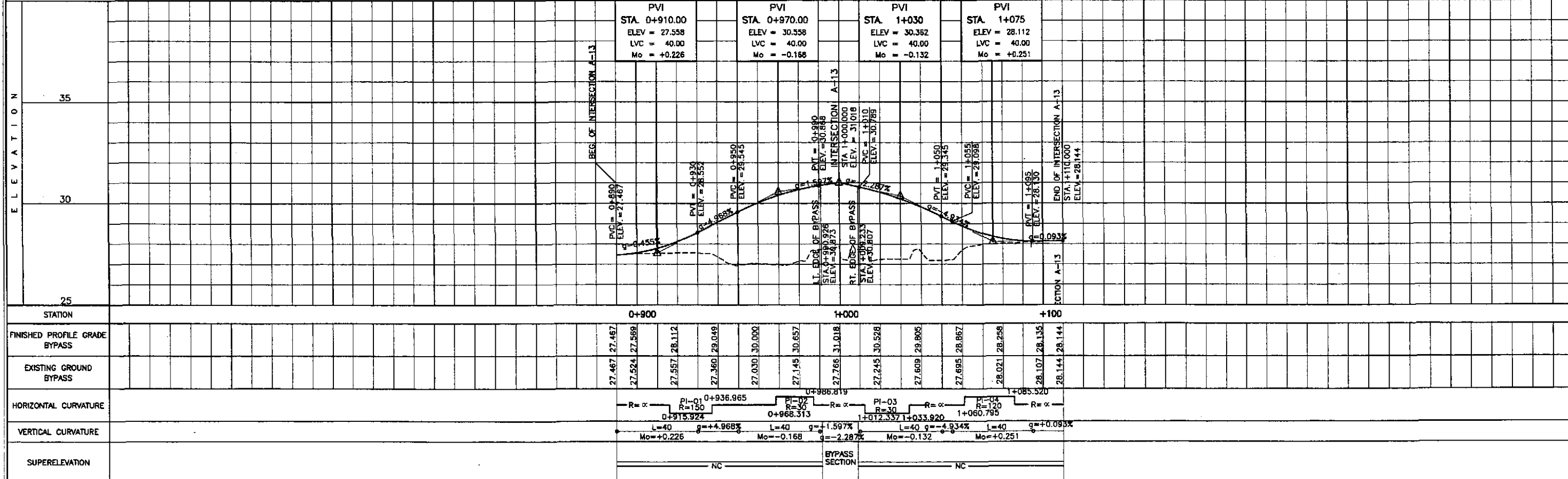
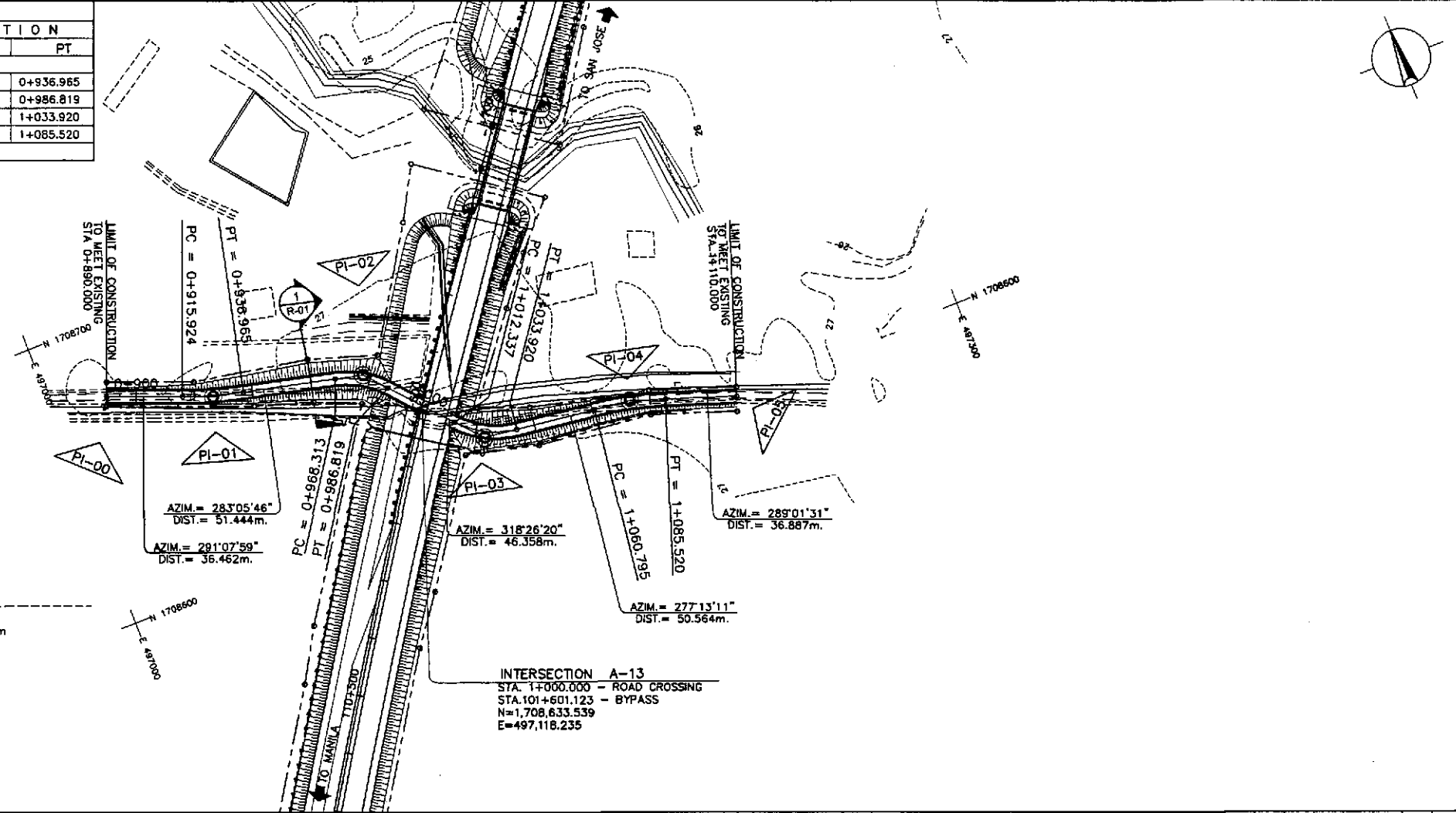
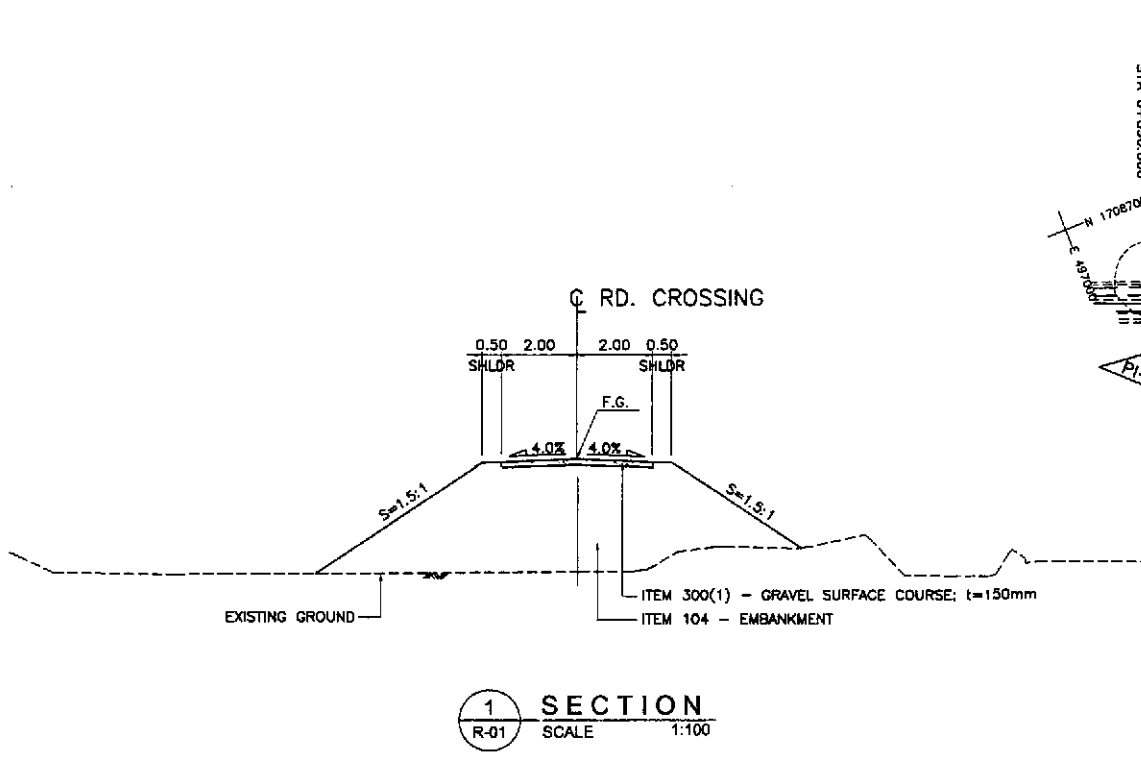
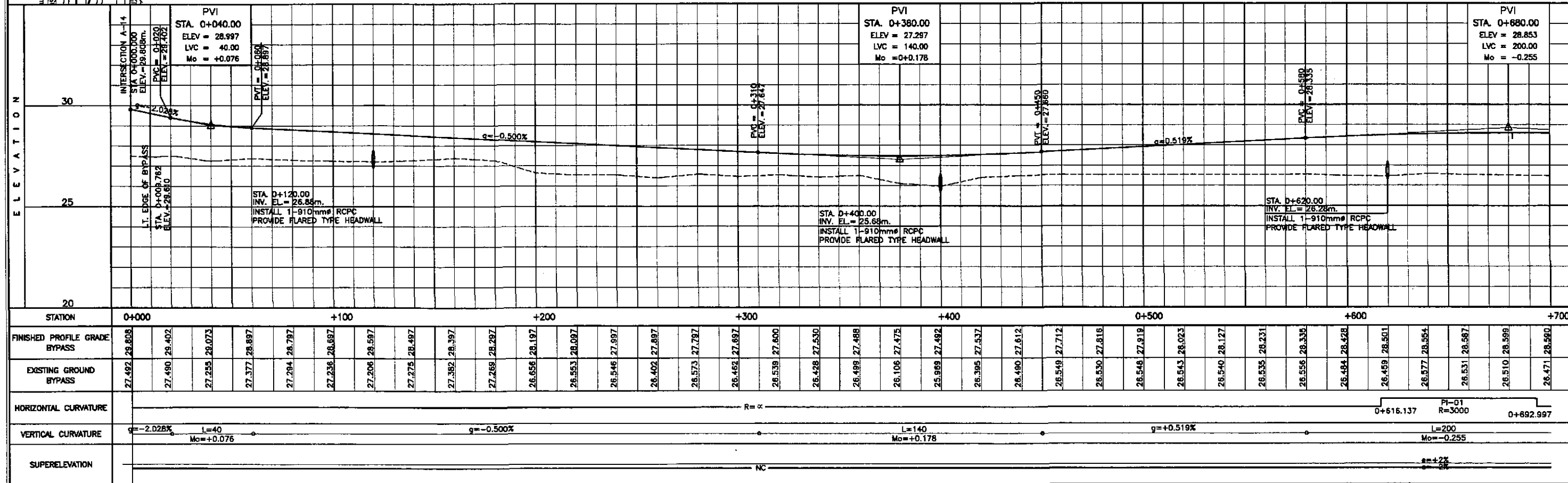
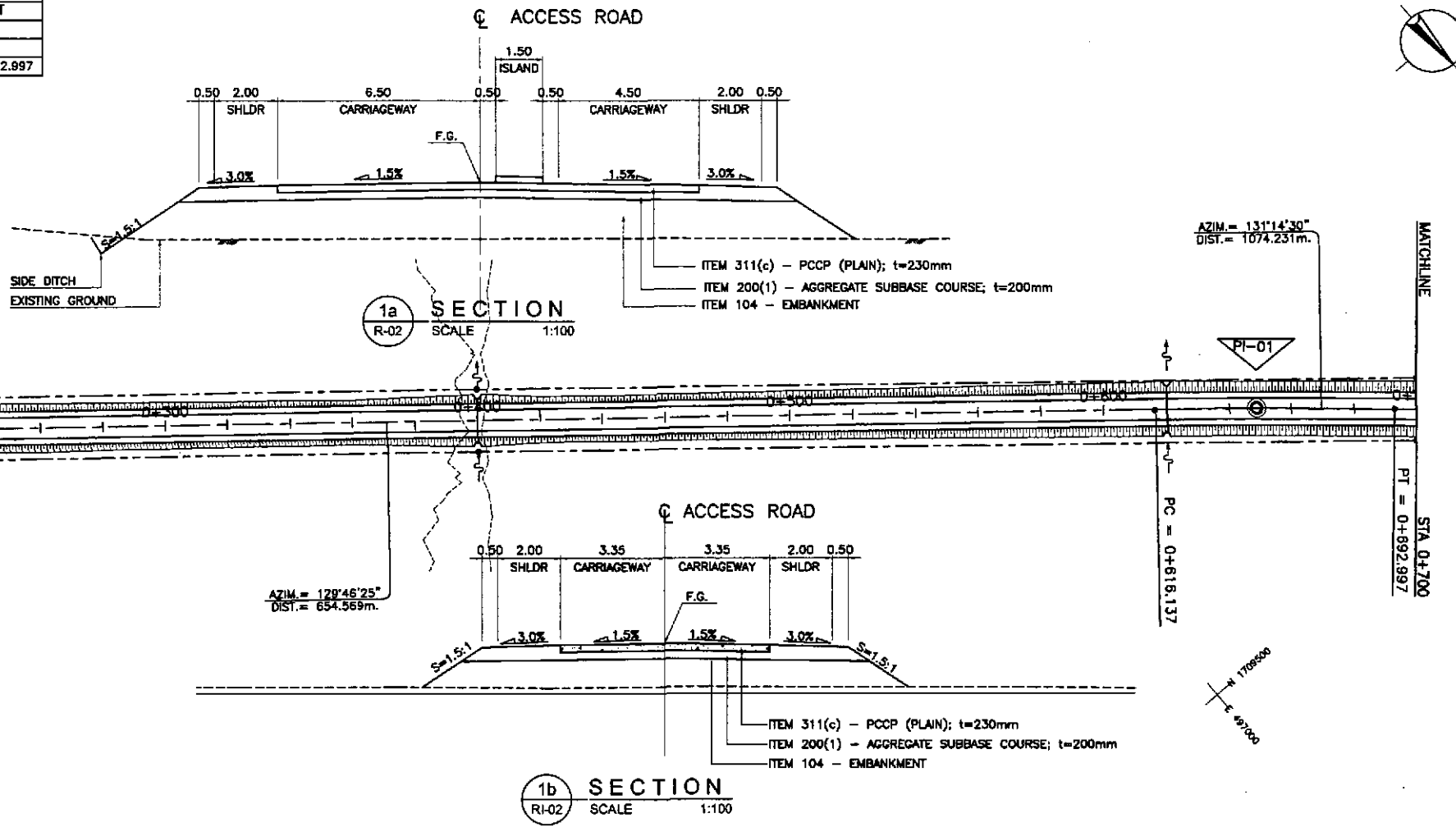
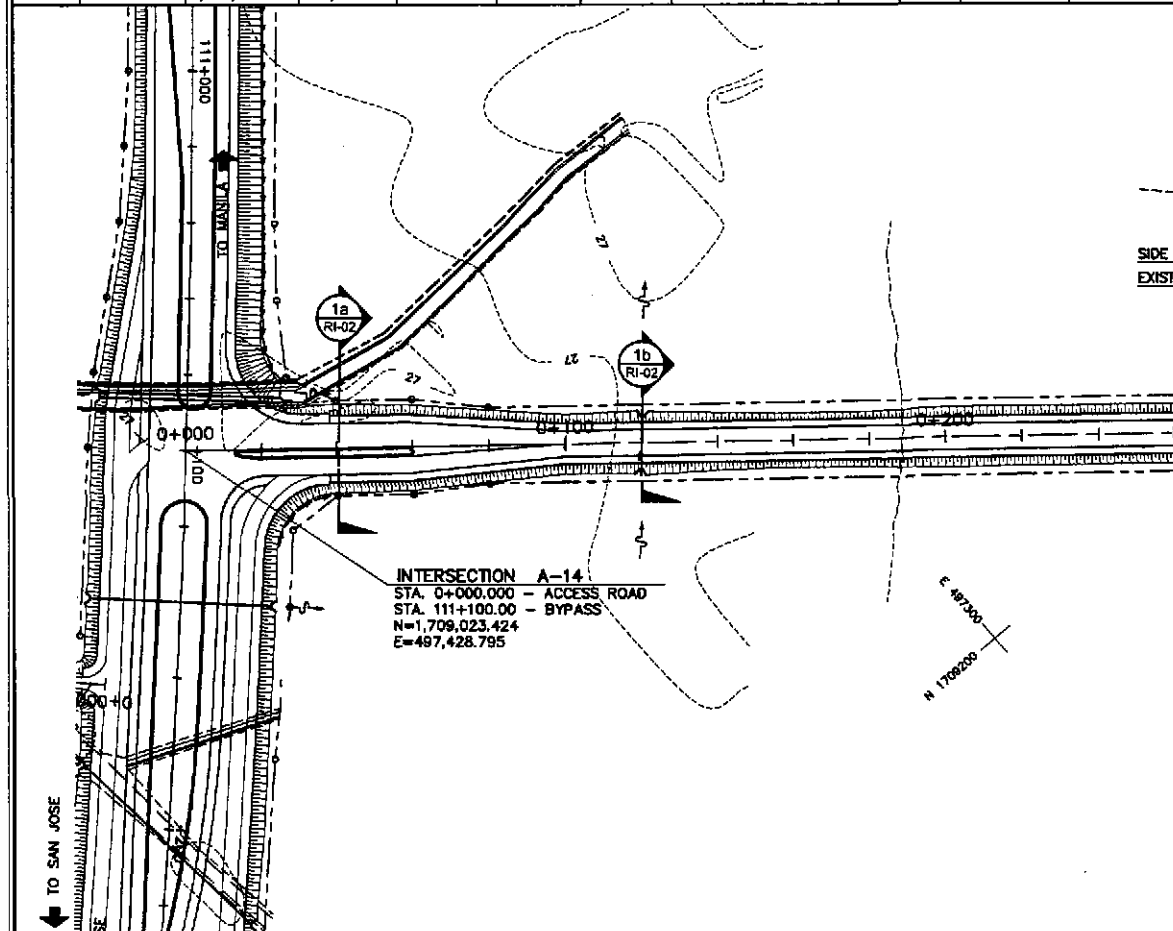


ELEMENTS OF CURVE												
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION	
		NORTHING	EASTING								PC	PT
PI-00	0+890.00	1,708,675.356	497,019.034								BEGINNING OF INTERSECTION A-13	
PI-01	0+926.462	1,708,662.210	497,053.044	08°02'13"	150.00	10.538	21.040	0.370	-	-	0+915.924	0+936.985
PI-02	0+977.871	1,708,650.554	497,103.149	35°20'33"	30.00	9.558	18.505	1.486	-	-	0+968.313	0+986.819
PI-03	1+023.619	1,708,615.866	497,133.904	41°13'08"	30.00	11.282	21.582	2.051	-	-	1+012.337	1+033.920
PI-04	1+073.201	1,708,609.511	497,184.067	11°48'19"	120.00	12.406	24.725	0.640	-	-	1+060.795	1+085.520
PI-05	1+110.000	1,708,597.487	497,218.939								END OF INTERSECTION A-13	



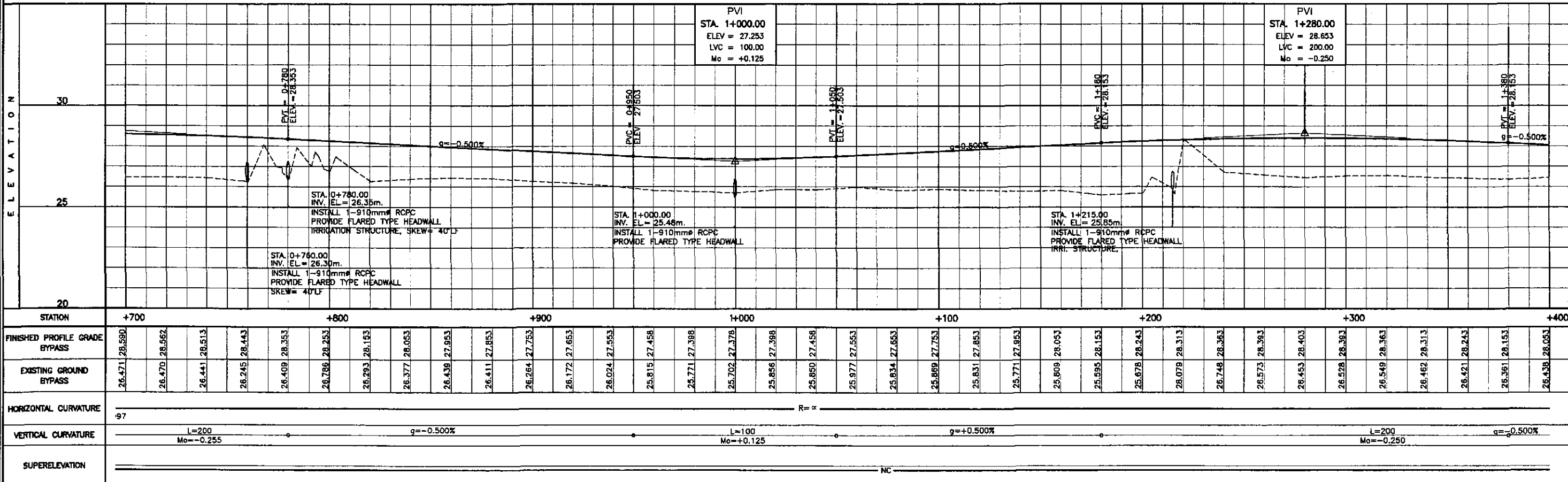
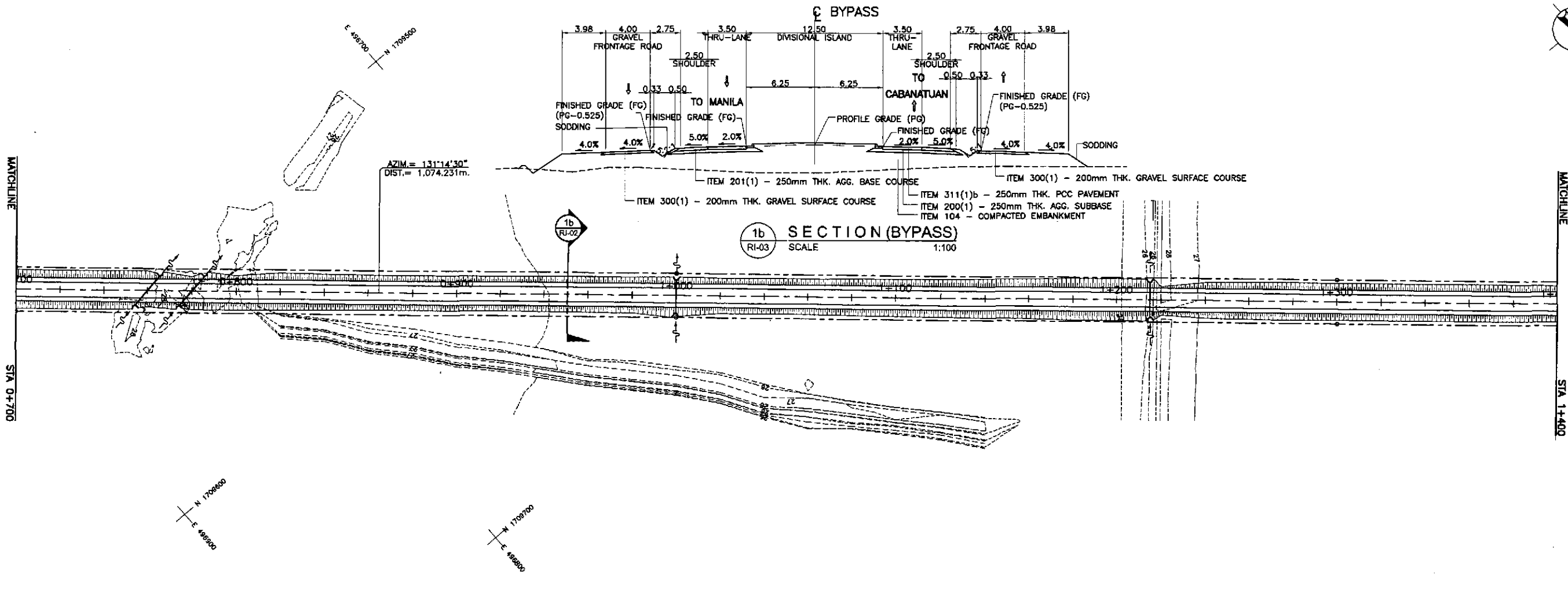
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pandal, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN, CROSS-SECTION AND PROFILE INTERSECTION A-13 STA. 0+890 - STA 1+110	SHEET NO. : RI-01
	CHECKED	10/16/02	SIGNATURE		Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Approved By: MANUEL M. BONDAN Undersecretary				

PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION	
		NORTHING	EASTING								PC	PT
PI-00	0+000.000	1,709,023.424	497,428.795								BEGINNING OF ACCESS ROAD	
PI-01	0+654.569	1,709,442.189	496,925.709	01°28'04"	3000	38.432	76.860	0.246	NC	60	0+616.137	0+692.997



STATION	0+000	+100	+200	+300	+400	+500	+600	+700																																																																								
FINISHED PROFILE GRADE BYPASS	27.492	27.402	27.255	27.073	27.377	27.897	27.294	27.797	27.236	27.697	27.206	27.597	27.275	27.497	27.382	27.397	27.269	27.297	26.656	27.197	26.553	27.097	26.546	27.597	26.402	27.597	26.575	27.797	26.462	27.697	26.539	27.600	26.498	27.530	26.499	27.489	26.106	27.475	25.969	27.492	26.395	27.537	26.490	27.612	26.549	27.712	26.530	27.815	26.548	27.912	26.543	28.023	26.540	28.127	26.535	28.231	26.556	28.335	26.484	28.429	26.459	28.501	26.577	28.554	26.531	28.587	26.510	28.599	26.471	28.590										
EXISTING GROUND BYPASS	27.492	27.490	27.255	27.073	27.377	27.897	27.294	27.797	27.236	27.697	27.206	27.597	27.275	27.497	27.382	27.397	27.269	27.297	26.656	27.197	26.553	27.097	26.546	27.597	26.402	27.597	26.575	27.797	26.462	27.697	26.539	27.600	26.498	27.530	26.499	27.489	26.106	27.475	25.969	27.492	26.395	27.537	26.490	27.612	26.549	27.712	26.530	27.815	26.548	27.912	26.543	28.023	26.540	28.127	26.535	28.231	26.556	28.335	26.484	28.429	26.459	28.501	26.577	28.554	26.531	28.587	26.510	28.599	26.471	28.590										
HORIZONTAL CURVATURE	R = ∞										R = 3000																																																																					
VERTICAL CURVATURE	g = -0.500%																																								g = +0.519%																																							
SUPERELEVATION	NC																																																																															

	DESIGNED	10/1/02			BUREAU OF DESIGN				OFFICE OF THE SECRETARY				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pilaride, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE INTERSECTION A-14 ACCESS ROAD, STA.0+000 - STA.0+700	SHEET NO. : RI-02
	CHECKED	10/1/02			Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Recommended By:	Recommended By:	Recommended By:					
	SUBMITTED	10/1/02			DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONGAN Undersecretary	SIMEON A. DATUMANGON Secretary							



STATION	+700	+800	+900	+1000	+1100	+200	+300	+400
FINISHED PROFILE GRADE BYPASS	26.471	26.562	26.653	26.744	26.835	26.926	27.017	27.108
EXISTING GROUND BYPASS	26.471	26.470	26.441	26.513	26.245	26.443	26.408	26.353
HORIZONTAL CURVATURE	R=∞							
VERTICAL CURVATURE	L=200 Mo=-0.255		g=-0.500%		L=100 Mo=+0.125		g=+0.500%	
SUPERELEVATION	NC							

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KATAHIRA & ENGINEERS
YEO YACHIYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
 BUREAU OF DESIGN
 OFFICE OF THE SECRETARY

DESIGNED: 10/1/02
 CHECKED: 10/10/02
 SUBMITTED: 10/18/02

DATE: 10/1/02
 SIGNATURE: [Signature]
 S. ROSE
 TEAM LEADER

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: SIMÉON A. DATUMANONG
 Secretary

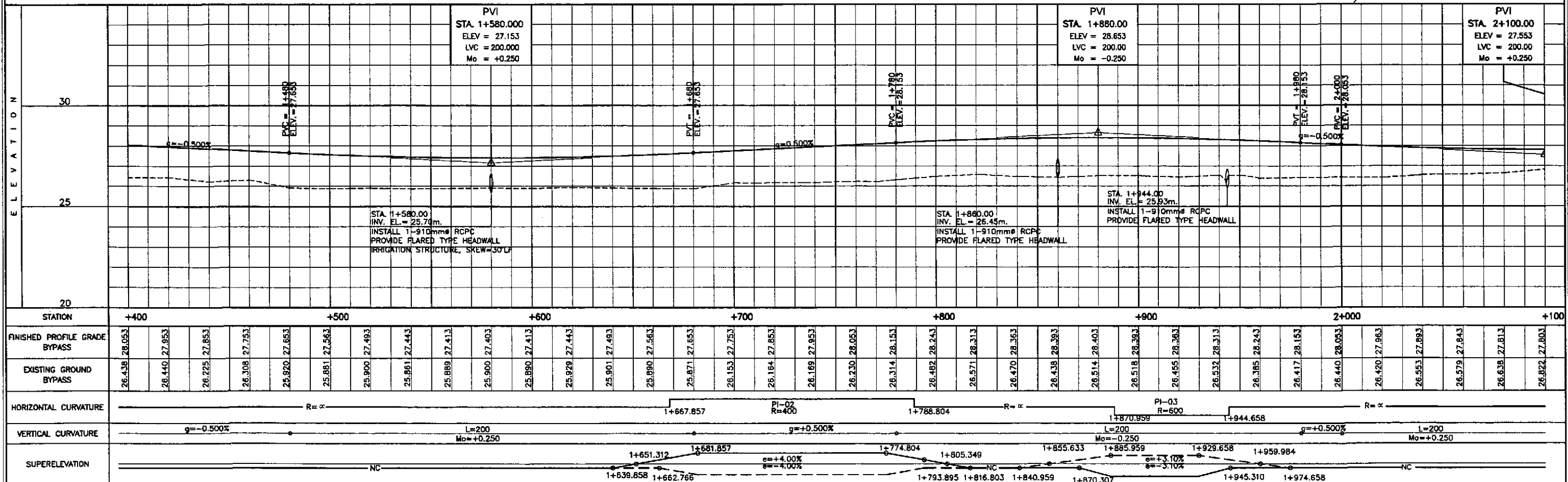
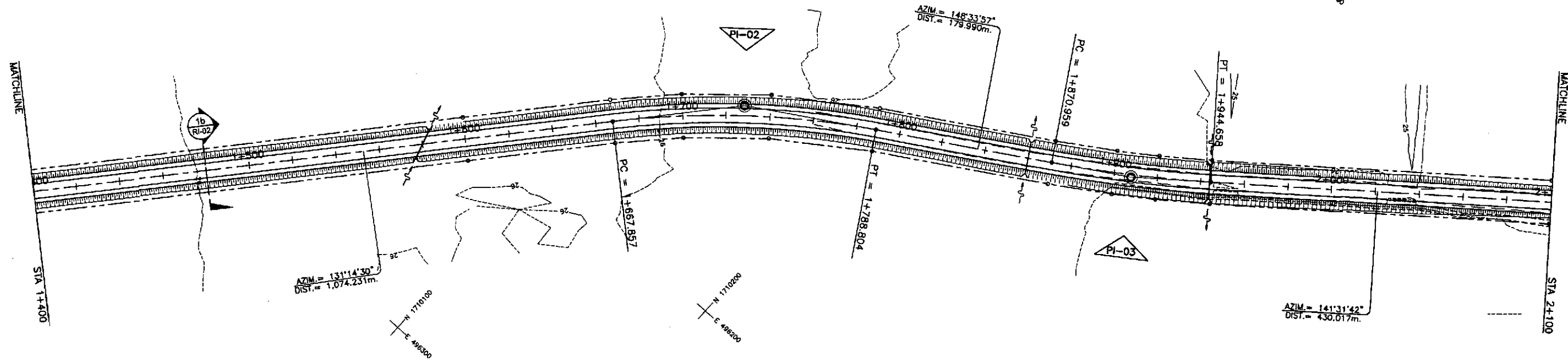
PROJECT AND LOCATION :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)
CABANATUAN BYPASS - CONTRACT PACKAGE II

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

SHEET CONTENTS :
PLAN, CROSS-SECTION AND PROFILE INTERSECTION A-14 STA.0+700 - STA.1+400

SHEET NO. :
RI-03

ELEMENTS OF CURVE												
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION	
		NORTHING	EASTING								PC	PT
PI-02	1+728.795	1,710,150.360	496,117.956	17°19'27"	400	60.938	120.946	4.615	4.00	50	1+667.857	1+788.804
PI-03	1+907.855	1,710,303.935	496,024.088	07°02'16"	600	36.898	73.698	1.133	3.10	50	1+870.959	1+944.658



STATION	+400	+500	+600	+700	+800	+900	2+000	+1000		
FINISHED PROFILE GRADE BYPASS	26.438	26.440	26.440	26.440	26.440	26.440	26.440	26.440		
EXISTING GROUND BYPASS	26.438	26.440	26.440	26.440	26.440	26.440	26.440	26.440		
HORIZONTAL CURVATURE	R=∞		PI-02 R=400				PI-03 R=600		R=∞	
VERTICAL CURVATURE	g=-0.500%		L=200 Mo=+0.250				L=200 Mo=-0.250		L=200 Mo=+0.250	
SUPERELEVATION	NC		e=+4.00% e=-4.00%				e=+3.10% e=-3.10%		NC	

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REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

DESIGNED: 10/4/02
 CHECKED: 10/16/02
 SUBMITTED: 10/16/02

Submitted By: **DANILO C. TRAJANO**
 Project Director

Reviewed By: **JOSEFINA M. ALAGAR**
 Chief, Highways Division

Recommended By: **GILBERTO S. REYES**
 OIC, Director IV

Office of the Secretary
 Recommended By: **MANUEL M. BONGAN**
 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)

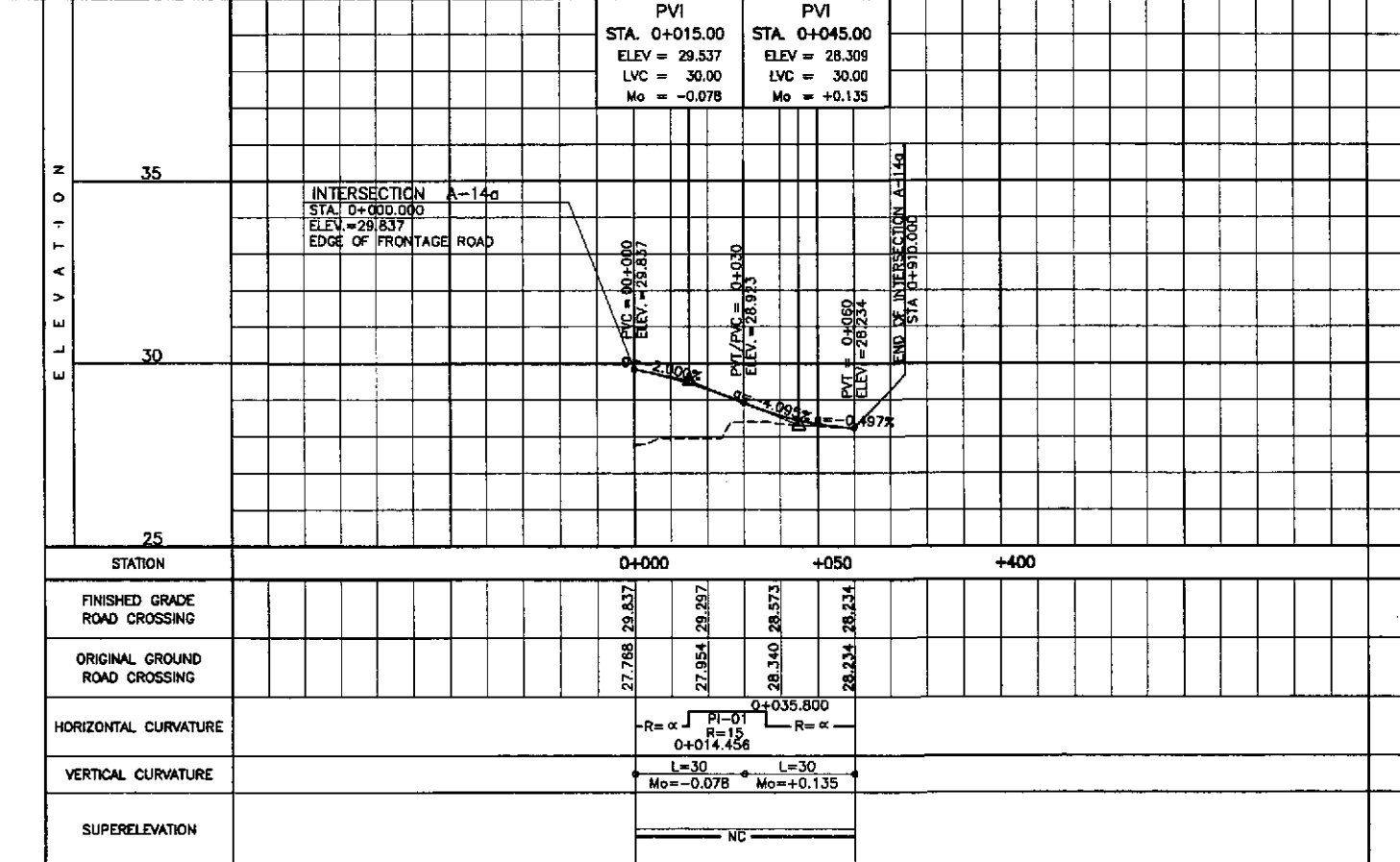
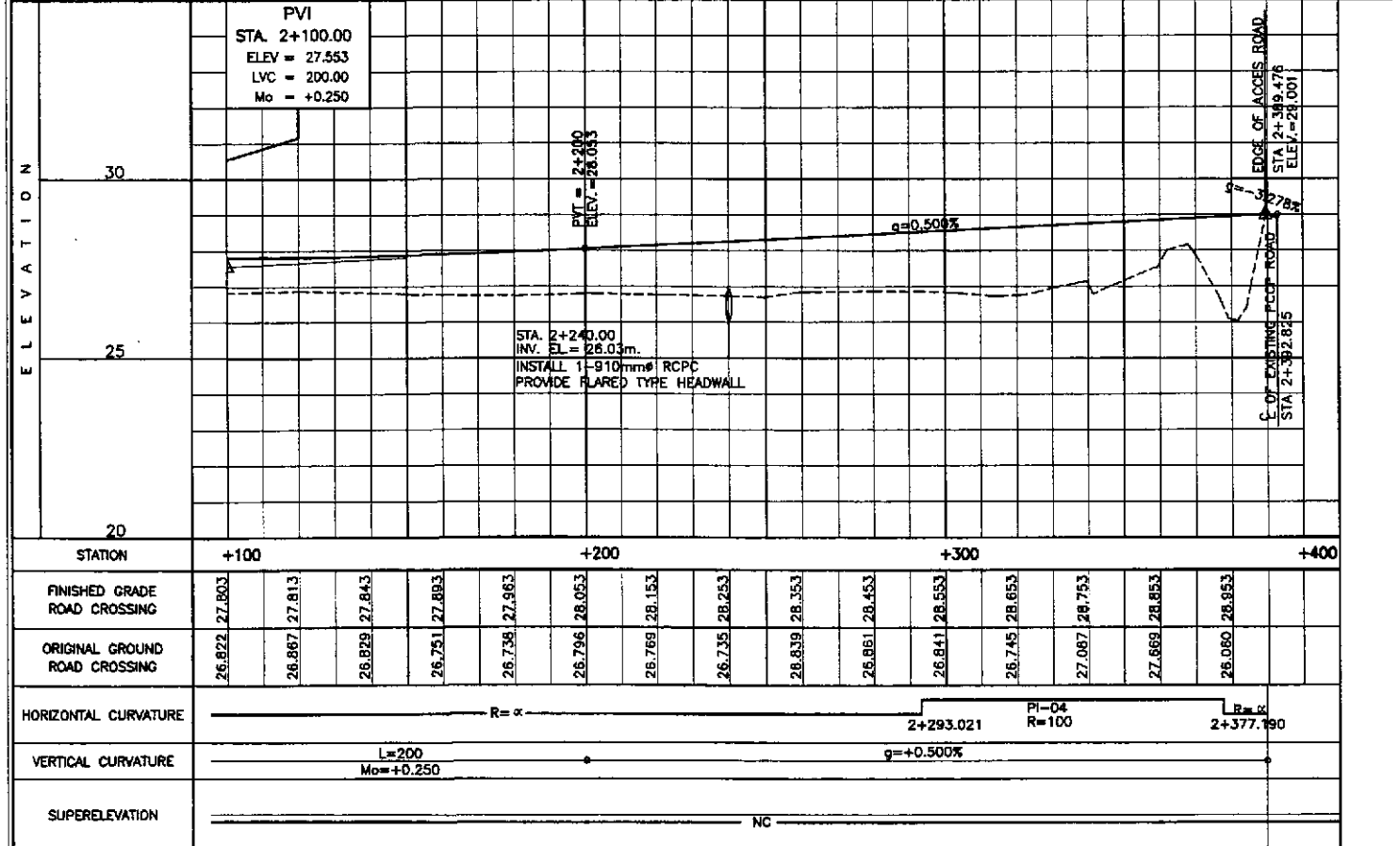
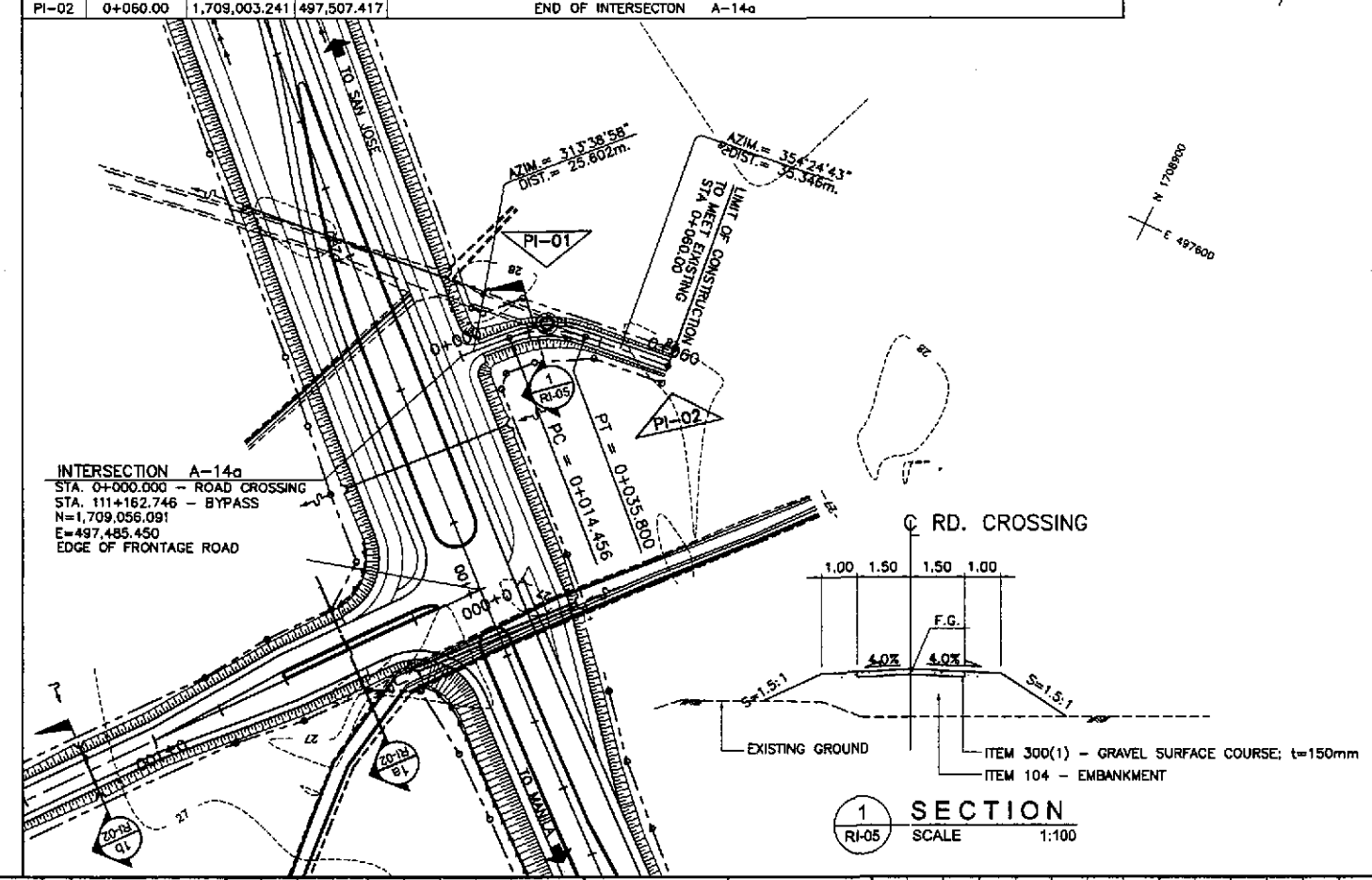
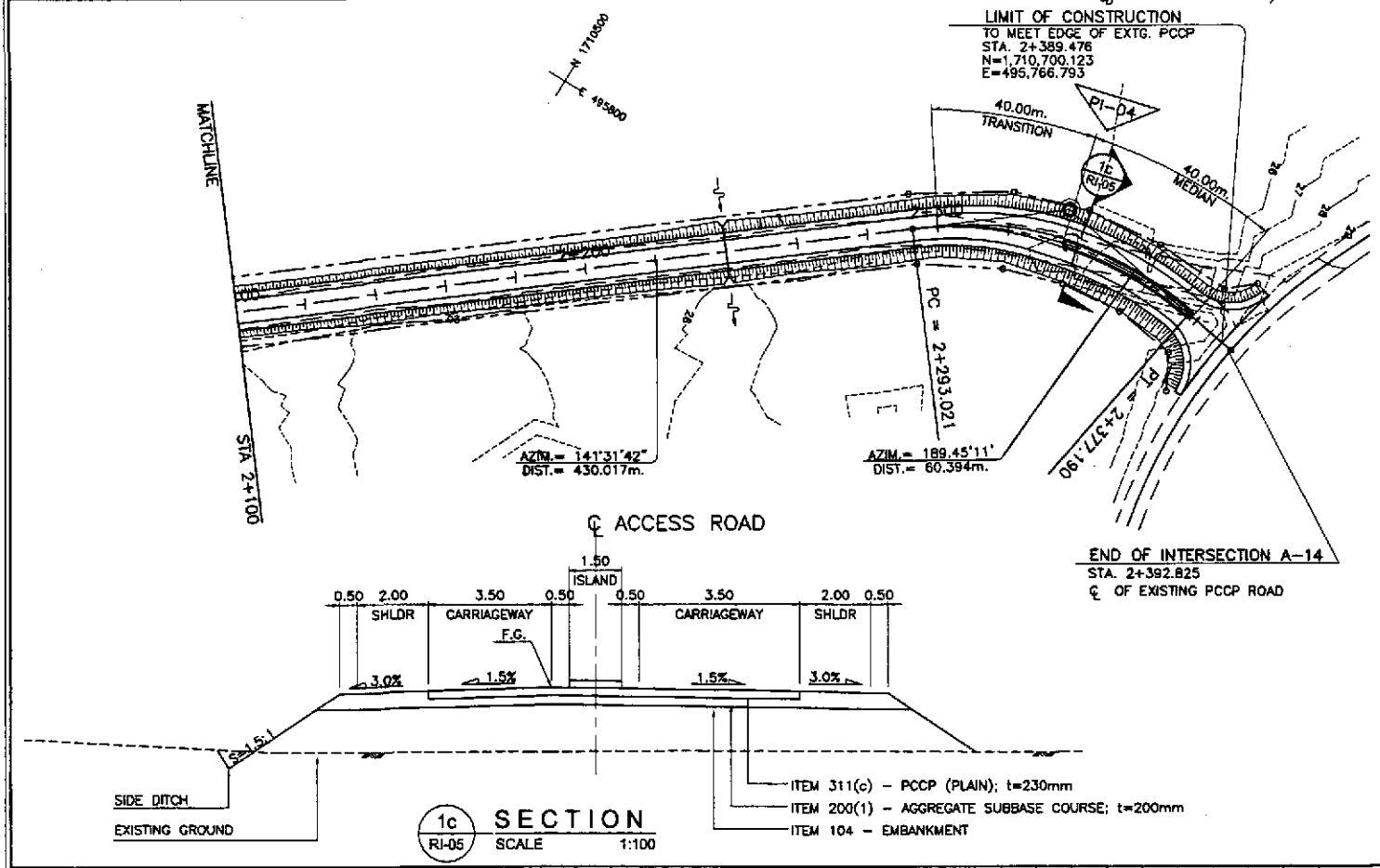
SCALE :
 HORIZONTAL 1:1000
 VERTICAL 1:100
 FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE INTERSECTION A-14 STA. 1+400 - STA 2+100

SHEET NO. : **RI-04**

ELEMENTS OF CURVE											STATION	
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	PC	PT
		NORTHING	EASTING								PC	PT
PI-04	2+337.780	1,710,640.602	495,756.562	48°13'29"	100	44.758	84.168	9.560	-	-	2+293.021	2+377.190
PI-05	2+392.825	1,710,700.123	495,766.793	END OF ACCESS ROAD								

ELEMENTS OF CURVE											STATION	
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	PC	PT
		NORTHING	EASTING								PC	PT
PI-00	0+000.000	1,709,056.091	497,485.450	BEGINNING OF INT A-14a								
PI-01	0+025.602	1,709,038.419	497,503.975	40°45'45"	30	11.146	21.343	2.004	-	-	0+014.456	0+035.800
PI-02	0+060.000	1,709,003.241	497,507.417	END OF INTERSECTION A-14a								



	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/16/02	S. JOSE	BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	PLAN, CROSS-SECTION AND PROFILE INTERSECTION 14 STA.2+100 - STA.392.825 INTERSECTION 14a STA 0+000 - STA.0+060	RI-05
	SUBMITTED	10/18/02	A. M. MORALES	Submitted By:	Reviewed By:	Recommended By:	Approved By:	CABANATUAN BYPASS - CONTRACT PACKAGE II			

TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
1	1708837.707	497281.806	OUTER EDGE OF 7.00m WIDE PAVEMENT
2	1708856.501	497292.134	CENTER OF TWO LANE PAVEMENT, LANE WIDTH 3.50m
3	1708887.257	497314.413	CENTER OF MEDIAN RADIUS 1.00
4	1708885.222	497319.174	OUTER EDGE OF 3.50m WIDE PAVEMENT
5	1708930.522	497359.15	OUTER EDGE OF 3.50m WIDE LANE
6	1708932.805	497356.498	BEG. OF TAPER
7	1708968.976	497383.4	END OF TAPER, PAVEMENT WIDTH 7.00m
8	1709016.307	497413.798	BEG. OF MEDIAN RADIUS 4.50
9	1709010.241	497420.447	END OF MEDIAN RADIUS 4.50
10	1708983.269	497405.492	INTERSECTION OF DIVERGING LANE
11	1708964.341	497388.846	INTERSECTION OF DIVERGING LANE
12	1709002.595	497435.471	OUTER EDGE OF SERVICE ROAD
13	1709005.509	497432.715	INNER EDGE OF SERVICE ROAD
14	1709014.591	497433.919	BEG. OF RADIUS 20.50/INTERSECTION OF BYPASS & SERVICE ROAD
15	1709014.011	497440.519	END OF RADIUS 20.50
16	1709019.465	497438.406	BEG. OF RADIUS 15/INTERSECTION OF BYPASS & SERVICE ROAD
17	1709024.249	497449.984	END OF RADIUS 15
18	1709041.838	497437.321	BEG. OF MEDIAN RADIUS 6.25
19	1709033.323	497446.472	END OF MEDIAN RADIUS 6.25
20	1709050.655	497480.264	BEG. OF CORNER RADIUS 6
21	1709050.864	497488.756	END OF CORNER RADIUS 6
22	1709003.241	497507.417	LIMIT OF CONSTRUCTION
23	1709053.035	497490.827	BEG. OF CORNER RADIUS 6
24	1709051.527	497490.636	END OF CORNER RADIUS 6
25	1709069.898	497485.847	EDGE OF 3.50m WIDE LANE
26	1709113.593	497526.754	OUTER EDGE OF THE 3.50m WIDE PAVEMENT
27	1709128.613	497534.676	CENTER OF THE MEDIAN RADIUS 1.00
28	1709158.209	497566.851	CENTER OF THE TWO LANE PAVEMENT, LANE WIDTH 3.50m

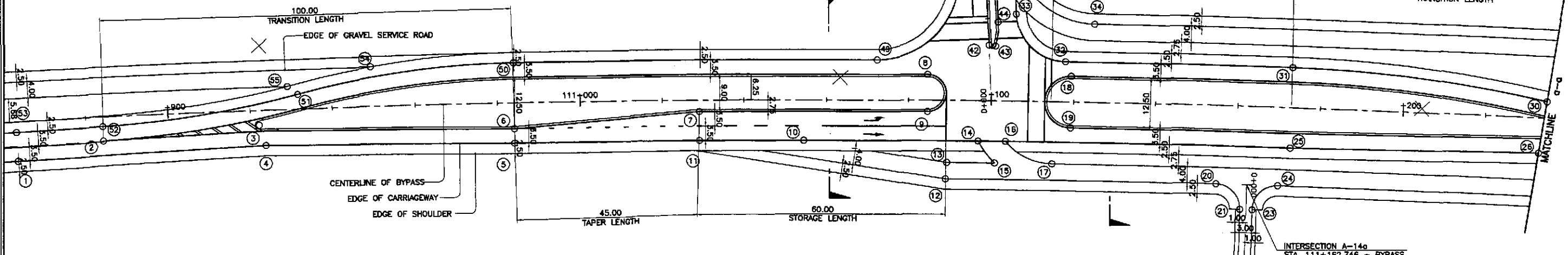
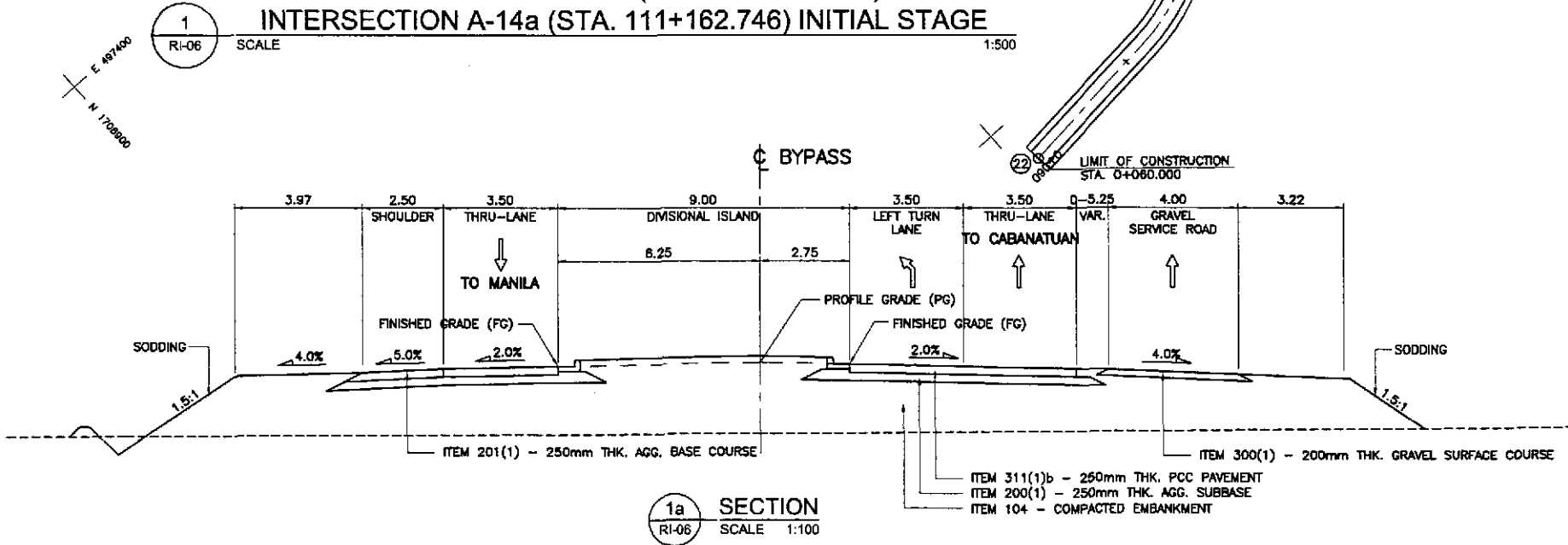


TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
29	1709160.717	497564.41	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE/BEG. OF TRANSITION RADIUS 346.50
30	1709123.415	497518.913	INTERSECTION OF TRANSITION RADIUS 346.50 & 303.20
31	1709083.399	497471.777	END OF TRANSITION RADIUS 303.20
32	1709043.153	497433.764	BEG. OF RADIUS 12
33	1709042.101	497417.298	END OF RADIUS 12
34	1709054.593	497431.778	BEG. OF RADIUS 20
35	1709053.22	497403.941	END OF RADIUS 20/LIMIT OF 2.50m WIDE SHOULDER
36	1709066.559	497387.916	BEG. OF TAPER, LANE WIDTH 4.50m
37	1709089.344	497354.838	END OF TAPER, LANE WIDTH 3.35m
38	1709086.769	497352.695	CENTERLINE INTERSECTION
39	1709061.178	497383.438	BEG. OF MEDIAN RADIUS 1.25
40	1709063.1	497385.037	END OF MEDIAN RADIUS 1.25
41	1709032.07	497418.408	BEG. OF MEDIAN RADIUS 0.80
42	1709033.104	497419.601	INTERSECTION OF MEDIAN RADIUS 0.80 & 18
43	1709037.504	497415.768	END OF MEDIAN RADIUS 18
44	1709084.194	497350.552	BEG. OF TAPER, LANE WIDTH 3.35m
45	1709056.183	497379.28	END OF TAPER, LANE WIDTH 6.50m
46	1709042.844	497395.304	LIMIT OF 2.50m WIDE SHOULDER
47	1709038.256	497400.816	BEG. OF RADIUS 20
48	1709009.459	497402.844	END OF RADIUS 20
49	1708943.245	497344.373	BEG. OF TRANSITION RADIUS 214.38
50	1708899.176	497315.055	INTERSECTION OF TRANSITION RADIUS 214.38 & 236.50
51	1708858.708	497289.417	END OF TRANSITION RADIUS 236.50
52	1708842.087	497276.346	EDGE OF TWO LANE PAVEMENT, LANE WIDTH 3.50m
53	1708916.599	497321.86	INTERSECTION OF SERVICE ROAD & SHOULDER
54	1708898.545	497311.936	INTERSECTION OF SERVICE ROAD & SHOULDER

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



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REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

BUREAU OF DESIGN

DESIGNED: 10/9/02
CHECKED: 10/16/02
SUBMITTED: 10/18/02

DATE: 10/9/02
SIGNATURE: [Signature]

Submitted By: DANLO C. TRAJANO, Project Director
Reviewed By: JOSEFINA M. ALAGAR, Chief, Highways Division
Recommended By: GILBERTO S. REYES, OC, Director IV
Recommended By: MANUEL M. BONGUAN, Undersecretary
Approved By: SIMEON A. DATUMANONG, Secretary

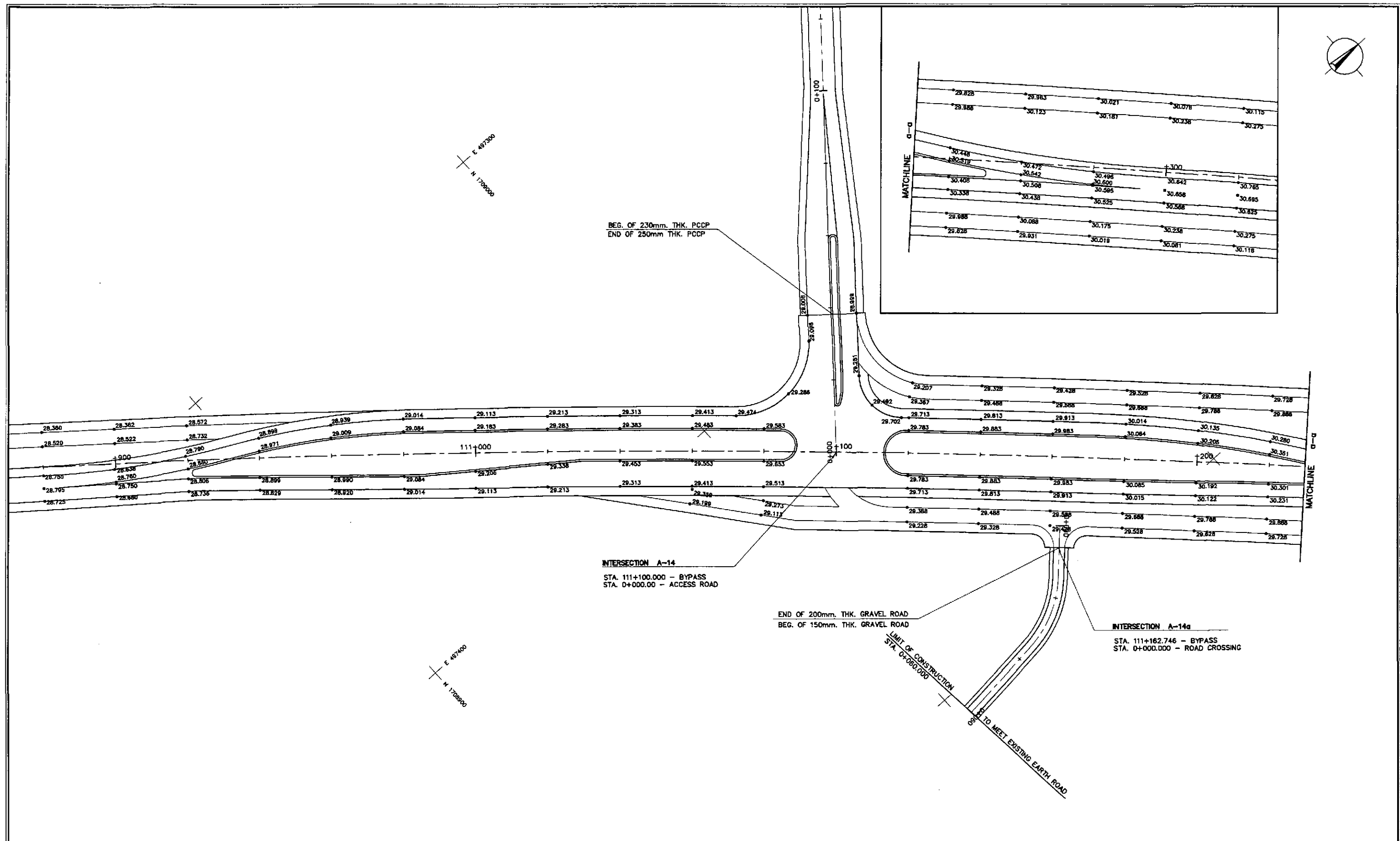
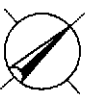
PROJECT AND LOCATION :
THE DETAILED DESIGN STUDY ON
UPGRADING INTER-URBAN HIGHWAY SYSTEM
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypasses)

CABANATUAN BYPASS - CONTRACT PACKAGE II

SCALE : 1:500
FULL SIZE A1

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

SHEET NO. : RI-06

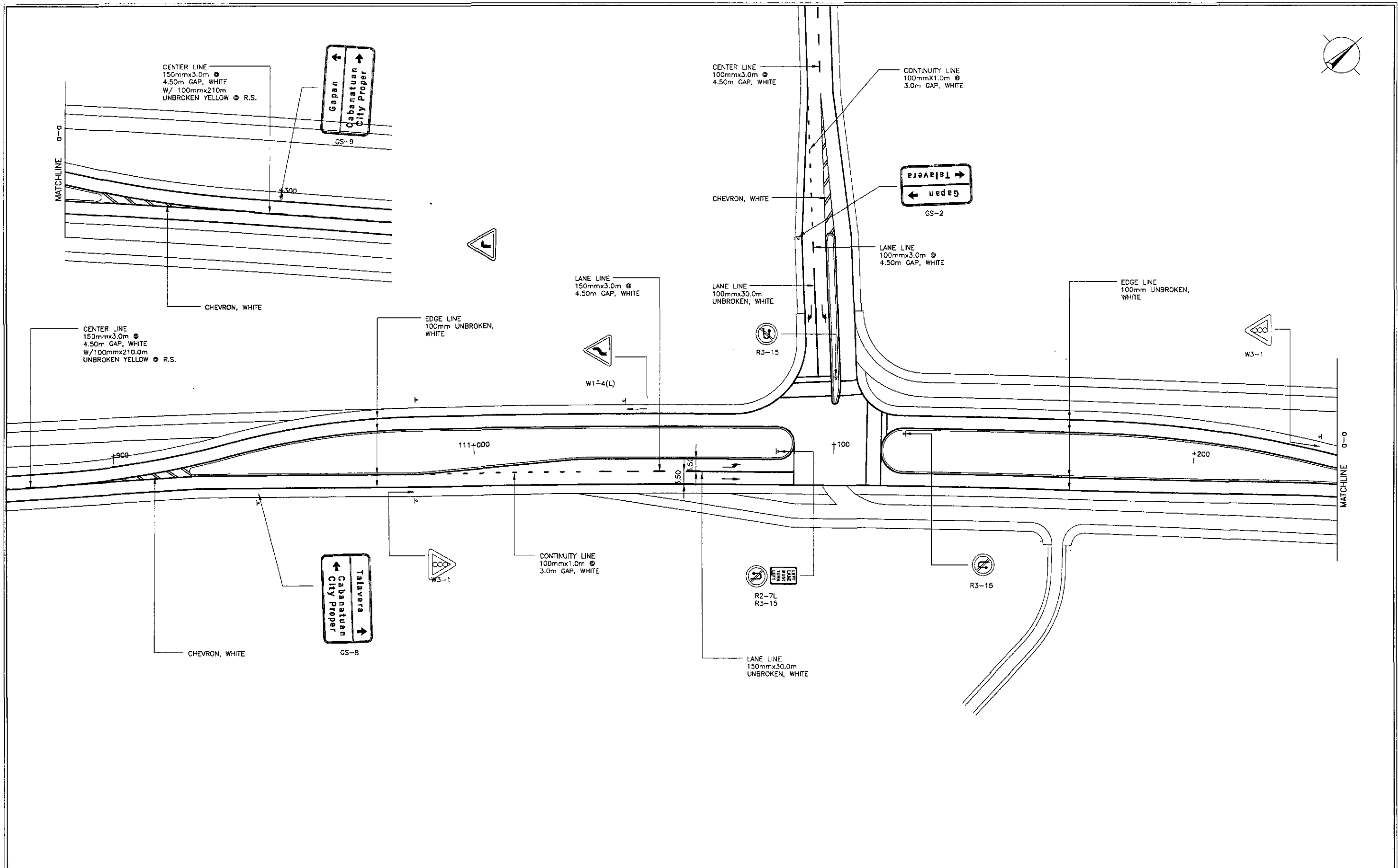


PAVING AND GRADING PLAN
 INTERSECTION A-14 (STA. 111+100.000)
 INTERSECTION A-14a (STA. 111+162.746) - INITIAL STAGE

1
RI-07

SCALE 1:500

		DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	10/4/02			Submitted By:	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-14&14a (INITIAL STAGE)	RI-07
	CHECKED	10/16/02			Reviewed By:	CABANATUAN BYPASS - CONTRACT PACKAGE II			FULL SIZE A1		
SUBMITTED	10/18/02		Team Leader	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			



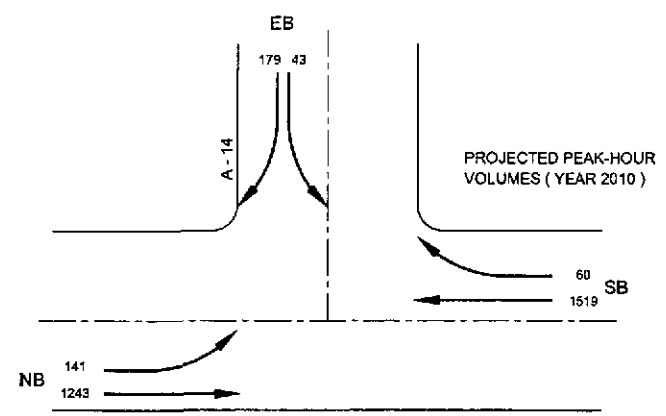
**TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT
INTERSECTION A-14 (STA. 111+100.000) - INITIAL STAGE**

1
RI-08

SCALE

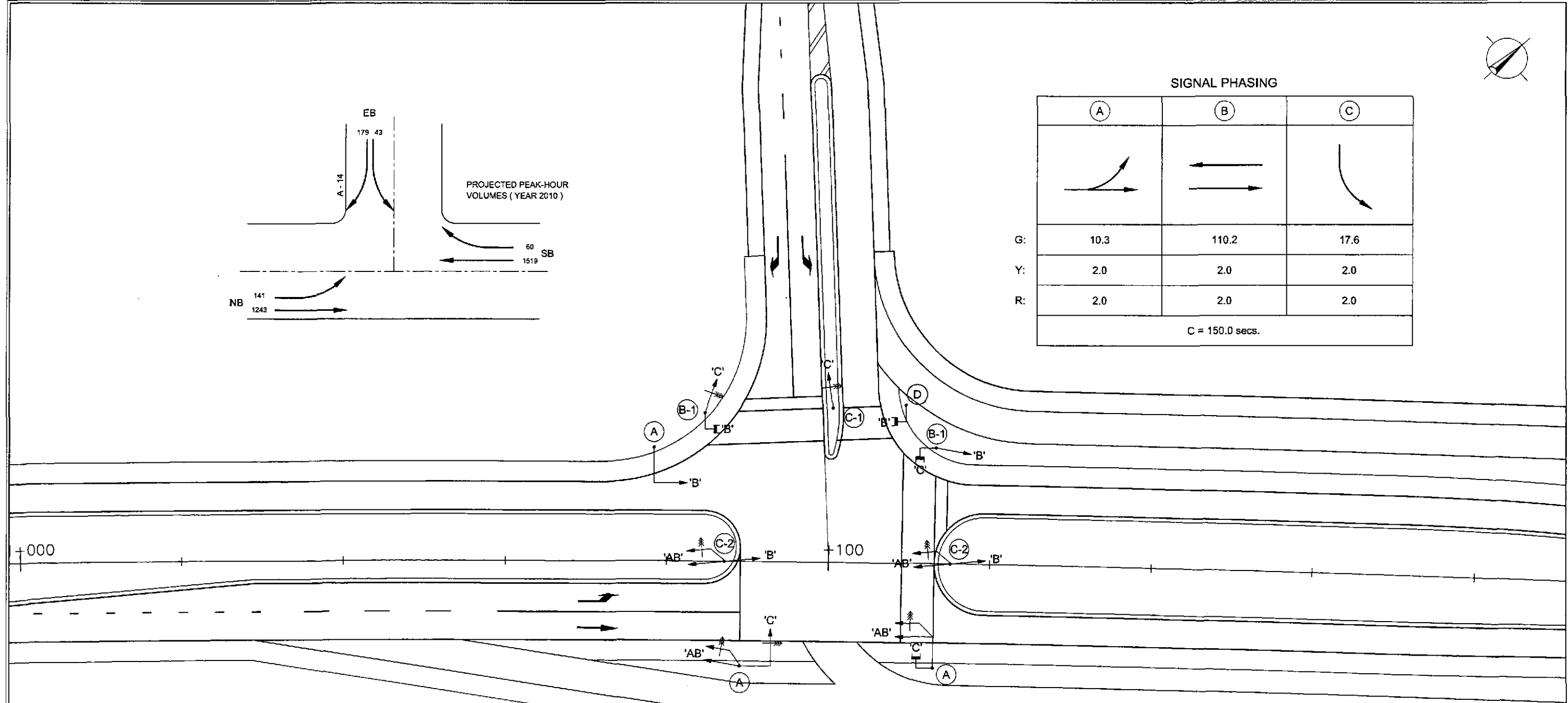
1:500

		DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	10/4/02	<i>[Signature]</i>	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	TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT INTERSECTION A-14 & 14a (INITIAL STAGE)	RI-08
	CHECKED	10/16/02	<i>[Signature]</i>	Submitted By:	Reviewed By:	Recommended By:	Approved By:	FULL SIZE A1	(See cover sheet for Signature/Approval)	(See cover sheet for Signature/Approval)
SUBMITTED	10/16/02	<i>[Signature]</i>	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONOAN Undersecretary	SIMON A. DATUMANONG Secretary	CABANATUAN BYPASS - CONTRACT PACKAGE II	FULL SIZE A1	



SIGNAL PHASING

	(A)	(B)	(C)
G:	10.3	110.2	17.6
Y:	2.0	2.0	2.0
R:	2.0	2.0	2.0
C = 150.0 secs.			



LANTERN ASSEMBLY REFERENCE

DESIGN PLAN LANTERN SYMBOL	LANTERN ASSEMBLY	DESIGN PLAN LANTERN SYMBOL	LANTERN ASSEMBLY
	 3 ASPECT		 5 ASPECT
	 3 ASPECT		 8 ASPECT
	 4 ASPECT		 PEDESTRIAN

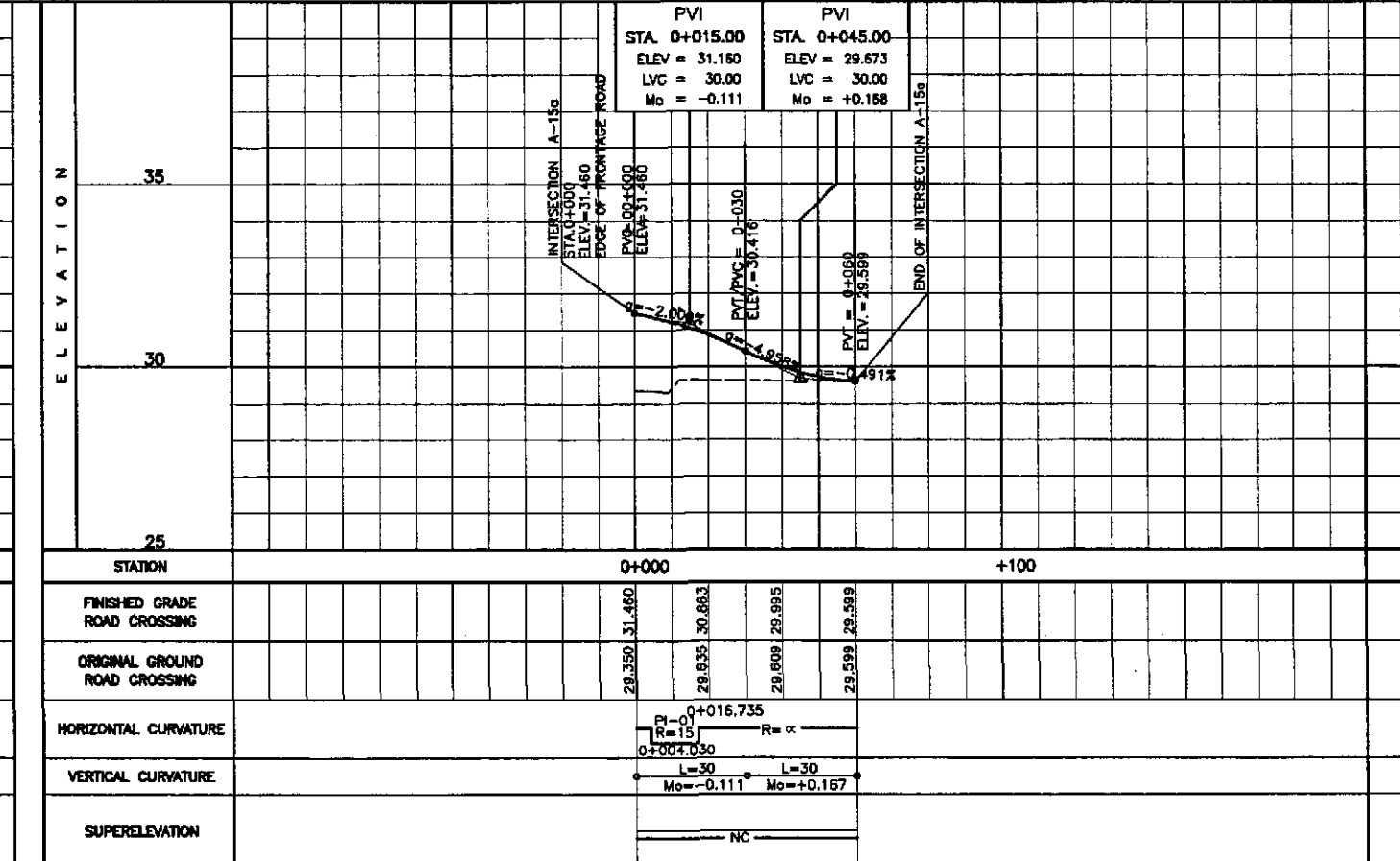
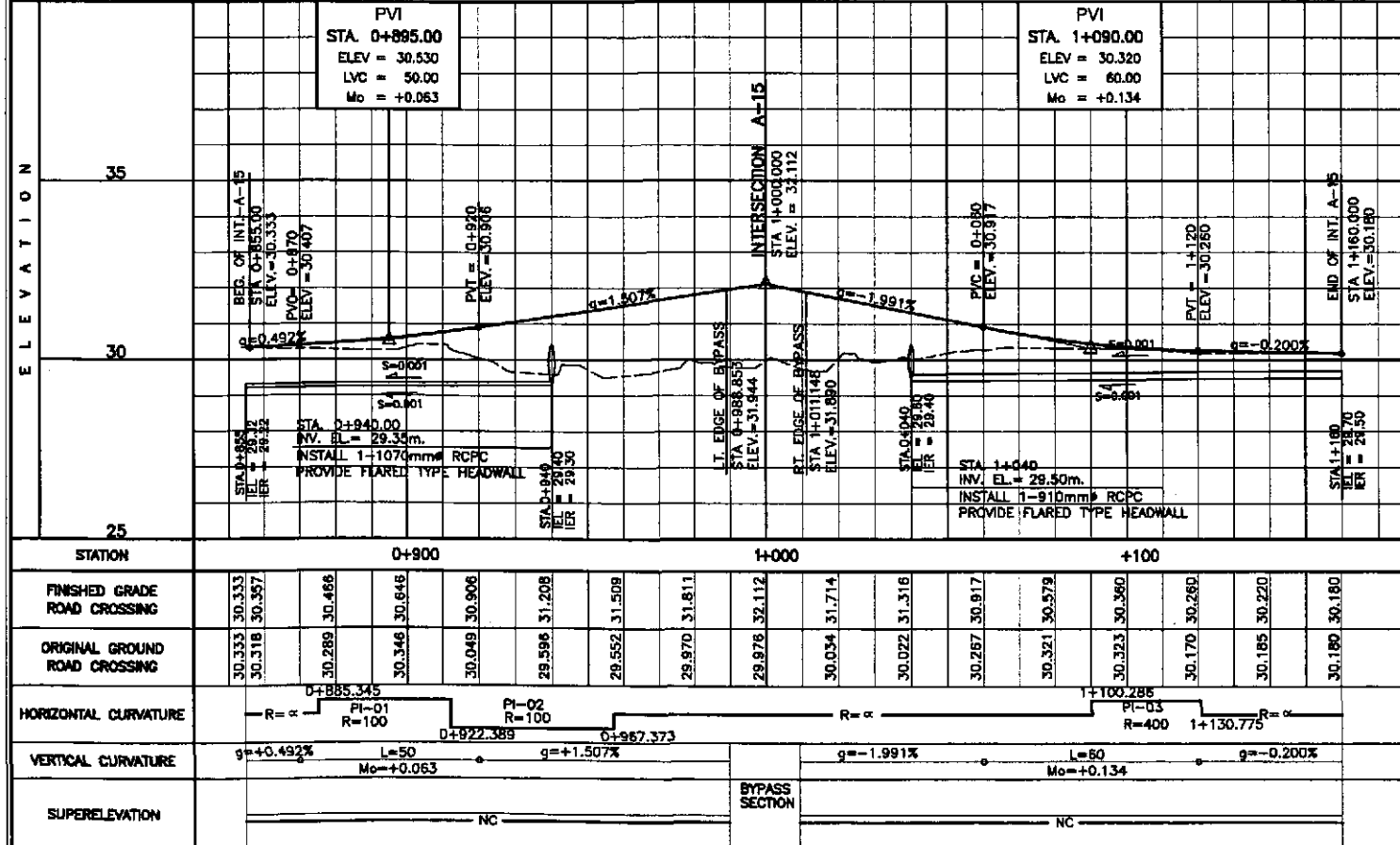
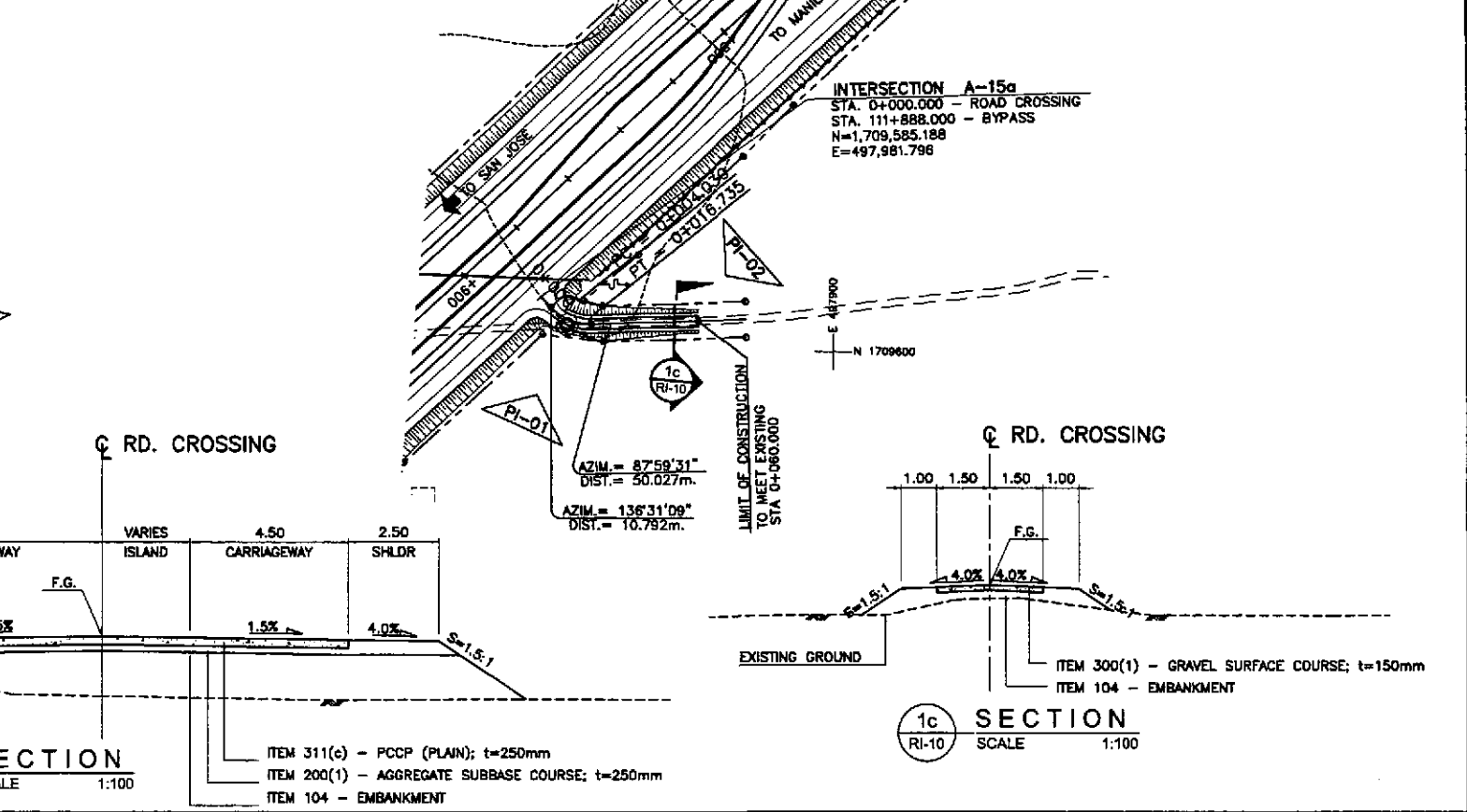
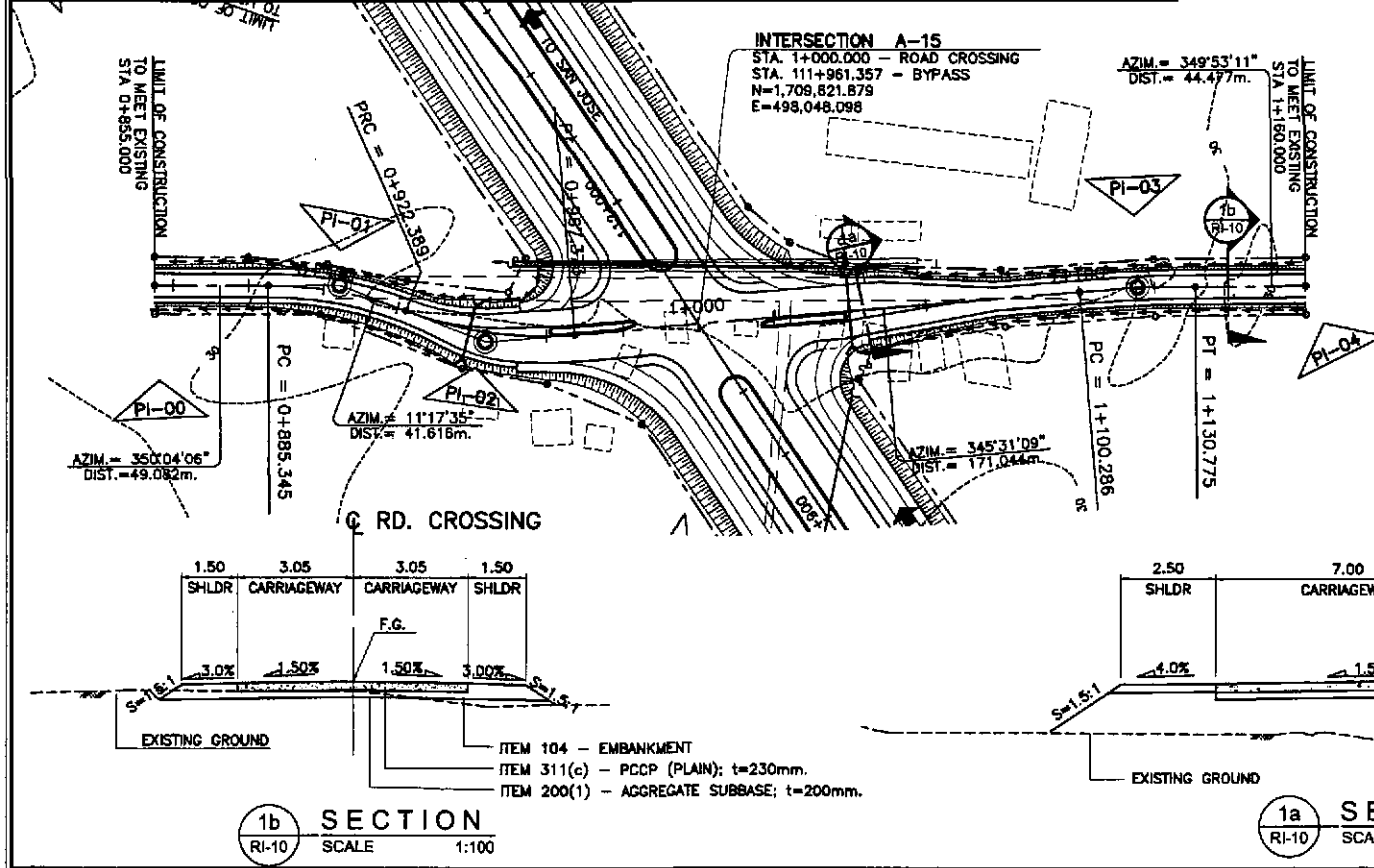
1 INTERSECTION A-14 (STA. 111+100.000) - INITIAL STAGE
 RI-09 SCALE 1:250

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

	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	10/14/02	S. MOSE		Submitted By: DANILO C. TRAJANO Project Director	Recommended By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Recommended By: MANUEL M. BONGAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary	1:250	TRAFFIC SIGNAL LIGHT LAYOUT INTERSECTION A-14 (INITIAL STAGE)
SUBMITTED				10/10/02	Submitted By: DANILO C. TRAJANO Project Director	PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pilaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II			FULL SIZE A1		

ELEMENTS OF CURVE													
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION		
		NORTHING	EASTING								PC	PT	
PI-00	0+855.00	1,709,784.778	498,033.902	BEGINNING OF INTERSECTION A-5									
PI-01	0+904.082	1,709,716.432	498,042.368	21°13'29"	100	18.737	37.044	1.740	-	-	0+885.345	0+922.389	
PI-02	0+945.268	1,709,675.622	498,034.218	25°46'25"	100	22.879	44.983	2.584	-	-	0+922.389	0+967.373	
PI-03	1+115.538	1,709,510.012	498,076.989	04°22'02"	400	15.252	30.489	0.291	-	-	1+100.286	1+130.775	
PI-04	1+160.00	1,709,466.226	498,084.799	END OF INTERSECTION A-15									

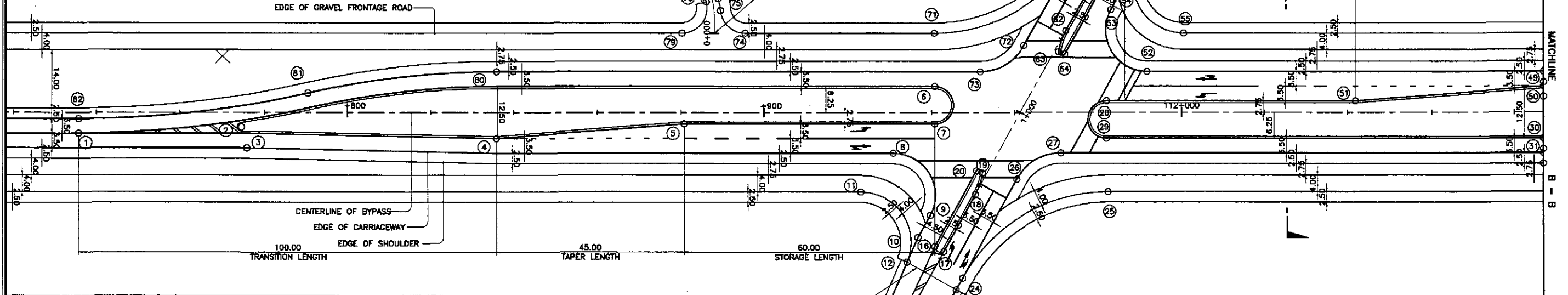
ELEMENTS OF CURVE													
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION		
		NORTHING	EASTING								PC	PT	
PI-00	0+000.000	1,709,585.188	497,981.796	BEGINNING OF INTERSECTION A-15a									
PI-01	0+010.792	1,709,593.018	497,974.370	48°31'38"	15	6.761	12.704	1.453	-	-	0+004.030	0+016.735	
PI-02	0+060.00	1,709,591.265	497,924.374	END OF INTERSECTION A-15a									



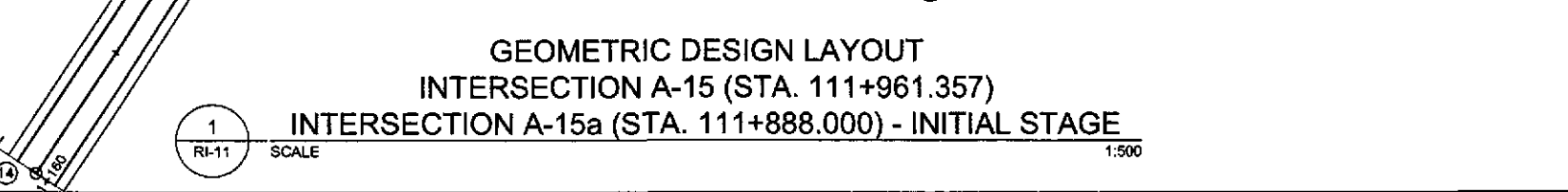
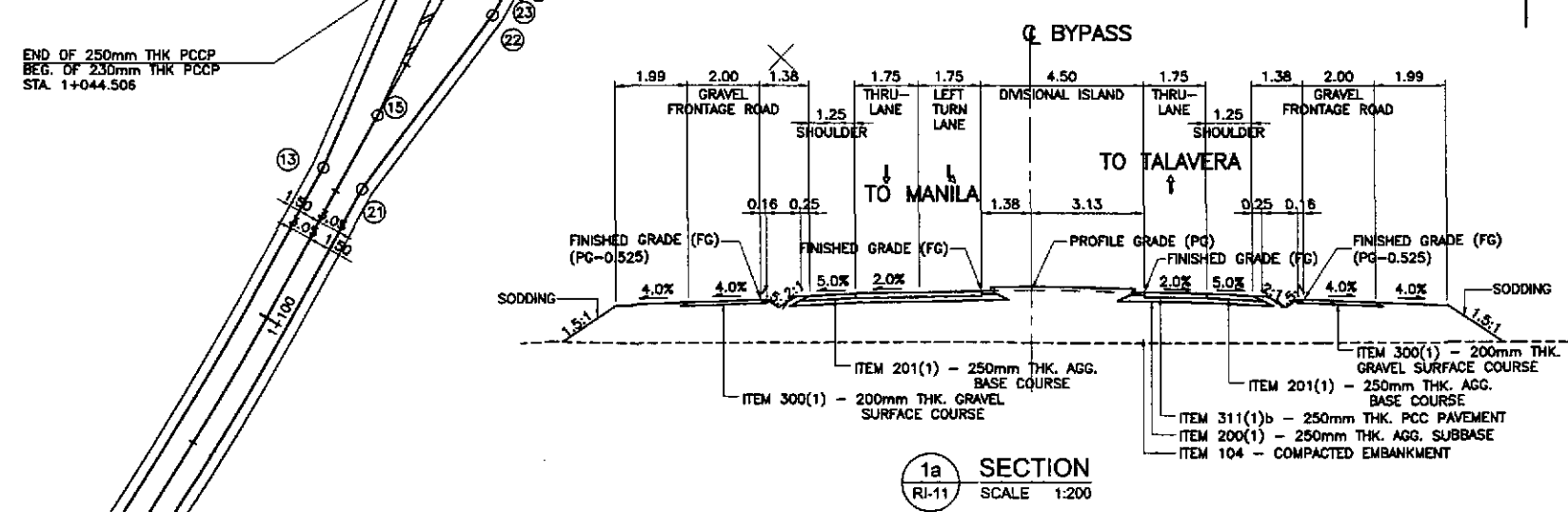
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN, CROSS-SECTION AND PROFILE INTERSECTION 15 STA.0+855 - STA.1+160 INTERSECTION 15a STA 0+000 - STA.0+060	SHEET NO. : RI-10	
	CHECKED	10/16/02	S. ROSE		BUREAU OF DESIGN							OFFICE OF THE SECRETARY
	SUBMITTED	10/18/02	S. ROSE		Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES CIC, Director IV					Approved By: MANUEL M. BONDAN Undersecretary

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
1	1709463.018	497887.848	CENTER OF TWO LANE PAVEMENT
2	1709490.757	497914.918	CENTER OF MEDIAN RADIUS 1.00
3	1709488.003	497919.28	EDGE OF 3.50m WIDE PAVEMENT
4	1709530.922	497961.268	BEG. OF TAPER, LANE WIDTH 3.50m
5	1709564.427	497991.512	END OF TAPER, PAVEMENT WIDTH 7.00m
6	1709612.244	498028.855	BEG. OF MEDIAN RADIUS 4.50
7	1709605.705	498035.04	END OF MEDIAN RADIUS 4.50
8	1709593.896	498032.76	BEG. OF RADIUS 10
9	1709589.141	498048.324	END OF RADIUS 10
10	1709583.328	498050.825	BEG. OF TAPER, LANE WIDTH 4.50m
11	1709581.863	498033.514	BEG. OF RADIUS 12
12	1709577.284	498053.039	END OF RADIUS 12
13	1709545.587	498064.651	END OF TAPER, LANE WIDTH 3.05m
14	1709466.226	498084.799	LIMIT OF CONSTRUCTION
15	1709556.032	498065.104	CENTERLINE INTERSECTION
16	1709584.453	498055.182	BEG. OF MEDIAN RADIUS 1.25
17	1709585.078	498057.602	END OF MEDIAN RADIUS 1.25
18	1709600.267	498053.68	BEG. OF MEDIAN RADIUS 15
19	1709605.118	498051.445	INTERSECTION OF MEDIAN RADIUS 15 & 0.80
20	1709604.459	498050.015	END OF MEDIAN RADIUS 0.80
21	1709547.112	498070.558	BEG. OF TAPER, LANE WIDTH 3.05m
22	1709576.9	498066.944	END OF TAPER, PAVEMENT WIDTH 7.00m
23	1709580.439	498066.03	LIMIT OF 2.50m WIDE SHOULDER
24	1709583.539	498065.23	BEG. OF RADIUS 40
25	1709622.566	498076.434	END OF RADIUS 40

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
71	1709621.406	498019.987	END OF RADIUS 40
72	1709634.009	498037.736	BEG. OF RADIUS 12
73	1709622.301	498034.374	END OF RADIUS 12
74	1709590.289	497987.175	BEG. OF RADIUS 6
75	1709580.149	497979.071	END OF RADIUS 6
76	1709581.89	497976.709	LIMIT OF 2.50m WIDE SHOULDER
77	1709591.265	497924.374	LIMIT OF CONSTRUCTION
78	1709589.326	497975.151	LIMIT OF 2.50m WIDE SHOULDER/BEG. OF RADIUS 6
79	1709579.846	497976.163	END OF RADIUS 6
80	1709542.531	497950.258	BEG. OF TRANSITION RADIUS 203.565
81	1709507.716	497920.94	INTERSECTION OF TRANSITION RADIUS 203.565 & 246.50
82	1709465.557	497885.439	END OF TRANSITION RADIUS 246.50, LANE WIDTH 3.50m



CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
26	1709609.749	498058.461	BEG. OF RADIUS 12
27	1709621.457	498061.822	END OF RADIUS 12
28	1709638.044	498081.148	BEG. OF MEDIAN RADIUS 4.50
29	1709631.514	498067.341	END OF RADIUS 4.50
30	1709703.766	498143.53	INNER EDGE OF 3.50m WIDE LANE
31	1709701.226	498145.938	OUTER EDGE OF 3.50m WIDE LANE
49	1709715.375	498132.52	END OF TRANSITION RADIUS 180.54
50	1709712.836	498134.928	BEG. OF TAPER, LANE WIDTH 3.50m
51	1709679.331	498104.684	END OF TAPER, PAVEMENT WIDTH 7.00m
52	1709649.882	498063.436	BEG. OF RADIUS 10
53	1709654.617	498046.873	END OF RADIUS 10/BEG. OF TRANSITION
54	1709658.176	498045.954	EDGE OF PAVEMENT
55	1709662.571	498063.395	BEG. OF RADIUS 12
56	1709668.324	498043.507	END OF RADIUS 12/LIMIT OF 2.50m WIDE SHOULDER
57	1709672.994	498042.321	BEG. OF RADIUS 55.36
58	1709697.461	498041.69	END OF RADIUS 55.36/END OF TAPER, LANE WIDTH 3.05m
59	1709764.778	498033.902	LIMIT OF CONSTRUCTION
60	1709698.056	498038.699	CENTERLINE INTERSECTION/END OF RADIUS 67.70
61	1709658.713	498038.735	BEG. OF MEDIAN RADIUS 1.25
62	1709643.49	498042.517	END OF MEDIAN RADIUS 1.25
63	1709638.64	498044.751	INTERSECTION OF MEDIAN RADIUS 15 & 0.80
64	1709639.299	498046.181	END OF MEDIAN RADIUS 0.80
65	1709659.207	498041.186	END OF MEDIAN RADIUS 1.25
66	1709671.421	498038.723	BEG. OF RADIUS 67.70
67	1709687.255	498032.7	INTERSECTION OF RADIUS 96.95 & 50
68	1709667.015	498030.39	LIMIT OF 2.50m WIDE SHOULDER
69	1709665.538	498030.548	INTERSECTION OF RADIUS 50 & 107
70	1709658.061	498031.728	INTERSECTION OF RADIUS 107 & 40



**GEOMETRIC DESIGN LAYOUT
INTERSECTION A-15 (STA. 111+961.357)
INTERSECTION A-15a (STA. 111+888.000) - INITIAL STAGE**

<p>JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL YEO YACHIYO ENGINEERING CO., LTD.</p>	DESIGNED	DATE	SIGNATURE	<p align="center">REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p> <p align="center">BUREAU OF DESIGN</p> <p align="center">OFFICE OF THE SECRETARY</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) CABANATUAN BYPASS - CONTRACT PACKAGE II</p>	<p>SCALE : 1:500 FULL SIZE A1</p>	<p>SHEET CONTENTS : INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-15&A-15a (INITIAL STAGE) 1/2</p>	<p>SHEET NO. : RI-11</p>				
	CHECKED	10/16/02	S. G. G. G.						Submitted By:	Reviewed By:	Recommended By:	Recommended By:
	SUBMITTED	10/18/02	[Signature]						DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highway Division	GILBERTO S. REYES Dir. Director IV	MANUEL M. BONDAN Undersecretary

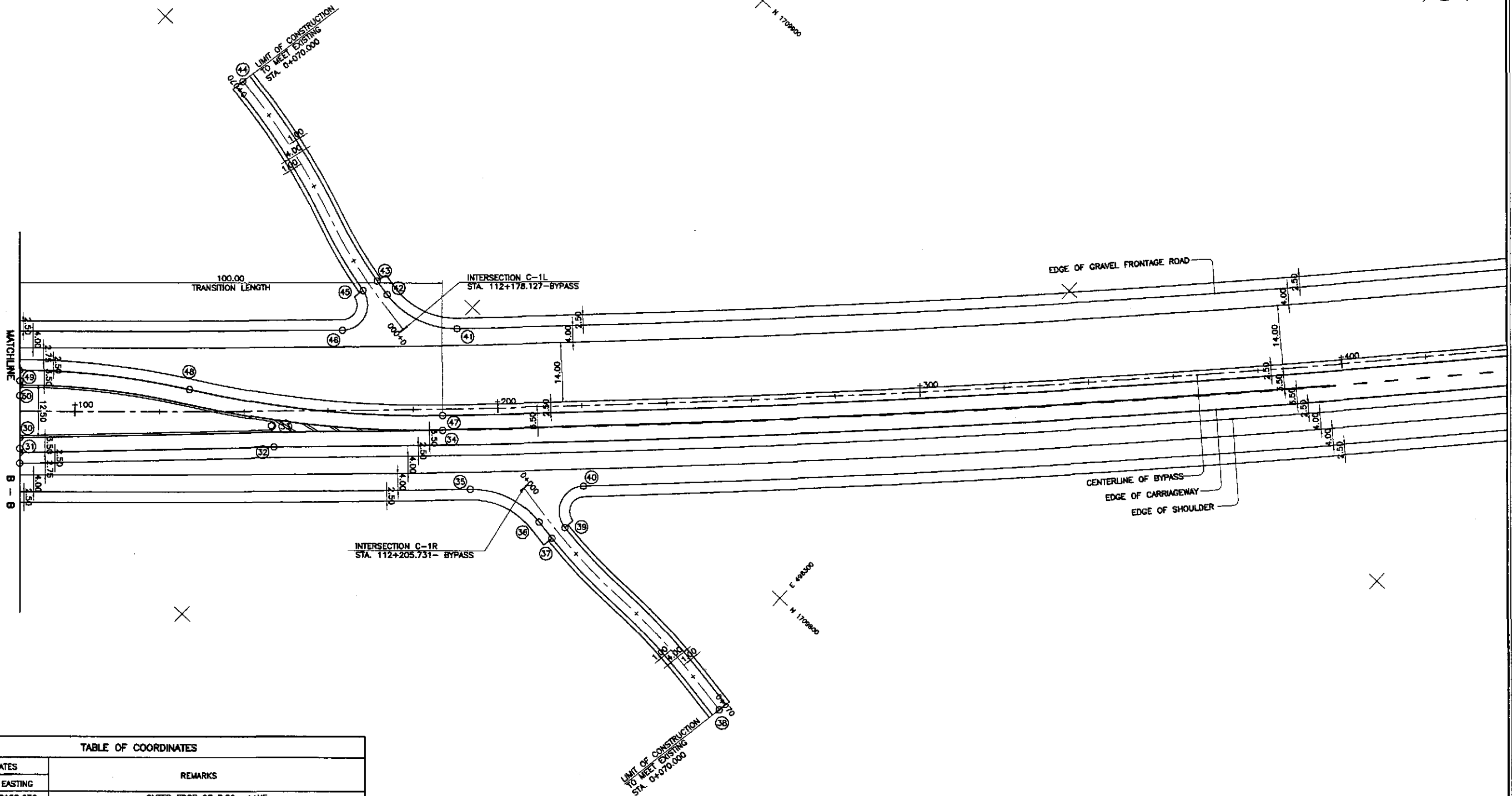
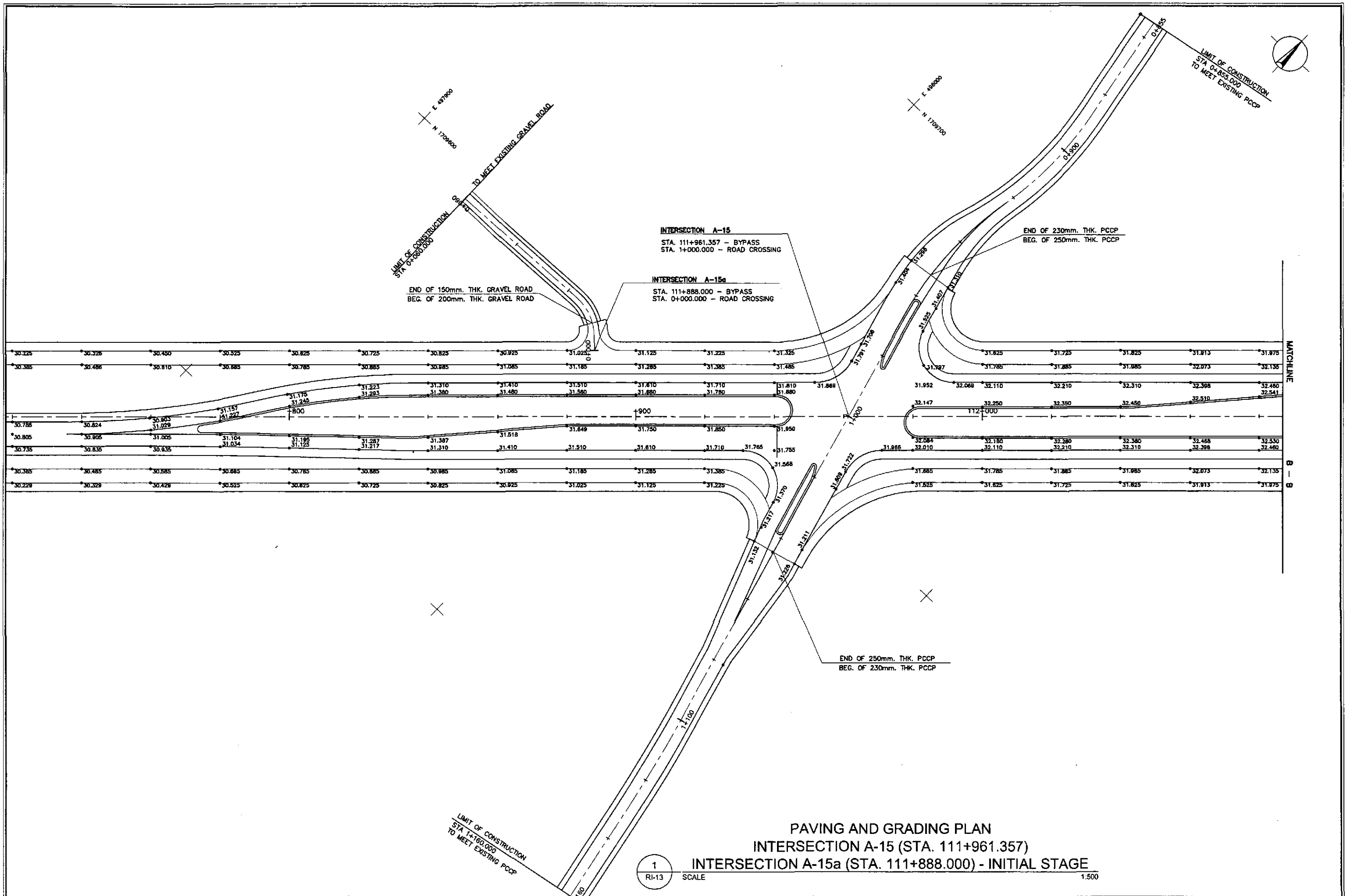


TABLE OF COORDINATES

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
32	1709743.563	498188.636	OUTER EDGE OF 3.50m LANE
33	1709746.721	498184.719	CENTER OF MEDIAN RADIUS 1.00
34	1709773.92	498214.816	CENTER OF TWO LANE PAVEMENT
35	1709768.382	498229.14	BEG. OF RADIUS 20
36	1709773.9	498246.363	END OF RADIUS 20
37	1709773.205	498251.19	LIMIT OF 2.50m WIDE SHOULDER
38	1709770.783	498307.709	LIMIT OF CONSTRUCTION
39	1709777.173	498251.697	BEG. OF RADIUS 6/LIMIT OF 2.50m SHOULDER
40	1709787.361	498248.208	END OF RADIUS 6
41	1709793.829	498200.826	BEG. OF RADIUS 20
42	1709788.359	498183.377	END OF RADIUS 20
43	1709789.105	498179.455	LIMIT OF 2.50m WIDE SHOULDER
44	1709802.897	498122.956	LIMIT OF CONSTRUCTION
45	1709785.189	498178.641	BEG. OF RADIUS 6/LIMIT OF 2.50m WIDE SHOULDER
46	1709775.011	498181.601	END OF RADIUS 6
47	1709778.46	498212.407	BEG. OF TRANSITION RADIUS 246.507, LANE WIDTH 3.50m
48	1709739.727	498164.772	INTERSECTION OF TRANSITION RADIUS 246.507 & 180.54

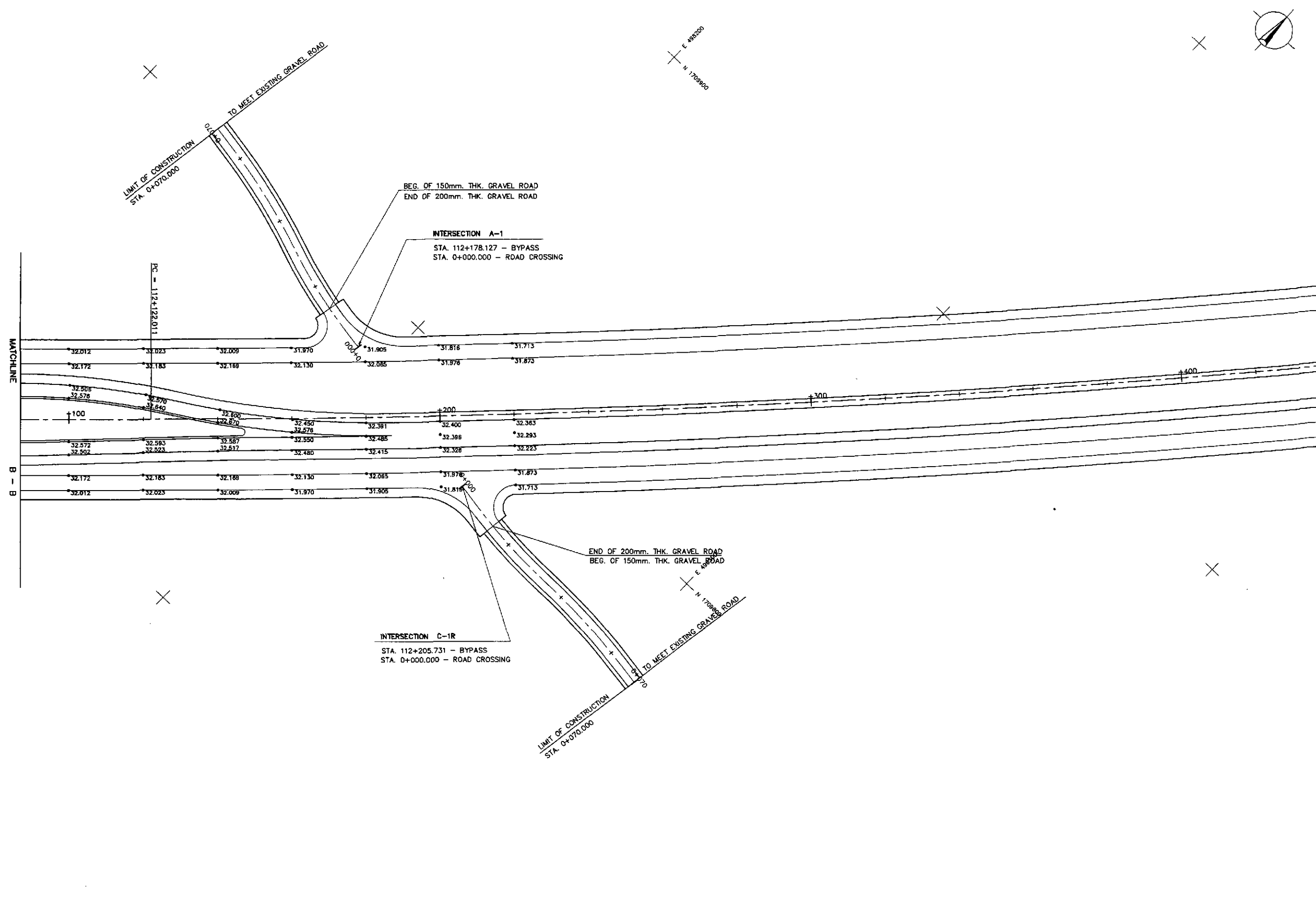
GEOMETRIC DESIGN LAYOUT
 INTERSECTION A-15 (STA. 111+961.357)
 INTERSECTION C-1L (STA. 112+178.127)
 INTERSECTION C-1R (STA. 112+205.731) - INITIAL STAGE
 SCALE 1:500

	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 (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : 1:500 FULL SIZE A1	SHEET CONTENTS : INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-15&C1-LR (INITIAL STAGE) 2/2	SHEET NO. : RI-12
	CHECKED	10/16/02	[Signature]		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS					
	SUBMITTED	10/16/02	[Signature]		Submitted By:	Reviewed By:				
			DANILO C. TRAJANO Project Director	JOSEFINA M. ALACAR Chief, Highways Division	GILBERTO S. REYES Dir. Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANG Secretary			

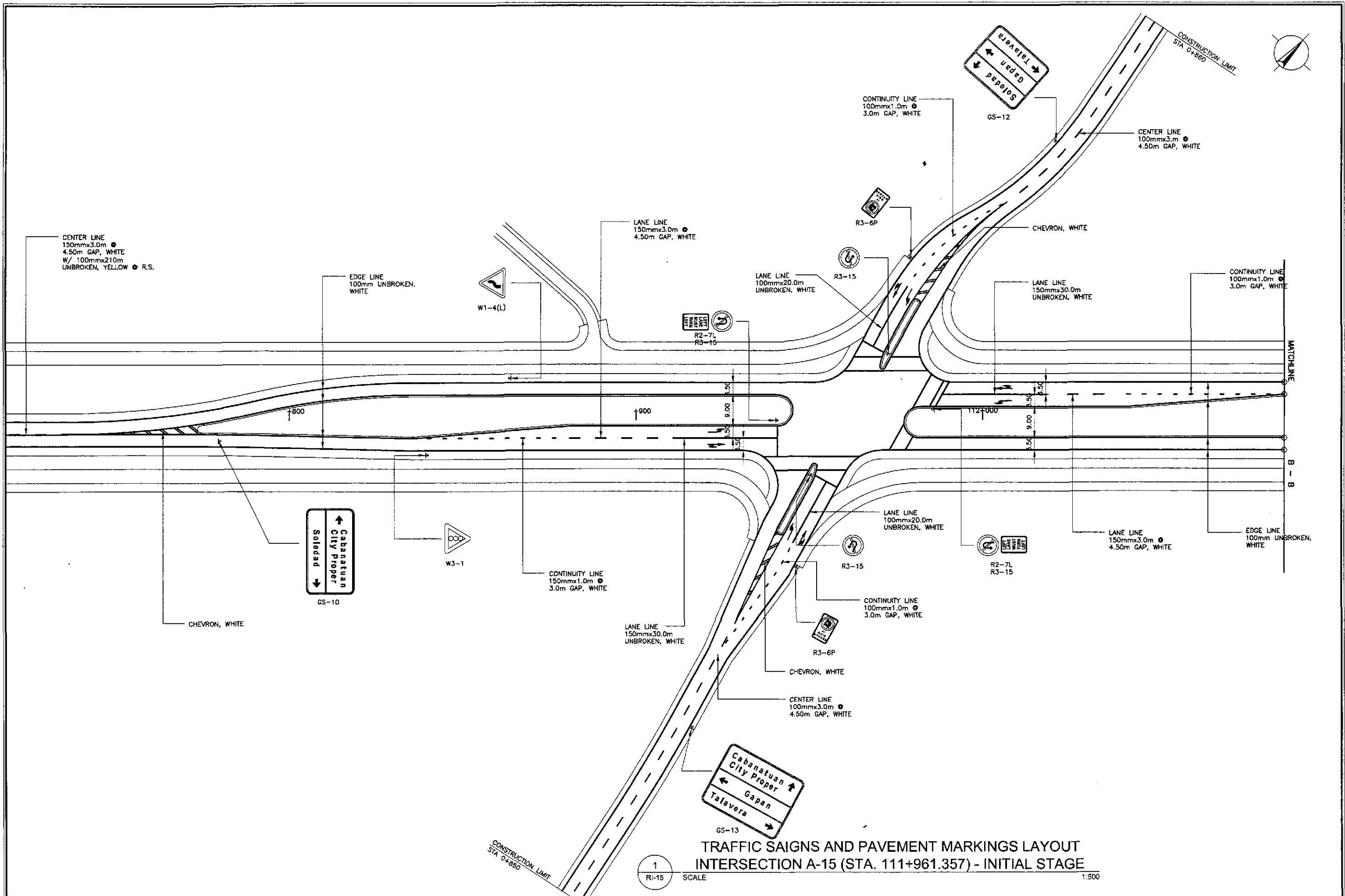


PAVING AND GRADING PLAN
 INTERSECTION A-15 (STA. 111+961.357)
 INTERSECTION A-15a (STA. 111+888.000) - INITIAL STAGE
 1
 RI-13 SCALE 1:500

	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : 1:500 FULL SIZE A1	SHEET CONTENTS : INTERSECTION DETAIL PAVING AND GRADING PLAN INTERSECTION A-15&A-15a (INITIAL STAGE) 1/2	SHEET NO. : RI-13
	DESIGNED	SIGNATURE	PJHL - PMO	BUREAU OF DESIGN						
	CHECKED	SIGNATURE	Submitted By:	Reviewed By:	Recommended By:	Approved By:				
SUBMITTED	SIGNATURE	TEAM LEADER	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highway Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary			



	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTEP-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : 1:500 FULL SIZE A1	SHEET CONTENTS : INTERSECTION DETAIL PAVING AND GRADING PLAN INTERSECTION A-15&A-15a (INITIAL STAGE) 2/2	SHEET NO. : RI-14
	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS										
	CHECKED SUBMITTED	10/4/20 10/16/20 10/19/20	[Signature] [Signature] [Signature]		[Signature]	BUREAU OF DESIGN Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division				



TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT
 INTERSECTION A-15 (STA. 111+961.357) - INITIAL STAGE

1
 RI-15

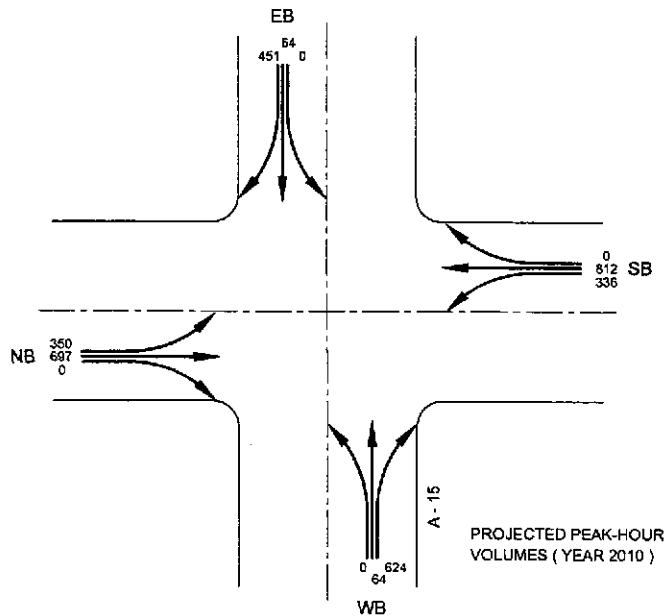
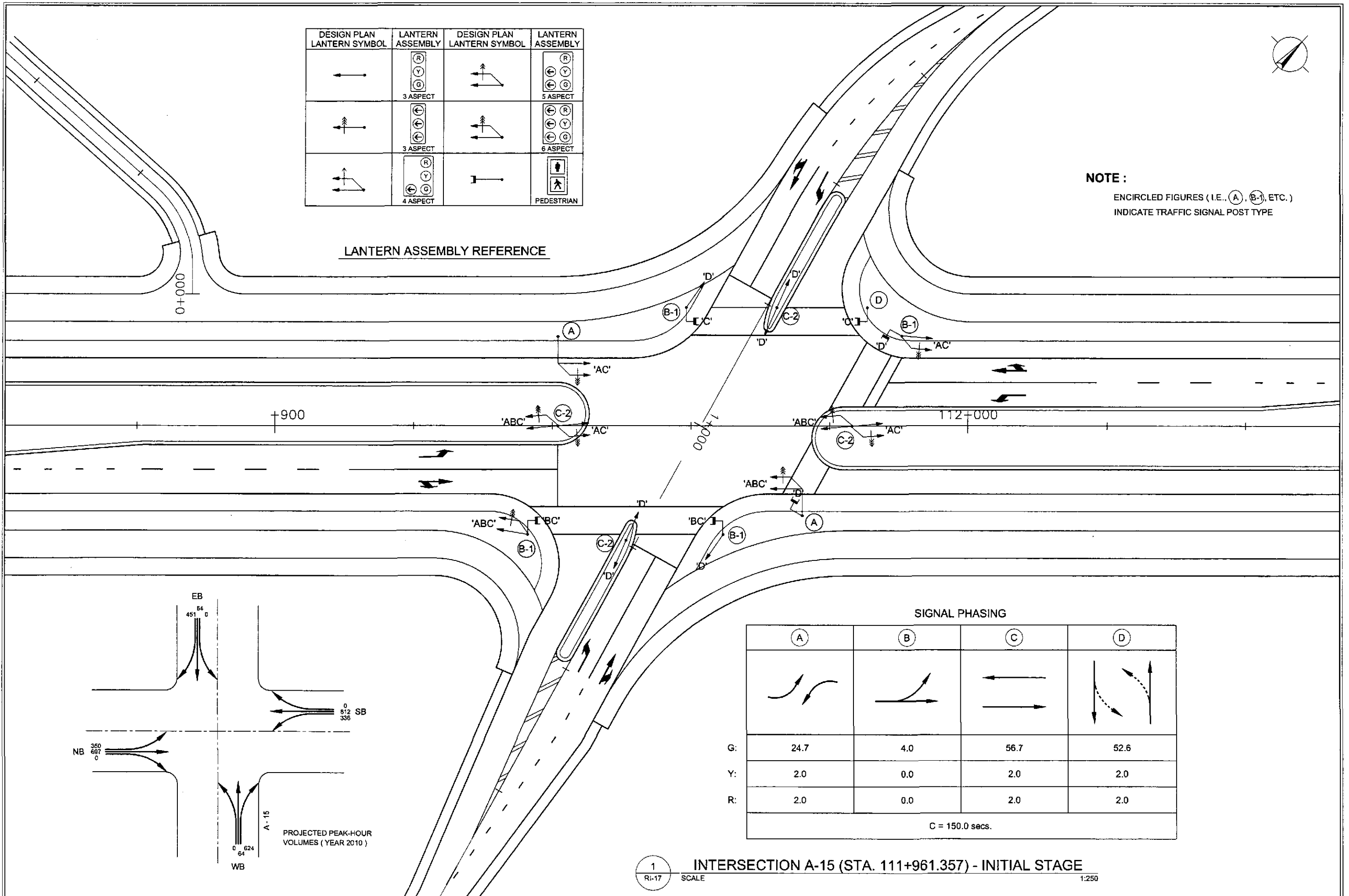
SCALE 1:500

 JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS YEO YACHIYO ENGINEERING CO., LTD.	DESIGNED	10/14/02	<i>S. Luna</i> S. LUNA	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	10/16/02	<i>S. Gosa</i> S. GOSA		Submitted By:	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pardel, Cabanatuan and San Jose Bypasses)	1:500	TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT INTERSECTION A-15 (INITIAL STAGE) SHEET 1 OF 2	RI-15
	SUBMITTED	10/18/02	<i>C. Trajano</i> C. TRAJANO		Reviewed By:	CABANATUAN BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		
			Project Director	Recommended By:					
			Chief, Highways Division	Recommended By:					
				Recommended By:					
				Recommended By:					
				Recommended By:					
				Recommended By:					

DESIGN PLAN LANTERN SYMBOL	LANTERN ASSEMBLY	DESIGN PLAN LANTERN SYMBOL	LANTERN ASSEMBLY
	 3 ASPECT		 5 ASPECT
	 3 ASPECT		 6 ASPECT
	 4 ASPECT		 PEDESTRIAN

LANTERN ASSEMBLY REFERENCE

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



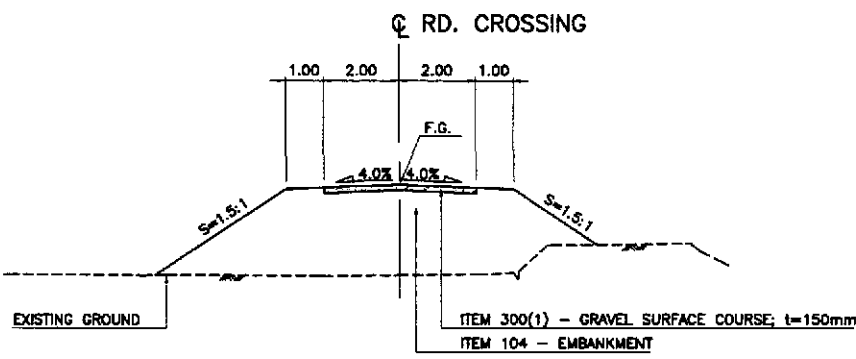
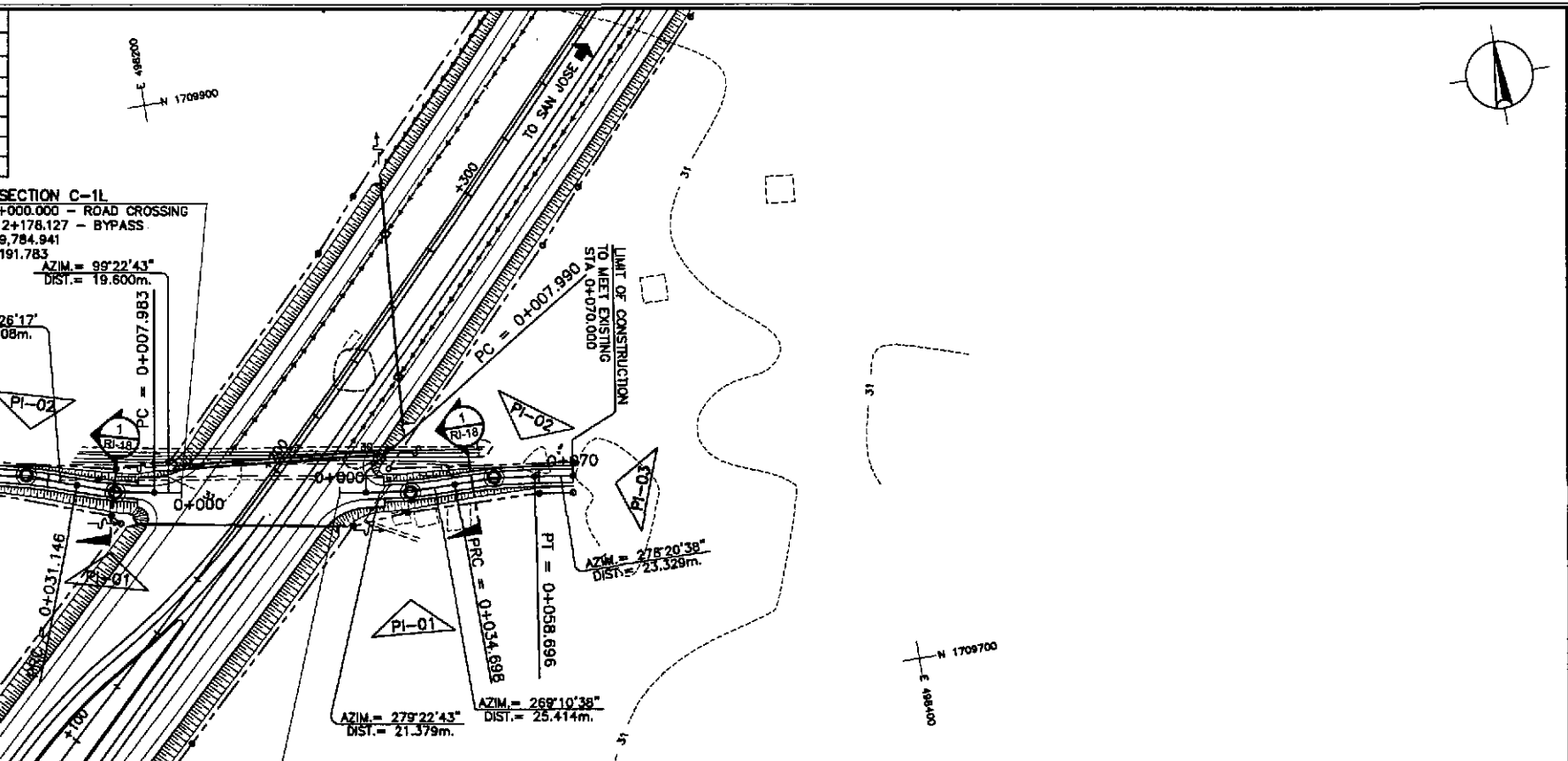
SIGNAL PHASING

	A	B	C	D
G:	24.7	4.0	56.7	52.6
Y:	2.0	0.0	2.0	2.0
R:	2.0	0.0	2.0	2.0
C = 150.0 secs.				

1 INTERSECTION A-15 (STA. 111+961.357) - INITIAL STAGE
RI-17 SCALE 1:250

	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	10/14/02			Submitted By:	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		1:250	TRAFFIC SIGNAL LIGHT LAYOUT INTERSECTION A-15 (INITIAL STAGE)	RI-17
	SUBMITTED	10/18/02			Project Director	Reviewed By:	CABANATUAN BYPASS - CONTRACT PACKAGE II		FULL SIZE A1	

INT C-1L													
ELEMENTS OF CURVE													
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION		
		NORTHING	EASTING								PC	PT	
PI-00	0+000.000	1,709,784.941	498,191.783	BEGINNING OF INTERSECTION C-1L									
PI-01	0+019.600	1,709,788.135	498,172.445	11°03'34"	120	11.618	23.183	0.561	-	-	0+007.983	0+031.146	
PI-02	0+046.636	1,709,797.601	498,147.043	11°03'34"	160	15.490	30.884	0.748	-	-	0+031.146	0+062.029	
PI-03	0+070.00	1,709,801.424	498,123.896	END OF INTERSECTION C-1L									



SECTION 1
RI-18 SCALE 1:100

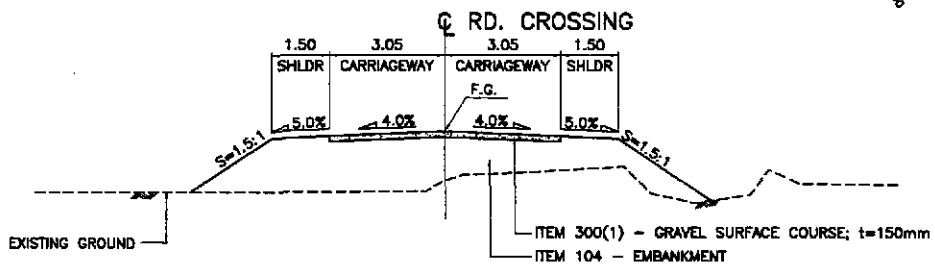
INT C-1R													
ELEMENTS OF CURVE													
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION		
		NORTHING	EASTING								PC	PT	
PI-00	0+000.000	1,709,777.287	498,238.123	BEGINNING OF INTERSECTION C-1R									
PI-01	0+021.379	1,709,773.803	498,259.216	10°12'05"	150	13.389	26.707	0.596	-	-	0+007.990	0+034.698	
PI-02	0+046.722	1,709,774.168	498,284.627	09°10'00"	150	12.025	23.998	0.481	-	-	0+034.698	0+058.696	
PI-03	0+070.000	1,709,770.783	498,307.709	END OF INTERSECTION C-1R									

ELEVATION	STATION	PVI		HORIZONTAL CURVATURE	VERTICAL CURVATURE	SUPERELEVATION
		STA. 0+020.00 ELEV = 32.193 LVC = 40.00 Mo = -0.140	STA. 0+055.00 ELEV = 30.513 LVC = 30.00 Mo = +0.159			
35	0+000					
30	0+000					
25	0+000					
	0+100					

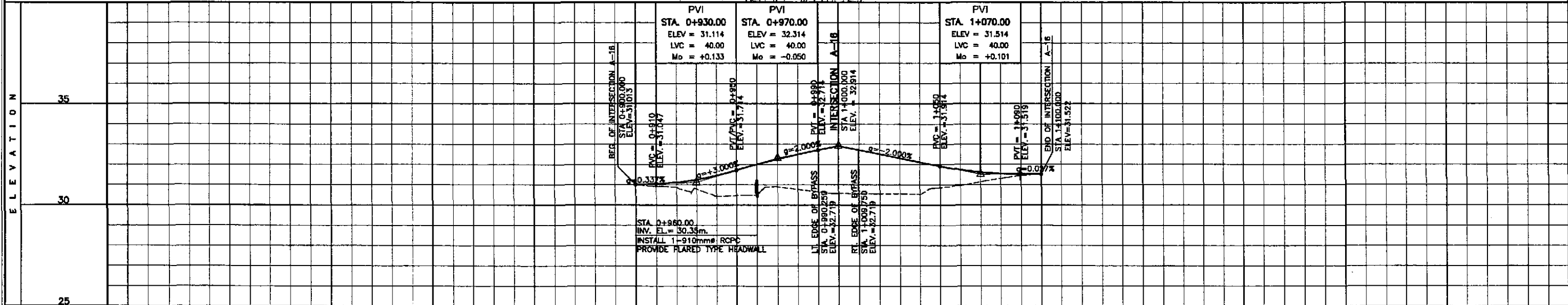
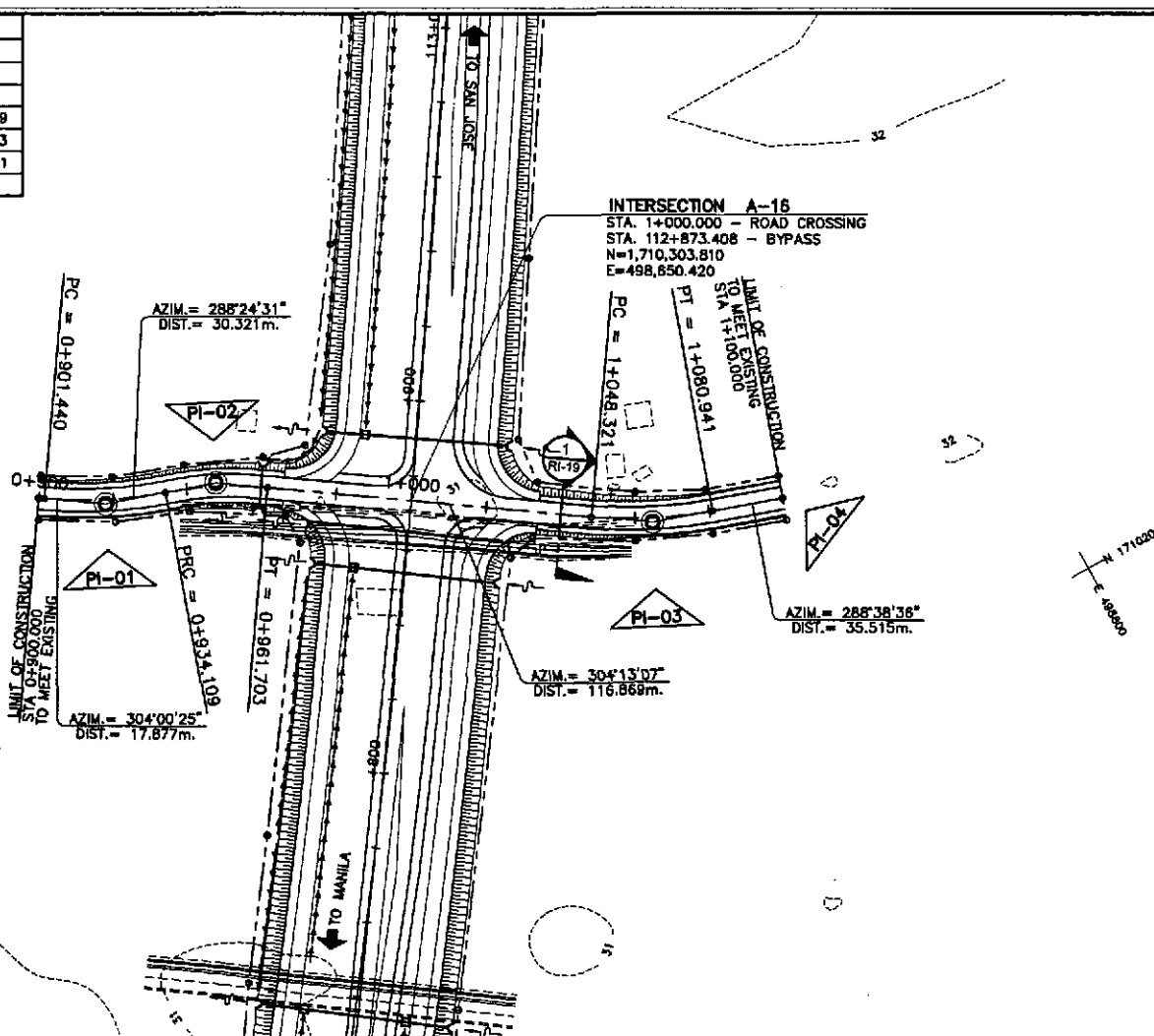
ELEVATION	STATION	PVI		HORIZONTAL CURVATURE	VERTICAL CURVATURE	SUPERELEVATION
		STA. 0+020.00 ELEV = 32.066 LVC = 40.00 Mo = -0.065	STA. 0+055.00 ELEV = 30.911 LVC = 30.00 Mo = +0.108			
35	0+000					
30	0+000					
25	0+000					
	0+100					

	DESIGNED	10/14/02				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/16/02	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)	HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	PLAN, CROSS-SECTION AND PROFILE INT. C-1L & C-1R STA. 0+000 - STA 0+070	RI-18
	SUBMITTED	10/18/02	BUREAU OF DESIGN OFFICE OF THE SECRETARY			CABANATUAN BYPASS - CONTRACT PACKAGE II			

ELEMENTS OF CURVE													
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION		
		NORTHING	EASTING								PC	PT	
PI-00	0+900.000	1,710,352.729	498,563.682	BEGINNING OF INTERSECTION A-16									
PI-01	0+917.877	1,710,342.730	498,578.501	15°35'53"	120	16.436	32.669	1.120	-	-	0+901.440	0+934.109	
PI-02	0+947.994	1,710,333.155	498,607.271	15°48'36"	100	13.885	27.594	0.959	-	-	0+934.109	0+961.703	
PI-03	1+064.687	1,710,267.434	489,703.909	15°34'29"	120	16.411	32.620	1.117	-	-	1+048.321	1+080.941	
PI-04	1+100.000	1,710,256.080	498,737.561	END OF INTERSECTION A-16									



1 SECTION
RI-19 SCALE 1:100



STATION	0+900										1+000										+100									
	FINISHED PROFILE GRADE BYPASS	31.013	31.013	31.114	31.447	32.001	32.501	32.914	32.514	32.114	31.738	31.542	31.522	31.522	31.013	31.013	31.114	31.447	32.001	32.501	32.914	32.514	32.114	31.738	31.542	31.522	31.522			
EXISTING GROUND BYPASS	31.013	31.013	31.114	31.447	32.001	32.501	32.914	32.514	32.114	31.738	31.542	31.522	31.522	31.013	31.013	31.114	31.447	32.001	32.501	32.914	32.514	32.114	31.738	31.542	31.522	31.522				
HORIZONTAL CURVATURE	PI-01 R=120										PI-02 R=100										PI-03 R=120									
VERTICAL CURVATURE	g=+0.337% L=40 Mo=+0.133										g=+3.000% L=10 Mo=-0.50										g=-2.000% L=40 Mo=+0.101									
SUPERELEVATION	NC										BYPASS SECTION										NC									

	DESIGNED	10/1/02	SIGNATURE	[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 :	SHEET CONTENTS :		SHEET NO. :
	CHECKED	10/16/02	SIGNATURE	[Signature]		BUREAU OF DESIGN				OFFICE OF THE SECRETARY				HORIZONTAL 1:1000	PLAN, CROSS-SECTION AND PROFILE INTERSECTION A-16 STA. 0+900 - STA 1+100		RI-19
	SUBMITTED	10/10/02	SIGNATURE	[Signature]		Submitted By: DANILO C. TRAJANO Project Director				Recommended By: JOSETINA M. ALACAR Chief, Highways Division				VERTICAL 1:100	CABANATUAN BYPASS - CONTRACT PACKAGE II		

TABLE OF COORDINATES			REMARKS
CONTROL POINT	COORDINATES		
	NORTHING	EASTING	
1	1710170.611	498561.454	CENTER OF TWO LANE PAVEMENT, LANE WIDTH 3.50m
2	1710218.199	498598.023	BEG. OF TAPER, LANE WIDTH 3.50m
3	1710256.706	498621.793	END OF TAPER, PAVEMENT WIDTH 6.50m
4	1710288.81	498651.988	BEG. OF RADIUS 8.50
5	1710291.036	498663.78	END OF RADIUS 8.50
6	1710278.289	498655.986	BEG. OF RADIUS 15
7	1710282.194	498676.782	END OF RADIUS 15
8	1710256.095	498737.518	LIMIT OF CONSTRUCTION
9	1710287.238	498680.212	BEG. OF RADIUS 15
10	1710308.014	498676.201	END OF RADIUS 15
11	1710292.448	498672.552	BEG. OF RADIUS 15
12	1710313.215	498668.552	END OF RADIUS 15
13	1710383.927	498710.733	BEG. OF TRANSITION
14	1710435.504	498741.601	END OF TRANSITION, CENTER OF TWO LANE PAVEMENT
15	1710385.542	498708.205	BEG. OF TAPER, LANE WIDTH 3.50m
16	1710346.098	498686.214	END OF TAPER, PAVEMENT WIDTH 6.50m
17	1710313.536	498656.709	BEG. OF RADIUS 8.50
18	1710311.264	498644.884	END OF RADIUS 8.50
19	1710329.512	498644.885	BEG. OF RADIUS 15
20	1710325.479	498623.982	END OF RADIUS 15

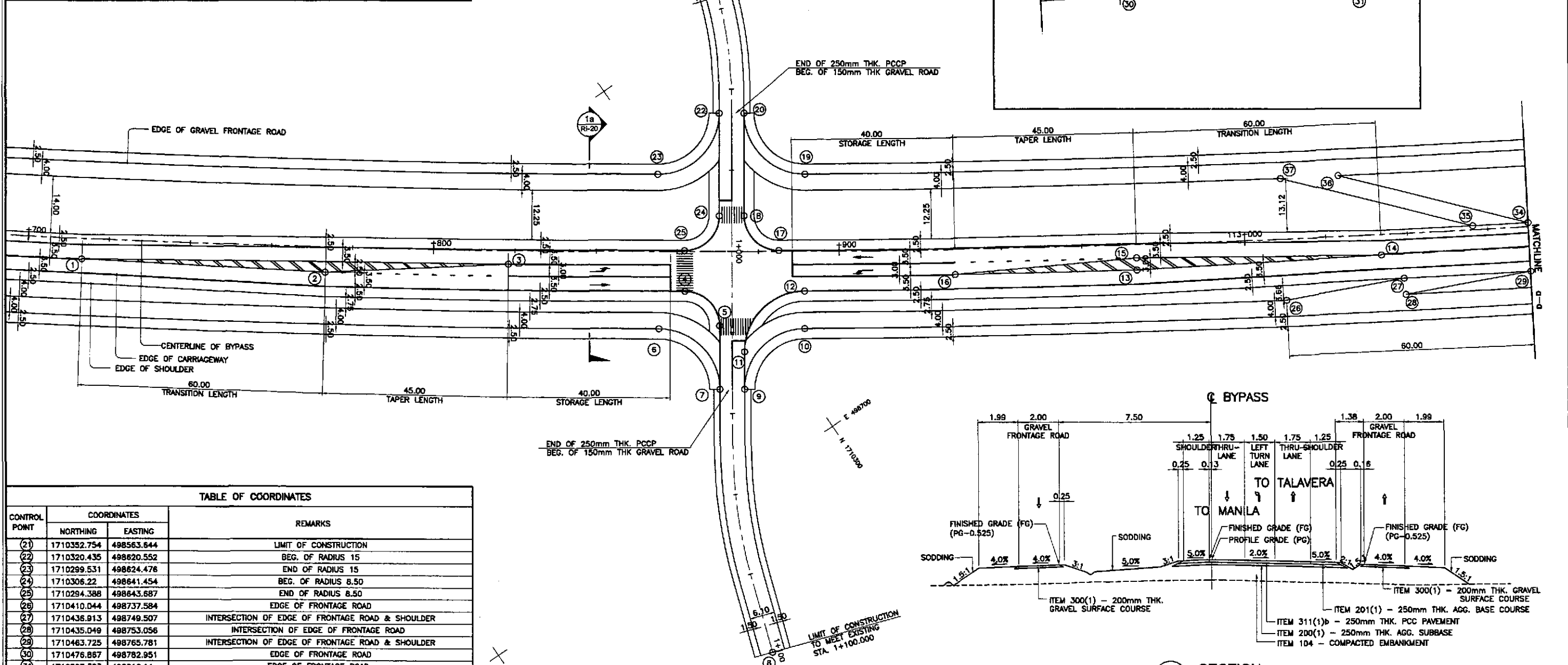
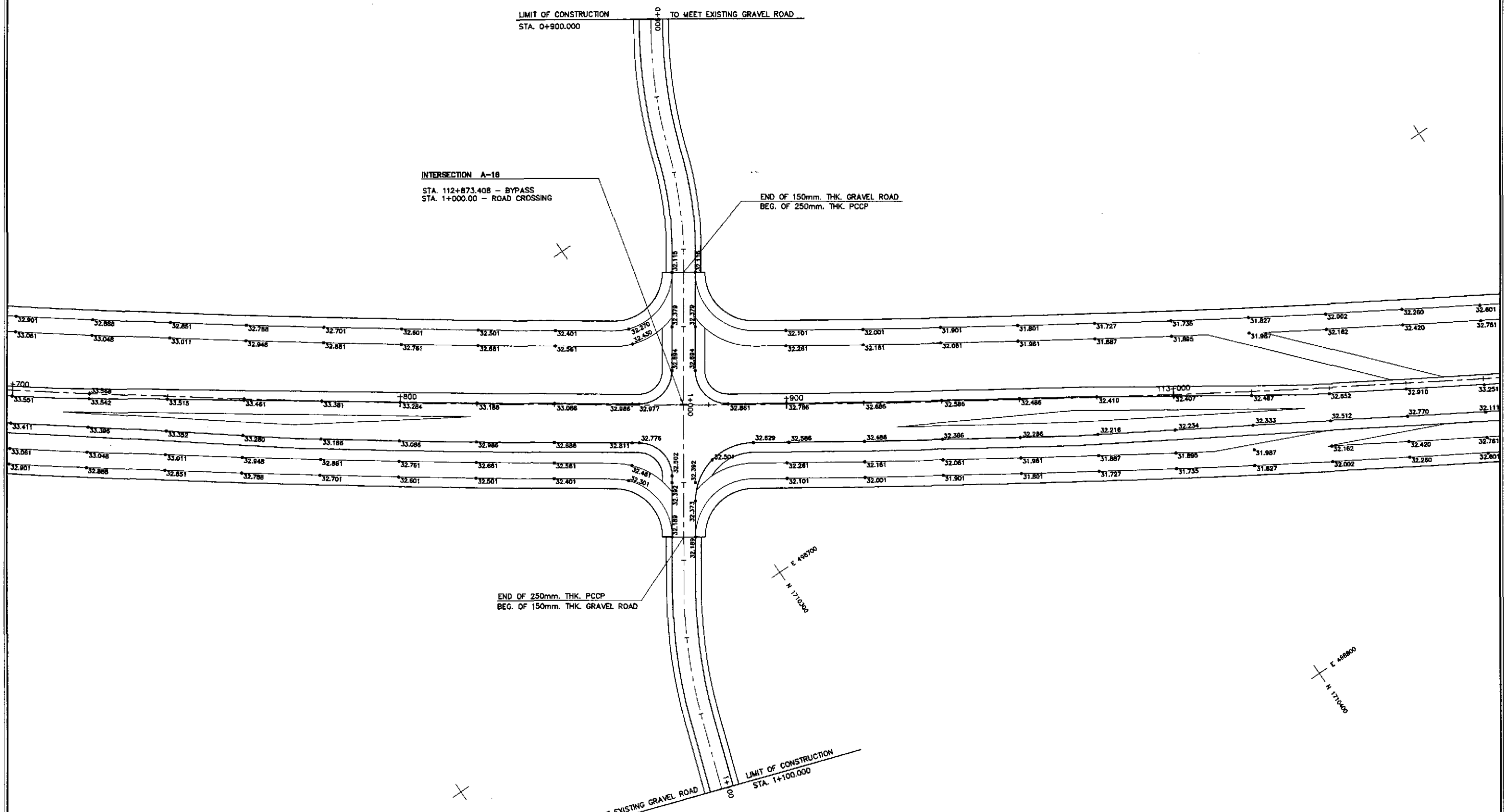
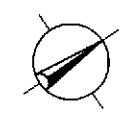


TABLE OF COORDINATES			REMARKS
CONTROL POINT	NORTHING	EASTING	
21	1710352.754	498563.644	LIMIT OF CONSTRUCTION
22	1710320.435	498620.552	BEG. OF RADIUS 15
23	1710299.531	498624.476	END OF RADIUS 15
24	1710306.22	498641.454	BEG. OF RADIUS 8.50
25	1710294.388	498643.687	END OF RADIUS 8.50
26	1710410.044	498737.584	EDGE OF FRONTAGE ROAD
27	1710436.913	498749.507	INTERSECTION OF EDGE OF FRONTAGE ROAD & SHOULDER
28	1710435.049	498753.056	INTERSECTION OF EDGE OF FRONTAGE ROAD
29	1710463.725	498765.781	INTERSECTION OF EDGE OF FRONTAGE ROAD & SHOULDER
30	1710476.887	498782.951	EDGE OF FRONTAGE ROAD
31	1710527.383	498816.14	EDGE OF FRONTAGE ROAD
32	1710549.474	498777.396	EDGE OF FRONTAGE ROAD
33	1710498.091	498750.164	EDGE OF FRONTAGE ROAD
34	1710469.905	498755.495	INTERSECTION OF EDGE OF FRONTAGE ROAD & SHOULDER
35	1710458.274	498748.475	INTERSECTION OF EDGE OF FRONTAGE ROAD & SHOULDER
36	1710437.747	498719.483	INTERSECTION OF EDGE OF FRONTAGE ROAD
37	1710425.688	498711.984	INTERSECTION OF EDGE OF FRONTAGE ROAD

GEOMETRIC DESIGN LAYOUT
INTERSECTION A-16 (STA. 112+873.408) - INITIAL STAGE
 SCALE 1:500

1a SECTION
 SCALE 1:200

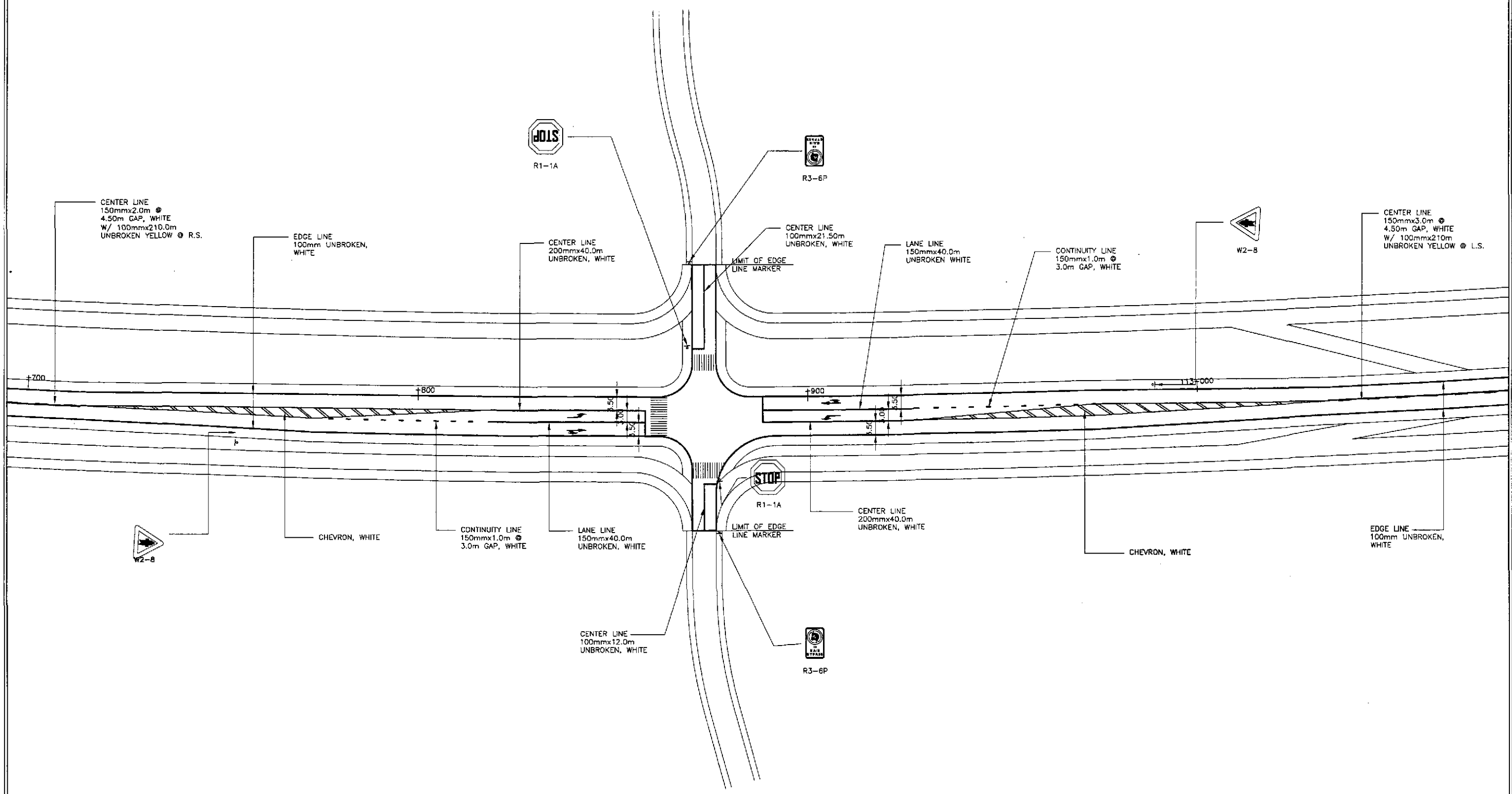
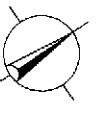
		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		SCALE : 1:500	SHEET CONTENTS : INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-16 (INITIAL STAGE)	SHEET NO. : RI-20
DESIGNED	10/16/02	SIGNATURE	P. HIL - P. MO BUREAU OF DESIGN		OFFICE OF THE SECRETARY		FULL SIZE A1			
CHECKED	10/16/02	SIGNATURE	Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES Dir., Director IV	(See cover sheet for Signature/Approval) MANUEL M. BONGHAN Undersecretary	(See cover sheet for Signature/Approval) SIMEDHI A. DATUMANONG Secretary	CABANATUAN BYPASS - CONTRACT PACKAGE II		
SUBMITTED	10/18/02	SIGNATURE								



1
RI-21 SCALE 1:500

PAVING AND GRADING PLAN
INTERSECTION A-16 (STA. 112+873.408) - INITIAL STAGE

<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p> <p>KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>YEO YACHIYO ENGINEERING CO., LTD.</p>	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	01/16/02	<i>[Signature]</i>		Submitted By:	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-16 (INITIAL STAGE)	RI-21
	SUBMITTED	10/18/02	<i>[Signature]</i>		Reviewed By:	CABANATUAN BYPASS - CONTRACT PACKAGE II			FULL SIZE A1		
				BUREAU OF DESIGN DANILLO C. TRAJANO Project Director	OFFICE OF THE SECRETARY JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES OIC, Director IV	Approved By: MANUEL M. BONGAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary			



**TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT
INTERSECTION A-16 (STA. 112+873.408) - INITIAL STAGE**

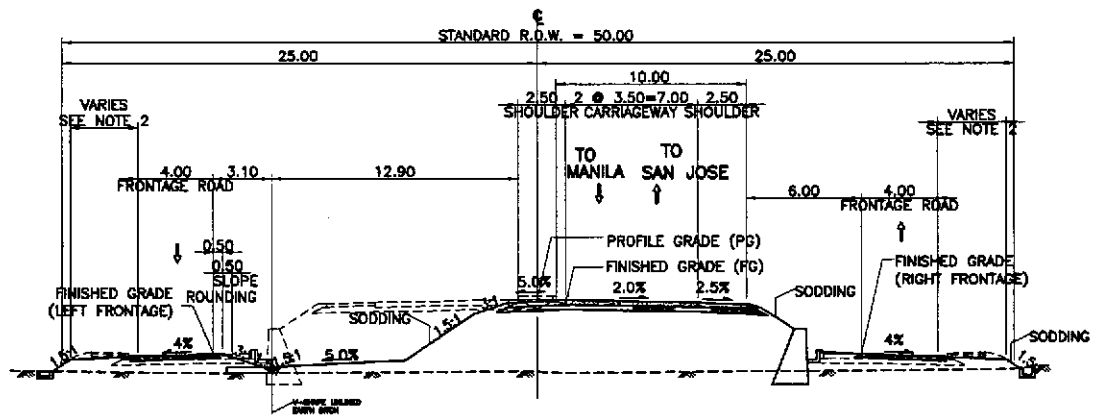
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RI-22

SCALE

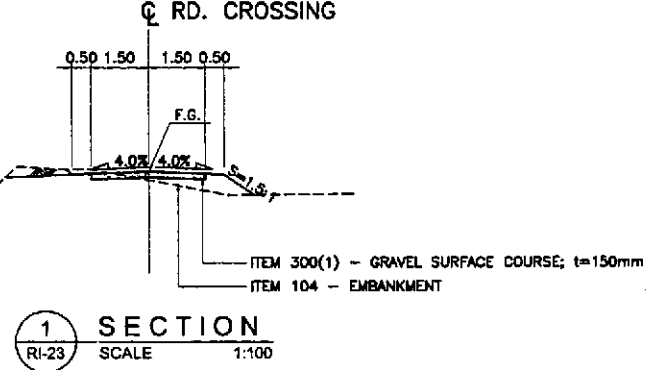
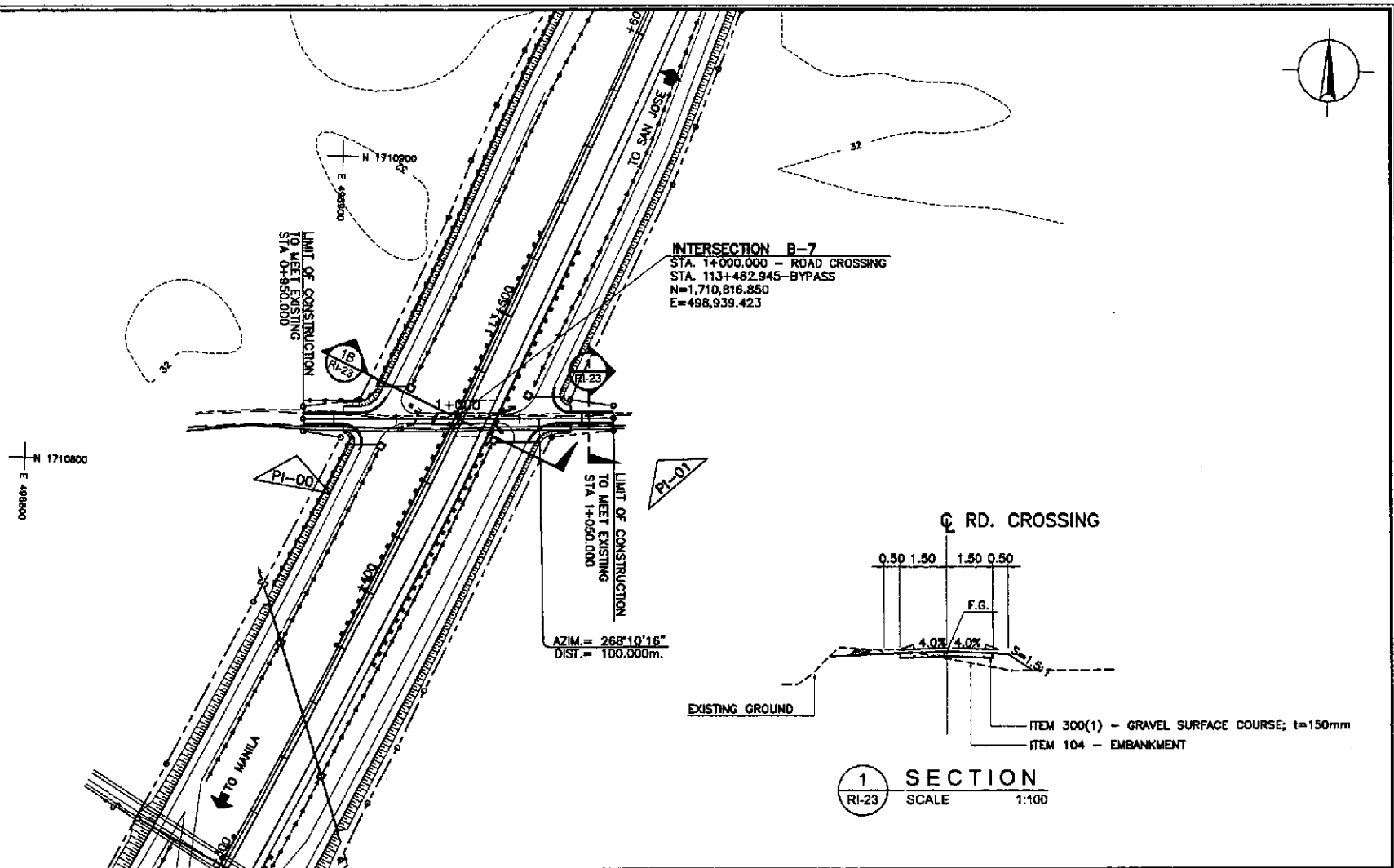
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	DESIGNED	DATE	SIGNATURE	<p align="center">REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	10/10/02	S. S. S.		<p align="center">BUREAU OF DESIGN</p> <p>Submitted By: DANILLO C. TRAJANO Project Director</p> <p>Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division</p> <p>Recommended By: GILBERTO S. REYES OIC, Director IV</p> <p>Recommended By: MANUEL M. BONDAN Undersecretary</p> <p>Approved By: SIMEON A. DATUMANONG Secretary</p>	<p align="center">THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p>			1:500	TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT INTERSECTION A-16 (INITIAL STAGE)	RI-22
	SUBMITTED	10/18/02	M. R. R.		<p align="center">OFFICE OF THE SECRETARY</p>	CABANATUAN BYPASS - CONTRACT PACKAGE II			FULL SIZE A1		

ELEMENTS OF CURVE													
PI NO.	STATION	COORDINATES		A	R	T	Lc	E	e%	V(kph)	STATION		
		NORTHING	EASTING								PC	PT	
PI-00	0+950.000	1,710,815.255	498,889.449	BEGINNING OF UNDERPASS B-7									
PI-01	1+150.000	1,710,818.446	498,989.398	END OF UNDERPASS B-7									



1B UNDERPASS SECTION - INITIAL STAGE
RI-23 SCALE 1:200

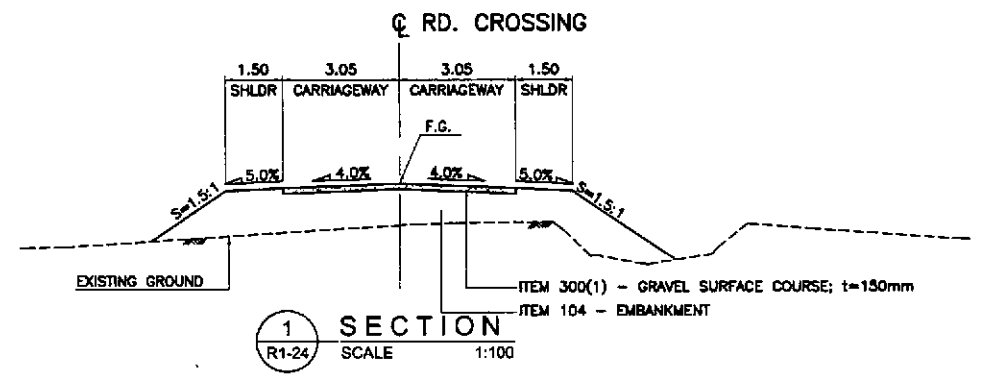
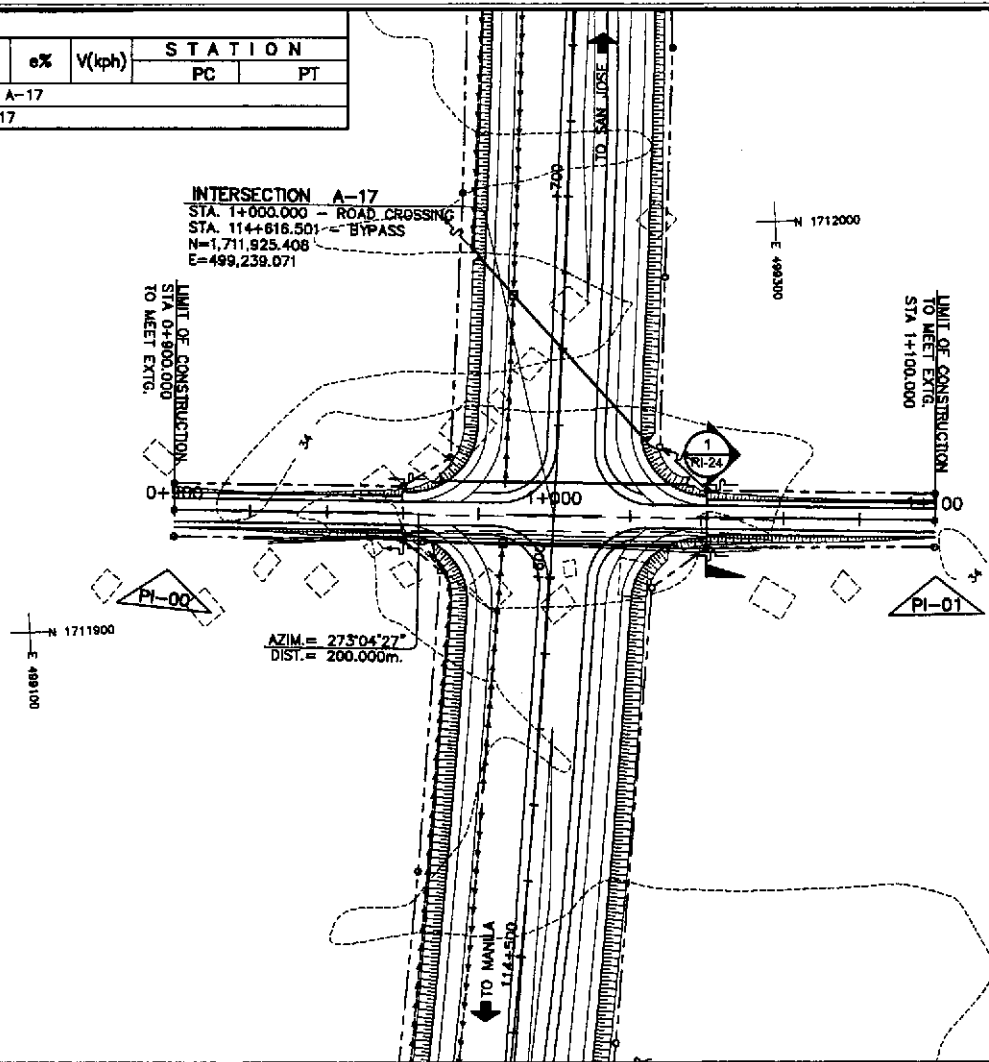


1 SECTION
RI-23 SCALE 1:100

ELEVATION	PVI		PVI			
	STA. 0+970	ELEV. = 31.274	STA. 1+030	ELEV. = 31.274		
35						
30						
25						
STATION	0+900		1+000		+100	
FINISHED PROFILE GRADE BYPASS						
EXISTING GROUND BYPASS						
HORIZONTAL CURVATURE	R = ∞					
VERTICAL CURVATURE	g = +0.195% L=30 g = +0.500% g = -0.500% L=30 g = -0.585% Mo = +0.011 Mo = +0.41					
SUPERELEVATION	NC					

	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN, CROSS-SECTION AND PROFILE INTERSECTION B-7 STA. 0+950 - STA 1+050	SHEET NO. : RI-23	
	DESIGNED	10/4/02		[Signature]	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS						
	CHECKED	10/14/02		[Signature]	BUREAU OF DESIGN						
	SUBMITTED	10/18/02	[Signature]	OFFICE OF THE SECRETARY							
				Submitted By: DANILO C. TRAJANO (Project Director) Reviewed By: JOSEFINA M. ALACAR (Chief, Highways Division) Recommended By: GILBERTO S. REYES (OC, Director IV) Approved By: MANUEL M. BONDAN (Undersecretary) Approved By: SIMEDON A. DATUMANONG (Secretary)							

ELEMENTS OF CURVE												
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION	
		NORTHING	EASTING								PC	PT
PI-00	0+900.000	1,711,930.770	499,139.214								BEGINNING OF INTERSECTION A-17	
PI-01	1+100.000	1,711,920.045	499,338.927								END OF INTERSECTION A-17	

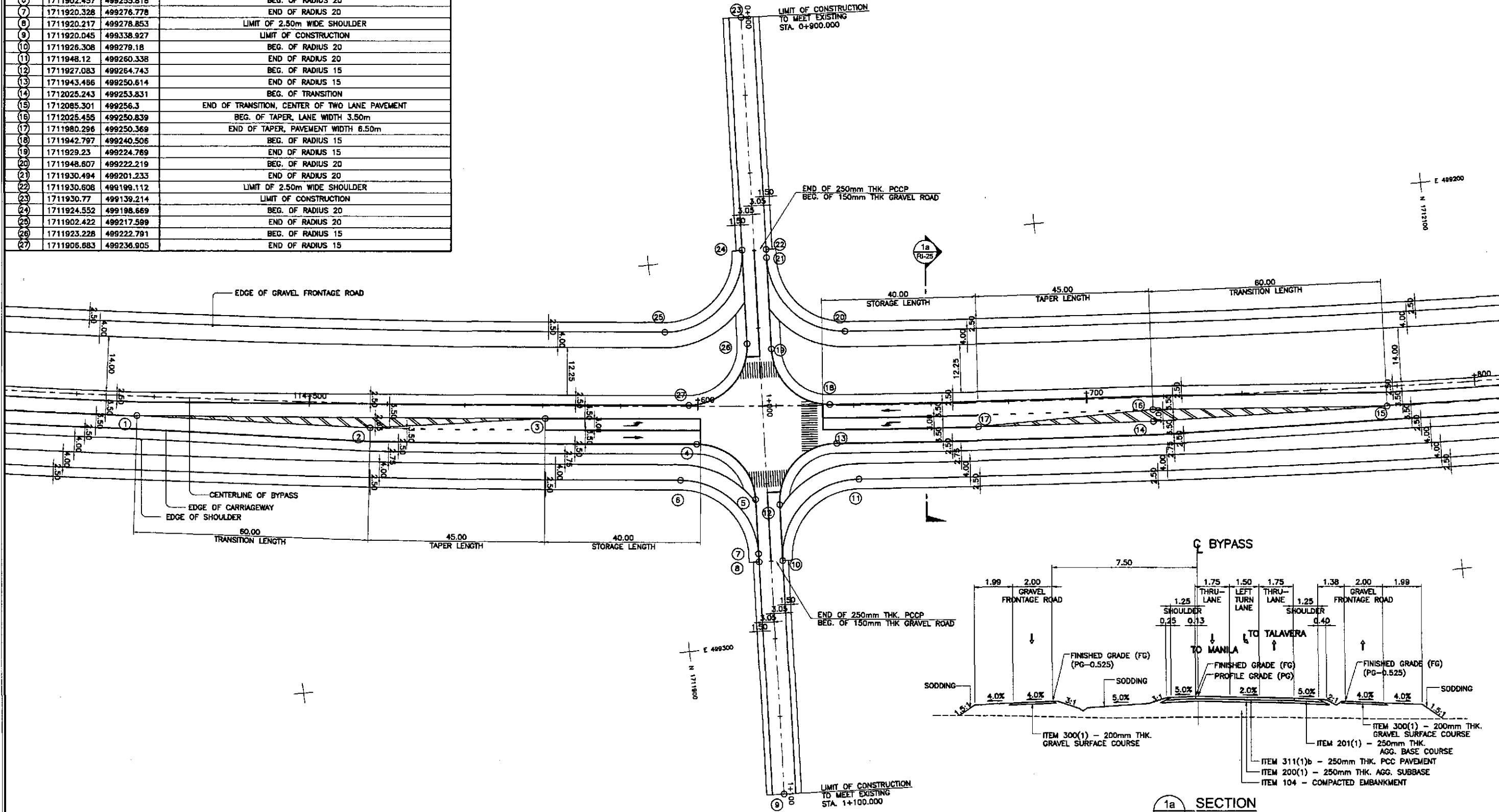


ELEVATION	STATION											
	0+900	0+920	0+940	0+960	0+980	0+990	1+000	1+020	1+040	1+060	1+080	
40												
35												
30												
FINISHED PROFILE GRADE BYPASS												
EXISTING GROUND BYPASS												
HORIZONTAL CURVATURE	R = ∞											
VERTICAL CURVATURE	L=40 g=+3.220% L=40 Mo=+0.130 Mo=-0.056 g=-2.153% g=-2.319% L=40 Mo=+0.108											
SUPERELEVATION	NC											

	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 (Pinaridel, Cabanatuan and San Jose Bypasses)	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN, CROSS-SECTION AND PROFILE INTERSECTION A-17 STA. 0+900 - STA. 1+100	SHEET NO. : RI-24
	CHECKED	10/16/02	S. JOSE		Submitted By: DANILO C. TRAMANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES OIC, Director IV				

TABLE OF COORDINATES

CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
1	1711765.116	499224.426	CENTER OF TWO LANE PAVEMENT
2	1711824.482	499233.846	BEG. OF TAPER, LANE WIDTH 3.50m
3	1711869.574	499236.332	END OF TAPER, PAVEMENT WIDTH 6.50m
4	1711907.659	499247.061	BEG. OF RADIUS 15
5	1711921.08	499262.785	END OF RADIUS 15
6	1711902.457	499255.816	BEG. OF RADIUS 20
7	1711920.328	499276.778	END OF RADIUS 20
8	1711920.217	499278.853	LIMIT OF 2.50m WIDE SHOULDER
9	1711920.045	499338.927	LIMIT OF CONSTRUCTION
10	1711926.308	499279.18	BEG. OF RADIUS 20
11	1711948.12	499260.338	END OF RADIUS 20
12	1711927.083	499264.743	BEG. OF RADIUS 15
13	1711943.486	499250.614	END OF RADIUS 15
14	1712025.243	499253.831	BEG. OF TRANSITION
15	1712085.301	499256.3	END OF TRANSITION, CENTER OF TWO LANE PAVEMENT
16	1712025.455	499250.839	BEG. OF TAPER, LANE WIDTH 3.50m
17	1711980.296	499250.369	END OF TAPER, PAVEMENT WIDTH 6.50m
18	1711942.797	499240.506	BEG. OF RADIUS 15
19	1711929.23	499224.789	END OF RADIUS 15
20	1711948.607	499222.219	BEG. OF RADIUS 20
21	1711930.494	499201.233	END OF RADIUS 20
22	1711930.608	499199.112	LIMIT OF 2.50m WIDE SHOULDER
23	1711930.77	499139.214	LIMIT OF CONSTRUCTION
24	1711924.552	499198.669	BEG. OF RADIUS 20
25	1711902.422	499217.599	END OF RADIUS 20
26	1711923.228	499222.791	BEG. OF RADIUS 15
27	1711905.683	499236.905	END OF RADIUS 15

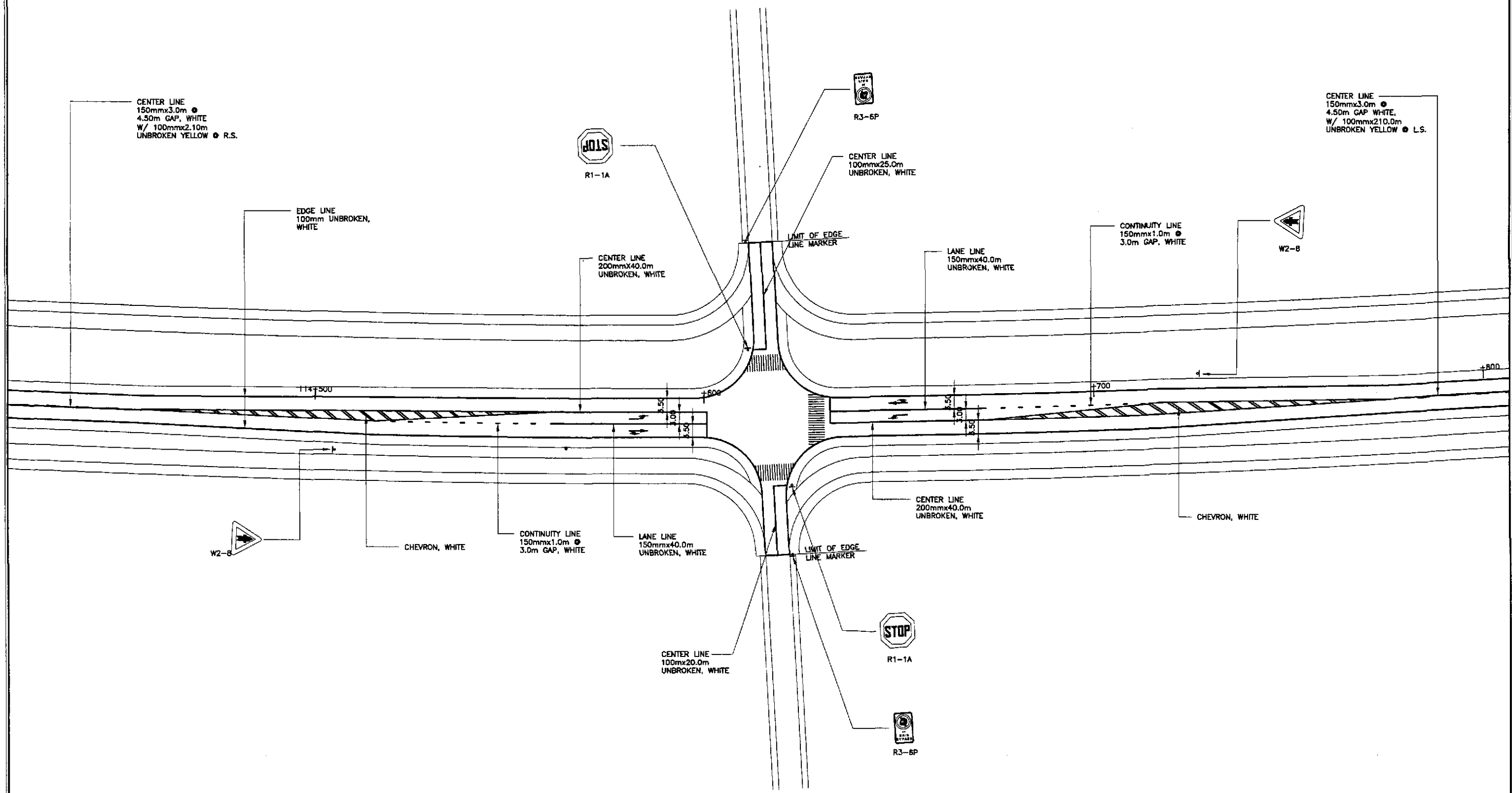
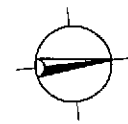


GEOMETRIC DESIGN LAYOUT
INTERSECTION A-17 (STA. 114+616.501) - INITIAL STAGE

1 SCALE

1a SECTION SCALE 1:200

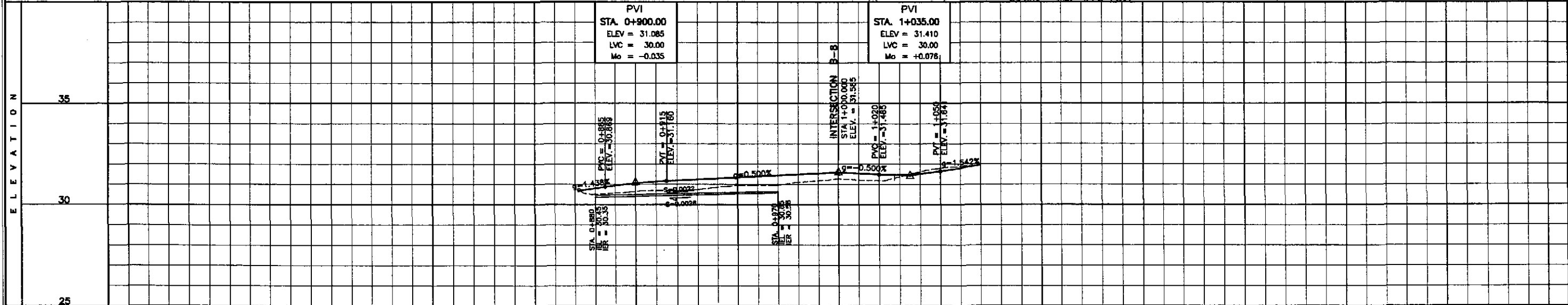
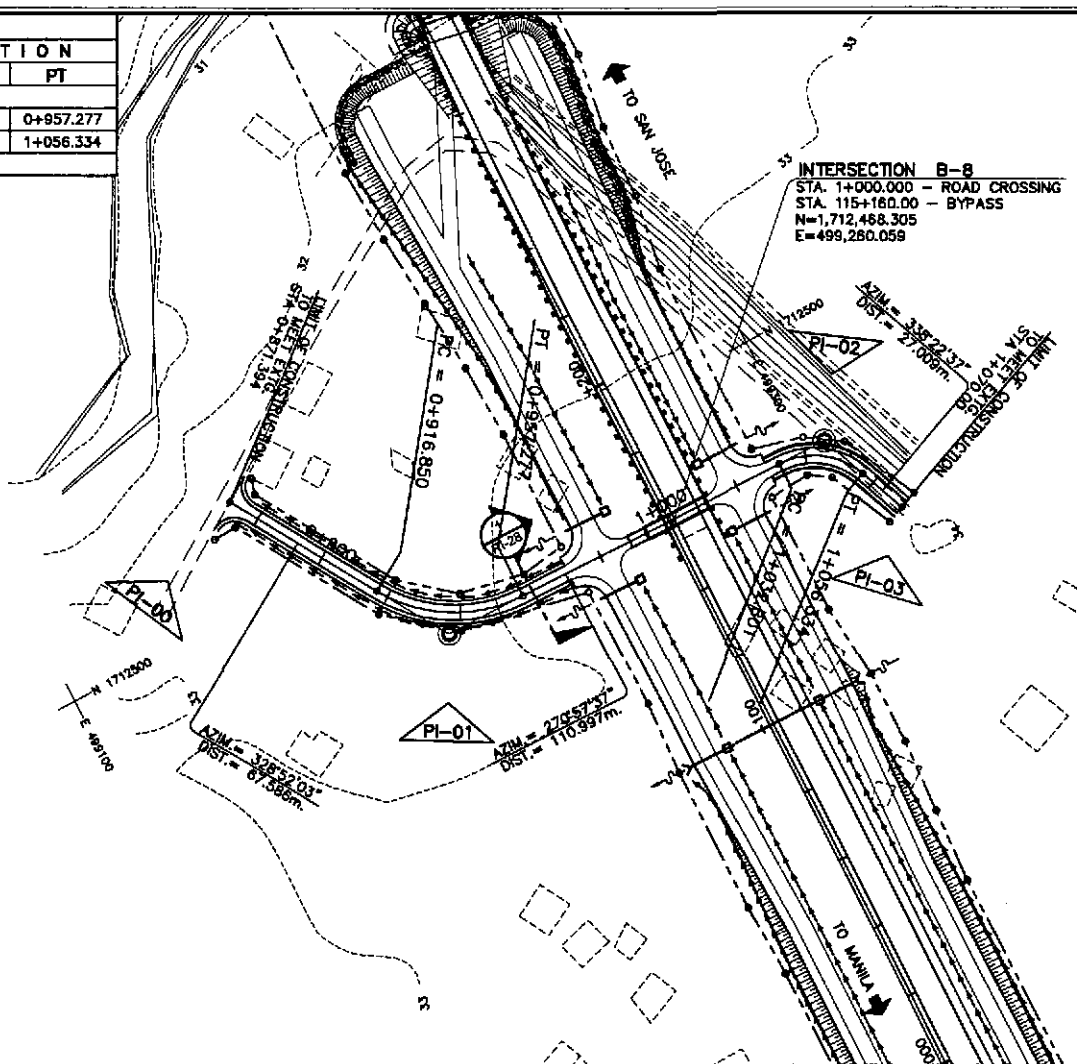
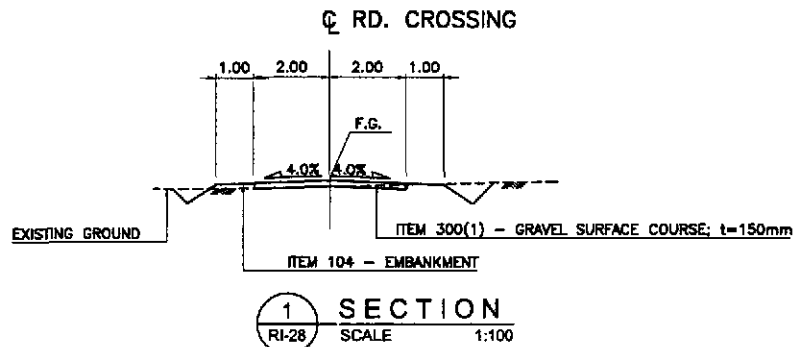
	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : 1:500 FULL SIZE A1	SHEET CONTENTS : INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-17 (INITIAL STAGE)	SHEET NO. : RI-25
	CHECKED	10/16/02	S. GONG		PUHL - 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: MANUEL M. BONGHAN Undersecretary				
SUBMITTED	10/18/02		TEAM LEADER [Signature]								



1
TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT
INTERSECTION A-17 (STA. 114+616.501) - INITIAL STAGE
 RI-27 SCALE 1:500

				REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS							
	DESIGNED	DATE	SIGNATURE	Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :
CHECKED	10/16/02	<i>S. Jose</i>	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES DIC, Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary	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 INTERSECTION A-17 (INITIAL STAGE)	RI-27
SUBMITTED	10/18/02	<i>Mr. R. Lopez</i>						CABANATUAN BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		

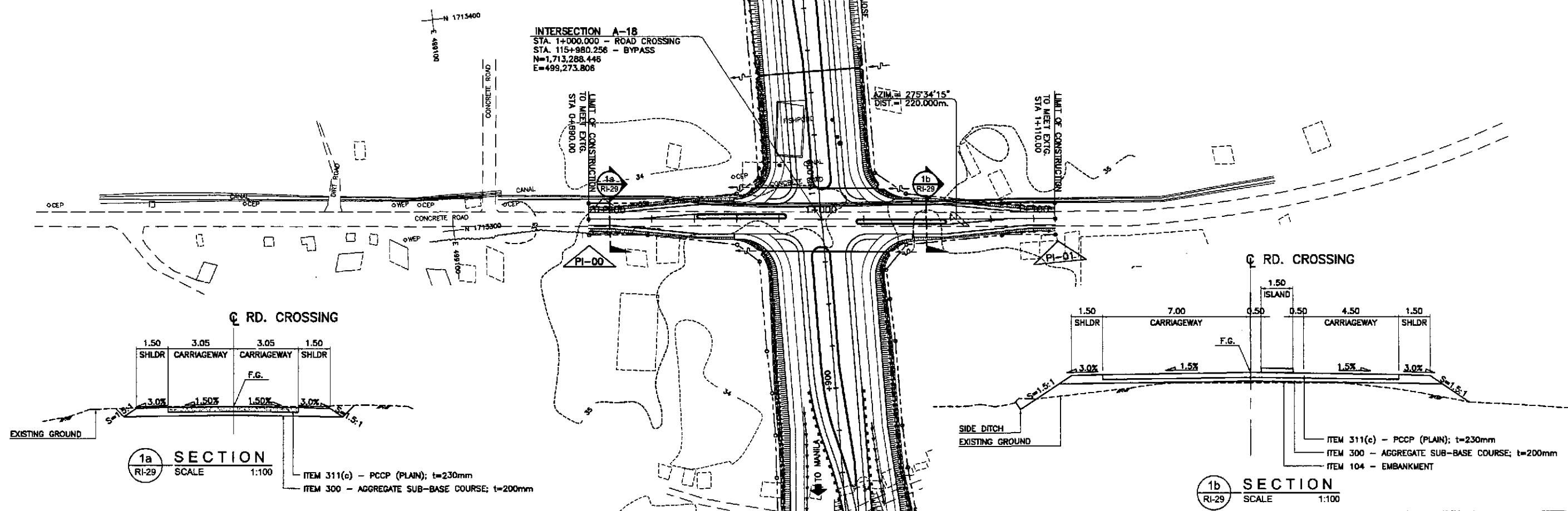
ELEMENTS OF CURVE												
PI NO.	STATION	COORDINATES		A	R	T	Lc	E	e%	V(kph)	STATION	
		NORTHING	EASTING								PC	PT
PI-00	0+871.394	1,712,527.243	499,160.272								BEGINNING OF UNDERPASS B-8	
PI-01	0+938.980	1,712,469.392	499,195.215	57°54'26"	40	22.130	40.427	5.714	-	-	0+916.850	0+957.277
PI-02	1+046.143	1,712,467.532	499,306.196	67°25'00"	20	13.343	23.533	4.042	-	-	1+032.801	1+056.334
PI-03	1+070.00	1,712,442.423	499,316.149								END OF UNDERPASS B-8	



STATION	0+900	1+000	+100
FINISHED PROFILE GRADE BYPASS			
EXISTING GROUND BYPASS	30.674, 30.506, 30.797, 30.644, 31.050, 30.700, 31.185, 30.857, 31.285, 30.952, 31.385, 31.098, 31.485	31.270, 31.585, 31.177, 31.485, 31.820, 31.521, 31.878, 31.795	
HORIZONTAL CURVATURE	R = ∞		
VERTICAL CURVATURE	g = -1.438%, L = 30, Mo = -0.035; g = +0.500%; g = -0.500%; L = 30, Mo = -0.076; g = +1.542%		
SUPERELEVATION	NC		

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN, CROSS-SECTION AND PROFILE INTERSECTION B-8 STA. 0+871.394 - STA 1+070	SHEET NO. : RI-28
	CHECKED	10/14/02	[Signature]		BUREAU OF DESIGN OFFICE OF THE SECRETARY						
	SUBMITTED	10/18/02	[Signature]		Submitted By: DANILLO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALACAR Chief, Highway Division	Recommended By: GILBERTO S. REYES DC, Director IV				

ELEMENTS OF CURVE													
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION		
		NORTHING	EASTING								PC	PT	
PI-00	0+890.000	1,713,299.124	499,164.325	BEGINNING OF INTERSECTION A-18									
PI-01	0+110.000	1,713,277.767	499,383.286	END OF INTERSECTION A-18									



ELEVATION	STATION																			
	0+900	0+910	0+920	0+930	0+940	0+950	0+960	0+970	0+980	0+990										
35																				
30																				
25																				
FINISHED PROFILE GRADE BYPASS																				
EXISTING GROUND BYPASS																				
HORIZONTAL CURVATURE	R = ∞										BYPASS SECTION									
VERTICAL CURVATURE	g = +0.086%					g = +2.044%					g = -1.942%					g = -0.222%				
SUPERELEVATION	NC										NC									

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :				SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/16/02	<i>[Signature]</i>		BUREAU OF DESIGN				THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Paridel, Cabanatuan and San Jose Bypasses)				HORIZONTAL 1:1000	PLAN, CROSS-SECTION AND PROFILE INTERSECTION A-18 STA. 0+890 - STA 1+110	RI-29
	SUBMITTED	10/18/02	<i>[Signature]</i>		OFFICE OF THE SECRETARY				CABANATUAN BYPASS - CONTRACT PACKAGE II				VERTICAL 1:100		
			P.W.H. - P.M.D. 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. BONGAN (Undersecretary) Approved By: SIMON A. DATUMANG (Secretary)								FULL SIZE A1				

TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
1	1713128.098	499277.219	CENTER OF TWO LANE PAVEMENT
2	1713162.114	499276.402	CENTER OF MEDIAN RADIUS 1.00
3	1713173.019	499281.622	EDGE OF 3.50m WIDE PAVEMENT
4	1713173.101	499278.123	BEG. OF TAPER, LANE WIDTH 3.50m
5	1713218.153	499275.378	END OF TAPER, PAVEMENT WIDTH 7.00m
6	1713271.297	499267.288	BEG. OF MEDIAN RADIUS 4.50
7	1713271.146	499276.286	END OF MEDIAN RADIUS 4.50
8	1713269.637	499283.242	BEG. OF RADIUS 10
9	1713279.422	499284.211	END OF RADIUS 10
10	1713173.001	499284.123	INTERSECTION OF SHOULDER & EDGE OF FRONTAGE ROAD
11	1713196.108	499288.76	MERGING LANE OF FRONTAGE ROAD
12	1713195.179	499284.494	INTERSECTION OF SHOULDER & EDGE OF FRONTAGE ROAD
13	1713218.287	499289.132	MERGING LANE OF FRONTAGE ROAD
14	1713257.753	499283.794	BEG. OF CORNER RADIUS 20
15	1713277.323	499315.733	END OF CORNER RADIUS 20
16	1713275.897	499330.355	BEG. OF TAPER, LANE WIDTH 4.00m
17	1713275.945	499370.549	END OF TAPER, LANE WIDTH 3.05m
18	1713277.767	499383.286	LIMIT OF COSTRUCTION
19	1713279.952	499360.893	CENTERLINE INTERSECTION
20	1713282.884	499331.034	END OF MEDIAN RADIUS 1.25
21	1713286.747	499291.223	END OF MEDIAN RADIUS 1.25
22	1713284.259	499290.981	END OF MEDIAN RADIUS 1.25
23	1713280.376	499330.792	END OF MEDIAN RADIUS 1.25
24	1713282.017	499371.142	BEG. OF TAPER, LANE WIDTH 3.05m
25	1713289.831	499331.714	END OF TAPER, PAVEMENT WIDTH 7.00m

TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
51	1713294.027	499216.578	END OF MEDIAN RADIUS 1.25
52	1713290.141	499256.437	END OF MEDIAN RADIUS 1.25
53	1713292.633	499256.631	END OF MEDIAN RADIUS 1.25
54	1713294.875	499176.47	BEG. OF TAPER, LANE WIDTH 3.05m
55	1713287.061	499215.898	END OF TAPER, PAVEMENT WIDTH 7.00m
56	1713285.488	499232.017	LIMIT OF 2.50m SHOULDER
57	1713285.212	499234.854	BEG. OF CORNER RADIUS 20
58	1713264.971	499252.909	END OF CORNER RADIUS 20
59	1713283.269	499254.77	BEG. OF RADIUS 10
60	1713273.149	499263.798	END OF RADIUS 10
61	1713218.383	499262.88	BEG. OF TRANSITION RADIUS 137.61
62	1713181.215	499267.344	INTERSECTION OF TRANSITION RADIUS 137.61 & 196.50
63	1713128.189	499273.72	END OF TRANSITION RADIUS 196.50
64	1713219.138	499256.142	INTERSECTION OF FRONTAGE ROAD
65	1713204.548	499260.834	INTERSECTION OF EDGE OF FRONTAGE ROAD & SHOULDER
66	1713206.72	499255.934	INTERSECTION OF FRONTAGE ROAD
67	1713173.293	499266.684	INTERSECTION OF EDGE OF FRONTAGE ROAD & SHOULDER

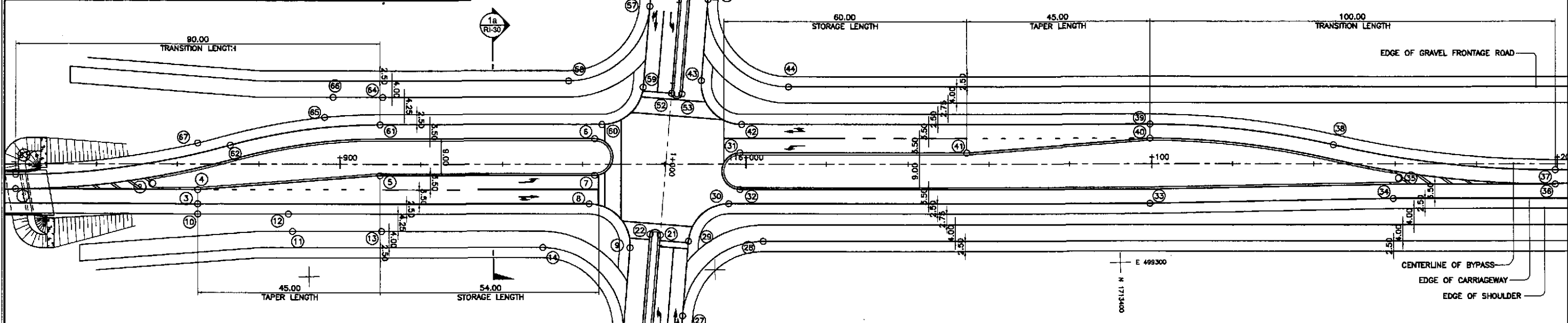
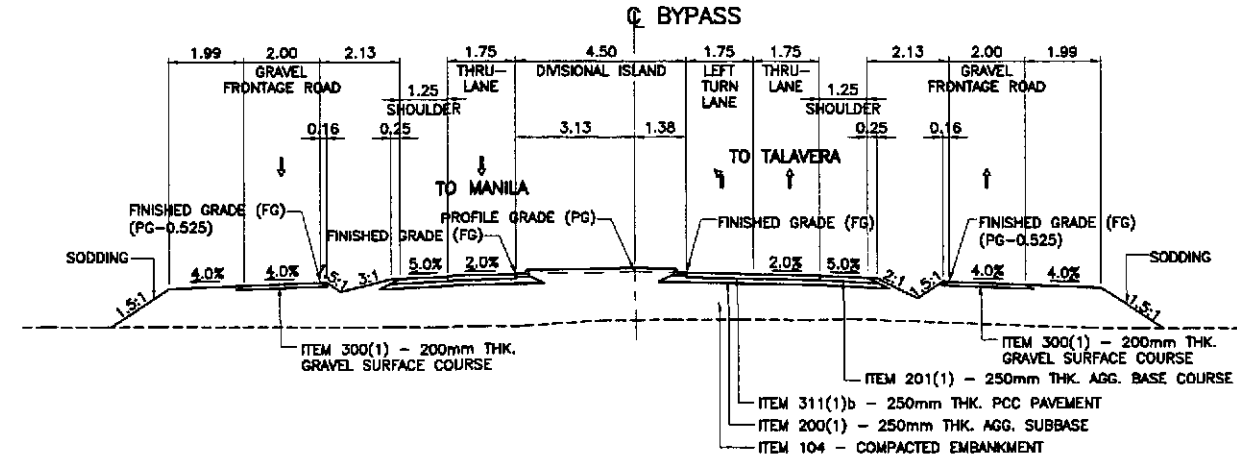


TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
26	1713291.257	499317.092	LIMIT OF 2.50m WIDE SHOULDER
27	1713291.826	499311.26	BEG. OF CORNER RADIUS 20
28	1713312.067	499293.204	END OF CORNER RADIUS 20
29	1713293.622	499292.841	BEG. OF RADIUS 10
30	1713303.743	499283.814	END OF RADIUS 10
31	1713306.745	499271.362	BEG. OF MEDIAN RADIUS 4.50
32	1713306.594	499280.361	END OF MEDIAN RADIUS 4.50
33	1713407.522	499285.553	EDGE OF 3.50m WIDE PAVEMENT
34	1713467.534	499285.309	EDGE OF 3.50m WIDE PAVEMENT
35	1713468.888	499280.331	CENTER OF MEDIAN RADIUS 1.00
36	1713507.587	499282.48	CENTER OF TWO LANE PAVEMENT
37	1713507.646	499278.98	BEG. OF TRANSITION RADIUS 246.50
38	1713452.987	499271.901	INTERSECTION OF TRANSITION RADIUS 246.50 & 203.565
39	1713407.848	499266.056	END OF TRANSITION RADIUS 203.565
40	1713407.79	499269.555	BEG. OF TAPER, LANE WIDTH 3.50m
41	1713362.737	499272.301	END OF TAPER, PAVEMENT WIDTH 7.00m
42	1713307.254	499264.37	BEG. OF RADIUS 10
43	1713297.469	499253.4	END OF RADIUS 10
44	1713318.993	499255.315	BEG. OF CORNER RADIUS 20
45	1713299.422	499233.376	END OF CORNER RADIUS 20
46	1713300.994	499217.257	BEG. OF TAPER, LANE WIDTH 4.50m
47	1713300.946	499177.063	END OF TAPER, LANE WIDTH 3.05m
48	1713299.124	499164.325	LIMIT OF CONSTRUCTION
49	1713296.94	499186.719	CENTERLINE INTERSECTION
50	1713296.516	499216.82	END OF MEDIAN RADIUS 1.25

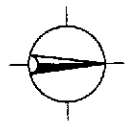


1a SECTION
SCALE 1:200

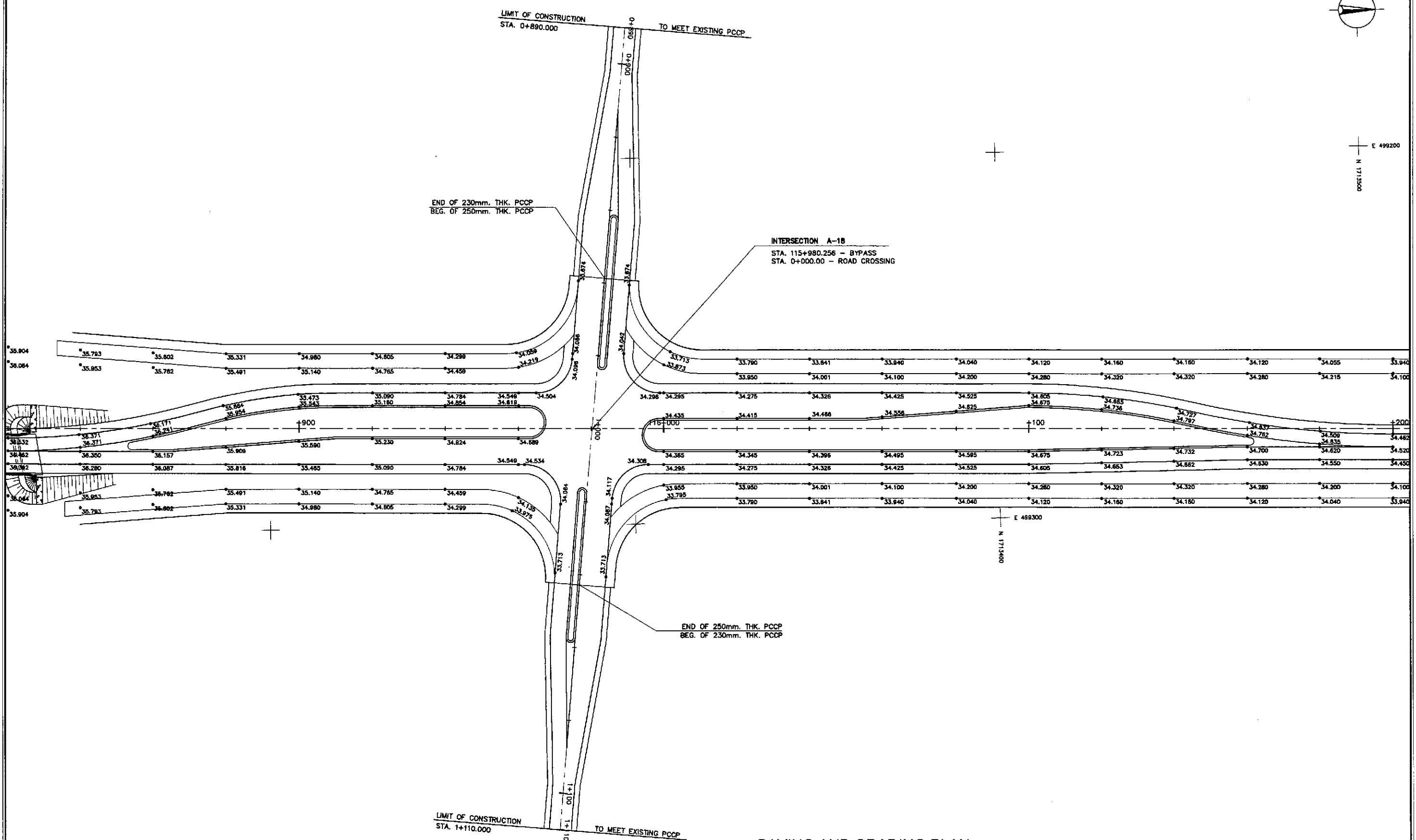
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RI-30 SCALE

GEOMETRIC DESIGN LAYOUT
INTERSECTION A-18 (STA. 115+980.256) - INITIAL STAGE
1:500

<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 : 1:500</p>		<p>SHEET CONTENTS : INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-18 (INITIAL STAGE)</p>		<p>SHEET NO. : RI-30</p>	
DESIGNED	DATE	SIGNATURE	PROJECT DIRECTOR	REVIEWED BY	RECOMMENDED BY	APPROVED BY					
CHECKED	6/16/02		DANILO C. TRAJANO	JOSEFINA M. ALADAR	GILBERTO S. REYES	MANUEL M. BONGAN					
SUBMITTED	6/18/02		DANILO C. TRAJANO	JOSEFINA M. ALADAR	GILBERTO S. REYES	MANUEL M. BONGAN					



E 499200
N 1713500

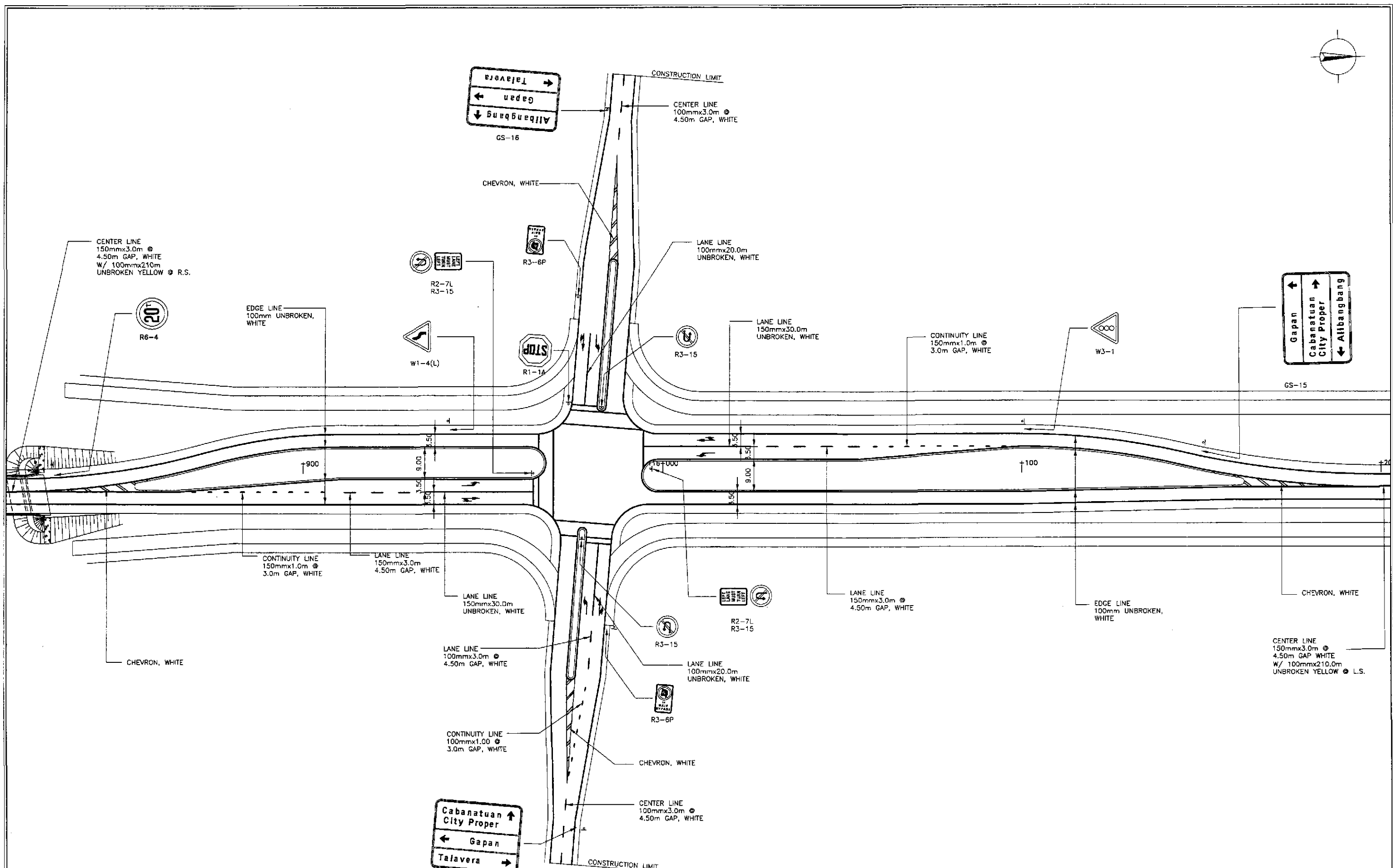
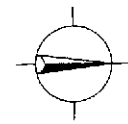


1
RI-31

PAVING AND GRADING PLAN
INTERSECTION A-18 (STA. 115+980.256) - INITIAL STAGE

1:500

	DESIGNED	10/14/02	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	10/16/02	Submitted By:	Reviewed By:	Recommended By:	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pilaridel, Cabanatuan and San Jose Bypasses)	1:500	INTERSECTION DETAIL PAVING AND GRADING PLAN INTERSECTION A-18 (INITIAL STAGE)	RI-31
	SUBMITTED	10/18/02	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES Dir., Director IV				



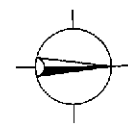
**TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT
INTERSECTION A-18 (STA. 115+980.256) - INITIAL STAGE**

1
RI-32

SCALE

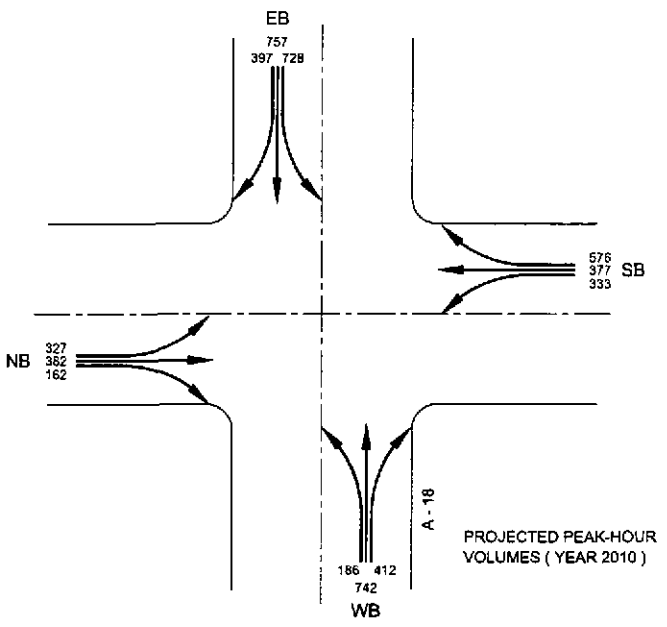
1:500

	DESIGNED	DATE	SIGNATURE	<p align="center">REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :			SCALE :	SHEET CONTENTS :	SHEET NO. :			
	CHECKED	10/10/02	S. JOSE		BUREAU OF DESIGN			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 INTERSECTION A-18 (INITIAL STAGE)	RI-32
	SUBMITTED	10/10/02	TEAM LEADER		Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	FULL SIZE A1			
				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					

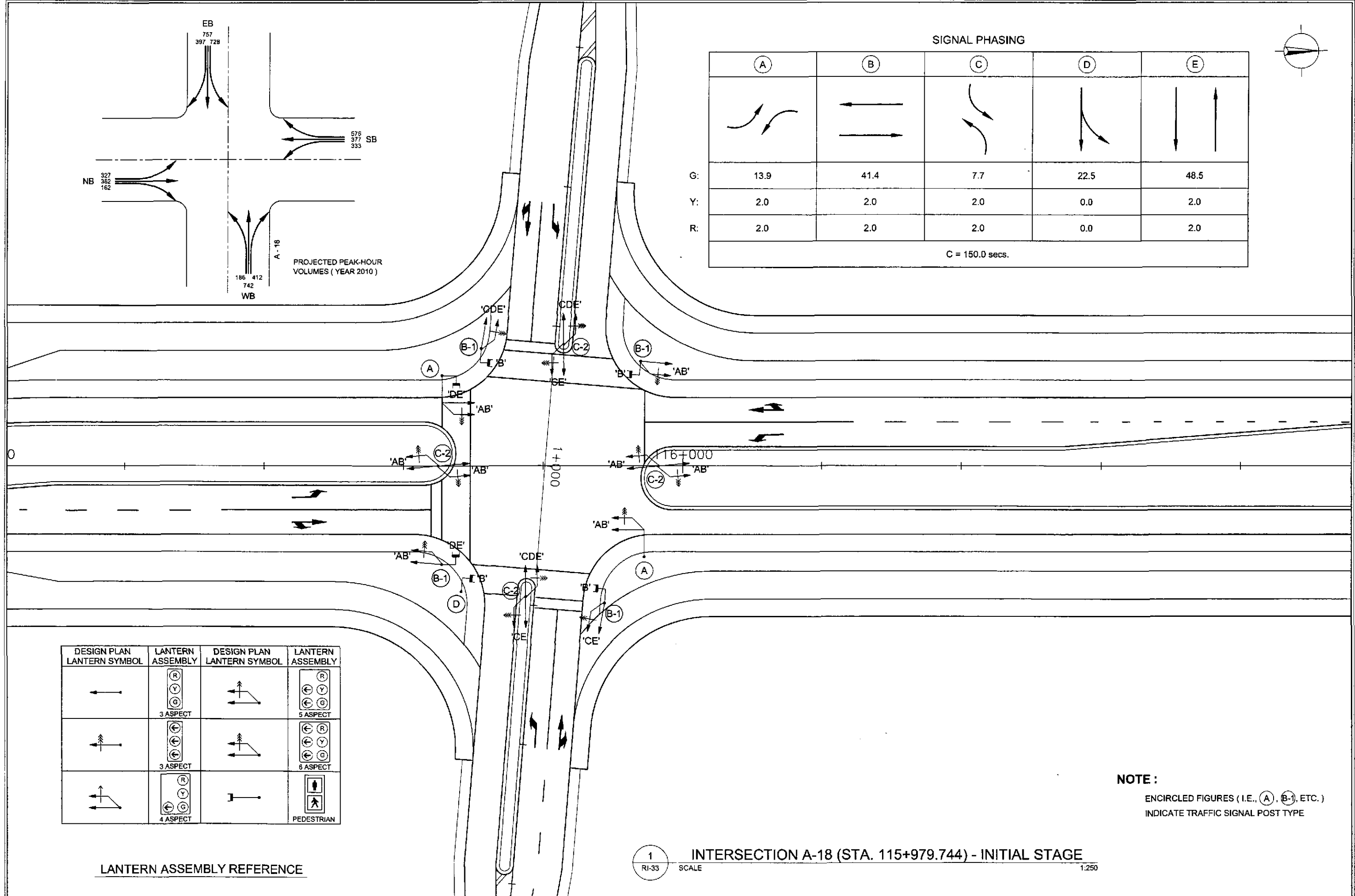


SIGNAL PHASING

	(A)	(B)	(C)	(D)	(E)
G:	13.9	41.4	7.7	22.5	48.5
Y:	2.0	2.0	2.0	0.0	2.0
R:	2.0	2.0	2.0	0.0	2.0
C = 150.0 secs.					



PROJECTED PEAK-HOUR VOLUMES (YEAR 2010)



DESIGN PLAN LANTERN SYMBOL	LANTERN ASSEMBLY	DESIGN PLAN LANTERN SYMBOL	LANTERN ASSEMBLY

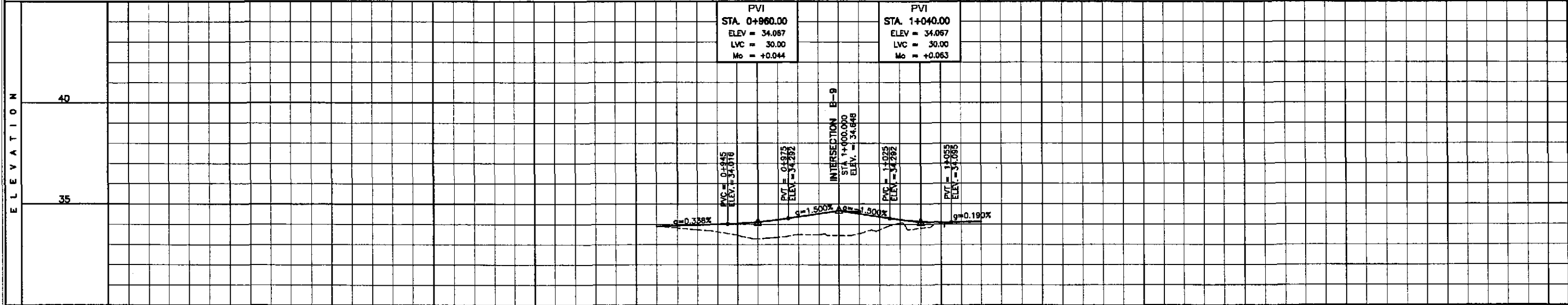
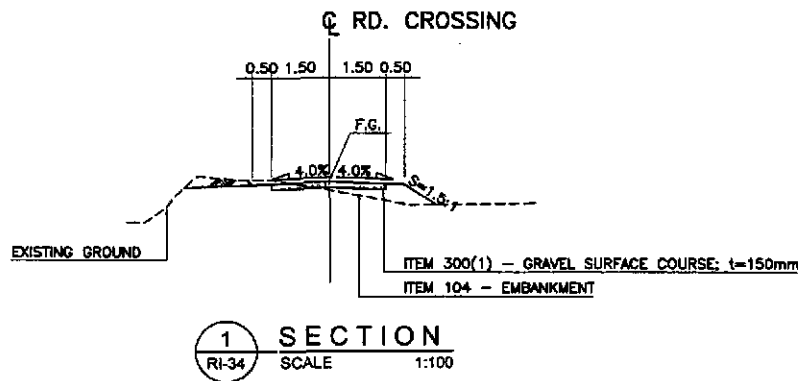
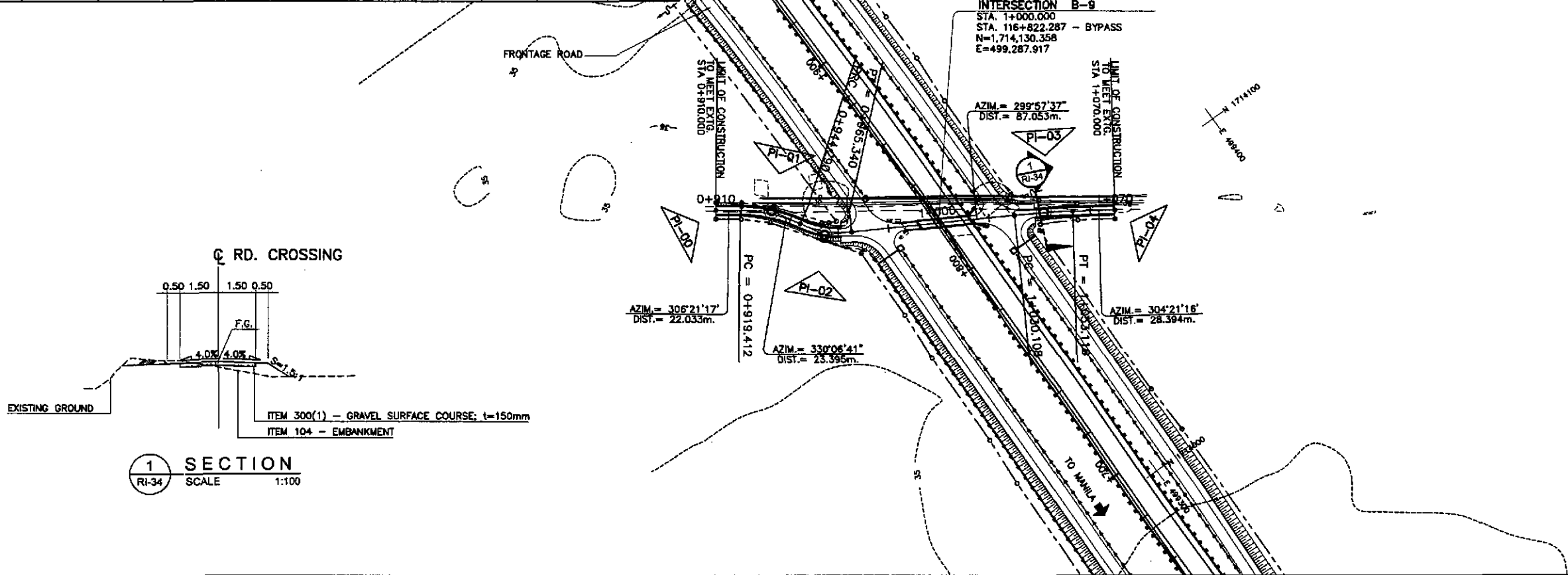
LANTERN ASSEMBLY REFERENCE

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

1 INTERSECTION A-18 (STA. 115+979.744) - INITIAL STAGE
RI-33 SCALE 1:250

	DESIGNED	DATE	SIGNATURE	<p>DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	10/16/02			Submitted By:	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)		1:250	TRAFFIC SIGNAL LIGHT LAYOUT INTERSECTION A-18 (INITIAL STAGE)	RI-33
	SUBMITTED	10/18/02			Reviewed By:	CABANATUAN BYPASS - CONTRACT PACKAGE II		FULL SIZE A1		
			Project Director	Chief, Highways Division	OC, Director IV	Undersecretary	Secretary			

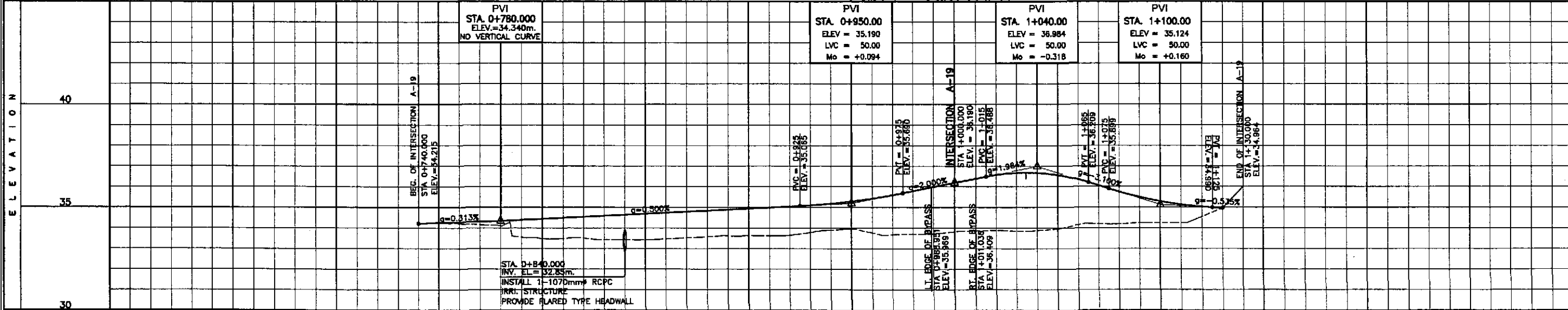
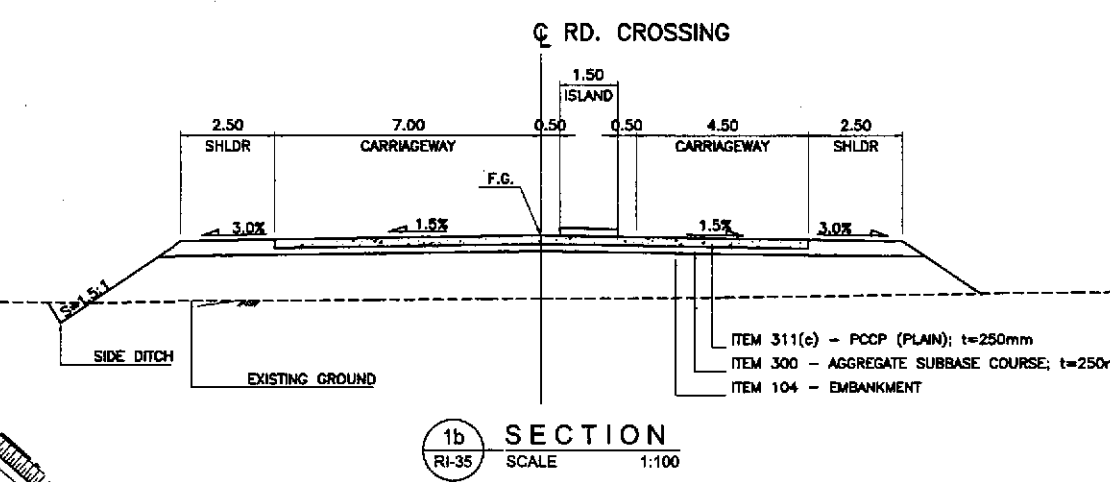
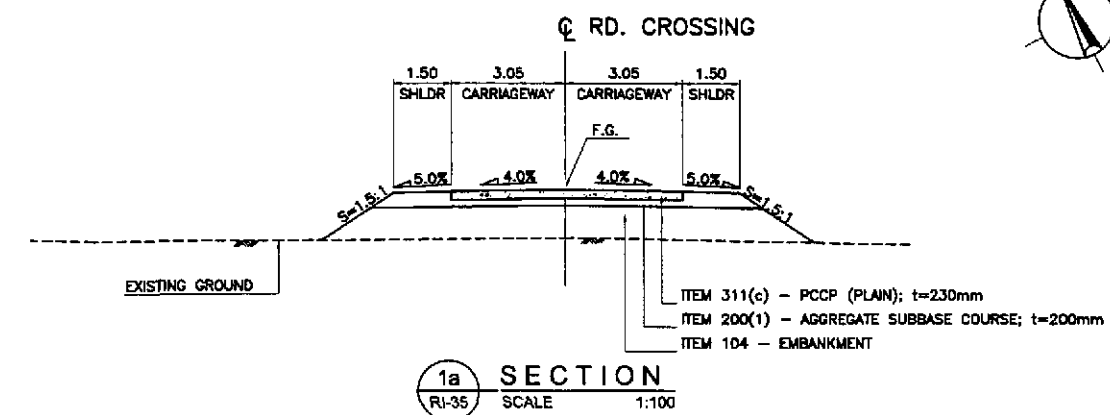
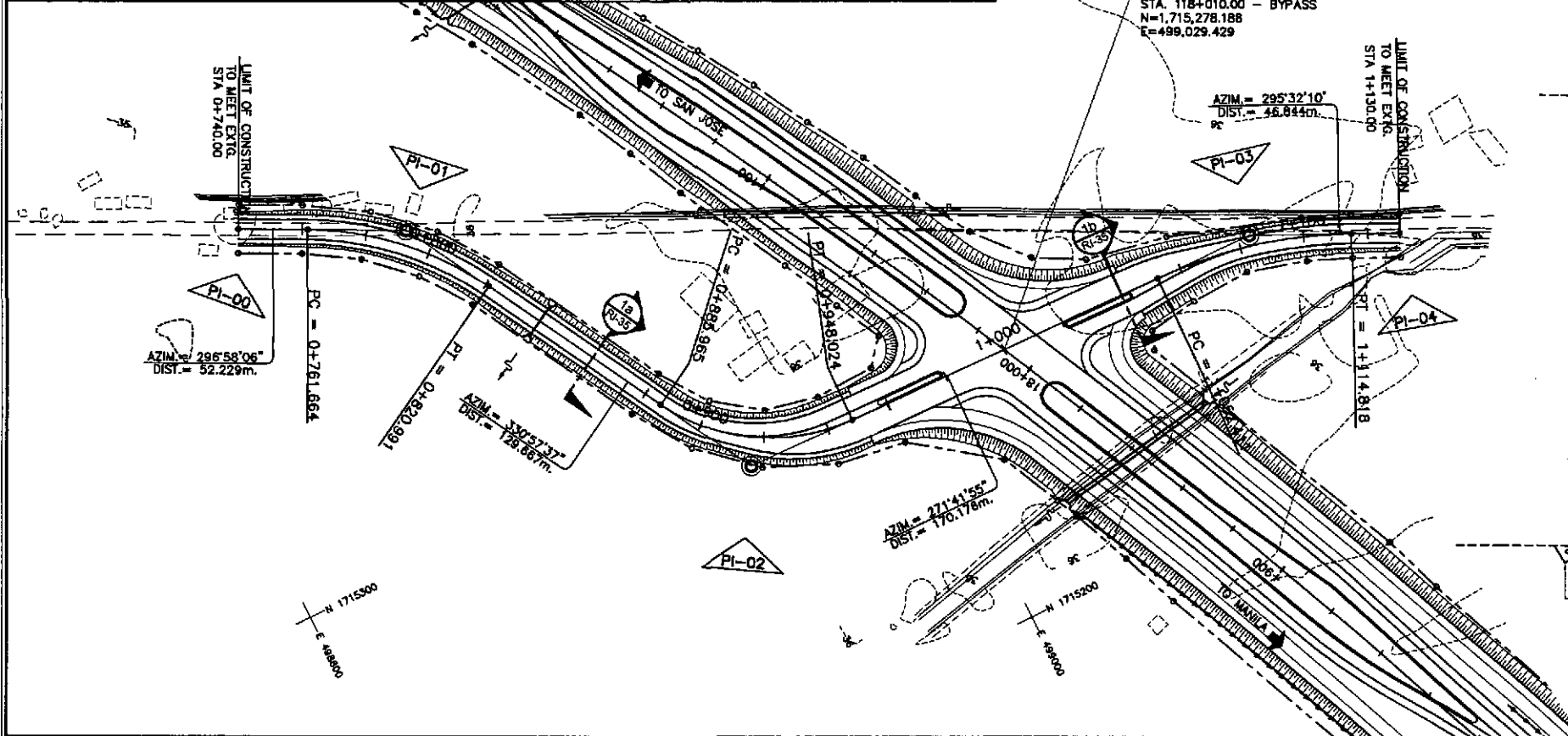
ELEMENTS OF CURVE												
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION	
		NORTHING	EASTING								PC	PT
PI-00	0+910.000	1,714,186.392	499,219.151								BEGINNING OF UNDERPASS B-9	
PI-01	0+932.033	1,714,173.332	499,236.895	23°45'24"	60	12.620	24.878	1.313	-	-	0+919.412	0+944.290
PI-02	0+955.065	1,714,153.049	499,248.553	30°09'04"	40	10.775	21.049	1.426	-	-	0+944.290	0+965.340
PI-03	1+041.617	1,714,109.575	499,323.973	04°23'39"	300	11.509	23.008	0.221	-	-	1+030.108	1+053.116
PI-04	1+070.000	1,714,093.552	499,347.413								END OF UNDERPASS B-9	



STATION	0+900	0+910	0+920	0+930	0+940	0+950	0+960	0+970	0+980	0+990	1+000	1+010	1+020	1+030	1+040	1+050	1+060	1+070
FINISHED PROFILE GRADE BYPASS																		
EXISTING GROUND BYPASS																		
HORIZONTAL CURVATURE																		
VERTICAL CURVATURE																		
SUPERELEVATION																		

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN, CROSS-SECTION AND PROFILE INTERSECTION B-9 STA. 0+910 - STA 1+070	SHEET NO. : RI-34
	CHECKED	DATE	SIGNATURE		P.M.L. - PMO Submitted By: DANLO 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				

ELEMENTS OF CURVE												
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION	
		NORTHING	EASTING								PC	PT
PI-00	0+740.000	1,715,417.792	498,833.871								BEGINNING OF INTERSECTION A-19	
PI-01	0+792.229	1,715,394.106	498,880.421	33°59'31"	100	30.585	59.327	4.567	4.10	30	0+761.664	0+820.991
PI-02	0+920.093	1,715,280.740	498,943.364	59°15'42"	60	34.127	62.059	9.027	-	-	0+885.965	0+948.024
PI-03	1+084.073	1,715,275.696	499,113.465	23°50'14"	150	31.661	62.406	3.305	-	-	1+052.411	1+114.818
PI-04	1+130.000	1,715,255.502	499,155.732								END OF INTERSECTION A-19	



STATION	+700	+800	+900	+1000	+1100	+200
FINISHED PROFILE GRADE BYPASS						
EXISTING GROUND BYPASS						
HORIZONTAL CURVATURE						
VERTICAL CURVATURE						
SUPERELEVATION						

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN, CROSS-SECTION AND PROFILE INTERSECTION A-19 STA. 0+740 - STA 1+130	SHEET NO. : RI-35
	CHECKED	10/16/02	<i>[Signature]</i>		Submitted By: DANILO C. TRAJANO Project Director Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division Recommended By: GILBERTO S. REYES DIC, Director IV Recommended By: MANUEL M. BONDAN Undersecretary Approved By: SIMEON A. DATUMANONG Secretary	PROJECT AND LOCATION : CABANATUAN BYPASS - CONTRACT PACKAGE II					

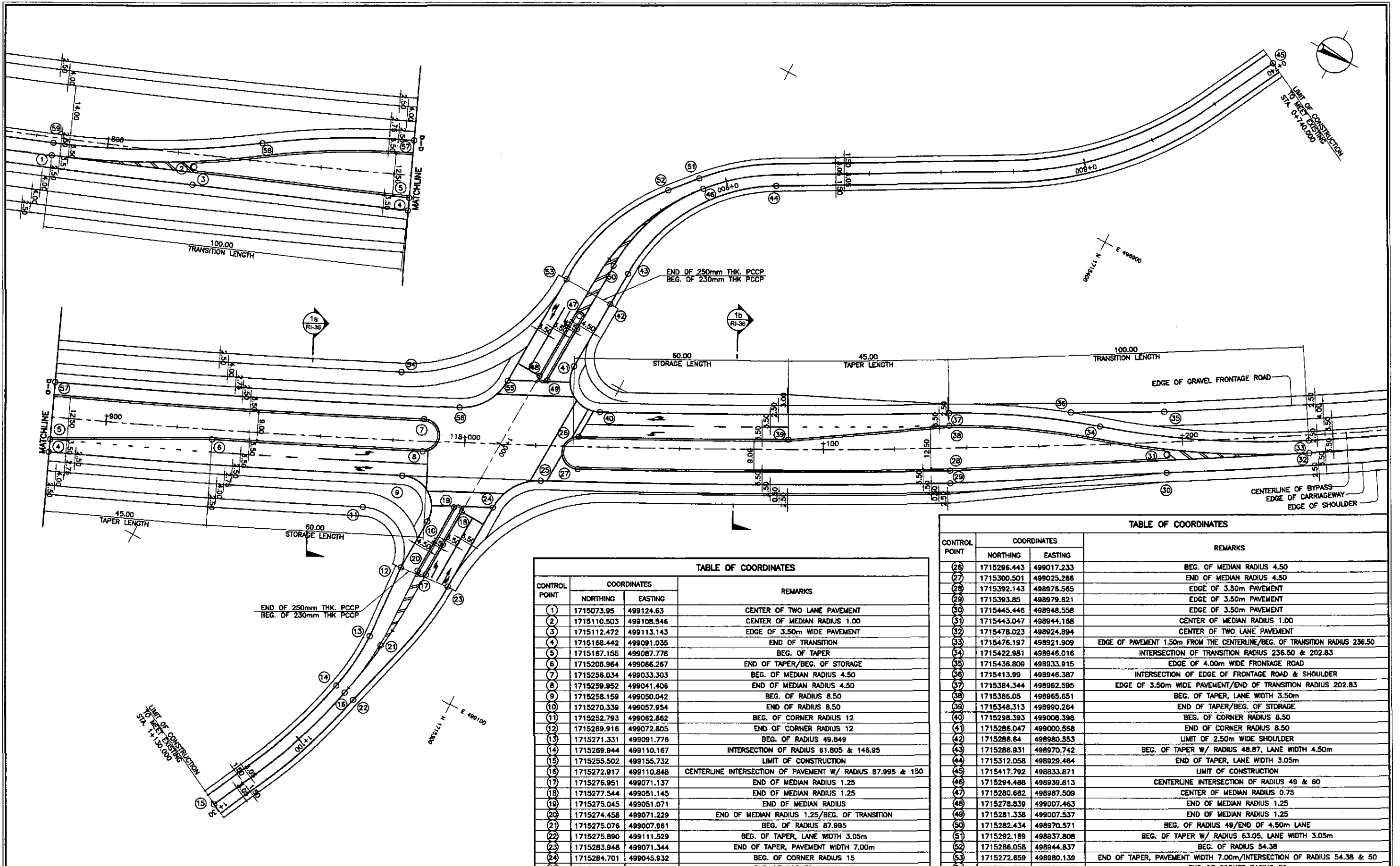


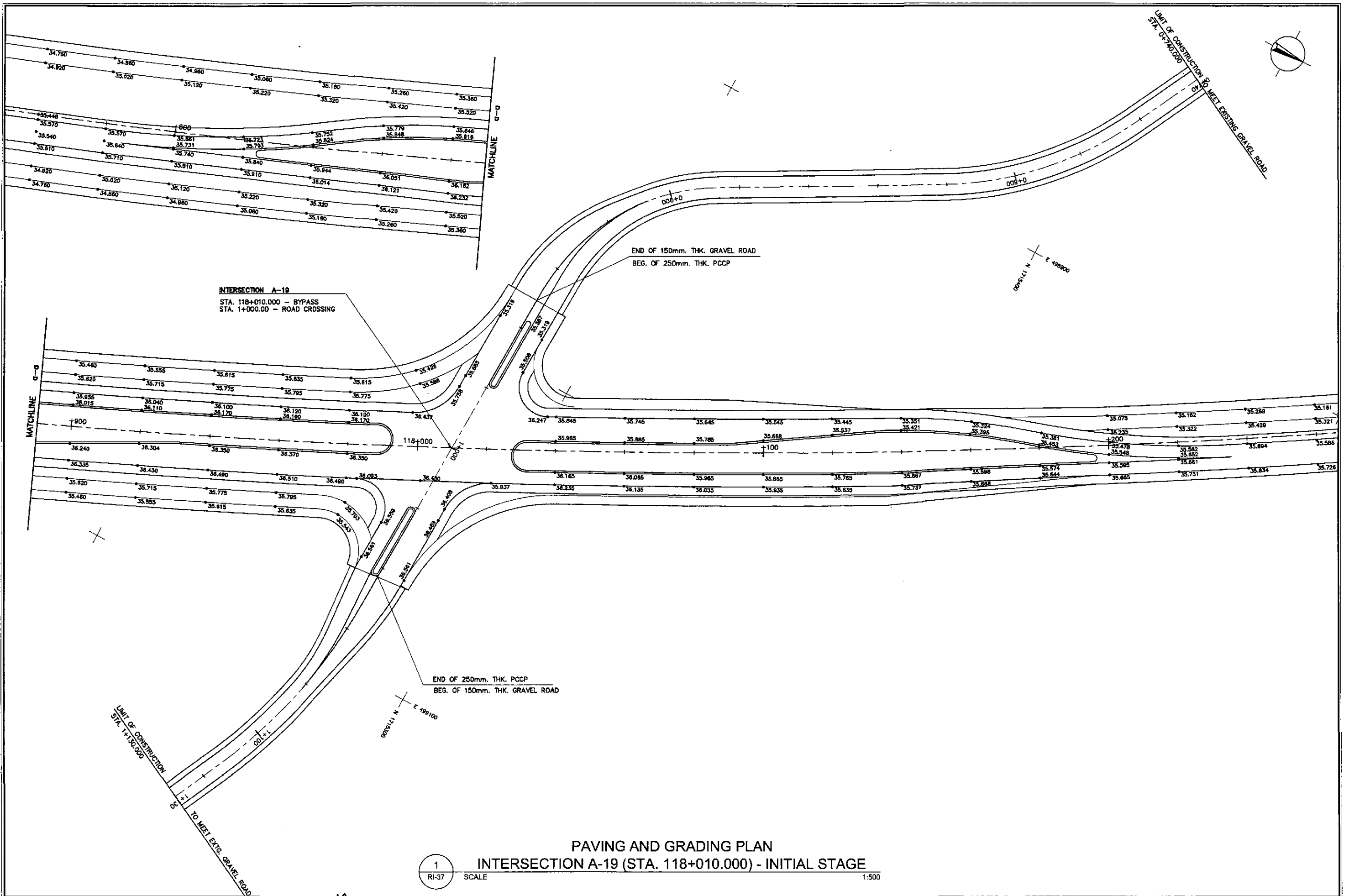
TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
1	1715073.95	499124.63	CENTER OF TWO LANE PAVEMENT
2	1715110.503	499108.546	CENTER OF MEDIAN RADIUS 1.00
3	1715112.472	499113.143	EDGE OF 3.50m WIDE PAVEMENT
4	1715168.442	499091.035	END OF TRANSITION
5	1715187.155	499087.778	BEG. OF TAPER
6	1715206.964	499066.267	END OF TAPER/BEG. OF STORAGE
7	1715256.034	499033.303	BEG. OF MEDIAN RADIUS 4.50
8	1715259.952	499041.406	END OF MEDIAN RADIUS 4.50
9	1715258.159	499050.042	BEG. OF RADIUS 8.50
10	1715270.339	499057.954	END OF RADIUS 8.50
11	1715252.793	499062.862	BEG. OF CORNER RADIUS 12
12	1715269.916	499072.805	END OF CORNER RADIUS 12
13	1715271.331	499091.776	BEG. OF RADIUS 49.849
14	1715269.944	499110.167	INTERSECTION OF RADIUS 61.805 & 146.95
15	1715255.502	499155.732	LIMIT OF CONSTRUCTION
16	1715272.917	499110.848	CENTERLINE INTERSECTION OF PAVEMENT W/ RADIUS 87.995 & 150
17	1715276.951	499071.137	END OF MEDIAN RADIUS 1.25
18	1715277.544	499051.145	END OF MEDIAN RADIUS 1.25
19	1715275.045	499051.071	END OF MEDIAN RADIUS
20	1715274.458	499071.229	END OF MEDIAN RADIUS 1.25/BEG. OF TRANSITION
21	1715275.076	499007.961	BEG. OF RADIUS 87.995
22	1715275.890	499111.529	BEG. OF TAPER, LANE WIDTH 3.05m
23	1715283.948	499071.344	END OF TAPER, PAVEMENT WIDTH 7.00m
24	1715284.701	499045.932	BEG. OF CORNER RADIUS 15
25	1715292.985	499032.961	END OF CORNER RADIUS 15

TABLE OF COORDINATES			
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
26	1715296.443	499017.233	BEG. OF MEDIAN RADIUS 4.50
27	1715300.501	499025.266	END OF MEDIAN RADIUS 4.50
28	1715392.143	498976.565	EDGE OF 3.50m PAVEMENT
29	1715393.85	498979.821	EDGE OF 3.50m PAVEMENT
30	1715445.446	498948.558	EDGE OF 3.50m PAVEMENT
31	1715443.047	498944.188	CENTER OF MEDIAN RADIUS 1.00
32	1715478.023	498924.894	CENTER OF TWO LANE PAVEMENT
33	1715476.197	498921.909	EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE/BEG. OF TRANSITION RADIUS 236.50
34	1715422.981	498946.016	INTERSECTION OF TRANSITION RADIUS 236.50 & 202.83
35	1715436.808	498933.915	EDGE OF 4.00m WIDE FRONTAGE ROAD
36	1715413.99	498946.387	INTERSECTION OF EDGE OF FRONTAGE ROAD & SHOULDER
37	1715384.344	498962.595	EDGE OF 3.50m WIDE PAVEMENT/END OF TRANSITION RADIUS 202.83
38	1715386.05	498965.651	BEG. OF TAPER, LANE WIDTH 3.50m
39	1715348.313	498990.264	END OF TAPER/BEG. OF STORAGE
40	1715298.393	499008.398	BEG. OF CORNER RADIUS 8.50
41	1715286.047	499000.568	END OF CORNER RADIUS 8.50
42	1715286.64	498980.553	LIMIT OF 2.50m WIDE SHOULDER
43	1715286.931	498970.742	BEG. OF TAPER W/ RADIUS 48.87, LANE WIDTH 4.50m
44	1715312.058	498929.464	END OF TAPER, LANE WIDTH 3.05m
45	1715417.792	498833.871	LIMIT OF CONSTRUCTION
46	1715294.488	498939.813	CENTERLINE INTERSECTION OF RADIUS 49 & 60
47	1715280.682	498987.509	CENTER OF MEDIAN RADIUS 0.75
48	1715278.839	499007.463	END OF MEDIAN RADIUS 1.25
49	1715281.338	499007.537	END OF MEDIAN RADIUS 1.25
50	1715282.434	498970.571	BEG. OF RADIUS 49/END OF 4.50m LANE
51	1715292.189	498937.808	BEG. OF TAPER W/ RADIUS 63.05, LANE WIDTH 3.05m
52	1715286.058	498944.837	BEG. OF CORNER RADIUS 54.38
53	1715272.859	498980.139	END OF TAPER, PAVEMENT WIDTH 7.00m/INTERSECTION OF RADIUS 54.38 & 50
54	1715244.302	499024.803	END OF CORNER RADIUS 50
55	1715271.676	499012.864	BEG. OF RADIUS 15
56	1715263.265	499025.898	END OF RADIUS 15
57	1715180.792	499073.098	BEG. OF TRANSITION RADIUS 202.835
58	1715124.157	499083.726	INTERSECTION OF TRANSITION RADIUS 202.835 & 236.50
59	1715072.688	499121.366	END OF TRANSITION RADIUS 236.50/EDGE OF PAVEMENT 1.50m FROM THE CENTERLINE

1
RI-36
SCALE 1:500

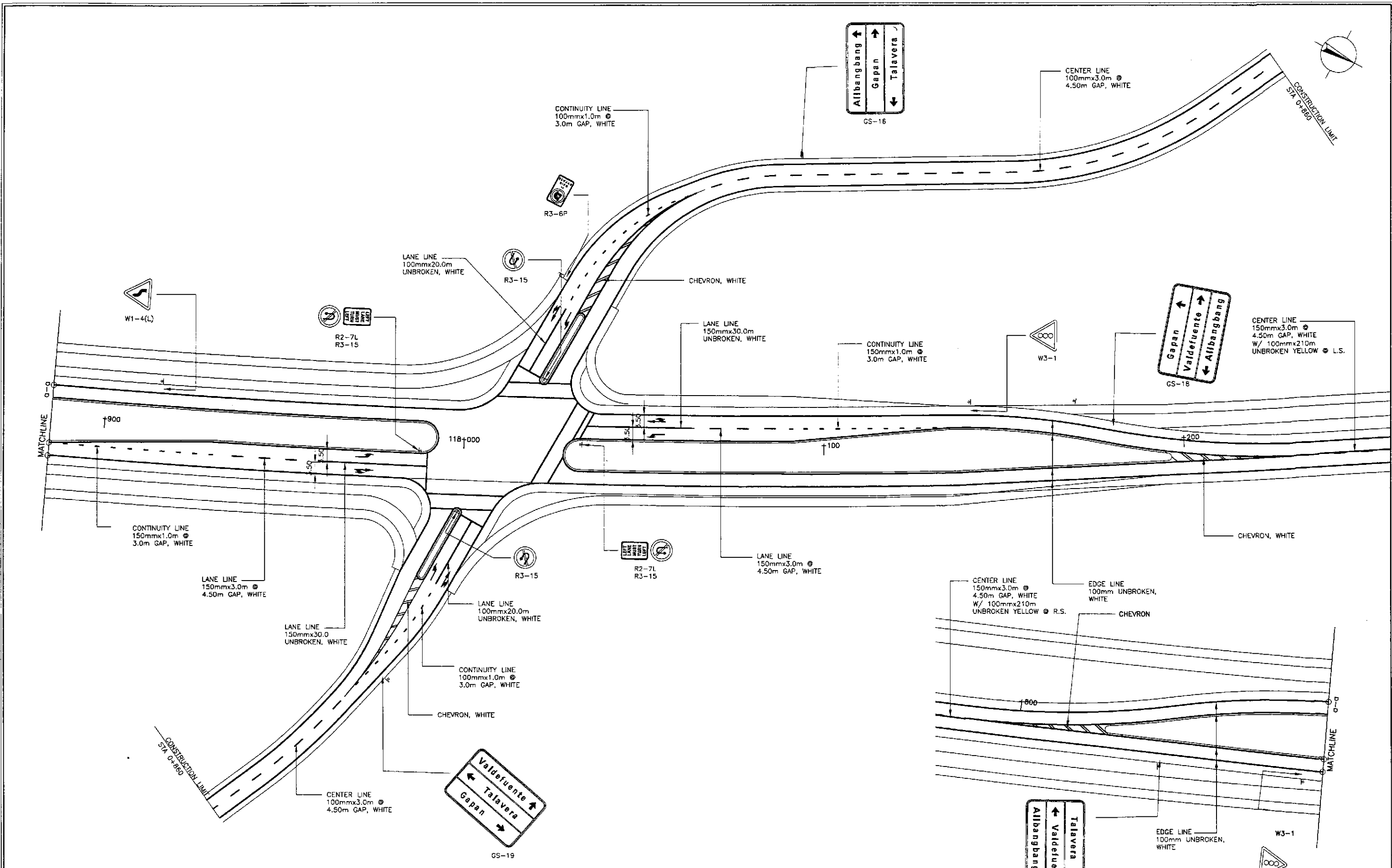
GEOMETRIC DESIGN LAYOUT
INTERSECTION A-19 (STA. 118+010.000) - INITIAL STAGE

	DESIGNED: 10/14/02 CHECKED: 10/14/02 SUBMITTED: 10/14/02	DATE: 10/14/02 SIGNATURE: [Signature] TEAM LEADER		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION: THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE: 1:500 FULL SIZE A1	SHEET CONTENTS: INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-19 (INITIAL STAGE)	SHEET NO.: RI-36
	BUREAU OF DESIGN Submitted By: DANILO C. TRAJANO, Project Director Reviewed By: JOSEFINA M. ALAGAR, Chief, Highways Division Recommended By: GILBERTO S. REYES, D.C., Director IV Office of the Secretary Recommended By: MANUEL M. BONDAN, Undersecretary Approved By: SIMEDIN A. DATUMANONG, Secretary				PROJECT AND LOCATION: (repeated)	SCALE: (repeated)	SHEET CONTENTS: (repeated)	SHEET NO.: (repeated)
	JICA JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL YACHYO ENGINEERING CO., LTD.				DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION: (repeated)	SCALE: (repeated)	SHEET CONTENTS: (repeated)



1 INTERSECTION A-19 (STA. 118+010.000) - INITIAL STAGE 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	10/16/02	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	Approved By:	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Pilaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	1:500	INTERSECTION DETAIL PAVING AND GRADING PLAN INTERSECTION A-19 (INITIAL STAGE)	RI-37
	SUBMITTED	10/18/02	<i>[Signature]</i>		DANILO C. TRAJANO Project Director	JOSEFINA M. ALACAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONDAN Undersecretary				



TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT
 INTERSECTION A-19 (STA. 118+010.000) - INITIAL STAGE

1
 RI-38

SCALE

1:500

JICA
 JAPAN INTERNATIONAL COOPERATION AGENCY

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

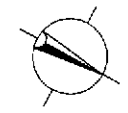
DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			
CHECKED	10/16/02	<i>S. Lim</i>	BUREAU OF DESIGN		OFFICE OF THE SECRETARY	
SUBMITTED	10/18/02	<i>M. R. Lopez</i>	Submitted By:	Reviewed By:	Recommended By:	Approved By:
			DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES D.C. Director IV	MANUEL M. BONDAN Undersecretary
					MANUEL A. DATUMANONG Secretary	

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

SCALE :
 1:500
 FULL SIZE A1

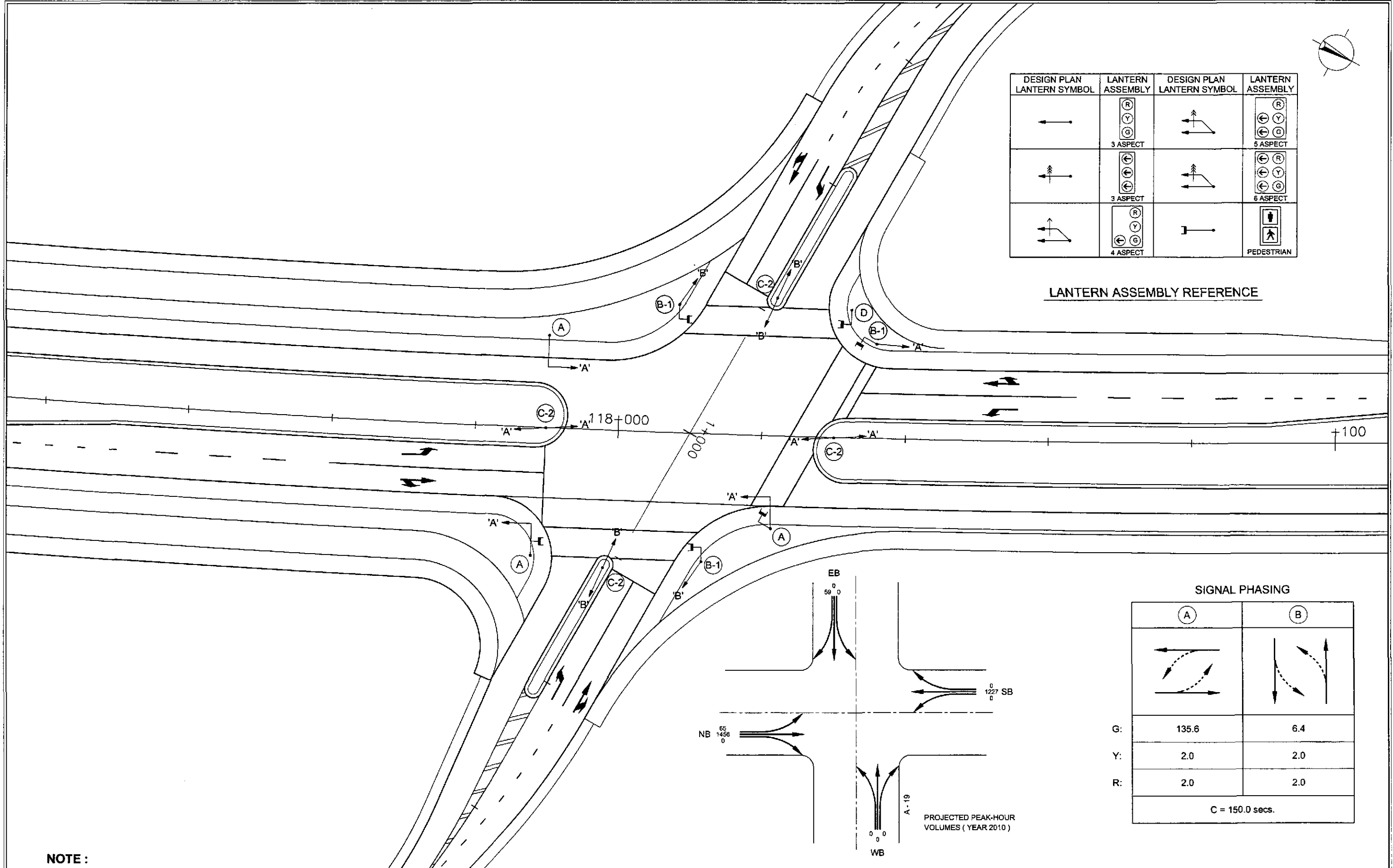
SHEET CONTENTS :
 TRAFFIC SIGNS AND PAVEMENT
 MARKINGS LAYOUT
 INTERSECTION A-19 (INITIAL STAGE)

SHEET NO. :
 RI-38



DESIGN PLAN LANTERN SYMBOL	LANTERN ASSEMBLY	DESIGN PLAN LANTERN SYMBOL	LANTERN ASSEMBLY
	 3 ASPECT		 5 ASPECT
	 3 ASPECT		 6 ASPECT
	 4 ASPECT		 PEDESTRIAN

LANTERN ASSEMBLY REFERENCE



SIGNAL PHASING

	A	B
G:	135.6	6.4
Y:	2.0	2.0
R:	2.0	2.0
C = 150.0 secs.		

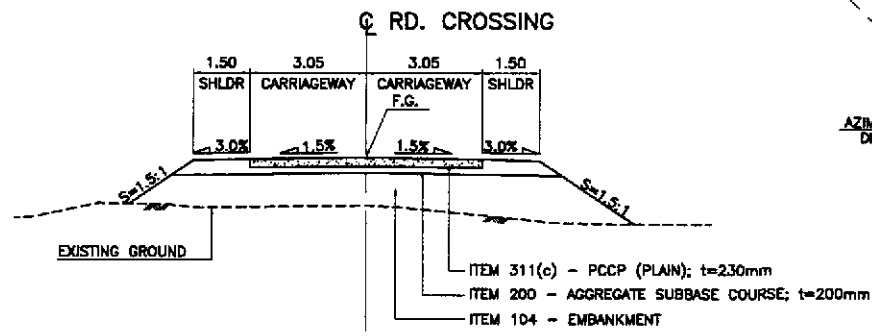
NOTE :
ENCIRCLED FIGURES (I.E., A, B-1, ETC.)
INDICATE TRAFFIC SIGNAL POST TYPE

1 INTERSECTION A-19 (STA. 118+010.000) - INITIAL STAGE
RI-39 SCALE 1:250

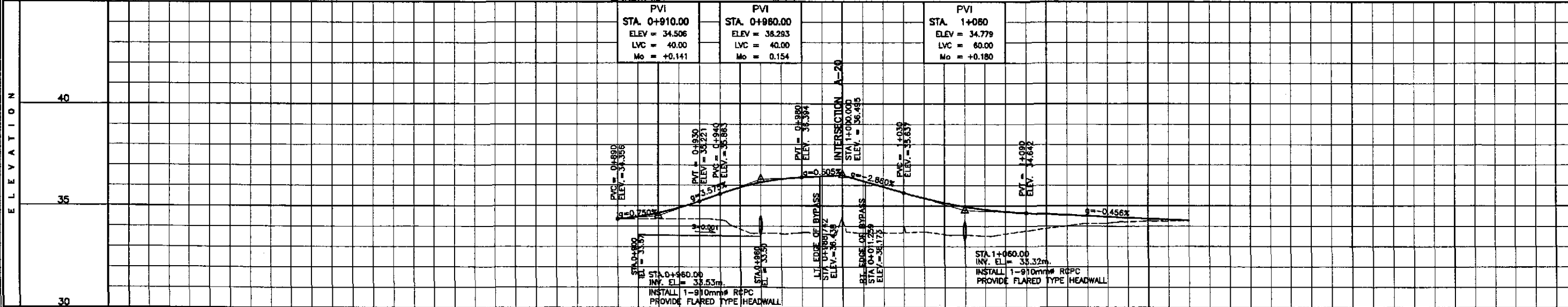
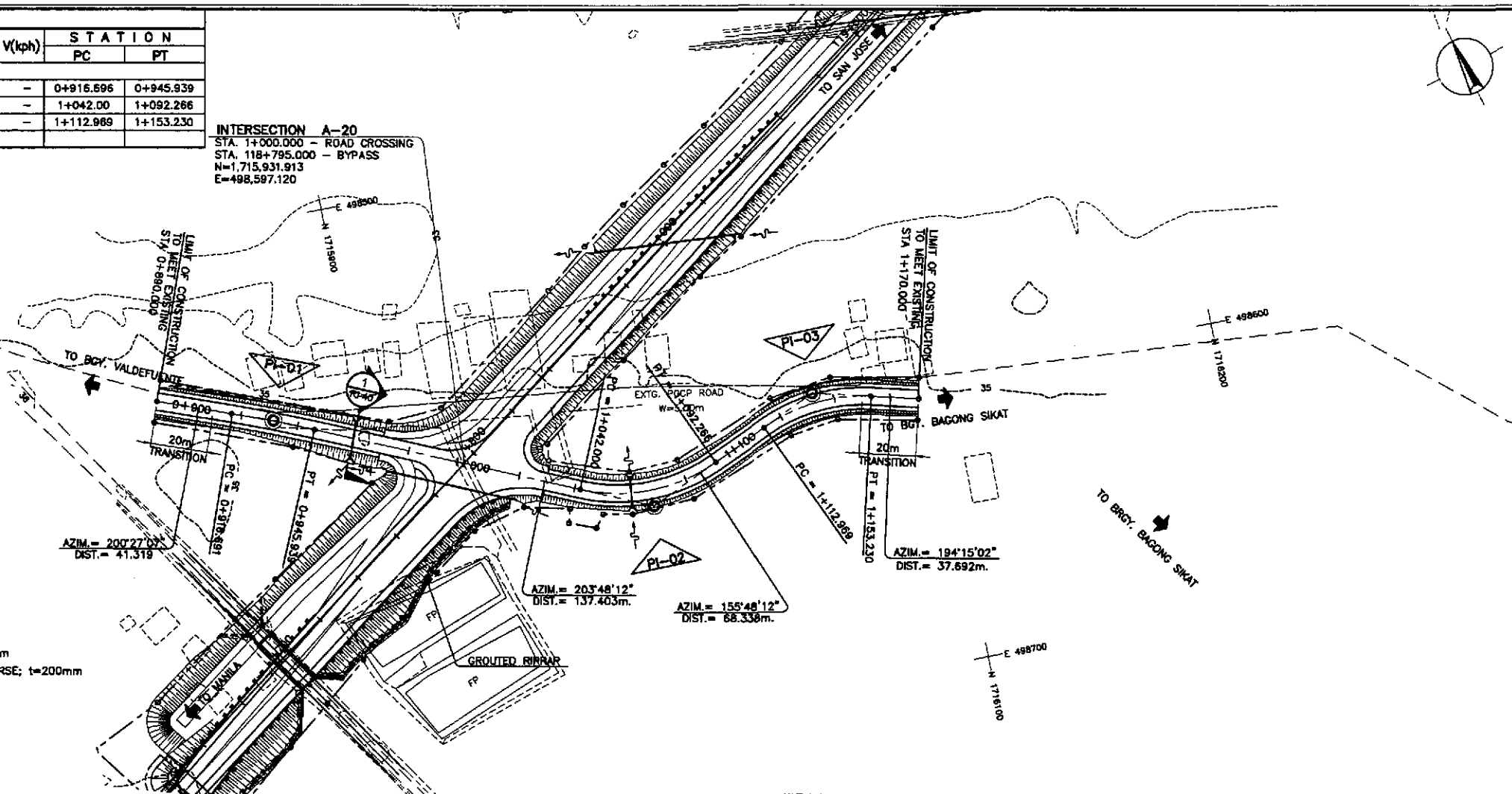
		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS		PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : 1:250 FULL SIZE A1	SHEET CONTENTS : TRAFFIC SIGNAL LIGHT LAYOUT INTERSECTION A-19 (INITIAL STAGE)	SHEET NO. : RI-39	
	DESIGNED: 10/14/02 CHECKED: 10/16/02 SUBMITTED: 10/18/02	SIGNATURE: [Signatures] Submitted By: [Name] Reviewed By: [Name] Recommended By: [Name] Recommended By: [Name] Approved By: [Name]	FJHL - PMO BUREAU OF DESIGN DANIL C. TRAJANO Project Director	OFFICE OF THE SECRETARY (See cover sheet for Signature/Approval) MANUEL M. BONDAN Undersecretary SIMEON A. DATUMANONG Secretary				
	JICA JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS YEO YACHIYO ENGINEERING CO., LTD.							

ELEMENTS OF CURVE												
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	V(kph)	STATION	
		NORTHING	EASTING								PC	PT
PI-00	0+890.000	1,715,830.352	498,554.960								BEGINNING OF INTERSECTION A-20	
PI-01	0+931.319	1,715,869.067	498,569.397	03°21'06"	500	14.628	29.248	0.214	-	-	0+916.696	0+945.939
PI-02	1+068.714	1,715,994.782	498,624.853	48°00'00"	60	28.714	50.265	5.678	-	-	1+042.000	1+092.266
PI-03	1+133.890	1,716,057.116	498,596.843	38°26'50"	60	20.922	40.262	3.543	-	-	1+112.969	1+153.230
PI-04	1+170.000	1,716,093.648	498,606.122								END OF INTERSECTION A-20	

INTERSECTION A-20
 STA. 1+000.000 - ROAD CROSSING
 STA. 118+795.000 - BYPASS
 N=1,715,931.913
 E=498,597.120



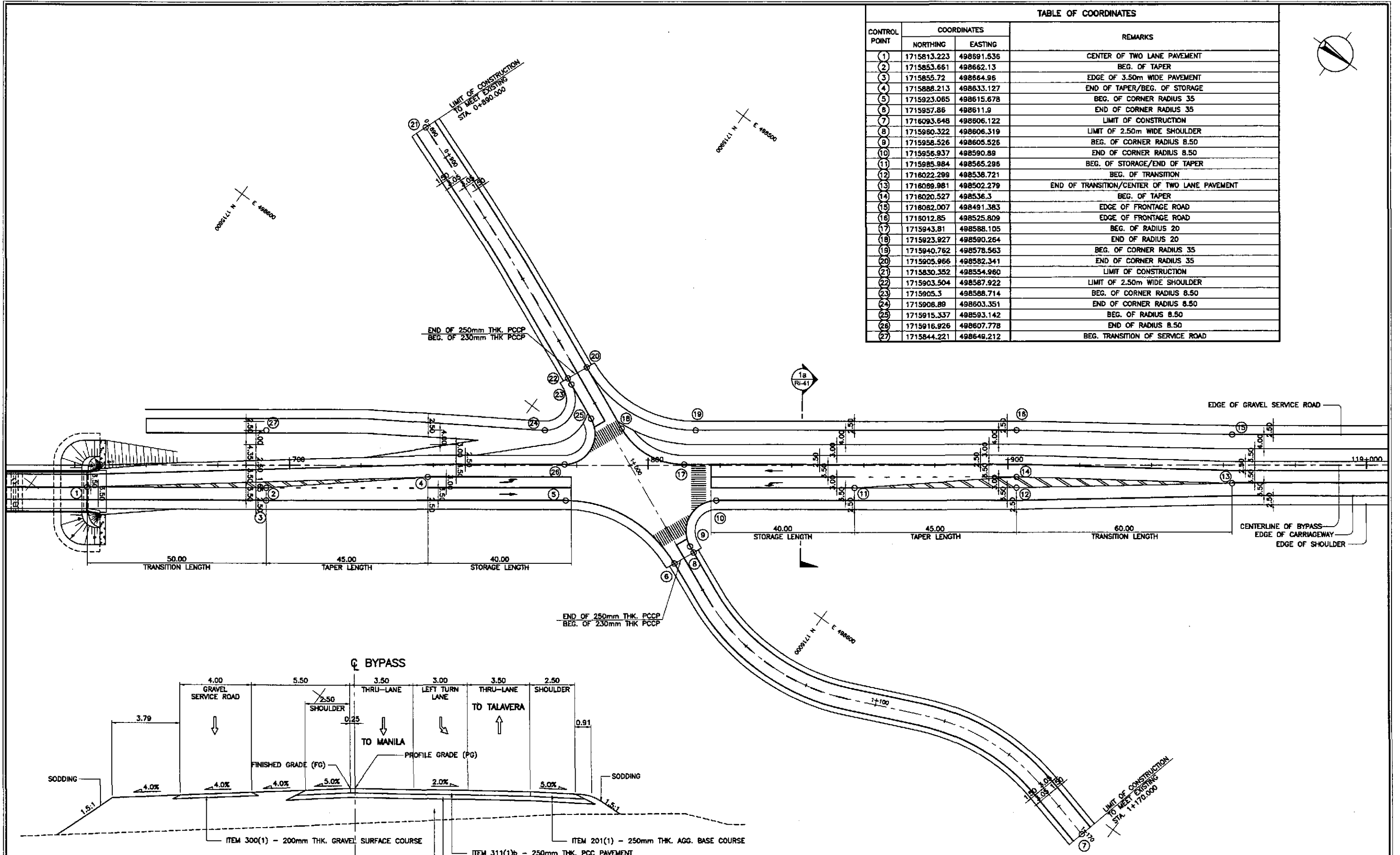
1 SECTION
 RI-40 SCALE 1:100



STATION	+800	+900	+1000	+100
FINISHED PROFILE GRADE BYPASS				
EXISTING GROUND BYPASS				
HORIZONTAL CURVATURE				
VERTICAL CURVATURE				
SUPERELEVATION				

	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION : THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN, CROSS-SECTION AND PROFILE INTERSECTION A-20 STA. 0+890 - STA 1+170	SHEET NO. : RI-40
	CHECKED	DATE	SIGNATURE					

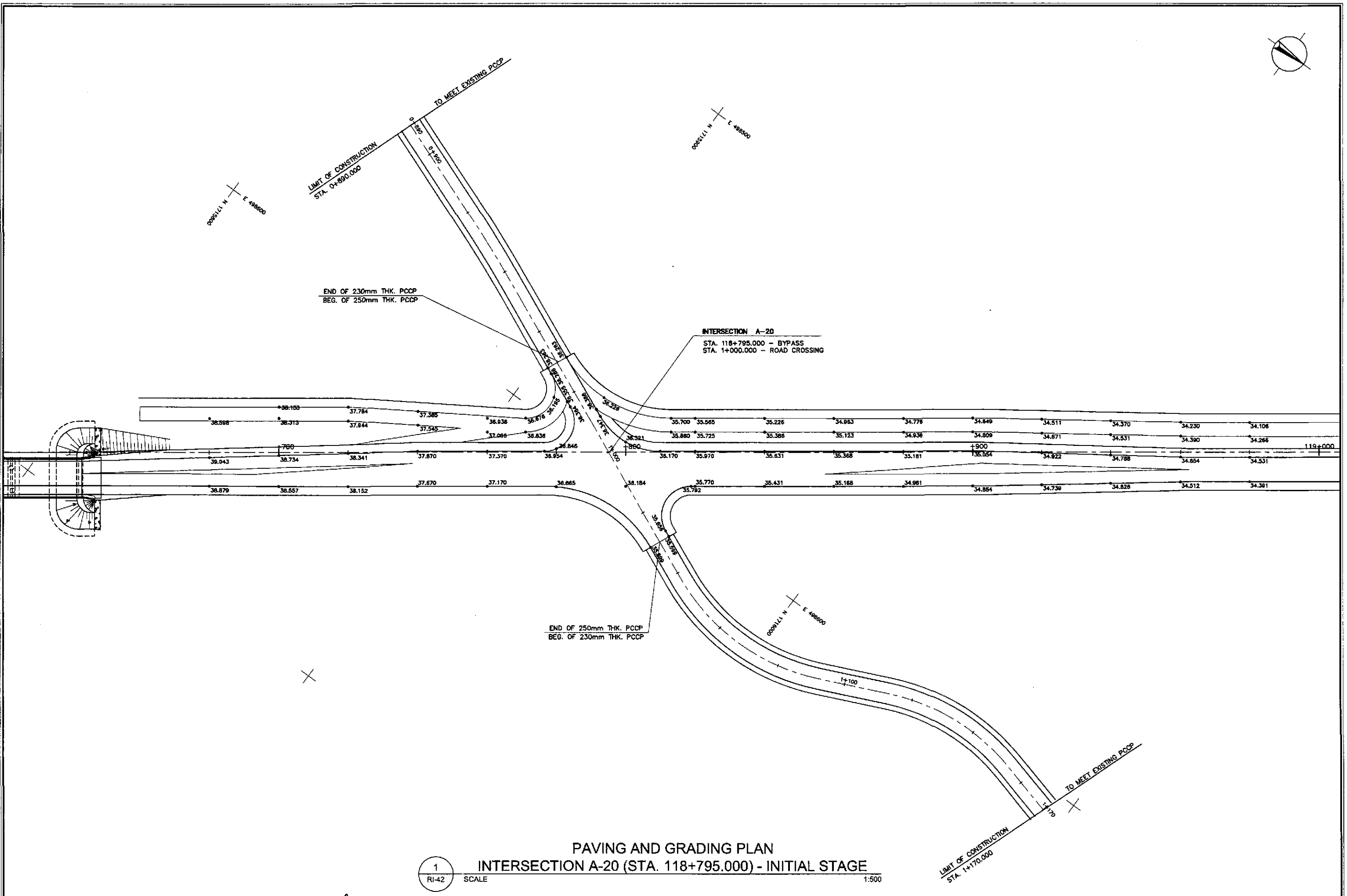
CONTROL POINT	COORDINATES		REMARKS
	NORTHING	EASTING	
1	1715813.223	498691.536	CENTER OF TWO LANE PAVEMENT
2	1715853.661	498662.13	BEG. OF TAPER
3	1715855.72	498664.96	EDGE OF 3.50m WIDE PAVEMENT
4	1715888.213	498633.127	END OF TAPER/BEG. OF STORAGE
5	1715923.085	498615.678	BEG. OF CORNER RADIUS 35
6	1715957.86	498611.9	END OF CORNER RADIUS 35
7	1716093.648	498606.122	LIMIT OF CONSTRUCTION
8	1715960.322	498606.319	LIMIT OF 2.50m WIDE SHOULDER
9	1715958.526	498605.526	BEG. OF CORNER RADIUS 8.50
10	1715956.937	498590.89	END OF CORNER RADIUS 8.50
11	1715985.984	498565.296	BEG. OF STORAGE/END OF TAPER
12	1716022.299	498536.721	BEG. OF TRANSITION
13	1716099.981	498502.279	END OF TRANSITION/CENTER OF TWO LANE PAVEMENT
14	1716020.527	498536.3	BEG. OF TAPER
15	1716082.007	498491.383	EDGE OF FRONTAGE ROAD
16	1716012.85	498525.809	EDGE OF FRONTAGE ROAD
17	1715943.81	498588.105	BEG. OF RADIUS 20
18	1715923.927	498590.264	END OF RADIUS 20
19	1715940.762	498578.563	BEG. OF CORNER RADIUS 35
20	1715905.966	498582.341	END OF CORNER RADIUS 35
21	1715830.352	498554.960	LIMIT OF CONSTRUCTION
22	1715903.504	498587.922	LIMIT OF 2.50m WIDE SHOULDER
23	1715905.3	498588.714	BEG. OF CORNER RADIUS 8.50
24	1715906.88	498603.351	END OF CORNER RADIUS 8.50
25	1715915.337	498593.142	BEG. OF RADIUS 8.50
26	1715916.926	498607.778	END OF RADIUS 8.50
27	1715844.221	498649.212	BEG. TRANSITION OF SERVICE ROAD



1a SECTION
RI-41 SCALE 1:100

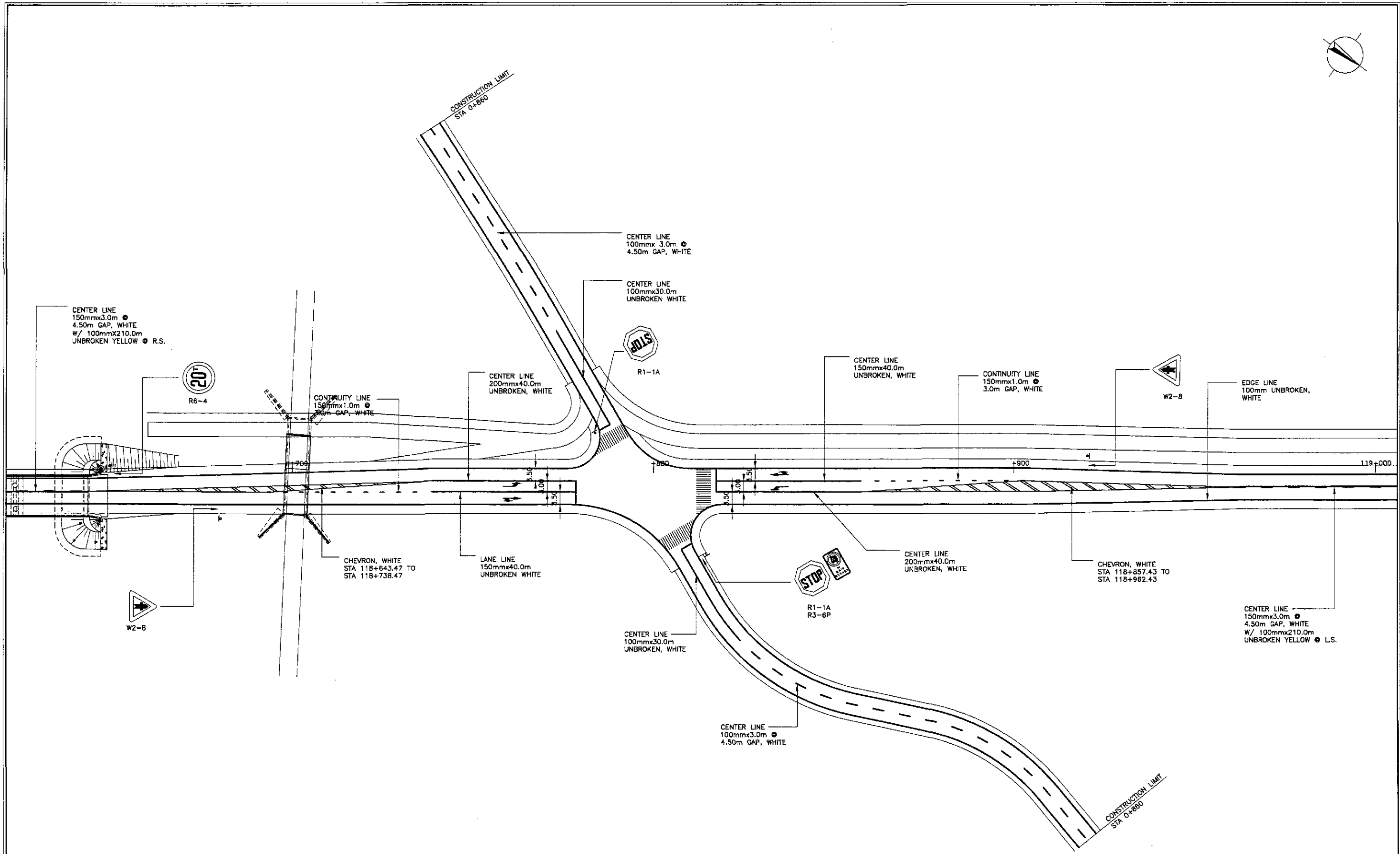
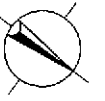
1 GEOMETRIC DESIGN LAYOUT
RI-41 SCALE 1:500
INTERSECTION A-20 (STA. 118+795.000) - INITIAL STAGE

	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	DESIGNED	<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)	1:500	INTERSECTION DETAIL GEOMETRIC DESIGN LAYOUT INTERSECTION A-20 (INITIAL STAGE)	RI-41
	CHECKED	<i>[Signature]</i>	Submitted By:	Reviewed By:	Recommended By:	CABANATUAN BYPASS - CONTRACT PACKAGE II	FULL SIZE A1		
SUBMITTED	<i>[Signature]</i>	DANILO C. TRAHANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES Dir. Director IV	MANUEL M. BONDAN Undersecretary	SIMON A. DATUMANONG Secretary			



1
PAVING AND GRADING PLAN
INTERSECTION A-20 (STA. 118+795.000) - INITIAL STAGE
 SCALE 1:500

		DATE 10/11/02	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) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : 1:500 FULL SIZE A1	SHEET CONTENTS : INTERSECTION DETAIL PAVING AND GRADING PLAN INTERSECTION A-20 (INITIAL STAGE)	SHEET NO. : RI-42	
	DESIGNED 10/11/02	CHECKED 10/16/02	SUBMITTED 10/20/02	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: SIMEON A. DATUMANONG Secretary	
	PJHL - PMO BUREAU OF DESIGN OFFICE OF THE SECRETARY								



1
TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT
INTERSECTION A-20 (STA. 118+795.000) - INITIAL STAGE
 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) CABANATUAN BYPASS - CONTRACT PACKAGE II	SCALE : 1:500 FULL SIZE A1	SHEET CONTENTS : TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT INTERSECTION A-20 (INITIAL STAGE)	SHEET NO. : RI-43	
	DESIGNED: 10/14/02 CHECKED: 10/16/02 SUBMITTED: 10/17/02	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		
	DATE: 10/14/02 SIGNATURE: <i>S. Luna</i> S. LUNA TEAM LEADER	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		