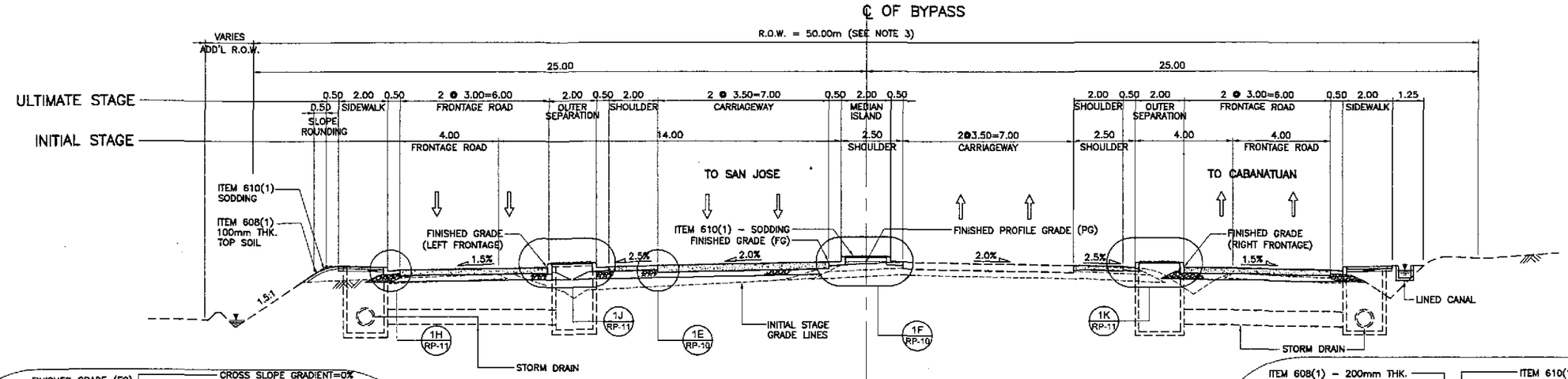
PUHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director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

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

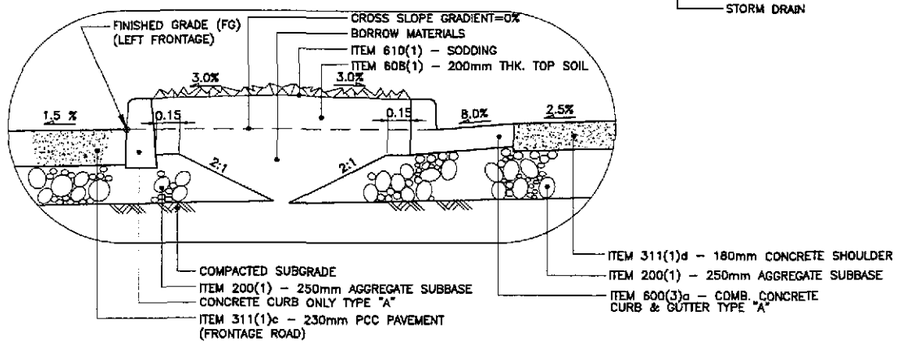
SCALE : AS SHOWN
FULL SIZE A1

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

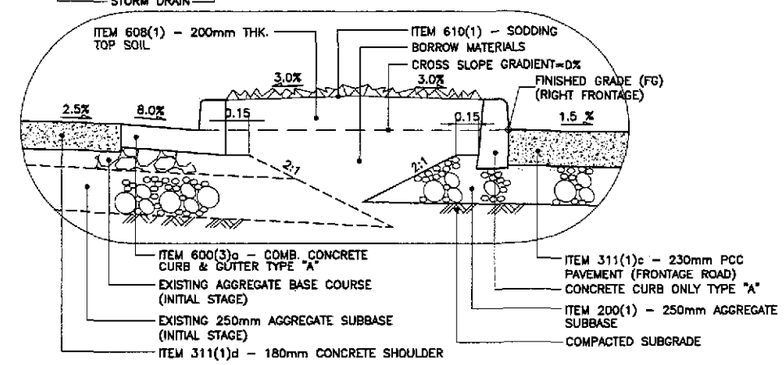
SHEET NO. : RP-10



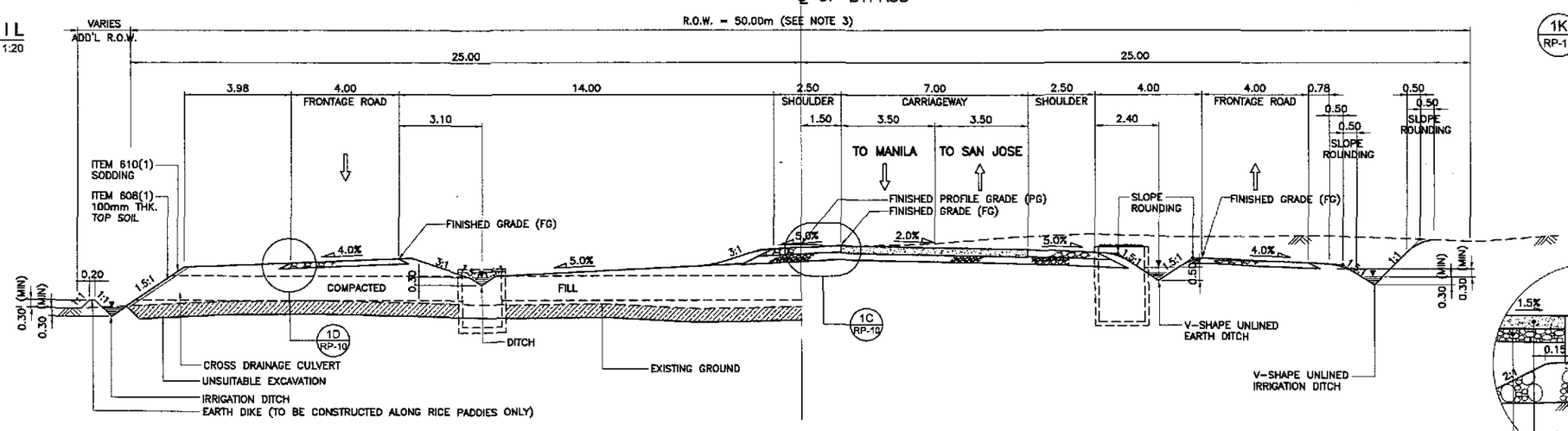
1B RP-11 NORMAL SECTION - ULTIMATE STAGE
SCALE 1:100



1J RP-11 DETAIL
SCALE 1:20



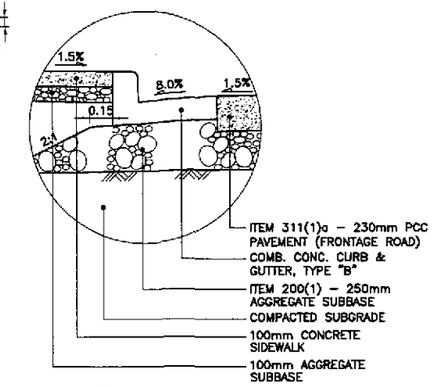
1K RP-11 DETAIL
SCALE 1:20



EMBANKMENT SECTION

CUT SECTION

1A RP-11 NORMAL SECTION - INITIAL STAGE
SCALE 1:100



1H RP-11 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. RG–04 TO RG–07.
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–07.
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-11 TYPICAL ROADWAY SECTIONS - WITH FRONTAGE ROAD
SCALE 1:100

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

	DATE	SIGNATURE
DESIGNED	9/29/02	A. ACACIO
CHECKED	9/30/02	S. JOSE
SUBMITTED	10/2/02	M. KUCHAI, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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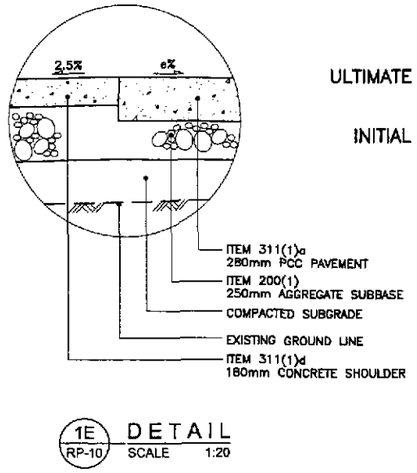
PLARIDEL BYPASS - CONTRACT PACKAGE IV

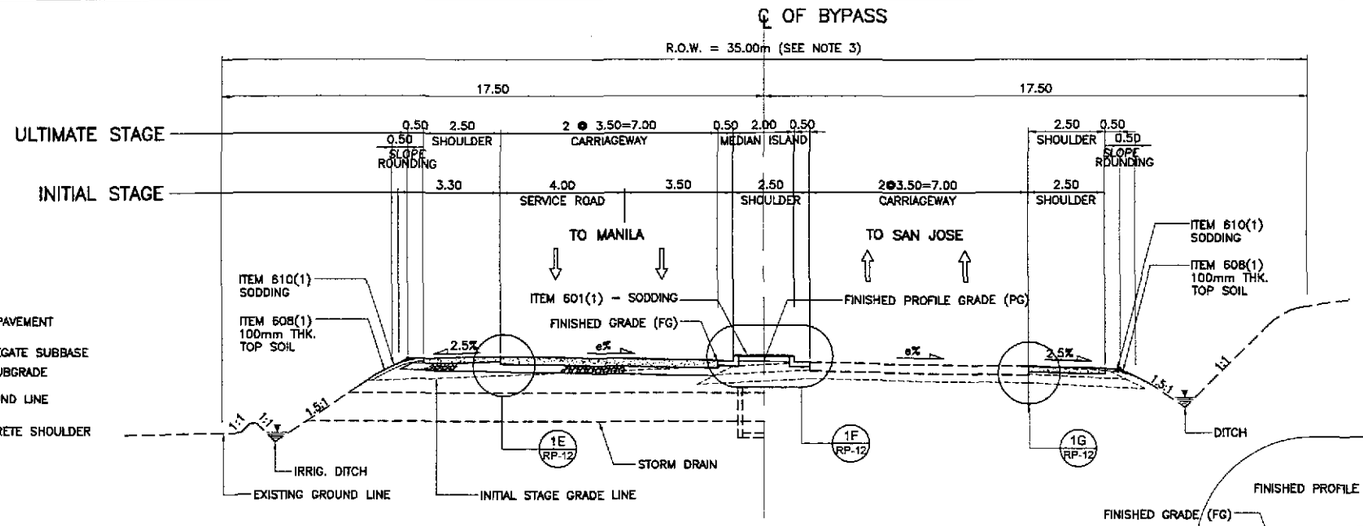
SCALE : AS SHOWN FULL SIZE A1

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

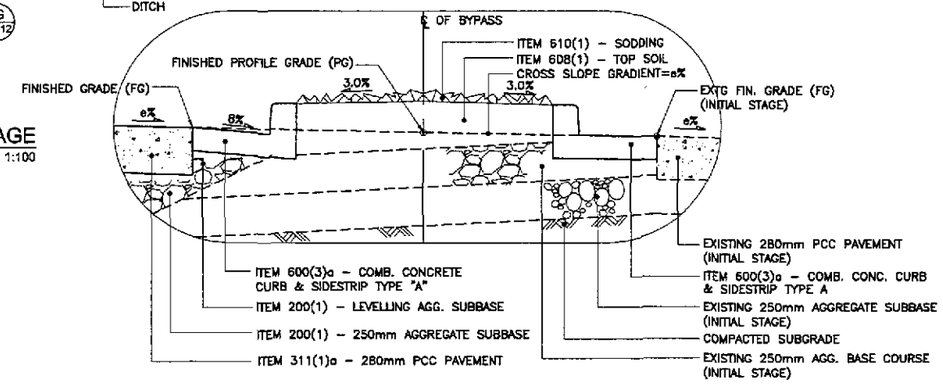
SHEET NO. : RP-11



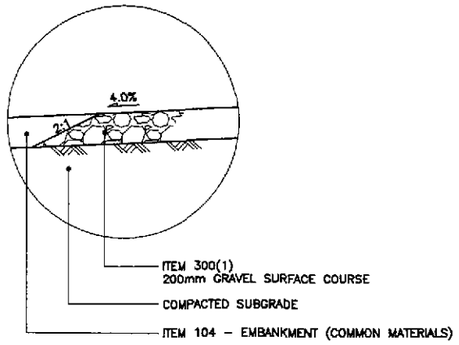
1E RP-10 DETAIL
SCALE 1:20



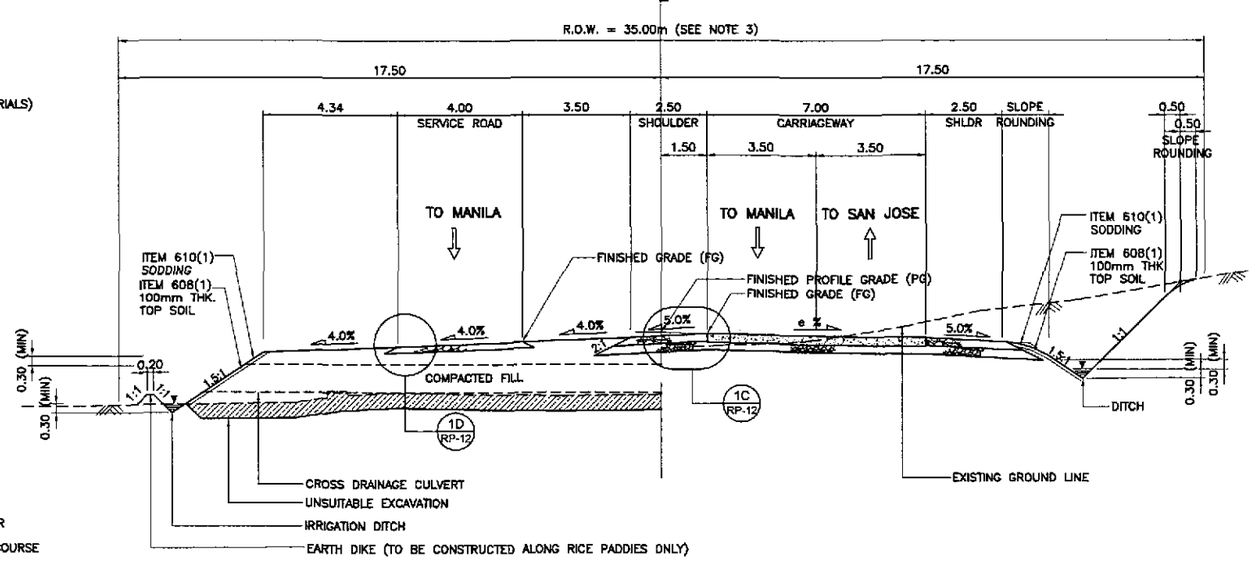
1B RP-12 SUPERELEVATED SECTION - ULTIMATE STAGE
SCALE 1:100



1F RP-10 DETAIL
SCALE 1:20

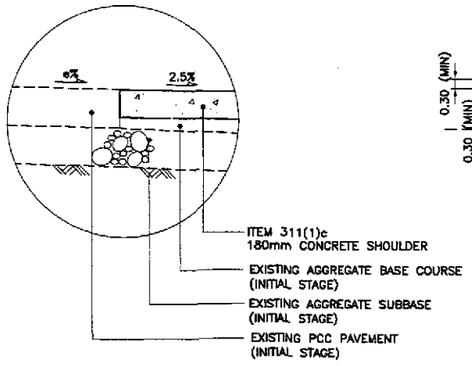


1D RP-10 DETAIL
SCALE 1:20

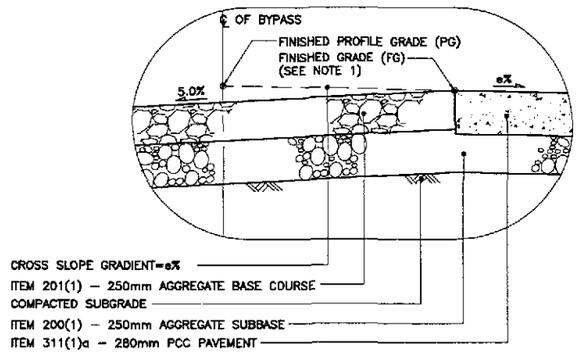


EMBANKMENT SECTION CUT SECTION

1A RP-12 SUPERELEVATED SECTION - INITIAL STAGE
SCALE 1:100



1G RP-10 DETAIL
SCALE 1:20



1C RP-10 DETAIL
SCALE 1:20

1 RP-12 TYPICAL ROADWAY SECTIONS - WITHOUT FRONTAGE ROAD
SCALE 1:100

NOTES:

1. FINISHED PROFILE GRADE (PG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NOS. RG-04 TO RG-07.
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-07.
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.

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

	DATE	SIGNATURE
DESIGNED	9/23/02	A. ACACIO
CHECKED	9/30/02	S. GOSE
SUBMITTED	10/1/02	M. NIGHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

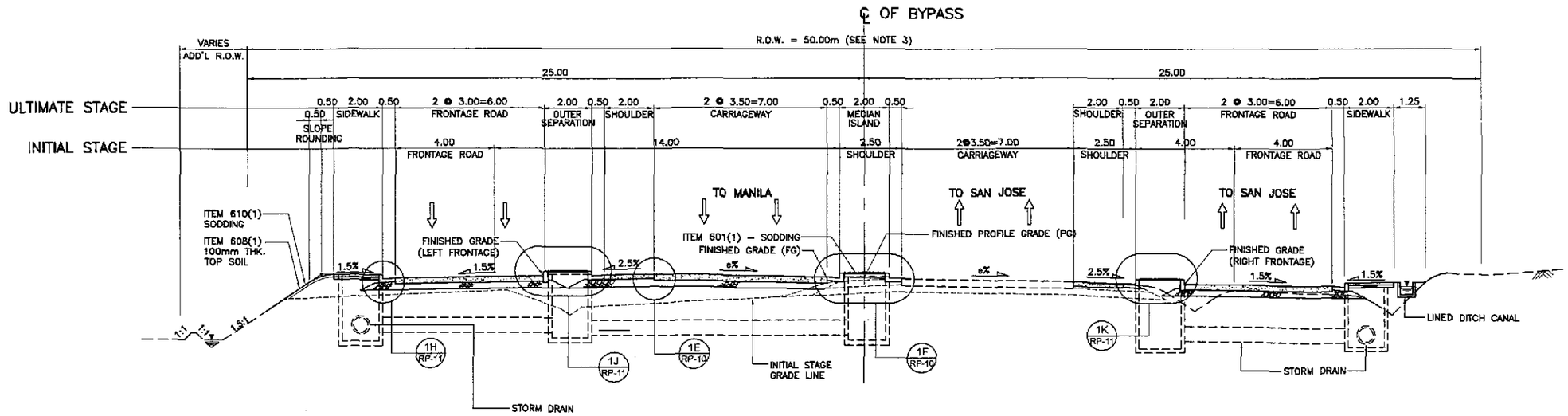
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONGAN	SIMEON A. DATUMANONG
Project Director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

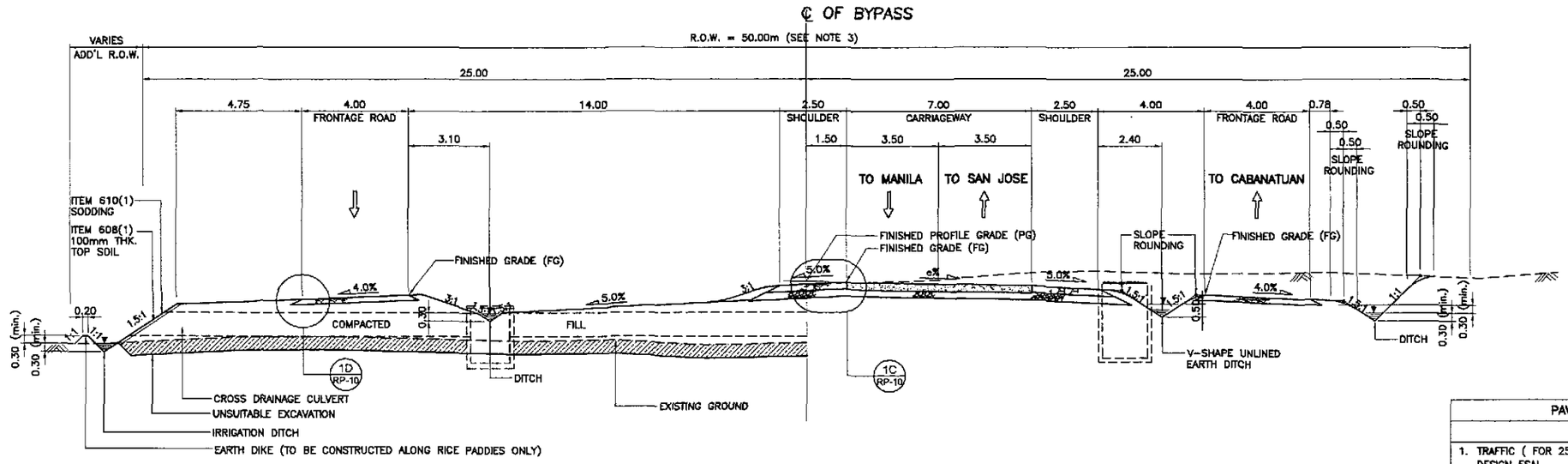
SCALE : AS SHOWN
FULL SIZE A1

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

SHEET NO. : RP-12



1B / RP-13 SUPERELEVATED SECTION - ULTIMATE STAGE
SCALE 1:100



EMBANKMENT SECTION

CUT SECTION

1A / RP-13 SUPERELEVATED SECTION - INITIAL STAGE
SCALE 1:100

1 / RP-13 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. RG-04 TO RG-07.
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-07.
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5. SEE SHEET NO. RG-04 FOR UNSUITABLE EXCAVATION SCHEDULE.

PAVEMENT DESIGN PARAMETERS	
	AFTER ANGAT BRIDGE
1. TRAFFIC (FOR 25 YEARS DESIGN LIFE) DESIGN ESAL	3.50×10^6
2. DESIGN CBR SUBGRADE CBR	5.00 %
3. ROADBED RESILIENT MODULUS M_R / E_{SB} / E_{BS}	5,500 psi = 37.92 MPa 13,000 psi = 89.64 MPa 23,000 psi = 158.58 MPa
4. PERFORAMNCE 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 THIKNESS PCCP / SUBBASE	250mm THK 250mm THK

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

	DATE	SIGNATURE
DESIGNED	9/28/02	R. ACADIO
CHECKED	9/30/02	S. ROSE
SUBMITTED	10/16/02	M. KIOCHI, 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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

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-13

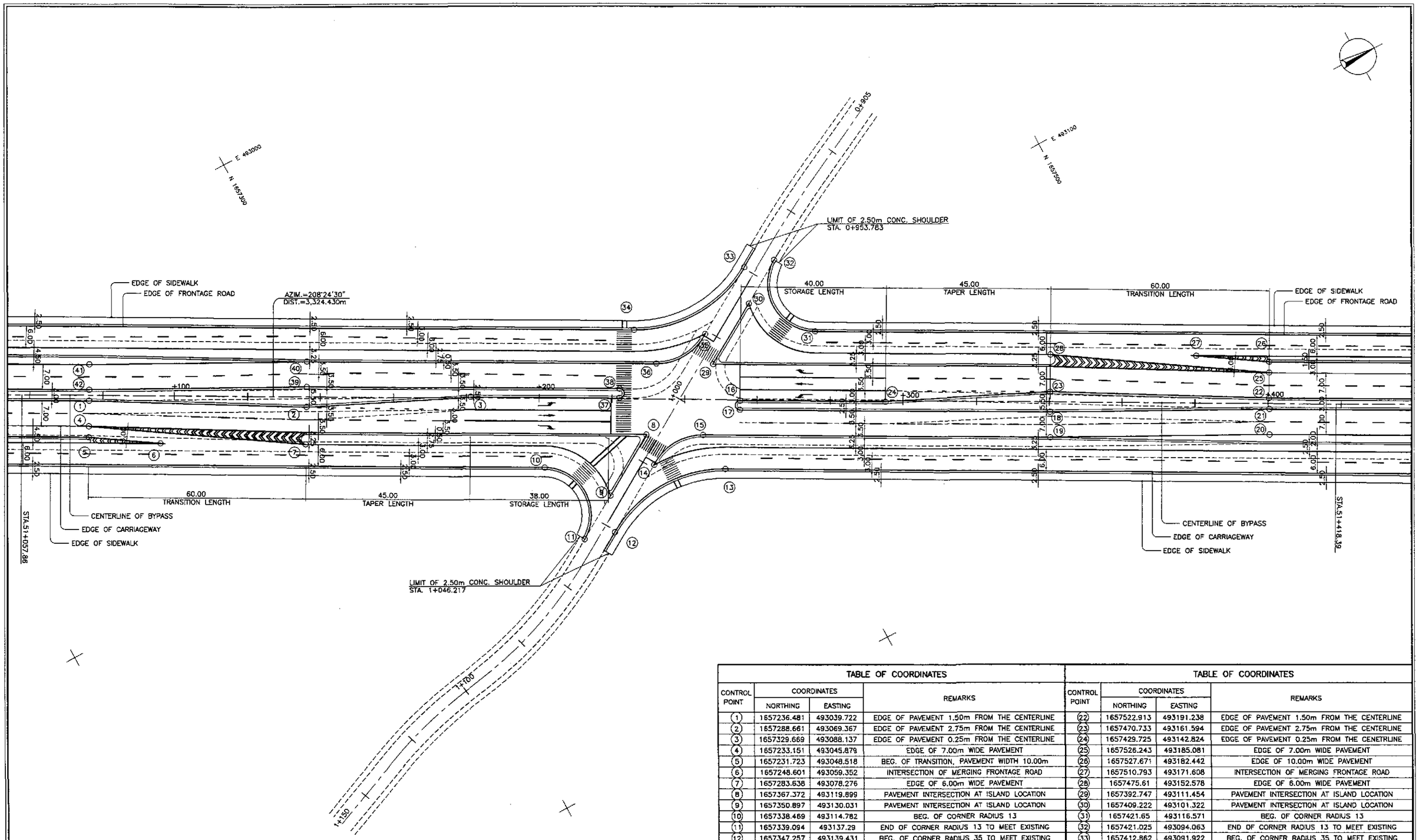


TABLE OF COORDINATES				TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS	CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING			NORTHING	EASTING	
1	1657236.481	493039.722	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE	22	1657522.913	493191.238	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE
2	1657288.661	493069.367	EDGE OF PAVEMENT 2.75m FROM THE CENTERLINE	23	1657470.733	493161.594	EDGE OF PAVEMENT 2.75m FROM THE CENTERLINE
3	1657329.669	493088.137	EDGE OF PAVEMENT 0.25m FROM THE CENTERLINE	24	1657429.725	493142.824	EDGE OF PAVEMENT 0.25m FROM THE CENETRLINE
4	1657233.151	493045.879	EDGE OF 7.00m WIDE PAVEMENT	25	1657526.243	493185.081	EDGE OF 7.00m WIDE PAVEMENT
5	1657231.723	493048.518	BEG. OF TRANSITION, PAVEMENT WIDTH 10.00m	26	1657527.671	493182.442	EDGE OF 10.00m WIDE PAVEMENT
6	1657248.601	493059.352	INTERSECTION OF MERGING FRONTAGE ROAD	27	1657510.793	493171.608	INTERSECTION OF MERGING FRONTAGE ROAD
7	1657283.638	493078.276	EDGE OF 6.00m WIDE PAVEMENT	28	1657475.61	493152.578	EDGE OF 6.00m WIDE PAVEMENT
8	1657367.372	493119.899	PAVEMENT INTERSECTION AT ISLAND LOCATION	29	1657392.747	493111.454	PAVEMENT INTERSECTION AT ISLAND LOCATION
9	1657350.897	493130.031	PAVEMENT INTERSECTION AT ISLAND LOCATION	30	1657409.222	493101.322	PAVEMENT INTERSECTION AT ISLAND LOCATION
10	1657338.469	493114.782	BEG. OF CORNER RADIUS 13	31	1657421.65	493116.571	BEG. OF CORNER RADIUS 13
11	1657339.094	493137.29	END OF CORNER RADIUS 13 TO MEET EXISTING	32	1657421.025	493094.063	END OF CORNER RADIUS 13 TO MEET EXISTING
12	1657347.257	493139.431	BEG. OF CORNER RADIUS 35 TO MEET EXISTING	33	1657412.862	493091.922	BEG. OF CORNER RADIUS 35 TO MEET EXISTING
13	1657382.243	493138.459	END OF CORNER RADIUS 35	34	1657377.876	493092.894	END OF CORNER RADIUS 35
14	1657365.446	493126.244	END OF ISLAND W/ RADIUS 15	35	1657394.673	493103.108	END OF ISLAND W/ RADIUS 15
15	1657381.185	493127.37	END OF ISLAND RADIUS 15	36	1657378.934	493103.983	END OF ISLAND RADIUS 15
16	1657394.542	493123.794	BEG. OF MEDIAN RADIUS 1.25	37	1657365.573	493107.557	BEG. OF MEDIAN RADIUS 1.25
17	1657393.352	493125.993	END OF MEDIAN RADIUS 1.25	38	1657366.763	493105.358	END OF MEDIAN RADIUS 1.25
18	1657468.116	493166.431	EDGE OF PAVEMENT 2.75m FROM THE CENTERLINE	39	1657291.278	493064.529	EDGE OF PAVEMENT 2.75m FROM THE CENTERLINE
19	1657464.915	493172.656	EDGE OF 7.00m WIDE PAVEMENT	40	1657294.608	493058.372	EDGE OF 7.00m WIDE PAVEMENT
20	1657518.359	493200.144	EDGE OF 7.00m WIDE PAVEMENT	41	1657241.238	493030.926	EDGE OF 7.00m WIDE PAVEMENT
21	1657521.625	493193.952	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE	42	1657237.908	493037.084	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE

GEOMETRIC DESIGN LAYOUT
INTERSECTION A-18 (STA. 51+238.639) - ULTIMATE STAGE

1 / RI-01 SCALE 1:500

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

	DATE	SIGNATURE
DESIGNED	9/28/02	R. ORONCE
CHECKED	9/30/02	S. GOSE
SUBMITTED	10/16/02	M. KUCHI, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

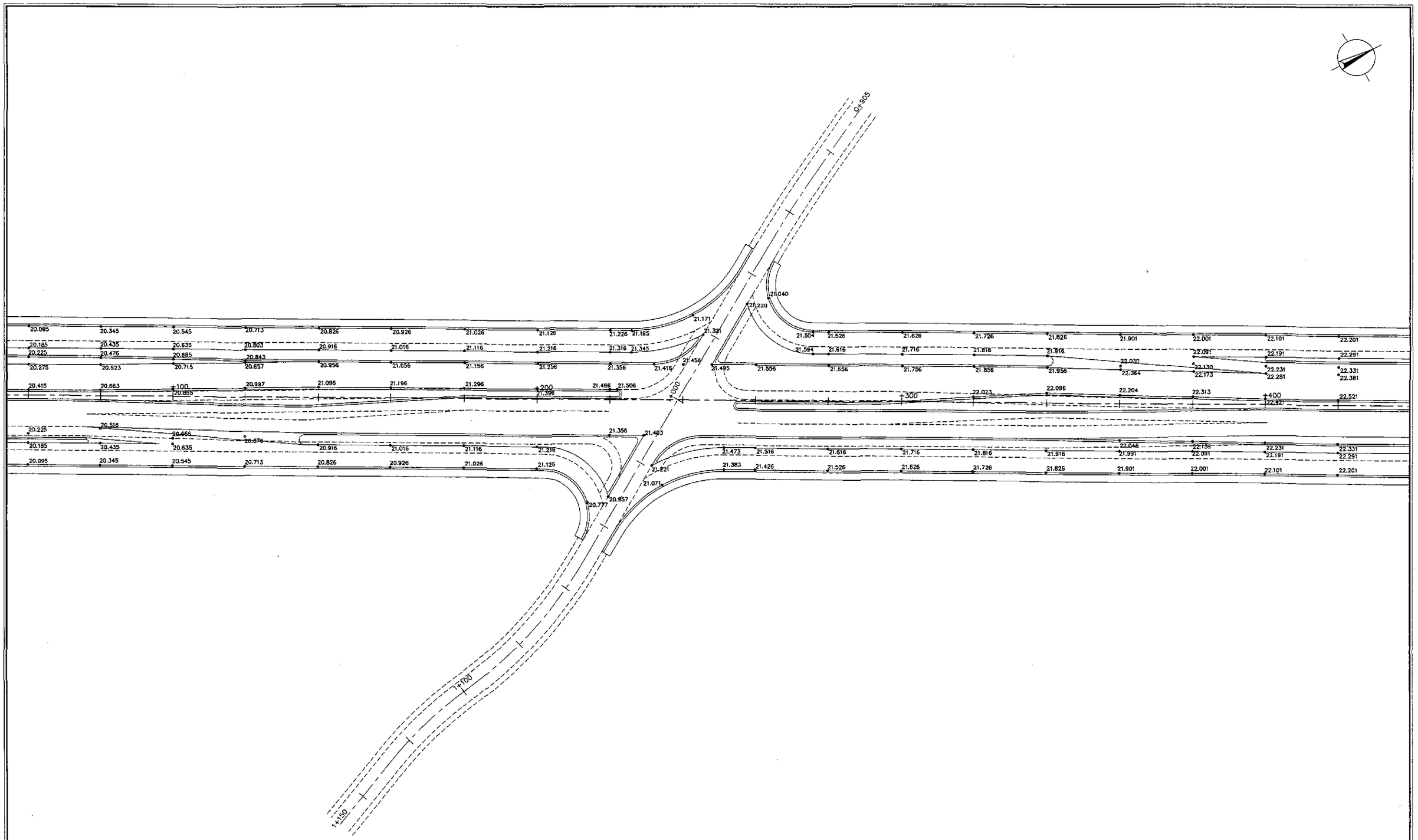
PJHL - PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	JOSEFINA M. ALAGAR, Chief, Highways Division	GILBERTO S. REYES, OIC,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

SCALE : 1:500 FULL SIZE A1

SHEET CONTENTS :
INTERSECTION DETAIL
GEOMETRIC DESIGN LAYOUT
INTERSECTION A-18 (ULTIMATE STAGE)

SHEET NO. : RI-01

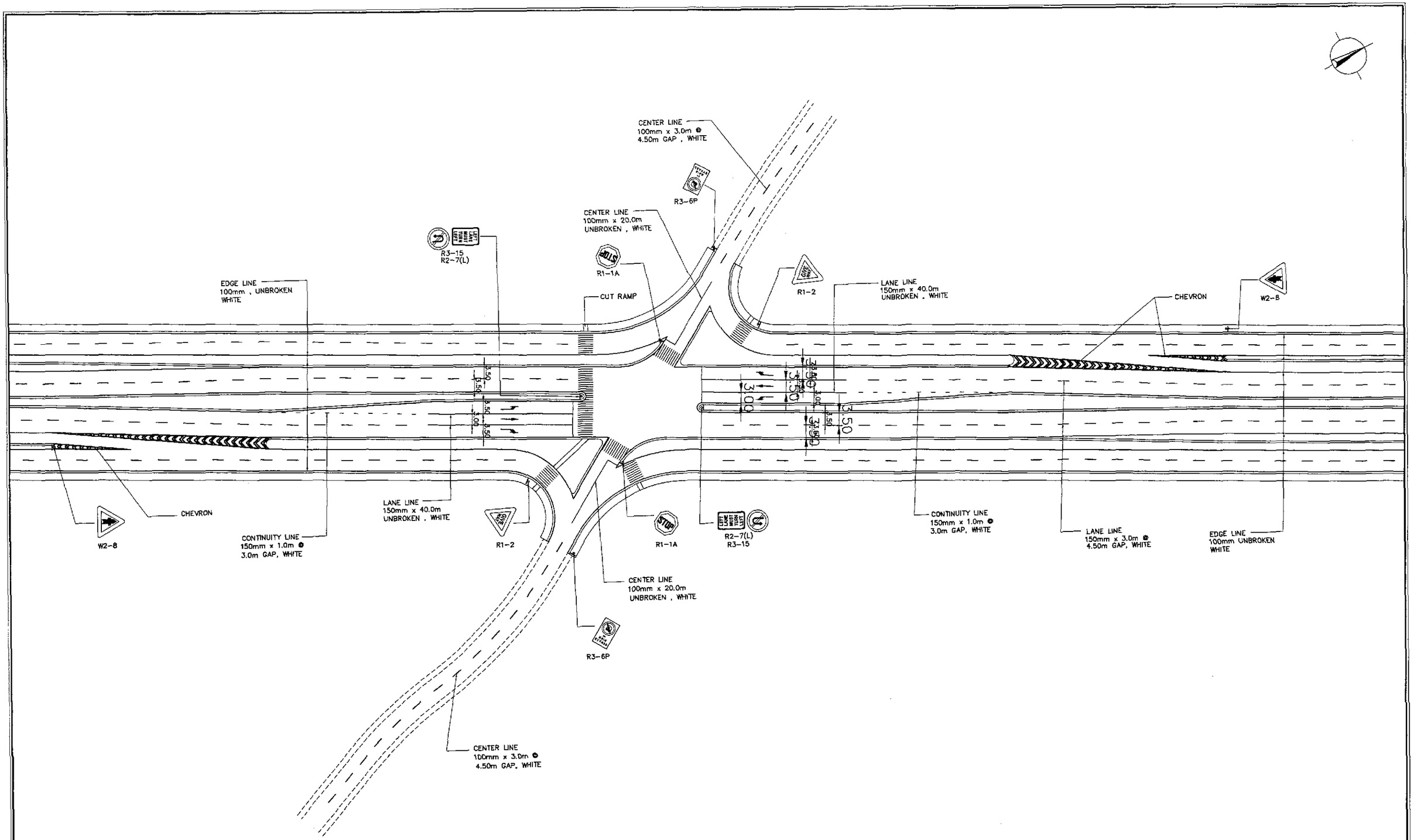


PAVING AND GRADING PLAN

1 / RI-02 INTERSECTION A-18 (STA. 51+238.639) - ULTIMATE STAGE

SCALE 1:500

JICA JAPAN INTERNATIONAL COOPERATION AGENCY		DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
KATAHIRA & ENGINEERS INTERNATIONAL / YACHIYO ENGINEERING CO., LTD.	DESIGNED	9/28/02	R. GO	PJHL – PMO	BUREAU OF DESIGN		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)	1:500	INTERSECTION DETAIL PAVING AND GRADING PLAN INTERSECTION A-18 (ULTIMATE STAGE)	RI-02
	CHECKED	9/30/02	S. GOSE	Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature) / Approved By: (See cover sheet for Signature/Approval)	PLARIDEL BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		
	SUBMITTED	10/16/02	M. KUCHI	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				
			TEAM LEADER								



TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN
INTERSECTION A-18 (STA. 51+238.639) - ULTIMATE STAGE

1 / RI-03 SCALE 1:500

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

	DATE	SIGNATURE
DESIGNED	9/28/02	S. LUNA
CHECKED	9/30/02	S. GOSE
SUBMITTED	10/16/02	M. KIDOKORO, 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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

SCALE : 1:500 FULL SIZE A1

SHEET CONTENTS :
TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN
INTERSECTION A-18 (ULTIMATE STAGE)

SHEET NO. : RI-03

TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
1	1657754.440	493319.878	BEG. OF TRANSITION 1.50m FROM THE CENTERLINE
2	1657806.634	493349.514	END OF TRANSITION 2.75 FROM THE CENTERLINE
3	1657847.878	493367.800	END OF TAPER 0.25m FROM THE CENTERLINE
4	1657751.109	493326.035	EDGE OF 7.00m WIDE PAVEMENT
5	1657749.682	493328.674	EDGE OF 10.00m WIDE PAVEMENT
6	1657766.631	493339.546	INTERSECTION OF MERGING FRONTAGE ROAD
7	1657801.956	493358.636	EDGE OF 6.00m WIDE PAVEMENT
8	1657884.074	493397.222	PAVEMENT INTERSECTION AT ISLAND LOCATION
9	1657880.326	493404.861	PAVEMENT INTERSECTION AT ISLAND LOCATION
10	1657867.578	493399.366	BEG. OF RADIUS 15
11	1657874.635	493418.766	END OF RADIUS 15 TO MEET EXISTING
12	1657879.371	493423.293	BEG. OF RADIUS 15 TO MEET EXISTING
13	1657899.867	493415.208	END OF RADIUS 15
14	1657887.808	493408.465	PAVEMENT INTERSECTION AT ISLAND LOCATION W/ RADIUS 13
15	1657902.426	493406.173	END OF RADIUS 13

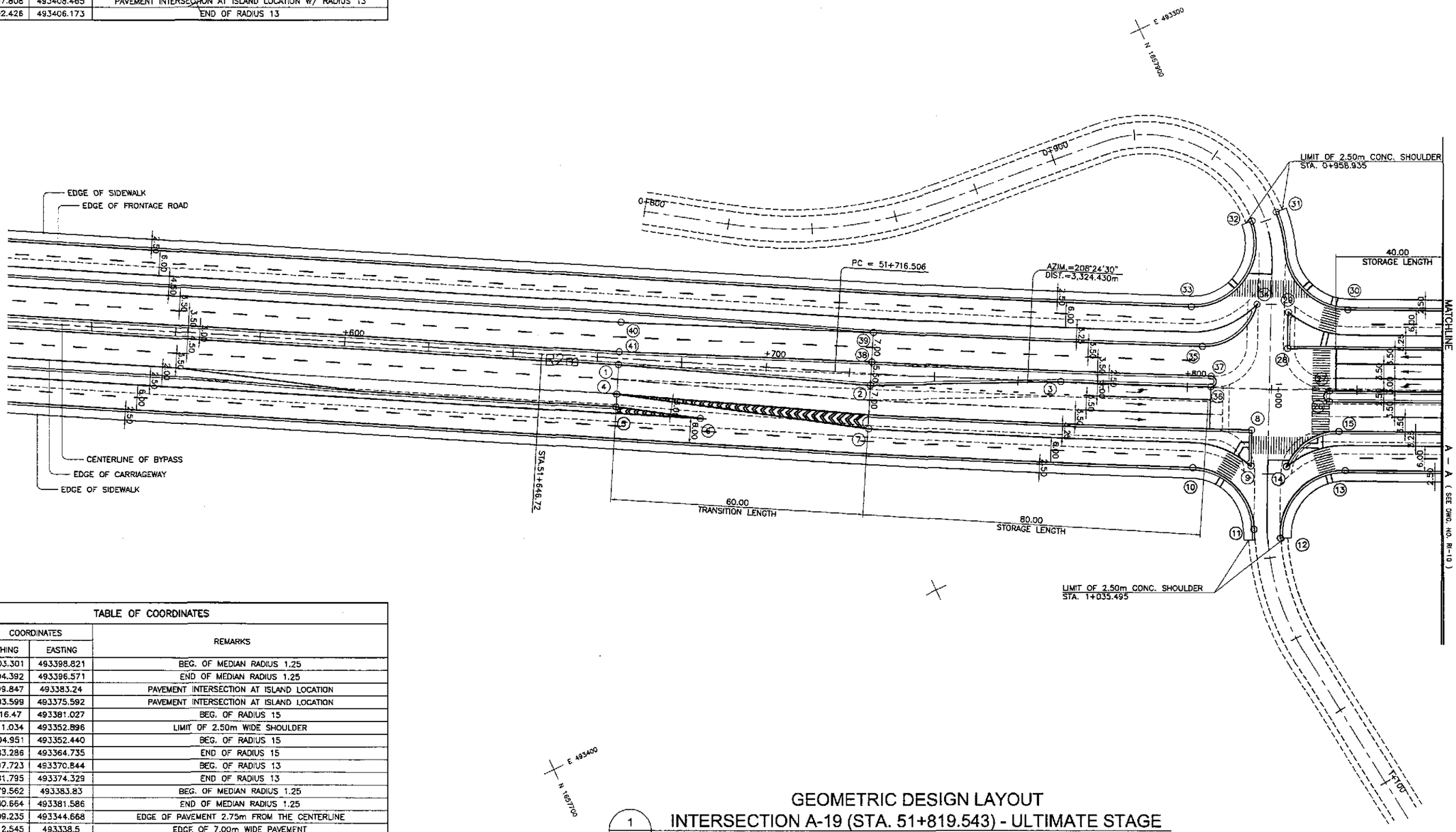


TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
26	1657903.301	493398.821	BEG. OF MEDIAN RADIUS 1.25
27	1657904.392	493396.571	END OF MEDIAN RADIUS 1.25
28	1657899.847	493383.24	PAVEMENT INTERSECTION AT ISLAND LOCATION
29	1657903.599	493375.592	PAVEMENT INTERSECTION AT ISLAND LOCATION
30	1657916.47	493381.027	BEG. OF RADIUS 15
31	1657911.034	493352.896	LIMIT OF 2.50m WIDE SHOULDER
32	1657904.951	493352.440	BEG. OF RADIUS 15
33	1657883.286	493364.735	END OF RADIUS 15
34	1657897.723	493370.844	BEG. OF RADIUS 13
35	1657881.795	493374.329	END OF RADIUS 13
36	1657879.562	493383.83	BEG. OF MEDIAN RADIUS 1.25
37	1657880.664	493381.586	END OF MEDIAN RADIUS 1.25
38	1657809.235	493344.668	EDGE OF PAVEMENT 2.75m FROM THE CENTERLINE
39	1657812.545	493338.5	EDGE OF 7.00m WIDE PAVEMENT
40	1657759.197	493311.082	EDGE OF 7.00m WIDE PAVEMENT
41	1657755.867	493317.239	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE

GEOMETRIC DESIGN LAYOUT
INTERSECTION A-19 (STA. 51+819.543) - ULTIMATE STAGE

1 / RI-04 SCALE 1:500

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

	DATE	SIGNATURE
DESIGNED	9/28/02	R. ORONCE
CHECKED	9/30/02	S. ROSE
SUBMITTED	10/16/02	M. DATUMANONG, TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

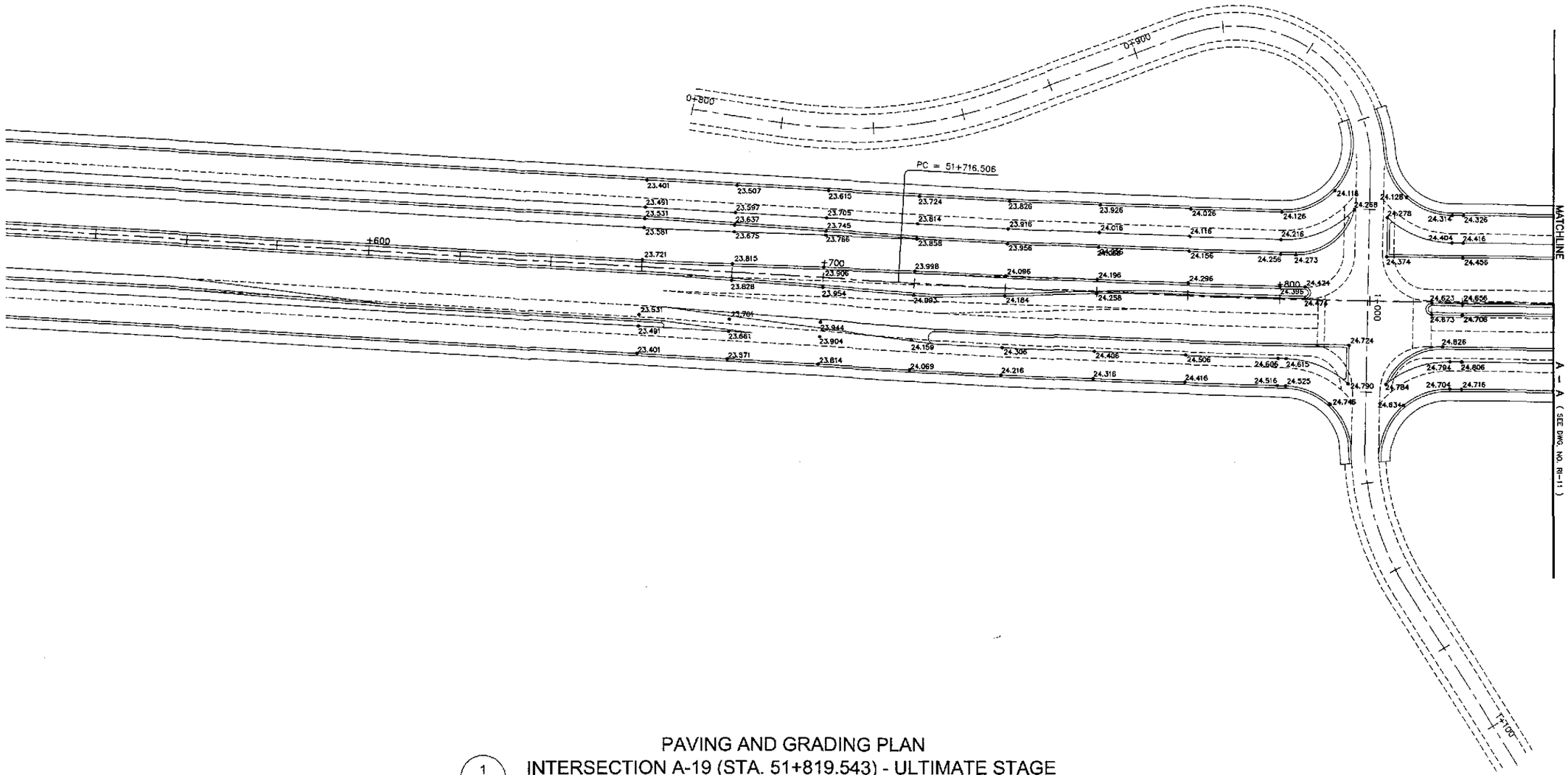
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO, Project Director	JOSEFINA M. ALAGAR, Chief, Highways Division	GILBERTO S. REYES, DIC, 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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

SCALE : 1:500 FULL SIZE A1

SHEET CONTENTS :
INTERSECTION DETAIL
GEOMETRIC DESIGN LAYOUT
INTERSECTION A-19 (ULTIMATE STAGE)

SHEET NO. : RI-04



PAVING AND GRADING PLAN

1 / RI-05 INTERSECTION A-19 (STA. 51+819.543) - ULTIMATE STAGE

SCALE 1:500

	DATE	SIGNATURE
DESIGNED	9/28/02	R. GO
CHECKED	9/30/02	S. GOSE
SUBMITTED	10/16/02	M. KANCHI TEAM LEADER

JICA JAPAN INTERNATIONAL COOPERATION AGENCY

KEI KATAHIRA & ENGINEERS INTERNATIONAL — yec YACHIYO ENGINEERING CO., LTD.

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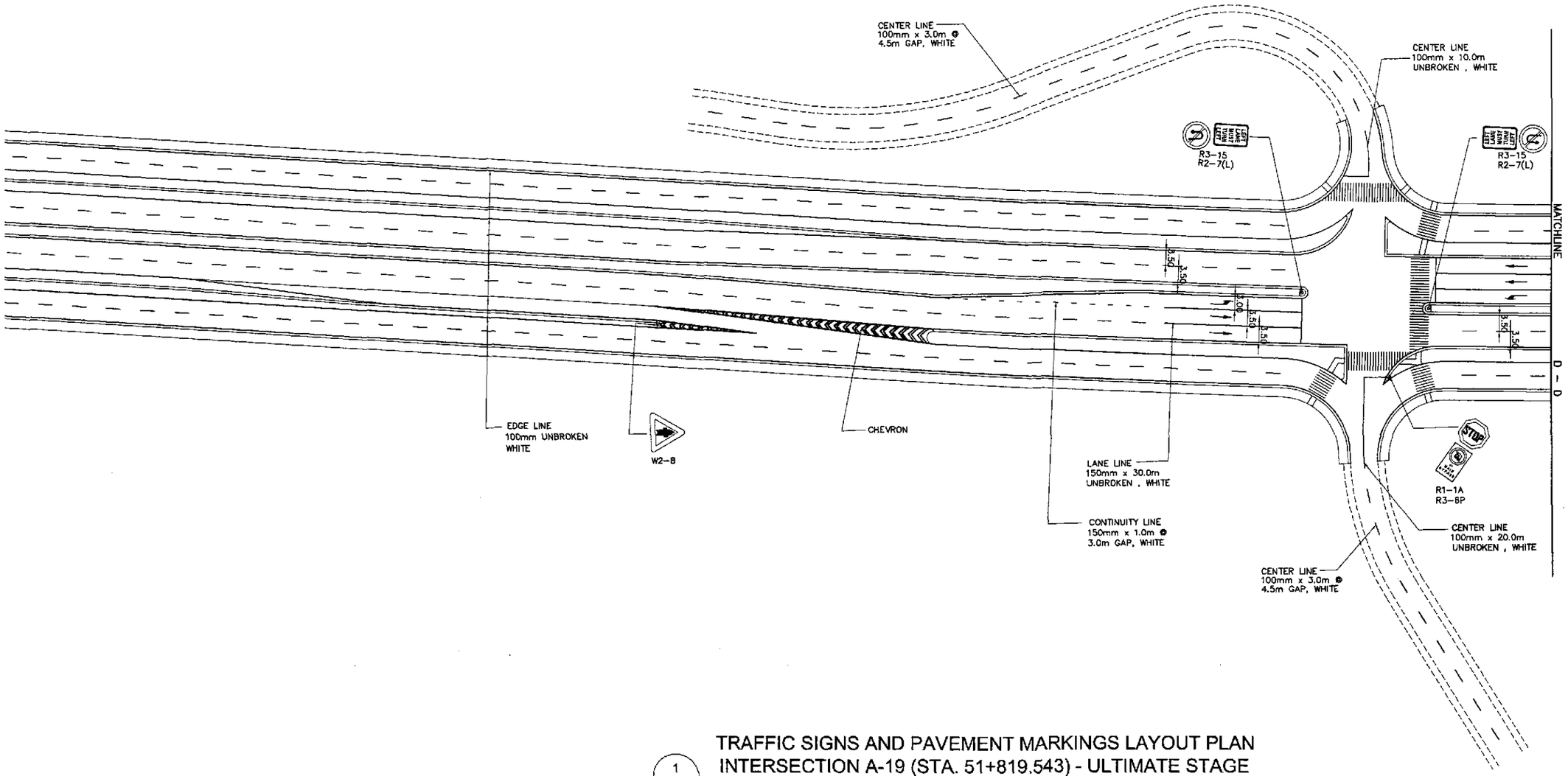
Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary

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

SCALE : 1:500 FULL SIZE A1

SHEET CONTENTS :
INTERSECTION DETAIL
PAVING AND GRADING PLAN
INTERSECTION A-19 (ULTIMATE STAGE)

SHEET NO. : RI-05



1
RI-06

TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN
INTERSECTION A-19 (STA. 51+819.543) - ULTIMATE STAGE

SCALE 1:500

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

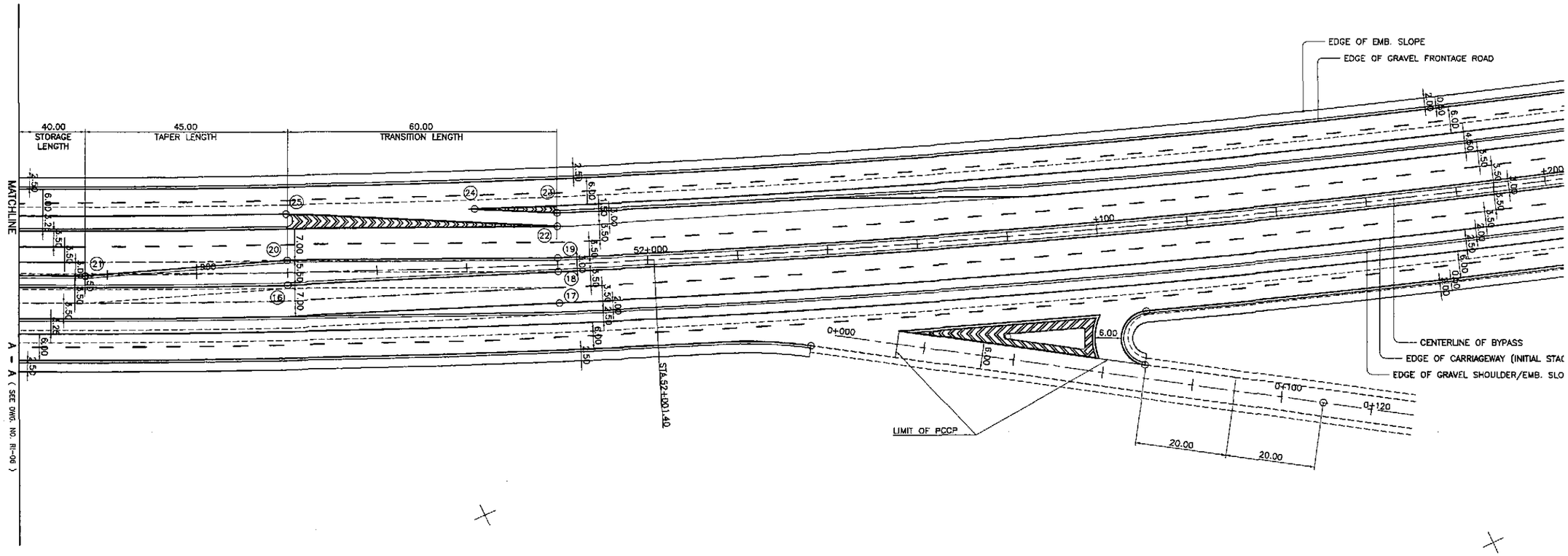
	DATE	SIGNATURE
DESIGNED	9/28/02	S. LUNA
CHECKED	9/30/02	S. JOSE
SUBMITTED	10/16/02	TEAM LEADER

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 :	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) PLARIDEL BYPASS - CONTRACT PACKAGE IV	1:500 FULL SIZE A1	TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN INTERSECTION A-19 (ULTIMATE STAGE)	RI-06

TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
(16)	1657981.865	493435.23	END OF TAPER 2.75m FROM THE CENTERLINE
(17)	1658034.827	493464.277	EDGE OF 7.00m WIDE PAVEMENT
(18)	1658037.518	493457.815	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE
(19)	1658038.671	493455.045	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE
(20)	1657984.088	493430.22	END OF TAPER 2.75m FROM THE CENTERLINE
(21)	1657941.893	493414.357	END OF TAPER 0.25m FROM THE CENTERLINE
(22)	1658041.543	493448.659	EDGE OF 7.00m WIDE PAVEMENT
(23)	1658042.760	493445.916	EDGE OF 10.00m WIDE PAVEMENT
(24)	1658026.724	493437.549	INTERSECTION OF MERGING FRONTAGE ROAD
(25)	1657988.158	493420.812	END OF TRANSITION/EDGE OF FRONTAGE ROAD



GEOMETRIC DESIGN LAYOUT

1 / RI-07 INTERSECTION A-19a (STA. 52+040.477) - ULTIMATE STAGE

SCALE 1:500

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

	DATE	SIGNATURE
DESIGNED	9/28/02	A. ORONCE
CHECKED	9/30/02	S. JOSE
SUBMITTED	10/16/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

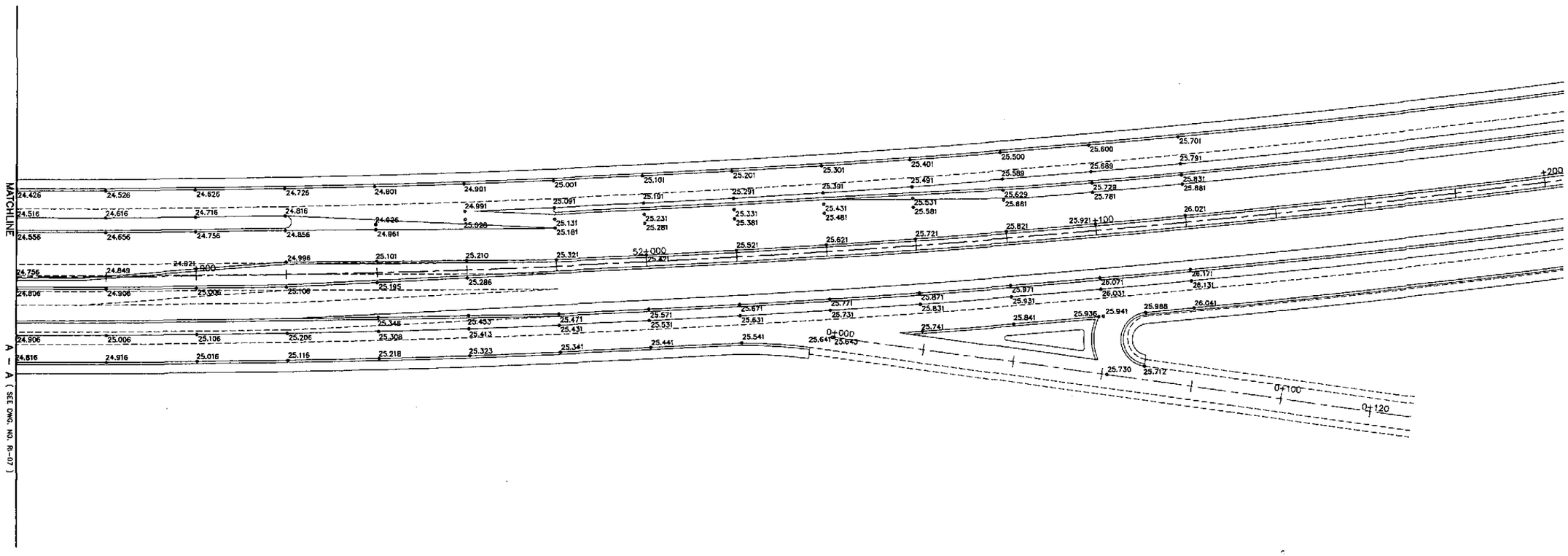
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

SCALE : 1:500 FULL SIZE A1

SHEET CONTENTS :
INTERSECTION DETAIL
GEOMETRIC DESIGN LAYOUT
INTERSECTION A-19a (ULTIMATE STAGE)

SHEET NO. : RI-07



PAVING AND GRADING PLAN

1 / RI-08 INTERSECTION A-19a (STA. 52+040.477) - ULTIMATE STAGE

SCALE 1:500

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

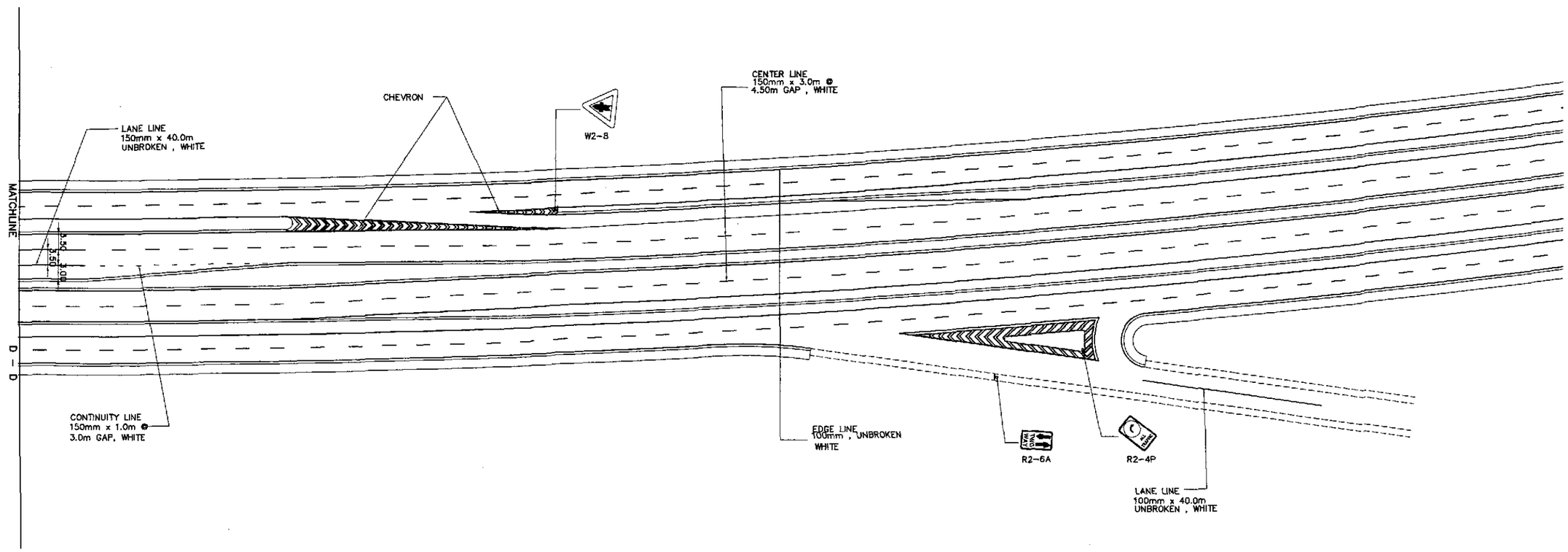
KEI KATAHIRA & ENGINEERS INTERNATIONAL
YEC YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/28/02	R. GO
CHECKED	9/30/02	S. JOSE
SUBMITTED	10/10/02	M. KINUGAWA, 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 :	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) PLARIDEL BYPASS - CONTRACT PACKAGE IV	1:500 FULL SIZE A1	INTERSECTION DETAIL PAVING AND GRADING PLAN INTERSECTION A-19a (ULTIMATE STAGE)	RI-08



1
RI-09

TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN
INTERSECTION A-19a (STA. 52+040.477) - ULTIMATE STAGE

SCALE 1:500

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

	DATE	SIGNATURE
DESIGNED	9/28/02	S. LUNA
CHECKED	9/30/02	S. JOSE
SUBMITTED	10/16/02	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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

SCALE : 1:500
FULL SIZE A1

SHEET CONTENTS :
TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN
INTERSECTION A-19a (ULTIMATE STAGE)

SHEET NO. : RI-09

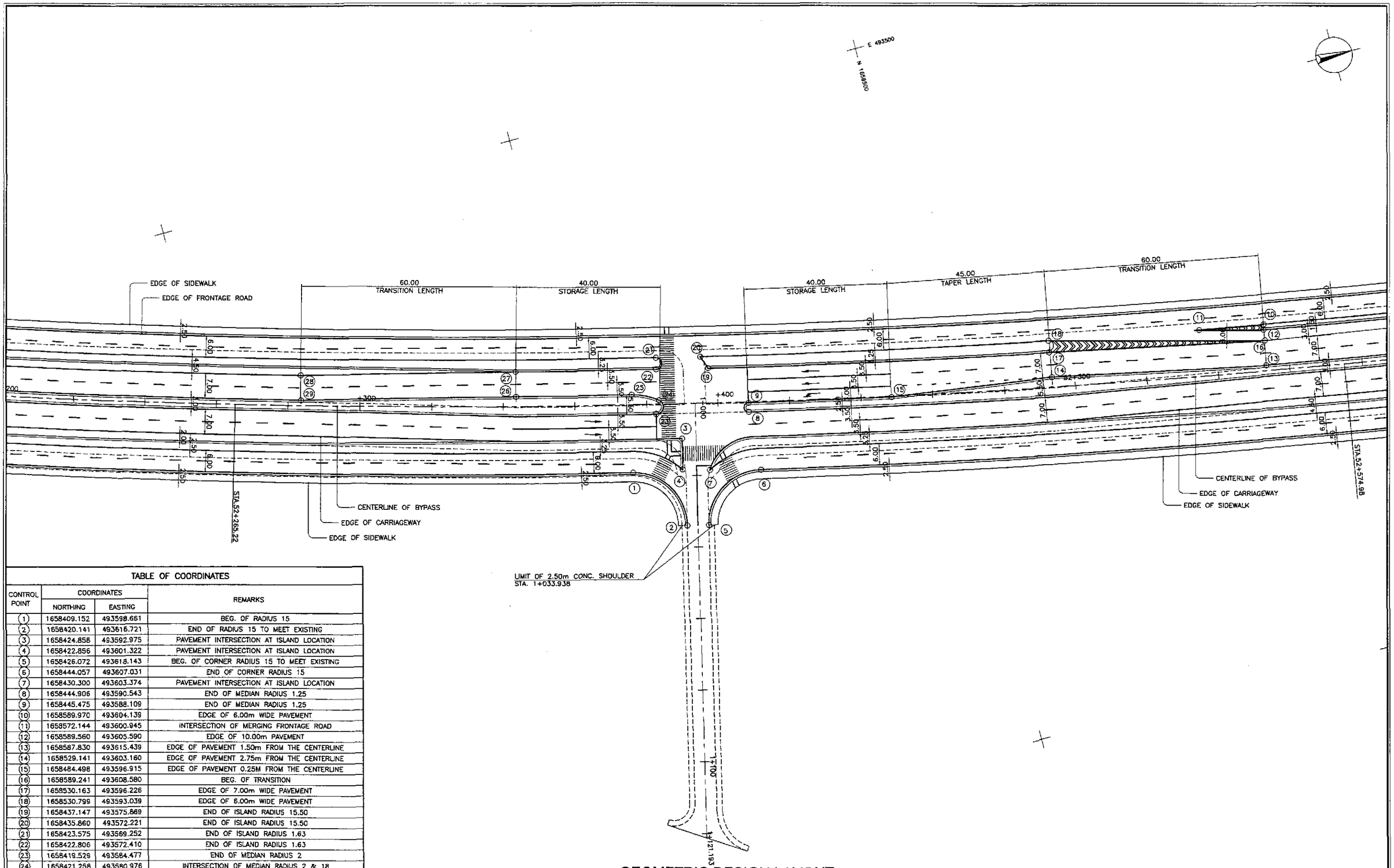


TABLE OF COORDINATES

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
1	1658409.152	493598.661	BEG. OF RADIUS 15
2	1658420.141	493616.721	END OF RADIUS 15 TO MEET EXISTING
3	1658424.858	493592.975	PAVEMENT INTERSECTION AT ISLAND LOCATION
4	1658422.856	493601.322	PAVEMENT INTERSECTION AT ISLAND LOCATION
5	1658426.072	493618.143	BEG. OF CORNER RADIUS 15 TO MEET EXISTING
6	1658444.057	493607.031	END OF CORNER RADIUS 15
7	1658430.300	493603.374	PAVEMENT INTERSECTION AT ISLAND LOCATION
8	1658444.906	493590.543	END OF MEDIAN RADIUS 1.25
9	1658445.475	493588.109	END OF MEDIAN RADIUS 1.25
10	1658589.970	493604.139	EDGE OF 6.00m WIDE PAVEMENT
11	1658572.144	493600.945	INTERSECTION OF MERGING FRONTAGE ROAD
12	1658589.560	493605.590	EDGE OF 10.00m PAVEMENT
13	1658587.830	493615.439	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE
14	1658529.141	493603.160	EDGE OF PAVEMENT 2.75m FROM THE CENTERLINE
15	1658484.498	493596.915	EDGE OF PAVEMENT 0.25M FROM THE CENTERLINE
16	1658589.241	493608.580	BEG. OF TRANSITION
17	1658530.163	493596.226	EDGE OF 7.00m WIDE PAVEMENT
18	1658530.799	493593.039	EDGE OF 6.00m WIDE PAVEMENT
19	1658437.147	493575.869	END OF ISLAND RADIUS 15.50
20	1658435.860	493572.221	END OF ISLAND RADIUS 15.50
21	1658423.575	493569.252	END OF ISLAND RADIUS 1.63
22	1658422.806	493572.410	END OF ISLAND RADIUS 1.63
23	1658419.529	493584.477	END OF MEDIAN RADIUS 2
24	1658421.258	493580.976	INTERSECTION OF MEDIAN RADIUS 2 & 18
25	1658414.293	493577.527	END OF MEDIAN RADIUS 18
26	1658383.159	493569.629	EDGE OF PAVEMENT 2.75m FROM THE CENTERLINE
27	1658384.922	493562.855	EDGE OF 7.00m WIDE PAVEMENT
28	1658326.816	493548.308	EDGE OF 7.00m WIDE PAVEMENT
29	1658324.991	493555.067	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE

GEOMETRIC DESIGN LAYOUT
INTERSECTION A-20 (STA. 52+393.681) - ULTIMATE STAGE

1 / RI-10 SCALE 1:500

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

	DATE	SIGNATURE
DESIGNED	9/28/02	A. ORONCE
CHECKED	9/30/02	S. GOSE
SUBMITTED	10/16/02	M. BRUCE TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

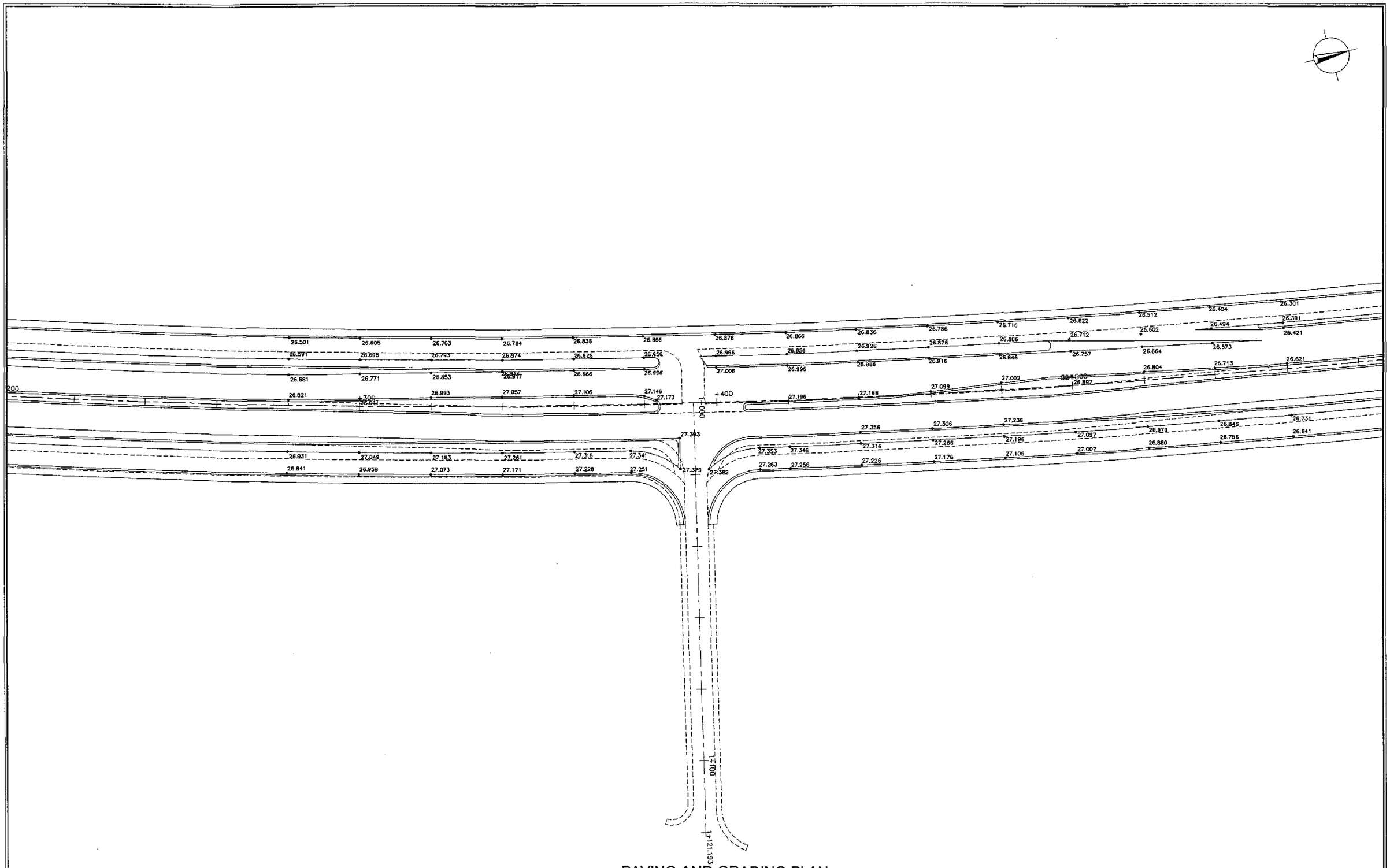
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN	SIMEON A. DATUMANONG
Project Director	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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

SCALE : 1:500 FULL SIZE A1

SHEET CONTENTS :
INTERSECTION DETAIL
GEOMETRIC DESIGN LAYOUT
INTERSECTION A-20 (ULTIMATE STAGE)

SHEET NO. : RI-10

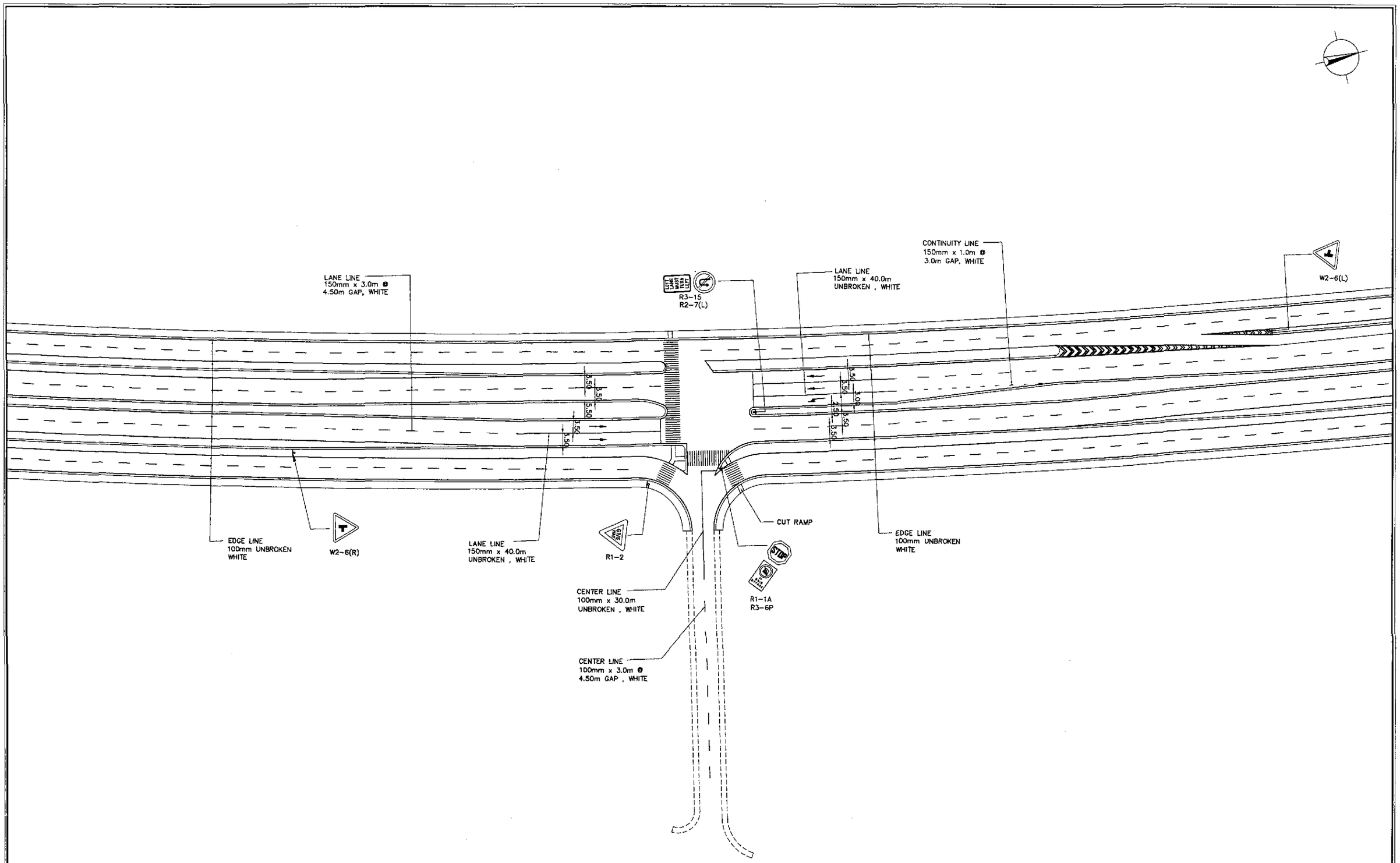


PAVING AND GRADING PLAN

1 / RI-11 INTERSECTION A-20 (STA. 52+393.681) - ULTIMATE STAGE

SCALE 1:500

JICA JAPAN INTERNATIONAL COOPERATION AGENCY	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	DESIGNED	9/28/02	PJHL – PMO	BUREAU OF DESIGN		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)	1:500	INTERSECTION DETAIL PAVING AND GRADING PLAN INTERSECTION A-20 (ULTIMATE STAGE)	RI-11
KATAHIRA & ENGINEERS INTERNATIONAL / YACHIYO ENGINEERING CO., LTD.	CHECKED	9/30/02	Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature) / Approved By: (See cover sheet for Signature/Approval)	PLARIDEL BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		
	SUBMITTED	10/16/02	DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONOAN / SIMEON A. DATUMANONG				
		TEAM LEADER	Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary / Secretary				



1
RI-12

TRAFFIC SIGNS AND PAVEMENT MARKINS LAYOUT PLAN
INTERSECTION A-20 (STA. 52+393.681) - ULTIMATE STAGE

SCALE 1:500

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

	DATE	SIGNATURE
DESIGNED	9/28/02	S. LUNA
CHECKED	9/30/02	S. ROSE
SUBMITTED	10/14/02	M. DAUCHI TEAM LEADER

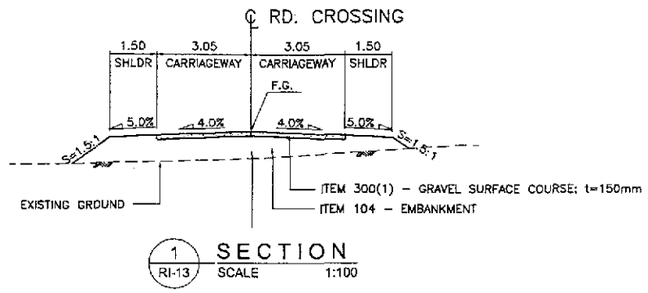
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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

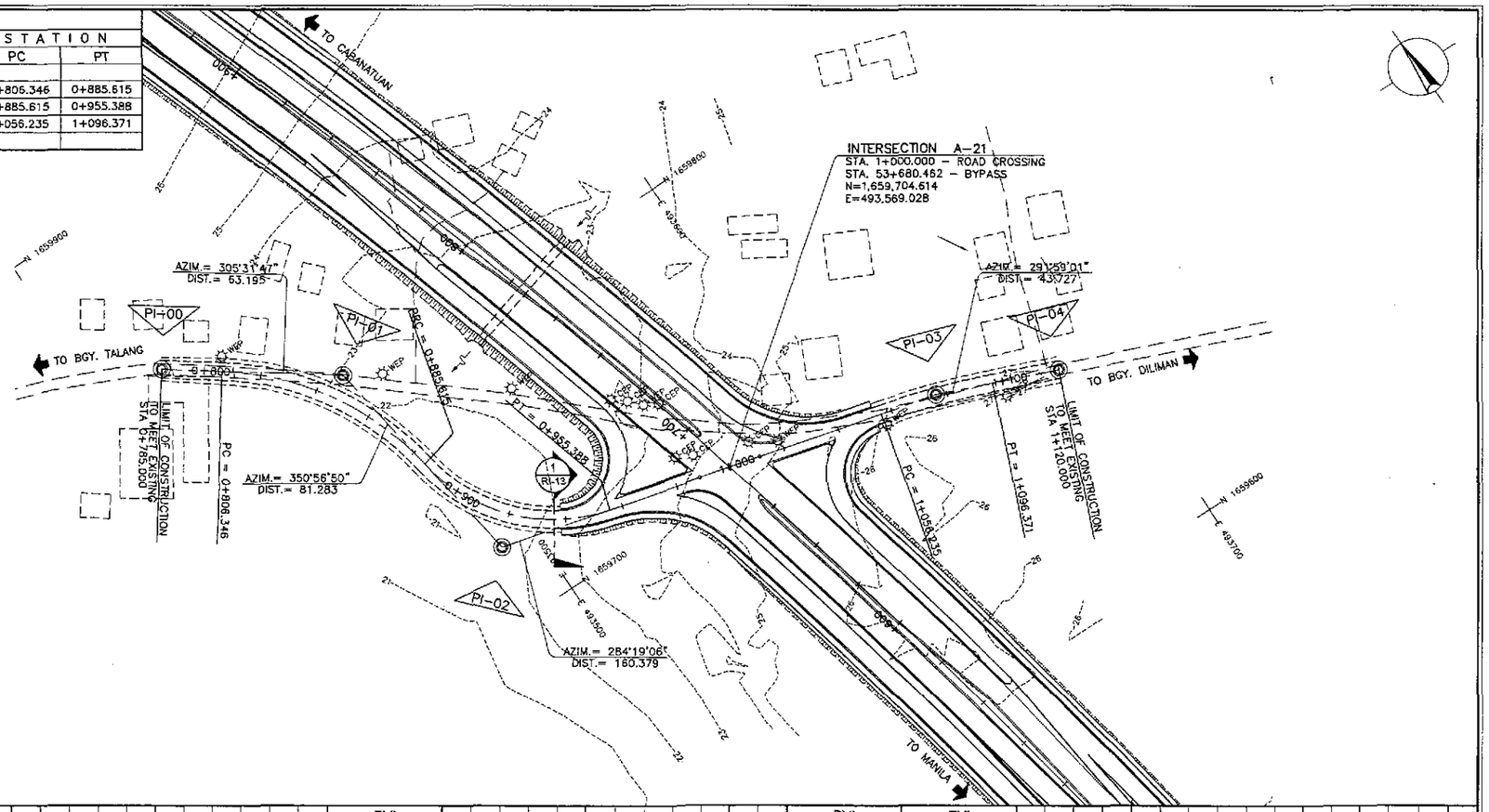
PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	1:500	TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN INTERSECTION A-20 (ULTIMATE STAGE)	RI-12
PLARIDEL BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		

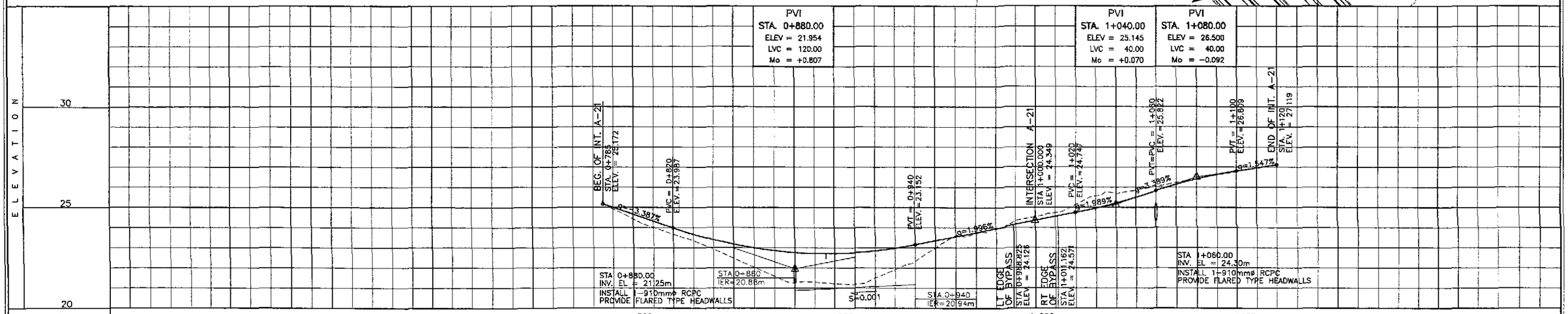
ELEMENTS OF CURVE

PI NO.	STATION	COORDINATES NORTHING	COORDINATES EASTING	Δ	R	T	Lc	E	e%	V(kph)	STATION PC	STATION PT
PI-00	0+785.000	1,659,842.394	493,423.374	BEG. OF INTERSECTION A-21								
PI-01	0+848.195	1,659,805.669	493,474.803	45°25'03"	100	41.849	79.269	8.404	–	30	0+806.346	0+885.615
PI-02	0+925.049	1,659,725.399	493,487.592	66°37'44"	60	39.434	69.774	11.799	–	–	0+885.615	0+955.388
PI-03	1+076.333	1,659,685.736	493,642.990	07°39'55"	300	20.098	40.136	0.672	–	–	1+056.235	1+096.371
PI-04	1+120.000	1,659,669.367	493,683.537	END OF INTERSECTION A-21								



1 / RI-13 SECTION
SCALE 1:100





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

	DATE	SIGNATURE
DESIGNED	9/30/02	R. GO
CHECKED	9/30/02	S. GOSE
SUBMITTED	10/16/02	M. Kudo 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, Highway Division	GILBERTO S. REYES, Director IV (OIC)	EDMUNDO V. MIR, 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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

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

SHEET CONTENTS :
PLAN, CROSS-SECTION AND PROFILE
INTERSECTION A-21
STA. 53+680.462 (ULTIMATE)

SHEET NO. :
RI-13

TABLE OF COORDINATES

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
1	1659528.130	493610.898	EDGE OF PAVEMENT 1.50m FROM THE CENTRELINE
2	1659587.214	493600.114	BEG. OF TAPER 2.75m FROM THE CENTERLINE
3	1659630.476	493587.296	END OF TAPER 0.25m FROM THE CENTERLINE
4	1659529.427	493617.776	EDGE OF 7.00m WIDE PAVEMENT
5	1659530.016	493620.718	EDGE OF 10.00m WIDE PAVEMENT
6	1659552.177	493617.891	INTERSECTION OF MERGING FRONTAGE ROAD
7	1659589.380	493610.133	EDGE OF 6.00m WIDE PAVEMENT & END OF RADIUS 1.37
8	1659698.479	493580.729	PAVEMENT INTERSECTION AT ISLAND LOCATION
9	1659692.301	493604.934	PAVEMENT INTERSECTION AT ISLAND LOCATION
10	1659666.610	493598.391	BEG. OF CORNER RADIUS 18
11	1659688.373	493620.324	END OF CORNER RADIUS 18 TO MEET EXISTING
12	1659702.471	493589.755	PAVEMENT INTERSECTION AT ISLAND LOCATION
13	1659696.817	493611.906	BEG. OF CORNER RADIUS 40 TO MEET EXISTING
14	1659725.071	493583.202	END OF CORNER RADIUS 40
15	1659719.976	493565.157	END OF MEDIAN RADIUS 1.00
16	1659720.206	493567.121	INTERSECTION OF MEDIAN RADIUS 1.00 & 12.25
17	1659723.841	493566.594	END OF MEDIAN RADIUS 12.25
18	1659821.968	493537.778	EDGE OF PAVEMENT 2.75m FROM THE CENTERLINE
19	1659878.619	493517.829	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE
20	1659880.944	493524.431	EDGE OF 7.00m WIDE PAVEMENT
21	1659877.649	493514.990	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE

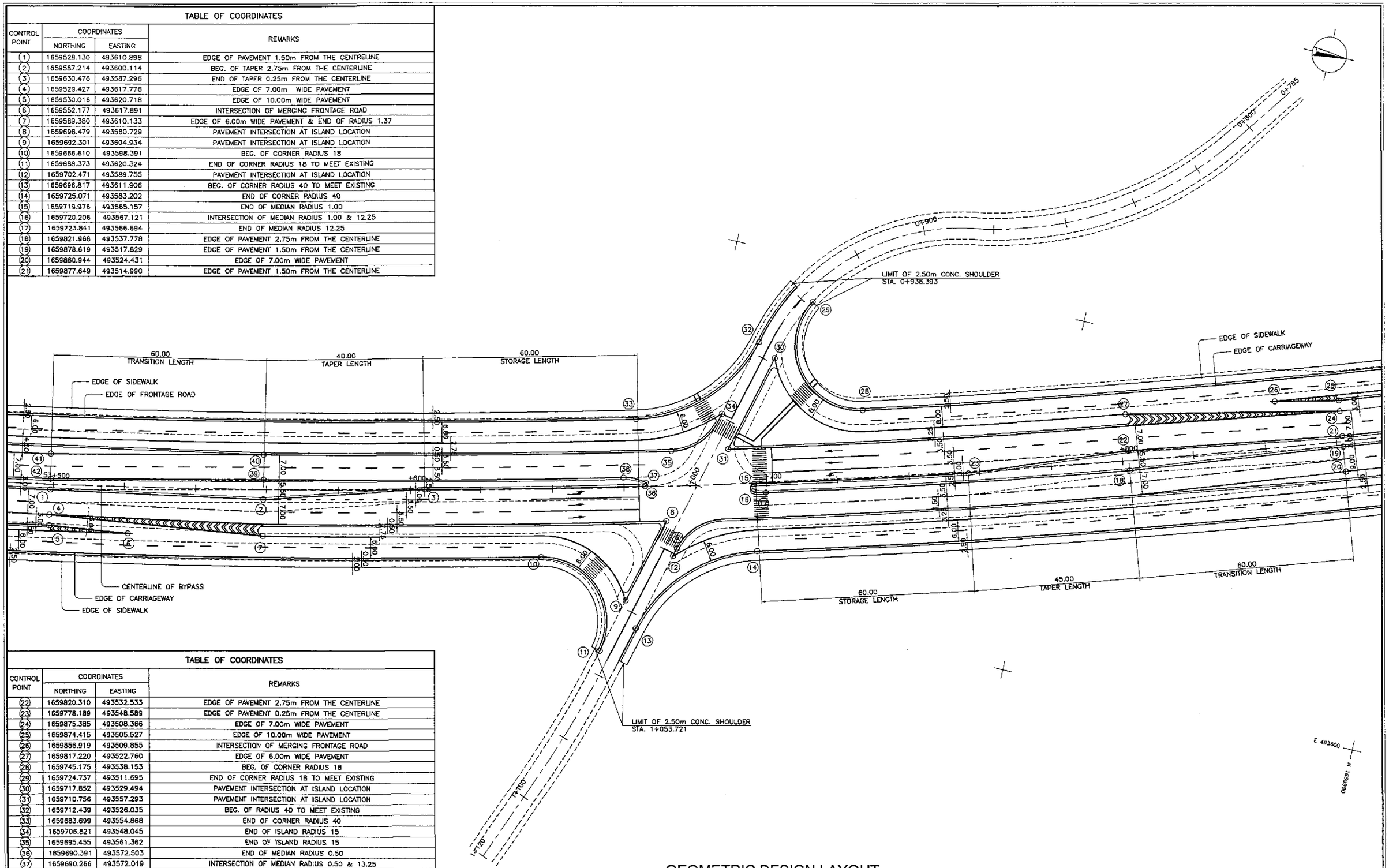


TABLE OF COORDINATES

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
22	1659820.310	493532.533	EDGE OF PAVEMENT 2.75m FROM THE CENTERLINE
23	1659778.189	493548.589	EDGE OF PAVEMENT 0.25m FROM THE CENTERLINE
24	1659875.385	493508.366	EDGE OF 7.00m WIDE PAVEMENT
25	1659874.415	493505.527	EDGE OF 10.00m WIDE PAVEMENT
26	1659856.919	493509.855	INTERSECTION OF MERGING FRONTAGE ROAD
27	1659817.220	493522.760	EDGE OF 6.00m WIDE PAVEMENT
28	1659745.175	493538.153	BEG. OF CORNER RADIUS 18
29	1659724.737	493511.695	END OF CORNER RADIUS 18 TO MEET EXISTING
30	1659717.852	493529.494	PAVEMENT INTERSECTION AT ISLAND LOCATION
31	1659710.756	493557.293	PAVEMENT INTERSECTION AT ISLAND LOCATION
32	1659712.439	493526.035	BEG. OF RADIUS 40 TO MEET EXISTING
33	1659683.699	493554.868	END OF CORNER RADIUS 40
34	1659706.821	493548.045	END OF ISLAND RADIUS 15
35	1659695.455	493561.362	END OF ISLAND RADIUS 15
36	1659690.391	493572.503	END OF MEDIAN RADIUS 0.50
37	1659690.266	493572.019	INTERSECTION OF MEDIAN RADIUS 0.50 & 13.25
38	1659683.971	493571.579	END OF MEDIAN RADIUS 13.25
39	1659586.08	493594.732	EDGE OF PAVEMENT 2.75m FROM THE CENTERLINE
40	1659584.538	493587.904	EDGE OF 7.00m WIDE PAVEMENT
41	1659526.021	493601.124	EDGE OF 7.00m WIDE PAVEMENT
42	1659527.563	493607.951	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE

GEOMETRIC DESIGN LAYOUT
INTERSECTION A-21 (STA. 53+680.462) - ULTIMATE STAGE

1 / RI-14 SCALE 1:500

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

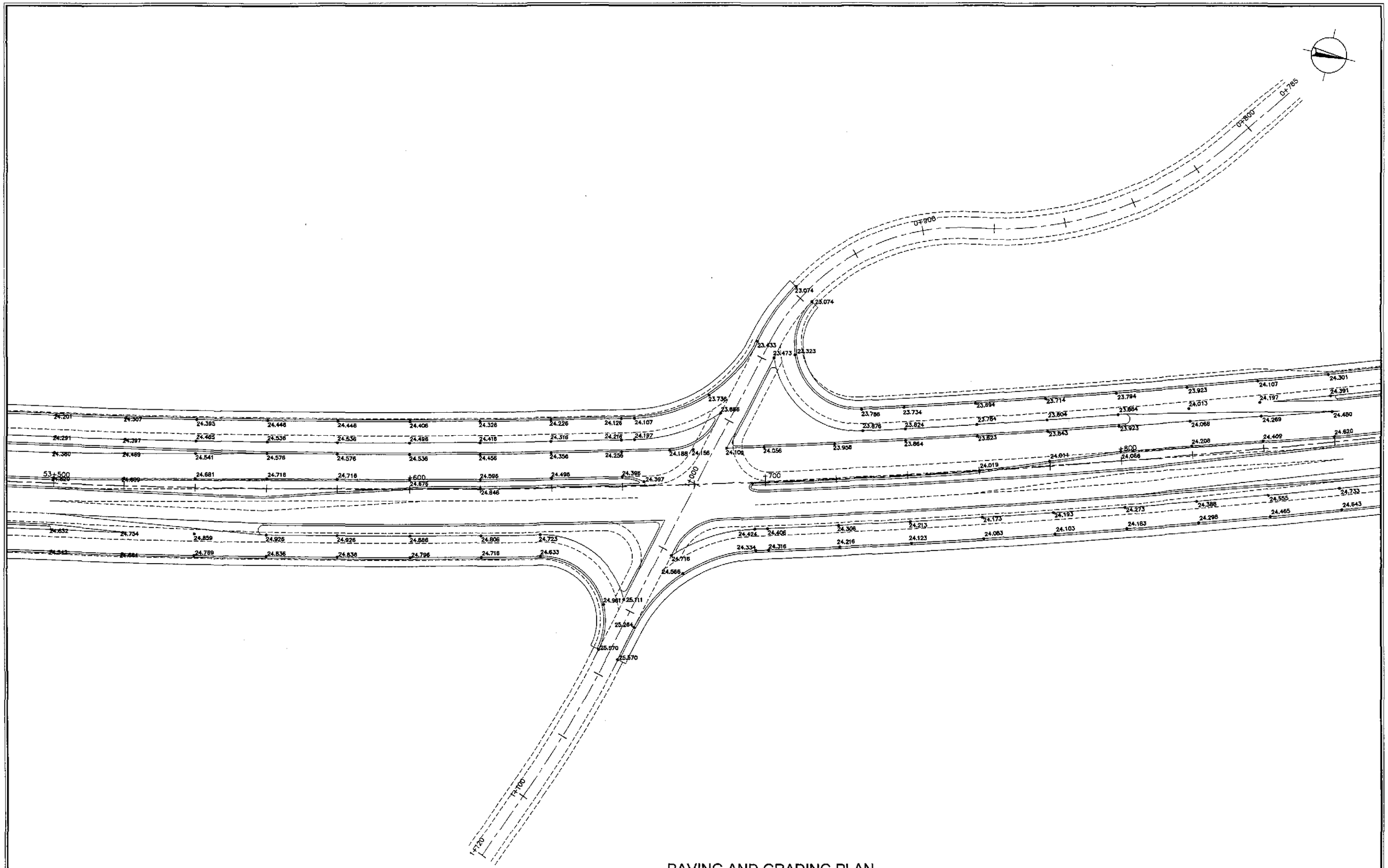
KEI KATAHIRA & ENGINEERS INTERNATIONAL
YEC YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/28/02	A. ORONCE
CHECKED	9/30/02	S. GOSOE
SUBMITTED	10/4/02	M. NIIGAKI 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 :	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) PLARIDEL BYPASS - CONTRACT PACKAGE IV	1:500 FULL SIZE A1	INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-21 (ULTIMATE STAGE)	RI-14

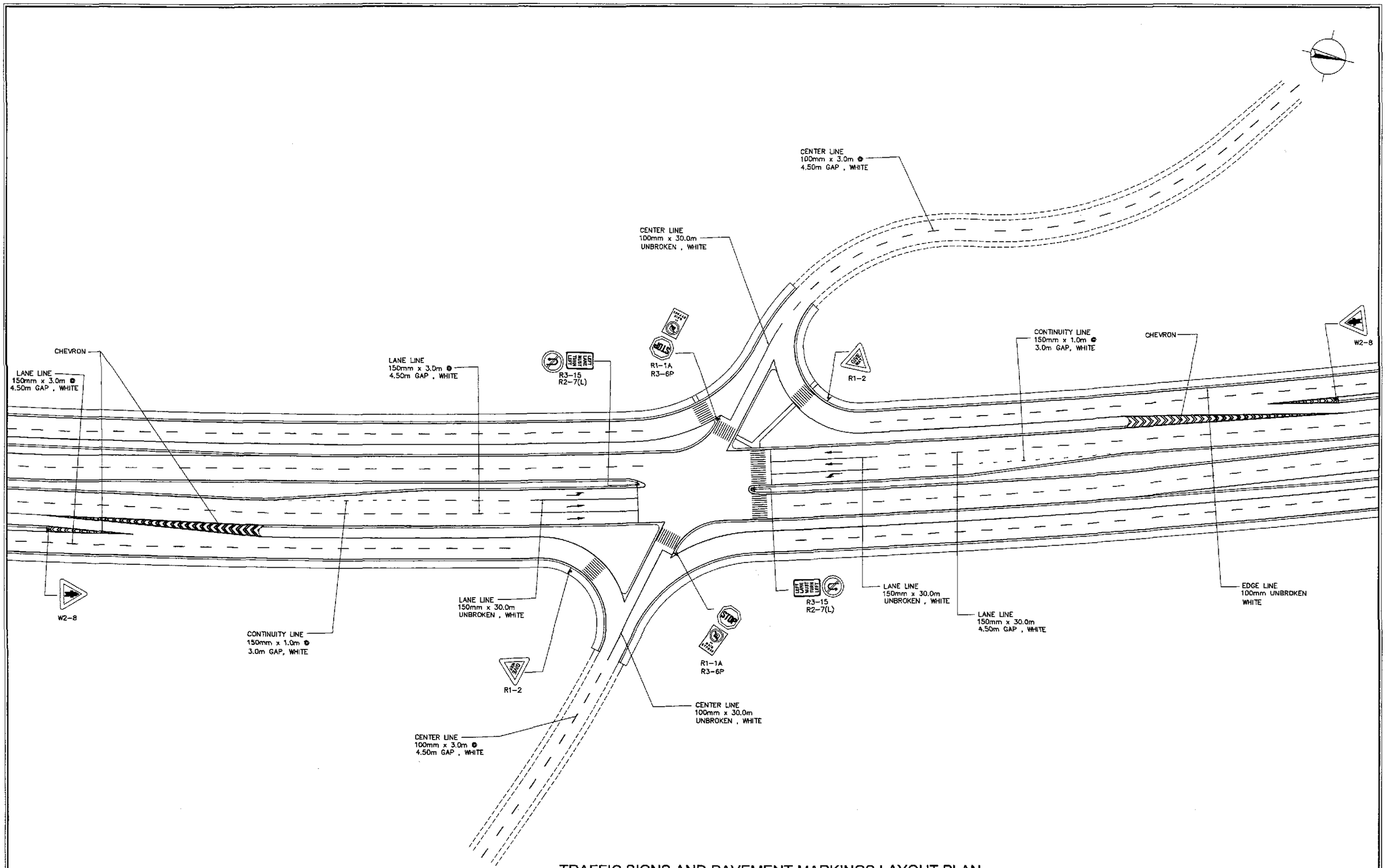


PAVING AND GRADING PLAN

1 / RI-15 INTERSECTION A-21 (STA. 53+680.462) - ULTIMATE STAGE

SCALE 1:500

		DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS					PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
JICA JAPAN INTERNATIONAL COOPERATION AGENCY	DESIGNED	9/28/02	R. GO	PJHL – PMO	BUREAU OF DESIGN		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)	1:500	INTERSECTION DETAIL PAVING AND GRADING PLAN INTERSECTION A-21 (ULTIMATE STAGE)	RI-15
KEI KATAHIRA & ENGINEERS INTERNATIONAL / yec YACHIYO ENGINEERING CO., LTD.	CHECKED	9/30/02	S. GOOSE	Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)	PLARIDEL BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		
	SUBMITTED	10/16/02	M. KINUCHI TEAM LEADER	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				



1
RI-16

TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN
INTERSECTION A-21 (STA. 53+680.462) - ULTIMATE STAGE

SCALE 1:500

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

	DATE	SIGNATURE
DESIGNED	9/30/02	S. LUNA
CHECKED	9/30/02	S. JOSE
SUBMITTED	10/11/02	M. BONOAN TEAM LEADER

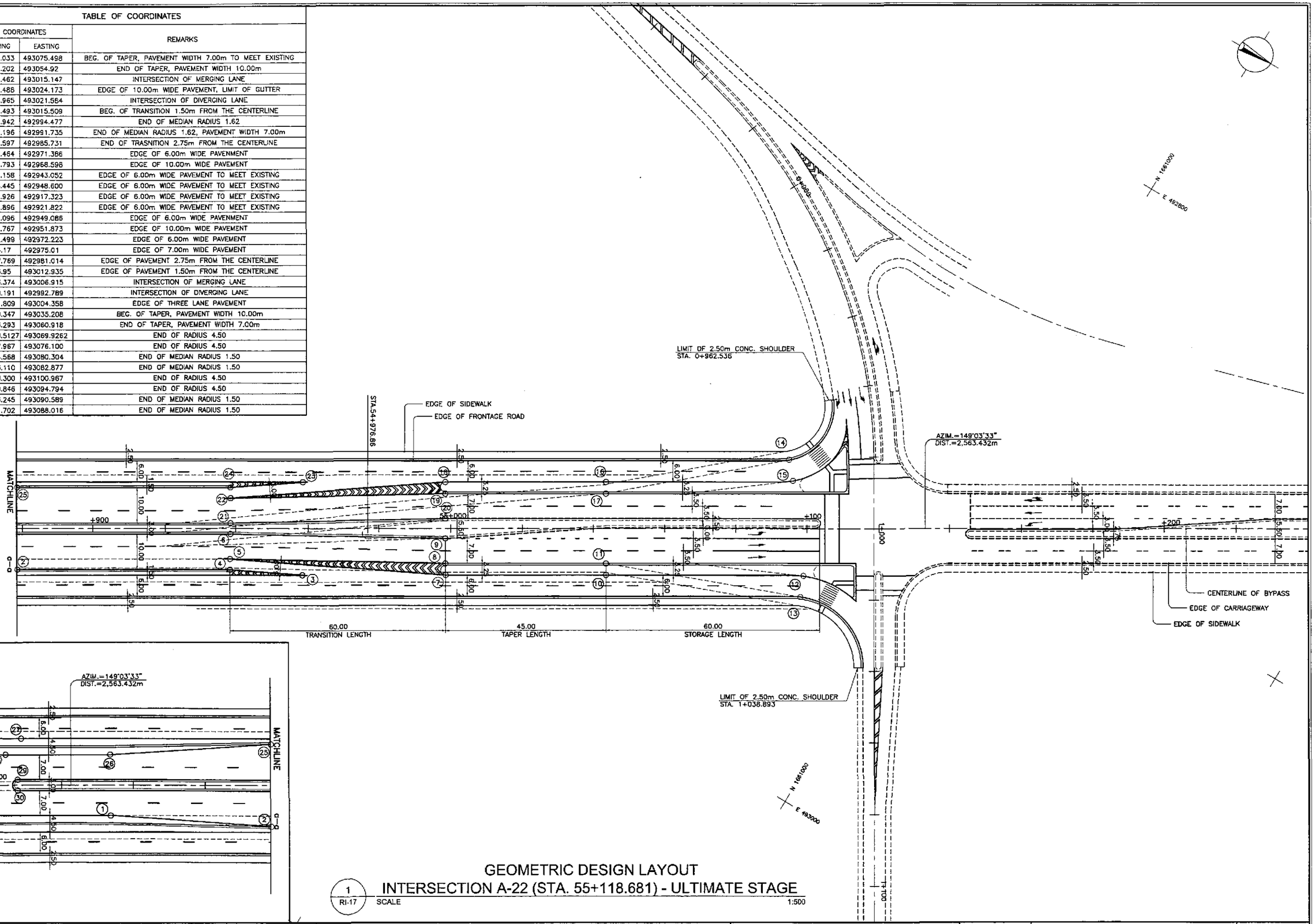
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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 :	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 PLAN INTERSECTION A-21 (ULTIMATE STAGE)	RI-16
PLARIDEL BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		

TABLE OF COORDINATES

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
1	1660742.033	493075.498	BEG. OF TAPER, PAVEMENT WIDTH 7.00m TO MEET EXISTING
2	1660782.202	493054.92	END OF TAPER, PAVEMENT WIDTH 10.00m
3	1660851.462	493015.147	INTERSECTION OF MERGING LANE
4	1660833.486	493024.173	EDGE OF 10.00m WIDE PAVEMENT, LIMIT OF GUTTER
5	1660831.965	493021.564	INTERSECTION OF DIVERGING LANE
6	1660828.493	493015.509	BEG. OF TRANSITION 1.50m FROM THE CENTERLINE
7	1660885.942	492994.477	END OF MEDIAN RADIUS 1.62
8	1660884.196	492991.735	END OF MEDIAN RADIUS 1.62, PAVEMENT WIDTH 7.00m
9	1660880.597	492985.731	END OF TRASNITION 2.75m FROM THE CENTERLINE
10	1660924.464	492971.386	EDGE OF 6.00m WIDE PAVENMENT
11	1660922.793	492968.598	EDGE OF 10.00m WIDE PAVEMENT
12	1660972.158	492943.052	EDGE OF 6.00m WIDE PAVEMENT TO MEET EXISTING
13	1660974.445	492948.600	EDGE OF 6.00m WIDE PAVEMENT TO MEET EXISTING
14	1660951.926	492917.323	EDGE OF 6.00m WIDE PAVEMENT TO MEET EXISTING
15	1660955.896	492921.822	EDGE OF 6.00m WIDE PAVEMENT TO MEET EXISTING
16	1660911.096	492949.086	EDGE OF 6.00m WIDE PAVENMENT
17	1660912.767	492951.873	EDGE OF 10.00m WIDE PAVEMENT
18	1660872.499	492972.223	EDGE OF 6.00m WIDE PAVEMENT
19	1660874.17	492975.01	EDGE OF 7.00m WIDE PAVEMENT
20	1660877.769	492981.014	EDGE OF PAVEMENT 2.75m FROM THE CENTERLINE
21	1660826.95	493012.935	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE
22	1660823.374	493006.915	INTERSECTION OF MERGING LANE
23	1660838.191	492992.789	INTERSECTION OF DIVERGING LANE
24	1660821.809	493004.358	EDGE OF THREE LANE PAVEMENT
25	1660770.347	493035.208	BEG. OF TAPER, PAVEMENT WIDTH 10.00m
26	1660733.293	493060.918	END OF TAPER, PAVEMENT WIDTH 7.00m
27	1660709.5127	493069.9262	END OF RADIUS 4.50
28	1660707.967	493076.100	END OF RADIUS 4.50
29	1660714.568	493080.304	END OF MEDIAN RADIUS 1.50
30	1660716.110	493082.877	END OF MEDIAN RADIUS 1.50
31	1660708.300	493100.967	END OF RADIUS 4.50
32	1660709.846	493094.794	END OF RADIUS 4.50
33	1660703.245	493090.589	END OF MEDIAN RADIUS 1.50
34	1660701.702	493088.016	END OF MEDIAN RADIUS 1.50



GEOMETRIC DESIGN LAYOUT
INTERSECTION A-22 (STA. 55+118.681) - ULTIMATE STAGE

1 / RI-17 SCALE 1:500

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	9/28/02	A. ORONCE
CHECKED	9/30/02	S. SUCOSE
SUBMITTED	10/16/02	M. KUCHIKI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

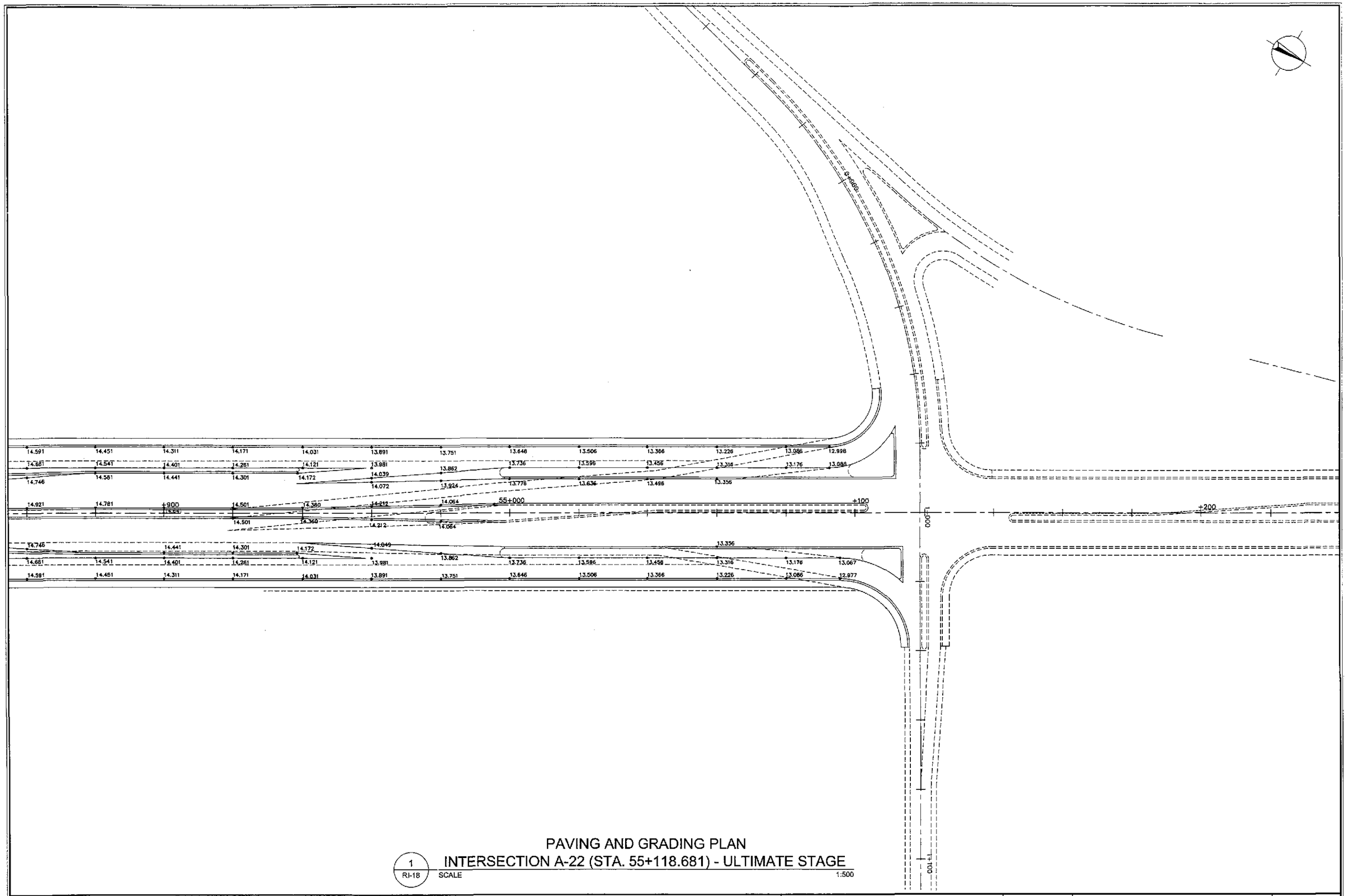
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

SCALE : 1:500 FULL SIZE A1

SHEET CONTENTS :
INTERSECTION DETAIL
GEOMETRIC DESIGN LAYOUT
INTERSECTION A-22 (ULTIMATE STAGE)

SHEET NO. : RI-17



PAVING AND GRADING PLAN

1 / RI-18 INTERSECTION A-22 (STA. 55+118.681) - ULTIMATE STAGE

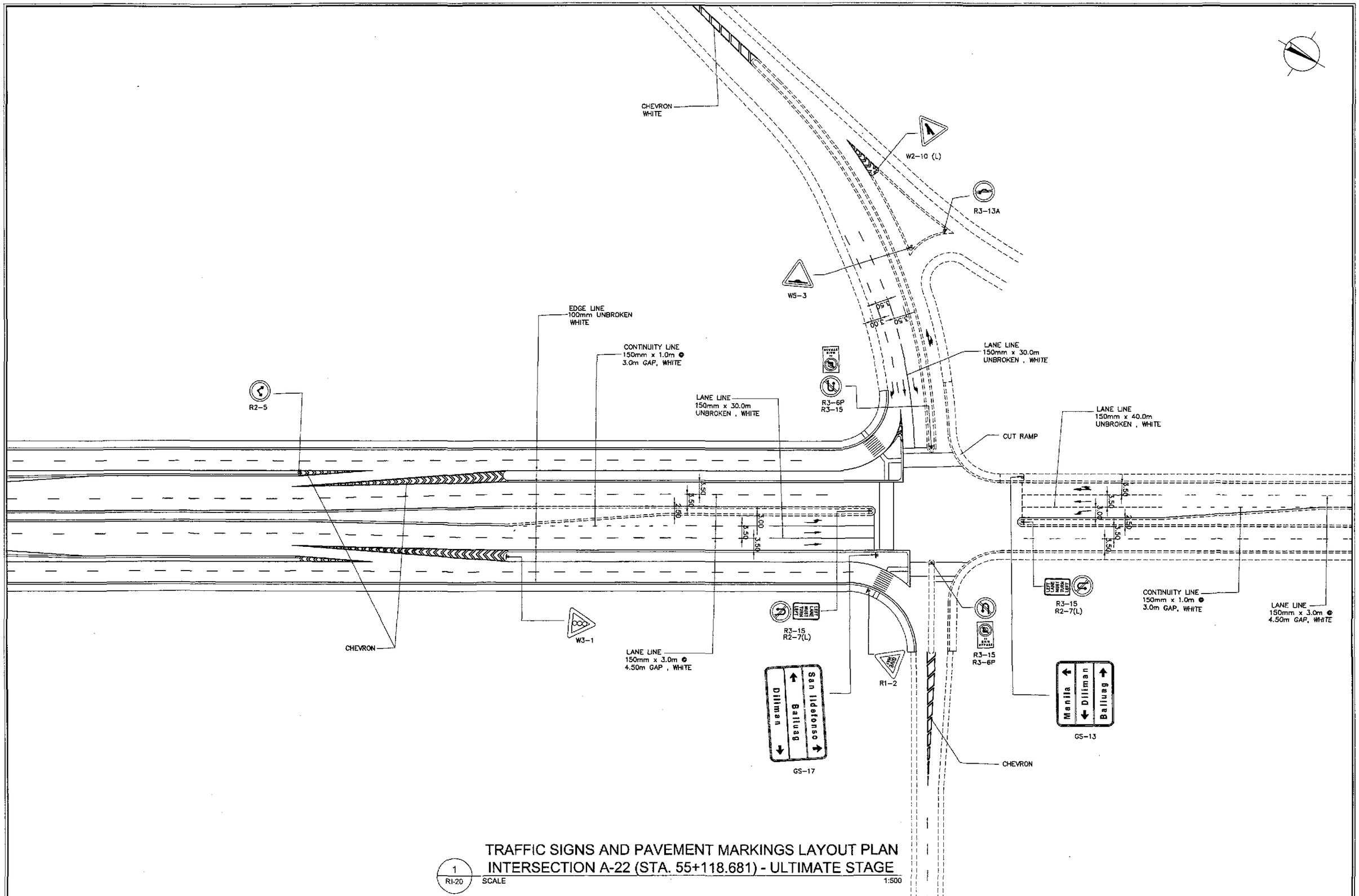
SCALE 1:500

		DATE	SIGNATURE
JICA JAPAN INTERNATIONAL COOPERATION AGENCY	DESIGNED	9/20/02	R. GO
KATAHIRA & ENGINEERS INTERNATIONAL / YACHIYO ENGINEERING CO., LTD.	CHECKED	9/30/02	S. GOSE
	SUBMITTED	10/16/02	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	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONGAN	SIMEON A. DATUMANONG
Project Director	Chief, Highways Division	O/C, 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	INTERSECTION DETAIL PAVING AND GRADING PLAN INTERSECTION A-22 (ULTIMATE STAGE)	RI-18
PLARIDEL BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1		



1
RI-20

TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN
INTERSECTION A-22 (STA. 55+118.681) - ULTIMATE STAGE

SCALE 1:500

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

	DATE	SIGNATURE
DESIGNED	9/28/02	LUNA
CHECKED	9/30/02	GOSE
SUBMITTED	10/16/02	TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

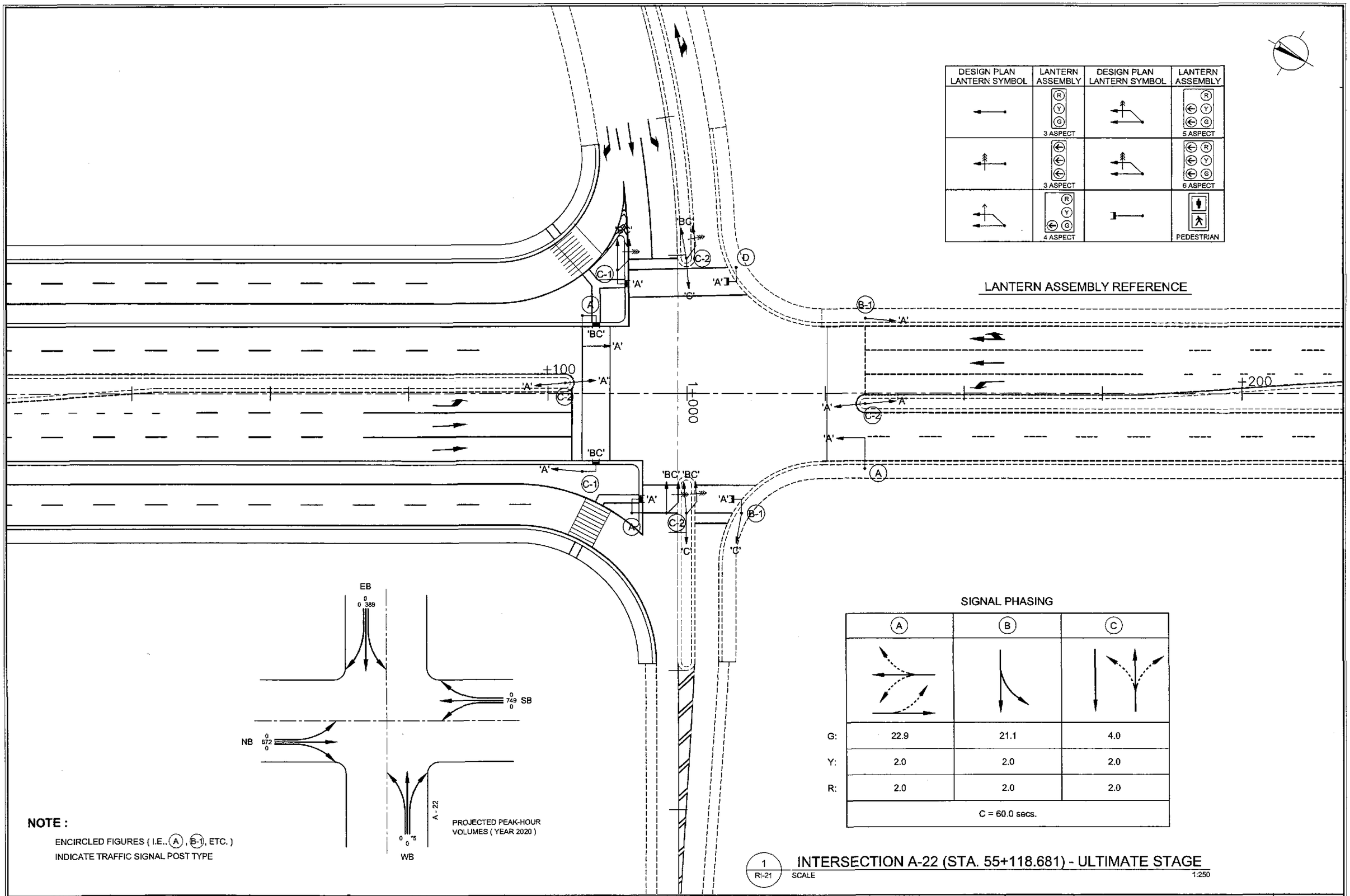
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG
Project Director	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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

SCALE : 1:500
FULL SIZE A1

SHEET CONTENTS :
TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN
INTERSECTION A-22 (ULTIMATE STAGE)

SHEET NO. : RI-19



SIGNAL PHASING

	A	B	C
G:	22.9	21.1	4.0
Y:	2.0	2.0	2.0
R:	2.0	2.0	2.0
	C = 60.0 secs.		

NOTE :

ENCIRCLED FIGURES (I.E., (A), (B-1), ETC.) INDICATE TRAFFIC SIGNAL POST TYPE

1 / RI-21 INTERSECTION A-22 (STA. 55+118.681) - ULTIMATE STAGE

SCALE 1:250

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

	DATE	SIGNATURE
DESIGNED	9/28/02	J. CATBAGAN
CHECKED	9/30/02	S. JOSE
SUBMITTED	10/14/02	M. KUCHI TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

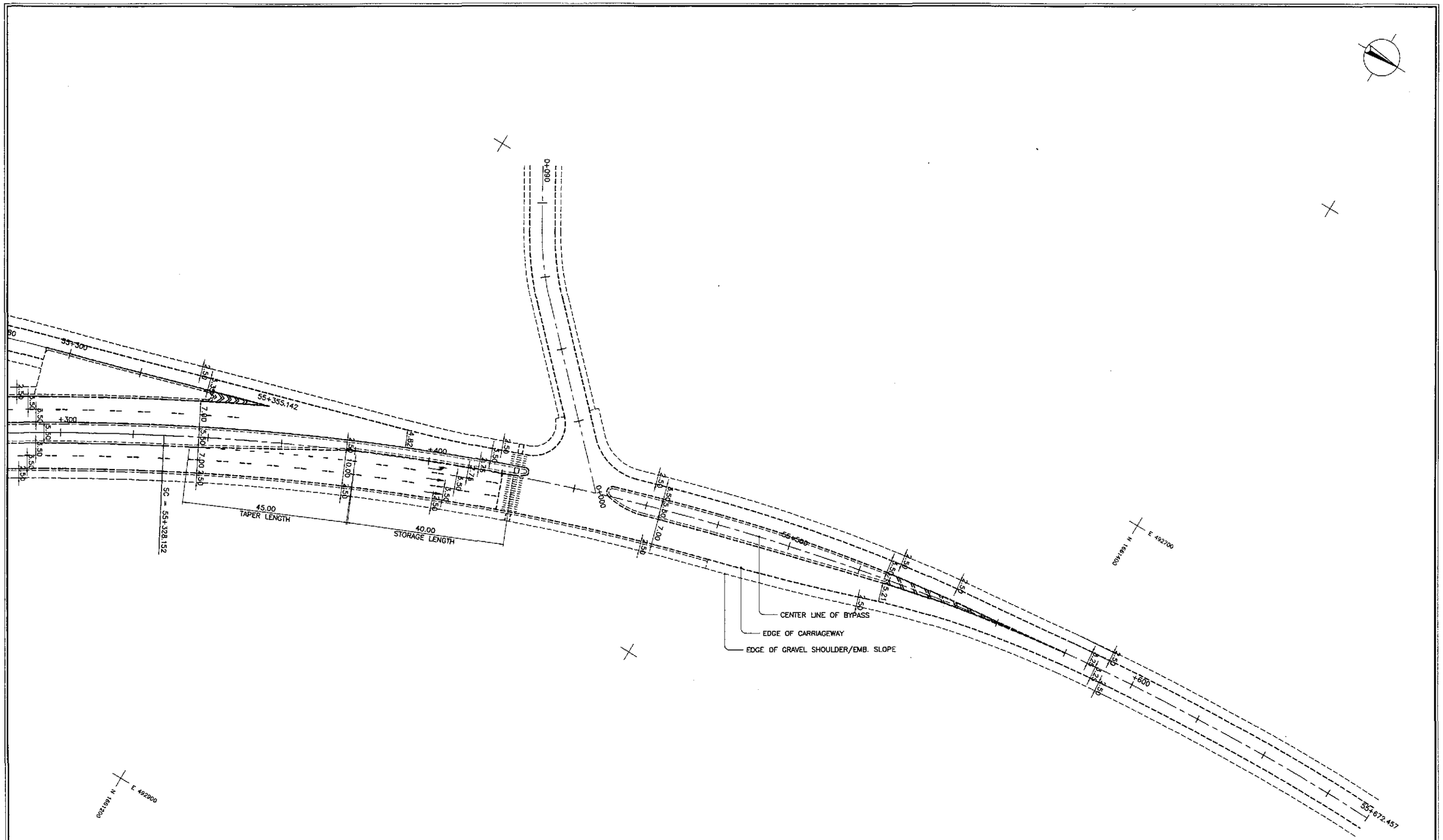
PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)
DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, 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)
PLARIDEL BYPASS - CONTRACT PACKAGE IV

SCALE : 1:250 FULL SIZE A1

SHEET CONTENTS :
TRAFFIC SIGNAL LIGHT LAYOUT
INTERSECTION A-22 (ULTIMATE STAGE)

SHEET NO. : RI-20



GEOMETRIC DESIGN LAYOUT

1 / RI-27 INTERSECTION A-22b (STA. 55+445.972) - ULTIMATE STAGE

SCALE 1:500

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

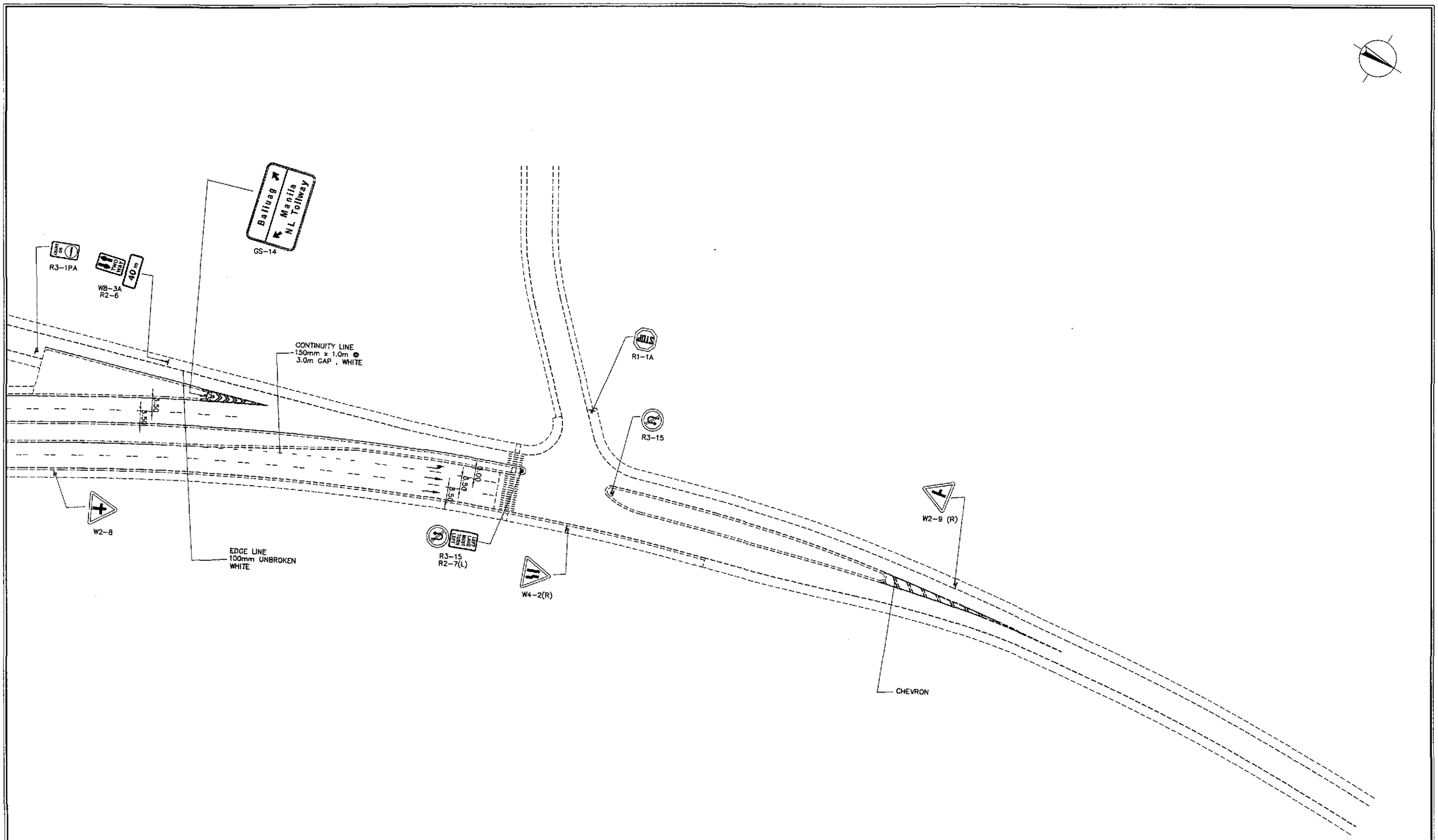
KATAHIRA & ENGINEERS INTERNATIONAL
YACHIYO ENGINEERING CO., LTD.

	DATE	SIGNATURE
DESIGNED	7/28/02	A. BRONGE
CHECKED	7/30/02	S. JOSE
SUBMITTED	10/16/02	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	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) PLARIDEL BYPASS - CONTRACT PACKAGE IV	1:500 FULL SIZE A1	INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-22a & b (ULTIMATE STAGE)	RI-21



TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN
INTERSECTION A-22b (STA. 55+445.972) - ULTIMATE STAGE

1 / RI-28 SCALE 1:500

JICA JAPAN INTERNATIONAL COOPERATION AGENCY		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 : 1:500	SHEET CONTENTS : TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT PLAN INTERSECTION A-22a (ULTIMATE STAGE)	SHEET NO. : RI-22
	DESIGNED	9/28/02	S. LUNA	PJHL – PMO	BUREAU OF DESIGN		OFFICE OF THE SECRETARY				
KEI KATAHIRA & ENGINEERS INTERNATIONAL / yec YACHIYO ENGINEERING CO., LTD.	CHECKED	9/30/02	S. JOSE	Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)	PLARIDEL BYPASS - CONTRACT PACKAGE IV	FULL SIZE A1	
	SUBMITTED	10/14/02	M. MUCHI TEAM LEADER	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			