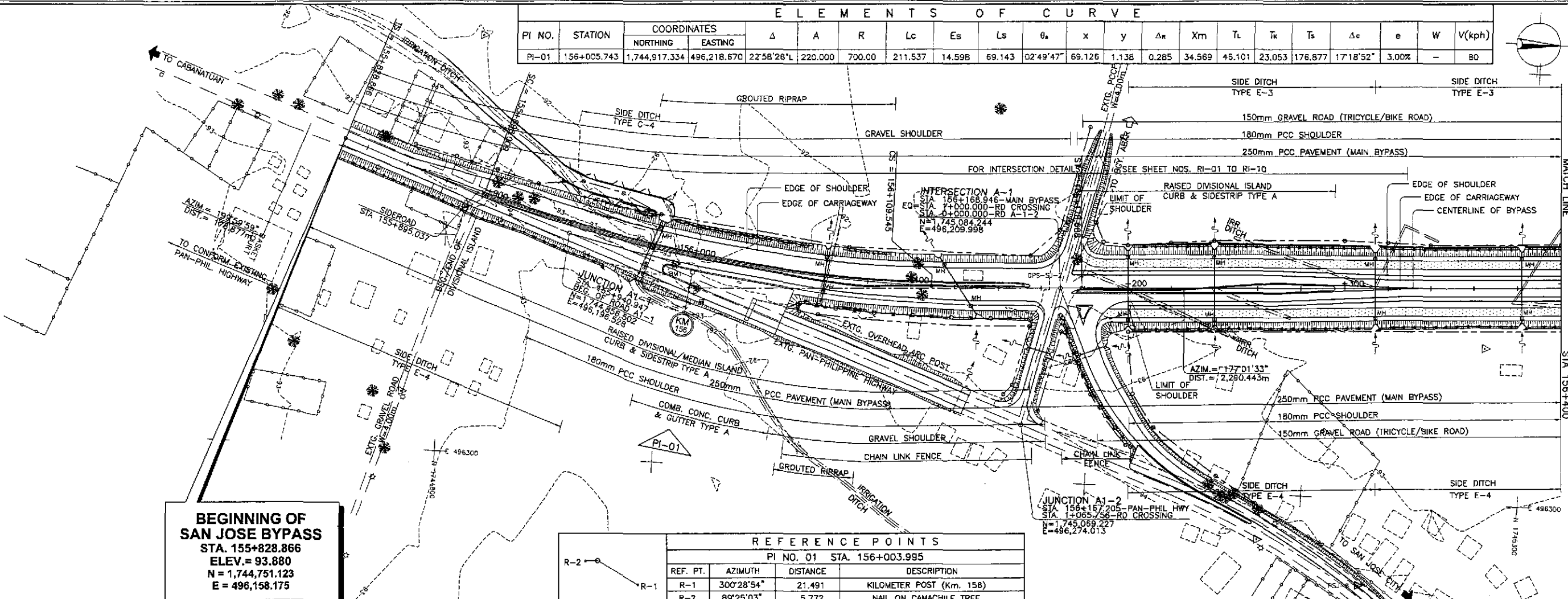
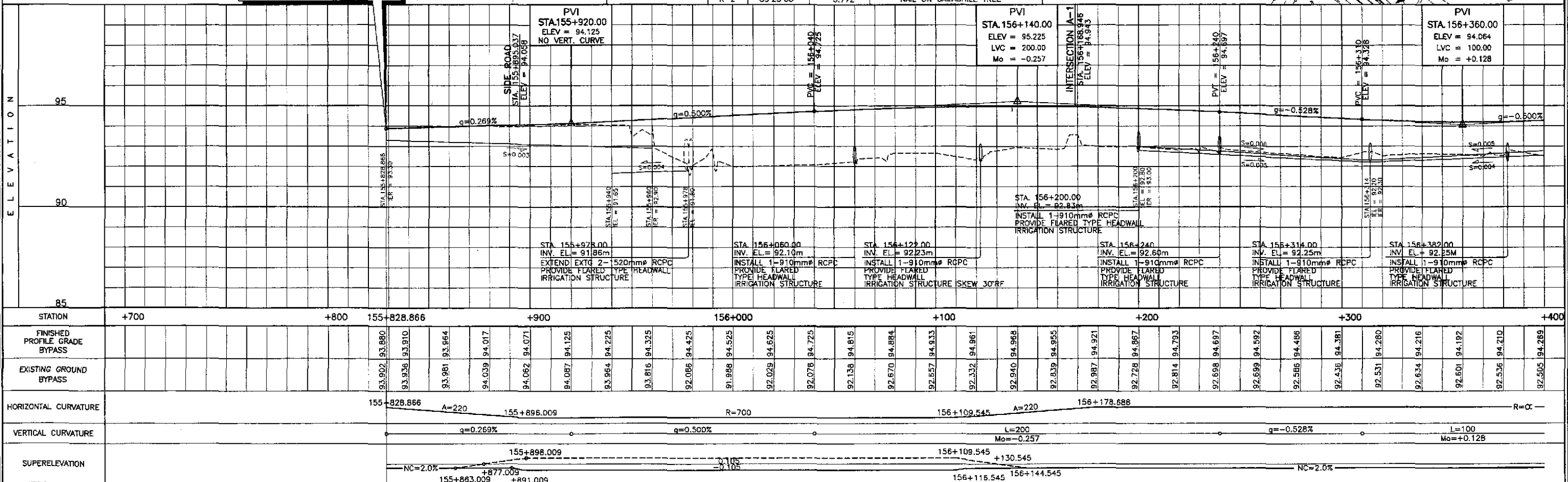


PI NO.	STATION	COORDINATES		Δ	A	R	Lc	Es	Ls	θ_a	x	y	Δx	Xm	Tl	Tt	Ts	Δe	e	W	V(kph)
		NORTHING	EASTING																		
PI-01	156+005.743	1,744,917.334	496,218.670	22°58'26" L	220.000	700.00	211.537	14.598	69.143	02°49'47"	69.126	1.138	0.285	34.569	46.101	23.053	176.877	17'18"52"	3.00%	-	80



BEGINNING OF SAN JOSE BYPASS
 STA. 155+828.866
 ELEV. = 93.880
 N = 1,744,751.123
 E = 496,158.175

REFERENCE POINTS			
PI NO. 01 STA. 156+003.995			
REF. PT.	AZIMUTH	DISTANCE	DESCRIPTION
R-1	300°28'54"	21.491	KILOMETER POST (Km. 156)
R-2	89°25'03"	5.772	NAIL ON CAMACHILE TREE



STATION	+700	+800	155+828.866	+900	156+000	+100	+200	+300	+400																								
FINISHED PROFILE GRADE BYPASS			93.902	93.910	93.964	94.017	94.062	94.071	94.125	94.225	94.325	94.425	94.525	94.615	94.670	94.884	94.933	94.961	94.968	94.955	94.921	94.867	94.793	94.697	94.592	94.486	94.381	94.280	94.192	94.210	94.289		
EXISTING GROUND BYPASS			93.902	93.910	93.981	94.017	94.062	94.071	94.125	93.964	94.225	94.325	94.425	94.525	94.615	94.670	94.884	94.933	94.961	94.968	94.955	94.921	94.867	94.793	94.697	94.592	94.486	94.381	94.280	94.192	94.210	94.289	
HORIZONTAL CURVATURE			155-828.866 A=220		155+896.009 R=700		156+109.545 A=220		156+178.688 R=∞																								
VERTICAL CURVATURE			q=0.269%		q=0.500%		L=200 Mo=-0.257		q=-0.528%		L=100 Mo=+0.128																						
SUPERELEVATION			NC=2.0%		+877.009 +891.009		+130.545		NC=2.0%																								

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 JAPAN INTERNATIONAL COOPERATION AGENCY

KAI KATAHIRA & ENGINEERS INTERNATIONAL
YEC YACHYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES
 DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DESIGNED: 9/2/02
 CHECKED: 9/4/02
 SUBMITTED: 9/6/02

DATE: 9/2/02
 SIGNATURE: [Signature]
 S. COSE
 TEAM LEADER

PJHL - PMO
 Submitted By: [Signature]
 DANILLO C. TRAJANO
 Project Director

BUREAU OF DESIGN
 Reviewed By: [Signature]
 JOSEFINA M. ALAGAR
 Chief, Highways Division

OFFICE OF THE SECRETARY
 Recommended By: [Signature]
 GILBERTO S. REYES
 OIC, Director IV

Recommended By: [Signature]
 MANUEL M. BONDAN
 Undersecretary

Approved By: [Signature]
 SIMEDON A. DATUMANONG
 Secretary

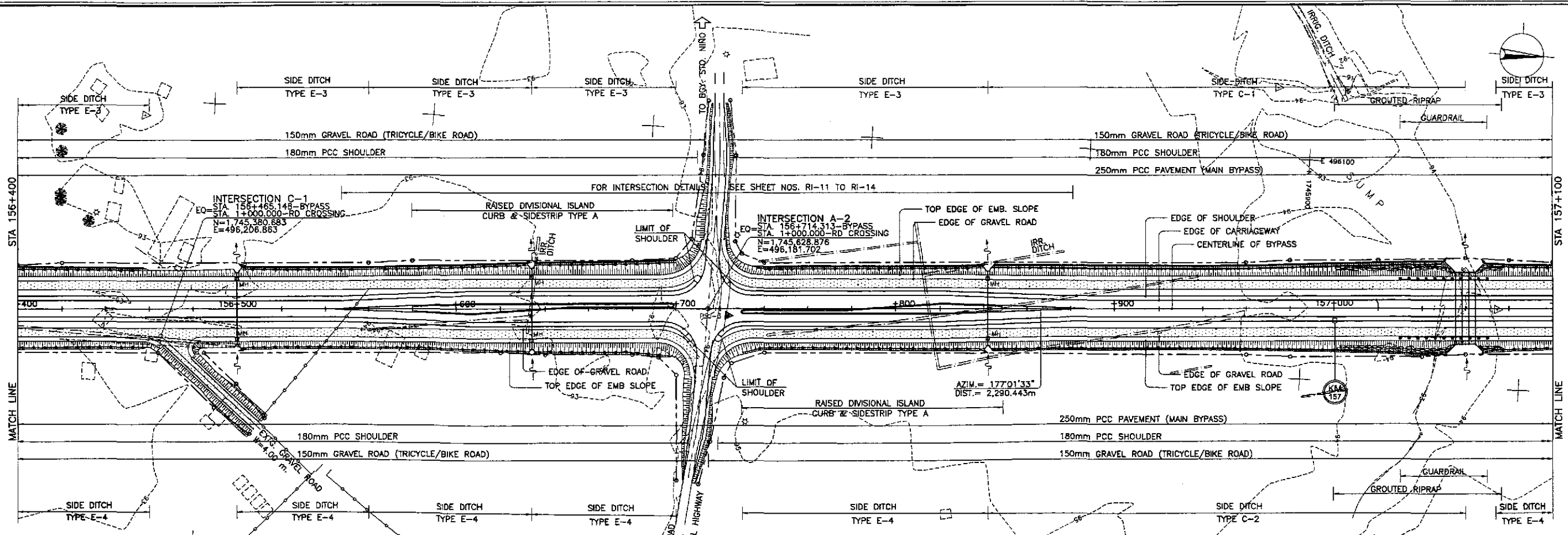
PROJECT AND LOCATION :
 THE DETAILED DESIGN STUDY ON
 UPGRADING INTER-URBAN HIGHWAY SYSTEM
 ALONG THE PAN-PHILIPPINE HIGHWAY
 (Paralid, Cabanatuan and San Jose Bypasses)

SAN JOSE BYPASS

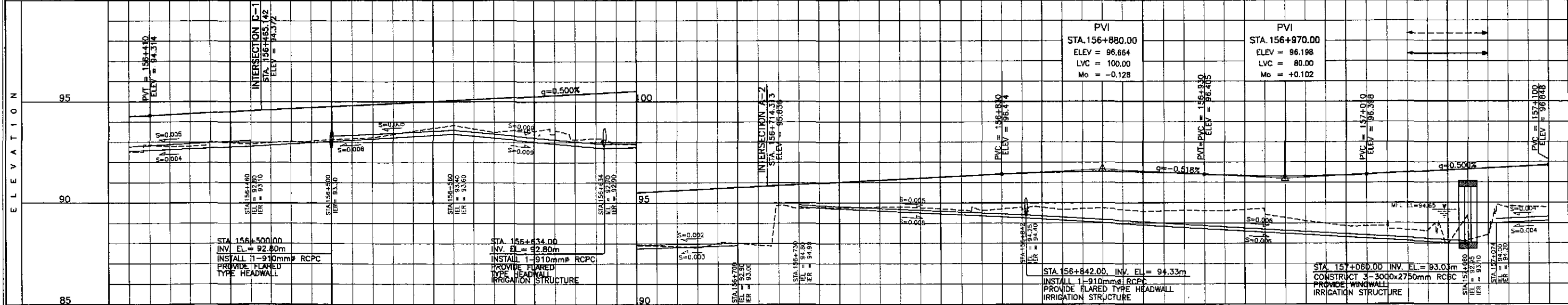
SCALE :
 HORIZONTAL 1:1000
 VERTICAL 1:100
 FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE
 ALONG BYPASS (INITIAL STAGE)
 STA. 155+828.866 - STA. 156+400

SHEET NO. :
RP-01

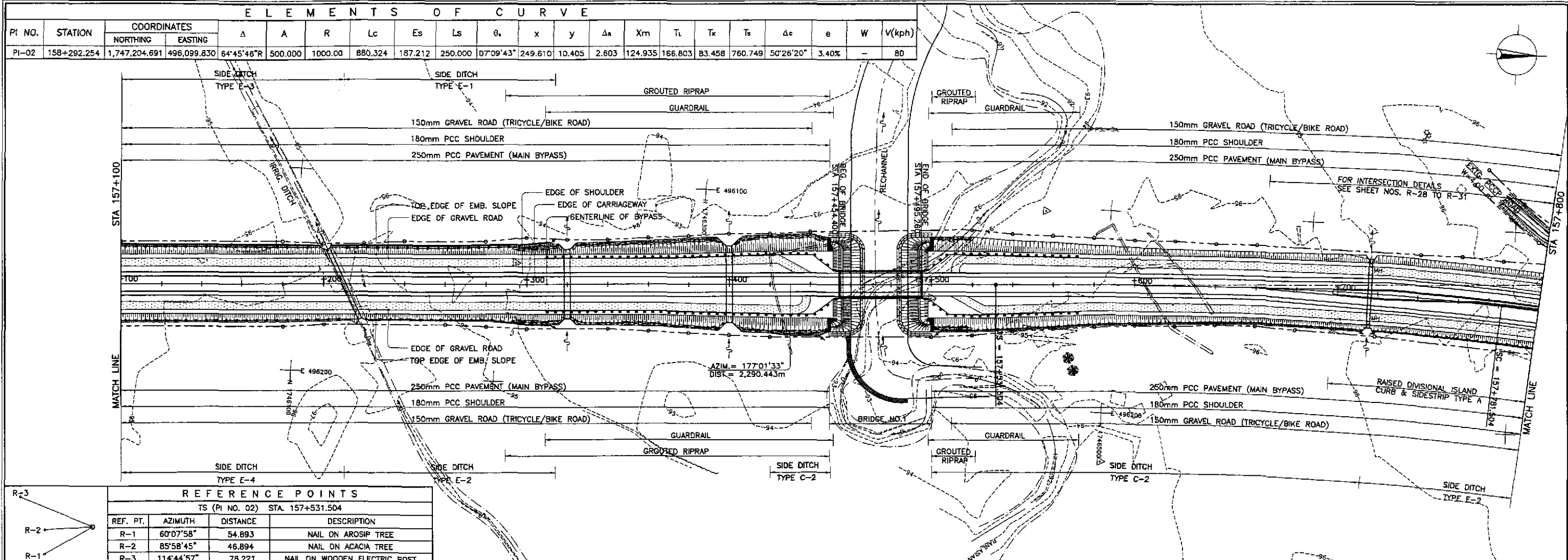


REFERENCE POINTS			
INTERSECTION A-2 STA. 156+714.314			
REF. PT.	AZIMUTH	DISTANCE	DESCRIPTION
R-1	177°42'36"	37.007	NAIL ON WOODEN ELECTRIC POST
R-2	81°29'36"	49.149	NAIL ON WOODEN ELECTRIC POST



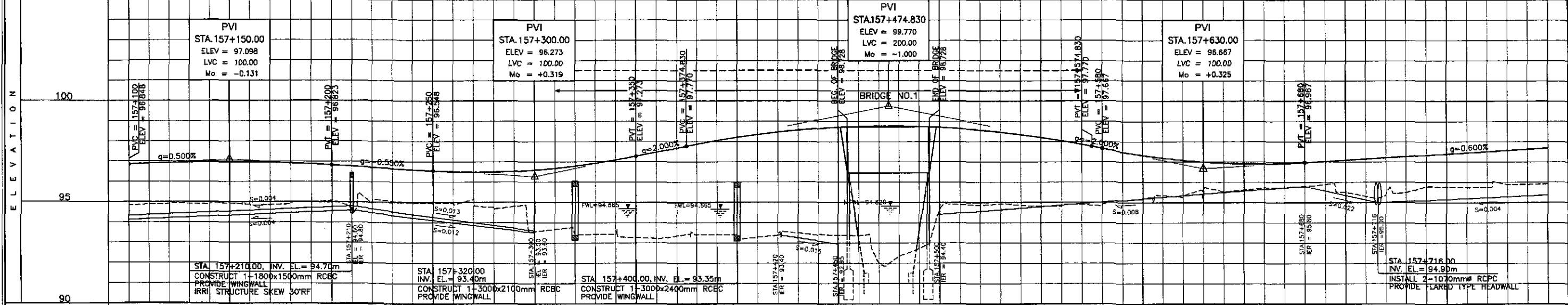
STATION	+400	156+500										+600	+700										+800	+900										157+000										+1000
FINISHED PROFILE GRADE BYPASS	94.289	94.364	94.464	94.564	94.664	94.764	94.864	94.964	95.064	95.164	95.264	95.364	95.464	95.564	95.664	95.764	95.864	95.964	96.064	96.164	96.264	96.364	96.459	96.518	96.537	96.515	96.452	96.360	96.307	96.305	96.354	96.448	96.548	96.648	96.748	96.848								
EXISTING GROUND BYPASS	92.505	92.771	93.033	93.291	93.556	93.823	94.093	94.364	94.636	94.909	95.184	95.464	95.744	96.024	96.304	96.584	96.864	97.144	97.424	97.704	97.984	98.264	98.544	98.824	99.104	99.384	99.664	99.944	100.224	100.504	100.784	101.064	101.344	101.624	101.904	102.184	102.464	102.744	103.024					
HORIZONTAL CURVATURE	R=∞																																											
VERTICAL CURVATURE	q=0.500%										L=100, Mo=-0.128										q=-0.518%, L=80, Mo=+0.102										q=0.500%													
SUPERELEVATION	NC=2.0%																																											

	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION :				SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	7/4/02	S. GOZEL		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)				HORIZONTAL 1:1000	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 156+400 - STA. 157+100	RP-02
	SUBMITTED	9/6/02	M. KUNDI		SAN JOSE BYPASS				VERTICAL 1:100		
					FULL SIZE A1						



REFERENCE POINTS

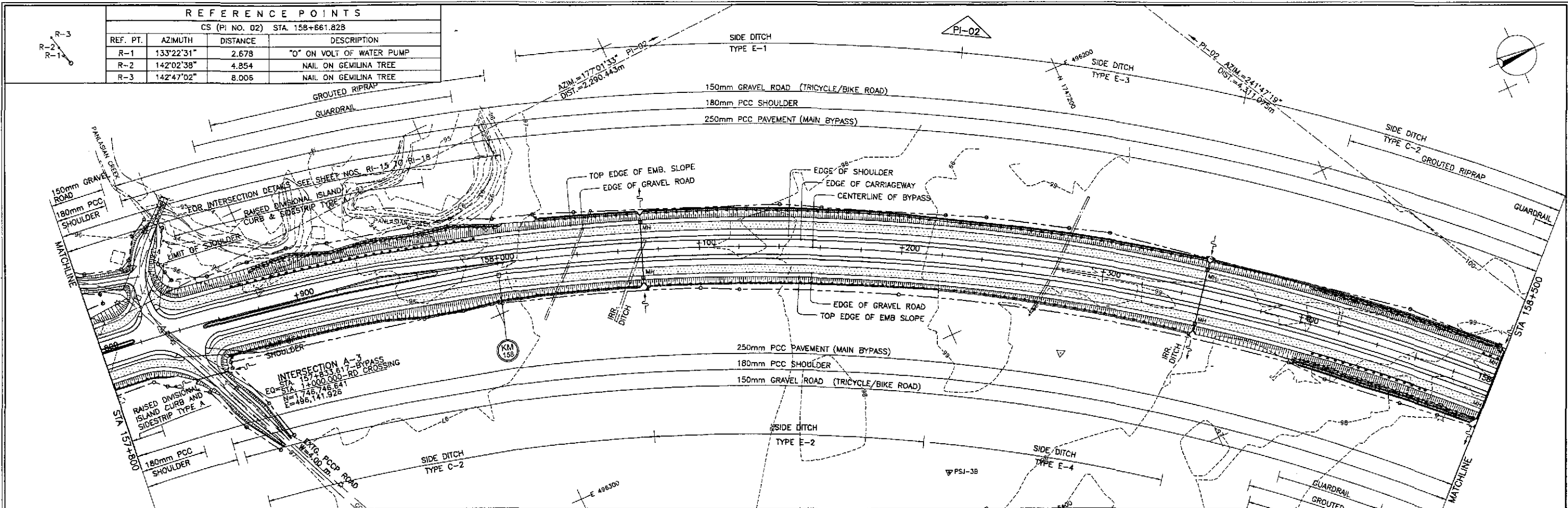
REF. PT.	AZIMUTH	DISTANCE	DESCRIPTION
R-1	60°07'58"	54.893	NAIL ON AROSIP TREE
R-2	85°58'45"	46.894	NAIL ON ACACIA TREE
R-3	114°44'57"	78.221	NAIL ON WOODEN ELECTRIC POST



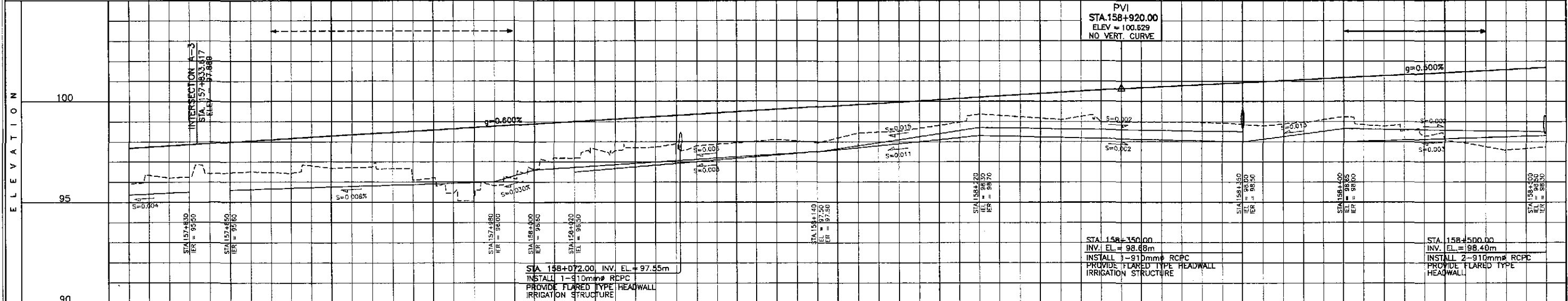
STATION	+100	+200	+300	+400	157-500	+600	+700	+800
FINISHED PROFILE GRADE BYPASS	96.848	96.927	96.964	96.959	96.912	96.823	96.713	96.603
EXISTING GROUND BYPASS	94.836	94.943	94.885	95.005	94.988	95.098	94.947	94.970
HORIZONTAL CURVATURE	-R=0°							
VERTICAL CURVATURE	L=100 Mo=-0.131		L=100 Mo=+0.319		L=200 Mo=-1.000		L=100 Mo=+0.325	
SUPERELEVATION	NC=2.0%							

	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :				
	CHECKED	9/2/02	<i>[Signature]</i>						THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	HORIZONTAL 1:1000	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 157+100 - STA. 157+800	RP-03
	SUBMITTED	9/4/02	<i>[Signature]</i>						DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY	VERTICAL 1:100		
	9/6/02	<i>[Signature]</i>	Submitted By: DANILDO C. TRAJANO Reviewed By: JOSEFINA M. ALAGAR Recommended By: GILBERTO S. REYES Recommended By: MANUEL M. BONDAN Approved By: SIMEON A. DATUMANGONG									

REFERENCE POINTS			
REF. PT.	AZIMUTH	DISTANCE	DESCRIPTION
CS (PI NO. 02) STA. 158+661.828			
R-1	133°22'31"	2.678	"O" ON VOLT OF WATER PUMP
R-2	142°02'38"	4.854	NAIL ON GEMILINA TREE
R-3	142°47'02"	8.006	NAIL ON GEMILINA TREE



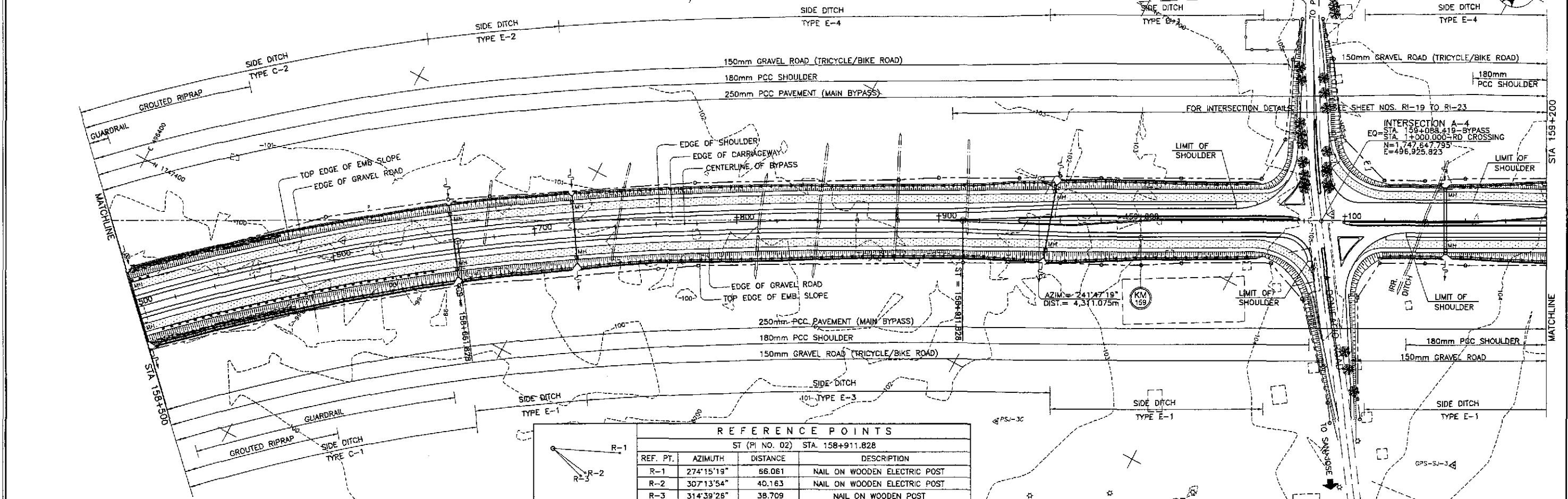
ELEMENTS OF CURVE																					
PI NO.	STATION	COORDINATES		Δ	A	R	Lc	Es	Ls	θ _s	x	y	Δ _r	X _m	T _L	T _r	T _s	Δ _c	e	W	V(kph)
		NORTHING	EASTING																		
PI-02	158+292.254	1,747,204.691	496,099.830	64°45'46"R	500.000	1000.00	880.324	187.212	250.000	07°09'43"	249.610	10.405	2.603	124.935	166.803	83.458	760.749	50°26'20"	3.40%	-	80



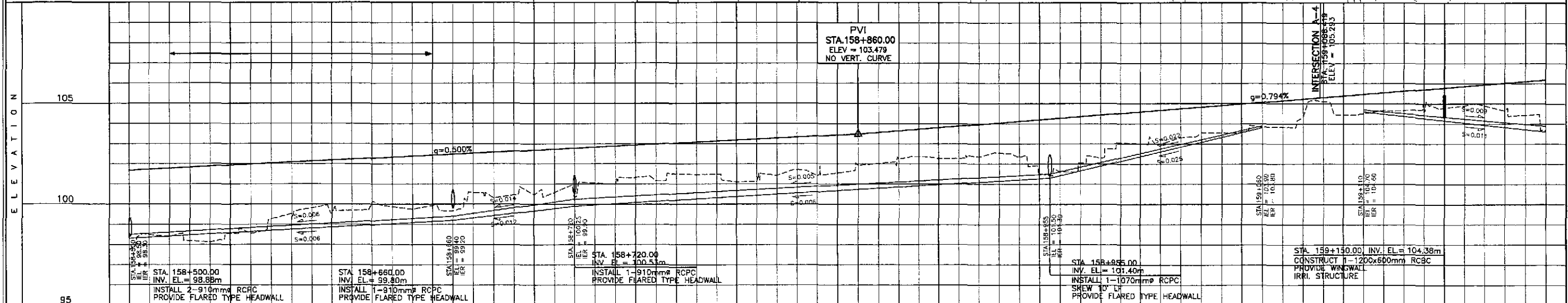
STATION	+800	+900	158+000	+100	+200	+300	+400	158+500
FINISHED PROFILE GRADE BYPASS	97.688	97.808	97.928	98.048	98.168	98.288	98.408	98.528
EXISTING GROUND BYPASS	95.910	96.208	96.407	96.508	96.432	96.684	96.739	96.106
HORIZONTAL CURVATURE	R=1000							
VERTICAL CURVATURE	g=0.500%							
SUPERELEVATION	0.119							

	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION :				SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/14/02	S. ROSE		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)				HORIZONTAL 1:1000	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 157+800 - STA. 158+500	RP-04
	SUBMITTED	9/6/02	M. K. K.		SAN JOSE BYPASS				VERTICAL 1:100		
SUBMITTED BY: DANILLO C. TRAJANO, Project Director		REVIEWED BY: JOSEFINA M. ALAGAR, Chief, Highways Division		RECOMMENDED BY: GILBERTO S. REYES, OIC, Director IV		APPROVED BY: MANUEL M. BONDAN, Undersecretary		APPROVED BY: SIMEON A. DATUMANONG, Secretary			

PI NO.	STATION	COORDINATES		Δ	A	R	Lc	Es	Ls	θ _a	x	y	Δ _π	X _m	T _L	T _R	T _S	Δ _c	e	W	V(kph)
		NORTHING	EASTING																		
PI-02	158+292.254	1,747,204.691	496,099.830	64°45'46"R	500.000	1000.00	880.324	187.212	250.000	07°09'43"	249.610	10.405	2.603	124.935	166.803	83.458	750.749	50°25'20"	3.40%	-	80

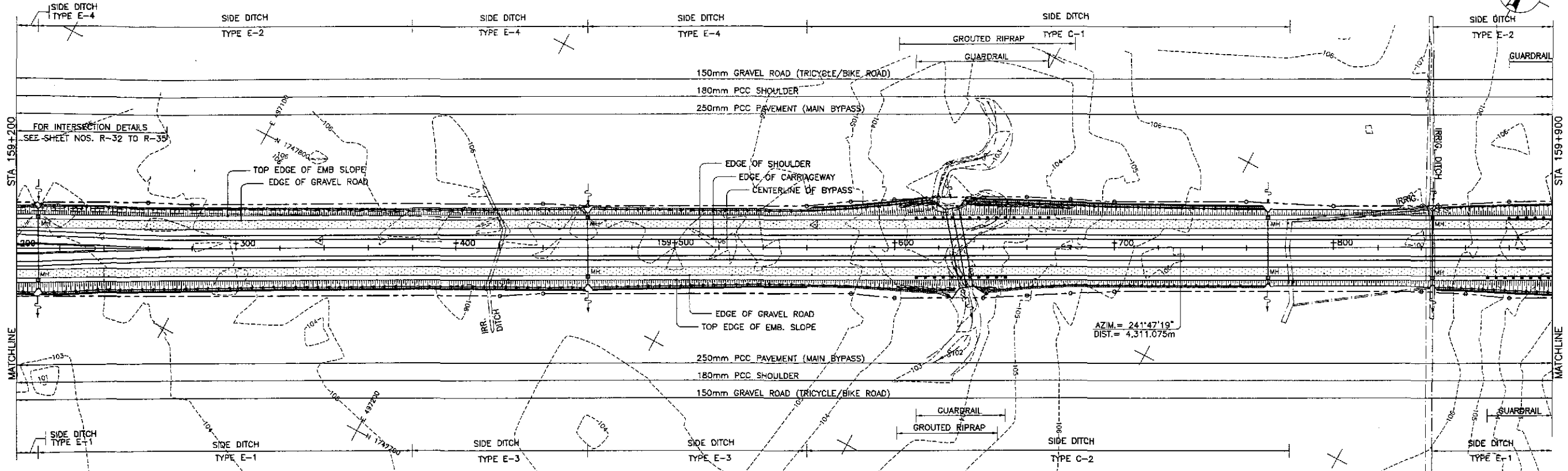


REFERENCE POINTS			
ST (PI NO. 02) STA. 158+911.828			
REF. PT.	AZIMUTH	DISTANCE	DESCRIPTION
R-1	274°15'19"	66.061	NAIL ON WOODEN ELECTRIC POST
R-2	307°13'54"	40.163	NAIL ON WOODEN ELECTRIC POST
R-3	314°39'26"	38.709	NAIL ON WOODEN POST

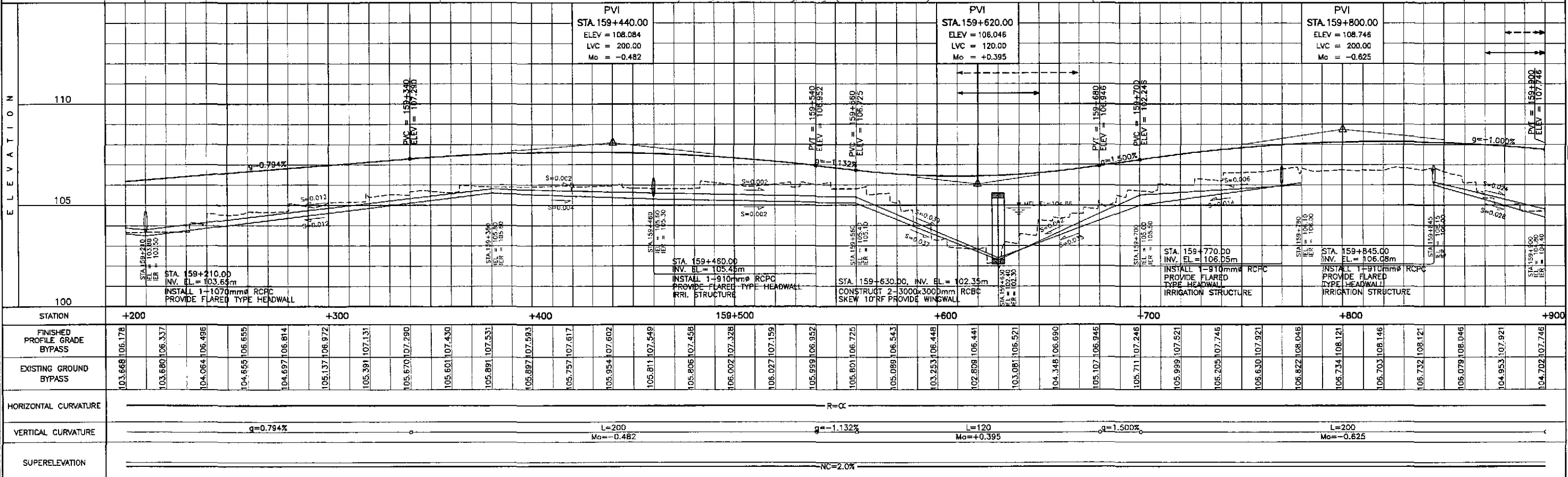


STATION	158+500	+600	+700	+800	+900	159+000	+100	+200																												
FINISHED PROFILE GRADE BYPASS	97.732	98.389	98.123	98.552	98.204	99.540	100.083	99.758	100.671	100.310	100.473	100.354	100.889	101.163	101.459	101.093	101.424	101.405	101.924	102.231	102.260	102.348	102.331	101.614	102.300	103.013	103.323	103.536	103.831	104.333	104.455	104.673	104.683	104.899	104.652	103.668
EXISTING GROUND BYPASS	97.732	98.389	98.123	98.552	98.204	99.540	100.083	99.758	100.671	100.310	100.473	100.354	100.889	101.163	101.459	101.093	101.424	101.405	101.924	102.231	102.260	102.348	102.331	101.614	102.300	103.013	103.323	103.536	103.831	104.333	104.455	104.673	104.683	104.899	104.652	103.668
HORIZONTAL CURVATURE	R=1000		158+661.828										A=500										158+911.828										R=∞			
VERTICAL CURVATURE			q=0.500%																				q=0.794%													
SUPERELEVATION	0.11%		158+661.828										+700.828										158+723.789										NC=2.0%			

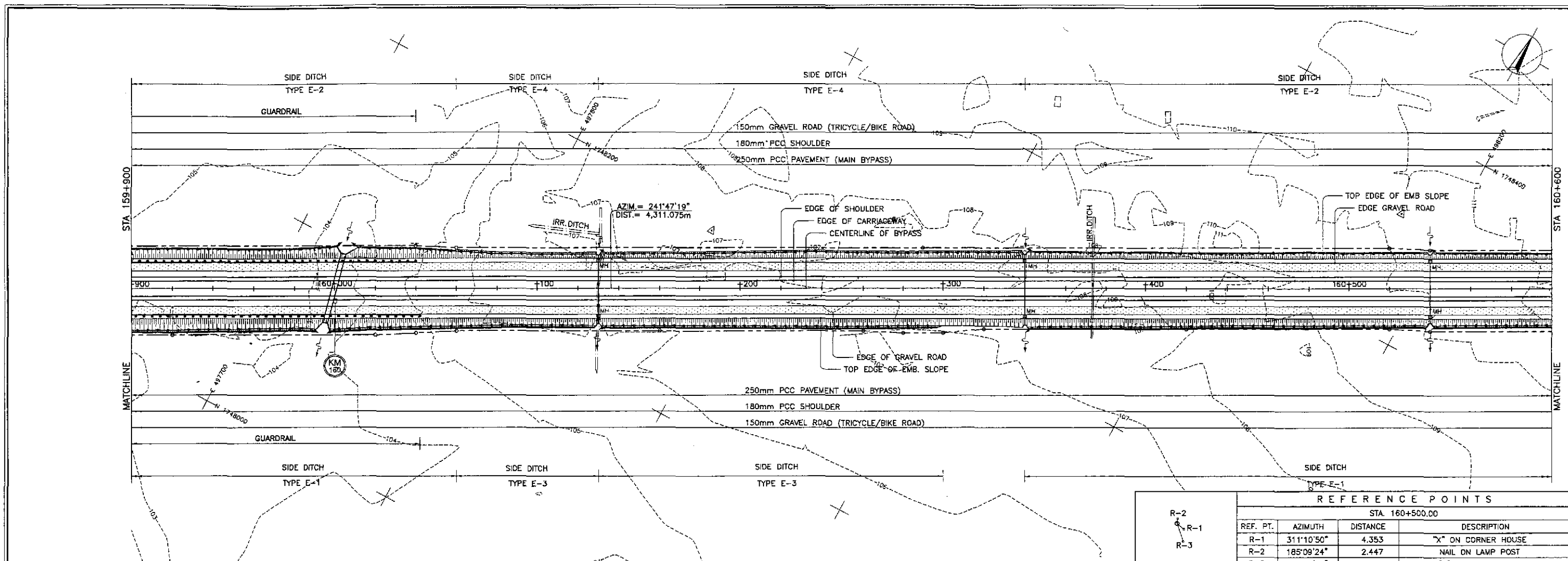
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pariel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 158+500 - STA. 159+200	SHEET NO. : RP-05
	CHECKED	9/4/02	S. GOSSE		Submitted By:	Reviewed By:	Recommended By:	Approved By:				
	SUBMITTED	9/6/02	M. KIRI		DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONGAN Undersecretary				



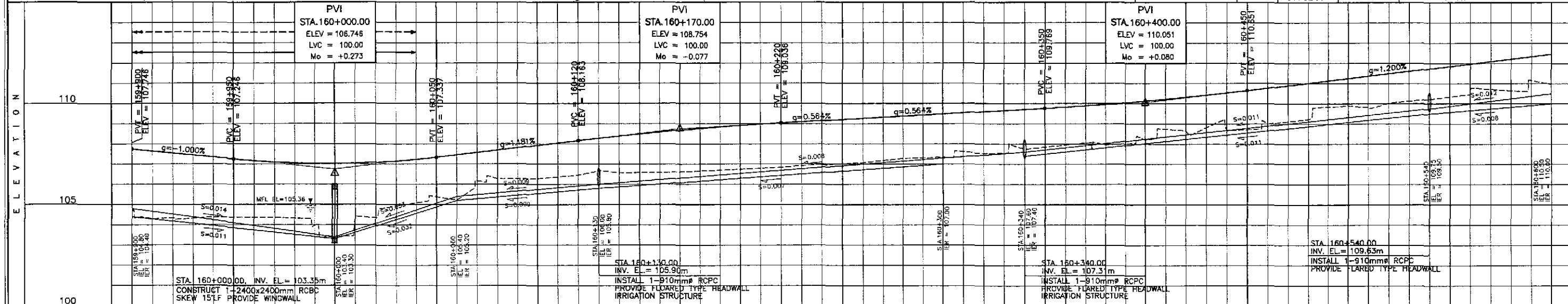
REFERENCE POINTS			
STA. 159+500.00			
REF. PT.	AZIMUTH	DISTANCE	DESCRIPTION
PSJ28	166°51'06"	12.077	EMBEDDED CONC. MONUMENT



	DESIGNED: 7/2/02 CHECKED: 7/4/02 SUBMITTED: 7/6/02	DATE: 7/2/02 SIGNATURE: [Signature] NAME: ALACACIO TITLE: SOSE TEAM LEADER		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pilarid, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE: HORIZONTAL: 1:1000 VERTICAL: 1:100 FULL SIZE A1	SHEET CONTENTS: PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 159+200 - STA. 159+900	SHEET NO.: RP-06
	Submitted By: DANILO C. TRAJANO, Project Director Reviewed By: JOSEFINA M. ALAGAR, Chief, Highways Division Recommended By: GILBERTO S. REYES, OIC, Director IV Recommended By: MANUEL M. BONDAN, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary				PROJECT AND LOCATION:	SCALE:	SHEET CONTENTS:	SHEET NO.:
	JICA JAPAN INTERNATIONAL COOPERATION AGENCY				DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pilarid, Cabanatuan and San Jose Bypasses)	HORIZONTAL: 1:1000 VERTICAL: 1:100 FULL SIZE A1	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 159+200 - STA. 159+900

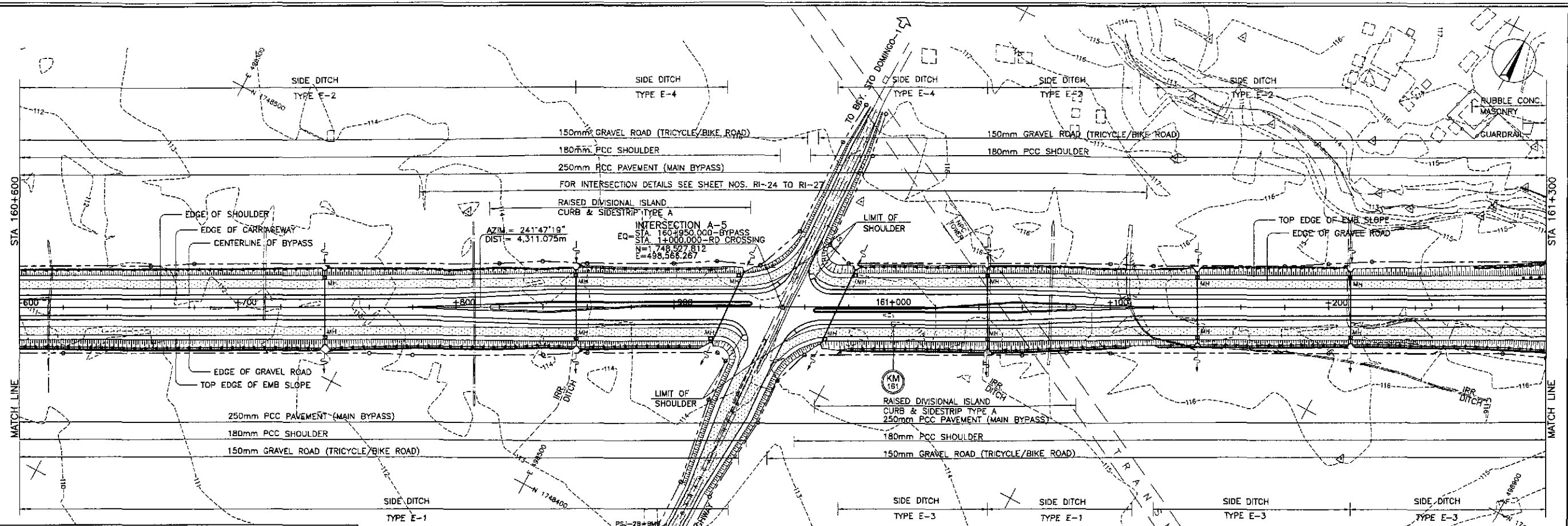


REFERENCE POINTS			
STA. 160+500.00			
REF. PT.	AZIMUTH	DISTANCE	DESCRIPTION
R-1	311°10'50"	4.353	"X" ON CORNER HOUSE
R-2	185°09'24"	2.447	NAIL ON LAMP POST
R-3	341°32'58"	9.305	"X" ON CORNER C.R.



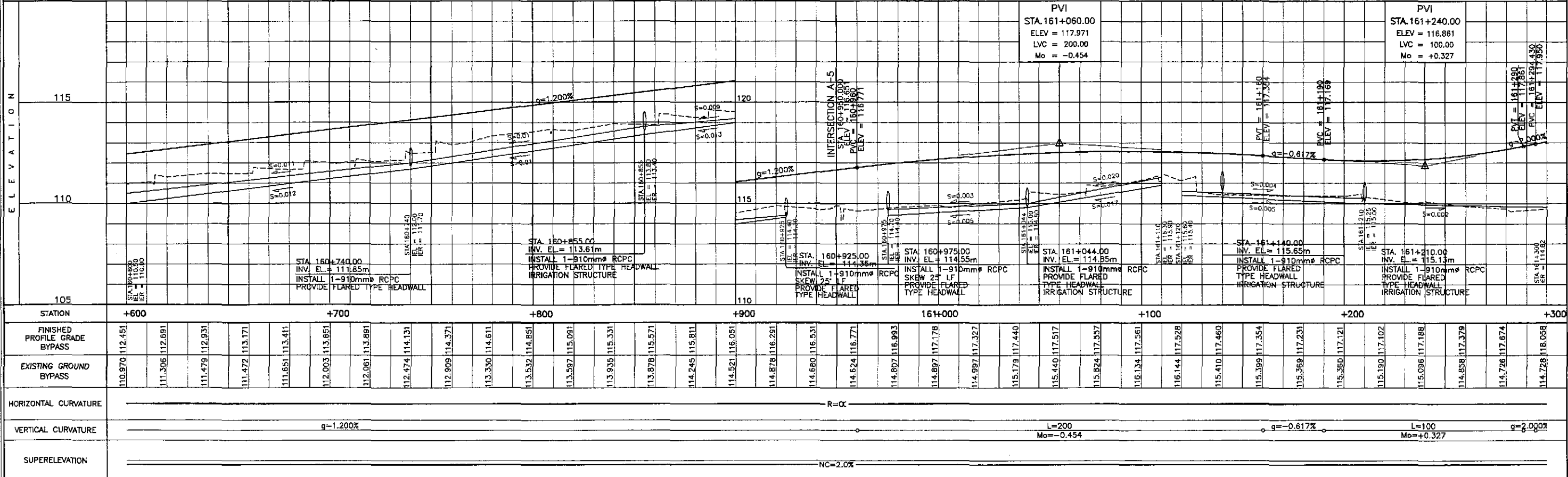
STATION	+900	160+000	+100	+200	+300	+400	160+500	+600
FINISHED PROFILE GRADE BYPASS	104.702	107.746	107.546	107.346	107.157	107.044	107.019	107.080
EXISTING GROUND BYPASS	104.346	107.346	107.157	107.044	106.931	106.818	106.705	106.592
HORIZONTAL CURVATURE	R=∞							
VERTICAL CURVATURE	g = -1.000%		L=100 Mo=+0.273		g = 1.181%		L=100 Mo=-0.077	
SUPERELEVATION	NC=2.0%							

	DESIGNED	DATE	SIGNATURE	<p>DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p> <p>BUREAU OF DESIGN</p> <p>OFFICE OF THE SECRETARY</p>			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :									
	CHECKED	9/2/02	9/2/02								Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMCEN A. DATUMANDING Secretary	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 159+900 - STA. 160+600	RP-07
	SUBMITTED	9/6/02	9/6/02																



REFERENCE POINTS
INTERSECTION A-5 STA. 160+950.000

REF. PT.	AZIMUTH	DISTANCE	DESCRIPTION
R-1	311°10'50"	4.353	"X" ON CORNER HOUSE
R-2	185°09'24"	2.447	NAIL ON LAMP POST
R-3	341°32'58"	9.305	"X" ON CORNER C.R.



STATION	+600	+700	+800	+900	161+000	+100	+200	+300
FINISHED PROFILE GRADE BYPASS	112.451	112.691	112.931	113.171	113.411	113.651	113.891	114.131
EXISTING GROUND BYPASS	110.970	111.306	111.479	111.472	111.651	112.003	112.061	112.474
HORIZONTAL CURVATURE	R=∞							
VERTICAL CURVATURE	g=1.200% L=200 Mo=-0.454 g=-0.617% L=100 Mo=+0.327 g=2.000%							
SUPERELEVATION	NC=2.0%							

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DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DESIGNED: 9/2/02 [Signature]
CHECKED: 9/11/02 [Signature]
SUBMITTED: 9/16/02 [Signature]

Submitted By: DANILLO C. TRAHANO, Project Director
Reviewed By: JOSEFINA M. ALAGAR, Chief, Highways Division
Recommended By: CILBERTO S. REYES, OIC, Director IV
Approved By: MANUEL M. BONDAN, Undersecretary
Approved By: SIMEON A. DATUMANDONG, Secretary

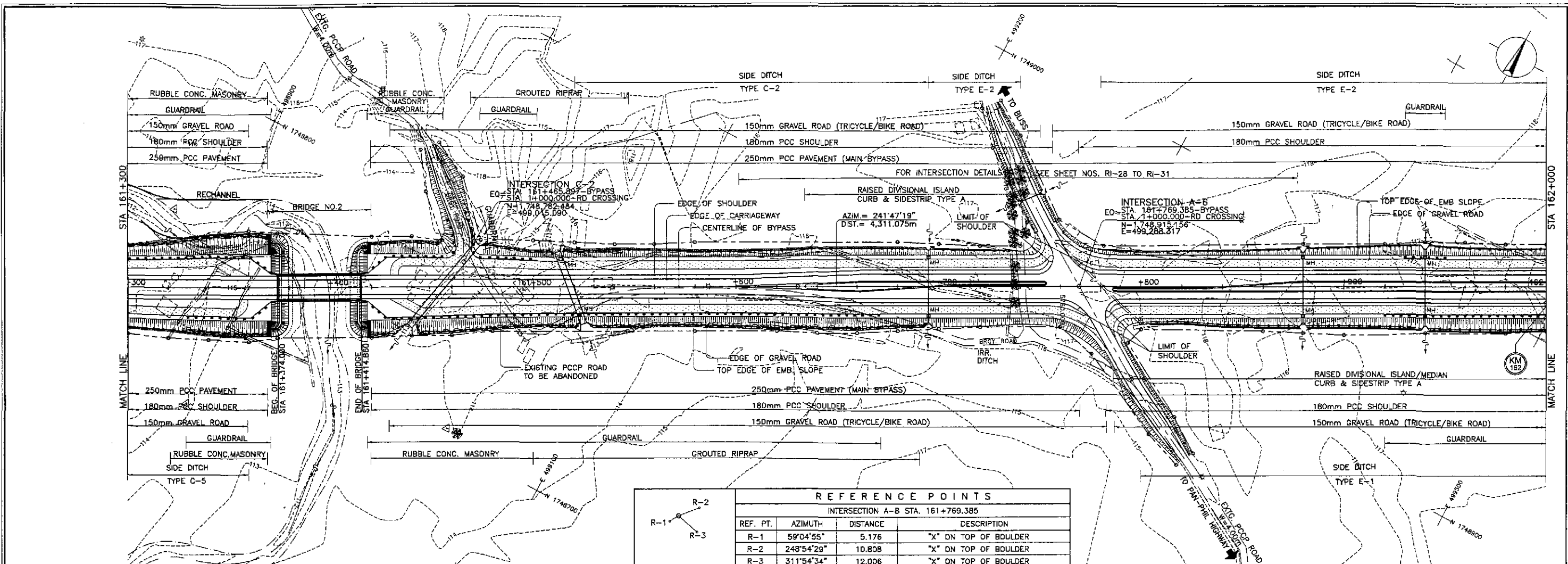
PROJECT AND LOCATION:
THE DETAILED DESIGN STUDY ON
UPGRADING INTER-URBAN HIGHWAY SYSTEM
ALONG THE PAN-PHILIPPINE HIGHWAY
(Paralid, Cabanatuan and San Jose Bypasses)

SAN JOSE BYPASS

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

SHEET CONTENTS:
PLAN AND PROFILE
ALONG BYPASS (INITIAL STAGE)
STA. 160+600 - STA. 161+300

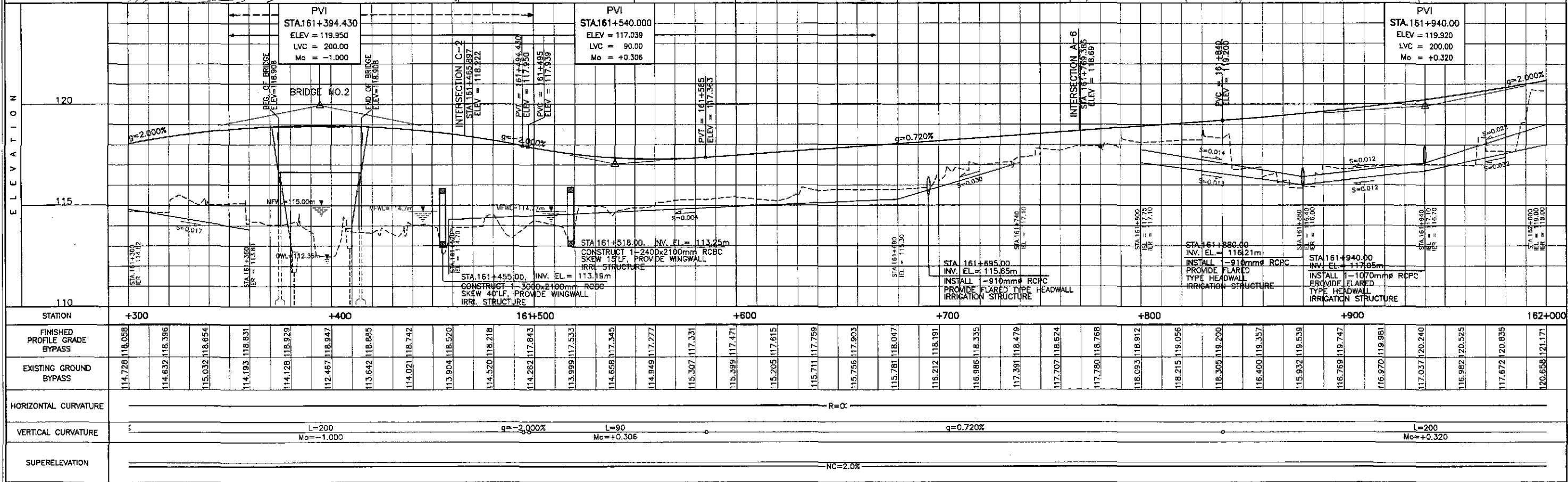
SHEET NO.: **RP-08**



REFERENCE POINTS

INTERSECTION A-B STA. 161+769.385

REF. PT.	AZIMUTH	DISTANCE	DESCRIPTION
R-1	59°04'55"	5.176	"X" ON TOP OF BOULDER
R-2	248°54'29"	10.808	"X" ON TOP OF BOULDER
R-3	311°54'34"	12.006	"X" ON TOP OF BOULDER



STATION	+300	+400	161+500	+600	+700	+800	+900	162+000
FINISHED PROFILE GRADE BYPASS	114.728	118.058	118.396	118.654	118.931	119.299	119.947	120.658
EXISTING GROUND BYPASS	114.632	118.396	118.654	118.931	119.299	119.947	120.658	121.171
HORIZONTAL CURVATURE	R=∞							
VERTICAL CURVATURE	L=200 Mo=-1.000		L=90 Mo=+0.306		L=200 Mo=+0.320			
SUPERELEVATION	NC=2.0%							

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REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DESIGNED: 9/2/02 S. ACACIO	CHECKED: 9/4/02 S. ROSE	SUBMITTED: 9/6/02 M. KUNDI	DATE: 9/6/02	SIGNATURE: <i>[Signature]</i>
P.U.H. - PMO Submitted By: DANILLO C. TRAJANO Project Director		BUREAU OF DESIGN Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division		OFFICE OF THE SECRETARY Recommended By: GILBERTO S. REYES OIC, Director IV
		Approved By: MANUEL M. BONDAN Undersecretary		Approved By: SIMEON A. DATUMANONG Secretary

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

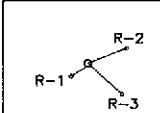
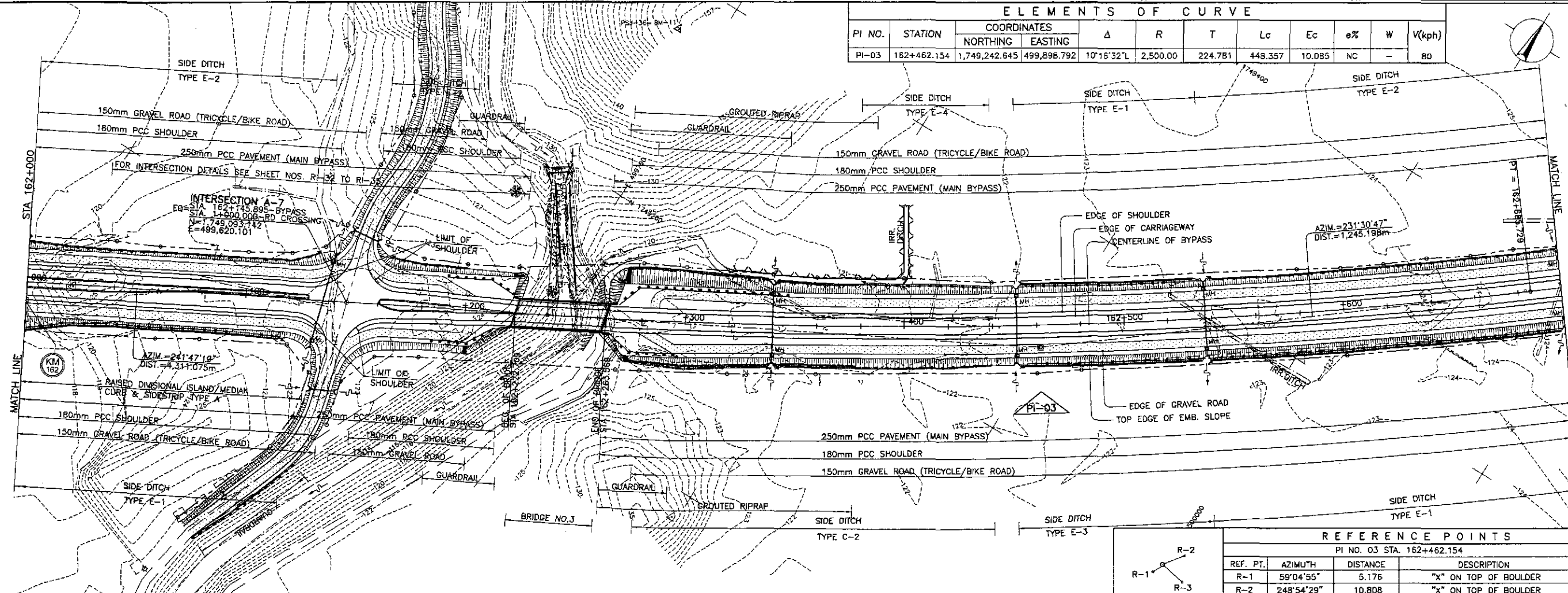
SAN JOSE BYPASS

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

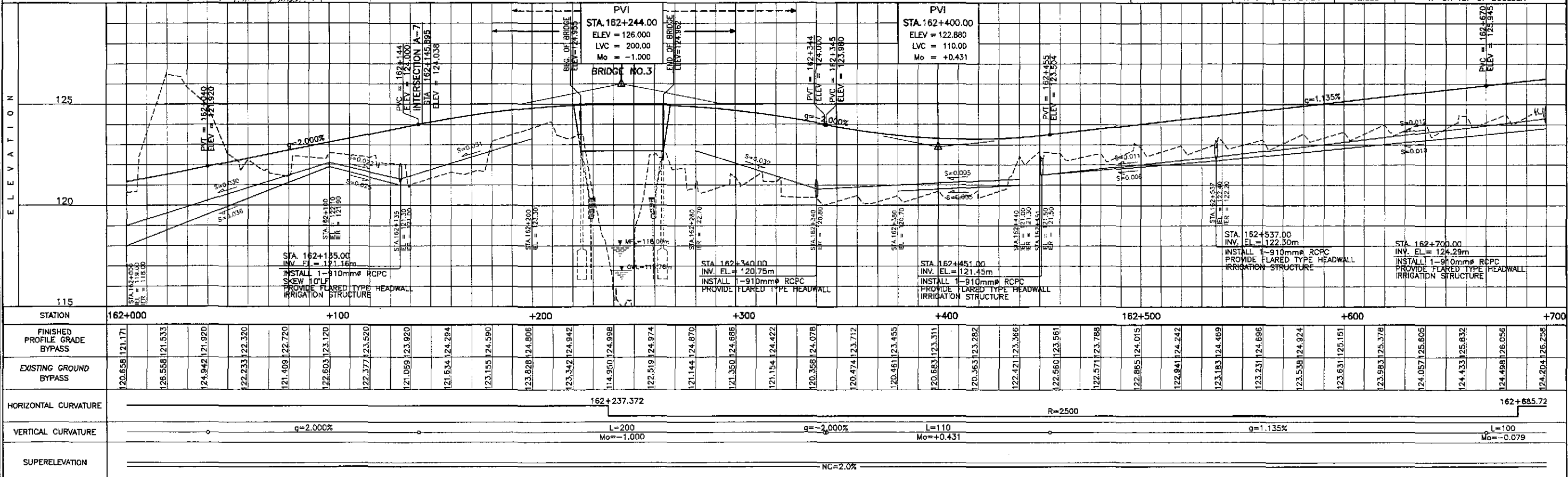
SHEET CONTENTS: **PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 161+300 - STA. 162+000**

SHEET NO.: **RP-09**

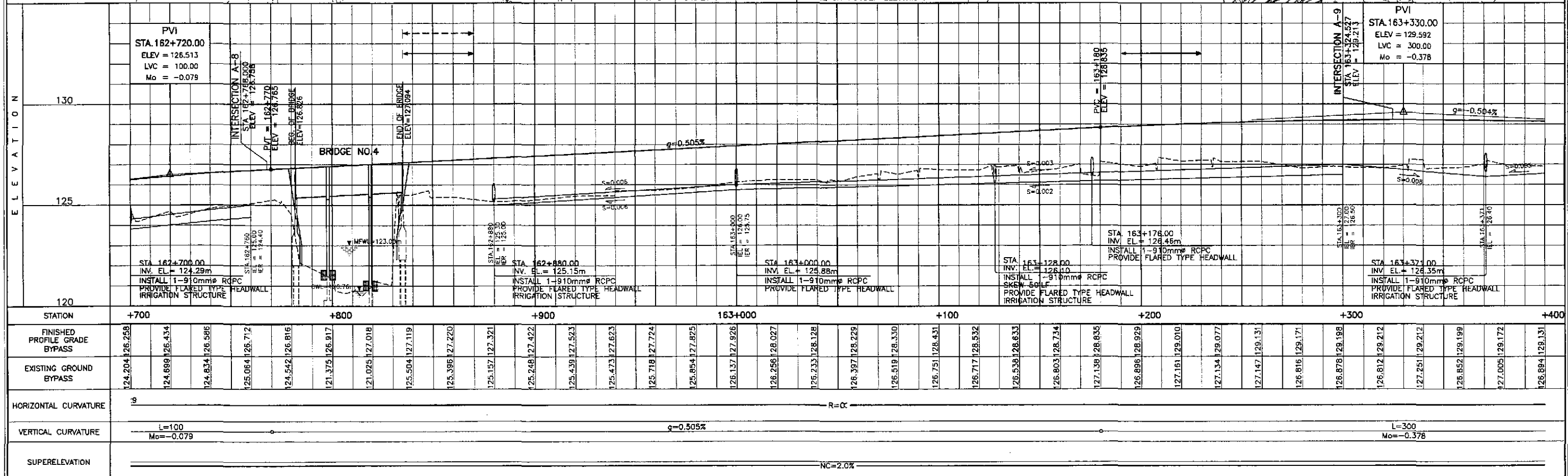
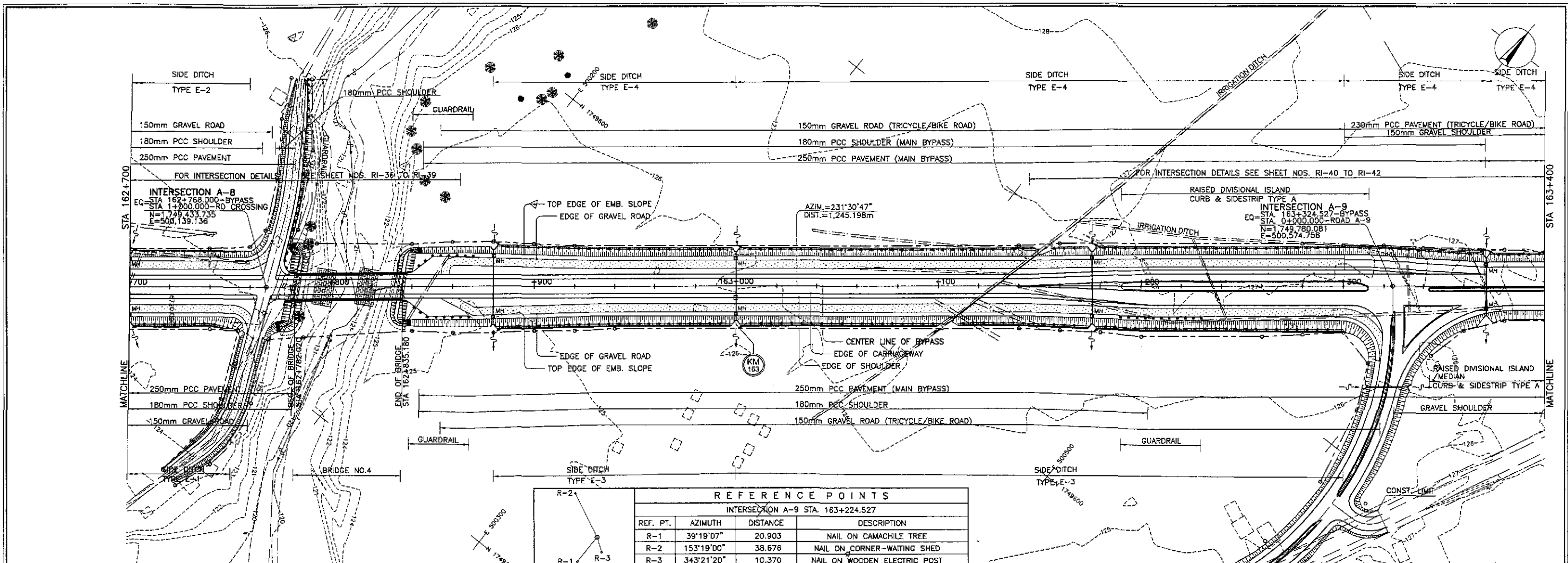
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	Ec	e%	W	V(kph)
		NORTHING	EASTING								
PI-03	162+462.154	1,749,242.645	499,698.792	10°16'32"L	2,500.00	224.781	448.357	10.085	NC	-	80



REFERENCE POINTS			
PI NO. 03 STA. 162+462.154			
REF. PT.	AZIMUTH	DISTANCE	DESCRIPTION
R-1	59°04'55"	5.176	"x" ON TOP OF BOULDER
R-2	248°54'29"	10.808	"x" ON TOP OF BOULDER
R-3	311°54'34"	12.006	"x" ON TOP OF BOULDER

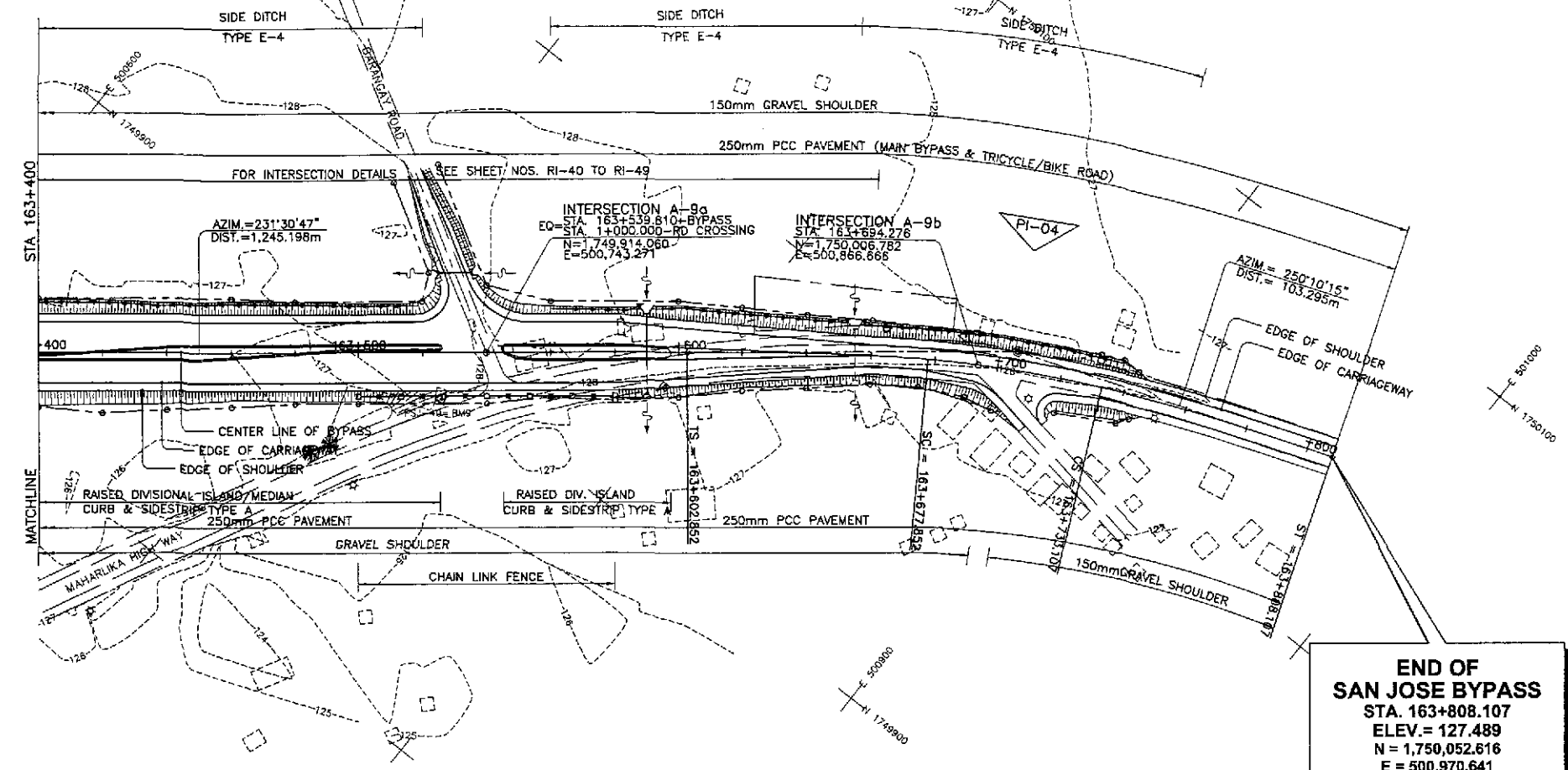
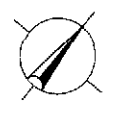


	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :		
	CHECKED	9/16/02	S. G. ROSE		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)			HORIZONTAL 1:1000			PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 162+000 - STA. 162+700	RP-10
	SUBMITTED	9/16/02	M. B. BONDAN		SAN JOSE BYPASS			VERTICAL 1:100				
JICA JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL YEO YACHIYO ENGINEERING CO., LTD.				REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN DANILD C. TRAJANO, Project Director JOSEFINA M. ALAGAR, Chief, Highways Division GILBERTO S. REYES, O.C. 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) SAN JOSE BYPASS		SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 162+000 - STA. 162+700	SHEET NO. : RP-10	



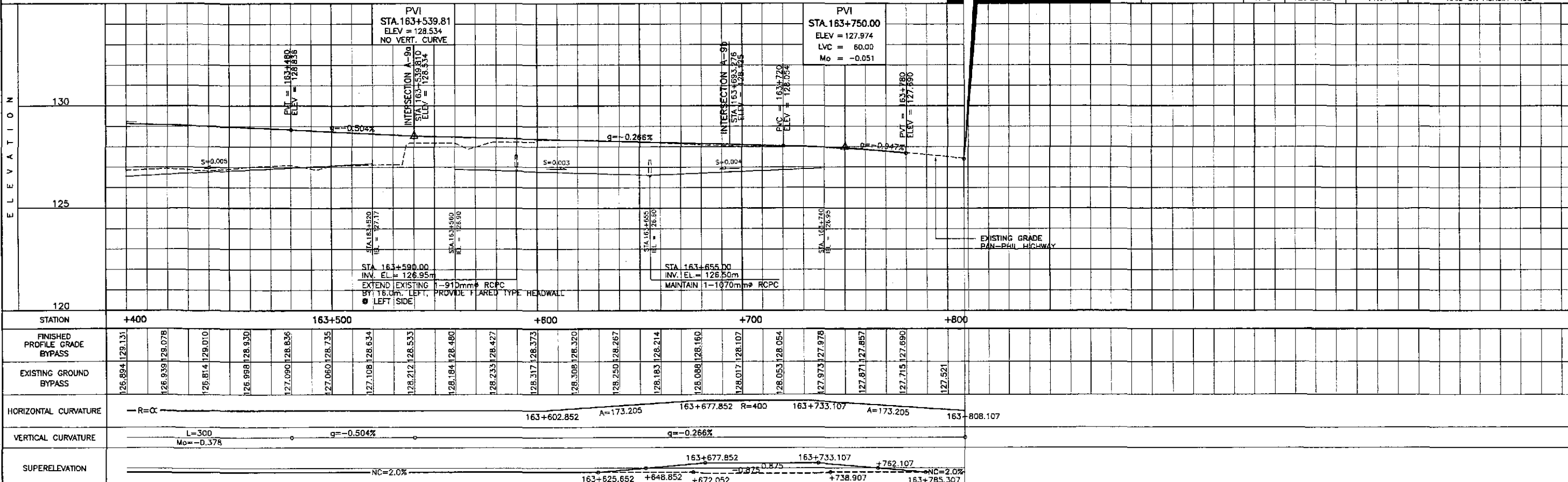
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 162+700 - STA. 163+400	SHEET NO. : RP-11
	CHECKED	9/14/02	S. MOSE		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS						
	SUBMITTED	9/16/02	Mr. Ruy		BUREAU OF DESIGN						
					OFFICE OF THE SECRETARY						
					Submitted By:	Reviewed By:	Recommended By:	Recommended By:			
					DANILO C. TRAIANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG		
					Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary		

PI NO.		STATION		COORDINATES		Δ	A	R	Lc	Es	Ls	θ _a	x	y	Δ _e	X _m	T _L	T _K	T _S	Δ _c	e	W	V(kph)
PI-04		163+706.146		NORTHING	EASTING																		
				1,750,017.577	500,873.471	18°39'28"R	173.205	400.00	55.255	5.995	75.000	05°22'17"	74.934	2.342	0.586	37.469	50.023	25.021	103.295	07°54'53"	2.50%	-	80



END OF SAN JOSE BYPASS
STA. 163+808.107
ELEV. = 127.489
N = 1,750,052.616
E = 500,970.641

REFERENCE POINTS			
PI NO. 04 STA. 163+706.148			
REF. PT.	AZIMUTH	DIST.	DESCRIPTION
R-1	165°51'06"	12.077	NAIL ON WOODEN ELECTRIC POST
R-2	110°55'34"	9.587	"X" ON CORNER CHB
R-3	123°23'52"	11.071	NAIL ON ACACIA TREE



STATION	+400	163+500	+600	+700	+800
FINISHED PROFILE GRADE BYPASS	126.894	126.939	126.814	126.998	127.090
EXISTING GROUND BYPASS	126.894	126.939	126.814	126.998	127.090
HORIZONTAL CURVATURE	R=∞				
VERTICAL CURVATURE	L=300, Mo=-0.378, q=-0.504%, q=-0.266%				
SUPERELEVATION	NC=2.0%				

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DESIGNED: 9/2/02
 CHECKED: 9/1/02
 SUBMITTED: 9/1/02

DATE: 9/1/02
 SIGNATURE: [Signature]

PROJECT DIRECTOR: DANILLO C. TRAJANO
 CHIEF, HIGHWAYS DIVISION: JOSEFINA M. ALAGAR
 OIC, DIRECTOR IV: GILBERTO S. REYES
 UNDERSECRETARY: MANUEL M. BONDAN
 SECRETARY: SIMEDON A. DATUMANONG

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

SAN JOSE BYPASS

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

SHEET CONTENTS :
PLAN AND PROFILE ALONG BYPASS (INITIAL STAGE) STA. 163+400 - STA. 163+808.107

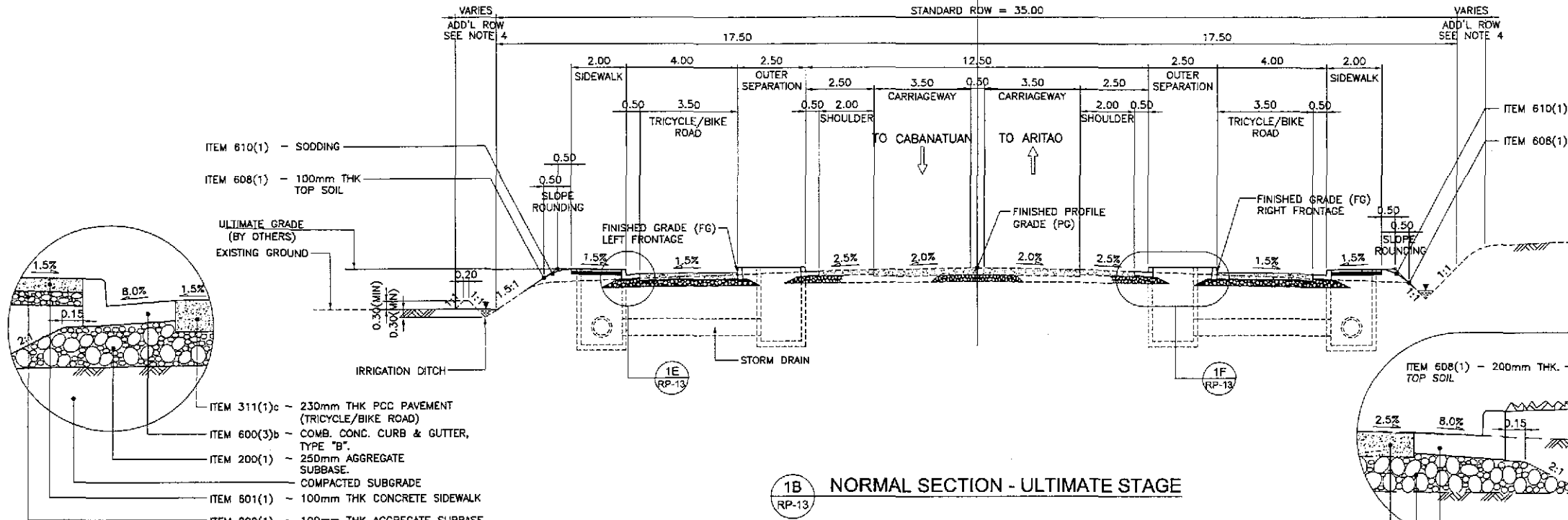
SHEET NO. :
RP-12

BYPASS

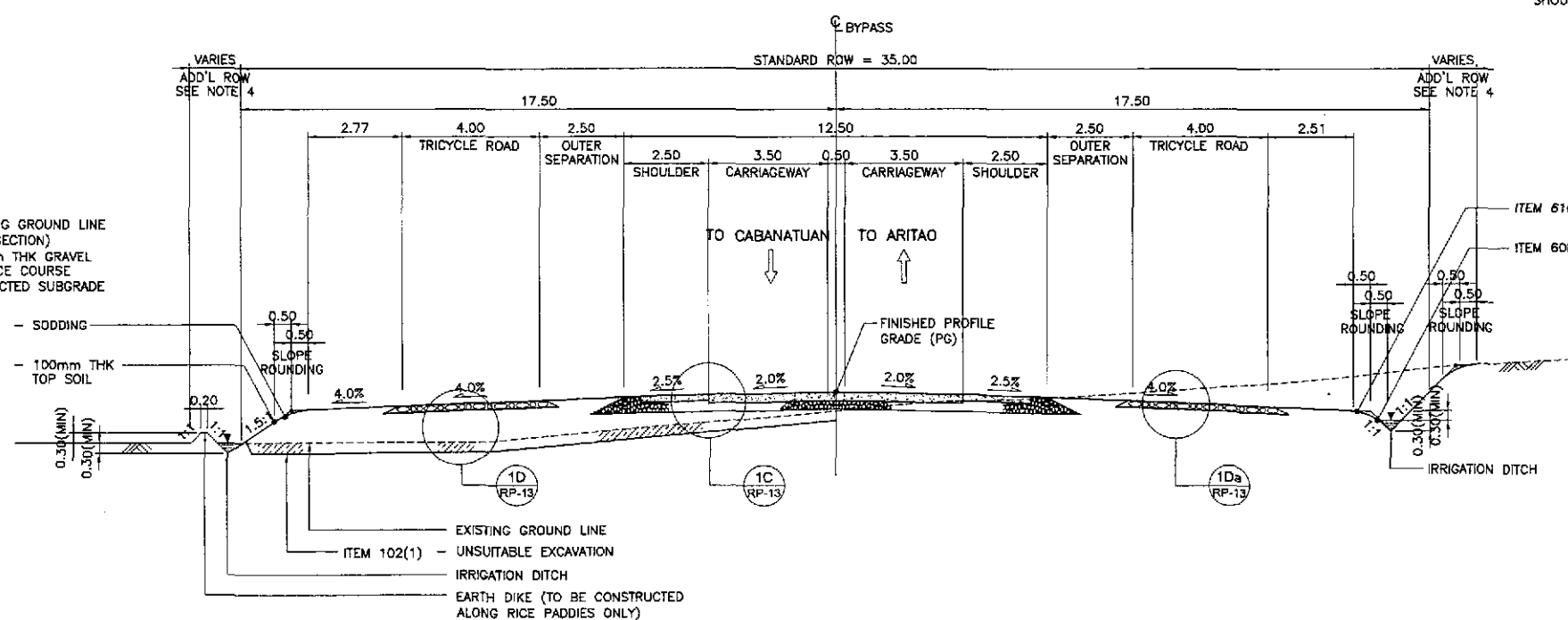
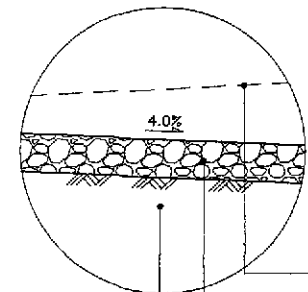
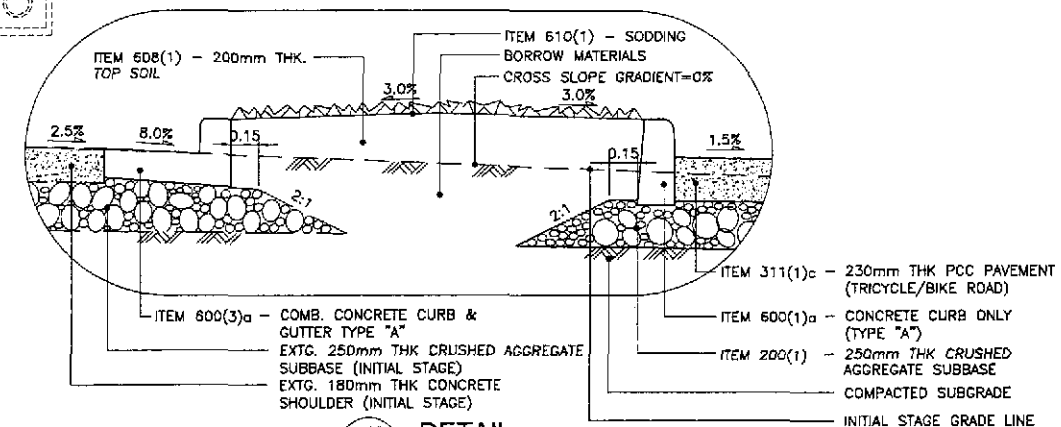
STANDARD ROW = 35.00

NOTES:

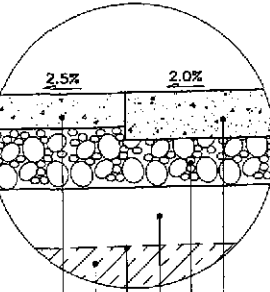
1. FINISHED PROFILE GRADE (FG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NO. RG-04 TO RG-10.
3. ROADWAY SECTIONS OTHER THAN THE STANDARD WIDTH SHALL BE VARIED DUE TO HORIZONTAL TRANSITION OF SERVICE ROAD/ OR FRONTAGE ROAD, MEDIAN DIVISIONAL ISLANDS, OUTER SEPARATION AND DUE TO HEIGHT OF EMBANKMENT.
4. R.O.W. WIDTH OTHER THAN THE STANDARD WIDTH VARIES IN ACCORDANCE WITH NOTE 3.
5. 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.
6. SEE SHEET NO. RG-07 FOR UNSUITABLE EXCAVATION SCHEDULE.



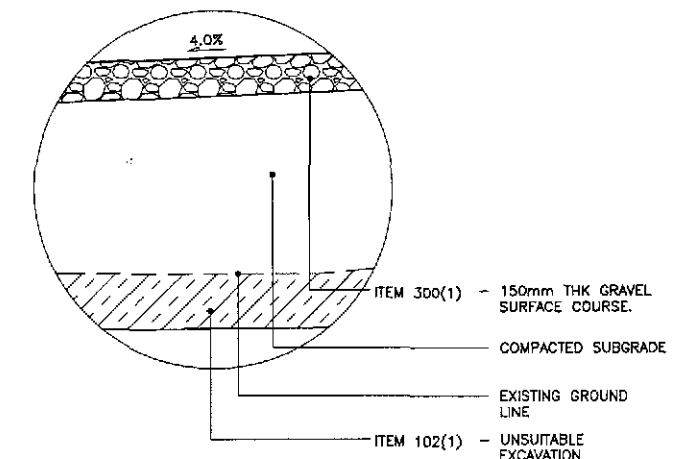
1E DETAIL SCALE 1:20



1Da DETAIL SCALE 1:20

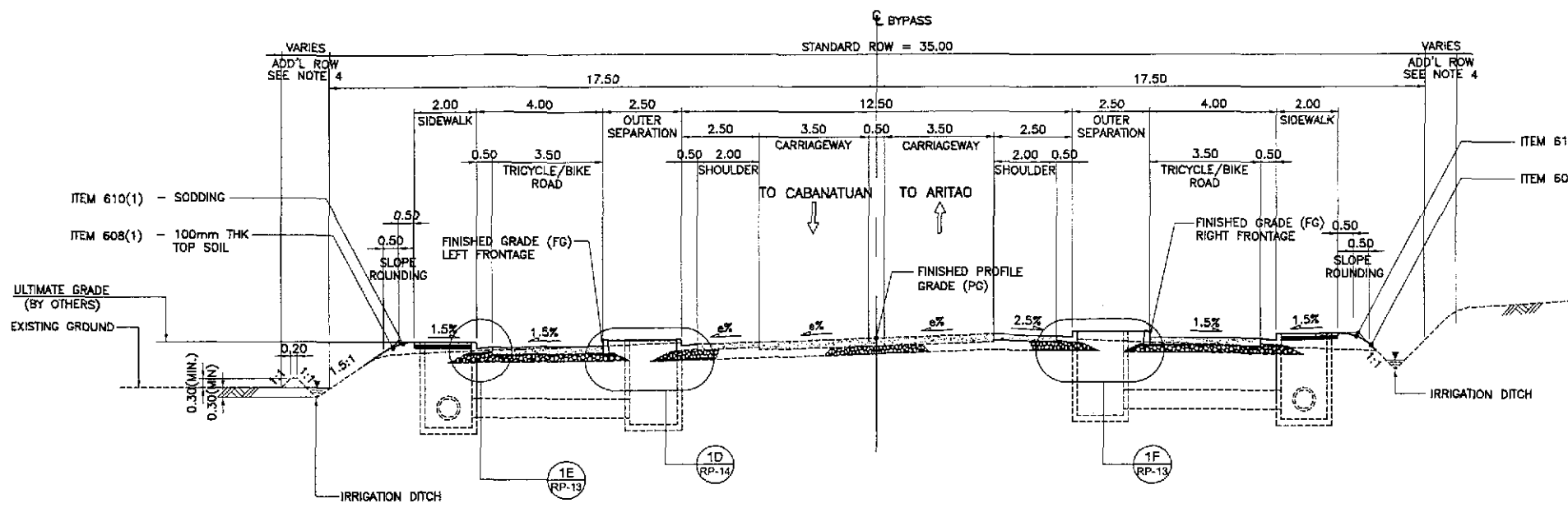


1C DETAIL SCALE 1:20

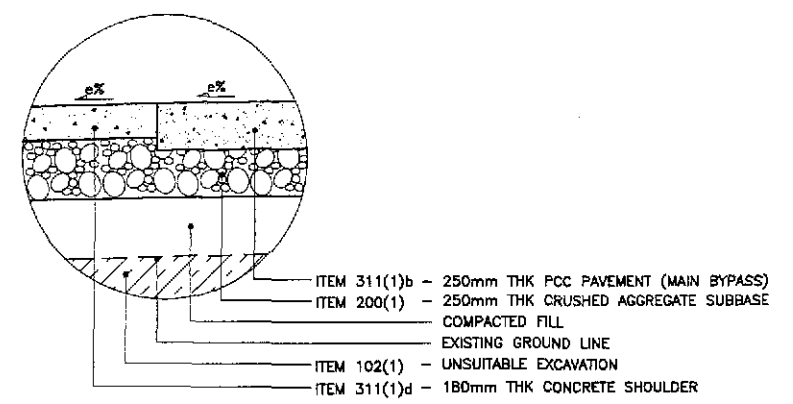


1 TYPICAL ROADWAY SECTIONS SCALE 1:100

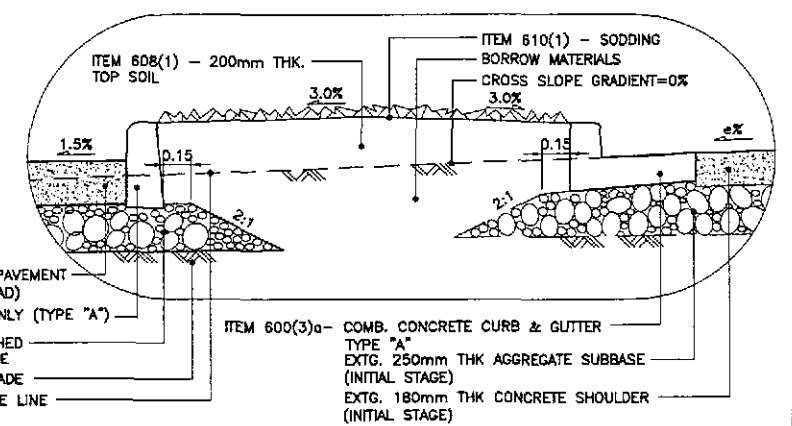
<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>		<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>				<p>PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p>		<p>SCALE : AS SHOWN</p>	<p>SHEET CONTENTS : TYPICAL ROADWAY SECTIONS 1 OF 2 (INITIAL & ULTIMATE STAGE)</p>	<p>SHEET NO. : RP-13</p>
DESIGNED	DATE	SIGNATURE	APPROVED BY	DATE	APPROVED BY	DATE	APPROVED BY	DATE	APPROVED BY	DATE
CHECKED	7/2/02	[Signature]	Submitted By:	7/2/02	Reviewed By:	7/2/02	Recommended By:	7/2/02	Recommended By:	7/2/02
SUBMITTED	9/4/02	[Signature]	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			



2B SUPERELEVATED SECTION - ULTIMATE STAGE
SCALE 1:100



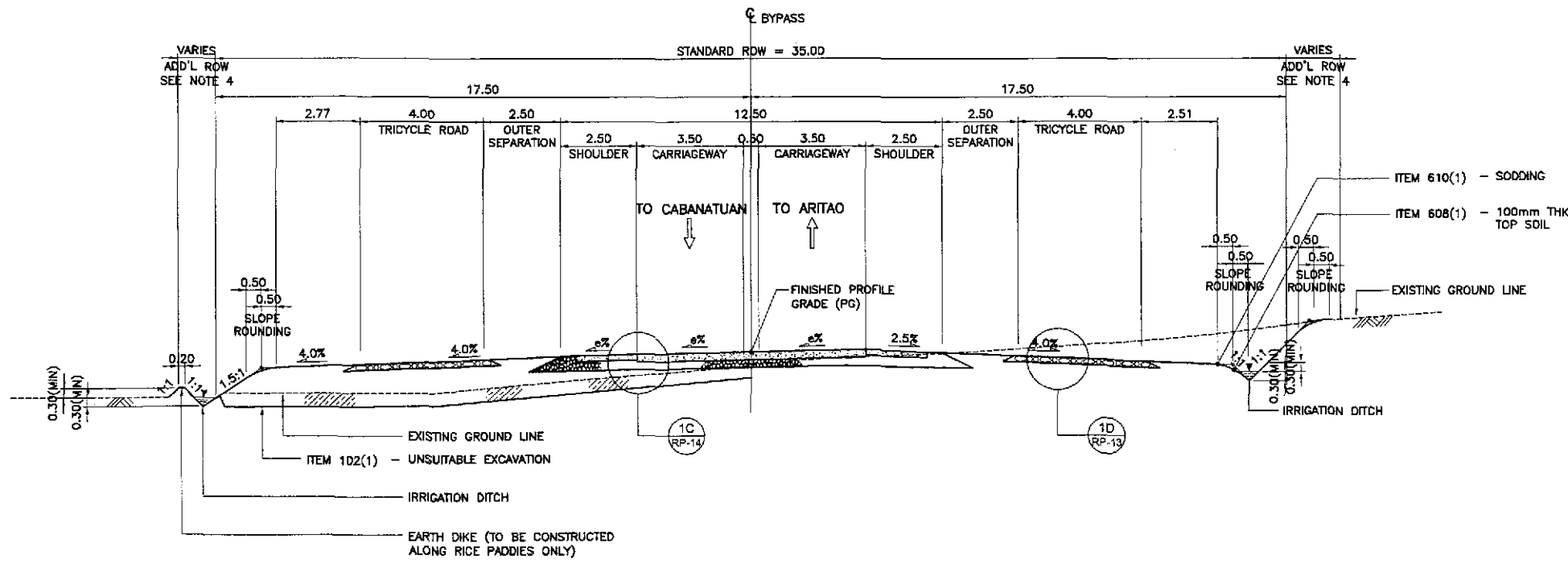
1C DETAIL
SCALE 1:20



1D DETAIL
SCALE 1:20

- ITEM 311(1)c - 230mm THK PCC PAVEMENT (TRICYCLE/BIKE ROAD)
- ITEM 600(1)a - CONCRETE CURB ONLY (TYPE "A")
- ITEM 200(1) - 250mm THK CRUSHED AGGREGATE SUBBASE
- INITIAL STAGE GRADE LINE

- ITEM 610(1) - SODDING
- ITEM 608(1) - 200mm THK BORROW MATERIALS
- CROSS SLOPE GRADIENT=0%
- ITEM 600(3)a - COMB. CONCRETE CURB & GUTTER TYPE "A"
- EXTG. 250mm THK AGGREGATE SUBBASE (INITIAL STAGE)
- EXTG. 180mm THK CONCRETE SHOULDER (INITIAL STAGE)



EM BANKMENT SECTION CUT SECTION

2A SUPERELEVATED SECTION - INITIAL STAGE
SCALE 1:100

PAVEMENT DESIGN PARAMETERS	
1. TRAFFIC (FOR 25 YEARS DESIGN LIFE) DESIGN ESAL	2.20 x 10 ⁶
2. DESIGN CBR SUBGRADE CBR	5.00 %
3. ROADBED RESILIENT MODULUS M _R E _{SB} E _{BS}	5,500 psi = 37.92 MPa 13,000 psi = 89.64 MPa 23,000 psi = 158.58 MPa
4. PERFORMANCE CRITERIA Δ PSI	2
5. DESIGN RELIABILITY Z _R S _o	50 % 0.35
6. DRAINAGE COEFFICIENT RIGID	1
7. LAYER COEFFICIENT a ₁ (FOR AC) a ₂ (FOR BASE) a ₃ (FOR SUBBASE)	0.39 0.105 0.095
8. PAVEMENT CONSTRUCTION THICKNESS PCCP SUBBASE	250mm THK 250mm THK

- 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 NO. RG-04 TO RG-10.
 3. ROADWAY SECTIONS OTHER THAN THE STANDARD WIDTH SHALL BE VARIED DUE TO HORIZONTAL TRANSITION OF SERVICE ROAD/ OR FRONTAGE ROAD, MEDIAN DIVISIONAL ISLANDS, OUTER SEPARATION AND DUE TO HEIGHT OF EMBANKMENT.
 4. R.O.W. WIDTH OTHER THAN THE STANDARD WIDTH VARIES IN ACCORDANCE WITH NOTE 3.
 5. SIDESLOPES OF 1:5 OR FLATTER SHALL BE PROTECTED BY SODDING. SIDESLOPES ALONG AREAS PRONE TO FLOODING SHALL BE PROTECTED BY GROUDED RIPRAP AT 300mm MINIMUM THICKNESS. SIDESLOPES ALONG BUILT-UP AREAS SHALL BE PROTECTED BY STONE MASONRY AND/ OR RETAINING WALLS OR AS DIRECTED BY THE ENGINEER.
 6. SEE SHEET NO. RG-07 FOR UNSUITABLE EXCAVATION SCHEDULE.

2 TYPICAL ROADWAY SECTIONS
SCALE 1:100

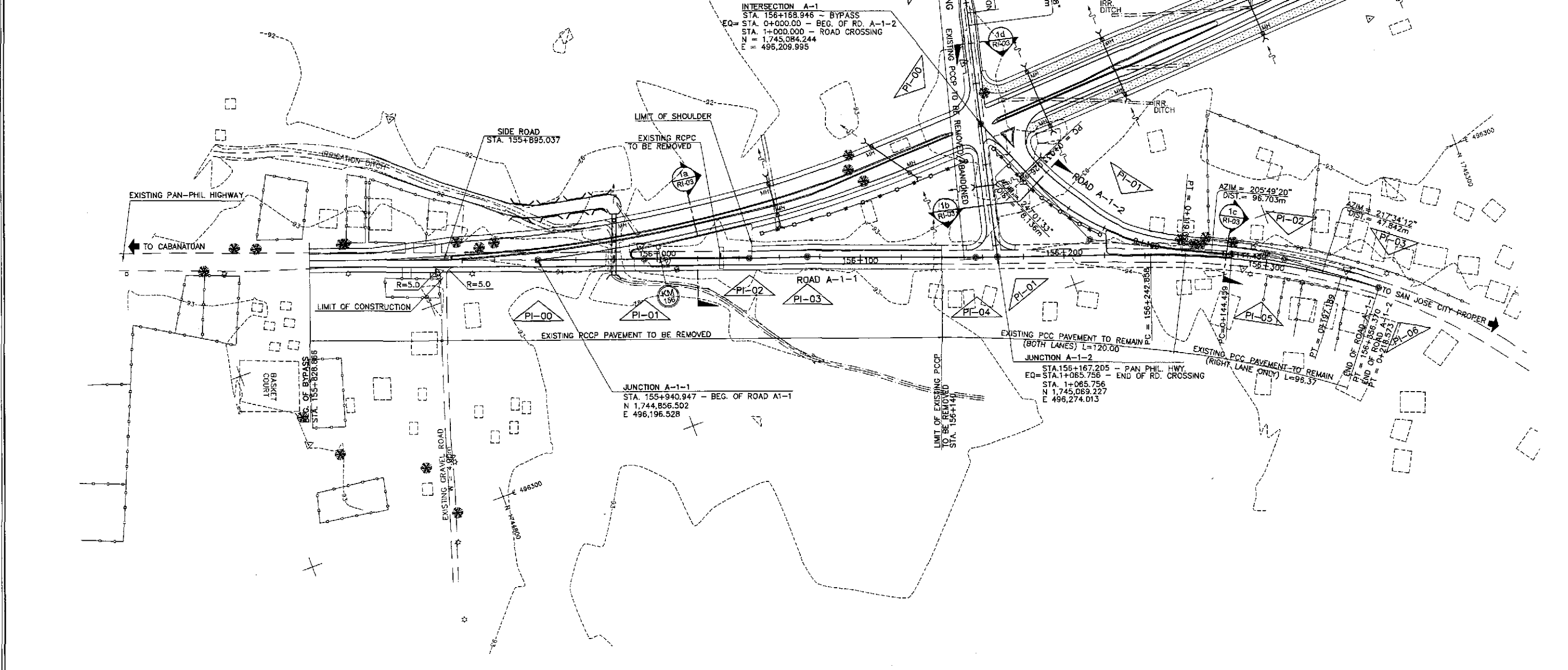
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	Submitted By: DANILLO C. TRAJANO, Project Director Reviewed By: JOSEFINA M. ALAGAR, Chief, Highways Division Recommended By: GILBERTO S. REYES, OIC, Director IV Approved By: MANUEL M. BONDAN, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary			SAN JOSE BYPASS			
	JICA KATAHIRA & ENGINEERS INTERNATIONAL YEO YACHIYO ENGINEERING CO., LTD.			BUREAU OF DESIGN OFFICE OF THE SECRETARY			

CURVE ELEMENTS												
ROAD A-1-1 (PAN-PHIL HIGHWAY)												
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V (kph)	STATION	
		NORTHING	EASTING								PC	PT
0	155+940.947	1,744,856.502	496,196.528	-	-	-	-	-	NC	50	-	-
1	155+993.837	1,744,906.202	496,214.619	0°03'04"	-	-	-	-	NC	50	-	-
2	156+045.032	1,744,954.294	496,232.171	0°06'59"	-	-	-	-	NC	50	-	-
3	156+073.987	1,744,981.683	496,241.587	0°13'05"	-	-	-	-	NC	50	-	-
4	156+156.589	1,745,059.081	496,270.419	0°56'26"	-	-	-	-	NC	50	-	-
5	156+300.089	1,745,194.347	496,318.330	18°03'58"	360	57.231	113.513	4.521	2.50	50	156+242.858	156+356.370
6	156+356.370	1,745,239.709	496,353.226	-	-	-	-	-	NC	50	-	-

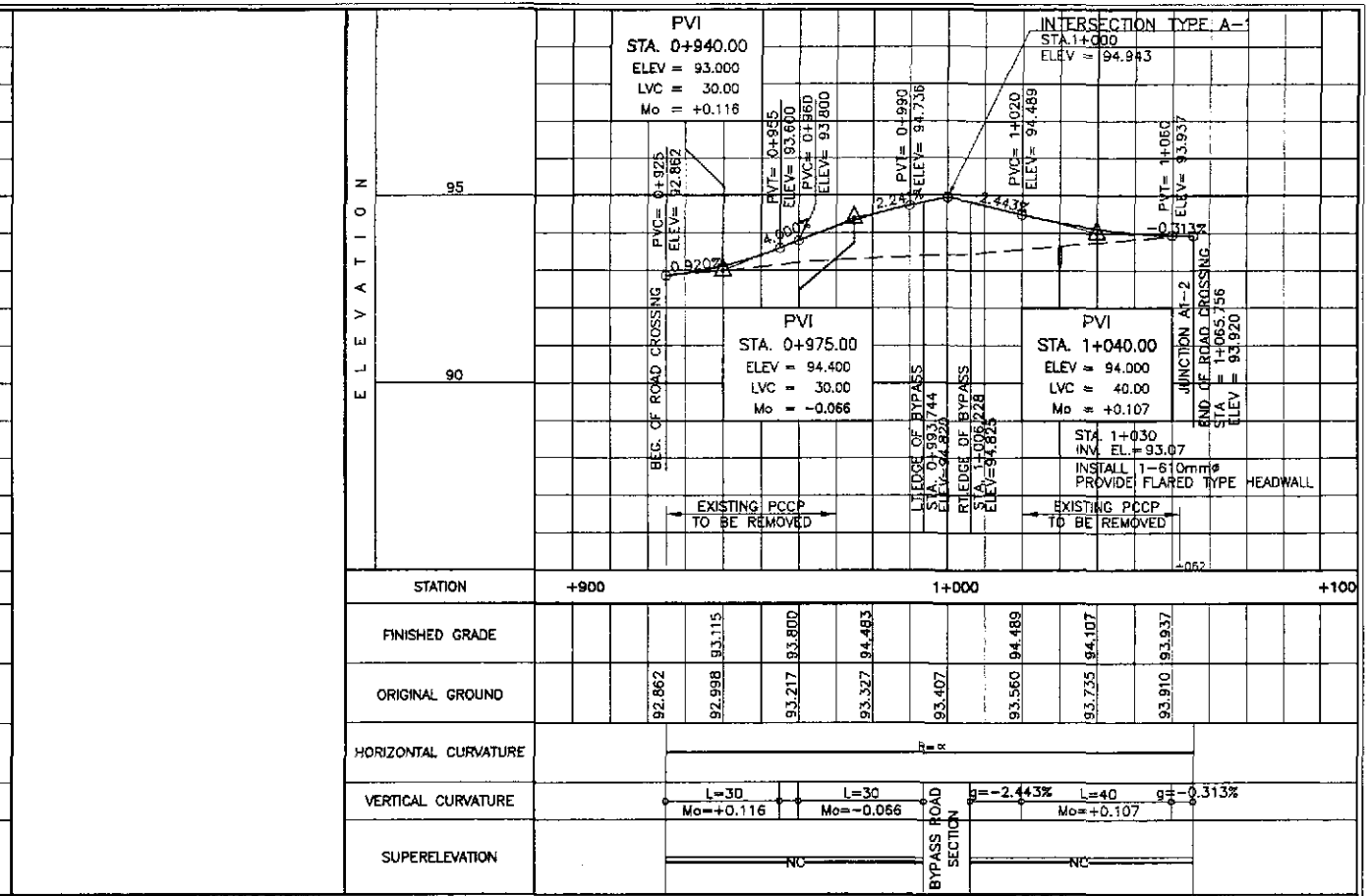
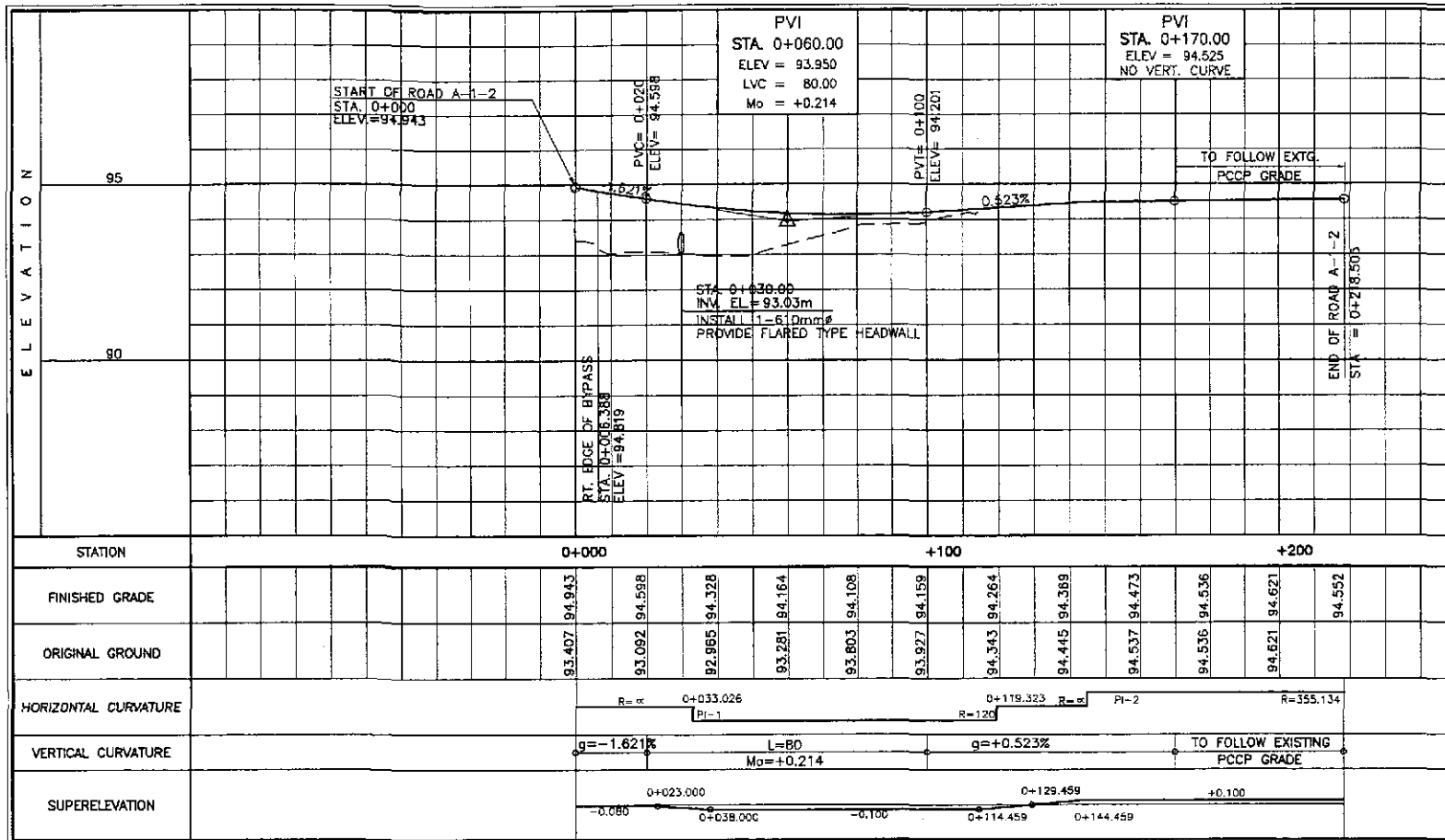
ROAD A-1-2												
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V (kph)	STATION	
		NORTHING	EASTING								PC	PT
0	0 + 000.000	1,745,084.244	496,209.995	-	-	-	-	-	-	-	-	-
1	0 + 078.136	1,745,114.742	496,281.933	41°12'13"	120	45.109	86.297	8.198	2.50	40	0+033.026	0+119.383
2	0 + 181.617	1,745,210.957	496,329.640	71°56'47"	355.134	37.158	74.046	1.939	2.50	40	0+144.459	0+197.189
3	0 + 218.505	1,745,239.685	496,353.207	-	-	-	-	-	-	-	-	-

TABLE OF COORDINATES					
ROAD CROSSING					
PI NO.	STATION	COORDINATES		STATION	
		NORTHING	EASTING	PC	PT
0	0 + 925.000	1,745,101.373	496,136.977	-	-
1	1 + 065.756	1,745,069.227	496,274.013	-	-

- NOTES:
1. TYPE A-1 INTERSECTION. FOR DETAIL, SEE SHEET NO. RI-04 & RI-05
 2. FOR PAVING PLAN SEE SHEET NO. RI-06 & RI-07
 3. FOR TRAFFIC SIGNS & PAVEMENT MARKINGS SEE SHEET NO. RI-09 & RI-11

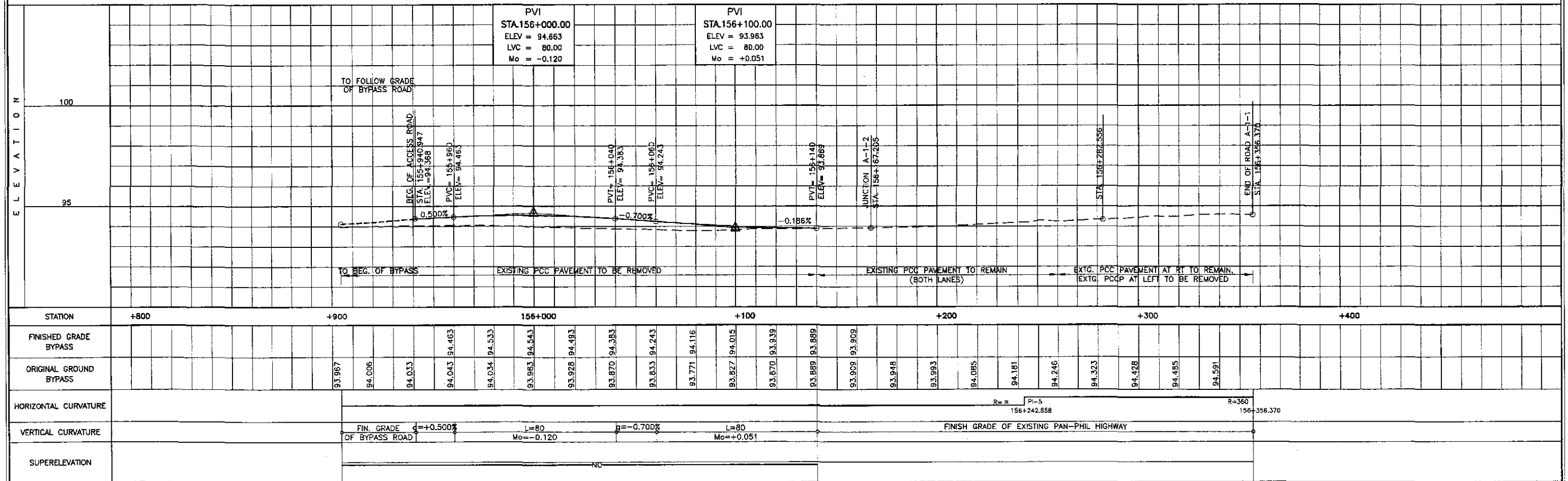


	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pilaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE : 1:1000 FULL SIZE A1	SHEET CONTENTS : PLAN INTERSECTION A-1 ROAD A-1-2 (STA 155+940.947 - STA 156+356.370) ROAD A-1-1 (STA 0+000.000 - STA 0+218.505) ROAD CROSSING (STA 0+925.000 - 065.756)	SHEET NO. : RI-01	
	CHECKED	DATE	SIGNATURE									SUBMITTED BY: DANILLO C. TRAJANO Project Director
	SUBMITTED	DATE	SIGNATURE									



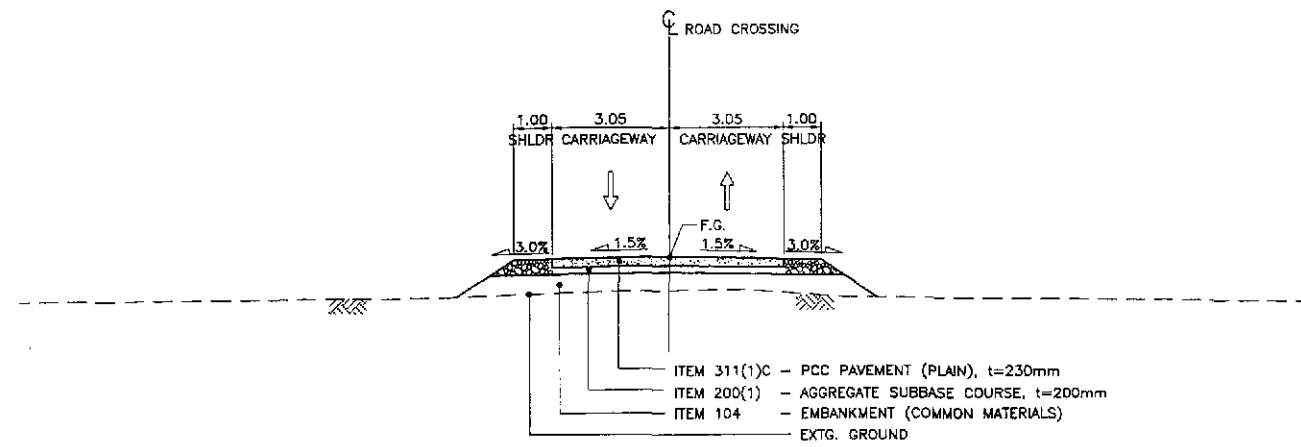
2 ROAD A-1-2
RI-02 SCALE AS SHOWN

3 ROAD CROSSING
RI-02 SCALE AS SHOWN

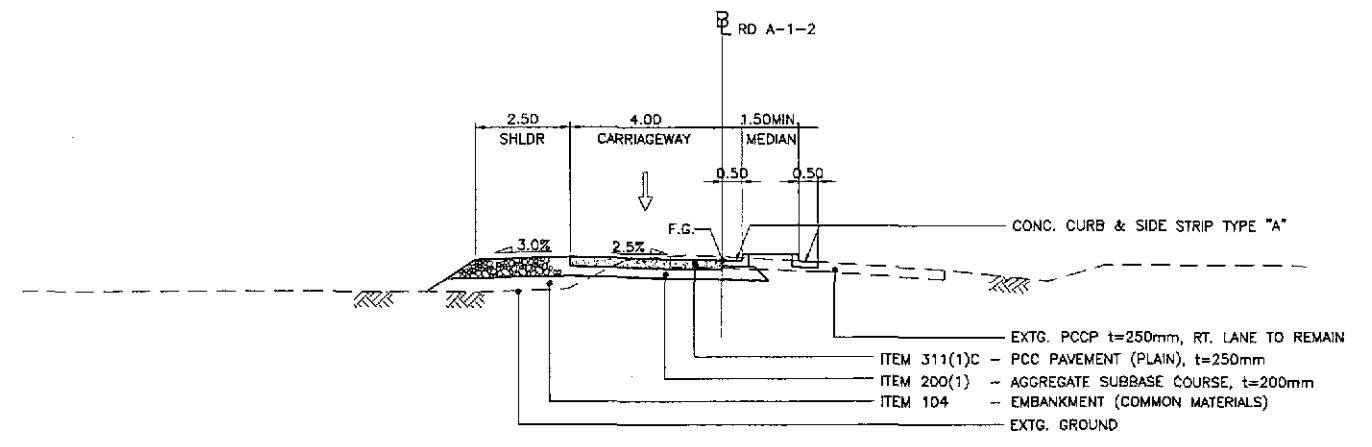


1 ROAD A-1-1 (PAN-PHIL HIGHWAY)
RI-02 SCALE AS SHOWN

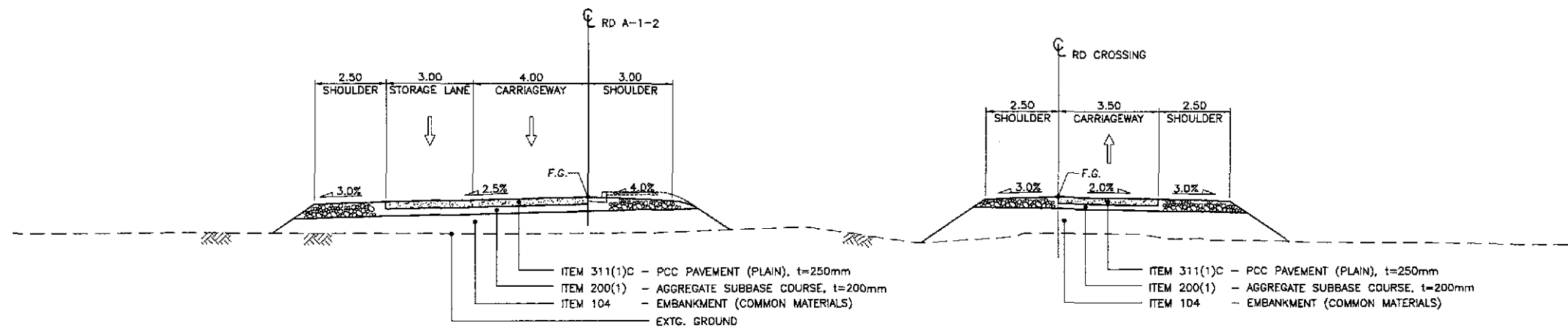
	DATE	9/2/02	SIGNATURE	<i>[Signature]</i>		PROJECT AND LOCATION :	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE :	HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS :	PROFILE INTERSECTION A-1 ROAD A-1-1 (STA 156+940.947 - STA 156+356.370) ROAD A-1-2 (STA 0+000.000 - STA 0+218.505) ROAD CROSSING (STA 0+925.000 - STA 1+065.756)	SHEET NO. :	RI-02
	DESIGNED	9/2/02	DESIGNED BY	PJHL - PMO		BUREAU OF DESIGN	OFFICE OF THE SECRETARY	RECOMMENDED BY	MANUEL M. BONDAN	Undersecretary			
	CHECKED	9/4/02	CHECKED BY	S. ROSE		REVIEWED BY	JOSEFINA M. ALAGAR	Chief, Highways Division	APPROVED BY	SIMEON A. DATUMANONG	Secretary		
	SUBMITTED	9/6/02	SUBMITTED BY	Mr. Rinda		PROJECT DIRECTOR	DANILO C. TRAJANO	Project Director	GILBERTO S. REYES	OIC, Director IV			



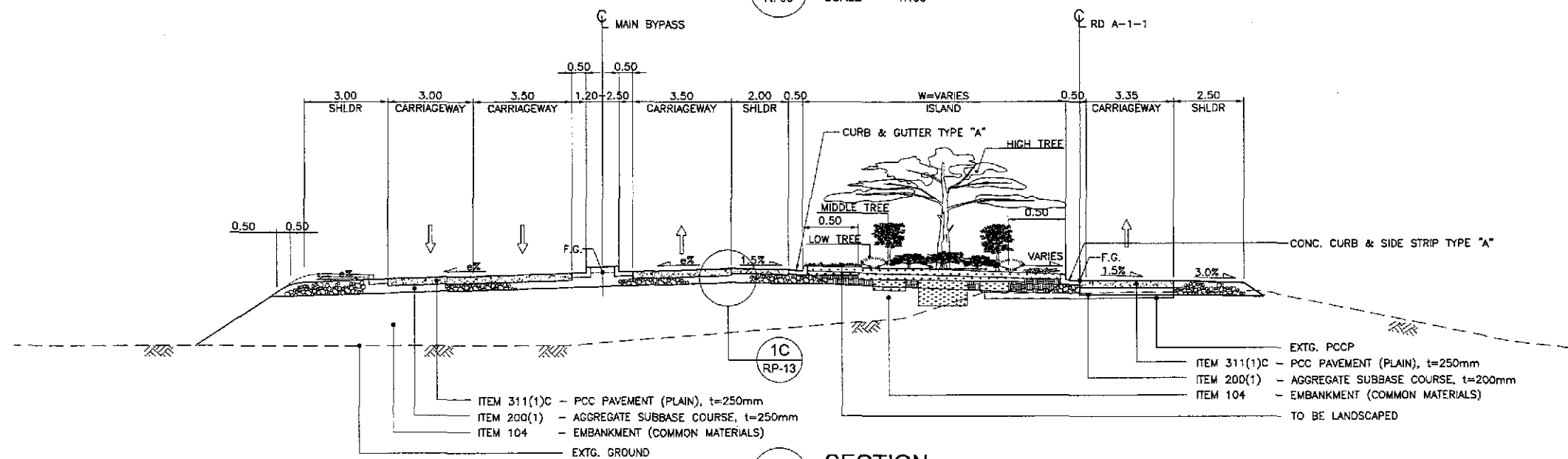
1d SECTION
 RI-03 SCALE 1:100



1c SECTION
 RI-03 SCALE 1:100

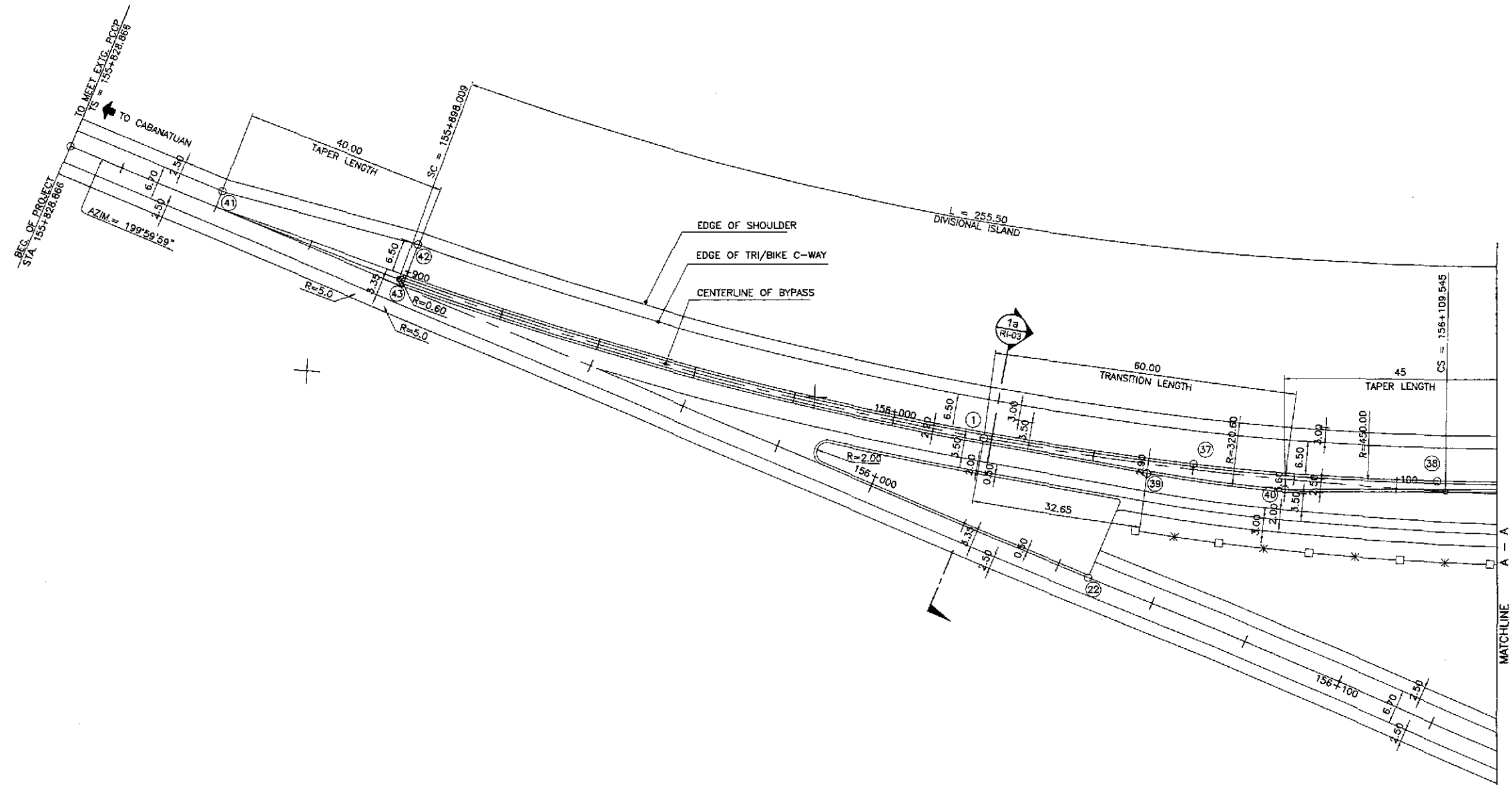
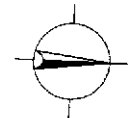


1b SECTION
 RI-03 SCALE 1:100



1a SECTION
 RI-03 SCALE 1:100

	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/2/02	[Signature]		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)			1:100	SELECTED SECTIONS ALONG INTERSECTION A-1	RI-03
	SUBMITTED	9/6/02	[Signature]		SAN JOSE BYPASS			FULL SIZE A1		
Submitted By: DANILLO C. TRAJANO, Project Director Reviewed By: JOSEFINA M. ALAGAR, Chief, Highways Division Recommended By: GILBERTO S. REYES, OIC, Director IV Recommended By: MANUEL M. BONOAN, Undersecretary Approved By: SIMEON A. DATUMANONG, Secretary										



- NOTES:
1. FOR DETAIL OF CURVE DATA SEE SHT. NO. RI-01.
 2. FOR TYPICAL ROAD CROSS-SECTIONS SEE SHT. NO. RP-13 & RP-14.

TABLE OF COORDINATES

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
(1)	1744934.026	496206.252	STA. 156+018.448, BEG. OF TRANSITION LENGTH
(2)	1744955.554	496232.603	STA. 156+046.390, END OF TWO WAY TRAFFIC
(3)	1744975.705	496209.235	STA. 156+080.259, INT. OF RADIUS 450 & RADIUS 698.90
(3B)	1745022.778	496209.985	STA. 156+107.442, END OF RADIUS 450
(39)	1744966.269	496211.499	STA. 156+051.023, BEG. OF RADIUS 321.10
(40)	1744993.687	496213.828	STA. 156+078.448, END OF RADIUS 321.10 & BEG. OF TAPER
(4)	1744781.529	496185.566	STA. 155+860.000, END OF TAPER
(42)	1744820.596	496174.065	STA. 155+900.000, BEG. OF TAPER
(43)	1744817.799	496181.157	STA. 155+899.400, END OF ISLAND NOSING

GEOMETRIC DESIGN LAYOUT
INTERSECTION A-1 (STA. 156+168.946) - INITIAL STAGE

1
RI-04

SCALE 1:500

	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/2/02	<i>[Signature]</i>	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)	AS SHOWN	INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-1 (INITIAL STAGE)	RI-04
	SUBMITTED	9/6/02	<i>[Signature]</i>	Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary	FULL SIZE A1		

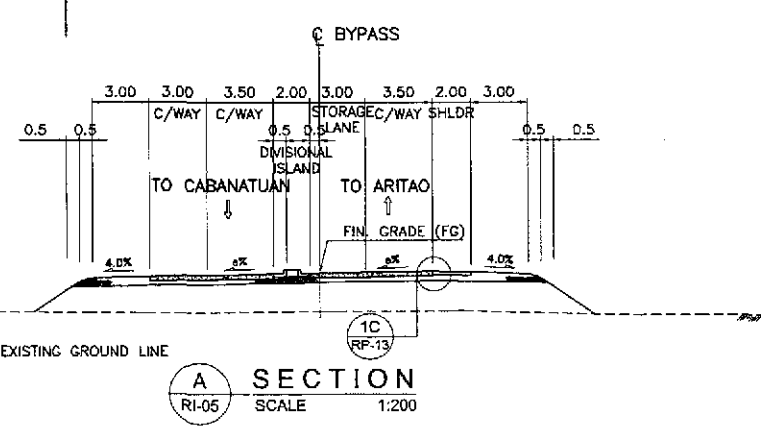
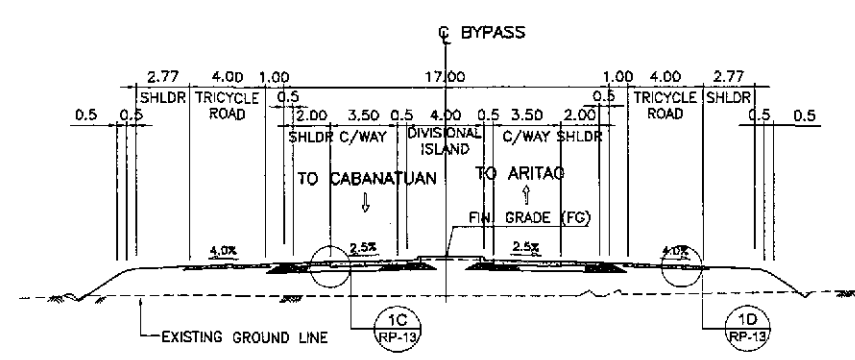
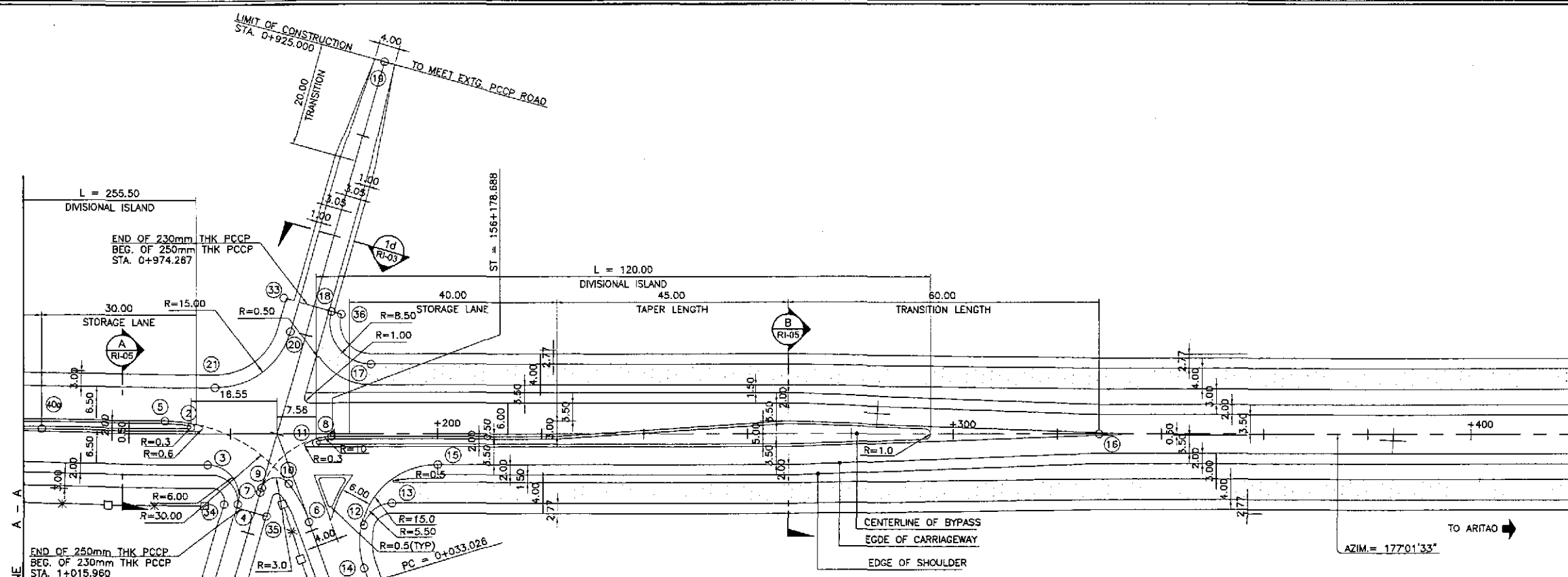
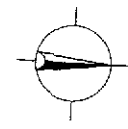
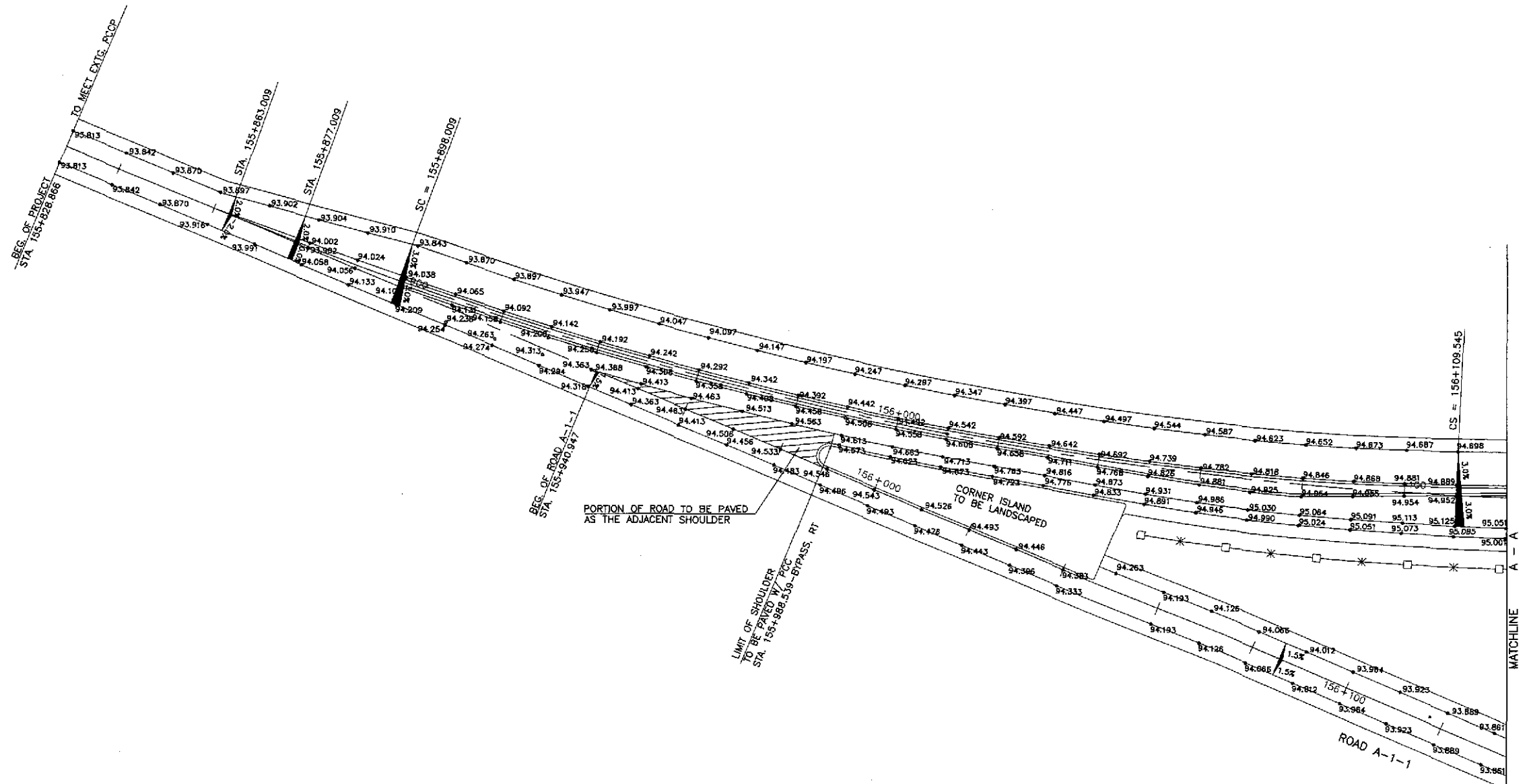
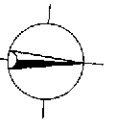


TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
(2)	1745067.642	496209.522	STA. 156+152.383, END OF ISLAND NOSING
(3)	1745071.243	496216.639	STA. 156+155.652, BEG. OF RADIUS 6
(4)	1745077.363	496224.003	END OF RADIUS 6
(5)	1745062.491	496208.518	STA. 156+147.274, BEG. OF TURNING RADIUS 30
(6)	1745091.361	496226.763	STA. 0+018.234, END OF TURNING RADIUS 30
(7)	1745081.551	496221.474	BEG. OF TURNING RADIUS 10
(8)	1745094.797	496209.95	STA. 156+179.488, END OF TURNING RADIUS 10
(9)	1745081.795	496220.564	STA. 156+165.895, BEG. OF RADIUS 3.0
(10)	1745086.992	496219.535	STA. 156+171.183, END OF RADIUS 3.0
(11)	1745091.886	496211.348	STA. 156+176.509, END OF ISLAND NOSING
(12)	1745102.063	496226.874	BEG. OF RADIUS 5.50
(13)	1745107.196	496222.324	STA. 156+191.229, END OF RADIUS 5.50
(14)	1745102.538	496235.213	STA. 0+030.358, BEG. OF RADIUS 15
(15)	1745115.570	496214.379	STA. 156+200.004, END OF RADIUS 15
(16)	1745243.039	496201.748	STA. 156+327.958, BEG. OF TRANSITION LENGTH
(17)	1745101.781	496195.589	STA. 156+187.209, BEG. OF RADIUS 8.0
(18)	1745093.578	496185.752	END OF RADIUS 8.00
(19)	1745101.373	496136.977	LIMIT OF CONSTRUCTION
(20)	1745085.794	496190.035	BEG. OF RADIUS 15
(21)	1745071.896	496201.593	STA. 156+157.008, END OF RADIUS 15
(23)	1745058.015	496265.701	STA. 156+152.067, BEG. OF RADIUS 10
(24)	1745069.244	496258.615	END OF RADIUS 10
(25)	1745072.042	496262.012	BEG. OF RADIUS 10
(26)	1745078.439	496273.722	STA. 156+175.938, END OF RADIUS 10
(27)	1745119.738	496291.904	STA. 156+220.938, BEG. OF TRANSITION LENGTH
(28)	1745239.685	496353.207	LIMIT OF CONSTRUCTION
(29)	1745178.034	496313.782	STA. 156+283.154, END OF ISLAND NOSING
(30)	1745135.005	496284.027	STA. 0+092.241, BEG. OF RADIUS 60
(31)	1745120.452	496266.976	STA. 0+068.905, INT. OF RADIUS 60 & RADIUS 120
(32)	1745114.799	496258.014	STA. 0+057.742, END OF RADIUS 120
(33)	1745084.222	496183.558	LIMIT OF SHOULDER
(34)	1745074.757	496224.168	LIMIT OF SHOULDER
(35)	1745083.032	496226.109	LIMIT OF SHOULDER
(36)	1745095.525	496186.209	LIMIT OF SHOULDER
(40)	1745038.772	496211.279	STA. 156+123.448 BEG. OF STORAGE

GEOMETRIC DESIGN LAYOUT
INTERSECTION A-1 (STA. 156+168.946) - INITIAL STAGE

1
RI-05
SCALE 1:500

				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) SAN JOSE BYPASS		SCALE : AS SHOWN FULL SIZE A1	SHEET CONTENTS : INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-1 (INITIAL STAGE)	SHEET NO. : RI-05
DESIGNED	9/2/02	SIGNATURE		P.J.H. - PWD	BUREAU OF DESIGN	OFFICE OF THE SECRETARY	Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	
CHECKED	9/16/02	SIGNATURE		Submitted By:	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES Dir. Director IV	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANONG Secretary			

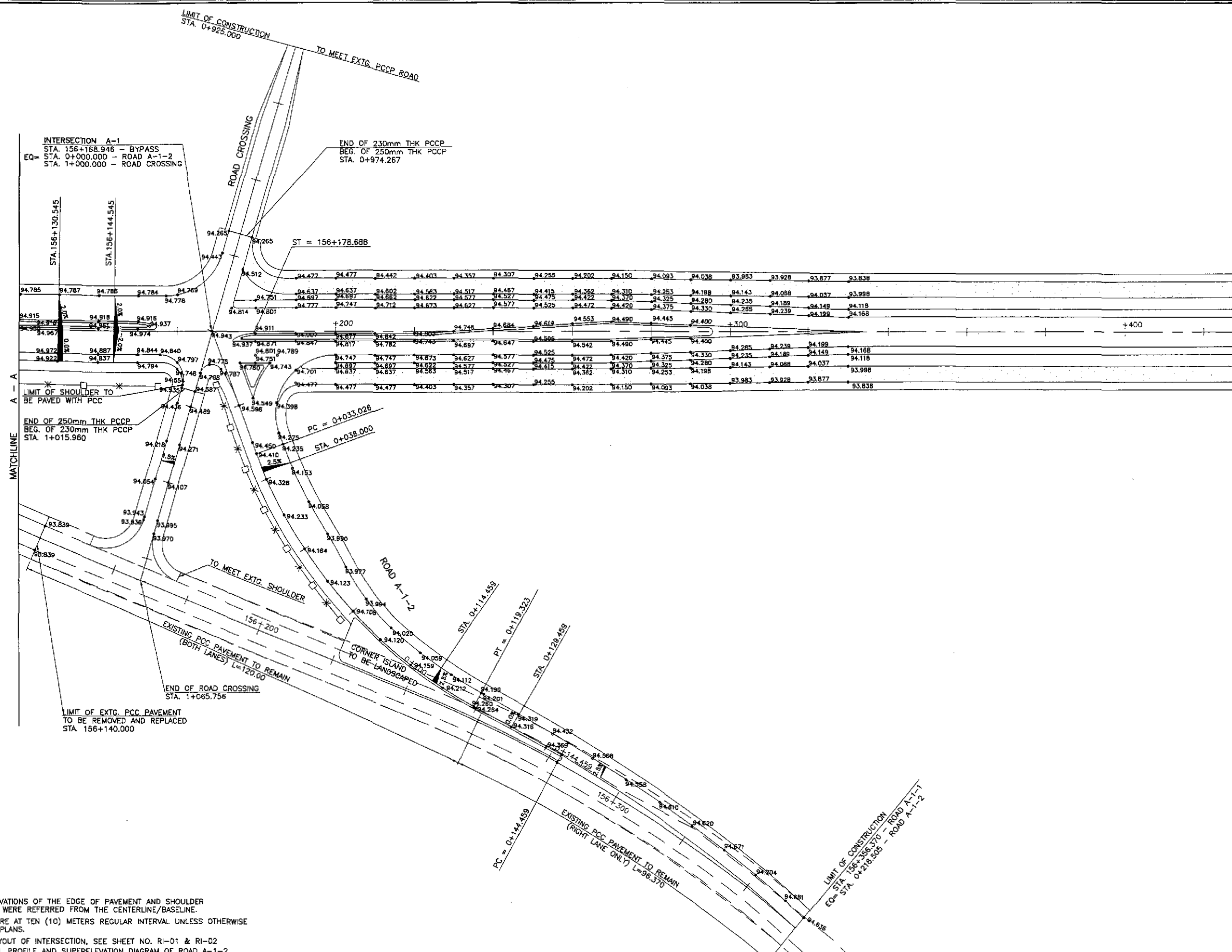
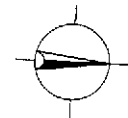


NOTES:

1. FINISHED SPOT ELEVATIONS OF THE EDGE OF PAVEMENT AND SHOULDER PRESENTED HEREIN WERE REFERRED FROM THE CENTERLINE/BASELINE.
2. SPOT ELEVATIONS ARE AT TEN (10) METERS REGULAR INTERVAL UNLESS OTHERWISE INDICATED ON THE PLANS AND SECTIONS.
3. FOR DETAILED PLAN, PROFILE AND SUPERELEVATION DIAGRAM OF ROAD A-1-1 SEE SHEET NO. RI-01 & RI-02
4. FOR GEOMETRIC LAYOUT OF INTERSECTION & SECTIONS, SEE SHEET NO. RI-04 & RI-05
5. FOR SELECTED SECTIONS, SEE SHEET NO. RI-03

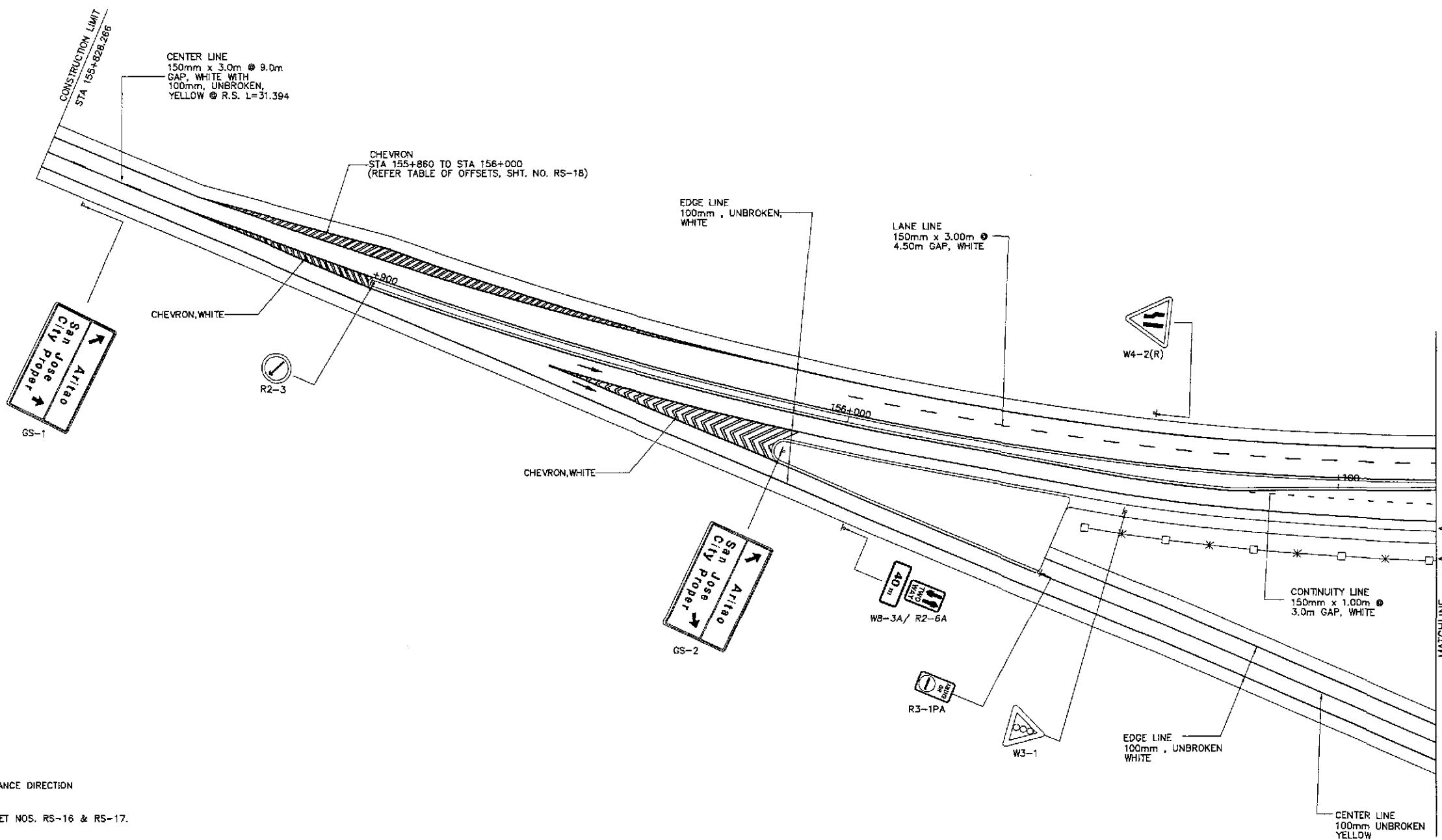
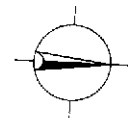
A
PAVING PLAN
INTERSECTION A-1 (STA. 156+168.946) - INITIAL STAGE
 RI-06 SCALE 1:500

 JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL YACHIYO ENGINEERING CO., LTD.	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	9/4/02	<i>[Signature]</i>		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Piaridel, Cabanatuan and San Jose Bypasses)			1:500	INTERSECTION DETAIL PAVING PLAN INTERSECTION A-1 (INITIAL STAGE)	RI-06	
	SUBMITTED	9/6/02	<i>[Signature]</i>		SAN JOSE BYPASS			FULL SIZE A1			
				BUREAU OF DESIGN OFFICE OF THE SECRETARY							
				Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:			
				DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary			



A
PAVING PLAN
INTERSECTION A-1 (STA. 156+168.946) - INITIAL STAGE
 SCALE 1:500

 JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL YACHIYO ENGINEERING CO., LTD.	DATE: 7/2/02 DESIGNED: [Signature] CHECKED: 7/4/02 S. ROSE SUBMITTED: 7/1/02 M. RANCHO	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Palarid, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE : 1:500 FULL SIZE A1	SHEET CONTENTS : INTERSECTION DETAIL PAVING PLAN INTERSECTION A-1 (INITIAL STAGE)	SHEET NO. : RI-07		
	Submitted By: DANILLO C. TRAJANO Project Director		Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division		Recommended By: GILBERTO S. REYES OIC, Director IV		Recommended By: MANUEL M. BONDAN Undersecretary	
	Approved By: [Signature] SIMEON A. DATUMANONG Secretary		Approved By: [Signature] SIMEON A. DATUMANONG Secretary		Approved By: [Signature] SIMEON A. DATUMANONG Secretary		Approved By: [Signature] SIMEON A. DATUMANONG Secretary	



NOTES:

1. FOR STANDARD SIGNS AND DETAILS OF ADVANCE DIRECTION SIGNS SEE SHEET NOS. RS-12 & RS-13.
2. FOR PAVEMENT MARKINGS DETAILS SEE SHEET NOS. RS-16 & RS-17.

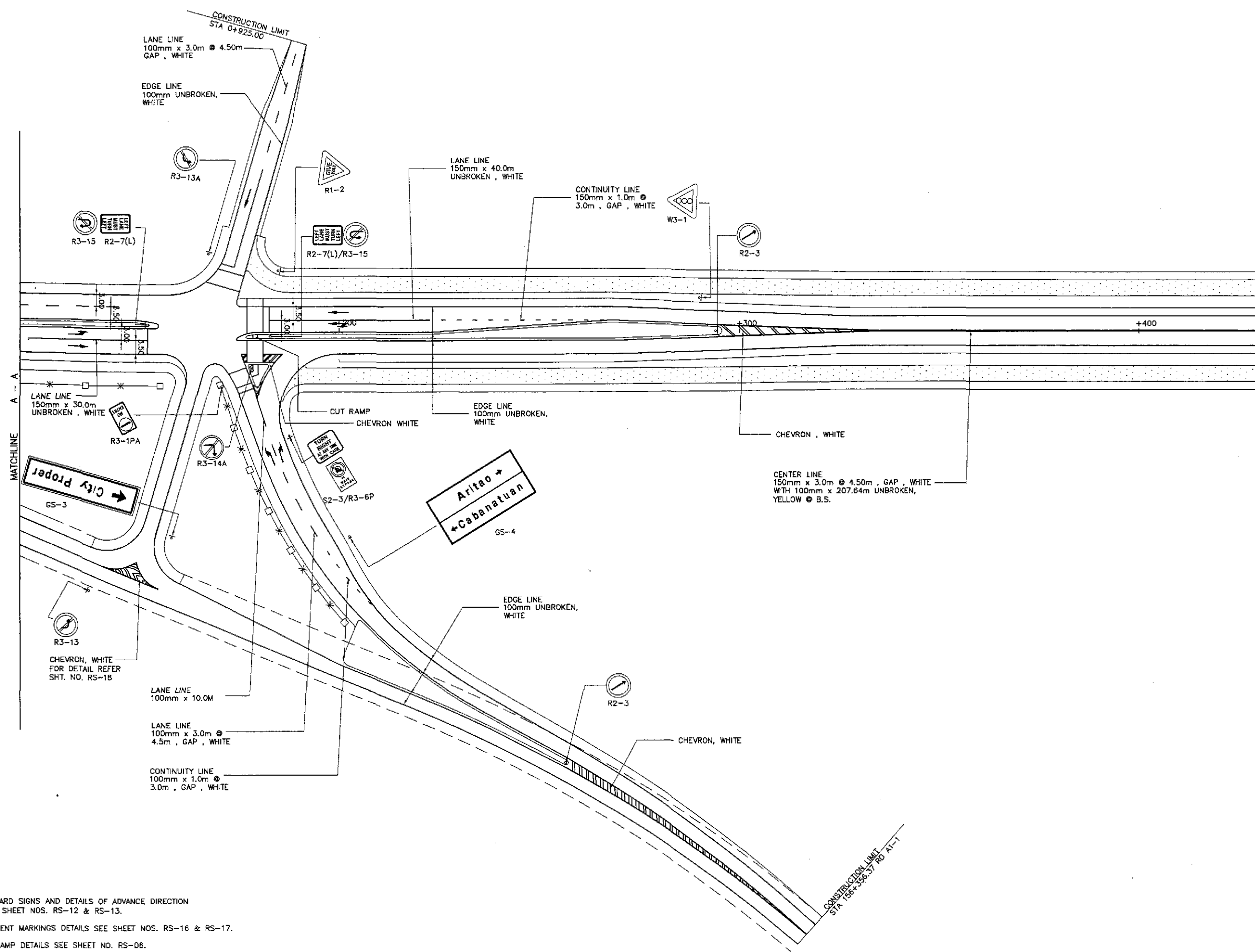
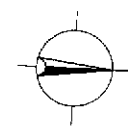
**TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT
INTERSECTION A-1, STA. 156+168.946 (INITIAL STAGE)**

A
R1-08

SCALE

1:500

	DESIGNED	7/2/02	S. LUNA	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	7/4/02	S. JOSE	Submitted By:	Reviewed By:	Recommended By:	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 - 1 OF 2 INTERSECTION A-1 (INITIAL STAGE)	R1-08
	SUBMITTED	9/4/02	M. KISHI	DANILLO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary		



NOTES:

1. FOR STANDARD SIGNS AND DETAILS OF ADVANCE DIRECTION SIGNS SEE SHEET NOS. RS-12 & RS-13.
2. FOR PAVEMENT MARKINGS DETAILS SEE SHEET NOS. RS-16 & RS-17.
3. FOR CUT RAMP DETAILS SEE SHEET NO. RS-06.

**TRAFFIC SIGNS, PAVEMENT MARKINGS AND CUT RAMPS LAYOUT
INTERSECTION A-1, STA. 156+168.946 (INITIAL STAGE)**

A
R1-09

SCALE

1:500

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			
9/2/02	9/2/02	[Signature]	BUREAU OF DESIGN			
CHECKED	9/4/02	[Signature]	OFFICE OF THE SECRETARY		OFFICE OF THE SECRETARY	
SUBMITTED	9/6/02	[Signature]	Submitted By:	Reviewed By:	Recommended By:	Approved By:
			DANILO C. TRAJANO Project Director	JOSEFINA M. ALADAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONDAN Undersecretary

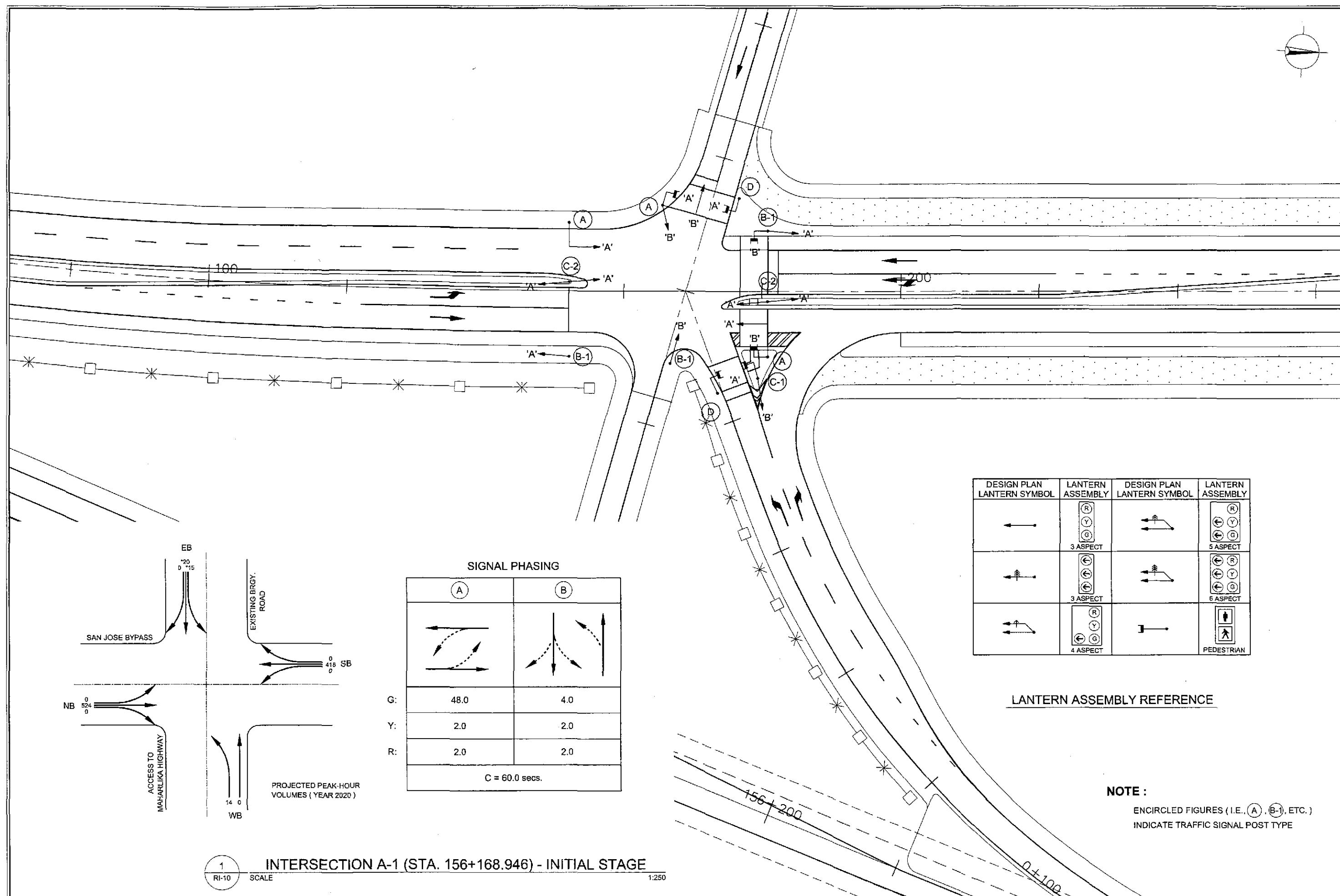
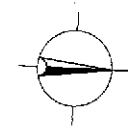
PROJECT AND LOCATION :
**THE DETAILED DESIGN STUDY ON
UPGRADING INTER-URBAN HIGHWAY SYSTEM
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypasses)**

SAN JOSE BYPASS

SCALE :
1:500
FULL SIZE A1

SHEET CONTENTS :
**TRAFFIC SIGNS, PAVEMENT MARKINGS
AND CUT RAMPS LAYOUT - 2 OF 2
INTERSECTION A-1 (INITIAL STAGE)**

SHEET NO. :
R1-09



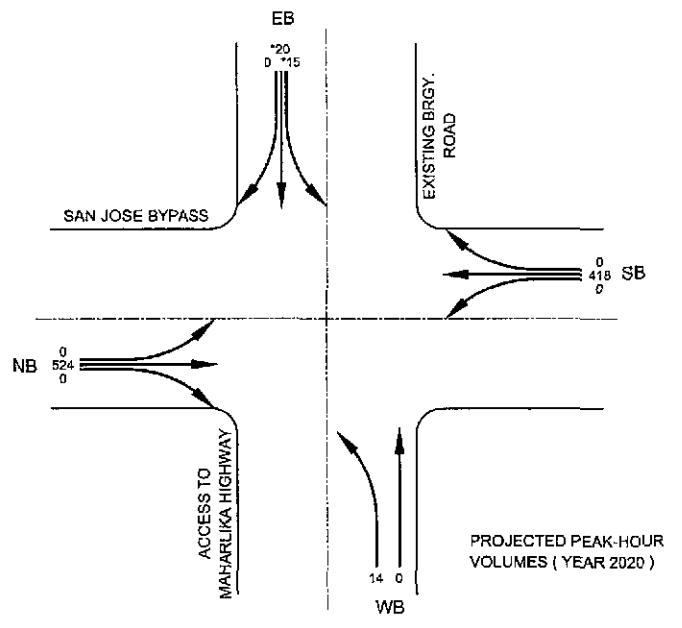
SIGNAL PHASING

	(A)	(B)
G:	48.0	4.0
Y:	2.0	2.0
R:	2.0	2.0
C = 60.0 secs.		

DESIGN PLAN LANERN SYMBOL	LANERN ASSEMBLY	DESIGN PLAN LANERN SYMBOL	LANERN ASSEMBLY
←	 3 ASPECT		 5 ASPECT
	 3 ASPECT		 6 ASPECT
	 4 ASPECT		 PEDESTRIAN

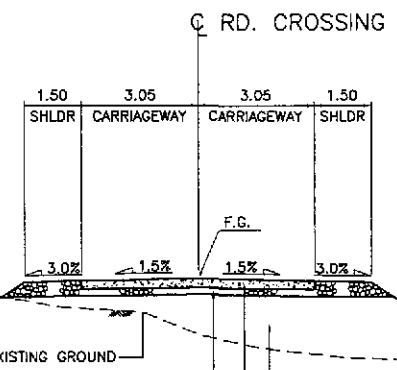
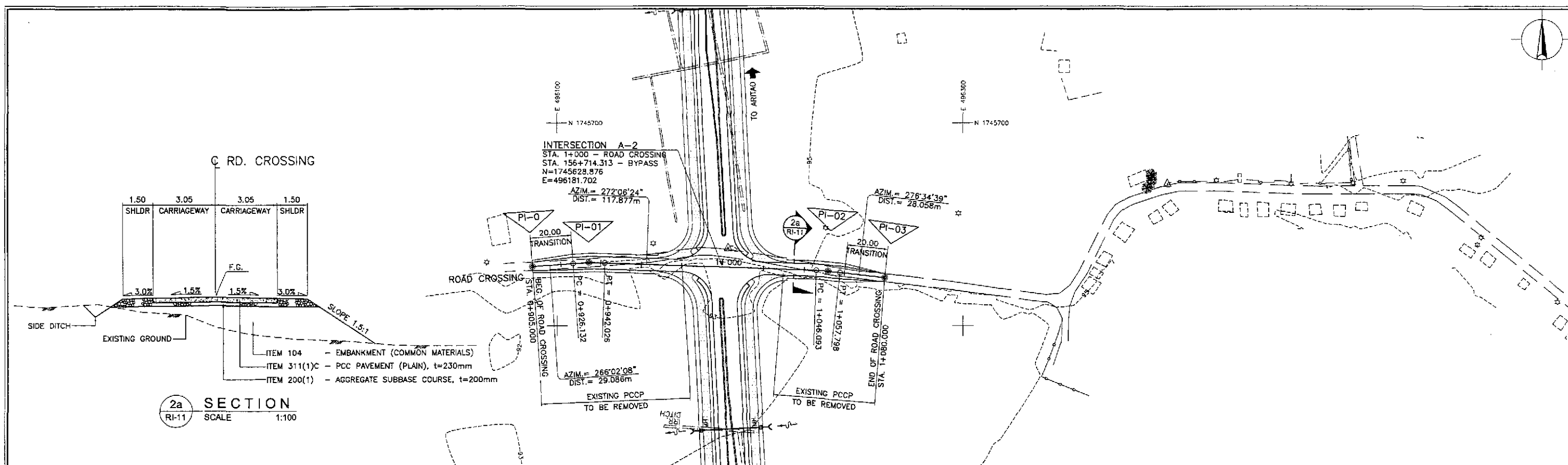
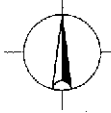
LANERN ASSEMBLY REFERENCE

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



1 INTERSECTION A-1 (STA. 156+168.946) - INITIAL STAGE
RI-10 SCALE 1:250

 JAPAN INTERNATIONAL COOPERATION AGENCY	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :				
	CHECKED	9/2/02	<i>[Signature]</i>						THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	TRAFFIC SIGNAL LIGHT LAYOUT INTERSECTION A-1 (INITIAL)	RI-10
	SUBMITTED	9/6/02	<i>[Signature]</i>						SAN JOSE BYPASS	FULL SIZE A1		
KATAHIRA & ENGINEERS INTERNATIONAL YACHIYO ENGINEERING CO., LTD.				DANILLO C. TRAJANO - Project Director JOSEFINA M. ALADAR - Chief, Highways Division GILBERTO S. REYES - D/C, Director IV MANUEL M. BONDAN - Undersecretary SIMEON A. DATUMANONG - Secretary								



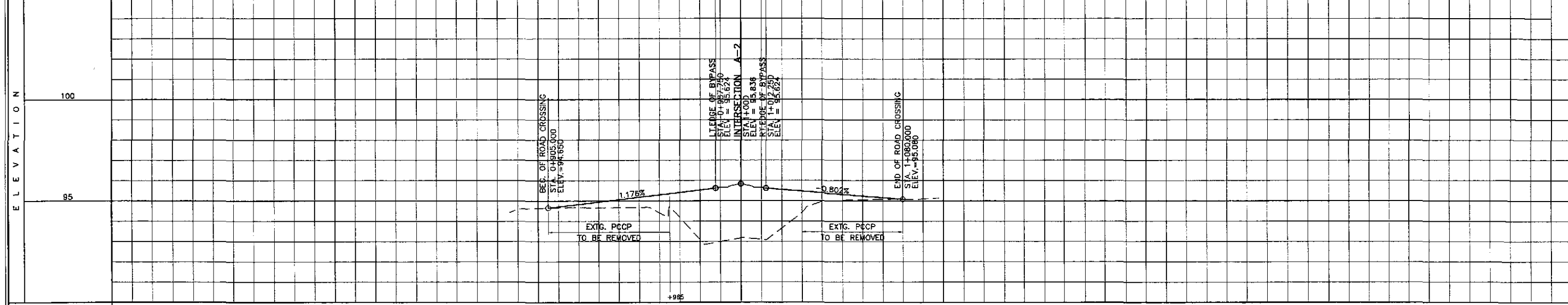
- ITEM 104 - EMBANKMENT (COMMON MATERIALS)
- ITEM 311(1)C - PCC PAVEMENT (PLAIN), t=230mm
- ITEM 200(1) - AGGREGATE SUBBASE COURSE, t=200mm

2a SECTION
RI-11 SCALE 1:100

CURVE ELEMENTS

PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V (kph)	STATION	
		NORTHING	EASTING								PC	PT
0	0 + 905.000	1,745,629.288	496,086.801									
1	0 + 934.086	1,745,631.299	496,115.817	06°04'16"	150	7.954	15.894	0.211	4.00	40	0+926.132	0+942.026
2	1 + 051.948	1,745,626.966	496,233.615	04°28'16"	150	5.856	11.705	0.114	4.00	40	1+046.093	1+057.798
3	1 + 080.000	1,745,623.752	496,261.488									

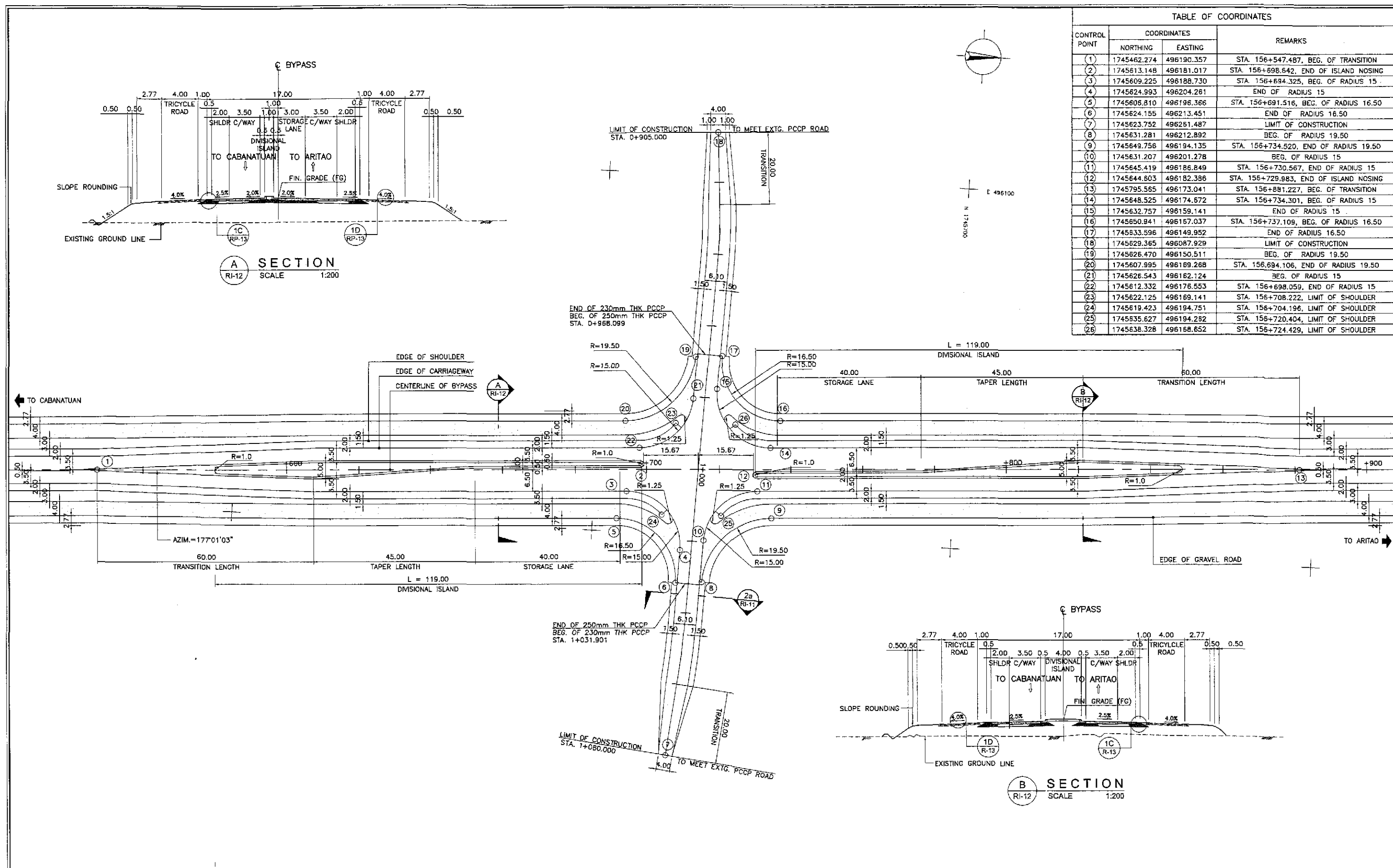
NOTES:
1. FOR DETAIL OF A-2 INTERSECTION SEE SHEET NO. RI-12



STATION	+700	+800	+900	+985	1+000	+100	+200	+300													
FINISHED GRADE																					
ORIGINAL GROUND				94.428	94.634	94.664	94.876	94.855	95.062	94.414	95.297	95.532	93.170	93.662	95.561	94.963	95.401	95.052	95.240	95.080	95.080
HORIZONTAL CURVATURE																					
VERTICAL CURVATURE																					
SUPERELEVATION																					

	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/2/02	[Signature]		<p>THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p>		HORIZONTAL 1:1000	<p>PLAN, PROFILE & SECTION INTERSECTION A-2 ROAD CROSSING (STA. 0+905.000 - 1+080.000)</p>	<p>RI-11</p>
	SUBMITTED	9/6/02	[Signature]		<p>SAN JOSE BYPASS</p>		VERTICAL 1:100		

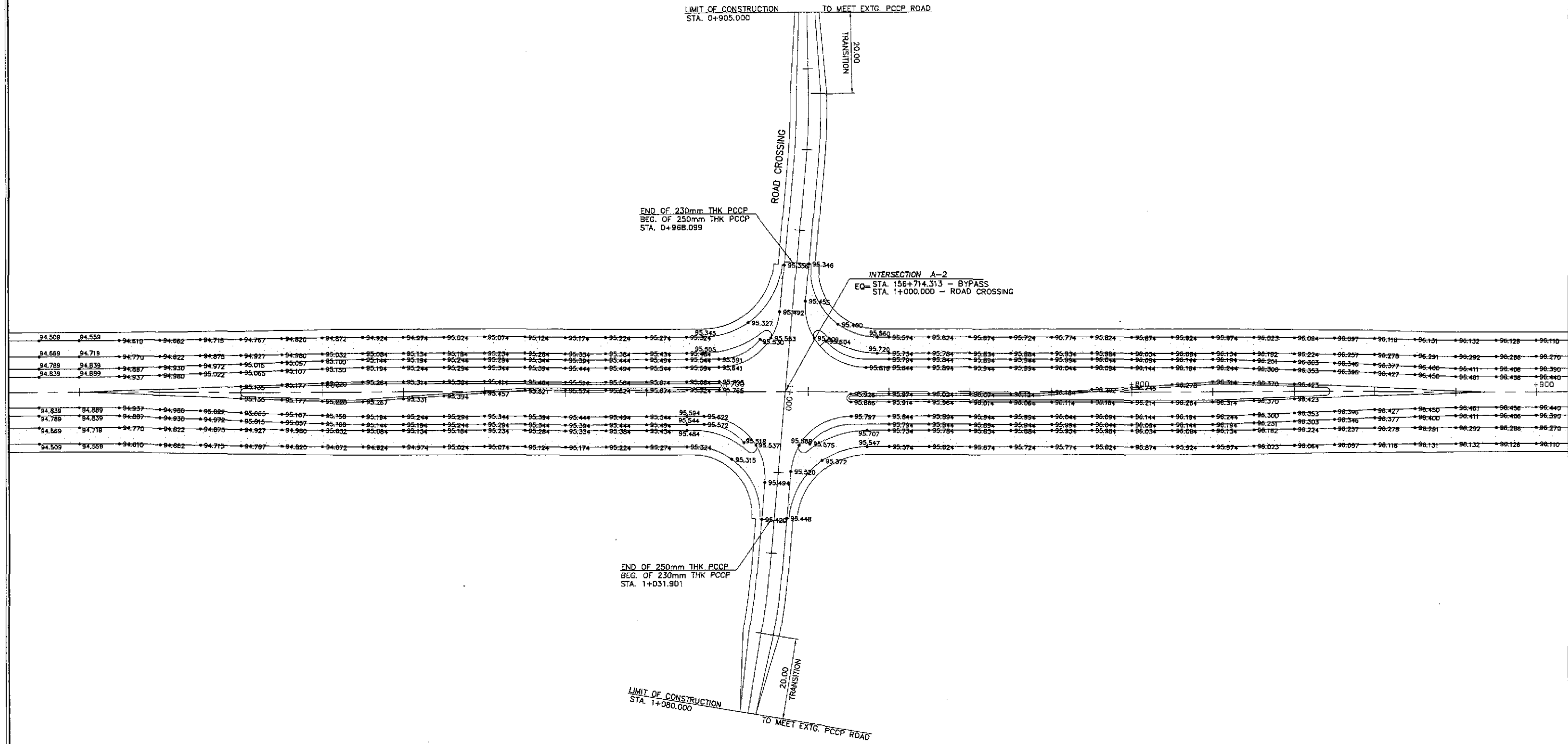
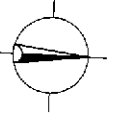
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
(1)	1745462.274	496190.357	STA. 156+547.487, BEG. OF TRANSITION
(2)	1745613.148	496181.017	STA. 156+698.642, END OF ISLAND NOSING
(3)	1745609.225	496188.730	STA. 156+694.325, BEG. OF RADIUS 15
(4)	1745624.993	496204.261	END OF RADIUS 15
(5)	1745608.810	496198.366	STA. 156+691.516, BEG. OF RADIUS 16.50
(6)	1745624.155	496213.451	END OF RADIUS 16.50
(7)	1745623.752	496261.487	LIMIT OF CONSTRUCTION
(8)	1745631.281	496212.892	BEG. OF RADIUS 19.50
(9)	1745649.756	496194.135	STA. 156+734.520, END OF RADIUS 19.50
(10)	1745631.207	496201.278	BEG. OF RADIUS 15
(11)	1745645.419	496186.849	STA. 156+730.567, END OF RADIUS 15
(12)	1745644.603	496182.386	STA. 156+729.983, END OF ISLAND NOSING
(13)	1745795.565	496173.041	STA. 156+891.227, BEG. OF TRANSITION
(14)	1745648.525	496174.672	STA. 156+734.301, BEG. OF RADIUS 15
(15)	1745632.757	496159.141	END OF RADIUS 15
(16)	1745650.941	496167.037	STA. 156+737.109, BEG. OF RADIUS 16.50
(17)	1745633.596	496149.952	END OF RADIUS 16.50
(18)	1745629.365	496087.929	LIMIT OF CONSTRUCTION
(19)	1745626.470	496150.511	BEG. OF RADIUS 19.50
(20)	1745607.995	496189.268	STA. 156+694.106, END OF RADIUS 19.50
(21)	1745626.543	496162.124	BEG. OF RADIUS 15
(22)	1745612.332	496176.553	STA. 156+698.059, END OF RADIUS 15
(23)	1745622.125	496169.141	STA. 156+708.222, LIMIT OF SHOULDER
(24)	1745619.423	496194.751	STA. 156+704.196, LIMIT OF SHOULDER
(25)	1745535.627	496194.282	STA. 156+720.404, LIMIT OF SHOULDER
(26)	1745638.328	496168.652	STA. 156+724.429, LIMIT OF SHOULDER



GEOMETRIC DESIGN LAYOUT
INTERSECTION A-2 (STA. 156+714.313) - INITIAL STAGE
 1/RI-12 SCALE 1:500

- NOTES:
- FOR DETAIL OF CURVE DATA SEE SHT. NO. RI-11
 - FOR TYPICAL ROAD CROSS-SECTIONS SEE SHT. NO. RP-13 & RP-14.

	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	9/2/02	<i>[Signature]</i>	BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-2 (INITIAL STAGE)	RI-12
	CHECKED	9/4/02	<i>[Signature]</i>	Submitted By:	Reviewed By:	Recommended By:	Recommended By:	FULL SIZE A1			
		SUBMITTED	7/6/02	<i>[Signature]</i>	DANILO C. TRAIANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary		

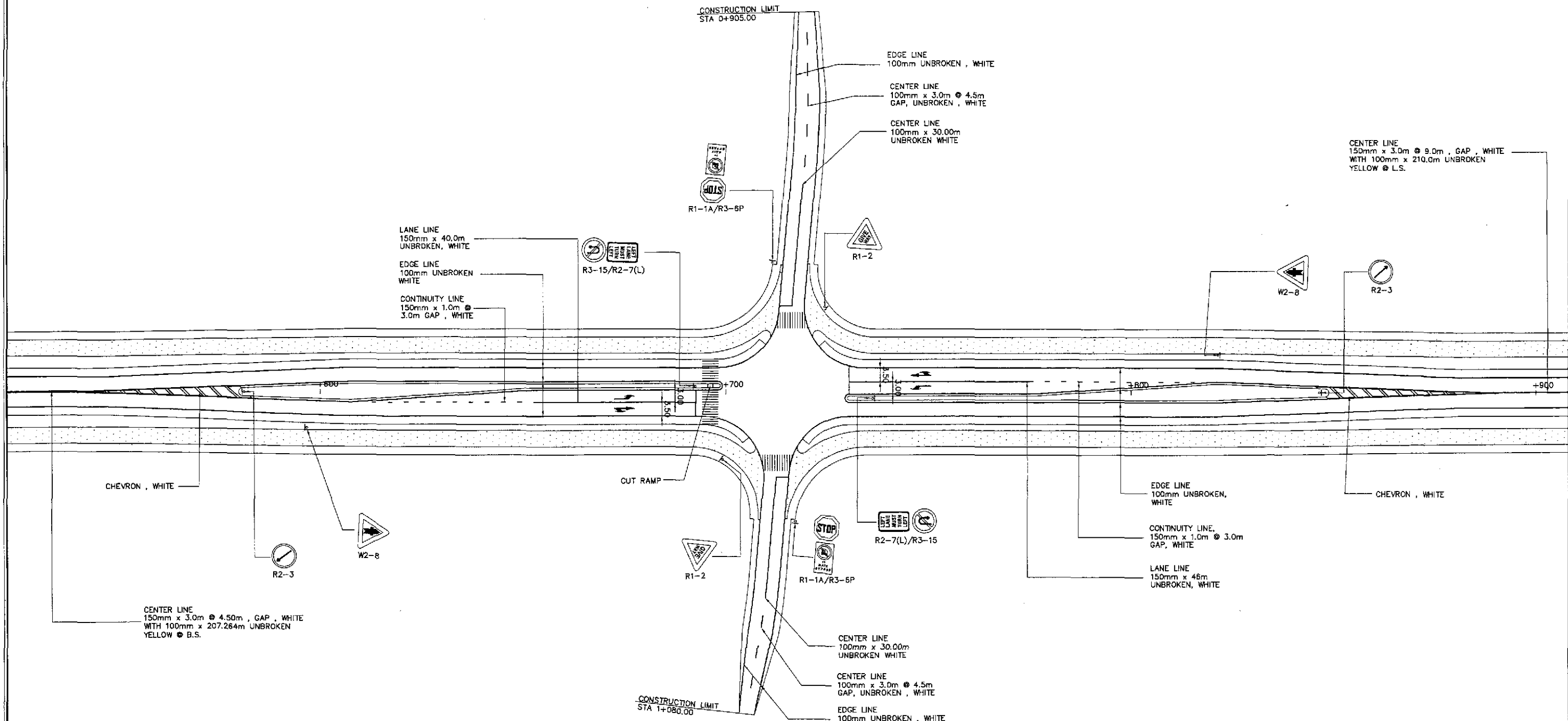
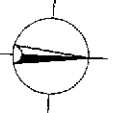


- NOTES:
1. FINISHED SPOT ELEVATIONS OF THE EDGE OF PAVEMENT AND SHOULDER PRESENTED HEREIN WERE REFERRED FROM THE CENTERLINE/BASELINE.
 2. SPOT ELEVATIONS ARE AT TEN (10) METERS REGULAR INTERVAL UNLESS OTHERWISE INDICATED ON THE PLANS.
 3. FOR GEOMETRIC LAYOUT OF INTERSECTION, SEE SHEET NO. RI-12
 4. FOR DETAILED PLAN, PROFILE AND SUPERELEVATION DIAGRAM OF ROAD CROSSING, SEE SHEET NO. RI-11

PAVING PLAN
INTERSECTION A-2 (STA. 156+714.313) - INITIAL STAGE
 SCALE 1:500

A
RI-13

		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 FULL SIZE A1	SHEET CONTENTS : INTERSECTION DETAIL PAVING PLAN INTERSECTION A-2 (INITIAL STAGE)	SHEET NO. : RI-13	
	DESIGNED: 9/2/02 CHECKED: 9/4/02 SUBMITTED: 9/6/02	DATE: 9/2/02 SIGNATURE: [Signature] [Signature] [Signature]	Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Recommended By: MANUEL M. BONDAN Underscretary	Approved By: SIMEDON A. DATUMANONG Secretary
	PUHL - PMO BUREAU OF DESIGN OFFICE OF THE SECRETARY			SAN JOSE BYPASS			



NOTES:

1. FOR STANDARD SIGNS AND DETAILS OF ADVANCE DIRECTION SIGNS SEE SHEET NOS. RS-12 & RS-13.
2. FOR PAVEMENT MARKINGS DETAILS SEE SHEET NOS. RS-16 & RS-17.
3. FOR CUT RAMP DETAILS SEE SHEET NO. RS-05.

**TRAFFIC SIGNS, PAVEMENT MARKINGS AND CUT RAMP LAYOUT
INTERSECTION A-2, STA. 156+714.313 (INITIAL STAGE)**

A
R1-14

SCALE

1:500

	DESIGNED	DATE	SIGNATURE	<p align="center">REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) SAN JOSE BYPASS	SCALE :	SHEET CONTENTS : TRAFFIC SIGNS, PAVEMENT MARKINGS AND CUT RAMPS LAYOUT INTERSECTION A-2 (INITIAL STAGE)	SHEET NO. : R1-14
	CHECKED	DATE	SIGNATURE						1:500		
	SUBMITTED	DATE	SIGNATURE	Submitted By: DANILO C. TRAJANO Project Director Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division Recommended By: GILBERTO S. REYES Dir. Director IV Recommended By: MANUEL M. BONOAN Undersecretary Approved By: SIMEON A. DATUMANONG Secretary	FULL SIZE A1						