

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

**DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REPUBLIC OF THE PHILIPPINES**

**THE DETAILED DESIGN STUDY
ON
UPGRADING INTER-URBAN HIGHWAY SYSTEM
ALONG THE PAN-PHILIPPINE HIGHWAY
(PLARIDEL, CABANATUAN AND SAN JOSE BYPASSES)**

FINAL REPORT

**PLARIDEL BYPASS - CONTRACT PACKAGE III
(ULTIMATE STAGE)
STA. 47+400.000 TO STA. 49+625.000**



December 2002

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

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GENERAL

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<p style="text-align: center;">JAPAN INTERNATIONAL COOPERATION AGENCY</p> <p style="text-align: center;">KATAHIRA & ENGINEERS INTERNATIONAL yeo YACHIYO ENGINEERING CO., LTD.</p>	DATE	SIGNATURE	<p style="text-align: center;">REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :				SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	9/25/08		ACACIO	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)				FULL SIZE A1	INDEX OF DRAWINGS (ULTIMATE STAGE) Sheet 1 of 3	GP-01
	CHECKED	9/27/08		GOSE	BUREAU OF DESIGN OFFICE OF THE SECRETARY						
SUBMITTED	9/30/08	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. BONCAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary				

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THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY PLARIDEL BYPASS - PACKAGE III (ULTIMATE STAGE)

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	LAYOUT AND DIMENSIONS				
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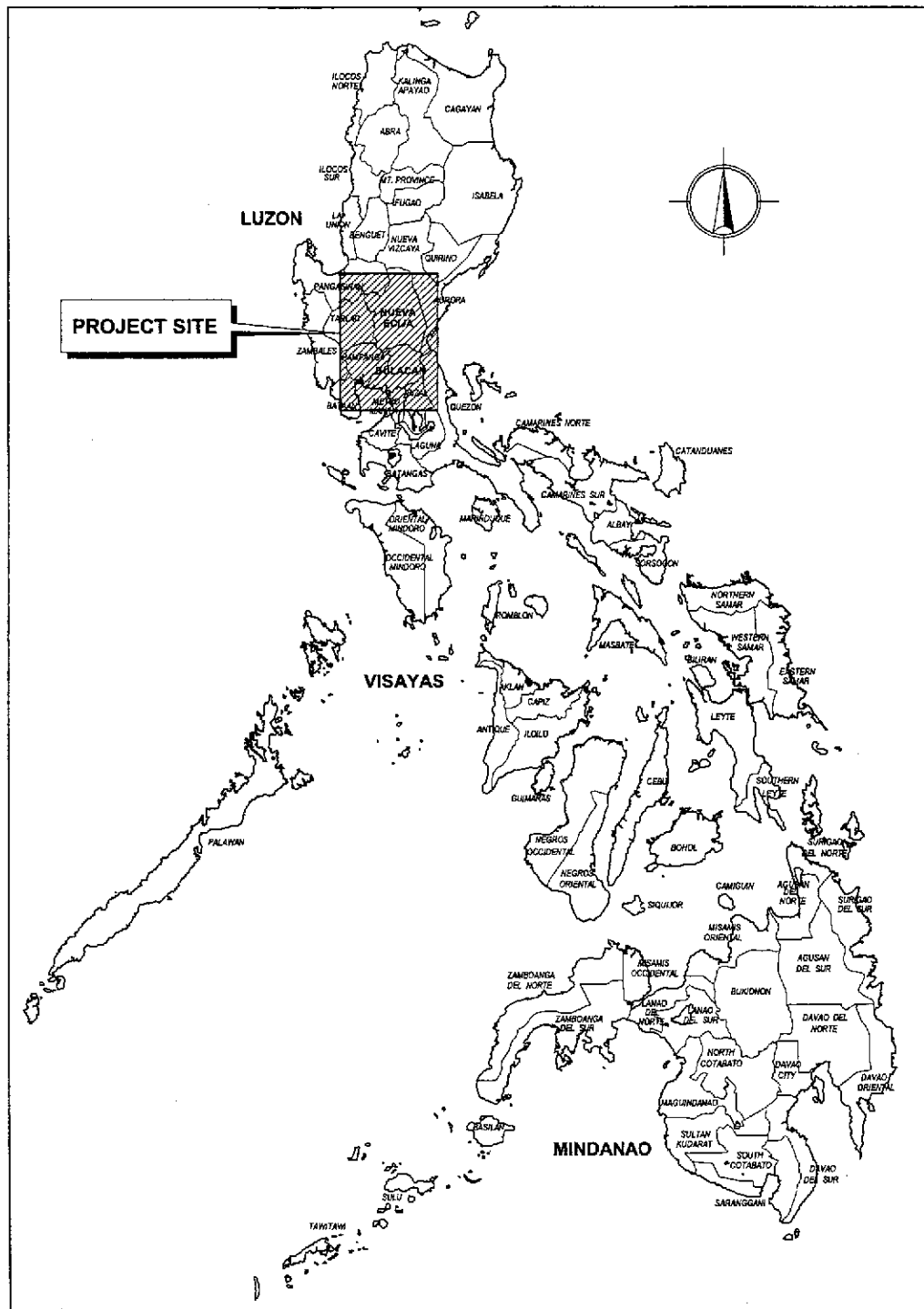
JICA JAPAN INTERNATIONAL COOPERATION AGENCY		DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :			
	DESIGNED	7/2/02	<i>[Signature]</i>			BUREAU OF DESIGN	OFFICE OF THE SECRETARY	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	FULL SIZE A1	INDEX OF DRAWINGS (ULTIMATE STAGE) Sheet 2 of 3	GP-02
	CHECKED	7/2/02	<i>[Signature]</i>			Submitted By: DANILLO C. TRAJAND Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	PLARIDEL BYPASS - CONTRACT PACKAGE III			

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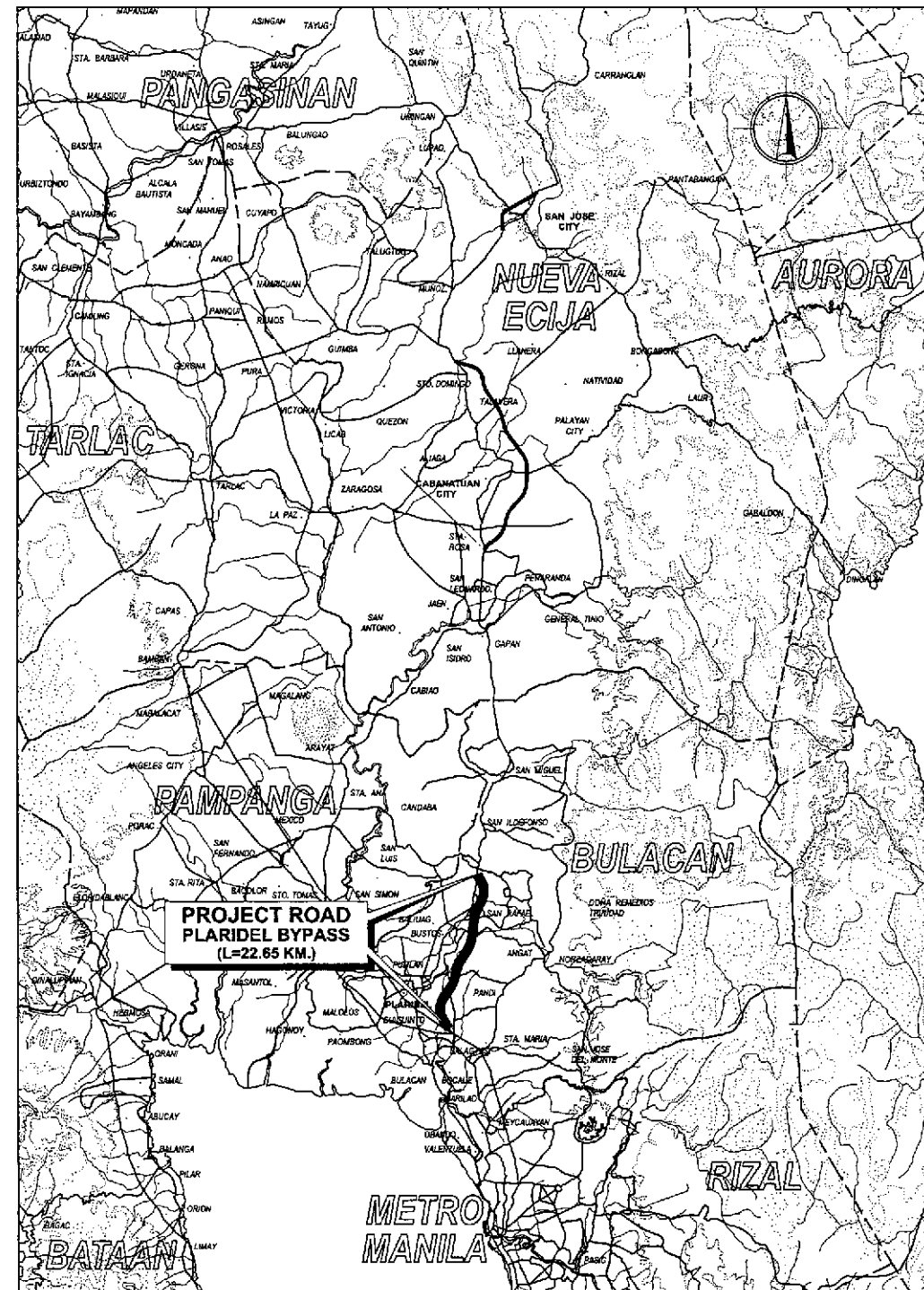
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SHEET NO.	TITLE OF DRAWING	SHEET NO.	TITLE OF DRAWING	SHEET NO.	TITLE OF DRAWING
	<p>BRIDGE NO. 9 (STA. 49+355.321 - STA. 49+396.181)</p> <p>GENERAL</p> <p>BG-01 BRIDGE LOCATION MAP</p> <p>BG-02 GENERAL NOTES FOR BRIDGES (1 OF 2)</p> <p>BG-03 GENERAL NOTES FOR BRIDGES (2 OF 2)</p> <p>BG-04 SUMMARY OF QUANTITIES</p> <p>MAIN BRIDGE</p> <p>B9-01 GENERAL PLAN</p> <p>B9-02 GENERAL ELEVATION & SECTIONS</p> <p>B9-03 DECK FRAMING PLAN AND SECTIONS</p> <p>B9-04 AASHTO TYPE VI GIRDER (MODIFIED)</p> <p>B9-05 CONC.PUMPING SEQUENCE AN DIAPHRAGM DETAILS</p> <p>B9-06 ABUT A1 & A2 MAINWALL REINF. DETAILS</p> <p>B9-07 ABUT A1 & A2 WINGWALL REINF. DETAILS</p> <p>B9-08 APPROACH SLAB PLAN, SECTIONS AND DETAILS</p> <p>B9-09 SHEAR KEY & RISER DETAILS</p> <p>B9-10 ABUT. PROTECTION AND WIDE DRAIN DETAILS</p> <p>MAIN BRIDGE</p> <p>BS-01 TYPICAL BERARING PAD EXP. JT. BEARING SLEEVE & ANCHOR BAR</p> <p>BS-02 TYPICAL PSCG SIDEWALK, RAILING AND DRAIN DETAILS</p> <p>BS-03 TYPICAL REINFORCED CONC. PIPE DETAILS</p> <p>ELECTRICAL</p> <p>ELECTRICAL STANDARD DRAWINGS AND DETAILS</p> <p>ES-01 NOTES & LEGENDS, SCHEMATIC CONTROL DIAG. & DUCT SECTION</p> <p>ES-02 SERVICE POLE DETAILS</p> <p>ES-03 STREET LIGHT POLE DETAILS</p> <p>ROADWAY LIGHTING LAYOUT FOR INTERSECTION</p> <p>EI-01 LAYOUT PLAN AND LOAD SCHEDULE INTERSECTION A-17</p> <p>EI-02 LIGHTING LAYOUT, LOAD SCHEDULE & LIGHTING FIXTURE SCHEDULE</p> <p>ROADWAY LIGHTING LAYOUT FOR BRIDGE</p> <p>EB-01 NOTES, LEGENDS AND LOAD SCHEDULE</p> <p>EB-02 LIGHT POST LAYOUT PLAN</p> <p>ENGR'S FIELD OFFICE & LIVING QUARTERS</p> <p>ARCHITECTURAL</p> <p>FA-01 PERSPECTIVE AND TABLE OF CONTENTS</p> <p>FA-02 ENGR'S FIELD OFFICE - FLOOR PLAN, ELEVATIONS, CROSS-SECTION AND REFLECTED CEILING PLAN</p>				
		<p>FA-03 ENGR'S LIVING QTRS - FLOOR PLAN, ELEVATIONS, CROSS-SECTION AND REFLECTED CEILING PLAN</p> <p>FA-04 ENGR'S FIELD OFFICE - DET. CROSS-SECTION AND SCHE. OF DOORS & WINDOWS</p> <p>FA-05 ENGR'S LIVING QTRS - DET. CROSS-SECTION AND SCHE. OF DOORS & WINDOWS</p> <p>FA-06 FOUNDATION PLAN, R.C. RAMP DETAIL, DET. OF F-1, P-1 & DESIGN CRITERIA</p> <p>FA-07 ENGR'S FIELD OFFICE - FRONT & RIGHT SIDE ELEVATION OF STEEL STUD FRAMES AND FRAMES SCHEMATIC DIAGRAMS</p> <p>FA-08 ENGR'S LIVING QTRS - FRONT & RIGHT SIDE ELEVATION OF STEEL STUD FRAMES AND FRAMES SCHEMATIC DIAGRAMS</p> <p>FA-09 ENGR'S FIELD OFFICE - REAR & LEFT SIDE ELEVATION OF STEEL STUD FRAMES AND FRAMES SCHEMATIC DIAGRAMS</p> <p>FA-10 ENGR'S LIVING QTRS - REAR & LEFT SIDE ELEVATION OF STEEL STUD FRAMES AND FRAMES SCHEMATIC DIAGRAMS</p> <p>FA-11 DETAIL CONNECTIONS, DETAILS 1 TO 15</p> <p>FA-12 ROOF FRAMING PLAN, SCHEMATIC DIAGRAM, PURLIN CONNECTION AND CROSS BRACING CONNECTION</p> <p>ELECTRICAL</p> <p>FE-01 ENGR'S FIELD OFFICE - LIGHTING LAYOUT, POWER LAYOUT & ELECTRICAL SYMBOLS AND GENERAL NOTES</p> <p>FE-02 ENGR'S LIVING QTRS - LIGHTING LAYOUT, POWER LAYOUT & ELECTRICAL SYMBOLS AND GENERAL NOTES</p> <p>FE-03 SCHEDULE OF LOADS & COMPUTATIONS & ELECTRICAL RISER DIAGRAM</p> <p>PLUMBING</p> <p>FP-01 SEWER AND WATER LINE LAYOUT AND ISOMETRIC DIAGRAM</p> <p>FP-02 SEPTIC TANK DETAILS</p> <p>EXTERNAL</p> <p>FX-01 PLOT PLAN, ELEVATION OF FENCE & GATE & FOUNDATION DETAIL</p>			

		DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS				PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	9/25/02	<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) PLARIDEL BYPASS - CONTRACT PACKAGE III	FULL SIZE A1	INDEX OF DRAWINGS (ULTIMATE STAGE) Sheet 3 of 3	GP-03
	CHECKED	9/27/02	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	Approved By:					
	SUBMITTED	9/30/02	<i>[Signature]</i>		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				



2 KEY MAP
GP-04 NOT TO SCALE



1 VICINITY MAP
GP-04 NOT TO SCALE

	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>	PROJECT AND LOCATION :		SCALE :	SHEET CONTENTS :	SHEET NO. :	
	CHECKED	9/27/06	<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)		NOT TO SCALE	KEY AND VICINITY MAP	GP-04
	SUBMITTED	9/30/06	<i>[Signature]</i>		Reviewed By:	PLARIDEL BYPASS - CONTRACT PACKAGE III		FULL SIZE A1		
				Project Director	Chief, Highways Division	O/C, Director IV	Undersecretary	Secretary		





LEGEND AND SYMBOLS

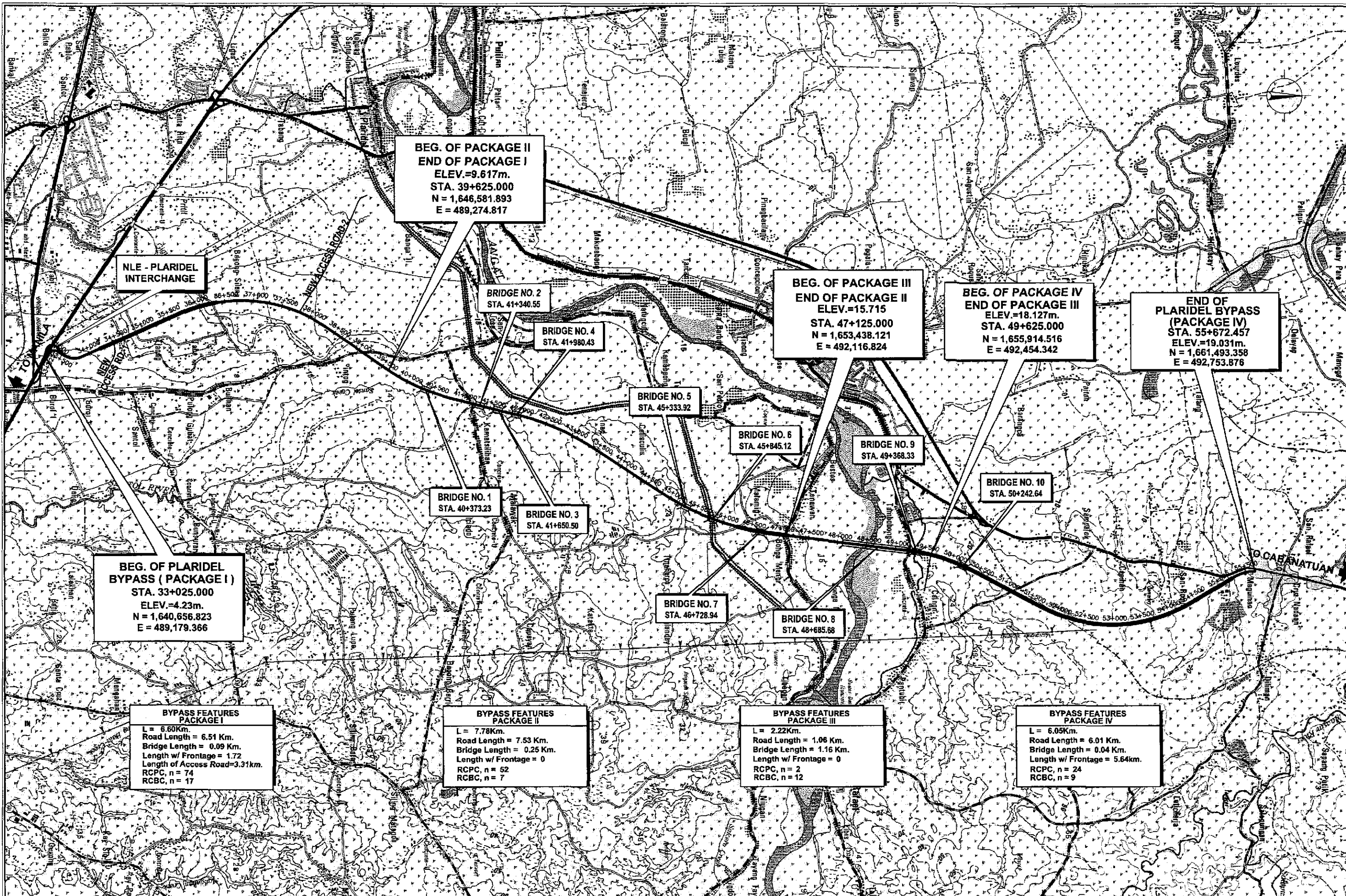
EXISTING FEATURES	
ROAD	
CONTOUR	
ORIGINAL GROUND	
CONCRETE FENCE	
BARBED WIRE FENCE	
HOUSE	
TREES	
BRIDGE	
SINGLE PIPE CULVERT	
DOUBLE PIPE CULVERT	
BOX CULVERT	
DITCH LINE/ IRRIGATION LINE	
IRRIGATION LINE	
RIVER/CREEK	
ELECTRIC POST	
KILOMETER POST	
TRAVERSE STATION POINT	
BENCHMARK	
FISH POND	
NATIONAL POWER CORP. TRANSMISSION LINE	

NEW DESIGN FEATURES	
PROJECT ROAD	
SERVICE OR FRONTAGE ROAD ALONG BYPASS	
CONTOUR	
RIGHT-OF-WAY LIMIT	
POINT OF INTERSECTION	
POINT OF INTERSECTION NO.	
℄ OF PROJECT ROAD	
FINISHED GRADE ON PROFILE	
BRIDGE	
SINGLE RC PIPE CULVERT	
DOUBLE RC PIPE CULVERT	
BOX CULVERT	
EARTH DITCH FLOW	
DIRECTION OF FLOW	
MANHOLE	
GUARDRAIL ON PLAN	
GUARDRAIL ON PROFILE	
GROUTED RIPRAP ON SLOPE	
EMBANKMENT	
EXCAVATION	
SECTION IN WATER	
SECTION IN EARTH	
SECTION IN CONCRETE	
SECTION IN GRAVEL	
SECTION IN STRUCTURAL STEEL	
SOFT BED MATERIALS TO BE EXCAVATED	
STONE MASONRY RETAINING WALL / REVETMENT / REINF. CONCRETE RETAINING WALL	
NORTH SIGN	
GRID COORDINATES	
AGGREGATE SOURCE	
LINE SYMMETRY	
SECTION TARGET	
ELEVATION TARGET	
TITLE TARGET	
SUB-TITLE TARGET	
DETAIL REF TARGET	
BOREHOLE	
STREET LIGHTING POLE	
KILOMETER POST	
STATION GRID	
LINED IRRIG. CANAL	
CHAIN LINK FENCE	
SODDING ON PLAN	
LOW TREES	
MIDDLE TREE	
HIGH TREE	

ABBREVIATIONS

A	PARAMETER (CLOTHOID)	DIST.	DISTANCE	Lo	SUPERELEVATION RUN-OFF	NIC	NOT INCLUDED IN CONTRACT
ABAN	ABANDON	DIV.	DIVISION	LG	LONG	MPa	MEGA PASCAL
ABT	ABOUT	DRWG./DWG.	DRAWING	LLV	LONG LEG VERTICAL	MC	MANHOLE COVER
ABUT	ABUTMENT	DWY.	DRIVEWAY	LM	LINEAR METER	RP	REFERENCE POINT
AC	ASPHALT CONCRETE	e%	DESIGN SUPERELEVATION	LONGIT.	LONGITUDINAL	RSP	ROCK SLOPE PROTECTION
AGG	AGGREGATE	E	EASTING	LP	LIGHT POLE	RT.	RIGHT
AH	AHEAD	EA	EACH	LS	LUMP SUM ; LEFT SIDE	S	SOUTH
APP	APPROACH	ECC/CS/PF	END OF CIRCULAR CURVE	LT	LEFT	SECT.	SECTION
ASPH	ASPHALT	E	EXTERNAL DISTANCE	m	METER	SDWK.	SIDEWALK
ASTM	AMERICAN STANDARD FOR TESTING & MATERIALS	EF	EACH FACE	mm	MILLIMETER	SHT.	SHEET
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS	EG	EDGE OF GUTTER	MAX	MAXIMUM	SL	SLOPE
AVE	AVENUE	ELEV./EL.	ELEVATION	MFL	MAXIMUM FLOOD LEVEL	SQ.M./m ²	SQUARE METER
AZIM.	AZIMUTH	EMB.	EMBANKMENT	MFWL	MAXIMUM FLOOD WATER LEVEL	SMH	SEWER MANHOLE
BCC/SC/PC	BEGINNING OF CIRCULAR CURVE	ENGR.	ENGINEER	MH	MANHOLE	SP	SPIRAL
BDRY LN	BOUNDARY LINE	EP	EDGE OF PAVEMENT	MIN.	MINIMUM	SPCD.	SPACED
BEG.	BEGINNING	EQ	EQUAL ; EQUATION	MISC.	MISCELLANEOUS	SPCS.	SPACES
BET.	BETWEEN	EQN.	EQUATION	MO	MIDDLE ORDINATE	SPL	SPECIAL
BGY./BRGY.	BARANGAY	ESMT	EASMENT	MPa	MEGA PASCAL	SPCS.	SPECIFICATIONS
BH	BOREHOLE	ETC./ST	END OF TRANSITION CURVE	MSL	MEAN SEA LEVEL	SQ.	SQUARE
BK	BACK	EW	EACH WAY	MT	METRIC TON	ST.	STREET
BLDG.	BUILDING	EXC.	EXCAVATION	DPWH	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	STA.	STATION
BLVD.	BOULEVARD	EXIST./EXTG.	EXISTING	MWSS	METROPOLITAN WATERWORKS & SEWERAGE SYSTEM	STD.	STANDARD
BM	BENCH MARK	EXP.	EXPANSION BEARING	N	NORTH / NEWTON	STIFF.	STIFFENERS
BMSL	BELOW MEAN SEA LEVEL	EXT.	EXTERIOR	N/A	NOT APPLICABLE	STIRR./STIR	STIRRUP(S)
BOT./BOTT	BOTTOM	EXTN.	EXTENSION	NC	NORMAL CROWN	STR.	STRAIGHT
BR.	BRIDGE	FF	FAR FILL/FAR FACE	NF	NEAR FACE	STRUC./STRUCT	STRUCTURAL
BRG	BEARING	FG	FINISHED GRADE	NO./No.	NUMBER	SURVY.	SURVEY
BS	BACK STATION ; BOTH SIDES	FIN.	FINISHED	OC/O.C.	ON CENTER	SYMM.	SYMMETRY
BST	BITUMINOUS SURFACE TREATMENT	FPL	FINISHED PAVEMENT LEVEL	OD	OUTSIDE DIAMETER	T	TANGENT
BTC/TS	BEGINING OF TRANSITION CURVE	FTG.	FOOTING	OGL	ORIGINAL GROUND LEVEL	TBM	TEMPORARY BENCHMARK
BW	BOTHWAYS	FH	FIRE HYDRANT	OUT INV.	OUTLET INVERT	TEMP.	TEMPORARY
c	CURVE	FWL	FLOOD WATER LEVEL	OWL	ORDINARY WATER LEVEL	THK.	THICK
CAB	CRUSHED AGGREGATE BASE	g	GRADIENT IN PERCENT	PCC	PORTLAND CEMENT CONCRETE	Tk	SHORT TANGENT OF SPIRAL
CALC.	CALCULATED	GALV.	GALVANIZED	PEJ	PREMOULDED EXPANSION JOINT	TL	LONG TANGENT OF SPIRAL
CB	CATCH BASIN	GEN.	GENERAL	PHIL.	PHILIPPINE(S)	TRANS.	TRANSVERSE
c / c	CENTER TO CENTER	GIP	GALVANIZED IRON PIPE	PI	POINT OF INTERSECTION	Ts	TOTAL TANGENT DISTANCE
CEM	CEMENT	GPS	GLOBAL POSITIONING SYSTEM	PJHL	PHILIPPINE-JAPAN HIGHWAY LOAN	TYP.	TYPICAL OR TYPE
CEP	CONCRETE ELECTRIC POST	GL	GROUND LEVEL	PL	PROPERTY LINE/ PLATE	V	DESIGN SPEED
cm.	CENTIMETER	GRD.	GRADE	PLDT	PHILIPPINE LONG DISTANCE TELEPHONE COMPANY	VAR.	VARIABLE/VARIES
Cu M/m ³	CUBIC METER	HDWL.	HEADWALL	PMO	PROJECT MANAGEMENT OFFICE	VC	VERTICAL CURVE
CHB	CONCRETE HOLLOW BLOCK	HFL	HIGH FLOOD LEVEL	POC	POINT ON CURVE	VER.	VERIFIED
CIM	CURB INLET MANHOLE	HOR.	HORIZONTAL	POT	POINT OF TANGENT	VERT.	VERTICAL
CI	CURB INLET	HSE	HOUSE	PP	POWER POLE	VOL	VOLUME
CL	CENTERLINE	HT.	HEIGHT	PR	PROJECT ROAD	W	WIDENING
CLR	CLEAR	HTL	HIGH TIDE LEVEL	PRC	POINT OF REVERSE CURVE	w	WIDTH
COL(S)	COLUMN(S)	HWL/HW	HIGH WATER LEVEL/HIGH WATER	PROJ.	PROJECT	W/	WITH
COMB. CONC.	COMBINE CONCRETE	HWY.	HIGHWAY	PROP.	PROPOSED	W/o	WITHOUT
CONC.	CONCRETE	I	INTERSECTION ANGLE	PVC	POLYVINYL CHLORIDE	WEP	WOODEN ELECTRIC POST
CONC. MON.	CONCRETE MONUMENT	ID	INSIDE DIAMETER	PV	POINT OF VERTICAL INTERSECTION	WK	WALK
CONST.	CONSTRUCTION	IN.	INCHES	PVMT.	PAVEMENT	WT	WATER TANK
CONST. JT.	CONSTRUCTION JOINT	INC.	INCORPORATED	QTY	QUANTITY	X,Y	COORDINATE OF BCC AND ECC WITH RESPECT TO TANGENT
CONT.	CONTINUOUS	IN. INV.	INLET INVERT	R	RADIUS	&	AND
CORP.	CORPORATION	INT.	INTERIOR	RC	REINFORCED CONCRETE	⊙	AT
CP	CROSS PIPE	INTERM.	INTERMEDIATE	RCBC	REINFORCED CONCRETE BOX CULVER	⊔	BASELINE
c & G	CURB AND GUTTER	IRRIG.	IRRIGATION	RCBG	REINFORCED CONCRETE BOX GIRDER	⊥	CENTERLINE
CULV.	CULVERT	JT.	JOINT	RCDG	REINFORCED CONCRETE DECK GIRDER	∞	INFINITY
C/WAY	CARRIAGEWAY	kg.	KILOGRAM	RCPC	REINFORCED CONCRETE PIPE CULVERT	%	PERCENT
CYL.	CYLINDRICAL	KN	KILO NEWTON	RD	ROAD	+/-	PLUS / MINUS
CTR	CENTER	KPa	KILO PASCAL	RDWY.	ROADWAY	∅	DIAMETER
DEPT.	DEPARTMENT	FIX	FIX BEARING	REINF.	REINFORCED	⊠	SQUARE
DET.	DETAIL	KM	KILOMETER	REP	RELOCATED ELECTRIC POST	CP	CONTROL POINT
DIA./DIAM	DIAMETER	KPH	KILOMETER PER HOUR	RET. WALL	RETAINING WALL	L	ANGLE SHAPE
DIAPH.	DIAPHRAGM	L	LENGTH	ROW	RIGHT-OF-WAY		
		Lc	LENGTH OF CIRCULAR ARC	RS	RIGHT SIDE		

 JAPAN INTERNATIONAL COOPERATION AGENCY  KATAHIRA & ENGINEERS INTERNATIONAL  YACHIYO ENGINEERING CO., LTD.	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :	
	DESIGNED	9/25/02	<i>[Signature]</i>	BUREAU OF DESIGN	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY SYSTEM (Plaridel, Cabanatuan and San Jose Bypasses)	NOT TO SCALE	ABBREVIATIONS	GP-06
	CHECKED	9/27/02	<i>[Signature]</i>	OFFICE OF THE SECRETARY	PLARIDEL BYPASS - CONTRACT PACKAGE III	FULL SIZE A1		
SUBMITTED	9/30/02	<i>[Signature]</i>	Submitted By: DANILO 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	

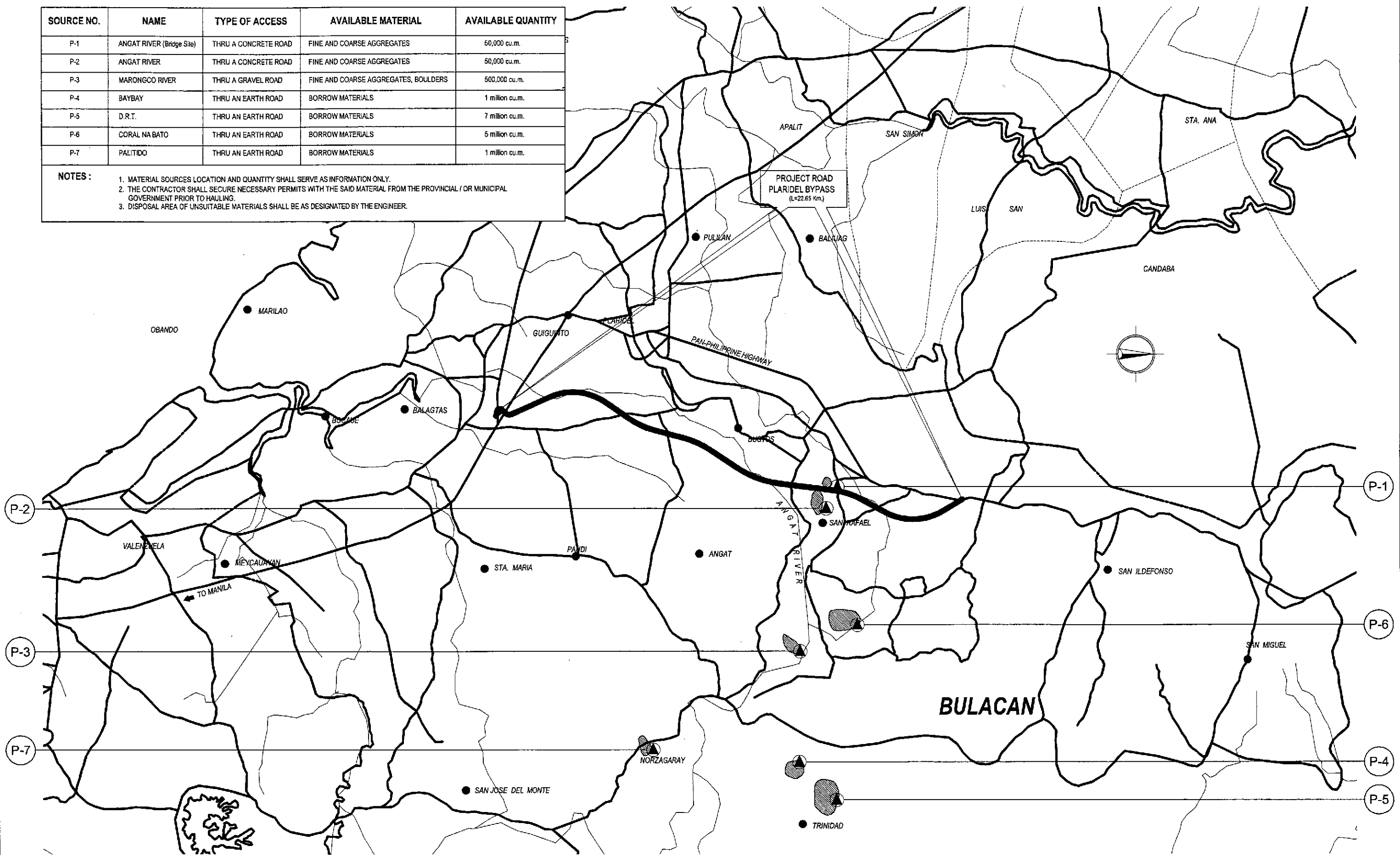


<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>		<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>				<p>PROJECT AND LOCATION :</p> <p>THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p>		<p>SCALE :</p> <p>1:30,000</p>	<p>SHEET CONTENTS :</p> <p>PROJECT ROAD GENERAL ALIGNMENT & FEATURES</p>	<p>SHEET NO. :</p> <p>GP-07</p>
DESIGNED	DATE	SIGNATURE	Submitted By:	Reviewed By:	Recommended By:	Approved By:				
CHECKED	9/27/02	<i>[Signature]</i>	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONDAN Undersecretary				
SUBMITTED	7/2/02	<i>[Signature]</i>								
<p>KATAHIRA & ENGINEERS INTERNATIONAL</p>		<p>YACHIO ENGINEERING CO., LTD.</p>		<p>SIMEON & DATUMANONG</p>						

SOURCE NO.	NAME	TYPE OF ACCESS	AVAILABLE MATERIAL	AVAILABLE QUANTITY
P-1	ANGAT RIVER (Bridge Site)	THRU A CONCRETE ROAD	FINE AND COARSE AGGREGATES	50,000 cu.m.
P-2	ANGAT RIVER	THRU A CONCRETE ROAD	FINE AND COARSE AGGREGATES	50,000 cu.m.
P-3	MARONGCO RIVER	THRU A GRAVEL ROAD	FINE AND COARSE AGGREGATES, BOULDERS	500,000 cu.m.
P-4	BAYBAY	THRU AN EARTH ROAD	BORROW MATERIALS	1 million cu.m.
P-5	D.R.T.	THRU AN EARTH ROAD	BORROW MATERIALS	7 million cu.m.
P-6	CORAL NA BATO	THRU AN EARTH ROAD	BORROW MATERIALS	5 million cu.m.
P-7	PALITIDO	THRU AN EARTH ROAD	BORROW MATERIALS	1 million cu.m.

NOTES :

1. MATERIAL SOURCES LOCATION AND QUANTITY SHALL SERVE AS INFORMATION ONLY.
2. THE CONTRACTOR SHALL SECURE NECESSARY PERMITS WITH THE SAID MATERIAL FROM THE PROVINCIAL / OR MUNICIPAL GOVERNMENT PRIOR TO HAULING.
3. DISPOSAL AREA OF UNSUITABLE MATERIALS SHALL BE AS DESIGNATED BY THE ENGINEER.



A LOCATION OF MATERIAL SOURCES
GP-08 SCALE AS SHOWN

	DESIGNED	DATE	SIGNATURE	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	7/27/05	<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)	1:80,000	LOCATION OF MATERIAL SOURCES	GP-09
	SUBMITTED	7/29/05	<i>[Signature]</i>	Submitted By: DANILO C. TRAJANO Project Director	Reviewed By: JOSEFINA M. ALAGAR Chief, Highways Division	Recommended By: GILBERTO S. REYES CEC, Director IV	Recommended By: MANUEL M. BONDAN Undersecretary	Approved By: SIMEON A. DATUMANONG Secretary	FULL SIZE A1	

R O A D W A Y

GENERAL NOTES

HIGHWAY / CIVIL AND DRAINAGE NOTES

1.0 DESIGN STANDARDS / SPECIFICATIONS

- 1.1 ALL GEOMETRIC DESIGN STANDARDS SHALL COMPLY WITH THE VALUES PRESCRIBED IN "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS", 1994 EDITION OF THE AMERICAN ASSOCIATION OF STATE HIGHWAYS AND TRANSPORTATION OFFICIALS (AASHTO), AND "DESIGN GUIDELINES CRITERIA AND STANDARDS" ISSUED BY THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH).
- 1.2 ALL WORKS SHALL COMPLY WITH THE DPWH STANDARD SPECIFICATIONS, 1985 EDITION, VOLUME II, HIGHWAYS, BRIDGES, AND AIRPORTS, AND THE SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS FOR THIS PROJECT.

2.0 SURVEY CONTROLS AND REFERENCES

- 2.1 HORIZONTAL CONTROL IS BASED THROUGH GLOBAL POSITIONING SYSTEM (GPS) ESTABLISHED BY THE ACRE SURVEYING. CORRESPONDING GPS STATIONS ARE AS FOLLOWS:

GPS STA.	NORTHING	EASTING	ELEVATIONS	DESCRIPTION
BLG-1	1640535.729	489225.487	8.931	LOCATED AT THE LEFT GUARDRAIL GOING TO TABANG EXIT. DRILLED ON TOP OF THE GUARDRAIL IS AN IRON STEEL 1/4"x2" ABOUT 40m. FROM THE LAST APPROACH OF THE BRIDGE.
BLG-2	1640592.279	489340.024	10.635	LOCATED AT THE WALL RAILING AT THE END OF THE BRIDGE'S FIRST APPROACH. DRILLED ON TOP OF THE WALL RAILING IS AN IRON STEEL 1/4"x 2".
BLG-2A	1643045.047	487830.179	3.777	LOCATED IN BGY. DAUNGAN, GUIGUINTO, BULACAN. IT IS EMBEDDED BESIDE AN IRRIGATION CANAL, ABOUT 150m. FROM INTERSECTION, ABOUT 15m. FROM AN ELECT. POST 50m. FROM BBM 16 AND ABOUT 15m. FROM THE FENCE OF THE HOUSE ON THE OTHER SIDE OF THE ROAD.
BLG-3	1646381.832	488957.118	8.646	LOCATED IN BGY. MATAAS, SAMPALOK, BULIHAN, PLARIDEL BULACAN. IT IS ON THE HEAD OF AN IRRIGATION CHECK VALVE, OUTSIDE THE COLEGIO DE IMMACULADA CONCEPCION, ABOUT 10m. FROM THE SHED AND 4.00m. FROM ROAD CENTERLINE.
BLG-4	1652474.952	492013.344	16.125	LOCATED IN BGY. MALAMIG, BUSTOS, BULACAN. IT IS ON THE SIDE OF IRRIG. CANAL, ABOUT 5m. FORM THE ROAD CENTERLINE 150m. FROM FORK, AND ABOUT 5m. FROM THE NEW HOUSE.
BLG-4B	1655132.400	492583.981	9.310	LOCATED IN BGY. TAMBONONG, SAN RAFAEL, BULACAN. IT IS EMBEDDED ON A ROAD GROUND ABOUT 600m. FROM INTERSECTION, 20m. FROM THE HOUSE.
BLG-5	1657566.872	493155.992	22.017	LOCATED IN BGY. SAMPALOK, SAN RAFAEL, BULACAN. IT IS EMBEDDED ON THE RIGHT SIDE OF THE ROAD GOING TO ROYAL NORTHWOODS 30m. FROM THE INTERSECTION.
BLG-5A	1659619.893	493753.421	29.185	LOCATED IN BGY. SAN ROQUE, HULO, SAN RAFAEL BULACAN. IT IS EMBEDDED ON THE RICE PADDY DIKE 20m. FROM THE DIRT ROAD CENTERLINE.

- 2.2 VERTICAL CONTROL IS REFERRED TO BM BL-12 ESTABLISHED BY THE BLGS WITH ELEVATION 14.935m. ABOVE MEAN SEA LEVEL LOCATED IN BARIO SABANG, PLARIDEL BULACAN. ALONG NATIONAL HIGHWAY NO.5 ABOUT 120m. NORTH OF KM POST NO 52. IT IS EMBEDDED IN A HOLE DRILLED ON TOP OF THE SOUTH SIDE OF THE FOOTING OF THE MARIANO PONCE MONUMENT. ABOUT 18m. NORTH OF THE CENTERLINE OF THE NATIONAL HIGHWAY, INSIDE THE SABANG ELEMENTARY SCHOOL GROUNDS. MARKED PC & GS BL 12, 1952, ELEV.=14.935.

3.0 ALIGNMENT CONTROLS AND REFERENCES

- 3.1 PROJECT IMPLEMENTATION OF ALL BYPASSES SHALL BE DONE IN TWO(2) CONSTRUCTION STAGES. THE FIRST STAGE IS THE INITIAL STAGE THAT CONSIST OF CONSTRUCTING TWO LANE-TWO WAY HIGHWAY (NORTHBOUND), GRAVEL SURFACE FRONTAGE ROAD AND GRAVEL SURFACE SERVICE ROAD AS SHOWN IN THE TYPICAL SECTIONS. IN THE SECTION WITH FRONTAGE ROAD, A GRAVEL SURFACE FRONTAGE ROAD WILL BE INITIALLY CONSTRUCTED EACH SIDE OF THE HIGHWAY. GRAVEL SURFACE SERVICE ROAD WILL BE PROVIDED IN THE SECTION WITHOUT FRONTAGE ROAD. THE SECOND STAGE IS THE ULTIMATE STAGE THAT INVOLVES THE CONSTRUCTION OF THE TWO LANE PAVEMENT (SOUTH BOUND) CONCRETING OF FRONTAGE ROADS AND CONSTRUCTION OF MEDIAN ISLAND AND OTHER HIGHWAY FACILITIES NOT INCLUDED IN THE INITIAL STAGE.
- 3.2 THE FOLLOWING MAJOR POINTS CONTROLLED THE DESIGN OF HORIZONTAL AND VERTICAL ALIGNMENT:
- 3.2.3 ALONG PLARIDEL BYPASS
- NORTH LUZON EXPRESSWAY AND BUROL INTECHANGE AT START OF BYPASS.
 - CONSTRUCTION OF AN 18 HECTARE SUBDIVISION (LEFT SIDE OF STA.35+000.00 CENTERLINE.)
 - FLOODED SECTION AT INTERSECTION WITH SAN JOSE-CAMACHILIHAN ROAD (STA. 41+166.00 CENTERLINE).
 - A NEWLY BUILT CHURCH AT INTERSECTION WITH BALIUG-SAN RAFAEL ROAD.
- 3.3 SIMPLE CIRCULAR CURVES, THREE-CENTERED CIRCULAR CURVES AND CLOTHOID CURVES WERE USED FOR HORIZONTAL CURVATURES, AND PARABOLIC CURVES WERE USED TO SMOOTHEN GRADE BREAKS.
- 3.4 DESIGN OF VERTICAL ALIGNMENT WAS CONTROLLED BY THE DESIGN MAXIMUM FLOODLEVEL, 25-YEAR RETURN PERIOD FOR EMBANKMENT. 50-YEAR RETURN PERIOD FOR BRIDGE AND DRAINAGE STRUCTURES MINIMUM COVERING AS INDICATED IN THE PROFILES.
- 3.5 EXISTING PAVEMENT GRADES OF PAN-PHILIPPINE HIGHWAY.

4.0 DIMENSIONS

- 4.1 DISTANCES AND ELEVATIONS SHOWN ON THE PLANS ARE IN METERS (m) AND IN MILLIMETERS (mm) UNLESS OTHERWISE SPECIFIED. OTHER UNITS OF MEASUREMENT ARE EXPRESSED IN THE MORE APPROPRIATE UNITS OF THE S.I. SYSTEM AS ADOPTED IN THE DPWH STANDARD SPECIFICATIONS, 1995 (VOLUME II).

5.0 STATIONINGS

- 5.1 CENTERLINE STATIONINGS OF THE PROJECT WERE BASED FROM THE NEAREST KILOMETER STATION ALONG THE NORTH LUZON EXPRESSWAY WHICH IS KM 33.
- 5.2 ROAD STATIONS AND ELEMENTS OF CURVE, BOTH HORIZONTAL AND VERTICAL ALIGNMENTS, ARE RELATIVE TO THE ROAD CENTERLINE/BASELINE UNLESS OTHERWISE INDICATED ON PLANS.

6.0 ELEVATION AND GRADES

- 6.1 ELEVATIONS AND GRADES AS DESCRIBED IN THE PROFILE GRADE ARE TOP OF CROWN ALONG THE CENTERLINE. FINISHED GRADE AS SHOWN WILL BE REFERRED BASE FROM PAVEMENT SLOPE

7.0 HORIZONTAL TRANSITIONS

- 7.1 HORIZONTAL TRANSITIONS FOR ROADWAY TAPERINGS/WIDENINGS ARE DESIGNED TO BE STAKED OUT BY THE OFFSETS FROM THE BASELINE INCREASING OR DECREASING ALONG THE DIRECTION OF TRAFFIC.

8.0 UTILIZATION OF GRAVEL MATERIALS

- 8.1 GRAVEL MATERIALS ALONG THE GRAVEL CROSS ROAD IN THE INITIAL STAGE SHALL BE EXCAVATED AND RECONSTRUCTED AS SUBBASE MATERIALS TO THICKNESS AS SHOWN AND INDICATED ON THE TYPICAL SECTIONS FOR THE ULTIMATE STAGE. RECONSTRUCTION OF THE SUBBASE MENTIONED SHALL BE DONE, FOLLOWING THE NORMAL REQUIREMENT IN SUBGRADE PREPARATION.

9.0 REMOVAL OF EXISTING STRUCTURES AND OBSTRUCTIONS

- 9.1 ARTICLE 4.7 OF THE "GENERAL REQUIREMENTS AND COVENANTS" IS HEREBY AMENDED AS FOLLOWS :
- THE REMOVAL OF BUILDINGS, HOUSES, FENCES, UTILITY POLES AND OTHER PUBLIC UTILITIES WILL NOT BE THE RESPONSIBILITY OF THE CONTRACTOR BUT WILL BE REMOVED BY THE RESPECTIVE OWNERS, OR THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS PRIOR TO CONSTRUCTION.

10.0 ROAD CONNECTIONS AND PRIVATE ENTRANCES

- 10.1 OPENINGS FOR DRIVEWAYS OR PRIVATE ENTRANCES SHALL BE CONSTRUCTED ONLY ALONG SECTIONS OF THE PROJECT ROAD WHERE FRONTAGE ROADS AND/OR TURNOUTS ARE TO BE PROVIDED. SUCH CONNECTIONS SHALL BE DETERMINED BY THE ENGINEER AND SHALL BE CONSTRUCTED IN SUCH A MANNER AS TO INSURE PROPER CONNECTION AND RIDING QUALITY.
- 10.2 ROAD CONNECTIONS SHALL BE CONSTRUCTED AS SHOWN ON PLANS. THE ROAD STRUCTURE OF EACH CONNECTION SHALL BE AS RECOMMENDED IN THE DRAWING.
- 10.3 THE INTERSECTIONS NOT SHOWN ON THE DRAWINGS SHALL REQUIRE PLANS SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTIONS.
- 10.4 THE LIMIT OF CONSTRUCTION FOR ROAD CONNCTIONS AND PRIVATE ENTRANCES SHALL BE AS SHOWN IN THE DRAWING OR AS INDICATD BY THE ENGINEER.

11.0 DRAINAGE STRUCTURES

- 11.1 EXACT LOCATIONS, SLOPES, OUTFALLS, AND INVERT ELEVATIONS OF DRAINAGE STRUCTURES SHALL BE CHECKED IN THE FIELD BY THE ENGINEER. MINOR ADJUSTMENTS MAY BE MADE TO SUIT ACTUAL FIELD CONDITIONS UPON APPROVAL OF THE ENGINEER.
- 11.2 EXISTING DRAINAGE STRUCTURES THAT ARE FAULTY, BROKEN DOWN, OR NOT IN GOOD WORKING CONDITION SHALL BE DETERMINED IN THE FIELD. RECONSTRUCTION, REPAIR AND/OR REPLACEMENT OF SAME SHALL BE DIRECTED BY THE ENGINEER, AND SHALL CONFORM TO THE STANDARDS AS SHOWN IN THE DRAWINGS.
- 11.3 EXISTING DRAINAGE STRUCTURES OR PARTS THEREOF REMOVED BY THE CONTRACTOR THAT ARE STILL SERVICEABLE SHALL BE TURNED OVER TO THE GOVERNMENT AND SHALL BE DEPOSITED AT A PLACE DESIGNATED BY THE ENGINEER WITHOUT ANY COMPENSATION. EXTREME PRECAUTIONS SHALL BE EXERCISED BY THE CONTRACTOR NOT TO DAMAGE THESE MATERIALS DURING THE REMOVAL AND HANDLING OPERATION.
- 11.4 THE CLEANING, UNBLOCKING AND/OR RELAYING OF REINFORCED CONCRETE PIPES, CONSTRUCTION OF CHANNELS AND DITCHES AS DIRECTED BY THE ENGINEER TO ENSURE AN OPERATIONAL TEMPORARY DRAINAGE SYSTEM DURING THE CONSTRUCTION PERIOD SHALL BE UNDERTAKEN BY THE CONTRACTOR WITHOUT ANY COMPENSATION.

12.0 ACCESSIBILITY LAW:

- 12.1 STRICT COMPLIANCE WITH BATAS PAMBANSA BILANG 344 AND ITS IMPLEMENTING RULES AND REGULATIONS SHALL BE IMPOSED.

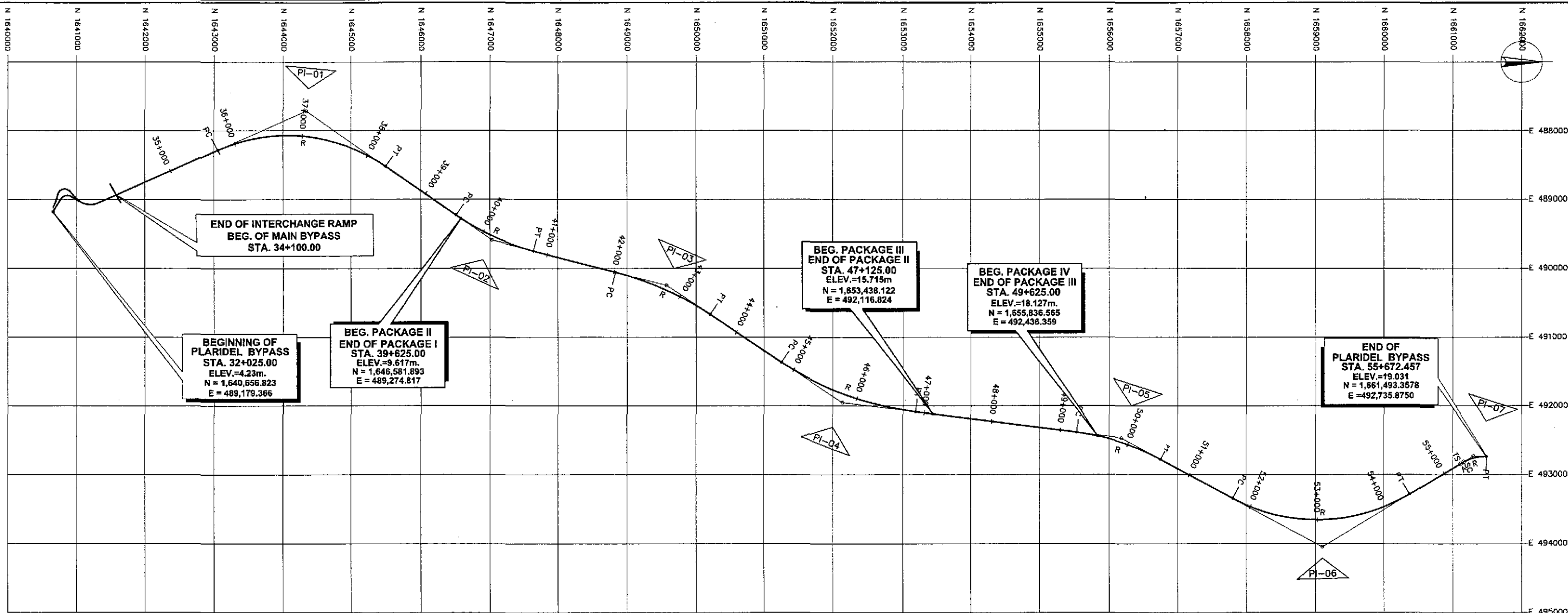
13.0 TREE PLANTING ALONG NATIONAL ROADS

- 13.1 DPWH DEPARTMENT ORDER NO. 15, SERIES OF 2000 AND ITS REQUIREMENTS SHALL BE IMPOSED. THE PLANTING OF TREES ALONG NATIONAL ROADS SHALL BE MADE A STANDARD COMPONENT OF ALL ROAD CONSTRUCTION AND IMPROVEMENT PROJECTS TO ENHANCE QUALITY OF ENVIRONMENT.

14.0 DESIGN DATA / REFERENCES

- 14.1 REPORTS
- FEASIBILITY STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHIL. HIGHWAY (PLARIDEL, CABANATUAN AND SAN JOSE BYPASSES), FINAL REPORT, NOVEMBER 1999.
 - DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY, BASIC DESIGN REPORT, SEPTEMBER 2001.
- 14.2 DRAWINGS
- FEASIBILITY STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHIL. HIGHWAY (PLARIDEL, CABANATUAN AND SAN JOSE BYPASSES).
 - DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY, BASIC DESIGN DRAWINGS, SEPTEMBER 2001.

		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 : FULL SIZE A1	SHEET CONTENTS : GENERAL NOTES (HIGHWAY AND DRAINAGE)	SHEET NO. : RG-01
	DESIGNED: 9/21/01 CHECKED: 9/27/01 SUBMITTED: 9/28/01	DATE: 9/21/01 SIGNATURE: [Signature] PROJECT DIRECTOR: DANILLO C. TRAJANO	BUREAU OF DESIGN OFFICE OF THE SECRETARY Recommended By: JOSEFINA M. ALAGAR Chief, Highways Division Recommended By: GILBERTO S. REYES OIC, Director IV Approved By: MANUEL M. BONDAN Undersecretary Approved By: SIMEON A. DATUMANGING Secretary			



ELEMENTS OF CURVES								
P.I. No.	STATION	DISTANCE	AZIMUTH	TANGENT Θ_s	DEFLECTION ANGLE	A R	Ls Lc	STATION
BEG.	34+100.00							
01	37+150.085	3,050.085	156°12'23"	1,405.622	58°41'37"	2,500.000	2,560.993	PC=35+744.463 PT=38+305.456
02	40+170.351	3,270.517	214°54'01"	631.471	20°27'17"	3,500.000	1,249.501	PC=39+538.880 PT=40+788.381
03	42+784.272	2,627.362	194°25'44"	762.261	19°13'42"	4,500.000	1,510.187	PC=42+022.011 PT=43+532.197
04	45+849.871	3,079.935	213°40'26"	1,055.870	26°24'35"	4,500.000	2,074.218	PC=44+794.002 PT=46+858.219
05	49+888.421	4,076.071	187°15'51"	653.242	21°08'39"	3,500.000	1,291.623	PC=49+235.179 PT=50+526.802
06	53+197.990	3,324.430	208°24'30"	1,481.484	59°20'57"	2,600.000	2,693.177	PC=51+716.508 PT=54+409.683
07	55+491.631	2,563.432	149°03'33"	217.897	32°44'53"	188.072	54.417	TS=55+273.735 SC=55+328.152 PT=55+672.457
END	55+672.457	191.336	02°23'54"	02'23'54"		650.000	344.305	

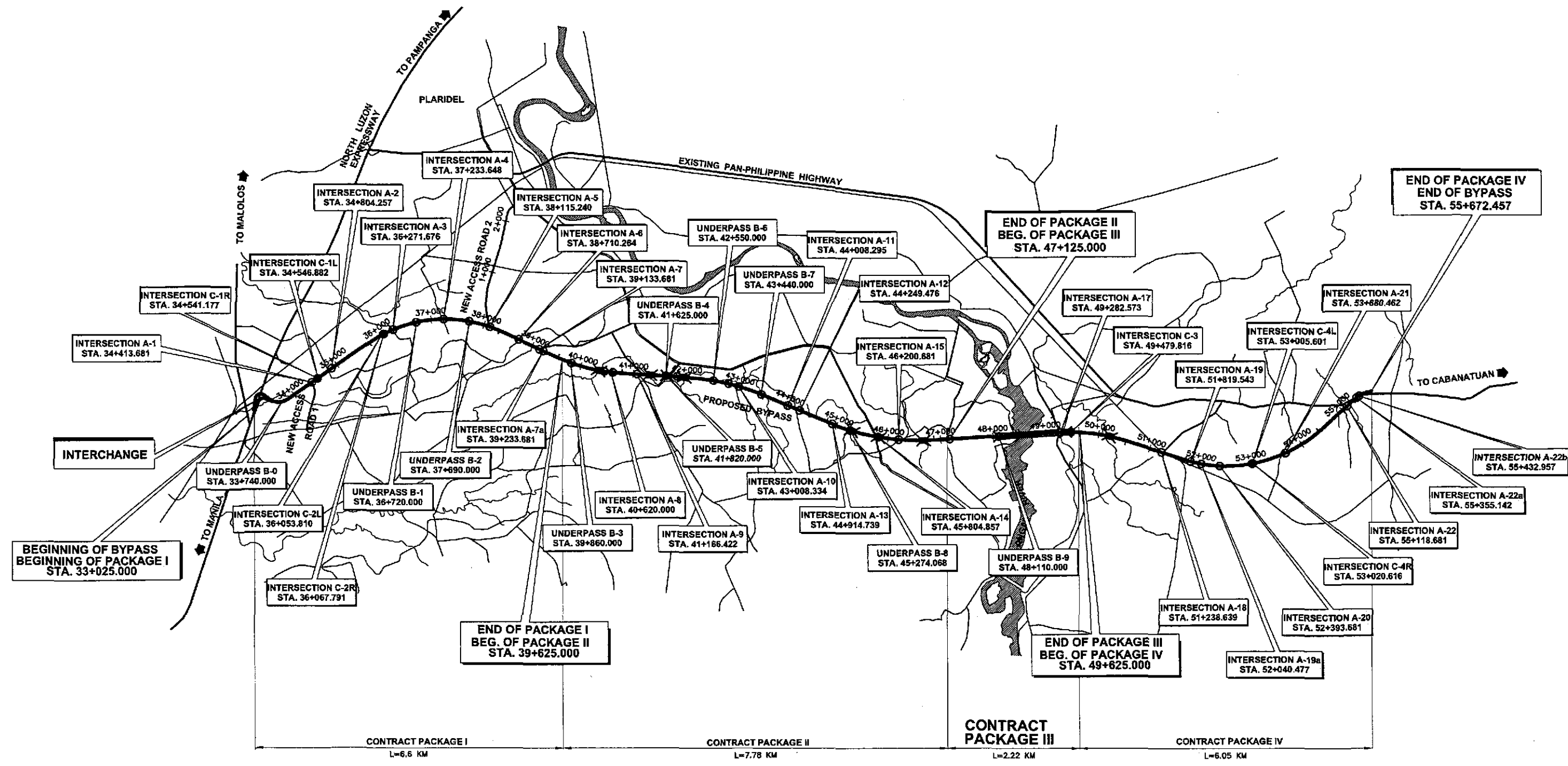
TABLE OF COORDINATES				
P.I. No.	NORTHING	EASTING	NORTHING	EASTING
BEG.	1,641,555.403	488,947.023		
01	1,644,346.248	487,716.493	PC 1,643,060.096	488,283.579
			PT 1,645,499.069	488,520.712
02	1,647,028.564	489,587.713	PC 1,646,510.662	489,226.418
			PT 1,647,640.071	489,745.240
03	1,649,572.862	490,243.134	PC 1,648,834.700	490,052.981
			PT 1,650,207.221	490,665.781
04	1,652,135.007	491,950.849	PC 1,651,257.304	491,365.407
			PT 1,653,183.402	492,084.356
05	1,656,179.303	492,466.239	PC 1,655,531.364	492,383.641
			PT 1,656,753.942	492,777.019

TABLE OF COORDINATES				
P.I. No.	NORTHING	EASTING	NORTHING	EASTING
06	1,658,103.466	494,047.839	PC 1,657,800.382	493,343.022
			PT 1,660,374.132	493,286.129
07	1,661,302.117	492,729.842	TS 1,661,115.228	492,841.874
			SC 1,661,162.283	492,814.552
			PT 1,661,493.358	492,735.876
END	1,661,493.358	492,735.876		

	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) PLARIDEL BYPASS - CONTRACT PACKAGE II	SCALE :	SHEET CONTENTS : ALIGNMENT TECHNICAL DESCRIPTION	SHEET NO. : RG-02	
	CHECKED	9/20/06	S. ACACIO		Submitted By:	Reviewed By:	Recommended By:		Recommended By:			1:30,000
	SUBMITTED	9/27/06	S. ROSE		P.J.H. - PMO	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division		GILBERTO S. REYES OIC, Director IV			MANUEL M. BONGAN Undersecretary



- LEGEND:**
- Intersection Type A (At grade)
 - ⊕ Intersection Type B (Underpass)
 - Intersection Type C (Only access to frontage roads)
 - ≡ Bridge





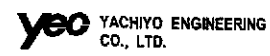

A LOCATION OF PROPOSED INTERSECTIONS ALONG BYPASS
 RG-03 SCALE 1:40,000

<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p> <p>KATAHIRA & ENGINEERS INTERNATIONAL</p> <p>YACHIYO ENGINEERING CO., LTD.</p>	DESIGNED	DATE	SIGNATURE	<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p> <p>BUREAU OF DESIGN</p> <p>OFFICE OF THE SECRETARY</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) PLARIDEL BYPASS - CONTRACT PACKAGE III	SCALE : 1:40,000 FULL SIZE A1	SHEET CONTENTS : LOCATION OF INTERSECTIONS ALONG BYPASS	SHEET NO. : RG-03				
	CHECKED	9/27/05	S. G. ROSE						Submitted By:	Reviewed By:	Recommended By:	Approved By:
	SUBMITTED	9/26/05	[Signature]						DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES GC, Director IV	MANUEL M. BONDAN Undersecretary

SCHEDULE OF TRAFFIC SIGNS AND RELOCATION OF GUARDRAILS
CONTRACT PACKAGE III (ULTIMATE STAGE)

SCHEDULE OF PLANTINGS
CONTRACT PACKAGE III (ULTIMATE STAGE)

ITEM 605 (1) WARNING SIGNS (TRIANGULAR 900mm)			SCHEDULE OF RELOCATION OF GUARDRAILS				1.) OUTER SEPARATION PLANTING (LEFT SIDE)									
STATION	REF. NO.	REMARKS	STATION		LENGTH (m)	LOCATION	STATION		LENGTH (L.M.)							
			FROM	TO			FROM	TO	1-B(1)	1-B(2)	1-B(3)	1-B(4)	1-B(5)	1-B(6)	1-B(7)	1-B(8)
49+405	W2-8**	LEFT SIDE MAIN BYPASS	47+957.68	48+121.68	164	LEFT SIDE	49 + 400	50 + 100	0	85	0	19	0	61	0	0
ITEM 605 (2)a REGULATORY SIGNS (TRIANGULAR 1039mm DIA.)			BRIDGE No. 8				2.) OUTER SEPARATION PLANTING (RIGHT SIDE)									
49+300	R1-2*	LEFT SIDE MAIN BYPASS	49+250.12	49+270.12	20	LEFT SIDE	49 + 400	50 + 100	0	85	0	19	0	61	0	0
ITEM 605 (2)c REGULATORY SIGNS (RECTANGULAR 450x750mm)			BRIDGE No. 9				3.) CENTER MEDIAN PLANTING									
49+270	R2-7(L)*	CENTER ISLAND MAIN BYPASS	49+390.64	49+410.64	20	LEFT SIDE	47 + 300	48 + 000	0	0	0	0	0	600	0	0
49+296	R2-7(L)*	CENTER ISLAND MAIN BYPASS					48 + 000	48 + 700	0	0	0	0	0	56	0	64
ITEM 605 (2)d REGULATORY SIGNS (CIRCULAR 600mm DIA.)							4.) SIDEWALK PLANTING (MIDDLE TREE)									
48+120	R6-4	RIGHTSIDE MAIN BYPASS					48 + 700	49 + 400	0	0	21	0	0	0	0	0
49+251	R6-4**	LEFT SIDE MAIN BYPASS					49 + 400	50 + 100	0	0	0	0	0	225	0	0
49+270	R3-15*	CENTER ISLAND MAIN BYPASS														
49+296	R3-15*	CENTER ISLAND MAIN BYPASS														
49+297	R3-14A*	LEFT SIDE MAIN BYPASS														
49+340	R6-4	RIGHTSIDE MAIN BYPASS														
49+405	R6-4**	LEFT SIDE MAIN BYPASS														
ITEM 605 (3) INFORMATORY SIGNS																
47+445	GS-8	LEFT SIDE MAIN BYPASS														
TOTAL No. OF INFORMATORY SIGNS 1.0 pcs																
NOTE:																
* - NEW SIGNS																
** - EXISTING AND TO BE RELOCATED																
UNMARKED - EXISTING AND TO REMAIN																

 JAPAN INTERNATIONAL COOPERATION AGENCY  KATAHIRA & ENGINEERS INTERNATIONAL  YACHIYO ENGINEERING CO., LTD.	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN	PROJECT AND LOCATION :				SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	7/27/06	J. TAPIA		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)				FULL SIZE A1	SCHEDULE OF TRAFFIC SIGNS, RELOCATION OF GUARDRAILS, AND PLANTINGS	RG-04
	SUBMITTED	7/27/06	M. KILDA		Submitted By:	Reviewed By:	Recommended By:	Approved By:			
					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		

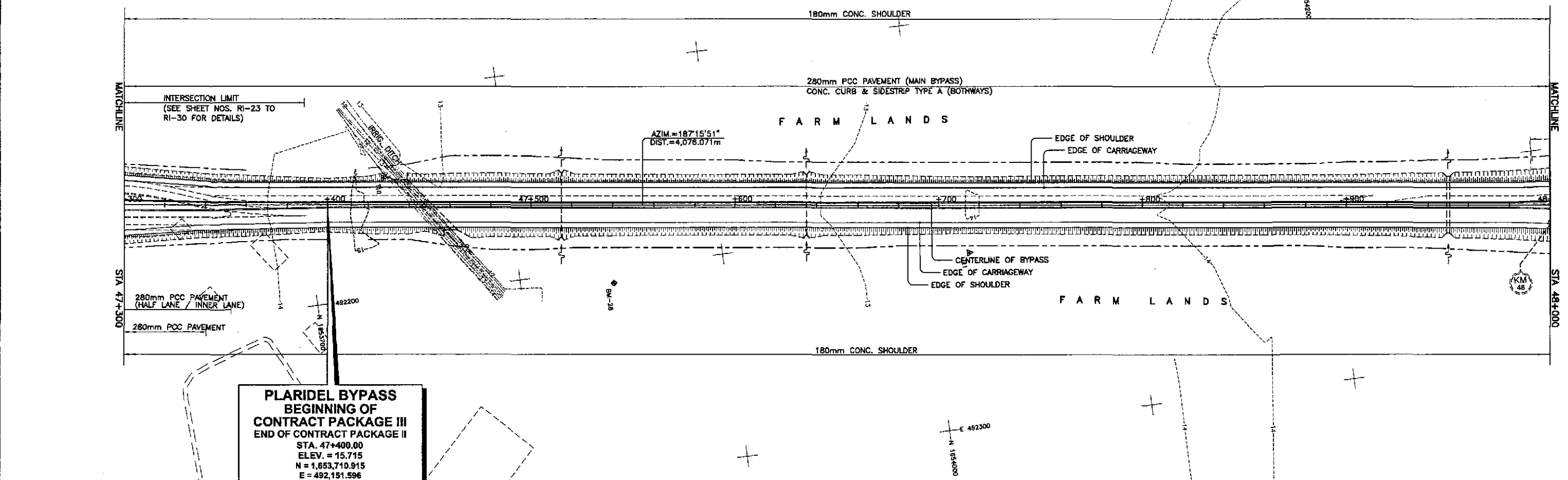
SCHEDULE OF PAVEMENT MARKINGS
CONTRACT PACKAGE III (ULTIMATE STAGE)
 ITEM 612(1) - REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS

1.0 CENTER LINE				3.0 LANE LINES				6.0 ARROWS				
STATION		LENGTH (m)	REMARKS	STATION		LENGTH (m)	REMARKS	ARROW TYPE	NUMBER OF ARROWS	LOCATION		
FROM	TO			FROM	TO							
00+962.68	00+982.88	20.00	A-17: 150mm UNBROKEN LINE	47+400.00	49+070.62	1670.62	(LS) LANE LINE 150mm x 3.0m @ 9.0m GAP	A	4	APPROACHING INTERSECTION A-17		
01+022.26	01+042.26	20.00	A-17: 150mm UNBROKEN LINE	47+400.00	49+070.62	1670.62 *	(RS) LANE LINE 150mm x 3.0m @ 9.0m GAP	B	3	APPROACHING INTERSECTION A-17		
				49+070.62	49+270.62	200.00	(LS) LANE LINE 150mm x 3.0m @ 4.50m GAP	C	3	APPROACHING INTERSECTION A-17		
				49+070.62	49+250.62	180.00	(RS) LANE LINE 150mm x 3.0m @ 4.50m GAP					
				49+250.62	49+270.62	20.00	(RS) 2- LANE LINE 150mm UNBROKEN					
				49+296.44	49+321.44	25.00	(LS) 2- LANE LINE 150mm UNBROKEN					
				49+321.44	49+625.00	303.56	(LS) LANE LINE 150mm x 3.0m @ 4.50m GAP					
				49+296.44	49+625.00	328.56	(RS) LANE LINE 150mm x 3.0m @ 4.50m GAP					
				00+962.68	00+982.68	20.00	(RS) LANE LINE 100mm UNBROKEN (A-17)					
				01+022.26	01+042.26	20.00	(LS) LANE LINE 100mm UNBROKEN (A-17)					
2.0 EDGE LINES				4.0 CONTINUITY LINE				7.0 PEDESTRIAN AND STOP LINES				
2.1 LEFT SIDE, OUTER EDGE OF MAIN BYPASS												
STATION		LENGTH (m)	REMARKS	STATION		LENGTH (m)	REMARKS	LOCATION		AREA (m ²)		REMARKS
FROM	TO			FROM	TO			PEDESTRIAN	STOP LINE			
47+400.00	49+265.99	1865.99	MAIN BYPASS	49+216.13	49+250.62	34.49	(RS) 150mm x 1.0m @ 3.0m GAP	INT. A-17	MAIN BYPASS	12.82	10.99	UNSIGNALIZED
49+265.99	00+977.70	18.15	MAIN BYPASS TO RT OF A-17	49+321.44	49+351.22	29.78	(LS) 150mm x 1.0m @ 3.0m GAP		A-17	18.83	4.18	
00+890.00	00+977.70	87.70	RIGHT OF A-17									
00+890.00	00+968.64	78.64	LEFT OF A-17									
49+286.66	49+400.00	113.34	MAIN BYPASS									
49+460.00	49+625.00	165.00	MAIN BYPASS									
NOTE: A - LEFT/RIGHT ARROW COMBINATION OF STRAIGHT AND LEFT ARROWS OR B - STRAIGHT AND RIGHT ARROWS C - STRAIGHT ARROW												
2.2 LEFT SIDE, INNER EDGE OF MAIN BYPASS												
STATION		LENGTH (m)	REMARKS	STATION		LENGTH (m)	REMARKS	LOCATION		AREA (m ²)		REMARKS
FROM	TO			FROM	TO			PEDESTRIAN	STOP LINE			
47+400.00	49+272.62	1872.62	MAIN BYPASS	49+216.13	49+250.62	34.49	(RS) 150mm x 1.0m @ 3.0m GAP	INT. A-17	MAIN BYPASS	12.82	10.99	UNSIGNALIZED
49+294.95	49+625.00	330.05	MAIN BYPASS	49+321.44	49+351.22	29.78	(LS) 150mm x 1.0m @ 3.0m GAP		A-17	18.83	4.18	
2.3 LEFT SIDE, RIGHT EDGE OF FRONTAGE ROAD				5.0 CHEVRON								
STATION		LENGTH (m)	REMARKS	STATION		LENGTH (m)	REMARKS	LOCATION		AREA (m ²)		REMARKS
FROM	TO			FROM	TO			PEDESTRIAN	STOP LINE			
00+981.74	49+298.45	13.05	LT OF A-17 TO FRONTAGE ROAD	49+425.50	49+460.00	34.50	RIGHT OF MAIN BYPASS					
49+298.45	49+400.00	101.55	FRONTAGE ROAD	49+400.00	49+462.73	62.73	LEFT OF MAIN BYPASS					
49+460.00	49+625.00	165.00	FRONTAGE ROAD	49+438.48	49+460.00	21.52	LEFT OF MAIN BYPASS					
				00+907.21	00+962.68	55.47 *	CENTER OF A-17					
				01+042.26	01+082.26	40.00 *	CENTER OF A-17					
NOTE: * - INITIAL STAGE PAVEMENT MARKINGS TO BE RETAIN												
2.4 LEFT SIDE, LEFT EDGE OF FRONTAGE ROAD												
STATION		LENGTH (m)	REMARKS	STATION		LENGTH (m)	REMARKS	LOCATION		AREA (m ²)		REMARKS
FROM	TO			FROM	TO			PEDESTRIAN	STOP LINE			
00+868.64	49+303.07	24.73	LT OF A-17 TO FRONTAGE ROAD									
49+303.07	49+625.00	321.93	FRONTAGE ROAD									
2.5 RIGHT SIDE, OUTER EDGE OF MAIN BYPASS												
STATION		LENGTH (m)	REMARKS	STATION		LENGTH (m)	REMARKS	LOCATION		AREA (m ²)		REMARKS
FROM	TO			FROM	TO			PEDESTRIAN	STOP LINE			
47+400.00	49+262.50	1862.50 *	MAIN BYPASS									
49+262.50	01+024.70	19.80 *	MAIN BYPASS TO RT OF A-17									
01+024.70	01+105.00	80.30 *	RIGHT OF A-17									
01+020.92	01+105.00	84.08 *	LEFT OF A-17									
01+020.92	49+296.44	18.26 *	LT OF A-17 TO MAIN BYPASS									
49+296.44	49+625.00	328.56	MAIN BYPASS									
2.6 RIGHT SIDE, INNER EDGE OF MAIN BYPASS												
STATION		LENGTH (m)	REMARKS	STATION		LENGTH (m)	REMARKS	LOCATION		AREA (m ²)		REMARKS
FROM	TO			FROM	TO			PEDESTRIAN	STOP LINE			
47+400.00	49+272.62	1872.62 *	MAIN BYPASS									
49+294.95	49+360.00	65.05	MAIN BYPASS									
49+360.00	49+625.00	265.00 *	MAIN BYPASS									
2.7 RIGHT SIDE, LEFT EDGE OF FRONTAGE ROAD												
STATION		LENGTH (m)	REMARKS	STATION		LENGTH (m)	REMARKS	LOCATION		AREA (m ²)		REMARKS
FROM	TO			FROM	TO			PEDESTRIAN	STOP LINE			
49+460.00	49+625.00	165.00	FRONTAGE ROAD									
2.8 RIGHT SIDE, RIGHT EDGE OF FRONTAGE ROAD												
STATION		LENGTH (m)	REMARKS	STATION		LENGTH (m)	REMARKS	LOCATION		AREA (m ²)		REMARKS
FROM	TO			FROM	TO			PEDESTRIAN	STOP LINE			
49+460.00	49+625.00	165.00	FRONTAGE ROAD									

 JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL YACHIO ENGINEERING CO., LTD.	DESIGNED	DATE	SIGNATURE	 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS 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 (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	SCALE :	SHEET CONTENTS :	SHEET NO. :				
	CHECKED	7/22/06	J. TAPIA						Submitted By:	Reviewed By:	Recommended By:	Approved By:
	SUBMITTED	7/20/06	J. TAPIA						DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONGAN Undersecretary

SCHEDULE OF PAVEMENT MARKINGS **RG-05**

REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-27	1,353,336.791	492,180.066	16.372	It is located on the side of the road opposite the corner of a wall near an electric post on the left side of the alignment in Bustos.
BM-28	1,653,845.433	492,207.423	12.908	It is located on a rice paddy field on the right side of the alignment in Bgy. Bunga Mener, Bustos.
BM-31	1,655,556.301	492,461.715	17.903	It is located on the side of the provincial road under an acacia tree on the right side of the alignment in Bgy. Tambobong.



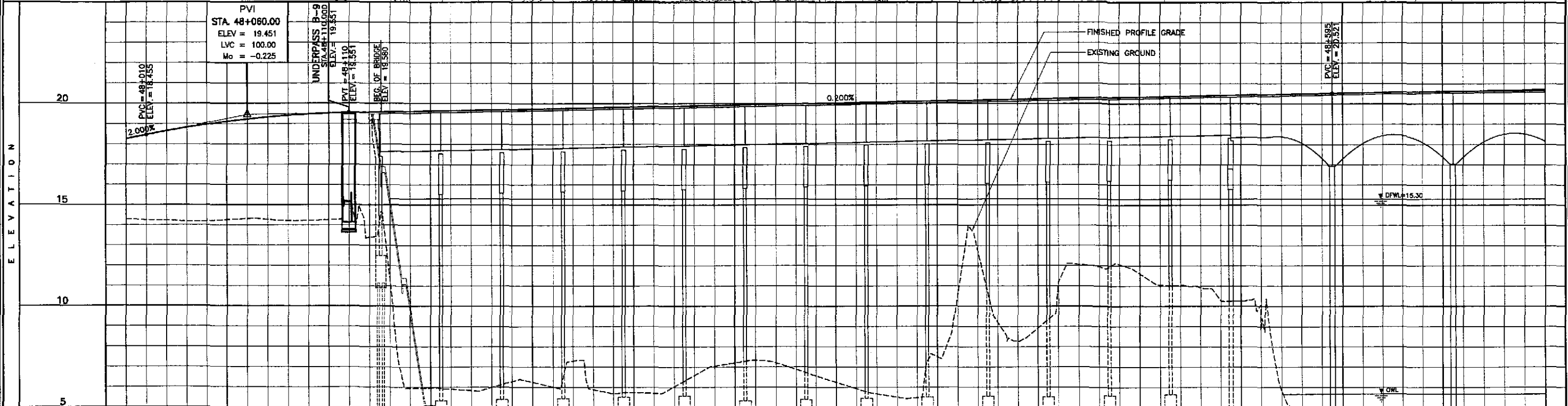
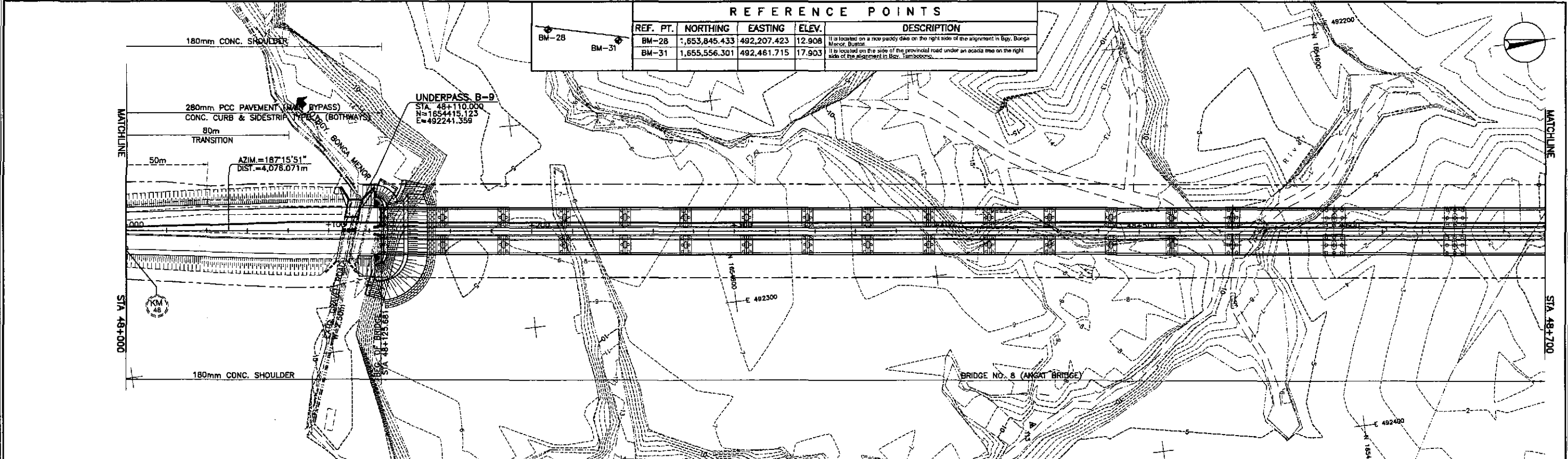
**PLARIDEL BYPASS
BEGINNING OF
CONTRACT PACKAGE III
END OF CONTRACT PACKAGE II**
 STA. 47+400.00
 ELEV. = 15.715
 N = 1,653,710.915
 E = 492,151.596

ELEVATION	PVI STA. 47+300.00 ELEV = 16.217 LVC = 80.00 Mo = +0.121			PVI STA. 47+570 ELEV = 14.861 LVC = 200.00 Mo = +0.254			PVI STA. 47+920.00 ELEV = 16.663 LVC = 80.00 Mo = +0.148																																																															
	20																																																																					
15																																																																						
10	<p>STA. 47+448.00, INV. EL. = 11.75m CONSTRUCT 3-2.40x2.40m RCBC PROVIDE WINGWALLS, IRR. STRUCTURE SKEW = 40°R</p> <p>STA. 47+515.00, INV. EL. = 12.44m CONSTRUCT 3-3.00x2.10m RCBC PROVIDE WINGWALLS</p> <p>STA. 47+635.00, INV. EL. = 12.95m CONSTRUCT 3-1.80x1.50m RCBC PROVIDE WINGWALLS</p> <p>STA. 47+958.00, INV. EL. = 14.12m CONSTRUCT 3-1.50x1.50m RCBC PROVIDE WINGWALL, IRR. STRUCTURE</p>																																																																					
STATION	+300	+400	47+500	+600	+700	+800	+900	48+000																																																														
FINISHED PROFILE GRADE BYPASS	13.766	16.338	13.840	16.147	13.840	16.016	13.840	15.916	14.235	15.815	14.719	15.715	14.979	15.614	14.747	15.514	12.582	15.413	12.584	15.235	12.928	15.175	12.719	15.136	12.804	15.117	12.823	15.118	12.827	15.140	12.868	15.182	12.896	15.244	13.108	15.327	13.417	15.427	13.769	15.530	14.000	15.633	13.968	15.736	13.936	15.839	13.953	15.942	13.981	16.045	14.027	16.148	14.111	16.251	14.195	16.354	14.266	16.457	14.334	16.597	14.344	16.811	14.218	17.098	14.328	17.460	14.322	17.858	14.275	18.256
EXISTING GROUND BYPASS	13.766	16.338	13.840	16.147	13.840	16.016	13.840	15.916	14.235	15.815	14.719	15.715	14.979	15.614	14.747	15.514	12.582	15.413	12.584	15.235	12.928	15.175	12.719	15.136	12.804	15.117	12.823	15.118	12.827	15.140	12.868	15.182	12.896	15.244	13.108	15.327	13.417	15.427	13.769	15.530	14.000	15.633	13.968	15.736	13.936	15.839	13.953	15.942	13.981	16.045	14.027	16.148	14.111	16.251	14.195	16.354	14.266	16.457	14.334	16.597	14.344	16.811	14.218	17.098	14.328	17.460	14.322	17.858	14.275	18.256
HORIZONTAL CURVATURE	R=∞									R=∞																																																												
VERTICAL CURVATURE	L=80 Mo=+0.121			q=-0.502%			L=200 Mo=+0.254			q=0.515%			L=80 Mo=+0.148			q=2.000%																																																						
SUPERELEVATION	NC									NC																																																												

	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/27/02	<i>S. ROSE</i>		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) PLARIDEL BYPASS - CONTRACT PACKAGE III	HORIZONTAL 1:1000	PLAN AND PROFILE ALONG BYPASS (ULTIMATE STAGE) STA. 47+400 - STA. 48+000	RP-01
	SUBMITTED	9/20/02	<i>M. KAVANA</i>		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN OFFICE OF THE SECRETARY	FULL SIZE A1		

REFERENCE POINTS

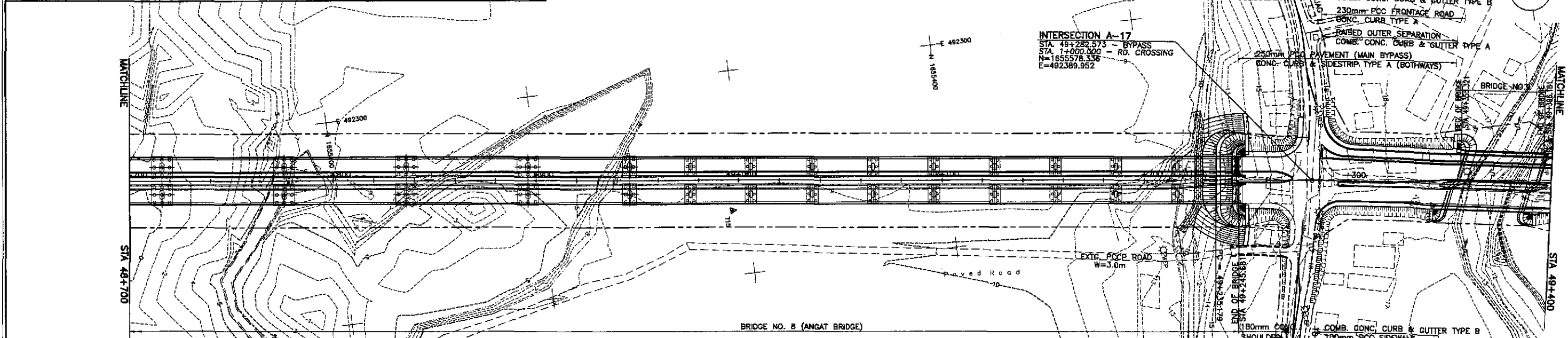
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-28	1,653,845.433	492,207.423	12.908	It is located on a rice paddy diko on the right side of the alignment in Bgy. Borge Mayor, Buzos.
BM-31	1,655,556.301	492,461.715	17.903	It is located on the side of the provincial road under an acacia tree on the right side of the alignment in Bgy. Tambocoro.



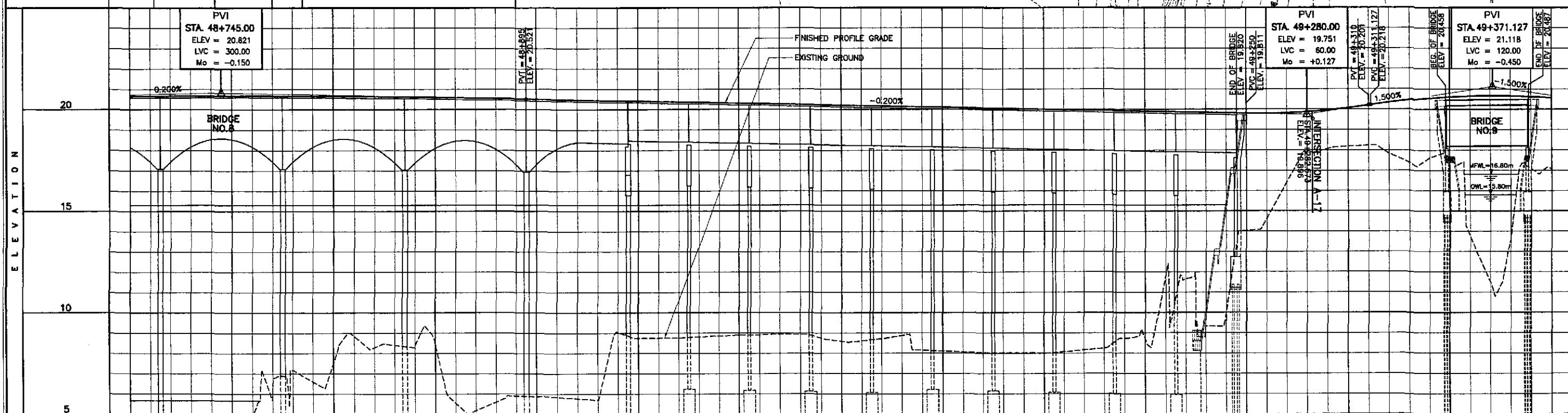
STATION	48+000	+100	+200	+300	+400	48+500	+600	+700																																																																
FINISHED PROFILE GRADE BYPASS	14.275	18.258	14.222	18.645	14.189	18.972	14.310	19.227	14.204	19.410	14.259	19.522	13.396	19.571	5.948	19.611	5.910	19.651	6.000	19.691	6.252	19.731	7.285	19.771	5.687	19.811	5.706	19.851	6.592	19.891	7.204	19.931	7.200	19.971	6.568	20.011	5.931	20.051	5.510	20.091	7.499	20.131	12.725	20.171	8.263	20.211	11.196	20.251	11.954	20.291	11.600	20.331	11.035	20.371	10.255	20.411	8.845	20.451	5.275	20.491	2.033	20.531	1.867	20.567	2.512	20.598	0.549	20.623	2.154	20.643	0.889	20.658
EXISTING GROUND BYPASS	14.275	18.258	14.222	18.645	14.189	18.972	14.310	19.227	14.204	19.410	14.259	19.522	13.396	19.571	5.948	19.611	5.910	19.651	6.000	19.691	6.252	19.731	7.285	19.771	5.687	19.811	5.706	19.851	6.592	19.891	7.204	19.931	7.200	19.971	6.568	20.011	5.931	20.051	5.510	20.091	7.499	20.131	12.725	20.171	8.263	20.211	11.196	20.251	11.954	20.291	11.600	20.331	11.035	20.371	10.255	20.411	8.845	20.451	5.275	20.491	2.033	20.531	1.867	20.567	2.512	20.598	0.549	20.623	2.154	20.643	0.889	20.658
HORIZONTAL CURVATURE	R=∞																																																																							
VERTICAL CURVATURE	q=2.000% L=100 Mo=-0.225										q=0.200%																																																													
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) PLARIDEL BYPASS - CONTRACT PACKAGE III	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	2/27/02	SIGNATURE		BUREAU OF DESIGN					HORIZONTAL	PLAN AND PROFILE ALONG BYPASS (ULTIMATE STAGE) STA. 48+000 - STA. 48+700	RP-02
	SUBMITTED	2/28/02	TEAM LEADER		Submitted By:	Reviewed By:	Recommended By:	Approved By:		VERTICAL		
			DANILLO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONOAN Undersecretary	SIMEON A. DATUMANONG Secretary	FULL SIZE A1				

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



REFERENCE POINTS				
REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-31	1,655,556.301	492,461.715	17.903	It is located on the side of the provincial road under an acacia tree on the right side of the alignment in Bay, Tambobong.
BM-32	1,655,771.206	492,471.912	17.367	It is located on the side of a dirt road near an electrical post on the right side of the alignment in Bay, Tambobong, San Rafael.



STATION	+700	+800	+900	49+000	+100	+200	+300	+400																															
FINISHED PROFILE GRADE BYPASS	20.658	20.667	20.671	20.670	20.653	20.651	20.634	20.611	20.583	20.550	20.511	20.471	20.431	20.391	20.351	20.311	20.271	20.231	20.191	20.151	20.111	20.071	20.031	19.991	19.951	19.911	19.871	19.831	19.805	19.878	20.065	20.341	20.652	20.658	20.561				
EXISTING GROUND BYPASS	0.889	0.726	1.308	4.868	7.169	7.541	8.280	8.331	5.541	5.609	5.887	5.782	9.041	8.741	8.803	8.888	8.843	8.748	8.608	8.872	8.105	8.028	8.009	8.066	8.244	8.712	11.639	10.019	14.634	17.836	18.182	17.841	17.622	13.733	13.754	17.088			
HORIZONTAL CURVATURE	R = ∞																			R = 3500																			
VERTICAL CURVATURE	L=300 Mo=-0.150					q=-0.200%										L=60 Mo=+0.127					q=1.500%					L=120 Mo=-0.450													
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) PLARIDEL BYPASS - CONTRACT PACKAGE III	SCALE : HORIZONTAL 1:1000 VERTICAL 1:100 FULL SIZE A1	SHEET CONTENTS : PLAN AND PROFILE ALONG BYPASS (ULTIMATE STAGE) STA. 48+700 - STA. 49+400	SHEET NO. : RP-03	
	CHECKED	9/27/06	<i>[Signature]</i>		Submitted By:	Reviewed By:	Recommended By:	Approved By:					
	SUBMITTED	9/30/06	<i>[Signature]</i>		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
	JICA JAPAN INTERNATIONAL COOPERATION AGENCY				BUREAU OF DESIGN OFFICE OF THE SECRETARY								FULL SIZE A1

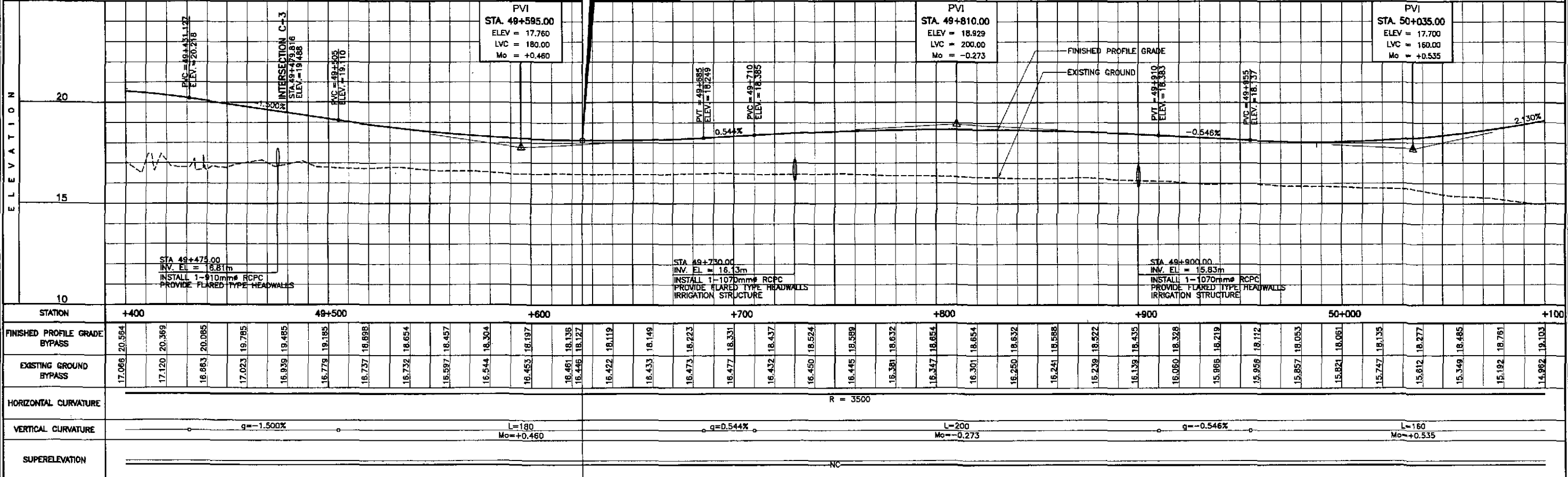
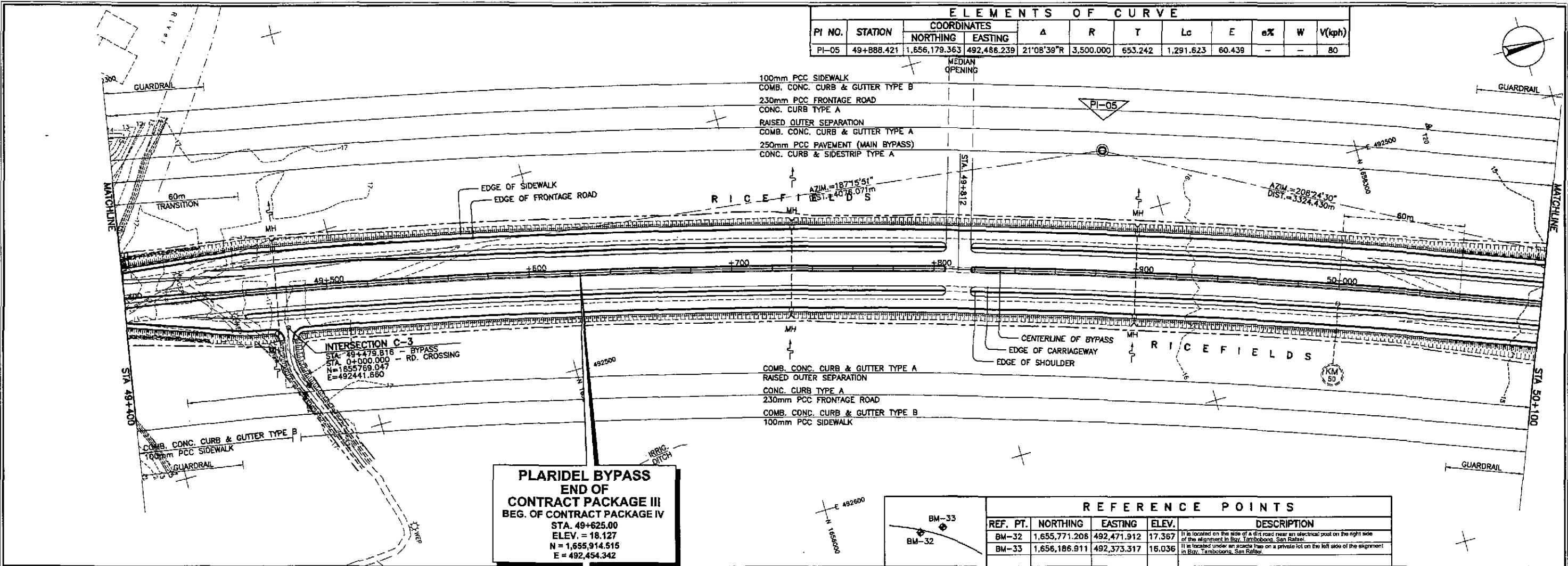
PI NO.	STATION	COORDINATES		Δ	R	T	Lc	E	e%	W	V(kph)
		NORTHING	EASTING								
PI-05	49+888.421	1,656,179.363	492,486.239	21°08'39"R	3,500.000	653.242	1,291.623	60.439	-	-	80

- 100mm PCC SIDEWALK
- COMB. CONC. CURB & GUTTER TYPE B
- 230mm PCC FRONTAGE ROAD
- CONC. CURB TYPE A
- RAISED OUTER SEPARATION
- COMB. CONC. CURB & GUTTER TYPE A
- 250mm PCC PAVEMENT (MAIN BYPASS)
- CONC. CURB & SIDESTRIP TYPE A

- COMB. CONC. CURB & GUTTER TYPE A
- RAISED OUTER SEPARATION
- CONC. CURB TYPE A
- 230mm PCC FRONTAGE ROAD
- COMB. CONC. CURB & GUTTER TYPE B
- 100mm PCC SIDEWALK

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

REF. PT.	NORTHING	EASTING	ELEV.	DESCRIPTION
BM-32	1,655,771.206	492,471.912	17.367	It is located on the side of a dirt road near an electrical post on the right side of the alignment in Bay Tambobong, San Rafael.
BM-33	1,656,186.811	492,373.317	16.036	It is located under an acacia tree on a private lot on the left side of the segment in Bay Tambobong, San Rafael.



STATION	+400	49+500	+600	+700	+800	+900	50+000	+1000
FINISHED PROFILE GRADE BYPASS	17.086	17.120	16.863	17.023	16.939	16.485	16.779	16.185
EXISTING GROUND BYPASS	17.086	17.120	16.863	17.023	16.939	16.485	16.779	16.185
HORIZONTAL CURVATURE	R = 3500							
VERTICAL CURVATURE	g = -1.500%		L = 180 Mo = +0.460		g = 0.544%		L = 200 Mo = -0.273	
SUPERELEVATION	NC							

JICA
JAPAN INTERNATIONAL COOPERATION AGENCY

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

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

BUREAU OF DESIGN
OFFICE OF THE SECRETARY

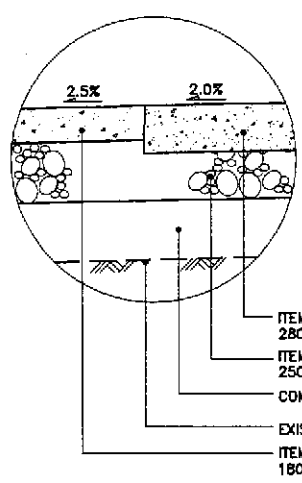
Submitted By: DANILO C. TRAJANO, Project Director
Reviewed By: JOSEFINA M. ALAGAR, Chief, Highways Division
Recommended By: GILBERTO S. REYES, OIC, Director IV
Recommended By: MANUEL M. BONOAN, Undersecretary
Approved By: SIMEON A. DATUMANDANG, Secretary

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

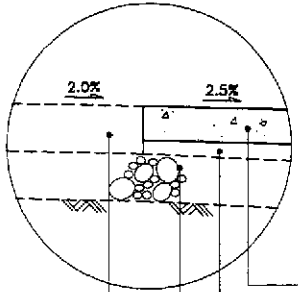
SCALE :
HORIZONTAL 1:1000
VERTICAL 1:100
FULL SIZE A1

SHEET CONTENTS :
PLAN AND PROFILE ALONG BYPASS (ULTIMATE STAGE)
STA. 49+400 - STA. 49+625

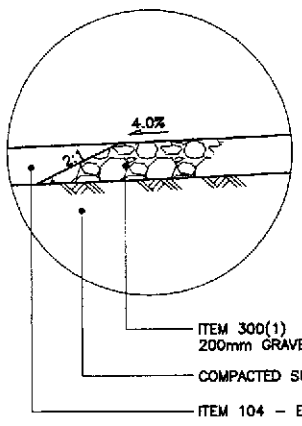
SHEET NO. :
RP-04



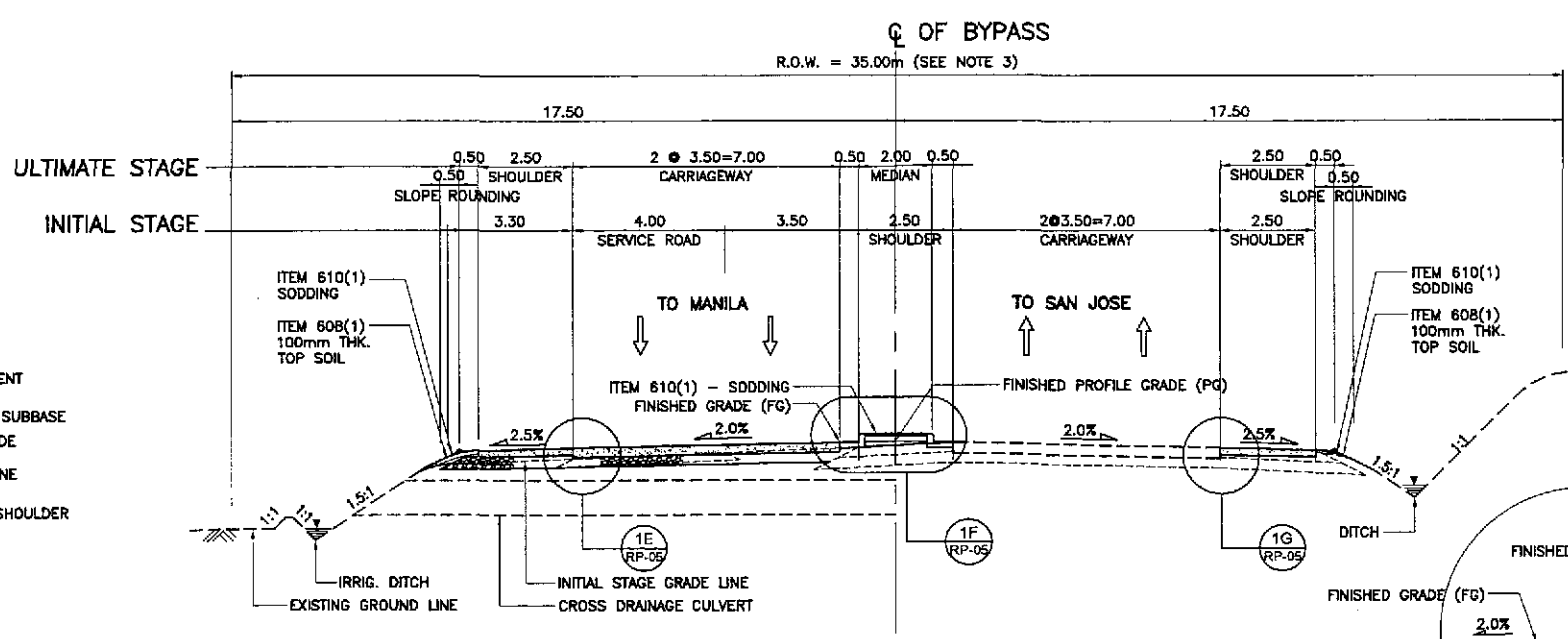
1E DETAIL
RP-05 SCALE 1:20



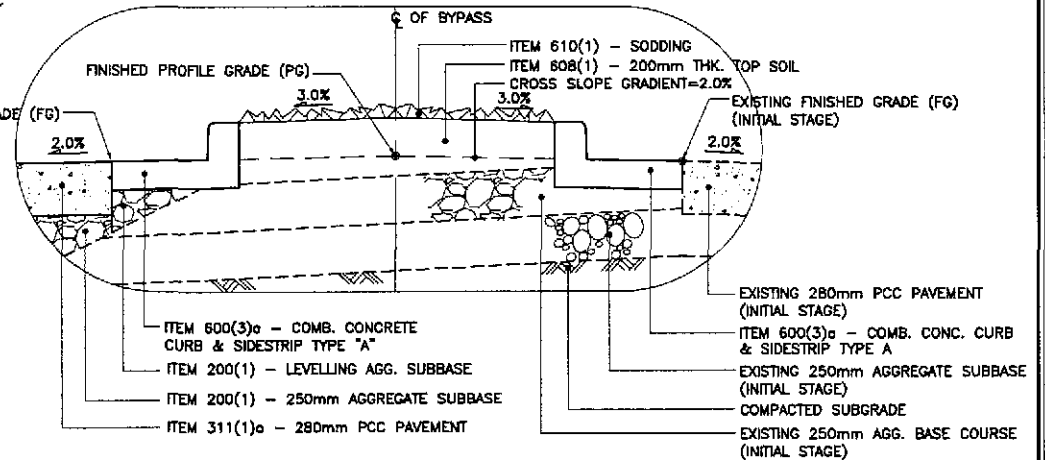
1G DETAIL
RP-05 SCALE 1:20



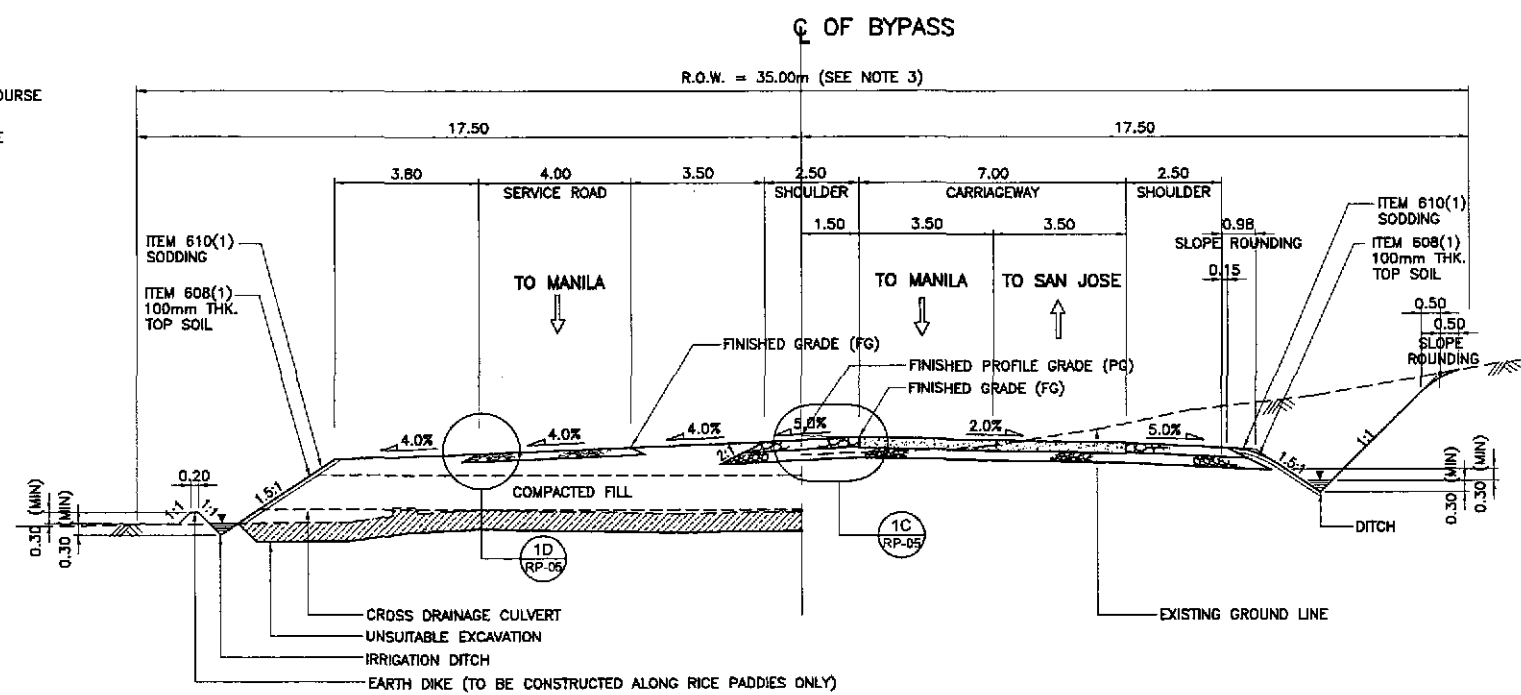
1D DETAIL
RP-05 SCALE 1:20



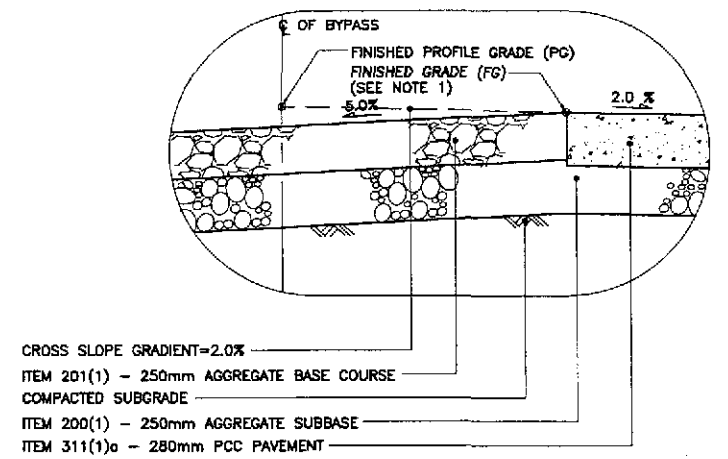
1B NORMAL SECTION - ULTIMATE STAGE
RP-05 SCALE 1:100



1F DETAIL
RP-05 SCALE 1:20



1A NORMAL SECTION - INITIAL STAGE
RP-05 SCALE 1:100

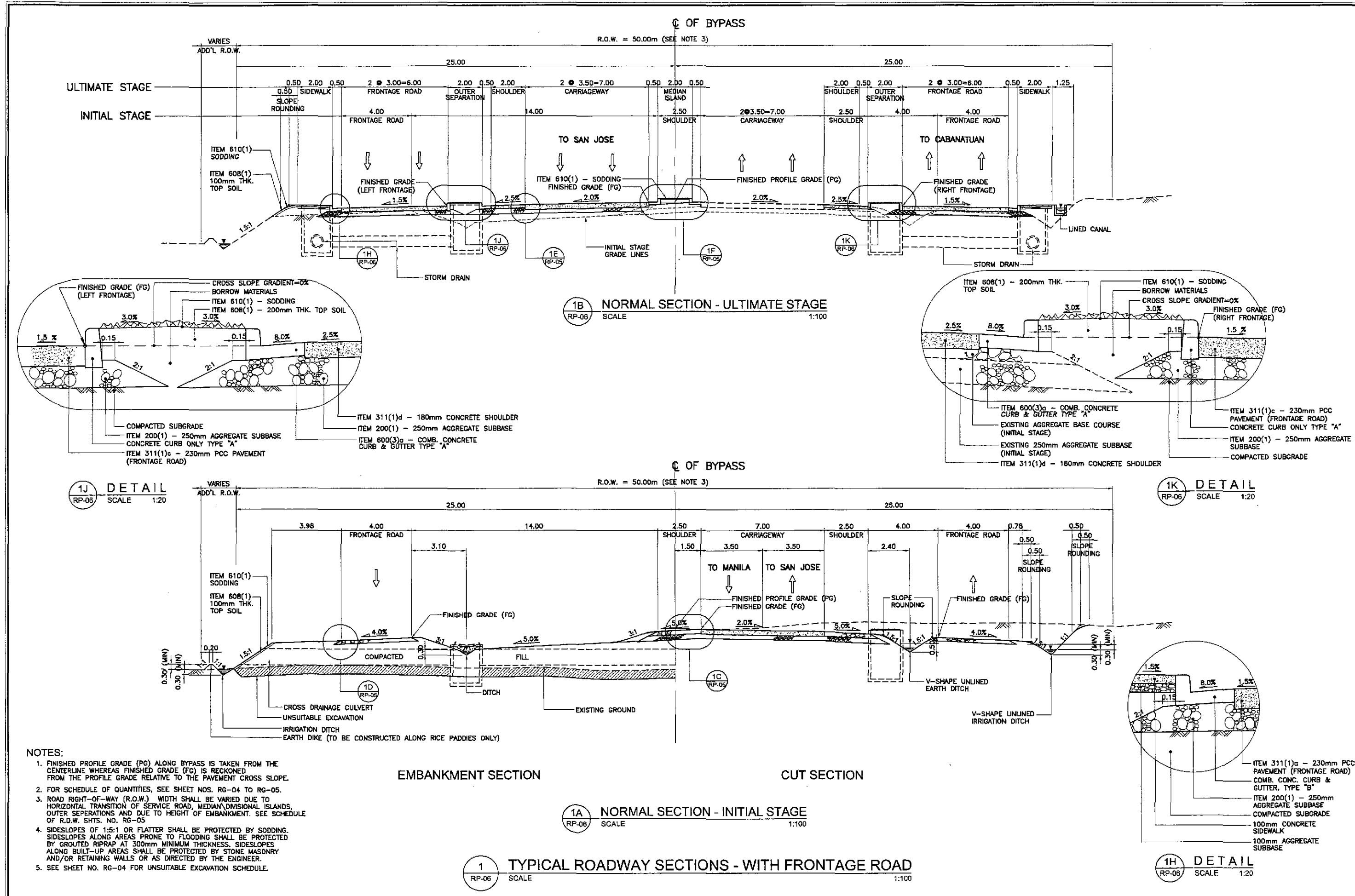


1C DETAIL
RP-05 SCALE 1:20

1 TYPICAL ROADWAY SECTIONS - WITHOUT FRONTAGE ROAD
RP-05 SCALE 1:100

- NOTES:
1. FINISHED PROFILE GRADE (PG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
 2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NOS. RG-04 TO RG-05.
 3. ROAD RIGHT-OF-WAY (R.O.W.) WIDTH SHALL BE VARIED DUE TO HORIZONTAL TRANSITION OF SERVICE ROAD, MEDIAN/DIVISIONAL ISLANDS, OUTER SEPARATIONS AND DUE TO HEIGHT OF EMBANKMENT. SEE SCHEDULE OF R.O.W. SHTS. NO. RG-05.
 4. SIDESLOPES OF 1:1 OR FLATTER SHALL BE PROTECTED BY SODDING. SIDESLOPES ALONG AREAS PRONE TO FLOODING SHALL BE PROTECTED BY GROUDED RIPRAP AT 300mm MINIMUM THICKNESS. SIDESLOPES ALONG BUILT-UP AREAS SHALL BE PROTECTED BY STONE MASONRY AND/OR RETAINING WALLS OR AS DIRECTED BY THE ENGINEER.
 5. SEE SHEET NO. RG-04 FOR UNSUITABLE EXCAVATION SCHEDULE.

<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p>		<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS</p>				<p>PROJECT AND LOCATION :</p> <p>THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)</p> <p>PLARIDEL BYPASS - CONTRACT PACKAGE III</p>	<p>SCALE :</p> <p>AS SHOWN</p> <p>FULL SIZE A1</p>	<p>SHEET CONTENTS :</p> <p>TYPICAL ROADWAY SECTIONS NORMAL SECTIONS WITHOUT FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE) (1 of 4)</p>	<p>SHEET NO. :</p> <p>RP-05</p>
<p>DESIGNED</p> <p>9/25/02</p> <p>CHECKED</p> <p>9/27/02</p> <p>SUBMITTED</p> <p>9/30/02</p>	<p>DATE</p> <p>SIGNATURE</p> <p>ACACIO</p> <p>GOSE</p> <p>Mr. Kinoshita</p>	<p>Submitted By:</p> <p>DANILO C. TRAJANO Project Director</p>	<p>Reviewed By:</p> <p>JOSEFINA M. ALAGAR Chief, Highway Division</p>	<p>Recommended By:</p> <p>GILBERTO S. REYES OIC, Director IV</p>	<p>Recommended By:</p> <p>MANUEL M. BONDAN Undersecretary</p>	<p>Approved By:</p> <p>SIMEON A. DATUMANONG Secretary</p>			



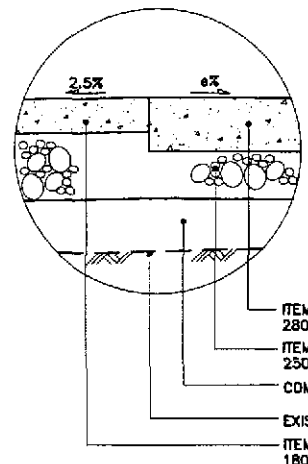
- NOTES:**
1. FINISHED PROFILE GRADE (PG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
 2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NOS. RG-04 TO RG-05.
 3. ROAD RIGHT-OF-WAY (R.O.W.) WIDTH SHALL BE VARIED DUE TO HORIZONTAL TRANSITION OF SERVICE ROAD, MEDIAN/DIVISIONAL ISLANDS, OUTER SEPARATIONS AND DUE TO HEIGHT OF EMBANKMENT. SEE SCHEDULE OF R.O.W. SHTS. NO. RG-05
 4. SIDESLOPES OF 1:5:1 OR FLATTER SHALL BE PROTECTED BY SODDING. SIDESLOPES ALONG AREAS PRONE TO FLOODING SHALL BE PROTECTED BY GROUTED RIPRAP AT 300mm MINIMUM THICKNESS. SIDESLOPES ALONG BUILT-UP AREAS SHALL BE PROTECTED BY STONE MASONRY AND/OR RETAINING WALLS OR AS DIRECTED BY THE ENGINEER.
 5. SEE SHEET NO. RG-04 FOR UNSUITABLE EXCAVATION SCHEDULE.

EMBANKMENT SECTION

CUT SECTION

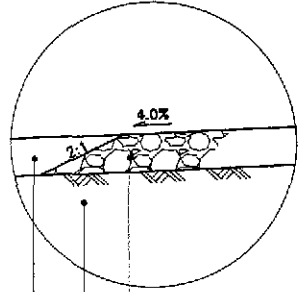
1 TYPICAL ROADWAY SECTIONS - WITH FRONTAGE ROAD
SCALE 1:100

<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 FULL SIZE A1</p>	<p>SHEET CONTENTS : TYPICAL ROADWAY SECTIONS NORMAL SECTIONS WITH FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE) (2 of 4)</p>	<p>SHEET NO. : RP-06</p>
<p>DESIGNED 9/2/06 CHECKED 9/27/06 SUBMITTED 9/30/06</p>	<p>DATE 9/2/06 9/27/06 9/30/06</p>	<p>SIGNATURE <i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i></p>	<p>PROJECT DIRECTOR DANILO C. TRAJANO</p>	<p>CHIEF, HIGHWAYS DIVISION JOSEFINA M. ALAGAR</p>	<p>OFFICE OF THE SECRETARY RECOMMENDED BY MANUEL M. BONDAN Undersecretary</p>	<p>OFFICE OF THE SECRETARY APPROVED BY SIMEON A. DATUMANDING Secretary</p>		



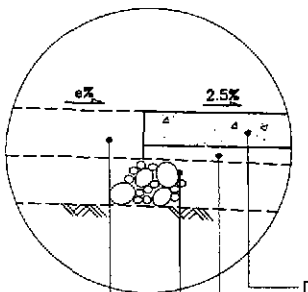
ITEM 311(1)^a
280mm PCC PAVEMENT
ITEM 200(1)
250mm AGGREGATE SUBBASE
COMPACTED SUBGRADE
EXISTING GROUND LINE
ITEM 311(1)^d
180mm CONCRETE SHOULDER

1E DETAIL
RP-07 SCALE 1:20



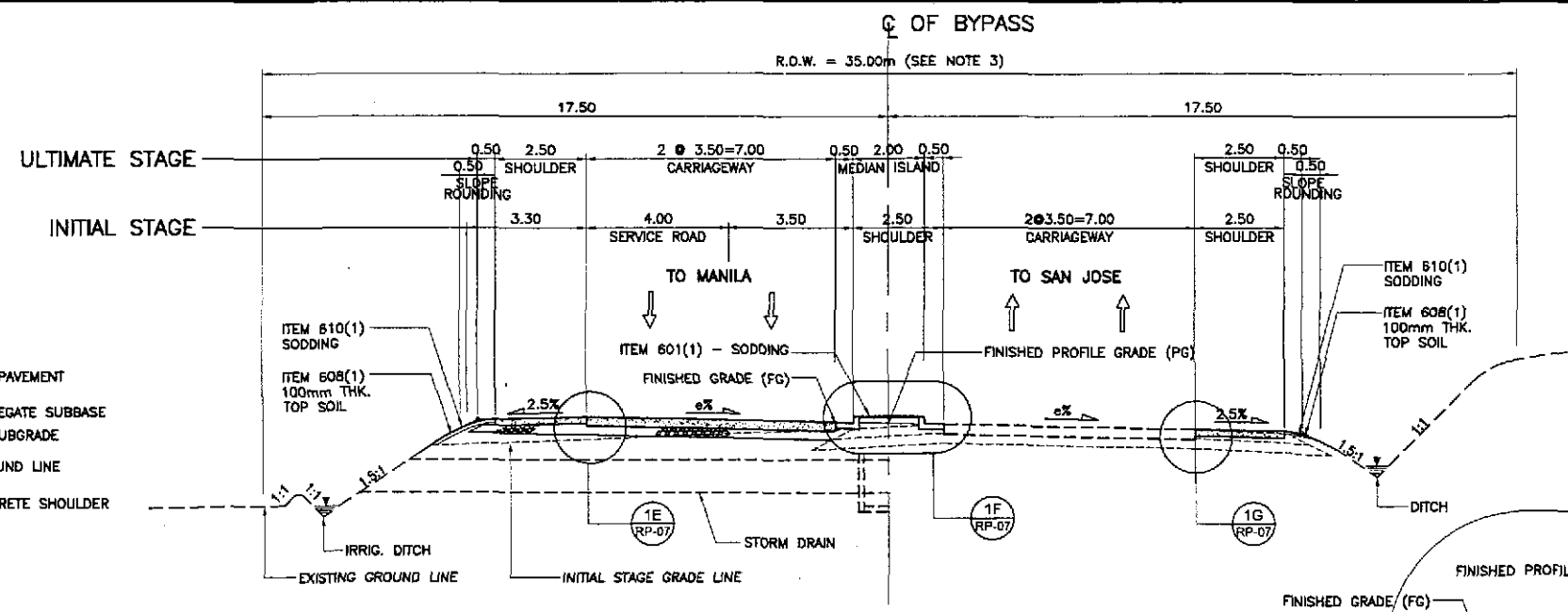
ITEM 300(1)
200mm GRAVEL SURFACE COURSE
COMPACTED SUBGRADE
ITEM 104 - EMBANKMENT (COMMON MATERIALS)

1D DETAIL
RP-07 SCALE 1:20

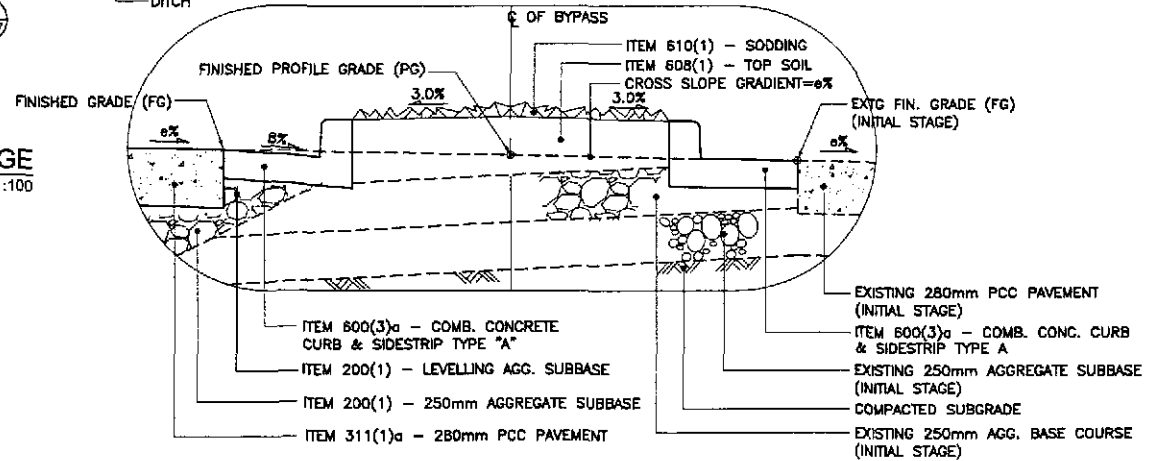


ITEM 311(1)^c
180mm CONCRETE SHOULDER
EXISTING AGGREGATE BASE COURSE (INITIAL STAGE)
EXISTING AGGREGATE SUBBASE (INITIAL STAGE)
EXISTING PCC PAVEMENT (INITIAL STAGE)

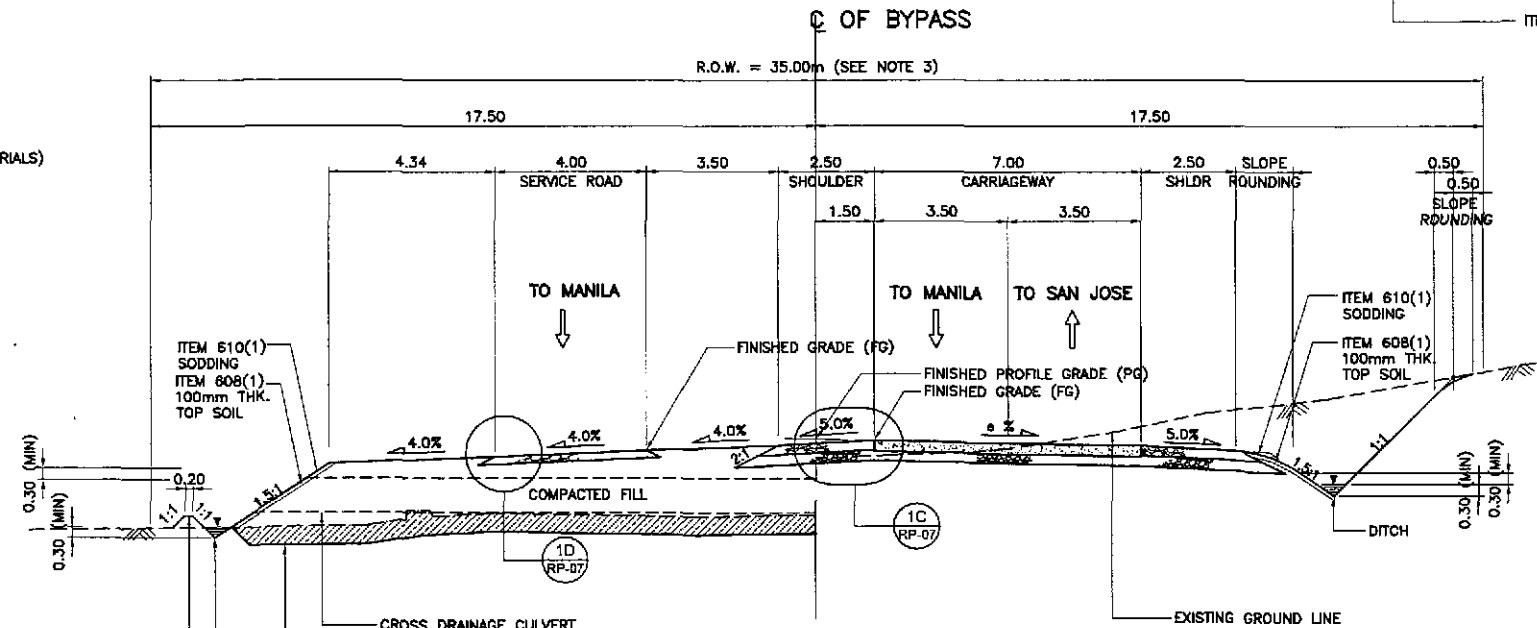
1G DETAIL
RP-07 SCALE 1:20



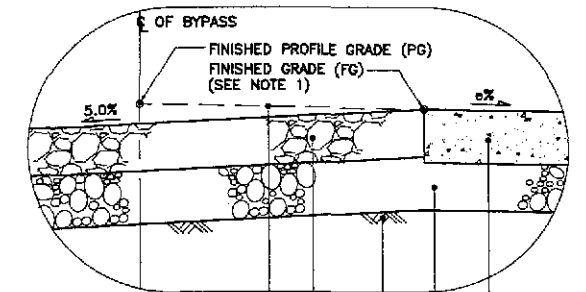
1B SUPERELEVATED SECTION - ULTIMATE STAGE
RP-07 SCALE 1:100



1F DETAIL
RP-07 SCALE 1:20



1A SUPERELEVATED SECTION - INITIAL STAGE
RP-07 SCALE 1:100



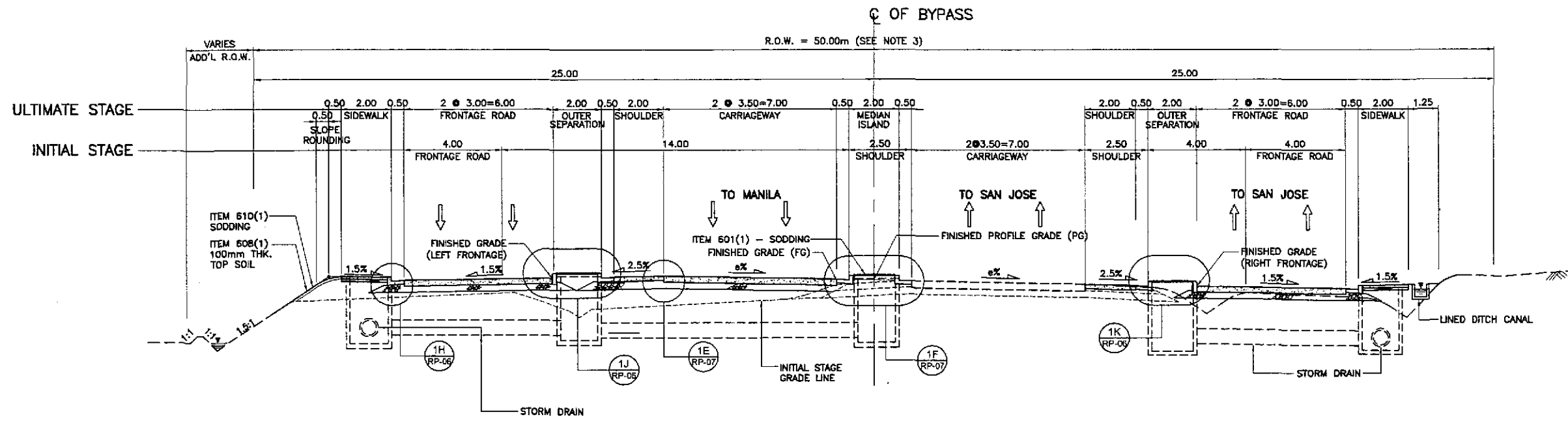
CROSS SLOPE GRADIENT=5.0%
ITEM 201(1) - 250mm AGGREGATE BASE COURSE
COMPACTED SUBGRADE
ITEM 200(1) - 250mm AGGREGATE SUBBASE
ITEM 311(1)^a - 280mm PCC PAVEMENT

1C DETAIL
RP-07 SCALE 1:20

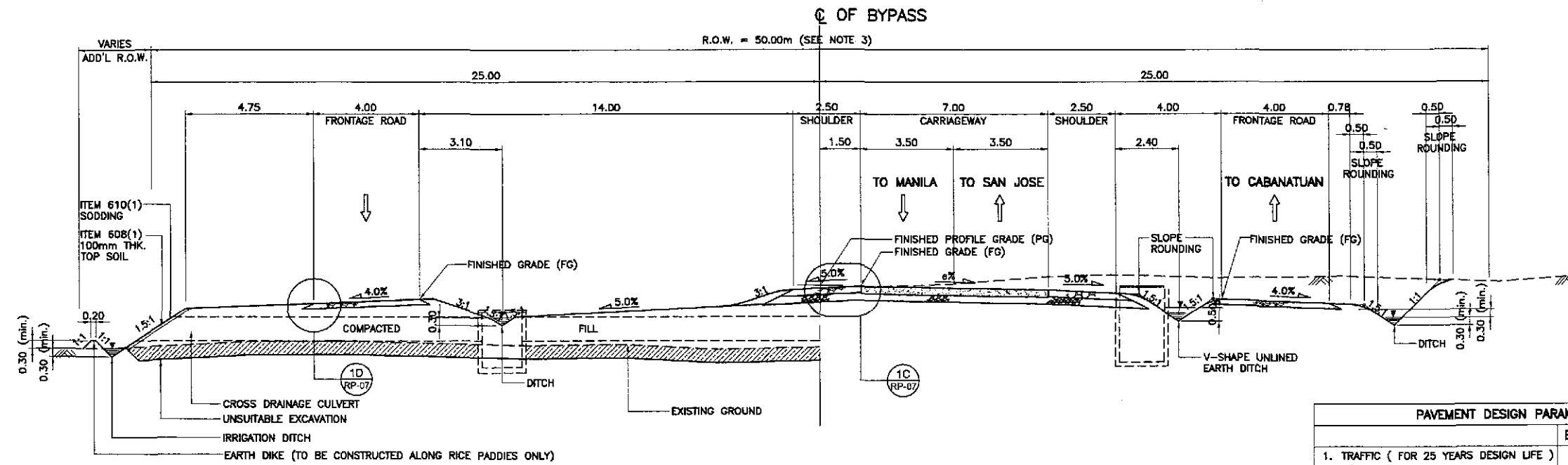
1 TYPICAL ROADWAY SECTIONS - WITHOUT FRONTAGE ROAD
RP-07 SCALE 1:100

- NOTES:
1. FINISHED PROFILE GRADE (PG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
 2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NOS. RG-04 TO RG-05.
 3. ROAD RIGHT-OF-WAY (R.O.W.) WIDTH SHALL BE VARIED DUE TO HORIZONTAL TRANSITION OF SERVICE ROAD, MEDIAN/DIVISIONAL ISLANDS, OUTER SEPARATIONS AND DUE TO HEIGHT OF EMBANKMENT. SEE SCHEDULE OF R.O.W. SHTS. NO. RG-05.
 4. SIDESLOPES OF 1:1.5 OR FLATTER SHALL BE PROTECTED BY SODDING. SIDESLOPES ALONG AREAS PRONE TO FLOODING SHALL BE PROTECTED BY GROUTED RIPRAP AT 300mm MINIMUM THICKNESS. SIDESLOPES ALONG BUILT-UP AREAS SHALL BE PROTECTED BY STONE MASONRY AND/OR RETAINING WALLS OR AS DIRECTED BY THE ENGINEER.
 5. SEE SHEET NO. RG-04 FOR UNSUITABLE EXCAVATION SCHEDULE.

	DESIGNED	DATE	SIGNATURE		PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	9/27/02	S. GOSE		THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	AS SHOWN	TYPICAL ROADWAY SECTIONS SUPERELEVATED SECTIONS WITHOUT FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE) (3 of 4)	RP-07
	SUBMITTED	9/27/02	M. K. ...		PLARIDEL BYPASS - CONTRACT PACKAGE III	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. BONDAN, Undersecretary APPROVED BY: SIMEON A. DATUMANONG, Secretary								



1B SUPERELEVATED SECTION - ULTIMATE STAGE
SCALE 1:100



1A SUPERELEVATED SECTION - INITIAL STAGE
SCALE 1:100

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

- NOTES:
1. FINISHED PROFILE GRADE (PG) ALONG BYPASS IS TAKEN FROM THE CENTERLINE WHEREAS FINISHED GRADE (FG) IS RECKONED FROM THE PROFILE GRADE RELATIVE TO THE PAVEMENT CROSS SLOPE.
 2. FOR SCHEDULE OF QUANTITIES, SEE SHEET NOS. RG-04 TO RG-05.
 3. ROAD RIGHT-OF-WAY (R.O.W.) WIDTH SHALL BE VARIED DUE TO HORIZONTAL TRANSITION OF SERVICE ROAD, MEDIAN/DIVISIONAL ISLANDS, OUTER SEPARATIONS AND DUE TO HEIGHT OF EMBANKMENT. SEE SCHEDULE OF R.O.W. SHTS. NO. RG-05.
 4. SIDESLOPES OF 1.5:1 OR FLATTER SHALL BE PROTECTED BY SODDING. SIDESLOPES ALONG AREAS PRONE TO FLOODING SHALL BE PROTECTED BY GROUTED RIPRAP AT 300mm MINIMUM THICKNESS. SIDESLOPES ALONG BUILT-UP AREAS SHALL BE PROTECTED BY STONE MASONRY AND/OR RETAINING WALLS OR AS DIRECTED BY THE ENGINEER.
 5. SEE SHEET NO. RG-04 FOR UNSUITABLE EXCAVATION SCHEDULE.

PAVEMENT DESIGN PARAMETERS		
	BEFORE ANGAT BRIDGE	AFTER ANGAT BRIDGE
1. TRAFFIC (FOR 25 YEARS DESIGN LIFE) DESIGN ESAL	4.40 x 10 ⁸	3.50 x 10 ⁸
2. DESIGN CBR SUBGRADE CBR	5.00 %	5.00 %
3. ROADBED RESILIENT MODULUS M _r E _{SB} E _{SS}	5,500 psi = 37.92 MPa 13,000 psi = 89.64 MPa 23,000 psi = 158.58 MPa	5,500 psi = 37.92 MPa 13,000 psi = 89.64 MPa 23,000 psi = 158.58 MPa
4. PERFORMANCE CRITERIA Δ PSI	2	2
5. DESIGN RELIABILITY Z _R S _D	50 % 0.35	50 % 0.35
6. DRAINAGE COEFFICIENT RIGID	1	1
7. LAYER COEFFICIENT o ₁ (FOR AC) o ₂ (FOR BASE) o ₃ (FOR SUBBASE)	0.39 0.105 0.095	0.39 0.105 0.095
8. PAVEMENT CONSTRUCTION THICKNESS PCCP SUBBASE	280mm THK 250mm THK	250mm THK 250mm THK

	DESIGNED	DATE	SIGNATURE		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	CHECKED	2/25/02	[Signature]		Submitted By:	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	TYPICAL ROADWAY SECTIONS SUPERELEVATED SECTIONS WITH FRONTAGE ROAD (INITIAL AND ULTIMATE STAGE) (4 of 4)
SUBMITTED	2/25/02	[Signature]	TEAM LEADER	Reviewed By:	OFFICE OF THE SECRETARY			PLARIDEL BYPASS - CONTRACT PACKAGE III	FULL SIZE A1		
				Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES D/C, Director IV	MANUEL M. BONDAN Undersecretary	SIMEON A. DATUMANONG Secretary			