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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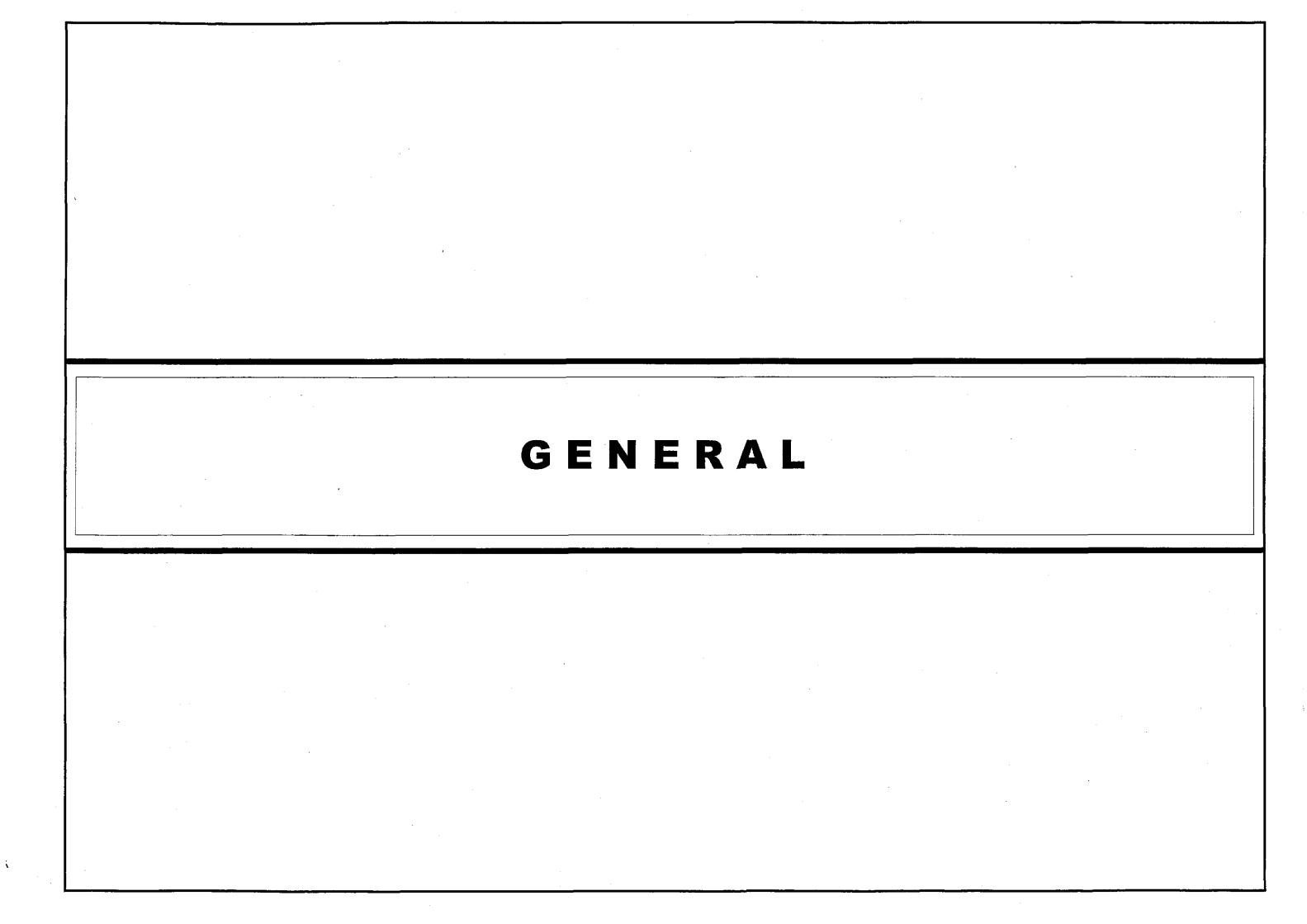
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PLARIDEL BYPASS - PACKAGE III

(ULTIMATE STAGE)

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GP-03 GP-04	INDEX OF DRAWINGS - 3 of 3	RM-02	LAYOUT PLAN, STA. 48 + 700.000 TO STA. 49 + 400.000	DP-01	PLAN AND PROFILE STA. 47 + 300.000 TO STA. 48 + 000.000
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GP-05 GP-06	LEGEND AND SYMBOLS	[[DI ANTINO CHARDRAII AND MI OMETER BOST I AVOIT DI AN	DP-03 DP-04	PLAN AND PROFILE STA. 48 + 700.000 TO STA. 49 + 400.000 PLAN AND PROFILE STA. 49 + 400.000 TO STA. 49 + 625.000
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(Plaridel, Cabanatuan and San Jose Bypasses)

PLARIDEL BYPASS - CONTRACT PACKAGE III
FULL SIZE A1

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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)

SHEET NO.	TITLE OF DRAWING	SHEET NO.	TITLE OF DRAWING	SHEET NO.	TITLE OF DRAWING
	DRIDGE NO. 8 (OTA 40.404 CC) ANGAT DIVER REPORT				
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ŀ	MAIN BRIDGE	B8M-47	REINFORCEMENT DETAILS AT PIER HEAD - P15 TO P21 (2 OF 2) REINFORCEMENT DETAILS FOR DIAPHRAGM	B8A-21	5 SPAN CONTINUOUS DECK SLAB REINF. DETAILS (10F 3)
		B6IVI-47	REINFORGEMENT DETAILS FOR DIAPHRAGIN	B8A-22	5 SPAN CONTINUOUS DECK SLAB REINF, DETAILS (2 OF 3)
	LAYOUT AND DIMENSIONS		SUBSTRUCTURE REINFORCING BARS	B8A-23	5 SPAN CONTINUOUS DECK SLAB REINF. DETAILS (3 OF 3)
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JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS
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KATAHIRA & ENGINEERS
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THE DETAILED DESIGN STUDY ON
UPGRADING INTER-URBAN HIGHWAY SYSTEM
ALONG THE PAN-PHILIPPINE HIGHWAY
(Plaridel, Cabanatuan and San Jose Bypassee)

PLARIDEL BYPASS - CONTRACT PACKAGE III

FULL SIZE A1

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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)

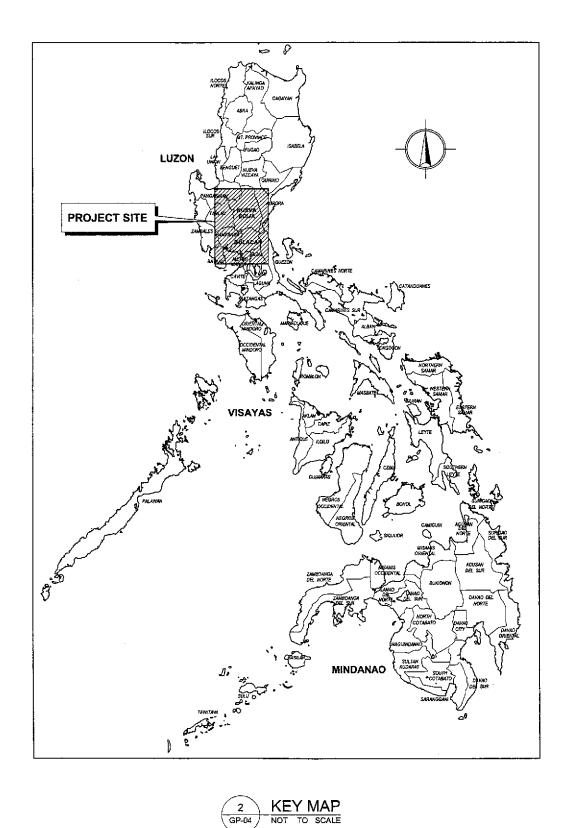
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	BRIDGE NO. 9 (STA. 49+355.321 - STA. 49+396.181)	FA-03	ENGR'S LIVING QTRS - FLOOR PLAN, ELEVATIONS, CROSS-SECTION AND REFLECTED CEILING PLAN				
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BG-01	BRIDGE LOCATION MAP	FA-05	ENGR'S LIVING QTRS - DET, CROSS-SECTION AND SCHE, OF DOORS & WINDOWS			•	
BG-02	GENERAL NOTES FOR BRIDGES (1 OF 2)	FA-06	FOUNDATION PLAN, R.C, RAMP DETAIL, DET. OF F-1, P-1 & DESIGN CRITERIA				
BG-03	GENERAL NOTES FOR BRIDGES (2 OF 2)	FA-07	ENGR'S FIELD OFFICE - FRONT & RIGHT SIDE ELEVATION OF STEEL STUD				
BG-04	SUMMARY OF QUANTITIES		FRAMES AND FRAMES SCHEMATIC DIAGRAMS				
	MAIN BRIDGE	FA-08	ENGR'S LIVING QTRS - FRONT & RIGHT SIDE ELEVATION OF STEEL STUD				
50.04]	FRAMES AND FRAMES SCHEMATIC DIAGRAMS				
B9-01 B9-02	GENERAL PLAN GENERAL ELEVATION & SECTIONS	FA-09	ENGR'S FIELD OFFICE - REAR & LEFT SIDE ELEVATION OF STEEL STUD FRAMES AND FRAMES SCHEMATIC DIAGRAMS				
B9-03	DECK FRAMING PLAN AND SECTIONS	FA-10	ENGR'S LIVING QTRS - REAR & LEFT SIDE ELEVATION OF STEEL STUD				
B9-04	AASHTO TYPE VI GIRDER (MODIFIED)		FRAMES AND FRAMES SCHEMATIC DIAGRAMS				
B9-05	CONC.PUMPING SEQUENCE AN DIAPHRAGM DETAILS	FA-11	DETAIL CONNECTIONS, DETAILS 1 TO 15			•	
B9-06	ABUT A1 & A2 MAINWALL REINF, DETAILS	FA-12	ROOF FRAMING PLAN, SCHEMATIC DIAGRAM, PURLIN CONNECTION AND				
B9-07	ABUT A1 & A2 WINGWALL REINF. DETAILS		CROSS BRACING CONNECTION				
B9-08	APPROACH SLAB PLAN, SECTIONS AND DETAILS						
B9-09	SHEAR KEY & RISER DETAILS		ELECTRICAL	1			
B9-10	ABUT. PROTECTION AND WIDE DRAIN DETAILS	[[
		FE-01	ENGR'S FIELD OFFICE - LIGHTING LAYOUT, POWER LAYOUT & ELECTRICAL				
	MAIN BRIDGE	1	SYMBOLS AND GENERAL NOTES				
BS-01	TYPICAL BERARING PAD EXP. JT. BEARING SLEEVE & ANCHOR BAR	FE-02	ENGR'S LIVING QTRS - LIGHTING LAYOUT, POWER LAYOUT & ELECTRICAL				
BS-02	TYPICAL PSCG SIDEWALK, RAILING AND DRAIN DETAILS		SYMBOLS AND GENERAL NOTES				
BS-03	TYPICAL REINFORCED CONC. PIPE DETAILS	FE-03	SCHEDULE OF LOADS & COMPUTATIONS & ELECTRICAL RISER DIAGRAM				
:			PLUMBING				
ļ	ELECTRICAL	FP-01	SEWER AND WATER LINE LAYOUT AND ISOMETRIC DIAGRAM				
	T. TOTAL OF AND ARREST BRANCO AND RETAIN	FP-02	SEPTIC TANK DETAILS	1			
	ELECTRICAL STANDARD DRAWINGS AND DETAILS	Ħ		İ			
ES-01 ES-02	NOTES & LEGENDS, SCHEMATIC CONTROL DIAG. & DUCT SECTION SERVICE POLE DETAILS		EXTERNAL				
ES-03	STREET LIGHT POLE DETAILS	FX-01	PLOT PLAN, ELEVATION OF FENCE & GATE & FOUNDATION DETAIL				
				1			
	ROADWAY LIGHTING LAYOUT FOR INTERSECTION						
EI-01 EI-02	LAYOUT PLAN AND LOAD SCHEDULE INTERSECTION A-17 LIGHTING LAYOUT, LOAD SCHEDULE & LIGHTING FIXTURE SCHEDULE]]					
L1-02							
	ROADWAY LIGHTING LAYOUT FOR BRIDGE		·				
EB-01	NOTES, LEGENDS AND LOAD SCHEDULE						
EB-02	LIGHT POST LAYOUT PLAN						
		11					
ĺ	ENGR'S FIELD OFFICE & LIVING QUARTERS						
ļ	ARCHITECTURAL	11					
	•	1					
FA-01	PERSPECTIVE AND TABLE OF CONTENTS	li .					
FA-02	ENGR'S FIELD OFFICE - FLOOR PLAN, ELEVATIONS, CROSS-SECTION AND REFLECTED CEILING PLAN						
	NEFLECTED GENERAL FLAN	11	}	}			
	DATE STATURE DESIGNED 2/25/04	DEPART	REPUBLIC OF THE PHILIPPINES PROJECT AND LOCATION : MENT OF PUBLIC WORKS AND HIGHWAYS THE DETAILED DE		SCALE :	SHEET CONTENTS :	SHEET N

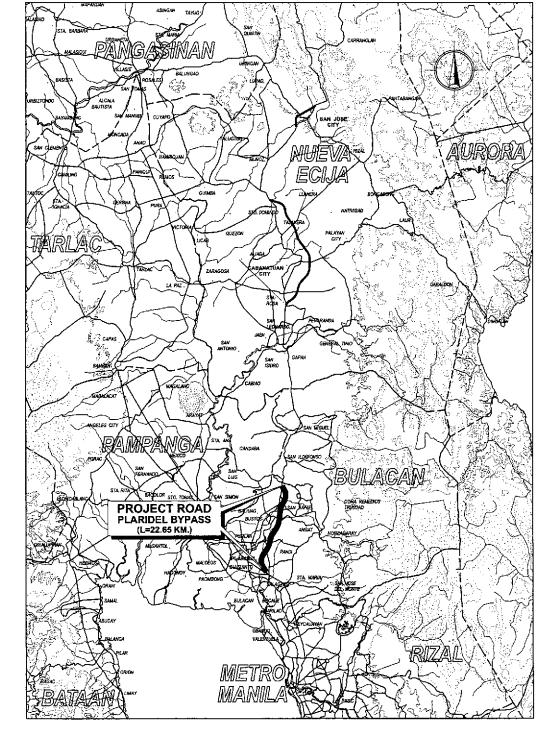
FULL SIZE A1

PLARIDEL BYPASS - CONTRACT PACKAGE III

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	DATE	SIGNATURE	4		REPUBLIC OF THE PHIL	IPPINES		
GNED	9/25/03		DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS					
	1/27 -	ACACIO	PJHL - PMO_	BUREAU O	F DESIGN	OFFICE OF THE SECRETARY		
CKED	9/27/02	5 9mc	Submitted By:	Reviewed By:	Recommended By:	Recommended By:	Approved By:	
	47	74. 16. A.	}			(See cover sheet for Signature)	(See cover sheet for Signature/Approval)	
MITTED	9/30/02	M. Killey V	DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	MANUEL M. BONDAN	SIMEON A. DATUMANONG	
	1/-/-	TEAM LEADER	Project Director	Chief, Highways Division	OIC, Director IV	Undersecretary	Secretary	







JAPAN INTERNATIONAL COOPERATION AGENCY

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DESIGNED 9/35/00 ACACID
CHECKED 9/27/07 SGOSE
SUBMITTED 9/36/07 TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

- PNO BUREAU OF DESIGN OFFICE OF THE SECRETARY

Reviewed By: Recommended By: Recommended By: Signourie Signourie)

C. TRAJANO JOSEFINA M. ALAGAR GILBERTO S. REYES MANUEL M. BONDAN SIMEON A. DATUMANON Undersecretory Secretary

Secretary

Approved 89: Signourie Signourie)

Signourie M. BONDAN SIMEON A. DATUMANON Undersecretory Secretary

Secretary

Approved 89: Signourie Signourie)

Signourie M. BONDAN SIMEON A. DATUMANON Undersecretory 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
FULL SIZE A1

KEY AND VICINITY MAP

SHEET CONTENTS :

GP-04

SHEET NO. :

LEGEND AND SYMBOLS

EXISTING F	FEATURES
ROAD	BARANGAY ROAD
CONTOUR	
ORIGINAL GROUND	
CONCRETÉ FENCE	
BARBED WIRE FENCE	-*-xx*-
HOUSE	
TREES	\$\$ \$\$ \$\$ \$\$ \$\$
BRIDGE	PLAN PROFILE
SINGLE PIPE CULVERT	PLAN PROFILE
DOUBLE PIPE CULVERT	
BOX CULVERT	
DITCH LINE/ IRRIGATION LINE	
IRRIGATION LINE	
RIVER/CREEK	
ELECTRIC POST	TP CEP WEP
KILOMETER POST	KM 156
TRAVERSE STATION POINT	A
BENCHMARK	*
FISH POND	FP /
NATIONAL POWER CORP. TRANSMISSION LINE	T NPC T

T ROAD		SECTION IN GRAVEL
E OR		SECTION IN
ONTAGE ROAD ONG BYPASS	THE RESIDENCE AND ADDRESS OF THE PARTY OF TH	STRUCTURAL STEEL
ONTOUR		SOFT BED MATERIALS TO BE EXCAVATED
IGHT-OF-WAY LIMIT		STONE MASONRY RETAINING WALL / REVETMENT / REINF. CONCRETE RETAINING WALL
NT OF INTERSECTION		NORTH SIGN
NINT OF INTERSECTION NO.	PI-00	GRID COORDINATES
OF PROJECT ROAD		AGGREGATE SOURCE
INISHED GRADE ON PROFILE	g-2.500%	LINE SYMMETRY
RIDGE	PLAN PROFILE	SECTION TARGET
INGLE RC PIPE CULVERT	PLAN PROFILE	ELEVATION TARGET
OUBLE RC PIPE CULVERT	PLAN PROFILE	TITLE TARGET
OX CULVERT	PLAN PROFILE	SUB-TITLE TARGET
ARTH DITCH FLOW		DETAIL REF TARGET
ECTION OF FLOW	-	BOREHOLE
ANHOLE	👉	STREET LIGHTING POLE
JARDRAIL ON PLAN		KILOMETER POST
JARDRAIL ON PROFILE	LEFT	STATION GRID
OUTED RIPRAP SLOPE		LINED IRRIG. CANAL
MBANKMENT		CHAIN LINK FENCE
CAVATION		SODDING ON PLAN
ECTION IN WATER		LOW TREES
ECTION IN EARTH		MIDDLE TREE
CTION IN CONCRETE		HIGH TREE

10		DATE /	SURNATURE		REPUBLIC OF THE PH	Lippines		PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	COPERATION AGENCY	DESIGNED 9/25/67	A ACACIO PJHL - PMO	DEPARTMENT BUREAU 0		RKS AND HIGHWAY	'S THE SECRETARY	THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY			
KATAHIRA & ENGINEERS		CHECKED 9/27/02	- 7.5 d ·		Recommended By:	Recommended By: (See cover sheet for Signature)	Approved By: (See cover sheet for Signature/Approval)	(Plaridel, Cabanatuan and San Jose Bypasses)	NOT TO SCALE	LEGEND AND SYMBOLS	GP-05
O EI INTERNATIONAL	CO., LTD.	SUBMITTED 9/2/01	TEAM LEADER Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES OIC, Director IV	MANUEL M. BONOAN Undersecretory	SIMEON A. DATUMANONG Secretary	PLARIDEL BYPASS - CONTRACT PACKAGE III	FULL SIZE A1	<u> </u>	

ABBREVIATIONS

· A	PARAMETER (CLOTHOID)	DIST.	DISTANCE	Lo	SUPERELEVATION RUN-OFF	NIC	NOT INCLUDED IN CONTRACT	
MABA	ABANDON	DIV.	DIVISION	LG	LONG	MPa	MEGA PASCAL	
ABT	ABOUT	DRWG./DWG.	DRAWING	ЩУ	LONG LEG VERTICAL	MC	MANHOLE COVER	l
ABUT	ABUTMENT	DWY.	DRIVEWAY	LM	LINEAR METER	RP	REFERENCE POINT	
AC	ASPHALT CONCRETE	e%	DESIGN SUPERELEVATION	LONGIT.	LONGITUDINAL	RSP	ROCK SLOPE PROTECTION	
AGG	AGGREGATE	Ε	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	Ε	EXTERNAL DISTANCE	m	METER	SDWK.	SIDEWALK	1
ASTM	AMERICAN STANDARD FOR TESTING & MATERIALS	EF	EACH FACE	mm	MILLIMETER	SHT.	SHEET	
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY	EG	EDGE OF GUTTER	XAM	MAXIMUM	SL	SLOPE	
	& TRANSPORTATION OFFICIALS	ELEV./EL.	ELEVATION	MFL	MAXIMUM FLOOD LEVEL	SQ.M./m	SQUARE METER	
AVE	AVENUE	EMB.	EMBANKMENT	MFWL	MAXIMUM FLOOD WATER LEVEL	SMH	SEWER MANHOLE	
AZIM.	AZIMUTH	ENGR.	ENGINEER	МН	MANHOLE	SP	SPIRAL	
BCC/SC/PC	BEGINNING OF CIRCULAR CURVE	EP	EDGE OF PAVEMENT	MIN.	MINIMUM	SPCD.	SPACED	
BDRY LN	BOUNDARY LINE	EQ	EQUAL ; EQUATION	MISC.	MISCELLANEOUS	SPCS.	SPACES	
BEG.	BEGINNING	EQN.	EQUATION	. MO	MIDDLE ORDINATE	SPL	SPECIAL	
BET.	BETWEEN	ESMT	EASMENT	MPo	MEGA PASCAL	SPECS.	SPECIFICATIONS	
BGY./BRGY.	BARANGAY	ETC/ST	END OF TRANSMON CURVE	MSL	MEAN SEA LEVEL	SQ.	SQUARE	ſ
BH	BOREHOLE	EW	EACH WAY	MT	METRIC TON	ST.	STREET	
BK	BACK	EXC.	EXCAVATION	DPWH	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	STA.	STATION	
BLDG.	BUILDING	EXIST./EXTG.	EXISTING	MWSS	METROPOLITAN WATERWORKS & SEWERAGE SYSTEM	STD.	STANDARD	
BLVD.	BOULEVARD	EXP.	EXPANSION BEARING	N	NORTH / NEWTON	STIFF.	STIFFENERS	
ВМ	BENCH MARK	EXT.	EXTERIOR	N/A	NOT APPLICABLE	STIRR./ST	R STIRRUP(S)	i
BMSL	BELOW MEAN SEA LEVEL	EXTN.	EXTENSION	NC	NORMAL CROWN	STR.	STRAIGHT	
BOT./BOTT	воттом	FF	FAR FILL/FAR FACE	NF	NEAR FACE	STRUC./S	TRUCT STRUCTURAL	
BR.	BRIDGE	FG	FINISHED GRADE	NO./No.	NUMBER	SURVY.	SURVEY	
BRG	BEARING	FIN,	FINISHED	oc/o.c.	ON CENTER	SYMM.	SYMMETRY	· ·
BS	BACK STATION; BOTH SIDES	FPL	FINISHED PAVEMENT LEVEL	OD	OUTSIDE DIAMETER	Т	TANGENT	
BST	BITUMINOUS SURFACE TREATMENT	FTG,	FOOTING	OGL	ORIGINAL GROUND LEVEL	ТВМ	TEMPORARY BENCHMARK	
BTC/TS	BEGINING OF TRANSITION CURVE	FH	FIRE HYDRANT	OUT INV.	OUTLET INVERT	TEMP.	TEMPORARY	
BW	BOTHWAYS	FWL	FLOOD WATER LEVEL	OWL	ORDINARY WATER LEVEL	THK,	THICK	
C	CURVE	q	GRADIENT IN PERCENT	PCC	PORTLAND CEMENT CONCRETE	Tk	SHORT TANGENT OF SPIRAL	
CAB	CRUSHED AGGREGATE BASE	GALV.	GALVANIZED	PEJ	PREMOULDED EXPANSION JOINT	TL	LONG TANGENT OF SPIRAL	
CALC.	CALCULATED	GEN.	GENERAL	PHIL.	PHILIPPINE(S)	TRANS,	TRANSVERSE	
СВ	CATCH BASIN	GIP	GALVANIZED IRON PIPE	PI	POINT OF INTERSECTION	Ts	TOTAL TANGENT DISTANCE	j
c / c	CENTER TO CENTER	GPS	GLOBAL POSITIONING SYSTEM	PJHL	PHILIPPINE-JAPAN HIGHWAY LOAN	TYP.	TYPICAL OR TYPE	
СЕМ	CEMENT	GL	GROUND LEVEL	PL	PROPERTY LINE/ PLATE	v	DESIGN SPEED	
CEP	CONCRETE ELECTRIC POST	GRD.	GRADE	PLDT	PHILIPPINE LONG DISTANCE TELEPHONE COMPANY	VAR.	VARIABLE/VARIES	
cm.	CENTIMETER	HDWL.	HEADWALL	PMO	PROJECT MANAGEMENT OFFICE	VC VC	VERTICAL CURVE	
Cu M/m ³	CUBIC METER	HFL	HIGH FLOOD LEVEL	POC	POINT ON CURVE	VER.	VERIFIED	
CHB	CONCRETE HOLLOW BLOCK	HOR.	HORIZONTAL	POT	POINT OF TANGENT	VERT.	VERTICAL	
CIM	CURB INLET MANHOLE	HSE	HOUSE	PP	POWER POLE	VOL	VOLUME	
CI	CURB INLET	HT.	HEIGHT	PR	PROJECT ROAD	w	WIDENING	
CL	CENTERLINE	HTL	HIGH TIDE LEVEL	PRC	POINT OF REVERSE CURVE	11 W	WIDTH	
CLR	CLEAR	HWL/HW	HIGH WATER LEVEL/HIGH WATER	PROJ.	PROJECT	 W/	WITH "	
COL(S)	COLUMN(S)	HWY,	HIGHWAY	PROP.	PROPOSED	₩/o	WITHOUT	
COMB. CONC.	COMBINE CONCRETE	I	INTERSECTION ANGLE	PVC	POLYVINYL CHLORIDE	WEP	WOODEN ELECTRIC POST	· ·
CONC.	CONCRETE	ID	INSIDE DIAMETER	PVI	POINT OF VERTICAL INTERSECTION	WK	WALK	[
CONC. MON.	CONCRETE MONUMENT	IN.	INCHES	PVMT.	PAVEMENT	WT	WATER TANK	
CONST.	CONSTRUCTION	INC,	INCORPORATED	QTY	QUANTITY	Х,Ү	COORDINATE OF BCC AND ECC W	пн
CONST. JT.	CONSTRUCTION JOINT	inc, in. inv.	INLET INVERT	QII R	RADIUS	A ₂ 1	RESPECT TO TANGENT	
CONT.	CONTINUOUS		INTERIOR	**	REINFORCED CONCRETE	B.		
CORP.	CORPORATION	INT. INTERM.	INTERIOR	RC RCBC	REINFORCED CONCRETE BOX CULVER	o. ♠	AND AT	
CP	CROSS PIPE	INTERM.	IRRIGATION	RCBG	REINFORCED CONCRETE BOX COLVER REINFORCED CONCRETE BOX GIRDER	₩	BASELINE	
	CURB AND GUTTER					₽ <u>₽</u>		
C & G	CULVERT	Л.	JOINT .	RCDG	REINFORCED CONCRETE DECK GIRDER	¥ ~	CENTERLINE	
CULV.		kg.	KILOGRAM	RCPC	REINFORCED CONCRETE PIPE CULVERT	u, =	INFINITY	ļ
C/WAY	CARRIAGEWAY	KN PD-	KILO NEWTON	RD	ROAD	%	PERCENT PLUS / MINUS	j
CYL.	CYLINDRICAL	KPa	KILO PASCAL	RDWY.	ROADWAY	+/-	PLUS / MINUS	
CTR	CENTER	FIX	FIX BEARING	REINF.	REINFORCED	ø 	DIAMETER	
DEPT.	DEPARTMENT	KM	KILOMETER	REP	RELOCATED ELECTRIC POST	Ø	SQUARE	
DET.	DETAIL	KPH .	KILOMETER PER HOUR	RÉT. WALL	RETAINING WALL	CP ,	CONTROL POINT	
DIA./DIAM	DIAMETER	L	LENGTH	ROW	RIGHT-OF-WAY	L	ANGLE SHAPE	
DIAPH.	DIAPHRAGM	Lc	LENGTH OF CIRCULAR ARC	RS	RIGHT SIDE			
INIA	DESIGNED 9/25/82 ACACID		REPUBLIC OF THE PHILIPPINES	HOLDAYANG	PROJECT AND LOCATION :	SCALE : SHEE	CONTENTS:	SHEET NO. :
االا	DESIGNED 9/25/07/10000	<u> </u>	DEPARTMENT OF PUBLIC WORKS AND I	IGHWAYS	THE DETAILED DESIGN STUDY ON			

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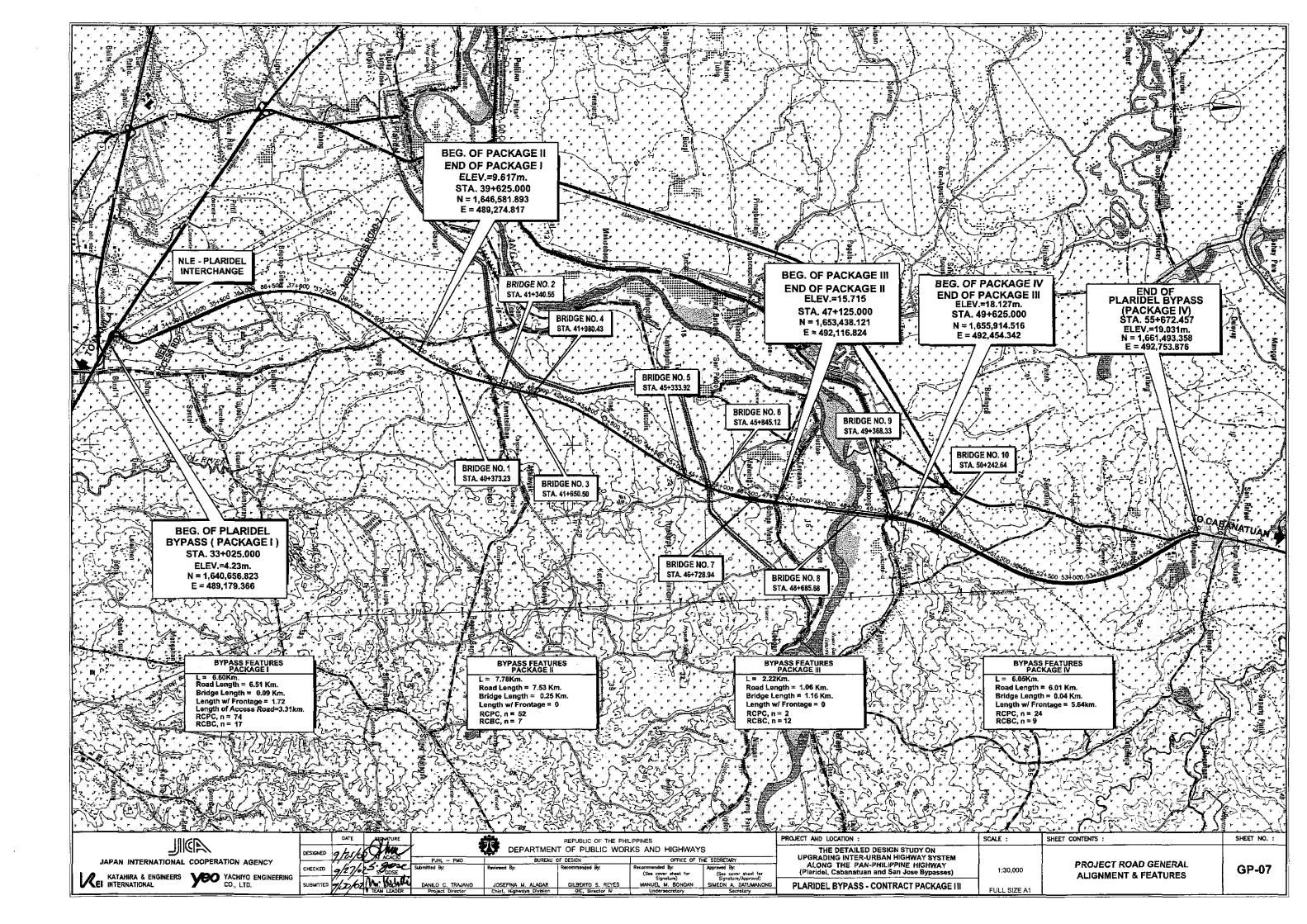
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	SUBMITTED	9/20/02	TEAM LEADER
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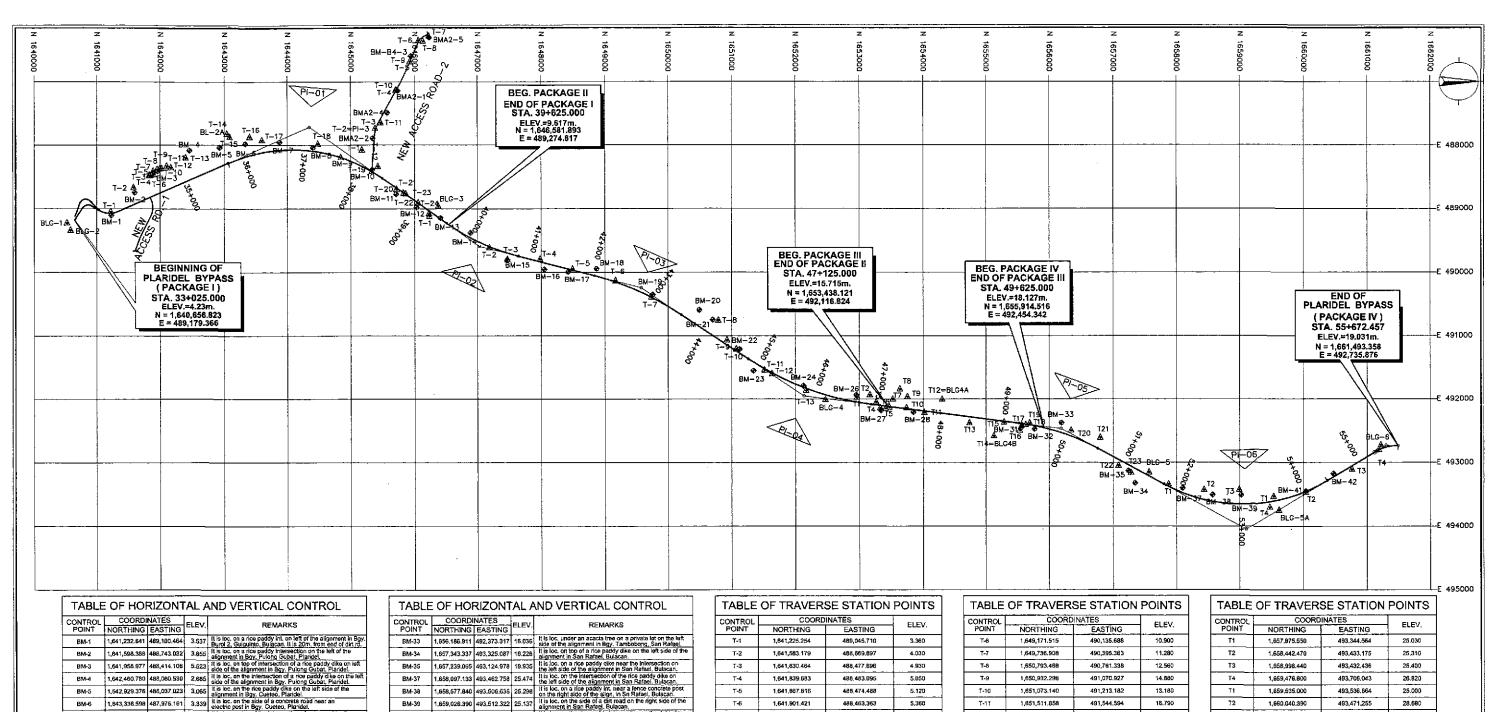
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ľ	A. ACACIO	PJHL - PMD	BUREAU () F DESIGN	OFFICE OF T	HE S
ľ	S. COSE	Submitted By:	Reviewed By:	Recommended By:	Recommended By: (See cover sheet for	Apr
į	hu Kildh	DANILO C. TRAJANO	JOSEFINA M. ALAGAR	GILBERTO S. REYES	Signoture) MANUEL M. BONDAN	sı
ì	TEAM LEADER	Project Director	Chief, Highways Division	OIC. Director N	Undersecretory	1-

PROJECT AND LOCATION :	SCALE :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	NOT TO SCALE
PLARIDEL BYPASS - CONTRACT PACKAGE III	

ABBREVIATIONS

GP-06





FORM	NORTHING	EAGING		
BM-1	1,641,232,641	489,100.464	3.637	It is loc. on a rice paddy int. on left of the alignment in Bgy. Burol 2, Guiguinto, Bulacan, It is 20m, from end of dirt rd.
BM-2	1,641,598.388	488,743.032	3.855	It is too, on a rice paddy intersection on the left of the alignment in Boy, Pulong Gubat, Plandel.
ВМ-3	1,641,958.977	488,414.108	5.523	It is loc, on top of intersection of a rice paddy dike on left side of the alignment in Bgy, Pulong Gubat, Plandel.
BM-4	1,642,460,780	488,080.530	2.685	It is loc, on the intersection of a rice paddy dike on the left side of the alignment in Bgy. Pulong Gubat, Plandel.
BM-5	1,642,929.376	488,037.023	3.065	It is loc, on the rice paddy dike on the left side of the alignment in Bgy. Cueteo, Plandel.
BM-6	1,643,338.598	487,976.161	3.339	It is loc, on the side of a concrete road near an electric post in Bgy. Cueteo, Planidel.
BM-7	1,543,883,348	487,952.887	3.883	It is loc, on top of the intersection of a rice paddy dike on the left side of the alignment in Boy, Cueteo, Plande).
BM-8	1,544,402,499	488,039.520	5.178	It is loc. on a rice peoply dike on the left side of the alignment in Bgy. Bulihan. Plaricel.
BM-9	1,644,847.404	488,197.025	6.382	It is loc. on a rice peddy dike along the alignment in Bgy, Bullhan, Plaridel.
BM-10	1,645.345.307	486,386.233	6,802	It is loc, on the side of a dirt road near a fence concrete post on left side of the align, in Sgy, Bulihan, Plaridel.
BM-11	1.645.714.384	486,771.939	8.317	it is loc. on the dike of a fishpond on the right side of the alignment in Bgy. Bulihan, Ptaridel.
BM-12	1.646.032.378	488,978.695	8.415	It is loc, on the side of the provi road on the right side of align, near the comer of a wall in Bgy. Bullhan, Plandel.
BM-13	1,646,415.622	489,145,127	7.659	it is loc. on the back of a college on the left side of the alignment in Bgy, Builhan, Plandel.
BM-14	1,646,892.978	489,377. 904	8.484	It is loc, on a rice paddy dike on the left side of the align, surrounded by banana in Bgy, Bulihan, Plaridel,
BM-15	1,647,467.925	489.802.574	8.B01	It is loc, on the center of a dirt road on the right side of the afignment in Bgy, San Jose, Baliwag.
BM-16	1,648,054.174	489,953.321	10.501	It is loc, on the int, of the bgy, road & the provi road on the left side of the align, in Bgy, San Jose, Baiwag.
BM-17	1,848,424.838	489,994.453	10.582	un de light side of the align. In Egy, San Jose, Salway.
BM-18	1,848,870.652	489,943.559	10.265	side of the alignment in egy. San Josa, Ballwag.
BM-19	1,649,757.184	490,350.187	11.391	It is loc, under a tree on the side of the road where an irr. canal is on the left side of align, in Bgy, Malamig, Bustos.
BM-20	1,650,493.060	490,591.189	11.815	It is foc, under a tree near an unfinished house on the left side of the alignment in Bgy. Malamig, Bustos.
BM-21	1,650,705.071	490,746.236	12.246	It is act on the side of the rd, near a culvert about a meter from the int, on the left side of the alignment in Bustos.
BM-22	1,551,121.786	491,211.136	12,593	the let albe of the alignment in Egy. Malamig, Bustos.
BM-23	1,651,339.258	491,553.289	18.706	It is loc, on the side of the road near an elect, post on the right side of the alignment in Bgy. Malamig, Buslos.
BM-24	1,652,126.811	491,790 544	14.480	It is loc,on the side on a wall on a fishpond dike about 40m. from the road on the lef side of the align, in Bustos.
BM-26	1,652,951.730	491,935.264	17,018	It is loc, on the slice of the dirt road near a coconut tree on the left side of the align, in Bgy, Malamig, Bustos,
BM-27	1,653,336.791	492,180,066	16.372	The labor and the class of the and consents the consent and the
BM-28	1,653,845,433	492.207.423	12.908	It is loc. on a rice paddy dike on the right side of the alignment in Bgy. Bonga Menor, Bustos.
BM-31	1,655,556.301	492,461.715	17.903	I late had no the state of the same of the
BM-32	1,655,771.206	492,471.912	17.367	

TABLE	OF HO	RIZONT	AL A	ND VERTICAL CONTROL
CONTROL	COORD	NATES	E1 E1	DEMARKS
POINT	NORTHING	EASTING	ELEV.	REMARKS
BM-33	1,656,186.911	492,373.317	15.036	It is loc, under an acadia tree on a private lot on the left side of the alignment in Bgy, Tambobong, San Rafael.
BM-34	1,657,343.337	493,325.087	16.228	It is loc. on top of a rice paddy dike on the left side of the alignment in San Rafael, Bulacan.
BM-35	1,657,239.065	493,124.978	19.935	It is foc, on a rice paddy cike near the Intersection on the left side of the alignment in San Rafael, Bulacan.
BM-37	1,658,097.133	493,462.758	25.474	It is loc, on the intersection of the rice paddy dike on the left side of the alignment in San Rafael, Bulacan.
BM-38	1,658,577.840	493,506.635	25.298	It is loc, on a rice paddy int, near a fence concrete post on the right side of the align, in Sn Rafael, Bulaçan.
BM-39	1,659,026.390	493,512.322	25.137	It is loc, on the side of a dirt road on the right side of the alignment in San Rafael, Bulacan.
BM-41	1,660,037.271	493,451.999	28.680	It is loc, on the rice paddy intersection on the right side of the alignment in San Rafael, Bulacan.
BM-42	1,860,472.819	493,175.599	18.805	It is loc. on a rice paddy dike on the right side of the alignment in San Rafael, Bulacan.
BM A2-1	1,648,237.686	486,306.250	6.524	It is loc, on the right side of road under acade tree near a concrete elec, post 30m, from dirt road in Plandel.
BM A2-2	1,645,946,661	486,593,542	6.120	It is located on side of concrete road bet, two guaves 70m, from end of conc. wall of Cretex Comp. Plandel
BM A2-3	1,545,739.141	487,142.838	7.237	It is loc, under a coconut tree on backyard about 3m. from house, 70m. from conc. road in Plandel.
8M A2-4	1,645,576.226	487,490.381	5,555	It is loc. near an abondoned elec. post at rice paddy int. outside the fence of property, Buliher, Pleridel.
BM A2-5	1,645,351,778	487,893.272	4.749	It is loc, beside the fool of an elec, tower, about 10m. from CL of a dirt road in Brgy, Bulihan, Pleridel.

	TABL	E OF G	PS S	STATION POINTS
CONTROL	COORD		ELEV.	REMARKS
POINT	NORTHING	EASTING		
BLG-1	1,640,535.729	489,225.487	B.931	Loc. at the left guardrail going to Tabang Exit. Drilled on top of the guardrail is an iron steel 1/4x2" about 40 m. from the lest approach of the bridge.
8LG-2	1,640,592.279	489,340.024	10.635	Loc, at the wall railing at the bridge's first approach. Drilled on top of the wall railing is an iron steel 1/4" x 2".
BLG-2A	1,643,045.047	487,830.179	3.777	Loc. in 8gy. Daungan, Guiguinto, Bulacan. It is embedded beside an Irr. canal, about 150 m. from Inter, about 15 m. from an elect, post, 50 m. from BBM 16 and about 15 m. from the fence of the house on the other side of the road.
BLG-3	1,646,381.832	485.957,118	8.646	Loc, in Bgy, Mataas, Sampatoc, Bulihan, Plaridel, Bulacan, It is on the head of an imigation check valve, putside the Cotegio de Immacutada Concepcion, about 10 m, from the shed and 4 m. from road centerline.
BLG-4	1,652,474.952	492,013.344	16.125	Loc. In Boy. Malamig, Busios, Bulacan, It is on the side of an irrigation canal, about 5 m. from the road centerline, 150 m. from a rd. fork, and about 5 m. from the new house.
BLG-4B	1,655,132,400	492,583,.981	9.310	Loc. in Bgy. Tambobong, San Rafael, Bulacan. It is emb. on the grd. about 600 m. from Inter., 20 m. from the house.
BLG-5	1,657,566,872	493,155.992	22.517	Loc. in Bgy. Samp., Sn. Rfl, Bulacen. It is emb. on rt. side of the rd. going to Royal Northwoods 30 m. from the inter.
BLG-5A	1,659,619,893	493,753.421	29.685	Loc. in Bgy. Sen Roque, Hulo, San Rafeet, Bulacan. It is embedded on the paddy dike 20 m. from the dirt road contentine.

CONTROL	COORD		ELEV.
POINT	NORTHING	EASTING	
T-1	1,841,225.254	469,045,710	3.360
T-2	1,641,583.179	488,669.897	4.030
1-3	1,641,830.464	488,477,696	4.930
T-4	1,641,839.683	488,483.095	5.050
T-5	1,641,867.816	488,474,488	5.120
T-6	1,641,901.421	488,463,363	5.360
T-7	1,641,892,449	488,410,158	5.540
T-8	1,641,957,997	488,384.675	5.080
T-9	1,642,000.969	488,371,561	4.660
T-10	1,642.026.410	488,367.580	5.150
T-11	1,642,108.886	488,330.691	4.630
T-12	1,642,173.014	488,355.198	4.970
T-13	1,642,403.861	488,200.615	4.000
T-14	1,643,045.237	487,829.752	3.700
T-15	1,643,090.558	487,878.132	3.470
T-16	1,643,408.710	467,873.117	2.580
T-17	1,643,604.945	487,925.855	2.930
T-18	1,644,483.188	487,984.415	5,410
T-19	1,645,338.877	488,419,155	6,970
T-20	1,645,721.458	488,700.217	8.030
T-21	1,645,829.207	488,757,963	7.960
T-22	1,645,865.037	488,769.278	8.350
T-23	1,646,058.318	488,913.983	8.080
T-24	1,646,234.573	489,081.303	B.050
T-1	1,646,237.677	489,119.664	7.800
T-2	1,647,190.511	489,613.241	8.530
T-3	1,647,472,147	489,797,550	9,160
T-4	1,647,987.901	489,794.855	9,910
T-5	1,648,499.124	489,951.678	10,960

CONTROL COORDINATES POINT NORTHING EASTING				
T-6	1,649,171.515	490,135.688	10,900	
T-7	1,649,736,908	490,395.363	11.280	
T-8		490,781.338	12,560	
	1,650,793,468	ļ		
T-9	1,650,932.296	491,070.927	14.880	
T-10	1,651,073.140	491,213.182	13.18D	
T-11	1,651,511.858	491,544.594	18.790	
T-12	1,651,634.116	491,604.256	16.560	
T-13	1,652,171.172	491,865.395	15,670	
T1	1,652,963.172	491,975.061	17.150	
T2	1.553,166.711	491.937.097	15.340	
T3	1,653,264.574	492,049.167	15.440	
T4	1,653,327.487	492,142.734	15.240	
T5	1,653,411.651	492,150.335	16.680	
T6	1,659,472.407	492,130.939	17.350	
17	1,653,525.530	492,004.044	17.430	
Tä	1,653,637.260	491,842.625	15.430	
T9	1,653,754.181	491,964,051	12.460	
T10	1,653,739.630	494,141,877	14.840	
T11	1,654,020,437	492,214.607	14.240	
T13	1.654,737.523	492,379.170	11.600	
T15	1,655,293.248	492,368,349	9.550	
T16	1,655,545.515	492,498.513	17.830	
717	1,655,576.842	492,417.395	18.020	
T18	1,655,635.552	492,409.403	17.620	
T19	1,655,697.300	492,385.162	17.490	
T20	1,656,337.537	492,498.250	15.870	
T21	1,656,799.655	492,508.090	20,950	
722	1,657,085.568	493,052.405	19.510	
123	1,657,280.628	493,163.137	19,630	

TABLE	OF TRAVER	SE STATION	POINTS
CONTROL	ELEV.		
POINT	NORTHING	EASTING	
T1	1,657,875.550	493,344,564	25.030
T2	1,658,442.470	493,433.175	25,310
T3	1,658,998.440	493,432.436	25,400
T4	1,659,476.800	493,706.043	26.820
T1	1,659,535.000	493,536.664	25.000
72	1,660,040.390	493,471,255	28.680
73	1,660,764.170	493,109.355	12.960
T4	1,861,191.210	492,796.889	13.460
T-1	1,645,182,514	488,080.020	6.740
T-2=PI-3	1,645,392,699	487,741.55D	4.900
7-3	1,645,474.603	487,648.546	5.950
T-4	1,645,710.343	487,137.423	7.460
T-5	1.645,931.256	486,682.762	6.100
T-6	1,646,065.278	486,350.560	7.130
T-7	1,646,280.317	486,282.965	8.960
T-8	1,646,137.594	486.360.509	7,750
T-9	1,645,932.065	486,685.036	6.280
T-10	1,645,718.320	487,138.070	7.500
T-11	1,645,478.867	487,651,111	6.040
T-12	1,645,434,836	488,340.248	7.060
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ADIL JAPAN INTERNATIONAL COOPERATION AGENCY

KATAHIRA & ENGINEERS YEC YACHIYO ENGINEERING CO., LTD.

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS OFFICE OF THE SECRETARY (Sec cover sheet for Signature)

MANUEL M. BONDAN

Undersecretary GILBERTO S. REYES OIC, Director IV JOSEFINA M. ALAGAR Chief, Highwaya Division

THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses) Approved By:
(See cover sheet for Signoture/Approval)
SIMEON A DATUMANONG Secretary PLARIDEL BYPASS - CONTRACT PACKAGE III

1:30,000 FULL SIZE A1

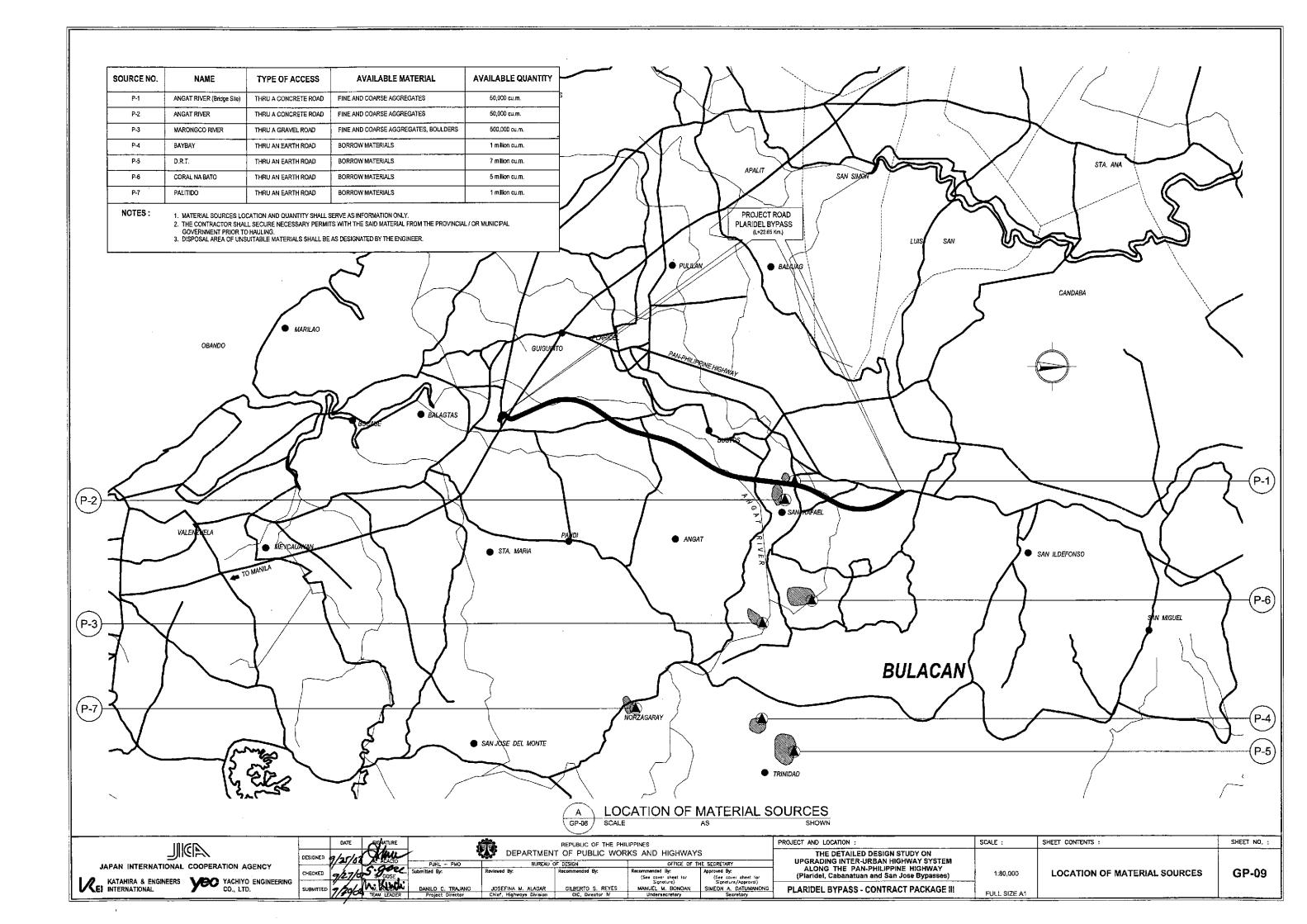
SCALE :

HORIZONTAL AND VERTICAL CONTROL MONUMENT

SHEET CONTENTS :

GP-08

SHEET NO. :



SUMMARY OF QUANTITIES (ULTIMATE STAGE)

ITEM NO.	DESCRIPTION	UNIT		-		QUANTITY		
	J255/14 7/5/		BYPASS	A-17	C-3	BRIDGE #8	BRIDGE #9	TOTAL
PART C - EA	RTHWORKS							
100(1)	Clearing and Grubbing	ha	1.45	-		-	-	2.00
101(1)	Removal of Existing Structures and Obstructions	L.S.	1.00	- 1		-		1.00
101(3)a	Removal of Existing PCC Pavement	m2	420.99	-		-	-	421.00
101(5)b	Relocation of Existing Guardraits	m	180.00	-	-	-	-	180.00
101(7)	Removal of Existing Stope Protection	m3	-	-	-	305.98	44.00	350.00
101(8)	Removal of Existing Slope Protection (Hand-laid Rock)	m3		-	-	33.72		34,00
101(9)	Removal of Existing Gabion	m3	- 1	-		211.00		211.00
101(12)	Relocation of Existing Road Signs .	each	3.00	-	-	_	-	3.00
101(13)	Removal of Existing Road Signs	each	1.00	2.00	-	-	-	3.00
103(1)	Structure Excavation	m3	274.53	-	,	439.00	-	714.00
103(2)a	Bridge Excavation above OWL (Common Soil)	m3	- 1	-	-	5,192.46	294.00	5,487.00
103(2)c	Bridge Excevation below DWL (Common Soil)	m3	-		-	10,716.42		10,717,00
103(3)a	Gravel Foundation Fill	m3	33.71			-	-	34.00
103(6)	Pipe Culverts and Drain Excavation	m3	678.45	-	-			679.00
103(7)	Granular Backfill for Pipe Culvert	m3	362,73	-	-	-	-	363.00
104(1)	Embankment from Roadway Excavation	m3	2,400.66		-	-		2,401,00
104(3)	Embankment from Borrow Pit	m3	10,338.66	-		3,115.72	726.00	14,181.00
104(4)	Embankment from Borrow (Selected Granular Material) for	m3		-		1,116.55	658.00	1,775.00
	Bridge		40.5.5.5			1,110.55	030.00	
1D5(1)	Subgrade Preparation (Common Soil)	m2	10,340.02		<u> </u>	-	-	10,341.00
	SE AND SUBBASE COURSE					r		
200(1)	Aggregate Subbase Course	m3	4,135,59			22.98	40.00	4,199.00
	RFACE COURSES						——— т	_
300(1)	Gravel Surface Course	m3	11.64			-		12.00
310(2)	Asphalt Mixture Wearing Course (#=50mm) for bridge payement, including tack coat	m2	-	-	-	9,289,65	- 1	9,290.00
311(1)a	PCC Pavement (Plain), t=280mm	m2	5,544.00	-		-		5,544.00
311(1)b	PCC Pavement (Plain), t=250mm	m2	3,676.98	-	-	-	-	3,677.00
311(1)c	PCC Pavement (Plain), t=230mm	m2	2,379.56		_	-	-	2,380.00
311(1)d	PCC Pavement (Plain), t=180mm	m2	4,448.31		_		-	4,449.00
311(2)	PCC Pavement (Reinforced) t=300mm Approach Slab	m2	308.87	-		91.04	154.00	554.00
	IDGE CONSTRUCTION		·					
400(4)b	Precast Concrete Piles (450mmx450mm), furnished	m]			1	1,106.00	1,106.00
400(13)b	Precast Concrete Piles (450mmx450mm), driven	m					1,020.00	1,020.00
400(15)b	Test Piles (Conc. Pile 450mmx450mm), furnished & driven	m					37.00	37.00
400(16)a	Cast-in-place Concrete Bored Piles @ 1000mm	m				420.00		420.00
400(16)b	Cast-in-place Concrete Bored Piles Ø 1200mm	m.	 			2,532.00		2,532.00
400(16)c	Cast-in-place Concrete Bored Piles Ø 1500mm	m				1,188.00		1,188.00
480(19)b	Pile shoes for 450mmx450mm Piles	each					70.00	70.00
	High Strain Dynamic Pile Test for Ø 1000mm Bored Piles	each				1.00		1.00
	High Strain Dynamic Pile Test for Ø 1200mm Bored Piles	each	1			3.00		3.00
400(21)	Static Pile Load Test for Ø 1500mm Bored Piles	each	-			2.00		2.00
	Pile Integrity Test for Bored Piles of various diameter	each			_	72.00		72.00
	Concrete Railing Type A (Concrete Posts and Precast		 			12.00		
401(1)a	Beams)	E					80.00	80.00
401(2)a	Steel Ralling Type A for (Angat and Talavera Bridge, and Approach of Pampanga Bridge)	m				2,240.15	ļ	2,241.00
SPL 401(3)a		each				2.00		2.00
404(1)	Reinforcing Steel (Grade 40)	kg	 			919,372.10	35,839.00	955,206.DC
404(2)	Reinforcing Steel (Grade 50)	kg	33,247.00			2,395,592.03		2,452,681.00
405(1)a	Structural Concrete Class A (tc'=21MPa, max. aggregate 38mm) for heavily reinforced structures	m3	356.70			41.82		399.00
405(1)b	Structural Concrete Class A (fc=21MPa, max. aggregate 38mm) for small & medium bridges substructures	m3					384.00	384.00
405(1)d	Structural Concrete Class A1 (fc'=21MPa, max. aggregate 20mm) for small & medium bridges PCDG superstructures	m3					183.00	183.04
405(1)e	Structural Concrete Class AA1 (fc=28MPa, max. aggregate 25) for long bridge substructures	m3		7 - 11 - 1		8,062.47		8,063.0
405(1)/	Structural Concrete Class AA2 (fc=28MPa, max. aggregate 20mm) for long bridge superstructures	m3				2,114.20		2,115.00
405(2)	Structural Concrete Class B (fc'=17MPa, max. aggregate 50mm) for plain or lightly reinforced structures	m3	113.08			29.75		143.0
	Structural Concrete Class C (fc=21MPa, max, aggregate 12mm) for thin reinforced members	m3				985.92	37.00	1,023.00
405(3)								
405(3) 405(4)b	Structural Concrete Class PP (fc=41MPa, max. aggregate 20mm) for prestressed box girders in Angat Bridge	m3				3,066.96		3,067.00

						QUANTITY		
ITEM NO.	DESCRIPTION	UNIT	BYPASS	A-17	C-3	8RIDGE #8	BRIDGE #9	TOTAL
406(1)g	Precast Prestressed Structural Concrete Member (AASHTO Girder Type V, L=29.4m)	each	-		-	56.00	-	56.0
406(1)h	Precast Prestressed Structural Concrete Member	each	-	-		49.00		40.0
406(1)n	(AASHTO Girder Type V, L×29.55m) Precast Prestressed Structural Concrete Member	each		_			7.00	7,0
406(3)a	(AASHTO Girder Type Vimodified, L=40m) Prestressing Steel 12-T12.7 for PC Box Girders of Angat			_		147,712,41		147,713.0
	Bridge, Longitudinal Prestressing Steel 5-T12.7 for PC Box Girders of Angat	kg						
406(3)b	Bridge, Transversat in Top Slab Prestressing Bar Ø 32mm for PC Box Girders of Angat	kg		-		29,029.58	-	29,030,0
406(3)c	Bridge, Transversat in Diaphragms	kg	-	-	-	4,874,44	-	4,875.0
406(3)d	Prestressing Bar Ø 32mm for PC Box Girders of Angat Bridge, Vertical in Webs	kg		-		5,713.69	-	5,714.0
407(1)c	Elastomeric Bearing Pad, Duro 60 (600x350x50mm)	each		-		-	14.00	14.0
407(1)b	Elastomeric Bearing Pad, Duro 60 (600x300x50mm)	each		- :	-	193.00		193.0
407(1)d 407(2)a	Elastomeric Bearing Pad, Duro 60 (600x700x89mm) Expansion Joint, (± 40mm Movement)	each m				4.00	20,00	20.0
407(2)b	Expansion Joint, & 50mm Movement)	m				20,40	24,00	21.0
407(2)c	Expansion Joint, (±70mm Movement)	m	 : -		<u> </u>	30,60	-	31.0
407(2)e	Expansion Joint, (+ 100mm Movement)	m		_		20.40	-	21.0
407(2)g	Expansion Joint, 30mm for bridge sidewalk	m	-			-	6.00	6.0
SPL 407(3)a	Restraining Bar Ø 32 x 1495mm	each		-	-	12.00	-	12.0
SPL 407(3)b	Restraining Bar Ø 32 x 1900mm	each	-	-	-	18,00		18.0
407(4)	G.t. Drain Pipe Ø 150mm for Bridge Drainage	m	-	-	-	469.80	4.00	474,0
SPL 407(5)a	Pier Protection Concrete Blocks for Angat Bridge	m2	-	-	-	1,344.00	-	1,344.0
SPL 420(3)	False Works Required for Cantilever Construction for PC	LS.	-			1,00	-	1.0
SPL 420(4)a	Box Girder (Angat Bridge) Temporary Craneway for Angat Bridge Construction	m			-	416.00	! 	416.0
SPL 420(5)a	Temporary Access Road (Causeway) for Angat Bridge							
	Construction Temporary Cofferdam for Pier Construction (Angat Bridge	m.				710.00		710.0
SPL 420(6)a	Type 1) Temporary Cofferdam for Pier Construction (Angat Bridge	each	-	-		2.00	-	2.0
SPL 420(6)b	Type 2)	each	-	-	<u> </u>	5.00	-	6.0
SPL 900(3)	Provisional Sum for Geotechnical Investigation	L.S.		-	<u> </u>	1.00	- }	1.0
PART G - DR	AINAGE AND SLOPE PROTECTION STRUCTURES							
500(1)b4	RCPC Standard Strength (32MPa), Ø 610mm (24*)	'n	220.00	-		-		220.0
500(1)c3	RCPC Extra Strength (32MPa), Ø 460mm (18")	m	52.00	-	-		~	52.0
502(2)a1	Drop Inlet Manhole for RCPC 1-Ø 460 x 1-Ø 460	each	B.00	-	<u> </u>		- 1	8.0
502(2)a2	Drop Inlet Manhole for RCPC 1-Ø 610 x 1-Ø 460	each	7.00		<u> </u>	-		7.0
504(5)	Grouted Riprap Class A	m3	17.51		·	13.52	165.00	196.0
506(1)	Hand Laid Rock Apron (Loose Boulder Apron)	m3		*	<u> </u>	57.60	-	58.0
507(2)b	Steel Sheet Piles (400x85x8mm), furnished & driven				-	1,248.00	-	1,248.0
509(1) 510(1)	Gabions Rubble Concrete Slope Protection	m3 m3	-		 	306,00 529,65	-	306.0 530.0
	SCELLANEOUS STRUCTURES			-	<u> </u>	329.03	· · ·	330.0
600(1)a	Concrete Curb, Type A (200x450mm)	m	331.50	·····		_ :		332.0
	Combination Concrete Curb & Gutter/Side Strip, Type A	\vdash						
600(3)a	(675x364mm) Combination Concrete Curb & Gutter/Side Strip, Type B	E)	2,241.19	• '		-	•	2,242.0
600(3)b	(675x334mm)	m	400.23		-	-		401.0
601(1)	PCC Pavement for Sidewalk (t=100mm)	m2	1,082.97	-	<u> </u>		-	1,083,0
605(2)a	Regulatory Signs (Triangular 1039mm)	each	1.00	-	<u> </u>	-		1.0
605(2)c	Regulatory Signs (Circular ō600mm)	each	3.00		-	-		3.0
605(2)d	Regulatory Signs (Rectangular 450x750mm)	each	2.00		<u>-</u> -	-	-	2.0
608(1)	Furnishing and Placing Top Soil Sodding	m3 m2	584.65	-	<u>:</u>	-	-	5,847.0
61 D(1)		_	5,846.52		 		-	
611(1)a	Trees (Furnishing and Transplanting) Low Tree H < 1.5m Trees (Furnishing and Transplanting) Medium Tree 1.5m	each	3,805,00	-	-			3,805.0
611(1)b	< H < 3.0m	each	309.00	-	<u> </u>	-	-	309.0
611(1)c	Trees (Furnishing and Transplanting) High Tree (Young Tree) 1.5m < H < 3.0m	each	5.00	<u> </u>	<u> </u>	-	-	5.0
SPL 611(3)a	Planter Box of CHB (1.00m x 1,00m) for Road Side Plantation	each	22,00	-		-	-	22.0
SPL 611(4)b	Planter Square Type B (0.68mx1.70m) for Road Side Plantation	each	21.00	-	-	-	-	21.0
612(1)a	Reflecturized Thermoplastic Pavement Markings (White)	m2	563.04	233.61		-	-	897.0
ACK AKAMI	Removal of Existing Thermoplastic Pavement Markings	m2	133.44	-	-	-	- 1	134.0
SPL 612(2)		anah				38.00	-	38.0
	Bridge Lighting Poles (Single Lamp)	each		I				
SPL 620(4)c	Bridge Lighting Poles (Single Lamp) Street Lighting Service Pole with Panel	each		-		2.00	-	2.0

IIIGD	DATE SIGNATURE		REPUBLIC OF THE PH	IILIPPINES	PROJECT AND LOCATION :	SCALE :	SHEET CONTENTS :	SHEET NO. :
	DESIGNED 0/2/0)	DEPARTME	NT OF PUBLIC WOR	RKS AND HIGHWAYS	THE DETAILED DESIGN STUDY ON	-		
JAPAN INTERNATIONAL COOPERATION A	GENCY / / CAA		OF DESIGN	OFFICE OF THE SECRETARY Recommended By: Approved By:	UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY	-	SUMMARY OF QUANTITIES	00.40
KATAHIRA & ENGINEERS VEC YACHIYO	CHECKED 19/14/0/1 43-7-56-	neversu by.	Recommended by,	(See cover sheet for Signature/Approvel)	(Plaridel, Cabanatuan and San Jose Bypasses)	NOT TO SCALE	(ULTIMATE STAGE)	GP-10
KATAHIRA & ENGINEERS YEC YACHIYO	SUBMITTED 12/22 (D) MY RIUCHI DANILI	C. TRAJANO JOSEFINA M. ALAÇAR		MANUEL M. BONGAN SIMEON A. DATUMANONO	PLARIDEL BYPASS - CONTRACT PACKAGE III	EU 1 0075 44		
II	TEAN LEADER Proj	ect Director Chief, Highways Division	OIC, Director N	Undersecretary Secretary		FULL SIZE A1	į.	1

ROADWAY

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 SPEICIFICATIONS, 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 15Dm. FROM FORK, AND ABOUT 5m. FROM THE NEW HOUSE.
BLG-4B	1655132.400	492583.981	9.310	LOCATED IN BGY. TAMBOBONG, 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 BALIUAG-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 INDICATO 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, UNCLOGGING AND/OR RELAYING OF REINFORCED CONCRETE PIPES, CONSTRUCTION OF CHANNELS AND DITCHES AS DIRECTED BY THE ENGINEER TO ENSURE AN OPERATIONAL TEMORARY DRAINAGE SYSTEM DURING THE CONSTRUCTION PERIOD SHALL BE UNDERTAKEN BY THE CONTRACTOR WITHOUT ANY COMPERSATION.

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).

SHEET NO. :

RG-01

DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY, BASIC DESIGN DRAWINGS, SEPTEMBER 2001.



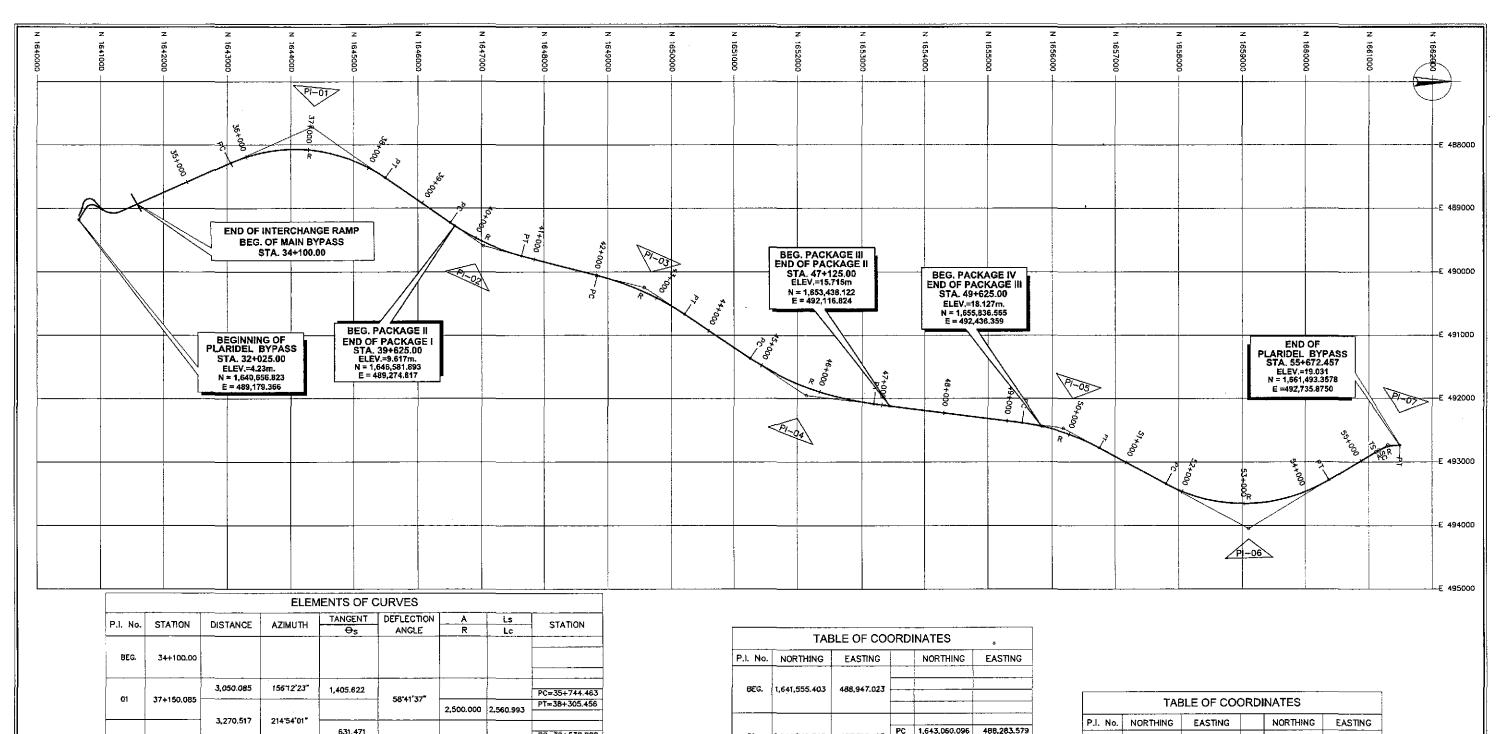
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ITTED	9/	5/0	(Au)	LEADER	DANILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	GILBERTO S. REYES	Signature) MANUEL M. BONDAN Undersecretary	Signature/Approval) SIMEON A. DATUMANONG Secretary	_
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PROJECT 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

FULL SIZE A1



P.I. No.	STATION	DISTANCE	AZIMUTH	TANGENT	DEFLECTION	A	Ls	STATION	
ii. No.	SIARON		AZIMUTH	θs	ANGLE	R	Lc	STATION	
BEG.	34+100.00								
		3,050.085	15672'23"	1,405.622				PC=35+744.46	
C 1	37+150,085				58"41"37"	2,500.000	2,560.993	PT=38+305.45	
02	40+170,351	3,270.517	214*54*01*	631.471				PC=39+538.880 PT=404788.381	
02	40+1/0.351	2,627,362	194"25'44"		20"27"17"	3,500.000	1,249.501	PT=40+788.381	
03	42+784.272	2,527.362	194 25 44	762.261	1973'42*			PC=42+022.011	
		3.079.935	213'40'26"		131342	4,500.000	1,510.187	PT=43+532.197	
04	45+849.871	3,075.500	215 40 20	1,055.870	00004757			PC=44+794.00	
U-F	431043.071	4,076,071	187"15'51"		26*24'35*	4,500.000	2,074.218	PT=46+868.219	
05	49+888.421	-,070,071	107 10 01	653.242	21'08'39"			PC≃49+235.17	
U S	497000.421	3,324,430	208"24"30"		21 00 39	3,500.000	1,291.623	PT=50+525.80	
06	53+197.990	3,324.430	208 24 30	1,481.484	59*20'57*			PC=51+716.508	
	357137.330	2 567 470	149'03'33"		59/20/5/	2,600.000	2,693.177	PT=54+409.68	
07	55+491.631	2,563.432	148 00 00	217.897	32"44"53"	188.072	54.417	TS=55+273.73 SC=55+328.15	
	557 101.001	191.336	02"23'54"	02*23*54*	32 77 33	650.000	344.305	PT=55+672.45	
END	55+672.457	181.000	02 23 54						

	TAE	BLE OF CO	ORD	INATES	٥	
P.I. No.	NORTHING	EASTING		NORTHING	EASTING	
BEG.	1,641,555.403	488,947.023				
01	1,644,346.248	487,716.493	PC PT	1,643,060.096 1,645,499.069		
02	1,647,02B.564	489,587.713	PC PT	1,646,510.662 1,647,640.071		
03	1,649,572.862	490,243.134	PC PT	1,648,834.700 1,650,207.221		
04	1,652,135.007	491,950.849	PC PT	1,651,257.304 1,653,183.402		
05	1,656,179.303	492,466.239	PC PT	1,655,531.364 1,656,753.942	488,283,579 488,520,712 489,226,418 489,745,240 490,052,98 490,665,78 491,365,407 492,084,356 492,383,64 492,777,019	

	TAE	BLE OF CO	ORD	INATES	
P.I. No.	NORTHING	EASTING		NORTHING	EASTING
		4D4 D47 D70	PC	1,657,800.382	493,343.022 493,286.129 492,841.874 492,814.552
06	1,659,103.466	494,047.839	PT	1,660,374.132	493,286.129
			T5	1,561,115.228	492,841.874
07	1 004 700 447	462 700 842	SC	1,661,162.283	492,814.552
u,	1,661,302.117	492,729.842	PT	1,661,493.358	492,735.876
END	1,661,493.358	492,735.876			
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SHEET NO. :

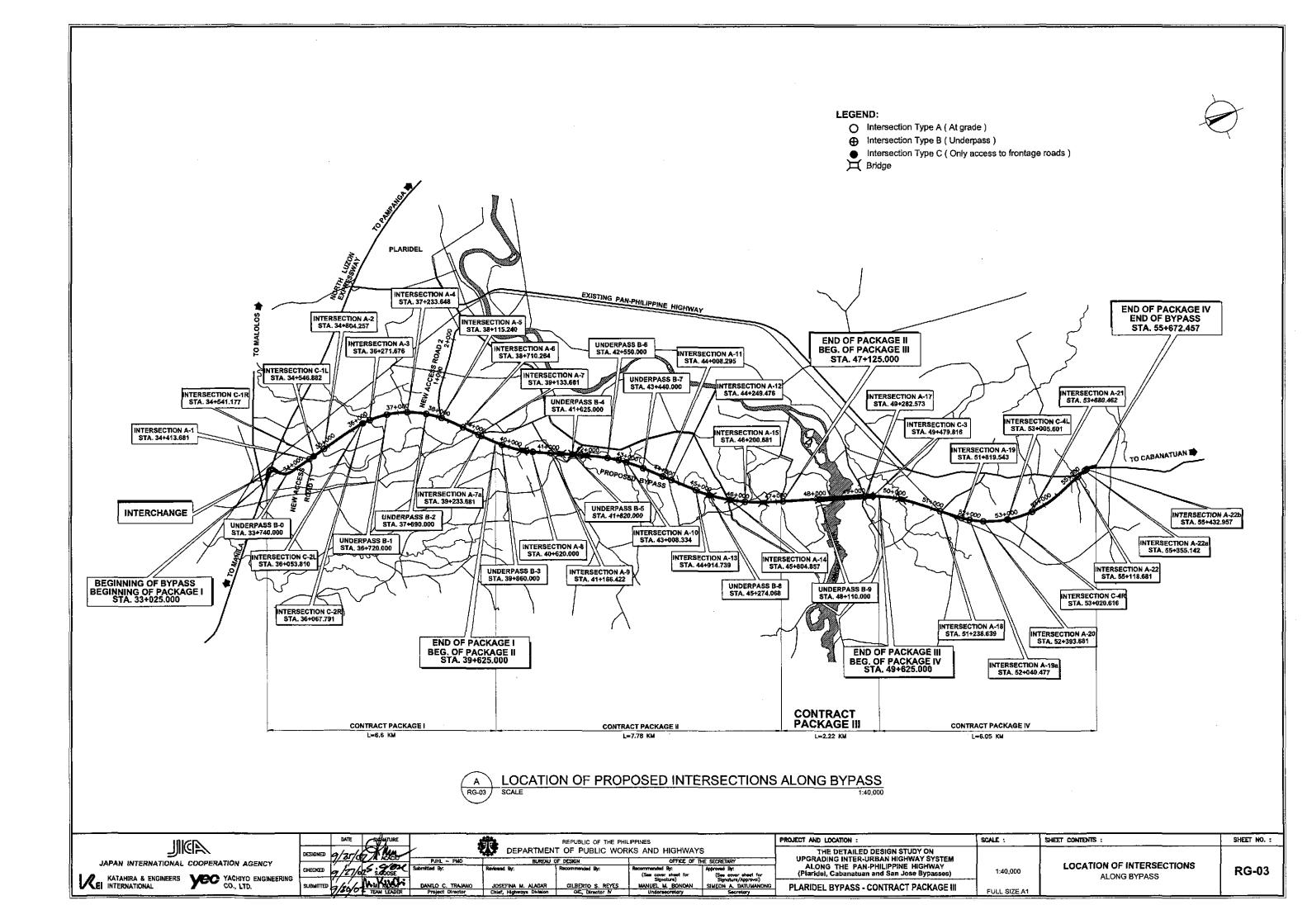
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JAPAN INTERNATIONAL COOPERATION AGENCY										
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	KATAHIRA & ENGINEERS YACHIYO ENGINEERING CO., LTD.	SL								

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	DESIGNED	9/20/1	A ACACIO	
		1/24/9	A	PJHL - PMO
	CHECKED	2/27/0	S. GOSE	Submitted By:
G	SUBMITTED	2/20/02	TEAM LEADER	DANILO C. TRAJ. Project Directo
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-	1/4	904	TEAM	LEADER	Project Director	Chief, Highwaye Division	OIC, Director M	Undersecretary	Secretary

PROJECT AND LOCATION:	SCALE :	SHEET CONTENTS :
THE DETAILED DESIGN STUDY ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY (Plaridel, Cabanatuan and San Jose Bypasses)	1:30,000	ALIGNMENT TECHNICAL DESCRIPTION
PLARIDEL BYPASS - CONTRACT PACKAGE II	FULL SIZE A1	



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

SCHEDULE OF PLANTINGS CONTRACT PACKAGE III (ULTIMATE STAGE)

 		IS (TRIAGULAR 900mm)		SCHEDULE O			.,,	PARATION PLANTING	- (: · -:;						
STATION	REF. NO.	REMARKS	FROM	TION	LENGTH (m)	LOCATION	ļ	STATION				LENG	TH (L.M.)		
49+405	W2-8**	LEFT SIDE MAIN BYPASS	47+957.6B	4B+121.68	164	LEFT SIDE	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 + 400	50 + 100	0	8 5	Ö	19	D	61 0	0
ITEM 605 (2)	a REGULATORY	SIGNS (TRIANGULAR 1039mm DIA.)		·	BRIDGE No. 8										
STATION	REF. NO.	REMARKS	49+250.12	49+270.12	20	LEFT SIDE	2.) OUTER SEF	PARATION PLANTING	(RIGHT SIDE)						
	ļ		49+321.35	49+341.35	20	LEFT SIDE		STATION					TH (L.M.)		
49+300	R1-2*	LEFT SIDE MAIN BYPASS					FROM	то	1-B(1)	1-B(2)	1-B(3)	1-B(4)	1-B(5)	1-B(6) 1-B(7	
	<u> </u>		40 500 54	,	BRIDGE No. 9	LEFT SIDE	49 + 400	50 + 100	0	85	0	19	0	61 D	0
ITEM 605 (2)	c REGULATORY	' SIGNS (RECTANGULAR 450x750mm)	49+390.64	49+410.64	20	LEFT SIDE			=				<u> </u>		
STATION	REF. NO.	REMARKS	Ī				3.) CENTER MI	EDIAN PLANTING							
49+270	R2-7(L)*	CENTER ISLAND MAIN BYPASS	 					STATION	4 4 4 4 4	4 10	4 4 (9)		TH (L.M.)	4 4 (6)	1 4 4 400
49+296	R2-7(L)*	CENTER ISLAND MAIN BYPASS					FROM 47 + 300	48 + 000	1-A(1)	1-A(2)	1-A(3) 0	1-A(4)	1-A(5)	1-A(6) 1-A(7 600 0) 1-A(8)
			+				48 + 000	48 + 700	0	0	<u> </u>	-	0	56 0	64
ITEM 605 /2\	d REGULATORY	SIGNS (CIRCULAR 600mm DIA.)	1	· • • • · · · · ·			48 + 700	49 + 400	0	0	21	0	0	0 0	٥
	,_ ,	(ontooper voorm ben)				· •	49 + 400	50 + 100	0	0	0	0	0	225 0	0
STATION	REF. NO.	REMARKS											+		
48+120	R6-4	RIGHTSIDE MAIN BYPASS													
49+251	R6-4**	LEFT SIDE MAIN BYPASS				-									
49+270	R315*	CENTER ISLAND MAIN BYPASS				· · · · · · · · · · · · · · · · · · ·									
49+298	R3-15*	CENTER ISLAND MAIN BYPASS													
49+297	R3-14A*	LEFT SIDE MAIN BYPASS					4\010=11111	DI ANTINO GUBBLE	TREE'		1			<u> </u>	
49+340	R6-4	RIGHTSIDE MAIN BYPASS						PLANTING (MIDDLE		TH (L.M.)					
49+405	R6-4**	LEFT SIDE WAIN BYPASS					FROM	ATION TO	LEFT	RIGHT					
			_				49 + 400	51 + 100	185	165					
	INFORMATORY		1												
STATION	REF. NO.	REMARKS	1												
	x 1630mm		<u> </u>											· ····	
47+445	GS-8	LEFT SIDE MAIN BYPASS	_												
	. OF INFORMATORY SIG	NS 1.D pcs	4						,						
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	NTERNATIONAL CO	OPERATION AGENCY	1000	PUHL - PMO ted By:	BURE Reviewed By:	AU OF DESIGN Recommended By: Recommend	OFFICE OF THE SECRETARY led By: Approved By:	ALONG_	G INTER-URBAN HI THE PAN-PHILIPPI abanatuan and San	NE HIGHWAY	1			TRAFFIC SIGNS,	BC 04
		YACHIYO ENGINEERING SUBMITTED 9/05/02	SCOSE _			[See &	over sheet for (See nover she	Plaridel, C: أيت بين	abanatuan and San	Jose Bypasses)	1			OF GUARDRAILS,	RG-04
A KATAHIR	ka & Engineers 🔪	CO., LTD. SUBMITTED -7/04 MALE	4 753	ILO C. TRAJANO Project Director	JOSEFINA M. ALAGAR Chief, Highways Division	t GILBERTO S. REYES MANUEL on OIC, Director W Und	over sheet for (See cover she signature/App L. M. BONDAN SIMEON A. DATE seasonstary Secretary	rovol)	SYPASS - CONTRA		_		A NID. DI	ANTINGS	

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

1.0 CENTER	RLINE			3.0 LANE L	INES			6.0 ARROWS						
STATI	TO	LENGTH (m)	REMARKS	STA*	TO	LENGTH (m)	REMARKS	ARROW TYPE	NUMBER OF ARROWS	LOCATION				
00+962.68	00+982.68	20.00	A-17: 150mm UNBROKEN LINE	47+400.00	49+070.62	<u>, , , </u>	(LS) LANE LINE 150mm x 3.0m @ 9.0m GAP	Α	4	APPROACHING INTERSECTION A-17	·		I	
01+022.26	01+042.26	20.00	A-17: 150mm UNBROKEN LINE	47+400.00	49+070.62		(RS) LANE LINE 150mm x 3.0m @ 9.0m GAP	В	3	APPROACHING INTERSECTION A-17	<u> </u>			
				49+070.62	49+270.62		(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							
2.0 EDGE LI	INES			49+250.52	49+270.62	20.00	(RS) 2- LANE LINE 150mm UNBROKEN							
		D 5005 05		49+296.44	49+321.44	25.00	(LS) 2- LANE LINE 150mm UNBROKEN							
			MAIN BYPASS	49+321.44	49+625.00		(LS) LANE LINE 150mm x 3.0m @ 4.50m GAP						<u> </u>	<u> </u>
STAT		LENGTH	REMARKS	49+296.44	49+625.00		(RS) LANE LINE 150mm x 3.0m 6 4.50m GAP		<u> </u>					
FROM	TO	(m)		00+962.68	00+9 <u>82.68</u>	20.00	(RS) LANE LINE 100mm UNBROKEN (A-17)			<u></u>				
47+400.00	49+265.99	1865.99	MAIN BYPASS	01+022.26	01+042.26	20.00	(LS) LANE LINE 100mm UNBROKEN (A-17)							
49+265.99	00+977.70	18.15	MAIN BYPASS TO RT OF A-17			1							<u></u>	
00.008+00	00+977.70	87.70	RIGHT OF A-17	<u> </u>		1	·				·		 	
00.098+00	00+968.64	78.64	LEFT OF A-17			ļ		NOTE:					 	
49+286.66	49+400.00	113.34	MAIN BYPASS	-		1 1		A - LEFT/						
49+460,00	49+625.00	165.00	MAIN BYPASS			 			NATION OF STRAIGHT AND L	EFT ARROWS UR	_		 	
						 		C - STRAI	SHT AND RIGHT ARROWS		-		 	
		·		+		1 1		C - SIRAI	SHI ARROW		-			
2.2 LEFT SI	DE, INNER EI	DGE OF MAIN	N BYPASS	4.0 CONTIN	UITY LINE			7.0 PEDESTRIAN	AND STOP LINES		——		 	
STAT				STA*	FION	LENGT		 	AREA	(m²)	- 		 	
FROM	то	LENGTH (m)	REMARKS	FROM	TO	(m)	REMARKS	LOCATION	PEDESTRIAN			+ + +	 	
47+400.00	49+272.62	1872.62	MAIN BYPASS	49+216.13	49+250.62	34.49	(RS) 150mm x 1.0m 6 3.0m GAP	МАМ	BYPASS 12.62	10.99		 	 	
49+294.95	49+625.00	330.05	MAIN BYPASS	49+321.44	49+351-22	29.78		4 INI. A-1/	-17 18.B3	4.18 UNSIGNALIZED	1			
				1			,,	 			1		<u> </u>	
-		-		1	_			1					 	
001555	DE DIGUES	DOE OF 555	NITA OF BOAR	E & 611517				 	- 					
Z.3 LEFT SI	UE, KIGHT EI	DGE OF FRO	NTAGE ROAD	5.0 CHEVR	ON						1			
STAT	ION	LENGTH	DELLA DEC	STA	TION	LENGT	1 BENARYS							
FROM	TO	(m)	REMARKS	FROM	TO	(m)	REMARKS							
00+981.74	49+298.45	13.05	LT OF A-17 TO FRONTAGE ROAD	49+425.50	49+450.00	34.50	RIGHT OF MAIN BYPASS							
49+298.45	49+400.00	101.55	FRONTAGE ROAD	49+400.D0	49+452.73	62.73	LEFT OF MAIN BYPASS							
49+450.00	49+625.00	165.00	FRONTAGE ROAD	49+438.48	49+450.00	21.52	LEFT OF MAIN BYPASS	NOTE						
				00+907.21	00+962.68	55.47		*	- INITIAL STAGE PAVEMENT	MARKINGS TO BE RETAIN				
				01+042.26	01+082.26	40.00	* CENTER OF A-17							
241 FET SII	DE, LEFT ED	GE OF FRON	TAGE ROAD											
			TAGE ROAD											
STAT		LENGTH	RÉMARKS			<u> </u>								
FROM	TO	(m)				ļ								
00+968.64	49+303.07	24.73	LT OF A-17 TO FRONTAGE ROAD			ļ		 					<u> </u>	
49+303.07	49+625.00	321.93	FRONTAGE ROAD	<u> </u>		ļ		 			-	<u> </u>	<u> </u>	
				 		ļ		 			 		 	
		·		+									 	
2.5 RIGHT S	SIDE, OUTER	EDGE OF MA	AIN BYPASS					 					 	
STAT	ION	LENGTH				 		 · · · 				 	 - 	····
FROM	TO	LENGTH (m)	REMARKS	F		f		f						
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	1				 			1			
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	1										
49+296.44	49+625.00	328.56	MAIN BYPASS	-							1			
26 PICUT C	SIDE, INNER I	FDGE OF MA	IN RYPASS								1			
						1					1			
STAT		LENGTH	REMARKS			ļ	<u> </u>	ļ		<u> </u>	1		ļ	
FROM	то	(m)				1		I		ļ	1		 - · · · · · · · · · · · · · · · · · · 	
47+400.00	49+272.62	1872.62 *	MAIN BYPASS	 		ļ		 			_		 	
49+294.95	49+360.00	65.05	MAIN BYPASS					 		 			 	
49+360.00	49+625.00	265.00 *	MAIN BYPASS					 			-	<u> </u>	 	
2.7 RIGHT S	SIDE, LEFT E	DGE OF FRO	NTAGE ROAD			 	· · · · · · · · · · · · · · · · · · ·	 			 		 	
STAT			T			 		 					 	
FROM	TO	LENGTH (m)	REMARKS			 		 			+		 	
49+460.00	49+625.00	165.00	FRONTAGE ROAD	 		 		 	+					
737700.00	431023.00	100.00	FRONIAGE ROAD			+		 			+			
				+		 		 			1		 	
2.8 RIGHT S	SIDE, RIGHT I	EDGE OF FR	ONTAGE ROAD			 							<u> </u>	
STAT	rion 1	LENGTH		+		 		 	-	 	 		 	
FROM	TO	(m)	REMARKS			 		† · · · · · · · · · · · · · · · · · · ·	+	 	 		 	
49+460.00	49+625.00	165.00	FRONTAGE ROAD		 	 		 	- 	 	+		 	
.0				CICHATINE		****		-	DDVIEW THE TOOM	in the second se	SCALE :	SHEET CONTENTS :	<u>- </u>	SHEET NO. :
	IA	ADI	DATE	SIGNATURE	4	那	REPUBLIC OF THE PHILIPPINES	NI KAJANO	PROJECT AND LOCAT		SUPLE :	ance contents:		SALET NO. :
	الا	1/21/N	DESIGNED 9/21/05	J. TAPIA	_	DEP	ARTMENT OF PUBLIC WORKS AND HIS			TAILED DESIGN STUDY ON INTER-URBAN HIGHWAY SYSTEM				1
JAPAN I	INTERNATIONAL	L COOPERATIO			PJHL - PMO ed By:	Dandamed D		THE SECRETARY		E PAN-PHILIPPINE HIGHWAY		BOUESIA	PLIP 44 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	^ ^ _
I A WATAIR	IDA E ENGINEERO	1 200 V40	HINO ENGINEEDING CHECKED 7/27/02	S. GOSE Submit	au ay:	Reviewed By:	Recommended By: Recommended By: (See gover she	Approved By: (See cover sheet Signaturs/Approve		anatuan and San Jose Bypasses)		SCHEDULE OF PAVEN	IENT MARKINGS	RG-05
= ### RAIAMI	INA a ENGINEERS	VCU YAC	HIYO ENGINEERING SUBMITTED 9/00/0	A KIMIL	Project Director	1	Signoture) Signaturs/Approve	*		7			Ì
CI INTERN	(ATIONAL	# cn	LTD. SUBMITTED	M. K		MANUTE IN	. ALAGAR GILBERTO S. REYES MANUEL M. B	SIMEON A. DATUM	NONG DIADENDA	PASS - CONTRACT PACKAGE III	FULL SIZE A			

